

Hen Harrier Southern Reintroduction Project – Assessment against IUCN Guidelines

1.0 Introduction

1.1 Policy context

The case for species translocations derives largely from the 1992 Convention on Biological Diversity (known as the Biodiversity Convention) signed at the 'Earth Summit' in Rio de Janeiro. Article 9(c) necessitates contracting parties, including the UK to 'Adopt measures for the recovery and rehabilitation of threatened species and for their reintroduction into their natural habitats under appropriate circumstances' (CoBD 1992). 'Biodiversity - The UK Action Plan' was published in 1994 in direct response to the Rio Earth Summit. Stemming from target 36 of that Plan, the Joint Nature Conservation Committee (JNCC) published their 'Policy for Conservation Translocations in Britain' in 2003 (JNCC 2003) based on the original 1995 International Union for Conservation of Nature (IUCN) Guidelines for Re-introductions. Later UK legislation, the Natural Environment and Rural Communities Act 2006, requires that public bodies in England must have regard to conserving biodiversity which includes 'restoring or enhancing a population or habitat' (section 40(3)) and that Government departments to have *particular* regard the Biodiversity Convention (Section 40 (2)).

The IUCN published their updated Guidelines for Reintroductions and other Conservation Translocations (the 'Guidelines') in 2013 (IUCN 2013). These guidelines are now internationally recognised best practice for conservation reintroductions and translocations. They are beginning to be adopted by the UK statutory and some non-governmental (NGO) conservation bodies. For example, the Scottish Code and Best Practice Guidelines (SNH 2014), produced by the National Species Reintroduction Forum, was based on the IUCN Guidelines.

2.0 IUCN Assessment

2.1 Scope and definitions

This part of the document constitutes the formal assessment of the Project against the Guidelines and represents a distillation of the major ecological and socio-economic themes only. Therefore, close reference should also be made to the Project Plan and feasibility study (Hodgson et al. 2010) which provide additional detail in respect of planning, reporting and communications as well as more logistical and administrative considerations required by the Guidelines.

Themes, expressed as headings, have been compiled from the IUCN assessments for the white-tailed eagle *Haliaeetus albicilla* into England in Suffolk 1996 and Isle of Wight 2019, the osprey *Pandion haliaetus* in the Poole Harbour Osprey Conservation Recovery Project (Birds of Poole Harbour 2017) and the golden eagle *Aquila chrysaetos* reinforcement project in southern Scotland.

Using the Guidelines definitions, it is important to note that the conservation translocation of hen harriers in the Southern Reintroduction Project is considered to be a *population restoration* intended to establish a viable population by means of *reintroduction* within its

indigenous range in southern England, from which it has disappeared as a breeding population.

2.2 Consideration of alternatives

The IUCN Guidelines require that all alternatives must first be considered prior to initiating any translocation. The Defra Action Plan (Defra 2016) sets out the principal conservation options available for the recovery of the hen harrier population in England, including the southern reintroduction. As at the time of writing these are all being enacted, the only remaining alternative is the 'Do Nothing' approach i.e. relying on natural processes to drive recolonisation of the viable historic breeding range. So we explore this option here.

Well documented anthropogenic losses associated with the management of driven grouse shoots (Etheridge et al. 1997, Thirgood & Redpath 2008, Fielding et al. 2011, Thompson et al. 2016) have led to the near extinction of the hen harrier population in northern England, as confirmed by census data (Smith & NERF 2016, Wotton et al. 2018) and analysis of satellite telemetry (Murgatroyd et al. 2019). Although 2018 and 2019 saw small increases in numbers of breeding pairs and successful fledging (Natural England 2019a), persistent illegal persecution in the north continues to depress adult and juvenile survival such that reproductive rates are well-below those required to sustain population growth, let alone drive natural range expansion.

In common with many raptor species, hen harriers exhibit strong natal philopatry, which is the 'hard-wired' biological tendency to return to breed near their place of birth (Watson 1977; Simmons 2000). Typical natal dispersal distances and other demographic factors (such as high juvenile mortality and density dependent productivity) coupled with the 'habitat learning' required to transition from upland to lowland habitats, dictate that the speed of natural colonisation across the whole of England would likely be very slow, perhaps in the order of many decades (Watson and Thirgood 2001, Whitfield and Fielding 2009). Natal philopatry and density dependent productivity rates were the motivating factors for establishing multiple release locations to improve range expansion in the red kite reintroduction programme (Carter 2007).

Therefore, Natural England considers that the 'Do Nothing' approach is highly unlikely to facilitate the natural recolonisation of the former breeding range across lowland England in the foreseeable future.

2.3 Ecological feasibility

2.3.1 Good evidence of former natural occurrence

Uncovering the historic status of any species can be problematic simply because of the lack of systematic recording and documentation, especially prior to the 19th Century (BTO 2019). Early accounts of raptors, often contained in Church, Parish or estate game keeper records, are more usually lists of 'vermin' taken in any given season. Also, species' nomenclature varied considerably and misidentification was frequent. For example, male hen and Montagu's harriers *Circus pygargus* were grouped as 'ashen' harriers, while female hen harriers were thought to be an entirely different species. Dr William Turner in his 'Avium Praecipuarum...' published in 1544 provides the first proper written description of the hen

harrier. But it wasn't until 1802, through studies in his native Devon, that the naturalist George Montagu formally separated the two species in his pioneering Ornithological Dictionary.

Donald Watson undertook an extremely thorough evaluation of the historic status of hen harriers, stating there "...is evidence that they were already well-known in the 16th Century... with a widespread population up to 1825" (Watson 1977). He maps breeding across most of southern England at this time. He documents a severe range contraction by 1865, with only rare breeding in the south of England and virtual extinction across the whole UK by the end of the 19th Century. Thereafter, there were only a handful of known breeding attempts in the UK; mainly on Orkney and the Outer Hebrides until around 1975 when breeding started to recover in earnest in Scotland, Ireland and northern England. At this time, harriers also began to winter again in southern England, indicating the likely provenance of these birds from the north of the UK (Watson 1977, Fergusson-Lees et al. 2007, Dobson et al. 2012,).

In 'Birds of Wiltshire', the editorial board also examined the question of historic status in Wiltshire and surrounding counties in some detail, confirming evidence of breeding across a range of locations and habitats prior to the 20th Century (Fergusson-Lees et al. 2007). They too consider misidentification with Montagu's harrier, but it is clear that records of nesting in woodland clearings, scrub, heath or gorse can only be of hen harriers because Montagu's harrier have a strong preference for low vegetation in very open landscapes (Cormier et al. 2010), choosing to nest well away from hedges and trees (A. Millon, pers. comm.). Salisbury Plain appears to have been a key area for breeding and wintering birds historically, with some of the last known nesting records coming from just south of Market Lavington and Urchfont. For instance, the Rev AC Smith in his comprehensive 1887 'The Birds of Wiltshire' wrote "Not many years since this species used to breed regularly on Salisbury Plain.." and "Mr Stratton often saw them on the downs above Lavington, and thought it probable they bred every year in gorse above him.." (quotes in Fergusson-Lees et al. 2007). There are occasional and mostly unsubstantiated breeding records from Salisbury Plain and Wiltshire border in the 20th Century. More recently a few attempts in lowland England have occurred, including on Salisbury Plain in 2003 (and may have bred 2002-5) with a pair choosing to nest in newly cleared hazel coppice (P. Castle, pers. comm.).

2.3.2 Original causes of extinction are known

The reasons behind the historic declines and extinction in the UK are well documented (Etheridge et al. 1997; Potts 1998; Sim et al. 2007; Fielding et al. 2011; Hayhow et al. 2013) and relate to a combination of systematic human persecution and widespread losses of semi-natural habitat (Watson 1977). In terms of the latter, implementation of the various Enclosures Acts in the 16th, 17th and 18th Centuries caused a seismic shift from communal to private ownership, bringing into agricultural production once huge tracts of contiguous semi-natural habitats held as common land. Remaining suitable habitats were further degraded and fragmented by agricultural intensification and specialisation in the 19th and early 20th Centuries. But perhaps most significantly, the above processes drove a wholesale cultural intolerance of virtually all predatory species of bird and mammal, resulting in their eradication from large areas of the UK.

2.3.3 Causes of extinction are no longer present

The UK has witnessed population recovery in many species of raptor over the last four decades or so. The improved situation is in part due to the prohibition of many environmentally persistent pesticides such as the organochlorine group, but is also correlated with the introduction of strengthened domestic and international legislation to protect species and habitats. Improved wildlife crime surveillance has also improved knowledge of the level and distribution of anthropogenic losses. The Raptor Persecution Priority Delivery Group published maps of confirmed shootings, trappings, poisonings and nest destructions that took place across England & Wales between 2011 and 2015 (RPPDG 2019). Of a total of 262 recorded incidents in England and Wales during that period, most incidents were reported from North Yorkshire, followed sequentially by Norfolk, Cumbria, Derbyshire, Lincolnshire, Suffolk and Northumberland. The RSPB also publishes maps of recorded incidents that show a similar geographical pattern (RSPB

We know that illegal killing of raptors persists in the northern uplands of the UK (Murgatroyd et al. 2019). However, away from grouse moors in Wales and southern English counties, the recorded incidence and threat of persecution is significantly lower. This situation and suitability of the environment in southern England is perhaps best exemplified by the staggering success of the red kite reintroduction programme. Since 1992, when the first released birds bred in the Chiltern Hills (Carter 2007), the English population has risen to an estimated 5000 breeding pairs (I. Carter, pers. comm.). Such rapid population growth can only occur when productivity, recruitment and survival rates are high, even though the species is particularly exposed to poisoning and targeted persecution due to their scavenging behaviour and tendency to associate with human settlements. In stark contrast, the red kite translocation programme in Scotland has experienced poor population growth as a result of much greater levels of persecution (Carter et al., 2008).

The hen harrier reintroduction will be based at Parsonage Farm National Nature Reserve (NNR) in the heart of the Wiltshire countryside, which is an area with very low recorded raptor persecution and good numbers of wintering harriers. The Project aims to establish a farmland breeding population centred on the extensive foraging grounds of Salisbury Plain, which is a Special Protection Area (SPA), Special Area of Conservation (SAC), a Site of Special Scientific Interest (SSSI) and is owned and operated as a training area by the Ministry of Defence (MOD). Ringing and recent satellite tracking data from Europe partial-migratory behaviour with some individuals migrating to more southerly latitudes while others remain on their breeding grounds during the winter (NE 2019a). Consequently it is reasonable to assume that the spatial movements of translocated individuals will be similar. That said, the residual risk of an individual roaming into northern upland areas cannot be ruled out entirely, but the incidence levels will be low and/or ephemeral and therefore highly unlikely to impact on the success of reintroduction.

2.3.4 Suitable supporting habitat

In the UK, hen harriers are strongly associated with moorlands, which has led to a popular misconception the species is an obligate upland specialist. However, in continental Europe the majority of hen harrier, and Montagu's, now breed and forage in lowland arable farmland (e.g. Arroyo & Garcia 2007; Millon & Bretagnolle 2004a). This is also the growing trend for marsh harriers, including in the UK (Underhill-Day 1998). And even historically,

there is some evidence of past use of farmland with the naturalist Gilbert White and poet John Clare observing hen harriers hunting over corn fields, although it is not clear to what extent they bred in cereal crops or indeed were confused with Montagu's (Watson 1977).

Hen harriers are generalist predators of small birds and mammals, preferring open landscapes with variable height vegetation in which to breed and roost. Nest site selection is based on height and density rather than type of vegetation or crop (A. Millon, pers. comm.). Although intensive arable farmland may appear poor habitat it provides suitable cover for nest sites and prey in the wider landscape for foraging. In Europe breeding densities are generally higher than those in moorland habitats in the UK. For example densities of 7/100 km² in arable in France (Millon & Bretagnolle 2004b) compares to 2.0/100 km² in Scotland (Wotton et al 2018), although localised densities in the UK and abroad can exceed these figures e.g. 5.3/100 km² on the Isle of Man or 19.76/100km² on Orkney (Wotton et al. 2018).

The Project aims to establish a crop nesting population, with much of southern England offering very extensive areas of arable 'pseudo-steppe' farmland directly comparable to those landscapes frequented by hen harriers on the continent. Furthermore, the chalk landscapes of southern English counties that hold much of our arable farmland, also support considerable areas of semi-natural grasslands which are rich in the favoured harrier diet of small birds and mammals. The Project feasibility study undertook detailed field survey and analysis, and confirmed the suitability of supporting habitat and food availability in the farmland landscapes of Wiltshire (Hodgson et al. 2010).

Parsonage Farm adjoins the most extensive area of chalk grassland in NW Europe, much of which is designated as the Salisbury Plain SPA/SAC, with wintering hen harriers being a designated SPA feature.

2.3.5 Taxonomic relatedness of donor and native populations

The hen harrier is a monotypic species, with a breeding and wintering range that extends throughout Europe and Asia, including the UK and potential donor countries (Robinson 2005). Ringing recoveries and satellite tracking studies demonstrate considerable movement and exchange across NW Europe (Robinson 2005; Natural England 2019a). A recent paper on harrier genetic phylogeny conclusively separated the hen harrier and northern harrier (of North America) as distinct species, where once the latter was thought to be a subspecies of the former (Oatley et al. 2015).

2.3.6 No impacts on donor population

The project feasibility study (Hodgson et al. 2010), scientific literature (e.g. Wolf et al. 1996, Morandini & Ferrer 2017) and acknowledged best practice for raptor translocations (R. Dennis, pers. comm.) suggest an optimal release strategy of at least 100 juveniles over a 4-6 year period (equating to 15-20 juveniles per annum) and therefore will represent the anticipated numbers of founding stock and likely duration of the translocation programme (see the Project Plan for more details).

The project proposes to source hen harriers from large populations in SW Europe, notably France and Spain. The last national censuses of hen harriers in these countries estimated a breeding population of 7,800-11,200 (Millon & Bretagnolle 2004b) and 370-600

(SEO/BirdLife 2018) breeding pairs respectively. On the face of it, sourcing all harriers from the countries with the greatest number of breeding pairs would negate any impact on the donor population. However, simple logistical restrictions such as human resources and the need for a central holding or rearing facility, dictate that collection can only happen at relatively small spatial scales. The key factor is to ensure that the process of collection does not have a detrimental effect locally, no matter the size of the meta-population.

A typical clutch size is 4-6 eggs (Robinson 2005), though pairs very rarely fledge more than 3 young (average 3.4 from Millon & Bretagnolle 2004a, in Spain 2.9 from Arroyo & García, 2007). As a rigid rule, collection would be from genuine surpluses only i.e. those individuals that wouldn't be expected to survive. Specifically the approach would take 1-2 chicks from larger clutches at an early stage in brood development, always leaving at least 3 of the oldest (most viable) chicks in each nest. Crucially this method will have no demographic effect on the donor population (A. Millon pers. comm.), and indeed may well improve fledging success of the remaining chicks through reduced sibling competition and parental provisioning pressure (R. Dennis, pers. comm.).

Even with the above approach and applying the precautionary principle, Natural England's expectation is to bring about an overall beneficial effect on any donor locations. At the time of writing, the preferred location of founding stock is from the arable landscapes of Castilla y Leon in central Spain, where the breeding population is known to be stable and increasing. Here there are a handful of active volunteer groups that undertake proactive 'campaigns' to protect nests from destruction during harvesting. Natural England proposes to deploy a team of field ecologists at key times to extend the search and protection of hen harrier nests (and other species such as Montagu's) into areas not currently covered by the local conservation groups. With more nests found and protected, adult survival and juvenile recruitment to the local population should be increased from current baseline levels.

2.3.7 No impact on priority native species

The release location is approximately 3km from the southern boundary of the Salisbury Plain SPA. The published Conservation Objectives for this SPA are provide advice about any assessment of effects on their special interest (Natural England 2019b). Natural England decided that the Conservation of Habitats and Species Regulations 2010 ("the Habitats Regulations", as amended) required an assessment of potential impacts of the Project on the SPA interest features, known as a Habitats Regulation Assessment (HRA). The University of Exeter were commissioned to undertake a 'Shadow Screening Report' to inform the HRA. This included a detailed literature review, expert consultation and demographic modelling (Jelbert et al. 2019). The final HRA (Natural England 2019c) has concluded that the release of hen harriers at Parsonage Farm will not have an effect on the integrity of Salisbury Plain SPA but includes recommendations for an adaptive management strategy linked to monitoring and new data (see 2.3.8 below).

Apart from the SPA features assessed in the HRA, Salisbury Plain SSSI also has a specific designated interest feature 'Assemblage of breeding bird species on lowland dry grassland' which could be affected by the Project. The known diet of hen harriers, reviewed from existing literature (Hodgson et al. 2010) includes some of the birds listed as part of the SSSI assemblage (Annex 1). Some of these are the small birds that form the bulk of a hen harrier

diet, perhaps equalling small mammals (Hodgson et al 2010: Table 6.1.2). The most common prey are likely to be skylark *Alauda arvensis* and meadow pipit *Anthus pratensis*, which are highly abundant across the Wiltshire landscape (Watson 1977, Wiltshire Ornithological Society 2019), particularly on Salisbury Plain (e.g. Thompson Ecology 2016) but are not in fact listed as part of this assemblage. Pellet analysis of hen harriers wintering on Salisbury Plain (Castle & Clarke 1995) suggests that skylarks are the dominant bird prey at this time of the year, with linnets and other small birds representing a greater percentage than gamebirds, which are only a very small component. It is difficult to predict predator effects on a diverse group of species with highly different abundances. On heather moorland Amar et al. (2003) did find a depressive effect of abundant hen harriers (c. 26 harrier pairs/100km²) on skylark densities. Yet typical indicative breeding densities of hen harriers in comparable arable farmland habitats in NE France (e.g. 5.3 pairs per 100km², Millon et al. 2002) are considerably less than this. At these densities, and with documented nest provisioning rates (Watson 1977 & Amar et al. 2003 &), hen harriers should have no population-level impact on their main prey species in the broader avifauna.

Of their small mammal prey, pellet analysis has shown that field vole *Microtus agrestis* is a common element of the diet and that rabbits *Oryctolagus cuniculus*, presumably young animals, can be important in spring (Castle & Clark 1995). Other species which may be taken are wood mouse and common mole *Talpa europaea*. All of these species are widely distributed on Salisbury Plain and in the surrounding area (Harris & Linham 2017) and are not rare or likely to be significantly affected by the hen harrier reintroduction. No animal listed as a European Protected Species in Annex IV of the Habitats Directive has been recorded as a prey item of hen harrier.

2.3.8 Ecological monitoring

A key principle which will be adopted here, as set out in the IUCN Guidelines, is to apply adaptive management to the Project. This means explicitly recognizing that there are levels of uncertainty in any decision and collecting the necessary information to facilitate re-evaluation of management (Canessa et al. 2016). The project will implement a comprehensive and detailed monitoring research programme, which will be primarily supported by the University of Exeter via two PhDs (one co-funded studentship and one self-funded) and a Science Advisory Group composed of international experts (see Project Plan).

The full programme is detailed in the Project Plan but the following outlines some of the key components:

- *Impacts on native fauna, including Salisbury Plain SPA features.* Baseline sampling of bird populations in the vicinity of Parsonage Down NNR and small mammals across Salisbury Plain began in summer 2018, in accordance with the methodologies used by Hodgson et al. (2010). This sampling will be repeated and evaluated at least biennially. A specific programme for SPA features will be developed with key experts and partners but will include hen harrier dietary analysis (DNA, pellet and nest cameras).
- *Post release monitoring of hen harriers.* All juveniles (and a sample of adults and juveniles from donor locations) will be satellite tagged to monitor their welfare and to evaluate spatial movements, behaviour and habitat use.

- *Disease Risk Analysis and post release health surveillance*. This will be undertaken by the Zoological Society of London as per the protocols set out in Sainsbury & Vaughan-Higgins (2012).
- *Demography*. Detailed data on productivity and survival rates to monitor the performance of the translocated hen harrier population.

2.4 Social feasibility

2.4.1 Stakeholder and public engagement

Since 2017 the Project team has conducted a programme of informal information and engagement with multiple stakeholder groups and individuals. The team took a simple geographic approach, contacting and meeting farmers, gamekeepers and estate managers within a radius of c. 10km from the introduction site at Parsonage Farm, then slowly expanding this area as time and opportunities arose. An open and inclusive approach was adopted from the outset, proactively arranging as many one to one conversations as possible, which has been generally appreciated by participants. The initial purposes were to share information, initiate discussions and to invite feedback on project proposals rather than conduct a formal consultative process. Events have also been organised, comprising either a guided visit to Parsonage Farm or presentations to interest groups and conferences. Table 1 provides a summary of all communications to date (as at December 2019). Overall, the Project Team regarded guided visits as the most effective vehicle for conveying key messages and holding constructive dialogue with stakeholders.

Feedback has been generally positive, with the majority of participants expressing support or at least neutrality towards the project. Where concerns have been expressed, these have centred on: a) the possible need for financial reparation for crop losses from arable nesting attempts, b) disturbance and/or chick predation on managed native grey partridge shoots, c) the possible effects of another predator on shoots, and d) increased presence and footfall from bird watchers. The project team is liaising with individual participants and/or stakeholder group representatives to proactively manage and mitigate any negative impacts associated with the reintroduction.

Ultimately the success of the reintroduction will be dependent on securing long-term interest and support from society. As local interest has grown in Wiltshire, it has thus become increasingly important to provide facilities and mechanisms to facilitate a deeper level of involvement in the project. To this end, the Project Team has grown the number of volunteers and University students actively engaged with the project, notably with biological surveys and data management to date. Furthermore, the Team has established a Local Advisory Board composed of representatives from sporting, farming and conservation interests in the vicinity of the release site, who will advocate and advise on communications and practical implementation of the reintroduction.

At a national level, the reintroduction is actively supported by key organisations such as the National Trust, Hawk and Owl Trust, Country Land and Business Association, National Farmers Union, British Association for Shooting and Conservation and National Game

Keepers Organisation, amongst many others. Representatives from many of these organisations sit on the national Project Steering Group or Local Advisory Board.

The project Communications Plan sets out the detailed strategy for proactive press and social media coverage. Some negative coverage is inevitable given the toxicity of the wider issue of anthropogenic persecution on grouse moors. Hence the Plan sets out the 'lines to take' and position for Press Teams in dealing with opposition to the reintroduction. Within this plan, Natural England also expresses longer-term ambitions to deliver a large-scale public engagement programme to connect the project with local schools and communities and the wider British population (please see Appendix 4 of the Project Plan).

The exit strategy in the Project Plan details the various scenarios which would necessitate the cessation of the reintroduction programme.

Table 1. Stakeholder participation and events

Participant categories	Number (individuals or events)
Farming and sporting	45
Nature conservation	77
Community and general interest	13
Events	
Guided walks or illustrated talks	17

2.4.2 Socio-ecological and socio-economic evaluation

As a measure of the overall performance of this project, and to inform other translocations in future, it is important to chart social attitudes prior, during and following completion of the translocation programme. In 2019, Natural England entered into a formal agreement with the University of Exeter to co-fund a PhD studentship specifically to study and publish findings on cultural attitudes, drivers and responses over the life of the reintroduction.

At this stage, it is difficult to fully assess the potential risks and benefits to the economy locally in Wiltshire. However, the Project Team is mindful and respectful of the concerns raised during the stakeholder engagement, especially where these may impact upon livelihoods and economic viability of legitimate sporting and farming operations. That said, it is hoped that the reintroduction will bring about benefits to the local economy, albeit likely on a relatively small-scale. For example, only local agricultural and building contractors have been used to develop the necessary site infrastructure and the planned externally-funded public engagement programme is likely to be delivered through a wider educational and conservation partnership in south Wiltshire. This partnership approach will ensure that the benefits flow to and become embedded in local communities, educational establishments and rural businesses.

3.0 Summary and conclusion

There is clear documentary evidence that hen harriers once bred commonly throughout England, and that historic causes of decline are no longer present in the south, where the

threat of targeted persecution is now extremely low. The stakeholder engagement programme shows a strong level of support from the majority of sporting, farming and conservation interests, at both local and national levels. The most likely provenance of active opposition will be from those who have a broader agenda to change the management of driven grouse shoots, not specifically the reintroduction itself.

Natural England is confident that extensive suitable farmland and supporting semi-natural habitats will sustain a large, healthy population. As hen harriers are monotypic throughout their range, there is no risk of genetic transgression or dilution. If, as proposed, founders are sympathetically sourced and Natural England engages in additional conservation measures, there should be no demographic risk to donor locations – indeed this intervention should be beneficial. Furthermore, the proposed reintroduction site is situated in a landscape with an abundant supply of food, which acts not only to support a self-sustaining harrier population but also serves to mitigate any impacts on high value native fauna.

Given the review of evidence above, Natural England concludes that the proposal to reintroduce hen harriers to southern England fulfils all of the requirements of the IUCN Guidelines for Reintroductions and other Conservation Translocations 2013. That said, all translocations should adapt to any new developments (positive and negative) and information gleaned from the monitoring programme and scientific literature. Therefore, the Project must take a flexible and responsive approach to management of the translocation programme.

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Annex 1 - List of species contributing to Salisbury Plain bird assemblage from review in Hodgson et al. 2010 (species in bold text have been recorded in the diet of hen harrier).

Blackcap-Sylvia atricapilla

Bullfinch-Pyrrhula pyrrhula

Chiffchaff-Phylloscopus collybita

Corn Bunting-Miliaria calandra

Cuckoo-Cuculus canorus

Garden Warbler-Sylvia borin

Goldcrest-Regulus regulus

Goldfinch-Carduelis carduelis

Grasshopper Warbler-Locustella naevia

Greenfinch-Carduelis chloris

Grey Partridge-Perdix perdix

Lapwing-Vanellus vanellus

Lesser Whitethroat-Sylvia curruca

Linnet-Carduelis cannabina

Long-eared Owl-Asio otus

Long-tailed Tit-Aegithalos caudatus

Nightingale-Luscinia megarhynchos

Quail-Coturnix coturnix

Red-legged partridge-Alectoris rufa

Reed Bunting-Emberiza schoeniclus

Short-eared Owl-Asio flammeus

Stonechat-Saxicola torquata

Stone-curlew-Burhinus oedicephalus

Tree Pipit-Anthus trivialis

Turtle Dove-Streptopelia turtur

Whinchat-Saxicola rubeta

Whitethroat-Sylvia communis