

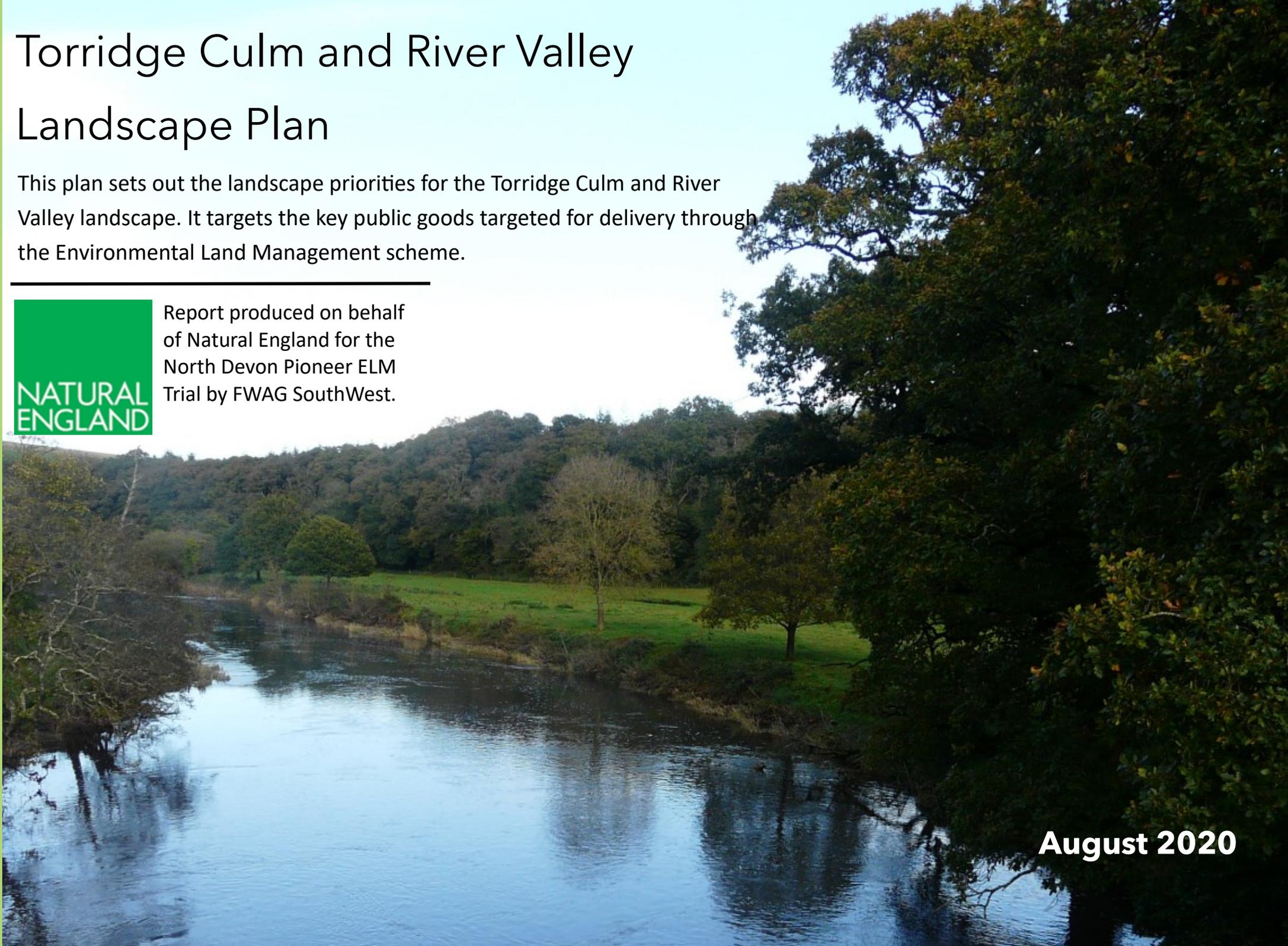
Torrige Culm and River Valley Landscape Plan

This plan sets out the landscape priorities for the Torrige Culm and River Valley landscape. It targets the key public goods targeted for delivery through the Environmental Land Management scheme.



Report produced on behalf
of Natural England for the
North Devon Pioneer ELM
Trial by FWAG SouthWest.

August 2020



Landscape Plan Overview

What is the purpose of this document?

The plan outlines environmental priorities locally including where they are best targeted in the landscape to maximise the delivery of the Environmental Land Management (ELM) scheme, and in doing so, contribute to the delivery of the government's [25 Year Environment Plan](#)¹.

The purpose of the document is *not* to recommend specific land management practices and interventions. Rather, it is for farmers, local communities and other organisations with an interest in the local environment as a platform to use as a platform to share their knowledge and experience to best target environmental priorities. It is therefore an ever-evolving document. The plan will help those managing the landscape to develop Land Management Plans that address the priorities, and set out the actions required that could be supported through ELM.

The environmental priorities outlined should be addressed within the context of the farmed landscape, and compliment farming and forestry systems that produce food and timber.

How has this document been produced?

- ⇒ This document has been developed and refined using feedback from local stakeholders. Relevant organisations and farmers working in the landscape were consulted to identify environmental priorities for the Landscape area.
- ⇒ This feedback was used to develop a more accurate and locally relevant list of priorities and spatial targeting for ELM. Through an iterative process of refinement, the Landscape Plan was produced.
- ⇒ This is expected to be a living document that can be refined as new data becomes available.

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¹https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/693158/25-year-environment-plan.pdf

Introduction

Creating a 21st Century Landscape

The Torridge Culm and River Valley area is primarily a farmed landscape which can also deliver environmental public goods. Defining a landscape area, such as this one, provides a unit in which the wildlife, history and form of the land can be described, linked and managed appropriately. Within such landscapes it is possible to identify areas of environmental risk and opportunity, which help guide the development Land Management Plans that support productive farming and forestry while matching the capability, character and environmental priorities of the land. Working to achieve a set of priorities across the landscape will enable food and timber production to be managed alongside the creation of thriving habitat networks and the provision of clean water and air. Historic landscapes and features will be preserved or restored to acknowledge and embrace the influence of humans and past geological processes.

Consideration of a landscape's capabilities and character at this scale also allows us to consider suitable future directions for the management of the land that addresses the challenges of the climate and ecological emergencies. We should aim to provide habitats that achieve these while enhancing the existing landscape characteristics.

This plan looks across the landscape at a broad scale to provide a thought process to support the development of Land Management Plans that can deliver the environmental priorities in a way that recognises national and local priorities, but also captures the unique features and opportunities that can only be identified at a field scale within individual or neighbouring farms.

A wide range of datasets have been used to map where priorities are targeted spatially. These need updating regularly, and there will always be gaps in the data. Therefore, spatial prioritisation is flexible, meaning environmental issues can be addressed as a priority outside of target areas if evidence is provided. Additional, higher resolution data will be provided at the farm level as part of the preparation of individual LMPs, and examples of how this data may be used are included in an appendix to this document.

Meeting the regulatory baseline

ELM will support the provision of environmental outcomes over and above the baseline regulatory requirements of Cross Compliance² regulations. These regulations are set to change through the agricultural transition period, but much of the requirements are based on legislation that will remain in place. Environmental Impact Assessment regulations³ apply to changes in land use to protect uncultivated land, semi-natural land or nationally important heritage assets. The Soil and Water Code⁴ sets out regulatory requirements and best practice.

² <https://www.gov.uk/government/collections/cross-compliance>

³ <https://www.gov.uk/guidance/eia-agriculture-regulations-apply-to-make-changes-to-rural-land>

⁴ <https://www.gov.uk/government/publications/protecting-our-water-soil-and-air>

Torridge Culm and River Valley Environmental Priorities Summary

Landscape Character: The landscape can be divided into different Landscape Character Types, in which environmental priorities are likely to be similar, because landscape character is intrinsically linked to natural habitats, historic features, soil type and topography. Consulting the descriptions of different Landscape Character Types can help guide what interventions are suitable for the character and capability of that landscape. Landscape character therefore underpins most environmental priorities.

Healthy soil: Soil health contributes to many environmental issues and is an essential priority in its own right for sustainable agriculture and land use.

Thriving Plants and Wildlife: Restoring, expanding and connecting priority habitats will reduce habitat fragmentation and to increase resilience of wildlife populations. Target a healthy farm wildlife population across the landscape through the provision of margins, hedgerows, semi-improved grasslands and arable habitats. Habitat initiatives that extends across farm boundaries can be particularly beneficial, such as managing hedges alternately between farms to ensure a continual availability of resources to wildlife.

Priority species: Dormouse, willow tit, salmon, marsh fritillary, wood white butterfly, freshwater pearl mussel, lichen assemblages and lesser butterfly orchid .

Priority habitats: Culm grassland, hedgerows, riparian habitats, hedges, field margins, wet woodland, ancient woodland, other native woodlands and traditional orchards.

Clean Water: Point and diffuse pollution from a range of sources should be targeted. Phosphate levels are a primary cause of failures of the Water Framework Directive across the area. Faecal indicator organism failures are also widespread, and there are frequent issues with sediment levels.

Clean Air: Ammonia emission reduction should be prioritised around priority habitats.

Environmental Hazards and Climate Change: Reducing the impact of drought and high rain fall on river flow should be actioned through habitat restoration, small scale in-channel features and land management practices. Targeting the reduction of surface runoff entering drainage networks at challenged points will reduce flood risk and the need to discharge combined sewer overflows. Minimising plastic pollution, and maximising carbon storage in soils and habitats, are also priorities.

Public Access Network: Targeting the linkage of communities and public services by providing permissive paths, especially at Woolsery, will have safety benefits for pedestrians, and help reduce car usage. Provision of access to the Torridge river where not currently present should be considered, particular in the upstream section, as well as improved access from the Tarka trail into adjacent countryside. Education access, where groups including school children and other community groups have valuable contact with the countryside, farming and forestry, is also a priority.

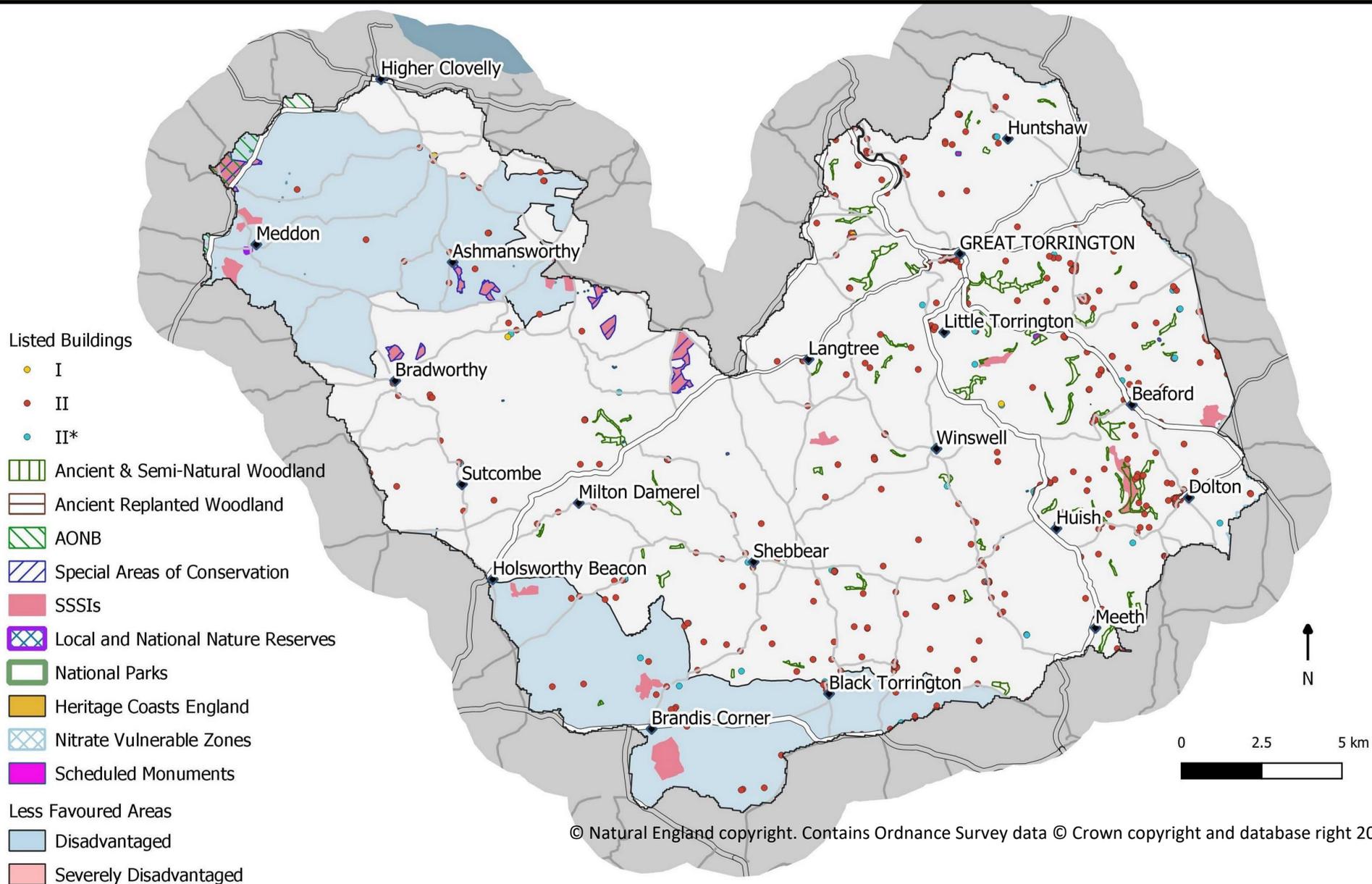
Historic Features: Historic landscapes in the area include ritual bronze age moorland areas and upland defensive sites such as hill forts and castles that overlook river valleys and slopes. Communication routes, formal estate landscapes, such as Heanton Satchville, and residual mediaeval field systems are found extensively throughout the area. However, much of the historic landscape of the Torridge Culm and River Valley is little known, so identifying undesignated archaeological features of importance should be targeted during the development of Land Management Plans.

Providing Multiple Benefits: The provision of a habitat can provide many benefits depending on location, so a priority for land management to choose land management interventions that best provide multiple environmental benefits and also contribute to the farming system where relevant.

Designated Land

Designations are given to identify and protect land of conservation interest and/or vulnerability. They vary in terms of their reasons for designation, their level of protection and the regulatory requirements for their management. They will need to be considered, and targeted where relevant, during the development of land management plans.

County Wildlife Sites and Unconfirmed County Wildlife Sites are not mapped below, but are key sites for wildlife that should be considered in relevant land management plans. Their location can be viewed using the Devon County Council Environment Viewer⁵



Landscape Character

The Importance of Landscapes Character to People

Landscapes character has formed over time from both natural and human influences. It provides people with an opportunity to enjoy scenic views, appreciate natural beauty and heritage, have contact with nature and experience a sense of tranquillity. The landscape provides an educational resource for learning about geology, natural processes and how humans have interacted with the land throughout history. Land management under ELM should seek to enhance or preserve these opportunities and resources. Every land holding is an important contribution to a landscape's character, and therefore the preservation and enhancement of landscape character should be considered a priority in all areas.

Landscape Character

The Torridge Culm and River Valley area includes a diverse range of landscape types. In the east, secluded wooded valleys run through the farmland, and in the west, a more open landscape comprises a mix of moorland and Culm grassland within undulating lowland farmland. In the centre of the area, wooded estates dominate the landscape. More generally and throughout much of the area, the landscape's special character is one of traditional hedges dividing permanent pasture. Landscape character has been divided into Landscape Character Areas (LCAs), and sub-divided into Landscape Character Types (LCTs), for Devon County Council's Landscape Character Assessment, which describes the landscape in detail and sets objectives to protect, manage and plan. Details and a description of all LCAs and LCTs can be accessed [here](#)⁵. The map below shows all LCTs in the area.

Land Management that is Consistent with Land Character and Capability

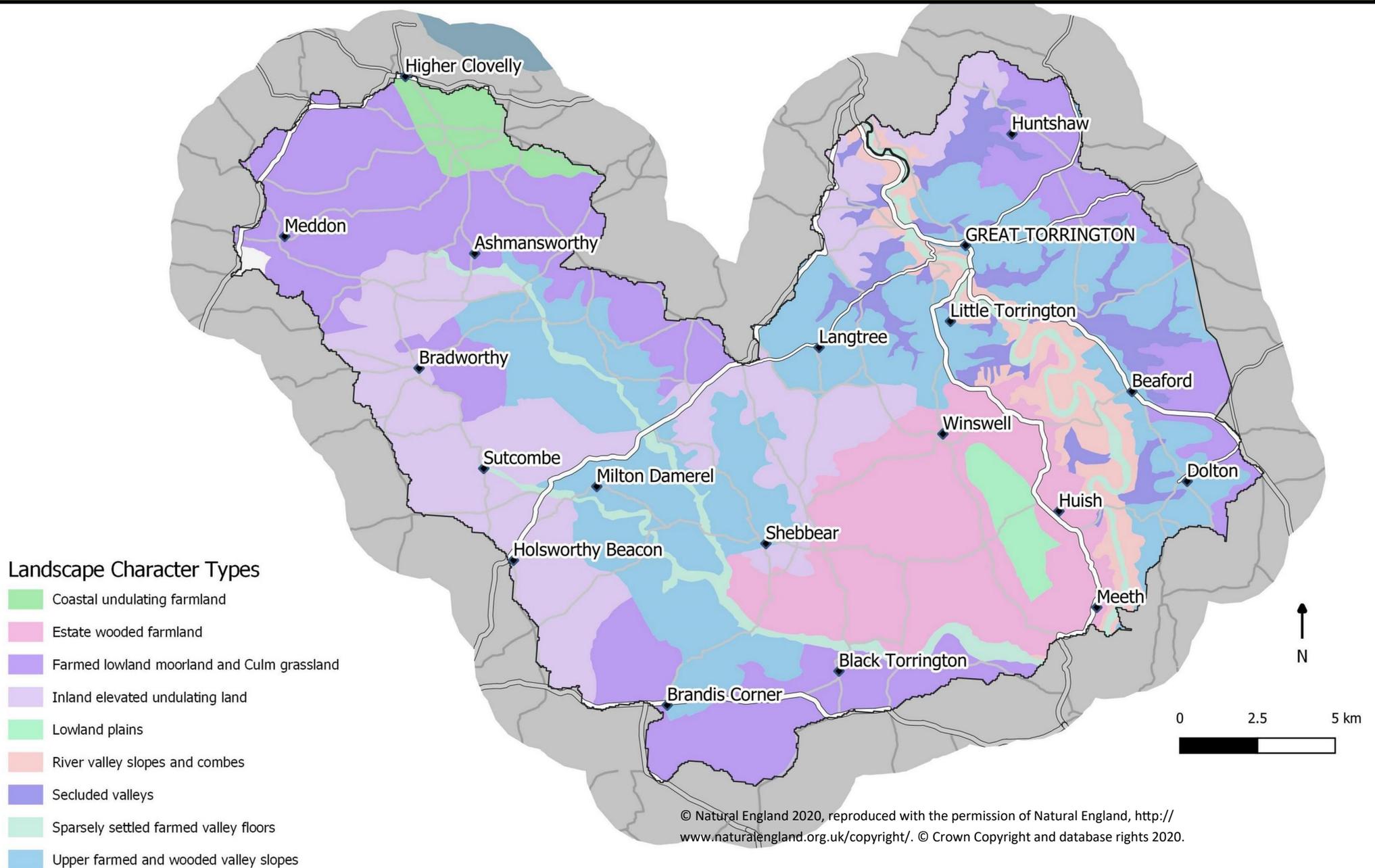
In any single LCT, environmental priorities are likely to be similar, because landscape character is intrinsically linked to natural habitats, historic features, soil type, topography and agricultural capabilities. Therefore, landscape character underpins most environmental priorities laid out in this plan, so when developing a Land Management Plan, decision makers should choose interventions that are consistent with the character and capability of that landscape. They can consult the descriptions of the LCTs for more information.

Consideration of landscape character also allows us to take appropriate directions for addressing issues that may require larger-scale changes in how we manage the landscape, for example to tackle the climate and ecological emergencies.

⁵ <https://www.devon.gov.uk/planning/planning-policies/landscape/devons-landscape-character-assessment>

Landscape Character

The full description of each Landscape Character Type and the features which define them and should be prioritised can be found at: <https://www.devon.gov.uk/planning/planning-policies/landscape/devons-landscape-character-assessment>



Thriving Plants and Wildlife

Habitat Connectivity and Wildlife Resilience

Natural and semi-natural habitats tend to be small and heavily fragmented locally. The condition of some important semi-natural habitats, including **hedgerows**, has declined, and existing sites should be managed appropriately to allow wildlife populations to thrive. Measures targeted at expanding and connecting sites will expand and improve resilience of wildlife populations. In particular, **Culm grassland** and **woodland** should be targeted for management, expansion and connectivity, and **traditional orchards** should be managed and restored where possible. Sites with a dynamic mosaic of culm grass and wet woodland support particularly rich communities. However, plans to create new habitats should consider whether the proposed location will continue to be suitable for that habitat type in a changing climate. Dispersal of wetland species will be aided by **pond** creation in areas targeted for habitat connectivity. Management of in-river habitat and riverside land is a priority for **riparian habitats** and species, including removal of stock from wide riparian buffers. Hedges already provide crucial connectivity between habitats and are an extremely valuable habitat in their own right. Management for diverse hedges with increased **hedgerow trees** is a key priority, as well as protection and replacement of in-field trees. Pollinators should be considered across all habitats, including intensive farmland areas, where there are often opportunities to help this group through hedgerow and field margin management. Good quality **semi-improved grasslands** are not registered as priority habitat, but should be identified where present on farms and targeted for maintaining and enhancement to develop the wider habitat network. The management of existing wildlife habitat, including those in previous agri-environment schemes, is a priority where evidence shows habitat management is successful, even if outside the priority zones indicated on the map overleaf.

Target Indicator Species

The presence of certain specialist species indicates that habitat management/creation has been particularly successful. Examples locally include the **freshwater pearl mussel** which, owing to water quality issues, is in a chronic decline that threatens the Taw/Torridge population and its unique genetics. Numerous rivers and streams also have failing fish populations, including **salmon** that have gone through major decline, with their habitat range now being limited to the river Okement where there is less sediment runoff and therefore better spawning habitat. Other indicator species include the **marsh fritillary** (Culm grassland), **wood white butterfly** (Culm/wood mosaic), **Brown Hairstreak Butterfly** (Hedges), **narrow-bordered bee hawkmoth** (Culm), **dormouse** (woodland), **willow tit** (wet woodland), **lesser butterfly orchid** (Culm), **Lichen assemblages** (woodland) and both **lesser** and **greater horseshoe bats** (pastoral landscapes).⁶

Invasive Species

Invasive species control is a long-term requirement that needs considering throughout the restoration and management of a functioning habitat network. Himalayan Balsam is a particular issue in the area.



The Brown Hairstreak is scarce and very localised nationally, but Devon has a stronghold, where it is an indicator of hedges managed well for wildlife that have a major blackthorn component.

⁶ <https://www.naturaldevon.org.uk/devons-natural-environment/devons-wildlife/devonspecialspecies/>

Thriving Plants and Wildlife

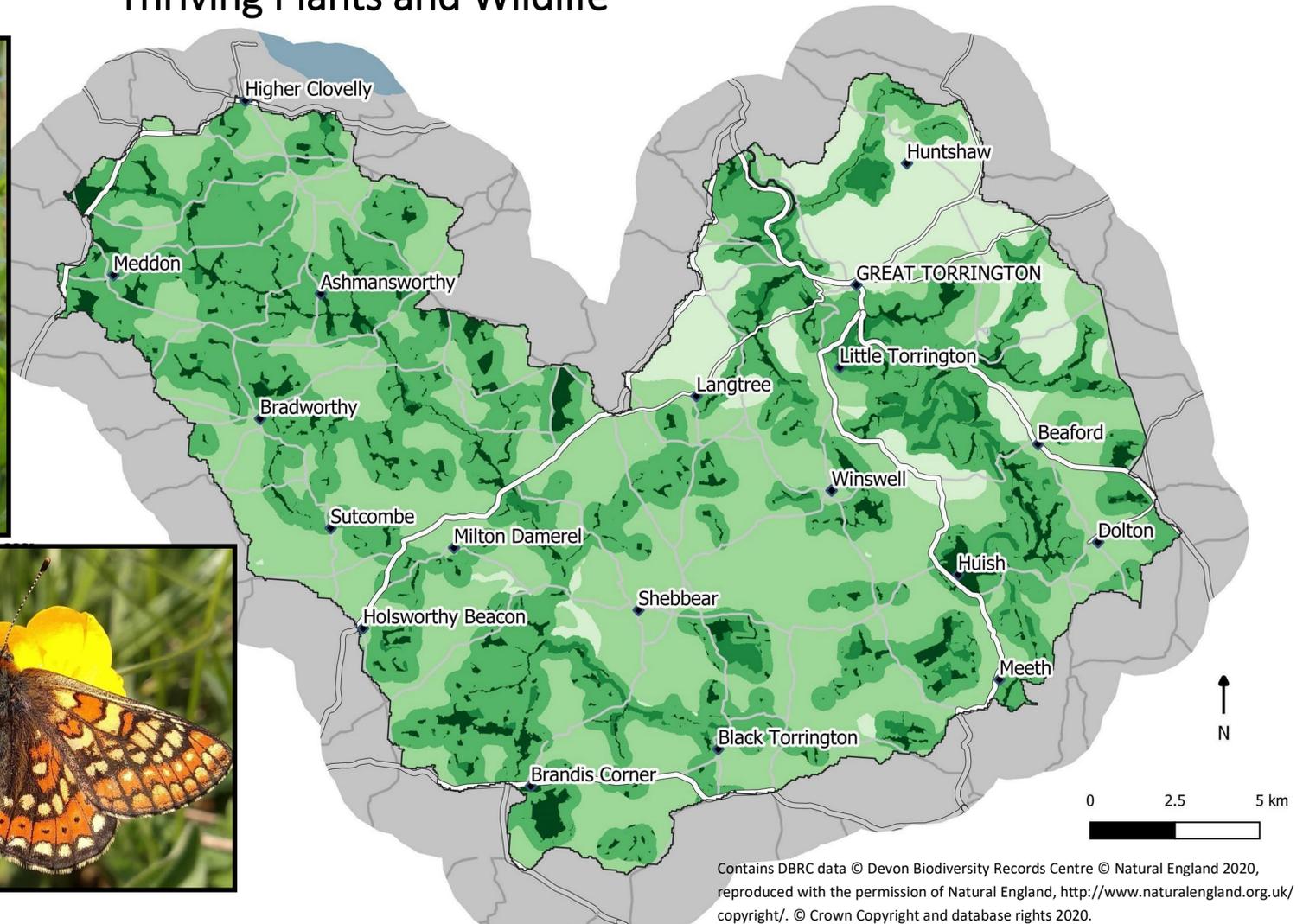
Lesser Butterfly Orchid

A delicate and scarce orchid that grows in damp unimproved grassland locally. Improvement of grassland nationally has greatly reduced its population.



Marsh Fritillary

A rare and threatened species that has a stronghold locally, where it can thrive on Culm grassland.



The map indicates how a landscape-scale network of habitats could be developed, where wildlife thrives because areas of habitat are large and connected to each other. The key below explains what the coloured zones are, and how land within them is targeted to best contribute to the network. For a more detailed explanation, see [here](#)⁷.

Network Zone 1—Priority Habitats and SSSIs: Existing priority habitats that are a target for maintaining in good condition⁸

Network Zone 2—Restorable and Creatable Habitats: Areas of reasonable quality habitat that are a target for restoration to priority habitat

Network Zone 3—Network Enhancement Zone: Land connected to existing priority habitats, where habitat creation is targeted to increase connectivity and resilience

Network Zone 4—Expansion Zone: Areas that are likely suitable for habitat creation with the aim of linking habitat networks more widely across the landscape

Wider Farm Wildlife Priority Zone: Areas marked with this colour are outside of the habitat network zones, but as with all farmland in the area are targeted for conservation of habitats associated with farmland, especially diverse hedges, field margins and field corners left for wildlife.

⁷ <https://data.gov.uk/dataset/0ef2ed26-2f04-4e0f-9493-fb9dbfaeb159/habitat-networks-england>

⁸ <https://jncc.gov.uk/our-work/uk-bap-priority-habitats/>

Clean Water

Overall Water Quality Status and Key Pollutants

Almost all sub-catchments are affected by at least one cause of poor water quality, meaning all land managers are in a position to contribute to improved water quality. Elevated phosphate levels are a primary cause of failures of the Water Framework Directive across the area, with sediment and faecal matter levels in rivers also being widespread issues.

Main Causes and Resolutions

Water quality issues are a result of the combination of local geography and land uses, and the heavy clay loam soil is prone to compaction, poaching and run off.

This is a landscape of productive agricultural, so where slurry, sediment loss and issues from maize fields are key issues and priority for mitigation. Studies on the Torridge have shown that a significant proportion of fine sediment in rivers also originates from erosion of the river channels themselves. This reveals the decline of the underlying structure of the rivers and associated ecology, with freshwater pearl mussels and salmon being lost. Key solutions are therefore river bed and river corridor restoration as well as wider land management.

Prioritisation

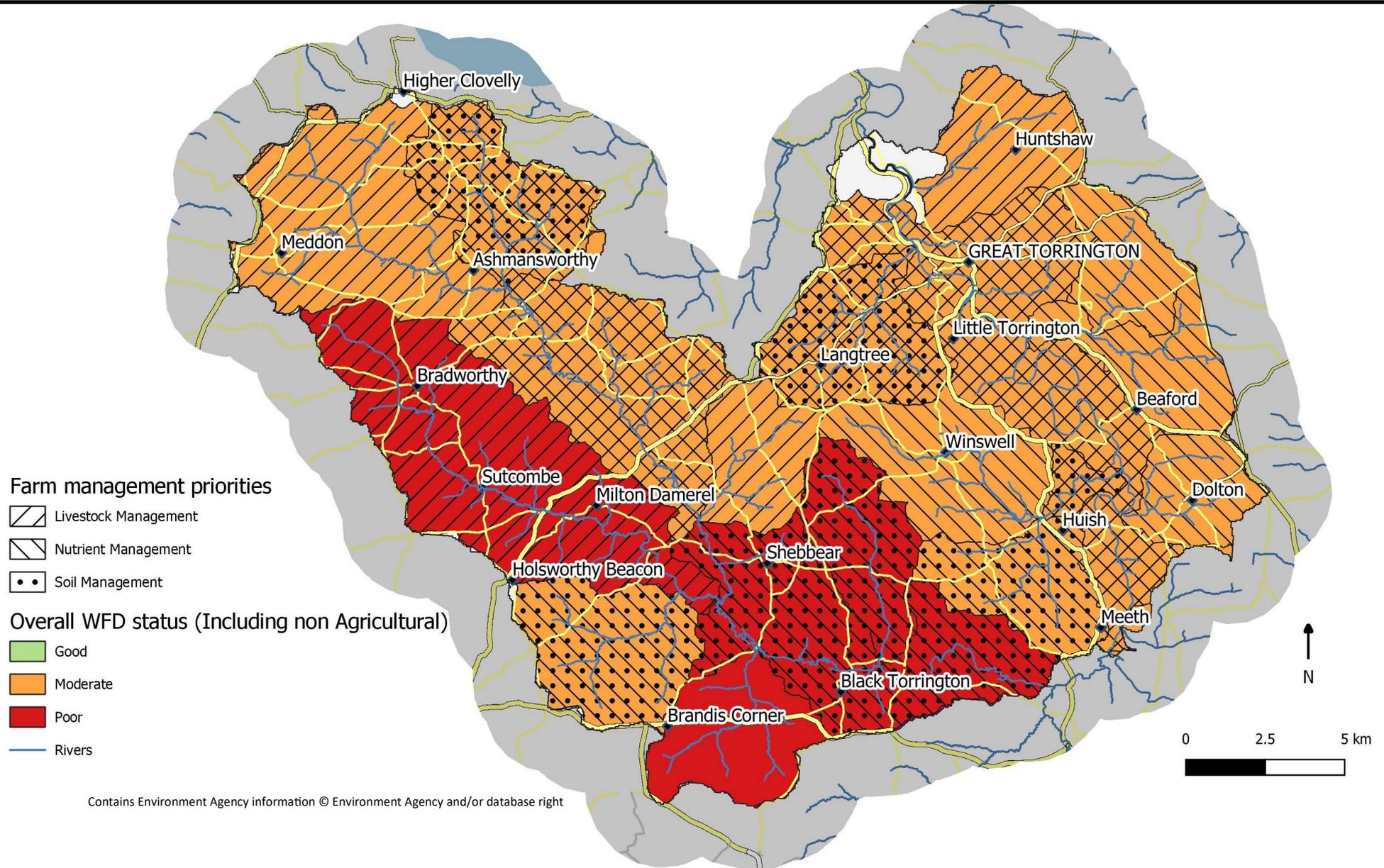
Water catchments are shaded on the map below according to their overall water quality status as per the Water Framework Directive⁹, which is affected by pollution from industry and waste water as well as agriculture. For catchments where interventions on farms could help improve water quality, the relevant farm management activities are mapped. This does not mean that all areas in priority catchment are appropriate for interventions aimed at improving water quality, and this will be determined by farm-level assessment of higher resolution data and opportunity mapping (see appendix).

Pollution hotspots may arise unforeseen, and need targeting as a priority even if outside mapped priority target areas.

⁹ <https://environment.data.gov.uk/catchment-planning/>

Clean Water

Water catchments are shaded on the map below according to their overall water quality status as per the Water Framework Directive. Catchments with Moderate or Poor status are a priority for mitigating against phosphates, nitrates, sediment and faecal matter entering waterways. Key farm management activities to consider for each catchment are marked on the map.



Clean Air

Issues with Ammonia

A proportion of this ammonia emissions are deposited on nearby land, mainly within 1km. This changes the nutrient levels in soils, which impacts habitats that support specialist low-growing plants and associated wildlife. A diversity of specialist plants can be replaced by a smaller number of common and more vigorous species. The phenomenon is well documented, and can include Purple Moor Grass becoming dominant on heathland sites. Different habitats have different sensitivities to ammonia, with geological and bird designations being less sensitive, and habitats with specialist lower plants being most sensitive. The map shows areas around priority habitats where the impacts of cattle housing, slurry and FYM storage, high risk slurry spreading methods and fertiliser spreading could be considered in Land Management Plans, as well as the establishment of woodland buffers against ammonia.

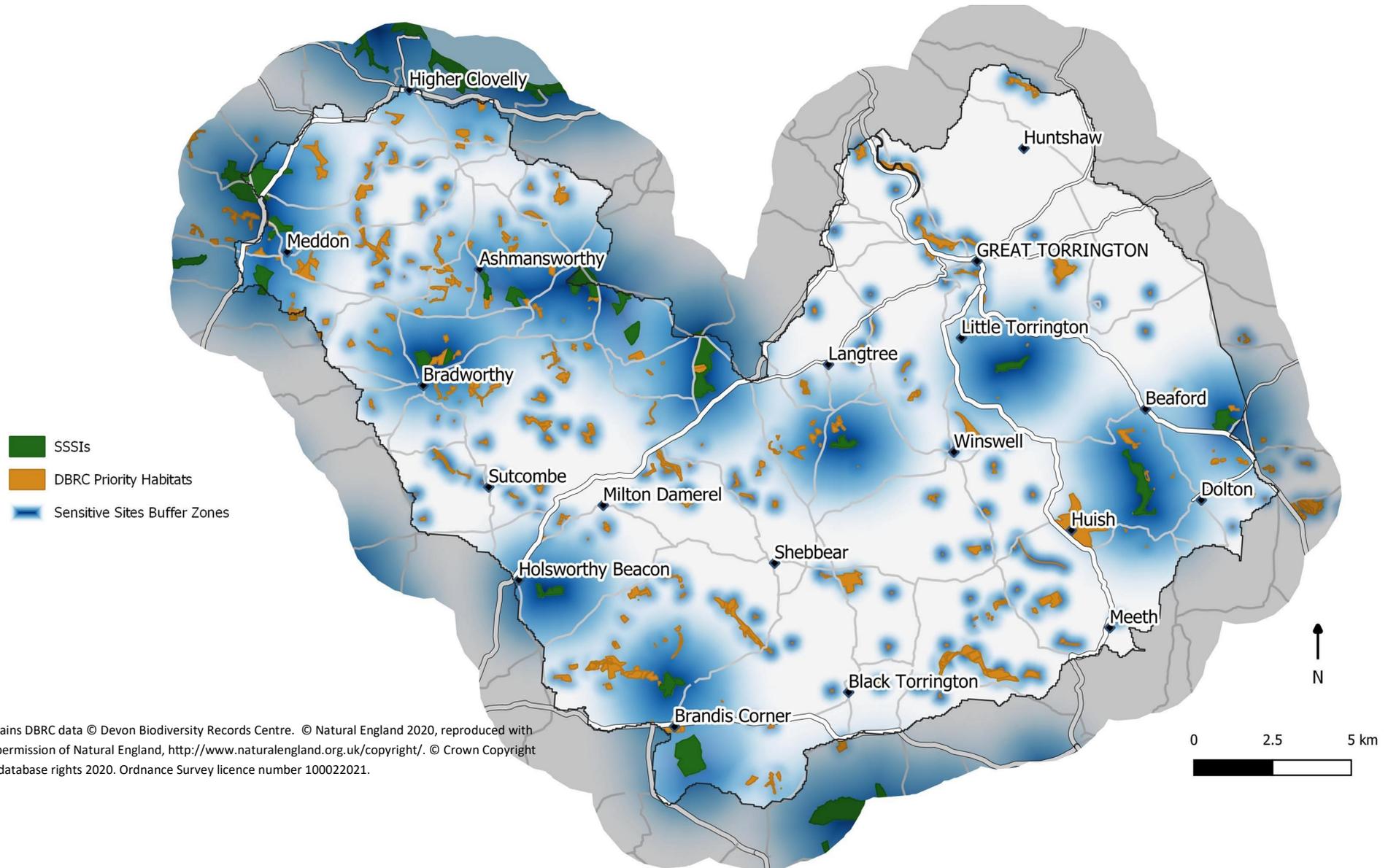
SSSI Impact Risk Zones for planning highlight regularly requirements¹⁰, and ELM will support the provision of additional buffering to sensitive sites including those not designated as SSSI. A Buffer of 3Km around SSSIs and of 0.5Km around other priority habitats has been used on the map overleaf, with a darker colour at closer proximity to the sites, indicating where ammonia emissions are most likely to cause issues.

In addition to the risk to habitats, Ammonia causes health issues in people through combining with other pollutants to form particulates.

¹⁰ https://magic.defra.gov.uk/Metadata_for_magic/SSSI%20IRZ%20User%20Guidance%20MAGIC.pdf

Clean Air

The map below highlights areas where ammonia emission is likely to have an impact on nearby priority habitats and SSSIs. A Buffer of 3Km around SSSIs and of 0.5Km around other priority habitats has been used, with darker colour at greater proximity to the sites indicating where ammonia emission is likely to have the greatest impact.



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Public Access Network

Current Level of Access

Although there are footpaths scattered throughout the area, there is a lack of footpaths linking to create circular walks. The area is sparsely populated meaning paths experience a low footfall, making the area attractive to those looking to access a remote landscape with rich landscape heritage. Increasing access here may also help reduce pressure on the coast and help tourism businesses develop.

Priority Outcomes from Access Creation

Public access creation will be considered a priority if it contributes to at least one of the following:

- Provision of access to the Torridge river where not currently present, particularly in the upstream section.
- Improved network to communities, schools or other facilities for reduced car use, particularly around Woolsery.
- Reduced use of dangerous roads by pedestrians.
- Improved access from the Tarka trail into adjacent countryside, or links between sections of the trail.
- Improved public access to historic landscapes and features.
- Provision of circular routes to encourage usage.
- Provision of new areas of greenspace, especially where managed for biodiversity.
- Improved access to inland sites popular with tourists.
- Provision of multi-use routes that allow access for all users, in accordance with Devon County Council's Rights of Way Improvement Plan.

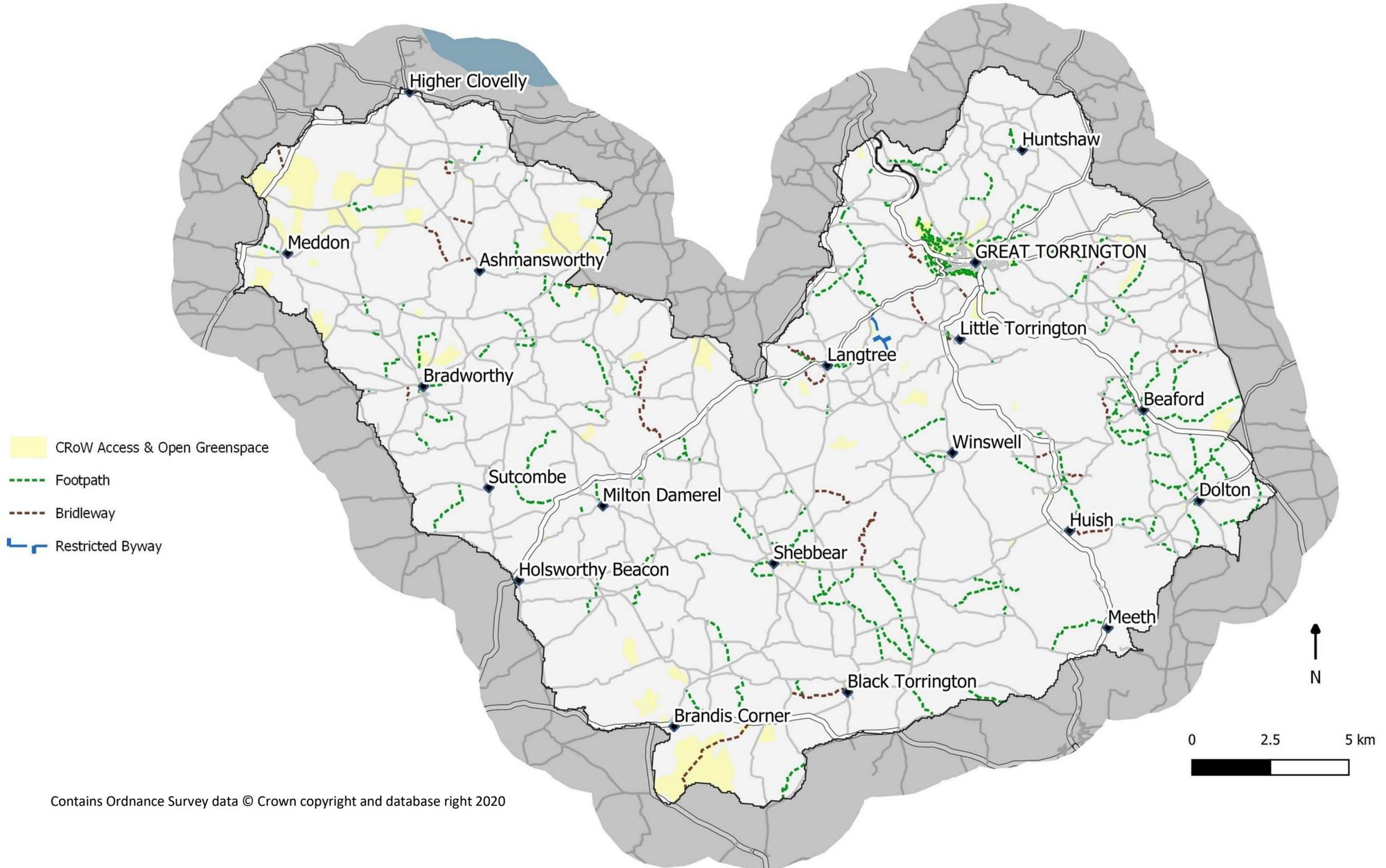
New access needs to be balanced against other competing priorities, particularly impacts on sensitive habitats and species.

Educational Access

Access onto farms can be provided in a structured form, where groups including school children and other community groups can have valuable contact with the countryside, farming and forestry. Providing these experiences is a priority for the area.

Public Access Network

The maps below shows existing levels of public access, and therefore may indicate where new public access would be most appropriate.



Historic Features

Historic Landscapes and Features

Historic elements of the land can be categorised as historic landscapes or historic features. Historic landscapes in the area include bronze age ritual landscapes in moorland areas, defensive sites such as hillforts and castles in their settings overlooking river valleys, settlements and communications routes, formal estate landscapes such as Heanton Satchville, and the residual mediaeval field systems that are found extensively throughout the area. However, overall, the historic landscape here is barely known and poorly accessed. Key historic features relevant to ELM include the many barrows and hill forts. Hedgebanks are also some of the oldest features.

Prioritisation

Historic features are priorities for management of damaging vegetation, trees, bracken, scrub and invasive species; and protecting them from damage from farm vehicles, leisure off roaders, horse riders, mountain bikes and hunts. Cultivations, high stocking rates and other activities that disturb soils should be avoided. Linking multiple features that are in close proximity through management of natural, open setting creates recognisable historic landscapes recognised as groups of prominent features in the landscape. Hillforts presented in an appropriate landscape settings are imposing features with clear visibility.

It is not appropriate to map target areas for the preservation of historic features, since the reasons determining if a feature is a priority for preservation are not strongly linked to its location, and are more dependent on its condition and how it is managed. As nationally important heritage assets, Scheduled Monument, most registered parks and gardens, and registered battlefields, and many Listed Buildings, where directly within a holding applicable to the land management scheme, are a priority for conservation, enhancement and access arrangements. The preservation of other historic features should also be encouraged, such as additional sites listed on the [Selected Heritage Inventory for Natural England \(SHINE\)](#) and [Devon County Council Environment Viewer](#)

N.B. It is hoped that a map showing target historic landscapes for preservation measures would be available in ELM.

Environmental Hazards and Climate Change

Flooding

Flooding is a current issue for a small number of properties in the catchment, primarily along the Sutcombe stream and at Tavern Gardens. These properties are located at the lower, downstream end of the catchment, however, meaning that any changes in land management in the upper portion of the catchment would need to be very extensive to significantly reduce flood risk at these locations. However land management actions which improve infiltration and reduce the rate of surface water run-off, such as the creation of semi-natural habitats and measures to reduce soil compaction will be beneficial for a variety of reasons, not only helping to reduce flood risk downstream, but also reducing instream channel erosion, and making the landscape more resilient to drought within a changing climate. There are good opportunities for floodplain re-connection in the area.

Around areas of settlement, land management measures that reduce surface water runoff, particularly in areas of high surface flows, will reduce the amount of surface water entering the drainage network, reducing the need to discharge combined sewer overflows, which causes river pollution.

Climate Change and Carbon Sequestration

Low flows have been highlighted as an issue in Torridge headwater tributaries, resulting in reduced fish productivity. Improved resilience to low flows by increasing land uses that store and release water over a longer time period would benefit these catchments. In particular, the creation and suitable management of culm grassland and woodland will help address the issue. Good water supply for groundwater-fed boreholes must be maintained to prevent the need for water extraction from rivers. Drought also threatens the endangered freshwater pearl mussel. Conifer plantation and Culm may in particular be at increasing risk of fire due to climate change.

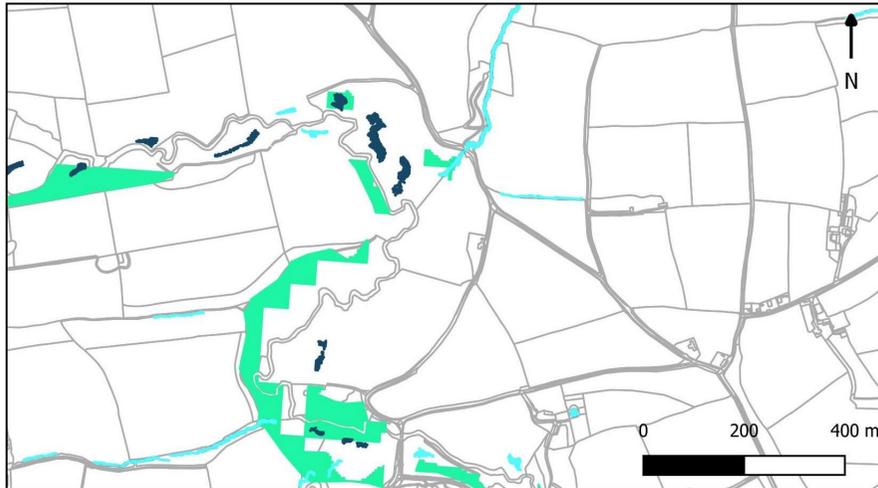
Carbon storage is identified as a priority in the local Natural Capital Biosphere Strategy. There are many opportunities on farms to capture carbon, such as in soils, hedges, woodlands and isolated trees. Increasing these stores of carbon will often contribute to several of the environmental priorities in this plan, and any priority habitats can be important stores of carbon, including Culm grassland. Carbon storage is also a stand alone priority for the area, meaning woodland planting may be a priority even in areas where it is not a priority for habitat connectivity. Including fast growing species in the mix in areas that are less important for other habitats will facilitate rapid carbon capture, but planting of native broadleaved woodland will generally have the greatest benefits to multiple environmental priorities.

Plastic Pollution

Farm plastics should continue to be disposed of properly. Silage wrap, baler twine and feed bags and other plastics should be handled appropriately to minimise plastic pollution in the countryside. This will help maintain landscapes that are appealing to consumers and users of the countryside, as well as preventing ecological damage from such pollution. Recycling schemes should be used and plastic consumption reduced where possible.

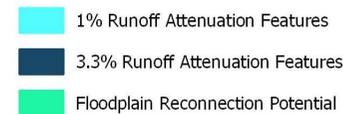
Appendix: Example Opportunity maps to be used at the farm scale to visualise where on the farm interventions may have the greatest impact

Attenuation Features and Floodplain Reconnection Potential

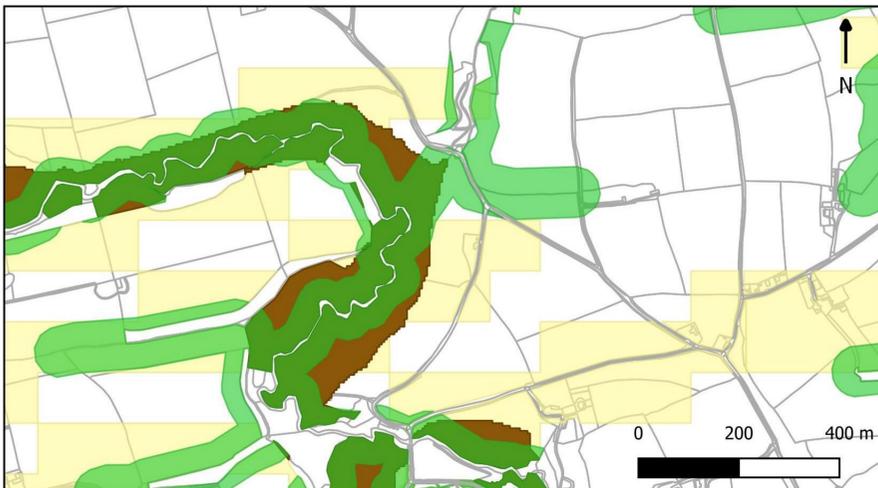


Potential for runoff Attenuation Features: Areas where water flows across the land during flooding events, where it may be possible to temporarily store water on the land to slow the movement of rainwater along the catchment, and so reducing flooding downstream. Examples may include pond creation and damming.

Floodplain Reconnection Potential: Areas of floodplain where waters are constrained to the river channel during high flow events, rather than spilling onto the floodplain, where the channel could be reconnected to the floodplain to slow the movement of water along the catchment.



Woodland Planting Potential



Areas where woodland planting may contribute to the reduced the severity of flooding events. Woodland potential excludes areas of existing woodland, water courses, peat, roads, railways, and urban locations.

Riparian Woodland Potential: A 50m buffer of rivers to indicate where woodland planting will slow the rate of water entering river channels.

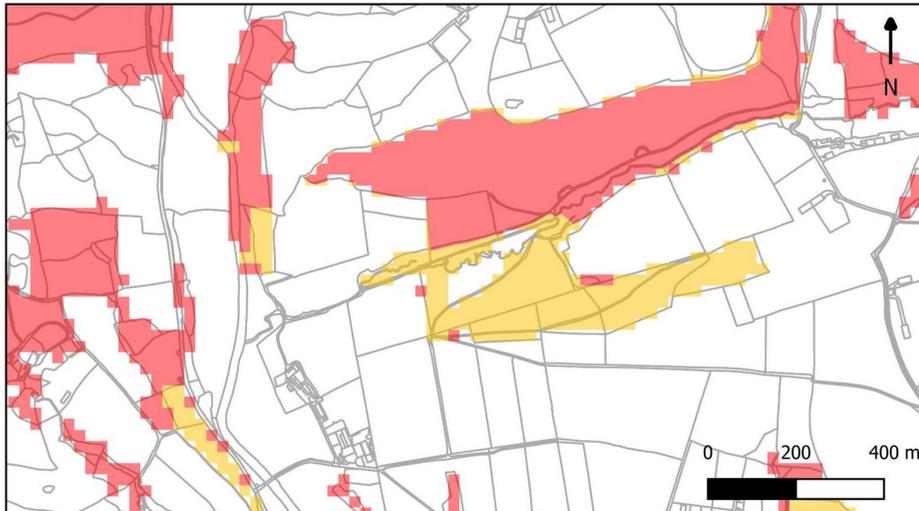
Wider Catchment Woodland: An estimate of where there are slowly permeable soils, where tree planting will increase permeation and so reduce runoff.

Floodplain Woodland: Areas of floodplain in Flood Zone 2, as defined by EA, where tree planting would slow the movement of water along the catchment.



Appendix: Example Opportunity maps to be used at the farm scale to visualise where on the farm interventions may have the greatest impact

Woodland Improvement Priorities



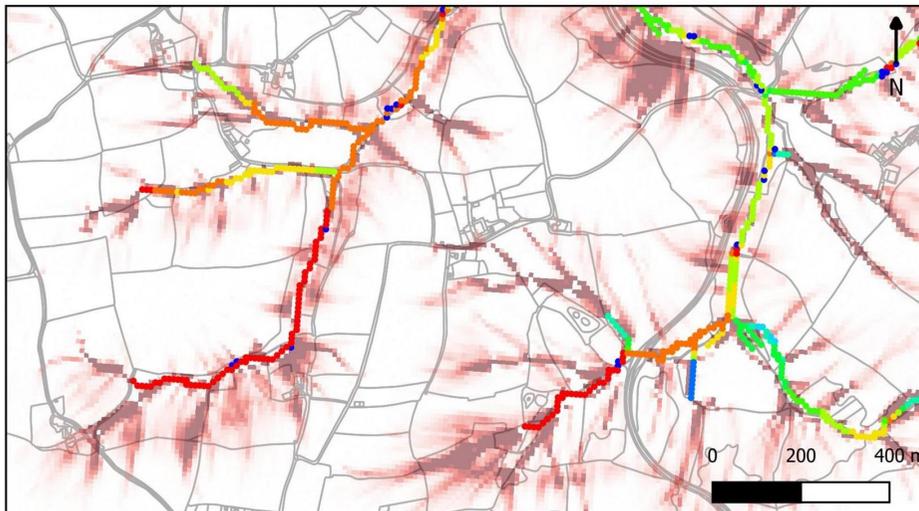
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A woodland is considered high priority for improvement if it is at least one of points below. Other woodlands are considered lower priority for improvement.

- Protected by a statutory designation
- Priority woodland habitat
- Coniferous woodland targeted for conservation
- A Planted Ancient Woodland Site (PAWS)
- Woodland in catchments with eutrophication and acidification issues

High Spatial Priority
Lower Spatial Priority

Fine Sediment and Erosion Risk



Fine Sediment and Erosion Risk data modelled using SCIMAP (www.scimap.org.uk)

Fine Sediment Risk: Rivers are displayed as a colour ranging from blue to red, depending on the risk of pollution from sediment that has run off the land in the catchment.

Erosion risk: Land is shown on a colour gradient to show where it is at greater risk of erosion, and therefore a likely source of sediment entering rivers. It has been created based on soil type, slope, land use and rainfall.

