



Introduction

As part of Natural England's responsibilities as set out in the Natural Environment White Paper,¹ Biodiversity 2020² and the European Landscape Convention,³ we are revising profiles for England's 159 National Character Areas (NCAs). These are areas that share similar landscape characteristics, and which follow natural lines in the landscape rather than administrative boundaries, making them a good decision-making framework for the natural environment.

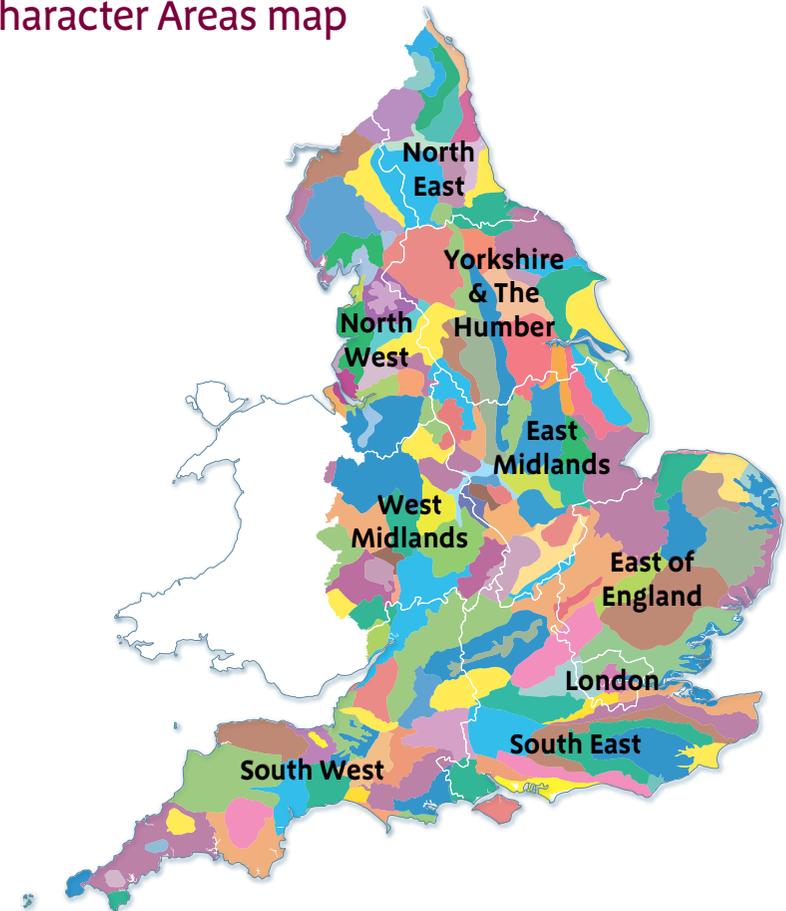
NCA profiles are guidance documents which can help communities to inform their decision-making about the places that they live in and care for. The information they contain will support the planning of conservation initiatives at a landscape scale, inform the delivery of Nature Improvement Areas and encourage broader partnership working through Local Nature Partnerships. The profiles will also help to inform choices about how land is managed and can change.

Each profile includes a description of the natural and cultural features that shape our landscapes, how the landscape has changed over time, the current key drivers for ongoing change, and a broad analysis of each area's characteristics and ecosystem services. Statements of Environmental Opportunity (SEOs) are suggested, which draw on this integrated information. The SEOs offer guidance on the critical issues, which could help to achieve sustainable growth and a more secure environmental future.

NCA profiles are working documents which draw on current evidence and knowledge. We will aim to refresh and update them periodically as new information becomes available to us.

We would like to hear how useful the NCA profiles are to you. You can contact the NCA team by emailing ncaprofiles@naturalengland.org.uk.

National Character Areas map



- ¹ The Natural Choice: Securing the Value of Nature, Defra (2011; URL: www.official-documents.gov.uk/document/cm80/8082/8082.pdf)
- ² Biodiversity 2020: A Strategy for England's Wildlife and Ecosystem Services, Defra (2011; URL: www.defra.gov.uk/publications/files/pb13583-biodiversity-strategy-2020-111111.pdf)
- ³ European Landscape Convention, Council of Europe (2000; URL: <http://conventions.coe.int/Treaty/en/Treaties/Html/176.htm>)

Summary

The South Herefordshire and Over Severn National Character Area (NCA) stretches from the border with the Forest of Dean in the south, north-westwards to Ewyas Harold in South Herefordshire and north-eastwards to the southern point of the Malvern Hills. Between these two northern points the boundary curves northwards in an arc around the Woolhope Dome. Stunning panoramic views are available from Garway Hill in the west and May Hill in the south-east across the NCA and beyond to up to 12 counties on a clear day.

The meandering River Wye flows southwards through the centre of the area from Holme Lacy, with its celebrated parkland landscape in the north, to Goodrich, where one of the best examples of a Norman castle in England stands. Much of the course of the River Wye, popular with canoeists, and its adjacent flood plain, lies within the northern end of the Wye Valley Area of Outstanding Natural Beauty (AONB) with 39 per cent of the AONB within this NCA and much of the remainder extending into Wales. The River Wye itself is internationally designated as a Special Area of Conservation (SAC).

It is a picturesque, rural, well-wooded landscape with substantial areas of ancient semi-natural woodland, parkland and traditional orchards and a network of ancient hedgerows with hedgerow trees contributing to a timbered feel. Remnants of common land and neutral and calcareous grassland, particularly on the Woolhope Dome, form a highly fragmented semi-natural grassland resource. Land use is mainly a mix of livestock and arable farming. The wild daffodils of Over Severn provide a seasonal visitor attraction and have been much featured in poetry. A small corner of land above Dymock and the River Leadon in the north-eastern part of the NCA lies within the Malvern Hills AONB.

Key ecosystem services within this NCA include water regulation as a part of the Wye and Severn catchments, food production through extensive agriculture, an important genetic resource of local fruit varieties and a sense of tranquillity intrinsic in the scenic rural character of the landscape.

Pressures arise largely from increasingly intensive agricultural land use on the prime fertile soils of the area, including arable cropping, potato growing and fruit production. Pressure from development is small and largely focused around Ross-on-Wye and Newent.

[Click map to enlarge; click again to reduce](#)

[Click map to enlarge; click again to reduce](#)

Statements of Environmental Opportunities:

- **SEO 1:** Protect and manage the woodland, parkland, traditional orchards and hedgerows with hedgerow trees that contribute to the well-wooded feel of the landscape, securing the new generation of replacement trees. Expand and restore the currently much-fragmented semi-natural habitats across the NCA to enhance the ability of species to move across the landscape, enabling some resilience to climate change, and benefiting soil quality and water quality and reducing soil erosion.
- **SEO 2:** Sustainably manage the productive agricultural landscape, enhancing food provision and increasing permeability to the movement of species. Manage in such a way as to preserve and enhance soil condition and water quality and reduce soil erosion, particularly in relation to the River Wye Special Area of Conservation.
- **SEO 3:** Maintain and enhance the many historic features and characteristic settlement pattern of rural hamlets, isolated farmsteads and small villages and towns using local materials. Preserve the tranquil rural character of the area, protecting and promoting the biodiversity, geodiversity, access, recreation and heritage of the area.
- **SEO 4:** Protect and enhance the rivers Wye, Leadon and Monnow and their tributaries for their internationally important biodiversity associated with the River Wye Special Area of Conservation, their contribution to landscape, the ecological network, and sense of place and inspiration, and for the regulating services that they provide including water flow, water quality and water availability.



Goodrich Castle, one of the best examples of a Norman castle in England.

Description

Physical and functional links to other National Character Areas

The South Herefordshire and Over Severn National Character Area (NCA) is bordered by the Severn and Avon Vales, Malvern Hills, Herefordshire Lowlands and Forest of Dean and Lower Wye NCAs to the east, north-east, north and south respectively. The Welsh county of Monmouthshire and the Black Mountains and Golden Valley NCA border the western edge, separated from the NCA by the River Monnow.

Garway Hill in the west, the highest point in the NCA at 366 m, provides stunning panoramic views across the area and surrounding area from the peaks of the Black Mountains in the west to the Cotswolds in the east and across to May Hill, at the south-east corner of the NCA, which itself provides views of up to 12 counties on a clear day. The meandering valley of the River Wye provides attractive views north and south out of the area, both from the valley floor and from vantage points along the steep valley sides.

Lower Old Red Sandstone underlying much of the area is found right along the Wye Valley from Hereford to just south of Tintern and extends right through Herefordshire into Shropshire and westwards into Wales.

The rivers Wye and Leadon flow into the NCA from the Herefordshire Lowlands NCA to the north. The Wye flows south through the centre of the NCA before passing into the Forest of Dean and Lower Wye NCA, joining the Severn at Chepstow, the Leadon passing through the north-east corner

before flowing through the Severn and Avon Vales NCA into the River Severn at Gloucester. The water quality of the Wye through this NCA is significantly influenced by discharges from Hereford and Ross-on-Wye and sediment from intensive agricultural land use upstream. Flows in the Wye are influenced by extraction for water for Gloucester in the neighbouring Severn and Avon Vales NCA.

The A40 (south of Ross-on-Wye) and M50 provide an arterial route connecting South Wales to the Midlands, heavily used by commercial traffic to avoid the Severn bridge tolls. The A40 east from Ross-on-Wye provides a transport route and connection to Gloucester. The A49 and A466 run north–south, connecting Monmouth to Hereford. There are no railway stations in this NCA. A section of the Wye Valley Walk long-distance path crosses the area from Goodrich to Hereford and the River Wye is navigable by small boats and canoes.

Thirty-nine per cent of the Wye Valley Area of Outstanding Natural Beauty (AONB) and 3 per cent of the Malvern Hills AONB lie within this NCA. These protected landscapes provide additional recreational resource to the well-wooded countryside for both local residents and the many visitors to the area from South Wales, the West Midlands and beyond.

Key characteristics

- An undulating landscape with some prominent rounded Old Red Sandstone hills in the west, lower rolling ground, ridges and valleys, meandering, often deeply incised rivers with narrow flood plains, and Silurian limestone ridges and clay vales of the Woolhope Dome and Silurian sandstone of May Hill in the east.
- Well-wooded character created by larger woodlands confined to the steeper slopes adjacent to the flood plain and to hillsides. Smaller tree clumps often found in groups around hill tops, farmsteads, hamlets and prominent buildings including small areas of ornamental parkland-style planting and scattered parklands.
- Numerous mature and over-mature trees along hedgerows and watercourses including ash, oak, alder and some pollarded willows.
- Traditional historic cider apple orchards and commercial bush orchards on steeper valley slopes and around farmsteads, hamlets and country houses throughout the area, contributing to the woodland character.
- Substantial country houses set within historic landscaped parklands.
- Varied field pattern bounded by hedgerows, ranging from sparse and low 19th century to dense and species-rich hedgerows dating from the medieval period.
- Large-to-medium-sized fields dominate the intensive arable farming on the fertile soils of the lower undulating ground and river valleys.
- Small-to-medium-sized pastures typify livestock farming on the higher ground with steeper slopes.
- Welsh Borders character in western hills and valleys linked to historic 'Archenfield'.
- Dispersed settlement pattern throughout the area with scattered farmsteads, small hamlets, numerous isolated churches and manor houses linked by narrow winding roads.
- Key transport routes run north-south and east-west linking larger settlements (Newent, Woolhope and Dymock) with the principal town Ross-on-Wye and Monmouth, Gloucester and Hereford in neighbouring NCAs.
- Remnant commons and patches of unimproved grassland typically found on hilltops and inaccessible steeper valley slopes.
- Historic wild daffodil fields of Over Severn and the Wye Valley have inspired poets and stimulated tourism.
- Traditional building materials in the west are predominantly red sandstone; however, to the east of the River Wye they include brick, 'black and white' timber-framed and grey Silurian limestone, render and whitewash.
- Hill-top iron-age forts, motte-and-bailey castles and moated sites are found scattered throughout the area.

South Herefordshire and Over Severn today

South Herefordshire and Over Severn is an NCA of three principal parts: the Wye Valley with its narrow flood plain dissected by the river channel meandering through farmland from Holme Lacy to Goodrich, in the centre of the area; to the east the Woolhope Dome, Marcle Ridge and Over Severn, rising abruptly out of the Herefordshire Lowlands and influenced by limestone geology, with well-wooded 'daffodil country', old orchards and views east across the Leadon Valley to the Malvern Hills, Cotswolds and the Gloucestershire–Herefordshire borders; and to the west the Garway Hills, a group of rounded Old Red Sandstone hills which abut and contrast with the Welsh Borders across the river Monnow on their south-western edge.

The area is unified by the underlying Old Red Sandstone, resulting in characteristic fertile red soils, the exception being the grey soils associated with the Silurian limestone rocks, shales and siltstones of the Woolhope Dome, Marcle Ridge and May Hill. The Woolhope Dome is a distinctive feature of the Herefordshire landscape: from distant views, it appears as a wooded dome but, from within, there is a landscape of sheltered vales where the shale crops out and a more open, almost downland landscape on the limestone outcrops.

A number of rivers drain the NCA, the largest being the Wye. It has a narrow flood plain, with wide incised meanders, prominent riverside slip-off slopes and steep outer slopes and abandoned meanders/oxbow lakes, for example to the east and south of Penyard Hill (Rudhall Brook) near Ross-on-Wye. The River Wye is of international importance and is designated as a Special Area of Conservation (SAC) for species such as native crayfish, otter, salmon,

shad and lamprey. The Leadon, in the north-eastern corner, drains south-eastwards towards the Severn, fed by a complex dendritic drainage pattern in the many valleys at its head. On the northern and western edge of the Woolhope Dome, small streams drain radially and westwards to the Wye and Frome. The River Monnow flows southwards along the south-western edge of the NCA, fed by short streams from the ridge that extends from Kentchurch down to Welsh Newton. To the north-east of the Garway Hills, the Garren Brook drains south-eastwards into the Wye, fed by numerous streams arising in the steep-sided valleys.

The scenic quality and natural beauty of the Wye Valley landscape is nationally recognised as part of the Wye Valley AONB, designated in 1971. Large, wide, high interlocking spurs of land between Foy and Ballingham overlook the incised flood plain, giving long and very attractive views from vantage points such as Sellack and Ballingham Hill, or more spectacularly from Capler Hill.

Woodland cover is concentrated on the steeper hill slopes, the steep outer slopes of river bends, parkland-style clumps around hamlets and farmsteads, hedgerow trees and landscaped parklands. The areas around May Hill through Dymock up to the Woolhope Dome and along the Monnow Valley have abundant woodland, a mix of broadleaves and conifers, with more than half of the sites being of ancient semi-natural woodland. Woodland is noticeably sparse in the more fertile areas of the lower Wye and around the Garren Brook west of the River Wye. The Woolhope Dome provides many good examples of ancient semi-natural woodlands such as Sites of Special Scientific Interest (SSSI) at Sharpnag Wood, Cherry Hill Woods and Lea and Pagets Wood. Oak and ash are the main canopy species and there is abundant cherry and yew as well as some lime and wild service. The ground

flora is rich and reflects the calcareous nature of the soils with species such as stinking iris, spurge laurel and stinking hellebore. Wild daffodils are abundant in some of the woods. Ancient semi-natural woodlands are also found along the valley of the River Monnow, and in the vicinity of King's Thorn, such as at Mynde Wood, Aconbury Hill and Nether Wood towards the north-west of the area.

Part of the Dymock Forest is a deciduous plantation of native species (though not necessarily of local/British provenance) on an ancient woodland site. Dymock Woods SSSI is noted for sessile oak and small-leaved lime. Planting of ancient woodland sites with non-native conifers has been undertaken on the Woolhope Dome, notably at Haugh Wood. Many conifer plantations are of relatively low wildlife interest but some contain very old conifer stands that are of value for conservation and support breeding goshawk. Where

a diverse ride-and-glade structure has maintained an element of the semi-natural composition there is a good variety of invertebrates, particularly woodland butterflies and moths.

Traditional orchards are a significant feature of this NCA, particularly around the Woolhope Dome, May Hill and Over Severn area along the Gloucestershire–Herefordshire border and north-east of the Garway Hills. These older orchards with a wide range of fruiting trees are becoming fragmented but are of high conservation value, particularly for birds, lichens and saprophytic invertebrates such as noble chafer. Modern commercial bush orchards also occur widely but are of little conservation value except in relation to pollinators. There are numerous landscaped parklands and woodlands, some of which are registered, such as Hill Court, Sufton Court, Stoke Edith, Kentchurch Park and Holme Lacy, exhibiting a wealth of styles



The distinctive group of conifers on top of May Hill are visible from long distances away.

and landscape designs. These ornamental parklands support a wealth of deadwood invertebrates (many of which are nationally rare or scarce), nesting sites for birds and roosts for some bat species.

The acidic Broadmoor Common is found at the very centre of the Woolhope Dome on the Lower Silurian May Hill Sandstone, and within the smaller field pattern associated with the steep slopes of the Dome are important unimproved species-rich calcareous and neutral grasslands. These range from the steeper slopes of Common Hill SSSI above Fownhope to the more neutral grassland found within smaller hamlets such as Checkley. The highest points on the Garway Hills tend to be rather open with grassland, patches of bracken and the remnants of formerly extensive commons. The Over Severn area supports many unimproved or semi-improved neutral grasslands with abundant wild daffodils. Many daffodil fields may be fairly species poor because daffodils are more resistant to some agricultural operations than other wild plants, or perhaps because they have been cleared from woodland comparatively recently. The 'daffodil country' was well known as a tourist site in the 1930s and is of cultural and historical as well as wildlife interest. This NCA probably contains the most extensive populations of grassland wild daffodils in England.

The undulating landscape of the lower Wye Valley, Over Severn and the gentler slopes of the Garway Hills are of good agricultural quality, with much of it being used for cereals and grass leys, but with a wide variety of other uses including horticulture, potatoes, pigs and poultry rearing, and dairying. Fields tend to be large and rectangular, resulting from the piecemeal enclosure and successive re-organisation of medieval strip fields, particularly on the low, flatter land inside the meanders of the Wye and along the Garren Brook. In enclosed valleys of the Woolhope Dome, such as that around

Sollers Hope, and the steep-sided valleys of the Garway Hills, small pasture fields with irregular boundaries and overgrown hedgerows predominate. There is an area of horticultural land use north of Newent, with its usual mixture of polythene tunnels, shelterbelts and glasshouses.

Many hedgerows in the NCA are several hundred years old and in places, for example at Hentland, Peterstow, Ballingham and Llandinabo, the parish boundary hedgerows may well be based on very early monastic estate boundaries and therefore could be at least a thousand years old. The condition of hedgerows is variable. Some are lush and overgrown with large hedgerow trees, many more are severely flailed. In other cases, only a scattered line of trees and individual shrubs survive. Hedgerow trees are generally mature or over-mature and are very sparse in areas where the agricultural fields are larger.

South Herefordshire and Over Severn is a landscape of large weathered sandstone farmsteads standing in their own fields and of numerous hamlets formed around a manor house and church: there are few villages. Ross-on-Wye is the principal settlement, dominated by the spire of St Mary's Church, visible for miles along the valley. It has an attractive core of 18th- and 19th-century rendered buildings and a market centre. To the south-west of this, The Prospect, laid out by John Kyrle – the 'Man of Ross' – in the 18th century, has wide views across the river. The often-photographed and painted view of Ross-on-Wye from the river's edge remains particularly distinctive. The remainder of Ross-on-Wye is mainly 20th-century housing, spreading northwards across the A40 to Blackfield and southwards to Tudorville, with the built-up and urban fringe character continuing across the river to Wilton. The A40 and its traffic dominate views from and towards the town on the western side.

Outside Ross-on-Wye, the main settlements are small hamlets and isolated farmsteads. Sandstones of the Lower Old Red Sandstone predominate as building stones, even if they are in places rendered and whitewashed. There are many typical Herefordshire foursquare houses with hipped slate roofs and massive farmstead buildings with rugged faces of heavily weathered sandstone. The larger settlements of Woolhope Dome are Fownhope and Woolhope, although both are relatively small. Here some of the older buildings are of the underlying grey Silurian limestone in the robust Herefordshire style; others are of black-and-white construction. Over Severn settlements are dominated by Newent and Dymock. Enclosed, winding, commonly single-track lanes link the settlements. The larger settlements have older cores, with their styles of building commonly found in an attractive mixture, as at Fownhope. Twentieth-century development is limited: modern housing, for instance, is prominent on the edge of Newent. In the Garway Hills, the pattern of small hamlets and clusters of farmsteads, linked by numerous narrow lanes and only sporadically by a more substantial road, is typical of the Welsh Borders, as are the more dispersed settlements on the patches of former common.

Farming and cider production are the main industries in this NCA, but tourism increasingly provides a significant economic resource. The many parklands, accessible woodlands and historical sites such as Goodrich Castle, together with the nationally recognised AONB landscape of the Wye Valley, provide a range of tourist destinations. The National Cycle Network Route 46 (Hereford to Abergavenny section) passes through the west of the area. There are also sections of a number of long-distance footpaths including the Herefordshire Trail, Gloucestershire Way and Wye Valley Walk. Access to the Wye for watersports is permitted only in places; however, a public right of navigation exists all the way to Hay-on-Wye.



The gently undulating agricultural landscape of Over Severn and the lower Wye beyond with isolated farmsteads.

The landscape through time

The NCA (and much of neighbouring Herefordshire, the Black Mountains and Brecon Beacons) is largely underlain by Old Red Sandstones, formed in the arid environment of the Lower Devonian period, resulting in an undulating topography, the rounded sandstone Garway Hills of the Devonian Brownstones Formation and rich, red fertile agricultural soils. Towards the west, much older rocks were pushed up during the Variscan Orogeny (mountain building phase), forming the upfolded Silurian limestones, fossiliferous shaley mudstone and siltstone (laid down when the area was covered by a shallow tropical sea) of the Woolhope Dome, Marcle Ridge and May Hill, with their distinctly different grey Silurian soils. Along the border with the Severn and Avon Vales NCA Permian and Triassic sandstones are found, the boundary being formed by the southward continuation of the East Malvern faultline along a major line of weakness in the Earth's crust. At Woolhope Dome, erosion of the domed upfold exposed a succession of limestones and shales in concentric ridges and vales; the oldest rocks are the Llandoverly May Hill Sandstone Group (Lower Silurian). These are the sandstones of the Haugh Wood Formation which outcrop in the centre of the Woolhope Dome. The Wye Valley is separated from the hilly land of the Woolhope Dome to the east by the line of the Woolhope Fault, which runs from north-north-west to south-south-east.

The underlying rocks have directly influenced the flow of the River Wye across the sandstone. Between Mordiford and Fownhope, the weaker Silurian Raglan Mudstone and Devonian St Maughans formations result in a wide, flat valley floor with the river meandering across a larger flood plain. Where the river crosses onto the slightly more resistant Brownstones Formation, it has developed meanders of larger amplitude which are incised into the land

surface, exposing the sandstone which can be clearly seen in the old river cliffs at Ross-on-Wye. There are river terrace deposits, gravels laid down from meltwater during the last interglacial, which mark the former, higher level of the valley floor. At Holme Lacy there are remnants of the highest and oldest of the river terraces. Both the Wye and Monnow rivers have augmented the agricultural quality of the soils in the river valleys by depositing alluvium in times of flood, and this continues to the present day. Carboniferous Upper Coal Measures have been mined in the Newent area.

Evidence of Palaeolithic human activity over a 25,000-year timescale has been found in Merlin's Cave and King Arthur's Cave at The Doward on the border with the Forest of Dean and Lower Wye NCA;⁴ artefacts such as animal bones suggest use by nomadic hunters taking shelter in the caves. There is also a bronze-age cemetery at Pontshill, south-east of Ross-on-Wye. During the Iron Age, settlements became larger and iron-age activity is evident at the hill fort at Little Doward on the NCA's southern border, at Capler Camp near Brockhampton and Aconbury Hill south of Hereford.

To the Romans, the Marches in the west of Herefordshire were an area of conflict with local tribes. There is little evidence for Roman settlement within this NCA, only of a Roman villa at Putley, the town of Ariconium at Western under Penyard and suggestion that the fort on Aconbury Hill was occupied by the Romans, a strategic position that continued to be occupied periodically up to the 17th century.

In the early Middle Ages, much of the area of the Garway Hills lay within Archenfield, created from the Celtic British kingdom of Eryng in 740 ad when some of the kingdom became part of English Mercia. Welsh law and customs

⁴ Herefordshire Through Time: <http://htt.herefordshire.gov.uk/default.aspx>

were still being observed at the time of Domesday Book and many of the place names in Archenfield today are Welsh or anglicised, and indeed the area was known as 'Herefordshire within Wales' and remained part of the Welsh diocese of St David's until the 19th century. The pattern of small hamlets and clusters of farmsteads is typical of the Welsh Borders as are the more dispersed settlements on the patches of former common. The historic character is summed up by Sylvester:⁵ "The solitary parish church, the Welsh place and farm names, the rugged field pattern... are all reminiscent of Wales... this pattern is only rarely broken by the introduction of alien elements, usually an Anglo-Norman defensive work or the moated house which succeeded it, a dovecote such as that at Garway or the interpolation of English names in farm and field."

Following the Norman invasion in 1066, conflict between the Welsh and Normans continued. Many small motte-and-bailey castles were built along the border with Wales. The building of Goodrich Castle, one of the many Marcher Castles, was begun in the late 11th century by the landowner Godric of Mappestone. During the 12th century many of the wooden castles were replaced by stone keeps, as was the case at Goodrich and nearby Wilton Castle.

By the end of the Middle Ages, the area comprised a largely cleared landscape of churches, small woodlands, parklands, sheepwalks (large open areas for grazing sheep, particularly around the Woolhope Dome), sporadic patches of common, cultivated land, substantial manor houses and farmsteads with numerous hamlets but without villages. The ancient woodland of Dymock forest was at one time probably continuous with the Forest of Dean, though by the time of the Domesday survey it had already become separated.⁶ The area

⁵ The Rural Landscape of the Welsh Borderland: A study in historical geography, Dorothy Sylvester (1969), MacMillan, London

⁶ Forest Service: First forty-five years of the Forestry Commission of Great Britain, George Ryle (1969), p162

was widely regarded as part of one of the most fertile and productive areas in the country, most of the medieval strip fields having been enclosed and re-organised around farmsteads by the 18th century. There are pockets of earlier medieval irregular enclosure, especially in the hillier land to the east and west.



Brockhampton 20th-century "Arts and Crafts" church.

In 1794, the fertile agricultural land of the lower Wye was described by John Clark as “unequaled by few spots in the land of Great Britain for the production of every article that can contribute to the comfort, the happiness and in some degree the luxury of society. Here verdure almost perpetual reigns.”⁷ The area’s attractive landforms lent themselves to the development of landscape parks and the wealth generated by agriculture found expression in the development of substantial houses within parkland, whether as the 17th-century formality of Holme Lacy, as Humphry Repton’s early-19th-century landscape at Sufton Court on the edge of the area, or as the fine manor houses such as Fawley Court. One of the most interesting parklands of Herefordshire can be found at Kentchurch which developed out of the less formal picturesque landscape movement, creating a more natural ‘forest scenery’ influenced by Uvedale Price (1747–1829). Kentchurch Park includes the famous Jack of Kent oak, whose girth exceeds 11 m, making it one of the ten largest in England. This parkland tradition continued into the early years of the 20th century with the development of the park at Brockhampton and its fine Arts and Crafts church.

Viscount Scudamore of Holme Lacy in the 17th century pioneered many of the modern fruit varieties used in Herefordshire and the West of England.⁸ By the 17th century apple orchards had become extensive in Herefordshire and the neighbouring counties of Gloucestershire and Worcestershire. These orchards were used mainly for cider production, and the development of canals in the late 18th century expanded the market for it. The industry continued to expand until during the 20th century it contracted as a result of disease, imports and taxes.

Depression hit agriculture in the 1870s and lasted until the Second World War, after which improvements on the better agricultural land reduced tree and hedgerow

cover and introduced substantial new farm buildings. Orchards, a prominent feature of the 19th-century landscape, disappeared through removal or neglect. However, it would be easy to exaggerate the effects of 20th-century change: the variety and distinctive character seen on the first edition of the Ordnance Survey six inch series in 1870 persists, in the main, down to the present day, though remnants of heath supporting bilberry, ling and cross-leaved heath which were found within the Woolhope Dome until relatively recently have now disappeared.

Change in the agricultural landscape has seen the intensification of arable farming, the extension of coniferous woodland, the abandoning or conversion of farm buildings no longer required for agricultural use and a modest increase in the size of the larger settlements. Newent and Dymock have grown modestly from medieval market centres and a localised horticultural industry has developed to the north of Newent. Dymock has given its name to a group of poets which included Rupert Brooke and Robert Frost who gathered around Lascelles Abercrombie’s cottages at Ryton in the early years of the 20th century. Abercrombie himself wrote in celebration of the area’s famous daffodils. The Wye Valley AONB was designated in 1971.

Owing to the high fertility of the soil, agriculture continues to dominate the area, with small remnants of semi-natural habitat surviving on the steeper, less productive ground. More recently, the fertile flood plain of the River Wye has been used for more intensive agriculture. There has also been considerable diversification of crops, the most significant being the expansion of soft fruit (through the use of polytunnels) and less traditional crops such as asparagus on the versatile Ross sands. Bush orchards have also increased with the expansion of the cider industry.

⁷ General View of the Agriculture of the County of Hereford ... John Clark (1794), Volume 4, Issue 5

⁸ Herefordshire Through Time: <http://htt.herefordshire.gov.uk/534.aspx>

Ecosystem services

The South Herefordshire and Over Severn NCA provides a wide range of benefits to society. Each is derived from the attributes and processes (both natural and cultural features) within the area. These benefits are known collectively as 'ecosystem services'. The predominant services are summarised below. Further information on ecosystem services provided in the South Herefordshire and Over Severn NCA is contained in the 'Analysis' section of this document.

Provisioning services (food, fibre and water supply)

- **Food provision:** This NCA has a long history of food production, which relates to the quality of the soils, particularly the fertility of the flood plain, and the relatively flat nature of the landscape, providing easy accessibility for cultivation. Livestock farms are greater than arable in terms of numbers; however, in terms of area they are about equal.
- **Water availability:** The main rivers in this NCA are the Wye, the Monnow and the Leadon. The Wye rises at Plynlimon in the Cambrian Mountains of Wales and has a very large catchment within a high rainfall area, and the Monnow rises near Craswall on the English–Welsh border, while the source of the Leadon is at Evensbach near Ledbury. The NCA does not overlie any major aquifers. There is 'no water available' for additional abstraction from the River Wye or the River Monnow or their tributaries within the NCA.
- **Genetic diversity:** This and the surrounding NCAs of the major fruit producing counties of Gloucestershire, Herefordshire and Worcestershire retain a wide range of local varieties of orchard fruit cultivated over hundreds of years. It is important to maintain genetic diversity of orchard

fruit varieties in order to safeguard food provision, and afford increased resilience to climate change and disease.

Regulating services (water purification, air quality maintenance and climate regulation)

- **Regulating soil erosion:** Reflecting the susceptibility to soil erosion, approximately two-thirds of the NCA, to the west, lies within Defra's River Wye priority catchment. Soil erosion is an identified problem, especially where soils are left bare under potato cropping, and under maize production where fields are left bare over the winter other than the remaining maize stubble. In turn, erosion of soils is leading to the siltation of rivers, of particular concern in the Wye SAC.
- **Regulating soil quality:** Where the soil is under semi-natural habitat and tree cover in this NCA it is maintained in good condition. However, where the soil is under agricultural use, maintaining and improving its quality will safeguard and retain productive food provision in the long term and increase the soil's resilience to climate change and extreme weather events.
- **Regulating water quality:** The NCA falls within the River Wye priority catchment, which has problems associated with agricultural diffuse pollution and soil run-off. Priorities under the Catchment Sensitive Farming Project for the River Wye priority catchment are to reduce the loss of sediment, nutrients and pesticides in the catchment and to reduce run-off from agricultural fields and poaching of river banks by livestock.
- **Pollination:** Pollination services are important for the various crops of the area, particularly fruit production. Semi-natural habitats supplying

nectar provision for pollinators, including flower-rich hedgerows and road verges, are scattered throughout the agricultural area of the NCA. This is further enhanced by the significant number of traditional and bush orchards which act as important sources of nectar for pollinating insects. In spring, the woodland ground flora also bolsters the nectar supply.

Cultural services (inspiration, education and wellbeing)

- **Sense of place/inspiration:** A sense of place is provided by the undulating, intricate landscape with the prominent, rounded Garway Hills to the west and Woolhope Dome to the north. The lower rolling ground and narrow meandering flood plains of the River Wye and its tributaries winding between Hereford and Ross-on-Wye are a key part of the landscape's character. Though commercial agriculture covers a large proportion of this NCA, the rural character is maintained and a large part of it is protected by AONB designations. The wild daffodil meadows of Over Severn have long inspired poets such as Brooke, Frost and Abercrombie.
- **Sense of history:** The history of the landscape is evident in prehistoric burial sites, iron- age hill forts on several hill summits, Norman castles and moated sites, medieval manorial centres characterised by the grouping of a motte, reflecting the past threat of Welsh invasion. Substantial farmsteads with houses and working buildings dating from the 17th and 18th centuries relate to the re-organisation of farmland over that period, and its agricultural prosperity.
- **Tranquillity:** According to the Campaign to Protect Rural England Intrusion Map, levels of intrusion have increased dramatically since the 1960s with undisturbed areas decreasing from just less than 97 per cent in the 1960s

to 66 per cent in 2007. The largest 'undisturbed' areas occur away from the major settlements of Hereford, Ross-on-Wye and Newent, and the main road corridors (M50, A49, A465 and A40). Nevertheless, the area retains a strong sense of tranquillity with the its strongly rural character

- **Recreation:** Recreation is supported by the area's 877-kilometre rights of way network (with a density of 1.7 km per km²) as well as 278 ha of open access land (0.5 per cent of the NCA). The wealth of rivers are important for fishing, with the Wye offering a major recreational corridor for canoeing, kayaking, camping and other outward bound activities.
- **Biodiversity:** There is one internationally designated site within the NCA, a portion of the River Wye SAC, supporting a number of important and rare species, including an exceptional range of aquatic flora. There are also 24 SSSI in the NCA, totalling over 950 ha (2 per cent of the NCA). There are over 4,300 ha of priority habitat within the NCA totalling 8 per cent of the area, including broadleaf woodland, fens, reedbeds, lowland dry acid grassland, lowland calcareous grassland, lowland meadow and heathland.
- **Geodiversity:** There are 41 Local Geological Sites within the NCA and 5 geological SSSI. It is worth noting that most of the geological sites are in disused quarries, reflecting the former importance of quarrying in the area and the value of these sites today for current and future geological research as well as opportunities to learn about the shaping of the NCA.

Statements of Environmental Opportunity

SEO 1: Protect and manage the woodland, parkland, traditional orchards and hedgerows with hedgerow trees that contribute to the well-wooded feel of the landscape, securing the new generation of replacement trees. Expand and restore the currently much-fragmented semi-natural habitats across the National Character Area (NCA) to enhance the ability of species to move across the landscape, enabling some resilience to climate change, and benefiting soil quality and water quality and reducing soil erosion.

For example, by:

- Bringing existing woodlands (especially ancient woodlands) and tree groups into active management where appropriate, particularly in the Garway Hills and lowlands, Woolhope Dome and Over Severn.
- Conserving and managing the distinctive clumps of trees found on the May Hill summit and the small areas of parkland-style planting around farmhouses.
- Managing and planning for a continuous resource of mature and veteran trees at wood pasture and parkland sites, replanting where appropriate, so that important invertebrate populations, lichen communities and fungi can be conserved and valued historic landscape features can be retained.
- Bringing traditional orchards into active management and seeking to extend the area of traditional orchards to ensure a continuity of deadwood and rot holes and increase the variability of age structure of orchard trees; retaining orchards for their deadwood habitat value and where possible improving the condition of the underlying grassland to enhance the lowland meadow resource.
- Encouraging regeneration and planting of local orchard fruit varieties, raising awareness of them and linking owners with suppliers.
- Restoring or maintaining traditional orchard buildings such as cider houses and field barns which contribute to the history and cultural associations of orchards across this and neighbouring orchard-rich areas.
- Managing and restoring species-rich hedgerows, particularly in areas where hedgerow decline has been most marked, to benefit species and contribute to the reduction of soil erosion, improving soil and water quality. In the Garway Hills and May Hill area encourage tall, thick hedgerows, particularly in areas of common land, manage mature hedgerow trees and restore viable hedgerow tree populations, reflecting characteristic patterns and species composition.
- Managing, monitoring and, where appropriate, controlling diseases, pests and other threats which may cause substantial mortality in tree species and woodland habitats, and seeking to mitigate the landscape impact of any loss.
- Managing existing areas of semi-natural grassland and riverside meadows, particularly along the river valley flood plains of the Monnow, Wye and Leadon. Encouraging the creation of semi-natural grassland and riverside meadows, particularly where they may link existing grassland areas, notably in the Garway Hills, Woolhope Dome, Over Severn daffodil areas and May Hill area, benefiting both the ecology and ecosystem services such as water and soil quality and water regulation (through increased infiltration) and reducing soil erosion.
- Using local traditional breeds of livestock such as Hereford cattle, where appropriate, for conservation grazing, maintaining a genetic resource in the county of origin.

SEO 2: Sustainably manage the productive agricultural landscape, enhancing food provision and increasing permeability to the movement of species. Manage in such a way as to preserve and enhance soil condition and water quality and reduce soil erosion, particularly in relation to the River Wye Special Area of Conservation.

For example, by:

- Working with the local farming community to improve and expand sustainable food production as appropriate, and safeguard future food production while enhancing key ecosystem services such as biodiversity, water quality, water regulation (flooding), soil erosion and quality, pollination services and genetic diversity.
- Developing stronger branding for locally produced food, and encouraging the purchasing of local produce to benefit the local economy, climate regulation and local culture, thus maintaining and strengthening farming and its associated cultural landscapes and the wildlife that it supports.
- Maintaining and increasing farmland bird populations through the use of appropriate agri-environment options.
- Encouraging the protection of areas of ridge and furrow and other historic earthworks, particularly in Leadon Vale, through appropriate management.
- Reducing sources of diffuse pollution in the rivers Wye and Leadon catchment sensitive farming target areas by promoting soil and nutrient management planning and improved pesticide practice, plus capital grants works that facilitate dirty water separation and alleviate soil run-off.
- Encouraging well-designed winter water storage reservoirs on farms to help to alleviate the levels of abstraction for water used on farmland during dry periods.
- Restoring hedgerow boundaries and creating buffer strips to intercept soil run-off on slopes.
- Maintaining and expanding the network of semi-natural habitats adjacent to watercourses to act as a buffer against diffuse pollution.
- Creating grassland buffer strips within arable farming systems and adjacent to watercourses to intercept soil run-off pesticides and nutrients and reduce the volumes entering directly into river systems.
- Supporting measures which employ minimal tillage and increase organic matter incorporation into the soil to improve soil structure and conditions for soil fauna, increase water infiltration and also relieve soil compaction on a landscape scale.
- Working with the farming community to achieve appropriate stocking regimes which avoid poaching and reduce erosion.
- Encouraging the use of nectar and forage mixes, field margins, beetle banks and headlands in arable land, to encourage species which will benefit crop productivity through pollination and pest control and to enhance the permeability of the arable landscape to all species.

SEO 3: Maintain and enhance the many historic features and characteristic settlement pattern of rural hamlets, isolated farmsteads and small villages and towns using local materials. Preserve the tranquil rural character of the area, protecting and promoting the biodiversity, geodiversity, access, recreation and heritage of the area.

For example, by:

- Ensuring the appropriate use of local materials, vernacular styles and protection of the area's historic settlement pattern, including through the small-scale development of its small hamlets, and conserving traditional farm buildings through continued and new uses with local materials and techniques.
- Encouraging the sympathetic use of important buildings in the landscape, including through conversion where appropriate. Ensuring that any development and infrastructure within the Area of Outstanding Natural Beauty (AONB) is in keeping with the aims of the AONB designation and encouraging that existing and new power and telephone cables should be placed underground to minimise visual impact, particularly within the AONB.
- Protecting the historical features of the area that reflect the continuity of human occupation, such as Norman castles, remnants of Roman activity and iron-age forts and earthworks.
- Encouraging the use of best practice cultivation and agricultural methods to ensure the preservation of buried archaeological remains and above-ground earthworks, recognising also the high potential in this area for new discoveries.
- Managing and restoring field boundaries including hedgerows, hedgerow trees and drainage ditches in keeping with local styles and management traditions.
- Encouraging the management of fragments of characteristic commons, sometimes at the heart of villages, through appropriate grazing regimes and scrub clearance, particularly around the villages and hamlets in the Garway Hills, Woolhope and May Hill area. Encourage management to support ecological links between the commons on the Woolhope Dome and those close-by in the adjacent Herefordshire Lowlands NCA to the north.
- Support parish councils to sustainably manage verges, encouraging wild flowers, acting as wildlife corridors to increase permeability of the landscape to wildlife and enhancing sense of place.
- Ensuring that levels of signage on roads and trails are appropriate for the rural setting, particularly within the AONB.
- Protecting and maintaining rock exposures and encouraging access agreements to key geodiversity sites, such as work to restore good condition of overgrown and endangered geological Sites of Special Scientific Interest, for example Linton Quarry. Improve access to cuttings, quarries and other geological glacial and fluvial features by improving footpaths and providing signage and interpretation.
- Promoting awareness of the Local Geological Sites, many of which have been important in the development of geology as a science, especially those on the Woolhope Dome.
- Raising awareness of the importance of Local Sites (biological and geological) to heritage and to the unique habitats that they provide.

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- Maintaining the availability of local stone for building restoration through small sustainably managed local quarries.
- Identifying and realising opportunities to enhance the setting, interpretation and legibility of historic features including buildings and earthworks, and their wider settings, to increase the understanding of the importance of historic land use in shaping the current landscape.
- Promoting recreation and access for its health benefits, sense of wellbeing and connection with the landscape, sustainably managing access, recreational and educational opportunities, particularly in the more actively used areas of the Wye Valley.
- Continuing to develop and implement the Rights of Way Improvement Plan for Herefordshire and for Gloucestershire, encouraging the use, interpretation and maintenance of the National Cycle Network routes, long-distance footpaths including the Herefordshire Trail, Gloucestershire Way and Wye Valley Walk, and other public footpaths and rights of access within the NCA.
- Ensuring that paths are well marked and maintained and that key features, wildlife and points of interest are highlighted. Ensure that some surfaced paths are provided to enable easy access walks.



Ross-on-Wye's 17th-century market hall built in local red sandstone.

SEO 4: Protect and enhance the rivers Wye, Leadon and Monnow and their tributaries for their internationally important biodiversity associated with the River Wye Special Area of Conservation, their contribution to landscape, the ecological network, and sense of place and inspiration, and for the regulating services that they provide including water flow, water quality and water availability.

For example, by:

- Ensuring that fish passes are installed where required, enabling the natural migration of fish to upstream spawning grounds.
- Retaining, restoring and extending bankside vegetation and wet meadows to reduce soil erosion and improve water quality.
- Creating grassland buffer strips and maintaining hedgerows on arable land running across slopes to reduce soil erosion and nutrient run-off.
- Maintaining woodland cover which provides integrated benefits to soil quality, water flow and water quality and reduces soil erosion.
- Ensuring that good livestock husbandry prevails across the landscape to minimise soil compaction, soil erosion and diffuse pollution.
- Controlling non-native invasive species in this and NCAs further up the catchment as part of a co-ordinated approach with upstream NCAs, especially Himalayan balsam which results in exposed unvegetated river banks during the winter, thereby exacerbating erosion.
- Providing educational and recreational opportunities that improve understanding and appreciation of the special qualities of the River Wye's habitats and geology.
- Sustainably managing and monitoring the watersports and other recreational impacts on the river environment.



View east along the River Wye from Ballingham Hill, Nov 1994.

Supporting document 1: Key facts and data

South Herefordshire and Over Severn National Character Area (NCA): 51,148 ha

1. Landscape and nature conservation designations

The Wye Valley (12,836 ha) and Malvern Hills (295 ha) Areas of Outstanding Beauty (AONB) fall within the South Herefordshire and Over Severn NCA.

Management plans for the protected landscape can be found at:

- www.wyevalleyaonb.co.uk/
- www.malvernhillsaonb.org.uk/

Source: Natural England (2011)

1.1 Designated nature conservation sites

The NCA includes the following statutory nature conservation designations:

Tier	Designation	Designated site(s)	Area (ha)	% of NCA
International	n/a	n/a	0	0
European	Special Protection Area (SPA)	n/a	0	0
	Special Area of Conservation (SAC)	River Wye SAC	271	1
National	National Nature Reserve (NNR)	n/a	0	0
National	Site of Special Scientific Interest (SSSI)	A total of 24 sites wholly or partly within the NCA	950	2

Source: Natural England (2011)

Please note: (i) Designated areas may overlap (ii) all figures are cut to Mean High Water Line, designations that span coastal areas/views below this line will not be included.

There are 183 local sites in the South Herefordshire and Over Severn NCA, covering 4,319 ha which is 8 per cent of the NCA.

Source: Natural England (2011)

- Details of individual Sites of Special Scientific Interest can be searched at: <http://www.sssi.naturalengland.org.uk/Special/sssi/search.cfm>
- Details of Local Nature Reserves (LNR) can be searched at: http://www.lnr.naturalengland.org.uk/Special/lnr/lnr_search.asp
- Maps showing locations of Statutory sites can be found at: <http://magic.defra.gov.uk/website/magic/> – select 'Rural Designations Statutory'

1.1.1 Condition of designated sites

Condition category	Area (ha)	% of SSSI land in category condition
Unfavourable declining	15	2
Favourable	499	53
Unfavourable no change	6	<1
Unfavourable recovering	431	45

Source: Natural England (March 2011)

- Details of SSSI condition can be searched at: <http://www.sssi.naturalengland.org.uk/Special/sssi/reportIndex.cfm>

2. Landform, geology and soils

2.1 Elevation

The lowest elevation in this NCA is 18 m; the highest point is 361 m. The mean elevation across the NCA is 99 m.

Source: Natural England (2010)

2.2 Landform and process

The landscape directly reflects the underlying rock structure with higher land where there are harder more resistant rocks. There are three distinct landscape typologies derived from the underlying geological structure; Woolhope Dome and Over Severn, Lower Wye and The Garway Hills.

At Woolhope Dome a radial pattern of drainage developed on the dome, but the streams have preferentially chosen to erode their valleys on the softer shale bands.

Around the edges of the Woolhope Dome, there exists steeply dipping limestones with thin bands of bentonite clay. Groundwater seepage lubricates these bands and landslips occur such as 'The Wonder' near Much Marcle and 'Dormington Slip' near Perton Quarry, which itself has also been affected by a landslip.

Within the Woolhope and Over Severn area, there are three rather different landforms; the Woolhope Domes, the hills and vales landscape around Newent and the lower, more rolling landscape around Dymock.

The Lower Wye includes some large amplitude meanders of the River Wye and the valley profile changes as it passes from one underlying rock type to another.

The landscape tends to be of an undulating nature within the Lower Wye area.

Rivers are depositing alluvium on the valley floors in times of flood at the present day.

The Garway Hills in the NCA abut the Welsh Border on their south western edge, rising out of the Lower Wye landscape to the east and the Herefordshire Lowlands to the north. The smooth, flowing landforms produce a rolling countryside, which contrasts with the dramatic and irregular topography of the Welsh landscape to the south-west.

Source: South Herefordshire and Over Severn Countryside Character Area Description

2.3 Bedrock geology

The overall landscape is dominated by Raglan Mudstone Formation (Silurian), St Maughans Formation and Brownstones Formation (Lower Devonian). These are collectively known as Old Red Sandstone. At Woolhope and Over Severn, upfolded Silurian limestones, shaley mudstone and siltstone form the Woolhope Dome. Erosion of the domed upfold has exposed a succession of different rocks. The oldest rocks are the Llandoverly May Hill Sandstone Group (Lower Silurian). These are the sandstones of the Haugh Wood Formation which outcrops in the centre of the Woolhope Dome. The Wye Valley is separated from the hilly land of the Woolhope Dome to the east by the line of the Woolhope Fault, which runs from north north-west to south south-east. The viewpoint at Capler is on the east side of the fault with spectacular views from the high land over the valley below to the south-west. In the Newent area, there are Coal Measures deposits.

Source: Geological Narrative West Midlands Geodiversity Partnership, South Herefordshire and Over Severn Countryside Character Area Description

2.4 Superficial deposits

Along the River Wye there are a series of remnants of river terrace deposits, usually on the inside of meander bends. These are formed of gravels transported by meltwater during the last interglacial period and show the former higher levels of the valley floor. At Holme Lacy there are remnants of the highest and oldest of the river terraces, the Fourth Terrace Deposits of the River Lugg and Proto Wye. In the Huntsham Bridge area, the valley widens out as the river emerges from the narrow gorge cut in the harder rocks of the Forest of Dean Plateau. Here are river terrace deposits inside a large meander bend. Rivers are depositing alluvium on the valley floors in times of flood at the present day. Red soils are characteristic of the 'Old Red Sandstone'. The St Maughans Formation and Brownstones Formation rocks in this area are Lower Devonian in age.

Source: Geological Narrative West Midlands Geodiversity Partnership, South Herefordshire and Over Severn Countryside Character Area Description

2.5 Designated geological sites

Designation	Number
Geological Site of Special Scientific Interest (SSSI)	5
Mixed interest SSSI	0

There are 41 Local Geological Sites within the NCA.

Source: Natural England 2011

- Details of individual Sites of Special Scientific Interest can be searched at: <http://www.sssi.naturalengland.org.uk/Special/sssi/search.cfm>

2.6 Soils and Agricultural Land Classification

To the east and south, the Siluro-Devonian sandstones, marls and conglomerates of the Lower Old Red Sandstone give distinctive red soils, very different from the grey Silurian soils of Woolhope Dome. The Old Red Sandstone forms soil of high agricultural quality augmented by alluvium.

Source: Geological Narrative West Midlands Geodiversity Partnership, South Herefordshire and Over Severn Countryside Character Area Description

The main grades of agricultural land in the NCA are broken down as follows (as a proportion of total land area):

Agricultural Land Classification	Area (ha)	% of NCA
Grade 1	3,085	6
Grade 2	20,050	39
Grade 3	21,653	42
Grade 4	3,827	8
Grade 5	0	0
Non-agricultural	2,214	4
Urban	277	1

Source: Natural England (2010)

- Maps showing locations of statutory sites can be found at: <http://magic.defra.gov.uk/website/magic/> - Select 'Landscape' (shows ALC and 27 types of soils)

3. Key water bodies and catchments

3.1 Major rivers/canals

The following major rivers/canals (by length) have been identified in this NCA.

Name	Length in NCA (km)
River Wye	41
Afon Mynwy/River Monnow	15
River Leadon	10
River Dore	1

Source: Natural England (2010)

Please note: other significant rivers (by volume) may also occur. These are not listed where the length within the NCA is short.

The Wye, with its wide incised meanders and prominent riverside slip-off slopes, drains southwards through the area. The principle river near Woolhope and Over Severn is the Leadon, draining south-eastwards towards the Severn, fed by a complex dendritic drainage pattern in the many valleys at its head. However, on the northern and western edge of the Dome, small streams drain radially to the Wye and Frome. Within the Garway Hills, the River Monnow flows along the south-western edge and short streams drain into it from the ridge that extends through Welsh Newton to Kentchurch. To the north-east, Garren Brook drains south-eastwards into the Wye, fed by numerous streams arising in the steep-sided valleys.

3.2 Water quality

The total area of Nitrate Vulnerable Zone is 47,737 ha, which is 93 per cent of the NCA.

Source: Natural England (2010)

3.3 Water Framework Directive

Maps are available from the Environment Agency showing current and projected future status of water bodies at: http://maps.environment-agency.gov.uk/wiyby/wiybyController?ep=maptopics&lang=_e



View from Sellack across Wye to Kings Caple.

4. Trees and woodlands

4.1 Total woodland cover

The NCA contains 6,272 ha of woodland (12 per cent of the total area), of which 3,824 ha is ancient woodland.

Source: Natural England (2010), Forestry Commission (2011)

4.2 Distribution and size of woodland and trees in the landscape

In the Lower Wye area, woodland is confined almost entirely to the steep outer slopes of the river bends, while hedges are very variable. Some are lush and overgrown with large hedgerow trees. Many more are severely cut back. In other cases, only a scattered line of trees and individual shrubs survive. There are commercial bush orchards, but the older orchards, with much more varied range of trees, are found mainly at the edges of the hamlets and around the



Traditional orchard in blossom.

farm houses. The Woolhope Dome area has abundant woodland, such as the extensive Haugh Wood, which lies adjacent to the acidic Broadmoor Common at the very centre of the Dome, and much of it is coniferous. The enclosed valleys, such as that around Sollers Hope, also have a well-wooded appearance, not least from the small fields and overgrown hedges on the steeper slopes. Orchards are numerous, predominantly in the north and east of Woolhope, and were formally much more extensive. Well-wooded parks are a particular feature, including Repton's Sufton Court, Stoke Edith and Brockhampton and the extensive parkland around the sheltered village of Woolhope.

Source: Dean Plateau and Wye Valley Natural Area Profile, South Herefordshire and Over Severn Countryside Character Area Description

4.3 Woodland types

A breakdown of the area and type of woodland found across the NCA is detailed below.

Area and proportion of different woodland types in the NCA (over 2 ha).

Woodland type	Area (ha)	% of NCA
Broadleaved	3,837	8
Coniferous	1,504	3
Mixed	515	1
Other	416	1

Source: Forestry Commission (2011)

Area and proportion of Ancient Woodland and Planted Ancient Woodland within the NCA:

Type	Area (ha)	% of NCA
Ancient semi-natural woodland	1,551	3
Ancient re-planted woodland (PAWS)	2,272	4

Source: Natural England (2004)

5. Boundary features and patterns

5.1 Boundary features

Hedgerows are generally with some sparse trees.

**Source: South Herefordshire and Over Severn Countryside Character Area Description;
Countryside Quality Counts (2003)**

5.2 Field patterns

There is a predominant pattern of multi-period enclosures. This varies from large to medium fields, with variable, commonly low hedges which represent the end product of the continual process of assortment in the Saxon and medieval periods, possibly earlier, with the subsequent rationalisation and boundary removal.

**Source: South Herefordshire and Over Severn Countryside Character Area Description;
Countryside Quality Counts (2003)**



View west from May Hill across Ross (Penyard Hill on the left of Ross) to the Garway Hills beyond. On a clear day the Black Mountains of Wales are also visible.

6. Agriculture

The following data has been taken from the Agricultural Census linked to this NCA.

6.1 Farm type

The farm types in this area were relatively evenly divided between holdings primarily reliant on arable and horticulture on the one hand, and livestock on the other. Grazing livestock holdings accounted for 32 per cent of farms in 2009. In addition, 5 per cent of holdings were dairy farms and 3 per cent specialised in poultry. Cereal farms accounted for 13 per cent of holdings and 9 per cent were general cropping. Horticulture accounted for 10 per cent of farms. 8 per cent of holdings were mixed farms.

Source: Agricultural Census, Defra (2010)

6.2 Farm size

Farm sizes were relatively evenly distributed across size bands in 2009. 45 per cent of holdings were smaller than 20 hectares, but covered only 7 per cent of the agricultural area. 40 per cent of holdings were between 20 and 100 hectares and covered 36 per cent of the agricultural area. 16 per cent of holdings were larger than 100 hectares and covered 57 per cent of the agricultural area.

Source: Agricultural Census, Defra (2010)

6.3 Farm ownership

2009: Total farm area = 39,884 ha; owned land = 27,173 ha

2000: Total farm area = 39,315 ha; owned land = 29,293 ha

Source: Agricultural Census, Defra (2010)

6.4 Land use

Half the agricultural land area was under grass or uncropped land in 2009. 24 per cent was cereals, 4 per cent cash roots, 5 per cent oilseeds (up from 2 per cent in 2000), 1 per cent stock feed, 1 per cent vegetables and 6 per cent other arable crops. Fruit represented 3 per cent of the area, with small contributions from hardy nursery stock and glasshouses.

Source: Agricultural Census, Defra (2010)

6.5 Livestock numbers

In 2009 there were 80,600 sheep (125,900 in 2000), 27,700 cattle (29,700 in 2000) and 5,500 pigs (18,300 in 2000).

Source: Agricultural Census, Defra (2010)

6.6 Farm labour

The total agricultural workforce in 2009 was 2,288. Of this, 47 per cent were principal farmers, 9 per cent full-time workers, 8 per cent part-time workers and 2 per cent salaried managers. Casual/gang workers were 34 per cent of the workforce, up from 20 per cent in 2000.

Source: Agricultural Census, Defra (2010)

Please note: (i) Some of the Census data is estimated by Defra so will not be accurate for every holding (ii) Data refers to Commercial Holdings only (iii) Data includes land outside of the NCA belonging to holdings whose centre point is within the NCA listed.

7. Key habitats and species

7.1 Habitat distribution/coverage

Areas of semi-natural grassland are concentrated along the Woolhope Dome and the Over Severn. The Over Severn area supports many unimproved or semi-improved neutral grasslands with abundant wild daffodils. The abundance of wild daffodils characterises the Over Severn part of the NCA. Areas of limestone grassland are concentrated on the Silurian Limestone around the Woolhope Dome. Remnants of heath are also still to be found on Woolhope Dome. Hedgerows of several hundred years in age are found throughout this NCA, in places such as Peterstow and Ballingham, they could even be a thousand years old based on very early monastic estate boundaries.

Source: Dean Plateau and Wye Valley Natural Area Profile

7.2 Priority habitats

The Government's new strategy for biodiversity in England, Biodiversity 2020, replaces the previous Biodiversity Action Plan (BAP) led approach. Priority habitats and species are identified in Biodiversity 2020, but references to BAP priority habitats and species, and previous national targets have been removed. Biodiversity Action Plans remain a useful source of guidance and information. More information about Biodiversity 2020 can be found at; <http://www.naturalengland.org.uk/ourwork/conservation/biodiversity/protectandmanage/englandsbiodiversitystrategy2011.aspx>

The NCA contains the following areas of mapped priority habitats (as mapped by National Inventories). Footnotes denote local/expert interpretation. This will be used to inform future national inventory updates.

Priority habitat	Area (ha)	% of NCA
Broadleaved mixed and yew woodland (broad habitat)	2,528	5
Coastal and flood plain grazing marsh	562	1
Lowland meadows	350	1
Fens	53	<1
Lowland calcareous grassland	40	<1
Purple moor grass and rush pastures	10	<1
Reedbeds	1	<1

Source: Natural England (2011)

Maps showing locations of priority habitats are available at

- <http://magic.defra.gov.uk/website/magic/> select 'Habitat Inventories'

7.3 Key species and assemblages of species

- Maps showing locations of priority habitats are available at: <http://magic.defra.gov.uk/website/magic/>
- Maps showing locations of 541 species are available at: <http://data.nbn.org.uk/>



Wild daffodil meadows of Over Severn have inspired poets and attracted tourists to the area.

8. Settlement and development patterns

8.1 Settlement pattern

Ross-on-Wye is the principal settlement, dominated by the spire of St Mary's Church, visible for miles along the valley. The remainder of the Ross, which is mainly 20th century housing, spreads northwards across the A40 to Blackfield and southwards to Tudorville with the built up and urban fringe character continuing across the river to Wilton. Outside of Ross, the main settlements are small hamlets and isolated farmsteads. 20th century development is limited in the Woolhope and Over Severn area. Modern housing is prominent on the edge of Newent. The rest of the area is characteristically farmsteads and hamlets.

Source: South Herefordshire and Over Severn Countryside Character Area Description; Countryside Quality Counts (2003)

8.2 Main settlements

The main settlements within the NCA are Ross-on-Wye, Woolhope, Newent, King's Thorn, Fownhope and Llangrove. The total estimated population for this NCA (derived from ONS 2001 census data) is 36,322.

Source: South Herefordshire and Over Severn Countryside Character Area Description; Countryside Quality Counts (2003)

8.3 Local vernacular and building materials

Within the Lower Wye area of the NCA, Ross-on-Wye is the principle settlement, with an attractive core of 18th and 19th century rendered buildings and market centre. The remainder of Ross is mainly 20th century housing. Outside Ross, sandstones of the Lower Old Red Sandstone predominate as building stones, even if they are in places rendered and whitewashed. There are many typical Herefordshire foursquare houses

with hipped slate roofs and massive farmstead buildings with rugged faces of heavily weathered sandstone. Within Woolhope and Over Severn, the characteristic settlements of the area are farmsteads and hamlets commonly of brick, black and white timber framing and grey Silurian limestone.

Source: South Herefordshire and Over Severn Countryside Character Area Description; Countryside Quality Counts (2003)



Building in grey Silurian Limestone of the Woolhope Dome and May Hill area.

9. Key historic sites and features

9.1 Origin of historic features

There is little evidence that this area was well-settled in the prehistoric and Romano-British period. Major market centres at Ross-on-Wye, Newent and Dymock developed from the late 11th century. There is a high concentration of motte and bailey castles (late 11th and 12th century) and moated sites (mostly 13th to 14th century). Medieval manorial centres characterised by grouping of a motte, church and later manor house (for example, Peterstow). The Welsh influence is strong to place names in the west of the NCA, with the Garway Hills area remaining part of the Welsh diocese of St David's until the 19th century.

Source: Countryside Quality Counts Draft Historic Profile, Countryside Character Area Description

9.2 Designated historic assets

This NCA has the following historic designations:

- 5 Registered Parks and Gardens covering 443 ha.
- 0 Registered Battlefields.
- 53 Scheduled Monuments.
- 1,461 Listed Buildings.

Source: Natural England (2010)

- More information is available at the following address:
www.english-heritage.org.uk/caring/heritage-at-risk/
- www.english-heritage.org.uk/professional/protection/process/national-heritage-list-for-england/

10. Recreation and access

10.1 Public access

- 5 per cent of the NCA (2,338 ha) is classified as being publically accessible.
- There are 877 km of public rights of way at a density of 1.7 km per km².
- There are no National Trails within the NCA.

Source: Natural England (2010)

The following table shows the breakdown of land which is publically accessible in perpetuity:

Access designation	Area (ha)	% of NCA
National Trust (accessible all year)	91	<1
Common Land	197	<1
Country Parks	0	0
CROW Access Land (Section 4 and 16)	1,022	<1
CROW Section 15	61	<1
Village Greens	6	<1
Doorstep Greens	0	<1
Forestry Commission Walkers Welcome Grants	1,314	3
Local Nature Reserves (LNR)	14	<1
Millennium Greens	1	<1
Accessible National Nature Reserves (NNR)	0	0
Agri-environment Scheme Access	1	<1
Woods for People	1,961	4

Sources: Natural England (2011)

Please note: Common Land refers to land included in the 1965 commons register; CROW = Countryside and Rights of Way Act 2000; OC and RCL = Open Country and Registered Common Land.

11. Experiential qualities

11.1 Tranquillity

Based on the CPRE map of tranquillity (2006) undisturbed land lies around the less inhabited Garway Hills and Woolhope Dome. The largest areas of undisturbed land tend to be located in the north-east and south-west of the NCA and are divided by the A49 corridor. Large areas of disturbed land are found around the settlement of Ross on Wye and along the A40 and A49 corridors.



River Wye.

A breakdown of tranquillity values for this NCA are detailed in the table below:

Category of tranquillity	Score
Highest	45
Lowest	-52
Mean	3

Sources: CPRE (2006)

More information is available at the following address: www.cpre.org.uk/what-we-do/countryside/tranquil-places/in-depth/item/1688-how-we-mapped-tranquillity

11.2 Intrusion

The 2007 Intrusion Map (CPRE) shows the extent to which rural landscapes are 'intruded on' from urban development, noise (primarily traffic noise), and other sources of visual and auditory intrusion. This shows a corridor of disturbance along the route of the A50/M50. A breakdown of intrusion values for this NCA is detailed in the following table.

Intrusion category	1960s (%)	1990s (%)	2007 (%)	Percentage change (1960s-2007)
Disturbed	3	23	33	30
Undisturbed	97	77	66	31
Urban	0	0	1	1

Sources: CPRE (2007)

Notable trends from the 1960s to 2007 were a significant increase in the area of disturbed/intruded land by 30 per cent, matched by similar levels in decrease in the areas of undisturbed/un-intruded land by 31 per cent.

- More information is available at the following address: www.cpre.org.uk/resources/countryside/tranquil-places

12. Data sources

- British Geological Survey (2006)
- Natural Area Profiles, Natural England (published by English Nature 1993-1998)
- Countryside Character Descriptions, Natural England (regional volumes published by Countryside Commission/Countryside Agency 1998/1999)
- Joint Character Area GIS boundaries, Natural England (data created 2001)
- National Parks and AONBs GIS boundaries, Natural England (2006)
- Heritage Coast Boundaries, Natural England (2006)
- Agricultural Census June Survey, Defra (2000,2009)
- National Forest Inventory, Forestry Commission (2011)
- Countryside Quality Counts Draft Historic Profiles, English Heritage (2004)*
- Ancient Woodland Inventory, Natural England (2003)
- Priority Habitats GIS data, Natural England (March 2011)
- Special Areas of Conservation data, Natural England (data accessed in March 2011)
- Special Protection Areas data, Natural England (data accessed in March 2011)
- Ramsar sites data, Natural England (data accessed in March 2011)
- Sites of Special Scientific Interest, Natural England (data accessed in March 2011)
- Detailed River Network, Environment Agency (2008)
- Source protection zones, Environment Agency (2005)
- Registered Common Land GIS data, Natural England (2004)
- Open Country GIS data, Natural England (2004)
- Public Rights of Way Density, Defra (2011)
- National Trails, Natural England (2006)
- National Tranquillity Mapping data, CPRE (2007)
- Intrusion map data, CPRE (2007)
- Registered Battlefields, English Heritage (2005)
- Record of Scheduled Monuments, English Heritage (2006)
- Registered Parks and Gardens, English Heritage (2006)
- World Heritage Sites, English Heritage (2006)
- Incorporates Historic Landscape Characterisation and work for preliminary Historic Farmstead Character Statements (English Heritage/Countryside Agency 2006)

Please note all figures contained within the report have been rounded to the nearest unit. For this reason proportion figures will not (in all) cases add up to 100 per cent. The convention <1 has been used to denote values less than a whole unit.

Supporting document 2: Landscape change

Recent changes and trends

Trees and woodlands

- In 1999 about 15 per cent of the established eligible National Inventory of Woodland and Trees woodland stock was covered by a Woodland Grant Scheme management agreement by 2003 this was about 37 per cent.
- About 67 per cent of the woodland cover is on an ancient woodland site. The proportion of these sites covered by a Woodland Grant Scheme agreement in 1999 and 2003 increased from 15 per cent to 47 per cent.
- There are approximately 5,600 ha of woodland in the NCA, 11 per cent of its area. At the beginning of 2014, Forestry Commission data recorded 73 per cent of woodland in the NCA to be under some form of management and 27 per cent unmanaged.
- The larger blocks of woodland in the NCA, totalling 1,023 ha, are Forestry Commission owned and therefore not eligible for woodland grant schemes.
- In 2003 Countryside Stewardship annual agreements included restoration and management of 77 ha of traditional orchard. At the beginning of 2014, 98 ha of traditional orchards were managed under agri-environment agreements.

Boundary features

- The estimated boundary length for the NCA is about 4,828 km. Between 1999 and 2003 Countryside Stewardship capital agreements for linear features included 54 km of fencing, 31 km of hedgerow management, 48 km of hedge planting and restoration and 29 km of restored boundary protection, totalling management of about 3 per cent of the total boundary length in the NCA.
- By 2011, 19 km of ditches, 575 km of hedgerows, 0.2 km of stone walls and 38 km of stock-proof woodland fencing was managed or installed under Environmental Stewardship agreements, equating to about 13 per cent suggesting that there had been an increase in boundary management since 2003.
- Many of the hedgerows particularly in the productive areas remain over-cut and with few hedgerow trees or old hedgerow trees with no younger specimens to replace them.

Agriculture

- In terms of farm numbers agriculture is predominantly livestock rearing with some dairying, though in terms of area cropped land covers a similar hectareage to grass and uncropped land (Agricultural Census June Survey, Defra, 2000, 2009).

- The amount of cropped versus grass and uncropped land is similar in both the 2000 and 2009 agricultural census at around 20,000 ha of grass and uncropped land and circa 18,000 ha crops. The major difference between the 2000 and 2009 data is a huge decrease in the number of sheep (45,000 fewer in 2009) and pigs (13,000 fewer in 2009). This may indicate a reduction in grazing intensity which may be beneficial where overgrazing has been an issue; however, it may result in undergrazing and scrubbing up in some areas.
- The most extensive annual Countryside Stewardship agreements in 2003 were for lowland pastures on neutral/acid soils (512 ha) and regeneration of grassland/semi-natural vegetation (190 ha). In January 2014 live agreements showed Entry Level Stewardship options for low or very low input grassland covering the greatest area (1,817 ha), followed by the Higher Level Stewardship options for maintenance restoration and creation of species rich grassland (414 ha), protection of archaeology on grassland (238 ha) grass for target features (192 ha), parkland (132 ha), traditional orchards (98 ha) and wet grassland for wading birds (83 ha). In total Entry and Higher Level Environmental Stewardship options covered 28,869 ha (56 per cent of the NCA).

Settlement and development

- In general, development pressure is low and for Herefordshire is primarily associated with the market towns, Ross-on-Wye in the case of this NCA. The Herefordshire Core Strategy 2011–2031 (Draft March 2013) proposes an urban extension of new homes to the south-east of Ross-on-Wye at Hildersley. The remainder of new homes for Ross-on-Wye will be provided on a range of smaller sites, of less than 100 dwellings, in and around the town. New employment development is proposed at Model Farm. In total 900 new homes balanced with approximately 10 ha of employment land

are proposed during the plan period. The document also states that new development should reflect and enhance the characteristic built historic elements of Ross-on-Wye, such as its red sandstone and timber-framed Tudor buildings and boundary walls, the medieval plan form, conservation area and natural setting overlooking the River Wye.



Wind break alongside a field of fruit trees. Looking across the valley to fields, some with plastic sheeting.

- Within rural areas, new housing continues to be delivered through in significant numbers through the conversion of rural buildings, many being redundant agricultural buildings on farmsteads.⁹
- Within villages, carefully considered development which is proportionate to the size of the community and its needs will be permitted, only where residential proposals are locally appropriate to ensure villages retain their separate, distinctive and varied characters.
- The Core Strategy further states that “given the importance of the Herefordshire landscape, and particularly the Malvern Hills and Wye Valley Areas of Outstanding Natural Beauty, new dwellings should make a positive contribution to their rural landscape by being built to a high standard, incorporating appropriate materials and landscaping”.
- The Core Strategy covering the Forest of Dean District, Gloucestershire, highlights a small amount of development for Newent within the NCA.¹⁰

Semi-natural habitat

- There are approximately 4,106 ha of semi-natural priority habitat in the NCA (not including wood pasture and parkland), the majority of this being native broadleaf woodland, followed by fen and traditional orchard habitat.
- Countryside Quality Counts data suggests that in the period 1999–2003 agricultural improvement was leading to a loss of species-rich grassland particularly in the Garway lowlands and hills as well as Leadon Vale, and

that the remaining semi-natural habitats in the area were being fragmented by agricultural improvement. It was suggested that the environmental value of grasslands should be maintained through low usage of fertiliser and appropriate grazing regimes. In 2003 agri-environment options for lowland pastures on neutral/acid soils covered 512 ha and regeneration of grassland/semi-natural vegetation 190 ha. By January 2014 live agreements showed Entry Level Stewardship options for low or very low input grassland covering an area of 1,817 ha, and Higher Level Stewardship options for maintenance restoration and creation of species rich grassland covering 414 ha, suggesting that there has been some improvement in the situation.

- An area of 950 ha is designated as SSSI, of which, 53 per cent is considered in favourable condition, 45 per cent unfavourable recovering, <1 per cent unfavourable no change and 2 per cent unfavourable declining (January 2014). The unfavourable declining status is recorded on single units at four SSSI; Linton Quarry, a geological SSSI is suffering from scrub and ivy growth, while the remaining three SSSI are woodland units where overgrazing from deer is an issue.

Historic features

- In 1918 about 3 per cent of the NCA was historic parkland. By 1995 it is estimated that 51 per cent had been lost. Between 1999 and 2003 about 35 per cent of the remaining parkland was covered by a Historic Parkland Grant, and about 35 per cent was included within an agri-environment scheme. Approximately 77 per cent of historic farm buildings remained unconverted. About 85 per cent were intact structurally. Although historic farm buildings appeared to be at risk, given the coverage of agri-environmental agreements on 1918 historic parkland, the overall assessment in 2003 was that historic features were maintained.

⁹ Herefordshire Core Strategy 2011–2031 (Draft March 2013)

¹⁰ Core Strategy Adopted Version, Forest of Dean District Council (23 February 2012)

- The national priority habitat inventory currently (January 2014) records 1,186 ha of wood pasture and parkland habitat within the NCA, though the accuracy of some of the records is questionable. In January 2014, Environmental Stewardship Scheme Parkland options were applied to 132 ha a small fraction of the potential parkland area.



The now disused Rudge End Quarry. Here a geological fault is exposed in the Silurian Woolhope Limestone, along which movement occurred when the rocks in the dome were upfolded.

- Protection of archaeology on grassland accounted for 238 ha of options in January 2014.
- The English Heritage Risk Register 2013 identifies eight Buildings and Scheduled monuments at risk in this NCA.

Rivers

- The biological water quality in 1995 could not be determined. The chemical water quality in 1995 was predominantly good and was maintained through to 2003.
- Current data shows the majority of the Wye through the NCA is of good ecological quality except for the small section below Goodrich which is poor. The lower stretch of Garren Brook is recorded as poor because of the biological quality for fish being poor, fish passes and habitat improvement would aid the quality for fish. The remaining waterbodies are recorded as being of good or moderate ecological quality.

Minerals

- Extraction of sandstone for local building and restoration is at a small-scale and dependent on need and market demand. Callow Hill Quarry in the far south of the area near Welsh Newton has supplied red sandstone for the restoration of the parish church in Monmouth and the stone is still being worked. There are numerous disused limestone quarries in the Woolhope Dome area and at Perton Quarry the Aymestry Limestone is still being worked for roadstone.

Drivers of change

Climate change

- Climate change is likely to result in periods of heavy rain that may cause more frequent flood events in the narrow Wye flood plain. Settlements in the flood plain such as the main market town of Ross-on-Wye may experience increased flooding from the river. Cultivated land on the flood plain may remain under water for longer, reducing the potential growing season.
- Heavy rain may result in soil erosion in this NCA and higher up the Wye resulting in pollution of the watercourse downstream.
- Increased storminess, drought and prevalence of pests and diseases such as Phytophthora may result in the loss of ancient woodlands and mature and/or veteran trees, especially parkland trees.
- A longer growing season could potentially lead to double cropping with impacts on soil condition due to increased cultivation.
- More frequent droughts leading to increases in water demand for crop growth and drying out and erosion of soils.
- Species migration may occur resulting in changes to native species distribution and population sizes, fragmented or isolated habitats may be lost.
- Likely impact of climate change on orchards, both traditional and commercial bush orchards, needs to be monitored and managed. It is important to retain variability of genetic resource to allow adaptability to changing climate.¹¹
- Opportunities may arise for the planting of novel crops.

Other key drivers

- There is likely to be increased pressure for food production in the future as a result of a national drive for greater self-sufficiency in food. Within this NCA this may result in arable expansion of current farming systems, resulting in increased pressure on semi-natural habitats, archaeological features and ecosystem services such as water availability and water quality but may provide an opportunity to encourage low water consumption devices to be installed.
- The Wye catchment has been identified as a Catchment Sensitive Farming (CSF) Priority catchment, providing opportunities to work with landowners to reduce agricultural inputs reaching the river. The Wye Valley NIA partnership is also looking to build on the CSF work.
- Increasing fuel costs, particularly for off-mains rural areas, may result in more biomass installations, a growing demand for wood fuel and a knock on increase in woodlands being managed to provide wood fuel.
- Increased visitor numbers and recreational activities may mean that 'honey-pot' sites suffer high levels of disturbance, particularly along the River Wye and within the AONB.
- Although development pressure within this NCA is low, development within targeted settlements may impact upon the sense of place and tranquillity and increase surface water run-off within those settlements.

¹¹ [www.farmingfutures.org.uk/sites/default/files/casestudy/pdf/Fact per cent20Sheet per cent2016 per cent20Orchards.pdf](http://www.farmingfutures.org.uk/sites/default/files/casestudy/pdf/Fact%20per%20cent20Sheet%20per%20cent2016%20per%20cent20Orchards.pdf)

Supporting document 3: Analysis supporting Statements of Environmental Opportunity

The following analysis section focuses on a selection of the key provisioning, regulating and cultural ecosystem goods and services for this NCA. These are underpinned by supporting services such as photosynthesis, nutrient cycling, soil formation and evapo-transpiration. Supporting services perform an essential role in ensuring the availability of all ecosystem services.

Biodiversity and geodiversity are crucial in supporting the full range of ecosystem services provided by this landscape. Wildlife and geologically-rich landscapes are also of cultural value and are included in this section of the analysis. This analysis shows the projected impact of Statements of Environmental Opportunity on the value of nominated ecosystem services within this landscape.



Old railway bridge piers at Strangford.

Statement of Environmental Opportunity	Ecosystem Service																		
	Food provision	Timber provision	Water availability	Genetic diversity	Biomass provision	Climate regulation	Regulating water quality	Regulating water flow	Regulating soil quality	Regulating soil erosion	Pollination	Pest regulation	Regulating coastal erosion	Sense of place / Inspiration	Sense of history	Tranquility	Recreation	Biodiversity	Geodiversity
SEO 1: Protect and manage the woodland, parkland, traditional orchards and hedgerows with hedgerow trees that contribute to the well-wooded feel of the landscape, securing the new generation of replacement trees. Expand and restore the currently much-fragmented semi-natural habitats across the NCA to enhance the ability of species to move across the landscape, enabling some resilience to climate change, and benefiting soil quality and water quality and reducing soil erosion.	↘ **	↑ ***	↑ **	↑ ***	↗ ***	↑ **	↑ **	↑ **	↗ ***	↗ ***	↑ ***	↑ ***	NA	↑ ***	↑ ***	↑ ***	↗ ***	↑ ***	↔ ***
SEO 2: Sustainably manage the productive agricultural landscape, enhancing food provision and increasing permeability to the movement of species. Manage in such a way as to preserve and enhance soil condition and water quality and reduce soil erosion, particularly in relation to the River Wye Special Area of Conservation.	↗ **	↔ ***	↗ ***	↔ ***	↔ ***	↗ ***	↑ ***	↑ ***	↑ ***	↑ ***	↑ ***	↑ ***	NA	↗ ***	↗ ***	↗ ***	↔ ***	↗ ***	↔ ***
SEO 3: Maintain and enhance the many historic features and characteristic settlement pattern of rural hamlets, isolated farmsteads and small villages and towns using local materials. Preserve the tranquil rural character of the area, protecting and promoting the biodiversity, geodiversity, access, recreation and heritage of the area.	↔ ***	↔ **	↗ *	↔ ***	↔ ***	↗ **	↗ **	↗ **	↗ **	↗ **	↑ ***	↑ ***	NA	↑ ***	↑ ***	↑ ***	↑ ***	↑ ***	↑ ***
SEO 4: Protect and enhance the rivers Wye, Leadon and Monnow and their tributaries for their internationally important biodiversity associated with the River Wye Special Area of Conservation, their contribution to landscape, the ecological network, and sense of place and inspiration, and for the regulating services that they provide including water flow, water quality and water availability.	↔ ***	↔ **	↗ *	↔ ***	↔ ***	↔ *	↗ **	↗ **	↔ **	↔ **	↔ **	↔ **	NA	↑ ***	↗ **	↑ ***	↑ ***	↑ ***	↗ **

Note: Arrows shown in the table above indicate anticipated impact on service delivery: ↑ = Increase ↗ = Slight Increase ↔ = No change ↘ = Slight Decrease ↓ = Decrease. Asterisks denote confidence in projection (*low **medium***high) ° symbol denotes where insufficient information on the likely impact is available.

■ National Importance; ■ Regional Importance; ■ Local Importance

Landscape attributes

Landscape attribute	Justification for selection
An undulating landscape with some prominent rounded hills, lower rolling ground and narrow meandering flood plains, largely underlain by Old Red Sandstone, although the area around the Woolhope Dome and May Hill incorporates Silurian limestones, shaley mudstones and siltstones.	<ul style="list-style-type: none"> ■ Largely unifying geology of Old Red Sandstone creating rounded hills, variation in hardness of the rock formations creating narrow meanders and wider flood plain of the Wye between Mordiford and Fownhope enabling the Wye to have created its wide meandering path with abandoned and partially incised meanders further south. ■ Agriculturally important fertile red soils augmented by alluvium from river flooding both historically and currently. River terrace deposits, gravels laid down during the last interglacial, mark the former higher level of the valley floor. ■ The oldest rocks in the area from the Lower Palaeozoic consist of alternating fossiliferous limestones and shales and form the Woolhope Hills and May Hill. Around the Woolhope Dome, the limestones stand out as wooded escarpments. The ridges of Wenlock and Aymestry limestone form a double scarp feature almost encircling the Woolhope inlier.
Woodland largely confined to the steeper slopes adjacent to the flood plain and to hillsides. Trees often found in groups around farmsteads including small areas of parkland style planting.	<ul style="list-style-type: none"> ■ Good examples of ancient semi-natural woodlands such as Sharpnag Wood, Cherry Hill Woods and Common Hill Wood SSSI are found at Woolhope Dome. Oak and ash are the main canopy species and there is abundant cherry and yew as well as some lime and wild service. The ground flora is rich and reflects the calcareous nature of the soils with species such as stinking iris, spurge laurel and stinking hellebore. ■ Ancient semi-natural woodlands are also found along the valley of the River Monnow, and in the vicinity of King's Thorn, for example, Mynde Wood, Aconbury Hill and Nether Wood towards the north-west of the area. ■ The woods provide characteristic autumn and in spring wild daffodils are abundant in some around Dymock. ■ The Forestry Commission owns 1,022.5 ha of woodland in the NCA, allowing open access to this woodland.
Contrasting field pattern and land use between the flatter more productive areas and the steeper slopes of the hillsides.	<ul style="list-style-type: none"> ■ Scattered trees along hedgerows and water courses. Many traditional and bush orchards on slopes throughout the area. ■ Larger rectilinear fields in the arable areas, with commonly low hedges and fewer hedgerow trees, particularly around the Wye and Garren Brook. ■ Small irregular pastures with thicker hedges and many hedgerow trees found on the steeper slopes.
Unimproved grassland on areas of open common land and occasional remnants in small fields. Famous wild daffodil fields of Over Severn.	<ul style="list-style-type: none"> ■ The wild daffodils have inspired poets and encouraged tourism. ■ Calcareous grasslands are associated with the Silurian limestones of Woolhope Dome and May Hill. ■ Small patches of common survive, notably at the centre of the village of Peterstow. Garway Hill, May Hill, Moor Meadow and Backbury Common being the largest of the commons within the NCA. ■ Four SSSI designated for grassland interest and one for daffodils.
Meandering rivers with narrow flood plains.	<ul style="list-style-type: none"> ■ Meandering River Wye and its narrow flood plain with low hedges, ditches, scattered mature trees and pollarded willows. ■ Steeper wooded slopes confine the flood plain of the Monnow and Leadon in places. ■ Large houses with parkland overlooking the Wye. ■ River Wye designated nationally and internationally as SSSI and SAC for species such as native crayfish, otter, salmon, shad and lamprey.

Landscape attribute	Justification for selection
Wide range of historical features from iron-age hill forts to Norman castles and substantial houses set in parkland.	<ul style="list-style-type: none"> ■ 1,460 listed buildings, 53 scheduled monuments, 5 registered parks and gardens covering 443 ha and 1,495 ha of historic parkland. ■ Substantial houses such as Holme Lacy and Fawley Court, evidence of the wealth generated from the rich agriculture of the area. ■ Evidence of Palaeolithic human activity found in Merlin's Cave and Arthur's Cave at Doward on the border with the Forest of Dean and Lower Wye NCA. ■ Iron-age forts such as Little Doward on the NCA border, at Capler Camp near Brockhampton and Aconbury Hill. ■ Roman evidence such as the Roman town of Ariconium at Western-under-Penyard. ■ Norman castles such as Goodrich and Wilton.
Dispersed settlement pattern throughout the area consisting of small hamlets and scattered farmsteads, few larger towns such as Ross-on-Wye and Newent. Buildings predominantly of red sandstone in the west, east of the river Wye more variable materials include brick, timber framed and grey Silurian limestone.	<ul style="list-style-type: none"> ■ The Lower Wye is a landscape of large weathered sandstone farmsteads standing in their own fields and of numerous hamlets formed around a manor house and church. There are few villages. Sandstones of the Lower Old Red Sandstone predominate as building stones, in places rendered and whitewashed. ■ There are many typical Herefordshire foursquare houses with hipped slate roofs and massive farmstead buildings with rugged faces of heavily weathered sandstone. ■ Ross-on-Wye, the principal settlement of the NCA, is dominated by the spire of St Mary's Church, visible for miles along the valley. ■ Around the Woolhope Dome and Over Severn area, characteristic settlements are farmsteads and hamlets commonly of brick, black and white timber framing and grey Silurian limestone. There are also some fine manor houses like Old Court. Enclosed, winding, commonly single track lanes link the settlements. ■ In the Garway Hills the pattern of small hamlets and clusters of farmsteads, linked by numerous narrow lanes and only sporadically by a more substantial road, is typical of the Welsh borders.
A largely rural tranquil landscape of great aesthetic value and inspirational to poets.	<ul style="list-style-type: none"> ■ Few large settlements, Ross-on-Wye being the largest. The total urban settlement area covers 645 ha or only 1.3 per cent of the NCA. ■ Wye Valley AONB designated in 1971 covers 39 per cent of the NCA. ■ Dymock gave its name to a group of poets that gathered at Lascelles Abercrombie's cottages at Ryton in the early years of the 20th century, being inspired by the landscape and the area's famous daffodils. ■ In the 1930s daffodil tourism was popular and day trippers from London would travel on the train to see the daffodils of Over Severn.
Public rights of way network and areas of access land.	<ul style="list-style-type: none"> ■ 2,031 ha of accessible woodland. ■ 27.8 km of National Cycle Network trails. ■ Parts of the Herefordshire Trail, Gloucestershire Way and Wye Valley Walk long-distance footpaths pass through the area. ■ Access to the Wye for watersports is permitted only in places; however, a public right of navigation exists all the way to Hay-on-Wye.

Landscape opportunities

- Encourage the training of volunteers in surveying techniques and geoconservation methods, to improve the quality and understanding of geological sites and to retain the knowledge and skills required for their future management.
- Bring existing woodlands (especially ancient) and tree groups into active management particularly in the Garway Hills and lowlands, Woolhope Dome and sandstone ridge areas, and bring parkland style trees and woodlands on slopes and valley sides into management in the western part of this area. Manage the distinctive clumps of trees found on hill summits in the May Hill area and the small areas of parkland style planting around farmhouses.
- Plan for a continuous resource of mature and veteran trees at wood pasture and parkland sites, re-planting where appropriate, so that important invertebrate populations, lichen communities and fungi can be conserved and a valued historic landscape feature can be retained.
- Bring traditional orchards into active management and seek to extend their area and ensure a continuity of deadwood and rot holes and increase the variability of age structure of orchard trees. Improve the condition of the underlying grassland to enhance the lowland meadow resource. Restore or maintain traditional orchard buildings such as cider houses, which contribute to the history and cultural associations of orchards across this and neighbouring orchard-rich areas.
- Manage and restore field boundaries including hedgerows, hedgerow trees and drainage ditches in keeping with local styles and management traditions particularly in areas where hedgerow decline has been most marked. In the Garway Hills and May Hill area, encourage tall thick hedgerows particularly in areas of common land, manage mature hedgerow trees and restore viable hedgerow tree populations reflecting characteristic patterns and species composition.
- Maintain and increase farmland bird populations through use of appropriate agri-environment options.
- Encourage the management of fragments of commons through appropriate grazing regimes and scrub clearance particularly around the villages and hamlets in the Garway Hills, Woolhope and May Hill area. Encourage management to support ecological links between the Woolhope commons and close-by in the adjacent Herefordshire Lowlands NCA to the north.
- Manage and conserve the daffodil meadows and woodlands of Over Severn that have inspired poets and continue to bring visitors to the area.
- Manage existing small ponds found in the Leadon Vale area.
- Manage existing areas of semi-natural grassland and riverside meadows particularly along the river valley flood plains of the rivers Monnow, Wye and Leadon. Encourage the creation of semi-natural grassland and riverside meadows particularly where they may link existing grassland areas notably in the Garway Hills, Woolhope Dome, Over Severn daffodil areas and May Hill areas.

- Encourage sustainable agricultural managements including good livestock husbandry and the use of hedgerows and buffer strips across slopes to minimise soil compaction, soil erosion and diffuse pollution.
- Encourage the protection of areas of ridge and furrow and other historic earthworks, through appropriate management, particularly in Leadon Vale.
- Protect the historical features of the area that reflect the continuity of human occupation, such as Norman castles, remnants of Roman activity and iron-age forts and earthworks.
- Ensure the appropriate use of local materials, vernacular styles and protection of settlement structure particularly in the small hamlets and conserve traditional farm buildings using local materials and techniques.
- Preserve the rural tranquil feel of the landscape; an inspiration to many poets and artists and protected by the AONB designation.
- Continue to develop and implement the rights of way improvement plans for Herefordshire and for Gloucestershire and ensure that access balances recreational enjoyment with protection of biodiversity, geodiversity and historic features; taking opportunities to improve access, supporting and promoting community engagement and participation, to provide local people and visitors with the range of benefits offered by contact with the natural environment. Identify opportunities for access and recreational provision for use of all levels of ability.



View towards Hoarwithy Village.

Ecosystem service analysis

Service	Assets/attributes: main contributors to service	State	Main beneficiary	Analysis	Opportunities	Principal services offered by opportunities
Food provision	<p>Naturally fertile soils</p> <p>Agri-environment schemes</p> <p>Large flat fields in lowlands</p> <p>Pasture on slopes</p> <p>Water availability</p>	<p>Farming is the primary land use within this NCA, historically dominating and continuing to dominate the economy of the area.</p> <p>Livestock farms are greater in number than arable, however in terms of area they are about equal.</p> <p>The 2009 census registered far fewer animals in 2009 compared with 2000: 45,000 fewer sheep and 13,000 fewer pigs.</p> <p>Cereals provide the greatest area of arable cropping at 9,597 ha in 2009. Root crops and oilseed are also significant. Fruit crops cover 1,040 ha, orchard fruit being processed locally at national drinks producers one of which is within this NCA at Much Marcle.</p>	Regional	<p>This NCA has a long history of food production, which relates to the quality of the soils, particularly the fertility of the flood plain, and the relatively flat nature of the landscape providing easy accessibility for cultivation.</p> <p>Given the nature of the area in terms of the important river catchments, sensitive soil management and best practice farming is essential to maintain river and soil quality and prevent soil erosion.</p> <p>Traditional orchards are in decline, trees often not being replaced potentially resulting in the loss of local varieties. The sensitive restoration of traditional orchards could benefit local food production, biodiversity, culture and tourism.</p>	<p>Work with the local farming community to enhance and expand sustainable food production as appropriate, and safeguard future production while enhancing key ecosystem services such as biodiversity, water quality, water regulation, pollination services, genetic diversity, soil quality and minimising soil erosion.</p> <p>Develop stronger branding for locally produced food, and encourage the purchasing of local produce to benefit the local economy, climate regulation and local culture, thus maintaining and strengthening farming and its associated cultural landscapes and wildlife it supports.</p> <p>Encourage the adoption of catchment sensitive farming principles.</p> <p>Traditional orchards provide opportunity for high quality local produce and protection of local varieties, with the potential to link in with tourism initiatives such as orchard history, tasting events, seasonal celebrations and walking routes.</p>	<p>Food provision</p> <p>Pollination</p> <p>Genetic diversity</p> <p>Regulating soil erosion</p> <p>Biodiversity</p> <p>Climate regulation</p> <p>Sense of place/ inspiration</p> <p>Sense of history</p>

Service	Assets/attributes: main contributors to service	State	Main beneficiary	Analysis	Opportunities	Principal services offered by opportunities
Timber provision	Area of existing woodland	<p>The existing coniferous and broadleaved plantations currently provide and may offer further potential for the provision of timber.</p> <p>There are approximately 5,600 ha of woodland in the NCA, 11 per cent of its area, some of which is grown for timber production. At the beginning of 2014, Forestry Commission data recorded 73 per cent of woodland in the NCA to be under some form of management and 27 per cent unmanaged. 1,023 ha are Forestry Commission owned.</p>	Local	The agricultural value of much of the land in this NCA probably limits the area available for woodland expansion; however, emphasis on the type of timber production could be altered. Species composition is approximately 37 per cent conifer, 51 per cent broadleaves, but for the period 2009–2028 the proportion of broadleaves in Forestry Commission managed woodlands is planned to increase through plantation on ancient woodland sites (PAWS) and the replacement of conifers by broadleaves.	<p>Increase the area of managed broadleaf woodland on Forestry Commission land through PAWS restoration and the replacement of conifers by broadleaves, increasing biodiversity and moving timber provision from softwood to hardwood.</p> <p>Raise awareness of the current economic value of timber or wood fuel together with examples of sustainable management, which also benefits the landscape and biodiversity.</p> <p>Support the development of local skills and markets for small-scale local timber and other woodland produce.</p>	<p>Timber provision</p> <p>Biomass energy</p> <p>Regulating soil erosion</p> <p>Climate regulation</p> <p>Regulating water flow</p> <p>Biodiversity</p> <p>Sense of place/inspiration</p>

Service	Assets/attributes: main contributors to service	State	Main beneficiary	Analysis	Opportunities	Principal services offered by opportunities
Water availability	<p>Abstraction</p> <p>River Wye</p> <p>High rainfall area</p>	<p>The main rivers in this NCA are the Wye, the Monnow and the Leadon. The Wye rises at Plynlimon in the Cambrian mountains of Wales and has a very large catchment within a high rainfall area, the Monnow rises near Craswall on the English/Welsh border, while the source of the Leadon is at Evensbach near Ledbury.</p> <p>The NCA does not overlay any major aquifers but in the western half of the NCA groundwater sources are closely connected to surface flows and so their resource availability has been included within that of the rivers.</p> <p>In the north-east of the NCA, the minor Bromsberrow and Oxenhall North aquifers provide base flow to the River Leadon (the aquifers cover the area approximately from Botloe's Green north east to the boundary of the NCA). Bromsberrow and Oxenhall North aquifers are classified as 'over abstracted'.</p>	Regional	<p>Much of the water abstracted within this NCA is used by agriculture; however, water is also abstracted from the Wye to supply the city of Gloucester in the neighbouring Severn and Avon Vales NCA.</p> <p>According to the relevant Catchment Abstraction Management Strategies there is 'no water available' for additional abstraction from the River Wye or the River Monnow or their tributaries within the NCA. New licenses for abstraction from these rivers or their tributaries will only be granted if it can be 'demonstrated that the abstractions will have no adverse effect on the integrity of the River Wye SAC'.</p> <p>The Environment Agency Wales encourages 'water management measures' such as the use of winter storage reservoirs in this area, in order to make supplies more reliable.¹²</p> <p>In the east of the NCA, there is similarly 'no water available' in the River Leadon or its tributaries.¹³</p>	<p>Seek, where possible, to increase the water retention ability of soil, and reduce the rate of water loss from the area through the establishment of rough vegetation and targeted drainage management to increase water availability in periods of low rainfall.</p> <p>Maintain ecological flow levels in water courses by managing abstraction so as to avoid over-abstraction resulting in low flow levels.</p> <p>Well designed winter water storage reservoirs on farms could help alleviate the levels of abstraction for water used on farmland.</p> <p>Slow the flow of water across the landscape to maintain more constant river levels through ponds, scrapes and more naturalised drainage.</p> <p>Support measures to maintain and improve soil structure to increase permeability and water retention by the soil.</p>	<p>Water availability</p> <p>Food provision</p> <p>Biomass energy</p> <p>Regulating water flow</p> <p>Regulating water quality</p> <p>Regulating soil erosion</p> <p>Regulating soil quality</p> <p>Climate regulation</p> <p>Recreation</p>

¹² Wye Catchment Abstraction Management Strategy, Environment Agency (March 2008)

¹³ Severn Vale Catchment Abstraction Management Strategy, Environment Agency (January 2008)

Service	Assets/attributes: main contributors to service	State	Main beneficiary	Analysis	Opportunities	Principal services offered by opportunities
Genetic diversity	Local fruit varieties Herefordshire cattle	This and the surrounding NCAs of the major fruit-producing counties of Gloucestershire, Herefordshire and Worcestershire retain a wide range of local varieties of orchard fruit cultivated over hundreds of years. Hereford cattle originated in the county in the 18th and 19th centuries and have subsequently spread worldwide as a universal beef breed.	National	Genetic diversity of orchard fruit varieties are important to maintain in order to safeguard food provision, and afford increased resilience to climate change and disease. Examples of local varieties from this NCA include the Dymock red, a very old cider apple from the village of Dymock, Turner's Barn, a pear from Newent and Winnal's Longdon, a pear raised by Mr Winnal at Weston-under-Penyard in about 1790 and found planted between Ross-on-Wye and Tewkesbury. ¹⁴ Where Hereford cattle still graze the landscape they contribute significantly to both the genetic foundation of the breed and the distinctive sense of place. They are a useful breed for 'conservation' grazing.	Maintain collections such as the national fruit collection at Brogdale Farm, Kent and the Perry Pear collection at Hartpury, Gloucestershire. Raise awareness of local varieties and link owners with supplier. Encourage regeneration and planting of local varieties. Use local traditional breeds of livestock, such as Hereford cattle, where appropriate for conservation grazing maintaining a genetic resource in the county of origin.	Genetic diversity Climate regulation Pollination Biodiversity Sense of place/inspiration Sense of history

¹⁴ Gloucestershire Orchard Group: <http://gloucestershireorchardtrust.org.uk/varieties/>

Service	Assets/attributes: main contributors to service	State	Main beneficiary	Analysis	Opportunities	Principal services offered by opportunities
Biomass energy	Existing woodland	<p>Currently there is little biomass production in this NCA as most of the productive land area is used for food production.</p> <p>There is approximately 5,600 ha of woodland in the NCA (11 per cent of the NCA area), which offers some potential for the provision of biomass by bringing unmanaged woodland under management and as a by-product of commercial timber production. Hedgerows also provide local opportunities for coppiced timber.</p> <p>The NCA offers medium potential yield for short rotation coppice throughout the NCA while there is generally a medium potential yield for miscanthus in the centre of the NCA, with pockets of low and high potential yield around the fringes of the NCA to the west, north, and east.</p>	Local	<p>There is some potential for the provision of biomass through bringing some areas of unmanaged woodland back under small-scale coppice management. This may also locally extend to coppiced wood from hedgerow management.</p> <p>There may also be some potential for miscanthus and short rotation coppice in some areas of the NCA, although due to the high agricultural quality of the soil most of the productive land is used for food production.</p> <p>Siting of any energy crops is critical due to the potential water use requirements, chemical inputs and affect on soil structure and erosion. Damage to historic features such as field boundaries, parkland and ridge and furrow should also be avoided.</p> <p>For information on the potential landscape impacts of biomass plantings within the NCA, refer to the tables of 'opportunities and optimum sitings for energy crops' on the Natural England website.¹⁵</p>	<p>Opportunities for short rotation coppice and miscanthus exist in the NCA if suitably located.</p> <p>There is substantial potential for use of wood for biomass from existing woodlands, for example, bringing areas of woodland into traditional coppice management for small-scale wood fuel production and benefits to biodiversity, some hedgerow management could also be included in this.</p>	<p>Biomass energy</p> <p>Climate Regulation</p> <p>Biodiversity</p> <p>Water Availability</p>

¹⁵ www.naturalengland.org.uk/ourwork/farming/funding/ecs/default.aspx

Service	Assets/attributes: main contributors to service	State	Main beneficiary	Analysis	Opportunities	Principal services offered by opportunities
Climate regulation	<p>Semi-natural and conifer woodland</p> <p>Ancient hedgerows networks and traditional orchards</p> <p>Soil carbon and stable microbial community under unimproved permanent pasture</p>	<p>There is generally a low soil carbon content across the NCA of 0–5 per cent, reflecting the dominance of mineral soils in which organic content is likely to be particularly low under continuous cultivation.</p> <p>The combination of woodland, parkland, traditional orchards and hedgerows plays an important part in carbon sequestration.</p> <p>The permanent pasture, fen and heathland, found in this NCA, contributes through soil carbon storage which would otherwise be released by aerobic microbial activity on exposure of the soil to air through activity such as ploughing.</p>	Local	<p>The potential for soil carbon sequestration in this NCA is low as there is no active peat deposition, however, in mineral soils, carbon sequestration and storage can be increased slightly by increasing organic matter inputs and by reducing the frequency/area of cultivation, also benefiting soil condition and water retention.</p> <p>Woodland, hedgerows, traditional orchards and parkland trees all retain and sequester carbon both within the wood and uncultivated soils beneath. Maintenance and expansion of these woody resources will benefit climate regulation.</p> <p>High concentrations of permanent pasture and semi-natural habitats, particularly permanently wet anaerobic soils, also retain carbon, an increased proportion of which would be released through microbial action if the soil was ploughed and exposed to air. However, where permanent pasture is grazed by cattle, it can result in the release of methane by the animals themselves. Other ruminants such as sheep also release methane but to a lesser extent per animal.</p> <p>Production of inorganic fertiliser is particularly energy intensive and large volumes of greenhouse gases are emitted during production. Soil testing enables the calculation of optimal fertiliser application rates, thus reducing excess use of fertiliser, saving energy, money and benefiting water quality.</p>	<p>Maintain levels of carbon sequestration through sustainably managing and expanding where possible, the woodland and hedgerows of the area.</p> <p>Prevent the release of carbon dioxide by maintaining permanent pasture and ensuring it is managed within a sustainable regime.</p> <p>Encourage incorporation of organic matter into cultivated mineral soils to appropriate levels, avoiding overloading that might cause diffuse pollution.</p> <p>Maintaining traditional orchards and wood pasture and parkland, stores carbon both through the trees themselves and the permanent grassland beneath.</p> <p>Work with the farming community to ensure they have adequate access to soil analysis to enable the calculation of appropriate levels of fertilizer inputs to reduce energy wastage and benefit water quality.</p>	<p>Climate regulation</p> <p>Regulating water flow</p> <p>Regulating water quality</p> <p>Biodiversity</p>

Service	Assets/attributes: main contributors to service	State	Main beneficiary	Analysis	Opportunities	Principal services offered by opportunities
Regulating water quality	<p>Hedgerows and buffer strips across steeper slopes</p> <p>Permanent grassland particularly low input</p> <p>Semi-natural habitats</p> <p>Semi-natural and conifer woodland</p> <p>Appropriate tillage</p> <p>Good livestock management</p> <p>Buffer strips alongside watercourses</p> <p>Diffuse and point source pollution prevention</p> <p>Sustainable urban drainage</p>	<p>The NCA falls within the River Wye Priority Catchment, which has problems associated with agricultural diffuse pollution, poaching of riverbanks and soil run-off.</p> <p>The River Wye and River Monnow have a good ecological status throughout their length within the NCA. The River Leadon has a good ecological status along its length while the tributaries to these rivers have an ecological status varying from good to poor.</p> <p>The groundwater chemical status in the NCA is good, with the exception of the minor aquifers in the north-east of the NCA poor chemical status.¹⁶</p> <p>Semi-natural habitats and both coniferous and broadleaf woodlands with the NCA contribute to water quality, particularly where they are adjacent to water courses or across steep slopes.</p>	Regional	<p>Water quality is important to this area in both the provision of water and in support of much of the biodiversity resource to be found associated with rivers and watercourses. This is significantly and directly influenced by the management of the surrounding farmland.</p> <p>Careful management of grasslands and livestock, particularly minimising inputs, controlling access to watercourses and waste (farmyard manure) management is essential to maintaining good water quality. Improved farm infrastructure will reduce sources of pollution and further contribute to maintaining good water quality.</p> <p>Priorities, under the Catchment Sensitive Farming initiative for the River Wye Priority Catchment are to: reduce the loss of sediment, nutrients and pesticides in the catchment and to reduce run-off from agricultural fields, the pathways that run-off takes through gates and down tracks and the poaching of river banks by livestock.¹⁷ Although there is some scope for work within the NCA, many of the water quality issues also rely on catchment sensitive farming upstream of the NCA.</p> <p>Woodland, both coniferous and broadleaved and other semi-natural habitats, particularly adjacent to water courses help to buffer water courses, filtering nutrients and soil particles from run-off.</p>	<p>Maintain ecological flow levels in water courses by managing abstraction to avoid over-abstraction.</p> <p>Maintain and expand the network of semi-natural habitats adjacent to watercourses.</p> <p>Maintain and restore hedgerows across slopes within river catchments.</p> <p>Work with farmers across the Wye catchment, to improve soil quality to reduce run-off, and fence water courses to prevent excessive poaching of the river bank by livestock.</p> <p>Create grassland buffer strips within arable farming systems and adjacent to water courses to intercept soil run-off pesticides and nutrients and reduce the volumes entering directly into river systems.</p> <p>Work with landowners the Environment Agency and water companies to address point source discharges.</p> <p>Incorporate sustainable urban drainage schemes (SUDS) into new development to reduce pollution from run-off from urban areas reaching rivers.</p>	<p>Regulating water quality</p> <p>Regulating soil erosion</p> <p>Biodiversity</p> <p>Climate regulation</p>

¹⁶ Severn River Basin Management Plan, Annex A: Current state of waters, Environment Agency (December 2009)

¹⁷ Capital Grant Scheme – Funding Priority Statement 2014/15, Catchment 23: The River Wye, Natural England

Service	Assets/attributes: main contributors to service	State	Main beneficiary	Analysis	Opportunities	Principal services offered by opportunities
Regulating soil quality	<p>Unimproved pastures</p> <p>Appropriate tillage</p> <p>Appropriate stocking levels</p> <p>Deciduous woodland cover</p> <p>Semi-natural habitats</p>	<p>This NCA has five main soilscape types:</p> <ul style="list-style-type: none"> ■ Freely draining slightly acid loamy soils, covering 53 per cent of the NCA, adjacent to the Wye. ■ Slightly acid loamy and clayey soils with impeded drainage (37 per cent) in the Garway Hills and Over Severn areas. ■ Freely draining flood plain soils (4 per cent) in the narrow flood plain of the Wye and Monnow. ■ Slowly permeable seasonally wet acid loamy and clayey soils (3 per cent) on Woolhope and May hills. ■ Freely draining slightly acid sandy soils (2 per cent) in the Leadon Vale. 	National	<p>Where soil is under semi-natural habitat and tree cover in this NCA, the soil is maintained in good condition. However, where the soil is under agricultural use, maintaining and improving the soil quality will safeguard and retain productive food provision in the long term and increase the soil's resilience to climatic change and extreme weather events.</p> <p>The freely draining slightly acid loamy soils (53 per cent) have potential for increased organic matter levels through management interventions. They may be valuable for recharging groundwaters that provide the base flows to many of the rivers of the NCA. This requires the maintenance of good soil structure to aid water infiltration and the matching of nutrients to needs to prevent groundwater pollution.</p> <p>In contrast the slightly acid loamy and clayey soils with impeded drainage (37 per cent) are easily poached by livestock and compacted by machinery when the soil is wet. Weak topsoil structures can easily be damaged and careful timing of activities is required to reduce the likelihood of soil compaction.</p>	<p>Support measures which employ minimal tillage and organic matter incorporation to increase soil organic matter and also relieve soil compaction on a landscape scale.</p> <p>Work with the farming community to achieve appropriate stocking regimes which avoid poaching and reduce erosion.</p> <p>Support measures which increase the volume of organic matter within worked soil to improve soil structure and conditions for soil fauna, increasing water infiltration.</p>	<p>Regulating soil quality</p> <p>Climate regulation</p> <p>Regulating water quality</p> <p>Biodiversity</p> <p>Geodiversity</p>

Service	Assets/attributes: main contributors to service	State	Main beneficiary	Analysis	Opportunities	Principal services offered by opportunities
Regulating soil erosion	<p>Hedgerows and buffer strips across steeper slopes</p> <p>Permanent grassland</p> <p>Semi-natural habitats</p> <p>Sustainable systems of arable cultivation</p> <p>Well-managed livestock systems</p>	<p>Some 93 per cent of soil cover in this NCA is prone to soil erosion. The only soils that are not susceptible are the freely draining flood plain soils and the slowly permeable seasonally wet acid loamy and clayey soils, together covering 7 per cent of the NCA.</p> <p>The freely draining slightly acid loamy soils and the freely draining slightly acid sandy soils, covering just over half of the NCA have enhanced risk of soil erosion on moderately or steeply sloping land where cultivated or bare soil is exposed, exacerbated where organic matter levels are low after continuous arable cultivation or where soils are compacted. There is also the potential for wind erosion on some coarse textured cultivated variants.</p> <p>Equally, the slightly acid loamy and clayey soils with impeded drainage (37 per cent) are prone to compaction and capping/slaking, leading to increased risk of soil erosion by surface water runoff, especially on steeper slopes such as the Garway hills.</p> <p>Permanent grasslands, semi-natural habitats and woodland tend to be on the steeper slopes of this NCA so limiting soil exposure on these steep areas.</p>	National	<p>Reflecting the susceptibility to soil erosion, approximately two-thirds of the NCA, to the west, lies within Defra's River Wye Priority Catchment. Soil erosion is an identified problem especially where soils are left bare under potato cropping, and under maize production where fields are left bare over the winter other than the remaining maize stubble. In turn, erosion of soils is leading to the siltation of rivers, of particular concern in the Wye SAC.²⁰</p> <p>Where soils are under permanent pasture, semi-natural habitat or tree cover, they are protected from erosion. In this NCA, the steepest slopes tend to be covered by these habitats or permanent pasture which if not over stocked and poached, will alleviate soil erosion from the steeper ground. Semi-natural habitat or buffer strips adjacent to water courses in the river valleys are particularly important to prevent soil runoff reaching the river, however in this NCA there is little semi-natural habitat in the heavily cultivated flood plain and flatter agricultural areas.</p>	<p>Work with the farming community within this NCA and further up the Wye catchment, to produce sustainable systems of arable cultivation and well-managed livestock to reduce poaching and soil exposure, particularly on the widespread steep sloping ground of this NCA, using measures such as maintaining or expanding areas of permanent grassland, dense hedgerows and buffer strips across steeper slopes.</p> <p>Maintain and restore areas of semi-natural habitat and permanent grasslands to minimise soil compaction to improve water retention and reduce soil run-off across the NCA</p>	<p>Regulating soil erosion</p> <p>Climate regulation</p> <p>Regulating water</p> <p>Regulating water quality</p> <p>Biodiversity</p> <p>Geodiversity</p>

²⁰ Capital Grant Scheme – Funding Priority Statement 2010/11, Catchment 23: River Wye, Natural England

Service	Assets/attributes: main contributors to service	State	Main beneficiary	Analysis	Opportunities	Principal services offered by opportunities
Pollination	Existing flower-rich, semi-natural habitat Traditional and bush orchards Flower-rich road verges	Pollination of crops in this NCA is required for some market gardening, orchard fruit and arable crops such as varieties of oilseed rape which require insect pollination. Semi-natural habitats supplying nectar for pollinators, including flower-rich hedgerows and road verges, are scattered throughout the agricultural area of the NCA. This is further enhanced by the significant number of traditional and bush orchards, which act as important sources of nectar for pollinating insects. In spring, the woodland ground flora also bolsters the nectar supply.	Local	There is scope to improve the condition of habitats to provide for pollinators, including parkland, wood pasture, unimproved grassland, flower-rich meadows and verges and to expand areas where appropriate to do so. Incorporation of flower-rich headlands, hedgerows and buffer strips into agricultural systems maintains a network of nectar sources throughout the farmed landscape, sympathetic management of road verges can be a beneficial addition to this network and also are aesthetically pleasing instilling a sense of place.	Increase the area and improve the condition of semi-natural habitats, with particular emphasis on unimproved flower rich grasslands, heathland, traditional orchard and species-rich hedgerows. In addition, through mechanisms such as agri-environment schemes, encourage the use of nectar and forage mixes in arable land, to increase the availability of nectar sources in close proximity to food crops requiring pollination. Work with the local authority/parishes to create multi-functional green spaces incorporating sympathetic management for pollination including appropriate management of road verges into cutting regimes, adding to the network of nectar sources close to pollinated food crops.	Pollination Food provision Biodiversity Sense of place/ inspiration
Pest regulation	Existing semi-natural habitat Agricultural field margins Species-rich hedgerows Woodland Sympathetically managed verges	As described under pollination, there is a reasonable spread of semi-natural habitat throughout the agricultural area of this NCA which will support species that will aid pest regulation.	Local	As described under pollination, although there is a reasonable spread of rich semi-natural habitat across the NCA there is scope to improve the condition of this habitat through appropriate management and to extend it where possible.	Maintain and expand the area of semi-natural habitats, throughout the NCA to provide a range of niches to support pest-regulating species including invertebrates, birds and mammals. In addition, through mechanisms such as agri-environment schemes, encourage the use of field margins, beetle banks and headlands in arable land, to encourage pest regulating species in close proximity to food crops requiring pollination.	Pest regulation Pollination Biodiversity Food production

Service	Assets/attributes: main contributors to service	State	Main beneficiary	Analysis	Opportunities	Principal services offered by opportunities
Sense of place/ inspiration	Views outward and of the Wye Valley from prominent vantage points	A sense of place is provided by the undulating, intricate landscape with the prominent, rounded Garway Hills to the west and lower rolling ground and narrow meandering flood plains of the River Wye and its tributaries winding between Hereford and Ross-on-Wye.	Regional	Though commercial agriculture covers a large proportion of this NCA, the rural character is maintained and a large part of it is protected by AONB designations.	Work with partners to maintain and restore the picturesque daffodil meadows and woodlands that have inspired poets and brought many day trippers to the area.	Sense of place/ inspiration Sense of history Geodiversity Recreation Biodiversity Food provision
	Country houses and parkland	Woodlands, including outstanding ancient woodlands, found on the steep outer slope of river bends, parklands, commercial and bush orchards and hedgerows with occasional hedgerow trees are extensive throughout the area and create a 'well-wooded' feel.		The large number of trees in the landscape (woodland, parkland, orchard and hedgerow) could, in places be better managed and replacement trees planted to maintain the stock and the landscape quality into the future. In general, semi-natural habitat is fragmented due to the intensive farming activity in the area.	Work with land managers to find opportunities to maintain and restore distinctive traditional orchards and work to find markets for produce to ensure their future viability and sustainability.	
	Orchards	Orchards are now most numerous in the north and east of the NCA with traditional orchards mainly at the edges of the hamlets and around the farm houses. The farmland landscape of small pasture fields on steeper slopes, pockets of unimproved grassland on open commons and in small fields, contrast with the intensively cultivated flood plain, where fields are large to medium in size with low species-rich hedgerows especially along lanes.		Further development is largely focussed on Ross-on-Wye. Within rural areas, new housing continues to be delivered through in significant numbers through the conversion of rural buildings, many being redundant agricultural buildings on farmsteads. Due to the importance of the Herefordshire landscape and the AONB designations, new buildings should be in keeping with the character of their surroundings using appropriate design, materials and landscaping.	Maintain and restore wood pasture and parklands and hedgerow trees that contribute to the well-wooded feel.	
	Rural hamlets and farmsteads	Settlement pattern is dispersed, consisting of scattered farmsteads (substantial in size) and numerous hamlets formed around a manor house and church and linked by sunken, narrow winding lanes, with clustered settlements around commons. Typical building materials include red sandstone to the west while to the east of the River Wye, brick, timber-framed and limestone prevail.			Maintain and restore semi-natural habitats such as the small neutral and calcareous grasslands around the Woolhope area.	
	Norman castles	Numerous churches and a wealth of country houses with extensive parklands add to the strongly rural character of this NCA.			Ensure habitats are restored and well managed, and linked through habitat creation.	
	Wild daffodil meadows and woods	Senses of inspiration and escapism are likely to be associated with the attractive vantage points from Sellack, Ballingham and Capler Hills of the River Wye and its flood plain as well as views of imposing courts, castles and hillforts, with more confined and intimate views to the east. The Dymock daffodils have inspired group of early 20th-century poets named after the village.			Ensure the strongly distinctive pattern, form and features of settlements are maintained and enhanced through the use of good quality design, reflecting the historical development of settlements and the vernacular materials and building techniques.	
	Meandering river valleys				Ensure the River Wye and its setting continues to be protected and enhanced by sensitive management of the surrounding landscape.	
Historic settlements of Ross on Wye						

Service	Assets/attributes: main contributors to service	State	Main beneficiary	Analysis	Opportunities	Principal services offered by opportunities
Sense of history	<p>Prehistoric sites</p> <p>Iron-age hill forts</p> <p>Norman castles</p> <p>Welsh influence</p> <p>Orchards</p> <p>Agriculture</p> <p>Houses set within parkland</p>	<p>The history of the landscape is evident in prehistoric burial sites, iron-age hill forts on several hill summits, Norman castles, and moated sites, medieval manorial centres characterised by the grouping of a motte, church and later manor house, reflect the past threat of Welsh invasion.</p> <p>The Welsh influence is still strongly evident in the settlement pattern and place names to the west – the Garway Hills remaining part of the Welsh diocese of St David’s until the 19th century.</p> <p>Fertile soils have supported a prosperous and long history of mixed agriculture. Intensive orchard production has prevailed since the late 17th century linked to the Herefordshire cider industry.</p> <p>Aspects of history likely to be most evident to the public are the market town of Ross on Wye and The Prospect, a historic park within the town with dramatic views of the Wye 30 m below. There are also the smaller market towns of Newent and Dymock. The latter gave its name to a group of poets including Rupert Brooke and Robert Frost who gathered at Lascalles Abercrombie’s cottages at Ryton.</p> <p>Other features include the numerous houses set within parkland including Holme Lacy, Hill Court, the Repton landscape of Sufton Court, Stoke Edith, Brockhampton and manor houses such as Fawley Court and Old Court, all of which reflect the agricultural wealth of the area from the 17th century.</p>	Regional	<p>The fertile soils of this area have resulted in a long-standing agricultural history and sparse settlement pattern. The remains of historic features and heritage assets, both above and below ground are challenged by intensive agricultural activity.</p> <p>Inappropriate cultivation may damage or destroy earthworks and buried remains. Neglect and unsympathetic conversion of and rural buildings, development around locally/nationally important buildings and the historic cores of settlements may undermine both the legibility of the historic record and the distinctive character of farmsteads and settlements.</p> <p>Emphasis should be placed on the need to continue to protect and interpret the wealth of heritage present ensuring public access to historical sites such as the many parks and castles, which are well placed to make history accessible both physically and intellectually through interpretation and education.</p>	<p>Opportunities to enhance the setting, interpretation and legibility of heritage assets should be identified and realised to increase the understanding of the importance of historic land use in shaping the current landscape.</p> <p>Encourage the use of best practice cultivation and agricultural methods to ensure the preservation of buried archaeological remains and above ground earthworks.</p> <p>Encourage the sympathetic management, and only where necessary, the conversion of important buildings in the landscape.</p> <p>Where identified as necessary, new development in historic settlements should seek to conserve and enhance the distinctive pattern and distribution of buildings, roads and enclosures, with the use of locally distinctive materials and local vernacular styles as appropriate.</p>	<p>Sense of history</p> <p>Sense of place/ inspiration</p> <p>Geodiversity</p> <p>Biodiversity</p> <p>Recreation</p>

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Tranquillity	<p>Undeveloped rural character</p> <p>Areas with few major roads</p> <p>Extensive views across rural counties</p> <p>Long views of the Wye Valley AONB</p>	<p>According to the CPRE Intrusion Map, levels of intrusion have increased dramatically since the 1960s with undisturbed areas decreasing from just less than 97 per cent to 66 per cent in 2007. The largest 'undisturbed' areas occur away from the major settlements of Hereford, Ross on Wye and Newent, and the main road corridors (M50, A49, A465 and A40).</p> <p>The area retains a strong sense of tranquillity with the area's strongly rural character and intricate landscape of woodland, field patterns, orchards and open commons along with the its river landscapes.</p>	Regional	<p>Development is largely concentrated around the larger towns of Ross-on-Wye and Newent. There is a risk of larger developments here intruding into the areas of rural tranquillity, both through increases in vehicular activity and light pollution.</p> <p>The long distance footpaths and national cycle trails within this NCA provide access to the more rural and tranquil elements of the area such as quiet river valleys or hillside woodland. Even the exposed hilltops with their panoramic views can provide a sense of tranquillity through appreciating how rural and un-urbanised the surrounding areas truly are.</p>	<p>The undeveloped character of the area should be protected and intrusion into the most rural areas avoided.</p> <p>Light pollution from any new development should be prevented or minimised through good lighting design or planting of woodland around settlement edges.</p>	<p>Tranquillity</p> <p>Sense of place/ inspiration</p> <p>Sense of history</p> <p>Geodiversity</p> <p>Biodiversity</p> <p>Recreation</p>
Recreation	<p>Long distance trails</p> <p>National cycle network</p> <p>877 km of rights of way</p> <p>River Wye navigation</p> <p>Open access woodland</p> <p>Historical features</p> <p>Tranquil landscape</p>	<p>Recreation is supported by the area's 877-kilometre rights of way network (with a density of 1.7 km per km²) as well as 278 ha of open access land (0.5 per cent of the NCA).</p> <p>The wealth of rivers are important for fishing, with the Wye offering a major recreational corridor for canoeing, kayaking, camping and other outward bound activities.</p> <p>Parts of the Herefordshire Trail, Gloucestershire Way and Wye Valley Walk long-distance footpaths pass through the area.</p>	Regional	<p>The River Wye is important for recreation in various forms including walking cycling, canoeing, kayaking and fishing. It is an attractive landscape that draws people from around the west Midlands, Wales and from further afield. Some recreational activities may not always be complementary and 'honey-pot' sites may suffer high levels of disturbance.</p> <p>Recreation reconnects or maintains people's connection with the landscape and ecosystems that support them and encourages a valuing of their surroundings.</p>	<p>Ensure that access balances recreational enjoyment with protection of biodiversity, geodiversity and historic features.</p> <p>Continue to develop and implement the rights of way improvement plans for Herefordshire and for Gloucestershire.</p> <p>Ensure that access to water sports and fishing on the River Wye continues in a sustainable manner, so that the impressive views and tranquillity of the river continue to be appreciated and the ecology is protected.</p> <p>Ensure paths are well marked and maintained and key features, wildlife and points of interest are highlighted. Ensure that some surfaced paths are provided to enable easy access walks.</p>	<p>Recreation</p> <p>Sense of place/ inspiration</p> <p>Sense of history</p> <p>Biodiversity</p> <p>Geodiversity</p> <p>Tranquillity</p>

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Biodiversity	River Wye SAC SSSI Local Sites Local Nature Reserves Wye Valley AONB	<p>There is one internationally designated site within the NCA – a portion of the River Wye SAC. The River Wye is an extensive river system crossing the border between England and Wales and supporting a number of important and rare species, including ‘an exceptional range’ of aquatic flora. The SAC extends over 2,200 ha, of which 270 ha lies within this NCA.</p> <p>There are also 24 SSSI in the NCA, totalling over 950 ha (2 per cent of the NCA area), of which, 53 per cent is considered in favourable condition, 45 per cent unfavourable recovering, less than 1 per cent unfavourable no change and 2 per cent unfavourable declining.</p> <p>There are over 4,300 ha of priority habitat within the NCA totalling 8 per cent of the NCA area. 90 per cent of this is comprised of wet woodland and lowland mixed deciduous woodland.</p>	National	<p>River habitats are important in this NCA, the River Wye in particular. Siltation, sedimentation and diffuse pollution from agricultural run-off and domestic waste water, combined particularly with low summer water levels impact the ecological quality of the river.</p> <p>Ancient and wet woodland are important habitats distributed throughout this NCA and account for the majority of the SSSI designations. Wood pasture and parklands and traditional orchards are also significant. Lack of appropriate management, changing climate and new pests and pathogens may significantly influence their structure, composition and condition.</p> <p>Wet meadows and fen make up important flood plain habitat. Changes in flooding patterns and timings along with inappropriate grazing and cutting regimes may significantly impact on their condition and quality.</p> <p>The neutral and calcareous grasslands in this NCA are particularly fragmented and would benefit from landscape scale management to improve their connectivity.</p> <p>The unfavourable declining SSSI status is recorded on single units at four SSSI, Linton Quarry, a geological SSSI is suffering from scrub and ivy growth, while the remaining three SSSI are woodland units where overgrazing from deer is an issue.</p>	<p>Improve the ecological quality of the River Wye through schemes such as catchment sensitive farming across the extensive catchment.</p> <p>Seek opportunities to reconnect the ecological network across the NCA and ensure connections with neighbouring NCAs as appropriate to the network.</p> <p>Where possible, increase areas of semi-natural habitat including grassland, heath and Traditional orchard, creating extensive and connected areas of semi-natural habitat, which are managed in favourable condition, to increase the resilience of these priority habitats to climate change.</p> <p>Use and expand local work on opportunity mapping to inform landscape scale projects and local development plans/decisions.</p>	<p>Biodiversity</p> <p>Climate regulation</p> <p>Pollination</p> <p>Sense of place/ inspiration</p> <p>Tranquillity</p> <p>Recreation</p> <p>Geodiversity</p>

Service	Assets/attributes: main contributors to service	State	Main beneficiary	Analysis	Opportunities	Principal services offered by opportunities
Geodiversity	<p>Old Red Sandstone</p> <p>Old Red Sandstone hills</p> <p>River</p> <p>Geomorphology</p> <p>Limestone hills</p>	<p>The NCA has exposures of Silurian, marine shelf facies; Upper Silurian and Devonian Old Red Sandstone facies, Permian and Triassic desert facies. There are 5 geological SSSI in the NCA with Silurian and Devonian interests and there are 41 Local Geological Sites.</p> <p>At Scutterdine Quarry there are exposures of Woolhope Limestone the lowest of the Silurian limestones in the type area of this rock. Fossils of some of the earliest land plants were found at Perton Roadside and Quarry.</p> <p>At Linton Quarry, there is a break in succession separating the marine Silurian Wenlock Limestone from the Upper Ludlow Shales and the lowest of the terrestrial Old Red Sandstone rocks.</p> <p>At Wilton Bluff are cliffs exposing the Devonian Brownstones Formation.</p> <p>The Silurian rocks occurring in the Woolhope Dome and May Hill consist of alternating fossiliferous limestones and shales, the limestones standing out as wooded escarpments.</p> <p>The ridges of Wenlock Limestone and Aymestry Limestone form a double scarp feature almost encircling the Woolhope inlier.</p> <p>The Old Red Sandstone is found in the Wye Valley most of the way from Hereford to Tintern. Around Hereford it is represented by the Raglan Mudstone Formation dominated by easily eroded mudstones and marls. To the south of this is the St Maughans Formation which has a higher percentage of sandstone. In the vicinity of Ross-on-Wye the more resistant sandstones of the Brownstones Formation occur and are exposed clearly in the old river cliffs.</p> <p>The rolling countryside of the Garway Hills is made up of Lower Devonian St Maughans Formation overlain by Brownstones Formation rocks. They were laid down on a large landmass formed when two tectonic plates of the Earth's crust collided and pushed up the Welsh mountains. These mountains were eroded by seasonal streams which deposited sediments in the lowlands to the south-east.</p> <p>The Leadon Valley around Dymock is underlain by Raglan Mudstone Formation. The river then crosses an area of Permian and Triassic desert sandstones which stretches from Newent north to the Malvern Hills.</p>	Local	<p>There is a lack of geodiversity data for this area and an opportunity to undertake additional mapping and research work.</p> <p>The area is important for the work of early geologists developing geology as a science. The underlying geodiversity shapes the topography and the soils of the area and the agricultural use that can be made of the land.</p> <p>It is worth noting that most of the geological sites are in disused quarries reflecting the former importance of quarrying in the area and the value of these sites today for understanding the area's geodiversity.</p> <p>The area's geodiversity is also important for current and future geological research as well as opportunities to learn about the shaping of the NCA. Exposure of these geological features also makes a positive contribution toward sense of place and sense of history.</p> <p>The use of locally-derived stone has created a close association between the geology of the area and the distinctiveness and identity of the local buildings. Lack of access to new sources of stone limits the potential to reinforce local character in new development and to repair important existing buildings.</p> <p>The Brownstones Formation, of the Garway Hills contains rare but interesting fossils that show the development of the earliest plants and animals to emerge from the seas and colonise the land.</p>	<p>Seek opportunities to improve the interpretation of geological sites to increase understanding of both the geological and historical aspects at sites such as Rudge End Quarry, one of the Community Earth Heritage Champions Project Sites. Encourage projects like this, where local people have been trained to conserve geological sites and teach others more about them, such as at Rudge End Quarry and Linton Quarry.</p> <p>Ensure geological SSSI are well managed and that access to them is maintained.</p> <p>Maintain the availability of local stone for building restoration through small sustainably managed local quarries.</p> <p>Work with the local geodiversity partnership to designate further Local Geological Sites to assist with the understanding and enjoyment of geodiversity and to provide opportunities for recreation and volunteering.</p> <p>Work with local authorities and consultants to ensure geological exposures are not obscured by development.</p> <p>Support projects such as Earth Heritage Trust's 'One Thousand Years of Building with Stone', which is finding out more about the stone-built heritage of the area and researching the sources of the building stone used.</p>	<p>Geodiversity</p> <p>Sense of place/ inspiration</p> <p>Sense of history</p> <p>Biodiversity</p> <p>Recreation</p>

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