Brit Catchment Beaver Project Public consultation report
Sam Rose
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Contents

1. Introduction

This report sets out the process and outcomes of the Brit Catchment Beaver Project Public consultation exercise, which lasted from April 13th to 30th 2023. The consultation was done through five village hall meetings, c.8 enclosure tours and an online information page and questionnaire.

The reason for the consultation is that West Dorset Wilding believe that natural processes are needed to be allowed for nature to heal itself, not only in West Dorset but across the country. Beavers were once an integral part of ecosystems in our country until we wiped them out over 400 years ago. They had coevolved over tens of thousands of years with fish, predators, other mammals, and created habitats where these, and other plants and animals could thrive. They are one of nature's great ecosystem engineers, what they do is an entirely 'natural' process and their value for biodiversity has been proven many times.

However, West Dorset Wilding is led by farmers and landowners and we understand that for something like the reintroduction of beavers to work, it needs to be done with the consent, understanding and support of those who live in the landscape and work on the land, and that decisions are underpinned by objective scientific information. We would not look to progress this if the general feeling in the catchment of residents was opposed to this work, or that the science didn't support it.

The process was led by Sam Rose, with logistics and organisation by Dana Assinder. WDW Trustees Nick Gray, Arthur Crutchley, and Tarsha Finney attended some of the events, and two volunteers, Zoe Tribe and Ellen Bugler.

2. Summary of findings

The principle findings of this report are:

a) from those who attended the meetings and did our online questionnaire, 87% of people were in support of wild beaver reintroduction in the catchment area, the majority of whom were 'very supportive';
b) from the subset of landowners and farmer, 67% were supportive, 24% not sure and only 8% opposed, which gives a clear mandate for further conversations with this audience;
c) The vast majority of people recognised the benefits that beavers can bring, except in the case of economic benefits, about which people were less clear;
d) Many people had questions, the answers for which are summarised in Section 8.

Conclusions can be found in Section 9.

3. Context and Purpose

The following is an extract from a report by independent beaver specialist Mark Elliot. It is a useful context for those not familiar with this project or the area.

"Beavers and the Brit

Eurasian Beavers (Castor fiber) are a native 'keystone species,' that were hunted to extinction in Britain around 400 years ago but are now returning to our landscapes in many places. In October 2022 they were given European Protected Species (EPS) status in England following the successful River Otter Beaver Trial (2015-2020).

A Brit Beaver Partnership has now been formed and, with a small funding package from Natural England, are beginning to engage with local people to understand the feasibility and acceptability of reintroducing beavers into the Brit catchment.

The Brit is a small catchment on the south Dorset coast, with its source on the hills around Beaminster about 15kms inland. It flows through a predominantly pastoral landscape passing through the town of Bridport before discharging into Lyme Bay.

Although some of the partners have aspirations to bring wild beavers back to this catchment, there are no firm proposals at this stage. However, there are now two enclosed beaver populations within the Brit catchment, as well as one in the adjacent Frome catchment just to the northeast where there are also plans developing for a wild release into Purbeck on the western side of Poole Harbour.

When the River Otter Beaver Trial concluded in 2020, and was judged a success by the government, there were estimated to be around 13 family groups living throughout this catchment, which lies around 30 kms to the west of the Brit. There is also a significant wild population in the Bristol Avon catchment to the north and recent reports of wild beavers in the Dorset Stour.

The town of Bridport has a history of flooding, and there is some anticipation that beavers could reduce the flood risks here by holding water upstream and reducing peak flows coming through the town. However, any proposal would need to examine this in detail, and investigate any potential conflicts with existing infrastructure, such as bridges, culverts etc. that might exacerbate flooding locally.

Current Defra position on wild beaver reintroductions

Following the decision by Defra in 2020 that the River Otter Beavers would be permitted to remain and spread naturally, a consultation was conducted in 2021 on the 'Approach to beaver reintroduction and management in England.' As well as granting beavers legal protection at this time, the consultation outlined how existing and future beaver populations could be managed through a network of Beaver Management Groups. More details on a management hierarchy and licensing regime have subsequently been put in place.

The [national] consultation also proposed that further wild reintroduction projects would be permitted where the applicants demonstrate clear benefits, and where the risk of negative outcomes are avoided, mitigated for, or managed. A Code and Guidance for Reintroductions and

other Conservation Translocations was published and would also need to be followed. This may mean that reintroductions and reinforcements would be prioritised where they assist with this by, for example, linking isolated catchments to promote the occasional exchange of genetic material between populations.

*The outcome of this part of the consultation with the processes involved in applying for wild releases into new catchments is keenly anticipated and will apparently be published '**in due course**.'"*

In respect of the catchment, Mark further states:

"Catchment Overview
The Brit is a small catchment comprising the main River Bit which flows from Beaminster to the north and the Mangerton River which drains the eastern side of the catchment around West Milton and Powerstock. The confluence of these two main watercourses is in Bridport itself, where the smaller River Simene also joins.

The relatively steep valleys and pastoral landscape mean that it has a 'spatey' hydrology with water levels rising rapidly after heavy rain, before dropping again quickly. This brings with it considerable flood risk to floodplain communities like Bridport, and it is hoped that the reintroduction of beavers might help address this issue.

Whilst this gradient contributes to the rapidly fluctuating nature of the watercourse, it also means that any negative effects of beavers on floodplains and valley bottoms would be more localised, and may be easier to manage. There are only small areas of flat agricultural land, and so land-drainage conflicts are also likely to be localised, and management of them more straightforward than in an extensive flat catchment with large areas of intensively drained agricultural land. However, it may also mean that any beneficial effects of beavers in reducing flood risks to places like Bridport requires a greater number of beaver dams in more of the headwater streams. In order to facilitate the creation of these wetlands / water storage areas, there will need to be detailed credible answers to the questions about the financial incentives that are available to landowners who might wish to provide the watercourse with more space, with or without beaver impacts.

As the Brit is a small catchment, any beaver population may likely to reach carrying capacity faster than in a larger more connected catchment where opportunities for dispersal are greater. Although there may be some habitat links to the east and west, it appears to be quite geographically enclosed by the chalk ridge that runs around the headwaters north of Beaminster. These connections east and west should be explored further, so that its position as a connecting catchment could be more clearly established, but it may be quite discrete from a beaver dispersal perspective.

If it was found to be quite isolated, the assessment and management of beavers and any impacts would be more straightforward, and it would be easier to implement an exit strategy if that were required. In terms of the future management of genetic diversity, the potential for a small number of beavers to move to the east and west would be important, but when considering metapopulation dynamics, the numbers and frequency of these dispersal events can often be quite limited."

This report and other information was used to prepare material for the consultation events and online presence, details of which can be seen below.

4. Programme of events

Village hall events:

Thursday 13th April: Red Lion, Beaminster 3pm - 8pm. c. 40pp
Saturday 15th April: Bridport Town Hall 10.30am - 4pm. c. 100pp
Sunday 16th April: Loders Village Hall 3pm - 8pm. c. 30pp
Tuesday 18th April: Broadoak Village Hall 5pm - 8pm. c. 20pp
Friday 21st April: Netherbury Village Hall 3pm - 8pm. c. 45pp

Each event comprised a drop-in period and then a talk towards the end, with time for Q&A. Sam Rose gave the presentation at four venues, and Steve Oliver (Dorset WT) gave a talk on our behalf at Bridport. The events had tables with maps, beaver chips and beaver-gnawed wood, a stuffed beaver, reference books, and leaflets (from the Beaver Trust). We set aside space for kids activities and we put up banners about the impact of beavers borrowed from Devon Wildlife Trust for people to read.

Everybody was encouraged to complete a questionnaire before they left and as you will see from the outcomes, we had about a 70% take up. People were also encouraged to sign up for enclosure tours at either Slape Manor or Mapperton.


Figs 1a) and b) Talks at the Broadoak and Bridport public meetings

Figs 2 a), b), c) and d) Displays at the village hall events

Enclosure tours:

These were held on Sat and Sun 22nd and 23rd April at Slape Manor and Sun 30th at Mapperton, with about 60 people attending in total. The tours at Slape were about 45 mins and at Mapperton about 2.5 hrs, reflecting the accessibility of the locations. These were very well received.


Figs 3a) and b) Enclosure tour at Slape Manor

Promotion and reach:

Our promotion was very locally targeted so that we didn't get people from out of catchment coming over. We promoted the events through our website, the (very) local newspapers, local Facebook Groups, Parish newsletters, flyers, posters and Instagram. Broadly speaking, we think this approach worked well as, even though the numbers were not huge, we attracted a variety of people from different backgrounds, including farmers and landowners.

5. Online presence

As the primary source of information now is through the web, we set up a detailed and comprehensive web page to give people information about beavers, what we are doing, and a chance to complete an online questionnaire, with the same questions as the printed version. You can see this at westdorsetwilding.org/beavers and a screenshot is in Fig 5 below. Fig 4 shows the analytics from the period with a surge of interest in the beaver page.

What is so interesting about this data is the average dwell time - over 8 minutes - which shows that people are taking time to read the information. Also it shows the effectiveness of both traditional media, the first peak relating to the Bridport News article, and social media, with the the second peak linking to a flurry of social activity, mainly from Facebook, around the start of the events proper.

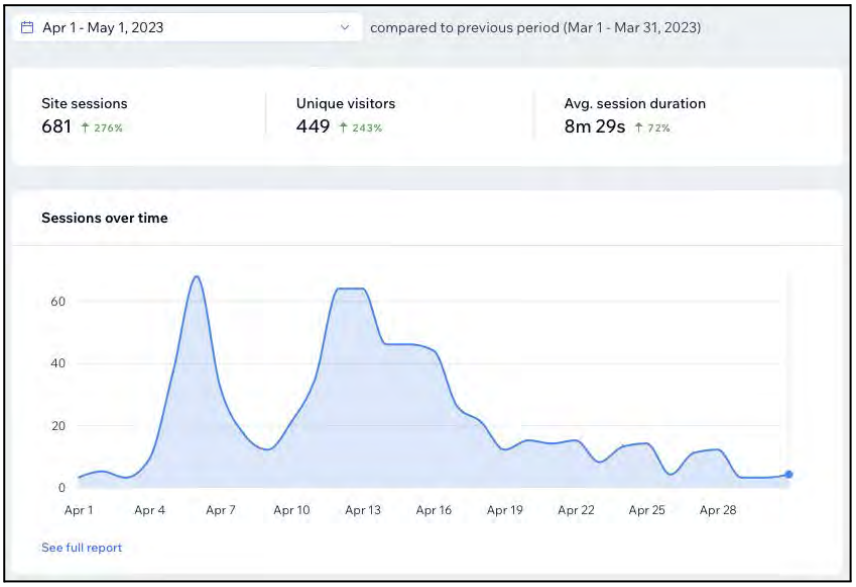


Fig 4) westdorsetwilding.org analytics for the pre- and consultation period

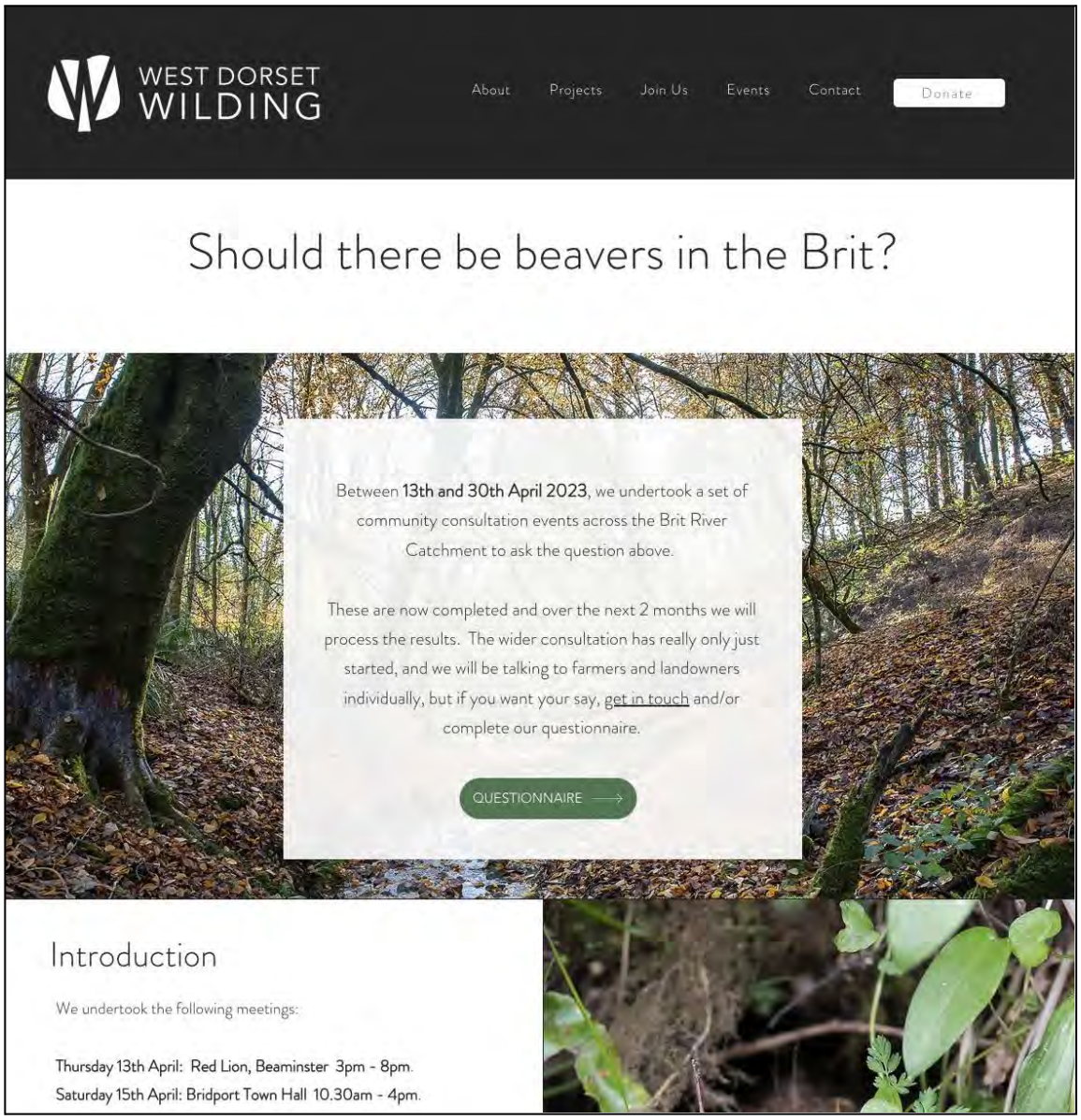


Fig 5) Screenshot of the /beavers webpage

6. Questionnaires

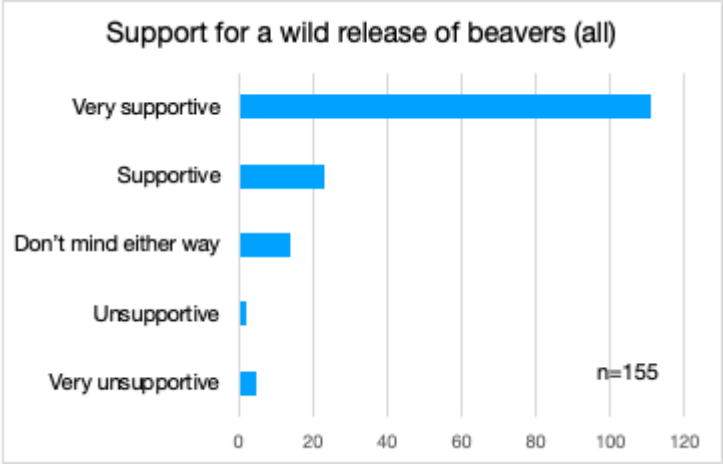
The questionnaires we used are attached as Annex 6, and at using Google Forms at https://forms.gle/q9dwwFZUvAzamt5dA. The questions followed the format of the questionnaire used by The Isle of Wight Wildlife Trust in their recent consultation, which in turn drew on the work of Dr Roger Auster from the University of Exeter.

The questions were broadly about the level of support for beavers in general, and for different ecosystem services that they can offer; biodiversity, water quality, flood prevention, recreation and economic benefits. Most people who completed the questionnaires did so in full. We had only one spoiled paper, and no spam entries.

7. Outcomes

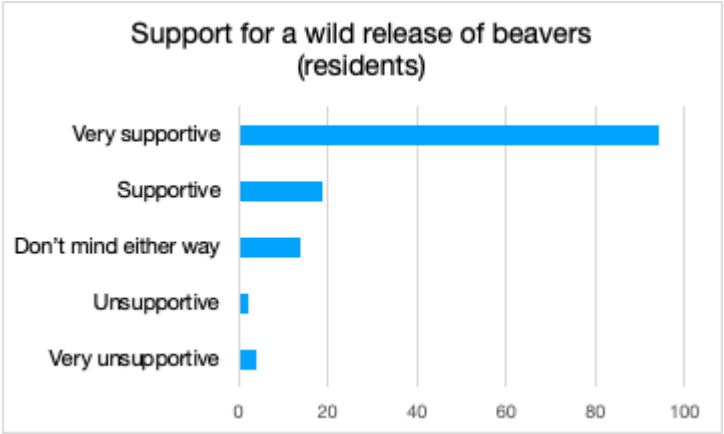
1. Responses to question about support for a wild release of beavers

All respondents (n = 155)



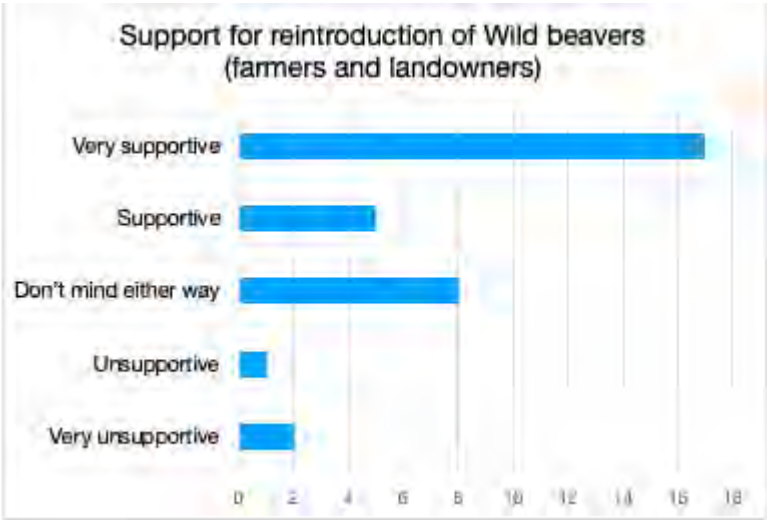
87% supportive (134)
11% not sure (14)
2% not supportive (7)

Residents only respondents (n = 133)



85% supportive (113)
11% not sure (14)
5% not supportive (6)

Landowners and farmers respondents (n = 33)



67% supportive (22)
24% not sure (8)
9% not supportive (3)

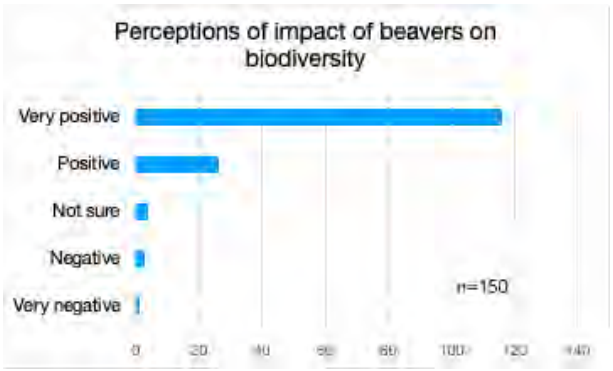
From these three charts it is clear to see an overwhelming level of support for a wild release of those who attended the meetings and completed the online questionnaire. Of course this is a self selecting audience, and unlikely to be statistically significant, but people who came to the meetings

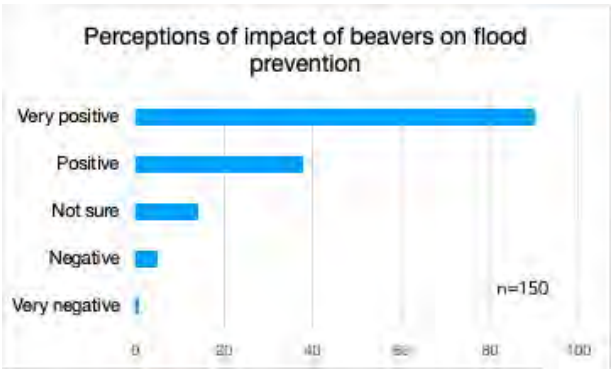
were generally curious rather than passionately supportive, with a good many initially quite sceptical.

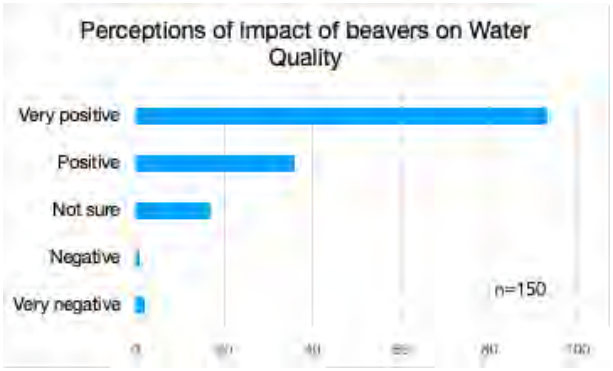
Most heartening perhaps is the responses from the landowners and farmers from within the catchment area, of which only 9% were unsupportive. There is a perception that 'landowners and farmers' don't want beavers, but this - albeit from a small sample size - goes some way to refuting that, and the 24% who weren't sure are almost certainly interested in finding out more.

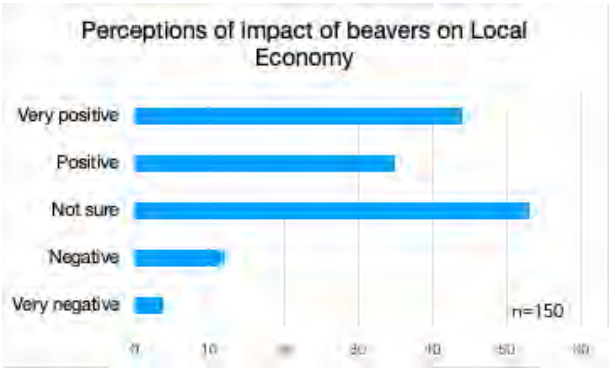
2. Responses to questions about Ecosystem services

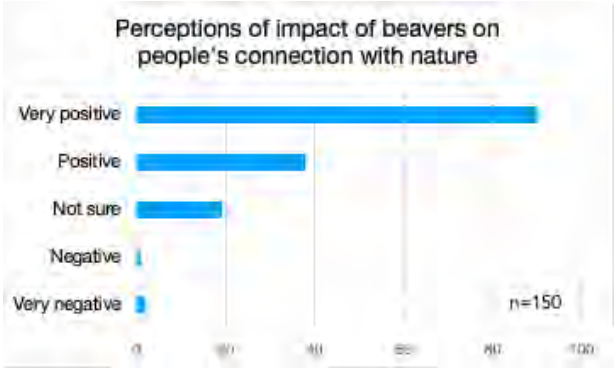
The following five charts show the results of the questions relating to people's perceptions of the impacts of beavers on different ecosystem services.











Overall there are strong perceptions that there would be a positive impact from beavers on biodiversity, flood prevention, water quality and connection with nature, all of which have evidence

to back up the perceptions. Perception of beaver impact on the economy is significantly less positive and more confused, so it would be useful for us to find out whether there is evidence from other places in relation to this question.

Overall, the results indicate a sound understanding of the role that beavers can play in these areas, and a significant level of support from people in the catchment for them to undertake these roles.

8. Q&A

We asked people to write their concerns or questions on the questionnaires, with a view to providing them with answers. These questions are in addition to the Myth-busting displays which we put up during the village hall meetings and which are broadly reflected in the website.

The following table is a summary list of the key questions asked, and answers we have provided. If your question is not there, please contact us at info@westdorsetwilding.org

Question	Answer
Will beavers flood my land?	Beavers need areas of deep water, and if they are living in an area without that, they will build dams to create it. This can reduce flooding to communities downstream, but it can result in waterlogging and even flooding of low-lying farmland adjacent to watercourses in the headwaters. Due to the nature of the Brit Catchment, with many small, steep narrow valleys, the extent of this flooding is likely to be limited by the shape of the landscape. Where farmland is affected, there is a government management hierarchy in place to enable the landowner, or West Dorset Wilding, to respond. This can be seen here and may involve removing the dam, putting in a flow device, and ultimately translocating the beavers. There are also agri-environment payments that can be used to reward the landowner for taking these wetland areas out of production, because of the benefits to residents downstream and to wildlife.
Will beavers eat my trees?	Beavers are entirely herbivorous. In summer they mostly feed on lush wetland plants, but in the autumn and winter, they switch more to riverside trees and shrubs. They fell larger trees to reach the upper branches and bark which they eat, and to stimulate regrowth of trees like willow or poplar that coppice readily. This can often result in the tree canopy opening up in patches, stimulating more vegetation growth below. If you have a tree that is within 20 metres of a river or stream where beavers are present, you might see evidence that the beavers are starting to feed on it. As well as willow and poplars, other favourites include hazel and apple trees, but nothing is completely off limits.

Question	Answer
	If there is evidence that beavers are eating your trees, and you wish to protect them, there are easy fixes such as weld-mesh or sandy paint, both of which are cheap and easy to apply and could be done by the landowner, or West Dorset Wilding. 'Pre-emptive protection' is also possible for important trees in the middle of an active territory.
Will beavers eat crops?	Beavers can eat 'sweet' green crops like maize within about 20m of a watercourse. The financial impact of this behaviour is very limited, but a buffer strip alongside the watercourse can discourage it. Buffer strip payments are now available through Agri-enviornment schemes here in England under the new Environmental Land Management Schemes (ELMS).
Will beavers damage river banks?	Beavers can burrow into riverbanks, either for their main natal lodge or for outlying dwellings or temporary 'shelters'. While the lodges are generally quite obvious, some of their smaller burrows can be unobtrusive. These can impact on flood defences, and they sometimes collapse when farm machinery or even people and livestock go over them. A buffer strip alongside watercourses reduces potential conflicts with burrows.
What will keep the population down as there are no natural predators?	Beaver kits are subject to predation from otters, foxes and birds of prey, so it is inevitable that some will be lost. Natural predators of adult beavers are wolves, lynx and bears which are obviously absent from Britain, but the most significant control of beaver populations is territorial fighting which controls beaver number; they kill each other as the population increases. Road traffic collisions also kill beavers, and in the longer term people are likely to control beaver populations.
What happens if there are too many?	If it is agreed under the management hierarchy that there are too many beavers in an area, some can be translocated out of the catchment to places where they are wanted and there is more space. Ultimately the management hierarchy allows for lethal control of beavers by a skilled operative where there are no alternatives.
Because they are protected, what can we do?	Beavers are protected under law and so management has to be carried out in accordance with the management hierarchy and under a Natural England class licence. All of the information you need is here.
How could they be monitored and managed, and who will pay?	If beavers spread into the area naturally then it would be the responsibility of landowners to undertake any management under licence from Natural England (NE). West Dorset Wilding are proposing an approach similar to that used in the Otter Valley, in which we source funds for a catchment beaver officer to oversee management and monitoring. This will take the burden off landowners and ensure that trained and licensed personnel can advise and support landowners effectively.

Question	Answer
Do they pass on TB or other diseases?	There has never been a case of beavers carrying TB. Any beavers introduced from elsewhere in Britain would need to be health screened for a number of diseases such as Salmonella and Leptospirosis. Report from the Scottish beaver trial states: *A sample of Tayside beavers were also tested for a range of parasites and diseases and no evidence was found of pathogens that may cause an increased health risk to humans, livestock and other wildlif*e. More can be seen on this here.
Will they create silt which will impact on fish spawning gravels, and how will it impact on fish populations?	The effects of beavers on fish is an area where there is much research from around the world, and more being undertaken. Beavers build dams in the headwaters and so trap sediment and hold and gradually release a steady flow of cleaner water from their wetlands. This can benefit existing spawning gravels, and they also create new gravel beds which have been shown to benefit trout and other species. Beaver pools are also shown to hold larger trout and other species that like areas of slower flowing water within the channel. Questions are sometimes raised about whether dams impact on migrating salmon, but dams are built in the headwaters, usually upstream of where the salmon are spawning. It is worth remembering that migratory fish and beavers co-existed and co-evolved for a long time before humans impacted our watercourses so heavily. However watercourses do need more space in order to adapt to the presence of beavers and maximise their potential. Beavers do not build dams in larger rivers - although there are many man-made weirs and other barriers to fish migration in the Brit and Asker.
How will you control the mink that will flourish in the wetlands?	This is an interesting question and one for which there is little evidence from previous work. It is likely that as an non-native invasive species, we would aim to undertake trapping as part of the work to support a wild release of beavers if it became necessary. An effective programme of this type would also pave the way for re-introducing water voles.
When will management stop?	This would entirely depend on government policy, but from West Dorset Wilding's perspective we would look to continue with management and monitoring until the point at which it is no longer needed and beavers are part of everyday life - should that happen.
Will they cause footpaths to be lost?	The effects of beavers on footpaths are likely to be very limited. Very occasionally paths might be realigned if areas became impassible, or if necessary beaver dams could be removed to maintain an important path. Trees being felled on footpaths will be an important thing to monitor for.

Question	Answer
What about dog/beaver interactions?	Beavers have a strong sense of smell and will be aware of dogs within their territory, and will often stay out of the way. If a dog is putting the beaver's family at risk, they are capable of defending their kits with sharp teeth, and there have been occasions where dogs have been bitten by beavers in these situations. A tail-slap is a sign that beavers are being disturbed by people or dogs, and also warns other beavers of the presence of danger within the territory.
What about the safety of beavers from dogs and hostile humans?	In respect of dogs, see above. In respect of humans, it is illegal to harm a beaver, and although this may not stop everyone, we hope that a programme of education and awareness through guided walks and talks will help people feel more comfortable about the reintroduction of a native species.
What is the scientific basis for reintroduction?	There is plenty of work done that can explain this better than us. You could look at this summary from the team at Exeter University, and there are some useful scientific reports published by the government as part of a beaver consultation held in 2021 - see link here. There is also more information on the Beaver Trust website https://beavertrust.org/
Will it reduce the value of my land?	There is unlikely to be any significant effect on the value of your land. Beavers are becoming more widespread in Britain again, and this is likely to continue over the coming decades until they are in most watercourses. There should be management processes in place to minimise detrimental impacts on productive farmland, and the Government policies suggest that there will be more financial incentives for landowners wishing to create wetlands in the future.
Will they eat all of the beautiful wildflowers on the river banks?	Beavers are browsers and in the summer tend to eat lush riverside vegetation. This might include a few flowers, but it also includes brambles, nettles and even invasive species like himalayan balsam. They are actually likely to make the vegetation and the canopy more structurally varied which would benefit the rarer wild-flowers. Beavers will have co-evolved with riparian plants so their interaction is natural.

9. Conclusions and next steps

It is clear from the outcomes that amongst those who attended the events and who completed our form online, **there is strong support for a wild release of beavers in the Brit catchment**. This is across the board, from 87% of the total recipients to 67% of landowners and farmers. Overall, the number of people opposed or strongly opposed was very low.

We are also aware that the numbers are relatively low - 133 residents completed the forms - and self selecting. However, through a high level of media presence, and strong word of mouth in small communities and five different events throughout the catchment, it would be safe to assume that knowledge of the events was relatively high, so people chose not to get involved. This would perhaps imply an indifference to the subject which is something we need to address.

Despite the high levels of support, there were some valid concerns, and we have tried to address these in the Q&A. Ultimately, we will not know what impact beavers' interactions with people might have until they are here, but we are also confident that the right practices are already in place to manage this if and when it happens.

As of August 2023, the government has still not made a decision about whether they will license wild releases or not so our next steps are unclear. However, this process, positive that it has been, is only the start of the consultation process and West Dorset WIlding will continue to talk to landowners, farmers and residents about the subject, and will undertake the following work in slow time until we have a clearer lead from the Secretary of State:

1) Put in place a Brit catchment stakeholder group of landowners, farmers, residents, experts and others
2) Develop a Brit catchment beaver management plan which would see the work through from ongoing consultation through to release and then ongoing management
3) Continue to show people the benefits of beavers through the three enclosures in or near the catchment
4) Continue to provide information on our website and through other channels

Ultimately, it is clear that they will make their own way here, but by having a 'managed' wild release we can oversee this so that it is undertaken in the best possible way for the local population, the safety of the beavers and their genetic diversity. We can also allow them to start their ecosystem restoration work more quickly

10. Acknowledgements

We wish to thank Natural England for the funding to undertake this consultation work, and the following people and organisations who have contributed in different, equally important, ways: Tarsha and Paul (Slape Manor), Ben and Luke (Mapperton), Mark Elliott (independent consultant), Gen Crisford (National Trust), Rich Brazier and Alan Puttock (University of Exeter), Ian Rees (Dorset AONB), Steve Oliver (Dorset Wildlife Trust), Devon Wildlife Trust Beaver Team and our volunteers Zoe Tribe and Ellen Bugler.

Appendix 1: Myths and legends (by Mark Elliot)

There are numerous myths surrounding beavers and their reintroduction. Many of them contain a ‘grain of truth’ which has been exaggerated beyond reality, and sometimes there is more substance to them. It is important to challenge them with the facts, so that they don’t become entrenched in the narrative surrounding the species. Some of the more common myths are described here, together with some of the key facts that surround them:

Myth: Beavers live in dams
Reality: Beavers live in burrows and lodges. They sometimes build dams downstream of them so that the entrance is submerged in deep stable water. Beavers feel safe in deeper water, and are able to escape from predators by diving underwater and reappearing inside their burrow or lodge. They can hold their breath for 15 minutes if necessary. Where beavers live in deeper rivers and lakes, they can sometimes simply have burrows in the banks. In these places, they often don’t build dams at all. In smaller streams and ditches where the water levels aren’t as high or stable, they build dams to create ponds, and will often have a more traditional lodge, made of sticks and mud, on the bank or maybe an island.

Myth: Beavers cause flooding
Reality: It depends where in the river system you are. By holding water in headwaters, scientists have shown clearly that beaver-created wetlands can reduce flooding to communities living in floodplains downstream. In order to reduce flooding downstream, the water has to be stored somewhere during wet weather. Holding water upstream, either in permanent wetlands or temporarily on farmland is better than allowing it to flood people’s houses and shops. Landowners and farmers will generally need payments if they lose farmland to provide this public good. Beavers can also block drainage ditches and culverts (where streams go through pipes under roads etc), and this can cause flooding if not managed.

Some people are concerned that beaver dams could suddenly collapse and cause flooding downstream. Whilst there have been occasional cases of this happening in dry conditions (the DWT site on the Hooke is the only place that I know of personally), generally beaver dams break down, often completely, during large flood events. They often erode from the top down, and ‘dissolve’ in the floodwater, with the extra volume of water contributed by the pond being gradually released and relatively low compared to the volumes of water already coming downstream. However this is not always the case, and they can sometimes pivot open from one side, releasing water more quickly. The University of Exeter team could do more work on this question.

Myth: Beavers kill trees
Reality: Beavers browse on riverside trees and shrubs, particularly in the winter when there is less soft vegetation for them to feed on. Although sometimes still quite large trees, they prefer species like willow, poplar (aspen) and birch trees which aren’t killed but readily resprout (coppice) in response to being felled.

Beavers fell larger trees in order to reach the upper branches, and will feed on the bark, twigs and leaves, and use the larger sticks as building material. They will feed on a broad range of (mostly) broadleaved species., including oak, ash, sycamore etc. as well as traditionally wetland species such as willow and poplar. Interestingly they don’t seem to eat as many mature alder trees as their riverside habits would suggest.

Important riverside or landscape trees can be easily protected, as is frequently done elsewhere. If you visit an area such as the lower River Otter where beavers have been present for over a decade now, none of the larger trees have been lost, although lots of smaller willow trees are being felled on rotation as others grow up. At the start of the River Otter Trial, this was a concern expressed by some local stakeholders, but these concerns have mostly died away as people can now see the reality.

The canopy structure might change in some areas, and become more of a patchwork of trees and shrubs of different ages, and this includes having more dead wood in the ecosystem. This is much more natural, and healthy for a wide range of other wildlife.

Myth: Beavers eat fish
Reality: Beavers are herbivorous animals. Fish are not part of their diet. People sometimes get beavers and otters confused!

Myth: Beaver dams block rivers and stop salmon migrating
Reality: Beavers don't build dams across larger rivers. However, dams can be built across streams and ditches, and this could affect migrating fish, particularly sea trout during dry weather when there isn't much water passing over them.

This is a complex and contentious area of science, and there are no simple answers to this. Much more research will be required over the coming decades as beavers and fish populations start to interact again.

Beavers and migrating fish have evolved alongside each other and co-existed for millions of years. Beavers create the complexity in our watercourses which fish rely on to complete their life cycles (eg gravel beds for spawning, deep pools for larger fish to rest etc).

Fish like salmon and sea trout often migrate upstream in the autumn when pulses of water allow them to pass natural obstacles in the river. There are some locations where it's possible to see salmon making spectacular leaps up giant natural waterfalls in autumn floods. Beavers do create many natural obstacles, but in doing so also create multi-channel 'braided' streams and rivers which are fabulous habitats for spawning fish.

However, we live in a heavily modified landscape in Britain. We have dredged and straightened our rivers and streams, removed spawning gravels and drained riparian wetlands and floodplains so that we can intensively farm our river catchments. Consequently, our watercourses are now often nothing more than deep, slow flowing canals, carrying water polluted with phosphates, nitrates and pesticides. In this heavily degraded landscape, Atlantic Salmon populations have declined to near extinction, and fisheries managers are having to micro-manage the last remaining salmon, so that the fishermen that pay large sums of money can still catch them.

Beavers have the potential to restore our rivers, re-creating the natural systems on which healthy fish populations depend. Interestingly, in parts of North America, it is the fisheries scientists and anglers that are leading the reintroduction of beavers.
However in order for beavers to restore them, these streams need more space, so when beavers build their dams, the water can flow out of the artificial channel and back onto the surrounding floodplain. In this way, the stream develops multiple channels, and the fish can navigate these natural obstacles.

Beaver dams built across single deep channels, disconnected from their surrounding floodplains, can obstruct migratory fish particularly in summer where there is very little flow. This may be more the case for sea trout than salmon. Sea Trout spawn further upstream in the headwaters where the beaver dams are, whilst salmon are generally spawning further downstream, so might be impacted less by the dams.

Beaver dams and wetlands in headwater streams have also been shown to improve water quality and baseflows downstream, which is of vital importance for healthy fish populations.
The best place to see Eurasian beavers and Atlantic salmon co-existing is in Norway, where some of the best salmon rivers contain huge populations of beavers.

Myth: Beavers don't have any predators in Britain, and so their numbers will get out of control.
Reality: Beaver kits are vulnerable to otters, foxes and even birds of prey when they are young. Adult beavers do not have any natural predators, but beavers are fiercely territorial and kill each other as their populations build, and this helps regulate numbers.

Lynx, wolves and bears would have been important predators of beavers in the past, but these have been removed from the landscape. However, like many other species, the availability of food resources and habitat are one of the main regulators of population size, and as the beaver population approaches 'carrying capacity' for an area, fights over territory increase, and can result in mortalities. However, it may be that conflicts with people and existing land-use happen before the population gets to natural carrying capacity, and people will manage beaver populations at an artificially lower, more acceptable, level.

Myth: Reintroduced Beavers have caused havoc in Patagonia and will do the same in Britain
Reality: North American beavers were introduced into southern Argentina in 1946 for fur farming. In South America they are a non-native species, and are very damaging to the natural vegetation. Here their numbers are not regulated by the natural factors such as climate, vegetation and predation.

The ancient southern beech trees (Nothofagus spp.) in places like Tierra del Fuego don't coppice in response to being felled by beavers unlike species that have co-evolved with beavers. Comparing the effects of North American beavers in Patagonia is like comparing the effects of North American mink here in Britain where their impacts on species like water voles have been catastrophic.

Myth: Beavers are heavily protected so you can't manage any problems they cause.
Reality: As of 1st October 2022, beavers became a European Protected Species in England. Mindful of the need to manage the impacts of this keystone species, the government has published a Beaver Management Hierarchy and issued Class Licences which facilitate the management of conflicts for those that need to do so.

In October 2022, Eurasian beavers were included in Schedule 2 of the Conservation of Habitats and Species Regulations 2017, making it an offence to deliberately capture, injure, kill or disturb them, or damage and destroy their breeding sites or resting places without a licence from Natural England. The protection of breeding sites or resting places means that burrows and their associated dams become protected features.

Where dams are not associated with a burrow or lodge, or are less than two weeks old, they are not covered by this legislation. During the breeding season, between 1st March and 31st August, the licence holder is required to register the site with Natural England and provide a more detailed justification for the proposed action, including demonstrating that alternative options have all been considered and discounted.

Natural England will issue Class Licences to a range of organisations, including landowners to manage the impacts of beavers. A management hierarchy has been published which outlines the sequence of steps that should be taken before more high impact measures, such as the removal of beavers, can be considered.

Appendix 2: Further reading

Books

Beavers. Ecology, Behaviour and Management. Frank Rosell and Roisin Campbell-Palmer. Oxford University Press (2022)

Eurasian Beaver Handbook. The Ecology and Management of *Castor fiber.* Roisin Campbell-Palmer *et al.* Pelagic Publishing. (2016)

The Eurasian Beaver. Roisin Campbell-Palmer et al. The Mammal Society / Pelagic publishing (2015)

Beavers in Britain's Past. Bryony Coles. Oxbow Books and WARP (2006)

Beavers. Andrew Kitchener. Whittet Books (2001)

The Beaver; Its Life and Impact (2nd ed). Dietland Muller-Schwarze. Cornell University Press (2011)

Further reading and references

Defra Consultation on approach to beaver reintroduction and management in England – including supporting evidence documents. https://consult.defra.gov.uk/natural-environment-policy/beaver-reintroduction-and-management/

River Otter Beaver Trial Science and Evidence Report ROBT Science and Evidence Forum (2020) https://www.exeter.ac.uk/creww/research/beavertrial/

Beavers – Nature's Water Engineers. Devon Wildlife Trust. (2017) https://www.devonwildlifetrust.org/sites/default/files/2021-05/Beavers%20-%20Nature%27s%20Water%20Engineers.pdf

Devon Beavers – Ecological changes within the Enclosed Beaver Project. Devon Wildlife Trust (2022) https://www.devonwildlifetrust.org/research-and-evidence-beaver-re-introduction

Beaver Management Strategy Framework for the River Otter (post 2020). ROBT Steering Group (2019) https://www.devonwildlifetrust.org/sites/default/files/2021-05/Beaver%20Management%20Strategy%20Framework%20for%20River%20Otter_0.pdf

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Brazier, R. E., Puttock, A., Graham, H. A., Auster, R. E., Davies, K. H., & Brown, C. M. L. (2021). **Beaver: Nature's ecosystem engineers**. In Wiley Interdisciplinary Reviews: Water (Vol. 8, Issue 1, p. e1494). John Wiley and Sons Inc. https://doi.org/10.1002/wat2.1494

Puttock, A., Graham, H. A., Cunliffe, A. M., Elliott, M., & Brazier, R. E. (2017). **Eurasian beaver activity increases water storage, attenuates flow and mitigates diffuse pollution from intensively-managed grasslands.**