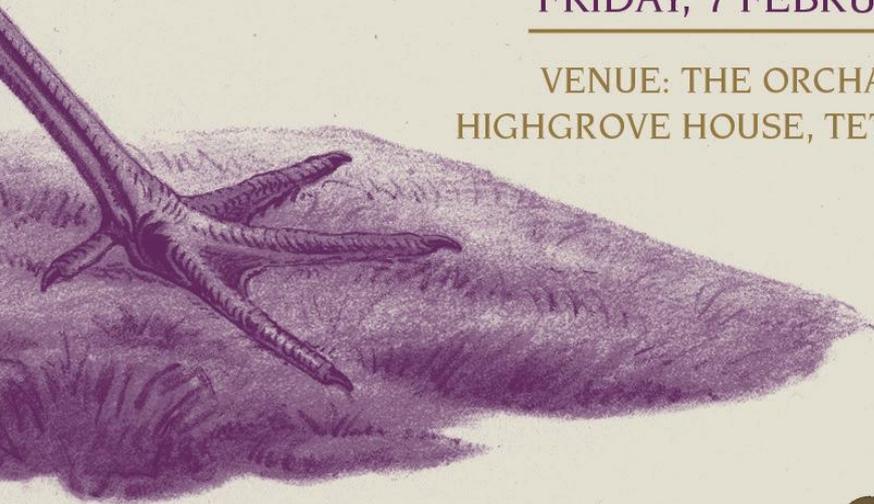




HIGHGROVE CURLEW AND OTHER PRIORITY SPECIES RECOVERY SUMMIT

FRIDAY, 7 FEBRUARY 2020

VENUE: THE ORCHARD ROOM
HIGHGROVE HOUSE, TETBURY, GL8 8TN



DUCHY of CORNWALL



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Citation

Executive Summary

His Royal Highness The Prince of Wales convened a second Curlew Summit at Highgrove (following one on Dartmoor in 2018) to look at the opportunities to aid the recovery of Curlew and other priority species presented by Defra's 25 Year Environment Plan, the new Environment Land Management scheme (ELMS), and the proposed Nature Recovery Network (NRN) approach.

The meeting brought together Defra & Natural England policy officials, wildlife charities, farmer & facilitator representatives from existing curlew recovery projects, environmental advisors, and farmers & land managers. The unifying factor was an already demonstrated commitment to curlew conservation, and many in the room had worked together on initiatives, projects, and conferences over the last 10 years.

His Royal Highness paid tribute to the work done over many years by the organisations, farmers, gamekeepers, and conservation managers present, all working for curlew on farms, in Farmer Cluster groups and recovery projects. His Royal Highness welcomed the opportunity offered by ELMS and NRN for Defra to co-create with people in the room long-term measures, including wildlife management in the form of predation control, to save curlew. His Royal Highness urged the meeting to remember it is the curlew we are saving and to work together. His Royal Highness suggested that the new NRN offered an opportunity to 'call on' farmers, gamekeepers and land managers to "put up their hand and come forward to be the group of people in England who want to save curlew"

It was clear that the main findings of the 2018 Summit are still highly relevant and are picked up in the recommendations from this event.

Many of the speakers and table discussions made similar points which are brigaded into recommendations for the design of ELMS and NRN in relation to curlew conservation in the summary and conclusions. It was agreed curlew are an important priority species and its ability to act as an ambassador species for wider conservation was valuable. The scale of the challenge due to recent declines and poor breeding success primarily due to predation was acknowledged. This underpinned the need for new, dynamic landscape-scale partnerships within a NRN (such as Farmer Clusters) alongside tailored, funded, effective prescriptions summarised into nine measures: habitat provision, nest & chick finding, predation control, advice for farmers and facilitators for Farmer Clusters, compensation for restricted agricultural operations and crop sacrifice, head-starting where appropriate, landscape-scale/ bottom-up measures, long term funding, and monitoring.

Ways in which we can build on 'the call' to action above and inspire and engage farmers, land managers and gamekeepers to be conservation champions for curlew were identified.

Both Summits felt we need to create a National Curlew Recovery Network. This one identified that this Network was particularly needed to co-ordinate projects and effort to achieve the best outcomes for curlew 'beyond' the inevitable vested interests of organisations and individuals, but also suggested other helpful tasks.

Summary and recommendations

1. This Summit identified willingness, opportunity and the necessary conservation tools as being the critical components of conservation success, alongside a need for better co-ordination and organisation of conservation effort – subsequently described as a Curlew Recovery Network (see 12 below). It also touched on the need to bring all society into this endeavour – to shift conservation from being the concern of a few, to be a passion for all of us.
2. Everyone present (farmers, land managers, estate owners, scientists, land management advisers, policymakers and representatives of nature conservation charities) was united in their **willingness** to do more to save curlew; it is a species capable of unlocking considerable, large-scale conservation effort. Any future approach to curlew conservation should seek to
3. harness that.
4. Defra's new Nature Recover Network (NRN) proposal may offer an **opportunity** to develop and harness that willingness in a new and exciting way. Defra is to be congratulated for devising the policy- curlew and other priority species will benefit and offer an opportunity to unlock its potential. Defra also helps to fund a number of curlew related recovery projects in England The Summit showed the potential lies in people at ground level (managing land and balancing conservation with other land uses) wanting to 'take a lead', to create a 'coalition of the willing' to make the difference.
5. The new Environmental Land Management Scheme (ELMS) could provide the necessary **tools**. Many measures are already in the Countryside Stewardship Scheme (CSS) but additional opportunities could be explored. Currently, predation control is not directly funded through CSS, however, we describe below how we think this could be 'designed into' CSS and ELMS.

These issues are looked at in more detail below.

6. **Why should we focus on curlew and other priority species?** There is a small window of opportunity, and therefore great urgency, to save species like Curlew. To know curlew is to love them; they can bring all sides of the conservation world together, as well as potentially engaging wider society. Whilst conservation is about conserving the whole ecosystem, conservation effort, especially when it comes to galvanising effort at grassroots level must have a focus. Using ambassadorial species such as the curlew is a key way to achieve this and can also be a very effective way to secure the wider positive gains that we all seek for the natural environment.
7. **What are the ecological and demographic drivers of curlew and wader decline?** The main, long-term ecological driver of declines has been change in landscape management, particularly agricultural intensification during the last 40 years, hence declines have been most severe on lowland farmland. The demographic driver of decline is poor breeding success. Adult survival rate is high, and adults live a long time. Predation on nests and chicks is the main cause of poor breeding success especially where populations are already critically low, in many cases preventing recovery even where there is good habitat and protection from agricultural operations. Wild European Curlews typically fledge around 0.3 fledglings per female, about half the rate needed to replace the adults, let alone achieve recovery. Local curlew projects have documented extremely low breeding success (e.g. Dartmoor: three Curlew chicks fledged in 14 years; Curlew Country: no chicks fledging from 33 monitored pairs; Galloway: one chick fledged from 111 nesting attempts). Populations of generalist predators in the UK are high, but the underlying ecological reasons for this are unknown. Lethal control of foxes and crows can be

highly effective; in one study it increased the curlew breeding population by 14% a year and without it numbers declined by 17% per year. However, we must attempt to understand what is driving fox and carrion crow numbers and assess other measures which could help to reduce their populations and impact.

8. **How big is the challenge?** The scale of conservation delivery needed to recover breeding wader populations is huge and, critical to this, will be the need to develop new landscape-scale partnerships.
9. **How do we develop the opportunity presented by the NRN?**
 - 8.1 The NRN needs to support networks of people and communities linking together to help wildlife. The over-arching NRN could act as the locus for ‘mini-networks’, helping to link together people working across the country to recover targeted places, habitats, and species. Many of these will already exist, such as farmer and local community groups and voluntary networks working together for the conservation of certain species. Other networks of this sort should be encouraged, such as villages or towns that want to act as the hub for a local network promoting nature recovery. Taken together these types of approaches have the potential to benefit priority species such as the Eurasian Curlew.
 - 8.2 The NRN should allow nature’s recovery to move beyond designated site boundaries, enabling and encouraging people that own and manage surrounding land to help extend such sites.
 - 8.3 While rural [?] habitats are a top priority, NRN should also be relevant to where most people live and enable people from all backgrounds to act for nature. They need to deliver at scale yet offer a ‘way in’ to different people’s motivations, recognising diversity of focus (conservation, education, citizen science).
 - 8.4 Local monitoring data should be taken into account when setting local priorities. Including using citizen science initiatives such as the Big Farmland Bird Count and Garden Bird Count.
 - 8.5 There is a need to integrate bottom up approaches (“What wildlife do you want on your farm?”) with strategic advice on national or regional priorities, encouraging priorities of individuals and communities.
 - 8.6 The NRN Partnership should encourage people to get on now, act quickly, join up and deliver more. Trusted advisors will be key to this, to help operationalise evidence and good practice.
 - 8.7 Importance of Countryside Stewardship and ELMS was recognised, but there is also a need to facilitate innovation and broker investment in natural capital, working with business and industry (e.g. green bonds, Net Gain).
 - 8.8 Need to build on existing knowledge, engaging quickly, broadly, inclusively to create social licence for curlew conservation, giving farmers and other land managers the mandate to act.
 - 8.9 The conservation success achieved through Farmer Cluster-type approaches was noted whereby groups of farmers working together can build the social capital and commitment to aid curlew recovery. With farmers creating ‘curlew envy’ and the cachet of getting breeding curlew back on their farms, motivating others to replicate that success.
10. **What is the suite of conservation ‘tools’ we need to save curlew?** We need to provide a suite of actions which satisfy the year-round ecological requirements of the species, at scale and for the long term. To succeed all aspects are needed.
 - 10.1. **Habitat provision.** For Eurasian Curlew this would include management of grassland (appropriate cutting, grazing and Agri-chemical use) and water levels, ensuring a large-scale mosaic of invertebrate-rich feeding sites, nesting areas and brood-rearing habitat.
 - 10.2. **Landscape-scale and ‘bottom-up’ measures.** Waders are site faithful so maintaining existing hotspots is top priority. Recovery is more likely if restored/ new habitat expands

out from these. Some hotspots are huge areas (e.g. in-bye and moorland), others are smaller scale but nonetheless likely cover many fields, under different ownerships or occupancies. Upland in-bye grassland is of particular importance and better, more sympathetic management of these grasslands to benefit breeding curlew should be encouraged.

10.3. Incentives to encourage cessation of detrimental agricultural operations.

Operations potentially needing restricting (or delaying) on grassland are rolling, harrowing, early silage making, and even hay making. The required changes incur opportunity costs that can affect farm businesses. Compensation for this (for example through agri-environment schemes) may be needed, alongside thinking about different approaches/ innovations that can minimise the costs (such as localising the area in which the curlews need protection), and rewarding the public goods (co-benefits) of curlew-friendly farming such as healthy soils and insect fauna

10.4. Nest and chick finding. Without knowing where nests and chicks are, they cannot be protected from agricultural operations or predation. Farmers need specialist help from experts in curlew conservation and monitoring to locate nests.

10.5. Predation control. Need a combination of options to be tailored to predator pressure.

This should include predator exclusion (such as fencing to protect nests) and lethal control for larger scale protection, and to get chicks to fledging (once they have wandered beyond the fenced nest area). Predation control should be: focused on the period from January/February to July to cover the pairing up and nesting season; legal (in terms of species targeted and methods used); follow best practice; be carried out by trained, competent practitioners; with proper record keeping. One possibility would be to provide funding for Farmer Clusters to use approved predation managers (ideally operating on that area for 5 years). A cost estimate was provided in Session 3, Talk 3.

10.6. Good advice. Without this, farmers often fail to achieve tangible conservation outcomes. Advice needs to be tailored, from advisors trusted (and preferably selected) by the farmer, quite intensive to start and moving to lighter touch, and available from the same individual for several years. Sources are FWAG, NGOs, NE, or independent consultants. S/he should develop a landowner's relationship with other relevant experts and Natural England (NE) (landowners find this knowledge inaccessible and prefer one point of contact). The advisor should be authorised to permit flexibility of scheme design and prescriptions.

10.7. Long term commitment. Being long-lived and site faithful means these birds tend to breed year after year in the same place and young birds tend to recruit close to where they fledged from. They need the whole suite of conservation measures in the same place over long periods (25 years).

10.8. Monitoring. Essential to assess the effectiveness of conservation actions and to inform an adaptive, decision-making framework to deliver successful outcomes. We should maintain a distribution map of current territories. We need a flexible, scalable suite of monitoring, delivering coordinated, comparable data at different levels of intensity which can cater to different stakeholders and be accessible to all.

10.9. Head-starting. A new tool to increase curlew productivity (see Session 2, Talk 8), it potentially provides three options to integrate with wider measures: to 'buy time' (perhaps a decade or more) for a critically small and declining population; to put birds back into a suitable landscape (rather than waiting for the uncertain arrival of wild birds); to 'kick-start' recovery, where a very small population is in recovery, but only increasing very slowly. However, as yet we lack evidence that birds return in good numbers to the right areas or provide the intended boost to breeding populations – the real measure of success.

11. How could this be funded and paid for? The summit identified the NRN and CSS/ELMs as a *real opportunity* and one of the *key tools* to provide effective, large-scale, long-term curlew

conservation. No estimate of cost was made but it will be significant. Existing curlew recovery projects need financial support now to keep them going. Funding for predation control (as the element missing in CSS) could helpfully be provided now. ELMS will likely form the bulk of future funding. It was also recognised that government should not necessarily be funding everything; other 'blended' funding models need to be looked at. For example, we are seeing landowners helping to fund the necessary work needed to help curlew recovery at a local level; we should consider biodiversity off-setting funding. To allocate what will inevitably be limited resource we will need effective geographical targeting (at national, landscape and farm-scales) and an evaluation of the local Farmer-Cluster-type projects. We know from recent social science studies that such approaches are likely to yield better value for money outcomes.

- 12. How do we inspire and engage farmers, land managers and gamekeepers?** This will be critical to achieve the results required. One speaker said, "Farmers are enthralled by these waders and will often go to great effort to conserve them when they are breeding on their land". His Royal Highness said, "let's ask (farmers and land managers) to put up their hand and come forward to be the group of people in England who want to save curlew and other iconic species". Key components of engagement were considered to be:
- 12.1. Empowering local communities, farmers, and landowners to take the lead and to own nature conservation and species recovery outcomes at the local level e.g. through Farmer Cluster type approaches.
 - 12.2. Land manager-friendly measures where possible e.g. using additional cattle to reduce *Molinia* dominance for better sward structure – a win: win.
 - 12.3. Efficient consideration and processing of derogations to existing Agri-Environment Schemes where changes are required.
 - 12.4. Using owners of large estates to bring key parties together.
 - 12.5. Addressing the need for predation control; farmers become disillusioned with adjusting farming practices and providing habitat if predators continue to take nests and chicks.
 - 12.6. Allow Farmer Clusters to fairly distribute each year compensation for crop sacrifice, according to where birds nest.
 - 12.7. Acknowledge good conservation management; farmers and gamekeepers need to feel they are 'trusted' partners not 'the problem'.
 - 12.8. current scrutiny of grouse shooting fails to acknowledge what that management delivers for species such as curlew.
 - 12.9. Support those who already have healthy curlew populations to maintain them.
 - 12.10. Be aware that, in the main, curlew conservation must 'fit' within economically viable land use; we need to take a holistic approach to support.

- 13. A National Curlew Recovery Network.** It was felt we need a 'coalition of the willing' to lead and drive a national Curlew Recovery Network in England; with participants willing to put differences aside and work together for the greater 'curlew' good, channelling influence and skills through a truly transformative partnership. This change in approach has the potential to make a real difference, and those present wanted to explore this further. The Summit showed that Curlew can engender impressive unity of purpose, and we would hope the 'Summit Partnership' can lead and build upon this.

Below we set out our initial thoughts on what next steps should be and what issues will need to be tackled:

- 13.1. Differing approaches to, and ideology of, conservation. This manifests itself mainly around the issue of predation control, areas where there is a lack of scientific knowledge (such as the possible impact of large-scale gamebird releases), and where practitioners feel their experiential knowledge is under-acknowledged. We hope a structure addressing these types of tension will help us build an effective Curlew Recovery Network.

13.2. Ensure that there is a more strategic, joined up approach in securing future funding avoiding unwanted competition for limited funds. How can the 'best' projects be chosen? If blended funding models are developed funders will wish to know that projects are being vetted and prioritised. Farmers, and hence Farmer Clusters, may offer some of the best opportunities for conservation but have virtually no capacity for making non-AES funding applications; they will need help, ideally from an 'independent' process.

It was felt that 'an honest broker without badges and labels' was needed to help develop:

13.3. A vision for Curlew Recovery in England that we can all sign up to and work towards. How many curlews are we aiming for and where? When do we have enough? How did they previously fit in to a more nature-rich landscape and can or should that be replicated?

13.4. A way to work together to maximise the opportunities for species recovery and curlew recovery which the NRN, ELMS and current Agri-environment schemes can now offer.

13.5. A way to co-ordinate projects to achieve the best outcome for curlew; allowing individuals (conservation organisations, farmers, and land managers) to both 'work together' and 'step back' for the greater good.

13.6. Strategies for achieving good outcomes i.e. regulation versus engagement and cultural shifts – what will work best where?

13.7. Finding solutions to situations in which curlew recovery may conflict with other policy drivers. Examples raised were tree planting to mitigate climate change, public access to breeding sites, dog walking and disturbance. One issue is differing views over grouse moor management techniques such as heather burning, another the extent of licensed predator control needed to protect curlew which implicates the conditions of the issuing of the new General Licences. These issues are as yet not resolved but there is recognition from all parties that breeding upland curlew benefit from aspects of grouse moor management and there is a desire to find common ground to build consensus, and where consensus is not yet possible, to move forward constructively on other areas.

13.8. A mechanism for local solutions and decisions, leaving farmers and gamekeepers feeling they are 'trusted' partners not 'the problem'.

13.9. Scope for future philanthropic and 'blended' funding models.

Following the Summit, it was suggested the organisers should propose a 'wise head' to help create a national Curlew Recovery Network. A secretariat could be provided (the BTO has offered).

14. **What is the societal challenge and how do we address it?** This was covered in Session 2. Talk 1. We need to increase public engagement in, and understanding of, the countryside and nature conservation. Curlews provide an opportunity to achieve this: they are inspirational and widely loved emblems of wild places. For this reason, we should prioritise public engagement as a keystone of curlew conservation. Doing so would also provide opportunities to widen understanding of some of the real dilemmas inherent in nature conservation in a densely populated country, such as control of native predators and the problems deriving from high levels of public access.

Proceedings

Welcome and aims of the day

Teresa Dent, CEO, Game & Wildlife Conservation Trust

It is a great privilege to be here and I feel hugely honoured to be able to welcome you today. Thank you all for coming.

I would like to start by thanking and introducing my fellow hosts:

Tom Orde-Powlett from Bolton Castle,
 Andy Clements from BTO,
 Mary Colwell from Curlew Action,
 Tom Stratton from the Duchy of Cornwall,
 Lord Blencathra, Marian Spain and James Phillips from Natural England,
 Kevin Cox & Beccy Speight from RSPB, and
 James Robinson & Geoff Hilton from WWT.

And of course, huge thanks from all of us to His Royal Highness Prince Charles for convening this meeting at Highgrove.

Today had its starting point in March 2018 (quite a lot of you here today were in that room) when His Royal Highness convened a meeting on Dartmoor to raise the pressing issue of breeding Curlew decline in the UK.

The top line messages to come out of that event were:

“there is a need to scrutinise existing Agri-environment policy and facilitate the development of agile pilot projects that can be quickly implemented, to help local groups bring about change on the ground for curlew habitat and predator control measures. Secondly, that there are existing local curlew conservation initiatives which are doing well but need support and financial help. There is a need for a National network – independent, multidisciplinary, and representing all interests – to support local groups with resources, advice, knowledge sharing, best practice, and leadership. Finally, there is consensus across the board concerning predator control; all parties are agreed that, where it has been shown to be needed, legal, humane predator control is vital to improve curlew productivity”¹.

I remember the need to find support and financial help for local, existing Curlew projects as a heartfelt plea, and that there was a very strong consensus that day on the need for predator control to improve Curlew productivity to get it to a level where a population could both sustain itself and expand. With hindsight, they were very good, prescient objectives.

My aim is to try and use today to ‘bake them into’ future policy. I think Defra has done a brilliant job of providing us with both the means and the opportunity. We have a new Environmental Land Management Scheme (ELMS) currently in its design stage, and the concept of a Nature Recovery Network (NRN). The latter is an inspiring idea and (to my mind) unlocks huge, exciting potential. Our aim today is to understand measures needed within future ELMS & NRN.

We have the opportunity in this room to combine the hard-won experience of people on the ground (their knowledge of what works and what is needed to turn their farm, or their meadows, into a haven for curlew and lapwing and other priority species), scientists who understand the ecology, the people who have developed novel techniques for curlew conservation, the policy experts, and this fantastic new policy approach. We have all the pieces of the jigsaw and I am hopeful we can come up with some fantastic outcomes.

We are all aware no-one has a magic wand or an unlimited budget. The real value of this new approach – the NRN - is that funding is not the only thing that matters; there are other aspects that we can build on to achieve this ambition.

¹ Conclusions and Recommendations from the Dartmoor Upland Wader¹¹ Summit. Convened by His Royal Highness the Prince of Wales. Two Bridges, Dartmoor, Friday 23rd March 2018. <https://www.gwct.org.uk/media/1112891/Dartmoor-Upland-Wader-Summit.pdf>

I can guarantee we are all united in our passion to save Curlew and other priority species, so let us work out how we inspire and support that passion in others. We should acknowledge the tremendous work put into curlew conservation in recent years which has helped get us to this point:

- 2009: Birdwatch Ireland instigated prioritisation of curlew rather than as a component of wider breeding wader efforts.
- 2010: GWCT published its *Upland Predation Experiment*, key evidence which showed the breeding success of curlew (& other upland waders) was nearly zero on unkept areas, and that they were more than three times as likely to raise a chick on kept areas (i.e. with predation control).
- 2014: RSPB host an Edinburgh meeting with statutory conservation organisations to discuss decline of Curlew across whole of the UK and Republic of Ireland
- 2015: Curlew is declared the UK's bird of most pressing conservation concern.
- 2016: Mary Colwell's Irish Curlew Event. The key outcome was the formation of Irish Curlew Task Force.
- 2016: UK and Ireland Curlew Action Group launched. Brought together five statutory agencies and various NGOs to shape and drive a co-ordinated programme for curlew conservation, and to support international obligations including the African-Eurasian Waterbird Agreement and the EU Birds Directive
- 2017: England Curlew Workshop. Again, organised by Mary Colwell and hosted by WWT. Key outcome: creation of the Curlew Forum.
- 2017: the first World Curlew Day. Key outcome: improved awareness
- 2017: Westminster debate. Initiated by Richard Benyon MP. Key outcome: Minister for Environment Thérèse Coffey agreed to look for predation control in future Agri-Environment Schemes.
- 2018: Wales Curlew Workshop. Organised by Mary Colwell and hosted by NRW. Key outcome: Establishment of Gylfinir Cymru (Curlew Wales).
- 2018: His Royal Highness's Upland Wader Summit, Dartmoor.
- 2018: Scotland Curlew Conference. Organised by Mary Colwell, hosted by SNH. Key outcome: enhanced action for curlew within an existing project 'Working for Waders'
- 2019: Downing St. Summit. Lord Randall invited Mary Colwell to organise it. Key outcome: Establishment of eastern England Curlew Network, with head-starting of Curlew in East Anglia in 2020, and recognition that lowland Curlew need central organisation and funding.

Thank you to everybody who has been involved in that series of important meetings and discussions. Today, I really hope we can move forward again.

Session 1 – Current measures in Countryside Stewardship for priority species like curlew and likely parameters of ELMS for species recovery

Lynne Phillips, Programme Delivery Director for Future Farming and Countryside Programme, Defra

My presentation will focus on the topic I was asked to consider but reflects a broad range of activity across the Defra group (including Natural England (NE), Environment Agency and Forestry Commission to name a few) as well as many of the organisations here. I look forward to exploring the content and themes with input from you all during today. That is also code for me saying that “I don’t have all the answers!”, but I am likely to be able to find someone who does! Priority species, like curlew, matter and that is reflected in work government is supporting and funding as well as in our future shared objectives. Specifically, the new mid-tier Countryside Stewardship (CS) options and the work we are taking forward via the 25 Year Environment Plan (25YEP) on ELMS.

- Defra and NE are financially supporting several key Eurasian Curlew conservation initiatives across England.
- We want to see the NRN promoted to deliver landscape-scale nature recovery which can incorporate species recovery. A farmer-led and ‘bottom-up’ approach will be important.
- CS includes tailored option prescriptions designed to meet the requirements of breeding curlews, including the necessary mosaic of short and tall vegetation and marshy ground.
- Mid-tier CS options have recently been created for the management of rough grazing and lowland wet grasslands for breeding birds. This will make curlew-friendly management available to a much larger proportion of holdings that support.
- One of the public goods to be paid for under ELMS is ‘*Thriving Plants and Wildlife*’. This makes specific reference to NRN, habitat restoration, enhancement and creation, and re-introductions with targeted actions for species recovery.

The last point provides essential context for the NRN; it is not a new designation but a new approach – co-ordinating people and resources to deliver habitat more capable of supporting rich, resilient wildlife. The NRN is defined as connecting, restoring, and creating places rich in wildlife, resilient to climate change and enjoyed by people. It will implement the Lawton principles of ‘more, bigger, better and more joined-up habitats’. So, very pertinent to the topics we will be discussing today.

Now for an advert for CS. Defra teams are working closely with Rural Payments Agency (RPA) colleagues, learning from previous schemes, and intend to prepare for ELMS by simplifying the current CS scheme. Our exit from the EU allows some flexibility, and we are actively reviewing existing agreements; we are keen to keep land in agreement during transition away from the Basic Payment Scheme (BPS) and into ELMS. We are also creating opportunities to increase participation. In summary:

- The new CS scheme is improved, simpler and payments are going out sooner.
- CS gives farmers and other land managers an opportunity to improve the environment.
- CS is a stepping-stone to the future of farming and land management. We encourage farmers to enter into new CS agreements to prepare for ELMS.
- Existing agreements expiring in 2020 are being reviewed.
- All agreement holders will be advised whether they can extend their existing agreements, or whether they should enter into a new CS agreement with a 2021 start date.

Many of our new policies set out in the Agriculture Bill and the Environment Bill are based on public money for public goods. The slide below offers a nice graphic illustrating some of the public good contribution we derive from the farmed landscape.

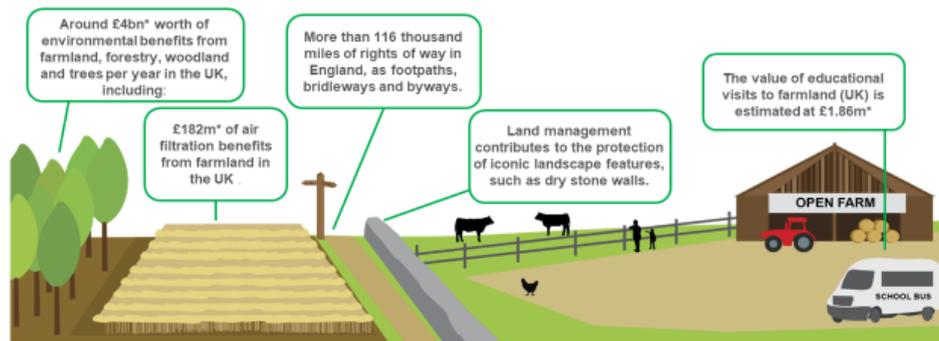


What do we mean by public goods?

Public goods are things that benefit **more than just the recipient** and cannot be rewarded by the **market alone**

Our new agricultural policy in England will be underpinned by the principle that **public money buys public goods**

Examples of public goods provided by the farmed landscape



And so, onto ELMS. The principle is that the funding will support the delivery of public goods as set out in the 25YEP. These are defined as

- Clean and plentiful water
- Clean air
- Protection from and mitigation of environmental hazards
- Mitigation of adaption to climate change
- Thriving plants and wildlife
- Beauty, heritage, and engagement

It is important here to also mention soils and recognise via the additional content in the Agriculture Bill that soil health requires our investment too - but you all know that and have been telling us for quite a while!

We are very excited about ELMS Test & Trials (T&T) Programme - the interest and enthusiasm generated, and the ideas being explored. The Programme is working across England to develop and collaboratively design ELMS 'prescriptions' with a wide range of stakeholders, farmers and land managers. There are six priorities:

1. The 'Land Management Plan'
2. The role of advice and guidance
3. Payments
4. Spatial prioritisation
5. Collaboration
6. Innovative delivery solutions

In Phase 1 we are taking forward 44 proposals (started September 2019). Phase 2 will begin January 2020. In future, we will issue specific calls for proposals where appropriate to collect evidence that will inform policy development and fill gaps in our T&Ts.

I did a quick count and at least 12 of our Phase 1 projects are represented here today, with a further 6 in Phase 2. I have put in place thematic leads and we have established thematic groups to rapidly capture the learning and feed it directly into ELMS design and operation.

I want to spotlight this project which I visited in Summer 2019. It is up on Hadrian's Wall in the Northumberland National Park. Called "Curlew Contracts" it is working with NE, Newcastle University and a small group of farmers investigating how to develop and implement Land

Management Plans (LMPs) with the priority of creating breeding habitats for waders, including curlews. One can see - and hear - the positive impact it is having.

The ELMS National Pilot (late 2021 to late 2024) is the means by which Defra will pilot, at scale, the new ELMS. It aims to learn and innovate prior to full rollout and build confidence in delivery and amongst stakeholders.

The pilot will have a modular structure, and will test three main things:

1. How best to construct different types of ELM agreement at different scales
2. How to target ELM incentives to deliver specific environmental outcomes in specific areas
3. The underlying scheme mechanics

The pilot will be undertaken in close consultation with stakeholders and land manager participant, and I suspect this is content that many of you are familiar with.

I want to finish with a bit of Roadmap for the transition to public goods for public money. We are in the final stages of clearance for the documents in 5 below; that will enable us to engage more publicly, in more detail, on the whole package of reform set out in our legislation. Essentially:

1. Changes set out in the Agriculture Bill will be made over a 7-year agricultural transition period.
2. Direct Payments (BPS) will be phased out in England between January 2021 and 2027.
3. In February 2020, applications for the simplified CS scheme will open.
4. The last CS agreements will start in January 2024.
5. We are maintaining & extending our commitment to co-design ELMS with a discussion document and a programme of extensive regional engagement starting Spring 2020.
6. No one in CS will be unfairly disadvantaged when we transition to new ELMS arrangements.
7. Until then, signing a CS agreement gives a viable, long-term source of income for providing environmental benefits and is the best way to start to prepare for ELMS.

Session 2 – Curlew Recovery Projects – what works and why?

Mary Colwell, Curlew Action

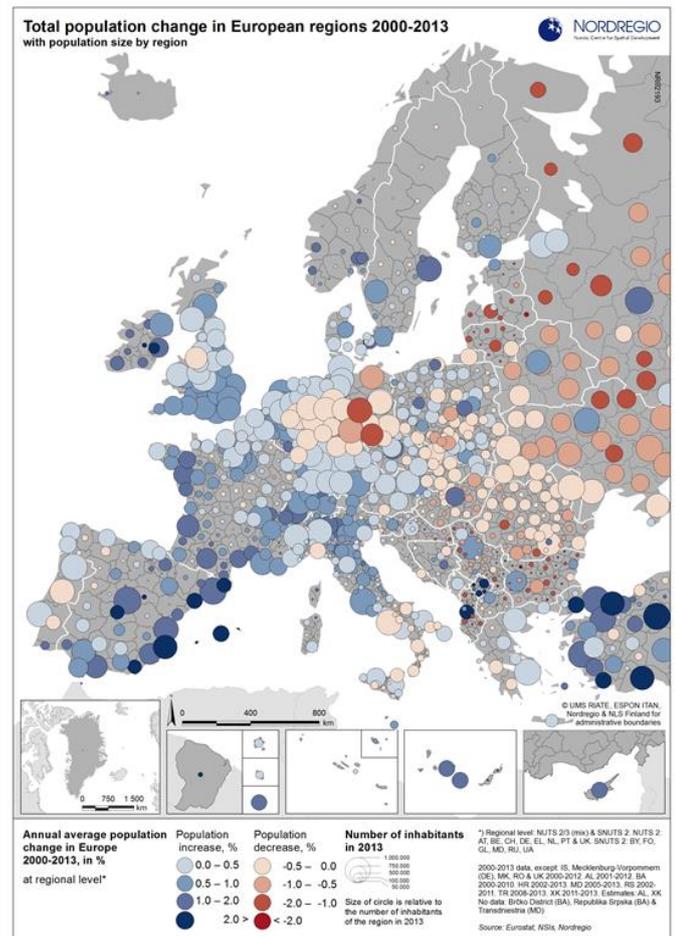
Today I want to spend a few minutes giving a much bigger picture for us to focus on. I think it is helpful to see where Curlew and Curlew conservation fits into a much wider agenda, a bigger landscape.

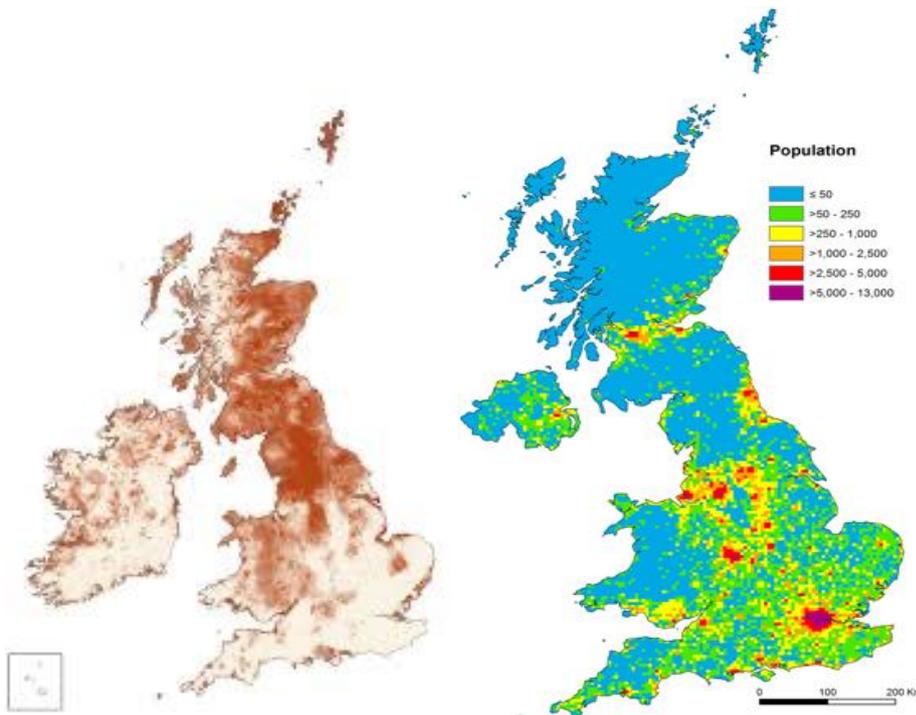
First, I want to show how the population of Europe is changing relative to where Curlew are. The grey and blue spots on the map show where human population is increasing; red spots are where it is decreasing. You will see that, on the whole, human population is increasing outside the range of the Eurasian Curlew. More people now live across the western breeding range of the Eurasian Curlew, with some land abandonment in eastern Europe.

Second, the population of the UK is increasingly urban. 83.5% of us are now urbanites mainly in the South and the East, with only a few other hotspots. That is where people live, work, think and vote. Our Curlew populations are concentrated still in the uplands and the North. That is not where most people live, so the challenge for conservation is to get people to connect with birds in the places where most of us do not live.

Source:

<https://www.nordregio.org/maps/total-population-change-in-european-regions-2000-2013/>





Map of curlew relative abundance
Source: BTO Atlas 1988-91

Map of human distribution

Source: https://www.researchgate.net/figure/Gridded-UK-population-density-based-on-the-UK-census-at-the-5-km-5-km-grid-spatial_fig8_281137363

I live in the middle of a city - Bristol. Twice everyday streams of young kids walk past my house to and from the local school, most of them from ethnic minorities. Not one of them, I guarantee you, will have ever heard of Curlew.

We have massive issues around making Curlew conservation work given this mismatch between where the birds are and where we are. Living in big cities means most of us only regularly see crows, pigeons, and a sprinkle of birds at feeders.

A 2019 survey² of 1000 children aged between 5 and 15, showed that 50% could not identify a stinging nettle, 75% a Robin or a Badger, 80% did not know what a Bumblebee is, and 90% do not know a cabbage white. These results are shocking, what hope for Curlew? People are increasingly disconnected from the natural world; we all know it, we all say it, and it is true. Most people have no connection with where their food comes from and are simply concerned with the cheapest price; cheap meat and dairy is seen as a prerequisite for basic living.

It is easy for us to get into our 'conservation bubble' and forget that disconnect. Add to that the very bad press farmers often get in the media (destroyers of the environment, animal cruelty and major contributors to climate change) it is hard to form sympathetic and meaningful relationships between urban citizens and the farming community. The divisive stance towards farming taken by some high-profile commentators on both sides makes it even more difficult to bring conservation and farming together.

We must tackle these issues if we are going to change things; it clear that unless we take people with us, good conservation will not happen or succeed. These birds live on farmland. How are we going to reinvent the relationship between most people and the farmed landscape and get rid of this negativity?

² Source: <https://www.bbc.co.uk/newsround/49331144>

My suggestions would be:

1. Forget trying to find somebody to blame - we are all in this together - we all eat. We need to support farming, be interested in it, and have a say about its future.
2. Increase society's 'nature literacy'. I want those young people walking past my house to be part of a nature-literate society again, to have an easy, daily conversation with the natural world. This can be done through schools and adult learning, supported by the internet (and my campaign for a GCSE in Natural History, which should be in schools in 2022).

Set against this social background, getting projects to work is challenging.

In the south of England, there are groups working with small populations of Curlew across a region below a line from the Wash to Shrewsbury. The things that we need to wrap into the prescriptions for the future are:

- Locally led projects, that tap into local networks, with wider community involvement
- Appeal to 'rootedness in place' (heritage and history); often not based on a specific NGO
- Ability to make local decisions based on local conditions
- Targeted financial help e.g. replacement of silage if cutting is delayed

In the uplands there are different issues. Many curlews are on large estates which can be mired in controversy, such as grouse moor management. The uplands are where new tree planting is being targeted – a huge concern as forestry and wader conservation needs careful coordination.

Both uplands and lowlands also face the thorny issue of predator control – how much is enough, who does it and what species? We have a dysfunctional relationship with predators. We do not know what we think about them, there is too much heat in the system, too much emotion and not enough coolheaded thinking or understanding of the issues. New legislation is no doubt grappling with predator control, but consensus will not be easy.

To sum up:

- Curlew conservation is about science, but it is also about the heart. Curlews are a very good ambassador - a real icon for conservation. To know them is to love them. We need people to know them again and to bring all sides together.
- It is about money but also about supportive communities.
- We need to touch people's sense of rootedness, their local history and future, desire to belong to a place and for that place to be rich in nature.
- Personal connections and networks in these groups go beyond any single NGO. A local, independent, honest broker is sometimes the best way to go, without badges and labels
- Increasing the understanding of nature throughout society
- Being honest and open about difficult issues
- Giving a sense of empowerment and autonomy to farmers
- Have a vision to work towards. We sometimes talk like we want to fill the world full of curlews – what do we actually want? When do we have enough? How did they previously fit in to a more nature-rich landscape and can or should that be replicated?

Session 3 – Components needed for success

Talk 1: Landscape Scale – A Landowner’s Perspective

Tom Stratton, Deputy Land Steward, Duchy of Cornwall

This perspective comes from my involvement with the Dartmoor Wader Project, which was inspired by HRH The Prince of Wales in 2005 and co-funded by the Duchy of Cornwall and the Dartmoor National Park Authority. The project monitors Curlew, Snipe, Lapwing and Dunlin via a Project Officer, but has become more focussed on Curlew in recent years (though monitoring and habitat improvement continues for the other species where needed). Key points are:

1. On Dartmoor there were 20-25 Curlew territories in the 1990’s. There has been a marked decline since. Territories were typically in Duchy owned ‘newtakes’ on the high moor (large areas of enclosed moorland) and on the commons at lower altitude. Habitat decline in some areas and predation are key issues.
2. In recent years Curlew numbers have averaged only 4-5 birds over 2-3 territories each year. There is typically only one nest each year, focussed on Haytor (common land in third party ownership). Any successful nests have with been predated by crows and/or disturbed by public access.
3. Habitat in the nesting area is good and being maintained. Predator control is now underway, but the public access makes this challenging and in many ways, ineffective.
4. Only three Curlew chicks have fledged during the life of the project (2005-2019).

Following HRH’s Dartmoor Curlew Summit in 2018 we engaged with the Wildfowl and Wetlands Trust (WWT) on head-starting. Key actions have been:

5. NE gave consent to head-start³ Dartmoor curlew eggs in 2018. However, no eggs were produced from the one, possibly two nests established.
6. In December 2019, the Duchy and Prince of Wales’s Charitable Foundation kindly offered funding together with in-kind assistance from our partners to deliver a head-starting project for an initial three years using translocated eggs.
7. Head-starting was initially planned for summer 2020 with WWT, alongside wider habitat and predator management to enable population recovery. [Postscript: this work will now be deferred until 2021 due to the Corona Virus and the associated impact on staffing].
8. The target is to return to 1990’s curlew numbers.
9. We will continue to monitor and undertake predator control on the existing next site but release the head-started birds a few miles away on enclosed farmland and into an area of extensive, appropriate habitat with potential for further enhancement alongside predator control and with restricted public access. The farm is Duchy owned and this will also be used for rearing. Tenants are engaged across a land area of 6,500 acres assisting in the delivery of habitat and predator management.

The learnings to date and components for success are:

10. Engagement with farmers / tenants is critical to achieve the results required and the delivery of ‘place based’ management. We have had high levels of interest from our tenant farmers.
11. Habitat improvements are usually ‘farmer friendly’; on Dartmoor we have required additional cattle to reduce Molinia dominance and achieve better sward structure – a win: win.
12. NE support to achieve the necessary derogations to existing Agri-environment schemes, and support for the right breeds / numbers of animals required.

Looking ahead, there will be additional benefit if:

13. Landowners and tenants have greater awareness of species recovery targets within the regions and access to support, advice, and appropriate Agri-environment prescriptions. There needs to be a collaborative approach to species recovery.
14. Utilise the opportunity of Defra’s T&T to inform ELMS development.
15. Funding support for predator management (key to nesting success) which is costly in the absence of a keeper / sporting interest.

³ Head-starting – see talk 8 - is a technique that can increase productivity. Eggs are taken from the nests of wild birds, and incubated, hatched, and reared in captivity, to be released back into the wild around fledging.

16. An identifiable role exists for the landowner in bringing the key parties together, achieving continuity of delivery and the ability to work at landscape scale.

Talk 2: Protecting nests and chicks from predation

Dr Andrew Hoodless, Head of Wader and Wetland Research, Game & Wildlife Conservation Trust

1. **Curlew declines.** There is general agreement that the main, long-term ecological driver of curlew (and other wader) declines has been change in landscape management, particularly agricultural intensification during the last 40 years, and that the declines have been most severe on lowland farmland. The demographic driver of the declines has been demonstrated to be poor breeding success rather than increased adult mortality. Curlews are simply not fledging enough chicks each year to replace the adults that die, even though the adult survival rate is high. High predation rates on nests and chicks are now preventing population recovery even where good progress has been made in restoring habitat.
2. **Predation is the main cause of poor breeding success.** We have known for almost 30 years that predation of nests and chicks is an issue for curlews. For example, work by Murray Grant in Northern Ireland in the early 1990s indicated that 97% of nest failure and 74% of chick mortality was due to predation, mainly by foxes and carrion crows. A study examining nest predation rates on waders across Europe has shown that nest predation of curlews increased from 16% on average prior to 1980 to 65% during 1996-2006. Recent local curlew projects have documented extremely low breeding success. For example, the Curlew Country project in Shropshire recorded no chicks fledging from 33 pairs monitored during 2015-2016 and Patrick Laurie recorded just one chick fledging from 111 nesting attempts in Galloway.
3. **The need to tackle predation as well as improve habitat.** Ideally, we would like suitable habitat for curlews at a larger scale, including mosaics that accommodate feeding sites, nesting areas and brood-rearing habitat. However, habitat improvement and tackling predation must go together. For curlew, particularly in the lowlands, there is now an urgent need to reduce predation on eggs and chicks if we are to stand any chance of reversing local declines and ensure that investment in habitat management through Agri-environment measures is not wasted. This is likely to require the combination of effective predator exclusion and lethal control methods, tailored to different situations.
4. The fox is one of the most important predators of wader eggs and chicks. Nest predation by badgers can also be important. Predator exclusion fencing can dramatically increase the proportion of nests hatching. Small-scale (100 m x 100 m) exclusion fences can be effective at protecting curlew nests, but they do not protect broods, which tend to wander widely outside the fences. Therefore, to get curlew chicks to fledging lethal control is necessary to protect broods.
5. A failure to address predation risks losing the co-operation of farmers and land managers in recovery programmes and Agri-environment schemes; they may become disillusioned with adjusting their farming practices and managing habitat if there is no increase in bird numbers and they continue to see nests and chicks taken by predators.
6. **Evidence for the effectiveness of lethal control.** Lethal control of foxes and corvids is not popular, but it can be highly effective. In GWCT's Upland Predation Experiment at Otterburn in Northumberland, with legal predator control targeted at foxes and crows, 51% of curlews fledged a brood and the breeding population increased by 14% a year; whereas in the absence of predator control only 15% of curlew pairs fledged a brood and the population declined by 17% per year.
7. In GWCT's LIFE+ Waders for Real project, the combination of improved brood-rearing habitat, electric fences, and lethal control during 2015-2019 has started to reverse long-term declines in breeding lapwing and redshank through increasing productivity.
8. Lethal control is not effective in all situations. An experiment on RSPB lowland wet grassland reserves aimed at lapwings was not as conclusive overall but showed that predator control was effective where predator densities were high.

9. **Best practice.** Although lethal control can be very effective at increasing the breeding success and population size of ground-nesting birds, it requires trained, competent practitioners following best practice. It can sometimes be difficult to predict the outcome and there is the risk of non-target captures with traps and snares. Compensatory predation by protected predators is not fully understood but may become an issue in the longer term. Implementation of predator control as part of a wader recovery package can be controversial and requires careful management of public relations.
10. Predator control must be legal in respect of species targeted and methods used. It does not need to be year-round, but effort should be focused during January/February-July. In order to be targeted and effective, trail cameras should be deployed to provide information on predator locations and timing of movements. Use of thermal imaging equipment improves fox control efficiency.
11. Predator control must be proportionate and justifiable. In order to be justifiable, a clear aim and timescale should be set, and it is important that both wader numbers and breeding success, and predator numbers, are monitored prior to the start of lethal control and during its implementation so that progress can be documented.
12. **Understanding predator populations.** To recover curlew numbers in southern England, it is essential that measures to address predation are implemented immediately. There is evidence that populations of generalist predators are high, with the UK supporting some of the highest densities of foxes and crows in Europe. There are several possible reasons for an increase in generalist predators over the last 20-30 years, including an increase in the scale of pheasant and red-legged partridge releasing, along with increasing deer numbers and availability of roadkill, and food available for corvids in winter from outdoor pig units and for several predators from rubbish tips. However, there is little good evidence for how any of these food sources have increased predator numbers and, in the longer term, it would be useful to better understand what is driving predator numbers. This could inform targeting of wader recovery packages in the landscape and efforts could be made to reduce the availability of easily accessed food. Nevertheless, measures to reduce predation are still likely to be required for many years to ensure wader population recovery.
13. **A model for reducing predation and likely costs.** We need a targeted approach for curlew, aimed at sites with the best chance of success, which addresses predation by facilitating both effective predator exclusion and lethal control methods. The best approach might be to build on the Farmer Cluster approach, where groups of farmers are already working together on habitat improvements. With an additional payment, a group of farmers could contract an approved predation manager, who would be responsible for implementing predator reduction and exclusion. Funding should be enough for the predation manager to operate on the same area for at least 5 years. This person should keep proper records of predation control effort and time spent on different methods.
14. GWCT calculates the cost of a full-time upland gamekeeper, including housing and vehicle, at approximately £4,510 per 100 ha (£45/ha), which compares favourably with current Agri-environment scheme payments for habitat management (e.g. GS2 permanent grassland, low inputs £95/ha, GS9 management of wet grassland for breeding waders £264/ha). Based on a predation manager operating over an area of 1,200 ha, controlling foxes during February-July and crows in April and May, the annual cost would be in the order of £27,000 pa. There would also be an initial cost for electric fencing and Larsen traps, both of which would have a ten-year life, of c.£4,000.
15. It should be borne in mind that success for curlew will result in benefits for other species, such as lapwing, and a greater willingness amongst farmers to engage with Agri-environment schemes.

Talk 3: Nest and chick finding in an agricultural landscape

Mike Smart, Curlew Forum

I am involved with a group of volunteers working on a Curlew project in the Severn and Avon Vales in Gloucestershire and Worcestershire, and with the Wildfowl and Wetland Trust's Severn Curlew project; a lot of the ideas in this presentation come from fieldwork in that area. I have also been much involved with Mary Colwell in the Curlew Forum; we publicise the information provided by all of you at www.curlewcall.org.

Moving on to nest finding:

1. Normally Curlew produce 4 eggs (sometimes only 3 or 2 in replacement nests).
2. The first question is "do you really need to find these nests?" There is a danger that you might disturb the birds and cause them to desert. Curlew are difficult and awkward birds to work with; very nervous, will not let you come close, and desert the nest very easily.
3. We started by standing at a distance to see what was going on without trying to find the nest. But in the end, given the high rate of failed nests, we realised all we were doing was monitoring extinction. With this rate of decline, we must intervene, and try to find nests; as Andrew Hoodless said, nests in agricultural landscapes are highly susceptible to predation, and many farmers take silage cuts early in May which will destroy nests.
4. So, find your nest, put a protective electric fence around it, covering an area 20-25 m square; this will give the pair a chance to avoid predation and the agricultural operations.
5. Curlew tend to come back to the same place year after year; so, go to find nests from early April as, if the grass starts growing, you will not find them.
6. Note the courtship chasing early in the season (late February and March); that is a good sign that they are going to nest nearby.
7. Look for nests from a high position – high ground overlooking the nest site; a vehicle with a high cab which you can use as a mobile hide; maybe even specially installed scaffolding; it is very hard to find them if you just watch from a distance with a telescope at ground level.
8. Be patient - they know you are there; they are looking at you and will take a while to go back to their nest!
9. The old-fashioned way is to drag a rope across the nesting field, with lots of cans with pebbles in them to make a racket, which puts the parent bird up and you can find the nest that way.

Chick finding:

10. This is even more difficult in large meadows; I do not go in the grass as it risks trampling both hay and small chicks.
11. If you have been able to radio tag chicks in the nest, you can trace them with an aerial.
12. Otherwise the best way is to be led by the behaviour of the parents; when they have chicks, they go up in the air and then circle round and round, doing a highly agitated version of the normal call, almost barking, which is a sure sign that chicks are near.
13. The best way to tell a young Curlew from its Mum and Dad is to look for a shorter beak.

Talk 4: Support for crop sacrifice – financial or in kind

Amanda Perkins, Curlew Country Project Manager

Curlew Country is a pioneering curlew recovery project, working with over 65 farmers and land managers, plus wider community volunteers, based in the Shropshire Hills and Powys. Its work focuses on a curlew hotspot of 35 to 40 breeding pairs. During years 2017 to 2019 it has enabled 60 curlew chicks to fully fledge both from natural nests and by pioneering head-starting. It receives multiple requests for advice and help other curlew projects and individual land managers.

Curlew Country has recently held two workshops focussing on measures to facilitate breeding curlew success on farmland, what will be needed from a future ELMS, and assessing the impact on a farm business of taking measures to support breeding curlews. To summarise the points which emerged:

1. Farmers are enthralled by these waders and will often go to great effort to conserve them when they are breeding on their land.
2. However, they can be unwilling to engage and change agricultural practices if predation control is not a pragmatic part of the conservation mix. They do not believe there is any point in most habitat interventions without effective predation control and want predation control to be a requirement of, and funded by, ELMS.
3. Farmers will initially waive the cost to their farm business, but usually decide after a couple of years that is unsustainable (whilst lamenting their inability to do more to help).
4. Waders, along with their pollinator-rich breeding habitat, require management. Land managers can only deliver environmental outputs if their business is thriving and resilient.
5. From the late 19th century onwards, curlews moved south and east from moorlands, expanding their range from traditional upland/moorland habitat to farmland. They nested in species-rich hay meadows which then would have been abundant. Current cropping leads them to choose silage and haylage fields, and in arable areas they may also nest in arable crops.
6. Curlews are territory faithful. Territories can span several fields, but some breeding pairs return to the same spot to nest each year. They are attracted to a sward height tall enough to cover eggs or a sitting bird and short enough for the sitting bird to look out over. Silage crops are chosen as livestock will have been excluded at the time when birds are choosing a nest site. Ryegrass growth is more vigorous and omnipresent than indigenous species rich swards.
7. At egg stage, nests are vulnerable to disturbance or destruction by routine agricultural activities such as harrowing, rolling and fertilising. Trampling by livestock may also be a problem and in a few areas, there is some evidence of sheep eating eggs. Early mowing of silage crops will be a threat.
8. At chick stage the main agricultural clash is crop harvesting. Curlew chicks cannot be 'pushed' out of a crop by mowing strategies such as mowing from the centre to the edge of the field. They hunker down, and even those that have been radio-tagged are usually without tags at this stage and almost impossible to find in a dense tall crop. Adult birds will at intervals swoop low and alarm call around the chicks, but still far enough away from exact locations to confuse predator onlookers. Field ornithologists risk trampling the chicks in any efforts to locate them.
9. It will be necessary to delay mowing on part, or all, of a field to save chicks. The cost to the farm business is the loss of crop, the cost of contractors returning for a second time to harvest the grass, delayed aftermath grazing, with knock-on effects to the wider farm business.
10. Temporary electric fencing around nests increases egg-to-hatch rate but not chick survival. Mowing around a nest exposes it, leaving it vulnerable to avian predation especially when

birds are disturbed off the nest by agricultural activity. At chick stage, limited vegetational cover in which to hide from predators is a problem.

11. Curlews are not confined to small areas; chicks are precocious and range widely with adults to find food. Even the most attentive and assiduous farmer can have accidents: one chick was crushed by a quad bike despite the farmer doing all he could on a voluntary basis to help nest and chick survival. The adult birds heard the quad bike approaching and left the chicks to lure the threat away from them; the farmer saw the adults several fields away and believed the chicks to be there too.
12. Curlew territories can cover many fields, under different ownerships or occupancies. Small-scale action can still leave curlews vulnerable. Where there are remnant wader populations farmers need a menu of options which will reward successful outcomes or genuine intentions.
13. In areas of higher wader density, farmers understand the need to work co-operatively at landscape-scale. They want a flexible group system facilitated by someone who understands the farm business alongside conservation.
14. Farmers need specialist help to locate nests, with knowledge and experience of how to look after them during an initial curlew recovery phase.
15. Farmers will work together to help oversee a fair distribution of a pot of money (which will necessarily be available to different farmers in the group each year according to where birds nest).
16. Farmers have considered silage and hay banks, but so far rejected this concept due to the differing quality and quantity needed for different farming systems.

Summary

A love for waders has inspired land managers to make real and successful efforts to try and help increase breeding success on farmland. Trying to achieve this at landscape-scale has also motivated them to take a much broader view of conservation matters. In understanding what curlew need to survive they have recognised the many different environmental benefits this brings and have demonstrated a genuine desire to move toward achieving these wider outcomes. Farmers want to deliver these multiple benefits with specific management regimes. They have pushed themselves to the limits of viable interventions and need creative support to help them to the next stage and do not want to wait for ELMS. There is an excellent opportunity now to exploit this land manager enthusiasm to deliver a wide range of public goods.

Talk 5: Linking farmers to the best advice and support

John Ebbage, Land Management Advisor, Natural England

Providing farmers with good advice often forms the backbone of successful nature conservation projects. The end goal should be for any project to provide visible and tangible outcomes; advice is often key to securing this tangibility. Projects which lack an advisory input often fail to reach the final and most important goals.

The key aspects of advice are:

1. Tailored. Advice should be tailored and adapted to the specific scenario by the adviser.
2. Trusted. The quality of the advice and subsequent outcomes will always depend on the relationship that is established; at the core of that is trust. An adviser without the trust of a landowner will never reap the greatest environmental rewards.
3. Confidence both ways. Another key ingredient. Both the landowner's confidence in the advisor, but equally importantly a good adviser will build the confidence of a landowner and support him/her in their conservation endeavours.
4. Adaptability. Often, as time passes and relationships grow, an adviser will be able to hold the tiller far more lightly. Good advisers are adaptable and considered in the advice they give.
5. Understanding how people learn. People learn in different ways. Some farmers may simply require clear written instruction, others will benefit from being taken to another farm where the goal objectives have already been met.
6. Working with other experts. Establishing a landowner's relationship with others is also a key ingredient. An adviser may be tempted to feel s/he must deliver on all aspects, but the best advisers will bring in other expertise when required. Complex projects may need support from several individuals who possess key skills.
7. Scientific knowledge and data interpretation. This is frequently something an adviser is called on to do, often acting as the bridge between scientists/ academics and the landowner who would benefit from this knowledge but finds it inaccessible.
8. Longevity of involvement. Complex projects may take several years to bear fruit. A good adviser must therefore be tenacious and persistent, sticking with goals and not falling at the first hurdle. Often many hurdles will be encountered while guiding a landowner through to the completion of a complex project.

Talk 6: Monitoring for success

Dr Sam Franks, Research Ecologist, BTO

Monitoring data will allow us to both identify the problems and find effective solutions for breeding wader recovery. Key points are:

1. Monitoring before and after interventions. Assessing the effectiveness of conservation actions requires monitoring data both before and after interventions are delivered.
2. Monitoring should be a key part of future funding packages for species recovery. These data will then feed back into an adaptive, decision-making framework grounded in sound evidence to inform and adjust actions to deliver successful outcomes. As a critical component of assessing the effectiveness of conservation action, monitoring & evaluation must therefore be a key element of future funding packages for species recovery.
3. Coordination and comparability. Equally important is coordination of efforts - without that we are not maximising the enormous potential of the dedicated network of stakeholders involved in curlew conservation. A vital part of coordination is enabling the collection of comparable data, and to ensure these data are accessible to make evidence-based decisions on what works, where, and why.
4. Flexible and scalable methods. We need a flexible, scalable suite of methods, delivering comparable data at different levels of monitoring intensity which can cater to different stakeholders.
5. Partnership. Participation in monitoring gives ownership of the outcomes and decision-making process across stakeholder groups and ensures that results are shared widely among relevant audiences. Partnerships at all levels, across all sectors, will be key for sharing monitoring best practice and lessons learned to enable successful species recovery.

Talk 7: Understanding landscape needs of the birds

Dr Jennifer Smart, Head of Species, RSPB

Breeding wader populations are supported across a diverse array of landscapes from coastal grasslands and saltmarsh, lowland wet grasslands, floodplain wetlands, upland in-bye grasslands, moorland, and bog. Despite how variable these landscapes appear, the processes that operate to influence the distribution, abundance and success of these waders are remarkably similar. Different species have different ecological needs but there are traits which are common across species that are important for species recovery:

1. Vulnerable to predation and losses related to agricultural operations They all nest on the ground and have young that take 25-40 days to reach fledging. This means their eggs and young are vulnerable to predation and losses related to agricultural operations.
2. Adult birds live a long time. This means each pair only needs to rear a single chick to fledging every 1-2 years, depending on the species, although we know that they regularly fail to reach even these levels.
3. They are very site faithful. Adult birds tend to breed year after year in the same place and young birds recruiting to a breeding population tend to recruit close to where they fledged from. For example, the average dispersal distance for redshanks is only ~600m with 71% recruiting to the same field they hatched in and curlew pairs tend to nest within 250m of previous nest sites.

Being long-lived, site faithful and philopatric means that:

4. Consistency of habitat quality is important otherwise individuals will experience very different breeding conditions and success between years.
5. Species recovery is much more likely to be successful when conservation interventions are focused around and then outwards from existing populations because a high percentage of individuals will be site faithful and therefore newly created or restored habitat close to existing populations is much more likely to be colonised.

When managing landscapes for wader recovery, it is important to have a vision for what you are trying to achieve because your intended outcomes for species conservation will have implications for the management actions and conservation tools that will need to be deployed.

6. Scale. There is lots of evidence in the literature for the habitat and landscape requirements of different species at different scales.
 - 6.1. At the small-scale (patch to field), it is very likely that vegetation (e.g. height, structure, type, growth), wetness (e.g. soil moisture, wet features, open water), land management (e.g. grazing, cutting, fertilising) and aspect (altitude, slope, boundary features) will be important considerations.
 - 6.2. At the site to landscape-scale, fragmentation of breeding habitat and wader populations, farming practises, environmental subsidies, presence of human structures (buildings, roads, energy infrastructure) and other land-use (e.g. forestry, recreation, hunting, gamebird) will be important.
7. The combination of variation in habitat and landscape factors are important because they influence:
 - 7.1. The presence and density of waders.
 - 7.2. The abundance of invertebrate food, which is critically important for chick growth and survival, and
 - 7.3. The distribution and abundance of key predators, their ability to find wader prey and the availability of non-wader prey for predators.
 - 7.4. In addition, nothing operates in isolation and interactions are critically important. For example, wader density, vegetation structure and wetness influence predation of nests but nest predators operate over large spatial scales so are very likely affected by conditions at the landscape-scale.

8. There are some key landscape-scale issues that are extremely relevant right now.
 - 8.1. Tree planting will be critically important in the fight against climate change, but we need the right trees in the right place. Many studies have shown negative effects of woodland and forestry on wader presence, abundance and success with effects varying between wader species but apparent up to 1 km. The reason often proposed for these effects is predation risk and a new long-term RSPB study from the Flow Country, which will be published shortly, shows that predator scat densities are eight times higher in forestry plantations compared to the bogs in which the forestry is planted and, that effect bleeds out into the bog.
 - 8.2. Understanding the large-scale processes that determine why we have such high predation levels is critical because our existing predator management options are expensive, unsustainable, unpalatable to many and are arguably treating the symptoms and not getting to the cause of the problem.
 - 8.3. As well as trees in the wrong place, the release of millions of gamebirds each year, the lack of meso-predators or the way we treat our waste could all be contributory factors to the high predation pressure faced by these waders.
 - 8.4. Breeding waders are generally species of managed landscapes so land managers who sympathetically manage their land to deliver wader conservation and other environmental benefits must be supported to remain in these landscapes where farming is often operating on the edge of economic viability.
 - 8.5. The scale of conservation delivery needed to recover breeding wader populations is huge and, critical to this, will be the need to develop new landscape-scale partnerships and for organisations, farmers and landowners to put aside their differences and to focus on agreed common goals.

Talk 8: Head-starting

Dr Geoff Hilton, Head of Conservation Evidence, WWT

1. Curlew decline is largely driven by low productivity caused by high rates of nest failure and chick mortality. Head-starting is a technique that can increase productivity. Eggs are taken from the nests of wild birds, and incubated, hatched, and reared in captivity, to be released back into the wild around fledging. It has been used successfully for Black-tailed Godwits and Spoon-billed Sandpipers, and since 2018 has been trialled for Curlews in Shropshire and Gloucestershire.
2. When implemented by well-trained and equipped practitioners, wader head-starting can result in the release as fledglings of about 80% of the eggs taken. This means that for a typical female Curlew, we would expect to release 3.2 fledglings on average. This contrasts with typical values for wild European Curlews in recent years of around 0.3 fledglings per female.
3. However, head-starting has limitations. It is a specialised, difficult, and expensive undertaking. There are logistical constraints on the number of birds that can be reared by one team – typically a few 10s of birds per year. This means that it will only produce a significant boost to a population's productivity if the receiving population itself is quite small. Finally, it does not solve the underlying ecological causes of low breeding success (although this is also true of other measures such as predator control and nest fences).
4. Head-starting is therefore a valuable conservation tool in certain areas. Specifically, it can 'buy time' for a critically small and declining population, by providing a temporary but large boost to the number of recruits. This can allow conservationists the time – perhaps a decade or more – to solve the underlying problems on the ground. Second, it can allow recovery for a local population that has been lost: where substantial effort has gone into habitat and predation management, head-starting will put the birds back into the landscape, rather than having to wait for the uncertain arrival of wild birds from other populations. Third, it can 'kick-start' recovery, where a very small population is in recovery, but only increasing very slowly.
5. In the right circumstances, head-starting can thus be a very powerful tool in the conservation of small Curlew populations, but it needs to be integrated with a wider conservation approach that creates a sustainable recovery.
6. Head-starting can be a powerful supporting tool for the ELMS because it can retain and restore critically small or lost populations, while ELMS is developed, refined, and rolled out. Head-starting was first used in the Curlew Country project (Shropshire) in 2017, in the Severn Vale (Gloucestershire) in 2019, and plans are afoot to use it as part of Curlew recovery projects in the east of England and in Dartmoor from 2020 onwards.

Session 4 – Discussion tables

Following the eight talks above, the meeting split into 6 groups to discuss specific aspects and bring forward ideas and proposals. Each table's nominated 'leader' reported on the outcome of that discussion to His Royal Highness when he joined the meeting, and each table subsequently summarised its discussions and conclusion in note form as below.

The purpose of the table discussion was for scientists, policy makers and practitioners to share views and discuss possible actions. The points recorded are those felt by the Table Leader to be the most relevant and helpful. Many comments are based on the experience of the practitioners rather than scientific evidence. The former are relevant to policy makers as schemes need to appeal to practitioners to attract entrants.

Table 1: What do we need in the Uplands?

Table leader: Tom Orde-Powlett, Bolton Castle

Table scribe: Sian Whitehead, Game & wildlife Conservation Trust

1. In the Pennines:
 - 1.1. Tom Orde-Powlett (TO-P) considers his whole estate to be upland, but that we need to define/separate open moorland and low ground.
 - 1.2. On the low ground, the issues are
 - 1.2.1. Agricultural operations (rolling, harrowing, multiple silage cuts) which impact on curlew.
 - 1.2.2. Habitat fragmentation and increased predation pressure from adjacent woodland.
 - 1.2.3. Whether farm tenants will manage without BPS, and what impact the change in support will have. Will marginal hill farms be sustainable? It is likely that they will keep going but with a risk of intensification.
 - 1.3. On the open moorland
 - 1.3.1. Predator control is helping to maintain curlew breeding success, but disturbance (dogs and human recreation) is perceived to be an increasing issue.
 - 1.3.2. N. Pennines has very high densities, where there is wall-to-wall, landscape-scale predator control associated with grouse moor management.
2. On Dartmoor:
 - 2.1. There is a disconnect between commons and in-bye; the latter is now managed as intensively as the lowlands.
 - 2.2. Dartmoor periphery is not high moor and is now intensively managed.
 - 2.3. Commons are sub-optimal for curlew breeding. They are all open access (so more disturbance) and no game shooting management (so no predator control); the combination resulting in low productivity.
 - 2.4. There is a need to do more to bring together the two systems (commons and in-bye).
3. Need to build on existing strengths. Should learn from what is working where the birds are stable. As important as looking at where birds are declining and trying to make things better there
4. Forestry / tree-planting is one of the biggest threats to upland curlew. Having no forestry representation at this Summit was an unfortunate omission. Concern was expressed over tree-planting aspirations in the N Pennines as the one of the remaining curlew strongholds. Very little / none on common land but concerns about planting on deep peat. Suggested there needs to be policy position (as already exist in Scotland - no tree-planting on peat >50 cm deep). However, forestry agencies are reluctant to identify no-planting areas. Strategic tree planting (e.g. scrub in ghylls for black grouse) can be compatible with curlew, particularly where there is predator control.
5. Predator control.

- 5.1. This is the key to curlew breeding success (if habitat is suitable). We must protect the strongholds and maintain predator control in those areas.
- 5.2. Also need to understand why predators are so abundant (absence of top predators, role of game-bird rearing and release?). In some areas (e.g. Dartmoor), predator control is difficult to do; intensive predator control is not a long-term solution.
- 5.3. On grouse moors predator control pays for itself. In the N. Pennines, the benefits of predator control for curlew is a by-product of grouse moor management.
- 5.4. Can a future ELMS support predator control? Yes, if funded, and can be done at a sufficient intensity and at an appropriately large scale.
6. Expand out from key curlew areas. These are in-byre and uplands. BTO has identified 'key' and 'moderately' important areas, to identify where to target conservation action. Work needs to focus on those areas and then expand out from them. Maintaining hotspots is the top priority. However, this targeting is a matter of scale. Some hotspots encompass huge areas (e.g. large parts of Northern England), whereas other hotspots are at a much smaller scale.
7. Loss of tools for the job. While trying to focus conservation action, we are faced with the potential loss of the tools needed – concern was expressed about both general licences and heather burning in this context. There is a perception that NE is 'only interested in Sphagnum', therefore there needs to be a balance maintained between managing for different upland interests – blanket bog restoration and curlew conservation.
8. Knowledge gaps. In identifying key areas, there are also factors that influence curlew distributions about which we know less e.g. soil acidification, impacts on invertebrates, soil compaction (legacy of headage payments).
9. Grouse moor management. Current scrutiny of grouse shooting from some fails to acknowledge what that management delivers for other species. If grouse moor management stops Agri-environment (or other funding) would be unable to adequately plug that management gap and upland ground-nesting birds would decline. Any discussions around what ELMS can do to support curlew in the margins is academic if the rug is pulled from under the main management mechanism underpinning our core upland populations. Beware of taking for granted the role played by grouse moor management for ground-nesting waders.
10. Core principles for ELMS
 - 10.1. Additionality/ payment by results is fine but need to define results to ensure that those who already have healthy curlew populations are rewarded for maintaining them. Should not just be focussing on areas where curlew populations and productivity need improving.
 - 10.2. Need independent validation of results against which payments are made.
 - 10.3. Allow for different measures of success (suitable habitat, predator control, presence of breeding or feeding curlew, successful breeding) not just number of successfully breeding pairs as that may be impacted by events outside the control of the farmer. Also need to consider other species that can benefit from the management.
 - 10.4. Needs sufficient resources to enforce scheme rules. One of the failings of HLS is that it pays for intention, not results; farmer compliance is influenced by peer pressure / self-policing and farming practices are ultimately driven by economics rather than best conservation practice.
 - 10.5. Pay for multiple benefits (soil, water, carbon, biodiversity). Many upland farms are unprofitable; need to change mindsets from intensification to try to increase profit margins to lower intensity High Nature Value farming. Current practices run the risk of abandonment of less productive areas, which would be devastating for curlew – need the right incentives for farmers to respond to.
 - 10.6. Consider upland farms as a whole system, avoid focus on individual parts of the holdings.
 - 10.7. Reward collaborative working and those operating within Farmer Clusters.
 - 10.8. Reward people for continuing to do good work.
 - 10.9. Need to look at other income sources, not just ELMS.

10.10. As ELMS is developed and implemented, ensure good consultation between regulators and practitioners.

11. Environmental Net Gain (within Environment Bill). Current debate as to whether measures to secure net gain must be done locally or whether they can be done on a wider scale. David Hill's Environment Bank provides a good model.

The discussion was summarised by the Table Leader into the following points in the feedback session:

1. Predator control at appropriate scale and intensity is crucial
2. Minimise disturbance
3. Control / enforce adherence to non-damaging agricultural operations
4. Implement forestry / tree planting policy
5. Maintaining upland strongholds as currently supported through grouse moor management is the priority.
6. Avoid losing tools needed for curlew conservation/ management (heather burning, general licences).
7. Reward collaborative working that delivers management at a wider scale, beyond single holdings.

Table 2: What do we need in the Lowlands?

Table leader: Dr James Robinson, Wildfowl & Wetlands Trust

Table scribe: Lizzie Grayshon, Game & Wildlife Conservation Trust

1. **Lowland curlew.** The table discussed the question “Why bother with the lowland population when it is only a very small subset of the overall curlew population?” and agreed:
 - We have a duty to maintain species range.
 - It is the most accessible curlew population to the human population, and community engagement very important.
2. **Landscape scale**
 - Big enough areas of habitat – Gloucester Wildlife Trust project is 200 acres and still not enough
 - Reserve approach not enough
 - Need collaborative approach to bring people together – farmers, local community, conservationists.
 - Funding and flexibility adapting to different situations in different areas
3. **Realistic goals**
 - Short term goal - maintain distribution map of current territories, although mainly small populations these make up a big part of distribution map
 - Secure species in farming landscape
 - Action plans - Lowland model needed
 - Better coordination between conservation groups
 - Reporting on impact of conservation measures, so that we can manage adaptively”
 - Collating information gathered, measuring impacts, and feeding it out
4. **Pathway to Delivery**
 - 4.1. Education
 - Close farming community needs to be more involved
 - New land management schemes needed to allow for scope for engaging local communities – could be part of facilitator’s role in Farmer Clusters
 - Engagement with local groups
 - 4.2. Advice
 - Trusted and knowledgeable advisors needed
 - Curlew option needs combination of farming compensation, habitat, and predator control
 - Land management scheme with extra add-ons, flexibility in schemes to deal with situations as they arise, right habitats in right places and provide interactions when possible.
 - Do not want too many points of contact e.g. the adviser should be the contact with NE, not through the farmers.
 - Generating enthusiasm and engagement means that the funding will go a long way.
 - Facilitator needs to be allowed to be creative with ELMS – do not make the scheme rigid
 - Ireland Example: conservation task force with an advisor per district, intervention officer to do fencing, compensation, and predator control as well as undertaking community engagement.
5. **Funding.** Needs to fit into farm business model:
 - Delivering ecosystem services to public e.g. food
 - Able to meet financial challenge in lowlands, due to greater economic importance of agricultural land

- A grassland carbon code, which sets common standards for carbon markets in a similar manner to those already developed for peatland and woodland, would help farmers to realise the economic value of carbon storage from sustainable grassland management.
- What will the balance be in terms of economic farm models and conservation? Need realism between what is possible and what funding will be available.
- Develop corporate funding opportunities and develop scope for teaming up with small farms as well as larger ones.

6. Monitoring

- Support and funding needed
- Base line needed and awareness of current situation
- Feedback on what is working/not working

7. Timescale. Is it happening quick enough?

- Head-starting buys time
- Groups are coming together
- Large volunteer base able to call on for survey work

8. Where should efforts be focused?

- Be bold to deliver recovery
- More empowerment for people on ground – authority at local scale
- Cost analysis for low populations
- Predator control – need to record the benefits, public goods and services.
- End goal - a landscape that supports Curlew, no intervention needed.

Table 3: ELMS – making this work

Table leader: James Phillips, Natural England

Table scribe: Andrew Hoodless, Game & Wildlife Conservation Trust

1. **Spatial Targeting.** Effective geographical targeting (at national, landscape and farm-scales) is essential to maximise the impacts of our inevitably limited ELMS funds, and to ensure both value for money from the public purse and effective partnerships/collaborations at different scales (e.g. national, regional, catchment/upland dale, lowland vale).
2. **Advice.**
 - 2.1. Type. Experience from the best examples of previous AE schemes is that 1-2-1 advice will be essential to ensure ELMS delivers for threatened species. Good 1-2-1 advice for farmers will be essential for curlew recovery.
 - 2.2. Advisor skills. Need to understand the requirements of the birds, how to create suitable conditions but also the farm business.
 - 2.3. On-line. There is scope for more online material from Defra on managing for waders aimed at farmers and advisors, but farmers still need regular contact with someone they trust and with whom they have built a good strong working relationship.
 - 2.4. Sources of adviser. Could be from an NGO, FWAG, Natural England, a local consultant etc. Key here is that it needs to be someone farmers trust and work well with.
3. **Collaborative working.** Farmer Clusters et al likely to deliver greater benefits than individual farmers implementing measures; birds do not respect farm boundaries and farmers likely to remain better motivated by feeling included in a collective initiative.
4. **An ELMS Package of Land Management Actions**
 - 4.1. Need package of actions that satisfies the year-round ecological requirements of the species being targeted. For Eurasian Curlew this would include management of grassland (cutting, grazing etc.), water levels and predation (lethal and non-lethal) on the breeding grounds, and ensuring suitable habitats are available outside the breeding season.
 - 4.2. As far as possible, farmers need to be shown evidence and be convinced that the package will work. Many farmers will lose motivation for managing habitat if they do not see success in terms of fledged young and perceive predation to be undoing their good work. Habitat works and predation management must go together.
 - 4.3. The package needs to be flexible and fully account for the cost to the farmer of carrying out the management required.
5. **Enthuse the public & farming community to engage in Species Recovery action.** Use the profile and public/stakeholder/partner interest in curlew to get land managers interested in the conservation of threatened species and their habitats, and nature recovery, more generally i.e. use curlew as an 'ambassadorial' species for what we want to achieve for nature in England. Getting ownership and bottom up buy-in is key to this.
6. **Monitoring and Evaluation.** Essential, given we are investing a lot of public money into ELMS. Positive feedback on how the scheme works and helping to future scheme design will be crucial. Was a requirement under EU rules - still needed even though not now within our own scheme. Ability to review and change, plus ability to respond into unintended consequences of management approaches.
7. **How best to deliver the right land management actions for Priority Species.**
 - 7.1. Targeted actions for limited number of species is good but not practical to deliver individual actions for c.900 s41 species or c.1,500 red list species. It will be important to identify those species that do need more tailored targeted land management, a more bespoke approach.
 - 7.2. At the same we need a wider species-led approach to habitat management and creation i.e. incorporating heterogeneity and connectivity, at the landscape scale. The Nature Recovery Network and Nature Recovery Areas gives us this opportunity, allows us to push these

parameters further offering landscape nature recovery with priority species outcomes central to this.

8. Scheme design to take account of day to day farming activities.

- 8.1. Good points were raised about the use of contractors to cut grass. The farmer needs to have several fields ready to be cut at once as contractors are not interested in doing just one or two fields and it makes better financial sense for the farmer to get a contractor in once or twice. However, this means that there is a sudden change in habitat suitability for curlews across a large part of the farm and a risk to several pairs at a time when they are likely to have chicks. Some farmers would be happy to cut small areas sequentially themselves, following liaison with an advisor/volunteer who could tell them where birds were, if there was support for a small tractor.
- 8.2. Ways of encouraging birds to nest in some fields and not others could be explored. For instance, sward height and field suitability for nesting in spring will be influenced by management the previous autumn.
- 8.3. Curlew broods are thought to range widely, but anecdotal evidence suggests that they will use small areas close to nest locations when conditions are optimal. Creation of brood foraging areas, such as patches with a managed mosaic of sward heights or creation of scrapes close to nesting locations, might be an option for keeping breeding pairs within the same field for the whole season. It might be easier for the farmer to accommodate curlews, especially in the early years until they breed well and start to expand across the farm, if a couple of fields were spared for the birds and farming operations could continue as normal across the rest of the farm.

Table 4: As farmers and land managers what do we need?

Table leader: Simon Lester, Wildlife Manager

Table scribe: Amanda Perkins, Curlew Country

1. **Immediate action.** There is no time to waste if we are to save waders. Previous research has shown us what is needed in terms of habitat and predation control, and we need to act on that. Head-starting has a place but as explained above is necessarily limited in its application.
2. **Recognition of broader environmental benefits.** Management for waders will also deliver many other environmental benefits such as improved soil and water quality, flood risk, carbon sequestration and other species and habitats, currently high on the political agenda.
3. **Strong farmer engagement.** A high level of farmer engagement with waders is equally important, enabling them to move forward quickly into considering the new public goods agenda.
4. **Future Agri-environment**
 - 4.1. Use existing Agri-environment schemes, with derogations and extensions as necessary, to bridge possible gaps between CSS to the start of ELMS. To allow land being managed for curlew to 'fall' out of a scheme will be damaging.
 - 4.2. A flexible Agri-environment scheme is needed with a gold standard reward for providing conservation 'networks' at landscape-scale.
 - 4.3. Encourage farmers to understand which agricultural operations are damaging (cultural shift) but be prepared to compensate farmers for stopping what they consider to be valuable farming operations in nesting areas e.g. harrowing.
 - 4.4. CSS must work to engage farmers who are not part of a group at landscape scale.
 - 4.5. Clarity about what farmers are expected to do is essential.
 - 4.6. Engaging and inspiring people through this process, especially farmers is fundamental.
 - 4.7. If the intention is that not all funding will come from the public purse, farmers (even those working in small groups) will need help accessing it. Some may be happy to work with conservation NGOs who are geared up with staff resource and skillsets to do it, but not all farmer groups want to (for instance, lack of agreement over acceptable predator control methods – RSPB policy does not allow fox snaring). There should be a mechanism whereby collaborative groups of farmers can access non-government funding.
 - 4.8. The work of a facilitator/co-ordinator to achieve larger scale benefits is pivotal.
 - 4.9. Farmers want to act co-operatively at scale as a group and choose a trusted person/organisation to work with. Grass roots up methodology has demonstrated greatest effectiveness. Work still needs to be done on helping conservationists and farmers to work co-operatively.
 - 4.10. Communications between NE and farmers needs to be improved to move away from a prescription v advice situation to a prescription-led with flexibility situation. The role of a respected NE advisor able to authorise flexibility of schemes, not subsequently overridden by inspectors with less knowledge and understanding is important to a successfully run scheme.
 - 4.11. There are only a few effective curlew/wader recovery projects up and running. Future ELMS design to incorporate the lessons learned in these. It is concerning these projects lack funding now to continue their work.
 - 4.12. When considering habitat management, the impact of agricultural practices on invertebrates (vital food for chicks) needs investigation (e.g. wormers, tick control).
5. **Predation Control**
 - 5.1. Predation control is generally accepted to be needed urgently to both recover curlews and save them from further decline. There are differing views about predator control in the long term, how sustainable predator control should be defined, whether predator

populations are being sustained by land management practices that could be altered to reduce long term reliance on predation control.

- 5.2. Research has shown that given evidenced information on predation control for a variety of species, that generally the public find this an acceptable intervention tool.
 - 5.3. One of the arguments against predation control is that predator numbers have increased. The change (reduction) in numbers of people working on the land and carrying out routine predation control will be a contributory factor, often overlooked by those considering the causes of increased predator abundance.
 - 5.4. Funding for predator control should be available in Agri-environment Schemes for those that wish to undertake it for species recovery and can deliver to a high standard across an area that spans beyond a single farm.
 - 5.5. Further research is required into the causes of high predator populations and what can be done to mitigate the impact of these on other vulnerable species. Any research must consider the impact of game bird release.
 - 5.6. We need to beware perverse outcomes. Recent changes to General Licences make predation control on EU designated sites more difficult, yet these are the hotspots for curlew and predation control is vital.
- 6. National Strategy and Co-ordination**
- 6.1. It is essential to look at the bigger picture and when designing curlew recovery schemes, remember that not one size fits all.
 - 6.2. Strategic co-ordination of wader recovery work is needed.
 - 6.3. A national database is required for monitoring and evaluation.
- 7. Other Points**
- 7.1. **Research outside the breeding season.** There is no point in trying to support breeding waders if other factors are playing a role in population decline. More research may be needed on migratory behaviour, for example, the impact of shooting in France on British breeding birds.
 - 7.2. **Raising awareness.** There is still much more to be done in conservation generally to encourage those not from a land management background to engage more meaningfully with the countryside and gain an understanding of the rural culture and economy. Getting children out into the countryside and involved with hands-on activities that embed knowledge and understanding remains a priority.
 - 7.3. **Public Access.** Help and support is still needed in guiding people to behave appropriately in the countryside for the sake of both wildlife and farming and sporting activities e.g. dogs off leads at lambing and nesting time.
 - 7.4. **Proposed tree planting policy.** Right tree, right place. Tree planting is not a panacea for all environmental delivery and is detrimental to waders. Policy makers from planners to Agri-environmental scheme designers must assess the negative as well as the positive impact of such proposals.

Table 5: Nature Recovery Network – making this work

Table leader: Lord Blencathra, Natural England

Table scribe: Rose O'Neill, Natural England

15. Vision

- 15.1. General agreement with high level vision for NRN (e.g. places where people and nature thrive), and curlew as 'ambassador species' for this. Vision needs to be high level enough to speak to species conservation like curlew, whilst also tangible to the wider public (so as speak to places on local doorstep).
- 15.2. Agreement that we did not have time to wordsmith a new vision and agree on this.
- 15.3. **Urgency.** Is crucial. It is a time for action. The vision needs to be used to build public and political movement and inspire people to '**join us**'.

16. Where

- 16.1. NRN must include all the designated sites and spill out from and 'go beyond' these. Allowing nature's recovery moving out from designated site boundaries, enabling, and encouraging people that own and manage surrounding land to act (e.g. Martin Down Farmer Clusters).
- 16.2. Farmland and countryside are a top priority but the NRN should also include places close to where people live (e.g. urban street trees, nature-rich urban fringes / green belt, road verges, etc). Making the NRN relevant to where most people live important part of the social licence for action.
- 16.3. Important to recognise opportunities and challenges re climate and Net Zero and need to ensure trees planted in right place. Huge opportunity to deliver new nature rich woodlands in and around urban areas to deliver against climate and health policies, and nature connection, whilst also restoring fen land and peat land

17. How to determine priorities for an NRN

- 17.1. The NRN needs to deliver at scale and across all nature objectives. But it is important that it also offers a 'way in' that appeals to different people's motivations. This needs to recognise that for some, species conservation is important, and that different species appeal to different people. If a group of people want to get together to conserve curlew, the NRN needs to harness that motivation, encourage, enable, and leverage it.
- 17.2. It is important that the NRN priorities are reflexive, that they build on landowner and community motivations and do not stifle ideas but encourage those from the bottom up. "What wildlife do you want on your farm"? There also needs to be a recognition of diversity in how people might want to act e.g. some may want to focus on education, others on conservation or citizen science.
- 17.3. That said, it was recognised that there is a clear need for robust evidence, data, and advice on the priorities from a strategic level (e.g. a national or regional framework). This 'top down' will inform and help guide local action where NRN is voluntary, as well as prescribing what is needed in the designated sites.
- 17.4. As well as data from government sources, important to ensure local monitoring data is considered when setting local priorities. This should include using citizen science such as the Farmland Bird Count and Garden Bird Count.
- 17.5. If the NRN is to 'go beyond' designated sites, it is important to enable local input to priorities and recognise and encourage priorities of individuals and communities. This should not be about a 'race to the bottom' to get a local plan that is agreed by a long consensus process. It should be more about encouraging people to get on now, act quickly, and encourage them to join up and deliver more.

18. The role of government

- 18.1. There was agreement that NE should set out data and evidence for the NRN, and strong support for the importance of trusted advisors to help translate and operationalise evidence and good practice.
- 18.2. A request for NE to be able to point to all the areas of the country that are successes for nature recovery. There was a challenge about our ability (NE and sector more broadly) to capture and learn from what is happening, and promote beyond networks (e.g. are we doing enough to promote curlew projects – BTO audit - and work beyond people in the room?)
- 18.3. There was agreement that local level planning was important, so that ‘top down’ strategies work with what people want to deliver, but there was real concern about the coherence, capability, and capacity of local authorities to deliver this. There was concern that individual local nature plans will not add up to a coherent national NRN. Also, that currently many landowners have very little engagement with local authorities, and that local authorities have very little funds, will or time to engage with farmers and landowners. There was concern that there may be perverse incentives for local authorities not to be ambitious with local nature recovery plans, because they may feel that they will have to pay for it and have little resource.

19. The money

- 19.1. Importance of the £ for Countryside Stewardship (urgency) and ELMS. But government needs to facilitate funding as well as provide.
- 19.2. Role of government to facilitate innovation and broker investment in natural capital. There is a need for government to facilitate investment by business and industry (e.g. green bonds; all the £ from companies who need to offset CO₂ under Net Gain – this should be brokered by government to ensure financing delivers maximum impact).
- 19.3. Given potential for private money (Net Gain, Net Zero, etc) it is important to have spatial planning to target finance. Consider natural regeneration and restoration of peatlands and fenlands. Be aware of potential for perverse outcomes (e.g. developers’ mismanagement to create a false low baseline; creation of 200m plastic tubes).
- 19.4. The Knepp model is ‘an easy sell’ partly as it uses stories, imagery, evocative words and experiences that people want to buy into. We need to learn from that.

20. How do we get started?

- 20.1. No more new pilots! This is urgent. We need to build on, and create from, and learn from what is already there.
- 20.2. Importance of engaging quickly, broadly, inclusively to create that social licence for curlew conservation (and other NRN objectives) and give farmers and other land managers the mandate to act. This should include connecting with urban areas (e.g. Yorkshire Dales National Park working to connect urban Tayside and Blackpool with ‘their’ curlew in the uplands). Potential to use new technology to do this (e.g. live camera on Barn Own nest). Work in schools (new GCSE in Natural History). Reintroductions (e.g. curlew) as engagement hook.
- 20.3. Create ‘curlew envy’. Social norms – what are you doing for the NRN?
- 20.4. Need to start with what people want to deliver (what wildlife on your farm?) – and build from there – with an eye to what is needed at large scale from NRN. Importance of advisors to get ‘foot in the door’ – and continue to nudge and build to a wider range of species/outcomes delivery. Evidence of examples: farmer transition from year 1 (focus on 1 species, low levels of skill) to year 3 (expert in wildflowers going beyond scheme requirements); farmer clusters (year 1, small number of actions, low community engagement, to year 4-5 multiple actions and high engagement).
- 20.5. On predator control, agreed that as ecosystem functioning increases, need for predator control will decline. Case for legal, responsible, targeted, and timely predator control (based on evidence) to kick start recovery in the interim.

Table 6: Balancing landscape, species recovery and access.

Table leader: Alison Barnes, New Forest National Park

Table scribe: Richard Saunders, Natural England

1. **Curlew on agricultural land**
 - 1.1. Curlew need a mosaic of short and long swards
 - 1.2. Potential importance of alternative mammalian prey (i.e. voles) for would-be nest predators of curlew
 - 1.3. Importance of targeted predator control highlighted
 - 1.4. Typically, less access on agricultural land, except common land / Lammas lands
2. **Curlew on upland semi-natural habitat**
 - 2.1. Large areas of extensive habitat
 - 2.2. Predator control linked to grouse moor management
 - 2.3. Open access, but effects of recreation diluted (large areas of habitat remain undisturbed)
3. **Curlew on lowland semi-natural habitat**
 - 3.1. Smaller fragmented areas of habitat
 - 3.2. Smaller local populations more vulnerable to stochastic effects & abundant generalist predators
 - 3.3. Not always open access, but even limited access might have disproportionate effect
4. **Increased recreational pressure**
 - 4.1. Increased recreation (more people with more leisure time)
 - 4.2. Increased access provision (coastal access, CROW)
 - 4.3. Dogs are the main problem (particularly dogs off leads)
 - 4.4. Suggestion that increasing riverside access has been proposed
5. **Mitigating effects of recreation**
 - 5.1. Divergence of opinion amongst practitioners
 - 5.2. Pro-access: signage alone can work to change behaviour
 - 5.3. Pro-birds: people ignore signs – ban access / create refuges with wardening required to police restrictions, habitat creation
 - 5.4. Limited empirical evidence that any measures are effective
 - 5.5. One good piece of evidence in the uplands – less effect of disturbance on golden plover in Peak District following managed recreation / provision of linear route.
6. **Is disturbance actually the limiting effect?**
 - 6.1. Might disturbance be limiting?
 - 6.2. Is predation limiting?
 - 6.3. Are busier areas sub-optimal and, with little / no productivity, there are no recruits and busier areas remain unoccupied?
 - 6.4. Might these areas be occupied if predation was addressed?
 - 6.5. Is there an inherent behavioural response that prevents curlew from habituating such that, above a certain level of access, areas become sterilised?
 - 6.6. Might disturbance be exacerbating predation?
 - 6.7. Might impact of recreation differ between extensive upland areas and fragmented lowland areas?
7. **Additional location-specific risks**
 - 7.1. Unenclosed uplands – tree planning risk
 - 7.2. In by land / pasture – silage operations
 - 7.3. Lowlands – greater recreational pressures
 - 7.4. Lowlands / southern locations – climate change related decline in warmer / drier areas
 - 7.5. Correlation between generalist predator abundance in areas with gamebird releases
8. **Options for recovery**
 - 8.1. Intensive *island eradication* approach
 - 8.2. Farm Cluster approach
 - 8.3. Control of tree planting

- 8.4. Share examples of best practice
- 8.5. Need better evidence of mitigation
- 8.6. Identify areas where access is an issue
- 8.7. What is the RSPB view on predator control – would they publicly endorse?
9. **Top round-the-table issues (not all feedback necessarily access related)**
 - 9.1. Must work at a landscape scale
 - 9.2. Context important – upland / lowland / farmland / semi-natural
 - 9.3. Focus on habitat improvements first
 - 9.4. Need regulation to limit access
 - 9.5. Must be bold
 - 9.6. Must ensure design of new ELMS Agri-environment schemes can deliver curlew recovery
 - 9.7. Need a better understanding of what works and where
 - 9.8. Need evidence to understand both impact of recreation on curlew and effective mitigation techniques

On arrival His Royal Highness was greeted by Sir Jim Paice and Teresa Dent (Chairman of Trustees and CEO of the Game & Wildlife Conservation Trust). His Royal Highness joined a top table comprising Mary Colwell, Marian Spain (NE), Andy Clements (BTO) and James Robinson (WWT). Mrs Dent thanked His Royal Highness most warmly for convening and attending the event; she summarised the programme for the morning so far.

Remarks made by His Royal Highness

1. This is the second Curlew and other priority species summit I have been pleased to convene. The first was on Dartmoor in March 2018. I know quite a number of you have been kind enough to come to both.
2. At that Dartmoor Summit we agreed on seven measures to help save curlew. I know Teresa has reminded you of those earlier today. I am delighted to see opportunity for almost all those measures to now form part of ongoing Agri-environment Schemes and the new Nature Recovery Network.
3. You all have been working unbelievably hard to save curlew since we last met and before that too. You are conservation heroes, but curlew is still struggling except in the uplands. I hope we can leave this meeting today clear about what we need to do, and how we are going to do it.
4. Let me congratulate Defra on its 25 Year Environment Plan and having the foresight to bring in the concept of Nature Recovery Network. These are an opportunity to go to the heart of what we need for curlew recovery: to bring people together to work at a landscape scale, to inspire, to support, to share knowledge.
5. I would also like to thank Defra and Natural England for the hard work they will be doing in the next months to design the details of the future ELMS. I hope this can be the primary tool that funds the recovery measures we need for curlew.
6. I congratulate all scientists in the room who have done years of research to show what is happening to curlew and what we need to do to put it right.
7. Thanks to curlew ambassadors like Mary Colwell and Tom Orde-Powlett who have inspired us all with their personal commitment to curlew conservation.
8. The *State of Nature* report produced by the RSPB and many other organisations has kept the perilous conservation status of this species front of mind.
9. The BTO and its splendid band of volunteers have gone out year after year to track the trends.
10. GWCT has done most of the heavy lifting on the research to show the need for predation control which – I sincerely hope - we all now agree on.
11. WWT has done wonderful work with head-starting which gives us the means of helping even the smallest population of curlew.
12. I would also like to pay tribute to the considerable number of farmers, gamekeepers and conservation managers in the room doing wonderful work for birds like curlew and lapwing on your farms, in Farmer Cluster groups and projects. You are at the sharp end, making sure the birds have the habitat they need, protecting them from foxes, desperately trying to make sure vulnerable nests and chicks do not get mashed in a silage machine or trampled by cattle. We all need to learn from you about what will work, and how we can help you do it even better.
13. We have a tremendous opportunity with ELMS and the Nature Recovery Network but if we do not make it practical and welcoming we will not get the number of farmers and landowners needed to make a real difference into the scheme.
14. I really hope we can move to a period of co-creation on this. That Defra will work with everybody in this room
15. We need to remember that it is the curlew we are saving, not ourselves or each of our organisations. We need to work together like never before.
16. It is my firm belief that there are many farmers, landowners, and land managers out there who if asked, would do a huge amount to save curlew, lapwing, redshank, and wonderful species like that. Rather than ask them to simply join a scheme, I think we should ask them to join a movement. As these important policies roll out, let us ask them to put up their hand and come forward to be the group of people in England who want to save curlew and other iconic species. I know curlew is just one species, and we need to save all our precious wildlife. But by saving

one, we save many.

17. It is reasonable to hope it can be done. I think you have been told this morning about the Avon Valley farmers who reversed the decline of Lapwing in the Avon Valley south of Salisbury. You have heard about Curlew Country, which has done its own head-starting
18. It will be a wonderful thing to save curlew. We can all retire from our jobs – though for some of us such a thing never seems to happen - hand our farms to the next generation or go to our graves feeling we have achieved something marvellous.
19. But we will not achieve it by only doing the nice stuff. All the evidence shows that we must control predators in order to get curlew and lapwing recovery. We need to stop thinking of those measures as controversial and difficult, and start realising this is simply good wildlife management, which needs to be embedded into ELMS and funded. The evidence shows that if we do not, every penny put into curlew conservation will actually be wasted.

Final discussion

Teresa Dent facilitated this session by going around the tables again to capture the key points from the earlier table-based discussions in the light of His Royal Highness's remarks and discussion over lunch between delegates themselves and with His Royal Highness.

Key points which emerged were:

1. Scope. Our vision for the conservation of species like Curlew needs to encompass the whole community, not just the conservation world, farmers etc. Conservation effort needs to include the urban and peri-urban areas as part of the wider societal involvement.
2. Engagement. Need to capture the passion and commitment of landowners to Curlew conservation and create a virtuous circle by combining that with well-designed ELMS and NRN.
3. Access. There are different solutions needed for the uplands, lowlands, and farmland. It is important to understand those differences.
4. Urgency. There is great urgency and we need to communicate that. We currently have a window of opportunity to save species like Curlew. It may not last long - we must make the most of it. Should consider scope to provide emergency funding either within existing CS or in addition.
5. Farmer Clusters.
 - 5.1. We should make use of existing groups like this when developing the NRN.
 - 5.2. There should be an incentive for collaborative landscape-scale conservation work.
 - 5.3. Important in the uplands to join up the Home Farm area with the top of the hill to ensure a coordinated approach.
6. Simple schemes design. ELMS must be simple and practical so that farmers and other land managers are encouraged to enter; complexity is very off-putting.
7. Combining conservation techniques. Head-starting should only be used if the conditions exist for the head-started birds to return to nest successfully i.e. a combination of habitat and predation control. Should learn from the experience of the Peak District where collaborative working has resulted in a significant increase in local bird populations, the result of a holistic approach and tackling predation control.
8. Making resources go further. We need to look at this as a national picture so that we make the best use of limited resources, but also of local knowledge and willingness to engage. Quality of advice is critically important.
9. Enabling the farming community. We need to acknowledge the current threat to the principal deliverer of these conservation efforts i.e. the farmers and land managers who currently face a period of enormous uncertainty. Need to cost the interventions needed particularly particular predation control and head-starting.
10. Multiple funding sources. Should explore scope for other funding mechanisms, not just ELMS and NRN. Blended funding options should be considered for the future.
11. Co-ordination. May need some sort of central coordination of funding to maximise opportunity and outcomes. Experience shows this approach can increase available funding e.g. Conservation Initiative. His Royal Highness's point about setting aside organisational priorities and putting the curlew first was highlighted. Should make use of the existing groups such as the Curlew Forum, the UK, and Ireland Curlew group.
12. Keep the tools available to those practising conservation. Very important that we keep the ability to control predation through General Licences.

Beware perverse outcomes. Tree planting seen as the biggest risk; achieving one environmental objective defeats a different biodiversity objective.

Appendix I: Table plan for discussion sessions

Table 1 – What do we need in the Uplands?

1. **Tom Orde-Powlett, Bolton Castle (Table Leader)**
2. Ian Sleightholm, Bolton Castle Keeper
3. Samantha Franks, BTO
4. Mark Pinches, Farmer
5. Sian Whitehead, GWCT
6. Matt Ridley, House of Lords
7. Naomi Oakley, Natural England
8. Kevin Cox, RSPB
9. Des Thompson, SNH
10. Sonya Wiggins, Yorkshire Dales Moorland Group
11. David Douglas, RSPB

Table 2 – What do we need in the Lowlands?

1. **James Robinson, WWT (Table Leader)**
2. Russell Wynn, Curlew conservationist
3. Richard Hanby, Farmer Gloucestershire
4. Rupert Brewer, Gamekeeper Avon Valley
5. Lizzie Grayshon, GWCT
6. Ben McCarthy, National Trust
7. Graham Irving, Natural England
8. Phil Sheldrake, RSPB
9. Edward Parsons, Sandringham
10. Harry Buscall, Farmer
11. Mike Smart, Curlew conservationist

Table 3 – ELMS – making this work

1. **James Phillips, Natural England (Table Leader)**
2. Simon Smart, Black Sheep Environmental Advisor
3. Lynne Phillips, Defra
4. Tom Stratton, Duchy of Cornwall
5. Neil Cole, Farmer Dartmoor
6. Sarah Wells, FWAG
7. Andrew Hoodless, GWCT
8. Rob Cooke, Natural England
9. Thomas Binns, NFU
10. Geoff Hilton, WWT
11. Paula Reading, Defra

Table 4 – As farmers and land managers what do we need?

1. **Simon Lester, Wildlife Manager Somerset (Table Leader)**
2. Andy Clements, BTO
3. Richard Knott, Dartmoor National Park
4. Andrew Carter, Farmer Avon Valley
5. Gerald Gray, Gamekeeper Norfolk
6. Amanda Perkins, Curlew Country
7. John Ebbage, Natural England
8. Marian Spain, Natural England
9. Diane Mitchell, NFU

- 10. Jennifer Smart, RSPB
- 11. Simon Mackown, Defra

Table 5 – Nature Recover Networks – making these work.

- 1. **David Blencathra, Natural England (Table Leader)**
- 2. Mary Colwell, Curlew Action
- 3. Richard Pullen, Defra
- 4. Richard Bickell, Farmer Dartmoor
- 5. Richard Benyon, GWCT
- 6. Teresa Dent, GWCT
- 7. Rose O'Neill, Natural England
- 8. Sarah Sanders, RSPB
- 9. Jake Fiennes, Wildlife Manager Holkham Estate
- 10. Ian Proudler, Yorkshire Dales National Park Authority
- 11. Liam Bell, NGO

Table 6 – Balancing landscape, species recovery and access.

- 1. **Alison Barnes, New Forest National Park Authority (Table Leader)**
- 2. James Pearce – Higgins, BTO
- 3. Alastair Martin, Duchy of Cornwall
- 4. David Stroud, Ecologist
- 5. David Fitzherbert, Farmer/Land Manager
- 6. James Paice, GWCT Chairman
- 7. Peter Holmes, Natural England
- 8. Rebecca Lloyd, Prince of Wales Charitable Foundation
- 9. Beccy Speight, RSPB
- 10. Richard Saunders, Natural England