



Useful hedgerow plants in Surrey: knowledge, uses and wellbeing benefits

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Research

Abstract

Background: Hedgerows are a valuable feature of the British countryside and the produce from them has been used by humans for centuries. Useful hedgerow plants (UHP) are still used for food, fuel, craft and medicine, and since the Covid 19 pandemic, interest in foraging and wild edible plants (WEP) has grown, yet there is a lack of research about the cultural relationship between people and hedges. This study looked at what the Surrey public know about hedgerow plants and what wellbeing impact this knowledge offers.

Methods: Utilizing a mixed methodology centered on ethnobotany and social sciences, the research studied quantitative and qualitative data to explore the importance of hedgerows to the public. An online questionnaire and face-to-face interviews were conducted with participants from across Surrey and the results analyzed using R.

Results: Participants cited 107 species with 274 unique uses recorded. Both current and childhood residence had an impact on knowledge and usage; specifically, a rural childhood was a major factor in plant knowledge with over 80% of participants gaining knowledge in childhood. Reasons why UHP are important to the public were explored and various kinds of wellbeing, including connection to nature and community, mental health benefits, and enjoyment, are linked to knowledge of UHP.

Conclusions: There is a wide diversity of knowledge of UHP across Surrey and this knowledge, and resulting usage, can have a positive impact on both users and hedgerow health and conservation. Knowledge acquisition typically happens in childhood and resulting policy implications are suggested.

Keywords: Useful Plants, Hedgerows, Wellbeing, Connection to Nature, Wild Edible Plants, Ethnobotany, Foraging.

Background

The British hedgerow is a cultural icon, scientifically important, agriculturally valuable, historically complex, and regionally distinct. Although hedges exist globally (Montgomery *et al.* 2020), hedgerows in Britain are unique due to their sheer volume and the history they represent (Wolton 2024). Historically, hedgerows have been well utilised due to economic necessity - indeed from Anglo-Saxon times, many were planted with human use in mind (Rackham 1997). Past uses of hedgerows were more human-centric and the range of what can now be considered useful hedgerow plants was wider reaching (Haw 2014).

Whilst hedges created boundaries for landowners and fodder for animals, they also provided crucial foodstuffs, medicinal herbs, and fuel for people (Forman & Baudry 1984, Tilzey 2021). **Elder** (*Sambucus nigra* L.) for clothes pegs, **Dogwood** (*Cornus sanguinea* L.) berries for lamp oil and **Nettle** (*Urtica dioica* L.) for fibre were just some of the essential plants recorded (Hart 2024). Hedges were such valuable property due to the wood and other amenities they offered that in the 1530's during the dissolution of the monasteries, surveys listed hedgerows as part of the Church's assets (Rackham 2020) and stealing from them could result in flogging (Rackham 1997).

However, the use of hedgerow plants has dropped dramatically since the Enclosure Acts began in 1750. Post-WW2, children were picking **Rose hips** (*Rosa canina* L.) for vitamin C or **Elder** berries for cold remedies (Wright 2017) but with the major destruction of hedges between the 1950's-70's (Pollard *et al.* 1979) the link between people and the provisions of hedgerows has faltered (Hart 2024). There is, however, a renewed curiosity in foraging; post the Covid pandemic and with the impact of social media, interest in eating wild foods is rising (Knight 2020, Russo & McCarthy 2024).

At present, the usefulness of plants is often considered through an Ecosystem Services (ES) lens and there is an increasing recognition of various benefits offered by hedgerows (Dover 2019, García de León *et al.* 2021). Research on the regulating and provisioning services provided is abundant - hedgerows support up to 80% of our woodland birds, 50% of our mammals and 30% of our butterflies (Hart 2024). They help with flood prevention and soil compaction (Montgomery *et al.* 2020). In 2004 it was suggested that hedges in the United Kingdom could sequester up to 2.4% of carbon emissions - at that time representing 20% of the UK's commitment to emission reduction (Falloon *et al.* 2004). In addition, over 1,000 plant species have been recorded in British hedgerows - nearly a third of the 3,500 native and non-native species in the UK (Hart 2024). They are one of Britain's most valuable ecosystems and the list of ecosystem services and goods they provide outstrips almost all other natural environments (Wolton 2024).

However, whilst cultural ecosystem services (CES) form a noted part of the ecosystem services framework, research on the cultural ES of hedgerows is limited. This is surprising considering the cultural links of hedgerows, and the related crafts and sustenance deeply linked with the history and place narratives of the UK (Haw 2014). Hedgerows feature heavily in art, literature and the public imagination (Clifford & King 1985), and the foraging community frequently espouses the importance of place-based plant usage for wellbeing. Research on foraging and foragers reveal the multifaceted importance of the practice; "Foraging is a fundamental part of who we are. As a species, we seek meaningful connections to our natural world to provide us with a sense of belonging and to enhance place attachment" (Wilson 1984:155 quoted in Russo & McCarthy 2024). These qualities of "sense of belonging" and "place attachment" link directly to cultural ecosystem services but have not been explored sufficiently within hedgerow research. As Townsend (2020) suggests, foraging is a practice which "celebrates local produce, promotes wellbeing, and creates custodians of natural habitats" and one which has value both to the academic community and to local practitioners.

Townsend's assertion that foraging promotes wellbeing ties into the growing research on the benefits of nature for wellbeing, and this should be considered when discussing the benefits hedgerows can offer. It is generally accepted that nature has both physical and mental health benefits (Carrus *et al.* 2015, Fuller *et al.* 2007, Robinson *et al.* 2020). Connection to nature has been the subject of long-term research by the UK Government with the 'People and Nature' and 'Monitor of Engagement with the Natural Environment (MENE)' surveys, demonstrating 15 years of interest in the impact nature has on the public (MENE 2019). There is greater awareness of the wellbeing effects of nature than 10 years ago (Natural England and National Statistics 2019), but nature is often treated as 'uniform' in these studies and by the NHS (Marselle *et al.* 2019) - as if all access to nature gives the same benefits. Proximity to 'greenspace' is used as a marker for wellbeing rather than investigating the complex and nuanced relationships that may be had with that space (Dallimer *et al.* 2012) or with specific natural environments. Wellbeing is a tricky concept to define with research suggesting that physical, emotional, spiritual, social and cognitive wellbeing should all be considered as part of a complete sense of wellness (Irvine *et al.* 2023).

Hedgerows are important to people not just for the tangible, regulating services they provide, but also the intangible - the experiences, the connections, and the memories invoked (Oreszczyn 2000). They form a part of food sovereignty, providing culturally valuable foodstuffs for local people (Tilzey 2021), and are a part of a cultural landscape which contributes to people's sense of place (Clifford & King 1985, Naveh 1995). However, these intangible qualities make cultural ecosystem services harder to quantify and therefore assign value and the knowledge held about them is at risk of dying out. Pilgrim *et al.* (2008) note that in wealthier countries (such as the UK), traditional ecological knowledge (TEK) is being lost as economic strength reduces attachment to cultural traditions and places become more homogenous and less distinct (Relph 1976).

Traditional plant knowledge loss in the UK is particularly stark (as Pilgrim highlights) in comparison to other European countries where foraging and public access to land is more widespread (Fišer & Peroni 2025, Grivins 2021).

Research on TEK demonstrates that the knowledge is often practice based; an interweaving of people and place, tested and handed down through time. It encompasses cultural and spiritual belief systems (Reyes-García *et al.* 2007) but is also deeply practical with noted benefits for conservation and sustainable resource use (Berkes *et al.* 2000). Under the ecosystem services framework these practical benefits would be considered provisioning or regulating services yet Berkes describes this knowledge system as a “cumulative body of knowledge, practice, and belief, evolving by adaptive processes and handed down through generations by cultural transmission” (Berkes *et al.* 2000:1252); the knowledge is inextricably linked to place, culture *and* practice. TEK has been widely studied by ethnobotanists but most frequently within Indigenous communities and developing countries (Reyes-García *et al.* 2007). Little research has been conducted on how TEK functions within the UK despite ethnobotanical research by, and on, British foragers (Łuczaj *et al.* 2012, Łuczaj *et al.* 2021, Townsend 2020). Hedgerows, as a distinctive local feature, have not been considered for the complex, multifaceted wellbeing they could create and both the cultural *and* provisioning ecosystem services this offers. The ecosystem services model, as a Western conception, has limited scope to consider the complexities inherent within place and practice-based TEK and the biocultural exchange which comes from its usage and preservation.

This research aims to fill the gap in ecosystem services thinking by exploring the hedgerow plant knowledge which exists in Surrey, discussing how this relational knowledge can impact wellbeing and therefore considering how cultural ecosystem services function in relationship to hedgerows; how a tangible, provisioning activity can be intrinsically linked to cultural benefits. The following questions are asked:

1. What species diversity, knowledge and usage is there of useful hedgerow plants in Surrey?
 - 1a. Who is using this knowledge and how have they acquired it?
2. Is wellbeing a major component of the reasons people have for using useful hedgerow plants?
 - 2a. What kind of wellbeing is felt - physical, mental or spiritual?

Materials and Methods

A mixed methodology collecting both quantitative and qualitative data was deemed the best framework for the research (Creswell 2003) allowing for a broad range of data to be captured. Initially focusing on seven common species for analysis, the study then explores whether wider species diversity is being utilised and what impact usage has on participants.

Study area

Surrey was chosen as a clearly delineated geographic area of an appropriate size for the timeframe. Although 50% of Surrey is rural (Cirican 2023), the county has just 1.2km/km² of hedgerows - the lowest of all non-urban counties (UK Centre for Ecology and Hydrology 2024). By comparison, the average density of hedgerows in counties where they are present in England is 4.2km/km² (Staley *et al.* 2024). The rural areas are unevenly distributed, with boroughs such as Mole Valley being more than 72% rural whilst Spelthorne has no rural areas at all (Cirican 2023). Choosing Surrey therefore allowed for a diversity of experience and opinion.

Survey design

Questionnaire

A questionnaire was created on Microsoft Forms for distribution to the public (see Appendix 3 for full questionnaire). The survey included quantitative questions regarding various demographics such as gender, age, and area of residence. Respondents were asked if they had ever used useful hedgerow plants and acquisition of this knowledge was explored through multiple choice questions.

A Likert 5-point scale captured opinions on statements regarding the importance of hedgerows to respondents. The statements were chosen to explore feelings about the natural world in general (e.g. “I enjoy spending time in nature”) and more specific topics related to aspects of useful hedgerow plants that had arisen as important themes within the literature (Natural England and National Statistics 2019, Oreszczyń 2000).

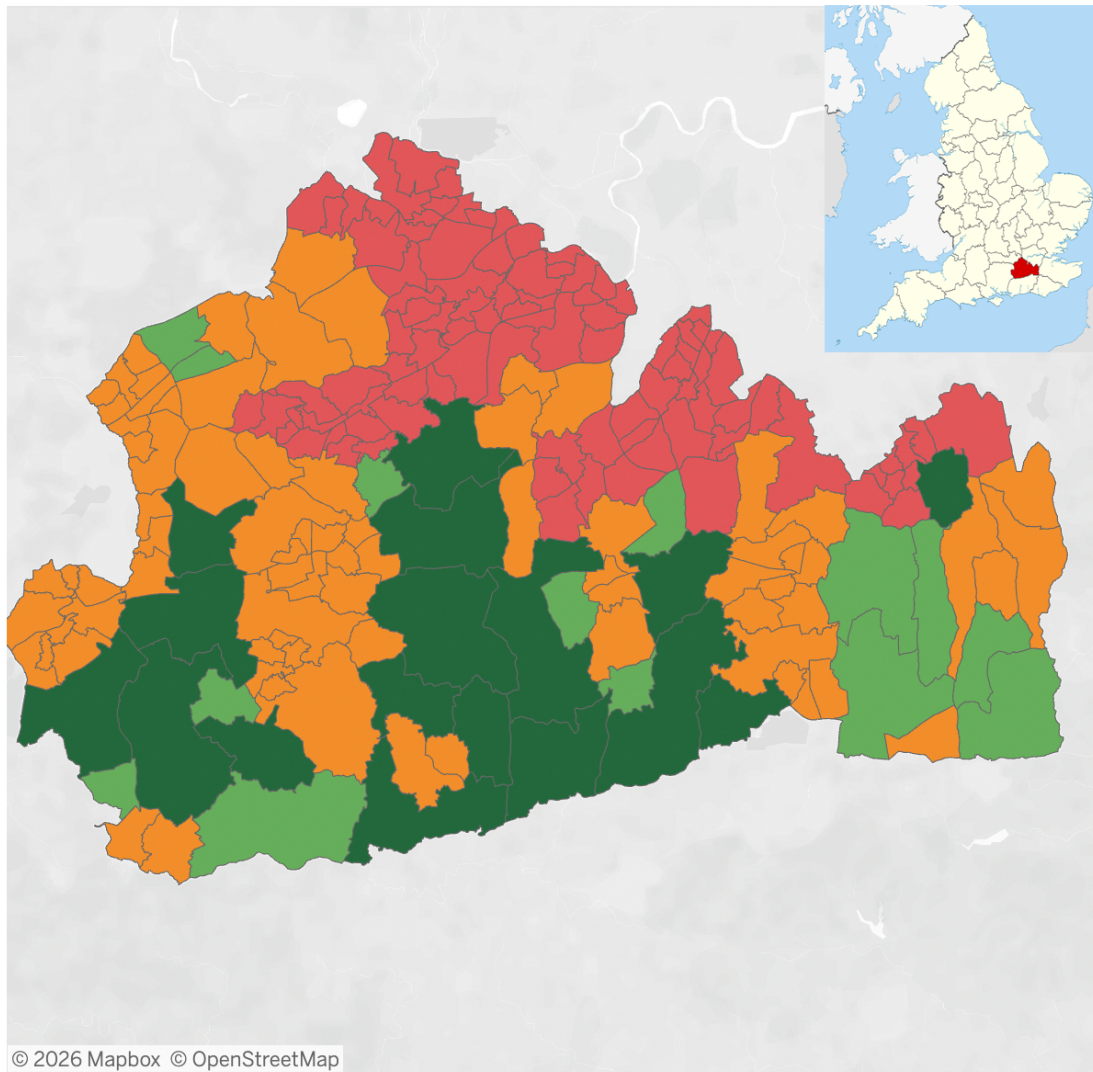


Figure 1. Map of Surrey showing Urban (red), Suburban (orange) and Rural (light and dark green) areas. Reproduced with permission of Surrey County Council (Joint Strategic Needs Assessment 2022). Inset map showing Surrey's location within the UK (red). The Rural Urban Classification is used to distinguish rural and urban areas. An area is defined as rural if it falls outside of settlements with more than 10,000 resident population (Cirican 2023). Reproduced from Ordnance Survey OpenData.



Figure 2. L to R. Elder - flower and berry (*Sambucus nigra* L.), Crab Apple (*Malus sylvestris* L.), Sloe (*Prunus spinosa* L.) (Photos by A. Lewis taken during foraging walks in Surrey)

Seven of the most common hedgerow species in Surrey (Jackson 1924, Pollard *et al.* 1979, Whale 1785) were selected: **Blackberry** (*Rubus fruticosus* L.), **Sloe** (*Prunus spinosa* L.), **Elder** (*Sambucus nigra* L.), **Crab Apple** (*Malus sylvestris* L.), **Nettle**

(*Urtica dioica* L.), **Dog Rose** (*Rosa canina* L.), and **Hawthorn** (*Crataegus monogyna* Jacq.). These species were selected as the most common mentioned in the referenced literature as common hedgerow plants. Respondents were asked if they recognised each species, if they used it, and what they used it for, using multiple choice boxes. Branching was used so that if species were not recognised, further questions were not asked. These species worked as a tally system to check recognition and to offer quantitative data regarding plant use.



Figure 3. From L to R: **Nettle** (*Urtica dioica* L.), **Blackberry** (*Rubus fruticosus* L.), **Hawthorn** (*Crataegus monogyna* Jacq.), **Dog Rose** (*Rosa canina* L.). (Photos by A. Lewis taken during foraging walks in Surrey)

Additionally, “Are there any other hedgerow plants which you use which are not mentioned above?” was asked, which offered an opportunity for free listing. If answered, respondents were asked about usage of each of the listed plants, to create a comprehensive assessment. The questionnaire also offered a qualitative element with questions such as “why do you use hedgerow plants?” taking the form of a longer free-form text response.

Semi-structured interviews

To obtain a greater depth of opinion than the questionnaire could offer, semi-structured interviews were conducted (Creswell 2003). These probed further into the social and wellbeing aspects of hedgerow plants, with questions such as “why do you feel using hedgerow plants is important?”. Similar questions were asked each time, but the interviewer was guided by the interviewee and had prompts which were used depending on the answers given. For specialist respondents, additional questions were asked to ensure specialist knowledge was captured (see Appendix 4. for example interview questions).

Sampling

Questionnaire

The survey was widely distributed online using social media and community news sites. Local news Facebook groups were found for each major town and the questionnaire posted, as well as on the local online noticeboard website “nextdoor.com”. Surrey-wide groups were also utilized including Facebook groups such as “Surrey Gardeners” and “We Love Surrey”. Local councils and Residents' Associations were also contacted to request posters with a QR code be placed on community notice boards across the county.

The aim for responses was 150 and this was quickly achieved, but most responses came from those aged 45-65. The survey remained online to gain further responses from those in the 18-35 bracket, and this demographic was pursued through posters at Royal Holloway University, the University of Surrey and through targeting student social media groups. The questionnaire received 258 responses over 6 weeks.

Respondent Characteristics

2 respondents did not accept that their data could be used in the research and 7 did not live in Surrey. They were excluded from the analysis, leaving 249 responses. 21% of participants were aged 18-44, 51% of participants were aged 45-64 and 28% of participants were over the age of 65. 74% of participants were female, 25% were male, and 1% preferred not to share their gender. These characteristics showed a skew towards age 45+ female participants which is reflective of the chosen data collection methods. Each questionnaire respondent was assigned a unique reference number (URNQ).

Interviews

Interviews were conducted with both specialist knowledge holders and respondents to the questionnaire who self-selected as suitable candidates. A range of perspectives from interviewees was desirable, so an effort was made to contact those with diverse knowledge. Surrey based foraging teachers were found through the Association of Foragers and Wild Food UK and two foraging walks were attended. Farmers, Forest School teachers, hedge layers, outdoor cooking specialists, and herbalists were all contacted. Surrey Wildlife Trust was approached as their project “Hedgerow Heritage” has been running in the Surrey Hills, and a member of their team was interviewed.

The questionnaire allowed respondents to volunteer for interviews and 45 respondents put themselves forward. Purposive sampling was used to select these interviewees from a broad range of demographics. In total 16 interviews were undertaken. Nine interviews were self-referrals and seven were with specialist knowledge holders. Each interviewee was assigned a unique reference number (URNI).

Data analysis

The data was cleaned as described above. Entries on the border where Surrey residence was claimed remained in the dataset as the question asked, “what is the closest village or town?” (See Appendix 3). This could have elicited responses of towns outside Surrey despite the respondents living within the county boundaries.

A full list of plants mentioned, and their uses, was tabulated. Using methods developed within Ethnobotany, the types of uses were categorised to Economic Botany Standards (EBS) Level 1 (Cook 1995) and the frequency of mention for each plant was calculated to create Use Values (UV) for each plant (Hoffman & Gallaher 2007, Rossato *et al.* 1999). Two different use values were recorded. Firstly, a use values based on all uses (AU). The formula used for this was:

$$UV_{AU} = \sum UV_{AU} / n$$

Secondly, a use value which only considered the Economic Botany Standards categories. This formula was:

$$UV_{EBS} = \sum UV_{EBS} / n$$

For all uses, an answer “Jam; Condiment; Alcoholic drink” would be counted as 3 uses whereas for Economic Botany Standards this would be 1 use: Human Food. For both formulae UV is the number of uses reported across all individuals and n is the total number of individuals surveyed (n=249) (Zenderland *et al.* 2019).

The data was analysed in R, using chi-square tests of independence as all data was categorical. To look for a relationship between hedgerow plants usage and various demographics, the data was split into categories and tested. To explore how knowledge is acquired, the ways people gained their knowledge were tabulated. This data was spilt into compressed age groups and a chi-square test performed to analyse relationship between age and knowledge acquisition.

To explore the emotions related to useful hedgerow plants the statement “I enjoy spending time in nature”, was collapsed into dummy variables - agree and do not agree. This was then compared to the data from the People and Nature survey (Natural England 2016a, Natural England 2023) using a two-proportion z test.

The answers to the qualitative question (questionnaire question 42 - see Appendix 3) “Why do you use hedgerow plants?” were spilt into seven frequently occurring themes (Jones 2024). Using inductive analysis, the answers were read through several times to allow themes to emerge from the reasons given for usage. The answers were coded and the thematic analysis refined into the seven specific and most commonly occurring themes selected. These themes were split into “tangible reasons” (free/low cost, health, sustainability) and “intangible reasons” (enjoyment, connection to nature/seasons, culture/heritage/nostalgia, connection to local community). There was more overlap within the intangible reasons for usage and initially “connection to nature” and “connection to the seasons” were considered as two separate categories. It was decided to combine them as one theme as they were so frequently featured together within answers. The themes were tested against various demographic variables to look for relationships. Correlation plots were created from the residuals to show the trends.

The interviews were transcribed, and the answers coded into the same seven themes as the questionnaire responses. Further time was taken to explore whether there were any additional themes present which had not arisen in the questionnaire

answers, but it was found that the seven selected themes were representative of all answers. The frequency of mention was compared to that of the questionnaire.

Results

The survey was widely distributed and captured opinions and knowledge from across Surrey.

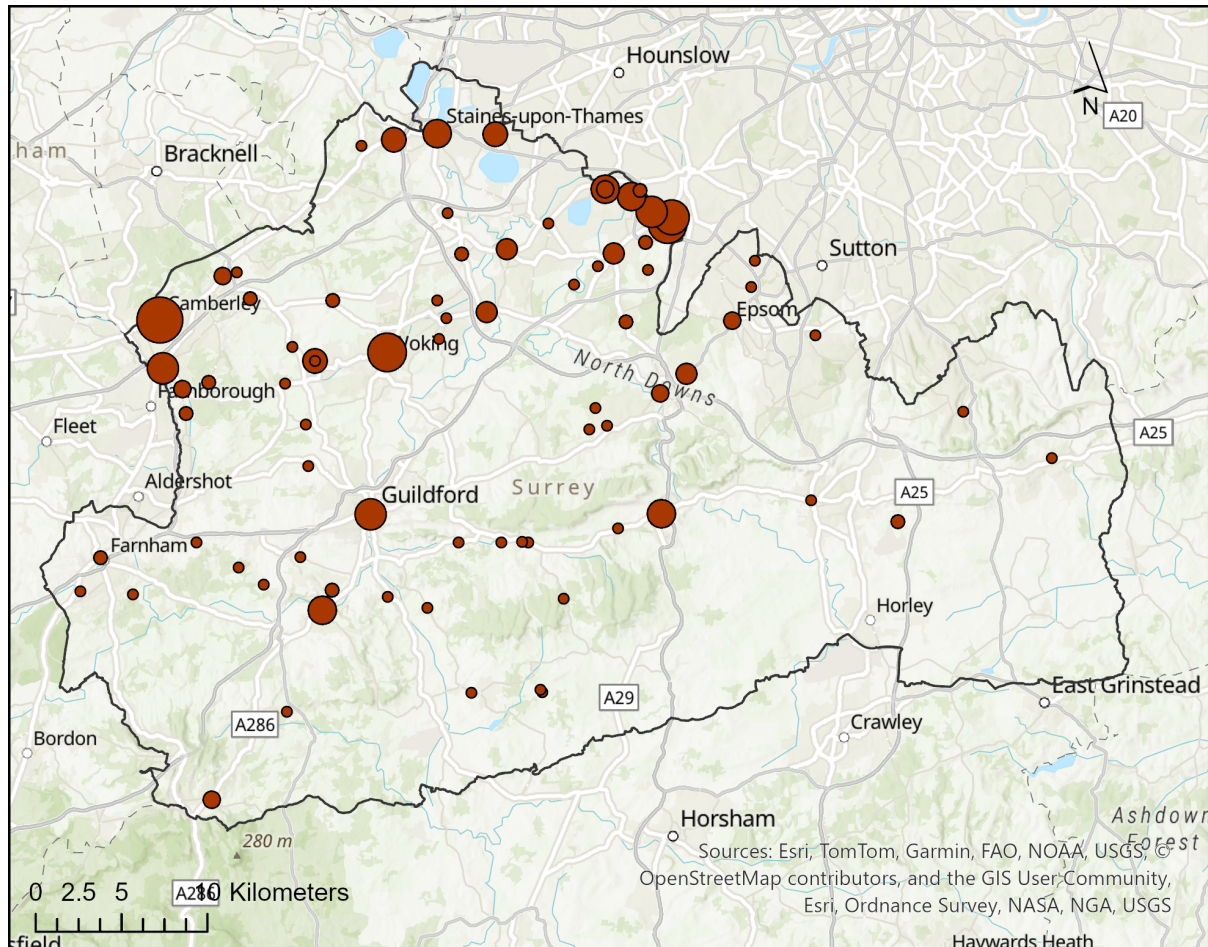


Figure 4. Map showing survey area and the location of questionnaire respondents answering Q.5 “Where in Surrey do you live? What is the closest town or village?” created on ArcGISPro. The size of point represents the volume of respondents at each location.

Plant knowledge and usage

The responses to the questionnaire showed a broad knowledge of useful hedgerow plants: 107 plants with 274 unique uses were recorded.

The use value calculations for the key species showed **Blackberry** to be the most useful plant by a significant margin in both values, with only 7 respondents (2.8%) saying they had never used the plant. Its use was commonly reported as a food, both as a general foodstuff and in jam and puddings, although some respondents used it in both alcoholic (36 responses) and non-alcoholic (17 responses) drinks.

The detailed questions on the seven key species revealed widespread and varied usage of these common plants. Some species were commonly associated with particular uses; for example, **Elder** was most frequently used for a non-alcoholic drink, such as elderflower cordial (103 responses), as well as for an alcoholic drink, such as elderflower champagne or elderberry wine (42 responses). **Sloe** was most frequently used for an alcoholic drink (103 responses), probably **Sloe gin** (or **Sloe brandy** as one respondent specifically noted). This shows that there are specific, traditional uses for these plants which are well known across the population. With the less commonly used key species the uses were more diverse, although there were still peaks in the data. **Nettle** was most commonly used as a general foodstuff (35 responses), with notes on the use in salads and soups, **Crab Apple** was most commonly used for jam (68 responses), **Dog Rose** was most frequently used as

medicine (26 responses) which links to usage of rose hips for Vitamin C rich syrup, and **Hawthorn** usage was spread across all categories.

Table 1. Number of mentions, uses and use value of the selected species. For full breakdown of all recorded uses of these species see Appendix 1: Table 6

Common Name	Scientific Name	Total Users	Number of Uses (AU)	Total Number of Uses (AU)	Number of Uses (EBS)	Total number of Uses (EBS)	UV _{AU}	UV _{EBS}
Blackberry	<i>Rubus fruticosus</i> L.	242	13	617	5	263	2.48	1.06
Elder	<i>Sambucus nigra</i> L.	138	11	256	6	154	1.03	0.62
Sloe	<i>Prunus spinosa</i> L.	133	16	193	4	136	0.78	0.55
Nettle	<i>Urtica dioica</i> L.	84	19	140	5	115	0.56	0.46
Crab Apple	<i>Malus sylvestris</i> L.	95	11	135	4	96	0.54	0.39
Dog Rose	<i>Rosa canina</i> L.	73	18	113	6	92	0.45	0.37
Hawthorn	<i>Crataegus monogyna</i> Jacq.	50	16	83	7	67	0.33	0.27

Free listing revealed a further 100 plants with an additional 170 unique uses (see Appendix 1: Table 7 for complete list), demonstrating knowledge going well beyond the focal species. 149 respondents (59.8%) included free-listed responses. UV was not calculated for the free-listed species as the question was optional. However, Figure 5 shows several species were frequently mentioned, with **Hazel** (*Corylus avellana* L.) mentioned more than **Hawthorn** - one of the key species. This scoping question offers a springboard for further research into the most used hedgerow plants.

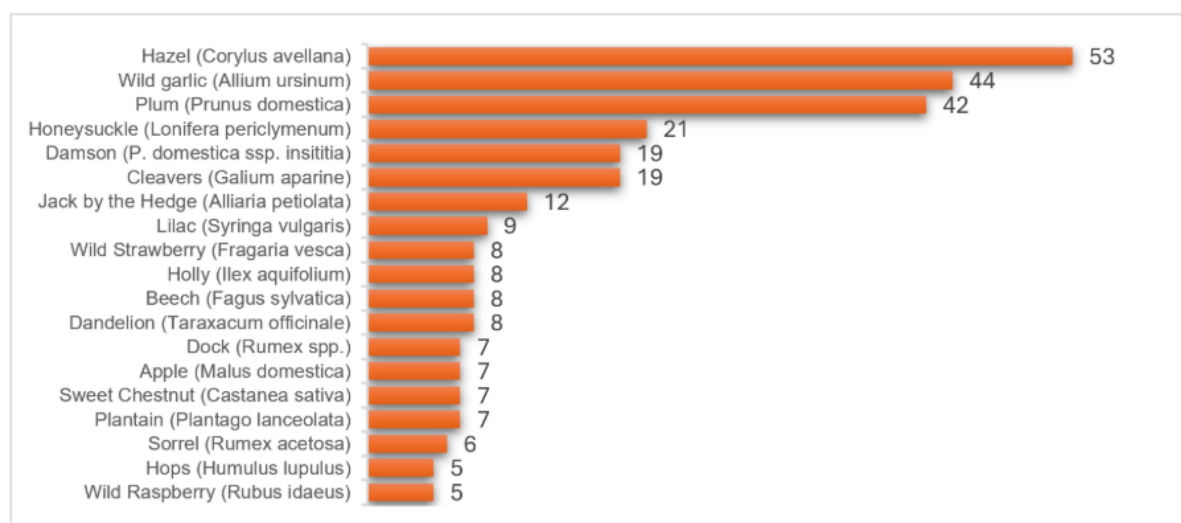


Figure 5. Number of mentions of the most cited species in response to Q.36 "Are there any other hedgerow plants which you use which are not mentioned above?"

Demographic usage

To assess who is using useful hedgerow plants, Q.10 asked, "Do you or have you ever used hedgerow plants?". The answers were tallied and split into various demographics to see which factors impacted knowledge and use. Chi-square tests were performed to see if there was any dependence between variables. The relationship between usage and gender was not statistically significant ($p=0.844$) nor was the relationship between usage and age, either split into the groups used in the questionnaire ($p=0.931$) or in three compressed groups - 18-44, 45-64, 65+ to account for smaller sample sizes in some groups ($p=0.821$).

However, the type of area lived in was found to have a significant impact on UHP usage.

A 1-sample proportion test shows that the proportion of respondents who live rurally ($p = 0.15$) is not significantly different from the proportion of people who live rurally across Surrey (Circan 2023), making this a representative sample of the county.

Table 2. Usage of useful hedgerow plants (UHP) by demographic area of Current Residence

Current Residence	Use UHP	Do not use UHP	Total
Rural	33 (89%)	4 (11%)	37
Suburban	129 (70%)	54 (30%)	183
Urban	15 (52%)	14 (48%)	29

P value = **0.003**

Area of childhood residence was also considered as the survey revealed that most respondents gained their initial knowledge of useful hedgerow plants as children: 56.8% under the age of 10 and 19.1% between age 10 and 17. In total 75.9% of those with knowledge acquired it under the age of 18. Childhood residence was found to be even more statistically significant than current residence.

Table 3. Usage of useful hedgerow plants (UHP) by demographic area of Childhood Residence

Childhood Residence	Use UHP	Do not use UHP	Total
Rural	56 (78%)	16 (22%)	72
Suburban	96 (77%)	29 (23%)	125
Urban	25 (48%)	27 (52%)	52

P value = **0.0002**

The proportion of people who grew up in a rural area (28.9 % of the sample) is higher than both the average population for Surrey (11.4%) (Cirican 2023) and the UK in general (17.1%) (DEFRA and Government Statistical Service 2024). This could be explained by the self-selecting nature of the data - a rural upbringing is shown to make you statistically more likely to use hedgerow plants and therefore perhaps more interested in filling out a questionnaire about your knowledge.

Knowledge Acquisition

Knowledge of useful hedgerow plants was acquired through a range of means with multiple options chosen by respondents. 10 results claimed no knowledge. There were 518 multiple choice options selected by the remaining 239 respondents. 82% of respondents (204 responses) were taught about useful hedgerow plants by another person. This was broken down into further categories (parent, grandparent, teacher, and other) totalling 285 responses. The ‘other’ category was free-listed and included responses such as “colleagues”, “girl guiding” and “Tree Wardens”.

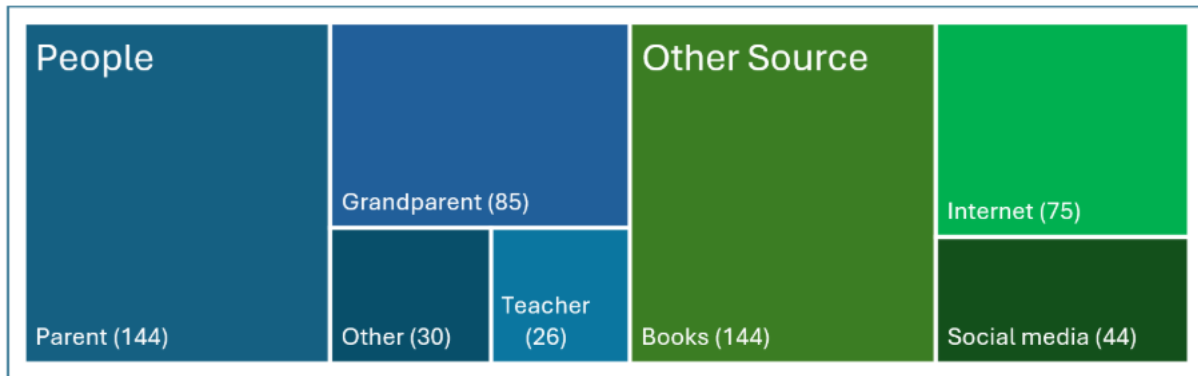


Figure 6. Hierarchy chart showing types of knowledge acquisition (per response).

In addition to acquiring knowledge from other people, transfer of knowledge is also present with 69% of respondents having taught at least one other person about useful hedgerow plants.

Responses were again split into three combined age groups (18-44, 45-64, 65+) to see if there was a statistical significance between methods of knowledge acquisition and age. A chi-square test showed no significant relationship (p value = 0.376) but the correlation plot of the residuals revealed stronger positive associations with ‘Internet’ and ‘Social Media’ in the 18-44 age group and stronger negative associations with those methods in the 65+ age bracket.

Knowledge Impact**People and Nature**

The statement 'I enjoy spending time in nature' was ranked on a Likert 5-point scale with 5 being 'Strongly agree' and 1 being 'Strongly disagree'. The percentage of respondents who used useful hedgerow plants and who agreed with this statement (i.e. Scored it 4 or 5) was 94%. This was compared to a similar statement in Natural England's People and Nature survey ("being in nature makes me very happy") in which the response was 81% agree (Natural England 2023). A two-proportion z test found this to be statistically significant (p-value= <0.0001)

Thematic Responses

The reasons given in response to Q.42 "Why do you use hedgerow plants?" were broad. 5.6% of respondents stated they did not use hedgerow plants, all other respondents had an answer.

71 respondents interpreted the question literally with answers such as "for food" (URNQ248) or "cooking" (URNQ239). These literal answers were removed from the analysis, and the remaining 164 answers were grouped into seven commonly recurring themes. Three themes were tangible (1. Free/Low-Cost Food, 2. Health, 3. Sustainability) and four were more intangible (4. Enjoyment, 5. Connection to Nature and Seasons, 6. Heritage/Culture/Nostalgia, 7. Connection to Local Community). Many answers contained more than one of these themes (e.g. "I love the connection with my local plants and area, being sustainable and in touch with the seasons" - URNQ133). The frequency of mention of each theme was tallied.

Table 4. Frequency of themes in response to questionnaire Q.42 "Why do you use hedgerow plants?". See Appendix 2. for a longer list of quotations.

Reason Type	Theme	Frequency of mention in Questionnaire	Example Quotations
Tangible	1. Free/ Low Cost	77	"Because they are available and free" - URNQ017 "To save money on berries that are otherwise expensive to buy" - URNQ022
	2. Health	35	"Freshness, health benefits" - URNQ003 "They are important because they can be nutritious & medicinal." - URNQ160
	3. Sustainability	17	"Environmental benefits" - URNQ072 "Like the fact it's low food miles" - URNQ173
Intangible	4. Enjoyment	70	"Foraging is incredibly satisfying" - URNQ010 "More for fun than anything else" - URNQ163
	5. Connection to Nature and Seasons	48	"Gives a sense of being connected to nature." - URNQ131 "I use hedgerow plants to connect me to my

			landscape & to seasonal changes" - URNQ244
6.Heritage/ Culture/Nostalgia	32		"It connects me to my grandma and mum and dad" - URNQ150 "It feels natural and primal to forage" - URNQ118 "It's nice to be able to show my children what I did as a child and make it into a tradition" -URNQ120
7. Connection to local community	28		"I like the idea of eating close to where I live" - URNQ118 "Because I believe we all need to reconnect to the earth and this is a great way to start as its out there right on most people's doorstep if you look" - URNQ123

The frequency of themes recorded was tested to see if there were links with various demographics (gender, age and childhood residence). Chi-square tests were performed, and no statistical significance was found looking at gender (p value = 0.762), age using compressed groups (p value = 0.780), or childhood residence (p value = 0.598). However, correlation plots were created using the residuals which showed where the strongest associations were for each group. In each test 'Connection to Local Community' trended highly with a particular demographic, (female respondents, the 18-44 age group, and those with a rural upbringing). These could be a useful starting point in investigating the most significant feelings towards useful hedgerow plants in future research.

Given the more in-depth nature of the semi-structured interviews, the questions allowed for more complex responses from interviewees. The themes highlighted came up throughout interviews and were not always in answer to a specific question (see Appendix 4 for example interview questions).

Table 5. Frequency of themes in interviews shown by number of interview respondents who mentioned the theme and the number of references to each theme - see Appendix 2. for a longer list of quotations.

Reason Type	Theme	Number of Interviews (n=16) in which theme was mentioned	Total Number of References to theme	Example Quotations
Tangible	Free/ Low Cost	5	7	"I love getting something for nothing" - URNI004
	Health	10	16	"Obviously health and wellness as well, as you know, wild edibles are packed full of vitamins and you know they've not had any pesticides on them" - URNI009
	Sustainability	9	13	"It's like a really fun, local, low carbon, sustainable hobby for you to do... so

				there's that environmental slant" - URNI014
Intangible	Enjoyment	15	44	"It's so exciting, it's just a joy" - URNI013
	Connection to Nature and Seasons	13	44	"So there's definitely a connection, people are, I think, trying to reconnect with nature. So I think to maintain that is certainly one of my personal reasons." - URNI008
	Heritage/ Nostalgia	Culture/ 14	36	"In terms of thinking about people in the past, it is a comforting idea that it's a process, you know, that's been kind of reenacted over the years" - URNI012
	Connection to local community	10	27	"My knowledge is very localised and specific" - URNI012

A comparison of themes from the questionnaire and interviews shows that intangible themes linked to wellbeing such as enjoyment and connection were mentioned more frequently in interviews whereas the low cost of useful hedgerow plants was most frequently commented on as a reason for use in the questionnaire.

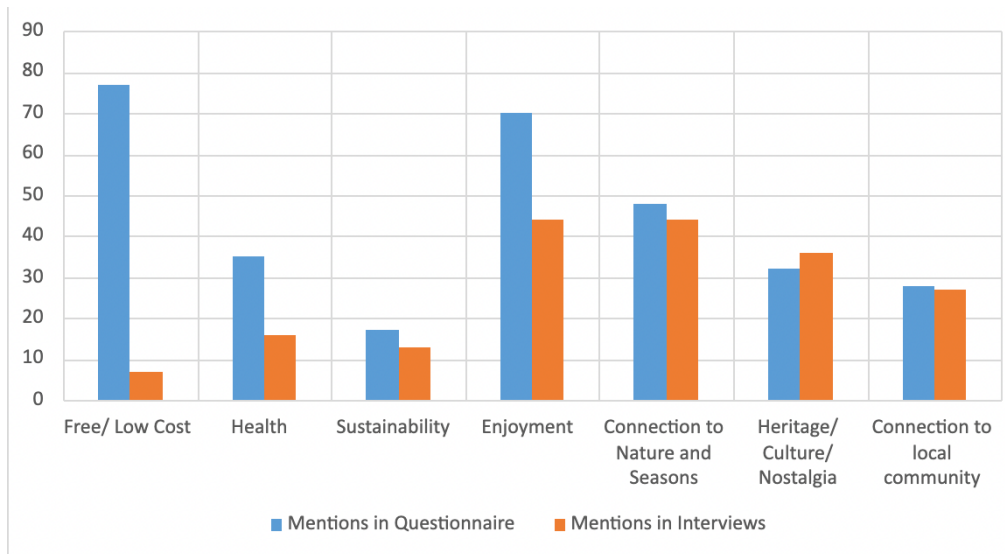


Figure 7. Graph showing comparison of frequency of themes mentioned in both the questionnaire responses and interviews (percentage).

Discussion

The research clearly shows that there is ongoing and widespread use of useful hedgerow plants throughout Surrey going far beyond the key focal species. The extensive list of plants and usages demonstrates that knowledge is substantial and wide-ranging and the rich qualitative data show that reasons for use are deep and nuanced. The knowledge is intrinsically linked to multifaceted understandings and experiences of wellbeing and suggest hedgerows should be considered as important biocultural elements.

A key finding of the research is the enjoyment created and experienced by users of useful hedgerow plants, and this enjoyment builds connection to - and concern for - the natural world. The positive correlation between the enjoyment of nature in comparison to the national average of the 'People and Nature' survey is striking and suggests that knowledge of UHP can impact the individual's appreciation of nature more generally. This is reflected in the qualitative elements of the

data - enjoyment as an important reason for using hedgerow plants was raised in 93.8% of interviews and 28.1% of questionnaires. A range of positive emotions were considered to fall under this - satisfaction, pleasure, fun - all of which evoke positive feelings and resulting care for the environment. The enjoyment of nature is considered an important way to connect to nature (Hunt *et al.* 2017, Natural England 2016b, Natural England 2020) which can have an impact on wellbeing (Dallimer *et al.* 2012). Going beyond enjoyment, many interviewees reported improved mental wellbeing using hedgerow plants which they linked to a deep connection to nature and place due to the requirement to look closely and be aware of surroundings. This deep connection created by use of hedgerow plants is shown to generate a link to both heritage and the local area and community, demonstrating that cultural value and wellbeing can be generated by material usage. This demonstrates the tension in the current ecosystem services model which separates provisioning services, such as food and fuel provision, from cultural services such as sense of place, mental wellbeing, and access to cultural heritage. Clearly, within the use of UHP the provisioning and cultural services are co-produced and inherently intertwined.

The data contains previously unrecorded, valuable, traditional knowledge. Recording a Surrey-specific list of useful plants and hundreds of uses can save and facilitate future knowledge for researchers and non-academics. The data reported on this list demonstrates the importance of specific species in maintaining knowledge and tradition across centuries. **Blackberries** have been eaten in the UK since the neolithic period and folk traditions around the plant remain today (Phillips 2014). Not only does the research's finding on the importance of **Blackberry** support the conclusions of current ethnobotanical research - literature suggests that **Blackberry** is the most foraged plant in the UK (Russo & McCarthy 2024) due to its accessibility and multitude of culinary and medicinal uses (Mabey 2001, Phillips 2014) - but it highlights the additional emotional and connection value created by the use of this plant. Memories of **Blackberry**-picking were referenced in 20 answers about why respondents used useful hedgerow plants - more than any other named plants combined. This demonstrates the ability of a common plant to foster connection in users to their own community as well as to history and tradition.

The results suggest that access to rural areas in childhood is the biggest predictor for using hedgerow plants (and related benefits). Evidence suggests that being able to explore nature as a child can engender a beneficial sense of place and environmental awareness (Chipeniuk 1998, Lohr & Pearson-Mims 2005, Measham 2006), so given that urban population growth is increasing (Statista 2024), and that three boroughs in Surrey have no rural areas, it is worth considering whether young people will be able to access useful hedgerow plants in the way those older generations surveyed have. Are wellbeing benefits being missed and knowledge lost through lack of access? Access in childhood facilitates useful hedgerow plant knowledge which in turn can lead to multifaceted wellbeing benefits, connections and greater appreciation for both the local and wider environment.

Whilst close knowledge of their local environment was seen as a benefit by many participants, the environmental concern caused by awareness of changing seasonal patterns was sometimes shown to cause less positive feelings in participants. The close attention paid to their surroundings fostered by participant's knowledge did lead to some respondents feeling anxiety both over the environment - concerns about climate change, microplastics, and the fragility of the food system - and concerns that increasing popularity of using hedgerow plants might lead to over harvesting and poor foraging practices. Given the trend towards social media as a source of information these concerns over usage 'going viral' could be valid (Russo & McCarthy 2024).

However, this environmental concern also has value. As shown, the data suggests that this knowledge, often gained in childhood, gives a greater propensity to relate to or enjoy the natural world as an adult, thereby creating a greater desire to protect it (Hausmann *et al.* 2016). The connection to place offered by hedgerows can motivate pro-environmental behaviours which are both economically and personally valuable (Rajala *et al.* 2020) and questions whether cultural practices could have a wider role in conservation (Schaich *et al.* 2010). This research was limited by the sample (which was self-selecting). Whilst efforts were made to garner the opinions of a broad cross-section of the public there is a bias towards those who already have an interest in the topic. Utilising social media as the primary method for data collection also created an inherent bias towards those who use it. Additionally, the time frame available limited the number of responses, particularly the number of interviews which could be undertaken. It was also hard to access younger members of society - those under 35 were underrepresented in the data. However, this opens the possibility for future research. It would be valuable to target both young adults and teenagers. Further research could also utilise school groups and compare the knowledge of children in rural and urban areas. Given that the data shows a trend towards environmental concern amongst those with knowledge of useful hedgerow plants gained in childhood it would be valuable to see whether, given that children

now have less access to rural areas and less freedom to explore, this may impact their knowledge and care for the environment.

Ultimately the enthusiasm with which these questions were answered - all interviewees stated that participating in this research was important to them - possibly demonstrates the value of overlooked cultural ecosystem services. Whilst they may be hard to quantify economically, they are no less valuable to the people who access them (Oreszczyn 2000). This questions the idea that cultural ecosystem services are separate from provisioning or regulating ecosystem services, as the data uncovered here suggests that the cultural elements of useful hedgerow plants are embedded in the materiality of the plants and their usefulness (Schaich *et al.* 2010). The cultural knowledge and value are co-produced through material usage and cannot be separated into different ecosystem services. As humanist geographer Yi Fu Tuan states in his work on place and space, "What begins as undifferentiated space becomes place when... we endow it with value" (Tuan 2001: 6). The values discussed here are rich and multifaceted, demonstrating the importance of phenomenological qualitative data (Daland & Walmann Hidle 2016), and recording them could have wide ranging future benefits. Hedgerows clearly hold multiple values, and it is possible to suggest that they are an impacting factor in creating wellbeing and supporting environmental awareness within Surrey.

Conclusion

This study explored the range of species and usages of hedgerow plants in Surrey, why these plants are valuable to people, and the wellbeing benefits they offer. Many reasons for the use of plants are linked to mental and physical wellbeing through connection to place and people. We demonstrate the importance of considering cultural ecosystem services and the challenges with measuring them.

The location where participants grew up and currently live was significant in accessing knowledge and should be further explored; especially as the number of people living in rural areas is decreasing. The entire methodology could be repeated, exploring attitudes to useful hedgerow plants in cities, whether knowledge is deteriorating through generations and developing comparisons between urban and rural areas. Additionally, the research methods could be used to study wild useful plants more broadly across the UK, not just those found in hedgerows.

The data has clear beneficial policy implications. The value of the knowledge and the importance of accessing it as a child could be harnessed by integrating teaching on useful hedgerow plants to the curriculum. This ties to work already being undertaken by charities supporting hedgerow knowledge in schools which could be backed by more formalised policy.

Additionally, the study offers information for urban planning; the findings support the planting of multispecies hedgerows in urban areas. These plantings could be combined with foraging information points, assisting public knowledge and access to useful plants. In rural areas, farmers could be encouraged, through funding such as the ELM (Environmental Land Management) scheme, to involve local communities in hedgerow planting. One farmer interviewed spoke of the success of this initiative on their own farm and the community engagement and ownership it had fostered.

The knowledge uncovered shows the intrinsic link between provisioning services, and the cultural services and knowledge which are co-produced when using hedgerow plants. The plant knowledge recorded here demonstrates that the public have an intimate relationship with their natural surroundings and that this relationship impacts them in a variety of ways including greater concern for the wider environment. For the public to care about nature they need to be engaged with it. Useful hedgerow plants form an integral part of this connection.

Declarations

List of abbreviations: CES - Cultural Ecosystem Services, ES - Ecosystem Services, TEK - Traditional Ecological Knowledge, UHP - Useful Hedgerow Plants, URNI - Unique Reference Number Interview, UNRQ - Unique Reference Number Questionnaire, WES - Wild Edible Species

Ethics Declaration and consent to participate: Ethics approval was given by Lynn Tang, Departmental Ethics Reviewer for the Health Studies Department, Royal Holloway University of London. Approval Reference HE5011_2024_005. All participants gave written permission to be included in this research.

Consent for publication: All those included in the research gave their consent to have their data published.

Availability of data and materials: A selection of the data that support the findings of this study are available in the appendices of this article. The full dataset is available on request from the author. The data are not fully publicly available due to privacy restrictions.

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Author's contributions: AL collected the data, performed the formal analysis, carried out the investigation, developed the methodology, and drafted the original manuscripts. WM and PR contributed to the investigation, methodology, supervision, validation, and writing review/editing. All authors read and approved the final version of the manuscript.

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Appendix 1. Questionnaire Results: Complete List of Useful Hedgerow Plants and Uses

Economic Botany Standards (Cook, 1995)	
Human Food (HF)	Fuel (FU)
Medicine (ME)	Animal Food (AF)
Materials (MA)	Invertebrate Food (IF)
Social Uses (SU)	Environmental Uses (EU)

Table 6. Key Questionnaire Species: Complete List of Uses ranked by Frequency of Mention

Scientific Name	Common Name	Number of Respondents who used species (Frequency of Mention)	Use (x = number of mentions)	Economic Botany Standard
<i>Rubus fruticosus</i> L.	Blackberry	242	Food (180), Jam (127), Pudding (153), Condiment (28), Alcoholic Drink (36), Non-Alcoholic Drink (17), Garnish for Drinks (1), Blackberry Pie (1)	HF
			Medicine (12), Tisane (1)	ME
			Craft (9)	MA
			Flower Arrangements (1)	SU
			Food for Rabbits (1)	AF
<i>Sambucus nigra</i> L.	Elderflower	138	Food (26), Jam (15), Pudding (12), Condiment (3), Alcoholic Drink (42), Non-Alcoholic Drink (103), Cake Decoration (1), Vinegar (1), Fritters (1)	HF
			Medicine (13), Tisane (1), Tincture (1)	ME
			Craft (1)	MA
			Fuel (4)	FU
			Elderberry for Chicken Food (1)	AF
<i>Prunus spinosa</i> L.	Sloe	133	Food (24), Jam (21), Pudding (9), Condiment (6), Alcoholic Drink (103), Non-Alcoholic Drink (7), Sloe Gin infused chocolate (1)	HF
			Medicine (4)	ME
			Craft (2)	MA
			Planted for Wildlife (Brown Hairstreak Butterfly (1)	EU
<i>Malus sylvestris</i> L.	Crab Apple	95	Food (20), Jam (68), Pudding (7), Condiment (12), Alcoholic Drink (5), Non-Alcoholic Drink (6), Adding Pectin to Other Jams (1)	HF
			Medicine (5), Skincare (1)	ME
			Craft (1)	MA
<i>Urtica dioica</i> L.	Nettle	84	Food (35), Jam (1), Pudding (2), Condiment (3), Alcoholic Drink (3), Non-Alcoholic Drink (21), Tea (2), Soup (4), Vegetable in stew (1), Seeds as garnish for soup (1)	HF
			Medicine (21), Hair Conditioner (1), Lotion for Hives (1), Hair Tonic (1), Tisane (1)	ME
			Craft (12)	MA

			Tomato Feed made by soaking leaves in water (1), Enriching compost (1)	EU
			Rabbit Forage (1)	AF
<i>Rosa canina</i> L.	Dog Rose	73	Food (10), Jam (12), Pudding (3), Condiment (9), Alcoholic Drink (6), Non-Alcoholic Drink (21)	HF
			Medicine (26), Rosehip Syrup (5), Cosmetics (1), Perfume (1)	ME
			Craft (7)	MA
			Itching Powder (3), Flower Arrangements (2)	SU
			Planted for Native Hedging Mix (1)	EU
			Food for Hamsters (1), Rabbit Forage (1), Dried as Horse Feed Supplement (1)	AF
<i>Crataegus monogyna</i> Jacq.	Hawthorn	50	Food (17), Jam (11), Pudding (2), Condiment (8), Alcoholic Drink (5), Non-Alcoholic Drink (2), Hawthorn Jelly (1), Leaves for Salad (3)	HF
			Medicine (17)	ME
			Craft (9)	MA
			Planting for wildlife (1), Planted for Native Hedging Mix (1)	EU
			Rabbit Forage (1), Dried as horse feed supplement (1)	AF
			Fuel (2)	FU
			Pet Caterpillar food (1)	IF

Table 7. Questionnaire Free Listed Species: Complete List of Uses ranked by Frequency of Mention

Scientific Name	Common Name	Number of Respondents who used species (Frequency of Mention)	Use (x = number of mentions)	Economic Botany Standard
<i>Corylus avellana</i> L.	Hazel	53	Food, (18) Nuts for Food (14), Leaves as Salad (1), Pesto (1)	HF
			Walking Sticks (2), Making Brooms (2), Coppicing (2), Fencing/Hurdles (5), Plant Supports (4)	MA
			For slow worm food (1), For rabbit food (1)	AF
			Fuel (1), Kindling (1)	FU
			Withies for craft (1), Bushcraft (1), Dowsing (1)	SU
<i>Allium ursinum</i> L.	Wild Garlic	44	Food (33), Soup (1), Pesto (1), Seasoning (1)	HF
<i>Prunus domestica</i> L.	Wild Plum	42	Food (32) Jam (9), Pudding (4), Alcoholic Drink (1)	HF

<i>Lonicera periclymenum</i> L.	Honeysuckle	21	Food (3), Tea from dried flowers (2), Drinking sweet nectar (1)	HF
			Bark for tinder (1)	FU
			Medicine (2)	ME
			Borders (4)	EU
<i>Galium aparine</i> L.	Cleavers	19	Food (5), Infused in water for refreshment (4), Garnish for drinks (1)	HF
			Medicine (3), Anti-itch for horses (2)	ME
			Roots as a dye (1)	MA
<i>Prunus domestica subsp. insititia</i> L.	Damson	19	Food (12), Jam (6), Pudding (4), Alcoholic Drink (1)	HF
<i>Alliaria petiolata</i> (M.Bieb.) Cavara & Grande	Jack-by-the-Hedge (Garlic Mustard)	12	Food (7), Salad leaves (5)	HF
<i>Syringa vulgaris</i> L.	Lilac	9	Drink (1)	HF
			Medicine (1), Perfume (1), Skincare (1)	ME
			Flower arrangements for mindfulness (1)	SU
<i>Fagus sylvatica</i> L.	Beech	8	Nuts for Food (4), Leaves for Salad (3)	HF
<i>Fragaria vesca</i> L.	Wild Strawberry	8	Food (2)	HF
			Leaves for Tisane (1)	ME
<i>Ilex aquifolium</i> L.	Holly	8	Craft (3)	MA
			Seasonal decoration (4)	SU
<i>Taraxacum officinale</i> F.H.Wigg.	Dandelion	8	Roots in stew (1), Flowers for tea (2), Dandelion honey (1), Leaves for Salad (3)	HF
			Medicinal salve (1), Tincture for gallstones (1)	ME
			Forage for Rabbit (1)	AF
<i>Castanea sativa</i> Mill.	Sweet Chestnut	7	Food (3), Stuffing (2)	HF
<i>Malus domestica</i> Borkh.	Apple	7	Food (5), Crumble (2)	HF
<i>Plantago lanceolata</i> L.	Plantain	7	Medicine (2) For nettle stings (1), Medicinal Salve (3)	ME
<i>Rumex obtusifolius</i> L.	Dock	7	Leaves for skin applications (1), Topical application for Nettle Stings (3)	ME
			Dye (1)	MA
<i>Rumex acetosa</i> L.	Sorrel	6	Food (2), Salad (2), Soup (1)	HF
<i>Humulus lupulus</i> L.	Hops	5	Food (1), Shoots eaten raw (1), Brewing Beer (1)	HF

			Buds as medicine (1)	ME
<i>Lamium album</i> L.	Dead nettle	5	Food (2)	HF
<i>Rubus idaeus</i> L.	Wild Raspberry	5	Food (4) Leaves for tisane (1)	HF ME
<i>Geranium robertianum</i> L.	Herb Robert	4	Tisane (2) Forage for pets (1)	ME AF
<i>Geum urbanum</i> L.	Wood Avens	4	Salad (1), In refreshing drinks (1) Forage for Pets (1)	HF AF
<i>Hedera helix</i> L.	Ivy	4	Seasonal Decoration (4)	SU
<i>Lavandula angustifolia</i> Mill.	Lavender	4	Dried fragrance for linens (1)	SU
<i>Prunus avium</i> (L.) L.	Wild Cherry	4	Food (2), Jam (1)	HF
<i>Achillea millefolium</i> L.	Yarrow	3	Medicinal salve (3)	ME
<i>Aegopodium podagraria</i> L.	Ground Elder	3	Stir fry young leaves (2) Forage for pets (1)	HF AF
<i>Allium triquetrum</i> L.	Three Cornered Leek	3	Food (1), Stir fry (1), Stew (1)	HF
<i>Heracleum sphondylium</i> L.	Common Hogweed	3	Food (1), Shoots and leaves for eating (1), Seeds dried as a spice (1)	HF
<i>Juglans regia</i> L.	Walnut	3	Food (2)	HF
<i>Laurus nobilis</i> L.	Bay	3	Food (2)	HF
<i>Matricaria chamomilla</i> L.	Chamomile	3	Tea (1) Medicine (1), Medicinal salve (2), Tisane (2)	HF ME
<i>Origanum vulgare</i> L.	Wild Marjoram	3	Food (3)	HF
<i>Prunus domestica</i> , subsp. <i>italica</i> (Bokh.) Gams.	Greengage	3	Food (2)	HF
<i>Salvia rosmarinus</i> Spenn.	Rosemary	3	Food (3)	HF
<i>Ulex europaeus</i> L.	Gorse	3	Food (2), Petals for infusing alcohol (1) Dye (1)	HF MA
<i>Anthriscus sylvestris</i> (L.) Hoffm.	Cow parsley	2	Flower arrangements (1)	SU
<i>Armoracia rusticana</i> G. Gaertn., B. Mey. & Scherb.	Horseradish	2	Food - made into sauce, Leaves for eating, Roots for condiments (2)	HF
<i>Bellis perennis</i> L.	Daisy	2	Salve (1)	ME
<i>Glechoma hederacea</i> L.	Ground Ivy	2	Tea (1), Shortbread (1), Infused Vinegar (1)	HF

<i>Laetiporus sulphureus</i> (Bull.) Murrill	Chicken of the Woods	2	Food (2)	HF
<i>Mentha arvensis</i> L.	Wild Mint	2	Food (2)	HF
<i>Prunus cerasifera</i> Ehrh.	Myrobalan Plum (Cherry Plum)	2	Food (1), Jam (1)	HF
<i>Prunus insititia</i> L.	Bullace	2	Jam (1)	HF
<i>Salix</i> sp.	Willow	2	Forage for pets (1)	AF
			Weaving and Crafting (2)	MA
<i>Sorbus aucuparia</i> L.	Rowan	2	Berries for Food (1), Jelly (1)	HF
<i>Trifolium repens</i> L.	White Clover	2	Salad (1)	HF
<i>Viola odorata</i> L.	Violet	2	Food (2)	HF
<i>Viscum album</i> L.	Mistletoe	2	Seasonal Decoration (1), For Luck (1)	SU
<i>Abies</i> sp.	Fir	1		
<i>Allium paradoxum</i> (M.Bieb.) G.Don.	Few Flowered Leek	1	Food (1)	HF
<i>Allium schoenoprasum</i> L.	Wild Chive	1	Food (1)	HF
<i>Aloysia citrodora</i> Paláu.	Lemon Verbena	1	Food (1)	HF
<i>Angelica archangelica</i> L.	Angelica	1	Food (1)	HF
<i>Berberis aquifolium</i> Pursh.	Mahonia	1	Food (1)	HF
<i>Betula</i> sp.	Birch	1	Sap for a drink (1), Leaves as Food (1)	HF
<i>Boletus edulis</i> Bull.	Cep	1	Food (1), Dried for winter stew (1)	HF
<i>Borago officinalis</i> L.	Borage	1	Food (1)	HF
<i>Capsella bursa-pastoris</i> (L.) Medik.	Shepherds Purse	1	Medicinal tea for period pain (1)	ME
<i>Cardamine pratensis</i> L.	Lady's Smock	1	Food (1)	HF
<i>Castanea sativa</i> Mill.	Chestnut	1	Food (1)	HF
<i>Clematis vitalba</i> L.	Clematis	1	Weaving (1), Firelighters(1)	SU
<i>Corylus avellana</i> L.	Cobnut	1	Food (1)	HF
<i>Daucus carota</i> L.	Wild Carrot	1	Craft (1)	MA
<i>Diploxys tenuifolia</i> (L.) DC	Wild Rocket	1	Food (1)	HF
<i>Dipsacus fullonum</i> L.	Teasel	1	Craft (1)	MA
<i>Epilobium angustifolium</i> L.	Willowherb	1	Forage for pets (1)	AF
<i>Equisetum arvense</i> L.	Horsetail	1	To make into plant food (1)	EU

<i>Fuchsia arborescens</i> Sims	Fuchsia	1	Sucking on nectar for sweet treat (1)	HF
<i>Hypericum perforatum</i> L.	St John's Wort	1	Medicine (1), Cosmetics (1)	ME
<i>Impatiens glandulifera</i> Royle.	Himalayan Balsalm	1	Seeds for Food (1)	HF
<i>Infundibulicybe geotropa</i> Bull.	Trooping Funnel	1	Food (1)	HF
<i>Macrolepiota procera</i> (Scop.) Singer	Parasol Mushroom	1	Food (1)	HF
<i>Melissa officinalis</i> L.	Melissa	1	Forage for pets (1)	AF
<i>Morchella esculenta</i>	Morel	1	Food (1)	HF
<i>Morus nigra</i> L.	Mulberry	1	Food (1)	HF
<i>Nasturtium officinale</i> W.T.Aiton	Wild Watercress	1	Food (1)	HF
<i>Origanum vulgare</i> L.	Wild Oregano	1	Food (1)	HF
<i>Oxalis acetosella</i> L.	Wood Sorrel	1	Salad (1)	HF
<i>Papaver</i> sp	Poppy	1	Collecting seed (1)	EU
<i>Prunus armeniaca</i> L.	Wild Apricot	1	Food (1)	HF
<i>Pyrus pyrastrer</i> (L.) Burgsd.	Wild Pear	1	Crumble (1)	HF
<i>Quercus</i> spp.	Oak	1	Food (1)	HF
<i>Reynoutria japonica</i> Houtt.	Japanese Knotweed	1	Eating the shoots (1) Forage for Rabbits	HF AF
<i>Ribes rubrum</i> L.	Redcurrant	1	Deserts (1)	HF
<i>Rumex acetosella</i> L.	Lambs Sorrel	1	Salad (1)	HF
<i>Solidago virgaurea</i> L.	Goldenrod	1	Dye (1)	MA
<i>Symphytum officinale</i> L.	Comfrey	1	Medicine (1)	ME
<i>Tanacetum parthenium</i> (L.) Sch.Bip.	Feverfew	1	Medicine (1)	ME
<i>Thymus serpyllum</i> L.	Wild Thyme	1	Food (1)	HF
<i>Tilia x europaea</i> L.	Lime	1	Leaves as Food (1), Flowers as Tea (1) Medicine (1), Flowers as tisane (1)	HF ME
<i>Trifolium pratense</i> L.	Red Clover	1	Salad (1)	HF
<i>Valeriana officinalis</i> L.	Valerian	1	Medicine (1)	ME
<i>Viburnum opulus</i> L.	Guelder Rose	1	Syrup from the berries (1)	HF
<i>Vicia sativa</i> L.	Vetch	1		

Appendix 2. A Selection of quotations organised by theme from Interview and Questionnaire Respondents

1. Free/ Low Cost	Respondent Unique Code
Interview Respondents	
"We thought it would be very nice to use things from hedgerows like elderberry and make wine which we felt that we shouldn't buy too much because of the school fees and all the things were demanded"	UNRI001
"I mean, they're all free!"	URNI004
"I love getting something for nothing"	URNI004
"We weren't poor but we weren't far from it, so certainly, we used to gather timber for the fire and that was fairly essential"	URNI008
"it's just a practical thing that is basically for free"	URNI013
Questionnaire Respondents	
"Because they are available and free"	URNQ017
"To save money on berries that are otherwise expensive to buy."	URNQ022
"They're free and delicious!"	URNQ023
"Sloe and blackberries are free ingredients for baking muffins/crumble or making sloe gin."	URNQ058
"Why not! They are free and there and mostly plentiful."	URNQ075
"It appeals to me that I can make use of food for free"	URNQ105
"There is an abundance of different plants available and they are free."	URNQ143
"Freely available, free, useful"	URNQ182
2. Health	Respondent Unique Code
Interview Respondents	
"We could be using different things and have more varied diets"	URNI002
"Obviously health and wellness as well as, you know, wild edibles are packed full of vitamins and you know, they've not had any pesticides on them"	URNI009
"Everything was very synthetic that you use, or you know, what was available was very l'Oreal, you know, like everything smells really strong, as a pack of chemicals. And then so as more and more natural products came out, I was thinking, actually I'm sure I could make that, you know"	URNI012
"In Germany (interviewee's birthplace) you use more herbal medicines. It's quite common knowledge. So a GP wouldn't be stumped if you told him I've been using thyme infusions and I've been using lime flower to get on top of this cold but it didn't work"	URNI013
"So I find that dimension important, that it's, the healing just in general. My husband has never heard of it before so it he's got a sniffle or anything I'll go and say I'll make you a tisane, I'll give you a thyme thing, something for your throat and it will not entirely stop it but it will make him feel better"	URNI013
"If we go from a medicinal point, we should certainly be able to treat ourselves much more easily and be a bit more knowledgeable about reliable herbal remedies and not fall for kind of trick nonsense. Because a lot of homeopathy and other stuff out there that will tell you all kind of magic things. But if you know already about herbs, you're much more likely to be able to research and separate the wheat from the chaff."	URNI013
"It's infantilising society. And I know that the food industry is, of course, interested in making soft food, foods that have no bitter in it, that are not too tangy, that are very sweet, we can also expand into health as such and how these food habits, this infantilising soft food is also making us unhealthy"	URNI013
"I think people are fascinated to learn the medical uses of a lot of the plants we find"	URNI015

"I personally feel that the whole pharmaceutical industry, and the food industry, is set up to disempower people... So I think we need to be I mean it's not even just wild food, it's vegetables, things that you can grow in your garden, understanding the impact that they have on the body. I think it is empowering"	URNI015
"Whereas taking someone out into the meadow and teaching them about meadow sweet or where aspirin came from, these natural anti-inflammatories. I think it really is important that we have that information. I think it helps us to make better decisions about what we put into the body."	URNI015
Questionnaire Respondents	
"Freshness, health benefits"	URNQ003
"I love natural remedies"	URNQ067
"Because I enjoy foraging, its free, they're fresh and healthy"	URNQ070
"It's fresh and it's free and provides extra variety to our diets, possibly different minerals and vitamins etc"	URNQ074
"I like to use things which are unpolluted"	URNQ103
"Free, healthy food!"	URNQ012
"Their health benefits are far greater than modern medicine."	URNQ116
"Getting to know the nutritional and medicinal properties of these plants that's readily available around us."	URNQ127
"I like eating seasonally (grow a lot of my own food on allotment). Hedgerow plants are not the main part of a diet, but an interesting addition. Less food miles"	URNQ128
"They are important because they can be nutritious & medicinal."	URNQ160
"Full of vitamins and minerals, more than shop brought. Good for you, medicinal."	URNQ172
3. Sustainability	Respondent Unique Code
Interview Respondents	
"Specially at a time when we talk about climate change for example and we are growing all the same food crops and they get infected by diseases, trying different things, that some of them grow spontaneously without much effort that we could be using."	URNI002
"As it gets hotter and wetter, we just realise we need more resilient landscapes and I think hedges are really helpful in increasing that resilience"	URNI003
"Really, really honestly living off the land, much more closely"	URNI007
"Food security, food safety, like the supermarkets you know, they say there's like only like three days worth of sort of food in the in the food system"	URNI009
"There is another source, that's sustainable like"	URNI009
"We've seen during the pandemic and during like the Suez Canal thing, how fragile our supply lines are"	URNI013
"It's like a really fun, local, low carbon, sustainable hobby for you to do... so there's that environmental slant "	URNI014
"I think, when I think globally, you know, supply chains and things get stretched, and... I hear about the fact that the global food systems on sort of teetering on the edges collapse. And I think about it's really important that we have some understanding of what our geography and climate and conditions can support"	URNI014
Questionnaire Respondents	
"No negative impact (Co2, plastic, etc.)"	URNQ032
"Free. Sustainable."	URNQ049
"Environmental benefits"	URNQ072
"I like to live sustainably where possible. We have an abundance of hedgerow plants at our disposal."	URNQ094

"Low impact"	URNQ110
"Like the fact its low food miles."	URNQ173
"Free! Local & limiting environmental damage in the process"	URNQ227
4. Enjoyment	Respondent Unique Code
Interview Respondents	
"I do think that an appreciation of all those things that we've been talking about should be part and was part of my enjoyment of life"	URNI001
"I actually think any nature restoration work people enjoy together"	URNI003
"Exploring in the hedge, you're so excited that you didn't realise it produced plums so I think there's something... like, your gratitude is even greater because you didn't plan to find that there necessarily and then you find it and it's like 'this is exciting'."	URNI003
"I love it, I love it"	URNI006
"The actual process of picking wild is not important, but it's... it feels comforting"	URNI007
"Enjoyment and fulfilment"	URNI008
"You feel good about it, there's no doubt about it"	URNI008
"I think we see just kind of brought everything together for me that after that, there was never a dull moment really in my life, you know, kind of always something there to look forward to the next fruit or the next plant that's coming up"	URNI011
"it's a joy isn't it? It's one way of enjoying nature and it's one of the underrepresented ways, I think. And I find great joy in it so why shouldn't I introduce other people to it?"	URNI013
"I feel I know more about life in a way and that is, kind of, so interesting"	URNI013
"It's so exciting, it's just a joy"	URNI013
"It's quite comforting knowing that I feel like I can know the species and a handful of uses of it"	URNI014
"I think this huge amount of pleasure people come back season after season and I think it is very relaxing and very empowering as well"	URNI015
"I just love playing with my food, it's really basic stuff, I can't tell you the pleasure of just going out"	URNI015
"I think that is another thing that you really enjoy seeing with other people when they taste something for the first time"	URNI015
"Yeah it is quite emotional...Getting out to pick some blackberries just feels massive. It's relaxing and calming. It gets you away from stress which I think it really helpful"	URNI015
"Anecdotally, from the children themselves they love being out and doing... A lot of them said, it's fun, which obviously, you know, is, you know, if it's enjoyable, if it's an enjoyable experience, hopefully, you know, hopefully anything we are teaching is then retained that bit more readily"	URNI015
"It's quite nice you know, when you can facilitate those experiences, they're great, yeah it is quite special."	URNI016
Questionnaire Respondents	
"The process of collecting is a pleasure."	URNQ001
"Foraging is incredibly satisfying [sic]"	URNQ010
"I've used these plants in the past because I like making preserves etc myself and I enjoy the flavours of these plants"	URNQ111
"It's fun to make things for other people that you've foraged yourself, it's even more effort"	URNQ126
"It makes me feel good to use things from nature in my cooking"	URNQ134
"I love foraging. Fantastic flavour and medicine"	URNQ139
"Because I enjoy it. I love the diversity of flavours and uses, and the knowledge gives me joy."	URNQ142

"It is very satisfying to utilise wild plants."	URNQ146
"More for fun than anything else."	URNQ163
"It's enjoyable to take the grandchildren blackberrying and for them to help make crumbles and their own ice lollies"	URNQ165
"Because it feels good to forage!"	URNQ173
"They are so useful, free and give me joy to use"	URNQ181
"I find foraging for plants satisfying on a very primal level."	URNQ246
"To eat! And for the pleasure of picking them."	URNQ252
5. Connection to Nature and Seasons	Respondent Unique Code
Interview Respondents	
"The way that the seasons vary really affects the way you think about food because there's different things at different times"	URNI002
"Now when I look around I don't just see green, I see different plants and I understand the different habitats where they grow so I started to give more importance to nature reserves and preserving the habitats"	URNI002
"It's a really good way to feel connected with wildness"	URNI003
"It feels very connected to the land"	URNI007
"So it's the connection with the land. That's the important part of it for me"	URNI007
"I would imagine they will get really good grounding, just being aware and being aware of the seasons"	URNI007
"I think people are trying to connect more with nature now. I think that it's got a lot higher profile"	URNI008
"So there's definitely a connection, people are, I think trying to reconnect with nature. So I think to maintain that is certainly one of my personal reasons."	URNI008
"If you connect them to nature early on I think it's definitely key, because obviously, they're the ones that, when they grow up, hopefully, if you get them, they're going to look after the planet or have more respect and more of a deeper understanding the knowledge of how you know how we all have to coexist. We are, you know, we are animals, we are part of the earth. We're not disconnected."	URNI009
"it definitely connects you more to nature, because you have a better understanding. You're not just walking past plants aimlessly going 'oh I don't know anything' you know. I think you're more mindful and you're always constantly sort of looking and finding out more about, you know, what's around you"	URNI009
"I started wanting a deeper connection, and then you start learning about your ancestry and what we were connected to - land through plants."	URNI011
"And certainly this seasonal... much more seasonal thing that's going on in, you know, successional plants, and how human beings would have been deeply in tune with that and how that would have shaped their movements and behaviour."	URNI011
"Also the interest in... connecting with the seasons which makes me happy"	URNI013
"The knowledge of observing nature as well plays a role in it... they say you don't see what you don't know about so you can't protect it"	URNI013
"I found a lot of solace and tranquillity and becoming more aware about what was around me nature wise"	URNI014
"Rekindling understanding of nature, connection with land... connection to land when I feel so estranged from it"	URNI014
"I think similarly to learning a language or becoming, gaining knowledge or living in a place and a culture, you're learning about the characters and the dynamics and everything about the plants and their personalities and their cycles"	URNI014
"I was reflecting on that and thinking that one of the beautiful things about foraging is that certain things are only available for a very short time, and you just wait for that season to come, so the fresh nettles, waiting for that season to come and then you just gorge on them, and then the ransoms and then you blink and they're gone."	URNI015

"It's part of the excitement as well. And you're absolutely right. You begin to treasure the season, and you celebrate each season for what it brings, rather than what you're missing, which is really nice."	URNI015
Questionnaire Respondents	
"Free delicious food that is in season."	URNQ018
"Feel a connection to nature."	URNQ042
"It's good to use what nature provides."	URNQ050
"I love them as friends. I enjoy being in their company, seeing them change through the seasons. I love the places they reside and the other life forms which reside in them."	URNQ085
"I enjoy the whole process of being out in nature and making use of nature's bounty"	URNQ094
"They're nature's free resources"	URNQ116
"Because they are a gift from nature and humans should take advantage of their benefits as animals do in occasions.[sic]"	URNQ122
"Gives a sense of being connected to nature."	URNQ131
"They are always in abundance and feels like you are part of the nature cycle"	URNQ168
"Part of everyday living, provides a real link with the environment"	URNQ184
"Makes me feel connected to nature."	URNQ211
"I use hedgerow plants to connect me to my landscape & to seasonal changes"	URNQ244
6. Heritage/Culture/Nostalgia	Respondent Unique Code
Interview Respondents	
"I always think of hedge laying competitions and it's that cultural element that people seem to like about hedges"	URNI003
"I think it's culturally important and we've really got to preserve our hedgerows"	URNI004
"I'm a hunter gatherer"	URNI006
"My earliest memories are, you know, we had like walking sticks with hooks on to pull down the brambles to pick blackberries"	URNI007
"That's really nice - it's carrying on to the next generation"	URNI007
"Whether we need to maintain hedges for some... what's essential, I suppose, maybe people's spirituality, well, maybe that is a very good reason for maintaining all of those interests."	URNI008
"We have almost an ancient memory in us as well, which is not sort of obvious. But I do wonder sometimes... people, if you've got a pub and there's an open fire, you know, there's an immediate attraction to it. And again, we don't need the open fire. But there's something ancient in us that recognises that as safe and well back then of course it was essential and I think maybe the same with hedgerows."	URNI008
"It's almost like an ancient memory, you're doing something that was done for 1000's of years."	URNI008
"I just think you know, back in the day we were hunter gatherers, it's a knowledge that we would have all had an understood really well and even probably you know more so back then than we do now."	URNI009
"I've done more of it as I've got older, because the memories, as you get older, the memories become stronger"	URNI010
"She was very much interested in our historical connection to plants. And also there's a lot of mysticism in that"	URNI011
"In terms of thinking about people in the past, it is a comforting idea that it's a process you know that's been kind of reenacted over the years"	URNI012
"I think it's this long, long line of female tradition of knowing"	URNI013
"We haven't done it for 500 or 1000 years so we have to reestablish this culture"	URNI013

"And it's, of course, a feminine tradition, a feminist tradition. I don't want to exclude men but it's something that hasn't been written down as much"	URNI013
"It's culture, it's culture in it's most enjoyable form"	URNI013
"Like many foods you are reminded of the situation you first had it, where you found it first, who made it for you, so it is of course, as I say, this connection to ancestry, also to people you've never met."	URNI013
"You can get creative, create something that you know people have been doing for time immemorial, which has been lost as a knowledge base, and which is so... and for me, it rekindles, for me it's like a rekindling of my human nature"	URNI014
"It's inherently a very British thing"	URNI014
"I think the whole herb walk is just such a grounding experience. I think it sort of seems to awaken dormant genes and you can sort of see your ancestors doing the same sort of thing - it's just incredible"	UNRI015
"So it was part of my childhood but it feels as if it goes much deeper. It feels a real connection with the past, which feels important to me"	UNRI015
Questionnaire Respondents	
"Blackberry picking is a tradition in our family"	URNQ015
"Heritage and tradition.....and they are free"	URNQ021
"Foraging is a fundamental human trait, a natural instinct to hunt/gather food."	URNQ028
"They are delicious, free and picking them reminds me of my childhood."	URNQ029
"There is something ancient and primeval in foraging and "harvest home". Bottling, preserving or freezing for leaner days and enjoying nature's bounty is part of our heritage."	URNQ030
"I like the fact that I am using knowledge that I learnt from my Mum and Grandma. I am teaching my children now,"	URNQ076
"It feels like it is preserving historical foods and drinks"	URNQ097
"It feels natural and primal to forage."	URNQ118
"It's nice to be able to show my children what I did as a child and make it into a tradition of foraging and then cooking together."	URNQ120
"It feels like it's knowledge that shouldn't be lost"	URNQ124
"When I use the herbs in winter, they bring back the memory of the day I foraged for them"	URNQ142
"I suppose it is a deep rooted hunter/gatherer impulse. While doing this you continually expand your knowledge and appreciation of our rapidly declining wild flora and fauna"	URNQ146
"Like learning about the old ways"	URNQ148
"It connects me to my grandma and mum and dad"	URNQ150
"Revival of lost traditions."	URNQ243
7. Connection to Local Community	Respondent Unique Code
Interview Respondents	
"It really changes the way you see your surroundings"	URNI002
"There's a very large community... lots of people form good friendships and bond around this"	URNI002
"We did get the community involved in planting those hedges so yes, hedges are definitely important"	URNI003
"There's a few grants for hedge planting and I think we'd look at that and think, ok, this would be a really nice community project, so definitely in the planting itself we think about people"	URNI003
"There's local produce, literally everywhere you go, that's really important"	URNI009
"Also, I understood there was a community around this"	URNI011
"I've never seen it through those eyes, when I first walked on it was pretty much as it is now... so I wanted to open people's eyes to that... so basically to say to people look, you know, look at what riches we've got"	URNI011
"I've got a special connection, I know this place like the back of my hand... it's like a friend"	URNI011

"My knowledge is very localised and specific"	URNI012
"So yes, I would say it's definitely very specific to my locations"	URNI012
"I said 'let's walk in the park because the beech nuts are arriving'. He was totally gobsmacked that I would eat that and it grew in the middle of Edinburgh"	URNI013
"I felt like, you know, there's such an interesting universe on my doorstep, right in front of me, and there's so much knowledge I don't know"	URNI014
"They also, hedgerows are very, for me, it's the meaning behind being able to concentrate on something that's immediately around you"	URNI014
"Learning something that's on your doorstep"	URNI014
"I'm interested in investing in what's around me here. I think there's so much to learn. It's not that I'm being, like, quite closed minded about it. And, yeah, like I feel like there's such an interesting universe on my doorstep"	URNI014
"I was just astounded. By the variety of wild plants and edibles that were on the doorstep, and it just had a real impact."	URNI015
"I'm very much an urban forager. I don't go into the country very much. Part of the excitement for me is that it is literally in the parks and around the hedgerows where you live"	URNI015
"Certainly I feel connected to the community in a big way. There was we've got a little playing field at the back of our house, which is surrounded by hedgerows. I got to know the plants really well. And about a year ago, there was concern that they were going to build on the site. And I just went into absolute meltdown and thought that my trees, my precious live trees, with the sweet chestnut and the oak and that they were going to be taken down, and became extremely politically vocal about it, so yeah a huge attachment to the area, and even when they do strimming, the Council have taken down a meadow of yarrow, which was really upsetting. So, yeah, I think you feel, I personally feel a huge relation to my area."	URNI015
Questionnaire Respondents	
"I like to make up batches and give them as gifts to colleagues, family and friends. It costs very little and is immensely satisfying. In return, people often tell me where they come across 'bounty'"	URNQ009
"I like to learn about how to use the plants around me"	URNQ045
"I like the idea of eating close to where I live."	URNQ118
"Because I believe we all need to reconnect to the earth and this is a great way to start as its out there right on most people's doorstep if you look"	URNQ123
"It brings an extra level of understanding and appreciation of your surroundings and nature"	URNQ124
"I love the connection with my local plants and area"	URNQ133
"It's great to use local produce"	URNQ229
"Excitement of creating something from scratch using resources available in your surrounding environment."	URNQ243

Appendix 3 - Online Questionnaire

Note - * indicates a compulsory question

Branching was used so if answers were negative to Plant ID questions, no further questions about that plant were asked.

1. I accept that the answers I give can be used in this research?* Yes/No
2. What is your name?
3. What is your gender?* Male/ Female/ Other
4. What is your age?* 16-24, 25-34, 35-44, 45-54, 55-64, 65-74, 75-84, 85+
5. Where in Surrey do you live? What is the closest town or village?*
6. What kind of area do you live in currently?* Urban/Suburban/Rural
7. Where did you grow up?* Urban/Suburban/Rural
8. Please select any which apply to you* I have a garden, I have an allotment, I have a dog, I grow some of my own food, I cook regularly, None apply
9. On a scale of 1 to 5 - with 1 being strongly disagree and 5 being strongly agree - how true are these statements to you?
 - a. I enjoy spending time in nature
 - b. It is important to be able to make use of local plants
 - c. Eating foods that are locally in season is important to me
 - d. Hedgerows matter to me personally
 - e. Hedgerows are culturally important
 - f. I would feel a loss if I was unable to access hedgerow plants
10. Do you, or have you ever used plants from hedgerows?*
11. What age did you first use hedgerow plants?* Under 10, Under 18, 18-24, 25-34, 35-44, 45-54, 55-64, 65+
12. Do you have specific favourite locations you return to for hedgerow plants?*
13. What makes these locations special?*
14. Would you be interested in learning more about hedgerow plants?*

Note - the following questions included photo images of the specific target species

15. **Blackberry** (*Rubus fruticosus*) Do you recognise this plant?* Yes/No
16. Have you used this plant? Yes/No
17. What have you used this plant for? Food, Jam, Pudding, Condiment, Alcoholic drink, Non-alcoholic drink, Medicine, Fuel, Craft, Other (please specify)
18. **Sloe/Blackthorn** (*Prunus spinosa*) Do you recognise this plant?* Yes/No
19. Have you used this plant? Yes/No
20. What have you used this plant for? Food, Jam, Pudding, Condiment, Alcoholic drink, Non-alcoholic drink, Medicine, Fuel, Craft, Other (please specify)
21. **Elderflower/Elderberry** (*Sambucus nigra*) Do you recognise this plant?* Yes/No
22. Have you used this plant? Yes/No
23. What have you used this plant for? Food, Jam, Pudding, Condiment, Alcoholic drink, Non-alcoholic drink, Medicine, Fuel, Craft, Other (please specify)
24. **Crab Apple** (*Malus sylvestris*) Do you recognise this plant?* Yes/No
25. Have you used this plant? Yes/No
26. What have you used this plant for? Food, Jam, Pudding, Condiment, Alcoholic drink, Non-alcoholic drink, Medicine, Fuel, Craft, Other (please specify)
27. **Nettles** (*Urtica dioica*) Do you recognise this plant?* Yes/No
28. Have you used this plant? Yes/No
29. What have you used this plant for? Food, Jam, Pudding, Condiment, Alcoholic drink, Non-alcoholic drink, Medicine, Fuel, Craft, Other (please specify)
30. **Dog Rose** (*Rosa canina*) Do you recognise this plant?* Yes/No
31. Have you used this plant? Yes/No
32. What have you used this plant for? Food, Jam, Pudding, Condiment, Alcoholic drink, Non-alcoholic drink, Medicine, Fuel, Craft, Other (please specify)
33. **Hawthorn** (*Crataegus monogyna*) Do you recognise this plant?* Yes/No
34. Have you used this plant? Yes/No

35. What have you used this plant for? Food, Jam, Pudding, Condiment, Alcoholic drink, Non-alcoholic drink, Medicine, Fuel, Craft, Other (please specify)
36. Are there any other hedgerow plants which you use which are not mentioned above? (eg. **honeysuckle, lilac, plums, hazels, cleavers** etc.) This can include any plants growing on or in the hedgerow, or any, such as wild herbs, growing alongside in the grassy bank.
37. How do you use these plants?
38. Any other comments or thoughts on hedgerows - their importance, their uses, their conservation etc.
39. Where did your knowledge about hedgerow plants come from?* From another person, Books, The Internet, Social Media, Other (please specify)
40. Did anyone teach you about hedgerow plants or take you to use them?* Parent, Grandparent, Teacher, Self-taught, No-one, Other (please specify)
41. Have you taught anyone else about about useful hedgerow plants?* Family member, Friend, Colleague, Students, No-one, Other (please specify)
42. Why do you use hedgerow plants?
43. I am looking for respondents who might be interested in talking in more detail about their knowledge of useful hedgerow plants. If you are interested or if you can suggest someone who you think has valuable knowledge on this subject then please write your email in the box below.

Appendix 4. Semi-structured interview questions and optional prompts

1. How did you become interested in Hedgerow Plants
 - How did you learn?
 - Who taught you?
 - Are you teaching other people and why?
2. Why is finding and using these plants important to you?
 - What feelings or emotions are connected with the activity?
 - Why do you feel like that?
 - Is it connected to the activity? The environment? The sensory experience?
3. Does your knowledge on these plants feel specific to a particular place or is it transferable?
 - If you moved do you think you would use it elsewhere?
4. Does this activity or knowledge make you feel connected to a group or a community or a sense of heritage?