

Joint action plan to increase the English hen harrier population

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Introduction

Although the hen harrier was once found across upland and lowland Britain including throughout many English counties, after 1830 it became an exceptionally rare breeding bird in England¹. It was lost as a breeding species from the British mainland around 1900 with the lowest point between the 1920 and 1940s when there were estimated to be just 50 to 60 pairs present in the Orkneys.

Since then the population has seen some recovery spreading from the northern isles throughout Scotland. However, with the exception of a handful of birds, southerly range expansion has halted upon reaching the grouse-moors of northern England. The hen harrier has never re-established itself in the uplands of south-west Britain, or switched to lowland habitats that were utilised elsewhere within its range prior to the species' original decline. Hen harriers visit southern England in the winter months but do not breed there.

The hen harrier is listed on Annex 1 of the EC Birds Directive as it is considered vulnerable within Europe and is on the red-list of birds of conservation concern in the UK. It is a species of principal importance for biodiversity conservation in England under Section 41 of the Natural Environment and Rural Communities Act 2006.

The most recent full survey of UK population was carried out in 2010² and found 633 territorial pairs in the UK. This estimated 505 pairs in Scotland; 57 in Wales and 12 in England. It is reasonable to conclude that there should be more pairs in England than currently exist. A 2011 JNCC report³ which looked at the available habitat in England backed this conclusion.

In its document "*Biodiversity 2020: A strategy for England's wildlife and ecosystem services*" government set out Priority actions. "Take targeted action for the recovery of priority species, whose conservation is not delivered through wider habitat-based and ecosystem measures" is one of these and government considers that hen harriers merit additional action to reverse the decline in their population numbers.

Within its Upland Stakeholder Forum, government has set up a sub-group to look specifically at the issues surrounding hen harrier populations in England. The sub-group comprises organisations that are best placed to help drive actions forward for the hen harrier on the ground and who are committed to doing so. The sub-group comprises Defra, Game & Wildlife Conservation Trust, Moorland Association, National Gamekeepers Organisation, National Parks UK, Natural England and the RSPB. This Action Plan sets out a suite of actions which the sub-

¹ Birds in England; Brown and Grice 2005

² Hayhow, D. et al. In prep. Status of Hen Harrier in the UK and Isle of Man in 2010.

³ JNCC Report No: 441 A Conservation Framework for Hen Harriers in the United Kingdom Alan Fielding, Paul Haworth, Phil Whitfield, David McLeod and Helen Riley

group agrees can contribute to the recovery of the hen harrier population in England and sets out the period over which we expect to see outcomes delivered.

Success criteria

- The hen harrier has a self-sustaining and well dispersed breeding population in England across a range of habitats including a viable population present in the Special Protected Areas designated for hen harrier.
- The harrier population coexists with local business interests and its presence contributes to a thriving rural economy.

Summary table of actions

This table summarises, in chronological order, the measures that comprise the Action Plan. Further information about each project can be found in the sections that follow.

Action	Expected benefits	Timescales	Lead Organisation(s)
1. Monitoring of populations in England and UK			
<p>Continuation of monitoring of numbers of hen harriers in England.</p> <p>Satellite tagging of and tracking of hen harriers in England.</p>	<p>Direct: None</p> <p>Indirect: Adds to evidence base on population trends, movements and areas where on the ground recovery actions should be targeted.</p>	<p>Ongoing: NE has been monitoring hen harrier numbers since Spring 2002.</p> <p>NE has tagged and tracked birds since 2008, RSPB now do the tagging and intend to increase the number of birds tagged.</p>	<p>Natural England</p> <p>Royal Society for the Protection of Birds (RSPB)</p>
2. Diversionary feeding			
<p>Gamekeepers and shoot managers encouraged to follow 'best practice' by providing carrion as supplementary feeding for hen harriers, to substitute for more valued prey (e.g. grouse).</p>	<p>Direct: Ensures adequate provisioning of food for hen harriers so that they are less likely to prey on grouse during breeding and fledging season. Greater fledgling success has resulted from diversionary feeding in the Langholm Project.</p>	<p>Ongoing: Landowners are being encouraged to carry out diversionary feeding to mitigate predation and this will continue until it is accepted practice where predation is an issue.</p>	<p>Game and Wildlife Conservation Trust (GWCT)</p> <p>The Moorland Association (MA)</p> <p>The National Gamekeepers'</p>

	Indirect: Gradual shift in perceptions resulting from successful attempts at diversionary feeding leading to increasing acceptance that hen harriers and grouse can co-exist.		Organisation (NGO)
3. Work with Raptor Persecution Priority Delivery Group (RPPDG) to analyse monitoring information and build intelligence picture			
The RPPDG will provide advice on the most effective enforcement and deterrent measures to protect hen harriers, and supply analyses of intelligence received regarding reported incidents of persecution.	Direct: Increased awareness of any hotspots of illegal activity may allow better preventative measures to be taken at specific sites. Indirect: Publicity surrounding successful enforcement demonstrates zero tolerance of illegal activity.	Ongoing: The RPPDG have been publishing information on raptor poisoning since Feb 2013 and this is updated annually. The hen harrier is a species the RPPDG will continue to give priority to in its work.	Sub-group members who sit on RPPDG
4. Nest and winter roost protection			
Nests are monitored so that action can be taken where appropriate to protect them from disturbance and destruction, and to identify provisioning problems. Winter roosts are identified and monitored so that action can be taken where appropriate to protect them from persecution.	Direct: Should assist in prevention of illegal persecution, and deter would-be offenders. Indirect: People's support of the project sees them engage more widely on plight of harrier.	1 to 2 years for initial impact then increasing	Natural England (and partners, including volunteers, wildlife crime officers as appropriate)

5. Southern reintroduction			
<p>Reintroduce additional hen harriers to suitable upland or lowland habitat in Southern England with the aim of securing a stable, self-sufficient population with the potential to expand its range.</p> <p>Undertake stakeholder engagement to engender acceptance of the project; negotiate with landowners and source hen harriers.</p>	<p>Direct: Introduces individual birds to unoccupied habitat where they can establish a stronghold and expand their range.</p> <p>Indirect: Greater visibility of the species in areas where it is not usually found leads to increases in (a) appreciation of the species; (b) awareness of the plight of the harrier; (c) public support of the project and wider Action Plan; (d) deterrence to would-be offenders.</p>	<p>Project 1: Stakeholder engagement (2yrs)</p> <p>Project 2: Reintroduction(4yrs)</p>	<p>Natural England</p>
6. Trial brood management scheme			
<p>The Environment Council Hen Harrier Dialogue commissioned research to model how many harriers could live alongside grouse before their predation impacted on grouse numbers. Data was used to estimate a threshold at which economic impact is likely to be caused on a moor and where intervention could improve economic viability.</p> <p>This further phase of the project would</p>	<p>Direct: Confidence for grouse moor managers to allow birds to settle in the knowledge that impacts can be managed and bird populations can begin to grow. Introduces individual birds to unoccupied habitat where they can establish a stronghold and expand their range.</p> <p>Indirect: Greater visibility of the species in areas where it is not</p>	<p>Project 3: Further scoping of the trial required to work up the detail of a trial brood management scheme, fully scoping out its aims, its legal status, and the finer detail of how a trial would work on the ground. Make clear population thresholds at which a trial might commence.</p>	<p>Project 3: Scoping of second phase: Natural England to lead with MA, GWCT and others.</p>

<p>see testing of interventions made based on the modelling to remove harriers to rearing pens and later reintroduce them.</p>	<p>usually found leads to increases in (a) appreciation of the species; (b) awareness of the plight of the harrier; (c) public support of the project and wider Action Plan; (d) deterrence to would-be offenders.</p>	<p>Project 4: Undertake and evaluate a field trial to test the conclusions of project 3. Estimated 5-10 years.</p>	<p>Project 4: To be agreed</p>
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Further information

Action 1: Monitoring of populations in England and UK

NE currently undertakes the following monitoring work on English hen harriers:

- Fieldwork to locate breeding attempts using volunteers and collation of information on hen harrier activity in the breeding season from raptor workers
- Tagging of nestlings and remote monitoring work to gain information about movements, habitat use and threats
- Fieldwork to locate winter roosts using volunteers and collation of data from raptor workers.

Satellite tagging can be used as a tool to track movement of harriers. Tags will continue to be fitted to nestling harriers in the core project area of Northern England and Southern and Eastern Scotland (birds are only tagged in Scotland with the consent of the Scottish authorities).

In addition, to maximise the amount of data available, tags will start being fitted to those nestlings from other areas that are likely to winter in the core area or move through it. The tags, reinforced by targeted field surveys, can greatly improve our understanding of harrier movements and the location and importance of dispersal corridors and winter roost sites across the project area. Hen harriers roost communally in winter; persecution at roost sites (and away from breeding sites more generally) is suspected to be an important factor in their ongoing decline.

These additional data will help to determine the frequency, circumstances and nature of persecution incidents, as well as enabling the collection of evidence to support enforcement actions. Where appropriate, data will support the use of targeted protection measures at key sites.

The Uplands Hen Harrier sub-group endorses the principles of access to land available under the Countryside and Rights of Way Act 2000 and notes that strict protocols and licence conditions have been put in place in order to ensure that birds are not adversely impacted by disturbance during monitoring visits.

Costs: Current satellite tags are approximately £3.5k per unit. NE and RSPB already have access to the software for receiving the transmitted data. RSPB has been awarded a LIFE+ grant for satellite tagging of hen harriers.

Action 2: Diversionary feeding

Diversionary feeding means providing alternative food sources to predators with the aim of diverting them away from a more valued food source (e.g. gamebirds) which they might otherwise take.

Following the positive findings of a field study undertaken in the late 1990's⁴, diversionary feeding has been used extensively in the Langholm Project in Scotland. There, what is essentially a bird table for hen harriers has been used to provide, during the nesting period, an alternative food source so that they take fewer grouse chicks. Costs of diversionary feeding during the study were calculated to be approximately £900 per harrier nest.

To ensure there are no obstacles preventing diversionary feeding from occurring where it will provide benefits, NE has issued class licence WML-CL25 to permit the diversionary feeding of hen harrier on grouse moors in specified counties in northern England. A practical guide to diversionary feeding is annexed to this licence, which can be found here: http://www.naturalengland.org.uk/Images/wml-cl25_tcm6-35969.pdf

Costs: Currently estimated to be £1150 per year per hen harrier brood provisioned for.

Action 3: Work with Raptor Persecution Priority Delivery Group (RPPDG) to analyse monitoring information and build intelligence picture

Raptor persecution is one of the UK's six wildlife crime priorities, and the hen harrier is one of 6 species meriting special attention. Each priority has a delivery group which considers what action should be taken to prevent crime, gather intelligence on offences and enforce against it. The Hen Harrier Subgroup will work with the RPPDG to share intelligence on suspicious activity at nest sites and winter roosts and to seek advice on how to provide sufficient protection to reintroduced populations.

Maps showing confirmed cases of raptor poisoning are published annually, along with a protocol for gathering and using the information⁵. The RPPDG will work on further datasets which it considers will be of use in highlighting and preventing different types of raptor persecution incidents and those other crimes which have the potential to harm raptors.

Costs: No additional costs are expected. Work here should be able to be taken forward as part of the programme of work the NWCU currently undertakes from its government

⁴ Does supplementary feeding reduce predation of red grouse by hen harriers?; Redpath, S.M., Thirgood, S.J. and Leckie F.M. (2001)

⁵ <https://www.gov.uk/government/publications/bird-of-prey-poisoning>

funding to deliver against the priorities; sub-group organisations involved include Defra, NE, MA, and NGO – all pay their own costs in attending the RPPDG.

Action 4: Nest and winter roost protection

Nest protection:

The hen harrier is a ground nesting bird and its nests and eggs are vulnerable to both disturbance and destruction. Once it is known harriers have nested, land owners and Natural England will work together to monitor nest activity and intervene as necessary. It may be appropriate for raptor groups and other volunteer bodies to assist in monitoring action. This type of co-operation has already been used successfully and needs to continue following the protocol that is already in place for this work.

It is possible to monitor activity at nests by direct observation and use of CCTV/ time lapse cameras. This could provide:

- understanding of the birds' behaviour at the nest
- evidence of any unwanted activity by third parties at nest sites or of natural impacts on nesting success
- assist in taking enforcement action against perpetrators
- assessment at an early stage of any provisioning problems.

Furthermore, footage of these rare and valued birds of prey could help engage the public, if it was provided to nature documentaries such as Springwatch, or perhaps made available online.

Winter roost protection:

Hen harriers are known to congregate around particular roost sites in winter; this makes them vulnerable to targeting for persecution. The satellite tagging described in Action 1 above, and data from raptor workers will provide information on the location of roost sites. Working with the NWCU through the intelligence picture built at Action 3 decisions can then be taken as to whether any action is required to protect them.

Other organisations such Areas of Outstanding Natural Beauty, National Parks UK and Raptor Groups should be able to support any necessary action in the field both at nest and roost sites. The Raptor Persecution Priority Delivery Group will be tasked to help drive forward necessary action.

Costs: Funding is provided to NE, the NWCU, AONBs, and National Parks UK from central government which means these tasks should be absorbed in the normal course of

business. CCTV costs are estimated to be in the region of £5,000 per unit. Time-lapse motion detector cameras retail at £150 per unit.

Action 5: Southern reintroduction

A scoping project⁶ has assessed the feasibility of reintroducing hen harriers to southern England. The project has identified potential release sites, based on habitat requirements of hen harriers and the availability of suitable prey. Each site has been assessed for its feasibility according to IUCN (1998) guidelines. To ensure any reintroduced birds are given the best chances of populating these areas, birds will be sourced from populations adapted to surviving in habitats similar to those where they would be released.

The reintroduction will be delivered as two distinct projects:

- i. The first project will involve selecting suitable release sites from those identified in the feasibility study, obtaining permission from landowners, getting them and the local communities to buy-in to the project; seeking appropriate funding for the second project and sourcing birds.
- ii. The second project will implement the reintroduction and follow up monitoring. This is anticipated to run for several years.

Costs: It is estimated that the preparatory first stage will cost approximately £74k, while the actual reintroduction will cost approximately £441k – an estimated total of **£515k**. These estimates are based on birds being released at two release sites, which is the scoping project's favoured option, to provide the birds the best chance of settling sufficiently to become self-sustaining. The final costs will be influenced by a number of factors such as the source of the donor stock, the number and location of release sites, and the extent to which novel technologies are employed.

Action 6: Trialling a Brood Management Scheme

A brood management scheme is a relatively simple idea, based on an idea put forward by Potts (1998) and developed around the approach used for harriers breeding in crops in continental Europe. Research has shown that high densities of breeding harriers can threaten the viability of driven grouse moors. The aim of a brood management scheme would be to remove harrier broods from driven grouse moors once breeding numbers had reached a density at which they would impact significantly on grouse numbers. Research has already been undertaken, commissioned by the Environment Council Hen Harrier

⁶ (Awaiting publication) The Feasibility of Translocating Hen Harriers to Southern England, and Prioritisation of Potential Translocation Sites and Strategies; Hodgson, Schuett, Redpath, Palmer, Saunders 2012

Dialogue⁷, to model the impact of different hen harrier numbers on grouse populations. The trial would use the densities determined in *Elston et al's* modelling work to assess whether Brood Management as an intervention, is likely to improve the numbers of harriers present in the uplands while protecting the economic viability of the moor.

A trial scheme (licenced under Section 16(1)(a) of the Wildlife and Countryside Act 1981 for scientific, research or educational purposes) would be open to driven grouse moors that had brood numbers in excess of the modelled densities and would run for a minimum of 5 years. An agreed threshold, based on independently derived, objective criteria, and agreed by main stakeholders, would be set for contiguous groups of estates. When harrier numbers within estates increased above the density determined by *Elston et al*, their eggs or broods could be moved to a rearing facility away from managed moorland. Young would be reared in pens (in heather habitat) until fledging, whereupon they would re-join the wild population. There is absolutely no lethal control involved. During the trial, young harriers would be fitted with satellite tags to measure movements and survival. If the trial scheme is successful, it would be available as an ongoing tool for grouse moors to conserve hen harriers, to be used under licence from Natural England.

Work on a trial Brood Management Scheme will be delivered as two distinct projects:

- i. The first will involve a small group to include scientists, raptor experts and NGOs, who will scope out the detail of the proposal, and its practicalities, liaise with landowners and the local communities; and seek appropriate permissions and funding for the second project.
- ii. The second project will implement a field trial to test the conclusions of part i) and help understand the practicalities of a brood management scheme and evaluate its contribution in delivering more hen harriers to the Northern uplands. The trial is anticipated to run for 5 years.

Costs: Estimated costs are £875k over the five years of the trial.

⁷ Working with stakeholders to reduce conflict – modelling the impact of varying hen harrier *Circus cyaneus* densities on red grouse *Lagopus lagopus* populations : Elston, Spezia, Baines and Redpath 2014



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