

Pine martens in the Forest of Dean: Stakeholder and public attitudes

Bianca Ambrose-Oji

Mike Dunn

Mark Atkinson

March 2018



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An appropriate citation for this report is: Ambrose-Oji, B., Dunn, M, and Atkinson, M., 2018, Pine martens in the Forest of Dean: Stakeholder and public attitudes. Forest Research report to Pine Marten Reintroduction Feasibility Project, Gloucestershire Wildlife Trust, Coleford. 47pp.

Acknowledgements

Thanks are extended to all the stakeholders who agreed to take part in the interviews and all the members of the public willing to take part in the public survey

Frank McCall (Forestry Commission England, Evidence and Analysis team) provided help with the spatial analysis, assigning rural/urban classifications and the preparation of maps related to the public survey.

Andrew Stringer the Pine Marten Reintroduction Feasibility Study project was an invaluable source of information, and played a role in reviewing the interview guides and public survey questions.

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Pine Martens in the Forest of Dean: Stakeholder and public attitudes

1. Introduction

There is a growing interest in the re-introduction to suitable locations of native woodland and forest species such as the pine marten. The pine marten is of particular interest in the forestry context partly because research suggests that they may have some impact on populations of grey squirrels which are a major forestry pest (Sheeney and Lawton, 2014). The Gloucestershire Wildlife Trust (GWT) is working with partners including the Vincent Wildlife Trust and the Forestry Commission to assess the potential for re-introducing pine martens into the Forest of Dean, Gloucestershire. Following best practice guidelines (NSRF, 2014; IUCN, 2013) GWT is undertaking a through feasibility study encompassing three components:

Ecological Feasibility Study: An assessment of the potential costs and benefits to other species of interactions between pine martens and local ecologies

Biological Feasibility Study: An assessment of the habitat suitability of the area including risks posed by roads and other infrastructure

Social Feasibility Study: An assessment of the socio-economic costs and benefits of a reintroduction. There may for example, be opportunities for increasing ecotourism, but also potential costs such as mitigation measures to protect poultry.

The feasibility studies begin with the collation, synthesis and interpretation of published data, before GWT sends them to interested parties for comment.

The re-introduction of predators, even small predators, which have potentially significant environmental impacts, can create greater potential for conflicts between different land users. In terms of the Social Feasibility Study, there is little published data concerning the attitudes of stakeholders and the public towards pine martens. This is important for the acceptance of any re-introduction programme, and the minimisation of risk to re-introduced animals.

The Vincent Wildlife Trust found general support when consulting the public in advance of their reintroduction programme into Wales (VWT, 2014). In 1999 BASC (reported in Stringer 2017) undertook a study of support and opposition towards pine martens amongst the public and farmers: a sub-sample from the Forest of Dean showed stakeholders and public were largely in favour of reintroduction. However, less is known about the attitudes

of gamekeepers and other businesses, particularly those land-based and tourism businesses which are important in the Forest of Dean.

1.1. Objectives of the social research

The social research was designed to fill some of these data gaps and provide additional information and detail about the attitudes and perspectives of key stakeholders and the general public to the reintroduction of pine martens in the Forest of Dean. Specifically, the objective was:

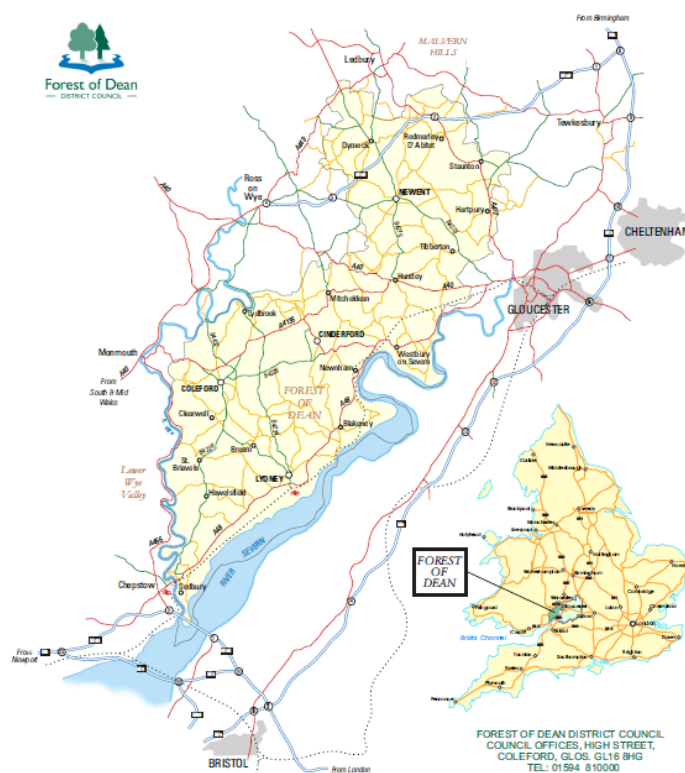
To provide evidence that informs the development of the communication and engagement strategy and the social feasibility assessment of the Forest of Dean Pine Marten Reintroduction Feasibility project.

This was to be achieved through investigation of:

- i. The perceptions, attitudes and concerns about pine marten reintroduction held by key stakeholders in the Forest of Dean area,
- ii. The views and concerns of the wider public living and working in the Forest of Dean area.

Because pine martens are mobile, the social research was conducted across the Forest of Dean Non-Metropolitan District (see Figure 1). The population is circa 82,000 with Coleford, Cinderford, Lydney and Newent being the major centres of population and economic activity.

Figure 1. Forest of Dean Non-Metropolitan District



1.2. Methodological approach

There were three strands to the social research:

1. **Stakeholder mapping.** Identifying individuals and organisations with specific interests in Pine Marten reintroduction. The mapping made explicit what those interests are, and how important these were to any reintroduction
2. **Interviews and discussion with key stakeholders.** Interviews were undertaken with the full range of stakeholder types identified through the stakeholder mapping.
3. **Public opinion survey with residents in the Forest of Dean.** Undertaken in the major centres of population, the survey was designed to act as a baseline from which future surveys could track any changes to perception if an introduction took place.

2. Stakeholder perspectives

2.1. Method

Semi-structured interviews were conducted to investigate the following:

- What did stakeholders know about pine martens?
- Did stakeholders perceive any benefits associated with a reintroduction?
- Did stakeholders have any specific concerns about a reintroduction?
- What were stakeholders' views about how any reintroduction process should be conducted?

Two slightly different interview guides were developed: one to use with stakeholders who had been consulted to comment on GWT's Ecological Feasibility Study (EFS), and one for those "general" stakeholders who had not been invited to review the EFS. The interview guides are included in Appendix 1 and 2.

Interviews were either conducted face-to-face or over the telephone depending on the preference and availability of the interviewee. Two researchers conducted the interviews between June and October 2017.

Interviews were digitally recorded and professionally transcribed. Nvivo was used to code the transcripts through content analysis identifying key issues and themes. The coding framework is indicated in Appendix 3.

2.1.1. Sampling

A purposive (i.e. specially selected) sampling frame (i.e. list of potential interviewees) was drawn up using the stakeholder mapping grid and added to through a web-based search for interest groups, and snowball sampling following suggestions from established local contacts and other interviewees. The selection aimed for a balanced representation of the different interest groups in the Forest of Dean, i.e. stakeholder type, including those likely to have negative as well as positive attitudes towards pine marten reintroduction. From a list of 35,

23 stakeholders agreed to take part, and interviews were completed with 19 unique stakeholders. Those participating in the process included:

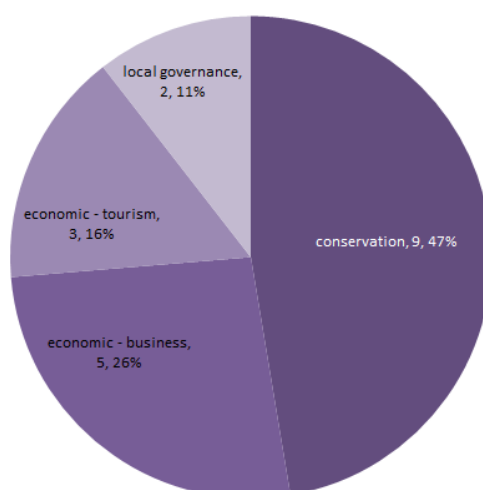
- Governance organisations in the area, e.g. representatives from District and parish councils
- Conservation interests, including:
 - members of the local community with an interest in wildlife
 - representatives of wildlife/conservation groups working in the Forest of Dean, e.g. Gloucester Naturalist Society, Gloucester Bat Group,
 - national conservation organisations with a local interest, e.g. Woodland Trust, RSPB
- Business interests, including:
 - those connected with tourism
 - other land-based businesses such as farmers and estates
 - and forestry related business and organisations, e.g. CONFOR

2.1.2. Characteristics of the sample

The mix of stakeholders in the sample is shown in Figure 2 below and includes:

- mostly men – just 4 interviewees were female
- mostly residents of the Forest of Dean – 13 lived in the area and many of these were born and raised in the Forest
- a majority of stakeholders who had not taken part in the EFS consultation - 5 had commented on the document
- 7 respondents who had direct experience of other translocation/re-introduction projects in the UK and internationally

Figure 2. Type of stakeholders included in the sample (n=19)



2.2. Knowledge and beliefs about pine martens

The degree of knowledge that each of the interviewees had about pine martens was rated by the respondents themselves, and then confirmed through coding the detail with which they were able to discuss the ecology of pine martens and the issues surrounding pine marten reintroduction. Those asked to comment on the EFS obviously had a high degree of knowledge, but the analysis shows other stakeholders did too (see Figure 3). Those with the lowest degree of knowledge were businesses. However, land-based businesses with an interest in predator control had a higher level of knowledge.

Figure 3. Difference in levels of knowledge about pine martens by stakeholder type (n=19)

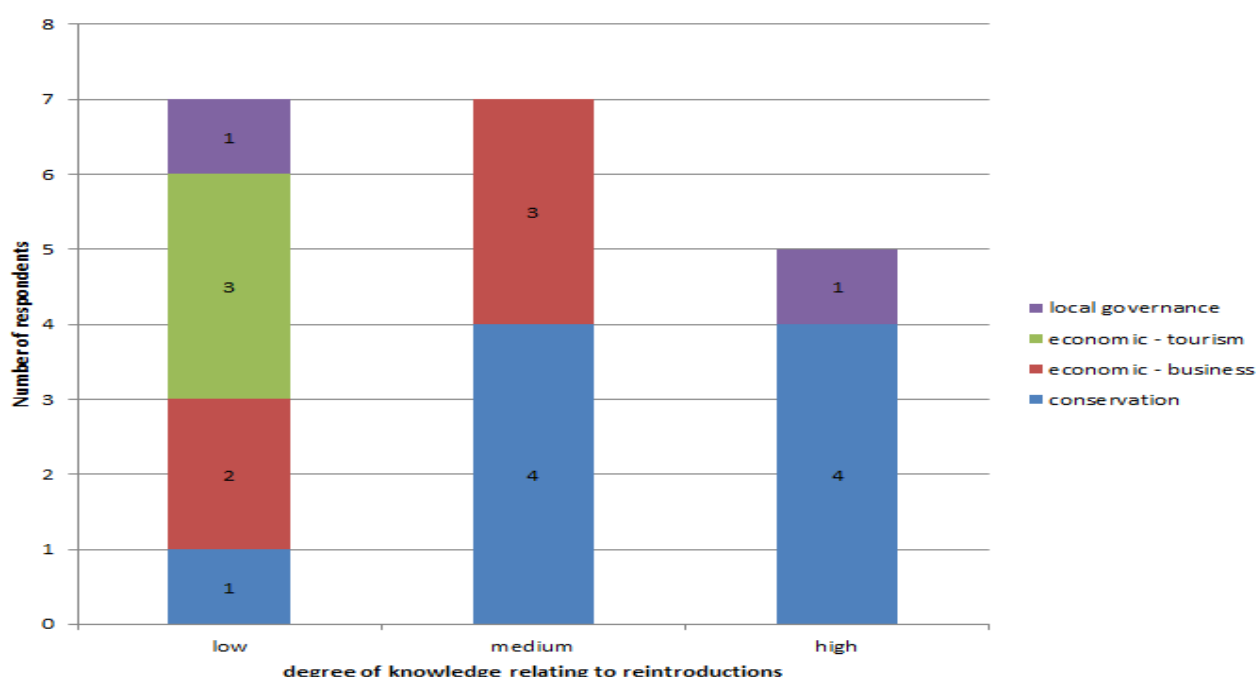
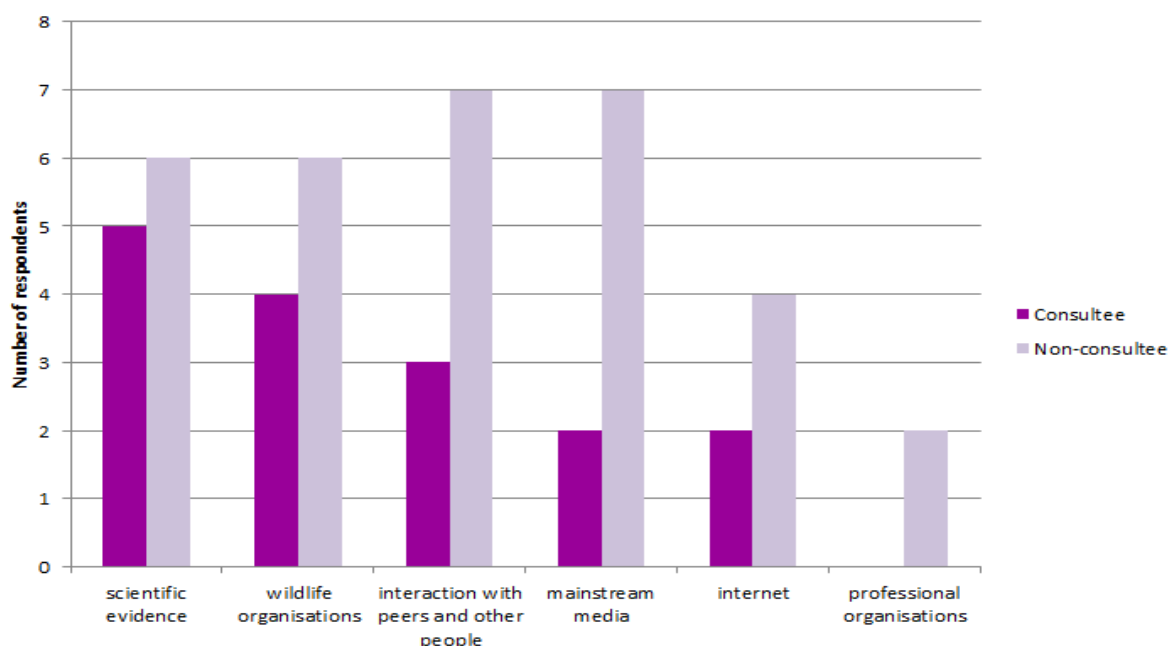


Figure 4 below summarises responses relating to which information sources different stakeholders would trust and use for information about pine martens, those commenting on the EFS (i.e. “consultees”) were more likely to use science and evidence sources and wildlife organisations. The other stakeholders (i.e. “non-consultees”) were more likely to use mainstream media (local press, local and national TV programmes), social interaction with peer groups and other people, as well as scientific evidence and wildlife organisations.

What was very striking was a very strong “discourse” or “narrative” evident through the interviews across all stakeholders, i.e. the story-line that pine martens will get rid of grey squirrels. Those better informed stakeholders were more likely to question the detail of the discourse and understand the limits of the research and evidence supporting this proposition.

Figure 4. Differences in trusted & used information sources by EFS consultee/non-consultee (n=19)



There was also a strong belief that social attitudes were likely to be a major challenge to pine marten reintroduction. Consequently, there was a view that information, knowledge and understanding about pine martens were likely to be significant building informed support or tolerance of any reintroduction project. Connected to this was the generally negative attitude towards wild boar in the Forest of Dean, and a fear stemming from this that the pine martens might become a nuisance in the same way. As one respondent put it:

People are going to think, 'Oh, they're going to cause a problem like the boar have,' without knowing what a pine marten is. I imagine most people don't even know what a pine marten looks like or wouldn't know one if one wandered right through the garden. Not everybody, but a lot of people (economic - business interest)

2.3. Perceived Benefits

There were three main areas of benefit that stakeholders recognised and discussed in detail. These were:

- General benefits
- Ecological benefits, and
- Economic benefits

Each of these are described in the following sub-sections.

2.3.1. General benefits

The most often discussed general benefits were:

- Ideas connected with pine martens being native/"belonging"/and being "natural"
- Existence value, i.e. enjoyment associated with knowing the species is present and the potential for seeing the species
- The attractive/charismatic features of the pine marten as a species

There were many comments from across the full range of stakeholders generally supportive of a reintroduction on the grounds of pine martens being a natural component of the local landscape that was lost and should be replaced. These interviewees responses were typical:

Just to have them back in England again - well, the Forest of Dean - would be lovely (business interest)

In terms of the Forest of Dean, pine martens clearly should be there because they were there in Victorian Times (conservation interest)

There were many more comments about the general value of knowing pine martens were part of the wildlife community in the Forest. Connections were made to the visual appeal and attractiveness of the animal. A selection of views from interviewees represents views across the range of stakeholders:

The opportunity to see rarer species would be a positive (tourism interest)

People generally walking around in the woods would be happy to know that these animals are back there because they are obviously ... they have the star quality in that sense.(conservation interest)

Most people, if they were actually out in the Forest and saw a pine marten would be thrilled to ribbons. (conservation interest)

Well it's rather beautiful, isn't it? (economic – business interest)

They're attractive native animals. There's no reason why they shouldn't be reintroduced and re-established. They're not exactly threatening.
(conservation interest)

I would think it would be thought of as fairly positive actually. I mean, if people knew what a pine marten was they'd probably think it was quite a nice little thing to have around (conservation interest)

2.3.2. Ecological benefits

The most often discussed ecological benefits were:

- Adding to biodiversity in the Forest of Dean
- The impact martens may have on invasive species, e.g. grey squirrels
- Restoring the "natural balance"

There were general comments about the reintroduction of pine martens adding to biodiversity through their return to the Forest, for example:



They are one of the animals that was taken out of the ecosystem and it wouldn't hurt to put them back in a lot of places (conservation interest)

it's something that will enhance, make things a bit more diverse, I think it's a wonderful idea (tourism interest)

But there was also more nuanced understanding of the ecological and inter-species interactions likely to come about as a result. For example, the prevalence of a narrative around pine martens controlling grey squirrels has already been noted, but respondents were able to explain further their perceptions of the possible positive impacts of reducing grey squirrel numbers on other species, for example:

A lot of people hope that pine martens could reduce the grey squirrel population. Grey squirrels are delightful animals, but they are still an alien species, an introduced alien species. They do do a lot of damage to the forestry work. They have displaced red squirrels which are the native ones, and they are, how shall I put it, they're just far too numerous (conservation interest)

If you go into the forest, you will see far more grey squirrels than you'll see red [...] I would like to see the balance tipped perhaps the other way, personally, and if the pine marten is one of the things for doing that, great (local governance)

Pine martens would kill squirrels, forcing goshawks to take more jays, therefore that will have a positive knock-on effect (conservation interest)

Moving beyond interspecies interactions, around half of respondents also perceived potential benefits to the ecosystem as a whole, whether that was in general terms, or through a specific understanding of ecological restoration – or what some participants referred to as rewilding or restoring the “natural balance”:

It's unlikely to have a significant impact on the ecosystem overall. I think it's more likely to have a positive one (conservation interest)

It's the principle of reintroduction that I applaud and support for the beneficial effects on the ecosystem. It's resetting the ecosystem to what it was naturally before we extinguished, exterminated certain species, particularly the key species. So, I think it's a bonus (local governance)

I am quite happy with the principle of re-introducing species that we have lost, especially through the impacts of human habitat change or persecution, things like that. So rebalancing and bring back the native fauna and flora seems like a sensible endeavour, depending on the circumstances (conservation interest)

There tends to be things like [inaudible – 0:18:12] and greater spotted woodpeckers... it tends to be those other larger bird species that tend to prey on smaller birds. It's interesting. We've had... when we put it in our membership magazine, we had some comments from members saying they'll eat all the songbirds. Actually the evidence so far from mid-Wales is actually,

that's likely to be... I'm not saying not true, but it may well have the opposite impact. So, I understand those concerns but I think they're probably not well founded (tourism interest)

For some respondents this included an appreciation that restoring the natural balance would not necessarily happen immediately and could involve a period of transition:

I'm a great believer, if it worked in the past, and they evolved strategies and behaviours to co-exist, even if it was a predator prey relationship, then it should reset itself in the future (local governance)

Now there is a danger perhaps that pine martens might still damage some of the natural wildlife that's here, but on balance, you know, you should have predators in the ecosystem. Something I heard a few weeks ago from, I must admit an expert, was quite a profound statement: if you get the invertebrates and ecology right at the bottom end of the food chain, you get the predators right at the top of the food chain, everything in between will eventually come into balance. And I'm inclined to agree with that (conservation interest)

2.3.3. Economic benefits

The most often discussed economic benefits were:

- Pine martens being an asset to the tourism sector and local economy
- Pine martens being an asset to the timber industry through grey squirrel predation

Some respondents were able to make connections between the potential presence of pine martens, their existence value, and the potential financial benefits to businesses and the local economy of the Forest. The greatest degree of discussion about this was amongst businesses and representatives from local governance, but it was also understood as a potential benefit by those talking from the standpoint of conservation interests. The kind of expectations mentioned related to the pine martens being an attraction drawing in more visitors to the area, as well as the potential for new business opportunities built around the pine martens, for example, typical comments were:

It's just another thing that people can put on the list. 'Come to the Forest and do the cycling, see wild boar, see deer, maybe see a pine marten.' (economic – business interest)

In mid-Wales certainly, there are tourist businesses already using pine martens as an emblem for visitors and that could play quite well in the Forest of Dean (conservation interest)

.... if they were brought in and re-introduced and successfully established themselves, then more people'd be coming to the Forest to see them or to try and see them and potential enterprises – you know, setting up of hides to watch them in favoured locations (conservation interest)

.... the pine marten, I would guess, would be another thing that we would get wildlife watchers, tourists into come and see, which is great for the Dean. You

know, all of that, anything that helps – putting my regeneration hat on, anything that brings tourists in here to spend tourist money in our area is good for the Forest of Dean (local governance)

Further comments about the potential for martens to predate on grey squirrel were connected with the specific financial and economic benefits to forestry over the longer term, i.e. reductions in pest control costs and improvements to the quality of timber – hence potential selling price. As one person put it:

As a private-sector forestry and timber users' membership organization, we strongly support the control of grey squirrels for timber quality and also for red squirrel reintroduction in areas where that is applicable. (business interest)

2.4. Concerns

There were three main areas of concern that stakeholders raised, namely:

- Threats and risks to the pine martens themselves
- Impacts on livelihoods and businesses
- Impacts on local ecologies and species

2.4.1. Risks to pine martens

The most often discussed issues were:

- Uncertainty over suitability of environment (habitat, food resources and human disturbance)
- Perceived susceptibility of martens to road and traffic hazards
- Fears of persecution by humans (pest management; misunderstandings)

Following through from the ideas about ecological restoration, many respondents recognised that the ecology of the Forest of Dean today, may not be the same as ecologies in the past, so there was some concern about the suitability of the habitat to sustain a viable population of martens. Those respondents who had read and commented on the EFS were less concerned about this than those people who had not read the feasibility study. Typical comments included:

Although overall the amount of woodlands may not have changed hugely since we lost pine martens from the area, now with the potential for bringing them back, how much the habitat quality has changed. (conservation interest)

Will there be sufficient variety of habitat for them, sufficient food sources, etc.? (business interest)

Human wildlife conflict was mentioned by nearly all respondents as a potential threat to any reintroduced animals. As well as the disturbance presented by recreational users of the Forest, top amongst concerns was the dense road network and perceptions that martens would be at significant risk from traffic. Those respondents who were residents noted the



amount of dead wildlife they observed on the roads, mentioning boar, deer, foxes, birds and weasels, and they made statements about their feelings that the same fate was likely to befall pine martens. Conservationists in particular made associations between the location of better areas of habitat for the martens having the greater density of roads.

This is a great honeypot, so we're seeing people walking all the time, and there are a quarter of a million visitors a year to here. There are very few large areas of the Forest that aren't crisscrossed by roads and trucks and paths. So disturbance – I mean, not intentional disturbance, but just casual disturbance – is going to be a factor (conservation interest)

I can see a number of pine martens possibly getting run over on the road (conservation interest)

.... areas where pine martens are likely to be successfully reintroduced, also happen to coincide with the four major roads in the Forest of Dean, the four major roads that have the highest proportion of roadkill, and I do wonder if that will be an issue (conservation interest)

The next most commonly discussed issue after the roads considered a relatively important threat, was to do with the attitudes of some land owners, farmers and other individuals respondents felt were likely to persecute predators, whether or not there was any connection with business losses and livelihoods. The following comments were typical:

[There has been] a tremendous increase in the number of people shooting in the area, and as they shoot anything that moves ... (conservation interest)

There are people out there prepared to shoot and poison anything with, which tends to predate on something else, so you never know (conservation interest)

I do believe there could be conflict still with gamekeepers and the shooting fraternity, because they're just something else to shoot at (business interest)

The people who may not welcome it are the cuddly animal brigade and the general public who would simply see it as another element of nature red in tooth and claw and [that means] something's going to die and they don't like that, but it's a fact of life (conservation interest)

2.4.2. Impacts on livelihoods

The most commonly discussed economic concerns related to:

- Potential losses to pheasants, poultry and fish through predation
- Potential losses to livestock/pets through disease transmission
- Some concern of property damage and general nuisance

The theme of persecution of pine martens carried on through discussion of the financial and economic impacts of their presence in the Forest with the livelihoods of poultry farmers and the managers of game shoots being most widely acknowledged. There was a separation in



attitudes between different stakeholder groups. Whilst all types of respondents noted the possibility of mitigation measures being used, the general assessment across conservation stakeholders and some businesses was that poultry/game businesses would likely resist the idea of a reintroduction, or, persecute martens if they were reintroduced.

The wealthy landowners who manage and run these shoots [...] and gamekeepers, I can imagine that they would be very much against it
(conservation interest)

Well, like lynx or wolves and all that sort of stuff, I'm just - I think you're signing their death warrant. because of farmers and gamekeepers (business interest)

However, amongst those businesses connected with poultry or game management, they talked less about resisting the introduction of pine martens and more about the likely costs of installing mitigation methods and how this might affect their profitability. The potential for pine martens to introduce diseases to local populations of livestock or wildlife was mentioned by 2 (of nine) of those representing conservation interests.

The only other issue might be transmission of disease, and one of the problems that we had here a few years ago of course was foot and mouth [...] Now, if pine martens are able to carry certain diseases, that may be a problem
(conservation interest)

There was just one business involved with a fish farm that had real fears pine martens represented a serious threat to their livelihood as well as to their ornamental ducks and pheasants.

There were some negative comments about tourism pressures representing a risk to businesses, with some fears that increased numbers of tourists looking to see pine martens would present a cost or nuisance to business, for example:

[we] have experienced people trespassing on their land and damaging fences through poaching and wanting to get close (sometimes to photograph) wild animals (business interest)

[we] do not perceive tourism in the area to be a positive thing as a result of such experiences (business interest)

There were a few comments to do with the general nuisance pine martens might present to householders and residents, for example:

... if a pine marten starts going into people's houses, garages, etc. Somebody is just going to come along and trap it, and you'll find it dead on the side of the road (business interest)

Most people won't notice them at all, but they will if they start getting into garages and houses and chewing this, that, and the other (business interest)

.... anything that brings tourists in here to spend tourist money in our area is good for the Forest of Dean. That has to be balanced against the next wave of

complaints of, "The pine marten's eaten my pet cat" or something (local governance)

Whilst some of these concerns may be based in fact and evidence, other concerns may be imagined, or related to narrative, rather more than in fact. There were for example comments about pine marten affecting fish stocks, and following quote is another good example:

but I think there's some reticence from some of the shepherds because they think the pine martens take the young lambs It would probably get the farmers to keep them in fields, which is something that we want them to do anyway (local governance)

2.4.3. Impacts on local ecology and species

Comments were focused on species and species groups, but also considered forest ecology in the Dean in broader terms, namely:

- Bats – particularly *Rhinolophus spp*, i.e. horseshoe bat species
- Birds - particularly ground nesting and rare species
- Interactions between re-introduced species

Two respondents noted the possibility that people in the Forest may be opposed to a reintroduction in general terms because adding another species to the area is not considered to be "necessary" or generally beneficial. The link with people's experiences of the wild boar was critical in this regard, as one person put it:

There will be some who won't want them in anyway, because 'Why do we need these in?' Because the Forest is happy going along as it is, without anything new in just look at what happened about the pigs (business interest)

Across the interviews respondents mentioned a long list of species present in the Forest that they feared might be threatened by pine marten predation, including dormice and other small mammals, woodland birds, rare beetles, rabbits and game birds. However, the most significant levels of concern from those who had taken part commenting on the EFS as well as those who had not, were to do with the impact of pine martens on nationally and internationally significant populations of specific bats and rarer species of birds in the Forest. Those with significant expertise and interest in bats made very strong representations about the risks of pine martens to horseshoe bats in particular. There was some doubt expressed over the veracity of the EFS and the exploration of potential mitigation measures. Those with an interest in bats did not feel this section of the EFS was particularly adequate. Whilst these stakeholders were not opposed to the reintroduction of pine martens in principle, there was real alarm and fear that unless the potential threat martens posed to the particular colonies in the Forest was more carefully thought through, there was a potentially unresolved and significant problem.

If anything happens to a roost, then you've damaged that population for that area. [...] The lower Wye Valley in Forest of Dean wasn't just an important



area in Gloucestershire or just in England, but it's one of the most important horseshoe bat sites in Europe (conservation interest)

When you've only got very small numbers, even minor predation would be significant to the population (conservation interest)

I mean they are predators and they will kill mice and voles. If they found a bat roost, they'd probably go through it like a dose of salt which is a bit of a scary prospect, particularly if it's something like a winter roost in a cave (conservation interest)

In terms of the birdlife potentially at threat, it was the ground nesting birds that caused the greatest degree of concern, with various species mentioned, the most frequent being woodlark and nightjar, although there was also some discussion about willow tits. Some commentators had the view that a newly re-introduced predator such as the pine marten might be unfamiliar enough under current conditions for them to be more vulnerable to predation, for example:

We've got a decent population of nightjar, which appear to be increasing [...] We've also in the past few years had a number of breeding attempts by woodlark, which was a bird that we had almost in abundance in the 1940s and 50s, but we lost them by the mid-60s. There is a possibility that pine martens could do some damage to those ground nesting birds (conservation interest)

But I just think that whether or not there is an issue in terms of the habitat quality of the woodland, between what we have now and what maybe we had when the species were all evolving together and the birds were kind of evolving an avoidance mechanism – whether or not the change in the woodland structure actually might make them more prone to predation by various species, and therefore whether they might possibly be more vulnerable if we brought pine marten back (conservation interest)

Leading on from this latter point, there was also an appreciation amongst the conservationists in particular, that it was the potential interactions between pine martens, the wild boar, other species and human pressures that was poorly understood. There was a concern that the ecological and species specific impacts of having wild boar in the Dean had not been researched, and the additional pressure of reintroduced pine marten populations in addition to this could impact the local ecology in unknown and unexpected ways. The combined pressure from wild boar and a new population of predators might represent a more significant impact than currently appreciated. As some respondents expressed it:

I think the more we find out about wildlife, the more it's connected. The more fragile the balances are between everything (conservation interest)

..... small mammals and voles and things, which I guess would be the main prey items for martens, and we know that we've already got a big decline in birds like owls and kestrels and again, therefore, there could be a big direct impact on owls and kestrels [i.e. that rely on the same prey species] which already appear to be in decline really (conservation interest)

You'll know as well as I do how few barn owls and things get through their first winter, and if there were fewer mice, fewer voles because the pine martens are taking a percentage out of the population, then it would just make it in my mind, slightly harder for something like those populations to get through difficult periods (business interest)

There's a lot of new pressures have come along in the last 100 years really, which has affected all the wildlife that's remaining at the moment. So you've got to be very careful. [The pine marten] may well be a species that was here many years ago but things have changed in the meantime (conservation interest)

Pine martens were a native species but if something hasn't been around for a long time, like the wild boar, putting it back in changes all the natural balance again (conservation interest)

2.5. Reintroduction process and measures

There were a number of issues raised by stakeholders across the different sectors:

- Reintroduction details
- Mitigation solutions
- Monitoring
- Exit strategy

Those stakeholders who had not read through and commented on the EFS said they needed more information about the specifics of how a reintroduction would be implemented, they were unsure about how animals would be brought into the forest and released, and how many animals would be reintroduced in total. There was a certain degree of confusion about what the re-introduction process involved and what the animal welfare implications might be: One person expressed their confusion and how this affected their attitudes, as follows:

If you're talking about catching wild pine martens in Scotland and then bringing them and letting them loose here, as opposed to, for example, getting pine marten kittens and rearing them, and then trying to release them to the wild, I would be a bit more concerned about taking wild animals and, in a comparatively short time just sort of – that's more of a translocation, isn't it? (conservation interest)

While many respondents supported the notion of a re-introduction, some noted a preference for the animal to return naturally rather than through human intervention. They believed the natural migration of the pine martens back into the Dean from other populations, perhaps those in mid-Wales, would incur less opposition from stakeholders and the general public, as well as perhaps be better for the pine martens themselves. As one respondent summarised it:

Why can't we let them come here naturally? They might not be happy here. If they want to come they'll come themselves (business interest)

There was some degree of confusion about mitigation measures to avoid negative impacts of pine martens. Some of the businesses were interested in more information about costs and effectiveness. Some of the conservation interests felt more attention needed to be spent on considering the mitigation measures, particularly in connection with the bats. As two people put it:

Personally, I don't think that the paper [i.e. the EFS] is in a fit state to be offered forward for constructive decision until everything has been properly addressed (conservation interest)

No. I just don't feel that the initial paper [i.e. the EFS] has been done... has really taken seriously the unique area in relation to the Horseshoe Bats. The Greater Horseshoe Bat has only got one maternity roost in the Forest of Dean. So, that makes everything pretty vulnerable (conservation interest)

A very consistent concern across all stakeholders types, regardless of their level of knowledge or whether they had commented on the EFS or not, was the need for a monitoring programme to follow the success of the reintroduction as well as species focused and ecological impacts. This was a very important caveat of stakeholder's in-principle support for a reintroduction. Typical responses are illustrated by the following comments:

In terms of the Forest of Dean, you'd need to monitor the things and see where they are going. Specifically from a bat point of view, you need to see whether or not they were showing an interest in entering the bat mine (conservation interest)

You'd have to be fairly sure what you were doing and fairly sure that you could monitor them, I would have thought. One could just see it being a disaster otherwise (conservation interest)

One assumes that the animals introduced would be tagged, but you would still have to monitor where they were going and what they were doing ... what the impacts were (conservation interest)

you'd obviously have to monitor them somehow. That might be quite problematic in the Dean, monitoring anything in the Dean is not an easy job. (conservation interest)

[the project needs] a consistent team to manage and monitor (conservation interest)

Consideration of an exit strategy was raised by a few respondents who wanted to know what could be done if things went wrong and the impact of the martens on other wildlife and businesses interests became significant. This was an acknowledged risk that some would have like to have seen addressed:

Once they're in, they're in, aren't they? It's almost impossible to get them back out again. So that's sort of the main worry, I think, from the birding fraternity (business interest)

I don't know what the natural predator would have been originally but obviously if you've not got a natural predator or something like that, then you need to look at how you are going to keep numbers down and under control. That would be my only concern. (business interest)

3. Stakeholder support and future considerations

Overall the interviews with stakeholders showed that there was a general level of support for the principle of reintroduction of pine martens into the Forest of Dean. Two of the stakeholders interviewed were opposed: one was strongly opposed, and one marginally so, as they put it:

In the Dean, I don't, I'm sort of sitting on the fence but I think I would lean towards the non-introduction (conservation interest)

There was a feeling amongst some that the reintroduction had already been decided upon, as this person commented:

But I'm always suspicious that somehow it's a foregone conclusion and the objections are all overruled unfortunately because these introduction are backed by certain organisations that really ought to take more account of what people say. That's just my opinion (conservation interest)

However, despite general acceptance of the proposal, it is important to note that few of the stakeholders consulted had first-hand experience with pine marten, which left them with some uncertainty over exactly how other existing species would interact with them. Such limited experience and knowledge made some reluctant to express unequivocal support for a reintroduction. In addition to this, many of the stakeholders put forward the view that residents of the Dean would have preconceived ideas about a reintroduction project based on inaccurate knowledge of the species, or on experiences and attitudes based related to other introduced species - notably the wild boar, as some people explained:

I think the biggest hurdle to this programme could be ignorance on the part of the general public and that's the one you're going to have to get over (local governance)

On the basis that the wild boar have got out of hand, they might think, oh my goodness, they're going to introduce something else and that will get out of hand in some way (business interest)

You're very worried about the reintroduction of anything after the very bad results we've had from the reintroduction of wild boar or feral wild boar, which has been a really big impact. I think a lot of people view introductions with some caution following that (conservation interest)

That's been a reintroduction that's gone badly in a lot of cases, for a lot of people, so they'll be prejudiced already with the pine marten. So once you sort

of break that link between them – this isn't the boar again, this isn't Boar Mark II, this is completely different – I think you should be on a winner
(business interest)

So, in short, support was contingent on a number of caveats issues being addressed, these were:

- Additional consideration of mitigation measures related to the bat populations, particularly the horse shoe bats (lesser and greater)
- Identification of effective mitigation measures for businesses
- Development of an effective monitoring programme tracking pine martens and their impacts on other species
- The involvement of stakeholders in any reintroduction project
- Public engagement - Communication and education

3.1.1. Mitigation measures

As already noted in the section detailing concerns, stakeholders requested better and more thorough consideration of mitigation measures for wildlife (particularly bats) and businesses.

My feeling is that it should clearly go ahead with the appropriate safeguards in place for any of the other species that might be affected (conservation interest)

As well as that there was a request for additional and clear information about possible mitigation measures, likely costs and effectiveness.

3.1.2. Monitoring

The issue of monitoring as being an important aspect of any reintroduction project has already been mentioned. This is a key feature of garnering stakeholder support. There were a number of stakeholders who expressed some reservations that proposals for a monitoring programme might be ineffective. The main limitations related to stakeholder belief that resourcing might not be adequate either in the short term, or very particularly the longer term, or that monitoring represented a particularly difficult technical challenge. These two comments were typical of perceptions that need to be addressed:

Yes, monitoring is going to be quite intensive I would have thought to get a proper picture of what the pine martens are doing, where they've gone. I imagine they're pretty elusive so you're going to need people who know what they're about, what to look for (conservation interest)

who's going to pay for the monitoring et cetera afterwards? It's like this Forester's Forest, the Forestry Commission have given Gloucester Wildlife Trust some clear felled areas. Well, Gloucester Wildlife Trust must be rubbing their hands with glee over it. But are they going to be able to manage it properly in years to come? I don't think so, because it costs lots of money. It's all very well taking land on, you've got to manage it properly. My experience is that these things get, I don't know, the amount of

money, they just turn into wildernesses, but there you are, I'm cynical (conservation interest)

3.1.3. Stakeholder involvement

There was a clear view that there should be continuing involvement of stakeholders in strategic oversight of any reintroduction project. Stakeholders felt that the governance models already tested in the pine marten reintroduction project in mid-Wales, or the wild boar management forum in the Forest of Dean were appropriate. The importance of maintaining communication with local residents and other local organisations was stressed, as was the need to make sure governance processes were seen to be open, transparent and involving a greater range of stakeholders than the Forestry Commission and the Wildlife Trust.

So, yeah, the more consultation, the merrier. They don't want their little closed shop of the Wildlife Trust and the Forest Commission going 'Right, We're going to bring them in.' Immediately there are going to be people against it, just on that principle, really (business interest)

3.1.4. Public engagement - Communication and education

Stakeholders really emphasised the need for a comprehensive communication strategy that would:

- i. make a comparison and underscore the difference between pine martens and the wild boar - stakeholders were really concerned this was a major issue, as these comments illustrate:

They may just feel... on the basis that the wild boar have got out of hand, they might think, oh my goodness, they're going to introduce something else and that will get out of hand in some way (conservation interest)

The boar have caused a problem, and people will say, 'Oh, I bet they have problems like we had with the boar.' So if they do bring them back, they're going to have to do a bit of good PR on explaining what they are and what they're not going to do. They are not going to dig up everybody's lawn and eat everybody's garden and trash everything. (business interest)

You've got to remember, in the Forest of Dean we still have the example of the wild boar which is very contentious and controversial and it's very simple for people to assume that once you reintroduce an animal it's going to explode and the population is going to be a problem. I don't think that's the case with the pine marten. I think to avoid that threat of negative public opinion, you need to market it and make the public understand clearly what the pine martens will do and how the populations will adapt in the forest. (local governance)

It's going to need a campaign of education for the public to try and convince them that pine martens are not the embodiment of boar, quite how you achieve that I don't know, but you certainly could do it through programmes

on TV for example, like Countryfile, through articles in the local press, local radio. There is going to be an education process needed.(conservation interest)

- ii. provide consistent clear messaging providing facts about pine marten ecology, benefits and any potential impacts, as one person summarised it:

.... pine martens aren't here at the moment and people are. They need to be properly informed. So, I think it shouldn't be something you just mention, it should be based on fact. In other words, they need to know, what are the likely problems, what are the likely benefits, and those of us who have lived here quite a long time without pine marten's probably have no experience of that (tourism interest)

- iii. reach the largest number of residents and businesses, and,
- iv. is conceived to have an impact on myth busting, and changing people's attitudes and perceptions:

I think you have to quash rumours and myths and bust those as quickly as you can by giving presentations, going to parish councils, going to community events, as they have done with the beaver (local governance)

4. Public perspectives

4.1. Objectives and method

The objectives of the public survey were to discover more about how residents of the Forest of Dean felt about pine martens and the levels of support for a reintroduction programme, specifically:

- How do the public use and value the forest?
- What did the public know about pine martens?
- Did the public perceive any benefits associated with a reintroduction?
- Did the public have any specific concerns about a reintroduction?

Because the views of residents within the Forest of Dean were the main focus of the research, the best method for eliciting opinions from them was considered to be a survey. Based on previous experiences with mailshots and web-based surveys, it was decided that the most reliable and cost effective delivery method was likely to be an on-street survey.

Using an on-street survey required a survey design that was quick and easy to administer. In addition, the survey needed to be designed as a "baseline" against which any changes (positive as well as negative) to local perceptions and attitudes could be measured in the future. The decision was therefore made to use closed questions. These were developed by referring to the previous survey work on public attitudes to pine marten (English Nature

1999; VWT 2014), as well taking into account the issues that had been raised during the stakeholder interviews. A copy of the survey is included as Appendix 4.

A commercial market research company (Salient Research) was used to conduct the survey during January and February 2018. The fieldwork concentrated on recruiting participants at major shopping locations in or around the three population centres in the Forest i.e., Coleford, Cinderford and Lydney. Some door-to-door surveying was undertaken to supplement recruitment. The demographic characteristics (i.e. gender, age) of the Forest of Dean District from the 2011 census were used to generate a quota sample representative of the population as a whole. The target sample was 250-300 respondents. The sample was drawn from residents living within the Forest of Dean District boundary. People living outside of this boundary did not qualify to take part. Only respondents aged over 16 years were included in the survey.

4.2. Results

4.2.1. Achieved sample and confidence level

The achieved sample was 265 responses. For an estimated population of 67,396 in the Forest of Dean District who are aged over 16, working at the 95% confidence level, this means that our results are likely to show a margin of error (i.e. confidence interval C.I.) of 5%. In other words if 60% of the sample say “yes” to a question, a margin of error of 5% means that between 55% and 65% of the general population think that the answer is “yes.”

Sample weighting by gender and age category

The achieved quota sample was weighted by gender and age category to enable inference to the general population, as well as analysis of any differences in responses by age and gender. Weightings were generated using data in Table 1.

Table 1. Characteristics of the public survey sample by gender and age

Demographic category	Survey responses		Forest of Dean District Population ¹	
Male	127	49%	32,350	48%
Female	138	51%	35,046	52%
Total	265	100%	67,396	100%
17-18 yrs	8	3%	2,459	3%
19-24 yrs	29	7%	5,737	11%
25-34 yrs	35	12%	3,601	13%
35-44 yrs	46	26%	14,337	17%
45-54 yrs	45	18%	17,985	17%
55-64 yrs	41	12%	6,381	15%
65+ yrs	61	22%	16,896	23%
Total	265	100%	67,396	100%

¹Office for National Statistics Census data 2011

Sample weighting by rural-urban split

The achieved sample was weighted by a rural/urban classification generated using the residential postcode respondents provided. The purpose of this was to enable analysis and inference of any differences in opinion and attitudes by respondent location. Weightings were generated using data shown in Table 2. The location and rural-urban split of the sample population is mapped in Figure 5 below.

Table 2. Characteristics of the public survey sample by rural/urban classification

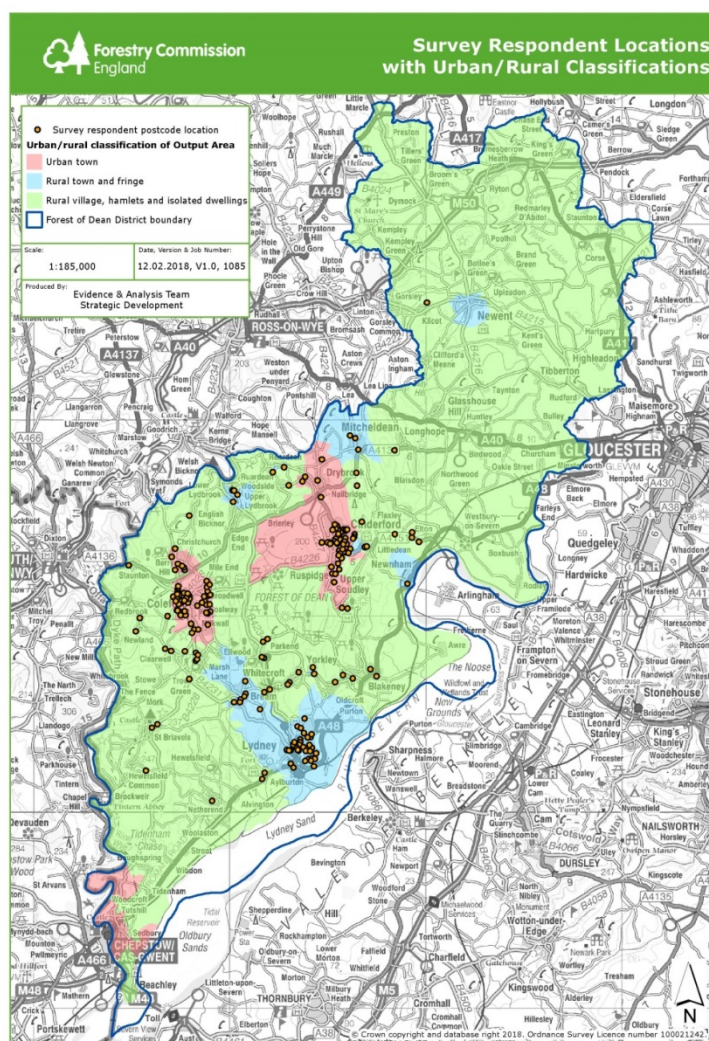
Urban/Rural Classification ¹	Survey Responses		Forest of Dean District Population ²	
Urban city and town	133	50.2%	27,158	33.1%
Rural town and fringe	63	23.8%	21,269	26.0%
Rural village & Rural hamlets and isolated dwellings	52	19.6%	33,534	40.9%
Invalid postcodes/not given	17	6.4%		
Total	265	100.0%	81,961	100.0%

¹ Urban Classification: <https://www.gov.uk/government/statistics/2011-rural-urban-classification>

² Office for National Statistics Output Areas joined to Usual Resident Population figures

Produced by Evidence & Analysis Team, Strategic Development, Forest Services

Figure 5. Map showing public survey respondent locations with rural/urban classifications



4.2.2. Characteristics of the sample

The majority of respondents in the sample (c. 97% of residents; C.I. 92-100%), did not have current or past occupations related to the land-based sector (see Table 3). Around three quarters of residents (c. 76% of residents; C.I. 71-81%), do not belong to any of the major environmental, land-based, heritage or countryside organisations. The organisations which were represented included the National Trust, the Wildlife Trusts, the RSPB, RSPCA, the Woodland Trust and Greenpeace or Friends of the Earth (see Table 4).

Table 3. Involvement in land-based occupations (n=265)

Regarding your occupation, are you working currently, or have you worked, in any of the following?	no of responses ¹	% sample ¹
None of the above	257	96.8%
Forestry or arboriculture	4	1.4%
Agriculture – as farmer or farming contractor	3	1.1%
Sheep farming/shepherding	2	0.6%
Estate management	0	0.0%
Poultry production – including game birds	0	0.0%

¹ respondents were able to select more than one response

Notes. Uses age/gender weighted data. Confidence interval +/- 5%

Table 4. Membership of environmental, heritage and countryside organisations (n=265)

Are you a member of any of the following organisations?	no of responses ¹	% sample ¹
Not a member of any organisation listed	200	75.6
National Trust	25	9.4
a Wildlife Trust (e.g. Gloucestershire, Gwent, Herefordshire)	24	9.1
RSPB (Royal Society for the Protection of Birds)	13	4.8
RSPCA (Royal Society for the Prevention of Cruelty to Animals)	8	3.2
Woodland Trust	7	2.7
Greenpeace	7	2.7
NFU (National Farmers Union)	5	1.8
Friends of the Earth	5	2
Royal Horticultural Society (RHS)	4	1.6
CLA (The Country Land and Business Association)	1	0.3
The Ramblers	1	0.6
Bat Conservation Trust	0	0
BASC (The British Association for Shooting and Conservation)	0	0
National Gamekeepers Association	0	0
Small Woods Association	0	0
Dean Green Team	0	0

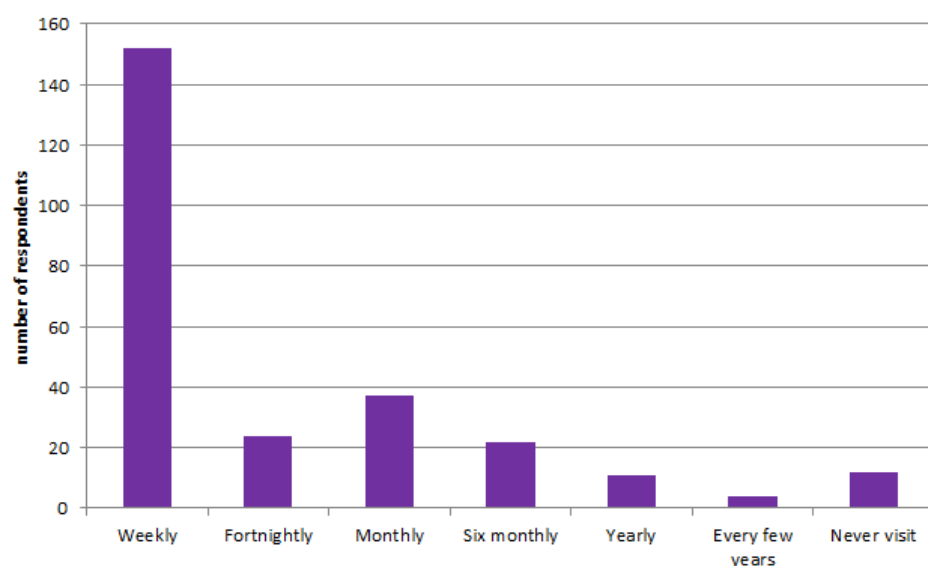
¹ respondents were able to select more than one response

Notes. Uses age/gender weighted data. Confidence interval +/- 5%

4.2.3. What the public value the woodland in the Forest of Dean for

The data displayed in Figure 6 shows that around 58% of residents (C.I. 53-63%) visit the woodland in the Forest of Dean on a weekly basis. There were no differences in the trends by age group other than people older than 65 were more frequent amongst those visiting monthly. There were no differences in the trends between rural and urban areas of the Dean.

Figure 6. How frequently the public visit woodland in the Forest of Dean (n=265)



Notes. Uses age/gender weighted data. Confidence interval +/- 5%

The data displayed in Table 5 and Table 6 shows how the public value the Forest of Dean woodland and the species associated with it. The most important values of the woodland were associated with recreation (c. 80% of residents; C.I. 75-85%), beauty and aesthetics (c. 67% of residents; C.I. 62-72%), or ecology and wildlife (c. 64% of residents; C.I. 61-71%). Looking at which species are valued Table 6 illustrates that the most appreciated species in the Forest of Dean are deer (c. 94% of residents; C.I. 89-99%), with song birds and birds of prey being equally valued (c. 88% of residents; C.I. 83-93%). The two species

Table 5. How the public value woodlands in the Forest of Dean (n=265)

Which of the following do you value the Forest of Dean woodlands for?	no. of responses ¹	% of sample ¹
Recreation	211	79.7
Beauty and aesthetics	179	67.4
Ecology and wildlife	170	64.3
Tourism	97	36.6
Timber and forest products	73	27.6
Game and sporting interests	41	15.4
None of the above	11	4.1

¹ respondents were able to select more than one response

Notes. Uses age/gender weighted data. Confidence interval +/- 5%

valued by fewer people were wild boar (c. 60% of residents; C.I. 55-65%), and grey squirrels (c. 59% of residents; C.I. 54-64%). Trends revealed fewer respondents over the age of 55 valued the wild boar, and wild boar were less likely to be valued by those living in the more rural areas of the Dean. Similarly, trends revealed fewer respondents over the age of 45 valuing grey squirrels compared with other age groups, and grey squirrels were less likely to be valued by those living in the more rural areas of the Dean.

Table 6. How the public value different species in the Forest of Dean (n=265)

Which of the following do you particularly value having in the Forest of Dean?	no. of responses ¹	% of sample ¹
Deer	249	94.0
Song birds	234	88.2
Birds of prey	234	88.3
Bats	201	75.7
Dormice	193	72.7
Wild boar	159	60.2
Grey squirrel	157	59.4
Don't know	2	0.6
None	1	0.4

¹ respondents were able to select more than one response

Notes. Uses age/gender weighted data. Confidence interval +/- 5%

4.2.4. What the public know about pine martens and the feasibility study project

The data displayed in Table 7 and Table 8 show that more than half of the residents in the Forest of Dean can correctly identify a pine marten (c. 61% of residents; C.I. 56-66%), and the diet of a pine marten (c. 60% of residents; C.I. 55-65%). Trends show that the youngest two age groups (i.e. below 24 years) said "don't know" or mis-identified a pine marten as a pine tree more frequently than other age groups.

Table 9 shows the degree of knowledge that residents felt they had of pine marten ecology, and of pine marten as well as other animal reintroductions. The majority of residents felt they knew nothing or very little about these issues.

Table 7. Public identification of pine martens (n=265)

Which of the following is a pine marten?	responses	%
Pine Marten	161	60.9
Sand Martin	46	17.3
don't know	30	11.4
Mink	17	6.3
Pine Tree	11	4.1
Total	265	100

Notes. Uses age/gender weighted data. Confidence interval +/- 5%

Table 10 turns attention to the impact of the feasibility study project outreach and engagement activities. As the data display shows, the majority of residents in the Forest of Dean (c. 88% of residents; C.I. 83-93%), have not been engaged with and learnt more about the project or about pine martens through any of the communication routes. Of those who were engaged, the majority (c. 10% of residents; C.I. 5-15%) heard about the project and pine martens through reading magazine or newspaper articles. Local radio and the GWT website reached c. 2% of the population (C.I. 0-7%), and the public displays just around 1% of the population (C.I. 0-6%).

Table 8. Public recognition of pine marten diet (n=224¹)

What is the diet of a pine marten diet	responses ¹	%
Insects, small mammals, birds, berries	134	60.0
Fish, birds, small mammals	40	17.8
Don't know	34	15.3
Insects	16	7.0
Total	224	100

¹This question was only asked of those people who correctly identified the pine marten
Notes. Uses age/gender weighted data. Confidence interval +/- 5%

Table 9. Public understanding of pine marten ecology and reintroduction projects (n=265)

How much do you know about the following?	Know nothing		Know a little		Know a lot	
	no. responses	%	no. responses	%	no. responses	%
Pine marten ecology	180	67.9	78	29.5	7	2.6
Animal re-introductions	161	60.7	98	37.1	6	2.1
Pine marten re-introductions	194	73.4	64	24.0	7	2.6

Notes. Uses age/gender weighted data. Confidence interval +/- 5%

Table 10. The impact of feasibility project communication and engagement activities (n=265)

Have you already taken part in any activities relating <u>specifically</u> to the Pine Marten Reintroduction Feasibility Study in the Forest of Dean?	no. responses ¹	% of the sample ¹
None of those listed	232	87.6
Reading magazine or newspaper articles	26	9.6
Listening to local radio article about the feasibility project	5	1.7
Visiting the GWT website and pine marten project pages	5	1.9
Visiting a GWT public display	2	0.6
Attending GWT talks and presentations	1	0.6
Taking part in consultation about the Ecological or Biological Feasibility Studies	0	0

¹Multiple responses were possible

Notes. Uses age/gender weighted data. Confidence interval +/- 5%

4.2.5. What benefits and dis-benefits the public associate with pine marten reintroduction

The data in Table 11 shows that residents in the Forest of Dean recognise a range of benefits that can come from the reintroduction of pine martens to the area. The top three benefits were preventing extinction of the pine marten (c. 50% of residents; C.I. 45-55%), restoring the natural balance (c. 45% of residents; C.I. 40-50%), and bringing back a native species (c. 41% of residents; C.I. 36-46%). It is interesting to note that around a third of residents (c. 32% of residents; C.I. 27-37%) also recognised the potential benefit of grey squirrel control. In terms of the dis-benefits that Forest of Dean residents recognised, a large number (c. 23% of residents; C.I. 18-28%) did not have any idea about dis-benefits or did not see them on the list of options presented to them (c. 19% of residents; C.I. 14-24%). Of those dis-benefits that were selected, the most important appear to be the risks to the pine martens themselves (c. 32% of residents; C.I. 27-37%), risks to other protected

Table 11. Public understanding of benefits of pine marten reintroduction (n=265)

Which of the following do you consider benefits of pine marten reintroduction?	no of responses ¹	% of sample ¹
Preventing extinction of the pine marten	132	49.8
Restoring the natural balance	119	45.0
Bringing back a native species	110	41.4
Grey squirrel/pest control	84	31.7
Increasing biodiversity	68	25.8
Economic benefits e.g. eco-tourism	40	15.1
Don't know	40	15.3
None of those listed	6	2.4

¹Multiple responses were possible

Notes. Uses age/gender weighted data. Confidence interval +/- 5%

Table 12. Public concerns about pine marten reintroduction (n=265)

Which of the following are major concerns regarding pine marten re-introduction?	no of responses ¹	% of sample ¹
Risks to the pine martens, e.g. road traffic, illegal trapping	84	31.6
Don't know	60	22.8
Risks to protected species	59	22.1
None of those listed	51	19.3
Predation of wildlife	43	16.3
Nature should take its own course, pine martens have not arrived under their own steam	31	11.5
Costs to poultry farmers	22	8.4
Costs to game keepers	7	2.6
Costs to sheep farmers	7	2.5

¹Multiple responses were possible

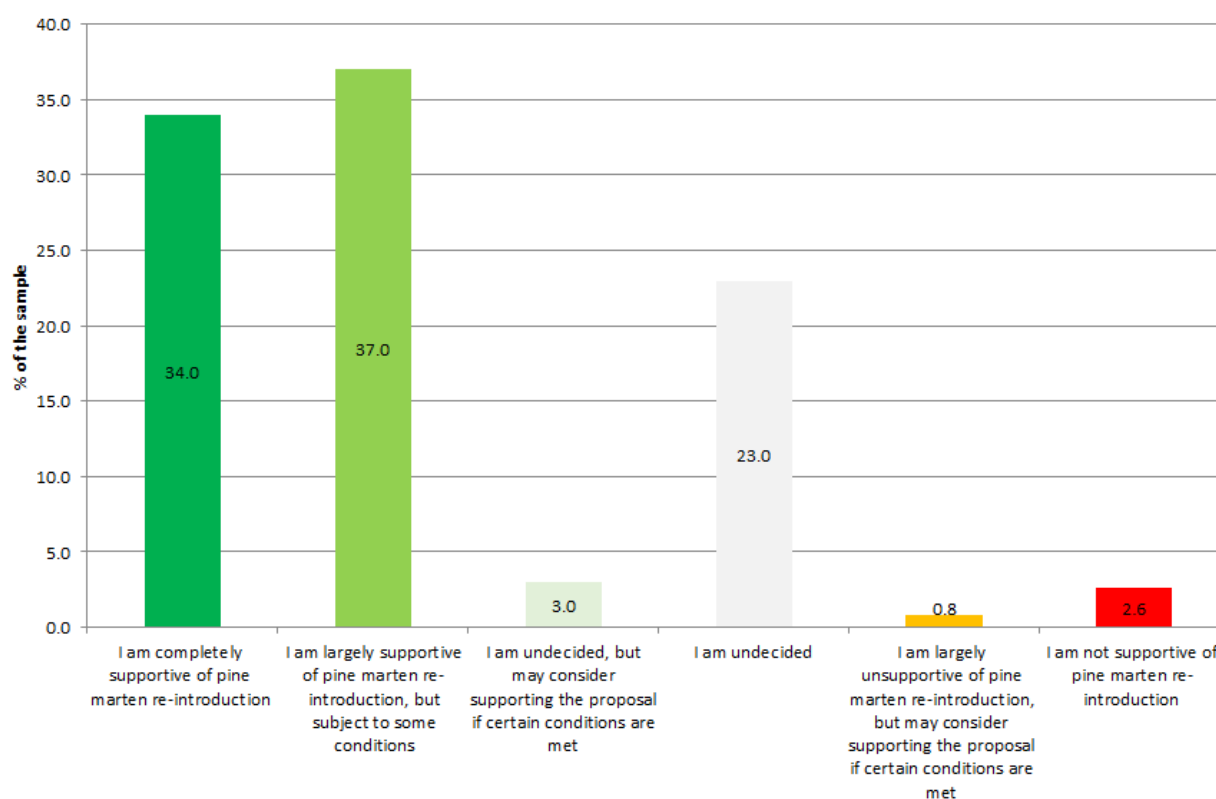
Notes. Uses age/gender weighted data. Confidence interval +/- 5%

or rare species (c. 22% of residents; C.I. 17-27%), and predation of wildlife (c. 19% of residents; C.I. 14-24%).

4.2.6. Support for pine marten reintroduction

Levels of support for pine marten reintroduction were gauged by asking respondents to choose from five possible answers. The results for the general population are displayed in Figure 7. Overall 34% of the population were completely supportive of the proposal (c. 34% of residents; C.I. 29-39%), and 37% were largely supportive subject to some conditions (c. 37% of residents; C.I. 32-42%). We could take this to mean that around 71% of the Forest of Dean residents are supportive of the proposal to reintroduce pine martens. A relatively small percentage of the population around 3% (c. 3% of residents; C.I. 0-8%) said they did not support the idea of a reintroduction. More than a quarter of residents felt undecided (c. 26% of residents; C.I. 22-32%).

Figure 7. Public support for pine marten reintroduction into the Forest of Dean (n=265)



Notes: Using age/gender weighted data. Confidence interval +/- 5%

Variation by age

Figure 8 shows the same data disaggregated by age categories. Although the least positive responses to the idea of pine marten reintroduction trend towards the older age groups, a Chi Square test of independence could not be performed because of too many missing values across the contingency table.

Figure 8. Public support for pine marten reintroduction into the Forest of Dean, disaggregated by age (n=265)

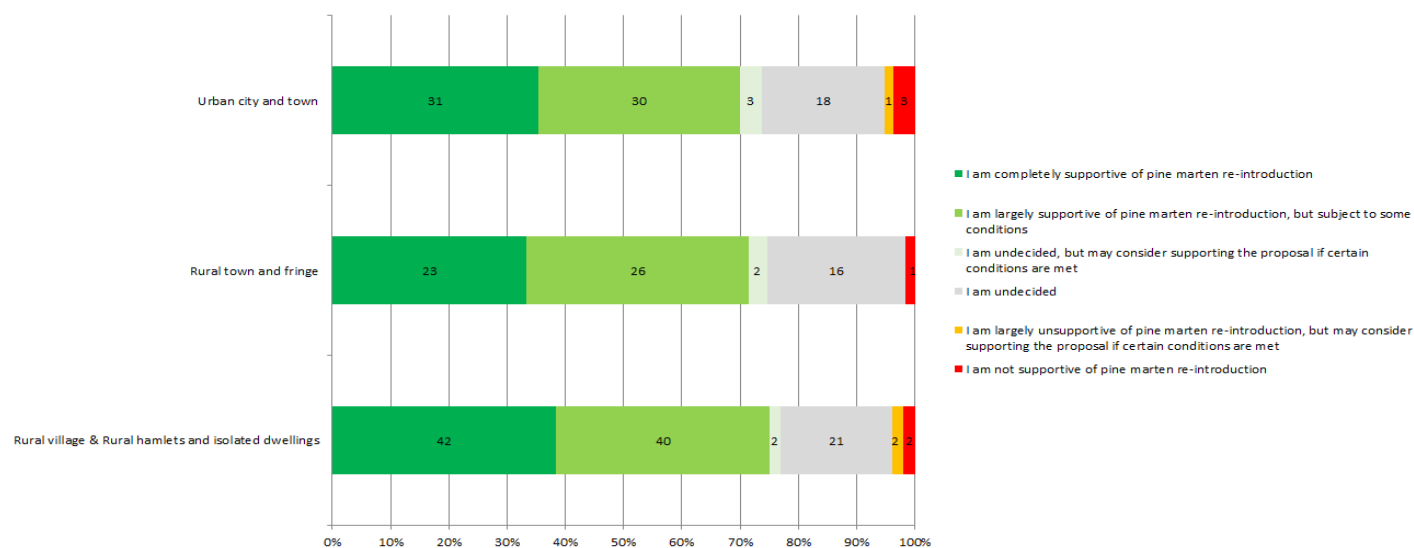


Notes: Using age/gender weighted data. Confidence interval +/- 5%

Variation by location

Figure 9 shows the same data disaggregated by rural/urban classification. A Chi Square test of independence was performed and showed that the frequency of respondents answering each statements did not depend on where they lived i.e. there was no significant difference in the numbers of each statement between urban and rural locations ($\chi^2 = 3.4589$, $df = 10$, $p = 0.985$).

Figure 9. Public support for pine marten reintroduction into the Forest of Dean, disaggregated by location (n=248)



Does not include respondents with invalid post codes

Notes: Using rural/urban weighted data. Confidence interval +/- 5%

4.2.7. Contingent actions influencing public support for a reintroduction

The actions that respondents felt were important to ensuring their support of any potential pine marten re-introduction project were gauged using a score (1 is not very important, 10 is very important). Generating an average scores ((sum(no respondents x score))/n), and placing the answers in rank order, shows the order of importance of the measures is:

1. Monitor the impacts of pine marten reintroduction
2. Put in place mitigation measures to manage ecological risks
3. Continuing communication by the project
4. Include community representation in reintroduction management
5. Have a robust exit strategy
5. Put in place mitigation measures to avoid harm to pine martens
7. An agreed plan to deal with problem animals
8. Set up a stakeholder forum

Looking for differences by urban and rural locations, the only one was around the robust exit strategy. A Chi Square test of independence showed that the frequency against each score was dependent on rural/urban location ($\chi^2 = 34.1486$, $df = 18$, $p^* = 0.03501$). Those respondents in the most urban areas (urban city and town) generated a mean score of 8.2 compared with those in other locations who generated a mean score of 7.7.

Table 13. Public views about the importance of reintroduction project measures (n=265)

Score	monitor impacts of pine marten reintroduction		mitigation measures to manage ecological risk		robust exit strategy		agreed plan to deal with problem animals		manage the risks to pine martens		continuing communication by the project		set up stakeholder forum		inclusion community representation in management	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
not at all important																
1	2	0.7%	1	0.3%	8	3.0%	6	2.4%	3	0.9%	0	0.0%	6	2.2%	4	1.3%
2	1	0.3%	3	1.0%	0	0.0%	4	1.4%	1	0.3%	2	0.6%	3	1.0%	2	0.6%
3	7	2.8%	0	0.0%	10	3.9%	6	2.2%	4	1.4%	2	0.9%	3	1.2%	2	0.6%
4	3	1.1%	1	0.4%	4	1.4%	4	1.5%	4	1.6%	0	0.0%	6	2.3%	2	0.7%
5	11	4.0%	20	7.4%	23	8.6%	19	7.2%	24	9.2%	25	9.6%	24	9.2%	19	7.2%
6	14	5.1%	15	5.8%	22	8.2%	15	5.6%	18	6.7%	10	3.8%	19	7.2%	21	7.8%
7	27	10.0%	27	10.1%	21	8.0%	28	10.5%	22	8.5%	26	9.8%	29	10.9%	23	8.5%
8	34	13.0%	33	12.3%	38	14.2%	41	15.4%	43	16.2%	44	16.4%	29	11.1%	40	15.2%
9	39	14.6%	40	15.1%	29	10.8%	31	11.5%	27	10.0%	35	13.1%	29	11.0%	28	10.5%
v. imp 10	119	44.7%	111	41.9%	97	36.7%	93	35.1%	99	37.4%	106	40.0%	83	31.3%	110	41.7%
Don't know	10	3.7%	15	5.6%	14	5.2%	19	7.1%	21	7.8%	16	5.9%	34	12.7%	16	5.9%
MEAN	8.2		8		7.5		7.4		7.5		7.9		6.8		7.8	
Rank	1		2		5		7		5		3		8		4	

Notes: Using age/gender weighted data. Confidence interval +/- 5%

5. Conclusions

The research has investigated the opinions, perceptions and attitudes of important stakeholders with interest in the reintroduction of pine martens into the Forest of Dean, as well as the urban and rural residents of the Forest. Understanding and taking account of the views of these groups of people is an integral part of any conservation translocation project (IUCN, 2013). In principle the stakeholders and the residents of the Forest of Dean are supportive of the idea of a pine marten reintroduction, and very few people are openly against the idea. However, the evidence shows that this support is not unconditional. The majority of stakeholders and the majority of local residents felt their support was contingent on certain conditions being properly met. Those conditions were largely similar, addressed their main concerns, and prioritised:

- effective monitoring of any pine marten reintroduction to track impacts on other species and local ecologies
- effective mitigation measures put in place to protect locally and nationally significant species – most particularly bats and some birds
- continued engagement (i.e. communication) and involvement of stakeholders and the public in future decision making and management of a pine marten reintroduction project.

It is difficult to make direct comparisons of these results concerning the level of support (i.e. 71%) or opposition (i.e. 3.4%) with other studies because of differences in the questions asked. This study canvassed the views of stakeholders and the public separately, and, in the public survey provided respondents with six potential answers concerning their level of support including “undecided”. However:

- a smaller sized survey (n=62) including the views of both the public and stakeholders in England (English Nature 1999) showed 92% would support reintroduction
- a larger survey (n=530) of stakeholders and the public in Wales (VWT, 2014) showed 87.3% of respondents would support a restocking effort, and 12.7% (n=77) of respondents would not support a restocking.

The main value and benefits that stakeholders and the public saw in a pine marten reintroduction were also similar, and emphasised:

- Working to protect a native species (i.e. the pine marten)
- The potential to maintain or increase biodiversity
- Working to restore the “natural balance”.

These results are not very different to those found in the English Nature (1999) or the VWT (2014) studies. However there is one major difference. Stakeholders and the public in the Forest of Dean place some emphasis on the potential for pine martens to control grey squirrel populations. In the case of the public 32% of the population valued this, which compares with just 3% of the public in the Welsh (VWT, 2014) study.

The analysis suggests that key messages to project partners are that:

1. there is broad support for the decision to reintroduce pine martens in the Forest of Dean
2. if a reintroduction project goes ahead it should include stakeholders in the identification and development of effective mitigation measures for those species already identified as at risk in the ecological feasibility study
3. if a reintroduction project goes ahead it should include stakeholders in the identification and implementation of a monitoring programme that meets the needs of different interest groups, species and ecologies identified as important and at risk in the ecological feasibility study
4. An effective communication and engagement strategy that reaches stakeholders and the public, that passes on information as well as provides them with a chance to share information and views, and take part in decision making where appropriate, should be a critical component of any reintroduction project. Messaging, engagement and consultation should concentrate on:
 - i. addressing the main concerns of stakeholders and the public as they relate to the monitoring and mitigation measures that will be put in place, as well as
 - ii. explaining the positive impacts on those aspects of pine marten reintroduction that the public and stakeholders value.

6. References

English Nature, 1999, Species Recovery Programme for the Pine Marten in England 1996-1998 (ENRR306). English Nature, Peterborough.

IUCN, 2013, Guidelines for Reintroductions and other Conservation Translocations. IUCN, Gland, Switzerland.

National Species Reintroduction Forum, 2014, The Scottish Code for Conservation Translocations and Best Practice Guidelines for Conservation Translocations in Scotland. Scottish Natural Heritage, Edinburgh.

Sheehy, E., & Lawton, C., 2014, Population crash in an invasive species following the recovery of a native predator: the case of the American grey squirrel and the European pine marten in Ireland. *Biodiversity and conservation*, 23(3), 753-774.

Stringer, A, 2017, Social Feasibility study. Pine marten Reintroduction Feasibility Study project. GWT, Coleford.

Vincent Wildlife Trust, 2014, People and Pine Marten in Wales: Public Opinion Survey 2013. VWT, Ledbury, Herefordshire.

Appendix 1. Interview guide for consultee stakeholders (i.e. in receipt of EFS)

Aim of interview

To investigate key stakeholders' attitudes, both positive and negative, associated with the idea of re-introducing pine martens to the Forest of Dean area

Recording the interview

Our method looks for digital recordings to be transcribed.

Seek permission to record the interview

Gaining consent

Ask the interviewee to fill in the consent form before starting. Outline that the interview will take approximately 30-40 minutes that they do not need to answer questions if they don't want to and they are free to stop the interview at any time.

Questions

About the person and their interest (i.e. stake)

- What is your professional role/interest in the feasibility study?
 - If the consultee is not a representative of a specific organisation connected with conservation/land use then ask "Do you belong to any professional or other organisations related to conservation, countryside, or land use"
- Are you a resident of FoD? If not how well do you know it? *Probe for some detail where, how long, interaction with local community, frequency of visits.*

About knowledge of re-introductions

- How much knowledge and experience do you have of re-introductions, restocking or translocations of species?
 - e.g. in professional role, but also volunteering, studies etc.
 - Have you commented on re-introductions before – formal or informal
 - Have you taken an active part in a re-introduction
- What is your general attitude to re-introductions? *Probe for detail. May be possible to explore why respondent is favourable to some species being reintroduced and not others, or in some circumstances and not others*

About knowledge of pine martens

- What knowledge and experience do you have of pine martens? *Probe for detail.*
- Where does your knowledge come from?
- Where would you go to for what you feel is the best, most reliable information about pine martens? Why?

About pine martens in the FoD: the Ecological Feasibility Study

- What do you see as the main implications of having pine martens present in the FoD? *Probe for risks and potential impacts.*
- Was everything you felt should be covered assessed in the EFS?
- The EFS concentrates on assessing the risks that pine martens may pose to other species. However, do you think there is anything in the Dean's environment which could pose a risk to the pine marten



- Do you see any scenarios or situations in which pine martens could be:
 - a particular problem, or
 - a particular benefit?

About pine martens in the FoD: the wider context

- What do you consider to be the key challenges to any re-introduction of pine martens? (e.g. funding/staffing/resources/opposition/access etc.). *Probe for project, and people-wildlife interactions as well as wider ecological context.*
- What do you know about other people's (i.e. other stakeholders, the local community) attitudes towards pine marten reintroduction?
 - What factors do you think influence those attitudes?
- If pine martens were re-introduced do you think stakeholder perceptions/attitudes should influence future management decisions?
 - How would you see this happening?
 - Is there stakeholder understanding of the different options?
 - Are there certain stakeholders/interest groups whose views you think are particularly important?

Likely support for re-introduction

- How far do you support the idea of a pine-marten re-introduction in the Forest of Dean? Why, Why not? *Probe for detail see notes below.*

Other

- Any further comments?

Prompt Notes

Key attitudes for successful reintroduction:

1. An understanding of pine marten behaviour and ecology
2. Support towards habitat conservation
3. Awareness of threatened status of species
4. Understanding advantages of biodiversity richness
5. Understanding links between pine marten recovery and benefits to the environment
6. Favouring co-existence with wild carnivores

Key areas of concern:

1. Fears over pine martens breeding in roofs of houses and other damage to property
2. Fears over predation upon poultry and game
3. Fears rooted in cultural/traditional views – *vermin*
4. Conflicting interests (land use, competition for game species,...)
5. Beliefs they are possible vectors of disease
6. Beliefs they may impact on rare native wildlife
7. Concerns about changes to the present natural environment

Appendix 2. Interview guide for general stakeholders

Aim of interview

To investigate key stakeholders' attitudes, both positive and negative, associated with the idea of re-introducing pine martens to the Forest of Dean area

Recording the interview

Our method looks for digital recordings to be transcribed.

Seek permission to record the interview

Gaining consent

Ask the interviewee to fill in the consent form before starting. Outline that the interview will take approximately 30-40 minutes that they do not need to answer questions if they don't want to and they are free to stop the interview at any time.

Questions

About the person and their interest (i.e. stake)

- What is your professional role/job/business/interest in the feasibility study?
- How much experience would you say you have in conservation/wildlife/ecology and what has this involved? E.g. studies, employment, volunteer experience etc.
- Do you belong to any:
 - professional organisations or related to your business
 - wildlife conservation organisations/networks
 - organisations networks connected with the countryside and land use
- Are you a resident of FoD? *Probe for some detail where, how long, interaction with local community*

About knowledge of re-introductions

- Are you aware/can you give any examples of re-introductions and, e.g. concept of re-wilding? Either past, present or planned.
- What do you know about re-introductions and translocations of British species?
- What is your general attitude to re-introductions? *Probe for detail. May be possible to explore why respondent is favourable to some species being reintroduced and not others, or in some circumstances and not others*

About knowledge of pine martens

- What knowledge and experience do you have of pine martens? *Probe for detail.*
- Where does your knowledge come from?
- Where would you go to for what you feel is the best, most reliable information about pine martens? Why?

About pine martens in the FoD

- What do you see as the main implications of having pine martens present in the FoD? *Probe for risks and potential impacts.*
- Do you see any scenarios or situations in which pine martens could be:
 - a particular problem, or

- a particular benefit?
- What do you consider to be the key challenges to any re-introduction of pine martens? (e.g. funding/staffing/resources/opposition/access etc.). *Probe for people-wildlife interactions as well as wider ecological context.*
- What do you know about other people's (i.e. other stakeholders, the local community) attitudes towards pine marten reintroduction?
 - What factors do you think influence those attitudes?
- If pine martens were re-introduced do you think stakeholder perceptions/attitudes should influence future management decisions?
 - How would you see this happening?
 - Is there stakeholder understanding of the different options?
 - Are there certain stakeholders/interest groups whose views you think are particularly important?

Likely support for re-introduction

- How far do you support the idea of a pine marten re-introduction in the Forest of Dean? Why, Why not? *Probe for detail see notes below.*
- What do you understand by the term re-wilding? If necessary, prompt whether or not this would include the reintroduction of species and how these species would be reintroduced.

Other

- Any further comments?

Prompt Notes

Key attitudes for successful conservation:

1. An understanding of pine marten behaviour and ecology
2. Support towards habitat conservation
3. Awareness of threatened status of species
4. Understanding advantages of biodiversity richness
5. Understanding links between pine marten recovery and benefits to the environment
6. Favouring co-existence with wild carnivores

Key areas of concern:

1. Fears over pine martens breeding in roofs of houses and other damage to property
2. Fears over predation upon poultry and game
3. Fears rooted in cultural/traditional views – *vermin*
4. Conflicting interests (land use, competition for game species,...)
5. Beliefs they are possible vectors of disease
6. Beliefs they may impact on rare native wildlife
7. Concerns about changes to the present natural environment

Appendix 3. Nvivo coding framework

Tree nodes		Free Nodes
Factor	Variable	View
Species	Boars Beavers Lynx Grey squirrel Bats Owls Foxes Dormice Small rodents Ground nesting birds Pheasants Game birds Poultry predation	Positive/Support Negative/Opposition Neutral/don't know/ambivalent/unsure
Habitat	Re-wilding Biodiversity Road network	
Native fauna	Existence value Restore natural balance Cultural history	
Ecology	Balance of nature Natural history Ecological load Ecosystem disturbance	
Local Economy	Economic benefits Financial costs	
Participant understanding	Pine marten as species PM reintroduction Science and evidence Other people Media/web Wildlife organisations Professional organisations	
Cultural issues	Vermin Roof space Social acceptability Engagement with nature Control marten population Mitigation	
Project process	Public consultation Public opinion Stakeholder engagement Evidence Communication and education Monitoring Volunteering	

Appendix 4. Public Attitudes Survey

Q1251 Forest Research. Forest of Dean public survey. Pine Marten re-introduction.

Introduction

Good morning/ afternoon/ evening, my name is _____, from Salient Research (show ID), an independent market research company. I am conducting research in this area on behalf of the Gloucestershire Wildlife Trust and the Forestry Commission looking into the public's attitudes and awareness of wildlife related issues, particularly the idea of reintroducing pine martens. Could you spare a few minutes to answer some questions? I can assure you that your answers would remain entirely confidential and would be used for statistical purposes only? May I ask...

About the respondent

Qualifier. Firstly can I check that you live in the Forest of Dean – **SHOWCARD MAP**

Yes 1

No 2 **If no, exit survey**

Qu.1. Could you please tell me your age?

<i>Under 16 years</i>	<i>1 THANK & CLOSE</i>
<i>16 - 18 years</i>	<i>2 – QUOTA 3%</i>
<i>18 - 24 years</i>	<i>3 – QUOTA 7%</i>
<i>25 - 34 years</i>	<i>4 – QUOTA 12%</i>
<i>35 - 44 years</i>	<i>5 - QUOTA 26%</i>
<i>45 - 54 years</i>	<i>6 – QUOTA 18%</i>
<i>55 - 64 years</i>	<i>7 – QUOTA 12%</i>
<i>65+ years</i>	<i>8 – QUOTA 22%</i>
<i>Prefer not to say</i>	<i>9</i>

Qu.2. Could you please tell me your gender?

<i>Male</i>	<i>1 – QUOTA 49%</i>
<i>Female</i>	<i>2 – QUOTA 51%</i>
<i>Other</i>	<i>3</i>

Qu.3. Could you please give me your postcode? We ask for postcode data so that we can understand more about the social characteristics of the area you where you live. This information will not identify either you or your exact home address.

Qu. 4. Regarding your occupation, are you working currently, or have you worked, in any of the following? **Tick all that apply.**

<i>Agriculture – as farmer or farming contractor</i>	<i>1</i>
<i>Estate management</i>	<i>2</i>
<i>Forestry or arboriculture</i>	<i>3</i>
<i>Poultry production – including game birds</i>	<i>4</i>
<i>Sheep farming/shepherding</i>	<i>5</i>
<i>None of the above</i>	<i>6</i>

Qu. 5. Which of the following organisations do you belong to? **Tick all that apply**

<i>National Trust</i>	<i>1</i>
<i>Royal Horticultural Society (RHS)</i>	<i>2</i>
<i>RSPB (Royal Society for the Protection of Birds)</i>	<i>3</i>
<i>Bat Conservation Trust</i>	<i>4</i>
<i>Woodland Trust</i>	<i>5</i>

<i>RSPCA (Royal Society for the Prevention of Cruelty to Animals)</i>	6
<i>CLA (The Country Land and Business Association)</i>	7
<i>BASC (The British Association for Shooting and Conservation)</i>	8
<i>NFU (National Farmers Union)</i>	9
<i>National Gamekeepers Association</i>	10
<i>The Ramblers</i>	11
<i>Friends of the Earth</i>	12
<i>Greenpeace</i>	13
<i>Small Woods Association</i>	14
<i>a Wildlife Trust (e.g. Gloucestershire, Gwent, Herefordshire)</i>	15
<i>Dean Green Team</i>	16
<i>None of these</i>	17

Qu. 6 How often would you say you visit the woodlands in the Forest of Dean? **Please chose one option.**

<i>Weekly</i>	1
<i>Fortnightly</i>	2
<i>Monthly</i>	3
<i>Six monthly</i>	4
<i>Yearly</i>	5
<i>Every few years</i>	6
<i>Never visit</i>	7

Qu.7. Which of the following do you value the Forest of Dean woodlands for? **Please tick all that apply**

<i>Recreation</i>	1
<i>Beauty and aesthetics</i>	2
<i>Timber and forest products</i>	3
<i>Game and sporting interests</i>	4
<i>Tourism</i>	5
<i>Ecology and wildlife</i>	6
<i>None of the above</i>	7

Qu.8. Have you already taken part in any activities relating specifically to the Pine Marten Re-introduction Feasibility Study in the Forest of Dean? **Please tick all that apply.**

<i>Attending GWT talks and presentations</i>	1
<i>Visiting a GWT public display</i>	2
<i>Reading magazine or newspaper articles</i>	3
<i>Listening to local radio article about the feasibility project</i>	4
<i>Visiting the GWT website and pine marten project pages</i>	5
<i>Taking part in consultation about the Ecological or Biological Feasibility Studies</i>	6
<i>Not taken part in any of the above</i>	7

Respondent's knowledge of pine martens

Qu. 9 Which of the following do you think is a pine marten? **SHOWCARD IMAGES. SINGLE CODE.**

- A. pine tree **Skip Qu.10 if this response given – GO TO Q11**
- B. sand martin
- C. mink
- D. pine marten
- E. don't know. **Skip Qu.10 if this response given – GO TO Q11**

Qu. 10 Which one of the following best describes the main diet of pine martens? **SINGLE CODE.**

- Insects* 1

Fish, birds, small mammals 2
Insects, small mammals, birds, berries 3
Don't know 4

ASK ALL

Qu.11 How much do you feel you know about the following: **TICK ONE FOR EACH A-C**

	<i>Know nothing</i>	<i>Know a little</i>	<i>Know a lot</i>
<i>a)Pine martens and their ecology</i>			
<i>b)Animal re-introductions</i>			
<i>c) Pine marten re-introductions</i>			

Attitudes to and Acceptance of re-introduction

Qu. 12 Which of the following would you say are major benefits of pine marten reintroduction in the Forest of Dean? **TICK ALL THAT APPLY**

Increasing biodiversity 1
Grey squirrel/pest control 2
Bringing back a native species 3
Restoring the natural balance 4
Preventing extinction of the pine marten 5
Economic benefits e.g. eco-tourism 6
None 7
Don't know 8

Qu. 13 Which of the following would you say are major concerns regarding re-introducing pine martens in to the Forest of Dean? **TICK ALL THAT APPLY**

Risks to the pine martens, e.g. road traffic, illegal trapping 1
Predation of wildlife 2
Risks to protected species 3
Nature should take its own course, pine martens have not arrived under their own steam 4
Costs to game keepers 5
Costs to poultry farmers 6
Costs to sheep farmers 7
None 8
Don't know 9

Qu.14. Which of the following do you particularly value having in the Forest of Dean? **PLEASE TICK ALL THAT APPLY**

Grey squirrel 1
Deer 2
Wild boar 3
Bats 4
Song birds 5
Birds of prey 6
Dormice 7
None 8
Don't know 9

Qu.15. How far do you agree with each of the following statements. So do you Strongly agree (5), slightly agree (4), neither agree nor disagree (3), slightly disagree (2) and strongly disagree (1) firstly that a)....**WRITE IN RATING FOR EACH A-G**

	Strongly agree = 5, Slightly agree = 4, Neither agree nor disagree = 3, Slightly disagree = 2 and Strongly disagree = 1
a) <i>Humans should manage wild animal populations so that humans benefit</i>	
b) <i>Animals should have rights similar to the rights of humans</i>	
c) <i>I enjoy watching wildlife when I take trips outdoors in the Forest of Dean</i>	
d) <i>It is important that the Forest of Dean always has abundant wildlife</i>	
e) <i>Taking part in gun sports enables people to engage with the outdoors in a positive manner</i>	
f) <i>An important part of living in the Forest of Dean is the wildlife I see around my home</i>	
g) <i>It is important we learn as much as we can about wildlife</i>	

Qu. 16. Which of the following statements about the idea of re-introducing pine martens into the Forest of Dean do you agree with? **Chose one response.**

<i>I am completely supportive of pine marten re-introduction</i>	1
<i>I am largely supportive of pine marten re-introduction, but subject to some conditions</i>	2
<i>I am not supportive of pine marten re-introduction</i>	3
<i>I am largely unsupportive of pine marten re-introduction, but may consider supporting the proposal if certain conditions are met</i>	4
<i>I am undecided</i>	5
<i>I am undecided, but may consider supporting the proposal if certain conditions are met</i>	6

Qu17. How important are the following conditions to ensuring your support of any potential pine marten re-introduction project. **Please rate all of the following**

Number scale where 1 = not at all important and 10 = very important

	1-10	Don't know
a) <i>Monitoring the ecological impacts of the pine martens</i>		
b) <i>Putting in place mitigation measures to manage any ecological risks posed by pine martens i.e. using techniques to try and prevent negative impacts</i>		
c) <i>Having a robust exit strategy, i.e. having a plan to stop and reverse the re-introduction if required</i>		
d) <i>Having an agreed plan to deal with problem animals, i.e. knowing what to do with pine martens predating persistently on chickens</i>		
e) <i>Mitigation measures to manage the risks to pine martens, e.g those posed by road traffic, or illegal hunting</i>		
f) <i>Continuing communication from the re-introduction project team</i>		
g) <i>The establishment of stakeholder forums to input into re-introduction management</i>		
h) <i>The inclusion of community representatives in the re-introduction management</i>		

Thank & Close

Show card Images

Pine tree



Sand martin



Mink



Pine marten



Alice Holt Lodge
Farnham
Surrey GU10 4LH, UK

Tel: 0300 067 5600

Fax: 01420 23653

Email: research.info@forestry.gsi.gov.uk

www.forestry.gov.uk/forestresearch

Northern Research Station

Roslin
Midlothian EH25 9SY, UK

Tel: 0300 067 5900

Fax: 0 131 445 5124

Forest Research in Wales

Edward Llwyd Building

Penglais Campus

Aberystwyth

Ceredigion

SY23 3DA

Tel: 01970 621559

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