Social barriers and opportunities to the implementation of the England Peat Strategy

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Final report

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Executive Summary

Context

Natural England ran five Peatland Pilots to explore barriers and opportunities to protect, restore and sustainably manage peatlands, and engage stakeholders in the development of the England Peat Strategy. Located in Dartmoor, the East Anglian fens, Greater Manchester Combined Authority, Cumbria and Northumberland, and the North York Moors, the pilots explored a range of issues to help inform the strategy.

Aim

Land manager engagement with policy is driven by external factors (e.g. land tenure, farm characteristics and agri-environment scheme flexibility) and internal factors (e.g. availability of financial and social capital, risk perception and perceived self-efficacy) that can act as enablers or barriers to delivery of policy objectives. We sought to understand how internal influences shape favourable or oppositional attitudes towards policy mechanisms within the England Peatland Strategy, and to use these insights to make recommendations to tailor the design and communication of the strategy to engender more positive engagement, which may lead to more effective strategy design and implementation.

Research design and methods

The research followed a mixed-methods research design, combining insights from qualitative interviews with photo survey and deliberative valuation methods to provide an analysis of social barriers and opportunities to implementing the England Peat Strategy. We considered how people live *from* peatlands, through the different ways in which peatlands benefit people's livelihoods; how people live *with* peatlands, including its biodiversity and ecosystem processes; how people live *in* peatlands, where peatland landscapes are core to the places and histories that are important for community, recreation and wellbeing; and how people live *as* peatlands, where people experience themselves as part of the peatland landscapes and peatlands in turn shape peoples embodied identities and experiences.

A single stakeholder analysis workshop was used to stratify subsequent interview and workshop invitations to represent the full range of interests in the strategy and pilots. A total of 50 interviews were conducted across all five Peat Pilots, stratified by stakeholder type. A selection of interviewees took geo-referenced photographs and answered additional questions linked to these locations. One stakeholder from each site and Natural England's Peat Pilot lead were invited to take part in portrait photography sessions to further explore their relationship with the land. Workshops were facilitated for each Peat Pilot to triangulate

interview and photo data with group discussion, and to collect and evaluate future scheme options through deliberation. Qualitative data was analysed using Grounded Theory-based analysis and the project was approved by Newcastle University ethics committee.

Key messages

1. Frame messages and proposed actions in ways that are consistent with the identity, values, norms and beliefs of EPS target audiences:
    a. Frame benefits of implementing the strategy in a pluralistic way, in terms of self-regarding (e.g. financial, risk, etc.), broader personal (e.g. place identity), collective values (e.g. fairness, environmental protection) and social benefits (e.g. collaboration opportunities and benefits to local communities) as much as public goods, despite the strong imperative to frame policy in terms of public goods.
    b. Ensure values, messages and proposed actions are framed in a way that is consistent with the identity of land managers (e.g. as adaptive innovators diversifying their businesses to meet public demand and custodians protecting existing benefits), rather than reframing them in roles they do not identify with (e.g. park rangers delivering an agenda for a Government they may or may not believe in).
    c. Ensure payment levels provide genuine incentives reflective of the value of benefits, but also of land managers themselves in their role in delivering them, covering at least the full economic cost of implementing changes.

2. Take an evidence-based and systematic approach to the communication and delivery of EPS objectives that is adapted to the needs of key stakeholder groups:
    a. Map policy/delivery mechanisms onto desired EPS outcomes as these are likely to play out for different stakeholder groups, to identify additional activities that might be needed to deliver outcomes that meet the objectives of both the EPS and stakeholders as far as possible. The co-production of such a delivery plan would increase the likelihood of identifying effective activities that are adapted to the needs, preferences and constraints of specific stakeholder groups, and could be done on a region-by-region basis, facilitated by local Natural England staff.
    b. Identify key individuals and organisations with the ability to influence attitudes and drive behaviours, alongside the identification of hard-to-reach groups that may require specific strategies and investment to ensure they benefit from the EPS. Desired EPS outcomes and both planned and newly identified mechanisms then need to be communicated as far as possible through peer-to-peer networks and other trusted sources of information.

Key findings

1. **The importance of place.** Place attachment and place identity framed many of the values, beliefs and norms that were expressed in interviews, photo survey and portrait photography across the Peat Pilot sites. There was strong agreement from interviewees across sites and from different backgrounds, that peatland management should prioritise carbon sequestration, water quality, biodiversity and food production. However, these priorities were not based on disembodied evidence but instead were founded on a deep personal connection with, and experience in, the landscape. The prominence of both place attachment and identity was further emphasized in the way that land managers spoke about themselves as custodians of the land and its heritage, and many considered their practices intrinsically linked to this sense of identity.
2. **Value orientation.** Protecting the environment was by far the most important shared value in the two sites that were assessed using the "values compass", with more than half in each site also citing social justice and fairness as an important value. In contrast, none of the participants chose social order, authority or respect for tradition as one of their top five values. While land managers were among the most likely to speak about self-regarding and personal values linked to farm business viability and profitability, they were equally likely to emphasize social-altruistic and biospheric value orientations. Land managers often had different definitions of 'public goods' (including productive functions of the land), and therefore, what should be funded under 'public money for public goods', compared to other stakeholders. All however shared concerns about the extent to which the public understood and valued the benefits arising from peatlands.
3. **Staying in control.** Land managers who were interviewed had a strong locus of control (defined as a perception that the individual has sufficient control over their circumstances and actions that they can achieve some kind of change), but this often felt threatened by policy change, with specific concerns expressed about the extent to which the EPS might constrain management options and freedom of action. A strong component of the identities expressed by land managers focussed on their freedom of action, openness to change and adaptability as decision-makers in the landscapes they managed. There was a feeling that some of this locus of control had to be given up if they adopted land management prescriptions from Government, as might be offered under the EPS.
4. **Incentivise engagement with the EPS, even if this is only limited, rather than trying to change values and beliefs.** Our research showed that beliefs around some issues (e.g. impacts of burning on carbon balance) are more conflictive than others (e.g. impacts of grazing on peatland carbon dynamics); these beliefs are likely to be tied to identities of different stakeholders within their social networks. However, past research has shown that land managers beliefs can change over time with participation in EPS. Thus rather than focusing on changing values and beliefs as a precursor to engaging with the EPS, the focus should be on

incentivising engagement with at least one element of the EPS, and this may in time lead to their values and beliefs changing. Once changes take hold within a sufficient number of individuals within social networks these changes may percolate, and bring others in.

5. **Conservation has to pay.** The need for conservation to pay was re-iterated by land managers of different ages and farm types across the sites, and was echoed by many of the other stakeholders who took part in the research. Conservation was widely perceived as loss making, with neither maintenance nor opportunity costs fully covered, let alone the land manager's time. There was therefore a strong consensus that an increase in payments was an essential condition for increasing uptake of restoration options. Fair compensation needs to at least include capital costs, income foregone, ongoing maintenance (of restoration, and reflecting temporal variation in these costs), opportunity costs (e.g. stock exclusion), time/labour costs and provide long-term financial stability (e.g. some participants suggested current 10 year contracts are too short for business planning), if changes in practice are to make business as well as environmental sense. As a result, respondents suggested that the majority of landowners choosing peatland restoration under public agri-environment schemes to date (based primarily on payments for capital works and income foregone) were already interested in restoring their land. As expressed by workshop participants, *"We can adopt any policy we like…what we want to achieve at the end of it, but there's a payroll that comes with it…" and "you can't be green if you're in the red"*. Overall, while sufficient financial incentives were seen as an essential requirement for increased EPS uptake, there were varying degrees to which this was deemed to be sufficient relative to the non-monetary aspects related to identity and value congruence discussed previously, as well as diverse viewpoints with regard to appropriate conditions for schemes. For example, people had different views on where trade-offs between flexibility and complexity should lie, with some arguing for regional variation or weighting and others for a 'level playing field'.
6. **Concerns about new scheme options.** There was disagreement over the extent to which managed burning had a significant effect on carbon storage or loss peatlands, and consequently over whether land managers should be paid to reduce burning for this reason. However, the majority saw climate change as an issue that should be primarily tackled by Government, with taxpayers contributing towards restoration and paying the full cost of measures to reduce wildfire risk. Linked to this, there was wider support for post-Brexit agri-environmental scheme options that promote "climate smart" agriculture with locally targeted, multiple outcomes (as proposed in Tier 2 ELMS). However, there were concerns around the conditions that might be attached to new scheme options, payment levels, the possibility of losing eligibility for Basic Payment Scheme payments after restoring peatlands, and there were questions around the feasibility and flexibility of some restoration activities. Moreover, preliminary results from the logic map (section 4.1) suggest that

small isolated rural communities may be particularly vulnerable to systemic impacts from changes to farm/estate income as we transition to ELMS with potential knock-on effects on schools, demography and house prices in locations where finely balanced tipping points exist.

7. **Barriers in common land.** Major barriers were identified that are likely to prevent restoration on common land without significant precursory changes in policy and practice, including institutional arrangements around payments for common land. Issues included, for example: the need for landscape scale co-ordination for effective restoration; the consequent need to aggregate individual commons in single agreements on a geographic basis; payment splits between different rightsowners; and facilitation and/or adjudication of decision-making processes within groups of commoners where individuals have differing priorities and between landowners and other rightsholders.
8. **Public and private funding for peatland restoration need to work together.** As the Government prepares to fund peatland restoration via the Nature For Climate Fund, it is important to protect and nurture the nascent, but credible and active, private sector funding restoration via the Peatland Code, which has the potential to supplement and extend public funding for restoration. However, to realise the full potential of these funding sources, and to match the scale and urgency of peatland restoration, mechanisms will be required to ensure different funding sources are at least additive, and do not compete, block, or cancel each other out.
9. **Support and inclusion.** While many land managers had a strong sense of self-efficacy around their skills and capacity to deliver public goods, others expressed doubts about the extent to which they could change their practices, and the level of support that would be available if things went wrong. This suggests advisory services may need to play a stronger role in supporting more challenging changes in practice proposed in the EPS. Many land managers did not want to take risks in land management for fear of getting blamed if outcomes were not right – a more flexible framework would allow for experimentation, including learning from mistakes in the short-term, to find local practices that work in the long-term. However, social structures may constrain innovation if women and young people continue to be excluded from or under-represented in land use decision-making.
10. **Respect for local knowledge.** Land managers expressed pride in the value of their local knowledge, culture and tradition to guide decisions, linked to place-based identities. This was one reason for the general positive reception of future schemes based on “public money for public goods” or “payment by results”. By drawing explicitly on local knowledge, payment by results approaches enable land managers to find the solutions that work for their land adaptively, rather than following prescriptions. This respects their expertise and experience, feeding into their professional identity and locus of control. Participants emphasised the unique contexts in which they managed land and warned against blanket approaches in the EPS that might not be appropriate in their area.

Policy messages

1. **Incentive levels need to increase to reflect the value of public goods and the role of land managers in providing them.** Framing benefits of the EPS in terms of financial and social gains to land managers and their networks is a quick win that could increase engagement with the strategy with limited additional work (see next point). However, this cannot be done without also increasing payment levels. Payment levels need to provide incentives that reflect the value of public goods as well as the role of land managers in delivering them. At minimum, this should cover the full economic cost of implementing and maintaining changes, but participants across study sites made it clear that this was a minimum and that more attractive payment rates would be necessary to obtain significant uptake of scheme options promoting restoration and/or sustainable management of peatlands. To be attractive, economic returns from entering a scheme and payment terms and conditions would need to compare favourably to existing land use and management.
2. **Emphasise how the EPS delivers personal and social benefits as well as public goods, acknowledging that there will be trade-offs.** Frame benefits of implementing the strategy in a pluralistic way, in terms of self-regarding (e.g. financial, risk, etc.), broader personal (e.g. place identity), collective values (e.g. fairness, environmental protection) and social benefits (e.g. collaboration opportunities and benefits to local communities) as much as public goods, despite the strong imperative to frame policy in terms of public goods. However, the framing of benefits in relation to pro-self and pro-social values should not, come at the expense of clear messages about benefits for nature, which will appeal to the widespread biospheric value-orientation found across the land managers we interviewed and who completed the values compass questionnaire. Where there are conflicts between incompatible sets of values, beliefs and norms, as is commonly the case in land management decisions, it is better to acknowledge these, to increase the likelihood that decisions are made (typically compromises). This would reduce the cognitive dissonance of conflicting values, rather than creating a misleading impression that restoration and sustainable management is easy or always leads to a 'win-win' of financial, social and environmental benefits.
3. **Give land managers flexibility in the way they can deliver EPS objectives, emphasising the control they will retain over their own management decisions and speaking to the competent majority while providing training and support to those who need it.** It will likely benefit engagement with restoration if land managers are positioned more centrally in any narrative about environmental benefits as custodians who protect existing benefits and who facilitate additional new benefits through their actions, consistent with their values, beliefs and norms, emphasising the pivotal role this community is able to play in protecting and enhancing ecosystem services from peatlands. This stands in contrast to a common policy narrative which places the Government at its heart, delivering policy outcomes for the public by "nudging" the behaviour of land managers

through well-designed policy mechanisms. In this policy-dominant narrative, land managers play a supporting role, enabling a Government that they may or may not support, to achieve and claim success through their actions. It is important to emphasise the control land managers can retain (to opt in to schemes, and once opted in to choose and adapt how they deliver scheme goals) and their competence to deliver the EPS in their own way, alongside the provision of opportunities for professional development and support for those who do not feel competent. While there is a risk that a less competent minority may not seek help and so fail to deliver outcomes, there is a more significant risk in focusing on this minority in the narrative, and so disempowering the majority by removing their locus of control.

4. **Position land managers centrally in the EPS narrative as custodians and innovators, in line with shared values and identities in this community.** It would be beneficial if the EPS framed the role of land managers in terms that are consistent with chosen identities, as expressed in interviews, rather than reframing them in new roles that conflict with these identities. The shift towards public goods is problematic for land managers whose primary identity is framed in terms of food production (this was particularly evident in the East Anglian Fens, given their role in food production). As such, the importance of food production needs to be retained, whilst expanding this function to encompass the production of additional non-market/commodity goods. For example, reframing hill farmers as "park rangers" helping to save the climate requires a more significant identity shift than the idea of a farmer selling carbon instead of (or in addition to) meat as an additional commodity. Alternatively, farming public goods could be framed as a form of diversification, playing into the identity of land managers as adaptable innovators with good business sense, as opposed to reframing them as conservationists, who may be perceived to have quite different values, beliefs and norms to the average land manager. Even whilst our results suggest that farming and conservation communities share many altruistic, biospheric and place-based values, values are framed differently depending on people's roles and identities.
5. **Provide social science training to front-line agency staff to ensure local and scientific knowledge are each given critical consideration in the implementation of the EPS.** There is evidence that researchers and Government representatives are among the least trusted sources of information among the UK farming community, so it matters who delivers key messages about the EPS when it is published (see communication and impact plan below). We are less likely to learn from people who are unlike (socially distant from) us, who we instinctively do not trust. Scientific knowledge tends to be generated by people with different value systems to many land managers (it might not be conservationists' values around nature that are the problem, but perceptions of their wider values around animal rights, veganism, liberalism, class identity, etc.). Conversely, we are more likely to learn from people who are like us (our peer groups), who we instinctively trust, even if the strength of their evidence is weak, especially

if their evidence has an associative coherence with our other beliefs. We are less likely to believe things that threaten our psychological wellbeing, e.g. make us feel guilty, threatened or powerless. As a result, researchers are more likely to uncritically accept findings from papers written by other researchers, even if they are flawed, and stakeholders are more likely to uncritically accept messages from other people like them that are not based on sound evidence. However, the natural science training of many agency staff assumes an ontology and epistemology that presumes universal objective truth, making them right and others wrong. Therefore, as part of the longer-term capacity required to implement the EPS, consideration may need to be given to the professional development of agency staff, including training in the philosophy of science and social sciences to enable both local and scientific knowledge to be treated equally critically and with equal respect. Interpretation of the EPS based on a more relativistic world view is likely to engender mutual respect and collaborative working towards the goals of the strategy by front-line staff.

6. **Provide professional development opportunities for land managers, and consider developing codes of good practice.** Participants across pilots emphasised the need for education, personal development and support for land managers to change practices. Participants cited lack of time and resources as barriers to engaging in professional development, but also said they were more likely to adopt new practices if they understood their likely benefits e.g. the potential for cover crops in the East Anglian Fens to improve productivity while reducing erosion losses and fertiliser input. Moreover, exploring new practices with peers in a local community can contribute towards pro-social values, normalise new approaches and increase the likelihood of adoption. Participants emphasised the need for support to be independent (e.g. from industry interests), coherent (e.g. centrally organised with Government support rather than fragmented), tailored to the local context and the needs and pace of individuals, and delivered by trusted advisors familiar with the local area. Alternatively, codes of good practices could be developed alongside the EPS to drive more effective implementation of interventions (for example, the recent Defra Code of Good Agricultural Practice (COGAP) for reducing ammonia emissions provides simple, evidence-based ways to reduce NH3 emissions from agriculture).
7. **Work with public and private intermediaries to increase uptake of Peatland Code projects by landowners and managers**. Key barriers to engagement with the Peatland Code include the complexity of proposing projects, and perceived risks associated with contract length and potential future ineligibility for more lucrative future public schemes based on the principle of “public money for public goods”. There is evidence that the perceived complexity of new schemes can be reduced via clear communication and actual complexity can be reduced via intermediaries (who do the fieldwork and paperwork to validate projects for a fee). In Scotland and Wales, this has been done via publicly funded intermediaries (Peatland Action Officers in Scotland and project officers in Wales). In

England this service is currently only available via private intermediaries. However, any attempt to replicate the Scottish model via publicly funded landscape scale enablers or facilitators would need to ensure effective collaboration with private sector intermediaries and investors to ensure public funding complements rather than outcompetes private investment.

8. **Design any new public funding for peatland restoration to ensure it does not outcompete private investment via the Peatland Code.** We have set out we set out five options for managing the costs and benefits of integrating public and private funding for restoration, which could be deployed individually or in combination:
    - Funds delineation (using public investment to fund a discrete menu of 'value-added' components of a peatland scheme);
    - Carbon trigger funds (setting up government funding that only 'triggers' when a certain level of private sector carbon funding is achieved);
    - Establishing fund-matching or co-investment as a default principle;
    - Using a transparent cost-benefit matrix to target public sector funds; and
    - Creating integrated systems for public-private implementation.
9. **Consider legal and regulatory mechanisms that could help overcome other barriers to peatland restoration.** This includes concerns from landowners that restoration could lead to areas of wetland and scrub that would: i) not be eligible for BPS payments; ii) not be eligible for Agricultural Property Relief or Business Property Relief, increasing liabilities under Inheritance Tax law; iii) lead to designation of Sites of Special Scientific Interest, leading to increased statutory obligations and commitments on the land. Changes in legislation and regulation could be considered in each of these three areas to reduce risks to landowners from restoring their land.
10. **Consider how the EPS could increase public awareness of the importance of peatlands and how they are managed.** The EPS may be able to play a role in increasing public recognition for the work done by land managers in peatlands and help build a more positive public image. To do this, a communication and impact plan linked to the EPS (see points below) could actively promote the widest possible range of benefits of peatlands to the public, including local information campaigns that showcase public investments in local peatlands. Such campaigns have the potential to reward those who are already engaging with a greater sense of achievement and recognition, while driving new and increased engagement of other land managers with mechanisms contained within the EPS. At the same time, this would help justify public investment and increase public understanding. The spatial scale of this public engagement matters. While public engagement initiatives linked to tourism (e.g. archaeological tours or art exhibitions) may be cost effective, initiatives targeting local communities have the potential to feed into a sense of place attachment and identity in both community members and land managers, further reinforcing decisions to engage with measures in

the EPS. Public awareness campaigns also have the potential to re-balance the negative stereotypes of land managers promoted by some groups in the media, and re-inforce images of land managers as custodians of nature in addition to being producers of food. By engaging with the farming media and key opinion leaders in the land management community, it may be possible to further reinforce existing biospheric values, beliefs and norms within the land management community, driving further engagement with mechanisms within the EPS.

11. **Identify peatland communities that are particularly vulnerable to changes in payment levels under ELMS that might threaten the viability of these communities, using regional payments under Tier 2 to ensure these wider changes do not undermine the goals of the EPS.** Systemic vulnerabilities to rural communities arising from changes to payment levels under ELMS could be predicted based on existing evidence and used to "rural proof" policy mechansims in the EPS, with the option to use Tier 2 regional payments to reduce vulnerabilities where there are finely balanced tipping points
12. **Co-produce a regional EPS delivery plan, building on the Peat Pilots, using publicly funded landscape facilitators.** As part of this rural proofing, a regional EPS delivery plan could be co-produced with stakeholders, building on knowledge and collaborations established during the Peat Pilots. To do this effectively, existing Peat Pilots would need to be extended and replicated across other peatlands. This could draw on landscape facilitators, employed under the Nature for Climate Fund, to co-produce delivery plans on a region-by-region basis. Section 4.3 outlines methods that could be used to ensure the approach is both co-productive and systematic, enabling policy/delivery mechanisms to be mapped onto desired EPS outcomes, considering (based on available evidence and expert knowledge) how these are likely to play out for different stakeholder groups. Based on this, it would be possible to identify specific risks that EPS outcomes are not delivered for particular groups, and identify additional activities (or adapt existing policy/delivery mechanisms) that might be able to deliver at-risk outcomes. The co-production of such a delivery plan would increase the likelihood of identifying effective activities that are adapted to the needs, preferences and constraints of specific stakeholder groups.
13. **Ensure EPS delivery plans integrate ongoing opportunities for stakeholder engagement and social innovation.** Although delivery mechanisms would need to be identified in collaboration with stakeholders at each site, illustrative mechanisms arising from our research in the Peat Pilots include:
    - To foster innovation and co-production of locally relevant delivery mechanisms, social innovation labs might be used to co-produce and resource small-scale experiments in land use and management, with formal evaluations leading to their extension, adaptation or discontinuation

- The EPS may seek to promote land manager-led groups/fora that enable land managers to interact and collaborate with peers to share good practice on peatland restoration and sustainable management, and communicate the benefits of peatlands to the public, providing opportunities to build social connectedness and trust through activities linked to the EPS.
- Demonstration sites have also been shown to reduce perceived complexity and increase observability of benefits, driving the adoption of new agricultural practices. This is most effective when sites and events are run by other land managers who are well known and trusted.

The report provides a brief introduction and account of the methods used, followed by a detailed results section and three discussion sections, focusing on designing and communicating the EPS to enhance engagement and implementation and economic considerations.

Contents

1 Introduction

Natural England ran five Peatland Pilots to explore barriers and opportunities to protect, restore and sustainably manage peatlands, and engage stakeholders in the development of the England Peat Strategy (EPS). Located in Dartmoor, the East Anglian fens, Greater Manchester Combined Authority, Cumbria and Northumberland, and the North York Moors, the pilots explored a range of issues to help inform the development and implementation of the strategy. This study conducted social science research in each of the Peat Pilots to better understand potential social, economic and cultural barriers to the successful implementation of the EPS, and identify opportunities to shape the strategy and deliver outcomes that meet both policy and stakeholder needs.

To provide an in-depth understanding of these barriers and opportunities, we explore how different stakeholders value peatlands and how these values are likely to shape their likely interaction with key mechanisms within the EPS. To do this, we consider the broadest possible range of values, beliefs and norms and other internal factors (e.g. availability of financial and social capital, risk perception and perceived self-efficacy) and external factors (e.g. land tenure, farm characteristics and scheme flexibility) that are likely to influence engagement with the EPS by a cross-section of stakeholders in each of the Peat Pilots.

We consider how people live *from* peatlands, through the different ways in which peatlands benefit people's livelihoods; how people live *with* peatlands, including its biodiversity and ecosystem processes; how people live *in* peatlands, where peatland landscapes are core to the places and histories that are important for community, recreation and wellbeing; and how people live *as* peatlands, where people experience themselves as part of the peatland landscapes and peatlands in turn shape peoples embodied identities and experiences. We then use these insights to make recommendations to tailor the design, communication and implementation of the EPS to engender more positive engagement, which may lead to more effective strategy design and implementation.

2 Data collection and analysis

The research followed a mixed-methods research design, combining insights from qualitative interviews with photo survey, portrait photography, deliberative valuation and a logic map to provide an analysis of social barriers and opportunities for implementing the England Peat Strategy.

The research design is based on a theoretical framework that explains how people perceive, relate to and value their natural environment. Questions and exercises deliberative valuation workshops, semi-structured interviews and photo survey were structured around the Life Framework of Values (O'Connor and Kenter, 2019) to explore how peatland stakeholders live *with*, *from*, *in* and *as part of* nature. Figure 1 shows how these four Life Frames of Values enable the consideration of instrumental values (the value of what humans can get from nature), relational values (how humans value their relationships with nature) and intrinsic values (the value of nature without reference to humans) (IPBES, 2016). The Life Frames are inclusive of ecosystem services but also move beyond a framing of nature as a means to human benefits, emphasising the two-way relations that people often experience and express with the landscapes that they live in.

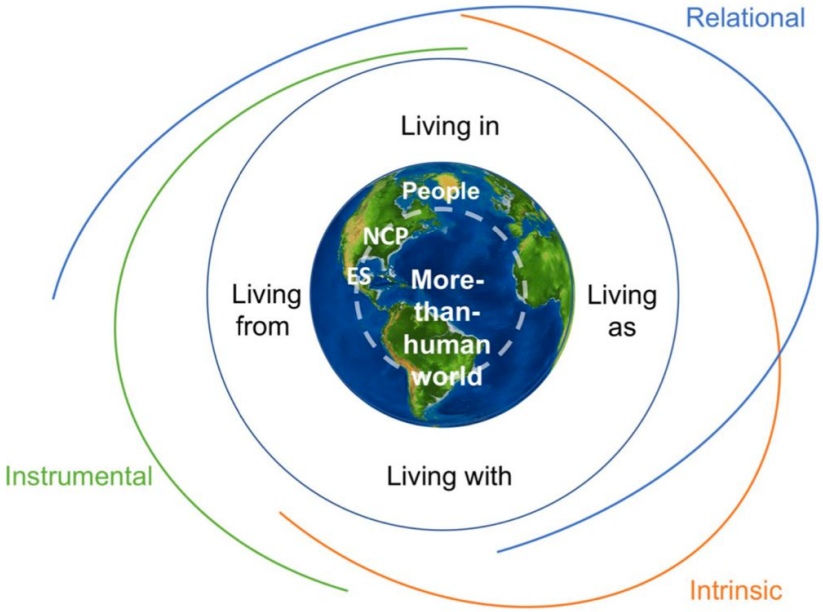


Figure 1: O'Connor and Kenter's (2019) four Life Frames of Values and their relationship to the IPBES (2016) categories of intrinsic, instrumental and relational values (ES = ecosystem services; NCP = nature's contributions to people).

2.1 Qualitative methods

A stakeholder analysis was used to stratify subsequent interview and workshop invitations to represent the full range of interests in the strategy and pilots. This was done using the 3i's approach to consider the relative interest, influence and impacts arising for different organisations and groups from the implementation of the strategy (Reed et al, 2018; Kendall et al., in prep.). The workshop was attended by each of the Peat Pilot leads and other Natural England staff and facilitated by Reed and Hansda. Based on the stakeholders identified and their characteristics, a stakeholder categorisation was developed based on the interests and likely attitudes of stakeholders towards the strategy. Interests were categorised by the primary ecosystem service each stakeholder was likely to be interested in (climate/biodiversity; water quality/flooding; cultural (including recreation); provisioning (including timber and sheep)). In addition, a final "cross-cutting" category was developed for organisations or groups with multiple interests, for whom a clear primary ecosystem service interest could not be identified. Within each of these categories, a distinction was made between those who were thought to be open or resistant to key changes proposed in the strategy. Given the need to understand both barriers and opportunities for EPS implementation, this dichotomy was deemed useful to ensure balanced representation of views. The more fine-grained distinction provided by the ecosystem service classification was deemed to be useful to ensure broad representation across stakeholders in relation to the broad-ranging objectives of the EPS.

A total of 50 interviews were conducted across all five Peat Pilots, stratified by stakeholder type (based on the stakeholder analysis). Based on 'information sheet' prior to the interview, informed consent was obtained from all interviewees, and recordings transcribed prior to qualitative thematic analysis. The project was approved by both the Newcastle University and the Natural England ethics committees. Out of the 50 planned interviews, 10 per site, three-quarters of the interviews were conducted face-to-face, and the remaining through online video or phone calls due to Coronavirus restrictions on movement. For the analysis, the NVivo software was used for initial coding. The early stages of coding, described as 'open coding', aimed to capture detail and nuance and relied largely on the descriptive articulations of the interviewees of their values, perceptions and beliefs about peatland and their everyday lived experiences around this natural resource. It also captured some of the concerns and anxieties around future agri-environment schemes, including peatland restoration work in terms of what they might enable or restrict. Descriptions then became the building blocks for more abstract concepts to emerge.

2.2 Photo survey

In order to understand wider perceptions of the five Peat Pilot project study areas a geo-referenced photographic survey and questionnaire data collection exercise was carried out with stakeholders and wider community groups within the study areas. The exercise utilised two mobile applications:Landscape Connect

(http://landscape-connect.com/) and Rate my View (http://ratemyview.co.uk/). This participatory geo-spatial information management method has the benefit of combining participatory research methods with geographic information systems (GIS) that allow mapping of the spatial distribution of cultural ecosystem services. Participants become experts in understanding and mapping their own experiences within the landscape. The two mobile phone applications record individual, subjective experiences using survey methods, with geo-spatial information. This type of tool allows researchers and participants to co-examine the interpersonal and spatial distribution of the perceived benefits of landscapes. Therefore, in this study the method allows impressions and initial values-based thoughts associated to the Peat Pilot areas to be formed and collected in the field.

For this study the mobile phone applications were originally envisaged as tools to be used by workshop attendees in each of the five peatland study areas. The intention was to set the pre-workshop task to each attendee of using their mobile phone to gather photos and comments around expected respondent values in advance of workshops. Unfortunately, the unfolding 2020 Covid-19 lockdown curtailed these workshops and allied activities. However, a short independent data- gathering exercise was performed across all the peatland study areas, engaging with a cross-section of stakeholders. The stakeholder groups ranged from WI groups to Mountain Bike clubs.

The questions asked with the mobile phone tools thus covered three dimensions:

a) The five peatland study areas
b) The values of discrete individuals (respondents)
c) Four sets of value types:
    a. Perceptive
    b. Affective
    c. Meaning-based
    d. Importance

The questions asked were framed in 2 sets:

Questions about you:

Q1. How would you describe this place (smell, taste, sound, touch, appearance, & other impressions)?
Q2. How does it make you feel (emotions & experiences)?

Questions about your peatlands:

Q3. What does this place mean to you (individually & to your community or organisation)?
Q4. Why is this place important or special (positives & negatives)?

Full attention was paid to ethical and GDPR considerations in gathering and storing user-generated digital data.

2.3 Portrait photography

One stakeholder from each site and Natural England's Peat Pilot lead were invited to take part in portrait photography sessions to further explore their relationship with the land. Due to COVID-19 movement restrictions, photographs were only taken in four sites. This work was originally planned to be part of a touring photography exhibition at each site, designed to communicate initial findings whilst eliciting additional feedback from participants alongside photography from the photo survey, but due to movement restrictions, photographs have been integrated into this report and framed copies have been sent to subjects.

2.4 Deliberative valuation workshops

One workshop was organised in each Peat Pilot area to triangulate interview and photo data with group discussion, and to collect deliberative monetary valuation data to inform the development of future scheme options. Originally, all workshops were planned in March 2020 to run over a full day, but four of five had to be rescheduled and conducted in a shorter online format due to COVID-19:

- Greater Manchester Combined Authority, in person, 10 March 2020
- Border Uplands in Northumberland and Cumbria, online, 4 June 2020
- East Anglian Fens, online, 5 June 2020
- Dartmoor, 11 June 2020
- North York Moors, 12 June 2020

The objectives of the workshops were to (1) update the attendees on the project interview results; and to (2) consider agri-environmental management, payment options and fair prices with regard to peatland restoration.

Participants at Manchester deliberative valuation workshop

Workshop participants (Table 2) were recruited through the NE Pilot Leads following an initial stakeholder analysis in collaboration between the leads and the research team (see section 2.1). They primarily represented people with backgrounds in farming, land management and conservation, and local government and national park and AONB authorities. All those engaged in the interviews were also invited to workshops.

An outline of the different formats used can be seen in Table 1. Recruitment for the online workshops proved to be somewhat challenging, and for Border Uplands and North York Moors, diversity of groups was deemed too low to allow for a meaningful multi-stakeholder deliberation on payment schemes; hence the workshops were focused instead on dissemination of results from the project, and previous research on restoration economics. Because this was focused on upland contexts, the restoration economics presentation was not included in the East Anglia workshop. In Manchester, participants completed a pre-workshop questionnaire in person, including a 'values compass'. For East Anglian Fens and Dartmoor this was distributed online in advance of the workshops, but there were few respondents from Dartmoor. The questionnaire was then adjusted and sent to a broader stakeholder group for Dartmoor, Border Uplands and North York Moors, but only for Border Uplands did sufficient respondents reply to make the results meaningful.

In both the in-person and online workshops, respondents were split into two sub-groups, at separate tables or Zoom breakout rooms, for the each of the discussion sessions, and also for the storytelling session in Manchester. The overall workshops were facilitated by Dr Jasper Kenter (Ecologos Consultancy & University of York) and break-out groups were facilitated by Dr Kenter and Dr John Martin (Plymouth University). Facilitators helped ensure participation by managing how long different people spoke for - a range of facilitation tools were used to assist with a set of participant-agreed ground rules of respect and inclusivity, including go-rounds and direct prompts, and cutting short of overly dominant speakers by the facilitators.

In the online workshops for East Anglia and Dartmoor, facilitation was supported by the use of Jamboard online software (http://jamboard.google.com). This provides an online 'flipchart' where people could add sticky notes to contribute points (Figure 1). The boards were pre-populated with prompts, and different coloured sticky notes related to different question prompts. This allowed the sub-group discussion to take place in different rounds, where facilitators asked participants to first individually answer the prompts by adding notes, and then to comment on and discuss each other's notes in go-rounds, to maximise inclusion. The software vas very easy to use, even by those who were less IT-proficient, and a brief training session was included at the start of the workshop. One participant was unable to work out how to use the Jamboard; they spoke their notes with the facilitator adding them. When discussion ensued, research assistants added additional notes to capture key discussion points.

Table 1: Different activities per Peat Pilot stakeholder workshop

Characteristics & activities	Manchester	East Anglian Fens	Dartmoor	Border Uplands	North York Moors
Format	In person	Zoom			
Duration	6.5 hours	3.5 hours		2 hours	
No. participants	11	16	12	10	5
Use of Jamboards		x	x		
Pre-workshop questionnaire	x	x			
Introduction to Peat Pilots programme	x	x		x	x
Storytelling	x				
Values Compass	x	x			
Presentation / discussion on interview results	x	x	x	x	x
Presentation / discussion on restoration economics	x		x	x	x
Discussion on agri-environment-schemes and fair prices	x	x	x		
Discussion on issues specific to commons			x		
Feedback questionnaire	x	x	x		

Table 2: Workshop and questionnaire participants primary stakeholder affiliation

	Workshop	Questionnaire
Manchester	National Park/AONB: 2 Peatland restoration practitioner: 1 Environmental NGO: 2 Science/research: 1 Local council: 1 Natural England: 4	National Park/AONB: 3 Peatland restoration practitioner: 1 Environmental NGO: 3 Landowner:1 Science/research: 1 Water authority: 1 Natural England: 3
East Anglian Fens	Environmental NGO: 2 Farmer: 5 Science/research: 2 NFU: 1 Local council: 2 Water authority: 1 Natural England: 3	Environmental NGO: 3 Farmer: 4 Science/research: 1 NFU: 1 Local council: 1 Water authority: 1
Dartmoor	National park/AONB: 1 Environmental NGO: 2 Farmer/grazier: 3 Local council: 2 Water authority: 2 Natural England: 4	N/A
Border Uplands	National park/AONB: 3 Environmental NGO: 0 Science/research: 1 Local council: Water authority: Natural England: 6	National Park/AONB: 3 Environmental NGO: 1 Farmer: 1 Environment agency: 1 NFU: 1 Natural England: 2
North York Moors	NFU: 2 Natural England: 3	N/A

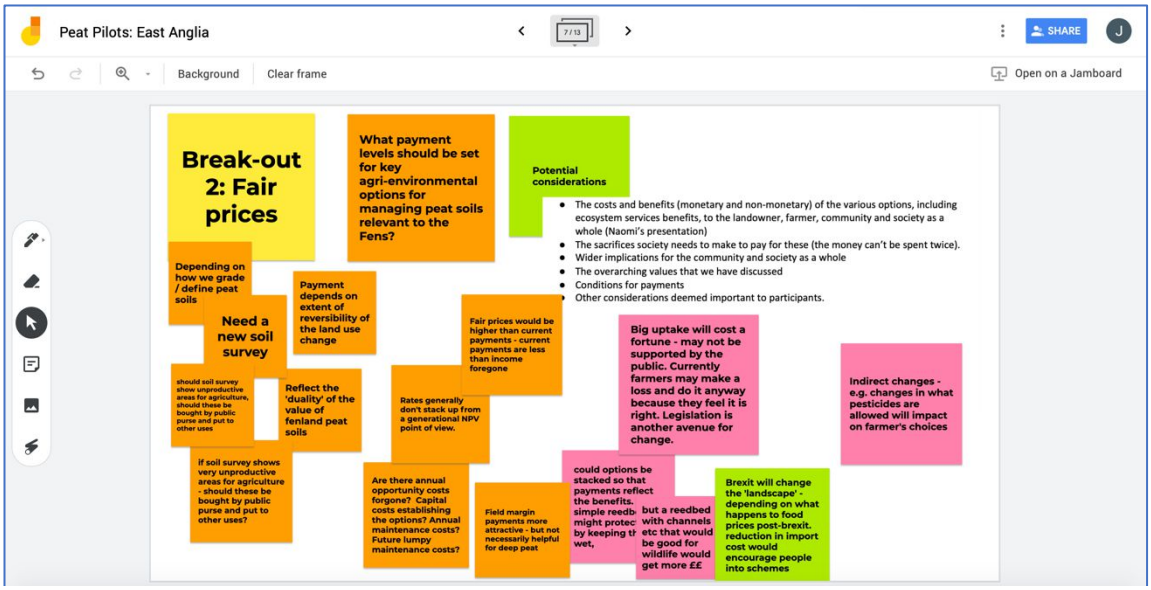


Figure 1: Example Jamboard. When participants added their notes, they were asked to include their names; names have been removed from the image.

2.4.1 Pre-workshop questionnaire

The pre-workshop questionnaire included:

- A Values Compass (Kenter et al. 2016; Kenter, 2017) consisting of 18 value statements adapted with minor modifications from the Schwartz values system.
- Questions around respondents' beliefs with regard to the state of peatlands in their pilot areas and the consequences of deliberation.
- Questions with regard to individual views on agri-environmental management, scheme options and terms and conditions, and fair prices.

Likert scale questions included a mix of positive and negatively-phrased questions to reduce framing bias around contentious issues such as heather burning.

2.4.2 Storytelling

A storytelling approach was used in Manchester to elicit participants' shared experiences and values with regard to peatlands. Workshop attendees were each asked to tell a short story or anecdote prompted by the following questions: What are your favourite places in Greater Manchester peatlands? How do you feel when you are in these places? What is important about them?

2.4.3 Interviews and economics sessions

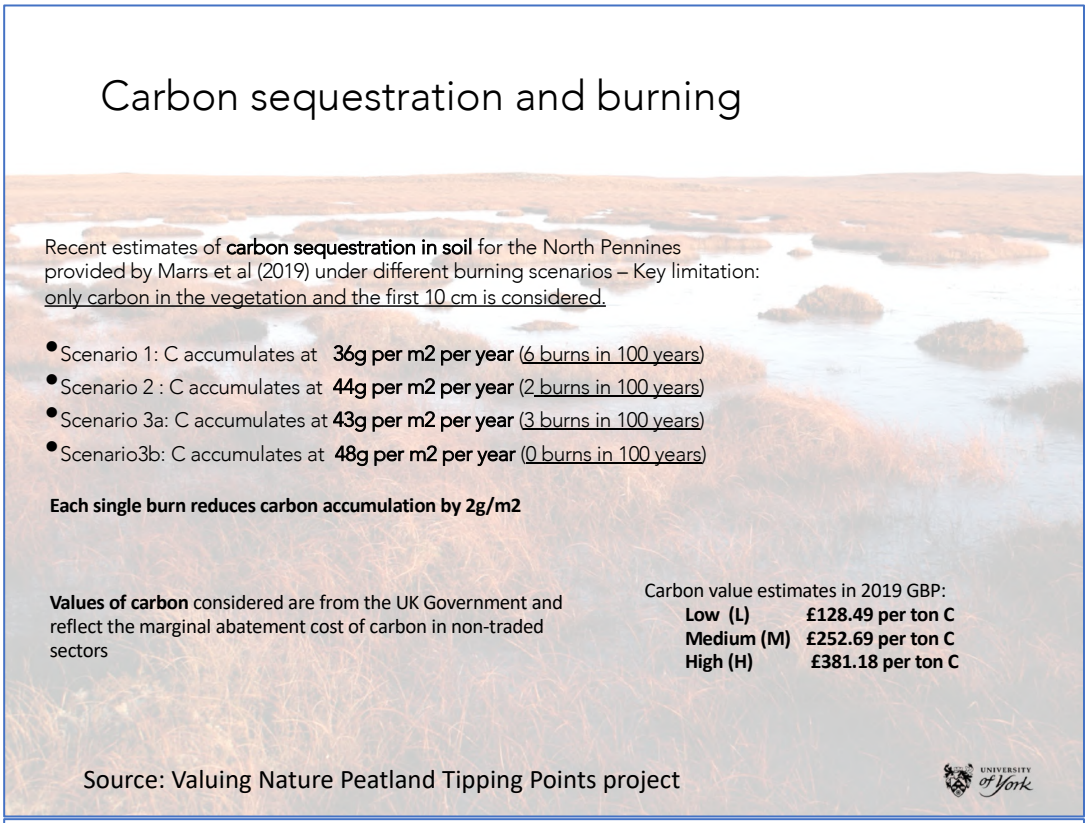
Discussion sessions were interspersed with presentations. Peat Pilot presentations included an overall presentation by Natural England (Naomi Oakley) and, in Manchester, East Anglia and Border Uplands, the Peat Pilot leads. Interview result presentations consisted of ±20m reflections on the results of the project interviews (see section 2.1) followed by up to 30 minutes and discussion.

The presentation on economics, followed by a short Q&A, was included to help frame discussions around agri-environment payments, in particular what payments should be based upon. They included:

- Introduction of the Committee on Climate Change's Net Zero technical report, in particular the demands on and objectives for peatland restoration to achieve net zero policy.
- Discussion of benefits of restoration, including:
    - The economic value of carbon sequestration in terms of the social cost of carbon avoided, and how this might vary by burning regime, based on work by the Valuing Nature Programme Peatland Tipping Points (VNP-TP) project (Figure 2).
    - Public willingness to pay for restoration, based on work by Glenk and Ortega (2018) (Figure 3).

- Discussion of CAPEX and OPEX costs of restoration, as established by Okumah et al. (2019) and Glenk and Ortega (2018), as used by the Committee on Climate Change (Figure 5).
- Discussion of benefits and costs to different groups of recreationalists of rewetting, based on the VNP-TP North Pennines study (Figure 4).
- Discussion of potential changes in grazing, according to different kinds of agri-environmental scenarios post-Brexit (Figure 6).
- Presentation of payment levels for current peatland related payment options within HLS and CSS agri-environment schemes.

Nun's Cross, Dartmoor (used with permission by Andy Hughes, 2020)



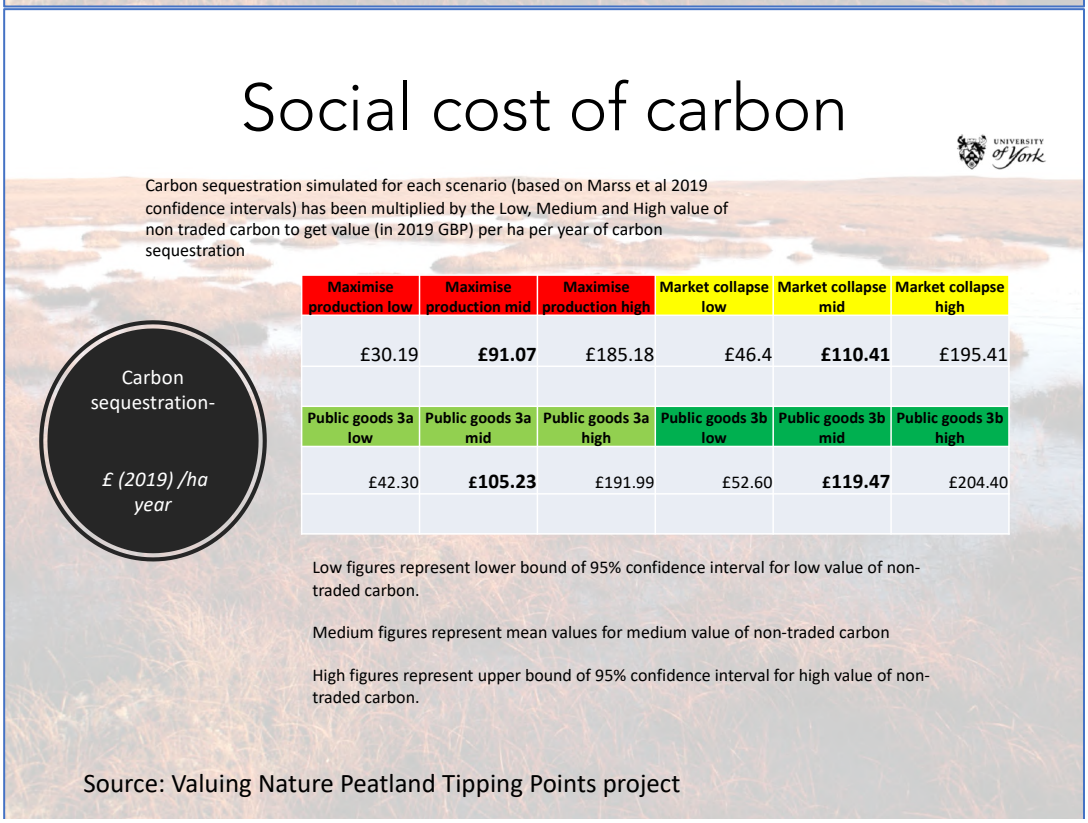


Figure 2: VNP-TP results with regard to benefits of carbon sequestration, in terms of avoided social cost of carbon across different burning scenarios.

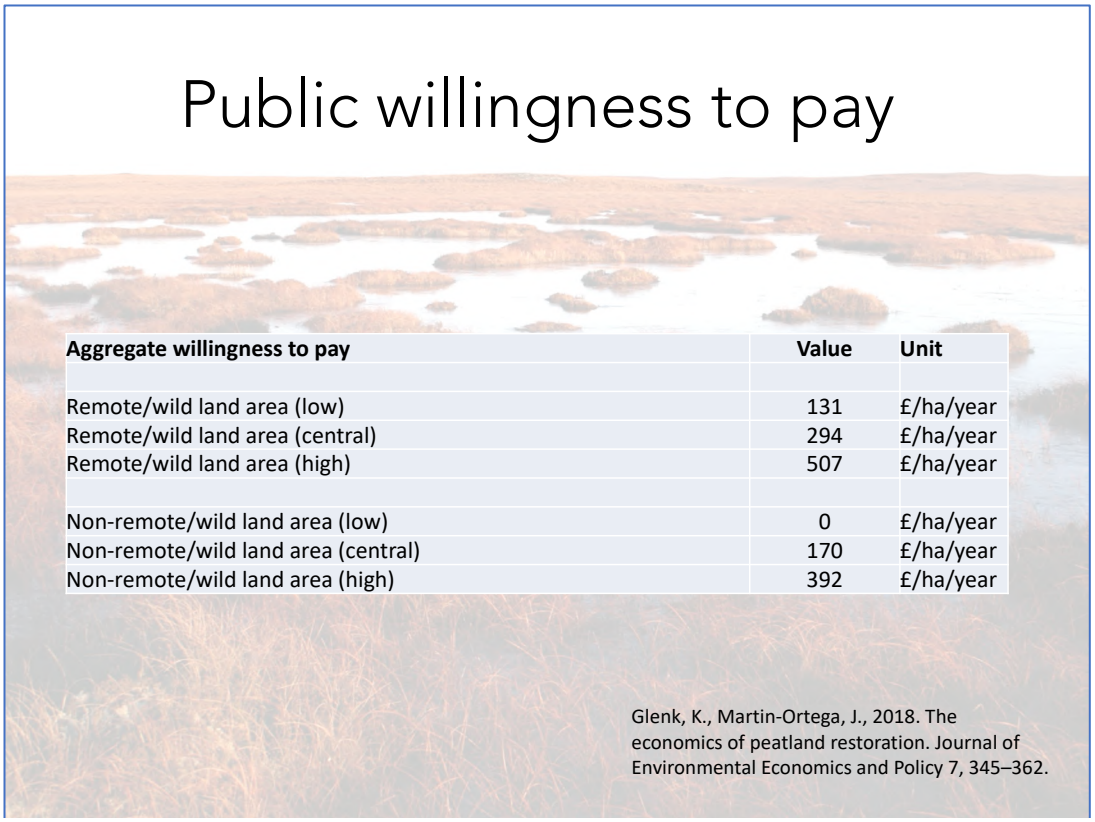


Figure 3: Public willingness to pay per hectare in a study with the Scottish public.

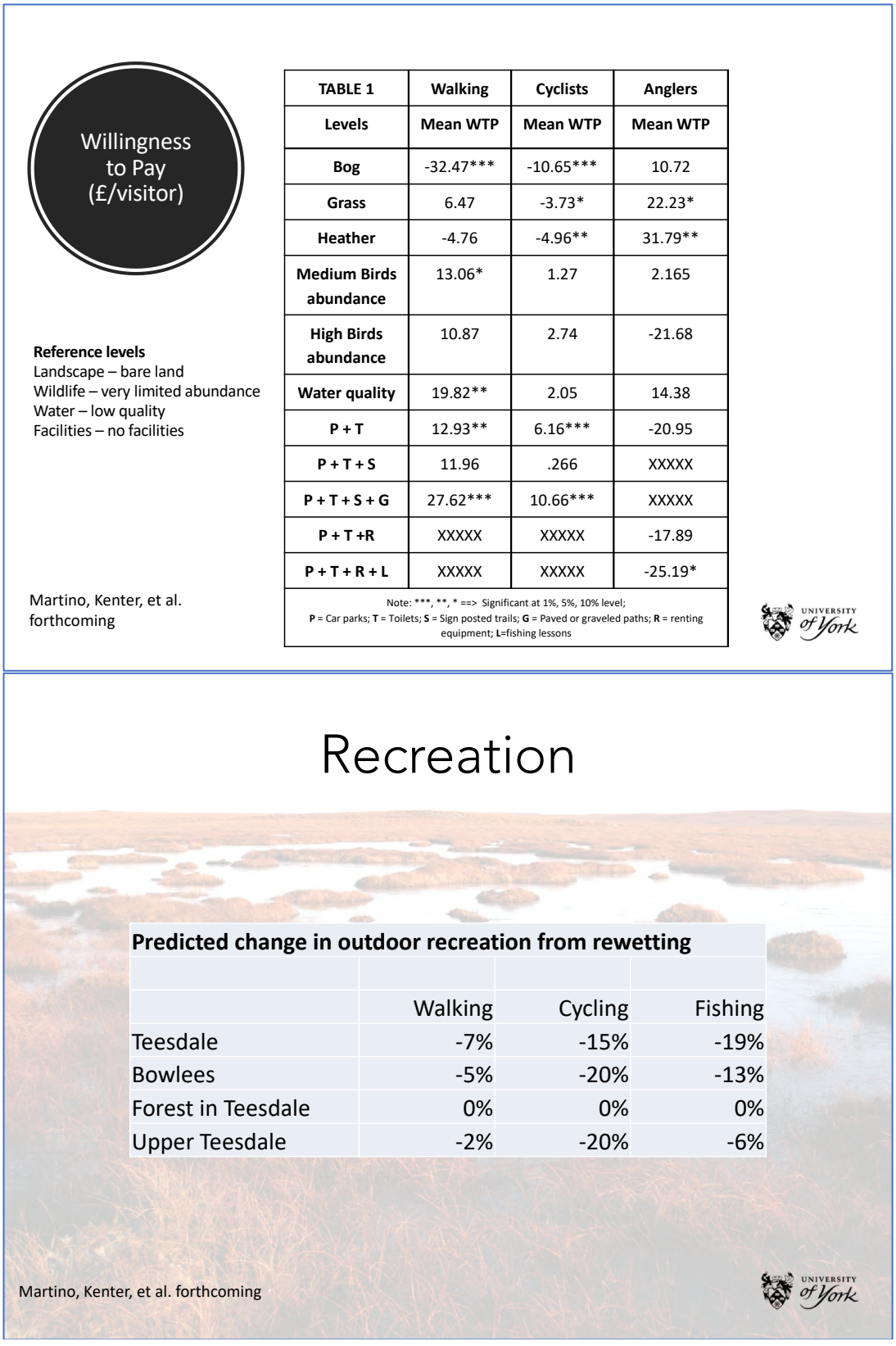
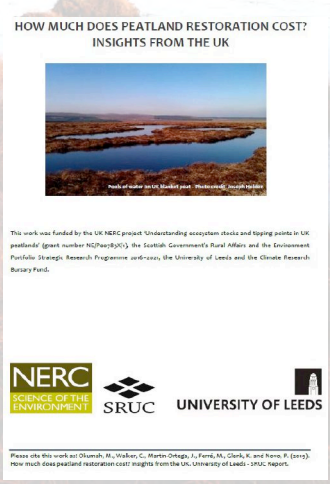


Figure 4: Willingness to pay by different recreationalists visiting the Pennines, based on travel cost, for changes in different landscape attributes, including vegetation, bird life, water quality and recreational facilities; and central estimates of predicted changes in number of outdoor recreation visits to different areas of the North Pennines resulting from peatland rewetting; results from the VNP-TP project.

Restoration costs

- Currently information on restoration costs is scarce and fragmented
- Collected data from 38 restoration sites in England (Okumah et al. 2019)
- Costs of restoration works make up ~90% of total restoration costs
- Large differences in cost/ha by technique
  - Damming with rock among most expensive (~£5,900)
  - Damming with peat among least expensive (£100/ha)
- Median restoration cost/ha across techniques ~£1,000
- Factors affecting costs: site characteristics, location of site, and land ownership
- More data is needed to better understand large variation in cost/ha and factors affecting costs

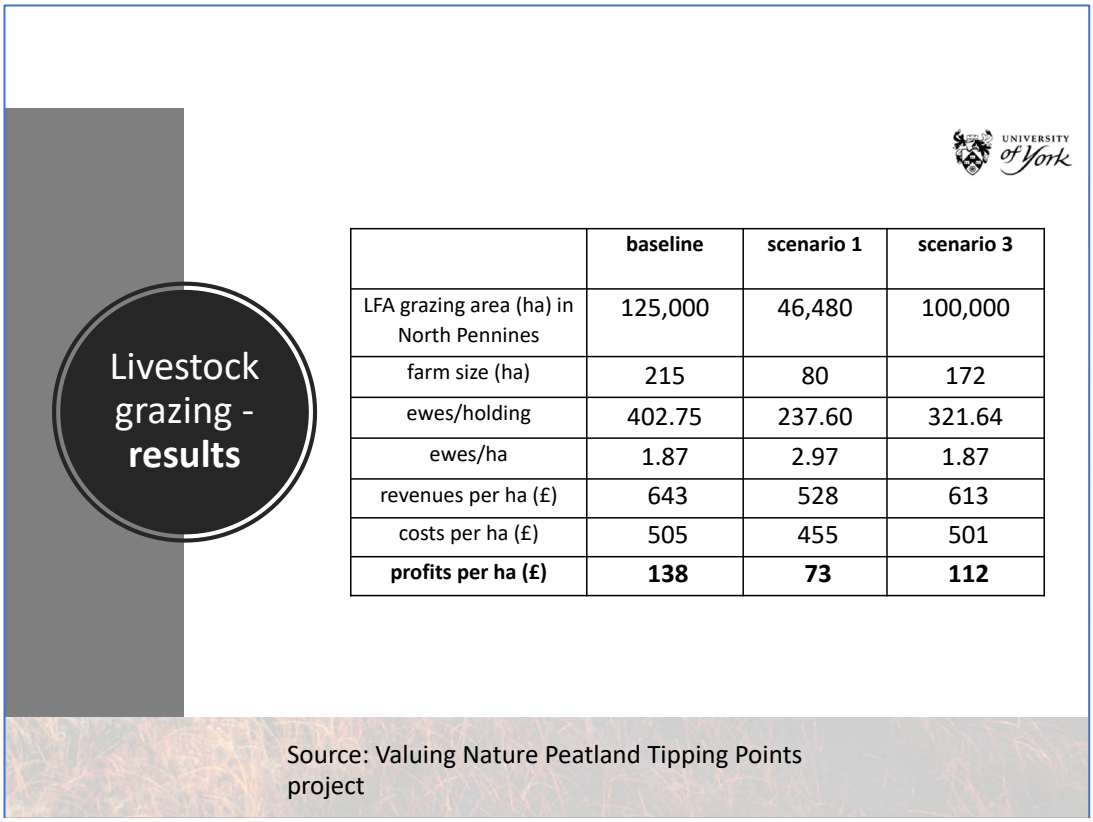


Opex

Costs	Upland value	Lowland value	Unit
Loss of livestock/grouse/crop revenues and monitoring/maintenance costs (low)	20	25	£/ha/yr
Loss of livestock/grouse/crop revenues and monitoring/maintenance costs (central)	100	100	
Loss of livestock/grouse/crop revenues and monitoring/maintenance costs (high)	140	400	

Glenk, K., Martin-Ortega, J., 2018. The economics of peatland restoration. Journal of Environmental Economics and Policy 7, 345–362.

Figure 5: Presentation of restoration CAPEX and OPEX costs as currently used by the Committee on Climate Change based on Okumah et al. (2019) and Glenk and Ortega (2018).



	baseline	scenario 1	scenario 3
LFA grazing area (ha) in North Pennines	125,000	46,480	100,000
farm size (ha)	215	80	172
ewes/holding	402.75	237.60	321.64
ewes/ha	1.87	2.97	1.87
revenues per ha (£)	643	528	613
costs per ha (£)	505	455	501
profits per ha (£)	**138**	**73**	**112**

Figure 6: Estimates of impacts of different future post-Brexit agricultural scenarios for the North Pennines on grazing in the North Pennines (Scenario 1: Maximise Production; Scenario 3: Public Money for Public Benefits), based on a farm profit maximisation model; results from the VNP-TP project. Descriptions of scenarios can be found at: https://13c4feef-c595-4142-87f9-360a3f387d7f.filesusr.com/ugd/6e5046_1c4569f5899346be9cc85c04fb5347c0.pdf.

2.4.4 Discussions on agri-environment-schemes, fair prices and local issues

In two break-out groups, participants from Manchester, East Anglia and Dartmoor then discussed in more detail key questions relating to agri-environmental management and payment schemes:

Agri-environmental management:

- What should the objectives for agri-environment/ELMS policy post-Brexit?
- How can land & agricultural management be changed towards minimising peat loss and maximising benefits?
- What incentives are necessary to achieve such a change?

Common land issues (Dartmoor only):

- Scale of agreements: single commons, multiple commons
- How should payments be split: by a formula, site by site negotiation, or another way?
- Who decides? Should all rightsholders need to be signed up to an agreement?
- What mechanisms can be used to engage reluctant land managers?

Payment options and fair prices:

- What are your views on the current payment options? Should these options be modified in any way? Are there any options missing?
- What should be the terms and conditions of schemes and options, how should they be implemented? How should outcomes be assessed?
- What should payments be based on?
- How could the shared values discussed in the workshop previously (i.e. in relation to values compass, storytelling, interview responses) be incorporated?
- What should be fair prices for key payment options?

The final discussion on fair prices revisited current HLS/CSS payment options and considered whether these needed to be changed, and what payment levels would be appropriate. A number of key considerations were suggested: whether payments reflected the social value of the management (to the local community and to the general public/taxpayer); the broader values of, and in relation to, biodiversity and the environment, including the ecological, economic and cultural values presented and discussed previously; opportunity costs and effectiveness of the measures; and any other considerations deemed relevant to participants. The approach broadly followed a model established by Kenter and Reed (2014) in deliberative work in the Peak District, following broad principles of Deliberative Democratic Monetary Valuation (Lo and Spash, 2012; Orchard-Webb et al. 2016; Kenter, 2017).

2.5 Logic map

A conceptual logic map was developed as a preliminary systems model linking land management interventions to ecosystem services. This was refined in iterative cycles of literature searching and expert consultation. Changing scope and definitions of system elements in different schema proved problematic to integrate. These were formalised to maximise policy relevance using Bunce et al (2018) as a source of evidence on links between management and habitats. UKBAP broad habitats (seminatural grasslands lumped) were used to classify habitats and ecosystem service links were taken from Annex 1 of “Natural Capital Indicators: for defining and measuring change in natural capital” (NERR076). Scenerios are under ongoing development to explore downstream consequences of changes in natural capital.

2.6 Policy workshop

Finally, a stakeholder workshop was held to address additional questions from the steering group about links between the Peatland Code, other private PES schemes and future public schemes that might fund peatland restoration. Findings from interviews with scheme organisers were presented to participants for discussion in plenary before breaking into two parallel groups to discuss options for integration between the three main private schemes in operation in the UK, and between public and private schemes. The focus group was facilitated by Reed with 12 participants representing those involved in the development and operation of UK PES schemes, based on an initial review of PES schemes across the UK (Gosal et al., 2020). These included researchers, consultants, businesses, the third sector, an intermediary/broker, and policy stakeholders from regulatory bodies and Government departments in Scotland and England.

Greater Manchester Combined Authority Peat Pilot site (used with permission by John Post, 2020)

3 Results

3.1 Qualitative interview results

At the start of analysis, the coding process produced substantial numbers of codes which, based on overlapping ideas, were narrowed down to a few emergent categories (Table 3). Figure 7 summarises the broad themes in the form of a conceptual framework. Figures 8-12 then summarise the interview data using word frequencies. The following sections provide a detailed summary of the findings of the qualitative thematic analysis. Note: we refer to land managers as anyone who manages peatland, including farmers, foresters, landowners, tenants and gamekeepers.

Table 3: Themes (denoted by headings) and lists of categories generated from analysis of qualitative data

Place and meaning
Farming history and culture around land and livestock
Stockmanship - intrinsic to hill farmers' identity
Investedness in the land - histories, traditions, memories
Gentrification of the countryside and cohesiveness issues
Concern about the disappearing wildlife
Land manager identity
Concerns about hill farming, its value and relevance
Political economy of food and the productivist paradigm
Image of a farmer and need for redefinition
Farming and education issues
Intergenerational knowledge and skills transfer
Peatland restoration – ambivalences and opportunities
Code of silence - past and existing AES schemes
Prioritisation of interventions and outcomes
Evidence-based work, scalability
Vernacular expertise
Need for mediators and facilitators

Existing pro-environmental practices
Need for long-term payments to enable planning
Incentivising and simplifying procedures
Fine balance of interests, ideas and outcomes
Commons, commoners and complexity
Over-grazing and under-grazing
Mosaic of habitats
Existing conflicts and dynamics
Prioritisation of interventions and outcomes
Powerful groups and their lobbyists
Tenant farmers/commoners and inclusion
Diversity of management regimes
Narrative-setting
Multiple outcomes possible - food, wildlife and carbon sequestration
Bridging the disconnect and trust issues
Political economy of food and peat-based products and trade offs
Farmers as ecologically conscious economic actors
Meaningful consultation
Collaborative working
Nature conservation - intergenerational, global responsibility

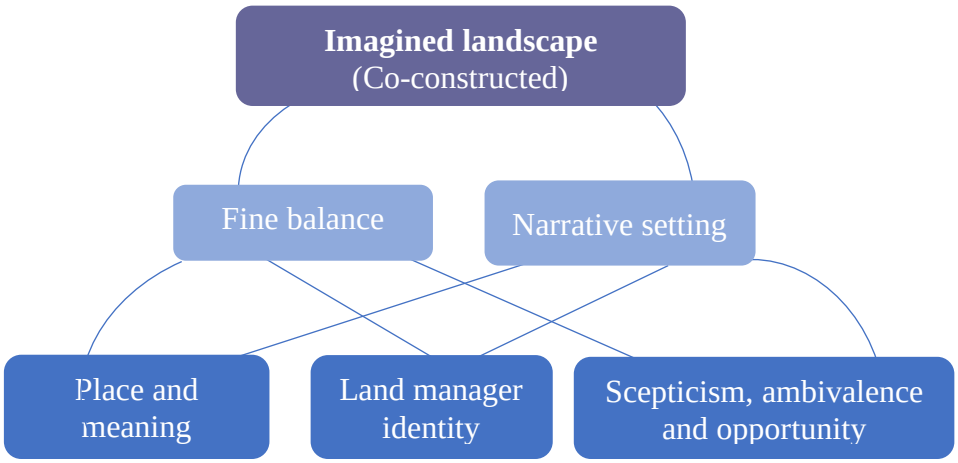


Figure 7: Conceptual framework showing thematic categories that emerged from interviews (each theme is described in detail in the sections that follow)

Dartmoor

Border Uplands in Northumberland and Cumbria

Greater Manchester Combined Authority

East Anglia Fens

North York Moors

Figure 8: Word frequencies from interviews

3.1.1 Place, identity and meaning

Recent literature on agri-environment scheme governance and sustainability science has argued the need to fully incorporate cultural and emotional dimensions of a landscape to understand how societies deal with and shape anticipated transformations, unforeseen risks and increasing uncertainties (Brown et al. 2019). Understanding these values are critical in determining motivations for behavioural change and areas of reservations. *Place identity, place attachment* and *place dependence* are values people associate with certain geographical spaces, and they reflect the importance of a place in providing meaning and conditions that support intended use (Giuliani and Feldman, 1993; Proshansky, Fabian, & Kaminoff, 1983). Individual identity is a relational value, and a person's sense of self emerges in relation to a particular place and/or other human and non-human actors in a given geographical landscape (Allen et al, 2018).

Most interviewees, especially the land managers, had long family histories, memories, traditions, and a sense of attachment associated with the places. This relates to the image a land manager holds about him/herself and the role that discourse and practice play in affecting behaviour and decision-making processes in relation to the farm. Land managers expressed pride in the value of their local knowledge, culture and tradition to guide decisions, linked to place-based identities.

The roles and social identities associated with farming are complex, dynamic, and often context-specific. All land managers had their own version of what it means to be “a good land manager”. The main identity which land managers see for themselves is that of a food producer. This is particularly so for the East Anglia Fens region which produces almost 70% of Britain’s food and is seen as the ‘Food Bowl of Britain’. Unlike conventional lowland farmers (where a large part of the farmer’s identity is defined by their ability to have high-input, high-output production systems, using large-scale machinery), in the case of upland management, it is predominantly the ability to raise good quality livestock and maintain genetic purity of breeding stock which defines identity. The most important aspect of this is the production and maintenance of hardy animals that are adapted to the harsh landscapes they have to survive in.

However, the role of hill farming is valued differently**.** Some hold the view that there is marginal utility of land with diminishing returns, and that hill farmers’ businesses require careful scrutiny in terms of their profitability and viability. This is an issue which hill farmers themselves are not ready to consider, leading to the continuation of so-called ‘inefficient farming practices’. Many land managers acknowledge this as a contentious area and recognise the value of farm subsidies, in the absence of which it would be extremely difficult to continue their farming practices. As one Border Uplands land manager stated:

> *“…if I was left to my own devices and I had to make the money, I can’t… market prices will not allow that. We don’t make enough to*

survive on our own, which is the sad bit. We are not sustainable without support."

However, they want to be recognised as 'high quality food producers' as opposed to just 'efficient food producers', which does not do justice to the multiple functions they perform in the management and upkeep of the uplands. The political economy of agriculture in the UK has conventionally favoured a productivist paradigm with heavy reliance on agro-chemicals and intensive farming, and this has its own detrimental effects on the environment. There is a body of literature that suggests the productivist identity dominates the decision-making process, thereby putting biodiversity conservation, water quality and other environmental goals at risk, or making them secondary goals to pursue only if time and resources allow (Burton and Wilson 2006; Chouinard et al. 2008; Herndl et al. 2011). In a sense, there is a contradiction in the existing system - it encourages production and supply of cheap food, to which the land managers and consumers respond, but the government also expects land managers to respond to concerns around the environment. In the existing scenario, the land managers find themselves sandwiched between these two demands, of the market and the environment.

There is recognition across the sites that knowledge and skill transfer in hill farming is an intergenerational responsibility. Conventional universities and colleges do not offer relevant courses for land managers interested in making a living in the uplands. Therefore, there is a general notion that the younger generation of land managers can only learn through on-the-job training at their fathers' or grandfathers' knees. However, the average age of the land manager is mid-fifties. There are concerns about succession, as there are few new arrivals within the farming industry because of the high entry barriers. This is especially the case in the upland areas, which is physically more demanding in terms of making a living. There are attempts by younger members of farming families to explore livelihoods elsewhere, outside of farming. From the perspective of peatland restoration where much of the discussion has centred on longevity of schemes for long-term commitment, ensuring recruitment and retention of younger land managers in upland farming is key.

Table 4 presents a snapshot of how stakeholders across sites perceived and viewed themselves in relation to peatlands, and in relation to the wider farming community. It is important to recognise that what is true for one site/place may not necessarily be true of another, both in terms of attachment, history and tradition, but also in terms of land management practices. What may work in one location may not necessarily work in another; therefore, a 'one-size-fits-all' approach to peatland management may not be a good idea, because it will not deliver the outcomes for the environment of policy goals.

Table 4: Illustrative quotes from each study site about place, identity and meaning

Peat Pilot Site	Quote	Attribution
Border Uplands in Northumberland and Cumbria	"...we talk about hefted sheep, these are hefted families. They have been farming for years. You see some turnover, but we still see blokes whose families have been hundreds of years and they are still hefted..."	Land manager
Dartmoor	"...I value it (biodiversity) for two reasons. Firstly, I recognise that the biodiversity has an intrinsic value beyond monetary terms. It is part of the world we share, and knowing that it is being steadily eroded by human population is upsetting, and it is nice to see where I have still got wildlife.... I value both for their own values (intrinsic) and what I can get out of it (environmental payments)..."	Land manager
Dartmoor	"...I can't understand people who say we shouldn't have cows. Environmentally they provide so much. They poach the ground a bit and that holds the water, we don't want smooth tracks everywhere... The way animals move, they all have a place on the commons and different birds will associate with different animals..."	Land manager
Greater Manchester Combined Authority	"...because it is flat. It is really difficult to appreciate how complex it is, because it looks so simple on the surface..."	Conservationist
	"The people who visit the place, the people who live near it, the town of which it is part of – there is general insufficient valuing of the landscape in terms of what it does to the city, what it can do, and the way it behaves. It is looked at in quite a simplistic way, only as a pretty photo...but actually it is a complex ecosystem with a lot of capacity to do a lot of things, and to a varying degree it is not doing what it is potentially capable of..."	Land agent
North York Moors	"...For me Swaledale sheep belong to a heather moorland... the best way of managing any moor for me is with livestock. Don't overdo it and don't underdo it... They have a value, the farmers can actually make a living out of it. It is a double-edged sword really. You are getting the value of the sheep at the end of the day, plus you are getting the value of the habitat and the moorland surroundings. There are areas of moor around here that haven't been grazed for years and whether you like that or not, it is just scrub..."	Land manager

3.1.2 Scepticisms, ambivalence and opportunity

> *"We are getting on this ship but we don't know where we are going and do we have a clear idea of when will we arrive at our destinations?...is it going to be the same for everyone? "*
>
> Land manager, Dartmoor

> *"...it is hard to get people excited and interested in something which is falling to pieces. Even when you have got a fully restored peatland, perhaps it does not look as exciting or as adventurous as the Amazon..."*
>
> Local Authority, Greater Manchester Combined Authority

> *"People will see investing money in tree planting in the Amazon as being a beneficial thing to do from a carbon perspective but will probably not be aware that there is an equally good or potentially stronger mechanism right on the doorstep..."*
>
> Local Authority, Greater Manchester Combined Authority

Across the Peat Pilots, amongst different stakeholders, there are anxieties, scepticisms and feelings of ambivalence associated with peatland restoration work. A growing body of research discusses the ubiquity of ambivalence, which is the simultaneous experience of strong positive and negative emotional or cognitive orientations and responses towards a person, situation, object, task, or goal (Ashworth et al. 2014). In the context of peatlands, these ambivalences and scepticisms are mainly around issues of clarity-unclarity, flexibility-inflexibility, practicality-impracticality, scientific evidence and lack of evidence, and the role and scope of local knowledge or 'vernacular expertise'. Concerns are mainly around the lack of clarity on the actual status of peat depths and the degradation of sites within peatland landscapes. However, opportunities are seen for site-specific flexibilities and experimentation, and for mechanisms to measure and monitor Greenhouse Gas emission reductions.

Questions are raised about whether it is better to couple or de-link peat restoration targets from other ecosystems services; how trade-offs between climate mitigation and other services might be dealt with, especially on contentious issues like re-wetting, rotational burning and tree plantation; and through what process of consultation. Despite the 'right tree in the right place' refrain, the idea that most respondents agreed on was that the skyline of the uplands should not be dominated by woodland plantations. Land managers felt nervous about a range of issues and feared that their voice would not be heard, for example on potential land abandonment, the prospect of new regulations leading to the cessation of rotational burning on some sites, and tensions around woodland plantation and re-wetting of land. For example:

"...we talk about hefted sheep, these are hefted families. It is a really fragile existence. You get people trying to change things for their reasons, which are not always valid, and it is frightening. Technology does not do a lot up here..."

Land Manager, Border Uplands in Northumberland and Cumbria

"...Everybody has recognised that we need new solutions but these solutions are not fully ready yet..."

Land Manager, East Anglia

Money from agri-environmental schemes can be a poisoned chalice - it keeps the farms going, but it can also bring unwanted tensions and obligations. Across the Peat Pilots, there were significant concerns around money, funding and payment arrangements in terms of how payments will be made, who will do the work and who will receive the payments. Experiences across sites have shown that funding can become a source of resentment (e.g. the media outrage against large payments to large estate owners under the Common Agricultural Policy). In addition, how people are paid for the work they do is contested, and there is resentment when people fail to do work despite making commitments, but still take the money. This is further complicated by differences of opinion about whether that work ought to be done at all and whether it is the best approach. Conflict with outsiders and the 'urban elite' can arise from a conflation of anti-blood sports with anti-burning sentiments. People are forced to take sides and become polarised, despite the fact that almost all the people interviewed recognised this as a contested issue.

Across the sites, there were conversations around the need for long-term commitments to peatland restoration work, which necessitates careful thinking on the duration of the schemes. However, there were also concerns about the (ir)reversibility of commercial decisions when markets/incentives change, whether the land managers would have the option to revert to previous land use and management, and who would pay for those re-conversion efforts. Overall, there is recognition that many of the peatlands sites have become degraded because of decades of extractive practices, that restoration is necessary, and that land managers have to be part of the solution.

There is significant interest in the potential of carbon markets, especially in the Greater Manchester Combined Authority area, given its extensive urbanisation plans. However, there are concerns around the measurability and verifiability of GHG emission reductions. There are also worries about the availability of up-to-date data, and uncertainties around GHG emissions over time after restoration, especially over large sites (e.g. Chat Moss, Greater Manchester Combined Authority). There is growing recognition that peatland restoration offers immense opportunities and possibilities to local businesses, especially around carbon markets and natural capital. However, this can only be achieved through inclusive, consultative processes and collaborative working. For example, on the issue of carbon markets, there is emphasis on having baselines that can become

the starting point for any progressive work on carbon capture through peatland restoration. For instance, one land estate representative from Greater Manchester Combined Authority said:

> *"You have got to set your baseline. If you want to capture more carbon, you need to set your baseline. You need to be confident in that baseline and for us we then need some sort of verification that other people are confident in that baseline, so we need Natural England to almost rubber stamp it and say we agree with those calculations or better still give us the calculations…"*

Table 5 presents illustrative quotes on scepticisms, ambivalences and opportunities that different stakeholders expressed in relation to the challenges around wider peatland restoration work. It is clear from these quotes that scepticisms remain about the effectiveness of current and proposed peatland restoration. The worry is mainly that some of the new proposals might end up creating new problems, and that the sheer scale, temporality, and irreversibility of some of the work around restoration might result in enormous loss in both the short- and the long-term. However, there is recognition that through pragmatic, inclusive, collaborative and collective decision-making processes, it is possible to create site-specific plan, which are owned, accepted and supported by local stakeholders.

Table 5: Illustrative quotes from each study site about scepticisms, ambivalences and opportunities

Peat Pilot Site	Quote	Attribution
Border Uplands in Northumberland and Cumbria	Scepticisms mainly around tree plantation, for example: *"I am open to anything, but it is the practicalities that I am concerned about. Can I talk to somebody mid-way if I need to, and is somebody going to listen to me?"*	Land manager
Dartmoor	Concerns around re-wetting of land, restriction on livestock movement, type and size of livestock, for example: *"Cash from schemes raises the stakes. Already, individuals are circling like vultures, how they are going to get a share of this money…"*	Land manager
	"Stewardship virtue is a socially cultivated desire to keep the land healthy. For me it is diversity is the most important thing. Dartmoor should if it were a working system worked from blanket bog at the top to functioning valley myers with trees up the valleys, slowing flows, with beavers on the rivers, again slowing flows, taking carbon out of the water, increasing biodiversity, turning this landscape into something that is heterogenous rather than homogenous…"	Land manager

East Anglian Fens	Concerns around re-wetting of land, hydrology and tensions regarding food production as a goal, for example: *"How do you feed the country if you convert this area to wetland. If there are ways you can grow it then that's fine. We want to look at our own food security policy to make sure that we are protecting areas that are providing food for the country. I think we can have our cake and eat it too, but we need people talking together, so that we can identify areas we can re-wet, and have areas for agriculture as well…"*	Land manager
Greater Manchester Combined Authority	Concerns around urbanisation and development pressures and climate mitigation targets, for example: *"…it is hard to get people excited and interested in something which is falling to pieces. Even when you have got a fully restored peatland, perhaps it does not look as exciting or as adventurous as the Amazon…"*	Local authority
	"People will see investing money in tree planting in the Amazon as being a beneficial thing to do from a carbon perspective but will probably not be aware that there is an equally good or potentially stronger mechanism right on the doorstep…"	Local authority
North York Moors	Concerns around rotational burning, for example: *"When things like rotations get passed down through a bit of legislation … in reality it is ridiculous for this area when you consider how fast heather grows… An area here has not been burnt in quite a while for various different issues and there are no sheep in it, there is no grazing, and I know the farmer and he said I have probably got 800 acres of moorland that, I can't get into because it is not getting burnt. He doesn't think it is his place to burn it so nothing is going in there now. What is happening is that he has got the same amount of sheep that he has always had, that flock is congregating on lower edges and effectively he is now getting into trouble for over grazing issues on his lower grounds. It all knocks on. It is all about managing, if you carry on managing the moors effectively the way they are, with compromise, who gets the rough end of the stick. It is not going to be the guy from DEFRA who will say I'll be out of a job at the end of the month, whereas for a gamekeeper or farmer, it could be very real."*	Land manager

3.1.3 Fine balance

Peatlands are complex, diverse ecosystems, with multi-stakeholder interests. There are entrenched interests and polarities in opinions across the studied Peat Pilot sites. 'Fine balancing' emerged as a dominant theme across the sites – the need to consider that there are multiple stakeholders, multiple interests, existing inter-dependencies, local politics and dynamics around resource access and use.

There are concerns around tenancy arrangements and expected nature of commitments for peatland restoration. In addition, there are hopes and anxieties around the global carbon market and the ability of UK land managers to compete in the open market. Some insights on fine balancing can be gained from complexity and implementation science theories that suggest change can be stimulated in many ways, notably through enabling policy frameworks and opportunities for widespread stakeholder engagement, including mechanisms for bottom-up feedback loops, to produce outcomes that are fair and sustainable over a long period (Braithwaite et. al. 2018). Place-based approaches to landscape management also argue for integration of shared values and multi-level governance by paying close attention to interpersonal and institutional power dynamics (Reed et al. 2017).

The four main contentious issues, often intersecting in various degrees across sites, are those of rotational burning, woodland plantation, re-wetting, and stocking densities/ timing of grazing. These issues are not only contentious to external parties, but also within and between stakeholders residing and working in these landscapes. However, there is recognition that multiple outcomes around food production, biodiversity conservation, water quality, flood risk management and climate change mitigation are necessary and possible, provided there is a 'fine balancing' of interests. For example:

> *"It is not that I am an environmentalist and the farmer isn't, it is that we have two different conceptions of what an environmental good might be. I think you have to get around that with some dialogue and sometimes you say there is an element of truth in what we are both saying, so we will find some way to compromise. It has got to be the right kind of compromise otherwise you don't deliver anything for anyone anywhere, that too often happens sadly."*
>
> *Conservationist, Dartmoor Commons*

> *"Functionally and economically, it is not just by chance we do these things, we don't keep them because they are pretty, but we keep them because they work."*
>
> *Land Manager, Dartmoor Commons*

The need for fine balancing also emerges from the acknowledgement and recognition that there are existing skills and knowledge systems in each peat site that have value and relevance. This is especially important, considering that the

science around many aspects of peatland restoration remains contested, and therefore might benefit from a hybrid approach that blends scientific knowledge with 'vernacular expertise' (Lowe et al. 2019). For instance, research on 'controlled burning' - one of the most contested issues in the North York Moors region - has provided arguments for and against the practice for stakeholders on both sides of the divide. There is a convenient reliance on only those segments of the arguments which serves the interests of a particular stakeholder, and this does not help to move conversations forward. Some of these quotes reflect the dilemmas, concerns and inter-dependencies:

> *"Everyone has got one little piece of the puzzle, and they haven't got the whole puzzle..."*
>
> *Land Manager, Dartmoor*

> *"...the new agricultural policy on 'public money for public goods' has to emphasize that farming is more than just beef and lamb; it is about looking after the landscape and all of the things that it provides. And with the right grazing regime then they can provide incredible services from these landscapes, for biodiversity, for water, for carbon... They absolutely deserve to be supported to do that. It is finding that balance that is the challenge..."*
>
> *Conservationist, Dartmoor*

> *"Has burning got a sensible, logical place or does it not? What are the benefits, what are the negatives? ... as I am aware people come here in July and August to see the heather bloom, it is important for bees, it is important for pollinators, important for tourists. I feel responsible for maintaining that. That is part of my creation; I am investing in that for everyone else to see..."*
>
> *Land Manager, North York Moors*

> *"Why is it that our curlew numbers are the highest in the country, it is all inter linked to pastural farming and whether it is acceptable to people or not in the cities, it is linked to grouse moor management and keepers. If you don't get rid of predators you are not going to have the waders here and the curlews are as linked to the heather and the peat, you can't have one without the other."*
>
> *Land Manager, Border Uplands in Northumberland and Cumbria*

> *"If you looked at pure and simply what we are doing now I think this could have impact on me, that I could lose my livelihood... What would I do? what would this organisation do? I really think we do need water level management in the Fens, you can't have it all flooded. I think the biggest barrier to peat land restoration is going to be how it is communicated across..."*

Local Authority, East Anglia Fens

Another contentious issue is the issue of woodland plantation in the Border Uplands area. However, evidence from this area around native red squirrels and ancient woodland forests (Kielder Forest) provides a counter-argument to the charge that the role of woodlands in biodiversity conservation is limited:

> *"Half of the English red squirrel population live in the Kielder Forest, and they do that because the greys cannot tolerate the sub-optimal habitat of the woodland. Also, because they are bigger and they need more energy and the seed crop is smaller, so red squirrel can live in that environment. Greys can't…"*
>
> *Forestry Organisation, Border Uplands in Northumberland and Cumbria*

Fine balancing the complexity, diversity and existing dynamics around the issue of peatland restoration and management across stakeholder groups would necessitate reconciling a range of positive and negative aspects spanning the realms of emotion, cognition, and behaviour. Institutional mechanisms that create safe spaces and opportunities for dialogue and collaborative working could potentially contribute in identifying shared values and priorities (see section 3.3). New challenges around cooperation and cohesion are likely to emerge which could to be addressed through inclusive engagement, conversations and by building relationships of trust and making people feel valued. Failure to balance these various challenges could inhibit the cooperation of various key stakeholders and therefore the outcomes around peatland restoration.

> *"My chair of the commons association once said to me 'I'm not going to listen to any politician or conservationist telling me what to do but I will listen to what another farmer says, if a farmer tells me I might listen but otherwise forget it'. My answer to that is tough, you have to listen to the policy makers."*
>
> *Land manager, Dartmoor*

> *"The important thing is to work in collaboration with landowners to explain why there is a problem and collectively come up with solutions that work for them …then they will do it…"*
>
> *Private company, North York Moors*

> *"I think all of this is to do with people ultimately. You can talk about peat bogs and vegetation and burning, it is all down to people. I think XX estate has been an enormous success because it has recognised and valued two things. One is people and the other one is trust…"*
>
> *Estate Manager, North York Moors*

3.1.4 Narrative setting

> *"If we get the narratives wrong, we will get the solutions wrong too..."*
>
> *Land Manager, East Anglia Fens*

> *"The trouble is we can't see this carbon. We can't smell it, we can't see it or feel it. The ordinary person does not perhaps fully understand the carbon situation. That is the problem."*
>
> *Land manager, East Anglia Fens*

> *"I don't think the value of the peat that we have here in Greater Manchester Combined Authority is particularly well understood..."*
>
> *Land agent, Greater Manchester Combined Authority*

This point about getting the narratives right was echoed in different iterations across sites. Studies show that narratives can help set new goals, increase appreciation for existing but unacknowledged practices, improve experiential engagement with climate change and build support for transitions to a low carbon future (Howarth, 2017). Also, it is increasingly argued that preferences and values for complex goods and services, in this case climate change mitigation, are not pre-formed, but are generated through a process of deliberation and co-learning (Kenter et al., 2016). Different stakeholders are involved in producing and consuming different products of and from the land, and derive different values from it (Connor and Kenter, 2019). Across the Peat Pilots, there is widespread recognition that peatlands are areas of outstanding natural beauty, but as a natural resource they are not delivering goods and services to the extent they can. As a result, there is widespread support for the current policy trajectory of 'public money for public goods', which rewards and incentivises stakeholders for delivering multiple outcomes.

Studies have found that knowing more about the science of an issue will not necessarily increase understanding or lead to action (Boaz and Davies, 2019). Rather, opportunities for collective working around shared values or overlapping areas of concerns could potentially enable constructive dialogue to deepen understanding of different lines of evidence and argument (Howarth, 2017). Different land managers are open to experimenting on their land especially with regard to numbers of livestock or trialling 're-wilding' on their own. They are worried that if measures are not thought out properly, with some degree of allowances, they might prevent them from being open, experimental and innovative. Land managers hold a lot of pride in what they do, and no one wants to be publicly shamed for getting it wrong. For example:

> *"Tell us clearly what needs to be grown and for what outcome (food, carbon, biodiversity, water), how much are you willing to pay for it,*

and we'll take a call whether we can do it or not, after we have weighed in everything…"

NFU representative

"I feel that I am here to make a living and to provide for my next generation and leave the farm in a better state than it was. Some people might think leaving it all wet and boggy is not in such a good state as it was."

Land Manager, East Anglia Fens

"The land is locked in trees or carbon because you have created that habitat but then you can never go back to agriculture. Yes there are great opportunities, but there is lots of nervousness…"

Land Manager, Border Uplands in Northumberland and Cumbria

"…in the grand scheme of things I want to do what is right and responsible…",

Land Manager, North York Moors

New narratives should aim towards framing and delivery of ideas and messages that mitigate some of the stakeholders' concerns around clarity, and include public awareness and community engagement. The role of education, awareness and communication strategies in setting new narratives cannot be over emphasised. Some of the areas where new narratives could help develop a connections between people, existing practices and climate change include:

- Putting people at the heart of the debate – land managers consider themselves as custodians of the peatland resource, and it is important that they are part of the solution. New narratives could aim towards mitigating any anxieties and concerns they have and acknowledging their valuable roles in their respective sites, recognising that they have the ability to contribute to change through their own behaviour. It is striking that in Figure 8, the word clouds for different sites show 'people' as being among the most frequently used words in all sites.

- Raising awareness about everyday consumer products with a peatland connection, for example peat-based compost. Through communication strategies the public can be made aware of the connection between their local everyday practices and climate change, and how small alterations in behaviour can make a difference.

- Tapping into the idea of land managers as ecologically conscious economic actors. This emerges from the idea expressed by many interviewees that everyone with a stake in the future of peatlands is an environmentalist at heart. Many land managers practice environmentally-friendly farming in their own ways - including conservation agriculture, no-tillage farming, having a wildlife patch or a small water body to encourage

wading birds and other inter-dependent flora and invertebrates - with or without any stewardship schemes. Although they exhibit pro-self-values with their predominant interests in profitability and business, they are also equally inclined to conserve nature. Often there is healthy competition between land managers about the wildlife, predominantly the bird species, on their farms. There are studies which show that many land managers make trade-off decisions between farm profits and conservation goals (Burton and Paragahawewa 2011; Chouinard et al. 2008). There is opportunity (post-Brexit) to re-design agri-environment schemes in ways that help shift the identity of land managers from as primarily economic actors and food producers, to ecologically-conscious economic actors. Important in this discussion is how these messages are communicated to land managers and to the public at large, to retain land manager pride individually and within the farming community as a whole.

- Explore unique, site-specific branding opportunities that can enhance local experience of consuming nature (e.g. traditional breeds, unique flora). For example, *"Dartmoor is a fantastic product and we need to sell it."*

Fine balancing of different interests, outcomes and stakeholder groups as discussed above is critical in successfully delivering a landscape that is co-constructed, owned and sustained across generations.

3.2 Photo survey results

A total of 40 photographs and questionnaire responses were received from participants. These were spread across all sites, although there were more responses from Greater Manchester Combined Authority and Border Uplands in Northumberland and Cumbria (Table 6).

Table 6: Summary of photo survey results

Data Type	Number of Submissions	Notes
Total Submissions	40	Over 5 days in June 2020
Areas Covered (and responses clearly within study area)		All study areas represented
Dartmoor National Park	7	
East Anglian Fens	3	
Manchester Peatlands	18	
North York Moors	5	
Northumberland Peatlands	7	
Application	**Number of Submissions**	**Notes**
Landscape Connect	33	All study areas, February-May 2020
Rate my View	7	Only 2 study areas, February-May 2020
Average words per question	**Number of Words**	**Most frequent terms**
Q1. How would you describe this place (smell, taste, sound, touch, appearance, & other impressions)?	8.3	Bird Peaceful Fresh Clean
Q2. How does it make you feel (emotions & experiences)?	6.6	Happy Calm Relaxed Proud
Q3. What does this place mean to you (individually & to your community or organisation)?	13.0	Need Work Protect Paid
Q4. Why is this place important or special (positives & negatives)?	10.9	Habitat Wildlife Change Many

Study Area	Number of Words per Study Area (per person)	Most frequent terms
Dartmoor National Park	55.85	Peace Place Wild Beauty
East Anglian Fens	32.66	Wildlife Action History Record
Manchester Peatlands	34.44	Place Change Clean Lost
North York Moors	12	Happy Home Nature Free
Northumberland Peatlands	55.29	Trees Need More Work

3.2.1 By Person

There were respondents from all study areas, and it is clear that stakeholders from different backgrounds were represented, but without workshops or other follow-up it is hard to make many conclusions about the significance or otherwise of individual submissions. Language clearly indicated some expertise, but even in these cases the questions elicited less cognitive and more personal, affective impressions of the landscapes visited by respondents.

3.2.2 By Area

a) Dartmoor
Respondents in this study area were clearly responding to the heritage and geography of the landscape. The comparative remoteness was evident, as was the reflection of a powerfully-promoted local narrative of an ancient and unchanging sense of place. However, this jarred with the reality that this is actually a highly managed landscape. For example:

> *"Ancient, sense of permanence, unyielding, a slice of the wild."*

There were strong perceptions of this open natural-ness, echoed in fears of (potential) damage (Figure 6). Underlying these worries however was a sense of optimism and hopefulness. For example:

> *"We are lucky to have Dartmoor National Park next to Plymouth. It's huge, greatly unspoiled and plays an important role in farming and enhancing our appreciation of the environment. I guess it poses management problems, but I can't think of many negatives."*

Figure 6: Photo survey image from Dartmoor described by participant as, "*Rough vegetation, soft grass heads, plots of mini landscapes in a vast expanse, delicate sounds."*

b) East Anglian fens

The open wildness is again reflected-upon in this location, but spectacular wildness is downplayed in favour of impressions of calm cleanliness (Figure 7). Clearly evident is awareness of landscape modification for water management, implicating the effects of such activities on peatland health. Ultimately again though, the landscape importance is seen as residing on its habitat potential for

wildlife, values that mesh well with peatland conservation and restoration plans. For example:

> *"The start of repairing systems, protecting peat and wildlife, potential for things greater than we can imagine."*

Figure 7: Photo survey image from East Anglian Fens.

c) Greater Manchester Combined Authority

This area received by far the best response, possibly reflecting the comparative proximity of populous urban centres, but also the fact that a well-attended workshop was staged here before the Covid-19 lockdown. Some respondents effectively ignored the questions and filled the fields with strongly felt statements, peppered with technical terms, perhaps indicating responses from those with more professional involvement in land management debates in the area. For example:

> *"Sad. This place is loved for a belief in its value, but it is underperforming by so much. And those who love it may well object to the changes needed to get what they actually need!"*

Despite these feelings, on balance respondents recorded an overall sense of this landscape as (comparatively) remote and bleak with inspiring attributes (Figure 8). In broad value-terms the peatlands here were repeatedly judged undervalued, and positive attention was drawn to the habitat and restoration potential of the area. For example:

> *"Changed an area of Manchester for the better."*

Figure 8: Photo survey image from Greater Manchester Combined Authority described by participant as, *"Birds in the distance, barren, fresh, splintered, harsh."*

d) North York Moors

Although submissions here were not low, fewer questions were answered in the mobile questionnaire, and data collected is of a more monosyllabic nature, making analysis of meanings or priorities harder to assess. Nevertheless it can be concluded that both perceptual and affective values associated with the location were largely positive, with memories, temporal associations, and local-commerce all noted upon (Figure 9). For example:

> *"Home to nature, farming and people."*

Figure 9: Photo survey image from North York Moors described by participant as, *"Flowers, earth, bird song."*

e) Border Uplands of Northumberland and Cumbria

This was another area that attracted multiple submissions and, as for the Manchester peatlands, concerns with the negative effects of human activities in the area arose. Respondents clearly indicated feelings that fragile habitats need more protection, but also that opportunities for environmental enhancement exist, such as through restoration for climate mitigation. For example:

> *"Sequester more carbon than the trees around it, although slowly and it's a fragile habitat which is easily damaged."*

Landscape irreplaceability was stressed, as was the privilege of being able to access such remote, damp, and bleak, but birdsong-filled places (e.g. Figure 10). For example:

> *"All I can hear is birdsong and wind. Surrounded by trees in the mist."*

Figure 10: Photo survey image from Border Uplands in Northumberland and Cumbria described by participant as, *"Wet, remote, spoilt by encroaching forestry."*

3.2.3 By Question

The clearest value collection of all responses taken cumulatively (using word count as a crude semi-quantitative metric) was the connection between perception and value, in that wildlife, in particular birdlife (answering Q1 about perceptions; Figure 11), was clearly equated with the importance of habitat conservation and enhancement (answering Q4 about importance of place; Figure 14). This was perhaps unsurprising given the main reasons people might visit remote landscapes. The prominence of the word 'bird' for Q1 was particularly striking, given that most respondents were not in the landscape for primarily birdwatching purposes.

There was also a clear linkage of conservation objectives to affective understandings of well-being and 'calm' 'relaxation' (answering Q2 about feelings; Figure 12) and 'clean' 'peaceful' settings (answering Q1; Figure 11). The 'expanse' of 'open' landscapes also evoked less perceptive and more identification-based affective responses, as conveyed through terms such as 'pride', 'sadness', and 'optimism'.

Interestingly, responses to the question about meaning (answering Q3; Figure 13) mostly concerned utilitarian values. Emphasis was placed on the 'work' that needs to be done to 'protect' 'places', 'trees', and 'wildlife'. This was surprising but may reflect the way in which respondents were recruited to the study, where the restoration of peatlands was clearly foregrounded as the project theme. These answers also conveyed a sense of urgency in the 'essential' need' for 'communal' 'value' of 'peatlands', and an understanding that there is a 'price' to pay in achieving 'results'. For example:

"Important, we are responsible for it, need to tell people about it. We need to protect it for carbon, water quality and storage and for biodiversity."

A strong sense of place and a range of varied values were evident through responses to all 4 questions. These themes will be further explored in the next section.

Figure 11: Frequency of words used to answer Q1, "How would you describe this place (smell, taste, sound, touch, appearance, & other impressions)?"

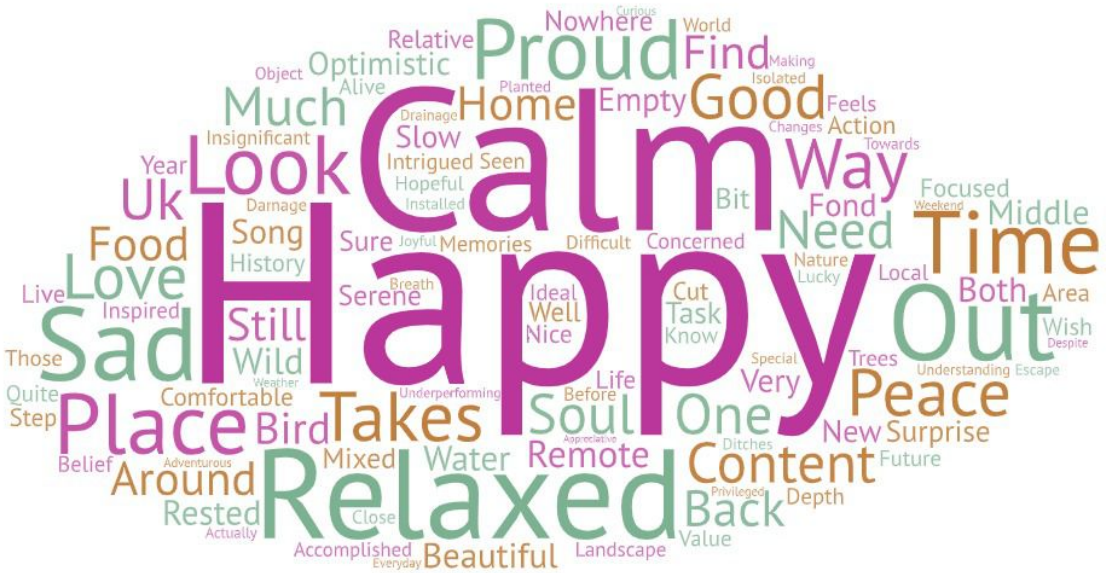


Figure 12: Frequency of words used to answer Q2, "How does it make you feel (emotions & experiences)?"

Figure 13: Frequency of words used to answer Q3, “What does this place mean to you (individually & to your community or organisation)?”

Figure 14: Frequency of words used to answer Q4, “Why is this place important or special (positives & negatives)?”

3.3 Qualitative results

Illustrative words and phrases from interviews in each site in Table 7 show the diversity of ways respondents expressed their sense of place, showing the dominance of certain focal ideas and issues of priority in each site.

Table 7: Illustrative words and phrases from qualitative interviews, showing key ideas and issues of priority with respect to place in each site.

Dartmoor	Wild, rough, untouched, haven for wildlife, landscape at the edge of England holding endemic species of flora and fauna, hill farming, Molinia grass, commons, commoners and complexity
North York Moors	The largest expanse of heather moor land in the UK, a source of livelihoods, controlled burning, grouse
East Anglia Fens	Monotonous, flat land, big skies, food production is central to land managers' identity, England's food bowl, wetlands, flood-prone, drainage is an important land management tool
Border Uplands in Northumberland and Cumbria	Windy, remote, home of the majestic curlews, woodland plantation is a contested, but important form of land management
Greater Manchester Combined Authority	Sense of wilderness, calm, peace, peat right at the doorstep, wildfire, land use change issues

3.4 Deliberative valuation workshop results

Results from the questionnaire are based on aggregated individual responses, whilst workshop results can be seen as intersubjective, resulting from the social dynamics between people. In this section, we will report participation in the workshop and questionnaires, values compass results, questionnaire responses with regard to beliefs about restoration, and key viewpoints from both the questionnaires and discussions on agri-environmental management and payments.

3.4.1 Values compass

The values compass was compiled only for the East Anglia and Manchester workshops. Protecting the environment was by far the most important shared value, noted as one of their top five by 80% of East Anglian respondents and 73% of Manchester respondents (
). Four more values (honesty and transparency, social justice and fairness, family security and health) were registered by at least 50% of East Anglian participants as one of their top five values. In contrast, only two other values were chosen by the majority of Manchester participants: social justice and fairness, and a varied life. Social order, authority, and, perhaps surprisingly, respect for tradition, were not included in the top five values of either of the two groups. When asked within the workshop whether their broader communities reflected the values compass profile of the group, the lack of prominence of respect for tradition was noted by both Manchester and East Anglian groups as the most important perceived discrepancy.

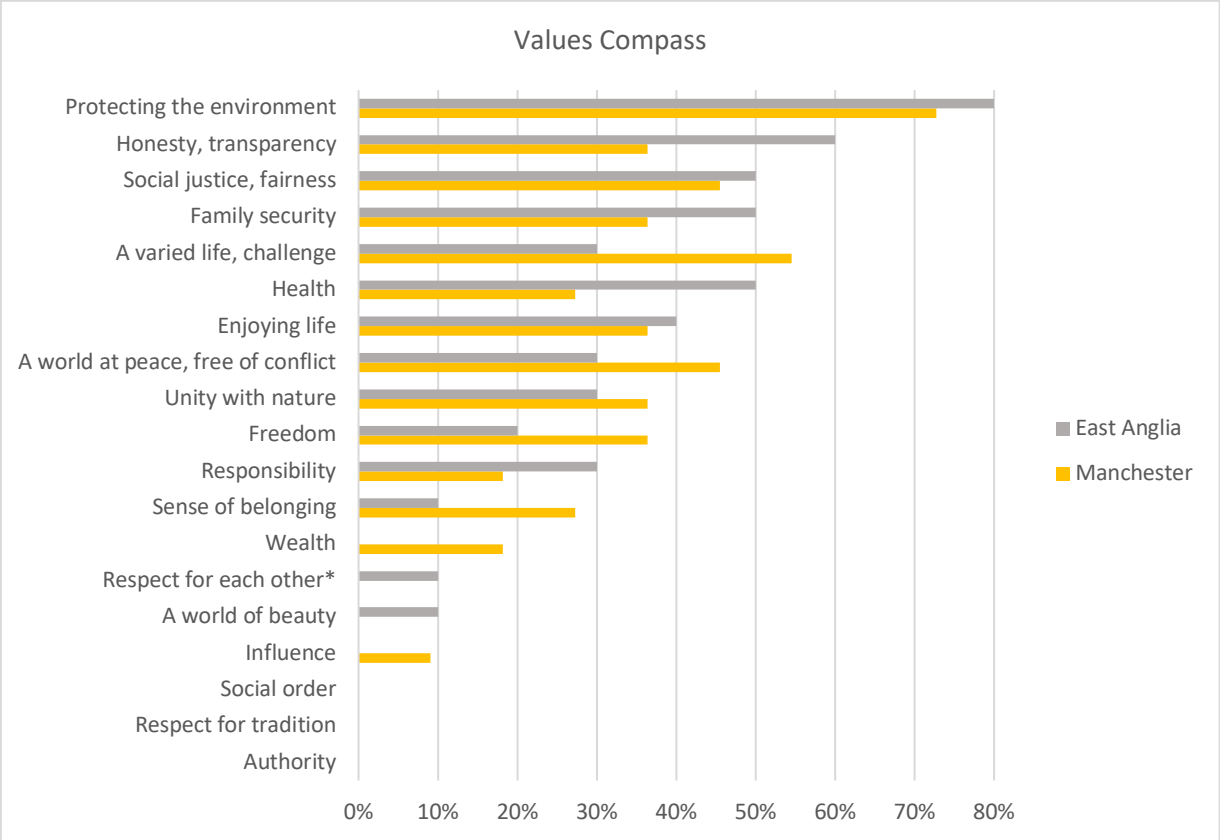


Figure 15: Values compass for East Anglia and Manchester participants, indicating the proportion of respondents that selected each value as one of their top five overarching guiding principles and life goals. *Respondents had an opportunity to add important values that were missing; 'Respect for each other' was the only value added, by an East Anglia participant.

3.4.2 Beliefs about restoration

Participants' beliefs about restoration are depicted in Figure 16. There was substantial similarity in the patterns of responses between different Peat Pilots, except that East Anglian respondents were more inclined to be 'unsure' about questions with response to burning, as this is not an issue in the fens. Respondents disagreed more on the impact of burning than grazing. A small majority of respondents from Manchester and Border Uplands disagreed about whether burning substantially affected carbon balance, whereas there was strong agreement that grazing could affect carbon storage across the pilots. The vast majority of participants also agreed that taxpayers should contribute towards increased restoration efforts, whereas there was substantial disagreement on whether estate owners should be paid to reduce burning. Climate change-related concerns with regard to peatlands were seen by 81% of all respondents as the responsibility of government foremost, with landowners taking second place.

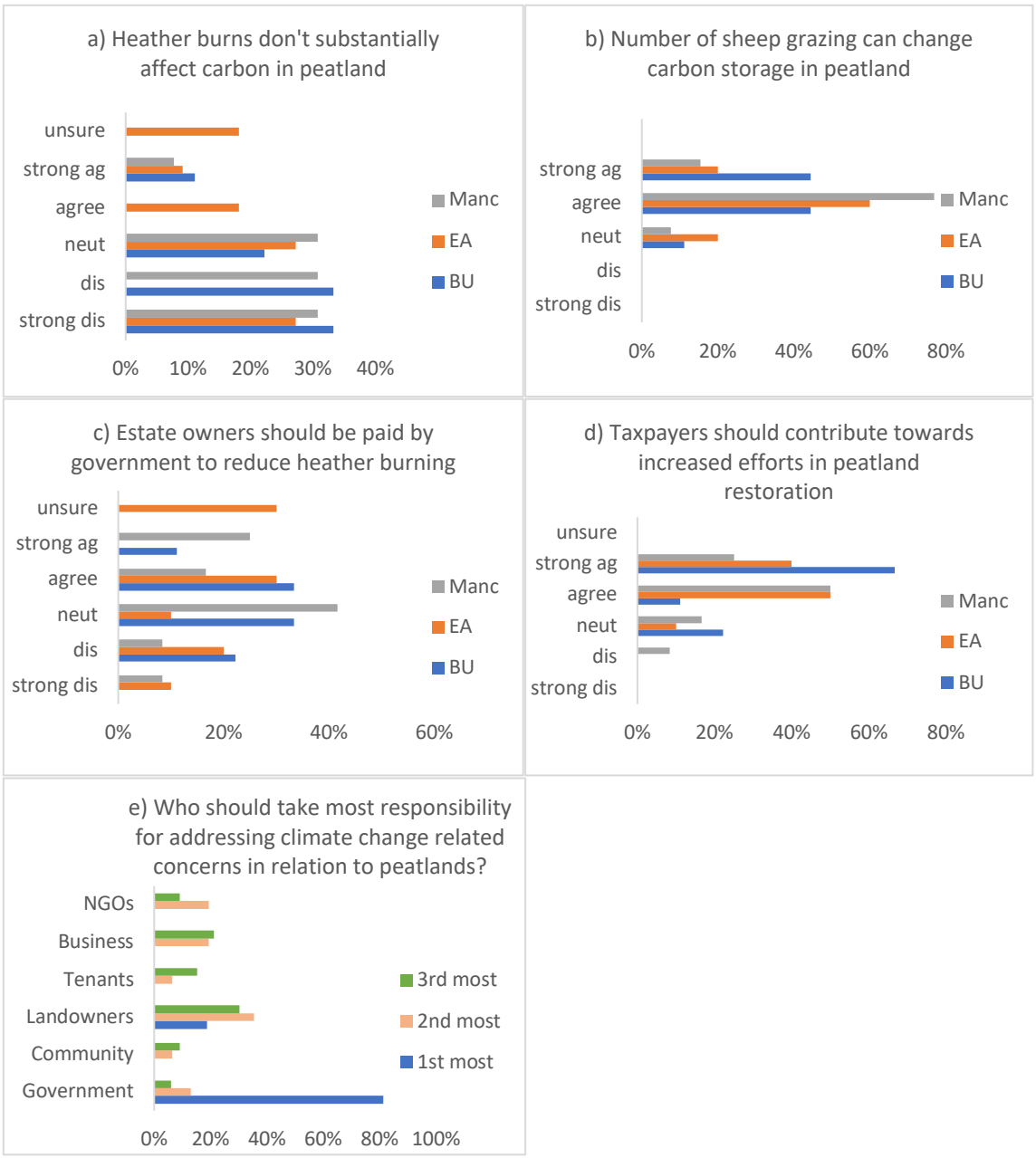


Figure 16: Participants responses to various statements in the pre-workshop questionnaire. All responses aggregated per Peat Pilot, except for Figure 7e (bottom), which reflects all responses aggregated.

3.4.3 Agri-environmental management post-Brexit

In terms of objectives for agri-environment/ELMS policy post-Brexit, participants indicated the need to use land more economically and sustainably, with more 'climate-smart' methods. This includes carrying out conservation work and nature enhancement and reducing carbon and greenhouse gas emissions to move towards net-zero. In relation to this, participants thought production of sustainable, low-carbon food should become land managers' unique selling proposition with consumers encouraged to value this. They emphasised the importance of considering peat in broad terms, including its cultural significance, priority habitats, wildfire control and carbon credits and sequestration. Participants are also keen for regionally relevant objectives to be introduced.

They suggested that for land managers to achieve what is required of them, they need proper financial support, advice and realistic expectations. Inclusion and collaboration and fewer policy directives will increase their sense of being worked *with,* so that they feel guided rather than pushed. Participants believed the production and security of food remains central to their role, but that the delivery of public goods would be increasingly incorporated. These might include healthy soils, including re-wetting where appropriate; clean water; the arrest of biodiversity declines; carbon sequestration; and natural and built heritage. Land managers need more opportunities for negotiation within food supply chains so food can be produced in less damaging ways. This requires a cultural shift supported by the public, business and government.

There was some discussion about food security concerns post-Brexit meaning that peatland restoration might become deprioritised. However, participants recognised that what is necessary for future generations must be considered now, and that this might help to keep peatlands as a priority.

In terms of minimising peat loss, a shift towards multiple outcome farming was considered desirable: *"we want options that have more than one benefit…everybody's saying yes, we want food, but if we can grow that in a way that also has another benefit, we want to have our cake and eat it, obviously."*

Specific techniques and processes with potential to address peat loss were discussed. In the Fens, techniques already used include reduced/no-till (which reduces soil compaction and erosion), livestock as part of arable rotations, and cover cropping. Transitioning to 'wet soils' and introducing wetland crops was considered promising, but the scope for growing food crops on raised water tables needs more exploration.

In Manchester, participants flagged up the importance of better wildfire avoidance and management - "*the government need to take it seriously and invest in firefighting. Everyone talks about fire operation groups, but there's no real machinery to get the fire brigade up there"* - and the importance of more collaboration across agencies.

Participants across pilots emphasised that education, personal development and support for land managers is required for management practices to change. For example, in East Anglia an understanding of cover crops and their potential to improve productivity and reduce fertiliser input was thought more persuasive than being told to implement them. Participants often lack the time and resources needed to do professional development and training to help them see beyond present-day practices. Exploring the merits of various land management techniques within their community normalises them, enhances community knowledge, and may make others more receptive to their use.

3.4.3.1 Incentives

Incentives take many forms including financial, political and public support, advice, and social capital. Indirectly, better communication and education for external audiences, including the public, about the benefits of what is being done would help increase understanding of peatland work and its value and, it was hoped, willingness to pay. Public goods were seen as not deliverable without funds. For example, in East Anglia, people noted that price-per-unit costs for cover crops may be small, but for land managers, total costs are high and difficult to recover when crops are sold: *"when you're looking at a cover crop that's not going to give you anything… and it's going to cost you about a hundred quid a hectare to (do it)…you've got to try and get that money back. And where are we going to get that from?"*

Fair compensation was seen as essential by land managers, including income foregone and all relevant costs, so land-management decisions make business as well as environmental sense. The mismatch between payments and the revenue needed for business viability therefore needs tackling.

EAF participants agreed the need for the public to comprehend the costs attached to high welfare and environmentally-friendly foods, with support from government. They felt that getting this in place before cheap food imports begin was important, amid complaints about Members of Parliament recently voting to defer food standards to the forthcoming Trade Bill rather than integrating these concerns into the Agriculture Bill. Participants anticipate this undermining land managers' efforts to produce food to current standards, with little scope to attend to wider environmental issues. Amid the anxieties around these issues, participants took comfort from the public's willingness to pay higher food prices during the Coronavirus pandemic and that this might be capitalised upon: "'*…reconnecting with local people so that they can actually appreciate what's going on on a farm…there are a whole range of incentives; people saying thank you. Obviously, the money's got to be right, that's first and foremost important, but I think there are other ways of appreciating what's been done."*

Carbon payments were considered an attractive incentive: *" '…that's how you link climate change, people thinking about carbon and farming… if we can see it as a revenue for the farm as well, that's even better, it helps mitigate other things that we've got going on….(some) big companies…are offsetting or in-setting elsewhere, but why not do it on that seventeen million hectares of land in the UK, if we're getting incentivised for that?"*

However, Greater Manchester's participants voiced concern about the risk of losing carbon value through wildfires.

Participants recognised the communities of knowledge within their own localities and Peat Pilot groups and understood the value of drawing upon them. However, there were also calls for impartial advisory services, independent of agri-chemical companies and the like. Concerns were raised about government's limited role in farm- and land-related education. Support is fragmented and participants saw a lack of urgency about improvement. They want expertise and guidance tailored to specific locations or farms and at the right pace for each individual. This demands that advisors have social capital within that locality, and participants noted the window of opportunity for ELMS to include a stipulation that advisors *must* be able to fulfil this remit.

In terms of scheme design, participants stressed the importance of inbuilt flexibility to accommodate uncontrollable factors such as Brexit and the Corona pandemic, and to ensure flexibility in outcome. They want new schemes to have clear visions and strategies with clear funding pathways and obvious end markets, for example for novel wetland crops.

Land management scheme design can discourage or incentivise uptake. Participants made the point that those tasked with conducting the work should be consulted and involved right from inception, including those 'hard to reach' groups whose insights tend to be overlooked.

Participants saw the benefit of location-specific schemes but also referred to the benefits of collaboration across multiple holdings. This would share skill and responsibility with outcomes potentially exceeding the sum of parts. Participants thought that schemes funded long-term were more incentivising than short-term ones. For work like peat restoration where progress is achieved after years or decades, this is especially important. It was important that schemes and payment are *"sustainable over time. It's no good just funding it for five or ten years. This needs to be like a system change that works in and of itself for everybody, going forward."*

3.4.3.2 Common land issues

A range of specific local institutional issues were discussed in Dartmoor relevant to the nature of common land. Regarding scale of agreements, participants noted

the benefits of multiple commons or areas being under one agreement, with this reducing the impact of one upon another. But this is not failsafe: "*something done on one common can have massive implications on a neighbouring one. Stock are hefted only to a certain degree, they have legs."* Geographic boundaries rather than parish or forest boundaries were thought to be the appropriate basis for agreements.

In relation to payment splits, the following points were made:

- *"it will depend on the desires of the common owner and the intensity of registered rights and attitude of rights holders. Too complex to answer here".*
- *"Multiple commons/landscape could work. Achieving objectives across a larger scale gives more space to accommodate what is required. The smaller the focus, potentially increases conflict".*
- A link to person's home farm was also suggested, as were links to single commons. Some participants felt splits should relate to a site or project and one cautioned against creating *"winners and losers".*
- *"Needs to be a formula agreed by all groups and applied across the board. Otherwise individuals will block area schemes".*
- *"It needs some direction and formula to implement from administrative body".*

A landscape approach to funding was suggested: *"The capital costs of restoration are way beyond the gift of single AES. This needs coordination across whole landscapes (Tier 3)."*

Graziers' ownership and engagement is important. One participant noted that Dartmoor's pastoral landscape needs recognition for proper engagement. Related comments included: "*We don't have shared values with all of the community. We want to farm, some of them want us gone…"* and *"Perhaps we need to confirm that restored peatland needs livestock grazing and management."*

Regarding who should sign up for agreements and the associated appetite for risk, some participants thought making everyone sign up risked sabotaging the whole scheme: *"Key influencers need to be signed up for sure, but not critical that all are. Not all rightsholders will ever agree, so perhaps work on two-thirds agreements."*

Landlords need cooperation from tenants to manage land, including with grazing, and must work around legacies of earlier management, multiple stakeholders, and competing interests, including recreational access. For these reasons, conservation work was considered more difficult and expensive on common than non-common land. Tenants and livestock are important for well managed commons, yet management decisions are sometimes made without their consultation.

Suggestions for engaging with reluctant land managers tended to be cautious: *"History says gentle persuasion or leave them alone"* and *"More knowledge of what you hope to achieve is helpful in coming to an agreement."* However, there was also a need for new institutional arrangements: *"If incentive of scheme is not effective then ultimately regulation would be needed…"* and *"Need to have an adjudication entity, not just a stick."*

Regarding landowners' and other rightsholders' roles, participants suggested that landowners need to get a return from their asset and should lead the process of agreeing options and implementing them, whilst rightsholders have to make a living. They thought more transparency and clarity is needed about how rightsholders contribute to and are paid for activities linked to peat management, beyond grazing.

Participants thought landowners have a duty to maintain land in good condition and provide public goods and services for current and future generations. Landowners need rewarding for achieving outcomes and should facilitate ELM and blended finance opportunities by agreeing shares in the natural capital apportioned to graziers. Landowners should take responsibility for the condition of their land but need advice about managing commons and collaboration with graziers to make improvements.

3.4.4 Payment options, terms and fair prices

Participants expressed many diverse concerns about AES funding: *"We can adopt any policy we like…what we want to achieve at the end of it, but there's a payroll that comes with it."* They felt that payments should be designed to cover restoration costs, management and those ongoing payments needed to support public benefits created by restoration*: "you can't be green if you're in the red."* They were concerned about losing BPS payments and about business insecurity meaning the 'right' decisions are not made. Other participants observed that 'how much?' tends to be the leading question when 'what can we achieve' ought to be the primary question with cost-related questions being secondary.

In East Anglia, some participants felt that current options are biased towards nature conservation and wetland creation when focusing on making food production more environmentally-sound might be more appropriate. Other suggestions included:

- meeting the cost of transitioning to wetland farming and supporting trials with new wetland crops (palludiculture) and less damaging ways of producing current crops.
- carbon payments.
- total exclusion of livestock on peatland restoration areas year-round, not just seasonally.

- specific funds for wildfire management based on true-cost accounting: *"There are economics in fighting a major fire that are just not looked at properly."*
- heritage management, including measurement and survey.
- the cost of working around unexploded ordinance.

Some participants felt schemes need to be simplified - "*the current CS scheme is insanely complex…"* - with unnecessary restrictions removed and examples of acceptable approaches provided: *"the evolution of options over the last 15 years has been ever more prescriptive and detail-oriented, with constraints that aren't necessarily necessary to achieve the outputs that the options are designed for*." However, balancing land managers' need for simplicity against the actual complexities of scheme operation is challenging: *"…we are getting repeatedly the message from farmers that this needs to be simple… it is not simple, it is really complicated. If you're going to get value for money and hit all the bases…"*

3.4.4.1 Terms and conditions

With regard to terms and conditions of payments, most participants agreed that payments should be offered long-term for financial predictability and confidence that work done is appropriate: *"…(it) should be long term involvement… Ten years is not really enough. Consider 15 to 20." F*or others, short time scale schemes were preferable: *"'…when you look at long-term commitment, it depends whether he's a farmer landowner/occupier, whether he's a tenant, whether he's got long-term leases, short-term leases. If you ask four different people, they'll all have a different answer, but what you're asking me is have one answer to suit them all, is it? Well, they've got to be shorter-term then, really… The man who's on the tenancy or the old agricultural tenancy, for instance… he's not going to look at it like the man who's got the short-term tenancy.*"

Shifting socio-political circumstances can mean that land management is uncertain, so that some participants wanted agreements to relate to land or its owner: *"It's got to be written in… to the land itself, not necessarily who owns it or who farms it. Now whether that's possible to orchestrate…"*

Participants identified the need to avoid inadvertently rewarding the 'wrong' behaviour: *"…trying to identify specific things that need rewarding and not rewarding people for doing nothing. Be careful you don't penalise somebody or some people who are on a piece of ground that's in fantastic order. You're incentivising them to mess it up in the first place."* Another land manager described their personal experience of this: "*I like the idea of payment for positive actions but I get a bit concerned when farms like our own miss out on some of the grants that are currently available because they say your river's too clean or something to that effect and you sort of wonder, well, seems a bit of a perverse incentive or lack of it."*

Reward and recognition of good maintenance and success sustained and of raising expectations is important to participants: *"…under the present stewardship, the first five years were fine. We could improve quite easily what we'd been doing in the past. The second five years, to get the same sort of improvement, it was… Things always have to be improved."*

Evaluation is challenging, including because what meets one set of criteria or outcomes may fail others. Examples include the rewetting of peat resulting in historical and archaeological sites being lost from view. On Dartmoor, opposition to rewetting on this basis had been observed by participants, but with the exception of certain significant archaeological sites peat restoration was considered the priority: "*…I'm not sure enough is made of… the ecological crisis we're facing, and that climate is only one part of that. If we're going to address it and we're going to address it in the best way economically as well as for communities, it has to be around nature-based solutions."*

Finally, the need for up to date soil and ground water surveys was noted in particular by EAF participants, with the suggestion that surveys showing an area to be unproductive for agriculture might be bought by public purse and put to other uses. Related to this was some discussion about how soil quality is graded and how this determines the amount of money paid.

3.4.4.2 Fair prices

An important discussion prompted by the facilitators and the economics presentation considered what should be the basis for fair prices for setting the level of agri-environmental payments. Participants made various, sometimes conflicting suggestions about the basis of payment including:

- **The (full) cost of labour and capital inputs, implementation and maintenance,** not just income foregone. This includes that maintenance costs may occur infrequently but still be significant: *"…something like a reedbed might be really expensive to put in, then it'll sit there for ten years and cost next to nothing, and then you might have to do a whole load more work to it…"*
- **Opportunity costs,** including the cost of lost agricultural production, and the cost and inconvenience associated with working around whatever has been put in place, including physically: *"…if you're looking at managing the size of a field, it's a different value to if you've got a pocket of peat in the middle of the field. The practicality of farming, if you've got to take 20% out of the middle of the field, there's cost for every part of the machine…"* Another participant said that the changed hefts and animal behaviours resulting from peatland restoration would also incur costs.
- **Social value based on desirable outcomes,** including biodiversity and habitats, regulating ecosystem services, broader social and cultural benefits, and heritage management.

- **Regional weighting,** so that money is targeted at locations where it can deliver the most benefit. Participants thought that this would encourage uptake by making the scheme appear more relevant and interesting and help to avoid people simply picking the 'easiest' options.
- **Enhanced payments for landscape scale collaboration,** with small numbers of objectives being met to receive full or partial payment.

In terms of what would be fair prices to pay for peatland restoration through future public agri-environmental schemes, participants broadly agreed that current payments are inadequate: *'CS payments are far too low and don't reflect the efforts required to re-wet or restore these habitats. It would be better if restoration costs were 100% and then revenue payments could be set at a more realistic value.'*

Participants however mostly avoided discussion on what would be fair prices for current or future options. Two figures were stated, £100 in addition to BPS rates (the same figure that was suggested by a valuation workshop in the North Pennines; Albers et al. 2019), and £500 in total per hectare per annum (comparable to £643 for gully blocking agreed by a deliberative valuation workshop in the Peak District; Kenter and Reed, 2014).

The fair price discussions yielded some further observations. Whilst fair prices are an important incentive, land managers will be increasingly subject to other pressures motivating behaviour changes too. These are likely to include changes in pesticide legislation, and the effect of Brexit. This may change the socio-political landscape, making some schemes indirectly more attractive.

It was broadly agreed that a big uptake of schemes will have a significant cost which may not be supported by the public. If this was the case, it may be that increased legislation would need to be the driver for change. Participants felt that land managers often do the work without proper recompense because this is the right thing to do, despite sometimes having scope to make far more income from the land, including by *'...letting the land out for 20 times more return for industrial maize to grow fuel...'*.

North York Moors Peat Pilot site (used with permission by John Post, 2020)

3.5 Logic map results

Assessing the linkages between peatland management, ecosystem services, and the needs of people is complex. Multiple interactions can have potentially important downstream impacts that are mediated by drivers operating across different spatio-temporal scales. Important information can be quantitative or qualitative and is often highly uncertain. Thus far no maps have been developed of the entire system which would allow assessments of resilience and potentially development of decision support tools.

As a first step along this road, we have developed a systematic map linking changes in peatland land management to UK Biodiversity action plan priority habitats and their associated natural capital (Figure 17).

Initial analysis illustrates that where both condition (c) and extent (e) of habitat is concerned and all potential drivers are considered equally important, overall system resilience is high as a result of the large number of system interactions. Further work is ongoing to ascertain system sensitivity when these structural assumptions are relaxed.

Future work will explore how three scenarios (dominance of private Payments for Ecosystem Service schemes like the Peatland Code, dominance of publicly funded restoration schemes or market collapse in which neither public nor private funding for restoration is widely available) might change natural capital and the resilience of (hypothetical) small isolated rural communities versus larger peri-urban settlements.

Preliminary qualitative results suggest that small isolated rural communities may be particularly vulnerable where finely balanced tipping points exist. For example, loss of income in a hotel supporting sporting interest results in loss of two jobs, movement of two families, closure of a local primary school viable with 20 pupils but not 18; with downstream impacts on demography and house prices which are clearly negative in terms of resilience. Clearly such vulnerabilities could be mitigated by lack of mobility or creation of alternative employment opportunities, but they point to a real need to consider “rural proofing” across a broad multi-faceted policy interface at inter-governmental department level. Further assessment of these vulnerabilities is ongoing.

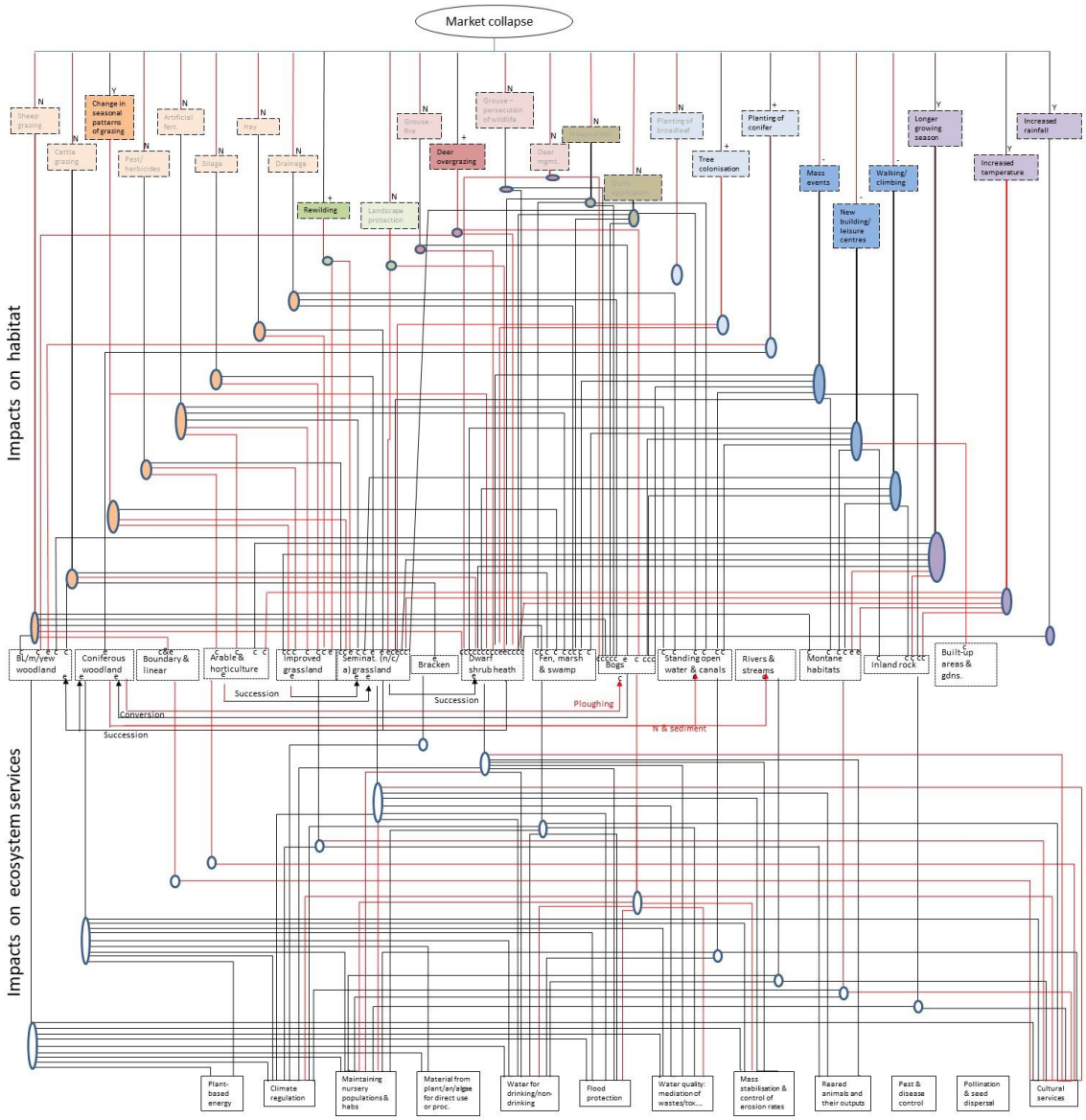


Figure 17: Logic map figure: Economic scenario 1: Pessimism of post-Brexit market and reduced public funding to uplands (agricultural market collapse).

Key:

Top boxes: interventions in uplands. Orange = agriculture, green = conservation/leisure, plum = sporting interests, brown = eutrophication, pale blue = afforestation/trees, blue = urbanisation, purple = climate change.

Lines: positive impact (black), negative impact (red), none/unknown (blue)

Ovals/'teardrops' in flow chart: junctions from which individual impacts stem.

4 Designing and communicating the EPS to enhance engagement and implementation

Land manager engagement with incentive-based policy mechanisms (e.g. peatland restoration options in ELMS and the Nature for Climate Fund) is driven by both internal and external factors that can act as enablers or barriers to delivery of policy objectives (Mills et al., 2017; Rust et al., 2020). Understanding these factors can enable the design of policy mechanisms that engender higher levels of engagement and implementation.

External influences (Reed, 2007; Siebert et al., 2006; Ruto and Garrod, 2009; Wilson and Hart, 2000; Emery and Franks, 2012; Proctor et al., 2012; Kusmanoff et al., 2016; Mills et al., 2017) include:

- Land tenure (including rights to common land).
- Farm characteristics (e.g. farm size, ratio of intensive to non-intensively farmed land, farm infrastructure and availability of relevant equipment, and the type and suitability of the land for the proposed policy measure).
- Wider features of the farming system or farm management plan that may make the proposed intervention more or less compatible in a given context.
- Other features of the adoptability of the intervention (in particular its perceived relative advantage over current practice, trialability, adaptability, observability and perceived complexity).
- The perceived inflexibility of some schemes, which fail to recognise individual characteristics of farms or provide land managers with flexibility in how they meet scheme criteria.
- Political and institutional factors (e.g. infrastructure, capacity, training and other forms of support that enable successful implementation of policy options on the ground).

Internal influences on engagement (De Groot and Steg 2007, 2008; Burton et al., 2008; Mills et al., 2017; Sutherland et al., 2012; Wynne-Jones, 2013; Kenter et al., 2015) include:

- Availability of resources, including financial capital (e.g. availability of working capital and level of dependency on farm income), social capital (e.g. access to expertise, credit and other support, and levels of connectedness and trust in social networks) and time.

- Personal capabilities and related demographic factors (e.g. knowledge and skills, formal educational status, disabilities, age, gender and succession status), especially as these influence risk perception.
- Risk perception, which is influenced by: the type of risks perceived (e.g. new versus familiar, and voluntary versus involuntary risks); cognitive biases such as the availability heuristic, where risks that can be easily called to mind tend to be over-weighted compared to risks that are less familiar (even if they are in fact more likely); confirmation bias, where risks are interpreted in a way that confirms existing preconceptions; or the general tendency to overweight very low probability risks and underweight very high probability risks.
- Levels of perceived self-efficacy (i.e. belief that it is possible to bring about change through an individual's action) and agency (i.e. freedom of choice to opt in or out of an incentive-based scheme, versus feeling coerced by new regulation).
- Individual land manager attitudes towards and preferences for policy options, as they are shaped by their values, beliefs and norms about the natural environment (the extent to which their value orientation is biospheric) and other people ('social-altruistic' orientation) compared to more self-interested 'egoistic' values, beliefs and norms.
- The shared attitudes and preferences of land managers as they are shaped by members of social groups that share similar values and land use objectives (e.g. one land user group versus another). Understanding the monetary and deeper 'transcendental' values, beliefs and norms that underpin land manager attitudes and preferences for scheme options can enable smart targeting of options and tailoring of communication to meet the needs and preferences of contrasting groups of people.
- The extent to which messages about scheme options are framed in relation to the values, beliefs and norms of the individual or group receiving the message. Evidence suggests that people and groups with biospheric and/or social-altruistic value orientations are more likely to adopt scheme options that protect or enhance the environment. However, framing messages in egoistic terms can also significantly increase the adoption of practices that benefit the environment (e.g. additional financial benefits to the land manager, increased land productivity, a sense of achievement, the respect of peers or greater opportunity for social interaction).

By understanding these internal influences on engagement, it is possible to understand how favourable or oppositional attitudes towards policy mechanisms within the EPS are shaped, and to tailor the design and communication of the strategy to engender more positive engagement. In the rest of this section, we consider evidence from literature, interviews and photo survey on perceived self-efficacy, individual and group values, beliefs and norms that are likely to drive attitudes towards the EPS, and the extent to which strategy design might be adapted and messaging framed to engender widespread and positive engagement from the stakeholder community. In section 4, we will build on this

with evidence from both interviews and deliberative monetary valuation, to provide a more fine-grained assessment of the incentive levels and other factors needed to drive sustained engagement in the peatland restoration and sustainable land management mechanisms within the EPS.

Photo survey image from Dartmoor

4.1 Designing the EPS to enhance the actual and perceived locus of control and self-efficacy

Restoring peatlands and/or adopting more sustainable land management practices, like any type of pro-environmental behaviour, requires an understanding of the problem and its causes, knowledge of actions that could address the problem, a perception that the individual has sufficient control over their circumstances and actions to achieve some kind of change ('locus of control'), a perception that they have the skills and capacity to carry out those actions to achieve change ('self-efficacy'), and a set of values and beliefs that engenders action (e.g. positive attitudes and a strong sense of personal responsibility for the environment) (Hungerford and Tomera, 1986, 87). Synthesising evidence from 57 studies, Bamberg and Moser (2007) concluded that the most important psycho-social determinants of pro-environmental behaviour were attitudes/beliefs, moral and social norms, self-efficacy and locus of control. The previous section considered how the EPS could be adapted to be consistent with stakeholder values, beliefs and norms to driver stronger engagement and implementation. In this section, we explore the role of self-efficacy and locus of control, which were major themes arising from interviews. The two concepts are strongly related - a person's locus of control is the extent to which they perceive they have *control* over their circumstances and actions,

and their self-efficacy is the extent to which they believe they have the *ability or capacity* to change their circumstances and to act.

Land managers who were interviewed had a strong locus of control, but this often felt threatened by policy change, with specific concerns expressed about the extent to which the EPS might constrain management options and freedom of action. Building on the discussion of identity in the previous section, a strong component of the identities expressed by land managers focussed on their freedom of action, openness to change and adaptability as decision-makers in the landscapes they managed. There was a feeling that some of this locus of control had to be given up if they adopted land management prescriptions from Government, as might be offered under the EPS:

> *"We are getting on this ship but we don't know where we are going and do we have a clear idea of when will we arrive at our destinations?"*
>
> Land Manager, Dartmoor

> *"...Everyone says you can cut, cutting the equivalent sizes of small fires is what we do. We are not obliged to, but we are doing more cutting the heather as opposed to burning. We have invested in some gear, tractor and cutter. It is costly and there are issues with maintenance. It is very rocky. Each moorland is different. Some moors are steep, some moors are flat, some moors are rocky, some are boggy already; some you can't travel on tractors. Burning is a tool for biodiversity. It is important for fire risk. It is important for ecology and ultimately it is important to privately fund for the generation of grouse... that supports local economy in the winter months..."*
>
> Land Manager, North York Moors

Generally speaking, there was a preference for incentives and guidance over regulation. As a land manager from North York Moors put it, "*a farmer can be led, and not pushed...".* Interviewees emphasised the unique contexts in which they managed land and warned against blanket approaches in the EPS that might not be appropriate in their area. Concerns focussed around the conditions that might be attached to payments for restoration as well as payment levels, and there were questions around feasibility and flexibility of restoration activities. Land managers were generally open to the idea of natural capital/peatland restoration and the critical role they could play. However, their willingness to participate was often driven as much by the economic imperative of retaining government support for their farm business. As one Border Uplands land manager stated, "*...if I was left to my own devices and I had to make the money, I can't... market prices will not allow that. We don't make enough to survive on our own, which is the sad bit. We are not sustainable without support".*

Land managers expressed pride in the value of their local knowledge, culture and tradition to guide decisions, linked to place-based identities. This was one reason for the general positive reception of future schemes based on 'public money for public goods' or 'payment by results'. By drawing explicitly on local knowledge, payment by results approaches enable land managers to find the solutions that work for their land adaptively, rather than following prescriptions. This respects their expertise and experience, feeding into their professional identity and locus of control. As an NFU representative explained, *"Tell us what needs to be grown and for what outcome (food, carbon, biodiversity, water), how much are you willing to pay for it, and we'll take a call whether we can do it or not, after we have weighed in everything…"*.

While many land owners had a strong sense of self-efficacy around their skills and capacity to deliver public goods, others expressed doubts about the extent to which they could change their practices, and the level of support that would be available if things went wrong, suggesting a stronger role for advisory services in supporting the more challenging changes in practice proposed in the EPS:

> *"…I don't think I could do a lot differently. …Maybe less sheep in some areas and more in others, maybe a little bit of burning and little of cutting."*
>
> Land manager, Border Uplands of Northumberland and Cumbria

> *"…I am open to anything, but it is the practicalities that I am concerned about. Can I talk to somebody mid-way if I need to, and is somebody going to listen to me?…"*
>
> Land manager, Border Uplands of Northumberland and Cumbria

Many land managers did not want to take risks in land management for fear of getting blamed if outcomes were not right – a more flexible framework would allow for experimentation, including learning from mistakes in the short-term, to find local practices that work in the long-term. However, social structures may constrain innovation if women and young people continue to be excluded from or under-represented in land use decision-making (Shortall, 2004; 2008).

4.2 Aligning policy mechanisms and messages in the EPS with common stakeholder values, beliefs and norms

The EPS could make explicit and emphasise policy mechanisms and messages that are consistent with common individual and group values, beliefs and norms among peatland stakeholders. These are consistent with Bamberg and Moser's (2007) meta-analysis suggesting that the three most important predictors of pro-environmental behaviour were attitudes/beliefs and moral and social norms (covered here) and locus of control and self-efficacy (see section 3.2).

Place attachment and place identity framed many of the values, beliefs and norms that were expressed in the photo survey and interviews across the Peat Pilot sites. Place attachment is the felt link people establish with specific settings, in which they tend to spend time and feel comfortable and safe (Hidalgo and Hernandez, 2001). People who have lived in or near a location for longer are more likely to feel attached to it (Riger and Lavrakas, 1981; Taylor et al., 1984), but this attachment can also be influenced by the number of relationships a person has within their local community and whether or not they have tenure rights (Giuliani, 1991; Brown et al., 2003). It includes the values, meanings, beliefs and feelings that a person or group holds towards a specific setting (often a geographic location), and is often tied to conceptions of individual, group and cultural identity (William and Stewart, 1998). Place is now considered to be a fundamental component of personal identity (Proshansky et al., 1983; Lalli, 1992; Wester-Herber, 2004). Place identity is defined as "the process by which, through interaction with places, people describe themselves in terms of belonging to a specific place" (Stedman, 2002). However, people born in an area tend to feel a stronger sense of place identity than incomers, who are likely to feel a stronger sense of place attachment than identity (Hernandez et al., 2007).

While each site was distinctive in terms of what people valued and the meaning it held for them (see Table 4 and Figures 11-14 in section 3). There was strong agreement from the photo survey and interviews across all sites that peatlands should be a haven for wildlife and be protected for their biodiversity. There was no evidence of any bias in the photo survey respondents towards conservationists or birdwatchers, but these respondents emphasised the importance of birds for their intrinsic biodiversity value and for birdsong, associated with feelings of calm, peace and relaxation. Interviewees also valued biodiversity, but showed awareness of wider priorities including carbon storage, water quality and food production.

These priorities were not based on disembodied evidence but instead were founded on a deep personal connection with, and experience in, the landscape. As a result, the historical (including archaeological) and cultural significance of peatlands was emphasized by interviewees, with people from all backgrounds sharing nostalgic memories and stories of personal significance, often from their childhood or linked to significant life events. The photo survey also elicited memories and comments on the sense of history and ancientness of the places being photographed. It was common for photo survey respondents to write about the remoteness of the places they visited, talking about their bleakness alongside a sense of privilege that they experienced as they stood in the site, taking their photograph. This unchanging sense of place however jarred with an awareness that sites had been damaged by human activity and needed to be protected, linked to contrasting feelings of sadness and optimism among survey respondents. On the other hand, others looked at the same landscapes and expressed their sense of pride, and the communal value they shared with others who manage and experience the sites. It should be noted that the affective response to the lowland peat landscapes of East Anglia was quite different. While

it was associated with impressions of calm cleanliness in contrast to the wildness of the upland sites, these feelings were no less rooted in a clear sense of place and values that were perceived to be under threat.

The prominence of both place attachment and identity was further emphasised in the way that land managers spoke about themselves as custodians of the land and its heritage: many considered their practices intrinsically linked to this sense of identity. However, land managers often had different understandings of 'public goods', and therefore, what should be funded under 'public money for public goods', compared to other stakeholders. While land managers were among the most likely to speak about self-interested goals linked to farm business viability, innovation, diversification and profitability, they were equally likely to emphasize social-altruistic and biospheric value orientations.

> *"...I value it (biodiversity) for two reasons. Firstly, I recognise that the biodiversity has an intrinsic value beyond monetary terms. It is part of the world we share, and knowing that it is being steadily eroded by human population is upsetting, and it is nice to see where I have still got wildlife.... I value both for their own values (intrinsic) and what I can get out of it (environmental payments)..."*
>
> Land manager, Dartmoor

> *"...It is not that I am an environmentalist and the farmer isn't, it is that we have two different conceptions of what an environmental good might be. I think you have to get around that with some dialogue and sometimes you say there is an element of truth in what we are both saying, so we will find some way to compromise. It has got to be the right kind of compromise otherwise you don't deliver anything for anyone anywhere, that too often happens sadly..."*
>
> Conservationist, Dartmoor

> *"...the new agricultural policy on 'public money for public goods' has to emphasize that farming is more than just beef and lamb; it is about looking after the landscape and all of the things that it provides. And with the right grazing regime then they can provide incredible services from these landscapes, for biodiversity, for water, for carbon... They absolutely deserve to be supported to do that. It is finding that balance that is the challenge..."*
>
> Conservationist, Dartmoor

> *"Has burning got a sensible, logical place or does it not? What are the benefits, what are the negatives? ... as I am aware people come here in July and August to see the heather bloom, it is important for bees, it is important for pollinators, important for tourists. I feel responsible for maintaining that. That is part of my creation; I am investing in that for everyone else to see..."*

Land Manager, North York Moors

In addition to differing perspectives on what constituted a 'public good' among the stakeholders interviewed, there were concerns about the extent to which the public understood and valued the benefits arising from peatland:

> *"The trouble is we can't see this carbon. We can't smell it, we can't see it or feel it. The ordinary person does not perhaps fully understand the carbon situation. That is the problem..."*

Land manager, East Anglia

> *"People will see investing money in tree planting in the Amazon as being a beneficial thing to do from a carbon perspective but will probably not be aware that there is an equally good or potentially stronger mechanism right on the doorstep..."*

Public Sector, Greater Manchester

> *"It is hard to get people excited and interested in something which is falling to pieces. Even when you have got a fully restored peatland, perhaps it does not look as exciting or as adventurous as the Amazon..."*

Public Sector, Greater Manchester

Finally, informal interviews conducted as part of the portrait photography work enabled further in-depth exploration of the relationship between stakeholders and their environment, with portrait photographer John Post reflecting:

> *"Although all appeared to work in very different roles with varying goals and wishes to maintain the landscape in which they worked, one thing was common amongst all of them; love of nature and the land, and love of their role in protecting it. I was met with a strong impression that these individuals felt a connection to these extraordinary places that ran much deeper than just being a part of their day job. It was this connection of love and pride to the land that I wanted to capture within the portraits."*

Photo survey image from Greater Manchester Combined Authority

The portraits can be found in Appendix 1. By asking subjects to take their office chair to the site, the photographer was able to visually explore their outdoor 'office space'. Having the subjects seated on ordinary office chairs not only illustrates that the land is their place of work but contrasts the wildness of the landscapes where they feel most at home, to the more urbanised spaces in which their offices might be located. The composition also incorporates the land as an active participant in the portrait and not just a mere backdrop. As the artist concludes, "*These people engage with the land and therefore the land engages with them, shaping their attitudes and actions, as much as their attitudes and actions shape the land they manage*".

Based on these findings, it may be possible to design the EPS to include mechanisms and associated messages that resonate across the land management community, if they integrate pro-self and pro-social values with the biospheric values associated with delivering public goods from more sustainable practices. However, for this to be effective, explaining benefits in terms of financial and social gains to land managers would need to go beyond the EPS itself to a communication and impact plan for the strategy, designed to influence and pro-actively frame discourse around the EPS in mass and social media and other stakeholder networks. To be effective, these framing devices would need to emphasise actual benefits, foregrounding and explaining them to key stakeholder groups in ways that match their interests and concerns.

Photo survey image from North York Moors

4.3 A tailored delivery plan for the EPS

4.3.1 Delivering the EPS

There is now a well-developed literature on conservation conflicts, showing how behavioural shifts have been achieved that benefit land managers alongside achieving conservation objectives (Redpath et al., 2015). Superficially these conflicts often appear to focus on different land management objectives. As a result, much of the research effort has gone into providing more evidence for the effects of different types of land use and management on the natural environment. However, the roots of these conflicts typically arise from deeper issues linked to power relations, values, beliefs, norms and cultural history (Young et al., 2010; Redpath et al., 2013). These conflicts are also fuelled by power relationships between stakeholders and the way stakeholders are engaged in policy design and implementation, for example resulting in exclusion from decisions or a disadvantaged negotiating role in decisions (Niemelä, 2005; Reed, 2008; Reed et al., 2018a).

There are two broad approaches to avoiding or tackling such conflicts. First, based on game theory, engagement with stakeholders can attempt to move from a “zero-sum” game in which one party’s gain is another’s loss, towards win-win outcomes where both sides perceive benefits. The “prisoner’s dilemma” game illustrates how stakeholders can move towards a win-win when they are

persuaded to see the conflict as a shared problem in which mutual cooperation may lead to better outcomes than continued antagonistic relationships. This approach is often associated with consensus-building methods (e.g. Delphi and consensus voting) (Innes and Booher, 1999). However, approaches that seek to force agreement have been criticised for generating "dysfunctional consensus" (Cooke and Kothari, 2001), leading to the downplaying of perspectives from less powerful groups who are unable to make their voices heard and choose to avoid conflict by supporting a consensus outcome.

As a result, there is now a strong evidence-base for more participatory, deliberative approaches that value learning, trust, empowerment and other social outcomes of the decision-making process over consensus. With skilled facilitation and using structured elicitation and discussion and methods like multi-criteria evaluation or the deliberative evaluation method used in this research, it is possible to explore the perspectives of all parties to a decision and move forward as a group, appreciating and learning from diverse perspectives without having to agree or reach consensus (Reed et al., 2018; Kenter, 2016; Orchard-Webb et al. 2016). Deliberative methods can therefore provide a foundation for the co-production of policies, strategies and delivery mechanisms.

Co-productive approaches offer the promise of addressing complex social-ecological challenges more effectively than traditional scientific approaches, but results have been mixed in practice. Drawing on a meta-analysis of over 300 participatory environmental management processes in OECD countries (Jager et al., 2019) and wider literature, Reed et al. (2018a) offered four principles for effective co-production, which were extended by Norstrom et al. (2020) with a further principle. Both studies emphasised the importance of understanding and adapting to context, and the need to manage power dynamics to ensure multiple voices and knowledges are included. Both also discussed the role of process design, though Reed et al. (2018a) emphasised representation and the use of structured elicitation methods and Norstrom et al. (2020) emphasised the frequency and intensity of engagement, starting as early as possible in the process.

Social innovation laboratories and open innovation approaches are increasingly being used around the world to co-produce policy, and emphasise the exchange of knowledge and perspectives from research, policy and wider stakeholder communities as equals, in safe spaces (Westley et al., 2012; Socio-tech REF). This approach can be distinguished from traditional participatory and co-productive processes through its emphasis on integrating knowledge from research and policy experts (rather than these experts playing the role of selecting, synthesising and/or interpreting inputs from stakeholders), and active experimentation with ideas, resourcing small-scale pilots, evaluating outcomes and either adapting, discontinuing or extending pilots based on the results. The approach draws on ideas from adaptive co-management, complex adaptive systems theory, transitions management, design thinking and socio-technical

innovation (see Foxon et al. (2009), Reed et al. (2013) and Westley et al. (2017) for reviews of these approaches).

Based on this literature and suggestions arising from participants in our research, it may be possible to co-produce a detailed local delivery plan for the EPS with stakeholders, building on knowledge and collaborations established during the Peat Pilots. Based on Reed et al (2018a) and Norstrom et al.'s (2020) principles, the co-production of such a plan would need to be done on a regional basis, to adapt to the unique contexts in which people live from, with, in and as peatlands (O'Connor and Kenter, 2019). As part of this, a regional stakeholder analysis would be needed to ensure effective representation of interests, and to inform the design of the process so power relations can be managed and multiple voices and perspectives can be heard. This would require an extension of the existing Peat Pilots and replication of this approach to other peatlands, possibly using the landscape facilitators proposed under the Nature for Climate Fund, to ensure an appropriate frequency and intensity of engagement to enable genuine co-production.

A systematic approach (e.g. using a logic model or Theory of Change) would enable policy/delivery mechanisms to be mapped onto desired EPS outcomes, considering (based on available evidence and expert knowledge) how these are likely to play out for different stakeholder groups (Reed et al., 2018b). Based on this, it would be possible to identify specific risks that EPS outcomes are not delivered for particular groups, and identify additional activities (or adapt existing policy/delivery mechanisms) that might be able to deliver at-risk outcomes. The co-production of such a delivery plan would increase the likelihood of identifying effective activities that are adapted to the needs, preferences and constraints of specific stakeholder groups, and could be done on a region-by-region basis, facilitated by local Natural England staff.

Once co-produced, the communication of delivery plans to the broader stakeholder community would need to be organised strategically. Using evidence from regional stakeholder analyses (using the interest-influence-impact approach used in this research; Reed et al., 2018b), key individuals and organisations could be identified with the power to influence attitudes and drive behaviours within their sphere of influence, alongside the identification of hard-to-reach groups (especially where these are land managers) that may require particular investment and specific strategies to ensure they benefit from the EPS. There is increasing evidence that opinion leaders within the UK farming community are shaping awareness and attitudes towards sustainable agriculture via social media (Rust et al., under review). Desired EPS outcomes and both planned and newly identified mechanisms could need to be communicated as far as possible through peer-to-peer networks and other trusted sources of information.

Although such plans would need to be co-produced locally, our work with the Peat Pilots illustrates some of the mechanisms that might be considered:

- To foster innovation and co-production of locally relevant delivery mechanisms, social innovation labs might be used to co-produce and resource small-scale experiments in land use and management, with formal evaluations leading to their extension, adaptation or discontinuation
- The EPS may seek to promote land manager-led groups/fora that enable land managers to interact and collaborate with peers to share good practice on peatland restoration and sustainable management, communicate the benefits of peatlands to the public, providing opportunities to build social connectedness and trust through activities linked to the EPS.
- Demonstration sites have also been shown to reduce complexity and increase observability of benefits, driving the adoption of new agricultural practices. This is most effective when sites and events are run by other land managers who are well known and trusted.

4.3.2 Communicating the EPS

In addition to creating and framing policy messages and actions that are likely to resonate with stakeholder identities, values, beliefs and norms (see previous section), it is important to consider what happens once these messages and actions have been communicated via the EPS. Any efforts to ensure effective framing of messages could be undermined if stakeholders ultimately receive these messages re-framed by their peers in ways that drive disengagement with the EPS. As such, it will be important to identify opportunities to communicate indirectly with stakeholders e.g. through peer-to-peer networks to increase the perceived trustworthiness of messages, and design activities to drive subsequent actions that will deliver strategic objectives (or lead to the adaptation of actions proposed in the EPS to local contexts).

Our research showed that beliefs around some issues (e.g. impacts of burning on carbon balances) are more conflictive than others (e.g. impacts of grazing on peatland carbon dynamics); these beliefs are likely to be tied to identities of different stakeholders within their social networks. However, past research has shown that land managers beliefs can change over time with participation in EPS (Davies and Hodge, 2012). It is thus not necessarily a matter of changing values and beliefs for people to enter into EPS, but incentivising them sufficiently to participate and this may in time lead to their values and beliefs changing accordingly; and once changes take hold within a sufficient number of individuals within social networks these changes may percolate, and bring others in.

There is evidence that researchers and Government representatives are among the least trusted sources of information among the UK farming community, so it matters who delivers key messages about the EPS when it is published (see communication and impact plan below). We are less likely to learn from people who are unlike (socially distant from) us, who we instinctively do not trust, and scientific knowledge tends to be generated by people with different value

systems to many land managers (it might not be conservationists' values around nature that are the problem, but perceptions of their wider values around animal rights, veganism, liberalism, class identity etc). Conversely, we are more likely to learn from people who are like us (our peer groups), who we instinctively trust, even if the strength of their evidence is weak, especially if their evidence has an associative coherence with our beliefs. We are less likely to believe things that threaten our psychological wellbeing e.g. make us feel guilty, threatened or powerless. As a result, researchers are more likely to uncritically accept findings from papers written by other researchers, even if they are flawed, and stakeholders are more likely to uncritically accept messages that are not based on sound evidence from people like them. However, the natural science training of many agency staff assumes an ontology and epistemology that presumes universal objective truth, making them right and others wrong.

Therefore, as part of the longer-term capacity required to deliver the EPS, consideration may therefore need to be given to professional development of agency staff, focusing on philosophy of science and social science to enable both local and scientific knowledge to be treated equally critically and with equal respect. There is a rich literature and body of practice concerned with engaging with local knowledge and expertise, and the capacity for this to contribute towards land management decisions that are more environmentally sustainable (e.g. see Reed, 2008; Raymond et al., 2012; de Vente et al., 2016; Jager et al., 2019; Gerlak et al., 2020). Clearly, there are some issues upon which there is broad scientific consensus, that can form the basis for evidence-based policy and practice. However, recent controversies around "p hacking" in science have undermined confidence in scientific evidence among some decision-makers, emphasising the need for decisions to be based on evidence synthesis rather than individual studies. While a number of syntheses (including meta-analyses) have been conducted, it is surprising how many have provided weak or mixed evidence for the delivery of public good from existing agri-environmental scheme options (Reed et al., under review). It should also be noted that there is insufficient evidence to draw conclusions from meta-analysis for a number of contested issues in peatlands. Interpretation of the EPS based on a more relativistic world view is likely to engender mutual respect and collaborative working towards the goals of the strategy by front-line staff. Building on this, practical training in stakeholder engagement could enable staff to facilitate decisions among groups of land managers more effectively (Reed et al., 2018a).

Equally, participants across pilots emphasised the need for education, personal development and support for land managers to change practices. Participants cited lack of time and resources to engaging in professional development, but also said they were more likely to adopt new practices if they understood their likely benefits e.g. the potential for cover crops in the East Anglian Fens to improve productivity while reducing erosion losses and fertiliser input. Moreover, exploring new practices with peers in a local community can contribute towards pro-social values, normalise new approaches and increase the likelihood of adoption. Participants emphasised the need for support to be independent (e.g.

from industry interests), coherent (e.g. centrally organised with Government support rather than fragmented), tailored to the local context and the needs and pace of individuals, and delivered by trusted advisors familiar with the local area.

East Anglian Fens Peat Pilot site (used with permission by John Post, 2020)

5 Economic considerations

While the previous section focused on non-monetary drivers of land manager behaviour, it was clear that peatland restoration and sustainable management practices had to make business sense. For example, a land manager from North York Moors explained that "*in the grand scheme of things I want to do what is right and responsible"*, but then emphasised the importance of this contributing towards his economic interests, being feasible on his land, and enabling him to provide the kind of legacy he wanted for the next generation. A conservationist from Dartmoor who suggested priority may differ between groups said:

> *"When I have spoken to farmers there is very much a different mindset between the older generation and the younger farmers. A lot of the older farmers do it because it is a way of life. The younger guys are saying it is a business and if it doesn't pay we don't do it. The way of life doesn't matter so much…"*

However, the need for conservation to pay was reiterated by land managers of different ages and farm types across the sites and was echoed by many of the other stakeholders interviewed. As a result, respondents suggested that the majority of land managers choosing peatland restoration under public agri-environment schemes to date were already interested in restoring their land.

Therefore, the rest of this section will consider evidence from a logic map of public goods from upland management (section 4.1), deliberative valuation workshops with interviewees and other stakeholders in each study site (section 4.2) and a desk-study of options to integrate public and private funding for peatland restoration (section 4.3).

5.1 Logic map

Preliminary qualitative results (Figure 17, section 3.4) suggest that small isolated rural communities may be particularly vulnerable where finely balanced tipping points exist. For example, loss of income in a hotel supporting sporting interest results in loss of two jobs, movement of two families, closure of a local primary school viable with 20 pupils but not 18; with downstream impacts on demography and house prices which are clearly negative in terms of resilience. Clearly such vulnerabilities could be mitigated by lack of mobility or creation of alternative employment opportunities, but they point to a real need to consider "rural proofing" across a broad multi-faceted policy interface at inter-governmental department level. Further assessment of these vulnerabilities is ongoing.

Photo survey image from Greater Manchester Combined Authority

5.2 Deliberative valuation workshops

The deliberative workshops in Manchester, East Anglia and Dartmoor explicitly focused on stakeholders' perceptions of payment schemes and how fair prices for payments should be constituted, though largely falling short of deliberative monetary valuation in the sense of actually determining price levels through discussion (cf. Orchard-Webb et al. 2016). For the Border Uplands and North York Moors, issues around payments surfaced in discussions following the interview and economics presentations, but were not fully deliberated owing to the different design of the workshops (resulting from the lower diversity of stakeholders present).

There was very broad consensus across sites that current financial incentives were insufficient to drive restoration further, and it appeared to be perceived as the primary barrier to restoration in East Anglia and Dartmoor. Fundamentally, conservation was perceived as loss making, with neither maintenance nor opportunity costs fully covered, let alone the land manager's time.

There was also consensus that incentive levels should be cost-covering, and similar sets of costs were put forward across workshops. Capital, opportunity, management, maintenance, and time/labour costs were seen as much more

extensive than the current basis of capital plus income foregone. In contrast to previous similar stakeholder deliberations with Dark Peak stakeholders (Kenter and Reed, 2014), producer surplus/profit were rarely touched upon.

Also, despite participants being well aware of the prevalent policy framing of "public money for public goods", and a presentation on the substantial public willingness to pay for restoration in Dartmoor and Manchester, participants almost entirely approached the question of fair prices from the perspective of supply, rather than demand. This contrasted with recent Valuing Nature Programme deliberative work in the North Pennines, where stakeholders sought to anchor fair prices more onto benefits than costs, and expressed that there was insufficient research on economic values and public willingness to pay for benefits for them to establish a clear set of fair prices for peatland restoration and management payment options (Albers et al. 2019).

Interestingly, the two loosely conjectured figures stated by individual participants in the Dartmoor and Border Uplands workshops nonetheless corresponded closely with these previous studies, with the Dartmoor figure of £100 per hectare per year stated in addition to BPS (i.e. approximately £163 in total) being the same figure that was suggested by the valuation workshop in the North Pennines (Albers et al. 2019). The higher £500 total per hectare per annum was comparable to £643 for rewetting agreed by the deliberative valuation workshop in the Peak District (Kenter and Reed, 2014), with the difference with the Dartmoor and North Pennines figures being that those did not include capital costs (the Peak District figure was arrived at by annualising capital costs over a 30 year period, with Dark Peak restoration costs being generally considered higher than average; cf. Okumah et al. 2019).

Overall, while sufficient financial incentives were seen as an essential requirement for increased EPS uptake, there were varying degrees to which this was deemed to be sufficient relative to the non-monetary aspects related to identity and value congruence discussed previously, as well as diverse viewpoints with regard to appropriate conditions for schemes. For example, people had different views on where trade-offs between flexibility and complexity should lie, with some arguing for regional variation or weighting and others for a 'level playing field'.

In Dartmoor, it was generally agreed that increasing payments without addressing the significant institutional challenges around commons would not lead to desired outcomes. Key issues raised were that common rights pertained to grazing but not to restoration, so there was no incentive for graziers, and historical distribution of rights that produced skewed distributions of payments unrelated to current reality. Suggestions to address this included working with agreements that actively involved rightsholders but also ensured that uncooperative parties could be circumvented; the creation of an effective adjucation entity; and a system of fair shares between landowners and rightsholders, including relating to their relative contributions to management, i.e.

in effect allow graziers to have rights to other goods than grazing so that they could make more efficient trade-offs, which could lead to both social-economic and environmental benefits. Some Dartmoor participants however indicated that if incentive structures were too difficult to align, restoration should be achieved through legal obligation rather than economic incentives.

Some participants from the East Anglian Fens also suggested that legal routes should be considered to achieve policy targets. Although it was somewhat vague what was meant by this, the context of discussions suggested raising water tables by decree. In the Fens, achieving rewetting through economic incentives was seen as unaffordable in most places, because payments would have to cover the very high opportunity costs. Economic incentives could achieve most where benefits were highest relative to opportunity costs, and for this reason it was deemed essential that there was up-to-date soil data, which was perceived to be lacking. Furthermore, participants indicated that options should be broadened out to support changes in agricultural practice to minimise peat loss and for shifts to wetland crops, in order to reduce opportunity costs.

Workshop participants made only occasional reference to private payments, generally accepting that these only contribute in a limited way to restoration, with the main burden of responsibility for incentives being ascribed to government with almost complete consensus. Concern was expressed here that in relation to water quality, according to one water industry participant, benefits were likely to be too low (<£10 per hectare per year) to meaningfully cover costs. In relation to reducing GHG emissions for the private market, while potentially more lucrative, this was still perceived as difficult, with questions raised about the time period required for peatland to begin sequestering carbon making recognition and payment conditions difficult.

Photo survey image from Border Uplands in Northumberland and Cumbria, Northumberland

5.3 Combining public and private funding for restoration

New publicly funded peatland restoration schemes linked to the EPS have the potential to operate in different ways to previous Government schemes. In response to questions arising from a preliminary version of this report discussed by the Peat Pilots steering group in February 2020, we held a supplemental policy workshop to explore how the Peatland Code might interface more effectively with these and other schemes (for full report, see Curtis et al., 2020a, 2020b). The £640M Nature For Climate Fund, launched in 2020, focuses on woodland creation but includes peatland restoration in its remit. In future, the ELMS programme in England may also provide public funding for peatland restoration. Alongside future public schemes, private sector demand for peatland restoration comes from both carbon and wider ecosystem interests. The relatively nascent but operational market for carbon from peatland is regulated under the Peatland Code, developed by IUCN and launched in 2015. The wider catchment interests of water companies (colouration, sedimentation, and water resource management) have provided funds for restoration in a number of peatlands (e.g. SCAMP and Moor for the Future in the Pennines). Wider emerging markets for ecosystem functions derived from peatland restoration may include natural flood management, air quality management, place-making for recreation, and Biodiversity Offsetting markets arising from 'Net Gain' legislation.

Some or all of these markets may be mediated in multifunctional landscape marketplaces, such as Landscape Enterprise Networks (LENs). This sort of approach enables ecosystem service prices to be negotiated at landscape scales to avoid a competitive race to the bottom that prioritises low price over quality of environmental management and public benefits, and creates conflict between community members. Some schemes become deeply divisive, and are used to advantage/penalise people e.g. 'easy going' people pushed out by ruthless peers; cash from schemes raises the stakes: "*Already, individuals are circling like vultures, how they are going to get a share of this money" (Land manager, Dartmoor).*

Public and private sector schemes currently interact in a number of ways. For example, Government sets the regulatory framework within which carbon markets can develop and operate, captures and defines ' good practice' in policy guidance, and sets the legal framework within which projects (selling ecosystem services), investors (buying services) and intermediaries (aggregating supply and demand, and brokering deals between buyers and sellers) can operate.

While current funding sources and action are taking place on an unprecedented scale, a range of market conditions would help in scaling up action from the private sector, and these are summarised in Box 1. However, perhaps the single most pressing opportunity at the moment is to better integrate public and private sources of funding for peatland restoration. The twin opportunity here is to increase the level of funding available for individual restoration projects, and to increase the number and area of projects over which restoration becomes economically viable.

Box 1. Market conditions required for scaling-up markets for peatland restoration:

1. **Efficient management systems**
   - Credible and accredited outcomes (Peatland Code).
   - Efficient mechanisms for making transactions.
   - Organisational capacity and join-up within and between delivery, audit, and regulatory functions.
2. **Scale and timing of returns**
   - Viability of individual schemes. Note variable costs and variable potential for income of different peatland schemes, depending on practical site factors and baseline of habitat degradation (for carbon, more degraded sites have greater potential for reduction of carbon emissions and therefore income potential).
   - Alignment and consistency of funds from a range of sources (public, private, carbon and non-carbon).
   - Availability of appropriate funds through key project stages: planning, capital stages, ongoing maintenance.
3. **Confidence**
   - Long term credibility and backing of carbon credits required for offset customers.

Curtis et al. (2020b) shows the strong potential for synergy between carbon markets and markets for wider, multifunctional outcomes such as those developed by Landscape Enterprise Networks (LENs). The finding that carbon markets may provide a significant source of co-investment into multifunctional marketplaces, which in return might provide additional 'customers' for carbon funded schemes, applies also in the case of funding for peatland restoration. In both instances this creates two wider societal benefits:

- Increased funding for sustainable land management practices.
- Market drivers for land management design and practice that is explicitly multifunctional in nature.

In the case of carbon-specific public-private funding, there are a range of benefits, but also drawbacks or complications associated with integration. Some of these are set out in Table 8. The desirability and approach to blending private and public sector funds will depend on the balance of these costs and benefits.

Table 8: Benefits and costs of carbon funds integration in peatland schemes

Benefits	
1. Avoiding conflict	Schemes will naturally seek to draw in as many sources of funds as possible. By integrating – or at least aligning – sources in a systematic manner, the potential for conflict (either in terms of process or objectives) is reduced.
2. Catalysing new funds	Depending on how funds are deployed, the presence of a potential 'match fund' is likely in some cases to release other sources of private, or philanthropic funds.
3. Spreading and extending funds	Where funds are integrated, rather than in competition – there is more likely to be an additive effect, providing more funds for more projects, and for extended projects.
4. Economies of scale	Where added funds result in larger projects, or projects with more activities built in, then there are likely to be practical economies of scale, reducing the unit cost of carbon delivery.
5. Regional alignment of public funds	Depending on the source of private sector funds, where public funds are integrated with private finance there can be opportunities to align with regional economic development and regeneration needs.
Costs	
1. Potential flight of funds from more economically challenging sites	Where there is an obligation for public funds to be matched – or linked – to private funds, then sites or projects with merit for public benefit but with little or no private sector interest or value may be left unfunded.
2. Inflation of costs – as a result of increasing demand	There may be a simple increase in costs charged for peatland schemes as a result of increased availability of funds (demand).
3. Government co-invests in work that would have happened in any case	Especially where government funds are used as a match, there is a natural risk that private sources will 'back off' in order to pass over costs.
4. Contravening additionality requirements	Where public funds render private carbon funds superfluous or 'less than critical' to a peatland project, then those private funds may become ineligible for carbon credits (see Box 2 on additionality).

There are a number of potential areas of conflict between unintegrated public and private funds and markets. These include:

- 'Cancelling-out', where public funds outcompete private funds that would otherwise have enabled the market to deliver the public good. For example, this happened when the Woodland Carbon Guarantee offered higher prices than were available via the Woodland Carbon Code, leading to the potential for a reduction in private funding supporting woodland creation via the Code. It is important to note that where private funds are cancelled out, they do not

tend to be redeployed elsewhere in the environment. More usually in business if there is an avoided cost – for example because government is now funding a sustainability activity, or the activity has become non-viable – then it is simply treated as a cost saving; the money comes off the table.

- Uncertainty over future public schemes as the UK develops and trials post-Brexit policy over a relatively long time-frame has the potential to freeze the market, with potential sellers withholding projects until they know whether they will get a better price under existing private schemes versus future public schemes.
- A lack of integration between public and private schemes can also lead to unrealistic carbon prices for the market (as happened recently with the Woodland Carbon Guarantee) and lead to lasting damage to the market if sellers believe these prices may be offered again by Government at some future date.

Box 2. Additionality

- Additionality refers to a requirement that a payment for a particular landscape outcome is essential to its delivery. It ensures that something that is being paid for 'wouldn't have happened anyway'.
- Additionality rules are especially important for landscape outcomes in which the purchaser has no direct technical interest, but instead is buying an offset against the impact of their separate trading activities. Carbon offsets are a case in point, but this also applies to other 'fungible' products, such as biodiversity offsets. In both cases there is a theoretical 'moral hazard' on both sides of the offset transaction that money changes hands without any additional action taking place on the ground.
- The two key tests applying to carbon projects are:
  1) A minimum contribution of carbon finance to the work carried out (currently 15% under the Peatland Code), and
  2) Evidence that carbon finance is instrumental to the project going ahead.
- In the case of carbon outcomes being delivered as part of public-private funded peatland restoration scheme, the issue arises when the level of public funds (and/or private funds for other outcomes such as water catchment protection) call the need for private carbon finance into question. The key question is 'would restoration have happened anyway, even without the private carbon

Based on discussions at the policy workshop and subsequent desk-based review, it is possible to set out five strategies or mechanisms for managing the costs and benefits of integration (Table 9). Several of these may work best in combination.

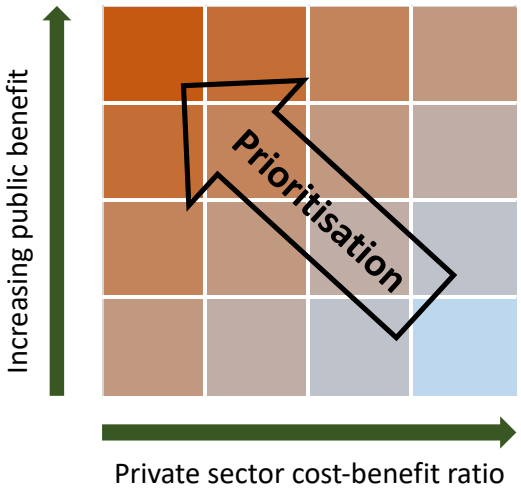


Figure 17: Basic logic for allocating public sector co-investment into peatland restoration

Table 9: Mechanisms for integrating public and private peatland payments for ecosystem services

Description	Strengths	Weaknesses
Funds delineation – *using public investment to fund a discrete menu of 'value-added' components of a peatland scheme*		
There is an extent to which a practical peatland restoration scheme can be broken down into components, or items – as would for example be reflected in a specification to a contractor. The concept here is to have the facility to break out and use public funds for scheme components that are ancillary to core carbon delivery, and for which there is a clear public benefit justification. Designed-in and delivered from the start, these would ideally be spatially defined and discrete within a site. Examples might be: public access infrastructure, habitat features, such as pools, or species reintroduction, or more technically challenging activities that would not otherwise be funded – such as clough woodland planting or rhododendron clearance.	• This approach creates clear 'lines of sight' between sources of funding and outcomes, helping the Government to justify the public benefits of its funding, potentially avoiding inefficient conflict or competition between public and private funds, and helping to address additionality questions for private carbon finance. • By increasing the size of the overall project, packages of 'delineated funding' may help make smaller or marginal schemes more financially viable, or attractive to contractors. • At a site level it creates a positive business case for delivering a range of outcomes which may otherwise be secondary considerations in a delivery plan or contract.	• Separation of service delivery presents a partial solution. While it provides a 'cordon sanitaire' around differently funded site features, it may not realise the full potential for 'leverage' presented by more fully integrated payments and action. Beneficial schemes where the core carbon component is financially marginal may therefore remain non-viable. • Clearly defined 'menus' of fundable actions would be required to avoid public funds being directed to primarily enabling or preparatory work – for example funding public access infrastructure that realistically will only be used for site management.

Carbon trigger funds – *setting up government funding that only 'triggers' when a certain level of private sector carbon funding is achieved*		
'Trigger funds' would be government funds (directed at carbon, and / or other site outcomes) that would only be released once a certain level of private carbon finance was reached. The level would be set at a percentage of the overall project budget. A single universal percentage level could be used, or stepped trigger levels could be used based on site prioritisation (using a cost-benefit matrix, as described below). Trigger funds are well suited to carbon, but they could also be applied differentially to other scheme components and features, as a combination approach with 'funds delineation'. The trigger fund could also be operated on a challenge basis – with regionally targeted 'pots' of public sector money being made available at pre-determined 'trigger points'. It would be important for these to be administered in a way that allowed decisions to be made throughout – rather than just at the end of – the period over which a challenge fund is operating.	• Trigger funds would allow Governments to direct funds for carbon outcomes at Peatland Projects, without 'squeezing out' private sector finance, increasing the overall level of funds available for Peatland Restoration. • A key additional benefit is that the effect of private carbon finance triggering public funds would assist in demonstrating additionality. A double-lock on this would be for the trigger level to be set at ≥15%; the current additionality test level.	• Set too low, trigger levels may have the effect of capping, or cancelling out the potential level of private sector funding. They also represent a level of organisational complexity that, for example, simpler match funding may not involve.
Establishing fund-matching / co-investment as a default principle		
This is an extension of 'trigger funds' in that it establishes a wider default that public funds should only be issued on the basis that a level of private sector funds are already in place for a peatland project. The objective is to 'spread' both public and private funds further, and to increase the number of peatland sites that are viable for restoration. An important practical consideration of fund-matching is that it would be significantly facilitated if the systems and processes used for deploying and contracting payments were at least aligned, or better still - integrated. The establishment of a default principle is important in terms of 'signalling' and building confidence within the marketplace that private funds (for carbon and other functions) will be instrumental	• The main strength of the 'default' approach is that it builds a straightforward expectation that public funds will be directed in conjunction with private ones, with the result that private carbon markets are less likely to be squeezed or priced-out.	• As with 'trigger funds', default co-funding may have the effect of capping, or cancelling out the potential level of private sector funding. • There is a risk of organisational complexity, and the potential for delay to publicly – or privately –

in peatland projects. However, 'default' leaves room for exceptions, and it may be that exceptional peatland projects that deliver almost exclusively public, non-market benefits could be funded publicly.		funded schemes, where funds are not evenly available or where timing is not aligned. • Finally, there is a risk that more public-benefit oriented projects, where there is little private sector demand for carbon or other landscape-derived benefits, will be disadvantaged.
Using a transparent cost-benefit matrix to target public sector funds		
If public funds are used to simply 'mirror' where private sector carbon (and other) funds are being deployed, then there is a risk that certain categories of peatland project will not be funded; principally: (1) technically challenging, expensive schemes, and (2) schemes with significant public benefit, but little private sector investment potential. To address this, public funds could be adjusted according to a matrix of public benefit versus private finance potential. Stepped, or differential, rates of funding would need to be guided by a transparent set of tests (ideally these would be narrative rather than numerical). The basic logic for prioritisation would be as set out in Figure 9.	Creates 'smarter' funding, 'stepping up' funds for more difficult, or public-good oriented schemes or locations.	Adds complexity, and requires a defensible and widely applicable set of tests.
Creating integrated systems for public-private implementation		
A key potential barrier to effective funds integration will be mismatches in the different systems and processes involved in delivery. Mismatches may come about because of different organisation scales, differing timescales, and simple differences in terminology, definitions, and metrics. These are likely to be exacerbated by the need to manage the particular requirements and opportunities presented by	System integration has the potential to improve the quality and efficiency of public-private funded peatland schemes, by designing-in the resolution of different funding requirements before they are	Depending on the level of integration, it could increase bureaucracy, and reduce the agility of private sector delivery. This would be especially so for organisations managing 'end-to-

individual projects. Integration could be as simple as ensuring that there is alignment in system design – and dialogue between those involved in it (this may be defined more as system harmonisation). More radical integration could include regional clearing houses for integrating funds and managing deployment. Timing is important for funds integration, in that it is difficult from a value for money perspective to justify additional funding to a programme of work once the work is underway or completed. Packages of funds should therefore be agreed and contracted up-front, before delivery takes place. This suggests that integration mechanisms should be in place before public funding is deployed.	presented as a specification to an organisation wishing to deliver a project.	end' services, connecting carbon clients with project delivery without the need for intermediaries.

Finally, the integration of private PES schemes via Landscape Enterprise Networks (LENs) may offer a novel approach to stimulating and meeting demand for peatland ecosystem services, by framing demand in relation to business risks and aggregating both demand side interests and the supply of services, overcoming free-rider effects and minimising trade-offs between ecosystem services across a landscape. Contrary to assumptions underpinning the majority of PES schemes, the LENs approach can lead to strong and resilient demand for ecosystem services in the absence of tight coupling between payments and provision of benefits. However, integration of LENs with the Peatland Code may provide an expanded range of investors and land uses from which services can be provided, making an integrated national market for ecosystem services possible for the first time. The integration of private schemes in this way may make it possible to coordinate more effectively with public funding for ecosystem services, prioritising public funding towards landscapes and services not paid for by the market, and increasing the diversity and amount of funding for sustainable land management interventions.

Shovel Down stone rows, Dartmoor (used with permission by Andy Hughes, 2020)

6 Conclusions and policy messages

6.1 Summary

This report has drawn on a stakeholder analysis, 50 semi-structured interviews, 40 photo survey responses, portrait photography and five deliberative valuation workshops to provide a unique insight into the values of peatland stakeholders. By understanding their values, beliefs and norms, and other internal and external factors likely to drive engagement with the EPS, we have identified a number of policy messages that we hope will help shape the design and delivery of the EPS so that it delivers benefits for the widest possible range of stakeholders.

Stakeholders emphasised the importance of place, with place attachment and identity framing many of the values expressed in interviews, photo survey and portrait photography across the Peat Pilot sites. While land managers were among the most likely to speak about self-regarding and personal values linked to farm business viability and profitability, they were equally likely to emphasize social-altruistic and biospheric value orientations. Land managers who were interviewed had a strong locus of control (defined as a perception that the individual has sufficient control over their circumstances and actions that they can achieve some kind of change), but this often felt threatened by policy change, with specific concerns expressed about the extent to which the EPS might constrain management options and freedom of action. The need for conservation to pay was re-iterated by land managers of different ages and farm types across the sites, and was echoed by many of the other participants in the research. As such, it is important to ensure payment levels provide genuine incentives reflective of the value of benefits, but also of land managers themselves in their role in delivering them, covering at least the full economic cost of implementing changes.

The research suggests that messages and proposed actions should be framed in ways that are consistent with the identity, values, norms and beliefs of EPS target audiences. Specifically:

- Frame benefits of implementing the strategy in a pluralistic way, in terms of self-regarding (e.g. financial, risk, etc.), broader personal (e.g. place identity), collective values (e.g. fairness, environmental protection) and social benefits (e.g. collaboration opportunities and benefits to local communities) as much as public goods, despite the strong imperative to frame policy in terms of public goods.
- Ensure values, messages and proposed actions are framed in a way that is consistent with the identity of land managers (e.g. as adaptive innovators diversifying their businesses to meet public demand and custodians protecting existing benefits), rather than reframing them in roles they do not identify with (e.g. park rangers delivering an agenda for a Government they may or may not believe in).

An evidence-based and systematic approach should be taken to the communication and delivery of EPS objectives, that is adapted to the needs of key stakeholder groups:

- Map policy/delivery mechanisms onto desired EPS outcomes as these are likely to play out for different stakeholder groups, to identify additional activities that might be needed to deliver outcomes that meet the objectives of both the EPS and stakeholders as far as possible. The co-production of such a delivery plan would increase the likelihood of identifying effective activities that are adapted to the needs, preferences and constraints of specific stakeholder groups, and could be done on a region-by-region basis, facilitated by local Natural England staff.
- Identify key individuals and organisations with the ability to influence attitudes and drive behaviours, alongside the identification of hard-to-reach groups that may require specific strategies and investment to ensure they benefit from the EPS. Desired EPS outcomes and both planned and newly identified mechanisms then need to be communicated as far as possible through peer-to-peer networks and other trusted sources of information.

6.2 Suggestions for policy

1. **Incentive levels need to increase to reflect the value of public goods and the role of land managers in providing them.** Framing benefits of the EPS in terms of financial and social gains to land managers and their networks is a quick win that could increase engagement with the strategy with limited additional work (see next point). However, this cannot be done without also increasing payment levels. Payment levels need to provide incentives that reflect the value of public goods as well as the role of land managers in delivering them. At minimum, this should cover the full economic cost of implementing and maintaining changes, but participants across study sites made it clear that this was a minimum and that more attractive payment rates would be necessary to obtain significant uptake of scheme options promoting restoration and/or sustainable management of peatlands. To be attractive, economic returns from entering a scheme and payment terms and conditions would need to compare favourably to existing land use and management.
2. **Emphasise how the EPS delivers personal and social benefits as well as public goods, acknowledging that there will be trade-offs.** Frame benefits of implementing the strategy in a pluralistic way, in terms of self-regarding (e.g. financial, risk, etc.), broader personal (e.g. place identity), collective values (e.g. fairness, environmental protection) and social benefits (e.g. collaboration opportunities and benefits to local communities) as much as public goods, despite the strong imperative to frame policy in terms of public goods. However, the framing of benefits in relation to pro-self and pro-social values should not, come at the expense of clear messages about benefits for nature, which will appeal to the widespread biospheric value-orientation found across the land managers we interviewed and who

completed the values compass questionnaire. Where there are conflicts between incompatible sets of values, beliefs and norms, as is commonly the case in land management decisions, it is better to acknowledge these, to increase the likelihood that decisions are made (typically compromises). This would reduce the cognitive dissonance of conflicting values, rather than creating a misleading impression that restoration and sustainable management is easy or always leads to a 'win-win' of financial, social and environmental benefits.

3. **Give land managers flexibility in the way they can deliver EPS objectives, emphasising the control they will retain over their own management decisions and speaking to the competent majority while providing training and support to those who need it.** It will likely benefit engagement with restoration if land managers are positioned more centrally in any narrative about environmental benefits as custodians who protect existing benefits and who facilitate additional new benefits through their actions, consistent with their values, beliefs and norms, emphasising the pivotal role this community is able to play in protecting and enhancing ecosystem services from peatlands. This stands in contrast to a common policy narrative which places the Government at its heart, delivering policy outcomes for the public by "nudging" the behaviour of land managers through well-designed policy mechanisms. In this policy-dominant narrative, land managers play a supporting role, enabling a Government that they may or may not support, to achieve and claim success through their actions. It is important to emphasise the control land managers can retain (to opt in to schemes, and once opted in to choose and adapt how they deliver scheme goals) and their competence to deliver the EPS in their own way, alongside the provision of opportunities for professional development and support for those who do not feel competent. While there is a risk that a less competent minority may not seek help and so fail to deliver outcomes, there is a more significant risk in focusing on this minority in the narrative, and so disempowering the majority by removing their locus of control.
4. **Position land managers centrally in the EPS narrative as custodians and innovators, in line with shared values and identities in this community.** Frame the role of It would be beneficial if the EPS framed the role of land managers in terms that are consistent with chosen identities, as expressed in interviews, rather than reframing them in new roles that conflict with these identities. The shift towards public goods is problematic for land managers whose primary identity is framed in terms of food production (this was particularly evident in the fens, given their role in food production). As such, the importance of food production needs to be retained, whilst expanding this function to encompass the production of additional non-market/commodity goods. For example, reframing hill land managers as "park rangers" helping to save the climate requires a more significant identity shift than the idea of a land manager selling carbon instead of (or in addition to) meat as an additional commodity. Alternatively, farming public goods could be framed as a form of

diversification, playing into the identity of land managers as adaptable innovators with good business sense, as opposed to reframing land managers as conservationists, who may be perceived to have quite different values, beliefs and norms to the average land manager. Even whilst our results suggest that farming and conservation communities share many altruistic, biospheric and place-based values, values are framed differently depending on people's roles and identities.

5. **Provide social science training to front-line agency staff to ensure local and scientific knowledge are each given critical consideration in the implementation of the EPS.** There is evidence that researchers and Government representatives are among the least trusted sources of information among the UK farming community, so it matters who delivers key messages about the EPS when it is published (see communication and impact plan below). We are less likely to learn from people who are unlike (socially distant from) us, who we instinctively do not trust. Scientific knowledge tends to be generated by people with different value systems to many land managers (it might not be conservationists' values around nature that are the problem, but perceptions of their wider values around animal rights, veganism, liberalism, class identity, etc.). Conversely, we are more likely to learn from people who are like us (our peer groups), who we instinctively trust, even if the strength of their evidence is weak, especially if their evidence has an associative coherence with our other beliefs. We are less likely to believe things that threaten our psychological wellbeing, e.g. make us feel guilty, threatened or powerless. As a result, researchers are more likely to uncritically accept findings from papers written by other researchers, even if they are flawed, and stakeholders are more likely to uncritically accept messages from other people like them that are not based on sound evidence. However, the natural science training of many agency staff assumes an ontology and epistemology that presumes universal objective truth, making them right and others wrong. Therefore, as part of the longer-term capacity required to implement the EPS, consideration may need to be given to the professional development of agency staff, including training in the philosophy of science and social sciences to enable both local and scientific knowledge to be treated equally critically and with equal respect. Interpretation of the EPS based on a more relativistic world view is likely to engender mutual respect and collaborative working towards the goals of the strategy by front-line staff.
6. **Provide professional development opportunities for land managers, and consider developing codes of good practice.** Participants across pilots emphasised the need for education, personal development and support for land managers to change practices. Participants cited lack of time and resources as barriers to engaging in professional development, but also said they were more likely to adopt new practices if they understood their likely benefits e.g. the potential for cover crops in the East Anglian Fens to improve productivity while reducing erosion losses and fertiliser input. Moreover, exploring new practices with peers in a local community can contribute towards pro-social values, normalise new approaches and

increase the likelihood of adoption. Participants emphasised the need for support to be independent (e.g. from industry interests), coherent (e.g. centrally organised with Government support rather than fragmented), tailored to the local context and the needs and pace of individuals, and delivered by trusted advisors familiar with the local area. Alternatively, codes of good practices could be developed alongside the EPS to drive more effective implementation of interventions (for example, the recent Defra Code of Good Agricultural Practice (COGAP) for reducing ammonia emissions provides simple, evidence-based ways to reduce NH3 emissions from agriculture).

7. **Work with public and private intermediaries to increase uptake of Peatland Code projects by landowners and managers.** Key barriers to engagement with the Peatland Code include the complexity of proposing projects, and perceived risks associated with contract length and potential future ineligibility for more lucrative future public schemes based on the principle of "public money for public goods". There is evidence that the perceived complexity of new schemes can be reduced via clear communication and actual complexity can be reduced via intermediaries (who do the fieldwork and paperwork to validate projects for a fee). In Scotland and Wales, this has been done via publicly funded intermediaries (Peatland Action Officers in Scotland and project officers in Wales). In England this service is currently only available via private intermediaries. However, any attempt to replicate the Scottish model via publicly funded landscape scale enablers or facilitators would need to ensure effective collaboration with private sector intermediaries and investors to ensure public funding complements rather than outcompetes private investment.
8. **Design any new public funding for peatland restoration to ensure it does not outcompete private investment via the Peatland Code.** We have set out we set out five options for managing the costs and benefits of integrating public and private funding for restoration, which could be deployed individually or in combination:
    - Funds delineation (using public investment to fund a discrete menu of 'value-added' components of a peatland scheme);
    - Carbon trigger funds (setting up government funding that only 'triggers' when a certain level of private sector carbon funding is achieved);
    - Establishing fund-matching or co-investment as a default principle;
    - Using a transparent cost-benefit matrix to target public sector funds; and
    - Creating integrated systems for public-private implementation.
9. **Consider how the EPS could increase public awareness of the importance of peatlands and how they are managed.** The EPS may be able to play a role in increasing public recognition for the work done by land managers in peatlands and help build a more positive public image. To do this, a communication and impact plan linked to the EPS (see points below) could actively promote the widest possible range of benefits of peatlands to the public, including local information campaigns that

showcase public investments in local peatlands. Such campaigns have the potential to reward those who are already engaging with a greater sense of achievement and recognition, while driving new and increased engagement of other land managers with mechanisms contained within the EPS. At the same time, this would help justify public investment and increase public understanding. The spatial scale of this public engagement matters. While public engagement initiatives linked to tourism (e.g. archaeological tours or art exhibitions) may be cost effective, initiatives targeting local communities have the potential to feed into a sense of place attachment and identity in both community members and land managers, further reinforcing decisions to engage with measures in the EPS. Public awareness campaigns also have the potential to re-balance the negative stereotypes of land managers promoted by some groups in the media, and re-inforce images of land managers as custodians of nature in addition to being producers of food. By engaging with the farming media and key opinion leaders in the land management community, it may be possible to further reinforce existing biospheric values, beliefs and norms within the land management community, driving further engagement with mechanisms within the EPS.

10. **Identify peatland communities that are particularly vulnerable to changes in payment levels under ELMS that might threaten the viability of these communities, using regional payments under Tier 2 to ensure these wider changes do not undermine the goals of the EPS.** Systemic vulnerabilities to rural communities arising from changes to payment levels under ELMS could be predicted based on existing evidence and used to "rural proof" policy mechansims in the EPS, with the option to use Tier 2 regional payments to reduce vulnerabilities where there are finely balanced tipping points
11. **Co-produce a regional EPS delivery plan, building on the Peat Pilots, using publicly funded landscape facilitators.** As part of this rural proofing, a regional EPS delivery plan could be co-produced with stakeholders, building on knowledge and collaborations established during the Peat Pilots. To do this effectively, existing Peat Pilots would need to be extended and replicated across other peatlands. This could draw on landscape facilitators, employed under the Nature for Climate Fund, to co-produce delivery plans on a region-by-region basis. Section 4.3 outlines methods that could be used to ensure the approach is both co-productive and systematic, enabling policy/delivery mechanisms to be mapped onto desired EPS outcomes, considering (based on available evidence and expert knowledge) how these are likely to play out for different stakeholder groups. Based on this, it would be possible to identify specific risks that EPS outcomes are not delivered for particular groups, and identify additional activities (or adapt existing policy/delivery mechanisms) that might be able to deliver at-risk outcomes. The co-production of such a delivery plan would increase the likelihood of identifying effective activities that are adapted to the needs, preferences and constraints of specific stakeholder groups.

12. **Ensure EPS delivery plans integrate ongoing opportunities for stakeholder engagement and social innovation.** Although delivery mechanisms would need to be identified in collaboration with stakeholders at each site, illustrative mechanisms arising from our research in the Peat Pilots include:
    - To foster innovation and co-production of locally relevant delivery mechanisms, social innovation labs might be used to co-produce and resource small-scale experiments in land use and management, with formal evaluations leading to their extension, adaptation or discontinuation
    - The EPS may seek to promote land manager-led groups/fora that enable land managers to interact and collaborate with peers to share good practice on peatland restoration and sustainable management, and communicate the benefits of peatlands to the public, providing opportunities to build social connectedness and trust through activities linked to the EPS.
    - Demonstration sites have also been shown to reduce perceived complexity and increase observability of benefits, driving the adoption of new agricultural practices. This is most effective when sites and events are run by other land managers who are well known and trusted.

The report provides a brief introduction and account of the methods used, followed by a detailed results section and three discussion sections, focusing on designing and communicating the EPS to enhance engagement and implementation and economic considerations.

6.3 Future research

Based on our research, we have recommended additional work on impact planning around the England Peat Strategy and identified additional evidence synthesis work that could inform future policy. The COVID-19 pandemic started during the project, and so there are also opportunities to build on the original research to explore impacts of COVID-19 on the Peat Pilot sites and strategies for enabling these rural communities to recover from these impacts. Based on this, there are a number of options for future research:

1. **Co-develop an impact plan for the EPS with Defra communications.** Co-development of an evidence-based communication and impact plan for the EPS with Defra communications teams, designed to influence and proactively frame discourse around the strategy in mass and social media and other stakeholder networks, prior to its launch. The impact strategy would actively promote the widest possible range of benefits of peatlands to the public, including local information campaigns that showcase public investments in local peatlands. The impact strategy would identify key individuals and organisations with the power to influence attitudes and drive behaviours within their sphere of influence, alongside the

identification of hard-to-reach groups of land managers that may require particular investment and specific strategies to ensure they benefit from the EPS. Tailored activities could then be co-developed in collaboration with key players from different stakeholder groups, to reach stakeholders through peer-to-peer networks and other trusted sources of information.

2. **Evidence synthesis of economic uses for peatlands in English uplands.** Following from the successful development of a logic map linking upland management options to natural capital outcomes and downstream economic dependencies in the initial project, there is an opportunity to conduct a series of Rapid Evidence Syntheses on key outcomes and dependencies where there is sufficient high quality literature, providing rigorous evidence for the likely economic outcomes of key components of the EPS.
3. **Impacts and recovery from COVID-19 in the Peat Pilots.** The Peat Pilots are well-studied case studies that exemplify a wide range of issues facing upland and lowland peats across England. It is expected that the effects of COVID-19 will differ substantially between Peat Pilot sites, and it is not known how restrictions on movement, economic slowdown and changes in public attitudes are affecting these sites at present. This social science study would first expand the logic map of economic dependencies in uplands (from the initial study) to include lowlands, and then use this as one input to the design of a large sample survey with stakeholders (including a sample of previous/likely visitors) from each site (stratified by categories based on the stakeholder analysis in the initial study, conducted by a polling company). Alongside this, a narrative literature review would be conducted, including grey literature, to explore the role of shifting public and land managers attitudes as a result of COVID-19 (for example towards food production and consumption, food security and supply chain resilience, and the role of farming and nature conservation) and wider societal and economic shifts (for example the use of green stimulus programmes and a “rural renaissance” stimulated by employers encouraging more people to work from home) in a resilient recovery. Findings from the survey and literature review would be used to design an in-depth phase consisting of interviews and online focus groups with stakeholders in each site to further explore impacts and recovery options. It would be of benefit to engage in a longitudinal approach (e.g. repeated surveys) to consider how perceptions shift over time post-COVID, and also in interaction with Brexit and the resulting changes in economic environments.
4. **Economic values for peatland restoration.** At present, there is insufficient data to estimate supply and demand curves for restoration activities which makes it difficult to determine payment levels for restoration in EPS. We would suggest an economic study where public willingness to pay for restoration would be assessed in a study that builds on existing research for Scotland (Glenk & Martin-Ortega, 2018), and adds additional work on farmers’ and land managers’ willingness to accept environmental payments. It would also consider how willingness to accept might vary

according to different institutional frameworks, rules and ways of working, based on outcomes reported here, other research on restoration payments and evaluation of existing ELMS Tests and Trials outputs; allowing modelling of the efficacy and efficiency of different arrangements. Results of the public and land manager surveys would provide the basis for deliberation involving interaction between representative samples of the public and land managers (and with the possibility for the public to call on other experts), to establish fair prices for rewetting payments that are socially acceptable, effective in achieving policy targets, and efficient. The economic work would also be integrated with the longitudinal work under (3) to assess how the uncertain landscape resulting from COVID, economic depression and recovery, and Brexit, influences change in public and farmers values and incentives. As such, the work would be placed within a whole farm-food system approach to ensure peatlands/restoration are not considered in isolation, and allow learning over multiple years on responses to policy and uncertainty.

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Appendix: Portrait photography

Peat Caretakers

The English landscape is wide in its natural diversity and the locations for Natural England's new peatland pilots, Northumberland, North York Moors, the East Anglian Fens, Greater Manchester and Dartmoor, each offer a sublime backdrop for portraiture. However, these sites are of more worth than as a mere backdrop to a photograph. Each site has been part of a process to develop an England Peat Strategy, which will not only protect but sustainably manage these magnificent and ecologically important parts of the country.

As a portrait photographer I am most interested in engaging with the person who is to be photographed. This engagement is a crucial part of my practice as an artist and important in my ability to deliver a successful portrait. When I met with each of the individuals who were to be photographed - Blanaid, Lorna, Helen, Naomi and Chris - I was struck by how passionate each of them felt towards the land in which they worked and their great enthusiasm in showing me the beauty held within the landscape.

Each site was remarkably different from the next, all delivering a sense of uniqueness, not unlike the individuals I happened to meet. Although all appeared to work in very different roles with varying goals and wishes to maintain the landscape in which they worked, one thing was common amongst all of them; love of nature and the land, and love of their role in protecting it. I was met with a strong impression that these individuals felt a connection to these extraordinary places that ran much deeper than just being a part of their day job. It was this

Peat Caretakers' connection of love and pride to the land that I wanted to capture within the portraits.

When drawing inspiration for the task of creating this work, the well-known lines from the beginning of John of Gaunt's speech from Shakespeare's Richard III felt a pertinent place to start:

"This royal throne of kings, this sceptred isle,
This earth of majesty, this seat of Mars..."

Although neither Kings or Queens, the subjects of the portraits do govern these sites with knowledge, care and pride. This governance over what is essentially their 'office space' was something that I wanted to be very present within each image and was something which would tie them together as a body of work. With bemusement, their office chairs were carried, not easily in some cases, to a favoured spot where the subject could tentatively sit on the rugged ground and be photographed. Having the subjects seated on ordinary office chairs not only illustrates that the land is their place of work but ties each piece together in a more contemporary and urbanised manner, supporting a healthy contrast to the wildness of the landscape. The composition also aids in incorporating the land as an active participant to the portrait and not just as a mere backdrop. These people engage with the land and therefore the land engages with them, shaping their attitudes and actions, as much as their attitudes and actions shape the land they manage. It was important for me to be able to see the partnership between the individual and the land, and therefore highlight this interconnectivity within the photographs, something which the new strategy will inevitably enhance.

In the words of land managers and conservationists interviewed for the project:

"It is part of the world we share, and knowing that it is being steadily eroded by humans is upsetting, [so] it is nice to see where I have still got wildlife.... I value [the wildlife] both for their own value (intrinsic) and what I can get out of it (environmental payments)."

"I am aware people come here in July and August to see the heather bloom. It is important for bees, it is important for pollinators, important for tourists. I feel responsible for maintaining that. That is part of my creation; I am investing in that for everyone else to see."

"It is not that I am an environmentalist and the farmer isn't; it is that we have two different conceptions of what an environmental good might be. ...Sometimes you say there is an element of truth in what we are both saying, so we will find some way to compromise. It has got to be the right kind of compromise otherwise you don't deliver anything for anyone anywhere."

"Farming is more than just beef and lamb; it is about looking after the landscape and all of the things that it provides. And with the right grazing regime then [land managers] can provide incredible services from these landscapes, for biodiversity, for water, for carbon... They absolutely deserve to be supported to do that. It is finding that balance that is the challenge."

Peat Caretaker: Blanaid Denman

Senior Conservation Officer (Northeast & Cumbria) RSPB, Northumberland

Peat Caretaker: Lorna Parker
Great Fen Restoration Manager, East Anglian Fens

Peat Caretaker: Chris Fry
Project Manager, Moors for the Future, Greater Manchester

Peat Caretaker: Helen Radmore
Commons Grazier and Tenant Farmers Association


Peat Caretaker: Naomi Oakley
Project Lead, Natural England Peat Pilots

The Photographer

John Post is a photographer and artist currently living in Dundee, Scotland.

He is a Scottish Portrait Awards finalist and was awarded a commendation for his portrait of Lou Moon in 2019. His work has been exhibited in Edinburgh, Glasgow, Dundee and Kirkcudbright.

John is currently studying for a Master of Fine Art (MFA) degree in photography at the University of Ulster in Belfast. He is researching the psychology behind looking at portraiture and exploring the dual theme of absence and presence within photography. His specialisms are contemporary portraiture and still life, and he is working on his first photobook.

John also holds a bachelor's degree with honours in zoology and is working in the field of drug discovery for neglected diseases at the University of Dundee.

More of his work can be viewed at *www.johnpost.co.uk*

NATURAL ENGLAND

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