



Heal Rewilding CIO

Registered charity (England & Wales): 1187992

www.healrewilding.org.uk

heal@healrewilding.org.uk

ELM Consultation Questions - Heal response

Heal launched in March 2020 in response to the biodiversity emergency. Without action, declines will continue unabated. 15% of species are at risk of extinction from Great Britain (State of Nature Partnership, 2019, p9). Ours is one of the most nature-depleted countries in the world (State of Nature Partnership, 2016, p6) and nature must be given more space in the UK to thrive again.

Heal is buying land for rewilding, the low-intervention practice of allowing natural processes to restore biodiversity and soil health, initially in England. Regenerating vegetation and trees on Heal sites will sequester increasing amounts of carbon each year. The sites will also build other 'natural capital' resources, including improved water retention and quality, better soil health and nectar and pollen for insects.

We make this contribution to the development of the ELM scheme as an organisation representing British citizens – in time, hundreds of thousands of them – and many businesses, all of whom will see themselves as stakeholders in land management, having donated to Heal to enable us to acquire ecologically depleted land across lowland England.

Nature-based climate solution

Rewilding is vital to delivering the UK's legally binding commitment to delivering net zero emissions by 2050. This approach draws carbon from the atmosphere, storing it in trees, vegetation and in the soil, and allows for the natural regeneration of plant that lock in carbon as they grow.

Delivering multiple environmental objectives

Rewilding has a clear role to play in decarbonising the UK, but it also delivers other key environmental benefits including helping meet the government's commitment to create or restore 500,000 hectares of wildlife habitat in nature networks across the country. Rewilding is hugely important for restoring biodiversity loss at all levels of the country's ecosystems. It also has a significant role to play in improving the health of our depleted soils; helping land to recover from prolonged periods of intensive farming; supporting water retention in soil and flood risk management; and contributing to clean air.

Diversifying rural incomes

Rewilding projects create new jobs, especially in deprived rural communities. They can help to diversify revenue streams from land management, generating eco-tourism opportunities and bringing new investment into local economies around the country.

Cost-effective carbon abatement and conservation

Rewilding, as a low-intervention, nature-based solution to the climate and biodiversity emergency, is a comparatively cost-effective method to deliver multiple objectives. It must therefore be well supported to deliver its full potential to ensure that net zero is delivered with the greatest value for money to the taxpayer. Not only does rewilding deliver cost-effective carbon abatement, it also

delivers many wide-reaching social, economic, and environmental benefits alongside this, making the case for investing in this approach even stronger.

Supporting community-led projects

At Heal, we believe that community engagement is key to delivering long-lasting environmental solutions, improving people’s connection with nature and unlocking the social benefits that come with this. At our rewilding sites, people will spend time outdoors and learn about rewilding, wildlife and sustainable living. They will go back to their communities with a determination to create more space for nature and make changes that will help address the biodiversity and climate emergency.

Accessible practices to farmers and foresters

Rewilding sites in the UK include projects being delivered by, or delivered in partnership with, farmers, as they have skills that transfer well to such projects. The approach is therefore very accessible to existing land managers and it is vital that there is good engagement with farmers and local communities to help educate about the benefits of rewilding.

HEAL’S FIVE HIGH-LEVEL POINTS

1. ELM is about land management, not just farming, so the framing of ELM should encourage all those responsible for land management – from golf courses to brownfield sites to grouse moors – to manage that land better for climate, nature and people.
2. The links in ELM between the scheme and nature recovery networks, and the scheme and public access, should be much stronger.
3. The scheme should confirm clearly whether nature-managed land (rewilded land) will qualify for ELM and to ensure that the design of ELM administrative processes would not exclude rewilding projects because they are not species specific.
4. Commit to having at least one rewilding project in the National pilot.
5. Include more explicit mention in ELM of climate adaptation and mitigation benefits, particularly water management. Specifically, design ELM to enable bundling and stacking of different payments for ecosystems services/carbon offsetting/green prescribing.

COMPILATION OF KEY POINTS IN THIS DOCUMENT:

Key point 6.1: The scheme design should recognise ‘rewilding’ as a term and explicitly include nature-managed land holdings/nature-driven land management.

Key point 6.2: Robust qualitative evidence indicates that rewilding sites (where natural processes are restored to produce fully functioning ecosystems) are delivering the highest general gains in biodiversity (species and abundance) in a farmland context.

Key point 6.3: At the moment, it is not possible to work out whether rewilding is covered by ELM or not. Many landowners at all scales are interested in rewilding. It should be easy for them to see that they can receive payments under ELM for rewilding their land.

Key point 6.4: The mental/physical health benefits of enjoying wildlife and nature are scientifically proven. Formal/informal access by the public to rewilded land holdings can deliver this public good as a whole-site option compared with scattered, individual habitat elements like wildflower margins.

Key point 6.5: Varied scrub habitat should be particularly highlighted as it supports the widest range of wildlife.

Key point 7.1: Approaches that deliver multiple positive environmental outcomes in one land holding should be prioritised in Tier 2.

Key point 7.2: The description should be broadened to ‘agriculture and other land use’.

Key point 7.3: Given ELM’s objectives, the text overall should be clear that it is a scheme for any land manager seeking environmental improvement as well as an agricultural/farming scheme.

Key point 7.4: A healthy environment is a public good and therefore ELM should work to improve all land, regardless of land use, to best serve the public.

Key point 8.1: Encourage landowners managing dedicated, single-land holding rewilding projects to participate by using the word ‘rewilding’ and recognising them as a category of landowner.

Key point 8.2: Despite some widely-publicised concerns about the impact on traditional rural communities involved, there is still support from landowners and farmers for rewilding. Some farmers respond to the word as a shorthand proxy for concerns about change. Having rewilding supported alongside farming in ELM is unlikely to discourage participation by farmers but is likely to encourage rewilding landowners who have the potential to deliver public goods at scale.

Key point 8.3: ELM uptake can be encouraged by helping the farming community understand the strength of feeling amongst the general public and UK businesses about the state of nature and the climate, and that rewilding is a word strongly and positively associated with action on the biodiversity and climate emergencies. Putting rewilding and farming alongside each other with the ELM proposal would show farmers that the two are not mutually incompatible.

Key point 8.4: One of the facets of change is the acceptance of new terminology. Shying away from using the term ‘rewilding’ serves the past rather than the future. Engagement with local communities – particularly farmers – and showing the economic benefits they could enjoy by embracing it, can overcome misapprehensions and misconceptions about rewilding.

Key point 8.5: A user-friendly ELM scheme which specifically describes nature-managed landholdings as beneficiaries will increase participation and reduce the likelihood of wholesale land abandonment.

Key point 8.6: Participation will be increased in ELM if the scheme more clearly states that farmers can switch to rewilding/nature-managed land holdings as an alternative source of income as demand for meat and dairy production is reduced by significant shifts in food consumption and climate change targets.

Key point 9.1: Rewilding should be included in the list of activities under Tier 2 and Tier 3 of ELM. As well as granular measures and payments for activities benefiting specific habitats, ELM should incorporate explicit provision for generalised nature recovery over a land holding with mixed, non-specialist habitats naturally evolving and changing through vegetative succession, sometimes with the use of cattle, pigs, ponies, beavers and other ecosystem engineers.

Key point 9.2: Tier 2 should include rewilding land holdings as single entities.

Key point 9.3: Single entity Tier 2 rewilding land holdings could form the core of clusters which could then become Tier 3 ELM candidates.

Key point 9.4: When designing a cost-effective delivery mechanism for public goods, rewilding should be recognised as a low-input approach.

Key point 10.1: Rewilding landowners should be supported in Tier 2 because rewilding sites can be the biodiversity core for a set of multiple land holdings. This will enable rewilding landowners to collaborate with land managers deploying wildlife-friendly, regenerative agriculture and other land uses.

Key point 10.2: Funding and support for the organisation of multiple land holdings, including rewilding sites, needs to be provisioned in ELM.

Key point 11.1: Rewilding is a relatively low-cost, long-term solution to significantly reducing flood risks and to improving water quality, through the improvement of soil organic matter and consequent increase in water holding capacity and the restoration of natural water courses. Beavers also undertake effective ecosystem engineering work as a keystone species.

Key point 11.2: Nature recovery networks should also help determine local priorities.

Key point 12.1: Use proxy measurements, satellites, drones and self-certification with targeted risk-based auditing. Simplicity and support (rather than enforcement/punishment) are key.

Key point 12.2: For land holdings which are entirely focused on nature recovery and nature-based solutions, develop land holding-wide calculations based on close approximations of the percentages of main habitat types (eg grassland, scrub, woodland, wetland).

Key point 12.3: Applicant clusters who together comprise larger-scale regenerative/rewilding approaches should be explicitly described as candidate applicants for Tier 3.

Key point 13.1: The delivery of public goods could all attract private funds, particularly as natural capital accounting becomes established.

Key point 14.1: Advice will be essential to us.

Key point 15.1: The burden of monitoring should be minimised.

Key point 16.1: A rewilding site should be included as part of the National Pilot.

Key point 17.1: Heal wholeheartedly supports the aims of ELM in principle. We look forward to fully supporting a policy which recognises the value of rewilding.

Key point 17.2: Rewilding has growing public support. The word 'rewilding' is understood in society at large to mean a way of helping nature to thrive and has positive social currency. It would seem wise for Defra to be in step with broad public opinion by supporting rewilding, given that the public are paying for ELM public goods through the tax system as well as being the beneficiaries.

Key point 17.3: We can provide Defra with new analysis to inform work to reduce concern around rewilding. We have undertaken thematic analysis of attitudes to rewilding and identified five primary themes relevant in this context.

Key point 17.4: By excluding rewilding from ELM, it appears Defra is underestimating the level of interest amongst existing and potential landowners in rewilding.

Key point 17.5: More attention could be given in ELM to the benefits to mental and physical health through access to nature.

Key point 17.6: Varied scrub habitat should be particularly highlighted in ELM to help land managers understand its value for delivering biodiversity.

RESPONSES TO INDIVIDUAL QUESTIONS

6. Do you have any comments on the design principles on page 14? Are they the right ones? Are there any missing?

Key point 6.1: The scheme design should recognise ‘rewilding’ as a term and explicitly include nature-managed land holdings/nature-driven land management.

Key point 6.2: Robust qualitative evidence indicates that rewilding sites (where natural processes are restored to produce fully functioning ecosystems) are delivering the highest general gains in biodiversity (species and abundance) in a farmland context.

Key point 6.3: At the moment, it is not possible to work out whether rewilding is covered by ELM or not. Many landowners at all scales are interested in rewilding. It should be easy for them to see that they can receive payments under ELM for rewilding their land.

Key point 6.4: The mental/physical health benefits of enjoying wildlife and nature are scientifically proven. Formal/informal access by the public to rewilded land holdings can deliver this public good as a whole-site option compared with scattered, individual habitat elements like wildflower margins.

Key point 6.5: Varied scrub habitat should be particularly highlighted as it supports the widest range of wildlife.

Context and opinion: For the design principles (a) through (i) our responses are:

- a. To ensure a clear focus on achieving environmental outcomes, helping to deliver the government’s 25 Year Environment Plan with 500,000ha of new/restored wildlife habitats, the scheme design should include **nature-managed land holdings with a mosaic of changing habitats** which use the land management approach known as ‘rewilding’ because it clearly delivers all ELM public goods or use the term ‘nature-driven land management’. The Knepp Estate is the best known example. In particular, we are not aware of any other category of land use where biodiversity is being delivered to a superior level, in terms of general species presence and abundance in a farmland context (i.e. excluding SSSIs) (**Evidence 6.1**). Our **Schematic 1** shows the gap in the current ELM design.
- b. Given the increasing volume of landowners planning to rewild their land holdings to deliver key public goods (**Evidence 6.2**), the scheme should include **rewilding** as an explicit category to ensure potential rewilding landowners recognise without difficulty that the ELM scheme supports their proposed land management approach, which in turn will support local and national environmental goals and priorities.
- c. For the scheme and its underpinning systems and processes to work effectively and represent maximum value for money to the taxpayer, rewilding should be included. This approach to managing land maximises delivery of all six of the public goods specified in ELM (ref **Schematic 1**). Through the development and promotion of eco-tourism it creates new rural jobs and brings much-needed income into local economies.
- d. The scheme needs to recognise landowners who are prioritising nature’s recovery as a dedicated approach across their entire land holdings to ensure that ELM includes actions that such land managers could deliver and encourages delivery of outcomes at all spatial scales through collaboration. Specifically recognising the role of these ‘rewilders’ alongside

farmers and foresters will encourage collaboration between land managers. In particular, formal/informal access by the public to whole-site rewilded land holdings (like the Knepp Estate) can deliver wellbeing as a public good compared with scattered, individual habitat elements like wildflower margins (see also **Evidence 17.3**).

Principles (e) through (i) – we fully support these principles.

Evidence 6.1: As a result of the management approaches used, nature-based land holdings:

- store and produce clean water (eg no polluted runoff into water courses) (Bryant, 2015)
- help reduce flooding (water held back in restored soil or where beavers are present) (Hudson, 1994; Gurnell et al, 2009)
- deliver clean air (mixed types of vegetation in succession on land holding and no chemical spraying) (no reference - inherent in approach)
- involve no environmental hazards (eg no use of fertilisers, pesticides, slurry) (no reference, inherent in approach)
- combat climate change and improve climate change resilience (eg healthy ecosystems, carbon sequestration) (Sandom et al, 2019; Heal data in process, 2020)
- support thriving plants and wildlife (restoration of natural processes delivering fully functioning ecosystems), particularly pollinators (beetles, flies, ants, moths, butterflies, bumble bees, honey bees, solitary bees, and wasps) which provide value to agriculture in the UK of £690 million annually (Centre for Food Security, undated)
- offer the public, via public rights of way, permitted paths or specifically facilitated visits, beauty (of wildlife and plants), engagement (with nature) and the mental/physical health benefits of being in nature (Bratman et al, 2019)

Some SSSIs have rewilding areas within them which are more biodiverse, such as at Ingleborough and Purbeck in Dorset (personal comment, Rewilding Britain).

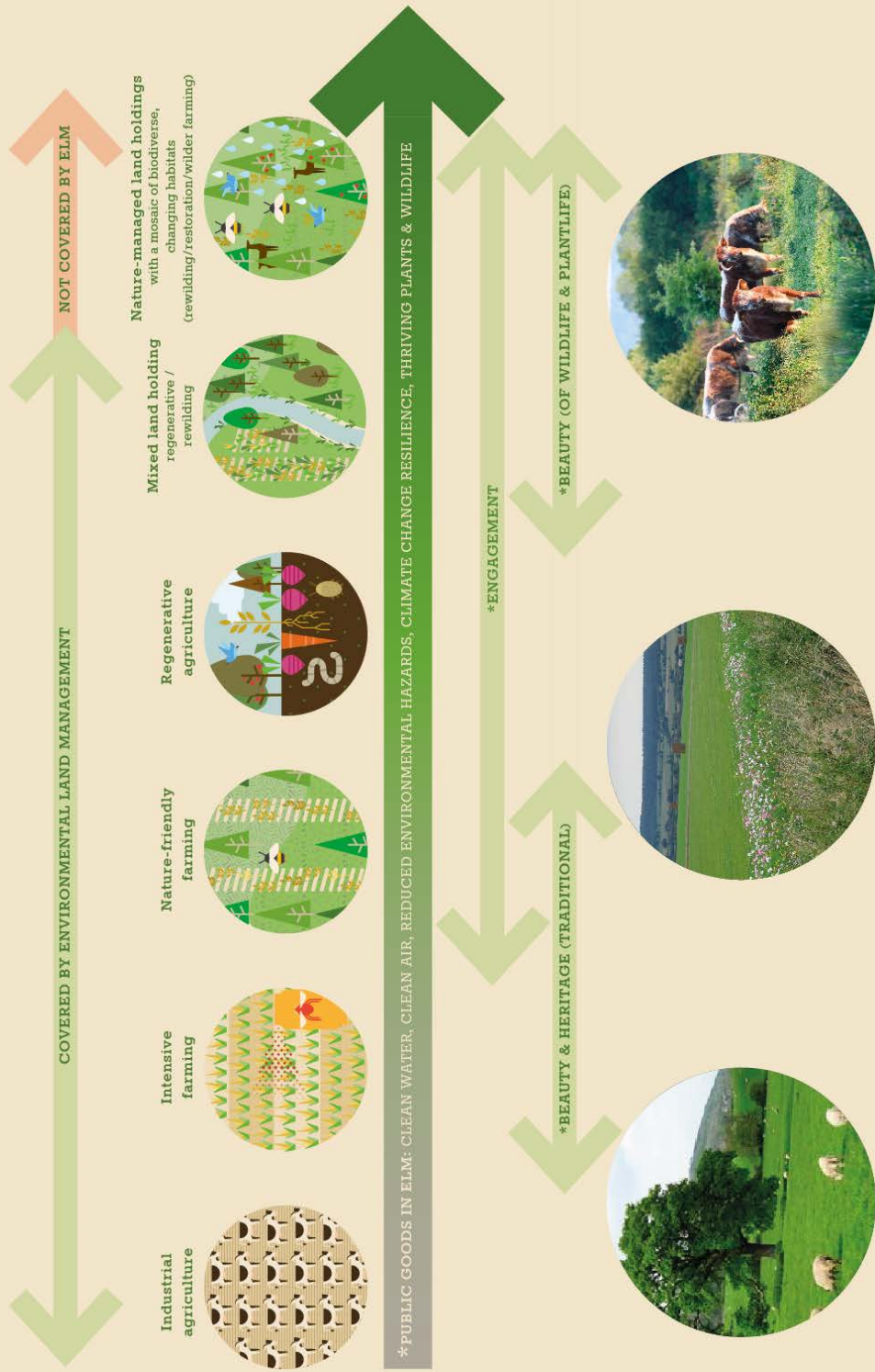
Multiple papers in *Birdlife* also report high biodiversity in rewilding settings (Birdlife, various).

Evidence 6.2: 70 landowners with 45,000ha, with rewilding underway or planned to start very soon. Around 50 of these are between 15ha and 400ha in size and 20 are over 400ha. These numbers are increasing on a weekly basis (unpublished data, Rewilding Britain, 2020).

Evidence 6.3: Scrub of varied age, species and structure supports the widest range of wildlife. Scrub provides nectar for pollinators, seeds and fruits for birds and mammals, shelter and nest sites for invertebrates, birds and mammals, and habitats for many flowering plants. Tall herbs and grasses growing along the edge of scrub offer shelter for small mammals, nest sites for birds and hunting areas for barn owls and kestrels. Birds using scrub include yellowhammers, linnets, grasshopper warblers, whitethroats, dunnocks, willow warblers, turtle doves, song thrushes, bullfinches and nightingales (RSPB, 2020).

DELIVERY OF PUBLIC GOODS*

IN NON-SPECIALIST HABITATS IN UK LOWLAND RURAL LANDSCAPES



SPECIALIST HABITATS IN ELM: **WOODLAND**, WETLANDS, FRESHWATER, PEATLAND, HEATHLAND, SPECIES-RICH GRASSLAND, COASTAL HABITAT, URBAN GREEN SPACE
WOODLAND - SIGNIFICANTLY LOWER BIODIVERSITY COMPARED WITH NATURE-MANAGED LAND HOLDINGS WITH A MOSAIC OF HABITATS

IMAGE CHARLIE BURRILL, KNEPP ESTATE

IMAGE JOHN STEPHEN

Schematic 1

7. Do you think the ELM scheme as currently proposed will deliver each of the objectives on page 8?

Key point 7.1: Approaches that deliver multiple positive environmental outcomes in one land holding should be prioritised in Tier 2.

Key point 7.2: The description should be broadened to ‘agriculture and other land use’.

Key point 7.3: Given ELM’s objectives, the text overall should be clear that it is a scheme for any land manager seeking environmental improvement as well as an agricultural/farming scheme.

Key point 7.4: A healthy environment is a public good and therefore ELM should work to improve all land, regardless of land use, to best serve the public.

Context and opinion: We think that ELM as currently proposed could be improved to ensure delivery of strategic objective (1), ‘**to secure a range of positive environmental benefits**’, by the inclusion of land use which entirely focuses on nature-managed holdings supporting nature recovery and climate resilience (rewilding). This approach delivers, broadly and effectively, all of the public goods at the heart of ELM: clean and plentiful water, clean air, protection from and mitigation of environmental hazards, mitigation of and adaptation to climate, thriving plants and wildlife, beauty and engagement. Approaches that deliver multiple positive environmental outcomes in a single land holding should be prioritised in Tier 2. The evidence of the ecosystem service benefits of rewilding interventions is growing steadily (**Evidence 7.1**).

We think that ELM will deliver strategic objective (2) ‘**to help tackle some of the environmental challenges associated with agriculture, focusing on how to address these in the shorter term**’ more effectively if the description is broadened to include ‘agriculture and other land use’ to explicitly accommodate golf courses, for example, which could convert marginal areas, or brown-field sites in urban settings (as urban green space is one of the habitats mentioned). Other large-scale land uses, such as grouse moors, deer-stalking estates and commercial forestry, also have serious environmental challenges associated with them which must be addressed urgently.

The point above highlights a mixed message in the text: on the one hand, ELM is positioned as a nationally beneficial scheme for linking land management to environmental improvement and public goods, but it come across in a number of places as a scheme for agriculture and farmers/farming. ELM is an alternative ‘income stream for farmers’ (Policy Discussion Document p8) but must also be clearly explained as a scheme for any land manager seeking and delivering environmental improvement. A healthy environment is a public good and therefore ELM should work to improve all land, regardless of land use, to best serve the public. If the intention of ELM is as a scheme to deliver public goods from land use (e.g. the inclusion of urban green space) it would help if references were ‘for farmers and other land managers or farmland and other land’.

In the near future, rural demographics are going to have a significant impact on the agricultural economy (**Evidence 7.2**). To support rewilding now would be a proactive response to the inevitable economic disruption to come, promoting and creating diversity (and therefore resilience) within the farming economy. Farmers can diversify into rewilding and continue to manage land for food production but with greater attention to the environmental outcomes (**Evidence 7.3**). Integrated within ELM’s objectives should be text which sets out considerations for land use diversification. For example, landowners, including farmers, with rewilded areas can benefit from eco-tourism, which could provide an essential income supplement after the end of the Basic Payment Scheme (**Evidence 7.4**). Tourism currently generates more revenue and provides more employment for the rural sector

in Britain than farming (**Evidence 7.5**). The market for nature tourism in Europe is increasing at six times the rate of tourism overall and over 65% of the total trip cost from a typical nature-based adventure tourism holiday remains in the local economy (**Evidence 7.6**).

Evidence 7.1: See reference list for five papers in *British Wildlife* detailing the biodiversity benefits of rewilding. Isabella Tree's book *Wilding* also provides numerous examples, some detailed in **Evidence 9.2**.

Evidence 7.2: According to Feedback's report (2019), with only 13% of UK agricultural workers under the age of 44, and 62% over the age of 55, a management transition between the generations offers an opportunity to shift methods of production and land management. The report says that environmental objectives could be achieved alongside providing good rural livelihoods by subsidising shifts away from livestock to fruit and vegetable production, offering older livestock farmers good financial support to retire, and funding training/retraining for growers transitioning into growing plant-based sustainable foods and forestry management - particularly for new younger producers.

Evidence 7.3: Gross margins at Wild Ken Hill in Norfolk are an example of a thriving farm with a mixed land holding of regenerative agriculture and large areas for rewilding that provide evidence that land diversification, including rewilding, can increase farm revenue as a result of tourism and fit into a farming/traditional conservation framework (Wild Ken Hill, 2020).

Evidence 7.4: Eonomia's North Devon Natural Capital Investment report for Natural England describes the potential benefits of eco-tourism on farmland – including drawing tourists away from over-crowded tourist hotspots (Natural England, 2020). Visitor numbers to Knepp provide evidence for this (unpublished information, Knepp Estate).

Evidence 7.5: Tourism currently generates more revenue and provides more employment for the rural sector in Britain than farming - there are 365 million trips to rural destinations each year, generating £18.6bn for the rural economy and providing 340,000 full-time jobs (Farming UK). Over 65% of the total trip cost from a typical nature-based adventure tourism holiday remains in the local economy (Rewilding Britain website).

Evidence 7.6: Nature Economies (Rewilding Britain website)

8. What is the best way to encourage participation in ELM? What are the key barriers to participation, and how do we tackle them?

Key point 8.1: Encourage landowners managing dedicated, single-land holding rewilding projects to participate by using the word 'rewilding' and recognising them as a category of landowner.

Key point 8.2: Despite some widely-publicised concerns about the impact on traditional rural communities involved, there is still support from landowners and farmers for rewilding. Some farmers respond to the word as a shorthand proxy for concerns about change. Having rewilding supported alongside farming in ELM is unlikely to discourage participation by farmers but is likely to encourage rewilding landowners who have the potential to deliver public goods at scale.

Key point 8.3: ELM uptake can be encouraged by helping the farming community understand the strength of feeling amongst the general public and UK businesses about the state of nature and the climate, and that rewilding is a word strongly and positively associated with action on the biodiversity and climate emergencies. Putting rewilding and farming alongside each other with the ELM proposal would show farmers that the two are not mutually incompatible.

Key point 8.4: One of the facets of change is the acceptance of new terminology. Shying away from using the term ‘rewilding’ serves the past rather than the future. Engagement with local communities – particularly farmers – and showing the economic benefits they could enjoy by embracing it, can overcome misapprehensions and misconceptions about rewilding.

Key point 8.5: A user-friendly ELM scheme which specifically describes nature-managed landholdings as beneficiaries will increase participation and reduce the likelihood of wholesale land abandonment.

Key point 8.6: Participation will be increased in ELM if the scheme more clearly states that farmers can switch to rewilding/nature-managed land holdings as an alternative source of income as demand for meat and dairy production is reduced by significant shifts in food consumption and climate change targets.

Context and opinion: Heal is a potential future participant in ELM. We will be managing, as time goes on, more than 24,000 acres and representing hundreds of thousands of British citizens and many businesses who will have donated to enable us to acquire ecologically depleted land across lowland England. Our sites will be managed for nature and accessible to major urban populations so that people can benefit from the evidence-based contribution that nature makes to mental and physical health. We are particularly focused on younger people and diversity of ethnic background, socio-economic background and LGBTQ+. Education, scientific research and training are also charitable purposes.

We aim to create a strategic network of 48 sites for nature recovery, one in every county, with a target scale of 200+ha/500+ acres per site with public access. Studies show that if more people can interact with nature, they will attach more value to it. Heal’s plan for rewilding and facilitating public access would therefore contribute significantly to increasing public exposure to nature, and subsequently public desire to protect it (**Evidence 8.1**). We may also lease or manage land for existing landowners. **A barrier to participation is that we cannot deduce clearly that we, as a rewilding landowner, would qualify for ELM.**

The key way in which Defra could encourage participation by landowners like us, who are entirely focusing on the delivery of environmental public goods, is to recognise us as a category of landowner and to recognise the approach we will take to managing land, which currently is not represented anywhere in the ELM document. The document only references specialist habitats, so for completeness, should also refer to ordinary (or non-specialist habitat) land which is managed for nature.

To meet the government’s objectives to create or restore 500,000 hectares of wildlife habitat in nature networks across the country, it is not enough simply to continue to fund the conservation of existing specialist habitats. We must create new habitats by improving ecologically-depleted sites with non-specialist habitats (i.e. Heal’s approach to rewilding). Therefore, ELM must include payments for improving non-specialist habitats. A further justification of this approach is that the cost and carbon sequestering benefit of rewilding 500,000ha of rewilded land is more efficient and better value for money than traditional conservation or ‘wildlife-friendly farming’ (see **Evidence 9.5** in section 9).

We hope that Defra not only wants ELM to be supported by farmers and other landowners / managers, but also for it to garner wider public support, given that the UK public will both pay towards, and benefit from, ELM. One of the facets of change is the acceptance of new terminology and the ELM scheme can serve the future by using the term ‘rewilding’ which has growing public

support following the widely publicised successes at the Knepp Estate. Having rewilding explicitly supported in ELM will chime with the general public and is unlikely to discourage participation by farmers, for whom ELM is an underpinning scheme, but could encourage rewilding landowners who have the potential to deliver public goods at scale.

ELM take-up can be encouraged by helping the farming community understand the strength of feeling amongst the general public about the state of nature (**Evidence 8.2**) and the climate, and similar views amongst UK businesses. Rewilding is a word strongly and positively associated with action on the biodiversity and climate emergencies; we know this because we have amassed substantial qualitative data – in the form of hundreds of messages and dozens of conversations – about the need for action through rewilding.

That said, we recognise that amongst some constituencies there is both an apathy towards nature, and a scepticism about the Government's ability and willingness to support rural communities. We are also very aware of the spectrum of attitudes that exists around rewilding. Rewilding can often be rated more positively by tourists and residents from other regions, than by local inhabitants who may have more functional ties with nature (Bauer and Von Atzigen, 2019, p153). Nevertheless, we know there is support for rewilding within the farming community (**Evidence 8.3**) and rewilding projects are emerging in Britain which are successfully continuing their agricultural output (**Evidence 8.4**).

Understanding of, and support for, rewilding can be increased through access and engagement (**Evidence 8.5**). Within the farming community, this could be helped by increasing their understanding of the value of wild areas. For example, a report from The Royal Society (2015) found that giving over a tiny portion of land to wilder margins can actually increase yields. Local communities must be involved in a participatory process of co-design at rewilding sites, starting with a detailed assessment of human-nature relationships in the area. Public education campaigns can garner local support and encourage other land managers, through better understanding of the nature of rewilding, to support nature-managed areas within their land holdings which will qualify for ELM (**Evidence 8.6**). For this reason, we think it is important to continue with farmer facilitation fund payments under ELM with a view to Heal and other rewilding landowners (present and future) developing clusters in collaboration with surrounding farmers (see Schematic 2) (**Evidence 8.7**).

In the context of changes in farming practices post-Brexit mentioned in answer to Q7, landowners would be more likely to embrace ELM if the scheme clearly lists rewilded/nature-managed land holdings as beneficiaries. This may also reduce the likelihood of wholesale land abandonment resulting from a general lack of awareness from farmers that they could benefit from ELM in this way. Land abandonment has been an issue in some European countries (Lasanta et al, 2017).

Another way to encourage participation in ELM is to help landowners and managers to understand more fully the opportunity to use land for rewilding if their incomes from meat and dairy production decline as a result of changes in food preferences and ideally reducing to meet climate change targets.

In terms of food preferences, recent changes to consumption patterns for meat and dairy consumption are profound (**Evidence 8.8**).

The Committee on Climate Change has proposed that the amount of grassland and rough grazing land used for agriculture could be reduced by as much as one-third — or 4.5m hectares — by 2050 to deliver net zero-carbon emissions by then. One of the Committee on Climate Change's targets to

help achieve this is for a 50% reduction in red meat consumption from 2020-2050. A halving of meat consumption would not only reduce the requirement for grazing land but also the land to grow crops for animal feed. This would require a slower decline in red meat consumption than has occurred historically over the past nine years, so is likely to be achieved on that basis; the Feedback report to the CCC (2020) says there is no rationale to project a slower rate of decline than the rate of the historical trend. As this change occurs, considerable additional land will become available for rewilding and afforestation as part of the ELM scheme, or be used (where suitable) for growing extra plant-based protein and fruits and vegetables to improve UK food security. (**Evidence 8.9**).

Evidence 8.1: Research by Zaradic has shown how experiences of nature can be a predictor of environmental concern (Zaradic et al., 2009). There is evidence that children are more likely to form connections to nature if their parents frequently do the same. We suffer from 'environmental generational amnesia' (Miller, 2005, p431) which means that we don't take into account degradation from before we were born, but rather work off a 'baseline' of what we knew growing up. This is especially important now as young people have never known widespread healthy ecosystems, so education is key.

Evidence 8.2: In the world's biggest scientific study of its kind, Natural England's 'Monitor of Engagement with the Natural Environment' (MENE) 2019 report shows that nine out of ten adults in England are concerned about increasing threats to the natural environment, with nearly two-thirds specifically worried about biodiversity loss (Natural England, 2019).

Evidence 8.3: Stefan Jimenez-Wisler, land use policy adviser for the CLA, which represents rural landowners, refers to support by farmers in a study which addresses the issue of rewilding. The paper looks at perceptions of rewilding as an attack on traditional land uses like farming and highlights ways in which rewilding may be an attractive option for farmers as post-Brexit changes take place. Wisler says: "Farmers and landowners are eager to contribute to environmental improvements and achieve the environmental and business opportunities associated with the range of rewilding approaches identified; whether it is active management at a holding level, passive management at landscape scale or anything in between. As the UK leaves the CAP, the introduction of a new agricultural policy in England based on public money for public goods is a welcome change that will better enable rewilding approaches to be taken, by accounting for and rewarding the wide range of benefits to wildlife, water, climate and soils that rewilding can provide." Benedict Dempsey, in the same paper, says: "Farmers and landowners often know their land better than anyone else, with a deep connection to its history and the communities that have shaped it. There is no need for farming and rewilding to be in conflict with each other. Instead, if they choose to, landowners and farmers can use their unique knowledge to diversity what they deliver for society - like flood alleviation and biodiversity, as well as food production." (Sandom et al, 2019).

Evidence 8.4: Knepp and Wild Ken Hill are examples of rewilding projects with a successful continuation of profitable agricultural output (Knepp and Wild Ken Hill websites).

Evidence 8.5: The Upper Adur Farmers Group with the Knepp Estate are working together, demonstrating how the outsider/local divide can be bridged with a proactive community engagement strategy to make rewilding work for everyone (personal comment, Knepp Estate team).

Evidence 8.6: In the journal *Landscape and Urban Planning*, Gunderson et al (2017) noted that added information describing why the landscape is being treated in a certain way can lead to a more positive assessment of it from the public.

Evidence 8.7: Facilitation groups have proved to be a good means of delivering agri-environment schemes in Countryside Stewardship and also enable knowledge sharing of more novel forms of land management, like on the benefits of rewilding. Farmers in the scheme are more likely to be receptive to new ways of thinking, such as ELM. This idea of group learning is emphasised in a project for Defra which explored how their advice could be best implemented, saying that: ‘The link between environmental attitudes and behaviour is stronger where behaviour is collective. If individuals are convinced that the response is a group response, the perceived effectiveness of the action will be enhanced’ (Dwyer et al, 2006, page iv).

Evidence 8.8:

- From 2008-2019, the consumption by adults aged 19-64 of fresh and processed meat reduced by 26% (Public Health England, 2019)

- one in eight people in the UK is now vegan or vegetarian and a further 21 per cent claim to eat a largely vegetable-based diet supplemented occasionally with meat, meaning a third of UK consumers have deliberately reduced the amount of meat they eat or removed it from their diet entirely (Waitrose, 2019)

- 23% of all new UK food product launches in 2019 were labelled as vegan (Mintel, 2020)

- Of the six million hectares of cultivatable land in Britain, only 168,000 hectares are used for fruit and vegetables (Lang, 2020)

- The UK currently has ~84,000 km² of permanent pastureland, and ~58,000 km² cropland of which 55% is used to grow animal feed, meaning that animal agriculture currently occupies 48% of all UK land in total (Harwatt and Hayek, 2019, p.7)

- The proportion of UK meat eaters who have reduced or limited the amount of meat they consume rose from 28% in 2017 to 39% in 2019, and the proportion of Britons who have eaten food containing meat substitutes has risen from 50% in 2017 to 65% in 2019 (Mintel, 2020).

- Sales of meat-free foods grew 40% from £582 million in 2014 to an estimated £816 million in 2019, and are projected to reach over £1.1 billion by 2024 (Mintel, 2020).

Evidence 8.9: A report commissioned by the CCC estimates that a 50% reduction in beef, lamb and dairy consumption by 2050 would alone result in a 37% reduction in the total UK agricultural sector’s domestic emissions by 2050, a reduction of 17.49 Mt CO₂e per year. This would free up vast amounts of pastureland for afforestation and ecosystem restoration (CEH and Rothamsted Research, 2019, p. 29).

9. For each tier we have given a broad indication of what types of activities could be paid for. Are we focussing on the right types of activity in each tier?

Key point 9.1: Rewilding should be included in the list of activities under Tier 2 and Tier 3 of ELM. As well as granular measures and payments for activities benefiting specific habitats, ELM should incorporate explicit provision for generalised nature recovery over a land holding with mixed, non-specialist habitats naturally evolving and changing through vegetative succession, sometimes with the use of cattle, pigs, ponies, beavers and other ecosystem engineers.

Key point 9.2: Tier 2 should include rewilding land holdings as single entities.

Key point 9.3: Single entity Tier 2 rewilding land holdings could form the core of clusters which could then become Tier 3 ELM candidates.

Key point 9.4: When designing a cost-effective delivery mechanism for public goods, rewilding should be recognised as a low-input approach.

Context and opinion: We have already expressed our views above on the logic of including ‘rewilding landownership’ explicitly in the scheme.

Heal has a significant concern regarding ‘types of activities’. Wynne Jones et al (2019) from the University of Sussex pointed out that rewilding “[departs] from ‘compositional’ approaches, centred on designated species and features, and focuses instead upon the integrity of ecosystem processes and functionality”. In rewilding, the imperative for ‘management’ is ostensibly reconsidered, with lost species returned (or comparable species substituted to reinstate trophic processes) and impediments on natural function removed in order to reinstate a more ‘self-willed’ ecosystem. Unlike traditional conservation approaches, rewilding is inherently a low-intervention approach where the rewilding landowner is not ‘acting’, but rather allowing natural processes to be restored. Furthermore, rewilding is used to restore ecosystem function on ecologically-depleted (non-specialist) land rather than specialist habitats. How will that be recognised in ELM – given that the land will be strategically delivering public goods on a generalised basis?

The current ELM approach, which offers payments for specific ‘activities’ and habitats, is a granular approach, whereas nature recovery in a rewilding setting doesn’t follow a plan of activities or the restoration of specific habitats, as processes are nature-driven. Therefore, in addition to the granular approach in ELM, rewilding should be included in the list of activities under Tier 2 and Tier 3 of ELM. Provision should be made for payments on a basis which recognises generalised nature recovery over a land holding where mixed and connected habitats are naturally evolving and changing through succession with minimal human interference and sometimes with the use of cattle, pigs, ponies, beavers and other ecosystem engineers. This form of nature recovery delivers environmental benefits at a more systemic, whole ecosystem level as opposed to disconnected fragments of habitats on farms, and as such should be recognised as a separate category in ELM.

Unlike in traditional habitat management, rewilding does not follow ecological targets and outcomes are inherently unpredictable. We appreciate that uncertainty is challenging for funders but this shift in mindset must happen and happen fast – we are in an emergency and action is urgently needed to enable whole-ecosystem recovery. ELM must be designed to allow progress in biodiversity and environmental benefits to be delivered without the requirement for constraining outcome targets.

Rewilding Britain have, in their submission, described the greater efficiencies across landscapes and the scale of public goods delivery and we concur. However, we think that rewilding landowners should be supported in Tier 2; if rewilding is only explicitly supported in Tier 3, the ELM scheme will discourage individual landowners from taking part in rewilding, even though they will support ‘stepping stones’ in clusters in rural landscapes and act as wildlife hotspots.

We are also aware of anecdotal evidence that a move towards nature-led management by one landowner can positively influence adjoining landowners. This has happened at Knepp, for example (**Evidence 9.1**). This means that a start in Tier 2 could lead to Tier 3 – so an individual landowner should be supported in Tier 2 for this reason.

We contend that Heal will be an ideal candidate for Tier 2, as we will be undertaking ‘the management of land to deliver a wide range of environmental benefits, ensuring local outcomes are targeted to the local environment’. The framing of Tier 2 appears to have been drafted in the context of ‘legacy’ conservation management approaches (such as preserving targeted species or saving specific habitats) and does not reflect the profound changes in thinking and practice – around abundance and fully functioning ecosystems where nature is ‘self-willed’ – which have been developing over the last 20 years and are now supported by some robust and compelling evidence.

The best-evidenced example of biodiversity and other gains in public goods at a nature-managed single land holding in a lowland, non-specialist habitat context is the Knepp Estate, which has gone through a rewilding succession from being intensively farmed in the 2000s (**Evidence 9.2**).

The capacity of soils in a rewilded setting to hold water and alleviate flood risk is also significant (**Evidence 9.3**).

Habitat management alone will not underpin nature-based tourism, whereas there is strong evidence that a rewilded location can be an appealing destination. Nature and ecotourism attract people interested in a variety of natural and cultural resources, including being immersed in a rich, natural, cultural or historical experience. Particularly as a result of the Covid-19 pandemic, more UK residents are planning ‘staycations’ and are becoming more conscious of the impact of travel on the planet. Eco-tourism is a growth market and natural areas in the UK are major beneficiaries; generally, as rewilding takes hold over years and decades, its potential for tourism will increase significantly (**Evidence 9.4**).

As a low-intervention approach, rewilding is a cost-effective and sustainable means of delivering public goods (**Evidence 9.5**).

Evidence 9.1: The Upper Adur Farmers Group with the Knepp Estate are demonstrating how landowner clusters can be developed. The Knepp Estate has added several hundred acres owned by a neighbour into its rewilded area (personal comment, Charlie Burrell, Knepp Estate).

Evidence 9.2: Professionally conducted baseline surveys began at Knepp in 2005. A 2016 peer-reviewed UK Parliament POSTnote confirmed that “emerging scrub, wood-pasture, water meadows and grassland currently supports some of the largest UK populations of nightingales, turtle doves and purple emperor butterflies”. The Knepp 2018 survey reports underline the extraordinary increases in wildlife (Knepp, 2018):

- 57 species of birds including 22 Red List Species of High Conservation Concern and 21 Amber List Species of Medium Conservation Concern
- 30 nightingale territories (none in 2001)
- breeding site for peregrine falcons, ravens, red kites, sparrowhawks, lesser-spotted woodpeckers, lapwings, skylarks, house sparrows and yellowhammers
- five UK species of owl recorded
- 13 out of the UK's 17 species of breeding bats recorded
- 388 individual purple emperor butterflies, believed to be more than anywhere else in Britain (none in 2009)
- 23 species of butterflies (13 species in 2005)
- 1,334 individual butterflies including 45 green-veined white (none in 2005), 47 purple hairstreak (none in 2005), 35 common blue (none in 2005), 29 Silver-washed Fritillary (13 in 2005)

- Major population increases yellow-necked field mice, bank voles, field voles and common shrew hedgehogs, stoats and weasels
- Over 600 invertebrate species
- The removal of pesticides and avermectins, and leaving deadwood on the land, has triggered a rise in notable beetles, including the first record in Sussex for 50 years of the violet dor beetle (*Geotrupes mutator* - a type of dung beetle); the rare click beetle (*Calambus bipustulatus*) and the steely blue beetle (*Korynetes caeruleus*)
- scarce chaser dragonflies, found only in six places in Britain, appeared out of nowhere with 18 counted in a single day

The Wicken Fen rewilding project in Cambridgeshire has seen increases in barn owls, kestrels, lapwing, avocets and snipe, all of which are breeding, and sightings of common cranes, last seen on the fenland 400 years ago, otters and bitterns. The site now supports 9,300 species (National Trust website).

Knepp and Wicken Fen are going against the trends of wildlife decline (State of Nature, 2019).

Evidence 9.3:

- improvements in soil organic content is evidenced by (a) 18 species of anecic, epigeic and endogeic earthworms at Knepp and (using neighbouring farmland as a baseline), an exponential rise in the populations of all three types of earthworm; (b) 23 species of dung beetle in a single cowpat; and (c) ants, with some ant-hills now over a half a metre high (Knepp, 2018).
- see also **Evidence 11.1** on water management/flood risk reduction through soil organic matter improvement

Evidence 9.4: according to data gathered by the Government, between 2009 and 2016 adults in Britain made 2.6 billion visits to forests or woodland areas in England, for example. In that same time period the number of visits has risen by 71 per cent. On the island of Mull, the reintroduction of white-tailed eagles now brings in £5 million a year, one tenth of the total tourism income, generating 110 jobs and a further £2.4 million in spin-off income (Rewilding Britain website). The Knepp Estate in Sussex has recently increased its booked spaces from 2,000 to 6,000 and the birth of white storks recently has brought in thousands of visitors (personal comment, Knepp Estate employee).

Evidence 9.5: a peer-reviewed UK Parliamentary 'POSTnote' on rewilding notes that the practice 'often has low input costs, but can still benefit biodiversity' (Alison and Wentworth, 2016, p1). Compared with traditional conservation practices, rewilding is:

- a. Simpler – conservation NGOs have detailed management plans for each nature reserve that specify multiple activities (e.g. brushcutting, coppicing, herbicide application) at specific times of year. In rewilding, one livestock management plan covers the whole site.
- b. Less expensive to operate – fewer staff are needed (a stockman and a site manager instead of team of habitat managers) and does not require specific qualifications and equipment needed in conservation like chainsaw/power tool certification and herbicide licences.
- c. Sustainable – rewilding is a low-input system that is driven by nature and therefore requires little resource.

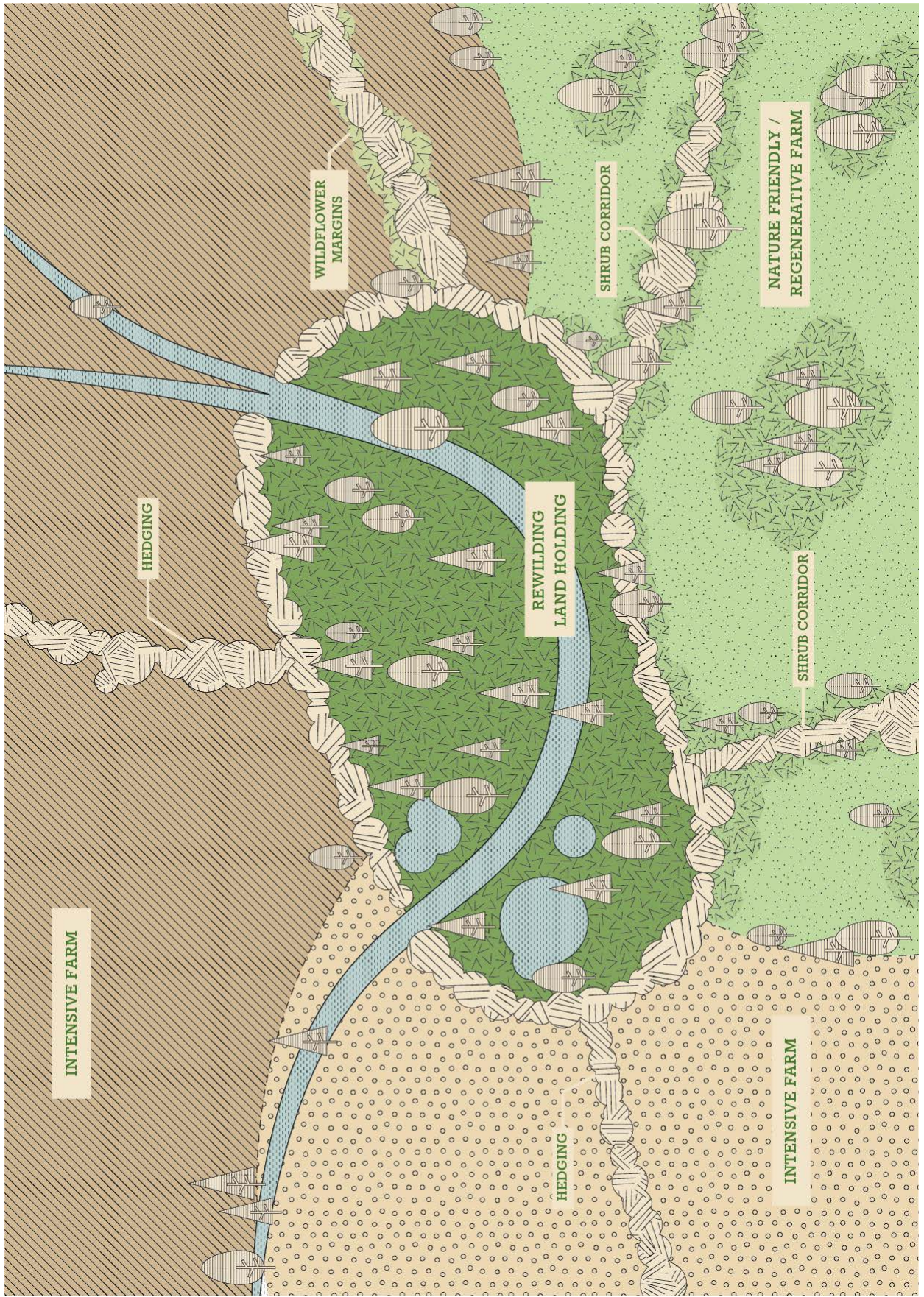
d. Lower risk – given that rewilding is a low-intervention system, a rewilding site management plan specifies long periods of no human action. The only urgent actions will be livestock care, such as animal relocation to different plots, vet check-ups and fence repairs. These activities can be safely conducted by one or two people. This means that rewilding is significantly more pandemic proof than current ‘legacy’ conservation practices; conservation NGOs have suffered greatly during Covid-19 because all group habitat management activities (staff and volunteers) were cancelled, meaning that the actions in their management plans (e.g. coppicing, scything) were not carried out.

10. Delivering environmental outcomes across multiple land holdings will in some cases be critical. For example, for establishing wildlife corridors or improving water quality in a catchment. What support do land managers need to work together within ELM, especially in tiers 2 and 3?

Key point 10.1: Rewilding landowners should be supported in Tier 2 because rewilding sites can be the biodiversity core for a set of multiple land holdings. This will enable rewilding landowners to collaborate with land managers deploying wildlife-friendly, regenerative agriculture and other land uses.

Key point 10.2: Funding and support for the organisation of multiple land holdings, including rewilding sites, needs to be provisioned in ELM.

Context and opinion: Heal can see an optimal combination of a core ELM-funded rewilding land holding being surrounded by ELM-funded farming operations providing a core-and-corridors arrangement (see Schematic 2 below) where a rewilding area acts as a biodiversity ‘hot spot’ with corridors such as hedges, rivers and wildlife strips going from the centre of it through the surrounding farms to other cores.



Schematic 2

Land managers will require targeted support in a number of ways:

- 1) High-quality advice available (both nationally and locally) to help land managers transition to wildlife-friendly land management techniques. This includes creating a network of community-based business advisors who can provide the right support to help land managers initiate and implement new environmental projects and nature-friendly food production/regenerative farming. Land managers should also have access to relevant ecological and environmental training, and business development support.
- 2) Funding to support the set-up of local businesses and partnerships who have the collective power to find markets for local product and broker public payments, ensuring results benefit the local community. These legally constituted entities will also be able to collectively deliver greater benefits in terms of soil and water quality, carbon sequestration, and for wildlife and biodiversity.
- 3) Bearing in mind the considerable time it takes for rewilding or nature recovery to develop significantly, investment capital (which will be crucial) should not be tied to set ecological targets and outcomes, and investments must offer long-term paybacks.

11. While contributing to national environmental targets (such as climate change mitigation) is important, ELM should also help to deliver local environmental priorities, such as in relation to flooding or public access. How should local priorities be determined?

Key point 11.1: Rewilding is a relatively low-cost, long-term solution to significantly reducing flood risks and to improving water quality, through the improvement of soil organic matter and consequent increase in water holding capacity and the restoration of natural water courses. Beavers also undertake effective ecosystem engineering work as a keystone species.

Key point 11.2: Nature recovery networks should also help determine local priorities.

Context and opinion: When the prioritisation of local environmental deliverables is being determined, this should be done in relation to the risk and impact of climate-related events. Rewilding is a relatively low-cost and long-term solution to significantly reducing flood risks and to improving water quality. (**Evidence 11.1**). The restoration (or rewilding) of rivers also serves to slow the flow of rivers and ease severe flooding. The reintroduction of beavers, a keystone species, also substantially reduces the risk of flooding by slowing rivers through their dams and waterways (**Evidence 11.2**). Aligning this work to help meet the flood management aims of the Environment Agency across a complete catchment will ensure a holistic, rather than piecemeal, approach to managing flood risk. This requires that statutory agencies are well-resourced and able to provide comprehensive opportunity mapping for the public goods within their remit. This in turn will assist ELM administrators to focus their efforts on targeted, priority areas and avoid shifting problems elsewhere and restricting potential benefits. Nature recovery networks should also help determine local priorities for nature-oriented land use.

Evidence 11.1: Work by Bryant (2015) confirms that a 1% increase in soil organic matter can help soil hold 220,000 litres more water per hectare. A 1994 study by Hudson in the *Journal of Soil and Water Conservation* showed that a silt loam soil with 4% organic matter holds more than twice the water of a silt loam with 1% organic matter. Independent research investigated the implications for soil microbial community, composition and function in a rewilding setting and compared the results with disturbed agricultural land. The results showed that soil nutrients (total carbon, total organic carbon, total nitrogen, organic matter content, phosphorous), soil microbial community (microbial biomass)

and respiration (multiple substrate induced respiration) showed significant increase over time since rewilding (Kurwald, 2018).

Evidence 11.2: The Devon Wildlife Trust's beaver enclosure, has seen beavers dramatically alter the landscape, stimulating the revival of a natural wet woodland – home to a diverse range of wildlife. They have significantly increased water storage while slowing the flow of water downstream – valuable services at times of drought and after storms. During storm events, there was on average 30% lower peak volume of water leaving the site, compared with entering – reducing flood risk downstream (Brazier et al, 2020, p70).

12. What is the best method for calculating payments rates for each tier, taking into account the need to balance delivering value for money, providing a fair payment to land managers, and maximising environmental benefit?

Key point 12.1: Use proxy measurements, satellites, drones and self-certification with targeted risk-based auditing. Simplicity and support (rather than enforcement/punishment) are key.

Key point 12.2: For land holdings which are entirely focused on nature recovery and nature-based solutions, develop land holding-wide calculations based on close approximations of the percentages of main habitat types (eg grassland, scrub, woodland, wetland).

Key point 12.3: Applicant clusters who together comprise larger-scale regenerative/rewilding approaches should be explicitly described as candidate applicants for Tier 3.

Key point 12.4: Carbon pricing should be considered. The more carbon capture a site achieves, the more money it receives.

Context and opinion: Borrowing from Rewilding Britain's vital 2019 report, 'Rewilding and Climate Breakdown', we agree with their proposal for a model that values carbon sequestration and biodiversity enhancement in different restored ecosystems. Land holdings that come together to form contiguous zones of recovering, protected and restored ecosystems could attract enhanced payments. This should reflect where there are additional contributions to public goods, such as carbon sequestration, water quality improvement, water table stabilisation, public amenity value and flood mitigation. The figures in the Rewilding Britain report (Rewilding Britain, 2019) provide a clear, evidence-based steer on the level of payments for each type of ecosystem. The value of carbon sequestration should be central (**Evidence 12.1**).

Proxy measurements for the natural capital value per hectare of delivering certain public goods would be the most effective solution to calculating payments. A simple system of satellite imagery, backed up by targeted risk-based auditing, can be used to verify outcomes. It would be counter-productive to see a return to a complicated system like the unsuccessful CAP Pillar II (environmental) schemes.

Tier 3 is likely to attract fewer applications due to scale requirements. Those applicants, however, should receive the highest payments per hectare because they will be delivering public goods on a measurable and nationally significant scale. The specific inclusion of rewilding in Tier 3 would encourage various ecosystem restoration activities to be delivered at scale. Applicants in these cases should receive the highest total payments, aligned with their delivery of multiple public goods and applicant clusters who together comprise larger-scale regenerative/rewilding approaches should also be able to apply for Tier 3.

The positive option for land holdings which are focused solely on nature recovery and nature-based solutions is to develop land holding-wide calculations, e.g. for carbon reduction, reduced flood risk and clean water production. These will be informed by the outcomes of projects recently funded by Defra, EA, Esme Fairbairn Foundation and Triodos Bank which are assessing and measuring economic outcomes and the benefits delivered in terms of carbon storage, air quality, flood management and human health, as well as enhancing biodiversity and wildlife habitats. To verify the percentages for each main type of habitat (grassland, shrubland, woodland, wetland in ‘ordinary’ land holdings), we support the use of proxy measurements for the natural capital value per hectare of public goods delivery with satellite imagery and drone footage in support, with randomly selected, risk-based auditing for verification. Changes resulting from succession (grass > shrub > regenerating tree cover) including relative percentages will enable assessments to be made.

Evidence 12.1: For carbon:

- Heal is working with two academics, including a professor of ecosystem carbon, to assess general ranges of carbon sequestration in a rewilding site containing multiple habitat types undergoing succession through rewilding
- We are calculating the carbon capture potential of candidate rewilding sites site-specific base data such as soil type, texture, land use history
- We are developing a ‘rewilding succession carbon calculator’ to enable rewilding sites to be assessed for carbon sequestration using this base data and its current state of succession (grassland/shrubland (scrub)/woodland/wetland)
- £ value can be attributed to the carbon sequestered

13. To what extent might there be opportunities to blend public with private finance for each of the 3 tiers?

Key point 13.1: The delivery of public goods could all attract private funds, particularly as natural capital accounting becomes established

Context and opinion: At a strategic level, when natural capital accounting is integrated into businesses’ financial accounts, the potential to attract private finance will increase (**Evidence 13.1**).

There are excellent opportunities to blend private and public finance, most significantly in Tier 2 and Tier 3, as they are likely to be more specifically targeted. The delivery of public goods such as carbon sequestration, flood management, clean water and water retention could all attract private funds, as is currently seen with several water company schemes (**Evidence 13.2**).

Businesses looking to offset carbon emissions would be an ideal source of finance (**Evidence 13.3**). Rewilding areas going through vegetation succession, particularly from an intensive arable start, will particularly attract such businesses. According to a report in Farmers Weekly (Noble, 2020), a nascent trade in selling carbon credits to corporate buyers looking to offset emissions already exists, but variability in the market has not instilled confidence among farmers. Establishing an economy-wide carbon pricing mechanism would provide financial support, as well as driving the right behaviours. Carbon reduction, combined with improving carbon retention through these schemes, can significantly help to reduce overall emission levels, towards the 2050 target.

Increasing the amenity value of land – attracting visitors through general rewilding, species introductions and species resurgence – is being demonstrated at a number of nature-recovery focused sites. The ability to leverage private funding by demonstrating income streams from amenity value should be possible.

Local projects, especially when co-ordinated by local enterprise networks or partnerships, will encourage private finance, both by operating locally and by identifying specific benefits accruing to local people and businesses. These include the public goods mentioned in Q12, as well as opening land access to a wider cross-section of people, along with the associated health and wellbeing benefits which will be made available to individuals and businesses.

Evidence 13.1 The *Improving nature's visibility in financial accounting* report (April 2020) from the Capitals Coalition says that 'significant progress in natural capital accounting has taken place in parallel to financial capital accounting, but accounts for different capitals are not integrated and very limited natural capital impacts and dependencies, such as those relating to marketed products and operational costs, are captured under current financial accounting standards. Material natural capital-related financial returns (e.g. reduced costs and risks from clean water and fertile soil) are omitted from financial accounts [...] and improving integrated reporting is crucial to integrate the private sector and wider stakeholders' (Capitals Coalition, 2020, p27).

Evidence 13.2: Severn Trent has recently launched a £200,000 biodiversity fund (Severn Trent, 2020).

Evidence 13.3: Journalist Geoffrey Lean reported on Twitter on 17.7.20 that the bank Triodos UK has said that 'lots of corporates are approaching [them] wanting to offset their carbon by investing in natural solution projects' (Geoffrey Lean, 2020).

14. As we talk to land managers, and look back on what has worked from previous schemes, it is clear that access to an adviser is highly important to successful environmental schemes. Is advice always needed? When is advice most likely to be needed by a scheme participant?

Key point 14.1: Advice will be essential to us.

Context and opinion: Advice will be essential to us and should be for all land managers, not just those who manage particular habitats or particular amounts of land. This advice should be available and administered at a local scale (county-wide would be logical). This advice would be particularly necessary prior to, and during the first few years of, involvement in the ELM scheme. Advisers could both be involved in explaining the ELM policy to landowners when it is launched and also helping co-design local policies with local stakeholders.

15. We do not want the monitoring of ELM agreements to feel burdensome to land managers, but we will need some information that shows what's being done in fulfilling the ELM agreement. This would build on any remote sensing, satellite imagery and site visits we deploy. How might self-assessment work? What methods or tools, for example photographs, might be used to enable an agreement holder to be able to demonstrate that they're doing what they signed up to do?

Key point 15.1: The burden of monitoring should be minimised.

Context and opinion: It is a given that the time and effort involved in monitoring should be minimised. Evidence of improvements can be enhanced through satellite imagery, drone footage and photography. These should be supported by the ability to provide evidence via real-time reporting apps and online.

Site visits, while essential in some cases, must be kept to a minimum, due to the associated cost and administrative burden. The network of advisors previously discussed in Q.10, could be employed in the dual role of assessing the success (or otherwise) of specific schemes, whilst tracking results and building on lessons learned.

16. Do you agree with the proposed approach to the National Pilot? What are the key elements of ELM that you think we should test during the Pilot?

Key point 16.1: A rewilding site should be included as part of the National Pilot.

Context and opinion: The Pilot should include not only a project/site in every county, but should also include upland and lowland habitats as it is important to ensure that public money is being spent in the best possible way for these very different spatial locations.

A rewilding site should be included as part of the trial, to test how it can work with more novel or innovative delivery approaches.

To do this, the delivery partners should include an independent specialist.

The Pilot design enables *participants* to feed in experience, but we should advocate for non-participants to also be able to monitor, assess, and comment on the pilot, and continue to influence the final ELM design.

17. Do you have any other comments on the proposals set out in this document?

Key point 17.1: Heal wholeheartedly supports the aims of ELM in principle. We look forward to fully supporting a policy which recognises the value of rewilding.

Key point 17.2: Rewilding has growing public support. The word ‘rewilding’ is understood in society at large to mean a way of helping nature to thrive and has positive social currency. It would seem wise for Defra to be in step with broad public opinion by supporting rewilding, given that the public are paying for ELM public goods through the tax system as well as being the beneficiaries.

Key point 17.3: We can provide Defra with new analysis to inform work to reduce concern around rewilding. We have undertaken thematic analysis of attitudes to rewilding and identified five primary themes relevant in this context.

Key point 17.4: By excluding rewilding from ELM, it appears Defra is underestimating the level of interest amongst existing and potential landowners in rewilding.

Key point 17.5: More attention could be given in ELM to the benefits to mental and physical health through access to nature.

Key point 17.6: Varied scrub habitat should be particularly highlighted in ELM to help land managers understand its value for delivering biodiversity.

Context and opinion: We are strong supporters of the ‘public money for public goods’ principle and fully endorse the three-tiered ELM scheme. We view the scheme as an unprecedented opportunity to take significant steps in turning around the biodiversity crisis and climate emergency.

It may be helpful to those refining the scheme policy and design to take into account the strong public support for action on rewilding (**Evidence 17.1**) evidenced by the response to our national launch as a ‘rewilding landowner’ charity in March 2020, offering a new way for individuals and businesses to become directly involved in helping nature’s recovery (**Evidence 17.2**).

We can provide analysis to Defra which would help inform work to reduce concern around rewilding in the farming community, which we think is essential given the nature of the ELM scheme. We have completed a thematic analysis of attitudes to rewilding (April-July 2020) based on large volumes of tweets on rewilding and land use gathered by a team of 15 volunteers, with the analysis completed

by a social scientist. This work was done primarily to enable us to better appreciate the perspectives of others and to understand the nature of the land use debate and provides evidence of considerable (and understandable) fear and anxiety around land use change within the farming community based on their perception of rewilding and how it is manifest. We hope Defra may be interested in the top-line summary of this analysis. The main themes surrounding farmers' concerns with rewilding are:

- The damage that reintroductions of top predators/keystone species may inflict on livelihoods
- Enforced land abandonment – rich outsiders buying up land and negatively impacting rural livelihoods
- Rupturing farms/farming community and therefore loss of identity/way of life
- Preference for the existing aesthetic
- Concerns about animal welfare

By excluding rewilding from ELM, Defra appear to be underestimating the level of interest amongst existing and potential landowners in rewilding. Heal has had numerous approaches from people with land, or planning to buy land, about advice on rewilding because they want to take action on nature's recovery. Advice and support is not our role so we always refer them to Rewilding Britain. We believe there are many more landowners/prospective landowners interested in rewilding than have contacted Rewilding Britain thus far, particularly at smaller scales (ref **Evidence 6.2**). This is likely to surge when Isabella Tree (Knepp Estate author of *Wilding*) publishes her new manual/handbook on rewilding in 2021.

ELM would be stronger if it aligned with public and business opinion by referencing rewilding, which is a synonym for remarkable nature recovery.

ELM would be strengthened by informing participants about the scientific consensus emerging around nature experience and wellbeing (Bratman et al, 2019) (**Evidence 17.3**):

- **common types of nature experience and increased psychological wellbeing.** A wealth of studies have demonstrated that nature experience is associated with psychological well-being. These include increased 'positive affect' (positive moods such as joy and interest); happiness and subjective well-being; positive social interactions; cohesion, and engagement; a sense of meaning and purpose in life; improved manageability of life tasks; and decreases in mental distress. Longitudinal studies, as well as natural and controlled experiments, show nature experience to positively affect various aspects of cognitive function, memory and attention, impulse inhibition and children's school performance, as well as imagination and creativity
- **common types of nature experience and a reduction of risk factors and burden of some types of mental illness.** Nature experience has been associated with improved sleep and reductions in stress (various physiological measures, biomarkers of acute and chronic stress and self-report). These impacts on sleep and stress may entail decreased risk for mental illness, especially depression. In addition, there is growing evidence that nature experience is associated with a decreased incidence of other disorders, including anxiety disorders, attention deficit and hyperactivity disorder and depression

We also want to make a point in principle about scrub* as a vital habitat for dozens of native species. Varied scrub habitat should be particularly highlighted in ELM to help land managers understand its value for delivering biodiversity as it supports the widest range of wildlife compared with other habitat types. The BPS exclusion of dense scrub has been a contributing factor in untold

species losses. Scrub must be rehabilitated as a valuable wildlife habitat with land managers being rewarded and not penalised for its presence (**Evidence 17.4**).

*Defined as ‘all stages from the scattered bushes to closed canopy vegetation, dominated by shrubs and tree saplings, usually less than 5 m tall, occasionally with a few scattered trees.’ (The Scrub Management Handbook, English Nature [now Natural England])

In an ELM webinar on 16 July, Gavin Ross, Defra Deputy Director for ELM, explained that the scheme would not cover anything for which there is already a market, in answer to a question suggesting that food is a ‘public good’. This reassured us, because if the ELM scheme is also required to help ensure food security, it may become diluted to the extent that it mimics the Basic Payments scheme.

The ELM scheme has the potential to be hugely complex and unwieldy because of its current emphasis on specific ‘activities’ and habitats. A blend of trust, flexibility and best-available technology will be essential to its success, as well as maintaining a generalised, whole-ecosystem view.

With clearer encouragement for rewilding in the scheme, ELM could offer a once-in-a-lifetime chance for Britain to lead the way to a sustainable and climate-resilient future for land use, one which will benefit our farming community, society as a whole and our natural environment.

We look forward to fully supporting a policy and design which recognises the value of rewilding.

Evidence 17.1: A YouGov poll in January 2020, exploring rewilding reintroductions, found strong support for lost bird species being reintroduced to the UK as one of the benefits of rewilding: 64% of the wider population want to bring back spoonbills, cranes, Dalmatian pelicans and other waders 68% of the public would be happy to see new populations of raptors such as goshawks, ospreys, and white-tailed eagles (YouGov, 2020).

Evidence 17.2: In four months, Heal Rewilding has (own data, 2020):

- Gained over 5,600 followers on social media in our first 100 days
- Experienced one of the fastest growth curves from a standing start in donations (volume and size of the largest donations) ever seen by our third-party, UK-based donations platform (which has processed donations for over 4,000 UK charities since 2012)
- Had nearly 200 volunteers coming forward in our first 100 days, of which over 160 are working in our online environment (Slack), with dozens more registered and waiting for work

Evidence 17.3: A wealth of studies has demonstrated that nature experience is associated with psychological well-being. These include increased positive affect; happiness and subjective well-being; positive social interactions; cohesion, and engagement; a sense of meaning and purpose in life; improved manageability of life tasks; and decreases in mental distress. Longitudinal studies, as well as natural and controlled experiments, show nature experience to positively affect various aspects of cognitive function, memory and attention, impulse inhibition and children’s school performance, as well as imagination and creativity. Nature experience has been associated with improved sleep and reductions in stress (various physiological measures, biomarkers of acute and chronic stress and self-report). These impacts on sleep and stress may entail decreased risk for mental illness, especially depression. In addition, there is growing evidence that nature experience is associated with a decreased incidence of other disorders, including anxiety disorders, attention deficit and hyperactivity disorder and depression (Bratman et al, 2019).

Evidence 17.4: Scrub of varied age, species and structure supports the widest range of wildlife. Scrub provides nectar for pollinators, seeds and fruits for birds and mammals, shelter and nest sites for invertebrates, birds and mammals, and habitats for many flowering plants. Tall herbs and grasses growing along the edge of scrub offer shelter for small mammals, nest sites for birds and hunting areas for barn owls and kestrels. Birds using scrub include yellowhammers, linnets, grasshopper warblers, whitethroats, dunnocks, willow warblers, turtle doves, song thrushes, bullfinches and nightingales (RSPB, 2020).

References:

Alison, J., and Wentworth, J. (2016) Rewilding and Ecosystem Services. UK Parliament.

<https://post.parliament.uk/research-briefings/post-pn-0537/>

Bauer, N and Von Atzigen, A (2019). Understanding the factors shaping the attitudes towards wilderness and rewilding.. In Pettorelli, N, Durant, S and du Toit, J, H (Eds). (2019). *Rewilding*. Cambridge: Cambridge University Press.

Bratman, G., Anderson, C.B., et al (2019). Nature and mental health: An ecosystem service perspective. *Science Advances*. 24 July 2019. Vol. 5, no. 7, eaax0903. DOI: 10.1126/sciadv.aax0903

Brazier, R.E., Elliott, M., Andison, E., Auster, R.E., Bridgewater, S., Burgess, P., Chant, J., Graham, H., Knott, E., Puttock, A.K., Sansum, P., Vowles, A., (2020) River Otter Beaver Trial: Science and Evidence Report.

British Wildlife Vol 31 No 4. p 254-264. Balancing culture and nature in the Lake District. L Schofield et al. Apr 2020.

British Wildlife Vol 31 No 3. P 179-187. Opportunities for wildlife through small-scale wilding in lowland farmland. D Casey et al. Feb 2020.

British Wildlife Vol 30 No 6. p 409-417. RSPB Geltsdale – A case study of upland management. S Garnett et al. Aug 2019.

British Wildlife Vol 29 No 6. P 393-400. Conservation of mountain woodland in the Cairngorms National Park. D Hetherington. Aug 2018.

British Wildlife Vol 27 No 5. p 333-339. The great rewilding experiment at Knepp Castle. P Marren. Jun 2016.

Bryant, L (2015) Organic Matter Can Improve Your Soil's Water Holding Capacity www.nrdc.org/experts/lara-bryant/organic-matter-can-improve-your-soils-water-holding-capacity Retrieved 18.7.2020.

Capitals Coalition (2020). *Improving nature's visibility in financial accounting report*.

https://naturalcapitalcoalition.org/wp-content/uploads/2020/04/NatCap_VisFinAccount_final_20200428.pdf

CEH and Rothamsted Research (2019). Quantifying the impact of future land use scenarios to 2050 and beyond - Final Report. Committee on Climate Change. Available at:

<https://www.theccc.org.uk/wp-content/uploads/2018/11/Quantifying-the-impact-of-future-land-use-scenarios-to-2050-and-beyond-Full-Report.pdf>

Centre for Food Security webpage: www.reading.ac.uk/food-security/ Sustainable Pollination Services for UK Crops https://www.reading.ac.uk/web/files/food-security/cfs_case_studies_-_sustainable_pollination_services.pdf

Dwyer, J., Mills, J., Ingram, J., and Taylor, J., Burton, R., Blackstock, K., Slee, B., Brown, K., Schwarz, G., Matthews, K., and Dilley, R. Understanding and influencing positive behaviour change in farmers and rural land managers - WU0104. Defra.

<http://sciencesearch.defra.gov.uk/Default.aspx?Menu=Menu&Module=More&Location=None&Completed=0&ProjectID=14518>

Farming UK (2016) <https://www.farminguk.com/content/digital-issue/258/files/assets/common/downloads/publication.pdf?uni=98cce2c3aea8741b18579618d0317494>. Retrieved 22.7.2020.

Feedback (2019). EFRA enquiry – call for evidence, covid-19 and food supply.

<https://feedbackglobal.org/wp-content/uploads/2019/10/EFRA-agriculture-and-net-zero-response.pdf> Retrieved 22.7.2020.

Gunderson, V, Stange, E.E., Kaltenborn, B.P and Vistad, O.I. (2017). Public visual preferences for dead wood in natural boreal forests: the effects of added information. *Landscape and Urban Planning*, 158:12-24

Gurnell, J., Gurnell, A.M. et al. (2009). The feasibility and acceptability of reintroducing the European beaver to England. Natural England NERC002

<http://publications.naturalengland.org.uk/publication/45003>

Harwatt, H., and Hayek, M.N. (2019) Eating Away At Climate Change With Negative Emissions: Repurposing UK agricultural land to meet climate goals. Harvard Law School.

<https://animal.law.harvard.edu/wp-content/uploads/Eating-Away-at-Climate-Change-with-Negative-Emissions%E2%80%93Harwatt-Hayek.pdf> Retrieved 22.7.2020.

Hird, V., and Shub, M. A green and pressured land (2019).

https://www.sustainweb.org/secure/a_green_and_pressured_land.pdf Retrieved 18.7.2020.

Hudson, B.D (1994). Soil organic matter and available water capacity. *Journal of Soil and Water Conservation* March 1994, 49 (2) 189-194.

Knepp Estate (2018). Surveys. <https://knepp.co.uk/yearly-surveys>

Kurwald, L.K.G, (2018). Does Rewilding restore soil biodiversity and function? MSc thesis, Cranfield University, <https://tinyurl.com/yb727aay>. Retrieved 16.7.20

Lang, T (2020). *Feeding Britain: Our Food Problems and How to Fix Them*. Penguin. ISBN: 9780241442227.

Lasanta, T., Arnáez, J., Pascual, N., Ruiz-Flaño, P., Errea, M.P., Lana-Renault, N (2017). Space–time process and drivers of land abandonment in Europe. *CATENA*, Volume 149, Part 3, pp810-823.

Lean, G (2020) Twitter comment.

<https://twitter.com/GeoffreyLean/status/1283789001930006533?s=20>

Mason, P., Derbyshire, E., Pickard R., Ruxton, C., Jenkins, G. Report for the Health and Food Supplements Information Service: <https://www.hsis.org/wp-content/uploads/2019/06/HSIS-Dietary-Trends-report-2019.pdf>. Retrieved 20.7.2020.

Miller, J. (2005) 'Biodiversity conservation and the extinction of experience', *Trends in Ecology and Evolution*, 20(8), pp. 430-434

Mintel (2020). Plant-based push: UK sales of meat-free foods shoot up 40% between 2014-19. <https://www.mintel.com/press-centre/food-and-drink/plant-based-push-uk-sales-of-meat-free-foods-shoot-up-40-between-2014-19>

Natural England (2016) Monitor of Engagement with the Natural Environment: a pilot to develop an indicator of visits to the natural environment by children Available at: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/498944/mene-childrens-report-years-1-2.pdf (Accessed: 14 November 2018)

Natural England (2019). Monitor of Engagement with the Natural Environment: Headline report and technical reports 2018 to 2019. <https://www.gov.uk/government/statistics/monitor-of-engagement-with-the-natural-environment-headline-report-and-technical-reports-2018-to-2019>

Natural England (2020). Natural Capital Investment Opportunities for North Devon (NECR292), May 2020. <http://publications.naturalengland.org.uk/publication/5724468750319616>

National Trust website. <https://www.nationaltrust.org.uk/wicken-fen-nature-reserve/features/wicken-fen-vision> Retrieved 22.7.2020.

Noble, N. (2020) Farming carbon: How to make money from new woodland *Farmers Weekly*. <https://www.fwi.co.uk/business/payments-schemes/environmental-schemes/farming-carbon-how-to-make-money-from-new-woodland>

Pheby, C. YouGov survey (2020). <https://yougov.co.uk/topics/science/articles-reports/2020/01/28/third-brits-would-reintroduce-wolves-and-lynxes-uk>

Public Health England (2018). NDNS: results from years 7 and 8 (combined), GOV.UK. Available at: <https://www.gov.uk/government/statistics/ndns-results-from-years-7-and-8-combined>

Public Health England (2019). NDNS: time trend and income analyses for Years 1 to 9, GOV.UK. Available at: <https://www.gov.uk/government/statistics/ndns-time-trend-and-income-analyses-for-years-1-to-9>.

Rewilding Britain website. Nature economies. <https://www.rewildingbritain.org.uk/rewilding/why-rewilding/nature-economies>. Retrieved 22.7.2020.

Rewilding Britain (2019). Rewilding and climate breakdown: how restoring nature can help decarbonise the UK www.rewildingbritain.org.uk/assets/uploads/Rewilding%20and%20Climate%20Breakdown%20-%20a%20report%20by%20Rewilding%20Britain.pdf

Pywell, R.F., Heard M.S., Woodcock, B.A., Hinsley, S., Ridding, L., Nowakowski, M., and Bullock J.M. (2015). Wildlife-friendly farming increases crop yield: evidence for ecological intensification. *Wildlife-friendly farming increases crop yield: evidence for ecological intensification*. The Royal Society. *Proc. R. Soc.* B.28220151740. <https://royalsocietypublishing.org/doi/10.1098/rspb.2015.1740>

RSPB website. Scrub | Shrubs and Trees | Advice For Farmers - <https://www.rspb.org.uk/our-work/conservation/conservation-and-sustainability/farming/advice/managing-habitats/scrub/> Retrieved 22.7.2020.

Sandom C.J., Dempsey, B., Bullock, D., Ely, A., Jepson, P., Jimenez-Wisler, S., Newton, A., Pettorelli, N., Senior, R.A. (2018) Rewilding in the English uplands: Policy and practice. *Journal of Applied Ecology*. <https://doi.org/10.1111/1365-2664.13276>

Severn Trent website (2020). <https://www.stwater.co.uk/news/news-releases/severn-trent-launches-boost-for-biodiversity-grant-scheme/>

State of Nature Partnership (2019). State of Nature Report. <https://nbn.org.uk/wp-content/uploads/2019/09/State-of-Nature-2019-UK-full-report.pdf>

State of Nature Partnership (2016). State of Nature Report. <https://www.rspb.org.uk/globalassets/downloads/documents/conservation-projects/state-of-nature/state-of-nature-uk-report-2016.pdf>

Tree, I. (2018) *Wilding: the return of nature to a British farm*. Picador, London.

Waitrose Food and Drink report (2018-2019) <https://www.waitrose.com/content/dam/waitrose/Inspiration/Waitrose%20&%20Partners%20Food%20and%20Drink%20Report%202018.pdf>

Wynne-Jones, S., Strouts, G., O'Neil, C. and Sandom, C. (2019) Rewilding – departures in conservation policy and practice? An evaluation of developments in Britain. *Conservation and Society*. pp. 1-14. ISSN 0972-4923

Zaradic PA, Pergams ORW, Kareiva P (2009) The Impact of Nature Experience on Willingness to Support Conservation. *PLoS ONE* 4(10).