Chapter 2

Formative Influences

Physical Influences

Geology and Topography

2.1 The South Downs is dominated by a spine of Chalk that stretches from Winchester in the west to the cliffs of Beachy Head in the east. To the north of the Chalk the older sandy rocks of the Lower Greensand and soft shales of the Wealden Clays are exposed. The Chalk is separated from the Lower Greensand by a belt of low-lying ground marked by the Gault and a 'terrace' of Upper Greensand that lies at the foot of the Chalk scarp. To the south of the chalk the younger Tertiary rocks overlie the Chalk. The solid geology within in South Downs National Park can be viewed on the South Downs National Park LCA online map. The different rock formations are considered in chronological order below. The description includes the development of each rock formation, its composition, and its influence on the topography and character of the South Downs. A topographical map is also available on the LCA online map.

Cretaceous rocks

Wealden Series

2.2 The oldest rocks in the South Downs are those of the low lying clays of the Wealden Series that are exposed along the northern boundary of the study area. During the early part of the Cretaceous period, some 140 million years ago, a lake covered the area and it was during this time that the Wealden Clay was laid down. It consists of shales and mudstones with outcrops of siltstones, sandstones, shelly limestones and clay ironstones. Erosion of the softer rocks has created a low lying area or 'basin'. In combinations with the outcrops of harder siltstones, sandstones, shelly limestones and clay ironstones this creates an undulating landform.

Lower Greensand Deposits

2.3 Towards the end of the Weald Clay deposition, the salinity of the Weald Lake increased and the lake became a shallow marine bay in which sands were deposited. The sandy rocks also contain chert, ironstone and calcareous deposits. Three lithological divisions of Lower Greensand are exposed within the South Downs National Park boundary - the Hythe Beds (a greenish grey sandstone with beds of chert located to the north-east of Petersfield), Sandgate and Bargate Beds

(yellow sandstones around Pulborough and Midhurst) and the Folkestone Beds (quartzose sands with seams of pebbles and clay found along the Rother Valley and at Woolmer Forest.

2.4 The Hythe Beds are particularly thick along their northern and western limits where they produce a prominent ridge of hills that enclose the Wealden Basin. These resistant cherts and sandy limestones form the high hills and steep escarpments to the north-east of Petersfield. The Sandgate, Bargate and Folkestone Beds are composed of less resistant lithologies and create lower landforms. The Sandgate Beds form rolling relief with well-drained, easily eroded soils which are almost exclusively used for arable farmland. The Folkestone Beds form a slightly elevated, flat-topped plateau which is associated with poor soils and extensive tracts of heathland. The sands are of economic value and these areas are frequently pitted with quarries.

Gault Formation

2.5 The Gault was probably deposited in quiet water of the shallow seas and is composed of soft mudstones and silty mudstones which have weathered to yellow and brown clays. These rocks are exposed at the foot of the Chalk where they create a smooth 'vale' like landform, for example around West Liss. The clays of the Gault formation have been exploited for brick making e.g. the Selborne brickworks.

Upper Greensand Formation

2.6 The Upper Greensand formation was deposited near the shorelines of the shallow Wealden Sea during the Cretaceous period over 100 million years ago. The rock is composed of a series of sandy beds with small amounts of clay and silt which is more resistant to erosion than the neighbouring Gault. The Upper Greensand is thickest at the western end of the Weald, for example around Selborne, where it is exposed as a 'shelf or 'terrace' at the foot of the chalk. Outcrops of solid rock are revealed in the sunken roads and lanes which cross the terrace.

Chalk

2.7 The South Downs is dominated by and unified by Chalk. The Chalk beds were laid down during the latter part of the Cretaceous period, some 100 million years ago, as a white calcareous mud when much of southern Britain lay under water. The Chalk is a soft, white limestone of organic origin containing microscopic calcareous bodies. Embedded within the Chalk are hard flints which are formed from silica. These flints remain long after the softer chalk has eroded and have been exploited by man as tools and as a building material, with the flint villages, walls and churches being one of the most distinctive features of the South Downs.

- 2.8 The Chalk formation is divided into Lower, Middle and Upper Chalk. The Upper Chalk gives rise to the extensive areas of gently undulating downland that dominates the South Downs landscape with Middle and Lower Chalk cropping out in the scarp slopes and in the bottoms of valleys. The cliffs of Beachy Head provide excellent sections through the Lower, Middle and Upper Chalk.
- **2.9** The striking Chalk escarpment is formed by erosion of the Chalk, partly as a result of the water emitting from springs at the base of the Chalk. The escarpment is remarkably constant in height throughout its length as a result of the lithological uniformity of the Chalk. Variations in landform are therefore due almost entirely to folds and faults in the chalk.
- 2.10 The escarpments and dipslopes of the Chalk are characterised by coombes which are related to local joints in the chalk and were formed by spring sapping and stream erosion probably during and immediately after glaciation when the Chalk was impermeable as a result of permafrost. Spring action and intermittent 'bournes' or 'lavants' after heavy rain have continued to cause modifications in structure. The effect of the Chalk joints on the development of coombes is exemplified by the pattern of dry valleys around Brighton. Some coombes are more complex, for example Devil's Dyke, which is an 'escarpment' valley where a dip-slope and scarpface valley intersect.

Tertiary Rocks

2.11 By the end of the Cretaceous time the sea had retreated, the chalk was gently folded and exposed to erosional processes. Tertiary rocks represent the marine incursion into the area by shallow seas some 65 million years ago. These are the most recent bedrock deposits found in the South Downs.

Lambeth Group

2.12 The Lambeth Group (formerly known as the Woolwich and Reading Beds) are the earliest Tertiary rocks. They consist of brightly mottled clays, silts, sands and gravels that rest on the chalk. The Lambeth Group is seen along the southern boundary of the South Downs National Park boundary, to the south of the Chalk, where it gives rise to a gently undulating lowland landscape.

London Clay Formation

2.13 The London Clay Formation is a bluish grey clay that occurs in the most southerly part of the South Downs, at West Walk, where it forms a heavily wooded lowland landscape.

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Wittering Formation

2.14 The Wittering Formation is part of the Bracklesham Group. It is composed of sands and gravels and gives rise to a well-drained lowland landscape as seen at Rookesbury Park on the southern extremity of the South Downs.

Geomorphological Processes

2.15 After the Tertiary rocks were laid down the topography of the landscape was substantially altered by the process of folding and faulting. East-west folds formed anticlines such as the Winchester Anticline which extends from Winchester almost to Petersfield, the Stockbridge Anticline which ends just west of Stockbridge, the Worthing-Arundel-Chichester Anticline, the Lewes Anticline and the Mount Caburn Anticline. The approximate locations of these anticlines may be seen on geological maps contained in the Hampshire Basin and Adjoining Areas and Wealden District volumes of the British Regional Geology series (published by the Natural Environment Research Council, Institute of Geological Sciences). All the folds face northwards and this produces the distinctive north facing scarps that characterise the area. The area has also been acted on by hydrological processes (see below) that have shaped the landscape resulting in the distinctive wide U-shaped valleys and hidden dry valleys, which are so characteristic of the chalk landscape and the narrow gorges and ravines that typify the Greensand.

Drift Geology

2.16 The principal types of drift deposits in the study area can be viewed on the South Downs National Park LCA online map and is summarised below.

Clay-with-flints

2.17 Clay-with-flints are accumulations of clay and embedded flints that reach up to 10m depth on the surface of the Chalk. The deposits formerly extended as an almost continuous sheet, much of which is likely to have been eroded. The present day distribution, as mapped by the British Geological Survey, occurs as isolated patches across the chalk. Remnants of clay-with-flints are found on the highest Chalk of the Hampshire Downs as well as on the dip slope along the southern edge of the South Downs. The presence of clay with flint capping creates considerable variation in the chalk landscape with heavier soils frequently supporting areas of woodland and pasture.

River Terrace Deposits and Dry Valley Deposits

2.18 Three major glaciations are recognised in Britain which were separated by periods of interglacial warming. During the interglacial periods, sea level rose and the valleys were flooded. When glaciation caused the sea level to fall again,

material transported by the water, was deposited on the valley sides. The remnant deposits of these glacial/interglacial fluctuations are still found in terraces along the river valley. River terrace deposits line the valley sides up to 15m from the present valley floors. These are particularly noticeable along the River Rother.

2.19 Dry valley deposits are composed of sand and silt, and can be found along the bottom of valleys which have in the past been water filled. When water flowed through the valley, the sand and gravel was transported and deposited along the river's course. Since more recent drops in water levels, the valleys now run dry except for during periods of heavy rainfall. Dry valley deposits are typically found in the valley bottoms of the extensive dry valleys and coombes that characterise the dipslope of the chalk downland.

Alluvium, Raised Marine Deposits and Peat

2.20 Alluvium is the modern deposit of rivers, spread by the river during flooding, and occupies the low-lying marshy ground alongside rivers. This type of deposit is particularly prominent in the wide river floodplains of the Arun, Adur, Ouse and Cuckmere. Raised marine deposits are similar to river alluvium, but are spread by the sea rather than river. Raised marine deposits are seen in the lower floodplain of the River Arun. Peat is closely associated with inland alluvium and occurs on low lying marshy ground, for example at Amberley Wild Brooks.

Head

2.21 Head is weathered, broken-up material that has moved downhill by solifluction. It may also refer to downwash deposits that are still forming and is found on plateaux, hill slopes, and valley bottoms, for example in the coombes and valleys within the Chalk, Greensand and Low Weald.

Tufa

2.22 Tufa is a porous calcareous rock deposited by springs after having flowed through the chalk strata of the downlands. Tufa depositing flushes occur when the springs deposit the sediment, which they have been carrying through chalk, on the surface. Tufa deposits are particularly notable along the valley of the River Itchen.

Hydrology

2.23 The surface of the chalk dip slope is furrowed by extensive branching dry valley systems which are most likely early drainage patterns which retreated as the level of the water table in the chalk fell. These dry valley systems occur throughout the chalk landscapes. Coombes are features of the scarp slope which were formed by spring sapping and stream

erosion probably during and immediately after glaciation when the Chalk was impermeable as a result of permafrost.

- **2.24** Folding, faulting, jointing and lithological variations have all played a part in governing the drainage pattern. The chalk valleys of the River Itchen, Meon, Lavant and Ems, all of which support rivers on their lower reaches, follow structural folds in the chalk. The River Rother flows eastwards at the foot of the northern scarp of the Chalk before entering the Arun.
- 2.25 One of the main drainage features in the South Downs is the series of deep valleys, or gaps, in the South Downs which contain the rivers of the Arun, Adur, Ouse, and Cuckmere. These large U-shaped valleys were most likely deepened and enlarged by periglacial erosion and contain extensive floodplains. The main hydrological features in the National Park can be viewed on the South Downs National Park LCA online map.
- **2.26** A line of springs runs around the foot of the Lower Greensand Hills at the junction between it and the Weald Clay. The springs are formed by water which percolates through the sand, but is stopped and forced out where it reaches the impervious clay.
- **2.27** A similar springline is also found along the Greensand shelf at the foot of the scarp slope of the chalk downs.

Soil and Agricultural Capability

- 2.28 In common with most of lowland England and the South East region, the majority of agricultural land in the National Park is Grade 3 ("good to moderate quality agricultural land" which is capable of growing a range of arable crops with relatively few restrictions). There are few areas of Grade 2 land ("very good quality agricultural land") which occur in river valleys where there is a depth of alluvial soil and two small areas of Grade 1 land (which occurs in significant areas on the coastal plain south of the National Park). Grade 4 land is found mostly on the steeper land with thin chalk soils or heavy clay with flints, occurring across the area but particularly in the central part of the South Downs, which remains dominated by large areas of woodland.
- **2.29** The distribution of agricultural land quality, soil types and landcover types within the National Park can be viewed on the South Downs National Park LCA online map.

Sources Consulted

- Countryside Commission and Sussex Downs Conservation Board (1996) The Landscape of the Sussex Downs AONB. CCP 495.
- Natural Environment Research Council Institute of Geological Sciences (1960) British Regional Geology:

- The Hampshire Basin and Adjoining Areas, Third Edition by C P Chatwin MSc. (Her Majesty's Stationery Office, London).
- Natural Environment Research Council Institute of Geological Sciences (1965) British Regional Geology: The Wealden District, Fourth Edition by R W Gallois BSc. (Her Majesty's Stationery Office, London).
- Soil Survey of England and Wales: Soil Map of England and Wales with explanatory text (Scale 1:1000, 000)
- Soil Survey of England and Wales (1983) Sheet 6 South East (scale 1:250,000)
- DEFRA's agricultural land clarification

Human Influences and the Historic Environment

- **2.30** The landscape of the South Downs as we see it today is the product of an interaction between natural and human processes. The landscape bears the imprint of successive periods of human inhabitation and land use.
- **2.31** This chapter provides a narrative overview of the human history of the South Downs and surrounds, examining the main trends that can be recognised in the development of the modern landscape from earliest prehistory up to the present day, a broad overview of historical settlement patterns, and an introduction to the Historic Landscape Characterisation (HLC) of the South Downs.

Overview

Palaeolithic (c.500, 000BC-c.10, 000BC)

- **2.32** The Palaeolithic period was the earliest and longest phase of human history. A number of important discoveries of hominid remains of Lower Palaeolithic date have been made from the Raised Beach deposits that lie at the foot of the dipslope of the Downs, just outside the National Park boundary. These include the internationally important site at Boxgrove, comprising deposits and artefacts dateable to c.500, 000BC.
- 2.33 The South Downs, although heavily wooded, were an attractive area for exploitation with the southern combes affording good access to the freshwater and marine resources of the coastal plain, while the northern escarpment provided an ideal vantage point for monitoring animal herds. A number of artefacts of Lower and Middle Palaeolithic date, mainly handaxes, have been found scattered along the gravels of the Wealden river valley systems, particularly the Western Rother and the Arun. These are derived deposits of a secondary nature, removed from their original location by the effects of glaciation and subsequent hillwash, moving material both

downslope and downstream, but they do suggest the presence of human groups exploiting the wider downland plateau. The exceptions to this are the scattered pockets of Clay-with-Flint that survive in hollows along the chalk ridge, particularly on the open Ouse-Eastbourne downland. These deposits have been shown elsewhere (the East Kent Downs) to contain in situ Palaeolithic material (although the exact circumstances of deposition are still in dispute). Most of the known Palaeolithic material relates to the blade traditions of the Upper Palaeolithic, prior to the last glaciation. Mesolithic (c.10, 000BC-c.4300BC).

2.34 The Mesolithic saw the return of human communities to the South Downs in response to improving post-glacial climatic conditions. The warming climate led to the spread of a succession of woodland types, culminating in a mixed broadleaved forest dominated by oak but including elm, ash, alder, lime and hazel. Human communities exploited this woodland and the rich resources of the river valleys. Settlements comprised semi-permanent base camps occupied during the winter months and a series of seasonal hunting camps, although evidence for such settlements is scarce and tends to be restricted to the Greensand (e.g. Selmeston, East Sussex; West Heath, West Sussex, Oakhanger, Hampshire). The bulk of the evidence for this period comprises flint scatters, from which three typologically distinct chronological groupings have been recognised. Evidence for the later Mesolithic period is less forthcoming, although it is likely that small-scale clearance of the woodland, together with a certain level of manipulation of animal populations as part of an increasingly efficient hunting strategy laid the foundations for the adoption of agriculture.

Neolithic (c.4300BC - c.3000BC)

2.35 The Neolithic saw the development of agriculture and the first evidence for large-scale communal activity. New ideas relating to the domestication of animals and, probably later, the cultivation of cereals, were adopted by indigenous human communities, together with new technologies such as pottery. Environmental evidence indicates a major phase of woodland clearance taking place at this time, as land was opened up to provide fields and sacred spaces. Evidence for Neolithic settlements is patchy, with a few sites producing pits (e.g. New Barn Down and North Marden, West Sussex), although the proximity of these sites to ceremonial monuments, and the 'ritual' appearance of the fills, may indicate that these are not domestic sites. A much more extensive impression of Neolithic activity is gained from the numerous flint scatters and also the distribution of polished stone axes, both of which are concentrated on the chalk downlands. The absence of Neolithic material from the Greensand is surprising given the fertility of the soils, but this is likely to be the result of Neolithic sites being buried under deep colluvial deposits. Ironically, the

soil erosion that caused this process was initiated by largescale tree clearance during this period.

2.36 The most striking evidence for the period exists in the form of ceremonial monuments. The earliest examples comprise earthen long barrows, which are found scattered across the downland, but with concentrations in Hampshire east of Winchester, to the north of Chichester in West Sussex and east of the Ouse valley in East Sussex. These were both communal burial places and foci for social and ritual gatherings, serving to anchor the community in the landscape. Another early ceremonial site was the causewayed enclosure, seven examples of which are known from the Sussex portion of the designated National Park (with an eighth immediately outside at Whitehawk, Brighton). No examples are known from Hampshire. The nature of these sites remains a matter of debate, but activities may well have included excarnation (the exposing of the dead prior to burial), ritual deposition of food and artefacts and use as a meeting place. Ritual activity has also been recognised at a number of flint mines scattered across the South Downs chalk, often surviving as areas pockmarked with former shafts. The remaining class of ceremonial site found in the late Neolithic, the henge, is not present within the National Park, although a possible henge has been suggested at Mileoak near Brighton.

Bronze Age (c.3000BC-c.600BC)

- 2.37 The Bronze Age is characterized by the introduction of metals, firstly gold and copper and later bronze. The earliest metals are generally associated with a new type of pottery, Beaker Ware, as well as the construction of a new type of ceremonial site, the round barrow. These monuments heralded a new way of thinking about society as they represented the burial of individuals rather than the communal burials of the preceding period. This is probably linked with the emergence of social elites. The barrows are found in large numbers across the chalk downland and also on the Greensand, often forming linear cemeteries on ridges.
- 2.38 The Middle Bronze Age (from c.1500BC) saw a dramatic change in emphasis away from the ceremonial and monumental landscape. Large-scale evidence for farming appeared with the creation of field systems defined by earthwork banks and ditches (and probably hedges). Small enclosed settlements of round houses representing farmsteads set within groups of paddocks are found across the chalk downs (mainly in Sussex), several of which have been excavated (e.g. Winnall Down, Hampshire; Blackpatch, West Sussex; Itford Hill, East Sussex), although usually not surviving as upstanding landscape features (unlike the numerous contemporary stone settlements that survive in upland areas such as Wales).

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2.39 The Late Bronze Age (from c.1000BC) saw further changes with the disappearance of the round barrow burial tradition, the development of a settlement pattern characterised by unenclosed settlements, the creation of major linear earthworks carving the landscape into territories (especially evident in the cross-ridge dykes found on the downland) and the appearance of large defended enclosures (hillforts) (e.g. Harting Beacon, West Sussex). More evidence of settlement in the lowland areas, particularly the Sussex and Hampshire Coastal Plain, is evident, together with hoards of metalwork indicative of burgeoning trade networks. Environmental evidence indicates that woodland clearance had reduced tree cover on the eastern Downs to a level very similar to that of the present day, replacing it with an intensive mixed agricultural system in which sheep were becoming increasingly important. This regime saw the development of large areas of regular planned field systems, often surviving as lynchetted field systems (traditionally known as 'Celtic fields'). The tree cover remained more extensive in the west due to the prevalence of poorer clay soils capping the chalk.

Iron Age (c.600BC-AD43)

- 2.40 The Early and Middle Iron Age (up to c.100BC) saw a continuation of trends developed in the Late Bronze Age, with increasing numbers of open settlements and defended enclosures evident, the latter perhaps representing focal points for a number of different activities rather than purely acting as military citadels or refuges. Hillforts developed during the period, becoming larger and more strongly defended, with concentric rings of ditches and ramparts (multivallations). By the Middle Iron Age, many of the smaller sites had been abandoned, and there appears to have been a move towards a centralisation of power, with large sites (e.g. Cissbury, The Trundle) dominating blocks of downland territory. Little is still known about exactly how these sites functioned, with evidence of pseudo-urban settlement at Danebury (outside the National Park) not yet replicated in any significant manner elsewhere.
- 2.41 The Late Iron Age saw the abandonment of many of the hillforts, with a handful of major sites dominating the landscape (e.g. The Trundle and Cissbury, West Sussex). These in turn fell out of use, to be replaced by large-scale open sites of high status in the lowlands, bounded by long stretches of ditches and banks. These so-called oppida are not found within the National Park boundary, but exist immediately outside at Chichester (the Chichester Dykes) and Winchester (Oram's Arbour). Increasing numbers of settlements are known from this period, including increasingly complex ditched enclosures and the distinctive 'banjo enclosures', many of which survive as cropmarks on aerial photographs. Increasing levels of trade with the Continent, both with native communities and with the expanding Roman

Empire, brought a range of fine imports into the area, and the period saw the first evidence for centralized pottery production, including wheel-turned vessels based on the Greensand.

Romano-British Period (AD43-c.AD410)

- 2.42 The Roman invasion of AD43 saw little immediate change to the landscape of the South Downs. The military presence in the area was slight, although there is increasing evidence for a Conquest-period (and perhaps earlier) military site at Fishbourne. The area was occupied by the Atrebates tribe, whose largely pro- Roman sympathies spared them the ferocious assault suffered by the tribes further west at the hands of Vespasian's legions. In fact, ordinary life appears to have changed little for the bulk of the population, with the field systems, roundhouses and farmsteads continuing in use, many of which survived until recently as earthwork sites on the downs.
- 2.43 The process of Romanisation is largely evident further up the social scale, where people acquired those elements of the Roman lifestyle 'package' they felt most comfortable with, merging them with elements of their own culture to produce a Romano-British hybrid. This is manifested in the landscape in the appearance of rectangular stone or timber multi-roomed buildings, generally known as villas, and often developing on pre-existing settlement sites. A scatter of these sites is known, clustering along the Greensand (e.g. Wyck, Hampshire and Bignor, West Sussex, the latter on display as a museum) and also in the fertile river valleys penetrating the dipslope of the chalk (e.g. Twyford, Hampshire and Chilgrove, West Sussex), although the wider landscape contexts of these sites is as yet poorly understood. Many of the villa estates appear to have been deliberately located where they could exploit several resource zones (i.e. river valley and downland). Associated with the villa sites are several temples established higher up on the downland itself (e.g. Chanctonbury and Lancing, West Sussex). The villa estates lay within extensive arable field systems, many surviving as terraced earthworks, interspersed with sheepwalk, and further pressure was put on woodland resources by the increased need for fuel, both for domestic use and to supply an increasing number of industrial concerns such as the Alice Holt pottery kilns. The estates subsequently formed the basis of the later landscape, informing the boundaries and internal layouts of the Saxon and Medieval manorial and parochial landscapes.
- **2.44** Although much of the landscape history of the South Downs in the Romano-British period is concerned with continuity, there were also a number of new elements. Two major towns were established at Winchester and Chichester, with a number of smaller nucleated settlements known such as Pulborough and Hassocks. These settlements were linked by a network of new roads, ranging from straight well-

engineered trunk routes like Stane Street through to smaller local networks reusing pre-existing prehistoric tracks. Many of these roads now survive as green tracks and holloways in the landscape, with some stretches followed by straight lengths of modern highway (e.g. Stane Street).

Anglo-Saxon Period (ADc.410-AD1066)

2.45 The decline of Roman authority created a power vacuum in which the local Romanised elites competed for power. The chaotic situation coincided with movements of people from the Germanic lands to the east (modern Germany and Denmark), who were able to settle in increasing numbers along the eastern and southern seaboards of England. Sussex was settled by people of Saxon origin, initially on the downland block between the Ouse and Cuckmere rivers in East Sussex, while Hampshire was targeted by the Jutes, penetrating via river valleys such as the Meon. Early Saxon settlements are rare, with most evidence for this period derived from cemeteries (e.g. Droxford and Abbots Worthy, Hampshire; Apple Down, West Sussex) although work at Chalton in Hampshire suggests that the earliest settlements were established on the upper reaches of the chalk dipslope, a situation replicated at Bishopstone in East Sussex. By the 9th century, the original settlements had been abandoned, or had shrunk to individual farmsteads, and new daughter settlements were established both in the valleys along the dip slope and as a string of villages along the Greensand, exploiting the spring line at the foot of the scarp slope. These villages were associated with an expanding system of common fields, and had become identified as manorial centres by the time of the Domesday Survey in the late 11th century. Their equidistant spacing possibly reflects an underlying pattern of Romano-British villa estates. From the late 10th century, these estates began to be formalised into a developing system of ecclesiastical parishes, many of which comprised long strips of territory extending from the chalk ridge down into the Weald.

2.46 Many of these manors exploited both the downland and the Weald. The downland portions were characterised by their complex and fragmented nature, resulting from competition for this vital resource. Numerous dependent hamlets were dispersed around areas of waste, including wood pasture as well as sheepwalk. Many manors also had outlying parcels of land in the wooded Weald, exploited mainly as summer pasture (pannage) for pigs (reflected in the numerous placenames ending in –fold). These isolated clearings gradually developed into homesteads surrounded by assarted enclosures, small irregular fields carved piecemeal out of the woodland and bounded by thick hedgerows (shaws). A network of parallel trackways developed linking the parent settlements on the Greensand with the Wealden outliers. These early settlements were established in the valleys (in

contrast to the downland), with the ridges settled later. Charter evidence suggests permanent settlement by the 8th- 9th centuries.

2.47 The later Saxon period also saw the return of urban life to the area. The Roman towns lost their urban status and much of their population after the collapse of Roman power. However, by the 10th century a growing network of administrative centres was evident in the landscape, some reusing Roman sites (Chichester and Winchester), while others developed on new sites (Lewes and Steyning). Many of these settlements were associated with royal or aristocratic power, and contained mints. They formed part of a system of defended strongpoints called burhs, with earthwork defences surviving at Burpham near Arundel and, partially, at Lewes, East Sussex.

Medieval Period (AD1066-1485)

2.48 The Norman Conquest saw the imposition of a foreign nobility on England. Sussex was divided into a series of Rapes, each comprising a strip of territory linking London with the sea and, therefore, Normandy. Each Rape was granted to one of the Conqueror's most loyal followers and contained one major castle together with several subsidiary castles. Hampshire was organised on a different pattern with up to half the county covered by royal forests. Many of the major manors were retained in royal or ecclesiastical hands, particularly strategic locations like Winchester and Portchester. The urban settlements which developed in the preceding period grew in prosperity and status. Winchester was already the effective capital of England, and the importance of Chichester was heightened by the translation of the bishopric from its original site at Selsey. Smaller market towns, particularly those functioning as administrative centres (e.g. Lewes, East Sussex), grew wealthy on the proceeds of agriculture, particularly the wool trade, and were soon transformed by the construction of well-appointed houses for merchants. A number of monastic orders began establishing priories and, later, friaries in the towns. The medieval street patterns of many of the small towns still dominate the present-day urban landscape.

2.49 Medieval settlement on the South Downs comprised in essence nucleated settlements set within common arable, and situated on the fertile Greensand shelf and the dip slope of the chalk. The manors were divided into tithings or townships, and each subsidiary holding had its own field systems, some of which (e.g. Amberley, West Sussex) contained strip cultivation characterised by long narrow unenclosed strips. The system was based around sheep and corn husbandry, with communal sheep flocks grazing up on the downland sheepwalk (tenantry down) by day and brought down on to arable land at night for safety and, more importantly, to provide manure. The arable lands of the eastern Downs (east of the Arun) tended to be

unhedged common fields creating a 'prairie'-like landscape, operating a highly developed form of arable farming based around crop rotations within several large fields and continuous cultivation (i.e. no fields left as fallow). Further to the west, on poorer soils derived from the Clay-with-Flints, the fields were smaller, more irregular and hedged. Sheep pastures in the west were of lesser quality, and the land saw a greater degree of multiple use, with hunting parks and wood pasture prominent, the boundary banks of which survive in many woodland areas. Attempts were made to reclaim and enclose the floors of the major river valleys. Some cattle were also reared in the river valleys.

- 2.50 The Weald also saw some arable cultivation in the 13th century, particularly after 1240. Settlement here was of a more dispersed nature, comprising isolated farmsteads set within piecemeal enclosures (assarts). The boundaries of these enclosures survive as thick hedgerows (shaws) derived from linear bands of woodland left unfelled. However, pasture was still the dominant land use within the cleared areas.
- 2.51 Deer parks were common features of the landscape of the western downs, comprising enclosed areas of wooded pasture bounded by earthwork banks and ditches (pales). Parts of the dipslope of the downs in Hampshire lay within the Forest of Bere, while the eastern part of the county fell within Woolmer Forest. The western downs of Sussex fell within the Forests of Stansted and Arundel. These were areas of varied land-use (including settlements and agricultural land) over which the Crown had hunting rights.
- 2.52 Both downland and Weald experienced a contraction in settlement in the 14th century, the result of a complex series of factors derived from deteriorating climatic conditions. The result was a series of crop failures and increased rates of stock disease (e.g. cattle murrain) that left a weakened and impoverished population vulnerable to threats such as the plague. Many of the downland settlements suffered desertion or shrinkage, surviving only as isolated farms or as archaeological earthwork sites (deserted medieval villages). Much farmland became derelict, and the period saw the beginnings of the enclosure movement as abandoned arable land was bought up by wealthier peasants and enclosed with hedges. The impoverishment of the area at this time is reflected in the absence of any local equivalent to the finelydecorated churches seen in other wool-producing areas (e.g. the Cotswolds). By comparison, the medieval churches of the downland and Weald are small and archaic in nature, reminiscent of those found in other marginal areas.

Post-Medieval Period (AD1485-present)

2.53 The post-medieval period saw the emergence of a modern market economy. Major changes took place as a result of an increasing population and a more flexible land

market, including the sale of former monastic land as a result of the Dissolution. The communal aspects of medieval agriculture began to be replaced by farms run by individuals. The eastern downs were still largely based around sheep, although flocks were being reduced due to overgrazing. From 1650 onwards, the sheepwalks began to be ploughed up for arable cultivation, represented by small surviving patches of early enclosure. The increasingly wealthy occupiers of the Greensand began to enclose the common waste. The western downs saw more diversification from an earlier date, with common fields enclosed from as early as the 15th century. The 16th and 17th centuries saw the enclosure of large expanses of common woodland, denying the local communities their traditional rights of exploitation. Much of the stimulus of this was the increasing demand for fuel for Wealden industries, notably ironworking. Improved techniques of water management in the valley bottoms led to the development of water meadows. Most of the arable land had been enclosed piecemeal by the end of the 17th century, resulting in a distinctive landscape of small irregular fields enclosed by planted hedgerows, usually thinner than those of the Wealden enclosures. Many of the smaller farmsteads began to be amalgamated as landowners built up larger estates.

- 2.54 The later 18th century saw the development of 'New Farming'. This saw the heyday of the sheep-corn husbandry system, boosted by the buoyant economy resulting from the Napoleonic Wars. The eastern downs supported a vast sheep flock by 1813. The sheep were partly fed on new fodder crops, resulting in arable encroachment on the downland, and produced regular grid-pattern field systems, often enclosed under Acts of Parliament (parliamentary enclosure) bounded by linear straight hedgerows comprising one or two species, usually hawthorn. Much of the downland arable returned to pasture, often derelict, after 1815. A further period of prosperity followed in the 1840s, lasting for thirty years and often referred to as the period of High Farming. More downland disappeared under the plough, particularly on the areas of Clay-with-Flint. Arable cultivation in the Weald benefited from the introduction of new powerful ploughs, better able to cope with the heavy soils.
- 2.55 The 18th and 19th centuries also saw the development of large landscape parks, particularly in West Sussex where large acreages at Stansted, Petworth, Arundel and Goodwood were redesigned with large expanses of grassland interspersed with extensive tree planting. The initial schemes, dating from the early 18th century, were usually of a formal nature reflecting French, Italian and Dutch influences brought back from the Grand Tour of Europe. These were replaced from the middle of the century by more naturalistic landscapes. Another way in which the great landowners stamped their identity on the landscape was by the adoption of

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'estate liveries', whereby farm buildings would be constructed to a common style and painted with a consistent colour scheme. Some landowners created estate villages such as Firle in East Sussex.

2.56 The onset of the agricultural depression in the 1870s saw a decline in the importance of sheep on the downland. More downland was again lost to the plough, and some small farms on marginal land were abandoned or downgraded to a cluster of farm buildings. The Weald, ironically, suffered less than the downland as the farms were smaller and more adaptable, the farmers often supplementing their incomes from other sources such as hops, fruit and poultry. Fortunes rose during the First World War, when home-grown food was required to replace foreign imports, but the interwar period saw the onset of another period of depression. Descriptions of the Downs during the 1930s often refer to the derelict overgrown appearance of the land. Much of this land was again reclaimed and converted to arable during the Second World War, but by 1942 the demands of military training became paramount and the arable was abandoned. Some of the downland settlements were abandoned at this time, to be used for battle training (e.g. Stanmer, East Sussex), and the coastal strip at Cuckmere Haven contains an almost intact system of anti-invasion defences. The years following the First World War also saw the planting of large coniferous forestry plantations by the Forestry Commission and private landowners.

2.57 The post-war period has seen the landscape of the South Downs transformed. Most of the remaining open downland, together with pre-existing enclosures, was ploughed and fenced-off to create large arable fields. Extensive areas of archaeological features, surviving as earthworks, were destroyed by the plough. Many of the landscape parks were sold off, and the open parkland enclosed for arable cultivation. This situation is now partly in reverse, with environmental and heritage based grant schemes preserving surviving downland and restoring or sympathetically cultivating arable areas. Recognition of the importance of the landscape through the designation of two AONBs (East Hampshire and Sussex Downs) and the subsequent designation of the South Downs National Park sets the scene for a further period of positive landscape change in the 21st century.

Settlement and Buildings

Rural Settlement Character

2.58 The English Heritage Atlas of Rural Settlement in England, records the South Downs National Park falling within the South-Eastern Province, and is covered by two Sub-Provinces: Weald and East Wessex. The Weald Sub-Province is described as an area with a high density of dispersion and a

scatter of mostly small-medium nucleations. This manifests as isolated farmsteads, with a scatter of later villages and hamlets, often originating as common-edge settlements. The East Wessex Sub-Province covers the chalk downland and is described as exhibiting a low density of dispersion, with lines of nucleations evident on the fertile soils at the foot of the scarp and dip slopes, where they coincide with the spring-line, and in the river valleys. The nucleated settlements are predominantly large villages and market towns of medieval origin.

Springline Villages

2.59 Historically, the best land within the National Park was along the Greensand shelf at the foot of the scarp slope of the Downs, coinciding with the spring line. A line of nucleated villages is found along this shelf, such as Ditchling in East Sussex and Buriton in Hampshire, situated at the centre of a long, thin parish which extends from the chalk ridge down onto the Greensand and continues onto the Wealden clayland, thus giving the settlement access to the widest selection of resources. On the dip slope, villages tended to be established on the drift deposits of the coastal plain, and in the river valleys. The high density of settlement in these areas is particularly marked between Hassocks and Lewes in East Sussex and between Petersfield and Alton in Hampshire where the ribbon-like nature of the parishes is striking. Many of these villages contained farmsteads situated close to the village street. Large numbers of pre-1750 farmhouses survive, often no longer in agricultural use, although the contemporary farm buildings have usually disappeared.

Dispersed Settlement

2.60 The predominant settlement type within the Wealden area of the designated National Park is dispersed in nature. The core of this settlement pattern comprises farmsteads of medieval origin, set within a mosaic of irregular fields enclosed in a piecemeal fashion from the woodland (assarts). Subsequently, the establishment of settlements around the fringes of communal waste (i.e. commons) led to the development of irregular semi-nucleated agglomerations of common-edge settlement. A degree of later infill has also modified the pattern.

Downland Villages

2.61 Nucleated settlement on the Downs is rare. The Downs in Sussex are largely devoid of such settlement. Several are known on the Downs in Hampshire, although these tend to be very small and nestle in the shelter of valleys (e.g. Kilmeston). Owlesbury is unusual in that it is on top of the hill rather than at the bottom.

Deserted Medieval Villages

2.62 Deserted settlements are common on the South Downs. Most are situated in the river valleys (e.g. Tarring Neville, East Sussex) and on the Greensand, and reflect the ebb and flow of settlement. Many of the sites are better termed 'shrunken' or 'shifted' rather than deserted. The downland contains a number of sites that appear to have been totally deserted (e.g. Hangleton, East Sussex) or survive only as an isolated farm (e.g. Balmer, East Sussex; Lomer, Hampshire).

Medieval Market Towns

2.63 A number of market towns of medieval origin lie within the National Park – Petersfield in Hampshire, Midhurst, Petworth, Arundel and Steyning in West Sussex, and Lewes in East Sussex. Steyning and Lewes originated as towns in the Late Saxon period, while the remainder are largely new foundations of the 11th-12th century, representing planned settlements established either around Norman castles (Midhurst and Arundel) or in locations perceived as economically advantageous (Petersfield and Petworth). The towns were incorporated as boroughs, held markets and fairs and were, and continue to be important centres for the surrounding countryside.

Dispersed Farmsteads

2.64 Dispersed farmsteads are the dominant settlement pattern across the chalk downland. Some of the sites are of medieval origin, sometimes representing shrunken hamlets, while others are of later date. Although forming a low density settlement pattern, the farmsteads tend to be very prominent in the landscape, often due to the large threshing barns (often of aisled, timber clad construction) necessary to deal with the grain harvests and the presence of shelter belts of trees. They can also appear quite bleak, as most buildings face into the yard.

Vernacular Building Styles

2.65 The geologically diverse nature of the National Park is reflected in the variety of building materials utilised. The downland is characterised by the use of flint as a building medium, which can be traced back into the Roman-British (e.g. Bignor Roman villa, West Sussex) and medieval periods (e.g. Hangleton, East Sussex). Often, the flint walling was dressed at the corners and around openings with stone or brick. Further north, the Greensand and the Weald were dependent on timber for construction, usually infilled with daub (a mix of mud, dung, animal hair and chopped straw) and later brick (nogging). Timber buildings were also present on the chalklands and in the river valleys. The timber-framing was mainly box-frame in style (roof trusses carried on a frame composed of posts, tie-beams and wall-plates), although a few

cruck-framed buildings (roof carried on long curved timbers stretching from the ridge down to the ground) are known from Hampshire. Use was also made of the local Wealden sandstone, often cut into large regular blocks, and a hard type of chalk called clunch. Brick was used for building from the 16th century onwards, but only became widespread from the 18th century, and mainly in the towns where it became fashionable. Where building in brick was not possible, for reasons of expense or practicality, a type of clay tile was developed which could be hung on to timber-framed buildings to resemble brickwork. These 'mathematical tiles' are particularly common in Lewes, East Sussex.

- **2.66** Roofing materials were mainly thatch and clay tiles. Wooden shingles were sometimes used, often on church belfries and spires. Some higher status buildings (e.g. The Grange, Lewes) were roofed in Horsham stone flags, a localised sandstone which laminates naturally. Such roofs were very heavy and thus had a low pitch to prevent the stones sliding off. The roof timbers were also large to support the weight.
- 2.67 The earliest building types comprised simple small cottages constructed of whatever materials were to hand. The earliest farmsteads were not architecturally distinctive, and the people, livestock and harvested crops occupied buildings largely identical in nature. Often people shared buildings with the livestock, usually (but not always) with a partition in between. These early buildings are reminiscent of the longhouse tradition of the upland regions of Wales and northern England. By the later medieval period, houses had become more sophisticated, with open halls flanked by two storey private wings. Farm buildings were separate structures, and usually comprised barns and animal stalls. The postmedieval period saw the open halls floored over to give more private accommodation. By the 18th century, the use of timber and stone for domestic building had been replaced by brick.

Historic Farmsteads

2.68 Historic farmsteads and their buildings make an important contribution to countryside character. In areas of nucleated settlement most medieval farmsteads are sited in villages, although their farm buildings have often been lost. Farmsteads in areas of dispersed settlement are mostly isolated or located in hamlets. These buildings use local building materials and display great variation in building material relating to underlying geology. The most important period of farm building was between 1750 and 1880 when agricultural productivity was boosted by improved grasses, winter crop feeds and production of good manure by livestock wintered in yards or buildings.

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Historic Farmsteads in Hampshire

- 2.69 A project on historic farmsteads and landscape character¹ was undertaken by Forum Heritage Services in 2005, for English Heritage, to establish the feasibility of historic farmstead characterisation as a planning and research tool. The project concentrated on examining a number of pilot areas in Hampshire, including one that fell within the bounds of the National Park boundary. Following the completion of the pilot project, farmstead sites across the whole of Hampshire were digitised. The following comments are derived from the project results.
- 2.70 Downland farmsteads are scattered across the landscape, with most concentrated in the villages on the Greensand, but with a low-density pattern of examples dotted around the chalk. Nevertheless, they tend to be large and prominent in the landscape, usually identifiable by their large barns and shelter belts of trees. The village farmsteads are usually of medieval date, and lie on the edge of the settlements, while those on the chalk date from after 1750. apart from a few medieval examples resulting from settlement shrinkage. The farmsteads usually form a loose courtyard plan, with one or more threshing barns, raised granaries and sometimes open fronted cattle shelters and cartsheds. Regular planned farmsteads are evident from the 19th century. Building materials comprise timber-framing with thatched and tiled roofs, with brick, flint and slate used from the 19th century, and concrete from the late 19th century.
- 2.71 The dipslope of the Downs comprises isolated farmsteads set in a traditionally wood pasture landscape (the Forest of Bere). Farmsteads are set in a landscape of small early enclosed fields and winding lanes, and are mainly of medieval origin. They usually form L- and U-shaped complexes, with larger farmsteads forming regular courtyard plans, with large barns, granaries, cattle sheds and pigsties. Building materials comprise timber-framing with thatched and tiled roofs, with brick, flint and slate used from the 19th century, and concrete from the late 19th century.
- 2.72 The Western Weald (Woolmer Forest) comprises a dense scatter of isolated farmsteads of varying sizes, largely of medieval origin, set in a complex landscape of assarted fields and woodland. The farmsteads exhibit a wide variety of forms, often with no discernible pattern or planning, and consist of small barns, granaries and stables. Some later cattle sheds are found on some farmsteads, and a variety of distinctive buildings such as hop kilns. Building materials comprised timber-framing set on malmstone footings, with

malmstone used extensively for smaller structures. Brick and some flint were used later. Roofing comprised thatch and tiles.

Historic Farmsteads in Sussex

- **2.73** A similar study on historic farmsteads and landscape character in West Sussex was undertaken in 2007.² The following comments are derived from the project results.
- 2.74 The West Sussex Downs has a low density of large scattered farmsteads. This was an area of large prosperous farms based on corn and wool production where there was capital for new buildings, so few retain pre-1700 buildings, and those that exist are typically based in villages or along the foot of the north scarp slope, or valleys that cut across the area. Some large downland farmsteads represent the sites of medieval hamlets where the small farms have been amalgamated into one holding. Large barns with a large expanse of roof compared to wall areas are typical, along with stables, free-standing granaries, cart sheds, and cattle sheds and pigsties. Flint and cobbles were used more widely in Sussex for farm buildings from the medieval period than in the Hampshire part of the South Downs, while flint combined with bricks is characteristic of the 18th and 19th century. Brick was more widely used in the 19th century although it did not replace other local material until late in the century.
- 2.75 The Wealden Greensand has a medium density of dispersed historic farmsteads, associated with a landscape of small and irregular fields created by assarting from woodland in the medieval period or more regular fields created by later enclosure, a common feature of the Rother Valley. The mixed farms are typically small and retain pre-1750 buildings, with timber-farmed farmhouses and barns mostly of 18th and 19th century date. Timber framing was typically used until the 19th century with greensand stone, such as malmstone giving the buildings a distinctive character. Clay tile is the characteristic roofing material.
- 2.76 The farmland of the Low Weald has a high density of historic farmsteads, many retaining early buildings of pre-1600 date in contrast with the adjacent chalk Downs to the south. The farm sizes are small and sit within a landscape of small and irregular fields, many of medieval origin. The agriculture of the heavy clay soils of Low Weald was largely pastoral with the extent of arable fluctuating but increasing to its greatest extent in the 19th century. Buildings are largely timber-framed combined with local sandstones derived for bordering areas and bricks from local clay with clay tile roofs. Hipped roof barns (mostly dating from 17th and 18th century) are

¹ English Heritage (2005) Historic farmsteads & Landscape Character in Hampshire, Pilot Project. Report by Bob Edwards of Form Heritage Services for English Heritage

² Forum Heritage Services (2007) Historic Farmsteads & Landscape Character in West Sussex. Report by Bob Edwards

characteristics along with cow houses and small stone or brick-built pigsties.

- 2.77 On the coastal plain, on the southern edge of the National Park, the agriculturally rich arable land allowed farmers sufficient profit to invest in buildings in the 18th and 19th century meaning few earlier farm buildings survive. There is a medium density of mainly village-based farmsteads predominately of 18th century date set in a 20th century landscape of large scale fields. Barns are mostly 18th or 19th century in date, some earlier barns are timber-farmed but from 18th century were built in brick or cobble with clay tile and slate roofs.
- 2.78 The most common plan form of farmsteads across the area is the loose courtyard, usually L- and U-shaped complexes with detached farm buildings grouped around a yard, sometimes with the farmhouse. Larger downland farms have 'multi-yard plans' with a number of separate yards reflected the management of stock that became increasingly important in the 19th century. Outfarms and field barns were an widespread feature of lowland areas at the end of the 19th century but many have been lost or replaced by modern farm buildings.

Historic Landscape Character

- **2.79** Historic landscape characterisation (HLC) is an archaeological method used to define and map the historic and archaeological dimension of the present day landscape. HLC data for the South Downs National Park is provided by two studies: the Sussex HLC completed in 2010³ for the whole country of Sussex (a dataset that has subsequently been cut to the National Park boundary) and an HLC for the Hampshire area of the National Park completed in 2017⁴ which adopted the same classification system as the earlier study.
- **2.80** The HLC was an important baseline layer contributing detailed historic environment information to assist in the description and evaluation of the landscape character of the National Park. The updated HLC for the South Downs National Park can be viewed via the South Downs National Park LCA online map.
- **2.81** Many of the historic processes examined in this section are clearly expressed in the present landscape and, some of the more significant patterns discussed below.

Enclosures

2.82 The pattern of field systems in the National Park reflects the complex and varied history of enclosure within the South Downs.

- 2.83 Field amalgamation to meet modern agricultural practices has occurred across the National Park but is most evident on the open downlands and along the southern boundary with the coastal plain. Here, the dominance of modern (mostly 20th century) field systems is highly visible in the present landscape as large, open fields which are regular in pattern.
- 2.84 Formal enclosure of open fields, commons and downs relating to the 18th and 19th centuries (parliamentary or private enclosure as part of some form of land 'improvement) often reflected the 'gentrification' of the landscape at this period associated with the rise of great landed estates. This enclosure type exists at a variety of scales across the National Park, but is characterised by a strong defined regular pattern of rectilinear field bounded by straight hawthorn hedgerows which exist as islands of regularity within an earlier organic landscape. The extensive sheep walks on the dip slope of the South Downs also underwent formal enclosure at this time, as did a number of heaths and commons although in a more piece-meal fashion.
- **2.85** The scarp foot of the Downs and parts of the low Weald are dominated by early enclosures of medieval date, often sinuous in nature and bounded by thick hedgerows and retaining a medieval character to this day. Assarts, fields cleared from woodlands and heaths, characterised by sinuous wooded field boundaries and an irregular pattern dominate the lowland wooded landscapes of the Weald.

Woodland

- 2.86 Woodland is a major component of the South Downs National Park. Many areas of woodland date back to the Medieval period and are associated with ancient semi-natural woodland (areas which have had continuous woodland cover since 1600) occupying the downland ridge and the Wealden basin. The extensive woodland on the crest of the western South Downs is probably a consequence of drift geology and much of this downland woodland has been managed throughout the post-medieval period by a number of larger landed estates such as Cowdray Park and Goodwood estate.
- **2.87** Later woodland adds to the wooded character of the National Park and includes regenerated secondary woodland on the poorer soils of the Lower Greensand and along the scarp face and dip slope of the South Downs, and the creation of commercial and ornamental plantations particularly in the 19th and 20th century, often linked to the creation of the great landscape parks.
- **2.88** The southern boundary of the National Park on the coastal plain and the eastern end of the South Downs are

³ Dr.Bannister, Nicola, Sussex Historic Landscape Characterisation (2010)

 $^{^{\}rm 4}$ Wyvern xx, Historic Landscape Characterisation Report (Hampshire) South Downs National Park (2017)

comparatively bare of woodland. The general absence of woodland probably reflects the longer period of settlement from the early prehistoric period when much of the former woodland cover was cleared and the land managed as farmland.

Designed Landscapes

2.89 Designed landscapes form important focal points in the landscape, either created by gentrification of farmland or those associated with the remnants of older deer parks. The landscape parks area a characteristic feature of the dipslope of the chalk, and those situated on the fringes of the Wealden basin. The former are located on good agricultural land and tend to be large and impressive in nature, such as Goodwood, Arundel and Stanmer. They represent the landed estates of wealthy and important families who could afford to set aside large expanses of productive agricultural land. The latter are smaller in size and situated on less productive marginal soils such as the Lower Greensand and the Gault and Weald Clays, such as Parham where the landscape park is situated on the clay, with better farmland to the south.

2.90 Historic designations within the National Park can be viewed on the South Downs National Park LCA online map.

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