
The Value of Shooting

**The economic,
environmental, and social
benefits of shooting sports
in the UK**

An independent survey report prepared by

PACEC

on behalf of

UK shooting and countryside organisations

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Executive Summary

Aims and objectives

Overall aims

“to assess the economic, environmental, and social contribution of shooting sports to the UK”

This report presents the main findings of the 2013/14 PACEC research into the economic, environmental and social contribution of shooting sports to the UK between August 2012 and July 2013. It updates and expands upon the PACEC study carried out in 2006. The current research was concentrated around a large scale email survey of shooting sports **participants**, and the people occupying key roles in organisations which provide shooting sports opportunities (we have termed this second group “**providers**”).

The research also featured a programme of case study research with shooting providers, suppliers, and organisations such as providers of hospitality who may benefit from local provision of shooting, as well as discussions with shooting stakeholders drawn from the partner organisations who contributed to the study.

The nature of shooting sports

What types of shooting sports are provided in the UK?

Among **live quarry** shooting providers, the shooting of **driven game** (57% of providers), and **avian pests (e.g. woodpigeon) / predators (e.g. corvids)** and **mammalian pests/predators** (50% and 36% respectively) are the most widespread (with pest and predator control usually offered alongside another form of shooting). Most providers of shooting sports offer more than one type of shooting. **Clay pigeon shooting** is a very common shooting discipline offered by 38% of providers. The research also covers **target shooting**, of which **small bore rifle** (24% of providers) and **full bore rifle** (23%) are the most common.

Who is responsible for providing these shooting sports opportunities?

There are an estimated **70,000** providers of shooting opportunities in the UK, incorporating all organisational types, from small informal shoots and syndicates to the large commercially-orientated clubs, ranges, shoots, and estates.

Where are the shooting opportunities provided?

For the most part, participants tend to shoot in the region in which they live, although it is common for shooters to travel for particular types of shooting (e.g. **red deer** or **grouse**). Shooting was most common in the South East (37% of participants shot there in 2012/13), and South West of England (28%), and in Scotland (21%).

On what scale do organisations or individuals provide shooting opportunities?

Returns from providers and participants suggest an estimated total of **1,700,000 shooting days** in the UK in 2012/13, attended by an average of 6 people each, giving rise to a total of **11,000,000 participant-days** or **Gun-Days**.

Who is participating in shooting sports in the UK?

The survey accounts for an estimated minimum 600,000 people in the UK who shoot live quarry, clay pigeons, or targets. This estimate excludes a large amount of activity outside the scope of the survey as it is undertaken by people who are not members of shooting and countryside organisations – for example, an independent estimate suggests that 1,600,000 individuals shoot live quarry with air rifles. The majority of survey respondents were male and over the age of 40, and half of them shot at least 20 days a year.

What types of shooting sports activity were they involved in during 2012/13?

Most participants took part in more than one type of shooting in 2012/13. Participants were most likely to be shooting **clay pigeons** (66% of participants), **driven game** (55%), or **avian pest species** (53%).

How many gamebirds and wildfowl were shot in 2012/13?

20,000,000 gamebirds and wildfowl were estimated to have been shot across the UK in 2012/13, including some 13,000,000 pheasant and 4,400,000 partridge.

How many other species were shot in 2012/13?

At least 1.1 million woodpigeons, 520,000 rabbits, 300,000 corvids and 184,000 deer were shot by participants in 2012/13 (excluding those shot as part of a job).

What is the destination of edible quarry shot in 2012/13?

On average, providers said that 62% of all edible quarry shot in 2012/13 was used by the shooting provider or taken home by participants for themselves or their friends. 35% was used as food elsewhere – for example, sold to a game dealer, a game processor, or a restaurant. Chiefly due to damage, some 3% either entered other food chains (e.g. canine) or was discarded as unfit for human consumption. In the shooting season, 27% of participants eat gamebirds weekly.

The economic benefits of shooting sports

What is the total number of jobs supported by shooting sports activities in the UK?

Shooting sports supports an estimated total of 74,000 paid **full-time equivalent** jobs in the UK. Shooting sports providers are responsible for providing 350,000 direct paid jobs in the UK. Most are seasonal and / or part time – their full time equivalent is 35,000 direct paid jobs. A total of 39,000 jobs are supported indirectly through purchases to suppliers by both individuals and firms, and as a result of spending wages and company profits.

What is the breakdown of jobs supported by shooting sports in the UK?

The breakdown of paid FTE jobs is:
 35,000 direct jobs
 39,000 indirect jobs

The breakdown of the 35,000 direct paid FTE jobs is:
 14,000 Beaters and Pickers Up
 21,000 others (including gamekeepers, shoot managers, administrators, accommodation staff, and all others)

The breakdown of the 39,000 indirect paid FTE jobs is:
 16,000 supplier jobs
 740 “downstream” jobs (such as sale of shot game to processors and dealers for their use)
 22,000 “rest of supply chain” jobs (chiefly in companies providing accommodation and food, costs associated with dogs, and travel),

What are providers typically spending in order to provide shooting sports opportunities?

The majority of providers surveyed (84%) each spent over £1,000 per annum, and 15% spent over £50,000 in 2012/13. In the UK in 2012/13, providers spent **£1.1 billion** on providing shooting sports, most of which was spent on operational costs (£630m) and staff costs (£370m).

What are participants typically spending on their sport per annum?

Shooting participants in the UK spent a total of **£2.5 billion** on goods and services in 2012/13, of which **£860 million** was spent directly with shooting providers or on site. The largest annual expenditure for participants was shoot subscriptions and per day shooting fees, totalling £370 million and £310 million respectively in 2012/13.

What amount of GVA is attributable to shooting sports in the UK? The value to the UK economy of the shooting sports providers and their suppliers, as measured by Gross Value Added, was £2 billion in 2012/13.

The environmental and social benefits of shooting sports

What area of the UK is managed for shooting sports? Shooting providers influence the management of **14 million ha** of land, around **two thirds** of the area of rural land in the UK.

Specific habitat and wildlife management for shooting is carried out on **1.8 million ha** of land in the UK. 46% of this work (by area) is general management of heather moorland, and 27% is coppicing or thinning woodland.

What is the cost of such habitat and wildlife management practices? Shooting providers in the UK spend an estimated **£230 million** per year on habitat and wildlife management practices specifically for shooting sports (related labour, operational and capital spend). **61%** (£140 million) of this expenditure is on labour.

How much labour is required to carry out these activities? A total of **3.9 million work days (16,000 FTEs)** are required each year to undertake all habitat and wildlife management on shooting sports sites in the UK. The main areas of labour are game wardening (4,700 FTEs), pest control (3,100 FTEs) and woodland maintenance (1,600 FTEs).

What are the views of participants on the benefits of shooting sports? In over 97% of cases, shooting participants agree or strongly agree that shooting contributes to their well being. 93% agree or strongly agree that that shooting sites are healthy and attractive. 87% agree or strongly agree that shooting contributes to the social fabric of the local area, and 81% agree or strongly agree that it contributes to local employment and skills.

What community benefits do shooting providers give? 6% of the providers in the survey said that they provided apprenticeships, and a further 28% said that they provided other formal or informal on-the-job training on site. 22% have links with training organisations. 16% have links with local educational establishments, or provide school visits.

1 Introduction

1.1 Aims and objectives

Overall aims

“to assess the economic, environmental, and social contribution of shooting sports to the UK”

This report presents the main findings of the 2013/14 PACEC research into the economic, environmental and social contribution of shooting sports to the UK between August 2012 and July 2013. It updates and expands upon the PACEC study carried out in 2006. The current research was concentrated around a large scale email survey of shooting sports **participants**, and the people occupying key roles in organisations which provide shooting sports opportunities (we have termed this second group “**providers**”).

The research also featured a programme of case study research with shooting providers, suppliers, and organisations such as providers of hospitality who may benefit from local provision of shooting, as well as discussions with shooting stakeholders drawn from the partner organisations who contributed to the study.

1.2 Research programme

Research methodology

The research programme has been as follows:

- 1 Identification of key economic, environmental and social impact issues
- 2 Preparation of conceptual framework for economic, environmental and social impact
- 3 Database assembly through survey research and collection of secondary data from official sources and stakeholder information
- 4 Impact assessment: input/output analysis of jobs supported and value added, and statistical analysis of survey research
- 5 Reporting

Following the first two stages of the programme, the decision was made to launch an online survey of participants and providers, in order to gain maximum coverage of shooting sports. The conceptual framework will be described in the section on economic impact (Chapter 3).

Questionnaire design

An online questionnaire was developed to examine the key issues for the research. This questionnaire was divided into two sections. At the beginning of the questionnaire, survey respondents were asked if they held a key role in an organisation providing shooting sports opportunities (such as a club, estate, syndicate, or shooting range), and if not, if they were a participant in shooting sports. Depending upon their answer, they were redirected to a survey investigating the activities of their provider organisation, or their own shooting sports participation. Providers were also given the opportunity to complete the participant survey.

Survey research and data collection

Each of these two branches of the main questionnaire incorporated a 'quick' section covering the key details of shooting sports participation and provision, followed by a 'detailed' section including more quantitative data on participation, details of provision, conservation and habitat management, and expenditure. The detailed section also includes a range of qualitative questions relating to the social benefits of shooting sports, such as opportunities for employment and training, improved viability of providers of accommodation and hospitality, and links with schools, charities, and community organisations.

We believe¹ that as a result of this approach we have the best possible compromise between a short survey which would be acceptable to the maximum number of potential respondents, and a longer survey providing greater depth of information.

The quick section of the survey of participants was completed by over 12,000 people, and that of the provider survey by almost 4,000.

The majority of the survey questionnaires were distributed online using the survey research provider "SurveyMonkey". Invitations to the online survey were distributed by shooting and countryside/conservation organisations to their members by email. Paper copies of the questionnaire were made available on request. Some 16,234 responses to the survey were received.

Case study research

A series of sixteen case studies with shooting sport providers, their suppliers, manufacturers and the gun trade, and associated organisations such as auctioneers was also carried out. The purpose of these was to gain qualitative insights into the benefits of shooting sports.

¹ Statistical analysis of the survey pilot conducted for the 2006 study coverage provided very strong evidence that when the questionnaire was split into a "quick" section and a "detailed" section the 'quick' section increased the overall response rate, and no evidence that it deterred people who would have completed a single long questionnaire from proceeding to the detailed section after completing the quick section.

Case study topics included:

- Direct employment: occupations and the quality of jobs
- Indirect employment: supply chain relationships and the dependence of suppliers upon shooting sports
- Skills and apprenticeships
- Conservation and land/habitat management
- Social benefits via improved leisure/hospitality opportunities and engagement with community organisations such as schools.

1.3 Acknowledgements

The study has benefited greatly from the co-operation of all of the partner organisations:

British Association for Shooting and Conservation Limited (“BASC”)
British Shooting Sports Council (“BSSC”)
CLA
Clay Pigeon Shooting Association (“CPSA”)
Countryside Alliance (“CA”)
Game Farmers’ Association (“GFA”)
Gun Trade Association (“GTA”)
GunsOnPegs
Moorland Association (“MA”)
National Gamekeepers’ Organisation (“NGO”)
National Rifle Association of Great Britain and Northern Ireland (“NRA”)
National Small-Bore Rifle Association (“NSRA”)
Scottish Country Sports Tourism Group (“SCSTG”)
Scottish Enterprise (“SE”)
Scottish Land & Estates (“SL&E”) incorporating the
Scottish Moorland Group (“SMG”)
Scottish Natural Heritage (“SNH”)

We are also grateful to the following organisations for providing data and distributing online survey invitations:

Association of Professional Shooting Instructors
United Kingdom Practical Shooting Association

1.4 Data presentation and analysis

In this report data collected from the survey are analysed and presented in two main forms. Firstly the report includes “unadjusted” data derived directly from questionnaire responses (shown in lighter/blue shading). Secondly the report includes data based on the survey research but “grossed up” to reflect the total population of providers, participants and suppliers (shown in darker/orange shading).

Grossing up of survey results

The grossing up of survey based evidence was challenging because the total population of providers and participants is unknown, and estimating the size of each of these inter-connected populations was a major part of the study.

Estimates of key statistics for the total population of providers and participants were produced using the known total population of each contact list, taking the following into account:

- Higher non-response rate of those not involved, and of those with smaller involvement
- Membership of more than one partner organisation
- Provider organisations, returning a single questionnaire, which may be run by many people who all participate in shooting.

The grossed up results² also utilised information from fully completed questionnaires to infer missing data on a case by case basis in partially completed questionnaires (particularly where only the ‘quick’ section had been filled in).

² Grossed up statistics are shown in orange (darker shaded) tables in the report, whereas the unadjusted results from the survey are shown in blue (lighter shaded) tables. When reading unadjusted results from the provider survey it should be noted that they are biased towards larger providers, and providers of driven game shooting.

Due to the complex nature of the grossing up technique it has not been possible to give margins of error of these grossed up estimates, but they are likely to be at least 10%. All estimates, therefore, are rounded to two significant figures. For this reason, some of the disaggregated and exact numbers shown may not sum to the rounded totals. This is normal practice for this type of research. As with any survey research, the margin of error will be higher on estimates of sub-groups of the population of participants or providers.

Further details of the complex methodology used are given in Appendix A.

1.5 Report structure

The report breaks down into four chapters and a set of appendices. Following this introductory chapter, Chapter 2 analyses the nature of shooting sports and looks specifically at the trends of providers and participants. Chapter 3 analyses the economic impact of shooting in terms of the number of direct and indirect jobs generated by shooting activities in the UK. Chapter 4 is an account of the land management and environmental activities associated with shooting and the broader social benefits of shooting. Key statistics are presented by UK country and region at the end of chapters 2, 3 and 4. For the project methodology and glossary of terms, please see Appendices A and B respectively. For case studies, please see Appendix C. For results of consultations with stakeholders, please see Appendix D.

2 The nature of shooting sports

2.1 Introduction to shooting sports

The purpose of this chapter is to examine the nature of shooting sports in the UK in the twelve-month period August 2012 to July 2013. This period was chosen so that it began at the same time as the 2012 game shooting season, but included a full year's activity so as to include types of shooting which take place all year round. The chapter is broken down into three main sections:

- The provision of shooting opportunities
- Participation in shooting
- The numbers and usage of gamebirds, wildfowl, deer, pests (e.g., woodpigeons, rabbits), predator species (e.g., corvids, foxes) and hares.

The focus of this study is on all **live quarry shooting**³, **clay pigeon shooting**, and **target shooting**. These different forms of shooting have a long history in European and Western culture.

Live quarry shooting is not limited to gamebirds and wildfowl. It also includes the shooting of pest species shot for crop protection (such as woodpigeon and rabbit), and predator species shot for game and wildlife management (such as foxes, weasels, stoats, and corvids).

The shooting opportunities currently available are wide-ranging, covering a number of **quarry species**⁴, styles of shooting and areas of the UK. In order to present a representative picture of shooting in the UK, data were collected from a full range of **shooting providers**⁵, incorporating all organisational types, from the small syndicate-run to the large commercially-orientated.

³ **Live quarry shooting sports:** *The shooting of birds and mammals for recreation, pest, or predator control.*

⁴ **Quarry species:** *A legally shootable bird/animal which has an open season. Bird species commonly regarded as pests, e.g. woodpigeon, are shootable for crop protection / other reasons under **general licences**.*

For the purposes of the survey research, any company or organisation which provides shooting sports (such as a shooting club or range, an estate, or a syndicate) is a “provider”, and anyone holding a key role in such an organisation is eligible for the survey of providers, including those collecting firearms. Key roles include the manager, secretary, or treasurer of a shooting club or range, a shoot captain, gamekeeper, stalker, farmer or estate manager, or a landowner or leaseholder.

While the use of shooting- and countryside-related membership organisations provided access to a large number of shooting providers and participants, it is important to recognise that shooting provision includes the activities that take place through informal arrangements, such as on a farmer’s small-holding. It is important to recognise that although the shooting and countryside related organisations allowed access to a large number of members, not all shooters/providers are members of one or more of these organisations. In order to counter this, an “open access” version of the web survey (as opposed to one that required a specific invitation) was created. This was promoted via social media, and survey participants via invitations from partner organisations were also encouraged to forward the open access survey link to their friends and colleagues.

⁵ **Shooting providers:** *An organisation/business (with employees and/or members) or individual who performs services (either paid or voluntary) which give rise to opportunities for shooting sports.*

2.2 Provision of shooting sports opportunities

This section, which looks at shooting providers, seeks to answer the following questions:

- What types of shooting are provided in the UK?
- Who is responsible for providing these opportunities? (including the total number of shooting providers in the UK)
- On what basis do organisations or individuals provide shooting?
- On what scale do organisations or individuals provide shooting? (including the total number of **shooting days**⁶ and the average participation per day⁷ provided in the UK)

It should be noted that all responses are based on respondents' reports and perceptions.

What types of shooting sports are provided in the UK?

Most providers of live quarry shooting sports provide more than one type, with **driven game**⁸ being the most frequent form of live quarry shooting. Informal types of shooting, such as **walked up game**⁹ and **pest control**¹⁰, are often provided alongside more formal types of shooting (e.g. driven game). However, very few providers offer *solely* pest control shooting.

⁶ **Shooting days:** A "Shooting Day" is a record of the time spent on and around the site, including all the social aspects, for shooting sports. Some or all of a morning is half a day. Some or all of an afternoon/evening is half a day. Most formal live quarry shoots would therefore count in units of full days. Much wildfowling, informal shooting (including pest control), clay pigeon and target shooting would be counted in units of half days.

⁷ **Gun-Days:** In live quarry shooting, a participant is colloquially known as a "Gun", and a measure of activity is the **Gun-Day**, which is equal to the number of shooting days multiplied by the average number of Guns per day. We have used an equivalent measure for clay and target shooting but have assumed half-day participation for all members.

⁸ **Driven Game:** Form of shooting in which gamebirds are flushed over standing **Guns** (shooting participants).

⁹ **Walked Up Game:** Form of shooting in which the shooter flushes gamebirds as he/she walks over the shooting ground.

¹⁰ **Pest control:** The control of pest species using a gun in the context of shooting sports activities, including woodpigeon shooting.

Aside from shooting live quarry, **clay pigeon shooting** is the most frequently-provided form of shooting sport. The survey also covered **target shooting**, of which **small bore rifle** and **full bore rifle** shooting were the most common. It is common for a target shooting provider to offer multiple types of shooting at a single site.

The low number of coastal wildfowling providers reflects the nature of wildfowling provision. **Coastal wildfowling**¹¹ is typically carried out through clubs, which may cover large areas of foreshore. The shooting provider in these cases is taken to be the club manager or secretary.

¹¹ **Coastal Wildfowling:** *The shooting of ducks, geese and waders on coastal land affected by tides.*

72% of providers offer a variety of live quarry shooting. The most common forms are driven game (57% across grouse and other game) and pest/predator control. 38% offer clay pigeon shooting.

Only a small proportion of providers offer red deer stalking, grouse shooting, or coastal wildfowling.

A small proportion (6%) are involved in collecting firearms (including antiques).

Table 1: Type of shooting sports available through providers (% of providers)

	% of providers by country within UK				
	Total	Eng	Wales	Scot	NI
Avian pests (e.g., woodpigeons) / predators (e.g., corvids)	50	51	53	46	56
Mammalian pests (e.g., rabbits) / predators (e.g., foxes)	36	36	40	39	47
Driven grouse	7	6	3	14	0
Walked-up grouse	7	5	5	24	5
Other driven game (including duck)	55	55	51	53	44
Other walked-up game (including duck)	30	27	35	46	40
Coastal wildfowling	6	5	9	6	7
Inland duck (e.g. flight ponds / marshes) and goose shooting	26	24	31	38	33
Deer stalking (red deer)	10	7	6	36	7
Deer stalking (other deer species)	31	28	13	59	12
Wild boar	2	2	3	1	0
Air gun shooting of live quarry	10	10	12	5	16
Any live quarry shooting above	72	71	73	83	70
Clay pigeon shooting	38	39	39	34	26
Target shooting: air gun	20	21	27	13	19
Target shooting: black powder	13	14	11	7	9
Target shooting: small bore rifle	24	25	26	16	35
Target shooting: full bore rifle	23	25	21	15	33
Any target shooting	34	35	39	26	42
Collecting firearms (including antiques)	6	6	6	3	2
None of the above	1	1	1	0	0
<i>Number of respondents</i>	3,843	3,219	144	437	43

See Appendix B1 for notes on bold figures, multiple rows and rounding
Source: PACEC Survey of Providers 2014

Collection of firearms not for shooting sports use

6% of providers and 7% of participants were involved in the collection of firearms (not for sporting use). Among the participants, average annual expenditure was £1,470.

Among the providers, 6% stated that they offered opportunities to collect firearms (including antiques) which were not for shooting sports use. Furthermore, 7% of the respondents to the participant survey stated that in 2012/13 they had taken part in this type of collection. When asked later on in the detailed questionnaire to quantify their average annual expenditure over the past 5-10 years, 32% said it was between £250 and £1000, and 28% said that it was between £1000 and £2500. The average expenditure among those who gave an estimate was £1,470.

Table 2: Average annual expenditure on collection of firearms (£)

	% of respondents
0-100	3
100-250	12
250-1000	32
1000-2500	28
2500-10000	18
10000-25000	5
Over 25,000	2
<i>Number of respondents</i>	<i>577</i>

Source: PACEC Survey of Providers 2014

What are the characteristics of outdoor shooting sites?

The most common forms of land across the shooting sites were arable land, permanent grass or pasture, and woodland. Across all providers with outdoor shooting sites, the average share of the site which was arable land was 29%, and the average share of the site which was permanent grass or pasture was 28%. Woodland occupied an average of 22% of the area of the shooting sites.

Outdoor shooting sites are typically made up of arable land, permanent grass or pasture, and woodland.

Table 3: Average breakdown of site area (%)

	Average % of site area
Cover crops	5
Arable land	29
Permanent grass/pasture	28
Woodland	22
Open water	1
Inland wetlands	1
Heather moorland	9
Non-heather upland	3
Intertidal land	2
<i>Number of respondents</i>	<i>1,110</i>

Source: PACEC Survey of Providers 2014

Those providers operating outdoor shooting sites were asked if their site or property covered more than one farm or estate; 40% responded that they did. Among these 40%, most (72%) operated 2, 3, or 4 farms or estates, but 3% of responses covered more than 10 farms or estates.

40% of providers provide shooting activities over more than one farm or estate.

Table 4: Number of farms/estates represented by providers (% of those with more than one farm/estate)

	% of providers whose responses represent more than one farm/estate
2	34
3	26
4	12
5	8
6	2
7	3
8	2
9	1
10	2
More than 10	3
<i>Number of respondents</i>	<i>637</i>

Source: PACEC Survey of Providers 2014

What are the characteristics of shooting ranges?

A total of 27% of respondents to the provider survey said that their site was (or included) a rifle or pistol shooting range. Among these, 64% included an indoor range, and 72% included an outdoor range (36% provided both).

5 out of 6 rifle ranges surveyed provide rimfire rifle shooting.

Table 5: Types of firearms available at shooting ranges (% of providers)

	% of providers
Airgun	66
Rimfire rifle	86
Centrefire rifle	68
Muzzle-loader	50
<i>Number of respondents</i>	<i>1,050</i>

Source: PACEC Survey of Providers 2014

Among the rifle ranges surveyed, 44% were privately owned. 10% were owned by a council, and 17% by the Ministry of Defence. The majority of the remainder were owned by clubs and/or their members.

Who is responsible for providing shooting sports opportunities?

It is estimated that there are a total of at least 70,000 providers of shooting sports opportunities in the UK, of which 47,000 offer live quarry shooting. Providers of avian and mammalian pest control are the most numerous. They are offered by 41,000 and 29,000 providers respectively, and are typically offered as part of site management alongside other types of live quarry shooting, of which driven game (23,000 providers) and walked up game (21,000) are the most common. There are understandably fewer grouse providers, given the habitat and wildlife management requirements of such provision.

Clay pigeon shooting is offered by 24,000 providers and is the most common form of shooting other than live quarry shooting.

It is estimated that there are at least 70,000 providers of shooting sports in the UK. Excluding pest control, clay pigeon, driven game, and walked-up game are the most common.

Table 6: Estimated number of shooting sports providers in the UK

	Total
Driven, predominantly game (including duck)	23,000
Walked-up, predominantly game (including duck)	21,000
Coastal wildfowling (duck / goose / wader shooting on foreshore)	4,000
Inland duck (e.g. flight ponds / marshes) and goose shooting	16,000
Deer stalking (red deer)	4,600
Deer stalking (other deer species)	14,000
Air gun shooting of live quarry	7,100
Avian pests (e.g., woodpigeons) / predators (e.g., corvids)	41,000
Mammalian pests (e.g., rabbits) / predators (e.g., foxes)	29,000
Any live quarry above	47,000
Clay pigeon	24,000
Target shooting: air gun	5,100
Target shooting: black powder	2,400
Target shooting: small bore rifle	5,400
Target shooting: full bore rifle	5,300
Total clay/target	29,000
Total Providers	70,000

Source: PACEC (Respondents can belong to multiple categories – the total figure takes account of this. See Appendix B1 for notes on rounding, multiple rows)

In 80% of cases, shooting sports had taken place on the site for 20 years or more, and 45% of providers said that shooting sports had taken place on the site for 50 years or more – possibly with a different organisation.

Almost half the sites had supported shooting for over 50 years.

Table 7: For how long have shooting sports taken place on this site? (%)

	% of providers
<5 years	5
5-19 years	15
20-49 years	34
50+ years	45
<i>Number of respondents</i>	622

Source: PACEC Survey of Providers 2014

Although the shooting *sites* had typically supported shooting for a long time, the shooting sports sector involves shooting *organisations* of all ages. The presence of shooting providers with operations under 5 years old as well as a number of older, established operations suggests that the sport supports new businesses, and the formation of new shooting arrangements such as syndicates, as well as retaining those which are mature. The syndicate is a popular way to provide shooting, as there are advantages from cost-sharing.

The sport supports businesses of all ages – 13% are less than 5 years old, though the site shot over may have supported shooting for longer.

Table 8: How old is the current shooting sports operation? (%)

	% of providers
<5 years	13
5-19 years	25
20-49 years	34
50+ years	28
<i>Number of respondents</i>	595

Source: PACEC Survey of Providers 2014

32% of providers said that their shooting-related income had been rising over the past 5 years, while 61% said it had stayed roughly the same. The largest providers – those spending £10,000 or more on providing shooting over the year – were most likely to say that their shooting-related income was rising.

The shooting income for 32% of providers had risen over the past five years.

Table 9: Change in shooting-related income over the past 5 years

	Total	% of providers (By amount spent on providing shooting)				
		£0-99	£100-999	£1k-9k	£10k-49k	£50k or more
Been rising	32	35	17	28	39	43
Stayed roughly the same	61	57	78	64	55	49
Been falling	7	9	6	7	7	8
<i>Number of respondents</i>	1,111	23	138	460	314	160

Source: PACEC Survey of Providers 2014

Among those providers who had observed an increase in shooting-related income over the past 5 years (32% of the total), a little over half had seen their income grow either by 11-20% (27% of providers with increased income) or 21-50% (another 27%). 3% had seen their income more than double over the past 5 years.

Table 10: Percentage increase in income (among those providers reporting an increase) (%)

% increase in income	% of providers reporting increased income over 5 years
1-5%	14
6-10%	19
11-20%	27
21-50%	27
51-100%	9
Over 100%	3
<i>Number of respondents</i>	330

Source: PACEC Survey of Providers 2014

Among those providers who stated that their shooting-related income had fallen over the past 5 years (7% of the total), 43% had recorded a fall of between 6% and 20%, and 41% had recorded a fall in income of between 21% and 50%. 5% had seen their income disappear entirely over the past 5 years.

Table 11: Percentage decrease in income (among those providers reporting an decrease) (%)

% decrease in income	% of providers reporting decreased income over 5 years
1-5%	8
6-10%	23
11-20%	20
21-50%	41
51-99%	3
100%	5
<i>Number of respondents</i>	66

Source: PACEC Survey of Providers 2014

On average, providers said that 82% of their income came from their local UK region.

On average, providers said that 82% of their income came from people in their local UK region. The share from the rest of the UK was 15%, with 2.3% coming from the rest of the EU and just 0.7% coming from the rest of the world.

59% of providers said all their income came from the local region

Table 12: Share of income coming from people in local UK region (%)

% of income from local region	% of providers
All income	59
91-99%	12
75-90%	7
50-74%	9
26-50%	3
11-25%	4
0-10%	6
<i>Number of respondents</i>	646

Source: PACEC Survey of Providers 2014

On average, providers said that 84% of their staff lived within 10 miles.

On average, providers said that 84% of their staff lived locally (i.e. within 10 miles). 14% lived elsewhere in the region, and 2% lived elsewhere in the UK.

64% of providers said all their staff lived within 10 miles.

Table 13: Percentage of staff living locally (within 10 miles) by provider of farms/estates represented by providers (% of those with more than one farm/estate)

% of staff living locally	% of providers
100%	64
90-99%	9
75-90%	7
50-75%	7
1-50%	7
0%	6
<i>Number of respondents</i>	760

Source: PACEC Survey of Providers 2014

The shooting providers were asked if their activities had been affected by restrictions on gun owners, gun ownership laws/certification, and/or increased police pressures. A quarter (26%) of providers stated that they had. The most-commonly cited single regulation was the 1997 handgun/pistol ban – shooting clubs said that their membership levels had been seriously negatively affected by this legislation, although in many cases it was now beginning to recover. Shooting providers also cited increased police call-outs by the public (especially in response to night shooting), increase requirements for documentation, and the potential for delays in licensing and renewals.

26% of shooting providers said shooting on their site had been affected by gun ownership laws and restrictions, and/or increased police pressures.

Table 14: Providers with shooting affected by restrictions on gun owners and gun ownership laws/certification, and/or increased police pressures (%)

	Percentages of all respondents (By amount spent on providing shooting)					
	Total	£0-99	£100-999	£1k-9k	£10k-49k	£50k or more
Yes	26	27	18	29	27	19
No	61	64	64	56	63	68
Don't know	14	9	18	14	11	13
<i>Number of respondents</i>	<i>960</i>	<i>22</i>	<i>120</i>	<i>403</i>	<i>267</i>	<i>135</i>

Source: PACEC Survey of Providers 2014

On what basis do organisations or individuals provide shooting?

In cases where shooting was run as a business, providers were asked how shooting sports were financed. Around two thirds said that shooting sport on the site was self-financing and roughly broke even. The largest organisations (spending £50k or more a year) said they broke even in some 42% of cases; they were the most likely to say that shooting was loss-making but financed through other activities on the estate, or in some other way.

Shooting is profitable for providers in around a sixth of cases (16%), regardless of the size of the organisation. 62% said it roughly breaks even.

Table 15: How are shooting sports on this site mainly financed? (%)

	% of providers (By amount spent on providing shooting)					
	Total	£0-99	£100-999	£1k-9k	£10k-49k	£50k or more
Shooting is self-financing and profitable	16	14	14	15	17	16
Shooting is self-financing and roughly breaks even	62	43	64	70	62	42
Shooting is loss-making but is financed through other activities on the estate	7	7	7	3	9	13
Shooting is loss-making and is financed some other way	15	36	15	12	13	29
<i>Number of respondents</i>	<i>762</i>	<i>14</i>	<i>91</i>	<i>325</i>	<i>215</i>	<i>110</i>

Source: PACEC Survey of Providers 2014

A fifth (21%) of providers saw themselves to be in competition with other providers. 55% said they collaborated with other providers.

Table 16: Do you see yourself to be in competition or collaboration with other providers of shooting opportunities? (%)

	% of providers
Competition	21
Collaboration	55
<i>Number of respondents</i>	620

Source: PACEC Survey of Providers 2014

On what scale do organisations or individuals provide shooting opportunities?

The number of **shooting days** provided by shooting providers per annum is used to assess the scale of their operations. The following table details the number of days reported by shooting providers.

On average each shooting provider provided 24 days of shooting opportunities in 2012/13, resulting in 1.7 million Shooting days.

Table 17: Estimated number of shooting sports days in the UK

	Providers	Average days Shooting Days per provider	
Driven, predominantly game (including duck)	23,000	5	120,000
Walked-up, predominantly game (including duck)	21,000	5	100,000
Coastal wildfowling (duck / goose / wader shooting on foreshore)	4,000	7	28,000
Inland duck (e.g. flight ponds / marshes) and goose shooting	16,000	2	38,000
Deer stalking (red deer)	4,600	9	40,000
Deer stalking (other deer species)	14,000	5	68,000
Air gun shooting of live quarry	7,100	2	17,000
Avian pests (e.g., woodpigeons) / predators (e.g., corvids)	41,000	7	270,000
Mammalian pests (e.g., rabbits) / predators (e.g., foxes)	29,000	5	130,000
Total live quarry	47,000	17	820,000
Clay pigeon	24,000	13	320,000
Target shooting: air gun	5,100	55	280,000
Target shooting: black powder	2,400	16	38,000
Target shooting: small bore rifle	5,400	31	160,000
Target shooting: full bore rifle	5,300	13	68,000
Total clay/target	29,000	30	870,000
Total	70,000	24	1,700,000

Source: PACEC (Respondents can belong to multiple categories – the total figure takes account of this. See Appendix B1 for notes on rounding, multiple rows)

The scale of shooting provision can be assessed by multiplying the number of shooting days by the average number of participants per shooting day. In live quarry shooting, this unit is known as a “Gun-Day” – that is, one participant or “Gun”¹² shooting for a full day. The following table details the number of Gun-Days reported by live quarry shooting providers, and the equivalent numbers for clay pigeon and target shooting are also given.

Driven shooting days commonly have more participants per day than walked-up days, so the total number of annual “Gun-Days” is higher for driven game than walked-up game.

	Shooting days	Average number of participants per shooting day	“Gun-Days” (participants x shooting days)
Driven, predominantly game (including duck)	120,000	13	1,600,000
Walked-up, predominantly game (including duck)	100,000	7	680,000
Coastal wildfowling	28,000	4	100,000
Inland duck and goose shooting	38,000	4	160,000
Deer stalking (red deer)	40,000	2	100,000
Deer stalking (other deer species)	68,000	2	110,000
Air gun shooting of live quarry	17,000	3	60,000
Avian pests (e.g., woodpigeons) / predators (e.g., corvids)	270,000	2	510,000
Mammalian pests (e.g., rabbits) / predators (e.g., foxes)	130,000	2	240,000
Total live quarry	820,000	4	3,600,000
Clay pigeon	320,000	12	3,900,000
Target shooting: air gun	280,000	5	1,400,000
Target shooting: black powder	38,000	4	150,000
Target shooting: small bore rifle	160,000	8	1,300,000
Target shooting: full bore rifle	68,000	9	600,000
Total clay/target	870,000	9	7,400,000
Total	1,700,000	6	11,000,000

Source: PACEC (Respondents can belong to multiple categories – the total figure takes account of this. See Appendix B1 for notes on rounding, multiple rows)

¹² **Gun:** A shooter of any type of quarry (not just game - a wider definition than in colloquial use)

The table above gives average participation per shooting day. The number of participants per shooting day, and days offered per year, vary greatly within each shooting discipline, particularly for clay pigeon shooting where opportunities are provided by registered clay ranges with high availabilities and capacities and also by live quarry shooting providers who have the equipment necessary to lay on a limited number of days per year, at low average participation, in addition to their other activities.

Certain shooting disciplines attract non-shooting participants (spectators not directly involved in the shooting). These are people accompanying others and are additional to any **beaters**¹³ and **pickers up**¹⁴ organised by the gamekeeper. Providers reported that the average driven shooting day attracted 10 such spectators (in addition to the 13 shooting participants, as set out in the table above), and the average walked-up shooting day had 4 spectators. Other live quarry types (e.g. deer stalking, pest/predator control, inland/coastal wildfowling) typically had no spectators. A clay shooting day attracted 8 spectators on average, and target shooting disciplines attracted an average of 2 spectators per shooting day).

¹³ **Beater:** *Person who flushes wild game.*

¹⁴ **Picker Up:** *Person who retrieves shot game with the aid of gundogs.*

The survey and the case studies showed that volunteers participate, primarily from the local area, in the shooting activity. Please see Appendix C.

Gamekeepers¹⁵ manage the land and the game for shooting, so in live quarry shooting generally the number of gamekeepers employed is an indicator of the scale of operations. In the quick section of the questionnaire, providers were asked the number of paid gamekeepers, stalkers¹⁶, and other paid employees.

A third (32%) of the providers employed at least one paid **gamekeeper**, and one in ten employed a **stalker**. 55% had no other types of paid employee.

Table 19: Number of paid stalkers, gamekeepers, and other employees per organisation (%)

	% of providers by type of employee		
	Stalkers	Gamekeepers	Other paid employees
None	90	68	55
1 Part time	4	13	21
1 Full time	2	8	11
2 (part or full time)	2	7	8
3+ (full or part time)	2	5	5
<i>Number of respondents</i>	<i>3,681</i>	<i>3,756</i>	<i>3,703</i>

See Appendix B1 for notes on bold figures and rounding.
Source: PACEC Survey of Providers 2014

The case studies with providers showed that there is a high skills base with the full range of necessary qualifications amongst staff. Please see Appendix C.

A little over half the providers in the survey (54%) stated that their shooting sports activity led to visitors staying overnight, with 30% providing on-site accommodation and 39% generating visitor nights elsewhere in the area. The average number of visitor nights per provider was 59 (31 on-site, 28 locally).

¹⁵ **Gamekeeper:** Person who works on a farm or estate to look after game species, their habitats, and the other wildlife that shares them. They may rear birds for release into the wild for shooting purposes.

¹⁶ **Stalker:** Person who shoots deer for recreation, deer management, or crop protection purposes.

54% of providers said that their shooting sports activity led to visitors staying overnight.

Table 20: Number of visitor nights provided by shooting sports providers

Number of visitor nights	% of providers		
	On site	Elsewhere locally	Total
None	70	61	46
1-5	6	5	8
6-10	5	7	8
11-20	4	7	8
21-50	7	8	12
51-100	3	5	6
101-200	2	3	5
201-500	2	2	4
501-1000	1	1	1
Over 1000	1	0	1
<i>Average visitor nights provided</i>	31	28	59
<i>Number of respondents</i>	786		

Source: PACEC Survey of Providers 2014

2.3 Participation in shooting sports

Key issues and questions

This section looks specifically at **shooting participants**¹⁷ and addresses the following key questions:

- Who participates in shooting sports in the UK? (including the total number)
- What types of shooting were they involved in during 2012/13?
- Where are people shooting?
- On what scale do people participate in shooting? (including the total number of shooting days spent in the UK in 2012/13, and the average participation per day)

¹⁷ **Shooting participants:** *Those who take part in shooting sports (live quarry, clay pigeon, or target shooting), and either pay to do so, or do so for nothing. Many providers are also participants.*

Who participates in shooting sports in the UK?

It should be noted that, when considering the following data, people may participate in more than one type of shooting in more than one area. Taking into account the overlap between all these different kinds of shooting activity, we estimate that at least 600,000 people took part in shooting live quarry, clay pigeons or targets in 2012/13, based on the responses to our survey.

This figure is very likely to be an underestimate of total UK activity for the following reasons:

- The survey contact lists omitted participants who were not a member of a shooting, countryside or conservation society – this will have the effect of excluding some informal or “rough” shooting, unaffiliated members of shooting clubs, and a potentially very large amount of informal shooting with air guns (see further information on air guns following the table setting out the estimates on participation, below). The survey attracted some respondents who were not members of any of the organisations, via an open access web link.
- The survey contact lists omitted some participants under the age of 17, for data protection reasons, so young people are under-represented in the results. However, there is substantial evidence from providers and case studies that many young people are involved in shooting, e.g., cadet forces, the Scouts, schools etc. There can be cadets and scouts shooting along with school competitions that involve hundreds of young people each year. Many young people are also members of shooting organisations. Young people, through provider links with schools, also participate in conservation and wildlife habitat management activities, which begin to familiarise them from an early age with the wider shooting experience. Please see Appendix C.

We estimate that there were at least 600,000 participants who shoot live quarry, clay pigeons and targets in the UK in 2012/13, based on our survey.

Table 21: Estimates of the number of participants by type of shooting

	Total UK
Driven, predominantly game (including duck)	280,000
Walked-up, predominantly game (including duck)	150,000
Coastal wildfowling (duck / goose / wader shooting on foreshore)	28,000
Inland duck (e.g. flight ponds / marshes) and goose shooting	75,000
Deer stalking (red deer)	36,000
Deer stalking (other deer species)	69,000
Air gun shooting of live quarry	79,000
Avian pests (e.g., woodpigeons) / predators (e.g., corvids)	220,000
Mammalian pests (e.g., rabbits) / predators (e.g., foxes)	140,000
Total live quarry	380,000
Clay pigeon	280,000
Target shooting: air gun	130,000
Target shooting: black powder	26,000
Target shooting: small bore rifle	85,000
Target shooting: full bore rifle	83,000
Total clay/target	400,000
Total Participants	600,000

Source: PACEC (Respondents can belong to multiple categories – the total figure takes account of this. See Appendix B1 for notes on rounding, multiple rows)

The potential number of informal participants in shooting with air guns is very large. The BSSC estimates that there are currently some 4 million airgun owners in the UK. Industry sources' survey data and best estimates indicate that 40% of airgun owners use their airgun for live quarry shooting. If this were representative of the 4 million airgun owners, that would suggest that there are 1,600,000 individuals who shoot live quarry with airguns, the majority of whom are not accounted for by this study as they are not members of the organisations surveyed.

Participants who responded to the survey were typically over the age of 40, with 62% of respondents stating that they were between 40 and 64. It should be noted that in some cases the data protection arrangements of the partner organisations prevented us from surveying people under the age of 17

The majority of participants are male (96%) or over the age of 40 (85%).

Table 22: Age of participant respondents (%)

	Total
Under 18	1
18-24	2
25-39	13
40-64	62
Over 64 (retired)	17
Over 64 (not retired)	5
<i>Number of respondents</i>	6,013

Source: PACEC Survey of Participants 2014

Half of the participants spent 20 or more days shooting in 2012/13.

Table 23: Number of days spent shooting in 2012/13 (%)

	Total
None	1
1-4	7
5-9	14
10-19	27
20-39	25
40 or more	25
<i>Number of respondents</i>	12,253

Source: PACEC Survey of Participants 2014

What types of shooting sports were they involved in during 2012/13?

Participants are typically involved in more than one type of shooting – in fact, the average participant in the survey is involved in 4 different kinds. More participants are involved in clay pigeon shooting than any other single shooting discipline as we have defined them – however, when all live quarry shooting is combined into one category it is carried out by more participants than clay shooting.

The table below sets out the types of shooting undertaken by participants in 2012/13, cross-tabulated by the number of days in the 12-month period they spent shooting. People who spent 20 or more days shooting a year were more likely to be involved in target shooting than those shooting less frequently – this reflects the availability of target shooting throughout the year.

The most widespread shooting discipline was clay pigeon shooting, undertaken by 67% of all participants. 55% shoot some form of driven game. 79% of participants take part in some form of live quarry shooting, chiefly driven game or pest/predator control.

Table 24: Type of shooting undertaken by participants in 2012/13 (%) by total amount of shooting undertaken during the year (days)

	Total	% of participants (By total days spent on shooting)				
		1-4	5-9	10-19	20-39	40 or more
Avian pests (e.g., woodpigeons) / predators (e.g., corvids)	54	36	49	56	58	55
Mammalian pests (e.g., rabbits) / predators (e.g., foxes)	28	14	19	27	31	36
Driven grouse	7	4	7	7	9	4
Walked-up grouse	5	2	4	6	6	4
Other driven game (including duck)	53	64	71	65	48	33
Other walked-up game (including duck)	30	21	32	34	31	25
Coastal wildfowling	8	3	4	7	10	9
Inland duck (e.g. flight ponds / marshes) and goose shooting	20	7	16	22	24	19
Deer stalking (red deer)	9	3	8	10	11	10
Deer stalking (other deer species)	18	6	12	18	22	21
Wild boar	2	0	1	2	3	3
Air gun shooting of live quarry	22	13	16	19	23	29
Any live quarry	79	82	91	85	77	69
Clay pigeon shooting	67	61	65	69	70	68
Target shooting: air gun	24	15	16	21	26	34
Target shooting: black powder	8	1	2	5	9	15
Target shooting: small bore rifle	24	7	9	17	27	43
Target shooting: full bore	23	10	11	19	27	37
Any target shooting	44	26	27	37	48	61
Collecting firearms (including antiques)	7	4	4	6	8	12
<i>Number of respondents</i>	12,102	831	1,753	3,342	3,064	3,112

See Appendix B1 for notes on bold figures, multiple rows and rounding.
Source: PACEC Survey of Participants 2014

Where are people shooting?

The following table shows the regions in which participants were shooting in 2012/13 by participants' region/country of residence and region/country in which they shot. The most popular area for shooting in 2012/13 was South East and South West England, and Scotland. Although respondents who shot in Scotland were more likely to be residents of Scotland, there was also significant travel to Scotland from other parts of the UK. Scotland is also the most popular region for participants living abroad.

For the most part, people tend to shoot in the area in which they live. Few respondents travelled to Northern Ireland from other parts of the UK to shoot. Those coming from abroad were statistically most likely to shoot in Scotland (31%), although the South West (22%) and South East (19%) of England were also attractive destinations for shooting. Around a sixth (15%) of those living in England travelled to Scotland to shoot in 2012/13.

There is a strong tendency for people to shoot in the area in which they live. For example, 97% of those who live in Scotland shot in Scotland in 2012/13.

Shooting participants may shoot in more than one region of the UK. For example, in 2012/13, 38% of those who had shot in Wales had also shot in the West Midlands.

Table 25: In which areas (if any) did you shoot in 2012/13? (%)

	Shoot UK	Area of residence					Area shot in			
		Live Eng	Live Wales	Live Scot	Live NI	Live Abroad	Shoot Eng	Shoot Wales	Shoot Scot	Shoot NI
South East	37	42	13	8	4	19	42	31	29	25
East	18	20	3	3	1	8	20	17	15	13
Greater London	6	7	2	1	4	8	7	6	5	9
South West	28	31	17	6	2	22	31	36	25	21
West Midlands	16	17	16	3	1	9	17	38	16	15
East Midlands	14	16	4	2	3	5	16	19	13	13
Yorkshire & the Humber	15	17	5	6	4	15	17	21	22	19
North West	12	13	11	6	1	8	14	25	18	12
North East	9	10	3	7	2	6	10	14	18	13
England	89	98	45	27	16	61	100	84	70	49
Wales	13	11	94	2	3	10	12	100	15	13
Scotland	21	15	15	97	24	31	17	26	100	38
Northern Ireland	2	1	1	2	97	2	1	2	3	100
<i>Number of respondents</i>	15,156	12,984	522	1,198	156	252	13,539	1,922	3,254	275

See Appendix B1 for notes on bold figures, multiple rows and rounding.
Source: PACEC Survey of Participants 2014

The movement of participants from one area to another necessitates expenditure on fuel, food and accommodation, all of which contribute to the economic impact of shooting sports.

Participants were also asked if they had spent any shooting days overseas in 2012/13, and 5% stated that they had. The most common forms of shooting were full-bore rifle, clay pigeon, wild boar, and deer stalking.

Table 26: Shooting days spent overseas by participants

	% of overseas participants	Average days
Avian pest /predator control (e.g. pigeon)	8	8
Mammalian pest/ predator control (e.g. foxes)	6	9
Deer stalking (red deer)	4	5
Deer stalking (other deer species)	16	7
Driven grouse	0	1
Other driven game (including duck)	15	4
Walked-up grouse	2	5
Other walked-up game (including duck)	10	5
Coastal wildfowling (duck/goose/wader shooting on the foreshore)	1	3
Inland duck (e.g. flight ponds / marshes) and goose shooting	3	5
Wild boar	23	4
Wild goat	2	2
Air gun shooting of live quarry	2	7
Any live quarry	54	6
Clay pigeon shooting	23	13
Target shooting: air gun	3	6
Target shooting: black powder	3	4
Target shooting: small bore	15	9
Target shooting: full bore / rifle	35	9
Any clay/target	58	8
<i>Number of respondents</i>		

Source: PACEC Survey of Providers 2014

2.4 Numbers and usage of quarry shot for sport

Key issues and questions

This section looks specifically at the gamebirds, wildfowl, deer, pests (e.g. woodpigeons, rabbits) predator species (e.g. corvids, foxes) and hares which are shot. The following aspects are addressed in this section:

- What percentage of edible quarry shot in 2012/13 was destined for the food chain?
- What percentage of edible quarry shot in 2012/13 was used by providers and participants, and how much was used as food elsewhere?
- When used as food elsewhere, how much edible quarry is distributed locally and how much is transported to the rest of the UK or exported?

What was the total number of gamebirds, wildfowl, deer, pests, predators and hares shot in 2012/13?

The total number of gamebirds and wildfowl shot for sport across the UK in 2012/13 was around 20 million. Of these, some 13,000,000 pheasant were shot, or two-thirds of the total.

Pheasant and partridge are the most commonly-shot gamebirds.

Table 27: Estimates of the number of gamebirds and wildfowl shot in 2012/13

	Total UK
Pheasant	13,000,000
Partridge	4,400,000
Grouse	700,000
Duck	1,000,000
Goose	110,000
Woodcock	160,000
Snipe & other waders	110,000
<i>Total Gamebirds</i>	20,000,000

Source: PACEC (Individual figures have been rounded and therefore may not appear to sum exactly to the total. See Appendix B1 for notes on rounding)

Other species shot include deer, avian and mammalian pests (such as woodpigeon and rabbit), and predators (such as corvid and fox). Numbers shot were estimated using information reported by providers on what was shot by unpaid shooting participants. Numbers shot as part of a job (see Table 32) were not included, therefore the figures in Table 28 are likely to be under-estimates of total shooting bags.

Of the deer, pest and predators shot by unpaid shooting participants in 2012/13, the most common were woodpigeon (1,100,000), rabbit (520,000) and corvid (300,000).

Woodpigeon, rabbit, and corvids are the most commonly-shot other species.

Table 28: Estimates of the number of other species shot in 2012/13 by shooting sports participants (i.e. not as part of a job)

	Total UK
Red deer	74,000
Other deer	110,000
Woodpigeon	1,100,000
Rabbit	520,000
Corvids	300,000
Grey squirrel	150,000
Fox	66,000
Hare	73,000

Source: PACEC (See Appendix B1 for notes on rounding)

Statistics from the Gun Trade Association and Defra Lead Ammunition Group suggest that 170 million shotgun cartridges are sold annually, with approximately 68 million cartridges used for game and other quarry species and 102 million for clay shooting¹⁸. Combining this estimate with estimated shoot-to-kill ratios of between 4:1 and 3:1 gives rise to an estimate of between 17 and 23 million gamebirds and other species shot annually.

¹⁸ See minutes of 9th Lead Ammunition Group meeting, 19 December 2013 – accessed via <http://www.leadammunitiongroup.co.uk/LAG%20-%20minutes%20-%2019%20December%202013.html> on 16/6/2014

What percentage of edible quarry shot in 2012/13 was destined for the food chain?

On average, 97% of edible quarry was destined for the food chain.

On average, providers said that 62% of edible quarry shot in 2012/13 was used by the shooting provider or taken home by participants for themselves or their friends. 35% was used as food elsewhere – for example, it could have been sold to a game dealer, a game processor, or a restaurant. Some 3% of the quarry was reported as damaged, and discarded (or used for animal feedstuffs e.g. for dogs) as it was not considered to be fit for human consumption.

On average, 62% of edible quarry was consumed at the shooting site or taken away by Guns to eat.

Table 29: Destination of edible quarry (Average % per provider)

	%
Eaten on site or taken away by shooting participants	62
Used as food elsewhere (e.g. sold to dealers, food processors, or restaurants)	35
Damaged and discarded as being unfit for human consumption	3
<i>Number of respondents</i>	<i>1,050</i>

Source: PACEC Survey of Providers 2014

The shot quarry that was “used as food elsewhere” was transferred to a dealer, processor, or restaurant within the UK region of the shoot in 81% of cases (although having been transferred to a local dealer or game processor it may subsequently be consumed elsewhere in the UK or overseas).

Where edible quarry is used as food elsewhere, it stays in the local UK region in 81% of cases.

Table 30: Location of edible quarry used as food elsewhere (Average % per provider)

	%
Local UK region	81
Elsewhere in UK	12
Rest of EU	6
Rest of world	0
<i>Number of respondents</i>	<i>562</i>

Source: PACEC Survey of Providers 2014

The case studies of shooting providers indicate that participants have a preference for eating some quarry on site, or when they stay locally as part of the overall shooting experience. Please see Appendix C.

Participants responding to the survey were invited to comment on the distribution, consumption, and use of shot game, wildfowl, and pigeon over the last 5 years. It was commonly reported that game had become more popular: there was greater awareness of game among the public, it was appearing on restaurant menus, in recipe books and on television, and was becoming more available outside specialist retailers (e.g. in supermarkets). Perhaps as a consequence, there was a trend towards prepared, “oven-ready” birds – some participants reported that fewer people were willing to take birds that had not been plucked and cleaned.

Fewer participants commented on trends in the use of shot wildfowl or woodpigeon. Among those that did, it was most commonly stated that woodpigeon was becoming more popular. A small minority stated that the popularity of wildfowl (chiefly duck) had increased.

Participants were asked how often they ate shot quarry in their open seasons, and in the rest of the year. In season, 27% of participants ate gamebirds weekly. 9% of participants ate wildfowl weekly in season, according to species, and 8% ate venison weekly in season according to species. Over 70% of participants ate woodpigeon during the year.

In the shooting season, 27% of participants eat gamebirds weekly. Gamebirds and venison were among the most popular meats, with 84% and 78% respectively eating them in season. 73% of respondents ate woodpigeon and 68% ate rabbit.

Those surveyed commonly reported that game meat had become more popular.

Table 31: Frequency of shooting participants' consumption of shot quarry (%)

	% of participants by frequency of eating shot quarry			
	Weekly	Monthly	Occasionally	Never
Gamebirds in season	27	31	26	16
Gamebirds: rest of year	3	49	18	30
Wildfowl: in season	9	41	21	30
Wildfowl: rest of year	1	48	9	42
Venison: in season according to species	8	50	20	22
Venison: outside season according to species	4	55	15	26
Rabbit	3	53	13	32
Hare	0	29	1	70
Woodpigeon	4	53	17	27

Source: PACEC Survey of Providers 2014

Participants reported that where their shot gamebirds, deer, hare, or rabbit were used by a game processor, it was one-and-a-half times more likely for the processor to collect the shot quarry from the shooting site than for the participant to have to take it to the processor. For wildfowl and woodpigeon, it was around 25% more likely for a participant to have to take the shot quarry to a processor than for the processor to collect from the shooting site.

Both case study and stakeholder research concluded that deer may be shot for environmental or ecological reasons (deer management) or solely for sport, generating income for the stalking provider. Please see Appendix C and Appendix D. Similarly, pest and predator control may be undertaken for the protection of gamebirds on shooting sports land, or the protection of crops and livestock on farmers' land. The cost implications of such control for the landowner/farmer are detailed in Chapter 4.

Data were also collected and assembled on an average shooting provider basis. The following table shows the number of deer, pests (e.g. woodpigeons, rabbits) and predators (e.g. foxes) shot by unpaid Guns and as part of a job.

An average of 10 deer, 23 rabbit and 80 woodpigeon are shot by unpaid Guns over the land of each shooting provider. Over half of those species shot or otherwise controlled as part of a job were rabbits (63%).

Table 32: Average number of deer, pests, and predators shot by unpaid Guns and as part of a job per shooting provider in 2012/13.

	Total – unpaid Guns	Total – shot as part of job	Total – otherwise controlled as part of job ¹⁹
Red deer	4	10	2
Other deer	6	17	4
Woodpigeon	80	215	18
Rabbit	23	726	53
Corvid (magpies, crows etc)	14	73	29
Grey squirrel	7	30	16
Fox	4	22	8
Hare	3	15	9
Other predators (mink, stoat, weasel, rat etc)	3	41	32
Other pests (collared dove, gulls, geese etc)	2	8	4
<i>Number of respondents</i>	<i>722</i>	<i>966</i>	<i>685</i>

Source: PACEC Survey of Providers 2014

¹⁹ For example, by trapping (excluding deer).

2.5 The nature of shooting sports by region

The largest concentrations of providers of shooting in the UK are to be found in the South East and South West of England, the Midlands, and Scotland.

Participation in shooting is most common in the South East, South West, and Scotland

Table 33: The nature of shooting sports by UK country and region

Country/ Region of England	"Gun-Days" provided (live and clay/target)	Providers	Participants (by region of participation)
South East	2,300,000	14,000	200,000
East	1,200,000	6,500	100,000
Gr. London	380,000	1,500	22,000
South West	1,500,000	10,000	170,000
West Midlands	1,100,000	8,500	95,000
East Midlands	1,500,000	7,100	79,000
York/Humber	590,000	4,000	87,000
North West	800,000	4,800	64,000
North East	290,000	2,100	44,000
England	9,600,000	59,000	550,000
Wales	450,000	2,900	76,000
Scotland	640,000	7,100	120,000
Northern Ireland	210,000	740	9,800
<i>UK</i>	11,000,000	70,000	600,000

Source: PACEC (Individual figures have been rounded and therefore may not appear to sum exactly to the total. Participants can belong to multiple categories – the total figure takes account of this. See Appendix B1 for notes on rounding)

2.6 Summary of the nature of shooting sports

What types of shooting sports are provided in the UK?

Among **live quarry** shooting providers, the shooting of **driven game** (57% of providers), and **avian pests (e.g. woodpigeon) / predators (e.g. corvids)** and **mammalian pests/predators** (50% and 36% respectively) are the most widespread (with pest and predator control usually offered alongside another form of shooting). Most providers of shooting sports offer more than one type of shooting. **Clay pigeon shooting** is a very common shooting discipline offered by 38% of providers. The research also covers **target shooting**, of which **small bore rifle** (24% of providers) and **full bore rifle** (23%) are the most common.

Who is responsible for providing these shooting sports opportunities?

There are an estimated **70,000** providers of shooting opportunities in the UK, incorporating all organisational types, from small informal shoots and syndicates to the large commercially-orientated clubs, ranges, shoots, and estates.

Where are the shooting opportunities provided?

For the most part, participants tend to shoot in the region in which they live, although it is common for shooters to travel for particular types of shooting (e.g. **red deer** or **grouse**). Shooting was most common in the South East (37% of participants shot there in 2012/13), and South West of England (28%), and in Scotland (21%).

On what scale do organisations or individuals provide shooting opportunities?

Returns from providers and participants suggest an estimated total of **1,700,000 shooting days** in the UK in 2012/13, attended by an average of 6 people each, giving rise to a total of **11,000,000 participant-days** or **Gun-Days**.

Who is participating in shooting sports in the UK?

The survey accounts for an estimated minimum 600,000 people in the UK who shoot live quarry, clay pigeons, or targets. This estimate excludes a large amount of activity outside the scope of the survey as it is undertaken by people who are not members of shooting and countryside organisations – for example, an independent estimate suggests that 1,600,000 individuals shoot live quarry with airguns. The majority of survey respondents were male and over the age of 40, and half of them shot at least 20 days a year.

What types of shooting sports activity were they involved in during 2012/13?

Most participants took part in more than one type of shooting in 2012/13. Participants were most likely to be shooting **clay pigeons** (66% of participants), **driven game** (55%), or **avian pest species** (53%).

How many gamebirds and wildfowl were shot in 2012/13?

20,000,000 gamebirds and wildfowl were estimated to have been shot across the UK in 2012/13, including some 13,000,000 pheasant and 4,400,000 partridge.

How many other species were shot in 2012/13?

At least 1.1 million woodpigeons, 520,000 rabbits, 300,000 corvids and 184,000 deer were shot by participants in 2012/13 (excluding those shot as part of a job).

What is the destination of edible quarry shot in 2012/13?

On average, providers said that 62% of all edible quarry shot in 2012/13 was used by the shooting provider or taken home by participants for themselves or their friends. 35% was used as food elsewhere – for example, sold to a game dealer, a game processor, or a restaurant. Chiefly due to damage, some 3% either entered other food chains (e.g. canine) or was discarded as unfit for human consumption. In the shooting season, 27% of participants eat gamebirds weekly.

3 The economic benefits of shooting sports

3.1 Introduction to economic benefits

Whether shooting is done through an informal arrangement or provided commercially, it generates economic activity. Such activity and its magnitude are discussed in this chapter.

Conceptual Framework

The chapter focuses on employment as the main indicator of economic impact, although estimates of **Gross Value Added**²⁰ are also presented. To estimate the total number of **jobs**²¹ supported by shooting sports in the UK, it is necessary to establish both direct and indirect jobs associated with shooting sports. Direct jobs are those arising from the provision of shooting sports opportunities. Indirect jobs are also generated and, indeed, no economic analysis of the sector would be complete without taking into account all wider effects (so called 'ripple' effects) of the transactions associated with the sport. These wider effects are derived from the type and extent of expenditure reported by both providers and participants.

Beginning with the participants, individuals make purchases from both shooting providers (in the form of the cost of a day's shooting for example) and from other **suppliers**²².

²⁰ **Gross Value Added (GVA):** *The standard monetary measure of the value of economic activity. Equal to the sum of employment costs plus profits. Also equivalent to the value of goods and services produced minus the inputs (raw materials, services etc) required to produce them.*

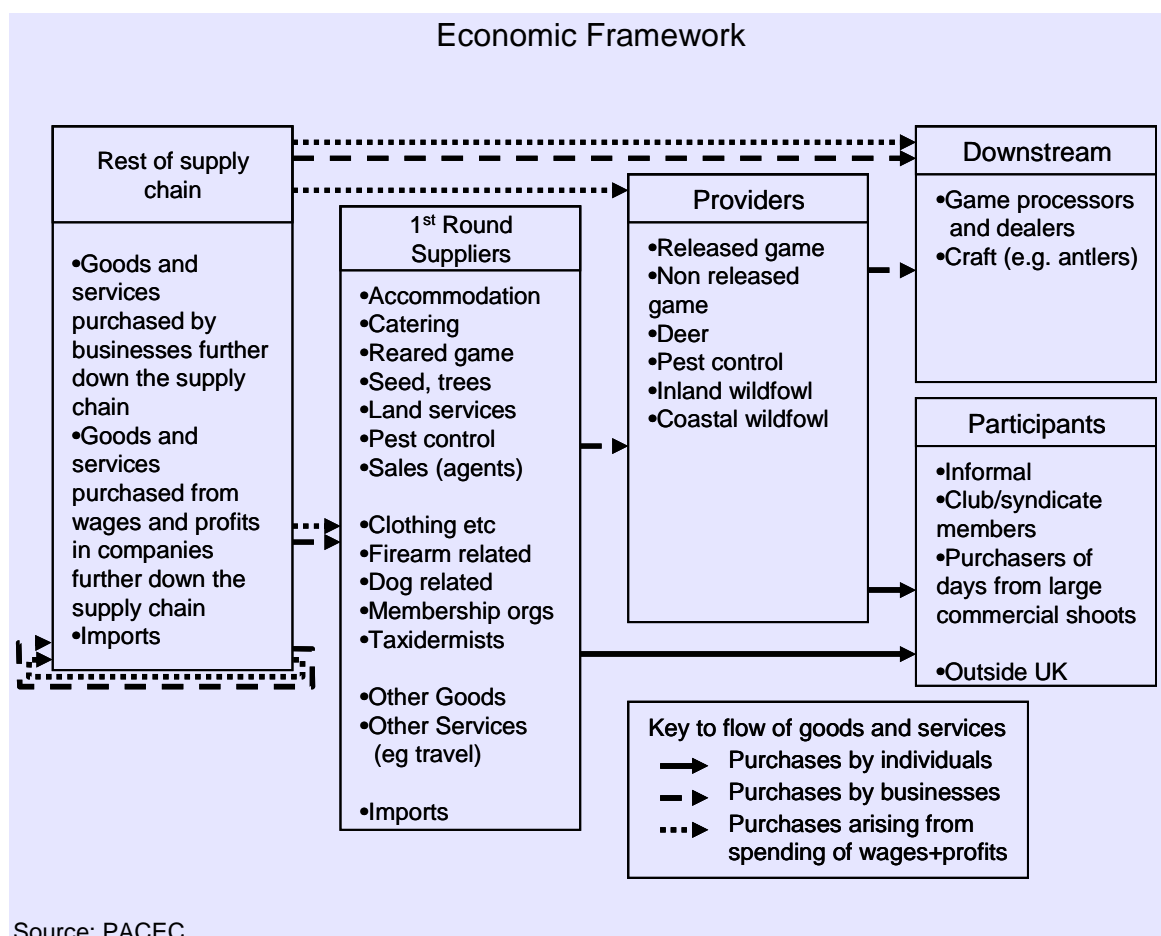
²¹ **Jobs:** *include both employees and self employed (including working directors/owners)*

²² **Suppliers:** *A range of firms/individuals which supply shoot providers and participants with related goods and services. Potential suppliers include: shooting agencies (sales), accommodation, shooting training, land management services, reared game (for release).*

Providers also make purchases, including expenditure on the preparation of shooting land, such as the purchase of land management services, fencing and game cover crop seed. Some providers employ one or more gamekeepers to manage the land and look after the game. Larger shooting operations may also employ ancillary staff to undertake administration, catering or accommodation functions.

In addition to supplying participants with shooting opportunities, providers also supply downstream industries with a range of goods and services - for example, the sale of shot game to game processors and dealers.

The economic framework diagram below sets out the full supply chain in terms of purchases by individuals, purchases by businesses, and purchases arising from the spending of wages and profits.



Every transaction which takes place among providers and participants incurs further economic effects.

Linkages take place as firms buy from other businesses, referred to as 'supply chain effects'. Furthermore, additional purchases arise from first and subsequent round suppliers spending their wages and profits which have been generated by the shooting activity. These are referred to as 'expenditure multiplier effects' and the multipliers applied to generate these figures are taken from the Office of National Statistics Input-Output tables, which are authoritative national statistics on the expenditure *by* each industrial *on* other industrial sectors in order to produce goods and services. These two types of effects have been amalgamated and are presented under the heading 'rest of supply chain'.

The chapter follows these monetary flows from their source to their effect on UK employment and GVA, addressing the following questions on route:

Key issues and questions

What are the **direct** economic benefits of shooting sports?

- What are shooting providers spending on average per annum in order to provide shooting sports opportunities?
- What is the total number of direct jobs generated by shooting?

What are the **indirect** economic benefits of shooting sports?

- What are providers and participants spending on supplier businesses (e.g. ammunition, game farms)?
- How many first round supplier jobs come from shooting?
- What are the downstream jobs resulting from the sport?
- How many jobs are supported through the supply chain beyond the first round impacts?
- What is the total number of jobs supported by shooting?
- What amount of Gross Value Added (GVA) is attributable to shooting sports in the UK?

3.2 Direct economic benefits of providers of shooting sports

What are shooting providers spending per annum on shooting sports opportunities?

The majority of providers (84%) each spent over £1,000 per annum, and 15% spent over £50,000 in 2012/13.

42% of providers spent £1k-9k on providing shooting sports in 2012/13.

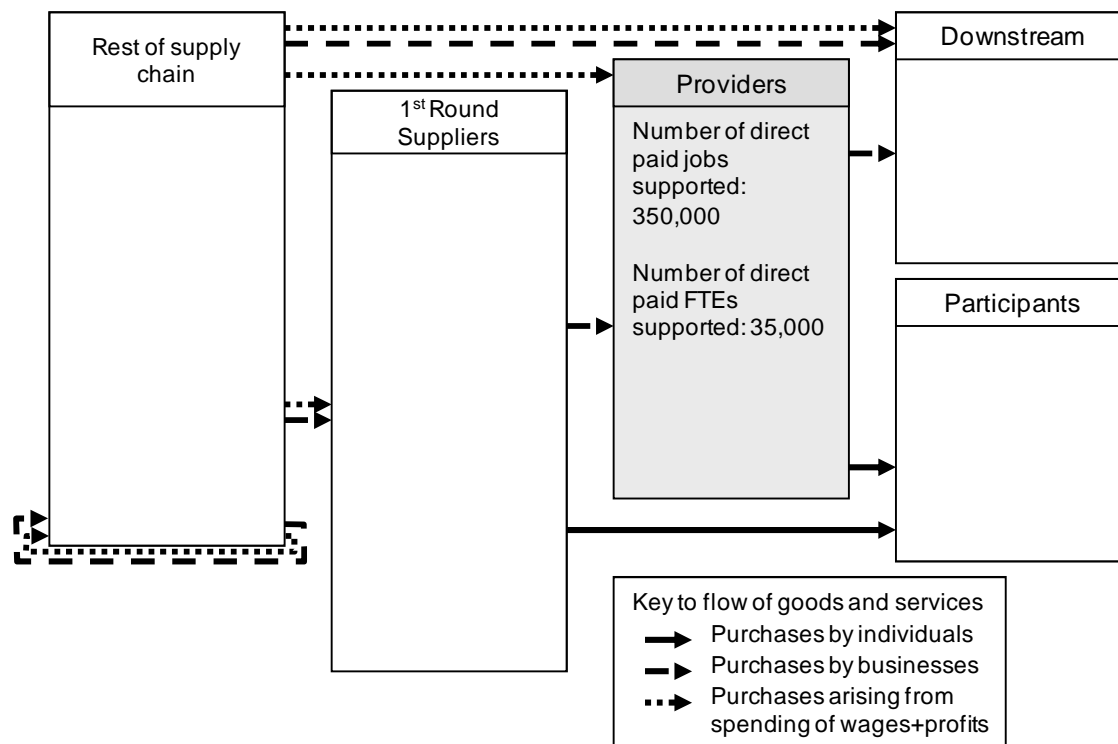
Table 34: Total shooting sports expenditure by type of provider (%)

	% of providers
	Total
£0-99	3
£100-999	12
£1k-9k	42
£10k-49k	27
£50k or more	15
<i>Number of respondents</i>	<i>3,737</i>

See Appendix B1 for notes on bold figures and rounding.
Source: PACEC Survey of Providers 2014

What is the total number of direct jobs generated by shooting sports provision?

The framework diagram shows the direct impact of provider expenditure.



Shooting sports providers are responsible for providing 350,000 paid jobs in the UK. Most are seasonal and/or part-time - their **full time equivalent (FTE)**²³ employment is 35,000.

Table 35: Estimated work (including beating and picking up) done to provide shooting sports opportunities in the UK

Category	Beaters and Picking Up	All other staff	Total
Paid workers	280,000	68,000	350,000
FTE paid jobs	14,000	21,000	35,000

Source: PACEC (Individual figures have been rounded and therefore may not appear to sum exactly to the total. See Appendix B1 for notes on rounding)

The number of direct jobs relative to the number of direct full time equivalents (FTE) indicates that many of the direct jobs required to provide shooting sports, particularly for live quarry shooting, are **seasonal**²⁴ or **part time**²⁵. Most, but not all, beaters are paid. Those who are not paid may be partners/spouses/ children of Guns²⁶.

²³ **Full Time Equivalents (FTE):** The number of full-time employees that could have been employed if the reported number of hours worked by part-time employees was worked by full-time

The case studies with providers showed that they were optimistic that shooting participation was likely to grow over the next five years, bringing greater income and employment benefits. Please see Appendix C.

While some shooting providers will employ a range of ancillary staff to manage all aspects of the business, including catering and accommodation (more typically estate providers), other providers do not employ such staff. No syndicate for example employed a paid shoot manager, given that such a position is likely to be held voluntarily by a member of the syndicate. Although the numbers were greatest on shooting tenants' land, the employment of beaters and pickers-up was common to all shooting providers. Not only are they vital to the shooting operation, they are also relatively inexpensive, as they are employed only on shooting days.

Most beaters/pickers up will be paid per shooting day. The survey research for gamekeepers suggests that they are more likely to be held in a **permanent**²⁷ salaried position than other members of staff which may operate for the shooting season only. This is understandable, given that gamekeepers are responsible for the management of the land all year round.

The survey results also include assistance from unpaid staff which may, for example, be partners/spouses or children of the participants or members of a club/syndicate carrying out the work for colleagues. Although they are not paid directly by the shooting providers, this does not mean that they have no economic impact. Indeed, such workers will still spend in the local area on travel, food and drink and

employees. This statistic is calculated by dividing the "part-time hours paid" by the standard number of hours for full-time employees then adding the resulting quotient to the number of full-time employees. Full time jobs are assumed to be 37 hours a week for 250 days per year.

²⁴ **Seasonal Jobs:** assumed to be for 20 weeks of the year

²⁵ **Part Time Jobs:** assumed to be 20 hours a week

²⁶ There is some potential for double-counting in the total number of paid workers, as people may work for more than one shoot, but not in the number of FTE paid jobs, as these are estimated per provider.

²⁷ **Permanent Jobs:** assumed to be for 52 weeks of the year

may be paid 'in kind' by the shooting provider (e.g. an annual meal prepared to thank those working for the provider). It is worth noting that some positions are always paid jobs, e.g. game processors and accommodation managers.

The work of beating and picking up on a shooting provider's land may be carried out by non-Guns or by Guns for their colleagues. The survey asked shooting participants if they carried out any such work. Over a third (36%) of participants said that they did, the most prevalent jobs being beating (27%) and picking up (17%). The work which participants carry out has implications for shooting provision. While their work may substitute for paid or unpaid employment, their attendance is not free from impacting on the local area, through spend on travel, food and drink, and those carrying out such work are also more likely to own a gundog, which supports breeders and trainers across the country, as well as producers of dog food.

38% of shooting participants own at least one gundog.

Table 36: Number of gundogs owned by shooting participants (%)

Gundogs owned	% of participants
None	62
1	20
2	12
3	4
4	1
5 or more	1
<i>Overall average including "none"</i>	<i>0.69</i>
<i>Average among those with at least 1 gundog</i>	<i>1.7</i>
<i>Number of respondents</i>	<i>3,737</i>

See Appendix B1 for notes on bold figures and rounding.
Source: PACEC Survey of Providers 2014

37% of participants stated that they would not continue to own their gundogs if shooting sports were no longer possible in the UK, and a further 15% said that they would retain some but not all of their gundogs, suggesting that much of this support for breeders, trainers, and dog food producers is reliant upon shooting sports.

37% of participants with gundogs would not retain their dogs if shooting sports were stopped.

Table 37: Retention of gundogs if shooting sports were to be stopped (%)

	% of participants with gundogs
All gundogs would be retained	33
Some gundogs would be retained	15
No gundogs would be retained	37
Don't know	15
<i>Number of respondents</i>	<i>2,629</i>

See Appendix B1 for notes on bold figures and rounding.
Source: PACEC Survey of Providers 2014

Two-thirds (67%) of participants said that they volunteered to carry out work related to the provision of shooting sports in 2012/13. Among these, the most prevalent jobs were beating/flanking (31%) and conservation / habitat management (35%). The average number of volunteer days per participant (among those who quantified their volunteering) was 7 days.

Two thirds of shooters volunteer, and one third of these undertake conservation work or habitat management. That equates to 21% of participants volunteering in conservation work, and the average length of time is 7 days a year.

Table 38: Participants volunteering as a beater, picker up, loader, gamekeeper, stalker/guide, or in conservation / habitat management (%)

	% of participants
Beater/flanker	31
Picker-up	14
Loader	4
Gamekeeper (not shooting)	8
Stalker/guide (not shooting)	5
Conservation work / habitat management	35
<i>Number of respondents</i>	<i>3,840</i>

See Appendix B1 for notes on bold figures, multiple rows and rounding.
Source: PACEC Survey of Participants 2014

The case studies with providers show that volunteers bring a range of valuable skills to support shooting, conservation, and environmental management. Please see Appendix C.

3.3 Indirect economic benefits of shooting sports

What are providers and participants spending on supplier businesses (e.g. ammunition, game farms)?

Table 39: Participant expenditure on shooting in 2012/13, by number of days spent shooting (%)

	% of participants (By days spent on shooting)						
	Total	None	1-4	5-9	10-19	20-39	40 or more
£0-99	4	74	18	5	2	1	1
£100-999	35	15	56	41	34	34	26
£1k-9k	53	11	23	50	53	52	63
£10k-49k	8	0	1	3	9	10	8
£50k-£99k	1	0	0	0	0	1	1
£100k or more	1	0	0	1	1	0	1
<i>Responses</i>	<i>12,244</i>	<i>142</i>	<i>830</i>	<i>1,748</i>	<i>3,333</i>	<i>3,057</i>	<i>3,100</i>

See Appendix B1 for notes on bold figures, multiple rows and rounding.
Source: PACEC Survey of participants 2014

Participant spend

The typical (median) spend of participants is estimated to be around £1,500-£2,000 per year, but one in ten participants spend £10,000 or more each year.

Participants' total expenditure is shown below, broken down according to their on-site, off-site and **capital**²⁸ expenditure.

Shooting sports participants in the UK spent a total of £2.5 billion on goods and services for shooting.

Table 40: Estimated total spend by shooting sports participants (£m)

	Total UK
On-site operational expenditure	860
Purchase of game	27
Off-site operational expenditure	710
Total operational expenditure	1,600
Capital expenditure	900
Total participant spend	2,500

Source: PACEC (Individual figures have been rounded and therefore may not appear to sum exactly to the total. See Appendix B1 for notes on rounding)

²⁸ **Capital good:** The cost of a capital good refers to its replacement cost, or its value in today's money, rather than the price originally paid for it.

Table 41: Estimated breakdown of on site expenditure by shooting sports participants (£m)

	Total UK
Annual shoot subscriptions	370
Per day shooting fees	310
On site food	40
On site accommodation	70
Other expenditure	70
<i>Total on-site spend (to Providers)</i>	<i>860</i>

Source: PACEC (Individual figures have been rounded and therefore may not appear to sum exactly to the total. See Appendix B1 for notes on rounding)

Table 42: Estimated breakdown of off site operational expenditure by shooting sports participants (£m)

	Total UK
Shotgun and/or firearms certificate	39
Membership of organisations	31
Shooting/Country Magazine	20
Training/Shooting School: requested/required for licence/membership	17
Training/Shooting School: additional	27
Shooting Insurance	6
Travel to Shoots	200
Off-site Food	70
Off-site Accommodation	66
Dogs – training	16
Dogs – feed	54
Dogs – vet	52
Dogs – kennelling	10
Ammunition	140
<i>Total off-site spend (to Suppliers)</i>	<i>710</i>

Source: PACEC (Individual figures have been rounded and therefore may not appear to sum exactly to the total. See Appendix B1 for notes on rounding)

The case studies with the hospitality sector and hotels/pubs providing accommodation near shoots showed how important shooting participants were to trade, especially in quieter periods, and upgrading the quality of services. Please see Appendix C.

Participants were asked to state their capital expenditure on shooting sports. Where something (e.g. building, vehicle) has a shared use and would be required even if shooting were not to take place, respondents were requested not to include it. In addition, each capital cost is the replacement costs divided by the life expectancy (in years) multiplied by an appropriate “shared use” percentage. For example, a £1,000 firearm, lasting 20 years used 50% for shooting sports would yield a cost of $1,000/20*50\% = £25$.

Table 43: Breakdown of capital expenditure on shooting sports participation (£m)

	Total UK
Vehicles	620
Firearms	98
Dogs	25
Accessories	220
Clothing	90
*Other	20
<i>Total capital spend (to Suppliers)</i>	<i>900</i>

*The Other category was used by respondents who were either not willing or not able to split some or all of their expenditure into the other categories
 Source: PACEC (Individual figures have been rounded and therefore may not appear to sum exactly to the total. See Appendix B1 for notes on rounding)

Industry data (provided by the Gun Trade Association) shows the importance of the retail trade in guns and ammunition to the UK economy. There are more than 2,000 trade outlets in the UK, providing a range of perhaps 70,000-100,000 different products (including sales of accessories, clothing, footwear etc), with an annual turnover of some £200m-300m. The industry supports up to 10,000 employees (full-time and part-time), with a typical outlet having around 5 employees. Please see Appendix C for case studies on retail of guns and associated accessories and clothing.

Substantial expenditure also takes place in the trade and collection of antique firearms not used for shooting sports. The trade in antique firearms in the UK is estimated to be in excess of £60m per annum²⁹, largely taking place at auction and typically resulting in transfer of funds between collectors (participants). This supports employment in specialist dealers and auctioneers, and also employment and skills in repair and maintenance of firearms. Please see Appendix C for case studies on auctioneering and restoration of firearms, and the associated skills/apprenticeships.

What additional annual expenditure would you make on other leisure activities if shooting sports were not possible in the UK?

²⁹ Information submitted to FCO inquiry on the Arms Trade Treaty, May 2012

In the detailed questionnaire, participants were asked if they would make additional expenditure on other leisure activities if shooting sports were not possible in the UK. Five out of every six respondents to the question said that they would spend more on other leisure activities if shooting sports were not possible. The most common answers were fishing in the UK (38%) and shooting abroad (36%). Among those who said they would shoot abroad, the average expenditure was £4,300. Averaged over all respondents to any part of the question (including zeroes), the average participant would spend £3,100 on other leisure activities if shooting sports were not possible, including £1,500 on shooting abroad and £700 on other activities abroad. These results suggest that if shooting sports were unavailable there would be a loss of leisure income to the UK economy³⁰.

Table 44: Potential additional expenditure by participants on other leisure activities if shooting were not possible in the UK

	Participants			
	% reporting additional expenditure	Average expenditure – those reporting additional expenditure	Average expenditure – all respondents to any part of question	Maximum expenditure reported
Fishing (UK)	38%	£720	£300	£25,000
Horse riding (UK)	6%	£2,500	£100	£30,000
Other leisure (UK)	28%	£1,200	£300	£50,000
Other sport (UK)	18%	£1,000	£200	£30,000
Shooting (abroad)	36%	£4,300	£1,500	£100,000
Other leisure (abroad)	15%	£3,300	£500	£50,000
Other sport (abroad)	6%	£2,700	£200	£100,000
<i>Overall</i>	85%	£3,700	£3,100	£150,000
<i>Number of respondents</i>	4,724	4,008	4,724	4,724

Source: PACEC Survey of Participants 2014

³⁰ Among those participants who answered all detailed questions on shooting expenditure and the question on alternatives if UK shooting were unavailable, the average annual expenditure on shooting was £7,100 and the average estimated expenditure on alternatives was £4,100, of which £2,900 would be spent overseas.

Provider income

The shooting sports providers recorded £1.1bn income in 2012/13. The major items of income as reported by shooting providers were fees for sold days (£360m), shooting rent (£260m), and annual subscriptions (£170m).

Table 45: Estimated breakdown of income by shooting sports providers (£m)

	Total UK (£m)
Shooting rent	260
Annual club / syndicate / membership shooting subscriptions	170
Total income from sold days fees	360
Ammunition: airgun pellets	0.62
Ammunition: shotgun cartridges	29
Ammunition: bullets	24
Clothing	6.8
Sale of shot game (to dealers, shooters, retail/restaurants)	20
Sale of processed game (processed by you)	1.1
Sale of live game birds and eggs sold for other shoots	8.7
Accommodation	35
Catering	20
Sale of firearms	17
Training / shooting school	3.4
Sponsorship	0.16
Clay pigeon shooting	84
Target shooting: air gun	1.8
Target shooting: small bore	6.2
Target shooting: black powder	0.38
Target shooting: full bore / rifle	24
Charitable donations	5.6
Other	24
<i>Total</i>	1,100

Source: PACEC (Individual figures have been rounded and therefore may not appear to sum exactly to the total. See Appendix B1 for notes on rounding)

Provider spend

Providers' total spend on goods and services is shown below, broken down into their operational and capital expenditure. The total operational and capital expenditure in 2012/13 is estimated to be £740m. In addition, staff costs amounted to £370m.

Provider expenditure is mostly operational (£630m/year) as opposed to capital (£110m/year).

Table 46: Estimated total spend by shooting sports providers (£m)

	Total UK (£m)
Total operational expenditure	630
Total capital expenditure	110
Total staff costs	370
Total provider spend	1,100

Source: PACEC (Individual figures have been rounded and therefore may not appear to sum exactly to the total. See Appendix B1 for notes on rounding)

The estimated breakdown of operational and capital expenditure is shown in the tables below.

Shooting providers recorded £3.5m of charitable donations in 2012/13 (excluding those to shooting sports organisations).

Table 47: Estimated breakdown of operational expenditure by shooting sports providers

	Total UK (£m)
Agency commission	13
Marketing	2.0
Catering/accommodation subcontractors	30
Land management subcontractors	28
Trees for planting	3.3
Cover crop seed	5.4
Pesticide/fertiliser	9.6
Bought in eggs/reared game for the shoot	68
Compound feed for birds	46
Other feed for birds	25
Pest control subcontractors	0.65
Ammunition	17
Vehicle servicing/repairs	27
Feed for dogs kept by the shoot	9.0
Vet	3.0
Clothing	6.1
Licences, Membership subscriptions	15
Shooting Land Rent	31
Property costs	46
Vehicular running costs	44
Utilities & communications	21
Other Goods purchased	37
Other Services purchased	79
Charitable donations	3.5
Other	56
<i>Total</i>	630

Source: PACEC (Individual figures have been rounded and therefore may not appear to sum exactly to the total. See Appendix B1 for notes on rounding)

Table 48: Estimated breakdown of capital expenditure by shooting sports providers

	Total UK (£m)
Game rearing equipment	8.9
Fencing	4.2
Game feeding equipment	3.3
Buildings	8.8
Roads, tracks	10
Vehicles	32
Shotguns	6.0
Air rifles, rifles	20
Dogs	2.4
Game processing equipment	0.2
Cold Store	2.2
Communication equipment	1.3
Computers	1.2
Other	11
<i>Total</i>	110

Source: PACEC (Individual figures have been rounded and therefore may not appear to sum exactly to the total. See Appendix B1 for notes on rounding)

How many first round supplier jobs result from shooting sports?

Shooting sports support 5,200 full-time equivalent jobs in the accommodation and food sector.

Table 49: Estimated number of first round supplier jobs in the UK supported by shooting sports

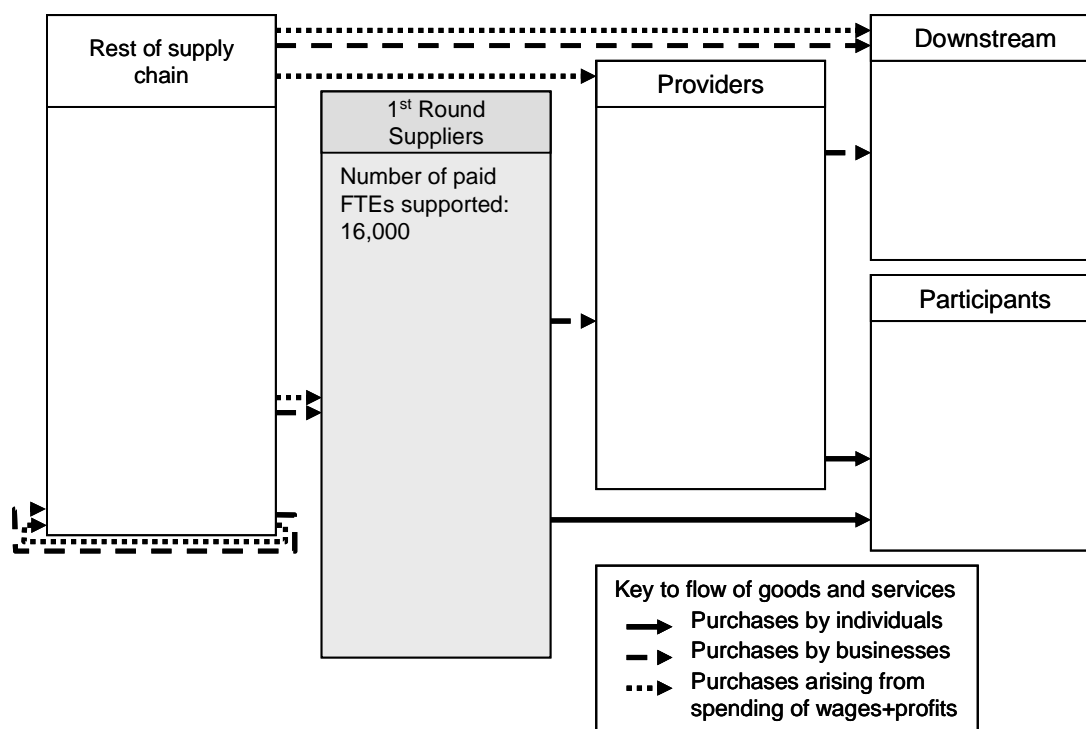
	Total UK FTE paid
Land mgt services	160
Pest control services	7
Shooting school	360
Sales/marketing	140
Accommodation/food	5,200
Membership/ insurance	310
Game farm	180
Magazines	100
Feed/fert/trees/seeds/fencing	490
Firearms & ammunition	820
Dogs (incl. training & kennelling)	2,000
Vet	730
Travel	1,700
Vehicles (providers only)	73
Vehicle running	780
Utilities/communications	55
Building: road/track/ property	610
General goods	1,000
General services	920
Craft	4
Art	140
Taxidermy	11
<i>Total 1st round supplier employment</i>	16,000

Source: PACEC (Individual figures have been rounded and therefore may not appear to sum exactly to the total. See Appendix B1 for notes on rounding)

A significant proportion of provider expenditure goes to local suppliers, primarily within 10-15 miles of the shooting site.

The case studies of providers showed that significant proportions of their expenditure was of local suppliers, primarily within a ten to fifteen mile radius of the shoots. This was important to the local economy, helping to provide employment, retaining and upgrading local skills. The case studies with suppliers further afield, for example, with those supplying guns, ammunition, clothing, and accessories and collectible guns showed that they enjoyed income benefits. Please see Appendix C.

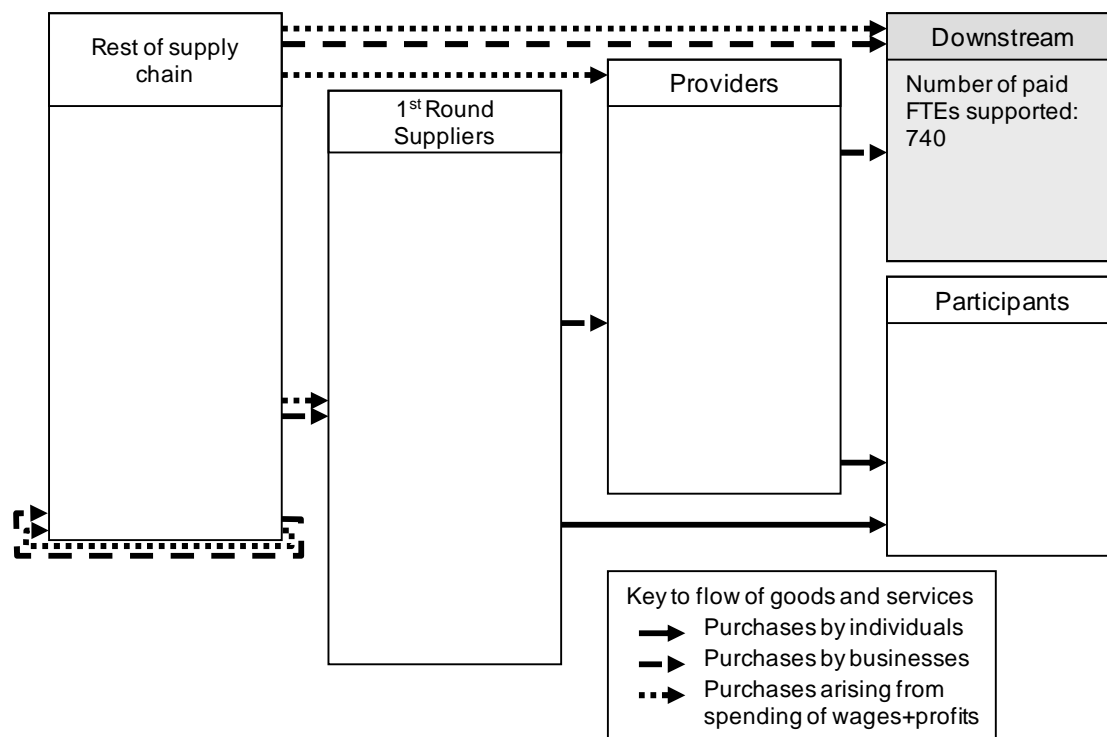
The framework diagram shows the initial impact of expenditure on suppliers – the “1st round” of the supply chain.



What are the downstream jobs resulting directly from the sport?

“Downstream” businesses are those to which shooting sports providers are suppliers, such as processors of, and dealers in, shot quarry, and those using animal products such as antlers for arts and crafts. 740 jobs are supported in businesses.

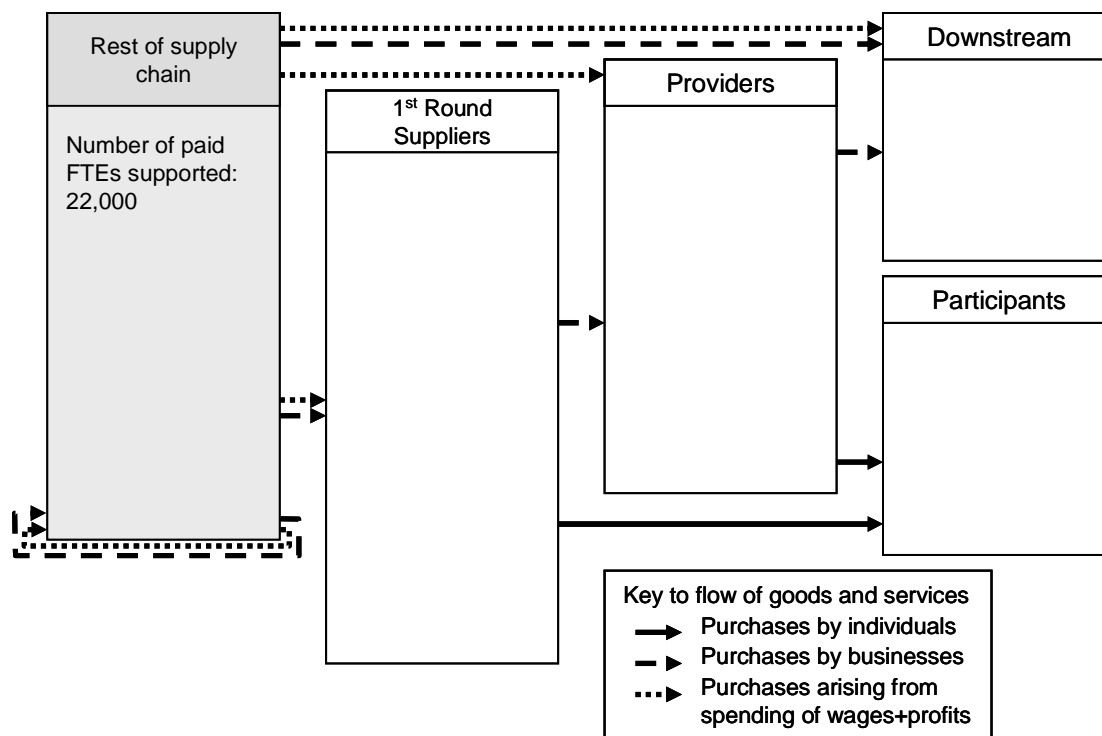
Table 50: Downstream businesses affected by participants and providers	
	Total UK
Expenditure by participants and providers	£59m
Number of paid FTE jobs supported	740 jobs
Source: PACEC (See Appendix B1 for notes on rounding)	



How many jobs in rest of the supply chain are supported through the supply chain and expenditure multiplier effects?

Suppliers to the shooting industry support jobs in their own supply chains, and by spending wages and profits. The total effect is to support an additional 22,000 FTE jobs.

The number of supply chain jobs quoted below represents the amalgamation of all jobs resulting from businesses buying from other firms (supply chain effects) and all jobs generated by businesses and individuals' spending of wages and profits (expenditure multiplier effects).



All levels of the economic impact are now accounted for.

What is the total number of jobs supported by shooting sports in the UK?

The estimated number of jobs supported by shooting sports has been calculated by adding together all direct and indirect (first round supplier, downstream and supply chain) jobs.

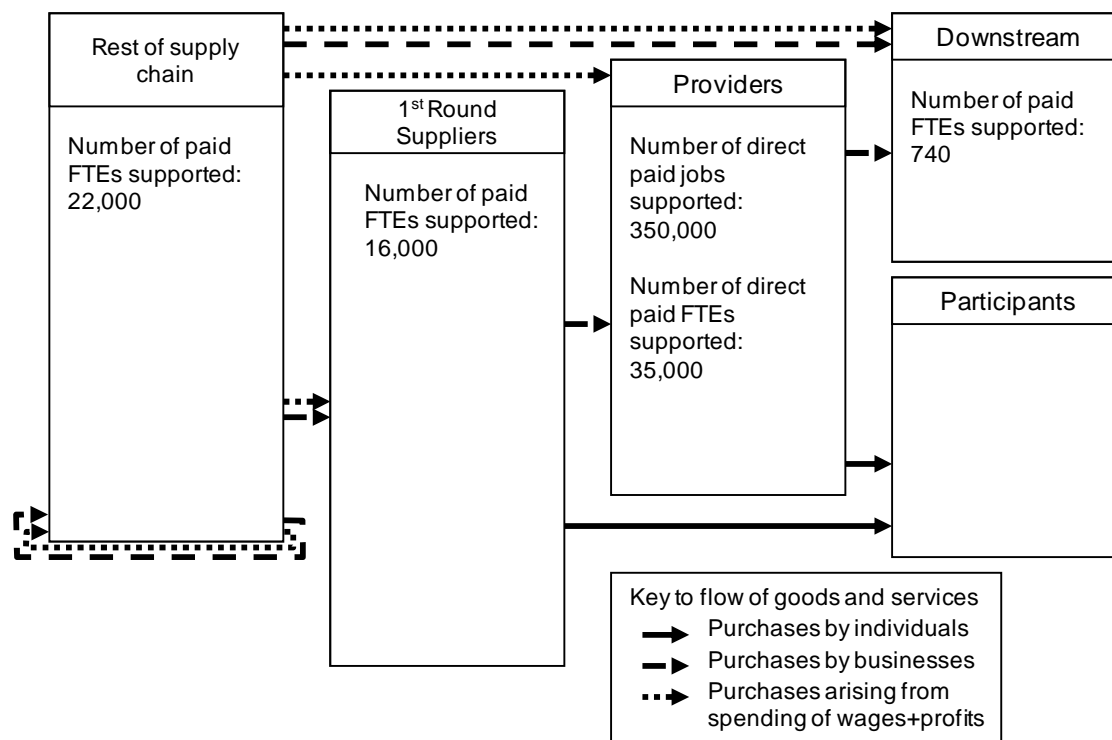
Shooting supports a total of 74,000 full-time equivalent jobs in the UK economy – 35,000 directly, 39,000 indirectly.

Table 51: Breakdown of paid jobs supported by shooting sports

	Total UK FTE paid
Beaters and pickers up	14,000
Shoot managers, gamekeepers, others	21,000
Total number of direct jobs	35,000
Number of supplier jobs supported	16,000
Number of jobs supported in downstream businesses	740
Number of supply chain jobs supported (includes expenditure multiplier effects)	22,000
Total number of indirect jobs supported	39,000
Total number of jobs supported	74,000

Source: PACEC (Individual figures have been rounded and therefore may not appear to sum exactly to the total. See Appendix B1 for notes on rounding)

The complete framework diagram below shows the flow of expenditure and the jobs supported.



What amount of Gross Value Added (GVA) is attributable to shooting sports in the UK?

The total economic impact of shooting in money terms is measured by Gross Value Added (GVA). It is equal to the amount of wages and profits generated at all levels of the supply chain. This is equivalent to taking the value of the inputs required at each level of the chain (i.e. raw materials, services) and subtracting this from the value of all the goods and services produced at every level of the chain. It is the value of the work undertaken. The value of shooting sports to the UK economy in 2012/13 is estimated to be £2bn.

Shooting activity contributed £2bn to the UK economy in 2012/13.

Table 52: Estimated GVA supported by shooting sports (£m)

	Total UK
Direct GVA (staff income)	370
Downstream	31
First round suppliers	680
Rest of supply chain	950
Indirect total	1,700
Total	2,000

Source: PACEC (Individual figures have been rounded and therefore may not appear to sum exactly to the total. See Appendix B1 for notes on rounding)

3.4 The economic benefits of shooting by region

Shooting GVA is concentrated in the South East, the South West, and the West Midlands. There is little direct GVA in London but it benefits from the supply chain.

Table 53: The economic benefits of shooting sports by UK country and region

Country/Region of England	Total FTE paid jobs supported	First round supplier spend by providers and participants (£m)	Direct GVA (£m)	Total GVA supported (£m)
South East	13,100	330	71	370
East	7,000	150	30	180
Gr. London	3,600	68	10	140
South West	10,000	230	52	250
West Midlands	9,800	220	43	240
East Midlands	6,200	140	25	150
York/Humber	4,100	91	18	120
North West	5,300	130	24	160
North East	2,300	46	9	57
England	61,000	1,400	280	1,700
Wales	2,400	64	11	75
Scotland	8,800	180	38	200
Northern Ireland	770	19	2.7	28
<i>UK</i>	74,000	1,700	370	2,000

Source: PACEC (Individual figures have been rounded and therefore may not appear to sum exactly to the total. See Appendix B1 for notes on rounding)

3.5 Summary of the economic benefits

What is the total number of jobs supported by shooting sports activities in the UK?

Shooting sports supports an estimated total of 74,000 paid **full-time equivalent** jobs in the UK. Shooting sports providers are responsible for providing 350,000 direct paid jobs in the UK. Most are seasonal and / or part time – their full time equivalent is 35,000 direct paid jobs. A total of 39,000 jobs are supported indirectly through purchases to suppliers by both individuals and firms, and as a result of spending wages and company profits.

What is the breakdown of jobs supported by shooting sports in the UK?

The breakdown of paid FTE jobs is:
 35,000 direct jobs
 39,000 indirect jobs

The breakdown of the 35,000 direct paid FTE jobs is:
 14,000 Beaters and Pickers Up
 21,000 others (including gamekeepers, shoot managers, administrators, accommodation staff, and all others)

The breakdown of the 39,000 indirect paid FTE jobs is:
 16,000 supplier jobs
 740 “downstream” jobs (such as sale of shot game to processors and dealers for their use)
 22,000 “rest of supply chain” jobs (chiefly in companies providing accommodation and food, costs associated with dogs, and travel),

What are providers typically spending in order to provide shooting sports opportunities?

The majority of providers surveyed (84%) each spent over £1,000 per annum, and 15% spent over £50,000 in 2012/13. In the UK in 2012/13, providers spent **£1.1 billion** on providing shooting sports, most of which was spent on operational costs (£630m) and staff costs (£370m).

What are participants typically spending on their sport per annum?

Shooting participants in the UK spent a total of **£2.5 billion** on goods and services in 2012/13, of which **£860 million** was spent directly with shooting providers or on site. The largest annual expenditure for participants was shoot subscriptions and per day shooting fees, totalling £370 million and £310 million respectively in 2012/13.

What amount of GVA is attributable to shooting sports in the UK? The value to the UK economy of the shooting sports providers and their suppliers, as measured by Gross Value Added, was **£2 billion** in 2012/13.

4 The environmental and social benefits of shooting sports

4.1 Introduction to environmental and social benefits

While the previous chapter has concentrated on placing a value on the contribution which shooting sports makes to the UK economy, one cannot conclude that the value of the sector is in jobs and monetary contribution alone. This study has set out to examine both the economic and the environmental impacts of the sport. This research has also sought to quantify the social benefits of shooting sports beyond the economic impacts. The “human dimension” of the benefits provided by shooting sports include access to training and skills, engagement between providers and the local community, and the benefits to well-being which areas of countryside managed for shooting can provide to shooters and other groups such as walkers.

This is not the first time that a study has looked at the benefits which shooting sports have on the environment. A number of previous reports highlight the important role which habitat and wildlife management for shooting plays in conserving, managing, improving, and creating landscapes, habitats and biodiversity in the UK. The environmental component of our own study is designed to provide up-to-date information on the habitat and wildlife management carried out by shooting providers.

Shooting providers influence the management of two thirds of the area of rural land in the UK.

Habitat and wildlife management is crucial to provide the conditions necessary for sustaining gamebird/other populations. Shooting providers become, in effect, countryside stewards for a sizeable proportion of land in the UK. Indeed, whether they manage the land solely for the purposes of shooting or more commonly, for a combination of reasons including shooting, they influence the management of 14 million hectares of land, around two thirds of the area of **rural land**³¹ in the UK.

What is more, shooting providers undertake work which complements other management carried out by conservation organisations providing public environmental services. Local shoots will influence habitat management carried out on farms to benefit game as well as other wildlife. Where the shooting provider is not the landowner (such as a syndicate shoot captain), the shooting provider often carries out land management that is additional to that undertaken by the landowner.

Over half of the providers are members of conservation organisations, 20% of providers are members of biodiversity advisory groups, a quarter (24%) have participated in bird surveys and 16% have participated in other conservation or land management research.

32% of providers employ a paid gamekeeper (who may be part time or full time) whose duties include habitat and wildlife management. This can have significant benefits for the countryside and biodiversity. 29% of shooting providers said that they had a conservation designation on part of their site.

This chapter falls into two parts. The first looks at the environmental activities and benefits arising due to shooting in the UK. The second considers the broader social benefits as well as softer environmental effects such as health and well-being.

³¹ **Rural land** All land in the UK which is not defined as urban, i.e. not in a settlement of 10,000 or more people. (Definition from "2011 Rural Urban Classification" published by Defra)

4.2 Environmental activities associated with shooting sports

Key issues and questions

This section aims to answer the following questions:

- What is the scale and type of habitat and wildlife management carried out for shooting?
- How would habitat and wildlife management change if shooting sports stopped?

What is the scale and type of habitat and wildlife management carried out for shooting?

In the UK as a whole shooting sports providers were found to be responsible for a total of over 14 million hectares of land. Although shooting does not take place over the entirety of this area, the figure does illustrate the area of land which may be influenced by management for shooting.

A wide variety of habitat and wildlife management practices are associated with shooting sports, designed to control pests, increase wildlife and provide habitats favourable for sustaining conditions suitable for quarry. The most common of these, set out in the table below, are **pest control, maintenance of woodlands, creation/maintenance of release pens, and planting cover crops.**

Among those providers carrying out habitat and wildlife management, 53% maintained woodlands via coppicing and thinning.

On average, the percentage split between creation of new habitats and maintenance of existing habitats, in terms of labour time, is 20:80.

Table 54: Habitat and wildlife management activities carried out by shooting providers (%)

	% of providers
Create or maintain conservation headlands	26
Create or maintain grass strips around fields	33
Create or maintain hedgerows	41
Create / maintain 'covert' (copse that shelters game)	37
Retain overwinter stubbles	19
Plant cover crops	48
Create or maintain beetle banks	18
Maintain banks of streams and rivers	32
Maintain woodlands (coppicing, thinning)	53
Create or preserve wetlands	21
Create / maintain release pens	50
Plant native trees	35
Remove trees to create glades/rides	35
Manage heather moorland (general)	24
Re-seed heather moorland	16
Re-wet deep peat	15
Block grips	16
Control bracken	27
Create ponds and scrapes	23
Create or maintain flight ponds	33
Pest control (to protect game and habitats)	54
Litter picking	40
Game wardening ³² (general habitat management)	33
Other (please specify below)	17
<i>Number of respondents</i>	<i>560</i>

³² **Game wardening:** *The management of game in the context of habitat and wildlife management.*

External research³³ has suggested that the environmental benefits of shooting-related conservation extend beyond the species and habitats directly managed. For example, certain bird species fare better on shoot sites (including grouse moors) than elsewhere in the UK, due to predator control (e.g. corvid, fox) and other habitat management such as rotational burning of heather moorland; feed hoppers provided by gamekeepers for pheasants are used by wintering songbirds; and management of woodland for shooting results in higher numbers of songbirds and woodland butterflies.

Further evidence of the environmental benefits of shooting-related conservation is set out in the case studies in Appendix C.

Shooting providers were asked to give details of the extent of various types of habitat and wildlife management carried out on their land as a result of the provision of shooting sports on the site, and the area of land over which these specific types of management took place was grossed up for the UK. 1.8 million ha of land is managed in this way in the UK. This represents 7% of the total land area of the UK, 12% of rural land in the UK and an area roughly the size of Wales. The following table shows the breakdown of land management by type of activity.

³³ Provided by GWCT – further information available at <http://www.gwct.org.uk/research>

1.8 million hectares of land is managed for shooting purposes, chiefly heather moorland (850kha) and woodland (500kha).

Table 55: Breakdown of land managed by providers for shooting purposes (000ha)

	Land (000 ha)
Management of heather moorland (general)	850
Woodland (e.g. coppicing, thinning)	500
Retaining overwinter stubbles	140
Creating/maintaining "covert" ³⁴	100
Controlling bracken	57
Plant native trees	48
Create or maintain conservation headlands	30
Plant cover crops	25
Create or preserve wetlands	20
Re-seed heather moorland	20
Re-wet deep peat	14
Create or maintain grass strips around fields	13
Remove trees to create glades/rides	12
Create / maintain release pens	10
Create or maintain flight ponds	7
Create or maintain hedgerows	7
Maintain banks of streams and rivers	5
Create or maintain beetle banks	3
<i>Total land</i>	<i>1,800</i>

Source: PACEC (Individual figures have been rounded and therefore may not appear to sum exactly to the total. See Appendix B1 for notes on rounding)

Those providers operating outdoor shooting sites were asked how much supplementary feed they put out in 2012/13. In most cases (84% of those answering the question), 0-20,000 kg were put out by providers, with 9% stating that they did not put out any supplementary feed.

³⁴ **Covert:** *A copse that shelters game.*

The providers put out an average of 16,000kg of supplementary feed for gamebirds and ducks.

Table 56: Supplementary feed put out by providers (%)

Supplementary feed (kg)	% of providers
0	9
1-2,000	25
2,001-5,000	18
5,001-10,000	17
10,001-20,000	15
20,001-50,000	9
50,001-100,000	4
Over 100,000	3
<i>Number of respondents</i>	<i>545</i>

Source: PACEC Survey of Providers 2014

In 29% of cases, shooting providers had land with a specific conservation designation on at least part of their site. Among those providers that identified a specific designation, the most common was “Site of Special Scientific Interest” (72% of cases). 26% identified a “Special Area of Conservation” and 15% said their site was part of a National Park.

29% of shooting providers said that they had a conservation designation on part of their site.

Table 57: Providers with a conservation designation on part of their site (%)

	Percentages of all respondents (By amount spent on providing shooting)					
	Total	£0-99	£100-999	£1k-9k	£10k-49k	£50k or more
Yes	29	18	20	25	27	51
No	71	82	80	75	73	49
<i>Number of respondents</i>	<i>978</i>	<i>22</i>	<i>122</i>	<i>410</i>	<i>271</i>	<i>140</i>

Source: PACEC Survey of Providers 2014

15% of shooting providers said shooting on their site had been specifically affected by conservation or environmental regulations.

Table 58: Providers with shooting specifically affected by any national or international conservation or environmental regulations (%)

	Percentages of all respondents (By amount spent on providing shooting)					
	Total	£0-99	£100-999	£1k-9k	£10k-49k	£50k or more
No	59	52	69	63	56	48
Don't know	26	43	24	26	29	19
Yes	15	5	7	11	15	33
<i>Number of respondents</i>	<i>899</i>	<i>21</i>	<i>113</i>	<i>378</i>	<i>255</i>	<i>123</i>

Source: PACEC Survey of Providers 2014

How would habitat and wildlife management change if shooting sports were stopped?

If shooting were stopped:

- 20% of providers would manage their land in the same way
- 68% would manage habitats with less effort – this includes 44% who would employ “much less effort”
- 6% would put more effort in

Of the organisations likely to continue managing the land if shooting were stopped, those spending £50k or more annually on shooting were more likely to anticipate employing less effort in habitat and wildlife management.

Some two thirds (68%) of shooting providers would manage their land with less effort if shooting sports stopped. Only 20% of providers would manage their land in the same way.

Table 59: If shooting sports were stopped, how would your land be managed? (%)

	% of all providers (by amount spent on providing shooting)					
	Total	£0-99	£100-999	£1k-9k	£10k-49k	£50k or more
With much less effort	44	44	26	43	46	55
With less effort	24	17	24	21	26	28
In the same way	20	33	33	23	16	9
With more effort	6	0	8	7	5	4
With much more effort	6	6	8	7	6	4
<i>Number of respondents</i>	752	18	87	315	220	107

See Appendix B1 for notes on bold figures, multiple rows and rounding.
Source: PACEC Survey of Providers 2014

The case studies showed that local volunteers and liaison with schools and young people make an important contribution to conservation, wildlife, and habitat management. Please see Appendix C.

4.3 Costs of environmental activities associated with shooting sports

Key issues and questions

The following section looks at the financial costs of habitat and wildlife management carried out by shooting providers and it seeks to answer the following questions:

- What expenditure is required to carry out habitat and wildlife management for shooting purposes?
- What labour is required to carry this out?
- How is the management funded?
- What would be the costs of pest and predator control in the absence of shooting?

Below are illustrations of operational and capital expenditure on habitat and wildlife management. Respondents were asked only to detail the expenditures attributable to shooting sports, although some items may not be exclusively for habitat and wildlife management work (e.g. an estate vehicle used by the gamekeeper used for beaters on shooting days).

An estimated total of £28m was spent on habitat and wildlife management subcontractors. Expenditure on pest control subcontractors was considerably less (£1m), indicating that most pest control is carried out by shooting providers' employees or volunteers.

Table 60: Breakdown of operational expenditure on habitat and wildlife management for shooting sports (£m)

	Total UK
Land mgt subcontractors	28
Trees for planting	3
Cover crop seed	5
Pesticide/Fertiliser	10
Pest Control subcontractors	1
<i>Total operational land mgt spend</i>	<i>47</i>

Source: PACEC (Individual figures have been rounded and therefore may not appear to sum exactly to the total. See Appendix B1 for notes on rounding)

Shooting providers spend £11m per annum on fencing, which arguably may be specifically for shooting sports purposes (such as in the case of **release pens**³⁵), or indirectly for management (when fences are put up to manage deer).

The £10m invested in roads and tracks each year for shooting purposes may have knock on benefits for other users of the land such as walkers or farm workers.

Table 61: Breakdown of capital expenditure on habitat and wildlife management for shooting sports (£m)

	Total UK
Fencing*	4
Private roads, tracks	10
Vehicles	32
<i>Total capital spend</i>	<i>46</i>

*Excludes expenditure on fencing erected for other purposes (e.g. for livestock).

Source: PACEC (Individual figures have been rounded and therefore may not appear to sum exactly to the total. See Appendix B1 for notes on rounding)

What expenditure is required to carry out habitat and wildlife management for shooting purposes?

Expenditure on habitat and wildlife management represents a fifth (21%) of all costs borne by shooting providers.

Table 62: Breakdown of costs of habitat and wildlife management for shooting sports (£m)

	Habitat & wildlife management costs	Shooting sports costs
Staff Costs	140	370
Operational costs	47	630
Capital costs	46	110
<i>Total costs</i>	<i>230</i>	<i>1,100</i>
<i>Share of shooting sports</i>	<i>21%</i>	<i>100%</i>

Source: PACEC (Individual figures have been rounded and therefore may not appear to sum exactly to the total. See Appendix B1 for notes on rounding)

³⁵ **Release Pens:** Where pheasant shooting takes place, release pens are typically erected for the management of young birds before release.

How much labour is required to carry out these activities?

An estimated 3.9 million work days are undertaken each year on habitat and wildlife management for shooting in the UK. This is the equivalent to 16,000 FTEs (not necessarily paid, and including voluntary work).

The most labour intensive management tasks are game wardening (4,700 FTE), pest control (3,100 FTE), and maintenance of woodlands (1,600 FTE).

Table 63: Breakdown of labour undertaken for habitat and wildlife management practices for shooting sports (FTEs)

	Labour
Create or maintain conservation headlands	440
Create or maintain grass strips around fields	560
Create or maintain hedgerows	790
Create / maintain 'cover' (copse that shelters game)	940
Retain overwinter stubbles	480
Plant cover crops	96
Create or maintain beetle banks	170
Maintain banks of streams and rivers	450
Maintain woodlands (coppicing, thinning)	1,600
Create or preserve wetlands	100
Create / maintain release pens	450
Plant native trees	630
Remove trees to create glades/rides	270
Manage heather moorland (general)	120
Re-seed heather moorland	12
Re-wet deep peat	12
Block grips	1
Control bracken	170
Create ponds and scrapes	3
Create or maintain flight ponds	210
Pest control (to protect game and habitats)	3,100
Litter picking	400
Game wardening (general habitat management)	4,700
Total	16,000

Source: PACEC (Individual figures have been rounded and therefore may not appear to sum exactly to the total. See Appendix B1 for notes on rounding)

The amount of land influenced by shooting for each provider of live quarry shooting, and the amount of conservation labour associated with the provision of shooting, varies by the type of quarry provided, as shown in the table below. The providers of driven grouse shooting had an average size of 4,500ha, and reported an average of 790 days per year of conservation labour dependent upon shooting – approximately 3 FTEs per provider.

Table 64: Average land affected by shooting (ha) and annual conservation labour (days) per provider, by quarry type

	Average figures per provider	
	Land affected by shooting (e.g. site area) (ha)	Annual conservation labour (days)
Driven grouse	4,500	790
Walked-up grouse	3,400	160
Other driven game	850	140
Other walked-up game	1,300	66
Inland wildfowling	1,400	190
Coastal wildfowling	2,600	150
Red deer stalking	4,700	560
Other deer stalking	960	150

See Appendix B1 for notes on rounding.
Source: PACEC Survey of Providers 2014

The survey returns suggest that the amount of effort expended in the management of heather moorland by grouse shooting providers exceeds that reported in the table on conservation labour above, as such providers reported the activities of their gamekeepers in the “game wardening” and “pest control” categories (see Table 63) – all of this activity takes place on heather moorland and contributes to its management.

How is habitat and wildlife management funded?

Most providers rely on a range of sources to fund habitat and wildlife management activities.

At present, a proportion of the costs of habitat and wildlife management are borne by the shooting provider. A sixth of shooting providers said that conservation paid for itself by “reaping its own returns” (16%). 56% said that land management was either financed from returns from shooting or was done voluntarily. For the remainder (29%) there was a mixture of the other two options or other finance (including some grants and donations as well as substantial private expenditure). Providers also reported the amount of charitable donations that they made (excluding those to shooting sports organisations) – in the UK as a whole these totalled some £3.5m.

Conservation is self-financing for 16% of shooting providers.

Table 65: The financing of land management and conservation by shooting providers (%)

	% of providers (By amount spent on providing shooting)					
	Total	£0-99	£100-999	£1k-9k	£10k-49k	£50k or more
Conservation reaps its own returns	16	0	15	14	16	21
Financed from returns from shooting/done voluntarily	56	40	43	57	59	55
Other / mixture	29	60	42	29	25	25
<i>Number of respondents</i>	533	10	53	211	159	97

See Appendix B1 for notes on bold figures and rounding.
Source: PACEC Survey of Providers 2014

What would be the costs of controlling pest and predator species in the absence of shooting sports?

In the absence of shooting sports, pest control would cost approximately £7,900 each year per provider.

A little over half of the providers (53%) stated that pest and/or predator control would need to take place on their site in the absence of shooting sports (for example, for the protection of crops or conservation of ground-nesting birds). Among the providers that described specific pests or predators, foxes were most commonly mentioned (by almost two-fifths of providers), followed by crows (almost one-quarter). Pigeon and rabbit were each mentioned by around one in five providers, and deer by one in six.

The anticipated costs of pest and predator control without shooting sports on the land were found to be on average £7,900 per year per provider (among those who answered the survey question). Alternatively, those who expressed the amount of pest and predator control in terms of the amount of time required estimated an average of 99 days per year.

Regional summary of environmental activity of providers

Higher regional labour inputs for environmental management usually correspond with greater areas of land managed.

Table 66: The environmental effects of shooting sports by UK country and region

Country/Region of England	Area influenced by shooting (000ha)	Costs of habitat & wildlife mgt for shooting (£m)	Labour for habitat & wildlife mgt for shooting (FTE)
South East	1,800	41.0	2,400
East	820	29.0	1,100
Gr. London	240	3.1	280
South West	1,800	36.0	2,200
West Midlands	1,300	20.0	1,600
East Midlands	830	18.0	1,100
York/Humber	810	11.0	1,000
North West	890	16.0	990
North East	400	8.0	480
England	8,800	180.0	11,000
Wales	380	7.4	490
Scotland	4,500	35.0	3,900
Northern Ireland	69	8.5	67
UK	14,000	230.0	16,000

Source: PACEC (Individual figures have been rounded and therefore may not appear to sum exactly to the total. See Appendix B1 for notes on rounding)

4.4 Environmental and social benefits of shooting sports according to participants

The shooting participants were asked to share their views on the environmental and social effects of the sites where they shot by asking to rate the level of their agreement with a number of statements on their shooting activity and that of the shooting providers they use. Their agreement was rated on a scale from 1 to 5, where 1 indicated strong disagreement and 5 indicated strong agreement.

97% of shooting participants agree or strongly agree that shooting contributes to their well being. 93% of cases, shooting participants agree or strongly agree that shooting sites are healthy and attractive. 87% agree or strongly agree that shooting contributes to the social fabric of the local area, and 81% agree or strongly agree that it contributes to local employment and skills.

Table 67: Views on environmental and social effects of shooting on scale of 1 (strongly disagree) through 3 (neutral) to 5 (strongly agree)

	% of participants giving each rating					
	Average rating	1	2	3	4	5
The sites where I shoot are attractive environments	4.5	0	1	6	31	62
The site(s) where I shoot are healthy environments	4.6	0	0	4	33	62
My shooting activity contributes to my well being	4.7	0	0	2	20	77
I or the shooting provider(s) I use contribute to:						
The attractiveness of the environment/landscape	4.4	0	1	12	34	53
The conservation of flora and fauna	4.4	1	1	11	32	56
The social fabric of the local area	4.4	0	1	12	33	54
Employment and skills in the local area	4.3	1	1	16	32	49
<i>Number of respondents</i>	533	10	53	211	159	97

See Appendix B1 for notes on bold figures and rounding.
Source: PACEC Survey of Providers 2014

4.5 Environmental and social benefits of shooting sports according to providers

6% of the providers in the survey said that they provided apprenticeships, and a further 28% said that they provided other formal or informal on-the-job training on site.

In the detailed section of their survey, providers were asked to describe any apprenticeships or other formal or informal on-the-job training they provided. 6% provided apprenticeships, most commonly including gamekeeping but also incorporating farming and gunsmithing. The other training provided was much more likely to reflect the activities of shooting ranges, including range officer training, firearms safety, general health and safety, and the responsibilities of training new members in turn.

The case studies showed that providers use their local and regional colleges for skills training for both apprentices and existing staff. Please see Appendix C.

22% of providers have links with training organisations. 16% have links with local educational establishments, or provide school visits.

Around one in six providers stated that they maintained links with local educational establishments or provided school visits. These include the provision of shooting experience and training to school cadet forces, scout groups, Duke of Edinburgh award scheme members. There are also links which emphasise the environmental benefits of shooting and conservation, or simply use shooting locations as wild locations, such as for nature walks or “forest school”-type outdoor lessons.

The case studies indicated that there were a wide range of local social benefits as a result of using local volunteers, the links with schools and young people, and the local expenditure with suppliers that helped maintain and strengthen rural communities. Many of these practices had become embedded as many of the providers had operated locally for over 50 years. Please see Appendix C.

Links with training organisations are commonly organised through the shooting and conservation organisations such as BASC, CPSA, NRA, and NSRA.

In 16% of cases, providers felt that some people might consider the game or other quarry (or the greater assemblages of other bird species present due to habitat management) on the sites they owned to be a tourist attraction. An example of this would be the opportunity to see deer or birds on a hillside.

4.6 Summary of environmental and social benefits of shooting sports

What area of the UK is managed for shooting sports?

Shooting providers influence the management of **14 million ha** of land, around **two thirds** of the area of rural land in the UK.

Specific habitat and wildlife management for shooting is carried out on **1.8 million ha** of land in the UK. 46% of this work (by area) is general management of heather moorland, and 27% is coppicing or thinning woodland.

What is the cost of such habitat and wildlife management practices?	Shooting providers in the UK spend an estimated £230 million per year on habitat and wildlife management practices specifically for shooting sports (related labour, operational and capital spend). 61% (£140 million) of this expenditure is on labour.
How much labour is required to carry out these activities?	A total of 3.9 million work days (16,000 FTEs) are required each year to undertake all habitat and wildlife management on shooting sports sites in the UK. The main areas of labour are game wardening (4,700 FTEs), pest control (3,100 FTEs) and woodland maintenance (1,600 FTEs).
What are the views of participants on the benefits of shooting sports?	In over 97% of cases, shooting participants agree or strongly agree that shooting contributes to their well being. 93% agree or strongly agree that that shooting sites are healthy and attractive. 87% agree or strongly agree that shooting contributes to the social fabric of the local area, and 81% agree or strongly agree that it contributes to local employment and skills.
What community benefits do shooting providers give?	6% of the providers in the survey said that they provided apprenticeships, and a further 28% said that they provided other formal or informal on-the-job training on site. 22% have links with training organisations. 16% have links with local educational establishments, or provide school visits.

Appendix A Survey methodology

A1 Introduction

- A1.1 The purpose of the surveys of participants and providers was to look at the employment and monetary flows of those responsible for providing shooting opportunities and those participating in the sport, so as to assess the direct, indirect and induced impacts of the sport on the UK economy. In other words, this information was gathered to inform the modelling of the impacts of the sector and to calculate the total number of jobs and revenue generated by the sector across all associated activities.
- A1.2 In addition to the economic impact of shooting sports, the surveys were also used to assess the environmental and social impacts of shooting sports by asking providers and participants a series of questions relating to the land management practices attributable to the shooting taking place.
- A1.3 The facility to shoot and stalk is provided by owners of land and sporting rights, who may grant access to shoot over their land. In many cases, the land is subject to special management for this purpose. However, the 'providers' are not necessarily owners; they may be lessees, with a specific interest in the sporting rights. For the purposes of this study, providers were taken to include landowners, shoot managers, gamekeepers and farmers based on the shoot site, or the club captain/secretary of a shooting club. Where there was more than one person involved in the provision of shooting activities, it was suggested that those in key roles worked together to fill in the questionnaire, especially as the financial and land management aspects of the questionnaire may best be filled in by two different people.
- A1.4 For the purposes of this study, participants were taken to be people who shoot any type of live quarry across the UK, or participate in clay pigeon or target shooting.

Questionnaire design

- A1.5 The design of the provider, participant and supplier questionnaires drew on information gathered from stakeholder interviews, literature reviews and other desk top research. A 'quick' section was incorporated in each questionnaire in order to cover the key elements of both the participants and providers surveys (which were used for grossing up). This element was designed with the following in mind:
- Non response of long detailed questionnaires can cause problems with our estimate of the grossed up size of shooting sports. Very large organisations may be unwilling to give **detailed** information. Larger organisations may be particularly suffering from survey **fatigue**. Very small organisations may be unwilling to spend a long **time** giving information. Each of them may be willing to fill in the shorter less intrusive questionnaire.
 - The vast majority of providers are themselves participants, so including a small number of participant questions to providers is useful. A small number of participants may be providers, so asking a small number of provider

questions to participants is useful, particularly in identifying the smaller and/or more informal providers.

A1.6 The 'quick' section of the provider and participant questionnaires contained the following features:

- Questions regarding the respondent's membership of the organisations which are providing the data. This allowed for estimates of double counting to take place.
- Providers were asked how many key people were involved in running the provider organisation. These key people are: Shoot manager, Shoot Secretary/captain, Landowner, Tenant and Stalker/gamekeeper. This was required, given that we could potentially have contacted a provider organisation via a number of sources (e.g. gamekeeper and landowner) and we needed to be aware of this when grossing up.

A1.7 A single email invitation was used for both participants and providers. A filter question on whether or not the respondent held a key role in a provider organisation was asked at an early stage and the respondent was routed to the appropriate sections of the questionnaire accordingly. In this way we were able to access the maximum amount of information on provision. Having completed the provider questionnaire, respondents were able to continue to the participant questionnaire as well.

Questionnaire distribution

A1.8 Providers and participants were accessed primarily through a number of membership databases which were made available to us, either directly or indirectly. Typically, the membership organisation would distribute an email invitation to the online survey via its membership database. The exception was the National Gamekeepers Organisation, which sent emails where addresses were available and also a random sample of 1,000 questionnaires via its postal address database.

A1.9 The great majority of provider and participant questionnaires were distributed by email, although an "open access" version of the web survey was created and promoted via social media, and survey participants via invitations from partner organisations were also encouraged to forward the open access survey link to their friends and colleagues. The organisations which have helped us to access potential questionnaire respondents are as follows:

Association of Professional Shooting Instructors
British Association for Shooting & Conservation (BASC)
Clay Pigeon Shooting Association
Country Land and Business Association (CLA)
Countryside Alliance
GunsOnPegs
Moorland Association
National Gamekeepers Organisation (NGO)
National Rifle Association

National Small-Bore Rifle Association
 Scottish Country Sports Tourism Group
 Scottish Land and Estates
 United Kingdom Practical Shooting Association

- A1.10 It was not possible to conduct telephone prompts to increase the response rates because in most cases for reasons of confidentiality we did not have the contact lists (the organisations themselves sent out the questionnaires).

Main survey

- A1.11 Questionnaires were distributed via the partner organisations, principally by direct email, as shown in the following table. The majority of responses came from BASC members.

Table A1.1 Survey invitations distributed and responses received

Organisation	Questionnaires received	Circulation
Association of Professional Shooting Instructors	61	284
British Association for Shooting and Conservation	6,713	34,169
CLA	157	17,500
Clay Pigeon Shooting Association	1,323	13,651
Countryside Alliance	1,204	26,000+*
GunsOnPegs	2,565	62,082
Moorland Association	45	175
National Gamekeepers' Organisation - email	528	4,094
National Gamekeepers' Organisation - postal	103	1,000
National Rifle Association	2,051	6,800
National Small-Bore Rifle Association	351	900
Scottish Country Sports Tourism Group	63	1,200
Scottish Land and Estates	181	1,497
United Kingdom Practical Shooting Association	177	520
General access (circulation to friends/colleagues, social media etc)	721	Unknown
<i>Total</i>	<i>16,234</i>	<i>Unknown (due to potential duplication)</i>

Note: Countryside Alliance circulated 26,000 questionnaire invitations by direct email and in addition made reference to the questionnaire in a newsletter.
 Source: PACEC

- A1.12 A total of 16,234 questionnaires were filled in.

A2 Non response bias

- A2.1 In the PACEC 2006 study, in order to address the issue of non-response bias on estimates of involvement in shooting sports, we carried out a set of follow-up

interviews. This option was not available for the current study as the relevant contact information was not available – however, the results have been used to estimate non-response bias in the current study.

A2.2 The target sample was taken from the contact data supplied by the Countryside Alliance:

- 20 Countryside Alliance Member (no shooting sports flag) and 20 Countryside Alliance Supporters. These groups have relatively low rates of involvement in Shooting sports (48% in the main survey)
- 20 Countryside Alliance Members (shooting sports flag) and 40 Campaign for Shooting (provider flag). These have very high rates of involvement in Shooting sports (94% in the main survey)

A2.3 Non-respondents were asked the following questions:

In the summer you were sent a questionnaire about Shooting sports in the UK as part of a study commissioned by the British Association for Shooting and Conservation, the Countryside Alliance and the Country Land and Business Association.

- a Did you fill in the questionnaire (Yes/No)
- b As part of the data checking would you be willing to answer 4 very short questions - which should take no longer than 1 minute? (Yes/No) If No, is this because you are not involved in shooting sports? (Yes/No)

If 'Yes':

- 1 **What types of shooting sports were you involved with?** (Tick as many as apply)
Grouse; Driven Game; Walked up Game; Coastal WF; inland WF, Deer stalking; avian pest; Mammal pest, **None**
- 2 Were you involved in the provision of shooting sports in 2004? (Tick as many as apply)
Grouse; Driven Game; Walked up Game; Coastal WF; inland WF, Deer stalking; avian pest; Mammal pest, None
- 3 If you were involved in provision, how many key people were involved in the provision
Landowner, Farmer, Estate manager, Gamekeeper, Stalker, Shoot Manager, Secretary, Captain
- 4 If you were involved, how many paid gamekeeper/stalkers were employed?

A2.4 The key finding was that the involvement rates were lower for those who did not reply to the postal survey, than those who did reply to the postal survey for both groups (48% fell to 26%, and 94% fell to 90%).

A2.5 An involvement deflator was calculated using the following

- Involvement rate of survey respondents = 48%
- Involvement rate of non survey respondents = 26%
- Survey response rate = 20%
- Involvement rate of population =
 $20\% * 48\% + (1-20\%) * 26\% = 30\%$
- Actual involvement rate changes from 48% to 30%

- Involvement deflator necessary = $30/48 = 63\%$

A2.6 This deflator changes depending on the involvement rate. We assume that the deflator is 100% when involvement rate = 100% and it changes linearly to 63% when the (survey based) involvement rate is 48%. This correctly predicts a deflator of 96% when the involvement rate is 94%.

A3 Grossing up

A3.1 There are certain key statistics which we wish to estimate for the whole of the UK shooting sports:

- From the Participant survey
 - Number of Guns (by quarry, by country/region)
 - Number of Gun-Days (by quarry, by country / region)
 - Expenditure by participants by category of expenditure
- From the Provider survey
 - Number of Providers (by quarry, by country/region)
 - Number of days provided (by quarry, by country / region)
 - Number of Gun-Days provided (by quarry, by country / region)
 - Total Bag (by quarry, by country / region)
 - Land management (area and labour by activity by country / region)
 - Jobs (by type by country / region)
 - Expenditure (by category by country / region)

A3.2 In order to estimate these key statistics a method was devised consisting of the following four steps (each of which are described in greater detail below):

- Weighting of data (to take into account response rates with known populations, also taking into account non response rates)
- Adjusted weights (to allow for joint membership)
- Inference of missing data (on a case by case basis)
- Adjustment of weights (to allow for increased response rate for those which higher levels of activity and inference of additional participants and providers via ACPO data, club membership data, and average shooting range participation per shooting day)

Weights

A3.3 In the first place questionnaires are given a weighting which is calculated as the total number of persons in the group divided by the number of responses from persons across the group, multiplied by the non involvement deflator (94%).

A3.4 Where possible the initial weighting process is done for (mutually exclusive) groups within an organisation. For example:

- BASC membership lists were de-duplicated and split into groups including full members, wildfowl club, gamekeepers etc.

A3.5 A further adjustment was necessary for providers, to allow for double counting arising from there being more than one person in a key position within the shooting organisation. The weighting (for the respondent as a participant) was divided by the number of people in key positions (i.e. the answer to the survey question “how many other people hold key positions in this organisation” plus one).

A3.6 We have good evidence from the previous study that there are some shotgun certificate holders who participate in shooting sports activity but are not members of the organisations whose contact lists we have used. The 2006 PACEC study distributed surveys to shotgun certificate holders (via the Association of Chief Police Officers – ACPO), The following constabularies sent questionnaires out on our behalf:

- Essex
- Norfolk
- Surrey
- Tayside
- Greater Manchester
- Fife
- North Wales
- Staffordshire

A3.7 The responses from these surveys were re-analysed in the current study to gauge the potential number of participants who hold shotgun certificates but were not on any of the contact lists used for this survey. The response weightings for this study in live quarry shooting categories have been adjusted upwards accordingly to partially account for participants with shotgun licences who were not directly surveyed. This adjustment is deliberately conservative so as not to adversely affect the margin of error on the current survey – it assumes that many respondents in the 2006 study will have been members of the organisations (and their contact lists) that were used in this study but not in the 2006 study, and it assumes that the total number of participating shotgun certificate holders is at the lower bound of the margin of error from the 2006 study.

Adjusted weights (to allow for joint membership)

A3.8 These initial weights will overestimate the scale of activity due to dual membership. In order to account for this joint membership we start with the largest membership organisation (BASC) and then add one membership organisation at a time, adjusting the weighting at each stage to allow for double counting.

A3.9 As an example we add CLA members to BASC members

Table A3.2 Adding CLA members to BASC members

	Responses	Initial weighted responses	Final weighted responses
BASC members who are not members of CLA	387	101,876	101,876
CLA members who are not members of BASC	107	27,439	27,439
BASC members: who are members of CLA	39	10,963	5,553
CLA members who are members of BASC	39	10,268	5,410
Joint members	78	21,231	10,963
<i>Total</i>	<i>572</i>	<i>150,545</i>	<i>140,278</i>

Source: PACEC

A3.10 At the second (and subsequent) stages, the double counting involves

- checking whether those which have already been added (e.g. BASC and CLA) have membership of the new group (e.g. CA)
- checking whether the new group (e.g. CA) are members of any of the previously added organisations (e.g. BASC or CLA)

Inference of missing data

A3.11 There are two reasons why data is missing from the surveys:

- Respondents only filled in the 'quick' section
- Respondents filled in only part of the full questionnaire.

A3.12 In both cases it is possible to make an estimate of the missing data based on what information has been completed for the survey together with an analysis of other respondents who did answer the missing questions. Mathematically we *constrain* the estimates based on other respondents to be consistent with actual information given on the survey.

Table A3.3 Inference of missing data for participants

Item	Estimation method
Number of Guns	No inference required
Total number of Gun-Days	Median of those answering (Q28) who gave the same banded number of days (Q6)
Gun-Days by region by quarry	Take the total number of days shot by region and quarry for those who live in the same area, remove those days in those regions and those quarries where this respondent does not shoot. Constrain these numbers to sum to the total number of Gun-Days (above), with the added constraint that there must be at least one Gun-Day in each quarry and region specified in Q4 and Q3.
Total UK expenditure	If question is blank, use median total expenditure of those with the same banded number of shooting days. If question is not blank, use median total expenditure of those with the same banded expenditure. Divide capital expenditure by number of years to give annual expenditure. Exclude imports to give annual UK expenditure
Breakdown of expenditure	Use the average breakdown of expenditure of those who did give details constrained to equal the total expenditure
Participation by providers	Use the quick questions on region lived in and regions shot in. Apply average activity breakdown for that region.

Source: PACEC

Table A3.4 Inference of missing data for providers

Item	Estimation method
Number of providers	No inference required
Days provided by quarry	Take the median number of days shot by quarry, by level of expenditure for those quarries where this provider is involved. Constrain these numbers to sum to the total number of days shot.
Gun-Days provided	Take the median of the number of days shot by quarry provided, but constrain this to come within the range specified in the quick section.
Bag	Take the median bag per Gun-Day by shooting type
Area	Take the median of those answering the question on area by level of expenditure and 3 types of quarry/activity (red deer + grouse, shooting ranges excluding full bore, all others)
Land management	Take the median ratio of area managed to total area of those activities which are relevant to the quarry shot. Use the median labour per hectare / metre.
Jobs	Median of those answering the question on jobs who have the same banded numbers of paid stalkers / gamekeepers and other paid employees, including beaters and loaders (if grouse/driven game is provided)
Annual UK Expenditure	Median of all those answering the expenditure question who have the same banded expenditure. Use the average breakdown of expenditure by category. Divide capital expenditure by number of years to produce annual expenditure estimates. Exclude expenditure outside the UK to produce annual UK expenditure.

Note: Allocation of all of the items in this table by region/country was on the basis of the region of residence given in Q3.

Source: PACEC

Higher activity levels have higher responses rates

- A3.13 The results based on the steps outlined above gave rise to over-estimates of certain variables whose values were known from other sources. The main such variables were the area of land shot over in the UK (which is generally reckoned³⁶ to be 75% of rural land – or 16 million hectares) and the numbers of total numbers of each quarry shot (for which broad estimates were available from BASC and GWCT). Those responses with large activity rates were linked with responses with smaller activity rates (from the same source), including assumed numbers of provider shotgun licence holders which were surveyed via ACPO data in the PACEC 2006 study and target shooters whose existence has been inferred from the excess of target shooting Gun-Days and the size of club memberships.
- A3.14 The re-weighting processes ensured that the overall weights for each contact list group remained the same (since we had no evidence that the overall estimate for the number of providers or participants were not correct).

A4 Supply chain jobs

- A4.1 Data from the participant and provider surveys on expenditure by category was used to estimate the number of supply chain jobs supported by shooting.
- A4.2 Because participants are active in more than one region it was difficult to allocate their expenditure by region, so participants' expenditure was allocated to each region pro rata to the provider expenditure.

³⁶ Piddington, Dept of Land Economy at Cambridge University, 1980

A4.3 The allocation of first round supplier expenditure (and jobs) around the UK was based on the percentages of expenditure remaining in the local area and the UK, found in the PACEC 2006 surveys of participants and providers as shown in the following table. The questions were not retained for the 2013 surveys as they were felt to have occupied a disproportionate amount of the interviewees' time and discouraged survey completion – however the information gained has been re-used in this study.

Table A4.5 Retention of expenditure in local area and UK

	Expenditure within the Local region	Expenditure within the UK
Game	100%	100%
Land Management	97%	100%
Pest control services	93%	100%
Shooting school	100%	100%
Sales/Marketing	97%	100%
Accommodation /Food	61%	100%
Membership/insurance	33%	94%
Game Farm	35%	74%
Magazines	0%	100%
Feed/Fert/Trees/Seed/Fence	59%	91%
Firearms + Ammunition	56%	73%
Dogs (incl. train and kennel)	67%	94%
Vet	61%	99%
General Goods	65%	95%
Craft	100%	100%
Art	100%	100%
Taxidermy	100%	100%
Travel	100%	100%
Vehicles	26%	58%
Vehicle running	87%	98%
Utilities/communications	96%	100%
Building: Road/Track/Property	89%	100%
General Services	57%	89%

Source: PACEC (Surveys of Providers and Participants)

- A4.4 Expenditure falling outside the local area, but within the UK was allocated to all the other 11 regions in the UK in proportion to the size of their economy, as measured by the average number of workforce jobs over the four quarters commencing September 2012 – June 2013 in the following table.

Table A4.6 Employment and share of employment by UK area

	Jobs (m)	Share of UK
South East	4.5	14%
East	2.9	9%
Greater London	5.2	16%
South West	2.7	8%
West Midlands	2.7	8%
East Midlands	2.2	7%
Yorkshire and the Humber	2.5	8%
North West	3.4	11%
North East	1.1	4%
England	27.1	85%
Wales	1.4	4%
Scotland	2.6	8%
Northern Ireland	0.8	3%
UK	31.9	100%

Source: Office for National Statistics, Workforce Jobs 2012/13 PACEC

- A4.5 Converting turnover into employment for the first round supplier jobs was achieved either using the employment to turnover ratio from the supplier survey or those in the UK Input-Output Supply Use Tables from the Office for National Statistics. In a similar way converting turnover into Gross Value Added (GVA) for the first round supplier jobs was achieved either using the GVA to turnover ratio from the supplier survey or those in the UK Input-Output Supply Use Tables from the Office for National Statistic (where GVA was equal to compensation of employees plus gross operating surplus).
- A4.6 The “rest of supply chain” jobs are calculated for the UK using a multiplier (2.4) based on data from the UK Input-Output Supply Use Tables from the Office for National Statistics). Half of these jobs were allocated to the local region and half were allocated to all the other 11 regions in the UK in proportion to the size of their economy.

Appendix B Glossary

B1 Guide to the interpretation of tables

Bold: A number is shown in bold where, taking into account the margin of error due to sampling, we are 95% certain that it is different from the number in the left hand total column (using a Chi-Squared or Mann-Whitney statistical test).

Rounding: Numbers are rounded due to margins of error present in the estimation process. As a result totals may not add up exactly (e.g. the total of $1/3+1/3+1/3$ is 1, but when given as rounded percentages, 33%, 33% and 33% do not add up to 100%). Furthermore some numbers are given as $<1/2$ meaning between 0 and 0.5.

Significant Figures: Grossed-up tables are “rounded to 2 significant figures”, meaning that the first 2 digits carry information and the rest are rounded off. For example, 123,456 rounded to 2 significant figures is 120,000 – the ‘1’ and ‘2’ digits are significant, the rest are rounded off. Leading zeroes are not significant figures, meaning that rounding to 2 significant figures can yield different results to rounding to 2 decimal places. For example, 0.000579 is 0.00 to 2 decimal places but 0.00058 to 2 significant figures. A trailing or internal zero can be a significant figure. For example, 20,349 is 20,000 to two significant figures – the ‘2’ and ‘0’ are significant and indicate that the true value is between 19,500 and 20,500.

Multiple Rows: A table with “Multiple Rows” in the footnote indicates that any individual or organisation may appear in more than one row. Therefore the sum of all the numbers in any column may give rise to a total which exceeds the total at the end of the column (or 100% where the numbers are percentages). For example, if all people undertake *at least one* of 2 specified activities, it is possible for 50% of people to undertake one activity, and for 60% of people to undertake a second activity. These numbers add up to more than 100%, since 10% of people undertake both activities.

Multiple Columns: A table with “Multiple Columns” in the footnote indicates that any individual or organisation may appear in more than one column. Therefore the sum of all the numbers in any row (particularly the number of respondents) may give rise to a total which exceeds the total at the beginning of the row. For example, 200 out of 400 people may undertake one activity, and 240 out of 400 people may undertake a second activity. These numbers add up to more than 400, since 40 people undertake both activities.

Respondents: Different numbers of people answered different questions in the questionnaires. In particular the numbers of respondents is much larger for questions in the quick section of the questionnaires than for other questions.

B2 Glossary of Terms

Please note that all definitions given in this report are given in the context of shooting sports and as such may differ from definitions in common usage.

Avian pests/predators: *Birds such as woodpigeons which cause problems with agriculture and corvids which cause problems for rearing of game*

Beater: *Person who flushes wild game during a shooting day*

Capital good: *The cost of a capital good refers to its replacement cost, or its value in today's money, rather than the price originally paid for it*

Charitable donations: *These exclude those specific to shooting sports*

Club: *Typically a group of more than 10 people shooting a variety of quarry or targets and a variety of targets over fixed pieces of land. The distinction between Club and Syndicate in this study rests with the perception of the providers and participants who filled in questionnaires.*

Coastal Wildfowling: *The shooting of ducks, geese and waders on coastal land affected by tides.*

Corvid: *Avian predator in the crow family.*

Cover Crops: *Crops (such as kale and millet) planted on shoots to provide gamebirds with food and shelter*

Covert: *A copse that shelters game.*

Deer Stalking: *Shooting deer for deer management, crop protection and recreational purposes*

Driven Game: *Form of shooting in which gamebirds are flushed over standing **Guns** (shooting participants).*

Employment costs: *Include wages and employers' National Insurance and pension contributions and the costs of any other benefits (e.g. health care)*

Full Time Equivalents (FTE): *The number of full-time employees that could have been employed if the reported number of hours worked by part-time employees was worked by full-time employees. This statistic is calculated by dividing the "part-time hours paid" by the standard number of hours for full-time employees then adding the resulting quotient to the number of full-time employees.*

Full time jobs: *Assumed to be 37 hours a week for 250 days per year*

Gamekeeper: *A person who works on a farm or estate to look after game species, their habitats, and the other wildlife that shares them. They may rear birds for release into the wild for shooting purposes.*

Game Wardening: *The management of game in the context of habitat and wildlife management.*

General licence: *Derogation from bird protection legislation allowing necessary control under specific circumstances e.g. crop protection.*

Gross Value Added (GVA): *The standard monetary measure of the value of economic activity. Equal to the sum of employment costs plus profits. Also equivalent to the value of goods and services produced minus the inputs (raw materials, services etc) required to produce them.*

Gun: *A shooter of any type of quarry (not just game - a wider definition than in colloquial use)*

Gun-Days: *In live quarry shooting, a participant is colloquially known as a "Gun", and a measure of activity is the **Gun-Day**, which is equal to the number of shooting days multiplied by the*

average number of Guns per day. We have used an equivalent measure for clay and target shooting but have assumed half-day participation for all members.

Gundog: *Dog specially bred and trained for locating, flushing and retrieving shot game*

Inland Wildfowling: *The shooting of ducks, geese and waders on inland sites using flight ponds / marshes.*

Jobs: *Include both employees and self employed (including working directors/owners)*

Live quarry shooting sports: *The shooting of birds and mammals for recreation, pest, or predator control.*

Median: *The middle value in the distribution of individual values, above and below which lie an equal number of values*

Mean: *The conventional average value, equal to the sum of the individual values divided by the number of values.*

Non-Gun: *Term used to describe people accompanying others on a live quarry shoot who are additional to the beaters and pickers up organised by the gamekeeper*

Non-released Game: *Game that is not bred for shooting or bought in from a game farm.*

Part Time Jobs: *Assumed to be 20 hours a week*

Permanent Jobs: *Assumed to be for 52 weeks of the year*

Pest control: *The control of pest species using a gun in the context of shooting sports activities, including woodpigeon shooting.*

Picker Up: *Person who retrieves shot game with the aid of gundogs*

Predator Control: *The active management and control of predators such as foxes, corvids, rats, etc., that would threaten game or habitats.*

Quarry species: *A legally shootable bird/animal which has an open season. Bird species commonly regarded as pests, e.g. woodpigeon, are shootable for crop protection / other reasons under general licences.*

Reared / Released birds: *Gamebirds released into the wild by the shooting provider for shooting purposes.*

Release Pens: *Where pheasant shooting takes place, release pens are typically erected for the management of young birds before release.*

Rural land *All land in the UK which is not defined as urban, i.e. not in a settlement of 10,000 or more people. (Definition from "2011 Rural Urban Classification" published by Defra)*

Seasonal Jobs: *Assumed to be for 20 weeks of the year*

Shooting Days: *A "Shooting Day" is a record of the time spent on and around the site, including all the social aspects, for shooting sports. Some or all of a morning is half a day. Some or all of an afternoon/evening is half a day. Most formal live quarry shoots would therefore count in units of full days. Much wildfowling, informal shooting (including pest control), clay pigeon and target shooting would be counted in units of half days.*

Shooting participants: *Those who take part in shooting sports (live quarry, clay pigeon, or target shooting), and either pay to do so, or do so for nothing. Many providers are also participants*

Shooting providers: *An organisation/business (with employees and/or members) or individual who performs services (either paid or voluntary) which give rise to opportunities for shooting sports*

Shooting site: *The land over which shooting sports takes place*

Shooting sports: *In this report, shooting sports are defined as the following:*

- *shooting of birds and mammals for recreation, pest, or predator control (**live quarry shooting sports** above)*
- *shooting of clay pigeons*
- *shooting at targets.*

Shooting tenant: *Individual who rents the shooting rights for an area of land from the landowner*

Stalker: *Person who shoots deer for recreation, deer management, or crop protection purposes.*

Suppliers: *A range of firms/individuals which supply shooting providers and participants with related goods and services. Potential suppliers include: shooting agencies (sales), accommodation, shooting training, land management services, or reared game (for release).*

Syndicate: *Typically a group of up to about 10 people shooting game over fixed or varying pieces of land. The distinction between Club and Syndicate in this study rests with the perception of the providers and participants who filled in questionnaires.*

Walked Up Game: *Form of shooting in which the shooter flushes gamebirds as he/she walks over the shooting ground.*

Appendix C Case Studies

The case studies were carried out with providers of shooting opportunities, the hospitality sector (hotels and pubs), those in manufacturing of ammunition, clothing, and accessories, auctioneering of collectible guns, and colleges providing training for apprentices and shooting provider employees.

Topics were provided to the interviewees in advance, and details of specific organisations were confidential.

C1 Case Study. Shooting Provider. Devon

C1.1 Situated in Devon, in a remote setting this provider offers shooting opportunities over 4,000 acres of very scenic countryside which is a mix of arable land and pasture, woodland and some cover crops. The main quarry comprise pheasant and partridge, with some deer and grey squirrels which are controlled.

C1.2 Most participants are individuals shooting in groups (with friends) or through corporate bookings. They tend to be from the financial and legal sectors baseline in London with participants from the south east counties, and it was considered that the number of Gun-Days, having fallen to some degree in the recession, would increase in the next few years.

Employment Opportunities and Skills

C1.3 To provide the 110 days of shooting, with some eight participants on each, the owner and his wife run the operation and there are some three fully qualified game keepers, two apprentices and a helper. Staff are highly skilled. The apprentices are 18 months into their courses with training through a specialist college in the southeast and on the job training. Part time staff provide assistance for catering on the shoots using local products such as bread, cheese, poultry, meat and salads.

C1.4 Staff all live locally with some cottages on the estates or in the nearby towns and villages.

Suppliers and Services

C1.5 The subcontractors are primarily local and within fifteen miles or so, dealing with fencing, some aspects of woodland and countryside management and veterinary services.

C1.6 The owner has an arrangement with a local hotel (with golf range) to provide accommodation for groups who usually travel from the south east. The participants require high quality services in the main hotel site.

- C1.7 The hotel restaurant is supplied with some pheasant, otherwise the majority of birds shot are sold to one company based in the eastern region who collects on a daily basis and exports most of them, after preparation, to Europe.

Conservation and the Environment

- C1.8 The conservation activities are extensive. The shoot manages the environments and health of the main game and quarry. The shoot manages the predators and pests which adversely affect the game birds, wildlife and young farm stock. Foxes, deer, rats and grey squirrels are controlled. Habitat management is synchronised with this activity along with woodland management of some 750 acres to allow the woodland to flourish, with selective tree planting, ground level plants and flora to grow and clearance of windblown trees to be cleared. Wood is recycled for habitats and screening. Water quality and the network of streams is maintained and enhanced.

Collaborative Activity

- C1.9 All staff are involved in the cycle of conservation activities which includes collaboration with other local shoots and farms as well as joint research activities linked to the sites of special scientific interest (SSSIC) and bird counts and surveys conducted with external research groups, comprising national groups and colleges
- C1.10 There is also collaboration with local volunteers interested in conservation issues and wildlife habitats.

The Social and Community Benefits

- C1.11 The shoot is well integrated into the local community through providing local jobs, and housing, in an area where there are not large employers outside the public and consumer services sectors. The apprentices are selected from local youths who will usually participate in "taster" activities beforehand. Subcontractors are primarily local and there are established and collaborative links with other shoots and farmers those who provide services for participants (ie hotels, restaurants and facilities for wives / partners not shooting). The shoot fits in with the grain of local rural life and customs.

C2 Case Study. Shooting Provider. East Midlands

- C2.1 This shoot, originating in 1992 forms part of an active farm and covers around 1300 acres of arable land, pasture and woodland. In an attempt to diversify the farming activity, best practice has been established to manage the shooting with conservation, environmental and pest control and encourage biodiversity which helps enrich the shooting experience. There are some 14 to 16 shooting days per year for driven game, primarily pheasant and partridge, walked up shoots. and shooting of specific species, Over one hundred guns take part, comprising participants from Jersey, Scotland and adjacent counties, together with local people from nearby towns

and villages, and there could be some increase in coming years, following a drop in the recession.

Employment Opportunities and Skills

- C2.2 The shoot provides a rich array of employment opportunities. One full time gamekeeper is employed on site who has the full set of skills and experience for high quality shoots. He is supported by two relatives and twelve beaters, all with the necessary skills built up over a number of years who are paid on an hourly basis. There are additional part time paid helpers who provide refreshments with local produce including gin, beer, pies and cheese.
- C2.3 The shoot runs training sessions in Conservation and Environmental Stewardship along with agronomist certification through a new building funded by a relatively large grant and shooting revenue. There is a core group of seven who provide training and information for just over two thousand visitors per annum. They attend three days or half day training activities and go on tours of the shoot site. Participants can be countryside enthusiasts, farmers, other shoot providers or schoolchildren and college students, including attendees of English, Pakistani and Eastern European origin from nearby towns and cities who rarely visit the countryside. Some schools send students on half a day management activities such as coppicing. Open farm visits allow two to four hundred participants per annum to see the farm and the preparation for the shoots.
- C2.4 The shoot attracts volunteers primarily for the conservation activities.

Suppliers and Services

- C2.5 A local church working with the shoot provider, makes accommodation available primarily for those who attend the driven shoots. Other supplies bought in include feed for birds, poulters from game fairs, local food for refreshments, shot for guns and subcontractors with equipment to assist with the keeping. Almost all suppliers come from within a thirty mile radius.

Conservation and the Environment

- C2.6 The conservation activities are embedded in the shoots and have been tested and adapted over a twenty year period in order to achieve best practice. The site is a working farm, with around a tenth outside production for stewardship activities and covers. The combination of game-keeping, predator control, winter feeding, habitat management and positive biodiversity engineering with active farm management has produced an environment which goes beyond preservation where wildlife is enhanced and, for example, the non-quarry bird population has risen five fold for some species such as thrushes.
- C2.7 The scale of the conservation and open farm visits are the recognition of the achievements and the attractive environment.

Collaborative Activity

- C2.8 Collaboration takes place in a number of ways: through working with the local church to provide accommodation for shooters; working with training providers and local farmers to train workers in stewardship and agronomics; liaising with local schools and colleges with some outputs for school coursework; liaison with the County Trust, farmers and other groups for open farm visits and volunteering.

The Social and Community Benefits

- C2.9 The shoot and the farming activities have become well integrated in the local area over some thirty years. They add to the rural setting and the farming activities spanning many decades. Employees come from the local area, as do the volunteers. There are strong links with other local farms to develop good practice farming, shooting and conservation management. The church provides accommodation, via the shoot, for groups of shooting participants. Almost all the supplies for the shoot are purchased locally, within twenty miles which provides income for those off site and employment. The links with schools and colleges extend to the towns and cities within 25 to 30 mile radius and results in multi-ethnicity participation for both educational and wider interests. This activity helps foster wider social and community networks across the county and sub region.

C3 Case Study. Grouse Shooting Provider. Scotland

- C3.1 This grouse shooting provider is based in north-east Scotland and the shooting area comprises some twelve to fifteen thousand acres of moorland and three to four thousand acres of forest. The season starts on the “glorious twelfth”, lasting over twenty days. Last year some twelve hundred brace were shot. The shoot is family run and there are usually eight guns per shoot. The participants usually stay for around five days on the estate or hotel accommodation in converted farm buildings run by an external hotel operator. Participants are primarily local or from the English Home Counties; there are very few participants from overseas.

Employment Opportunities and Skills

- C3.2 There are three full time, fully trained keepers and one trainee keeper. On shooting days there are fifty beaters (including twenty-five students). There is also a full time gardener and full and part time housekeepers who provide refreshments for the shoot.
- C3.3 The keepers have the full range of necessary qualifications. It’s a very skilled job and keepers have deer management qualifications as well as first aid training and training for quad bikes, ATVs and for Argocats. Some also have chainsaw training.
- C3.4 The trainee keeper is an apprentice attending the local college. He is on block release to complete his NC in Game Keeping and then his HNC in Highland Game Keeping. The estate has trainees who go off and work on other shoots to gain

experience and then return, but nowadays a lot of new keepers are coming through; young keepers who have done formal NC and HNC courses.

- C3.5 The gardeners have their own qualifications, for example to use chainsaws or quad bikes. The estate also employs a forest manager and a squad of four foresters who carry out work for the shoot as needed. Overall there are about fifty full time workers, many of whom contribute to the shooting activities.

Suppliers and Services

- C3.6 Generally, all the supplies come from Scotland, and many were in a ten to fifteen mile radius. Where possible they are sourced locally, for example fuel, feedstuffs, pesticides, quad bikes and vehicles all come from within Aberdeenshire and other supplies come from the rest of Scotland, for example medicated grit.

- C3.7 The estate owns the building from which a five star hotel and restaurant is run. This provides accommodation for those who go shooting but do not stay with the owner as guests in his house. They are provided with full board including lunch and dinner throughout their stay. This is important to them and forms part of the "shooting experience".

- C3.8 The estate has over two hundred and twenty houses. These are mainly let to local people; the estate make a positive attempt to help people already living and working in the area and some have been tenants for many years. There are no holiday lets. The estate could tap into the Aberdeen oil industry market, which could be financially rewarding, but the focus is on local people and the estate has a very strong social conscience.

- C3.9 Most of the grouse shot goes to a local specialist food company for processing and then often goes down to London. The remainder are prepared by a local game dealer for the estate owners, staff and shooting participants.

Conservation and the Environment

- C3.10 The estate carries out a significant amount of conservation work. It is a wildlife estate, involved in moorland management and the protection of several Sites of Special Scientific Interest (SSSIs). The head keeper is involved in research on moorland management issues with the wider Moorland group. There has been extensive planting of shelter belts on the estate as part of forest management and to protect the grouse stock and the sheep flock. There is likely to be a programme of forest restructuring to make it an amenity and more species friendly, which will involve, for example the management of the red squirrel population.

Collaborative Activity

- C3.11 The estate works very closely with neighbouring estates, with for example joint work between the keepers for the control of foxes and other predators. There are also

strong links on the conservation side and generally in the community between those operating in the shooting sector which span over many years.

- C3.12 The estate works a lot with local schools. There are open days held on a fairly regular basis, usually once every year. The local primary schools will visit for a circuit around the estate with stops at certain stations where the keepers and estate staff talk with students about the work they do. The talks will cover farming, grouse management, deer management and forestry.
- C3.13 The estate also holds a large open day for secondary schools and colleges and the educational wing of the Royal Highland Agricultural Society. The local regional college provides training and the estate has links with the Barnados Get Ready for Work scheme, with one youth from the scheme lined up to start as a trainee on the estate soon.
- C3.14 The estate also works with Game and Wildlife Conservation Trust (GWCT) and British Association for Shooting and Conservation (BASC) to organise research and seminars. The estate is a huge provider of accommodation in the area and they are very mindful to try and support local families and their children through the schools.

The Social and Community Benefits

- C3.15 The estate is a provider of jobs and income both directly on site and directly through the supply chain. The housing for the local community is important and helps to foster the network of local people and those who work across the estates. All age groups are involved including the children and students at the schools and colleges.
- C3.16 It is anticipated that the level of shooting activity will stay as it is in the short and medium term and may increase slightly. It could fluctuate depending on the population of grouse. Generally no driven shooting will occur if the stocks are too low. The poor weather can be a big factor when birds are hatching and the young are being reared. Ticks can also be a big problem and careful control and management is required. The clients are most likely to be Scottish and English although more Europeans come when roe deer stalking is organised.

C4 Case Study. Shooting Provider. Close to Exmoor

- C4.1 This relatively small shoot is run as a syndicate involving the shoot manager and a group of some twenty local farmers and their friends. It is a “friendly shoot” of some forty years standing which is organised over some two thousand acres in different ownership including local farmers and the Forestry Commission. Just over half the land is permanent pasture, a quarter is woodland and a sixth inland wetlands and non-heather upland. The site is remote with extensive steep sided valleys which permit high quality shoots. The main quarry is pheasant (with some 600 shot per annum) with some woodcock.

- C4.2 Some twenty shooting days are organised with between 10 and 20 guns on each comprising syndicate members, friends and guests, and it was anticipated that shooting activity would increase in the short to medium term.

Employment Opportunities and Skills

- C4.3 There is one shoot manager who is also an agronomist and all the skills needed are provided by members of the farmers' syndicate (or on occasions their employees). The skills cover re-stocking and breeding, the protection tasks, pest control and land and habitat management. The high skills base that is available means the shoot is virtually self-sufficient in terms of labour requirements. The shoot allows the skills of the syndicate members to be maintained and upgraded so other shoots in the area also benefit. Subcontractors are not usually required as the farmer syndicate members have all the skills needed and the equipment such as diggers, earth movers, quad bikes and trailers. There is cooperation with other much larger adjacent shoots re some of the gamekeeping tasks, for example predator control

Suppliers and Services

- C4.4 Services bought in, usually within a ten to fifteen mile radius, include local vet(s), bird rearing skills and seed, cereal and grain foodstuffs – although one member has a separate company that provides the birdfood to a number of shoots in the area.
- C4.5 All game is taken home with some given away – the syndicate has all the skills and qualifications for the preparation of birds.

Conservation and the Environment

- C4.6 Much of the land is owned by the shoot members who manage it. The members play a conservation role in the woodland areas that are rented through cutting down and thinning trees coupled with reseeded. The syndicate runs a full stewardship scheme with cover and protection for the birds and to stop deer going in and feeding on the plants in the forests and on private land. There are highly organised control activities for corvid, foxes, grey squirrels and deer along with other predators such as rats and stoats.

Collaborative Activity

- C4.7 The main collaboration is between the syndicate members who provide the skills and share the equipment as necessary with other adjacent shoots. This helps to both retain and boost the skills in the area and close to the national park. The members share and exchange their skills with other local shoots, including the small and larger ones, the owners of woodland and other farmers. This allows members to shoot on other estates, without infringement and vice versa and to control pests and enhance some of the conservation belts. The collaborative activity is enhanced through membership of the Greater Exmoor Shooting Association and the Exmoor National Park Authority.

The Social and Community Benefits

- C4.8 The maturity and integration of the syndicate members provide important social benefits to allow skills, ideas and practices to be shared and exchanged. Members “enjoy the way of life” and the joint activities – with shooting punctuated by in-house sandwiches and port to cement the kinship and comradeship. The syndicate works with volunteers who are family / friends of members – in a sense all syndicate members are volunteers as no tasks are paid for. There are links with local social and community groups – for example the local church(es) are provided with shooting days which they can auction at church events to provide income of around £200-300 a time for a days shooting.

C5 Case Study. Shooting provider. South East.

- C5.1 The site runs to about four thousand acres with the first participation on the late 1890's. It includes; rifle, air rifle and clay pigeon ranges . There are a dozen or so different ranges on the complex. The clay ranges have two very large sporting clay lay outs and a complex of the Olympic level facilities The site is occupied, owned and operated by the National Rifle Association and a small part is owned by the National Small-Bore Rifle Association who run an indoor range complex. Shooting takes place throughout the year. Busy weekends attract between eight hundred and a thousand people rising to one and a half thousand to two thousand on the major competitions once or twice a year with people from all over the world. There are two main market local / County wide people who come for the day and those who travel for the events from the UK and overseas. A substantial amount of building work has taken place and includes accommodation (in the Club house and the Pavillion Hotel, caravan and camping activities, catering to support the shooters and retail outlets sell shooting equipment, and the shooting activity was growing and would continue to do so in the short term.

Employment opportunity and skills

- C5.2 The NRA and the trading subsidiary employ about sixty full time staff and a hundred and fifty part timers. The National Small-Bore Rifle Association employ about forty-five full time staff There is probably a further sixty or seventy or so full time employees with the same number in regular part time work. The staff primarily come from the locality (especially in accommodation and hospitality terms) and the wider county areas.
- C5.3 Training is an absolutely critical part of the activities. It includes the participants who have to be properly trained and properly validated as being safe and competent to shoot. There is an extensive training team, with five permanent instructors on the rifle shooting plus twenty or so casuals on the clays. There are half a dozen or so instructors that are called upon regularly to train visitors.
- C5.4 In terms of staff there are a myriad of different skills. For example as well as the training specialists, there are hospitality staff, staff who manage the ranges, a

maintenance team who look after the grounds, a finance team, marking team, membership and competitions teams. All have bespoke training packages e.g. training ground staff to up skill in terms in spraying certificates and use of chainsaws and a range of management skills as well as developing social media skills in the marketing team.

C5.5 Most of the training is in house using our own instructors. For specialities, we will link up with agricultural colleges to provide us with services and other services and courses for the skills that staff are seeking.

C5.6 The youth development programme involves special competitions for cadets, schools, and scouts groups from the age of fourteen and on. We have the Cadet Force Shooting Organisation for hundreds of cadets each year. There are cadets, scout shooting, and school competition involves hundreds of young people.

C5.7 In regard to routine shooting the site has seen significant growth which is now accelerating through. The site handled six thousand eight hundred rifle range bookings in 2012 (excluding major competitions), rising to eight and a half thousand in 2013 and potentially nine to ten thousand in 2014 excluding the corporations.

C5.8 Accommodation is one of the major pinch points to growth and development. There are upgrading and increasing the accommodation stock will be required to cope with the demand from people who are travelling further and staying longer.

The social and community benefits

C5.9 The organisation is a registered charity and apart from the employees, the vast majority of people who come and help with hosting and managing a competition are volunteers. This is very typical of shooting. The core professional staff are supported by several hundred volunteers and through the love of the sport want to give something back and help the shooting function. The shoot also has extensive links with young people through the Cadets, the Scouts and the network of schools – with training providers.

Conservation and the environment

C5.10 The majority of the four thousand or so acres or so has European derogation and is an environmentally sensitive area. There is this rich and diverse plethora of wildlife in the heart of County is because of shooting and not despite of shooting and for example with full-bore shooting, very substantial areas are not accessible to the public. As a consequence and with managers the site is untouched by human hands and dog walkers and as a consequence creates wonderful environment for a varied groups of wildlife and flora. For example, natterjack toads and Dartford warblers and a wide range of wonderful flora and fauna.

C5.11 Sometimes management is required for example in terms of cutting heather so as not to disturb the ground nesting birds. Work is carried out with the Wildlife Trust and

others organisation to make sure that the work is sympathetic too. The size is a very good example of where a high volume, very intensive, very dynamic shooting, sits alongside a very rare and very vibrant natural community of flora and fauna.

C6 Case study. Shooting provider, East of England.

C6.1 This inland wildfowling club has entirely voluntary members, and there are no full-time job associated with its administration. Membership is around a hundred people. It is organised with trustees and the land is registered in the names of the trustees. There is a committee with four officers who are tasked with the day to day running of the club and organising all the activities including liaison with members. There are some thirty shooting days a year with the funds going to the central kitty.

Suppliers and Services

C6.2 Most expenditure goes on conservation. An external group is used to cut the hay if there are no cattle grazing and local contractors are always used rather than going further afield. Occasionally the club has a loan with other organisations for wildlife habitat activity and conservation. Periodically the club will buy some land (with loans) and larger sums are required. For day to day running, it is primarily local subcontractors who are brought in to do specific tasks.

Conservation and the Environment

C6.3 If the land used by the club was abandoned, it would get covered in water-loving plants such as reeds and rushes etc. Much of the club area on the Ouse Washes is a four hundred year old water containment system. This would revert back to nature which is essentially fen, if not used by the club. It is not very good for attracting ducks in the winter, which is why the fen is kept at bay.

C6.4 The Ouse Washes is also a significant area for wading species, and conservation bodies like to ensure a habitat exists that attracts waders. They are not so interested in the wild fowl but are also trying to encourage waders species to breed. The conservation is organised to keep the vegetation down otherwise there would be reeds and rushes on the site and eventually it would not be passable.

Employment Opportunities and Skills

C6.5 The shoot does not have employees but trustees and members who assist with the tasks required. There are volunteer working parties several times a year, for example pollarding willows, because they can grow quickly, or fencing. Hence the willows are pollarded to keep them trim. The club reinstates fences where necessary and tidies up ditches.

C6.6 Some of the skills involve using chainsaws. The club has members who use chainsaws in their jobs anyway, for example there are a couple of tree surgeons.

Social and Community Benefits

- C6.7 Some of the land includes the Cam Washes which includes a Site of Special Scientific Interest (SSSI) and there are public footpaths right through the area. Hence in the summer in particular there are local walkers. Also boats moor up on the banks of the waterways and people gain access. On the Ouse washes there is less public access.
- C6.8 There have been links with a primary school close by in the Fens, with a party of children taken to see some gun dogs at work, sit in a hide, and watch the ducks coming as it gets dark. The other links with the community include attending the Fenland Country Fayre once a year and running a charity water scurry for gun dogs, where the money raised goes to a local charity and a national one and can approach £600–£700 a time.
- C6.9 Virtually all club members eat what they shoot, but the quantities shot are relatively small, unlike pheasant shoots.

Collaborative Activities

- C6.10 The club has formal arrangements for sharing shooting with wild fowling elsewhere, who pay half the lease fees on some of the land on the Ouse washes. The club is involved in wildfowling conferences and normally offers a prize of a day's shooting. Links with other local wildfowling clubs exist and the club runs gun dog working tests once a year as a competition. This is a team competition with teams from other wildfowling clubs, with forty to fifty entries each year.
- C6.11 People who shoot go off to a local pub for meals. The pubs that are not too far away from the Ouse washes benefit from the shooting trade, although it has fallen slightly in recent years. In the winter wildfowling in particular increase the trade considerably, when other passing trade is quieter.
- C6.12 Membership has been retained at a hundred to a hundred and ten throughout the recession. Initially numbers declined and special events were held. Shooting now seems to have come back to normal levels. Wild fowling is at the cheaper end of shooting, for example, in comparison to pheasant shooting.
- C6.13 The club site is an attractive place to visit and a guide can be provided to allow people to experience wildfowling and to see if it is something they would like to take up. This has helped to attract people from North Wales, Sheffield, Lymington, and the New Forest. This brings income to the area through expenditure on accommodation and meals.

C7 Case Study. The hospitality sector. South West England

- C7.1 The hotel is situated between a number of large shoots close to the river valley and accessible via high hedged B road support. It comprises six buildings and 36

bedrooms centred around the old Manor House. There are three restaurants including a high end starred restaurant and a brasserie with some 260 covers in total and additional capacity in the bar. There is also 120 acre golf range the hotel has gun cupboards and safes for visitors and kennels for dogs.

C7.2 The complex was refurbished with £1.5 M of funds some eight years ago The shooting activities nearby played a key part in the plans and there are strong links with local shoot managers and gamekeepers.

C7.3 The shooting clients come mainly from the South East and Surrey and work primarily in the insurance, financial services and legal sectors. Some of the shoots are corporate bookings but they are primarily independent groups of friends and colleagues with wives and partners.

Employment opportunities and skills

C7.4 There are some 55 employees (rising to 75 in the summer months) of which 25 are FTE. There is a hierarchy of skills from the hotel and restaurant managers and top chefs (acquiring two rosettes). Most of these are recruited from outside the area as the local supply of skilled labour is not sufficiently strong. The administration, reception, housekeeping and food services staff are almost 100% local. Training is important and provided to NVQ level predominantly by well-known national training providers who train in situ on the job, and Exeter College. There is also a fully qualified Estate manager and gamekeeper with green keepers and groundsmen primarily for the golf course.

C7.5 The prime shooting period is in January, when participants are the main hotel occupants with accommodation in the manor house. Shooting is probably supporting 15% of all staff over the year and is a very important market.

The local supply chain

C7.6 Some 75% of supplies are sourced locally primarily food such as lamb and beef, poultry, fish, vegetables, bread from the local bakeries and beer. Within a fifteen mile radius, the St Austell brewery is a favourite. Building maintenance, golf course subcontractors are almost all local. Only some of the dried food is not locally sourced.

C7.7 Some of the birds, mainly pheasants, from the shoots are brought back to the hotel and some are sourced from game preparation firms. However most of the quantity can be exported via specialist firms in the Midlands who collect the bird on a daily basis who then ship them to European markets.

Innovation and diversification

C7.8 The shooting fraternity who stay at the hotel and use the restaurants have helped to upgrade quality overall. This has made it easier to attract other “top end clients” while still catering for the middle market. The hotel provides gun cabinets and kennels to

accommodate 50% of shooters who bring their dogs. The parties themselves include wives and partners, some of whom follow the shooting. On other days they tend to visit the local sites and gardens (some RHS listed and approved.) The golfing visitors form a different group from the shooting parties and they did not mix, apart from socially at the bar.

Economic and social benefits

- C7.9 These primarily feature the employment opportunities and the need to upgrade skills across the staff profile with a rich diversity of occupations and skills-. The subcontractors benefit indirectly from the income that flows and from the shooting clients where the expenditure per capita is higher than for most of the other visitors. The social network and benefits are extended through the local recruitment and the links to the shoots and other attractions.
- C7.10 It is considered that growth will continue and increase by 100% in three years time (reflecting 50% growth in shooting in the previous season). The shooting cake will continue to grow and the hotel share is likely to increase in size. Total turnover was £1.5 M per annum last year and they were plans to add fifteen bedrooms.

C8 Case Study. The hospitality sector. North of England

- C8.1 The hotel is situated in a very scenic location on the edge of the Moors in North Pennines at around one thousand feet and close to the river that flows eastwards to the North Sea. Access is by B roads as they leave the main trunk roads. It has twenty one bedrooms and a restaurant with eighty covers.

Shooting participation of the hotel

- C8.2 The hotel lies close to a number of large shooting sites (of between 5 and 16000 acres each) which was a primary reason for refurbishing and extending the old original stone buildings. Some four fifths of the shooting clients who stay are English primarily from the north and the southeast with visitors from Belgium, Switzerland, Germany and France. They tend to bring their own guns and the hotel provides gun cupboard which have been upgraded, expanded and made secure. Shooting clients are mainly in small groups with their wives and partners who stay for three to five nights on average and tend to eat in the restaurant after a days shooting.

Employment opportunities and skills

- C8.3 The hotel and restaurant employs 35-40 staff who are almost all local and commute from the villages in the Moors, river valleys and small towns within a 10 to 12 miles radius. The peak periods for shooting are from August for three to four months and then in January and February. The shooting related employment accounts for some 60% of the total in these periods and some 22 and 23 staff and 20% over the whole year (ie.7-8 staff)

- C8.4 There is a blend of skills required for the hotel and restaurant which ranges from managers to chefs and kitchen staff, bar staff, waiters, reception and admin staff to cleaners and maintenance personnel. There are two apprenticeships in hospitality skills and training is organised for other staff through the regional FE colleges and private training on-site. The shooting guests in particular require high quality services and food.

The local supply chain

- C8.5 Virtually all the services and food are sourced locally within ten to twelve miles including supplies from the village shop to other, some superstores and specialists who supply lamb, beef, poultry, locally caught fish, and game (grouse and pheasants in season) and local / regional ales. The emphasis is on reliability and quality. Shooting visitors look for the local experience which combines the quality shooting with the local hospitality.
- C8.6 Suppliers in the specialist fields require the necessary qualifications and skills to produce the quality products required. Some of the suppliers of food and other services have needed to upgrade staff skills to meet the requirements of the hotel.
- C8.7 Some of those who shoot can bring their own game to the restaurant for their evening meals and the hotel restaurant purchases game from the local shoots.
- C8.8 A further link with suppliers is through the local training providers in the public and private sectors.

Innovation and Diversification.

- C8.9 To meet the requirements of those shooting the hotel has needed to create the local experience (which now applies to most clients) and diversify into organising trips to alternative local attractions for those who are with shooting partners but who don't shoot. Attractions include local moorland visits and forest walking, nature tracks, heritage and cultural attractions and shopping trips.

Economic and social benefits

- C8.10 These primarily result from the employment offered to local people (with some up-skilling) and the income spent on local purchases which supports other jobs. The hotel has also helped underpin the quality and international markets for some of the shooting providers as the "high end" shooting visitors now find it easier to stay at the area close to the shoots. The local employees help to integrate the hotel and restaurant with the local community in the surrounding villages.
- C8.11 Overall the hotel is not dependant on the shooting parties but they make a significant contribution to the bottom line. The growth in shooting visitors is anticipated at 75% to 80% up to 2017/2018.

C9 Case Study. College. South West.

Background and provision

- C9.1 A land based college situated in the countryside, it provides a Countryside Management course with around 60 full-time students. The main qualifications offered are BTEC Level 2 and a Level 3 Extended Diploma in addition to foundation Level 1 courses. The subjects which are delivered are in gamebird production, fishery management, shoot management, firearms use, game ecology, deer stalking, pest and predator control, river fishery creation and deer farming. The gamekeeping course is specifically configured for aspiring gamekeepers, deer stalkers or ghillies. The programme is fully integrated with the management of a local estate shoot. The shoot is located on the estate which provides the range of habitats typical of a lowland estate. Students are expected to participate fully in the running of the shoot days as well as playing a full role in all aspects of shoot management over the two years of the programme.
- C9.2 Moving forward provision will extend to Level 5 HE in 2014/2015. This was driven by internal demand whereby gamekeeping students who wanted to progress into HE but couldn't because there was no such provision throughout the region. The course will be unique and will include an element of transferring knowledge and skills amongst similar provision throughout Europe and will include study visits to various EU countries. The idea is to give students the tools to engage with conservation issues at EU policy levels while simultaneously being academically rigorous.

Collaborative activity and spin offs

- C9.3 The course is linked very closely to a network of local farms in order to give students the diverse experience needed for game management and shoots. The shoots can last 5 days with around 500 birds shot per day. Therefore, the college's collaborative activities with local employers are critical to ensuring that students meet the required competence levels. In addition the college runs a commercial shoot itself and staff and shoot participants have found that one key area in which students are not competent in is people skills which are a key requirement. There are seven shoots a year which generate around £12,000 and helps to future proof the course.

Views on wider impacts of shooting activities

- C9.4 The economic benefits are fairly large in terms of tourism and the college is surrounded by organisations that are shooting and bringing people into the area, staying in hotels and generating income locally. The college has also noticed that there has been no real significant impact on the employability of the game keeping students from the recession and that is not the case for students in other subjects. The conservation benefits are likewise vast with for example the spreading of cover crops, the planting of hedgerows and necessary pest controls which are key to maintaining a healthy habitat. The students at the college contribute towards this. In terms of social benefits they are primarily related to developing a healthy outdoor

based lifestyle. Students, whether or not they go into game keeping, all leave here with a passion for the outdoors.

C10 Case Study. College. North West

Background and provision

C10.1 The college is a further education college which provides full time level 2 and 3 courses in game management and has an intake of around 25 students each year. The two qualifications on offer are a level 2 in Countryside and Environment and a level 3 in Countryside Management. The college also provides apprenticeships in conjunction with employers. Content includes modules in gamebird production, shoot management, deer stalking, firearm use and management and pest and predator control. A total of 5 staff who have had direct experience of the industry, including game-keeping, deliver the courses. Demand for places has remained quite constant and it is envisaged that this will remain to be the case in the future.

Benefits of work based learning

C10.2 Unique to the provision is the facility of a small 1 day shoot covering approximately 500 acres which is provided to give level 3 students in year 2 first-hand experience of shoot management. Students literally take overall responsibility for the shoot including its planning. First year students undertake beating and also get the opportunity to go up to the college's own grouse moor. The shoot is fundamental to the overall provision and they are involved in all aspects leading up to the shoot including the rearing programme which produces in the region of 1200 partridges and about 900 pheasants with half of the latter being sold and the remainder released on to the farm.

C10.3 The courses are quite unique in that they give students the appropriate employability skills which employers consistently report they need. The college considers that the demand for young people leaving colleges with qualifications coupled with a high level of hands on experience in game-keeping is high and that the training sector overall keeps pace with supply. The college has a high completion rate and has a very good record in securing employment outcomes for students

Collaborative activity

C10.4 The college works very closely with employers, BASC and the NGOs in configuring course content which is aligned to employer needs and is continuously reviewed and improved. The college works extensively with local employers and particularly farms and local shoots primarily in delivering apprenticeships for example. In recognition of the good work of both college and students one student was selected as the 2012 Best Gamekeeping Student by the National Gamekeepers' Organisation.

Views on wider impacts of shooting activities

- C10.5 The greatest plus factor reported in relation to shooting activity is the creation and conservation of wildlife habitat and the college contributes to this locally. In addition, income can be generated by farmers with shooting rights, and particularly for upland farmers who find it difficult to make profits in other areas. Another direct benefit of shooting activity, and the training needed to support the sector, i.e. the social and community benefits. For example, the college shoot this year will be delivered in partnership with Band of Brothers' shooting, which is a subsidiary of Help for Heroes, and therefore the students will literally be coming in face to face contact with injured servicemen which will instil a sense of community pride in students. In addition to these benefits there are health benefits to be derived from direct involvement with shoots in that many students, and young people in general, involved in shoots remain fit and active.
- C10.6 The college plays a crucial role in securing these local benefits and with the hard work of both tutors and students alike the future prospects for the sector are bright.

C11 Case Study. College South East

Background and provision

- C11.1 The college has a long history in land management courses and covers a whole range of subjects. It delivers provision ranging from vocationally based entry level foundation land-based programmes (FLP) up to degree level and also delivers apprenticeships. The main courses in relation to shooting sports are game and countryside management level 1, game management level 2 and game and wildlife management level 3 diplomas. The college has first class facilities including the recently opened game and wildlife centre which provides industry standard facilities, which allows them to practice every aspect of game rearing and game meat production. The college also has an indoor .22 rifle range, a clay shooting site and gun armoury. Next year the college will have a full-bore firing range.
- C11.2 The college offers a full apprenticeship programme which comprises both competence and knowledge based qualifications, functional skills and additional certificates in operating machinery. The apprenticeship provides essential skills required by an Under Keeper. These include monitoring and maintaining game populations (birds and deer) and their habitats; constructing, maintaining and repairing structures and surfaces; controlling pests; assisting in game shooting activities and caring for animals used in support of gamekeeping and wildlife management. Qualifications such as the NPTC Certificate of Competence in All Terrain Vehicle Handling and the Lantra Certificate in Wild Game Meat Hygiene also comprise the apprenticeship. Student involvement in deer stalking and local shoots helps students to understand the importance of health and safety in gun management as well. The intake for game related study every year is about 150 students and the college boasts a 90% achievement rate for students

Collaborative activity

- C11.3 The college is already at the forefront of provision in relation to shooting activities and it is a key local employer and generates spin off effects for the local economy. It works alongside estates and helps with habitat management, conservation, trapping and seasonal tasks. The college also has contracts to provide game for local shoots of which the birds are reared on site with fully equipped facilities. Identifying what employers skills needs are for the industry is key for the college and it works with various employers and associations in order to identify these. The college also has strategic alliances with key partners in the area in order to extend its curriculum offer, partners include Job Centre Plus, LEPs and local councils

Views on wider benefits of shooting activities

- C11.4 There are significant benefits to be had from shooting activities and the college makes a substantial contribution both in terms of the local economy and conservation / environmental benefits. The benefits range from hotel occupation for those who study and shoot through to the meat and game being sold to local shoots and individuals. In terms of conservation, the habitat needs to be suitable for game birds as well as shooting and the college, along with the estates, plant the trees and hedgerows necessary for this to flourish. There are also community benefits derived from the activities of the college in relation to shooting. For example, the college is in its centenary year and in the summer of 2014 will attend a range of local community events for both individuals and community partners alike.
- C11.5 The impact which the college has in terms of supplying the shooting industry with suitably qualified individuals cannot be under-estimated. A high proportion remain in the industry and find employment either locally or throughout the UK. They come to the industry well prepared for the requirements for a career in game and conservation management aligned to employer needs.

C12 Case Study. Manufacture of ammunition. The Midlands

Background and products

- C12.1 The manufacturing company has been in operation since 1998 and produces game cartridges in the UK. The company has a high turnover of around £8m, employs 21 full-time staff and produces over 30 different models of cartridges which are all specially developed to maximise the potential in all shooters. The factory also uses state of the art, fully automated equipment to produce the cartridges. The company has gained popularity globally culminating in Richard Faulds winning a gold medal at the Sydney Olympics using cartridges produced by the company, the only British produced shotgun cartridge to have won an Olympic gold medal.

Markets and supply chains

- C12.2 The key markets for the cartridges are the UK (85%) and the rest overseas, mainly Europe including Scandinavia, Germany and the Netherlands. The company sources most of its materials from outside of the UK and particularly the propellant which isn't available here and which is sourced from France or Spain. The suppliers, eight of them, are also manufacturers and all of the companies involved are members of AFEMS which is the association for sporting ammunition.

Employment, Skills and training

- C12.3 In terms of skills requirements within the company these vary from IT and technical skills for machine operators to marketing and sales for the sales team. Most training is on the job though the company sources external training for fork lift driving for example. The machines which manufacture the cartridges are fully automated and the main requirements are to understand how to operate them via a computer. This is a matter of learning on the job and as new machinery develops then skills have to be refreshed accordingly. The training is overseen by a qualified supervisor.

Innovation and product development

- C12.4 Product development is key for the company as they have to keep pace with changing technologies and customer needs. For example the propellant used in the cartridges can be manipulated to act differently and work at various speeds for different uses and types of firearms and this can be affected by either using a plastic or a fibre wad. Therefore, the components have to be flexible dependent on customer needs. The company doesn't have a research and development team as such though it does test the machinery in collaboration with the suppliers of it. The testing of products also takes place and has been refined over time within the company which has ensured that the product meets rigorous quality standards and that the company remains competitive.

C13 Case Study: Gunsmith Apprenticeships in the Eastern Region

- C13.1 This is a longstanding gunsmiths based in a small town in the Eastern Region. As a highly specialised business it deals in gun sales and gun repairs, accounting for the majority of its annual turnover in equal proportions. Other accessories such as clothing are also sold. The majority of business is done "over the counter", by people coming into the shop and workshop. This helps the owner to get to know its customers, and retain them through the services offered. For this reason, sales are not made by mail order or online and also because there can be problems with security and delivery. Approximately 90% of the custom is "local", from within the county or from the adjacent counties, and consists of farmers, those who work in the rural sector, or professionals, some of whom commute to London. Trade fell 15-20% in the late stages of the recession but has now started to pick up.

Employment and Apprenticeships

- C13.2 Five or six people are employed, on either a full or part time basis. The company decided to place one of the employees, “a young lad”, on an apprenticeship scheme. This was mainly to improve the skills available in the company but also to give a young person who had come to get some work experience “a chance”. There was also the need to replace the skills, in time, of an experienced older worker who had passed retirement age. This was the first time the business had gone down the apprenticeship route with a young person. The other employees were all older and most had been known to the owners before appointment as having the right skills and experience in the agricultural sector, dealing with machinery, equipment and repairs.

The Apprenticeship Training and Skills

- C13.3 The training was a combination of attendance at college and on the job training, working with experienced staff in the workshop at the rear of the shop. The apprenticeship would last five years or so, with the college attendance on a part time basis in the first two years, as part of a government scheme. This led to a recognised qualification and certification. The on the job learning was an essential part of skills development. The main skills were engineering related but linked to maintaining, servicing and repairing guns, shotguns and rifles. This could involve tasks and skills including making gun parts (which could not be bought), metalwork, machining, lathe tuning and fitting parts.
- C13.4 The apprentice also learnt the importance of how to treat guns, and safety and gun security issues.

The Benefits of the Scheme

- C13.5 Training an apprentice allowed the skills to be developed and customised specifically for the highly specialised gunsmith trade. The employer benefited from the outset and would continue to do so over the period of the apprenticeship and well beyond. The scheme also allowed something of a career path to be shaped for the apprentice, over time, linked to improved remuneration, responsibilities and prospects. This also improved the chances of retaining the apprentice within the company. The specialist applications of the skills to gunsmithing, honed by the on the job content, was a strong point.
- C13.6 The skills base of the company would be enhanced to ensure that quality could be retained and developed, especially as the guns in use were getting older and worth repairing. Some repairs could cost several thousand pounds but those who went shooting wanted to retain their guns. On some of the guns part of the work would be sub-contracted, for example where wood on butts needed to be repaired, and a knowledge was required as to how to work with sub-contractors.

Wider Interests

- C13.7 The apprentice developed his interest in shooting and the use of guns; although he had participated to some extent in “rough shooting” before joining the company. The shooting activities went hand in hand with the job and informal contacts with others who shot as part of a network.
- C13.8 The experience of having an apprentice had worked out well both for the business and the trainee who was getting worthwhile skills. Quote from the owner:

“The experience of having an apprentice has benefited us so far and we would do it again if needed and take on another one”.

C14 Case Study. Bespoke shooting accessories. Scotland

Background and products

- C14.1 The company has been in operation for over 12 years and specialises in the repair and production of exclusive hand carved, bespoke ornate rams horn crooks and wooden walking sticks for shooting clients. It also produces a wide range of other shooting accessories such as cuff bags, gun slips and sporting jewellery. What essentially began as a hobby for a shooter with some 40 years’ experience in the commercial shooting industry has now developed into a thriving business whereby turnover doubled each year for the first 6 years.

Markets and supply chains

- C14.2 The key markets for the products are a mixture of UK and overseas, and particularly the US where a key factor in penetrating that market has been the internet. Prospects for the future are good with predicted sales set to grow over the next 5 years.
- C14.3 The business is wholly dependent on the sports shooting sector and is quite unique in that ninety five per cent of the accessories that are sold are sourced, developed and manufactured within the company and here in the UK. There are no supply chains as such in terms of sourcing materials and it’s only some of the craftsmanship skills which are outsourced in the UK. The company utilises the skills of around 15 local craftsmen and is therefore a source of self-employment in the area. The items which are produced are high-end and cost around twice as much as similar products which are produced outside the UK.

Employment, skills, innovation, and product development

- C14.4 In terms of innovation in the development of new products and services the company is responsive to customer needs and feedback. Customers are key to the development of the products as they are largely bespoke and therefore the customer plays a key role from beginning to end. One example of this are products which are

produced related to the woodcock bird and which are exclusive in the market place for shooting accessories.

- C14.5 Advertising is primarily through magazines and the internet will full purchasing facilities online. The use of the internet as a marketing tool has become increasingly used by the company and because the accessories are unusual the company appears high on Google when the relevant search terms are used. However, the internet wasn't always used as a method of marketing and the team has had to develop computer skills in order to keep pace with technology. Other skills required are customer handling and business development skills, accounting and the craft skills in relation to the production. Training is undertaken in-house.

Views on wider impacts of shooting activities.

- C14.6 The benefits associated with shooting are seen as being very important to local economies where shooting takes place. The knock on effects which it has in terms filling beds in hotels and the food and drink supply chain for example is substantial. Shooting also acts as a cohesive force for countryside people and this bringing together people, who perhaps might lead solitary lives, therefore it has social and community benefits.

- C14.7 Whilst retaining traditional craft methods, utilising customer input for product development, entering new markets and being competitive within the market for shooting accessories, the company is expected to flourish going forward and therefore contributes to the sports shooting sector in a distinctive way.

C15 Case Study. Clothing, guns, and accessories. West Midlands

Background and products

- C15.1 The company was established as a family business in 1845 as an ironmongers and branched out into guns and shooting accessories more recently and now has a fully stocked Gunroom. It stocks a full range of shooting accessories from decoys and gun cabinets to dog accessories and cleaning kits from leading brands. It also stocks clothing for shooters and specialises in Barbour. The business thrives by differentiating itself on the basis of its quality of customer service. It has been developing its online store for over 10 years and has a dedicated department for this. It is a thriving business and has a turnover of over £1.5m for online sales which is set for annual double digit growth going forward.

Employment, skills and training

- C15.2 The company employs 38 members of staff all together, with 5 full time and 2 part time who work directly with shooting sports accessories. The team includes a gunnery manager, a gunnery assistant and sales staff. There are no skills deficiencies though recruiting people with good overall gun knowledge can be

challenging. In house training is provided for customer service skills and associated activities. The customer service skills training is key to the company's growth. Other types of training the company engages in is management and product related training. The company currently has 4 apprentices in customer service, warehousing, dispatch and marketing.

Markets and supply chains

- C15.3 The company is not dependent on the shooting sports sector because of the diversity of the sectors within the business, though it is quite an important revenue stream. The primary market for the products is the UK. They source the supplies within the UK though they are largely manufactured abroad and imported from some 300 overseas companies. The main issues in relation to the supply chain are stock availability and synchronising it with the online offer in the UK.

Innovation and product development

- C15.4 The key selling point for the company is the quality of its customer service and the quality branded products it sells. It has recently branched out into designing and producing its own label and has begun with shooting trousers and breeks. The product uses quality materials which are sourced overseas. In addition the company prides itself in its e-commerce offer and has a fully integrated online store which has been 12 years in development.

Views on wider impacts of shooting activities.

- C15.5 The company organises small shoots locally and has a good insight on the impact the sector has on the local supply chain. Foot fall into the town centre and then into the shop increases when there are local shoots and this impacts positively on the hotel and restaurant industry where the company also advertises its shooting accessories.
- C15.6 The shooting accessories part of the company is growing and dynamic and it places skills development at the heart of this. Ongoing training helps to make the company competitive and it provides a physical place for local people and tourists to visit and purchase shooting related products. Its online presence has ensured that growth is maintained.

C16 Case Study. Dealer in Guns and Collectables. South East

- C16.1 The contribution which auctioneers make to the shooting industry is quite significant and this is demonstrated by a particular auctioneer whose annual turnover has been around three to five million pounds per annum over the past 5 years. It auctions traditional and modern arms and armour. The Arms and Armour department covers a range of antique European and eastern armour and edged weapons. It also covers American firearms including rare examples by Colt and Winchester and other items relating to the armourer and the craft between the 14th to the late 19th century

throughout the world. In addition the Sporting Gun department has grown significantly in recent years to become one of the global leaders in this specialist field and holds sales three times a year.

Employment and Skills

C16.2 There are 6 members of staff who work across the 2 departments which is headed up by a Director. The team includes a consultant, a manager and admin staff. The main skills required are knowledge based and key staff have to have a significant working knowledge of the marketplace and be specialist in modern and antique firearms. Knowledge of legislation and standards are also a key requirement, where for example a deep understanding of section five, section one and two and section fifty-eight firearms is key.

C16.3 Learning primarily takes place on the job and there is a distinctive lack of provision available for this specialist area. Staff also need skills in customer services and client handling in order to provide a professional and courteous service. This is usually provided in-house.

Suppliers and Services

C16.4 The auctioneer's main customers are private institutions and private individuals and are located both in the UK and overseas. Clients usually approach the auction house itself as and when collections come up for sale. The supply chain for associated services is primarily internal and all the technological and photographic work is conducted in-house.

Innovation and product development

C16.5 This particular auction house plays a key role in generating knowledge exchange in the antique and modern gun industry. By using its specialist expertise and use of technology it brings both antique and modern firearms to life. It creates a learning platform for enthusiasts and collectors alike in addition to the economic contribution it makes.

C16.6 The auction house's working model is very much embedded within the organisation though they are always looking at new ways to advertise and the use of technology has greatly increased which has meant they can produce much finer catalogues in terms of images and now draw heavily upon eCatalogues. The technology also allows them to add footnotes in an interesting way which links to further information on the particular item for sale.

Views on wider impacts of shooting activities.

C16.7 The social, conservation and economic benefits of shooting activities are seen to be significant in the UK in many ways. For example, the supply chains involved are deep and assist local economies throughout the shooting season through employment and

associated spin-off activity. Conservation wise, the welfare of the birds is paramount and a large amount of care is put into conserving the natural habitat.

Appendix D Interviews with Stakeholders

D1 Introduction

D1.1 This appendix sets out the main results of the interviews with key stakeholders, which were conducted to assess stakeholder views on the trends and issues in the sector. Some fourteen interviews were held with representatives of the stakeholders, using a list of relevant contacts provided by BASC. They mainly consisted of organisations that played a significant role in shooting sports and represented providers and participants involved. For example, as well as BASC, the Countryside Alliance, the NFU, the Moorland Association, and Scottish Land and Estates and others.

D1.2 This paper covers the topics discussed and is structured as follows:–

- The organisation and management of shooting
- The past growth in shooting sports
- The prospects for growth in the future
- The benefits and impacts
 - The economic impacts
 - Conservation and environmental benefits
 - Wider links/social and community benefits
- The counterfactual: benefits without shooting sports
- Competition from overseas
- Key issues for the future.

D1.3 The interviews were essentially qualitative, based on the knowledge, experience, and perceptions of stakeholders. They stressed that their views were not based on research carried out for the interviews but on their experience of the sector, and were to some extent anecdotal.

D2 The Organisation and Management of Shooting

D2.1 Most of the stakeholders were not aware of any major changes that had taken place to the way opportunities were organised and provided over the past five to ten years. The recession from 2008/2009 onwards had meant that, mainly in response to the market, some adjustments had been required and taken place. The main features were:–

- a The Demand for Shooting. It was considered by some that in spite of adjustments the sector was, to some extent, recession proof in that the core product on offer remained the same and there were no major structural changes. However, at the top end of the market some of the large corporate shoots had been reduced, but were probably now recovering, the middle sized ones found it more difficult to let shooting days, and more of the smaller shoots were being managed by syndicates. Overall there had been more demand for a smaller number of shooting days, with a knock-on effect for birds being put down. There had been reductions in prices charged owing to the recession but these were beginning to rise.

The patterns of booking had changed, with many more participants booking on the web (but not necessarily with shorter booking times, and the “shoots of quality” were still booked up well in advance). Syndicates were advertising more on the web, and hence people were browsing there for opportunities, but they still may book direct.

- b Diversification. More shoots now offered accommodation, either on site or in the local areas, to broaden the “shooting experience” and cater for families and parties. To some degree shooting was key, but offered “packaged up” with other recreational activities, for example, line fishing and golf in some locations. This was thought to be much more prevalent in Scotland.
- c Providers and land ownership. The amount of overseas investment had increased. As a result of this and the changes to farming (to maximise income) the land prices were up significantly. There was considered to be a predominance of relatively small providers and little increase in the number of larger providers although larger farms were increasing in size.

D3 Past Growth in Shooting Sports

D3.1 It was considered that the number of shoots had probably not declined and there were probably more now than ten years ago, accompanied by a marginal increase in the area of land being shot over. However, the participation had probably fallen as a result of the recession (see above) for some stakeholders (while some thought it had stayed about the same), although participation was now reviving. There was also a trend that, for example, large pheasant shooting days had been cut right back, there were fewer guns per day, and generally smaller shoots. There was also a move to birds shot rather than per diem fees. The cost of many shoots could well have influenced this, especially the increases in fuel and feedstuff prices.

D3.2 Generally, indigenous UK demand had fallen, with an increase in the “good shoot” days by overseas participants, e.g., from Germany, Italy, Scandinavia, the USA and the Far East.

D4 Future Growth Prospects

D4.1 The general view was that the sector would see growth in the number of participants over the next five years which would iron out the past cycle. It was considered that the number of opportunities would increase and they were generally more accessible. Both indigenous UK and overseas demand were likely to increase. However, there were likely to be ups and downs. Diversification would influence growth, along with the desire of landowners to increase their income. There would be efficiencies that would create extra revenues (for example, improved skills and energy savings).

D4.2 The growth would be influenced by several factors: i.e. the economic prospects and stability in terms of the initial return to growth, innovation, and moves to link shooting more with tourism and recreational activities in the countryside, the prospects for developing a more formalised food chain for game meat (although there was more competition from the Russians who were selling produce cheaply), and steps to

encourage the relatively large number of people who held shotgun licences to shoot more regularly.

- D4.3 Increasing regulations that affected providers and the broader sector could be a disincentive and limit growth significantly, for example, as they impacted on the need for training/certification, health and safety, accommodation standards, game meat and the food chain (as it becomes more formalised), together with real time information requirements on for example VAT.

D5 Economic Benefits

- D5.1 The discussions highlighted positive and enduring economic benefits which if anything were increasing as the sector generally upgraded its capacity to broaden the offer and its capabilities. The main benefits were:–

- Employment. The previous study had highlighted some 70,000 full-time equivalent jobs, which may have contracted to some extent during the recession but were increasing again. Some providers had grown in terms of land coverage and the number of shoots but the jobs may not have increased pro rata. Possibly a quarter or more of providers had up to five recruits and half may not employ people. Hence the jobs could be concentrated in around a quarter of providers. It was considered that the employment “churn” was fairly low with a tradition of engaging local people.

The supply chain and wider sector was an extensive source of employment including manufacturing for guns and ammunition, clothing, food and drink, and feedstuffs as well, accommodation, restaurants, pubs etc and the hospitality sector. Without the shooting activity, especially in small rural communities the job opportunities in the hospitality sector would be very limited.

The types of occupation had become more diverse with on site game stock and land management/conservation, the management of accommodation and hospitality and the “packaging” of the offer/product with other recreational activities (to some extent). The changes impacted on both the providers and those in the supply chain.

The sector was attracting more young people and women as the employment opportunities diversified.

- Skills. There was an increasing requirement to upskill the workforce in the sector and ensure that recruits were qualified/certified with increasing links to apprenticeships. For example, game keepers and stalkers and land/conservation, ecosystem management. There was demand for qualifications from recruits who were seeking something tangible and there had been some initial mention of a “competent persons register” but this had not gone far. Generally the actual and preferred approach was voluntary training and skills development rather than a mandatory approach, and people become engaged in the sector more out of interest and “love”. The requirement for skills development was also impacting on the supply chain from gun makers (where British guns were still the finest in the world), through to accommodation (hotels), pubs, and restaurants and hospitality skills.
- Innovation. On the manufacturing side there was ongoing improvement in the guns and in particular ammunition and cartridges. Conservation led to the adaptation of new methods of monitoring activity and responses to issues. The sector had developed and adopted new technology for bookings and marketing e.g. the web / web cams.

D6 Conservation, the Environment, and Land Management.

- D6.1 The conservation activities and benefits were significant. The requirements were now considerable and practices had grown and become more “technical” with a focus on sustainability. They covered the game birds and deer and wider habitats. There were significant impacts on the moorlands (for example, pink heather moorland which would not exist without grouse shooting), field quality and grass margins, hedgerows, woodlands and planting, rotation coppicing, and the creation of ponds and water courses with improved quality etc., with a move to habitat enhancement, biodiversity with species recovery, pest control (e.g. foxes) aimed at balancing and enriching the ecosystem.
- D6.2 There was increasing focus on AONBs, SSSIs, and working with, for example, the National Park Authorities and Natural England.
- D6.3 Overall grant support for conservation was thought to have declined and while conservation imposed costs they had not risen disproportionately.
- D6.4 The conservation aspects were an important part of the shooting experience and existed throughout the year and off season. There was also increasing interest from the media in conservation e.g. television and radio.

D7 Links with Local groups/Social Benefits.

- D7.1 There were important links with local schools, primarily for educational purposes on the environmental and conservation side, through visits and some talks which form part of school projects and the curriculum. The links with the regional/countywide FE and agricultural colleges reflected the training side and the qualifications sought for gamekeeping, pest and predator control, and conservation. Students are involved in work experience and placements on the land management and conservation aspects and on the shoots themselves. Some thought the conservation aspects were “much more fun” than shooting for students.
- D7.2 There were also important links with local conservation and community groups who visit sites, develop projects, and have a key role in the voluntary side of shooting and environmental management. They organise visits, guided tours, and talks on the countryside, conservation, and the relationship with shooting. There is also interaction with countryside recreation groups including ramblers and walkers who meet and engage with staff at shooting sites – this raises awareness of the shoots and practices.
- D7.3 As many of the students and people in local groups are local the interactions help strengthen the community involvement in shooting. Coupled with the on and off site employment opportunities, shooting is an important part of community life and the social fabric of local areas.

D8 The Counterfactual, and Benefits without Shooting

D8.1 There were strongly held views that if shooting were to decline there would be considerable knock-on effects:–

- The employment opportunities would be significantly reduced both on site at shoots and in the extensive supply chain that provided the “hardware” and the accommodation and hospitality for participants.
- The skills base would contract both for shooting itself and the supply chain with knock-on effects for other sectors and tourism generally.
- The reductions in conservation activity would mean a loss of woodland, ponds, and watercourses and a reduction in pest control which would damage not just the countryside environment but crops (e.g., oilseed rape, peas, legumes, etc.).
- The finance for conservation was essentially revenue driven from shooting and government grants could not fill the gaps.
- Shooting as a means of community engagement and interaction could decline along with social benefits.

D8.2 While there may be some diversification into other countryside recreational activities the scale and breadth of benefits would not be so great, and the transition period would mean they were delayed and spread over time.

D9 Competition from Overseas

D9.1 It was considered that the shooting offer in the UK, and in particular the moorland locations, was unique for grouse and deer especially in Scotland in terms of the whole “sense of place” and countryside experience. The UK was seen as the international destination for shooting, especially for the top shoots. There was developing competition in some areas such as Eastern Europe (with very large corporate shooting days which are relatively cheap) and Russia and Argentina (for grouse and partridges). However, the world was becoming a smaller place through ease of travel and advertising which encouraged participants to try other locations. The GB field and sports market remained relatively strong and stable.

D10 Key Issues in the Future

D10.1 The main issues faced by the sector as a whole in the future were

- The economic context and the requirement for adjustments to be made if the GB and international economies (especially Western Europe and North America) were to fall back into recession or continue to show limited growth
- The regulatory environment and legislation (e.g. especially from the EU) that related to the stock of quarry, conservation, rural access and requirements for training and qualifications
- Public relations and the need to promote the benefits of shooting and build upon goodwill
- Changes in technology that included the “hardware” such as the guns, ammunition/cartridges and the promotion, booking and management of the

sector – websites, booking agents, webcams, mobile phones and mobility on sites e.g. quad bikes

- The rising input costs for providers, especially energy costs against a background of CAP “reforms” and income from the EU
- The development of ecosystem services, landscape management, conservation and biodiversity etc
- Economic development opportunities and the rural/urban interface which has implications for in- and off-season activity, short trip distances and shorter shoots
- The integration of shooting with the local context especially as shooting providers manage so much of the countryside: food security, the health of the countryside and the “feeling of place” in different locations – local provenance.