National Character Area profile:

# 134. Dorset Downs and Cranborne Chase

Supporting documents



NATURAL ENGLAND

www.naturalengland.org.uk

## 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.

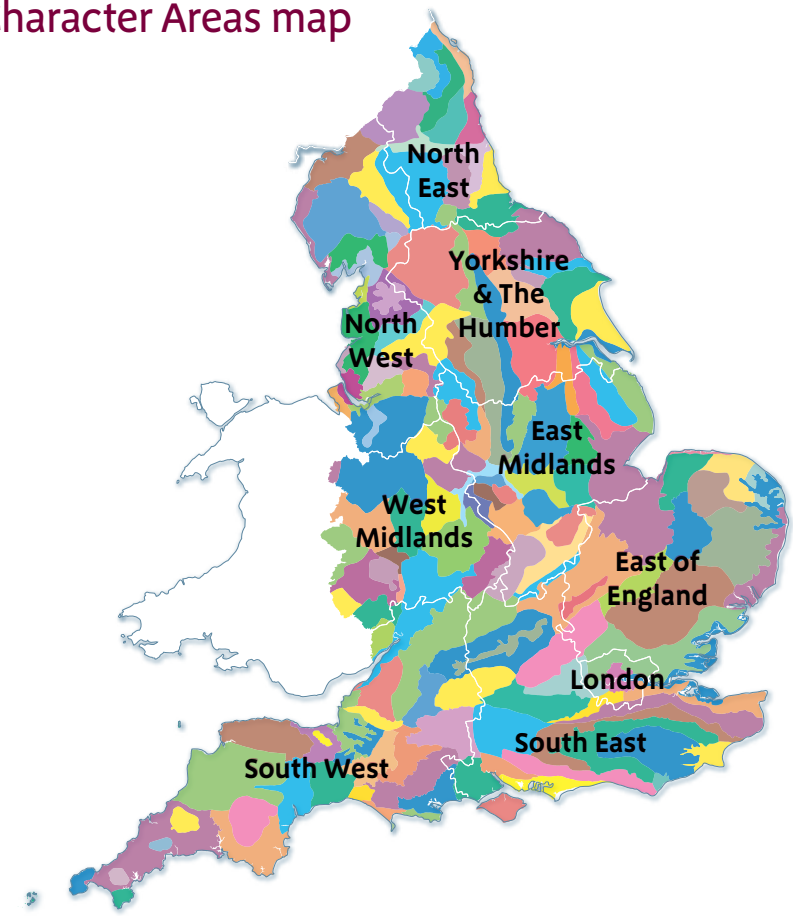
NCA profiles are guidance documents which can help communities to inform their decision-making about the places that they live in and care for. The information they contain will support the planning of conservation initiatives at a landscape scale, inform the delivery of Nature Improvement Areas and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

Forming the south-western limb of England's Cretaceous Chalk outcrop, the Dorset Downs and Cranborne Chase National Character Area (NCA) lies across the counties of Dorset, Wiltshire and Hampshire, from east of Bridport to the outskirts of Salisbury. Dorchester and Blandford Forum are the largest settlements in what is a sparsely settled area of lowland England.

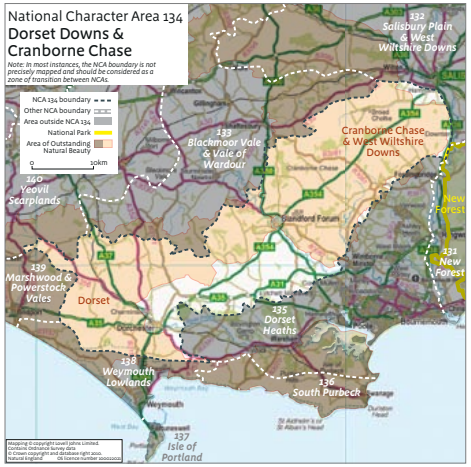
This strongly rural and agricultural NCA is characterised by large, open fields of pasture and arable, punctuated by blocks of woodland all draped over the undulating chalk topography. The NCA features one of the densest assemblages of prehistoric sites and monuments in Europe, with areas such as the South Dorset Ridgeway revealing some 8,000 years of human activity. The evolution of the chalk plateau of Cranborne Chase was fundamental to the development of the character of the northern part of the NCA.

Food production is the most visible service provided by the NCA. However, the provision of drinking water and the charging of the important suite of chalk rivers that flow southwards out of this NCA (via the chalk aquifer), are also essential services. The custodians of this NCA will face the challenge of continuing to meet demand for food production, while ensuring that ecosystems – and the services that they provide – are repaired and maintained.

The area's outstanding landscape is recognised in the designation of two Areas of Outstanding Natural Beauty (AONB), which cover 78 per cent of the NCA: the Dorset AONB and the Cranborne Chase and West Wiltshire Downs AONB. A 15 km stretch of the inland section of the South West Coast Path National Trail runs through the south-west corner of the NCA, along the South Dorset Ridgeway.

The signature chalk downland of the area is internationally recognised in three Special Areas of Conservation (SAC): Cerne and Sydling Downs, Fontmell and Melbury Downs, and Prescombe Down. Internationally significant lowland yew woodland is also represented in the Great Yews SAC. Three per cent (3,486 ha) of the NCA is designated as a Site of Special Scientific Interest (SSSI).

The area is synonymous with Thomas Hardy, the Dorset Downs and Cranborne Chase forming some of the core areas of his literary Wessex. Other artists associated with the area are Elisabeth Frink, Stanley Spencer, Lucian Freud, Henry Lamb and E.Q. Nicholson.




**Click map to enlarge; click again to reduce**

## Statements of Environmental Opportunities:

- **SEO 1:** Plan for and manage changes in the agricultural landscape by encouraging and supporting business choices that balance food production with protecting soils and water, enhancing ecosystems (particularly those associated with semi-natural grasslands) and restoring ecosystem services.

- **SEO 2:** Manage and enhance the historic character of the NCA, including the rich assemblage of settlement and field patterns, heritage features (including prehistoric assets), and the patterns of woodland, vegetation and geodiversity that give the NCA its sense of place.

- **SEO 3:** Manage and enhance the recreational and educational potential of the NCA in a way that clearly shows the links between people and the landscape, and between geodiversity, ecosystems and the services they provide. Aim to heighten people's enjoyment, appreciation and understanding of the NCA, as well as their ability to take positive, informed action to enjoy and conserve their surroundings.

**Fertile arable valley floor surrounded by steep slopes of unimproved calcareous grassland - a sward of wild flowers and grasses, punctuated by ant hills.**

# Description

## Physical and functional links to other National Character Areas

This component of the Chalk extends to the north-east into the West Wiltshire Downs (Salisbury Plain and West Wiltshire Downs NCA). The rolling chalk dip slope of this NCA submerges beneath the tertiary deposits of the Dorset Heaths NCA, returning to the surface in outcrops in the South Purbeck NCA and, further east, the Isle of Wight NCA.

Visually, the chalk downs provide an imposing backdrop to the Blackmore Vale and Vale of Wardour NCA, the Marshwood and Powerstock Vales NCA, and the Weymouth Lowlands NCA. The Dorset Downs and Cranborne Chase NCA boasts stunning, long views over these NCAs and beyond – northwards as far as the Yeovil Scarplands, Mendip Hills and Cotswolds NCAs, and southwards across the dip slope over the Dorset Heaths, South Purbeck, Weymouth Lowlands, Isle of Wight and New Forest NCAs.

Rising on the Chalk, the rivers Frome and Piddle flow across the Dorset Heaths NCA and into Poole Harbour. The River Stour rises in the Blackmore Vale and Vale of Wardour NCA, flows through this NCA, across the Dorset Heaths NCA and into Christchurch Harbour. The Chalk is functionally connected to several adjacent NCAs, via boreholes, as a major artesian aquifer.

The A35 (A354) runs south-west to north-east, joining Dorchester with Salisbury via Blandford Forum. At Blandford Forum the A350 intersects the A354, and runs through the relatively wide valley of the River Stour, connecting the Blackmore Vale and Vale of Wardour NCA with the Dorset Heaths NCA. The South Dorset Ridgeway, the inland route of the South West Coast Path National Trail, detours from the coast at West Bexington and runs along the southern chalk scarp to Osmington Mills in the Weymouth Lowlands NCA.

The eastern end of the NCA has a strong connection to the Stonehenge Neolithic landscape, found in the Salisbury Plain NCA.

## Distinct areas

- Stour Valley

**A view from Hardy's Monument on Blackdown out across the Dorset Downs and Cranborne Chase NCA, the Weymouth Lowlands NCA and out to the Isle of Portland NCA.**

## Key characteristics

- North-west to south-east transition through dramatic scarps, plateaux, rolling chalk upland, and a gentle but expansive dip slope – all dissected by often steep-sided, sheltered valleys and coombes.
- Relict, species-rich calcareous grassland, meadows, water meadows, ancient woodland and parkland. Chalk streams and rivers play host to a thriving, distinctive community of plants, invertebrates and fish.
- Semi-natural ancient woodlands, with large coups of hazel coppice, and the deer parks of Cranborne Chase, clothe the undulations of the dip slope. Prominent planted shelterbelts and hill-top clumps of beech, oak and ash emphasise and reinforce the simple but expansive geometry of the high downland.
- Highly legible and coherent history of early human occupation, including a particularly well-preserved network of imposing hill forts, clusters of barrows, field systems, earthworks, ancient lanes and other prehistoric features, often delineating ritual landscapes.
- Very large fields, resulting from the enclosure of downland for sheep and corn that took place between the 16th and 19th centuries. Changes during the 20th century have resulted in an intensively arable agricultural landscape.
- An intimate and older (often medieval in origin) enclosed, mixed-farming landscape of smaller, often hedgerow-bounded fields is found in the valleys and combes, and around the formally landscaped estate parklands.
- River valleys, dry in their upper sections, are often occupied by winterbournes, each with its own character, with thick hedgerows, flood meadows and linear villages in a variety of vernacular styles and materials.
- The wide flood plain of the River Stour brings a lowland interlude to this downland NCA, and provides the location for the NCA's second-largest town, Blandford Forum.
- Isolated farmsteads punctuate the highest downland areas, contrasting with closely spaced, linear villages and hamlets close to water along the valley bottoms or at the foot of the combes and scarp, along the springline.
- A suite of large houses and estates have played a key role in the formation of the character of the NCA.
- The chalk plateau of Cranborne Chase itself, particularly the Inner Bounds and the Walks.

## Dorset Downs and Cranborne Chase today

Running some 70 km, from Bridport in Dorset to Salisbury in south Wiltshire, this NCA presents a distinct landscape form of scarp, plateau and dip slope, delineated by the south-easterly dipping chalk outcrop and dissected by a network of river valleys and combes. The west- and north-facing scarps look out over (and dominate) the adjacent lowland vale landscapes of north and west Dorset, and form the backdrop to both the Bride Valley and the imposing ridge behind Weymouth.

The dip slope forms a subtler (but still impressive) backdrop to the heaths, plantations and river valleys of the lowlands, forming an arc from Dorchester in Dorset to Hale in Wiltshire. The broad valley of the River Stour divides the NCA and breaks the topographical rhythm of the Chalk landscape. Some 907 km2 of the NCA (77 per cent) is designated as an AONB.

This is a rural and, for the most part, intensively agricultural NCA. Farming dominates the landscape and, compared with the permanency of the lush, lowland pastures and timeless heathland landscapes of the adjoining NCAs, the patterns of cropping – sowing, ripening, harvesting, ploughing and re-sowing – drive a constantly changing character through the year.

Juxtaposed with this annual cycle is a timeless landscape, scattered with the earthen traces of settlements dating from the Neolithic period through to the Middle Ages. Burial mounds, hill forts (most notably the massive ramparts of Maiden Castle) and barrows dominate the cultural psyche of the high downlands, while the historical imprint of the Cranborne Chase – grand houses, estates, parks and large tracts of relict ancient woodland – dominates the gentler dip slopes.

Traversing the plateau of the NCA, settlement is sparse and views generally wide. Upland, valley and escarpment landscapes are often found in close proximity, providing strong contrasts of relief, light and shade.

To the south and east of the plateau, the Chalk dip slope provides long views across a rolling landscape of large arable fields defined by a network of sparse, narrow hedgerows. There are occasional hedgerow trees and small, dark blocks of woodland – mainly plantations dominated by beech, oak and ash. Streams have cut into the plateau and the Chalk dip slope and, as the stream valleys are approached, fields tend to become smaller and pastures more common.

Unimproved calcareous grassland communities, typically associated with the steeply sloping, thin, chalky soils of the scarp and combes, can feature up to 40 species of plant per square metre. Plants such as pyramidal orchid, yellow-wort, common rock-rose and chalk milkwort, and butterflies including the Adonis blue, chalkhill blue and marsh fritillary, are all characteristic of the short turf. International recognition of this habitat saw the selection of three SAC: Cerne and Sydling Downs, Fontmell and Melbury Downs, and Prescombe Down. Martin Down is the second-largest chalk grassland complex in western Europe, after the Salisbury Plain/Porton Down massif.

Villages are generally found off the highest ground, occupying the sheltered bays in the escarpment or at the foot of the slopes, where springs and streams emerge. They are connected by a dense network of narrow, twisting lanes, often flanked by thick hedgerows.

Woodland becomes increasingly prominent to the east of the Stour Valley, where the remnants of the ancient hunting ground of Cranborne Chase are. The Chase is characterised by woodlands, shelterbelts, clumps and copses containing ancient hazel coppice, and by enclosed areas of arable, pasture and parkland. The Great Yews SAC at Homington is relict yew woodland, a habitat that was probably much more extensive in the past.

In contrast to the thinly-scattered farmsteads of the dip slopes, the Chase has relatively frequent settlement comprised of villages within the valleys and hamlets linked by ancient lanes. Within the substantial parks there are large mansion houses that contrast with the modest vernacular buildings elsewhere on the Downs.

The river valleys that cut through the chalk dip slope are an important element of the character area. The chalk rivers have rich and diverse fish populations, and are fast flowing with a water quality that is suitable for the most sensitive of fish – trout and salmon, along with bullhead. A rich assemblage of aquatic invertebrates and aquatic plants thrives, including river water-crowfoot, starworts and the commercially important watercress. Where they are still managed and not improved, the wet meadows and marshes along these rivers can support a distinctive plant community including ragged robin, marsh marigold, southern marsh orchid and water avens.

Within the valleys a more settled, small-scale wooded and pastoral character pervades. Unspoilt linear villages, such as Sydling St Nicholas, Milton Abbas and Bowerchalke, nestle in the valleys. A wide variety of building materials have been used, including timber framing (often disguised by more recent facades), flint with brick dressing and banding, and clunch, a hard chalk that is sometimes used with brick to give a chequered pattern. Roofing materials vary from thatch to tiles, and occasionally slate.

Effectively cutting the NCA in two is the River Stour, its wide valley bringing a distinctively lowland feel to the NCA. The town of Blandford Forum is one of the most complete Georgian towns in the country. Its red brick and stucco elegance contrasts with the more modest vernacular of the smaller villages and hamlets, and reflects its past importance as a market town and staging post on the road to London. The largest settlement in the NCA, Dorchester, is the county town of Dorset and a thriving market town and visitor destination.

Recreation is generally limited to walking on the network of tracks, bridleways and paths, although equestrian and field sports are still popular. Part of the South West Coast Path National Trail, the South Dorset Ridgeway, detours from the coast and runs for 15 km along the southern scarp of the Chalk between Dorchester and Weymouth.

**The Dorset Downs and Cranborne Chase feature abundant small relict ancient woodlands, remnants of the once extensive tracts of high forest and coppice.**

## The landscape through time

The NCA provides evidence of late Jurassic/early Cretaceous shallow marine to brackish and river environments. It is, however, dominated by the Upper Cretaceous Chalk, which was deposited by a vast, warm, shallow sea that covered much of Europe between 99 and 65 million years ago. Deposition of the calcareous skeletons of planktonic algae led to the formation of thick layers of chalk, while silica (derived from sponges and plankton) formed extensive layers and nodules of flint.

Post-Cretaceous environments reflect changing sea levels, environments and climates, shifting from the tropical Cretaceous to the present-day temperate environment. Isolated exposures of post-Cretaceous sediments, such as the Bagshot sands around Blackdown, indicate the presence of powerful river systems. Elsewhere, however, there is very little evidence of the post-Cretaceous rock record: much of Southern England was subjected to a complex sequence of uplift, erosion and reworking as a consequence of Alpine mountain-building from about 37 million years ago, and more recent ice-age erosion of the landscape.

Throughout much of this period uplifted chalk was subjected to tropical weathering, resulting in the formation of clay-with-flints on the surfaces of the chalk and silcretes (sandstones hardened by silica cement) which, following erosion, remain as isolated patches on hill summits.

During the Quaternary 'ice ages' (the last 2 million years), the area was affected by periodic tundra-like environments as ice sheets advanced and retreated. This period shaped the landscape we recognise today, with its scarps, combes and dry valleys. Repeated freeze-and-thaw cycles have also carried sediments down the valley sides. Perhaps most notable are the sarsen stones, broken silcrete remains that have been carried down valley sides by this process, for example the 'sarsen trains' in the Valley of Stones National Nature Reserve (NNR).

Because of the lighter tillage, clearance of natural vegetation cover on the downs probably began early in prehistory. There was certainly Mesolithic activity in the area of the Downs, but the first 'legible' imprints on the landscape are those of the Neolithic and Bronze Age. The causewayed camps of Maiden Castle, Maumbury Rings and Hambledon Hill are examples of important fortifications of this period. Further concentrations of Neolithic and Bronze Age sites are found in Cranborne Chase, including the Dorset Cursus, a linear feature crossing the landscape for some 10 km.

By the Bronze Age, the Downs seem to have been quite densely settled. Large areas were divided up by early field systems which, together with boundary features like Grim's Ditch and Bokerley Dyke, are evidence of highly organised societies able to significantly change and order the places in which they lived.

The invading Romans continued and intensified this change. A new civitas capital was established at Dorchester, where roads, still prominent landscape features, radiated military and cultural power out to the wider landscape. The Roman-enforced peace saw new settlements and, with greater organisation and better technologies, an increasing exploitation of the valleys around the high downland. The Romano-British period in Dorset appears to have extended well beyond that of other areas of England and saw the successful repulsion of Saxon forces.

Ultimately, however, Saxon settlement of the area was complete. Their influence appears to have been gradual, and continuity of settlement was

maintained. The numerous place names ending in 'ton' and 'bourne' are evidence of the establishment of Saxon farmsteads and waterside settlements.

Saxon charters show that much of the landscape was divided up into long, narrow estates that embraced valley bottoms, valley sides and access to the open downland, providing a partial 'template' for modern parishes.

By 1086 much of the present pattern of settlement had been established, as recorded in the Domesday Book. Today's loose ribbons of farmsteads and cottages that make up many of the valley villages were, during the Middle Ages, laid out in potentially much denser planned form, and the landscape is littered with deserted settlements – all indicating greater populations than today. Open field systems developed along the valleys, sometimes reaching up to the edge of the open downland.

In the east, Cranborne Chase was a royal hunting ground from at least the time of William the Conqueror until the 17th century. The medieval religious houses in and around the Chase formed the basis – via dissolution, seizure and re-distribution – of later parks and mansions such as Tarrant Crawford and Iwerne. Successive noble (and, later, private) families maintained the Chase laws, principally prohibiting the felling of woodland and thicket, and the ploughing of pasture used by the deer, keeping it substantially in its medieval character. Only in 1829, under multiple pressures, did the second Lord Rivers agree to disenfranchisement. What followed were the widespread removal of woodland and scrub, and the ploughing of grasslands, as owners were finally able to exploit their lands without fear of penalty.

General Pitt Rivers, to whom Cranborne Chase passed in 1880, developed his interest in archaeology by carrying out many pioneering excavations on his lands. These are generally held to mark the beginning of modern British field archaeology. His attention to recording all artefacts (a practice which, at the time, was considered to be revolutionary) is summed up by this comment: 'Much that is recorded may never prove of further use, but even in the case of such matter superfluous precision may be regarded as a fault on the right side'.[4]

The agricultural management of the high downs saw small-scale arable and larger-scale grazing, principally by sheep. Rapid nutrient depletion of the thin chalk soils was countered by periods of fallow, allowing the natural vegetation to recover. From the mid-14th century, little affected by the Chase laws, the high downs saw continued piecemeal enclosure and quickening expansion of sheep grazing as the English wool and cloth industries became pre-eminent in Europe. It is probable that the methods of estate management employed across the area suppressed the development of capital farming by tenants. Towards the east, and in common with the chalk landscapes of Wiltshire and Hampshire, capitalist farmers began to enlarge their holdings from the 15th and 16th centuries onwards, taking on the demesne estates of large institutions and engrossing the holdings of smaller farmers, creating some of the largest farms in the country.

By the 17th century the downs' economy was dominated by the production of wool. This continued for the next two centuries, with most of the remaining downlands being enclosed within strongly rectilinear fields in the 18th and 19th centuries. In contrast to the downlands of Wiltshire and Hampshire, the

[4] Excavations in Cranborne Chase Volume II, Augustus Pitt Rivers (1888)

enlargement and reorganisation of holdings did not result in the rebuilding of farmsteads until the mid- to late 19th century, due to the late movement of farmsteads out of villages and the involvement of estates in their construction. There was a considerable expansion of arable farming in the period before the agricultural depression of the 1870s to 1930s, when much of the area returned to grassland for dairying and sheep husbandry, and the rural population declined. Over the remainder of the 20th century, as the international wool industry declined, agricultural activity turned to arable. Improving agricultural technology brought bigger machines and better artificial fertilisers, aiding increasingly rapid conversion to arable. The pace of change peaked with wide-scale ploughing of downland during the Second World War, as part of the efforts to feed the nation.

Since the war, trends have been towards greater arable intensification alongside the decreasing use of marginal grazing, to the detriment of the extent and condition of semi-natural habitats – particularly calcareous grasslands, which are now highly fragmented.

Despite great changes in land management, the landscape has maintained many of its special qualities and much of its scenic beauty. This led to the designation of the Dorset AONB in 1957, and the Cranborne Chase and West Wiltshire Downs AONB in 1981.

This essence of the Downs and Chase landscape has been captured in the popular works of Thomas Hardy. . William Barnes' distinctive dialect poetry is often inspired by the downland and woods of this area. In the 20th century artists such as Elisabeth Frink, Stanley Spencer, Lucian Freud, Henry Lamb and E.Q. Nicholson stayed or lived in the area – although it is not clear whether they were inspired by the place itself or by its seclusion from modernity. In While Following the Plough (1946) and Down to Earth (1947),[5] John Stewart Collis was greatly inspired by his time working on a farm on the downs and is seen as a pioneer of ecological writing.

[5] These two works were published together in 1973 as The Worm Forgives the Plough

**Cranborne Chase and field sports are synonymous. Once the sole domain of royalty, they have, and continue to evolve as times change.**

## Ecosystem services

The Dorset Downs and Cranborne Chase 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 Dorset Downs and Cranborne Chase NCA is contained in the 'Analysis' section of this document.

### Provisioning services (food, fibre and water supply)

- **Food provision**: The NCA is an important arable area, growing significant amounts of cereals and, increasingly, oil seeds (although it is possible that up to 70 per cent of these are grown as biofuel precursors). Dairy farming has declined but is still present. All livestock numbers have fallen, but cattle, sheep and pigs are still present in significant numbers.

- **Timber provision:** The 2,000 ha of coniferous plantation is a profitable timber-producing sector in the NCA, and the timber is sold into national markets. The 8,836 ha of broadleaved and 1046 ha of mixed woodland are underutilised in terms of timber.

- **Water availability:** The chalk that underlies the whole NCA forms a very important set of aquifers. These supply drinking water to several large towns and parts of the Bournemouth–Poole conurbation. The rivers flowing out of the NCA are also heavily dependent on groundwater from springs to maintain and regulate their flows.

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

- **Regulating soil erosion:** Many of the lighter soils that make for such good arable production are also susceptible to erosion, from both wind and run-off. Compaction and poaching can exacerbate the problem.

- **Regulating soil quality:** Soil quality is essential to maintaining the successful arable operations in the NCA, along with the recharging of the groundwater aquifers.

- **Regulating water quality:** The deep chalk, through which groundwaters have to slowly percolate, act as physical and chemical filters, leading to traditionally high water quality. However, modern agricultural chemicals have entered the groundwater aquifers and significantly raised levels of nitrogen. Surface waters have suffered similarly, although from high levels of phosphorus via agricultural run-off and discharge from sewage treatment works.

### Cultural services (inspiration, education and wellbeing)

- **Sense of place/inspiration:** The history of Cranborne Chase as a hunting forest has given it a strong sense of identity. The works of Thomas Hardy have, more than the real history of this NCA, defined its place in the popular imagination.

- **Sense of history:** A multitude of heritage assets and cultural associations, and a 'time depth' extending into the prehistoric period, all give this NCA a strong sense of history.

- **Tranquillity:** Very low densities of development and few major roads mean that many parts of this NCA have a high level of tranquillity. Expansion of the two major towns and increased traffic on the trunk roads has, however, eroded this to some extent.

- **Biodiversity:** Internationally important concentrations of chalk grassland are found within the NCA, along with a distinctive suite of associated species. This habitat is much reduced and fragmented, and in need of landscape-scale interventions. Tracts of semi-natural ancient woodland (some extensive) provide a second habitat of importance. Again, much reduced and fragmented, it is significantly out of management and in need of interventions to reclaim aspects of its biodiversity interest. The NCA also features a suite of chalk streams that support a range of rare plants and animals, again recognised internationally.

- **Geodiversity:** The NCA is dominated by its Chalk geology and Quaternary landscapes. Disused quarries and pits are particularly important in understanding the late Jurassic, Cretaceous and Tertiary history – not only of this NCA, but also of the south of England and all of Europe. For example, quarries (designated as an SSSI) at Upwey and Bincombe Down expose rare late Jurassic and early Cretaceous sediments, while the West Harnham Chalk Pit SSSI is important for our understanding of both Chalk geology and the later uplift caused by Alpine mountain-building. The landscape of dry valleys and combes, features such as the swallow hole at Cull-Peppers Dish SSSI, and the development of sarsens all add to our understanding of the evolution of the Quaternary landscape across southern England.

**In contrast to the open expansive downlands, the many river valleys are often small scale, intimate and enclosed.**

# Statements of Environmental Opportunity

**SEO 1: Plan for and manage changes in the agricultural landscape by encouraging and supporting business choices that balance food production with protecting soils and water, enhancing ecosystems (particularly those associated with semi-natural grasslands) and restoring ecosystem services.**

**For example, by:**

- Identifying and encouraging the uptake of a system of payment for ecosystem services to protect and enhance these, and to allow land managers to make business choices that will have long-term benefits.
- Making sure that future incentives promote multiple outcomes – regardless of where they are targeted. For example, biodiversity, archaeology, landscape character, aquifer recharge and recreational opportunities could all be enhanced via a single scheme, if located correctly.
- Ensuring that sufficient resources are delivered in the right places, based on evidence, to create a functioning, resilient ecological network of habitats and species.
- Explaining the key role played by the geology and geomorphology of the NCA in supporting the fundamental ecosystem services of water, food and biodiversity provision.
- Making available robust and accessible evidence about which ecosystems services are most influenced by positive approaches in land management, the semi-natural habitats and geodiversity that underpin them and how and where to repair ecosystem services for the widest benefits.
- Restoring and re-creating important areas of semi-natural calcareous grassland and broadleaved woodland, increasing their resilience and function as an ecological network – using the Lawton principles of more, bigger, better and joined habitats.
- Identifying key potential impacts of climate change on grassland and woodland habitats, and targeting climate change adaptation actions accordingly.
- Identifying sources of silt entering the NCA's streams and rivers. Taking action that will reduce this, at the same time as enhancing biodiversity and landscape character.
- Using an integrated, catchment-based approach to continue to reduce the amounts of nitrate- and phosphate-based nutrients entering surface and groundwater systems from both diffuse and point sources.
- Aiming to expand the Frome and Piddle catchment initiative approach to all the rivers rising in and flowing through the area. Maximising their biodiversity value, integrating them with adjacent land uses, and reducing the transfer of nutrients and sediment to downstream assets such as Poole Harbour.
- Increasing land managers' understanding of the importance of the soil resource, and of the need for its sympathetic management for the delivery of a range of benefits and services, and to enable better control of the costs of agricultural production.
- Ensuring that the NCA's suite of Sites of Special Scientific Interest (SSSI) and Natura 2000 sites are brought into favourable condition, and then well maintained.
- Increasing the density and permeability of the 'matrix' of small-scale, connecting habitats that provide a refuge for natural predators and pollinators, using a systematic and landscape-scale approach.

**SEO 2: Manage and enhance the historic character of the NCA, including the rich assemblage of settlement and field patterns, heritage features (including prehistoric assets), and the patterns of woodland, vegetation and geodiversity that give the NCA its sense of place.**

**For example, by:**

- Using an understanding of the NCA's historic landscape character – the result of how human and natural forces have interacted over millennia – as a framework for sustainable development and enhancing biodiversity.
- Implementing the objectives and actions contained in both the Dorset AONB Management Plan, and the Cranborne Chase and West Wiltshire Downs AONB Management Plan.
- Giving high regard to the guidelines contained in the various Landscape Character Assessments that cover this NCA, particularly those of the Dorset AONB and the Cranborne Chase and West Wiltshire Downs AONB.
- Implementing the National Planning Policy Framework (NPPF) guidance that 'Great weight should be given to conserving landscape and scenic beauty in National Parks, the Broads and Areas of Outstanding Natural Beauty, which have the highest status of protection in relation to landscape and scenic beauty.'
- Implementing the recommendations of the Cranborne Chase and West Wiltshire Downs AONB Historic Landscape Character Assessment and the Historic Environment Action Plan (HEAP).[6]
- Avoiding developments with damaging impacts on the character of the NCA. Where development is unavoidable, ensuring that measures are put in place to mitigate or (in the final instance) compensate for damage.
- Keeping the scale and style of developments within the villages and hamlets of the NCA, sympathetic to their location. Making sensitive use of redundant buildings, and always reflecting local vernacular and settlement form.
- Ensuring that the underpinning nature of the NCA's geology and geomorphology is used to contextualise the evolution of the landscape character we see today.
- Ensuring that the materials and skills essential for repairing and building structures in the local vernacular are still available.
- Maintaining the historic parks and gardens of the NCA at their historic extent, and preferably with management considered as a whole. This will help to prevent fragmentation, and will ensure the cohesion and continuity of features and character.
- Re-connecting woodlands with their past cultural context. Bringing underused native broadleaved woodland into new, productive, economically viable uses, enhancing landscape character and biodiversity/ecosystem function.
- Articulating the links between prehistoric and ancient landscape features, and the ancient calcareous grassland habitats within which they are often located. Identifying locations where the setting and presentation of historic assets might be enhanced through re-establishing species-rich grassland.

[6] See www.historiclandscape.co.uk

*SEO2 continued on next page*

*SEO2 continued from previous page*

- Maintaining, restoring and, where appropriate, introducing features that enhance the landscape character of the NCA, such as hedgerows, hill-top clumps, copses and coverts.
- Understanding the implications of environmental changes and pathogens, and planning potential responses in terms of vegetation cover. Paying particular attention to the loss of ash from ash die-back, and the loss of beech from drought and wind throw.
- Conserving historic features in the landscape that have heritage interest, including the field systems, water meadow infrastructure and other archaeological features.
- Conserving and interpreting archaeological earthworks and sub-surface archaeology, while recognising the potential for undiscovered remains.
- Improving the condition of heritage assets through appropriate measures and seeking to reduce conflicting or unsympathetic management regimes, while recognising the high potential in this landscape for undiscovered remains.
- Continuing to protect the 1,100 Scheduled Monuments and 2,825 Listed Buildings in the NCA, via the provision of advice and incentives.
- Avoiding and reducing light pollution from villages, roads, and recreational and industrial sites.

**Skyscape is an important element of the character of this NCA. Lighting, cloud cover and other meteorological phenomena can greatly change the feel of the landscape.**

**SEO 3: Manage and enhance the recreational and educational potential of the NCA in a way that clearly shows the links between people and the landscape, and between geodiversity, ecosystems and the services they provide. Aim to heighten people's enjoyment, appreciation and understanding of the NCA, as well as their ability to take positive, informed action to enjoy and conserve their surroundings.**

**For example, by:**

- Maintaining and enhancing the rights-of-way network and open access land throughout the area.
- Developing new, permissive access to historical sites, open access land and other areas of interest, as part of a cohesive network of inspiring access provision.
- Explaining the intimate relationship between geodiversity, human occupation and land use history in the NCA.
- Taking opportunities to increase and improve the area of accessible natural greenspace in places that are currently poorly served, as in certain rural areas.
- Promoting sustainable tourism initiatives that target a broad range of visitors, allowing farm businesses to diversify. This simultaneously exploits and conserves the landscape, its biodiversity and its tranquillity.
- Supporting the whole-landscape approach adopted by the South Dorset Ridgeway Landscape Partnership, and investigating whether this can be used elsewhere in the NCA.
- Making full use of the NCA to explain and illustrate the form and function of karstic landscapes, and to explain how geomorphological processes have produced some of our most highly regarded and culturally significant landscape types.
- Using the distinct identity of the NCA to create cohesive and thought-provoking stories for visitors and residents alike.
- Maintaining the high levels of tranquillity that can be experienced within the NCA. Additionally, enhancing the experience of tranquillity at certain locations, for example through the creation of semi-natural habitats and the removal of eyesores.
- Promoting the inspirational qualities of the NCA; exploring the cultural imprints of 8,000 years of occupation that are still so clearly legible in the landscape; celebrating the rise of modern archaeology; reviewing the depiction of the NCA in the arts; and understanding the changing relationship between the landscape and the people who lived – and live – in it.

# Supporting document 1: Key facts and data

**Dorset Downs and Cranborne Chase**
**National Character Area (NCA): 116,854 ha**

## 1. Landscape and nature conservation designations

Seventy-eight per cent of the NCA lies within a National Park or Area of Outstanding Natural Beauty (AONB). Forty-three per cent is within the Cranborne Chase and West Wiltshire Downs AONB and 35 per cent of the NCA is within the Dorset AONB. Less than 1 per cent of the NCA is within the New Forest National Park.

- www.ccwwdaonb.org.uk/
- www.dorsetaonb.org.uk/

**Source: Natural England (2011)**

### 1.1 Designated nature conservation sites

The NCA includes the following statutory nature conservation designations:

| Tier | Designation | Designated site(s) | Area (ha) | % of NCA |
|---|---|---|---|---|
| **International** | Ramsar | Dorset Heathlands | 63 | <1 |
| **European** | Special Protection Area (SPA) | Dorset Heathlands SPA | 91 | <1 |
| | Special Area of Conservation (SAC) | Cerne and Sydling Downs SAC; Dorset Heaths SAC; Fontmell and Melbury Downs SAC; Great Yews SAC; Prescombe Down SAC; West Dorset Alder Woods SAC; River Avon SAC | 851 | 1 |
| **National** | National Nature Reserve (NNR) | Hambledon Hill NNR; Hog Cliff NNR; Martin Down NNR; Prescombe Down NNR; Valley of Stones NNR | 560 | <1 |
| **National** | Site of Special Scientific Interest (SSSI) | A total of 61 sites wholly or partly within the NCA | 3,486 | 3 |

**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.*

Land covered by international and European nature conservation designations totals 851 ha (1 per cent of the total land area), and national designations cover 3 per cent of the area. Dorset Heathlands Ramsar and Dorset Heathlands SPA are within the Dorset Heathlands SAC. Dorset Heaths, Fontmell and Melbury Downs, Great Yews, Prescombe Down, River Avon and West Dorset Alderwood SAC are within a SSSI designated area. Prescombe Down NNR is entirely within the SSSI designated area but the other NNRs are not completely SSSI designated.

There are 434 local sites in Dorset Downs and Cranborne Chase NCA covering 7,008 ha which is 6 per cent of the NCA.

**Source: Natural England (2011)**

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

### 1.1.1 Condition of designated sites

| Condition category | Area (ha) | % of SSSI land in category condition |
|---|---|---|
| **Unfavourable declining** | 139 | 4 |
| **Favourable** | 1,584 | 45 |
| **Unfavourable no change** | 122 | 4 |
| **Unfavourable recovering** | 1,641 | 47 |

**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

At its lowest the NCA is only 16 m above sea level rising to a maximum height of 275 m. The mean elevation is 112 m.

**Source: Natural England 2010**

### 2.2 Landform and process

Cranborne Chase lies south of the Ebble valley. Its scarp is intercut by steep, deep coombes, while the dip slope is much gentler and eventually runs under the wooded London Clay of the Dorset Heaths NCA. It is separated from the Dorset Downs by the River Stour. These downs are a series of hogsback ridges and chalk stream valleys with deep stream-cut coombes in the ridge sides.

**Source: South Wessex Downs Natural Area Profile, Dorset Downs and Cranborne Chase Countryside Character Area description.**

### 2.3 Bedrock geology

The highest parts of the Downs represent the remains of a once-extensive Chalk platform. In the very west of the NCA small areas of Upper Greensand and Gault Clay are exposed along with very small areas of Jurassic sediments. Small areas of Tertiary sediments are also present in the southern half of the Downs.

**Source: South Wessex Downs Natural Area Profile, Dorset Downs and Cranborne Chase Countryside Character Area description, British Geological Survey maps.**

### 2.4 Superficial deposits

Over time the uplifted Chalk was subjected to tropical weathering leading to formation of clay-with-flints on its surface in some areas. Silcretes (sandstones with a hard silica cement) also formed as a result of weathering

in sandy soils. During periglacial times these deposits were broken up into what are now known as sarsen stones and many were transported down slope and great distances by solifluction. Rivers crossing the area deposited gravel terraces which now only remain as isolated patches on hill tops and in current river valleys.

**Source: South Wessex Downs Natural Area Profile, Dorset Downs and Cranborne Chase Countryside Character Area description, British Geological Survey maps.**

### 2.5 Designated geological sites

| Designation | Number |
|---|---|
| Geological Site of Special Scientific Interest (SSSI) | 3 |
| Mixed interest SSSI | 3 |

There are 12 Local Geological Sites within the NCA.

**Source: Natural England (2011)**

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

### 2.6 Soils and Agricultural Land Classification

The soils are predominantly thin, chalky rendzinas although some ridges and hill tops are capped with more acidic drifts, sometimes clay-with-flints. In the valley bottoms alluvial deposits have given rise to neutral soils.

**Source: Dorset Downs and Cranborne Chase Countryside Character Area description.**

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

| Agricultural Land Classification | Area (ha) | % of NCA |
|---|---|---|
| Grade 1 | 29 | <1 |
| Grade 2 | 4,902 | 4 |
| Grade 3 | 98,499 | 84 |
| Grade 4 | 7,770 | 7 |
| Grade 5 | 2,714 | 2 |
| Non-agricultural | 2,481 | 2 |
| Urban | 468 | <1 |

**Source: Natural England (2010)**

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

## 3. Key water bodies and catchments

### 3.1 Major rivers/canals

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

| Name | Length in NCA (km) |
|---|---|
| River Allen | 16 |
| River Ebble | 23 |
| River Frome | 27 |
| River Moors | 6 |
| River Piddle/Trent | 19 |
| River Stour | 27 |

**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 valleys of the Frome, Piddle and Stour are all different in character. The River Frome and its tributaries form a branching network of valleys. These probably have the most deeply eroded and enclosed landforms, especially in the Cerne and Sydling Water valleys, where the distinctive character is emphasised by the Cerne Abbas Giant carved out of the chalk high above the valley floor. In contrast the valleys of the Piddle system typically have V-shaped upper valleys which wind through narrow gaps to open out dramatically. The Stour valley is the least remote with a wide flood plain, large villages and the attractive town of Blandford Forum within its parkland setting.

The major drainage pattern runs south-eastwards forming the upper parts of the Piddle, Frome, Stour and Avon catchments, but the Nadder and Ebble drain eastwards into the Avon.

### 3.2 Water quality

The total area of Nitrate Vulnerable Zone is 115,984 ha or 99 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 12,399 ha of woodland (11 per cent of the total area), of which 4,672 ha is ancient woodland.

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

### 4.2 Distribution and size of woodland and trees in the landscape

Cranborne Chase is characterised by woodlands, shelterbelts, clumps and copses containing ancient hazel coppice and by enclosed areas of arable pasture and parkland. The Dorset Downs still have many small coppices and the ridge is dominated by the extensive woodlands of Grovely Wood and Great Ridge. Cranborne Chase and Bentley Wood in particular were developed from hunting forests into huge coppice areas, the former remaining today.

**Source: South Wessex Downs Natural Area Profile, Dorset Downs and Cranborne Chase Countryside Character Area Description**

### 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 | 8,536 | 7 |
| Coniferous | 2,009 | 2 |
| Mixed | 1,046 | 1 |
| Other | 808 | 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 | 2,510 | 2 |
| Ancient re-planted woodland (PAWS) | 2,162 | 2 |

**Source: Natural England (2004)**

## 5. Boundary features and patterns

### 5.1 Boundary features

Hedgerows are typically low and sparse. The few hedgerow trees and shelterbelts of beech, ash and sycamore are found mainly near the scattered farmsteads.

**Source: Dorset Downs & Cranborne Chase Countryside Character Area description; Countryside Quality Counts (2003)**

### 5.2 Field patterns

To the south and east the fields are large and regular. At the edges of the valleys, fields tend to become smaller.

**Source: Dorset Downs & Cranborne Chase Countryside Character Area description; Countryside Quality Counts (2003)**

## 6. Agriculture

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

### 6.1 Farm type

The main crop types are; cereals 232 holdings (31 per cent); grazing livestock 208 holdings (27 per cent); and other types 161 holdings (21 per cent). The NCA also supports a range of other farm types; dairy with 61 holdings (8 per cent); mixed with 58 holdings (8 per cent); specialist pigs with 12 holdings (2 per cent); specialist poultry with 10 holdings (1 per cent); general cropping with 9 holdings (1 per cent); and horticulture with 8 holdings (1 per cent). During the period 2000 to 2009 cereals and other types increased by 37 and 34 holdings respectively. Mixed farms saw a reduction in the number of holdings by 52 as did dairy by 47 holdings.

**Source: Agricultural Census, Defra (2010)**

### 6.2 Farm size

The most common farm size is over 100 ha with 293 holdings covering 86,995 ha followed by farms between 5 and 20 ha in size with 163 units and covering 1,755 ha. The numbers of holdings among all farm sizes fell between 2000 and 2009. The greatest reduction was for farms over 100 ha which lost 14 holdings and then for farms between 5 and 20 ha which lost 10.

**Source: Agricultural Census, Defra (2010)**

### 6.3 Farm ownership

Owned land makes up 67 per cent of the total farm area, while the remainder is held in tenancy. There was an increase in owned land of 4 per cent over the 2000 to 2009 period, while the area of land held in tenancy declined by 8 per cent.
2009: Total farm area =99,966 ha; owned land = 67,062 ha
2000: Total farm area = 98,279 ha; owned land = 64,334 ha

**Source: Agricultural Census, Defra (2010)**

### 6.4 Land use

Cereals and grass and uncropped land are the main crop types covering 39,586 ha or 40 per cent and 37,656 ha or 38 per cent of the total farmed area respectively. Many crop types decreased by hectarage between 2000 and 2009, the largest reductions being in grass and uncropped land by 4,677 ha or 11 per cent and other arable crops by 594 ha or 10 per cent. There was a dramatic increase in oil seeds by 5,059 ha or 112 per cent. Cereals also increased by 782 ha or 2 per cent.

**Source: Agricultural Census, Defra (2010)**

### 6.5 Livestock numbers

Pigs are the most common livestock with 81,900 animals, followed by sheep with 78,700 and cattle with 48,000. Between 2000 and 2009 there was a decrease across all livestock numbers with sheep falling by 23 per cent to be replaced by pigs as the most common livestock. Cattle fell by 24 per cent and pigs 17 per cent over this period.

**Source: Agricultural Census, Defra (2010)**

### 6.6 Farm labour

Most farms are run by principal farmers (985). There were 127 salaried managers). The number of all farm workers fell between 2000 and 2009 apart from salaried managers who increased in number by 32. The number of principal farmers fell by 143, full time workers by 167, part time workers by 6 and casual/gang workers by 61 between 2000 and 2009.

**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

There are large areas of chalk downland, often occupying the steep, difficult to cultivate scarp slopes, for example at Hog Cliff and Cerne Abbas. Woodland similarly hangs on slopes and in some of the deeper combes, though in other areas is found on areas of heavier clay-with-flints soils. Valley bottoms support areas of grazing marsh, some of it remnants of now defunct water meadow systems. All other habitats are of much less extent and significance and in some respects represent both the dominance of the chalk substrate and the long tradition of agricultural management in this NCA. The NCA also contains important arable habitats. These support nationally important assemblages of arable birds.

**Source: South Wessex Downs Natural Area Profile**

### 7.2 Priority habitats

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

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

| Priority habitat | Area (ha) | % of NCA |
|---|---|---|
| Broadleaved mixed and yew woodland (broad habitat) | 6,837 | 6 |
| Lowland calcareous grassland | 2,855 | 2 |
| Coastal and flood plain grazing marsh | 2,323 | 2 |
| Lowland meadows | 298 | <1 |
| Lowland dry acid grassland | 72 | <1 |
| Purple moor grass and rush pasture | 60 | <1 |
| Lowland heathland | 47 | <1 |
| Reedbeds | 18 | <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

Apart from the attractive town of Blandford Forum in the Stour Valley and Dorchester at the southern edge, the main settlements within the NCA are the villages strung out along the narrow valleys or in more compact form in the wider valleys. They are linked by narrow roads following the valley bottoms, with more sinuous tracks extending to the farmsteads on the valley sides. On the higher ground there are only a few farmsteads and the road pattern is dominated by straight enclosure and turnpike roads.

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

### 8.2 Main settlements

The main settlements within the NCA are Dorchester and Blandford Forum. The total estimated population for this NCA (derived from ONS 2001 census data) is: 79,821.

**Source: Dorset Downs & Cranborne Chase Countryside Character Area description; Countryside Quality Counts (2003), Natural England (2012)**

### 8.3 Local vernacular and building materials

The farmsteads on the higher ground are mostly of modern construction but in the valleys and in the villages that cluster at the foot of the scarps a wide variety of building materials have been used. Timber framing, often disguised by more recent additions, is a particular feature. Flint with brick dressing and banding is common, and clunch (chalk) is sometimes used with brick to give chequered patterns. Low, rendered buildings are common and there are many pre-18th and 19th century brick buildings. Although thatch is the traditional roofing material there are many tiled roofs and some use of slate. This mixture of materials reflects the lack of a consistent supply of building stone and dressed stone is largely confined to the churches and manor houses.

**Source: Dorset Downs & Cranborne Chase Countryside Character Area description; Countryside Quality Counts (2003)**

**Milton Abbey is typical of the transition of estates through the church to nobelry, via the dissolution, and finally to families whose wealth flowed from commerce.**

## 9. Key historic sites and features

### 9.1 Origin of historic features

There was certainly Mesolithic activity in the area of the Downs but the first major imprint on the landscape is that of the Neolithic and there is a notable concentration of Neolithic ritual and ceremonial monuments around Dorchester. The causewayed camps of Maiden Castle, Maumbury Rings and Hambledon Hill are examples of important monuments of this period. Other concentrations of Neolithic and bronze-age sites are found in Cranborne Chase, including the Dorset Cursus which seems to have been used for excarnation or exposure of the dead. It is likely that the clearance of woodland on the downs and the steady downwashing of downland soils had begun early in prehistory although there may well have been early valley settlement obscured by later settlement and cultivation. During the Bronze Age the Downs seem to have been quite densely settled and groups of round barrows are still common features. Large areas were divided up by early field systems which, together with boundary dykes like Grimm's Ditch and Bokerley Dyke, are evidence of highly organised societies. Defended hilltop sites for which the Downs are rightly famous, were developed during the Iron Age although the most celebrated, Maiden Castle, has its origins in the Neolithic.

**Eggardon Hill Fort stands guard on an extended finger of the Chalk outcrop, over the boundary to the Powerstock and Marshwood Vales NCA.**

The civitas capital (or regional administrative centre) of Dorchester was the main settlement of the Roman period. The roads radiating from it are still prominent features in the present day landscape but the main Roman influence was a long period of peace in which settlements multiplied and in which there was increasing exploitation of the valleys around the high downland. The gradual Saxon takeover of the area seems to have maintained a continuity of settlement. The numerous tons and bournes are evidence of Saxon farmsteads and waterside settlements and the Saxon charters show that much of the landscape was divided up into small estates which embraced valley bottoms, valley sides and access to the open downland.

Domesday Book shows that much of the present pattern of settlement had been established, and in the Middle Ages it was more common than it is today. The loose ribbons of farmsteads and cottages that make up many of the valley villages were originally laid out in probably much denser planned form, and the landscape is littered with deserted settlements. Open field systems developed along the valleys, sometimes lapping up to the edge of the open downland crests but, from the mid 14th century onwards there was piecemeal enclosure and expansion of sheep grazing.

In the east Cranborne Chase was a royal hunting ground from at least the time of William the Conqueror until the 17th century. Its conservative landlords kept it substantially in its medieval character until it was disenfranchised in 1829. The medieval religious houses in and around the Chase formed the basis of the later parks and mansions like Tarrant Crawford and Iwerne. During the 17th century an elaborate system of flood meadows was developed in the valleys and the economy of the downs was dominated by sheep rearing. This continued in the succeeding centuries with the downlands being enclosed within strongly rectilinear fields in the 18th and 19th centuries. During the 20th century there has been large-scale conversion of the downlands to arable.

Today many perceptions of the Dorset Downs and Cranborne Chase have been coloured by the writing of Thomas Hardy; Cranborne Chase was the 'venerable tract of forestland' in Tess of the d'Urbervilles. Maiden Castle featured in Far from the Madding Crowd.

**Source: Draft Historic Profile, Countryside Quality Counts, Countryside Character Area description**

### 9.2 Designated historic assets

This NCA has the following historic designations:

- 24 Registered Parks and Gardens covering 3,251 ha
- No Registered Battlefields
- 1,100 Scheduled Monuments
- 2,825 Listed Buildings

**Source: Natural England (2010)**

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

## 10. Recreation and access

### 10.1 Public access

- 6 per cent of the NCA, 6,672 ha, is classified as being publically accessible.
- There are 1,897 km of public rights of way at a density of 1.6 km per km2.
- There is 1 National Trail ; the South West Coastal Path National Trail covering extending over 15 km.

**Source: Natural England (2010)**

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

| Access designation | Area (ha) | % of NCA |
|---|---|---|
| National Trust (Accessible all year) | 246 | <1 |
| Common land | 751 | 1 |
| Country Parks | 0 | 0 |
| CROW Access Land (Section 4 and 16) | 4,731 | 4 |
| CROW Section 15 | 295 | <1 |
| Village Greens | 1 | <1 |
| Doorstep Greens | <1 | <1 |
| Forestry Commission Walkers Welcome Grants | 905 | 1 |
| Local Nature Reserves (LNR) | 47 | <1 |
| Millennium Greens | 1 | <1 |
| Accessible National Nature Reserves (NNR) | 609 | 1 |
| Agri-environment Scheme Access | 20 | <1 |
| Woods for People | 2,307 | 2 |

**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.**

**Three strongly visual elements of the downs; a prehistoric barrow is dwarfed by electricity pylons striding across the countryside while below lies a field of bright yellow oilseed rape.**

## 11. Experiential qualities

### 11.1 Tranquillity

Based on the CPRE map of tranquillity (2006) the NCA is most tranquil in the Cranborne Chase away from the A340 and to the north-west of the A340 between Dorchester and Blandford Forum. It is least tranquil around Dorchester and Blandford Forum.

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

| Category of tranquillity | Score |
|---|---|
| Highest | 46 |
| Lowest | -58 |
| Mean | 7 |

**Sources: CPRE (2006)**

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

### 11.2 Intrusion

The 2007 Intrusion Map (CPRE) shows the extent to which rural landscapes are 'intruded on' from urban development, noise (primarily traffic noise), and other sources of visual and auditory intrusion. This shows there is some intrusion around Dorchester, Blandford Forum and Salisbury and the A340 that links the three towns but particularly around the Cranborne Chase area and to the north-west of the A340 there are areas that are relatively undisturbed A breakdown of intrusion values for this NCA is detailed in the table below.

| Intrusion category | 1960s (%) | 1990s (%) | 2007 (%) | Percentage change (1960s-2007) |
|---|---|---|---|---|
| Disturbed | 3 | 20 | 25 | 22 |
| Undisturbed | 96 | 79 | 74 | -22 |
| Urban | <1 | <1 | 1 | <1 |

**Sources: CPRE (2007)**

Notable trends from the 1960s to 2007 are the large increase in intrusion.

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

**Rising from the Vale of Wardour, the unimproved grassland on the chalk scarp at Fovant became a 'canvas' for the carving of regimental crests of soldiers stationed at Fovant Camp during the First World War.**

## 12. Data sources

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

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

# Supporting document 2: Landscape change

## Recent changes and trends

### Trees and woodlands

- The latest Forestry Commission data gives a figure of 12,399 ha of woodland of all types in the NCA. About 2,510 ha are ancient semi-natural woodland (ASNW) and 2,162 ha of planted ancient woodland sites (PAWS).
- The proportion of these sites (based on a representative sample) covered by a Woodland Grant Scheme changed between 1999 and 2003 from 20 per cent to 16 per cent, indicating a potential for declining management of these sites.
- Given the economic marginalisation of traditional woodland economics, increasingly pheasant rearing and shooting has become a means to recover financial returns. Release of large numbers of pheasants into ASNW can be damaging to woodland structure and biodiversity.
- 90 km of Environmental Stewardship (ES) funded woodland fencing has been a welcome aid to reducing deer and stock grazing damage.
- Under ES, 891 individual parkland or hedgerow trees have been planted (though it is not possible to differentiate between types of planting).

### Boundary features

- The Countryside Quality Counts (CQC) project estimated boundary length for the JCA at about 7,344 km (giving an average boundary length of 63 m/ha). This reflects the large field size, inherited via the past enclosure of whole downland areas followed by conversion to arable in more recent (post-Second World War) times. So a lack of boundary features should not be interpreted as a negative indicator.
- Boundary densities in river valleys and in some of the earliest enclosed areas will be considerably higher.
- The 2003 CQC assessment noted that around 131 km or 1.7 per cent of the boundary length was in Countryside Stewardship Schemes (CSS) and that the resource had 'probably been maintained'. As of June 2013, almost 1,832 km (just short of 25 per cent of NCA boundary features) of hedgerow management options were live across the NCA. This indicates a significant increase when compared to the CSS figures and almost all of this increase can be attributed to hedgerow management options taken up under Entry Level Scheme (1,819 km or 99 per cent of the total).
- The figures also show that while hedgerow management is a popular option for ELS, the establishment of new (1.5 km) and restoration (10.5 km) of existing hedgerows is not widely taken up in the Higher Level Scheme. Therefore, repairs to the connectivity hedgerows give to the landscape are probably not happening under ES.

- The economics of farming, particularly in the arable sector, demands aggregation and increasing use of larger vehicles. Numbers of holdings in all size ranges fell in the period 2000 to 2009. In this context the pressures on further increasing size of fields with accompanying boundary loss may remain.

- Changes to the suite of agri-environment schemes may change the range of options, eligibility and payments available for boundary management.

### Agriculture

- Despite sometimes volatile prices for produce, arable still defines the NCA's agriculture. In the period 2000 to 2009, oil seeds and cereals still increased (by 5,059 ha and 782 ha respectively).

- Dairy and mixed farming holdings decreased (down by 47 and 52 holdings respectively) over the period 2000 to 2009. In the face of cheaper imported red meat, numbers of livestock also fell over the same period, most significantly sheep by 23 per cent and cattle by 24 per cent.

- These changes, in combination, have and could continue to militate against the maintenance of chalk grassland resource and other semi-natural habitats. Loss of grazing animals, suitable for the semi-natural habitats, will further marginalise areas of semi-natural grassland, especially the smaller patches.

- The use of textile materials to assist with growth of early arable crops often presents hectares of uniform colour and texture, visible for considerable distances. The waste material may also have an impact.

- While not a direct change of the landscape, the re-organisation in farm labour is an indicator. During 2000–2009 the numbers of principal farmers fell by 143, full-time workers by 167 and casual workers by 61, while salaried managers rose by 32 to 159. This, along with data that appears to indicate that farm businesses are becoming larger (see key facts and data), indicates a much more businesslike approach and a system where farm management is specialised work and other aspects of running the operation can also become specialist occupations. This could offer the opportunity for the historic environment, landscape and biodiversity aspects of farm management to also become a specialism and of higher profile within an operation.

### Settlement and development

- The NCA is not an area under heavy pressure for development. While the two major settlements, Dorchester and Blandford Forum have experienced significant growth since 1961 (55 per cent Dorchester and 189 per cent Blandford[7] ) these are the exception rather than rule.

- Most small settlements have experienced developments around their peripheries ,which while small in scale, can have significant impacts upon the population and character of these settlements (not always negative). The desirability of many of these small villages, as places for retired or commuting people to live in, are creating pressures, particularly on local authorities' ability to provide levels of service. Calls to curtail further expansion of small villages are often countered by the need to make affordable housing available for local people to stay in their communities.

[7] See www.dorsetforyou.com/343562

- The vernacular of many villages has been added to over the post war years, as successive small scale developments have added their styles to the mix. While this may not be an issue in terms of the evolution of a particular settlement, the homogeneity of modern building styles has damaged the distinctiveness of some settlements. Intervention by planning authorities has managed to turn this tide somewhat in many cases resulting in new interpretations of traditional styles and materials.

- There is potential for considerable expansion in photo-voltaic energy production and small scale wind turbine installations, though both of these can have significant impacts on the landscape character over a quite wide area, depending upon sensitivity of placement and design.

- Modern farming equipment and the size of some of the holdings in this NCA means that farm yards are taking on the proportions of small industrial estates. These modern large 'sheds' are presenting a massing, colour and repetition of form that has a far greater visual impact, in an open landscape of wide vistas, than structures of more traditional construction. These buildings do, however offer opportunities for large scale PV and rainwater harvesting though only infrequently taken up.

### Semi-natural habitat

- The most frequent (non-woodland) semi-natural habitat is lowland calcareous grassland. Today, only around 2.6 per cent of the NCA remains unimproved or semi-improved calcareous grassland. This amounts to some 3,100 ha of recorded sites containing predominantly this and closely associated habitats.

- The work of Hooftman and Bullock[8] indicates that in Dorset some 89 per cent of managed calcareous grasslands have been lost since the early 1930s. Crude extrapolation would give an historical figure of 28,180 ha of calcareous grassland in the NCA, however, the figure was probably higher as they give a total Dorset calcareous grassland figure of 41,738 ha, much of which must have been in this NCA.

- Significantly, since the 1930s, the mean size of managed calcareous grassland fragment has fallen from 40.4 ha to just 2.5 ha today (a 94 per cent decline).

- While major losses occurred between the Second World War and the late 1970s, small erosions of habitat extent to arable have continued until recently.

- Since the introduction of the Countryside Stewardship Scheme and subsequently Environmental Stewardship (ES), significant resources have been put into this NCA to halt the decline and begin to redress the losses of the previous 70 years.

- These ES payments are focussed upon the largest and most important grassland sites and will not necessarily reach the myriad small sites. The loss and/or degradation of these 'stepping stone' sites will impact the connectedness of the larger sites. Hoofman and Bullock indicate that for the whole of Dorset the degree of connectedness of managed calcareous grasslands has fallen dramatically. Consequently current activity may be maintaining connectivity at a historically low level, rather than enhancing it.

[8] Mapping to inform conservation: A case study of changes in semi-natural habitats and their connectivity over 70 years. Biological Conservation 145: 30–38, D.A.P. Hooftman and J.M. Bullock (2012)

- While habitat extent gains are being made by the creation of new calcareous grasslands, the smaller fragmentary remnants of downland may be declining in extent and habitat quality due to being ploughed up, lack of optimised grazing, scrub invasion and/or to abandonment.

- Mesotrophic grasslands, concentrated in the river valleys, have also declined in extent, ecological community and condition due to agricultural improvement and changes in management regimes. Many fragments remain and some are under agri-environment scheme management.

- The suite of chalk streams and rivers in the NCA are, for the most part, under pressure from high levels of nutrient (principally nitrogen, but also phosphorus) load, high levels of in-stream and deposited sediments and periods of low flows due to inadequate aquifer recharge (though summer of 2012 has shown that extreme weather events can reverse these flow characteristics quite dramatically). While the in-stream impacts can be problematic the major impacts are felt in the adjacent Dorset Heaths NCA where Poole Harbour is suffering severe levels of eutrophication.

- Characteristic species of the semi-natural habitats and of the agricultural landscape have all suffered steep declines since the Second World War. Habitat destruction, degradation and fragmentation have all played a part.

- Certain species have rallied with the aid of agri-environment schemes. The trend in the decline of farmland birds has been slowed and some species, such as skylark, have seen a recovery. However, as long as the underlying causes have not been addressed, only continued effective interventions will slow, halt and, in some cases, reverse the decline.

### Historic features

- Over the millennia, many heritage assets will have been destroyed or damaged. This was dramatically increased in both pace and extent during the period of intensive ploughing of the downs during and after the Second World War. For example, the Dorset Cursus now only remains as an impressive soil mark over much of its course.

- The trend of damage to known, registered assets has slowed and at the present time English Heritage's 'Heritage at Risk Register' lists some 216 heritage assets 'at risk', covering 200 ha in the NCA in 2012.[9] It is considered that many assets are damaged or even destroyed before they are formally identified.

- Much of the slowing of the trend of damage has been due to English Heritage' grants, Dorset County Council's Dorset Monument Management Scheme and more significantly in the 'wider countryside' the specialised Historic Environment options available through both Countryside Stewardship and the current Environmental Stewardship (ES) Schemes. .

- The vast majority of 'at risk' heritage assets are being damaged by agricultural activities; however, agri-environment schemes have made great inroads into limiting the affects of the damaging activities. It is also possible that other heritage is being damaged by activities such as aforestation but it has not yet been formally identified as such.

[9] Heritage at Risk Register 2012 South West, English Heritage (2012) (accessed September 2013: www.english-heritage.org.uk/content/publications/publicationsNew/heritage-at-risk/har-2012-registers/sw-HAR-register-2012.pdf)

- The continued high profile afforded to historic environment issues by English Heritage, the two AONB and a range of other groups should see the majority of these features removed from harm by the middle of the 21st century, so long as suitable schemes remain in place to support alternative, less damaging agricultural uses on these sites.

- There is a sense that many features and buildings of historical value have yet to be recorded, with agricultural structures particularly underrepresented in the NCA.[10]

### Coast and rivers

- While it is clear that initiatives such as the Nitrate Vulnerable Zone and work to clean up the outfalls of sewage treatment works has had a positive effect on the streams flowing through the NCA, there are still issues to be addressed.

- Soil compaction, run-off and in stream siltation is an issue for the biodiversity of the chalk streams, particularly for spawning fish and aquatic macrophytes.

- Nitrate pollution of the groundwater and streams is an issue across the NCA.

- Phosphate pollution both from point and diffuse sources is a threat to drinking water quality in some rivers and is causing a significant impact upon the ecology of Poole Harbour.

- It is probable that further improvements to current pollution and run-off will not immediately result in improved water quality as aquifer refresh takes many decades and certain phosphate compounds are attached to silt particles within rivers and can become available under certain conditions.

- Temperature rises within the NCA's rivers is also an issue that could become a barrier to ecological function and provision of services (fish populations may decline). Early measures to re-introduce riparian tree cover are seen as an effective solution to this issue.

### Minerals

- There is one active quarry in the NCA today, extracting limestone.

- The once extensive network of active chalk quarries are largely abandoned, and at risk of being lost as important geological and landscape features due to becoming overgrown, infilled with rubbish or inappropriately developed.

[10] Dorset AONB Management Plan 2014–2019, Dorset AONB Partnership (in preparation)

## Drivers of change

### Climate change

- The UKCP09 climate change projections suggest that by 2050 there may be an increase of winter mean temperature, and an increase in summer mean temperature. This would be accompanied by a change in the seasonal distribution of precipitation, with a decrease in summer and increase in the winter throughout the Southwest.[11]
- While the long term climatic trend is toward 'hotter drier summers and warmer wetter winters', there is a more immediately experienced trend in the increased frequency of what are considered extreme weather events.
- The increased frequency and intensity of rainfall events has put pressure on infrastructure, habitats, species and agriculture. Flooding has been a major issue, as have lengthy periods of water logging that has held back growth of both crops and semi-natural habitats.
- In addition, the NCA's principally arable agriculture may experience increasing difficulty in maintaining crops during periods of drought and an increasing need for irrigation putting pressure on the poorly recharged aquifer.
- A general increase in temperature may see opportunities for land managers to change their crop selections, though effects of extreme weather events may make this a potentially risky proposition. It is more likely that 'new' crops will be drought or temperature resistant varieties of current cropping.
- Demand for a greater proportion of energy generation from renewable sources has brought increased pressure for; wind turbines, photovoltaic solar arrays, and a growth in biomass crop production. Such developments can have both direct impacts where they are built or grown and indirect impacts through infrastructure construction for example power lines and the upgrading of roads.
- Contraction of the 'climate space' of beech and other tree species will see trees succumbing to temperature and drought stress compounded by increased damage from storm events.
- Semi-natural habitats on the chalk are well adapted to stress from drought and extremes of heat and cold. However, poor weather may prevent grazing or other, mechanised, sward management and could lead to habitat degradation.
- Many invertebrate species will benefit from a climate of hotter summers and warmer winters as they are at or near the northern limits of their ranges, butterflies and bees in particular. However, unusual weather patterns, unseasonal coolness and extended periods of rain, can be highly problematic for invertebrates.
- The shallow chalk streams of the NCA are vulnerable to warming both due to increased warming by the sun and low levels of riparian tree cover. The temperature rises could be significant enough to seriously affect the salmonids populations which are intolerant of high temperatures.
- Reduced summer rainfall and increased rates of evaporation may see a reduction in the volumes of water percolating into the aquifer and charging groundwater supplies. This is also of significance to the NCAs streams and rivers as they are principally groundwater fed.
- Extended periods of hot dry weather, followed by extreme rainfall events could, especially in combination with other NCA wide issues (soil compaction and structural organic material deficiency) lead to intense bursts of run-off and increased amounts of erosion and siltation.

[11] Climate Change Projections, UK Climate Projections (2010) (accessed September 2013: http://ukclimateprojections.defra.gov.uk/22306)

## Other key drivers

- Water Framework Directive represents a challenge for land and watercourse managers, but a great opportunity for restoring the quality and biodiversity of the NCA's streams and rivers and for getting more people involved in the process.

- Water resource issues, brought about by climate change, may have an impact on the NCA. Recharge of the chalk aquifer is already and could be further impacted by a combination of changed patterns of precipitation and unsympathetic land uses. Continued or increased demand for abstraction could impact the rivers and streams rising on the NCA.

- Continued influxes of new pests and diseases are threatening and will continue to pose a threat to agricultural and silvicultural crops (particularly large areas of monoculture). Native flora and fauna are also at risk from the arrival of new species and pathogens. Ash die back caused by Chalara fraxinea and the threat to native ladybirds from the arrival of the Harlequin ladybird (Harmonia axyridis) are two examples.

- The payment, by society, for the ecosystem services provided by the natural world and those who positively manage them could open up possibilities for new funding streams into the natural environment.

- The extensive areas of north facing scarp, combe and valley slopes could, where suitable soil conditions prevail, act as refuge areas for habitats and species under stress from increased temperatures.

- Conversion of farm buildings to residential and commercial uses helps maintain both farm economics and the buildings themselves. However unsympathetic conversion and use can result in negative impacts on character and historical value.

- Partnerships, working at the landscape scale, have already delivered benefits for habitats, species and people. There is, however, still considerable potential to deliver more and across larger areas to create robust ecological networks and place the NCA in the best place possible to respond to future challenges.

- While the economics of commercial forestry timber and pulp are stable at present, the markets for wood fuel and high quality timber products from semi-natural sources will be critical for securing sustainable management of woodland resource. There is potential to manage woodlands for their multiple benefits, addressing the threats of pests, diseases, inappropriate or poorly managed recreation and wood lotting. A co-ordinated and effective approach to woodland management will also help improve resilience to climate change.

- Urban tree planting and the development of various 'green infrastructure' and 'sustainable drainage systems will gain importance in the mitigation of impacts of climate change such as 'heat island' affects, flash flooding, and pollution concentrations in the NCA's towns. These measures will also provide other public benefits such as relaxation, informal recreation, increased local biodiversity and helping to integrate new development.

# 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.

**Bokerly Dyke provided a barrier to Saxon advances into Dorset for many years. Here at Martin Down it is still well preserved.**

| 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 | Tranquillity | Recreation | Biodiversity | Geodiversity |
| **SEO 1:** Plan for and manage changes in the agricultural landscape by encouraging and supporting business choices that balance food production with protecting soils and water, enhancing ecosystems (particularly those associated with semi-natural grasslands) and restoring ecosystem services. | ↗ ** | ↔ ** | ↗ ** | ↗ *** | ↔ ** | ↑ *** | ↑ *** | ↑ ** | ↑ *** | ↑ *** | ↗ ** | ↗ ** | n/a | ↗ *** | ↗ *** | ↗ ** | ↔ *** | ↑ *** | ↔ *** |
| **SEO 2:** Manage and enhance the historic character of the NCA, including the rich assemblage of settlement and field patterns, heritage features (including prehistoric assets), and the patterns of woodland, vegetation and geodiversity that give the NCA its sense of place. | ↘ ** | ↔ *** | ↔ *** | ↔ *** | ↔ *** | ↔ *** | ↔ *** | ↔ *** | ↗ ** | ↗ ** | ↔ *** | ↔ *** | n/a | ↑ *** | ↑ *** | ↗ ** | ↗ ** | ↗ ** | ↗ *** |
| **SEO 3:** Manage and enhance the recreational and educational potential of the NCA in a way that clearly shows the links between people and the landscape, and between geodiversity, ecosystems and the services they provide. Aim to heighten people's enjoyment, appreciation and understanding of the NCA, as well as their ability to take positive, informed action to enjoy and conserve their surroundings. | ↘ ** | ↔ *** | ↔ *** | ↔ *** | ↔ *** | ↔ *** | ↔ *** | ↔ *** | ↔ *** | ↔ *** | ↔ *** | ↔ *** | 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.

National Importance; Regional Importance; Local Importance

## Landscape attributes

| Landscape attribute | Justification for selection |
|---|---|
| **Prominent north and east facing scarp slope.** | ■ It is this feature which provides both impressive long views out of the NCA and the distinctive skyline of adjacent NCAs. It is a defining feature, whether grassland or cloaked in trees, of the landscape through which it occurs.<br>■ Abrupt cliff-like rise of the scarp slope punctuated by combes and promontories marking very clearly the geological boundary and can be used to explain the geomorphological process that have shaped the area.<br>■ As well as visual importance, the scarp slopes provide strongholds for the relict calcareous grasslands, generally protected from improvement by the unworkable nature of the slope. |
| **Plateau and long, gentle dip slope dissected by combes, dry valleys and river valleys.** | ■ Provides the long views out of the NCA to the south and east.<br>■ Provides the context and setting for most of the settlements in the NCA. |
| **Extensive, though highly fragmented, suite of relict semi-natural chalk downland habitats.** | ■ 'Flagship' habitat of the chalk and host to an evocative suite of plants and animals. Internationally important recognised by Natura 2000 designation (Cerne and Sydling Downs SAC, Fontmell and Melbury Downs SAC, Prescombe Down SAC).<br>■ Within and immediately adjacent to the NCA are some 609 individual chalk grassland sites. These amount to 3,100 ha with a range of between 0.25 and 66 ha and an average size of 5.1 ha1.<br>■ Additional areas of rough grassland, calcareous scrub (an important transitional habitat) and secondary woodland associated with the principal open grassland habitat.<br>■ Important downland texture, associated with the steep slopes and prehistoric heritage assets.<br>■ Direct links between vegetation communities and historic land use. |
| **Large areas of Ancient Semi-Natural Woodland alongside visually important plantations, clumps and windbreaks.** | ■ The woodlands of the Dorset Downs and Cranborne Chase are visually, culturally and ecologically important. Many of the Ancient Semi-Natural Woodlands probably represent remnants of original prehistoric woodland cover, spared by a fortuitous combination of difficult to work soils, possible cultural/spiritual beliefs and subsequent incorporation into past social and economic land management systems (hunting, followed by coppicing).<br>■ The plantations, clumps and shelterbelts represent both changing land use and a more symbolic expression of wealth and the power and influence over the landscape this gave.<br>■ Significant loses of the woodland resource (both semi-natural and planted) would have a marked effect on the character of the NCA. |
| **Small but significant suite of 'secondary' habitats that add to both local landscape character and biodiversity.** | ■ Scattered acid grassland sites, particularly in the west, for example Rampisham Down, notified as SSSI in 2013.<br>■ Alder woodland, again in the west, component sites of the West Dorset Alder Woods SAC.<br>■ Small but significant heathland outlier at Blackdown. |

| Landscape attribute | Justification for selection |
|---|---|
| **Extensive suite of prehistoric heritage assets, including barrows, hill forts, track ways and earthworks.** | ■ This NCA not only charts, through its archaeological assets, the history of early human occupation in southern England, but also charts the development of the modern, scientific study of our past.<br>■ A rich resource for the study of prehistoric 'architecture' both in terms of ritual and defensive structures.<br>■ Cranborne Chase is the area where modern British field archaeology developed, originating with General Pitt Rivers' pioneering excavations in the 19th century.<br>■ Cranborne Chase and the Dorset Downs (particularly the South Dorset Ridgeway) provide a microcosm of virtually all the major types of field monument found in southern England as a whole.<br>■ Much of the archaeological material has survived, and represents one of the most complete chronologies of any part of the prehistoric British landscape. |
| **Record of settlement into Roman occupation, through the Medieval period.** | ■ Roman roads linking Dorchester with other centres, a suite of villas, once the 'hubs' of highly productive farming estates.<br>■ Earthworks recording the advance of Saxon culture against a retreating Romano-British enclave.<br>■ Abandoned villages and field systems marking population shrinkage and dislocation due to disease and socio-economic perturbations. |
| **Winterbournes and chalk rivers, typically shallow, clean and highly biodiverse and often a feature of linear villages within the valleys.** | ■ The several chalk streams/rivers that flow across the Downs and Chase represent important reservoirs of biodiversity, supporting as they do a discreet community of species adapted to the chemistry of this base-rich water.<br>■ Certain species such as brook lamprey, bullhead, water crowfoot and salmonids are of European conservation importance. |
| **Parklands and estates of landowning families.** | ■ Large estates have played a defining role in the shaping of the NCA, and in many cases remain a strong influence on today's landscape.<br>■ Parklands associated with the large houses are both historic features and records in themselves and host a suite of species ranging from ancient trees to a rich lichen, fungal and invertebrate flora and fauna. |
| **Tranquillity and low levels of light pollution.** | ■ While tranquillity within the NCA has been eroded since the 1960s there are many places throughout where tranquillity can be regularly experienced.<br>■ This is still a strongly rural, agricultural NCA – subject to cycles of activity juxtaposed with the relative calm and tranquillity of the agricultural calendar.<br>■ Parts of this NCA, where settlements are sparse (Eggardon Hill, the downs around the upper river valleys of the Frome, Piddle, Cerne and Sydling), may include locally important areas of 'dark sky'. |

| Landscape attribute | Justification for selection |
|---|---|
| **Access and recreation on open land and through a limited network of rights of way, and traditional country pursuits.** | ■ The NCA has, and Cranborne Chase in particular, a very long history of recreational use, which itself reflects the changing use of the land and the transformation of subsistence activities into sport and recreation.<br>■ The hunting of deer, by the royal elite, was the foundation for the evolution of Cranborne Chase. More recent changes saw the deer eclipsed by the fox as the quarry of choice.<br>■ Field sports are still an important element of the economy and culture of the Cranborne Chase, though this is today dominated by game bird shoots and to a lesser extent 'large' game shooting (deer and wild boar).<br>■ The field sport inheritance of this NCA has created a strong equestrian sector.<br>■ More recent recreational activities such as walking and cycling are well served by the network of minor roads, green lanes and footpaths. There are 1,897 km of public rights of way, equating to a density of 1.6 km per km2. Some 6,672 ha or 6 per cent of the NCA is classified as publicly accessible. |
| **Farming land use patterns and seasonality in a landscape dominated by agriculture.** | ■ This NCA, without the intervention of large scale industrial or urban development, remains fundamentally shaped by agriculture and agricultural practices.<br>■ Agriculture, over past centuries, has shaped all of the vegetation found in the NCA. It created the vegetation communities that are valued for both their biodiversity and their beneficial influences on the very character of the area.<br>■ Modern systems of production have become 'de-coupled' from many previously agricultural landscape features. As their economic importance has waned, such features have been neglected, abandoned or removed. This threatens many key aspects of the NCA's character. |

## Landscape opportunities

- Ensure that the essential character of the landforms and processes underpinning the character of this NCA are protected from developments and/or land use changes that will compromise their contribution to the landscape.

- Manage and, where necessary, restore the existing suite of semi-natural calcareous grasslands and the important associated habitats found within and around them. Increase the resilience of these sites to environmental changes by creating new semi-natural calcareous grasslands (and associated habitats) that extend, buffer and link them.

- Bring all ancient semi-natural woodland into sympathetic management that will lead to a favourable condition, programme the restoration of all 'planted ancient woodland' sites returning them to native broadleaved cover, and design and implement a programme of new woodland planting that enhances the conservation status of existing woodlands and reinforces the character of the landscapes into which they are planted. Reintroduce active coppice management where this will enhance woodland wildlife interest and provide useful, saleable produce.

- Bring all Scheduled Ancient Monuments into favourable management regimes, ensuring that those currently found on the Heritage at Risk register are given priority. Ensure that the suite of local heritage assets and features are also managed to the best standard possible.

- Ensure that the NCA's watercourses are reconnected with the landscapes through which they flow. Re-connecting watercourses and their flood plains is important both for ecosystems and ecosystem services, whilst re-connecting watercourses with the settlements they flow through or close to helps people understand the positive benefits brought by rivers and streams, not just the issues when it floods.

- Secure the cultural, landscape and ecological continuity of the NCA's suite of historic parklands through planning tree planting, grassland management and the maintenance of specific parkland features for the future.

- Protect the chalk aquifer by promoting good agricultural and land management practices, helping to bring improvements to groundwater recharge and quality. Further, promote sustainable use of water resources, protecting the aquifer from over abstraction and safeguarding the water supply which is derived from the aquifer.

- Work with land managers to better understand and manage the soils of the NCA. Seek to enhance their structure and organic content where this has been damaged or degraded, devise practical solutions to issues such as compaction, erosion and run-off.

- Enhance the physical and mental wellbeing of people through experiential contact with the landscape, biodiversity and cultural artefacts of the Dorset Downs and Cranborne Chase NCA. Do this by maintaining and improving the 15 km of the South West Coast Path National Trail (South Dorset Ridgeway) and other main routes, increasing the network of connecting permanent and permissive routes linking national trails with high profile landscape, biodiversity and cultural assets.

- Work with the protected landscapes of the Dorset AONB and the Cranborne Chase and West Wiltshire Downs AONB to help meet the ambitions of their management plans.

## Ecosystem service analysis

| Service | Assets/attributes: main contributors to service | State | Main beneficiary | Analysis | Opportunities | Principal services offered by opportunities |
|---|---|---|---|---|---|---|
| **Food provision** | Cereals<br><br>Oil seeds<br><br>Dairy<br><br>Livestock rearing | Agricultural census data (2010) indicates that the major farm types are cereals (31 per cent) 39,856 ha, grazing livestock (27 per cent) dairy (8 per cent) and specialist pigs (2 per cent).<br><br>The trend appears to be a continuing reduction in livestock numbers (reductions between 2000 and 2009: sheep -23 per cent, cattle -24 per cent and pigs -17 per cent). Pigs are the most numerous livestock in the NCA at around 82,000 animals.<br><br>Land use shows a declining hectarage of grass (down by around 11 per cent or 4,677 ha) and a rise in cereals (up by about 2 per cent or 782 ha) and a large increase in oil seeds (up by 112 per cent or 5,000 ha).<br><br>The current concentration upon cereals and oil seeds also results in a reduction in other arable crops, down by 10 per cent or 594 ha.<br><br>Many of the arable soils are low in organic matter and dependent upon annual applications of organic and inorganic manure and fertiliser. | Regional | The current dominance of arable production in this NCA is a reflection of the suitability of the soils and the buoyancy of the world markets for cereals and oil seeds.<br><br>The shift in production reflects increasing intensification of livestock management, a movement away from extensive, pasture-based grazing to intensive grain based systems (around 70 per cent of grain in industrialised nations is used for stock feeding[12]). In addition globalised markets have driven demand for cereals and oil seeds as food and for bio fuel.<br><br>The figures available do not indicate whether livestock are being concentrated on fewer farms as well as declining in total numbers. It is also possible that adjacent NCAs are 'taking up the slack' in stock numbers, allowing this NCA to exploit its soils more profitably.<br><br>The resulting reduction of permanent grassland has and continues to exacerbate issues of rain water run-off, soil erosion, nutrient discharge (both nitrogen and phosphorus) and siltation.<br><br>While the move from pasture to more arable does not seriously impede or modify the character (which has evolved to include arable as a feature) it can both damage the context in which certain features are placed within (prehistoric sites, parks and gardens for example) and is reducing the availability of suitable stock (sheep and cattle) to graze the suite of semi-natural grasslands in the NCA. | Continued development of approaches which optimise the application of fertilisers, both in terms of effective crop nutrition and the reduction of the 'escape' of nutrients into surface and ground waters and adjacent semi-natural habitats.<br><br>Ensure that sufficient grazing animals are available to maintain valued aspects of the landscape, especially the areas of prehistoric monuments and semi-natural grassland that are entirely dependent upon sympathetic grazing.<br><br>Understanding of soils and their effective management needs to be disseminated and encouraged. | **Food provision**<br><br>**Biodiversity**<br><br>**Regulating water quality**<br><br>**Regulating water flow**<br><br>**Regulating soil erosion**<br><br>**Regulating soil quality**<br><br>**Water availability** |

[12] Reaping the Benefits: Science and the Sustainable Intensification of Global Agriculture, The Royal Society (2009) (accessed September 2013: http://royalsociety.org/uploadedFiles/Royal_Society_Content/policy/publications/2009/4294967719.pdf)

| Service | Assets/attributes: main contributors to service | State | Main beneficiary | Analysis | Opportunities | Principal services offered by opportunities |
|---|---|---|---|---|---|---|
| **Timber provision** | Conifer plantations<br><br>Broadleaved woodland<br><br>Coppice | Woodland cover in the NCA is currently approximately 12,400 ha. Of this conifer plantation accounts for 2,000 ha and there is 8,300 ha of broadleaved and 1,000 ha of 'mixed' woodland.<br><br>Timber values are good at the present time (mid 2013).<br><br>Saw logs, accounting for two-thirds of a tree, are the most valuable. The "top third" goes for pulp, fencing and wood fuel (depending on market availability).<br><br>The burgeoning wood fuel market has meant that this top third is now saleable, whereas before this was not always the case. It is, however, low in value.<br><br>The markets are not always local, or even regional. Soft wood saw logs are sold into national markets by a few dealers (Euroforest, Tihill, and Selectfor).<br><br>They provide structural timber and fibre for our national requirements (the UK consumes about 1 tonne of wood per person per year).<br><br>The broadleaved standard and coppice woodland is poorly utilised, having become 'disconnected' from the rural economics of the NCA. Some is used for fuel logs and some is used to produce 'artisan' products such as hurdles and stakes for thatching.<br><br>4,762 ha of this woodland are on ancient sites, of which 2,510 ha is ancient semi-natural woodland and 2,162 ha planted ancient woodland sites. | Regional | The conifer plantation in the NCA is productive and economically viable, given high demand for saw timber and the buoyant fuel log market.<br><br>However, the bulk of standing timber in the NCA is either underutilised or not used productively at all. This principally equates to the broadleaved stands, comprising both coppice and standard trees.<br><br>This is because the traditional uses for timber have ceased or been replaced by modern materials or practices.<br><br>These broadleaved woodlands are however a valuable future resource, over and above their current biodiversity and historical value. As world demand and prices rise for hardwood products (for example charcoal and timber) these woodlands will become financially viable sources of timber products. | Not all of the 2,000 and more hectares of planted ancient woodland sites will be restored to broadleaved, given the economics of conifer at the present time. However, key areas (considering landscape and the 'Lawton Principles') of planted ancient woodland should be restored.<br><br>Carry out an assessment, using the tripartite approach, developed by the Dorset AONB, for valuing woodlands for their biodiversity, timber and wood fuel identifying barriers or constraints to these, and maximising the benefits for each of these aspects while maintaining or improving the woodland's contribution to landscape character.<br><br>Provide advice and support to woodland owners and managers with regard to bringing woodlands back into economic use. | **Timber provision**<br><br>**Biomass energy**<br><br>**Biodiversity**<br><br>**Sense of place / inspiration** |

| Service | Assets/attributes: main contributors to service | State | Main beneficiary | Analysis | Opportunities | Principal services offered by opportunities |
|---|---|---|---|---|---|---|
| **Water availability** | Extensive chalk aquifer<br><br>Suite of chalk winterbournes, streams and rivers<br><br>Light permeable soils | The entire NCA overlies a chalk aquifer.<br><br>Groundwaters are already subject to over-abstraction in the north of the area, while the central area has no water available for additional abstraction.[13]<br><br>Limited availability is found in the south.[14]<br><br>Most water abstracted from both groundwater and a river source in the NCA is used for public water supply. Other use is mostly licensed to aquaculture and fish farming.<br><br>The Stour and the Allen both have 'no water available', with the upper Stour being over-licensed and the Allen having groundwater pumped into the river to support its flow.<br><br>There is a confined chalk aquifer beneath the Stour catchment but it is not sustainable to use as a public or private resource because it is difficult to access and would need some form of artificial recharge.[15]<br><br>River flow is affected by abstraction from the chalk aquifer as the rivers are largely spring fed. In dry winters, the aquifer is unable to recharge fully, depriving chalk rivers and associated wetland habitats of their prime source of water. | Regional | The chalk aquifers underlying this NCA are stressed in terms of recharge.<br><br>The levels of abstraction can and have, in places, exceeded the ability of the aquifers to recharge over dry winters.<br><br>Wessex Water's 'Water Supply Grid' will, upon completion, address the major issues of getting water supplies to the major conurbation and towns in Dorset and beyond that have dependencies upon this source.<br><br>Many smaller supplies will remain dependent upon local ground or surface water sources. Additionally, the aquatic environment relies upon maintenance of minimum flows at all times of year, principally maintained by the 'slow release' of water from the aquifers.<br><br>To this end measures to increase natural recharge of the aquifers should be taken alongside the work on the Water Supply Grid.<br><br>Further pressures may arise as a result of climate change and increased water demand associated with the growth of Dorchester, as well as Bournemouth and Poole. | Increase area of semi-natural habitats including woodland, grassland and scrub to intercept and retain more precipitation into the groundwater reservoir.<br><br>Manage soils to restore permeable structure and water retentiveness – mainly via repairing and avoiding compaction and increasing soil organic content.<br><br>Manage farmland to minimise run-off, encouraging the use of contour ploughing, buffer and in-field strips, restored hedgerows and targeted scrub growth. | **Water availability**<br><br>**Regulating water quality**<br><br>**Biodiversity**<br><br>**Regulating soil quality**<br><br>**Climate regulation**<br><br>**Regulating water flow** |

[13] Maps of water available for extraction: Hampshire Avon Catchment Abstraction Management Strategies and Dorset Catchment Abstraction Management Strategies (accessed September 2013: www.environment-agency.gov.uk/business/topics/water/119937.aspx)
[14] Map of water available for extraction, Dorset Catchment Abstraction Management Strategies (accessed September 2013: www.environment-agency.gov.uk/business/topics/water/119937.aspx)
[15] Dorset Stour Catchment Abstraction Management Strategy, Environment Agency (2004) (accessed September 2013: http://publications.environment-agency.gov.uk/pdf/GESW0104BHCD-E-E.pdf)

| Service | Assets/attributes: main contributors to service | State | Main beneficiary | Analysis | Opportunities | Principal services offered by opportunities |
|---|---|---|---|---|---|---|
| **Genetic diversity** | Wiltshire Horn and Dorset Horn sheep<br><br>Dorset Down sheep<br><br>White Park cattle | The Wiltshire Horn and Dorset Horn sheep are both 'early' breeds well suited to meat production under the conditions of open downland.<br><br>The Dorset Down is a later breed, bred as part of the move to increase wool production on the downs.<br><br>There are several White Park herds within the NCA.<br><br>The above are all categorised as '5. Minority' by the Rare Breeds Survival Trust. This means there are between 1,500 and 3,000 animals in the breed flock/herd. | Local | Two of the oldest breeds of native sheep.<br><br>The sheep of Dorset were known for their unusual ability to breed out of season as far back as the 17th century. The Dorset Horn sheep is one of the earliest recorded breeds of British sheep with the first Flock Book being established in 1892.[16]<br><br>The Wiltshire Horn is a short haired breed that fell out of popularity as a result of the focus on wool producing breeds. The breed's 'wool shedding' habit makes it suitable for warmer climates.[17]<br><br>The Dorset Down was developed in the late 19th century as a result of crossing Southdown rams onto Hampshire and Wiltshire ewes and using these to improve the native sheep of Dorset. The Breed Association was founded in Dorchester in 1905 and issued its first Flock Book in 1906 containing entries from 51 flocks totalling 21,376 sheep, all located in Dorset.[18]<br><br>These are robust breeds and could play an important part in managing semi-natural habitats and may be able to deal with changing conditions associated to climate change or arrival of new pathogens. | Promote the ability of these breeds to effectively exploit semi-natural habitats, particularly chalk downland.<br><br>Expand flock sizes of these important genetic resources to provide potential reservoirs of disease resistance and environmental tolerances. | **Genetic diversity**<br><br>**Biodiversity**<br><br>**Sense of history**<br><br>**Sense of place / inspiration** |

[16] Dorset Horn factsheet, Rare Breeds Survival Trust (2011) (accessed September 2013: www.rbst.org.uk/sitemanager/uploads/ck_files/files/Dorset%20Horn%20-%20Fact%20Sheet.pdf)
[17] Wiltshire Horn factsheet, Rare Breeds Survival Trust (2011) (accessed September 2013: www.rbst.org.uk/sitemanager/uploads/ck_files/files/Wiltshire%20Horn%20-%20Fact%20Sheet.pdf)
[18] Dorset Down factsheet, Rare Breeds Survival Trust (2011) (accessed September 2013: www.rbst.org.uk/sitemanager/uploads/ck_files/files/Dorset%20Down%20-%20Fact%20Sheet.pdf)

| Service | Assets/attributes: main contributors to service | State | Main beneficiary | Analysis | Opportunities | Principal services offered by opportunities |
|---|---|---|---|---|---|---|
| **Biomass energy** | Existing conifer plantation, broadleaved and coppice woodland | Woodland cover in the NCA is currently approximately 12,400 ha (some 9.5 per cent of the NCA). Of this conifer plantation accounts for 2,000 ha with 8,300 ha of broadleaved woodland and 1,000 ha 'mixed' woodland.<br><br>A good proportion of this area is thought to be unmanaged and could, if brought into sensitive management, provide a large amount of wood fuel for local use.<br><br>While firewood is always a relatively low-value market it is healthier than it has been for some time.<br><br>Firewood logs have a good value but there is insufficient supply of good quality seasoned hardwood firewood. | Local | Wood fuel from small to medium unmanaged woodlands is probably the most likely and suitable form of biomass production for the NCA.<br><br>Thriving local markets exist to supply the burgeoning domestic wood burning stove market.<br><br>The supply of cut and seasoned logs has not developed to the more complex supply of chip and pelleted wood, partly reflecting the low density of installed systems and the higher capital investment needed to establish such a business.<br><br>Biomass crops such as short rotation coppice (SRC) and miscanthus are not grown in the NCA and there are limited locations for new biomass plantings.<br><br>While the existing resource of broadleaved woodland is so underutilised and profitability of the arable sector is already high, the promotion of SRC and miscanthus would appear counter intuitive, especially given the landscape character impacts these crops can have.<br><br>For information on the potential landscape impacts of biomass plantings within the NCA, refer to the tables on the Natural England website. http://www.naturalengland.org.uk/ourwork/farming/funding/ecs/sitings/areas/default.aspx | Consider supporting the opening up of further woodlands to sensitive harvesting of timber for wood fuel.<br><br>Carry out an assessment, using the tripartite approach, developed by the Dorset AONB, for valuing woodlands for their biodiversity, timber and wood fuel identifying barriers or constraints to these, and maximising the benefits for each of these aspects while maintaining or improving the woodland's contribution to landscape character.<br><br>Provide advice and support to woodland owners and managers with regard to bringing woodland back into economic use.<br><br>Investigate the use of wood fuel in pyrolysis systems[19] to release energy without releasing carbon. The resulting charcoal material can be used to condition the soils under arable use within the NCA. | **Biomass energy**<br><br>**Biodiversity**<br><br>**Sense of place / inspiration** |

[19] Pyrolysis is a thermochemical decomposition of organic material at elevated temperatures in the absence of oxygen.

| Service | Assets/attributes: main contributors to service | State | Main beneficiary | Analysis | Opportunities | Principal services offered by opportunities |
|---|---|---|---|---|---|---|
| **Climate regulation** | Mineral soils<br><br>Existing woodland<br><br>Organic matter in soils<br><br>Wetlands<br><br>Semi-natural grassland | The mineral soils that dominate this NCA generally have a low soil carbon content of 0 to 5 per cent reflecting their low organic matter content, especially in areas under continuous arable cultivation.<br><br>There are also small areas with a soil carbon content of up to 10 per cent which may reflect areas under permanent grassland and areas of flood plain grazing marsh (covering 2,000 ha).<br><br>The woodland cover (12,400 ha) within this NCA will also play an important role in the sequestration and storage of carbon.<br><br>Work looking at the changes in vegetation cover and management over the last 70 years[20] indicate that many semi-natural habitats have been replaced by arable and intensively managed grasslands with a subsequent degradation of carbon capture and storage capacity. | Local | With the expansion of arable production over the NCA, there is probably a net decrease in the soil organic matter/carbon content and thus climate regulating capacity of the soils.<br><br>In these circumstances soil carbon sequestration and storage can be enhanced by increasing soil organic matter content and increasing the area under permanent grass and grass leys.<br><br>Increased permanent grassland and shallow tilling on archaeological sites, via Environmental Stewardship agreements may be encouraging greater soil carbon content.<br><br>Existing conifer woodland is probably fixing carbon more effectively than the broadleaved at the moment. This being because the conifer is a managed crop and much is used for timber, while much broadleaved woodland is unmanaged and finds its way into the wood fuel market.<br><br>Shallow and no till systems may, if soil condition has been repaired, offer a greater chance at maintaining soil organic material and will reduce the fossil fuel energy required to establish and grow crops. | Increase the carbon/organic matter content of the NCA's soils through an increasing in the area of permanent and ley pasture and semi-natural grassland, revising crop/soil management to increase the organic material in the soil structure.<br><br>Introduce novel systems of soil management – minimum or no till, direct drill and slurry injection – all aimed at minimising soil disturbance, erosion and compaction.<br><br>Bringing the broadleaved woodland resource into sensitive active management and trying to use as much timber as possible for non wood fuel uses.<br><br>Re-establish areas of marsh, swamp and tall herb habitats in flood plains, leading to creation of carbon-rich organic soils. | **Climate regulation**<br><br>**Biodiversity**<br><br>**Regulating water quality**<br><br>**Regulating soil quality** |

[20] Mapping to inform conservation: A case study of changes in semi-natural habitats and their connectivity over 70 years. Biological Conservation 145: 30–38, D.A.P. Hooftman and J.M. Bullock (2012)

| Service | Assets/attributes: main contributors to service | State | Main beneficiary | Analysis | Opportunities | Principal services offered by opportunities |
|---|---|---|---|---|---|---|
| **Regulating water quality** | Chalk aquifer<br><br>Streams and rivers<br><br>Semi-natural habitats | 99 per cent of NCA, some 115,984 ha is in a Nitrate Vulnerable Zone. This recognises the potential for agriculture and other land management activities to cause nitrate to enter ground and surface waters through application of fertilisers, manures or slurry at inappropriate times or under poor conditions.<br><br>The water environment is already under stress, with chemical groundwater quality classified as poor across the area.<br><br>High nitrate levels in groundwater across the NCA.<br><br>Phosphate levels in the Stour and Frome catchments threaten drinking water quality[21] (predominantly as a result of extensive areas of arable cultivation over the open downland).<br><br>Arable production using heavier machinery, and often on increasingly steeper slopes is leading to soil compaction and erosion. Subsequent siltation is an issue in many of the NCA's rivers.<br><br>The Frome and Piddle which drain into Poole Harbour (lying outside of the NCA to the south-east) are responsible for high levels of nitrate which is having clear impacts upon the water quality. The most obvious of which are extensive algal blooms of *Enteromorpha* in the summer months. | Local | In freshwaters the impacts of elevated nitrate are considered a threat to drinking water quality.<br><br>Phosphate is an issue in the NCA's rivers. Point sources, including sewage treatment works (STW), domestic septic tanks and diffuse agricultural sources are all major sources.<br><br>Diffuse sourced phosphate commonly enters streams and rivers bound to silt. Excessive run-off from fields, road verges and roads into watercourses has caused this problem. In the highly permeable, karstic geology of the Dorset Downs and Cranborne Chase, leaching through the ground and into ground waters and back, via springs, into surface waters is also a significant pathway.<br><br>High levels of available phosphate can lead to algal blooms which can deplete dissolved oxygen (DO) and reduce light levels in the water column, smothering sensitive aquatic plant species. In severe cases, dissolved oxygen (DO) is exhausted and large scale die-off of aquatic species can occur.<br><br>A study of the Dorset Chalk aquifers concluded that: "It is generally of high quality but is being progressively impacted by agrochemicals in unconfined areas, the evidence of which is found even in deeper ground waters. Waters of pristine pre-industrial quality are rare in the basin..."[22]<br><br>Because available phosphate in rivers is naturally very low, even small quantities (<1mg/l) can have an adverse impact on ecology. Additionally, phosphate bound to silt in watercourses can be released long after deposition, leading to elevated levels even after inputs have been significantly reduced.[23]<br><br>Siltation with attendant turbidity and smothering issues, which can be especially damaging on spawning substrates, is an NCA wide issue as well. Maintenance of salmon and trout spawning sites often involves mechanical cleaning of the gravel/ sand substrate.<br><br>Efforts to reduce nitrate pollution of ground and surface waters are based on the extensive NVZ covering the bulk of the NCA. Measures to increase the efficiency, location and timing of fertiliser application are the main mechanisms employed to reduce pollution potential.<br><br>The catchments of the Frome, the Piddle, the Stour and the Ebble are Priority Catchments in the England Catchment Sensitive Farming Initiative (ECSFI).<br><br>Elements of this initiative actively seek to reduce pollution of surface and ground waters via a series of voluntary interventions by farmers. | Identify important areas for aquifer recharge and initiate land use / management changes that will reduce the penetration of nitrogen and phosphate pollution.<br><br>Restore semi-natural grasslands or woodland and scrub to areas at risk from high levels of run-off and pollution into water courses.<br><br>Reduce compaction and subsequent erosion of soils and transport of silt and phosphate into watercourses.<br><br>Explain financial as well as environmental benefits of fertiliser use efficiency. | **Regulating water quality**<br><br>**Regulating water flow**<br><br>**Regulating soil erosion**<br><br>**Regulating soil quality**<br><br>**Water availability**<br><br>**Biodiversity** |

[21] DEFRA catchment priorities identified in the England Catchment Sensitive Farming Delivery Initiative (accessed September 2013: http://archive.defra.gov.uk/foodfarm/landmanage/water/csf/documents/ecsfdi-phase1-report.pdf)

[22] Baseline Report Series: 4. The Chalk of Dorset, British Geological Survey and Environment Agency (2002) (accessed September 2013: http://a0768b4a8a31e106d8b0-50dc802554eb38a24458b98ff72d550b.r19.cf3.rackcdn.com/scho0207blyb-e-e.pdf)

[23] Freshwater eutrophication, Environment Agency (2012) (accessed September 2013: www.geostore.com/environmentagency/Freshwater_Eutrophication_Briefing_Note_December_2012.pdf)

| Service | Assets/attributes: main contributors to service | State | Main beneficiary | Analysis | Opportunities | Principal services offered by opportunities |
|---|---|---|---|---|---|---|
| **Regulating water flow** | Streams and rivers<br><br>Semi-natural habitats<br><br>River valley wet woodland<br><br>Wetland habitats<br><br>Geodiversity | The NCA has a history of flooding. Steep slopes at the top of the catchments of the Frome and the Piddle create fast run-off responses to rainfall events.<br><br>The upper catchments are underlain by chalk so water is absorbed quickly, though this may be offset by large areas of arable agriculture that increases run-off to watercourses. Further downstream there is mixed geology with water staying on the surface before discharging into rivers.<br><br>The Stour catchment has a varied geology. The upper catchment comprises impermeable clays creating shallow valleys and wide flood plains.<br><br>On the chalks of Cranborne Chase, valleys are steep with narrow flood plains while lower reaches run over semi-permeable sands, gravels and clays. Run-off and changes in water levels are rapid in the many streams on the clay making flooding common.<br><br>Principle river flood risks are from the Frome in Dorchester, and Maiden Newton, the Cerne at Cerne Abbas and the Stour at Blandford Forum.<br><br>An example was the flooding of Piddletrenthide, Maiden Newton and other hamlets in the winter of 2000-2001, caused by combined high groundwater, surface and river water after heavy rainfall.<br><br>Flood risk in this NCA is set to increase if climate change brings more frequent intense rainfall events. [24,25] | Local | It is likely that flooding has always been an issue in many parts of the NCA. The difference now is peoples' tolerance of disruption and damage is much lower. Modern homes and infrastructure are also more vulnerable to flood damage.<br><br>The large scale switch from permanent pasture to arable systems increases compaction and the run-off of water from fields, which are traditionally large and without hedgerows. This quickly flows into field drains, streams and rivers.<br><br>Coupled to more frequent extreme weather events (2012 saw the second wettest summer on record, 133 per cent above average) it is clear that the rivers' ability to contain flows within their banks will be more frequently exceeded.<br><br>Changes in land use and management practices could alleviate flood risk through the restoration of naturally functioning flood plains and the ability of the chalk aquifers to absorb and thereby moderate extremes of precipitation.<br><br>More effort must be put into the creation of wetland habitats to manage run-off and slow flood waters and, more generally, the creation of 'soft defences' to store water and manage run-off in locations that provide overall flood risk reduction and/or environmental benefit.<br><br>The planting of trees and woodland to control water flows in flood plains and to reduce and arrest down-slope flows of water could provide a wide range of benefits over and above flood management.[26] | Working with the land owning and management community, initiate the large scale restoration of semi-natural grasslands on areas of slope currently under arable regimes. These should be selected both for their ability to prevent run-off and their function within wider grassland ecological networks.<br><br>In areas where the conditions, ecological networks and landscape character permit, areas of woodland and scrub should be established to fulfil similar functions.<br><br>River valleys should incorporate identified areas for storage of flood waters that can also fulfil ecological functions. Selection of vegetation communities, ranging from productive grasslands to wet woodland, should be arrived at via an assessment of the ecological network in that area, the landscape character and landowner preferences.<br><br>In areas where production of arable crops is still required, introduce techniques that help to slow flows and improve water penetration into the soil. This will include soil structure restoration, restoration of hedgerows, contour ploughing, continuous cover and minimal tillage systems. | **Regulating water flow**<br><br>**Regulating water quality**<br><br>**Regulating soil erosion**<br><br>**Regulating soil quality**<br><br>**Water availability**<br><br>**Biodiversity** |

[24] Dorset Stour Catchment Flood Management Plan, Environment Agency (2012) (accessed September 2013: www.environment-agency.gov.uk/static/documents/Leisure/_CFMP_Dorset_Stour_12.pdf)
[25] Frome and Piddle Catchment Flood Management Plan, Environment Agency (2012) (accessed September 2013: www.environment-agency.gov.uk/static/documents/Leisure/_CFMP_FromeandPiddle_2012.pdf)
[26] The Frome and Piddle Catchment Flood Management Plan (http://www.environment-agency.gov.uk/static/documents/Leisure/_CFMP_FromeandPiddle_2012.pdf)

| Service | Assets/attributes: main contributors to service | State | Main beneficiary | Analysis | Opportunities | Principal services offered by opportunities |
|---|---|---|---|---|---|---|
| **Regulating soil quality** | Fertile soils cover the river flood plains.<br><br>Well drained easily worked soils cover much of the plateau and dip slope.<br><br>Heavier clay-with-flints in some parts of the plateau and dip slope<br><br>Thin nutrient-poor soils in areas of unimproved grassland | There are 7 main soilscape types in this NCA.[27]<br><br>■ Shallow lime-rich soils over chalk, covering 50 per cent of the NCA.<br><br>■ Freely draining slightly acid loamy soils (20 per cent).<br><br>■ Freely draining lime-rich loamy soils (8 per cent).<br><br>■ Freely draining slightly acid but base-rich soils (7 per cent).<br><br>■ Slightly acid loamy and clayey soils with impeded drainage (7 per cent).<br><br>■ Loamy and clayey flood plain soils with naturally high groundwater (4 per cent).<br><br>■ Slowly permeable seasonally wet slightly acid but base-rich loamy and clayey soils (2 per cent).<br><br>Much of the area with the two greatest cover soil types, that are so important for aquifer recharge, is also the preferred area for intensive arable production.<br><br>Issues of poor structure (low organic content), compaction (due to the highly mechanised nature of the agricultural operations) and erosion (due to greater extent and period of open soil conditions under the preferred arable systems) are issues for these soils. | National | The shallow lime-rich soils over chalk (50 per cent) are typically shallow and droughty but due to their calcareous nature have a degree of natural resilience.<br><br>These and the freely draining slightly acid loamy soils (20 per cent) are valuable for aquifer recharge requiring the maintenance of good structural conditions to aid water infiltration and requiring the matching of nutrients to needs to prevent pollution of the underlying aquifer.<br><br>There is the potential to increase organic matter content by management interventions to improve soil structure.<br><br>The catchments of the Frome, the Piddle, the Stour and the Ebble are Priority Catchments in the England Catchment Sensitive Farming Initiative (ECSFI).<br><br>Soil erosion is a specific issue within these catchments, particularly under maize cropping (the Frome catchment) and in the upper catchments where arable cultivation occurs on steeper slopes. | Ensure levels of long-established organic matter are maintained in higher-value agricultural soils, where found, minimising tillage operations where possible.<br><br>Similarly, avoid any further ploughing of long established grasslands (regardless of biodiversity value) to ensure the soil structure, organic content and ecosystem services are maintained.<br><br>Rehabilitate soil quality and the services good soil structure provides by:<br><br>■ Repairing compaction and seeking management techniques less reliant on heavy machinery in wetter parts of the year.<br><br>■ Increasing organic matter and soil ecosystems through less intensive management and more targeted and 'needs based' use of biocides.<br><br>■ Reduce erosion and run-off through sensitive crop selection and management, reestablishment of semi-natural buffer features (grassland, scrub and woodland).<br><br>■ Use aspirations for large scale recreation and restoration of semi-natural grassland habitat networks to target (without compromising habitat network viability) areas of vulnerable soils. | **Regulating soil quality**<br><br>**Regulating water flow**<br><br>**Regulating water quality**<br><br>**Regulating soil erosion**<br><br>**Water availability**<br><br>**Food provision**<br><br>**Biodiversity** |

[27] NSRI Soilscapes data (https://www.landis.org.uk/soilscapes/)

| Service | Assets/attributes: main contributors to service | State | Main beneficiary | Analysis | Opportunities | Principal services offered by opportunities |
|---|---|---|---|---|---|---|
| **Regulating soil erosion** | Soils | The 7 main soil types include:<br>■ Shallow lime-rich soils over chalk (50 per cent).<br>■ Freely draining slightly acid loamy soils (20 per cent).<br>■ Freely draining lime-rich loamy soils (8 per cent).<br>■ Freely draining slightly acid but base-rich soils (7 per cent).<br>■ Slightly acid loamy and clayey soils with impeded drainage (7 per cent).<br>■ Loamy and clayey floodplain soils with naturally high groundwater (4 per cent).<br>■ Slowly permeable seasonally wet slightly acid, base-rich loamy and clayey soils (2 per cent).<br>The lime-rich and freely draining loamy soils are susceptible to erosion, especially on moderately or steeply sloping land where cultivated or soil is exposed. This is exacerbated where organic matter levels are low after continuous arable cultivation or where soils are compacted.<br>There is the potential for wind erosion on some fine textured cultivated variants.<br>The base-rich soils and the clayey soils with impeded drainage are susceptible to compaction and capping, leading to an increased risk of surface water run-off and subsequent erosion. These soils are easily compacted by machinery or livestock if accessed when wet.<br>The small areas of seasonally wet and flood plain soils are not susceptible to soil erosion. | Regional | The relatively light soils that dominate the NCA are shallow, sometimes unstable and prone to loss through erosion.<br>They are particularly at risk on sloping cultivated ground or where soil is exposed along tracks or areas of extensive bare ground created by outdoor pig rearing (most numerous livestock in the NCA). This is exacerbated where organic matter levels are low after continuous arable cultivation or where soils are compacted or capped.<br>The catchments of the Frome, the Piddle, the Stour and the Ebble are Priority Catchments in the England Catchment Sensitive Farming Initiative (ECSFI).<br>Soil erosion is a specific issue within these catchments, particularly under maize cropping (the Frome catchment) and in the upper catchments where arable cultivation occurs on steeper slopes. | Ensure levels of long-established organic matter are maintained in higher-value agricultural soils, where found, minimising tillage operations where possible.<br>Similarly, avoid any further ploughing of long established grasslands (regardless of biodiversity value) to ensure the soil structure, organic content and ecosystem services are maintained.<br>Rehabilitate soil quality and resilience to erosion and compaction by:<br>■ Repairing compaction and seeking management techniques less reliant on heavy machinery in wetter parts of the year.<br>■ Increasing organic matter and soil ecosystems through less intensive management and more targeted and 'needs based' use of biocides.<br>■ Reducing erosion and run-off through sensitive crop selection and management, cross-field hedgerows and arable margins, re-establishment of semi-natural buffer features (grassland, scrub, woodland). | **Regulating soil erosion**<br>**Regulating soil quality**<br>**Regulating water flow**<br>**Regulating water quality**<br>**Water availability**<br>**Food provision**<br>**Biodiversity** |

| Service | Assets/attributes: main contributors to service | State | Main beneficiary | Analysis | Opportunities | Principal services offered by opportunities |
|---|---|---|---|---|---|---|
| **Pollination** | Lowland calcareous grassland<br><br>Semi-natural ancient woodland<br><br>Tracks, byways and road verges | The existing network of semi-natural habitats provides an important habitat for pollinating insects.<br><br>Unfortunately, the highly fragmented nature of many of the habitats in this NCA will make it difficult for these pollinators to have a widespread impact – being limited to a specific range from their host habitat.<br><br>A general lack of hedgerows or other insect friendly boundary and connecting features (many are simply barbed wire fences) will also tend to reduce the ability of insects to pollinate widely. | Local | Pollination of crops is undertaken by a range of insect species. The intensification of the arable landscape on the Dorset Downs and Cranborne Chase has inevitably eroded the extent and connectivity of semi-natural habitats that these species depend upon for shelter, food and dispersal.<br><br>The historical lack of an extensive network of hedgerows, copses and other 'corridors' and 'stepping stones' may also be a limiting factor on the availability of these species' pollinating services to areas of farmland. | Measures aimed at enhancing the extent, quality and connectivity of a range of semi-natural habitats within the NCA (predominantly, though not exclusively, broadleaved woodland and calcareous grassland) will have a markedly positive impact on the availability of pollinators over the area.<br><br>More specific, localised measures, probably on a farm scale (arable margins, land left fallow or sown with annual nectar-rich species mixes, areas of scrub and long grass) will also be required to attract pollinators where major network features are not in close proximity. | **Pollination**<br><br>**Pest regulation**<br><br>**Biodiversity**<br><br>**Sense of place / inspiration**<br><br>**Food provision** |

| Service | Assets/attributes: main contributors to service | State | Main beneficiary | Analysis | Opportunities | Principal services offered by opportunities |
|---|---|---|---|---|---|---|
| **Pest regulation** | Lowland calcareous grassland<br><br>Semi-natural ancient woodland<br><br>Tracks, byways and road verges<br><br>Range of farmland bird species | The existing network of semi-natural habitats provides an important habitat for naturally pest predating species.<br><br>Unfortunately, the highly fragmented nature of many of the habitats in this NCA will make it difficult for these predators to have a widespread impact – being limited to a specific range from their host habitat.<br><br>A general lack of hedgerows or other predator friendly boundary features (many are simply barbed wire fences) will also tend to reduce the ability of these species to have a widespread impact on pests. | Local | The natural regulation of pest species is undertaken by a range of native fauna. Insects and birds are probably the two most important groups that provide this service.<br><br>The intensification of the arable landscape on the Dorset Downs and Cranborne Chase has inevitably eroded the extent and connectivity of semi-natural habitats that these species depend upon for shelter, food and dispersal.<br><br>The historical lack of an extensive network of hedgerows, copses and other 'corridors' and 'stepping stones' may also be a limiting factor on the availability of these species' pest regulating services to areas of farmland.<br><br>The suite of so called 'farmland birds' whose lifecycles had adapted to traditional farming techniques and cycles would have provided important services in pest regulation. Modern practices have however undermined their ability to survive on many farmed landscapes (other changes such as timing of insect prey will have played a part in this decline).<br><br>Work to arrest the decline of a suite of these species has been undertaken as part of the Environmental Stewardship (ES) under the South West Farmland Bird Initiative (SWFBI). This project encourages landowners to manage specific elements of their holding in a range of options aimed at providing forage for birds at specific key times of year.[28] | Measures aimed at enhancing the extent, quality and connectivity of a range of semi-natural habitats within the NCA (predominantly, though not exclusively, broadleaved woodland and calcareous grassland) will have a markedly positive impact on the availability of pest regulating species over the area.<br><br>More specific, localised measures, probably on a farm scale (arable margins, land left fallow or sown with annual nectar rich species mixes, areas of scrub and long grass) will also be required to attract predators where major network features are not in close proximity.<br><br>Additionally, measures such as those currently promoted by the SWFBI will be required to maintain the farmland bird population at a stable or recovering population level. | **Pest regulation**<br><br>**Pollination**<br><br>**Biodiversity**<br><br>**Sense of place / inspiration**<br><br>**Food production** |

[28] Natural England's South West Farmland Bird Initiative (accessed September 2013: www.naturalengland.org.uk/regions/south_west/ourwork/farmlandbirds)

| Service | Assets/attributes: main contributors to service | State | Main beneficiary | Analysis | Opportunities | Principal services offered by opportunities |
|---|---|---|---|---|---|---|
| **Sense of place/ inspiration** | Dominating scarp landscape on approach to the NCA's northern and south-western boundaries<br>Long views to south and east across the long dip slope<br>Dramatic, rhythmic contrasts of plateau dissected by combes and steep-sided valleys<br>Expansive plateau with gently undulating landscape, wide horizons punctuated by woodlands and hill top clumps<br>Narrow, secluded river valleys with narrow flood plains and small linear settlements<br>Ancient woodlands and grasslands<br>Local vernacular cob, clunch, flint, brick and thatch<br>Large skyscape and impact of various weather phenomena<br>Agricultural cycles of seasonality juxtaposed against timelessness of some aspects of the landscape | This NCA still has a strong sense of identity, more so in Cranborne Chase, and its inspirational qualities are, though eroded in places, intact.<br>Most villages have retained their character, even with post-war expansion and changes in the demographic of their inhabitants. Dorchester and Blandford Forum still retain their prosperous market town character, at least in their historic cores, while the development of their 'suburbs' has somewhat eroded the peri-urban character of both.<br>The rapid wartime and post-war conversion from pastoral systems to arable production, urban expansion and increased density of 'infrastructure' have all degraded the character and sense of place in parts of the NCA.<br>However, in many places the essential qualities of openness, interaction between land use and landform and an essentially 'uncluttered' landscape have been maintained.<br>Cranborne Chase has a strong 'estate landscape' imposed upon the natural features with extensive coppice woodland, areas of permanent grassland on valley sides and a wealth of designed parklands and gardens providing the setting of stately homes.<br>Feelings of inspiration and escapism are likely to be associated with the open landscape and skyscape of the downland with its dramatic scarps slopes and spectacular, panoramic views of a largely rolling arable landscape. These features combine to give a feeling of remoteness.<br>Contrast between the elemental expansiveness of the plateau and downland and sheltering embrace of the valley landscape creates a strong sensory dynamic.<br>The importance of the works of Thomas Hardy should not be underestimated in terms of the inspiration and sense of place people bring to this landscape. Along with the 'blasted heaths' of the Dorset Heaths NCA, the chalk downs are the key contextual and spiritual elements of most of Hardy's writings. | National | The obvious underlying factor giving a sense of place to this NCA is the chalk geology and geomorphology. This has defined the landforms, building materials, semi-natural vegetation and to a great degree the land use. The cultural identity of the NCA is less unified.<br>Cranborne Chase, due to its distinct royal links and forest law history, has a more 'high profile' historical identity than the Dorset Downs which have been more 'quietly pastoral'.<br>There is a sense that the people of Cranborne Chase are more aware of their identity than elsewhere in the NCA.<br>To some extent, the identity of this NCA is split between the two AONB that cover almost its entire area.<br>This identity split is delineated by the atypically lowland pastoral character of the relatively wide Stour Valley and the town of Blandford Forum.<br>A unifying sense of place for the NCA is the predominance of arable agriculture which is of course a relatively recent change and represents a 'new' landscape character for the NCA. However, increased mechanisation and intensification of agricultural production and the semi-industrial nature of farm building complexes can impact on the character of the NCA.<br>Similarly, while prominent clumps of trees and follies may be seen as enhancements to the landscape – in part due to their sensitivity to their surroundings – Modern energy and communications infrastructure insensitively placed on high points or ridgelines can be distracting, overwhelming and ultimately damaging to the landscape character. | The essential character forming landforms of the NCA should be protected and enhanced by decisions made regarding land use.<br>Reinforce the sense of place/character through restoration of areas of semi-natural grassland, scrub and woodland.<br>Maintaining and restoring/replacing hedgerows, shelterbelts, clumps, copses and coverts that contributes positively to the sense of place. Resist new planting that has deleterious effects on landscape.<br>Encourage and support the restoration and ongoing management of parks and gardens of the large houses within the NCA.<br>Avoid new and minimise the impact of current infrastructure, particularly that of utilities/telecoms.<br>Maintain the fabric and setting of heritage assets, ensuring their historic value and character setting qualities are maintained or, where degraded, enhanced. | **Sense of place/ inspiration**<br>**Sense of history**<br>**Biodiversity** |

| Service | Assets/attributes: main contributors to service | State | Main beneficiary | Analysis | Opportunities | Principal services offered by opportunities |
|---|---|---|---|---|---|---|
| **Sense of history** | High density of heritage assets<br>Groups of barrows, defences and ancient track ways<br>Hill forts in commanding positions<br>Patterns of settlement substantially unchanged since Norman times<br>Grand houses, gardens and parks<br>General absence of intrusive modern developments<br>Ancient woodlands and grasslands<br>Strong literary references to the area in Thomas Hardy's novels<br>24 Parks and registered gardens<br>1,100 Scheduled Monuments<br>2,825 Listed buildings | The NCA has a very strong sense of history, both in terms of having a great number of above and below ground heritage assets and having a suite of features that, more than almost anywhere else in the UK, represent the full record of human occupation and activity.<br>Much of the history is readily legible, having escaped the destruction wrought in other areas through a combination of low levels of development, stable land use patterns (until recently) and the persistence of forest law in Cranborne Chase.<br>The landscape also displays a diverse cross section of the major movements and trends that have shaped the English countryside, up to the present day.<br>Barrows, hill forts, field systems, tracks and earthworks are present across the NCA and in places, such as the South Dorset Ridgeway, their density is high (with more barrows in a mile-wide corridor around the SDR than there are in Stonehenge and Avebury World Heritage Site) and impact in the landscape significant.<br>In places like the Valley of the Stones National Nature Reserve, some 6,000 years of human occupation and agricultural history can be experienced in a relatively small area.<br>This historic character is further reinforced by the pattern of linear villages strung along valleys and spring lines and linked by ancient lanes. This pattern of settlement is largely unchanged since the time of Domesday Book.<br>The numerous historic houses and parks including Kingston Lacy, Waterston Manor, Rushmore and Charborough Parks mark both the rise and fall of ecclesiastical and subsequent replacement by secular commercial power over the landscape.<br>The legacy of the ancient hunting ground of Cranborne Chase is still to be seen in the NCA. While large areas of the wooded cover are centuries gone, the culture of the area is still strongly associated with field sports. | National | The Dorset Downs and Cranborne Chase are well known for their historic assets. Many of the most popular and defining aspects of this NCA are historic features – hill forts including Hambledon Hill, Badbury Rings and Maiden Castle (the largest hill fort in England), barrows, visible banks of the Dorset Cursus and the Cerne Abbas Giant.<br>These are all nationally or even internationally recognised features.<br>It is also significant that much of the development of early archaeological study was pioneered in this NCA.<br>While successive layers of land use history have sat side-by-side for the last 6,000 years, the land use changes of the last 100 years have been disproportionately destructive and still threaten to 'erase' signs of past land use.<br>The Dorset Cursus is a good example of a massive landscape feature reduced, by ploughing, to a soil mark over most of its 10 km length.<br>English Heritage's Heritage at Risk lists many earthworks at risk from principally agricultural (ploughing) activities, though many of these have or are being addressed through Environmental Stewardship.<br>The breakdown of main causes of damage are:<br>■ Arable ploughing 140 sites, 174 ha.<br>■ Animal burrowing 18 sites, 7 ha.<br>■ Arable clipping 35 sites, 5.5 ha<br>■ Other causes 23 sites, 13.5 ha.[29] | Continue to raise awareness of the value of the historic landscape to landowners, local people and visitors to the NCA.<br>Taking a project approach focus, within the 'hotspot' of the South Dorset Ridgeway, upon an integrated approach to the historic assets, biodiversity, landscape character and cultural identity of the area.<br>Continue to use English Heritage grants, agri-environment schemes and inputs from the private sector (for example Section106 agreements and Community Infrastructure Levy) to enhance both the material condition and the setting of historic assets.<br>Link the enhancement of historic assets and their setting to projects to increase areas of semi-natural grassland.<br>Protect ancient ways over the open downland summits from inappropriate and damaging vehicular use.<br>As well as protecting heritage assets, their interpretation and legibility should be enhanced where appropriate.<br>Management and restoration of historic parklands ensures continuity of their positive impact on sense of history and landscape character.<br>The areas where ancient, irregular field patterns still persist should be protected to ensure large scale arable intensification does not erase this form of land management and landscape character within the NCA. | **Sense of history**<br>**Sense of place / inspiration**<br>**Biodiversity** |

[29] Geographic Information System data from Heritage at Risk Register 2012 South West, English Heritage (2012) (accessed September 2013: www.english-heritage.org.uk/content/publications/publicationsNew/heritage-at-risk/har-2012-registers/sw-HAR-register-2012.pdf)

| Service | Assets/attributes: main contributors to service | State | Main beneficiary | Analysis | Opportunities | Principal services offered by opportunities |
|---|---|---|---|---|---|---|
| **Tranquillity** | Low levels of development, including electricity and telecommunications infrastructure<br><br>Few major roads<br><br>Lack of major air traffic corridors<br><br>Relatively 'dark skies' across much of the NCA<br><br>Scale and open nature of landscape<br><br>Areas of semi-natural habitat supporting species highly characteristic of tranquillity | The NCA has experienced a significant decline in tranquillity since the 1960s. Since then undisturbed areas have decreased from 96 per cent to 74 per cent in 2007.<br><br>The lowest scores for tranquillity within the NCA are found, not surprisingly, around Dorchester, Blandford and along major A-road corridors such as the A354 and A350.<br><br>The various landscape types within the NCA convey differing forms of tranquillity. The varied river valleys with woodlands, hedged fields and flood meadows afford a more cocooned tranquillity, while the open downs and scarp offer a robust, expansive and remote sense of tranquillity.<br><br>Presence of species such as skylark, bees and livestock imbue areas of semi-natural habitat with a pastoral (even nostalgic) sensibility that many find relaxing and tranquil.<br><br>Dark night skies are a feature of the NCA, away from the larger urban areas of Dorchester and Blandford Forum. No 'Dark Skies Reserves' have yet been identified, but potential is there. | Regional | Most of the NCA is still tranquil. There are temporal and seasonal variations (rush hours, harvest time - holiday and off seasons) which see marked increases in certain types of disturbance or intrusion.<br><br>The edges of urban areas can be made less intrusive by schemes of planting and landscaping but these can, if not carefully designed, have adverse visual impacts.<br><br>Roads visual (day and night) and acoustic impacts can be moderated through planting and landscaping. However, such schemes can also have negative visual impacts upon open views both from the road and across the landscape it crosses.<br><br>The major pressures upon tranquillity in the NCA are:<br><br>■ Increasing industrialisation of arable agriculture;<br><br>■ Greater traffic volume and 24 hour pressure (increasing demands for lighting) on the NCAs major roads;<br><br>■ Increased urbanisation of the smaller villages and hamlets, again increasing calls for lighting;<br><br>■ Greater vehicular use of lanes and byways;<br><br>■ Farm business diversification leading to noisier, visually intrusive activities. | Create 'softer' edges to larger urban areas. Industrial areas/ units should be suitably massed and arranged to prevent high visibility and impact.<br><br>Resist calls for increased street lighting, and where possible implement strategies for reducing light intensity/ pollution and/or duration.<br><br>Ensure that any new developments both minimise their own adverse impact and seek to mitigate existing adverse impacts upon tranquillity.<br><br>Investigate mechanisms to reduce traffic on non-trunk roads. | **Tranquillity**<br><br>**Sense of history**<br><br>**Sense of place / inspiration**<br><br>**Biodiversity** |

| Service | Assets/attributes: main contributors to service | State | Main beneficiary | Analysis | Opportunities | Principal services offered by opportunities |
|---|---|---|---|---|---|---|
| **Recreation** | South West Coast Path National Trail<br><br>Open access land<br><br>Public rights of way<br><br>Extensive permissive access<br><br>Hunting | The NCA offers an extensive network of rights of way totalling nearly 2,000 km at a density of over 1.5 km per km2.<br><br>There is a wealth of open access land covering over 4,000 ha or 3.6 per cent of the NCA. In addition, 15 km of the inland route of the South West Coast Path (known as the South Dorset Ridgeway) lies within the NCA.<br><br>Popular activities across the area include walking, riding, hunting and cycling.<br><br>The South Dorset Ridgeway (part of the South West Coast Path National Trail , running from West Bexington to Osmington Mills in the Weymouth Lowlands NCA is a particularly good example of the access both physical and visual that many of the public rights of way give to the heritage assets of the area.<br><br>The Hampshire / Wiltshire border is a maze of byways and bridleways - nearly all ancient droves.<br><br>Most of the chalk grassland is also open access land and the hills and valleys are well connected by cow droves and footpaths.<br><br>There is extensive permissive access in the Cranborne Chase woodlands around Tollard Royal and other woodland access is provided by the RSPB and Forestry Commission.<br><br>The Chalke Valley has excellent networks of public rights of way. Some of the open access land has closure agreements for the shooting season. | National | In the east of the NCA the pursuit of various hunting and hunting-derived activities is still popular with some even gaining in popularity.<br><br>The 'pull' of the coast certainly reduces the volume of day visits or longer holidays to the area and this may be seen in the less-well developed level of provision in the NCA.<br><br>A low density of public transport services means that often even local people (especially those with low disposable incomes) have quite poor access to their own environs.<br><br>The extensive byway and bridleway network around Whitsbury has seen the horse racing industry locate here for most of the last 100 years. There is currently one world-class stud and one large racing stable, along with a number of associated smaller equine businesses, racing enterprises and eventing stables.<br><br>In some areas, the public rights of way network is 'severed' by busy, fast main roads. This can be an issue for all users and can effectively deny access for certain user groups. | Seek to connect local people to their local countryside via enhanced access from within towns and villages to the wider countryside, possibly via semi-formalised areas of green infrastructure.<br><br>Work with Local Access Fora to identify and address issues with rights of way through Rights of Way Improvement Plans. | **Recreation**<br><br>**Sense of place / inspiration**<br><br>**Sense of history** |

| Service | Assets/attributes: main contributors to service | State | Main beneficiary | Analysis | Opportunities | Principal services offered by opportunities |
|---|---|---|---|---|---|---|
| **Biodiversity** | Semi-natural unimproved calcareous grassland<br><br>Suite of lowland chalk streams and rivers.<br><br>Broadleaf and ancient woodland<br><br>Great Yews SSSI<br><br>Rare yew woodland designated as a Special Area of Conservation (SAC)<br><br>Some component sites of the West Dorset Alderwoods SAC<br><br>SSI covering 3 per cent of NCA<br><br>1 Special Protection Area (SPA small part), 7 SAC and 1 Ramsar site<br><br>Important farmland bird area | The areas of Ramsar and SPA in the NCA are small fragments of heathland sites predominantly located in the adjacent Dorset Heaths NCA.<br><br>The 3,000 ha of lowland calcareous grassland[30] is an internationally important concentration of a priority habitat. Much of this is SSSI and in several cases SAC; however a significant proportion is made up of a large number of small local sites (Sites of Nature Conservation Interest).<br><br>The chalk supports a range of locally common, characteristic species such as common rock-rose, quaking grass, chalk milkwort, carline thistle, marbled white butterfly and salad burnet.<br><br>Also found are species that have declined, over and above the declines of calcareous grassland, making them especially rare. The early gentian, marsh fritillary and silver-spotted skipper butterflies, juniper and Adonis blue butterfly.<br><br>Much of the woodland resource is undermanaged for biodiversity, especially as much of the coppice woodlands are now outside of that regime and succeeding to high forest.<br><br>The generally clear and unpolluted chalk rivers of the NCA support bullhead and brook lamprey, both species listed under the Habitats Directive (Annex II) and rafts of the rare river water-crowfoot.<br><br>The vast majority of SSSI are in favourable (or recovering) condition (98 per cent). Unfavourable sites account for 4 per cent of the total.<br><br>The condition of Sites of Nature Conservation Interest (SNCI) is not so well understood and their generally smaller size makes them more vulnerable to various perturbations.<br><br>Arable habitats support farmland birds while historic parklands are an important habitat supporting populations of bats, soil and deadwood fungi and rotting wood loving species of invertebrates. | International | The rich mosaic of grassland, woodland and riverine habitats in the NCA supports many rare and internationally important wildlife species.<br><br>The quality, extent and connectivity of these habitats and the ecosystems that function within have declined markedly over the last 100 years.<br><br>This has principally been due to arable conversion and intensification of the farmed landscape and decoupling of valued biodiversity assets from mainstream agriculture.<br><br>The impacts have been widespread and not merely upon biodiversity. The services that the ecosystems provided have also suffered.<br><br>There are opportunities to re-create ecological networks to improve biodiversity connectivity, ecosystem function and ecosystem service provision. | Create significant new areas of semi-natural calcareous grassland, the location of which will meet the 'Lawton Principles' and strengthen the connectivity and resilience of the habitat.<br><br>Encourage land managers to pull arable production away from the edges of steep sided scarp, combe and valley slopes where chalk grassland is found to prevent nutrient run-off.<br><br>Bring ancient species-rich woodlands into management as a priority; restore their structure to encourage woodland floor recovery.<br><br>Understand ecological function within the NCA (and how this interacts with adjacent NCAs) and conserve areas using the ecosystem approach.<br><br>Continue to use environmental schemes as a way to secure populations of farmland birds, but also to include other mobile farmland biodiversity. | **Biodiversity**<br><br>**Sence of place / inspiration**<br><br>**Recreation** |

[30] This figure is derived from the NCA area plus a 1 km buffer to incorporate important scarp chalk downland sites in the transition zone between this NCA and the adjacent NCAs – principally NCAs 132, 133 and 138

| Service | Assets/attributes: main contributors to service | State | Main beneficiary | Analysis | Opportunities | Principal services offered by opportunities |
|---|---|---|---|---|---|---|
| **Geodiversity** | Chalk geology illustrating various peri-glacial landforms and processes<br><br>Geological SSSI and Local Geological Sites<br><br>Quarries<br><br>Isolated Tertiary deposits at Blackdown<br><br>Sarsen 'train' at Valley of the Stones National Nature Reserve (NNR)<br><br>Suite of chalk streams, winterbournes and rivers<br><br>Local stone used in building | There are 6 (SSSI within the NCA with geological interests and a further 12 sites of local geological or geomorphological interest.<br><br>The geological SSSI are designated mainly for their Cretaceous rocks (mainly Chalk) that outcrop over most of the area.<br><br>The layers of chalk contain bands of flint nodules, a common feature of the walls and buildings in downland villages.<br><br>There is an interesting 'inlier' of Greensand at Tarrant Crawford, below Martin Down.<br><br>The lack of active quarries may indicate a lack of good local exposures of chalk and other strata. | Regional | The level of diversity in the geology of this NCA is low. It is almost entirely underlain by Chalk.<br><br>The Chalk is also topped in a very few places, most notably at Blackdown, around Hardy's Monument, by remnants of once extensive Tertiary gravels and sands, giving rise to an area of heathland and planted areas of conifer.<br><br>A short distance away is the Valley of the Stones NNR which features a Sarsen train, a collection of Sarsen stones (a material known as Silcrete – a silicacious concretion). These were brought down the slopes to the valley floor by the process of solufluction.<br><br>The overwhelmingly calcareous Chalk geology and geomorphology are the dominant influence upon the aesthetic and cultural qualities of the area. | Key features of the landscape which help understand and explain the processes of a karstic landscape should be protected from damage and made as visible and accessible as possible.<br><br>Highlight the fundamental connections between the geodiversity, history of human occupation and land use of the NCA.<br><br>Ensure that the most important quarry exposures are protected from infilling, re-vegetating and inappropriate uses.<br><br>Ensure that local materials are still available for both repairs to existing and new build vernacular buildings.<br><br>Installations of interpretation for archaeological and biodiversity assets should include references to underlying geology and geomorphology. | **Geodiversity**<br><br>**Water availability**<br><br>**Sense of place / inspiration**<br><br>**Biodiversity**<br><br>**Recreation** |

**Photo credits**

Cover photo: Fallow deer near Sixpenny Handley, Cranborne Chase.
Pages 1, 4, 8, 11 & 29 © Tracy Adams
Pages 5 & 13 © Mark Simons
Page 16 © John Hunter
Page 25 © Dorset AONB
Page 26 © Ian Dalgleish
Page 28 © Tiny Gill
Page 38 © Carolyn White

NATURAL ENGLAND

**Natural England is here to secure a healthy natural environment for people to enjoy, where wildlife is protected and England's traditional landscapes are safeguarded for future generations.**

Catalogue Code: NE494 ISBN: 978-78367-054-3

Should an alternative format of this publication be required, please contact our enquiries line for more information: 0845 600 3078 or email enquiries@naturalengland.org.uk

**www.naturalengland.org.uk**