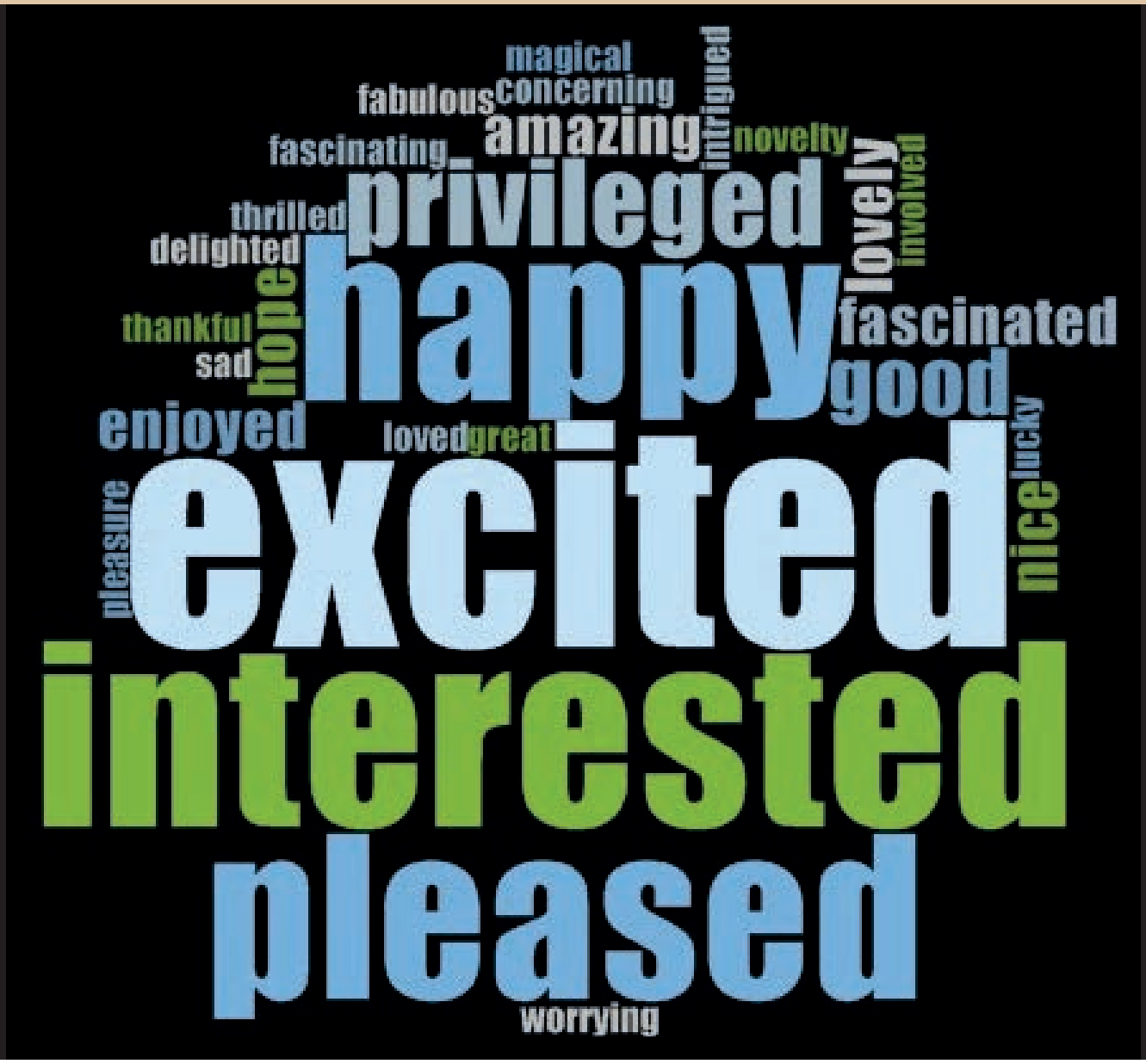
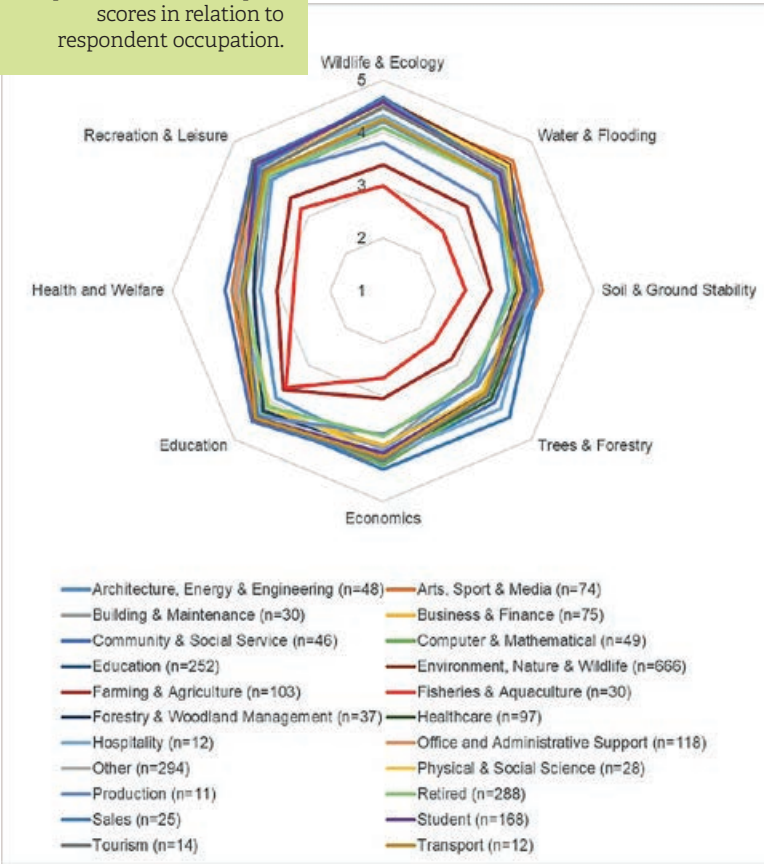
CHAPTER 4:
Social Attitudes and Perceptions



Frequency analysis of 'emotional response' words used in mail-return questionnaire in Otterton (**Case Study 3**) when respondents were asked to describe how they felt when they had seen beavers or signs of their activity.

Social attitudes in Britain – A nationwide survey

↓ **Figure 4.1** Respondents' perceived beaver impact scores in relation to respondent occupation.



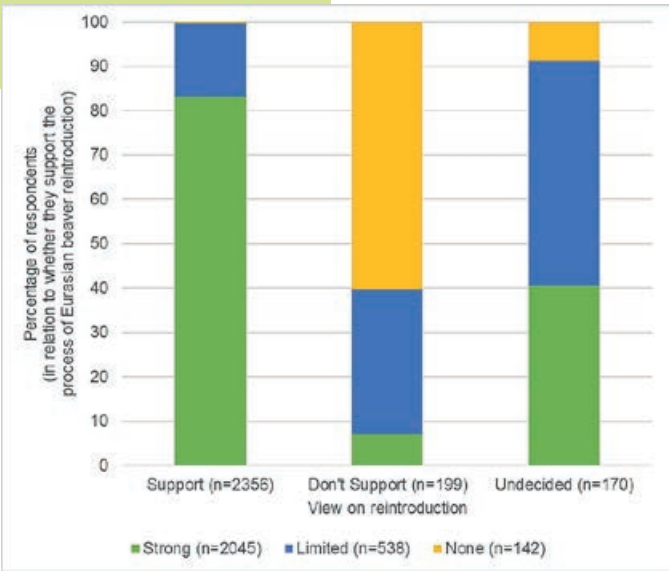
In 2017, a nationwide online opinion survey was conducted by the University of Exeter which received 2,759 responses. The survey was conducted from an impartial viewpoint and has been subject to scientific peer review[1]. This paper by Auster, et al. (2019)[1] is provided in Appendix 4.

The first set of questions was wide ranging, including themes such as beaver impacts on wildlife/ecology, water/ flooding, soil, trees/forestry, economics, education, health/welfare and recreation/ leisure. In each of these areas of focus, respondents were asked to indicate their view on a scale. Score 1 = Very Negative, 2 = Somewhat Negative, 3 = Neutral, 4 = Somewhat Positive, 5 = Very Positive.

The majority of survey respondents averaged a score at the positive end of the scale for all of the impact areas (Figure 4.1). The average scores for respondents whose occupation was in 'Farming and Agriculture' or 'Fishing and Aquaculture' were not as positive as the others. When looking in more detail within the scores given by respondents from these occupations, a diversity of opinion was observed with both positive and negative views of potential impact expressed. The impact area in which these two occupations generally exhibited a more positive view of potential beaver impact was in 'Education'.

All respondents were given the opportunity to provide a reason for their answer for the impact score. For each of the eight impact areas, a summary of the reasons given as to why respondents indicated their scores (broken down into whether their views were positive, negative or neutral) are provided in Appendix 4.

↓ **Figure 4.2** Respondents' views on level of legal protection required for beavers if they are formally reintroduced across Great Britain, in relation to whether respondents support the process of beaver reintroduction. Reasons for respondents' views are provided in Appendix 4



The survey then included questions regarding their attitudes towards the potential management of beavers in the scenario that they were formally reintroduced. Questions focused upon: views on the level of legal protection for beavers that would be required; whether respondents would support particular beaver management techniques (Figure 4.3); who should take responsibility for beaver management funding (Figure 4.4) and management in practice (Figure 4.5). (Note, this survey took place prior to the Scottish Government listing beavers in Scotland as a European Protected Species).

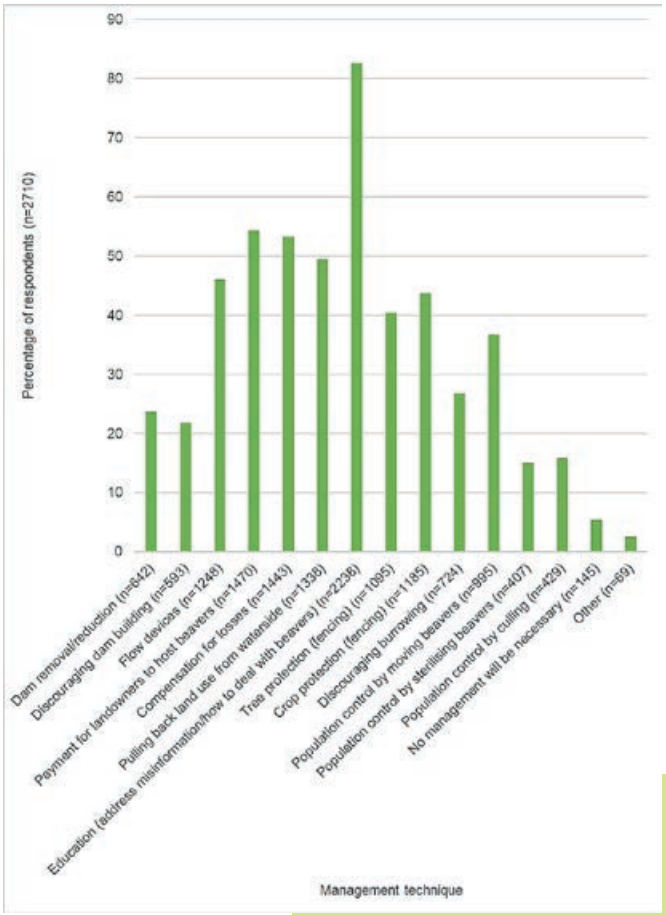
Respondents who supported beaver reintroduction were most frequently associated with a view that they should be given strong legal protection

(if formally reintroduced). The reasons given most frequently cited the protection of beavers against cruelty or persecution, and the ability to establish and sustain a viable beaver population.

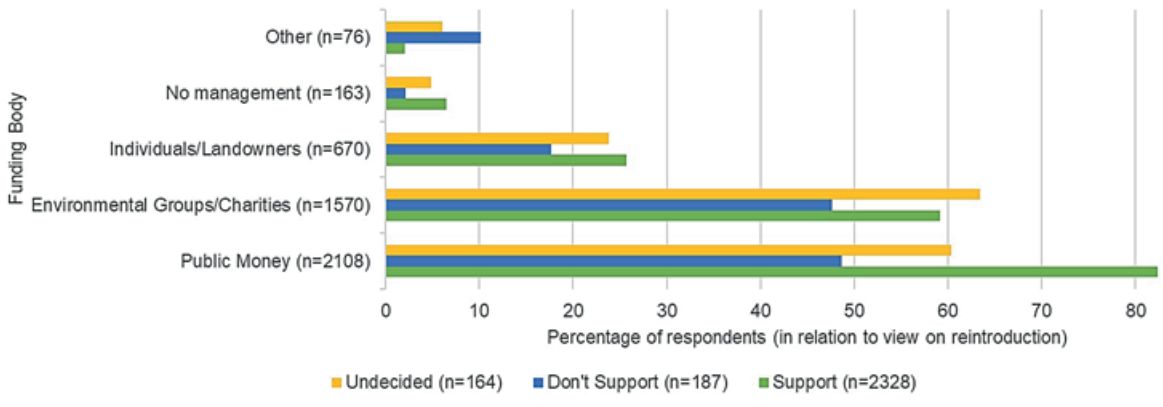
Those who did not support beaver reintroduction most frequently thought that beavers should not be given any legal protection and most frequently suggested that legal protection would make it difficult to manage negative impacts when necessary and that affected people/landowners should be able to undertake some management themselves.

Respondents who were undecided as to whether beavers should be formally reintroduced were most frequently associated with the view that beavers should be given limited legal protection. The reasons given here were more nuanced and often included reasons both for and against the legal protection of beavers; most commonly it was cited that beavers would require some form of management.

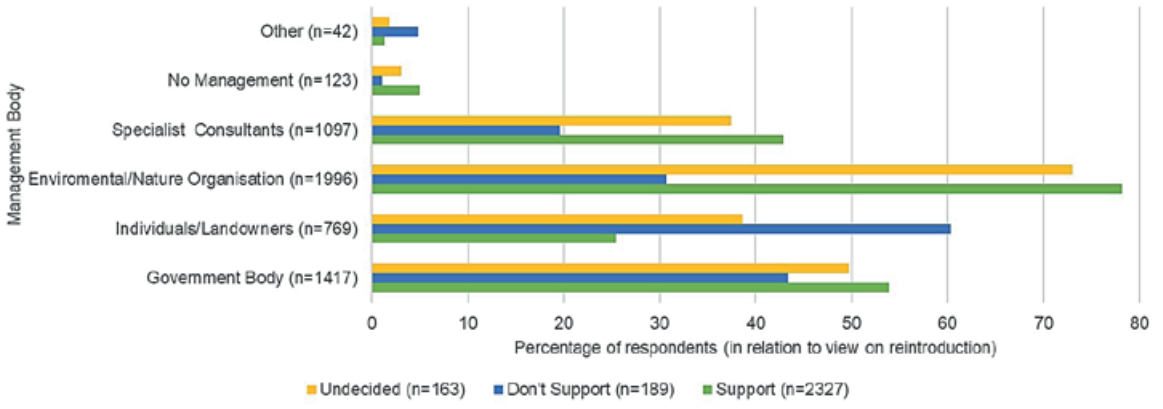
When asked about specific beaver management techniques, the indirect methods such as education, compensation and payments for landowners to host beavers on the land were the most highly selected responses. The more direct techniques, in particular population control by culling or sterilisation, garnered less support. Least supported was the view that there should be no management (Figure 4.3).



↑ **Figure 4.3** Respondents' support for potential beaver management techniques (respondents could select multiple answers).



← **Figure 4.4** Respondents' views on responsibilities for beaver management funding if they are formally reintroduced across Great Britain, in relation to whether they support reintroduction.



← **Figure 4.5** Respondents' views on responsibilities for beaver management in practice if they are formally reintroduced across Great Britain, in relation to whether they support reintroduction.

Repeat survey in 2019

In 2019, the outcomes of the nationwide questionnaire[1] were shared with the respondents who had provided their email addresses at the time of the survey. Respondents were invited to leave their address to receive the survey outcomes. With this email, an invitation was issued to take part in a short follow-up survey.

The follow-up repeated four of the questions asked in 2017[1] in order to assess changes in attitude amongst the same group of people. Using the email addresses that had been voluntarily given at the time of the original questionnaire, 1,992 respondents were successfully invited to take part in the repeat survey (72.20% of the total number of original respondents). Of these, 386 participants took part (19.38% of those invited, 13.99% of the total number of original respondents) between 13th and 28th August 2019.

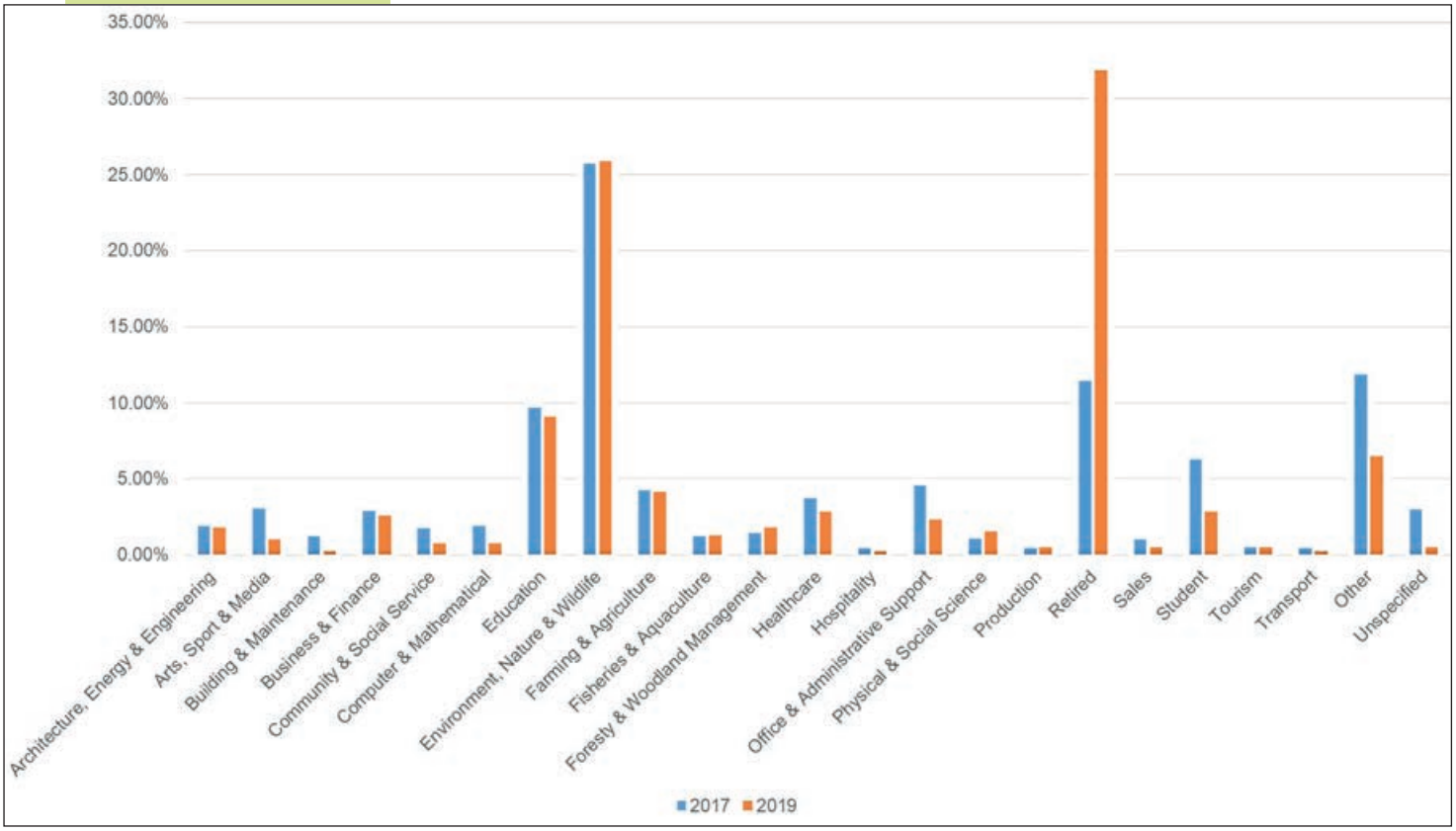
On this occasion, respondents were not asked for the reason for their answers as the respondents had already given time to the much longer original questionnaire. A number of questions in the original questionnaire asked respondents for the reasons for their views, the results of which are available in Appendix 4.

There was a statistical difference in the percentage of respondents from occupational backgrounds between the 2017 and 2019 surveys. Of the two occupations identified as statistically more likely to have a more positive view of beaver impacts in 2017, the relative proportion of 'Environment, Nature & Wildlife' was similar (+0.14%), and there was a decrease in the proportion of 'Arts, Sport & Media' participants (-2.01%). Of the three occupations identified as statistically less likely to have a more positive view of beaver impacts in 2017, there was a similar proportion of 'Farming & Agriculture' (-0.10%) and 'Fisheries & Aquaculture' (+0.06%) respondents, whilst there was a large increase in the proportion of 'Retired' (+20.41%) respondents.

Respondents were asked whether they supported the process of beaver reintroduction in Britain. As a respondent pool on the whole, there was not a statistical difference between the years (Figure 4.7):

- In 2017, 86.25% supported the process of beaver reintroduction, 7.44% did not and the remaining 6.31% were undecided (n=2741).
- In 2019, 89.64% supported the process of beaver reintroduction, 6.22% did not whilst the remaining 4.15% were undecided (n=386).

↓ **Figure 4.6** Relative proportions of respondents of each identified occupation in the 2017 and 2019 surveys.



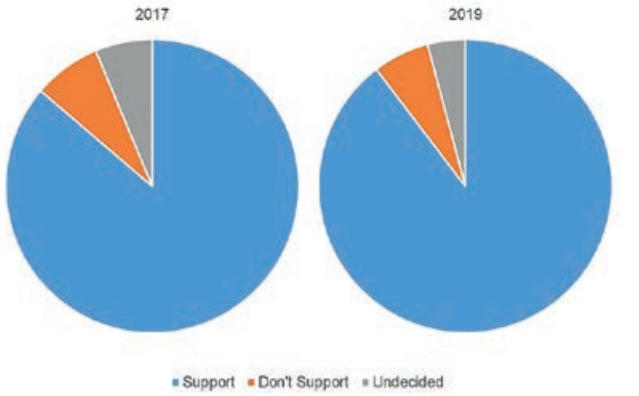
Nor was there a statistical difference found in respondents' views (as a whole) on the level of legal protection required if beavers were to be formally reintroduced (figure 4.8):

- In 2017, 74.93% felt there should be strong legal protection, 19.77% felt there should be limited legal protection and 5.31% felt there should be none (n=2732).
- In 2019, 79.27% felt there should be strong legal protection, 17.10% felt there should be limited legal protection and 3.63% felt there should be none (n=386).

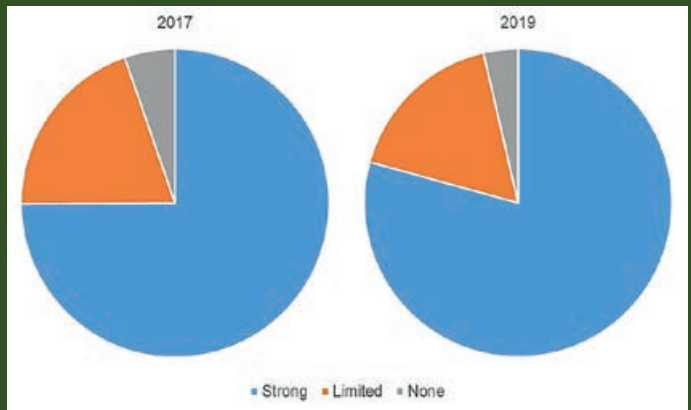
Respondents were asked how much they felt they knew about the beaver reintroduction trials taking place across Britain (an additional note was added to state that the situation in Scotland was recognised to have changed and that the situation there was still included in the question).

There was a statistical difference identified between the answers given in each survey (Figure 4.9). There was a decrease in the relative proportion of respondents who felt they knew 'Nothing' (-4.74%) or selected "I have heard something but don't know much" (-16.43%). Meanwhile, there was an increase in respondents who selected "I know something about them" (+13.00%) or "I know a lot about them" (+6.78%).

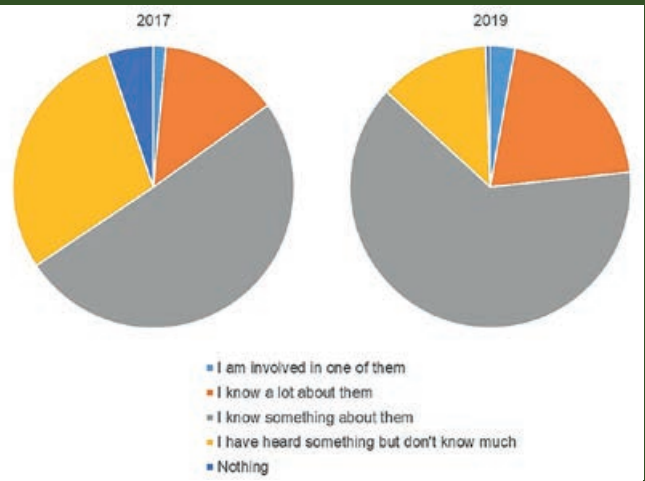
Finally, respondents were asked whether they felt able to express their opinions where it influences decision-makers and there was found to be a statistical difference between the surveys. In 2017, the majority of respondents answered 'No' (60.22%), with the remainder answering 'Yes' (39.78%). The opposite was found in 2019 with the majority answering 'Yes' (53.63%) and the remainder answering 'No' (46.37%) (Figure 4.10). However, as this survey was issued alongside the paper based upon the 2017 survey, it is uncertain whether this difference is a result of seeing this paper specifically or because of the wider change in circumstances in beaver reintroduction.



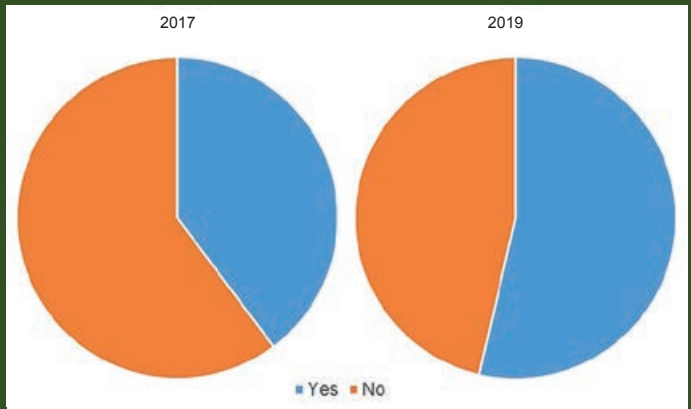
↑ **Figure 4.7** Relative proportions of all respondents in 2017 and 2019 who support or don't support the process of beaver reintroduction to Great Britain.



↑ **Figure 4.8** Relative proportions of all respondents in 2017 and 2019 who support differing levels of legal protection if beavers are to be reintroduced.



↑ **Figure 4.9** Relative proportions of all respondents in 2017 and 2019 which identified how much they felt they knew about the beaver reintroduction Trials in Great Britain.



↑ **Figure 4.10** Relative proportions of all respondents in 2017 and 2019 on whether they felt they could express their opinions where it may influence decision-makers.

Perspectives from the agricultural sector

There were 117 respondents who identified their occupation as 'Farming & Agriculture' who took part in the peer-reviewed nationwide questionnaire[1]. Respondents of this occupation were found to be statistically less likely to have a more positive view about the impacts of beavers than other respondents.

The 'Farming & Agriculture' respondents were found to have a diverse set of opinions about beaver impacts. Similarly, when asked whether respondents supported the process of reintroduction to Britain, 46.55% supported the process, 42.24% did not and 11.21% were undecided (n=116). This diversity in opinion was also observed in respondents' views on the level of legal protection that should be applied should beavers be reintroduced: 32.17% indicated that beavers should be given 'strong' legal protection, 34.78% indicated that they felt beavers should be given 'limited' legal protection whilst 33.04% felt there should be none. (Appendix 4 - Respondents' Reasons for Answers Given in 2017 Nationwide Questionnaire).

During the ROBT, there were two significant instances of flooded agricultural land due to beaver damming. The respective farmers were interviewed and asked for their views. Details of the interviews are reported in **Case Studies 1 and 2**, with the importance of good communication highlighted.

Beaver management

A key theme which was recognised in the nationwide survey[1] and which repeatedly occurred during discussions with farmers/landowners in the River Otter catchment was the question of future management if beavers were to be reintroduced. This included questions about who would be responsible for management in practice, management funding and the actual management techniques that could be employed.

A range of beaver management techniques exist, all of which are detailed in *The Eurasian Beaver Management Handbook*[2]. In the nationwide questionnaire, respondents were asked which of the management techniques they supported with the ability to select multiple options. These results are presented in Appendix 4 in relation to the respondents' occupations. In these results, the least supported option amongst almost every group was 'No Management'.

Perspectives from the angling community

The nationwide survey[1] also identified that those who identified their occupation as in 'Fisheries & Aquaculture' were less likely to have a more positive view of the potential impacts of beaver reintroduction than other respondents. One of the questions asked whether participants supported the process of beaver reintroduction to Great Britain and amongst the 'Fishing & Aquaculture' respondents to answer the question (n=34) there was a diversity of opinion observed: 44.12% supported reintroduction, 44.12% did not and the remaining 11.76% were undecided.

A method from the psychological sciences known as the 'Q-Methodology' was used to explore the perspectives that exist amongst anglers in the River Otter catchment on beaver reintroduction and its interaction with both fishing and other factors. Participants were invited to take part by first engaging with fishing syndicates throughout the catchment and asking them to refer details onwards. 11 anglers volunteered to participate in the study.

At the time of writing, this Q-Method study is under peer review[4]. Below we summarise the three distinct perspectives that were identified indicating differences of opinion within the participants:

1. The first group fished in order to engage with nature. They felt strongly that beavers would be beneficial for fish and wider biodiversity and were not too concerned about possible negatives. They were willing to accept some negative impacts upon fishing in order to obtain wider ecosystem benefits.

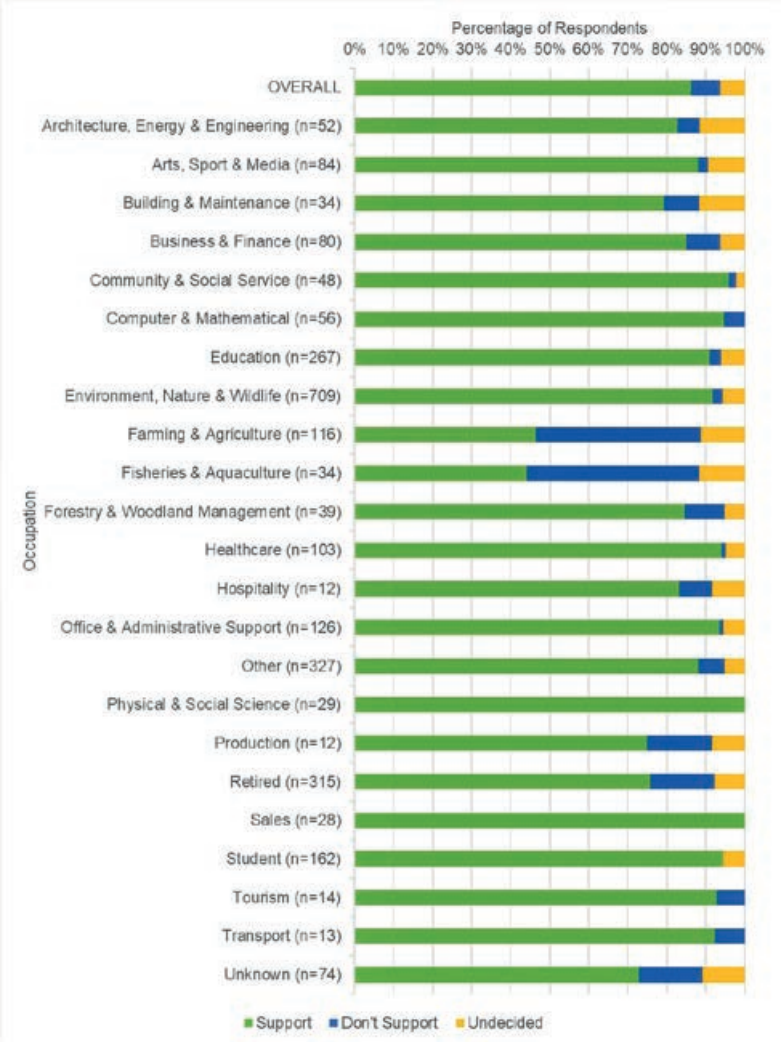
2. The second group viewed angling as a traditional activity which is particularly beneficial for physical and mental health. They were apprehensive about beaver reintroduction and viewed it as a possible threat towards fish and fishing activity. In particular, there was a concern about whether beaver dams would obstruct fish migration.

3. The third group exhibited a mix of the opinions seen in the other perspectives. They too saw fishing as important, including for physical and mental health, whilst they also believed that there would be benefits resulting from beaver activity. They believed that beavers should be reintroduced, but only in association with the ability to control or manage beavers and their impacts.

Perceptions of beavers in the urban environment

An urban fenced beaver project is under consideration in Plymouth, led by Plymouth City Council. In an online questionnaire targeted towards residents in the area, to which 133 respondents replied, a question asked about the respondents' views of beavers in the urban environment. The response to this question is provided here to complement the views secured through the River Otter Beaver Trial as the latter is in a largely rural area.

Comments were received from 53 of the 133 respondents and a thematic analysis of answers to the question identified the key themes which emerged. These were regarding the potential benefits, risks/challenges for beavers, concerns, management considerations and project-specific comments. Under each of these headings, subsequent themes were identified (Figure 4.12)



↑ **Figure 4.11** Levels of support for beaver reintroduction in relation to the occupations of all respondents in the 2017 nationwide questionnaire[1].

Benefits Cited	Risks/Challenges For Beavers	Concerns Cited	Management Considerations	Project-Specific Comments
Aesthetic Improvements	Cruelty	Increased Risk of Tree Felling Causing Damage	Welfare Checks	Introduce Beaver Post-Road Construction
Beneficial for Human Mental Health	Road Accidents	Costs of Management	Beavers Need Protection	Risk of Vandalism
Increase Urban Biodiversity	Space Limitations		Damage Monitoring and Reporting	
Educational Opportunity	Dogs		Need To Promote Positives of Beavers To Increase Tolerance	
Engagement of Urban Communities in Nature (Limited opportunities in cities)				

↑ **Figure 4.12** Key themes identified from an urban community on their perspectives of beavers in the urban environment.

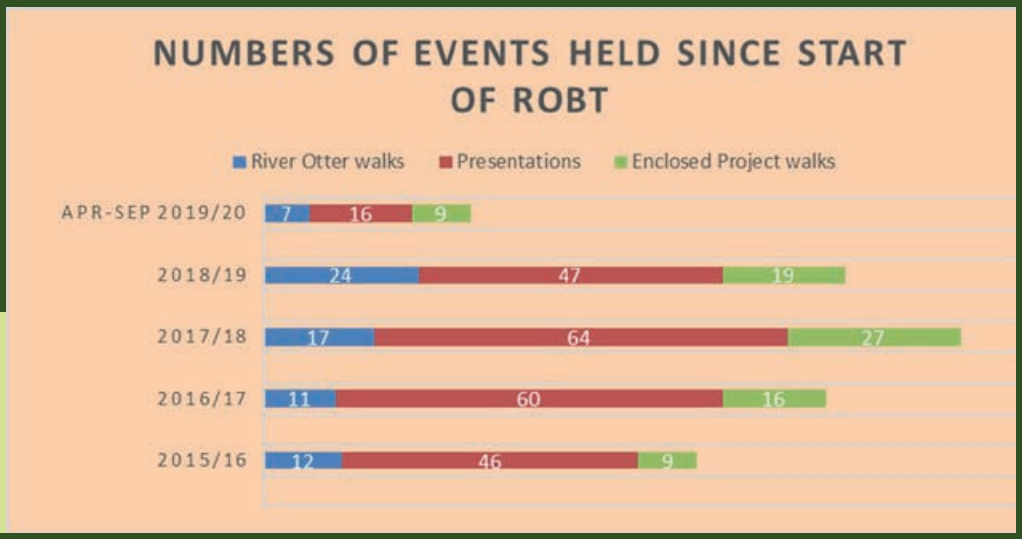
The ROBT Steering Group has established a 'Beaver Management Strategy Framework'[3] through comprehensive engagement with a broad range of stakeholders for Defra to consider if beavers are permitted to remain on the River Otter

Role of engagement activities

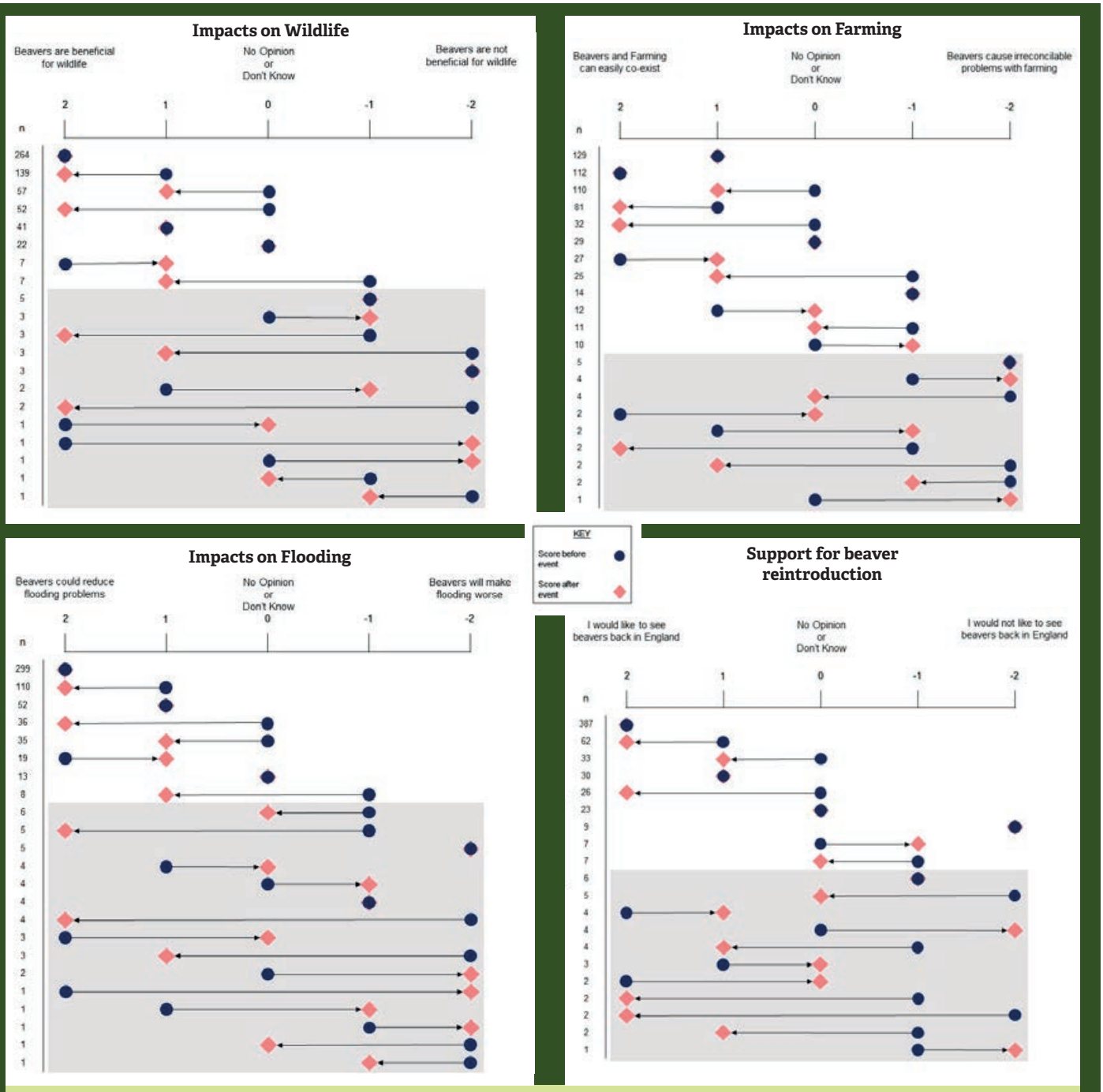
Many events took the form of a slideshow/presentation followed by question and answer sessions by the project team from Devon Wildlife Trust and other project partners, including Clinton Devon Estates and the University of Exeter. At 18 of these events attendees were issued with identical questionnaires 'Pre-' and 'Post-Event'. The respondents were asked to indicate their view of beavers in four different areas by providing a score on a scale between two opposing statements. The results showed differences in responses 'Pre-' and 'Post-Event' which indicate that there were attitudinal shifts between the completion of each survey. Further details (including where there were differences between the groups of attendees) are included in Appendix 4.

The results indicate that the role of objective, evidence-based engagement activities in beaver reintroduction can influence attitudes positively. Further research would be required to assess whether this attitudinal change persists beyond the event itself and whether it would influence behaviour. It is possible that this could play a role in addressing conflict issues. It will be important that engagement events remain evidence-based to prevent attitudinal shifts based upon misinformation.

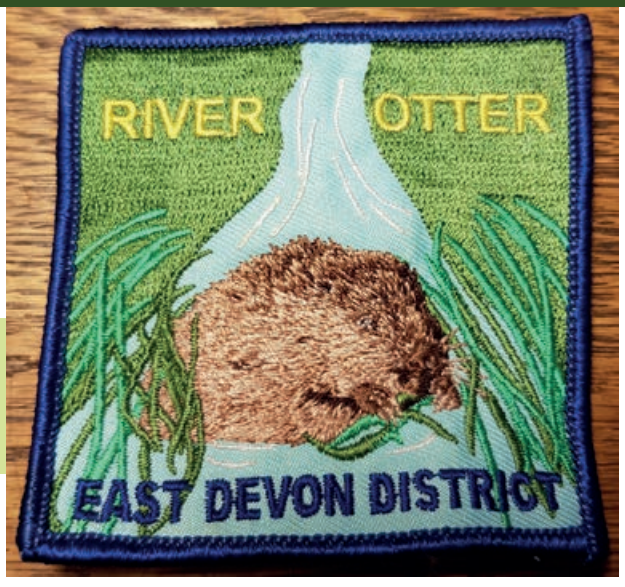
→ Since the very beginning of the Trial, there has been huge interest in the beavers and the work of the Trial. This has manifested itself in requests for talks and guided walks by members of the public, special interest groups, key stakeholders and partner organisations.



→ **Figure 4.13** In the first 4½ years of the Trial a total of 384 events were hosted or attended, at which an estimated 18,000 people were engaged directly with information about the beavers.



↑ **Figure 4.14** Patterns of shift in attitude score between each pair of opposing statements. In these figures, each n refers to the number of people who demonstrated each shift pattern, and the area in grey indicates shift patterns exhibited in <1% of the respondent pool.



→ A Beaver Scouts badge made in honour of the River Otter beavers

Additional perspectives

Ecological politics of beaver reintroduction

During the period prior to the start of the Trial, PhD researcher Sarah Crowley studied the attitudes of stakeholders involved in the discussions about the future of the beavers found to be living and breeding on the river. The research examined the political processes, negotiations and outcomes of the 'unauthorised' reintroduction of beavers to Devon prior to licence to release beavers being granted to DWT and partners[5]. The relevant publication by Crowley, et al. (2017)[5] is provided in Appendix 4.

Interviews were conducted with key informants, alongside documentary analysis (including consultation responses) and field observations. The research identified that the Government's initial response constituted an effort to reassert political and ecological order. From the Government's perspective, the unauthorised reintroduction of the Devon beavers represented both an unwelcome precedent and a potential public health risk. The beavers were therefore framed as both unnatural and illegitimate, and the government planned to secure the situation by capturing them.

This decision was strongly opposed by a diverse collective of British citizens who were united and made powerful by a common goal: protecting the beavers. This collective included East Devon residents, environmentalists, and conservation and animal protection organisations, who expressed varied opinions and arguments, but shared the aim of stopping Government action. While there were organisations and individuals in support of the beavers' removal, the pro-beaver voice became large and powerful enough to sustain a high level of pressure on the Government.

The development of the River Otter Beaver Trial provided an alternative option that, by monitoring and regulating the beavers' presence, allowed governing authorities to regain some control of the situation. The Trial was compared to a citizenship test for beavers, through which they have the opportunity to demonstrate their ability to (re)integrate successfully into British social and ecological landscapes. There are risks with this approach: particularly, the unorthodox events which led to Trial establishment have created tensions between stakeholders that could create challenges in the future. Nevertheless, it was proposed that the Trial provided opportunities to (a) develop methods for, and gain experience in, managing beaver impacts, and (b) find ways to constructively include affected and interested people in future negotiations.

The conservationists' approach to the River Otter Beaver Trial

In May and July 2019 anthropology student, Charlotte Zealley, conducted ethnographic fieldwork focusing on the conservationists involved in the management of the Trial[6]. It took the form of semi-structured interviews and participant observation of day-to-day work.

Charlotte found that, for conservationists, the most significant element of the Trial is its introduction of a powerful nonhuman 'natural process' to the landscape. As such, conservationists distinguish between human and nonhuman processes. Compared to many wildlife reserves in England where species are carefully managed, the Trial is more focused on managing relationships with affected stakeholders. The reintroduction of beavers to the river is distinctive in terms of English conservation because it does not

involve the intensive management of a targeted site; the Trial aims not to exclude people from shaping the landscape, rather it seeks to facilitate the integration and co-existence of beavers, their impacts and human activity in one shared landscape.

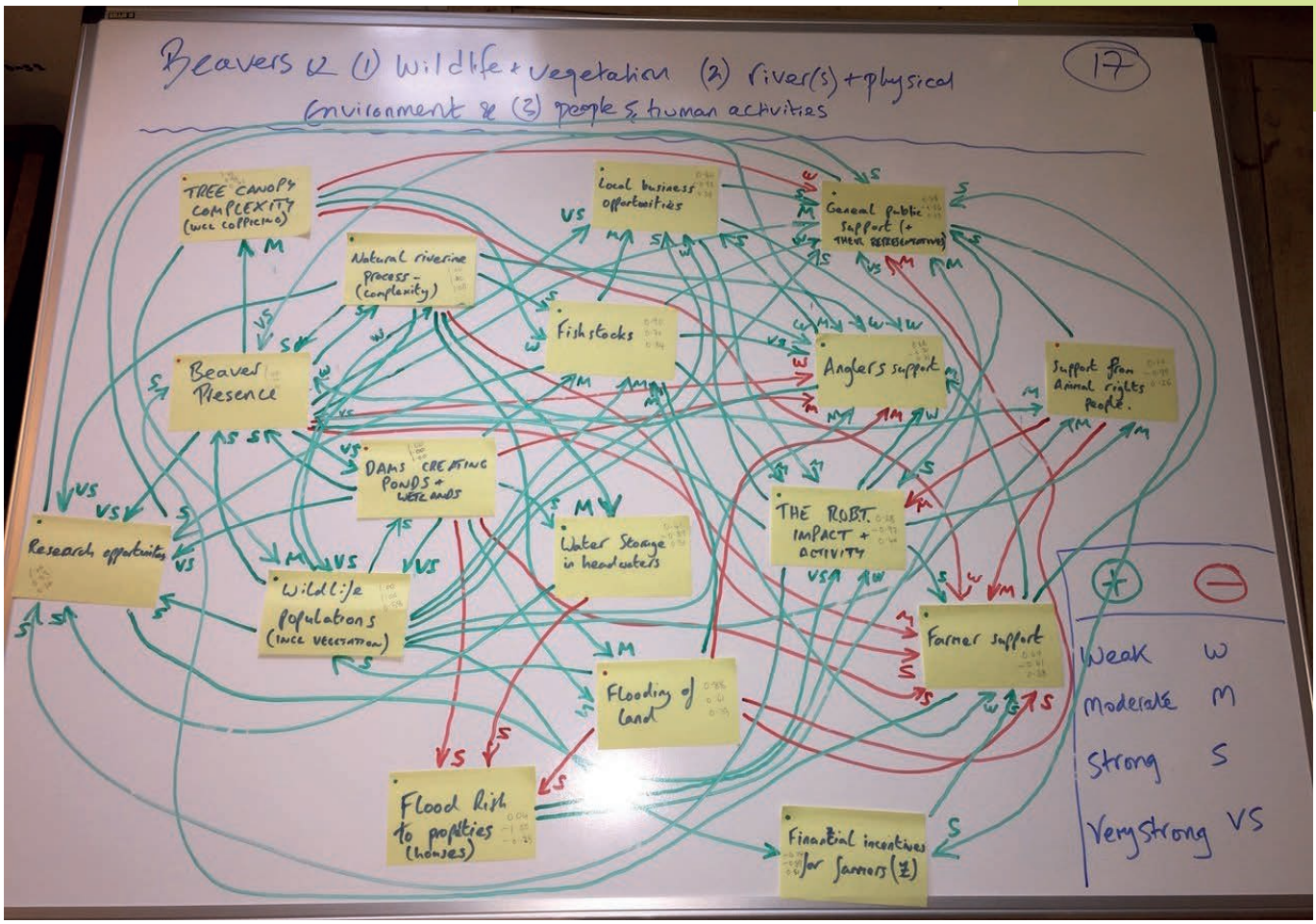
This research highlights the often-conflicting challenge of addressing nature/culture focused perspectives or interests, and that doing so remains pertinent to the perception of the English landscape.

Mental models and emotion; understanding the ROBT as an example of human-wildlife conservation interaction

A PhD research project led by Andrew Blewett (Wageningen University, Netherlands) is investigating the unique circumstances of the River Otter Beaver Trial reintroduction. This study draws on detailed perceptions, understanding and feelings of 48 interviewees including: farmers, land-owners and managers, anglers, conservationists, environmental regulators, utility providers and members of the public. The resulting stakeholder mental models (see Figure 4.15), show concepts and linkages weighted by the perceived importance by the participant. Furthering this research will develop an understanding of the relationship between beaver reintroduction and land-use objectives preferred by stakeholders and policy-makers.

Additionally, during interviews he included a layer of emotion ratings attached to concepts. It is known that emotion plays an important role in decision-making (notably under stress), crucial to wildlife and ecological restoration project outcomes, especially in multi-use landscapes. It is hoped to infer conclusions drawing on the empirical data and decision-making theory, relevant to natural-resource management as it increases further in strategic importance.

↓ **Figure 4.15** An example of a raw mental map collected as part of the stakeholder interview process (with permission).



Key documents in Appendix 4

- Engagement Events and Attitudinal Change (November 2019)
- Nonhuman Citizens on Trial: Eco Politics of Beaver Reintroduction (2017)
- Respondent Reasons for 2017 Nationwide Survey Answers (November 2019)

The appendices are available to view at https://www.exeter.ac.uk/creww/research/beavertrial/appendix4/

NB. These appendices will be updated with other relevant supporting documents, not necessarily listed here.

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4. Auster, R. E., Barr, S. & Brazier, R. E. Naturalists and Traditionalists: Alternative perspectives of the angling community on Eurasian beaver (*Castor fiber*) reintroduction. (In Review).
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