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To: [Cooke, Rob](#); [Jowitt, Adrian \(NE\) \(Adrian.Jowitt@naturalengland.org.uk\)](#); [REDACTED]; [Appleton, David](#); [REDACTED]; [Saunders, Richard](#)
Subject: Agenda and paper for hen harrier reintroduction project group meeting at 12:00, 27th April
Date: 23 April 2020 10:06:00
Attachments: [Hen Harrier Conservation Breeding Proposal 2020v.2.docx](#)

Dear All,

Please find below an agenda and paper for our meeting on the 27th April.

To aid discussion, it would be useful if you can have a quick read through the paper prior to the meeting.

Look forward to speaking to you on Monday.

Best wishes,

Simon

Agenda

Brief synopsis of current position – SL

Conservation breeding programme (see attached proposal) – SL, All

Project governance – [REDACTED], DA

Project group membership and roles – SL, All

Agreed actions - DA

Chair: David Appleton

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Hen Harrier Reintroduction

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We are here to secure a healthy natural environment for people to enjoy, where wildlife is protected and England's traditional landscapes are safeguarded for future generations.

In an effort to reduce Natural England's carbon footprint, I will, wherever possible, avoid travelling to meetings and attend via audio, video or web conferencing.

Attachment

Hen Harrier Conservation Breeding Programme

Why a conservation breeding programme?

This could overcome ongoing uncertainty in securing permissions to collect stock from the wild in Europe. The COVID19 pandemic has illustrated the vulnerability of sole reliance on sourcing from abroad, which may always be subject to the vagaries of ecological stochasticity, third party interventions and other events beyond our control. Early confidential discussions with close partners in France and Spain has indicated strong support for pursuit of such a programme. Indeed, greater project autonomy may in itself help unlock political and conservation support in Europe for limited extraction of wild donor stock to augment the reintroduction, as illustrated by the initial verbal feedback from the Junta de Castilla y Leon.

Historically conservation breeding projects have experienced low success rates because typically they have involved critically endangered species with low reproductive rates and poor genetic heterogeneity, reducing long-term viability. However the European meta-population of hen harriers is sufficiently large to facilitate regular genetic supplementation from wild stock, if required. Furthermore it is highly likely that released birds and their progeny will encounter and breed with conspecifics in the wild over time. These factors combined with young sexual maturity and relatively high reproductive rates of hen harriers mitigate this issue, significantly increasing overall viability of the reintroduction.

The lack of documented experience and availability of an easily replicable methodology for captive breeding of hen harriers does necessitate the development of such techniques, potentially impacting the timescale at which successful first breeding is achieved. There is also a risk that suitable breeding stock is not found in an acceptable timeframe. That said, many effective raptor conservation breeding programmes have started from a similar position. There is also considerable wider avian breeding expertise to draw upon. And as the hen harrier is an extremely well-studied species, much is already known about their breeding biology and likely reproductive requirements in captivity.

All-year in-situ presence of hen harriers and breeding programme activity may well elicit further tangible benefits to the reintroduction through enhanced public engagement, practical conservation demonstration and applied research.

Outline

This is a breeding programme of captive birds specifically to produce progeny for release into the wild to expedite the reintroduction. Numbers of breeding pairs required in a given programme depend on the ultimate aim, age of sexual maturity and typical annual productivity of the species concerned.

As hen harriers breed at 1-2 years of age and normally produce clutches of 5-6 eggs, relatively few pairs can quickly provide an ample number of juveniles for reintroduction. For example, 5 pairs could produce c. 20 young for release annually, bearing in mind that not all pairs may breed in any one year. 10 individuals also facilitates rotation of breeding partners to lessen pair-

bonding issues and increase genetic diversity. Clutches can also be part cross-fostered so that pairs with fertile eggs can rear a portion of pairs with infertile eggs, and vice versa. This strengthens pair bonds, encouraging birds to breed more readily in future.

As hen harriers are generally nervous birds, a conservation breeding programme is most likely to be successful if operated from a quiet (non-public) location, like Parsonage Farm. Hosting the programme here will also minimise transport-related stress during releases and maximise the biological tendency to return to their natal area.

Recommendation

To establish a conservation breeding programme based at Parsonage Farm using rehabilitated adult birds from the continent to generate a minimum core for release, alongside continued pursuit of wild donor stock to augment the reintroduction.

Programme details

Provenance of breeding stock

All over the world raptors incur injuries in the wild. The ICBP alone receives over 70 injured wild birds of prey each year, even though it's not a dedicated wildlife rescue centre. The aim of centres is always to rehabilitate injured birds for eventual return to the wild. Sadly this figure is typically less than 50%, meaning the remainder are permanently disabled and usually euthanised due to limited space and funds. But disabled individuals with the ability to lead an acceptable and useful life in captivity can be utilised for conservation breeding programmes, generating progeny that will return to the wild.

Abundance and/or exposure to particular hazards in a given region will dictate which species are most frequently received at rescue centres. For example, common buzzards with road traffic-related injuries are most prevalent in the UK. Where hen harriers are common, they will be injured and potentially be taken to local rehabilitation centres. But because hen harriers occupy remote regions of Britain, injured individuals are not found and so rarely appear in wildlife rehabilitation centres (although any received are potential candidates). And as they are not a favoured species for falconry or display, they are not kept in captivity as part of private collections, bird of prey centres or zoos in the UK.

The largest breeding populations of hen harrier in nearby continental Europe are within France and northern Spain. Here they predominantly nest in cereal crops where they are exposed to harvesting operations. This specific hazard has generated the need for widespread protection programmes and perversely increases the likelihood of injured birds being found and taken to wildlife rescue centres. Our study visits, published literature and personal communications with collaborators in France and Spain confirm annual presence of disabled birds residing in rescue centres and logistical support for their use in a conservation breeding programme in England. It is also true to say that the majority of rehabilitation centres will be delighted to find a suitable home for birds unfit for re-release.

A further option, separately or combined with the above, is a one-off collection of ecologically surplus chicks from wild nests in the England i.e. extracting 1-2 of the youngest from larger clutches that would normally perish. The context here is that NE recently licensed the collection of 6 peregrine falcon chicks from the wild for use in a captive breeding programme to supply birds for falconry purposes, using the same protocol.

<https://naturalengland.blog.gov.uk/2020/04/16/natural-england-issues-licences-for-taking-peregrine-falcons-from-the-wild-for-falconry/>

Validation of candidate stock

Any potential rehabilitated stock will be physically compromised in some way. Suitable candidates are those possessing part wing, single eye or leg injuries but still retain sufficient locomotion and balance to undertake near normal activities and social interactions, and crucially be able to breed. From a welfare perspective, injuries should not prevent individuals from leading an acceptable quality of life in captivity. Adult birds that have already bred in the wild are more likely to reproduce the following year in captivity. Sexing hen harriers is straightforward, especially in adult plumage, due to iris colour and reversed size dimorphism. To ensure suitability of any stock offered, it is essential that all birds are initially validated by a suitably experienced member of ICBP staff. Approved candidates will then be subject to a full veterinary inspection before transportation as a requirement of an export license.

Breeding aviaries

It is important to plan for success, and that means more space and more aviaries than might be initially envisaged. Individual aviary design needs to cater for all-year round adult use and successful breeding, including sufficient room for 5-6 young to be reared and fledge alongside their parents. Therefore the initial plan would be to install 10 aviaries, each housing a single pair of breeding birds. Keeping birds in the same area for long periods can cause the build-up of pathogens and parasites, so having double the number of identical aviaries facilitates regular rotation, with minimal stress associated with movement. Unoccupied aviaries can also act as isolation or hospital units for any sick or recovering birds.

Aviaries to be located at Parsonage Farm, well away from human disturbance and where there is an existing capability for remote monitoring via the CCTV system, which can be relayed externally to specialist advisors and veterinarians, if required.

Increasing production

It is recommended that first breeding and rearing is allowed to take place entirely by the parent birds with minimal intervention. In subsequent seasons, methods to increase productivity may be considered. The best and easiest way to do this is to double clutch selected breeding pairs. This involves removing the entire clutch at 10 days after the last egg is laid. This replicates a natural predation event where birds will usually be prompted to lay a replacement clutch, encouraged by good body condition and food supply. The parent birds are left to hatch and rear the second clutch, while the first clutch is reared by the project team.

Staffing and infrastructure costs

Parsonage Farm has a number of large modern livestock houses, now redundant due to recent changes in NNR stocking management. It is anticipated that sections of these buildings can be easily and cheaply re-purposed as the core facility for the breeding programme. Existing reintroduction release pens coupled with a small number of temporary netted poly tunnel aviaries can increase capacity for the release period, if required. Therefore capital costs of the additional infrastructure is estimated to be c£35K.

Daily inspection, cleaning and feeding of breeding birds has an associated uplift in staffing costs. However routine bird care does not warrant a full-time role and so can be rostered into the duties of existing project staff, supplemented by occasional support from NNR staff and appropriately trained volunteers. NE has also just entered into a 5 year collaboration with BASC leveraging a contribution minimum of £10k per annum, which will cover the majority of the expected additional staff costs.

Permissions and regulations

In relation to using breeding rehabilitated stock from the continent, the following permissions will be required:

- Agreement directly from centre managers.
- Standard import and export licenses for movement of non-commercial animals.
- NE license to release captive bred progeny into the wild.
- Breeding facilities to conform to APHA regulations.

Indicative key stages

Year	Period	Activity
2020	May-July	Orchestration of initial search for candidate breeding stock
	May-June	Commission any specialist advice and contractors, order aviary materials and acquisition of import and export licenses
	July-Sept	Build breeding aviaries at Parsonage
	Sept-Oct	Importation of breeding stock
2021	April	Further search for candidate breeding stock and acquisition of import and export licenses, if required
	April-July	Possible first breeding and release of limited number of progeny
	June-July	Potential collection of limited number of wild progeny to augment reintroduction
	Aug-Oct	Importation of further breeding stock, if required
2022	April-July	Possible second breeding and release of larger number of progeny
	June-July	Potential collection of limited number of wild progeny to augment reintroduction
2023 onwards the reintroduction is operating at full capacity, subject to annual review and success criteria		