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Rewilding—The farmers' perspective. Perceptions and attitudinal support for rewilding among the English farming community

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Abstract

1. Rewilding is an increasingly common conservation approach, aiming to restore ecosystem processes and minimise human intervention. Rewilding has the potential to profoundly change landscapes and people–nature relations. These issues prompt an ongoing debate about how and if rewilding should be done.
2. Farmers are key stakeholders in this debate; they stand to be both affected by and influence the trajectory of rewilding initiatives developing in the United Kingdom and globally. Despite this, a comprehensive understanding of farmers' perceptions towards rewilding is lacking.
3. Here, we focus on how members of the farming community in England perceive common rewilding scenarios (beaver release, farm-level rewilding and landscape-scale rewilding), and how these perceptions shape farmers' attitudinal support for rewilding practices.
4. Using thematic analysis of semi-structured interviews with 36 farmers and farming representatives, we show that the diversity of farmers' attitudes can be understood through the prism of perceptions on five core issues: (a) the perceived need for restoration action, (b) the ecological effectiveness of rewilding, (c) rewilding's compatibility with ensuring food security, (d) rewilding's compatibility with rural lifestyles, livelihoods and economies and (e) multidimensional justice of rewilding initiatives. These issues are rooted in collective farming values, and farmers' perceptions of these issues are influenced by mental models, perceived social impacts and perceived ecological outcomes of rewilding initiatives. Diverse perceptions result in a range of attitudes, from enthusiastic support to strong opposition to different rewilding practices.

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5. We argue that the scope to increase support for rewilding varies depending on the type of underlying negative perceptions. Where the negative perceptions are based on objectively verifiable causal beliefs (mental models), opponents' minds may be changed through the provision of positive experiences, social learning, and adhering to good governance principles. However, where negative perceptions are based on values, for example, a preference for traditional rural landscapes, they are unlikely to change easily. Pursuing rewilding ambitions that clash with the values of local farmers may risk social conflicts, but accommodating these values too much may compromise rewilding's own goals. Rewilding initiatives will need dialogue and social engagement to navigate their path around this tension.

KEYWORDS

attitudinal support, ecological effectiveness, farmers, mental models, perceptions, rewilding, social impacts, values

1 | INTRODUCTION

There is a growing consensus that to counteract biodiversity loss and safeguard the ecosystem services that underpin human existence, traditional conservation of species and protected areas must be accompanied by large-scale ecological restoration (UN, 2019). One increasingly popular form of ecological restoration is rewilding: a family of conservation approaches with the ultimate aim of regenerating self-regulating ecosystems (Carver et al., 2021; Perino et al., 2019). In its original conception in North America, rewilding concerned the restoration of vast, connected wilderness areas with full trophic levels present, including large predators (Lorimer et al., 2015; Soulé & Noss, 1998). In the context of the more crowded and 'intensely cultural' European landscapes, the concept of rewilding expanded to include less 'radical' forms of ecosystem restoration, such as introducing primitive cattle and pony breeds as surrogates for the lost large herbivore species (Holmes et al., 2020; Lorimer et al., 2015; Thomas, 2021). Today, rewilding is recognised to exist across a spectrum of spatial scales, degrees of ecological connectivity and levels of human intervention (Carver et al., 2021).

For this paper, we define rewilding as *any activity that intentionally moves an area along this spectrum by reactivating ecological processes (disturbance, species interactions and dispersal) and minimising human management* (Carver et al., 2021; Perino et al., 2019). As a substantive change in land use, rewilding can often profoundly alter existing landscapes and human–nature relationships. These potential changes have prompted a heated debate about whether and how rewilding should be done (Carver et al., 2021). Rewilding is, therefore, seen to involve cultural, socio-economic and ecological transformations.

One of the key stakeholders in the debate about rewilding is the farming community. As some of the main land-holding and land-using groups, farmers stand to be affected by and shape the trajectory of the growing number of rewilding initiatives in the United

Kingdom and globally (Wynne-Jones et al., 2018). Farmers and land-owners can derive costs and benefits from rewilding, whether or not they engage in it personally. They may experience the effects of reintroduced large herbivores or carnivores (Bautista et al., 2019; Vasile, 2018), become affected by rewilding activities of a neighbouring farm or reserve (DeSilvey & Bartolini, 2019), or live in a locality where a larger rewilding project may be changing the local landscape and thereby impacting place-identity and redefining associated values (Drenthen, 2018; Wynne-Jones et al., 2018). Studies also demonstrate rural communities' struggles with broader justice issues related to the distribution of power and capacity to determine how, and if, rewilding proceeds (Jørgensen, 2015; Vasile, 2018). Understanding and engaging with the perspective and concerns of different stakeholders is important to ensure conservation actions are socially just (Woodhouse et al., 2015). Rewilding projects are also likely to garner more support and have a greater chance of success when stakeholders' needs and concerns are heard and addressed (Bennett, 2016; Bennett et al., 2019; Matzek & Wilson, 2021). However, a comprehensive assessment of how farmers perceive rewilding is still lacking.

Using England as a case study, we focus on the perceptions of and attitudinal support for rewilding practices among the farming community. Attitudinal support for a policy or a conservation initiative refers to its acceptability among individuals: how favourably or unfavourably they evaluate it (Schuitema & Bergstad, 2018). Perceptions, on the other hand, can be defined as '*the way an individual observes, understands, interprets, and evaluates a referent object, action, experience, individual, policy, or outcome*' (Bennett, 2016). Shaped by subjective experience, perceptions vary between individuals and can change over time.

Crucially, perceptions influence attitudinal support for conservation initiatives (Bennett, 2016; Bennett et al., 2019). There are various types of perceptions relevant to conservation, for example, mental models, meaning the beliefs and assumptions about the state

of a system, how it functions and the causal relationships within it, for example, whether a species is in decline and what is driving the trend (Jones et al., 2011). Other important types of perceptions include the perceived ecological outcomes for nature, for example, an increase in biodiversity, and the perceived social impacts (including impacts on the material, relational and so-called subjective dimensions of human wellbeing), for example, a decline in livelihoods (Ban et al., 2019; Brueckner-Irwin et al., 2019; Jones et al., 2020; McGregor, 2008). Perceptions can also concern the perceived fit of the conservation outcomes with values. Values are a multidimensional, multi-level concept expressing ascriptions of worth to something (Kenter et al., 2019; Rawluk et al., 2019). For example, values can be transcendental, meaning broad, overarching principles such as environmental stewardship or food security, or they can be contextual, expressing subjective attachments and preferences for qualities (e.g. 'neat and tidy' landscapes) and things (e.g. 'my farm') (Burton, 2004; Chapman et al., 2019; Rawluk et al., 2019; Wheeler et al., 2018). They may also be expressed by individuals or collectively at the level of groups and societies, and they can scale up and down the hierarchies of value providers through the processes of internalisation and socialisation (Kenter et al., 2015, 2019). Overall, examining different types of perceptions of rewilding can help explain the variation of current attitudes to this expanding practice and provide clues to its future acceptability among farmers.

Present-day England is an important and highly relevant context for studying rewilding impacts on farmers. The UK's departure from the EU and the Common Agricultural Policy offers an exceptional opportunity to redefine the country's rural and environmental policies. Land use policy is developed at the devolved level (by national governments for Scotland, Northern Ireland and Wales, and by the UK government for England) and the UK government has set the target for England to restore 500,000ha of land outside protected areas as part of the Nature Recovery Network (DEFRA, 2019). Additionally, the current EU farming subsidies are scheduled for replacement by the new Environmental Land Management Scheme (ELMS) for generating 'public goods' like improved soil health and water quality, which includes specific objectives for 'restoring wilder landscapes where appropriate' (DEFRA, 2020a). Although not the only possible approach, rewilding fits within the goals of these land policies and the ELMS payments could increase the financial attractiveness of rewilding to landowners.

At the same time, several rewilding developments have already been established for some time (Wynne-Jones et al., 2020). These range in scale from micro-sites, for example, BLUE Campaign (2022), through formal and informal, location-specific reintroductions of extirpated species, for example, beavers (Auster et al., 2020), single farm or land-holding rewilding with large herbivores, for example, Knepp Estate (Tree, 2018); and multi-partner rewilding initiatives governing over larger areas, for example, Wild Ennerdale (Sandom & Wynne-Jones, 2019; Wynne-Jones et al., 2020). Some projects have faced significant resistance from the local communities that perceive them as an imposition on their way of life (Wynne-Jones et al., 2018). Additionally, conflicts and hostility towards rewilding

are aggravated by the common association of the term 'rewilding' with the proposed reintroductions of large carnivores like lynx and wolves (Thomas, 2021), whereas rewilding projects on the ground are varied and none of the existing projects involves large carnivores (Sandom & Wynne-Jones, 2019). Despite evident controversy, rewilding NGOs are registering record-high numbers of enquiries for advice on developing new rewilding initiatives (Rewilding Britain, 2020), suggesting that rewilding initiatives are here to stay.

Our research is a timely contribution elucidating the perceived risks and opportunities stemming from attempts at integrating ambitious nature restoration efforts into the socio-ecological realities of rural Britain. As conservation scientists, we embrace the need to protect and restore natural ecosystems and to do so equitably. Our intention for this paper is to document and share the perspectives of members of the English farming community as an important interest group to inform equitable conservation management and decision-making. Our specific objectives comprise:

1. Identifying the types of perceptions and attitudes present.
2. Identifying the central themes in the justifications for rewilding attitudes and their underlying perceptions.
3. Understanding the relationships between specific types of perceptions and the level of attitudinal support.

In analysing narrative accounts of farmers' perceptions and attitudes towards rewilding practices, we aim to understand the heterogeneity of views on rewilding among English farmers, how these views align with rewilding objectives, and how these insights can help inform the governance of rewilding projects to achieve greater acceptability and increase chances of project success.

2 | METHODS

2.1 | Data collection

To understand the perceptions of the farming community on rewilding impacts, we conducted semi-structured interviews with 36 individuals who were farmers, land managers and representatives from a range of farming associations. Neither the information for participants nor the interview guide mentioned the term 'rewilding'. Similarly, during the interviews, the term rewilding was not used by the interviewers at any point, unless first invoked by the interviewee. Instead, the interview guide and the interviewers used the more general and less rhetorically loaded term 'restoration' (S1). This was because we were interested in farmers' perceptions of rewilding practices, rather than in their associations with the term rewilding, which can be influenced by media portrayals of rewilding (Deary & Warren, 2017). The interviews were conducted by a trained research team, either on the online platform 'Zoom' or by phone, and lasted up to 2h. Participants gave written consent to participate in the study; all interviews were recorded and fully transcribed.

The interviewers and data analysts were all master's students in Conservation or Animal Behaviour (AB, SB, LE) or post-doctoral researchers (KM), with little prior exposure to the realities of British farmers. Hence, the interviewers could be conceived of as 'ignorant outsiders' (Berger, 2015). This positionality put participants clearly in the position of 'experts' and facilitated a level of openness and eagerness to explain their views. However, coming from a conservation background, our team could not be perceived as completely neutral. Efforts to counteract this bias in interviews were reflected in the construction and adherence to the interview guide (SI.1) to avoid value-laden language and leading statements, and in the focus on empathy and active listening to participants. The research was approved by the Anglia Ruskin University School of Life Sciences Research Ethics Panel, reference number A&EB SREP20-21.

2.2 | Recruitment strategy

Participants were recruited through farming associations, direct messages to farmers' accounts on the social media platform 'Twitter', researchers' personal networks and snowball sampling, whereby existing participants and points of contact connected us with other potential interviewees (Table 1). This multi-pronged recruitment strategy helped us reach different segments of the farming community (McRobert et al., 2018), in different parts of the country (Figure 1). Generally, larger farming associations and personal networks provided access to representatives of conventional and upland farmers, while Twitter and informal farmers' networks were most useful in reaching farmers and land managers engaged in various forms of agro-ecological farming.

Our participants represented a wide range of farming systems ranging from intensive to extensive, conventional to agroecological and involving a variety of farming sectors (mainly arable, poultry, beef cattle, dairy, sheep and pigs). However, some groups were more difficult for us to access than others. As a result, our sample likely under-represents conventional and hard-to-reach farmers who have typically lower social capital and can be mistrustful of and poorly engaged with external initiatives (Hurley et al., 2022). Additionally, due to the limitations of the purposive sampling techniques employed (McRobert et al., 2018; Morgan, 2008), the prevalence of perceptions found cannot be generalised to the wider farming community. Instead, the value of our research lies in the assessment of the qualitative diversity of perceptions. The wide range of actors recruited, the large spectrum of attitudinal support, and the saturation apparent during thematic analysis suggest that the sampling has been adequate to characterise the key issues that matter to English farmers in relation to rewilding (Firmin, 2008).

2.3 | Interview questions

The interviews started with broad background questions aiming to provide context about participants' positionality and worldviews on farming and nature (SI1 Interview guide). Interviews with farming associations' representatives not directly farming themselves were modified to reflect their perceptions of the views prevalent among the farmers and landowners they work with.

The second part of the interview focused on the perceptions of rewilding. To gain a broad understanding of the impacts that may derive from diverse rewilding approaches, we based our interview around three hypothetical rewilding scenarios, reflecting the key rewilding

TABLE 1 Respondent characteristics concerning socio-demographics, recruitment process and actor group represented

Respondent characteristics		
Age		26–81 (mean = 46)
Gender	Female	14%
Capacity in which interviewed (mutually exclusive)	Farmer	27
	Farming community representative	4
	Farmer and farming community representative	5
Recruitment process	Social media—direct contact	20
	Researchers' initial network	6
	Farming association—direct contact or forwarded email	7
	Personal referral (snowballing)	3
Role on farm (not mutually exclusive, excludes non-active farmers)	Owens or co-runs a family farm	25
	Farm manager	6
	Land manager	1
	Farm contractor	9
	Tenant farmer	1
Farm size (excludes non-active farmers)		9–3500 ha (med. = 188)

approaches currently practised in the United Kingdom (beaver release, farm-level restoration and multi-partner landscape rewilding project; Table 2). Our questions concerned the anticipated social and ecological effects, perceived fit with the local conditions, and the levels of support for each of these scenarios and any other relevant projects that respondents highlighted. The participants were asked to comment on the effects of rewilding scenarios as though they were to happen locally in their neighbourhood, rather than directly on their land. However, many participants also reflected on how rewilding would affect them if it was happening on their own farm.

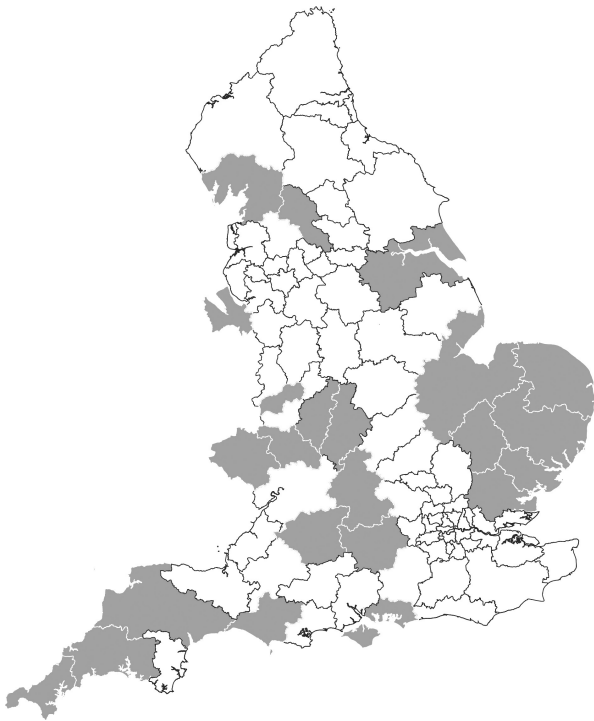


FIGURE 1 Map of postal code areas in England represented by at least one respondent (in grey).

In addition to the three scenarios described in the interview guide and without direction from the interviewers, some participants also raised points relating to two other types of ecosystem restorations: predator reintroductions and regenerative farming. Predator reintroductions referred to scenarios resembling the beaver release scenario but pertained to predator species whose reintroduction can change ecosystem dynamics by exerting a top-down pressure on herbivore populations. Regenerative farming, on the other hand, referred to a type of agroecological approach that attempts to mimic natural processes to restore soil functioning, increase biodiversity and improve ecosystem services like water cycling and carbon storage (Gosnell et al., 2019).

2.4 | Analysis

We applied thematic analysis (Vaismoradi et al., 2013) to our data using NVivo 12 (QSR, 2020). First, we identified and classified the types of rewilding perceptions present. Second, we identified and classified attitudes to each rewilding practice (as positive, negative, or neutral/undecided). Based on the number of attitudes in each class across the three rewilding scenarios, we heuristically classified the participants into general rewilding 'support categories'. Participants were classified as either 'concerned' (two negative attitudes, one undecided), 'mixed-attitudes' (both positive and negative attitudes present), 'undecided' (two or three undecided attitudes, no negative ones) or 'pro-rewilding' (all three attitudes positive). No 'opposed' category was created since no respondent expressed uniformly negative attitudes. Third, we examined the justifications for different attitudes to identify any central themes relating to attitudes and the types and content of the underlying perceptions. Lastly, we compared the justifications for attitudes within and across the support categories to determine if any patterns of perceptions were consistently related to a particular attitude or support category.

TABLE 2 Hypothetical rewilding scenarios introduced in the interviews to understand perceptions of rewilding

Hypothetical scenario	Description (as presented to participants)
1. Beaver release	A group of local charities and land management organisations obtains a licence and releases several pairs of beavers to the local waterways. The animals are free-living and as the population grows, they are expected to spread further across the watershed
2. Restoration of ecological processes on a private farm	A private landowner, with the support of researchers and conservation NGOs, decides to stop conventional agriculture on their farm with marginal land and lets natural vegetation and wildlife recover in a hands-off approach. Within a fenced area, the landowner also introduces free-roaming animals like long-horn cattle, heritage pig breeds and wild ponies to imitate extensive, natural grazing by wild herbivores. The landowner harvests the meat of these animals for sale and diversifies the farm income by receiving tourists
3. Landscape-scale ecosystem restoration	A partnership of local landowners, including individuals, charities, government bodies, and private companies, joined together to implement a landscape-scale approach to the management of a large area of land. Activities might include reducing the management of land, allowing a more natural flow of water, allowing the return of more natural vegetation on some parts of the land, and reintroducing animals like semi-wild cattle and ponies or previously lost species like pine martens and beavers

3 | RESULTS

3.1 | Results overview

Our analysis revealed a wide range of farmers' attitudes to rewilding practices, from strongly opposed to enthusiastically supportive. The attitudes were shaped by a complex interaction of varying perceptions of how rewilding will function, how it will affect social and ecological outcomes and sit with farmers' values (Figure 2; Table 3). Perceptions of how rewilding would function, that is, the mental models, focused mostly on beliefs about how nature and economy work and how they would change with rewilding. Perceptions of how rewilding would affect social impacts were grouped around material (e.g. damage to agricultural production), relational (e.g. new market opportunities) and subjective (e.g. connecting with nature) effects on people's wellbeing (Table 3). Perceptions of how rewilding would influence ecological outcomes were centred around ecosystem complexity and the conservation of existing species (Table 3). The last type of perception was the perceived fit with values. Values expressed by the participants included some broad, transcendental principles, for example, producing food, as well as more variable contextual attachments and preferences, for example, for the aesthetics of managed versus unmanaged landscapes (Subjective Impacts, Table 3). Comparisons across interviews revealed repeating patterns of transcendental values, suggestive of a set of collective farming value principles: environmental stewardship, food production to ensure food security, making a living from the land, countryside and farming heritage preservation, and respect for farmers' autonomy and property rights (Table 4). These collective farming values varied in salience and importance between participants, implying different levels of internalisation.

Based on our analysis, attitudes were related to perceptions of five 'core issues', including (1) the necessity for nature restoration, (2) ecological effectiveness of rewilding, (3) compatibility with ensuring food security, (4) compatibility with rural ways of life and (5) social justice of rewilding efforts. The importance of these issues was rooted in their connection to the collective farming values principles. Causal mental models underpinned the perceived social and ecological outcomes of rewilding (Figure 2). The perceived fit between the impacts and individual's values determined if a rewilding scenario was evaluated as compatible with the core issue at hand. Finally, an attitude to a rewilding scenario depended on how a participant weighed the perceived impacts across all the core issues that mattered to them.

Because we framed our interviews in terms of 'restoration' rather than 'rewilding', it is important to consider how participants responded to this framing and whether the interpretation in terms of rewilding is warranted. In the context of this framing, the participants themselves spoke of 'restoration', 'recovery', 'regeneration', and, sometimes, 'rewilding'. This is reassuring, as these related terms suggest we have successfully tapped into a shared concept of restoration as an action that helps nature move to some healthier ecological state, which is a key feature of rewilding that we wanted to convey with the use of the term 'restoration'. However, there are likely to be some differences in the way that different farmers differentiate and use these terms, which were not explored in this study. Additionally, the second characteristic of rewilding, that of minimising human interventions, has also come through, evident in the ways that participants considered potential trade-offs between the discussed scenarios and human activities in the landscape (see Sections 3.4–3.6). Thus, we are

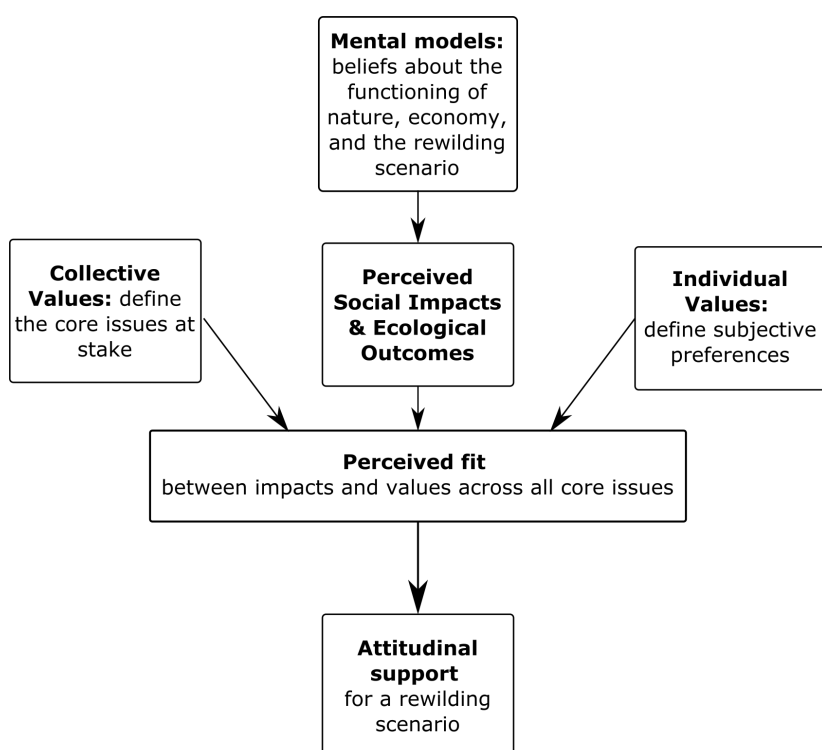


FIGURE 2 Conceptual model emergent from analysis on the inter-relationships between different types of rewilding perceptions and their influence on attitudes to rewilding scenarios.

TABLE 3 Social impacts and ecological outcomes that the respondents expected from different restoration scenarios. Social impacts are grouped by the affected components of wellbeing. B = beaver release, F = farm-scale restoration, L = landscape-scale restoration, L* = possible, depending on the type of implemented interventions. P = large predator reintroductions. Other forms of restoration: R = regenerative farming, All = all mentioned scenarios, ? = impact disputed or uncertain

Core issue	Wellbeing component	Opportunities	Risks
Material impacts			
4	Farming conditions	<ul style="list-style-type: none"> Water retention and access at times of drought (B, onsite) Increased ecosystem services like pollination and natural pest control (R, F, L, onsite and neighbours) Mob grazing can reduce livestock parasite load (R, onsite) 	<ul style="list-style-type: none"> Reduced production from farmland wetting or flooding (B), or from the increased abundance of potentially damaging species (crop damage, livestock predation, disease transmission) (B, F, L*, onsite and neighbours) Semi-wild livestock spreading disease. (F,L, onsite and offsite) Livestock predation, loss of genetic material and breeding work (P)
4	Farming business	<ul style="list-style-type: none"> Higher margins due to lower production costs and inputs balanced with outputs (R) Income diversification, for example, from tourism (All) 	<ul style="list-style-type: none"> Decrease in income and land value in case of lower land productivity or land taken out of production (All, onsite)
4	Safe and Clean environment	<ul style="list-style-type: none"> Cleaner air, water and healthier soils leading to better carbon storage and absorption (All) Flood and drought mitigation improved through river damming and wetland creation (B), reduced soil erosion and better water absorption capacity (F, R, L*) 	<ul style="list-style-type: none"> Carbon storage reduction due to tree felling by beavers Localised flooding upstream of beaver dams Danger to people's safety from untamed livestock (e.g., trampling) and predators attacks (wolves only) (F, L*, P)
4	Health	<ul style="list-style-type: none"> Enhanced physical and mental health through recreation in natural spaces (All) 	<ul style="list-style-type: none"> Injuries from semi-wild livestock or predator attacks (F, L, P) Mental health deterioration due to negative emotions arising from material or cultural damages from rewilding (All)
Relational impacts			
3	Food Security and Ethics of food production	<ul style="list-style-type: none"> High nutritional value of crops and meat in restorative systems (R, F) Restoration of productive capacity to land (R) 	<ul style="list-style-type: none"> Lower food availability and access, and higher prices if production was reduced (All) May lead to higher global environmental costs of production and lower welfare standards if compensated by imports from less regulated places (All)
4	Welfare of Rewilded Animals	<ul style="list-style-type: none"> Disputed: ability to provide appropriate veterinary and nutritional care to rewilded livestock, safety and welfare of reintroduced species, for example, dogs killing beavers 	
4	Interpersonal relationships	<ul style="list-style-type: none"> Engagement in non-conventional agriculture offers potential for (vicarious) friendships with like-minded farmers (R, F) 	<ul style="list-style-type: none"> Increase in anti-social behaviours linked to increased tourism, for example, littering or dogs off-leash around livestock linked to increased tourism (All) Engagement in non-conventional agriculture can strain relations with neighbouring farmers (R, F)
4	Social capital and community cohesion	<ul style="list-style-type: none"> Building networks and collaborations with like-minded farmers or around a restoration project (All) 	<ul style="list-style-type: none"> Polarising views and community division over public restoration projects (B, P, L*) Potential reputational risks to NGOs involved (All)
4	Markets	<ul style="list-style-type: none"> Potential to develop the tourism industry, subject to dilution effect (All), and to create markets for local healthy, carbon-friendly meat (F, R) 	<ul style="list-style-type: none"> Reduced workforce demand and employment opportunities (F, R, L*)
5	Fairness and Equality		<ul style="list-style-type: none"> Landowners expected to bear the costs of reintroductions while benefits accrue elsewhere (B, P). In case of lower food production, reduced food availability and increased prices likely to most affect poorer households (All)

(Continues)

TABLE 3 (Continued)

Core issue	Wellbeing component	Opportunities	Risks
Subjective impacts			
5	Autonomy and Self-direction	<ul style="list-style-type: none"> Sympathisers: Ability to enact a restoration vision, source of motivation, sense of purpose and achievement (All) 	<ul style="list-style-type: none"> Opponents: Loss of control and decision-making power over one's land and livelihood and consequently of a source of purpose, achievement and self-worth. (B, P, L, onsite)
4	Cultural heritage and Legacy	<ul style="list-style-type: none"> Sympathisers: Sense of 'giving back' to nature and future generations, returning to a more equal and harmonious relationship with nature (All) 	<ul style="list-style-type: none"> Opponents: Perceived undermined respect for and the recognition of farmers' way of life, identity, and environmental achievements. Threat to cultural traditions & family legacy. Threat to countryside heritage and traditional landscapes.
4	Nature contact and connection	<ul style="list-style-type: none"> Enhanced through increased natural habitats and opportunities to see wildlife but depending on access (All) 	<ul style="list-style-type: none"> Reduced if previously enjoyed areas altered, for example, through beaver cutting beloved or heritage trees (B), or introduction of untamed, intimidating livestock limiting access to previously used recreational areas (F, L*)
4	Landscape aesthetics	Restored landscapes may be seen as 'ugly, messy and untidy' or 'beautiful, vibrant and alive' depending on individual preferences (All)	
4	Emotions	Dependent on perceptions of other impacts. Positive: for example, curiosity, enjoyment, happiness, pride, satisfaction. Negative: for example, sadness, anger, despair, 'heartache'	
Conservation goals		Ecological outcomes	
1,2	Ecosystem complexity	<ul style="list-style-type: none"> Increased ecological disturbance through beaver and large herbivore activity (R, F, L*); enhanced network of riparian and wetland habitats (B); seed, microbe and fertiliser dispersal by large herbivores (F, L, R), although limited by fencing (F) Increased habitat diversity and complexity, biodiversity and abundance of associated species (B, R, F, L*) Wildlife population control by large predators (P) 	<ul style="list-style-type: none"> ? Long-term effectiveness at restoring ecological integrity disputed where grazing is unmanaged (F, L*) ? Wildlife population control by large predators disputed due to low expected predator numbers (P).
1,2	Conservation of existing species	<ul style="list-style-type: none"> Increased habitat area and connectivity for threatened species (B, R, F, L*) 	<ul style="list-style-type: none"> Potential negative impacts on existing protected species, for example, due to changing habitat mix or predation by reintroduced species or increased abundance of predators (All)

confident in interpreting the attitudinal results as pertaining to rewilding practices, although not necessarily to the participants' own notions of what rewilding means.

Similarly, the labels and definitions applied to the concepts identified in our analysis were intended to best capture the common symbolic meaning of similar ideas, but do not necessarily reflect the diversity of terms used to express those ideas by the participants. For example, the value we labelled as 'environmental stewardship' (Table 4) was variously expressed by the participants, for example, as taking the role of 'stewards' 'custodians' and 'caretakers' of the land, the 'duty to look after biodiversity', farming 'as sustainably as possible and eliminating pollution from farming' and 'putting back' into the land and environment more than one takes out (S12).

The remainder of the results explores in-depth the perceptions around the five core issues and how they affected support for rewilding scenarios.

3.2 | Issue 1: Is restoration needed?

The first issue concerned the question of whether nature in Britain needs restoring at all. Nearly all the participants expressed in some way that environmental stewardship was an important value to them (Table 4) and considered rewilding scenarios in light of the need to help nature. Only two participants negated this idea. One participant, although embracing the value of environmental stewardship and describing himself as an 'animal-friendly man', was puzzled by the idea that British nature needs restoration, signalling a lack of awareness of environmental damage in his mental model: '*...we have natural vegetation in all our woodlands. Why do we need more? And letting it recover, it's not suffering round here to my knowledge, so why does it need to recover? ... and I don't think we need any more types of wildlife, I think we have sufficient*' [AB01].

The other participant simply did not consider whether nature needs restoring for nature's sake, focusing solely on the direct costs

TABLE 4 Collective value principles related to farming and the appropriate relationship between nature and food production, ordered by related core issues

Core issue	Value	Definition	Example
1,2	Environmental stewardship	A belief that nature and its protection are important and that they should constitute elements of good farming. Various expressed as taking the role of 'custodians', 'caretakers', or 'stewards' of the land, the duty to look after biodiversity, farming as sustainably as possible, eliminating pollution from farming, and 'putting' back to the land and environment more than one takes out	'[T]he guy who works for us once a week says there's more nature here on this farm, more wildlife here on this farm than anywhere else he works. And, I think that's probably, that's important for me.' [LE04]
3	Food production to ensure food security	A belief that the production of food and fibre to supply people's needs is an important role and responsibility of farmers. Various considered at the national level (responsibility to provide food for the nation)	'... the majority of farmers and particularly the farmers in our area, we are trying to produce the best quality, the highest welfare, food that we possibly can. We want to get that onto the shelves, we want the public to know how much work and effort we are putting into producing such quality product, be that meat or vegetables, arable farmers, dairy farmers, whichever it is.' [AB03]
4	Making a living from the land	A belief that it is important that farmers or landowners should be able to support themselves from the land they own or farm	'And making a profit, of course, you have got to make a profit! I'm not going to be shy about that. I want to make some money so I have got time to relax as well.' [SB01]
4	Countryside and farming heritage preservation	A belief that it is important to respect and preserve farming identities, traditions and family legacies, and to conserve traditional rural landscapes and countryside heritage	'[I]f it was our farm, it'd be devastating because I basically would not get to be a farmer anymore. ... That's an element of my job which I enjoy, integrating with the food production. If it was on my doorstep ... and I still got to be a farmer? I think brilliant!' [AB07, re farm restoration]
5	Respect for farmers' autonomy and property rights	Deeply held respect for the right of the landowner to decide what should happen on their land and how it should be managed	'I've always been of the mind that if someone wants to do something with their farm, with their land then, you know, it's their property. They can do exactly what they want as long as it's legal of course. But you know, they are quite right to do whatever they want.' [LE03]

and benefits to humans, suggesting a utilitarian approach to valuing nature: '...all these animals that were effectively trapped or shot to extinction in this country was for a reason because they didn't do any good at all. It's a bit like having a wasp.... The best you want to do is squash the bloomin thing because all it does is sting you. But at least if you get a bee, that makes you honey so you're not gonna squash that one. So I'm not really in favour of introducing all these wild animals and letting them roam freely' [AB13, re reintroductions].

Aside from these two exceptions, there was agreement that environmental conditions in Britain need improvement. Some considered nature recovery as an issue of moral obligation and a high priority for farming: 'I think now, moving forward, the role of the farmer is the custodian for the natural landscape that he's responsible for. And because of the overarching depletion of it globally and anywhere, it's no longer about being able to use your land to make as much money as possible... You now have a greater responsibility for re-generating it or maintaining it' [KM03]. Others believed that nature's recovery, although necessary, must be closely balanced with other needs and concerns.

3.3 | Issue 2: Is rewilding ecologically effective?

The second issue was that of the ecological efficacy of rewilding. Those whose mental models indicated that nature needs to recover considered rewilding scenarios in terms of its ecological impacts and the potential to help British nature. Most believed that rewilding would result in ecological benefits (Table 3). The expected benefits of beavers were related to the creation and improvement of wetland habitats, while farm and landscape-scale rewilding were expected to improve soil functioning, seed dispersal and biodiversity of grassland and shrub habitats. However, not all agreed.

Some questioned the logic of species reintroductions as a conservation strategy, particularly predators, believing they 'could be a threat to ...native species, the ground-nesting birds.' [AB03]. An argument was made that rewilding is an unnecessary distraction to the conservation of existing species: '...if we want to go back about 50 or 70 years and have the diversity we had then, then maybe we actually just move down that more organic mixed farming route, because that's what provided that biodiversity... It wasn't rewilded landscapes that provided

that biodiversity that we've lost, especially in this country that's so managed' [AB11, re farm-level restoration].

Some also believed that in the absence of predators, naturalistic grazing under regenerative agriculture is actually more ecologically effective: *'I think that is a weakness in [that] system ...that there are no wolves chasing those cows too much. (...) If ...you don't have the ability to get predators in, then ...for the best possible environmental health, ...you have to be able to mimic that predator pressure'* [KM01, re farm-level restoration]. However, the predominant perception was that rewilding would benefit nature.

3.4 | Issue 3: Is rewilding compatible with ensuring food security?

The third issue concerned food production and security. The vast majority of participants identified producing sufficient amounts of high-quality food to supply the nation as a primary role of farmers in the United Kingdom, highlighting the importance of this value to the farming community (Table 4). Some of the participants believed that the rewilding scenarios discussed could be compatible with productive rural landscapes, as an element of larger, diverse, nature-friendly networks of different management and land-use forms. They also thought that food produced within them would have high nutritional value. However, most participants worried that rewilding could threaten food security—and farmers' identity as *'principal food providers for the country'* (Table 4).

Materially, all three scenarios were considered to have the potential to reduce the amount of food produced at the site of implementation, either by decreasing the land's productivity or by removing parcels of land from production entirely: *'if it was the wrong area and we started to have more land flooded then obviously that land [would go] out of production for food and it's just getting that compromise of food and wildlife.'* [AB04]. For this reason, participants often favoured the idea of rewilding happening on unproductive lands or on a smaller scale.

Moreover, there was a fear that nature restoration in the United Kingdom at the expense of farmland could lead to importing foods with potentially higher environmental footprint and lower animal welfare standards. Such an outcome was considered ecologically ineffective and immoral, conflicting not only with the value of producing food to feed people but also with environmental stewardship (Table 4): *'[We] are from one acre here producing the same as five to ten or more acres over in Australia. ...if we set aside 10,000 hectares in the UK that's 100,000 or 200,000 in Australia, or it's 20,000 in South America, and I would say ...that's probably irresponsible. ...I don't think our bees are worth more than their bees. (...) an acre of our landscape isn't worth five or ten acres of somebody else's landscape.'* [AB07].

3.5 | Issue 4: Is rewilding compatible with rural economies, livelihoods and ways of life?

The fourth issue concerned how rewilding would fit with the social fabric of rural life, that is, with the economic, social, cultural and

emotional relationships that farming families have built with their localities. This issue was linked to the widest array of perceived social impacts (Table 4) and was underpinned by two values: making a living from the land and preserving the countryside heritage and family farming legacies.

The positive perceptions centred on two elements. One was the belief that *'if you get it right,'* rewilding had the potential to bring *'big benefits for the agricultural socio-economics within that area in terms of connecting people together, ...branding or market opportunities'* [KM10, re landscape restoration], linked to perceived *'demand for tourism'* and *'local, healthy meat.'* The second element was the perceived benefits linked to a subjective preference for wilder landscapes and a more harmonious relationship with nature. Some who shared this preference felt that the lack of *'changes that have ecological health in mind'* currently has *'a really bad impact on [their] wellbeing, so if they were happening in [their] area, it would directly benefit [them]'* [LE01, re landscape restoration]. Rewilding was expected to enrich rural landscapes, providing spaces to connect with wild(er) nature. Rewilding (and regenerative farming) was also seen as a possibility of creating a new kind of legacy, *'giving something back'* to nature and future generations, *'something that is creating more for others later, not just our kids but if it's not other people, it's the opportunity for other wildlife'* [KM06].

The negative perceptions were based on economic beliefs and subjective attachments mirroring but opposite to those of enthusiasts. Economically, there were fears about impacts on farming businesses and the associated emotional distress, for example, *'if you woke up every morning and say the beavers had knocked down another set of trees that you'd planted and ...when it came a lot of rain, land was flooded then ...that would be pretty detrimental to your mental health ...and wellbeing.'* [LE03, re beaver release]. There was also the worry that successful tourism enterprises are not *'going to be ...replicable on every rewilded landscape'* and that rewilding on a wide scale could *'reduce a lot of the labour,'* negatively impacting local communities. Negative perceptions of subjective impacts were rooted in attachments to the traditional *'iconic British landscape,'* involving the tamed and peopled rural spaces. Participants worried that unmanaged landscapes would *'look a bloomin mess,'* that rewilding could damage cultural heritage, for example, by beavers *'chewing historic trees,'* and that it could sever the ties between farming families and their land. Again, some advocated for regenerative farming involving naturalistic grazing as a more suitable socio-economic alternative to rewilding, which can provide *'all of the ecological benefits that you get from that sort of rewilding, and at the same time... produce food and have businesses working in the countryside..., leave farmers on the land that they have been on for generations that they have worked with their families, without having to shake them of it'* [AB11, re farm-level restoration].

3.6 | Issue 5: Will rewilding projects be socially just?

The final issue was social justice, and it was reflected in the perceived impacts on the wellbeing domains of equality and fairness

and in autonomy and self-direction (Table 3). Here, the value of respecting farmers' autonomy and property rights (Table 4) was highly visible; farmers were less accepting of rewilding scenarios where the perceived impacts spilt over to areas managed by people not involved in the decision-making. For example, very few participants outright rejected the farm-level restoration scenario, even if they did not agree with it, because they perceived its impacts as localised and because they believed that every landowner has the right to decide how best to manage their land. In contrast, the case of reintroduced beavers wandering onto the land of someone who did not want them there was invoked as an infringement on the landowners' rights.

Landscape-scale restoration and species reintroductions also evoked fears about unequal cost distribution: *'[if] a pair of beavers ... make a dam below a housing estate that then floods 300 homes ... what's the difference between that and ... flooding 300 acres of someone's livelihood.'* [LE03]. Key tools suggested to mitigate unfair costs, particularly for species reintroductions, included management plans with a long-term allocation of responsibilities, an exit strategy and either incentives or compensation for material losses of income and assets. However, livestock farmers emphasised that adequate compensation for depredation by reintroduced predators was not possible due to emotional distress and loss of genetic material.

There were also fears of possible top-down imposition of rules in landscape-scale projects. For some, these fears were informed by past experiences of certain agri-environmental schemes with rigid conservation targets and prescriptive management, which reportedly ignored farmers' local knowledge yet blamed them if the desired outcomes were not achieved: *'I think ... when schemes were set up, there wasn't really a definitive pathway in what was going to happen. There was a sort of, if we take all the sheep and all the cows off the moorland, it's going to be better. Ten years later, when forty per cent of it is covered by gorse that's five-foot-high, well that's your fault. (...) when ... initially, an awful lot of those farmers would have said, if you want ground-nesting birds, you have to let me burn it.'* [KM08].

Most participants stressed that to preserve farmers' autonomy and ensure the recognition of farmers' voices, any projects involving multiple landowners should be voluntary, grass-root, ensure collaborative decision-making, and give value to local knowledge and experiences. Participants also emphasised the crucial role of good communication and responsiveness: *I was pretty against the [raptor reintroduction] project at the start to be honest... but when they came to us with their ideas and we sat around the table with them ... they did not only answer our questions, they did adapt their ideas around our responses* [KM07]. Finally, farmer representatives highlighted the need for skilled, charismatic and trust-inspiring individuals who can organise and galvanise others for action.

3.7 | Rewilding support

The complex interaction between different types of rewilding perceptions (values, perceived social and ecological impacts, and causal mental models) meant that no single type of perception was alone

sufficient to infer the attitude to a particular scenario and that no rewilding scenario was consistently favoured over others. However, certain patterns could be distinguished in how participants in each support category evaluated all three scenarios against the five core issues.

The participants in the 'concerned' category ($n = 3$) rejected most rewilding proposals based on their perceived incompatibility with ensuring food security and with maintaining rural economies and ways of life. Some also believed that rewilding was ecologically ineffective. The 'concerned' participants identified a range of negative social impacts and few or no positive impacts.

The participants in the pro-rewilding category ($n = 12$) believed that the current agricultural system is unsustainable and that ecological restoration is urgently needed. They thought that rewilding had a part to play in achieving this vision and was largely beneficial across all wellbeing dimensions. Nonetheless, even within this category, there was some resistance towards farm-scale rewilding as being ecologically less effective than regenerative farming.

The participants in the mixed-views category ($n = 5$) tended to strongly perceive the need to restore nature in the United Kingdom but they were unconvinced of the benefits of the area-based scenarios. Some rejected the farm-level and landscape-scale restoration scenarios as ideologically driven, threatening to food security and rural communities, and ecologically ineffective. Others perceived rewilding as ecologically effective and likely beneficial to rural economies but were concerned either about the impacts on food security, or about rewilding projects imposing on farmers' autonomy and ability to make a living from their land.

Participants in the 'undecided' category ($n = 16$) were typically concerned about those same issues as one of the previous three categories but were more ambivalent about their conclusions on those issues. Neutral or undecided responses were common when participants (i) perceived trade-offs between impacts on different issues, (ii) lacked knowledge of impacts or (iii) had not deliberated the impacts of restoration before (unclear mental models). Participants with 'conditional' attitudes felt that judgement must be made on a case-by-case basis and depend on the way that each project and its governance unfold in real life.

4 | DISCUSSION

Interest in new rewilding initiatives in the United Kingdom is rapidly expanding (Rewilding Britain, 2020). This may be further bolstered through the introduction of the post-Brexit Environmental Land Management Scheme (ELMS) that will likely incentivise 'nature recovery' and the creation of 'wilder landscapes'. As such, rewilding could become a widespread land use in the United Kingdom in the coming decades. Given that around 70% of the UK's area is owned or managed by farmers (DEFRA, 2020b), collaboration and engagement with the farming community will be necessary to advance this vision. Our study maps the core issues that matter to the English farming community in relation to rewilding, the range of farmers'

perceptions of those issues, and the way these perceptions shape farmers' attitudes to rewilding practices. Rewilding perceptions were elicited using three hypothetical scenarios, including the release of free-ranging beavers, a fenced rewilding of a farm using reintroduced wild and semi-domestic herbivores, and a landscape-scale multi-stakeholder partnership to rewild a larger piece of land. We identified five core issues that structured the perceptions and attitudes towards rewilding practices: (1) the perceived need for ecosystem restoration, (2) ecological effectiveness of rewilding, (3) compatibility with food security, (4) compatibility with rural lifestyles and (5) social justice of rewilding initiatives. The farming value principles in which these issues are rooted appear widely shared and consistent with those found elsewhere, for example, in Europe and North America (Burton, 2004; Burton & Wilson, 2006; Chapman et al., 2019), suggesting that the identified criteria against which farmers commonly evaluate rewilding practices may also be relevant in some contexts beyond England.

Our findings contribute to the literature about the influence of people's perceptions on conservation support by showing how different types of perceptions may interact to affect attitudes (Bennett, 2016). According to our analysis, individuals assess rewilding scenarios across the core issues that matter to them, based on the perceived fit between their values and the perceived social impacts and ecological outcomes. The perceived social and ecological impacts, in turn, depend on the mental models, that is, causal assumptions about the consequences of rewilding practices (Jones et al., 2011). Mental models that are incompatible with rewilding and the perceived incompatibility between values and rewilding appear as the primary sources of opposition to rewilding. As heuristic devices, mental models can be changed in light of new information (Jones et al., 2011). However, subjective, value-based principles and preferences are notoriously difficult to change (Fulton et al., 1996; Manfredo et al., 2017). Hence, we argue that depending on whether negative perceptions stem from individuals' mental models or values, there will be limits to the extent to which negative perceptions can be accommodated for without compromising on rewilding's own goals.

The five core issues identified here provide a simple framework to make sense of and engage with the complexity of farmers' views on rewilding. Below, we consider what these issues mean for rewilding research and practice, and the scope for engaging with them to increase support for rewilding.

4.1 | Rewilding practice through the prism of core issues that matter to farmers

Farmers' positive perceptions on the first two core issues, that is, on the need for ecological recovery and the best means to achieve it, rely on embracing the value of environmental stewardship and congruent mental models. Environmental stewardship appears a widely shared value principle among English farmers (Wheeler et al., 2018), but our data highlight that not all farmers are convinced that

rewilding supports this value. This happens either because they see British ecosystems as healthy and hence see no need for rewilding and other forms of restoration, or because they perceive rewilding as ecologically ineffective, especially relative to other approaches like regenerative farming. The first of these beliefs is factually incorrect: England is one of the most biodiversity-depleted countries in the world (Sanchez-Ortiz et al., 2019). The second assumption, regarding the relative ecological inefficacy of rewilding, remains largely unverified, highlighting the need for more research into multidimensional outcomes of different land-use scenarios (Balfour et al., 2021). Addressing the challenges to rewilding presented by these mental models requires robust data and social engagement, ideally through participatory processes that facilitate social learning and potential revision of beliefs (Welp et al., 2006).

The farmers' concern about the trade-off between food security and ecosystem restoration aligns with the wider debates about sustainable intensification and land-sparing versus land-sharing (Godfray et al., 2010). Research is needed into the multidimensional costs and benefits associated with different scenarios involving various configurations of land uses, types of farming and ecological restoration efforts (Balfour et al., 2021). To the extent that the results would support compatibility between food security and rewilding, they may help to dispel some of the resistance to rewilding. However, our data suggest that the objective concern about food security is often entangled with the subjective attachment to the value of producing food: English farmers are proud of their role as the 'principal food providers' for the country. This identity is reinforced by the dominant narrative linking food security to continued production increases and the availability of plentiful, cheap food—a narrative that has been institutionalised for decades (Burton & Wilson, 2006). Now, hailed by the switch to the ELMS, the institutional and societal rhetoric on the role of farmers increasingly shifts towards custodians of the environment and providers of multiple ecological services. Research to date suggests farmers are keen to adopt environmental approaches that fit within or alongside their identity as food producers (Wheeler et al., 2018). However, any changes perceived as conflicting with or requiring a shift away from this identity are likely to be resisted and to unfold in a nonlinear fashion (Burton & Wilson, 2006; Manfredo et al., 2017).

The value and self-identities linked to food production interlock with concerns about rewilding's fit into the social fabric of rural England, and the subjective preferences for tidy, tame and productive rural landscapes. Together, they foster the normative belief (shared by many, although not all, farmers) that in Britain's crowded and heavily anthropogenic countryside, nature should be controlled. This belief clashes sharply with rewilding's core aim to create space for self-willed, dynamic ecosystems with minimal human intervention (Carver et al., 2021). As a result, farmers can prefer alternative solutions to rewilding such as regenerative agriculture, and be more accepting of rewilding projects that are fenced, occur on a small scale, on marginal land, and where any reintroduced species are tightly managed. Meanwhile, the more 'radical' rewilding approaches aiming to achieve fully functioning ecosystems governed by natural

processes are effectively curtailed by the subjective preferences for more managed and tame landscapes. This is reflected in the current trend for the apparent 'domestication' of rewilding projects in the United Kingdom, which tend to be smaller scale, maintain higher levels of human intervention and have lower ambitions for restoring ecosystem function, biodiversity and natural autonomy than elsewhere in Europe (Martin et al., 2021; Thomas, 2021).

Our findings highlight also the importance of rewilding's engagement with the multidimensional issue of justice, that is, with issues of participation, recognition and fair impact distribution (Sikor et al., 2014). Due to the widespread value of respecting landowners' right to decide what happens on their land, justice considerations are especially important for rewilding initiatives backed by public bodies or NGOs and are less of an issue when confined to private land. The need for participation and the need for recognition are both inscribed within the guidance on rewilding, for example, in the postulates for local consultation, recognising the value of local knowledge, co-design and participatory decision-making, (Perino et al., 2019; Rewilding Britain, 2021). However, the need for distributive justice appears less acknowledged (Wynne-Jones et al., 2018). Rewilding proponents tend to emphasise the economic benefits, for example, from tourism, but these remain uncertain (Sandom et al., 2019; Wynne-Jones et al., 2020).

Given that the broad headlines of the ELMS include 'wilder' landscapes as something farmers could be incentivised to do, there is a need to ensure robust data and a better dialogue over the multidimensional outcomes of different approaches that might be encouraged in the new schemes. Since incomes from the EU Basic Payments Scheme ('BPS', which many farmers rely on) are being phased out, ELMS payments due to replace them may help to increase the attractiveness of rewilding to landowners, as might opportunities for carbon and biodiversity offsetting outside of the ELMS. However, there is controversy around the accessibility and distribution of benefits from the ELMS as currently proposed (Stanley, 2022). The lion's share of the payments will likely go to the largest landholders and the most accessible ELMS tier will not match the current incomes from the BPS (DEFRA, 2021). This inequality may threaten the livelihoods of many farmers and breed further resentment towards rewilding.

Another outstanding issue of environmental justice revolves around solutions to increase the equitability of the distributions of the social costs of rewilding. In the European agri-environment policies, these figure, for example, as damage compensation for losses to large carnivores (Bautista et al., 2019). In the United Kingdom, compensation has only been experimented with, for example, in relation to whitetail eagles' reintroduction (Sandom & Wynne-Jones, 2019), but so far has not been implemented in policy. If we are serious about promoting greater acceptance and uptake of rewilding through the ELMS package, the issues of social justice and cost redistribution mechanisms should be given ample consideration. The co-design processes currently ongoing between Defra and farmers on ELMS (Hurley et al., 2022) could be an appropriate forum to explore the available options.

5 | CONCLUSION

As rewilding becomes more common, it is important to understand how different stakeholders might engage with this practice. Our research shows that in England, farmers' attitudes towards rewilding revolve around perceptions of five core issues: the perceived need for restoration, rewilding's ecological efficacy, compatibility with food security, compatibility with rural lifestyles, and justice. While some members of the English farming community feel enthusiastic about rewilding proposals, others remain more cautious or opposed to them. Engaging with the core issues outlined here may help rewilding proponents to widen the support for rewilding initiatives within the farming community, particularly among those whose opinions are currently undecided.

However, it is important to recognise that part of rewilding is about bold ambitions aiming for large-scale, connected habitats with all trophic levels present, including large predators. Many farmers perceive these ambitions to strike at the very essence of what farming is and to stand in direct opposition to the values they hold. Although the institutional and societal rhetoric on the role of farmers increasingly shifts towards custodians of the environment and providers of multiple ecological services, other farming values that are often perceived as less compatible with rewilding are unlikely to change rapidly. Hence, pursuing ambitious rewilding goals may likely lead to conflicts, which will need to be grappled with on both sides of the debate. Moreover, the real and substantive issues around the distribution of costs and benefits arising from any incentives promoting rewilding as a form of land use must be tackled head-on by policymakers. Recognising the common area of agreement—the need to look after the environment—and engaging with key farmer concerns can serve as a good entry point to facilitate stakeholder dialogue and negotiate the path forward.

AUTHORS' CONTRIBUTIONS

K.M.M., H.C.W., N.J. and C.J.S. conceived the research; K.M.M. led the development of the methods with inputs from all other co-authors; K.M.M., A.B., S.B. and L.E. conducted the interviews; K.M.M. analysed the data and wrote the first draft of the manuscript. All authors contributed to the development of the manuscript and approved the final version.

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CONFLICT OF INTEREST

The authors declare no conflict of interest.

DATA AVAILABILITY STATEMENT

Full transcripts of the interviews cannot be made available to avoid compromising respondents' anonymity. Additional quotes illustrating the coding decisions made during the analysis are available in the Codebook (SI2).

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REFERENCES

- Auster, R. E., Puttock, A., & Brazier, R. (2020). Unravelling perceptions of Eurasian beaver reintroduction in Great Britain. *Area*, 52(2), 364–375. <https://doi.org/10.1111/area.12576>
- Balfour, N. J., Durrant, R., Ely, A., & Sandom, C. J. (2021). People, nature and large herbivores in a shared landscape: A mixed-method, exploratory study of ecological and social outcomes from agriculture and conservation. *People and Nature*, 3(2), 418–430. <https://doi.org/10.1002/pan3.10182>
- Ban, N. C., Gurney, G. G., Marshall, N. A., Whitney, C. K., Mills, M., Gelcich, S., Bennett, N. J., Meehan, M. C., Butler, C., Ban, S., Tran, T. C., Cox, M. E., & Breslow, S. J. (2019). Well-being outcomes of marine protected areas. *Nature Sustainability*, 2(6), 524–532. <https://doi.org/10.1038/s41893-019-0306-2>
- Bautista, C., Revilla, E., Naves, J., Albrecht, J., Fernández, N., Olszańska, A., Adamec, M., Berezowska-Cnota, T., Ciucci, P., Groff, C., Härkönen, S., Huber, D., Jerina, K., Jonozovič, M., Karamanlidis, A. A., Palazón, S., Quenette, P. Y., Rigg, R., Seijas, J., ... Selva, N. (2019). Large carnivore damage in Europe: Analysis of compensation and prevention programs. *Biological Conservation*, 235(October 2018), 308–316. <https://doi.org/10.1016/j.biocon.2019.04.019>
- Bennett, N. J. (2016). Using perceptions as evidence to improve conservation and environmental management. *Conservation Biology*, 30(3), 582–592. <https://doi.org/10.1111/cobi.12681>
- Bennett, N. J., Di Franco, A., Calò, A., Nethery, E., Niccolini, F., Milazzo, M., & Guidetti, P. (2019). Local support for conservation is associated with perceptions of good governance, social impacts, and ecological effectiveness. *Conservation Letters*, 12(4), e12640. <https://doi.org/10.1111/conl.12640>
- Berger, R. (2015). Now I see it, now I don't: Researcher's position and reflexivity in qualitative research. *Qualitative Research*, 15(2), 219–234. <https://doi.org/10.1177/1468794112468475>
- BLUE Campaign. (2022). BLUE Campaign. <https://bluecampaignhub.com/>
- Brueckner-Irwin, I., Armitage, D., & Courtenay, S. (2019). Applying a social-ecological well-being approach to enhance opportunities for marine protected area governance. *Ecology and Society*, 24(3). <https://doi.org/10.5751/ES-10995-240307>
- Burton, R. J. F. (2004). Seeing through the 'good farmer's' eyes: Towards developing an understanding of the social symbolic value of 'productivist' behaviour. *Sociologia Ruralis*, 44(2), 195–215. <https://doi.org/10.1111/j.1467-9523.2004.00270.x>
- Burton, R. J. F., & Wilson, G. A. (2006). Injecting social psychology theory into conceptualisations of agricultural agency: Towards a post-productivist farmer self-identity? *Journal of Rural Studies*, 22(1), 95–115. <https://doi.org/10.1016/j.jrurstud.2005.07.004>
- Carver, S., Convery, I., Hawkins, S., Beyers, R., Eagle, A., Kun, Z., Maanen, E. V., Cao, Y., Fisher, M., Edwards, S. R., Nelson, C., Gann, G. D., Shurter, S., Aguilar, K., Andrade, A., Ripple, W. J., Davis, J., Sinclair, A., Bekoff, M., ... Soulé, M. (2021). Guiding principles for rewilding. *Conservation Biology*, 35(6), 1882–1893. <https://doi.org/10.1111/cobi.13730>
- Chapman, M., Satterfield, T., & Chan, K. M. A. (2019). When value conflicts are barriers: Can relational values help explain farmer participation in conservation incentive programs? *Land Use Policy*, 82(October 2018), 464–475. <https://doi.org/10.1016/j.landusepol.2018.11.017>
- Deary, H., & Warren, C. R. (2017). Divergent visions of wildness and naturalness in a storied landscape: Practices and discourses of rewilding in Scotland's wild places. *Journal of Rural Studies*, 54, 211–222. <https://doi.org/10.1016/j.jrurstud.2017.06.019>
- DEFRA. (2019). A green future: Our 25 year plan to improve the environment.
- DEFRA. (2020a). *Environmental land management: Policy discussion*. ELMS Consultation Document, February.
- DEFRA. (2020b). *Structure of the agricultural industry in England and the UK at June, UK annual times series: 1984 to 2020*.
- DEFRA. (2021). *Sustainable Farming Incentive: How the scheme will work in 2022*. <https://www.gov.uk/government/publications/sustainable-farming-incentive-how-the-scheme-will-work-in-2022/sustainable-farming-incentive-how-the-scheme-will-work-in-2022>
- DeSilvey, C., & Bartolini, N. (2019). Where horses run free? Autonomy, temporality and rewilding in the Côa Valley, Portugal. *Transactions of the Institute of British Geographers*, 44(1), 94–109. <https://doi.org/10.1111/tran.12251>
- Drenthen, M. (2018). Rewilding in layered landscapes as a challenge to place identity. *Environmental Values*, 27(4), 405–425. <https://doi.org/10.3197/096327118X15251686827732>
- Firmin, M. W. (2008). Themes. In L. M. Given (Ed.), *The sage encyclopedia of qualitative research methods* (pp. 868–869). Sage Publications.
- Fulton, D. C., Manfredo, M. J., & Lipscomb, J. (1996). Wildlife value orientations: A conceptual and measurement approach. *Human Dimensions of Wildlife*, 1(2), 24–47. <https://doi.org/10.1080/10871209609359060>
- Godfray, H. C. J., Beddington, J. R., Crute, I. R., Haddad, L., Lawrence, D., Muir, J. F., Pretty, J., Robinson, S., Thomas, S. M., & Toulmin, C. (2010). Food security: The challenge of feeding 9 billion people. *Science (New York, N.Y.)*, 327(5967), 812–818. <https://doi.org/10.1126/science.1185383>
- Gosnell, H., Gill, N., & Voyer, M. (2019). Transformational adaptation on the farm: Processes of change and persistence in transitions to 'climate-smart' regenerative agriculture. *Global Environmental Change*, 59(May), 101965. <https://doi.org/10.1016/j.gloenvcha.2019.101965>
- Holmes, G., Marriott, K., Briggs, C., & Wynne-Jones, S. (2020). What is rewilding, how should it be done, and why? A Q-method study of the views held by European rewilding advocates. *Conservation and Society*, 18(2), 77–88. https://doi.org/10.4103/cs.cs.19_14
- Hurley, P., Lyon, J., Hall, J., Little, R., Tsouvalis, J., White, V., & Rose, D. C. (2022). Co-designing the environmental land management scheme in England: The why, who and how of engaging 'harder to reach' stakeholders. *People and Nature*, 4, 744–757. <https://doi.org/10.1002/pan3.10313>
- Jones, N., Malesios, C., Kantartzis, A., & Dimitrakopoulos, P. G. (2020). The role of location and social impacts of protected areas on subjective wellbeing. *Environmental Research Letters*, 15(11), 114030. <https://doi.org/10.1088/1748-9326/abb96e>
- Jones, N., Ross, H., Lynam, T., Perez, P., & Leitch, A. (2011). Mental models: An interdisciplinary synthesis of theory and methods. *Ecology and Society*, 16(1). <https://doi.org/10.5751/ES-03802-160146>
- Jørgensen, D. (2015). Rethinking rewilding. *Geoforum*, 65, 482–488. <https://doi.org/10.1016/j.geoforum.2014.11.016>
- Kenter, J. O., O'Brien, L., Hockley, N., Ravenscroft, N., Fazey, I., Irvine, K. N., Reed, M. S., Christie, M., Brady, E., Bryce, R., Church, A., Cooper, N., Davies, A., Evelyn, A., Everard, M., Fish, R., Fisher, J. A., Jobstovogt, N., Molloy, C., ... Williams, S. (2015). What are shared and social values of ecosystems? *Ecological Economics*, 111, 86–99. <https://doi.org/10.1016/j.ecolecon.2015.01.006>

- Kenter, J. O., Raymond, C. M., van Riper, C. J., Azzopardi, E., Brear, M. R., Calcagni, F., Christie, I., Christie, M., Fordham, A., Gould, R. K., Ives, C. D., Hejnowicz, A. P., Gunton, R., Horcea-Milcu, A.-I., Kendal, D., Kronenberg, J., Massenberg, J. R., O'Connor, S., Ravenscroft, N., ... Thankappan, S. (2019). Loving the mess: Navigating diversity and conflict in social values for sustainability. *Sustainability Science*, 14(5), 1439–1461. <https://doi.org/10.1007/s11625-019-00726-4>
- Lorimer, J., Sandom, C., Jepson, P., Doughty, C., Barua, M., & Kirby, K. J. (2015). Rewilding: Science, practice, and politics. *Annual Review of Environment and Resources*, 40, 39–62. <https://doi.org/10.1146/annurev-enviro-102014-021406>
- Manfredo, M. J., Bruskotter, J. T., Teel, T. L., Fulton, D., Schwartz, S. H., Arlinghaus, R., Oishi, S., Uskul, A. K., Redford, K., Kitayama, S., & Sullivan, L. (2017). Why social values cannot be changed for the sake of conservation. *Conservation Biology*, 31(4), 772–780. <https://doi.org/10.1111/cobi.12855>
- Martin, A., Fischer, A., McMorran, R., & Smith, M. (2021). Taming rewilding—From the ecological to the social: How rewilding discourse in Scotland has come to include people. *Land Use Policy*, 111, 105677. <https://doi.org/10.1016/j.landusepol.2021.105677>
- Matzek, V., & Wilson, K. A. (2021). Public support for restoration: Does including ecosystem services as a goal engage a different set of values and attitudes than biodiversity protection alone? *PLoS ONE*, 16(1), e0245074. <https://doi.org/10.1371/journal.pone.0245074>
- McGregor, J. A. (2008). *Wellbeing, poverty and conflict*. Briefing paper no. 1/08. ESRC Research Group on Wellbeing in Developing Countries, February 1–4.
- McRobert, C. J., Hill, J. C., Smale, T., Hay, E. M., & van der Windt, D. A. (2018). A multi-modal recruitment strategy using social media and internet-mediated methods to recruit a multidisciplinary, international sample of clinicians to an online research study. *PLoS ONE*, 13(7), e0200184. <https://doi.org/10.1371/journal.pone.0200184>
- Morgan, D. L. (2008). Sampling. In L. M. Given (Ed.), *The sage encyclopedia of qualitative research methods* (pp. 799–800). Sage Publications.
- Perino, A., Pereira, H. M., Navarro, L. M., Fernández, N., Bullock, J. M., Silivia, C., Cortés-Avizanda, A., van Klink, R., Kuemmerle, T., Lomba, A., Pe'er, G., Plieninger, T., Benayas, J. M. R., Sandom, C. J., Svenning, J.-C., & Wheeler, H. C. (2019). Rewilding complex ecosystems. *Science*, 364, eaav5570. <https://doi.org/10.1126/science.aav5570>
- QSR. (2020). *NVivo qualitative data analysis*. QSR International Pty Ltd.
- Rawluk, A., Ford, R., Anderson, N., & Williams, K. (2019). Exploring multiple dimensions of values and valuing: A conceptual framework for mapping and translating values for social-ecological research and practice. *Sustainability Science*, 14(5), 1187–1200. <https://doi.org/10.1007/s11625-018-0639-1>
- Rewilding Britain. (2020). *New network to spearhead rapid rewilding in Britain*. <https://www.rewildingbritain.org.uk/blog/new-network-to-spearhead-rapid-rewilding-across-britain>
- Rewilding Britain. (2021). *Defining rewilding*. <https://www.rewildingbritain.org.uk/explore-rewilding/what-is-rewilding/defining-rewilding>
- Sanchez-Ortiz, K., Gonzalez, R. E., Palma, A. D., Newbold, T., Hill, S. L. L., Tylianakis, J. M., Börger, L., Lysenko, I., & Purvis, A. (2019). *Land-use and related pressures have reduced biotic integrity more on islands than on mainlands*. <https://doi.org/10.1101/576546>
- Sandom, C. J., & Wynne-Jones, S. (2019). Rewilding a country: Britain as a study case. In N. Pettorelli, S. M. Durant, & J. T. du Toit (Eds.), *Rewilding* (pp. 222–247). Cambridge University Press. <https://doi.org/10.1017/9781108560962.012>
- Sandom, C. J., Dempsey, B., Bullock, D., Ely, A., Jepson, P., Jimenez-Wisler, S., Newton, A., Pettorelli, N., & Senior, R. A. (2019). Rewilding in the English uplands: Policy and practice. *Journal of Applied Ecology*, 56(2), 266–273. <https://doi.org/10.1111/1365-2664.13276>
- Schuitema, G., & Bergstad, C. J. (2018). Acceptability of environmental policies. In L. Steg & J. I. M. de Groot (Eds.), *Environmental psychology: An introduction* (2nd ed., pp. 295–306). Wiley-Blackwell.
- Sikor, T., Martin, A., Fisher, J., & He, J. (2014). Toward an empirical analysis of justice in ecosystem governance. *Conservation Letters*, 7(6), 524–532. <https://doi.org/10.1111/conl.12142>
- Soulé, M. E., & Noss, R. (1998). Complementary goals for continental conservation. *Wild Earth*, 8(Fall), 39–64.
- Stanley, J. (2022). Opinion: New ELM scheme will favour larger farms more than BPS. *Farmers Weekly*, February 19. <https://www.fwi.co.uk/news/opinion-new-elm-scheme-will-favour-larger-farms-more-than-bps>
- Thomas, V. (2021). Domesticating rewilding: Interpreting rewilding in England's green and pleasant land. *Environmental Values*. <https://doi.org/10.3197/096327121X16328186623841>
- Tree, I. (2018). *Wilding: The return of nature to a British farm*. Pan Macmillan.
- UN. (2019). *Resolution 73/284: United Nations decade on ecosystem restoration (2021–2030)* (1st of March 2019) (Issue March). United Nations General Assembly. <https://undocs.org/A/RES/73/284>
- Vaismoradi, M., Turunen, H., & Bondas, T. (2013). Content analysis and thematic analysis: Implications for conducting a qualitative descriptive study. *Nursing and Health Sciences*, 15(3), 398–405. <https://doi.org/10.1111/nhs.12048>
- Vasile, M. (2018). The vulnerable bison: Practices and meanings of rewilding in the Romanian Carpathians. *Conservation and Society*, 16(3), 217–231. <https://doi.org/10.4103/cs.cs-17-113>
- Welp, M., de la Vega-Leinert, A., Stoll-Kleemann, S., & Jaeger, C. C. (2006). Science-based stakeholder dialogues: Theories and tools. *Global Environmental Change*, 16(2), 170–181. <https://doi.org/10.1016/j.gloenvcha.2005.12.002>
- Wheeler, R., Lobley, M., Winter, M., & Morris, C. (2018). 'The good guys are doing it anyway': The accommodation of environmental concern among English and Welsh farmers. *Environment and Planning E: Nature and Space*, 1(4), 664–687. <https://doi.org/10.1177/2514848618817487>
- Woodhouse, E., Homewood, K. M., Beauchamp, E., Clements, T., McCabe, J. T., Wilkie, D., & Milner-Gulland, E. J. (2015). Guiding principles for evaluating the impacts of conservation interventions on human well-being. *Philosophical Transactions of the Royal Society B: Biological Sciences*, 370(1681), 20150103. <https://doi.org/10.1098/rstb.2015.0103>
- Wynne-Jones, S., Strouts, G., & Holmes, G. (2018). Abandoning or reimagining a cultural heartland? Understanding and responding to rewilding conflicts in Wales—The case of the Cambrian wildwood. *Environmental Values*, 27(4), 377–403. <https://doi.org/10.3197/096327118X15251686827723>
- Wynne-Jones, S., Strouts, G., O'Neil, C., & Sandom, C. (2020). Rewilding—Departures in conservation policy and practice? An evaluation of developments in Britain. *Conservation and Society*, 18(2), 89–102. <https://conservationandsociety.org.in/article.asp?issn=0972-4923;year=2020;volume=18;issue=2;page=89;epage=102;aulast=Wynne-Jones;type=0>

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