Malvern Hills National Landscape

Apportionment of PLTOF Targets 1 and 8

Final report
Prepared by LUC
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Chapter 1
Introduction

1.1 LUC was appointed by the Malvern Hills National Landscape (MHNL) in December 2024 to help apportion the contribution towards the Protected Landscapes Targets and Outcomes Framework (PLTOF) 'apportioned targets', which will be delivered within the MHNL boundary.

1.2 The box below contains a summary of the PLTOF and information on the targets to be apportioned. Target 7 is not relevant to the MHNL as there is no peat within the National Landscape boundary.

Protected Landscapes Targets and Outcomes Framework

What is the Protected Landscapes Targets and Outcomes Framework (PLTOF)?

Published by the Government in January 2024, the PLTOF establishes ambitious targets for National Parks and National Landscapes. It recognises the crucial role these nationally important landscapes play in achieving positive changes for nature, climate, people and place. The PLTOF builds on new legislation in the Levelling Up and Regeneration Act (LURA) that strengthens how relevant authorities must further the purposes of Protected Landscapes and help develop and implement management plans. The targets are for the 'place' and will be delivered by a range of partners through National Park / National Landscape statutory management plans. The targets set the ambition for how Protected Landscapes will achieve the following three outcomes from Defra's Environmental Improvement Plan (EIP):

- Thriving plants and wildlife
- Climate mitigation and adaption
- Enhancing beauty, heritage and enhancement with the natural environment

Defra has selected ten targets for Protected Landscapes and partners to prioritise and focus on delivery. These prioritised EIP targets are those that are most relevant to National Park and National Landscapes' statutory purposes, with monitoring data available at the right spatial level, and which Protected Landscapes bodies have the ability to influence through mobilising partners (through their statutory Management Plans).

Three targets to be apportioned to individual Protected Landscapes

Three of the ten targets need to be apportioned (shared) to more accurately reflect the local circumstances of individual Protected Landscapes. These are:

- **Target 1 - Wildlife-rich habitats**: Restore or create more than 250,000 hectares of a range of wildlife-rich habitats within Protected Landscapes, outside protected sites by 2042 (from a 2022 baseline).
- **Target 7 - Peat:** Restore approximately 130,000 hectares of peat in Protected Landscapes by 2050.
- **Target 8 - Increased tree canopy and woodland cover**: Increase tree canopy and woodland cover (combined) by 3% of total land area in Protected Landscapes by 2050 (from 2022 baseline).

Chapter 2
Existing habitat and defining opportunity and ambition

2.1 Figure 2.1 shows a flow diagram setting out the steps that should be followed to apportion the targets, as set out in the PLTOF guidance circulated by Natural England. This report mainly covers Steps 1, 2, 3 and 4. The Local Nature Recovery Strategies have undergone extensive public consultation, addressing Step 4.

Figure 2.1: Guidance for Apportioning Targets supplied to National Landscapes by Natural England

Step 1: Understanding where the Malvern Hills NL is starting from

2.2 The first step is to understand the current extent and type of habitats/woodland which are characteristic of the MHNL landscape (also referred to in this text as stock). There is some overlap between the stock data for Target 1 and Target 8. For example, new deciduous woodland, wood pasture and traditional orchards will count towards the existing baseline for both Target 1 and Target 8.

Target 1: Existing stock

2.3 The Priority Habitat Inventory[1] (PHI) data provide a good starting point to understand which type of semi-natural habitats might be appropriate within the MHNL. Table 2.1 shows the existing stock for each PHI type in the National Landscape.

2.4 30.46% of the MHNL is currently Priority Habitat (23rd out of 44 PLs in England, by percentage of PL area). As shown in Table 2.1, the majority of this PHI is deciduous woodland.

Table 2.1: Existing PHI stock in the Malvern Hills (from NE data). Some of the PHI categories will also contribute to the stock of Target 8.

Existing habitat	Area (Ha)	% of PL
Deciduous woodland	1,890	17.74
Good quality semi improved grassland	317	2.98
Lowland calcareous grassland	12	0.11
Lowland dry acid grassland	581	5.45
Lowland meadows	125	1.17
No main habitat but additional habitats present	163.92	1.54
Traditional orchard	160	1.5
Total Priority Habitat	**3,248.08**	**30.46**

Target 8: Existing stock

2.5 The Malvern Hills is the 5th most wooded Protected Landscape in England (as a proportion of the total area), with almost 32% woodland/tree canopy coverage. Table 2.2 shows a breakdown of the different types of woodland currently present within the MHNL.

Table 2.2: Existing tree canopy and woodland cover within the Malvern Hills National Landscape

Existing tree canopy and woodland cover		Area (HA)	% of PL
National Forest Inventory Combined		**2,486.02**	**23.31**
National Forestry Inventory categories	Broadleaved	2,022.67	
	Conifer	163.26	
	Felled	37.65	
	Ground prep	0.76	
	Mixed	145.58	
	Shrub	11.49	
	Young trees	94.38	
Trees outside of woodland		**920.79**	**8.63**
Total tree canopy and woodland cover		**3,406.82**	**31.95**

[1] The Priority Habitat Inventory is a spatial dataset produced by Defra/Natural England that maps priority habitats identified in the UK Biodiversity Action Plan and listed as being of principal importance for the purpose of conserving or enhancing biodiversity, under Section 41 of the Natural Environment and Rural Communities Act (2006).

Ancient woodland

2.6 Approximately 800 hectares of woodland are defined as ancient semi-natural woodland (ASNW).

2.7 Ancient woodland replanted/Plantations on ancient woodland sites (PAWS) constitute 440 hectares (or 4.13% of the MHNL area). This is primarily within the 'Highly wooded landscapes' Simplified Landscape Type (see Table 2.3). Restoration of PAWS would contribute to both Target 1 and Target 8.

What is current progress relevant to the targets?

2.8 The most recent Annual Reviews for the Malvern Hills National Landscape (2023-24[2] and 2024-25[3]) include the following achievements, some of which are relevant to Target 1 and/or Target 8:

- 33 ha of traditional orchards were restored or planted anew at 24 sites.
- Over 16 ha of wildflower meadows were restored or managed at 6 sites.
- 15 ha of woodland was created or managed at 3 sites.
- 791 m of hedges have been laid, gapped up or planted at 6 sites.
- 600 new trees were planted to protect ancient woodland and slow the flow of water across land in Alfrick.
- 68.2 ha of habitat was conserved or enhanced for biodiversity.
- 29 new parkland trees were planted in 3 old parklands.
- 39 new trees were planted in the historic Hope End Park near Ledbury.

Step 2: What is the priority and opportunity for the Malvern Hills?

2.9 Target apportionment for the MHNL should be informed by those who work and manage the landscape. The direction of travel for the targets can be tailored to the local landscape character, special qualities of the Protected Landscape, and to reflect local circumstances and priorities.

2.10 The targets should also aim for an ecologically functional landscape, in line with the principles set out in the Lawton report[4]. Ecologically resilient landscapes should comprise at least 30% of land as semi-natural habitat in a connected network. While the area of semi-natural habitat within the MHNL already exceeds this figure, semi-natural habitats are not evenly distributed and connectivity between areas of semi-natural habitat could be enhanced.

2.11 Examples of considerations that will need to be taken into account in deciding the priority and opportunity for the MHNL include the following (non-exhaustive list). Priorities/opportunities will vary across the MHNL (due to factors such as landscape type, land ownership, historic land use change, etc.):

- Is the priority to restore landscapes towards what they were like when the MHNL was first designated in 1959? For example, should scrub and woodland be removed to restore former grassland? Should arable land be reverted to pasture? Some priorities may be established by prescriptions for Sites of Special Scientific Interest (SSSI).
- Should the targets in the PLTOF be used as a catalyst for the evolution of the MHNL to respond to the climate and nature crises and develop multi-functional and resilient landscapes? This should comprises a diverse mosaic of habitats which are well connected across the MHNL.

Table 2.3: Simplified Landscape Types and coverage within the MHNL

[2] https://www.malvernhills-nl.org.uk/wp-content/uploads/2024/06/23-24-MHNL-Annual-Review-FINAL.pdf
[3] https://www.malvernhills-nl.org.uk/wp-content/uploads/2025/08/24-25-MHNL-Annual-Review-FINAL.pdf
[4] https://www.researchgate.net/publication/268279426_Making_Space_for_Nature_A_Review_of_England's_Wildlife_Sites_and_Ecological_Network

Simplified Landscape Type (from NL Nature Recovery Plan, 2022)	Component Landscape Character Types (2011)	Coverage of the National Landscape (hectares and percentage of total area)
Unenclosed landscapes	High Hills and Slopes Unenclosed Commons	1,198.78 hectares 11.3%
Highly wooded landscapes	Principal Wooded Hills Wooded Hills and Farmland	4,848.64 hectares 45.5%
Pastoral landscapes with Frequent High Nature Value habitats	Enclosed Commons Forest Smallholdings and Dwellings Settled Farmlands with Pastoral Land Use	1,404.65 hectares 13.2%
Pastoral landscapes with Fewer High Nature Value habitats	Principal Timbered Farmlands	2,275.89 hectares 21.4%
Predominantly arable landscapes	Sandstone Estatelands Settled Farmlands on River Terraces	635.69 hectares 6%
Urban	Urban	291.82 hectares 2.7%

Pro rata targets

2.12 While the PLTOF targets are not being imposed, a helpful starting point is to 'pro-rata' the targets based on the area of the particular Protected Landscapes. The box below shows the 'pro-rata' target for the MHNL, based on land area.

Target 1: If the target was pro rata'd based on the area of the MHNL without any local factors, this would be **842.25 ha**. This is equivalent to **42.11 ha** per year between 2022 and 2042.

Target 8: If the target was pro rata'd based on this MHNL area (i.e. 3% of the Protected Landscape area) without any local factors, this would be **319.91** ha. This is equivalent to **11.43 ha** per year between 2022 and 2050. The total amount of woodland within the Malvern Hills in 2050 would then be **3,726.73 ha** (35% of the Malvern Hills area).

NCA profiles: Statements of Environmental Opportunity and Landscape opportunities

2.13 The National Character Area (NCA) profiles contain detailed Statements of Environmental Opportunity and Landscape opportunities, including some which relate to the PLTOF targets. While these provide useful information on potential opportunities, it should be noted that these were written in 2013/14 and may not reflect the need for some areas to undergo ambitious landscape change to address climate change impacts and biodiversity decline.

2.14 The profile for National Character Area 103: Malvern Hills, includes the following:

- Statement of Environmental Opportunity 1: Conserve and appropriately manage the highly distinctive range of the Malvern Hills and the areas of semi-natural habitat in the wider character area, such as woodland and traditional orchard, providing economic opportunities, fostering community participation.

  - Restoring traditional orchards and improving the species diversity of grasslands, especially species rich unimproved grassland and including lowland meadows, especially those in close proximity to existing areas to increase their important biodiversity resource.
  - Restoring plantations on ancient woodland sites.
  - Managing and restoring species rich meadows and daffodil meadows.
- Statement of Environmental Opportunity 4: Plan for an expansion of semi-natural habitat where appropriate so that a significant ecological network is created and interconnected to adjoining areas. This will increase biodiversity, pollination, food and drink production, as well as regulate soil erosion, water and soil quality, reinforcing a strong sense of place.
  - Adopting a planned and measured approach to the creation of new areas of semi-natural habitat which will support existing wildlife habitats and species of importance in the area,
  - Utilising locally appropriate corridors to create physical links between semi-natural habitats, for example flower rich verges, species rich hedgerows and copses.

Landscape opportunities

2.15 The following landscape opportunities are included within the Malvern Hills NCA profile:

- Plan for expansion of various habitats, principally traditional orchards, meadows, and broad-leaved woodland to create an interconnected habitat network in accordance with landscape character. Networks should consolidate and connect with neighbouring networks in the Teme Valley and Severn and Avon Vales NCAs.
- Manage hedgerows to maintain their presence in the landscape, thus ensuring continuity of the distinctive boundary pattern of small pastures and fields. Establish and nurture new hedgerow trees and manage existing mature hedgerow trees to provide continuity of the veteran tree resource.
- Protect and manage historic parklands to retain their important contribution to landscape character and sense of history and to conserve their important deadwood fauna. Management of parklands should include establishment of new generations of trees, appropriate management of mature and veteran trees and retention of dead wood.

Step 3: What other targets and strategies are happening in the Malvern Hills?

2.16 In line with Step 3 of the PLTOF guidance, the targets are intended to complement existing targets/strategies, and many actions that are already being undertaken within Protected Landscapes will contribute towards the PLTOF targets.

30by30

2.17 For the 30by30 initiative, the UK has committed to protect 30% of land and sea for nature by 2030, aligning with the Global Biodiversity Framework agreed at COP15 in 2022. This target is embedded in the Environmental Improvement Plan (2023) and supports legally binding goals under the Environment Act 2021. 30by30 Aims to halt and reverse biodiversity loss, restore ecosystems, and support climate resilience. It also contributes to wider objectives: cleaner water, food security, flood protection, and nature recovery.

2.18 England's Protected Landscapes are viewed as being at the heart of 30by30 delivery[5], with an expectation that they contribute significantly to meeting the 30% target.

2.19 The delivery scenarios presented in this report should be viewed as contributions towards wider national ambitions such as 30by30, rather than a complete accounting of protected and well-managed land.

[5] https://assets.publishing.service.gov.uk/media/65807a5e23b70a000d234b5d/Delivering_30by30_on_land_in_England.pdf

Existing designated sites, priority habitats and effective management of the current ecological network already make a substantial contribution towards 30by30 within the Malvern Hills National Landscape.

Malvern Hills Nature Recovery Plan

2.20 The Malvern Hills Nature Recovery Plan was published in March 2022 and aims to halt biodiversity loss and restore nature across the MHNL and its wider setting. It focuses on improving habitat condition, creating larger and connected habitats and engaging communities. The plan prioritises land management for nature, strengthening connections between people and wildlife, and integrating the MHNL into the regional Nature Recovery Network. It also outlines short-term actions and monitoring indicators to track progress.

2.21 The Nature Recovery Plan does not include specific area-based targets for wildlife-rich habitat and woodland/canopy cover (it is the intention that the targets set out in this report will help to do this and in so doing, will enhance the Nature Recovery Plan). It sets out land management priorities by 'Simplified Landscape Type' (derived from the 2011 Malvern Hills LCA), as shown in Table 2.4. These can be used to tailor which habitats should be targeted in specific locations in the National Landscape.

Table 2.4: Land management priorities for each of the Simplified Landscape Types within the Malvern Hills Nature Recovery Plan

Simplified Landscape Type	Land management priorities relevant to Target 1	Land management priorities relevant to Target 8
Unenclosed landscapes	■ Regular management will be needed to keep a mosaic structure on the slopes where bracken and brambles may otherwise dominate.	■ Using grazing and scrub clearance to maintain a balance between open land, scrub and, where present, woodland.
Highly wooded landscapes	■ Conserving remaining traditional orchards, using restorative pruning to prolong the life of old trees as well as restocking with traditional varieties on standard rootstocks. ■ Conserving veteran trees in parkland and wood pasture and restocking with new trees.	■ Where ancient woodland have been planted with conifers, their replacement with native broadleaves.
Pastoral landscapes with frequent High Nature Value habitats	■ Enhancing the diversity and species richness of previously 'improved' grasslands through the introduction of wildflower and grass seed. ■ Conserving remaining traditional orchards, using restorative pruning to prolong the life of old trees as well as restocking with traditional varieties on standard rootstocks.	■ The creation of appropriately sized new woodland, connecting existing woodland and other habitats, integrating trees into productive land through agroforestry or silvopasture.
Pastoral landscapes with fewer High Nature Value habitats	■ Enhancing the diversity and species richness of previously 'improved' grasslands through the introduction of wildflower and grass seed. ■ Retaining, protecting and expanding watercourses, field ponds and wetland	■ Planting hedgerow and field trees to achieve a diverse age structure, providing shade for livestock, ecological variety and contributing to landscape character.

Simplified Landscape Type	Land management priorities relevant to Target 1	Land management priorities relevant to Target 8
	areas, ensuring clean natural water supplies.	
Predominantly arable landscapes	■ Leaving unfertilised rough grass margins (ideally sown with wildflower and grass seed) around all fields to buffer hedges and watercourses, provide winter shelter to wildlife and food for insects.	■ Creating new woodland in blocks or belts, connecting existing woodland and other habitats. ■ Maintaining a diverse age structure of hedgerow trees, establishing new trees in anticipation of the loss of ash trees due to ash die back.

2.22 A breakdown of the existing priority habitat inventory habitats present within each of the simplified landscape types is shown in Table 2.5 below:

Table 2.5: Existing type and amount of priority habitat within the Simplified Landscape Types

	Simplified Landscape Type				
	Unenclosed landscapes	Highly wooded landscapes	Pastoral landscapes with frequent High Nature Value habitats	Pastoral landscapes with fewer High Nature Value habitats	Predominantly arable landscapes
Deciduous woodland	327.38	1379.64	55.48	96.22	24.03
Good quality semi improved grassland	41.12	204.90	24.74	43.47	0.00
Lowland calcareous grassland	0.01	9.82	2.02	0.00	0.00
Lowland dry acid grassland	556.64	21.77	2.11	0.00	0.00
Lowland meadows	17.50	40.34	15.12	42.69	0.00
No main habitat but additional habitats present	57.82	94.47	2.55	8.78	1.45
Traditional orchard	16.22	68.16	12.17	44.75	8.92
Wood pasture and parkland	2.10	516.91	0	67.96	0.00
Total area of LCT with existing PHI (ha)	**1018.79**	**2336.00**	**114.19**	**303.87**	**34.40**
% of LCT with existing PHI	**84.99**	**48.18**	**8.13**	**13.35**	**5.41**

2.23 As noted in paragraph 2.10, ecologically functional landscapes should include at least 30% of the land area as semi-natural habitat. While the MHNL as a whole exceeds this, the data in Table 2.5 shows the distribution of the habitats within the Simplified Landscape Types, with the majority of existing semi-natural habitat (Priority Habitat) within the 'Unenclosed Landscapes' and 'Highly Wooded Landscapes' Simplified Landscape Types.

Table 2.6: Existing area of trees outside woodland within the Simplified Landscape Types

	Simplified Landscape Type				
	Unenclosed landscapes	Highly wooded landscapes	Pastoral landscapes with frequent High Nature Value habitats	Pastoral landscapes with fewer High Nature Value habitats	Predominantly arable landscapes
Trees outside of woodland	36.2 ha	329 ha	116.3 ha	202.3 ha	36.5 ha
% of LCT with existing trees outside of woodland	**3%**	**6.8%**	**8.3%**	**8.9%**	**5.7%**

Local Nature Recovery Strategies

2.24 Local Nature Recovery Strategies (LNRS) are statutory spatial plans introduced under the Environment Act 2021 to help deliver national biodiversity and nature recovery targets at a local level. They aim to identify priorities for nature recovery, map existing valuable habitats, and propose practical actions for habitat creation, restoration, and connectivity.

2.25 MHNL contains land within three LNRS areas: Herefordshire, Gloucestershire and Worcestershire. It was decided through discussions with the MHNL that aligning the spatial outputs from the LNRS for each area with the PLTOF targets would provide the most accurate and ambitious yet achievable target figures.

2.26 At the time of writing, the emerging LNRS are at different stages of development. The most up-to-date available data has been used, although the calculations will need to be updated as the outputs for each LNRS area are refined and updated.

2.27 It should be noted that the LNRS spatial datasets used in this analysis do not represent an exhaustive map of all potential habitat opportunity areas, but focus instead on priority areas of opportunity. As such, there may be additional opportunities for habitat creation and restoration beyond those mapped and reflected in this report.

2.28 The detailed rationale for reflecting the mapped LNRS measures within the PLTOF targets is included in Appendix A.

Identifying ambition

2.29 The ambition within the different landscape types within the MHNL will vary. This section sets out the considerations for each of the Simplified Landscape Types that have emerged through reviewing the Nature Recovery Plan, National Character Area profiles, National Landscape Management Plan and the existing habitat data.

Unenclosed landscapes

- 85% of this landscape type is already priority habitat/woodland and cannot count towards the areas for Targets 1 and 8 within the PLTOF.
- It is unlikely that additional woodland should be targeted in this landscape type, as this landscape type has already experienced significant woodland expansion in the 20th century due to changes in grazing regimes.
- Some removal of more recently established woodland to create opportunities to restore open habitats is likely to be appropriate, reflecting the historic extent of open areas.

Highly wooded landscapes

- Potential for some expansion of existing woodland, particularly to connect separate areas of woodland and provide linkages between habitats.
- Reinstatement of traditional orchards.
- Restoration of plantation on ancient woodland sites (PAWS).
- Opportunities exist for the expansion of existing wood pasture and parkland, as well as the reinstatement of lost parkland areas.
- Restoration/reinstatement of hedgerows and hedgerow trees.

Pastoral landscapes with frequent High Nature Value habitats

- Silvo-pasture systems to increase canopy cover while retaining the existing agricultural land use.
- Wood pasture and parkland creation and restoration.
- Buffering and linking of existing habitats including woodland areas.
- Restoration/reinstatement of traditional orchards.
- Restoration/reinstatement of hedgerows and hedgerow trees.
- Restoration and creation of species-rich grassland.

Pastoral landscapes with fewer High Nature Value habitats

- Establish new hedgerows and hedgerow trees, particularly to reflect historic patterns of enclosure.
- Wood pasture and parkland creation and restoration.
- Buffering and linking of existing habitats including woodland areas.
- Wetland creation along stream corridors.
- Creation of open habitats associated with woodland.
- Restoration/reinstatement of traditional orchards.
- Restoration and creation of species-rich grassland.

Predominantly arable landscapes

- Establish new hedgerows and hedgerow trees and reflect historic patterns of enclosure.
- Arable reversion to pasture (e.g. species-rich grassland).
- Opportunity to convert areas to semi-natural habitat or agroforestry.

Chapter 3
Devising targets for the Malvern Hills National Landscape (Step 5)

3.1 As noted in Chapter 2, it was decided that aligning the spatial outputs from the LNRS for each area with the PLTOF targets would provide the most accurate and ambitious yet achievable target figures. The LNRS have also been through extensive consultation and revision, which aligns with Step 4 of the Apportionment process. This chapter describes how the different LNRS were used to devise the PLTOF targets.

Rationale for reflecting LNRS measures in the PLTOF targets

3.2 The first step was to decide which of the LNRS measures could lead to the creation of wildlife-rich habitat. Measures relating to specific species or the management of existing habitats were excluded from the measures used to inform the targets. The measures from each LNRS used to inform the targets are included in Appendix A.

3.3 The second step was to assess how the mapped areas of each of the LNRS measures had been derived. The area of land mapped in each LNRS measure needs to be rationalised to result in a meaningful figure for inclusion in the PLTOF targets. The following considerations have been taken into account to rationalise the LNRS measures.

- How has the LNRS measure been mapped? Is it broad brush, or highlighting specific areas for LNRS measures (e.g. river corridors, woodland buffers)?
  - Areas which are accurately mapped are more likely to be achieved, as opposed to a broad-brush mapping approach. A higher proportion of accurately mapped measures are likely to be implemented, and this is reflected in the rationale.
  - Conversely, the area for LNRS measures which are broadly mapped that is likely to contribute to the targets is a small proportion of the mapped area. A relevant example of this is the introduction of margins within arable areas, where entire fields are mapped, but the actual area that could become wildlife rich habitat and contribute to the PLTOF target is a small proportion of the mapped area. This is also reflected in the rationale.
- Does the LNRS measure overlap with any others?
  - Areas which overlap should not be double-counted for the purposes of informing the targets.
  - If two (or more) LNRS measures precisely overlap, one should be removed from the calculation to prevent double counting.
  - In cases where there are multiple measures overlapping, the delivery potential should be reduced in the rationale for the calculations, to reflect that the area created can only count once towards the PLTOF Target.
- Is the area within the LNRS measure already defined as Priority Habitat or woodland?
  - Areas which are already defined as Priority Habitat or woodland cannot contribute to the PLTOF targets and are excluded.
- How likely is it that the measure will be implemented?

- Delivery capacity: Measures that lack clear funding streams, governance structures, or technical support are less likely to succeed.
- Competing land-use priorities: In areas dominated by arable farming, pressures to maintain food production may limit opportunities for habitat creation.
- Stakeholder engagement: Success often hinges on landowner willingness and alignment with local economic priorities.

3.4 Where available, spatial data of the LNRS measures were processed using GIS tools to remove any areas of overlap and areas which are already identified as Priority Habitat or woodland (and therefore cannot count towards these apportioned targets). The remaining area (of the areas that are identified in the LNRSs as having the potential to be of biodiversity value) is then rationalised using a proportional multiplier that is defined taking the considerations listed above into account. Appendix 1 contains the rationale used for each of the LNRS measures included in the calculations. Note that the Target 8 actions also contribute towards Target 1.

Definition of delivery scenarios

- Low delivery reflects cautious implementation, assuming limited funding availability, variable landowner uptake, and delivery focused primarily on well-established schemes and locations with high certainty (e.g. targeted woodland buffers, PAWS restoration, riparian margins).
- Medium delivery reflects a continuation and modest scaling-up of current delivery mechanisms, with improved uptake of agri-environment schemes, strong partnership working, and incremental expansion of habitat creation in priority opportunity areas.
- High delivery reflects an ambitious but achievable level of delivery, assuming sustained funding, strong landowner engagement, effective advisory support and coordination across partners, and widespread implementation of LNRS priorities across the National Landscape.

3.5 These scenarios are intended to test the sensitivity of the PLTOF targets to different levels of delivery, rather than to prescribe a single pathway.

Target 1: Overall target (to 2042)

Table 3.1: High, medium and low delivery scenarios for PLTOF Target 1, by Simplified Landscape Type and Habitat Type

Simplified Landscape Type	Habitat Type	Area – High delivery scenario	Area – Medium delivery scenario	Area – Low delivery scenario
Unenclosed landscapes	Woodland	3.4 ha	2.1 ha	1.1 ha
	Trees outside of woodland	9.4 ha	5.3 ha	2.6 ha
	Semi-natural grassland	15.3 ha	7.6 ha	3.8 ha
	Wetland	3.5 ha	1.7 ha	0.9 ha
Highly wooded landscapes	Woodland	106.9 ha	67.5 ha	33.7 ha
	Trees outside of woodland	67.8 ha	42.3 ha	21 ha
	Semi-natural grassland	171.9 ha	106.9 ha	50.6 ha
	Wetland	29.1 ha	16.6 ha	8.3 ha
Pastoral landscapes with frequent High	Woodland	29.9 ha	15.4 ha	7.6 ha
	Trees outside of woodland	21.1 ha	10.9 ha	5.4 ha

Simplified Landscape Type	Habitat Type	Area – High delivery scenario	Area – Medium delivery scenario	Area – Low delivery scenario
Nature Value habitats	Semi-natural grassland Wetland	65.8 ha 82.4 ha	33.7 ha 41.4 ha	16.9 ha 20.7 ha
Pastoral landscapes with fewer High Nature Value habitats	Woodland Trees outside of woodland Semi-natural grassland Wetland	59.4 ha 22.2 ha 86.3 ha 71.5 ha	38.3 ha 13.1 ha 54.5 ha 38.3 ha	19.2 ha 6.5 ha 27.1 ha 23.1 ha
Predominantly arable landscapes	Woodland Trees outside of woodland Semi-natural grassland Wetland	72.6 ha 17.9 ha 26.4 ha 14.1 ha	44.6 ha 9.3 ha 16.6 ha 8.2 ha	21.2 ha 4.6 ha 7.9 ha 3.9 ha
Totals		**976.9 ha**	**582.1 ha**	**286.1 ha**

Target 8: Overall target (to 2050)

Table 3.2: High, medium and low delivery scenarios for PLTOF Target 8, by Simplified Landscape Type and Habitat Type

Simplified Landscape Type	Woodland Type	Area – High delivery scenario	Area – Medium delivery scenario	Area – Low delivery scenario
Unenclosed landscapes	Woodland Trees outside of woodland	3.4 ha 9.4 ha	2.1 ha 5.3 ha	1.1 ha 2.6 ha
Highly wooded landscapes	Woodland Trees outside of woodland	106.9 ha 67.8 ha	67.5 ha 42.3 ha	33.7 ha 21 ha
Pastoral landscapes with frequent High Nature Value habitats	Woodland Trees outside of woodland	29.9 ha 21.1 ha	15.4 ha 10.9 ha	7.6 ha 5.4 ha
Pastoral landscapes with fewer High Nature Value habitats	Woodland Trees outside of woodland	59.4 ha 22.2 ha	38.3 ha 13.1 ha	19.2 ha 6.5 ha
Predominantly arable landscapes	Woodland Trees outside of woodland	72.6 ha 17.9 ha	44.6 ha 9.3 ha	21.2 ha 4.6 ha
Totals		**410.6 ha**	**248.8 ha**	**122.9 ha**

Conclusions

Targets

3.6 For each of the Simplified Landscape Types, the figures for the scenarios above can be picked to feed into the overall target, depending on the circumstances of the Simplified Landscape Types.

3.7 In the *Unenclosed Landscapes*, where the majority of land is already semi-natural, and there are existing projects to expand habitats, the High delivery scenario could be achievable. Opportunities to link the vast areas of habitat in this type with the surrounding habitats should also be targeted.

3.8 Similarly, the *Highly Wooded Landscapes* have a high proportion of existing semi-natural habitat (predominantly deciduous woodland) and could accommodate additional woodland/habitat as set out in the high or medium delivery scenarios, as this would not be at odds with existing landscape character or land use. As well as targeting woodland creation and tree planting, measures should also seek to enhance the farmed environment, through the creation of semi-natural grassland and other features within the agricultural environment, such as ponds and hedgerows. In the north of the National Landscape, there are several watercourses within this SLT which also provide opportunities to link areas of habitat, as well as providing wildlife rich habitat in their own right.

3.9 For *Pastoral landscapes with frequent High Nature Value habitats* and *Pastoral landscapes with fewer High Nature Value habitats,* the high or medium development scenarios are likely to be appropriate. In particular, semi-natural grassland can still be used as pasture, with this unlikely to be out of keeping with existing landscape character or land uses. In these areas, there is the potential for the creation of small woodlands, hedgerows, in-field trees, orchards and field ponds to enhance habitat provision within the agricultural environment.

3.10 For the *Predominantly arable landscapes*, where there are more competing pressures on land use, it may be more appropriate to include the Low delivery scenario figures in the targets which are reported to Natural England. In these areas, the focus should be to promote connectivity between discrete areas of habitat, using measures such as arable buffers, hedgerows, and linear woodlands. There is also opportunity for wetland measures along watercourses to contribute to habitat creation and connectivity.

Reflection on the process

3.11 Using spatial data developed as part of the LNRSs to help define and justify the PLTOF targets has merit. It follows the guidance developed by Natural England, in terms of aligning the targets with existing initiatives. Significant resources have gone into the development of the LNRSs, including a wide programme of stakeholder and public engagement.

3.12 The primary challenge with using the LNRS spatial data to help inform the targets has been the emerging state of this data. At the time of writing, the emerging LNRS for the three relevant local authorities are at different stages of development. The most up-to-date available data has been used. As the MHNL encompasses three different LNRS areas, this has significantly added to the complexity of the data processing.

- The Gloucestershire LNRS has well-developed spatial data, and the confidence in this data is higher than for the Worcestershire and Herefordshire areas.
- The draft Worcestershire LNRS mapping indicates some specific areas for certain measures; however, there are significant areas of overlap between the different measures, resulting in decreased confidence in the calculations. An example of this is the overlap between the spatial data of the three different grassland measures; ‘PM29 - Create or enhance species-rich neutral grassland’, ‘PM30 - Create or enhance species-rich acid grassland’ and ‘PM31 - Create or enhance species-rich calcareous grassland’. Additional GIS data processing could be used to eliminate these overlaps, but this was outside of the project scope.
- For the Herefordshire LNRS, which is at a less developed stage, there is less confidence in the spatial data and the calculations that have used this data. The Herefordshire data is also less developed in

terms of the measures defined, making it difficult to tell whether the actions might count towards the PLTOF targets. For example, it is not possible to determine whether the areas identified could become areas of importance to biodiversity or could be enhanced to contribute to wider environmental benefits (and whether this would count towards the PLTOF targets). As the mapping is more detailed for the Worcestershire and Gloucestershire LNRS, it has been possible to exclude measures which are not likely to contribute to the targets.

3.13 As the LNRS mapping becomes more developed and accurate, the calculation process could be rerun, resulting in greater confidence in the figures. The calculation process has been designed to be repeatable and can be readily updated as revised or final LNRS datasets become available.

3.14 Another underlying challenge has been the limited insight into how Natural England and Defra will be measuring and reporting on Targets 1 and 8 and defining how much a given action might reasonably contribute towards the targets (as the targets will be recorded using ‘action-based’ measurements, rather than ‘outcomes’).

Appendix A

Method for reflecting LNRS measures

Rationale for reflecting LNRS measures in the PLTOF targets

A.1 The area of land mapped in each LNRS needed to be rationalised to result in a meaningful figure for inclusion in the PLTOF targets. The following considerations have been taken into account to rationalise the LNRS measures.

- How has the LNRS measure been mapped? Is it broad brush, or highlighting specific areas for LNRS measures (e.g. river corridors, woodland buffers)?
- How likely is it that the measure will be implemented?
- Does the LNRS measure overlap with any others?
- Is the area within the LNRS measure already defined as Priority Habitat or woodland?

A.2 Where available, spatial data were processed using GIS tools to remove any areas of overlap and areas which are already identified as Priority Habitat or woodland (and therefore cannot count towards these apportioned targets). The remaining area is then rationalised using a multiplier that is defined taking the considerations listed above into account.

A.3 Each of the mapped LNRS measures, which could count towards Target 1 or Target 8, was reviewed in turn and a judgement was made on potential delivery, based on the factors listed above.

A.4 Some measures, such as the restoration of PAWS woodland, are often accurately mapped and have wide support, and it is likely a large proportion of the mapped measure will be delivered.

A.5 For measures that are not precisely mapped or that cover very large areas, it is less likely that a large proportion of the mapped area will be delivered.

A.6 Tables A.1, A.2 and A.3 set out the rationale for each of the relevant measures within the three LNRS areas, along with the percentage of the mapped area that might be delivered under high, medium and low delivery scenarios. If the mapped extent of the LNRS measures is updated, the rationale would need to be revised and the calculations re-run to reflect any changes to the mapping approach. For example, in the Worcestershire LNRS, confidence in measures PM29, PM30 and PM31 is reduced by the broad brush approach to the mapping and the overlaps between the measures. If the mapping in a future iteration of the LNRS resolves these issues, the confidence and likely delivery (as a percentage) of these measures will increase.

A.7 The High, Medium and Low delivery percentages do not represent fixed delivery requirements for LNRS measures. Instead, they are scenario-based assumptions indicating the proportion of the mapped LNRS opportunity area that could realistically be delivered within the relevant PLTOF reporting period (to 2042 for Target 1 and 2050 for Target 8), taking into account mapping confidence, overlap with other measures, land-use constraints, funding mechanisms and delivery capacity.

A.8 Generally, the approach to the calculations for each measure is as follows:

- >50%: usually when measure is clearly mapped and largely land-management-led (e.g. PAWS measures)

- 10-25%: broad opportunity areas (e.g. Riparian buffers measures)
- <5-10%: for broad polygons, low confidence, high uncertainty (e.g. pond measures)

Table A.1: Rationale for reflecting the Worcestershire LNRS measures in the PLTOF targets

LNRS Measure	Rationale	High delivery	Medium delivery	Low delivery
PM29 - Create or enhance species-rich neutral grassland	Mapping is quite broad brush and has significant overlaps with PM30 and PM31.	10% (0.1)	5% (0.05)	2.5% (0.025)
PM30 - Create or enhance species-rich acid grassland	Mapping is quite broad brush and has significant overlaps with PM30 and PM31.	10% (0.1)	5% (0.05)	2.5% (0.025)
PM31 Create or enhance species rich calcareous grassland	Mapping is quite broad brush and has significant overlaps with PM30 and PM31.	10% (0.1)	5% (0.05)	2.5% (0.025)
PM19 - Enhance wood pasture and parkland habitat	Overlaps with PM20 – removed from the calculation to avoid double counting.	N/A	N/A	N/A
PM20 - Create new wood pasture and parkland habitat	Mapped extent is broad and overlaps with several of the grassland measures.	10% (0.1)	5% (0.05)	2.5% (0.025)
PM12 - Plant new woodlands and trees outside woodland	PM12 is specifically mapped and buffers existing woodland. There is some overlap with other LNRS measures including *PM42: Buffer and enhance habitat connectivity around and between non statutory nature conservation sites*	10% (0.1)	5% (0.05)	2.5% (0.025)
PM22 - Enhance landscape connectivity for species using veteran and ancient trees	Overlaps with PM20 - removed from the calculation to avoid double counting.	N/A	N/A	N/A
PM23 - Create and enhance a habitat mosaic	Overlaps with other measures – removed from the calculation to avoid double counting.	N/A	N/A	N/A
PM10 - Restore PAWS woodlands	Accurately mapped and will contribute to both PLTOF Target 1 and Target 8. Achievable.	75% (0.75)	50% (0.5)	25% (0.25)
PM07 - Create and enhance wildlife ponds and surrounding habitat in high-density and high-value pond areas	Appears accurately mapped, although some of the mapped areas are quite large (e.g. field sized)	20% (0.2)	10% (0.1)	5% (0.05)
PM02 - Create riparian buffer zones	Appears accurately mapped adjacent to watercourses. Some overlap with other wetland measures.	20% (0.2)	10% (0.1)	5% (0.05)
PM03 - Revert land to wet grassland and floodplain meadow	Appears accurately mapped. Some overlap with other measures.	20% (0.2)	10% (0.1)	5% (0.05)

PM08 - Create and enhance wetland habitat	Mapped along watercourses although appears less precise than PM02 and PM03. Some overlap with other wetland measures.	20% (0.2)	10% (0.1)	5% (0.05)
PM33 Create new arable wildflower sites	Broadly mapped, covering entire fields. Significant overlap with other LNRS measures	5% (0.05)	2.5% (0.025)	1% (0.01)
PM42 Buffer and enhance habitat connectivity around and between non statutory nature conservation sites	Buffers existing habitat. Generally accurately mapped but covers a large area and overlaps with several other LNRS measures.	10% (0.1)	5% (0.05)	2.5% (0.025)
PM63 Create and enhance habitat for wetland and wading birds	Overlaps with other measures – removed from the calculation to avoid double counting.	N/A	N/A	N/A

Table A.2: Rationale for reflecting Gloucestershire LNRS measures in the PLTOF targets

LNRS Measure	Rationale	High delivery	Medium delivery	Low delivery
Restore/create neutral grassland meadows (4)	Mapped extent of the measure appears reasonable and achievable.	75% (0.75)	50% (0.5)	25% (0.25)
Restore/create floodplain meadows (6)	Mapped extent of the measure appears reasonable and achievable.	75% (0.75)	50% (0.5)	25% (0.25)
Restore and create acid grassland and heath (8)	Mapped extent of the measure appears reasonable and achievable, although the accuracy of the mapping is questionable.	75% (0.75)	50% (0.5)	25% (0.25)
Expand and buffer ancient and semi-natural woodland and long-established woodland (10)	Accurately mapped around areas of existing woodland.	75% (0.75)	50% (0.5)	25% (0.25)
Establish new woodland tree cover (11)	Mapping is fairly broad-brush, covering large areas of farmland. Lots of funding and general support for woodland creation, so quite likely that some areas of the mapped measure will be achieved. This measure will contribute to both PLTOF Target 1 and Target 8.	20% (0.2)	10% (0.1)	5% (0.05)
Restore plantation ancient woodland sites (12)	Accurately mapped and will contribute to both PLTOF Target 1 and Target 8. Achievable.	90% (0.9)	75% (0.75)	50% (0.5)
Manage/expand wet woodland (13)	Some areas of overlap with other wetland and woodland measures	50% (0.5)	25% (0.25)	10% (0.1)
Create mixed mosaic habitats including scrub (14)	Mapped extent seems reasonable and achievable (buffering existing woodland) and does not overlap with other measures	75% (0.75)	50% (0.5)	25% (0.25)
Restore/create wood pasture parkland (16)	Mapped extent of the measure seems reasonable and achievable.	75% (0.75)	50% (0.5)	25% (0.25)

Traditional orchard management, restoration and creation (17)	Mapped extent of the measure is quite broad and it was established during the project workshop that orchards are generally not economically viable, so only a small proportion of the mapped extent of this measure can realistically contribute to the PLTOF targets. There is also some overlap with the other woodland measures.	10% (0.1)	5% (0.05)	2.5% (0.025)
Manage improve and create ponds for wildlife (18)	Mapped extent covers entire fields that should be targeted for pond creation, so only a small fraction of the mapped area should be considered to contribute to the PLTOF targets.	2% (0.02)	1% (0.01)	0.5% (0.005)
Restore and create wetland and floodplain wetland mosaic (26)	Likely to be implemented, and appears to be precisely mapped.	75% (0.75)	50% (0.5)	25% (0.25)
Field margins hedgerows buffer strips ponds trees and sustainable farming and forestry (30)	Mapping is fairly broad brush, covering large areas of farmland. Measures are likely to be implemented but will only cover a small amount of the mapped area. Some overlap with 'Establish new woodland tree cover' measure.	5% (0.05)	2.5% (0.025)	1% (0.01)

Table A.3: Rationale for reflecting the Herefordshire LNRS measures in the PLTOF targets

LNRS Measure	Rationale	High delivery	Medium delivery	Low delivery
HFDS Combined Traditional Orchards	Accurately mapped – majority is already classified as PHI so management would not count towards PLTOF targets.	90% (0.9)	75% (0.75)	50% (0.5)
Open Habitat Woodland High Priority	Accurately mapped, but buffers large areas of woodland.	15% (0.15)	10% (0.1)	5% (0.05)
Open Habitats High Priority	Broadly mapped and overlaps with some other LNRS measures.	15% (0.15)	10% (0.1)	5% (0.05)
Wetland Opportunities	Broadly mapped and overlaps with some other LNRS measures.	15% (0.15)	10% (0.1)	5% (0.05)
Woodland High Priority	Accurately mapped but buffers all woodland.	15% (0.15)	10% (0.1)	5% (0.05)