National Character Area profile:

63. Oswestry Uplands

Supporting documents

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Introduction

As part of Natural England's responsibilities as set out in the Natural Environment White Paper[1], Biodiversity 2020[2] 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.

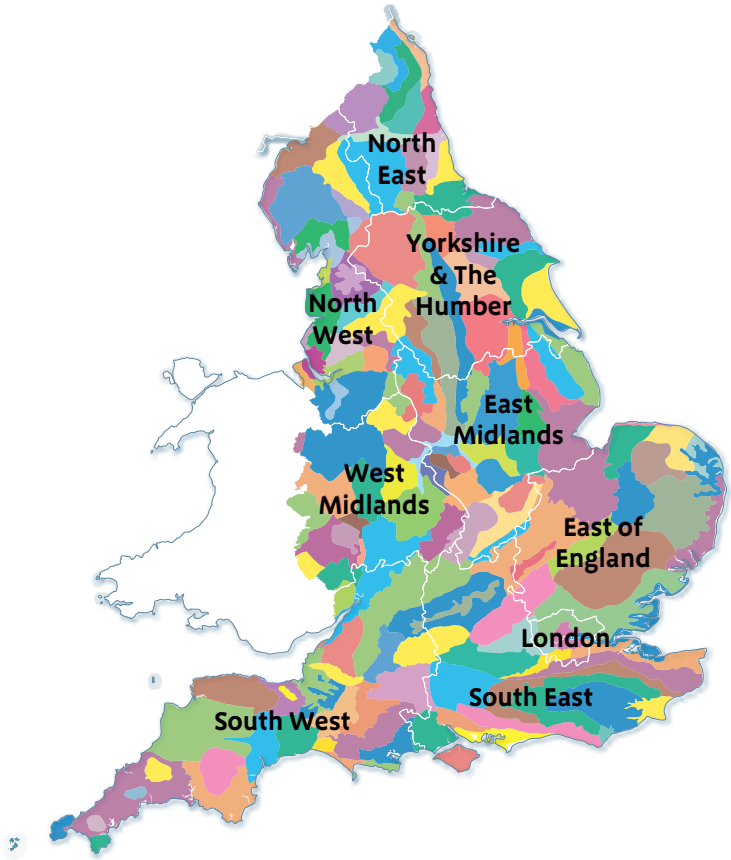
NCA profiles are guidance documents which can help communities to inform their decision-making about the places that they live in and care for. The information they contain will support the planning of conservation initiatives at a landscape scale, inform the delivery of Nature Improvement Areas and 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)

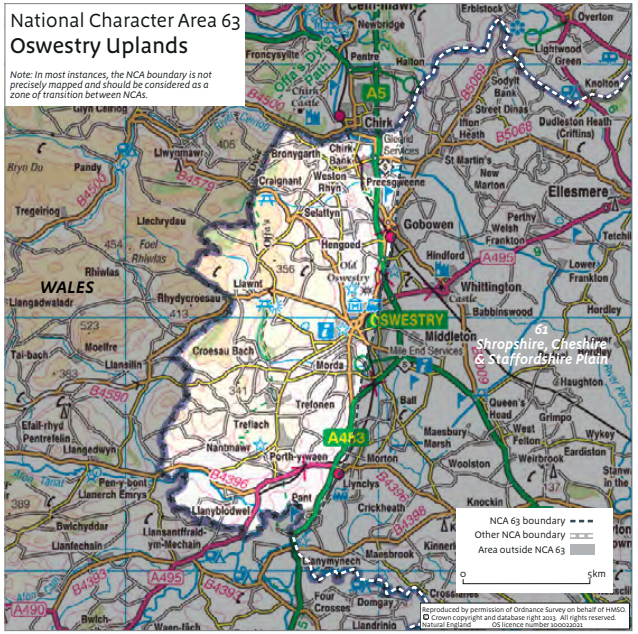
Summary

The Oswestry Uplands National Character Area (NCA) is a small yet distinct landscape of steep-sided, flat-topped hills mainly of limestone and narrow, wooded valleys and streams. It forms the eastern edge of the Clwydian Hills which extend from Mid Wales. The area has strong Welsh cultural associations which blend into this western edge of Shropshire. The hills rise quite steeply from gentle foothills crossing into the Shropshire, Cheshire and Staffordshire Plain NCA and overlook Oswestry, a typical market town of the Welsh Marches. Much of the area is deeply rural with small, irregular fields, copses, shelterbelts and woodlands. Scattered farms and hamlets are reached by narrow, winding and usually deeply sunken lanes. As the land rises, the irregular field pattern changes to a more rectilinear one with lower, frequently trimmed hazel hedges.

Woodland covers 9 per cent of this NCA which also includes a short section of the River Ceiriog, a tributary of the River Dee, part of the internationally important River Dee and Bala Lake Special Area of Conservation designated for its rare watercourse vegetation. The land is predominantly used for pasture and supports an important local sheep and beef cattle industry, with arable land limited to the lower parts in the east. The area has a wooded character due to the many woodlands on hill tops and sides. Towards the south, extensive limestone quarries are present, both active and disused, the latter now mostly overgrown. The historic Offa's Dyke Path National Trail winds across the western ridges, and associated hill forts on major summits, notably Old Oswestry, emphasise the turbulent history of this border area.

There is great potential to significantly expand key woodland and calcareous grassland habitats, securing environmental benefits which will help to ensure ecological connections across administrative boundaries and to improve soil quality and climate regulation, as well as enhancing biodiversity, tranquillity and sense of place.

Future challenges for this NCA include ensuring that livestock farming maintains and enhances the character of the landscape. Continuing to provide outdoor recreational opportunities for local communities and managing wider visitor pressure will also be challenges, ensuring that increased access and travel do not erode the tranquillity of this special area.



Click map to enlarge; click again to reduce.

Much of this area is deeply rural with small, irregular fields, copses, shelterbelts and woodlands. Scattered farms and hamlets are reached by narrow, winding lanes.

Statements of Environmental Opportunity

- **SEO 1:** Protect and enhance the area's distinctive and intricate historic landscape character – particularly its transitional character from the plains of Shropshire, Cheshire and Staffordshire into the uplands of Mid Wales, and its mosaic of pasture, woodlands and grasslands – to retain sense of place, enhance biodiversity networks and retain the area's high tranquillity levels.

- **SEO 2:** Protect the distinctive cultural and geological heritage resource across the National Character Area, from traditional buildings and industrial sites to the famous earthworks at Old Oswestry Hill Fort and Offa's and Wat's dykes, so that people can enjoy the recreational and educational benefits of this special area.

- **SEO 3:** Sustainably manage the soils, productive farming, woodlands, streams, rivers and grasslands that contribute to the sense of place, maintaining viable long-term food production while enhancing water quality, water flow and climate regulation.

Description

Physical and functional links to other National Character Areas

The Oswestry Uplands National Character Area (NCA) is a small area of steep-sided, flat-topped hills, lying within the county of Shropshire on its western boundary with Wales. It is bounded by the Shropshire Plain to the east and south, the Welsh hills to the west and the River Ceiriog to the north. The River Ceiriog is a tributary of the River Dee which flows into Liverpool Bay. It rises on the south-east slopes of Moel Fferna in the Berwyn mountains, and flows eastwards through the Ceiriog Valley in Wrexham. It flows below Chirk Castle and the town of Chirk, where the Chirk Aqueduct carries the Llangollen Canal over the river. The Ceiriog joins the Dee east of the town.

The Ordovician shales, mudstones and volcanic ash deposits that run westwards through to the Berwyn Mountains link this NCA geologically with Wales. The lower ground boulder clay drift that covered the area ran from the North Wales glaciers through to the Shropshire, Cheshire and Staffordshire Plain NCA.

Many fine views range westwards into the uplands of Mid and North Wales; eastwards into the Shropshire, Cheshire and Staffordshire Plain and on to the Wrekin; and north-eastwards towards the Peak District.

Most of the transport links run north–south, and include the A5, which joins this area with numerous other NCAs (indeed, the 420-kilometre route runs from London through to Holyhead in Wales), and the A495, which runs from Swansea through to Chester.

A north–south historic and recreational link is provided through the area by the famous Offa's Dyke Path. This well-used National Trail runs along the English–Welsh border, passing through several NCAs including the Shropshire Hills, the Clun and North West Herefordshire Hills and the Black Mountains and Golden Valley.

The Shropshire Union Canal links Shropshire, Staffordshire and Cheshire with the canal system of the West Midlands, at Wolverhampton and the River Mersey and Manchester Ship Canal at Ellesmere Port, Cheshire.

Most of the transport links in this NCA run north/south and includes the A5, which joins the area to numerous other NCAs. The 415 kilometre route runs from London through to Holyhead in Wales.

Key characteristics

- Steeply sloping, flat-topped, predominantly limestone hills form a band across the western half of the area, giving way to gentler foothills and the Shropshire Plain to the east.
- Soils are derived from the Carboniferous limestone bedrock and support rare flora and fauna such as the pyramidal and greater butterfly orchids.
- Numerous streams winding across the undulating landscape, with dramatic gorges carved out in the limestone, support species such as the Atlantic stream crayfish.
- There are scattered patches of broadleaved woodland and coniferous plantations throughout the area, particularly on the steeper slopes, which are dissected by narrow, often wooded valleys. There are linear woodlands along valley sides and wet woodlands on valley bottoms.
- Pasture is the dominant land use on the higher ground, with mixed, more commercial agriculture on the foothills to the east.
- The field pattern is irregular, with species-rich hedgerows (characteristically hazel) and some hedgerow trees across much of the area; however, the pattern is more regular in the north-west, where it is of relatively late enclosure.
- There is a strong Welsh influence on place names, and dispersed settlement character, particularly in the west and south. A clustered settlement pattern occurs in the south-west, associated with the mining industry.
- A strong time depth is evident in the medieval and earlier field patterns and routeways, iron-age hill forts such as that found at Oswestry, scattered parklands on lower slopes and industrial mining activity/archaeology.
- Industrial and residential development is evident around the market town of Oswestry, but the area is still one of the most tranquil in the west Midlands area.
- Many former quarries are dramatic features in the landscape but are now abandoned and have become overgrown with grassland and scrub.
- There are traditional farmsteads and buildings of local Carboniferous limestone with slate roofs. They are occasionally whitewashed.
- Offa's Dyke is an important historic landscape and recreational feature that runs north–south through the area.

Oswestry Uplands today

The distinct character of the Oswestry Uplands lies in the undulating landscape of Carboniferous limestone hills with calcareous grasslands and occasional rocky outcrops, together with steep, wooded valleys and marsh and fen habitats found scattered along its valley floors. Soils are derived from the Carboniferous limestone bedrock, with glacial drift present at the base of the slopes around Oswestry. As a consequence this landscape supports a diverse assemblage of rare flora and fauna. Among the characteristic calcicolous species that occur here are pyramidal and greater butterfly orchids, together with yellow-wort, rock rose, fairy flax, cowslip and salad burnet.

Ordovician shales, mudstones and ash deposits some 470 to 450 million years old fringe the western boundary of Shropshire and run away westwards through the Berwyn mountains of Wales on a broad anticlinal fold. This western margin is dissected into a number of rounded hill blocks by the north–south tributaries of the easterly flowing rivers Tanat, Morda and Ceiriog. The Carboniferous Limestone is most conspicuous at the southern end of the area, where the naturally steep hillsides of Llanymynech, Llynclys and Nant Mawr hills are further emphasised by the dramatic cliffs of quarrying. Considerable industrial archaeology interest now attaches to this area, all related to winning, transporting and burning the limestone. Inclines from the quarries transported the limestone eastwards down to lime kilns by the canal now known as the Montgomery Canal – a branch of the Shropshire Union Canal – which in turn carried limestone across to east Shropshire. Later this was superseded by a complex of railway lines, now the subject of restoration proposals.

There are numerous streams winding across the undulating landscape. Major rivers such as the Dee and Morda have carved out dramatic gorges in the limestone. Atlantic stream crayfish, salmon, trout, otter, dipper and grey wagtail are all found, associated with the area's rivers and streams. The River Dee also hosts an internationally designated Special Area of Conservation (SAC) for its rare

One of the characteristic calcicolous species which occur here is the greater butterfly orchid.

watercourse vegetation, of which 5 ha can be found within this area. North of Pant-glas the land drains northwards to the rivers Ceiriog and Dee. From a ridge between Pant-glas and Treflach the land drains via steep-sided valleys to the River Morda, with glacial deposits around the base of the limestone slopes around Oswestry. To the west, the ridge drains steeply to the rivers Cynllaith and Tanat, which drain southwards into the River Vyrnwy, which converges into the River Severn.

Woods and hedgerows are significant components of the landscape, helping to create the intricate pattern and small scale of the lower slopes. The hedgerows, where hazel often predominates, also often contain mature oaks, adding variety and scale to the hedgerow network. Ancient and semi-natural woodland is present here: mixed deciduous woodlands characterised by ash, hazel and elm are abundant along the steep valley sides, with natural regeneration also occurring around the disused limestone quarries. There are a number of small but important alder woods, which occur at streamside locations along valleys between the hills. There are a few conifer plantations to the north on land of moderate gradient.

Woodlands on limestone are usually of exceptional interest botanically. The main tree species found are ash and wych elm above an understorey of yew and hazel. The ground flora consists essentially of columbine, stinking iris, herb-Paris and wood sanicle, which is an indicator of ancient deciduous woodland – especially on limestone. These woods are also often accompanied by a diverse moss flora. Several large limestone quarries that were abandoned in the last half century have developed into dense pockets of scrub dominated by ash, hawthorn and blackthorn along with spindle and dogwood. Wet woodlands are in the main dominated by alder, with opposite-leaved golden saxifrage characteristic of flushed slopes. The bird communities of these woodlands characteristically include breeding redstart, tree pipit, wood warbler, spotted flycatcher and pied flycatcher.

Scattered farmsteads and hamlets are linked by a network of narrow, winding, sunken lanes. However, in the north, on higher ground, straight lanes run between the late enclosures and open common land. Older buildings are mainly low, slate roofed and roughly constructed in local limestone, sometimes whitewashed and occasionally rendered; some retain earlier timber-frame cores. Industrial settlements are found to the north and south, associated in part with quarrying and mining. The historic market town of Oswestry is situated in the middle of the area.

Disused Carboniferous limestone quarries are characteristic in the south of this area. The quarry faces are dramatic features in the landscape, particularly at Llanymynech and Llynclys. Some form important roosting sites for lesser horseshoe bats, and peregrine falcons now breed in other former quarries. Significant plants occurring on the exposed limestone include limestone fern, Welsh polypody, yew, rue-leaved saxifrage and stone bramble.

The area is rich in history, as evidenced in the iron-age forts at Llanymynech and Old Oswestry, its anciently enclosed farmland, and the development of parkland at Sweeney Hall, Broom Hall and Brogyntyn. Offa's Dyke, a linear earthwork that roughly follows the border between England and Wales, is both an important historic landscape feature and a recreational route, as the popular Offa's Dyke Path National Trail attracts many visitors to the area. Relatively few roads cut through this area. The A5 and A483 run along the eastern edge of the NCA. Development is mainly around Oswestry; the rest of the area is very rural. This lack of large-scale development or infrastructure has contributed to the area remaining one of the most tranquil in the West Midlands.

The landscape through time

The oldest rock – Ordovician shales, some 470 to 450 million years old – were deposited in varying submarine conditions, with associated volcanic activity producing ash deposits. The Carboniferous Limestone was deposited in shallow, warm tropical seas. This can be seen in the classic road section at Llanymynech up Pen-y-foel Lane, a site made more notable by Charles Darwin's description of it, where Carboniferous Limestone lies unconformably on steeply dipping Ordovician shale. As the seas became shallower and deltaic conditions with coastal forests took over, sandstones and Coal Measures were deposited. The pale grey to ferruginous brown sandstones from the Cefn y Fedw Sandstone Formation have been used quite extensively for local building. This Sandstone is succeeded stratigraphically, and geographically eastwards, by the Coal Measures, striking southwards from the heart of the North Wales Coalfield to terminate in the region of Treflach and Morda, south of Oswestry. The presence of the coal has resulted in a small-scale industrial landscape in the immediate vicinity of the old mines around Trefonen, Morda, Park Hall, Gobowen and St Martins. As recently as 25,000 years ago, the glacial, periglacial and tundra conditions led to the deposition sand and gravel deposits on the flood plains and lower ground of all valleys coming out of Wales, from Ceiriog at the northern boundary to Tanat Valley in the south. These deposits are dug locally for aggregates.

The history of the area is dominated by its position at the junction of upland and lowland and its' natural resources. The large iron-age hill forts at Llanymynech and Old Oswestry are evidence of the area's importance in the Iron Age, and it is possible that lead and copper were already being mined in the prehistoric period at Llanymynech. Certainly copper was being mined during the Roman period.

The pattern of scattered hamlets and farmsteads with small, irregular fields and open moorland on the high ground was probably present by the time the Anglo-Saxons arrived in the locality. In the 8th century, Offa's Dyke was created to protect Mercia against attacks and raids from Powys. In the later Saxon period, the area around Oswestry was part of the manor of Maesbury, but the Anglo-Saxon hold on the landscape was probably tenuous, since there are virtually no old English names west of the town.

The large iron-age hill forts at Llanymynech and Old Oswestry are evidence of the area's importance during this period.

The Normans realised the strategic importance of the area and built a castle at Oswestry, which became the centre of the Fitzalan lordship. Here a walled town developed, which, despite frequent Welsh raids, became an important market town that has remained to the present day.

The rural areas in the medieval and early post-medieval period saw continued clearance of the woodlands for livestock and arable farming, which included the practice of commoning on Llynclys Hill. These farming practices have checked scrub encroachment and maintained the characteristic grazed calcareous flora of the area. There was a long history of cattle rearing on the hill farms, with extensive sheep grazing from the late 18th century. More arable-based mixed agriculture with cattle fattening developed on the lowlands to the east and across most of the uplands in the 19th century, where there are fewer and larger farmsteads set within fields, evidencing re-organisation and enclosure in the late 18th and 19th centuries.

During the 18th and 19th centuries the quarries at the southern end of the area really developed, and the mosaic of small, irregular fields and cottages dates from this period. The quarried limestone was transported along the Ellesmere Canal, which opened in 1796, to be replaced by a railway in the 1860s. Prosperity in the 18th and 19th centuries saw the development of parkland at Sweeney Hall, Broom Hall and Brogyntyn. Opened in 1840, the railway station, once on the main line of the Cambrian Railways, closed on 18 January 1965 in favour of a route via Shrewsbury.

Recent development and growth have tended to be focused around Oswestry. The historic legacy of limestone quarrying continues on a large scale at Whitehaven but elsewhere occurs on a much smaller scale. Today the town still retains its vital function as a market and shopping centre serving north-west Shropshire and Mid Wales.

Ecosystem services

The Oswestry Uplands 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 Oswestry Uplands NCA is contained in the 'Analysis' section of this document.

Provisioning services (food, fibre and water supply)

- **Food provision:** The Oswestry Hills are significant for beef and sheep production. Some mixed arable farming takes place on the lower ground to the eastern fringe of the NCA.

- **Water availability:** The western upland areas of the NCA act as an important catchment supplying water of recognised good quality to watercourses flowing generally to the east and south, including the River Tanat, and northwards via the River Ceiriog along the northern boundary of the NCA.

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

- **Climate regulation:** Woodland cover, pasture and the relative absence of built development contribute to the important carbon storage capacity of the area.

- **Regulating water quality:** The River Ceiriog and Morlas Brook in the north of the NCA have a 'good' ecological status. The rivers Morda and Tanat in the centre and south of the NCA have a 'moderate' ecological status. The chemical status of the surface waterbodies in the NCA 'does not require assessment'. The chemical status of groundwater throughout the NCA is 'poor'. A very small portion of the Department for Environment, Food and

Rural Affairs West Midlands Meres priority catchment lies within the NCA, to the north of Pant in the south-east of the NCA. Key problems include sedimentation of watercourses and nutrient enrichment from agricultural run-off.

- **Regulating water flow:** Oswestry Town Council recognises flooding as a significant risk within its Strategic Flood Risk Assessment. The area is important in respect of regulating surface water run-off into its steep-sided valleys by maintaining – and where possible increasing – the porosity and water storage potential of the soils and woodlands. Woodlands (particularly wet woodlands) play an important role in regulating water flow (reducing run-off) and improving quality (diffuse pollution) by stabilising soil. The underlying limestone geology and associated thin soils to the west mean that such water retention measures may be difficult here. The free-draining limestone strata will assist in feeding springlines to the east, naturally regulating surface water flooding.

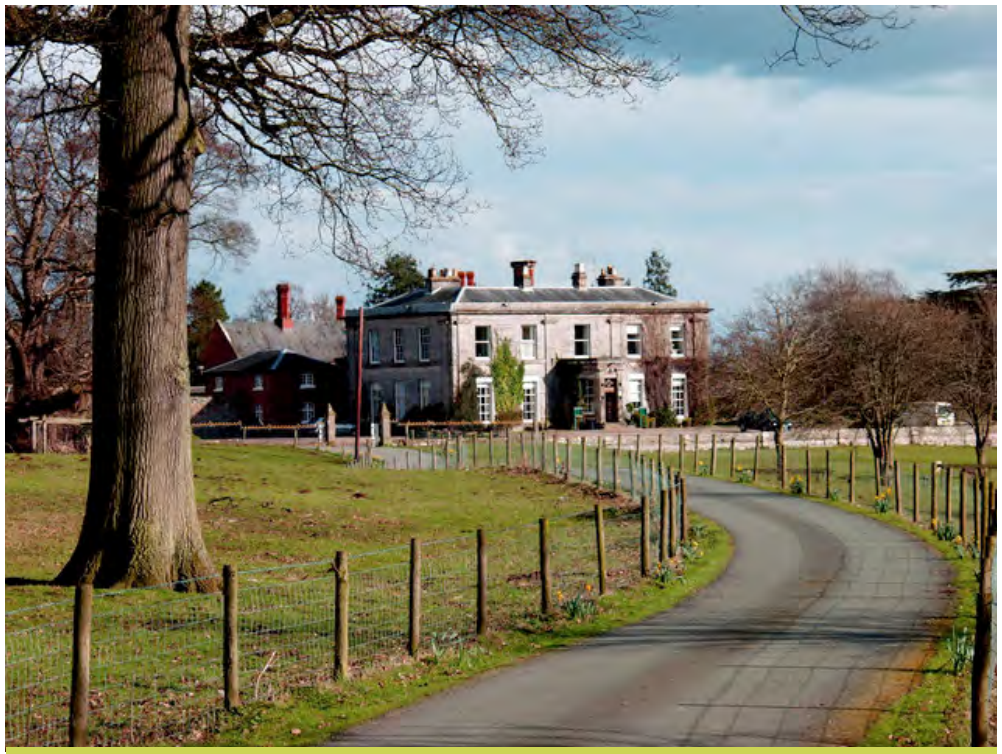
Cultural services (inspiration, education and wellbeing)

- **Sense of history:** The history of the landscape, evident in its moorland pastures and anciently enclosed fields, is linked to its proximity to Wales and cross-border tensions and to its natural resources. Historical elements most evident to the general public are the prominent hill forts and Offa's Dyke, as well as the market town of Oswestry with its Norman castle and its surrounding extensive parks and designed landscapes such as Brogyntyn.

- **Tranquillity:** The western areas of the Oswestry Hills offer some of the most tranquil landscapes within the West Midlands, particularly within the incised valleys that characterise the border areas with Wales.

- **Recreation:** This takes the form of low-key enjoyment of the landscape through walking, cycling and riding. Offa's Dyke Path National Trail runs through the heart of the NCA and is a well-used visitor attraction.

- **Biodiversity:** There is one internationally designated site that lies partially within the NCA: the River Dee and Bala Lake SAC (a site over 1,300 ha, 5 ha of which lie within this NCA), which is designated for its rare watercourse vegetation.



Prosperity in the 18th and 19th centuries saw the development of parkland at places such as Sweeney Hall. The house is now used as a hotel.

Statements of Environmental Opportunity

SEO 1: Protect and enhance the area's distinctive and intricate historic landscape character – particularly its transitional character from the plains of Shropshire, Cheshire and Staffordshire into the uplands of Mid Wales, and its mosaic of pasture, woodlands and grasslands – to retain sense of place, enhance biodiversity networks and retain the area's high tranquillity levels.

For example, by:

- Reinforcing links between wildlife habitats by managing permanent pasture in upland areas in the west of the National Character Area (NCA), to protect the landscape and ecological value of unimproved limestone soils and their flower-rich hay meadows.
- In the lowlands, protecting the pattern of field boundaries by managing hedgerows and other boundary features so that they are retained in, or restored to, good condition.
- Planning and managing commercial woodland in line with the UK Forestry Standard so that awkward shapes are resolved and native tree species are used, to improve landscape and biodiversity value.
- Protecting from further loss key elements of the landscape mosaic, particularly those areas of semi-natural habitat such as calcareous grasslands, fen, ponds and woodlands.
- Planning to reinforce the connectivity of habitats within and into adjoining NCAs and into Wales, using the historic patterns of field boundaries and semi-natural habitats. This will be particularly important in facilitating species movement and colonisation in response to climate change.
- Conserving more remote areas from development by working to ensure that traditional settlement patterns are retained and that these areas maintain relatively high levels of tranquillity.
- Designing new developments that are integrated with surrounding boundaries and landscape character, to minimise noise and visual impact (including light spill).

SEO 2: Protect the distinctive cultural and geological heritage resource across the National Character Area, from traditional buildings and industrial sites to the famous earthworks at Old Oswestry Hill Fort and Offa's and Wat's dykes, so that people can enjoy the recreational and educational benefits of this special area.

For example, by:

- Conserving historic features with heritage interest, and heritage assets, as an integral part of the distinctive landscape.
- Promoting appropriate access throughout the area, maximising opportunities to secure circular routes from the main settlements and linking into the National Trail of Offa's Dyke Path.
- Managing disused mineral workings so that semi-natural habitats develop in these areas and significant geological exposures are retained. Include biodiversity and recreational objectives in restoration plans for active mineral workings.
- Promoting the use of local stone that characterises the buildings through local design guidance.
- Providing access to the distinctive border landscape while protecting the Offa's Dyke Scheduled Ancient Monument.
- Maintaining and restoring the diverse stock of traditional farmstead buildings.
- Promoting wider awareness of the historic environment and, where possible, providing easy access to sites of historic interest. In particular, protect the hill forts throughout the area and features associated with the quarrying industry around Llanymynech Hill.
- Protecting and appropriately managing existing parklands and their veteran trees, and ensuring protection from inappropriate development.
- Protecting geological exposures from damaging practices or overgrowth, so that a good range of sites are available for public access and interpretation.

SEO 3: Sustainably manage the soils, productive farming, woodlands, streams, rivers and grasslands that contribute to the sense of place, maintaining viable long-term food production while enhancing water quality, water flow and climate regulation.

For example, by:

- Supporting good-quality local food initiatives that are linked with maintaining and enhancing this NCA's landscape.
- Working with land managers and farmers to support sustainable food production and the multiple benefits it affords for biodiversity, soil quality, carbon storage, water quality, water availability and the landscape.
- Providing good-quality advice and support to farmers and landowners to secure enhanced soil and water quality by minimising potential pollutants to watercourses (by for example improving soil and manure management on agricultural holdings and improving the management of drainage water and dirty water on farmyards), and increasing best practice storage, handling and use of pesticides to reduce their loss to groundwater or watercourses.
- Ensuring that the rivers are kept in good condition, semi-natural vegetation is used as buffer strips, and reedbeds are used as filtration systems, which would also increase biodiversity and naturally filter the water, enhancing the water quality.
- Retaining and expanding areas of woodland habitat and scrub in appropriate locations and encouraging land managers to refrain from cultivating areas of permanent pasture.
- Managing vegetation and soils to ensure that they remain in good biological condition, for example through sustainable grazing.

Woods and hedgerows are significant components of this landscape. There is scope to expand broadleaved woodland and restore plantations on ancient woodland sites.

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SEO 3: Sustainably manage the soils, productive farming, woodlands, streams, rivers and grasslands that contribute to the sense of place, maintaining viable long-term food production while enhancing water quality, water flow and climate regulation.

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- Maintaining the good structural condition of the soil and enhancing its' organic matter levels by carefully timing both cultivations and access onto land by low-pressure machinery and stock, to prevent compaction and poaching.
- Appropriately managing the rivers, including the River Dee and Bala Lake Special Area of Conservation, streams and reservoirs, to support and protect their biodiversity and ensure good water quality.
- Minimising this NCA's risks of localised flooding by restoring into good condition areas of upland habitats; seeking to restore and extend grasslands, woodlands and hedgerows; and increasing cover of woodland/scrub to slow the speed of rainfall run-off.
- Working with the Environment Agency, water companies, local authorities, the Highways Agency and developers to create more sustainable urban drainage systems to tackle surface water flooding, particularly around Oswestry.
- Promoting sustainable woodland management practices, such as coppicing, pollarding and rotational wood fuel production, to increase timber and biomass supply while enhancing carbon storage and sequestration, and to improve the resilience of woodlands to climate change.
- Ensuring that woodland management allows for retention of deadwood biodiversity and is sympathetic to local landscape character.
- Expanding broadleaved woodland and restoring Plantations on Ancient Woodland Sites. Work to improve the design and landscape sensitivity of new plantations.
- Encouraging multipurpose forestry for conservation and recreation benefits as well as for timber production, supporting greater biodiversity, with more broadleaved trees.
- Encouraging the provision of improved access to woodland as part of woodland management, to increase the opportunities for volunteering, recreation and education and to experience tranquillity.

Supporting document 1: Key facts and data

Area of Oswestry Uplands National Character Area (NCA): 9,981 ha

1. Landscape and nature conservation designations

There are no landscape designations within the Oswestry Uplands NCA.

Source: Natural England (2011)

1.1 Designated nature conservation sites

The NCA includes the following statutory nature conservation designations:

Tier	Designation	Name	Area (ha)	% of NCA
International	Ramsar	n/a	0	0
European	Special Protection Area (SPA)	n/a	0	0
	Special Area of Conservation (SAC)	River Dee and Bala Lake SAC	5	<1
National	National Nature Reserve (NNR)	n/a	0	0
	Site of Special Scientific Interest (SSSI)	A total of 6 sites wholly or partly within the NCA	126	1

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.

The total area of European designations within the NCA is 5 ha; the total area of the River Dee and Bala Lake SAC is 1,309 ha but only a short section of the River Ceiriog, a tributary of the River Dee which delineates the northern-most boundary of the NCA lies within the character area. The River Dee SSSI (River Ceiriog in the NCA) has a coincident boundary with the area of the River Dee and Bala Lake SAC that lies within the NCA.

There are 43 local sites in Oswestry Uplands covering 302 ha, 2 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

SSSI condition category	Area (ha)	Percentage of NCA SSSI resource
Unfavourable declining	0	0
Favourable	55	44
Unfavourable no change	5	4
Unfavourable recovering	66	53

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

Highest elevations are found predominantly on the western boundary of the NCA bordering the Berwyn Hills of Wales. The peak elevation of 372 m can be found in the north-west of the NCA at Selattyn Hill. Elsewhere in the NCA on the North Shropshire Plain, elevations range from 100 to 200 m.

Source: Natural England 2010

2.2 Landform and process

The Oswestry Uplands National Character Area exemplifies the transition between lowland England and upland Wales, across a geological unconformity. It is a boundary that is marked historically by the presence of Offa's Dyke following the western flank of the highest ground all the way from the dynamic river systems of the Ceiriog at Chirk to the Tanat at Llanymynech. Most of the lower ground is drift covered with boulder clay deposited by the North Wales glaciers which covered the Shropshire-Cheshire Plain as recently as 25,000 years ago. The presence of the coal beneath the drift has resulted in a small-scale industrial landscape in the immediate vicinity of the old mines around Trefonen, Morda, Park Hall, Gobowen and St Martins.

Source: Countryside Character Area description; Geology narrative, West Midlands Geodiversity Partnership

2.3 Bedrock geology

On the western margin New Red Sandstone rises abruptly from the North Shropshire Plain. The higher ground merges with that of Wales across Offa's Dyke, underlain by grey Ordovician rock, in a sequence of mudstones and ash deposits. The oldest rocks – Ordovician shales, mudstones and ash deposits, 470 to 450 million years old – fringe the western boundary of Shropshire and run away westwards through the Berwyn Mountains of Wales. This western margin is dissected into a number of rounded hill blocks by the north-to-south tributaries of the easterly flowing Rivers Tanat, Morda and Ceiriog. Carboniferous Limestone hills dominate the southern area of the NCA with associated mineralisation including lead and copper.

Source: Countryside Character Area description; Geology narrative, West Midlands Geodiversity Partnership

2.4 Superficial deposits

Most of this lower ground is drift covered with boulder clay deposited by the North Wales glaciers which covered the Shropshire-Cheshire Plain as recently as 25,000 years ago. This western margin of boulder clay is dissected by active river systems of the easterly flowing rivers Tanat, Morda and Ceiriog.

Source: Countryside Character Area description; Geology narrative, West Midlands Geodiversity Partnership

2.5 Designated geological sites

Tier	Designation	Number
National	Geological Site of Special Scientific Interest (SSSI)	0
National	Mixed Interest SSSI	0
Local	Local Geological Sites	6

Source: Natural England (2011)

One notable site, a classic road section at Llanymynech up Penyfoel Lane, is where Carboniferous Limestone lies unconformably on steeply dipping Ordovician shale. This classic geological structure was made famous by Charles Darwin's description of it.

- 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

The most significant influences on the soils in the area are the effects of the last Pleistocene ice age which, except where dissected by rivers, left an extensive cover of boulder clay, particularly at the base of the hill slopes around Oswestry. Elsewhere, soils are derived from the Carboniferous Limestone bedrock, with glacial drift present.

Source: Geology narrative, West Midlands Geodiversity Partnership

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

Grade	Area (ha)	% of NCA
Grade 1	0	0
Grade 2	0	0
Grade 3	5,585	56
Grade 4	3,797	38
Grade 5	170	2
Non-agricultural	0	0
Urban	286	3

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.

- River Ceiriog 25 km
- Afon (River) Tanat 4 km
- Shropshire Union Canal 3 km

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 Oswestry Uplands NCA has numerous streams winding across the undulating landscape. The western margin of the NCA is dissected into a number of rounded hill blocks by the north to south tributaries of the easterly flowing rivers Tanat, Morda and Ceiriog. North of Pant-Glas the land drains northwards to the rivers Ceiriog and Dee. From a ridge between Pant-Glas and Treflach the land drains via steep-sided valleys to the River Morda.

3.2 Water quality

The total area of Nitrate Vulnerable Zone is 1,809 ha, 18 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

4. Trees and woodlands

4.1 Total woodland cover

The NCA contains 1,157 ha of woodland (12 per cent of the total area), of which 122 ha is ancient woodland.

Source: Natural England (2010)

4.2 Distribution and size of woodland and trees in the landscape

The area was substantially wooded during the late 11th century. Deciduous and mixed woodland is still abundant along the steep valley sides, and copses and natural regeneration occur around disused quarries. In the north, a few conifer plantations are present. There are scattered patches of broadleaved woodland and coniferous plantations throughout the area, particularly on the steeper slopes and linear woodlands along valley sides. Ancient and semi-natural woodland is also present. Mixed deciduous woodlands characterised by ash-hazel-elm are abundant along the steep valley sides, with natural regeneration also occurring around the disused limestone quarries. There are a number of small but important alder woods which occur at stream-side locations along valleys between the hills. Woodlands on limestone are usually of exceptional interest botanically. The main tree species found are ash and wych-elm above an understorey of yew and hazel. The ground flora consists essentially of columbine, stinking iris, herb-paris and wood sanicle which is an indicator of ancient deciduous woodland especially on limestone. These woods are also often accompanied by a very diverse moss flora.

Source: Countryside Character Area description, Natural Area profile

4.3 Woodland types

A statistical 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	687	7
Coniferous	330	3
Mixed	87	<1
Other	53	<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	77	<1
Planted Ancient Woodland (PAWS)	45	<1

Source: Natural England (2004)

5. Boundary features and patterns

5.1 Boundary features

An irregular field pattern with species-rich hedgerows is found across much of the area, though it is more regular in the north-west where it is of relatively late enclosure. Woods and hedgerows are significant components of the landscape, helping to create the intricate pattern and small scale of the lower slopes.

Source: Oswestry Uplands Countryside Character Area description; Countryside Quality Counts (2003)

5.2 Field patterns

The land use pattern is of piecemeal settlements with small field sizes, gradually getting larger towards the foothills in the east around the market town of Oswestry. Scattered hamlets and farms with small irregular fields and open moorland occur on the high ground. Woods and hedgerows are significant components of the landscape, helping to create the intricate pattern and small scale of the lower slopes. The foothills have a more formal feel with parklands present amongst a more regular field pattern enclosed by trimmed hedgerows.

Source: Oswestry Uplands Countryside Character Area description; Countryside Quality Counts (2003); Geology narrative, West Midlands Geodiversity Partnership

6. Agriculture

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

6.1 Farm type

In 2009 there were 175 commercial holdings compared with 167 in 2000.The predominant sectors were dairy and grazing livestock which represented 66 per cent of the total.

Source: Agricultural Census, Defra (2010)

6.2 Farm size

Farm sizes reflect the character of the NCA with only 18 farms greater than 100 ha in area in 2009. Most commercial holdings are between 5-50ha in area with little variation in size categories. Between 2000 and 2009 the number of commercial holdings less than 5 ha in size increased.

Source: Agricultural Census, Defra (2010)

6.3 Farm ownership

2009: Total farm area = 7,169 ha; owned land = 4,492 ha
2000: Total farm area = 6,857 ha; owned land = 4,387 ha

Source: Agricultural Census, Defra (2010)

6.4 Land use

The total farmed area on commercial holdings was 7,169 ha in 2009, compared to 6,857 ha in 2000. The predominant land use is grass and uncropped land (6,502 ha in 2009, representing 91 per cent of the total). Between 2000 and 2009 is the 'other arable crops' increased by 76 per cent whereas there was a 39 per cent reduction in cereals.

Source: Agricultural Census, Defra (2010)

6.5 Livestock numbers

In 2009 there were 10,000 cattle (11,800 in 2000), 36,900 sheep (41,100 in 2000) and 1,300 pigs (3,500 in 2000).

Source: Agricultural Census, Defra (2010)

6.6 Farm labour

The number of principal farmers on commercial holdings remained stable between 2000 and 2009 but the number of full time employees reduced from 29 to 17. There was a small increase in the number of part-time workers.

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

Within the Oswestry Uplands NCA, rock faces, scree and caves support a variety of important habitats for some specialist wildlife.

Source: Geology narrative, West Midlands Geodiversity Partnership

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
Broad-leaved mixed and yew woodland	442	4
Lowland calcareous grassland	51	1
Fens	10	<1
Lowland meadows	5	<1
Lowland dry acid grassland	5	<1
Lowland heathland	3	<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 S41 species are available at: http://data.nbn.org.uk/

8. Settlement and development patterns

8.1 Settlement pattern

There is a strong Welsh influence on place names, dispersed settlement character and farming pattern particularly in the west and south of the area. Scattered farms and hamlets are linked by a network of narrow, winding sunken lanes. However, in the north on higher ground, straight lanes run between the late enclosures and open common land. A clustered settlement pattern occurs in the south-west, associated with the mining industry. Industrial and residential development has spread around the market town of Oswestry.

Source: Oswestry Countryside Character Area description; Countryside Quality Counts (2003); Geology narrative, West Midlands Geodiversity Partnership

8.2 Main settlements

Oswestry and Gobowen are large settlements that straddle the eastern boundary of the NCA. Chirk Bank straddles the northern boundary. Pant continues to expand at the foot of the Oswestry Hills. The total estimated population for this NCA (derived from ONS 2001 census data) is: 22,379.

Source: Oswestry Countryside Character Area description; Countryside Quality Counts (2003); Geology narrative, West Midlands Geodiversity Partnership

8.3 Local vernacular and building materials

Traditional buildings mostly date from the 18th and 19th centuries, in local limestone rubble (sometimes white-washed and occasionally rendered) with slate roofs. Many small houses are associated with common-edge settlements near quarries.

Source: Oswestry Countryside Character Area description; Countryside Quality Counts (2003); Geology narrative, West Midlands Geodiversity Partnership

9. Key historic sites and features

9.1 Origin of historic features

Iron-age forts at Llanymynech and Old Oswestry provided a focus for surrounding lowland communities. There is a strong Welsh influence in place names, the border character reinforced by presence of Wat's Dyke (around Oswestry) and later Offa's

Dyke in the 8th century. There is a strongly and anciently-rooted dispersed pattern of settlement with isolated farmsteads, connected by deep and winding tracks, and hamlets. Late 18th and 19th century farmsteads with straight roads to the northern Selattyn Hills associated with enclosure of the landscape in the 18th and 19th centuries by growth of squatter settlements linked to the quarrying industry in the south of the area. Norman castles formed the focus for growth of Oswestry as a market centre. Deposits of lead and copper such as at Llanymynech were mined during the Iron Age/Romano-British period. Extensive quarrying of limestone in the southern Treflach hills, with very large quarries at Whitehaven and Llanymynech Hill, led to large-scale production in the 18th century. Extensive parks and designed landscapes such as Brogyntyn are clustered to the west and surrounding Oswestry. Nearly half of the former extent of parkland has been lost (mainly to agriculture) since the end of the First World War.

Source: Countryside Quality Counts Draft Historic profile, Countryside Character Area description

9.2 Designated historic assets

This NCA has the following historic designations:

- 1 Registered Park and Gardens covering 230 ha
- 0 Registered Battlefields
- 45 Scheduled Monuments
- 286 Listed Buildings

Source: Natural England (2010)

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

10. Recreation and access

10.1 Public access

- 1 per cent of the NCA (95 ha) is classified as being publically accessible.
- There are 217 km of public rights of way at a density of 2 km per km^2.
- There is 1 National Trail (Offa's Dyke, runs along the western boundary of the NCA for a total length of 19 km).

Source: Natural England (2010)

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

Access designation	Area (ha)	% of NCA
National Trust (Accessible all year)	0	0
Common Land	82	<1
Country Parks	0	0
CROW Access Land (Section 4 and 16)	95	<1
CROW Section 15	28	<1
Village Greens	0	0
Doorstep Greens	0	0
Forestry Commission Walkers Welcome Grants	129	<1
Local Nature Reserves (LNRs)	3	<1
Millennium Greens	<1	<1
Accessible National Nature Reserves (NNRs)	0	0
Agri-environment Scheme Access	12	<1
Woods for People	77	1

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) the areas with the highest scores are found in the east of the NCA. The lowest scores for tranquillity are found around the settlements.

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

Category of tranquillity	Score
Highest value within NCA	55
Lowest value within NCA	-56
Mean value within NCA	4

Source: CPRE (2006)

- More information is available at the following address: **http://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 that disturbed areas are predominantly in the west of the NCA in a north-south linear pattern that closely follows the alignment of the A483 that links the main settlements. Particularly high values of disturbance are found around the settlements of Pant, in the south of the NCA, and Oswestry and Weston Rhyn in the north. Areas of undisturbed terrain exist in the east of the NCA, in particular on the eastern border with Wales in a north-south linear pattern that closely follows the alignment of the Offa's Dyke National Trail.

A breakdown of intrusion values for this NCA is detailed in the table below.

Category of intrusion	1960s (%)	1990s (%)	2007 (%)	% change (1960s-2007)
Disturbed	14	44	33	19
Undisturbed	75	42	63	12
Urban	4	4	4	0

Sources: CPRE (2007)

Notable trends from the 1960s to 2007 are a 19 per cent increase in the area of disturbed territory.

- More information is available at the following address: **http://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%.
The convention <1 has been used to denote values less than a whole unit.

Supporting document 2: Landscape change

Recent changes

Trees and woodlands

- Many woodlands are unmanaged and some are being damaged by stock grazing. Countryside Quality Counts data (2004) suggests that there has been very limited new planting.

- The conifer plantations on the more open areas do not always meet best current design standards. There is limited evidence of new planting associated with conifer plantations.

Boundary features

- Historically, there has been a decline in hedgerow management. This may have had some effect on the variation in hedgerows across the area and affected the hazel hedges which are characteristic of the Oswestry Uplands. The Countryside Survey 2000 suggests that fences and hedges are the most common boundary types.

- More recently, there has been an increase in the uptake of agri-environment scheme options for boundary management and for those farms not in a scheme; the work of the Campaign for the Farmed Environment (www.cfeonline.org.uk) indicates these farms use a range of voluntary techniques to enhance boundary features and other enhancement works.

There is an opportunity to reinforce the connectivity of habitats within and into adjoining NCAs and into Wales, using the historic patterns of field boundaries and semi-natural habitats.

Agriculture

- Farming in the Oswestry Hills is dominated by livestock. The emphasis appears to have shifted away from dairy farming towards beef and sheep production in recent times. This ongoing pastoral land use is important in establishing and maintaining the character of the area.

Settlement and development

- As an essentially rural NCA, growth impacts are not significant beyond Oswestry itself. Within Oswestry there is increased demand for housing and employment sites. These sites are identified within Shropshire County Council's Development plan and could potentially have an impact on the character of this historic market town.

- There has been an increase in livestock production units and poultry units (including the larger free range units).

Semi-natural habitat

- Semi-natural habitats have suffered through loss and neglect in the past and high quality habitats are fragmented. Direct loss of biodiversity has slowed but still continues. A gradual rise in uptake of Environmental Stewardship is helping to address this loss.

- Key upland and farmland bird species such as lapwing, curlew and snipe have declined from the 1970s to historically low levels.

Historic features

- In 1918 about 6 per cent of the area was historic parkland. By 1995 it is estimated that nearly half of the 1918 area had been lost. About a quarter of the remaining parkland is covered by a Historic Parkland Grant.

- More than a fifth of listed working buildings have obvious signs of structural disrepair, and a tenth to a fifth with visible adaptive reuse. High levels of dereliction in the upland and industrial sub-area. High levels of conversion to residential use in the lowland sub-area to the east.

- Agricultural use of historic farmsteads has declined and given way to residential use so that the proportion of farmsteads used as dwellings, around two thirds, is similar to the average for the west Midlands.

Coast and rivers

- The River Ceiriog and Morlas Brook in the north of the NCA has had a consistently 'good' ecological status. The rivers Morda and Tanat in the centre and south of the NCA have had a 'moderate' ecological status.

- Invasive weeds such as Japanese knotweed, giant hogweed and Himalayan balsam are becoming increasingly common, posing an escalating threat to native flora by dominating riparian habitats.

- A small portion of Defra's West Midlands Meres priority catchment lies within the NCA, to the north of Pant in the south-east of the NCA. Key problems include sedimentation of watercourses and nutrient enrichment from agricultural run-off.

Minerals

- The Oswestry Hills have a historic legacy of quarrying of limestone which continues on a large scale at Whitehaven but elsewhere on a much smaller scale. A number of disused quarries, including the large scale workings of Llanymynech Hill, are becoming naturalised and provide habitat, geodiversity, landscape and heritage interest to the NCA.

Drivers of change

Climate change

The Oswestry Uplands NCA is likely to experience warmer, drier summers and warmer, wetter winters in future. There is also likely to be more frequent extreme weather events such as storms and periods of intense rainfall. There will be direct effects on the Oswestry Uplands landscape from these changes, including:

- Changes in the species and communities that make up habitats.
- Changes in the timing of seasonal events like flowering, breeding and migration.
- More frequent droughts, which could result in crop failures and very low river levels affecting river biodiversity, particularly in the River Ceiriog and Morlas Brook.
- Increased erosion in winter, resulting in more nutrients being washed into rivers such as the Ceiriog.
- Intense storm events and extreme rain events are likely to happen at a greater frequency which means that habitats will struggle to recover from any damage they cause. This potentially will have the greatest impact in wooded areas.
- A loss of mature trees in the landscape as these succumb to extended droughts and more severe storms.
- Differences in the ability of woodland species to adapt to a longer growing season.
- A reduction in water resources available for agriculture, recreation, potable water supply and habitats.
- Changes in the viability of some crop varieties and livestock breeds that are less able to cope with drought conditions.
- Damage to historic buildings and structures such as earthworks, caused by an increase in soil erosion during peak rainfall and drought events.

Other key drivers

- Structural change in agriculture will continue to have a significant impact on the special qualities of this area. The future of the livestock sector, particularly beef cattle and sheep, are especially important to this NCA in maintaining and enhancing its' key features. There will be opportunities to work with farming and land owning communities as the key deliverers of a range of ecosystems services.
- For the rural communities of the Oswestry Uplands NCA to remain viable and vibrant there is demand for new housing, tourism and business development particularly around Oswestry.

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.

Oswestry Uplands, near Rhydycroesau.

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 enhance the area's distinctive and intricate historic landscape character – particularly its transitional character from the plains of Shropshire, Cheshire and Staffordshire into the uplands of Mid Wales, and its mosaic of pasture, woodlands and grasslands – to retain sense of place, enhance biodiversity networks and retain the area's high tranquillity levels.	↗ *	↗ **	↗ **	↗ **	↗ ***	↗ ***	↗ *	↗ *	↗ **	↗ **	↗ *	↗ *	n/a	↑ **	↗ **	↑ ***	↗ *	↑ *	↗ *
SEO 2: Protect the distinctive cultural and geological heritage resource across the National Character Area, from traditional buildings and industrial sites to the famous earthworks at Old Oswestry Hill Fort and Offa's and Wat's dykes, so that people can enjoy the recreational and educational benefits of this special area.	↔ ***	↗ *	↗ *	↔ ***	↗ *	↗ *	↗ *	↗ *	↗ *	↗ *	↗ *	↗ *	n/a	↑ ***	↑ ***	↗ *	↑ **	↗ *	↑ *
SEO 3: Sustainably manage the soils, productive farming, woodlands, streams, rivers and grasslands that contribute to the sense of place, maintaining viable long-term food production while enhancing water quality, water flow and climate regulation.	↑ ***	↗ *	↑ **	↗ *	↑ **	↑ **	↑ **	↑ **	↑ **	↗ **	↗ **	↗ **	n/a	↑ **	↗ **	↗ **	↗ *	↗ *	↗ *

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.

Dark plum = National Importance; Mid plum = Regional Importance; Light plum = Local Importance

Landscape attributes

Landscape attribute	Justification for selection
Flat-topped hills, mostly of limestone, with steep slopes form a band across the western half of the area giving way to gentler foothills and the Shropshire Plain to the east.	■ The western margin of the New Red Sandstone rises abruptly from the north Shropshire Plain. The higher ground merges with that of Wales across Offa's Dyke, underlain by grey Ordovician rock, in a sequence of mudstones and ashes. ■ The oldest rock – Ordovician shales, mudstones and ashes 470 to 450 million years old – fringes the western boundary of Shropshire and runs away westwards through the Berwyn Mountains of Wales. This western margin is dissected into a number of rounded hill blocks by the north to south tributaries of the rivers Tanat, Morda and Ceiriog. ■ Carboniferous Limestone hills dominate the southern area of the NCA.
Numerous streams winding through the undulating landscape with dramatic gorges carved out of the limestone.	■ Numerous streams winding across the undulating landscape with steep, wooded sides. ■ Major rivers such as the Dee and Morda have carved out dramatic gorges in the limestone. Atlantic stream crayfish, salmon, trout, otter, dipper and grey wagtail are all found. ■ The River Dee also hosts an internationally designated Special Area of Conservation of which 5 ha can be found within this area. It is designated for its rare watercourse vegetation.
The steep slopes are dissected by narrow, often wooded valleys. There are scattered patches of broadleaved woodland and coniferous plantations throughout the area, particularly on the steeper slopes and linear woodlands along valley sides.	■ Nearly a tenth of the area is woodland, a third of which is coniferous plantations. ■ In the north, few conifer plantations are present. There are scattered patches of broadleaved woodland and coniferous plantations throughout the area, particularly on the steeper slopes and linear woodlands along valley sides. Ancient and semi-natural woodland is also present. ■ Mixed deciduous woodlands characterised by ash-hazel-elm are abundant along the steep valley sides, with natural regeneration also occurring around the disused limestone quarries. There are a number of small but important alder woods which occur at stream side locations along valleys between the hills.
Pasture is the dominant land use on the higher ground, with mixed, more intensive agriculture on the foothills to the east.	■ The predominant land use is grass and uncropped land (6,502 ha) representing 91 per cent of the total. ■ Livestock production and dairying are the principal agricultural activities.

Landscape attribute	Justification for selection
An irregular field pattern with species-rich hedgerows is found across much of the area, though it is more regular in the north-west where it is of relatively late enclosure.	■ The land use pattern is of piecemeal settlements with small field sizes, gradually getting larger towards the foothills in the east around the market town of Oswestry. Scattered hamlets and farms with small irregular fields and open moorland on the high ground. ■ Woods and hedges are significant components of the landscape, helping to create the intricate pattern and small scale of the lower slopes.
Scattered parks and estates are found, in particular on the lower slopes around Oswestry.	■ Scattered farms and hamlets are linked by a network of narrow, winding sunken lanes. ■ Development of parkland at Sweeney Hall, Broom Hall, and Brogyntyn. ■ Extensive parks and designed landscapes, such as Brogyntyn, clustered to west and surrounding Oswestry. ■ Nearly half of the former extent of parkland has been lost (mainly to agriculture) since the end of the First World War.
Earthworks including Offa's Dyke, hill forts, and a concentration of other scheduled monuments, listed buildings and historic settlement pattern survive along with strong Welsh cultural influences.	■ Iron-age forts at Llanymynech and Old Oswestry provided a focus for surrounding lowland communities. ■ Strong Welsh influence in place names, the border character reinforced by presence of Wat's Dyke (around Oswestry) and later Offa's Dyke in the 8th century. ■ Strongly and anciently-rooted dispersed pattern of settlement with hamlets and isolated farmsteads connected by deep and winding tracks. ■ Late 18th and 19th century farmsteads with straight roads to northern Selattyn Hills, associated with enclosure of the landscape and growth of squatter settlements linked to quarrying industry to south of area during this period. ■ Norman castle formed focus for growth of Oswestry as market centre. ■ Deposits of lead and copper, for example at Llanymynech, were mined during the Iron Age/Romano-British period. ■ 1 Registered Park and Garden covering 230 ha. ■ 45 Scheduled Monuments. ■ 286 Listed Buildings.

Landscape attribute	Justification for selection
Extensive limestone quarrying in the south which has been used in traditional vernacular buildings but many quarries are now abandoned and have become overgrown with grassland and scrub.	■ Extensive quarrying of limestone in the southern Treflach hills, with very large quarries at Whitehaven and Llanymynech Hill led to large-scale production in 18th century. ■ The Oswestry Hills have a historic legacy of quarrying of limestone which continues on a large scale at Whitehaven but elsewhere occurs on a much smaller scale. ■ A number of disused quarries, including the large-scale workings of Llanymynech Hill, are becoming naturalised and provide habitat, geodiversity, landscape and heritage interest to the NCA. ■ Traditionally the buildings are of limestone with slate roofs, and occasionally whitewashed.
Regionally, the area has high tranquillity levels and is much enjoyed for quiet recreation.	■ Relatively few roads cut through this area. The A5 and A483 run along the eastern edge of the NCA. Development is mainly around Oswestry but the rest of the area is very rural. ■ Offa's Dyke is also an important historic landscape feature and recreational route as a popular National Trail attracting many visitors to the area.

Landscape opportunities

- Protect the area's distinctive and intricate landscape character, particularly its transitional character from the plains of Shropshire, Cheshire and Staffordshire into the uplands of Mid Wales, its mosaic of pasture, woodland, arable farmlands and the designed landscapes of its parks.
- Protect the pattern of field boundaries and the narrow sunken lanes in the lowlands by managing hedgerows and other boundary features so that they are retained in or restored to good condition.
- Work closely with landowners in managing the areas riparian habitats that contribute to the sense of place and biodiversity.
- Promote access throughout the area, maximising opportunities to secure circular routes for all users from the main settlements and linking into the National Trail of Offa's Dyke Path while simultaneously ensuring protection of Offa's Dyke Scheduled Ancient Monument.
- Plan and manage commercial woodland so that incongruous shaped plantations are re-profiled, also introduce native tree species into such woodlands to improve landscape and biodiversity value.
- Maintain and restore the diverse stock of traditional farmstead buildings and other traditional vernacular styles and settlement patterns.
- Promote wider awareness of the historic environment and where possible provide easy access to sites of historic interest. In particular protect the hill forts throughout the area and features associated with the quarrying industry around Llanymynech Hill.
- Protect and appropriately manage existing parklands and their veteran trees.
- Protect geological exposures from damaging practices or overgrowth, so that a good range of sites are available for public access and interpretation.

There is an opportunity to manage disused mineral workings so that semi-natural habitats develop in these areas and significant geological exposures are retained.

Ecosystem service analysis

The following section shows the analysis used to determine key ecosystem service opportunities within the area. These opportunities have been combined with the analysis of landscape opportunities to create Statements of Environmental Opportunity.

Please note that the following analysis is based upon available data and current understanding of ecosystem services. It does not represent a comprehensive local assessment. Quality and quantity of data for each service is variable locally and many of the services listed are not yet fully researched or understood. Therefore the analysis and opportunities may change upon publication of further evidence and better understanding of the inter-relationship between services at a local level.

Service	Assets/ attributes: main contributors to service	State	Main beneficiary	Analysis	Opportunities	Principal services offered by opportunities
Food provision	Relatively fertile soil Livestock (beef cattle and sheep) Pasture	Over half of the area is grade 3 agricultural land, the rest being predominantly grade 4. The Oswestry Hills are significant for beef and sheep production. Some mixed arable farming takes place on the lower ground to the eastern fringe of the NCA. Regional Maintaining sustainable levels of livestock farming can help to maintain the character of the NCA.	Regional	Maintaining sustainable levels of livestock farming can help to maintain the character of the NCA. The landscape supports an important local sheep and beef cattle industry which can provide multiple benefits in terms of food production, preserving landscape character and supporting biodiversity if appropriately managed.	Work with farmers to develop supply chains and produce a good quality product that is linked with maintaining and enhancing this NCA's landscape character. Work with land managers and farmers to support sustainable food production and the multiple benefits it affords for biodiversity, soil quality, carbon storage, water quality, water availability and landscape character. Provide good quality advice, best practice and support to farmers and landowners to minimise diffuse pollution entering watercourses and to secure enhanced soil and water quality.	**Food provision** **Biodiversity** **Sense of place/ inspiration** **Sense of history** **Regulating soil erosion** **Regulating soil quality** **Regulating water quality** **Regulating water flow** **Climate regulation**

Service	Assets/ attributes: main contributors to service	State	Main beneficiary	Analysis	Opportunities	Principal services offered by opportunities
Timber provision	Soils Woodlands (softwood and a small amount of good quality hardwood)	Woodland covers 12 per cent of this NCA. Broadleaved comprises around half of the total woodland resource.	Local	A third of the woodland is coniferous (timber resource) and half is broadleaved (low grade timber resource such as firewood). Much of this resource is currently under managed. There is potential to increase extracted volumes of timber by utilising the resources contained within the NCA's more remote and less accessible woodlands. In addition to softwood timber production, there is a small amount of higher-quality hardwood timber produced.	Promote sustainable woodland managementpractices, such as coppicing, pollarding, and rotational wood fuel production, to increase timber and biomass supply while enhancing carbon storage and sequestration, and to improve the resilience of woodlands to climate change. Ensure that woodland management allows for retention of deadwood biodiversity and is sympathetic to local landscape character. Opportunities for sustainable soil management especially atreplanting/harvesting. Expand broadleaved woodland and restore Plantations on Ancient Woodland Sites. Work to improve design and landscape sensitivity of new plantations. Ensure woodland and forestry felling operations are in keeping with the landscape character and provide maximum benefits for biodiversity. Encourage multipurpose forestry for conservation and recreation benefits by providing more opportunities for community engagement to increase woodland cover as well as timber production, and supporting greater biodiversity with more broadleaved trees. Encourage improved access to woodland to increase the opportunities for volunteering, recreation and education and to experience tranquillity.	**Timber provision** **Recreation** **Climate regulation** **Regulating soil erosion** **Regulating soil quality** **Regulating water quality** **Regulating water flow** **Biomass energy** **Sense of place/ inspiration** **Biodiversity**

Service	Assets/ attributes: main contributors to service	State	Main beneficiary	Analysis	Opportunities	Principal services offered by opportunities
Water availability	Topography Rivers Free-draining limestone strata connecting the land surface with ground water	The River Ceiriog runs along the northern boundary of the NCA, and there is currently 'no water available' from this resource. The Shropshire Union Canal crosses through the north east of the NCA; its water supply is provided by the River Dee which runs to the north of the NCA, from where there is 'no water available' for further abstractions. In contrast, the River Morda and the River Tanat crossing the middle and south of the NCA respectively both have 'water available' for additional abstraction. The free-draining limestone strata assist with feeding springlines to the east.	Regional	The western upland areas of the NCA act as an important catchment supplying good quality water to watercourses flowing generally to the east and south including the River Tanat, and northwards via the River Ceiriog along the northern boundary of the NCA. The River Dee hosts an internationally designated Special Area of Conservation (SAC) for its rare watercourse vegetation, of which 5 ha can be found within this area.	Carefully control surface and ground water abstraction so that the aquifer and surface water supplies downstream are not depleted. Support measures to maintain and improve soil structure to increase permeability and water retention by the soil. Appropriately manage the aquifers, rivers and tributaries to protect the main water sources within the area and the Special Area of Conservation. Provide guidance and advice on crops that assist water conservation.	**Water availability** **Climate regulation** **Regulating soil erosion** **Regulating soil quality** **Regulating water flow** **Regulating water quality** **Biodiversity**

Service	Assets/ attributes: main contributors to service	State	Main beneficiary	Analysis	Opportunities	Principal services offered by opportunities
Genetic diversity	Shropshire sheep Rare breed pigs/ cattle	Since February 2013 Shropshire sheep are no longer considered rare in the UK and the breed has been officially removed from the Rare Breed Survival Trust's Watchlist.	Local	Although now removed from the Rare Breed Survival Trust's Watchlist, there is still a need to encourage this breed where it still has a stronghold. Maintaining rare breeds is important for food security and for maintaining genetic diversity. Hardy, adaptable rare breeds can also aid future land management through conservation grazing. This will help to maintain a sense of place and increase biodiversity.	Support existing and new rare and ancient breed farms, for local food production and conservation grazing.	**Genetic diversity** **Food production** **Biodiversity** **Sense of place/ inspiration**
Biomass energy	Woodland cover Soils	A tenth of the NCA is woodland, offering potential for the provision of biomass by bringing unmanaged woodland back under management and as a by-product of commercial timber production. The soils support a high potential yield for miscanthus in the south-east of the NCA, lowering to a medium potential yield in the north-west of the NCA. For information on the potential landscape impacts of biomass plantings within the NCA, refer to the tables on the Natural England website at: **http://www.naturalengland.org.uk/ourwork/farming/funding/ecs/sitings/areas/default.aspx**	Local	Sensitive management of existing unmanaged woodland offers wood fuel potential. Dead wood is also an important component to retain in semi-natural woodlands for biodiversity (fungi, lichen, inverts) as well as nutrient cycling and soil formation (underpinning services regulating climate, soil quality, soil erosion and water quality). Establishment of energy crops will achieve multiple benefits where this is sited to avoid harm to, and enhance, biodiversity, water quality and availability. Visual impact should also be taken into account.	Seek opportunities to plant energy crops close to existing areas of woodland where appropriate to increase biomass production while maintaining the overall character of the landscape. Bring unmanaged areas of woodland back into management to increase biomass production. Promote sustainable soil management especially at replanting/harvesting.	**Biomass energy** **Climate regulation** **Regulating soil erosion** **Regulating soil quality** **Biodiversity** **Timber provision**

Service	Assets/ attributes: main contributors to service	State	Main beneficiary	Analysis	Opportunities	Principal services offered by opportunities
Climate regulation	Soils Woodlands Pasture and other permanent grassland	The mineral soils of this NCA generally have a low soil carbon content. The higher soil carbon levels are likely to be associated with the very acid peaty soils with a peaty surface. Areas under permanent pasture and with the organic soils and areas of woodland cover (12 per cent of the NCA) generally have a high carbon content.	Regional	The woodlands of the NCA also play an important role in the sequestration and storage of carbon, both in their organic-rich soils and in the woody material itself. There is an opportunity to maintain the carbon storage potential of the area and increase it through the extension of these habitats and by bringing unmanaged woodland back under management. Habitat restoration and creation would help address multiple issues such as responding to the direct impact of climate change and habitat fragmentation. The greater the area of well connected, good quality habitat, the more resilient the landscape will be to the impacts of climate change and other pressures.	Retain and expand areas of scrub and woodland habitat into a coherent habitat network, ensuring that calcareous grassland habitats are retained and expanded within the habitat mosaic. Encourage and support land managers to retain permanent pasture, avoiding losses to cultivation. Manage vegetation and soils to ensure good biological condition, seeking opportunities for maintenance or enhancement, for example through sustainable grazing.	**Climate regulation** **Biodiversity** **Sense of place/ inspiration** **Regulating soil erosion** **Regulating soil quality** **Regulating water quality** **Regulating water flow**

Service	Assets/ attributes: main contributors to service	State	Main beneficiary	Analysis	Opportunities	Principal services offered by opportunities
Regulating water quality	Grasslands Woodlands Hedgerows Rivers Soils	The River Ceiriog and Morlas Brook in the north of the NCA have a 'good' ecological status. The rivers Morda and Tanat in the centre and south of the NCA have a 'moderate' ecological status. The chemical status of the surface waterbodies in the NCA 'does not require assessment'. The chemical status of groundwater throughout the NCA is 'poor'. A very small portion of Defra's West Midlands Meres priority catchment lies within the NCA, to the north of Pant in the south-east of the NCA. Key problems include sedimentation of watercourses and nutrient enrichment from agricultural run-off.	Regional	Wider application of best practice land management (Catchment Sensitive Farming techniques) would reduce nutrient and pesticide losses to water from agricultural holdings. This might include: ■ Increasing best practice storage, handling and use of pesticides to reduce their loss to groundwater or watercourses. ■ Improving soil and manure management on agricultural holdings. ■ Improving the management of drainage water and dirty water on farm yards. ■ Limiting the pathways for pesticides and nutrients entering the river. Water quality can be enhanced by ensuring that the rivers are kept in good condition, semi-natural vegetation used as buffer strips and reedbeds as filtration systems that would also increase biodiversity and naturally filter the water. Himalayan balsam, a non-native invasive plant which colonises the river banks, is also preventing native riverside plant species to thrive which in turn increases the amount of fine sediment entering the channel through surface run-off. Slowing run-off could have significant positive impacts on regulating soil erosion and subsequent sedimentation, biodiversity and soil and pollution sources.	Appropriately manage the rivers, streams and reservoirs to support and protect their biodiversity and ensure good water quality. Promote the Catchment Sensitive Farming Scheme to farmers and landowners. Ensure good management of woodlands and hedgerows as natural barriers to run-off.	**Regulating water quality** **Biodiversity** **Water availability** **Regulating soil erosion** **Regulating soil quality** **Regulating water flow** **Sense of place/ inspiration**

Service	Assets/attributes: main contributors to service	State	Main beneficiary	Analysis	Opportunities	Principal services offered by opportunities
Regulating water flow	Soils Grasslands Woodlands Hedgerows Rivers	This NCA has a relatively low level of fluvial flood risk, the greater risk being from surface water flooding. Oswestry Town Council recognises flooding as a significant risk within its Strategic Flood Risk Assessment.	Regional	Surface water run-off into the steep sided valleys may be regulated by maintaining and where possible increasing the porosity and storage of the soils and woodlands of the upland areas. Underlying limestone geology and associated thin soils to the west may restrict such measures; however, the free-draining limestone strata will feed springlines to the east, providing some natural regulation of surface water flow.	To minimise this NCA's risks of localised flooding, restore upland habitats to good condition, seek to restore and extend grasslands, woodlands and hedgerows to intercept and slow the speed of rainfall run-off. Work with the Environment Agency, water companies, local authorities, the Highways Agency and developers to create more sustainable urban drainage to tackle surface water flooding particularly around Oswestry.	**Regulating water flow** **Regulating soil quality** **Regulating soil erosion** **Regulating water quality** **Biodiversity** **Sense of place/ inspiration** **Climate regulation**
Regulating soil quality	Soils Areas of semi-natural habitat including woodlands, hedgerows and permanent grassland	The two main soil types in this NCA are: ■ Freely draining slightly acid loamy soils covering half the NCA. ■ Slowly permeable seasonally wet acid loamy and clayey soils covering a third of the NCA.	Local	The freely draining slightly acid loamy soils have potential for increased organic matter levels through management interventions. They may be valuable for groundwater recharge, aiding river base flows, requiring the maintenance of good soil structure to aid water infiltration and the matching of nutrients to needs to prevent groundwater pollution. **Continued on next page...**	Maintain good soil structural condition and enhance soil organic matter levels by carefully-timing cultivations and access onto land by low pressure machinery and stock to prevent compaction and poaching.	**Regulating soil quality** **Regulating soil erosion** **Regulating water quality** **Regulating water flow** **Biodiversity** **Water availability** **Food provision**

Service	Assets/attributes: main contributors to service	State	Main beneficiary	Analysis	Opportunities	Principal services offered by opportunities
Regulating soil quality cont.				**... continued from previous page** The slowly permeable seasonally wet acid loamy and clayey soils are at risk of diffuse pollution and flooding as a result of poor water infiltration. Soils are easily damaged when wet and therefore it is important to minimise compaction and/or capping risk which will tend to exacerbate run-off problems. These soils may have limited potential for increasing organic matter levels by management interventions. Some component soils are at risk from topsoil compaction and poaching, requiring careful management of weak topsoils (such as through minimum tillage and addition of organic matter) to help maintain soil structure. Development of iron pans can occur in some soils. Maintaining good structural condition and enhancing organic matter will improve soil structure, root penetration and water infiltration.		

Service	Assets/attributes: main contributors to service	State	Main beneficiary	Analysis	Opportunities	Principal services offered by opportunities
Regulating soil erosion	Soils Semi-natural habitats including woodlands, hedgerows and pasture	The majority of soils in this NCA are susceptible to soil erosion. Those that are not are the slowly permeable seasonally wet acid loamy and clayey soils and the freely draining floodplain soils together covering a third of the NCA. The freely draining slightly acid loamy soils that cover nearly half of the NCA area 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 cultivation or where soils are compacted. There is the potential for wind erosion on some coarse textured cultivated variants. A very small portion of Defra's West Midlands Meres priority catchment lies within the NCA, to the north of Pant in the south-east of the NCA. Key problems include soil loss causing sedimentation of adjacent watercourses.	Local	The soils with impeded drainage are easily compacted by machinery or livestock if accessed when wet, increasing the risks of soil erosion by surface water run-off, especially on steeper slopes. Increasing the network of semi-natural habitats would increase the area of land maintained under stable conditions, reducing the risk of soil erosion, increasing the opportunities for the movement of species and enhancing landscape features that contribute to sense of place and tranquillity. Carefully-timed cultivations and access onto land by low pressure machinery and stock to prevent compaction and poaching would contribute to regulating soil erosion and improve soil quality. Maintaining good structural condition and enhancing organic matter will improve soil structure, root penetration and water infiltration.	Working with partners across the NCA, aim to increase woodland and shelter belts and restore hedgerows in poor condition to act as wind breaks and to bind soil in proximity. Increase the condition of riparian habitats, reintroducing a coherent network of habitats to protect underlying soils and trap sediment before it enters the watercourses. Work with landowners to encourage carefully timed cultivations and to manage access onto land by machinery and stock to prevent compaction and poaching.	**Regulating soil erosion** **Biodiversity** **Regulating water quality** **Water availability** **Regulating water flow** **Regulating soil quality** **Food provision** **Sense of place/ inspiration** **Biomass energy** **Geodiversity**

Service	Assets/attributes: main contributors to service	State	Main beneficiary	Analysis	Opportunities	Principal services offered by opportunities
Pollination	Unimproved grasslands Lowland meadows Hedgerows Arable margins	A tenth of the NCA is semi-natural habitat providing sources for pollinating insects. The hedgerow network, of which management is in decline may be an important source of nectar.	Local	Extended networks of species-rich hedgerows and lowland meadow will maintain a diverse range of flora which flower over a prolonged period of time and provide a good habitat for pollinating invertebrates to move through and between food crops. This will also aid biodiversity.	Promote good management of hedgerows to ensure they contribute to a network of good pollinator habitat, which supports viable populations of pollinating invertebrates in proximity to food crops. Work together with farmers and landowners to increase the population of pollinators enabling a more climate change resilient range of crops. Seek opportunities to increase the area of semi-natural habitat, such as lowland meadow and encourage the use of floristically diverse margins to arable fields.	**Pollination** **Food provision** **Biodiversity** **Sense of place/ inspiration** **Regulating soil erosion** **Regulating soil quality** **Climate regulation**
Pest regulation	Woodland Hedgerows Unimproved grasslands Arable margins	Many of the semi-natural habitats in this area support a variety of predatory species, such as beetles, which can help to regulate populations of invertebrates like aphids, regarded as a pest species when they affect food crops.	Local	Semi-natural habitats and hedgerows proximal to areas of commercial agriculture may support species of predators which can help regulate populations of pests that adversely affect food crops. Fragmentation and poor connectivity in the network of habitats may limit the movement and effectiveness of predatory species.	Enhance and expand the network of semi-natural habitats that aid the movement of beneficial predatory species and bring benefits for pest regulation within food crops, as well as pollination and biodiversity.	**Pest regulation** **Food provision** **Pollination** **Biodiversity** **Sense of place/ inspiration**

Service	Assets/ attributes: main contributors to service	State	Main beneficiary	Analysis	Opportunities	Principal services offered by opportunities
A sense of place/ inspiration	Topography Woodlands Field patterns River valleys Sunken lanes Parklands Border/Welsh influence Offa's Dyke Mining and local stone	The character of the Oswestry Uplands area lies in the undulating landscape of Carboniferous Limestone hills with calcareous grasslands and occasional rocky outcrops together with steep wooded river valleys with marsh and fen habitats on the valley floor. Nearly a tenth of the area is woodland, much of which is undermanaged. Registered Parks and Gardens covering 230 ha. 45 Scheduled Monuments. 286 Listed Buildings.	Local	Management to maintain locally distinctive features and elements will help to maintain or increase sense of place. Conserving and enhancing the changing woodland character is likely to benefit biodiversity. Development pressure that could have an impact on sense of place is relatively low other than around Oswestry.	Manage and protect the locally distinctive and visually prominent features and elements of the area. Protect the area's distinctive character by maintaining and restoring the pattern of sunken lanes, pasture, hedgerows, woodland, parkland and river valleys where appropriate. Protect and manage woodlands, particularly ancient and semi-natural woodlands. Encourage the use of local stone in new buildings and restoration.	**Sense of place/ inspiration** **Regulating soil quality** **Regulating soil erosion** **Regulating water quality** **Regulating water flow** **Climate regulation** **Sense of history** **Biodiversity** **Recreation** **Tranquillity**

Service	Assets/ attributes: main contributors to service	State	Main beneficiary	Analysis	Opportunities	Principal services offered by opportunities
Sense of history	Historic and cultural connections to the border/Wales Offa's Dyke Iron-age hill forts Norman Castle Quarries Local stone Park landscapes	About a fifth of listed working buildings have obvious signs of structural disrepair, and a tenth to a fifth with visible adaptive reuse. There are high levels of dereliction in the upland and industrial sub-area. There are high levels of conversion to residential use in the lowland sub-area to the east. Agricultural use of historic farmsteads has declined and given way to residential use so that the proportion of farmsteads used as dwellings, around two thirds, is similar to the average for the west Midlands area. In 1918 about 6 per cent of the area was historic parkland. By 1995 it is estimated that nearly half of this had been lost. About a quarter of the remaining parkland is covered by a Historic Parkland Grant.	National	Many of the historic assets such as earthworks and other buried archaeological remains are potentially at risk from deep and repeated cultivation and development pressures around Oswestry. Parkland within the area may continue to be at risk due to fragmentation of ownership and pressure for arable production. Managing and enhancing these assets could increase recreation and sense of history and place.	The careful planning of new development should seek to enhance the setting and conservation value of heritage assets throughout the area. Maintain and protect historic setting and visibility of distinctive buildings and landmarks which strongly reflect the traditional character of the area including country houses and earthworks. Use traditional, local building materials for construction, extension and repair work. Restore and manage existing parkland and veteran trees.	**Sense of history** **Sense of place/ inspiration** **Recreation** **Biodiversity**

Service	Assets/ attributes: main contributors to service	State	Main beneficiary	Analysis	Opportunities	Principal services offered by opportunities
Tranquillity	Rural character Valleys Rivers Parkland and woodland	Tranquillity levels have declined from 75 per cent in the 1960s to 42 per cent in 2007 reflecting the growth of Oswestry and significantly increased traffic levels on the A5 to the north of Oswestry and A483 to the south. The western Oswestry Hills offer some of the most tranquil landscapes within the west Midlands area, the incised valleys, in particular, which characterise the border areas with Wales, offer the most tranquil locations.	Regional	Tranquillity has been reduced as a result of urban expansion, road improvements and increased traffic levels. Pressures on tranquillity come with more development around Oswestry and along transport routes.	Maintaining the quiet rural character of the area by carefully managing development, particularly in secluded valleys, smaller settlements and along the network of winding lanes, will help conserve some areas of tranquillity. Conserve more remote areas from development by working to ensure traditional settlement patterns are retained and maintain relative high levels of tranquillity. Design new developments with screening to minimise noise and visual impact (including light spill). Conserve and enhance the woodlands, valleys, rivers and parkland features that contribute to the tranquillity of the area.	**Tranquillity** **Sense of place/ inspiration** **Biodiversity** **Sense of history**

Service	Assets/ attributes: main contributors to service	State	Main beneficiary	Analysis	Opportunities	Principal services offered by opportunities
Recreation	Public rights of way National Trail Open access land Shropshire Union Canal	Recreation is supported by the area's 216-kilometre rights of way network (with a density of over 2.2 km per km^2), including the Offa's Dyke Path National Trail of which nearly 19 km crosses into the NCA and the Wat's Dyke Heritage Trail, as well as an area of 95 ha of open access land (just under 1 per cent of the NCA) and access along the Shropshire Union Canal.	National	Recreational opportunities could be increased and multiple benefits realised, by further increasing access for all abilities between Oswestry and the wider countryside and by encouraging the restoration and after-use of old quarries.	Maintain the Offa's Dyke Path National Trail. Extend and manage other public access routes, supporting and promoting new linear and circular routes suitable for horses, cyclists and walkers within the NCA, linking where possible with existing routes. Also ensuring that some surfaced paths are provided to ensure easy access walks. Promote the recreational and educational opportunities afforded by the network of rights of way and improved access to the open countryside from Oswestry, which could have a beneficial effect on people's health and wellbeing and provide solutions for sustainable transport. Encourage the provision of improved access to woodland as part of woodland management to increase the opportunities for volunteering, recreation and education and to experience tranquillity. Encourage the management and restoration of quarries for the benefit of people and wildlife.	**Recreation** **Sense of place/ inspiration** **Sense of history** **Biodiversity** **Regulating water quality** **Climate regulation**

Service	Assets/ attributes: main contributors to service	State	Main beneficiary	Analysis	Opportunities	Principal services offered by opportunities
Biodiversity	River Dee and Bala Lake SAC 6 SSSI Local wildlife sites Priority habitats including woodlands and lowland calcareous grassland	A total of 3 per cent of the NCA area is a priority habitat (270 ha), including modest areas (50-75 ha) of upland oak woods, undetermined and lowland calcareous grassland, and lowland mixed deciduous woodland. Natural England notes that the NCA's complex habitats have resulted in a diverse assemblage of rare flora and fauna, however, changes in land management practices have caused a decline in nature conservation interest within the area. There is one internationally designated site that lies partially within the NCA – the River Dee and Bala Lake SAC (a site over 1,300 ha, 5 ha of which lie within this NCA), designated for its rare watercourse vegetation. There are six SSSI in the NCA, totalling 126 ha (1 per cent). 96 per cent of all SSSI are in favourable or recovering condition, while 4 per cent are in 'unfavourable no change' condition.	National	Pressures on the biodiversity resource include the effects of pollutants in the river systems. There are also the impacts of climate change that may cause fluctuation of water levels and water temperature, drought, and migration of species. Development may reduce areas of biodiversity or conversely provide opportunities through green infrastructure to increase biodiversity networks.	Continue to work with partner organisations and land managers to tackle the effects of pollutants in the river systems. Aim to achieve favourable condition of SSSI. Encourage local management and planning for local wildlife sites as core parts of the habitat network. Conserve the longevity of ancient trees, and identify suitable specimens to replace the stock of ageing ancient trees in the country parks and hedgerows. Work with partners and projects to build appropriate networks of habitats across the area to strengthen biodiversity, sense of place and assist in the regulation of soil erosion, soil quality and water quality.	**Biodiversity** **Sense of place/ inspiration** **Regulating water quality** **Regulating soil erosion** **Recreation** **Climate regulation**

Service	Assets/ attributes: main contributors to service	State	Main beneficiary	Analysis	Opportunities	Principal services offered by opportunities
Geodiversity	Local Geological Sites Limestone quarries	There are six local geological sites. The oldest rocks are Ordovician shales, mudstones and ashes 470 to 450 million years old. Pen-y-foel Lane is a site made notable by Charles Darwin's description of it, where Carboniferous Limestone lies unconformably on steeply dipping Ordovician shale. Considerable industrial archaeology interest now attaches to this area, all related to winning, transporting and burning limestone. A number of disused quarries, including the large scale workings of Llanymynech Hill are becoming naturalised and provide habitat, geodiversity, landscape and heritage interest to the NCA.	Local	With only six local sites it is important to protect and enhance the features which are of geological interest. This could have additional benefits for biodiversity and recreation as well as soil and water quality. The geological resource also provides a 'history' of how environmental changes through time have influenced the nature and distribution of the rocks, landforms and soils of the NCA: This could be used to inform understanding of future climate change impacts. The character of local towns and villages can be retained through using local stone as a building material to ensure that sense of place is maintained. It is important to conserve the quality, structure and condition of the fertile soils in this NCA for the retention of the geomorphological processes and features and for maintaining food production.	Support positive management of geological sites and features, working with local geologists and further education groups to enhance understanding, enabling appropriate access. Use the NCA's geological resources to study previous climate change to inform and support future adaptation. Support good soil and land management to help stabilize the geological sites and bring them into better condition. Manage and restore quarries and incorporate and promote geological features.	**Geodiversity** **Sense of place/ inspiration** **Biodiversity** **Recreation** **Regulating water quality** **Regulating soil quality**

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Front cover: View south into the Oswestry Uplands from Selattyn.
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