

RED GROUSE and birds of prey



This leaflet is supported by 17 voluntary bodies and addresses concerns about the impact of predation of red grouse by birds of prey (raptors). It

explains how serious habitat loss and degradation have caused long-term declines in grouse bags, and how a high density of birds of prey can affect bags when grouse densities are low. It details why killing of birds of prey, illegally or under licence, and setting quotas for birds of prey are not acceptable. It identifies measures that can be taken to reduce the impact of predation on grouse and enhance heather moors for wildlife.

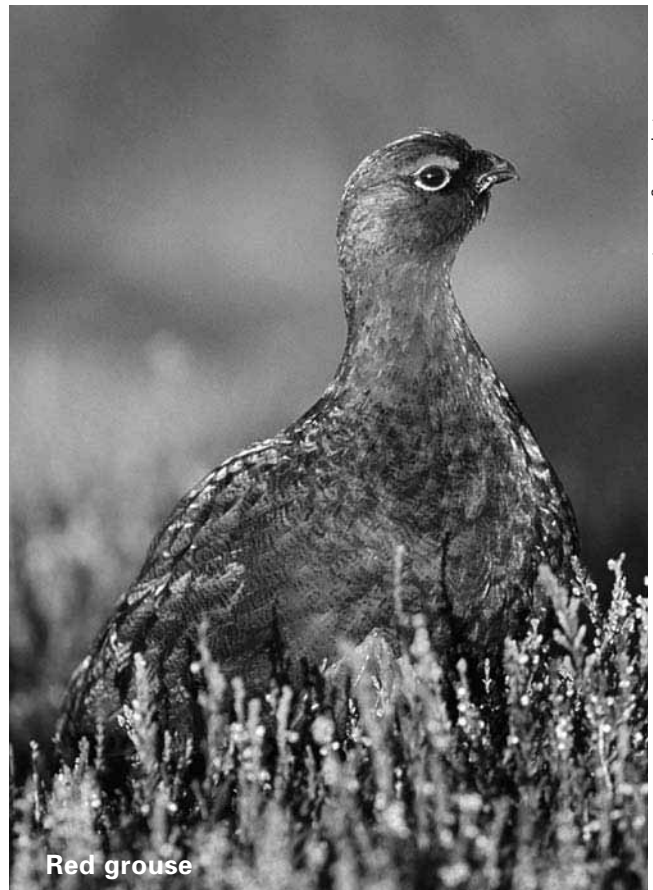
The concerns

Conservation groups and the Government are concerned because widespread killing of birds of prey, especially on upland moorlands managed for driven grouse-shooting, limits the population and distribution of several species. Killing birds of prey is a criminal activity involving hundreds of birds every year; for example:

- 11–15% of the hen harrier population on the Scottish mainland are destroyed each year.¹
- In Scotland, the illegal use of poison during 1981–2000 was disproportionately associated with grouse moors.²
- In the central and eastern Highlands of Scotland, where grouse moor management predominates, the golden eagle population has continued to decline to levels where increasingly large areas of suitable habitat are unoccupied by breeding pairs.³ In the absence of persecution it is likely that the population could expand to fill this increasingly vacant but apparently suitable habitat and would have a secure long-term future.⁴
- In the Yorkshire Dales, average productivity for peregrine nesting attempts on grouse moors was only 0.68, compared to 2.07 for nests at least 2 km away from grouse moors.⁵

There is controversy, however, over the impact of birds of prey on the quality and economics of grouse shooting. Declines in red grouse bags have occurred in many areas. Some people believe that birds of prey, particularly hen harriers and peregrines, are responsible for these declines or for holding back the recovery of grouse. Game managers and landowners cite the results of an experiment at Langholm in southern Scotland as an example of what will happen to all driven grouse moors if raptor numbers are not limited. Thus, some people are calling for the legalised killing of birds of prey, or the introduction of a 'quota' system. Some also feel that birds of prey disrupt driven grouse shoots, reducing the number of grouse that are shot.

- **Illegal killing of birds of prey is limiting the population and distribution of several species.**
- **Management for grouse has helped to protect heather moors from forestry plantations and livestock production, but heavy grazing by sheep and deer is the main cause of declines in grouse bags.**
- **'It is extremely unlikely that raptors were responsible for either the long-term decline or the fluctuations in grouse bags.'** Joint Raptor Study, Langholm.¹¹
- **'The raptor issue should be put on one side because it is a diversion that has too often resulted in managers taking their eyes off the ball.'** The Heather Trust.²⁵
- **Habitat management is fundamental to a long-term recovery of upland wildlife and grouse shooting. In the short term, diversionary feeding can reduce the number of grouse chicks eaten by hen harriers by up to 86%.**¹⁸



Red grouse

Analysis

Red grouse populations in much of Britain have been declining for decades, and in some areas for more than a century. Declines were most marked between 1930 and 1950, and from the mid-1970s to the present.⁶

Hen harriers, peregrines, golden eagles and some other birds of prey eat red grouse. In some circumstances, grouse may form a major part of their diet and they may take a sizeable proportion of the shootable surplus of grouse. However, hen harriers were barely present in mainland Britain during the major grouse declines between 1930 and 1950. Grouse bags have continued to decline on many moors, despite widespread killing of birds of prey and destruction of their nests.⁷

Causes of declines in red grouse

The Game and Wildlife Conservation Trust (GWCT)⁶ and the Heather Trust⁷ attribute grouse declines to a combination of:

- conversion of heather moorland to sheep pasture or conifer plantations
- deterioration in management of heather, through changes in shepherding and burning practices
- drainage of moors leading to reduced food availability, especially for chicks
- increased predation by foxes and crows – likely to be associated with increases in sheep and afforestation
- poor survival and productivity of grouse as a result of disease.

Red grouse depend on heather for food and cover. A major cause of their decline has been the destruction, fragmentation and deterioration of heather moorland. This has reduced the plant food for adults, while drainage has reduced the boggy plants and insects on which grouse chicks depend. In Scotland, 4,165 km² (23%) of heather was lost between the 1940s and 1980s, while an even greater proportion (27%) was lost in England.⁸ The loss was substantially greater in some areas, such as 48% of heather from Langholm Moor between 1948 and 1988.¹¹ A further 510 km² (3.6%) of heather was lost from the UK between 1990 and 1998.⁹ There is broad agreement that grazing by sheep and deer is responsible for much of this loss. Sheep numbers more than doubled to 40 million animals between 1950 and 1990 and there are 500,000–750,000 deer in Scotland alone, the most at any time since the last Ice Age.

Management of grouse is undertaken on 29%–55%* of the heather moorland in Britain and has been instrumental in protecting it from forestry plantations, but it has not prevented declines in the densities of grouse.

Can birds of prey affect grouse bags?

The Joint Raptor Study (JRS), undertaken by the Institute of Terrestrial Ecology (now the Centre for Ecology and Hydrology) and GWCT on six moors in Scotland, concluded that raptors did not cause the long-term decline in red grouse.

At two driven grouse moors where birds of prey were protected, numbers of hen harriers and peregrines increased in the mid-1990s. At one moor in the study (Langholm in south Scotland), predation by raptors did reduce the abundance of grouse in autumn by 50%, when grouse were already at a low density. This reduced the number of grouse available for shooting. However, during the Joint Raptor Study, birds of prey did not have a significant impact on the abundance of grouse in spring (and, therefore, the number of breeding grouse). At the other moor, in northeast Scotland, numbers of hen harriers and peregrines fluctuated and driven grouse shooting remained viable.¹¹

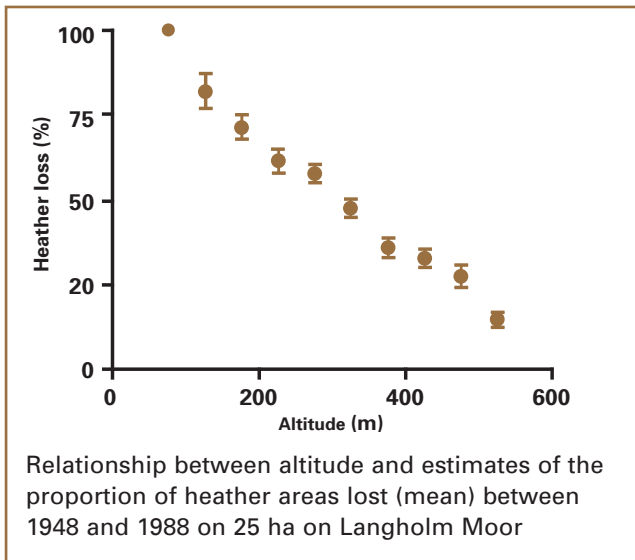
The JRS strongly suggested that severe loss of heather at Langholm since the 1940s was the principal cause of long-term grouse declines. It also found that the number of male hen harriers that settle on a moor is determined by the availability of voles and meadow pipits, not the number of grouse.

*Footnote: There are no definitive statistics on the extent of heather moorland managed for grouse. The Centre for Ecology and Hydrology's Land Classification System estimated that there was 4,890 km² of grouse moor in the UK in the late 1980s (28.9% of the total heather moorland). The GWCT states that 55% of total heather moorland in Great Britain is managed for grouse.¹⁰

Mark Hamblin (rspb-images.com)



Hen harrier

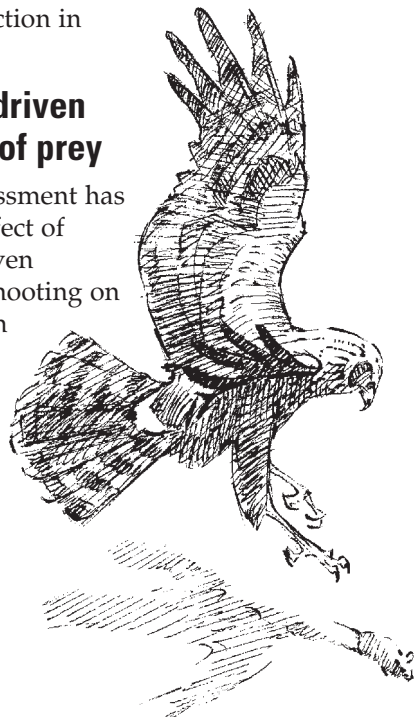


The grassy areas that replaced the heather (as a result of heavy grazing) are of little value to red grouse and hold more voles and meadow pipits than heather and so attract a higher density of hen harriers. Other studies found that meadow pipits were most abundant where there was least heather and the least active heather management,¹² while a broad-scale study of habitat associations found that meadow pipit abundance peaks with mixtures of grass and heather but declines as heather becomes more dominant.¹³

Any moor with similar characteristics to Langholm may experience a similar reduction in the shootable surplus of grouse during low points in the grouse cycle. However, there are currently few moors with similar characteristics to Langholm, largely because of widespread illegal killing of birds of prey. Given that heather cover and vole and pipit numbers determine the density of hen harriers, it is likely that not all moors will respond as Langholm did. Some of these factors might also be manipulated through habitat management to reduce the likelihood of a reduction in grouse numbers.

Disturbance of driven shoots by birds of prey

Relatively little assessment has been made of the effect of birds of prey on driven shoots. A study of shooting on 11 moors in northern England concluded that disturbance by birds of prey affected 2–7% of grouse drives, less than the number (3–10%) affected by poor weather.¹⁴



Options for resolving conflicts

There is broad agreement that habitat management is fundamental to achieving a sustainable recovery of upland wildlife and of grouse shooting. In the short term, while such work is being undertaken, gamekeepers need a cheap, simple and effective means to reduce the number of grouse taken by birds of prey. Several options have been put forward to resolve such conflicts and we believe that some have merit (see Box 1). Evidence suggests that diversionary feeding of hen harriers is effective, simple and cheap, and so is a viable option for gamekeepers.

Options that would require changes in the law could compromise the UK's requirement to maintain and protect its biodiversity. Setting an artificial ceiling on the number of hen harriers permitted to breed on grouse moors is not acceptable, especially when the species is in unfavourable conservation status and there are viable alternatives.

One option which has been suggested is the translocation of hen harriers to habitats where there is no driven grouse shooting. We agree with the GWCT that this 'would not be a sustainable method of reducing predation on grouse moors'.¹⁵

The way forward

The Government's Raptor Working Group, which included leading experts from the GWCT, British Association for Shooting and Conservation, the Royal Pigeon Racing Association, the Scottish Raptor Study Groups and the RSPB, rejected lethal control of raptors. Instead, it suggested that the Government should increase its support for the management of heather moors, that gamekeepers should use non-lethal measures to reduce the vulnerability of grouse to raptor predation and that greater effort should go into tackling criminal killing of birds of prey.¹⁰ A joint project is underway at Langholm Moor, which aims to show how management techniques such as diversionary feeding can allow hen harriers and grouse shooting to coexist.

1 Moorland management

The UK's Biodiversity Action Plan for the uplands requires action to maintain and enhance the extent and quality of upland habitats, including heather moorland and their wildlife. Birds of prey are an integral component of these habitats. Land use and management should aim to secure heather moorland and a full breadth of other elements, in order to develop a sustainable future for all in our uplands. Scotland's Moorland Forum has identified eight key factors that must be addressed to safeguard heather moorland.¹⁶

There is similarity between the management needed for a shootable surplus of grouse and that to benefit the conservation of some other wildlife species on heather moorland. Both must address the deterioration and fragmentation of heather through overgrazing, afforestation and declines in standards of heather

management. Achieving favourable condition of moorland SSSIs may also require a less intensive burning regime to provide a greater age range of heather. Changes in the Common Agricultural Policy and reform of agri-environment and woodland grant schemes provide important opportunities to reduce sheep densities in areas where this will be beneficial, re-create wetlands, restore losses of heather moorland and provide environmental, economic and social benefits from public funds. It is estimated that, in England alone, the owners and tenants of grouse moors received more than £60 million in public funds during 1991–2001.

Conservation groups have called on shooting organisations to support the pursuit of policies that

will maintain and restore grouse stocks, and benefit other moorland wildlife.¹⁸ Calls for licensed control of birds of prey divert attention from the long-term habitat issues.

2 Diversionsary feeding

In the short-term, diversionsary feeding can provide a simple, practical and effective way for gamekeepers to reduce the number of grouse chicks eaten by hen harriers by up to 86%.¹⁸ Diversionsary feeding is not designed to be a long-term solution, but it can be used to 'buy time', enabling grouse moor managers to maintain shooting income while habitat enhancement measures take effect.

Box 1: Options for reducing predation of red grouse by hen harriers

Options which do not require a derogation under the European Union (EU) Birds Directive

These are all available under current law without a licence. By law, they should be tried before any measures which require a derogation.

Habitat management – in the longer term, it should be possible to reduce the relative impact of hen harriers on grouse shooting by reducing the extent of grassland within heather (by encouraging heather regeneration). This could reduce the number of male hen harriers that take a territory on a moor by reducing the density of voles and meadow pipits, their main prey. The recovery of heather has some benefits for other wildlife too.¹⁹

Diversionsary feeding – trials at Langholm by the GWCT and the Centre for Ecology and Hydrology found that providing alternative sources of food for hen harriers could limit the number of grouse chicks taken by 86% in summer without significantly increasing the number of harriers attracted to breed on the moor.¹⁸ In some areas, government grants are available to support diversionsary feeding and we would welcome any further scientific efforts to develop and refine this technique.

Rearing of captive-bred grouse or restocking from wild populations – designed to replace those grouse eaten by hen harriers, there are serious practical difficulties associated with releasing grouse and further research is required to review the efficacy of these techniques.

Options which would require a derogation under the EU Birds Directive

These proposals are illegal without a government licence, the granting of which is not justified, because hen harriers are not in a favourable conservation status and non-lethal alternatives are available (see above).

Temporary movement of hen harrier young to aviaries – we see little benefit in undertaking a risky and expensive procedure when a significant reduction in predation on grouse could be achieved by diversionsary feeding, which is both cheaper and more practical on a large scale.

Moving hen harriers to sites which do not currently hold them – a review by the GWCT of a proposal to translocate

hen harriers concluded that, although practically possible, 'translocation would be an unnecessary and inappropriate conservation tool'.¹⁷ We agree with this view. It is not a priority for hen harrier conservation, so there is no justification for spending public money on a costly rearing and release programme. A translocation designed primarily to increase the number of grouse for shooting would be illegal under the EU Birds Directive.

Licensed killing of birds of prey – to be effective in producing more grouse for shooting, birds of prey, especially hen harriers, would have to be killed on such a widespread and regular basis that their numbers and range would be threatened so long as driven grouse shooting remained a significant land-use. It is highly unlikely that licensed control could be properly monitored or regulated and it could be additional to levels of illegal destruction that are already restricting the population and range of several raptor species. There is no legal provision for the licensed control of protected species to secure the protection of a shootable surplus of gamebirds in the wild.

Setting quotas for hen harriers – we see no reason to put an artificial ceiling on the number of a rare or scarce species permitted in an area, especially one with an unfavourable conservation status. Any such proposal would limit hen harriers to a lower population than they should naturally attain. The availability of food, habitat and the number of predators should naturally determine the population. There is no legal provision for such intervention in order to achieve a shootable surplus of red grouse.

A quota scheme fails to meet the needs of hen harrier conservation, since it will neither reduce nor eradicate the illegal killing of hen harriers: it has been estimated that the population threshold predicted by the GWCT²⁰ could be achieved in six years if illegal killing ceased. Neither would quotas achieve the objectives of gamebird managers. The density of successful broods that has been previously proposed is about three times that currently tolerated by moorland gamekeepers in Scotland. It remains difficult to believe that most keepers would find increased numbers of hen harriers acceptable. Placing an artificial ceiling on a specially protected species would set a disturbing precedent which could wholly alter the UK's commitment to biodiversity conservation.

3 Addressing bird of prey persecution

At present, the illegal killing of birds of prey on grouse moors, especially of hen harriers, is widespread.^{1,2,21,22} We hope that the development and implementation of alternative approaches to grouse management will reduce levels of persecution. Conservation organisations wish to work with game managers in conserving upland biodiversity, but stand united in opposition to the illegal killing of birds of prey.

Conservationists have called on landowners to eliminate the illegal persecution of birds of prey on moors managed for gamebirds and welcomed the 'golden rule' enshrined in The Code of Good Shooting Practice: 'Game management and shooting must at all times be conducted within the law'.²³ It is the employer's legal responsibility to ensure that their employees comply with the law, but we are disappointed, however, that there is no evidence of a reduction in illegal killing; indeed, there are signs of an increase since the UK Raptor Working Group made it clear that there was no case for issuing licences to kill birds of prey.²⁴

There is absolutely no justification for the illegal killing of raptors, which the Government has termed 'a national disgrace'.²¹ Neither are demands that hen harriers be removed or culled under licence justified, especially since a non-lethal means of reducing hen harrier predation of red grouse is potentially very effective and is available to all.¹⁸ We support, therefore, efforts by the Government and the police to increase the effectiveness of measures to protect birds of prey.

Conclusions

The concerns over low grouse numbers and the continued viability of gamebird shooting are understandable, but birds of prey are being held responsible for declines in the quality of grouse moors that are the product of deeper, long-term environmental problems: the loss, fragmentation and poor management of much heather moorland. We fully support the recommendations and conclusions of the DETR/JNCC Raptor Working Group and call on all those with an interest in the future management of the uplands, for sporting, economic, employment, conservation and recreational objectives, to work together to find, promote and deliver solutions to allow the maximum diversity of habitats, species and land-uses in our uplands.

Conservation organisations have sought an alliance with landowners, farmers and game interests in implementing a shared vision for the uplands.¹⁷

It is sad that this has been ignored by some and that illegal killing or demands for changes in the law have been pursued instead. There have been huge strides forward in our understanding of habitat restoration and best management practices, as well as the continued development of other techniques. However,

the killing goes on. The objectives of grouse moor managers are distinct from those of upland biodiversity conservation, but many of the management prescriptions are similar: the need to address grazing by sheep and deer, avoid inappropriate afforestation and enhance the quality of heather management. The focus on birds of prey distracts attention from finding and implementing solutions to the root causes of declines in grouse bags.

Conservation organisations, game-management organisations and the Government have invested considerable time and money seeking a viable solution to the potential conflicts between birds of prey and grouse management. Research and trials show that enhanced habitat management in the long term, backed up by short-term diversionary feeding, can provide a solution. Efforts should go into putting research into practice and it is essential to stop the killing of birds of prey, in accordance with the industry's published standards. Key to a sustainable system of driven grouse shooting is the application of management practices that are, in themselves, sustainable.

Further reading

- 1 Etheridge, B, Summers, R W, and Green, R E 1997 The effects of illegal killing and destruction of nests by humans on the population dynamics of hen harriers *Circus cyaneus* in Scotland. *Journal of Applied Ecology* 34: 1081–1105.
- 2 Whitfield, D P, McLeod, D R A, Watson, J, Fielding, A H, and Haworth, P F 2003 The association of grouse moot in Scotland with the illegal use of poisons to control predators. *Biological Conservation* 114 (2): 157–164.
- 3 Whitfield, D P, Fielding, A H, Mcleod, D R A, Morton, K, Stirling-Aird, P and Eaton, M A 2007 Factors constraining the distribution of Golden Eagles *Aquila chrysaetos* in Scotland. *Bird Study*: 54 199–211.
- 4 Whitfield, D P, Fielding, A H, Mcleod, D R A, and Haworth, P F 2004 Modelling the effects of persecution on the population dynamics of golden eagles in Scotland. *Biological Conservation* 119: 319–333.
- 5 Court, I R, Irving, P V, and Carter, I 2004 Status and productivity of peregrine falcons in the Yorkshire Dales between 1978 and 2002, *British Birds* 97: 456–463.
- 6 Hudson, P J 1992 *Grouse in space and time*. Game Conservancy Trust, Fordingbridge.
- 7 The Heather Trust 1996 Laurent-Perrier Award for wild game conservation. *The Heather Trust Annual Report* 1996: 55–57.
- 8 Thompson, D B A, MacDonald, A J, Marsden, J H, and Galbraith, C A 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.
- 9 Centre for Ecology and Hydrology/Department for the Environment, Transport and the Regions 2000 *Accounting for nature: assessing habitats in the UK countryside*.

- 10 UK Raptor Working Group 2000 *Report of the UK Raptor Working Group*. DETR/JNCC.
- 11 Redpath, S M, and Thirgood, S J 1997 *Birds of prey and red grouse*. The Stationery Office, London.
- 12 Smith, A A, Redpath, S M, Campbell, S T and Thirgood, S J 2001 Meadow pipits, red grouse and the habitat characteristics of managed moorland. *Journal of Applied Ecology* 38: 390–400.
- 13 Vanhinsbergh, D P, and Chamberlain, D E 2001 Habitat associations of breeding Meadow Pipits *Anthus pratensis* in the British uplands. *Bird Study* 48: 159–172.
- 14 Robson, G, and Carter, I 2001 *Do raptors disturb driven grouse shoots? A study in northern England*. English Nature Research Report 401.
- 15 Watson, M, and Thirgood, S 2001 Could translocation aid hen harrier conservation in the UK? *Animal Conservation* 4: 37–43.
- 16 Scotland's Moorland Forum 2003. *Principles of Moorland Management*, www.moorlandforum.org.uk
- 17 Hawk and Owl Trust, National Trust, The RSPB, Scottish, Wales and North of England Raptor Study Groups, The Wildlife Trusts, Scottish Ornithologists' Club, WWF-UK 1998 *A future for grouse moors – a call to action*.
- 18 Redpath, S M, Thirgood, S J, and Leckie, F M 2001 Does supplementary feeding reduce predation of red grouse by hen harriers? *Journal of Applied Ecology* 38: 1157–1168.
- 19 Tharme, A P, Green, R E, Baines, D, Bainbridge, I P and O'Brien, M 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: 440–458.
- 20 Potts, G R 1998 Global dispersion of nesting hen harriers *Circus cyaneus*; implications for grouse moors in the UK, *Ibis* 140: 76–88.
- 21 Scottish Raptor Study Groups 1998 *Counting the Cost: the continuing persecution of birds of prey in Scotland*. The Scottish Office.
- 22 Holmes, J, Walker, D, Davies, P, and Carter, I 2000 *The illegal persecution of raptors in England*. English Nature Research Report 343.
- 23 BASC, Countryside Alliance, Country Land and Business Association, Devon and Cornwall Association of Sporting Shoots, Game Farmers' Association, National Game Dealers' Association, National Gamekeepers' Organisation, Scottish Gamekeepers' Association, Game Conservancy Trust, Scottish Landowners' Federation 2003 *The Code of Good Shooting Practice*
- 24 The RSPB 2006 *BirdCrime 2006 – offences against wild bird legislation in 2006*. Sandy.
- 25 Heather Trust 1995 Raptors on moorland - The Heather Trust's view. *The Heather Trust Annual Report 1995*: 45.

Supporting organisations



British Trust for Ornithology

Humphrey Crick, The Nunnery, Thetford Norfolk IP24 2PU

The BTO, as an impartial scientific research trust, has provided critical review of the scientific evidence-base underpinning this document.



Birdlife

Boris Barov, European Conservation Manager, BirdLife International, European Division, Avenue de la Toison d'Or 67, B-1060 Brussels



Hawk and Owl Trust

Linda Bennett, PO Box 100, Taunton TA4 2WX



National Trust for Scotland

Richard Luxmoore, Wemyss House, 28 Charlotte Square, Edinburgh EH2 4ET



Scottish Ornithologists Club

Chris Waltho, Waterston House, Aberlady East Lothian EH32 0PY



Northern England Raptor Forum

Ian Court, contact@raptorforum.org



Scottish Raptor Study Groups

Patrick Stirling-Aird, Central Scotland RSG, Kippenross, Dunblane, Perthshire FK15 0LQ



Welsh Kite Trust

Tony Cross, Samaria, Nantmel, Llandrindod Wells, Powys LD1 6EN



Manx BirdLife

Chris Sharpe, Greenbank, 33 Mines Road, Laxey, Isle of Man IM4 7NH



The Wildlife Trusts

John Everitt, The Kiln, Waterside Newark NG24 1WT



Wildfowl and Wetlands Trust

Richard Hearn, Slimbridge, Glos GL2 7BT



Countryside Council for Wales

Sian Whitehead, Cyngor Cefn Gwlad Cymru/Countryside Council for Wales Maes y Ffynnon, Penrhosgarnedd Bangor, Gwynedd LL57 2DW



BTCV

Ron Fern, Sedum House, Mallard Way Doncaster DN4 8DB



Kennel Club

Steve Jenkinson, PO Box 3715, Field End, Hope Valley, Derbyshire S33 8XZ



Fell Runners Association

Chris Knox, www.fellrunner.org.uk/committee.htm



RSPCA

Colin Booty, Wilberforce Way, Southwater Horsham, West Sussex RH13 9RS



The Royal Society for the Protection of Birds

Jeff Knott, The RSPB, UK Headquarters The Lodge, Sandy, Bedfordshire SG19 2DL