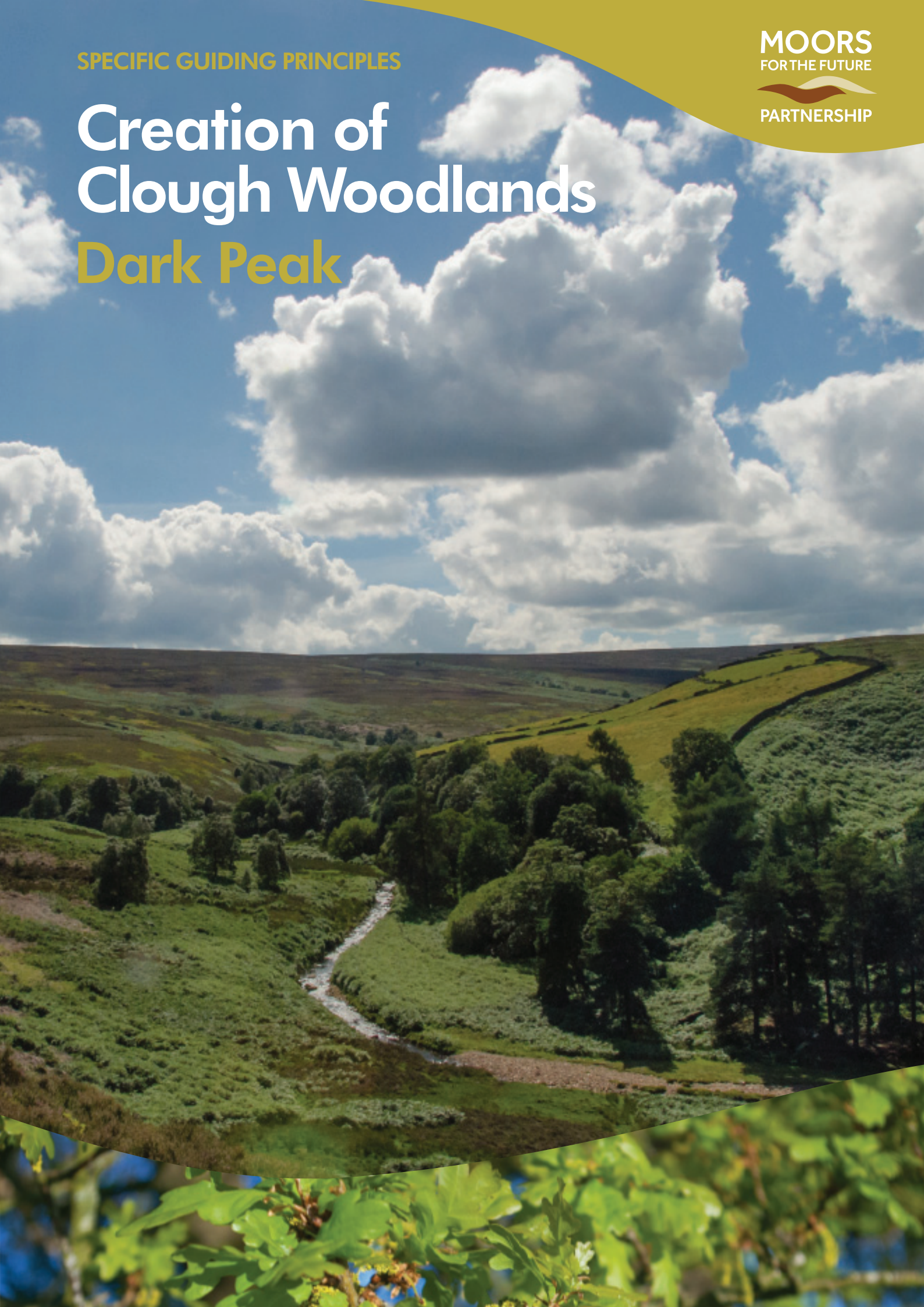
SPECIFIC GUIDING PRINCIPLES

Creation of Clough Woodlands

Dark Peak

MOORS FOR THE FUTURE PARTNERSHIP



Contents

1 Introduction

Clough woodlands are areas of steep-sided woodland found on valley sides on the edge of open moorland. They are of value for:

- **Wildlife**
  Providing habitat for woodland plants, invertebrates and birds as well as shelter for species more associated with adjacent areas of moorland. The presence of clough woodlands also provides opportunities for the development of diverse woodland/moorland edge habitats.

- **Water, air and land management**
  Clough woodlands can help to improve water quality as well as contributing to the reduction of downstream flood risk. Woodland canopy adjacent to watercourses provides shade, thereby helping to control water temperature with resulting benefits for freshwater ecology and chemistry. Woodlands can also play a part in the control of atmospheric pollutants as well as reducing soil erosion and increasing the stability of slopes.

- **Landscape**
  Areas of clough woodland enhance the landscape by increasing its diversity.

- **Agriculture and forestry**
  Clough woodlands can be used to provide shelter and shade for livestock, in addition to which they can help to control Bracken. Appropriately managed, they can also be a source of timber for use as fuel and in wood crafts.

- **Control of wildfires**
  Although the role of native woodland in wildfires has not been well studied, clough woodlands may play a role in reducing the spread of wildfires as they are regarded as a 'low-risk habitat' in contrast to 'high-risk' moorland, heathland and grassland habitats. They may also reduce the 'chimney effect' of moorland cloughs.[1]

Although clough woodlands are an integral part of the moorland landscape, they have declined over the years, in part due to high grazing pressure, and this has led to small, fragmented areas of woodland with poor connectivity for wildlife and a decline in biodiversity.

The Clough Woodlands Project aims to demonstrate how a partnership-based approach to land-use change at a catchment scale can deliver benefits in terms of flood risk management, water quality, soil erosion and biodiversity. The project is funded by the following:

- Environment Agency (EA)
- Forestry Commission (FC)
- The National Trust (NT)
- Woodland Trust (WT)
- Royal Society for the Protection of Birds (RSPB)

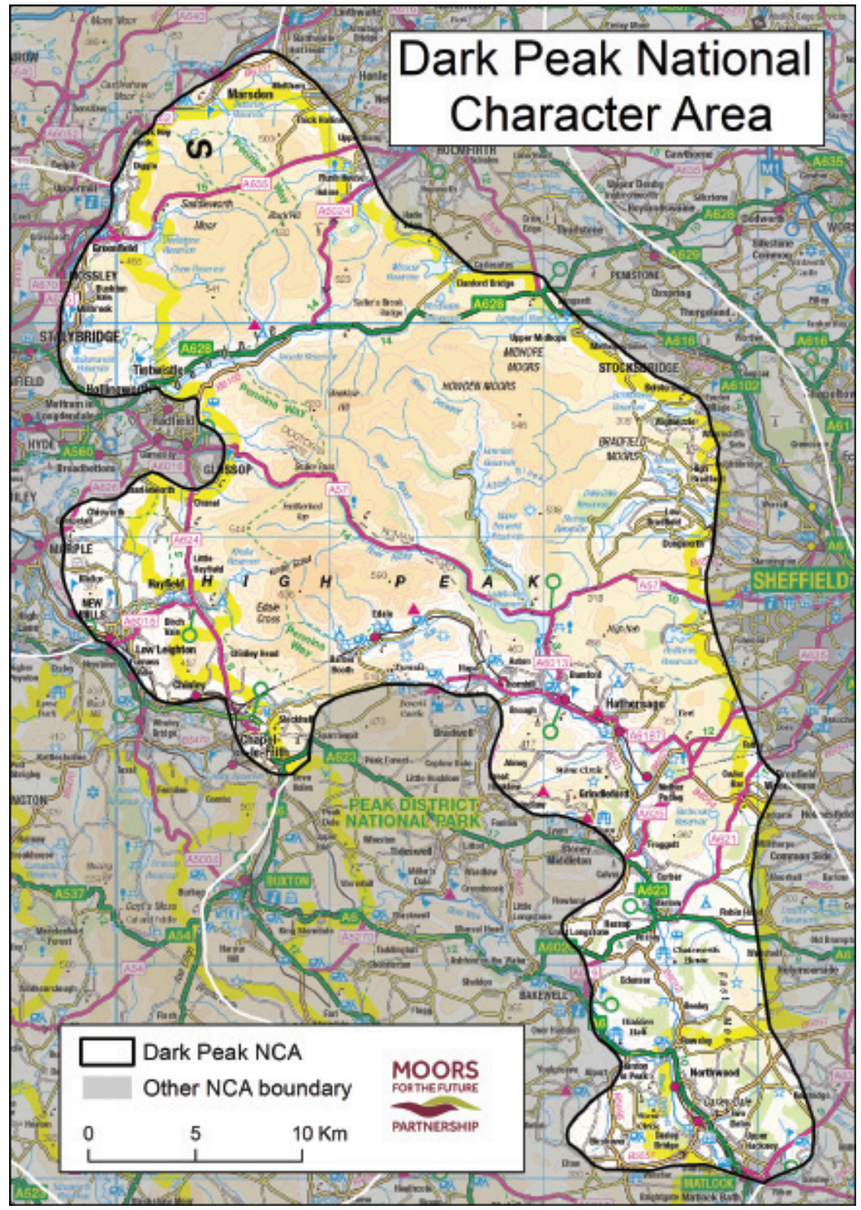
This document outlines the area-specific guiding principles to be adopted in the creation of any new native woodland in the Dark Peak National Character Area (NCA) – as

shown in Figure 1. It should be read alongside Moors for the Future Partnership's (MFFP) accompanying document, *Guiding principles for the creation of clough woodlands – methodology and design principles*, which outlines the methodology for woodland creation as well as broader design principles, for example those around fencing and grazing. Reference should also be made to relevant parts of the Peak District Landscape Strategy.[2]

Any bespoke plan for woodland creation in this area should follow the principles outlined here, unless explicitly stated otherwise.

[1] See www.forestresearch.gov.uk/research/building-wildfire-resilience-into-forest-management-planning/
[2] See www.peakdistrict.gov.uk/_data/assets/pdf_file/0003/90831/landscapestrategyandactionplan.pdf
[3] *National Character Area profile 51. Dark Peak*. Natural England, 2012

Figure 1: National Character Area 51 – Dark Peak [3]



2 Why create woodland within the Dark Peak?

Natural England's *Dark Peak National Character Area profile (NCA profile 51)* details the ecosystem services which the area provides. Approximately 10% of the NCA is covered by woodland which benefits a wide range of other ecosystem services including the regulation of climate, flooding and soil erosion. The NCA profile identifies opportunities to increase the extent of native woodland, scrub and trees – as well as to manage existing tree cover to provide an enhanced range of benefits including helping to assimilate new infrastructure, restore lost habitats and landscape features, store carbon, reduce run-off and provide fuel, shelter and recreational opportunities.

The creation of clough woodlands is supported by the Peak District Landscape Strategy and, in addition, makes a contribution to objectives in the Government's 25-year Environment Plan (2018) including:

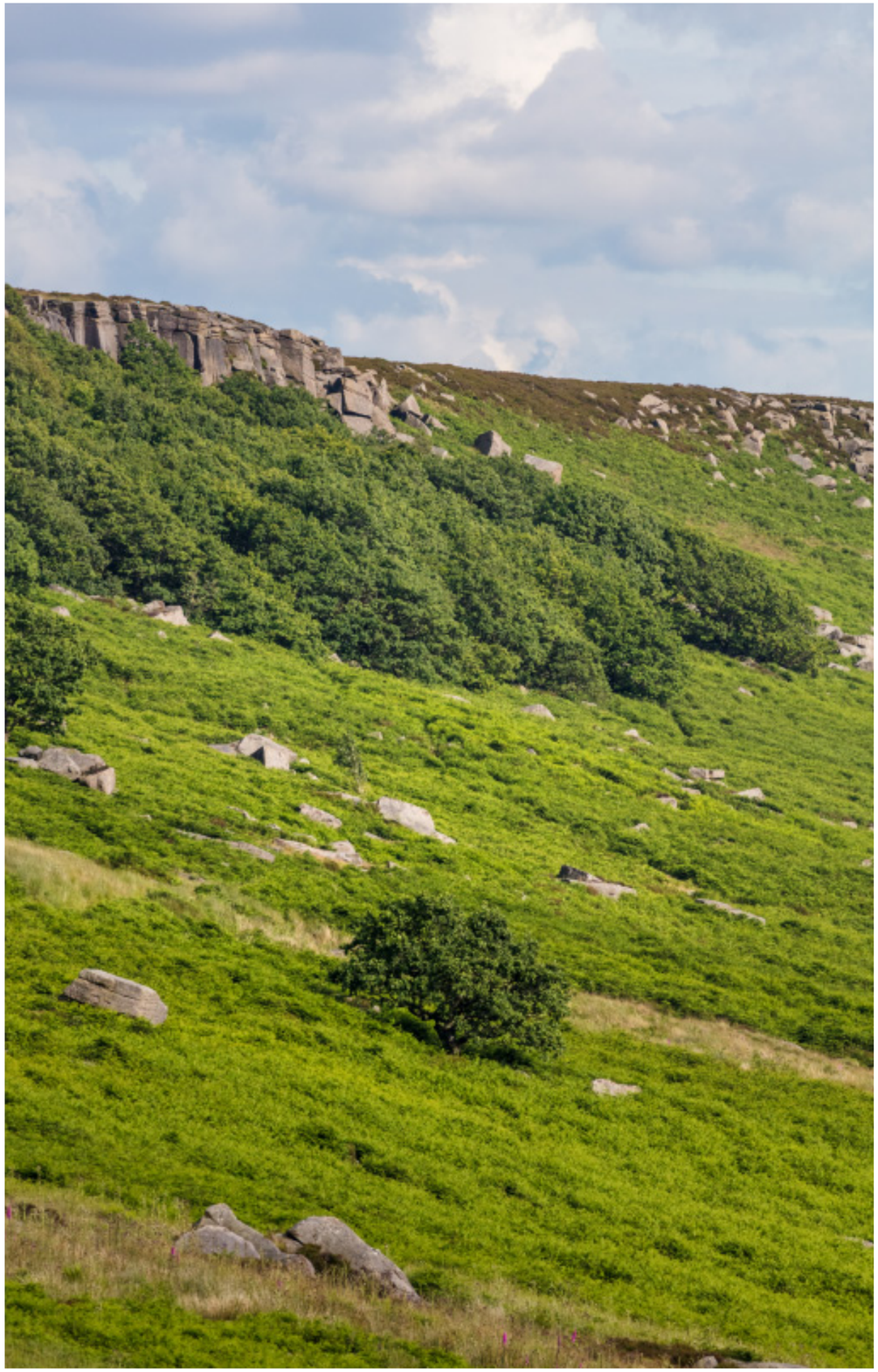
- increasing woodland cover
- creating wildlife-rich priority habitat
- improving water quality
- safeguarding and enhancing natural beauty.

Ways in which these objectives can be achieved include:

- Exploring the capacity to develop new native woodland in cloughs, on lower hills and on moorland fringes without compromising the area's character.

- Supporting the natural regeneration and appropriate planting of new small-scale native woodlands, the expansion of existing woodlands and the planting of non-woodland trees – especially within moorland cloughs and river valleys.

SPECIFIC GUIDING PRINCIPLES CREATION OF CLOUGH WOODLANDS **DARK PEAK**



3 Key features and designations

Where ecological, geological, cultural heritage, access and landscape features are identified as being important or protected, these must be carefully incorporated into woodland development plans in accordance with the principles outlined in Table 1 at the end of this document. In addition, local experts (see list of organisational stakeholders and consultees on page 14) should be consulted on the woodland design to ensure that this does not result in any adverse effects to protected characteristics.

Features and designations to be considered in the Dark Peak area include:

3.1. Peak District Moors Special Protection Area

This Special Protection Area (SPA) – also known as South Pennine Moors Phase 1 – has been designated due to the presence of the following bird species:

- Merlin (at least 2.3% of the UK population)
- European Golden Plover (at least 1.9% of the UK breeding population)
- Short-eared Owl (at least 2.2% of the UK population)

3.2. South Pennine Moors Special Area of Conservation

The presence of the following features form the primary reason for the designation of this Special Area of Conservation (SAC):

- Active blanket bogs
- European dry heath

The following qualifying features are also present, though not a primary reason for the selection of the site:

- Transition mires and quaking bogs
- North Atlantic wet heaths with Cross-leaved Heath

3.3. Sites of Special Scientific Interest

Two extensive Sites of Special Scientific Interest (SSSIs) lie within the area: the Dark Peak SSSI and the Eastern Peak District Moors SSSI.[4] Although some of the reasons for the notification of these differ, they also have many features in common.

3.3.1. Vegetation

The Dark Peak SSSI incorporates a full range of blanket bog habitats exhibiting a full range of erosional features. Other habitats present include:

- Heather-dominated heathland
- Wet heath
- Mires and transitional valley mires
- Acid grassland

In contrast to the Dark Peak SSSI, Heather moor predominates throughout the Eastern Peak District Moors SSSI where it exists in combination with other habitats representing the full range of upland vegetation characteristic of the South Pennines. These include:

- Blanket bog – significantly less extensive than in the Dark Peak SSSI
- Wet heath
- Acid grassland
- Small flushes
- Gritstone edges, cliffs and boulder slopes
- Streams and moorland reservoirs
- Fringing woodland

[4] In addition to these two large SSSIs, there are a number of smaller SSSIs in the Dark Peak area which can be located using Defra's MAGIC mapping website (https://magic.defra.gov.uk)

3.3.2. Birds

The Dark Peak moorlands support nationally important breeding populations of a number of key bird species as well as a diverse breeding assemblage of other moorland birds. Similarly, the Eastern Peak District Moors SSSI supports most of the upland breeding birds found in the region with some parts of the site being particularly diverse. The site is also important for certain overwintering and passage birds.

Species of national importance in one or both of these SSSIs include:

- Golden Plover
- Dunlin
- Meadow Pipit
- Merlin

Other birds found in the area include:

- Curlew
- Red Grouse
- Short-eared Owl
- Twite
- Peregrine
- Ring Ouzel
- Dipper
- Grey Wagtail
- Wheatear
- Stonechat
- Whinchat
- Tree Pipit
- Redstart
- Green Woodpecker
- Wood Warbler
- Pied Flycatcher
- Common Sandpiper
- Snipe
- Lapwing

Assuming that planting takes place in accordance with the guiding principles outlined in the accompanying document, birds that are likely to benefit from the development of clough woodlands include:

- Meadow Pipit – as a result of reduction in grazing allowing taller grasses to develop
- Short-eared Owl – as a result of the reduced grazing pressure associated with woodland development allowing increased numbers of small mammals
- Tree Pipit – as a result of the introduction of scattered trees in previously treeless areas
- Grasshopper Warbler – as a result of increased ground cover
- Redstart, Wood Warbler, Pied Flycatcher and Green Woodpecker – as a result of the availability of additional habitat once woodland matures
- Nightjar – as a result of an increased extent of woodland/moorland edge
- Grey Wagtail – which could benefit from increased tree cover, shading of streams and better regulated summer flow

3.3.3. Other animal species

The moorland and moorland edge mosaic supports a diverse assemblage of insects including many that are nationally scarce. Appropriate clough woodland development can benefit invertebrates including Northern Wood Ant and Green and Purple Hairstreak butterflies.

3.3.4. Geology

There are five locations of special geological interest within the Dark Peak SSSI:

- Alport Castles – the largest inland landslide in England
- Bleaklow (Bull Clough Head) – a classic example of stream erosion in peat
- Blackden Brook – exposures show a continuous sequence through sandstones and shales formed during the Carboniferous period
- Alport Valley – shows features that are characteristic of river landforms developed on bedrock
- Featherbed Moss – an important location for studies of vegetation history and peat erosion in the Pennines since the end of the last glacial period.

3.4. Cultural heritage

The Dark Peak NCA incorporates 217 Scheduled Monuments, including the following archaeological and historical features:

- A number of cairns and cairnfields situated across the moors including a round cairn 1140m north-east of Bamford House and another 200m west of Margery Hill triangulation pillar
- Extensive Mesolithic remains underlying the deep peat plus evidence of burial activity in the form of pre-historic barrows including Kinderlow bowl barrow
- Remains of the Bronze Age/Iron Age hill fort of Mam Tor
- The 'Roman Road' along Stanage Edge and a Romano-British farmstead 475m east of Ladybower Inn
- Evidence of former packhorse routes across the moorland plateau, many now utilised as footpaths and access tracks
- A number of wayside crosses including Edale Cross on Kinder Scout and New Cross on Bradfield Moor
- Large numbers of defunct quarries, historically used for the extraction and working of stone to form the Peak District's iconic millstones. In some places – for example in Longdendale and above Hathersage – worked millstones can be seen abandoned adjacent to quarry sites.

In addition, the Dark Peak NCA includes 1,239 listed buildings as well as examples of military training features.

It is therefore essential that consultation with Historic England as well as with local authority archaeology departments and other relevant local groups – for example the relevant county archaeological society – should take place in order to identify any sites that may need to be incorporated into woodland schemes. A list of relevant stakeholders and consultees can be found on page 14 of this document.

3.5. Access

The Dark Peak NCA contains more than 1,300 kilometres of Public Rights of Way – including the nationally significant Pennine Way and Pennine Bridleway routes. In addition, 46,000 hectares (around 50% of the total area of the NCA) is Countryside and Rights of Way (CRoW) Access Land. The area is also popular with sports enthusiasts including cyclists, rock climbers and paragliders. A large part falls within the Peak District National Park – an area which receives 22 million day visits each year.

Any woodland creation should therefore be in line with the guidelines set out in the accompanying 'Guiding principles for the creation of clough woodlands – methodology and design principles' document in order to ensure access is maintained for all users.

Key considerations for access include:

- New woodlands must not obstruct access.
- Where possible, fences across footpaths should be avoided. If this is not possible, the relevant Highways Authority must be consulted and appropriate stiles or gates should be put in place.
- Fences across open access land should have an appropriate access point every 200 metres.
- The use of barbed wire should be avoided.
- Local access groups should be consulted when planning the development of clough woodlands in areas where they might impact on activities of sports enthusiasts.

The area also falls under the remit of the Peak District Fire Operations Group who will need to be consulted on any woodland creation plans in order to ensure that access to the moorland can continue to be obtained in the event of a fire.

3.6. Landscape

The Dark Peak NCA profile describes the landscape as one of 'large-scale sweeping moorlands, in-bye pastures enclosed by drystone walls, and gritstone settlements.'

It specifies that any woodland creation should be in accordance with two 'Statements of Environmental Opportunity' for the area:

- SEO 1: 'Safeguard, manage and enhance the large areas of open, expansive moorland, and the internationally important habitats and species they support, as well as protecting soils and water resources.'

- SEO 3: 'Improve opportunities for the enjoyment and understanding of the National Park landscape, and to experience the sense of escapism and inspiration offered by the wide, open moorlands, while also conserving the qualities of the landscape and its valuable historic, geological and wildlife features.'

The NCA profile also identifies the following opportunities for woodland creation:

- SEO 4: 'Increase the extent of native woodland, scrub and trees, and manage existing tree cover to provide a range of benefits including helping to assimilate new infrastructure, restore lost habitats and landscape features, store carbon, reduce run-off and provide fuel, shelter and recreational opportunities.'

Considerations for landscape should also be in accordance with guidance in the accompanying MFFP document, *Guiding principles for the creation of clough woodlands - methodology and design principles*, namely:

- Maintain open views across the moorland by ensuring clough woodlands are generally kept to valley sides and cloughs and do not encroach onto open moorland. However, in the Dark Peak, extension of woodlands above the break of slope and onto less-sensitive open moorland areas may sometimes be appropriate. Appropriate local advice should be taken if this is being considered.
- Link fragmented woodlands on valley sides to improve biodiversity and the connectivity of these sites.
- Ensure that the shapes of planting schemes are in keeping with the landscape by avoiding straight lines. The use of open ground, scrub at edges to allow transition into open habitats, natural colonisation and varied tree spacing should be used to ensure that woodlands look natural.
- Natural colonisation should be used in exclosures to help ensure a natural look and feel to the woodland.
- Fencing lines should be designed so that they are considerate to the landscape.
- Local Access Groups and relevant stakeholders (including those taking part in sporting activities and those managing visitors to the National Park) should be consulted.

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4 Landownership and tenancy

The area has a broad range of landownership and tenancy. All relevant landowners and occupiers must be consulted on woodland development plans prior to works commencing. Graziers and shoot tenants should also be consulted to ensure that the creation of woodland and exclusion zones does not impact on their ability to manage their livestock or moorlands – including to ensure that there will be no adverse impact on the wellbeing of livestock grazing in the area (for example, by ensuring continued access to water).

Considerations for grazing should be in accordance with the accompanying *Guiding Principles for the Creation of Clough Woodlands – methodology and design principles* document, namely:

- Where woodland creation is to be through a mixture of planting and natural colonisation, exclosures should be used.

- Where exclosures are not used and woodland creation is through planting, tree guards should be used and a suitable grazing regime should be decided upon in consultation with the grazier and landowner.

- Where appropriate, grazing might be used as a tool to assist in ongoing management. However, the desirability of this is dependent upon the objectives for the area. Grazing may play an important role where scattered trees, open woodland or 'wood pasture' are the desired outcome. In other cases, public benefit may best be delivered by the exclusion of grazing.

5 Organisational stakeholders and consultees

Ecology
- Natural England
- Forestry Commission
- Peak District National Park Authority
- Royal Society for the Protection of Birds
- Wildlife Trusts – Derbyshire, Sheffield & Rotherham
- Woodland Trust

Ordinary Watercourses and Land Drainage Consent:
- This should be sought from the relevant Local Authority, e.g. Barnsley M.B.C.

Lead Local Flood Authorities
- Derbyshire County Council
- Sheffield City Council
- Barnsley Metropolitan Borough Council
- Kirklees Metropolitan Borough Council
- Greater Manchester Combined Authority

Access groups
- Peak District National Park Authority
- Peak District Fire Operations Group
- Local Highways Authorities – including but not limited to:
    - Derbyshire County Council
    - Sheffield City Council
    - Barnsley Metropolitan Borough Council
    - Kirklees Metropolitan Borough Council

Cultural heritage
- Historic England
- Peak District National Park Authority Cultural Heritage Team
- Local authority archaeological/cultural heritage teams
- Derbyshire Archaeological Society
- Yorkshire Archaeological & Historical Society

Geology
- East Midlands Geological Society
- Yorkshire Geological Society

6 Useful resources

Natural England
- *National Character Area Profile: 51 Dark Peak (NE378)*
  http://publications.naturalengland.org.uk/publication/3684793

- *European Site Conservation Objectives for South Pennine Moors SAC (UK0030280)*
  http://publications.naturalengland.org.uk/publication/4973604919836672

- *European Site Conservation Objectives for South Pennine Moors (Phase II) SPA (UK9007022)*
  http://publications.naturalengland.org.uk/publication/4885083764817920

- *Dark Peak SSSI*
  https://designatedsites.naturalengland.org.uk/SiteDetail.aspx?SiteCode=S1003028&SiteName=&countyCode=&responsiblePerson=

JNCC
- *South Pennine Moors SAC*
  http://jncc.defra.gov.uk/protectedsites/sacselection/sac.asp?EUCode=UK0030280

- *South Pennine Moors SPA*
  http://jncc.defra.gov.uk/page-2001

Defra
- *Countryside Stewardship Woodland Creation Grant Manual 2018*
  https://www.gov.uk/guidance/create-woodland-overview

Forestry Commission
- *Woodland Creation Hub including information on current funding opportunities*
  https://www.forestry.gov.uk/england-woodlandcreation

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Table 1: How protected and special features in the Dark Peak will be conserved in the creation of clough woodland

Feature	Impact of woodland	Survey	Mitigation	Management plan
Blanket bog	Increase in scrub and tree cover	Areas of blanket bog to be mapped	• No trees to be planted on blanket bog habitat • A 20m buffer zone must be applied around habitats identified as blanket bog	Habitat monitored through: • baseline surveys in first year and creation of control sites • sites monitored annually for at least 3–5 years after exclosure, to identify priorities for maintaining open ground Targets to ensure that buffer zones and open ground are maintained through ongoing management
Blanket bog and moorland tops: *Golden Plover, Merlin, Dunlin, Curlew, Short-eared Owl, Peregrine*	Reduction in open moor and breeding/foraging habitat Risk of predation of breeding waders close to woodland edge	Local advice (for example from Natural England, RSPB or Peak District National Park Authority) to be sought on bird populations	• In general, planting should be restricted to steeper sides, slopes, cloughs and valleys; with flat and gently-sloping moorland areas excluded from planting • There are however places in the Dark Peak where extending scattered trees or open woodland over clough brows and onto open moorland may be appropriate. Local advice should be taken • No trees to be planted on blanket bog or areas of mature heath (potential Merlin nesting habitat) • Access to wet features and flushes on open moor to be retained for foraging breeding waders • Woodland edges to consist of widely spaced trees (less than 20% tree cover) to reduce impact of predators	• Management plan to consider the need for predator control • Monitor nearby wader hotspots to ensure acceptable impact of new woodlands on these populations
Dry heath	Increase in scrub and tree cover	Areas of dry heath to be mapped	• Native tree and scrub cover to be limited to 20% in dry heath areas. Trees to be widely spaced with up to 15 metre spacing	Habitat monitored through: • baseline surveys in first year and creation of control sites • sites monitored annually for at least 3–5 years after exclosure, to identify priorities for maintaining open ground Targets to ensure that buffer zones and open ground are maintained through ongoing management
Dry heath on clough sides: *Merlin, Ring Ouzel, Short-eared Owl, Twite*	Impact on nesting birds of tall heather, heathland invertebrates and specialist plants	Advice to be sought on local bird populations and any scarce plants or invertebrates (e.g. from Natural England, RSPB or Peak District National Park Authority) Nesting sites and feeding grounds to be mapped	• In general, these areas should be retained as open moorland and omitted from exclosures • There may however be situations where it would be of net benefit to establish areas of scattered trees or open woodland – depending on location, existing interest and surrounding habitats. Local advice should be taken	• Monitor key species in the area
Wet heath	Increase in scrub and tree cover	Areas of wet heath to be mapped	• Local advice should be taken to inform the decision on planting trees on areas of wet heath. As these areas are on a pivot – decisions to be made on either the creation of wet woodland or to retain the wet heath/shallow peat habitat • Native tree and scrub cover to be limited to 20% in wet heath areas • Trees to be widely spaced with up to 15 metre spacing	Habitat monitored through: • baseline surveys in first year and creation of control sites • sites monitored annually for at least 3–5 years after exclosure, to identify priorities for maintaining open ground Targets to ensure that buffer zones and open ground are maintained through ongoing management
Acid flushes	Increase in scrub and tree cover	Areas of acid flushes to be mapped	• In general, no trees to be planted on acid flushes with these to be retained as open sunlit habitats within planted areas • Some areas may however benefit from the establishment of wet woodland – depending on location, existing interest and surrounding habitats. Local advice should be taken • 20m buffer zone to be placed around identified habitats • Potential for areas to be lightly grazed to prevent deterioration	Habitat monitored through: • baseline surveys in first year and creation of control sites • sites monitored annually for at least 3–5 years after exclosure, to identify priorities for maintaining open ground Targets to ensure that buffer zones and open ground are maintained through ongoing management

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Table 1: continued

Feature	Impact of woodland	Survey	Mitigation	Management plan
Old Sessile Oak woodland	Potential to improve connectivity between ancient woodland sites	Areas of old Sessile Oak woodland to be mapped	• Where possible, scheme design should seek to connect these areas	n/a
Acid grassland	Low priority habitat – generally minimal negative impact. However, some areas may be of value for feeding Ring Ouzel and some specialist fungi and invertebrates	Areas of acid grassland to be mapped Advice to be sought on locations of bird populations and scarce plants and invertebrates (e.g. from Natural England, RSPB or Peak District National Park Authority)	• Creation of closed canopy woodland is generally acceptable, apart from in specific areas identified as important • Maintain some areas of acid grassland as open ground and outside of exclosures	• Monitor key species in the area
Species-rich grassland	Potential loss of areas of species-rich grassland	Areas of species rich grassland to be mapped	• Exclude areas of species-rich grassland from woodland creation schemes (both tree planting and natural regeneration)	• Monitor key species in the area
Bracken stands: *Ring Ouzel, Whinchat, Nightjar*	Impact on nesting birds and scarce ferns	Advice to be sought on locations of bird populations and scarce ferns (e.g. from Natural England, RSPB or Peak District National Park Authority)	Appropriate approach depends on the precise nature of the Bracken stand. • Bracken over dwarf shrubs (e.g. Heather, Bilberry) to be maintained as open areas as should any areas known to be of importance for key bird species • Areas of Bracken over Creeping Soft-grass and/or Bluebells or over dense litter or bare ground may however be suitable for the development of open woodland • Follow guidelines for bracken control	• Monitor key species in the area
Crags and rock ledges: *Peregrine and Ring Ouzel nesting habitat*	Potential to impact on Peregrine and Ring Ouzel nesting habitats	Crags and rock features to be mapped Local advice (e.g. from Natural England, RSPB or Peak District National Park Authority) to be sought on bird populations Consult the British Mountaineering Council (if rock climbing is a current activity) to facilitate public awareness and mitigate adverse reactions	• Crags and rock features to be retained as open ground with a 20m buffer	• Monitor key species in the area
Crags and rock ledges: *specialised plants*	Potential to shade out plants that require open, sunlit ground	Crags and rock features to be mapped Surveys conducted to inform woodland scheme design Consult the British Mountaineering Council (if rock climbing is a current activity) to facilitate public awareness and mitigate adverse reactions	• Crags and rock features to be retained as open ground with a 20m buffer	• Monitor key species in the area
Archaeological and other cultural heritage features	Encroachment of tree and scree cover obscuring and damaging features Effect on heritage assets including views and significant aspects of setting	Survey of all features of interest including impact assessment and assessment of setting	• Features should be incorporated into areas of open ground • Fences must not cross archaeological features and should be sited at least 10 metres away • Archaeological and cultural heritage features can be included either within or outside of exclosures	• Targets to ensure that buffer zones are maintained through ongoing management
Geological features	Encroachment of tree and scree cover obscuring and damaging features	Survey of all features of geological interest	• Geological features to be incorporated into areas of open ground. Where trees are considered appropriate, they should be lightly spaced, with up to 15m between trees • Geological features can be included within or outside of exclosures	• Targets to ensure that buffer zones are maintained through ongoing management

Appendix 1: Birds species and their likely response to clough woodland creation in cloughs in the northern Peak District

√√√ strong benefit, significant amount of suitable habitat likely to be provided
√√ benefits likely but maybe in longer term
√ limited benefit, only small proportion of population affected
= benefits and disbenefits may balance
0 no benefit
× negative impact

This assumes:

- variable density establishment with a graduation through sparse to open habitat on upper slopes, ie not hard edges, and
- there will be some unplanted stand off/ buffer zones to crags
- species mix will change in relation to ground conditions, eg Alder, Willow in lower, damper areas, Oak etc on main slopes and Birch/Hawthorn on the upper edges
- other measures relating to habitat improvements elsewhere are not assessed here. Not that improved blanket bog, hay meadow etc habitats will provide additional benefits

Feature	BoCC status	General status/habitat comment	Potential use of project area	Potential benefits/disbenefits of project	Overall assessment	Clough woodland project design
Redstart		Strongly associated with open, mature (often Oak) woodland where nest holes are available *(Smart et al 2007)*	Limited opportunity in short to medium term, until trees mature (c80 years)	Availability of additional habitat once woodland matures. Could be accelerated with nest boxes	√√ longer term	Oak planted. Open areas with mosaic
Wood Warbler		Breeds in closed-canopy (usually) Oak woodland with sparse ground cover *(Smart et al 2007)*	Can occupy closed-canopy woodland from pole stage where structure is right	Availability of additional habitat in time as woodland matures	√ longer term	Oaks planted. Closed-canopy thickets with mosaic
Spotted Flycatcher		Open, well structured woodland, as well as parks and gardens. In woodland, sites nests in climbers or tree cavities *(Smart et al 2007)*	Sheltered, open, wooded areas lower in the cloughs e.g. near water	Structural mosaics of more open-spaced trees, well designed rides	√√	40% open areas, mosaic of thickets and sparse tree cover
Lesser Spotted Woodpecker		Mature, closed-canopy woodland, including wet woodland. Strong declines in part associated with habitat structure change	Probably mainly riparian areas at lower levels	Long term as woodland matures, particularly where contiguous with other suitable habitat	√	Increase closed-canopy woodland, including wet woodland
Pied Flycatcher		Strongly associated with mature, closed-canopy, Oak-dominated woodland with natural holes with open sub-canopy *(Smart et al 2007)*	Limited opportunity in short to medium term (c80 years)	Availability of additional habitat once woodland matures. Could be accelerated with nest boxes	√√ longer term	Oaks planted. Closed-canopy thickets within mosaic
Tree Pipit		Woodland edge species which has suffered with loss of graduated woodland/open habitat edge	Graduated edges to especially dry moorland, sparsely planted areas	Potentially high where edge graduation is over big areas	√√√	Natural graduation from woodland to open habitats, increase in woodland edge

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PRODUCED BY MOORS FOR THE FUTURE PARTNERSHIP ON BEHALF OF THE PROJECT PARTNERS

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www.moorsforthefuture.org.uk

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