

Red grouse and the Tomintoul and Strathdon Communities



The benefits and impacts of the grouse shooting industry from the rural community perspective - A case study of the Strathdon and Tomintoul communities in the Cairngorms National Park

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1. Introduction

This document outlines the findings of a study designed to explore the benefits and impacts of the grouse shooting industry and associated land management from the rural community perspective. A single in-depth case study of the communities of Tomintoul and Strathdon in the Cairngorms National Park was carried out. A combination of questionnaire surveys and semi-structured interviews was used to examine the benefits, impacts and perceptions of this industry from the rural community perspective.

2. Research context and aims

The sport shooting of red grouse (*Lagopus lagopus scoticus*) on heather moorlands has occurred since the mid-1800s, having developed with the rise of the sporting estate and the decline in the value of the uplands for grazing livestock (Moorland Working Group 2002). Driven shooting of red grouse is an activity unique to the UK, attracting people from all over the world. Some 25% of the British uplands is considered to be heather moorland; as much as 50% (7500 km²) of this may be managed for grouse, although the level and intensity of management can vary considerably between sites (Hudson, 1992). Domestic sheep and red deer also occur on many of these moors. The numbers of grouse shot can vary widely from year to year, with an overall decline evident from the 1970s onwards (Smith *et al.*, 2000).

The management of moorland for red grouse involves the burning of the vegetation at intervals, to create a patchwork of heather of varying ages for grouse to nest in, feed on and use for cover (Watson & Miller, 1976). Wrightham and Armstrong (1999) showed that, in 1988, some 20% of heather moorland in Scotland was being regularly burnt. Hudson (1992) estimated that some 746 properties (3,700,000 ha) were involved in grouse shooting in the UK, with 459 of these managing grouse moors, employing a gamekeeper for every 1,300ha of moor. Grouse moors therefore represent an important resource, with the shot grouse also generally all being consumed, with many birds going to restaurants as a speciality food.

Heather moorland is now extensive only in the islands of Britain and Ireland, with the vast majority being in Scotland; this heather resource is therefore of considerable international conservation importance (Thompson *et al.*, 1995). However, recent decades have witnessed significant declines in heather moorland, with an overall decline of 23% in Scotland between the 1940s and 1980s and a similar rate of decline between 1990 and 1998 (Haines-Young *et al.*, 2000). Moors which are not used for grouse shooting have experienced the most significant declines, suffering a 41% loss in heather cover between 1940 and 1980, while moors used for shooting lost 24% of their heather cover over the same time period (Barton and Robertson 1997). These declines have been due to a number of factors including afforestation and agricultural encroachment of moorland habitats (Mackay *et al.*, 1998, Hester *et al.*, 1996), heavy grazing pressure and a decline in grouse shooting (resulting in the decline of active moorland management) (Moorland Working Group, 2002). More specifically, the grouse shooting industry is also under threat from grouse pestilence issues (Hudson *et al.*, 1992), a reduction in the frequency of muirburn (Hester and Sydes 1992), a decline in the range of red grouse (Gibbons *et al.*, 1993), and the uncertain future impacts of climate change (Moorland Working Group 2002, Royal Society of Edinburgh 2008).

2.1 Benefits and impacts

The Fraser of Allander Institute (FAI) calculated that the total effects of grouse shooting in Scotland in 2000 included direct employment and income (wages) of 630 full-time equivalents (full-time keepers and part-time keepers and beaters) and £9.3m respectively (FAI 2001). Indirectly, these effects resulted in 940 FTE jobs and an income of £14.8m. The direct and indirect GDP effects were £3.1m and £8.6m respectively. These figures can be compared to earlier estimates of the impacts of grouse shooting made by McGilvary (1995), who estimated

a combined direct and indirect employment effect of 1239 FTEs and a GDP impact of £4.7m. Caution should be taken in interpreting the apparent improvement in returns evident between this estimate and the 2000 estimate, as grouse shooting is subject to cyclical fluctuations arising from weather and disease (McGilvary, 1995). In 2000, the average grouse moor generated a gross income of £26,700, compared with outgoings of £43,364 (FAI 2001).

The management of grouse moors may also have benefits from a conservation perspective. In particular, moorland management for grouse can result in restrictions on land uses less compatible with nature conservation, such as high-density stocking with sheep or afforestation with exotic conifers. As mentioned above, the loss of heather cover has been more extensive as a result of these and other land use encroachments on moorlands not used for shooting. Grouse moor management also includes the control of pest species such as the hooded crow and red fox. This management appears to have beneficial benefits for breeding waders, with Tharme *et al.* (2001) showing that Golden Plover, Lapwing, Red Grouse and Curlew populations were found at significantly higher densities on grouse moors than on other moors with similar vegetation. However, Meadow Pipit, Skylark and Whinchat occurred at lower densities on grouse moors (Tharme *et al.*, 2001). Merlin also appear to be more abundant on managed grouse moors than on non-managed moors (Tapper, 2005). Grouse moor management has also been associated with the illegal shooting, trapping or poisoning of various raptor species (Thirgood *et al.*, 2000, Whitfield *et al.*, 2004, Whitfield *et al.*, 2003). The use of poisoned baits for crow and fox control can also result in accidental poisoning of these birds.

Due to a combination of the various factors discussed above, the future of the grouse shooting industry and grouse moors generally is under threat. A factor which could be perceived as enhancing this threat is the aspirational target of the Scottish Forestry Commission to achieve 25% forest cover (from a current 17%) in Scotland by 2050 (FCS, 2006) – some of which could potentially be in areas of (unprotected) moorland. A key issue in this respect is the multifunctional nature of forestry, with the multiple environmental, social and economic benefits of this land use having been repeatedly recognised (Edwards *et al.*, 2008, Willis *et al.*, 2003, MLURI *et al.*, 1999, O'Brien and Claridge, 2002 among others). Furthermore, agriculture is often perceived as an essential but disadvantaged industry and a critical component of rural economies. In contrast, grouse shooting suffers from a perception of being an elite activity and, despite clear recognition of the economic benefits (see above), the social benefits and impacts have not been explored. In particular, there appears to be have been no examination of the impacts of grouse shooting and associated management at the community level; specifically, studies examining the perceptions of local community residents regarding the social and cultural importance of this industry and the impacts (positive and negative) of the industry at the community level are absent from the literature. The work presented here represents an effort to address this, through studying the direct and indirect impacts, benefits and perceptions of the grouse shooting industry from the perspective of a Scottish rural community.

2.2 Aims and objectives of the research

The overall aim of this research is the identification of the key social benefits and impacts of grouse shooting and associated land management within one pre-defined community area. The specific objectives of the proposed research are:

1. To assess the extent of grouse shooting and associated land management in the selected case study area and the direct employment creation impacts of these activities for the community.
2. To establish, both qualitatively and quantitatively, the social benefits and impacts of grouse shooting and associated land management from the perspective of local community residents and business people.

3. Research methodology

The overall approach utilised for this research was a case study. A community located in an area where grouse shooting is a key local industry was studied in detail to examine the benefits and impacts of grouse shooting on community residents. Questionnaire surveys of local residents were employed, in conjunction with a smaller number of in-depth semi-structured interviews, to ascertain key benefits, impacts and perceptions associated with the different elements of the grouse shooting industry. Local estates were also surveyed to gather specific information on employment-related benefits and the extent of grouse shooting activities in the case study area.

3.1 Case study location

The location for this study was the communities of Tomintoul and Strathdon in the Grampian region of the Scottish Highlands. This location was chosen for a number of reasons including:

- Grouse shooting is widespread in the surrounding area and represents a long-established economic activity
- The communities' population size allows for a blanket survey approach
- The area is relatively isolated, with limited types of local industry/land use, therefore allowing for the examination of grouse shooting with limited external 'noise'.



Figure 1 Map showing the location of the Cairngorms National Park in Scotland with the village of Tomintoul highlighted in red

Tomintoul and Strathdon are located in the Scottish Highlands, within Cairngorms National Park (Figure 1). Tomintoul village was planned and built in 1776 at an altitude of 356 metres, making it the highest village in the Scottish Highlands. The surrounding region exhibits agricultural (sheep and beef cattle), forestry and sporting (grouse and deer stalking) land

uses, with tourism and whisky distilling also key elements of the local economy. The 2001 census showed a village population for Tomintoul of 322. The population of the entire survey area, including Strathdon (located some 25km east of Tomintoul) is estimated, using mapped census data (UK Census Data, 2001), at between 600 and 700, with an estimated adult (over 16) population of 450-550.

3.2 Survey and interview methodology

The community area of Tomintoul and Strathdon was defined spatially prior to beginning data collection, using local knowledge and ordnance survey maps. Three forms of data collection were carried out: 1) a questionnaire survey of the whole community; 2) semi-structured interviews with key community members and business people; and 3) a concise survey of local landowners/landowner representatives to gather specific information from local estates on their grouse shooting activities. The community survey and semi-structured interviews were predominantly carried out on-site during field visits, while the estate survey was conducted by email or phone.

The case study area was delineated to incorporate the main populated areas of both the Tomintoul and Strathdon communities (see Figure 2). Upper Glenlivet was excluded, as this area was not thought to be dependent on Tomintoul as a centre of resources and the survey area did not include the entire areas of all of the 9 estates included in the estates survey, due to their extensive size – although the main population centres within these estates were included. Estate boundaries are not shown on Figure 2, although boundaries were reviewed with a geographic information system (GIS) in an effort to include as much as feasible of all of the 9 reviewed estates within the case study area.

3.2.1 Questionnaire Survey

A questionnaire survey was conducted of the Tomintoul and Strathdon communities. Following the development of an initial draft questionnaire, this was further refined through conducting a small-scale pilot survey in a different Scottish community in a grouse shooting area (the Angus Glens) and consulting with key personnel - including Centre for Mountain Studies staff, Countryside Alliance contacts and a number of experts in rural land management - on the draft. The final questionnaire (see Appendix 1) was hand-delivered to all households within the pre-defined (mapped) case study area (Figure 2), and residents were briefly introduced to the research where possible: thus, the target survey population was all community residents over the age of 16. Two surveys were delivered to each house within a pre-defined area (Figure 2) to be filled in by any two household members over the age of 16. Surveys were supplied with a postage-paid return envelope. A covering letter was also provided with the questionnaires to explain the rationale behind the research and instructions for questionnaire return. The surveys involved the collection of data relating to a number of topics; results from returned questionnaires were collated within the statistics programs SPSS and Excel and analyzed using descriptive statistics. The full survey findings are presented in Section 4 of this report and compared with similar findings at the national and Cairngorms National Park level where such findings were available and directly relevant.

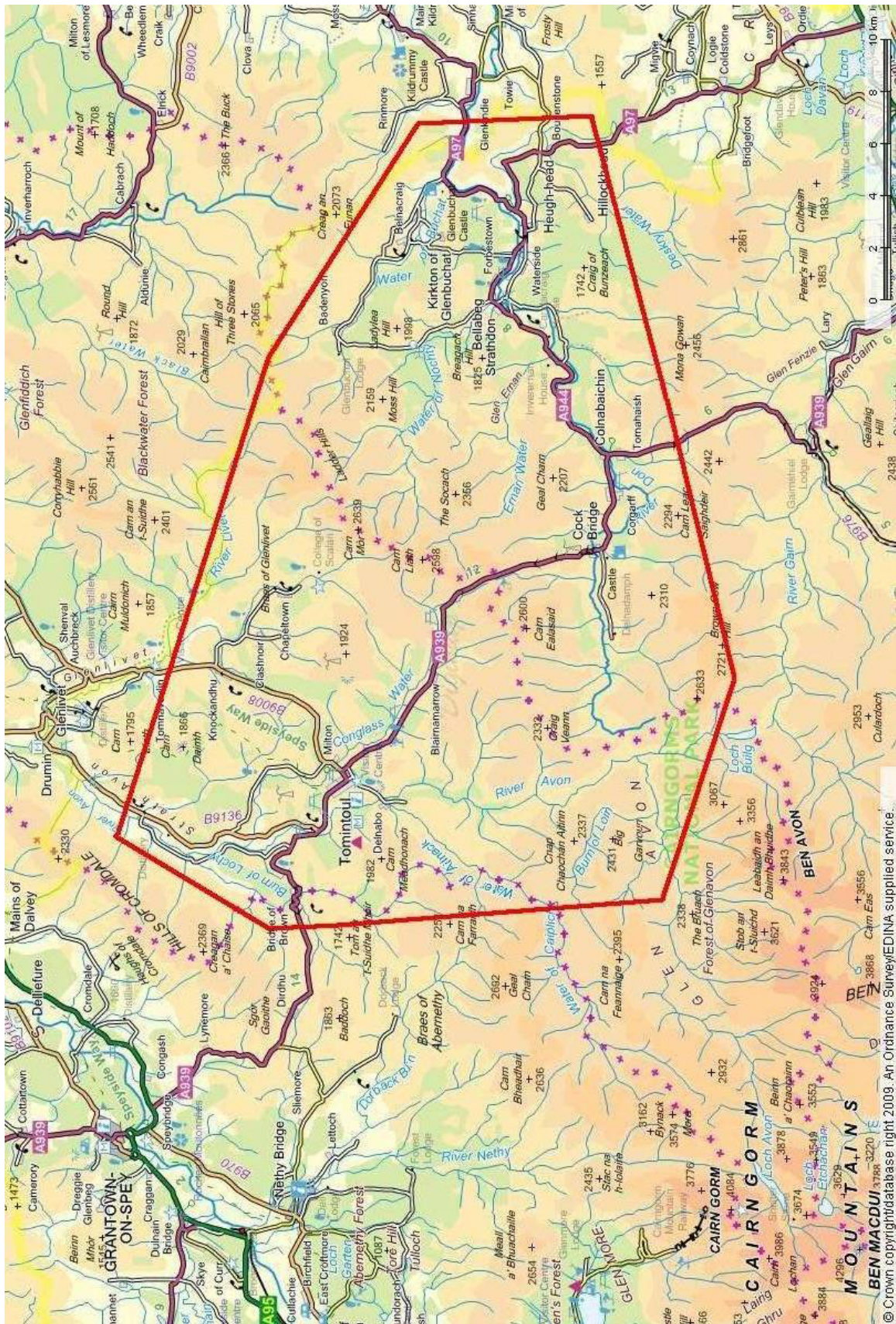


Figure 2 Map of Tomintoul and Strathdon area showing delineation of case study area

3.2.2 Semi-structured interviews

In total, 18 semi-structured interviews were conducted with key personnel, in person where possible (otherwise, by phone) and recorded using a digital voice recorder, and transcribed. Interviewees included: farmers (tenants or owner occupiers); forest managers; gamekeepers and other estate workers; local business owners/managers (hoteliers, publicans, shop owners, post office owners etc.); and key community representatives. The selection of interviewees involved a snowballing approach, with initial interviews being used to establish the identity of further possible interviewees. The development of the interviewee list was based on ensuring a balanced representation of relevant community interests¹. Appendix 2 provides a list of all interviewees. These interviews were used to assess, qualitatively, any conflicting perceptions of the grouse shooting industry among interviewees and key perceived impacts and benefits of the industry for the community. Key topics for discussion included:

- The position of grouse shooting and grouse moors within local community culture
- The level of general 'connectivity' between local residents and the grouse shooting industry and grouse moors
- The level of community satisfaction with general estate management in the area and specifically the management of grouse shooting and grouse moors
- The key benefits of the grouse shooting industry and associated land management for the community
- The key issues/negative impacts of the grouse shooting industry and associated land management for the community

A thematic analysis of interviewee responses is presented in section 6, under the overarching theme of key community-level benefits and impacts of grouse shooting and associated land management.

3.2.3 Estate survey

The 9 estates with all or a large component of their area lying within the delineated case study area were approached to obtain specific data on grouse shooting activities. Key data were collected for a five-year period where possible (2004-2008). Specifically, estates were contacted by phone and emailed a standard spreadsheet to be completed with regard to topics including:

- The number of full time equivalent (FTE) jobs resulting directly from the grouse shooting industry and related to supporting industries (from an assessment of all part-time and full-time jobs resulting directly from grouse shooting activities and associated land management)
- The areas in hectares of managed grouse moors on each estate
- The number of shooting days and total bags over this five-year period on each estate

¹ It is recognised that other stakeholders in the areas grouse moors exist (such as Scottish Natural Heritage and the Cairngorms National Park Authority); however, as this study was focused on the specific delineated area, only interviewees resident within the chosen area were selected.

4. Results of the community survey

4.1 Survey return rate

In total, 560 survey forms were distributed to 252 households. In some cases, more than one survey envelope (with two surveys inside) was given to respondents, who kindly agreed to distribute surveys to houses which were inaccessible to the researcher. Surveys were delivered to all houses thought to be in full-time use in the area. 113 surveys were returned; 75 single surveys were returned in their postage paid envelope and 38 were returned as pairs (two in an envelope for 19 households). The overall return rate was therefore 20%, equating to coverage of 37% (94/252) of all surveyed houses. As the adult (over 16) population for the entire survey area was estimated at between 450 and 550, survey respondents can be taken as accounting for between 20 and 25% of the study area's adult population.

4.2 Respondent profile

4.2.1 Gender and age of respondents

Of those respondents who indicated their gender (n=107), 41% were female and 59% were male. This can be compared to a gender breakdown for the whole of Scotland of 48.2% male and 51.7% female (General Register Officer for Scotland, 2006). Respondents were also asked to indicate their general age from a list of age categories (Table 1). Younger respondents were in the minority, with only 2% of respondents under 25 and only 18% under 40. In total, 58% of respondents were over 56 years of age and 28% were 66 or over. These figures can be compared with those for the Scottish population as a whole in mid-2008, when 18% of the population were under 16, 19% were of pensionable age (65 for men and 60 for women) and 63% were of working age (16-59 for women, 16-64 for men). As the survey targeted people over the age of 16, no inference can be made about the segment of the population under that age; however, even taking into account that those under 16 are missing from the respondent group, 58% of respondents over 56 years of age and 28% over 66 would appear to be significantly higher than the figures for the whole of Scotland. Combined with the low numbers of respondents under 40 and under 25, these figures are likely to be a product of continued out-migration of younger people and in-migration of older people retiring to the area. This imbalance in age classes relative to national figures is reflected across the Cairngorms National Park as a whole (although less extremely), with 25.8% of the park's population over 60 (CNPA 2006).

Table 1 Age categorisation of respondents (n=110)

16-25	2%
26-40	16%
41-55	24.5%
56-65	29.5%
66 and over	28%

4.2.2 Number of children

Respondents were also asked if they had children. Of the 110 respondents who answered this question, 77% had children and 23% did not. Of those respondents with children, 29% stated that some or all of their children still lived at home and 71% stated that none of their children still lived at home. Therefore, while about three quarters of respondents have children, just less than a third have children living at home. Coupled with the fact that a

number of these responses would have been by separate parents of the same children, the actual proportion was almost definitely lower than this.

4.2.3 Education and employment

Respondents were asked to indicate their level of education from six possible categories (Figure 3). Overall, **50%** of respondents were educated to college diploma level or above and 43% to Standard grade or Highers level. Among respondents, a greater number of people hold standard grade (or equivalent) qualifications than Higher grade (or equivalent) qualifications – this reflects the situation across the park as a whole (CNPA 2006). However, there are a higher number of people within the respondent group with degree (undergraduate or postgraduate) level education (31%) than across the park as a whole (22.7%) or across Scotland (19.5%) (CNPA 2006). The respondent group can therefore be considered as comparatively well educated.

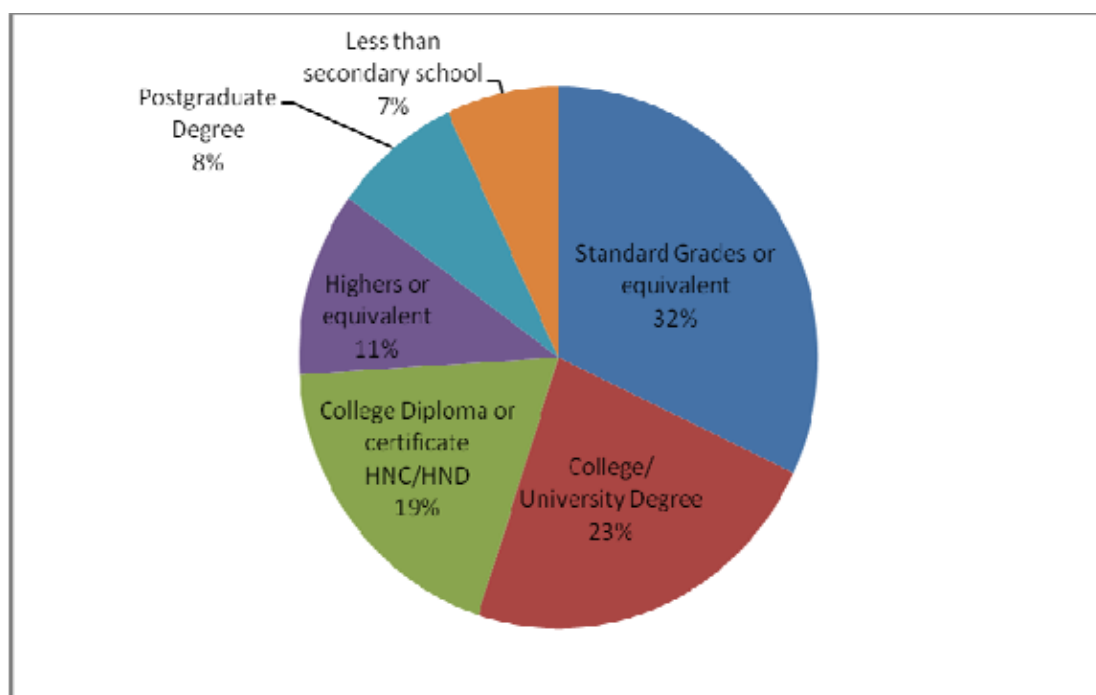


Figure 3 Level of education of respondents (n=108)

Of the 110 respondents who indicated their general employment status, **38%** were retired, with **60%** employed (divided between **23%** self-employed and **37%** employed). Unemployment was very low, at 1% of respondents (Table 2). This relatively high number of retired respondents reflects the comparatively high number of people over the normal working age living in the area (see previous section).

The breakdown of respondents across employment sectors is shown in Figure 4. Of those working, the public services sector - which includes social care, civil servants (public agencies and local government), health and education - represented the most important area of employment, with 21% of employed respondents working in this sector. This directly reflects employment in this sector across the park as a whole (20.1%), compared to 26.7% across Scotland. This disparity is likely to be a consequence of the comparatively low population density of the area and the corresponding reliance on external services, such as educational and large-scale health facilities.

In terms of importance, the public services sector was followed by the secondary sector (which in this case included distillery workers, food processing and construction) and the

game management sector, which both accounted for 13% of employed respondents. Game management and agriculture are clearly of comparatively much greater importance in the Tomintoul and Strathdon area (accounting for 20% of employment, or 23% if general estate workers are included) than across the park or Scotland as a whole, where forestry, agriculture and hunting (combined) account for 5.7% and 2.1% of employment respectively (CNPA, 2006).

Employment in the services sector (retail, IT, design, administration, business consultancies and a garage) accounted for 9% of employed respondents. This is a comparatively low figure, with the services sector accounting for 27.9% and 36.9% of employment in the park and Scotland respectively. As 10% of respondents were unspecified self-employed, it is possible that some of these respondents also worked in the services sector. The 'other' category (10%) accounts for respondents who included an artist, a charity worker, a homemaker, an estate owner-housewife, an unspecified worker and a respondent who worked in both agriculture and the oil industry. Employment within tourism and hospitality among respondents is higher (10%) than for Scotland (6%), although it is lower than for the park (19.4%) (CNPA 2006). This signifies the lesser importance of tourism and hospitality in the Tomintoul and Strathdon area relative to other areas in the park, although some of the unspecified self-employed respondents may have also been working in this sector.

Table 2 The general employment status of survey respondents (n=110)

General employment status of respondents (n=110)	
Retired	38% (41)
Employed	37% (41)
Self-employed	23% (25)
Unemployed	1% (1)
Homemaker	1% (1)

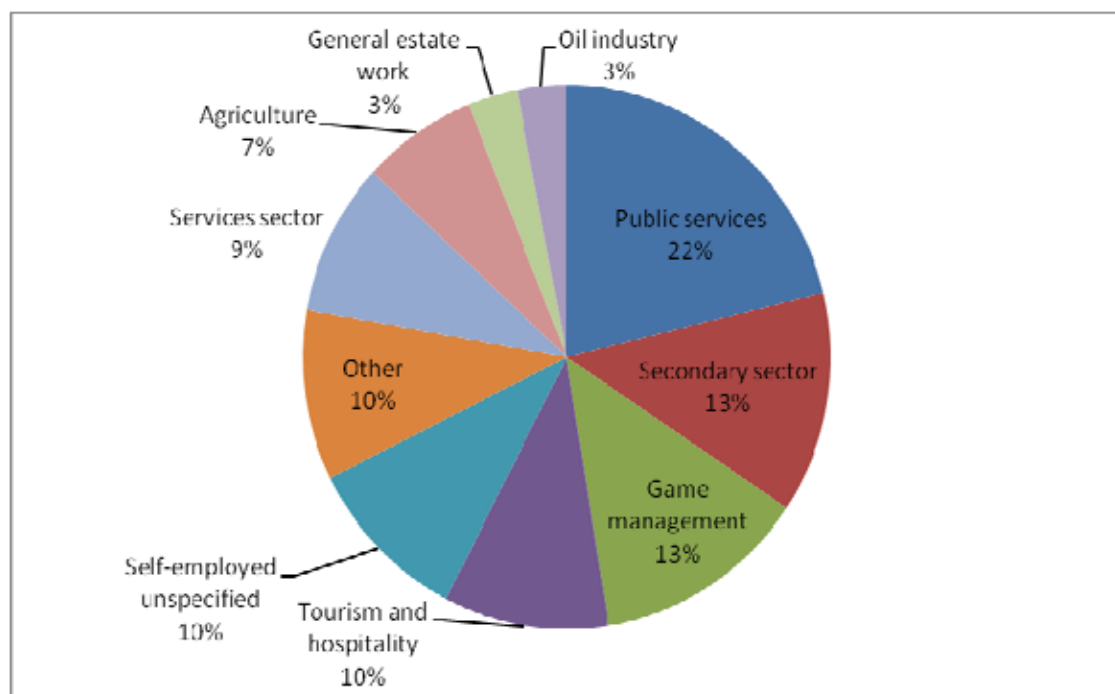


Figure 4 Breakdown of employed survey respondents by sector of employment (n=66)

4.2.4 Home ownership, length of residency and estate management

Respondents predominantly lived in their own home (**73.6%**), with **12%** living in accommodation provided by their employer and the remainder divided between tenant farmers, part-time residents and long-term rented accommodation (Table 3).

Table 3 Respondent breakdown in terms of accommodation type (n=110)

Form of accommodation in which respondents live	% and number of respondents
I live in the area full-time in my own home/my families home	73.6% (81)
I live in accommodation which is provided by my employer	11.8% (13)
I stay in long-term rented accommodation in the area	4.5% (5)
I live on a tenanted farm	4.5% (5)
I live in the area part-time in a second home which I/my family own	3.6% (4)
Other	1.8% (2)

As can be seen from Table 4, **67%** of respondents have been living in the area for over 10 years, with only **14%** having lived in the area for less than 5 years.

Table 4 Length of time respondents have lived in the area (n=110)

Length of residency	% and numbers of respondents
Recently moved to area	3.6% (4)
Under 5 years	10.9% (12)
5-10 years	19.1% (21)
10-20 years	21.8% (24)
20-40 years	30.9% (34)
Over 40 years	13.6% (15)

Respondents were asked if they lived on an estate and, of the 107 respondents who answered this question, 51%² (55) said that they did live on an estate and 49% (52) said they did not live on an estate. Respondents who lived on estates were also asked how satisfied they were with general estate management; the results are shown in Table 5. Of those who stated that they lived on an estate, the majority appeared to be very satisfied with estate management, with 66% stating that estate management on the estate on which they lived was either excellent or very good, with only 3 respondents perceiving estate management as poor and only 2 as very poor.

² It is apparent that some of those which answered yes to the question regarding whether they lived on an estate, must also have owned their own home (as 51% stated that they lived on an estate and 74% stated that they owned their own home). It can therefore be concluded that a number of respondents feel that they lived 'on an estate' even when they own their own plot of land and home but are surrounded by land owned by an estate.

All survey respondents were aware that grouse shooting was occurring in the area; however, the awareness of respondents about estate management more widely is unknown. In general however, respondents who answered the question on estate management appeared to be predominantly satisfied with estate management as they perceive it.

Table 5 Level of satisfaction of respondents (which stated that they lived on an estate) with general estate management (n=56)

Satisfaction level	% and number of respondents
Excellent	37.5% (21)
Good	28.6% (16)
Don't know	5.4% (3)
Average	19.6% (11)
Poor	5.4% (3)
Very poor	3.6% (2)

4.2.5 Estate-community communication

In terms of communication from estates, of the 102 respondents who answered this question, **76.5%** were satisfied with the level of communication and/or consultation with the community by estates on issues relating to grouse shooting, while **23.5%** were not happy.

4.3 Respondent perception of benefits and impacts of the grouse shooting industry

4.3.1 Personal benefits and impacts

The majority of respondents (**80%**) did not feel their livelihood depended on the grouse shooting industry, although **18%** of respondents did feel their livelihood was directly dependent on the grouse shooting industry. This figure is higher than the 10% of respondents who stated that they were employed in game management (see previous section), as it includes people working outwith the game industry, with some farmers acknowledging the importance of tick mopping to their livelihood, the local garage working mainly on estate vehicles, and some construction workers stating that they worked mainly on refurbishment of estate properties.

Table 6 Percentages of respondents which perceived that they received personal negative impacts and personal benefits from the grouse shooting industry

	Yes	No
Personal benefits (n=112)	40% (45)	60% (67)
Personal negative impacts (n=107)	18% (19)	82% (88)

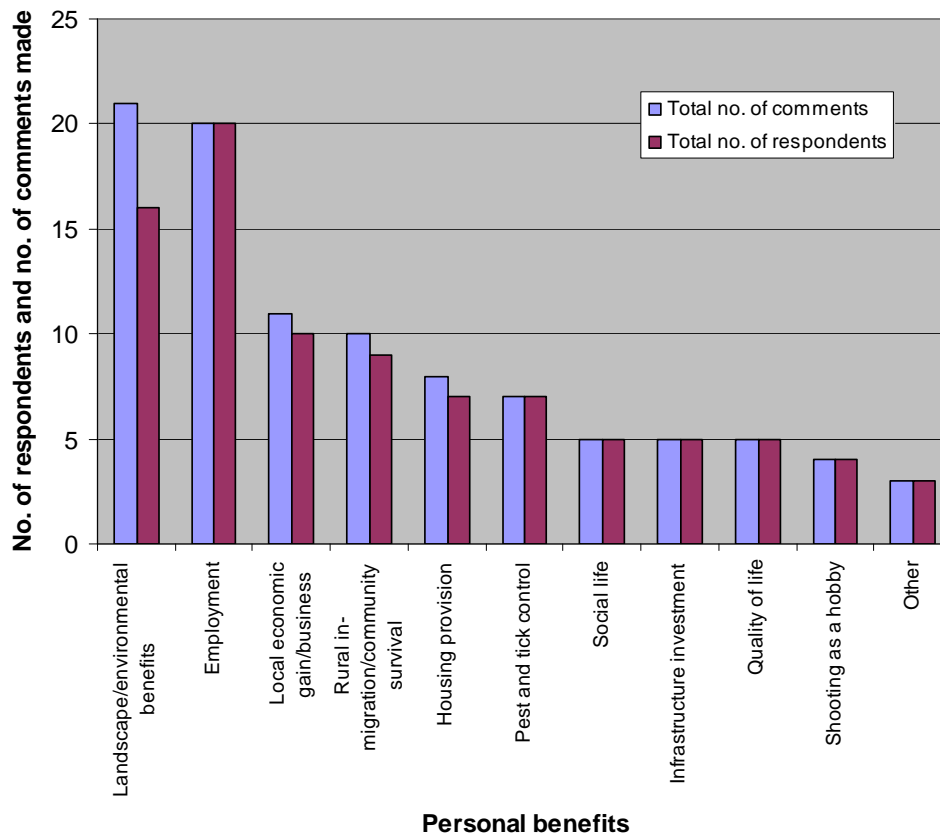


Figure 5 Total number of respondents who listed specific personal benefits and total no. of comments/benefits listed by respondents (45 respondents listed a total of 99 benefits, in some cases a single respondent listed more than one benefit relating to a single category)

Across the 45 (40%) respondents who felt they received personal benefits (Table 6), 99 comments on benefits were listed. For analysis purposes, all listed benefits were grouped under 11 separate headings. As can be seen from Figure 5, the most frequent comments related to landscape and the environment (21 comments, 16 respondents). However, more respondents actually listed employment as a personal benefit (20 comments, 20 respondents). This is due to the fact that some respondents listed two separate benefits which were both categorised under landscape and the environment (e.g. conservation of birds and good management of moorland habitats). Local economic gain, or the generation of income for local businesses, was also mentioned relatively frequently as a personal benefit (10 respondents/11 comments), followed by rural in-migration (9 respondents/10 comments) (also referred to as 'community survival'). The 'other' category in this figure refers to three separate listed benefits: added security for the area through the presence of gamekeepers; improvement of habitat for bees; and assistance from gamekeepers for farmers.

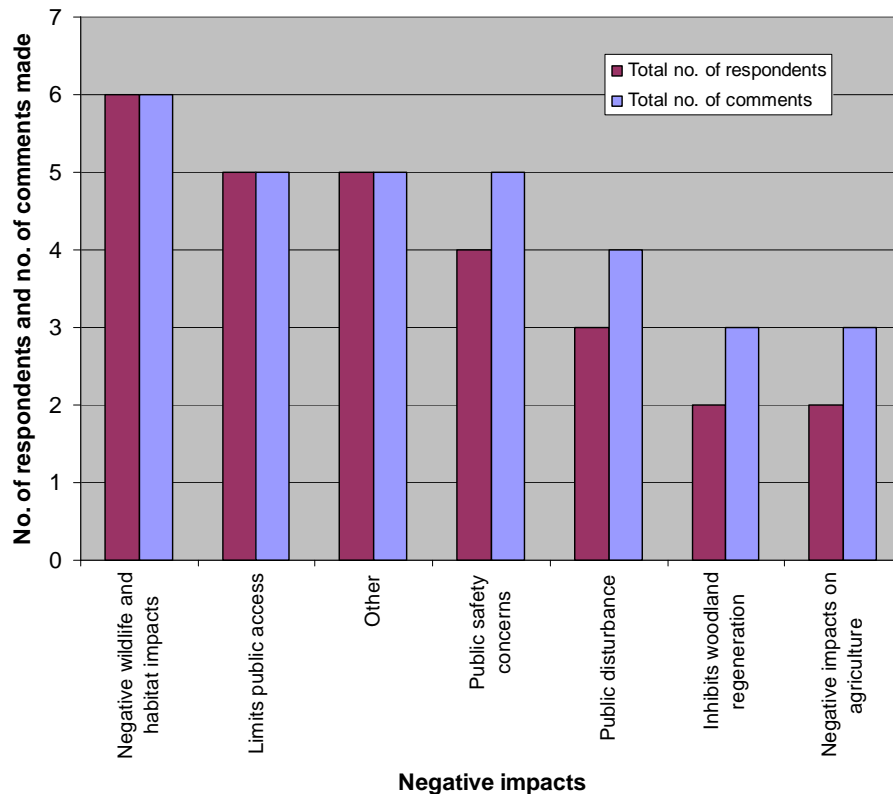


Figure 6 Total number of respondents who listed specific personal negative impacts and total number of comments/impacts listed by respondents (19 respondents listed a total of 31 impacts, in some cases a single respondent listed more than one impact relating to a single category)

Across the 18% (19) of respondents who felt they received negative impacts, a total of 31 comments listing specific negative impacts were made. All listed negative impacts were grouped under 7 separate headings (Figure 6). Comments relating to perceived negative impacts on wildlife and habitats were most prevalent, with 3 of these 6 comments specifically mentioning impacts on birds of prey. Five comments related to access, although three of these noted that access was only restricted for short periods. The public disturbance comments related primarily to the noise of shooting and smoke from muirburn. Public safety concerns related to shooting and the use of traps and snares, which two respondents perceived to represent a threat to the safety of walkers. The comments on negative impacts on agriculture included one which mentioned gamekeepers walking across farmland and two which associated grouse moor management with a general decline in agricultural activity. The 'other' category in Figure 7 relates to comments on: increased traffic associated with grouse shooting activities (1), landscape scarring from muirburn (1), 'bad' land management (1), 'bird focused' management (1) and one respondent who found estate culture 'offensive'.

4.3.1.1 The use of grouse moors by respondents

The majority of respondents actively used grouse moors for a wide variety of activities, with **78%** (87) of respondents agreeing that they used the grouse moors in their area and **22%** (24) stating that they did not use the grouse moors in their area for any reason (n=111 in both cases). Across the 87 respondents who stated that they used grouse moors, an average of 1.6 uses was listed per respondent (142 in total). Uses listed by respondents were grouped under nine separate headings, and the number of respondents listing uses which were categorised under each of these headings is shown in Figure 7. Walking was the most common use being made of grouse moors, with 64% of respondents using them for this purpose. This was followed by wildlife and bird watching (25%) and deer stalking and

shooting (13%), with the remaining activities being listed by respondents much less frequently.

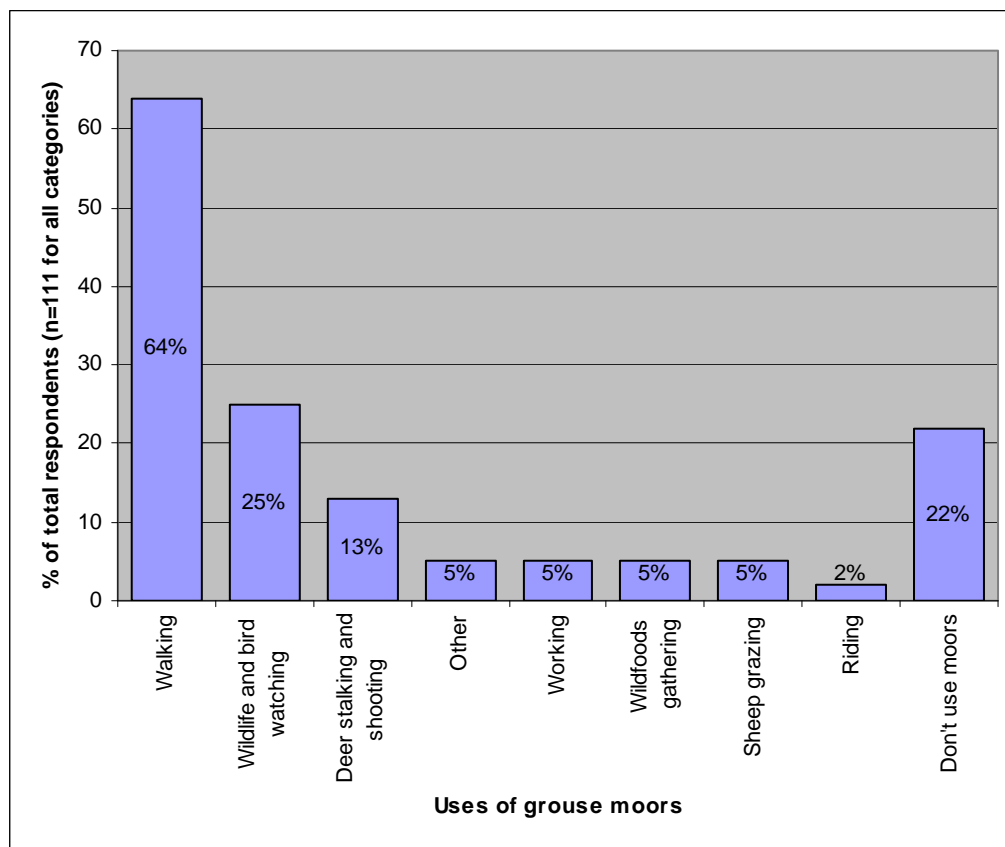


Figure 7 Percentage of respondents who listed specific uses they made of grouse moors (n=111 for all categories)

4.3.2 Community level benefits and impacts

The perception of community benefits among respondents was considerably higher than that for personal benefits, with **81%** of respondents agreeing that the community received benefits from the existence of the grouse shooting industry, while **18%** stated that the community did not receive benefits. A total of **17%** of respondents stated that there were negative impacts for the community from the grouse shooting industry, while **83%** stated that there were no negative impacts for the community (Table 7).

Table 7 Percentages of survey respondents who stated that the grouse shooting industry resulted in benefits and/or negative impacts at the community level

	Yes	No
Community -level benefits (n=110)	81% (90)	18% (20)
Community-level negative impacts (n=103)	17% (17)	83% (86)

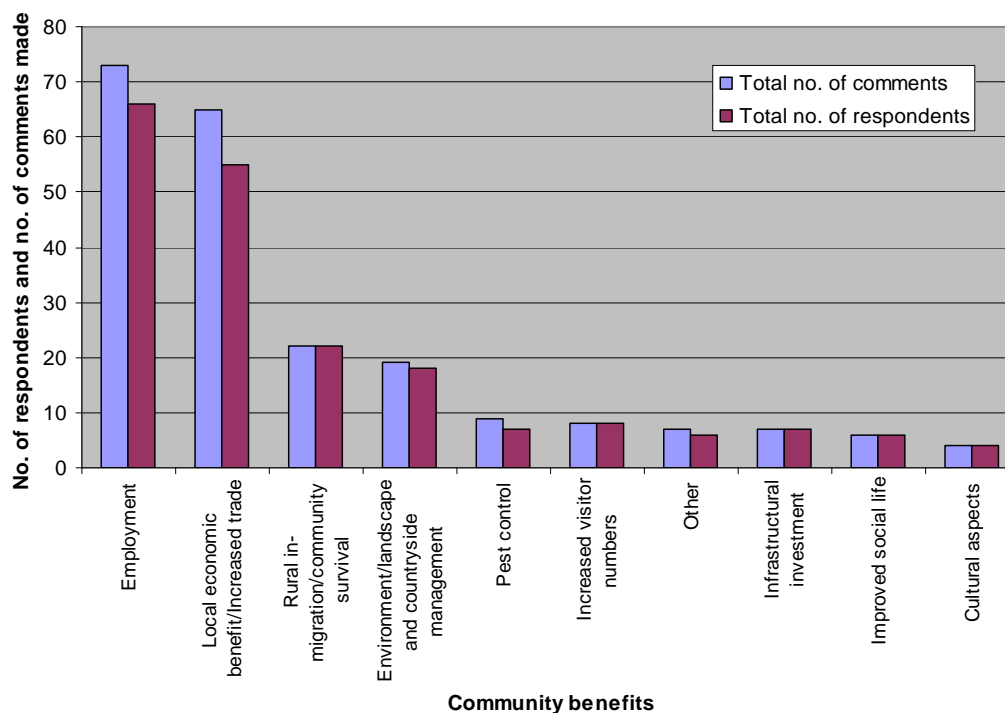


Figure 8 Total number of respondents which listed specific community-level benefits and total no. of comments/benefits listed by respondents (A total of 220 comments relating to perceived community benefits were listed by 89 respondents)

All respondents who perceived community level benefits and/or impacts were asked to note up to three benefits/impacts. Individual responses were grouped for analysis under summary headings and the overall frequency of occurrence of different community-level benefits and impacts is shown in Figures 8 and 9. Across the 81% (89) of respondents who felt the community received benefits, 220 comments listing specific benefits were made. For analysis purposes, all (220) listed benefits were grouped under 10 separate headings. As Figure 8 shows, employment (66 respondents, 73 comments) and economic/business related benefits (55 respondents, 65 comments) were the most commonly listed community-level benefits, followed by rural-in-migration (22 comments and respondents) (also referred to as community survival). Employment is therefore the benefit most frequently recognised by respondents, at both personal and community level. The environment/landscape and countryside management category included comments on how grouse moor management benefits the area's wildlife, increases bird numbers, maintains attractive landscapes and ensures a well-maintained countryside. The 'other' category for the responses to this question included comments on personal enjoyment of shooting, estate support to community activities, gamekeepers being involved in community activities and the value of maintaining activities which were grounded in 'rural realities'.

Across the 17% (17) of respondents who felt they received negative impacts, a total of 41 comments listing specific negative impacts were made. All listed negative impacts were grouped under 7 separate headings. As with the personal impacts section, comments relating to impacts on wildlife (12 across 7 respondents) were most prevalent, with two comments relating to negative impacts on birds of prey, one to impacts on wildcats, and the rest being general comments on wildlife impacts or comments on what was perceived as the unnecessary killing of certain species (such as foxes). As with personal impacts, comments on public safety and disturbance related mainly to the noise of shooting and smoke from heather burning, with one respondent also noting that shooting occurred too close to public roads to be safe and another stating that traps and snares represented a danger to walkers. The absenteeism heading related to comments on the lack of landowner involvement in

community activities and a perceived 'high-handed' approach to dealing with the community by certain landowners (2 comments). The 'other' category covered a number of different comments: one respondent stated that there was no explanation of grouse shooting activities and they found it frightening; another that there was a conflict between organic farming and the use of pesticides to control tick in moor management; one that the decline in farming was exacerbated by the prevalence of grouse moors in the area; and two that there was a growing lack of integration between grouse moor management and the community generally.

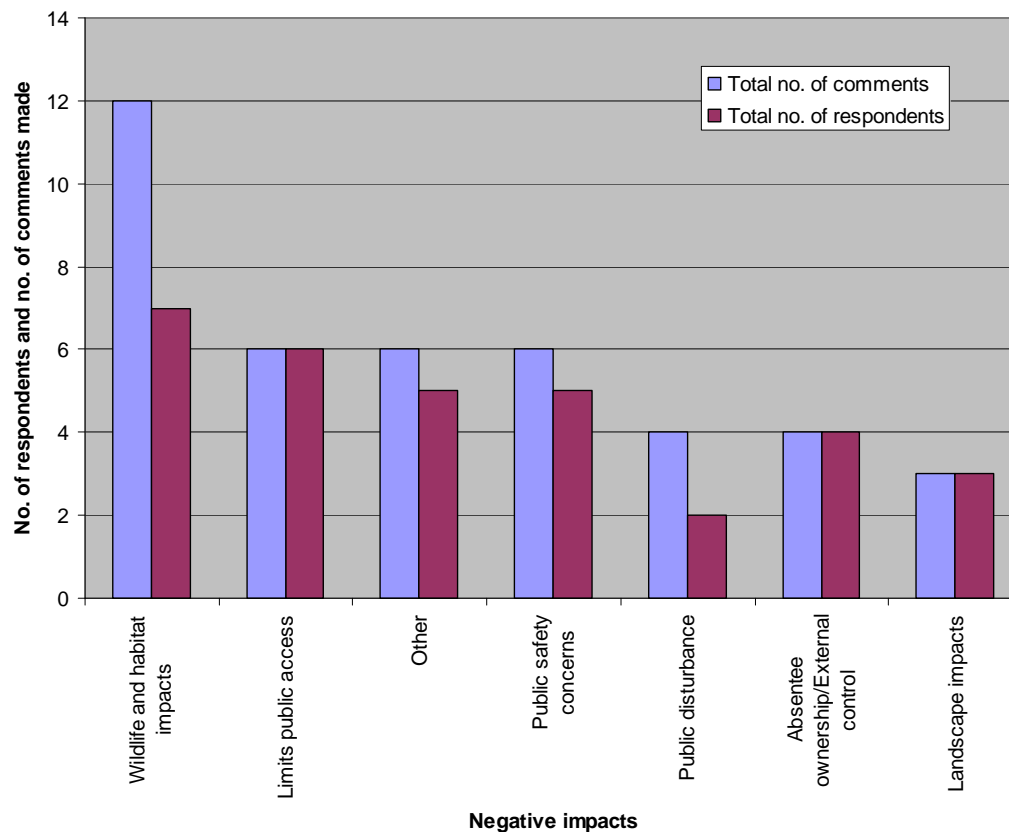


Figure 9 Frequency of mention by respondents of specific community-level negative impacts of the grouse shooting industry (n=35 i.e. total number of comments relating to perceived community benefits listed by 17 respondents)

4.4 Respondent opinions on key statements

Figures 10, 11, and 12 and Tables 8, 9 and 10 detail how survey respondents felt about a number of key statements provided on the questionnaire. Findings of particular note include the fact that 81% of respondents perceived grouse shooting to be an important part of their community's culture and history; 58% of respondents agreed that the grouse shooting industry was a major employer in the area; while 56% agreed that this industry represented an important source of custom for local businesses. However, only 42% of respondents felt that shooting parties spent heavily in the local area, which suggests that, when respondents agreed that the grouse shooting industry was an important source of custom for local businesses, they were often referring to the importance of gamekeepers and other estate staff as long-term customers of their businesses.

Table 8 Respondent opinion on the grouse shooting industry as it relates to retention of young people, community culture and community concerns generally

Key Statements	Respondent opinion				
	Strongly Agree	Agree	Not Sure	Dis-agree	Strongly Disagree
The grouse shooting industry contributes to keeping young people in this area (n=112)	27%	36%	15%	17%	5%
Grouse shooting and grouse moor management are an important part of the culture and history of my community (n=111)	46%	35%	7%	8%	4%
Those who run and practise grouse shooting have no regard for community concerns (n=110)	9%	9%	16%	36%	30%

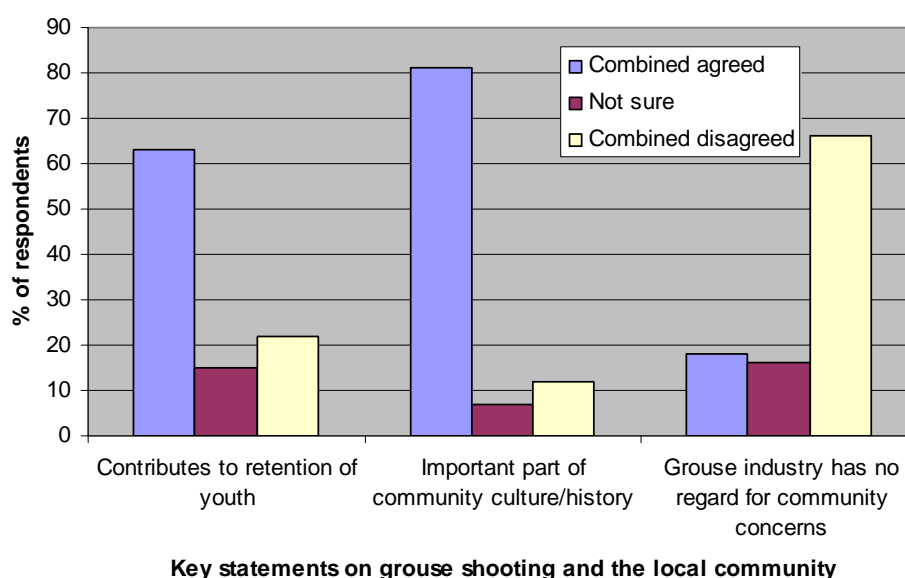


Figure 10 Respondent opinion on the grouse shooting industry as it relates to retention of young people, community culture and community concerns in general

Table 9 Respondent opinion on the socio-economic importance of the grouse shooting industry within their community

Key Statements	Respondent opinion				
	Strongly Agree	Agree	Don't Know	Dis-agree	Strongly Disagree
The grouse shooting industry is a major employer in this area (n=112)	28%	30%	16%	21%	5%
The grouse shooting industry invests heavily in the local area (n=111)	20%	28%	22%	27%	4%
The grouse shooting industry is a very important source of custom for local businesses (n=111)	24%	32%	23%	19%	2%
Grouse shooting parties spend heavily within the local area and make a significant contribution to the local economy (n=111)	16%	26%	28%	22%	7%

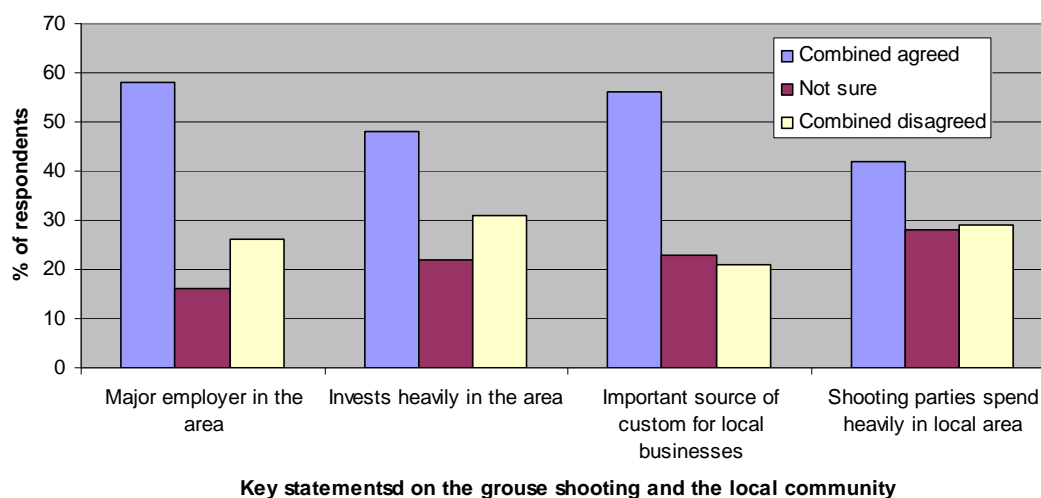


Figure 11 Respondent opinion on the socio-economic importance of the grouse shooting industry within their community

69% of respondents agreed that the landscapes resulting from grouse moor management were beautiful, indicating a generally high level of appreciation for these landscapes locally. The majority (66%) also felt that grouse moor management was beneficial to the area's environment though, conversely, 24% of respondents felt that grouse moor management was damaging to the area's environments and resulted in the unnecessary persecution of animals and birds. Clearly this is an area of contention in some respects.

Table 10 respondent opinion on the environmental benefits and impacts of the grouse shooting industry in their community

Key Statements	Respondent opinion				
	Strongly Agree	Agree	Don't Know	Dis-agree	Strongly Disagree
The landscapes which result from grouse moor management are beautiful (n=111)	30%	39%	9%	19%	4%
The landscapes which result from grouse moor management are unattractive (n=109)	4%	18%	7%	46%	25%
Grouse shooting and grouse moor management result in damage to the environment (109)	10%	14%	13%	36%	27%
Grouse shooting and grouse moor management result in unnecessary cruelty and persecution of animals and birds (n=109)	9%	15%	17%	30%	29%
Grouse shooting and grouse moor management are beneficial to the areas plants and wildlife (n=109)	26%	40%	16%	12%	6%
Grouse shooting activities limit public access to grouse moors (n=109)	9%	32%	6%	37%	16%
Grouse moor management is important for controlling the pest species within this area (n=109)	28%	33%	19%	14%	6%

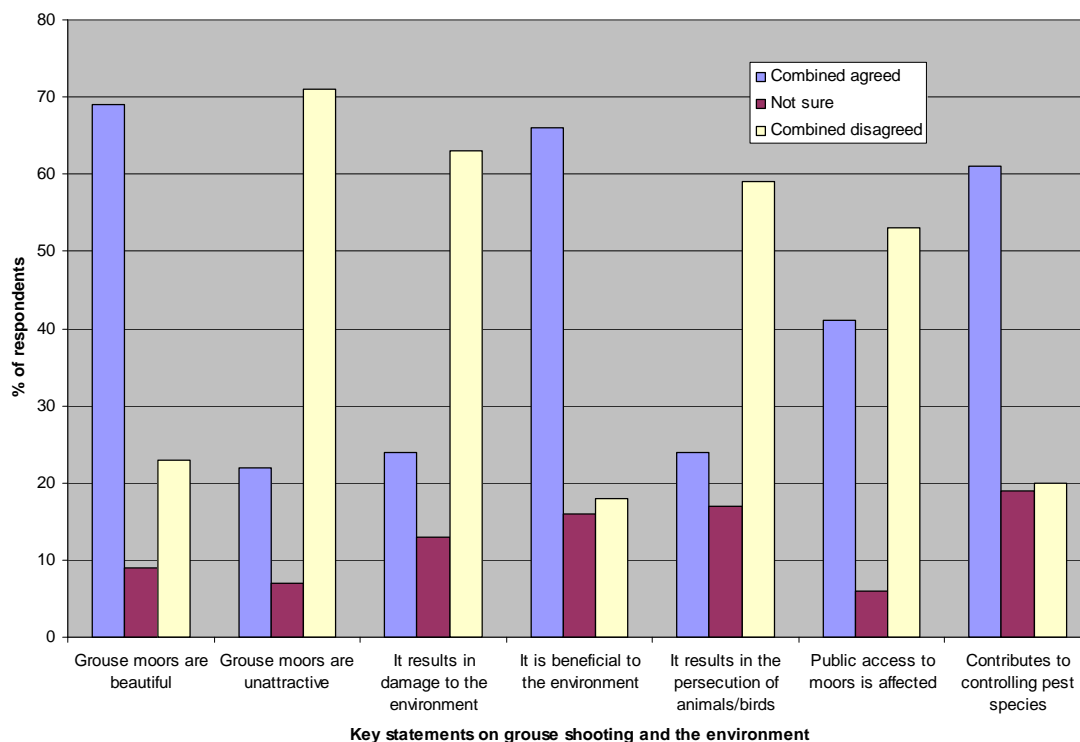


Figure 12 Respondent opinion on the environmental benefits and impacts of the grouse shooting industry in their community

4.5 Final comments section of survey questionnaire

Respondents were also asked for their general opinions on the future of the grouse shooting industry in their area and for any further comments. Twenty³ of the 113 respondents did not offer any opinion on the future of the grouse shooting industry, with the remaining 93 respondents responding to this question, with 43 of these respondents also making additional final comments. Of the 93 respondents who did note their opinions, 77 (83%) indicated their support for either the continuation of grouse shooting activities at current levels or the expansion of grouse shooting activities in the future. Six (6%) respondents were clearly unsupportive of the continuation of grouse shooting in the area; 4% were supportive of a reduction in the level of grouse shooting activities in the area, but not a complete cessation; 5% of respondents gave inconclusive responses (generally expressing concerns about specific aspects of grouse shooting but not indicating their support for a cessation of grouse shooting activities); and one respondent stated that they were not concerned either way. These results are shown in Table 11.

³ Of the 20 non-respondents, 12 recognised no negative impacts or benefits associated with the grouse shooting industry, either for themselves or for their community (i.e. they ticked the 'no' box for the benefits and impacts section at both the individual and community level). Despite this lack of recognition of either benefits or impacts of the grouse shooting industry and a lack of response regarding the future of the industry in the region, 9 of the 20 responded negatively towards grouse shooting in sections 4 and 5, with the remainder (11) showing either a positive or mixed response towards grouse shooting generally (in sections 4 and 5).

Table 11 Breakdown of respondents who indicated their general opinions on the future of the grouse shooting industry in their area (n=93)

Generalised opinion of respondents	No. and %⁴ respondents
Supportive of either the continuation of grouse shooting activities at current levels or their expansion	83% (77)
Supportive of the continuation of grouse shooting activities but at lower levels	4% (4)
Inconclusive - generally expressing concern about specific aspects of grouse shooting but apparently not supportive of a complete cessation of grouse shooting activities	5% (5)
Unsupportive of the continuation of the grouse shooting industry in the area (supportive of complete cessation)	6% (6)
Indifferent	1% (1)

4.5.1 Summary of final comments of respondents

As can be seen from the previous section, the majority of respondents who offered opinions on the grouse shooting industry were in favour of the continuation of grouse shooting activities in the region – this being largely connected with recognition of socio-economic benefits and appreciation of grouse shooting as part of the heritage and culture of the community. However, a number of respondents (including respondents who were generally supportive of grouse shooting) also expressed some concerns or caveats relating to these opinions⁵. A summary of both positive comments and respondent concerns expressed in responses to section 6 of the questionnaire is presented below.

Among respondents who made comments regarding the future of the grouse shooting industry which were either clearly unsupportive or inconclusive, the reasons for these opinions varied. Of the 6 respondents who were clearly unsupportive, two were clearly offended by estate culture generally, stating simply that estates were ‘stolen from the people’ and that estate owners were still ‘involved in the clearances’, while a third stated that access was restricted, burning and shooting was offensive and simply asked those involved to ‘leave’. The remaining three clearly unsupportive responses were all based on a perception that grouse moor management was damaging to wildlife, with two respondents commenting that gamekeepers were illegally killing protected raptors and one that they would much prefer to see larger areas of native woodland than grouse moors. The majority of inconclusive responses raised concerns relating to environmental issues (see environment and landscape section below for clarification).

Socio-economic benefits and the previous dominance of the grouse shooting industry

Twelve positive comments highlighted the importance of the grouse shooting industry in terms of the socio-economic benefits the industry delivered in the community. The importance of the industry in providing jobs for gamekeepers and supporting young families

⁴ Percentages rounded off to the nearest whole number, which explains why the total of percentages do not add up to 100%

⁵ Either within their expressed opinion on grouse shooting or in response to the second question in section 6 which asked for any additional comments.

was particularly referred to. Some respondents also noted that gamekeeping jobs were carried out within the community, with many of those living in the community employed outwith the community area due to the lack of available employment close by.

Some respondents also commented on the greater dominance of the grouse shooting industry in the area in the past, with more shooting days and a greater level of activity noted as having been evident in previous decades. Some respondents noted how grouse shooting activities had also become less integrated with community life over time:

"There is less involvement in village life now than there was 15 to 20 years ago. There is also less grouse shooting and grouse shooting parties don't stay locally anymore."

However, some comments recognised that grouse shooting and other traditional estate activities (particularly fishing) remained an important component of the culture and heritage of the community. As some noted, the industry was experiencing a resurgence due to increased grouse numbers in recent years and heavy investment on certain estates. In combination with this wider recognition of benefits and cultural linkages, a number of respondents commented on the importance of further future investment in, and improvement/expansion of, the grouse shooting industry – with increasing the numbers of grouse seen as particularly critical, in conjunction with improved (and more active) grouse moor management across the area as a whole.

As some comments noted, further investment and expansion of the industry would lead naturally to greater numbers of local jobs and an increase in rural in-migration of young families, which would also contribute to maintaining key local services such as the primary school. Three respondents also suggested that an increase in the commercial element of grouse shooting (as opposed to private shooting) in conjunction with a more inclusive approach to attracting shooting clients and the creation of stronger links with the tourism sector would result in an increase in visitors to the area and the employment of greater numbers of part-time staff to support the industry during the season (beaters and loaders). Three respondents suggested that public financing could be used to support the management and 'stewardship' of moorland areas, to deliver a range of benefits – including supporting the continuation of grouse shooting activities and the associated benefits.

Environment and landscape

While the majority of comments indicated support for grouse shooting, with many of these highlighting socio-economic benefits, only a small number of comments (5) referred to environmental benefits (despite a majority of survey respondents agreeing in section 5 of the survey that grouse moor management was beneficial for the environment). One example of this was:

"grouse shooting, and deer stalking for that matter, are responsible for the maintenance of a fragile ecosystem. Take the management away and the moors would deteriorate. Proper management is also very beneficial to other animal and bird species.....heather burning improves and regenerates heather growth which is beneficial to livestock using the hills."

Two comments also referred to how grouse moor management resulted in the maintenance of scenic landscapes, with the maintenance of grouse moors ensuring that potentially scenically damaging windfarms would not be established in these same areas. Some comments (5) also referred to the contribution of grouse moor management to the agricultural community in the area, with two specific areas highlighted: the control of pest species by gamekeepers, which benefitted farmers through helping minimise damage to crops and livestock; and the employing of farmers to graze grouse moors to 'mop-up' ticks to improve conditions for breeding grouse.

As noted previously, three of the six respondents who were unsupportive of grouse shooting based their opinions on environmental concerns. Of those who gave an inconclusive response or indicated that they would prefer a decline (not a cessation) in grouse shooting activities (9 respondents in total), almost all concerns related to environmental issues. These concerns mainly centred around three main areas (with some of the 9 respondents mentioning two or all three):

- Respondents commented that they would prefer to see a greater number of areas being allowed to return to 'natural' or 'native' woodland through succession, as opposed to the continuation of muirburn practices at present levels. Two respondents in particular commented that there was greater scope for the creation of a 'patchwork' of woodland and moorland habitats on some estates, as well as a diversification of hunting practices to include more deer stalking and potentially hunting of (re-introduced) wild boar in the future.
- Respondents expressed concern regarding the impacts of grouse moor management on various species of wildlife. Specifically, a greater degree of conservation and management efforts for other (non-grouse) species by gamekeepers was called for, such as wildcats and raptors. Three respondents in particular commented that protected raptors were being illegally controlled through shooting or poisoning, with two of these respondents arguing that a greater burden of responsibility for acting within the law should be placed on the employers of gamekeepers (landowners). A further three respondents also commented on the use of traps and snares, with two noting that, in their experience, traps were not always emptied as regularly as regulations require.
- A small number of respondents (3) also commented that repeated burning of moorland can reduce soil quality as well as potentially resulting in contamination of the environment through the use of diesel when burning. One respondent also commented that the use of pesticides to reduce tick loads on grouse populations was 'unnatural' and could result in further environmental contamination.

One respondent suggested that brashing represented a more sustainable approach to maintaining moorland habitats than rotational burning, in conjunction with the use of organic fertiliser, such as seaweed meal, to improve soils and thereby improve the health and vigour of moorland flora and fauna. Two respondents also commented on landscape issues, with one critical of how overly-frequent burning resulted in very 'unnatural' looking landscapes and the second critical of tracks being bulldozed in scenic areas to allow for access by gamekeepers and shooting parties.

Access, consultation and education

Only three respondents raised the issue of public access to grouse moors, and none appeared to express great concern, with one noting that public access was generally only limited for a few days of the year and that this was for obvious safety reasons. However, a number (11) of respondents did comment on the apparent lack of communication between grouse shooting estates and the general public. The majority (6) of these comments involved requests for a degree of further communication or consultation with the local community on grouse shooting by local estates. Areas on which respondents requested further information included: information on the time and locations of shoots on a website or posted up locally; explanation of the methods used to control vermin and the reasoning behind such control; and the conservation and general wildlife benefits of moor management. A number of approaches were suggested for disseminating this information and informing/educating community members on grouse shooting, including:

- Lectures by local gamekeepers in the local primary and secondary (Grantown-on-Spey) schools

- Estate open days where gamekeepers give presentations and demonstrations of their work or a gamekeeper lecture in the village hall
- A one-off visit for people who have just moved to the area to educate them on what grouse moor management and grouse shooting involve

Some respondents also commented that effective communication between estates and the local community could result in a better understanding and awareness of the benefits of the grouse shooting industry across the wider community, as well as the reversal of any potentially negative PR for the industry relating to raptor poisonings.

The urban-rural divide and minority opinions

Three respondents referred to the division between 'outsiders' and genuine community residents, with outsiders viewed as not fully understanding the ways of the countryside and therefore incapable of understanding the benefits of the grouse shooting industry. As one respondent wrote:

"Anyone in this area objecting to grouse management and shooting will probably have moved into this area from a town or city. So why move here?"

Two respondents also criticised the degree of influence and control exerted by 'quangos' and NGOs on land management in the area – although one respondent felt there was a need for the CNPA to be more involved and 'oversee' grouse moor management. As stated previously, a small minority of respondents also expressed strong views regarding estate ownership generally, with three respondents highly critical of all estate owners and what was referred to as 'foreign culture'.

Two respondents also commented that, despite the clear socio-economic benefits associated with grouse shooting (which they recognised), they could not personally support an industry which was centred on the killing of wild animals for sport:

"Although I am for as much employment as possible in rural areas, I can't condone people who shoot and poison virtually everything else in sight to save a wild bird and then take parties/individuals out, for money and the fun of it, to kill as many of the same wild birds they have been trying to preserve."

Interestingly, this comment was balanced by a further respondent who stated that, despite being an animal lover and a vegetarian for over 20 years, they were fully supportive of grouse shooting as a traditional rural activity. Finally, one comment from a respondent who was generally supportive of the grouse shooting industry encapsulates a number of concerns, as well as laying out a vision for a sustainable grouse shooting industry into the future:

"An industry which recognises its custodianship of the countryside; that makes a positive contribution to biodiversity and visual impact; that fully accepts its responsibilities for public access under SOAC (Scottish Outdoor Access Code) and the Land Reform Act; that fully accepts its responsibilities to fight wildlife crime."

5. Estates Survey

Tables 12 and 13 present data obtained from estates within the predefined area. Appendix 3 shows a full list of all surveyed estates. Data on number of brace and number of shooting days were unavailable for two of the surveyed estates and, for one estate, an approximate estimate was given for each of the five years. Table 12 gives a breakdown of the overall hectareage of grouse moors across the nine surveyed estates (with a total of 50,311 hectares of grouse moors on which driven grouse shooting was taking place), as well as data on employment. Full-time jobs which are directly related to grouse moor management on each estate were recorded (33 gamekeepers + 5 trainees in total), as well as part-time jobs directly related to grouse shooting. Part-time jobs were amalgamated to create a full-time equivalent (FTE) figure for each estate, with 1 FTE being considered, for the purposes of this amalgamation, as approximately equivalent to 20 beaters/loaders employed at £40 a day for 20 days (£16,000).

Table 12 Grouse moor hectareage and grouse moor related employment on the main grouse estates of the Tomintoul and Strathdon Communities

Estate	Grouse moor hectareage	Directly grouse moor related full-time jobs	Directly grouse moor related part-time jobs	FTE jobs indirectly related to grouse moor
Estate A	Main grouse moor: 11,000ha Walked up grouse area: 18,000ha	5 + 2 trainees	0.5 FTE beaters and loaders	2 (1 housekeeper 1 handyman)
Estate B	Main moor: 2800ha Second moor: 850ha	6	0.5 FTE beaters and loaders	2 general estate workers + 2 part time equivalent to 3 FTE
Estate C	2940ha	2	n/a	
Estate D	3000ha	4	1 FTE beaters/loaders and part-time shepherd	Part-time cleaner (0.5)
Estate E	1214ha	2	1 FTE beaters and loaders	Administration, cooking and cleaning staff (1.5 FTE)
Estate F	5000ha	4 + 1 trainee	1-1.5 FTE beaters/Loaders	1.5
Estate G	3237ha	3	0.5 FTE	2
Estate H	2500ha	2	Beaters and loaders 0.1 FTE	0
Estate I	20,000ha	5 + 2 trainees	0.5 FTE beaters/loaders	2 (1 cook, 1 housekeeper equivalent to 1.5 FTE)
Total	50,311ha driven	33+ 5 trainees	5.1-5.6 FTE	12 FTE

The total number of **full-time equivalent** (FTE) jobs either directly or indirectly attributable to grouse shooting on all surveyed estates is **49-51** (single figure not used due to FTE estimation inaccuracies). This is a significant figure, given that the estimated adult population for the whole search area is 450-550. If approximately 40% of these adults are retired, this

would imply that game management and related jobs, account for c. 15-20% of all employment in the area, not including the 5 trainees who are also working in the industry.

Table 13 shows the number of driven shooting days and total brace shot on surveyed estates. A decline is evident in 2006/2007, with an increase apparent in 2008. Walked up grouse shooting was also carried out on some estates, however no figures were gathered on this activity as it was considered as a marginal activity relative to driven grouse shooting. Of the nine surveyed estates, grouse shooting was frequently carried out commercially on three and infrequently on one. These four estates also all carried out grouse shooting privately (owner interests) and, on the remaining five estates, grouse shooting was pursued only as a private (non-commercial) interest⁶.

Table 13 Total number of shooting days and total brace shot across 7 of the 9 estates* within the survey area

	2004	2005	2006	2007	2008	Total	Average
Total days driven grouse	55.5	65	45	27	38	230.5	45
Total brace shot	5003.5	5306.5	3497.5	1615	2576.5	17,999	3598.7
Average per day	90	82	78	60	68	78	

*Data was unavailable for two of the nine estates and figures were given as approximate estimates for one of the 7 estates represented in this table. Thus, total figures for the entire area are likely to be higher than those given here.

⁶ This included Glenlivet estate, where the grouse moors are actually under long-term lease to private sporting clients.

6. Interview findings

The findings of the semi-structured interviews are presented below. A number of key themes were apparent within the wider interview discussion framework of 'the key benefits and impacts of the grouse shooting industry' and these themes are presented below. The 18 interviewees have been divided into two coded groups, with G1, G2 etc. corresponding to gamekeeping respondents and B1, B2 etc. corresponding to all other respondents, including business owners, long term community residents and others. Appendix 2 provides a full list of interviewees.

6.1 Grouse shooting and the rural economy

6.1.1 Local employment

The benefits of the grouse shooting industry in terms of associated employment opportunities were repeatedly referred to by interviewees as the single most important community-level benefit. Both direct employment within the industry was referred to, as well as indirectly related employment, which included sheep farmers being contracted to graze sheep on the moors to contribute to tick control and maintenance, cleaning and cooking staff working on the estates, and providing for shooting guests. A further area of employment strongly linked to the grouse shooting industry was within the local garage, which employs 3 full-time staff (and is looking to recruit at least one more mechanic), all of whom have families and live locally. The garage owner stated that at least 80% of garage business was vehicles used for estate management (with almost all large estates in the area focused primarily on grouse). Furthermore, it was noted repeatedly that those working in game management worked in the actual locality, as opposed to living locally but working outside of the local area.

A number of respondents referred to the remote and disadvantaged nature of Tomintoul, where opportunities for employment were viewed as restricted and visitor numbers were lower than in other areas of the Cairngorms region. As one local representative pointed out, this limited context for socio-economic development increased the relative importance of grouse shooting activities as a potential provider of jobs within the local area.

6.1.2 Grouse shooting and estate-level investment

While other activities such as tenant farming, tourism businesses, forestry, fishing and deer stalking were present on some of the estates in the case study area⁷, on almost all of these estates grouse shooting and grouse moor management constituted the single most important estate activity and management objective. As one gamekeeper commented: "in my boss's words, it is grouse 1st, 2nd, 3rd and 4th [G3]. everything else is secondary to that". As one estate owner pointed out, grouse shooting was of huge personal importance to most private estate owners and also offered potential to generate significant income relative to other activities on those estates which chose to provide it commercially (when grouse numbers were sufficient to do so).

"they pay me £150 a brace, so a day's shooting is £3,000 to 4,000 and I pay out £1000 in wages every time we do that, so from our point of view and the community point of view this is a lot more beneficial.....if you run a campsite, an awful lot of work but not a lot of return"
[B7 – Private Landowner]

⁷ Of the 9 estates reviewed for the estates survey (section 5) 8 referred to providing high-quality grouse shooting (either commercially or for private interests) as the single most important activity on their estates and as the key aim of estate management. The interviewee at Glenlivet referred to other activities (fishing, deer stalking, forestry etc.) as being of equal or greater importance, with the grouse moors on Glenlivet being under long-term private lease.

This strong interest in grouse shooting on the part of private estates was recognised by a variety of different respondents as resulting in significant investment by private owners in estate infrastructure. Many viewed this as beneficial to the local community in a general sense, as one business owner stated:

"The community more widely does also benefit from the estates managing for the grouse.....just recently an estate was sold and the new owner is investing millions into the estate, refurbishing derelict and ruined houses to a very high standard and moving in gamekeepers, which benefits the whole community, with new people and attractive buildings" [B4]

As some respondents pointed out, a number of disused grouse moors in the area had recently been brought back into active use in recent years, with an associated high level of investment of external funds on a number of private estates:

"huge money has been invested in the last five years and particularly the last 2-3 years in the area.....but running without outside investment would be not really work, Glenlochry is a prime example, the money they have spent there is just unbelievable and on Glenbuchat.....and it's all done up top notch, proper high standard" [G5 - Head Gamekeeper]

"it [estate management and grouse shooting] needs a lot of money and every 50 years all the buildings get run down and it needs someone to spend money from outside....and they employ lots of people during construction and for running the estate" [B7 – Private Landowner]

The standard of housing for gamekeepers was generally seen as very high, with a number of cottages having been refurbished to a high standard in recent years (for gamekeepers) on at least three of the estates in the area. As one recently appointed head keeper stated:

"My house is a new build and the two other lads, their houses are getting modernised. They are good houses, a good standard of accommodation, to get good lads you have got to do it, you work hard hours, the days of keepers being put in a bothy are long gone" [G3]

As one community representative also pointed out, while estate owners were rarely viewed as strongly integrated within the community, some were generous in their support of community activities:

"the people at Delnabo are very pleasant.....they come quietly and they do support the games and sponsor them, you get a cheque every year and the folk at Strathavon have given a substantial contribution.....one of them got married here and they will support quite a lot of things" [B8]

Despite the recognition of community benefits associated with estate investment in grouse moor management, some respondents were also critical of the lack of diversification into commercial activities by sporting estates. One community member and business owner argued that newer owners were less concerned with estate management as a whole and solely motivated to develop a high-quality sporting experience:

"Things have changed a bit, with more new owners now. They are very cash conscious, so if parts of the estates are not financially sound, or a major drain, they just cut that part off. Older landowners tend to be more driven towards keeping the estate going as a whole" [B2]

One opportunity suggested by this same respondent was the development of 'budget' stalking packages on sporting estates to decrease the exclusivity of sporting activities generally and generate income from hind stalking. A small number of the surveyed estates were already engaging in commercial hind stalking in the winter months, which was viewed as reasonably priced and relatively accessible. One local shop also expressed interest in

acquiring more meat, such as venison and grouse, from estates and selling this to both locals and visitors. However, estate respondents viewed such opportunities as limited and/or at too small a scale to have any significant impact. As gamekeeping respondents [G2, G3] pointed out, deer were also generally more effectively and efficiently controlled by estate staff than by clients, with high levels of commercial stalking potentially affecting herd quality.

"if you get a guest in to shoot hinds or stags he'll get one, but if I go and my keeper goes we can get four or five in the day...which pays us better because of the venison value and also because there is less time wasted and if your trying to cull a certain number, and my policy has been to cull about a hundred red deer a year, it's easier to do it if we do it ourselves" [B7 – Private Landowner]

Two community members also noted the lack of new farming tenants who appeared to be locating in the area, with some new estate owners being viewed as having no interest in supporting tenant farming on their estates.

6.1.3 Grouse shooting and local business benefits

All of the representatives of businesses operating in the area felt that the grouse shooting industry benefited them to some degree. Furthermore, none of the business owners/representatives interviewed recognised any negative impacts of the grouse shooting industry for their businesses. In general, the shooting parties themselves were viewed as a source of revenue by local pubs, hotels and shops; however, the gamekeepers working on local estates were generally seen as an even more important component of local business revenue. As one local businessman stated:

"the activities of the estates and particularly grouse shooting are simply a vital part of the rural economy in our area. Goodness knows where we would be socially and economically if we didn't have it, as we have nothing else here except farming and the distillery" [B4]

One business where the knock-on effects of the grouse shooting industry was particularly apparent was the local garage in Tomintoul. As the garage owner stated:

"Grouse shooting and gamekeepers are vital to us....during the year about 80% of our business is from the estates, most of which is therefore directly tied to grouse shooting, as grouse shooting is the main activity on the estates around here" [B2]

With three full-time staff working in the garage, all living locally with their own families, this was clearly significant. Furthermore, the level of business provided to the garage by the estates also ensured the long-term availability of this service to the community more widely. Local shops also appeared to benefit, both from shooting parties as seasonal visitors and from the gamekeepers as frequent customers. As the owner of Strathdon Post Office and shop stated:

"The benefits for my business [from grouse shooting] relate to a combination of business in the shop from the gamekeepers and the grouse shooting parties and people on the estates..... the estates all tend to use us as their local shop to supply them with a range of things.....we don't have a lot of passing trade despite being on something of a tourist route, the majority of our business is local people, and people staying on estate houses and in holiday cottages are also important.....even though it is very seasonal, I think that if the grouse shooting was not happening here then it could affect the overall viability of this business, because the population here is so small and without the grouse it would shrink further" [B4]

Respondents working within the hotel and catering trade also generally recognised benefits for their businesses from grouse shooting activities. Grouse shooting parties were recognised as contributing to local spending, as even relatively small numbers of visitors offered the potential for positive impact on local business incomes in an area with relatively low visitor numbers. However, gamekeepers and their families were generally viewed as being of considerably greater importance than the more seasonal, unpredictable and short-term business from shooting parties eating, drinking or staying locally. As two hoteliers and publicans pointed out, gamekeepers and their families represented a particularly critical component of their business in the quieter winter months:

"Keepers and shooting parties are not that important in summer, maybe 10% of the business....but that goes way up, maybe to about 80% of business in the bar, eating and drinking, in winter....we would shut down without it in winter..." [B1 - Local Hotel Manager]

"the steadiest trade in the pub is the gamekeepers, they are probably the main bulk of our business in the pub over the weekend, as they often come in with their families for a meal.....this is very important in winter when we don't have much of a tourist trade. The gamekeepers make a really marked difference to our trade over the winter in the bar" [B3 - Local Hotel manager]

A number of respondents differentiated between community residents who were living within the community and working externally and those who were both living and working within the community. Those working within the local area were generally viewed as spending more within local businesses; gamekeepers were often highlighted in this respect, with their continual presence being associated with a higher (individual) local economic and social impact than for community residents working outwith the community. As one hotelier stated:

"gamekeepers live and work here, so they spend more and are about more than if you're working somewhere away, like Aviemore or even Inverness.....I would guess that 60% of the people working locally that are present regularly in the village are working in the gamekeeping area" [B3 - Local Hotel manager]

Two local community representatives also pointed to gamekeepers as being of greater importance than grouse shooting parties, noting that, while hotels had provided accommodation for many shooting parties in the past, they no longer appeared to represent a major component of hotel business in the area, as many shooting parties now stayed locally on estate lodges (although fishing parties remain an important component of hotel business). It was apparent, however, that these lodges often purchased provisions locally, as well as employing small numbers of seasonal staff.

The majority of business owners did not feel that grouse shooting in itself represented a major attraction for non-shooting tourists, although it was recognised that many visitors expressed some interest. As one hotelier noted, potential existed for utilising the grouse shooting industry as a tourist attraction in itself:

"I think Balmoral does deer stalking tours, where tourists just see what goes on, which they are hoping takes off but there is nothing this side, but it would be great for us to offer shooting tours...I would like to see more from the estates along those lines definitely.... I would like to see grouse shooting encouraged more and I would like to see tourists given the opportunity to experience it..... I am sure it would help the tourist trade if we could get the tourists out to see the shoots all in their tweeds and all that" [B5 – Local Hotel manager]

However, as this same respondent pointed out, those engaged in grouse shooting were unlikely to want to highlight what is essentially a private and costly activity, which in itself is likely to limit the potential for developing such activities.

Two further 'spin-off' benefits of the grouse shooting industry included the employment of local construction workers in the renovation of estate cottages for gamekeepers and the supply of local game dealers with game from local estates. One gamekeeping respondent noted that two employees of a local slating company had been working on the estate full-time in the last four months, while all of the estate respondents noted that all game shot on their estates was supplied to game dealers (although these were not located within the case study area, with a game dealer in Newtonmore being mentioned most frequently).

Finally, a topic which was frequently mentioned by respondents was tick control. All of the estates interviewed engaged in this, usually with farmers being contracted by the estate to graze sheep on grouse moors, with sheep being treated with pesticide (dipped) every 6-8 weeks in an effort to control tick numbers on moors (referred to as 'tick mopping'). This activity was viewed as an opportunity for farmers to develop a new income stream, as well as obtaining free or low cost grazing for farm stock. As one head gamekeeper noted:

"we don't have any tenant farmers on our estate, but we have a boy that comes in and he grazes sheep on the moor for us.....we pay him.....it's a benefit definitely for him, you're not making a lot out of sheep now but it's still a flock of 6,000 sheep that he didn't have before and plus we pay him something for that.....we have opened the possibility for him and we dip them every six weeks and we pay for the dip also" [G4]

6.2 Rural in-migration and community survival – the people factor

One issue which was repeatedly referred to by interviewees was the continuing out-migration of younger community members and a continual influx of older people retiring in the area. Grouse shooting was often referred to in this context, in relation to the capacity of this industry to create gamekeeping jobs and potentially attract new young community members. This was seen as a significant benefit in an area as remote and sparsely populated as Tomintoul and Strathdon. Furthermore, gamekeepers were generally viewed with considerable trust and affection by interviewees, and their active and visible presence within the community was often viewed as 'keeping the community alive' and sustaining the community in the longer term.

As a number of interviewees pointed out, gamekeepers were a very visible and active component of the community and involved in a number of local initiatives, such as playing on the local football team and assisting in the training and organisation for younger players. As one community representative stated:

"some of the keepers are very involved in community stuff.....in the Highland games for example, without them we would be kind of stuck really.....they are very helpful and support a lot of things and I mean that's where you get the population increase, they are a really big part of the younger community members.....they all play in the village football team, these sorts of things are very valuable, you would probably have a job getting a team because so many of the youngsters here like anywhere else go away now, to uni if nothing else, so you don't have many kids here in that age group and a lot of the older keepers have been here a long time and have families, they don't change too often, so it keeps some young people here and you would miss it if it wasn't here....there's a lot more younger ones now" [B8]

A number of respondents also spoke about gamekeepers in the context of long-term community survival - and specifically the value of this group as producers of new community members. The children of gamekeeping families were often referred to as contributing to the

active retention of community services such as local primary schools⁸. A number of children from gamekeeping families also attended secondary schools outside of the study area. As one interviewee stated:

"without the estates being here and without the grouse shooting giving the estates a financial income, then there would be no gamekeepers and no gamekeeping families, which would severely deplete the community" [B1 - Local Hotelier/Publican]

While no figures were collected on the number of gamekeepers' children living in the study area, it was apparent from interviews that the majority of longer term gamekeepers had families. In relation to newer younger gamekeepers, as one senior head keeper explained: *"A lot of lairds want a young guy to come in, settle down and stay long term....so the keeper knows the estate and is a part of the community"*.

As two gamekeeping respondents [G3 and G3] pointed out, their positions allowed them to raise families in an attractive area with a very high quality environment. All of the gamekeepers spoken too also commented on the high quality of the houses with which they were provided as part of their employment contract. However, one issue for gamekeepers was that they were generally only provided with housing during the course of their employment and, on retirement, require housing of their own. As one head gamekeeper explained:

"Due to the influx of retired folk and people buying holiday homes at knocked up prices, it has become near impossible for a keeper to be able to afford a property of his own here....So because we live in our houses which the estate owns, we have nowhere to live when we retire unless the owner or sporting tenant decides to put us up somewhere!" [G2]

6.2.1 Joint working

While estates worked predominantly as independent units across the area in terms of grouse moor management, a significant amount of joint working between estates was also apparent. A number of gamekeepers referred to the sharing of part-time staff during the shooting season and the arranging of shooting days to minimise overlap. As one head keeper stated:

"we share our beaters between estates.....but an awful lot of shooting goes on in a very short period of time and there's not much of a source of people, there's not loads of kids up here either, so we try to divide the timing across the estates, but we all need to have a nucleus of at least 14 beaters which we can keep as our own....it's not easy, most of mine are South African, Australian, Southern hemisphere boys and girls and some from the local estates and some local boys from the village" [G4]

A considerable amount of goodwill was also apparent between estates, with joint working occurring in other areas where extra manpower was required for specific tasks:

"if we are needing help with anything, like mending roads, we will get the next door lads to come and give us a hand with it and then we give them a hand later and if you have a broken down tractor or landrover you can always go and borrow something for an hour just to get you out of a fix, or if you have a fox problem, the lads will often drop things and help you and you will do the same for them" [G5 Head Gamekeeper]

⁸ Tomintoul Primary School currently has 5 gamekeepers' children from a total of 50 children, while Strathdon Primary School has 4 children from gamekeeping families and one from the family of a general estate worker (from a total of 39 pupils). These figures vary year on year.

Estates often also arranged for shooting parties to shoot on different estates as part of their overall shooting experience, depending on grouse numbers on each estate and the number of shooting days planned for each estate.

6.3 Grouse shooting and local community heritage and culture – a cycle of resurgence and decline

As with survey respondents, the majority of interviewees recognised that grouse shooting and moorland management was an integral part of the culture, identity and history of their community. As one long-term community resident stated

"It is definitely an important part of the history and culture of the community....grouse and game shooting generally are just part of the way of life here, trapping and hunting for food are so normal here and we don't really have the whole anti-hunting element as part of the community" [B8]

However, as many interviewees (including both gamekeepers and others) recognised, grouse shooting had represented a more dominant part of community culture and general activity in the past. As two long-term residents stated:

"they [the shooting parties] would come in with a bag of always a hundred or more brace and two to three hundred sometimes, but gone are the days of thousands by a long way....and a lot of people used to be involved in it but now, much fewer and there's an awful lot of incomers here won't even know it happens much" [B8]

"I think sadly the relationship between the village and the grouse shooting has gone by the board, which is a pity, it was actually good fun...if you were involved, which I was with the beaters....yeah a lot of the local people who used to load and think, you know it was hard graft but it was good fun" [B9]

As some interviewees noted, this reduction in grouse shooting activity combined with rural out-migration, a declining interest in traditional 'outdoor rural' activities among young people, and continued in-migration of urban retirees had led to a decline in both knowledge of, and interest in, grouse shooting activities among community residents:

"Oh yes it is [part of the community's heritage], I mean especially with the older folk, who would all have worked on the hill as kids...but there are not many of them left to be honest. I mean my kids used to do the beating and my husband was very involved in it but I doubt you would find a lot of kids who do it now, so it doesn't mean as much to the local community as it used to" [B9]

As a number of gamekeepers noted, grouse populations in the area had declined significantly on a number of estates in recent years, due to climatic factors and pests. However, due to a resurgence of interest in grouse shooting on a number of estates, grouse numbers were beginning to experience a period of resurgence. As one head gamekeeper noted:

"We are currently in the process of building the grouse numbers back up again on our estate, from what were very low numbers. In previous years, grouse have been a really major part of the community here and if the grouse numbers come back up again then we will see a lot more activity generally and grouse shooting will become increasingly more important again" [G2]

This idea of resurgence and decline was often referred to as 'the normal way of things' by gamekeepers in particular, with grouse being referred to as 'wild' creatures whose population

numbers could be positively affected by management but rarely accurately predicted from year to year due to the influence of natural factors:

"grouse numbers naturally go up and down, I think the new tick and pest control programs have helped with our pest burdens throughout the estate but they do suffer from pests and disease....but it's nature so other things like the weather and so on can happen and we can't change that and they will fluctuate accordingly to all these different things" [G4 - Head Gamekeeper]

"we've always reckoned it's a long-term game and there is a cycle and you can see that and you can do something to improve it. I think climate change could be a threat, a significant increase in temperatures will affect all the wildlife" [B7 – Private Landowner]

6.4 The importance of awareness, communication and understanding

While interviewees were rarely, if ever, directly critical of the grouse shooting industry, some did raise the issue of the lack of communication between estates and the local community regarding shooting and gamekeeping activities in general. While part-time beating and loading work was viewed as a major community activity in the past, younger members of the community were apparently no longer as interested in this sort of work. This was perceived as having resulted in a growing lack of awareness among younger community members about the activities of estates. Future communication (e.g. open days) between the estates and the local community - particularly younger community members - was viewed as potentially beneficial in this regard.

6.4.1 Tomintoul – community dynamics and changing attitudes

Perhaps the issue most commonly referred to, in the context of awareness and communication, was the changing attitudes of community residents towards land management generally, which was perceived by many interviewees as being associated with the high levels of urban in-migration to the area in recent years. As two respondents stated:

"the 'real' locals have no issues whatsoever with grouse shooting and what we do. Farmers' children and most of the longer-term locals would have been beating at one stage or another. Some of the people who have retired to the area are not always supportive and I would say this is related to a general lack of awareness about what we do and what goes on in the countryside" [G4 – Head Gamekeeper]

"One issue here is the change in the people living in the countryside, with much more people now who do not have an understanding of how the countryside has been managed for years" [B9 – Community Representative]

The term 'real' locals was used in this context to refer to longer-term residents who had grown up in the area. While it was apparent that community residents were often perceived in this segregated way by gamekeepers (and indeed by many other interviewees), major tensions did not appear to have arisen as a result. As one head gamekeeper explained, while retirees to the area may have less experience of living with land management, they were in fact often knowledgeable about the area:

"There are a lot of new people in the village now, when I came here first I knew everyone in the village but I would not know half of them now....a lot of people came here and retired...but they are generally very friendly and they are welcome and we have no problems, usually they would have come up for years and years on fishing holidays and then retired here, so they do know the area very well" [G5]

However, while tensions and issues were infrequent, some interviewees did clearly perceive the views of so-called 'incomers' as potentially conflicting with the views of the land management fraternity (and particularly gamekeepers). As one gamekeeper put it:

"The village used to be [made up of] the people from the farms that would come into Tomintoul in the later stages of their life and they would still go back and forward obviously. They do not have that now, it is more of a retirement home for folks from [outside the area].....the most of the people in the village now are incomers as they call them, but they have not grown up in this environment, they maybe have come up here and fished and wanted to stay, but they often want it to change it from what it is to how they perceive it should be" [G5]

Despite this apparent potential for conflict, examples of such clashes of views were not frequently apparent – although they clearly did sometimes occur. One example which highlighted the importance of two-way (community-estate and vice versa) communication between estate users related to a walking festival:

"I think a lot of people have moved in and they are maybe interested in walking....and they don't realise initially that the hills are being used for something else and that's been longstanding.....we had a lad in the village who went and organised a walking festival right in the middle of the shooting season and never notified any of the estates, I mean we are ok with walking, but we need to know about a walking festival!...It wasn't until we found out about it and saw where all the routes were and went and spoke to him, he realised that maybe he should have spoken to everybody!" [G5 - Head Gamekeeper]

However, despite this example and a clear recognition among interviewees that grouse shooting activities did lead to access for walkers being restricted to certain areas for short periods of the year for safety reasons, access restrictions were not raised by any interviewees as a major issue (which reflects the findings of the survey). As one interviewee pointed out, this was perhaps due to walkers predominantly confining themselves to tracks:

"Access was the issue that was seen as always going to cause us difficulties, but since the access bill has been passed it has been ok, I think because people mainly walk on tracks and there has been a greater provision of tracks both by private landowners and by others, so conflict there is not a very big problem" [B7]

One topic which did appear to cause some concern among a limited number of local residents was the use of traps by gamekeepers for pest control (which again reflects survey findings). However, as gamekeeping interviewees argued, community residents had a limited understanding of the legalities of trapping and often assumed traps which they came across were illegal, when in fact this was not the case:

"We had a lad that came to the door this year, came with a bobby and a trap just up in arms completely about it being an illegal gin trap and all the rest of it and it was just a normal stoat trap, totally legal" [G5 – Head Gamekeeper]

"last year, one of the local boys was out walking and came across a ewe with a trap on its foot and called the police, what's actually happened is that the ewe has been rubbing into a bank and the trap is in the bank covered in stones and all that and she's rubbed all the stones off and shoved her foot in the trap and pulled the trap out because obviously she is a lot stronger than a stoat, but we then got the ewe and it was a fen trap, a legal trap, but why don't they come to me?" [G4 – Head Gamekeeper]

A number of gamekeepers also expressed concern regarding the tendency for dog walkers to let their dogs off the lead, particularly during the breeding season, when the potential impacts of roaming dogs on birds was greatest. As one gamekeeper noted, even extendable leads were potentially insufficient to control a dog:

"dogs are one of our biggest problems really....everything's nesting on the ground, quite often a grouse will nest within three or 4 yards of the road and on even an extendable lead a dog can still grab a chick off its nest and I've seen it here, I ask them to put their dog on a lead and they just go round the corner and let the bloody thing off again" [G5]

A further topic of community concern, which was perceived as having grown with the change in community dynamics, was to do with the control of birds of prey on grouse moors. This is discussed further in section 6.5.3.

One apparent outcome of these changing community dynamics which was repeatedly referred to was the decline in interest in taking on part-time beating or loading work among younger people in the area. As one interviewee stated:

"local kids, I doubt very many of them go beating at all any more, there would be a few, but by the time they start [shooting] quite often they are back at school anyway, there are a few that go out, keen ones or maybe on some of the farms here where the father or grandfathers have been involved, their youngsters might still go...also there is not that many in that age group and I think most of the ones in that age group now have probably never been near a grouse moor" [B9]

As another interviewee pointed out, the knowledge of local children about the countryside had declined in recent years for a variety of reasons, and this paralleled a declining interest in taking part in grouse shooting activities at any level:

"the kids do not go to the beating much anymore, unless much later on when they are older. It has changed a lot in this respect as the kids now do not have a good understanding and awareness of the countryside the way they used to. Some kids are interested in it and some do it, but it is much less now than it used to be" [B10]

As two other interviewees noted [B7 and G4], this decline in interest was not restricted to the Tomintoul area and was apparent in all rural areas across the UK, a factor demonstrated by the lack of interest among college students in beating work and the high numbers of foreign students working as beaters and loaders on many of the estates:

"there used to be a time when we would put up a notice in the Aberdeen University halls of residence and we would get a whole lot of students coming out" [B7 - Private Landowner]

"most of the beaters we get are South African, Australian, southern hemisphere boys and girls and some from local estates and some local boys from the village" [G4 – Head Gamekeeper]

6.4.2 The role of education, interpretation and community involvement

One topic which appeared to offer potential to tackle issues connected with the lack of awareness among many community members about grouse shooting activities, was for further local-level education and communication. Some estates were already using strategically located interpretation boards, which explained the practice of shooting and posted times (dates of shooting) when visitors should be cautious about going on to specific sites [B12, G2]. As one long-term community resident [B9] noted, annual lectures in the village hall to newer community residents and/or estate tours could offer considerable potential to increase local awareness and alleviate potential tensions regarding the use of traps and the control of raptors on grouse moors. School visits were also put forward by one respondent [B10] as offering potential to educate younger community residents about grouse shooting and associated activities and further the interest of this group in countryside management activities generally.

As one gamekeeper [G5] noted, awareness could also be raised nationally and the efforts of the Scottish Gamekeepers Alliance, in relation to their use of stands at game fairs around Scotland, was viewed as having undoubtedly increased public understanding of gamekeeping. In this context, making available a limited amount of 'budget' hind stalking or pheasant shooting to local community members was viewed as potentially lessening any distrust and increasing the inclusiveness of what some perceive as an elitist and somewhat hidden activity. As mentioned previously, the marketing of a certain amount of the game shot on local estates within the local area also offered the potential to further increase community support for and interest in stalking and shooting activities. As one interviewee stated:

"One opportunity for the estates to improve their public relations is that people generally are often very interested in hunting and getting their own healthy food.....average earners I mean. There is some money in this for them, Inchrory used to butcher five or six hinds every Christmas and put the meat in the village hall for people to help themselves to. This used to create a demand during the year then and people could order whole hinds for themselves. They don't seem to do that now and there is an opportunity to capitalise on local demand."

6.5 Grouse shooting and the environment – perceptions, benefits and impacts

Interviewees repeatedly referred to the environmental benefits and impacts of grouse shooting and grouse moor management. As was apparent from the survey, a minority of local residents had concerns regarding the impacts of gamekeeping on birds of prey and on restricting the regeneration of natural woodland. These issues were referred to by interviewees, although it was apparent that their opinions were not overly-conflicting; most of the discussion relating to grouse shooting and the environment was concerned with the recognition of the need for compromise, the development of a more coherent dialogue, and the recognition that grouse moors are managed environments. Furthermore, a number of interviewees noted the positive environmental benefits associated with grouse moor management, highlighting the reduction in pest species, increased numbers of a variety of bird species and the maintenance of large areas of valuable habitat.

6.5.1 Viewing grouse moors as a managed resource

A view strongly espoused by a number of interviewees was that grouse moors represented managed (as opposed to 'natural' or 'wild') environments and that this management had numerous knock-on positive benefits for the environment and the countryside generally. This view was shared by both community residents and gamekeepers. As two community residents noted, for example:

"It is very important that grouse shooting continues in the future. The landscapes here are not 'natural' in any sense of the word and it's important to realise that they are managed and this has been the case since at least Victorian times. Farms and moors are all managed, if left alone the landscape would change, pest species would rise in number and scrub would predominate." [B9]

"I mean the countryside would not look the way it does if you hadn't got the estates and the keepers....you know the heather burning and things like that, people think why is it all a patchwork, but they do keep the countryside really, they maintain it..." [B8]

As one gamekeeper argued, it was the misperception by members of the general public that grouse moors were not managed environments that had the potential to confuse and cause conflict:

"These places have been managed for a couple of hundred years, it's not natural, there's nothing about it that's not managed, it's being farmed really and if it doesn't get farmed it goes to wilderness and you don't see half the stuff that you see and the locals understand that, but not everyone realises that, which can mean misunderstandings" [G4]

The view of many gamekeepers, in this regard, was that without grouse shooting, the management of grouse moors would have no funding source, which would result in these areas being unmanaged, with associated negative impacts in terms of biodiversity and the landscape. The relatively consistent view of gamekeepers in this regard is well illustrated by the following comment:

"The control of vermin which we do is also a big plus for farmers and anyone involved in land management really. Without the presence of the gamekeepers who will look after the countryside, who will fund the management? Management is essential. Without management you will get widespread disease and starvation and the look of the landscape will also change hugely. If you go to the east coast and see the numbers of vermin they have and the result is that it's like a barren land. The issue is management, management puts in features, it diversifies and enriches the landscape" [G2]

The underlying presumption within these arguments was that, due to a long history of management, these landscapes required human input to maximise their biodiversity levels and that grouse moor management was, in effect, a positive force for the environment. This view is further illustrated by a comment relating to the 'natural processes' approach being undertaken at the RSPB's Abernethy Forest Reserve site on the boundary of the study area:

"Forest Lodge (RSPB) are not controlling vermin at all, yet they spend millions on capercaillie on that site and on neighbouring estates but then they don't even control foxes, it's all a bit mad if you ask me. All they really need to do is keep the fox numbers and certain types of birds down and they will have higher caper numbers." [G2 – Head Gamekeeper]

6.5.1.1 Pest and tick control

One of the most obvious benefits that respondents associated with grouse moor management was the control of 'pest' species such as foxes and rabbits, which was perceived as having knock-on benefits for other land managers and the countryside generally. Specifically, farmers (tenants and owner occupiers) were seen as having limited resources to control foxes on their own land and therefore benefited directly from the extensive fox control carried out by gamekeepers.

As referred to previously, in recent years many estates have begun to contract tenant or owner-occupier farmers to graze grouse moors to 'mop' up ticks, with grazing stock being treated regularly (dipped) to eliminate their tick loads. One respondent noted how this widespread control of ticks could potentially reduce the risk of people contracting tick-borne Lyme disease. As red deer were also viewed as carriers of tick, many estates were also increasing their levels of deer culling as part of their wider tick control programs. The associated reduction in deer numbers potentially represented a further environmental benefit, particularly in terms of creating conditions suitable for further native woodland regeneration - which would previously have been inhibited by high numbers of grazing deer (see Section 6.5.4). As one gamekeeper pointed out, this approach was sometimes perceived as represented a somewhat radical approach to tick control:

"until we get the tick numbers down we are going to try to reduce the deer numbers to a low level, until the tick are sorted, some people don't like that idea.....more the old traditional keepers don't like that as it goes against how it used to be and they don't like it, it is hitting a raw nerve for them, but at the moment there is no other way of doing it" [G5 – head Gamekeeper]

6.5.2 Grouse shooting and birds of prey

6.5.2.1 The need for a controlled and balanced approach

A number of respondents referred to the controversy between grouse moor management and the conservation lobby in relation to the perceived illegal control of protected raptors by gamekeepers. However, while respondents all generally argued that the law should be upheld in the case of gamekeepers and the protection of birds, the issue of illegal killing of raptors was not perceived by most interviewees as one which was of importance to most community members. Two interviewee responses typify this view:

"There is obviously huge controversy between grouse shooting and the wildlife and conservation lobby, although this is not in the community, it is an external thing.....it's not something that is present in the community in my experience" [B4 – Local Business Owner]

"You hear about it when they get poisoned, or it's in the news, and that's it....I think the community is concerned in a way, but it's a way of life up here really and we get access everywhere, it's not an issue for people here" [B5]

Some interviewees did express some concern in relation to the perceived illegal control of protected raptors:

"I think I would like to see better controls on pest control methods generally on some of the estates. Poisoning in particular is non-specific and must be banned completely" [B6 – Local Business Owner]

"The killing of the raptors, that's something that's not good at all really, they need to make sure we do enforce the law on that" [B8 – Long-term Community Resident]

However, despite these concerns, these same respondents also recognised the requirement for the control of pest species, including certain raptors, and argued the need for a balanced approach:

"the thing is we need a balance, there are arguments for and against [raptor control]...but in terms of the rural economy I think maybe the balance has swung too far in the wrong direction, we have these raids now on gamekeepers and prosecutions, with council funds being spent on this" [B4 - Local Business Owner]

"I can understand their [gamekeepers] point of view because there are so many raptors, it's like everything else, protection has upset the balance really, I mean you see raptors now that you never used to see, a lot more, a heck of a lot, sparrowhawks, buzzards...living in the village you don't see the raptors much, but the density of raptors has actually increased" [B6]

Police raids of gamekeepers' properties on some estates in recent years (in relation to alleged poisoning of birds of prey), appear to have elicited a mixed response, with one interviewee outlining her view on how the community viewed such raids:

"I suppose local feeling on this [police raids of gamekeepers' properties] is mixed, but overall it seems a bit heavy handed. Clearly they need to make sure they follow the law, but foxes and raptors basically do the same thing as far as the grouse are concerned, but raptors get all the attention. I think most people understand that poisoned baits absolutely has to stop, it is the old way and just not suitable any more" [B8 – Long-term Community Resident]

A number of gamekeepers clearly recognised the need to protect certain species of raptor; however, the approach to enforcing bird protection laws was generally heavily criticised by gamekeeping respondents:

"well you turn around and you think yes, they've got to do it, it's the law, but nine times out of ten if they had come forward and said.....we've found this, well we would open the door straight away anyway, it saves all of this mad 72 man thing running around the whole place and finding nothing, rather than it being one or two guys coming up for a visit. We were raided here and it was a case of 8 police officers, who raided two of my boys and also 24 or 25 RSPB boys wandering around the moor and never found anything and there was no apology or anything, it's just classed as an unsolved crime....basically it came from, they found a dead kite which was poisoned.....we knew nothing about it" [G3]

One view, repeatedly expressed by gamekeeping interviewees, was that they felt the public perception of them as a body had changed hugely in recent years, due to what were felt to be misconceptions. In particular, the perception of gamekeepers was often felt to have changed from one of an informal protector of the community and environment (akin to a ranger type role) to one of an indiscriminate pest controller or animal killer. As two interviewees noted:

"we're not a secret sect or anything, but Joe Public often perceives us a murderer....but actually if you go further back, especially in Scotland, we worked with the police far more than anyone else because we were out very early in the morning and so on and we would see a lot of what was going on" [G4]

"I think there is a great difficulty for gamekeepers, because that's his job to protect the grouse and what is attacking the grouse? The raptors? So suddenly he's breaking the law, even though he's always been on the side of the law. A lot of gamekeepers were special constables as they are the right sort of person and in those days they were dealing with poachers and hare coursers and criminals in that sense" [B7]

A number of gamekeepers also argued that a key reason for the apparent increases in the numbers of birds of prey was, in fact, the activities of gamekeepers on grouse moors:

"the main reason they [birds of prey] are there is because the grouse moors are being managed properly, if the grouse moors weren't there we would not have the same numbers of these birds whatsoever, because they won't have the feeding, we lose up to 50% of the stock in the winter, peregrines stay here in the winter and they kill grouse all winter" [G4]

A degree of pragmatism and compromise was often called for by interviewees, particularly in relation to the control of both buzzards and ravens, which were perceived as having reached very high densities in certain areas. As two respondents stated:

"I think there needs to be a balance, as without controlling raptors, particularly buzzards and crows, managing the grouse becomes very difficult. It needs a moderate approach, some balance between protecting raptors and protecting grouse" [B8]

"we're struggling with SNH as they interpret the law in a very direct and distinct way, whereas a commonsense person would say that if you've got too many buzzards or too many hen harriers you shoot some of them but you can't get a licence to do that.....the poisoning is what attracts the propagandists, but it was never used extensively, a bit for foxes and so on, but the trapping and snaring and shooting is the way most raptor control is done" [B7]

6.5.2.2 The need for constructive, collaborative dialogue

A number of interviewees, particularly gamekeepers, referred to the importance of developing a more constructive and open dialogue in the future between the gamekeeping community and key agencies such as SNH and the RSPB (and potentially the local constabulary). As two gamekeepers stated:

"It's gone too far.....what we really should be doing is sitting down around a table with the police and explaining things to them from our side" [G4]

"Poisoning was the old way and kept getting dragged forward by some people, the RSPB need to sit down at a table with us and really try to work something out, at the moment it's very difficult" [G5]

In general, it was apparent that some gamekeeping respondents felt their views were not always well respected by key actors in the policy and regulatory arenas:

"I think it's really important for agencies and keepers to communicate with each other more. Keep an open mind, keepers have vast experience of the countryside, so don't prejudge them..... I think generally we are immediately knocked down a peg or two by the agencies and those involved, simply because we are gamekeepers....their opinions are blinkered" [G2]

6.5.3 Grouse moors, biodiversity and the expansion of native woodland

In general, it was apparent that gamekeepers were not particularly supportive of significant woodland expansion on their estates, as it would result in the reduction of grouse moor areas. As one interviewee noted:

"I think more woodland would be a disaster, I think the whole government policy for trees is wrong....we're going to need all the agricultural land we can get and the carbon issue is marginal here, I think we probably absorb more carbon in the heather.....we do manage for biodiversity in that we've got the moorland and we keep the predators down as much as we can...we have very good biodiversity" [B4 – Local Landowner]

Coniferous forestry blocks were particularly heavily criticised by gamekeepers. As one head gamekeeper stated:

"the blocks of coniferous forestry in the middle of nowhere is not good, not what you want to see and it's just a place for foxes to hide....we have one block that's 250 acres down in the far corner" [G5]

However, three gamekeeping interviewees actually responded favourably to the idea of expanding native semi-natural woodland on their estates. Such expansion was viewed as potentially contributing positively to wider estate biodiversity and supporting grouse moor management. As one interviewee explained in relation to native woodland expansion on the estate on which he worked:

"Well we have a lot of regen here through the glen that we have been working hard on.....now over the last 7 years, because of the use of fencing and the culling of the deer for tick control and also for the regeneration, we now have a lot of regeneration...and that works well because it's a better biodiversity for everything, for the birdlife, for all the other animals, but you just have to look at the longer term" [G4]

7. Discussion and Conclusions

7.1 Methodological issues

The selection of the interviewee group was based on obtaining a diverse range of responses from stakeholders within the case study area. However, it is recognised that there are other stakeholders in the area's grouse moors, who are not part of, or based within, the case study communities. These include Scottish Natural Heritage (SNH), who control and regulate designated areas, of which there are a number within the study area, and the Cairngorms National Park Authority. Inclusion of interviewees from these organisations and other groups (such as the Royal Society for the Protection of Birds) would most likely have diversified views further – particularly in terms of the perceived environmental impacts of grouse moor management. Critically, this study represents an attempt to clarify views which exist within a rural community where grouse shooting is a prevalent activity. For this reason, stakeholders who could be considered as external to the immediate community (such as SNH) under study were not considered in this research. However, it is recommended that future studies of this kind may wish to consider the inclusion of such stakeholders as, while they may often be located outside the area of the study, their influence clearly occurs within it.

The study area is one where grouse shooting is a common activity. While grouse shooting is a common activity in many areas across Scotland (see section 1.1/1.2), it is not widely present in many of Scotland's upland areas, with agriculture, forestry, recreation and conservation representing other dominant uses of these uplands. As such, the findings of this study should not be considered as representative of the Scottish uplands in general, but rather as generally representative of upland areas where grouse shooting is a common activity (such as the Angus Glens). It is also recognised that the area in and around Tomintoul and Strathdon has a comparatively dense concentration of estates engaging in grouse shooting; in other areas, the community-level benefits (and impacts) of grouse shooting may be more dispersed, depending on the concentration of grouse shooting estates.

As certain estates which were included in the estates survey for this work were relatively large, the entire area of the estate was not located within the boundary delineated for the study area. This allowed for the delineation of a manageable study area. However, in most cases, all or the vast majority of each surveyed estate was included within the study area (with estate boundaries having been reviewed within a GIS). For this reason, in certain cases, the findings from the estates survey may also not be directly relevant to the delineated study area. Specifically, the number of employees recorded within the estates survey as working within the grouse shooting industry may not be exactly representative of the number of employees actually working and living within the study area (which may be slightly less). Furthermore, no data on numbers of brace shot and number of shooting days were available from two of the surveyed estates, implying actual figures for the study area are likely to be higher than presented.

For certain questions in the postal survey which indicated the level of agreement of respondents to provided statements, the number of 'don't know' responses was relatively high (20-28% in some cases). In some cases, this may have been influenced by respondents feeling that their (limited) level of knowledge and experience of the grouse shooting industry meant they could not answer the question with confidence.

In general, a strong degree of agreement occurs between the findings of the postal survey and the semi-structured interviews. However, survey findings appear to represent a wider cross section of community opinion – particularly as negative impacts and issues were noted only very infrequently by interviewees, while they were recorded somewhat more regularly in survey findings.

7.2 Discussion of findings

The results of the postal survey highlight the fact that the number of retired people within the study area is significantly higher than for both Scotland and the Cairngorms National Park as a whole. This may be influenced by a higher number of retired respondents with more available time; however, as the levels of retired respondents and the numbers in higher age categories were so comparatively high, it is clear that these findings are significant. The number of respondents with children living at home was also relatively low – and was likely to have been lower than recorded due to two surveys being supplied per household – with some respondents recording the same children twice when two surveys were returned from the same family. This combination of high numbers of retirees and low numbers of younger community members presents the area with a distinct set of challenges in terms of community survival and generating new socio-economic activity in the future. Two factors which could be explored in future studies and would be of considerable interest are a) the past employment of retired respondents prior to retirement and whether they worked elsewhere or within the same community within which they now live and b) where employed respondents actually work (i.e. within or outside of the community/ study area).

Clearly, gamekeeping and employment (full-time and part-time) which related more indirectly to the grouse shooting industry, was of comparatively much greater importance to the local economy in the study area than in Scotland (or the park) more generally. Given that hunting, fishing and forestry (combined) account for only 2.1% of national employment in Scotland, direct and indirect employment in grouse shooting would appear - from both the postal and estates survey combined, which showed 20% of respondents dependent on the grouse shooting industry and 49-51 FTEs respectively - to be of 10-15 times greater importance as an employment provider in the study area than nationally. Furthermore, as some interviewees and survey respondents pointed out, those employed within the grouse shooting industry were generally both working and living within the study area, while many other employed community members worked outside the community/ study area. In a comparatively disadvantaged area with relatively low levels of economic activity, the overall community-level socio-economic impact of employees of the grouse shooting industry is therefore likely to be of comparatively greater importance than for an equivalent number of community members working outside of the area. It was apparent from interviews that deer stalking and other sporting activities, such as fishing and pheasant shooting, also occurred on estates – and as such not all gamekeeping jobs are actually fully attributable to grouse shooting. However, on all but one of the surveyed estates grouse shooting was the activity considered to be of primary importance and the key driver of estate management.

Overall, a higher proportion (56% as opposed to 42%) agreed that the grouse shooting industry was an important source of custom for local businesses than that grouse shooting parties contributed significantly to the local economy. The findings of the interviews clarify that, generally, gamekeepers are more valued by local business owners in terms of their contribution to the local economy, not least due to the fact that they are permanent residents, as opposed to the short-term seasonal nature of shooting parties. As interviewees recognised, the numbers of grouse shooting parties staying in local accommodation has declined in recent decades, with many parties now staying on estate lodges, so the economic activity generated for the community is comparatively lower. While comments from both survey respondents and interviewees noted the further potential for estate diversification into hunting-based tourism, 'budget' hunting and the marketing of meat (including game birds and venison) locally, it would appear unlikely that this will occur (at least in this area) in any significant measure, for various reasons, including the emphasis on a private and exclusive sporting experience on the majority of estates. As the estates survey demonstrated, only a minority (3) of the estates in the area regularly engage in commercial grouse shooting. It is likely that an increase in grouse numbers in future years could increase the amount of commercial grouse shooting carried out in the area, which would, in turn, increase the amount of associated local economic activity.

Most (81%) survey respondents agreed with the idea that grouse shooting is a strong part of the community's culture and heritage. Interestingly, (when unprompted) less than 5% of respondents actually highlighted the cultural values of grouse shooting as a personal or community-level benefit, with employment, business and environmental factors being mentioned much more frequently. It would therefore appear that, while the cultural aspects of grouse shooting are well recognised, often these values are not, in themselves, perceived as a benefit of the activity for the community.

The benefits and impacts of the grouse shooting industry in the community, as recognised by the postal survey, appear to agree, in general, with those recognised and emphasized within the semi-structured interviews. The recognition of community-level (as opposed to personal) benefits occurred at a particularly high level (81%). A much lower number (39%) of respondents felt they received personal benefits from the grouse shooting industry. This interestingly appears to conflict with the relatively high number of respondents (78%) which stated that they used grouse moors regularly – clearly many respondents do not necessarily perceive their use of the moors as a personal benefit which is linked to the existence of the grouse shooting industry. Many respondents do not, therefore, necessarily perceive the existence of heather moorlands as being fundamentally linked to the existence of the grouse shooting industry. In terms of negative impacts recognised by survey respondents, the most contentious area appeared to be that of the perceived environmental impacts of grouse moor management. This reflects, in a general sense, the findings of the interviews, with issues around the control of birds of prey and the restriction of woodland expansion being two of the more prevalent issues - although the number of respondents and interviewees expressing (unprompted) concern about these issues was comparatively low.

Interestingly, when provided with set statements, a comparatively higher number of survey respondents (20-24%) agreed with statements which expressed concern about the environmental impacts of grouse moor management. Critically, analysis of specific comments on the support of survey respondents for grouse shooting activities in their area shows that, while 83% were supportive, only 6% were actually completely unsupportive of grouse shooting. A small number of these respondents were clearly unsupportive of estate culture generally, as opposed to directly targeting grouse shooting in their comments. Therefore, while 20-24% of respondents indicated concern about certain aspects of grouse shooting (e.g. negative impacts on raptors), this did not necessarily imply that they were completely unsupportive of grouse shooting as a whole. In certain cases, it appears likely that, while survey respondents were concerned about specific issues, their recognition of the benefits of grouse shooting activities for the community more widely meant they were not actually unsupportive of the industry.

A key aspect of the benefits of the grouse shooting industry, apparent from both interviews and survey responses, was the contribution of gamekeepers as active members of the community. The numbers of gamekeepers' children in local primary schools was reasonably high; however, the numbers of children from gamekeepers' families in secondary schools outside the area was not assessed and the impact over time of gamekeepers' families to local school rolls was also not assessed. A detailed survey of local schools could reveal findings of considerable interest in this regard – which could be combined with a survey of existing school children to assess their experience of working within, and knowledge of, the grouse shooting industry. It is clear from both survey findings and interviewee responses that grouse shooting, as an activity, has declined within the community, and that community involvement (particularly in terms of younger community members) with the industry has declined in recent decades. This decline in activity is likely to be a product of a number of factors, including lower numbers of grouse and a declining interest in land management activities among rural community members overall.

A number of opportunities appear to exist to lessen the perceived negative impacts of grouse shooting activities and allow for a greater re-integration of the local community with grouse shooting activities. In particular, younger community members could be educated about

grouse shooting and moorland management through school visits from gamekeepers. This could lead to a better informed community and growth in interest among younger community members in taking part in part-time work such as beating during the shooting season. A greater emphasis on community consultation and awareness could also decrease perceived negative impacts by community members – particularly as 23% of survey respondents requested more communication from estates. As interviews appeared to highlight, certain issues (such as the use of traps) appeared to be (at times) linked with misunderstandings. Consequently, estate open days or public talks by gamekeepers in the village offer considerable potential to increase community awareness and lessen general concerns. The changing dynamics of the local community, in terms of the influx of newcomers, may imply a certain amount of concern and tension is inevitable. However, well implemented and directed education and awareness-raising may act to considerably lessen future potential conflicts and strengthen relationships. Furthermore, the future development of a more open and constructive dialogue between gamekeepers and key agencies, such as SNH and the CNPA, offers potential to lessen any existing mistrust and develop a coherent and functional approach to controlling raptors and managing grouse moors more generally.

7.3 Conclusions

The findings presented in this report clearly highlight the importance of the grouse shooting industry, in terms of socio-economic benefits, to a specific Scottish rural community and may well be applicable, in a general sense, to other upland areas in Scotland where grouse shooting is a common activity. The grouse shooting industry clearly makes a very significant contribution to the area's economy, in terms of employment and benefits for local businesses. Crucially, while the positive economic impacts of grouse shooting parties has been referred to, the findings indicate that the presence of gamekeepers and their families in the community is, in fact, the most significant community-level social and economic benefit of the grouse shooting industry. Overall, the community is strongly supportive of the grouse shooting industry and, while a number of community residents expressed concerns about specific aspects of grouse shooting, many of these respondents remained supportive of the industry as whole. An increase in communication between private estates/gamekeepers and the local community also offers considerable potential to address many of these concerns. A resurgence of grouse shooting activity is apparent in the area, and one key opportunity for the future is the education and re-involvement of the community's youth in grouse shooting activities. The importance of the grouse shooting industry to the community can vary year on year, depending on grouse numbers and the levels of shooting and management activity. However, it is clear that grouse shooting is set to continue despite often growing pressure in terms of other upland interests and fluctuating grouse populations. To ensure a sustainable future for grouse shooting in Scotland, an open and constructive dialogue between the industry and both key agencies and the local community is of key importance.

8. Reference List

Barton, A.F., and P.A. Robertson (1997) Land cover change in the Scottish Uplands 1945-1990 in relation to grouse management. game Conservancy Trust, Fordingbridge, United Kingdom.

Edwards, D., J. Morris, L. O'Brien, V. Sarajevs and G. Valatin (2008) The economic and social contribution of forestry for people in Scotland. Forestry Commission Scotland, September 2008.

Fraser of Allander Institute (2001). An Economic Study of Scottish Grouse Moors: An Update. Fordingbridge: Game Conservancy Ltd.

Gibbons, DW, Reid, JB & Chapman, RA (1993) The New Atlas of Breeding Birds of Britain and Ireland 1988-1991. T & AD Poyser, Berkhamsted. 520p

R.H. Haines-Young, C.J. Barr, H.I.J. Black, D.J. Briggs, R.G.H. Bunce, R.T. Clarke, A. Cooper, F.H. Dawson, L.G. Firbank, R.M. Fuller, M.T. Furse, M.K. Gillespie, R. Hill, M. Hornung, D.C. Howard, T. McCann, M.D. Morecroft, S. Petit, A.R.J. Sier, S.M. Smart, G.M. Smith, A.P. Stott, R.C. Stuart and J.W. Watkins (2000) Accounting for Nature: Assessing habitats in the UK Countryside. Department of the Environment, Transport and Regions: London.

Hester, A.J., Miller, D.R. and Towers, W. (1996) Landscape Scale vegetation Change in the Cairngorms, Scotland, 1946-1988: Implications for Land Management. *Biological Conservation* **77** 41-51

Hester, A.J. & Sydes, C. (1992) Changes in burning of Scottish heather moorland since the 1940s from aerial photographs. *Biological Conservation* **60**: 25-30.

Hudson, P.J. (1992) Grouse in space and time: The population biology of a managed gamebird. Game Conservancy Trust, Fordingbridge, United Kingdom.

McGilvray (1995) An economic study of grouse moors. Game Conservancy Trust, Fordingbridge, UK.

Mackey, E.C., M.C. Shewry and G.J. Tudor (1998) Land Cover Change: Scotland from the 1940s to the 1980s. HMSO.

MLURI, John Clegg & Co. and University of Aberdeen (1999) Scottish Forestry: an input-Output Analysis. A report for the Forestry Commission.

Moorland Working Group (2002) Scotland's moorland; The nature of change. Battleby, Scottish Natural Heritage.

O'Brien, L and Claridge, J (2002) Trees are Company: Social Science Research into Woodlands and the Natural Environment. Forestry Commission, Edinburgh.

Royal Society of Edinburgh (2008) Committee of the inquiry into the future of Scotland's Hills and Islands report. Sept 2008

Smith, A., S. Redpath, S. and S. Campbell (2000) The Influence of Moorland Management on Grouse and their Predators. HMSO.

Tapper, S. (2005) Nature's Gain: How gamebird management has influenced wildlife conservation. Game Conservancy Trust, July 2005.

Tharme, A.P., R.E. Green, D. Baines, I.P. Bainbridge and M. O'Brien (2001). The effect of management for red grouse shooting on the population density of breeding birds on heather-dominated moorland. *Journal of Applied Ecology* **38**: 439-457.

Thirgood, S, Redpath, S, Newton, I & Hudson, P (2000) Raptors and red grouse: Conservation conflicts and management solutions. *Conservation Biology*, **14**: 95-104

Thompson, D.B.A, A.J. MacDonald, J.H. Marsden and C.A. Galbraith (1995) Upland heather moorland in Great Britain: a review of international importance, vegetation change and some objectives for nature conservation. *Biological Conservation* **71**: 163-178

Watson, A. & Miller, G.R. (1976). *Grouse Management*. The Game Conservancy Booklet 12. Banchory: Institute of Terrestrial Ecology.

Whitfield, D.P., D.R.A. McLeod, J. Watson, A.H. Fielding and P.F. Haworth (2003) The association of grouse moors in Scotland with the illegal use of poisons to control predators. *Biological Conservation* **114**: 157-163

Whitfield, D.P., A.H. Fielding, D.R.A. McLeod and P.F. Haworth (2004) The effects of persecution on age of breeding and territory occupation in golden eagles in Scotland. *Biological Conservation* **118**: 249-259

Willis, K.G., G.R. Garrod, R. Scarpa, N. Powe, A. Lovett, I.J. Bateman, N. Hanley, D.C. Macmillan (2003) The social and environmental benefits of forests in Great Britain. Centre for Research in Environmental Appraisal and management, University of Newcastle. Report to Forestry Commission, Edinburgh.

Wright, M. and H. Armstrong (1999). Natural Heritage Zones Programme - Mountain and Moorland: National Prospectus. SNH Internal Report.

Appendix 1. Draft Community Survey

WE WOULD LIKE TO KNOW YOUR OPINIONS!

TOMINTOUL COMMUNITY SURVEY ON GROUSE SHOOTING



A study of the key benefits and impacts of the grouse shooting industry and grouse moor management from the view point of local communities

If you are 16 or over and a resident of Tomintoul and the surrounding area we would like to ask you to fill in this questionnaire (one per person)

The survey should take 15-20 minutes to complete. If you do not wish to answer any particular question please move on to the next question

Please return completed questionnaires by post in the postage paid envelope provided

This survey is completely anonymous and all responses will be treated in total confidence

Please return this survey by the 12th June 2009

Please see accompanying introductory letter for more information about this research

Thank you very much for your time

Survey conducted by: Rob Mc Morran, Centre for Mountain Studies, UHI-Perth College, Crieff Road, Perth, PH1 2NX

**Contact telephone: 01224 716709/077 54571364
Email: robert.mcmorran@perth.uhi.ac.uk**

Part 1: About you					
Your Postcode <i>Please insert your postcode in this box</i>					
Your Age <i>Please tick the appropriate box below</i>				Your gender <i>Please tick the appropriate box</i>	
16-25		56-65		Male	
26-40		66 and over		Female	
41-55					

Your level of education <i>Please tick the appropriate box below</i>			
Less than secondary school		College diploma or certificate (HNC/HND)	
Standard Grades or equivalent		College/University Degree	
Highers or equivalent		Postgraduate Degree	

What sort of accommodation do you live in? <i>Please tick the appropriate box below</i>			
I live in the area full-time in my own home/my family's home		I stay in long-term ⁹ rented accommodation in the area	
I live in the area part-time in a second home which I/my family own		I stay in short-term rented accommodation in the area sometimes	
I live in accommodation which is provided by my employer		I live on a tenanted farm	
Other (please explain)			

How long have you lived in the area? <i>Please tick the appropriate box below</i>					
I am not a full-time resident		5-10 years		Over 40 years	
Recently moved here		10-20 years			
Under 5 years		20-40 years			

⁹ Long-term here means that you are living in a house with at least a six-month lease. Short-term accommodation refers to holiday lets or anyone renting for a week or two for any reason.

Do you have any children? <i>Please tick the appropriate box below</i>					
Yes		No			
Do any of your children still live at home? <i>Please tick the appropriate box below</i>					
Yes		No			
If yes, how old are your children which live at home? <i>Please indicate the number of children within each age category</i>					
Under 5 years old		10-15 years old		20-30 years old	
5-10 years old		15-20 years old		Over 30 years old	

Your Employment Status <i>Please tick the appropriate box below</i>					
Employed (full/part-time)		Self-employed		Unemployed	
Retired		Student		Home-maker	
Other Please specify:					

If you are employed please provide the sector(s) of employment <i>For example 'hospitality', 'agriculture', 'game management'</i>					

Part 2 Estate management, grouse shooting and you

Do you live on an estate?

Please tick the appropriate box

Yes

No

What is the name of the estate you live on?

Please fill in the name in the box on the right or leave blank if you do not know the name of the estate

How would you rate the quality of general estate management on the estate you live on?

Please tick the appropriate box below or leave blank if you do not live on an estate

Excellent

Don't know

Poor

Good

Average

Very poor

Is there any particular issue you would like to raise relating to estate management (e.g. you would like to be consulted more on estate activities, paths need improvement etc.) Insert your comments below

Are you aware that grouse shooting occurs in this area?

Please tick the appropriate box below

Yes

No

Does your livelihood depend *directly* on the grouse shooting industry?

Please tick the appropriate box below

Yes

No

If yes, can you explain why in the box below?

In your opinion does your livelihood depend *indirectly* on the grouse shooting industry in your area? (e.g. working in a business which sells products of some kind or provides a service to grouse shooting parties)

Please tick the appropriate box below

Yes

No

If yes, please explain why in the box below?

In your opinion, does the grouse shooting and grouse moor management which occurs in your locality benefit you personally in any way?

Please tick the appropriate box below

Yes

No

If yes, please list three benefits to you personally?

1.

2.

3.

In your opinion, does the grouse shooting and grouse moor management which occurs in your locality impact upon you negatively in any way?

Please tick the appropriate box below

Yes

No

If yes, please list three negative impacts to you personally?

1.

2.

3.

Are you satisfied with the level of communication and/or consultation between people working in the grouse shooting industry and you personally?

Please tick the appropriate box below

Yes

No

Is there anything specifically you would like to say about this?

Do you ever use the grouse moors in your area for any reason yourself?

Please tick the appropriate box below

Yes

No

**If yes, please explain below how you make use the grouse moors?
(e.g. for bird or wildlife watching, walking, shooting, wildfoods gathering)**

Part 3 Grouse shooting and the local community

In your opinion, does the grouse shooting and grouse moor management which occurs in your area benefit your community in any way?

Please tick the appropriate box below

Yes		No	
-----	--	----	--

If yes, please list three benefits to the community?

1.

2.

3.

In your opinion, does the grouse shooting and grouse moor management which occurs in your area have any negative impacts upon your community?

Please tick the appropriate box below

Yes		No	
-----	--	----	--

If yes, please list three negative impacts to the community?

1.

2.

3.

Indicate your level of agreement with the following statements by placing a tick in the appropriate box

Statements	Strongly agree	Agree	Not sure	Disagree	Strongly disagree
The grouse shooting industry contributes to keeping young people in this area					
Grouse shooting and grouse moor management are an important part of the culture and history of my community					
Those who run and practise grouse shooting have no regard for community concerns					

Part 4: Grouse shooting and the local economy

Indicate your level of agreement with the following statements by placing a tick in the appropriate box

Statements	Strongly agree	Agree	Not sure	Disagree	Strongly disagree
The grouse shooting industry is a major employer in this area					
The grouse shooting industry invests heavily in the local area					
The grouse shooting industry is a very important source of custom for local businesses					
Grouse shooting parties spend heavily within the local area and make a significant contribution to the local economy					

Part 5: Grouse shooting and the environment

Indicate your level of agreement with the following statements by placing a tick in the appropriate box

Statements	Strongly agree	Agree	Not sure	Disagree	Strongly disagree
The landscapes which result from grouse moor management are beautiful					
The landscapes which result from grouse moor management are unattractive					
Grouse shooting and grouse moor management result in damage to the environment					
Grouse shooting and grouse moor management result in unnecessary cruelty and persecution of animals and birds					
Grouse shooting and grouse moor management are beneficial to the areas plants and wildlife					
Grouse shooting activities limit public access to grouse moors					
Grouse moor management is important for controlling the pest species within this area					

Part 6: Final Comments

What future would you like to see for grouse shooting and grouse moor management in your area?

Do you have any other comments on any of the above questions or on grouse shooting and grouse moor management generally?

If you would like to be entered into a draw to be in with a chance of winning a bottle of single malt whisky please fill in your name and address below:

**This is the last page of the survey
Thank you very much for your time and cooperation!**

Please return completed questionnaires by post in the postage paid envelope provided

Appendix 2. List of respondents to semi-structured interviews

Gamekeepers (6)

Craig Barnett, Head Keeper, Glenbuchat Estate
Colin Gibson, Head keeper, Inchrory Estate
David Taylor, Head Keeper, Delnabo Estate
Colonel F.M.K Tuck, Owner/manager Allargue Estate
Alistair Mitchell, Head keeper Glenlivet Estate (Kilnadrochit)
Derek Calder, Head Keeper, Edinglassie Estate

Local business owners/managers (7)

Charlie Skene – owner, Skene’s Garage Tomintoul
Ewan Murray, Manager, Allargue Arms Hotel
Paul, Manager, Hotel, Strathdon
Owner/Manager, McNabs Larder, Tomintoul (Arts, crafts and fine foods shop)
Paul Toohey, Owner/manager Ballabeg Post Office and general Store (Strathdon)
Mike Drury, Owner/Manager The Whiskey Castle and Highland Market, Tomintoul
Ruth, Accommodation Manager, Glen Avon Hotel, Tomintoul

Community representatives (3)

Nancy Fraser – Head Teacher, Tomintoul Primary School (Long term community resident)
Jenny Herschell, Chair of Tomintoul Community Association (Long term community resident)
Patricia Grant, Staff member, Tomintoul Tourist Information centre (Long term community resident)

Others (2)

Pete Jones, Head Forester, Glenlivet Estate (Smiths Gore employee)
Vicky Hilton, Crown Estate, Countryside Ranger

Appendix 3. List of surveyed estates

Glenlivet
Candacraig
Delnabo
Allargue
Edinglassie
Inchrory
Delnadamph
Glenbuchat
Glenlochy