

Hen Harrier Brood Management Trial

Findings from the social science survey of moorland managers

July 2026

Natural England Commissioned Report NECR615

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Foreword

Natural England's role is to help protect and restore our natural world, and to balance nature recovery with the needs of people.

We are committed to our work on hen harrier recovery, and to delivering our actions as set out in the Hen Harrier Action Plan, including the trial of hen harrier brood management. A key aim of this trial was to understand whether the availability of this option increased confidence in legal methods of managing hen harrier impacts on grouse moors, and if this could reduce the illegal killing of hen harriers that has limited their numbers.

It is a principle of Natural England that decisions on conservation actions are based on evidence. As one of our actions on behalf of the trial partnership, Natural England commissioned the National Centre for Social Research to run a wide-scale survey of moorland managers, to understand what those working on grouse moors perceived to be the effects of the brood management trial, to investigate the mechanisms at play, and to produce an independent report on their findings.

We are grateful to everyone who shared or responded to the survey for their valuable insights. We welcome this report summarising the results of the survey, which will form part of the results of the brood management trial to be considered in future decision-making around hen harrier conservation.

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

Executive summary

This report presents findings from the social science survey of grouse moor managers conducted as part of the evaluation of the Hen Harrier Brood Management Trial.

The trial formed part of Defra's Hen Harrier Action Plan, and aimed to reduce the density of active hen harrier nests on grouse moors, via temporary translocation of eggs or chicks, to reduce the predation of hen harriers on grouse. This reduced pressure on grouse, which in theory could lead to changes in the perceptions and behaviours within moorland communities, and ultimately a decrease in the illegal persecution of hen harriers.

As part of the wider evaluation, Natural England commissioned the National Centre for Social Research to conduct an online survey of those who were actively involved in the management of grouse moorland. The survey aimed to inform the evaluation on whether brood management of hen harriers influenced behaviours and attitudes within the grouse shooting community, easing the conservation conflict that underpins the illegal killing of hen harriers.

The survey conducted between July and August 2024 received 63 responses. Due to the limited sample size and self-selection of the respondents (the survey was voluntary), the findings of this research are unlikely to fully represent the views of the broader population involved in managing grouse moors for shooting. Those who responded to the survey held a variety of sometimes overlapping roles in the management of estates, including gamekeepers (20), agents (19), owners (17) and managers (11).

Respondents tended to agree that hen harriers are an important feature of the upland ecosystem and that they can be described as magnificent birds of prey. They also indicated that they were supportive of the current level of hen harrier population but might have reservations about further increases, and many (37 of 63) agreed that the English uplands would be worse off if there were more hen harriers around.

All respondents were aware of the Hen Harrier Brood Management Trial and just under a third (18 out of 63) said that their estate (or estates) took part in the trial. Stated key motivations for taking part were to reduce conflict between hen harriers and the grouse shooting community, while also aiming to ensure the future of grouse shooting by effectively managing the impact of hen harriers on grouse populations. Those who did not take part in the trial said they either could not do so, due to limited numbers of hen harriers in the area or not meeting other eligibility criteria, or because they did not want to take part due to concerns about the impacts of the release of translocated hen harriers on grouse shooting and potential interference in the estates from the outside. Respondents agreed that an effect of involvement in the trial was demonstrating that the estates were working in the interests of the industry and were committed to wildlife conservation.

The findings indicated that respondents perceived the trial to have some negative impacts on the estates' operations. There was a view that the trial increased disruption on shoot days and led to a decrease in grouse stocks. Around half of all respondents were of the

opinion that large-scale brood management across many grouse shooting estates would be impractical.

The majority of respondents perceived the trial as an effective tool to increase the hen harrier population. Two key reasons for this view were that it created improved conditions for birds to be raised away from environmental threats, and that it led to increased acceptance of hen harriers among the shooting community.

The survey showed a division within the moorland management community on the influence of illegal killings on hen harrier numbers, with around half acknowledging this as a factor and the remainder citing other explanations.

Those who stated that the number of killings had decreased in the last five years were most likely to point to improved attitudes towards hen harriers within the grouse shooting community as a reason for that change and confidence that grouse were less impacted by hen harriers due to brood management. The belief that diversionary feeding played a role was also apparent. Other factors included greater surveillance of tagged birds, and to a lesser extent the presence of staff carrying out monitoring. The view given that the trial increased confidence that grouse stocks would not be affected was to some extent contradicted by respondents' views about the impacts of the trial on estate's grouse stocks (e.g. perceived decrease in grouse stocks as a result of the trial).

The survey findings indicate that brood management was seen as a positive step to enable the hen harrier population to coexist with local interests, but that there might be limitations to what the community is willing to accept in relation to any further rollout of the intervention beyond its current scope.

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Introduction

Background to the study

Conservation conflicts are a recurrent challenge faced by conservation practitioners (Redpath *et al*, 2013). Such conflicts commonly arise when wild animals pose an actual or perceived threat to human safety, livelihood, or economic activity (Woodroffe, Thirgood & Rabinowitz 2005). Predators are often at the centre of some of the most complex conflicts due to their impacts on wild species or livestock exploited by humans (Ewing *et al*, 2023). Numerous predators are not only of conservation concern but also legally protected (Ripple *et al*, 2014). However, regardless of these efforts, illegal killing can continue where human interests are perceived to be compromised by the species in question.

The illegal killing of predators is often carried out secretly to minimise the probability of prosecution and/or detection (Liberg Olof and others, 2012). As a result, quantifying its magnitude is often challenging. Evidence shows that illegally killing predators can significantly contribute to their overall mortality (Ewing and others, 2023). This research focuses on the hen harrier *Circus cyaneus*, a red-listed Bird of Conservation Concern (Stanbury and others, 2021) that has been legally protected since 1954 (Redpath and others, 2004). An entrenched conservation conflict over hen harriers persists in northern England and Scotland, mainly between actors with interests in bird of prey conservation and people involved in game shooting activities in upland regions (Marino and others, 2024). Hen harriers prey on moorland game birds, including red grouse *Lagopus l. scotica*, and retaliatory illegal killing continues in these regions. Research has revealed the links between hen harriers' deaths or disappearance and their use of grouse moors (Ewing and others, 2023; Murgatroyd and others, 2019).

In January 2016, the Department for Environment, Food & Rural Affairs (Defra) developed an [Action Plan](#) to help increase hen harrier populations in England. The [Action Plan](#) aims to enable the hen harrier population to coexist with local interests through the implementation of six actions. Three actions centre on existing populations, that is protection of nest and winter roost sites, anti-persecution intelligence work, and monitoring. One is a translocation measure, namely a reintroduction of hen harriers to southern England, and two aim to reduce the conservation conflict between hen harriers and upland game shooting: diversionary feeding to provide alternative food sources, and a trial of temporary removal of nests away from grouse moors, known as the [Brood Management Trial](#).

The Brood Management (BM) Trial focuses on hen harrier nests on upland grouse moors. The technique involves taking the eggs or chicks from some nests into captivity, rearing them to fledging age, and releasing them back into the wild. This aims to reduce the density of active hen harrier nests on grouse moors during the harrier breeding season, thereby reducing the hen harrier predation on red grouse that underpins the conservation conflict. The method was predicted to “increase confidence for grouse moor managers to

allow birds to settle in the knowledge that impacts can be managed and bird populations can begin to grow.”

The trial was a partnership project, with activities led on the ground by the Moorland Association working with its members, and the International Centre for Birds of Prey leading on chick rearing. Natural England led the monitoring and evaluation activities and chairs the project board. The Game and Wildlife Conservation Trust and the Hawk and Owl Trust also sat on the group. The trial ran from 2018 to 2024 and has seen the removal of broods from 15 hen harrier nests, with 58 fledged young subsequently released. Since the start of the trial 10 grouse shooting estates have been involved in the removal or release of birds.

Evaluation aims and objectives

The evaluation of the brood management trial was designed to test the direct and indirect theoretical assumptions of the theory of change (see Appendix A). The theory of change hypothesised that reduced pressure on grouse stocks and/or increased visibility of the species leads to changes in perceptions and behaviours within moorland communities, and ultimately a decrease in the illegal persecution of hen harriers.

As part of the wider evaluation Natural England commissioned the National Centre for Social Research (NatCen) to carry out an online survey with people who were actively involved in the management of grouse moorland. The objective of the survey was to capture the views and attitudes towards hen harriers and the brood management trial in the grouse shooting community.

Survey methodology

In early 2024 Natural England commissioned NatCen to design a social science survey exploring the views of those actively involved in the management of grouse moorland.

The survey instrument, presented in Appendix B, was built on earlier work examining the lessons from the management of red grouse and hen harriers in England conducted by St John et al., (St John, 2019), and informed by the brief from Natural England. The brief included the need to try to understand what those working on grouse moors perceived about the effects of the brood management trial, perceptions of any mechanisms at play which may have caused the effects seen, and opinions about implementation issues and suggestions for improving the method.

The survey was designed to take 20 minutes to complete. It covered the following topics:

1. background information about respondents and the estates that they worked on.
2. perceptions about wildlife and experiences with hen harriers.
3. awareness and experience of the brood management trial (including views on further participation).

4. views on the effects of brood management measures.
5. the perceived mechanisms for increases in the hen harrier population.
6. sociodemographic attributes.

The main question types were single code questions with a five-point Likert scale, multiple choice, and open-ended questions.

As part of the set-up phase, the project was reviewed and received ethical approval from NatCen's internal Research Ethics Committee (REC), which is based on Government Social Research (GSR) and Market Social Research (MSR) standards.

Cognitive Testing

As part of the survey development process the research team tested key questions with individuals who were identified for their experience and knowledge of grouse shooting communities. Five cognitive interviews were conducted in May 2024. Participants were shown draft survey questions and asked to elaborate on their understanding of the question, and comment on the appropriateness of the question wording and answer categories. This process helped the research team refine, extend, and exclude questions and answer categories, and improve the overall validity and reliability of the survey instrument.

Sampling

The survey aimed to capture the knowledge, experiences and opinions of individuals who were actively involved in the management of grouse moorland. These include the following roles:

- Agent: works with estates to arrange shooting opportunities
- Gamekeeper: directly manages areas of land for shooting activities
- Owner: owns the shooting estate
- Manager: directs all operations on the shooting estate
- Other: any other role actively involved in management of grouse moorland not covered above

To reach the relevant population, the survey was distributed with the help of three professional associations whose members were involved in grouse moor management in varying roles. The organisations were:

- Moorland Association (MA)
- British Association for Shooting and Conservation (BASC)
- National Gamekeepers' Organisation (NGO)

The organisations were approached following consultation with industry experts to determine how best to ensure coverage and reach those working on and managing grouse

moors for shooting. The organisations distributed an email with a link to the survey to members in relevant roles. Standard email wording was suggested by NatCen, with each organisation having final decision on how they advertised and promoted the survey to members.

Fieldwork and analysis

The survey fieldwork took place between 15th July and 30th August 2024. It was distributed to a combined total 870 email contacts via three membership organisations. However, it is likely that there was some duplication on the email lists, given the overlap between the membership of the organisations. The research team provided the organisations with templates for reminder emails which they were encouraged to share with their members. The final achieved number of responses to the survey was 63.

Following the completion of fieldwork, data tables with survey frequencies and key crosstabulations were produced. The crosstabulations included: participation in the trial, role (gamekeeper, other role), whether grouse shooting was the main type of business, size of the estate, age, average number of grouse shot, level of hen harrier appreciation.

The limited number of respondents (n=63) restricted the potential for checking the statistical significance of the findings, for example differences between subgroups. Consequently, the analysis in the following sections is primarily descriptive, focusing on summarising the characteristics of the sample rather than making inferences about the statistical significance of the findings. Where comparisons between subgroups are discussed, these illustrate differences within the responding sample rather than being generalisable to the wider population of moorland management.

The findings include all provided answers with the exception of 'prefer not to answer' responses, which were treated as invalid.

Limitations

A major limitation of this study is the specific nature of the sample and the reliance on third-party distribution channels with direct ties to the respondents. It is likely that other potential eligible respondents were not reached via this recruitment method given that the sample was limited to those holding professional memberships of one of the three organisations.

To reassure respondents about the survey's confidentiality, neither participant details nor the details of the estates were collected. As a result, it was not possible to assess how many estates took part or how many respondents participated in the survey per estate.

The findings are based on the views provided by the limited number of participants (n=63) and are unlikely to be fully representative of the general population of those managing moorland for grouse shooting.

Background information about survey respondents and their estates

This chapter provides information about those managing grouse shooting estates who took part in the survey and their estates. The findings are reported out of the whole sample (n=63) unless otherwise stated.

Key findings

Respondents

Respondents shared many similar characteristics. They were typically male (62), employed (59) and living in the north of England, with the biggest group residing in the Yorkshire and Humberside region (26).

Respondents held different, and sometimes overlapping, roles in the management of estates, including gamekeepers (20), agents (19), owners (17) and managers (11).

Respondents were typically experienced in the active management of grouse moorland; most had more than 10 years' experience, and none had been involved in grouse moor management for less than three years.

All respondents held memberships with professional and interest organisations. Organisations with the highest number of members were The Moorland Association, the Game and Wildlife Conservation Trust and the National Gamekeepers' Organisation. Many respondents held multiple memberships.

Most of the respondents (42) were only involved in grouse moor management on one estate. One in five (12) were involved with more than five different estates.

Estates

Most (41) respondents reported that the estates they managed shot less than 1,500 brace of grouse on average over the past five years.

Most (41) respondents managed estates that were smaller than 10,000 acres. Twenty reported working on estates larger than this.

A minority of respondents (10) worked on estates that employed a single gamekeeper. It was more usual for their estates to employ multiple gamekeepers, typically, two or three full-time or part-time gamekeepers.

Nearly all of the respondents' estates were owned and managed by individual landowners. A smaller number were leased from another landowner or from an entity such as a utility company.

Background information about respondents

Respondent profiles

Most of the respondents were male (62) and in full-time employment (59). The purpose of the survey was to gather data from those actively involved in the management of grouse moorland in the English uplands – so unsurprisingly the majority of respondents lived in the north of England, with the biggest group residing in the Yorkshire and Humberside region (26).

Role in managing moorland for grouse shooting

Respondents were asked about their role in managing moorland for grouse shooting and could select more than one answer (see Table 2.1). Twenty said they worked as a gamekeeper, 19 as an agent and 17 described themselves as owners. A smaller number said they were managers (11) or held a different role (7).

Table 2.1 Respondents' role in managing moorland for grouse shooting

Respondent's role	Number of respondents
Gamekeeper	20
Agent	19
Owner	17
Manager	11
Other	7
Total responses	74
Total respondents	63

Most respondents (42) were actively involved in the management of a single estate. A third (21) were involved in managing multiple estates (see Table 2.2), with some (12) managing five or more estates.

Table 2.2 Number of grouse shooting estates respondent was involved in managing

Number of estates	Number of respondents
One	42
Two	4
Three	4
Four	1
Five or more	12
Total respondents	63

Most respondents (53) had more than 10 years' experience managing moorland for grouse shooting. None had been involved in the management of grouse moorland for less than three years (see Table 2.3).

Table 2.3 Length of time managing moorland for grouse shooting

Years of experience	Number of respondents
More than 10 years	53
Between 6 and 10 years	3
Between 3 and 5 years	6
Total respondents	62

Membership organisations

The table below presents a list of membership organisations which those managing moorland for grouse shooting could typically join (see Table 2.4). Given the outreach strategy through membership organisations, all respondents were members of at least one organisation and the majority held more than one affiliation, hence responses in Table 2.4 do not sum to 63. The highest number of respondents were members of the Moorland Association and Game and Wildlife Conservation Trust.

Table 2.4 Respondents' membership organisations

Name of organisation	Number of respondents
Moorland Association (MA)	49
Game and Wildlife Conservation Trust (GWCT)	47
National Gamekeepers' Organisation (NGO)	39
British Association for Shooting and Conservation (BASC)	38
Countryside Alliance (CA)	28
British Trust for Ornithology (BTO)	15
Hawk and Owl Trust (HOT)	3
Other	4
Total responses	224
Total respondents	63

Background information about the estates

Grouse moor estates in the English uplands vary in their size, the types of business activities that take place on them, and their ownership model. This section presents some background information about the estates that respondents were managing. Those managing more than one estate were asked to provide answers about their main grouse shooting estate.

Estate management

Estates have different types of ownership models (see

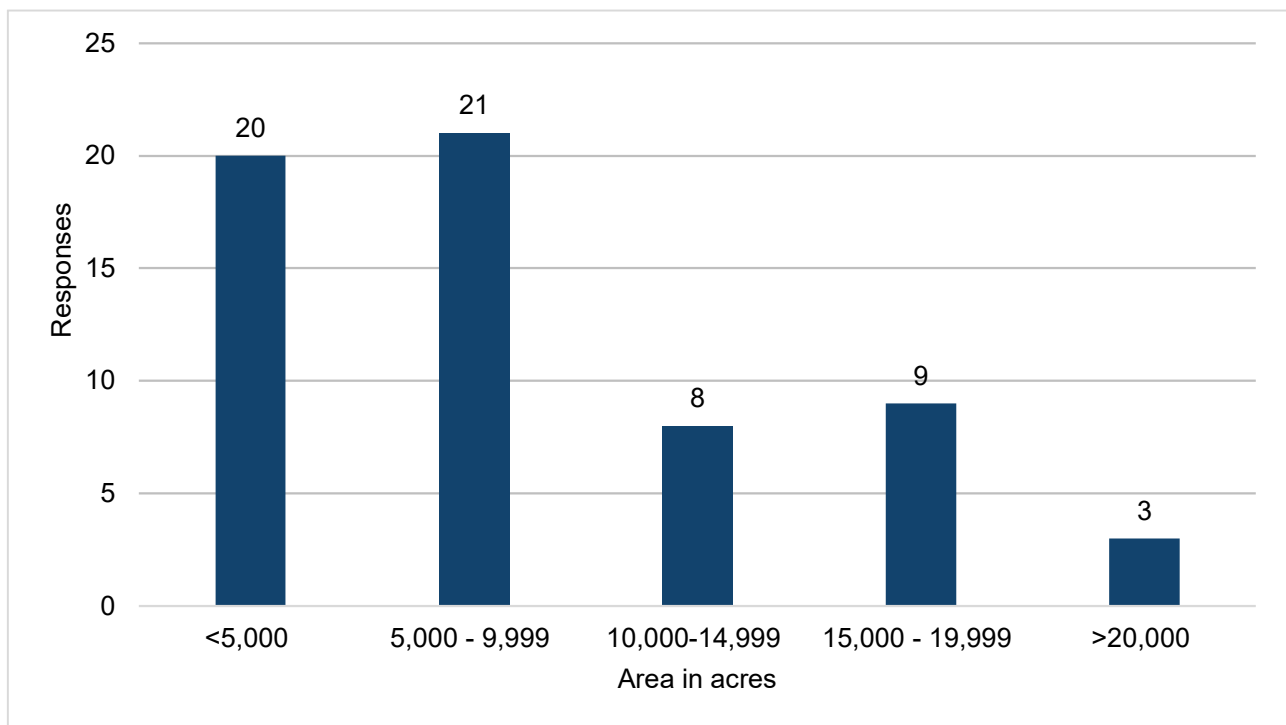
Table 2.5). Within the survey sample, nearly all the estates were directly owned and managed by individual landowners, (47), whereas twelve were leased from another landowner or from an entity.

Table 2.5: Type of ownership of the estate

Type of estate ownership	Number of respondents
Owned and managed by landowner	47
Owned by an individual landowner/s, leased for grouse shooting.	10
Owned by an entity and leased for grouse shooting	2
Other	3
Total respondents	62

Respondents were asked to provide the average size of their estate in acres, which is a commonly used measure on grouse shooting estates. Figure 2-1 shows that the majority of respondents manage estates that are smaller than 10,000 acres; the estates of 21 respondents were between 5,000 and 9,999 acres, and 20 respondents worked on estates smaller than 5,000 acres.

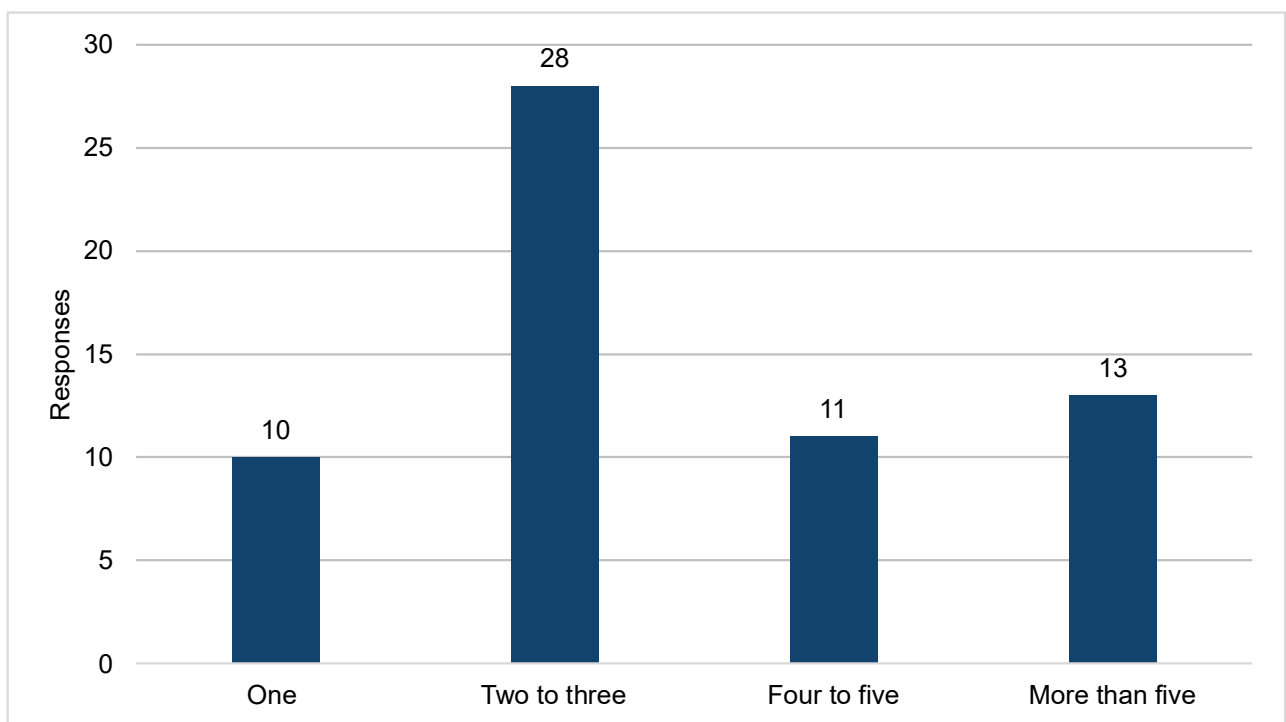
Figure 2-1. Approximate area of the (main) estate respondent was managing (in acres)



Base: (n=61)

Most of the estates had multiple game keepers, with only 10 employing a single gamekeeper (see Figure 2-2).

Figure 2-2. Number of keepers working on respondent's estate



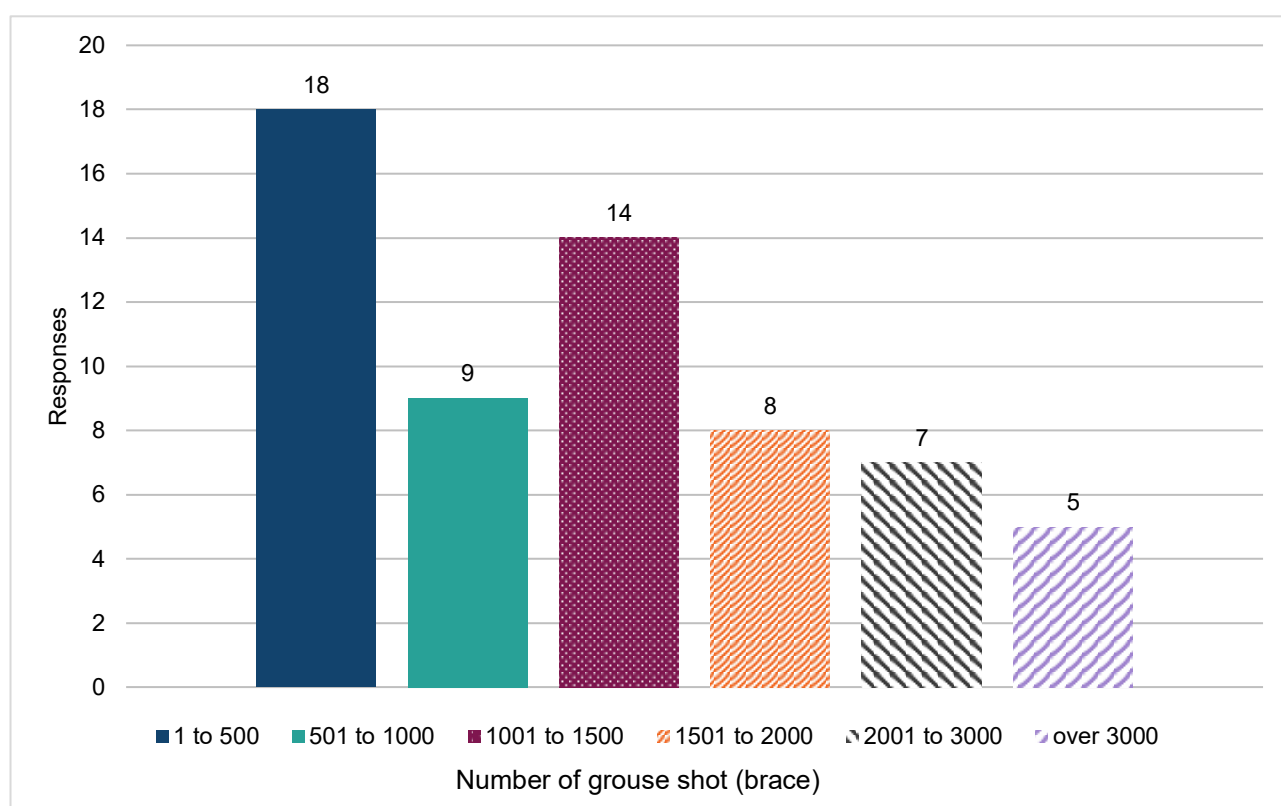
Base: n=62

Grouse shooting

For the majority of respondents (37), grouse shooting was the main source of income for their estate.

To gauge the intensity of activity on grouse moor estates, respondents were asked to provide an approximate number of grouse shot on their estates, using the unit brace, a term commonly used within the sport and meaning two birds. Whilst some estates achieved higher bag numbers (numbers of grouse shot) on their estates in the past five years, the majority of estates shot less than 1,500 brace annually and the most common answer was less than 500 brace (see Figure 2-3).

Figure 2-3. Average number of brace (pairs of grouse) shot per year on respondent's estate



Base: (n=61)

Respondents were asked what groups of people their estate's shoot days were open to (see

Table 2.6). The majority of respondents selected more than one answer, indicating that the estates were open to a range of groups. Thirty-eight said their estates were open to family and friends and 29 to buyers. Of the 11 respondents that said that their grouse moors

were open to syndicates, the majority (9) selected only this answer, suggesting it was exclusive to the syndicate.

Table 2.6 Groups that the estate's shoot days are open to

Who are most shoot days open to?	Number of respondents
Family and friends	38
Buyers	29
Syndicate	11
Other	2
Total responses	80
Total respondents	62

Attitudes towards wildlife and experience of hen harriers

This chapter outlines respondents' attitudes towards wildlife, and their experiences and perceptions of hen harriers.

Key findings

Most of the respondents were familiar with the sight of hen harriers and had experienced a disruption to a shoot day on their estate because of a hen harrier. Fewer had experienced a hen harrier nesting on their estate.

Most respondents were appreciative of wildlife in general and were somewhat inclined to agree that human needs do not always exceed animal rights. They were also very supportive of lethal control of wildlife, as long as the population is not at risk, and were strongly opposed to the idea that grouse shooting is ecologically damaging.

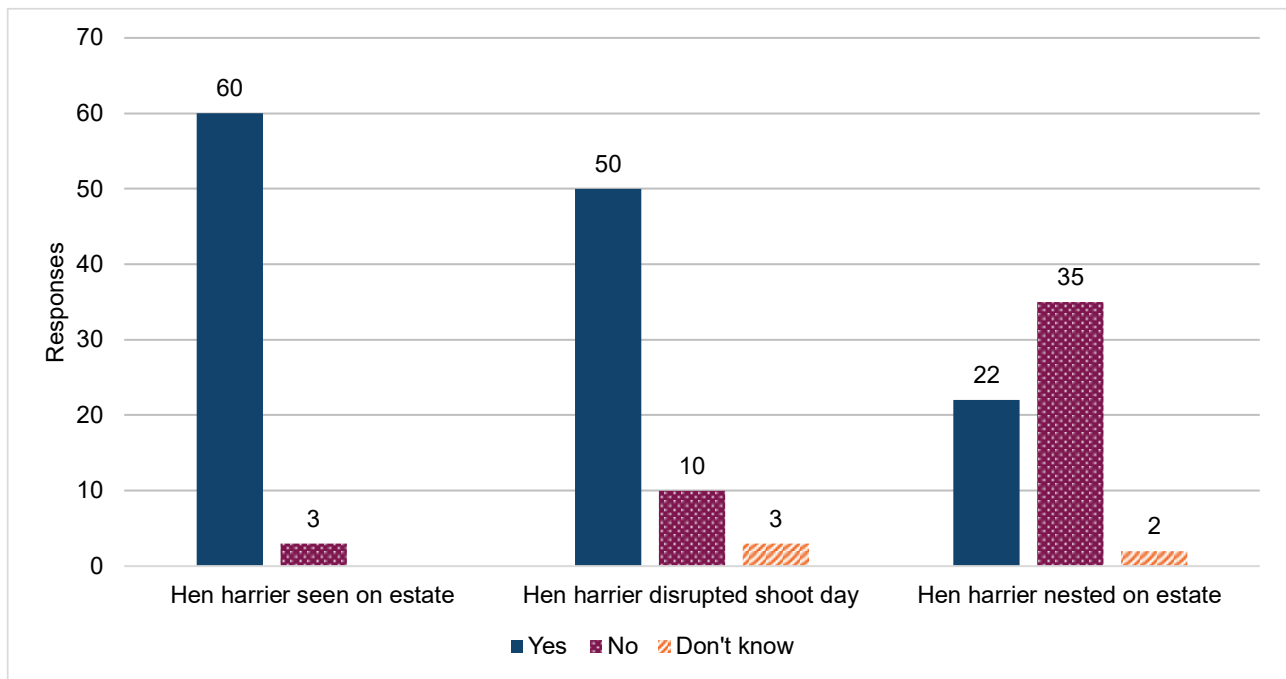
Respondents presented a range of views on hen harriers, expressing both high and low levels of appreciation for them. Whilst respondents tended to respect hen harriers as important features of the upland ecosystem and as magnificent birds of prey, they were inclined to agree that more hen harriers in the uplands would make the uplands worse off.

Gamekeepers in the sample tended to express less positive attitudes to hen harriers than those in other roles.

Experience of hen harriers

Respondents were asked about their experience of hen harriers (see Figure 3-1). The majority (60) said that a hen harrier had been seen on their estate in the last five years and that a hen harrier has disrupted a shoot day on their estate (50). One in three (22 out of 59) of those who had seen a hen harrier on their estate said that a hen harrier had nested on their estate in the last five years.

Figure 3-1. Responses to the questions “In the last five years, have hen harriers (1) been seen on your estate? (2) disrupted a grouse shoot day? (3) nested on your estate?”

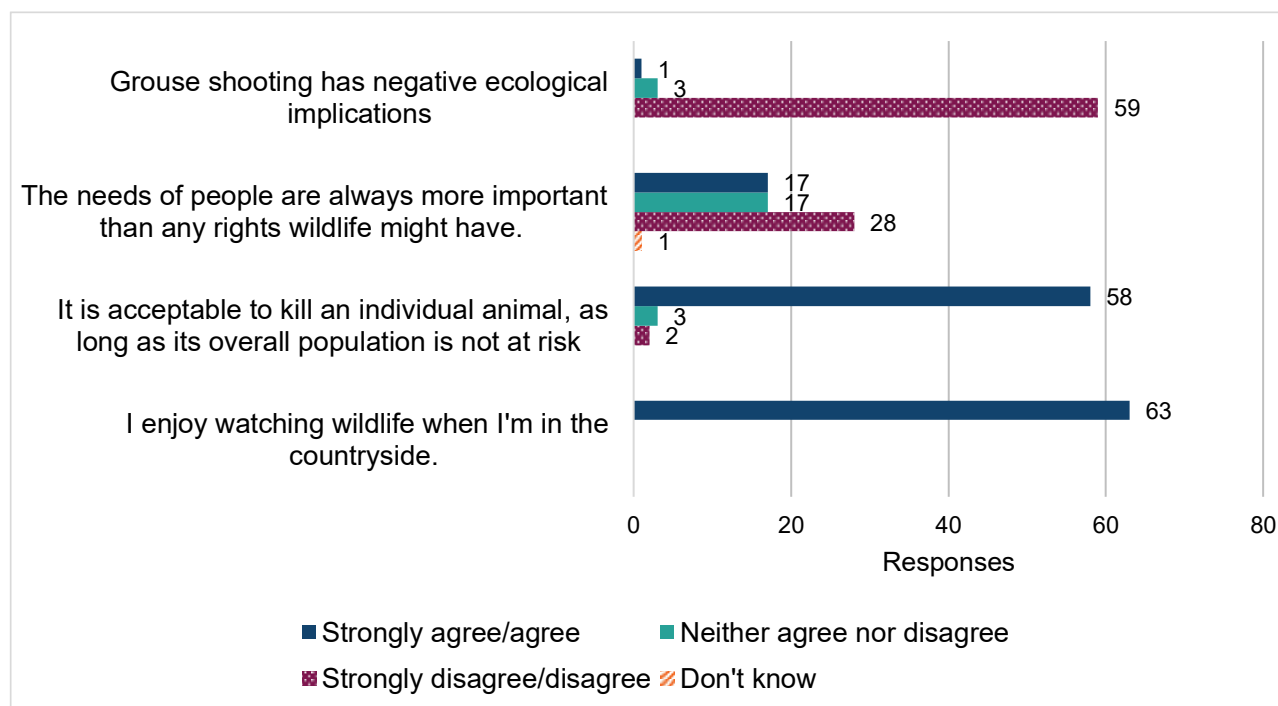


Base: HH seen (n=63), HH disrupted shoot day (n=63), HH nested on estate (n=59)

Attitudes towards wildlife and hen harriers

Respondents were asked a series of questions about their attitudes towards wildlife and grouse shooting (Figure 3-2). The majority stated that they enjoy watching wildlife when they are in the countryside. They also agreed with a statement that is acceptable to kill an individual animal, if its overall population is not at risk. Most (59) disagreed that grouse shooting has negative ecological implications. Around one in four (17 out of 63 people) agreed that the needs of people are always more important than the rights animals might have while 28 disagreed, and a further 17 neither agreed nor disagreed with this statement.

Figure 3-2. Levels of agreement/disagreement with statements about attitudes towards wildlife and grouse shooting



Base: (n=63) Agree/strongly agree and disagree/disagree responses were combined.

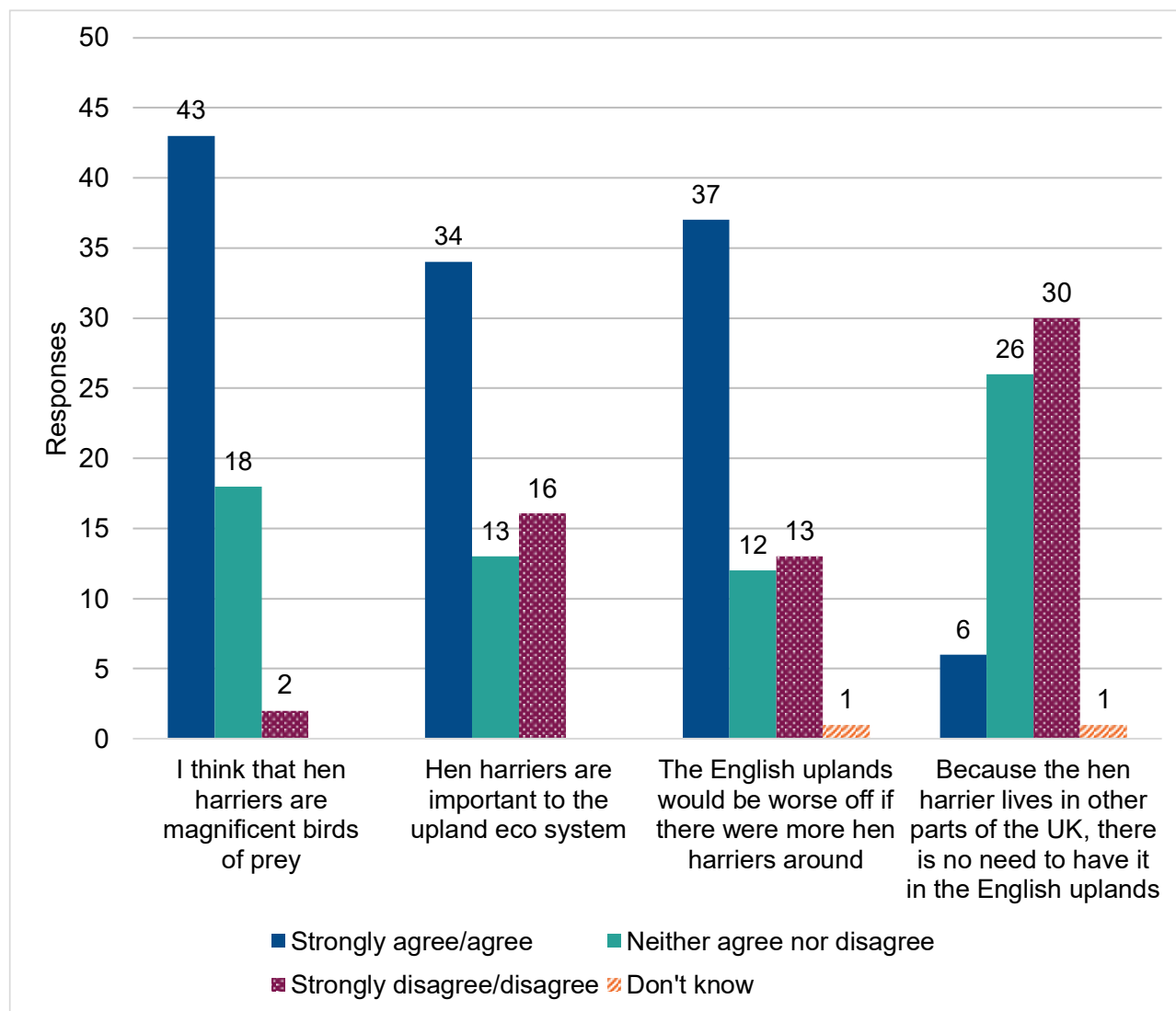
Respondents were also asked a series of questions about their attitudes towards hen harriers (see Figure 3-3). They demonstrated a respect for the hen harrier, appreciating it as a bird of prey and believing it has a role in the English uplands. Many respondents (43) agreed with the statement that hen harriers are a magnificent bird of prey, and 34 agreed that they are important to the upland ecosystem.

In answer to the statement “because the hen harrier lives in other parts of the UK, there is no need to have it in the English uplands,” respondents held differing views. Nearly half (30) of the respondents disagreed with this statement, whereas 26 neither agreed or disagreed, and six agreed.

The respondents’ stated orientation towards hen harriers appears to be one of general appreciation, although this is somewhat limited, as evidenced by the relatively high levels of agreement with the statement that the English uplands would be worse off if there were more hen harriers around (37 out of 63 agreed while 13 disagreed).

A closer examination of the responses to these value statements reveals the limits of this appreciation further. For example, although a majority (43) of respondents either agreed or strongly agreed that hen harriers are magnificent birds of prey, more than half (24) of them also thought the uplands would be worse off if there were more hen harriers around. Likewise, of the 34 respondents that said that hen harriers were important to the upland ecosystem, 15 also agreed that the uplands would be worse off with more hen harriers around.

Figure 3-3. Level of agreement/disagreement with statements about attitudes towards hen harriers



Base: (n=63). Agree/strongly agree and strongly disagree/disagree were combined.

To help assess the level of acceptance of hen harriers further among the survey respondents, their responses to the four questions about their attitudes towards hen harriers were also used to calculate a scale of level of expressed appreciation towards hen harriers. Answers to these four statements were assigned points between 1-5, where the lowest score (1) was assigned to the least favourable answer option towards hen harriers and the highest score (5) was assigned to the most favourable answer towards hen harriers. Those with a high score (who scored 15 points or above out of 20) were classified as high appreciation. Those scoring between 12–14 were classified as medium and those with 11 points or lower as low.

By examining these answers in the context of the respondents' roles, it appears that gamekeepers expressed less positive attitudes to hen harriers than those in other roles. One in two (11 out of 20) of those in gamekeeper roles scored low on the hen harrier appreciation score which compared to six out of 43 of those in other roles. For example, a higher proportion of gamekeepers said that hen harriers were not important to the

ecosystem (8/20) in comparison with to those in other roles (8/43). Those in other roles were more likely to be in the medium group, with 1 in 2 of them having a medium score (25 out of 43).

While the numbers involved are relatively low, these findings may warrant further exploration as it hints that two groups within the uplands community respondents may hold differing opinions and that an apparent contrast in opinion exists between gamekeepers and those in management, agent, or ownership roles.

Awareness and experience of the brood management trial

This chapter discusses the level of awareness of the brood management trial and Hen Harrier Action Plan among those involved in managing moorland for grouse shooting. It also explores the experiences of participation in the brood management trial, drivers and barriers to participation as well as respondents' views on future engagement.

Key findings

All respondents were aware of the Hen Harrier Brood Management Trial and nearly all said they were aware of the Hen Harrier Action plan.

Eighteen respondents said that their estate (or estates) took part in the trial. For 10 of them, birds were released from their estate, five had birds removed and two said it was both of these activities, and one did not provide an answer to the question.

Key motivations for taking part were to help conservation efforts, help manage hen harrier numbers and be supportive of the aims of the trial.

Forty-two respondents said that their estates did not participate in the trial, either because they could not (e.g. did not meet the eligibility criteria or did not have nesting hen harriers on their estate) or did not want to. Key reasons for not wanting to take part centred around concerns about impacts of hen harriers on grouse and concerns about potential interference in the estates from the outside.

Nine out of 18 respondents who took part in the trial said they would like to be involved personally in the trial in the future. Of the 42 who did not take part, 20 said they would not have liked to take part if given the opportunity while 13 would have liked to. Their reasons mirrored those expressed by those who did take part.

Awareness and participation in the trial

All survey respondents said they were aware of the Hen Harrier Brood Management Trial and nearly all (61 out of 63) said they were aware of the Hen Harrier Action Plan.

Eighteen respondents said that their estate (or estates) took part in the Brood Management Trial. As the brood management trial involves a number of different techniques (i.e. taking the eggs or chicks from some nests into captivity and releasing them back into the wild under specific conditions), respondents were asked which of the activities took place on their estate. For 10 trial participants, captive-reared birds were released on their estate, five said broods were removed and two said it was both of these activities.

Reasons for participation in the trial

Respondents were asked to provide open-text responses and state their reasons for participating or not participating in the trial.

Reasons for taking part in the trial

Those whose estates participated in the trial were asked to state why, in their view, their estates took part. Key reasons included:

- **Being supportive of the trial.** This included wanting to “do their bit” and contribute to the scheme. Respondents viewed taking part as a way to set an example and promote the trial.
- **Conservation.** Reasons included to help conservation efforts, and to help hen harriers and grouse to coexist for a balanced moorland environment. This was both to help re-establish hen harrier numbers but also help other ground nesting birds/other breeds.
- **Managing hen harrier numbers.** Another motivation was to remove hen harriers from the estate and reduce the chance of colony establishment and wildlife predation during the rearing period.

Reasons for not taking part in the trial

Respondents whose estates did not take part in the trial were asked why, in their view, their estate did not or could not take part. Key reasons included:

- **Not enough hen harriers to translocate.** Some respondents said that insufficient numbers of hen harriers and/or nesting attempts were their reason for not taking part.
- **Not meeting eligibility criteria.** Others mentioned not meeting the criteria for the trial, such as their estate being too small, being too close to roads or public pathways or below a specified altitude (restrictions that relate to release of brood managed birds).
- **Concerns about the impact of [release of] hen harriers.** This was either because of a perception of the impact of hen harriers on smaller estates because of a limited number of grouse or an existing high density of hen harriers on neighbouring estates or terrains.
- **Neighbouring estates already participating.**
- **Potential disturbance of grouse shooting or interference in the estate.**
- **Not being selected or not invited.**

Views on future involvement among participating estates

Respondents who took part in the trial (n=18) were asked whether they personally would like to take part in the trial in the future. Nine said they would like to and four were of the opposite opinion. A further five answered that they don't know.

Those who expressed an interest in further involvement mentioned the following key reasons:

- Because brood management works as a conservation tool and should be supported.
- To help the hen harrier population improve.
- To help relieve pressures on estates.
- To relieve the pressures of hen harrier colonies on grouse shooting and other birds (such as curlew, golden plover, merlin, ring ouzel).
- To show the shooting community in a good light.

Those who said they would not like to take part in the future quoted the following reasons:

- Poor management of the scheme (e.g. poor information flow and excessive expense and equipment).
- Too much involvement from third parties.
- Not seeing the benefits of the scheme.

Respondents were also asked what they would change in the trial. Suggestions included:

- Being able to release birds outside of the Special Protection Areas and into lowland habitats.
- Removing electric fencing around release aviaries.
- More involvement of keepers in the process (e.g. letting them keep information on the birds after they fledged, satellite tag information).
- More receptor sites (release sites).
- Introduce a single release site away from grouse moors.
- Less or no requirement for tags due to cost.
- Diversionary feeding at nest.

Views on future involvement among non-participating estates

Respondents from non-participating estates (n=42) were asked whether they would have liked to take part if their estate was given the opportunity. Thirteen out of 42 answered positively and 20 said they would not have liked to. A further eight said they did not know, and one gave no response.

Those who said they would have liked to take part gave the following rationale for this:

- To help reduce conflict between hen harriers and driven grouse shooting and help hen harriers and other types of birds to thrive.
- To save grouse eggs and chicks from predation.
- Helping the future of grouse shooting activities by actively managing the impacts of hen harriers on grouse.

Those who said they did not want to take part quoted the following reasons for their decision about future involvement, which largely match those given by people as the reasons that their estates had not taken part:

- Reluctance to have more birds released in the area due to feeling that their current number is sufficient.
- Limited grouse numbers.
- Not agreeing with re-releasing in the same area.
- Not meeting the criteria [for release]; lack of suitable habitat or estate being too small.
- Brood management taking place on neighbouring sites.
- Fears of potential disturbance from releasing hen harriers and disruption on shoot days.
- Perception of too much interference from outside influences.
- Feeling that involvement is time consuming.

Those in gamekeeper roles tended to say they would not have liked to take part in the trial (9 out of 12 compared to 11 out of 30 in other roles).

Views on the effects of brood management measures on grouse shooting estates

Key findings

Respondents were asked about their perceptions of the effects of brood management on grouse shooting estates. Questions covered effects on the business of the estates, such as interrupted shoot days, on their reputation or external perceptions of the estate, on attitudes towards hen harriers, and on how feasible people believed large-scale brood management would be if it were to continue.

The majority agreed that brood management helped to demonstrate the estate was working to support grouse shooting as a sport and that it showed the estate's commitment to wildlife conservation. Opinions were split on whether brood management demonstrated that the estate can responsibly manage the impacts of hen harriers.

Those who participated in the trial tended to say that the trial decreased the grouse stocks of their estate (10 out of 15 who expressed their opinion on grouse stocks changes). Only one person reported the trial had increased grouse stocks.

Respondents also reported that it had increased the number of shoot days disturbed by hen harriers (9 out of 16 who expressed their opinion on the number of interruptions). Three reported it had decreased interruptions. Respondents who did not take part in the trial gave similar answers about the impacts of brood management on participating estates.

Respondents were split on whether the trial made them feel more positively towards hen harriers or increased their willingness to co-exist with these birds. For example, approximately a third of respondents who had participated in the trial said the trial had made them more willing to co-exist with hen harriers, and around two thirds said their willingness had not changed or had decreased.

The majority agreed that there has been too much involvement from public bodies in estate activities due to brood management and about a third said it added undue financial pressure on the estates. Views were divided as to whether brood management is a lot of work for little benefit.

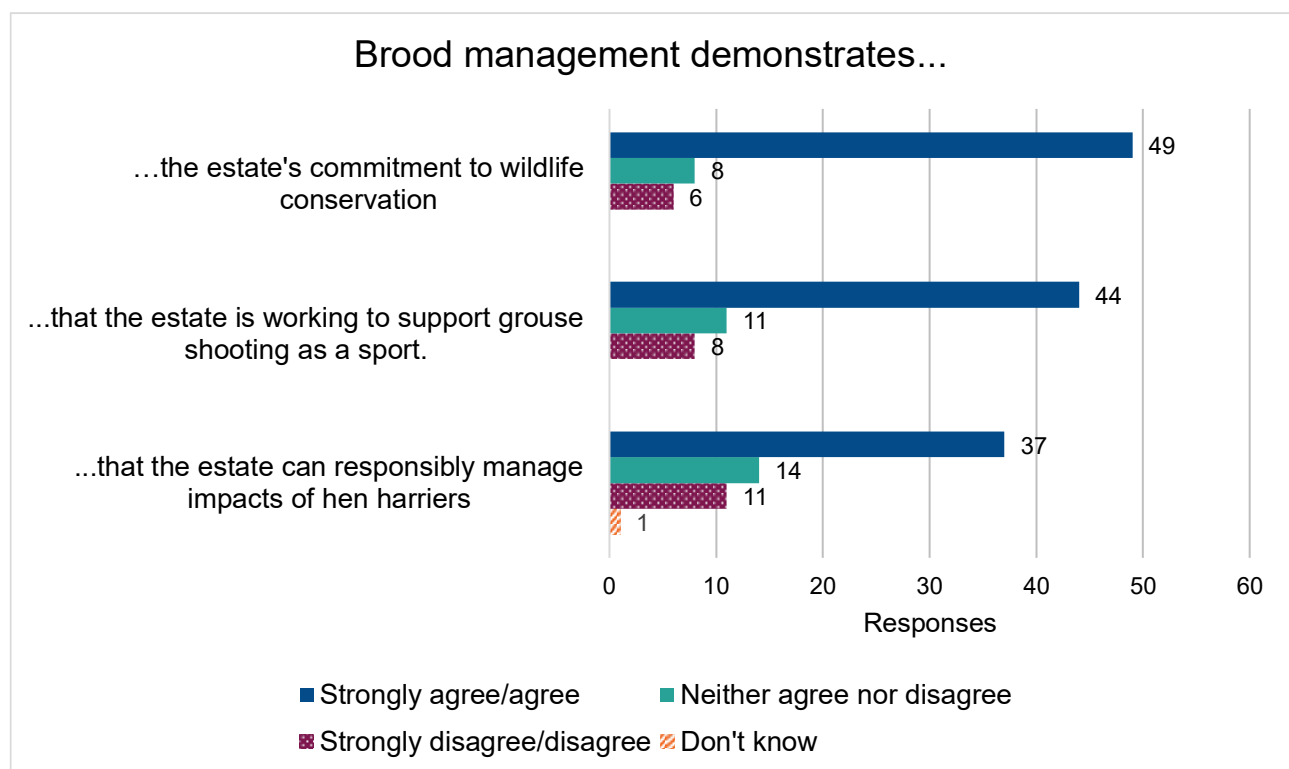
Around half were of the opinion that large-scale brood management across many grouse shooting estates would be impractical. Only 17 thought large scale brood management was practical.

Views on the effects of brood management on the estates

Respondents were asked a series of statements about their views on the effects of brood management on grouse shooting estates (Figure 5-1). Forty-nine out of 63 agreed or strongly agreed that brood management demonstrated the estate's commitment to wildlife conservation. A similar proportion (44) agreed or strongly agreed that brood management demonstrated that the estate is working to support grouse shooting as a sport.

Respondents were more divided on whether brood management demonstrated the estate's ability to responsibly manage the impacts of hen harriers. While 37 respondents agreed, 25 either disagreed or were neutral. Notably, a smaller proportion of gamekeepers agreed with this statement compared to those in other roles—only eight out of 20 gamekeepers agreed, compared to 29 out of 43 respondents in other roles.

Figure 5-1. Level of agreement/disagreement with statements on the effects of brood management on estates



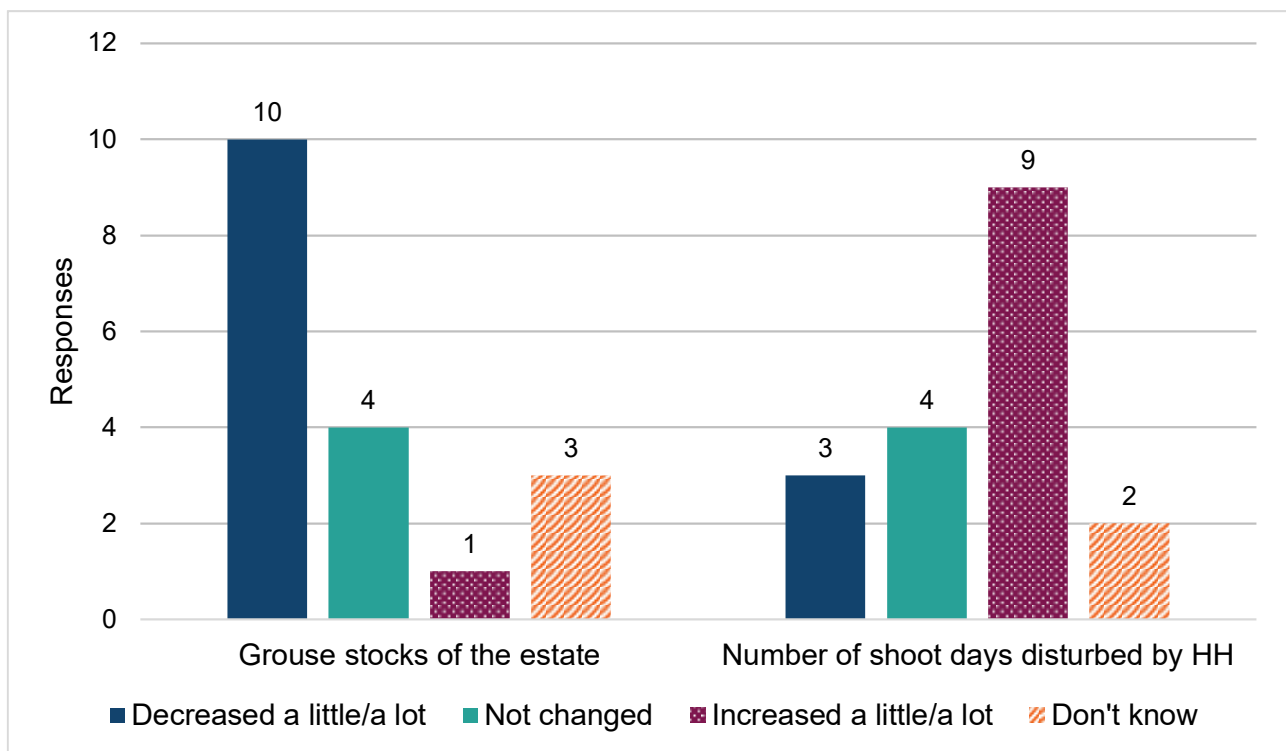
Base: (n=63)

Those who took part in the trial (n=18) were asked for their views on the impact of brood management on their estate's grouse stocks (see Figure 5-2). Ten responded that it had decreased the grouse stocks on their estate. This included those who had the birds released on the estate (5 out of 10), those who had the birds removed from the estate (3 out of 5) and those who had birds both removed and released (2 out of 2). One person said that the trial had increased the estate's grouse stocks and four that it had not changed grouse stocks.

Trial participants (n=18) were also asked whether their estate's participation had impacted the number of shoot days disturbed by hen harriers. Nine responded that it had increased the number of shoots disturbed, three that it had decreased this number and four that it had not changed.

Those whose estates had birds released as part of the trial tended to say that the trial had increased the number of shoot days disturbed (7 out of 10).

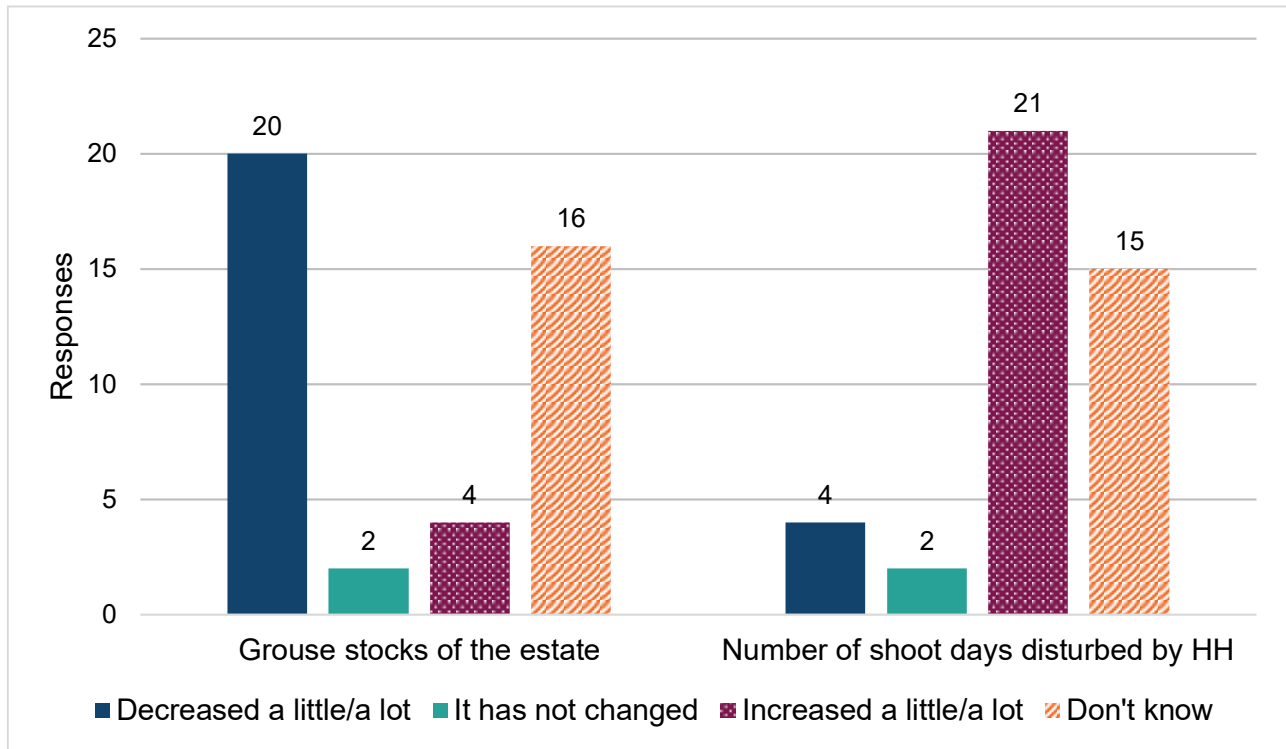
Figure 5-2. Responses to the questions “In your view, has brood management changed the grouse stocks of your estate?” and “In your view, has brood management changed the number of shoot days disturbed by hen harriers on your estate?” (asked of those who took part in BM trial)



Base: Respondents whose estates took part in brood management trial (n=18)

Respondents from estates which did not participate in the brood management trial were asked for their views on its perceived impact on participating estates (see Figure 5-3). Around half believed that grouse stocks had decreased as a result of the trial and that the number of shoot days disrupted by hen harriers had increased. Additionally, one in four indicated they were unsure.

Figure 5-3. Responses to the question “In your view, has brood management changed the grouse stocks of the estates that did take part in the trial?” and “In your view, has brood management changed the number of shoot days disturbed by hen harriers on estates that did take part in the trial?” (asked of those who did not take part in BM trial)



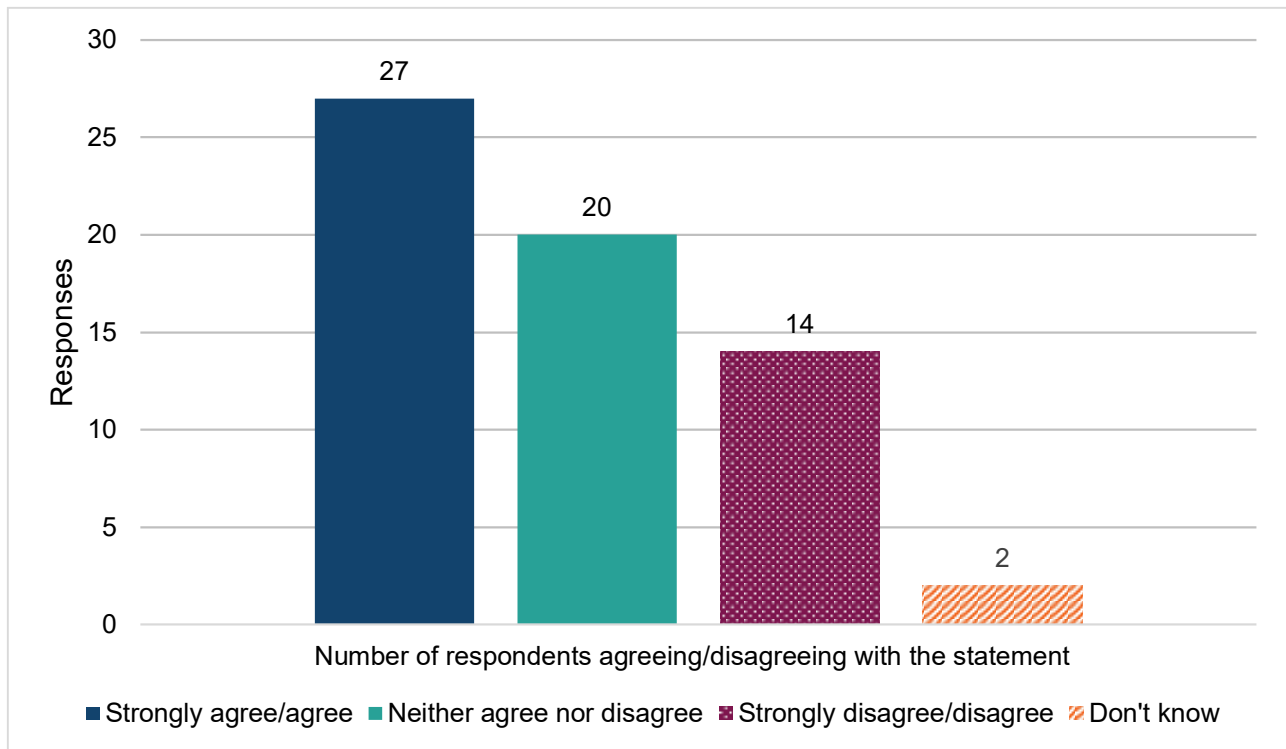
Base: Respondents whose estates did not take part in the trial (n=42)

Views on the effects of brood management on estates' approach to hen harriers

The survey included questions about brood management and its influence on respondents' attitudes towards hen harriers.

Respondents were asked whether brood management had made the grouse shooting community more positive toward hen harriers (see Figure 5-4). In this regard, opinions were divided, with 27 respondents agreeing and 34 either disagreeing or remaining neutral.

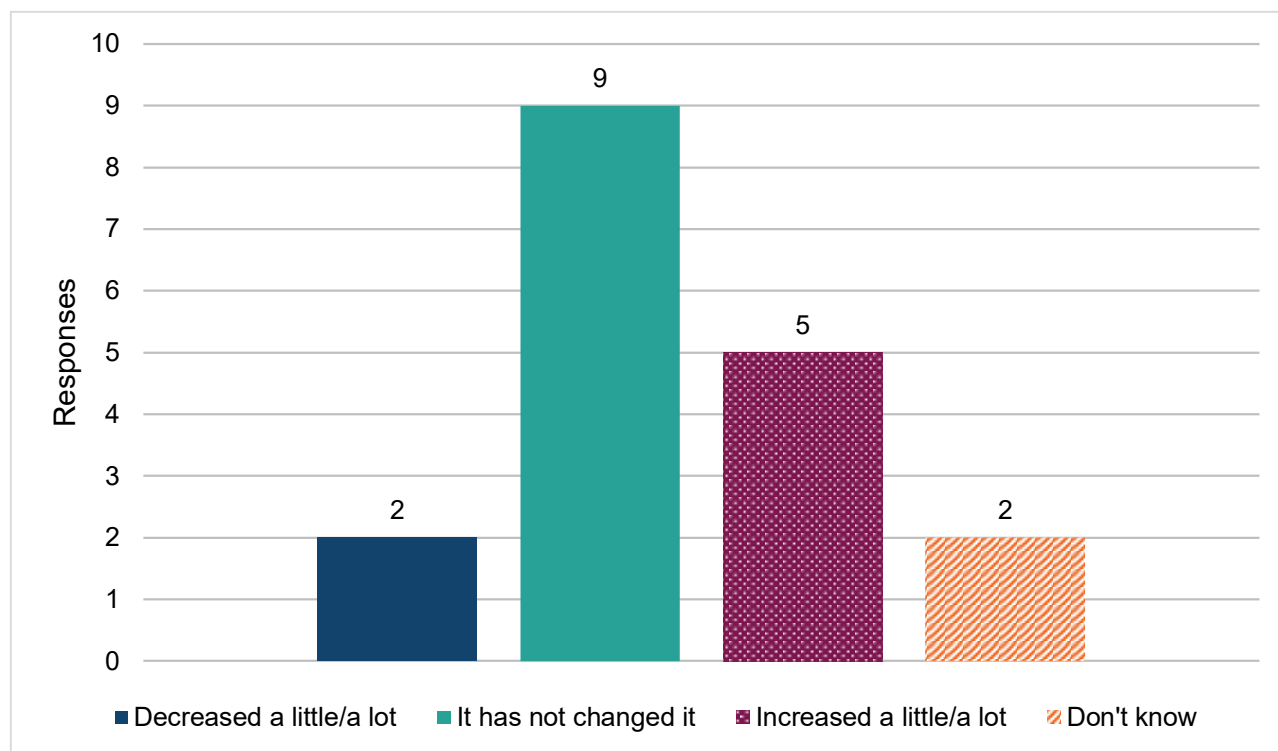
Figure 5-4. Level of agreement/disagreement with the statement “Brood management made the grouse shooting community feel more positive towards hen harriers”



Base: (n=63)

Respondents who took part in the trial (n=18) were asked whether brood management changed their willingness to co-exist with hen harriers (see Figure 5-5). Nine participants said their willingness had not changed, five that it had increased and two that it decreased as a result of the trial.

Figure 5-5. Responses to the question “In your view, has brood management changed your willingness to coexist with hen harriers?” (asked of those who took part in BM trial)

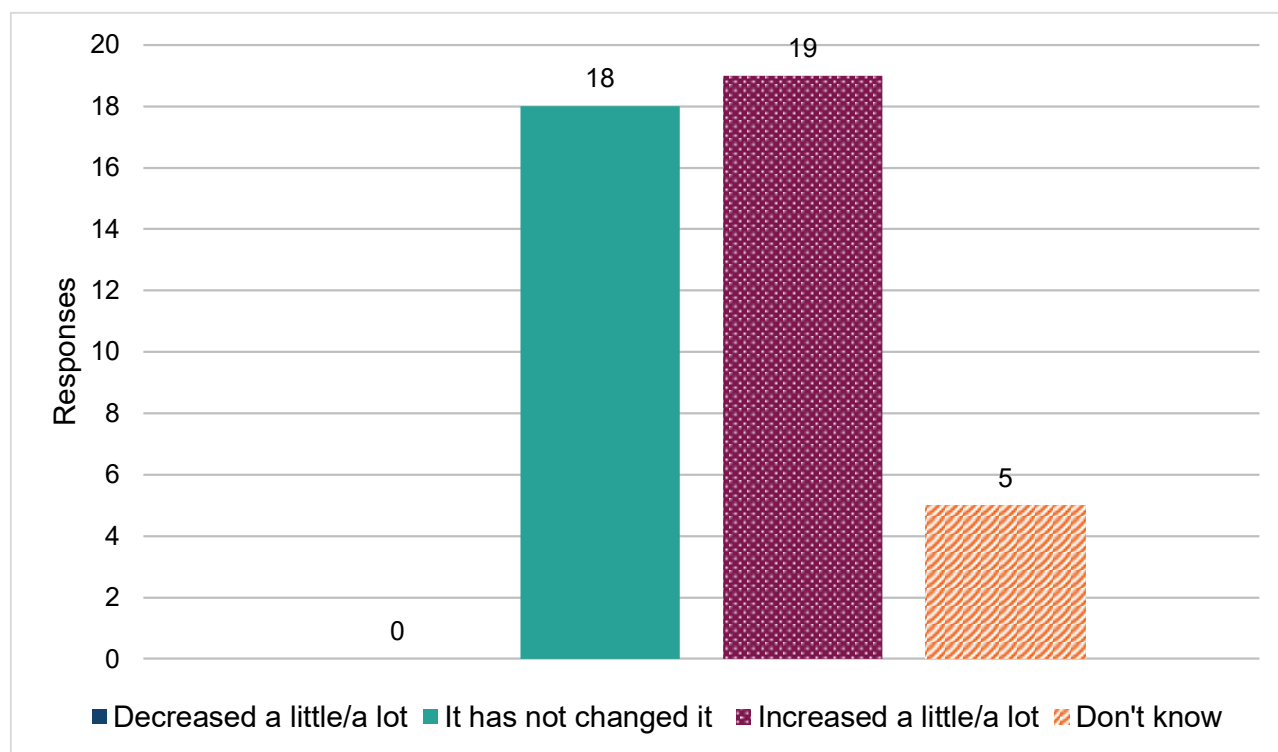


Base: Respondents whose estates took part in the trial (n=18)

Participants who did not take part in the trial were also asked whether the availability of brood management influenced their willingness to co-exist with hen harriers (see Figure 5-6). Nineteen reported an increased willingness as a result of the trial, while 18 indicated that it had not impacted their views.

Few respondents in gamekeeper roles who did not take part in the trial reported an increase in willingness to co-exist with hen harriers (2 out of 12 compared to 17 out of 30 of those in other roles). Similarly, only one in four (5 out of 22) out of those who said grouse shooting is the main type of business on their estate, and did not take part in the trial, reported an increased willingness to co-exist.

Figure 5-6. Responses to the question “In your view, has knowing that brood management is available changed your willingness to coexist with hen harriers?” (asked of those who did not take part in BM trial)



Base: Respondents whose estates did not take part in the trial (n=42)

Views on management of the brood management trial and future viability

Respondents were asked their views on how the brood management trial has been managed (see Figure 5-7). The majority (38 out of 63) felt that public bodies had been overly involved in estate activities because of the trial. About a third (20 out of 63) remained neutral, while only three respondents disagreed.

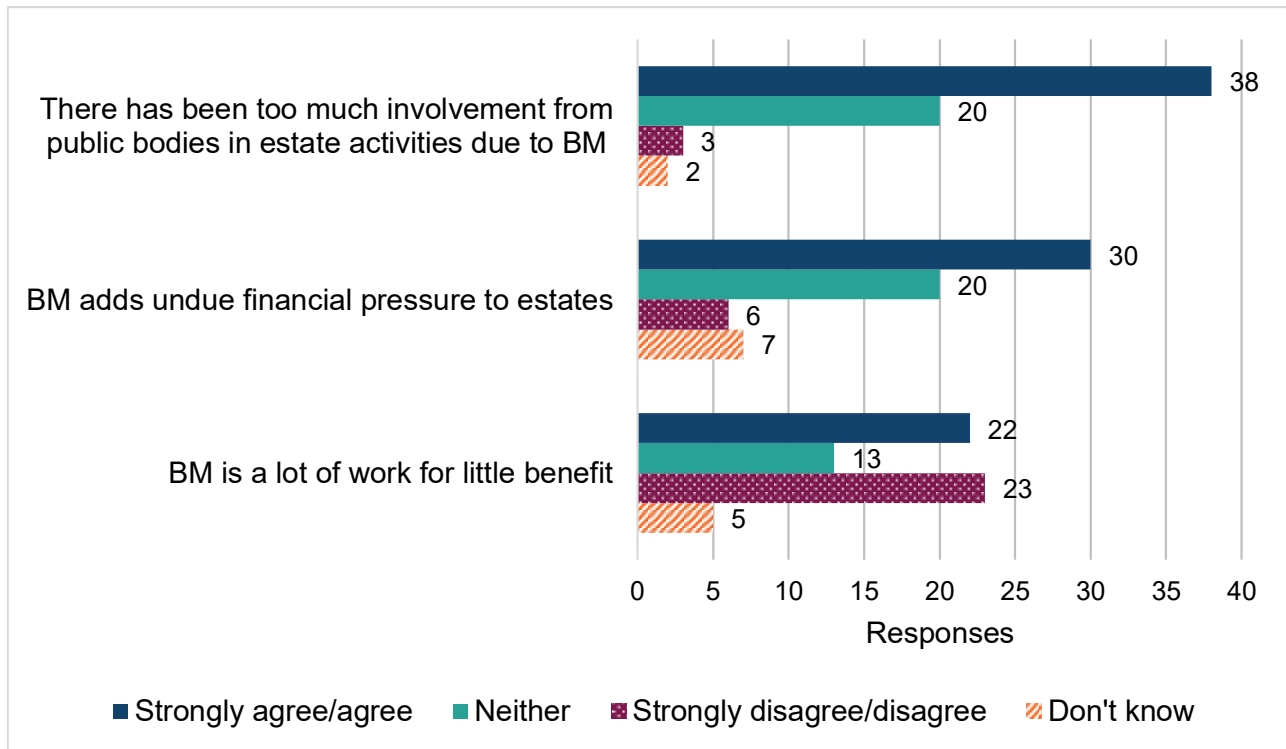
Around half (30 out of 63) thought that brood management adds undue financial pressure on the estates. Twenty said they neither agreed nor disagreed and six disagreed.

Respondents were split on whether brood management is a lot of work for little benefit. A third (22 out of 63) agreed with the statement, but a nearly equal number (23) disagreed.

Respondents who scored low in terms of their hen harrier appreciation were more likely to agree with all three statements. For instance, nearly all (14 out of 17) agreed that there has been excessive involvement from public bodies in estate activities due to brood management. Moreover, over half of the gamekeepers (11 out of 20) agreed that brood management involves a lot of work for little benefit, compared to only about a quarter of

those in other roles (11 out of 43). There were no notable differences for these three questions between those who did and did not take part in the trial.

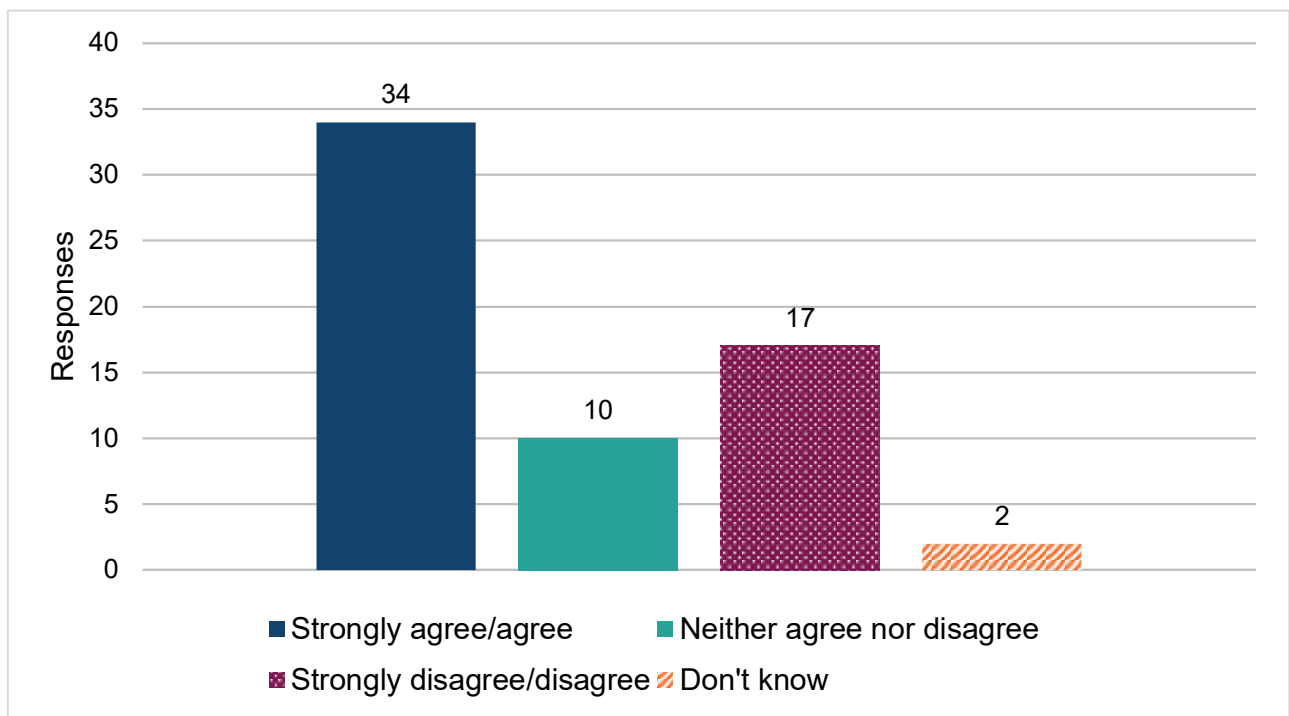
Figure 5-7. Level of agreement/disagreement with statements about the management, amount of time, and financial investment into brood management



Base: (n=63)

Respondents were asked their opinion on whether large-scale brood management across many grouse shooting estates would be impractical (see Figure 5-8). More than half (56 percent) of those expressing an opinion (34) agreed with this statement whereas 17 disagreed. Again, those who tended to agree included those with a low appreciation of hen harriers (13 out of 17) and those in gamekeeper roles (16 out of 20).

Figure 5-8: Level of agreement/disagreement with the statement “Large scale brood management across many grouse shooting estates would be impractical”



Base: (n=63)

Views on the effects of brood management measures on hen harriers

This chapter explores respondents' views on hen harrier population trends and possible mechanisms contributing to those trends. It considers questions about the potential causes of changes to numbers of nesting hen harriers and the overall hen harrier population. It also considers views on any trends and impacts of the illegal killing and disturbance of hen harriers.

Key findings

- Most respondents said that brood management led to an increase in the overall hen harrier population. When asked for the reasons for the increase, respondents gave two different broad explanations for how they believed this had come about. The first was that the act of brood management creates improved conditions for birds, including being raised in captivity away from environmental threats, reduced risk from predators, and being translocated into favourable grouse moor areas. The second was that the technique led to increased acceptance of hen harriers among the shooting community.
- Respondents were also asked for their views on which factors or mechanisms had led to an increase specifically in nesting hen harriers. The most frequently selected mechanism was the reduction in illegal killing and disturbance of nesting hen harriers on grouse moors, chosen by nearly half of the respondents (29 out of 63).
- Respondents were divided on the extent to which overall hen harrier numbers in England have been influenced by illegal killings and disturbances in the last 5 to 10 years. Twenty-five out of 63 answered 'quite a lot/a little' whereas 26 answered 'not very much/not at all'.
- Most of those who agreed that the number of hen harriers was influenced by illegal killing said that the number of illegal killings has decreased in the last five years. The most commonly selected reasons for this were the shooting community's improved attitude towards hen harriers (21 of 39) and the shooting community feeling more confident grouse will not be affected as a result of the brood management trial (15 of 39), and as a result of diversionary feeding. Other factors selected included increased awareness of surveillance of tagged birds (11 of 39), and to a lesser extent the presence of staff carrying out monitoring (5 of 39).

Factors that led to an increase in nesting hen harriers on grouse moors

Respondents were provided with information that the number of nesting hen harriers in England increased considerably following the launch of the Hen Harrier Action Plan in 2016 (three nesting attempts in 2016, up to 54 attempts in 2023). They were then asked to select all factors they believed played a role in that increase, from a defined list (see Table 6.1).

The most frequently selected factor was the reduction in illegal killing and disturbance of nesting hen harriers on grouse moors, chosen by nearly half of the respondents (29 out of 63). This was followed by the explanations of an increase in hen harriers arriving to breed from non-grouse-moor areas (24 respondents) and the impact of environmental conditions (20 respondents).

Those aged 50 and over tended to select reduced illegal killing as a factor affecting numbers of nests (23 out of 35 respondents). At the same time, only a few of those aged under 50 selected this answer (5 out of 26). There was also a difference by participation in the trial. Only four out of 18 respondents who participated in the trial picked this reason, whereas 24 out of 42 who did not participate in the trial selected reduced illegal killing and disturbance of hen harriers as a factor.

Table 6.1. Views on which factors led to an increase in nesting hen harriers on grouse moors

Potential factors	Number of times response selected
Reduced illegal killing and disturbance of nesting hen harriers on grouse moors	29
More Hen Harriers have arrived on grouse moors to breed from non-grouse moor areas	24
Environmental conditions (for example weather, prey abundance) have become more favourable for hen harriers	20
Changes in grouse moor management (unrelated to hen harriers) have made the landscape more favourable to hen harriers (please specify)	9
Another reason – (please specify)	8
Don't know	7

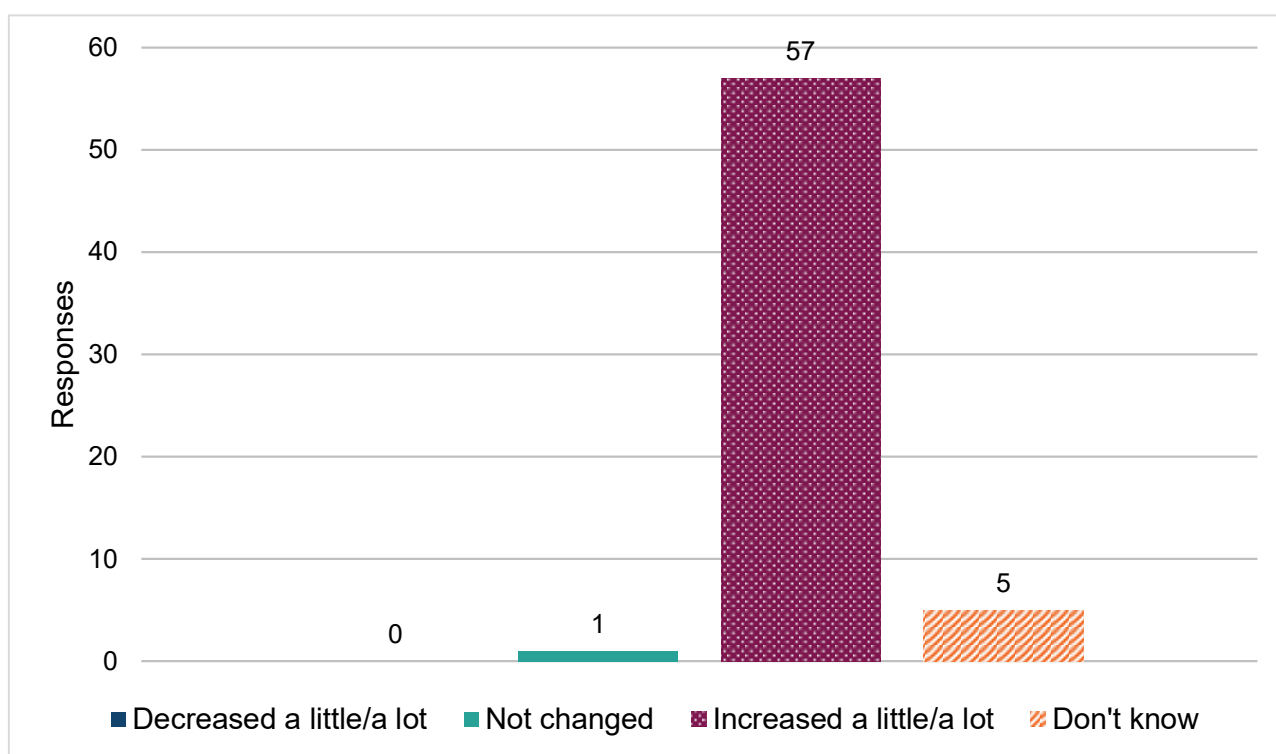
Potential factors	Number of times response selected
None of these	4
Total number of responses	101
Total number of respondents	63

Eight respondents mentioned other reasons for this increase. They provided short open-text answers for their views. Among their answers were the following:

- Brood management scheme and resulting better tolerance of hen harriers.
- Withdrawal of harmful chemicals.
- A change in numbers due to natural causes such as food supply and weather.

Respondents were also asked whether the brood management trial specifically led to an increase in overall hen harrier populations on the grouse moors (see Figure 6-1). Most respondents (57) believed that brood management led to an increase and only one respondent said it had not changed.

Figure 6-1. Views on whether brood management led to an increase in the overall hen harrier population



Base: (n=63)

Respondents who believed that the brood management trial led to an increase in the hen harrier population were asked to explain their views through open text responses. Their responses were analysed thematically and grouped into two main themes, discussed below.

Brood management creates conditions for more successful breeding and fledging

Respondents expressed the opinion that brood management creates improved conditions for birds to breed, fledge and survive. These improved conditions included: being raised in captivity away from environmental threats, less risk from predators and having a good food supply. This mechanism is elsewhere known as 'head starting', indicating that the increase in numbers fledged caused by captive rearing (and being released into favourable areas) is directly benefiting their numbers.

Brood management leads to increased acceptance of hen harriers among the shooting community and confidence that their impacts on grouse can be managed

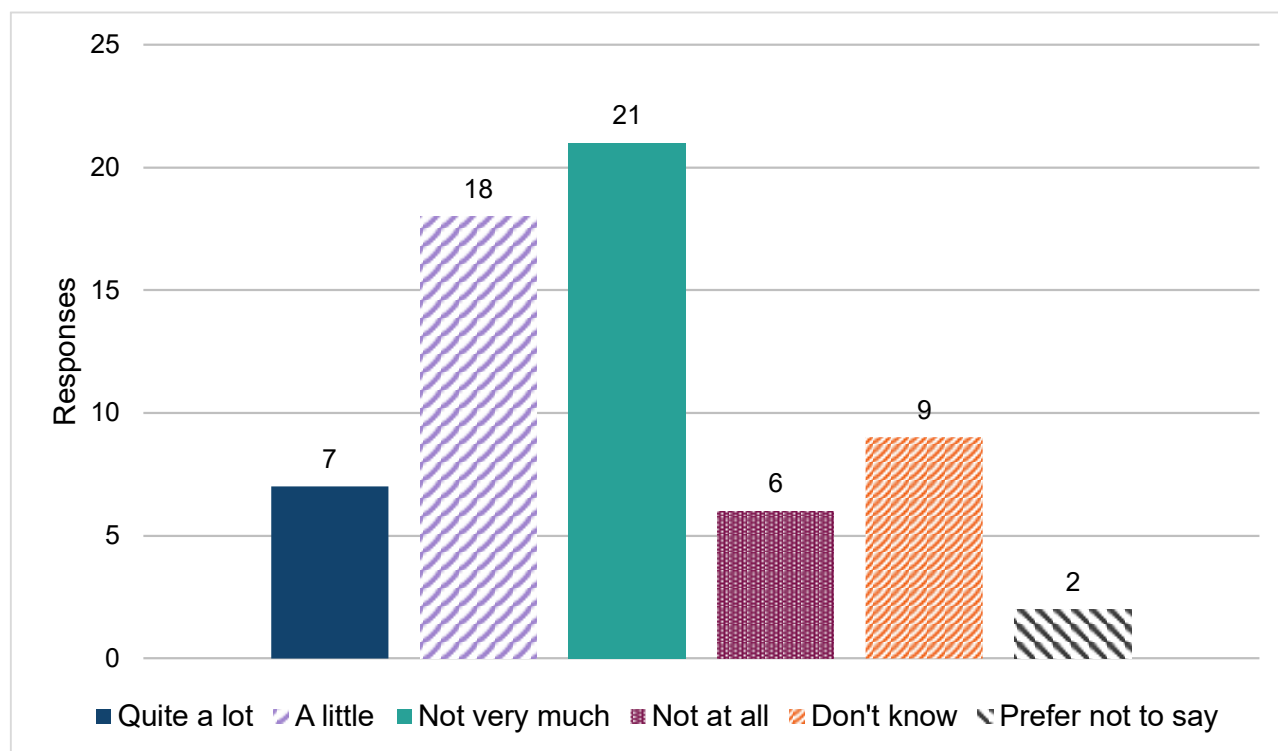
Respondents said that brood management led to an increased understanding of hen harriers and greater tolerance towards them. Some responses implied that the trial gave keepers more confidence that hen harrier numbers will not become unsustainable and showed a way to manage populations of harriers while minimising the impacts on the estates. Respondents also mentioned improved population control because of brood management.

Few responses mentioned directly that brood management had improved hen harrier numbers via reduced persecution. Some mentioned reduced human-wildlife conflict and the level of disturbance of hen harriers.

Impact of illegal killings on hen harriers

Respondents were asked their opinions about the extent to which hen harrier numbers in England have been influenced by illegal killings and disturbances in the last 5 to 10 years (see Figure 6-2). To this question, 25 respondents answered, 'quite a lot/a little', a further 21 answered 'not very much' and six 'not at all'. Nine respondents answered "don't know." This question relates to the stage in the trial Theory of Change that hen harrier numbers are affected by illegal killing.

Figure 6-2. Extent to which hen harrier numbers had been influenced by illegal killings and disturbance in the last 5 to 10 years



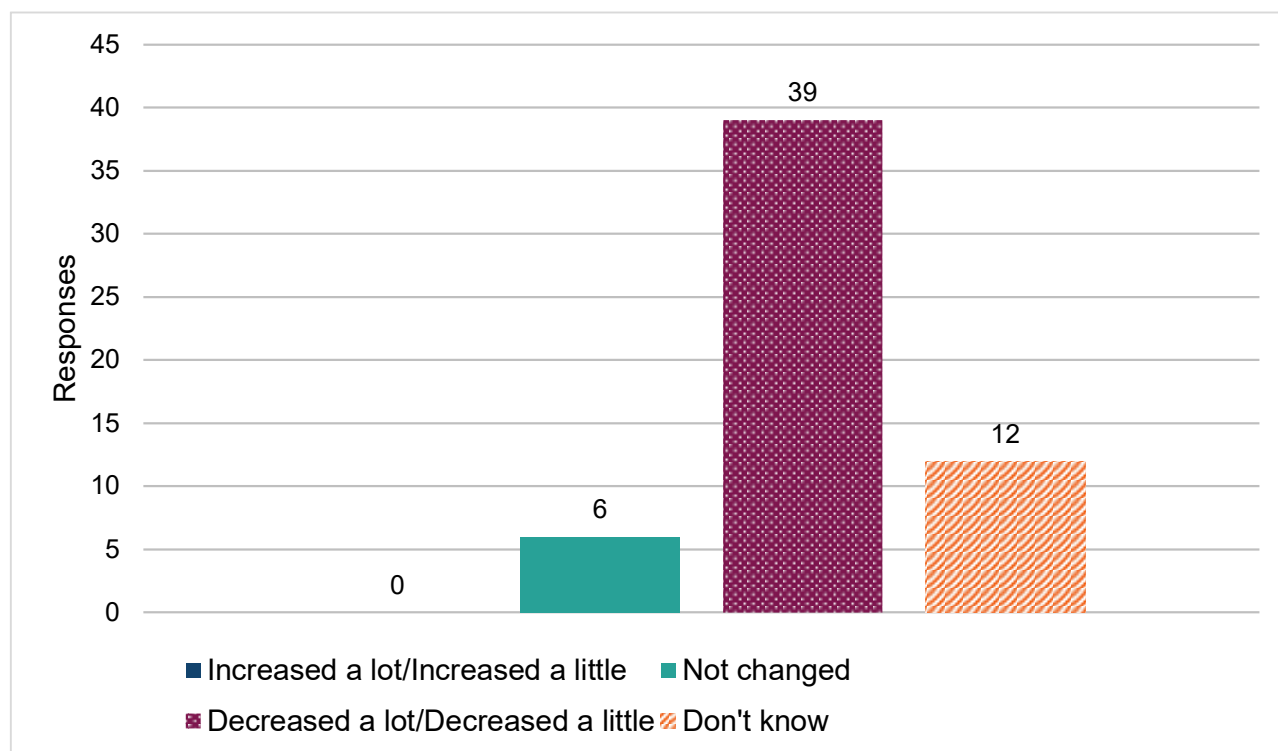
Base: (n=63)

Respondents who answered 'not at all' to the above-mentioned question were asked to name factors which in their view, influenced the hen harrier numbers. These factors were:

- Due to the success of brood management
- Better monitoring
- Relocating birds to areas where numbers are lower
- Habitat improvements
- Input from charitable organisations
- Better grouse management

All those who indicated that the harrier numbers were influenced by illegal killings and disturbance were asked whether the number of illegal killings had changed in the last five years (see Figure 6-3). This question reflected another step in the Theory of Change, that illegal killings had altered. Most respondents said illegal killings had decreased (39 out of 57), either a lot (29) or a little (10). A further six said it had not changed and none of the respondents said that the number of illegal killings or disturbances had increased.

Figure 6-3. Views on whether the number of illegal killings of hen harriers has changed in the last five years



Base: All those who indicated that hen harrier numbers were influenced by illegal killings (n=57) Those who answered 'not at all' in previous question (Figure 6-2) routed away from this question.

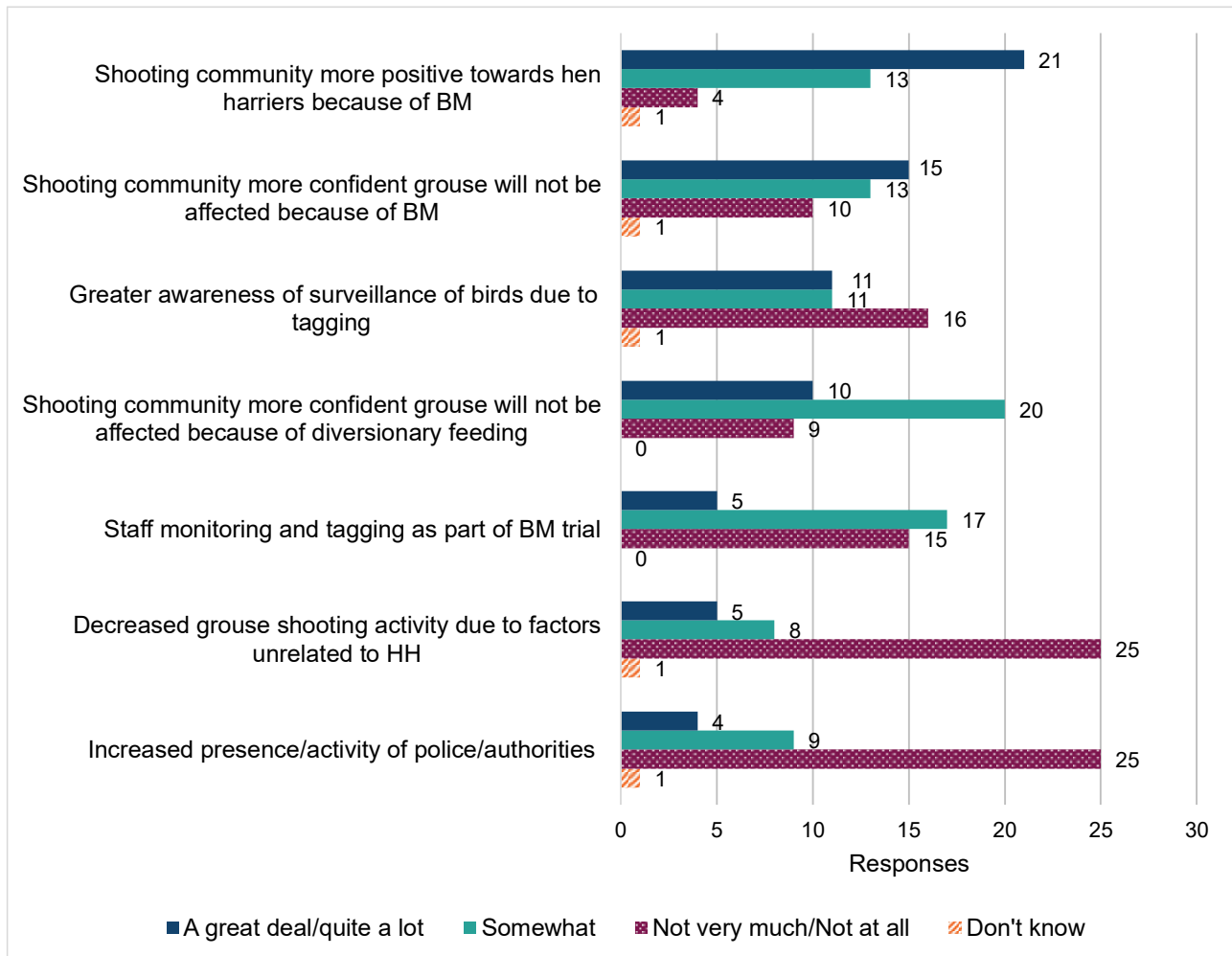
Respondents of the opinion that illegal killings had decreased were asked to assess various potential factors or mechanisms contributing to this reduction (see Figure 6-4). Of the 39 respondents, the majority (30) selected at least one of the suggested factors as contributing to this reduction "a great deal" or "quite a lot". Twenty-one attributed the decline primarily to the shooting community's improved attitude towards hen harriers and 15 to the shooting community feeling more confident grouse will not be affected as a result of the brood management trial. The belief that diversionary feeding played a role was apparent, with 10 feeling this affected illegal killing a great deal or quite a lot, and a further 20 thinking it played some role (as indicated by choosing somewhat). Other measures which in respondents' views influenced this decrease included increased awareness of surveillance of tagged birds, and to a lesser extent the presence of staff carrying out monitoring.

Most respondents (25 out of 39) responded 'not very much/not at all' to the following factors influencing the decrease in illegal killings – "increased presence of the police and other authorities", and "decreased shooting activity for reasons unrelated to hen harriers (e.g. poor grouse years, changes of leases)".

Of the 15 respondents who attributed the decline in illegal killing "a great deal" or "quite a lot" to "Shooting community being more confident grouse will not be affected by hen

harriers, because of brood management”, six had expressed views earlier in the survey that brood management had led to decreased grouse stocks on shooting estates (including three who had taken part in the trial, and three who had not).

Figure 6-4. The extent to which these potential factors influenced the decrease in illegal killings of hen harriers



Base: Respondents who believed that the number of illegal killings and disturbance of hen harriers has decreased in the last five years (n=39)

Respondents stated what other factors in their view led to a decrease in illegal killings and disturbance of hen harriers. The key factors mentioned were:

- Enlightened managers.
- A recognition that grouse shooting and hen harriers need to co-exist.
- Acceptance within the community that such actions are unacceptable/ internal industry peer pressure to behave.
- Brood management scheme and increased confidence that the impacts of hen harriers will be managed.
- Tighter laws in Scotland.
- A tool to limit grouse shooting.

Analysis of opinions about the impact of illegal killings against the factors believed to alter numbers of illegal killings, revealed the following patterns. Those who thought that illegal killings had reduced and played a role in increased nesting numbers (see Table 6.1) tended to select two main factors as the reason for the decrease in killings:

- “Shooting community being more confident grouse will not be affected by hen harriers, because of brood management” – this was selected by 13 of the 29 people who stated that illegal killing has influenced hen harrier numbers, compared to two out of 13 of those who did not select reduction in illegal killings as a factor that led to an increase in hen harrier numbers.
- “Shooting community feeling more positive towards hen harriers because of brood management.” – this was selected by 17 of the 29 people who stated that illegal killing has influenced hen harrier numbers, compared to four out of 13 of those who did not select reduction in illegal killings as a factor that led to an increase in hen harrier numbers.

Conclusions

The survey aimed to inform the evaluation of whether brood management of hen harriers influenced behaviours and attitudes within the grouse shooting community, easing the conservation conflict that underpins the illegal killing of hen harriers.

Due to the limited sample size, the findings of this research are unlikely to fully represent the views of the broader population involved in managing grouse moors for shooting. Therefore, the results should be approached with caution and considered as indicative rather than definitive. As the survey focuses on the views of those actively involved in grouse moor management alone, it did not capture the wider community opinions and any other possible influencing routes to the keepers/agents.

The majority of respondents (57 of 63) stated that they believed the trial to be an effective tool to increase the hen harrier population. In free-text responses, two different broad explanations were given for how respondents believed brood management had contributed to the increase in hen harriers. The first was that the act of brood management creates improved conditions for birds, including being raised in captivity away from environmental threats (a conservation technique often known as 'head starting'), reduced risk from predators, and being translocated into favourable grouse moor areas. The second was that the technique led to increased acceptance of hen harriers among the shooting community.

Respondents who participated in the trial were primarily motivated to take part to support the conservation aims of increased harrier numbers, plus the need to reduce conflict between hen harriers and the grouse shooting community, while also aiming to ensure the future of grouse shooting by effectively managing the impact of hen harriers on grouse populations.

Most respondents reported negative impacts of brood management on the shooting operations of estates, namely disruption of shoot days and decrease of grouse stocks, whether they took part in the trial or not. For example, only three of the 18 trial participants thought disturbance to shooting days had decreased. However, the majority agreed that brood management helped to demonstrate the estate was working to support grouse shooting as a sport and that it showed the estate's commitment to wildlife conservation. These responses suggest that the motivation to take part might be linked to messaging around participation in the trial rather than any direct benefits to estates' business.

The survey findings indicate that brood management has been seen by respondents as a positive step to enable the hen harrier population to coexist with local interests, but that there might be limitations to what they are willing to accept in terms of further increases of the hen harrier population and further rollout of the intervention. Although half of respondents who participated in the trial (9/18) said they would like to participate in a trial in the future, only 13 out of 42 of the respondents whose estates did not participate in the trial said they would have liked to have participated if they had been given the chance.

The fact that most respondents indicated a belief that there is too much involvement from public bodies in the running of the trial and that around half of respondents viewed it as adding undue financial pressure on estates, suggests that further engagement with the grouse shooting community is necessary. Particularly, on how the intervention is run and in identifying any potential changes to it, should it be used in future.

The survey showed a division within the respondents: just under half said that hen harrier numbers have been influenced by illegal killings over the last 10 years and that the observed increase in hen harrier nests was due to a reduction in illegal killings.

The majority of those who agreed that illegal killings had influenced hen harrier numbers said that the number of killings have decreased in the last five years. The key reason respondents indicated for this decrease in killing was 'the grouse shooting community feeling more positive towards hen harriers', and a reasonably strong belief in the role of diversionary feeding, but there was also a view that interventions such as increased surveillance due to tagging of birds have partly influenced levels. Respondents also supported the view that illegal killings have decreased because the community feels confident that brood management can reduce the impacts of hen harriers on grouse stocks. However, this is contradicted by the fact that almost all respondents said that taking part in the brood management trial had negatively impacted the grouse stocks of participating estates, and the view that brood management conferred undue financial pressure to participating estates.

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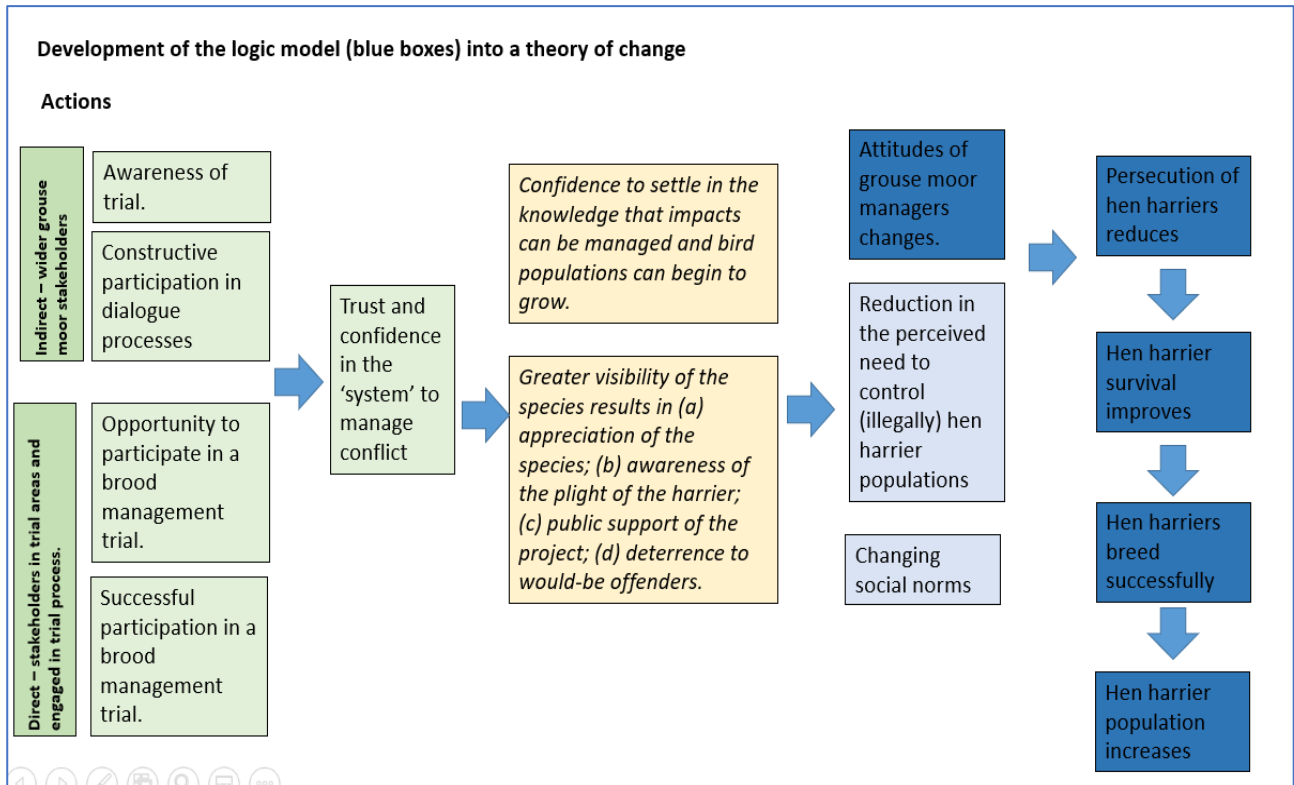
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Appendix A:

Theory of change of the brood management trial



Source: Hen Harrier Brood Management Trial (HHBMT) midpoint social science evaluation NERR160. (Natural England, 2026)

Appendix B

Survey questionnaire

Section A

ASK ALL

A1. We would like to ask you about your involvement in managing moorland for grouse shooting.

Are you actively involved in managing moorland for grouse shooting in any of the following roles? Please tick all that apply.

Response option	Role in managing moorland for grouse shooting
1	Agent
2	Gamekeeper
3	Owner
4	Manager
5	Other (please specify)
6	Not involved in managing land for grouse shooting

IF NOT INVOLVED IN MANAGING MOORLAND (A1=6)

Question A2.

This survey is intended to be completed by those who are involved in managing moorland for grouse shooting. If you are not involved in this capacity, we would like to thank you for your interest in taking part in this study.

If you would like to share your views on the hen harrier brood management trial, you can contact '[email address now closed]

IF INVOLVED IN MANAGING MOORLAND (A1 =1,2,3,4,5)

Question A3

Please indicate which, if any, of these organisations you are a member of or are affiliated with. Please select all that apply.

Response option	Organisation
1	British Association for Shooting and Conservation (BASC)
2	British Trust for Ornithology (BTO)
3	Countryside Alliance (CA)
4	Game and Wildlife Conservation Trust (GWCT)
5	Hawk and Owl Trust
6	Moorland Association
7	National Gamekeepers Organisation
8	Other (please specify)
9	None

IF INVOLVED IN MANAGING MOORLAND (A1 =1,2,3,4,5)

Question A4

How long have you been involved in managing moorland for grouse shooting?

Response option	Length of involvement
1	Less than a year
2	Between 1-2 years
3	Between 3-4 years
4	Between 6-10 years

5	Over ten years
6	Prefer not to say

Section B

ASK ALL.

Question B1

How many grouse shooting estates are you actively involved in managing in some way?

Response option	How many grouse shooting estates are you involved in?
1	One
2	Two
3	Three
4	Four
5	Five or more

ASK ALL.

Question B2

In the last five years, have hen harriers been seen on {IF B1=1 “the estate you are actively involved in managing” {IF B1>1 “any of the estates you are actively involved in managing”]}?

Response option	Response choices
1	Yes
2	No
3	Don't know

4	Prefer not to say
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IF SEEN A HEN HARRIER (B2 = 1)

Question B3

In the last five years, have hen harriers nested on {IF B1=1 “that estate” {IF B1>1 any of those estates”?

Response option	Response choices
1	Yes
2	No
3	Don't know
4	Prefer not to say

ASK ALL.

Question B4

In the last five years, has a hen harrier ever disrupted a grouse shoot day on {IF B1=1 “that estate {IF B1>1 “any of those estates”?

Response option	Response choices
1	Yes
2	No
3	Don't know
4	Prefer not to say

IF INVOLVED IN A SINGLE ESTATE (B1=1)

Question B5a

Has the estate you are involved with taken part in the brood management trial, i.e. have birds been brood managed or released on the estate?

Response option	Response choices
1	Yes
2	No
3	Don't know
4	Prefer not to say

IF INVOLVED IN MANAGING MORE THAN ONE ESTATE (B1>1)

Question B5b

Have any of the grouse shooting estates you are involved with taken part in the brood management trial, i.e. have birds been brood managed or released on any of them?

Response option	Response choices
1	Yes
2	No
3	Don't know
4	Prefer not to say

IF MORE THAN ONE ESTATE AND INVOLVED IN BM TRIAL (B5b=2,3,4)

Question B6a

We would now like you to answer the next few questions about your estate which is or was involved in brood management. If more than one of your estates is involved in the brood management trial, please answer about your main grouse shooting estate which means **the estate on which you do most of your grouse shooting-related work or business.**

IF MORE THAN ONE ESTATE AND NO BM TRIAL (B5b=1)

Question B6b

The next few questions focus on one estate. We would like you to answer the questions thinking about your main grouse shooting estate, which means **the estate on which you do most of your grouse shooting-related work or business.**}

ASK ALL

Question B7

What is the main type of grouse shooting that occurs on this estate?

Response option	Response choices
1	Over dogs
2	Walked up
3	Driven
4	Prefer not to say

ASK ALL.

Question B8

Please provide the approximate area of this estate

Response option	Approximate area of the estate
1	Less than 5,000 acres
2	5,000 – 9,999 acres
3	10,000 to 14,999 acres
4	15,000 to 19,999 acres

5	Larger than 20,000 acres
6	Don't know
7	Prefer not to say

ASK ALL.

Question B9

Is grouse shooting the main type of business on this estate?

Response option	Response choices
1	Yes
2	No
3	Don't know
4	Prefer not to say

ASK ALL.

Question B10

Who are most shooting days open to? Click all that apply.

Response option	Who are most shooting days open to? Click all that apply
1	Family and friends
2	Syndicate
3	Buyers
4	Other (please specify)
5	Prefer not to say

ASK ALL.

Question B11

What is the total number of keepers working on this estate, including part-time?

Response option	Total number of keepers working on this estate
1	1
2	2-3
3	4-5
4	More than 5
5	Don't know
6	Prefer not to say

ASK ALL.

Question B12

What is the type of ownership of this estate?

Response option	The type of ownership of this estate
1	Owned and managed by landowner (not leased)
2	Owned by an individual landowner/s, leased for grouse shooting.
3	Owned by an entity (such as a utility company or charity) and leased for grouse shooting
4	Other (please specify)
5	Don't know

6	Prefer not say
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ASK ALL.

Question B13

Thinking about the past five years, approximately how many grouse have been shot on average per year on this estate? (brace).

Response option	Approximate number (brace) of grouse shot on average per year on this estate
1	1 to 500
2	501 to 1000
3	1001 to 1500
4	1501 to 2000
5	2001 to 2500
6	2501 to 3000
7	Over 3000
8	Don't know
9	Prefer not to say

Section C

The next questions are about your awareness of the Hen Harrier Action Plan and any experiences of the brood management trial.

ASK ALL.

Question C1

Were you aware of the Hen Harrier Action Plan before today?

Response option	Response choices
1	Yes
2	No
3	Don't know
4	Prefer not to say

IF ESTATE NOT INVOLVED IN BM TRIAL or DON'T KNOW/PREFER NOT TO SAY AT B5 (B5A=2,3,4 OR B5B=1,5,6)

Question C2

In 2018, Natural England launched a trial of hen harrier brood management, as part of the Han Harrier Action Plan. The purpose of this trial was to understand if it is possible to rear hen harriers in captivity and then release them to become successful breeding adults in the English uplands. The trial also explores how this technique influences the perceptions and behaviours of the moorland community towards hen harriers.

Were you aware of the Hen Harrier Brood Management Trial before today?

Response option	Response choices
1	Yes
2	No
3	Don't know
4	Prefer not to say

IF ESTATE INVOLVED IN BM TRIAL (B5A=1 OR B5B=2,3,4)

Question C3.

You mentioned earlier that your estate has taken part in the brood management trial. Were the birds removed from or released on that estate, or was it both?

IF ESTATE INVOLVED IN BM TRIAL (B5A=1 OR B5B=2,3,4)

Question C4

In your view, why did your estate participate in the brood management trial? Please enter the reason(s) why below. (Free-text response).

IF ESTATE NOT INVOLVED IN BM TRIAL (B5A=2 OR B5B=1)

Question C5

In your view what were the reasons why your estate did not or could not participate in the brood management trial? Please enter the reason(s) below. (Free-text response).

IF ESTATE NOT INVOLVED IN BM TRIAL (B5A=2 OR B5B=1)

Question C6

Response option	Response choices
1	Yes
2	No
3	Don't know
4	Prefer not to say

IF WOULD HAVE LIKED TO TAKE PART IN BM TRIAL (C6=1)

Question C7

Please write below why you would have liked to take part in the trial. (Free-text response).

IF WOULD NOT HAVE LIKED TO TAKE PART IN BM TRIAL (C6=2)

Question C8

Please write below why you would not have liked to take part in the trial if you had an opportunity to do so. (Free-text response).

Section D

ASK ALL

Intro

We would now like to ask for your views on the effects of the brood management trial.

IF ESTATE TOOK PART IN BM TRIAL (B5A=1 OR B5B==2,3,4)

Question D1a.

You indicated earlier that your estate had taken part in the BM trial. In your view, has involvement in brood management changed the grouse stocks of your estate?

Response option	Response choices
1	Increased a lot
2	Increased a little
3	Decreased a little
4	Decreased a lot
5	It has not changed
6	Don't know

IF ESTATE DID NOT TAKE PART IN BM TRIAL (B5A=2 OR B5B=1)

Question D1b

You indicated earlier that your estate(s) had not taken part in the BM trial. In your view, has brood management changed the grouse stocks of the estates that did take part in the trial?

Response option	Response choices
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1	Increased a lot
2	Increased a little
3	Decreased a little
4	Decreased a lot
5	It has not changed
6	Don't know

IF ESTATE TOOK PART IN BM TRIAL (B5A=1 OR B5B=2,3,41)

Question D2a

In your view, has brood management changed the number of shoot days disturbed by hen harriers on your estate?

Response option	Response choices
1	Increased a lot
2	Increased a little
3	Decreased a little
4	Decreased a lot
5	It has not changed
6	Don't know

IF ESTATE DID NOT TAKE PART IN BM TRIAL (B5A=2 OR B5B=1)

Question D2b

In your view, has brood management changed the number of shoot days disturbed by hen harriers on the estates that did take part in the trial?

Response option	Response choices
1	Increased a lot
2	Increased a little
3	Decreased a little
4	Decreased a lot
5	It has not changed
6	Don't know

IF ESTATE TOOK PART IN BM TRIAL (B5A=1 OR B5B=2,3,4)

Question D3a

In your view, has brood management changed your willingness to coexist with hen harriers?

Response option	Response choices
1	Increased a lot
2	Increased a little
3	Decreased a little
4	Decreased a lot
5	It has not changed it
6	Don't know

IF ESTATE DID NOT TAKE PART IN BM TRIAL (B5A=2 OR B5B=1)

Question D3b

In your view, has knowing that brood management is available changed your willingness to coexist with hen harriers?

Response option	Response choices
1	Increased a lot
2	Increased a little
3	Decreased a little
4	Decreased a lot
5	It has not changed it
6	Don't know

ASK ALL.

Question D4

Please indicate the extent to which you agree or disagree with the following statements.

RANDOMISE STATEMENTS 1-8

Statement	Strongly disagree	Disagree	Neither agree or disagree	Agree	Strongly agree	Don't know
Brood management demonstrates the estate's commitment to wildlife conservation						
Brood management demonstrates that the estate can responsibly manage impacts of hen harriers.						
Brood management demonstrates that the						

estate is working to support grouse shooting as a sport.						
Brood management has made the grouse shooting community feel positive towards hen harriers.						
Brood management is a lot of work for little benefit.						
There has been too much involvement from public bodies in estate activities due to brood management.						
Large scale brood management across many grouse shooting estates would be impractical.						
Brood management adds undue financial pressure to estates.						

Section E

ASK ALL.

Question E1

The numbers of nesting hen harriers in England increased considerably following the launch of the Hen Harrier Action plan in 2016 (3 nesting attempts in 2016, up to 54 attempts in 2023). Many of these nesting attempts have been on land managed for grouse shooting.

Which, if any, of these factors in your view have led to an increase in nesting hen harriers on grouse moors? Please select all that apply. RANDOMISE ANSWERS 1-4

Response option	Response choices
1	More Hen Harriers have arrived on grouse moors to breed from non-grouse moor areas
2	Environmental conditions (for example weather, prey abundance) have become more favourable for hen harriers
3	Changes in grouse moor management (unrelated to hen harriers) have made the landscape more favourable to hen harriers (please specify)
4	Reduced illegal killing and disturbance of nesting hen harriers on grouse moors
5	Another reason– (please specify)
6	Don't know
7	None of these EXCLUSIVE CODE

IF ANSWERED NONE OF THESE AT E1=7)

Question E2

What, in your view, if anything, has led to an increase in hen harriers on grouse moors? (Free-text response).

Ask E3 to all.

Question E3

The previous question focused on nests. Separate to this, in your view, has the brood management trial specifically led to an increase in overall hen harrier populations on grouse moors?

Response option	Response choices
1	Increased a lot

2	Increased a little
3	Decreased a little
4	Decreased a lot
5	It has not changed
6	Don't know

IF view is BM has led to an increase in hen harriers on grouse moors (E3 = Response options 1, 2, 3)

Question E4a

Why, in your view, has brood management led to an increase in hen harriers on grouse moors? (Free-text response).

IF VIEW IS BM HAS NOT LED TO INCREASE IN HH ON GM (E3=4,5)

Question E4b

Why, in your view, has brood management not led to an increase in hen harriers on grouse moors? (Free-text response).

ASK ALL.

Question E4c

In your view, how much, if at all, have hen harrier numbers in England been influenced by illegal killings and disturbance? Please think about the last 5 to 10 years.

Response option	Response choices
1	Quite a lot
2	A little
3	Not very much

4	Not at all
5	Don't know
6	Prefer not to say

ASK ONLY THOSE THAT ANSWERED, "NOT AT ALL" (ASK IF RESPONSE TO QUESTION E4C=4).

Question E4d

What factors, in your view, have influenced hen harrier numbers in the last 5-10 years?
(Free-text response).

ASK ALL EXCEPT THOSE WHO ANSWERED "NOT AT ALL" AT E4C (ASK IF E4C NE 4)

Question E5

Some people say illegal killings and disturbance of hen harriers have decreased over the past five years. Others disagree. Do you think that illegal killings and disturbance of hen harriers have increased or decreased over the last five years, or has this not changed?

Response option	Response choices
1	Increased a lot
2	Increased a little
3	Decreased a little
4	Decreased a lot
5	It has not changed
6	Don't know

IF SAY IT DECREASED (E5= RESPONSE OPTIONS 3,4)

Question E6

In your view, to what extent, if at all, have the following factors helped decrease the illegal killings and disturbance of hen harriers? RANDOMISE STATEMENTS 1-7

Factors	A great deal	Quite a lot	Somewhat	Not very much	Not at all	Don't know
The presence of staff carrying out monitoring and tagging as part of the brood management trial						
Greater awareness of surveillance of birds due to increased numbers of tagged birds						
Shooting community being more confident grouse will not be affected by hen harriers, because of brood management						
Shooting community being more confident grouse will not be affected by hen harriers because of diversionary feeding						
Shooting community feeling more positive towards hen harriers because of brood management						
Decreased grouse shooting activity due to factors unrelated to hen harriers (e.g. poor grouse years, changes of leases)						
Increased presence or activity of the police and other authorities						

IF SAY ILLEGAL KILLINGS DECREASED (E5= 3,4)

Question E7

What other factors, if any, in your view, led to a decrease in illegal killings and disturbance of hen harriers? (Free-text response).

IF SAY ILLEGAL KILLINGS INCREASED (E5= 1,2)

Question E8

Why, in your view, have the number of illegal killings and disturbance of hen harriers increased over the past five years? (Free-text response).

IF SAY ILLEGAL KILLINGS NOT CHANGED (E5= 5)

Question E9

Why, in your view, have the number of illegal killings and disturbance of hen harriers not changed over the past five years? (Free-text response).

Section G

ASK ALL.

Question G1

Please indicate the extent to which you agree or disagree with the following statements.
RANDOMISE ORDER OF STATEMENTS 1-4

Statement	Strongly disagree	Disagree	Neither agree or disagree	Agree	Strongly agree	Don't know
It is acceptable to kill an individual animal, as long as its overall population is not at risk						
I enjoy watching wildlife when I'm in the countryside.						
The needs of people are always more important						

than any rights wildlife might have.						
Grouse shooting has negative ecological implications.						

ASK ALL.

Question G2

Please indicate the extent to which you agree or disagree with the following statements.

RANDOMISE ORDER OF STATEMENTS 1-4

Statement	Strongly disagree	Disagree	Neither agree or disagree	Agree	Strongly agree	Don't know
I think that hen harriers are magnificent birds of prey.						
The English uplands would be worse off if there were more hen harriers around.						
Because the hen harrier lives in other parts of the UK, there is no need to have it in the English uplands.						
Hen harriers are important to the upland ecosystem.						

Section H

IF ESTATE TOOK PART IN BM TRIAL (B5A=1 OR B5B=2,3,4)

Question H1

You mentioned that your estate took part in the brood management trial. Would you personally like to be involved in brood management in the future?

Response option	Response choices
1	Yes
2	No
3	Don't know
4	Prefer not to say

IF NOT INTERESTED TO BE INVOLVED IN BM TRIAL FURTHER (H1=2)

Question H2

Can you explain why not? What would you change about the trial? (Free-text response).

IF INTERESTED IN FUTURE INVOLVEMENT (H1= 1)

Question H3

Can you explain why you would like to take part in the future? Would you change anything about the trial? (Free-text response).

Section J

Finally, we'd kindly ask you to answer some questions about you. This will help us understand what types of people too part in the survey.

ASK ALL.

Question J1

In what region do you live?

Response option	Regional location
1	East of England
2	East Midlands
3	London
4	North-East
5	North-West
6	South-East
7	South-West
8	West Midlands
9	Yorkshire/Humberside
10	Northern Ireland
11	Scotland
12	Wales
13	Other (please specify)

ASK ALL.

Question J2

What is your age?

Response option	Response choices
1	18-29

2	30-49
3	50-59
4	60 plus
5	Prefer not to say

ASK ALL.

Question J3

Which gender do you identify with?

Response option	Response choices
1	Male
2	Female
3	Other
4	Prefer not to say

ASK ALL.

Question J4

What is your employment status?

Response option	Response choices
1	Working
2	Working part-time
3	Not Working
4	Retired

5	Permanently Sick/Disabled or Looking After Family/Home
6	Other (please specify)
7	Prefer not to say

ASK ALL.

Question J5

Are you dependent on your job for housing?

Response option	Response choices
1	Yes
2	No
3	Prefer not to say

Thank you.

Thank you for taking part in the survey. If you'd like to share any further views on the brood management trial not captured in the survey, please enter them here. (Free text response).

