Social dimensions of beaver reintroduction in England: qualitative research pilot

A summary of key findings

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Contents

Foreword by Natural England

Natural England commission a range of reports from external contractors to provide evidence and advice to assist us in delivering our duties. The views in this report are those of the authors and do not necessarily represent those of Natural England.

Context

A five-year licence was issued by Natural England in 2015 to legitimise the presence of beavers that had been living wild on the River Otter, Devon, enabling an authorised trial of a beaver reintroduction. In 2020 a decision was made by ministers, following the conclusion and assessment of trial results, to permit those free-living beavers to remain and continue to expand their range naturally. This has resulted in widespread interest in reintroducing beavers to new areas of England.

Over the last 18 months, Natural England has conducted a review of the available evidence on the interactions of beavers with the natural and human environment in relation to England. The purpose of that review was to determine whether the evidence suggests it is appropriate to reintroduce beavers more widely in England and to highlight key evidence relevant to decisions on further beaver releases. In conducting the review, Natural England identified that the social science evidence related to beaver introduction was growing but limited. The evidence suggested that stakeholders and the public were generally supportive of beaver reintroductions. However, it also suggested that there is potential for conflict related to beaver reintroduction in certain contexts and amongst certain groups including landowners and farmers in specific geographies, anglers and commercial fisheries and specific communities living close to reintroductions.

Scope

The purpose of this research commission is to better understand the potential for conflict, including by exploring some of the more challenging issues identified in the literature.

The purpose of this study was not to understand how widespread views are, nor whether they are representative of the stakeholder population. The purpose of the study was to explore the depth of feeling, and the potential for conflict, amongst those who had direct experience of beaver reintroduction, including those that may have been negatively affected.

Professor Alex Inman was commissioned to conduct a small qualitative research pilot to explore issues to help inform future research needs. Annex 1 sets out the rationale in commissioning this pilot study to use qualitative methods.

Background & Objectives

This report contains the main findings from a pilot research project using qualitative methods to assess the social implications of wild beaver reintroduction in England. The content is anticipated to complement the ecological and economic review currently being undertaken by Natural England to inform decision-making on this complex topic.

The social dimensions explored within the study were three-fold:

- Likely conflicts associated with reintroduction.
- Social factors relevant to the development and adaptation of policy, licencing and management strategies.
- Public attitudes towards potential beaver reintroduction and possible changes over time.

The research methodology adopted comprised a two-stage approach:

1. **Development of the qualitative research pilot design, informed by key papers from the academic (social) research and grey literature** relevant to beaver reintroduction including the assessment undertaken by Scottish Natural Heritage in 2015 and the recent Science and Evidence Report from the River Otter Beaver Trial in Devon. Given the limited time for this study, a literature search focused on academic articles from a Scopus[1] search which identified 116 papers. Abstracts of these were considered and only those directly relevant to the objectives of this study were selected for further enquiry. In total, 8 documents were examined in detail as listed in Annex 2. In conclusion, it was noted that academic effort thus far appears to have focussed on the natural science aspects of beaver ecology and reintroduction, revealing a dearth of salient social research.
2. To address the gaps in the literature, **primary qualitative research** was undertaken. The rationale for the use of qualitative research and related sample design parameters are outlined in Annex 1. This phase of the study involved in-depth interviews with individuals from three stakeholder typologies (1) members of the farming community (2) members of the fishing community (3) professionals from the conservation community in England and Scotland with direct experience of managing beaver introductions. Farmers (coded in this summary as ‘Farm’) and fishermen (‘Fish’) were selected due to the literature review indicating these two communities are most likely to be directly involved in the management of beaver populations and are at greatest risk of having their interests compromised in certain situations. Conservation professionals (‘Cons’) were selected to obtain their

[1] Using the search terms: (TITLE-ABS-KEY ("castor fiber" OR "castor canadensis" OR "castor spp" OR "eurasian beaver") AND TITLE-ABS-KEY ("human-wildlife conflict" OR perceptions OR reintroduction OR survey OR socio-economic OR behaviour OR attitudes OR values)) AND (LIMIT-TO (PUBYEAR , 2019) OR LIMIT-TO (PUBYEAR , 2018) OR LIMIT-TO (PUBYEAR , 2017) OR LIMIT-TO (PUBYEAR , 2016) OR LIMIT-TO (PUBYEAR , 2015)) AND (LIMIT-TO (LANGUAGE , "English"))

experience of engagement with rural stakeholders within the context of existing or proposed introductions. Semi-structured interview questions were developed based on the findings of the literature review to focus on those aspects of beaver reintroduction likely to be most salient to conflict generation and resolution (see Annex 3). In accordance with Natural England's standard procedures, ethical approval was obtained in line with Natural England's Ethics Committee guidelines. Informed consent was obtained from all respondents which guarantees respondent anonymity.

In total, seven respondents were interviewed as outlined below:

Respondent 1 (Farm) - Livestock farmer with experience of beaver introduction in England.

Respondent 2 (Farm) - Diversified farmer (farm not active) with experience of beaver introduction in England.

Respondent 3 (Fish/Farm) - Fisherman/land manager with extensive experience of fisheries management in England.

Respondent 4 (Fish) - Fisherman with extensive experience of fisheries management in England.

Respondent 5 (Fish) - Fisherman with extensive experience of fisheries management in England.

Respondent 6 (Cons) - Conservation professional with experience of beaver management in England.

Respondent 7 (Cons)- Conservation professional with extensive experience of beaver management in Scotland.

The research interviews were undertaken during March and April 2020 over the telephone and video conferencing platforms by the author of this report. All interviews were recorded, allowing detailed capture of participant opinion for subsequent analysis and the transcribing of verbatim comments for reporting purposes.

Main Findings

The main findings from the research are summarised here combining insight gained from both the literature review and the primary research interviews undertaken. Verbatim comments from respondents are included to emphasise particular items raised.

Likely conflicts associated with reintroduction

The study suggests there are three societal groups where the risk of conflict with beaver reintroduction is likely to be greatest:

1. **Landowners/farmers in specific geographical contexts** - landholdings with the following characteristics are potentially most likely to experience damage from beaver activity and, therefore, represent the most likely conflict zones:

- Those with flat, or very gently sloping, ground adjacent to watercourses, which might be inundated by embankment breaches (due to beaver burrowing for example) or drainage failures (e.g. linked to dams blocking drains). Farmers with high value intensively farmed land (particularly arable) in the lower reaches of river catchments are likely to be particularly concerned. Expert opinion (Respondent 7 (Cons)) suggests the backing up of river levels causing field drains to stop flowing can affect farmland drainage many hundreds of meters from a watercourse (i.e. not just the riparian corridor). This means 10 m 'beaver buffer strips' immediately adjacent to watercourses will not alleviate the problem in these situations.
- Those with high value deciduous trees near to watercourses (beavers are not interested in coniferous woodland).
- Those with crops in the vicinity of watercourses which are a favoured food source for beavers e.g. maize on dairy farms.

The research revealed that there will undoubtedly be a selection of farmers who will welcome beaver reintroduction:

> "We really enjoy the thought of having them there…..trees can be easily replaced. We purposefully walk down there every night now….we really appreciate where we are now more than we did before…it's an added thing you know, will we see the beaver?" (Respondent 2 (Farm)).

Respondents in this small pilot study suggested it is likely that overtly receptive hosts will be restricted to 'hobby farmers', those with sufficient marginal land or where farming is a very small proportion of family income. The interview with Respondent 2 (Farm) highlights this dynamic well. This individual was extremely positive about beaver presence on his land even though an estimated 200 trees have been felled on a field adjacent to the river as a result. It became evident within the interview that the respondent's obliging attitude stemmed from him no longer farming the land and, therefore, seeing no cause for concern. When the farm had been an active commercial dairy farm, attitudes towards perceived problematic species (in this case badgers) had not always been so benign:

> "When we were milking cows and growing maize, there was a time when badgers were not the most welcome animal on the farm." (Respondent 2 (Farm)).

Some respondents talked about their experiences with badgers as part of the context for their views on beaver reintroduction. For example, it became apparent from the research that the unease and concern felt by farmers towards badgers (and associated management practices) carries over to their disposition on beavers.

> "TB is a massive issue for some local farmers and this [referring to arrival of beavers in the vicinity] is just another little nail in the coffin…it's another thing that can go wrong…another thing to think about!" (Respondent 1 (Farm)).

This is not to suggest that the respondent was worried about beavers carrying TB (there have been no recorded cases of beavers with TB in Great Britain), but, at a time when many farm incomes are under significant pressure, the perceived threat of another protected and potentially problematic wildlife species to manage appears to be a source of contention.

This is particularly when farmers appear to look at beavers through a lens of financial costs not benefits.

A survey of land managers on Tayside (Scottish Natural Heritage, 2015), where the beaver population is much greater than the official Scottish beaver trial at Knapdale, serves to illustrate this position with the main perceive costs identified as follows: damage to trees; damage to banks and drains; damage to crops; and flooded fields/trees/crops. Only a third of respondents perceived no costs associated with beaver activity. It was not within the scope of this study to undertake any form of economic assessment to corroborate or otherwise these claims. However, the literature review suggests there may well be an economic disparity where *'there is an imbalance between those who experience the benefits of beavers (e.g. tourism industry, wider public) and those who bear the costs (e.g. agriculture, forestry)'*(SRUC, 2016).

Indeed, the overriding perception from Respondents 1 (Farm) and 3 (Fish/Farm) was that farmers will bear the costs of managing beaver populations as there will not be enough money available from government and/or the NGO sector. The coronavirus pandemic has exacerbated concerns over retrenchment in government expenditure on the environment:

> "Who pays for managing them [the beavers]? – it's not going to be the NGOs, it's the poor old individuals down the line who are going to have to foot the bill to look after the situation'. The EA and Agencies don't have any money." (Respondent 3 (Fish/Farm)).

> "Those trees belong to somebody, those fence posts belong to somebody, the farmland belongs to somebody….its somebody's livelihood."(Respondent 3 (Fish/Farm)).

It is also worth noting a degree of scepticism regarding the overarching benefits of public expenditure being dedicated towards beaver reintroductions:

> “All this money being spent on a few animals just seems a little bit out of kilter….I’m not sure the impact of the beavers has been money well spent.” (Respondent 1 (Farm)).

Respondent 3 (Fish) was of the strong view that limited financial resources would be better spent on addressing at-source pollution problems associated with farm management practices and land use, rather than the perceived unproven end-of-pipe mitigation by beavers.

Considerable attention in the interviews was focussed on discussing the merits of beaver specific agri-environment payments to offset costs of impacts and to make space for beaver populations. Lessons from the USA indicate that less negativity towards beaver populations occurs where financial assistance is in place to offset any complications (Abram et al, 2019). It is also reported in the River Otter Beaver Trial review (Brazier et al, 2020) that mitigation measures (e.g. dam removal and installation of electric fencing to protect maize crops) supplied and installed by the project team successfully reduced conflict with local farmers. However, evidence from interviews with Respondent 1 (Farm) and 3 (Fish/Farm) suggest that whilst payments are likely to go some way to bringing farmers on-side on marginal farmland, this is far less likely to be the case with individuals farming high quality land. In particular, historical experience since the introduction of the original Countryside Stewardship scheme (and its subsequent incarnations) is that the uptake of land reversion payments – particularly on arable land - has been very low and there is no reason why beaver specific habitat creation payments would fare any differently going forward unless there are substantive changes in relation to both payment rates and process.

2. **Salmonid fisheries interests -** the fish species regarded by fisheries interests to be at greatest risk from beaver introductions are Atlantic salmon (especially the spring stock component), sea trout and brown trout. This is due to the perceived restrictions to the migration of these species within a river system as a result of dam-building. Impacts on coarse fisheries (e.g. pike, roach etc.) are likely to be less controversial as these species are considered less susceptible to migration barriers.

> “I love seeing and hearing otters when I’m fishing at night……but I have a different view towards beavers than I do towards otters…can we afford to have yet another pressure on that very fragile population of Atlantic salmon and to some extent seatrout and the answer to that is not really well known.” (Respondent 4, (Fish)).

Interviews with Respondents 3 (Fish), 4 (Fish) and 5 (Fish) revealed a strongly held view that the Atlantic salmon population in England is already in a very fragile condition. Voluntarily introducing an additional perceived negative pressure is regarded by them to be fundamentally illogical. There is also concern that speciesism is at play amongst sections of the conservation community who were criticised by some respondents for being more positively disposed towards certain animals than others:

> “They’re photogenic, cuddly, people don’t see them in any way as a threat…beavers will fall into that category of ‘we love them’ so the science will not be the sole

determining factor in what protection they get, what management they get in the future." (Respondent 4, (Fish)).

"Unfortunately [negative views about beavers] is not something that people want to hear because fish are underwater and smelly and something you eat off the slab from the fishmongers whereas nice fluffy animals [i.e. beavers] look great….what is it [referring to beavers], a charismatic mega fauna." (Respondent 5, (Fish)).

Fisheries interests interviewed stressed uncertainty in the science surrounding positive salmon/beaver symbiosis, citing an academic review from Paul Kemp at Southampton University to support this position. These respondents also indicated that the introduction of beavers would, in their opinion, directly conflict with designated SAC habitats such as chalk streams in southern England. The fear here is that beavers will destroy ranunculus beds on which chalk stream ecology depends and on which chalk stream designated status is based. Other sites protected under the Ramsar convention are also regarded as under threat.

Experience from Scotland (Respondent 7 (Cons)) also suggests that beavers alter the tidy appearance of fisheries which, whilst appearing overly manicured to the ecologist, are often highly sought after by large sections of the angling community. Changes to fishery aesthetics is also likely to be a source of conflict within the more highly managed waters south of the border.

3. **Specific ad-hoc communities in downstream catchment areas**. Experience in Tayside (Scottish Natural Heritage, 2015) suggests impacts on flood defence and drainage networks may create risks for specific domestic residences in downstream localities (e.g. blocked culverts from beaver activity can cause localised flood risk). Damage to ornamental gardens and other speciality resources might be incurred by tree felling, boring activity etc. (Scottish Natural Heritage, 2015). A specific example was given in England by Respondent 3 (Fish/Farm) where beavers were said to have cut down a commemorative willow tree planted by a local couple to symbolise fifty years of marriage.

Social factors relevant to the development and adaptation of policy, licencing and management strategies

There are a plethora of intertwining socio-political factors which are likely to have a bearing on successful policy and practice design around beaver reintroduction. The interviews suggest that arrival of beavers without consent and without perceived legitimacy is likely to exacerbate existing cultural tensions between farmers/fishermen and conservationists and between 'rural' and 'urban' identities at a time when consensus building to develop a multifunctional landscape is already proving a difficult proposition to deliver.

It would appear from the interviews that there are two social factors which some respondents felt that decision makers need to take into account: (1) policy, licencing and management must take place within a trusted, scientifically led and transparent process which is not perceived to be steamrolled through by the 'conservation lobby' (2) the perception that beaver reintroduction has the potential to disproportionately affect farming and fishing interests negatively compared to other sections of society. For this reason, farming and fisheries interests argued they have a legitimate right to exercise a significant say in future policy and practice design; and also felt that they should have a high degree of self-determination regarding how the species is managed. Findings from the research pertinent to both these considerations are summarised below.

Trust deficit

It became apparent from the interviews undertaken that any proposed policy of future beaver reintroductions in England should not ignore the genesis of beaver introductions that have taken place thus far. Interviews with farming/fisheries respondents suggested that, in some places, trust in 'the science', practices and motives of those entities and individuals promoting the reintroduction agenda appears fragile. Given the qualitative nature of the study and small sample size, it is not clear how far these attitudes are shared with farming/fisheries stakeholders elsewhere. An indication of the strength of feeling encountered within this study is illustrated in the verbatim comment below:

> "There has been a huge amount of galvanising of the troops as a result of this situation in [County in SW England]…lots of letters to Ministers. With some sensitive and careful communication and respect for each other and trust and listening to each other's point of view a lot of this shouldn't have happened but now we've got absolute loggerheads and there will be a monumental fight. I know a London legal firm has been instructed to look into it." (Respondent 3 (Fish/Farm)).

Of note, the interviews suggest there is a component within farming and fishing communities who believe that beaver advocates are attempting to force through reintroduction by using perceived tactics of illegal introductions, emotive public communication and 'unsubstantiated science'. It was recognised by interviews from all respondent typologies (Fish/Farm/Cons) that the River Otter Beaver Trial is a study based on an initially unlicensed arrival of beavers into the catchment over which local farming and fisheries interests had no say. This has not helped its perceived legitimacy in the eyes of the beaver sceptics, particularly given "no-one has been held accountable" for the introductions. The interviews suggest that these unauthorised introductions (either through accident or illegal intent) currently being reported are in serious danger of delegitimising the official conservation effort to reintroduce the species legally in England.

> "Illegal introductions, has anyone actually been prosecuted for illegal introductions...no."(Respondent 4 (Fish)).

> “There are clearly people who are actively spreading beavers around so the problem becomes widespread so it is not possible for it to be simply swept away…we have our suspicions as to who that might be.” (Respondent 5 (Fish)).

Some of the beaver sceptics interviewed also felt the pro-beaver camp had used their public communication expertise and resources to present a biased view to the public:

> “[The local conservation NGO] has a very good PR machine…they’ve been working the systems….twitter, facebook and the rest of it….there has been no alternative view, a balanced view put out there and yet there is strong evidence from this country and Europe to say that beavers actually do not do much good.” (Respondent 4 (Fish)).

> “I don’t think they were listening….they were looking to do what they wanted to do to meet their agenda.” (Respondent 1 (Farm)).

Some respondents felt that ‘beaver proponents’ had a propensity to overstate the hydrological and ecological benefits of the species and underplay the negatives. Respondent 4 (Fish) was keen to point out that the flood mitigation potential of beaver populations has only been studied empirically at a micro-level; yet beaver advocates in his words: “have a tendency to read this across to catchment scale assumptions….this is not scientifically robust”. Respondent 3 (Fish/Farm) explained with considerable passion his concerns regarding fish migration, bank erosion and silt deposition based on personal observations and site visits; yet he felt none of these issues had been taken on board by beaver reintroduction advocates. Respondent 5 (Fish) personally discredited the River Otter Beaver Trial scientific report arguing no baseline ecological data had been collected. This respondent also rejected the reports assertion that seatrout migration is not impeded by dams, stating this conclusion was based on observations from a single dam which, in their view, is atypical of all others on the river.

In some of the interviews with farmers and fisherman, they revealed a perceived arrogance on the part of the conservation/scientific community which appears to have fuelled tensions considerably:

> “I find the proponents of beavers arrogant...who are you to question…we’re the scientists…we’re the experts….they almost want to pat you on the head.” (Respondent 4, (Fish)).

Interestingly, feedback from Scotland suggests a similar tension had existed between landowners and government agencies, resulting in the later learning considerable lessons and making changes to its approach accordingly:

> “An enormous amount of ill will exacerbated by us as an organisation not being very good…being a bit dictatorial with people…not engaging with landowners…..saying you can’t do this, you can’t do that.” (Respondent 7 (Cons)).

When attempting to understand conflict, it is also important to note there was a strong belief amongst the fisheries and farming interests interviewed that the beaver reintroduction agenda is motivated, in some cases, by personal/institutional economic

drivers rather than purely philanthropic factors. This has not helped the creation of trusted relationships and transparent dialogue. Some of the opinions put forward through the interviews included:

> "They'll do anything for money…their mortgages depend on finding something new to excite people to fund." (Respondent 4 (Fish)).

> "His business depends on rewilding and beaver reintroduction." (Respondent 4 (Fish)).

> "You've got celebrities, a lot of money pushing the beavers...sometimes you think they are pushing these projects for what? Is it their personal gain…..what are the real outcomes going to be?"(Respondent 1 (Farm)).

> "There are people who are bending the science and making a living out of it." (Respondent 5 (Fish)).

In summary, these interviews suggest there is mistrust between factions in terms of motivations, rationale and actions. Whilst there is not yet a catalogue of wider published research on the beaver issue to understand how generalizable this is across England, research on other wildlife conflicts in the UK provides a warning that any trust deficit between farmers and conservationists should be addressed quickly where possible to prevent escalation[2].

Management of beaver populations on-the-ground

It is probably not an overstatement to suggest that any reintroduction of beavers into England which successfully harnesses the good will and support of the land management and fisheries communities will depend on designing an appropriate population management protocol. This was also clear from the outcomes of the River Otter Beaver Trial (Brazier et al, 2020).

From the interviews, it was possible to identify a very clear picture of how this management protocol should look (which may well present a challenge to Natural England, policy makers and the Minister ultimately responsible for making the decision). It will also require measured and responsible communication with the public by all stakeholders concerned with reintroductions to avoid unnecessary tensions from developing.

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[2] For example: St John, F. Steadman, J, Austin, G, Redpath, S. 2019. Value diversity and conservation conflict: Lessons from the management of red grouse and hen harriers in England. People and Nature (vol 1) p6-17.

Young, J., Searle, K., Butler, A, Simmons, P. 2016. The role of trust in the resolution of conservation conflicts. Biological Conservation 195:196-202.

During the interviews it became evident that fisheries and farming interests are not against beaver reintroductions per se (a view supported in the wider evidence e.g. Auster et al. 2019). As Respondent 3 (Fish/Farm) put it, “they may work in some areas”. What they fear is a loss of agency over how the animals are controlled and who manages this process. There is a strong feeling of power imbalance between them on the one side and the pro-beaver lobby and governmental agencies on the other. Any social conflict model will suggest this is not an ideal scenario from where to build a successfully negotiated plan.

The discussions with farmer/fisheries interests suggested very clearly that their resistance to beaver introductions will be significantly diffused if the following items are agreed and implemented:

1. Respondents advocated that removal of animals considered to be causing a problem is undertaken quickly and without perceived bureaucracy on the part of the farmer/fisheries interests. Of crucial importance, they appear to have low levels of confidence in the efficacy of non-lethal control management options:

> “Management actions to remove dams…it took nearly three months to get rid of that dam because every time they took it down the beavers rebuilt it. You must not underestimate the costs.” (Respondent 5 (Fish)).

A reoccurring view expressed by Respondents 1,3,4 and 5 was that capturing/relocating beavers is unrealistic at any scale due to the costs involved and dam removal is also not a practical option given the tendency of beavers to immediately reinstate these structures. This behavioural characteristic was confirmed by the beaver experts interviewed (Respondents 6 and 7).

Some of the interviews suggested that the likely resistance to beaver reintroductions may be significantly dissipated if a policy of culling is introduced as a mainstream management tool and not as a ‘back stop’ measure of last resort. Respondents suggested that the process of culling beavers should be ‘non bureaucratic’, as farmers/fishing interests fear lengthy approval processes and associated paperwork will hamper their ability to take action and will impact significantly on their time/resources:

> “You should allow the people whose interests are most affected to effect the control.” (Respondent 4 (Fish)).

Interestingly, even Respondent 2 (Farm) who has been extremely receptive to the arrival of beavers on his land was not averse to the idea of culling where necessary:

> “It’s the same as any wildlife, if it becomes too numerous the balance of things can get out of balance and maybe culling or whatever is necessary.” (Respondent 2 (Farm)).

2. Interviewees advocated that beavers should not be given European protected status as they have been afforded in Scotland. This was seen as inappropriate because it presents an obvious juxta position with a culling policy. Specifically, some respondents suggested that granting a species strong international protection and then sanctioning culling is likely to cause confusion and mixed messaging with

the public. Emphasising he was expressing a personal as opposed to an institutional opinion, it is worth noting that one of the conservation professionals (Respondent 6 (Cons)) interviewed did not support European protected status preferring a "tailored level of protection".

> "Personally, and I will speak entirely personally, European protected status I think would be counter- productive for beaver restoration and beaver acceptance in the landscape…..I don't think that providing the level of protection that comes with EPS to an animal that does such profound things to the landscape is going to be in any way helpful….it's a really counter-productive thing to do." (Respondent 6 (Cons)).

Managing beavers in a similar vein to deer (i.e. on an open licence with a close season) was regarded as an optimal solution by all farming/fisheries respondents interviewed. References were made to the existing process of applying for bespoke licences to shoot piscivorous birds (cormorants, goosanders) or remove swan nests which is seen as unnecessarily complicated and too time consuming. A process where the authorities are perceived as exercising absolute control over culling is likely to exacerbate an underlying lack of agency perceived by the farmers/fishermen. Based on the sentiments expressed during the interviews, and in the absence of an open-licence situation, it is likely a very 'light touch' approval process obtained over the phone (as used in Scotland) would also be deemed appropriate and practical:

> "They now feel they can discuss things with us and no-longer see us as precious tree huggers." (Respondent 7 (Cons)).

An obvious potential downside to a policy of allowing culling with little or no authorisation is that there is a risk of conflict between farmers/fisheries interests and environmental campaigners and elements of the general public. It appears that examples of all such tensions have already emerged in Scotland in recent months. Respondent 6 (Cons) referred to landowners shooting beavers on the Tay being subject to "some pretty unpleasant behaviour" and predicted the same fate would fall on farmers in the South West England. (An article published by the investigative journalism platform The Ferret on May 17 2020 runs with the title 'Wholesale slaughter: around 100 beavers shot in Tayside' and is critical of the government strategy of licensed culling[3].)

Some landowners/fisheries interests were currently extremely concerned any future beaver introductions will be accompanied by full protection fuelled by public antipathy towards culling which may well be widespread. Indeed, a 2019 public survey (outlined in Brazier et, 2020) revealed that 8 out of 10 respondents favoured strong protection measures being implemented from the outset. However, it is possible to envisage a scenario where over time, increased awareness of negative beaver impacts as well as the positives might moderate any initial public antipathy towards lethal control measures (see

[3] see https://theferret.scot/beavers-killed-tayside-scottish-natural-heritage

public attitudes assessment section below). Many thousands of deer are culled each year across the UK without public outcry with venison now a very popular culinary choice. Levels of tension may well depend on the position the leading environmental NGOs take regarding their public communications strategies.

Observations on engagement between beaver advocates and farmer/fisheries interests

The experience from Scotland and England thus far strongly indicates that early and sustained proactive engagement of the landowning and fisheries interests is vital before proposals to introduce beavers are suggested within a given catchment. Hearing about proposals 'via the backdoor' or worse still once beavers have already arrived will not engender trust and goodwill:

> "There's been a lot of money lobbed at this….it's all been done slightly under the radar." (Respondent 3 (Fish/Farm)).

> "We didn't feel we'd been involved from the start. There should have been some formal way of saying this is going on, we don't know what is going to happen, we want you to be part of it, we will keep you up to date. If we don't then take any notice that's our fault." (Respondent 1 (Farm)).

> "Everything they did was retrospective….none of it was forward thinking." (Respondent 1 (Farm)).

It was also emphasised by Respondent 7 (Cons) that proponents must clearly articulate their objectives in a transparent manner and "you cannot just say you want more, more, more [beavers]". This respondent also stressed a need for conservation bodies to avoid viewing beavers through "rose tinted glasses" and to recognise the concerns of local stakeholders regarding the downsides of beaver reintroduction. Referring to beaver proponents in SW England, Respondent 7 (Cons) warned:

> "It will ultimately be to their detriment if they don't take the concerns of farmers and others seriously there." (Respondent 7 (Cons)).

Public attitudes towards potential beaver reintroduction and possible changes over time

The River Otter Beaver Trial has reported on the views of an urban community (see Brazier et al, 2020). The perceived benefits of beaver introductions are cited as aesthetic improvements, mental health benefits, biodiversity improvements, educational opportunities and an opportunity to engage the urban community in nature. It should be noted, however, that in Scotland (Tayside) where members of the public have had greater interaction with a growing beaver population, opinion is far from positive in some cases. Respondent 7 (Cons) explained the authorities there have received complaints from

members of the public regarding the felling of trees and denuding of riverside vegetation. In addition, the aesthetic impacts of beaver activity – “they are not very tidy creatures” – has also resulted in concern from local residents. This experience suggests public support for beaver introduction may be moderated by increased interaction with the realities of their presence over time.

> “If you ask the wider public about beavers they’ll say they’re wonderful…those who have had experience of them on the ground have a different view.”(Respondent 7 (Cons)).

To establish a firm understanding of public attitudes, it would be advisable to undertake a deliberative process (e.g. a sequence of site meetings over a 12-24 month period) with a selection of citizens in locations where potential disbenefits of beaver reintroductions might be experienced as well as the benefits. Such a process would allow complex issues to be explored such as interaction between beavers and dogs and human health risk which may have salience with the public in addition to ecological aspects.

Conclusions

Based on the pilot qualitative research undertaken, the following conclusions can be derived:

- The interviews suggested that there is a low level of trust in ‘the science’ and practice of those advocating beaver reintroduction by a section of the landowning and fishing community. There is also a group of ‘beaver advocates’ (including landowners) who have equally strong views. This is a small pilot qualitative study, and so there are no conclusions related to how widespread nor representative these views are.
- Findings from this study, when read in the context of the wider experience on wildlife conflicts in the UK, suggest that such a polarisation has the potential to destabilise future collaborative dialogue and that it would be wise to take heed. Further research is needed to understand how widespread such views are across the stakeholder community.
- Interviews suggested that the selection of appropriate river systems will be key to any successful reintroduction strategy. Interviews with respondents working in, or aware of, beaver reintroduction in Scotland suggested that remote and isolated areas away from human habitation, intensive agricultural systems and salmonid (salmon/sea trout) fisheries were, in their experience, the best localities to minimise conflicts.
- Conflict with landowners and fisheries interests will be significantly reduced if they have agency over how beavers are managed and can be reassured problems are dealt with rapidly and without expense. There appears considerable scepticism within the farming/fisheries community that non-lethal removals are practical and will be adequately financed over the long-term. Because of these concerns, it is likely tensions will remain high unless these stakeholders are empowered to control beaver populations through culling. Importantly, a light touch licensing policy (open

licence or a similar system to that adopted in Scotland) will be necessary to gain landowner/fisheries buy-in.

- Whilst the wider evidence suggests that the general public are supportive of beaver reintroduction, evidence from expert opinion in Scotland (Respondent 7) suggested that public support can cool where direct experience of negative beaver activity occurs. Some respondents also favoured a beaver culling policy incorporating a high degree of landowner self-determination and this study, by design, cannot draw conclusions on how the public in England might react to this. Further research is needed to explore public attitudes and understanding to beaver reintroduction and management, using deliberative as well as quantitative methods.
- Respondents advocated for sufficiently funded management support and for financial instruments to be put in place to appropriately compensate land managers for accommodating beaver populations. Further research is needed to understand potential take-up of financial measures, barriers and enablers to these to inform development of appropriate tools via ELM and others, such as conservation covenants.

There is some evidence from the River Otter Beaver Trial (Brazier etc. al, 2020) that farmers demonstrate attitudinal changes over time in response to scientific input and localised site specific action research. Fears and concerns raised in these interviews (e.g. flood risk from dam building) could be allayed, and it is possible to envisage an adaptive management cycle in the future where stakeholders learn together how to manage beaver populations within a working landscape and adjust strategies accordingly.

Recommendations

The research findings have been carefully considered and the following recommendations are made to relevant policy teams in Natural England and Defra:

- This exploratory social research exercise suggests that prompt and sustained engagement with landowning and fisheries interests at national, regional and local level is vital to ensure a retrenchment of positions does not occur.
- A multi-stakeholder dialogue process (beyond a survey based consultation exercise) would be useful to further understand issues raised in this study and build confidence in the policy making process before any further decisions are made. Such a process would also hopefully build much needed social capital between interest groups. An Appreciative Inquiry technique (or similar) might be appropriate here as a first step.
- The issue of management, particularly beaver removals, is important to address as a priority recognising that landowners and fisheries interests fear a loss of agency and control. It is suggested that a failure to clarify in the very near future that lethal control options are being actively considered by government (alongside/in conjunction with non-lethal options) as a mainstream option will severely compromise any future collaborative dialogue with the farming and fishing community. Low levels of trust in non-lethal management methods should be

addressed by inviting scrutiny, an ‘honest broker’ and, where possible, collaboration in further trials.

- Policy makers should consider establishing a scenarios planning approach, based on this research, the learning from Scotland and experiences from other wildlife conflicts (e.g. crows, cormorants, hen harriers, badgers) to understand the likely impacts and outcomes of various reintroduction strategies. This should be undertaken in partnership with stakeholders.
- Evidence relating to beaver reintroduction should further develop and incorporate social dimensions alongside ecological. For example, any GIS mapping work exploring potential beaver suitability zones should include conflict risk weightings for specific land types (such as grade 1 and 2 agricultural land), existence of salmonid fisheries etc. Some form of stakeholder assisted multi-criteria approach for selecting suitable beaver introduction localities is likely to have merit which should include the willingness and ability of landowners and/or fishery owners to accommodate beaver populations. Suitability models would be likely to benefit from the inclusion of farm business data able to detect relative densities of hobby farms and land holdings where farm production is not the primary income source for the owner.

Annex 1 - A note on qualitative research methods for conservation scientists and policy makers

It is recognised that an inter-disciplinary approach is essential to conservation science in order to understand and solve the anthropogenic problems facing the natural world. Traditionally, conservation science has been dominated by biological and quantitative approaches; yet there is a role for qualitative approaches to understand values, behaviour and take account of tacit, indigenous and local knowledge. Such understanding has been shown to be important when solving conservation challenges (Sutherland et al 2018).

Unlike quantitative research, generalisability (using statistics to infer from a sample the opinion of the general population) is not the intention of qualitative research. The sample in qualitative research is therefore not designed to be representative of the population but to capture the diversity of views on the research question. The number of participants will be fewer in order to keep the data set to a manageable size.

Qualitative research has a different purpose (and epistemology). It is a method used to understand meanings – people's deeply held beliefs, values, behaviours. In qualitative research, the emphasis is on the quality of data for each individual observed (not the number of individuals observed) and the data-set is the respondent's words. For example, a single 1 hour interview can elicit 5,000+ words ('data points').

There are a number of different methods used by qualitative researchers (Bryman, 2008). Generally, a sampling frame is defined based on the research question. The purpose of sampling is to explore the range and depth of views in relation to the research question and the frame is often determined by previous research or a literature review. For example, in a study designed to understand wildlife conflicts, the sample would seek to include individuals with different experiences of and perspectives on that conflict. Generally, data is collected (e.g. via interviews), transcribed, coded and analysed to understand whether a view or experience is shared, and if so, in which context. It is the contextual findings that can be generalised using qualitative methods (for example, if the sample suggest people in X context generally feel Y, then we can infer that other people in X context may experience similar feelings).

In certain situations and for certain research questions, particularly when the subject is sensitive, qualitative methods can be the most realistic way to generate valid data, allowing researchers to identify the issues of importance to respondents rather than impose those of the research team (Drury et al, 2011).

References

Bryman, A. 2015. Social Research Methods. 5th Edition. Oxford University Press.

Drury, R., Homewood, K., Randall, S. 2011. Less is more: the potential of qualitative approaches in conservation research. Animal Conservation 14, 18–24 Available at: http://www.hwctf.org/resources/specialist-groups/Drury%20R%20et%20al%202011%20Less%20is%20more%20the%20potential%20of%20qualitative%20approaches%20in%20conservation%20research.pdf. [Accessed 05/05/2021]

Sutherland, W. J., Dicks, L.V., Everard, M., Geneletti, D. 2018. Qualitative methods for ecologists and conservation scientists. Methods in Ecology and Evolution (9), 7-9. Available at: https://besjournals.onlinelibrary.wiley.com/doi/10.1111/2041-210X.12956 [Accessed 05/05/2021]

Annex 2 - Papers/Reports examined within the literature review exercise

Abrams, J., Johnduff, M., Charnley, S. Beaver-related restoration in Owyhee County, Idaho: Opportunities and challenges. 2019. USDA Forest Service - Research Paper PNW-RP, 2019 (PNW-RP-611).

Auster RE, Puttock A, Brazier R. Unravelling perceptions of Eurasian beaver reintroduction in Great Britain. 2019;00:1–12. https://doi.org/10.1111/area.12576 [Accessed 05/05/2021].

Brazier, R.E., Elliott, M.,Andison, E., Auster, R.E., Bridgewater, S., Burgess, P., Chant, J., Graham, H., Knott, E., Puttock, A.K., Sansum, P., Vowles, A. 2020.

Crowley, S.L., Hinchliffe, S., McDonald, R.A. Nonhuman citizens on trial: The ecological politics of a beaver reintroduction. 2017. Environment and Planning A, 49 (8), pp. 1846-1866.

Gaywood, M.J. Reintroducing the Eurasian beaver Castor fiber to Scotland. 2018. Mammal Review, 48 (1), pp. 48-61.

Howe, C. V. and Crutchley, S. E. 2020. The River Otter Beaver Trial: Natural England's assessment of the trial and advice on the future of the beaver population. Natural England Evidence Review NEER018. Peterborough: Natural England.

Loth, A.F., Newton, A.C. Rewilding as a restoration strategy for lowland agricultural landscapes: Stakeholder-assisted multi-criteria analysis in Dorset, UK. 2018. Journal for Nature Conservation, 46, pp. 110-120.

Scottish Natural Heritage. 2015. Beavers in Scotland - A Report to the Scottish Government.

SRUC, Rural Policy Centre Policy Briefing. 2016. Understanding the socio-economic impacts of beaver in Scotland.

Annex 3 – Question sequence used in primary research interviews

Topic guide content for interviews with farming/fisheries interests.

- Perceptions of benefits and disbenefits of beaver reintroduction including the information on which these perceptions are based? Do perceptions change over time in the light of hands on experience and/or exposure to scientific research?
- Perceptions of the individuals and organisations proposing beaver reintroduction. Are they regarded as credible, balanced, willing to listen?
- Is beaver research seen as credible, objective, sufficient? Is the research supplier important in relation to trust building?
- Do landowners/fishermen disaggregate pro-beaver advocates from other conservation interests or are they seen as part of the same 'pool'? Are pro-beaver advocates seen as self-serving and driven by financial/commercial considerations?
- Perceptions of power. Do landowners/fishermen perceive a level playing field regarding power dynamics between themselves and the pro-beaver community?
- Can we learn from the politics and practice of other wildlife management issues (e.g. bovine TB, challenge to the open-license to manage corvids, wood pigeons etc by Wild Justice) regarding how a proposal to reintroduce beavers might be managed?
- Which control measures are preferred? How should roles and responsibilities for control be allocated between landowners/fishermen, conservation organisations, government agencies?
- How might agri-environmental payments be structured to associate beaver reintroduction with a financial opportunity; or at least provide an off-set to any negative financial impacts? What paperwork would be seen as appropriate?
- For landowners/fishermen, how important is an option to cull beavers likely to be in accepting their reintroduction? What type of cull options would be most popular e.g open-licence, quotas, permits etc. What sort of reassurances would landowners/fisheries interests require?
- Do landowners/fishermen believe that beaver populations can be geographically constrained to specific defined localities? What are their views on beavers becoming a feature across the wider landscape i.e. is support likely to wane if wide-ranging populations are advocated and enabled?

Topic guide content for interviews with beaver proponents/project managers.

- What are the benefits and disbenefits of beaver reintroduction?
- What have been the major sources of conflict with landowners/fisheries interests?
- Why have these conflicts occurred?
- Could anything have been done to manage these conflicts before they arose?
- What are the lessons for the future regarding conflict resolution?

- What scale of resources are needed to provide appropriate facilitation between different interests on-the-ground? Who is best place to deliver this role?
- How might agri-environmental schemes be structured and designed to facilitate adoption of beaver related measures by landowners/fisheries interests?

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