

Tests & Trials Reporting

Dartmoor Commons PBR

FINAL REPORT

prepared by

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GDPR

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All participants giving data have given full consent for the data to be collected. Data is stored on secure password protected computers or kept in locked cabinets. Participants have the right to withdraw or access their data at any time during the process.

Title page

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Report Summary

Background

The proposal of the second Dartmoor Test & Trial (T & T) was to test the practical development of payment by results (PBR) on common land by designing and trialling a model with commons graziers across the varied landscape of Dartmoor. It aimed to better understand the barriers and opportunities to improve delivery, including the necessary governance. Both the reward (payment for delivery) and governance and financial administration were addressed.

Specific DEFRA Policy Questions identified as relevant to this project:

- I. How do we reduce the administrative burden of applying PBR at a large scale?
- II. Can PBR be utilised at a whole-farm-approach scale?
- III. How could a natural capital benefit/top-up be calculated and implemented in practice?
- IV. How to incentivise land manager participation and determine appropriate payment mechanisms?
- V. How to construct agreements for different land ownership structures e.g. individual and group agreements, tenants, commons?
- VI. How to deliver the required facilitation and framework for PBR on common land?
- VII. How appropriate is PBR for large scale delivery with multi-participation?**

Methods

Policy questions are addressed by five staged 'process' objectives, all of which were achieved:

1. Project Board (PB) to **establish a management structure** for T & T, appoint staff, confirm input from specialists. PB and staff confirm arrangements ensuring farmer and commoner participation.
2. **Develop PBR approach using scorecard** developed in the previous T&T, enabling measuring change in ecological outcomes and linking reward of delivery to PBR. Develop accompanying **monitoring plan**.
3. **Identify economic needs at farm level** for grazing commoners, to identify the most cost-effective package to wrap around a central PBR measure.
4. **Test scorecard and the monitoring plans**, including the role of technical innovations that could help streamline the process, in various scenarios.
5. **Develop potential governance models** that ensure correct delivery of PBR, and national and local priorities.

Project methods included: literature reviews of PBR and natural capital approaches; detailed analysis of Dartmoor's farming systems and farm economics data using the 'comparative agriculture' method; analysis of commons governance and management through interviews and a survey; regular engagement / information-gathering from more than 70 active farmers / commoners, landowners & key stakeholders (NE, Duchy, DCC, DCOA, DNPA, Hill Farm Project, various Commons Associations, Pony association) in numerous meetings, interviews and regular liaison. Two specialist farmer/owner panels: 'governance' and 'payment by results'; were convened and met regularly throughout the project. Four workshops and extensive field visits on Dartmoor commons were also undertaken with farmers, agency officers / experts / advisors and owners, and Defra policy teams. All actions foreseen were achieved, despite minor delays in appointing local staff and completing the economic analysis and trials. Structures and governance operated effectively throughout, despite significant external distractions and tensions (NE negotiations on HLS rollovers, and the Fursdon review process).

Results

Drawing from the literature, Payment-By-Results approaches develop often as partnerships between NGOs, government and farming bodies; most are farmer-led or government agency-led. PBR typically focus on a specific habitat or landscape type with shared agreement on desired outcomes, and knowledge of appropriate management practices. A clear vision of steps towards outcome(s) is linked to a scoring scale combining criteria, and training is needed for participants to be confident in judging outcomes. PBR scheme assessors can be the farmers themselves, but independent assessors are more usual. Scoring is linked to a payment matrix, payments rise in line with score/quality, incentivising farmers to achieve improvements. Payments are made annually after each scoring, when assessor and grazier(s) review progress and consider scope for improved management.

PBR offers potential benefits to achieve effective commons management on Dartmoor. Key features relevant and applicable to Dartmoor commons include linked advice and training to encourage commoner learning and scoring; 'capital works' or specific 'management actions' funding (on top of a PBR payment per hectare); and a governance approach that enables trust and regular communication between funders, assessors and commons managers (farmers/commoners and owners working together).

Literature review of NC approaches concluded that these are not appropriate for setting PBR payments on Dartmoor commons, due to poor valuing of biodiversity and landscape (which are central to Dartmoor). A management costs approach will be both more practical and more cost-effective, to develop and use. Our model for trials built on the Wales commons scorecard, integrating Dartmoor-specific aims and knowledge (notably Farming Futures), as well as lessons from recent experience. Duchy college work (FCL funded) and our Dartmoor diagnosis provided up to date detailed management costs data to use for the costing/pricing of PBR.

Financial analysis of FBS data shows the economic fragility of Dartmoor farms. Detailed farming systems diagnosis (Duverne and Pages, 2023) shows how, since 2000, decoupling and agri-environment agreements on commons led to system change and dramatic shifts in management. A reduction in grazing livestock numbers (sheep, cattle and ponies), near-complete exclusion of cattle overwintering and a shift in business structure to concentrate income on enterprises less dependent on the moor, have increased the fragility of commons management and the knowledge and culture that support it, among farmers and the wider community. Most farm systems on Dartmoor, whether using the commons or not, depend on public subsidy and non-farm income to maintain viability, with limited scope to substitute one for another as BPS reduces.

Sustained farmer engagement and deliberation has enabled us to develop a robust PBR approach. There is broad support for a new scheme which offers a more coherent, transparent and results-focused approach to generate public benefits on Dartmoor. Commoners and owners favour stronger advice, feedback and support as well as more clearly delineated funding for specific, targeted management through 'Management Action Plans' (MAPs) agreed on a 3-year rolling programme, working alongside a regular PBR review and reward system. There are widespread calls for the approach to be led by a body which is independent of Natural England and has a resource adequate to ensure sustained advice and ongoing dialogue with commoners and owners. It is not viable for individual Commons Associations (CAs) to design and oversee PBR without additional institutional support, and there is an appetite for greater co-ordination between CAs, going forward. A bespoke central team with the capacity to engage and coordinate across CAs and overseen by a Dartmoor-wide partnership, offers significant additionality and would command good local support.

These Governance ideas were refined by learning from the FCL test and trial to develop the SFI on common land; also undertaking a CA survey gathering information on Dartmoor commons' governance, rights and administration; and considering relevant good practice elsewhere as well as Dartmoor's own prior initiatives. The proposed PBR approach was developed and agreed for testing through trials: scoring and management action planning, working with graziers and owners. Progress was affected by the parallel conduct of the Fursdon evidence review as well as NE HLS rollover negotiations, which introduced sensitivities and delays. Nevertheless, trials were completed in February on 3 clusters of commons (embracing 6 individual commons).

Key conclusions and recommendations

1. There is broad support and farmer enthusiasm to take forward a PBR-style scheme for Dartmoor commons, based upon three elements as proposed here: a per-hectare annual payment linked to a scoring system which judges how well the common is delivering for a range of public goods; a Management Action Plan comprising a three-year rolling programme of specific management work (labour and capital costs) designed to address particular issues identified through the PBR survey and scoring; and a small core professional team of co-ordinators, facilitators and advisers who can ensure the quality of assessments and oversee efficient and effective delivery.
2. The survey and scoring system was judged usable by graziers / owners, even though surveys were done in winter. Minor weaknesses in species identification could be overcome by surveying in early summer (and would likely add 1 to average values). The approach can valuably 'piggy back' on survey points generated for SFI on commons, saving time and enabling complementary data collection for monitoring. Scores average quite low, emphasizing the need to ensure that the MAP component of the scheme is allocated a significant share of total available funding, to mobilise new active management by commoners and commons' owners.
3. There is potential to recognise the value of supporting good access, fire management, carbon contribution and commitment to responsible practices with an amended scoring system that would add up to 2 extra 'points' at landscape level. A fairly steep gradient would apply for scores in the low to mid-range of 3 to 6,

to encourage land managers/owners to improve scores and returns. To cover management costs, also ensure viability and sufficient incentive to join, average scores should result in average payments around £225/ha (at 2024 prices), across Dartmoor commons as a whole.

4. Trials and associated discussions highlight the crucial importance of a core technical team to support commoners in their management. It will improve the performance of commons managers and provide vital assurance for Natural England, Historic England and the RPA as a 'professional' guarantor of the quality and appropriateness of agreed management. It will enable commons secretaries to increase the cost-effectiveness of their agreements by offering independent and qualified advice, training and support, focusing funding on where it brings the best return for the public.
5. It is feasible to plan a total package spending at a similar scale to previous HLS + BPS on Dartmoor commons (estimated at somewhere over £7m/year in 2020), achieved by focusing a higher share of total payment on the rights holders and owners who take an active part in commons management tasks and responsibilities, rather than allowing a large proportion of payment to be directed to non-active grazing rights, as happens currently. Our evidence suggests the current system is inefficient, insecure and often ineffective. The new scheme would link payments much more closely to regular active management, monitoring and feedback.
6. The new scheme would be ambitious, by comparison with current schemes. However, there has been a good level of farmer engagement and support for the work, throughout, giving confidence that it can proceed to a pilot, aiming for this PBR approach to become a 'special project' under the CS+ scheme, within the next 2-3 years. The pilot should fund a PBR package, ideally on 6 commons, in 2024-2026.
7. The central management team for the special project will enable savings in administrative and delivery costs within RPA and NE, and provide significant added-value in respect of scheme outcomes, compared to an approach which did not include this element. PBR itself offers valuable scope for automated payment delivery, and MAPs could operate a system such as the standard CS capital works procedures, within RPA. However, the RPA should also work to improve in-house capability to ensure fully informed management of ELM collective agreements. This could eliminate current issues of misunderstanding, disincentive and error that have arisen due to inappropriate use of 'single-beneficiary' standard procedures and communications, in these more complex collective-entity situations.

In sum, our recommendations are:

- That Defra works with DNPA, NE and others to enable a funding allocation sufficient to support a pilot of this approach on c.6 Dartmoor commons in 2024-6, to develop and confirm the precise specification of the CS 'special project' that would enable its integration into CS+ from 2026 onwards, subject to a successful pilot.
- That DNPA, DCC, the current project board and CCRI continue to co-lead and deliver the pilot, working in close partnership with Dartmoor farmers and commons owners, as well as the statutory agencies.
- That the RPA (continuing to liaise with FCL and this project) establishes a core of expertise, tailored procedures and communication materials to enable effective delivery of ELM collective agreements.

Definitions and acronyms

Word or Acronym	Description or Definition
AES	Agri-environment Scheme
BPS	Basic Payment Scheme (support to UK farmers formerly funded via the CAP)
CAP	Common Agricultural Policy of the European Union
CCRI	Countryside and Community Research Institute
CS	Countryside Stewardship AES
DCC	Dartmoor Commoners Council
DNPA	Dartmoor National Park Authority
DHPA	Dartmoor Hill Pony Association
EA	Environment Agency
FCL	Foundation for Common Land
HLS	Higher Level Scheme (Environmental Stewardship AES)
MAP	Management Actions Plan (proposed works to accompany PBR)
NC	Natural Capital
NE	Natural England
NGO	non-governmental organisation
PAL	Premier Archaeological Landscape (Dartmoor designation)
PBR	Payment By Results
RPA	Rural Payments Agency
RSPB	Royal Society for the Protection of Birds
T&T	Test and Trial
TFA	Tenant Farmers Association
UELS	Uplands Entry-Level Scheme (Environmental Stewardship AES)

1. Introduction – research context and methods

This Test and Trial (T&T) took place on the 35,882 hectares of commons within Dartmoor National Park in South-west England. The project was led by Dartmoor National Park Authority (DNPA) in partnership with Dartmoor Commoners' Council (DCC), and managed by Janet Dwyer from the Countryside and Community Research Institute (CCRI), University of Gloucestershire. It built on the findings of the first Payment By Results (PBR) T&T led by DNPA in 2020-21. This second T&T ran from 1 November 2022 to 31 March 2024.

Figure 1 introduces the aims, origins, concept and phases of the project – as presented to farmers and landowners at the first project open workshop in late March 2023.

Figure 1: introducing the Dartmoor Commons PBR T&T (2)

Aims of the T&T 2 project	How the project came about		
<ul style="list-style-type: none"> To develop a new environmental payment scheme that can work on the commons, to become part of Defra's new ELM approach A scheme based on 'paying by results' : so payment is not linked to pre-defined management prescriptions, but instead it rewards the results of management (better results = higher payments) A renewed governance: Giving farmers and commoners / commons associations and owners more scope to design their own approaches, to deliver the desired outcomes, with support / involvement of key stakeholder bodies This allows flexibility in management, but requires a common, agreed goal: what good looks like, and how to measure progress towards it 	<p>Dartmoor National Park came together with Dartmoor Commoners Council, to develop a project idea and plan, inviting Dartmoor Hill Farm Project, the Duchy, and Natural England, to join them in partnership</p>	<p>They identified a willing delivery partner : CCRI – Janet and team – to manage the project, working with Gwyn Jones (testing Welsh commons schemes) and James Moran (longstanding experience in Irish schemes – Burren farmer-led scheme, EIP innovation schemes)</p>	<p>The team applied to Defra for funding and approval: this was given in November 2022. Since the kick-off meeting the partners have agreed:</p> <ul style="list-style-type: none"> A farming systems and business analysis based on the French 'agrarian diagnosis' method; Appointing a local project liaison officer to support the project management team Inviting more farmers and the RPA onto the steering board

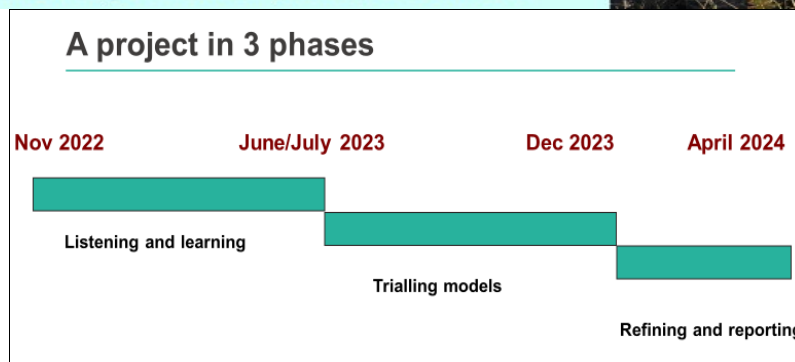
Farmers, authorities and other key partners agree and understand what the desired outcomes are, for each area of land, and what the positive indicators of progress would be.

Regular support is given by a small core team of dedicated assessors and advisers so that everyone is learning more, each year, about how to improve management to get better outcomes.

What it could mean – (based on the Burren)

Capital payments are offered by the core team to farmers wherever it's agreed as key to ensure better delivery of outcomes (e.g. to put in a water supply, fund cutting / burning, support tree-planting, host an educational visit or promotional event, etc.). The grant rate is adjusted to reflect the balance of public and private benefit.

Annual payments are based on how far the land is showing progress towards the desired outcomes: e.g. is it a 4 out of 10 score, or a 7 out of 10? Scores are judged by a core team assessor in discussion with the farmer(s), and checked by the team leader to ensure consistency. Nobody ever scores Zero: a score of 10 means the land is delivering the maximum possible, on all outcomes.



To guide the conduct of the project, five specific objectives were devised, with timelines. Figure 2 presents a whole-project timeline, linking events/activities to key stages in scheme decisions/design.

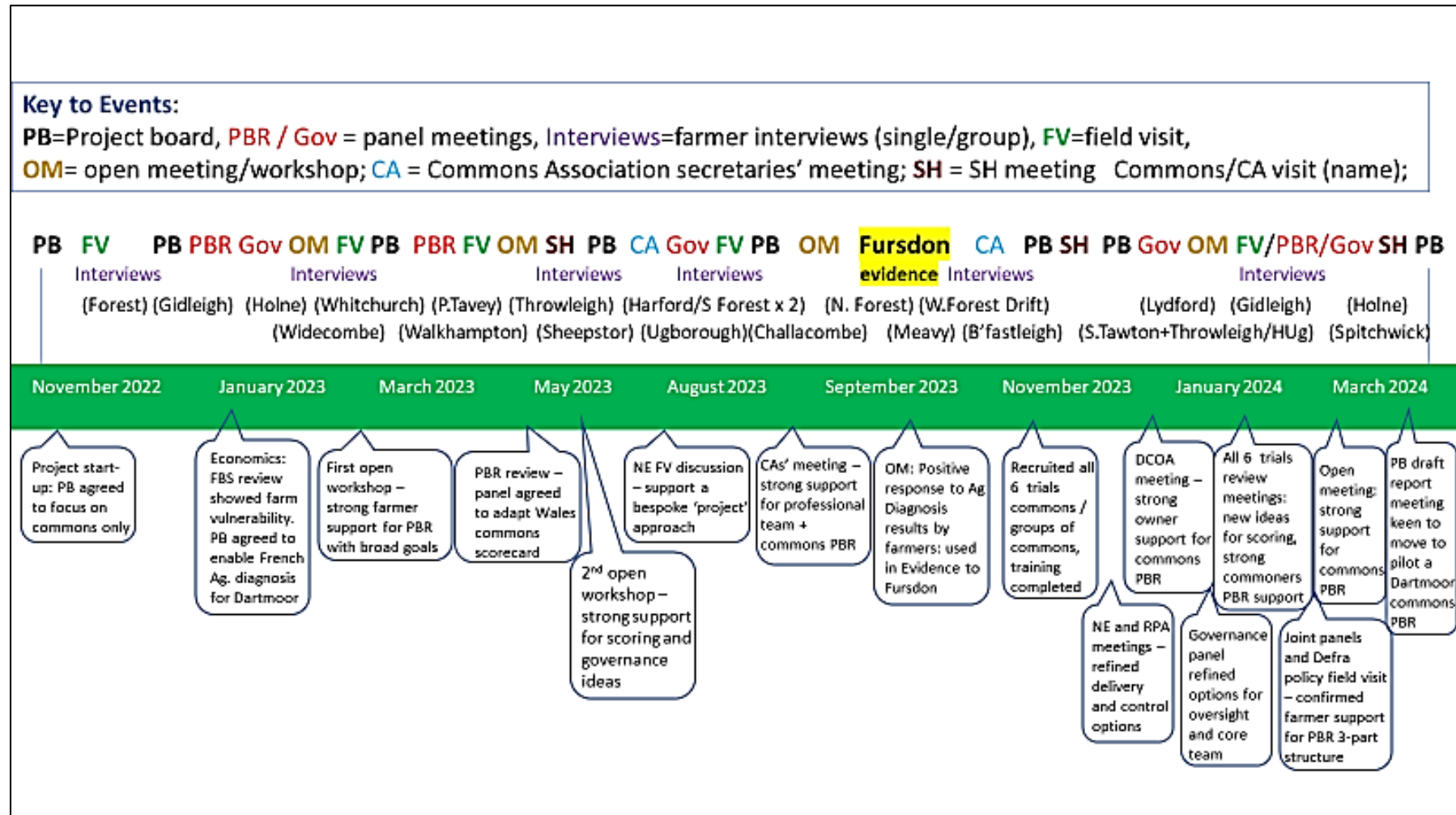
1. Nov – Dec 2022: Project Board (PB) to establish T & T management structure, appoint staff, confirm specialist input, arrange effective farmer and commoner participation.
2. Jan – June 2023: Develop PBR approach using scorecard (as per T&T1), enabling measurement of change in ecological outcomes and linking rewards to PBR delivery. Develop monitoring plan.
3. Jan - Dec 2023: Identify economic needs at farm level for grazing commoners, to identify the most cost-effective package to wrap around a central PBR measure. Secure working /preliminary analysis by August 2023, final figures by December 2023.
4. July – Dec 2023: Test scorecard and the monitoring plans, including the role of technical innovations that could help streamline the process, in various scenarios.
5. Jan – Sept 2023: Develop potential governance models that ensure correct delivery of PBR and delivery of national and local priorities.

Each of these was broken down into specific tasks to complete (see Annex 1 for details).

The project team (CCRI and DNPA) used the following methods to gather and analyse evidence.

- Open Meetings / workshops with c.50 farmers and owners, March, May, Sept 2023 and Feb 2024.
- 3 literature reviews (annexes 2-4) plus detailed work in two specialist panels of farmers and owners (c. 6-8 members each) on 'payment by results' and 'governance'; who met at intervals around 5 times each with the DNPA and CCRI team. Meetings were generally 3-6 hours long.
- Discussions with Commoners, owners and stakeholders/agencies: informal and more formal, including 20 one-to-one semi-structured interviews, 3 participant observations and 5 discussions in groups (at meetings of the various representative groups including individual Commons Associations, gatherings of active graziers out on the commons and visits to specific farms/farmers with longstanding relevant knowledge and experience including commoners of Walkhampton, Widecombe, Challacombe, Throwleigh, Gidleigh, Belstone, Forest of Dartmoor, South Tawton, Holne, Buckfastleigh, Sheepstor, Whitchurch, Meavy, Peter Tavy and Lydford.
- Meetings and events hosted by the project team and/or by: Dartmoor National Park, Dartmoor Commoners Council, Dartmoor Hill Pony Association, Natural England, the Duchy of Cornwall, 'Rewilding Dartmoor' interests, Devon County Fire and Rescue service, Dartmoor Commons Owners Association, the Rural Payments Agency, Dartmoor Hill Farm Project, the Foundation for Common Land officers and projects on Dartmoor (the T&T for SFI on commons, and 'Our common futures'), the October 2023 Drift on the North Forest of Dartmoor and adjacent western home commons, the Duchy/DNPA Curlew project, and a young farmers' group convened to provide evidence to the Fursdon review. These involved at least 100 farmers and 15 commons owners.
- Two large meetings with 14+ Commons Association (CA) secretaries / chairs, and an online survey of Commons Associations to gather information on commons and their HLS governance.
- An agrarian diagnosis of Dartmoor farms conducted by Lucie Duverne and Paul Pages (2023) for their Masters degree at AgroParisTech, France (Annex 6). This study made a detailed structural and economic analysis of farms on Dartmoor, based on five months of intensive fieldwork in the Park including biophysical and socio-economic data-gathering and in-depth interviews of over 60 Dartmoor farm businesses and a range of stakeholders. Completed in October 2023, the diagnosis achieved a mark of 90% from the examiners at AgroParisTech.
- Evidence submitted to, and discussions with, the Fursdon review panel convened in June 2023 to make an 'Independent review of protected site management on Dartmoor' (Annexes 6 and 7).
- Three surveys, then scoring and trials meetings, with the graziers, secretaries and owners on six Dartmoor commons: Lydford; Gidleigh, Throwleigh and South Tawton; and Harford and Ugborough. These provided specific empirical trialling of the PBR approach and MAP ideas.

• PROJECT TIMELINE



Notes in speech marks show the key points of decision or refining of our proposals for the new approach.

2 Findings

2.1 Context and background to the research – understanding Dartmoor commons and their management

This report describes a programme of participatory, multi-actor research and co-development to examine how a payment-by-results approach could work for Dartmoor's 91 commons, covering 35,882 hectares of unenclosed upland landscape and representing around three-quarters of the total area of moorland within Dartmoor National Park. A significant proportion of Dartmoor's commons are designated as SSSI or SAC for their biodiversity value, and/or as SAMs or historic landscapes of national importance for their archaeological value (with traces of Neolithic farms and many other unique features). The commons are also highly valued and well used for public access and enjoyment – Dartmoor receives over 10 million visits each year and research in 2018 estimated visitors from across England walk around 18 million kilometres on Dartmoor, each year (Day et al, 2018)¹.

The commons are owned by a variety of landowners, with the Prince of Wales' Duchy estate owning around half of the total area (including the largest 'Forest of Dartmoor' Common of c.11,000 ha), and others including the National Park and National Trust, South-West Water, a handful of large estates and some individual private landowners. They are grazed by somewhere between 100 and 200 active graziers overall, and supported by around 600 further non-grazing rights holders.

Management of the commons is organised by individual Commons Associations – in most cases, one association coordinates the rights holders' and owners' activities on one named common, although there are a few areas of commons which are managed together (e.g. Harford and Ugborough commons, each owned by different private landowners but managed as one contiguous grazing unit under one CA). All Commons Associations are overseen by the Dartmoor Commoners' Council which was established by statute in 1985. CA members must pay annual fees to DCC for any stock which they graze on the commons. DCC elects its Council from among the CA membership.

Dartmoor's commons are distinctive in that many of them adjoin others and have no physical boundaries between them, allowing stock to move freely across the moor from one common to another. However, grazing rights are specific to each common and sometimes to specific fragments of common, in all those cases where a single common is split into different discrete areas either physically (with island areas surrounded by in-bye farmland), or as a result of historic precedent (e.g. on South Brent moor there is a triangle of land at one end of the common which has separate grazing rights to the rest of the area, even though it is contiguous and there are no physical boundaries). Traditionally, stock which spent a significant part of the year on the common would be 'leered', meaning that they know the part of the common that is 'their patch' and would tend not to stray far from it unless forced to do so. However, since 2000 a significant decrease in overall grazing numbers of cattle, ponies and sheep has gradually weakened the effectiveness of many leers.

DNPA applied to run this Defra Test and Trial as a second-stage project following on from a first stage of work that was completed largely as a desk exercise, as a result of it running during the Covid-19 epidemic in 2020-21. The aim of this second phase of work (Nov 2022 - Mar 2024) has been to develop and trial **a model PBR scheme for Dartmoor commons** with farmers, graziers and owners, which could replace the current Higher Level Stewardship AES approach that is coming to an end soon (limited rollovers are being negotiated, as the original term of these agreements has passed).

The key reasons for seeking to try out a payment-by-results scheme are a combination of:

¹ Day, B., Harwood, A., Tyler, C. and Zonneveld, S. (2018) Population futures and Dartmoor National Park. SWEEP report, University of Exeter.

- concern that prescription-based management has failed to ensure recovery in the condition of habitats on many of the SSSI-designated commons;
- Commons graziers and Natural England have increasingly disagreed about what optimal habitat management should be, based on their different knowledges and experience/ evidence base. As a result, a profound lack of trust has developed in the existing system governing commons and SSSI management, as well as a widespread view among local land owners and managers that farmers could achieve more positive results using their own knowledge.
- Over the past 20 years, various initiatives have been established aiming to enable commons' managers and statutory agencies to develop a more positive management approach. A shared 'moorland vision' was agreed over 10 years ago, and the 'Dartmoor Farming Futures' project was established on a few commons, notably including the Forest of Dartmoor, which enabled increased management flexibility through dialogue and detailed management planning between graziers, owners, DNPA and NE. However, support for the initiative declined after some years for a variety of reasons, leading to a general view that more significant change is now needed, to turn around the situation (see Annex 2 for a summary).
- The suggestion is that outcomes would be more positive if graziers and owners had more ability to use their considerable experience to design commons management, in order to achieve the condition and quality of landscape and habitats sought both by public agencies and the wider public (as these are the key beneficiaries of any AES on Dartmoor). Our aim in this Test and Trial has been to design and trial such an approach.

2.2 Evidence to support answers to the Defra policy questions

When Defra established its test and trials (T&T) fund and called for applications, it identified a long list of policy questions that it wanted to explore, within T&Ts. All approved T&T projects have to agree with Defra, as a condition of funding, a short list of relevant questions drawn from the long list, that their T&T will provide some relevant evidence to answer.

For this T&T, seven Defra policy questions were deemed relevant, at project approval.

- I. How do we reduce the administrative burden of applying PBR at a large scale?
- II. Can PBR be utilised at a whole-farm-approach scale?
- III. How could a natural capital benefit/top-up be calculated and implemented in practice?
- IV. How to incentivise land manager participation and determine appropriate payment mechanisms?
- V. How to construct agreements for different land ownership structures e.g. individual and group agreements, tenants, commons?
- VI. How to deliver the required facilitation and framework for PBR on common land?
- VII. How appropriate is PBR for large scale delivery with multi-participation?

As the project has developed, each of these questions has been reviewed and reflected upon, and relevant evidence presented as far as possible within the agreed scope of this T&T. However, it should be noted that **the focus of our work was, from the start, a PBR approach for Dartmoor commons**, and not for whole farms. Here, we present a summary of the evidence, for each numbered question. More details of the evidence base are provided in annexes to this report.

2.2.1 Questions I and II: How do we reduce the administrative burden of applying PBR at a large scale? Can PBR be utilised at a ‘whole-farm-approach’ scale?

A PBR scheme for Dartmoor commons will apply at a large scale and thus the question of ensuring efficiency and reducing administrative burden is relevant. However, it is not a whole-farm scheme.

Nevertheless, the project has generated information that is relevant to both issues, more generally. To address these questions requires the identification, development and refinement through trials, of a realistic and efficient PBR package including scoring system, payment matrix and wrap-around elements (advice and capital works – for justification, see the evidence relevant to policy questions III and IV). These were addressed through a literature review and analysis of PBR approaches elsewhere, followed by discussion and co-development of an appropriate model with Dartmoor farmers and other relevant stakeholders.

We conclude that:

- **A PBR scheme can be particularly efficient because it does not require detailed setting and controlling of management by prescriptions**, and instead requires an agreed scoring system for each common. Once a score is given using an agreed process with built-in quality assurance and a certified assessor, the payment can be determined and disbursed automatically by the RPA. In this section we describe in detail, how that scoring system has been developed, emphasizing its consistency with statutory agency requirements.
- The rolling programme of **investment in additional management activities can be designed to use the already-established procedures for CS** capital works schedules, which will maximise its efficiency as a tried and tested RPA system.
- **The core staffing to facilitate and deliver the PBR approach across Dartmoor will significantly increase the scheme’s effectiveness compared to current AES on the commons** – i.e. providing a significant increase in outputs, **for a similar level of scheme budget** (including all three components) to that which has previously funded support to Dartmoor commons through BPS and HLS. This represents an increase in cost-effective scheme delivery, compared to the current situation.

2.2.1.1 Rationale for focusing on Dartmoor commons, and not a whole farm approach

This project has acknowledged the work of the previous Test and Trials I project to develop a Payment by Result model for Dartmoor (Bell, 2021). The first phase focused around the identification of general principles and the development of a first scorecard through a technical partnership applying a specific geospatial analytical tool. The model sought to design a scoring system for a whole-farm approach – combining assessment of the enclosed farmland (managed singly by each farmer/farm business) as well as the common grazing (managed collectively).

However, this model was subsequently recognised by the Project Board as too complex, time-consuming and infeasible for local roll-out, due to the complexities of mixed governance in such a situation. No payment matrix was achieved, and the model combined a lengthy questionnaire for a general farm assessment with a separate detailed habitat classification. As a result, it would produce an impressive amount of data, but without involvement of key partners, and lacking the breadth and simplicity in scorecard design which other reviews have identified as essential, for feasible operation.

In the meantime, the developing ELM approach for England has clarified how future land management on individual farms should be covered by an enhanced Countryside Stewardship approach, implying that farmers can hold individual agreements for their enclosed farmland, and separately develop and agree new collective agreements for the Commons. This phase II work has therefore focused specifically on a PBR approach for commons. Note that within the Ireland agri-environment scheme ACRES, there is a form of PBR in operation which can be applied at the scale of a whole farm approach – but this does not generally embrace the collective management of commons.

2.2.1.2 Review of PBR approaches elsewhere

The aims of the literature review (see Annex 3 for details) were:

- To review the range of PBR models, pilots and active schemes that have operated in recent years in similar managed, pastoral landscapes in the UK and Europe, identifying how they were established, designed, operated and how they have performed in ecological and socio-economic terms;
- To extract from the review, lessons and features that could be relevant for the specific situation of Dartmoor's commons, bearing in mind their significant scale, variability in conditions, complexity of governance and high proportion of designated areas (for nature and history/archaeology), as well as their generally high level of use for recreation by the public.

The PBR analysis was focused on a range of projects and approaches in western European countries. It found that, despite these schemes gaining in popularity and with increasing implementation, there has been little work done specifically on PBR for commons, apart from one ongoing study in Wales.

The literature indicates that PBR develop often as partnerships between NGOs, government and farming bodies; although some are more explicitly farmer-led while others have been policy- / government agency-led. Although not analysed in depth here, the wider literature also identifies a small number of approaches initiated and funded by commercial organisations (e.g. Danone, Heineken).

PBR typically focus on a specific habitat or landscape type (e.g. meadows, riparian, upland grazing); with a shared agreement on clearly-defined desired outcomes and sharing and developing knowledge of appropriate management practices. The financial scale of the PBR schemes is usually limited per farm/beneficiary. A clear vision of the desired outcome(s) is linked to a scoring matrix combining a range of criteria from whole-field scale conditions to more specific indicators (e.g. presence of particular species within quadrats). Schemes focus on environmental elements, e.g. the general habitat condition, any signs of deterioration, etc. as well as specific flora and fauna. Negative criteria (signs of damage) as well as positive criteria (presence of rare species) are common.

In all cases, an element of training is needed for participants to be confident in judging outcomes, given the complexity of indicators that must be scored. In principle, PBR scheme assessors can be members of the farming community and may even assess themselves, subject to some level of independent audit. However, scoring generally takes place at peak times of labour demand for pastoral farming (e.g. during lambing in late spring), which represents a practical challenge, and independent assessors are a more usual approach.

Scoring is generally linked to a payment matrix, with payments rising in line with quality, and an accelerated increment point usually around the average/median score, incentivising farmers to achieve improvements beyond the average and thereby gain higher payments per hectare. These payments are then paid annually, after each scoring exercise and discussion between the assessor and grazier(s) to review progress and consider further scope for improved management.

2.2.1.3 Relevance to Dartmoor

The PBR approach offers a number of potential benefits to the challenge of effective commons management at scale, on Dartmoor. Most important is the ability to enable farmers to tailor grazing strategies to achieve clear environmental outcomes, and to use the scheme to help implement a process of continuous improvement. Supporting this is a need for the approach to be as simple and cost-effective as possible.

The literature identified particular additional scheme features that are highly relevant and potentially applicable to Dartmoor commons, including:

- a need for advice and training to encourage continuous learning among farmers;

- the value of associated ‘capital works’ or ‘specific management actions’ funding (on top of the PBR regular payment mechanism), often set out in a rolling programme of work over a number of years; and
- the importance for a governance approach that enables and strengthens mutual trust, understanding and regular communication between scheme funders, assessors, and participants.

The most appropriate technical model for scoring and reward appears to be building on the Wales commons scorecard and integrating Dartmoor-specific aims and knowledge from past projects *in situ* (notably Farming Futures) as well as from ongoing governance and institutional mapping and assessment within this T&T. We have therefore taken this model forward.

A brief review of Farming Futures on Dartmoor is provided at Annex 2. Here, we highlight the main lessons learnt from this important partnership initiative, over the 12 years since its establishment.

- **Simplicity and Practicality:** Keep the number of outcomes simple and practical, ensuring they align with the interests and capabilities of farmers.
- **Improved Engagement:** Foster participation and collaboration to build trust and knowledge among farmers, who are eager to learn and engage in monitoring their common areas.
- **Local Relevance:** Recognise the diversity of Dartmoor and understand that outcomes will vary based on the unique character of each area.
- **Ownership of Project:** Ensure that outcomes are owned and supported by farmers as this feeling of ownership is crucial for farmers feeling valued and involved in Dartmoor’s management.
- **Understanding the Outcomes:** Expand farmers’ knowledge on what are considered valuable outcomes and provide a support network to address gaps in understanding and capacity.
- **Periodic Reviews and Two-Way Reporting:** Establish periodic reviews with active involvement from all parties, avoiding situations where farmers are left to organise meetings themselves. Two-way reporting is integral to success.
- **Financial Support and Workshops:** Recognise the importance of farmers’ time and incentivise greater participation through adequate financial support. Funding should also be allocated for administrative work and employing external expertise where needed. Workshops and similar initiatives serve as effective tools to enhance farmers’ knowledge and engage a broader audience.

The farmers on Dartmoor saw value in participating and were keen to learn new and effective management when the opportunity was offered to them. Significant numbers of farmers (more than 60) attended initial workshops and/or engaged with external experts over the trial period. They emphasized that under the current circumstances, **dedicated and trusted advisor(s) employed full time to act as liaison between commons graziers/owners and statutory bodies, is vital.**

More specific analysis and discussion in this T&T project has enabled the team to identify that the administrative burden of a PBR scheme would be made more efficient by the following actions:

- Appointing a small team of core professional staff to help support scheme delivery across the total area of Dartmoor commons, seeking to achieve good practice and continuous learning in effective ELM;
- Involving farmers themselves, once suitably trained and certified, as initial assessors for scoring commons, whose scoring would be quality-assured by the core staff team doing sampling and spot checks. These tasks would also act as a stimulus to revisit, revise and reaffirm the ongoing implementation of Management Action Plans, on each common, between the staff team and commoners.
- Ensuring that there is a commitment, seriously made, to continued regular and open communication between commoners, the core staff support team and all major stakeholders

(but especially those with regulatory and operational responsibilities: e.g. NE, HE and RPA). This should be core to the process of PBR roll-out.

Our work has not directly covered the potential for whole-farm approach PBR. However, it is clear that the scheme that we have developed, if offered as a special project within CS+, could work smoothly and efficiently alongside CS+ agreements on the in-by-land of Dartmoor farms. Thus in theory, the approach can facilitate a whole-farm approach to ELM delivery, through both single-farm and collective commons agreements running alongside one another.

2.2.1.4 Acceptability / feasibility for statutory and delivery agencies

In November 2023, meetings were held with the RPA (Ali Johnson and Simon Lunniss) and the local officers of NE (Eamon Crowe and Justin Gillett) to gain understanding of how they would interface with the new scheme. The main interest for the meetings was to understand the key standards and structures/processes that these agencies would require, to have confidence in a new PBR scheme.

From the RPA meeting, it was clarified that the RPA would favour a PBR approach which could enable some automated elements in its delivery: scoring should facilitate that. RPA would also be happy with the Management Actions Plan (MAP) approach if these could operate a system essentially the same as CS capital works schedules, running over 3 years with payment in arrears on production of receipts as proof of activity. RPA officers are open to the notion of a per-hectare basic rate deriving from a scoring system linked to condition assessment, although they find it difficult to envisage what would be controlled, if the approach moves entirely away from prescribing specific management details which are then audited. They agreed that the professional team would need to provide independent assurance of the accuracy of condition scoring derived from survey work done by (trained) graziers. They would need to consider further, whether that assurance would be sufficient to enable RPA to make payments to Commons Associations, under the scheme. Clearly, NE and HE would also have to confirm their confidence in the PBR scheme and its delivery, as they are the statutory regulators of protected sites (where relevant).

From the NE meeting, it was confirmed that NE could see clear value in investing public money in a bespoke professional team to ensure active and appropriate management of Dartmoor commons. Their expectation was that such a team could significantly enhance the likelihood of the scheme delivering biodiversity value and contributing to climate action, along with other public benefits. Having a team which could work directly with NE officers and commoners and commons' owners to mediate and share learning would be particularly helpful, given the current difficult relations between these groups. A greater professional input could help reduce the challenge of current low levels of resourcing within NE for regulating management of Dartmoor commons and their SSSIs, in particular.

2.2.1.5 Developing the PBR Scorecard

Why scorecards?

A basic limitation of the traditional prescriptive, 'payment for following these conditions' approach is its dependence on a black and white threshold separating payment (reward) from penalty. It is based on an optimistic assessment of good prior knowledge on the part of scheme designers, which is then more or less unable to respond to variations in external conditions over space or time (save by lengthy or cumbersome individual derogations), and thus can easily engender a 'box-ticking' approach to management on the part of scheme beneficiaries.

Scorecards are a way of allowing for variations in conditions and in management options (i.e. there will probably be more than one way for a site to reach a score of 7 out of 10); whilst limiting the possible detrimental effects of design flaws due to imperfect or incomplete knowledge on the part of scheme designers. Importantly, they are also a way of communicating clearly to the beneficiary, the whole bundle of characteristics which make up what is agreed as 'good condition', at any site.

The Common Standards Monitoring² protocol for upland dry heaths, for example, has 16 criteria, but farmers participating in conventional Stewardship schemes are presented with a standard set of grazing dates and stocking levels with which they have to comply, on this habitat type – thus reducing the options for pursuing those criteria to just two core variables, regardless of local context. By contrast, a scorecard could convert as many of these different criteria as possible into easily-understood metrics that contribute to the overall score awarded at each site or survey point, leaving farmers the choice of how best to ensure that they attain a good score, and thus a sufficient reward.

It is possible to combine a scorecard for site condition with a black-and-white approach to rewards; for example, by setting a threshold of points above which standard payments are made. However, the obvious next step in seeking to improve the cost-effectiveness of the mechanism is to convert the spectrum of attainable scores into a similar spectrum of payments which recognise the relative level of achievement in a continuum between poor and excellent, and thereby contribute directly to incentivising improvements in delivery.

Not reinventing, but adapting

The draft scorecard developed for use in this Test and Trial is in the ‘Burren’ tradition, building on the species-rich grasslands approach developed there by Sharon Parr³. Work by EFNCP and IT Sligo, carried out by Caitriona Maher, Dolores Byrne and Caroline Sullivan, extended this approach beyond calcareous grasslands, with the results used at large scale (1,500 participants) in the Hen Harrier Project⁴; these cards are the basis for some of those being used now for 20,000 applications of the mainstream ACRES CP agri-environment/non-productive investments/cooperation project package in Ireland.

The cards score a range of botanical and biophysical criteria, some of which are direct metrics of the target of the measure and some of which are proxies or surrogates (indicators) for other targets. They award points for positive aspects (e.g. diversity and cover of indicator species; vegetation structure; good hydrological characteristics...) and deducting them for negative aspects (presence of alien species or various negative indicator species; signs of damage by drainage or poor stock feeding practices; other damage to vegetation caused by the beneficiary...).

This same approach was refined over some years via a series of EFNCP projects in Scotland (in partnership with SRUC and NatureScot) and Wales⁵. Notable changes to the Irish method, are:

- Working to combine several scorecards between which an assessor chooses, into a single, coherent approach (thus avoiding one card being a ‘more attractive’ choice than another and ensuring that all payment rates make sense relative to one another, meaning that not all habitats can score as high as 10). Thus, in principle, the single scorecard can be used on any common in England or any semi-natural farmland habitat on Dartmoor (except pure linear features or ponds).
- Moving away from the Irish approach of surveying vegetation blocks using a W-shaped walk across a site, to one which is more strictly randomised and thus enables coverage of a complex mosaic of conditions and vegetation communities across the landscape.
- Assessing vegetation structure and the frequency of indicator species in combination, rather than independently (-which can be more difficult to do).
- Using more detailed but differentiated criteria so as to reflect better the metrics set out in Common Standards Monitoring (CSM), also the needs of specific additional targets, e.g. grassland fungi.

² <https://jncc.gov.uk/our-work/common-standards-monitoring-guidance/>

³ <http://burrenprogramme.com/wp-content/uploads/2019/06/BLG-Score-Sheet-v2-2017.docx>

⁴ <http://henharrierproject.ie/resources.html>

⁵ <https://www.efncp.org/download/OuterHebridescommongrazingsprojectfinalreport.pdf> (earliest)

<https://www.efncp.org/download/Walescommonsresults-basedprojectfinalreportv1.pdf>

<https://www.efncp.org/download/Fairwoodfinalreport2022.pdf>

https://www.efncp.org/download/Golfa_Frochas_Begwns_final_report.pdf (latest)

- Adopting a more differentiated approach to reward or penalise the presence of trees and scrub and of natural regeneration, since these may be more or less positive or negative depending on local context (e.g. negative if on sensitive archaeological sites, positive if adding more species niches in an otherwise denuded landscape).

The card was further developed on Dartmoor by the addition of specific sections for archaeology, addressing the needs of its 'Premier Archaeological Landscapes' (PALs) in particular, but equally applying to Scheduled Ancient Monuments. A new Marsh Fritillary section was added, reflecting local biodiversity targets; and the 'bracken-and-violets fritillaries' section was amended to match the approach used by Butterfly Conservation in SW England to identify potential target areas for these species (the Welsh approach focuses solely on bracken-covered, south-facing slopes; whereas in Dartmoor other areas are included in the polygons but need to be excluded in the scorecard).

The scorecard thus allows differentiated approaches to scoring the habitats/targets likely to be encountered on Dartmoor commons:

- areas with the appearance of a bog (as opposed to former bogs now supporting other vegetation)
- woodland
- Premier Archaeological Landscapes (and SAMs)
- South-facing bracken slopes in polygons identified by Butterfly Conservation (pers. comm.) as important for bracken-and-violets fritillary butterfly species
- Wet grassland/heathland mosaics; and Dry grassland/heathland mosaics
- Areas dominated by bracken or European gorse
- Areas dominated by *Molinia*
- Areas with high frequency of devil's bit scabious (marsh fritillary habitat)
- Rush pastures

Methodology

The preferred methodology for sampling would be to use grid-based points, with the grid itself being randomly set. Compared to a W-walk, this approach is less amenable to being skewed by surveyor bias; any need for a resurvey using different points can easily be achieved by setting a new grid. However, we chose to adopt the one-random-point-per-10 hectare approach, which is now the Defra-approved SFI commons sampling method, to encourage consistency and familiarity among surveyors. QGIS was used to generate the grid and random points within it. We noted that for some reason, this generates too many points if the grid mesh is set at 316 m, reflecting the number of square metres in 10 ha. The mesh then needs to be adjusted so as to generate the right number of points for the area of common being surveyed.

When the sampling point is located in the field using GIS/a map reading of Google Maps, a rigid marker pole is inserted into the ground and recording is carried out within a circle with a radius of 10 metres from that point (a 10m ribbon or cord can be used to mark out the boundary of the circle). Recording should take no more than 5 minutes. A north-facing photo including the marker pole is taken at each point. There is no fully-functioning app and API for interacting with other programmes, associated with this scorecard. The simple, free software Epicollect⁶ was used to give the surveyors a more user-friendly means of data collection than the Excel spreadsheet⁷ into which data is then transferred. One version of Epicollect also included the SFI survey questions, allowing data gathering to be combined for both purposes. Epicollect was used in conjunction with Google MyMaps, into which the random survey point data were uploaded. This dataset had to be processed manually in Excel to generate the final scores for each point. Clearly, one priority for a pilot phase of the PBR scheme would be to address this gap in IT provision so as to enable direct data processing when information is gathered on site, enabling surveyors to see immediately how each point is scoring.

⁶ A link can be provided, but note that the data generated is only accessible to the designer

⁷ A copy of the current draft can be provided, with the proviso that it remains a work in progress

2.2.2 Question III. How could a natural capital benefit/top-up be calculated and implemented in practice?

From the first meetings with stakeholders and farmers and commons owners, it was apparent that **the scheme would need to have a range of goals that go beyond the current concept of ‘natural capital’**. We were therefore asked by the project board to reflect this and develop a scheme based on the full range of public goods that are sought from Dartmoor’s commons.

Nevertheless, a literature review was made of natural capital approaches and monetization, to assess what it might have to offer our T&T. **This review concluded that a management costs approach to pricing a new PBR scheme would be much more comprehensive and usable than a natural capital approach applied for the same purpose.**

As reviewed in more detail in Annex 4, natural capital valuation approaches have proven largely unable to incorporate robust quantification of biodiversity value, and tend instead to concentrate upon carbon and hydrological (water quality and quantity) values. Our consultation with Dartmoor stakeholders has confirmed their strong support for a scheme with broad objectives mirroring the full range of public benefits sought on Dartmoor’s commons, including biodiversity, cultural landscape value, historic and archaeological value as well as public access and enjoyment, in addition to carbon storage and sequestration and good hydrological functioning. Further legitimate and interconnected goals were also identified for fire management, and livestock health and welfare. We therefore conclude that ‘Natural Capital’ as an approach will not be a sufficient basis for determining PBR payments, in this context: this was discussed and approved by the Project Board in March 2023.

Nevertheless, considering the natural capital assets on Dartmoor commons provided a useful input to the T&T workshops and discussions with farmers and other stakeholders, in which we identified the wide range of public benefits associated with the commons. The goals that our PBR scheme would support reflect the full breadth of objectives set out in the Dartmoor National Park Management Plan, which include both natural and cultural assets as well as a variety of ecosystem services.

An approach to payment calculations based on management costs offers a greater potential to incorporate this breadth of goals, for Dartmoor’s commons, than one based on natural capital. It can directly reflect the scale of economic challenge faced by upland farms, providing the necessary incentive to stimulate sensitive active management whilst still upholding the need to avoid over-generous compensation that could distort market adjustment and thus hold back system change to enhance farm performance.

Calculating and implementing the PBR – analysing needs and considering models

The economics of farming in Dartmoor and particularly on moorland are poor, in terms of economic value generation. Nevertheless, the level of labour productivity is high (mirroring previous findings for upland farming in Exmoor: Dwyer and Lenormand, 2020). Farm income is often reliant on farm diversification and subsidy payments, and margins are small, particularly considering the need to maintain active management of the moorland.

Payment approaches

The project undertook a review of PBR approaches, and considered the potential value of adopting a Natural Capital (NC) approach to setting payment rates.

A review of progress and outputs in the sphere of natural capital audits and accounting (NCC and others; Deane et al, 2018 – see annex 4) has demonstrated some key points:

- NC accounting has been found useful to record the wide variety of assets and ecosystem values associated with particular landscapes and territorial units. As such it is most frequently applied to audit-like procedures and has gained some popularity among estate owners and managers, in that context. A particularly inclusive approach has been used effectively in Exmoor National Park (Deane et al, 2018) to draw attention to the closely interwoven natural and cultural capital

of this varied upland landscape, in which people and nature have co-evolved over many centuries. However, this did not attempt monetization of this complex mix of valued assets.

- Monetization of NC has proven to be particularly challenging, largely because easily applicable and standardised metrics are more fully developed for some asset types than for others. Notably, there are widely applied metrics for carbon accounting but very few robust examples of metrics which fully capture biodiversity and other ecosystem service values. As a result, monetization exercises have frequently been judged to under-represent or under-value these less-developed but often critically important types of natural capital.

Dartmoor's commons hold simultaneous high value for nature (in their distinctive contribution to global biodiversity), for carbon and water, for history and archaeology, geology and also for public access and enjoyment, alongside their continuing (but economically challenged) value for food production and sustainable livelihoods for farmers and graziers.

Dartmoor's commons are truly and unavoidably multifunctional, and stakeholders agree that this is a core characteristic of their value. NC approaches as currently developed and applied cannot adequately capture and make explicit the full range of these multiple values, in a balanced way. Using NC calculus would risk over-stating the value of assets such as stored carbon, clean air and public recreation, whilst under-stating the value of landscape quality and character, archaeology and historic value, and specific biodiversity arising from Dartmoor's mix of semi-natural, grazed upland habitats and woodland and water features (which are valued not because they are all very species-rich, but for their particular distinctiveness, nationally and internationally, at a landscape scale). Therefore, it seems that NC as a metric will not provide a sufficiently comprehensive approach to deriving monetary values for the assets and outcomes or results of future commons management.

Turning to alternative approaches, basing the approach to payments on **management costs for commons** appears to offer a more inclusive and balanced approach to enable us to derive payment levels and scales. Detailed and recent studies (Duchy college, 2021 and 2023), along with ongoing results gathered in this T&T through our application of the diagnostic technique of 'comparative agriculture' and FBS data analysis, demonstrate evidence of the range of management costs involved in good commons management by graziers and owners working together.

The parallel T&T by the Forum for Common Land on a commons application of the moorland SFI, which has been partly based on work on Dartmoor commons, has also furnished this project with relevant data and information. These can be adapted and developed into a rationale and scale for determining future PBR payment levels, which we believe is more credible and robust than anything yet emerging from NC applications.

We explain the basis for our management costs approach, here.

2.2.3 Question IV. How to incentivise land manager participation and determine appropriate payment mechanisms? Considering the payments required to incentivise PBR

From the Duchy 'Costs of commoning' study, in 2021 (and 2022), the gross costs of keeping stock which graze the common under the restricted pattern imposed by HLS (i.e. no outwintered cattle, stocking density restricted, no supplementary feeding on the common), were around £700 (and £780) per cow and around £50 (and £53) per ewe and per mare. Of these, the average costs for feed were £314 (and £377) per cow and £5.10 (and £7.10) per ewe, plus around £6.20 (and £10) for a mare. These data emphasize the negative cost implications of HLS grazing restrictions for Dartmoor farms.

If winter grazing of cattle were allowed, these costs might reduce. We could imagine that of the costs of feed – which includes bought-in concentrates, forage crops and home-grown fodder - the greater share is used for feeding when the cows are off the common, although some supplementary feeding

on the common may occur at either end of the grazing season and only on land which is non-SSSI. The period when cattle must be off the common is 1 Nov to 30 April: 5 months.

On Exmoor, on a south-west moorland at similar altitude to some Dartmoor commons, where 60 hardy cows over-winter on the common, the comparative costs for a system with cows outwintered on the moor, is lower. Taking a 3-year average from 2018/19 -2020/21, the grazier on this moor spent £23,600 on bought in feed per year, plus £13,000 per year on forage production, for 700 ewes and 100 Galloway suckler cattle plus 90 continental cross in-bye cattle, which would be c.310 Livestock Units, i.e. £118 per LU per year, divided between sheep and cattle (Dwyer and Lenormand, 2022).

For the same numbers of animals using Duchy figures from 2021, the cost would be $(700 \times 5.1) + (190 \times 314) = 3570 + 59660 = £63,230$, which is 1.7 times the Exmoor costs. This means that the Exmoor farm was spending 0.57 of the Dartmoor farms' average level of feed costs in 2021, for a farm with 190 cows and 700 ewes, of which 100 hardy cows use the moor and 60 cows are outwintered. The difference in costs will be influenced partly by feed prices, which increased by 18% between 2019/2020 and mid-2021 (AHDB, 2023). Otherwise the main difference in cost arises from winter grazing on the common, thus implying the saving from outwintering those cattle is $(£443/1.18 =) £375$ per cow per year. That is probably an over-estimate, but it seems a very significant (potential) saving. Such a saving, however, would only be possible where the winter grazing on the commons is as good as the Exmoor moor's condition over winter: currently that is not the case for many of Dartmoor's commons.

A realistic view could be that the likely saving would be less than, but could increase up to, £375/cow in 2021 prices, taking some years to be realised as the commons' condition and palatability improve. Nevertheless, set against the net cost of farming cattle on Dartmoor, such a saving could significantly reduce costs, from £700 per cow to perhaps **£350 per cow per year, to add to the £50 per ewe or mare per year estimated already**. Expressed in Livestock Units, the costs range would appear to be around **£300-350 /LU / year**. This could be just about sufficient to turn what is a net loss-making activity without subsidy for many Dartmoor farms, into one that would break even, in 2021 prices – although note that these calculations don't include all elements of fixed costs, and don't include further loss of subsidies (NB. at this point in time: 2024, BPS has been cut by 50% from 2020 levels).

Using Duverne and Pages' (2023) work on Dartmoor farms, the range of data across different farming systems suggests that a potential saving without winter cattle grazing restrictions – enabling stock to choose when to come in, during the winter months – could be perhaps £150/LU under current conditions on the moor, in 2021 prices⁸. This suggests net costs of commoning higher than were estimated above using Exmoor comparisons under improved grazing conditions built up over time. Their costings indicate an average net cost of commons management in which outwintered cattle are permitted, of **£550 per LU per year**, under the current conditions. Under these conditions, targeted rates of stocking might average around 0.25-0.3 LU/hectare – suggesting a management cost somewhere around **£137-165 / ha**.

In order to make commoning viable, a payment on the common would also need to cover those elements of fixed costs that the Duchy college figures don't include. These are: grazing payments to Dartmoor Commoners Council, fuel costs and financial charges/interest payments.

- Grazing payments are of the order of around £10/animal/year.
- Fuel costs are now significant as a result of recent price rises, and the work involved on the commons could well amount to several thousand pounds per active grazier, so estimated at £10,000 per farm business for actively grazing the commons.
- Financial charges depend very much on the individual situation of each farm business and their extent of indebtedness. As interest rates have risen since the covid crisis and the war in Ukraine, any debts will now be more costly to service. We draw upon the results of the Duverne

⁸ Note: Duverne and Pages used 2021 prices throughout in their calculations, after analysis to establish that 2021 prices represent an average of prices over the past few years.

and Pages analysis to estimate these: suggesting an average amount of interest in 2021 rates of c.£2,000 per year, for Dartmoor farm systems.

Considering a farm business with 300 LU represented by 800 animals using a c.900ha common, the grazing payment bill for a Dartmoor grazier might be £8,000/yr. That would make a total cost for managing the common of £20,000 per farm business, grazing 300 LU on the common each year. Assuming that a common is grazed actively at a maximum density of 0.3 LU/ha per year, or 300 LU for the whole common – so payment on that common of £20,000 should suffice, which is **£22/ha**. On top of this, we must add sufficient payment to cover the loss (cost) from the remaining BPS removal, which we estimate would be around **£35/ha** (see figures below).

Summing these 3 components, we arrive at a total estimated management costs figure between c.£185 and £215 / ha / year.

Finally, as a comparator, we consider what scale of payment is needed to incentivise continuing active management of commons by grazing livestock, over and above the break-even point. This is likely to be a rate in between what is offered now under CS and what was offered under HLS, to most graziers.

Informal discussion with graziers suggests rates around £120/ha might be sufficient, for this. NE staff report that current HLS agreements on Dartmoor commons cost around £4.5 - 5m/year. They also estimate that the income from BPS, when paid in full in 2020, was around £7m in total for Dartmoor commons. HLS today covers 23 commons including some of the largest ones: the Forest, Holne, Gidleigh, Throwleigh, South Tawton, Penn and Stall, Harford and Ugborough, Sheepstor, Haytor, Lydford, Peter Tavy, Okehampton. The total area of SSSI on Dartmoor is 23,000ha but this includes some woodlands – hence, the £5m HLS spend is spread over about 21,000 ha of commons (NE also report that only 60% of the commons on Dartmoor are in AES).

A rough average payment per hectare might therefore be something under £238/ha for land in HLS (lower due to some budget being for capital works and around 4% for CAs' management costs – see annex 5), while CA with commons in CS report payments around half as large, so, perhaps £100-120/ha. BPS is paid on all land in Dartmoor, with a fixed rate for SDA moorland of £63.95/ha when paid in full in 2020. This means that if commoners claimed BPS plus HLS they were getting c.£270/ha, whereas if it was BPS plus CS it would be c.£180/ha, in total.

Using these figures, therefore, an average payment to Dartmoor commons that could represent sufficient incentive to join the scheme might be somewhere around **£225/ha**. This matches very well the management costs approach to payment calculation, as detailed previously.

Clearly, this figure could be tested and refined, drawing more from Duverne and Pages (2023). It should also be checked for variability across years, to identify a payment rate that is robust in the face of likely fluctuations in costs and market conditions.

The final step is to calibrate where on our payment scale, this 'average' sits, and what the optimal slope should be, either side of this point, grading from a score of zero to one of (near) ten. This requires analysis of findings from the trials, and is thus reported in section 3 of this report.

Total scheme cost for an established PBR approach, available on all Dartmoor commons

The cost of annual payments of £225 per hectare over all Dartmoor commons would be around £8 million, if ALL commons came into the scheme (which is unlikely). If we anticipate the scheme might attract 80% of commons at most (by area), the figure falls to £6.4m, as a maximum. From this amount we should deduct the underpinning SFI payment per hectare for commons which currently stands at £17/ha. That reduces the PBR budget to just over **£5.9m per year**.

Considering the costs of funding MAP for these commons, this could amount to perhaps **£2m/yr**. This estimate is based on consideration of the scale and pace of works discussed in our trials meetings with graziers and owners. At the level of an individual common, the scale of targeted management action needs to be both feasible and achievable, on a yearly basis. For a typical common of perhaps 600-900 hectares, with 10-20 persons contributing to management activities, around six to eight

specific actions could be achieved over a three-year period, e.g. including swales, targeted cutting, and a programme of targeted grazing with either no-fence collars or supplementary feeding strategies used to concentrate cattle where they are most needed, to control *Molinia*, gorse or bracken by a combination of feeding and trampling actions. This might cost around £30-50,000 per common.

The costs of staffing for the central team of five professionals should cost around £400,000/year; while any additional CA support costs (e.g. to access training, or buy-in expertise) might be perhaps half that, implying total staff + management costs of **£0.6m**, which is around 7% of total scheme budget.

This would suggest a **total scheme cost of around £8.5 million per year, assuming it achieved 80% uptake on Dartmoor's commons** (28,600 hectares, which we believe would represent a modest increase in cover, compared to current HLS and CS schemes on the commons). The score-related part of the budget would need to have room to grow, as conditions and thus scores improve, and the public benefits generated increases. Despite liaison with NE and the RPA, we have not been able to identify a robust figure for the expenditure on BPS and AES on Dartmoor's commons at the point before BPS began to be reduced under the agricultural transition (2020). However, RPA suggests a rough estimate of £2.2 million/year for BPS on common land in Dartmoor, in 2020 (Luniss, pers.comm), while NE estimates an agri-environment spend annually on Dartmoor commons of between £4.5 and £5 million (Crowe, pers.comm). That would suggest the comparable spend could have been around **£7.2 million/year in 2020**, but we have not been able to confirm the areas of common land under agri-environment agreements, with any precision (NE confirms 23 agreements; we suggest rough coverage below 25,000ha, based on the named commons/SSSI areas involved).

Experience from PBR in the Burren suggests relatively slow upward growth, overall, of c.0.1-0.2 in average score per year, which if replicated on Dartmoor commons with 80% uptake would mean adding £10/ha= £280,000 per year in total – so, spending that rises by around £0.8m within 3 years, assuming steady improvements in condition.

However, it would also be possible to stabilize the total scheme spend per year, if the MAP budget is adjusted down as the PBR budget grows. This is the budget management approach now used in the Ireland ACRES scheme, to simplify forward planning of public expenditure. Whether this would be appropriate for Dartmoor would need further consideration in light of the anticipated priorities for MAP spending, and how these may change as overall conditions on the commons improve.

2.2.4 Questions V. How to construct agreements for different land ownership structures e.g. individual and group agreements, tenants, commons? and VI. How to deliver the required facilitation and framework for PBR on common land?

The project has not focused specifically on the question of different land ownership structures, as the decision has been to develop a scheme for enhanced management of Dartmoor commons. Commons management unavoidably requires a collective approach between owners and all rights holders, including a significant proportion of tenant farmers (reflecting landownership patterns). Thus, **our work has helped to clarify the most appropriate methods for constructing collective agreements on common land**, which represents one particular element within this wider question.

As regards the evidence concerning how to deliver the required **facilitation and framework** for PBR on common land, this **is addressed within the overarching theme of governance**, in this project.

2.2.4.1 Governance and the value of facilitation

The governance of Dartmoor commons, as described in section 2.1, is complex and multi-layered. Some commons are single territorial units while others are fragmented across several sites, and they vary considerably in extent. Grazing and non-grazing rights for specific types of animal (ponies, sheep

and cattle) exist on most commons and the 100-plus active graziers typically hold rights on more than one common; mostly their 'home common' plus rights on the largest area: the Forest of Dartmoor (11,300ha). Rights may be commoners' rights which are linked to ownership of adjacent or nearby properties, or rights endowed by landlords to their tenants, or specific 'adjisters rights' which accrued historically to the people who acted as overall superintendents for Dartmoor commons, in previous centuries.

Commons on Dartmoor are owned by a variety of landowners, public, private and third sector. The largest single landowner of commons is the Duchy of Cornwall estate, other owners include the National Park, water companies and Natural England, as well as estates and private individuals, a few of whom are also active graziers. Several commons have split ownership across their area.

Classifying by management rights, home commons can be divided into: 23 clusters over which rights are held by a specific group of graziers; three individual, larger commons which are themselves fragmented into several blocks; and nine commons which are single territorial units.

A large number of rights holders on each common are non-grazing, for a range of reasons. As rights are inherited when properties adjoining the moor are sold to new occupants, these people may not farm. In other cases, graziers hold many more rights than they can exercise under current AES conditions and so they only graze on a proportion of their total allocation. Further rights may be held by farmers who currently don't use the common but who might wish to, at some point in the future. Nevertheless, all those who hold rights have the ability to influence commons' management through their voting power within the individual Commons Association(s) that oversees their rights.

Current AES agreements are held by individual Commons Associations (CA), usually overseen via a separate Trust or Committee whose work is agreed by an internal deed. The majority of CA hold HLS agreements which were due to end or already ended, in 2023 or 2024. In the absence of a replacement scheme, HLS rollovers of between 1 and 5 years have been under active negotiation during the period of this study, via a difficult process leading to a considerable amount of local conflict and tension between commoners and Natural England. The situation led to a Parliamentary debate in April 2023 which triggered Ministers to establish a rapid, independent evidence review from a panel of experts led by David Fursdon, Lord Lieutenant of Devon. The panel convened in the summer of 2023 and reported in December 2023. As this report is finalised, we await the Government's response to the review findings and recommendations.

As a result of the governance arrangements described here, achieving AES agreements for the management of commons requires the Commons Associations, usually setting up a Trust, to act as the legal entity acting on behalf of its members that takes on the responsibility of delivering the required management of the Common in return for public payments.

Graziers on the commons generally support the ability to plan management on the basis of the functional grazing unit, which for many of them would be more than one single common. The lack of physical boundaries between the commons makes it difficult to approach their management singly, in an isolated way. The individual Commons Association is clearly the simplest unit of governance available, representing the collective interest, but it is quite often not the simplest scale at which to co-ordinate the grazing and other management activities with which grazing livestock will interact (e.g. swaling or cutting or fire management activities).

Considerable discussion with the Project Board and governance panel, as well as in larger gatherings of farmers over the project period, lead us to conclude that **the ideal scale at which scheme agreements should operate and be confirmed would be at a level embracing groups of commons across which the majority of rights are shared and/or between which boundaries are non-existent.** However, we also recognise that in order to make collective agreements involving more than a single Commons Association would require good coordination, cooperation and trust between the rights holders and owners of each participating CA. This takes time and effort to establish and currently, can only be identified in a very few cases on Dartmoor (e.g. there are a few examples of 'clusters' of commoners who have worked together to plan management activities across their commons – such as the 5 commons around Widecombe). In respect of the Forest of Dartmoor, the

fact that this common is split into several quite separate areas, with its two largest blocks serving as the 'more remote' grazing opportunity for around 10 surrounding 'home commons', would suggest that it could best be managed through a separate agreement covering each of these blocks of commons, rather than as one common on its own. Yet currently, it is treated as one separate common, with a single HLS agreement.

Given these challenges, we recommend that a new PBR scheme should have the capability to form agreements at either the single-common scale, or at the level of a group of contiguous commons areas, wherever such opportunities exist or can be fostered through scheme delivery and support processes. **Brokering more co-ordinated management actions and building trust between graziers and owners of adjacent commons would be a worthwhile and legitimate activity of the proposed core staff team, to encourage more multi-commons agreements, over time.**

For the particular case of the Forest of Dartmoor, it may prove possible to consider split agreements between different blocks on this common and in combination with the adjacent home common(s), in so far as rights' registrations allow. However, further discussion would be needed with graziers, owners and statutory agencies to ascertain how best to balance the pros and cons of such a change.

2.2.4.2 The Framework – distribution of payments among rights holders and owners

The work for this T&T has included investigation to better understand the challenges and issues surrounding the management of current AES on Dartmoor's commons. This has been particularly informed by the meetings of Commons Association Secretaries held twice during the project period, and also by the survey of CAs which was undertaken in the Autumn of 2023. It has generated many ideas and lessons concerning how to achieve a more effective and robust facilitation and framework for a future PBR scheme.

The survey showed that different commons have chosen quite different approaches to commons management, also to the governance of agri-environment schemes on the common and the division of resources between the range of potential beneficiaries, in each. It is clear from DCC records that overall, many more rights to graze on Dartmoor commons are held by farmers and other local residents in the linked parishes, also among tenants of landlords and as agisters' rights, than it would be reasonable to anticipate using, if the land is to be managed sustainably. The reasons for this are historical, dating from the 1965 registration of rights. DNPA (2006) suggests rights are held by somewhere around 800 registered rights holders. The CA secretaries, meeting with us in May 2023, were able together to suggest that there could be up to 200 active graziers on commons today. Dartmoor sustains grazing rights for approximately 145,000 sheep, 33,000 cattle, 5,450 ponies, and 12,330 other potential grazing units (Dartmoor National Park Authority, 2006). DHPA has estimated that around 1,000 ponies currently graze the commons, and a generous estimate might be of up to 45,000 sheep and 3,000 cattle. This would suggest that unused rights to graze could outnumber used grazing rights by around three to one for sheep, ten to one for cattle and five to one for ponies, not including the 'other' category, across the whole area of Dartmoor commons.

For those commons currently under HLS agreements, the Association or Trust administering payments under the scheme on behalf of a CA has to decide how to apportion payments between different types of rights holders: owners, graziers (who typically hold both active and inactive grazing rights) and non-graziers. In most cases all of these four categories receive payments under the scheme and individual allocations will tend to be apportioned at least partly on the basis of the number of rights held, as well as on these different categories and the different management components of the HLS (and underpinning UELS) agreement. On a specific common, the individual beneficiaries of an agreement might include more non-graziers than graziers.

Using some figures shared with us by secretaries, we can be more specific: in one case, the ratio of graziers to non-graziers is around 2:1, and of the overall number of around 6,000 rights expressed as livestock units, the graziers exercise only about one-quarter of that entitlement, today. However, to

agree to join the scheme on this common, all rights holders have equal votes and the owner has to also agree. So, non-graziers have one-third of votes while graziers have two-thirds and the owner has a casting vote. In two other cases, we know the way in which the total value of the HLS agreement is divided between the different categories of rights held. These are given in table 1.

Table 1. Division of funding between different types of rights holders on 2 Dartmoor commons

total annual payment	Common A	share	Common B	share
Graziers	Total	60%	Total	72%
	Active grazing rights	24%	Active grazing rights	51%
	unused grazing rights	36%	Unused grazing rights	21%
Non graziers	Unused grazing rights	28%	Unused grazing rights	18%
Owners*		4%		6%
Management/admin		7%		5%

* the convention is that owners are paid 10% of the funding; however public bodies are not able to receive such payments so if they own some of a common, the funding share to owners is reduced.

What this shows is that **decision-making is influenced very much by these different balances**, which vary between commons. On the commons cited in Table 1, more funding is allocated to unused grazing rights than to active grazing rights. On some commons, even where most of the agreement funding goes to graziers, the weight of voting is with the non-graziers. On some commons, voting is weighted by numbers of rights held rather than by each individual or family rights holder, in which case the voting power in the Association will mirror the financial division of AES payments.

The CAs survey was completed and returned by most of those CA secretaries who attended the meeting in October 2023 – representing 11 commons, in different quarters of Dartmoor. In total, their responses covered 16,800 hectares of common, which represents around 47% of the total commons area on Dartmoor. More detailed findings from the survey are given in Annex 5.

For these commons, we were able to make a rough calculation of stocking rates in both high season and low season. These gave an average rate around 0.26 LU/ha in the summer (high season) and only 0.1 in winter, even allowing for the retention of significant numbers of hoggets on a few commons in the winter months. These stocking rates are low in comparison with sustainable grazing rates as identified for well-managed SW moorland in Exmoor (around 0.3 LU/ha/year, on average).

The survey revealed significant variety in how CAs have chosen to operate their HLS agreements (where relevant), adopting different formulae to determine which roles (owner, active grazier, inactive grazing rights holder, etc.) should be paid what percentage of the total HLS payment on the common, adjusting for the number and type of rights held, and the mix of actions attracting different payment rates or applying to certain areas of land, within the HLS agreement. In most cases, a brief rationale was provided for how allocations are justified, showing that different commons have slightly different rationales and that the financial implications are varied for graziers/rights holders and owners.

Considering the management of HLS agreements, discussions in the Governance panel identified that the current governance of HLS on Dartmoor commons is less than ideal, because:

- A significant burden of responsibility for making decisions about how payments are allocated and how penalties should be applied, falls currently on Commons Association Chairs and/or secretaries, as these are the people who signed the agreements with Natural England or latterly the RPA. This can be daunting for people who may have no formal legal or accounting training and often limited ability to oversee the process of managing the commons in line with prescriptions within the agreement. If graziers or inactive grazier rights holders disagree with any decisions made, it can be difficult to find anyone to advise on how best to manage these challenging situations.
- No third party is available to offer free professional help or guidance to CAs in the ongoing management of their agreements, and NE or RPA support is also often scarce. As a result, a

wide range of standards of management is applied to these agreements with limited co-ordination or consistency in the principles that underlie key decisions about liability and reward. CA secretaries and commoners have agreed in our meetings that ideally, all such management should adhere to some common, transparent and fair principles that could help minimise the risk of misunderstandings or disputes.

- The fact that the Commoners Association must be identified as the only legal entity capable of signing a management contract on behalf of those using and managing the commons for grazing, means that when funds are paid for environmental land management, all those with commons rights perceive this as money which belongs to everyone in the Association. This applies even if they contribute nothing to active management of the common other than to refrain from putting their stock onto it (which may, of course, help to achieve prescribed reduced stocking levels, under the terms of the agreement).

The current situation places significant stress upon CA office holders, as the individuals who have to manage the division of funding between their rights holders/owners according to the specific rationales established for their common, in the absence of any benchmark or standard reference.

All survey respondents are keen for a new scheme to establish some general principles that could be applied consistently across all commons to guide the allocation of funding between different commons' stakeholders, based on transparent and fair criteria.

The mix of interests represented among CAs (with active graziers and those who do not graze any stock) can be a real barrier to agreeing effective management, even where considerable financial incentives are potentially on offer. For those commons which do not currently have a HLS agreement, more than one noted that it had proven difficult to reach consensus on how to respond to the agreement offer, leading to an impasse between commoners and thus no agreement being secured.

The Foundation for Common Land's Test and Trial work has developed an approach for the moorland SFI on commons. The SFI requires beneficiaries to spend time surveying the habitats on their common, which is judged as an activity which does not affect the conditions for anyone else on the common. So, in legal terms it does not have to be a 'deed', and payments can be made to those who have done the work, without an obligation to pay all rights holders. Nevertheless, those who wish to claim the SFI have to notify all commoners in advance, to give them an opportunity to be involved if they wish. If people do not react to the notification, they are deemed to have not objected, so the surveying can go ahead. Figure 3 illustrates what FCL suggests as the key ingredients of a model 'internal agreement' for commons to enter SFI, and what its contents might include. They also note these key elements: what is required of members; how disputes will be resolved; how changes in membership will be dealt with; what is expected of participants in order to get paid; how payments will be distributed; and payments for undertaking survey work.

Figure 3. Potential components of an SFI agreement on a common (source: FCL 2023.)

- For the administration of this agreement - £6.15 per hectare per annum.
- To the owner/s - £.....
- To the surveyors - £30 per point per annum. (not including VAT)
- For attending meetings – payment per meeting **or** for attending a percentage of the meetings each year
- General Contingency Fund - £..... to be held as a reserve and topped up each year as necessary.
- At the end of each year any remaining unspent money to be paid to all members **or** to all members who participated in discussions to evaluate the public goods potential and identify opportunities for those public goods
- On a pro rata basis calculated by dividing the remaining unspent money by the number of members **or** the number of rights held by the members

These examples are helpful in suggesting relevant themes for **common, transparent and fair principles to govern a future PBR approach on commons**. They highlight the need to consider separately, what share of funding should be devoted to those doing the active management and those attending meetings to decide what will be done, and what share to those who do not graze the commons, or who own the land but have not taken part in the activities of the SFI, who also must be part of the decision-making process. They also suggest the value of retaining some share of the funds for land management on a given area of common within a general contingency fund as a reserve, and offering the option of either an annual payment *pro rata* by the number of members (so, all get the same amount) or by the rights held (so, those with more rights get more funds).

For a PBR agreement, the significantly larger funds and greater commitments involved, by comparison with current SFI on commons, suggest that the content of an internal agreement would constitute a deed, and need be more detailed than these elements as illustrated for the SFI. It therefore seems clear that further work is needed to identify these details. Such work could form part of the specification of tasks for a PBR pilot that could follow this T&T. In that context, we note and commend principles from Defra's ELM commons working group, for internal agreements:

- foster positive relationships
- recognise existing rights and laws
- reward those who contribute to scheme outcomes
- provide a binding way to resolve disputes within the common
- provide a way to manage potential and actual breaches
- manage scheme agreements in a fair, transparent and professional manner for all legal interests, including considering risk management and rights.

Commoners and owners alike favour a future approach with stronger advice, feedback and support as well as more clearly delineated funding for specific targeted management action, working alongside the annual PBR review and reward system.

There are widespread calls for the new approach to be led/overseen by a body independent of Natural England, which has lost commoners' confidence, and which has a resource adequate to ensure sustained advice and ongoing dialogue with commoners. It is not seen as viable for individual Commons Associations to design and oversee PBR implementation without such additional institutional support, although there is an appetite for greater co-ordination between CAs, going forward. **A bespoke central staff team with the capacity to engage across the CAs has widespread support.**

The professional team would work closely with Commons Associations and Commons owners, to help them manage PBR agreements and undertake scoring and Management Action Planning, giving support and key quality assurance, verifying the scores and negotiating the activities to be included in the MAP to ensure that they are appropriate and feasible. The team should also manage the budget of the PBR scheme and oversee the negotiation of each agreement between CA(s) and the RPA.

The Commons Associations' Secretaries meeting held in early October emphasised CA secretaries' concern to have enhanced professional support and training, as well as a mechanism for dispute resolution and risk management, in the carrying out of their role. Many feel considerable personal responsibility for the delivery of agri-environment obligations and the allocation of scheme funds and scheme penalties between members; some believe that the RPA holds them personally liable for scheme performance. The professional team running the PBR scheme could provide them with much-valued support and backup. It was felt that currently, CA secretaries don't get support from anyone in the RPA or Natural England, to help them to manage their agreements.

The professional staff team would need to report to a higher-level governance body. Given the current low level of trust between farmers, graziers and owners and the various statutory agencies, an independently-chaired partnership has been suggested to fulfil this role. A suitable landscape-scale 'board/structure' in-between Dartmoor and CA scale, could be needed. It would clearly need to be trusted by both RPA and NE and to align with NPA goals and seek to balance stakeholder interests.

An accompanying role in respect of public engagement, to build wider understanding of the value of continuing active management of Dartmoor commons, for nature and for climate, seems also to be an essential component of the remit for such an independent body.

In late October, a meeting was held of the Governance panel (including 4 members – 2 graziers, one owner and the DCC chair), to consider the appropriate membership and terms of reference of the 'Board' which it proposed would oversee the work of the technical team supporting the PBR scheme. It was recognised that commons owners have legal responsibility for the condition of the protected sites in their ownership (e.g. SSSIs), as well as ongoing influence over many management actions on commons. They need therefore to be represented on any 'Board' overseeing the management of the PBR scheme on the commons. The group noted that DCC is both a regulator of commoners and a representative of their interests: this is not unusual – a similar dual role is held by the Verderers in the New Forest. It would also be an important member of the Board.

Overall, the Panel suggested that the Board would need to include: representatives of Commoners, commons owners, statutory agencies (NE, HE, DNPA, EA), DCC and perhaps other key stakeholder bodies. The DNPA could provide its secretariat but its chair should be independent. The Board would direct the work of the professional team, who might be employed by the DNPA for convenience, but should report to the Board, rather than to DNPA alone.

2.2.5 Question VII: How appropriate is PBR for large scale delivery with multi-participation?

Because of the closely interlinked nature of the component questions 1-6 in this Test and Trial, many discussions and interactions with Dartmoor farmers and other key stakeholders have covered them as essentially one developing conversation about a future scheme. This section therefore focuses particularly on what our work has revealed of stakeholder views about the best way forward and their interests in, and demands from, a PBR approach for commons.

The combined conclusions of the events and panel and other evidence sessions, by June 2023, was as shown in Figure 4. This gave some confidence in the appropriateness of PBR for large scale delivery on Dartmoor, in particular.

Figure 4. Summary of key points from farmer / owner meetings and workshops, June 2023

<p>Commoner enthusiasm for PBR scoring approach, positive about broad range of goals</p> <p>Governance – keen not to bypass CAs, but also recognising problems of transparency, fairness, burden on Secretaries: points to a hybrid approach where CAs formally involved but</p> <ul style="list-style-type: none">• higher-level principles of PBR operation and payment need to be set across commons;• Management needs to be co-ordinated across the commons units where most stock/systems cross boundaries. Need to consider the special case of ponies and their movements, too. <p>Key issues around fairness and influence – dangers and benefits of the rights allocation patterns</p> <p>Farmers may be the most pragmatic first-line assessors, but trust requires some mediating oversight of all scoring: a central team, with responsibilities for working with farmers across the territory – maybe borrow the CDO model from Wales, with some modifications</p> <p>NE and RPA must be confident in the system – focus for upcoming discussions</p> <p>Engagement not yet 'in people's sights', but it must underpin the credibility of the approach (need to find a pragmatic consensus with 'wilders' who can accept this is a grazed landscape AND fire issues resolved).</p>

By January 2024, in a summary note to DCOA members to support a presentation given at one of their meetings, the project team noted the key elements emerging from the work to date.

Our developing PBR scheme would have 3 essential components:

1. a basic, annual 'condition payment' - the land is surveyed and scored for its natural and socio-cultural assets, based upon the vegetation on the common, noting its structural and biological diversity and the influence of local hydrology and soil conditions. Scoring is tailored to take into account value for biodiversity, soil carbon, water protection, archaeology/history, accessibility and fire safety, at each sampled point. Scores are assigned between 0 and 10, and an average score is calculated across the whole management unit (for now, a single common). The average score is rewarded with a payment per hectare based on that score. In this way, the better the condition score, the higher the payment rate per hectare and the financial reward for good management;
2. an accompanying 3-year rolling programme of specific investments in additional targeted management action (we call this the 'Management Action Plan' or MAP), which is funded using a model similar to the capital works programmes under other agri-environment schemes, also drawing from experience with the FIPL scheme in National Parks and AONBs. For this, land managers (owners, graziers, other relevant actors) agree to carry out certain planned activities - such as a controlled swale of an area of the common to renew the vegetation and reduce wild fire risk, or a specific period of targeted cattle grazing using no fence collars, mineral licks and carefully placed supplementary feed in order to knock back *Molinia* dominating one particular part of the common, or some cutting of gorse and/or strimming of bracken around sensitive sites, or some tree planting or managed natural regeneration along steep valley sides, etc. The funding for MAPs would cover the identified costs of agreed management works, and be paid to whoever undertakes them, on production of receipts/other evidence to show that the work has been done and by whom (e.g. allows non-graziers to take part, if keen);
3. a professional team of staff to manage, facilitate and oversee the operation of these two elements of the scheme; advising and supporting farmers and owners and Commons Associations in all aspects of good commons management; training and certifying people to do the surveying work on the commons and auditing the quality of their work; and bearing some responsibility for the proper deployment of scheme funds through agreements between the RPA and scheme beneficiaries. This professional team might have a leader and perhaps four Commons Support Officers (CSO) each taking responsibility for working with a different group of commons, to make sure that all Dartmoor commons have a dedicated CSO who will work with them to plan management activities, undertake scoring and prepare and review MAPs, on an ongoing basis. The team will work in a co-ordinated way to agree and establish common principles and collective learning. Its work would be overseen by some kind of ELM partnership which brings together management actors (commoners and owners) plus the statutory agencies: similar to the land management group that has been proposed by the Fursdon review.

As explained in section 2.2.3, we believe this package could initially be funded with a similar scale of resourcing as is currently devoted to farm and environmental support schemes on Dartmoor commons (somewhere around £8m). Designing the rates in such a way as to provide a real incentive to improve the condition of the commons should then lead to a gradual growth in resources over time, but this would reflect the increased value of environmental benefits that it was delivering, so can be justified on that basis.

In conclusion, there is good evidence to support the case for PBR being applicable and feasible at the large scale that would be required for a scheme on Dartmoor's commons, and via collective agreements which enable multi-participation by farmers and others with a direct interest in commons management (owners and other rights holders, in particular).

Building on this, the next section of the report draws together all of our findings and describes how they have informed our trialling, before reporting the results of those trials.

2.3 Trialling a proposed PBR model for Dartmoor

2.3.1 The new scheme - how it would work

We propose that the scheme should have multiple goals, reflecting the range of public goods and ecosystem services that can be delivered by good management of Dartmoor commons. These include:

- Protecting natural and cultural capital - biodiversity, archaeology, landscape
- Ensuring ecosystem services and climate resilience - carbon storage/sequestration, water quality/cycling, fire management and control, enabling public access, supporting healthy livestock, promoting public engagement and understanding.

As set out in the previous section, the scheme should have three main components:

1. A PBR annual payment (based on average score over the common: from £50 to £700/ha, average around £250/ha) – the rate rises, as the condition improves
2. A c.3-5 year ‘management action plan’ (MAP) providing additional funding to invest in improving condition, on each common / ‘cluster’ of neighbour commons working together
3. A core support team – to oversee the scheme, provide help and negotiate each agreement, advise and review every year, update the MAP activities, help to professionalise CA agreement management, and keep monitoring records.

For the payment per hectare, PBR scoring would be based on surveying vegetation on the common, using a 10-hectare grid of regular sampling points across the common. It would be most efficient to use the same grid as will be used for SFI on commons.

Farmer-assessors would undertake the surveys, scoring at each point and digitally recording the results on all of them; then calculating an average value across the better 90% of scores, to allow for the fact that some types of positive management cause short-term significant changes in condition as part of regenerative cycles (e.g. recently swaled areas would score zero).

The score should reflect how the vegetation delivers against all goals, as appropriate for that site; and be consistent with how government agencies judge quality, for their specific goals.

MAP payments would be designed to fund any activities that deliver/ support one or more of the scheme goals (building on FIPL good practice and CS/ESA capital works approach), and be targeted at action that can most efficiently help to improve the scores on the common. Each ‘action’ is then paid for when the work is done, to those people who did the work. Eligible costs would cover both capital items and labour costs (using standard hourly rates, plus actual costs for equipment, etc.). MAP actions would be agreed with the core staff team, and designed to respond to the results of the scoring by pinpointing areas for targeted action, and planning for sustained improvement of condition.

At each sampling point, the scorecard records the presence and frequency (present, frequent, abundant) of typical/ appropriate herbaceous & mossy species & waxcap fungi, ranging from the more common varieties to those less so or rarer. It also judges the structure of the herbaceous vegetation (including the impact of grazing); whereby the standard for what is judged as ‘good’ varies by habitat type and the balance of priorities/goals for that particular location (e.g. whether in a PAL or an SSSI, popular for access, a key watershed, etc.). Elements that contribute to positive scoring would include the presence, number of species, and structure of dwarf shrubs. The presence of trees & scrub and natural regeneration might score positive or negative depending on the site and adjacent vegetation. Negative scores would be assigned on the basis of the presence of non-native species and other negative indicator species, also the impact of drainage on habitats and any erosion (e.g. of peat); the

impact of any supplementary feeding damaging the vegetation or soils; and any other damage caused by grazing activity. Scores would not be affected by damage that is caused by factors beyond the control of commoners/owners such as public access leading to erosion or littering or fire damage.

Governance - how would the scheme be set up and operated?

A central, independent staff team comprising a leader and ideally four support assessors would take responsibility for the operation of the scheme. Their role would be to:

- oversee and check the surveys and scoring, which is done by trained/approved CA members
- discuss with the land managers (CAs, owners, graziers) to agree activities in the MAPs
- provide support for management and delivery – e.g. dispute resolution, legal guidance, standard good practice guidelines, training for responsible officers of CAs, etc.
- liaise with statutory agencies and other key stakeholders to ensure their goals are met

One senior assessor would oversee several commons / clusters (building on the Welsh model of Commons Development Officers, which proved very successful and popular with graziers).

It is essential that Defra, NE / HE and RPA must have confidence in the collective entity signing any agreement and the specific responsibilities of rights holders and owners; be assured that management is consistent with site protection/ regulatory requirements; and know how controls would operate. The core delivery team would help to provide these assurances, through their work with Commons Associations, owners and graziers.

Engagement is also important, to provide information and accountability to a wider public. The core delivery team would work with DNPA, DCOA, CAs, DCC and others to educate, involve and inform the public about the value and importance of grazing, scrub control / regeneration and other management (so they understand what it's for, and can support it).

Finally, the core team would have a key role in setting consistent principles for who should get paid what, within the Commons' collective agreements.

The aim would be to uphold high standards of equity, transparency and probity in this process and to give Commons Associations confidence in how best to manage funds.

Scoring assessments should be made every 2 years, unless there is a good reason for surveying more often.

Funds should be focused on whoever actively manages the common, for the various benefits or goals desired. This could include active graziers, owners, other rights holders who agree to do some work, or even third parties who support with specific activities.

The core team would develop a model internal deed and recording process to enable Commons Associations to adopt the same standards. They would also set standards for what information should be made public; and for monitoring and evaluation requirements.

There is logic in a 'management unit' approach to making agreements, such that individual Commons, owners and Associations are formally involved, but can work in clusters/groups, to match how rights are shared and/or how management is co-ordinated/ interdependent between commons, considering 'natural boundaries' of stock grazing patterns and leers. Joint agreements between CAs could work in some cases, but not everywhere (e.g. fragmented commons that join others only in some places), so individual agreements with CAs should also be allowed. The staff team would encourage consistency and co-ordinated management across interconnected units. The MAPs could be joint between adjacent commons, even if PBR payments are allocated by individual commons agreements.

Defra should finance the approach as a 'special project' option under CS+, so it is stackable with SFI, but offers an alternative to a conventional CS agreement on commons. This enables any Association

to choose whether to opt for this PBR approach, or apply for a normal CS offer based on management prescriptions. Defra has signalled that it will announce more new CS elements in the summer of 2024.

Scheme budget

In view of the fragile economics of contemporary upland farming, given the consistent decline in support from the Basic Payment Scheme since 2020, we suggest that the total Dartmoor ELM budget for the moorland commons should be set at about the same as it was in 2020 for the Basic Payment Scheme and HLS/CS combined. Our best estimate suggests this stood at somewhere **over £7 Million per year**. This amount should be sufficient initially to cover all three component parts of the scheme: the PBR rate per hectare, the Management Action Plans for each agreement, and the costs of the core staff team and its management budget. Allowance would be needed for gradual budgetary growth as scores improve, over at least 3 years. The MAP approach would allow Commons Associations to spend whatever they agree as worthwhile and feasible additional management, working with the support of core team staff, to deliver maximum benefit and value for money.

The independent staff team would report to a Dartmoor-wide partnership. This could be a body very like the Fursdon Review's recommended 'Land Management Group', to oversee management across Dartmoor. This group would be composed of representatives of graziers and landowners, e.g. DCC, NFU, CLA, TFA, DCOA, the Duchy of Cornwall and DHPA; along with the statutory agencies – DNPA, NE, HE, EA, FC and RPA. It might also include representatives from local community interests, such as the Dartmoor Parishes and selected/most relevant NGOs.

2.3.2 Trials results

The above text describes the model of an approach which was trialled among a group of six commons in different parts of Dartmoor (north-east, north-west and south-east). The trialling involved graziers and owners going up onto the common to do a scoring exercise during December and January 2023-24, enabling an average score per common to be calculated. A follow up meeting then focused on the likely payment per hectare arising from the scoring as well as the actions that could form the basis of targeted MAP elements for that common. Whilst the scoring was completed on four commons, the follow up meetings included graziers from adjacent commons over which grazing rights are shared, meaning that commoners on 6 commons in total were involved in these discussions.

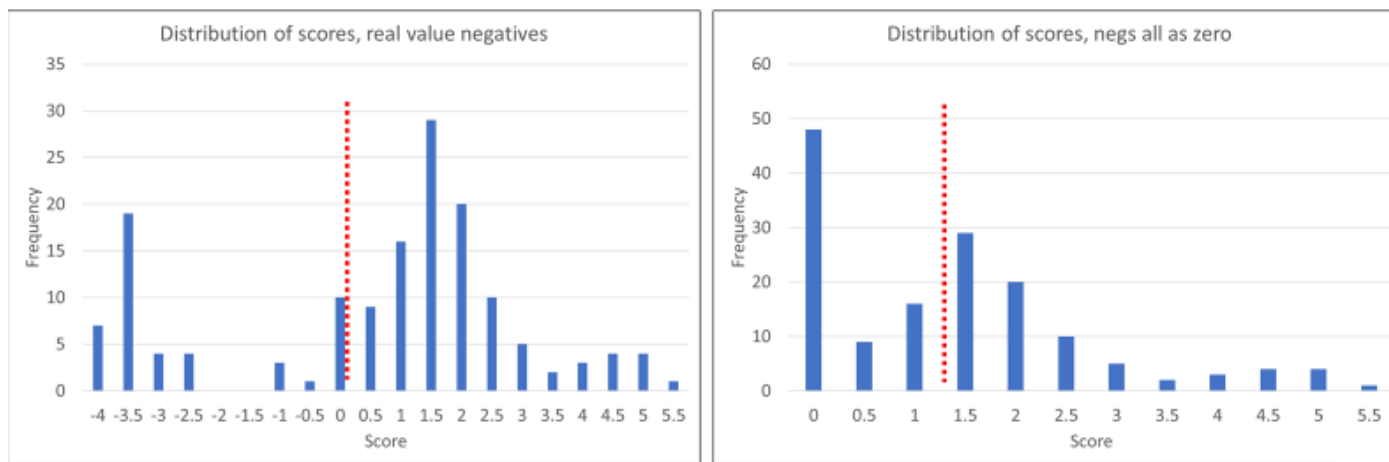
Two meetings were held with graziers and CA secretary of Lydford common, and with graziers, secretaries and owners of Harford and Ugborough as well as graziers, secretaries and owners of Gidleigh, Throwleigh and South Tawton commons, together, to discuss the surveying, scoring and management action planning for each group of commons. Those involved in undertaking the surveying reported that it had been achievable despite some challenging weather conditions; although they agreed that species recognition was very likely reduced by having to do this work in winter. It was also agreed that, had the surveys been conducted in May or June, a wider range of positive features was likely to have been recorded, implying that the scores at each point, and thus for the overall average, would be higher by perhaps a point or so.

In respect of the lowest scoring sites on each common, the influence of western gorse was particularly strong, as where it is the majority component in the sward, it attracts a strong negative score of minus four, reflecting its aggressive and dominant growth habit which will tend to crowd out other species. However, on reflection the group felt that this was probably rather too strong an influence in the overall average score and an argument was put forward to suggest that the score at any single sampling point should not go below zero, overall, since all vegetation has value by comparison with bare ground. Accordingly, a revised graph was made in which all negative scores were moderated to zero, meaning that the average score across the common was higher.

Figure 5 sets out the scoring results on the four commons surveyed and the average scores for each. As is evident in the graphs, the average scores were quite low, largely reflecting the dominance of

particular undesirable species in the sward on a proportion of sites. For three commons, the dominant negative scoring feature was western gorse, while for the fourth it was Molinia.

Figure 5. Average scores on all surveyed commons, under two different scoring conventions



Blue bars show how many sites scored that value
 Red dotted line shows the average (mean) score across all sites

On that basis, the overall average score which could be anticipated from these sites surveyed at a better time of year (May to September) would be around 2.5.

2.3.2.1 Scorecard learnings

The card was used in surveying by a range of commoners on each of the trial commons. It was found by them to be easy to use, even though the essentially unidirectional structure of Epicollect sometimes created minor repetition. Epicollect has a character limit, meaning that some questions were misunderstood by the surveyors (who had been given only brief training), as they had to be reworded to fit the limit. The fact that surveys had to be undertaken in December and January, given the time needed to set up the trials (as delayed by the NE HLS rollover/Fursdon review process) and the approaching end date of the project, most probably led to scores being consistently lower than they would have been had trials been possible in late summer, as originally planned.

Two issues ideally need further discussion with the relevant statutory agencies for Dartmoor.

- i. Where should the scorecard encourage, discourage or be neutral about a) existing scattered trees and scrub and b) natural regeneration?

The CSM allows up to 20% of these features on both dry and wet heaths, and in Scottish versions of the card they were rewarded (in line with NatureScot guidance). In Wales though, when scorecard designers held field visits on SSSIs with NRW specialists, the latter took a view that regeneration was never positive and were also neutral about the presence of any existing trees and scrub, on the basis that there was little enough good quality habitat as it was. The Dartmoor card currently reflects the Welsh situation, only rewarding existing trees and natural regeneration on bracken- or European gorse- dominated areas with no other specific interest. In discussion with a range of agency staff in the field on Dartmoor commons, it was questioned whether the card should reward the presence of scattered trees/scrub on dry and wet mosaics – or dry mosaics at least - and maybe encourage regeneration.

- ii. Dartmoor has many PALs, locally-acknowledged designations without regulatory backing which originated from a concern that its world class archaeological remains distributed at

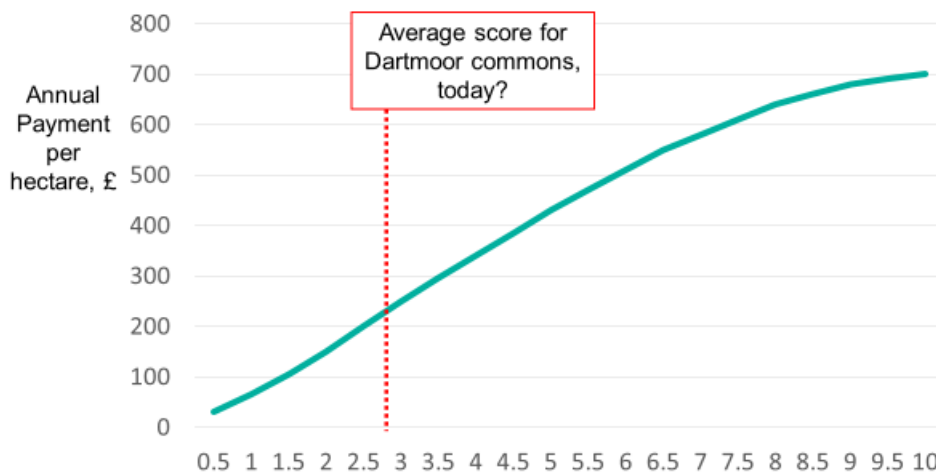
landscape scale, were being undervalued in comparison to biodiversity/nature value considerations, within site management decisions. Is the scorecard adequately balancing these values?

The card currently reflects what was understood to be the DNPA/agency-agreed compromise underlying the Dartmoor vision; favouring shorter vegetation within the boundaries of PALs, and not penalising existing scattered trees, but penalising natural regeneration on these areas. However, local managers have noted that this would mean maintaining only short vegetation over many square kilometres of common (- the scale of many of the PALs). Questions were raised on site, concerning whether the pattern of features within the PAL might allow for more varied cover at a micro-scale whilst still protecting the archaeology and retaining its visibility in the landscape, which could offer some benefit to species and lower management costs.

2.3.2.2 Payment considerations

In the context of the payment, a consideration of the appropriate range has been based on both the average cost estimation (which was around £225/ha, before considering the contribution of the SFI to this); and the need to have a top rate of payment which would be comparable to that offered for high quality semi-natural habitats in other landscapes and in the conventional CS approach. In addition, it was previously identified as important that the rate of increase of payments with average scores should be quite steep in the lower value range but then become shallower as condition improves above the mid-point of the scale. This generates a relationship between score and payment rate as shown in Figure 6.

Figure 6. Payment rate related to average score, for Dartmoor commons



2.3.2.3 Refining the approach – further issues and potential solutions

Low average scores, and payment challenges

It was discussed at the Project Board that scoring based mainly on vegetation characteristics cannot give weight to all the goals that the new approach aims to include, and therefore will underplay the value of commons and their assets, when surveyed and scored.

It would be possible to address this by adding a baseline score to cover carbon storage and sequestration, fire control, and good access, as assessed for the common as a whole (adding up to 2 points to the average).

Alternatively, or in combination, discussion in the trials meetings with commoners and commons owners revealed that there is some interest in having a baseline standard of 'responsible commons management' that might underpin the quality scoring, thereby resulting in higher scores.

Possibly, this second approach could even create a separate portion of the scheme payment that could be shared across all rights holders, both active and inactive graziers as well as owners, on the basis that they can all contribute something towards this baseline standard. The standard could be applied consistently across all the commons, but it might also incorporate particular activities or responsibilities tailored to the needs of each common, as agreed between the commoners and the core staff team.

The rationale for a baseline standard is two-fold:

1. it could aim to involve all rights holders in considering and promoting a notion of 'good behaviour' over the land and collectively contributing to this, reducing the risk that currently inactive rights, or other anti-social behaviour on the commons, might be mobilised in ways that undermine the positive management of active rights holders, owners and others who take time to contribute to MAP actions.
2. It would give a modest financial encouragement to inactive rights holders to accept the new payment approach, in which a larger share of the scheme payment is only available to those who actively manage the common. If inactive rights themselves attract no funding in our new approach, there is a significant risk that these rights holders could vote down any move to join the new scheme, as their collective rights often exceed those of active graziers.

To avoid the risk of what currently happens, where more agreement funding goes to inactive rights than to active rights held, on some commons, the core team could prescribe that any baseline standard such as this should attract no more than a certain payment per hectare – perhaps £15, making it similar to SFI in scale and significance.

2.3.2.4 Highest-level governance

Some graziers and owners have queried whether a broad partnership of several different organisations can be fully effective, in acting as the responsible body to whom the core staff team would report. It would be possible to consider alternatives, but this would require building a much stronger level of trust between farmers and owners and the statutory/public agencies and institutions, to enable all the relevant actors to have confidence in the scheme. Of the latter, Dartmoor National Park Authority is one body which has the broadest remit in respect of the goals of good management of the commons.

Finally, it should be emphasized that a significantly reduced budget for an approach such as this (i.e. attempting to operate it with lower payments than we have suggested are needed), would put everything in jeopardy, by comparison to the outcomes predicted in this report. We hope that this provides a strong case for why this level of support offered within a PBR scheme for Dartmoor commons represents very good Value for Money for taxpayers and citizens, particularly when compared against the current dysfunctional management situation, as catalogued in the Fursdon review report, and considered in light of the predictions by Duverne and Pages about what would happen, if BPS is phased out without providing a positive new offer for this precious high-nature-value protected landscape.

3. Next Steps

The project has delivered against the overall goals and outcomes, after two modifications and a number of minor adjustments to timing and tasks, which were pre-agreed with Defra and the Project Board.

There were no changes to the timeline of work, but some changes to milestones. We developed the draft payment schedule alongside the refining of the scorecard for trialling, in September/October 2023. Trials were then conducted between November 2023 and February 2024, just prior to project completion.

3.1 Challenges to scheme development

The current lack of consensus over the appropriate management to achieve goals for nature conservation on Dartmoor commons, between commons graziers, Natural England and a wide range of other experts and interested parties, is a stumbling block for the achievement of a firm foundation on which the PBR needs to be established. In particular there is considerable tension around the calls for 'rewilding' coming from third parties and in some ways influencing local decision-making on, for example, landowner's permission for graziers to swale sites with overgrown vegetation, and stock management to enable habitat recovery.

The situation has come to a head during work on this T&T, in the separate process of NE negotiating HLS rollovers on commons, and this led to the Fursdon evidence review which gathered its evidence in August to November 2023 and then reported at the end of 2023. The process of evidence-gathering involved most of the stakeholders who had been engaged in the T&T, thereby leading to some significant delays in achieving certain milestones and key deliverables while they prepared and submitted documents to the review and participated in meetings and field visits with Fursdon panel members. Nevertheless, the review process was helpful in enabling all parties to set out their knowledge and evidence concerning what they regarded as 'optimal grazing management' on Dartmoor commons, significantly broadening perspectives beyond those that had been dominating the NE negotiations, derived from NE's own assessment.

The project lead for this T&T, with the approval of the Project Board members, submitted written and oral evidence to the Fursdon review process. Her written evidence is provided at Annex 7 to this report, as it gives useful background to understanding the context which has led to this T&T and the persistence of concerns among farmers, owners and other stakeholders, whilst they await Government's response to the Review findings and recommendations.

It is to be hoped that the Government response to the review will be able to bring the parties together to review the reasons for their differences and to seek to find more common ground in respect of the desired future direction of change in management on Dartmoor commons. This is the most significant risk to successful delivery of these PBR proposals that we have identified, to date, as the initial agreement of desired outcomes from management is an essential first step in designing and operating a successful PBR package.

More limited farmer engagement during the Fursdon review process was a factor influencing some elements of project under-spend in respect of claims for farmer time in association with the trials process. Nevertheless, we received strong support from all 6 trialling commoners' associations and all have indicated that they would be keen to move on to a pilot, should this prove feasible in 2024/5.

3.2 Piloting the approach

Subsequent to the trials completing, we have discussed these outcomes and issues for further refinement with both the Project Board and with the commons' associations involved in the trials. Some relevant discussion also took place in the final open meeting held at Postbridge village hall on 19 March 2024, and at the day of the policy visit by Defra officers, on 21 March 2024. We are confident

that there would be support and a high level of farmer engagement for running a pilot scheme between 2024 and 2026, on Dartmoor commons. We note that Natural England has specific 'experimental powers' conferred through its incorporation of the former Countryside Commission remit for landscape and public enjoyment, which could offer the necessary flexibility to operate such a pilot in partnership with the National Park Authority, Dartmoor Commoners' Council and the other members of the current T&T Project Board, including the Duchy and a number of farmers and commoners. Piloting on Dartmoor commons could be part of wider work to experiment with new approaches to SSSI management, which we understand are currently being considered.

The pilot could take place on the 6 commons that participated in the trials, which cover c.5,000 hectares. We suggest that might ideally require an operating budget somewhere around £1 million, but it could be possible to pilot with a more modest investment, on a proportion of these commons.

4. Acknowledgements

Janet Dwyer and Gwyn Jones would like to express thanks to all those farmers, graziers, tenants and landowners and other commons rights holders who gave significant time, effort and enthusiasm to the project through meetings, workshops, field events and email exchanges. We also wish to thank the agency staff and other stakeholders who also supported our T&T work and deliberations, especially Chris Giles, Ellie Litobarski and Kevin Bishop of DNPA whose support throughout was invaluable, and John Waldon and the other Project Board members: Philip French of DCC, Ann Wilcocks, Shirley Mudge, Russell Ashford, Tom Stratton, and Eamon Crowe. Tracy May, Steve and Crispin Alford, Mary Alford, Colin Abel, David Attwell, Helen Radmore and John Howell also gave generously of their time and knowledge, for which we are very grateful.