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Advancing the understanding of the human dimensions of Eurasian lynx reintroduction in Scotland

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Abstract

Understanding the factors shaping human perceptions on a species reintroduction can facilitate project success and foster human–wildlife coexistence. Eurasian lynx *Lynx lynx* has been proposed as a candidate for reintroduction in Scotland, after having gone extinct in Britain. To identify perceived impacts of a lynx reintroduction among stakeholders and to explore factors shaping these perceptions, we conducted 34 unstructured interviews with stakeholders within and in potentially suitable habitat for a lynx reintroduction and surrounding areas in Scotland. We adopted an interpretative, grounded theory approach and identified themes from the interview data. The same perceived impacts were framed to both oppose and support a lynx reintroduction, which typically reflected pre-existing tensions between stakeholders and indicated opinion and affective polarization. A combination of individual experiences, human–human relationships, and human–wildlife relationships was pivotal in shaping perceptions. With these insights, conflict mitigation mechanisms can be developed before initiating a conservation project, such as the reintroduction of a species. We suggest that as a first step in a conservation project, relationships are built with stakeholders and immediately seeking to change opinions should be avoided, which can be counterproductive.

KEYWORDS

conservation social science, human dimensions of conservation translocation, large carnivores, species reintroduction

1 | INTRODUCTION

Conservation translocations can reestablish an animal within their historical range to benefit the overall population of the species, assist in improving the biodiversity within an area, and promote ecosystem functioning through restoring trophic cascades (International Union

for Conservation of Nature Species Survival Commission [IUCN/SSC], 2013). Conservation translocations are intertwined with a range of social, political, and economic factors (Dando et al., 2023; Rayne et al., 2025), and stakeholder perceptions have a strong influence on whether and how translocations are undertaken. Therefore, human dimensions research which investigates the

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social, cultural, psychological, and economic components of conservation is crucial for species translocations (Bennett, 2016; Serota et al., 2023). Globally, translocation initiatives with human dimensions objectives and active stakeholder involvement were significantly more associated with improved and positive outcomes (Serota et al., 2023). Engaging with stakeholders, understanding the heterogeneity of viewpoints, and building a level of trust assist in reducing the likelihood of conflict, developing aspects of, and increasing levels of support of a translocation effort (Dando et al., 2023; Rayne, 2025). Despite a growing body of literature emphasizing the importance of human dimensions and stakeholder perceptions in conservation translocations, these perspectives remain only weakly integrated into practice.

Historically, the human dimensions of conservation translocations were overlooked, particularly in terms of cultivating and sustaining deep and transparent forms of engagement with local communities (Reading et al., 2002; Serota et al., 2023). For example, little attention was focused on the human dimensions associated with the reintroduction of brown bears (*Ursus arctos*) in the French Pyrenees, and since the reintroduction of the species in 1996, social tensions are still prevalent (Piédallu et al., 2016). Catalano et al. (2019) reviewed conservation science literature and found that the most commonly reported reason for project failure was the human dimensions, such as stakeholder relationships. Individuals interested in wildlife conservation who pursue conservation translocations may lack the skills or resources to navigate the challenge of stakeholder engagement, be they individual citizens or community and wider stakeholders with legitimate interests in and concerns about a reintroduction process. To achieve biodiversity and functioning ecosystem goals through conservation translocations and encourage the application of human dimensions research in the field, appropriate stakeholder and community engagement methods warrant careful definition and exploration (Crowley et al., 2020).

In Britain, there has been an interest in Eurasian lynx (*Lynx lynx*, hereafter lynx) reintroduction over several decades (Hetherington, 2006). Lynx persisted in Britain until at least the early medieval period, with their extinction attributed to habitat loss, declining prey availability, and increased human persecution (Hetherington et al., 2006). The IUCN/SSC (2013) reintroduction guidelines state that a criterion for reintroduction is that there is evidence that the initial risk of extinction of an animal in the area is removed or sufficiently reduced. Academic literature explored whether these factors remain a threat to the survival of a lynx population in Britain. For example, habitat suitability models suggested that lynx could

survive in areas of Britain, such as in Northumberland, the Scottish Highlands, West Coast of Scotland, and the Southern Uplands (Hetherington et al., 2008; Ovenden et al., 2019; Premier et al., 2025). Lynx mainly hunt deer, mostly roe deer (*Capreolus capreolus*), and it is estimated that a density of 0.8–5 deer/km² are recorded in areas of Europe where lynx inhabit (Heurich et al., 2012) while in areas of Northumberland and Scotland, roe deer populations average 10 deer/km² (Campbell et al., 2017; Putman & Ward, 2010). This research on prey abundance and suitable habitat suggests that a reintroduced lynx population could be viable in Britain. In 2017, a license application for a trial lynx reintroduction into Northumberland, UK (Hawkins et al., 2020), was rejected due to failure to focus on primary social elements stated within the IUCN/SSC (2013) reintroduction guidelines. These social elements included a lack of communication with key stakeholders and a lack of ongoing engagement with local communities. This example highlights the critical need for in-depth stakeholder engagement to ensure local communities are heard, and concerns mitigated, to maximize project success, which in turn reduces the likelihood of adverse effects to reintroduced animals, such as persecution. Understanding whether local communities in Britain are willing to coexist with lynx can be explored through appropriate engagement such as long-term commitments to people and implementation of well-resourced social research and engagement (Dando et al., 2023). This is particularly important for large carnivore reintroductions where the views of relevant stakeholders are often heavily polarized (Bruskotter, 2013; Gonzalez, 2023; Lute et al., 2020).

Generally contributions in the field of research exploring social aspects of lynx in the UK and Europe are quantitative in nature and mostly explore demographic parameters that are associated with differences in perceptions and attitudes (Balčiauskas et al., 2010; Bath et al., 2008; Hawkins et al., 2020; Lescureux & Linnell, 2010; Røskaft et al., 2007; Tan et al., 2024; Whiley & Tzanopoulos, 2024; Wilson & Campera, 2024). Bavin et al. (2023) explored stakeholder perspectives in Scotland on the prospect of lynx reintroduction using Q-Methodology reporting important divergence among different stakeholder groups, especially on the impacts of lynx reintroduction on livestock farming and environmental management. This previous research exploring attitudes and perceptions of stakeholders paves the way for further research into how these perceptions develop. Delibes-Mateos et al. (2022), who explored support for Iberian lynx (*Lynx pardinus*) reintroduction in southern Spain, concluded that exploration of attitudes needed to go beyond a general assessment and that an in-depth analysis of perceptions of stakeholders was essential.

Qualitative methods can be used to explore the underlying factors shaping perceptions on lynx reintroduction in Britain, insights which remain currently underexplored.

Addressing this gap in the current literature and focusing on ongoing polarized debates on lynx reintroduction in Scotland, the aim of our study was to unearth and investigate complex social phenomena that determine stakeholders' perceptions on lynx reintroduction. The specific objectives of our research were: (i) to investigate the perceived impacts of a lynx reintroduction in Scotland by stakeholders, and (ii) to identify and explore factors that are associated with these perceptions. For the purpose of this research, perceptions are defined as the way an individual understands, interprets, and evaluates a specific topic (Bennett, 2016). Using a grounded theory approach, findings from this study bring to light the factors shaping perceptions toward a lynx reintroduction in Scotland, and likely shape perceptions toward other species reintroductions globally.

2 | METHODS

2.1 | Study area

Scotland has a land area of 77,910 km², which is 32% of the total land area of the UK (Scottish Government, 2023). The Scottish human population is approximately 5.4 million, with an overall density of 70 humans/km² (Clark, 2025). Scotland comprises a range of habitat types including 60% mountain and moorland, 23% blanket bog, and 19% woodland cover (NatureScot, 2023).

The study area focused on, but was not limited to, areas of potential suitable habitat for a lynx reintroduction (Figure 1) identified in published literature (Hetherington et al., 2008; White et al., 2016; Ovenden et al., 2019; Premier et al., 2025). According to these studies, the most suitable areas for a lynx reintroduction in terms of habitat, prey density, and landscape connectivity are in the Highlands, the Southern Uplands, and in areas of the West Coast of Scotland.

2.2 | Methodological approach

Unstructured interviews were undertaken between April and July 2022, focusing on the general topic of lynx reintroduction in Scotland, where interviewees were able to share their opinions and feelings on this potentially sensitive subject in a non-critical environment and without conflict escalation. The interviewees were prompted and

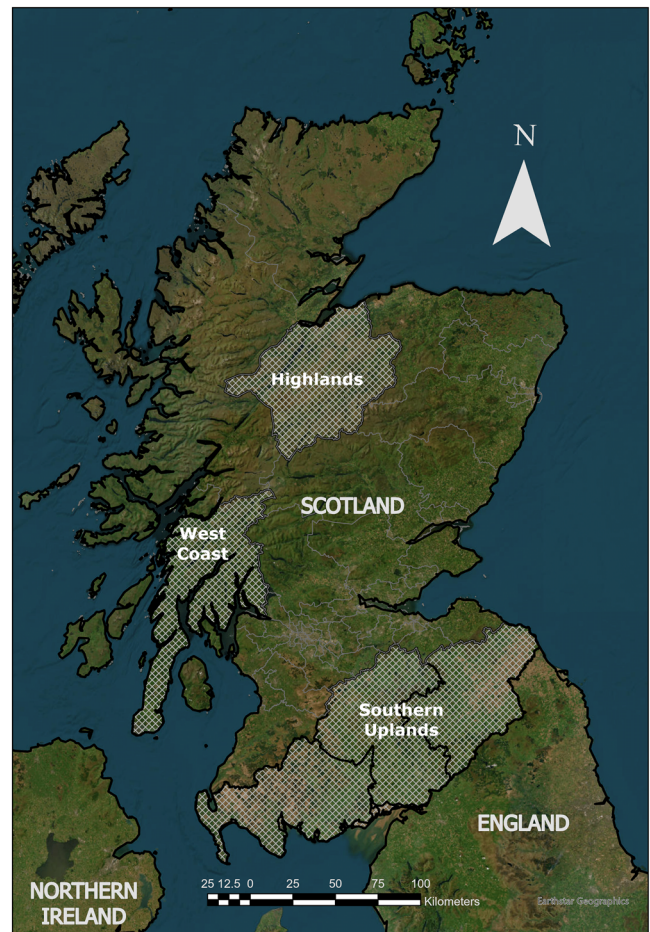


FIGURE 1 Study areas in Scotland (Highlands, West Coast of Scotland and Southern Uplands) where interviews to explore perceptions on lynx reintroduction were conducted.

guided by questions on their personal thoughts on potential impacts of a lynx reintroduction to elicit further information (Newing et al., 2011). While the semi-structured approach provides more structure to the interview, we opted for an unstructured style as it empowers the interviewee to take control and steer the conversation onto topics important to them and express their view in a way that they feel comfortable (Roulston & Choi, 2018). Following an interpretivist approach, we used an inductive strategy to uncover the insights, perspectives, and feelings of key informants (Glaser & Strauss, 1967). An interpretivism approach has an awareness of the preconceptions of the researcher when interacting with human actors (Chowdhury, 2014). Moreover, the result of interactions between researchers and human actors may lead to a change of perceptions for both parties (Chowdhury, 2014). To overcome this potential barrier, the primary researcher focused on building rapport with the interviewees (Secules et al., 2021).

All interviews were in-person and held at a time and location convenient for the interviewee. Interviews lasted

TABLE 1 Demographic characteristics of interviewees and number of interviewees within the demographic category ($n = 34$) that participated in unstructured interviews to explore perceptions of a lynx reintroduction in Scotland.

Scottish highlands		West coast of Scotland		Southern uplands	
$(n = 11)$		$(n = 11)$		$(n = 12)$	
Interviewee sector	No. of interviewees	Interviewee sector	No. of interviewees	Interviewee sector	No. of interviewees
Agricultural	3	Agricultural	4	Agricultural	2
Environmental	5	Environmental	2	Environmental	5
Deer management	3	Deer management	1	Deer management	4
Forest management	0	Forest management	4	Forest management	1

between 60 and 300 minutes in length. The length of the interview varied depending on the social setting and time available for the participant. Interviews were recorded in their entirety using a digital voice recorder and field notes were taken immediately after the interview. The first two unstructured interviews piloted this methodological approach and no adjustments were required.

2.3 | Sampling approach

Stakeholders, who could be directly or indirectly affected by a lynx reintroduction, were identified using an interest-influence matrix (Reed et al., 2009). Stakeholders included those working in the following sectors: agricultural, environmental, forest management, and deer management. Individuals within these stakeholder groups and with an awareness of the lynx reintroduction debate in Scotland were the intended interviewees within this study (Table 1). To align with the unstructured interview methodology, interviewees were required to have a level of awareness and understanding of the topic (Newing et al., 2011). Overall, 34 individuals were interviewed for this study. Initially, purposive sampling was applied, where online searching resulted in emailing an equal number of individuals from each stakeholder category and invited to an interview in each of the focal areas (Figure 1). A snowball sampling technique (also known as the chain-referral method) was followed to recruit further participants and overcome difficulties in acquiring representative participants (Bihu, 2020; Parker et al., 2019). Despite these efforts, recruitment of female interviewees was limited ($n = 5$), leading to a gender imbalance toward men ($n = 29$). Interviews were concluded once data saturation was achieved, where additional interviews no longer yielded new insights into the phenomenon (Bhattacharjee, 2012).

2.4 | Analysis

Interviews were manually transcribed verbatim. Each transcript was qualitatively analyzed, and inductively coded to elicit the key issues, and categorized into relevant themes. The non-linear six-phase framework developed by Braun and Clarke (2006) for conducting thematic analysis was followed: familiarization with the data, generating initial codes, searching for themes, reviewing themes, defining, and naming themes and writing-up of findings. This six-phase framework was undertaken by the primary author and member checking, where the co-authors reflected on the analysis, enhanced the credibility of the coding (Braun & Clarke, 2023). To evaluate the quality of the thematic analysis undertaken, we employed “the 4 R’s” tool: rigor, relevance, resonance, and reflexivity (Finlay, 2021; Finlay & Evans, 2009). To establish rigor, interview transcripts were systematically analyzed, and each theme can be illustrated from the interview data. Relevance was achieved through identifying themes in relation to their importance to the overall research objectives. Resonance was injected into the findings by using quotations as subtheme headings such as “them and us, urban versus rural.” Reflexibility was established while reflecting on the epistemological position of the primary researcher. As the researcher was positioned as an “outsider,” where the researcher does not belong to the community under study, it could have been additional work to gain rapport (Secules et al., 2021). However, as the researcher was not affiliated with a non-governmental organisation at the time of data collection and analysis, they were more trusted and may have secured more honest answers on the topic of lynx reintroduction (Holmes, 2020). Additionally, the interview data could be interpreted with an open mind and a reduced level of bias (Holmes, 2020). NVivo software release version 1.6 was used when reviewing themes and defining and naming themes within the interview transcripts.

Quoted spoken language was “cleaned up” to communicate clear narratives (Haapanen, 2017). Ellipses (...) indicate speech not presented to illustrate a certain point.

2.5 | Ethical consideration

Ethical approval was received for this research by the University of Kent ethics committee (Ethics ID: 2022164615446565). A participant information sheet was provided to each interviewee. Verbal and written informed consent was gained from each interviewee prior to the interview. Interviewees received a debriefing sheet post-interview.

3 | RESULTS AND INTERPRETATION

3.1 | Perceived impacts

A broad range of perceived impacts of a lynx reintroduction were described by interviewees, including cultural, ecological, economic, emotional, environmental, political, and social impacts. Through further review of the perceived impacts of a lynx reintroduction, sub-themes were identified (Figure 2).

The “social” theme encompassed perceived impacts on individual, community, or group dynamics. Interviewees highlighted that lynx reintroduction could strain community cohesion, especially amid polarized views. As Interviewee 20, a nature conservationist (hereafter conservationist), noted, “*These things are not good for local communities. Reintroduction, wind farm or whatever, there’s polarized views.*” The media was perceived as exacerbating conflict, particularly by amplifying the strength of emotions associated with particular situations. Interviewee 34, a conservationist, remarked, “*If a farmer was to lose one sheep, you can guarantee it would be in the headlines for weeks.*” The “political” theme related to governance and policymaking. Interviewees anticipated that lynx management would become politically contentious, with Interviewee 24, a forest manager, observing, “*It’ll very quickly become a political issue.*” The “cultural” theme referred to group-specific traditions and behaviors. Species reintroduction was seen as potentially disrupting traditional livestock farming. Interviewee 28, who worked in the agricultural sector, identified sheep predation as a key concern, suggesting financial incentives to transition to cattle, while questioning farmers’ willingness to change established practices. The “economic” theme focused on the production and exchange of goods and services. Some interviewees viewed reintroduction as an opportunity for regional economic growth through

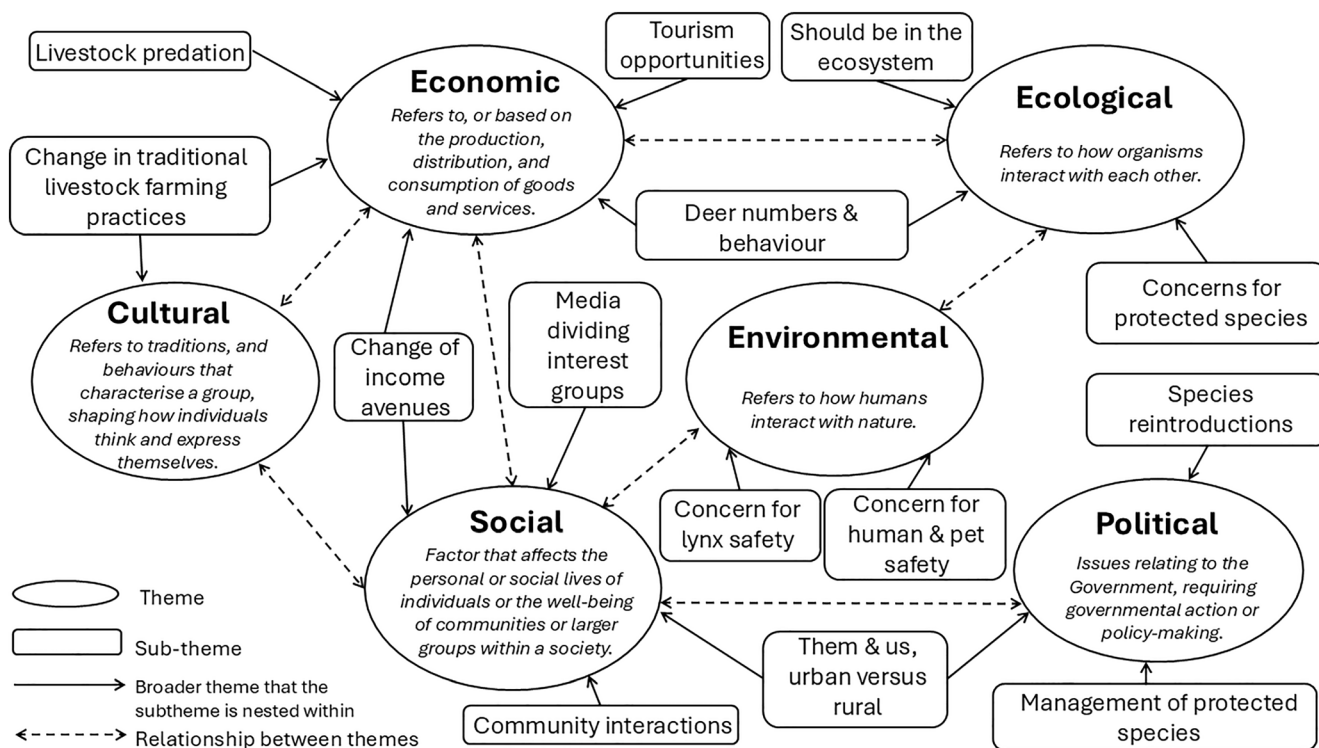


FIGURE 2 Relationships between themes, and sub-themes nested within the broader themes, of perceived impacts of a lynx reintroduction in Scotland by interviewees ($n = 34$).

tourism and employment. Interviewee 17, a deer manager, noted, “It might even bring some money to the regions, in terms of people having to monitor it and tourists staying in bed and breakfasts.” The “environmental” theme addressed human–nature interactions, while the “ecological” theme focused on species interactions. Concerns were raised about both human and lynx safety in the “environmental” theme. Interviewee 8, a conservationist, warned that some individuals would be eager to harm the first reintroduced lynx: “You’re always going to get the bright spark that wants to go and kill the first lynx.” Ecologically, lynx were seen as potentially increasing competition for resources, with Interviewee 21, a forest manager, expressing concern about added pressure on vulnerable species.

As in most socio-ecological systems, themes and sub-themes were interconnected. For example, the subtheme of “change in traditional livestock practices” bridged both the economic and cultural domains, reflecting financial concerns over predation and cultural resistance to altering established farming methods. Similarly, the “them and us, urban versus rural” subtheme spanned social and political domains. Interviewees positioned urban populations and government as “them,” with rural communities as “us.” Socially, reintroduction was seen as divisive, while politically, rural voices were perceived as marginalized. Interviewee 15, a deer manager, stated, “It would be

just another thing where the urban masses would do something on the rural population. The green agenda’s going to really hammer the rural population,” reflecting fears of rising living costs and rural depopulation driven by policies perceived as urban-centric.

3.2 | Polarization

The findings revealed divergent perspectives on the topic (see Figure 3), with both affective and opinion polarization evident across the qualitative themes. Affective polarization refers to individuals strongly disliking or distrusting those with opposing views to themselves (Hodson et al., 2025), while opinion polarization focuses on the content of views and refers to an extreme divergence of views between stakeholders (Judge et al., 2023).

The theme of “community interactions” encapsulates perceived threats to community cohesion arising from a potential lynx reintroduction. As Interviewee 17, a deer manager, noted, “It’s so polarized, people are like, these other people are imposing this on us.” This reflects affective polarization, whereby reintroduction is framed as a divisive “us and them” issue, fostering interpersonal and intergroup tensions. However, contrasting perspectives were also identified. For instance, Interviewee 19, a conservationist, suggested that the reintroduction of lynx

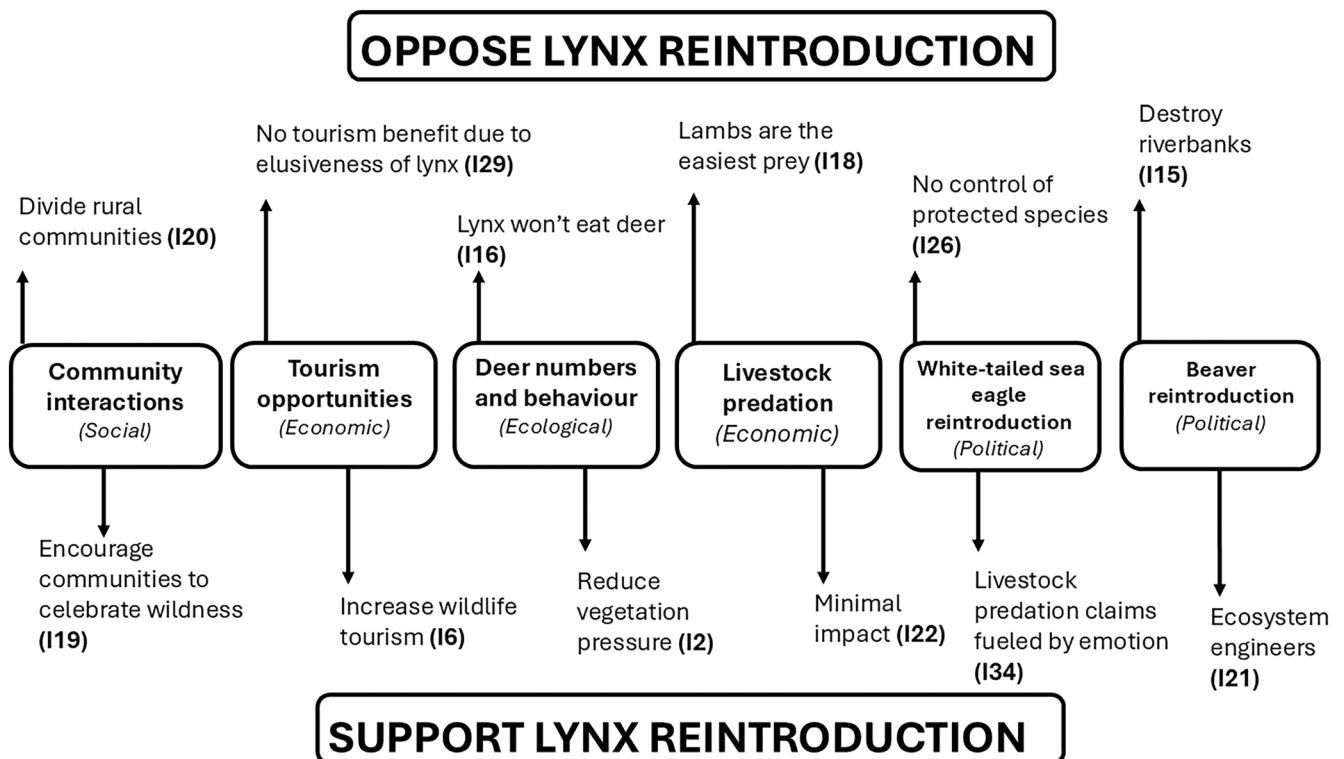


FIGURE 3 Sub-themes and opposing versus supportive views toward lynx reintroduction in Scotland among interviewees.

could foster community engagement with nature, potentially serving as a unifying force through shared environmental stewardship and appreciation of increased wilderness.

Polarization also manifested in discussions surrounding “tourism opportunities.” Opponents of lynx reintroduction questioned its viability as a tourist attraction, citing the species’ elusive nature. Interviewee 29, who worked in the agricultural sector, remarked, “*If all the reports of them being so reclusive are true, there’s no way we are going to see them.*” The concern was that visitor dissatisfaction could lead to limited economic returns. Conversely, some interviewees expressed enthusiasm about tourism potential, drawing parallels with cases like the white-tailed sea eagle (*Haliaeetus albicilla*, hereafter white-tailed eagle) reintroduction on the Isle of Mull. Interviewee 6, a conservationist, stated, “*Think of the people that would spend months trying to get that glimpse, that photograph.*” These visitors, it was argued, could stimulate local economies through increased demand for hospitality services and wildlife tours.

Another area of contention was the expected impact on “deer numbers and behavior.” Interviewees opposing the reintroduction argued that deer populations were high and that lynx would have negligible impact. As Interviewee 16 stated, “*Prey wise, I don’t think they’d tackle deer personally. I think a deer would be too much.*” The implication was that lynx would instead prey on livestock, thus threatening agricultural livelihoods. In contrast, proponents suggested lynx could contribute positively to deer population control and biodiversity. For example, Interviewee 2 observed, “*They might bring a little bit of fear back in the deer population,*” potentially reducing overgrazing and aiding vegetation recovery. These divergent perspectives illustrate opinion polarization through differential knowledge, values, and professional identities, here, between a conservationist (Interviewee 2) and a deer manager (Interviewee 16).

A shared concern among interviewees, regardless of position, centered on “livestock predation.” The predation of lambs was viewed as a consequence of reintroduction. Interviewee 18, a deer manager, expressed this concern, “*Lynx are going to see lambs ... and say, ‘why am I going to run after that deer when there’s a lamb?’*” From this perspective, lynx pose a tangible threat to farming livelihoods, which already face a wide range of challenges with livestock mortality. However, other interviewees argued that predation losses from lynx would be minimal compared to other factors such as disease or adverse weather. As Interviewee 22, a forest manager, noted, “*There will be other things that have a far bigger mortality on the livestock ... because lynx can’t get to that*

level.” With the naturally occurring low densities of lynx in the landscape, lynx predation on livestock would be negligible.

Previous species reintroductions served as important points of reference in shaping perceptions of lynx reintroduction. Several interviewees drew parallels with the reintroduction of white-tailed eagles, which are now strictly protected. Some expressed frustration over perceived powerlessness to manage impacts of these birds. As Interviewee 26, who worked in the agricultural sector, said, “*If you kill a sea eagle, you’ll be in jail longer than if you kill a person,*” suggesting a deep-seated distrust in conservation governance. This perceived lack of institutional support exacerbates concerns over predation and loss of agency among livestock farmers. Others challenged the narrative around eagle predation, suggesting that its actual impact on lamb losses was overstated. For example, Interviewee 34, a conservationist, commented, “*The research done shows that eagles have a very small impact but it’s very high profile.*” These contrasting views reflect broader tensions between conservation policy and rural livelihoods, where symbolic meanings and experiences of marginalization play a significant role.

Beavers (*Castor fiber*), another reintroduced species in Scotland, were also invoked as a comparative case. Among opponents, beavers were associated with environmental degradation and economic harm. Interviewee 15, a deer manager, reported, “*They’ve chopped down trees and destroyed the riverbank ... the beaver seems to be the menace.*” By contrast, proponents highlighted the ecological function beavers perform, such as natural forest thinning and flood prevention. Interviewee 21, a forest manager, remarked, “*If you’ve got beavers ... they come and thin the forest for you. Winner. Job done.*” These perspectives reflect broader symbolic and utilitarian framings of reintroduced species, as either destructive nuisances or ecosystem engineers.

These thematic areas (Figure 3) illustrate how stakeholders invoke different narratives, experiences, and comparisons to frame their position on lynx reintroduction, with insights into opinion and affective polarization.

3.3 | Shaping perceptions

Three overarching factors were identified to shape perceptions on lynx reintroduction: (i) individual experiences, (ii) human–human relationships, and (iii) human–wildlife relationships. Individual experiences referred to unique personal events, which may involve a range of interactions and activity. Human–human relationships referred to connections and interactions between individuals and social groups, while human–wildlife

relationships referred to how individuals value and view their connectedness with animals.

3.3.1 | Individual experiences

Individual experiences played a significant role in shaping perceptions of lynx reintroduction, with support or opposition often rooted in firsthand encounters or past reintroduction events. Notably, views on lynx were frequently informed by perceptions of the white-tailed eagle reintroduction on the West Coast of Scotland during the 1970s (Love & Ball, 1979). At the time, young eagles were translocated from Norway, where no livestock predation had been reported (Halley et al., 2006; Mee, 2009; O'Rourke, 2014). However, Scottish livestock farmers later reported lamb predation, which many felt had not been adequately anticipated by conservation authorities. Interviewee 26, who worked in the agricultural sector, expressed frustration over what was perceived as misinformation and poor governance:

The lynx ... it's another predator. It goes back to the sea eagle scenario. Bad parenting, 'oh they can do no wrong.' They reintroduce them and say, "they only take mice, they only take foxes." They only take lambs!

Such accounts illustrate a broader mistrust in conservation narratives, particularly among land users who feel excluded from decision-making. Lynx were thus framed similarly to white-tailed eagles, as apex predators perceived to threaten livestock and rural livelihoods. Conversely, other interviewees highlighted positive outcomes from past reintroductions, particularly in terms of tourism and community pride. For example, Interviewee 24, a forest manager, stated:

The eagles are a great example, amazing creatures ... people flock to Mull specifically to do that. Tourists stay in their bed and breakfasts and eat at their restaurants.

These perceived economic and emotional benefits were projected onto the lynx, reinforcing support for its reintroduction based on potential contributions to wildlife tourism and rural revitalization.

Experiences abroad also shaped attitudes. Several interviewees cited examples from Europe, where lynx coexist with livestock. For instance, Interviewee 1, a conservationist, remarked, "*There's 11 million sheep put on the mountains in the Carpathians [Romania], and they've got all the wolves, and bears, and lynx.*" Similarly,

Interviewee 34, a conservationist, reflected on sightings in Latvia: "*Quite exciting ... lynx tracks everywhere in a sort of an agricultural landscape.*" These accounts were used to argue that coexistence is possible and that livestock loss, while a concern, should not preclude reintroduction efforts. Perceptions of lynx reintroduction were shaped by personal and professional experiences, and transnational comparisons.

3.3.2 | Human–human relationships

Interview data revealed important insights into human–human relationships, particularly within and between stakeholder groups. The white-tailed eagle reintroduction on the West Coast of Scotland served as a reference point for past conflicts. Livestock farmers expressed frustration over discrepancies between initial reassurances from project organizers and their own observations of lamb predation. These perceived inconsistencies intensified intergroup tensions, as Interviewee 28, who worked in the agricultural sector, stated,

It's all been kind of denied for years, despite the fact that there were autopsies and all sorts of things done on the lambs ... that hasn't helped with the farmer's feeling towards it because they're angry with the people who have reintroduced it.

Farmers felt their concerns were ignored, leading to distrust in conservation organizations. This historical context influenced contemporary attitudes toward lynx reintroduction, with similar organizations now viewed with suspicion. The legacy of the eagle project shaped expectations about how government and conservation bodies might respond to future species reintroduction-related conflicts.

A prior lynx reintroduction attempt in Britain also contributed to skepticism. Interviewees described this initiative as poorly managed, causing widespread distrust and a lack of confidence in the information presented. As Interviewee 21, a forest manager, stated, "*The Scottish government body want to distance themselves from that very quickly. It's very concerning.*" Due to the absence of large carnivores in Britain for centuries and the lack of cultural familiarity with lynx, the failed initiative left a lasting negative impression. Participants generalized this experience to current proposals, assuming that similar mistakes would recur. These dynamics underscore how past human–human conflict can generate institutional mistrust, potentially hindering future reintroduction efforts.

Intragroup conflict was also evident, particularly among deer managers. Shifts in land management toward rewilding have caused internal divisions. Traditional estates, which manage deer populations for sport hunting revenue, contrasted with rewilding estates aiming to reduce deer numbers to promote forest regeneration. These differing objectives led to tensions among professionals within the same occupational group, as Interviewee 14, a deer manager, remarked,

It's quite often a separation. The older stalkers are still of that Victorian mentality ... some nights it can feel like it's a them and us. Some of these meetings can be pretty heated.

Those aligned with traditional estates expressed concern that lynx predation would reduce deer numbers and disrupt deer behavior, potentially reducing income from sporting clients. In contrast, deer managers on rewilding estates were perceived as more supportive of lynx reintroduction, further fueling internal conflict. Understanding both intergroup and intragroup relationships is crucial to anticipating and mitigating social tensions associated with species reintroductions.

3.3.3 | Human–wildlife relationships

Perceptions of lynx reintroduction in Scotland were shaped by human–wildlife relationships, for example, how individuals value and interact with wildlife. While wildlife is often accepted in the landscape, this acceptance appears conditional on the absence of perceived damage or inconvenience. Interviewee 10 illustrated this dynamic through a local example involving foxes:

At my neighbour's, they discovered a fox den, they saw the little cubs playing and all the rest of it. But, the foxes decided to have some chickens. Now immediately the foxes had to go.

Initially valued for their aesthetic and recreational benefits, the foxes were removed once they caused economic and emotional loss. This response suggested limited tolerance for wildlife when costs were incurred, with coexistence contingent upon minimal negative impacts. In context with lynx in the landscape, such conditional acceptance implied that support may erode if the species were perceived to predate livestock. This perception may be rooted in the long absence of large carnivores, such as lynx, wolves (*Canis lupus*), and bears (*Ursus arctos*), from

the British landscape. With no recent cultural or practical experience of coexisting with such species, mitigation knowledge and practices have largely been lost. Few interviewees referenced mitigation methods; ways to prevent livestock loss. Instead of focusing on how to foster human–wildlife coexistence, wildlife that could cause property damage were either a protected species or humans were permitted to shoot, “control” them.

Some interviewees questioned the need for reintroducing apex predators, reflecting a dominion-oriented wildlife value orientation, where animals are viewed primarily in utilitarian terms. As Interviewee 10 stated, “*Why do we need an apex predator? We've got an apex predator... man with whatever tools in his boot or box.*” In this framing, humans are seen as fulfilling the ecological role of a top predator, making the return of lynx redundant unless it serves a direct human benefit. Conversely, other perspectives embraced a more mutualistic or biocentric view of wildlife. For example, Interviewee 33, who worked in the agricultural sector, acknowledged potential losses and supported coexistence: “*They might take lambs ... But at the end of the day, we've all got to live, haven't we? Lynx included.*” This position recognizes non-human agency and legitimacy in shared landscapes, highlighting the heterogeneity of views even within stakeholder groups traditionally seen as opposed to reintroduction. Willingness of humans to coexist with wildlife may depend on the degree of change required by humans. As Interviewee 5, a conservationist, noted,

There are adjustments that humans can make ... but some people are not prepared to make changes that inconvenience themselves. It's just human nature.

This statement highlighted how humans may resist species reintroduction due to perceived behavioral, economic, or logistical change, such as adapting animal husbandry practices.

In summary, divergent relationships with wildlife, shaped by value orientations, produce varying levels of support for lynx reintroduction. A lack of consensus on the reintroduction of this species stems not only from attitudes toward the lynx itself but from differing beliefs about whether humans should adapt to accommodate non-human species within shared landscapes.

4 | DISCUSSION

Through qualitative, empirical work, our study provides the first in-depth exploration of the perceived impacts of a lynx reintroduction in Scotland and the factors shaping

these perceptions. Our findings into the complex perceptions associated with a large carnivore reintroduction and how these perceptions are framed to support views are important for understanding pre-existing tensions between stakeholder groups.

4.1 | Perceived impacts

A complex network of interconnected perceived impacts of lynx reintroduction was identified, supporting and strengthening findings from previous studies, for instance, potential economic benefits for local communities through tourism, alongside economic risks to the farming sector such as livestock loss (Bavin et al., 2023; Hawkins et al., 2020; Rode et al., 2021). Rode et al. (2021) provided a comprehensive classification of the socio-economic impacts of lynx, wolf, bear, and wolverine (*Gulo gulo*) acknowledged in European and North American studies. Our findings suggest that the perceived impacts of lynx reintroduction reflect those associated with these other large carnivores, such as becoming a topic of social and political tensions (Rode et al., 2021). Despite displaying considerable different behaviors, three large carnivores in Europe (wolves, bears, and lynx) are commonly discussed in unison. An awareness of how focal species are commonly aggregated should be attained and differences should be highlighted when engaging with communities (Trajçe et al., 2019).

Similarities in perceived overall impacts of large carnivores, such as those on livelihoods, communities, and the local economy, have been identified in a number of studies. However, it is important to explore in depth each context, as nuances in perceptions require individual solutions to foster coexistence. Zimmermann et al. (2021) explored conflict with jaguars (*Panthera onca*) in 17 case studies across central and southern America and found a lack of consistency in factors predicting how farmers perceived jaguars. Factors such as economic circumstances, experiences with livestock loss, and varying levels of attitudes to predict perceptions of jaguars may be similar across several case studies; however, the factors lacked generalizability across all contexts. Although levels of tolerance and attitudes can vary spatially (Zimmermann et al., 2021), differences in perceived impacts of a lynx reintroduction across the three locations in Scotland were not observed. Within this study, results reflected that perceptions were based on lynx reintroduction at a broad and national level. The heterogeneity within stakeholder groups, such as that demonstrated by interviewees working in the forest management sector, calls for attention beyond identifying perceptions. Efforts should focus on exploration of factors shaping perceptions and

implementation of more collaborative and bottom-up approaches to achieve human–wildlife coexistence (Rayne et al., 2025).

4.2 | Polarization

Our findings go beyond demonstrating opposing stakeholder views and provide insights into the polarization of lynx reintroduction in Scotland. The polarization is identified throughout the interview data, which reflects variation in the content of stakeholder views on lynx reintroduction and distrust in intergroup and intragroup relations. For example, one aspect fueling the polarization could be farmers facing difficulties from adverse weather, disease, and profitability, and the negative perceptions on reintroductions could be partly due to the actual or perceived risk released species pose to livelihoods (Dando et al., 2025). A reintroduction of a top carnivore may exacerbate the unsupported feeling some farmers are experiencing. To support stakeholders in Scotland, mechanisms to mitigate impacts on farming practices by reintroduced species should be established. For example, a Sea Eagle Management Scheme was developed to provide advice and support to farmers in Scotland experiencing impacts on livestock by white-tailed eagles (NatureScot, 2025). Despite efforts to achieve balanced representation across stakeholder groups, it is important to highlight that the final sample of interviewees comprised individuals who were willing and available to participate. Consequently, the observed level of polarization should be generalized beyond this cohort with caution.

One important finding of our work that stands out from the results reported in previous studies, was how the same perceived impact is used to express both opposing and supporting views among interviewees (Figure 3). While support and opposition toward species reintroduction has been examined predominantly through quantitative methods (Watkins et al., 2021; Williams et al., 2002; Wilson & Campera, 2024) and qualitatively investigated in wildlife management literature (Dandy et al., 2012), our research focus is rarely explored through qualitative methods in academic studies. Through our qualitative research, we go beyond the typical oppose or support framing and explored how social tensions are composed to support individual views on lynx reintroduction. Although our findings provide important insight into reasons for support and opposition, discussions on lynx reintroduction should not be simplified to “for or against.” Carnivore reintroductions are complex and are multifaceted in nature (Nesbitt et al., 2023; Titus & Jachowski, 2021). For example, after 30 years of recovery

efforts, Titus and Jachowski (2021) reported that several critically endangered black-footed ferret (*Mustela nigripes*) reintroduction attempts in Montana, United States, had failed. Despite overall public support, these reintroductions faced challenges such as persistent negative perceptions of local ranchers on the ferret's primary food source, the black-tailed prairie dog (*Cynomys ludovicianus*). This example highlights the need to explore perceptions further than the level of public support through active, appropriate engagement with stakeholders (Dando et al., 2023).

4.3 | Factors shaping perceptions

Our results suggest that individual experiences, human–human relationships, and human–wildlife relationships were key in shaping the perceptions of a lynx reintroduction. As expected, interviewees that had negative individual experiences with species released, such as livestock predation, held skeptical feelings on lynx returning to the landscape. Conversely, interviewees that experienced positive interactions with reintroduced species, such as those working in the forest management sector observing benefits of flood prevention from beaver reintroduction, held hopeful feelings toward lynx reintroduction. Similarly, a study by Auster et al. (2020), who explored the social and economic benefits of beaver reintroduction in England, reported that positive emotions result from sightings of beavers and their field signs. It is likely these experiences contribute to increased mental wellbeing and a connectedness with nature leading to a positive association (Auster et al., 2020). According to Hope (2009) direct experiences stimulate an emotional connection through exposure to other realities. These experiences have a transformative impact on personal values as individuals can challenge their own preconceptions (Hope, 2009). Although our results cannot be generalized (Parker et al., 2019), we have gathered important insights into how individual experiences shape perceptions on species reintroduction. To avoid hindering future initiatives, conservation projects should strive for positive interactions through constructive conversations with local communities (Dando et al., 2025).

Human–human relationships are another factor identified in shaping perceptions of a lynx reintroduction in Scotland. Similarly to other recent research, such as that on wildcats (*Felis silvestris*) (Dando et al., 2025), our data provided insights into relationships between livestock farmers, conservation organizations and authorities developed through the white-tailed eagle reintroduction. This long-standing conflict demonstrated how interviewees favorably present their in-group, which is a

group individuals psychologically identify with and often share similar interests and beliefs (Smith et al., 1999). This tendency can be explained by in-group favoritism, which is defined in the social identity theory as the bias toward supporting one's own group in behavior, attitudes, or perceptions (Turner et al., 1979). Additionally, and with relevance to factual information provided about species in reintroduction projects, in-group bias explains how an individual can overlook objective evidence-based information when supporting their in-group attitudes or perceptions (Turner et al., 1979). Belonging to a group makes individuals feel connected and unified, and therefore, individuals adopt the overall views of the group and may act as a significant barrier to engagement (Gonzalez, 2023). Pre-existing tensions between stakeholder groups as identified with farmers, conservation organizations and authorities associated with white-tailed eagles in Scotland, may fuel conflict and lead to emerging myths and rumors about future contentious projects. For example, farmers in Norway and France suspected authorities had clandestinely reintroduced wolves. This emerging rumor represented the farmers' cultural resistance and the deeply rooted social tensions between them and authorities (Skogen et al., 2008). Furthermore, our results are similar to those in previous research by Lühtrath and Schraml (2015) who reported that past interactions between stakeholder groups shaped opinions toward a lynx reintroduction in southwest Germany. Negative interactions with conservationists resulted in hunters strengthening their opposition toward lynx in the landscape (Lühtrath & Schraml, 2015). Pre-existing tensions and emotions tied to species reintroductions should be acknowledged (Marino et al., 2024) and decisions in relation to proceeding with conservation projects should be developed from evidence-based information.

The third key factor that shaped perceptions was human–wildlife relationships: how an individual views their place in nature. An explanation for both human–human relationships and human–wildlife relationships in shaping perceptions of lynx reintroduction is relational values. As a framework, relational values assess individual and societal beliefs of how humans should interact with nature (Messick & Serenari, 2025). In the context of our study, this relates to whether humans should reintroduce lynx back into the landscape. Understanding relational values of the communities living in areas suitable for potential species reintroduction is critical as conflict arises when projects planned are incompatible with relational values of the community (Pratson et al., 2023). This highlights the necessity for robust and reliable social research within conservation projects to collect and analyze qualitative data. Typically, social research is

practiced by those interested in pursuing a reintroduction or conservation project and may lack the skills and experience to implement social science methods (Rayne et al., 2025). Poorly constructed social science hinders our ability to understand the complexity of social issues tied to a project. We suggest that involving or collaborating with a social scientist at the planning stage of a project can be utilized in minimizing conflict, promoting coexistence, and developing more effective conservation strategies for long-term ecosystem health (Dando et al., 2023).

5 | CONCLUSION

Understanding the perceived impacts and the factors shaping these perceptions on a large carnivore reintroduction can facilitate project success and foster human-wildlife coexistence by co-designing appropriate interventions with local communities. Based on our findings, we recommend that active listening is implemented with local communities to gain an understanding of factors shaping perceptions toward conservation projects and aim to develop a level of empathy. Pre-existing tensions and emotions tied to species reintroductions should be acknowledged, and decisions in relation to proceeding with conservation projects should be made on evidence-based information. We suggest that as a first step in a species reintroduction project, individuals from stakeholder groups are actively listened to and relationships are built, rather than actively seeking to change opinions and perspectives, which can be counterproductive.

AUTHOR CONTRIBUTIONS

Faye L. Whiley: Conceptualization; methodology; investigation; data curation; formal analysis; funding acquisition; project administration; resources; software; visualization; writing—original draft; writing—review and editing. **Daniel J. Ingram:** supervision; visualization; writing—original draft; writing—review and editing. **Robert D. Fish:** Conceptualization; methodology; formal analysis; supervision; visualization; writing—review and editing. **Douglas C. MacMillan:** Conceptualization; methodology; formal analysis; funding acquisition; supervision; writing—review and editing. **Joseph Tzanopoulos:** Conceptualization; methodology; formal analysis; funding acquisition; project administration; resources; supervision; visualization; writing—original draft; writing—review and editing.

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DATA AVAILABILITY STATEMENT


Data are available upon request from the corresponding author. Please contact fayewhiley@hotmail.co.uk for access.

ETHICS STATEMENT

Ethical approval was received for this research by the University of Kent ethics committee (Ethics ID: 2022164615446565). The ESRC Research Ethics Framework was followed.

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