

Hawkins, Sally, Brady, Deborah, Mayhew, Michael ORCID:  
<https://orcid.org/0000-0002-2934-5489> , Smith, Darrell ORCID:  
<https://orcid.org/0000-0002-6745-8804> , Iversen, Sara, Lipscombe, Steven, White,  
Chris, Eagle, Adam and Convery, Ian ORCID: <https://orcid.org/0000-0003-2527-5660> (2020) Community perspectives on the reintroduction of Eurasian lynx  
(*Lynx lynx*) to the UK. *Restoration Ecology*, 28 (6). pp. 1408-1418.

Downloaded from: <http://insight.cumbria.ac.uk/id/eprint/5627/>

*Usage of any items from the University of Cumbria's institutional repository 'Insight' must conform to the following fair usage guidelines.*

Any item and its associated metadata held in the University of Cumbria's institutional repository Insight (unless stated otherwise on the metadata record) may be copied, displayed or performed, and stored in line with the JISC fair dealing guidelines (available [here](#)) for educational and not-for-profit activities

**provided that**

- the authors, title and full bibliographic details of the item are cited clearly when any part of the work is referred to verbally or in the written form
  - a hyperlink/URL to the original Insight record of that item is included in any citations of the work
- the content is not changed in any way
- all files required for usage of the item are kept together with the main item file.

**You may not**

- sell any part of an item
- refer to any part of an item without citation
- amend any item or contextualise it in a way that will impugn the creator's reputation
- remove or alter the copyright statement on an item.

The full policy can be found [here](#).

Alternatively contact the University of Cumbria Repository Editor by emailing [insight@cumbria.ac.uk](mailto:insight@cumbria.ac.uk).

1 **Community perspectives on the reintroduction of Eurasian**  
2 **lynx (*Lynx lynx*) to the UK**

3 *Hawkins, S.A.<sup>1</sup>, Brady, D.<sup>1</sup>, Mayhew, M.<sup>1</sup>, Smith, D.<sup>1</sup>, Lipscombe, S.<sup>1</sup>, White, C.<sup>2</sup>,*  
4 *Eagle, A.<sup>3</sup> & Convery, I.<sup>1</sup>*

5

6 <sup>1</sup> *University of Cumbria, Rydal Road, Ambleside, UK.,* <sup>2</sup> *AECOM, Aldgate Tower, 2*  
7 *Leman St, London, UK,* <sup>3</sup> *Clifford Chance LLP, 10 Upper Bank Street, London*

8 \*corresponding author: [sally.hawkins@uni.cumbria.ac.uk](mailto:sally.hawkins@uni.cumbria.ac.uk)

9 **Author contributions:** SAH, DB, MM, DS, CW, AE, IC conceived and designed the  
10 research; SAH, DB, MM, DS, SL, CW, AE, IC collected the data; SAH, DS, IC  
11 analysed the data; SAH, DB, SL, IC wrote and edited the manuscript; MM, DS, CW,  
12 AE reviewed and edited the manuscript

13 **Abstract**

14 The potential for the reintroduction of Eurasian lynx (*Lynx lynx*) to the UK gained  
15 considerable attention in 2017 when the Lynx UK Trust announced their intention to  
16 apply for a licence to hold a controlled trial reintroduction of lynx in Kielder Forest,  
17 Northumberland, an application which was denied in 2019 by the then Secretary of  
18 State Michael Gove MP. The historical extirpation of large carnivores in the UK has  
19 resulted in communities, populations and landscapes with little or no experience of  
20 coexistence with large predators. Whilst charismatic carnivores have significant  
21 cultural symbolism and are often promoted as flagship species for conservation and  
22 rewilding, their reintroduction presents challenges for conservation and rewilding in  
23 practice, not least in terms of managing often vehement opposition. This article  
24 presents findings from the initial consultation process and considers the lessons learnt

25 from the methodological approach. In particular, while the incomplete consultation  
26 centred on a community-based approach, there were several factors which constrained  
27 public participation, information sharing and transparent communications integral to  
28 this. These are identified and explored here using qualitative data collected during the  
29 local consultation, with the intention of informing any similar reintroduction projects.

30

31 Key words: reintroduction; coexistence; rewilding; *Lynx lynx*; community  
32 consultation; human-nature relations; complex systems

33

34 Implications for practice:

- 35 • In social-ecological systems, the concerns of a community regarding a  
36 proposal are complex and can be related to various social, political or  
37 economic issues within that system, such as urban-to-rural migration, land  
38 ownership or nature connection.
- 39 • A comprehensive, collaborative, multidisciplinary feasibility study needs to be  
40 undertaken to inform decisions over a UK *Lynx lynx* reintroduction.
- 41 • For consultation to be genuine and truly collaborative, trust and transparency  
42 are of great importance, particularly where projects are controversial.  
43 Thoughtful, factual and concise communication is important to avoid  
44 misinformation and misunderstanding which may exacerbate mistrust.

45

## 46 **Introduction**

47 In the UK, there has been a growing interest in the reintroduction of keystone species,  
48 including apex predators, within recent years, encouraged in part by the awareness  
49 generated by the reintroductions of locally extirpated species such as the pine marten

50 (*Martes martes*) and Eurasian beaver (*Castor fiber*), as well as growing interest in the  
51 potential for highly interactive species to encourage ecosystem restoration and  
52 rewilding (Wilson 2004; Hetherington 2006). Contemporary public perceptions  
53 towards the reintroduction of apex predators into the UK is broadly favourable (Smith  
54 et al. 2015), and the Eurasian lynx (hereafter lynx) is thought to be the most suitable  
55 of native apex predators as it poses no threat to people and the potential for predation  
56 of livestock is ‘low-level’ (Angst and Breitenmoser 2003), though there are notably  
57 higher predation rates on sheep in Norway than elsewhere in Europe (e.g. 2 to 3 sheep  
58 per lynx per year in the Vosges Mountains of France and up to 10 in Norway, largely  
59 because sheep spend more time in woodland (Odden et al. 2013).

60

61 Lynx populations are recovering in Western Europe due to successful reintroductions  
62 and natural recolonization (Trouwborst 2010; Kaczensky et al. 2012), which is  
63 prevented in the UK due to its isolation from mainland Europe. Factors which caused  
64 the extirpation of the lynx in Britain in the 5<sup>th</sup> Century AD – including deforestation,  
65 declining deer populations and persecution (Hetherington 2006) – have been  
66 alleviated, and due to the over-abundance of deer species in the UK (Jobin et al. 2000;  
67 Odden et al. 2006; Basille et al. 2009), lynx could now thrive in a number of areas.  
68 The reintroduction of lynx gained considerable attention following developments  
69 towards an application for a controlled trial reintroduction by the Lynx UK Trust  
70 (LUKT).

71

72 The historical extirpation of large carnivores across many parts of Europe, especially  
73 in the UK, has resulted in communities, populations and landscapes with little or no  
74 experience of coexistence with large predators (Hetherington 2006; Heurich et al.

75 2012; Chapron et al. 2014). While charismatic carnivores have significant cultural  
76 symbolism (Hetherington 2006; Sergio 2006; Van Heel 2017) and are often promoted  
77 as flagship species for the wider conservation cause (Simberloff 1998; Andelman &  
78 Fagan 2000), the reintroduction of charismatic animals presents challenges for  
79 conservation practice, not least in terms of managing often vehement opposition (Arts  
80 et al. 2012).

81

82 Species reintroductions were traditionally quantified in terms of ecological success  
83 (Griffith 1989) but it has become increasingly apparent that public concerns regarding  
84 translocations need to be addressed (Marshall et al. 2007; O'Rourke 2014) and that  
85 successful conservation projects require effective integration of the immediate society  
86 (Mascia 2003; Breitenmoser & Breitenmoser-Würsten 2004). It is now accepted that  
87 in addition to ecological research, reintroduction outcomes are determined by the  
88 attitudes and behaviour of the public and regional stakeholder groups (Marshall et al.  
89 2007; Thirgood & Redpath 2008) and public consultation is now integrated into the  
90 IUCN reintroduction guidelines (IUCN/SSC 2013).

91

92 In October 2015, the LUKT announced their proposal for a 'controlled, scientific and  
93 monitored trial reintroduction of lynx' to England and/or Scotland. At that stage,  
94 broad public support had been identified through a national survey (Smith et al.  
95 2015). The LUKT proceeded by establishing feasibility, risks, impacts and potential  
96 mitigation measures (Smith et al. 2016a & b) and by consulting with relevant national  
97 organisations, seeking feedback on project desirability and feasibility, socio-economic  
98 and ecological considerations, and the identification of a suitable trial location (Smith  
99 et al. 2016c). As a result of this consultation process and further socio-ecological

100 focussed work on potential release sites, the Kielder Forest area, an extensive forest  
101 block that straddles the border between England and Scotland, was identified as the  
102 most suitable location for further investigation (White et al. 2016a, see also Ovenden  
103 2019).

104

105 As a result, a local consultation, centred on a community-based approach, was  
106 conducted in the Kielder area between August 2016 and April 2017 as a precursor to a  
107 project licence application being submitted to Natural England and Scottish Natural  
108 Heritage by LUKT. This article considers data collected during the local consultation  
109 process. The data was collected with the intention of examining community attitudes  
110 towards the proposed reintroduction in order to inform ongoing consultation  
111 activities. The aim of this article is to present themes relating to community attitudes  
112 towards the reintroduction and to identify factors which constrained public  
113 participation, information sharing and transparent communication integral to a  
114 community-based approach. We go on to discuss the lessons learned based on the  
115 setbacks we encountered. It should be noted that the consultation team were unable to  
116 complete planned activities due to a conflict of interest with LUKT management and  
117 therefore the available data relate to incomplete plans. However, the data offer some  
118 extremely useful insights and point to a number of factors which should be considered  
119 in consultations of this kind, especially as there is continued interest in a lynx  
120 reintroduction in the UK (Horton 2020; Bliss 2019).

121

122 Convery et al. (2017) reported on the consultation activities and recommended that a  
123 licence application at that time would be premature and would threaten the longer-  
124 term viability of the project. Despite this recommendation, LUKT submitted a licence

125 application in 2017. The licence application was supported by a project plan which  
126 positioned the reintroduction within legal and policy frameworks, a statement of the  
127 project rationale and a list of reports as appendices including national consultation  
128 reports (Smith et al. 2015a & 2016c), cost-benefit analyses (White et al. 2015), a site  
129 selection report (White et al. 2016a) and a disease risk assessment (Mayhew et al.  
130 2017, unpublished). The application was denied by Michael Gove in 2018 (DEFRA  
131 2018).

132

### 133 **Methods**

134 Consultation activities were conducted between August 2016 and May 2017, led by a  
135 team from the University of Cumbria with assistance from Clifford Chance, AECOM  
136 and local volunteers. The main aim of the local consultation was to incorporate  
137 stakeholder opinion into the decision-making process and co-develop project  
138 management, particularly in relation to compensation schemes for livestock predation.  
139 In order to achieve this, a number of methods were used to build a network of  
140 contacts, share information, record and/or address any initial concerns and collect data  
141 on perceived risks and benefits. The consultation process was flexible and was  
142 adapted as new data became available. Spatially, a zoned approach to consultation  
143 work was adopted, comprising a primary and a secondary zone (Figure 1). The  
144 primary zone comprised communities or individuals identified as most likely to be  
145 affected, either directly or indirectly, by the presence of the lynx. The surrounding  
146 secondary zone included communities less likely to be affected but who should  
147 nevertheless be engaged with and given the opportunity to respond to the consultation  
148 process. The methods and results reported below relate specifically to data used in this

149 article. For the overall consultation plans, methods and results see Convery et al.  
150 (2016, 2017).

151 Three methods of data collection were used during the consultation process to provide  
152 the data used in this study, namely a risks/benefits questionnaire, Q methodology  
153 (QM) and notes taken at public meetings. Blanket ethical approval was granted by the  
154 University of Cumbria's ethics committee, covering all consultation activities.

#### 155 *Risks/benefits questionnaire*

156 The risks/benefits questionnaire was developed in order to provide a 'snapshot' of  
157 key community concerns and to feed into the development of the QM data  
158 collection as well as other consultation and project plans. The questionnaire asked  
159 respondents to list, in open-ended fields, what they believed to be the key risks and/or  
160 benefits of a trial reintroduction of lynx. The questionnaire also captured some  
161 demographic data, asked if respondents were willing to be contacted further in  
162 relation to the consultation and contained an open field for 'any further comments.'  
163 In total, 130 questionnaires were completed, either by the respondents themselves at  
164 LUKT events or by LUKT volunteers on behalf of respondents during door-to-door  
165 activities (Table 1). Table 2 provides summary demographic  
166 information for questionnaire participants alongside 2011 demographic data for the  
167 Bellingham ward (Northumbria County Council, 2011), which includes the Kielder,  
168 Tarsset and Greystead communities. The gender split for the sample is very similar to  
169 the ward average so we have focused on age cohort representativeness. A thematic  
170 analysis was undertaken to group the key risks and benefits according to respondents'  
171 comments.

172

#### 173 *Q methodology*



174 QM is a research tool designed to explore individual values, opinions and beliefs  
175 regarding a specific subject area. It is particularly useful in community engagement  
176 with smaller groups and has proven useful in identifying ‘common ground’ in conflict  
177 management situations and in capturing interesting, informative and relevant  
178 viewpoints relative to the question (Watts and Stenner 2012). QM typically involves a  
179 60-90 minute interview where the participant ranks a set of statements relevant to the  
180 topic depending on how strongly they feel about each. Factor analysis is then used to  
181 interrogate the data set.

182 The intention was to undertake a QM study to provide greater data depth (alongside  
183 the questionnaire survey work and public meetings). The 40 Q statements (Table S1)  
184 were developed from responses to the national public survey (Smith et al. 2015) and  
185 the local questionnaire, as mentioned above. QM participants were recruited using  
186 data collected through the questionnaire which contained a section for respondents to  
187 express interest in being involved in ongoing activities. A total of 25 interviews and  
188 QM sorts were undertaken prior to the point where we were unable to continue with  
189 consultation activities. All participants were resident within the primary zone (figure  
190 1), and were a range of ages but primarily over 65 years (n = 12). Participants offered  
191 a wide range of views in terms of support for the project, including those who were  
192 very supportive and very against. Their occupations included those who are retired  
193 (n=11), a student, tourism-related activities (n=6), other business owners (n=4), a  
194 forest surveyor, a huntsman and a farm vet. It is worth noting that none of the  
195 participants were directly involved in farming, although one is a retired farmer and  
196 one lives on a farm. It is recommended that a Q study includes approximately 40 to 60  
197 participants (Watts & Stenner 2005, 2012), and therefore we were unable to conduct a  
198 full factor analysis and complete the study. Therefore, the focus of this article is on

199 the qualitative data collected in the QM interviews rather than on the factor analysis.  
200 During each interview, the participant was first asked to sort the 40 statements into  
201 three piles – agree, disagree and neutral. The participant was then asked to place each  
202 statement on a symmetrical Q grid, containing 40 spaces on a scale from -5 to +5  
203 indicating a scale from ‘Most disagreed’ to ‘Most agreed’ with a neutral (0) column in  
204 the middle. Once the sort was completed, participants were asked to elaborate on the  
205 statements they felt strongly about and encouraged to add any comments they wanted  
206 to. This qualitative data was recorded, anonymised and transcribed. A thematic  
207 analysis was undertaken on the qualitative interview data to extract evidence of the  
208 participant’s concerns relating to the proposed reintroduction and factors which  
209 constrained public participation. The Q sort data is presented in Table S1.

#### 210 *Notes from public meetings*

211 Notes were taken during the question and answer sessions at the four open public  
212 meetings organised by the consultation team (Table 3). A thematic analysis was  
213 undertaken in order to extract evidence of public concerns relating to the proposed  
214 reintroduction and factors which constrained public participation.

## 215 **Results**

216 The results presented here focus on community attitudes to the proposed lynx  
217 reintroduction. To create a snapshot of responses from the risks/benefits questionnaire  
218 we grouped comments into themes under risks (15 themes) and benefits (9 themes)  
219 (Figure 2 and 3). Community members were given the opportunity to elaborate more  
220 fully on these themes during meetings and in QM interviews.

221 As the consultation progressed, one risk that began to emerge from the risks/benefits  
222 questionnaire was that of divisions in the local community (Figure 2). We note that  
223 the below themes attracted polarised views which may have exacerbated this.

224

225 *Farming*

226 Our data reflects that hill farming forms an integral part of the culture, economy,  
227 landscape and overall sense of place in the Kielder area. Consequently, this theme  
228 was prevalent throughout the consultation process and was a talking point among  
229 almost all participants, whether for, undecided or against the proposed trial  
230 reintroduction.

231

232 Given the risk of lynx-related livestock predation, the farming community was  
233 considered by project partners as a key stakeholder group with which to engage.  
234 However, during the early stages of the local consultation, members from the farming  
235 community expressed their disapproval of the project by refusing to talk to team  
236 members at door-to-door visits or by voicing their anger at public meetings. Common  
237 themes expressed by farmers at public meetings included a lack of trust and  
238 transparency in the LUKT, the potential for lynx to threaten their livelihoods and the  
239 need for a compensation scheme, the inability of farmers to control growing lynx  
240 populations and a sense of disempowerment that the reintroduction would be imposed  
241 on them regardless of their views.

242

243 Risks listed on risks/benefits questionnaires were predominately focused around risks  
244 to farming (Figure 2). This theme includes comments related to '*risks to livestock*'  
245 (including predation and worrying), negative impacts on farmer livelihoods, risks that  
246 compensation will not be easily accessible and the impacts on farmer workloads due  
247 to compensation or mitigation measures.

248

249 While this theme was prevalent throughout the consultation, the QM study showed  
250 polarity in support for farmers. During QM sorts there was strong agreement for the  
251 statement ‘I am concerned that lynx will be a threat to livestock during the trial’,  
252 although a number of participants disagreed (Table S1, statement no 8). There is a  
253 wider range of responses to the statement ‘I am concerned that the lynx will cause  
254 economic suffering to farmers and/or countryside managers’ (Table S1, statement no  
255 9). It became clear that this division was largely based on the polarity of views  
256 around farmers’ rights, land ownership and land use. Those who were supportive of  
257 farmers made efforts to justify their concerns, highlighting that farming is not just  
258 about money, farmers care passionately about their livestock or that ‘a lot of farmers  
259 in this area are very much on the edge of being able to earn a living.’ Others showed  
260 displeasure over how dominant farming is in the area, particularly in decision-making,  
261 citing ‘the intransigence of the NFU [National Farmers’ Union]’, that farmers in the  
262 area are a minority and the large subsidies they receive.

263 These two examples extracted from QM interviews summarise some of these  
264 arguments:

265

266 *‘I think there’s a lot of the people in this area who are not farmers born and bred and not*  
267 *closely connected with that culture, there’s quite a number of them that already don’t quite fit*  
268 *in and don’t understand, and don’t accept that they are coming in to one of the biggest*  
269 *factories there is – a mutton and lamb producing factory.’ (QM participant 16, primary zone)*

270

271 in comparison to:

272

273 *‘I think your project has highlighted the notion that those that farm the land should be able to*  
274 *dictate what goes on everywhere. It’s an outdated sense of ownership that they have over the*

275 *landscape and it doesn't exist in our modern classless society... I think most sections of the*  
276 *community are for it, it's just some of the lobbyist movement that represents the farmers and*  
277 *landowners is so vocal and very organised, to the point that they will intimidate everybody*  
278 *else into either not speaking or coming forward, or towing the line with their views. And it's*  
279 *with threats and intimidation.'* (QM participant 3, primary zone)

280

281 Where there is agreement across all parties is for the importance of compensation  
282 payments (Table S1, statement no 12). Those who were less supportive of farmers  
283 saw the value in compensation as a method for protecting the welfare of the lynx, but  
284 several participants raised concern over the possibility of corruption around  
285 compensation claims or issues with management and enforcement of a compensation  
286 scheme.

287

### 288 *Welfare of the lynx*

289 One theme that was widely supported according to the data is the welfare of the lynx  
290 (Figure 2), with concerns over lynx being harmed in road traffic accidents, an  
291 *'increase in illegal poisoning'* (questionnaire respondent) and the risk that farmers  
292 might *'club together to shoot lynx'* (questionnaire respondent). It is worth noting that  
293 during door-to-door activities there were a small number of very unsupportive  
294 community members who refused to interact with volunteers and who threatened to  
295 shoot or kill lynx. Two concerns were raised in relation to lynx welfare during QM  
296 interviews; conflict with farmers and the impact on individual lynx by the project  
297 itself, ie bringing healthy lynx into unsuitable habitat and the potential for wild lynx  
298 to end up in captivity or be exterminated if the trial was unsuccessful.

299

### 300 *Tourism*

301 On risk/benefits questionnaires the potential for tourism and related economic benefits  
302 was a predominant benefit (Figure 3), with the potential to *'put Kielder on the map as*  
303 *a destination'*. Interestingly, there was largely neutral response in the QM study to the  
304 statement 'Having lynx in this area would help put Kielder on the map' with many  
305 citing that, 'it's already on the map' due to existing attractions such as designation as  
306 an International Dark Sky Park (Table S1, statement 31).

307

308 However, others thought that the case for tourism was overstated or that tourists  
309 would cause problems locally by *'clogging up the roads.'* Simultaneously there were  
310 concerns that the reintroduction would *'scare tourists off'*.

311

312 This polarisation was reflected in the QM sorts with both strong agreement and  
313 disagreement for the statement 'Lynx could beneficially add to the rural economy  
314 through eco-tourism' (Table S1, statement no. 13). Those that disagreed with the  
315 statement could not see the potential for tourism due to the shy nature of lynx:

316

317 *'Certain people go on and on about millions of pounds coming into the community but we*  
318 *can't see how or why. And certain people don't want thousands of people streaming in. It's*  
319 *supposed to be a national park that's quiet and peaceful and not too busy. There is a balance*  
320 *between people who want tourists and people who don't.'* (QM participant 1)

321

### 322 *Ecosystem or biodiversity restoration*

323 The potential for ecological restoration was recognised by some. Environmental  
324 benefits listed on the risks/benefits questionnaires (Figure 3) largely focused on the  
325 *'overall benefit to the ecosystem'* and the potential of lynx to act as *'an ecosystem*  
326 *engineer, improving the quality of native woodland.'* The potential to control numbers

327 of other species, such as fox, was also mentioned. There was also emphasis on  
328 returning a native species and the potential '*to increase biodiversity, Kielder is a*  
329 *monoculture*'.

330

331 However, those opposed to the trial felt that the number of lynx would be too low to  
332 have any real ecological impact. Comments also included concerns over '*interfering*  
333 *with nature*', such as '*every time man interferes in ecosystems there are unexpected*  
334 *side effects and more times than not they are unwanted*'.

335

336 There was more disagreement than agreement over the QM statements, 'the presence  
337 of lynx is crucial for the health of forest's ecosystems' (although there were  
338 comments from supportive participants that the word 'crucial' was not appropriate;  
339 Table S1, statement no. 1) and 'lynx should be introduced as a natural control of deer'  
340 (Table S1, statement no. 4), while there was more strong agreement with the  
341 statement 'We have an obligation to try and restore our natural ecosystem as much as  
342 possible. The trial is one step towards that' (Table S1, statement no. 24).

343

#### 344 *Habitat suitability*

345 There were conflicting views over whether Kielder would provide suitable habitat for  
346 the lynx. The QM sorts indicated there was strong disagreement for the statement 'I  
347 do not think this area is suitable for the lynx' (Table S1, statement no 28), indicating  
348 that some people felt the habitat in the Kielder area may be suitable. One participant  
349 commented:

350

351 *'I'm quite passionate about the introduction of wild species into our landscape. I think it has*  
352 *to be a suitable landscape, and I think here, in and around Kielder, we should really be proud*  
353 *that we have a landscape where they can be reintroduced.'* (QM participant 3)

354

355 However, this contradicted some concerns raised in the questionnaires about  
356 plantation forests being unsuitable habitat for lynx, as well as other comments made  
357 during the accompanying interviews, such as:

358

359 *'It seems to me that there isn't enough space for them to survive, it's not a very attractive*  
360 *place to be honest, very thick horrible forest and... so dense nothing could possibly live in*  
361 *there.'* (QM participant 7)

362

363 At a larger scale, there was conflict over the statement 'the British countryside is no  
364 longer a suitable place for a sustainable lynx population' (Table S1, statement no 2),  
365 although more participants disagreed than agreed with it. The interviews suggested  
366 that those in agreement were not necessarily against the proposed reintroduction, but  
367 felt the British countryside was generally in a bad condition for wildlife. Many  
368 comments emphasised the need to reform and restore nature, and along with it  
369 people's perception of nature.

370

### 371 *Perception of 'wild' nature*

372 There was polarity in the perception of 'wild' nature, with supporters of the project  
373 recognising the intrinsic value of restored nature – the '*cultural/spiritual effects of a*  
374 *rewilded landscape*' as well as '*a sense of the wild*'.

375



376 *'I'm really passionate about the fact that it would create an exciting sense of wilderness... I also*  
377 *think it's important in terms of ecosystems and landscape management to actually have wild*  
378 *space and everything that goes with it.'* (QM participant 3)

379

380 This seems to correlate with those who feel it necessary to restore ecosystem function  
381 (as mentioned above), that nature can offer 'natural controls' for example on deer  
382 populations. On the other hand, opponents of the project raised concerns over  
383 uncertainty and over lynx being '*wild animals*' that are difficult to control (Figure 2;  
384 Table S1, statement no. 18). There was minimal fear for human safety (Table S1,  
385 statement no. 22), but some fear over a threat to pets (Table S1, statement no. 33) and  
386 to native wildlife, with red squirrels most frequently mentioned, along with the  
387 Kielder wild goat population, ground-nesting birds and the recently reintroduced  
388 water voles (Table S1, statement no. 6). However, supporters of the project were less  
389 concerned about pets and native wildlife, commenting that potential predation is 'just  
390 the natural way of things.'

391

### 392 *Concerns over project and consultation management*

393 Due to the high-profile nature of the project within the community, the consultation  
394 process itself was under intense scrutiny and became a talking point among  
395 community members. Concerns were raised regarding consultation activities and  
396 various aspects of the project plan, including the number of lynx being reintroduced,  
397 funding and methods used including lack of transparency, misinformation, the  
398 personalities involved and a feeling that the 'project is being imposed on us';

399

400 *I object to your patronising and high-handed methods in trying to force your project onto the*  
401 *community. I'm not confident that your consultation or research are impartial.'* (Meeting  
402 attendee)

403

404 Risks to the '*reputation of conservation in general*' and the '*potential to prevent*  
405 *future reintroductions of lynx or other species*' were also raised.

406

407 Throughout activities, there was agreement among members of the community over  
408 the need for scientific rigour and transparency over plans and decision making. In QM  
409 sorts, for example, importance was placed on the 'use of biological data and sound  
410 science in this trial of introducing lynx' (Table S1, statement no 7) and that 'all  
411 aspects of the trial must be transparent and open for all' (Table S1, statement no 19).

412

### 413 **Discussion**

414 The preliminary findings presented in this paper speak to the polarised nature of the  
415 debate around a trial lynx reintroduction in the UK. Strong opinions, both for and  
416 against, were held by community members which demonstrate a strong emotional  
417 component. While this discussion has focused largely on the negative aspects of the  
418 consultation process, there was also evidence of support, and a change in consultation  
419 strategies saw the beginnings of constructive, informative dialogue particularly  
420 through focused business and farming meetings and QM interviews. The thematic  
421 issues and concerns presented in the results section provide a possible structure  
422 around which any future lynx reintroduction initiative might approach conversations  
423 with stakeholder groups. Most importantly, communities should be fully represented  
424 in decisions and solutions to the issues they themselves have highlighted. As Coz and  
425 Young (2020:1) note, it is important that consultation processes go beyond

426 environmental impacts and social perception and seek meaningful engagement  
427 involving ‘all actual and potential stakeholders to agree on broad and long-term  
428 conservation plans at the landscape scale’. However, Nimegeer and Farmer (2016)  
429 provide a warning that involving rural communities in decision-making can serve to  
430 enhance the power of existing elites rather than uniting diverse perspectives, as such  
431 rural places might bring a specific set of engagement challenges.

432

### 433 *Polarising community views*

434 Attitudes towards the trial polarised communities within the consultation area, with  
435 conflicting views in particular over farmers’ rights and land use, the potential benefits  
436 of tourism, and perceptions of nature and its place in the landscape. Woods et al.  
437 (2012) describe urban-to-rural migration and diversification of economic activity in  
438 rural areas as potential causes for this type of conflict, and whilst it is problematic to  
439 over-generalise (Burnett 1998; Woods 2005), there are often tensions between what  
440 might be broadly termed more ‘progressive income attitudes’ and ‘traditional rural  
441 values’. Bennett (1998) states that the incomer is overwhelmingly constructed as a  
442 negative influence or a threat to traditional values, and is portrayed as ‘outside’ of and  
443 in opposition to ‘things local’. Similarly, Black et al (2019) note that some  
444 community members employ discourses of rural localness, authenticity and tradition  
445 to augment their credibility and gain influence over the newly arrived ‘incomers’.  
446 Proposing to reintroduce a carnivore within this context may have exacerbated such  
447 divides and may, to some extent, explain the entrenched, extreme views we  
448 encountered. As discussed earlier, whilst consultation planning should seek  
449 meaningful engagement with all actual and potential stakeholders (Coz & Young  
450 2020), it is also important to be cognisant of local power relationships and the often

451 difficult engagement challenges associated with rural communities (Nimegeer &  
452 Farmer 2016).

453

454 A key area of community agreement in relation to farming was the need for a  
455 compensation scheme to be agreed prior to any lynx release. This was a stated  
456 objective of the LUKT project, and Mansfield et al. (in prep.) discuss this area of the  
457 project in more detail, including how compensation might be addressed in future  
458 projects. It is noted, however, that there is conflicting evidence in the literature that  
459 economic incentives can be used to increase tolerance for predators and protect them  
460 from poaching. For example, Treves and Bruskotter (2014) highlight how social  
461 change should also be considered alongside the delivery of economic incentives or  
462 compensation.

463

464 Increased tourism is often cited in the literature as a potential benefit of species  
465 reintroduction or rewilding projects (e.g. Rewilding Europe 2020; Cerqueira et al.  
466 2015; Arts et al. 2012), but our data indicate mixed feelings amongst respondents  
467 regarding any increase in tourism to the area, and any claims of tourism-related  
468 benefits would need to be managed very sensitively by any future reintroduction  
469 project.

470

471 Unlike much of mainland Europe, the UK has existed without large carnivores for  
472 hundreds of years. IUCN Guidelines 5.2.5 (IUCN 2011) state that ‘if extinction in the  
473 proposed destination area occurred long ago, or if conservation introductions are  
474 being considered, local communities may have no connection to species unknown to  
475 them, and hence oppose their release. In such cases, special effort to counter such

476 attitudes should be made well in advance of any release.’ These attitudes are complex,  
477 and related to broader emotional, political and socio-economic issues which also need  
478 to be addressed if humans are to coexist with carnivores in shared landscapes. There  
479 is evidence that such ‘mediated co-existence’ has worked reasonably effectively for  
480 predator conservation in a European context (Chapron et al. 2014), and Di Minin et al.  
481 (2016) highlight the need to promote carnivore persistence outside of protected areas.  
482 A fear of uncertainty and lack of control is often associated with the reintroduction of  
483 large carnivores (Carter & Linnell 2014), and this is something we encountered  
484 during fieldwork. This risk intolerance is a major challenge to coexistence (Carter &  
485 Linnell 2014), as is the perception of nature or the ‘animal’ as being ‘out-of-place’ or  
486 ‘improper’ (Buller 2014). Gehr et al.’s (2017) ‘landscape of coexistence’ suggests  
487 that apex predators will change their behaviour and avoid human contact, and  
488 Chapron et al. (2014) have demonstrated that in Europe, people and large carnivores  
489 can coexist. However, the evidence is that this requires collaborative,  
490 multidisciplinary effort in order to explore, evaluate and operationalize coexistence  
491 (Buller 2014; Carter & Linnell 2014).

492

493 Carter and Linnell (2016, p. 575) define coexistence as ‘a dynamic but sustainable  
494 state in which humans and large carnivores co-adapt to living in shared landscapes  
495 where human interactions with carnivores are governed by effective institutions that  
496 ensure long-term carnivore population persistence, social legitimacy and tolerable  
497 levels of risk’. Understanding the constituency and governance of these ‘effective  
498 institutions’, and identifying ways of working collaboratively with them, seem  
499 important for any future lynx project. Such work might focus on understanding and  
500 agreeing tolerable level of risk in terms of livestock depredation, competition with

501 hunters and attacks on humans, rather than attempting to convince the community that  
502 there is low or no risk. It is interesting to note that the welfare of the lynx was a stated  
503 concern by respondents both for and against the project, and both groups made  
504 attempts to incorporate animal welfare into their respective arguments, for example by  
505 noting that the habitat in Kielder would be ‘sub-standard’ or that the presence of lynx  
506 might encourage illegal hunting. Animal welfare issues may offer common ground for  
507 any subsequent project.

508

### 509 *Misinformation and communication difficulties*

510 During early stages of the consultation, discussions at open public meetings were  
511 dominated by those who had very strong concerns, which were often expressed in  
512 anger, and mutually informative discussions often became impossible. The initial  
513 introduction of the project to the community at the public meeting in Kielder was  
514 particularly heated, with strong representation from the National Sheep Association at  
515 both a national and local level. Comments in the press (Hexham Courant 2016) and  
516 from members of the public throughout the consultation indicate that this event set the  
517 tone for much of the consultation process and it was difficult to overcome the hostility  
518 generated by it, which played a significant part in slowing progress towards  
519 consultation aims.

520

521 Smaller meetings were more effective and inclusive, including meetings focused on  
522 specific stakeholder groups, as were discussions during door-to-door visits, but the  
523 amount of resource needed to undertake this exercise meant that progress was slow  
524 and all homes were not visited. However, data collected through questionnaires  
525 during these activities did highlight risks which were useful in planning the ongoing

526 consultation and informing the plan for the trial reintroduction (Convery et al. 2017).

527 In hindsight, focused contact with individual stakeholders and small groups would

528 have been more suitable at the start of the process.

529

530 There was a perceived lack of information being communicated about the proposal

531 and the sense of the project being imposed from outside the community. Berkes

532 (2004) highlights the importance of incorporating local knowledge and perspectives

533 along with scientific information in community-based conservation. Throughout the

534 consultation, evidence from Eurasian lynx present in Europe was used, for example

535 on sheep predation (White et al. 2015) and increased ecotourism (White et al. 2016b),

536 to inform the community on potential impacts of the proposal. There is, however,

537 evidence that such a scientific knowledge-based approach can lead to alienation of

538 stakeholders and increased lobbying against reintroductions, resulting in polarisations

539 between a “science-based technocratic worldview, and its ‘populist’ counterpart that

540 portrays local actors as the victims of external intervention” (Arts et al. 2012).

541 Similarly, Von Essen (2017) highlights the challenges that ‘contested knowledge’

542 creates in controversial species reintroductions. Using the example of wolf

543 reintroductions in Sweden, she demonstrates how scientific knowledge can be viewed

544 as hegemonic and patronising from the perspective of rural residents and she argues

545 for a public platform of communication.

546

547 Several probable causes for perceived misinformation were raised by community

548 members during the consultation, including unsuitable communication methods used

549 in consultation leading to misinterpretation of information presented, and

550 misinformation being spread by different parties. The miscommunication of the level

551 of local support in local (Hexham Courant 2017) and national press (for example  
552 Halliday & Parveen 2017) further exacerbated these concerns.

553

554 A further obstacle in creating avenues for disseminating information that reinforced  
555 the purpose of the trial was that many supporters felt unable to express their support.  
556 This further exacerbated the slow progress with the consultation and made it difficult  
557 for those undertaking the consultation work, as well as members of the community, to  
558 get an accurate picture of the level of support for the trial. This has eventually resulted  
559 in the creation of the “Friends of the Lynx” group (Convery et al. 2017).

560

### 561 *The need for genuine and transparent consultation*

562 The importance of understanding and incorporating social impacts in conservation has  
563 long been established (Kaplan-Hallam & Bennet 2017) and are integral to the IUCN  
564 Guidelines for Reintroductions and Other Conservation Translocations (IUCN/SSC  
565 2013). The main focus of this work has been to examine community attitudes towards  
566 the proposed reintroduction. However, although the consultation plan centred on a  
567 community-based approach, there were several factors which constrained public  
568 participation, information sharing and transparent communications integral to this  
569 (Arts et al. 2012; IUCN/SSC 2013). In this paper we have discussed many of the  
570 issues which may have fostered disagreement and conflict concerning the proposed  
571 lynx reintroduction to Kielder, and we have highlighted some key challenges that  
572 need to be addressed by any subsequent lynx reintroduction initiative. Central to this  
573 is the need to find common ground with communities where there are likely to be  
574 conflicting values and priorities, and the early engagement of all ‘actual and potential  
575 stakeholders’ (Coz & Young 2020) in project development and design is



576 fundamentally important; communities should be fully represented in decisions and  
577 solutions to the issues they themselves have highlighted [whilst also noting Nimegeer  
578 and Farmer's (2016) concerns regarding power relationships within rural communities  
579 and how this might affect processes and outcomes of community participation]. There  
580 needs to be a genuine desire to collaborate with all stakeholders in order to overcome  
581 cultural and/or ecological challenges, and to develop context-specific management  
582 practices and institutional arrangements based on evidence from successful large  
583 carnivore projects elsewhere in Europe (Chapron et al. 2014). Encouraging local,  
584 grassroots leadership for future projects, together with transparency and trust in  
585 sources of information, could help to reduce the uncertainty that a reintroduced  
586 species can create in a social-ecological system.

587

588 The view that genuine, transparent consultation is required is shared by  
589 Northumberland National Park, who in their response to Natural England  
590 (Northumberland National Park Authority 2018) noted that '*a recent report by the*  
591 *University of Cumbria authored by some of the people who undertook the*  
592 *consultation also suggests that there has been insufficient consultation with the local*  
593 *community and co-development of plans should take place with local people*'  
594 (Convery et al. 2017). Similarly, in the Natural England guidance to Secretary of State  
595 Michael Gove MP's eventual decision, they note that '*consultation with national and*  
596 *local stakeholders was undertaken and this initial work was robust, carried out by*  
597 *competent consultants and reported. Further engagement with the local community,*  
598 *recommended in the consultants' report, was not followed up and involvement with*  
599 *landowners and the local community has been a concern throughout.*' (DEFRA  
600 2018).

601  
602 Identifying and understanding the structure of a community to work with is  
603 challenging and, as Berkes (2004) indicates, community-based conservation ‘failure’  
604 may be due to the implementation rather than any weakness or impracticality of the  
605 concept. Clear devolution of authority and responsibility (Songorwa 1999; Murphree  
606 2002) is vital alongside identifying the scale appropriate (Berkes 2004) in a multi-  
607 stakeholder environment. Such an approach takes time, commitment and honesty, and  
608 is often messy and complex, but ultimately necessary for conservation success.

609

### 610 **Acknowledgements**

611 At the time of developing the consultation plan and collecting data, the authors were  
612 working with the LUKT.

613

### 614 **References**

- 615 Andelman SJ, Fagan WF (2000) Umbrellas and flagships: Efficient conservation  
616 surrogates or expensive mistakes?. PNAS 97(11):5954-5959
- 617 Angst C, Breitenmoser U (2003) Eurasian lynx depredation on livestock in  
618 Switzerland – a lasting controversy 30 years after the reintroduction.  
619 Environmental Encounters 58:59-60
- 620 Arts K, Fischer A, van der Wal R (2012) Common stories of reintroduction: A  
621 discourse analysis of documents supporting animal reintroductions to Scotland.  
622 Land Use Policy 29:911-920
- 623 Basille M, Herfindal I, Santin-Janin H, Linnell JDC, Odden J, Andersen R, Hogda  
624 KA, Gaillard JM (2009) What shapes Eurasian lynx distribution in human

- 625 dominated landscapes: selecting prey or avoiding people?. *Ecography* 32:683-
- 626 691
- 627 Berkes F (2004) Rethinking community-based conservation. *Conservation Biology*
- 628 18:621-630
- 629 Bliss D (2019) Lynx and wolf may soon be roaming Britain's wild places again. Is it a
- 630 good idea? *National Geographic*.
- 631 [https://www.nationalgeographic.co.uk/environment-and-](https://www.nationalgeographic.co.uk/environment-and-conservation/2019/09/lynx-and-wolf-may-soon-be-roaming-britains-wild-places-again)
- 632 [conservation/2019/09/lynx-and-wolf-may-soon-be-roaming-britains-wild-](https://www.nationalgeographic.co.uk/environment-and-conservation/2019/09/lynx-and-wolf-may-soon-be-roaming-britains-wild-places-again)
- 633 [places-again](https://www.nationalgeographic.co.uk/environment-and-conservation/2019/09/lynx-and-wolf-may-soon-be-roaming-britains-wild-places-again) (accessed 25 February 2020)
- 634 Breitenmoser U, Breitenmoser-Würsten C (2004) Switzerland. In: von Arx M,
- 635 Breitenmoser-Würsten C, Zimmermann F and Breitenmoser U (eds) Status and
- 636 conservation of the Eurasian lynx (*Lynx lynx*) in Europe in 2001. Kora, Muri
- 637 Buller H (2014) Animal Geographies I. *Progress in Human Geography* 38:308-318
- 638 Burnett, K. (1998) Local heroics: reflecting on incomers and local rural development
- 639 discourses in Scotland. *Sociologia Ruralis* 38(2):204–224
- 640 Cerqueira Y, Navarro LM, Maes J, Marta-Pedroso C, Pradinho Honrado J, Pereira
- 641 HM (2015) Ecosystem Services: The Opportunities of Rewilding in Europe in
- 642 Navarro LM and Pereira HM (eds) *Rewilding European Landscapes*, Springer,
- 643 Dordrecht
- 644 Chapron G, Kaczensky P, Linnell JDC, von Arx M, Huber D, Andren H, Lopez-Bao
- 645 JV, Adamec M, Alvares F, Anders O, Balciauskas L, Balys V, Bedo P, Bego F,
- 646 Blanco JC, Breitenmoser U, Broseth H, Bufka L, Bunikyte R, Ciucci P, Dutsov
- 647 A, Engleder T, Fuxjager C, Groff C, Holmala K, Hoxha B, Iliopoulos Y,
- 648 Ionescu O, Jeremic J, Jerina K, Kluth G, Knauer F, Kojola I, Kos I, Krofel M,
- 649 Kubala J, Kunovac S, Kusak J, Kutal M, Liberg O, Majic A, Mannil P, Manz R,

- 650 Marboutin E, Marucco F, Melovski D, Mersini K, Mertzanis Y, Myslajek RW,  
651 Nowak S, Odden J, Ozolins J, Palomero G, Paunovic M, Persson J, Potocnik H,  
652 Quenette PY, Rauer G, Reinhardt I, Rigg R, Ryser A, Salvatori V, Skrbinek T,  
653 Stojanov A, Swenson JE, Szemethy L, Trajce A, Tsingarska-Sedefcheva E,  
654 Vana M, Veeroja R, Wabakken P, Wofl M, Wolf S, Zimmermann F, Zlatanova  
655 D and Boitani L (2014) Recovery of large carnivores in Europe's modern  
656 human-dominated landscapes. *Science* 346:1517-1519
- 657 Convery I, Smith D, Brady D, Hawkins S, Iversen S, Mayhew M, Eagle A (2016)  
658 Lynx UK Trust Consultation Brief: Kielder.  
659 <http://insight.cumbria.ac.uk/id/eprint/3453> (accessed 4 December 2017)
- 660 Convery I, Smith D, Brady D, Hawkins S, Mayhew M, Iversen S, Lipscombe S  
661 (2017) Interim Community Consultation Report: Kielder.  
662 <http://insight.cumbria.ac.uk/id/eprint/3802/> (accessed 16 July 2019)
- 663 Coz, D.M, & Young, J.C. (2020) Conflicts over wildlife conservation: Learning from  
664 the reintroduction of beavers in Scotland. *People Nature* 00:1– 14.  
665 <https://doi.org/10.1002/pan3.10076>
- 666 DEFRA (2018) Lynx reintroduction in Kielder Forest.  
667 <https://www.gov.uk/government/publications/lynx-reintroduction-in-kielder-forest>  
668 (accessed 18 November 2019)
- 669 Di Minin E, Slotow R, Hunter LTB, Puzols FM, Toivonen T, Verburg PH, Leader-  
670 Williams N, Petracca L, Moilanen A (2016) Global priorities for national  
671 carnivore conservation under land use change. *Scientific Reports* 6:23814
- 672 Gehr B, Hofer EJ, Muff S, Ryser A, Vimercati E, Vogt K, Keller LF (2017) A  
673 landscape of coexistence for a large predator in a human dominated landscape.  
674 *Oikos* 126:1389–1399

- 675 Griffith B, Scott JM, Carpenter JW, Reed C (1989) Translocation as a species  
676 conservation tool: Status and strategy. *Science* 245:477-480
- 677 Halliday J, Parveen N (2017) Plan to return the lynx splits friends and families in  
678 Kielder Forest community. [https://www.theguardian.com/uk-](https://www.theguardian.com/uk-news/2017/feb/03/plan-to-introduce-lynx-to-kielder-forest-angers-farmers)  
679 [news/2017/feb/03/plan-to-introduce-lynx-to-kielder-forest-angers-farmers](https://www.theguardian.com/uk-news/2017/feb/03/plan-to-introduce-lynx-to-kielder-forest-angers-farmers)  
680 (accessed 4 December 2017)
- 681 Hetherington D (2006) The lynx in Britain's past, present and future. *Ecos* 27: 66-74
- 682 Hetherington DA, Miller DR, Macleod CD, Gorman ML (2008) A potential habitat  
683 network for the Eurasian lynx *Lynx lynx* in Scotland. *Mammal Review* 38:285-  
684 303
- 685 Heurich M, Most L, Schaubberger G, Reulen H, Sustr P, Hothorn T (2012) Survival  
686 and causes of death of European Roe Deer before and after Eurasian Lynx  
687 reintroduction in the Bavarian Forest National Park. *European Journal of*  
688 *Wildlife Research* 58:567-578
- 689 Hexham Courant (2016) Chaos erupts at lynx meeting. [http://www.hexham-](http://www.hexham-courant.co.uk/news/bellingham/Chaos-erupts-at-lynx-meeting-45677f1c-956b-414b-8cb0-8dd0e426a85b-ds)  
690 [courant.co.uk/news/bellingham/Chaos-erupts-at-lynx-meeting-45677f1c-956b-](http://www.hexham-courant.co.uk/news/bellingham/Chaos-erupts-at-lynx-meeting-45677f1c-956b-414b-8cb0-8dd0e426a85b-ds)  
691 [414b-8cb0-8dd0e426a85b-ds](http://www.hexham-courant.co.uk/news/bellingham/Chaos-erupts-at-lynx-meeting-45677f1c-956b-414b-8cb0-8dd0e426a85b-ds) (accessed 4 December 2017)
- 692 Hexham Courant (2017) Debate continues over plans to release lynx at Kielder.  
693 [http://www.hexham-courant.co.uk/features/Debate-continues-over-plan-to-](http://www.hexham-courant.co.uk/features/Debate-continues-over-plan-to-release-lynx-at-Kielder-26f9ef29-431e-4906-94b6-1d7a15a0de7e-ds)  
694 [release-lynx-at-Kielder-26f9ef29-431e-4906-94b6-1d7a15a0de7e-ds](http://www.hexham-courant.co.uk/features/Debate-continues-over-plan-to-release-lynx-at-Kielder-26f9ef29-431e-4906-94b6-1d7a15a0de7e-ds) (accessed  
695 4 December 2017)
- 696 Horton, H (2020) Setting lynx wild in Britain could cut deer numbers, head of Natural  
697 England says. *The Telegraph*.  
698 [https://www.telegraph.co.uk/news/2020/02/24/setting-lynx-wild-britain-could-](https://www.telegraph.co.uk/news/2020/02/24/setting-lynx-wild-britain-could-cut-deer-numbers-head-natural/)  
699 [cut-deer-numbers-head-natural/](https://www.telegraph.co.uk/news/2020/02/24/setting-lynx-wild-britain-could-cut-deer-numbers-head-natural/) (accessed 25 February 2020)

- 700 IUCN/SSC (2013) Guidelines for reintroductions and other conservation  
701 translocations, IUCN Species Survival Commission, Gland
- 702 Jobin A, Molinari P, Breitenmoser U (2000) Prey spectrum, prey preference and  
703 consumption rates of Eurasian lynx in the Swiss Jura Mountains. *Acta*  
704 *Theriologica* 45:243-252
- 705 Kaplan-Hallam M, Bennett NJ (2017) Adaptive social impact management for  
706 conservation and environmental management. *Conservation Biology* 32:304-  
707 314
- 708 Kaczensky P, Chapron G, von Arx M, Huber D, Andren H, Linnell J (2012) Status,  
709 management and distribution of large carnivores - bears, lynx, wolf & wolverine  
710 - in Europe.  
711 [http://ec.europa.eu/environment/nature/conservation/species/carnivores/conserv](http://ec.europa.eu/environment/nature/conservation/species/carnivores/conservation_status.htm)  
712 [ation\\_status.htm](http://ec.europa.eu/environment/nature/conservation/species/carnivores/conservation_status.htm) (accessed 10 November 2017)
- 713 Mansfield L, Hawkins SA, Mayhew M, Brady D, White C, Eagle A, Smith D,  
714 Lipscombe S, van Maanen E, Convery I (awaiting decision) Farmer  
715 perspectives on a proposed *Lynx lynx* reintroduction in the UK
- 716 Marshall K, White R, Fischer A. (2007) Conflicts between humans over wildlife  
717 management: On the diversity of stakeholder attitudes and implications for  
718 conflict management. *Biodiversity and Conservation* 16:3129-3146
- 719 Mascia MB, Brosius JP, Dobson TA, Forbes BC, Horowitz L, McKean MA, Turner  
720 NJ (2003) Conservation and the social sciences. *Conservation Biology* 17:649-  
721 650
- 722 Murphree MW (2002) Protected areas and the commons. *Common Property Resource*  
723 *Digest* 60:1-3

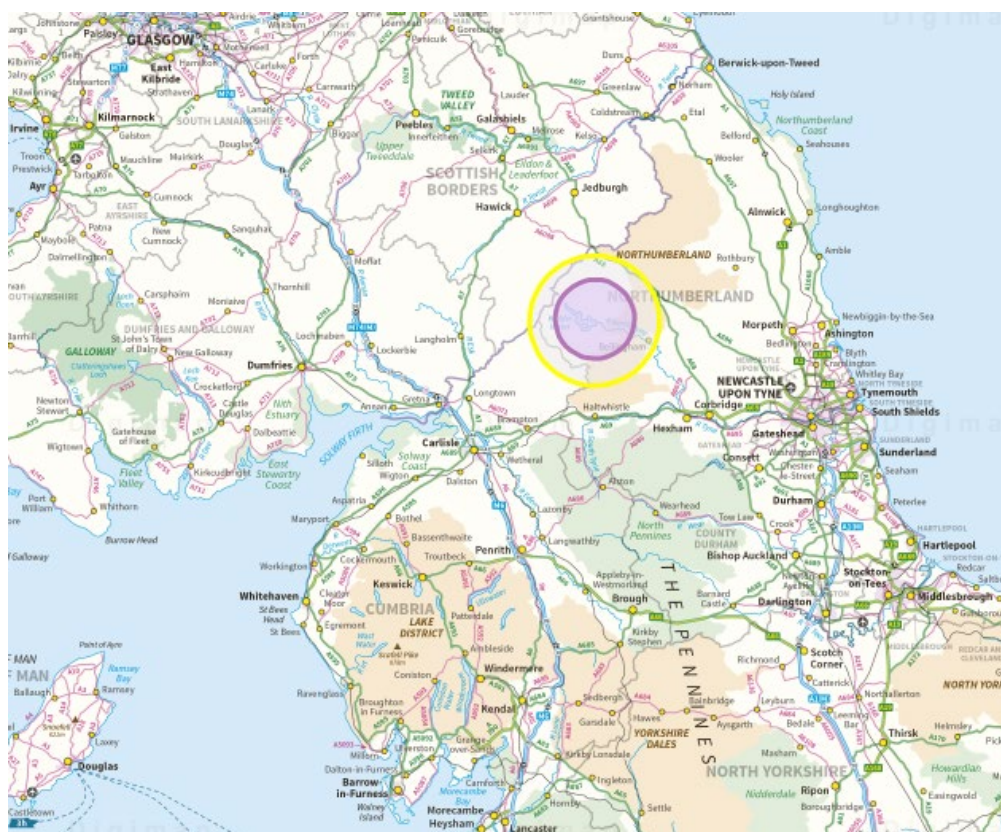
- 724 Nilsen EB, Milner-Gulland EJ, Schofield L, Mysterud A, Stenseth NC, Coulson T  
725 (2007) Wolf reintroduction to Scotland: public attitudes and consequences for  
726 red deer management. *Proceedings of the Royal Society of London B:  
727 Biological Sciences* 274:995-1003
- 728 Nimegeer, A., and Farmer, J. (2016) Prioritising rural authenticity: community  
729 members' use of discourse in rural healthcare participation and why it matters.  
730 *Journal of Rural Studies*, 43:94-103.
- 731 Northumberland National Park Authority (2018) Trial reintroduction of lynx into  
732 Kielder Forest. [https://nnp-tacdesign.netdna-ssl.com/wp-](https://nnp-tacdesign.netdna-ssl.com/wp-content/uploads/2018/05/Natural-England-NNPA-response-to-Lynx-Proposal.pdf)  
733 [content/uploads/2018/05/Natural-England-NNPA-response-to-Lynx-](https://nnp-tacdesign.netdna-ssl.com/wp-content/uploads/2018/05/Natural-England-NNPA-response-to-Lynx-Proposal.pdf)  
734 [Proposal.pdf](https://nnp-tacdesign.netdna-ssl.com/wp-content/uploads/2018/05/Natural-England-NNPA-response-to-Lynx-Proposal.pdf) (accessed 17 November 19)
- 735 O'Rourke E (2014) The reintroduction of the white-tailed sea eagle to Ireland: People  
736 and wildlife. *Land Use Policy* 38:129-137
- 737 Odden J, Linnell JDC, Andersen R (2006) Diet of Eurasian lynx, *Lynx lynx*, in the  
738 boreal forest of southeastern Norway: the relative importance of livestock and  
739 hares at low roe deer density. *European Journal of Wildlife Research* 52:237-  
740 244
- 741 Odden J, Nilsen EB, Linnell JDC (2013) Density of Wild Prey Modulates Lynx Kill  
742 Rates on Free-Ranging Domestic Sheep. *PLoS ONE* 8:e79261
- 743 Rewilding Europe (2020) Nature-Based Economies. Available at:  
744 <https://rewildingeurope.com/rewilding-in-action/nature-based-economies/>  
745 (accessed 6 April 2020)
- 746 Sergio F, Newton I, Marchesi L, Pedrini P (2006) Ecologically justified charisma:  
747 preservation of top predators delivers biodiversity conservation. *Journal of  
748 Applied Ecology* 43:1049-1055

- 749 Simberloff D (1998) Flagships, umbrellas, and keystones: Is single-species  
750 management passé in the landscape era? *Biological Conservation* 83:247-257
- 751 Smith D, O'Donoghue P, Convery I, Eagle A, Piper S (2015) Reintroduction of the  
752 Eurasian Lynx to the United Kingdom: Results of a public survey.  
753 <http://lynxuk.org/publications/lynxinterimsurvey.pdf> (accessed 4 December  
754 2017)
- 755 Smith D, O'Donoghue P, Convery I, Eagle A, Piper S, White C, van Maanen E  
756 (2016a) Application to Natural England for the trial reintroduction of Lynx to  
757 England. <http://lynxuk.org/publications/EngLynxConsult.pdf> (accessed 4  
758 December 2017)
- 759 Smith D, O'Donoghue P, Convery I, Eagle A, Piper S, White C, van Maanen E  
760 (2016b) Application to Scottish Natural Heritage for the trial reintroduction of  
761 lynx to Scotland. <http://lynxuk.org/publications/ScotLynxConsult.pdf> (accessed  
762 4 December 2017)
- 763 Smith D, O'Donoghue P, Convery I, Eagle A, Piper S, White C (2016c) Lynx UK  
764 Trust – A national stakeholder consultation: an interim consultation document.  
765 <http://lynxuk.org/publications/lynxinterimdoc.pdf> (accessed 4 December 2017)
- 766 Songorwa AN (1999) Community-Based Wildlife Management (CWM) in Tanzania:  
767 Are the Communities Interested? *World Development* 27:2061-2079
- 768 Thirgood S, Redpath S (2008) Hen harriers and red grouse: Science, politics and  
769 human-wildlife conflict. *Journal of Applied Ecology* 45:1550-1554
- 770 Treeves A and Bruskotter J (2014) Tolerance for Predatory Wildlife. *Science*  
771 344:476-477
- 772 Ovenden TS, Palmer SCF, Travis JMJ, Healey JR (2019) Improving reintroduction  
773 success in large carnivores through individual-based modelling: How to



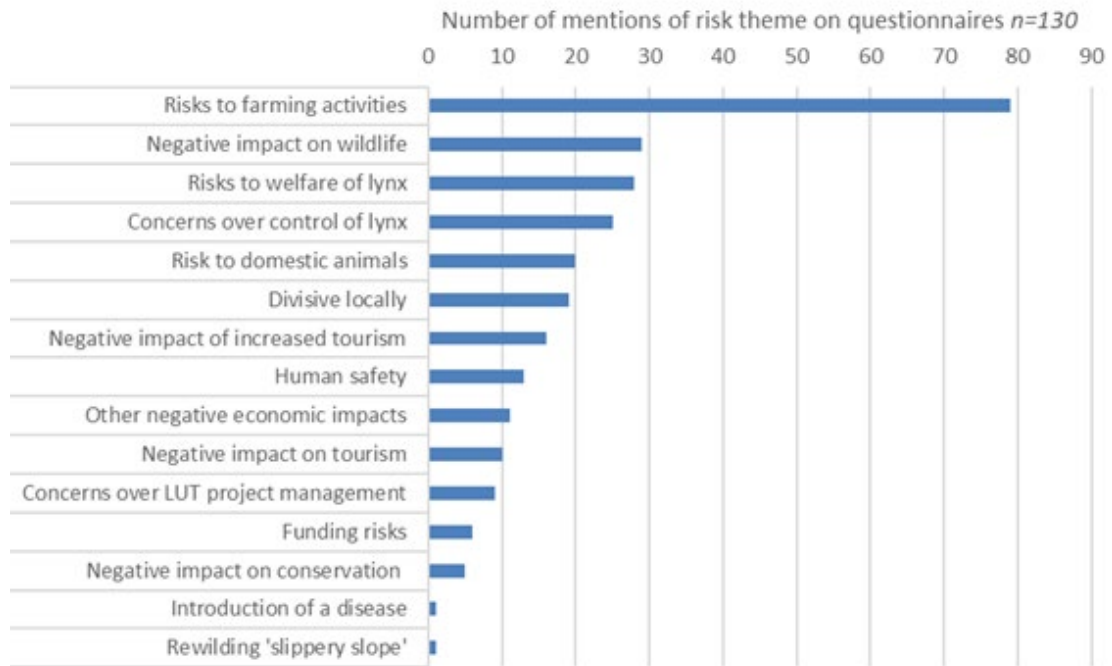
- 774 reintroduce Eurasian lynx (*Lynx lynx*) to Scotland. *Biological Conservation*  
775 234:140-153.
- 776 Trouwborst A (2010) Managing the carnivore comeback: International and EU  
777 species protection law and the return of Lynx, Wolf and bear to Western  
778 Europe. *Journal of Environmental Law* 22:347-372
- 779 van Heel BF, Boerboom AM, Fliervoet JM, Lenders HJR, van den Born RJG (2017)  
780 Analysing stakeholders' perceptions of wolf, lynx and fox in a Dutch riverine  
781 area. *Biodiversity and Conservation* 26:1723-1743
- 782 von Essen E (2017) Whose Discourse Is It Anyway? Understanding Resistance  
783 through the Rise of "Barstool Biology" in Nature Conservation. *Environmental*  
784 *Communication* 11:470-489
- 785 Watts S, Stenner P (2005) Doing Q methodology: Theory, method and interpretation.  
786 *Qualitative Research in Psychology* 2:67-91
- 787 Watts S, Stenner P (2012) Doing Q Methodological Research: Theory method and  
788 interpretation. Sage Publications, London
- 789 White C, Convery I, Eagle A, O'Donoghue P, Piper S, Rowcroft P, Smith D, van  
790 Maanen E (2015) Cost-benefit analysis for the reintroduction of lynx to the UK:  
791 Main report. [http://www.aecom.com/uk/wp-content/uploads/2015/09/Cost-](http://www.aecom.com/uk/wp-content/uploads/2015/09/Cost-benefit-analysis-for-the-reintroduction-of-lynx-to-the-UK-Main-report.pdf)  
792 [benefit-analysis-for-the-reintroduction-of-lynx-to-the-UK-Main-report.pdf](http://www.aecom.com/uk/wp-content/uploads/2015/09/Cost-benefit-analysis-for-the-reintroduction-of-lynx-to-the-UK-Main-report.pdf)  
793 (accessed 4 December 2017)
- 794 White C, Waters J, Eagle A, O'Donoghue P, Rowcroft P, Wade M (2016a)  
795 Reintroduction of the Eurasian Lynx to the United Kingdom: Trial site  
796 selection. <http://lynxuk.org/publications/lynxsiteselection.pdf> (accessed 4  
797 December 2017)

798 White C, Almond M, Dalton A, Eves C, Fessey M, Heaver M, Hyatt E, Rowcroft P  
 799 and Waters J (2016b) The economic impact of lynx in the Harz Mountains.  
 800 <http://lynxuk.org/publications/lynxharz.pdf> (accessed 4 December 2017)  
 801 Wilson CJ (2004) Could we live with reintroduced large carnivores in the UK?  
 802 Mammal Review 34:211-232  
 803 Woods, M. (2005). Contesting rurality: Politics in the British countryside. London:  
 804 Taylor & Francis.  
 805 Woods M, Heley J, Richards C, Watkins S. (2012) Rural People and the Land. In:  
 806 Convery I, Corsane G, Davis P (eds) Making Sense of Place: Multidisciplinary  
 807 Perspectives, Boydell Press, Woodbridge  
 808



809  
 810 **Figure 1. Location of Kielder forest within the UK and zoned approach to**  
 811 **community engagement, indicating primary zone (inner cycle) and secondary**  
 812 **zone (outer cycle).**

813

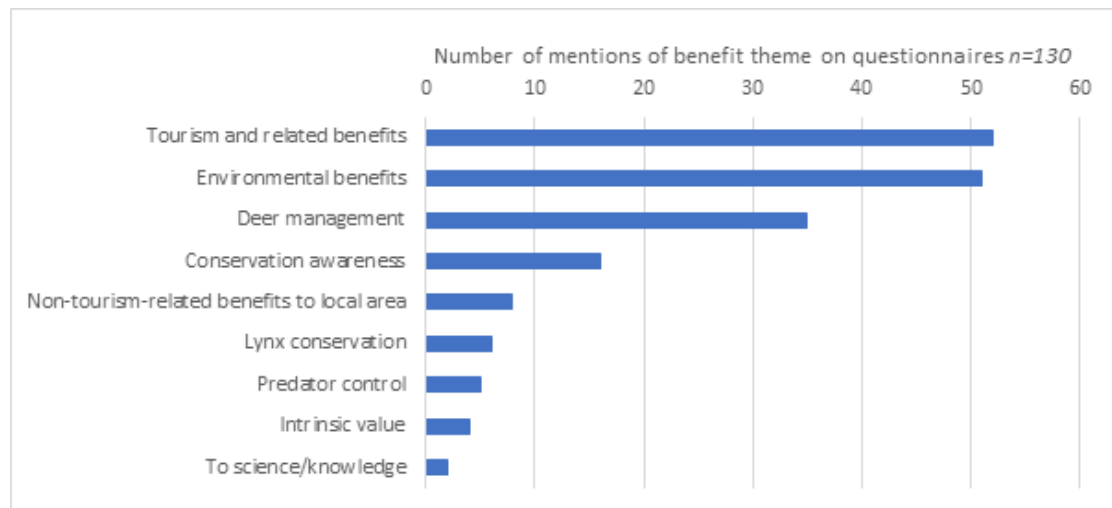


814

815 **Figure 2: Key risks raised on community questionnaires.**

816

817



818

819

820 **Figure 3: Key benefits raised on community questionnaires.**

821 **Table 1: Source of risks/benefits questionnaires**

Questionnaire source	Number ( <i>n</i> =130)
Door-to-door activities	86
Open meeting: Tasset	5
Open meeting: Newcastleton	3
Open meeting: Langholm	7
Presentation: Borders Natural History Society	17
Presentation: Bellingham Business Forum	12

822

823 **Table 2: Questionnaire demographics (including comparative demographics for**  
824 **Bellingham Ward)**

LUKT Kielder Sample				Bellingham Ward
Gender		Age group		Age group (%)
Male	67	Under 16	1 (0.8%)	14.9
Female	61	16-24	3 (2.3%)	8.1
Unstated	2	25-34	15 (11.5%)	8.3
		35-44	7 (5.4%)	12.3
		45-54	15 (11.5%)	17.8
		55-64	34 (26.2%)	16.5
		65+	42 (32%)	22.1
		Unstated	13 (10%)	

825

826 **Table 3: Details of consultation meetings which resulted in data in the form of**  
827 **meeting notes from question and answer sessions**

<b>Meeting (zone)</b>	<b>Date</b>	<b>Number of attendees</b>
Kielder open meeting (primary)	11 August 2016	~60-80
Newcastleton open meeting (secondary)	30 November 2016	~20-30
Langholm open meeting (secondary)	12 January 2017	~20
Tarset open meeting (primary)	1 February 2017	~50-60

828

829 **Table S1: Q statements their scores based on where participants placed them on**  
830 **the Q grid.**