NORTH PENNINES
Area of Outstanding Natural Beauty

United Nations Educational, Scientific and Cultural Organization
North Pennines UNESCO Global Geopark

YORKSHIRE DALES
National Park Authority

HERITAGE FUND

TEES-SWALE
Naturally
Connected

Programme Plan

Part 1

Foreword, Sir John Lawton CBE FRS

In the northern Pennines, the Yorkshire Dales National Park and the North Pennines Area of Outstanding Natural Beauty together cover the largest expanse of semi-natural habitats in England.

Upper Teesdale and Swaledale sit at the heart of this ecological network. During a rich and varied history of human occupation covering several thousand years, this place has been modified and nurtured by farmers and landowners. From the steep-sided valley of Swaledale in the south, with its iconic hay-barns set in flower-rich upland hay meadows, to the more open landscapes of Teesdale in the north, with its precious and unique flora, and much else in between. Today these landscapes offer local people and visitors not only stunning scenery but some extraordinary wildlife. You can, for instance, see more Black Grouse here in a day than anywhere else in England, and it is one of the few places where the bubbling call of curlews is still commonplace.

It is, without question, one of my most favourite places in the whole world.

But (imperceptibly to many people) this natural heritage, and the high-nature value farming systems that have sustained it are under threat, in the face of economic pressures and an uncertain future. Their remoteness does not make them immune to the climate and biodiversity crisis, which faces the whole world. If – as a nation - we are to hold on to nature, and support its recovery, this is where we must start — and on a transformational scale.

Covering 845km^2, Tees-Swale: *naturally connected* is a unique collaboration between an AONB Partnership and a National Park Authority, and those who own and manage the land. It has four principal objectives:

- to promote and support farming and land-management practices that are both economically viable and lead naturally to nature recovery on a grand scale;
- to share knowledge and expertise between farmers, landowners, land managers, and conservation agencies;
- to engage local communities so that they can help shape and share a common vision for the area's natural heritage; and, last but by no means least,
- to reach out to visitors and new audiences (particularly those who live in nearby towns and cities), who, through getting involved in activities of all kinds, can increase their appreciation and care for these wonderful landscapes and the people who live and work here.

It is indeed a huge privilege to chair the Programme Board for Tees-Swale*: naturally connected*.

Professor Sir John Lawton CBE FRS
Chairman

Programme Plan Part 1

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Our Vision for the future

By harnessing the knowledge of local farmers, landowners, land managers and conservation organisations, Tees-Swale will be the national exemplar of nature-friendly upland farming on a grand scale. This ancient cultural landscape will be enhanced and restored for the benefit of wildlife and the people who live, work and play there. Easier to access and explore, with a wealth of natural heritage to enjoy and stories to inspire people, it will be the natural destination for audiences old and new.

What will this look like on the ground?

Through this Programme, Teesdale and Swaledale have become 'the collaborative dales' – an exemplar of how everyone working together better can make a place and its heritage more resilient and sustainable.

Empowering our High Nature Value(HNV) farmers, and instinctive closer working between the farming, landowning and conservation communities, has led to habitats being enhanced, expanded and connected across multiple holdings on a landscape scale. Hundreds of hectares of hay meadows are now better maintained, and others have been made richer and more diverse; new woodlands have been created, linking fragmented habitat and helping to slow the flow of water from the hills; a network of new wetlands diversifies the landscape and supports our special and distinctive birdlife. Peatlands too have been restored, storing and sequestering carbon, holding back water, reducing sediment load in our rivers and supporting more wildlife. The impacts of centuries of industrial exploitation are being addressed through managing diffuse pollution from old metal mines.

Through building mutual trust and respect, and by learning new skills with and from each other across sectors, we have all altered our behaviours and made new things possible. Farmers and land managers have been enabled to measure their positive impacts, understand the public goods they provide and how to sustain and increase them. Everyone is more ready for what the future brings.

More people, from more diverse backgrounds, are discovering the natural heritage of this place for the first time or seeing it afresh. They are enjoying new trails and benefiting from innovative interpretation that leaves people knowing more and caring more than when they arrived. A cohort of local schoolchildren have been taken through part of their school life with Tees-Swale, learning through fun and discovery. Many other children have enjoyed learning in the landscape. Local communities are skilled at telling the stories of their natural heritage through art of all kinds, and our dales have become an outdoor classroom, a stage and a gallery which enriches lives and boosts well-being.

Through investing in the farming and land management community, empowering people to take action, promoting skills and expertise and fostering innovation in all we do together, we have all built a nature recovery network that is reversing the decline in our biodiversity, whilst our farmers and farming have grown more resilient. Our heritage has been brought to life and opened-up for everyone to discover and enjoy. We have not 'rented change' for the short-term but secured it for the future.

Tees-Swale: *naturally connected* covers 845km^2 of the North Pennines Area of Outstanding Natural Beauty (AONB) and the Yorkshire Dales National Park. As the name suggests, the focus is on Teesdale and Swaledale within the two Protected Landscapes, two dales which, though different in a number of ways, share many characteristics, not least in being among the most biodiverse parts of the English uplands.

Tees-Swale is led by the North Pennines AONB Partnership and the Yorkshire Dales National Park Authority, in collaboration with a range of statutory agencies and voluntary sector bodies. At the heart of the programme is a genuine collaboration with the High Nature Value farmers of the area, and with all those who own and/or manage the land.

In a widely acknowledged time of climate and biodiversity crisis, there has never been a greater need to promote nature's recovery. Over the next five years it will conserve, enhance, expand and connect habitats and boost species conservation, putting nature at the heart of farming, and putting farming and farmers at the core of nature recovery.

Most of the activity of the Programme is likely to take place below the fell wall, on small farms which are largely reliant on farm support for their survival. As we leave the European Union, the only certainty for farmers and the farmed landscape is that support payments for agriculture will change; a public money for public goods arrangement is the most likely successor to current schemes. The work will help to create a more collaborative, knowledgeable and skilled community of HNV farmers and land managers, better able to enhance nature on their land and better equipped to assess and monitor the benefits their work provides.

Through the Programme, local communities will be encouraged and enabled to celebrate what's special about where they live. New opportunities will be created to access the landscape more easily, whilst new interpretation of the landscape, its wildlife and how it is managed will help bring the stories of the area to life. New audiences, including youth and community groups from outside the area, will be given new opportunities to explore, enjoy and understand the area and all it has to offer.

It is the lead partners' intention to work with every farmer in the area – on 300 farms – to transform the fortunes of nature and create transformational change that lasts. Our Programme will be complete in terms of Lottery funding by 2025, but it is our ambition to use the successes of the work to create a platform for the continuation of the approach in the area, and its expansion to other parts of the AONB and National Park. Our legacy will be a more resilient landscape, in the hands of people better-equipped to conserve, enhance and celebrate all that makes it special.

"The Tees-Swale: *naturally connected* programme is exactly the kind of initiative that will enable us to meet the climate and nature crisis that is now upon us. We can only make real progress through fostering collaboration based on integrated thinking at the scale of landscapes, and this is a fantastic leadership example of how to do that."

Tony Juniper CBE, Chair, Natural England

Our strategic objectives

Objective 1 – Enhance, expand and connect priority habitats on a landscape scale, showcasing how public funds can deliver multiple public benefits

Summary of activity Through close partnerships between landowners, farmers and conservation bodies, the Programme will deliver habitat enhancement and creation on a grand scale, including:

- peatland restoration (minimum 1,250ha):
- hay meadows restoration (minimum 225ha);
- rush management (2,500ha);
- wetland creation (40 sites);
- woodland creation and enhancement (allowing for establishing 200,000 trees);
- improve water quality in up to 200km of rivers by mitigating pollution from diffuse metals; and
- river enhancements on the River Greta.

Objective 2 –Work in partnership with the farming and landowning community to generate change that will sustain our 'High Nature Value' farming systems

Summary of activity This is built in to the way we will deliver every aspect of this Programme, developing habitat works collaboratively, promoting training and skills and facilitating knowledge exchange and peer to peer learning. The works on farm and fell have all come about through engaging and listening one to one with over 100 farmers for years 1 and 2 of the Programme.

Objective 3 – Create opportunities for high quality learning and training connected to the special qualities of this landscape

Summary of activity

- Training for farmers in:
  - assessing habitats and monitoring the impact of actions, to support a future 'outcomes approach' as opposed to a prescriptions-led approach which has dominated in the past;
  - alternatives to intensification; understanding and sustaining the public goods on their farm;
- Training for contractors to deliver the services needed to create a large-scale nature recovery network;
- 'Knowledge exchange' between farmers/land managers/conservationists;
- Demonstrations and on-farm trials;
- Traineeships to support young people to develop careers in conservation of natural heritage; and
- Skills training for volunteers (including habitat and species monitoring).

Objective 4 – Enable more people, and more diverse audiences, to discover, explore, enjoy and understand the Tees-Swale landscape, how it is managed and the wider benefits it provides

Summary of activity

- 17 new walking/multi-user trails will be established, interpreted and promoted, with associated infrastructure improvements;
- Engaging with youth audiences from urban areas outside the Programme boundary;
- Educational programmes targeting year groups 6 to 10, with schools in and outside the Programme area;
- Community-led art projects with a series of professional artists;
- New interpretation across the area;
- On-farm public engagement; and
- HNV Farming Award.

These objectives will be delivered through three strands:

1: Nature Recovery. 2: Training and Skills. 3: Access and Engagement

1
About this Plan

This Programme Plan is the guiding document for an ambitious five-year programme of work, supported by the National Lottery Heritage Fund, which will drive nature recovery in Teesdale and Swaledale and engage a wider range of people in all that these places have to offer.

It draws together all the consultation, planning and research that has gone into developing this Scheme over the last three years, under the joint leadership of the North Pennines AONB Partnership and the Yorkshire Dales National Park Authority.

The Plan is divided into three parts, as follows:

Part 1 Programme Plan (this document). This introduces the concept behind Tees-Swale and provides a vision and objectives for the programme. It describes our Tees-Swale landscape, its history and its communities. It highlights the importance of its heritage assets, and it identifies the threats and opportunities facing this landscape and briefly summaries the projects within the overall Tees-Swale Programme and summarises the staffing plans and the overall Programme budget

Part 2: Project Summaries. This is a series of non-technical summaries of the projects, in three themes, which together will conserve, protect and enhance the natural and cultural assets of this special place and help people to engage with the area more deeply.

Part 3: Full Project Plans and accompanying documents. This is a detailed set of working documents for the team and delivery partners. It includes detailed working documents for each project with detailed key actions, audiences and communications, risk registers and Communications Framework. It also details the Programme budget, staffing structure and our Management and Maintenance Plan.

Appendices. The detailed reports and surveys that helped to inform the development of Tees-Swale form a series of appendices, maintained separately from the three Plan documents outlined here.

This Plan was prepared by the North Pennines AONB Partnership and Yorkshire Dales National Park Authority between September 2018 and February 2020. The work has been overseen by a board Chaired by Sir John Lawton and including representatives of farming, land management, tourism, access and arts organisations. It was prepared in consultation with many individuals and organisations to whom the lead partners and the Board are extremely grateful.

2
Introduction

What we're about – *Connections for people and nature, change that lasts*

Nature, and the urgent need for comprehensive work on its recovery, is at the heart of our philosophy. Together, Teesdale and Swaledale support the most coherent and connected ecological network left in England; there is nowhere else with a more important suite of upland habitats and species. From an upland biodiversity perspective, these are our 'crown jewels'. But though well-connected, our habitats are not always in good condition and some of our key species are under serious threat – there is much to do support nature recovery, even here.

Following the principles enshrined in *Making Space for Nature* (the 'Lawton Report'), we want to ensure that more and bigger areas of land are managed with nature in mind, that land is managed more effectively for conservation and that habitats are more effectively connected across the landscape. We also believe that it is essential to conserve the best examples of high quality habitats that we have, and build out from there to increase the biodiversity of the places beyond.

We believe that the only practical route to nature recovery here lies through working with people and connecting them back to their natural heritage.

Farmers and landowners are at the heart of this work. Continuing our deep engagement with them, we will work in clusters of farmers and through broader collaboration to foster a culture where people listen and learn from one another and recognise knowledge and achievement – ultimately building respect and self-respect. Through capital investment, learning and innovation, we will increase the connectivity and resilience of our extraordinary wildlife habitats and the support the livelihoods of those responsible for managing them.

We will build connections that cross physical and cultural boundaries: between habitats, people, organisations and places. Beyond our Programme area, we will forge links with young people in nearby urban areas. Coupled with extensive access and engagement activity, this will build new emotional connections for people to our area – this will become a place they understand, value and feel belongs to them too.

Like the 'Lawton principles' on which our habitat work is based, our philosophy will be to build connections outward but also 'upward' – to influence the development of national policy. We aspire to motivate and transform. Our ultimate goals are landscape-scale nature recovery, a brighter future for our proud 'High Nature Value' farmers, and a younger generation growing up nearby who feel connected to this place and what nature provides.

Hay making in Upper Teesdale © Rebecca Barrett NPAP

Our Programme area

The Tees-Swale Programme area covers 845km^2 of Upper Teesdale and Swaledale. We are driven to focus foremost on where the wildlife is, so the boundary has been drawn to encompass the full extent of the priority habitats. It would be hard to find an equivalent block of land anywhere else in England with this extent and density of nationally- and internationally-important habitats and species. If we are to hold on to nature, and support its recovery, this is where we must start — and on a transformational scale.

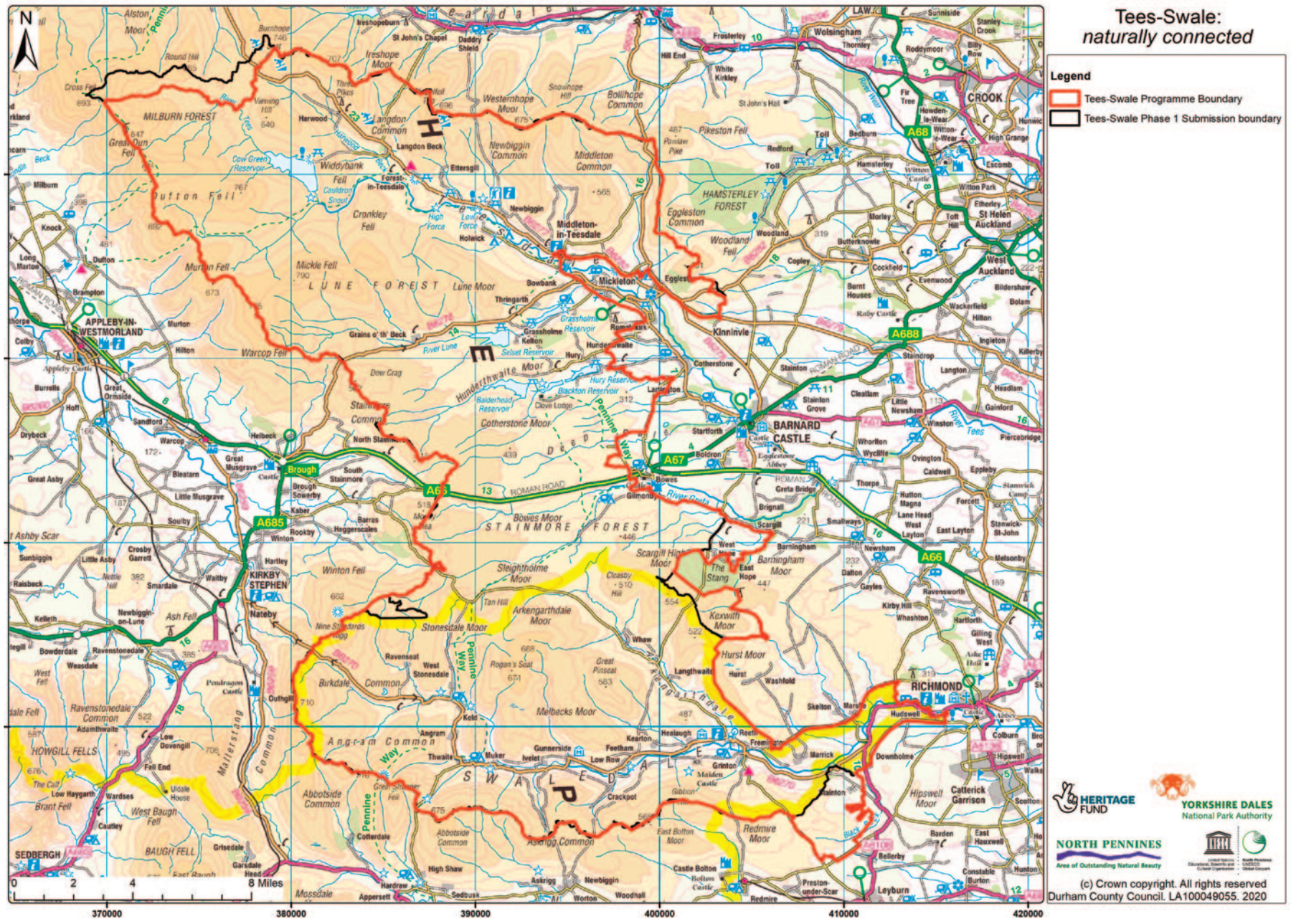
The two places have a common suite of species and habitats and are the most important areas in the English uplands for rare flora, upland hay meadows, breeding waders and black grouse, to name but a few.

From this common suite of natural assets flows a common set of natural goods and services – including water storage and filtration, carbon storage, and sequestration and pollination – which, when functioning well, support a range of benefits to society including clean air and water, reduced flood risk, climate change mitigation, food and many more. Through this Programme we will demonstrate a practical methodology for restoring nature in a way that best connects with all of these other environmental benefit.

But the rationale for choosing this area goes beyond bigger, better and more joined up habitats. It is also about making connections between:

- **the North Pennines Area of Outstanding Natural Beauty and the Yorkshire Dales National Park [Authority]** increasing our range and influence – we capitalise on each other's strengths and can demonstrate a unity of purpose in designated landscape management. This is just the approach advocated in the recent Landscapes Review (Glover 2019). The Review recommendations are clear on the need for AONBs and National Parks to be at the forefront of nature recovery and for there to be greater collaboration between their staff teams;
- **farmers and land managers** sometimes culturally separated across watersheds and county boundaries, who share similar problems and potential solutions in managing places that have more which unites them than divides them. Farms are often physically isolated, and many farmers feel isolated. Bringing together the subtly different farming cultures and practices will help them learn from each other, improve land management and overcome the challenges they face, but also build personal resilience and support networks; and
- **different administrative areas** of Natural England, Environment Agency; Local Enterprise Partnerships and others, increasing the reach and influence of the programme.

View across Baldersdale towards Upper Teesdale © Patrick Oulton NPAP



Map of the Tees-Swale Programme area. A boundary extension was established in the south eastern corner during the development phase (south of the black line), taking in an opportunity for greater connectivity of habitats. Appendix 3 details the rationale for the boundary change.

Our partnership

The initial stimulus for this Programme came from the establishment of the Northern Upland Chain Local Nature Partnership. The Partnership, which was set up in 2012, connects five nationally-designated landscapes: Forest of Bowland AONB; Nidderdale AONB; Northumberland National Park; North Pennines AONB and Yorkshire Dales National Park. The Partnership created the vehicle for closer working between NPAONB and YDNPA – building trust and identifying a shared ambition for nature recovery driven by 'high nature value' farming. The establishment by the LNP of the Northern Hill Farming Panel gave a voice to previously under-represented community of upland farmers, and a mechanism for engagement and collaboration.

From the outset, this could only be a partnership programme. It has been developed under the guidance of a Steering Group (now Programme Board) with a strong and diverse mix of representatives from farming and land-owning communities and those organisations in both public and private sectors with the drive and influence to help get things done. The composition of the Board can be found in Section 7.

The benefit of particular partnerships and collaborations became clear through our early developmental work the functional analysis referred to previously also addressed which groups of people and organisations were central to the mission of sustaining our key natural assets – the 'gatekeepers' to a future in which nature was better conserved, enhanced, expanded and connected. This Programme has been developed with close collaboration with all of those people and groups, but crucially with our High Nature Value farmers.

We have been incredibly fortunate that the Board has been chaired by Sir John Lawton, author of the UK Government's 2010 report *Making Space for Nature* (aka 'The Lawton Report'), which provides the intellectual blueprint for what we are trying to achieve.

As the development phase proceeded, the core group of delivery partners (YDNPA and NPAONB) was bolstered by organisations who, in delivery, will be responsible for leading major elements of the project: the Yorkshire Peat Partnership; Countryside and Community Research Institute at Gloucester University; Tees Rivers Trust; Yorkshire Dales Rivers Trust and the Environment Agency.

Other supporters that have committed funding to the work are: Arts Council England; Defra (Facilitation Fund, Countryside Stewardship); Environment Agency; Esmee Fairbairn Foundation; European Union (INTERREG programme); North Pennines AONB Partnership; Richmondshire District Council; Yorkshire Dales National Park Authority.

Contributions in-kind come from a wide range of partners and individuals including farmers and landowners, Yorkshire Peat Partnership, Woodland Trust, RSPB, the Coal Authority and Environment Agency and are focused on peatland restoration, hay meadow restoration, rush management, woodland planting, diffuse metal mitigation, wetland creation, in-stream works and training for farmers.

In addition, we have ensured that interest groups in the area have had the chance to influence the scheme through the Wider Stakeholder Forum, which has met and animatedly discussed the overall scheme and specific projects.

3
What makes the natural heritage of this place so special?

Statement of significance

Upper Teesdale and Swaledale is the most biodiverse part of the English uplands and has the highest levels of habitat connectivity in the country. These dales fall within two nationally protected landscapes – the North Pennines Area of Outstanding Natural Beauty and the Yorkshire Dales National Park. Within this landscape of 845km^2, there is over 500km^2 of UK Priority Habitat, covering over 60% of the Programme area. The Tees-Swale landscape is part of England's largest contiguous area of blanket bog, covering 400km^2. In contrast, there is a relatively small area of species-rich upland hay meadow, just 5.65km^2, but it represents 85% of the total English resources of this precious habitat.

Outside the mapped areas of priority habitat are extensive tracts of rushy-pasture, white moor and in-bye grassland, land vital for England's breeding wader population, notably red listed species such as curlew, lapwing, redshank and oystercatcher. These birds give a voice to the landscape in spring and summer and their return is eagerly awaited. 30% of England's remaining black grouse are found here, with much of the rest of the population in adjacent dales. Upper Teesdale National Nature Reserve, Britain's largest terrestrial NNR, supports more than 20 species of Europe-wide conservation importance, including the unique and celebrated 'Teesdale Assemblage' of arctic-alpine, arctic and montane plants such as alpine bartsia, spring gentian and birds-eye primrose; in this context it is the most important upland reserve in the country.

The rivers Tees and Swale are the arteries of the Programme area and have their birthplace high up in the fells. Home to otter, kingfisher, dipper, salmon and trout, they are part of the DNA of local communities. They tumble, rock strewn, along the dales, clothed in woodland in their middle and lower reaches. Where the rivers cross the erosion-resistant dolerite of the Whin Sill, dramatic waterfalls are formed, such as those at High Force, Low Force and Cauldron Snout, in Upper Teesdale

The large, continuous swathe of peatlands of Teesdale and Swaledale cover an area over four times the size of the city of York. In good condition, they store and sequester carbon, soak up water and mitigate the impacts of flooding, reduce sediment load and water colour in our rivers and support charismatic wildlife and upland farming,

Though fragmented and covering only a very small percentage of the area, our native woods are themselves important examples of woodland types, especially upland oak/ash and juniper woods. They are distinctive features of the landscape, often following the course of rivers or clinging to narrow gills. In these woods can be found wood warbler, pied flycatcher and redstart and, in Swaledale, elusive red squirrels.

These two dales have a history of human occupation stretching back perhaps 10,000 years. There is clear evidence of occupation in the landscape from the Mesolithic onwards and much still to discover. The most striking heritage assets of both dales are perhaps their legacy of an industrial past based on lead and metalliferous mining. The area has a renowned mineral mining heritage from an industry which had its heyday in the 18th and 19th centuries but from which there is an imprint reaching back to Roman times. In places, this has left a legacy of rare lead-tolerant plants, such as spring sandwort and alpine penny-cress.

Buildings and small settlements are an integral part of the landscape, mostly built of local sandstone and reflecting the underlying geology. Hundreds of miles of drystone walls provide a patchwork across the landscape, linking fields where barns stand out as much a part of the landscape as the hay meadows they were built to exploit.

This is perfect country for walking, cycling, horse-riding, wildlife-watching and following in the footsteps of artists, such as JMW Turner, and writers such as Dickens and Auden, who have been inspired by this land. There are 925km of footpaths and bridleways to explore, including the Pennine Way National Trail, the C2C National Cycle Route, the Pennine Cycleway and the National Byway.

High Nature Value farming is critical to the future of our biodiversity and to the retention of community and a living culture in these sparsely populated dales. Generations of families have often farmed the same land and they know each square foot of ground intimately. These people are as much a part of the landscape as the waders, the meadows and the Tees and the Swale themselves.

This is a place to live and work, and to celebrate, explore and look after as the most wildlife- rich part of upland England, and for all this landscape provides for us.

The evolution of our natural heritage

Present-day Upper Teesdale and Swaledale combine geology and glacial history with the activities of many generations of people who have farmed the area and exploited its mineral riches. Understanding the evolution of this natural heritage, and the endeavours of people to make a living from it since prehistoric times, is the bedrock on which our Programme is built.

The special character of the area has at its root the underlying rocks and the geological processes that have shaped them over hundreds of millions of years.

The deepest origins of the landscape are slates and volcanic rocks. Nearly **500 million years ago**, these rocks were muds and volcanic ash at the edge of a wide ocean. When the ocean closed, the muds and ashes were squashed, crumpled and altered to form hard, slates. They are now mostly buried under layers of younger rocks but can be found in a few places, notably in the old workings near the Cronkley Pencil Mill in Upper Teesdale.

About **400 million years ago**, a huge mass of molten rock rose up into the slates and volcanic rocks. It cooled and crystallized underground to form granite. As granite is less dense than most other rocks in the Earth's crust, the area above it has remained higher than surrounding areas for millions of years, leading to the upland environment we still see today.

About **350 to 300 million years ago** – in the Carboniferous Period – the area was near the equator and was periodically covered by shallow tropical seas. Skeletons of sea creatures accumulated as limy silt on the sea floor. Rivers washed mud and sand into the sea, building up vast deltas on which swampy forests grew. In time, the limy silt became limestone, the mud and sand became shale and sandstone, and the forests turned to coal. Periodically, the sea flooded in, drowning the deltas and depositing limestone again. This cycle happened many times, building up repeating layers of limestone, shale, sandstone and sometimes thin coal seams that are collectively known as the Yoredale Group.

The layers of limestone and sandstone in the Yoredale Group have slightly different erosion rates, and they are both more erosion resistant than the softer shales. This variation produces the distinctive 'benches', stepped features, in the landscape across the area.

The sandstone and limestone have been quarried in the area for centuries, and the use of local sandstone gives distinctive character to the area's settlements, fieldbarns and dry-stone walls.

Millstone Grit - a coarse series of sandstones with intervening shales and coals - lies on top the Yoredale rocks and forms an extensive plateau at the heart of the Programme area. A large coal seam, the Tan Hill coal, was worked for centuries on the moors near Tan Hill and helped to fuel the lead smelting mills.

Stretching of the Earth's crust **295 million years ago** caused molten rock to rise and be injected between the layers of sandstone, limestone and shale. While molten, its great heat baked and altered the surrounding rocks, creating the unique 'Sugar Limestone' of Upper Teesdale, which is now home to a unique assemblage of plants. The molten rock cooled and solidified underground to form a roughly flat-lying sheet of rock (a 'sill') made of hard black dolerite, known locally as whinstone. After millions of years of erosion, the Whin Sill is now exposed at the surface where its cliffs form dramatic landscape features in upper Teesdale at Cronkley and Holwick Scars and the waterfalls of Cauldron Snout, High and Low Force.

About **290 million years ago**, veins of lead ore and other minerals formed when mineral-rich waters, warmed by heat from the mildly radioactive buried granite, flowed through cracks and fractures deep underground. As the fluids cooled, their dissolved minerals crystallized within the fractures, forming mineral veins.

Mining for lead ore had its heyday in the 18th and 19th centuries when the area's lead mines were of global importance. Other commercially mined minerals included zinc ore, iron ores, fluorspar and baryte.

Leaping forward to about **two million years ago**, the world's climate cooled dramatically, heralding the start of a series of ice ages. The Tees-Swale landscape owes much of its character to the action of ice and meltwater. About **20,000 years ago**, an ice sheet one kilometre-thick covered the area and streamed over the landscape, smoothing and scouring the hills and valleys. It dumped a mixture of clay, gravel and boulders ('till') and created streamlined mounds of glacial debris (drumlins).

Finally, about **15,000 years ago** the arctic conditions started to give way to a milder, wetter climate. The ice began to melt, leaving a landscape of bare rock, unstable slopes and piles of glacial debris. Torrential meltwaters carved drainage channels and deposited sand and gravel in the valleys. Amidst this rapidly changing landscape, arctic plants, grasses and dwarf shrubs began to colonise the bare land. These were eventually replaced by woodland – part of the great wildwood which once covered much of Britain. Sparse birch and Scots pine dominated the higher slopes. About **7,500 years ago**, rainfall increased and blanket bog began to form on the waterlogged uplands. By this time, people had started to have a direct influence on our area.

Broadleaf woodland in Upper Swaledale © Rebecca Barrett NPAP

A place shaped by farming and mineral extraction

Ever since people first came to the area, perhaps 10,000 years ago, human activity has profoundly influenced the area's natural heritage.

As the last ice sheet retreated northwards, Mesolithic Age hunter gatherers followed (8000-6000 BC). Foraging for plants, fruits, nuts and seeds, these early people will have also hunted the wild boar, deer and wild cattle that roamed this predominantly wooded landscape.

The Bronze Age (1800-1000 BC) saw the first signs of farming and settlement. Evidence of Bronze Age settlement can be found on Harkerside in Swaledale, where there is a small stone circle, and at Bracken Rigg in Teesdale, where there is a hut circle within its own fields. With the landscape steadily shifting from one dominated by woodland to more of a mosaic of woodland and grassland, small-scale agricultural activity began. This would have included hay-making and the seasonal use of upland grazing, coupled with continued hunting of boar, deer and wild cattle.

Scattered across the area is evidence of the field patterns, wall boundaries and house platforms of the Iron Age and Romano British period (1000BC – 410). This suggests that during these times the population of the area was quite significant. Settlements of this period are surrounded by extensive systems of small arable and pasture fields. Forcegarth in upper Teesdale is a typical example. During the Iron Age, about 3,000 years ago, and for reasons that are not clear, there was a widespread loss of woodland cover in the area. As a result, heather and other dwarf shrubs became dominant across the higher altitudes.

The first settlers in the area after the end of Roman rule were Anglo-Saxons (410 - 1066). Evidence of their presence remains in place names such as 'Holwick' in Teesdale (Gledhill, in Gater 2018). At the beginning of the 10th century, the Vikings arrived. They established typical Norse-style settlements – boat-shaped 'long houses' – that were set within a complex of small fields and much larger areas of enclosed fell. An example of these can be seen on Holwick Fell. These people made further clearings within the remaining woodland and in summer took their stock to graze the higher pastures – or 'shielings' – on the fell. There are many Norse names in the area reflecting these Viking origins – Micklethwaite (Teesdale) and Keld (Swaledale), for example, coming from the Old Norse 'thveit' meaning 'clearing' and 'kelda' meaning 'spring'. (https://everybarn.yorkshiredales.org.uk/old-norse-names/)

The arrival of the Normans in the 11th century saw some significant changes to the way the land was used and managed. Large swathes were designated as 'hunting forests' by Norman Lords, principally for the purposes of hunting red deer and wild boar. The 'Forest of Lune' stretched south of the Tees from Holwick to the River Lune, and much of Swaledale became a hunting forest under Robert Arkhil, whose name was given to Arkengarthdale. These 'forests' – which comprised woodland, grassland, fields, moorland and villages – were actively managed by grazing with cattle and horses to ensure productive conditions for deer.

A combination of cattle plague, famine and the Black Death during the 14th Century resulted in a population decline. With fewer people to work the fields, medieval arable fields were progressively converted to pasture and meadow.

Swaledale Sheep

Though it is likely that people have been exploiting the mineral resources of the area since at least Roman times, iron smelting really took off during the medieval period. More than 50 domestic-scale medieval iron smelting sites – or 'Bloomeries' – have been recorded on Holwick Fell, Teesdale alone (Gledhill, in Gater 2018). Huge amounts of charcoal would have been required to smelt and forge the iron, and there is considerable evidence of charcoal-making across the area. This in turn would have required an enormous amount of wood and will have been a significant driving force for deforestation in the area. One reason why upper Teesdale still supports a significant juniper population may be that charcoal made from juniper is not suitable for iron smelting so will have been selectively avoided.

It was the beginning of the 18th century that saw a major expansion of lead mining and smelting throughout Teesdale and Swaledale (though as early as the 12th century Swaledale was supplying lead to the Tower of London and Jervaulx Abbey). This created profound changes to the landscape, ranging from shafts, hushes, spoil heaps and chimneys to new patterns of settlement. At the peak of the industry in the 19th century, there were 40 smelt mills in Swaledale and Arkengarthdale. In Teesdale, the industry was dominated by the London Lead Company which had its headquarters in Middleton-in-Teesdale.

Most miners also ran smallholdings to support their families and this led to the characteristic 'miner-farmer' landscape of the area – small, dispersed tenant farms created through the enclosure of common meadows and pastures (see below). The collapse of lead mining at the end of the 19th century led to the mass emigration of miners. In Swaledale, for example, the population declined from 8,279 in 1821 to just 3,061 by 1901. The legacy of its mining past, for both good and ill, remains imprinted on the natural heritage of the area.

The most significant and wide-spread human influence has been the centuries of pastoral farming. Whilst livestock and farming techniques have evolved, the basic principle is still the same: animals are moved between enclosed fields and the open moor to graze the vegetation during the growing season, and are then fed on vegetation preserved during that season over the (long) winter months.

This farming system not only helped to produce important habitats like the species-rich upland hay meadows and calcareous grassland but also created the associated pattern of dry-stone walls and field barns that make this one of the most distinctive agricultural landscapes in Western Europe.

From before Norman times most communities (or 'townships') owned fields in common within the manor. These included lowland meadows, pasture and arable land along with upland pastures for grazing sheep and cattle. However, by the 17th century the small, irregular, valley bottom meadows close to villages were pretty nearly all enclosed. By the 18th century, parliamentary enclosures resulted in the higher ground being enclosed by longer, straighter, parallel walls. By the early 19th century, most of the enclosed meadows had a barn (or "cow 'us"). In winter, the barn housed small herds of cows, with their hay feed in the loft above. The hay was also fed to sheep, brought down from the fells during winter. In summer, manure from the cows was spread over the hay meadows to replace nutrients removed through hay making.

Teesdale farmhouse © Rebecca Barrett NPAP

Not all areas were enclosed and there are still common grazing lands where individual farmers own or buy 'stints' allowing them to graze a certain number of sheep each year.

Most farmers in the project area today are sheep farmers and proud to be so. The Swaledale breed predominates – hardy, thick coated and excellent mothers, they rear lambs well, even in harsh conditions. The wool they produce, though durable and resilient, is worth little these days but the breed is renowned for its tender and good-flavoured meat.

For centuries, droving roads were the main transport routes through the area, for both people and their livestock, for example, the Green Trod in Teesdale. They continued to be used during mining times up until the 1880s. They will form part of the promoted routes we will be developing in this Programme.

By the 20th century, small- scale dairy farming, producing cheese and milk, was widespread on farms since the enclosure period, and was further encouraged by the formation of the Milk Marketing Board in the 1930s.

After the Second World War, food security became the national policy objective. Guaranteed prices encouraged producers to bring more land into more intensive cultivation. What were formerly flower-rich hay meadows were increasingly turned over to rye grass and silage. Grants were introduced to encourage the draining of the moorland to lower the water table and improve productivity for grazing. At the same time, traditional hardy (but slow-growing) livestock breeds were replaced by commercial breeds to increase production.

But by the 1980s, the introduction of Milk Quotas in the 1980s started a rapid decline in dairy farming in the dales with only a handful of dairy farmers left today with most having moved into beef and sheep farming. It also saw the start of a slow but steady re-orientation of agricultural policy towards environmental ends, with the introduction of the national Environmentally Sensitive Area Scheme for the Pennine Dales. This encouraged farmers within the area to retain and restore the remaining hay meadows, and maintain wider landscape features like barns and walls. As further national agri-environment schemes followed, stocking densities also reduced. At the height of these national schemes (2014), they covered around 80% of the area (see page 40).

Estates and their management

A feature of much of the area is the dominance of large estates, some with a continuity of ownership and management over many hundreds of years. In the last 150 years, above the fell wall at least, grouse shooting has influenced the area's natural heritage, generating broad swathes of heather moorland and strong populations of native red grouse.

Further information on farming and land management can be found in Section 4

View from Egglestone Common © Shane Harris NPAP

The Tees and the Swale – twin hearts for our Programme area

The River Tees rises on the eastern flank of Cross Fell and, at the very top of Teesdale, enters Cow Green Reservoir. From here it passes over Cauldron Snout and then further waterfalls at High and Low Force. The origin of the name Tees is thought to be Celtic and means 'boiling, surging river'. (https://englandsnortheast.co.uk/2016/11/10/tyne-wear-tees-becks-burns-forces-linns-whats-north-east-place-name/)

The River Swale rises on the slopes of High Seat and Nine Standards Rigg and becomes known as the Swale at the point where the becks of Birkdale and Great Sleddale meet. It passes over waterfalls at Wain Wath Force, Catrake Force and Kisdon Force. One of the fastest rising spate rivers in England, people used to say that the Swale "rusheth rather than runneth". The name 'Swale' is from the Anglo-Saxon word 'Sualuae' meaning 'rapid and liable to deluge'. This was proven accurate in July 2019 when a cloudburst caused extensive flooding in parts of Swaledale. (https://www.yorkshiredales.org.uk/visit-the-dales/discover-the-dales/water-features/river-swale)

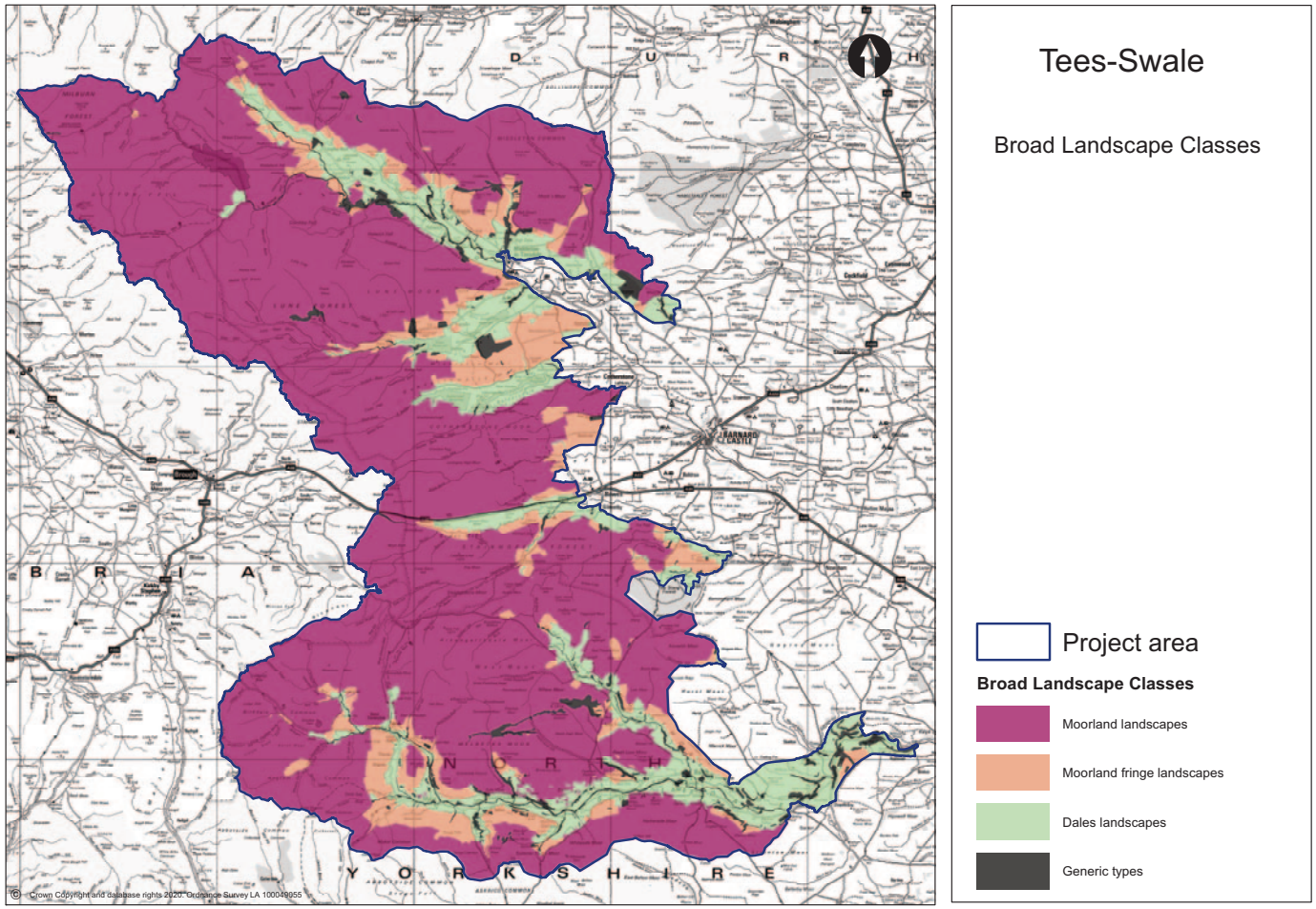
To Calver Hill from Maiden Castle in Swaledale

Landscape Character

Scope and purpose of landscape characterisation

A thorough understanding of our landscape provides confidence that our actions to conserve biodiversity and promote access are in tune with the area's landscape character and qualities; where we do make significant changes, it is a purposeful 'key change' and not simply a discordant note. This would be expected from a scheme led by two management bodies for nationally protected landscapes.

The Landscape Character Framework (LCF) has been undertaken to provide information on landscape character to inform the development of projects for Tees-Swale. The programme includes parts of the North Pennines Area of Outstanding Natural Beauty (AONB) and Yorkshire Dales National Park and is covered by several different existing landscape character assessments (LCA). The framework is designed to provide a consistent approach to landscape character across the Programme area, while retaining as much consistency as possible with the existing LCA. The full landscape character methodology, typology and maps forms a companion to this document.



Local landscape types. The full typology, including sub-types, is available, along with maps of Local Landscape Types and Subtypes.

National Character Areas

The programme area covers parts of three National Character Areas, The North Pennines (NCA 10) and the Yorkshire Dales (NCA 21) and the Pennine Dales Fringe (NCA 22).

Summary of Methodology

A local landscape typology was established based on the landscape types and sub-types identified in the County Durham LCA. These were revised to capture types and subtypes present only in the Yorkshire Dales and to provide a 'best fit' for the Programme area. These were grouped into four broad landscape classes; moorland landscapes, moorland fringe landscapes, dales landscapes and generic landscapes (those that occur across the range of the other classes – see map).

Mapping units from the CDLCA were combined with mapping units from the North Yorkshire and Lower Tees Valley HLC. The latter were interrogated against habitat data and aerial photography to assign them to local types and subtypes, the units being subdivided or redefined where appropriate. Descriptions of landscape types and subtypes were based on those in the CDLCA, amended where necessary to fit the revised typology.

Moorland

Ten distinctive local moorland landscape types were identified. The most extensive of these are:

- *Central Moorland Plateau* of flat or gently rolling moorland, predominantly of blanket bog, grading to heather or grass moorland on thinner peats in the drier moorland edges. The moor is generally open but locally may be subdivided by walls or fences. Lead or coal mining remains may be found locally including hushes, adits, shafts, washing floors, spoil heaps, tracks and waggonways.
- *Moorland Ridge* – high, gently sloping or flat-topped ridges covered predominantly in blanket bog but grading to heather or grass moorland on thinner peats in the east. Man-made features are rare and restricted to scattered cairns, curricks and grouse butts. The moor is generally open but locally may be subdivided by walls or fences. The ridges are crossed in places by unfenced roads marked by lines of snow poles. Lead or coal mining remains may be found locally including hushes, adits, shafts, smelter flues and chimneys, spoil heaps, tracks and waggonways.

Moorland Fringe

Containing five distinct local landscape types, the most extensive of which are:

- *Open rough grazing* – enclosed moorland, rough grazing and wet rush pastures in the moorland fringes. Fields are typically large and bounded by dry stone walls or wire fences. Most are regular in pattern, originating in 18th or 19th Century intakes from the moor. Tree cover is low and restricted to the occasional roadside or streamside rowan or sallow, wind sculpted sycamore shelter trees around farmsteads, and isolated conifer shelterbelts. This type is intermediate between Top land, allotments & intakes: open pasture and the moorland subtype Grass moor (enclosed) – from which it is distinguished by the degree of improvement in the sward
- *Open Pasture* – open pasture and wet rush pasture in the moorland fringes. Fields are typically medium or large in scale and bounded by dry stone walls or wire fences. Most are regular in pattern, originating in 18th or 19th Century intakes from the moor. Tree cover is low and restricted to the occasional roadside or streamside rowan or sallow, wind-sculpted sycamore shelter trees around farmsteads, and isolated conifer shelterbelts. This type is transitional with Top land, allotments and intakes: open rough grazing from which it is distinguished only by the degree of improvement in the sward.

Dales

Containing nine distinct local landscape types, the most extensive of which are:

- *Dale-side farmland: walled pasture and meadow* – Pastoral farmland of the upper dale side. Heavy and often poorly drained soils support improved and semi-improved pastures and meadows. Wetter pastures are often rushy. Some meadows are cut for silage; others are managed as traditional meadow. Field boundaries are predominantly dry stone walls dating from many different periods. Small stone field barns are fairly common. Tree cover is sparse, with isolated stands of shelter trees (Ash, Sycamore) around daleside farms, occasional field trees and tree lined watercourses (Alder, Sallow). Relics of lead mining and processing are locally common.
- *Dale-floor Farmland: Walled Pasture and Meadow* – Pastoral farmland of the middle and upper dale floor. The dale floor may be flat or gently undulating, its brown earths and stagnogley soils supporting improved and semi-improved pasture and meadow. Some meadow is improved and managed for silage but there are large areas of traditionally managed flower rich hay meadow. On wetter ground pastures are rushy. Field boundaries are predominantly dry stone walls dating from many different periods. Tree cover is generally low, though field boundary trees (Ash, Sycamore) are common in places and particularly in areas of older enclosure. Rivers and minor tributary streams from dale-side gills run across the dale floor, often marked by narrow riparian woodlands or tree lines (Alder). Locally there may be relics of lead mining and processing.

Generic

Containing 15 distinctive local landscape types, of which the most extensive are:

- *Upland Woods* – A variable type covering many of the diverse woodlands of the upland dales and upland fringes, including: ancient semi-natural Oak, Oak-birch and Ash woodland communities; Ancient coppiced woods, often indicated by place names such as 'Spring' or 'Hagg'; Replanted ancient woods, heavily modified by the introduction of commercial or exotic species, or species not native to the locality; Plantation woodlands of very variable character, including small plantations of conifers or broadleaves, often planted for shelter, and larger plantations usually dominated by conifers such as Scots Pine, Larch, Norway Spruce and Sitka Spruce; and, secondary semi-natural woodlands dominated by pioneer species such as Birch that have colonised areas of unmanaged pasture or moorland. Some woods are grazed as wood pasture or are regenerating under light or intermittent grazing.
- *Disturbed land* – a variable type made up largely of abandoned mineral workings and railway lines, including:
  - Old lead/spa workings with hushes, shafts, adits, spoil heaps, smelter flues and chimneys, bouse teams, tub ways, washing floors and associate buildings such as mine shops, peat stores, powder cabins and smelter buildings. Many of these features can be found scattered across other landscape types where they are captured as a 'lead mining features' sub-type.
  - Former quarries – abandoned limestone, sandstone and whinstone quarries, typically with extraction faces, spoil mounds and haul roads, softened by varying degrees of natural regeneration. Some quarries contain small ponds or larger areas of standing water.

Our ‘wildlife cathedral’

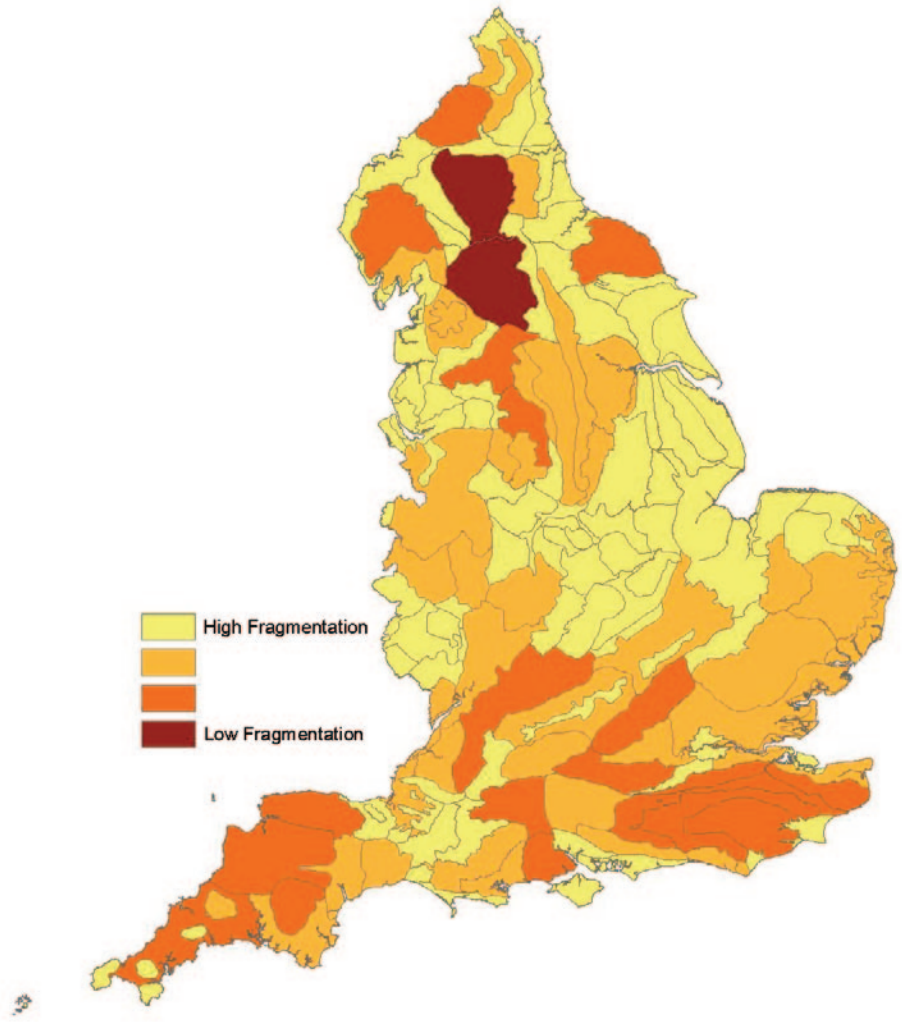
Within the realms of human culture and endeavour, cathedrals are amongst our most prized and cherished buildings – they inspire awe and admiration and are considered worthy of both protection and promotion. With some of the nation’s finest examples of wildlife and habitats, the same should be true for Teesdale and Swaledale but currently this is only partially the case. Addressing the shortfalls is a driving force for this Programme.

From top to toe, the area supports wildlife and habitats of national and international importance At a national scale, this is one of the least fragmented areas of habitat in the country (see map). But despite this high degree of connectivity, these habitats would benefit considerably from improvements in their condition.

Well-connected

On a European scale, the northern Pennines, including Teesdale and Swaledale, is the only significant green infrastructure network left in England. There are thousands of square kilometres of relatively unfragmented habitat, mainly blanket bog and heather moorland.

But though clearly well-connected, this habitat is not always in the best condition. There is a pressing need to improve the condition of habitats, and reconnect them where they are fragmenting, through large-scale programmes of restoration of peatlands, woodlands, grasslands and watercourses.



Habitat fragmentation across NCAs (Planning for Biodiversity, Catchpole, 2006

Our Tees-Swale habitats

Blanket bog and valley mire cover 48% of the Programme area. Together with upland heath, they dominate the central plateau. Sphagnum mosses are one of the key building blocks of blanket bog. Their water-retaining nature and acidic properties encourage waterlogged, oxygen-free conditions. This slows decomposition and allows the build-up of peat (average growth being 1 mm per year). Blanket bogs are home to specialist plants like crowberry and sundew, and golden plover nest here in significant numbers. There has been significant effort towards their conservation in the last 15 years.

Upland heath occurs on the more freely-draining mineral soils. Dominated by heather, this open, expansive habitat supports important populations of red grouse and merlin.

The moorland fringe is a wide belt of pasture with a characteristically tussocky nature that acts as a 'buffer' between the moorland and the more intensively managed grasslands below. This 'messy edge' is nationally-important for its ground-nesting birds like curlew, snipe and black grouse. Its loss is one reason for the decline of these species in most other upland areas.

Unusual plant associations are a special feature of this area. Botanists from around the world have been drawn to upper Teesdale, in particular, for hundreds of years. The Teesdale Assemblage comprises a unique collection of plants characteristic of arctic and alpine conditions that are found together nowhere else in Britain. Relics from the area's post-glacial past, they have survived through a fortunate coincidence of the altitude, local climate, geology and livestock grazing. Many of these plants – including spring gentian, for which Teesdale is well known – are associated with the 'sugar limestone', a granular form of marble.

The Teesdale Assemblage

- Arctic-alpine species (widely distributed in the arctic and high mountains of the northern hemisphere): *Alchemilla glomerulans*, alpine bartsia, alpine bistort
- Alpine species: spring gentian, alpine pennycress
- Northern montane species: wood crane's-bill, bird's-eye primrose, globeflower
- Continental northern species: melancholy thistle, Teesdale (rock) violet
- Continental southern species: hoary rockrose, horseshoe vetch

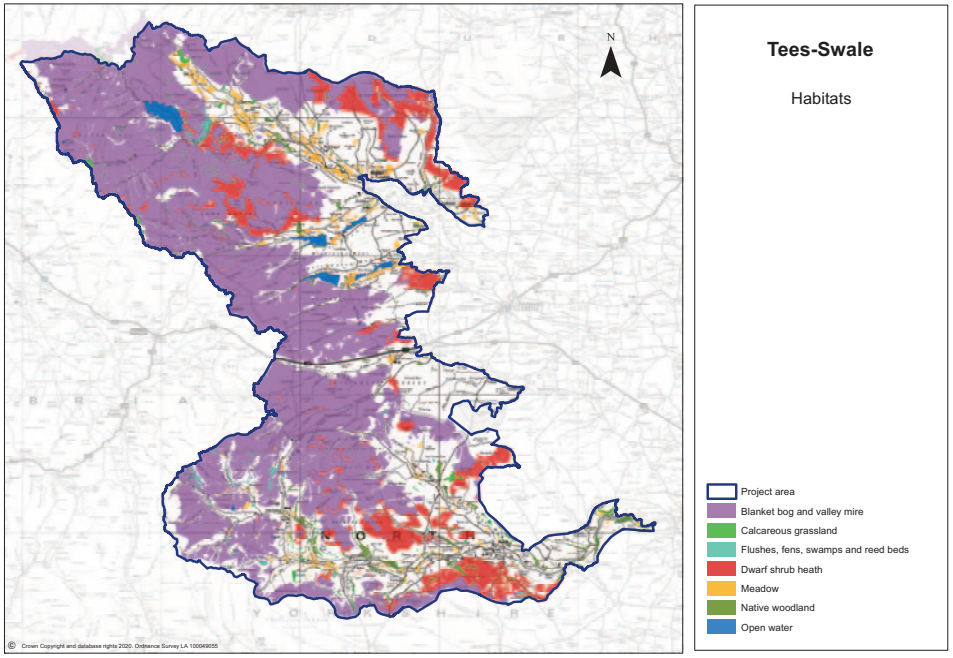
(Bradshaw, in Gater 2018)

Hay meadows and species-rich grassland are highly characteristic features of the area. Upland hay meadows are one of the rarest habitats in the UK, and the finest surviving examples are found here. Supporting unusual and attractive plants such as wood crane's-bill, globeflower and great burnet, these meadows also provide vital habitat for pollinating insects like bumblebees and hoverflies. Beyond the meadows, some of the richest remaining stretches of flower-rich vegetation are found on steep banks, riversides and road verges. A refuge for plants like melancholy thistle and knapweed, this network of species-rich grassland supports rare insects, like the moss carder bee, and offers the potential to provide corridors for species to expand into to nearby areas.

Calcareous grassland can be found where limestone is close to the surface, or where lime-rich springs emerge as 'flushes'. These special grasslands are notable for their species-richness, supporting plants such as bird's-foot trefoil, rock rose, mountain pansy, wild thyme and frog orchid. Bird's-eye primrose is a characteristic flower of limestone grasslands and is largely restricted to the northern Pennines.

Calaminarian grassland is directly associated with the former metal mining sites. The term 'calaminarian' is used for a range of plant communities, from sparse vegetation on highly contaminated mine spoil to closed grassland on less contaminated ground. In Britain, it is found only in the North Pennines, Yorkshire Dales, Mendips, Derbyshire and Cornwall. It is found on well-drained, nutrient-poor soils with high levels of lead,

zinc or copper. A key feature is the presence of heavy-metal tolerant plants, known as metallophytes. Typical species are spring sandwort, alpine penny-cross, thrift and mountain pansy. Important and highly specialised lichen communities are also present.



Small remnant upland oak/ash woodlands, are often located on steep slopes. Woodland cover is much lower than the national average and tends to be fragmented and limited in extent. Despite this, our woodlands are vital for specialist upland birds like pied flycatcher, and for a host of invertebrates. Juniper, one of our rarest native conifers, has a stronghold in the Programme area, with upper Teesdale supporting one of the largest stands in the country. Sadly, these plants are infected by the fungus-like pathogen *Phytophthora austrocedri*, making their future all-the-more uncertain and where possible we will seek to address this.

Rivers and streams are important features of the area. Invertebrates characteristic of fast-flowing upland water courses abound, including mayflies, stoneflies and caddis flies. In turn, they feed brown trout, dippers, sand martins and swallows. Flower-rich bank sides are a stronghold for water vole, Britain's fastest declining mammal.

Tees-Swale: Priority habitats and species

45,515 ha of blanket bog

12,123 ha of heather moorland

765ha of calcareous grassland

565 ha of upland hay meadows – over 60% of the total for England

654ha of deciduous woodland

(source: Priority Habitats Inventory)

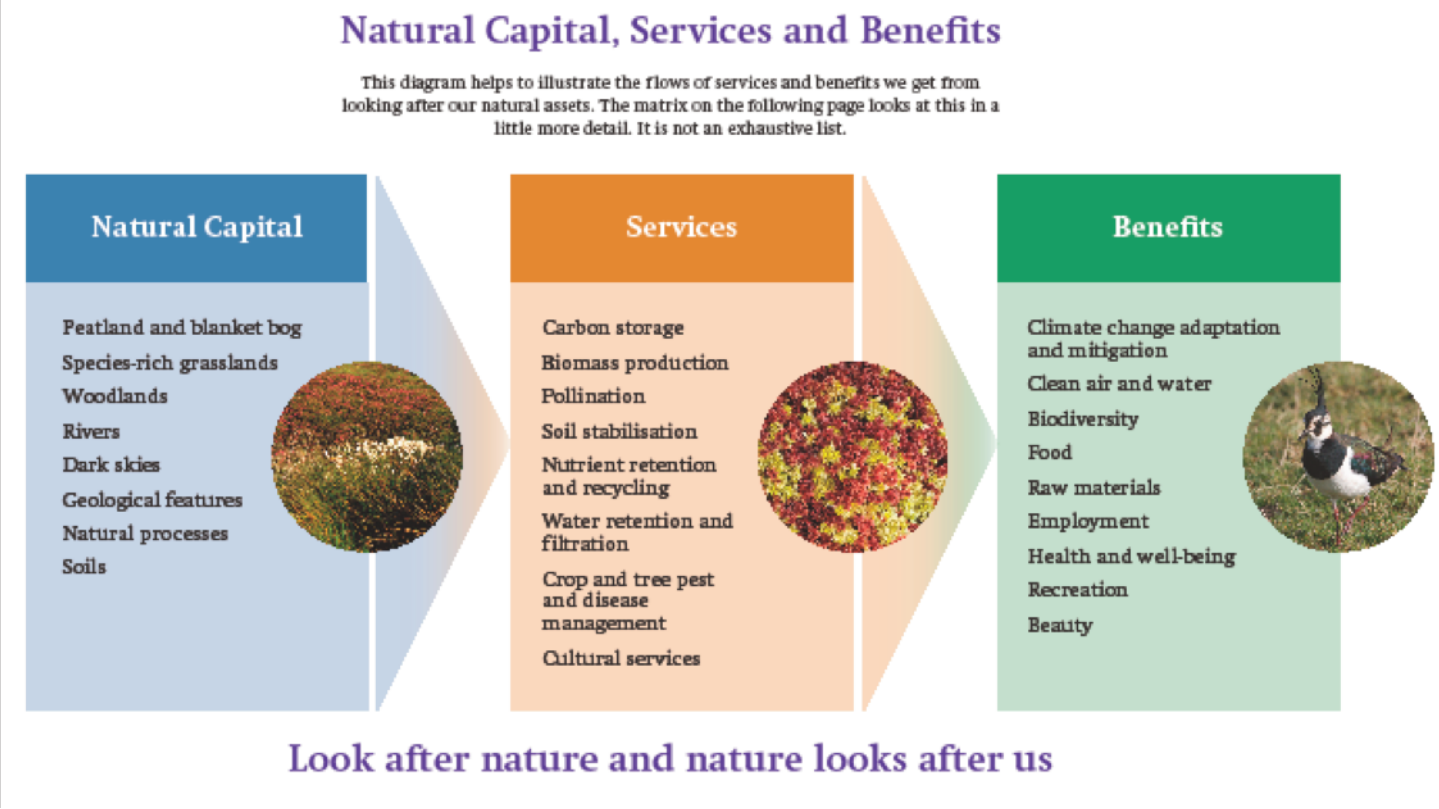
A significant population of breeding curlew – a species classified as globally Near Threatened on the IUCN red list and in disastrous decline in the UK

Heartland of the English black grouse population

Section 41 Priority Species (Natural Environment and Rural Communities (NERC) Act (2006)) include lapwing, ring ouzel, grey partridge, otter, brown hare, water vole, brown trout, adder, moss carder bee, violet oil beetle, frog orchid, yellow marsh saxifrage and rare Lady's mantles

What does nature do for us? – ecosystem services and the Tees-Swale landscape

The UK National Ecosystem Assessment (UK NEA 2011) provided the first analysis of the UK's natural environment in terms of the benefits it provides to society. Our environment has a series of 'natural capital assets' (such as peatland) which can provide goods and services we value (such as carbon storage and sequestration) from which flow benefits to society (such as climate change mitigation). This section describes the ecosystem services provided by the main habitats in the Programme area.



A summary of the ecosystem services provided by key habitats in the Programme area

Ecosystem service	Upland limestone grassland	Upland hay meadow	Calaminarian grassland	Blanket bog	Upland heath	Upland acid grassland	Semi-natural broadleaved woodland
Provisioning services: the products obtained from ecosystems							
Food and fibre provision	✓✓	✓✓✓	✓	✓✓	✓✓✓	✓✓	–
Timber and wood fuel provision	–	–	–	–	–	–	✓✓
Regulating services: the benefits obtained from the regulation of ecosystem processes							
Water supply	✓✓	✓✓	✓✓	✓✓✓	✓✓	✓✓	✓✓
Water quality	✓✓✓	✓✓✓	–	✓✓✓	✓✓	✓✓	✓✓
Flood control	✓✓	✓✓	✓✓	✓✓✓	✓✓	✓✓	✓✓
Carbon storage and sequestration	✓✓	✓✓	✓✓	✓✓✓	✓✓✓	✓✓✓	✓✓✓
Soil protection	✓✓✓	✓✓✓	✓✓✓	✓✓✓	✓✓✓	✓✓✓	✓✓✓
Pollination	✓✓✓	✓✓✓	✓✓	✓✓	✓✓	✓✓	✓
Cultural services: the non-material benefits people obtain from ecosystems							
Recreation	✓✓	✓✓	✓✓	✓✓	✓✓✓	✓✓	✓✓
Biodiversity	✓✓✓	✓✓✓	✓✓✓	✓✓✓	✓✓✓	✓✓✓	✓✓✓
Tranquillity and other cultural services	✓✓	✓✓	✓✓	✓✓✓	✓✓✓	✓✓✓	✓✓

Key: high (✓✓✓) medium (✓✓) low (✓) negligible (–).

Source: EFNCP Cumulus Consultants (2003)

Provisioning services

Food and fibre

Pastoral farming is the principal land-use. and makes a significant contribution to the economy of the local area. Hill sheep and cattle are reared, with progeny sold directly and indirectly for lamb and beef. Fibre, in the form of wool, is also produced, although it currently has little market value.

The poor quality of the soils and the climate mean there is limited potential to increase food production any further. Indeed, there is now a growing body of evidence that these upland farms would be more productive and profitable if stock numbers were reduced to a level that could be supported solely by the farm's naturally available grass (i.e. without the need for artificial fertilisers)[1] At this 'maximum sustainable stocking rate, the farm business is not only most profitable (or at least making the smallest loss) but also naturally leads to environmental benefits – reducing soil erosion, improving water quality, and significantly reducing greenhouse gas emissions. The evidence suggests that any increase in the economic value of food will come from improving the quality/provenance of the meat (and thus its price).

The area is home to a number of native livestock breeds that are important for genetic diversity. The predominant sheep breed is the Swaledale, which is a vital part of UK sheep production. The females are often crossed with Blue-Faced Leicester rams producing the lambs (known as 'Mules') that make up a large percentage of the lowland breeding sheep flock.

Timber and wood fuel

Woodlands in the area tend to be small, fragmented and not easily accessible – often restricted to the steep slopes of valleys and ghylls. The economic value of timber and wood fuel provision is therefore low. However, there is huge potential to enhance existing farm woodlands and create new woodland for the other benefits they would provide, and this could create opportunities for local, small-scale production of wood fuel.

[1] Less is More: Improving profitability and the natural environment in hill and other marginal farm systems, Chris Clark and Brian Scanlon, November 2019.

Water supply

Rainfall levels are high (the headwaters of the Swale receive an average of 1,800 mm per year)). This has led to the construction of several reservoirs in the Teesdale part of the Programme area to provide drinking water for the region, as well as for industrial uses downstream in Teesside. Reservoirs include Cow Green, Selset, Grassholme, Balderhead, Blackton and Hury, all owned and managed by Northumbrian Water Ltd, with whom we will collaborate during the lifetime of the Programme and who are regular supporters of peatland restoration and woodland creation work.

Water infiltration and storage are supported by the large expanses of blanket bog and upland heath, together with other semi-natural habitats including grasslands and woodland. Where they are in good condition, these habitats help to reduce surface runoff and ensure that baseflow is maintained in times of drought. As the effects of climate change worsen – with heavier, more unpredictable rainfall and drier summers – so the value of these habitats for water supply will increase.

Selset Reservoir in Lunedale

Regulating services

Water quality

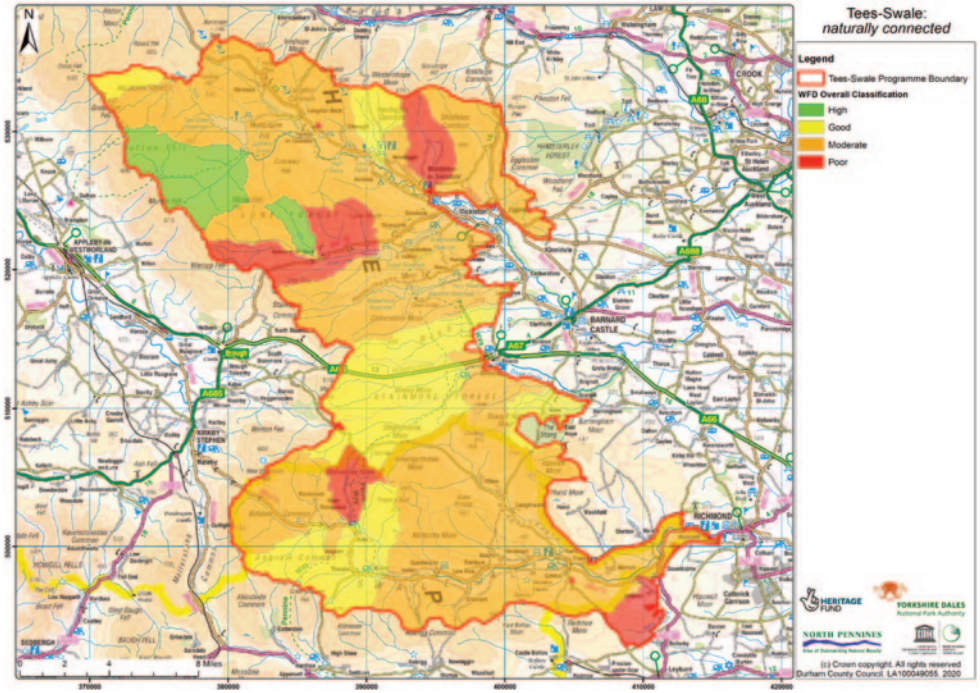
Water quality in the Programme area's catchments is predominantly moderate and good (High 48km^2; Good 168km^2, Moderate 550km^2 and Poor 79km^2 – shown on the map). However, there are some significant issues:

- Moorland drainage grips speed up the rate of run-off and thus exacerbate the scouring of watercourses. Bare and degraded peat is particularly vulnerable to erosion and as well as contributing to sediment load, this causes water discolouration issues. Climate change is likely to result in more frequent and heavier storm events, contributing to these problems.
- In meadows and pastures, water quality can be affected by diffuse pollution from applications of manure, artificial fertilisers and other agricultural chemicals. Soil erosion leading to sedimentation of water courses can occur through overgrazing, or where livestock 'poach' or erode riverbanks.
- Point source and diffuse pollution from mining spoil is a significant issue in both Teesdale and Swaledale.

Eight watercourses are failing their chemical status (totalling 211km^2); these are those targeted for diffuse metals work within Tees-Swale.

Eight watercourses are classed as 'poor' for fish (totalling 97km^2); one is currently targeted for riparian work to remedy this. Others will be addressed through the Programme.

There is significant potential to improve water quality further. Restoration of natural drainage on peatlands (by grip-blocking) and moorland management to maintain good vegetative cover will aid infiltration and reduce the rate of run-off and sedimentation. Maintenance of permanent grassland, or the introduction of scrub or woodland along watercourses can aid infiltration and reduce soil erosion, especially on steep slopes. The increased profitability of moving towards the 'maximum sustainable stocking rate' should lead naturally to less manure; less fertilizer and fewer chemicals finding their way into watercourses, and less soil erosion by livestock.



Flood control

The headwaters of the Tees and Swale drain extensive upland areas. With high rainfall and steep gradients, runoff can be rapid, with the watercourses reacting quickly. This is being exacerbated by an increase in frequency and scale of storm events arising through climate change. The greatest impact from flooding is outside the Programme area, with settlements potentially being affected over a wide area of northern England from Middlesbrough to York. However, the floods in Swaledale in July 2019 show that the area itself is not immune.

There is huge potential to help reduce downstream flood peaks by creating and extending wetland and woodland habitats, and by enhancing natural flood storage

areas. Blocking the drainage channels ('grips') in the peatland has a direct and immediate impact on the speed that rainfall reaches the main rivers Moorland management that achieves good vegetative cover, including mosses and cotton grasses, improves water infiltration rates and holding capacity.

Carbon storage and sequestration

Enormous volumes of carbon are stored within the area's extensive peaty soils – an estimated 31 million tonnes. The other soils also have a high carbon content, in particular those underlying upland heath and unimproved grassland. Carbon storage is also provided by the small but widely dispersed areas of woodland and their underlying, humus-rich soils.

In some instances, artificial drainage, high grazing levels, inappropriate heather burning regimes, and wildfires have adversely affected these soils. Damaged blanket bog releases significant amounts of stored carbon – through water erosion or where the artificial drainage causes the soils to dry out and be vulnerable to oxidation or to just blow away.

Carbon sequestration and storage can be radically enhanced by sympathetic moorland management, restoration of areas of bare and eroded peat and the restoration of natural drainage to encourage active peat formation. Existing woodlands can be managed so that growth rates are enhanced and their carbon storage potential improved.

There is scope for a significant increase in woodland cover. Low-input, extensive livestock systems can contribute to sustaining carbon-rich soils and also produce significantly lower greenhouse gas emissions. The expansion of wetlands, including permanent wet pastures that are not ploughed and reseeded, would also benefit carbon storage.

Soil protection

Where not well managed, soils are vulnerable to damage through wind and water erosion, loss of organic matter and compaction.

Measures to protect soil quality and reduce the risk of erosion include ensuring that soils retain water in situ, have permanent vegetation cover and are not overgrazed, over-burned or subject to trampling, poaching or damage by vehicles, especially on steeper slopes.

Pollination

The extensive areas of species-rich, semi-natural habitats in the Programme area support large numbers of invertebrates and provide nectar sources for pollinators. Species-rich grasslands provide valuable refuges for many pollinating invertebrates that are in decline nationally.

There is potential to enhance and expand pollinator habitats in the area through hay-meadow restoration and connecting flower-rich habitats.

Opportunities for maximising benefits of carbon storage, natural flood management, water quality improvements and habitat connectivity have been identified through the Viridian study, undertaken in the development phase – see page 49).

Cultural services

Recreation

Both Teesdale and Swaledale are well known for recreation that depends on the natural environment. 85% of visitors to the Yorkshire Dales go for a walk[2], whilst birdwatching, cycling, riding, canoeing, fishing, orienteering, geotourism and star gazing are all prevalent. There are 597km^2 of the Programme area is designated as 'open access' land and there are 915km of public rights of way.

Grouse shooting in the area contributes to the economy both in terms of income and employment.

An indicative economic value for outdoor recreation in the uplands, based on the recreation value function developed for the UK NEA, is £17.25 per visit (Sen *et al*, forthcoming).

The Tees-Swale Porgramme presents an opportunity to enrich the visitor experience, e.g. through creating new self-guided trails on rights of way, improving accessibility and updating and expanding interpretive material.

Walkers near Cauldron Snout © Rebecca Barrett NPAP

[2] Yorkshire Dales National Park Customer Survey 2017

Biodiversity

The importance of the area for biodiversity, which underpins many of the other ecosystem services described here, is set out in more detail in Sections 4 and 5.

Improving the condition and connectivity of habitats and increasing the numbers and range of key species is vital in its own right, but in 'cultural services' terms our biodiversity is closely linked with human inspiration joy and well-being.

It is also important to highlight the local economic benefit of biodiversity. This includes the economic benefits arising from visitors who come to enjoy wildlife and the scenery, generating custom for local businesses (tourism, food, retail, recreational enterprises) as well as expenditure and employment by conservation organisations. A number of economic studies have shown a strong correlation between a high quality landscape and environment and a positive impact on business performance (Cumulus Consultants, 2013).

Fragrant orchid

Sense of place and inspiration

The area offers one of the most remote and varied upland experiences in England – expansive, open moorlands contrasting with more sheltered dales, with meadows, pastures and drystone walls, villages and dispersed farmsteads all built in local stone. This highly-distinctive landscape has an almost visceral sense of place and cultural continuity, based on its long history of farming and mining.

Teesdale and Swaledale have provoked thought, admiration and creativity for generations. WH Auden, one of the greatest English poets of the 20th century, was deeply inspired by the landscape of the northern Pennines, particularly the remains of its mining past. Many of his poems of the 1920s and 1930s are set here. Arguably Britain's finest landscape painter, JMW Turner was also inspired by the northern Pennines, producing outstanding work in both Teesdale and Swaledale in the early 1800s. He stayed in Middleton-in-Teesdale and painted the town bridge and river, then, following the route of the modern-day Pennine Way, he visited the upper dale to produce wonderful paintings of High and Low Force, Wynch Bridge and Cauldron Snout.

Today In both Teesdale and Swaledale there is a strong community of writers, painters, sculptors, photographers, textile artists and more who draw their inspiration from the wildlife and dramatic landscapes. Our local communities are still celebrating this place in ways that mean something to them and in so doing. There is enormous potential

There is a considerable opportunity to use arts to engage new audiences for the area's heritage, in particular to help them make an emotional connection with the natural environment that is acknowledged to lead to more nature-friendly behaviour.

"I could draw its map by heart
Showing its contours
Strata and vegetation
Name every height
Small burn and lonely sheiling…"

WH Auden

Amor Loci, 1965

Turner's sketch of 'Merrick Abbey, Swaledale' 1822 © Trustees of the British Museum

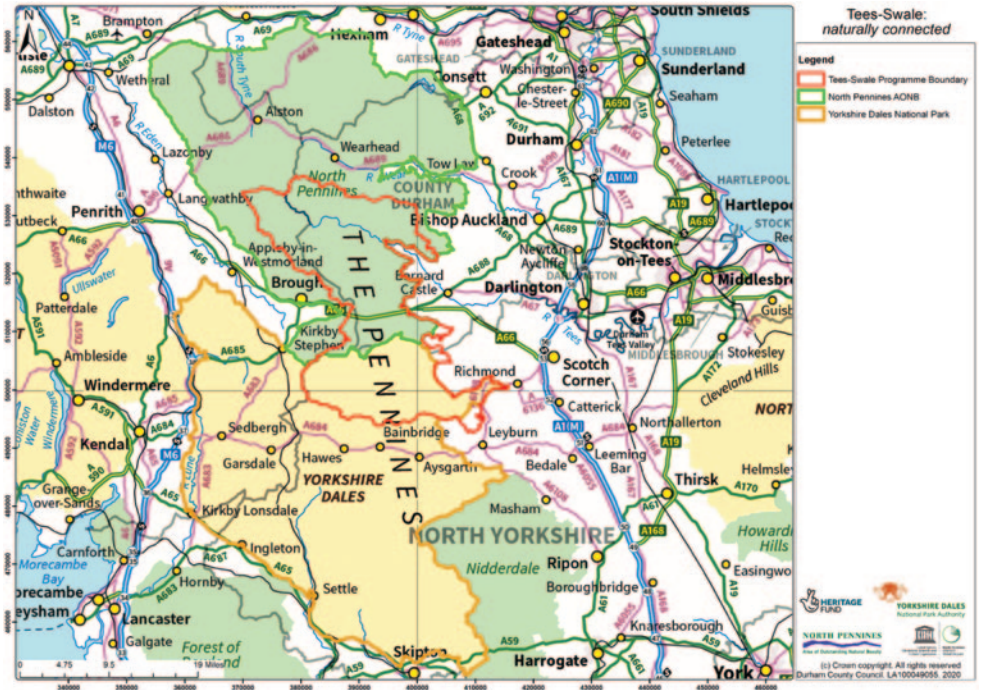
4
Current influences on the management of the natural heritage

A nationally important landscape

The importance of the natural heritage is highlighted by the extraordinary extent of wildlife, cultural heritage and landscape designations.

Virtually the entire area is covered by **national landscape designation**. The northern portion lies within the North Pennines Area of Outstanding Natural Beauty and the southern within the Yorkshire Dales National Park. National Parks and AONBs are of equal status regarding landscape quality and share the same level of protection – but they have different primary purpose and governance arrangements. The purpose of AONBs is to conserve and enhance natural beauty. The purposes of National Parks are to conserve and enhance natural beauty, wildlife and cultural heritage and promote public understanding and enjoyment of their special qualities. At the time of writing, it is not yet known how the recommendations in the Glover Review of Protected Landscapes (2019) will be taken forward in relation to the proposal to create new, aligned purposes for both designations. What is clear however, is that both AONBs and National Parks should be at the forefront of nature recovery and should be places where any barriers to engaging in these landscapes are identified and broken down.

National Parks and AONBs are part of the international Protected Area family. As cultural landscapes, produced through the interaction of humans with nature over time, they have a special significance as being recognised by the International Union for the Conservation of Nature (IUCN) as 'Category V – Protected Landscapes'. These are defined as: 'A protected area where the interaction of people and nature over time has produced an area of distinct character with significant ecological, biological, cultural and scenic value and where safeguarding the integrity of this interaction is vital to protecting and sustaining the area and its associated nature conservation and other values'.



The Programme boundary within the North Pennines AONB and Yorkshire Dales National Park

Natural beauty goes well beyond scenic or aesthetic value. The Countryside and Rights of Way Act (2000) states that natural beauty includes the conservation of 'flora, fauna and geological and physiographical features'. It is to do with the relationship between people and place and encompasses everything – 'natural' and human – that makes an area distinctive. It includes the area's geology and landform, its climate and soils, its wildlife and ecology. It includes the rich history of human settlement and land use over the centuries, its archaeology and buildings, its cultural associations, and the people who live in it, past and present.

National Park Authorities and AONB Partnerships each produce a statutory Management Plan for their area, which must be reviewed at least every five years[3]. The preparation and implementation of these plans brings together other local authorities, statutory agencies and a wide range of local partners, stakeholders and the community.

Tees-Swale: *naturally connected* makes a significant contribution to the fulfilment of the vision in both Management Plans. It delivers across many of the objectives of the Yorkshire Dales plan; for the North Pennines plan, Tees-Swale incorporates a wide range of management plan actions across several disciplines and supports delivery against many of the agreed 'Top Ten Conservation Priorities'.

The management plans can be found on the National Park Authority and AONB Partnership websites.

Appendix 7 includes objectives and outcomes from the two management plans which are delivered through the Tees-Swale Programme. It also identifies aspects of the 25 Year Environment Plan delivered through Tees-Swale.

[3] S63 of the Environment Act 1995 and s89 of the Countryside and Rights of Way Act 2000 respectively

UNESCO Global Geopark

The northern part of the Programme area within the AONB lies within the **North Pennines UNESCO Global Geopark**. Internationally recognised, Geoparks are places where outstanding geological heritage is used to support sustainable development, through conservation, education, interpretation and nature tourism.

Holwick Scar © Rebecca Barrett NPAP

Nature conservation designations

63% of the area is under international conservation designation as part of the Natura 2000 network of sites, established under the EU Habitats and Birds Directives that comprise Special Areas of Conservation (SACs) and Special Protection Areas (SPAs).

- 52,340ha designated as SAC
  - 147ha North Pennine Dales Meadows
  - 21,901ha Moor House-Upper Teesdale
  - 30,292ha North Pennine Moors
- 53,182ha designated as SPA (all North Pennine Moors)

These designations are being incorporated into UK legislation now the UK is outside the EU.

Just over 65% (552km^2) of the Programme area is designated as a **Site of Special Scientific Interest (SSSI)** under the Wildlife & Countryside Act (1981). SSSIs are a suite of sites providing statutory protection for the best examples of the UK's flora, fauna, or geological or physiographical features. 96% of the SSSI land is also Natura 2000 designated.

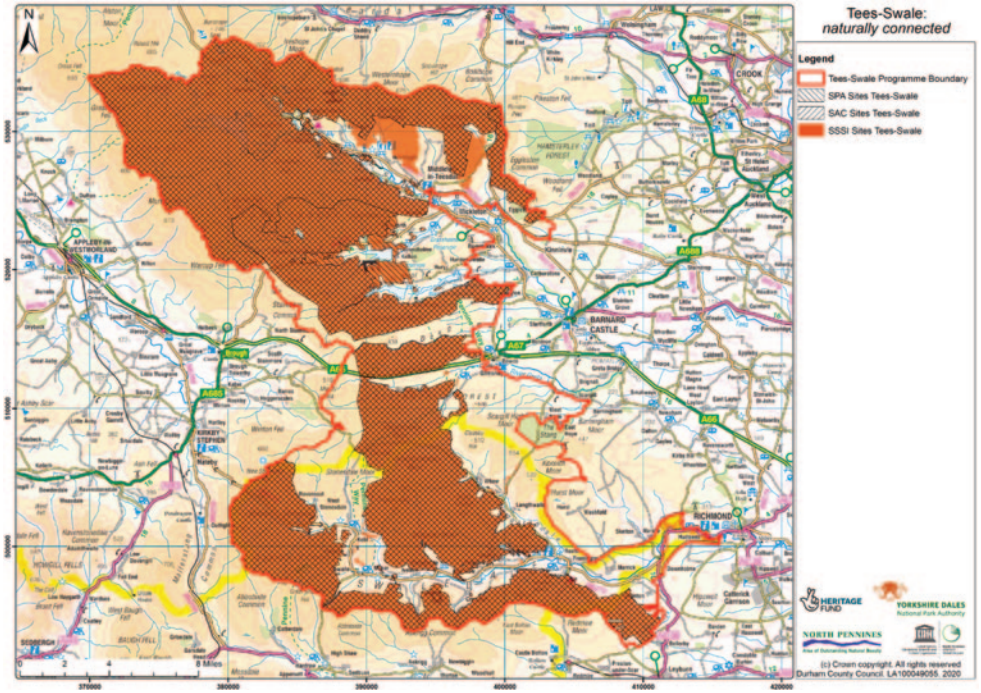
> The SSSIs include The Moorhouse – Upper Teesdale National Nature Reserve (NNR), which lies in the north-west of the Programme area. Comprising 7,400ha, parts of the NNR were first designated in 1952 under the National Parks & Access to the Countryside Act (1949). It is England's highest and largest NNR.

Written consent must be obtained from Natural England to carry out listed operations within the boundary of any SSSI.

The nature conservation designations in the area may have prevented damage through intensification or development, and the degree of connectivity is very high, but this does not always translate to habitats being in good condition. SSSI condition data in early 2020 is:

- 7,005ha in Favourable condition
- 45,715ha in Unfavourable Recovering condition
- 2,481ha in Unfavourable No Change
- 3ha in Unfavourable Declining

80% (67, 531ha) of the area is mapped on the Priority Habitat inventory.

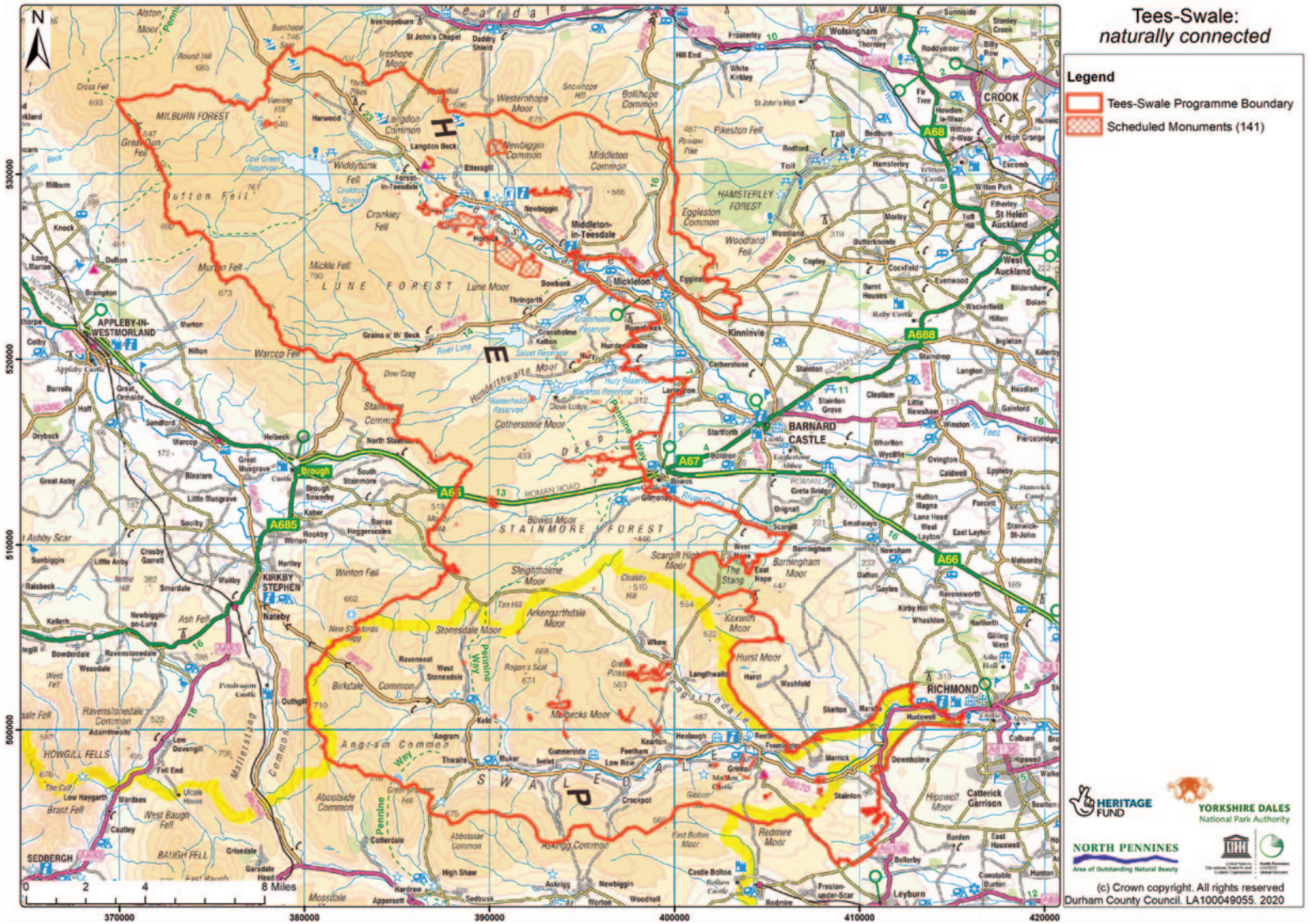


Extent of SSSI/Natura 2000 designations

Historic environment designations

Scheduled Monuments (SMs) are scattered across the area. Scheduled monuments form a carefully chosen sample of nationally important archaeological sites. Scheduled under the Ancient Monuments and Archaeological Areas Act (1979), ranging from evidence of Bronze Age settlement to the remains of metalliferous mining up to the 20th century, notably for lead.

Written consent must be obtained before any work on a scheduled monument can begin through an application to the Secretary of State for Digital, Culture, Media and Sport.



Scheduled monuments in the Programme area

Farmers and land managers

With the exception of part of Moor House Upper Teesdale National Nature Reserve, the entire Programme area is in private ownership. Land management here is overwhelmingly driven by farming and grouse moor management.

Hill farming in Teesdale and Swaledale

Farming is heavily influenced by local soils, climate and terrain – this is a harsh environment. The dominant Agricultural Land Classification (ALC) is Grade 5[4]: *very poor quality agricultural land* – land with severe limitations which restrict use to permanent pasture or rough grazing[5]. Virtually the entire Programme area is described under the Less Favoured Areas (LFA) classification as Severely Disadvantaged Areas (SDA)[6]. LFA classifications are a governance tool used to determine payment support to farmers. It is recognised that those operating in SDAs face difficult farming conditions and low agricultural incomes[7].

Native Shorthorn Cattle

[4] https://magic.defra.gov.uk/MagicMap.aspx

[5] MAFF (1988) Agricultural Land Classification of England and Wales. London. Ministry of Agriculture, Fisheries and Food.

[6] https://magic.defra.gov.uk/MagicMap.aspx

[7] Select Committee on Environment, Food and Rural Affairs (2004) Sourced online: https://publications.parliament.uk/pa/cm200304/cmselect/cmenvfru/226/22606.htm

The 'typical hill farm' in our area:

- comprises a mixture of rented and owned meadow and in-bye land extending to around 150ha;
- holds grazing rights on the local common;
- produces sheep as the main farming enterprise, but small herds of beef suckler cattle are also common;
- is economically marginal and often returns an annual loss;
- receives approximately £30,000 in support payments, which underpins the viability of the business;
- is likely to have on-farm and off-farm diversification, including tourism related services.

Sheep are synonymous with our area; the Swaledale breed takes centre stage, but the Dales Bred is also a distinctive and hardy local animal. Individual pure bred Swaledales are sold for high prices across northern England and Scotland. When crossed with a Blue-faced Leicester ram, the north of England mule is the highly valued progeny of the Swaledale, being sold across all parts of England and Wales. Some of the largest sheep markets in the UK serve the area, with Middleton-in-Teesdale, St John's Chapel and particularly Kirkby Stephen and Hawes selling high numbers of sheep.

Beef breeding cattle are found on many hill farms. Continental breeds, particularly Limousins are the cattle of choice, with notable breeders across the area. However, the economic performance of commercial beef production here is even more marginal than sheep production (Harvey & Scott, 2018). This means most upland producers focus on a limited number of pedigree animals or sell 'store' cattle at a young age to lowland farmers for finishing. Over recent years there has been a re-emergence of more hardy, native breed cattle, such as Aberdeen Angus and Belted Galloways, owing to the economic efficiencies (reduced management costs, premium price products) and the availability of financial support through national agri-environment schemes.

Grouse moor management

Sixteen major estates lie entirely or partially within the Tees-Swale project area. Most manage their moorland for commercial grouse shooting and have done so for over a hundred years. The grouse shooting industry contributes to the local economy, both through direct employment and support for accommodation providers, equipment suppliers, pubs and restaurants and transport operators.

Red grouse are truly hardy and live year-round on heather moorland. Feeding almost exclusively on the growing tips of heather plants, they can find food and survive in even the harshest winter conditions.

To increase the number of grouse available, gamekeepers control predators, such as foxes, crows and stoats. This also benefits ground-nesting birds like lapwing, curlew and golden plover. This has certainly been an important factor in maintaining the population of threatened species such as curlew in the area, against a national trend of decline.

Above the fell wall, the focus of Tees-Swale is on peatland restoration. Since 2006, grouse moor owners have worked with the North Pennines AONB Partnership and the Yorkshire Peat Partnership to restore blanket bog on their moorlands through blocking drainage ditches or 'grips' and revegetating areas of bare peat. Government-led proposals for ending the rotational burning of blanket bog, and moves to reduce stock numbers, will also benefit the long-term conservation of moorlands, alongside a shared wish to see a full suite of raptors.

Red Grouse © Colin Blackburn

Agri-environment schemes

Back where it all began

Agri-environment schemes provide funding to farmers and land managers to farm in ways that support biodiversity, enhance the landscape and improve the quality of water, air and soil. They began in 1987 with the launch of Environmentally Sensitive Area schemes (ESAs). The Pennine Dales ESA was launched in the first tranche of five ESAs and included both Teesdale and Swaledale. Its principal objective was to retain upland hay meadows. Farmers were offered payments in return for delayed cutting and reduced nutrient inputs – specified via management 'prescriptions' for the life of the 10-year agreements. Later expansions to the scheme saw the introduction of more restrictive (but higher paid) options and measures to benefit breeding wading birds.

Today there are two national schemes that still exert a profound influence on the area. Environmental Stewardship (ES) – launched in 2005 – was a comprehensive national scheme with multiple objectives including biodiversity, historic environment and access. The scheme had 2 tiers:

- Higher Level Stewardship (HLS), including SSSI land; and
- Entry Level Stewardship (ELS) 'broad & shallow'.

The scheme retained the 'prescription approach' established by ESAs and similarly offered ten-year agreements. An upland version of ELS was launched in 2010 specifically to attract hill farmers (UELS). Most farmers here entered both HLS and UELS and many of these agreements are still 'live'.

Countryside Stewardship (CS) was launched in 2015. It offers five-year agreements, the scheme has two tiers:

- Mid-tier – applicants select suitable options and apply for the scheme directly; and
- Higher tier – for applicants managing more complex land in environmentally significant sites, commons or woodlands which require support from Natural England or the Forestry Commission

Such is the uncertainty around Brexit and the future of UK agriculture that in 2019, Defra offered those whose ES agreements were expiring the opportunity to continue ('roll over') their agreements for a year, rather than seek a new five-year agreement through CS. Many farmers took the decision to 'roll over' their agreements. As long as uncertainty around Brexit continues, this approach is likely to continue too.

What has worked and what hasn't

There is no doubt that the national agri-environment schemes have had a beneficial impact on the natural heritage of the area. Habitat restoration measures funded through the schemes have seen, for example, small-scale woodland planting to benefit black grouse, extensive works to block drainage ditches and revegetate degraded peatland, and the reintroduction of local-provenance seed to upland hay meadows. These works, and others, have had a positive impact on habitats and the ecological function of the landscape. Without agri-environment schemes it is unlikely that the tradition of hay making would have been retained, such is the pressure on farmers to secure adequate winter feed for their livestock and the reliability of modern silage-making techniques.

There has, however, been significant fall-out as a result of the way agri-environment schemes have been designed and implemented. First, the Schemes enforce standard national prescriptions for managing habitats. These do not reflect local circumstances or the complexity of managing places where multiple habitats and species are being targeted. Nor can they be adapted even when it is clear that they are not working. The progressive loss of wildflowers from our upland hay meadows, despite being targeted through agri-environment schemes, is a clear example of the failure of this approach.

Second, cuts to the resources of Natural England, the body responsible for administering schemes and liaising with farmers, has reduced their capacity to engage with and advise farmers. This has led to a sense of 'abandonment', with some farmers left feeling unsupported and fearful of financial penalty should they be found to have not 'complied' with every detail of a scheme.

Third, and most worryingly, the prescriptive approach has detached farmers from the fundamental aims of the schemes. Instead of using their skill and knowledge to achieve the desired environmental outcomes, they are required simply to follow strict rules – often whilst disagreeing with them or not understanding their purpose. Over time, this

has led not only to resentment towards the rules and those who administer them, but also resentment towards the habitats or species for which the rules are applied. Research in 2013 for the Northern Upland Chain Local Nature Partnership, revealed the strong desire of local farmers to see a move towards "a more collaborative approach to the delivery of agri-environment schemes, using the skills and knowledge of HNV farmers to deliver environmental outcomes in a way that allows the whole farm to work and make sense as a system".[8]

The strength of feeling on these issues also led directly to the formation of the Northern Hill Farming Panel.

High Nature Value Farming in Upper Teesdale

[8] *High Nature Value farming in the Northern Upland Chain*, European Forum on Nature Conservation and Pastoralism, 2014

A new approach to land management support?

The Government's 25 Year Environment Plan proposes a move to a system of paying farmers 'public money for public goods', with the principal investment objective of environmental enhancement. This will be delivered through a 'new environmental land management system' that will 'incentivise and reward land managers to restore and improve our natural capital and rural heritage'. The vision for the new scheme is that it will deliver more for the environment – including mitigation of and adaptation to the effects of climate change – and provide flexibility, putting more management decisions in the hands of farmers.

> Nature Recovery Networks are a further proposal in the 25 Year Environment Plan with the aim of providing '500,000ha of wildlife habitat in addition to other plans for landscape-scale recovery for peatland, woodlands and natural flood management'.

The current Agriculture Bill sets out how the Government will implement an approach to 'payment for public goods' and the establishment of the new environmental land management system.

Defra is currently developing plans for the new Environmental Land Management scheme and has commissioned a series of Tests and Trials. Through this, funding has been secured to continue and expand a national pilot of a 'results-based' approach in Wensleydale, which is being, overseen by Natural England and led by the Yorkshire Dales National Park Authority. This work is aimed at maintaining species-rich hay meadows and grassland habitat for breeding waders. This pilot has proven to be highly effective in delivering conservation objectives and suitable reward for farmers, who have been engaged directly in designing and monitoring the scheme and its outputs.

The Wensleydale pilot, and the drive towards public funds for public goods, have both had a strong influence on the development of Tees-Swale and the need to ensure that our High Nature Value farmers feel more confident in delivering the things which society values which will help to sustain their business.

The Programme will help to create a more collaborative, knowledgeable and skilled community of HNV farmers, in a more resilient landscape, better equipped to support nature recovery and meet the challenges of the future.

Tees-Swale is recognised by the partners, and within Natural England, as exemplifying what is meant by the concept of a nature recovery area. It focuses on connecting species and habitats on a grand scale, putting nature at the heart of farming, working on the key natural assets and engaging those who have most direct influence on the land. Crucially in this context, it is about generating the enhanced skills and collaborative behaviours that can make High Nature Value farming mainstream across the area, addressing the concept in the Vision of not simply 'renting change' for the life of the Programme only.

Farmer moving cattle © Rebecca Barrett NPAP

Who comes to the area (and who doesn't)

There are no exact figures for the number and type of visitors to the Tees-Swale area. However, we do know that visitor numbers in Swaledale are lower than for the more popular and accessible parts of the National Park. Whilst offering extensive walking or mountain biking in expansive open moorland, the area has few 'honeypot' sites, and its upper reaches are relatively inaccessible other than by car. Most visitors come to enjoy the peace and tranquillity, walking and scenery (Source: YDNPA Visitor Survey 2017).

In terms of visitor profile, it can reasonably be assumed that the area will be broadly similar to that for the National Park and AONB (2010 Visitor Survey, quoted in Harris 2019) as a whole:

National Park

- 56% aged 55 or over, with only 23% aged under 45;
- 75% are social grade A/B/C1 (national average is 53%);
- Vast majority (94%) are from the UK, and over half of these (58%) are from the north of England;
- 42% are day visitors and 58% were overnight visitors;
- The majority (87%) travel to the Yorkshire Dales by private car;
- The vast majority are repeat visitors, with just 14% visiting for the first time ever;
- The vast majority of respondents (84%) said they saw natural beauty, scenery and views as one of the special qualities of the area;
- 29% said they had come specifically because of the scenery, landscape and opportunities to connect to nature;
- Walking for more than one hour was the main activity (43% of visitors); and
- Only 4% of respondents were not at all likely to return to the area in the next two years.

AONB

- 52% were overnight visitors;
- 6% were on their first visit (48% had been more than 20 times before);
- 53% were from North East England (23% County Durham), 4% were overseas visitors;
- 9 out of 10 used their own cars to visit;
- 25% said their main motivation to visit was 'general sightseeing';
- Average day visitor spend was £35.20 per day/overnight spend was £63.92;
- 73% identified high quality landscape/wildlife/historic environment was very important in their decision to visit; and
- 98% would recommend the area to friends/relatives.

The area has outstanding walking, cycling and horse-riding with Reeth, Keld and Arkengathdale providing good bases. The Coast-to-Coast walking route runs along the length of Swaledale, and is the most popular long distance walking route in the country. Data from people counters suggest between 5,000 to 8,000 people a year walk the route.

The potential for visitors to explore the area is immense. Over 70% of the area is designated as Open Access Land. There are around 925km of public rights of way, including the Pennine Way National Trail, which threads through the project area from Thwaite in the south, via Tan Hill, to High Force before exiting the area at High Cup Nick. Whilst the most popular routes are generally in good condition, the plethora of rights of way and open access land means making sense of opportunities for anyone other than seasoned walkers is difficult. Much more could be done to help different user groups, such as mountain bikers and horse riders new to the area, less able walkers, less confident walkers, those with a buggy or wheelchair or those looking for a shorter trail running 5k route.

The need for improvement emerged as a strong message from our consultation. The Programme will provide an opportunity to enhance the rights of way network, increasing accessibility for those less mobile, and creating and promoting new walking

and riding circuits. In turn, this will encourage visitors to have a more enjoyable experience, develop confidence, learn more about the area and its unique heritage, make repeat visits and stay longer.

This year Yorkshire will be hosting the international 'cycle summit' that promotes cycle touring hoildays. The Fremington Bike Centre, near Reeth will be hosting cycle trips from overseas visitors. There is increasing demand for cycle touring routes and this will extend the area's growing reputation for fantastic scenery, quiet roads and great riding.

Lack of confidence, awareness and connection with the Programme area has meant that young people and people from urban areas haven't traditionally visited in the numbers we might want.

The Swale Trail

5
Threatened: wildlife and a unique way of life - risks and opportunities

Teesdale and Swaledale support the richest suite of wildlife habitats in the English uplands which in turn are home to some of our most rare and charismatic wildlife. Intimately linked to and largely dependent on high nature value (low-intensity livestock) farming, these habitats have developed over generations in close association with human activities. Now both the rich natural heritage of the area and the viability of hill farming communities are under threat from economic, policy and social change, and a rapidly changing climate.

Habitats and species – condition and connectivity

Previous sections of this document have set out the extent, importance and functional value of key habitats. Despite their scale, widespread protective designation, and the availability of payments to support positive management, habitats and species are in decline. What is happening and what can be done to address it?

Peatland

The threat: Our peatlands have been under threat for a long time. Toxic fumes from lead and other smelting activities across the northern Pennines are thought to have damaged the vegetation and triggered the start of peatland erosion around two centuries ago. This has since been exacerbated by the installation of drainage channels ('grips'), past high levels of grazing by livestock; atmospheric nitrogen deposition; the burning of blanket bog vegetation for grouse moor management; and, occasional wildfires. Within our Programme area, there is approximately 5,000ha of bare or eroding peat. Bare and eroding peat supports no vegetation and no wildlife. It cannot be grazed, increases rainwater run-off and so exacerbates downstream flooding, increases sediment loads and discolours water supplies. Perhaps most significantly, rather than storing carbon, it releases it to the atmosphere.

The opportunity: Peatland restoration through re-vegetation, and the re-profiling and blocking of drainage channels, has the potential to turn areas of bare and eroding peat back to functioning blanket bog – supporting wildlife; storing and filtering water; providing fodder and shelter; and, sequestering and storing huge amounts of atmospheric carbon. There is a long and successful track record of collaboration on peatland restoration between the Yorkshire Peat Partnership, the North Pennines AONB Partnership (through its Peatland Programme) and local landowners and land managers, which will serve Tees-Swale well.

Responding to opportunities in relation to peatland *features in Tees-Swale Programme 1A Peatland Restoration.*

Peatland restoration in progress, showing stone dams, coir rolls and bags of brash

Hay meadows and species-rich grassland

The threat: 97% of hay meadows have been lost nationally since the 1930s, principally as a result of agricultural intensification. The upland hay meadows, for which Teesdale and Swaledale are renowned, are vanishingly rare. Less than 900ha remains in the UK. Even where meadows remain, there is evidence of a progressive loss of species – particularly those plants that are sensitive to changes in grazing intensity, fertility or cutting dates (Starr-Keddle 2014). Three issues stand out. First, subtle shifts in management over time have led to the loss of some key plants from the majority of meadows in the Programme area. Second, a network of uncut banks and verges across the area — a vital refuge for rare plants and invertebrates – are at risk of declining through lack of management. Third, prescription-based agri-environment schemes have normalised damaging management and cut the intuitive connection between farmer and land.

The opportunity: Hay meadow restoration through the addition of local provenance seed and plug plants is known to be an effective way of reintroducing lost species. Targeted management, principally cutting, can also ensure the persistence of vital flower-rich banks and margins. Together, these approaches not only promise a brighter future for our hay meadows but also for the myriad invertebrates and pollinators that depend on them.

Responding to opportunities in relation to hay meadows features in Tees-Swale projects 1B Upland hay meadow and species-rich grassland management; 1C Rush Management

Woodland

The threat: Woodlands tend to be small and fragmented and typically occur on steep slopes and in ghylls. These woodlands are vulnerable through lack of management and are often grazed by livestock, which prevents natural regeneration and suppresses ground flora. Sadly, disease is now also a significant threat. Rare junipers are dying through fungal infection and, [our most characteristic tree] is being devastated by 'ash die-back', caused by the fungus *Hymenoscyphus fraxineus*. The impact of this disease is of great concern owing to the predominance of ash in a landscape with already low levels of woodland cover.

The opportunity: Small-scale woodland planting– using a wide range of native species – has the potential to link pockets of woodland, making woodland network more resilient. Better management of existing woodlands is also important. Taken together and targeted correctly, these measures would improve woodland biodiversity, increase natural flood management, improve carbon sequestration and add further texture to the landscape.

Responding to opportunities in relation to Woodland features in Tees-Swale project 1E Woodland Creation

View of Upper Teesdale from Holwick with meadows and scattered trees and woodland

Wading birds

The threat: Our area supports some of the highest densities of breeding wading birds in the UK, with important populations of lapwing, redshank, snipe and curlew. Once common and widespread, all these birds are now in decline across the country. Of particular concern, curlew numbers are collapsing in other regions. Curlews are a migratory species, the population in the Programme area is therefore not only of local importance but is a vital link in the western European curlew population. The strong numbers of breeding waders in Teesdale and Swaledale are largely the result of low intensity farming – that maintains suitable nesting and feeding conditions – and the control by moorland gamekeepers of predators such as foxes and crows – that would otherwise prey on them. Despite this, two factors are threatening our breeding waders. First, owing to a combination of warmer, wetter winters and changes in livestock type, many rush pastures across the area are becoming choked by dense stands of *Juncus* rush. This not only reduces the grazing available for livestock but renders these grasslands unsuitable as nesting habitat. Second, the trend for short spells of intense heat in spring means that typically damp soils rapidly dry out, reducing the availability of invertebrate food for waders and their chicks when they most need it. The combination of these factors is resulting in a deterioration in the suitability of our grasslands for this important group of birds.

The opportunity: Carefully targeted management of rush through cutting and weed wiping has the potential to significantly improve the extent and quality of breeding wader habitat across the area, whilst also improving grazing conditions for livestock. Similarly, the establishment of small-scale wetlands and 'scrapes' has the potential to improve nesting habitat by providing access to damp, 'probe-able' soil and would help mitigate the impact of more unpredictable weather conditions in spring.

Responding to opportunities in relation to waders features in Tees-Swale projects 1B Upland hay meadow and species-rich grassland management; 1C Rush Management; 1D Wetland Creation

Lapwing in flight © Brian Irving HELM images

Rivers

The threat: Abandoned metal mines are a significant source of pollution in Teesdale and Swaledale. There are two broad sources: mine water drainage discharges and diffuse run-off from spoil heaps. Together, these discharges have a negative impact on water quality at a landscape scale, polluting nearly 200km of river within the Programme area with contaminants including lead, zinc and cadmium. Many water courses within the area fail Water Framework Directive criteria on the basis of contamination by these metals. The spoil and waste heaps from which the metals derive are obvious landscape feature; some, such as that at Herdship in Teesdale, are scheduled ancient monuments and most are recognised as valuable relics of the area's industrial past. Erosion of these features becomes an increasingly important source of pollution at higher river flows when more metals are mobilized by rainfall. This has a negative impact on both water quality and wildlife as well as posing a risk to riparian agriculture – grazing on land inundated with metal-rich sediments, for example – that may be many tens of kilometres downstream. Climate change will mean higher river flows and rainfall intensity, potentially exacerbating these problems.

The opportunity: Measures to reduce the impact of diffuse pollution from metal mine spoil heaps have the potential for multiple benefits. Low-tech and 'green engineering' solutions can be employed to reduce erosion and stabilise soils. Potential measures include: diverting flows; protecting vulnerable zones such as the 'toe' of slopes; settlement ponds; geotextile matting; revegetation and woodland planting. Not only would these measures reduce the discharge of heavy metal contaminants into rivers, they also have the potential to help to reduce flood peaks and create valuable new habitats, in the form of woodlands, wetlands and calaminarian grassland.

Responding to opportunities in relation to rivers features in Tees-Swale projects 1F Diffuse Metals; 1G In-stream and Riparian Works

Great Eggleshope Beck downstream from old mine workings © Shane Harris NPAP

To maximise the wider benefits of habitat creation and restoration, we commissioned consultants – Viridian Logic Limited – to assess the opportunities for a range of ecosystem services within the Programme boundary[1]. This assessment focused on:

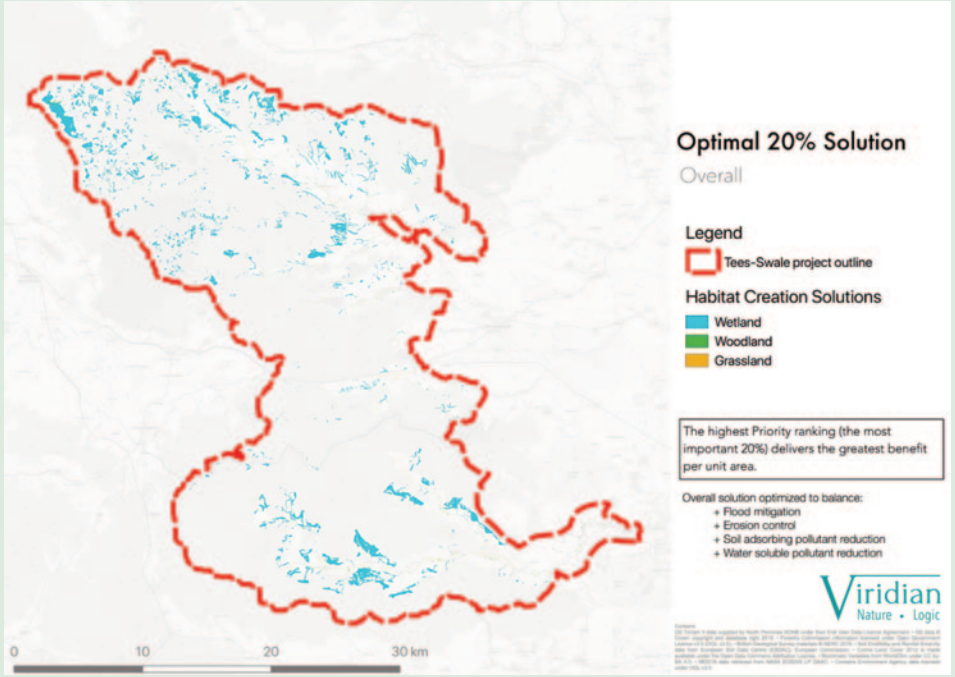
- Four hydrological functions:
  - reduction of erosion/siltation in watercourses;
  - reduction of soil adsorbing pollutants (e.g. phosphates);
  - reduction of water soluble pollutants (e.g. nitrates); and,
  - natural flood mitigation.
- Habitat connectivity; and
- Carbon sequestration and storage values.

Using HydroloGIS and other analytical tools, the study identified the most efficient locations to deliver each or all of the functions listed above through the creation of:

- Woodland;
- Wetland (including scrapes and water storage through natural flood management features); and
- Semi-natural grassland

The methodology ranks the potential interventions (from the top 0.2% to the top 50% of sites). This provides the essential flexibility needed to operate across a wide geographical area, and in negotiation with multiple farm-holdings and landowners. Inevitably, some of the very best sites will not be available. Identifying, say, the top 20% provides a sufficiently wide set of effective locations. This will enable the Programme to deliver the best practicable outcomes.

The mapping is being used to target farm holdings, and then as the basis for initial discussions and negotiations with potential participants. During the course of the Programme, all the habitat creation works will be mapped to enable comparison to the initial modelling, and assess the extent to which the Programme has been able to deliver the 'ideal' outcomes.



Optimal 20% Solution'

[1] Provision of ecosystem service mapping and modelling of Tees–Swale, Viridian Logic Limited (2019)

Political, economic and societal pressures

We are in a time of unprecedented political and economic uncertainty owing to the protracted debate and negotiations surrounding Britain's departure from the European Union. The ramifications of these decisions will undoubtedly have major implications for our Programme area, in particular for the hill farming community.

The economics of hill farming – a community under pressure

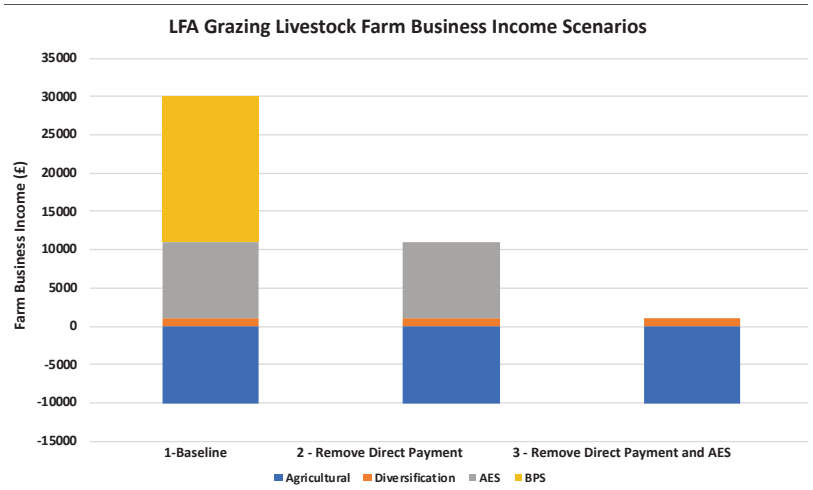
The threat: Farming and land management provide 1 in 5 jobs locally (the national average is less than 1%), and the resulting farmed landscape is the basis for a multi-million pound tourism industry. So, the parlous economics of hill farming are a great cause for concern and are a serious threat not only to the future of this industry but to the cultural, social and landscape fabric of our Programme area.

As detailed previously, many of our treasured habitats and landscape features would not exist if it were not for the tradition of hill farming – hay meadows, grassland mosaics suitable for ground-nesting birds, field barns and drystone walls, to name but a few. These features and many more are at risk if hill farming becomes economically unviable.

Hill farming is the web that holds communities in our area together. Farms are scattered widely across the landscape, each adding to the sense of a 'peopled' place, rather than an empty landscape. Each farm is a mini-powerhouse for the local community and the economy that underpins it – most have family members who not only work on the farm but elsewhere too, have children at the local school and many run businesses that support the region's tourism industry.

A recent report commissioned by the Northern Upland Chain Local Nature Partnership undertook an analysis of Farm Business Survey (FBS) data for 'Less Favoured Area (LFA) Grazing Livestock' for the five regions of Northumberland and Tyne & Wear, Tees Valley & Durham, Cumbria, Lancashire and North Yorkshire, from 2011/12 to 2016/17, using the latest dataset available (ADAS 2019). The analysis found that average income streams were highly dependent on EU Common Agricultural Policy payments, notably from the Basic Payment Scheme (BPS – a 'Direct Payment') and agri-environment schemes. This dependency is also evident in an analysis by Defra (2018) which identified that Direct Payments make up 83% of Farm Business Income (FBI) for tenanted farms, more than all other land ownership groups.

The Agriculture Bill is currently progressing through the House of Commons and sets out the removal of Direct Payments over a seven-year period with the aim of freeing up funding to support 'payment for public goods'. The ADAS study produced scenarios to understand the impact of the removal of support payments, which showed that the average LFA Grazing Livestock farm would move to a break-even position with the removal of the BPS and to negative FBI with the removal of agri-environment payments. On the basis of this analysis, farming in the uplands is unlikely to be viable in the long term without public support.



According to the Office for National Statistics, suicides by occupation show Agricultural Workers at almost twice the risk of suicide than the national average. In the six months between October 1991 and March 1992, eight people took their lives in upper Teesdale. This was a motivating factor in the establishment of the Upper Teesdale

Agricultural Support Service (UTASS). It is of great concern that financial insecurity and an uncertain future may once again drive members of our farming community to such dreadful measures.

A farmer responding to our attitude survey (see Programme Plan Part 3 Folder 20) wrote of the importance of preserving family tenant farms and the need to keep people in the local area and community: "Farmers spend money if they are profitable and most spend it locally supporting local businesses e.g. garage, shops, local agricultural store, pub, fence/wall contractors. It is like dropping a stone in the pond and watching the ripples spread far and wide. That is what farmers are good at, spending money when we are profitable. If the local community is not profitable, school shuts, shop shuts, empty house, empty dale – no tourists – dead area."

The opportunity

Activities and engagement to support the hill farming community have the potential to shift their situation from one of anxiety and vulnerability to one of increased confidence, positivity and control. Measures are needed to: help farmers to respond quickly and positively to policy changes that shift financial support towards 'payments for public goods; inform farmers of different approaches that would improve their farm profitability; support farmers to collaborate and work cooperatively with one another – thereby reducing isolation and potentially opening up new channels of financial support; enable farmers to become advocates for themselves and their important role in High Nature Value farming.

Responding to opportunities in relation to the economics of hill farming *features in Tees-Swale projects 1A – 1G; 2A Training for farmers and land managers; 2B Training for agricultural contractors; 2C Knowledge Exchange, demonstration and trials. 3G On-farm public engagement; 3H HNV Farming Award*

Attitudes and understanding

The future for our rich natural heritage will only be positive if people take action to ensure this. For this to happen, they need to understand it, care about it and have the means to act.

Farmers – shifting respect and responsibility

The threat: Section 4 details the extent of protective designations in the project area. These are appropriate given the importance and scale of habitats and species present. However, their presence and the prescriptions imposed for their management through agri-environment agreements, have often had the unintended consequence of driving a wedge between farmers and the wildlife on their farms. As explained in previously, this tends to manifest itself as resentment. A complaint commonly heard is that agri-environment schemes take a 'one size fits all' approach and that management prescriptions are rigidly applied. With their energy directed towards dealing with inflexible schemes and difficult relationships, it is not surprising if farmers have less enthusiasm for working positively for nature.

Responses from our farmer attitude survey concerning Natural England:

"If they want the results they should listen to what farmers say"

"Listen more to farmers – we understand and care more about the environment and wildlife than you think!"

The opportunity: Land management that works for both farming and wildlife is not always straightforward; it can vary from site to site according to prevailing conditions and the individual farm system. However, amongst farmers, land managers, agency and conservation staff, there is a wealth of knowledge and experience that is seldom shared effectively or constructively. Knowledge-exchange gatherings and site visits to explore complex or difficult issues between these 'experts in their own field' has the potential to

not only throw up novel solutions but build new, positive working relationships.

Enabling farmers to take a more direct role in assessing the habitats and species on their farms has the potential to increase engagement with existing agri-environment schemes, build skills necessary for future outcomes-based schemes and increase pride.

Responding to opportunities in relation to the farmer attitudes and understanding
features in Tees-Swale projects 1A – 1G; 2A – 2C; 3G; 3H

Upland hay meadow restoration demonstration event, August 2019

A society disconnected from nature and its worth

The threat: Around 90% of the UK population now live in towns and cities and as this trend continues, there are concerns that we are becoming disconnected from nature and that this is affecting our well-being. The term 'nature deficit disorder' has been coined to describe the human costs of alienation from nature, among them diminished use of the senses, attention difficulties and higher rates of physical and emotional illnesses (Luov 2005). People, in particular the young, are missing out on the joy of connection with the natural world; as a result, as adults they lack an understanding of the importance of nature to human society. Without such understanding they cannot be expected to support or engage with measures to conserve the natural world upon which all our futures depend.

> "No one will protect what they don't care about; and no one will care about what they have never experienced" – Sir David Attenborough

The opportunity: Connecting or re-connecting people with nature is a major task, particularly if it is to have a genuinely sustained and life-changing impact. However, programmes of engagement that offer more than just a 'toe in the water' approach – which are relevant to the audience and appeal to both head and heart – have the potential to significantly influence how young people, in particular, feel and behave into the future.

Responding to opportunities in relation to reconnecting people with nature
features in Tees-Swale projects 1A – 1G; 2A - 2C; 2D Traineeships, 2E Tees-Swale Volunteers; 3A Access to the Uplands; 3B Uplands for All; 3C Uplands for Education; 3D Community Events; 3E Creatively connected; 3F Interpretating Tees-Swale

Climate change

Climate change is a serious long-term threat to the landscape of Swaledale and Teesdale because of the damage it will cause to ecosystems, biodiversity, landscape value and the services to society they support. By mid-century, one third of land-based species could be on the pathway to extinction because of climate change (Harley *et al* 2005). The current and future impacts of a changing climate are hazards faced by people across the globe. If these threats are to be averted, action at the international policy level will not be enough; it is vital that steps are taken locally, across the world, in ways that will make a difference.

Sudden or slow – the reality of a changing climate in Teesdale and Swaledale

Our area is already suffering the impact of climate change. Predictions are for winters to become wetter and warmer and for summers to experience episodes of both intense heat and rainfall.

On 30th July 2019 an extreme rainstorm hit Swaledale – 113mm of rain fell in 3 hours, 85mm in just 2 hours. This was a UK record in terms of rainfall intensity. All the farms in Arkengarthdale were affected with homes flooded, walls swept away, hundreds of sheep lost and hay and silage destroyed. Large volumes of fluvial sediments and contaminated mine spoil were mobilised, much of it being deposited across meadows and pastures. 140km of public rights of way were affected with 9 footbridges lost. The road bridge at Grinton was damaged and the one at Cogden swept away. At Grinton Smelt mill, the historic culvert was destroyed. Millions of pounds of damage occurred in a few short hours.

This is likely to be the pattern of things to come as our climate changes.

Swaledale, floods, July 2019. Whaw, Arkengarthdale

Other impacts of a changing climate are less obvious but nonetheless important – climate change is already affecting our wildlife. Direct impacts include:

- Changes in phenology which may lead to lack of synchrony between species;
- Changes in species abundance and distribution;
- Changes in community composition; and
- Changes in ecosystem processes.

Research has shown that adult craneflies, the principal food of golden plover nesting on moorland, emerge earlier in warmer springs. These changes may result in a mis-match in the timing of laying dates and therefore breeding success as golden plover chicks are heavily dependent on craneflies for food (Pearce-Higgins 2005). The seeds of wood crane's-bill, one of the most characteristic plants of upland hay meadows, need to be frozen for them to germinate. Warmer winters are likely to see an acceleration in the rate of loss of this lovely plant, even from sites that are currently strongholds.

The opportunity: Much can be done in our Programme area to mitigate and adapt to the impact of climate change:

- Carbon storage and sequestration — previous parts of this Plan outline the important role of peatland restoration and woodland planting in absorbing and storing carbon. The maintenance of low-intensity permanent grassland also contributes significantly to carbon storage;
- Mitigation – action in our Programme area can alleviate the impact of climate change elsewhere, most notably further downstream. Peatland restoration, woodland planting and measures to reduce erosion and contamination from mining spoil heaps all have the potential to reduce downstream flooding and sedimentation; and
- Habitat resilience – measures to restore, enhance or improve the management of habitats has the potential to improve their resilience. The enhancement of ecological variability, restoration of ecosystem function and reduction in fragmentation would make habitats more robust to change and better able to act as refugia for a wider range of species.

Responding to opportunities in relation to climate change features in Tees-Swale projects 1A – 1G; 2A – 2C; 3B – 3H

Peatland restoration using stone dams and heather brash

What can't be replaced or substituted and what cannot be lost

At the core of the development of this Programme was a '**functional analysis of the** landscape' (see Programme Plan Part 3 Folder 14). This work:

a. identified those 'assets' of the landscape that will have the most significant positive impact on sustaining the most important functions/services/benefits that the landscape provides. The most valued was 'High Nature Value Farmland', followed by: Trees and Woodland; Moorland and Blanket Bog; Rivers and Streams; and, Skills and Expertise;
b. engaged directly with the key 'influencers' of those assets – farmers; landowners; and environmental agencies; and
c. provided solutions that respond to the key 'drivers of change' in this landscape; and thus will create a legacy that will permanently change the way in which local people are able to enhance and maintain the natural heritage of the area.

In preparing this document, stakeholders were asked what could be replaced or substituted. They concluded that it is possible to argue that most natural heritage assets could be replaced or substituted (e.g. heather moorland with woodland) but it is not always clear whether what might replace them would provide comparable values of species-richness, character and quality.

What is more straightforward to understand, and what is clearly linked to what cannot be replaced or substituted in our case, was stakeholder views on what cannot be lost, and why:

- With 30% of the UK's **species rich-upland hay meadows**, we have a duty to protect and enhance this habitat – it isn't going to be replaced elsewhere;
- Our **peatlands** should not be lost or damaged, because of the enormous role they play in providing many services and benefits to society, especially carbon storage ad sequestration at a level greater than would be provided by woodland;
- Our **woodlands** are already relatively small and fragmented and both the AONB Partnership and the National Park Authority are committed to no net loss of woodland and no loss of ancient semi-natural woods to conserve biodiversity and landscape quality and character; and
- In-bye grasslands and white moor, alongside heather moorland for several species, provide vitally important habitat for breeding waders. As England's hotspot for upland **breeding waders** these communities cannot be lost because their management in the lowlands is not sufficiently success to maintain their populations.

When the assets that wider stakeholders felt could not be lost are mapped against the most valued assets identified in the functional analysis process, it is clear that there is a very strong correlation. This rigorous focus on the assets that will be of lasting value and significance, and on the key influencers change, means that the Programme will generate change that lasts.

6
Vision and Objectives

Our Tees-Swale Vision

“By harnessing the knowledge of local farmers, landowners, land managers and conservation organisations, Tees-Swale will be the national exemplar of nature-friendly upland farming on a grand scale. This ancient cultural landscape will be enhanced and restored for the benefit of wildlife and the people who live, work and play there. Easier to access and explore, with a wealth of natural heritage to enjoy and stories to inspire people, it will be the natural destination for audiences old and new."

What will this look like on the ground?

Through this Programme, Teesdale and Swaledale have become 'the collaborative dales' – an exemplar of how everyone working together better can make a place and its heritage more resilient and sustainable.

Empowering our High Nature Value farmers, and instinctive closer working between the farming, landowning and conservation communities, has led to habitats being enhanced, expanded and connected across multiple holdings on a landscape scale. Hundreds of hectares of hay meadows are now better maintained, and others have been made richer and more diverse; new woodlands have been created, linking fragmented habitat and helping to slow the flow of water from the hills; a network of new wetlands diversifies the landscape and supports our special and distinctive birdlife. Peatlands too have been restored, storing and sequestering carbon, holding back water, reducing sediment load in our rivers and supporting more wildlife. The impacts of centuries of industrial exploitation are being addressed through managing diffuse pollution from old metal mines.

Through building mutual trust and respect, and by learning new skills with and from each other across sectors, we have all altered our behaviours and made new things possible. Farmers and land managers have been enabled to measure their positive impacts, understand the public goods they provide and how to sustain and increase them. Everyone is more ready for what the future brings.

More people, from more diverse backgrounds, are discovering the natural heritage of this place for the first time or seeing it afresh. They are enjoying new trails and benefiting from innovative interpretation that leaves people knowing more and caring more than when they arrived. A cohort of local school children have been taken through part of their school life with Tees-Swale, learning through fun and discovery. Many other children have enjoyed learning in the landscape. Local communities are skilled at telling the stories of their natural heritage through art of all kinds, and our dales have become an outdoor classroom, a stage and a gallery which enriches lives and boosts well-being.

Through investing in the farming and land management community, empowering people to take action, promoting skills and expertise and fostering innovation in all we do together, we have all built a nature recovery network that is reversing the decline in our biodiversity, whilst our farmers and farming have grown more resilient. Our heritage has been brought to life and opened-up for everyone to discover and enjoy. We have not 'rented change' for the short-term but secured it for the future.

Black grouse depend upon the mosaic of upland habitats which HNV farming supports
© Brian Raffety

Our strategic objectives:

Objective 1 – Enhance, expand and connect priority habitats on a landscape scale, showcasing how public funds can deliver multiple public benefits

Why? 'The Lawton principles of 'more, bigger, better, and joined-up' underpin this Programme and lie at the heart of our nature recovery ambitions. Lawton states that "The first priority is to enhance the quality of remaining wildlife habitat". The Lawton principles also highlight the need to start by securing the future of those remaining areas of relatively high biodiversity and then 'build out' from there into the wider landscape. Whilst this part of the northern Pennines has the highest levels of habitat connectivity in England, there could be significant improvements in condition and resilience, which would not only be good for nature but would also provide a more comprehensive range of 'public goods' – delivering multiple-benefits for society whilst conserving and enhancing our natural heritage.

Summary of activity

Through close partnerships between landowners, farmers and conservation bodies, the Programme will deliver habitat enhancement and creation on a grand scale, including:

- peatland restoration (minimum 1,250ha):
- hay meadows restoration (minimum 225ha);
- rush management (2,500ha);
- wetland creation (40 sites);
- woodland creation and enhancement (allowing for establishing 200,000 trees);
- improve water quality in up to 200km of rivers by mitigating pollution from diffuse metals; and
- river enhancements on the River Greta.

Objective 2 – Work in partnership with the farming and landowning community to generate change that will sustain our 'High Nature Value' farming systems

Why? Our High Nature Value farmers are at the heart of our ambitions for nature recovery. Farmers and landowners have by far the biggest influence on the land. Harnessing their skills and knowledge and working collaboratively across holdings and with a wide range of partners, is the only practical and realistic way to deliver the public goods that society wants. In turn, investing in the natural assets that will deliver those public goods will provide the basis for sustaining farm incomes at a level that makes them viable businesses. Building trust and new ways of working, with everyone adapting their behaviours, is essential for success.

Summary of activity

This is built in to the way we will deliver every aspect of this Programme, developing habitat works collaboratively, promoting training and skills and facilitating knowledge exchange and peer to peer learning. The works on farm and fell have all come about through engaging and listening one to one with over 100 farmers for years 1 and 2 of the Programme.

Objective 3 – Create opportunities for high quality learning and training connected to the special qualities of this landscape

Why? Everyone involved in managing our natural heritage – farmers, landowners, conservation bodies – has much to learn from each other. New techniques and new ways of working will be required to rise to new challenges. Learning together builds trust and collaborative behaviours which are central to transforming the way we approach large-scale nature recovery.

Summary of activity

- Training for farmers in:
  - assessing habitats and monitoring the impact of actions, to support a future 'outcomes approach' as opposed to a prescriptions-led approach which has dominated in the past; and
  - alternatives to intensification; understanding and sustaining the public goods on their farm.
- Training for contractors to deliver the services needed to create a large-scale nature recovery network;
- 'Knowledge exchange' between farmers/land managers/conservationists;
- Demonstrations and on-farm trials;
- Traineeships to support young people to develop careers in conservation of natural heritage; and
- Skills training for volunteers (including habitat and species monitoring).

Objective 4 – Enable more people, and more diverse audiences, to discover, explore, enjoy and understand the Tees-Swale landscape, how it is managed and the wider benefits it provides

Why? If this is to be the most biodiverse, connected and collaborative part of the English uplands, it should be the most 'accessible' too. People will only advocate for the conservation of things about which they care, and they will only care about things they can experience and enjoy. Local community pride in nature and culture can have a huge positive impact on conservation advocacy and practice. Engaging local people in their natural and cultural heritage, and helping them to tell their own stories about it, can help to bring this about. We also believe that the right to explore, understand and enjoy our natural and cultural heritage extends to everyone, regardless of location, ability or background. New and more diverse audiences should be able to share in the well-being benefits of engaging with our heritage together.

Summary of activity

- 17 new walking/multi-user trails will be established, interpreted and promoted, with associated infrastructure improvements;
- Engaging with youth audiences from urban areas outside the Programme boundary;
- Educational programmes targeting year groups 6 to 10, with schools in and outside the Programme area;
- Community-led art projects with a series of professional artists;
- New interpretation across the area;
- On-farm public engagement; and
- HNV Farming Award.

These objectives will be delivered through three strands:

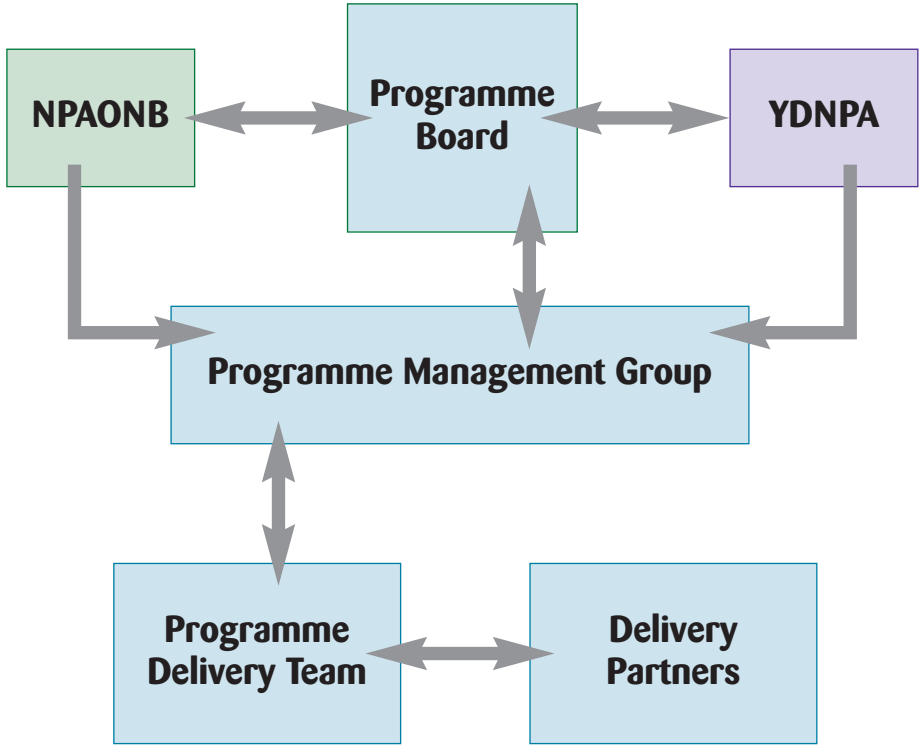
1: Nature Recovery. 2: Training and Skills. 3: Access and Engagement

7
Programme governance and management

Programme Governance

Our Programme is complex and multi-stranded – but the arrangements for managing it are clear and straightforward. The Programme Board will act as the strategic decision-making body. A small Programme Management Group will ensure the smooth running of the programme. Finally, the day-to-day delivery of the programme on the ground will be responsibility of the Delivery Team, working alongside the other specific Delivery Partners. These arrangements are shown in the diagram below:

Programme management structure for the delivery phase



There have been a number of changes during the development phase:

- The interim Programme Board *has been transformed into a more formal Programme Board*. It has also been strengthened by the addition of Countryside and Community Research Institute (Gloucester University) and the Environment Agency;
- Arrangements are in place to recruit the delivery team; and
- The close working between the North Pennines AONB Partnership and the Yorkshire Dales NPA during the delivery phase is to be 'formalised' through a Programme Management Group, with formal terms of reference.

Programme Board

The Board comprises an independent Chair (Sir John Lawton), representatives of those who own and manage the land, the Delivery Partners, and those bodies with strategic oversight of some of the areas of work:

- Independent Board Chairman – Professor Sir John Lawton
- Countryside and Community Research Institute (Delivery partner for continuous evaluation)
- Environment Agency
- Natural England
- Northern Hill Farming Panel
- North Pennines AONB Partnership
- Raby Estate (representing land owner interests)
- Welcome to Yorkshire[1]
- Yorkshire Dales National Park Authority

[1] Also representing Visit County Durham

The Board now has the diversity of expertise, knowledge, and institutional 'buy-in' to deliver the Programme's ambitions. Board members will sign a revised Partnership Agreement to reflect their role in the delivery phase of the work. The Board will meet quarterly to oversee the successful implementation of the programme, to monitor overall progress, and resolve any significant issues that may arise. Detailed arrangements are set out in the revised *Terms of Reference* (see Appendix 4).

Wider Stakeholder Forum

Although not part of the formal governance structure, the Wider Stakeholder Forum (established in the Development Phase) will continue to meet twice a year. The Forum will play a critical role in ensuring that a wider range of stakeholders remains involved in sharing information about, and learning from, the various project elements. It will also be a conduit for those stakeholders to directly encourage wide participation in the programme. (For Terms of Reference see Appendix 5.)

In addition to the organisations on the Board, bodies engaged in the Forum include: Durham County Council, Durham Wildlife Trust, representatives of local Estates, the Forestry Commission, Game and Wildlife Conservancy Trust, Northumbrian Water, RSPB, Tees Rivers Trust, the Woodland Trust, Yorkshire Dales Millennium Trust, Yorkshire Dales Rivers Trust and Yorkshire Wildlife Trust.

Programme Management

Management arrangements have been refined during the intensive development phase to ensure that our project can hit the ground running. In particular, we have

- Turned the 'interim Project Board' into a fully-fledged Programme Board;
- Agreed the financial, administrative and management arrangements for the programme;
- Secured all the cash match funding;
- *Assessed the key risks to the overall project and its component parts, and put in place appropriate mitigation and contingencies;*
- *Prepared a Communications Framework, and a Programme 'stamp' to ensure that we can promote the Programme effectively from day one; and*
- *Prepared a detailed plan for evaluation, which will be integrated into everything we do.*

Management Group

The Management Group will comprise key officers from NPAONB, YDNPA and the Programme Manager. It will meet regularly – between Programme Board meetings – to ensure the delivery team gets the support it requires, and that key issues are reported to the Programme Board in a timely fashion. It will also ensure that the two leaed partners work effectively together across the whole Programme area. For Terms of Reference see Appendix 6.)

Delivery Team

The Delivery Team will directly deliver most elements of the Programme, co-ordinate the work of the other Delivery Partners, and promote the scheme. It will also be responsible for the day-to-day administration; financial management; monitoring; and, evaluation– reporting to the Management Group, Programme Board and to NLHF and other funders.

This specialist team will be made up of the following posts:

- *Programme Manager (full-time)* – overseeing the overall delivery of programme objectives, managing the team, co-ordinating external delivery partners and representing the work to the Board, NLHF, and other stakeholders at a variety of scales;
- *Land Management Facilitators x 3 (full-time)* – ensuring the delivery of specific land management aspects of the programme and developing ongoing engagement in new works beyond years 1 and 2;

- *Engagement Officers x 2 (full-time)* – engaging new and more diverse audiences in events, activities and programmes. 1 post covering Teesdale and one Swaledale, with considerable interaction via the team management and the Management Group;
- *Access Officer (part-time)* – supporting and delivering improvements in physical and virtual access to the Tees-Swale landscape;
- *Communications Assistant (part-time)* – supporting the communications output of the team and partners;
- *Interpretation Officer (part-time)* – supporting and delivering high quality interpretation of our heritage;
- *Admin and Finance Officer (full-time)* – providing detailed financial information and ensuring all Programme finances are monitored effectively; providing dedicated administrative support to the team.

The Programme Manager, one Land Management Facilitator role and one Engagement Officer role were employed so as to bridge development and delivery; other roles will be advertised. Job Descriptions for all posts can be found in Programme Plan Part 3, Folder 6).

Line Management

The Director of the AONB Partnership will line-manage the Programme Manager who, in turn, will directly line manage the majority of the team members, based at the AONB offices in Stanhope.

In line with the core partnership at the heart of the Programme, and its fundamental philosophy to create lasting cultural change, one Land Management Facilitator and one of the Engagement Officers will be embedded with – and employed by – the Yorkshire Dales NPA. As a result, the Delivery Team will have the on-site support of specialist staff from both organisations. This models similar, successful delivery arrangements that have been used by YDNPA and the Yorkshire Dales Millennium Trust as part of the Green Futures programme; and by YDNPA and the Friends of the Lake District as part of the Westmorland Dales Landscape Partnership.

Delivery Partners

In addition to the Programme Delivery Team, a number of partners will take the on specific elements of the Programme, where they have the expertise, resources, contacts, and access to match funding. Those delivery partners are:

- Yorkshire Peat Partnership (Peatland Restoration – also delivered by the North Pennines team through its Peatland Programme);
- Countryside and Community Research Institute (Continuous Evaluation);
- The Coal Authority (Diffuse metals work); and
- Tees Rivers Trust / Yorkshire Dales Rovers Trust (Diffuse Metals work)

Each delivery partner will sign an individual grant offer agreement with Durham County Council (as the accountable body), and will report on a quarterly basis to the Programme Board, and as part of the overall reporting to NLHF.

Accountable Body

Durham County Council acts as the accountable body (and host authority) for the North Pennines AONB Partnership and will thus do so for this project. This model is replicated across all the work of the AONB Partnership, including many major lottery-funded projects over nearly 20 years. The Programme Manager, supported by the Finance Officer and other team members, and by the Management Group, will ensure that financial information is kept up to date and is regularly available through the County Council's finance systems. The majority of expenditure and funding will flow through the County Council's accounts; the Programme Manager will oversee submission of reports and payment requests and ensure that all procurement follows the procedures of the host authority (and of NLHF where required).

8
Programme of work, project delivery and evaluation

This section of the Programme Plan presents summary information of projects, finance and an outline of the scheme of monitoring and evaluation.

Project titles and codes

Theme	Project	Code
Nature recovery	Peatland restoration	1A
	Upland hay meadow and species-rich grassland management	1B
	Rush management	1C
	Wetland creation	1D
	Woodland creation	1E
	Diffuse metal mitigation	1F
	In-stream and Riparian Works	1G
Training and skills	Training for farmers and land managers	2A
	Training for agricultural contractors	2B
	Knowledge exchange, demonstrations and trials	2C
	Traineeships	2D
	Tees-Swale Volunteers	2E
Access and engagement	Access to the Uplands	3A
	Uplands for All	3B
	Uplands for Education	3C
	Community Events	3D
	Creatively connected	3E
	Interpretating Tees-Swale	3F
	On-farm public engagement	3G
	HNV Farming Award	3H

Information on the projects is found on the following pages and in more detail in:

- the Project Summaries (Programme Plan Part 2);
- the Full Project Plans and Gantt Chart (in Programme Plan Part 3, Folder 1); and
- the application form.

Nature Recovery

1A Peatland Restoration

We will restore a minimum of 1,250ha of severely damaged and eroding blanket bog, reducing the amount of carbon being lost to the atmosphere by oxidising peat. Restoring these peatlands will allow them to sequester carbon again and bring multiple benefits for flood reduction, watercolour, river sediment load and biodiversity. This work will build climate change resilience into these damaged peatlands, working at a landscape-scale.

1B Upland hay meadow and species-rich grassland management

We will restore and enhance the botanical diversity of a minimum of 225ha of upland hay meadows, steep uncut banks, species-rich road verges and other grasslands, through the addition of green hay, plug plants or physical management. This work will maintain species-rich upland hay meadows and steep banks by working with farmers to continue the traditional way of managing meadows. We will increase pollinator diversity by working with neighbouring farmers to increase habitat connectivity between holdings. Species rich verges are an important part of this grassland mosaic and we will engage with highway authorities to ensure their sympathetic management

1C Rush management

We will restore and enhance 2,500ha of rush pasture to good quality habitat for upland breeding waders. Through the funding of rush control by weed wiping and cutting on 1,000ha, rush cover will be reduced and a mosaic of rush and grassland cover restored across neighbouring holdings. Future management of rush pastures will be improved by advising groups/clusters of farmers on 5-year rush management plans.

1D Wetland creation

We will establish small-scale wetlands and scrapes for the benefit of biodiversity, in particular breeding wading birds. Through mechanical excavation and the manipulation of drainage systems as appropriate, 40 wetlands/scrapes will be created.

1E Woodland creation

We will create and enhance a minimum of 200ha of native broadleaved woodland, enabling the establishment of 200,000 trees. Our work will increase the connectivity between existing fragmented woodland areas, through the planting of new native woodland and scrub, enhancing areas of degraded woodland and introducing native woodland planting into areas of conifer plantation across neighbouring holdings. We will trial new approaches to management and creation of scrub and wood pasture areas.

1F Diffuse metal mitigation

We will reduce diffuse metal pollution into the River Tees and River Swale from former metal mines, for the benefit of biodiversity and water quality, benefitting 200km of watercourses.

1G In-stream and Riparian Works

We will improve fish passage and habitat quality, benefiting fish passage on 21km of the River Greta.

Training and Skills

2A Training for farmers and land managers

We will train groups/clusters of farmers, landowners and land managers in three key areas: habitat assessment; alternatives to intensification; and public goods and ecosystem services. We will inform groups/clusters of farmers, landowners and land managers about techniques that are consistent with High Nature Value (HNV) farming, results-based schemes and ecosystem services. This work will take the form of training workshops and field demonstrations delivered in partnership with industry experts and research institutes. A total of 60 training sessions, 11 per year with a total target of 600 training places, will lead to 50 farmers actively undertaking habitat assessment.

2B Training for contractors

We will deliver training on habitat management and HNV farming methods to agricultural contractors operating within the area. A total of 10 workshops and field demonstrations will enable contractors to deliver a high-quality service for both farmers and the environment.

2C Knowledge-Exchange

2Ci Knowledge-Exchange demonstration events:

We will hold demonstration events in four key areas of Knowledge-Exchange: Farmer-conservationist knowledge-exchange; Peer to peer learning; HNV farming; and peatland management. This work will bring groups/clusters of farmers, landowners, land managers, conservationists and policy makers together in real-world situations to build a shared understanding and to increase knowledge and respect. We will hold 45 workshops, nine per year, with a total target attendance of 560.

2Cii Land management trials:

We will work directly with groups/clusters of farmers, landowners and land managers to develop three land management trial, exploring locally-relevant management techniques that will benefit both farming and wildlife.

2Ciii Youth Group leaders and outdoor centres

We will work with youth group leaders, Duke of Edinburgh leaders and outdoor education centres to familiarise them with the area and help them to feel more confident leading groups in the area. Our work together will showcase what makes Teesdale and Swaledale special and the opportunities for groups to engage with our landscape, our wildlife and our cultural heritage.

2D Traineeships

We will recruit and support 16 paid trainees in a variety of roles. Our trainees will be offered a range of skills training, including habitat survey and management, GIS and IT, traditional skills (e.g. woodland management), new approaches to HNV farming, community engagement and heritage interpretation.

2E Tees-Swale Volunteers

Volunteers will be involved in a variety of activities, such as monitoring the impacts of habitat restoration, assisting in the engagement programme and carrying out large-scale conservation tasks. We aim to work with 100 active volunteers, running 58 training workshops over five years, on topics including wildflower identification, ash tree monitoring, tree and plug planting, access and community engagement.

Access and Engagement

3A Access to the Uplands

We will enhance the rights of way network to encourage and enable people to access this special landscape. We will produce 19 promoted multi-user and walking routes, covering 63.7 miles in Teesdale and 65.7 miles in Swaledale, with associated infrastructure improvements.

3B Uplands for All

We will enable young people aged 8-25 years old, predominantly from towns outside the Programme area, to engage in, understand and take ownership of the uplands. We will offer a programme of site visits, hands-on discovery, arts activities (part of 3E) and local family activities; plus, one-off days as part of wider self-development programmes. We will work with 2,700 young people from 10 different population hubs from outside the area.

3C Uplands for Education

We will excite and engage young people from primary and secondary schools within and outside the area, developing physical, emotional and intellectual links. We will engage with 400 primary school children and 10 members of staff from within the scheme area: 740 young people and 23 members of staff from Teesdale School and Barnard Castle School; 450 primary aged and 100 secondary aged children and young people from Darlington.

3D Community Events

We will provide a programme of at least 60 events for non-expert members of the public and families to enable people to learn about heritage, develop skills and to encourage a wider range of people to engage with our nature and culture. We aim to involve over 1,500 people in this work.

3E Creatively connected

We will deliver a community arts project, helping people to make the emotional connections with nature, which are capable of transforming their relationship with the natural world and encouraging nature-friendly behaviour.

3F Interpretating Tees-Swale

We will encourage greater understanding of and connection to the Tees-Swale area through a process of working with communities to tell the stories of the landscape, its wildlife and its people in innovative ways.

3G On-farm public engagement

We will enable a small number of farmers to welcome visitors to their farm to improve people's health and wellbeing and increase their understanding of hill farmers and their work.

3H High Nature Value (HNV) Farming Award scheme

We will foster a sense of pride and celebrate HNV farming by presenting an annual award to an HNV farming champion.

Case study

Nature Recovery

Hill Gill Farm, Baldersdale

Charlie Parker farms 50ha at Hill Gill in Baldersdale (a side dale of Teesdale). The farm is approximately 350m above sea level and is a mixture of meadow land, pastures and rough grazing; it has a current ELS/HLS agreement.

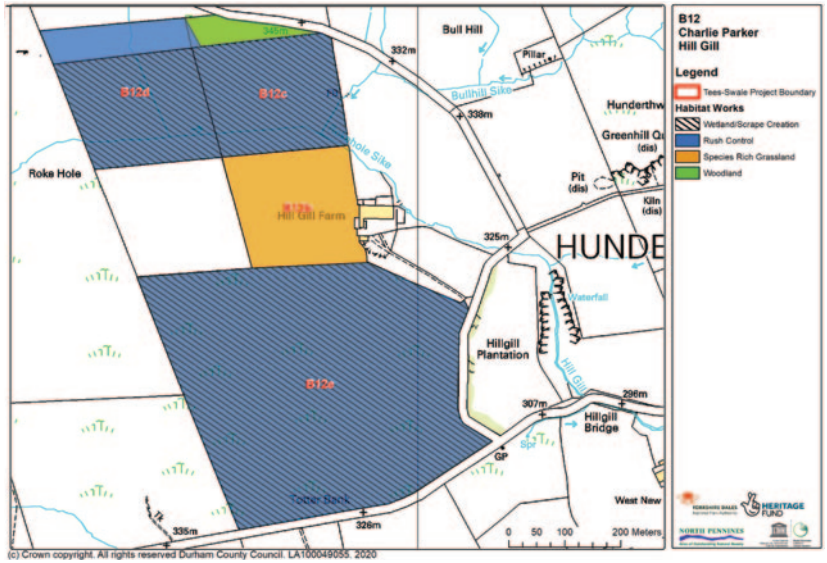
Since buying the farm Charlie has worked to maintain and restore the habitats there. He is particularly keen on introducing more trees into the landscape.

As part of the Tees-Swale programme staff will be working with Charlie to help him deliver his vision for the farm by conserving and enhancing habitats and connecting them up across his holding. Help, support and funding will be provided to:

- Improve the habitat for breeding waders by introducing scrapes and controlling dense areas of rush;
- Improve species diversity in meadows;
- Plant a small woodland area; and
- Welcome visitors onto the farm to learn more about the habitats and the farming practices that support them.

This is all excellent work that will improve the natural assets on the farm and increase the range and depth of public benefits they provide. This will hopefully put Charlie in a position to engage more fully in future outcome-focussed ELM schemes based on providing public money for the delivery of public goods.

The power of Tees-Swale is partly in its scale – imagine this work multiplied across over 50 farms at the time of programme submission, but then up to 300 over 5 years – this is what a farmer-focused nature recovery looks like.



Case study

Training and Skills

Farmer-led habitat assessment

Results-based schemes and payments for delivering public goods is the likely direction of the new Environmental Land Management (ELM) scheme that will replace current farm support. Various approaches have been trialled in the Wensleydale Results-Based Agricultural Payments Scheme (RBAPS), involving training farmers in habitat assessment work, including on upland hay meadow surveys and assessing rush cover for breeding wader populations.

Through the Tees-Swale: *naturally connected* programme, farmers can engage with a range of workshops and training events focused on the assessment of key habitats. Increased farmer understanding of the habitats and species on their farms, and the impacts of their management, will help to improve conservation outcomes; it will also better prepare them for the introduction of a results-based approach to ELM, helping them to maximise the public goods they can deliver and the rewards they might receive for doing so.

The aim is for them to feel part of a collaborative cluster, sharing skills, knowledge and expertise, working through management challenges together and developing greater trust.

Ian Cairns from SAC Consultants talking about rush management.

Case study

Access and Engagement

Community engagement programme

Youth group 'BCT Aspire', based in Billingham, near Stockton on Tees, will undertake a 6-week programme of engagement activity.

BCT is run by volunteers with one paid part-time member of staff. Their youth centre has multiple rooms and a large outdoor space with fruit and veg plots. About 90 young people per week from a range of backgrounds come to the club, with 40% being from outside the immediate area.

Session 1 At the club, to tie in with the organised youth club. Introduce the ideas of the environment, the uplands, why a healthy environment is important and what activities you might do there. There would be models and samples and art – some created through the Programme) to encourage engagement. Introduce the John Muir Award highlighting that it is not a test or onerous task to complete. This initial session would be open to everyone, knowing that some will be interested and some will not. The youth group leader will be responsible for drawing together who would like to go further with the programme.

Session 2 A full-day field visit, either on a weekend or a holiday. The Programme will cover any shortfall in BCT's outdoor kit. Lunch is provided to the participants as there is a mix of social backgrounds and no one should feel excluded. We will cover transport costs. The session will introduce the area to participants and allow them to explore, maybe through geocaching. They might meet a farmer who is part of the Nature Recovery programme and be able to handle stock. Or they may work with an arts contractor to develop their artistic responses to the landscape.

Session 3 Back at the youth club, an evening session, discussing what they have experienced so far, what their thoughts are and how their perceptions may have changed. They will also prepare for the fourth session and decide, as a group, what they would like to do.

Session 4 Another day in the field – they are more familiar with their surroundings now. A conservation task is on offer – tree planting or plug planting, linked to the Nature Recovery projects or works to improve public access. Or they may otherwise choose to do stream dipping to get up close with the aquatic invertebrates. The afternoon would be spent doing owl pellet dissection or butter making – a hands on activity that they are unlikely to have done before. Participants will be able to take home the bones or the butter.

Session 5 This session is crucial if the participants are to continue their engagement with the outdoors. This will see the young people visit a local green space and invite their families to embed learning and share their new skills and knowledge. They may do stream dipping (if possible) or work with others on quadrat surveying, bug hunts or art works. The young people will really take the lead and take ownership of this session.

Session 6 Back at the youth club the young people will take stock and reflect on what they have experienced and learnt. They will discuss, in their own way, how they have connected with the landscape and what it means to them. We will also explore ideas of how to take a legacy forward to enable their continued involvement in the outdoors and how they can make that happen. If they have been working on art works this will be an opportunity to finish them off and to arrange for an exhibition.

If the applicants have not undertaken enough activities to be awarded a John Muir Award the applicants and the youth group leaders will be supported to allow them to complete it. The youth group leaders will have the opportunity to take part in John Muir Award training (Project 2Ciii) and in this case Duke of Edinburgh area familiarisation sessions. Programme will also signpost the young people to local environmental volunteering opportunities.

Communications

The communications for the Programme will be led from the offices of the North Pennines AONB Partnership, where the larger part of the delivery team, including the Programme Manager, will be based. The Communications output will be led by the AONB Partnership's Communications Lead.

A **Communications Framework** (Programme Plan Part 3, Folder 10) will guide the output of the team in this area of work. It identifies:

- Programme values and identity;
- key themes;
- key messages for each theme;
- tone;
- consistency;
- acknowledgement and recognition, including funders and supporters;
- approved ways of referring to programme, the lead partners, and to NLHF and other funders;
- protocols for the delivery partners to follow;
- visual identity and its use – the 'Tees-Swale stamp';
- colour;
- typography;
- press release and social media protocols; amd
- media contacts

All communications work will comply with established NLHF protocols.

TEES-SWALE
Naturally
Connected

The visual identity for the Programme signifies peatland, farmed landscape and watercourses at the heart of the Programme and will accompany all Tees-Swale communications. It is not an organisational logo, but can be used like a 'stamp' as a visual signifier of the work delivered in the frame of the Programme. The communications framework includes guidance for how the Tees-Swale stamp is to be used.

Key Messages

The communications framework includes a series of key messages for the Programme – these are:

1. 'Tees-Swale: *naturally connected*' is a major programme that covers 845 square kilometres of Teesdale in the North Pennines Area of Outstanding Natural Beauty and Swaledale in the Yorkshire Dales National Park.
   - scale and connectedness; two teams working together; big vision; demonstrating an approach.
2. The Tees-Swale Programme exemplifies action for nature recovery and is a component of the country's emerging nature recovery network.
3. The work aims to restore, expand and connect habitats across the uplands of Teesdale and Swaledale, showcasing how public funds can enhance wildlife and deliver multiple public benefits.
   - uplands and connectivity; demonstrating an approach for how public funds can enhance wildlife; rewarding people for doing the right thing.
4. Our HNV farming community is central to nature recovery.
5. The ethos of the Programme is to work closely and in partnership with farmers, landowners and conservation agencies to build the relationships and establish the skills required to sustain our 'High Nature Value' farming systems.
   - partnership working and relationship-building; skills; sustainability.
6. High Nature Value (HNV) farming is a term used to describe farming systems that are particularly valuable for wildlife, the environment and people. Teesdale and Swaledale support some of the finest examples of HNV farming in England.
   - *HNV farming is nature-friendly and working within the constraints of the natural environment. The perspective is to see the environment as an asset that needs safeguarding and enhancing.*
   - *Focus on 'natural productivity'*
   - *Biodiversity on a farm in the uplands is one of the biggest, most valuable assets a farmer can have. Working with nature.*
   - *HNV farming is about survival and allowing farmers to feel and recognise that HNV farming is best for their business and for nature and that it is forward-looking and sustainable.*
   - *Farmers will become the spokespeople for what they have been doing. It is not just doing what is good for the environment but also what is necessary to survive. Enlightened self-interest is a powerful message.*
7. Through an innovative programme of interpretation, activities and rights of way improvements, Tees-Swale will enable people to discover, explore and enjoy the stunning landscape of Teesdale and Swaledale. At the heart of this will be a drive to reveal to visitors how this landscape is managed and why this is relevant to them.
   - Retaining memories and connectedness; forward-looking process; everyone involved; hearts and minds; water is a tangible link; involvement (volunteering, helping (young) people to 'make a difference' rather than feel powerless); getting new audiences whilst retaining existing ones; emphasising the importance of the uplands.
8. A comprehensive learning programme will see skills developed through traineeships, knowledge-exchange schemes and volunteering with the aim of building resilience within farming communities and empowering a future rural workforce.
   - Primary audience is internal/those involved/participants; future sustainability/resilience; respect for knowledge, sharing and celebrating; need to find more of the HNV farming heroes – and celebrate them as the 'smart' ones; must not give a message that nature is not in need of recovery in the Programme area; what is going to happen next?/innovation.

Promoting the work through our Destination Management Organisations

During the life of the programme, the two Destination Management Organisations (DMOs) – Welcome to Yorkshire and Visit County Durham – will be supporting the promotion of the engagement opportunities provided by the work, and the wider visitor offer in the area.

The two organisations are each providing in-kind support to the Programme to the value of a minimum of £10,000 to cover:

- Access to commissioned photography and films to engage and showcase the wider visitor product to attract new audiences;
- Inclusion in strategic destination marketing campaigns, specifically for nature/farm tourism where appropriate (with the potential to run a dedicated campaign towards the end of the Programme);
- Dedicated content pages on destination websites to attract new audiences and promote the accessibility strand of the Programme;
- Support to develop 'welcome training' programmes for farmers and other businesses wishing to diversify;
- Promotion of all collateral produced from the Programme through the pages on the DMOs' websites and at relevant events they attend;
- Inclusion in press and PR activity;
- Support through social platforms – content and message to be agreed;
- Support to develop print and digital interpretation tools;
- Event support and promotion (B2B and B2C); and
- Promotion of all collateral produced from the project.

Acknowledging funding

The partners in this Programme are grateful for all the funding contributions they have secured, which make this important work possible.

We will of course fulfil the standard conditions for acknowledging NLHF funds, alongside those of others, including, featuring Lottery funding logos on all printed matter and online material. Media releases and interviews etc will all reference the contribution of NLHF and lottery players. We will also ensure that Lottery and other contributions are promoted at events and activities – for instance any guided events will include a 'thank you' to the NLHF and lottery players.

We especially understand the value and importance of making sure Lottery players know where they money is being spent, the benefits this brings to heritage and the opportunities they have to find out more or get involved. So, beyond the usual methods of acknowledgement, we want to be creative in acknowledging our funders and supporters – especially in ways in which we think Lottery players themselves will appreciate and with which we think they can engage. This is likely to include:

- Short films of participants and beneficiaries specifically thanking Lottery players for their contribution, highlighting what the funding has made possible and how Lottery players might take part in future activity;
- Temporary signs, eg. movable A-boards at works sites explaining the work and the Lottery funding;
- Photography which displays a visual 'thank you' to Lottery players;
- Hashtags used across social media which credit the support;
- Engaging with NLHF campaigns such as Heritage Treasures Day; and
- Participating in the #thankstoyou campaign.

One of the National Association for AONBs 'Hearts in the Landscape' in Teesdale, celebrating local people's love for the landscape and thanks for 70 years of AONBs and National Parks. This kind of 'engaged acknowledgement' will always be more powerful than simply adding logos to publications.

Matrix of projects against HLF outcomes

The table below identifies the NLHF outcomes that this programme will help to deliver. It should be noted that the programme was approved under the former HLF outcomes in place in mid-2018.

Though not part of the outcomes above, we anticipate the Programme will have significant benefit for people's physical and mental well-being, especially through being able to access and exercise in high quality natural environments, engage directly with nature take part in our wide range of events activities.

Theme	Objectives	Code and Project	NLHF Outcomes								
			1	2	3	4	5	6	7	8	9
Nature recovery	1. Enhance, expand and connect priority habitats on a landscape scale, showcasting how public funds can deliver multiple public benefits. 2. Work in partnership with the farming and landowning community to generate changes that will sustain our 'High Nature Value' farming systems	1A Peatland restoration	■	■	■				■		■
		1B Upland hay meadow and species-rich grassland management	■	■	■			■			■
		1C Rush management	■	■	■						■
		1D Wetland creation	■	■	■						■
		1E Woodland creation	■	■	■						■
		1F Diffuse metal mitigation	■	■	■				■		■
		1G In-stream and Riparian Works	■	■	■				■		■
Training and skills	3. Create opportunities for high quality learning and training connected to the special qualities of this landscape.	2A Training for farmers and land managers	■	■	■	■	■	■	■		■
		2B Training for agricultral contractors	■	■	■	■	■		■		■
		2C Knowledge exchange, demonstrations and trials	■	■	■	■	■	■	■		■
		2D Traineeships	■	■	■	■	■				■
		2E Tees-Swale Volunteers	■	■	■	■	■	■			■
Access and engagement	4. Enable more people, and more diverse audiences, to discover, explore, enjoy and understand the Tees-Swale landscape, how it is managed and the wider benefits it provides.	3A Access to the Uplands	■	■						■	■
		3B Uplands for All				■	■	■		■	■
		3C Uplands for Education				■	■	■		■	■
		3D Community Events				■	■	■		■	■
		3E Creatively connected				■	■	■		■	■
		3F Interpretating Tees-Swale					■			■	■
		3G On-farm public engagement				■	■	■		■	■
		3H HNV Farming Award					■				■

HLF outcomes

1. Heritage will be better managed
2. Heritage will be in better condition
3. Heritage will be identifed/recorded
4. People will have developed skills
5. People will have learnt about heritage
6. People will have volunteered time
7. Environmental impacts to communities will have been reduced
8. More people and a wider range of people will have engaged with heritage

9 The landscape will be a better place to live, work and visit

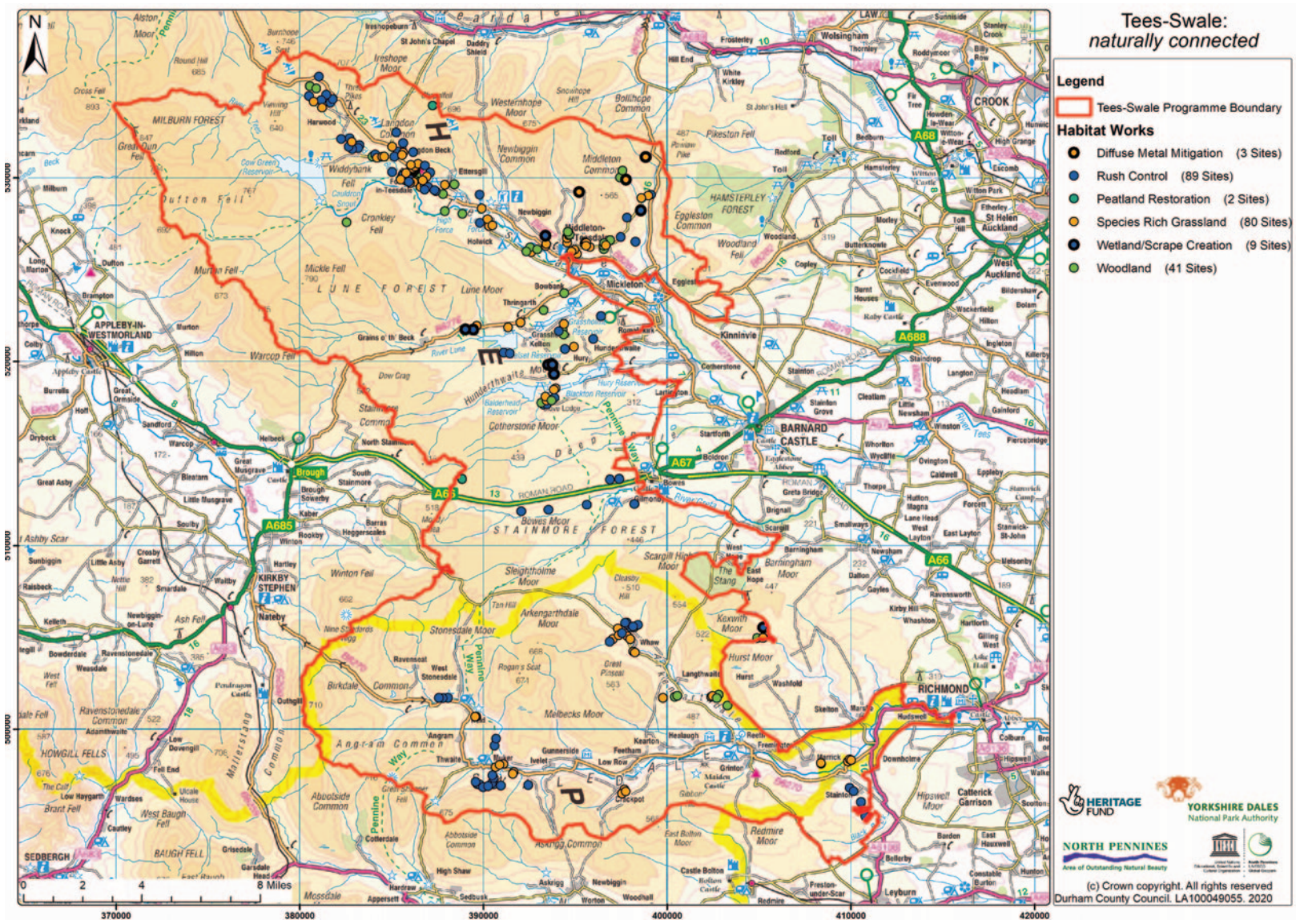
Key: ■ fully meets ■ largely meets ■ partly meets

Key milestones and events

Key milestones and events for the management and delivery of the programme are shown in the table below. Timetables for individual projects are included in the project plans in Part 3 of the Programme Plan

	2020	2021				2022				2023				2024				2025		
	Sept-Dec	Jan-Mar	April-June	July-Sept	Oct-Dec	Jan-Mar	April-June	July-Sept	Oct-Dec	Jan-Mar	April-June	July-Sept	Oct-Dec	Jan-Mar	April-June	July-Sept	Oct-Dec	Jan-Mar	April-June	July-Sept
NLHF reporting quarter	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2
Stage 2 decision	✦																			
Permission to start	✦																			
Recruit staff team	✦																			
Management Group meetings	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦
Programme Board meeting	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦
NLHF Reporting		✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦
Launch event	✦																			
Trainee recruitment			✦				✦				✦				✦					
Evaluation		✦								✦								✦		✦
Legacy planning		✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦
Management and maintenance plans																		✦	✦	
Final celebration event																				✦
Programme completion and final report																				✦

Project locations map — Years 1 and 2 (at submission date)



This map identifies landholdings on which there will be conservation or access improvement work in the first two years of Tees-Swale. It identifies the holding rather than area of land involved.

Overall budget summary

Expendiure

	Cost heading	1st round budget	2nd round budget	difference	Notes on major changes
Capital costs					
1A	Peatland restoration	£1,500,000	£1,578,600	£78,600	A more realistic assessment of potential
1B	Hay meadow restoration	£170,000	£210,375	£40,375	Further sites identified
1C	Rush management	£74,000	£37,450	£36,550	A more accurate assessment of costs
1D	Wetland creation	£120,000	£46,313	£73,687	A more realistic assessment of targets and costs
1E	Woodland planting	£1,000,000	£1,000,000		
1F	Diffuse metal mitigation	£400,000	£400,000		
1G	In-stream and Riparian Works	£100,000	£50,000	£50,000	A more accurate assessment of costs
3A	Rights of Way enhancement	£200,000	£180,000	£20,000	
3G	Farm visitor hygience facilities	£60,000	£64,600	£4,600	
	Professional fees	£73,400	£27,624	£45,776	Training contracts moved to 2A-C
Total capital costs		*£3,697,400*	*£3,594,962*	*£102,438*	
Activity costs					
	New staff costs	£1,777,721	£1,874,536	£96,815	New part-time communications assistant, other changes cost neutral
	Training for staff	£7,548	£20,000	£12,452	
	Travel for staff	£126,260	£105,600	£20,660	
2D	Paid training placements	£328,207	£320,240	£7,967	
2A-C	Training for volunteers	£6,000	£14,960	£8,960	
	Training for farmers and contractors		£71,345	£71,345	New heading originally part of professional fees
	Travel for volunteers	£17,472	£12,060	£5,412	
3F	Interpretation	£100,000	£136,375	£36,375	More detailed costs following contract work
3B-E, 3H	Other activity costs	£384,018	£329,859	£54,159	
Total activity		*£2,747,226*	*£2,884,975*	*£137,749*	
Other costs					
	Recruitment	£2,000	£1,000	£1,000	
	Publicity and promotion	£26,080	£21,500	£4,580	
	Evaluation	£100,000	£100,000		
	Other (office costs, phones, room bookings and catering)	£15,438	£69,464	£54,026	More realistic assessment of costs
	FCR	£109,119	£109,680	£561	
	Increased management and maintenance costs	£15,000	£191,900	£176,900	Not fully considered prior to development stage (see table Z)
	Non-cash contributions	£1,187,340	£1,201,620	£14,280	
	Volunteer time	£252,000	£165,246	£86,754	
Total other costs		*£1,706,977*	*£1,860,410*	*£153,433*	
Sub-total		*£8,151,603*	*£8,340,347*	*£188,744*	
	Inflation	£93,640		£93,640	Included in contingency
	Contingency	£395,104	£300,000	£95,104	See table X
Sub-total		*£488,744*	*£300,000*	*£188,744*	
GRAND TOTAL		**£8,640,347**	**£8,640,347**	**£0**	

Income

	Funding source	Description	1st round budget	2nd round	difference	Confidence
Cash income						
	European Union	INTERREG	£12,000	£12,000		secrured
	Other public sector	Yorkshire Dales NPA	£250,000	£232,000	£18,000	secured
	Central government	Environment Agency	£100,000	£100,000		secured
	Private donation - industry	Northumbrian Water	£250,000	£100,000	£150,000	secured
	Private donation - individual	Landowner contributions (Agri-Env Scheme)	£200,000	£403,800	£203,800	see table Y
	Private donation - individual	CS PA1 fees (Haymeadows)		£22,000	£22,000	including in table Y
	Private donation - trust/charities/foundations	Esmee Fairbairn Foundation	£300,000	£300,000		secured
	Private donation - trust/charities/foundations	Yorkshire Dales Millennium Trust	£50,000		£50,000	
	Private donation - trust/charities/foundations	Woodland Trust	£100,000		£100,000	
	Private donation - trust/charities/foundations	Prince's Countryside Fund	£50,000		£50,000	
	Private donation - trust/charities/foundations	Arts Council	£100,000	£100,000		applying for £80k in year 1, £20 in year 3
		CS Facilitation Fund		£40,000	£40,000	secured
		Richmondshire District Council		£50,000	£50,000	secured
	Own reserves	North Pennines AONB Partnership	£50,016		£50,016	
	Other fundraising	Income from events	£2,210		£2,210	
Total cash income			*£1,464,226*	*£1,359,800*	*£104,426*	
In-kind contributions						
	Increased management and maintenance costs		£15,000	£191,900	£176,900	see table Z
	Non-cash contributions		£1,187,340	£1,201,620	£14,280	
	Volunteer time		£252,000	£165,246	£86,754	
Total in-kind contributions			*£1,454,340*	*£1,558,766*	*£104,426*	
Total match funding			£2,918,566	£2,918,566		
NLHF grant request			*£5,721,781*	*£5,721,781*		
TOTAL FUNDING			**£8,640,347**	**£8,640,347**		

Table X: Contingency (including inflation allowances)

%	Item	Budget	Contingency
5	Staff costs (maternity cover, redundancies etc)	£1,874,536	£94,000
5	1A Peatland Restoration	£1,661,600	£79,000
5	1B Haymeadow restoration	£209,900	£11,000
5	1E Woodland creation	£1,000,000	£50,000
5	1G In-stream and Riparian Works	£50,000	£3,000
5	2 Training	£391,585	£20,000
10	3A Access to the Uplands	£180,000	£18,000
5	3B Uplands for All	£77,400	£4,000
10	3C Uplands for Education	£27,839	£3,000
5	3E Interpretating Tees-Swale	£136,375	£7,000
5	Office costs (inc. FCR) and publicity	£209,943	£11,000
TOTAL Contingency			**£300,000**

Table Y: Landowner contributions

Contributor	Basis	Amount
1A Valance Lodge landowner (CS)	CS payment	£284,800
1A North Stainmore landowners (CS)	CS payment	£119,000
1B Various (approx. 20) landowners	CS management plan fees	£22,000
TOTAL landowner contribution		**£425,800**

Table Z: Management and maintenance

Year 4 Woodland planting beating up costs/boundary maintenance	£32,000
Year 5 Woodland planting beating up costs/boundary maintenance	£40,000
River restoration/trees and fencing annual check and repair/see M&M plan	£7,500
River restoration/spilling dam checks/2-day RT staff x 5yrs	£3,000
Peat dams/10% coir rolls and 5% brash to replace over 5 years / see M&M plan	£50,800
Wetland scrapes/once in 5 years repair PLUS 3 annual inspection visits / see M&M plan	£46,000
Physical and digital interpretation / annual site inspection, testing and recording	£3,000
On-farm engagement facilities/monthly deep clean and maintenance / see M&M plan	£9,600
TOTAL Management and maintenance estimate	**£191,900**

Detailed budget spreadsheets for the Programme can be found in Programme Plan Part 3, Folder 9.

Rationale for Contingency and Management and Maintenance Costs

Contingency costs — these costs have only been applied to those features which may genuinely require them, rather than simply adding a percentage to the programme. These are listed in the contingency table.

Management and Maintenance costs — this relates to works which would not necessarily be maintained as part of normal farming operations (rush management, for instance, would be managed thus). The aspects requiring maintenance are listed in the table above. The reasoning behind each is found in the Management and Maintenance Plan (see Programme Plan Part 3, Folder 4).

Outline of financial arrangements

Accountable body – Durham County Council

As accountable body for the AONB Partnership, Durham County Council will receive funds and, subject to approval from the Programme Manager or their nominee, make payments in relation to the Programme.

The AONB Partnership has an independent budget within the County Council and the Tees-Swale Programme has a separate budget within that structure. This allows for income and expenditure codes for all the necessary purchases and payments to be appropriately coded to ensure accurate financial records.

Procurement

All procurement will be carried out in accordance with the policies and practices of Durham County Council. In summary:

- Other than incidental items, all expenditure up to £5,000 must be subject to a quote in writing;
- Between £5,000 and £50,000 three written quotes will be obtained. Contracts can also be put out to formal tender;
- Above £50,000 all contracts must go through a tender process.

Exceptions to this are where it is not readily possible to judge differing or competing work which is not based on direct costs or methods, e.g. the provision of artist services.

Where NLHF has its own rules on procurement, such as tendering work over £10,000, this will be adhered to.

Responsibility for managing the budget

The budget will be managed and monitored by the Programme Manager with support from the Programme's Finance Officer. Oversight will be provided by the Management Group, which will receive a budget update at each meeting, highlighting any areas of concern regarding potential under/overspend.

There will be a budget report to each Board meeting.

Claims to NLHF

Quarterly reports and claims will be submitted to NLHF. The Finance Officer will be responsible for gathering the financial information to inform this process.

Recording partner contributions (cash and in-kind)

These contributions will be subject to detailed record keeping. Partners will be asked to keep a formal record of in-kind contributions and this will be centralised and available to NHLF with claims.

Cash contributions will be through the financial systems of the AONB Partnership's host authority and accountable body, Durham County Council. A record of all such contributions will be kept by the Programme's Finance Officer, working with colleagues from the two main partner organisations and finance staff at Durham County Council.

Monitoring and evaluation

Introduction

Countryside and Community Research Institute (CCRI) at Gloucester University, will undertake in-dpeth evaluation of the programme. They have been written into the programme as partners and have a seat on the board, to ensure engagement with the process from stakeholder engagement to team/partner delivery, to Programme governance.

The basic framework for the evaluation is outlined below and the full framework is included in Part 3 of the Programme Plan. There is an intention to co-create the evaluation with the team and with other stakeholders, notably farmers, as the work progresses.

Proposals for in-depth evaluation

Three areas of evaluation activity have been identified for Tees-Swale:

1. Programme establishment and management;

2 Economic, social and cultural impacts; and

3. Ecological and environmental impacts.

The evaluation through CCRI will focus on the management, attitudinal and socio-economic aspects of the Programme. It will also address the arts activities and teacher/provider aspects of the educational programmes. Specialist evaluation work in relation to ecological change and access will not be undertaken by CCRI, but through the team and partners; alongside the work of Programme and partner staff there is a strong emphasis on the training and deployment of volunteers. A baseline, mid-term and final evaluation will be carried out to provide a systematic and objective assessment of the design, implementation, and outcome of the intervention over the duration of the Programme. In the case of ecological, access, and educational outcomes the evaluation will incorporate findings from appraisals carried out by partner organisations or other specialist surveys into the synthesis of information utilised to assess overall Programme outcomes.

Tees-Swale is multi-faceted and has multiple objectives that the evaluation approach will accommodate through:

- Evaluation of intervention impacts: Intervention impacts will be evidenced through baseline, mid-term, and final evaluation. This will consider the extent to which the intervention is meeting, or likely to meet, its stated objectives;
- Guidance from NLHF on project evaluation: The evaluation will provide assessment of outputs required by NLHF;
- Evaluation of different types of management process and intervention impact: Multiple methods will be utilised to evaluate management processes and intervention impacts; and
- Monitoring projects and data collection commissioned or undertaken through the Tees-Swale programme: Lead partners have started to commission projects to collect data for the programme and monitor its progress – this will be incorporated into the evaluation process.

Process and Outcomes

The Monitoring and Evaluation framework for the programme encompasses both a process and outcomes evaluation:

- Process evaluation will focus on processes linked to planning, management and delivery of the Programme, and the extent to which planned activities are carried out; and
- Outcomes evaluation will examine the outcomes and impacts of the projects delivered under the Tees-Swale programme of activities with the aim of determining overall effectiveness in meeting programme and NLHF criteria.

The Evaluation framework has been developed and refined to comprise three inter-related elements.

- Process tracing to gather qualitative feedback from relevant stakeholders on the processes and their relation to outcomes that can be reported back into the Programme and facilitate changes that can enhance effectiveness;

- Collecting data to assess the distance travelled towards achieving environmental, community, and social outcomes; and
- An evaluation cycle implemented three times over the course of the programme, designed to gather process and outcomes data through in-depth qualitative and inclusive enquiry, and to feed this back into the Programme in ways that can facilitate improvement.

All three elements indicate the need for inclusive evaluation involving all the programme stakeholders and is embedded within the management and delivery systems and processes.

Evaluations will be designed to assess individual projects as well as for programme management and implementation processes. All aspects of the Programme will be subject to baseline, mid-term, and final evaluation in order to capture and report changes over the programme period. Each project will have specific evaluative criteria linked to both Programme objectives and the wider NLHF evaluation criteria. Detailed evaluation techniques will be project specific in terms of the type of data to be collected and analysed.

Adaptation through the evaluation

CCRI's involvement across the whole structure of the Programme will provide opportunities for adaptation of the approach as the work progresses. There will be regular reviews of the evaluation at the Management Group level, with periodic reports to the Board.

Ecological monitoring — a framework for monitoring with staff and volunteers

Much of the approach to monitoring the impacts of the work on species and habitats will be undertaken through Programme / partner staff and the training and deployment of volunteers. The following table highlights the process.

Theme	Aim	Method	Number of replicates	Staff/ volunteers	Number of volunteers needed	Training required	Coordination lead	Timescales
Ash trees	To identify ash trees within the area that may be resistant to ash die-back with a view to ensuring their recognition/protection as potential resistant specimens.	Locate apparently healthy ash trees across the Programme area in year 1 and check their health in each subsequent year.	60 trees, 20 in Upper Teesdale, 20 in Lunedale/Baldersdale and 20 in Swaledale.	Volunteers	9 skilled volunteers - 6 in Teesdale, 3 in Swaledale	Yes	Land Management Facilitators (LMFs)	Surveys undertaken in August and September
Hay meadow restoration - green hay, botany	To evaluate the impact of hay meadow restoration through green hay addition.	Undertake a baseline survey of the meadow prior to green hay addition and then a further survey following addition using quadrat surveys (15/meadow). Impact of restoration to be measured in terms of the addition of new or increasing positive indicator species within the sward. Restoration meadows, 2 years after seed addition; enhancement meadows three years after seed addition.	4 restoration sites, 4 enhancement sites, plus 5 controls (9 in Teesdale, 4 in Swaledale).	Skilled Volunteers	9 skilled volunteers - 6 in Teesdale, 3 in Swaledale (2-3 needed for each survey)	Yes	Land Management Facilitators (LMFs)	Surveys undertaken in June and July
Hay meadow restoration - green hay, pollinators	To evaluate the impact of hay meadow restoration through green hay addition on the pollinator diversity.	Undertake a baseline survey of four restoration meadows prior to green hay addition and then a further survey following seed addition using walk-through surveys. Impact of restoration to be measured in terms of the increase in pollinators (i.e. bumblebees, hoverflies and other bees) in the meadow. Following the methodology set-out in the 'BeeWalk' by the Bumblebee Conservation Trust.	4 restoration sites.	Skilled Volunteers	2-3 experienced entomologists	Yes	Land Management Facilitators (LMFs)	Surveys undertaken from May until late summer

Theme	Aim	Method	Number of replicates	Staff/ volunteers	Number of volunteers needed	Training required	Coordination lead	Timescales
Hay meadow restoration - plug planting	Hay meadow restoration - plug planting	Monitoring establishment of plug plants across a selection of sites where they have been planted. 10 sites to be chosen with a designated small area, where a group of 100 plug plants will be planted and monitored two years later.	10 sites (5 per year in year one and year two, check in year four and year five)	Staff or skilled volunteers	Staff or 2-4 skilled volunteers	Yes	Land Management Facilitators (LMFs)	Surveys undertaken in late summer
Habitat management trials - species-rich banks	To evaluate the impact of management on the species diversity of banks following management (principally cutting).	Baseline vegetation survey prior to management with follow on survey 3 years later.	4 sites	Staff or skilled volunteers	4 volunteers, 2 in Teesdale, 2 in Swaledale	Yes	Land Management Facilitators (LMFs)	Surveys undertaken in June and July
Habitat management trials - road verge management	To evaluate the impact of cutting on the species diversity of road verges.	Baseline vegetation survey prior to management with follow on survey 3 years later.	4 sites	Staff or skilled volunteers	4 volunteers, 2 in Teesdale, 2 in Swaledale	Yes	Land Management Facilitators (LMFs)	Surveys undertaken in June and July
Habitat management trials - grassland management and rare plants	To evaluate the impact of cutting/grazing on the species diversity of species-rich grassland habitats.	Baseline vegetation survey prior to management with follow on survey 3 years later.	4 sites	Skilled surveyors or skilled volunteers	4 volunteers, 2 in Teesdale, 2 in Swaledale	Yes	Land Management Facilitators (LMFs)	Surveys undertaken in June and July
Rush pastures	To evaluate the impact of rush control on rush cover and habitat quality	Use recent aerial photos and drone photos to compare rush cover before and after treatment. Potentially use spatial analyst in ArcGIS to automate analysis of aerial photos.	6 sites (2 in Upper Teesdale, 2 in Lunedale/Baldersdale, 2 in Swaledale)	Staff	n/a	Yes, spatial analyst tool	Land Management Facilitators (LMFs)	Photos to be taken in Sept/Oct

Theme	Aim	Method	Number of replicates	Staff/ volunteers	Number of volunteers needed	Training required	Coordination lead	Timescales
Scrapes in rush pastures	To assess the functionality of scrapes created within Tees-Swale delivery.	Farmer assessing/checking three times a year. Staff or RSPB advisor – one assessment visit following installation and one visit three years after installation or at the end of project delivery. Then information sharing with project partners (YDNPA, NPAONB and RSPB) to enable care beyond project delivery.	All scrape sites to be assessed by farmer and staff/RSPB advisor. 40 proposed across 5 years (11 in year one, 9 in year 2). 1 or 2 demo sites to be filmed.	Farmers, staff and RSPB advisor	n/a	Yes - farmers.	Land Management Facilitators (LMFs)	Assessments to be undertaken any time in spring and summer
Diffuse metal pollution from lead-mining sites	To assess the water quality and invertebrate diversity of river sites near implementation sites.	Following Environment Agencies methodology. Water quality to be assessed using a water bottle and sending sample to EA. Using UAVs to fly each site before mitigation works and then four years after to assess with high resolution UAV images vegetation recovery.	3 locations in Teesdale, 3 locations in Swaledale	Staff or volunteers	4 volunteers	Yes, from EA	Land Management Facilitators (LMFs)	Monthly sampling over a fixed period. UAV flights in July
Peatland restoration	To assess vegetation recovery after peatland restoration.	Using UAVs to fly each site before restoration, one year after restoration and in year four of the Programme to assess, with high resolution UAV images, vegetation recovery. In addition, undertake fixed point photography.	3 flights for each restoration site	YPP and NPAONB Staff	n/a	No	Land Management Facilitators (LMFs)	UAV flights in July.
Woodland / scrub planting	To evaluate whether woodland and scrub planting has succesfully established.	Field survey to identify success rate of planted trees and also identify any potential negative indicators for current and future management such as boundaries not being maintained, plus weeding or re-staking.	6-9 sites (2-3 in Upper Teesdale; 2-3 in Lunedale/Baldersdale; 2-3 in Swaledale)	Staff or volunteers	4 volunteers (2 per site)	Yes	Land Management Facilitators (LMFs)	Anytime from April to October

Theme	Aim	Method	Number of replicates	Staff/ volunteers	Number of volunteers needed	Training required	Coordination lead	Timescales
Condition of promoted access route	To monitor the condition of access routes actively promoted through the Programme, including those that have received capital upgrade.	Through a regular programme of walk over surveys. This already exists through a team of volunteers in the YDNPA. A new volunteer team will be established through the programme for Teesdale.	17 promoted routes - 11 Teesdale 8 Swaledale	Volunteers	Team of 8 for Swaledale Team of 11 for Teesdale	Yes	Access Officer	Anytime
Use of promoted access routes	To evaluate use and the benefits people gain from the promoted routes.	Number of route leaflets sold; qualitative feedback encouraged through social media and directly to team.	17 promoted routes	Staff	n/a	No	Access Officer	Anytime

Risk

A **dynamic risk register** has been produced, at Programme and Project level; it will be kept updated as part of the management and governance of the Programme. Each project summary and full project plan also identifies the project level risks at the point of inception.

Risk management will be standing item at Board meetings. The impact of any risks which are likely to influence scheduled project delivery will be reported to NLHF as part of the quarterly reporting process.

The main Risk Register is included in the suite of documents which forms part 3 of this Programme Plan (Programme Plan Part 3 Folder 11).

9
A lasting legacy

- A landscape transformed – better managed and connected, richer in wildlife, delivering public goods and services that people value and held up as a national exemplar of nature recovery and High Nature Value farming.
- A place where farmers, land managers and conservation bodies collaborate freely and naturally, where improved knowledge and skills lead to better outcomes for people and wildlife.
- A more accessible landscape, easier to explore and better understood, enjoyed by a much wider audience.

It is the lead partners' intention to work with every farmer in the area – on 300 farms – to transform the fortunes of nature and create transformational change that lasts. Our programme will be complete in terms of Lottery funding by 2025, but it is our ambition to use the successes of the work to create a platform for the continuation of the approach in the area, and its expansion to other parts of the AONB and National Park. Our legacy will be a more resilient landscape, in the hands of people better-equipped to conserve, enhance and celebrate all that makes it special.

Change that lasts

With enough resources, it's possible to make short term beneficial changes to practices of most kinds; making that change stick is usually about culture change, and that is much harder to bring about. This rarely happens by accident; it comes about through adapting behaviour and embedding approaches that consciously address the aim of creating change that lasts, rather than simply 'renting change' for the lifetime of the funded work.

From a conservation perspective, the work focuses on enhancing and connecting habitats on a grand scale, putting nature at the heart of farming, focusing on the key natural assets and engaging those who have most direct influence on the land. A vital legacy will come from boosting skills and embedding collaborative behaviours that can make High Nature Value farming mainstream across the area. As we leave the European Union, the only certainty for farmers and the farmed landscape is that support payments for agriculture will change; a public money for public goods arrangement is the most likely successor to current schemes, including seeing an end to Basic Payments. Preparing farmers for this change, enabling to better appreciate, assess and monitor the public goods they deliver – especially biodiversity, will make them much more ready to face whatever the future brings and make our natural heritage more secure as a result.

From the perspective of people's engagement with nature, we believe that we will have given thousands of people experiences that they will cherish and that the emotional connection they have made will lead to more nature-friendly behaviour in future, as studies suggest it will. Barriers to engagement will be better understood and thus easier to overcome in the future and the learning from this engagement process will be shared nationally through our wide networks.

> "We do not aim to simply 'rent change' for the lifetime of the Programme; Tees-Swale is about creating change that lasts"

Wider influence

The partners are committed to ensuring that the project has a legacy through feeding into policy and practice elsewhere. We anticipate that the work will influence thinking on Nature Recovery Networks nationally, on ELM development and delivery, and on the development of large-scale engagement and conservation work on farmland. The partners are committed to spreading the word about the Programme's successes, and lessons about its shortcomings, through their broad national and international networks (Defra,National Parks England, National Association for AONBs, Europarc, UNESCO Global Geoparks etc.).

A culture change in the lead partners

The lead partners are also committed to generating culture change around this programme. The collaboration between them in the development of this Programme is already now second-nature and is reaping benefits beyond Tees-Swale; this will continue indefinitely. The approach the lead partners are taking in this Programme has already become one which is at the heart of all their wider work, with a primary focus on putting HNV farming at the heart of large-scale nature recovery and working to help everyone make an emotional connection with nature, as this is known to lead to nature-friendly behaviour change. The AONB Partnership and National Park Authority will not only continue to share learning and promote the benefits of the Programme to their national and international partners, they will 'live the change' across all of their work. The Glover Review's call for putting National Parks and AONBs at the heart of nature recovery, for widening participation in our national landscapes and for increasing collaboration across boundaries is, like the Lawton Principles, at the heart of Tees-Swale; this programme is leading the way in this not just our own Protected Landscapes, but can do so nationally.

The table below highlights project specific legacies which the partners are committed to maintaining.

Theme	Code	Project	Legacy
Nature Recovery	1A	Peatland restoration	A larger area of active blanket bog that is better connected, more resilient to climate change, has increased biological diversity and maximises the bog's ecosystem services.
	1B	Upland hay meadow and species-rish grassland management	Losses in botanical diversity have been mitigated. Groups of farmers have been engaged, are actively managing species-rich grasslands and are working together across the landscape to benefit wildflowers and pollinators.
	1C	Rush management	The farming communities have been engaged and are actively managing rush pastures to provide good quality habitat for breeding waders. Farmers value this habitat as a useful part of their farm business. Better habitat has been provided for breeding waders and high nature value farming within the area has been reinforced.
	1D	Wetland creation	A legacy of farming communities actively engaged in managing the wet features and have scrapes present in their rush pastures, to provide feeding sites as part of good quality habitat for breeding waders. Better habitat has been provided for breeding waders and high nature value farming management techniques within the area are re-enforced. Knowledge has been shared about the national importance of Breeding waders within the landscape ensuing a sense of pride within the farming community.
	1E	Woodland creation	A landscape richer in trees and scrub, the Tees-Swale Programme area will be better connected and more diverse. The landscape will be more resilient to challenges such as climate change and tree diseases. We will have enabled the establishement of 200,000 trees.
	1F	Diffuse metal mitigation	The water quality has improved in the River Tees and River Swale catchments, water movements have been slowed, increasing biodiversity, macroinvertebrate populations and reducing flood risk.
	1G	In-stream and Riparian Works	Fish populations have improved in the River Greta, wooded area has increased and is sequestering carbon, increasing biodiversity, macroinvertebrate populations and reducing flood risk.

Theme	Code	Project	Legacy
Training and skills	2A	Training for farmers and land managers	Groups of farmers, landowners and land managers are confident in monitoring priority habitats and species on their holdings which will have a lasting impact on the natural heritage across the area. They are fully recognised for their HNV farming practices supporting a range of public goods and ecosystem services and are well-placed to benefit from new forms of farm support. Farmers are collaborating freely and naturally.
	2B	Training for agricultural contractors	Agricultural contractors have increased knowledge and understanding of the rare habitats and species within the area, and value these as part of their work. Contractors will value High Nature Value farmers as customers and offer services that better meet the requirements of their farms.
	2C	Knowledge exchange, demonstrations and trials	Farmer–Conservationist Knowledge Exchange will leave a legacy of greater respect, understanding and easier communication between farmers, landowners and conservation bodies both within the Tees-Swale Programme area, and amongst conservationists and decision makes at regional and national levels. Peer to peer learning events will leave a legacy of real understanding of HNVF best practise management techniques amongst farmers, land owners and land managers supporting and enhancing the priority habitats and species within the area. HNV farming demonstration events (policy/wider reach) will leave a legacy of greater understanding and appreciation of High nature Value Farming and the habitats and species it supports amongst national policy makes, enabling them to create adequate protection and support of these farming systems and the habitats they support at regional and national levels. Moorland Management will leave a legacy of a generation of moorland managers who understand the value of moorland habitats, their importance for biodiversity, water storage and carbon storage. These managers will then factor in these processes into their decision making ensuring healthier biodiversity, cleaner water and air for all. Land Management Trials will leave a legacy of real understanding of best practise management techniques amongst farmers, landowners, Natural England and conservationists, supporting and enhancing the priority habitats within the area. Groups of farmers will be working together through a sustainable cluster where management issues, skills and expertise can be shared via active communication networks. The long-term effect of Youth Group Leaders and Outdoor Centre knowledge exchange will continue after Tees-Swale has finished and group leaders will feel inspired and informed to bring groups to the area. Likewise, outdoor centre staff will continue to hold the knowledge imparted to them and be able to pass it on to groups.
	2D	Traineeships	16 well trained trainees equipped for working in the conservation sector and, in particular, in the upland environment, who will pass on the ethos of the Programme to all those with whom they work in the future.
	2E	Tees-Swale Volunteers	New groups of people from many backgrounds will have the skills to support and appreciate natural heritage, building resilient communities into the future. They will have increased understanding, connectedness and ownership of the uplands to influence the management, access and the recording of natural heritage.

Theme	Code	Project	Legacy
Access and engagement	3A	Access to the Uplands	More people, with a greater range of ability will be able to explore the area more easily. Works completed on PROW will become the management and maintenance duty of the Yorkshire Dales National Park or Durham County Council. Works on PROW furniture are expected to last 20 years. Routes will be produced as GPX downloads and downloadable pdf documents which will be hosted for the long term on the North Pennines AONBP and the YDNPA websites. The tramper will continue to be available for use beyond the end of the Programme.
	3B	Uplands for All	There will be a new generation of people who have understanding, connectedness and ownership of the uplands who can influence the future of conservation. Participants will be signposted to A Focus on Nature (AFON) network to continue their activities. Participants who show a strong interest in environmental work will be signposted to the Ranger Plus weeks for 16-21 year olds.
	3C	Uplands for Education	Young people from primary to secondary age will have had an immersive experience of their local, regional upland natural and cultural heritage. There will have been a long-term input into specific cohorts of young people developing their sense of ownership and responsibility for the future of the Tees-Swale uplands. Schools will have received a programme of activities that will be documented, and resources lodged in schools so they can be repeated developed and shared with young people in the future. At 'A' Level innovative Extended Project Qualifications will be trialled. This will be a new national resource based on local trials by students and staff of Barnard School facilitated by the Tees-Swale Programme. An extra-curricular programme will have been developed with staff, pupils and volunteers to support school clubs and programmes and awards such as John Muir Award, Nature Friendly Schools (Wildlife Trusts), MICCI, RSPB Wild Challenge, Junior Award Scheme for Schools and possibly Duke of Edinburgh. Staff will be trained in delivery of land based, arts-based and environmental activity. School volunteers will be offered training to give them skills to support the schools in the future. A report on the evaluation of the influence of Tees-Swale project education programme on the attitude and behavioural changes of young people to the upland landscape and the natural and cultural heritage. This will be shared with interested partners. Our primary schools across the area will be better connected and strengthened through partnership working.
	3D	Community Events	New and existing audiences will have learnt new skills and acquired knowledge for them to continue to use and build upon
	3E	Creatively connected	People will have celebrated and been immersed in the stories from the rich natural and cultural heritage of the Tees-Swale landscape through community arts. The process will strengthen ties for individuals and communities within the Tees-Swale landscape. With interest in the area sparked by the arts activity it will encourage people from outside the Programme area to experience, learn more about, return to and celebrate this area. The Programme team and delivery partners will better understand and be able to apply creatively the arts to engage people in diverse future project work.
	3F	Interpretating Tees-Swale	Communities, from inside and outside the area, will have engaged with telling their stories and creating interpretation. Audiences for the interpretation will have increased their understanding and enjoyment of the area. Fixed pieces will remain in the landscape, continuing to tell the Tees-Swale story, until the end of their lifespan when they will be removed. Printed material will be available online on the respective organisations' websites
	3G	On-farm public engagement	There will be a small network of farmers offering health walks on their farms both for health and general well being. The public in and around the Tees-Swale Programme area will have an understanding of the work of farmers and land managers and can engage with it and question it knowledgably. People will feel more connected with the area and understand the importance of the benefits the environment within it delivers.
	3H	HNV Farming Award	The HNV Farming Award is seen by the farming community as a valuable and prestigious award to receive and recipients feel a sense of pride in winning it. The interest it creates drives up standards. The award is continued beyond the end of the Programme.

Appendix 1

Contents of Programme Plan Part 2 - Project Summaries

The second part of the Programme Plan is a set of Project Summaries. These outline the nature of the work under the following project titles and codes:

Theme	Project	Code
Nature recovery	Peatland restoration	1A
	Upland hay meadow and species-rich grassland management	1B
	Rush management	1C
	Wetland creation	1D
	Woodland creation	1E
	Diffuse metal mitigation	1F
	In-stream and Riparian Works	1G
Training and skills	Training for farmers and land managers	2A
	Training for agricultural contractors	2B
	Knowledge exchange, demonstrations and trials	2C
	Traineeships	2D
	Tees-Swale Volunteers	2E
Access and engagement	Access to the Uplands	3A
	Uplands for All	3B
	Uplands for Education	3C
	Community Events	3D
	Creatively connected	3E
	Interpretating Tees-Swale	3F
	On-farm public engagement	3G
	HNV Farming Award	3H

Appendix 2

Contents of Programme Plan Part 3

Project Plans/allied material and staff

1 Full Project Plans and Gantt Chart and Habitat Works Spreadsheet – more detailed project plans than available in the Summaries document

2 Landowner and farmer agreements Including proof of ownership

3. Partnership Agreements and Match Funding Commitment Letters

4. Management and Maintenance Plan

5. Events Programme

6. Job Descriptions for the team

   - o Project Manager (full-time) – overseeing the overall delivery of project objectives, managing the team, co-ordinating external delivery partners and representing the work to the Board, NLHF, and other stakeholders at a variety of scales
   - o Land Management Facilitators x 3 (full-time) – ensuring the delivery of specific land management aspects of the programme and developing ongoing engagement in new works beyond years 1 and 2
   - o Community Engagement Officers x 2 (full-time) – engaging new and more diverse audiences in events, activities and programmes. 1 post covering Teesdale and one Swaledale, with considerable interaction via the team management and the Management Group.
   - o Access Officer (0.6fte) – supporting and delivering improvements in physical and virtual access to the Tees-Swale landscape.
   - o Communications Assistant (0.5fte) – supporting the communications output of the project team and partners
   - o Interpretation Officer (0.5fte) – supporting and delivering high quality interpretation of our heritage
   - o Admin and Finance Officer (full-time) – providing detailed financial information and ensuring all Programme finances are monitored effectively; providing dedicated administrative support to the team.

7. Briefs for internally and externally commissioned work –

   a. Woodland creation

   b. Meadow restoration

   c. Peatland restoration

   d. Wetland creation

   e. Diffuse Metals report (delivered by Programme partners)

   f. Film work

   g. Access works

   h. Arts Contractor

   i. Arts evaluator

   j. Photography brief

   k. Your Dales Rocks Writer and Illustrator brief

   l. DCC Procurement (Peat and Hay Meadows)

   Note: Rush management delivered by farmers after on-site advice

Landscape Character

8. Landscape Character Assessment

Budget

9. Full budget spreadsheets

Communications

10. Communications Framework

Risk

11. Dynamic Risk Register

Evaluation

12. Evaluation Framework

Underpinning evidence and contracts delivered in Developed Phase

13. Veridian Report
14. Functional analysis of the landscape
15. Access Audit contract report
16. Education contract report
17. Interpretation contract report
18. Alternatives to Intensive Agriculture report
19. Farmer-led habitat assessment report
20. Farmer Attitude Survey
21. Arts contract report
22. Evaluation of Youth Group Engagement Taster Days
23. Information from farmer interviews and events

Terms of Reference

24.Group and Board Terms of Reference

Support

25.Letters of support (max. 6)

Images

26. Images

Appendix 3

Refinement of Tees-Swale Programme boundary

Our Programme boundary was initially established to include the upper catchments of the Tees and Swale within the boundaries of the North Pennines AONB and the Yorkshire Dales National Park. During our development phase, we have refined the boundary as follows:

1 A portion of land in the north-east has been removed as the boundary passed through large land holdings with whom we are unlikely to work as the landowners and farmers lie to the north, outside the project area;

2 The boundary has been extended eastwards beyond the Yorkshire Dales National Park boundary to enable the full inclusion of East Arkengarthdale Common/Kexwith Moor and all the graziers. Prior to this change, one of the seven graziers had fallen outside the programme boundary;

3. The boundary has been extended eastwards beyond that of the AONB to include Gill Beck, a tributary of the Tees, where there are known blockages to fish passage; and

4. Final refinements have been made to align the programme boundary with parish boundaries where they were already close.

Appendix 4

Programme Board Terms of Reference

Duties of the Board

1. The purpose of the Board is to guide and monitor the development and implementation of the Tees-Swale: naturally connected programme (hereafter known as "the programme").
2. The Board will take a strategic and proactive lead to pursue the successful implementation of the programme, and members will work together to:
   - ensure the development and implementation of the programme by co-ordinating and focusing effort and resources to create real change on the ground;
   - develop and promote the programme's objectives as widely as possible;
   - encourage and secure the active participation of farmers, landowners, communities and businesses;
   - identify gaps and secure new funding.

3. Specific duties of the Board are to:
   - support the development and delivery of the programme and act in its best interests at all times;
   - review and assess the performance and direction of the programme, and recommend changes if required;
   - receive, and comment on, reports on the programme's work programmes including proposed, existing and completed schemes;
   - help to secure match funding to support the implementation of the programme;
   - exchange information, ideas and advice to support the implementation of the programme;
   - keep under review the membership of the Board, introducing change as required;
   - establish working groups as required;
   - recommend any research and studies deemed necessary to support the implementation of the programme.

Structure of the Board

4. The Board will be chaired by Professor Sir John Lawton. A vice chair will be appointed by the Board.

Board Chair

5. The Board Chair will be required to:
   - lead the Board and co-opt individuals as required to assist the work of the group and sub-groups.
   - champion the programme to a wide variety of audiences;
   - work with any staff appointed to deliver the programme;
   - liaise with the Programme Manager on all matters that may impact on the operational activity of the programme;
   - be willing and able to work with the programme team in preparation for quarterly meetings;
   - be available to chair quarterly Board meetings and attend intermittent events (at weekends occasionally).

Board Membership

6. Its members shall include:
   - Chris Woodley-Stewart, Director of North Pennines AONB Partnership (Lead partner)
   - Gary Smith, Director of Conservation & Community, Yorkshire Dales National Park Authority
   - Christine Venus, Senior Manager, Natural England
   - Hugh Potter, Senior Hydrologist, Environment Agency
   - Richard Betton, Chair of Northern Hill Farming Panel and Teesdale farmer
   - Duncan Peake, Chief Executive, Raby Estates
   - David Shields, Area Director, Welcome to Yorkshire
   - Jill Cole, currently Director of Northern Heartlands but representing 'the arts'

more broadly

- Pete Gaskell, Countryside & Communities Research Institute, Gloucester University

7. Board members will comprise individuals who share the vision for the programme, have a direct involvement in the area, and are willing and able to deliver changes on the ground.
8. Where a Board member is unable to attend a meeting, they may nominate a substitute for that meeting.
9. The Board will keep under review its membership and may, at its own discretion, invite additional members or remove members.

Organisation of Board meetings

10. The Board will meet four times a year. Additional meetings can be called by the Chair.
11. The Board may, at the discretion of the Chair, invite any person or representative of an organisation to address and take part in a meeting where his or her knowledge or experience would contribute to a relevant matter on the agenda.
12. The Board will endeavour to make decisions by agreement and consensus wherever possible. However, where a vote is required to resolve an issue, the decision will be by single majority and members of the Board will have equal voting powers. In the event of an equal number of votes, the Chair will have the casting vote.
13. For matters requiring urgent decision by the Board, members will be contacted by email.
14. Where a member or the Board considers that the member has a prejudicial interest in a matter, that member shall remove themselves from that part of the meeting.

Administration of the Tees-Swale programme

15. The North Pennines AONB Partnership will administer the programme, and any staff appointed to manage it will be members of the AONB Partnership staff team (hosted by Durham County Council) or the Yorkshire Dales National Park Authority.

Income

16. Any income generated by the operations of the Board shall be used to further the objectives of the programme.

Disputes

17. Disagreements within the Board will be dealt with by the Chair or person authorised by them.

Exclusion of Partnership Act

18. The Board does not constitute a formal partnership under the Partnership Act 1890.

Alterations to Terms of Reference

19. Alterations to these Terms of Reference may be recommended at any time by the Board.

Termination

20. The Board shall terminate at the end of the implementation of the five year programme or when the programme's purposes have been fulfilled or when there is no funding available, whichever is the earlier.

Partnership Agreement

We, the signatories to this declaration, confirm these terms of reference and agree to the following:

We will collaborate to develop and support the vision, objectives and outcomes identified for the Tees-Swale programme.

We accept the management arrangements for the Tees-Swale programme and will support staff appointed by the North Pennines AONB Partnership to deliver the programme with time and resources to help them implement our shared aims.

We are committed to continue our membership of the Programme Board during the lifetime of the programme.

(signed .....) etc

Appendix 5

Stakeholder Group Terms of Reference

1. The purpose of the Stakeholder Group is to advise and support the development and delivery of the Tees-Swale: naturally connected programme (hereafter known as "the programme").
2. Stakeholder Group members are invited to work together to:
   - receive, and comment on, reports on the programme's development;
   - support the effective development of the programme by providing advice and co-ordinating effort & resources;
   - exchange information, ideas and advice to support the development and subsequent implementation of the programme;
   - help to secure match funding to support the implementation of the programme
3. The Stakeholder Group will be chaired by an officer of the North Pennines AONB Partnership team or the Yorkshire Dales National Park Authority.
4. Stakeholder Group members will comprise those who share the vision for the programme, have a direct involvement in the area, and are willing and able to support the delivery of change on the ground.
5. The Stakeholder Group will be sent the minutes following Tees-Swale Board meetings for information.
6. The Stakeholder Group will meet four times during the development phase of the Tees-Swale programme (December 2018, April, September & December 2019) and 6 monthly during the delivery phase. Sub-groups of the Stakeholder Group may be invited to meet more regularly as necessary.

Appendix 6

Management Group Terms of Reference

Duties of the Group

1. The Group will:
   - support the delivery of the Tees-Swale: naturally connected programme (hereafter known as "the programme");
   - have both a strategic and operational focus and will provide direct support to the Project Manager and team to ensure the implementation of the programme;
   - support the Programme Manager in ensuring that the programme delivers in a joined-up fashion across both Protected Landscapes;
   - provide support on operational matters including budget management, securing further funding and the management of staff as required. This will extend to supporting performance appraisal of the Programme Manager;
   - be engaged in any necessary recruitment to positions in the Tees-Swale delivery team;
   - review and assess the performance and direction of the programme, and recommend changes if required;
   - keep under review the membership of the Group, introducing change as required.

Structure of the Group

2. The chairing of the Group will rotate between the Director of the AONB Partnership and the Head of Community and Conservation of the National Park Authority. A vice chair will not be required.

   Its members shall include:

   - Chris Woodley-Stewart, Director of North Pennines AONB Partnership (Lead partner)
   - Gary Smith, Director of Conservation & Community, Yorkshire Dales National Park Authority
   - Programme Manager, Tees-Swale naturally connected
   - Other staff from the two lead partner organisations as required

3. The Group will keep under review its membership and may, at its own discretion, invite additional members or remove members.

Organisation of Group meetings

4. The Group will be administered by the Programme Manager. It will meet four times a year. Additional meetings can be called where required
5. The Group may invite any person or representative of an organisation to address and take part in a meeting where his or her knowledge or experience would contribute to a relevant matter on the agenda.
6. Where a member or the Group considers that the member has a prejudicial interest in a matter, that member shall remove themselves from that part of the meeting.

Exclusion of Partnership Act

7. The Group does not constitute a formal partnership under the Partnership Act 1890.

Alterations to Terms of Reference

8. Alterations to these Terms of Reference may be recommended at any time by the Group.

Termination

9. The Group shall terminate at the end of the implementation of the five year programme or when the programme's purposes have been fulfilled or when there is no funding available, whichever is the earlier.

Appendix 7

AONB, National Park and 25 Year Environment Plan Delivery through Tees-Swale

The Tees-Swale Programme supports the delivery of the following objectives in the Yorkshire Dales National Park Management Plan 2019-'24:

A1 During Brexit transition, support farmers and landowners to continue to deliver a range of public benefits through national agri-environment scheme agreements and other similar initiatives, and monitor take-up.

B3 Carry out works to improve access on appropriate public rights of way and established permissive routes so that 262 km (10%) are suitable for users of all ages and abilities by 2024.

B5 Through educational and skills-based activities inspire 6,000 young people from in and around the National Park to explore and enhance their environment each year.

B6 Run a cohesive programme of inspirational, participatory activities that attract at least 4,000 people each year to find out more about the National Park's special qualities.

B7 Give people from all backgrounds an opportunity to enjoy and contribute to the National Park by providing at least 7,000 volunteer days per year, with 15% coming from under-represented groups.

C1 Support farmers and landowners to restore and manage landscape-scale mosaics of priority habitats so that:

a) all the blanket bog in nationally and internationally important wildlife sites is 'recovering', and 50% of the other land in such sites has reached 'favourable' condition by 2024;

b) 30% of the priority habitats outside nationally-designated wildlife sites are in good condition by 2024; and

c) at least one landscape-scale 'nature recovery area' has been created by 2021.

C2 Work with farmers and landowners to achieve and maintain stable or increasing populations for 90% of priority species by 2026, including the UK 'red-listed' upland birds – Black Grouse; Curlew; Hen Harrier; Lapwing; Merlin; Skylark; and Yellow Wagtail – for which the National Park is renowned, and those of international importance.

C3 Work with farmers and landowners to improve the condition of the Aire, Eden, Lune, Ribble, Swale, Ure and Wharfe so that at least 90% of all rivers achieve 'good ecological status' by 2027.

D2 Support landowners to create at least a further 450 hectares of native broadleaved and mixed woodland that enhances the National Park's landscape by 2024, with priority given to projects that strengthen habitat networks, increase carbon storage and help to reduce flooding.

D3 By 2030 restore all degraded blanket bog/deep peat habitat to ecologically and hydrologically functioning bog that is actively sequestering and storing carbon, and is being managed sustainably.

D5 Work with farmers and landowners to deliver landscape-scale natural flood management projects in the Aire, Eden, Ribble; Lune; Swale, Ure, and Wharfe catchments.

E2 Improve the quality, variety and marketing of the tourism 'offer' to encourage more overnight stays and more visitors in the quieter months, so that the value of tourism grows by at least 5% in real terms by 2024.

E6 Develop and promote new events, festivals and attractions based on the National Park's special qualities and local distinctiveness so that at least 10% of visitors each year are coming for the first time.

E7 By 2023 provide at least 20 apprenticeships that focus on the skills that are essential to maintaining the National Park's special qualities.

The Tees-Swale Programme supports the delivery of all 11 Outcomes in the North Pennines AONB Management Plan 2019-'24:

Looking after our natural and cultural heritage

1. The landscape delivers more for nature, farmers and the public, including climate change mitigation and other natural services.
2. Landscape quality and character is protected and enhanced whilst ensuring essential development takes place.
3. More and bigger areas of habitat is better connected, and managed and biodiversity loss is reversed.
4. Built and other cultural heritage assets are better understood, conserved and managed.
5. More people take action to look after our natural and cultural heritage.

Valuing and sharing what's special

6. More people and wider audiences enjoy, understand and value our natural and cultural heritage.
7. More people come together to celebrate their heritage and increase local pride.
8. People of all ages have increased opportunity to learn about and be inspired by our natural and cultural heritage.
9. More people get health and wellbeing benefits from nature.

Nurturing a natural economy

10. Nature and culture increasingly underpins the economy and supports local services.
11. Skills and knowledge around natural and cultural heritage have increased.

The Tees-Swale Programme supports the delivery of all of the 6 Goals of the Government's 25 Year Environment Plan (pub. 2018)

1. Clean air.

We will contribute to the target of:

- Meeting legally binding targets to reduce emissions of five damaging air pollutants. This should halve the effects of air pollution on health by 2030.

  through our focus on storing and sequestering carbon in our peatlands, grasslands and woodland.

2. Clean and plentiful water.

We will contribute to the target of:

- Reaching or exceeding objectives for rivers, lakes, coastal and ground waters that are specially protected, whether for biodiversity or drinking water as per our River Basin Management Plans.

  through our focus on conserving in-stream and riparian habitats, improving passage for fish, engaging with farmers to reduce inputs and run-off.

3. Thriving plants and wildlife.

We will contribute to the targets of:

- Restoring 75% of our one million hectares of terrestrial and freshwater protected sites to favourable condition, securing their wildlife value for the long term.
- Creating or restoring 500,000 hectares of wildlife-rich habitat outside the protected site network, focusing on priority habitats as part of a wider set of land management changes providing extensive benefits.
- Taking action to recover threatened, iconic or economically important
- Species of animals, plants and fungi, and where possible to prevent human-induced extinction or loss of known threatened species in England and the Overseas Territories.
- Increasing woodland in England in line with our aspiration of 12% cover by 2060: this would involve planting 180,000 hectares by end of 2042.

  across all of the nature recovery aspects of our programme.

4. A reduced risk of harm from environmental hazards such as flooding and drought.

We will contribute to the targets of:

- Bringing the public, private and third sectors together to work with communities and individuals to reduce the risk of harm.
- Making sure that decisions on land use, including development, reflect the level of current and future flood risk.

  through our focus on in-stream and riparian works, peatland restoration, woodland planting and 'roughening' the landscape, all of which 'slows the flow' of water across the land and into our watercourses.

5. Using resources from nature more sustainably and efficiently.

We will contribute to the targets of:

- Improving our approach to soil management: by 2030 we want all of England's soils to be managed sustainably, and we will use natural capital thinking to develop appropriate soil metrics and management approaches.
- Ensuring that all fish stocks are recovered to and maintained at levels that can produce their maximum sustainable yield.

  through our focus on in-stream and riparian work, meadow restoration and peatland restoration.

6. Enhanced beauty, heritage and engagement with the natural environment.

We will contribute to the targets of:

- Safeguarding and enhancing the beauty of our natural scenery and improving its environmental value while being sensitive to considerations of its heritage.
- Making sure that there are high quality, accessible, natural spaces close to where people live and work, particularly in urban areas, and encouraging more people to spend time in them to benefit their health and wellbeing.
- Focusing on increasing action to improve the environment from all sectors of society.

  across all of the aspects of our programme.

Appendix 8

Key Activities in the Development Phase

Pre-Stage 1

The comprehensive engagement with stakeholders that helped create the successful stage 1 application is highlighted in that document.

Our Development Stage Consultation and reports are summarised below:

Farming Community

We have engaged 102 farmers in one to one discussion on their farms, listening to their concerns and aspirations. This has led to over 50 agreements for work in years 1 and 2 of the programme. These show costed habitat works on each holding, with maps for each, and a detailed spreadsheet of work behind each one. We have also developed five clusters and held meetings with them to shape the work and ran taster activities on habitat assessment.

We have produced 3 reports: Alternatives to intensification (Prog. Plan Part 3 Folder 18); Farmer-led habitat assessment (Folder 19); Farmer attitude survey (Folder 20). These all provided vital baseline data for the programme and engaged farmers directly. Our Programme Newsletter reached farmers in the area through bodies such as UTASS and The Farmer Network, keeping them informed of developments.

We held initial meetings with the area's estates, as large landowners and followed this up after the detailed farmer engagement. A regular Landowner Liaison meeting is to be established).

A comprehensive record of farmer interviews and their findings can be found in Programme Plan Part 3, Folder 23)

Youth and Community Groups

We have held detailed individual engagement with 48 youth groups and community organisations around the programme area. All but 5 of the contacts are new to YDNPA and the AONB Partnership.

This has led directly to the development of activities with these groups and a strong relationship with Marrick Priory Outdoor Centre in Swaledale. Youth and community group leaders were engaged not just to encourage the activity from their groups, but also to ascertain the interest in them being further trained themselves to deliver activities outdoors. The groups themselves were introduced to the John Muir Award, which will now be a key feature of the engagement programme. Taster days were held with a range of youth groups (see case study in Programme Plan Part 1).

Contracts to support development

We have let the following contracts, final reports of which are in Programme Plan Part 3.

Arts – (Folder 21)

This work helped to reshape our original thinking on the approach to our arts programme, moving us from an approach focused on large installations to one focused on smaller projects more directly engaging the community in telling their own stories. It will lead to community commission of works from year 3, as well as helping to inform bids to Arts Council England. 15 organisations were engaged in the consultation, including Durham University, YDNPA and AONBP, Northumbria Water, and those representing the arts, community and young people.

Access – (Folder 15)

Our successful access contract identified 17 new walking trail routes that will be taken into delivery, as well as a range of work which will help people explore the landscape more easily, such as the replacement of stiles with gates.

Education – (Folder 16)

Our education contract has enabled the creation of a comprehensive programme of

education works, working with cohorts of pupils from local schools throughout the five years. 6 external organisations were consulted, some of whom have their own education offer. We also engaged with the 6 primary schools and 2 secondary schools in or on the egde of the programme area and 7 primary schools and 4 secondary schools close to but outside the area.

Interpretation – (Folder 17)

The interpretation contract brought forward some good ideas but was less successful than the others in the development stage, requiring a lot of additional input from the team. 33 consultees were engaged, from a wide range of interests, including farming, youth engagement, arts, community, business and tourism, access and nature. We do now however, after intervention from the team and lead partners, have a range of interpretative projects which will be taken forward in a programme that will animate this special landscape over five years.

Programme Board

The project has met five times during delivery and has provided considerable help with shaping the programme. It has also helped us to raise the profile of the project with Defra and other bodies.

Stakeholder Group

Our Stakeholder Group met twice -with a wide range of conservation and heritage organisations – have helped us shape things such as the Statement of Significance and the Vision. This has been a valuable two-way information exchange which will continue into delivery, with formal terms of reference.

References

- ADAS (2019) The future of 'High Nature Value' farming systems and their ability to provide public goods in a post-Brexit world in the NUCLNP. Report submitted to the Northern Upland Chain Local Nature Partnership (http://www.nuclnp.org.uk/wp-content/uploads/2019/03/15022019-HNV-final-report-ADAS.pdf).
- Cumulus Consultants (2013) Valuing England's National Parks. Report for National Parks England.
- Defra (2018) Moving away from Direct Payments. Agriculture Bill: Analysis of the impacts of removing Direct Payments. September 2018 https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/740669/agri-bill-evidence-slide-pack-direct-payments.pdf.
- EFNCP (European Forum on Nature Conservation and Pastoralism) and Cumulus Consultants (2013) North Pennines AONB High Nature Value Farming Research: A report for the North Pennines AONB partnership.
- Glover (2019) Landscapes Review https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/833726/landscapes-review-final-report.pdf.
- Harley M, Buchanan K, Berry P & Hodgson N (2009) Climate change and biodiversity in North East England. https://www.eci.ox.ac.uk/publications/downloads/berry11-northeast.pdf.
- Harris S, North Pennines AONB Partnership. Responsible Tourism Destination Management Plan – The North Pennines AONB and UNESCO Global Geopark; Leeds Beckett University Dissertation (2019).
- Lawton, J H, *et al* (2010) Making Space for Nature: a review of England's wildlife sites and ecological network. Report to Defra.
- Luov R (2005) Last child in the woods – saving our children from nature deficit disorder. Atlantic books.
- Payne (2014) Mires and Peat, Volume 14 (2014), Article 04, 1–9. International Mire Conservation Group and International Peat Society.
- Pearce-Higgins JW, Yalden DW and Whittingham MJ (2005) Warmer springs advance the breeding phenology of golden plovers *Pluvialis apricaria* and their prey (Tipulidae). Oecologia 143: 470–476.
- Sen A., Harwood A. R., Bateman I.J., Munday P., Crowe A., Brander L., Raychaudhuri, J., Lovett, A., and Foden J.,(forthcoming) Economic Assessment of the Recreational Value of Ecosystems in Great Britain. The Economics of the UK National Ecosystem Assessment, Special Issue of Environmental and Resource Economics.
- Starr-Keddle R (2014) Upper Teesdale: changes in upland hay meadow vegetation over the past twenty to thirty years – results presented from botanical surveys. Natural England Commissioned Report NECR139.
- UK National Ecosystem Assessment (2011) The UK National Ecosystem Assessment: Synthesis of the Key Findings. UNEP-WCMC, Cambridge.
- Yorkshire Dales National Park Authority (2017) Yorkshire Dales National Park Customer Survey 2017.

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