

Hampshire and Isle of Wight Wildlife Trust Consultation on Beaver Introduction – Results

As part of Hampshire and Isle of Wight Wildlife Trust’s aspirations for a release of beavers on the Isle of Wight, a consultation was launched in the spring of 2022 to inform and gather the opinions of local stakeholders and residents. A suite of evening talks to parish councils, public events and guided walks have and will continue to build the evidence base amongst locals, providing information on beaver ecology, likely impacts of a release, the benefits that could ensue, and how any potential conflict would be managed.

A major component of the consultation was a door-drop questionnaire, incorporated into the Trust’s annual fundraising membership ask, that was mailed to all residences on the Island on the 28th

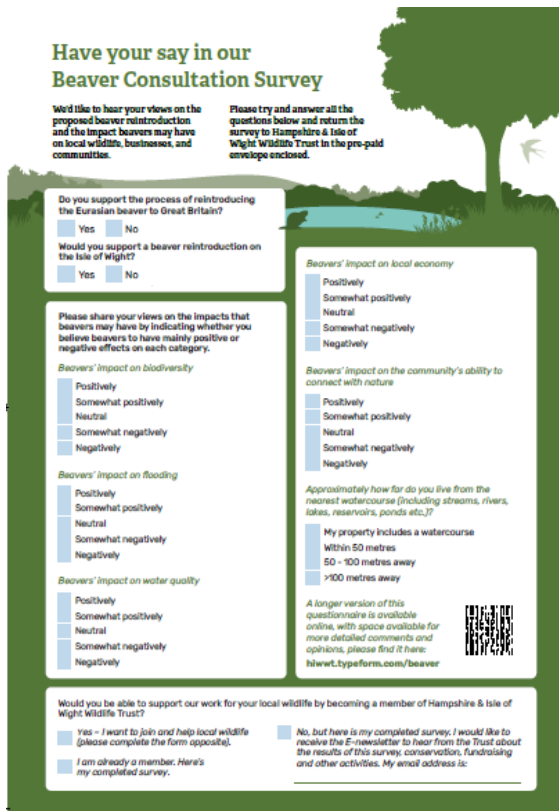


Figure 1. Door drop questionnaire, sent out to all Island residences on 28th February 2022.

February 2022, some 70,000 addresses (although difficulties with Royal Mail staff shortages during Covid meant that not all of these were ultimately delivered). To ensure maximum participation in the survey an online version of the questionnaire was launched simultaneously, which also provided the opportunity for respondents to write longer comments, which was not possible on the paper version where space was more limited.

The questions in the survey were based upon Dr. Roger Auster’s questionnaire of the University of Exeter, that captured local perceptions on beaver introduction in the River Otter catchment in Devon (Auster et al., 2020) and were reproduced with his kind permission.

The consultation questionnaire was officially closed on Monday 16th May 2022, during which time 4,008 paper responses and 875 online responses were received, giving a total of 4,883 responses across both media.

NB not all respondents replied to every question, and so the total numbers of respondents does vary between questions.

Opinions on Beaver Introduction

Of those who responded across both media, 97% or 4,755 respondents out of 4,883 were Island residents, the remaining 3% or 128 respondents likely to be residents of Hampshire with access to the online questionnaire.

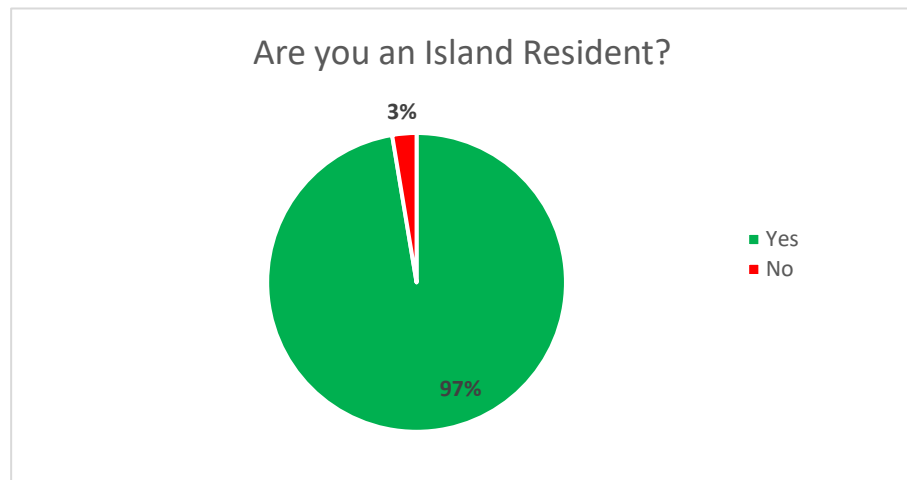
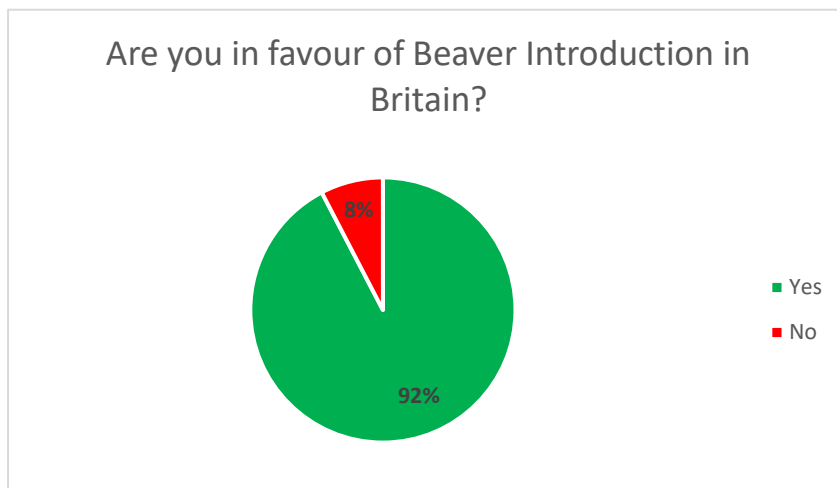


Figure 2. 97% of respondents (n=4,755/4,883) were Island residents.



Of those who responded across both media, 92% or 4,440 respondents out of 4,807 were in favour of beaver introduction generally across Great Britain.

Figure 3. 92% of respondents (n=4,440/4,807) were in favour of beaver release generally across Great Britain.

However, a slightly smaller proportion of respondents, 89% or 4,258 respondents out of 4,773 were in favour of a beaver introduction specifically onto the Isle of Wight. Although still a large majority, this difference in opinion may reflect concerns that a small number of individuals may have about the impacts of beavers locally on the Island, that they otherwise don't feel when considering beaver introduction more generally across Britain.

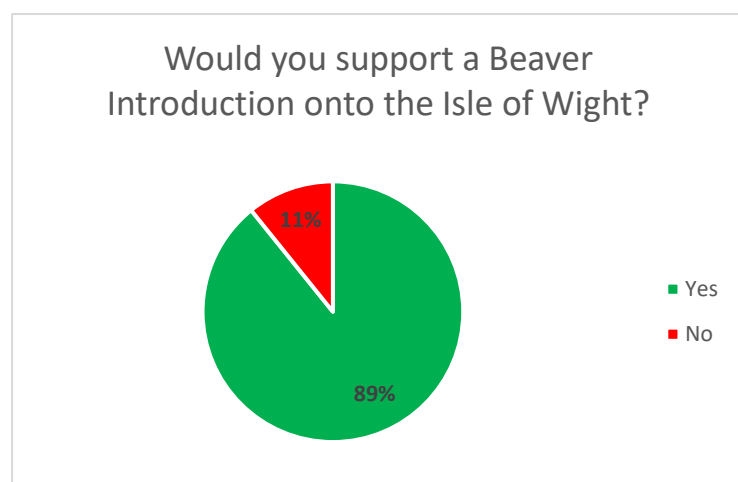
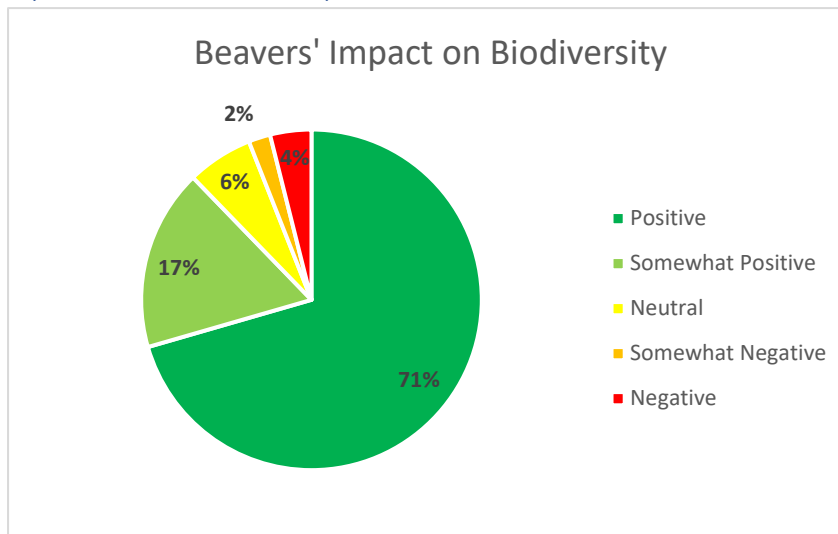


Figure 4. 89% of respondents (n=4,258/4,773) were in favour of a beaver release on the Isle of Wight.

Opinions on Beaver Impacts



When asked how they felt regarding the impact of beavers on biodiversity, 88% of respondents felt that the impact would be Positive or Somewhat Positive representing 4,234 out of 4,825 respondents. 289 respondents or 6% felt that the impact on biodiversity would be Negative or Somewhat Negative.

Figure 5. 88% of respondents (n=4,234/4,825) felt that the impact of beavers on biodiversity would be Positive or Somewhat Positive.

When asked how they felt regarding the impact of beavers on flooding, a slightly smaller proportion or 82% of respondents felt that the impact would be Positive or Somewhat Positive representing 3,934 out of 4,819 respondents. A slightly larger number of 369 respondents or 8% felt that the impact on flooding would be Negative or Somewhat Negative. Although the majority indicate that beavers could deliver positive

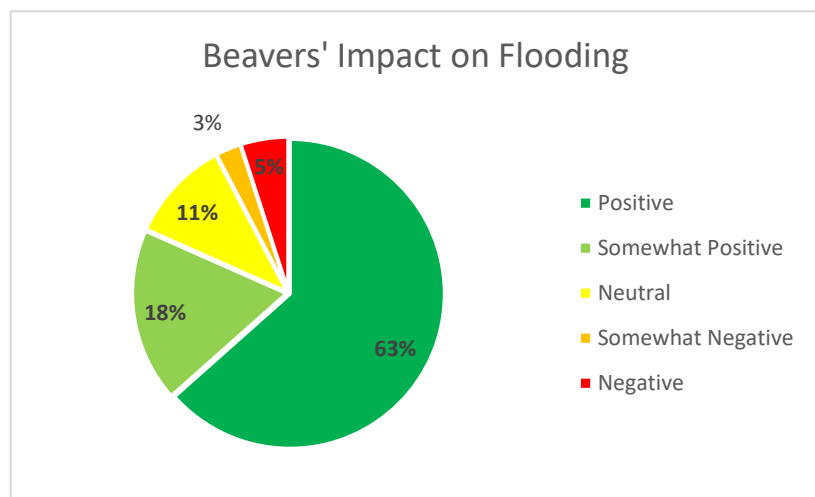
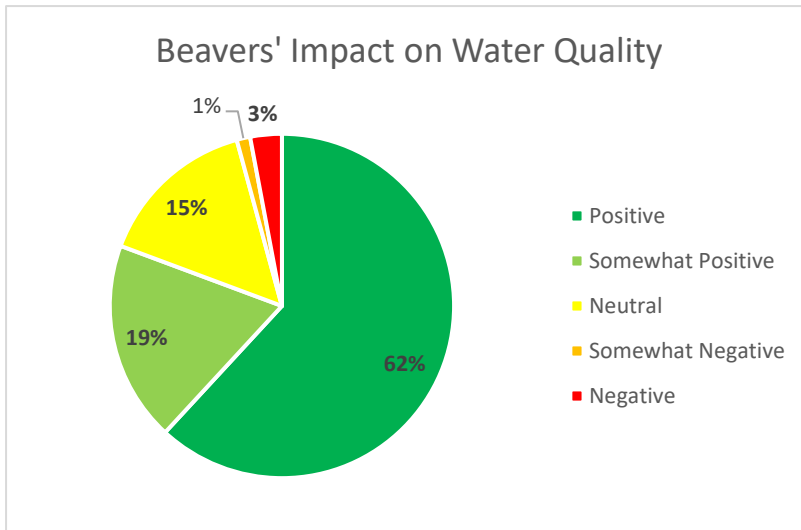


Figure 6. 82% of respondents (n=3,934/4,819) felt that the impact of beavers on flooding would be Positive or Somewhat Positive.

outcomes in minimising downstream flash flooding through their dam building slowing the flow, the slightly higher proportion of negative responses here could relate to some individuals' concerns that beaver damming in human-impacted places may perhaps result in flooding of infrastructure, agricultural land or property.

While beaver activity including their dams can be managed in order to lower water levels where ponding may not be welcome, existing flooding issues along heavily modified rivers on the Island has led to a heightened sensitivity to water levels among some riverside residents, who may be concerned to see any further perceived causes of flooding such as beaver damming in the river.



Similar numbers of people i.e. 81% respondents or 3,891 out of 4,823 total felt that beavers' impact on water quality would be Positive or Somewhat Positive. Interestingly only 4% or 204 respondents felt that beavers would have a Negative or Somewhat Negative Impact, with a larger proportion (15%) remaining Neutral on this issue.

Figure 7. 81% of respondents (n=3,891/4,823) felt that the impact of beavers on water quality would be Positive or Somewhat Positive.

A greater proportion of respondents were unsure of how beavers would impact the local economy. While a majority of respondents (73% or 3,503 out of 4,790) felt the impact was likely to be Positive or Somewhat Positive, 21% or 1,106 respondents were Neutral on this issue, with eco-tourism seemingly a less apparent benefit to beaver introduction in some people's minds.

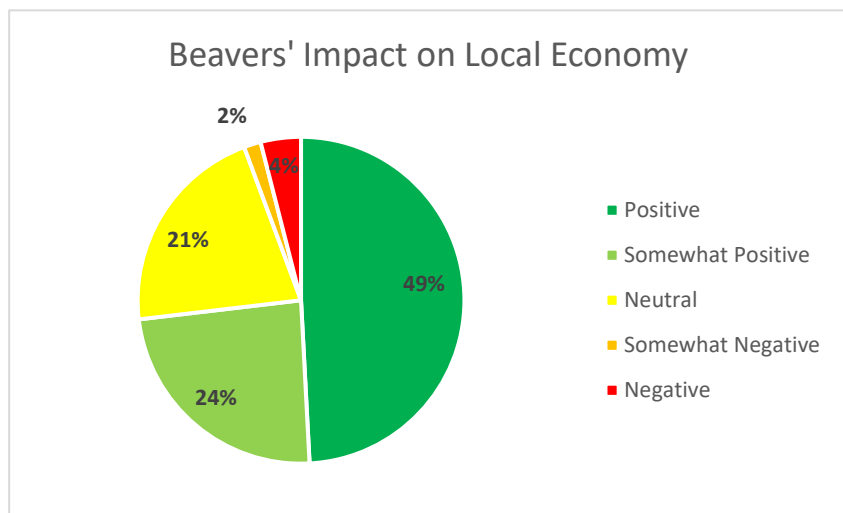
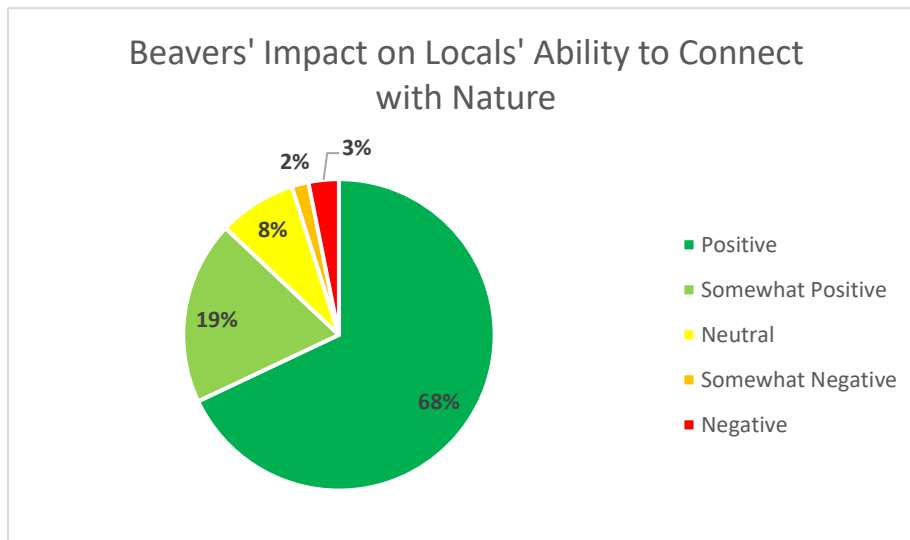


Figure 8. 73% of respondents (n=3,503/4,790) felt that the impact of beavers on the local economy would be Positive or Somewhat Positive.



A clearer response was seen when respondents were asked on beavers' impact on locals' ability to connect with nature, with 87% (4,177 out of 4,800 responses) indicating a Positive or Somewhat Positive impact.

Figure 9. 87% of respondents (n=4,177/4,800) felt that the impact of beavers on locals' ability to connect with nature would be Positive or Somewhat Positive.

How Opinions Differ by Proximity to a Watercourse

The door-drop survey included a question on how close the respondent lives to a watercourse, which enables us to tease out whether opinions differ based on geographic location. Beavers are aquatic animals, rarely straying far from the safety of deep water, and indeed typically the majority of their foraging takes place within 30m of the water's edge, while 100m from water is considered about the furthest a beaver could reasonably be expected to forage (Macfarlane et al., 2015). Therefore the closer one lives to a watercourse, the more likely one is to be impacted by either foraging or dam building activities.

Four distance responses in the questionnaire were listed, with those who selected "My property includes a water course" being most likely to experience direct impact. Those that live "within 50m of the water's edge" could perhaps experience some foraging activity or inundations at the margin of their property, but of course this heavily depends on the beaver habitat suitability and dam capacity of the reach of river in question. Those "within 50 – 100m of the water's edge" would experience a lesser degree of foraging or inundation impact, especially if the gradient increases upon distance from the watercourse. Those who live "further than 100m away from a watercourse" would be unlikely to experience any direct impact.

In general, when analysing the correlation in responses with distance from a watercourse, there was a small positive correlation across the board, meaning that people who lived closer to the water's edge, and therefore more likely to be directly impacted, were in general slightly less favourable towards beavers. Correspondingly people who lived further from the water's edge, and therefore less likely to be directly impacted, were slightly more supportive of a beaver introduction and their impacts. This can be seen in the following figures.

NB correlation statistics are reported as a number between the values of +1 and -1. The closer the value is towards +1, the stronger the positive correlation between two variables, i.e. say as distance from water increases ↑ so would support ↑. Conversely the closer towards -1, the more inverse the relationship i.e. say as distance from water decreases ↓, support of beavers increases ↑. A value close to zero shows little correlation either way.

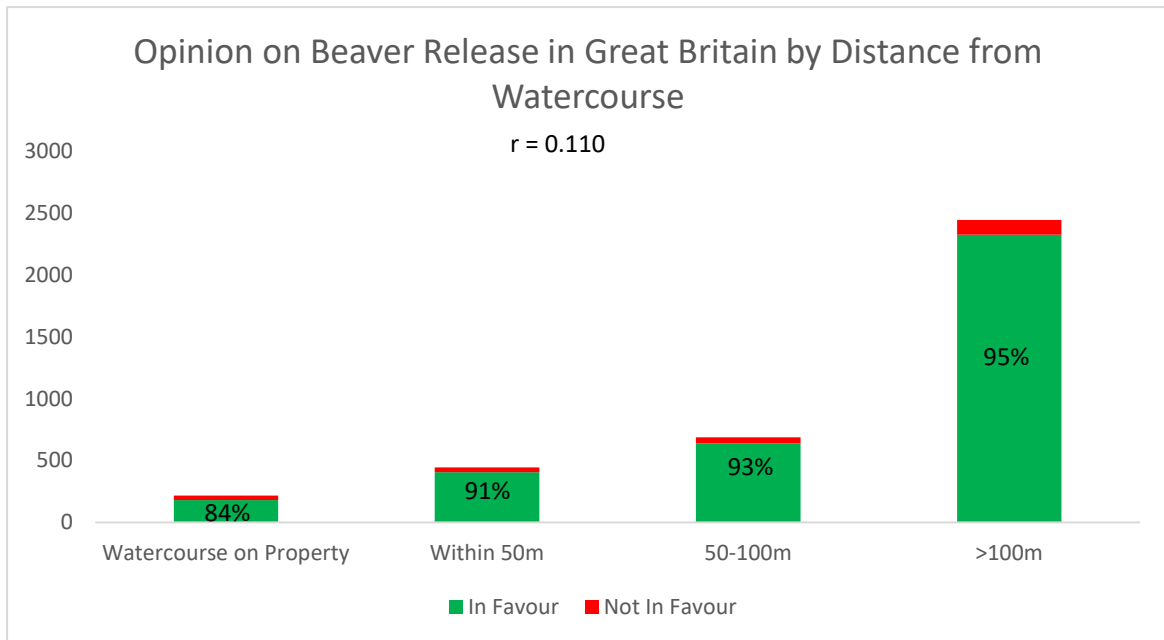


Figure 10. 84% of respondents with a watercourse on their property were in favour of beaver releases across Great Britain, but this increased to 95% of those living further than 100m from a watercourse, with a positive correlation statistic of 0.110

There was a slight positive correlation of 0.110 when respondents were asked their opinion on beaver introduction in Great Britain, with a greater proportion of people in favour on increasing distance from the water's edge. A majority (84%) of people with a watercourse on their property were still in favour, but this proportion increased to 95% of respondents living further than 100m from a watercourse.

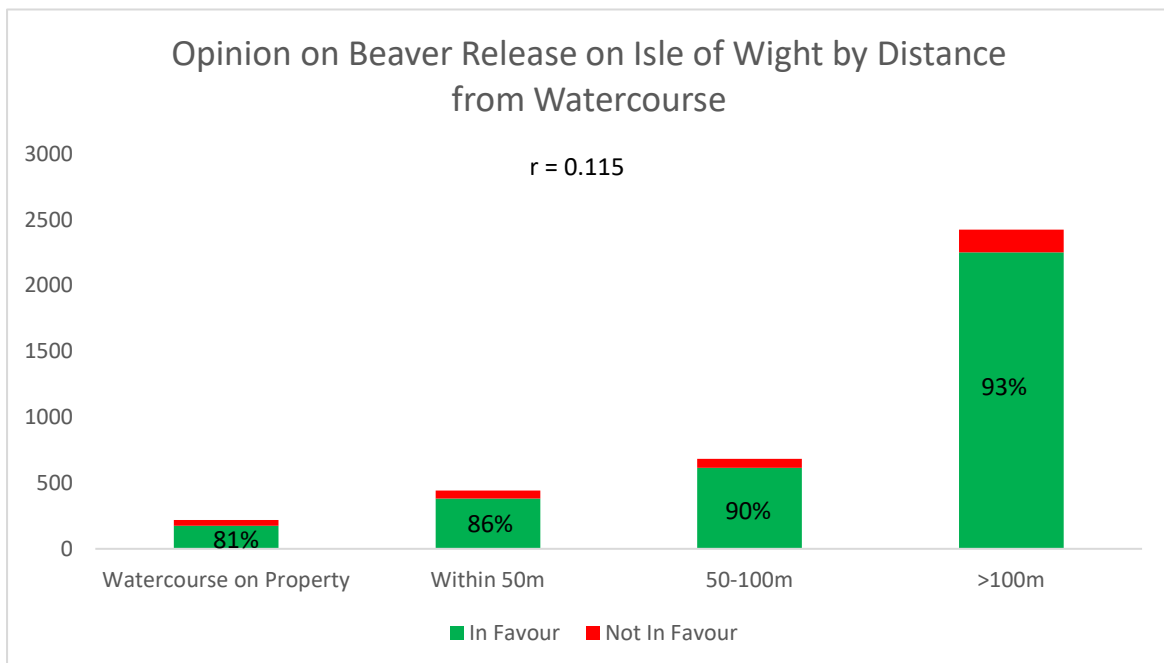


Figure 11. 81% of respondents with a watercourse on their property were in favour of a beaver release on the Isle of Wight, but this increased to 93% of those living further than 100m from a watercourse, with a positive correlation statistic of 0.115

There was a slightly greater positive correlation of 0.115 when respondents were asked their opinion on beaver introduction specifically on the Isle of Wight, with slightly less support overall and with less of that support found amongst those with a watercourse on their property. A smaller but still significant majority (81%) of people with a watercourse on their property were in favour, and this proportion increased to 93% of respondents living further than 100m from a watercourse.

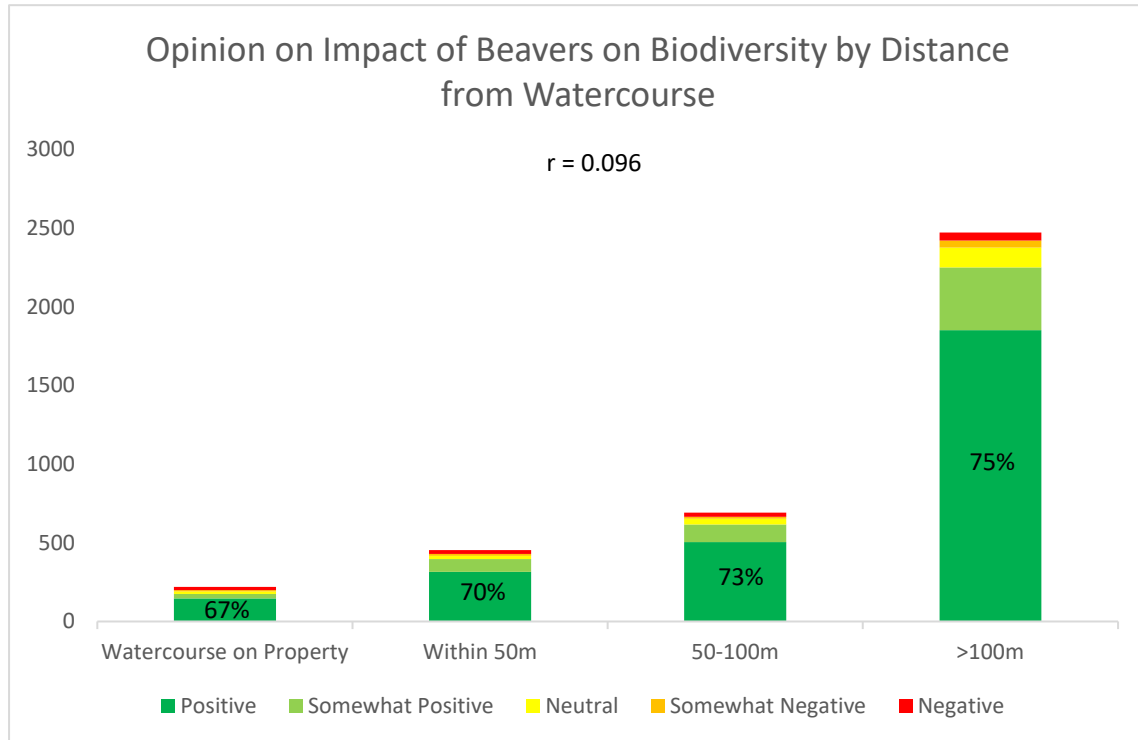


Figure 12. 67% of respondents with a watercourse on their property thought beaver impact on biodiversity would be wholly positive, but this increased to 75% of those living further than 100m from a watercourse, with a positive correlation statistic of 0.115

There was a slight positive correlation of 0.096 when respondents were asked their opinion on the impact of beavers on biodiversity, with a greater proportion of people seeing a positive benefit on increasing distance from the water's edge. A majority (67%) of people with a watercourse on their property thought beavers' impact on biodiversity would be wholly positive, but this proportion increased to 75% of respondents living further than 100m from a watercourse.

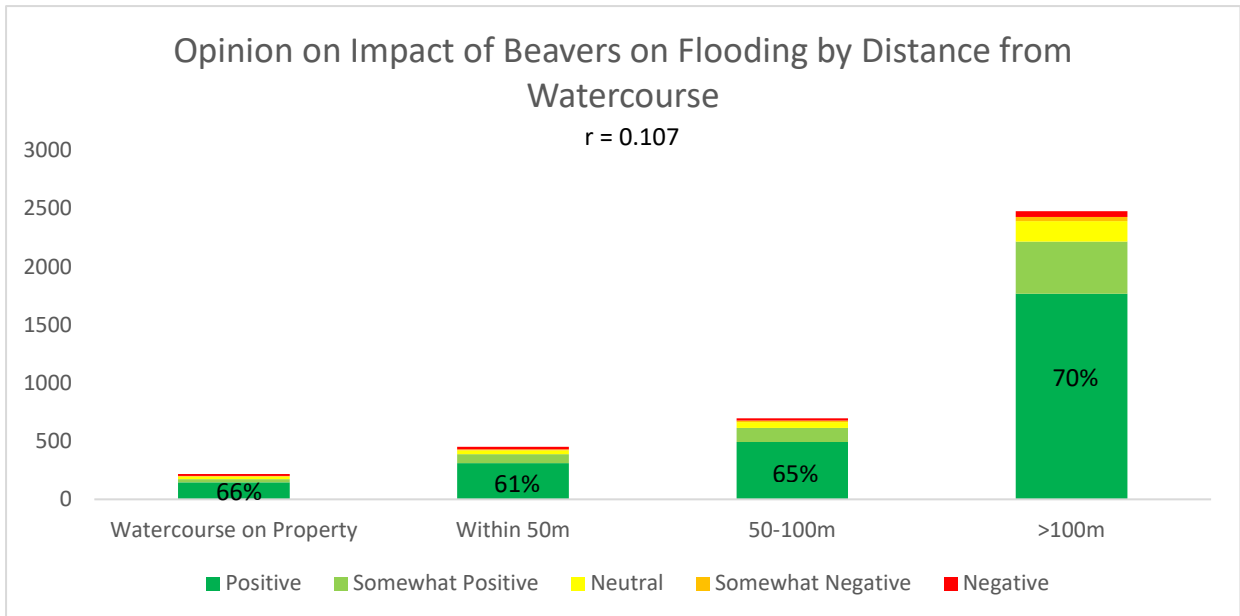


Figure 13. 66% of respondents with a watercourse on their property thought beaver impact on flooding would be wholly positive, but this increased to 70% of those living further than 100m from a watercourse, with a positive correlation statistic of 0.107

There was a slightly larger positive correlation of 0.107 when respondents were asked their opinion on the impact of beavers on flooding, with a greater proportion of people seeing a positive benefit on increasing distance from the water's edge, although with a slightly less positive outlook than for biodiversity above. A majority (66%) of people with a watercourse on their property thought beavers' impact on flooding would be wholly positive, but this proportion increased to 70% of respondents living further than 100m from a watercourse.

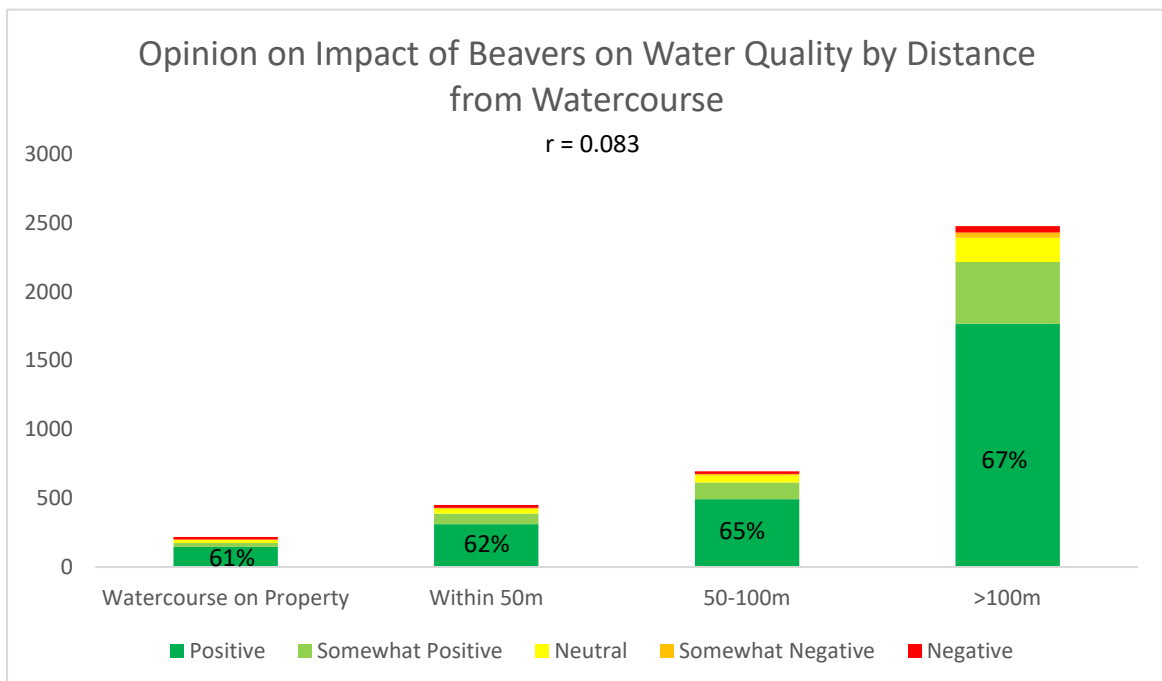


Figure 14. 61% of respondents with a watercourse on their property thought beaver impact on water quality would be wholly positive, but this increased to 67% of those living further than 100m from a watercourse, with a positive correlation statistic of 0.083

There was a slightly smaller positive correlation of 0.083 when respondents were asked their opinion on the impact of beavers on water quality, with a greater proportion of people seeing a positive benefit on increasing distance from the water's edge, although with a slightly less positive outlook than for biodiversity and for flooding. A majority (61%) of people with a watercourse on their property thought beavers' impact on water quality would be wholly positive, but this proportion increased to 67% of respondents living further than 100m from a watercourse.

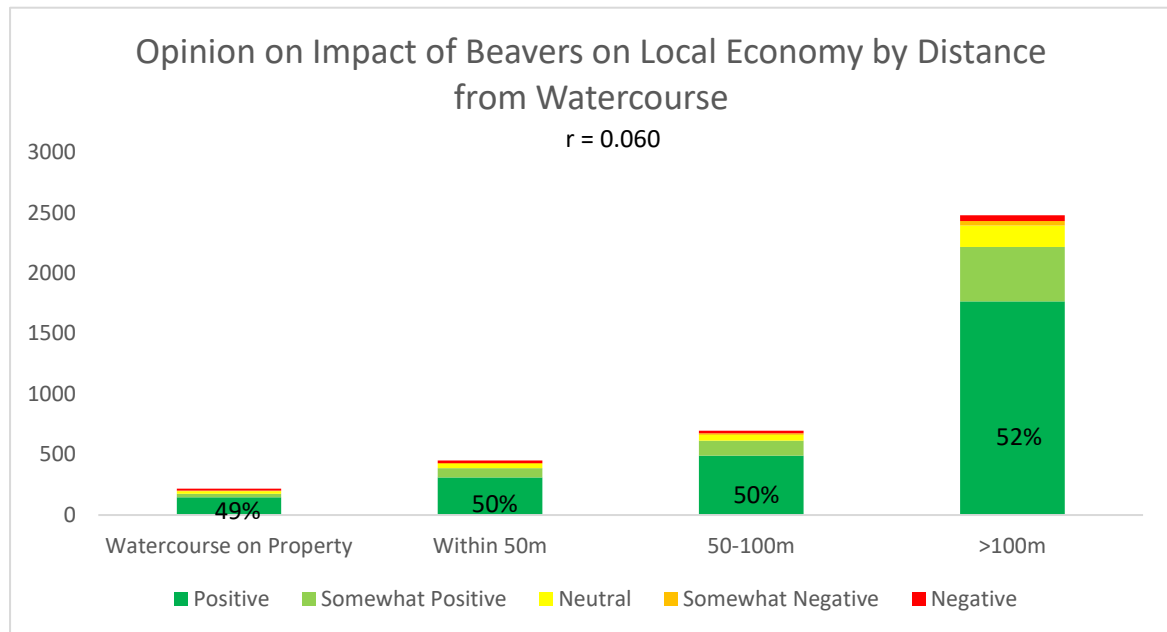


Figure 15. 49% of respondents with a watercourse on their property thought beaver impact on the local economy would be wholly positive, but this increased to 67% of those living further than 100m from a watercourse, with a positive correlation statistic of 0.083

There was an even smaller positive correlation of 0.060 when respondents were asked their opinion on the impact of beavers on the local economy, with very little difference in the proportion of people looking favourably on this based on how close they live to a water course. In general there was a less favourable outlook on the impact on the local economy than for biodiversity, flooding and water quality, due to the larger proportion of neutral opinions on this issue as discussed above. A large minority (49%) of people with a watercourse on their property thought beavers' impact on the local economy would be wholly positive, but this proportion increased to 52% of respondents living further than 100m from a watercourse.

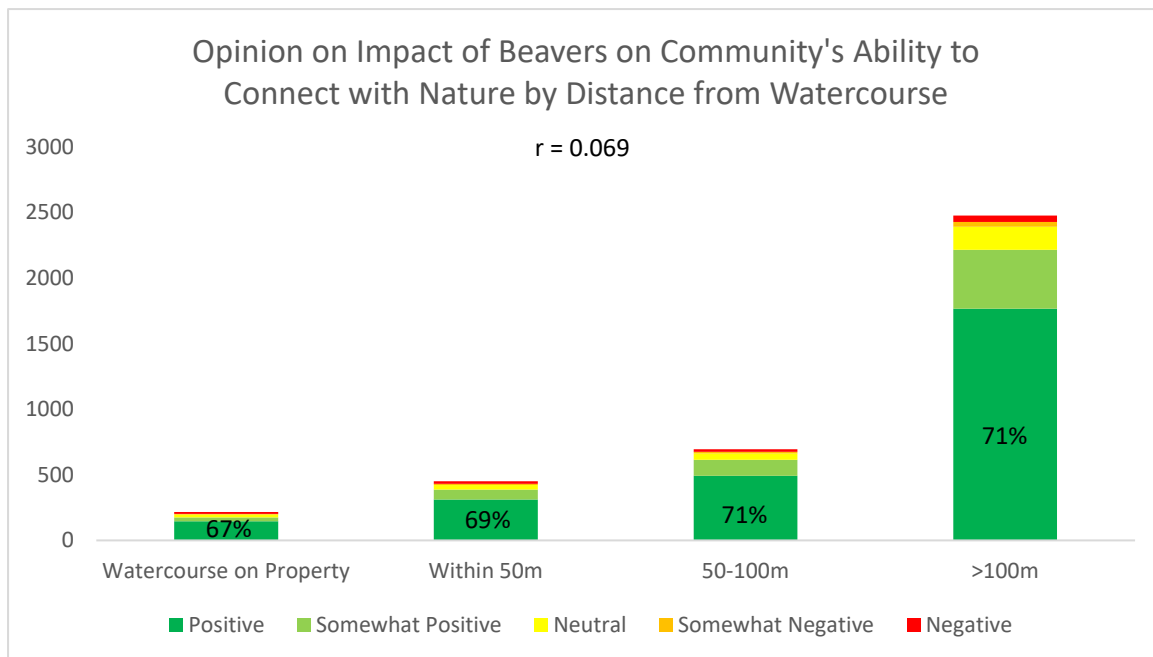


Figure 16. 49% of respondents with a watercourse on their property thought beaver impact on the local economy would be wholly positive, but this increased to 67% of those living further than 100m from a watercourse, with a positive correlation statistic of 0.083

There was similarly small positive correlation of 0.069 when respondents were asked their opinion on the impact of beavers on the community's ability to connect with nature, with very little difference in the proportion of people looking favourably on this based on how close they live to a water course. In general there was a more favourable outlook on the impact on being able to connect with nature, similar to the impact on biodiversity above. A majority (67%) of people with a watercourse on their property thought beavers' impact on connecting to nature would be wholly positive, but this proportion increased to 71% of respondents living further than 100m from a watercourse.

Opinions on Beaver Management

The following questions on beaver management were only found in the longer on-line questionnaire, accounting for the reduced number of respondents to these.

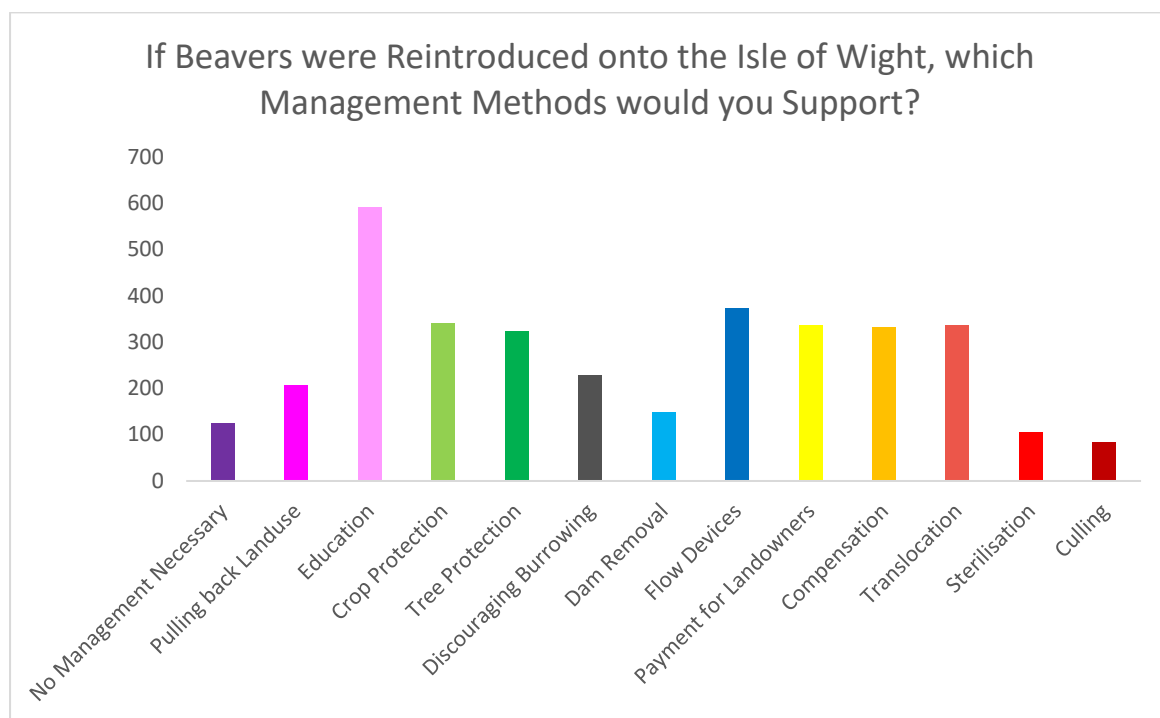


Figure 17. Response to beaver management methods.

When people were asked on the management methods that they would support, by far the most widely supported management action (supported by 591 respondents) was the provision of education and outreach on beaver ecology and impacts. The Trust recognises the key importance of this, which underlies our ongoing consultation and public events schedule. By endeavouring to provide as much information as possible on likely beaver impacts and how these can be mitigated, the Trust hopes to build tolerance amongst the community, as well as providing a clear channel of communication to the local Beaver Officer who can respond to any questions, comments or concerns.

There was also high support for practical mitigation steps to reduce beaver impact, such as the use of flow devices (373 respondents), crop protection (340 respondents) and tree protection (323 respondents). The use of simple, relatively cheap and available materials such as fencing to protect assets such as crops and trees, and installing pipes through dams to prevent inundation behind dams where tolerance is low, can help reduce human-beaver conflict and these methods would be used to manage beaver impacts in the event of an introduction as they have been used successfully elsewhere across Britain.

Pulling back landuse (207 respondents) was not as well supported as financial methods of promoting coexistence such as payment for landowners (337 respondents) and compensation (331 respondents).

Translocation was the most well supported active management technique, at 335 respondents. Support fell for the more invasive active management techniques with 104 respondents supporting sterilisation and 83 culling.

A relatively small number (125 respondents) felt that no management was necessary, although given that beavers as ecosystem engineers can have quite dramatic impacts on the landscape from their foraging and dam building activities, the Trust will ensure that any unwelcome and intolerable beaver activities would be managed through a hierarchy of interactions, beginning with education, moving through mitigation options such as fencing and dam removal, through to live trapping where necessary. Only in the absence of any other suitable alternative would lethal control be an option available to landowners, under the caveat that beavers are soon to receive European Protected Species status, whereby it will be an offence to capture, kill, disturb or injure beavers, or damage breeding sites or resting places without a licence from Natural England.

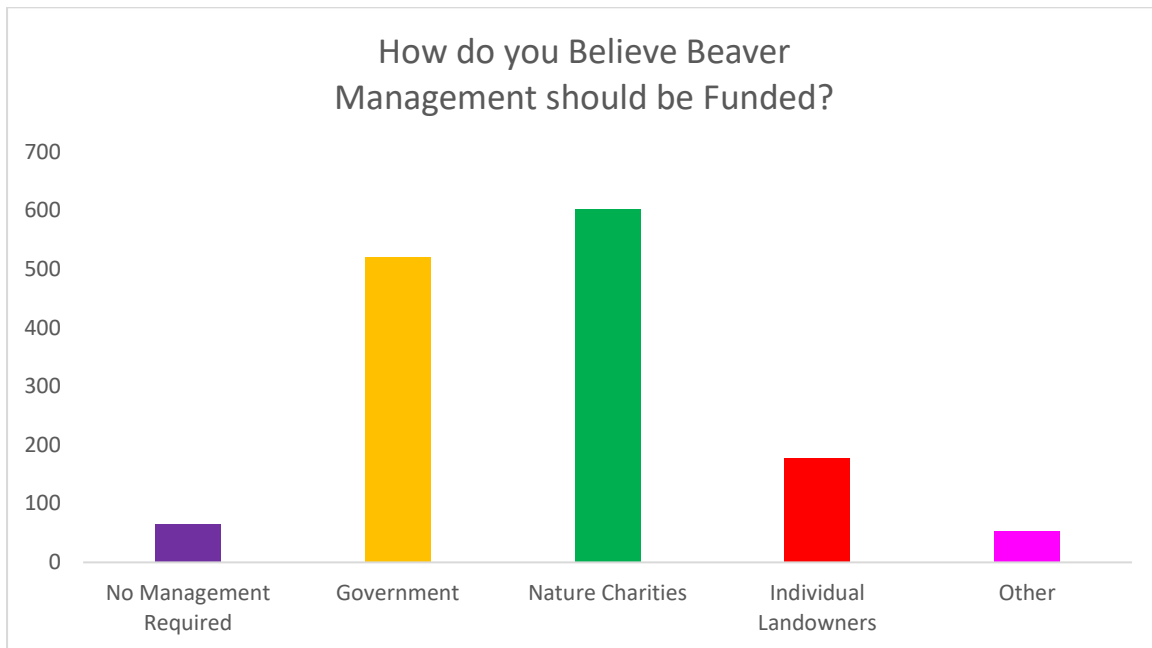


Figure 18. Response to how beaver management should be funded.

With regard to who should fund these management actions, the majority of people (602 respondents) felt that Nature Charities should pay for beaver management. This was certainly the case in Devon, where the wild population of beavers living freely on the River Otter, once under licence, was managed by Devon Wildlife Trust, who were responsible for funding all mitigation throughout the licencing period. Similarly, should beavers be introduced onto the Island, Hampshire and Isle of Wight Wildlife Trust would be responsible for management and mitigation throughout the licencing period. However, outside the licencing period the government sees the management of beavers long-term falling upon individual landowners as is the case with other wildlife. Yet given the scale of impact that beavers may have, and the resulting many benefits in terms of mitigating flash flooding, improving water quality and enhancing biodiversity, many clearly feel that government too should play a role in supporting beaver management financially (521 respondents).

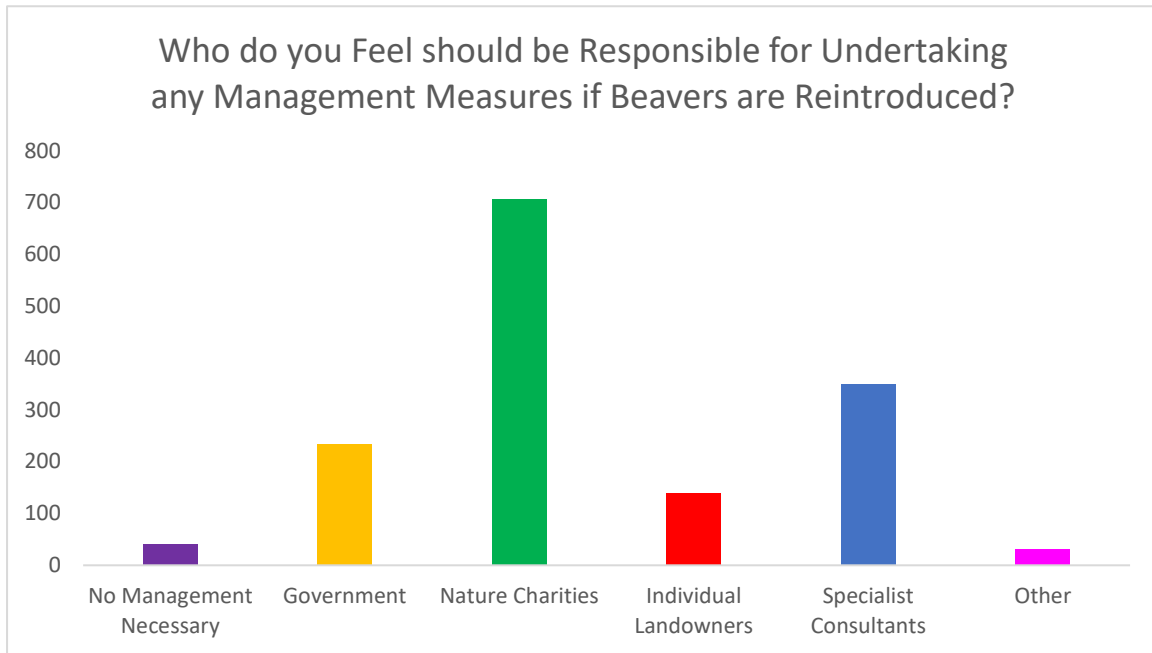


Figure 19. Response on who should undertake beaver management.

As to who should carry out management measures, again the majority of respondents (706) felt that nature charities should be responsible for this. And where nature charities are the licence holders, they will be required to hire Beaver Officers who will be responsible for carrying out management and mitigation throughout the licencing period. Many nature charities have amassed a large amount of knowledge and experience on beaver ecology and management thorough the recruitment of expert personnel and training. But as beavers become more common in Britain and as capacity builds across sectors, and especially through the recruitment of a National Beaver Officer by Natural England this past spring, it is likely that we will see more upskilling and training of personnel in government, and across the wider landscape with more private landowners becoming familiar with beavers and how to manage them.

Door Drop Perceptions and Comments



Figure 20. Word cloud summarising positive comments made on door-drop questionnaire

The above Figure 20 is a summary word cloud representing positive comments that were made on the mailed-out door drop questionnaire, where the size of the words indicates the frequency with which the comment was made, with the largest font comments made most frequently. Alongside numerous supportive comments, one of the most frequent comments (made 6 times) was the benefit that beavers can bring to mitigate flash flooding downstream. Three other comments picked up on the fact that beavers can boost tourism, while the benefit of beavers to wildlife and improving water quality were both mentioned once.



Figure 21. Word cloud summarising negative comments made on door-drop questionnaire

By contrast, Figure 21 is a summary word cloud representing negative comments that were made on the mailed-out door drop questionnaire. In this instance, by far the most common theme commented on (mentioned 25 times) was the idea that the Island doesn't provide enough space for beavers. And while beaver habitat suitability modelling does indicate that there would be plenty of suitable habitat for beavers on the Island, there is clearly a concern that the levels of urbanisation and intensive agriculture on the Island might make it difficult for beavers to colonise and thrive.

Another theme that came out frequently (11 times) was the perceived destructive nature of beavers, who as ecosystem engineers can alter their environment quite dramatically. With beavers having been absent from the landscape so long, we are unused to seeing natural processes operate at quite such a scale, and beavers' tree felling and raising of the water table can present quite a contrast to our otherwise highly controlled river environments.

A lack of trees was another concern mentioned nine times. Although beaver habitat suitability modelling does indicate that there would be plenty of forage available for beavers on the Island, people value trees highly, and the idea of beavers felling some, even if they were to coppice back, is a concern for those worried about landscape aesthetics and the climate crisis. Trees can be protected from foraging though, with mesh, electric fencing or sand-based paint acting as effective deterrents to preserve favoured landscape or fruit trees. Wetlands also act as important carbon sinks, and that through rewetting peat and preventing its oxidation, carbon dioxide can be locked up in beaver wetlands for many years.

The fear that beavers, by building dams in the wrong place, may actually increase flooding was mentioned eight times, although management of beaver dams would be crucial to building tolerance among communities and would be handled through the lowering and removal of offending dams, as well as the use of flow management devices to ensure water levels are kept at a tolerable level.

The impact on agriculture specifically was mentioned six times, either through beaver foraging or dam building, although again impacts could be brought to a tolerable level through the use of fencing, dam manipulation and also financial incentives such as compensation for the delivery of ecosystem services. The government's new Environmental Land Management Schemes make it clear that farmers can expect to be financially rewarded for delivering public goods such as clean and plentiful water, thriving plants and wildlife, protection from environmental hazards such as flash flooding, and reduction of and adaptation to climate change.

The idea that beavers are nocturnal was mentioned five times with regard to their impact on the local economy, and while that is true, visitors have still been shown to flock to Devon and other places to see not just the beavers themselves, which the committed can do if they are willing to get up at dawn or stay up til dusk for a photo opportunity in the summer months, but also the rather obvious evidence that beavers are in residence. Beaver foraging leaves trademark pencil shaped stumps, and their industrious building can lead to the creation of dams and lodges that are visible to see even if the beavers are asleep. And the wetlands they create can still lead to some rewarding wildlife watching experiences of other species such as birds which can heighten people's connection to nature.

The fear of persecution was also raised four times as a negative to beaver introduction. And while culling is likely to remain a legal recourse to landowners under licence by Natural England, it is important to acknowledge that significant culling does occur in Tayside where beavers are causing economic impacts to farmland, and for a small population such as would be the case on the Isle of Wight, any culling could have significant impacts to long term population genetic health and viability.

However, wild populations of beavers are currently free living elsewhere in other catchments in Britain that are not seeing the same levels of conflict and culling that have been seen in Scotland, and it is therefore so important that we build on the lessons that have been learnt on those projects such as the need for education, outreach, myth busting and a robust consultation to promote coexistence and reduce levels of human-wildlife conflict.

The comment on whether beavers are a native species also came up four times. Beavers are a native species to Britain, and would have been present on the landmass that is the Island during the last ice age, about 8,000 years ago. But as the ice melted, sea levels rose and the Island was separated by the breaching of the Solent, this population would have become small, isolated and vulnerable to human hunting and predation. While there does appear to be anecdotal evidence of beaver manipulated sticks having been found on the Island dating from around 8,000 years ago, there hasn't been any more recent archaeological evidence found, so it is likely that due to their vulnerability, beavers would have been eradicated from the Island fairly quickly.

Finally two respondents mentioned the threat of disease. While beavers have never been found to carry TB, unlike badgers, beavers can still carry diseases that are common to rodents such as leptospirosis or Weil's disease, which is already prevalent along our waterways. By far beavers' biggest risk to human health is the fact that they can be an intermediary host for the fox tapeworm, which can cause cystosis and death in people if transferred to them via the final host (a canid such as a pet dog). The fox tapeworm isn't currently found in Britain and because of this risk, there is currently a ban on the import of beavers from the continent. Any beavers to be released on the Isle of Wight would therefore come from inside Britain, would be subject to stringent disease testing as part of the licencing process, and would necessarily have no chance of carrying the fox tapeworm.

Online Questionnaire Perceptions and Comments

345 people filled out comments in the longer online questionnaire justifying their opinion on whether or not beavers should be introduced to Great Britain. These comments were categorised to allow qualitative analysis of lengthy individual responses, which are defined as follows in Table 1. Where respondents wrote comments citing numerous reasons, the first was taken to reflect their opinion as their most pressing concern or ardent support.

Table 1. Number of categorised comments received during the online questionnaire justifying opinions on whether beavers should be introduced to Great Britain.

Category	No. of Respondents	Definition
Native Species	76	That as a native species, hunted to extinction by man, beavers have the right to exist and be reintroduced.
Not Native	1	That beavers are not a native species and do not belong in Britain, having gone extinct and been absent for hundreds of years.
Reduce Flooding	34	That beavers, by building dams and slowing the flow, reduce downstream flood risk.
Increase Flooding	6	That beavers, by building dams and creating ponds, can cause localised flooding and increase flood risk
Rewilding	36	Representing those who value wildlife, want to see more rewilding, and value the introduction of beavers as an additional species.
Destructive	11	That beavers with their foraging, dam building and burrowing habits are destructive and will cause damage.
Keystone Species	140	That the introduction of beavers will have wide ranging benefits upon the ecosystem and for other wildlife far beyond their intrinsic value as an additional individual species.
Prioritise Existing Wildlife	3	That conservation charities such as the Wildlife Trust should focus on conserving existing species rather than devoting resources to reintroducing missing species
Successful Elsewhere	11	That beaver introductions have been successful elsewhere and so could do well and bring benefits to Britain.
Management Required	1	That beavers, being an ecosystem engineer with dramatic impacts on the landscape, would require management if released.
Suitable Habitat	2	That Britain offers suitable habitat for beavers and so would be able to thrive
Ecosystem Changed	10	That the ecosystem has changed since beavers have gone extinct, with increased human presence and resulting increased urbanisation and traffic etc.
Water Quality	1	That beavers improve downstream water quality through filtering out silt, sediment and pollutants that are trapped behind their dams.
Herbivorous	1	That since beavers are not predators, they will cause little harm to the ecosystem and other wildlife.
Charismatic	6	That beavers as cute furry mammals are endearing and popular with respondents

Connect to Nature	2	The beavers through their presence and impact on the environment will help people connect to nature through wildlife watching
Insufficient Habitat	2	That there is not enough habitat to support a beaver population
Why Not?	2	Representing those that see few downsides compared to the benefits that beavers could bring.
Total	345	

The number of categorised responses can be seen in Figure 22 below, where it is clear to see that the majority of comments were positive, in line with the level of overall support seen in other questions analysed above.

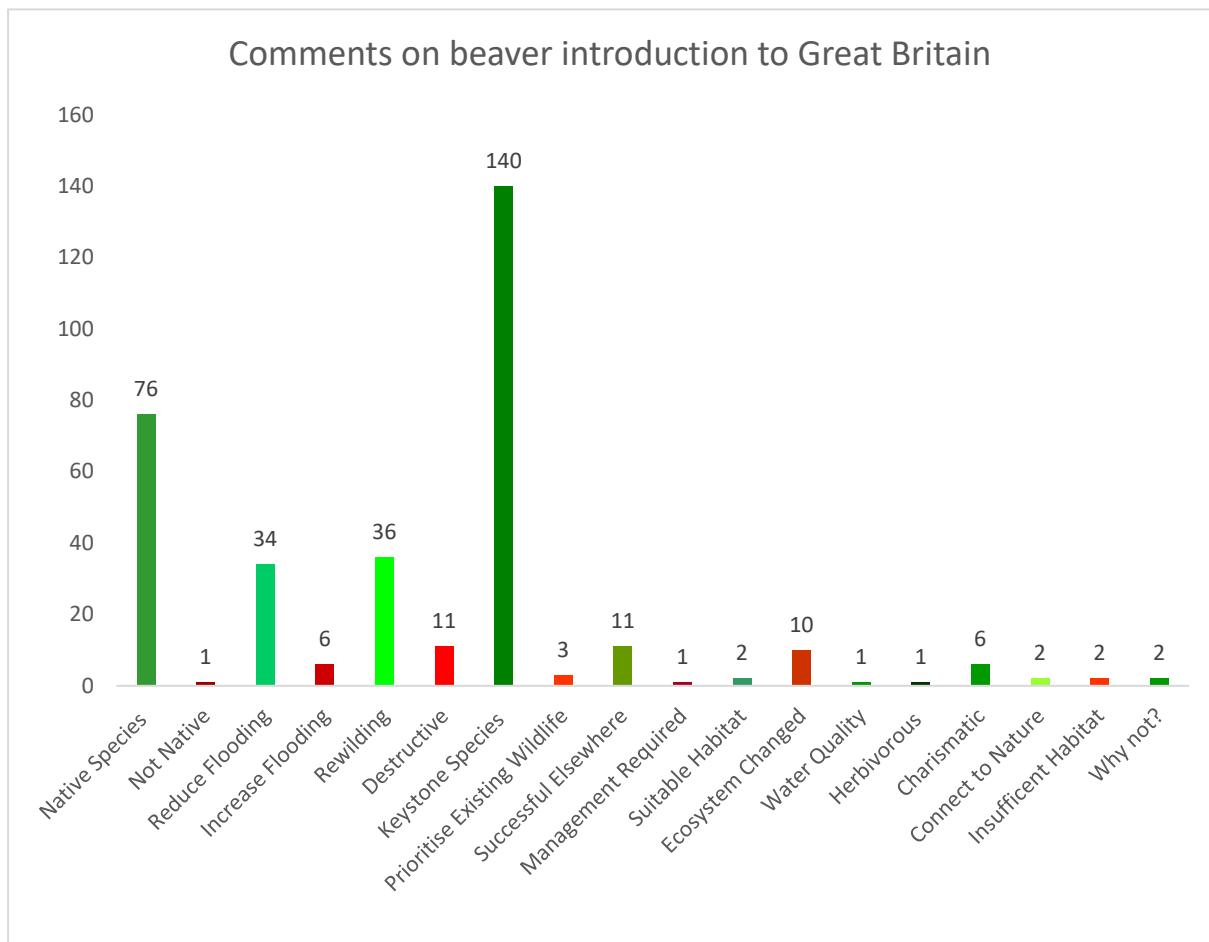


Figure 22. Respondents' comments justifying opinion on whether beavers should be introduced to Great Britain.

The most frequent comments made (n=140) were encapsulated by the Keystone Species category, where respondents highlighted the widespread benefits that beavers could bring to the entire ecosystem through supporting other wildlife and increasing biodiversity. The following two comments are representative of this category:

"They improve the environment and encourage biodiversity and control flood areas."

"I believe beavers infrastructure creates wetlands which are used by other species."

The next most frequent comments made were encapsulated by the Native Species category (n=76), where respondents expressed their belief that as beavers were hunted to extinction by man, they have a right to be reintroduced to places where they once thrived. The following two comments are representative of this category:

“They are a crucial part of the ecosystem, which were wiped out by humans. They should still be here, so I fully support their reintroduction!”

“The creature was hunted to extinction in Britain for its fur. Bring them back for moral and environmental reasons.”

While comments that did not support reintroduction were made much less frequently, the most frequent negative viewpoints were encapsulated by the Destructive category (n=11), where respondents raised concerns on beavers’ propensity to fell trees and cause damage. The following two comments are representative of this category:

“Because I am concerned about Beavers destroying trees. When they were last living wild in this country we had far more forest cover. We have lost so many of our trees since then that every single one left is precious. We cannot afford to lose any more trees. Before you re-introduce species you need to reinstate the habitat.”

“They destroy a lot of trees, and we need trees.”

Trees are culturally valuable due to their statuesque landscape, amenity and sometimes economic value. In this post-industrial era of modern Britain, it is true that we have lost a lot of tree cover after centuries of clearance for farmland and timber harvesting, reaching a low point during the war years. And now with the twin threats of climate change and the biodiversity crisis, we are under increasing pressure to plant more trees and retain the few we have left. But while it is true that beavers eat trees, as well as other soft vegetation including grasses during the summer months, their impact is typically restricted to within 100m of the water’s edge, and many of the species that they selectively feed on such as willows, poplars, alders and birches have co-evolved with beaver herbivory over millions of years and are often able to coppice and resprout back. Beavers’ ability to enhance biodiversity by creating areas of standing dead wood when tree roots get inundated, and varying the age structure of wet woodlands through creating coppiced glades can support wildlife even with the felling of trees. Beaver ponding can also raise the water table and re-wet peat, preventing oxidation and the release of carbon dioxide and methane, greenhouse gases that can otherwise exacerbate climate change.

The next most frequent negative views were encapsulated by the Ecosystem Changed category (n=10), where respondents made the point that habitats are under increased pressure and have changed in the hundreds of years since beavers became extinct in Britain. The following two comments are representative of this category:

“Because the ecosystem is not now equipped to deal with them”

“Since beavers became extinct, habitats and ecosystems have changed. We cannot recreate the past and undo our mistakes. We will continue to damage the planet - leave it be!”

While again it is true that since beavers went extinct in Britain in the 16th Century we have seen massive species declines from changing land use due to increasing population, urbanisation and more intensive agriculture, Hampshire and Isle of Wight Wildlife Trust believes that we should take action to reverse this trend. By endeavouring to create space for nature, restore natural processes

and reintroduce missing species such as the Eurasian Beaver, the Trust’s reserves can continue to provide a haven for wildlife. Beavers have been released and are doing well in multiple enclosures across Britain and in some cases have managed to evade captivity, with wild populations thriving in rivers including the Otter, Tamar, Stour and Avon, suggesting that even despite changes over time, there is still space for wildlife to flourish alongside us.

341 people filled out comments in the longer online questionnaire justifying their opinion on whether or not beavers should be introduced specifically to the Isle of Wight. These comments were again categorised to allow qualitative analysis of lengthy individual responses. Again, where respondents wrote comments citing numerous reasons, the first was taken to reflect their most pressing concern or ardent support. While many opinions were similar to those reported on the question of reintroduction to Great Britain as seen in Table 1, several new or Isle of Wight specific categories were mentioned that are summarised in Table 2 and are discussed below.

Table 2. Additional categorised comments received during the online questionnaire justifying opinions on whether beavers should be introduced to the Isle of Wight. To avoid repetition, opinion categories already defined in Table 1 above are not repeated here, but are still shown in Figure 23.

Category	No. of Respondents	Definition
Local Interaction	13	That locals would enjoy the chance to interact with beavers living nearby
More Info Needed	5	That more information is needed for people to determine whether a release would be suitable on the Island.
Enclosed System	11	That due to its geographic isolation, the Island would be a good place for a wild release to constrain a small population
Population Genetically Isolated	1	That due to its geographic isolation, beavers would need management to maintain genetic diversity over the long term.
Conserve Beaver Numbers	4	That a release on the Island would help support the conservation of the species
Too Many Visitors	1	That increased wildlife watching tourism would strain an area not geared up for increased visitation pressure
Island Should Lead the Way	7	That the Island is a distinct and progressive region with a good track record of existing successful wildlife and should be among the first to facilitate an introduction
Impact on Agriculture	2	That localised beaver flooding may encroach onto productive agricultural land and impact.
UNESCO Biosphere	4	That the Island as a UNESCO Biosphere reserve with excellent ecological credentials would be an ideal place to support a release.
Trust Wildlife Experts	2	That people trust the assessment of wildlife experts who believe that a beaver introduction would be beneficial
Existing Unique Wildlife	4	That the presence of existing rare wildlife such as red squirrels and sea eagles bodes well for a beaver introduction
Boost Ecotourism	7	That the presence of beavers will increase tourist visitation from wildlife watchers that will support local businesses

Locals Pro Wildlife	1	That local communities on the Island appreciate wildlife so beavers could be safely introduced without threat.
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The number of categorised responses can be seen in Figure 23 below, where it is clear to see that the majority of comments were again positive, in line with the level of overall support seen in other questions analysed above.

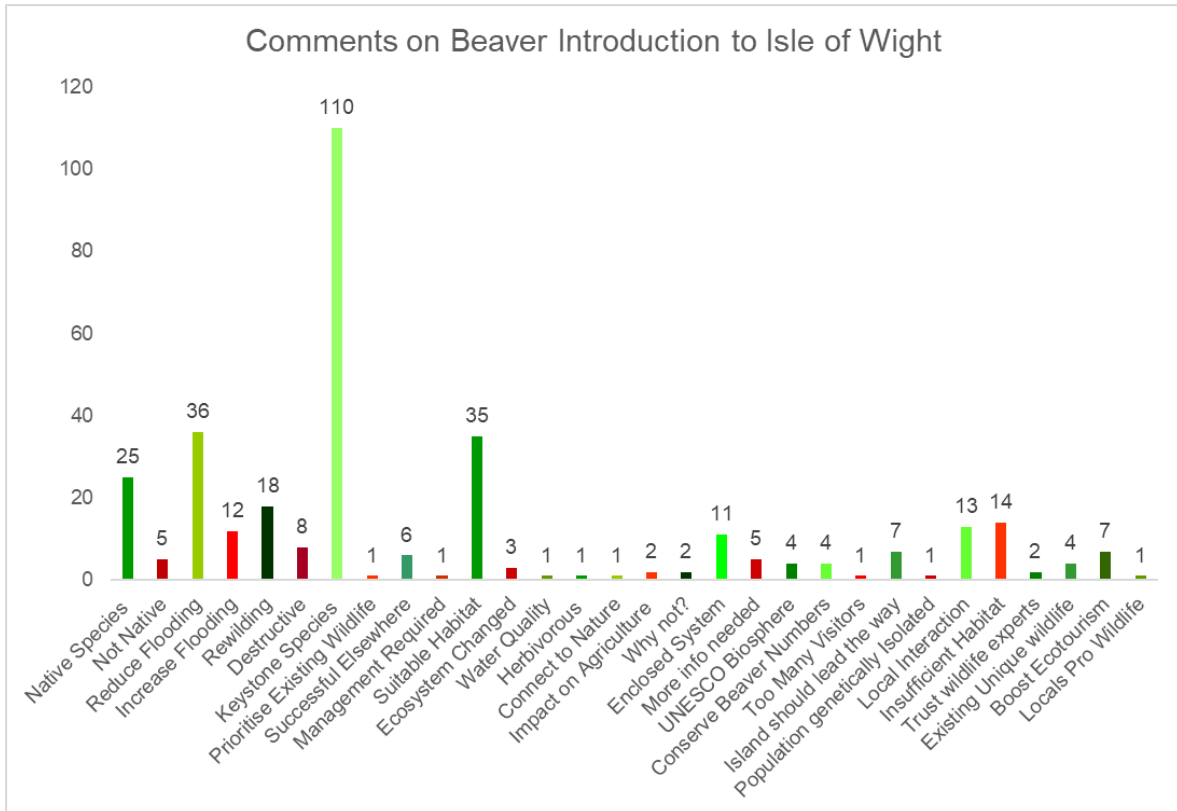


Figure 23. Respondents’ comments justifying opinion on whether beavers should be introduced to the Isle of Wight.

As above with the more general question on whether beavers should be reintroduced into Great Britain, the most frequent response (n = 110) was encapsulated by the Keystone Species category, as defined above, although given the greater diversity of responses on Island introduction, this number was cited less frequently (110 times versus 140 times above).

The next most frequent response was the category of Reduce Flooding (n=36), indicating the local concern about risk of flash flooding which frequently impacts the Island during heavy rainfall due to surface water run off, river channelisation, lack of floodplain connectivity and the added pressure of tidelocking when rivers are unable to drain at high tide.

Of the new Island-specific comments that were made relating to an Island release, the most frequent was the Local Interaction category (n=13), where respondents reflected on the benefits of being able to see and engage with beavers in their own community without needing to travel. The following two comments are representative of this category:

“Would love to see such an animal locally”

“I think it would be great to be able to see beavers living here”

The next most frequent Island-specific comment was the Enclosed System category (n=11), where respondents felt that the geographically isolated nature of the Island would make a good place for one of the first wild reintroductions of beavers. The following two comments are representative of this category:

“The Isle of Wight provides an 'enclosed' system where monitoring of the effects of reintroduction of a large mammal population can be easily monitored. Potential conflict with the human population can, hopefully, be averted.”

“The IoW is an excellent incubator and has the potential to become a great example and testbed for other ecosystems similar to the Knepp Estate”

While comments that did not support introduction onto the Isle of Wight were made much less frequently, the most frequent negative viewpoints were encapsulated by the Insufficient Habitat category (n=11), where respondents raised concerns on the Island not being able to offer enough suitable habitat to support a beaver population. The following two comments are representative of this category:

“The scale of the island's ecosystems and the potential proximity of candidate habitats to developed areas means the island is too small to support these animals safely, without unintended consequences.”

“Too little space. They would need constant culling”

While the Island is a relatively small landmass at 147 square miles, and is relatively densely populated in certain areas along the coast, with a population density of 960 people per square mile across the Island, beavers' requirements for a thin linear strip of habitat along riverbanks mean that they can survive without needing a large amount of space. Beavers rarely forage more than 100m from the water's edge, and typically 90% of their foraging occurs within 10m of the water's edge (Brazier et al., 2020), so large swathes of forest are not required to support a beaver family. Beavers are able to flourish in surprisingly densely populated areas including in towns and cities both in Britain and across continental Europe. Beavers have managed to establish and thrive even in the Netherlands, one of Europe's most densely populated countries with a density of 1,444 people per square mile, with approximately 5,000 beavers swimming Dutch waterways at last count. University of Exeter's beaver habitat suitability modelling commissioned by the Trust in 2020 has identified multiple rivers on the Island with access to good quality deciduous woodland forage. But beavers' territoriality and defence of these woodland resources mean that there would be a natural carrying capacity on the Island, with populations remaining small and manageable. Beaver mortality tends to occur during territorial disputes with other beavers, or if dispersing juveniles succumb to salt sickness if they swim out to sea when searching for vacant territories. Predation, disease and road mortalities can also limit population growth to a sustainable level. Culling is likely to be an available recourse to landowners suffering intolerable economic damage as a final resort under licence from Natural England, but the Trust will be looking to work closely with impacted landowners by offering mitigation and live trapping services to limit the need for culling.

The next most frequent negative comments aligned with the Increase Flooding category (n=12) which again reflects the preoccupation on flood risk among vulnerable residents. The following two comments are representative of this category:

“The area is already due to mismanagement subject to flooding and the reintroduction will only make this worse.”

“Flooding and the loss of public rights of way”

Beaver dams can be managed if built in inappropriate places in order to reduce ponding and localised flooding, through dam lowering, removal and the use of flow management devices, so called “Beaver Deceivers”. Additionally, the University of Exeter dam capacity modelling indicate that the areas most likely to be dammed will be small tributary streams, which could lead to reduced high flow input during periods of heavy rainfall which could minimise the risk downstream to places already suffering from flooding.

The most frequent Island-specific unsupportive comments fell into the More Info Needed category (n=5), with the following two comments representative of this opinion:

“I would like to know more about the circumstances and chances of flooding”

“I'd like to know how successful the reintroduction of beavers has been in other parts of the UK”

The Trust is continuing our consultation despite the closing of the questionnaire, and public events, presentations and guided walks will continue to allow locals to gain an understanding of beaver ecology, national policy and the success of beaver introductions elsewhere. Any landowner in close proximity to a watercourse is encouraged to get in touch with the Beaver Officer with any questions, and a site visit can be arranged with maps of the beaver habitat suitability and dam capacity modelling data to assess any likely local impacts to properties.

The next most frequent Island-specific unsupportive comments fell into the Impact on Agriculture category (n=2), with the following two comments representative of this opinion:

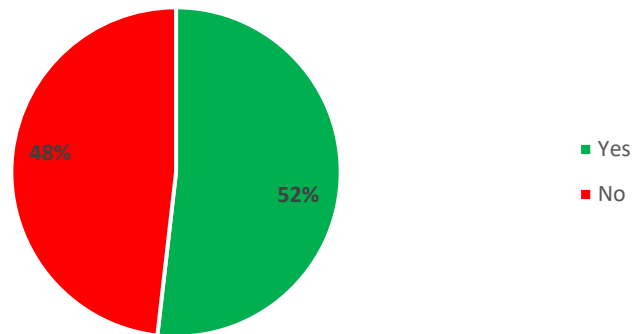
“I am concerned they would be introduced into inappropriate environments. The watercourses on the Isle of Wight are generally low-gradient and passing through agricultural land. There is no way this land will remain productive if existing watercourses are permitted to be dammed.”

“... I'm oppose the idea of introducing beavers to the Isle of Wight because it's another mammal brought forward. Once the population reaches a high level we won't be able to control them, they will also flood farmland, and harm the remaining oaks and hazel...”

In addition to the dam management methods mentioned above that can reduce the impact of localised flooding, the government is supportive of wild releases of beavers and has committed to compensating farmers who provide clean and plentiful water, thriving plants and wildlife, protection from environmental hazards, reduction of and adaptation to climate change, and beauty, heritage and engagement with the environment through the Environmental Land Management Schemes that will provide “public money for public goods”. Recently, the government announced capital grants to compensate landowners in scheme with Countryside Stewardship, who can be compensated for individual tree protection and permanent crop fencing such as for nut and fruit trees, with payouts of up to £84 per tree guard and £3.20 per meter of fencing available to eligible landowners.

The final question was whether respondents felt able to express their views in a manner that will influence the decision makers, which tellingly only 52% of respondents (443 of 855) felt was the case. We value the contributions, feedback and comments we have received from all respondents to the questionnaire, whether they be positive or negative, and have endeavoured to

Do you Feel that you can Express your Views on Beaver Reintroduction in a Manner that will Influence the Decision Makers?



summarise and address those thoroughly in this document. While it is encouraging that a majority of respondents are in favour of a beaver release and do see benefits, especially to biodiversity and to our ability to connect with nature from an introduction, we also recognise and value the respondents who have raised comments and concerns. We will continue to consult and liaise closely with stakeholders, especially local landowners that might be directly impacted in the event of a release, to assure them of management actions that would be taken to protect their assets and property. Ultimately the decision of whether beavers should be released on the Isle of Wight will be taken at the national level, by Natural England as part of the licence review process. Natural England will be sure to consult with key stakeholders including statutory agencies during this process in order to consider all risks and opportunities of a release. But given the availability of suitable habitat, much of which is already held in conservation management, the relatively small area of intensively farmed agricultural land present in the Eastern Yar catchment, the many ecosystem services that beavers could bring including enhancing water quality, minimising downstream flash flood risk and boosting eco-tourism, the Trust believe that a beaver release could offer a wealth of opportunities to enhance our climate resilience, restore nature and boost our local economy for many years to come.

If you would like any further information on the results of the consultation or have other beaver related questions, do please get in touch with Izzie Tween, the Trust's Beaver Recovery Project Officer at the following email: izzie.tween@hiwwt.org.uk or by phone: 07879 908040

References

Auster R., Puttock A. & Brazier R. (2020) Unravelling perceptions of Eurasian beaver reintroduction in Great Britain *Area*. **52**: 364–375.

Brazier, R., Elliott, M., Andison, E., Auster, R., Bridgewater, S., Burgess, P., Chant, J., Graham, H., Knott, E., Puttock, A., Sansum, P., & Vowles, A. (2020). River Otter Beaver Trial: Science and Evidence Report. <https://www.exeter.ac.uk/creww/research/beavertrial/>

Macfarlane W., Wheaton J., Bouwes N., Jensen M., Gilbert J., Hough-Snee N., Shivik J. (2015). Modelling the capacity of riverscapes to support beaver dams. *Geomorphology* DOI: 10.1016/j.geomorph.2015.11.019 [online] Available from: https://www.researchgate.net/publication/285590037_Modeling_the_capacity_of_riverscapes_to_support_beaver_dams (Accessed 15/07/2022)