

## **APPENDIX A**

### **Site Layout**





Legend

Project:  
LISS FOREST NURSERY  
PETERSFIELD ROAD  
GREATHAM



## **APPENDIX B**

### **HDA Methodology for Landscape and Visual Impact Assessment**

## HDA LVIA METHODOLOGY

### 1.1 Guidance

1.1.1 The proposed development is (not) subject to the Town and Country Planning (Environmental Impact Assessment) (England) Regulations (2011, amended 2015<sup>1</sup>), which implement EC Directive 2011/92/EU. The structure of this assessment accords with Schedule 4 of the Regulations.

1.1.2 The methodology used in preparing this Landscape and Visual Appraisal has been developed by HDA from guidance given in the following documents:

- The Landscape Institute with the Institute of Environmental Management and Assessment, (2013), “*Guidelines for Landscape and Visual Impact Assessment*” (third edition) (GLVIA);
- Natural England (October 2014), “*An Approach to Landscape Character Assessment*”; and
- Countryside Agency (now Natural England) and Scottish Natural Heritage (by Carys Swanwick and Land Use Consultants), (April 2002), “*Landscape Character Assessment – Guidance for England and Scotland*”.

1.1.3 The assessment of likely impacts is considered in two separate but inter-linked parts defined within GLVIA (page 21, para 2.21) as follows:

***‘Assessment of landscape effects:** assessing effects on landscape as a resource in its own right;*

***Assessment of visual effects:** assessing effects on specific views and on the general visual amenity experienced by people.’*

### 1.2 Process

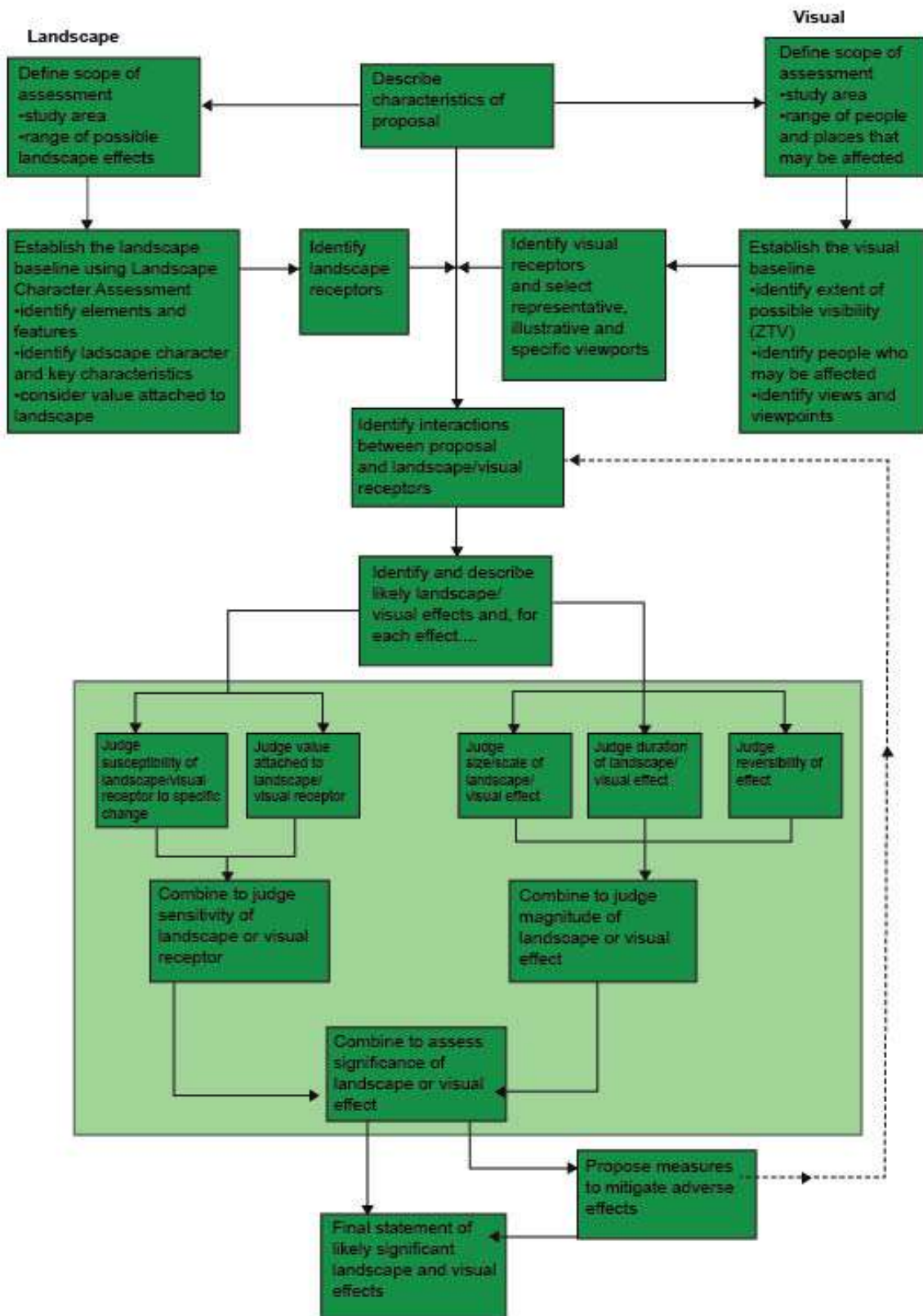
1.2.1 The iterative process undertaken through the course of a Landscape and Visual Impact Assessment is illustrated in Figure 1.

1.2.2 The level of detail included within a report will be proportionate to the anticipated extent of potential impacts caused by the proposed development and is also likely to vary between a full LVIA chapter and a more concise Landscape and Visual Appraisal (LVA). Within an EIA compliant LVIA, the assessment section of the report (shown as a pale green box in Figure 1), would provide details of the relative judgement on sensitivity, magnitude of change and would provide an assessment on the significance of effects of the development on various features, character areas and views. A Landscape and Visual Appraisal (LVA) of a small development is likely to cover the key effects but not include any detailed references to judgements on significance.

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<sup>1</sup> Statutory Instrument No 1824, published by the Department for Communities and Local Government

**Figure 1: Steps in assessing landscape and visual effects.**



Referenced from figures 5.1 and 6.1 in GLVIA (Ref.2)

### **1.3 Desk Study**

1.3.1 A desk-study is undertaken to establish the physical components of the local landscape and to identify the boundaries of the study area. The following data sources were consulted:

- Ordnance Survey (OS) maps – (a range from 1:25,000 to 1:1,250) to identify local features relating to topography, field pattern/shape/size, drainage pattern, woodland cover, existing settlement pattern, rights of way network, transport corridors and any important extant historic features.
- Vertical aerial photography – used to supplement the OS information.

1.3.2 This data informs the field survey by providing a basis for mapping landscape features and to indicate the likely visibility of the proposed development.

1.3.3 Topographical analysis is used to identify the extent of potential visibility of the site and the proposed development. The zone of theoretical visibility is identified through mapping, together with potential visual receptors (VRs), for verification by field survey. The VRs include locations with public access within the visual envelope; public rights of way, public open space, key vantage points, roads, etc. together with residential properties and workplaces.

1.3.4 Natural England's National Character Area Profiles, together with local landscape character assessment, provide the landscape character context.

1.3.5 The current landscape planning context for the site is provided by the development plan documents for the South Downs National Park.

### **1.4 Field Survey**

1.4.1 A field survey of the site was carried out in December 2017 and June 2021. This involved walking the site and travelling extensively through the local area, the extent of the study area being identified in the desk-study, to verify any variations in landscape character and the locations of visual receptors. The field surveys also served to understand the immediate setting of the proposed development, including the local topography, existing land uses and vegetation structure, position and condition of trees, hedgerows and stream courses.

1.4.2 The site visits were undertaken from publically accessible viewpoints around the site such as roads and public rights of way. Intervisibility analysis (projective mapping) was used to verify the zone of theoretical visibility and to evaluate the extent and nature of views from nearby properties (properties were not visited as part of the study). A working photographic record of the visit was also made.

## **1.5 Establishing the Baseline**

1.5.1 In order to form a comprehensive assessment of the effects of a proposed development, the existing situation, or baseline condition, must be established. The proposed changes resulting from the proposed development can then be identified and described. As described in section 1.1.3, the assessment considers the landscape and visual effects of the proposals.

1.5.2 GLVIA describes the landscape and visual baseline as follows:

- *‘For the landscape baseline the aim is to provide an understanding of the landscape in the area that may be affected – its constituent elements, its character and the way this varies spatially, its geographic extent, its history, its condition, the way the landscape is experienced and the value attached to it.*
- *For the visual baseline the aim is to establish the area in which the development may be visible, the different groups of people who may experience the views of the development, the places where they will be affected and the nature of the views and visual amenity at those points.’* (page 32, para 3.15 – Ref 2)

## **1.6 Landscape Baseline**

1.6.1 For the purposes of assessment, the landscape resource is considered in two ways:

1. Local landscape character variation across the site and Study Area is described and evaluated; and
2. Existing landscape features in and immediately adjacent to the site are identified, quantified and their condition assessed.

1.6.2 The objective of the landscape baseline is first to schedule, describe, and where possible, quantify the landscape resource that potentially could be affected by the proposed development. A judgement is then made as to the Landscape Value of the Study Area.

### **Landscape Sensitivity**

1.6.3 Landscape sensitivity is defined as:

*‘a term applied to specific receptors, combining judgements of the susceptibility of the receptor to the specific type of change or development proposed and the value related to that receptor’* (GLVIA, page 158)

1.6.4 The susceptibility of the landscape to change is *‘the ability of the landscape receptor to accommodate the proposed development without undue consequences for the maintenance of the baseline situation and/or the achievement of landscape planning policies and strategies’* (GLVIA, page 89, para 5.40)

1.6.5 The way that landscape responds to or is affected by proposed development is determined in part by the nature of that development. The sensitivity of the landscape will vary depending on the type, form, appearance, extent or scale, duration (temporary or permanent) and phasing of proposed development. Landscape effects are also dependent

upon the ‘degree to which the proposals fit with existing character’ (GLVIA, page 88, para 5.37), or indeed the potential to design-out potential adverse effects. Outline information about the proposed development such as type and scale helps inform preliminary judgement about the relative susceptibility of the landscape. However, the final judgement on susceptibility may change from the preliminary assessment as the scheme’s detail design evolves in parallel with EIA (an iterative process).

1.6.6 Landscape value consists of:

- *‘The value of the Landscape Character Types or Areas that may be affected, based on review of any designations at both national and local levels, and, where there are no designations, judgements based on criteria that can be used to establish landscape value;*
- *The value of individual contributors to landscape character, especially the key characteristics, which may include individual elements of the landscape, particular landscape features, notable aesthetic, perceptual or experiential qualities and combinations of these contributors.’* (GLVIA page 89, para 5.44 – Ref 2)

1.6.7 Paragraph 170 a) of the National Planning Policy Framework<sup>2</sup> gives weight to ‘*protecting and enhancing valued landscapes*’, however no definition of ‘valued landscape’ is given. In a judgement by Mr Justice Ouseley in the case of Stroud District Council v Secretary of State for Communities and Local Government (February 2015), Mr Justice Ouseley supported the inspector’s finding that for a landscape to be valued it would need to ‘*show some demonstrable physical attribute, rather than just popularity*’. The assessment of value should therefore first assess the intrinsic value of the physical attributes demonstrated by “*the site in situ as an integral part of the surrounding land rather than divorcing it from its surroundings*”<sup>3</sup> and then consider the popularity of the landscape as a community asset.

1.6.8 Indicators of landscape value include:

- **Landscape quality (condition):** ‘*A measure of the physical state of the landscape*’. This includes land use, the intactness of the landscape and the quality and condition of the features within the landscape and the influence of incongruous features or elements;
- **Scenic quality:** The effect that a landscape is likely to have on the senses. For example visual enclosure/openness or the pattern and scale of the landscape, whether there is a distinctive sense of place, striking landform or visual interest in the landscape;
- **Rarity:** ‘*the presence of rare elements or features in the landscape or the presence of a rare Landscape Character Type*’;
- **Representativeness:** whether the landscape or features within it are exemplary for the local area or whether the landscape being considered covers a high proportion of a particular character area;

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<sup>2</sup> Ministry of Housing, Communities and Local Government (July 2018), ‘*National Planning Policy Framework*’

<sup>3</sup> Land north of Aylesbury Road, Wendover, Buckinghamshire reference APP/J0405/W/16/3158833 (para 66).



- **Conservation interests:** recognition of importance through designation, or local consensus. Includes features of wildlife, archaeological, historic and cultural interest;
- **Recreation value:** *'evidence that the landscape is valued for recreational activity where experience of the landscape is important'*;
- **Perceptual aspects:** including tranquillity and appropriateness of substitution of the characteristics affected;
- **Associations:** *'with particular people, such as artists or writers, or events in history that contribute to perceptions of the natural beauty of the area'*.

The above list is based on Box 5.1, page 84 of GLVIA.

### **Landscape Character**

1.6.9 Landscape character areas (areas/types) were identified on plans and published descriptions and trends summarised. Where published documents create a hierarchy of landscape areas, this is stated and the scale most appropriate to the assessment is explained. The landscape characteristics within the site are compared to the character of the wider area.

1.6.10 The assessment focuses on the landscape within which the site/proposed development is located. The character of a neighbouring character unit may be strongly influenced by the adjacent area, within which the site is located. This relationship may be dependent on the scale of assessment (size of landscape units), as well as landscape characteristics that affect intervisibility, e.g. topography, vegetation cover.

### **Landscape Features**

1.6.11 Key landscape features that define site character are identified on plans, together with the tables, which provide information relating to their type, condition, value, and quantification (area/length/number). The potential for impact on each landscape feature is assessed using a combination of their relationship to the site/ proposed development (e.g. within, on or adjacent to site boundary and for those outside the site, the distance from the boundary) and sensitivity.

1.6.12 The landscape value of site landscape features is evaluated using factors in the following checklist:

- Type of landscape feature (e.g. natural or man-made);
- Size/extent (e.g. covers a large or small area; individual or part of a group);
- Condition or quality of landscape feature (intact);
- Maturity (is feature well established or recent);
- Contribution feature makes to landscape character (e.g. distinct and recognisable pattern or limited influence);
- Rarity (rare or widespread in local and/or regional/national context);
- Recognised importance (e.g. designation either nationally or locally);

- Ease with which the feature may be substituted or recreated.

1.6.13 The susceptibility of landscape features is closely allied to the ease with which a feature may be substituted or recreated.

1.6.14 The assessment of landscape features is an integral part of the initial design process and often influences the location of development. The landscape value of features is a contributory factor for the assessment of landscape character, as the assessment of the quality and condition of a landscape is intrinsically linked to its component features.

## 1.7 **Criteria for Evaluation of Sensitivity of Landscape Resource**

1.7.1 The evaluation of overall landscape sensitivity to change is considered to be a product of susceptibility to change and the value of the receptor. The evaluation is an expression of comparative sensitivity based on a five-point scale: Very High, High, Medium, Low and Very Low as follows:

### **Very High:**

- An exemplary part of a nationally recognised landscape, e.g. National Parks and Areas of Outstanding Natural Beauty. World Heritage Sites of international importance (if landscape reason for designation);
- Strong landscape structure, characteristic patterns and balanced combination of landform and land-cover;
- Appropriate management with distinctive features worthy of conservation;
- Sense of place (usually tranquil);
- No (or occasional) detracting features;
- Landscape not substitutable.

### **High:**

- Part of a nationally or locally recognised landscape of particularly distinctive character.
- Recognisable landscape structure, characteristic patterns and combinations of landform and land-cover are still evident;
- Appropriate management, but potential scope for improvement;
- Some features worthy of conservation;
- Sense of place;
- No or occasional detracting features;
- Very limited substitutability and susceptible to relatively small changes.

### **Medium:**

- Locally recognised, but undesignated, landscape of moderately valued characteristics;
- Distinguishable landscape structure, with some characteristic patterns of landform and land-cover;

- Scope to improve management (e.g. of hedgerows);
- Occasional detracting features;
- Landscape resource reasonably tolerant to change.

**Low:**

- Ordinary undesignated countryside;
- Weak landscape structure, without characteristic patterns of landform or land-cover;
- Limited management which is beginning to show signs of degradation;
- Abundance of detracting features;
- A relatively unimportant landscape, the nature of which is potentially tolerant to substantial change.

**Very Low:**

- Degraded to damaged/polluted or derelict landscape structure;
- Single land use dominates;
- Lack of or poor management/maintenance/intervention which has resulted in degradation;
- Presence of disturbed or derelict land requiring treatment;
- Extensive or dominant detracting features.

## **1.8 Visual Baseline Methodology**

- 1.8.1 The visual baseline serves to “*identify the people within an area who will be affected by changes in views and visual amenity – usually referred to as ‘Visual Receptors’*” (VR) (GLVIA, page 106, para 6.13). The baseline should combine information on “*the nature, composition and characteristics of existing views*” (GLVIA, page 111, para 6.24), “*the potential extent to which the site of the proposed development is visible from surrounding areas, the chosen viewpoints, the types of visual receptor affected*” (GLVIA, page 112, para 6.25), and “*their susceptibility to change in views and the value attached to particular views*” (GLVIA, page 113, para 6.31).
- 1.8.2 The susceptibility of visual receptors (VRs) to changes in views and visual amenity is affected by the type of activity that person or VR is engaged in (to determine the expectations of the viewer), in combination with the extent of the view of the site they experience, which relates to the degree to which the site is visible by a VR from a viewpoint as described in the baseline assessment (adapted from GLVIA, page 113, para 6.32).
- 1.8.3 All viewpoints (from chosen representative, specific and illustrative viewpoint locations), were visited as part of the field survey and “*the nature, composition and characteristics*” of their existing views noted. Where appropriate, the existence of temporary structures or features in the landscape that vary with the seasons and that may therefore affect visibility,

such as deciduous vegetation, were noted in order to evaluate the worst case situation in the assessment. The initial appraisal is based on a grading of degrees of visibility, from not visible to fully open in close views. To indicate the degree of visibility of the site from any location, that continuum has been divided into four categories:

- **None:** no view (no part of the site or proposed development is discernible);
- **Glimpse:** only a minor area of the site or proposed development is discernible and/or the view is transient or at such a distance that it is difficult to perceive in the wider view, or sequence of views;
- **Partial:** the site or proposed development forms a relatively small proportion of a wider view. There are open views of part of the site or proposed development such that it is easily visible as part of the wider view;
- **Open:** there are open views of the site or proposed development such that it forms a substantial part (is a dominant element) of the overall view and affects its overall character and visual amenity; or the site or proposed development is the dominant feature of the view, to which other elements become subordinate and where the site/proposed development significantly affects or changes the character of the view.

1.8.4 The value attached to views should also be considered i.e. whether the visual receptor/s being assessed are within a designated landscape, the site forms the setting to a heritage asset or there are particular tourism activities associated with the viewpoint location. The combined susceptibility to change in views/visual amenity and the value attached to particular views within the zone of visual influence of the site/proposed development, is evaluated using a combination of the information in the following checklist:

- *'The type and relative number of people (visual receptors) likely to be affected, making clear the activities they are likely to be involved in;*
- *The location, nature and characteristics of the chosen representative, specific and illustrative viewpoints, with details of the visual receptors likely to be affected by each;*
- *The nature, composition and characteristics of the existing views experienced at these viewpoints, including the direction of view;*
- *The visual characteristics of the existing views, for example the nature and extent of the skyline, aspects of visual scale and proportion, especially with respect to any particular horizontal or vertical emphasis and any key foci;*
- *Elements, such as landform, buildings or vegetation, which may interrupt, filter or otherwise influence the views.'*

(GLVIA, page 111, para 6.24)

## 1.9 Criteria for Evaluation of Visual Sensitivity

1.9.1 The evaluation of sensitivity, in relation to visual receptors is considered to be a product of susceptibility to change and the value attributed to the view by the visual receptor. It is represented as an expression of comparative sensitivity, based on a five-point scale: Very High, High, Medium, Low and Very Low as follows:



**Very High:**

- An open view, where the site forms a dominant part of the view, seen from a viewpoint that has a high value (nationally significant), by visual receptors that would be highly susceptible to a change in the view (e.g. walkers/cyclists on rural public rights of way), whose attention or interest is likely to be focused on the landscape. For example a walker on a national trail within an AONB, where the site forms the foreground to the view and is a characteristic part of a scenic and rural landscape.

**High:**

- A distant open or partial view of the site from a viewpoint that has a high value (nationally significant), seen by visual receptors that would be highly susceptible to a change in the view, whose attention or interest is likely to be focused on the landscape; for example a walker on a national trail within an AONB, where the site forms a distant part of a wider view and is seen in the context of a foreground which is characteristic and forms part of a scenic and rural landscape;
- An open view of the site from a viewpoint that **either** has a medium scenic value (i.e. is locally appreciated), seen by visual receptors that would be highly susceptible to a change in the view **or** that the viewpoint has a high value (nationally significant) but the visual receptors experiencing the view have a medium susceptibility to change (i.e. a scenic road route, where the view is transient but is still a focus).

**Medium:**

- An open view of the site from a viewpoint that **either** has a low scenic value (i.e. has a number of visual detractors / a degraded landscape character), seen by visual receptors that would have a medium susceptibility to a change in the view **or** that the viewpoint has a medium scenic value (i.e. is locally appreciated) and the visual receptors experiencing the view have a low susceptibility to change (i.e. a major road or an office, where the view is not the focus of people's attention);
- A partial view of the site from a viewpoint with medium value, seen by visual receptors with a medium susceptibility to change;
- A glimpse of the site from a viewpoint that has a high scenic value (nationally significant), seen by a high number of visual receptors and / or visual receptors that would be highly susceptible to a change in the view and whose attention or interest is likely to be focused on the landscape.

**Low:**

- A partial view of the site from a viewpoint that has **either**:
  - a low scenic value, seen by visual receptors that would have a medium susceptibility to a change in the view;
  - a medium scenic value and the visual receptors experiencing the view have a low susceptibility to change; **or**
  - that the viewpoint has a low scenic value and the visual receptors experiencing the view have a low susceptibility to change;
- A glimpse of the site from a viewpoint with medium value, seen by visual receptors with a medium susceptibility to change;
- No view of the site, but that the viewpoint has a high scenic value and would be seen by a high number of visual receptors and/or visual receptors that would be highly susceptible to a change in the view, whose attention or interest is likely to be focused on the landscape.

### **Very Low:**

- A glimpse of the site from a viewpoint that has **either:**
  - a low scenic value, seen by visual receptors that would have a medium susceptibility to a change in the view;
  - a medium scenic value and the visual receptors experiencing the view have a low susceptibility to change; **or**
  - that the viewpoint has a low scenic value and the visual receptors experiencing the view have a low susceptibility to change;
- No view from a viewpoint with medium value (or lower), seen by visual receptors with a medium susceptibility to change (or lower).

## **1.12 Summary of Landscape/Visual Baseline**

1.12.1 The baseline survey identifies the landscape resource (landscape features and character) and visual receptors (VRs) likely to be affected by the proposed development, and then evaluates the susceptibility, value and combined sensitivity of each to the likely effects of the proposed development.

## **2 Mitigation**

2.1 Mitigation is defined in the Guidelines as:

*'Measures proposed to prevent/avoid, reduce and where possible remedy (or compensate for) any significant adverse landscape and visual effects...'* (GLVIA, page 57, para 4.21).

2.2 Mitigation proposals are designed to respond to the constraints of the site and mitigate the landscape and visual impacts that arise from the proposed development. The mitigation measures considered fall into two categories: primary and secondary mitigation.

- Primary mitigation – the iterative process of masterplanning
- Secondary mitigation – additions or changes to the landscape proposals in order to address predicted residual effects remaining after primary mitigation measures are in place and assuming that standard construction and management practices, to avoid and reduce environmental effects, have been adhered to.

## **3 Assessment of Landscape Effects**

3.1 The landscape impact assessment addresses both direct and indirect impacts of the proposed development. Firstly, the direct effects of the development on the site itself are categorised, through an assessment of the magnitude of change. The magnitude of change is a judgement on the size/scale of effect, including the consistency of the proposed development with the baseline assessment, the extent of the area influenced and the duration and reversibility of the proposed effects. The focus is on the loss or change to identified landscape features within or adjacent to the site, together with the creation of new landscape elements.

- 3.2 Landscape character: The effects on local landscape character that would result from the proposed development are assessed. The effect on site landscape character directly correlates with the impact on landscape features (extent and duration). The effect on landscape character in the environs of the site is dependent on a range of factors (sensitivity) and overlaps with the visual assessment because the extent to which the proposed development would be visible from the surrounding countryside may influence neighbouring character areas. Effects on landscape character will also be directly influenced by the type of development proposed and whether it is consistent with existing land-use patterns.
- 3.3 Changes to landscape features and character may be adverse, beneficial or neutral. The erosion of a feature/character equates to an adverse impact, whilst strengthening of features/characteristics is regarded as beneficial. The substitution of a landscape feature/character area with another that is different but locally appropriate may be assessed as a negligible significance of effect. Refer also to GLVIA, page 88, para 5.37.
- 3.4 For the purposes of this assessment, 'magnitude of change' on each landscape feature and landscape character area is classified using the categories listed below (Whilst potential effects may be adverse or beneficial, for simplicity, the following definitions use examples of adverse impact, bearing in mind that significant effects on landscape features, in the context of LVIA, usually equate with total or partial loss. Where effects are deemed to be beneficial this will be clearly stated in the assessment text):

**High:**

- Notable change in landscape characteristics over an extensive area;
- The proposals are the dominant feature and there is substantial damage (or major improvement) to key characteristics, features and elements that contribute to landscape, and/or the effects are long term and irreversible;
- Effect on a landscape feature of designated importance that cannot be replaced; total loss of features that would be difficult to replace;
- Loss of, or substantial effect on, existing landscape character and its replacement with characteristics that are atypical of the character area;
- The proposed development is inconsistent with existing land-use patterns.

**Medium:**

- Moderate changes in localised area;
- The proposals form a visible and immediately apparent new feature that results in partial damage to (or addition of) key characteristics, elements and features that contribute to landscape, and/or the effects are medium to long term and largely irreversible;
- Total loss of feature that may be recreated over time; loss of small proportion of a feature that would be difficult to replace (e.g. mature woodland or historic species rich hedgerow);

- A considerable change to landscape character (proposed landscape character appropriate to character area but different from adjoining areas).

**Low:**

- Small change in any components;
- Some measurable change where the proposal constitutes a minor feature in the landscape and results in loss (or addition) of one (or maybe more) key characteristics, and/or the effects are short to medium term or could be irreversible;
- Total loss over sizeable area of a feature that can be recreated relatively easily (e.g. arable farmland); partial loss of feature that may be recreated over time, (e.g. young plantation/hedgerow); very minor loss of feature that would be difficult to recreate (e.g. woodland);
- A noticeable change to landscape character (proposed landscape character similar to existing landscape character of the area).

**Very Low:**

- Virtually imperceptible change of a temporary nature;
- The proposals result in very minor loss (or benefit) to the characteristics, features and elements that contribute to character, and/or effects are likely to be short term or could be reversible;
- Partial loss of feature that can be recreated relatively easily or which would regain its characteristics over time; minor or temporary effect on feature that can accommodate limited removal without noticeable change (e.g. gappy hedgerow);
- A barely perceptible change to landscape character.

3.5 The degree of significance of the landscape effect of the development is a product of sensitivity and magnitude of change.

#### **4 Assessment of Visual Effects**

4.1 The degree of significance of visual effects are assessed at two levels:

- i. The significance of the effect on each individual VR;
- ii. The overall significance of the visual effects in the context of the zone of visual influence and the range of VRs as a whole.

4.2 Following on from the visual baseline, the degree of visibility of the proposed development from each VR is assessed based on the same four categories: No view; Glimpse; Partial view, Open view. The view as it would be both during construction and operation of the proposed development is described. A direct comparison of the descriptions of the view following development (or during construction) with that of the existing situation, together with degree of visibility, indicates the extent of the change to the view. The relationship between visual intrusion and extent of change to the view is dependent upon the character of the development in the context of the view and whether they are consistent or contrasting.

4.3 The scale or magnitude of visual change has been made with reference to the following:



- *‘The scale of the change in the view with respect to the loss or addition of features in the view and changes in its composition, including the proportion of the view occupied by the proposed development;*
- *The degree of contrast or integration of any new features or changes in the landscape with the existing or remaining landscape elements and characteristics in terms of form, scale and mass, line, height, colour and texture; and*
- *The nature of the view of the proposed development, in terms of the relative amount of time over which it will be experienced and whether views will be full, partial or glimpses.’*

(GLVIA, page 115, para 6.39)

4.4 The geographical extent of a visual effect will vary with different viewpoints and is likely to reflect:

- *‘The angle of view in relation to the main activity of the receptor;*
- *The distance of the viewpoint from the proposed development; and*
- *The extent of the area over which changes would be visible.’*

(GLVIA, page 115, para 6.40)

4.5 The magnitude of change can be classified as follows:

**High:**

- Total loss of, or major alteration to, key elements of the baseline view, and/or introduction of elements considered to be uncharacteristic of the baseline view. The development would occupy most of the view (open or panoramic view) resulting in significant change in the existing view.
- The proposals would cause a significant deterioration/improvement in the view. (If adverse, the proposals would be a dominant and incongruous feature in the view).

**Medium:**

- Partial loss of, or alteration to, (one or more) key elements of the baseline view, and/or introduction of elements that may be prominent but may not necessarily be considered to be substantially uncharacteristic to the baseline view.
- The development may affect a partial view of most of it, or viewers would have a clear view of only a small part of the development. Also refers to distant views in which the site forms a significant proportion of the wider view resulting in a noticeable change in the existing view;
- The proposals would cause a noticeable deterioration/improvement in the view. (If adverse, the proposals would form a visible and recognisable incongruous new element readily noticed by a casual observer. If beneficial, the proposals would form a recognisable improvement that could be noticed by a casual observer.)

**Low:**

- Minor loss of, or alteration to, one or more key elements of the baseline view, and/or introduction of elements that may not be uncharacteristic of the baseline view. Poor or difficult view of the development resulting in a perceptible change in the existing views; and
- The proposals would cause a minor deterioration/improvement in the view. If adverse, the proposals would be a small incongruous element in the view that could

be missed by a casual observer. If beneficial, the proposals would form a small improvement to the view that could be missed by a casual observer.

#### Very Low:

- Very minor loss of, or alteration to, one or more key elements of the baseline view, and/or introduction of elements that are not characteristic of the baseline view.
- Poor or difficult view of the development resulting in barely perceptible change of a temporary nature. Approximating to the 'no change' situation, where the proposals overall would not form a noticeable deterioration or improvement in the view.

## 5 Landscape and Visual Significance

5.1 The methodology is first to identify the sensitivity of the landscape features, local landscape character or the viewer and then the scale of change. From these the significance of the effects arising from the proposed development are assessed. At its simplest; sensitivity x scale of change = significance of effects, but modified by professional judgement. The significance matrix provided below makes the judgements made by the professional assessors transparent so they can be understood easily by any reader of the assessment. The distribution of judgements is not intended to create a symmetrical matrix, but reflects a pragmatic approach to determining levels of significance based upon its refinement over many years.

### 5.2 Significance matrix for landscape and visual effects

		<b><i>Sensitivity of receptor</i></b>				
		<b>Very High</b>	<b>High</b>	<b>Medium</b>	<b>Low</b>	<b>Very Low</b>
<b><i>Magnitude of change</i></b>	<b>High</b>	Major	Substantial	Substantial or Moderate	Moderate	Minor
	<b>Medium</b>	Substantial	Substantial or Moderate	Moderate	Minor	Negligible
	<b>Low</b>	Moderate	Minor	Minor	Negligible	Negligible
	<b>Very Low</b>	Minor	Negligible	Negligible	Negligible	Negligible

**Major significance of effect:** An effect of international/national importance and is important to the decision-making process;

**Substantial significance of effect:** An effect of regional/district significance and could be a key decision-making issue; prominent changes to a sensitive view or substantial change or widespread loss of characteristic features in a sensitive landscape with little capacity for change;

**Moderate significance of effect:** An effect of local significance and not likely to be a key decision-making issue; noticeable change to view in an average, ordinary landscape with some capacity to accommodate development; in combination the cumulative impacts of VR's with a moderate significance would be more significant (district significance) and may be a key decision-making issue.

**Minor significance of effect:** An effect of very local significance and unlikely to be of importance to the decision-making process; small scale or temporary changes to view or to a low sensitivity landscape with capacity to accommodate development;

**Negligible significance of effect:** Minimal effect and not significant to the decision-making process.

- 5.3 Effects are judged to be 'Significant' if they are assessed as being Substantial effects or higher. The professional judgement of experienced landscape assessors is used throughout the assessment, particularly in those cases where the outcome lies between two levels of assessment, such as Substantial and Moderate. This is reflected in the landscape and visual impact significance matrices.

## **APPENDIX C**

### **National Character Area 120: Wealden Greensands**



Introduction & Summary

Description

Opportunities

Key facts  
and data

Landscape  
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Analysis



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## Introduction

As part of Natural England's responsibilities as set out in the Natural Environment White Paper<sup>1</sup>, Biodiversity 2020<sup>2</sup> and the European Landscape Convention<sup>3</sup>, 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.

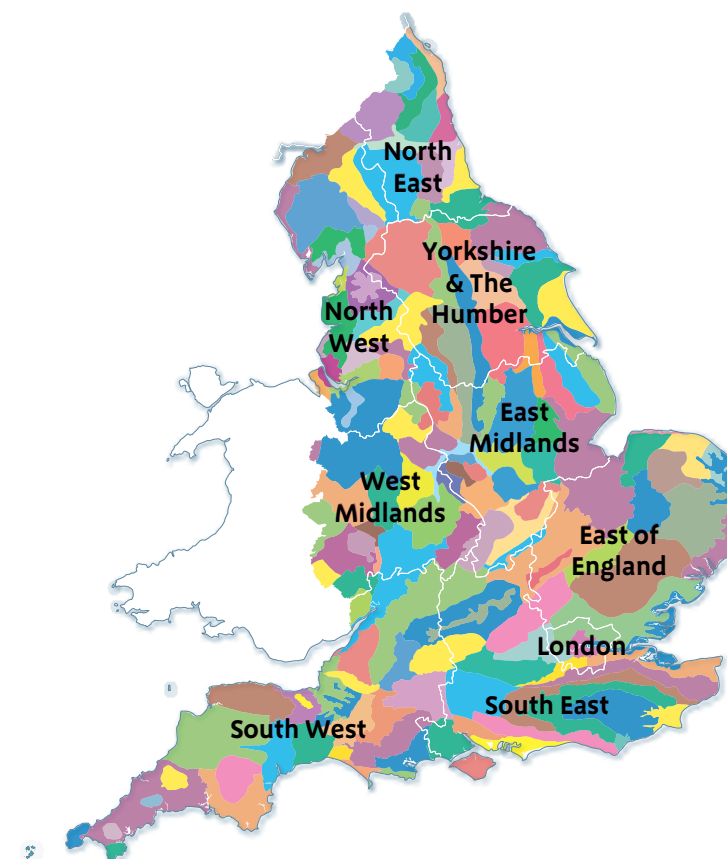
NCA profiles are guidance documents which can help communities to inform their decision-making about the places that they live in and care for. The information they contain will support the planning of conservation initiatives at a landscape scale, inform the delivery of Nature Improvement Areas and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

## National Character Areas map



<sup>1</sup> The Natural Choice: Securing the Value of Nature, Defra (2011; URL: [www.official-documents.gov.uk/document/cm80/8082/8082.pdf](http://www.official-documents.gov.uk/document/cm80/8082/8082.pdf))

<sup>2</sup> 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](http://www.defra.gov.uk/publications/files/pb13583-biodiversity-strategy-2020-111111.pdf))

<sup>3</sup> European Landscape Convention, Council of Europe (2000; URL: <http://conventions.coe.int/Treaty/en/Treaties/Html/176.htm>)



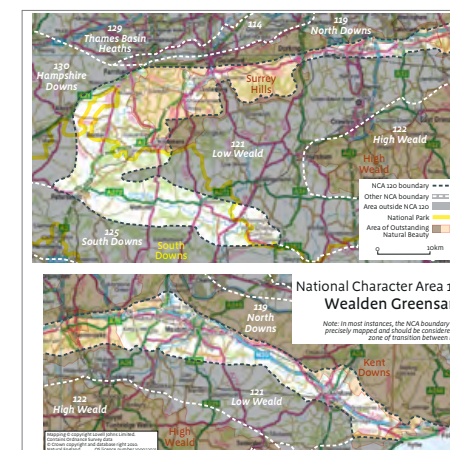
## Summary

The long, curved belt of the Wealden Greensand runs across Kent, parallel to the North Downs, and on through Surrey. It moves south, alongside the Hampshire Downs, before curving back eastwards to run parallel with the South Downs in West Sussex. Around a quarter of the NCA is made up of extensive belts of woodland – both ancient mixed woods and more recent conifer plantations. In contrast, the area also features more open areas of heath on acidic soils, river valleys and mixed farming, including areas of fruit growing.

The area has outstanding landscape, geological, historical and biodiversity interest. Some 51 per cent of the NCA is covered by the South Downs National Park, Kent Downs Area of Outstanding Natural Beauty (AONB) and Surrey Hills AONB – a testament to the area's natural beauty. The underlying geology has shaped the scarp-and-dip slope topography, with its far-reaching views, but it has also had a significant bearing on the area's sense of place: there are clear links between vernacular architecture, industry and local geology. The heritage assets provide vital connections to the NCA's industrial, military and cultural history, and include distinctive deer parks and more recent 18th-century parklands. Biodiversity interests are represented by internationally and nationally designated sites alongside numerous local sites and other non-designated semi-natural habitats. The internationally designated sites include three Special Protection Areas (SPAs), two Ramsar sites and eight Special Areas of Conservation (SAC), representing the outstanding value and quality of the heathland, woodland, wetland and coastal habitats found within the NCA. In addition, fragments of acid grassland and parkland landscapes add to the overall diversity of habitats.

The south-western part of the area remains essentially rural, with only small market towns such as Petworth and Petersfield, but eastwards from Dorking the character becomes considerably more urbanised, with many towns including Maidstone, Reigate, Ashford and Folkestone. The area forms a major transport corridor, with the M25, M20 and M26 motorways and other major road and rail routes all running through it.

A short coastal stretch extends from Folkestone to Hythe, with a heavily developed hinterland: as a result, most of the coastline is protected by coastal defences. The exception is Copt Point, where the eroding cliffs are designated for their wildlife and geological interest. This part of the coastline is also part of the defined Dover–Folkestone Heritage Coast. The coastline offers a contrasting recreational experience from that associated with the heathlands, wetlands and woodlands of the wider NCA.



Click map to enlarge; click again to reduce.

Development pressures are likely to pose significant challenges within the NCA, with increasing demands on water resources, the landscape, biodiversity and the sense of place. Well planned green infrastructure is likely to play a critical role in both new and existing developments, to bring about a range of economic, social and environmental benefits. The creation of resilient ecological networks will become increasingly important, especially as our climate changes. There are opportunities to strengthen the networks of semi-natural habitats – particularly wetlands, woodlands and heathlands – integrating them into the mixed farmed landscape and taking action to reduce further fragmentation.



Fields near Petworth, West Sussex.

## Statements of Environmental Opportunity

- **SEO 1:** Protect and manage the nationally recognised and distinctive character of the landscape, conserving and enhancing historic landscape character, tranquillity, sense of place, and the rich historical and geological heritage of the Wealden Greensand. Enhance access provision where appropriate, to maintain public benefit from and enjoyment of the area.
- **SEO 2:** Protect, manage and significantly enhance the mosaic and connectivity of semi-natural habitats within the mixed farmed landscape – particularly the internationally important woodland and heathland habitats – for the benefit of biodiversity, pollination, soil and water regulation, landscape character and enhanced adaptation to climate change.
- **SEO 3:** Manage and significantly enhance the quality of the characteristic wetland and water environment of the Greensand. This will contribute to sustainable flood risk management, will benefit the regulation of water quality and water availability, as well as enhancing the sense of place, biodiversity, recreation and wetland habitat adaptation to climate change.
- **SEO 4:** : Plan to deliver a network of integrated, well managed green spaces in existing and developing urban areas, providing social, economic and environmental benefits, and reinforcing landscape character and local distinctiveness – particularly on or alongside the boundaries of the designated landscapes within the Wealden Greensand.



## Description

### Physical and functional links to other National Character Areas

The curved Greensand ridge partially encircles the adjoining Low Weald NCA, while its outer edge is rimmed by the chalk outcrops of the North and South Downs, and the Hampshire Downs in the west. The ridge affords far-reaching views over the Low Weald, South Downs and London. In Kent, the ancient coastline reflected in the Lympe Escarpment overlooks the Romney Marshes.

In the south-west the Western Rother joins the Arun, which drains south into the South Downs NCA and on to the coast. In the north-west the rivers Wey and Mole drain north through the North Downs, and into the Thames. Further east the River Medway drains north through the downs, via the Medway Gap, and into the Greater Thames Estuary. The source of both the Upper Great Stour and the East Stour is on the Greensand ridge: these two rivers join to form the Great Stour, which flows north-east through the North Downs and the North Kent Plain. The Kent Lower Greensand groundwater body is considered a major aquifer, important for public and industrial water supply both within and outside the NCA.

Although it is only a short section, the management of the coastal stretch between Folkestone and Hythe influences and is influenced by the coastal stretches in adjoining NCAs (North Downs and Romney Marsh). Sediment supply in the development and denudation of beaches has a critical influence on the rate of coastal erosion and coastal squeeze.

A major transport corridor runs through the eastern part of the NCA, including the Channel Tunnel rail link connecting Folkestone to London.



View north from the Greensand ridge across Thursley Common. The dry heath, dominated by ling and bell heather, supports a wide range of wildlife including uncommon reptiles and rare heathland birds.

## Key characteristics

- A long, narrow belt of Greensand, typified by scarp-and-dip slope topography, including outcrops of Upper Greensand, Gault Clay and Lower Greensand. The Greensand forms escarpments separated by a clay vale: the overall undulating and organic landform – particularly in the west – gives a sense of intimacy to the landscape. Leith Hill in Surrey is the highest point in south-east England.
- There are extensive areas of ancient mixed woodland of hazel, oak and birch, with some areas having been converted to sweet chestnut coppice in past centuries. These areas reflect the diverse geology, including the distinctive chalk grassland elements within the East Hampshire Hangers Special Area of Conservation (SAC), the wooded commons ('charts') of East Surrey and West Kent, and conifer plantations.
- Semi-natural habitats include: remnant lowland heathland, mostly concentrated in West Sussex, Hampshire and West Surrey; the wetlands associated with the River Arun in West Sussex; and unimproved acid grasslands found in commons, parklands, heathland and other areas of unimproved pasture.
- Fields are predominantly small or medium, in irregular patterns derived from medieval enclosure. Boundaries are formed by hedgerows and shaws, with character and species reflecting the underlying soils. On the clay, hedgerows are dense and species-rich, with occasional standard oaks. On more acidic soils they generally consist of hawthorn and blackthorn, also with occasional oak trees, and often trimmed low.
- Agricultural land comprises a mosaic of mixed farming, with pasture and arable land set within a wooded framework. There is a fruit-growing orchard belt in Kent and also around Selborne in Hampshire.
- The rural settlement pattern is a mixture of dispersed farmsteads, hamlets and some nucleated villages. Large houses set within extensive parks and gardens are found throughout the area.

Continued on next page...



Apple harvest at Blackmoor Estate, Hampshire.



## Key characteristics continued

- In the east of Kent, the Wealden Greensand has a gentler and more open aspect than in the wooded west. This part of the area is also more marked by development, with the presence of major towns and communication corridors such as the M26, M25 and M20 motorways and railway lines including the Channel Tunnel Rail Link (High Speed 1).
- The local built vernacular includes the use of Greensand, ragstone and, in the west, malmstone, bargate stone, plus dark carrstone patterned in the mortar between stones ('galleting') in Surrey, as well as timber-framing and weatherboarding.
- There are a range of historic landscape features, including field monuments, old military defences, prehistoric tumuli, iron-age hill forts, Roman forts, the Royal Military Canal, small quarries and relics of the iron industry (including hammer ponds). Sunken lanes cut into the sandstone are a historic and characteristic feature, as are older deer parks and more recent 18th-century parklands.
- Surface water is an important feature across the Greensand, with many streams and rivers passing through the NCA: the Western Rother, Wey, Arun, Medway and the Great and East Stour.
- The Greensand ridge meets the coast of Kent between Folkestone Warren and Hythe. While most of the coastal strip is now built up and protected by sea defences, the undeveloped sea cliffs at Copt Point provide important geological exposures, are designated for their nature conservation interest and fall within the Dover-Folkestone Heritage Coast.

## Wealden Greensand today

The local character of the Wealden Greensand varies as a result of changes in local topography, soils and land use, but it is unified throughout by the underlying geology and the distinctive springline settlements below the Downs. The scenic beauty and special qualities of the landscape are recognised in the fact that 51 per cent of the area has been designated as protected: the South Downs National Park in the south-west, the Surrey Hills Area of Outstanding Natural Beauty (AONB) to the west and the Kent Downs AONB to the east. Panoramic views across adjoining NCAs are frequent and extensive from the Greensand ridge above the scarp face.



View across Ockley Common.

Overall the NCA has a well-wooded feel, accounting for 25 per cent of the NCA, with extensive areas of woodland, both ancient mixed woods and conifer plantations. Variety is provided by more open areas of heath and acid grasslands on acidic soils, by the river valleys, by the parkland landscapes and by the mixed farming found throughout the area, with marked differences between the western, central and eastern areas.

To the west, in Hampshire, Sussex and West Surrey, the Greensand forms an intimate landscape with a diverse character – from the more or less parallel sandstone ridges to the steep and dramatic scarp slopes, and the rounded clay vales containing river valleys with broad plains. The small pasture fields and linear woodlands of the scarps and ridges give way to larger and more regular field patterns and regular-plan farmsteads – the result of the successive reorganisation and enlargement of farms. This arable landscape of large, geometric fields is encouraged by the light, fertile soils of the Western Rother plain that cuts through the sandstone. It provides a local contrast with the more intimate nature of the sandy soils dominated by small pasture fields. On the higher ground, these sandy soils support some extensive heathland, including two Special Protection Areas (SPA) and three SAC. These heathlands give the landscape an impressive purple hue in mid to late summer, from the darker purples of the bell heather to the soft mauves of the ling/common heather. The species associated with these habitats – such as the Dartford warbler, nightjar, woodlark, amphibians, reptiles and butterflies (including the silver-studded blue butterfly and green hairstreak) – all add diversity to the landscape in sound, colour and texture.

A notable feature of the southern arm of the Wealden Greensand is the Arun Valley, which is designated as an SPA and a Ramsar site: it is a wetland of international importance for waterfowl including shoveler, teal, wigeon and Bewick's swan, which can all be found overwintering at the site. The site is also a candidate SAC for the populations of shining ram's-horn snail that it supports. The Arun Valley is a complex of meadows and ditches that contain many rare plants including cut-grass, true fox-sedge and sharp-leaved pondweed. As well as being botanically important, the nature reserves at Amberley Wildbrooks and Pulborough Brooks are a key resource for access and environmental education within the valley.

Further north and east, from Hampshire and into Surrey, the slopes become steeper and are typically densely wooded: the steep hanger ash, chalk-beech and mixed woodlands of East Hampshire are a locally dominating feature and have been designated as an SAC for their rare woodland composition. These woodlands are also important for the assemblages of invertebrates, plants, bryophytes and birds that they support. Farming is mixed and includes commercial fruit growing near Selborne. Hedgerows tend to mark the boundaries of the small, irregular fields. The intimate, almost secretive, feel of much of the west of the Wealden Greensand is reinforced by the deep, stream-cut gulleys and tree-lined, winding, sunken lanes leading to small settlements built of sandstone or malmstone. This mixed intimate character continues across Surrey, with woodland cover increasing. Surrey is the most wooded part of the area, with a high proportion of ancient mixed wood.

Besides the woodland, the Surrey Greensand is characterised by open rolling farmland. In the south, a traditional farmscape of small fields and thick hedgerows is retained. On flatter land, however, arable use is more prevalent. This area is heavily populated with settlements such as Redhill, Reigate and Dorking.



View along the Lympne escarpment.



The proximity to London and the longstanding affluence of this area are reflected in the numerous notable houses, parks and gardens. This affluence continues to shape the landscape, with some of the farmland given over to smallholdings and recreational uses such as pony paddocks. In many areas, the settlements bring a suburban feel that contrasts with the essentially rural landscape of the south-western end of the NCA.

The main river valley in Surrey is that of the River Wey, which cuts a broad, watery plain with open meadows and typical waterside vegetation (including willow, alder and wet meadows). The Surrey Greensand is particularly important for recreation, as it is easily accessible from London and many of Surrey's major towns. The Wey provides an opportunity for water-based activities, as well as cycling and walking routes along the towpath. The overall landscape, although mixed, is unified by the wooded character engendered by the many woodlands and shaws.

Further east, into Kent and beyond, the dramatic, wooded topography becomes less distinctive: being less wooded, the landscape here does not afford such an impression of intimacy. The area is also more marked by modern human influence, with major towns such as Maidstone, Sevenoaks and Ashford, and numerous communication routes. Notable among the latter are the M25, M26 and M20 motorways, and other major road and rail routes. Generally, the Kent Wealden Greensand in the east is relatively more open with mixed farming. The central area of the belt, near the Medway, where lighter loams occur, is an important commercial fruit growing area. Cobnut production, while much reduced in extent, is still a notable feature around Plaxtol. While orchards have tended to be replaced by arable fields, there is some evidence of new orchard planting occurring on the ridge. The River Medway flows through Maidstone and is a key recreational asset, offering riverside walks and boat trips. Further east,

the Great Stour and East Stour both rise on the Greensand before joining upstream of Ashford and flowing northwards. A key characteristic of this area are the large areas of woodland dominated by sweet chestnut coppice, originally planted to support the hop industry and more recently for use as renewable fuel.



Cliffs at Copt Point.

At its south-eastern extreme, the Greensand forms a notable scarp, formerly a sea cliff, giving extensive views over the Romney Marshes. The NCA meets the coast in Kent, extending from Folkestone to Hythe. Most of the coastal hinterland is heavily developed and protected by sea walls, groynes and shingle beaches – with the exception of Copt Point, where undeveloped, eroding cliffs are designated for their wildlife and geological interest. This part of the coastline forms part of the defined Dover–Folkestone Heritage Coast. The beaches and coastal amenities provide important recreational opportunities and contribute to the local economy.

## The landscape through time

The Wealden Greensand NCA follows the outcrop of the Lower Greensand Escarpment of the Wealden Anticline. The oldest rocks in the NCA (bordering the Lower Weald NCA) belong to the Lower Cretaceous Weald Clay Formation, which is in turn overlain by the Lower Greensand Group and the Gault and Upper Greensand Formations. The complete sequence varies in age from approximately 125 to 100 million years old. At this time deposition was occurring in the Wessex Basin, which was enclosed by uplands to the north, west and south. The basin was initially dominated by the fluvial sediments of the Wealden Group (exposed in the Low Weald and High Weald NCAs). The subsequent rise in sea level led to the deposition of the marine Lower Greensand sediments, which include the Atherfield Clay (offshore muds and silts) and the Hythe, Sandgate and Folkestone Formations (shallow marine sands). The Greensand is so-called due to the green mineral glauconite, however this is usually oxidised to more a typical yellow or brown. Another characteristic rock type of the Lower Greensand is the 'rag and hassock' of the Hythe Formation – 'rag' being a hard, sandy limestone and 'hassock' a sand speckled with glauconite. The continued rise in the sea level and the establishment of a deeper sea led to the deposition of the Gault Clay and Upper Greensand. Eventually, the Upper Cretaceous chalk formed the North and South Downs that now surround this NCA.

The collision of Africa with Europe led to a period of mountain-building known as the Alpine Orogeny (from about 65 to 2.5 million years ago), with associated folding and faulting in south-east England that produced the characteristic anticline of the Weald. Although the area was not glaciated during the Pleistocene, it was affected by interglacial and glacial climate changes. Erosion during the tundra-like cold periods produced landslips, in

particular cambering and gullying, between about 135,000 and 12,500 years ago. A number of the gullies have been filled by Pleistocene wind-blown sand and silt known as loess. The nutrient-poor, acid, sandy soils covering the Folkestone and Hythe Beds form a broad escarpment that is often associated with tracts of heaths and commons. The more fertile soils over the Sandgate and Bargate Beds, which have a high lime content, give rise to heavier and wetter soils that are often dominated by pasture. The heavy Atherfield Clay lies below. The Upper Greensand has outcrops of calcareous sandstone ('malmstone') in Hampshire and West Sussex, which was used as a building material. It closely resembles the calcareous Kentish ragstone, which occurs as part of the Lower Greensand at the opposite end of the area. The local architecture is linked to the underlying geology, with Greensand stone giving many buildings a distinctive character and local identity.

The Wealden Greensand has been occupied since the earliest times, with the presence of Palaeolithic flint tools at Oldbury Hill in Kent and traces of a Neolithic hearth at Abinger. On the whole, the generally nutrient-poor Greensand soils have not been as extensively cleared for agriculture as some other areas, and many ancient woodlands have survived – although often in fragmented patches and on steeper slopes. Woodlands throughout the area provided a renewable source of fuel and materials for domestic, agricultural and industrial use. Coppicing trees and shrubs, such as hazel, hornbeam, sessile oak and sweet chestnut, was an important part of the rural economy and also led to the development of a rich woodland flora. Coppice products included fencing materials, firewood, thatching spars, hop poles (mostly sweet chestnut in Kent) and charcoal. In the western part of the NCA, where clay ironstone occurs, coppice woodlands were vital for the early iron industry. This was responsible for the large hammer ponds, like the Waggoners' Wells within the Bramshott and Ludshott Commons Site of Special Scientific Interest (SSSI) in Hampshire.

The wide variation in soil acidity and fertility across the NCA is reflected in the range and diversity of both agriculture and the semi-natural habitats that occur within it. Accordingly, this was essentially an area of mixed farming, with the balance differing locally: fruit growing in Kent, dairying around Petersfield and hop growing around Maidstone. While the NCA remains a mixed farming area today, the balance has shifted, with dairying significantly reduced and hop gardens only functional in very few instances. Areas of fruit (mainly commercial as opposed to traditional), pasture and arable are all still prevalent. Most field patterns still reflect the irregularity of ancient enclosure or enclosure by agreement, with regular Parliamentary-type enclosure generally restricted to late enclosure of heathland.



Kent's last medieval deer park at Knole.

Heathland was very extensive on the Greensand ridge as recently as the 18th century, having developed on the sandy and acidic soils that were maintained as open and grazed landscapes since at least the Bronze Age. Once an important part of the rural economy, heathland provided grazing land, bedding for stock and a source of fuel. As the markets for some of these products declined, so did their place in the rural economy. As a result, much of this former heathland has been built on, converted to more productive agricultural land or forestry plantations, or has suffered due to lack of management, resulting in a dramatic decline over the past century. In other places, the absence of grazing stock and traditional use of heathlands has allowed bracken to spread, and pine, birch and oak trees to become established. These trees have replaced the typical wet and dry heathland plant communities, and a high proportion of the original Greensand heaths are now covered with secondary woodland.

The system of 'common land', whereby groups of people had collective grazing or harvesting rights over an area of land, had much to do with the creation and survival of some important Greensand habitats. Heathland was often common land, as were some of the ancient woodlands. Cattle and sheep grazed the wooded commons, and in autumn these areas provided foraging for pigs. Commoners could also gather firewood from the woods. Such wooded commons (or charts) were mostly found in East Surrey and West Kent. Although much overgrown, the charts of today still display a typical structure and suite of species that are the result of their traditional use.

The Greensand is scattered with landmarks that document the activities of previous centuries and make important contributions to England's heritage. These include Waverley Abbey, remains of the first Cistercian abbey in England, and a series of historic bridges over the River Wey, linked to the remnant water meadow system and thought to have been built by the monks of the



Abbey. The Chilworth Gunpowder Mills also provide a link to a thriving past industry that used water from the Tillingbourne, a tributary of the Wey, to power the mills. For a time, these mills were the only authorised gunpowder producer in Britain. Iron making (using the local ironstone) and Wealden timber (for charcoal) were important industries, with numerous hammer ponds found along the foot of the north-west escarpment. Old quarries (where ironstone, building stone and sand on the heathland areas were all extracted) are features of the landscape and a reminder of the economic value of the underlying geology – as are today's operational mineral working sites.

The woodland provides a backdrop to the many landscaped parks of the area, and has been used by designers such as Lancelot 'Capability' Brown to frame 18th- and 19th-century landscapes. Many of these parkland landscapes remain today. Oast houses are a highly characteristic farm building type associated with the hop industry, and many timber-framed buildings dating from the 15th and 16th centuries survive – including barns and Wealden hall houses ('A type of vernacular medieval timber-framed hall house traditional in the south-east of England').

Settlement across the area is a mixture of dispersed farmsteads and hamlets, and some nucleated villages, often linked by small, deeply sunken lanes through the easily eroded areas of soft sandstone. While the south-western part of the area remains essentially rural, improved transport links from the later 19th century led to increased development of the eastern half as it became a commuter belt. Significant 20th century development has altered the character of much of the area east of Dorking, with the expansion of towns such as Maidstone, Reigate, Ashford and Folkestone, and the development of major transport networks including motorways and the high-speed Channel Tunnel Rail Link.

## Ecosystem services

The Wealden Greensand 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 Wealden Greensand NCA is contained in the 'Analysis' section of this document.

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

- **Food provision:** An area of mixed farming that produces significant amounts of cereals and other arable crops. Also livestock, including sheep, pigs and cattle, and notably fruit growing and other horticultural crops – particularly in Kent. Includes some of the most productive agricultural land in Kent, where the ridge is less pronounced and the soils are more fertile.
- **Biomass energy:** The existing woodland cover (25 per cent of the NCA) offers significant potential for the provision of biomass through bringing unmanaged woodland under management. The NCA has been identified as having a high potential yield for sweet chestnut coppice, while short rotation coppice is generally medium: central areas around Redhill and Reigate, where lighter loams occur, have been identified as being more suitable<sup>4</sup>.

<sup>4</sup> Energy crop guidance and yield maps – see: <http://archive.defra.gov.uk/foodfarm/growing/crops/industrial/energy/opportunities/>

- **Water availability:** The majority of the area overlies post-Carboniferous rock (a sandstone aquifer), with a small area in the west overlying a chalk aquifer. For the area of strata assessed, the quantitative status is considered to be poor<sup>5</sup>. Water availability in both surface waters and the aquifer is under pressure from existing abstractions for public water supply and (to a lesser extent) for industrial and agricultural supply. The Lower Greensand aquifer supports surface water flows and provides base flow to the internationally important wildlife sites of the Arun Valley – SPA, SAC, Ramsar and heathland sites that have water-dependent habitats. The aquifer has an important role in maintaining spring and base flows of rivers; any low flows may damage the ecology of rivers and wetlands.

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

- **Climate regulation:** The very acidic sandy and loamy soils include some thin, organic and peaty topsoils that are a store of carbon, associated with the area's remnant heathland habitats. Some of the loamy and clayey flood plain soils are peaty at depth, or include small areas of peaty soils. The woodlands of the NCA also play an important role in climate regulation. However, as many of the soils are droughty sands and coarse loams they generally have a low organic matter content, which could be enhanced by organic matter inputs.
- **Regulating soil erosion:** Freely draining, loamy and/or sandy soils make up 60 per cent of the NCA, and generally carry an enhanced risk of soil erosion on moderately or steeply sloping land where cultivated or bare soil is exposed. This is often exacerbated where organic matter levels are low

after continuous arable cultivation, or where soils are compacted. Wind erosion can also be an issue for many of these soils. The freely draining, sands, silts and coarse loam soils, can be at risk of increased erosion. Loamy and Clayey soils with impeded drainage can be prone to both capping and slaking, and are easily compacted by machinery or livestock if accessed when wet, increasing the risks of soil erosion by surface water run-off. In the south-west of the NCA, steeper sandy soils under arable cultivation are highly prone to erosion.

- **Regulating water quality:** The Water Framework Directive's first river basin management plan classification indicates that the stretches of the rivers that fall within the NCA are of variable quality, as is the groundwater<sup>5</sup>. Three Defra priority catchments – the Arun and Western Rother, the Medway, and the Stour – fall within the NCA. All seek to reduce diffuse pollution from agriculture. Within the Arun and Western Rother priority catchment, steeper, sandy soils under arable cultivation are highly prone to erosion: as a result, the Western Rother suffers from very high levels of siltation. The Medway and Stour catchments are also both prone to sedimentation from soil erosion and phosphate run-off. Water quality is also influenced by the presence of industry and urban development within the NCA.
- **Regulating water flow:** Flooding has been an issue within the NCA and the river catchments more widely. Land adjacent to both the Mole and Wey has been subject to significant flooding in the past, including flooding of urban areas along their course. Most notable is the very significant flooding of Godalming (in the Wealden Greensand) and Guildford (in the adjacent Thames Basin Lowlands NCA) on the course of the Wey in 1968.

<sup>5</sup> *Thames River Basin Management Plan*, Environment Agency (2009) ([www.environment-agency.gov.uk/research/planning/125035.aspx](http://www.environment-agency.gov.uk/research/planning/125035.aspx)) and *South East River Basin Management Plan*, Environment Agency (2009) ([www.environment-agency.gov.uk/research/planning/124978.aspx](http://www.environment-agency.gov.uk/research/planning/124978.aspx))



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Guildford, although outside the NCA, is an area of high risk along the River Wey. Flood plain management in the wider catchment is identified as being a key mitigation measure. Maidstone is identified as an area of moderate risk along the River Medway<sup>6</sup>. Ashford is identified as being at risk from flooding and this risk is likely to increase as a result of climate change.

- **Regulating coastal flooding and erosion:** Long-term 'Hold the Line' policies are identified within the Shoreline Management Plan along the relatively small stretch of developed coastline that falls within the NCA between Folkestone and Hythe. The exception of Copt Point (where a policy of no active intervention is applied) will allow the undeveloped cliffs to erode, maintaining their environmental and geological value. For the rest of the stretch, preferred policies of 'Hold the Line' protect buildings, infrastructure and amenities. Identified implications are the narrowing of the intertidal area as a result of sea level rises, with the subsequent loss of fronting beaches – which are an important asset to tourism within the area – as well as a reduction in the long term in the amount of sediment available for downdrift frontages<sup>7</sup>.

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

- **Sense of place/inspiration:** A sense of place is provided by the prominent Greensand ridge, which affords many far-reaching views over the Low Weald from the scarp top, as well as by the extremely varied landscape character – a result of the diverse underlying soils and geology, and the overlying land use. Also distinctive are the extensive areas of lowland heathland (in Surrey, Hampshire and Sussex) and ancient woodland, which include the distinctive

hanger woodlands found on steeper slopes (notably in East Hampshire) and the wooded commons or charts characteristic of East Surrey and West Kent. Rivers draining the dip slope (and their associated wetland habitats) further support this varied character, as do the irregularly-patterned fields bounded by hedgerows and shaws, and the traditional fruit-growing areas of Kent. The rural settlement pattern of dispersed farmsteads, hamlets, some nucleated villages and tree-lined, sunken lanes adds to the distinctive sense of intimacy within the landscape in the south-west.

- **Sense of history:** The history of this landscape is evident in the predominantly irregularly-patterned fields and in the ancient road network, as well as in the area's prehistoric associations: including bronze-age tumuli near Petersfield and on the higher ground of heathlands in Sussex, iron-age hill forts at Holmbury, Anstiebury and Oldbury Hill, and Neolithic remains at Abinger. Aspects of history that are particularly striking in the landscape are the numerous large houses and designed parklands, including Petworth in Sussex, Knole, and Leeds Castle in Kent, and the traditional vernacular of local sandstone and patterned dark carrstone (known as 'galleting') – most notably in Surrey. The hammer ponds associated with iron workings along the foot of the north-west escarpment contribute to the sense of history and provide links with the area's industrial heritage.
- **Tranquillity:** Twenty-seven per cent of the NCA is classified as 'undisturbed' according to CPRE data, a decline from over 60 per cent in the 1960s. Tranquillity is most generally associated with the intimate rural landscape of the south-west (much of which falls within the South Downs National

<sup>6</sup> River Medway Catchment Flood Management Plan, Environment Agency (2009) (<http://a0768b4a8a31e106d8b0-50dc802554eb38a24458b98ff72d550b.r19.cf3.rackcdn.com/geso1008bowj-e-e.pdf>)

<sup>7</sup> South Foreland to Beachy Head Shoreline Management Plan, Environment Agency (2006) ([www.se-coastalgroup.org.uk/sf-to-bh-2006/](http://www.se-coastalgroup.org.uk/sf-to-bh-2006/))

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Park), in contrast with the more heavily developed eastern and central areas. Tranquillity is nevertheless likely to be associated with the extensive chain of heathlands and ancient woodlands that occur throughout East Hampshire, Surrey and West Kent: these remaining areas of tranquillity are important where development pressures are so high.

- **Recreation:** Recreation and access are supported by 3,315 km of public rights of way, including links to both the North Downs Way and South Downs Way national trails, as well as over 6,700 ha of open access land – around 5 per cent of the NCA. Part of the area to the south-west falls within the South Downs National Park, which seeks to offer wide-ranging opportunities for countryside recreation and access<sup>8</sup>. The Surrey Hills AONB and Kent Downs AONB also have much to offer in terms of recreation within inspiring landscapes. The woodland and heathland landscapes of Surrey and West Kent are particularly important for access, given their proximity to London and other significant urban areas, and also given increasing pressure for public recreation – particularly cycling and walking. The coastline offers a further recreational resource, as do the NCA's rivers – some of which are navigable, and are host to a range of water-based activities. These recreational opportunities offer benefits to physical and mental health, and to local economies, but there is a need to manage their impact on sensitive sites, where the ecology of these areas is at risk from significant footfall or from potentially damaging activities.
- **Biodiversity:** The NCA supports a variety of habitats and species. There are over 26,500 ha of Biodiversity Action Plan (BAP) priority habitat, covering around 18 per cent of the NCA. This includes lowland woodland (lowland mixed deciduous woodland (5,628 ha) and lowland beech and yew woodland (2,713 ha); lowland heathland (5,557 ha) and wetland fens (3,518

ha); wet woodland (2,936 ha); and coastal and flood plain grazing marsh (1,302 ha). The NCA has a number of international designations, with three SPAs, ten SAC and two Ramsar sites, indicating the area's contribution to international biodiversity.

- **Geodiversity:** The geodiversity of the Wealden Greensand NCA is of great importance. There are 18 SSSIs designated for their geology and 27 Local Geological Sites encompassing Cretaceous and Pleistocene geology, including classic exposures of Lower Greensand, Gault Clay, windblown sands or loess, and landslip features. Disused quarries and road cuttings are particularly important, as are the dramatic coastal sections of Folkestone Warren. The ridge itself gives spectacular views across the Low Weald, and Leith Hill is the highest point in Surrey. Key landscape features include the Devil's Punch Bowl at Hindhead and the Lympe Escarpment on the boundary with the Romney Marshes. As well as being of great importance in its own right, the geology is of fundamental importance to biodiversity. The complexity of the geology and soils has led to great variation in the vegetation that it supports. There are also clear links between traditional building materials and industries, which have been supported by the local geology; for example, ironstone was important in early iron production in the area.

<sup>8</sup> *The South Downs Management Plan, 2008–2013*, South Downs Joint Committee (2008) ([www.southdowns.gov.uk/about-us/key-documents](http://www.southdowns.gov.uk/about-us/key-documents))

## Statements of Environmental Opportunity

**SEO 1: Protect and manage the nationally recognised and distinctive character of the landscape, conserving and enhancing historic landscape character, tranquillity, sense of place, and the rich historical and geological heritage of the Wealden Greensand. Enhance access provision where appropriate, to maintain public benefit from and enjoyment of the area.**

### For example, by:

- Protecting the intimate rural character of the south-west of the NCA (part of the South Downs National Park) and the special qualities of the Kent Downs AONB and Surrey Hills AONB, working in partnership to identify management opportunities in accordance with the respective management plans.
- Conserving and enhancing the rural settlement pattern of dispersed farmsteads, hamlets and nucleated springline and riverside villages, and the network and character of ancient, winding, tree-lined, sunken lanes in the west, through sensitive planning and development control. This will benefit the landscape character, tranquillity and the sense of place and history. The management of trees alongside sunken lanes will maintain and enhance their botanical interest.
- Using an understanding of the area's traditional and historical architecture, its distinctive local materials (timber-framing with weatherboarding, Greensand, ragstone and, in the west, malmstone) and its patterns of settlement, to inform the appropriate conservation and use of historic buildings, and to plan for and inspire any new development so that it makes a positive contribution to local character.
- Maintaining and enhancing rights of way and open access throughout the area, improving links especially to the North Downs Way and South Downs Way national trails, and to towns and villages. Developing new permissive access to historical sites and quality green space as part of a cohesive network of inspiring access provision. Increasing the benefits of these routes for biodiversity, health and local businesses, and ensuring full compatibility with agriculture. Enhanced access permission will not be appropriate in all instances and needs to be balanced to ensure that areas that are particularly vulnerable to disturbance from recreational pressures are not compromised.
- Promoting sustainable tourism initiatives that help to reduce car dependency and can accommodate high visitor numbers while conserving the landscape and its tranquillity. Managing the impact of increased visitor numbers to sensitive sites.
- Restoring and creating broadleaved woodlands surrounding major transport corridors and urban areas to help reduce noise, light and air pollution, and to maintain and enhance the pockets of tranquillity.
- Maintaining the sense of intimacy within the landscape and the expansive views over the Low Weald, South Downs and London from the scarp tops.

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## Statements of Environmental Opportunity

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### ... continued from previous page

- Conserving, managing and enhancing the nationally important and locally characteristic geodiversity, including the undeveloped sea cliffs between Folkestone Warren and Hythe, plus inland exposures of Upper Greensand in Hampshire and West Sussex, and the ragstone exposures of the Lympe Escarpment in Kent.
- Maintaining and enhancing access to geodiversity, providing educational and research opportunities, and linking communities with their local heritage, including through the sensitive restoration of redundant quarries, exploiting their biodiversity, recreational and geological potential.
- Restoring and managing the nationally important parklands (for example at Knole), the more recent 18th-century parklands and designed landscapes (as at Petworth), and the wood pasture habitats. Management works should be prioritised and informed by an assessment of the historic design, use and significance of the parkland.
- Supporting local initiatives for the restoration of traditional orchards and hop gardens that are characteristic of Kent, and parts of Hampshire and Surrey. Using and promoting local fruit varieties where viable, and where this provides links to our heritage and sense of place, and maintains genetic diversity.
- Protecting the integrity of earthworks and monuments (including numerous bronze-age tumuli on the higher ground of the Sussex and Surrey heathlands, and prominent iron-age hill forts such as at Holmbury, Anstiebury and Oldbury Hill) through appropriate management, including the reversion of arable to grassland, scrub removal and protecting sites from erosion.
- Conserving and improving the management of historical landscape features such as relics of the iron industry (including hammer ponds) and water mills. Conserving and restoring historic buildings including oast houses and timber-framed barns, while promoting opportunities for access, education and sensitive interpretation at historic sites.

**SEO 2: Protect, manage and significantly enhance the mosaic and connectivity of semi-natural habitats within the mixed farmed landscape – particularly the internationally important woodland and heathland habitats – for the benefit of biodiversity, pollination, soil and water regulation, landscape character and enhanced adaptation to climate change.**

**For example, by:**

- Protecting the distinctive beech and ash hanger woodlands of Hampshire on the steep chalk and Upper Greensand escarpment, including the East Hampshire Hangers SAC, supporting the continued small-scale management on the difficult scarp slopes and buffering the woodlands through appropriate land management options on adjoining land. These woodlands provide important links to the surrounding landscape, and so any opportunities to enhance their connectivity to other habitats should be maximised, integrating them into the wider farmed landscape and enhancing adaptation to climate change while benefiting biodiversity and the sense of place and history.
- Restoring and managing the extensive belts of ancient mixed woodland throughout the rest of the NCA, including the sessile oak woods on the acid, sandy soils of Surrey, West Sussex and Kent, the pedunculate oak woods with hazel coppice on the heavy Gault Clay, and the ash woodland on lime-rich Kentish ragstone outcrops. (Consideration must be given to those trees that may have been affected by ash die-back disease, adapting to the implications through a combination of selection, propagation and planting of resistant ash trees, and diversifying as appropriate.) Ancient mixed woodland should be significantly expanded on steeper slopes, helping to prevent soil erosion, especially within important valley catchments such as that of the Western Rother.
- Promoting opportunities for productive woodland management, to support existing markets for local wood products (including wood for fuel) and to encourage new ones. Where smaller woodlands form part of the mixed farm mosaic, seeking to integrate their management into the wider farm business.
- Maintaining or (where appropriate) restoring stock grazing in parks and wood pastures, and stimulating the re-introduction of traditional tree and woodland management (including pollarding, the encouragement of new tree generations and the restoration of woodland glades), benefiting biodiversity, and the sense of place and history.
- Managing and monitoring the threats posed by tree diseases and pests, and planning for climate change, researching appropriate species mixes to create robust and resilient woodlands.
- Restoring hedgerow boundaries and shaws, especially where they will help to impede cross-land flows (and thus further aid the regulation of water quality), maintain the predominantly irregular field pattern to benefit cultural heritage and the sense of place, improve the landscape character, and help to create a robust, interlinked wildlife network with enhanced resilience to climate change.

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- Working with landowners to integrate arable habitats into the farming system. Encouraging the uptake of measures such as conservation headlands, low-input cereals and resource protection options on the sandy soils (such as grassland buffer strips) – to optimise the multiple benefits for biodiversity, water and soil regulation, and pollination services.
- Restoring the dry, humid and wet lowland heathlands (including large areas with SPA and SAC designation) through remedial work, including scrub and bracken management, and targeted conifer removal. This will enhance the adaptation of this important resource to climate change and will maximise the benefits for biodiversity. Where appropriate, considering opportunities for heathland creation, to improve connectivity of habitats and to allow for corridor management for the movement of species.
- Seeking to work with communities to reconnect them with their local heathland and common land habitats and to explore a combination of new and traditional management practices (such as stock grazing). This will help to create and maintain the structural diversity needed to support the range of plants and animals associated with these habitats. Appropriate management will also be needed to control invasive species.
- Managing woodland adjacent to heathland to help filter views of development beyond, enhancing habitat diversity while also allowing for species migration. These woodland belts can provide a robust recreational space close to where people live, and can help to relieve pressure on and buffer the more sensitive heathland habitats.
- Working in partnership to stimulate new markets for heathland products, providing a market driver to encourage and maintain viable and sustainable heathland management.
- Managing heathlands to maintain their ecological interest, while providing for the needs of the local communities and visitors. When considering changes to management practices, land managers should ensure that there is an engagement strategy in place and that this is implemented at an early stage of any decision-making process. The experience and understanding of the user should be enhanced through a variety of methods, including sympathetic interpretation and education, and the creation of local volunteer and ‘friends of’ groups. It may be appropriate to manage access so as to reduce disturbance, through the creation of ‘desire lines’ and the careful siting of gates and signage to create a visible route. In some cases, alternative access provision on less sensitive sites nearby might be feasible.
- Restoring and enhancing unimproved acid grasslands in parklands, on commons and on golf courses. Maintaining localised bare sand habitats on the Greensand ridge that support nationally rare wildlife species, to further protect and enhance biodiversity, while benefiting the sense of place and history.

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**SEO 2: Protect, manage and significantly enhance the mosaic and connectivity of semi-natural habitats within the mixed farmed landscape – particularly the internationally important woodland and heathland habitats – for the benefit of biodiversity, pollination, soil and water regulation, landscape character and enhanced adaptation to climate change.**

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- Improving the ecological connectivity of woodlands, heathlands, copses, grasslands, road verges, hedgerows and wetlands, strengthening the overall network of habitats, reducing fragmentation and improving the permeability of the landscape for species movement. This ecological connectivity should extend out from the NCA and link with adjoining areas, creating a coherent suite of quality habitats.
- Creating a mosaic of semi-natural woodland, grassland and wetland habitats that assimilate disused mineral workings and landfill sites into the landscape, while providing new wildlife havens and recreational space.

**SEO 3: Manage and significantly enhance the quality of the characteristic wetland and water environment of the Greensand. This will contribute to sustainable flood risk management, will benefit the regulation of water quality and water availability, as well as enhancing the sense of place, biodiversity, recreation and wetland habitat adaptation to climate change.**

**For example, by:**

- Restoring, expanding and re-connecting important wetland habitats within flood plains (particularly of the Arun – including Amberley Wildbrooks – the Western Rother, flood plain grazing marsh, wet lowland meadows, reedbeds, lowland fens and wet woodlands of willow and alder), to improve adaptation to climate change, enhance biodiversity and landscape character, while improving water quality and water storage, for the benefit of flood alleviation and aquifer recharge.
- Restoring natural river geomorphology where this is viable and where it is of particular benefit to biodiversity, including to fish populations. Bringing rivers back into continuity with their flood plains, and re-establishing backwaters as a refuge for aquatic species in times of drought. Allowing the seasonal inundation of wetlands and flood plain pastures as part of flood alleviation measures. This reflects the policies of the Catchment Flood Management Plans, as well as being essential to sustaining wetland habitats.
- Creating and maintaining low-input grasslands in river valleys and where this can bring significant benefits for water quality, along with low-input grasslands and wide grass buffer strips on sandy soils that are susceptible to erosion. Locating buffer strips to run across slopes and on either side of watercourses, to intercept sediment and associated nutrients – particularly within the Defra priority catchments of both the East Stour and the Arun and Western Rother, and the valleys of both the Medway and Wey – to aid improvements in water quality. Encouraging good soil management, including increasing organic matter content to enhance the structural condition of the soil, and improving water-holding capacity and water infiltration to aid aquifer recharge.
- Maintaining and restoring the numerous manmade lakes and ponds for the benefit of biodiversity, the landscape, the historic environment and water storage, to reduce runoff and soil erosion.
- Maintaining areas of tranquillity within the river valleys; deeply tranquil areas are still present, particularly in the extensive wetland areas of Amberley Wildbrooks, in the west.
- Ensuring that the ditch systems and wet grasslands (which support a rich ditch flora and attract nationally important populations of winter birds) are appropriately managed to maintain their biodiversity value as core sites.
- Conserving the historic bridges and heritage features of the flood plain landscapes, benefiting the sense of place and history.
- Enhancing the recreational assets of the wetland environment, including its aesthetic qualities, any water-based activities, and walking and cycling routes along the river corridors. This will provide benefits for local communities and tourists as local access networks are maintained and enhanced, while also benefiting health and wellbeing.
- Encouraging sustainable water use – both within and outside the boundaries of the NCA, and across sectors – to protect the sandstone aquifer from over-abstraction and to mitigate the negative impacts of low river flows on biodiversity (particularly on the internationally important wetland and heathland sites), while improving resilience to climate change.



**SEO 4: Plan to deliver a network of integrated, well managed green spaces in existing and developing urban areas, providing social, economic and environmental benefits, and reinforcing landscape character and local distinctiveness – particularly on or alongside the boundaries of the designated landscapes within the Wealden Greensand.**

**For example, by:**

- Where appropriate, creating areas of broadleaved woodland (under coppice management where possible) around towns to provide a buffer to new development. Providing local recreational opportunities that divert pressures from the SPA and SAC designated areas of heath, helping to provide climate change adaptation, flood alleviation, enhanced landscape character and biodiversity benefits.
- Creating enhanced areas of new – and improving any existing – multifunctional natural green space, including community food gardens, orchards, and extensive wetlands that form part of sustainable urban drainage systems. These link into the heart of urban areas and provide sustainable recreational links into the wider countryside as part of green infrastructure planning. They will help to meet Accessible Natural Greenspace Standards (ANGSt), and ensure that developments retain soil functionality, as much as possible and do not have a negative effect on flood risk within the NCA.
- Ensuring that development and its associated infrastructure (including light, noise and air pollution), does not intrude on the rural landscapes or the special qualities of adjacent protected landscapes (the South Downs National Park, the Kent Downs AONB and the Surrey Hills AONB) conserving remaining areas of tranquillity.
- Promoting the use of sustainable and locally sourced materials, vernacular building techniques and styles, and existing landscape character, to inform design and ensure integration with the surrounding landscape.
- Developing a strategic approach to green infrastructure across the NCA and its boundaries, to take account of the existing urban areas and areas of growth. Planning a network of green spaces across the urban areas, urban fringe and adjacent countryside, which can result in multiple benefits for the environment and communities.

## Supporting document 1: Key facts and data

Area of Wealden Greensand  
National Character Area (NCA): 145,783 ha

### 1. Landscape and nature conservation designations

The South Downs National Park falls within the NCA (40,751ha). Surrey Hills Area of Outstanding Natural Beauty (AONB) (24,575 ha) and Kent Downs AONB (15,614 ha) also fall within the NCA, in addition to 21 ha of the Dover – Folkestone Heritage Coast.

More information about the protected landscape can be found at:

- [www.southdowns.gov.uk/](http://www.southdowns.gov.uk/)
- [www.kentdowns.org.uk/](http://www.kentdowns.org.uk/)
- [www.surreyhills.org/](http://www.surreyhills.org/)

Source: Natural England (2011)

#### 1.1 Designated nature conservation sites

The NCA includes the following statutory nature conservation designations:

Tier	Designation	Name	Area (ha)	% of NCA
International	Ramsar	Arun Valley, Thursley and Ockley Bogs	795	1

European	Special Protection Area (SPA)	Wealden Heaths Phase II SPA, Thursley, Hankley and Frensham Commons SPA, Arun Valley SPA	4,454	3
	Special Area of Conservation (SAC)	Thursley, Ash, Pirbright and Chobham SAC, Woolmer Forest SAC, East Hampshire Hangers SAC, Shoreheath Common SAC, Folkestone to Etchinghill Escarpment SAC, Mole Gap to Reigate Escarpment SAC, Rook Clift SAC, The Mens SAC.	3,125	2
National	National Nature Reserve (NNR)	Thursley NNR, Ashford Hangers NNR	413	<1
	Site of Special Scientific Interest (SSSI)	A total of 91 sites wholly or partly within the NCA	9,116	6

Source: Natural England (2011)

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

There are 548 local sites in the Wealden Greensand NCA covering 10,823 ha which is 7 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](http://www.lnr.naturalengland.org.uk/Special/Lnr/Lnr_search.asp)
- Maps showing locations of Statutory sites can be found at: <http://magic.Defra.gov.uk/website/magic/> – select 'Rural Designations Statutory'

### 1.1.1 Condition of designated sites

SSSI condition category	Area (ha)	Percentage of NCA SSSI resource
Unfavourable declining	129	1
Favourable	3,551	39
Unfavourable no change	154	2
Unfavourable recovering	5,301	58

Source: Natural England (March 2011)

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

## 2. Landform, geology and soils

### 2.1 Elevation

The highest point within the Wealden Greensand NCA is 294 m above sea level. The lowest point is 0.20 m below sea level. The greensand ridge is highest in the west, becoming lower with a gentler slope towards the east. Leith Hill in Surrey is a notable high point.

Source: Wealden Greensand Natural Area Profile

### 2.2 Landform and process

The Wealden Greensand NCA follows the outcrop of Upper and Lower Greensand which curves around the western end of the Wealden anticline in West Sussex, east Hampshire and Surrey and forms a conspicuous ridge running west to east across Surrey and Kent terminating in coastal cliffs at Folkestone Warren. Time and the elements have removed overlying strata to leave the well defined concentric outcrops that encircle the Low and High Weald. Surface water is a feature across the Greensand with streams and rivers draining off the dip slope. Late Pleistocene landslips, in particular cambering and gullying, are common along inland escarpments and parts of the coast. Most notable is the Folkestone Warren land slip, where massive chalk has slipped on underlying Gault Clay. Here twelve major landslips have occurred since 1765, the most notable being in 1915 when the coastal railway line was displaced.

Source: Wealden Greensand Natural Area Profile, Wealden Greensand Countryside Character Area description

### 2.3 Bedrock geology

The Wealden Greensand NCA is dominated by Lower Cretaceous marine sediments folding into the Weald Anticline by the subsequent Alpine Orogeny. Weald Clay, non-marine fluvial clay borders the Low Weald NCA. The Lower Greensand Group, initially offshore muds, now shales and mudstones, of the Atherfield Clay were deposited followed by shallow marine sands of the Hythe, Sandgate and Folkestone Beds. The Hythe Beds are alternating layers of sandy limestone and calcareous sandstone ('rag and hassock'). The Folkestone Beds are predominantly made up of sandstone deposited in a strongly tidal near shore environment and Gault Clay and Upper Greensand were deposited in a larger and deeper sea; these rocks are of the same age, with the mudstones of the Gault predominant in the east and the sandstones of the Upper Greensand occurring mainly to the west of Sevenoaks. The Gault contains phosphatic nodules in discrete bands and has a rich marine fauna with abundant ammonites, bivalves and gastropods.

Source: Wealden Greensand Natural Area Profile. British Geological Survey maps

### 2.4 Superficial deposits

Superficial deposits, though limited in extent, typically include river gravels and sediments with associated terraces and windblown silts and sand producing loess filling Late Pleistocene gullies.

Source: Wealden Greensand Natural Area Profile British Geological Survey maps

### 2.5 Designated geological sites

Tier	Designation	Number
National	Geological Site of Special Scientific Interest (SSSI)	14
National	Mixed Interest SSSIs	4
Local	Local Geological Sites	27

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

Soils of the ridges and plateaux are predominantly freely draining slightly acidic droughty sands or coarse loams which are sometimes shallow over soft sandstone or occasionally limestone. There are very acidic sands and loams in the west of the NCA, often associated with heathland habitats, which thrive on these soils. Smaller areas of loamy and clayey soils with impeded or poor drainage occur particularly in the river flood plains and associated with the discontinuous band of lower lying Gault Clay along the outer rim of the NCA.

Source: Wealden Greensand Natural Area Profile

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

Grade	Area (ha)	% of NCA
Grade 1	1,430	1
Grade 2	21,665	15
Grade 3	57,896	40
Grade 4	20,340	14
Grade 5	654	<1
Non-agricultural	33,067	23
Urban	10,598	7

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.

■ Wey	56 km	■ Medway	13 km
■ Rother	30 km	■ East Stour	8 km
■ Great Stour	30 km	■ Slea	5 km
■ Arun	15 km	■ Mole	4 km
■ Len	14 km	■ Royal Military Canal	4 km

Source: Natural England (2010)

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

#### 3.2 Water quality

The total area of Nitrate Vulnerable Zone is 114,922 ha, or 79 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=maptopic&lang=\\_e](http://maps.environment-agency.gov.uk/wiyby/wiybyController?ep=maptopic&lang=_e)

### 4. Trees and woodlands

#### 4.1 Total woodland cover

The NCA contains 36,921 ha of woodland, 25 per cent of the total area, of which 10,561 ha is ancient woodland.

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

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

Ancient woodlands have survived throughout the NCA, though often on the steeper slopes and in fragmented patches. Several different types of woodland occur, from the Wealden edge hangers of Hampshire on the steep chalk and Upper Greensand escarpment, to sessile oak woods on the acid, sandy soils of Surrey, West Sussex and Kent. The heavy Gault Clay tends to support pedunculate oak woods with hazel coppice, while the lime rich Kentish ragstone outcrops, such as the Lympe escarpment, support ash woodland. East Surrey and west Kent have distinctive wooded commons or 'charts', which are often ancient in origin and have been used in the past for quarrying stone. In the river valleys and other wetter areas, alder woodland occurs. All these woodland types have their own characteristic fauna and flora and collectively add to the heavily wooded appearance of the Wealden Greensand landscape. The parkland areas contain ancient trees.

Source: Wealden Greensand Natural Area Profile

#### 4.3 Woodland types

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

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

Woodland type	Area (ha)	% of NCA
Broadleaved	24,943	17
Coniferous	8,647	6
Mixed	1,249	1
Other	2,082	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	7,187	5
Planted Ancient Woodland (PAWS)	3,374	2

Source: Natural England (2004)

## 5. Boundary features and patterns

### 5.1 Boundary features

Field boundaries are often formed by hedgerows with distinct character and species reflecting the soils. On the clay, hedgerows are dense, species rich with occasional standard oaks. On more acidic soils they generally consist of hawthorn and blackthorn, also with occasional oak trees.

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

### 5.2 Field patterns

Most field patterns are the product of ancient enclosure or enclosure by agreement. The small, irregular fields with thick hedgerows and interspersed with small woodlands, characteristic of medieval assarting are dominant in the western part of the area. Medium sized fields, but still having a degree of irregularity, are more common in the valley of the Rother in the south-west and in the central and eastern parts of the area. There is little regular parliamentary type enclosure other than in areas of heathland that were subject to late enclosure.

Source: Countryside Quality Counts Draft Historic profile, 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

From a total of 1,082 in 2009, all livestock farms accounted for 34 per cent of holdings. Arable and horticulture accounted for 27 per cent, of which horticulture represented 12 per cent. Mixed farming accounted for 5 per cent and those classed as 'other types' accounted for 34 per cent. Between 2000 and 2009 the most significant decreases in farm type were horticulture and mixed farms.

Source: Agricultural Census, Defra (2010)

### 6.2 Farm size

Farms between 5 and 20 ha accounted for 35 per cent of the total number at 384 units in 2009, with 205 greater than 100 ha (19 per cent), 209 between 20 and 50 ha (19 per cent), 152 less than 5 ha (14 per cent) and 132 between 50 and 100 ha (12 per cent). The number of farms fell by a hundred between 2000 and 2009, with the greatest loss being those between 20 and 50 ha.

Source: Agricultural Census, Defra (2010)



## 6.3 Farm ownership

2009: Total farm area = 73,706 ha; owned land = 49,104 ha

2000: Total farm area = 73,873 ha; owned land = 49,060 ha

Source: Agricultural Census, Defra (2010)

## 6.4 Land use

Grass and uncropped land represented 52 per cent of the total area in 2009, covering 38,171 ha. Other land uses included cereals covering 21 per cent, (15,438 ha), oilseeds 6 per cent (4,227 ha), other arable crops 6 per cent (4,123 ha) and a small percentage of fruit 2 per cent (1,770 ha).

Source: Agricultural Census, Defra (2010)

## 6.5 Livestock numbers

2009: cattle 28,700, sheep 77,100, pigs 11,000

2000: cattle 39,200, sheep 112,500, pigs 7,600

Source: Agricultural Census, Defra (2010)

## 6.6 Farm labour

2009: salaried managers 214, full time workers 833, part time workers 362, casual/gang 1,474.

2000: salaried managers 243, full time workers 1,330, part time workers 570, casual/gang 2,015.

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

Important semi-natural habitats include lowland heath, extensive ancient woodland, pasture, ponds and wetlands. Lowland heath was once very extensive on the Greensand ridge but today heathland is concentrated in West Sussex (around Midhurst), Hampshire (Woolmer Forest) and western Surrey (Thursley). Many ancient woodlands have survived throughout the NCA. The NCA includes part of several river valleys, notably the Arun, the Rother and the Wey. These support a series of wetland habitats including alluvial grazing meadows with drainage ditches, marshy grassland, reedbeds and wet woodlands. Other habitats include dry acidic grassland which is mostly found in commons, parkland and patches within heathland. There are also unimproved pastures on less acidic soils in Kent. Ponds are another notable habitat, including hammer ponds in Hampshire, West Sussex and Surrey and numerous small farm ponds. The Greensand ridge meets the coast of Kent between Folkestone Warren and Hythe, the undeveloped sea cliffs provide an important geological exposure and habitats.

Source: Wealden Greensand Natural Area Profile

### 7.2 Biodiversity Action Plan (BAP) 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.

Habitat	Area (ha)	% of NCA
Broadleaved mixed and yew woodland (broad habitat)	15,728	11
Fens	2,959	2
Lowland heathland	2,567	2
Coastal and flood plain grazing marsh	1,298	1
Reedbeds	264	<1
Lowland dry acid grassland	212	<1
Lowland meadows	210	<1
Lowland calcareous grassland	144	<1
Purple moor grass and rush pasture	29	<1
Mudflats	21	<1
Maritime cliff and slope	12	<1

Source: Natural England (2011)

### 7.3 Key species and assemblages of species

- Maps showing locations of UK BAP 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

Settlement across the character area is a mixture of both dispersed farmsteads and hamlets and some nucleated villages, often linked by small, deeply sunken lanes. The south-western part of the area remains essentially rural, with smaller market towns, but eastwards from Dorking the character area is considerably more urbanised. The area forms a transport corridor with the M25, M20 and M26 running along and across the area. Improved transport links from the later 19th century led to increased development of this part of the character area as it became a commuter belt. Within the area there are many large houses set in landscaped parks or large gardens.

Source: Countryside Quality Counts draft historic profile, Wealden Greensands Countryside Character Area description; Countryside Quality Counts (2003)

### 8.2 Main settlements

The main settlements within the Wealden Greensand NCA are: Maidstone, Redhill, Dorking, Ashford, Sevenoaks and Reigate. The total estimated population for this NCA (derived from ONS 2001 census data) is: 620,911.

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



### 8.3 Local vernacular and building materials

The use of greensand, ragstone and, in the west, malmstone, a soft creamy coloured stone, give the buildings of the area a distinctive character. In Surrey in particular galleting, the insertion of small pieces of dark carstone in the mortar between the stonework, is characteristic. Timber-framing was also a traditional building form that was largely superseded by brick by the 18th century except for farm buildings where it continued in use into the 19th century. There is a high survival of timber-frame buildings dating from the 15th and 16th centuries including Wealden hall houses. Clay tile roofs are characteristic, as is the use of tile hanging on walls.

Source: Countryside Quality Counts, Draft Historic profile, Wealden Greensands Countryside Character Area description; Countryside Quality Counts (2003)

## 9. Key historic sites and features

### 9.1 Origin of historic features

The history of this landscape is evident in the predominantly irregular-patterned fields and the ancient road network, including winding sunken lanes and Roman roads, as well as tumuli from the Bronze Age near Petersfield and on the higher ground of heathlands in Sussex, Iron-age hillforts at Holmbury, Anstiebury and Oldbury Hill, and Neolithic remains at Abinger. There are numerous large house and designed parklands, including Petworth in Sussex, Knole, Squerries Court and Leeds Castle in Kent. Hammer ponds associated with iron working are also found. A series of historic bridges are found over the River Wey associated with the remnant water meadow system.

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

### 9.2 Designated historic assets

This NCA has the following historic designations:

- 45 Registered Parks and Gardens covering 3,622 ha
- 0 Registered Battlefields
- 283 Scheduled Monuments
- 8,000 Listed Buildings

Source: Natural England (2010)

- More information is available at the following address:

<http://www.english-heritage.org.uk/caring/heritage-at-risk/>

<http://www.english-heritage.org.uk/professional/protection/process/national-heritage-list-for-england/>

## 10. Recreation and access

### 10.1 Public access

- Nine per cent of the NCA, 12,744 ha, is classified as being publically accessible.
- There are 3,315 km of public rights of way at a density of 2.3 km per km<sup>2</sup>.
- There are 2 national trails; North Downs Way 22 km, South Downs Way 23 km).

Sources: 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)	2,787	2
Common Land	6,406	4
Country Parks	474	<1
CROW Access Land (Section 4 and 16)	8,118	6
CROW Section 15	5,387	4
Village Greens	125	<1
Doorstep Greens	0	0
Forestry Commission Walkers Welcome Grants	5,067	3
Local Nature Reserves (LNRs)	808	1
Millennium Greens	3	<1
Accessible National Nature Reserves (NNRs)	434	<1
Agri-environment Scheme Access	91	<1
Woods for People	7,187	5

Sources: Natural England (2011)

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

## 11. Experiential qualities

### 11.1 Tranquillity

Based on the CPRE map of tranquillity (2006) tranquillity is most associated with the intimate rural landscape of the south-west, with only pockets of tranquil areas found in the more developed eastern and central parts of the NCA. The lowest scores for tranquillity are found around Ashford, Maidstone, Sevenoaks, Redhill, at the coast and along main roads (M20, M25).

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

Category of tranquillity	Score
Highest value within NCA	51
Lowest value within NCA	-88
Mean value within NCA	-10

Sources: CPRE (2006)

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

### 11.2 Intrusion

The 2007 Intrusion Map (CPRE) shows the extent to which rural landscapes are 'intruded on' from urban development, noise (primarily traffic noise), and other sources of visual and auditory intrusion. This shows that disturbed areas in the NCA coincide with several major roads, notably the M20, M25 and A3. The NCA skirts south London and in the main has very few undisturbed areas and these tend to be in the south-west of the NCA.

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

Category of intrusion	1960s (%)	1990s (%)	2007 (%)	% change (1960s-2007)
Disturbed	32	59	63	31
Undisturbed	63	36	27	-36
Urban	5	5	10	5

Sources: CPRE (2007)

Notable trends from the 1960s to 2007 are that 27 per cent of the NCA is classified as undisturbed a decline from over 60 per cent in the 1960s. The amount of disturbed land is now equal to the amount of undisturbed land in the 1960s.

- More information is available at the following address:  
<http://www.cpre.org.uk/campaigns/planning/intrusion/our-intrusion-map-explained>



Priory lane at Selborne.

## 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)
- BAP Priority Habitats GIS data, Natural England (March 2011)
- Special Areas of Conservation data, Natural England (data accessed in March 2011)
- Special Protection Areas data, Natural England (data accessed in March 2011)
- Ramsar sites data, Natural England (data accessed in March 2011)
- Sites of Special Scientific Interest, Natural England (data accessed in March 2011)
- Detailed River Network, Environment Agency (2008)
- Source protection zones, Environment Agency (2005)
- Registered Common Land GIS data, Natural England (2004)
- Open Country GIS data, Natural England (2004)
- Public Rights of Way Density, Defra (2011)
- National Trails, Natural England (2006)
- National Tranquillity Mapping data, CPRE (2007)
- Intrusion map data, CPRE (2007)
- Registered Battlefields, English Heritage (2005)
- Record of Scheduled Monuments, English Heritage (2006)
- Registered Parks and Gardens, English Heritage (2006)
- World Heritage Sites, English Heritage (2006)
- Incorporates Historic Landscape Characterisation and work for preliminary Historic Farmstead Character Statements (English Heritage/Countryside Agency 2006)

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



## Supporting document 2: Landscape change

### Recent changes

#### Trees and woodlands

- Countryside Quality Counts research<sup>9</sup> indicated that the coverage of Woodland Grant Scheme for management of established woodland and ancient woodland was considered high, with some attention to restocking and coppice felling with an overall increase in coverage from 24 per cent to 28 per cent between 1999 and 2003.
- Invasive species continue to threaten the woodlands including rhododendron and laurel which thrive on acidic sandy soils within woodlands. Tree diseases more recently identified include *Chalara fraxinea* and *Phytophthora ramorum*.
- Management has tended to concentrate on coniferous rotations in the west rather than traditional management of deciduous woodlands, where much potential is still to be realised.
- The 1987 storm had significant impacts on the more exposed faces of the Greensand, with some major wind blow areas such as those around Leith Hill. These areas have now regenerated.
- In the past some coniferous plantations were reverted to heathland in response to a drive to restore and link degraded heathland habitats. Agri-environment schemes provided the mechanism for some larger scale

heathland restoration in the early years of schemes. However, after initial activity the larger scale reversion of coniferous plantations has generally declined but with some targeted conifer removal still ongoing.

- A steady resurgence in the appreciation for the value of wood as both a carbon lean building material and fuel suggests a steady restoration of active management to many woods within the NCA over the next decade. Greater understanding of the multifunctional values of woodland habitats and sustainable woodland management techniques (as defined by the UK Forestry Standard) is likely to result in a more resilient and integrated landscape character.
- Similarly market opportunities for all forms of biomass are likely to provide economic drivers to help maintain heathland habitats.

#### Boundary features

- The estimated boundary length of this NCA is about 8,769 km. According to Countryside Quality Counts research boundary features were considered neglected during the period 1999 to 2003, with just 4 per cent of the resource covered by an agri-environment scheme. The introduction of Environmental Stewardship in 2005 has led to a significant increase in the length of boundary features under positive environmental management with 860 km, nearly 10 per cent of estimated boundary length, within an Environmental Stewardship Scheme. Despite this, some hedgerows have developed gaps, become overgrown or been lost with corresponding impacts on local landscape character.

<sup>9</sup> Countryside Quality Counts: <http://webarchive.nationalarchives.gov.uk/20101219012433/countryside-quality-counts.org.uk/>



- In some parts of the NCA, particularly in Surrey and west Sussex, horse paddocks and associated fence lines have become more prominent in the urban fringe.
- Sunken tracks are a very distinctive feature in the west of the NCA, often associated with historic boundaries. Increased numbers of vehicles has resulted in the widening of these tracks and in some instances changed the character of what would have been narrow single track roads.

## Agriculture

- Agricultural land comprises a mosaic of mixed farming with pasture and arable land, and with a fruit growing belt in Kent and locally around Selborne in Hampshire.
- Recent data from the Agricultural Census has indicated that between 2000 and 2009 the most significant decreases in farm type were horticulture and mixed farms. Dairy farms have also reduced in number. The Agricultural Census data also indicated livestock farms (52 per cent of total area) were the most prevalent farm type in 2009, these figures are supported by the area classified as grass and uncropped land. The remaining land use was made up of cereals, oilseeds, other arable crops and a small percentage of fruit (2 per cent). It appears as though this balance has been broadly maintained in more recent years.
- The use of land for recreational purposes as opposed to agriculture, particularly in areas close to urban centres has led to deterioration in farmed character in response to increased pressure for more recreational land uses.
- In the last 10 years there have been increased opportunities through agri-environment schemes to integrate a range of conservation measures into the farmed landscape. These have included management of fragments of acid grassland, heathlands, commons and flood plain grasslands.

## Settlement and development

- Countryside Quality Counts research suggested that between 1999 and 2003 development continued to significantly transform the character of some parts of the NCA with most development concentrated in the east, especially between Sevenoaks and Maidstone.
- Degradation of the urban fringe landscape notably in the east and a change in the character associated with small holdings, particularly within parts of the central area of the NCA are notable.
- Enhancement of transport networks has had a significant impact, notably the high speed Channel Tunnel Rail Link and major road networks.
- Pressure for development sites will continue within the NCA, most likely in the central and eastern areas around existing urban centres, but also at Petersfield and Bordon in the west. Bordon has been identified as an eco-town. Eco-towns are intended to achieve sustainable development in conjunction with affordable housing.

## Semi-natural habitat

- Despite efforts to improve the quality of semi-natural habitats across the NCA and the progress that has been achieved through landscape scale projects and agri-environment schemes, much work still needs to be done to strengthen the connectivity and quality of habitats and to reduce further fragmentation in response to the threats to biodiversity from invasive species, climate change and development.
- Fifty-eight per cent of SSSI are in 'unfavourable recovering' condition and 39 per cent are classed as in 'favourable' condition; the ongoing condition of these sites will be dependent on long term management and monitoring.

- Work has been undertaken in recent years to improve the quality of heathland habitats and agri-environment scheme funding has provided a mechanism for this. However, invasion by scrub and bracken on heathlands where there is low grazing pressure continues to be an issue.
- The Hindhead Tunnel, along the A3, was completed in 2011. This has led to landscape and biodiversity benefits. Two large areas of heathland have been linked and woodland creation has occurred on the route of the old road.
- The outputs from the Assessing Regional Habitat Change (ARCH) project should be used for a review of the habitats in Kent and the most recent habitat data and trends. Currently this information is only available for Kent and does not include areas of the NCA that fall into Surrey, Sussex or Hampshire<sup>10</sup>.

## Historic features

- Historic sites within the NCA are identified on the Heritage at Risk Register, with neglect, decay or inappropriate change<sup>11</sup> (8000 listed buildings and 283 scheduled monuments fall within the NCA). However, in the last decade agri-environment schemes have been targeted at these sites and as a result some sites have been successfully removed from the list.
- Historic parkland is a feature of the area and there are 45 registered parks and gardens within the NCA. In 1995 it was estimated that 51 per cent of historic parkland had been lost within the NCA. However, in terms of remaining parkland, CQC research in 2003 indicated that about 35 per

cent was covered by an historic parkland grant and about 34 per cent was included within an agri-environmental scheme. Since the launch of Environmental Stewardship in 2005 parkland options and standard capital items have been targeted at historic features and include the restoration and maintenance of parkland including the restoration of parkland structures such as parkland railing and buildings.

- The Photo Image Project (2006) recorded a high proportion of listed working farm buildings converted to non-agricultural use in this NCA; 56 per cent, the national average being 32 per cent<sup>12</sup>.

## Coast and rivers

- The coastline is undergoing constant change and there has been substantial development along the coastline. Along the frontage groynes have been constructed to retain sand and shingle that would have naturally been carried eastwards. The implementation of various defence schemes and management practices has led to a progressive denudation of sediment along the coastline causing narrowing and steepening of the foreshore. The legacy of the defence structures throughout this frontage means that apart from a small area there is very little natural evolution of the coast as a means of managing the shoreline.
- The ecological status of waterbodies is now monitored under the Water Framework Directive (WFD). River basin management plans cover the rivers and coast of the NCA setting out the main issues and what actions need to be taken to deal with them. This change in approach is driving actions within catchments, including the establishment of catchment partnerships and the move towards a catchment based approach.

<sup>10</sup> For more information on the ARCH project, see: [www.archnature.eu](http://www.archnature.eu)

<sup>11</sup> For more information on the Heritage at Risk register, see: [www.english-heritage.org.uk/caring/heritage-at-risk](http://www.english-heritage.org.uk/caring/heritage-at-risk)

<sup>12</sup> *Draft Farmsteads Character Statement – Wealden Greensand*, English Heritage (2006)

- There are three Catchment Sensitive Farming (CSF) areas within the NCA (Medway and Eden, Stour and the Arun and Western Rother). The aim of CSF is to provide practical solutions and targeted support to enable farmers and land managers to reduce diffuse water pollution from agriculture. Recent change as a result of this initiative is difficult to quantify due to the time lag before observable improvements can be considered statistically significant. However, water quality is monitored across a range of representative catchments and the results confirm reductions in pollutant loads and concentrations resulting from the CSF initiative<sup>13</sup>.

## Minerals

- The underlying geology of the NCA is of economic value and this is compounded by the number of active and disused quarries. There have been proposals for soft sand, crushed rock and silica sand sites within the NCA, within the various County Minerals and Waste Plans.
- Kentish ragstone continues to be quarried, but only at two sites in Kent (both within the NCA) and is an important resource, particularly for restoration of historic buildings. However, at current rates, existing supplies will become exhausted and new reserves may need to be identified.
- Where well managed, quarries, during and after their use, can be important ecological and geological sites.

<sup>13</sup> <http://www.naturalengland.org.uk/ourwork/farming/csf/evaluation.aspx>

<sup>14</sup> For more information on Natural England's Character Area Climate Change Project, see [www.naturalengland.org.uk/ourwork/climateandenergy/climatechange/adaptation/naturalengland.aspx](http://www.naturalengland.org.uk/ourwork/climateandenergy/climatechange/adaptation/naturalengland.aspx)

## Drivers of change

### Climate change

Potential impacts include:

- Change in woodland composition as a result of hotter, drier summers and new tree diseases, with competition from invasive species and notably loss of beech as a result of dieback due to soil moisture stress and wind blow due to increased storminess<sup>14</sup> – this has significant implications for the internationally important East Hampshire Hangers SAC in the west.
- Effects of hotter, drier summers on remnant areas of lowland heath, including changes in community composition, with a potential increase in perennial grasses, and birch at the expense of heather, potential reduced growth during summer months, and increased risk of wild fires as a result of increased temperatures.
- There may be a deterioration in wetland habitats due to summer drought, affecting wet woodland, fens, reedbeds, grazing marsh and wet meadows.
- If winters become wetter and summers drier, this could result in flooding and drought, potentially impacting on the flow regimes of the area's watercourses.
- Effects on orchards, including potential tree or crop loss due to drought stress, waterlogged soils and wind throw.
- Accelerated erosion of coastal cliffs.
- Longer growing seasons and different crop timings could result in the introduction of novel crops with appearance of species and crops adapted to new climatic conditions, with a longer growing season potentially leading to double cropping.

- Flood risk is likely to increase as climate change increases the magnitude and frequency of flood events.
- Pressure upon the water supply due to summer drought exacerbated by increased demand for abstraction.
- Changes in climate may result in species movements including the return of native species, expansion in the range of some species from continental Europe and some northward migration of indigenous species.

## Other key drivers

- Development pressures offer a challenge but where permitted it will be important to maximise opportunities for landscape and ecological enhancements through delivery of priority habitats and greenspace. Well planned green infrastructure within and reaching out from urban areas can help mitigate climate change and provide other environmental, economic and societal benefits.
- Increased development may cause associated urban fringe and suburban pressures including recreational activities on sensitive and vulnerable sites and habitats. An integrated approach to recreation management will be required especially to mitigate threats to key biodiversity sites including European sites. In addition, increased pressure for recreational facilities such as golf courses and horse riding centres, while servicing demand may impact on the rural character of the landscape particularly, in the west.

- New housing may place additional demands on water resources of the NCA, particularly the aquifers. If not managed appropriately this could significantly affect the natural springs, wet marshes and heathland habitats with knock on effects for protected sites and species.
- There is likely to be continued demand for sand, sandstone and ragstone, this may result in applications for new quarries. Opportunities for restoration of disused quarries should be sought, to maximise their geological, environmental and amenity potential. There may also be a drive to safeguard the mineral resource of the NCA, protecting supplies for future generations.
- New export markets, changing climate and increased pressure for food production in the future, as a result of a national drive for greater self-sufficiency in food is likely to have an effect on existing agricultural practices and land use.
- A requirement for increasing renewable energy generation could result in pressure for wind farm developments and increased pressure for the growth of biomass crops (Defra's maps show predominantly high potential miscanthus yields and medium potential SRC yields throughout the area).
- Delivery of flood risk management options as set out in the Rother, Wey, Mole, Arun, Stour and Medway catchment flood management plans should help to reduce flood risk.
- Working at a landscape scale can help to establish a coherent and resilient ecological network, capable of adapting to environmental change and halting losses in biodiversity. Increasing focus on connectivity and resilience



is likely to inform landscape scale projects throughout the NCA and could be used to drive improvements in quality and extent of semi-natural habitats.

- There is likely to be sustained pressure from tourism, especially to the protected landscapes of the South Downs National Park, Surrey Hills AONB and Kent Downs AONB. There will need to be a balance between maximising income from tourism and protecting the natural assets of the NCA.
- Future water resource issues are likely to have an impact on the NCA. The Greensand aquifer is an important source of water and is likely to come under increasing pressure. It will be important to work in partnership and across sectors to help safeguard the water resources. Implementation of the Water Framework Directive should improve the ecological status or potential of the NCA's rivers and quality of groundwater.
- The economics of woodland and heathland management, including the establishment of markets for wood fuel, high quality timber and heathland products is likely to be critical for securing the longer term sustainable management of the woodland and heathland resource.
- The Ministry of Defence are key landowners within the NCA and there may be increasing pressure to make use of the military training estate. This could have implications for habitats, tranquillity and public accessibility.



Ashford Hangers National Nature Reserve.



## 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.



Silver-studded blue butterfly.

Statement of Environmental Opportunity	Ecosystem Service																
	Food provision	Timber provision	Water availability	Genetic diversity	Biomass provision	Climate regulation	Regulating water quality	Regulating water flow	Regulating soil quality	Regulating soil erosion	Pollination	Pest regulation	Regulating coastal erosion	Sense of place/inspiration	Sense of history	Tranquility	Recreation
<b>SEO 1:</b> Protect and manage the nationally recognised and distinctive character of the landscape, conserving and enhancing historic landscape character, tranquillity, sense of place, and the rich historical and geological heritage of the Wealden Greensand. Enhance access provision where appropriate, to maintain public benefit from enjoyment of the area.	○	↗ *	↗ *	↔ *	↗ *	○	↔ *	↔ *	↔ *	↔ *	↔ *	○	↗ *	↑ ***	↑ ***	↑ **	↑ ***
<b>SEO 2:</b> Protect, manage and significantly enhance the mosaic and connectivity of semi-natural habitats within the mixed farmed landscape - particularly the internationally important woodland and heathland habitats - for the benefit of biodiversity, pollination, soil and water regulation, landscape character and enhanced adaptation to climate change.	○	↑ **	↗ *	↗ *	↗ **	↗ *	↗ **	↗ **	↗ **	↗ ***	↗ *	↗ *	↔ **	↑ *	↑ *	↑ *	↗ *

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

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

Statement of Environmental Opportunity	Ecosystem Service																			
	Food provision	Timber provision	Water availability	Genetic diversity	Biomass provision	Climate regulation	Regulating water quality	Regulating water flow	Regulating soil quality	Regulating soil erosion	Pollination	Pest regulation	Regulating coastal erosion	Sense of place/inspiration	Sense of history	Tranquility	Recreation	Biodiversity	Geodiversity	
SEO 3: Manage and significantly enhance the quality of the characteristic wetland and water environment of the Greensand. This will contribute to sustainable flood risk management, will benefit the regulation of water quality and water availability, as well as enhancing the sense of place, biodiversity, recreation and wetland habitat adaptation to climate change.	○	↔ ***	↑ **	↔ *	↔ *	↗ **	↑ **	↑ **	↔ *	↗ **	○ ***	○ ***	↔ *	↗ **	↗ *	↗ *	↗ *	↑ **	↔ *	
SEO 4: Plan to deliver a network of integrated, well managed green spaces in existing and developing urban areas, providing social, economic and environmental benefits, and reinforcing landscape character and local distinctiveness, - particularly on or alongside the boundaries of the designated landscapes within the Wealden Greensand.	↔ *	↗ *	↔ *	↗ *	↗ *	↔ *	↗ *	↗ *	↔ *	↔ *	↔ *	↔ *	↔ *	↗ *	↗ *	↔ *	↗ **	↗ *	↔ *	

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

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

Landscape attribute	Justification for selection
A long, narrow belt of Greensand typified by scarp/dip slope topography, with dissecting river valleys.	<ul style="list-style-type: none"> <li>The Greensand ridge is a conspicuous feature running west-east across the south-east and defines the NCA. The highest point in Surrey is found at Leith Hill.</li> <li>Long-reaching views are afforded over the adjacent Low Weald, South Downs and London from the prominent scarp summits.</li> <li>The topography contributes to the intimate character of the landscape, particularly in the west.</li> </ul>
A complex geology of Upper Greensand, Gault Clay and Lower Greensand, including geological exposures in quarries.	<ul style="list-style-type: none"> <li>The complex geology contributes to the diversity of landscape character and land use.</li> <li>Important geological exposures dominated by the Lower Greensand, including undeveloped sea cliffs between Folkestone Warren and Hythe, plus inland exposures of Upper Greensand in Hampshire and west Sussex and the ragstone exposures of the Lympe Escarpment in Kent, all supporting important wildlife communities including diverse moss and liverwort flora.</li> <li>Quarries are occasionally striking elements in the landscape, providing geological exposures to facilitate further understanding of the Greensand ridge and our understanding of past climate change. The economic value of the underlying geology is evident in the large number of quarries across the NCA.</li> <li>Geological exposures within quarries are also important as hibernation sites for bats, including Natterer's, Daubenton's and brown long eared bats.</li> <li>Well planned restoration of former extraction sites and appropriate management of existing sites provides an opportunity for positive landscape and environmental change.</li> </ul>
Extensive belts of ancient mixed woodland of hazel, oak, beech and birch and chestnut coppice reflecting the diverse geology, surviving mainly on river valley floors and steep scarp slopes, including areas of international importance.	<ul style="list-style-type: none"> <li>East Hampshire Hangers SAC are highly distinctive localised landscape features and internationally important for wildlife; these cloak the steep chalk and upper Greensand escarpment in Hampshire and support yew and beech woodland of international importance.</li> <li>East Surrey and west Kent have distinctive wooded commons or charts, many of them ancient.</li> <li>Many ancient woodlands have suffered from inappropriate management, including planting with conifers.</li> <li>Many of the NCAs woodlands are important for their assemblages of vascular plants, birds, invertebrates and bryophytes, as well as supporting ground flora species which are indicative of ancient woodland.</li> <li>Conifer woodlands, including large commercial estates are also a strong element of the landscape, with extracted timber used locally for building timber and fence posts.</li> </ul>

Landscape attribute	Justification for selection
Remnant lowland heathland mostly concentrated in west Sussex, Hampshire and west Surrey. Heathland habitats include dry and wet heath, acid grassland, scrub, woodland, bog and open water.	<ul style="list-style-type: none"> <li>■ Heathland is a visually prominent feature of the Greensand, contrasting with other land uses and bringing a diversity of colour, textures and sounds to the NCA.</li> <li>■ Lowland heathland was once extensive across the ridge but there has been a dramatic decline in habitat over the past century, with much former heath now covered by secondary woodland. Remaining areas are mostly concentrated in west Sussex, Hampshire and west Surrey, although Hothfield Heathlands contain Kent's last valley bogs and one of its few remaining fragments of open heath. Heathland is now a nationally and internationally rare and threatened habitat.</li> <li>■ Heathland developed on sandy and acidic soils which were maintained as open and grazed landscapes since at least the Bronze Age, when much of the original woodland cover was cleared by early man for agriculture, and are part of the NCAs cultural heritage.</li> <li>■ Internationally important areas still survive displaying the full range of habitats, including over 2,500 ha with SAC designation and over 3,000 ha with SPA designation. Woolmer Forest is noted as containing the largest diverse area of lowland heathland in Hampshire outside of the New Forest.</li> <li>■ Open heathland commons continue to be compromised by encroaching birch, oak and pine scrub, due to a decline in traditional management regimes.</li> <li>■ Heathland supports a number of rare species, including birds such as the Dartford warbler, nightjar, stonechat and woodlark. They also support, amphibians and reptiles including, adder and common lizard, and butterflies such as the silver studded blue, small copper and green hairstreaks. Spiders and their webs also adorn the heathland habitats including the bog raft spider.</li> </ul>
Coastal habitats and sea cliffs.	<ul style="list-style-type: none"> <li>■ The Greensand ridge meets the coast of Kent between Folkestone Warren and Hythe. While most of the coastal strip is now built up, the undeveloped sea cliffs provide an important geological exposure. They support some scrub and acid grassland habitats and are extremely important for insect fauna.</li> <li>■ Part of the coastline falls into the Dover-Folkestone Heritage Coast.</li> <li>■ The coastline will continue to be affected by sea level rise, with coastal squeeze an issue along the defended coastline.</li> </ul>



Landscape attribute	Justification for selection
The area's rivers and streams and their associated wetland habitats, including the Arun/Western Rother, the Wey, Mole, the Medway and Stour. Ponds and lakes are also a feature found throughout.	<ul style="list-style-type: none"> <li>■ Surface water is an important feature on the Greensand, with rivers and streams draining off the dip slope.</li> <li>■ Wetland habitats, most notably associated with the rivers Arun, Western Rother and Wey, include alluvial grazing meadows with drainage ditches, marshy grassland, reedbeds and wet woodland of high biodiversity value. Otters have recently been recorded on the river Wey.</li> <li>■ The special and evocative species, such as the Bewick's swan and ruff, ramshorn snail, wetland invertebrates and nationally rare and nationally scarce plant species found within the Arun Valley are recognised as being of international importance protected by SAC, SPA and Ramsar designations.</li> <li>■ Flood plain grasslands, marshes, ponds and lakes support a number of species including, cut grass, true fox sedge and marsh stitchwort.</li> <li>■ Large parts of the fertile river flood plains have been agriculturally improved and drained which has resulted in a general degradation of major river flood plain landscapes.</li> <li>■ Ponds and lakes are a characteristic feature, including hammer ponds in Hampshire, west Sussex and Surrey associated with the early iron industry, acid pools and ponds derived from peat cutting on heathlands, manmade lakes in parklands and numerous small farm ponds particularly on the Gault Clay. Many of these waterbodies are rich in wildlife habitats and important for plants and inverts.</li> <li>■ The rivers are important for recreation, providing opportunities for walking and angling as well as some water based activities including boating and canoeing. The Wey and Medway navigations are not only important for recreation and tourism but they also provide important links to the local industrial heritage.</li> <li>■ The River Wey has a remnant water meadow system with associated historic bridges, now designated as scheduled monuments.</li> </ul>
Unimproved acid grasslands found in commons, parkland, and as patches within heathland and golf courses, plus other unimproved areas of pasture and occasional areas of acid bog.	<ul style="list-style-type: none"> <li>■ The band of Gault Clay at the foot of the North Downs in Kent would once have supported a large number of small, unimproved pastures on less acidic soils, a few of which remain at sites, such as Trottiscliffe Meadows SSSI.</li> <li>■ Most of the acid grasslands are found in commons, parklands, patches within heathland and along road verges. There has been a loss of unimproved grasslands where agricultural improvement has taken place.</li> <li>■ Unimproved grasslands are scarce and fragmented.</li> </ul>

Landscape attribute	Justification for selection
Irregular field patterns predominate, with small fields dominant in the west and medium-sized fields more common in the Rother Valley and central and eastern parts; hedgerows and shaws form characteristic boundaries.	<ul style="list-style-type: none"> <li>■ Irregular field patterns are characteristic of the NCA and reflect historical enclosure.</li> <li>■ On the Gault Clay, hedgerows are species-rich with occasional oak trees. Hedgerows on acidic soils have fewer species and are sometimes gappy, with urban fringe pressures contributing to their decline;</li> <li>■ Boundary features in the form of shaws and hedgerows are important as wildlife refuges and corridors within the farmed landscape, supporting wildlife such as dormice.</li> </ul>
Agricultural land comprises a mosaic of mixed farming, with pasture and arable land, set within a wooded framework, with a fruit growing orchard belt persisting in Kent.	<ul style="list-style-type: none"> <li>■ The diversity of agriculture reflects the underlying geology and contributes to the NCA's character.</li> <li>■ Distinctive hop fields and orchards were once a familiar feature along the Greensand but have been extensively replaced by arable production. Many orchards and plats have been grubbed out and replaced by arable fields or more intensive types of fruit production.</li> <li>■ There are a cluster of cobnut plats, particularly around Plaxtol in Kent. These are valued for their historical, cultural, wildlife and landscape value, and are thought to include one of the largest single blocks of old cobnut plat remaining in the UK. The last functioning hop garden in Surrey is found in the Wealden Greensand NCA.</li> <li>■ Arable land provides foraging and overwintering sites for a range of farmland bird species.</li> </ul>
Rural settlement pattern is a mixture of both dispersed farmsteads and hamlets and some nucleated villages. Historic buildings including oast houses and timber-frame buildings dating from the 15th and 16th centuries. Distinctive sunken lanes cut into the sandstone connecting farmsteads and settlements.	<ul style="list-style-type: none"> <li>■ Modern development now dominates the eastern half of the NCA, while the south-west still remains essentially rural.</li> <li>■ Oast houses are a highly characteristic farm building type (associated with the hop industry), especially in the north and west Kent but are also found in the Hampshire, part of the NCA. Oasts are rare in the southern part of the area. Most Kentish examples date from the late 18th and 19th centuries, although there are some examples of older oast houses built within earlier barns. The majority of Hampshire oasts are of late 19th century date. Only a small number of unconverted oast houses survive. Farmsteads that retain unconverted oast houses, early to mid-20th century hop buildings and features such as hop-pickers huts are highly significant.</li> <li>■ Sunken lanes are historic and characteristic features of the landscape but are at risk from road improvements leading to the erosion of the enclosed and winding character of the local road network. As well as being of historic interest they are important for exposures of the underlying bedrock geology and biodiversity, often home to ancient trees.</li> </ul>

Landscape attribute	Justification for selection
Local vernacular including the use of Greensand, ragstone and, in the west, malmstone, bargate stone, plus dark carrstone patterned in the mortar between stones ('galleting') in Surrey, and timber-framing and weatherboarding.	<ul style="list-style-type: none"> <li>The use of local sandstone reflects the underlying geology. In the west, Malmstone, a soft creamy coloured Greensand has historically been widely used and harder, darker ragstone is still used in the central and eastern parts of the character area. The use of stone gives the buildings of the area a distinctive character, especially when entering the area from the west, where across most of Hampshire there is no local building stone.</li> <li>There is no direct alternative for Malmstone, and no local quarries in operation to provide material for repairs.</li> </ul>
Numerous historic parklands, including Petworth in Sussex, Knole, Squerries Court and Leeds Castle in Kent.	<ul style="list-style-type: none"> <li>Many parklands contain distinctive ancient pollards, which provide important wildlife habitats, along with unimproved grassland. Acid grassland within parklands is also important, where it remains unimproved it is maintained by light grazing.</li> <li>Lack of appropriate management can be an issue, and a number of parklands are in need of ongoing restoration. The ancient pollard trees need to be re-cut to prevent them becoming top-heavy and appropriate replacements planted. Where traditional management has declined, the habitats that these parklands sustained have become fragmented.</li> <li>Fungi and lichens often abound in old parkland both on below and among the veteran trees.</li> </ul>
Other historic features including Palaeolithic remains, bronze-age barrows and iron-age hillforts on the scarp tops, plus small quarries, military remains, Abbeys, castles, historic bridges over the River Wey and relics of the iron industry including hammer ponds and the former royal hunting forest at Woolmer.	<ul style="list-style-type: none"> <li>A number of historic features including 283 scheduled monuments.</li> <li>Prehistoric scarp-top features are closely associated with the Pilgrim's Way, which runs in parallel along the adjacent North Downs;</li> <li>Bronze-age barrows provide a link to a prehistoric ritual landscape.</li> <li>Hammer ponds, notably in the west, provide important wildlife habitats and links to the NCA's industrial past and geodiversity.</li> <li>A series of historic bridges over the River Wey are designated as scheduled ancient monuments are of great historic significance.</li> <li>Military features associated with the coast are notable in the east and include the Royal Military Canal.</li> <li>The monastery at Waverley Abbey was the first Cistercian house to be established in Britain.</li> <li>Historic features provide opportunities for education and research and are important links to our cultural heritage.</li> <li>Woolmer Forest has important historic associations. Formerly a royal hunting forest, it also has associations with military history. Both these aspects of history are important locally and also in land management decisions.</li> </ul>

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Remaining pockets of tranquillity, especially in the south-west.	<ul style="list-style-type: none"> <li>■ 27 per cent of the NCA classified as undisturbed according to CPRE data.</li> <li>■ The south-west of the NCA retains a distinctive tranquil character. Remaining pockets of tranquillity in the centre and east are particularly valuable given the extent of surrounding development.</li> </ul>
Recreation supported by 3,315 km of public rights of way, with over 6,700 ha of open access land, representing over 4.5 per cent of the NCA.	<ul style="list-style-type: none"> <li>■ Recreation links connect with the adjacent North Downs and South Downs national trails, while the south-west forms part of the South Downs National Park.</li> <li>■ The Surrey Greensand is particularly important for recreation given its proximity to London.</li> <li>■ Recreational pressures may increase as a result of new housing development. This may have important implications for the more sensitive habitats, particularly heathlands which are vulnerable to disturbance.</li> </ul>

## Landscape opportunities

- Protect and enhance the intimate rural character of the south-west and remaining areas of tranquillity throughout the NCA, especially within the protected landscapes, including the rural settlement pattern of dispersed farmsteads and hamlets and some nucleated villages and the distinctive sunken lane network.
- Protect, conserve, and enhance the historic and geological environments, including a) through the restoration of historic parklands, with re-introduction of pollard management to conserve wildlife rich veteran trees where appropriate, b) conservation of geological exposures further benefiting wildlife communities and exposures at the coast c) conservation and appropriate restoration of historic buildings including oast houses and timber framed barns d) maintenance of other historic features such as hammer ponds and prehistoric monuments along the scarp.
- Manage and significantly enhance the variety of ancient and broadleaved woodland throughout the NCA which reflects the underlying geology, expanding and re-linking woodland blocks where appropriate. Reintroduce active coppice management and pollarding where this will enhance wildlife interest and enhance adaptation to climate change. Managing woodlands may also provide a source of local fuel and timber products. Where woodlands form part of the mixed farm mosaic support landowners in integrating woodland management into their farm business.
- Manage and enhance the wetland habitats associated with the area's rivers, notably the Arun, Rother and Wey, including alluvial grazing meadows with drainage ditches, marshy grassland, reedbeds and wet woodland, expanding and reconnecting habitats to enhance landscape, biodiversity and habitat adaptation to climate change.
- Manage and enhance the agricultural landscape through the restoration of hedgerow boundaries, especially where they will reinforce historic field patterns and enhance landscape character in peri-urban areas, while reinforcing the wildlife network. In addition, seek to integrate environmentally beneficial land management into the farmed landscape which will benefit pollinators and help strengthen the network of habitats. Where remaining, support the restoration and continued management of traditional orchards for their contribution to sense of place, sense of history and genetic diversity.
- Plan for a landscape-scale approach to the sustainable management of the area's lowland heathlands. Expanding, improving, connecting and buffering heaths, where feasible, while reconnecting and engaging communities with their local heathlands. The management of heathlands will need to maintain both the ecology associated with lowland heathlands while providing for the needs of local communities and visitors.
- Enhance the area's acid grasslands and other unimproved pastures that occur among the heathlands (as well as in parkland and commons), to significantly enhance landscape as well as habitat adaptation to climate change and to improve the overall network of habitats.

**Continued on next page...**



## Landscape opportunities continued...

- Plan for the creation of new landscapes especially within the eastern half of the NCA, including areas of sustainably managed broadleaved woodland, to help assimilate existing and disused mineral workings and landfill sites into the landscape, and provide a robust landscape framework for new and existing development, significantly enhancing landscape character and strengthening the wildlife network and adaptation to climate change.
- Improve physical and mental health, through contact with inspirational landscapes, and to help boost rural businesses. Preserving and improving routes, including at the coast. Increase the number of connecting permanent and permissive routes to link with the North Downs and South Downs national trails, high profile greenspaces and tourist attractions. Where appropriate, upgrade paths to increase capacity for horses and cyclists and provide new sustainable routes along the river valleys. Recognise and manage the impacts of access on sensitive sites, where recreational pressures threaten their ecological integrity and avoid enhanced access provision where it may have a detrimental impact on key biodiversity sites.
- Work with the protected landscape partnerships of the Kent Downs AONB, Surrey Hills AONB and the South Downs National Park to help meet the ambitions of their management plans to conserve and enhance the outstanding scenic and natural beauty of the area.
- Conserve and protect the quality and quantity of surface waters and the sandstone aquifer through partnership working at the catchment scale, supporting existing catchment initiatives and encouraging the implementation of land management practices to improve the quality of water and help meet the objectives of the Water Framework Directive.
- Plan for landscape scale projects which enhance habitat connectivity in the peri-urban, urban and rural environments, taking account of the urban fringe pressures and the opportunities for well planned and managed green infrastructure to deliver societal, economic and environmental benefits in and around urban areas, where development is allocated and permitted.
- Plan and manage for the effects of coastal change by allowing the operation of natural coastal processes where possible, and improving the sustainability of current management practices.

## Ecosystem service analysis

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

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

Service	Assets/ attributes: main contributors to service	State	Main beneficiary	Analysis	Opportunities	Principal services offered by opportunities
<b>Food provision</b>	Livestock production  Cereal production  Fertile and versatile soils  Fruit growing area with orchards and cobnut plats	An area of mixed farming that produces significant amounts of cereals and other arable crops, livestock including sheep, pigs and cattle, and notably fruit growing and other horticultural crops.  Hop production was once extensive in this NCA, but has declined to almost nothing.  Commercial fruit growing has replaced the more traditional orchards and is notable in the central area of the belt. The NCA is a stronghold for cobnut production in England, with the two remaining cobnut plats in Kent found within the NCA.  <b>Continued on next page...</b>	National	Agricultural change will be driven by changes in the market which will be influenced by factors such as climate change and population growth.  Commercial fruit growing is likely to use new growing techniques which may impact on landscape character, but result in greater productivity. These changes are likely to be driven by the need to protect fruit from adverse weather as a result of climate changes, and to limit the risks of pests and diseases. The fruit growing belt makes an important contribution to sense of place and is an important component of the mixed farmed landscape.  Climate change may provide opportunities for new crop types.	Work with landowners to support the long tradition of a productive mixed farmed landscape, promoting land management interventions which will help safeguard future yields and protect the water and soils of the area.  Identify opportunities for local produce initiatives, especially where it provides links between food provision, landscape character and biodiversity.	<b>Food provision</b>  <b>Water availability</b>  <b>Genetic diversity</b>  <b>Regulating soil erosion</b>  <b>Regulating soil quality</b>  <b>Regulating water quality</b>  <b>Sense of place / inspiration</b>

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Food provision cont.		<p>... continued from previous page</p> <p>Changes in horticultural production methods have resulted in increased use of polytunnels.</p>		<p>Development pressures may lead to the loss of some agricultural land, particularly in peri-urban areas. It will be important to safeguard high quality agricultural land to maintain food security.</p>	<p>Protect and promote the remaining cobnut plats and remaining traditional orchards, for their contribution to sense of place, sense of history and genetic diversity.</p> <p>For new crops, these should be sensitively integrated into the landscape and care taken to avoid adverse impacts on other services.</p>	

Service	Assets/ attributes: main contributors to service	State	Main beneficiary	Analysis	Opportunities	Principal services offered by opportunities
<b>Timber provision</b>	<p>Conifer plantations account for 6 per cent of the NCA, 8,647 ha</p> <p>Broadleaved woodlands account for 17 per cent of the NCA, 24,943 ha</p>	<p>The woodland resource of the NCA is of national significance and the Greensand has some of the highest densities of ancient woodland in England. Timber is supplied mainly from commercial coniferous plantations on larger estates. These tend to be mostly dominated by Douglas fir with the woodland products used locally.</p> <p>Extraction can be challenging in parts of the NCA where broadleaved woodlands are on the steeper slopes or wetter ground of the western part of the NCA. Commercial extraction in these instances is unlikely to be economic.</p>	Local	<p>There would need to be a market driver for any significant expansion in timber production outside of the existing commercial plantations.</p> <p>Unmanaged woodlands could be brought under management and used as a source of high quality hardwood timber where the topography and environmental sensitivity are not limiting factors for extraction. This would depend on the demand and markets for locally sourced hardwood.</p> <p>Extracting softwoods from PAWS (planted ancient woodland) will provide one-off supply of timber from a few sites.</p>	<p>There is an opportunity to improve management of the existing woodland resource to extract timber which could have multiple benefits including, carbon sequestration as a result of regeneration and improving biodiversity.</p> <p>This would require the support and promotion of new and existing markets for local wood products to encourage sustainable and viable woodland management.</p> <p>There is an opportunity to extend woodland cover and management for timber, particularly where this will bring multiple benefits, such as enhancing landscape character, regulating climate, flooding and soil erosion.</p>	<p><b>Timber provision</b></p> <p><b>Biomass energy</b></p> <p><b>Climate regulation</b></p> <p><b>Regulating soil erosion</b></p> <p><b>Regulating soil quality</b></p> <p><b>Regulating water flow</b></p> <p><b>Sense of place / inspiration</b></p> <p><b>Biodiversity</b></p>

Service	Assets/ attributes: main contributors to service	State	Main beneficiary	Analysis	Opportunities	Principal services offered by opportunities
<b>Water availability</b>	<p>The majority of the area overlies post carboniferous rock – a sandstone aquifer, with a small area in the west overlying a chalk aquifer.</p> <p>Rivers and water courses</p>	<p>Availability of water is a problem throughout the entire area. Current quantitative assessment for the Lower Greensand aquifer indicates poor availability<sup>15</sup>.</p> <p>In terms of surface water most of the central and eastern parts of the NCA are classed as over licensed or over abstracted, in the west a fairly large area has no water available for further abstraction at low flows and in the south-west areas are classed as over-licensed or over –abstracted. For more information see the relevant Catchment Abstraction Management Strategies<sup>16</sup>.</p>	Regional	<p>Water availability in surface waters and the aquifer are under pressure from existing abstractions for public water supply and use in industry and agriculture. In many cases existing licences allow for more than is currently taken which could be of concern in the future.</p> <p>Water availability and resource issues are likely to be exacerbated by future development in the area and increasing demands, with climate change impacts potentially creating an additional stress on resources. There will need to be a balance between meeting these demands and protecting both surface and groundwater resources.</p> <p><b>Continued on next page...</b></p>	<p>Work in partnership and across sectors to protect the wetland sites, particularly those that are nationally and internationally designated, including wet heath and grasslands by ensuring that water levels are sufficient to meet the habitat and species requirements, avoiding unsustainable abstraction.</p> <p>Promote efficient water use to help address the challenges of meeting existing and future water demands, taking into account the likely impacts of climate change and increasing awareness and education on water resource issues. Use methods such as, water harvesting and sustainable drainage systems to help drive efficiency improvements in existing and new developments.</p> <p>Maximise the opportunities for water harvesting and storage from farm holdings, especially from new polytunnel schemes.</p>	<p><b>Water availability</b></p> <p><b>Biodiversity</b></p> <p><b>Regulating water quality</b></p> <p><b>Regulating water flow</b></p> <p><b>Sense of place / inspiration</b></p> <p><b>Food provision</b></p>

<sup>15</sup> Thames River Basin Management Plans, Environment Agency (2009), South East River Basin Management Plan, Environment Agency (2009)

<sup>16</sup> Arun and Western streams, abstraction licensing strategy, Environment Agency (2013) Wey Catchment abstraction licensing strategy, Environment Agency (2012) Mole abstraction licensing strategy, Environment Agency (2013) Medway abstraction licensing strategy, Environment Agency (2013) Stour abstraction licensing strategy, Environment Agency (2013)



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Water availability cont.				<p>... continued from previous page</p> <p>The aquifer has an important role in maintaining spring and baseflows of rivers, any low flows as a result of abstraction directly from surface water or the aquifer will potentially damage the ecology of rivers and wetlands. In particular the Lower Greensand aquifer provides baseflow to the internationally important wildlife sites of the Arun Valley SPA, SAC and Ramsar.</p> <p>The Wey catchment contains internationally important heathland sites which support water dependent habitats, such as wet mire, wet heath and bog. The ecology of these habitats is susceptible to changes in water availability. This is also the case in the Mole catchment. Although only a relatively small stretch is within the NCA, the water dependent habitats at Reigate Heath SSSI have suffered due to hydrological changes.</p>		

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Service	Assets/ attributes: main contributors to service	State	Main beneficiary	Analysis	Opportunities	Principal services offered by opportunities
<b>Genetic diversity</b>	Orchards	This NCA makes an important contribution as a major fruit growing area and remaining traditional orchards, while few in number contain locally distinctive varieties such as the Kentish cobnut.	Regional	<p>Genetic diversity of orchard fruit varieties are important to maintain and safeguard food provision and afford increased resilience to climate change and disease.</p> <p>Orchards are important for their heritage, landscape character and local distinctiveness value.</p> <p>It is important to use the traditional orchard resource for education on the history of fruit growing, its heritage value and how the industry has evolved into the fruit growing areas evident today.</p>	<p>Protecting and appropriately managing remaining areas of traditional orchards, recognising their role in genetic diversity and fostering local community engagement in promotion of local products.</p> <p>Consider opportunities for orchard restoration or creation alongside any new developments, especially where this would provide links between landscape character, local food provision, genetic diversity and sense of place and history.</p>	<p><b>Genetic diversity</b></p> <p><b>Sense of place / inspiration</b></p> <p><b>Sense of history</b></p>

Service	Assets/ attributes: main contributors to service	State	Main beneficiary	Analysis	Opportunities	Principal services offered by opportunities
<b>Biomass energy</b>	Woodland – ancient mixed woodland and coniferous plantations	<p>The existing woodland cover (25 per cent of the NCA, 36,921 ha) offers significant potential for the provision of biomass through bringing unmanaged woodland under management.</p> <p>The NCA has been identified as having a high potential yield for miscanthus, while short rotation coppice (SRC) is generally medium, with central areas around Redhill and Reigate, where lighter loams occur, identified as being more suitable. While the potential has been identified as high and medium, these biomass crops do not form part of the current landscape character and any location of biomass crops would need to be very carefully considered for landscape impacts.</p>	Regional	<p>Existing woodland offers potential for biomass. Improved management of woodlands for wood fuel could have multiple benefits including biodiversity gains; however the feasibility of this will be dependent upon the economics and market drivers.</p> <p>In response to climate change, there may be increasing demand for biomass crops. While the NCA has been identified as having a high potential yield for miscanthus and medium potential for SRC where lighter loams occur, any biomass plantings would need to be carefully sited to ensure no adverse impacts on the character of the landscape or other services.</p>	<p>Support existing and establish new markets to encourage the use of woodlands for local biomass. Restoration of coppice management to appropriate areas of woodland will improve biodiversity and provide a local source of wood fuel with potential benefits for climate regulation.</p> <p>Where appropriate consider other sources of biomass, taking into account landscape character, water availability and other services.</p>	<p><b>Biomass energy</b></p> <p><b>Timber provision</b></p> <p><b>Water availability</b></p> <p><b>Climate regulation</b></p>

Service	Assets/ attributes: main contributors to service	State	Main beneficiary	Analysis	Opportunities	Principal services offered by opportunities
<b>Climate regulation</b>	<p>Soils – freely draining very acid sandy and loamy soils</p> <p>Woodland and hedgerows</p> <p>Heathlands</p> <p>Wetland habitats</p>	<p>Across almost all of the character area there is a relatively low proportion of carbon stored in the top soil horizon, although there are small fragmented areas of higher carbon content, particularly in the north associated with heathland habitats.</p> <p>The diversity of habitats within this NCA including woodland, wetlands, heathlands and permanent grasslands suggests the NCA has an important role to play in its contribution to climate regulation through its existing and potential role in carbon storage and sequestration.</p> <p>Urban centres in the NCA are using green infrastructure strategies to plan a network of green infrastructure capable of sequestering carbon and contributing to reducing the impacts of urban heat island effects.</p>	Regional	<p>It has been recognised that UK woodlands and trees have the potential to play an important role in reducing and sequestering greenhouse gas emissions. Sustainable management of woodlands with sustainably produced wood fuel and wood products could help fulfil this potential. This would also provide other services for example, reinforcement of a sense of place and history, and increased biodiversity by restoring some of the local traditional woodland management.</p> <p>Favourably managed wetland, heathland and grassland habitats and maintaining their extent will also be of benefit for carbon sequestration and soil carbon storage with potential for multiple benefits such as water regulation (flooding), soil quality and reduction in soil erosion and biodiversity gains.</p> <p>Soils may have potential for carbon storage by increasing organic matter inputs, employing minimum tillage techniques and retaining buffer strips as an example.</p>	<p>Work with farmers and land managers to improve management of existing habitats across the NCA, particularly the woodlands, heathlands and wetlands to conserve organic and peaty topsoils that provide a store of carbon, while achieving multiple benefits for other services.</p> <p>Encourage farmers and land managers to adopt good soil management practices including enhancing organic matter content to improve soil quality and long term soil resilience to climate change.</p> <p>Opportunities for the creation of new habitats may also be appropriate and of benefit both for climate regulation and other services such as regulating soil erosion and water flow. Any creation of habitats needs to be carefully considered to ensure they are sited appropriately.</p> <p><b>Continued on next page...</b></p>	<p><b>Climate regulation</b></p> <p><b>Regulating soil erosion</b></p> <p><b>Regulating soil quality</b></p> <p><b>Regulating water quality</b></p> <p><b>Biodiversity</b></p> <p><b>Sense of place / inspiration</b></p>

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Climate regulation cont.					<p>... continued from previous page</p> <p>There are opportunities to further our understanding of the role of the NCAs woodlands and heathlands in a changing climate, working in partnership and promoting the multiple benefits of sustainable woodland and heathland management.</p> <p>Work with local planning authorities and developers to ensure a strong network of green infrastructure is included in new developments, with retro-fitting encouraged to support climate regulation service in existing developments.</p>	



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Regulating water quality	Rivers	Groundwater chemical quality is generally classified as poor or poor deteriorating. Groundwater is vulnerable to nitrates and pesticides and local impacts of solvents, hydrocarbons and heavy metals.	National	<p>Given the balance of rural and urban areas within the NCA a combination of measures will be needed to reduce urban diffuse pollution and diffuse pollution from agriculture to improve water quality. Actions identified include reducing phosphate from wastewater effluent discharges, ensuring good urban drainage, reducing diffuse pollution from agriculture and enhancing riparian habitats.</p> <p>Run-off risks from some of the soils due to poor infiltration qualities increases potential for diffuse pollution from applied nutrients to agricultural land.</p> <p>Habitats and species are sensitive to changes in water quality and poor quality also impacts on the quality and hence cost of the public water supply.</p> <p>Good quality water environments can be important for social, economic and quality of life benefits.</p>	<p>Promote the principles of Catchment Sensitive Farming both within the existing priority catchments of the Stour, Medway and Arun and Western Rother but also more generally to reduce the risks of diffuse pollution from agriculture and to protect and enhance the surface and groundwaters of the NCA.</p> <p>Work in partnership and across sectors to deliver Water Framework Directive objectives, supporting existing catchment based initiatives.</p> <p>Where development is permitted good green infrastructure should incorporate sustainable drainage systems.</p> <p><b>Continued on next page...</b></p>	<p><b>Regulating water quality</b></p> <p><b>Regulating soil erosion</b></p> <p><b>Regulating soil quality</b></p> <p><b>Biodiversity</b></p>
	Groundwater					
	Coast	There is variation in the ecological and chemical quality of rivers across the NCA. The chemical status of the main rivers is predominantly good although the River Medway fails on chemical quality due to the presence of priority hazardous substances <sup>17</sup> .				
	Ponds and lakes	<p>In terms of ecological status<sup>18</sup>, the East Stour is classed as moderate and the Medway and Arun are classed as being moderate potential as they are heavily modified waterbodies. The Mole and Wey are classed as being of poor ecological status. The Western Rother varies along its stretch from poor to moderate. The Upper Great Stour is classed as having poor ecological status due to being assessed as poor for overall biological quality.</p> <p>The Stour and Medway fall within Defra Priority Catchments and are both prone to sediment and phosphate runoff. At the same time, the south-west of the NCA falls within the Arun and Western Rother Priority Catchment where steeper sandy soils under arable cultivation are highly prone to erosion and as a result the Western Rother suffers from very high levels of siltation.</p>				

<sup>17</sup> South East River Basin Management Plan, Environment Agency (2009) Thames River Basin Management Plan, Environment Agency (2009)

<sup>18</sup> Note: For surface waters there are now two separate classifications for water bodies under the Water Framework Directive, ecological and chemical. To be in 'good' status both ecological and chemical status must be at least good. Ecological status integrates biological, physico-chemical and morphological factors and is not purely a measure of water quality. For more information on Water Framework Directive statuses in this NCA please refer to the relevant River Basin Management Plans.

Service	Assets/ attributes: main contributors to service	State	Main beneficiary	Analysis	Opportunities	Principal services offered by opportunities
Regulating water quality cont.					<p>... continued from previous page</p> <p>Significant restoration and creation of semi-natural wetland habitats, including alluvial grazing meadows with drainage ditches, marshy grassland, reedbeds and wet woodland, where appropriate adjacent to watercourses within the NCA plus creation of grassland buffer strips running across slopes to help limit diffuse pollution from agriculture and thus improve river water quality.</p>	

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<b>Regulating water flow</b>	Streams and rivers draining off the dip slope	<p>Localised flooding occurs across the NCA.</p> <p>Land adjacent to the Mole and Wey has been subject to significant flooding in the past including the very significant flooding of Godalming (in the Wealden Greensand) and Guildford (in the adjacent Thames Basin Lowlands NCA) on the course of the Wey in 1968.</p> <p>For detailed information on each river within the NCA, the Catchment Flood Management Plans provide an overview of flood risk and suggest measures for managing flood risk in the future<sup>19</sup>.</p> <p>In general, preferred alleviation measures include encouraging the use of sustainable urban drainage systems in new development, as well as storing water and managing run-off in the wider river catchments.</p>	Regional	<p>Flood risk within this NCA is likely to increase as a result of climate change. It will be important to ensure that any new development and its infrastructure are suitably designed to reduce the risk of flooding.</p> <p>Where soils are slowly permeable they will tend to have poorer water infiltration with greater potential for rapid runoff. It is therefore essential to maintain good soil structure and improve storage of water in flood plains to help reduce flood risk.</p>	<p>Opportunities for adopting sustainable flood risk management options, taking account of future climate change and land use changes.</p> <p>Alleviation measures that include encouraging the use of sustainable urban drainage systems in new development are critical in an NCA which includes large urban centres and is likely to be under increasing pressure for development.</p> <p>Restoration and creation of favourably managed wetland habitats along the flood plains of the Arun and Rother, the Wey and Mole, Medway and the Stour catchments, bringing rivers back into continuity with their flood plains where appropriate to allow for more regular flooding of identified areas (as per the catchment flood management plans) as a solution to help alleviate downstream flooding.</p>	<p><b>Regulating water flow</b></p> <p><b>Regulating soil erosion</b></p> <p><b>Regulating soil quality</b></p> <p><b>Regulating water quality</b></p> <p><b>Biodiversity</b></p>

<sup>19</sup> Arun and Western Streams Catchment Flood Management Plan, Environment Agency (2009) River Stour Catchment Flood Management Plan, Environment Agency, (2009) River Medway Catchment Flood Management Plan, Environment Agency (2009)

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Regulating soil quality	Woodland  Arable systems  Permanent grassland	<p>The majority of soils are classified as grade 3 agricultural land.</p> <p>There is a variation in soil types across the NCA with 10 different soilscape identified. Freely draining slightly acid loamy soils - covering around a third are the most extensive. Freely draining but very acid sandy and loamy soils, typically in heathland or forestry use, and freely draining slightly acid but base rich soils are also extensive. Contrasting slowly permeable seasonally wet, loamy and clayey soils and flood plain soils are less common and associated with wetter low lying land and wetland habitats.</p>	Local	<p>Freely draining soils are valuable for aquifer recharge of the sandstone aquifer and require maintenance of good structural conditions to aid water infiltration and the avoidance of rapid run-off.</p> <p>There is the potential to increase the organic matter of the soils to help improve soil quality. Organic matter may be lost on arable fields and makes these soils more susceptible to compaction and erosion.</p> <p>Soils with a higher clay content can have poor water infiltration qualities and can be easily poached by livestock and damaged by machinery when wet, increasing the likelihood of surface water runoff.</p> <p>The predominance of freely draining soils means that added nutrients need to be carefully balanced with needs to prevent diffuse pollution.</p> <p>Soils within woodland areas and areas of permanent grassland will often have higher organic matter levels, deeper root penetration which benefits water infiltration and overall structure. Management of these areas needs to be sensitively timed to avoid damage to soils.</p>	<p>Work with landowners to improve soil quality and management. Protecting the sustainability of future yields, while benefiting other regulatory services such as water availability, water quality and avoidance of soil erosion through improving organic matter levels, soil structure and water infiltration.</p> <p>Maintain and appropriately manage areas of permanent grassland, semi-natural woodland and other green infrastructure to protect the soil resources. Minimise harm to soil resources during development.</p>	<p><b>Regulating soil quality</b></p> <p><b>Regulating water quality</b></p> <p><b>Climate regulation</b></p> <p><b>Regulating soil erosion</b></p>

Service	Assets/ attributes: main contributors to service	State	Main beneficiary	Analysis	Opportunities	Principal services offered by opportunities
<b>Regulating soil erosion</b>	Semi-natural habitats	<p>Freely draining loamy and/or sandy soils generally have enhanced risk of soil erosion on moderately or steeply sloping land where cultivated or bare soil is exposed. Wind erosion can sometimes be an issue for these soils. Soils with a high fine sand or silt content are at risk of capping and slaking which may increase run-off and erosion risk. The seasonally wet and flood plain loamy/clayey soils are generally at lower risk of erosion, but where sloping water run-off may be enhanced where water infiltration is slow.</p> <p>The south-west of the NCA falls within the Arun and Western Rother Priority Catchment, where steeper sandy soils under arable cultivation are highly prone to erosion.</p>	Regional	<p>Regulation of soil erosion is important not only in its own right but also in terms of the impacts of soil erosion on other services such as water and soil quality and ultimately sustainable food production.</p> <p>Climate change impacts may result in an increased risk of erosion associated with flash floods, drier summers and wetter winters.</p> <p>Integration of land management interventions which accord with the existing landscape character would be beneficial, for example buffer strips, woodlands and hedgerows – this will also benefit biodiversity and could help strengthen the overall connectivity and mosaic of habitats.</p>	<p>Work with landowners to implement land management practices, especially on steeper slopes, to reduce soil erosion. This includes provision of buffer strips, restoration and creation of hedgerows, woodland creation where appropriate and creation of other areas of low input grasslands and semi-natural habitats in high risk areas. Seek to minimise soil compaction, improve water infiltration and reduce soil migration and surface runoff, for example by enhancing soil organic matter levels and timely cultivations. In addition, seek to link habitats and improve connectivity where possible, contributing to the biodiversity and sense of place of the area.</p> <p>Promote the work of the Catchment Sensitive Farming initiative.</p>	<p><b>Regulating soil erosion</b></p> <p><b>Biodiversity</b></p> <p><b>Regulating soil quality</b></p> <p><b>Regulating water quality</b></p> <p><b>Regulating water flow</b></p>



Service	Assets/ attributes: main contributors to service	State	Main beneficiary	Analysis	Opportunities	Principal services offered by opportunities
<b>Pollination</b>	Lowland heathland  Unimproved acid grasslands  Unimproved pastures  Orchards	The existing habitats of heathlands, grasslands and woodlands provide important nectar sources and habitats for pollinating insects.  Orchard and soft fruit pollinators are important in this NCA given the fruit growing areas.	Local	Pollinators play an important role in food provision and the mixed farming landscape, including arable and fruit, means that pollination services are important in maintaining future food provision and viability of crops within the NCA.  A landscape scale approach which creates pollinator habitats in suitable locations throughout the farmed landscape will benefit not only pollinators but will also help to enhance habitat connectivity and biodiversity while bringing potential benefits for soil and water regulation depending upon locations and chosen options.	Increase the pollinator habitat through expansion and linking of semi-natural habitats seeking to increase the diversity of habitats in close proximity to food crops requiring pollination. In particular, restoration and expansion of heathland and unimproved grassland habitats plus enhancement of arable areas through creation of conservation headlands, pollen and nectar mixes and arable field margins will help to provide nesting and foraging sites for pollinators.	<b>Pollination</b>  <b>Biodiversity</b>  <b>Food provision</b>  <b>Sense of place / inspiration</b>
<b>Pest regulation</b>	Existing semi – natural habitats  Field margins  Species-rich hedgerows	There are large areas of semi-natural habitat which will support species that will aid pest regulation.	Local	Pest regulation is currently provided by the existing spread of semi-natural habitat across the NCA. However, there is scope to improve the condition of this habitat through appropriate management and to extend it where possible, reducing the impacts of pests across the agricultural landscape and supporting a network of habitats, making the landscape more permeable for pest regulating species. However, increased permeability for predatory species may also increase opportunities for and the range of pest species.	Maintain and expand the area of semi-natural habitats, throughout the NCA to provide a range of niches to support pest regulating species.  Restoration and expansion of heathland and unimproved grassland habitats (including acid grasslands found amongst commons, heathlands and parklands and wet meadows along the valley floor), plus enhancement of arable areas through creation of conservation headlands and arable field margins will all be of benefit.	<b>Pest regulation</b>  <b>Biodiversity</b>  <b>Food production</b>  <b>Pollination</b>

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<b>Regulating coastal erosion</b>	Undeveloped sea cliffs	Long-term policies of 'Hold the Line' are identified within the Shoreline Management Plan along the relatively small stretch of coastline that falls within the NCA, given the significance of development at Folkestone and Hythe that essentially determines this stretch. The exception is at Copt Point where preferred policies allow for the ongoing erosion of maritime sand/clay cliffs.	Regional	<p>The area is at risk from coastal squeeze as habitats will be caught between rising sea level and hard defences. Sea level rise will continue to affect coastal processes (reduction in the amount of sediment available for downdrift frontages) habitats, heritage assets and geodiversity. A loss of fronting beaches may also have implications for tourism.</p> <p>The small area of coastline which falls on the far eastern boundary of the NCA is part of the Dover-Folkestone Heritage Coast.</p> <p>Long-term policies of 'Hold the Line' seek to reduce the risk of flooding not prevent it, as storms exceeding the protection level of the defences could occur.</p>	Plan and manage for the effects of coastal change, allow the operation of natural coastal processes where possible and the creation of new habitats, to maintain and enhance local landscape character, biodiversity and improve sustainability of current management practices and to reduce flooding to built areas.	<p><b>Regulating coastal erosion</b></p> <p><b>Biodiversity</b></p> <p><b>Sense of place / inspiration</b></p> <p><b>Geodiversity</b></p>

Service	Assets/ attributes: main contributors to service	State	Main beneficiary	Analysis	Opportunities	Principal services offered by opportunities
<b>A sense of place/ inspiration</b>	Geology and landform  Settlement pattern  Semi-natural habitats  Historic assets	<p>Sense of place is provided by the prominent Greensand ridge that affords far-reaching views over the Low Weald from the scarp top, as well as the extremely varied landscape character, a result of the diverse underlying soils, geology and overlying land use, including extensive areas of lowland heathland, ancient woodland and the wooded commons or charts.</p> <p>The rural settlement pattern and intimate character of the west, the proximity to the coast in the east and the mixed farm landscape with traditional fruit growing areas all add to the sense of place.</p> <p>The heritage assets and historic characteristics of the NCA also add to the sense of place including the vernacular building materials.</p>	National	<p>Maintaining sense of place is likely to become more challenging as the NCA responds to pressures such as development and associated infrastructure or climate change. However, these challenges also offer opportunities for enhancement of sense of place through careful management of the natural and built heritage.</p> <p>The special qualities and outstanding scenery of parts of this area are reflected in the designation of the South Downs National Park, the Kent Downs AONB and the Surrey Hills AONB.</p>	<p>Conserve and restore the extensive and highly characteristic areas of lowland heathland (in Surrey, Hampshire and Sussex) and ancient woodland that include the distinctive hanger woodlands found on steeper slopes (notably in East Hampshire) and the wooded commons or charts characteristic of east Surrey and western Kent.</p> <p>Work with AONB partnerships and National Park Authority, local communities and others to retain the historic and cultural features of the landscape, particularly the intimate character of the south-west that falls largely within the South Downs National Park, with its deeply sunken rural lanes, and the character of the AONB landscapes in western and central areas.</p> <p>Identify and seek to maintain the numerous uncluttered, far-reaching views over the Low Weald and adjacent NCAs from the scarp tops.</p> <p>Maintain the mixed farmed landscape including orchards that provide strong associations with the fruit growing areas and heritage of the NCA.</p>	<p><b>Sense of place / inspiration</b></p> <p><b>Sense of history</b></p> <p><b>Biodiversity</b></p> <p><b>Recreation</b></p> <p><b>Tranquillity</b></p>

Service	Assets/ attributes: main contributors to service	State	Main beneficiary	Analysis	Opportunities	Principal services offered by opportunities
<b>Sense of history</b>	<p>Range of heritage assets reflecting human occupation since Palaeolithic times</p> <p>Maritime and military history</p> <p>Historic settlements and vernacular buildings</p> <p>Ancient semi-natural woodland the hangers – provide a sense of time depth</p> <p>Roman roads</p> <p>Large houses set in landscaped parks or gardens.</p> <p>Oast houses</p> <p>Woolmer Forest – former royal hunting forest</p> <p>Remnant water meadow system along the river Wey with associated historic bridges</p>	<p>The history of this landscape is evident in the predominantly irregular-patterned fields and the ancient road network, including winding sunken lanes and Roman roads as well as the area's prehistoric associations, including bronze-age tumuli near Petersfield, iron-age hillforts at Holmbury, Anstiebury and Oldbury Hill, and Neolithic remains at Abinger.</p> <p>Numerous large house and designed parklands, including Petworth in Sussex, Knole, Squerries Court and Leeds Castle in Kent.</p> <p>The traditional vernacular of local sandstone and patterned dark carrstone (known as 'galletting') most notably in Surrey. The hammer ponds associated with iron workings along the foot of the north-west escarpment also contribute to sense of history and links to industrial past.</p>	National	<p>Some nationally significant heritage assets have been identified on the heritage at risk register and a number of historic assets are vulnerable to further loss or damage.</p> <p>The coherence of the historic environment is at risk in places from increased development and infrastructure pressures. The distinctive historic character of some settlements is being eroded, particularly the common-edge settlements on the Hampshire/Surrey border.</p> <p>Climate change may have an impact on the heritage assets. Continued coastal erosion at Copt Point along the coast will result in loss of the Folkestone Roman Villa SAM and associated areas of archaeological potential.</p>	<p>Conserve the irregular field pattern and the ancient road network, including winding sunken lanes and the Roman roads radiating from Canterbury (outside the area) in the east, as well as the area's prehistoric associations, including bronze age tumuli, iron-age hill forts and Neolithic remains.</p> <p>Conserve, manage and restore the numerous parklands that are characteristic of the area, as well as the traditional vernacular of local sandstone and patterned dark carrstone (known as 'galletting') most notably in Surrey.</p> <p>Further conserve the hammer ponds associated with iron workings along the foot of the north-west escarpment, the historic bridges along the River Wey and remnants of the water meadow system, maintaining their historic interest and links to past land management and contribution to landscape character.</p>	<p><b>Sense of history</b></p> <p><b>Geodiversity</b></p> <p><b>Sense of place / inspiration</b></p> <p><b>Biodiversity</b></p>

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<b>Tranquillity</b>	Intimate rural character in the south-west  Woodlands	<p>Twenty-seven per cent of the NCA is classified as 'undisturbed' according to CPRE data; a decline from over 60 per cent since the 1960s.</p> <p>Tranquillity is mostly generally associated with the intimate rural landscape of the south-west (much of which falls within the South Downs National Park), in contrast with the more heavily developed eastern and central areas. Tranquillity is still nevertheless likely to be associated with the extensive chain of heathlands and ancient woodlands that occur throughout east Hampshire, Surrey and west Kent.</p>	Regional	<p>Proximity to large centres of population and increased development pressures may impact on the tranquillity of the area.</p> <p>Tranquillity of green space is important for relaxation and mental health, with added economic benefits of a population that is healthier through participation in walking, cycling, and other activities. Conversely, recreational pressures also have the potential to impact on tranquillity, especially due to illegal or inappropriate recreation.</p> <p>The wooded character of the landscape does offer a mechanism to help reduce the impacts on tranquillity from visual disturbance or noise.</p>	<p>Expand and create broadleaved woodlands in central and eastern areas around transport corridors and major urban areas to help limit noise and light pollution and thus protect or re-establish pockets of tranquillity away from these areas.</p> <p>Maintain and create woodlands surrounding urban areas that adjoin the Surrey heaths to help conserve and improve the tranquillity of these heathlands, while also conserving existing pockets of tranquillity that are particularly characteristic of the south-west and the AONB landscapes.</p>	<p><b>Tranquillity</b></p> <p><b>Sense of place / inspiration</b></p> <p><b>Sense of history</b></p>



Service	Assets/ attributes: main contributors to service	State	Main beneficiary	Analysis	Opportunities	Principal services offered by opportunities
<b>Recreation</b>	<p>South Downs Way</p> <p>North Downs Way</p> <p>Greensand Way</p> <p>Wey South Path</p> <p>The Hangers Way</p> <p>Registered commons</p> <p>Open access land</p> <p>Public rights of way network</p> <p>Towpaths associated with the Wey navigations and other riverside walks</p> <p>National Nature Reserves</p>	<p>Recreation and access are supported by 3,315 km of public rights of way (equivalent to a density of 2.3 km per km<sup>2</sup>), including links to both the North Downs Way and South Downs Way, as well as over 8,118 ha of open access land (around 5 per cent of the NCA). Much of the area to the south-west falls within the South Downs National Park, which seeks to offer wide ranging opportunities for countryside recreation and access.</p> <p>The woodland and heathland landscapes of Surrey and west Kent are particularly important for recreation given their proximity to London and other significant urban areas.</p> <p>The rivers of the NCA are important for recreation, with opportunities for walking, angling and on some stretches water based activities such as boating or canoeing. The Wey towpath is particularly valuable for cycling and walking given the urban populations in close proximity.</p>	Regional	<p>Recreation is of particular importance in this NCA, both in terms of the opportunities on offer and managing the impacts of recreational pressures, which can impact on the tranquillity and biodiversity of the NCA if not managed appropriately. This is particularly pertinent given the urban centres within and nearby the NCA and sensitivity of habitats.</p> <p>The challenge is therefore achieving a balance between promoting access opportunities, recognising the wider health and economic benefits while reducing the impacts of inappropriate recreation on key biodiversity and heritage sites. Heathland is especially vulnerable to uncontrolled fires and disturbance to ground nesting birds.</p> <p>Access and recreational activities, particularly close to where people live, brings mental and physical health benefits. A network of trails linking quality green spaces and other visitor destinations can also provide significant benefits in terms of income from local visitors and tourists.</p>	<p>Enhance existing opportunities for access throughout the area, creating new permissive access that links settlements to historical features, the North Downs Way and South Downs Way and other areas of interest, reflecting the ambitions of the South Downs National Park management plan in the south-west.</p> <p>Also create significant new areas of recreational greenspace that form part of new landscapes surrounding urban areas and that provide a significant local recreational resource, notably in Kent and Surrey, helping to relieve pressures from the area's heaths and other sensitive habitats.</p>	<p><b>Recreation</b></p> <p><b>Sense of place / inspiration</b></p> <p><b>Biodiversity</b></p>

Service	Assets/ attributes: main contributors to service	State	Main beneficiary	Analysis	Opportunities	Principal services offered by opportunities
<b>Biodiversity</b>	<p>Semi-natural habitats</p> <p>Geology and soils</p> <p>Climate</p> <p>Rivers</p>	<p>There are over 26,500 ha of BAP priority habitat covering around 18 per cent of the NCA. These represent a diverse range of habitats and include broadleaved woodland, fen, lowland heathland, coastal and flood plain grazing marsh, reedbeds, lowland dry acid grassland and lowland meadows.</p> <p>The NCA contains 3 SPAs, 8 SAC and 2 Ramsar sites and over 9,116 ha of land that is nationally designated as SSSI. There are also 548 local sites, contributing to the overall habitat network.</p>	International	<p>Some of the more sensitive habitats are at risk from recreational pressures with many of the biodiversity assets located close to and accessible by large populations who use them for informal recreation. These pressures are likely to increase with increasing populations. Heathland habitats are particularly sensitive to disturbance.</p> <p>Maintaining grazing on heathland and some grassland sites is still an issue due to the economics of grazing these habitats.</p> <p>Wetland habitats are at risk where they may be impacted on by abstraction pressures and future climate change impacts on hydrological regimes.</p> <p>As the climate changes the importance of robust ecological networks and connectivity across the landscape will be critical giving species the best chance of adapting.</p>	<p>Significantly restore, create and re-link the fragmented lowland heathland habitats characteristic of the Surrey, Hampshire and Sussex parts of the NCA, as well as sustainably managing and re-linking the extensive ancient woodlands of the steep scarp slopes and valley floors.</p> <p>Also restore, expand and re-link the wetland habitats of river valleys, notably the Arun and Rother in west Sussex and the Wey, including alluvial grazing meadows with drainage ditches, marshy grassland, reedbeds, and wet woodland.</p> <p>Use evidence to adopt and implement a landscape scale approach to habitat restoration and connectivity of the fragmented habitats of woodland, heathland and wetlands, benefiting biodiversity, sense of place and strengthening the landscape character.</p> <p>Protect and enhance designated sites aiming to achieve favourable condition on all sites and linking them to the wider habitat network.</p> <p>Maximise opportunities through green infrastructure to encourage biodiversity gains and create multi-functional greenspaces which help relieve the pressure on ecologically sensitive sites.</p>	<p><b>Biodiversity</b></p> <p><b>Climate regulation</b></p> <p><b>Regulating water quality</b></p> <p><b>Regulating water availability</b></p>

Service	Assets/ attributes: main contributors to service	State	Main beneficiary	Analysis	Opportunities	Principal services offered by opportunities
<b>Geodiversity</b>	<p>Geological inland exposures including those in quarries</p> <p>Undeveloped sea cliffs</p>	<p>The geology and geomorphology of the Wealden Greensand create its distinctive landscape and have shaped the distribution of wildlife habitats and land use.</p> <p>The NCA contains exposures that are nationally important to geological science, including classical exposures of Lower Greensand and Gault</p> <p>Clay, more recent deposits of windblown sands or loess and landslip features and deposits that show the effects of climate change during past ice ages. In addition to these nationally</p> <p>important exposures, the NCA also contains many sites that are of regional importance.</p> <p>The shoreline management preferred policies allow for the ongoing erosion of maritime sand/clay cliffs at Copt Point to maintain the ecological and geological value of the cliffs.</p>	National	<p>The NCA offers excellent opportunities for research and furthering our understanding of geological and geomorphological features – this is particularly important for helping to demonstrate the links between geology, ecology, archaeology and the socio-economic development of the NCA.</p> <p>The geological resources are at risk from inappropriate management and it will be important to conserve and enhance the existing resource. In addition, the NCA has been a critical area for mineral extraction and mineral safeguarding may become increasingly important to protect national resources into the future.</p> <p>Continued erosion of the cliffs will maintain the geological assets.</p>	<p>Ensure important geological exposures are properly managed to prevent them becoming obscured or otherwise inaccessible for study as a result of vegetation growth, quarrying, waste disposal or other activities.</p> <p>Maintain a network of Regionally Important Geological Sites (RIGS) to facilitate protection of important geological sites.</p> <p>Encourage local authorities to adopt policies in development plans that protect important geological sites.</p> <p>Promote the scientific and educational value of important geological sites and in particular the links between geology, landscape and wildlife habitat development.</p> <p>Allow for continued natural erosion of the important geological assets at the coast.</p>	<p><b>Geodiversity</b></p> <p><b>Biodiversity</b></p> <p><b>Sense of place / inspiration</b></p> <p><b>Sense of history</b></p> <p><b>Regulating coastal erosion</b></p>

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## **Appendix D:**

### **County Character Area 2M: East Hampshire Lowland Mosaic**



## 2M: EAST HAMPSHIRE LOWLAND MOSAIC



**Low lying clay vale – west of Liss. A flat valley bottom landscape well treed hedges and backdrop of the hangers to the west and lower greensand hill to the east.**



Lowland Mosaic Small Scale Open south east of Petersfield. South Downs ridge in the background.



Lowland Mosaic Medium Scale Wooded landscape near Oakhanger – has the highest instance of assarting in this LCA.



Lowland Mosaic Small Scale Wooded near Stroud – short visual horizons, small fields and relatively high proportion of improved grassland..



Carstone from the Lower Greensand used in a terrace in West Liss. Westernmost distribution of this material's use in Hampshire.



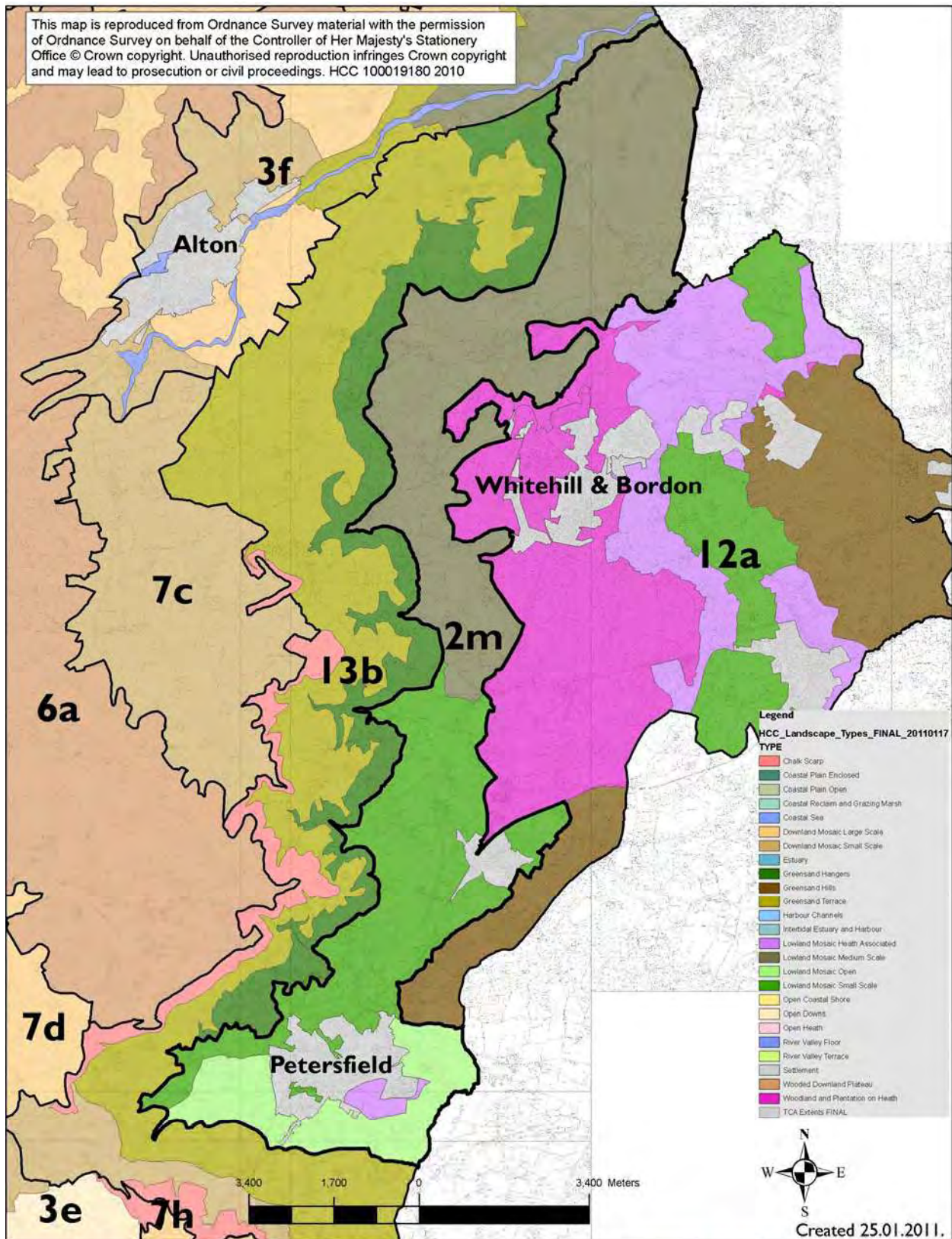
Upper Greensand – malmstone used in chapel at Stroud with intricate brick surround and edging details.



View from Greensand terrace near East Worldham to the clay vale below; emphasising its intervisibility with the surrounding landscape.



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## EAST HAMPSHIRE LOWLAND MOSAIC

## **1.0 Location and Boundaries**

**1.1** The Character Area is a relatively narrow, low lying clay vale bounded by greensand escarpment to the west and the Weald to the east. The south is more developed than the north which coincides with the presence of the River Rother. It includes the major settlements of Liss and Petersfield.



### **1.2 Component County Landscape Types**

Lowland Mosaic Small Scale, Lowland Mosaic Medium Scale, Lowland Mosaic Open, Settlement

### **1.3 Composition of Borough/District LCAs: East Hampshire**

Rother Valley Mixed Farmland and Woodland  
Kingsley/Blackmoor Mixed Farmland and Woodland  
Alice Holt

The County character area closely follows the District assessment character three character areas – the County landscape types resonate with these boundaries.

### **1.4 Associations with NCAs and Natural Areas:**

NCA 120: Wealden Greensand  
NA 70: Wealden Greensand

### **1.5 Townscape assessment areas:**

Petersfield

## **2.0 Key Characteristics**

- A low lying clay vale.
- Slowly permeable seasonally waterlogged clay soils, supports mixed farmland, well wooded in the northern half and relatively high proportion of improved grassland particularly in the south.
- Drained by numerous small watercourses, many of which are tributary streams of the Rother or Wey.
- Relatively lightly wooded landscape, composed of small blocks of ancient woodland, although increasing in extent from south to north.
- A landscape with many characteristics of medieval to 17<sup>th</sup> century origin, such as isolated farmsteads set in irregular and wavy boundary fields, assarts and deer parks.
- Rich variety of stone from adjoining Greensand outcrops reflected in the vernacular architecture of Liss and Petersfield.

- Presence of scattered pre 1810 hamlets in the southern half but relatively few settlements further the north.
- Relatively little 20<sup>th</sup> century expansion of settlements, apart from Petersfield and Liss and little redevelopment of historic cores.
- An accessible landscape with a good rights of way network, coupled with accessible woodland in the north, but a comparatively low destination draw for tourists.
- The A3 is a major landscape influence, in terms of noise and visual impact where it passes through the southern half of the character area.
- Varied tranquillity levels across the area the northern half being defined as being more tranquil than the south.
- The visual horizons are short and wooded but intervisibility from higher adjoining character areas can be extensive.
- A mixture of woodland habitats (including wood pasture) contribute to the area's biodiversity.

### **3.0 Physical Characteristics and Land use**

3.1 The East Hampshire Lowland Mosaic is underlain by Gault Clay, a formation of soft mudstones and silty mudstones which have weathered to yellow and brown clays – only occurring in this part of Hampshire. This clay vale landscape is locally low lying and predominantly gently undulating apart from a long narrow outcrop of Lower Greensand- Folkestone formation, which roughly follows the line of the A3 and gives rise to a much more undulating landscape, which helps to hide the road from the surrounding area. Overlying the bedrock geology are drift deposits of alluvium along the numerous streams and downwash deposits at the foot of the Greensand escarpment.

3.2 The predominantly clay geology gives rise to seasonally waterlogged clay soils known as Pelo-stagnogley soils. Where Greensand, Sandstone and Gault Clay occurs in the southern half of the LCA the soils are lighter and this is reflected in the increase in pasture land use. Woodland cover and permanent pasture use are more prevalent in the north – coinciding with the change in Lowland Mosaic types. There is a well developed generally thick hedgerow network with mature oaks throughout the area apart from in the extreme south.

3.3 This character area is drained to the south by the River Rother and north eastwards by the Rivers Wey, Slea and Oakhanger. Locally, these are the lowest parts of the hydrological basin and are relatively small compared with Hampshire's major river valleys. There are numerous small tributaries and small ponds, some of which are former clay pits.

### **4.0 Experiential/Perceptual Characteristics**

4.1 This character area is well enclosed by blocks of woodland, treed hedgerows and surrounding higher land. The latter is an enduring feature giving the sense of being in a valley bottom. Generally within this landscape the visual horizons are short and backed by woodland and hangers.

4.2 Levels of tranquillity are considered higher in the north of the LCA where the change in landscape type occurs. This is primarily due to greater development - related infrastructure in the south associated with Liss and Petersfield. Within the

forest enclosures in the north the landscape is particularly peaceful with a strong sense of seclusion.

- 4.3 The definitive rights of way network in this part of Hampshire is relatively dense and well connected. There is a strong east west alignment of routes, linking the higher ground with the clay valley. The network radiates from Petersfield in a particularly distinctive way – indicating its long historical status as a market town. Alice Holt in the north east of the LCA provides significant local multi user recreational access in a woodland setting but there are relatively few commons and open access land. Alice Holt is famed for its oak trees and their association with naval ship building and the Forestry Commission's two main research stations. Common land at Binswood and Shortheath are other significant access land resources.

## **5.0 Biodiversity Character**

- 5.1 This landscape comprises improved agricultural grasslands and arable land with patches and strips of woodland, both large and small. There are some unimproved neutral grasslands, but there are also some acidic grasslands and occasional patches of heath.
- 5.2 The north of the area is dominated by Alice Holt Wood, a woodland matrix comprising broadleaved woodland, parkland, mixed, coniferous and broadleaved plantations, new planting and forestry scrub. Here there are small fragments of semi-natural woodland and areas of replanted ancient woodland. In general the woodland is surrounded by improved grasslands. Towards the centre of the area, broadleaved woodlands become smaller and are sometimes associated with unimproved neutral grasslands reducing to woodland strips around fields in the south. There are occasional patches of wet woodland associated with Ashford stream in the south while patches of unimproved grasslands are also larger in the south than in the north, comprising mainly neutral with occasional acid grasslands. Of note area the patches of dry heath, associated with a large pond and some marshy grasslands to the southeast of Petersfield.
- 5.3 This landscape character area has two BOAs ; the Wealden Heaths BOA in the north which comprises the old hunting forest of Woolmer and has a long history of management as wood pasture and heathland, and the Rother Valley BOA in the south comprising riparian habitats, e.g. wet woods and rushy fen.
- 5.4 There are two notable SSSIs in this area including Bentley Station Meadow, an unimproved herb-rich grassland situated in juxtaposition to a variety of habitats including scattered scrub, a willow-lined stream forming the western boundary to the meadow and ancient semi-natural oak woodland surviving on the edge of the Forest in the east. This combination of habitats provides a sheltered environment which is both extremely uncommon in Hampshire and ideal for a remarkably rich invertebrate fauna. Many regionally scarce and local species breed and feed within the site, particularly hoverflies and butterflies. Binswood SSSI is still managed as a pasture woodland with common rights of grazing. The vegetation consists primarily of acidic poorly-drained unimproved pasture, with scattered old oaks and beeches, areas of denser woodland with a sparse shrub layer and ground flora, and former encoppicements now open to grazing. The pasture is dominated by bents, sheep's

fescue and soft rush, with abundant lesser spearwort, autumn hawkbit, tormentil and heath bedstraw, along with other herbs which are also characteristic of damp acid grassland.

- 5.5 There are over 60 SINC's within this landscape character area, most are designated for their ancient and semi-natural woodland resource, although some are designated for the unimproved grasslands which they support. There are a few SINC's designated for their wetland habitats, including open freshwater and more marginal habitats including fens, flushes, seepages and inundated grasslands. The Rotherlands LNR encompasses swamp and marshy vegetation associated with Tilmore Brook and the river Rother. It also contains broadleaved woodland, tall herbs and neutral grassland.

## **6.0 Historic Character**

### **6.1 Archaeology**

- 6.1.1 There is a significant concentration of Mesolithic sites and finds on the heath to the east, and Mesolithic sites do spill out into this character area where the Oxney Stream crosses it in the north, on the sandy soil. There is also a focus of activity at Petersfield Heath on sandy soil where there is a water source. Apart from these concentrations, there is little Mesolithic evidence across much of the character area. There is some evidence to suggest that there was Neolithic settlement and farming in the Wey valley and on the chalk to the south, but it is not clear that it extended into this character area. Although there are artefacts in the northern part of the area adjacent to the river valley it seems likely that this character area was utilised for activities such as grazing and hunting rather than being settled or farmed.

- 6.1.2 The area has a very limited range of data from the Bronze Age. The adjacent heathland is rich in burial mounds, and on Petersfield heath there is a remarkable cluster of burial mounds where there is a water source. There is no evidence of settlement and farming and so it would appear that the character area was extensively not intensively utilised.

- 6.1.3 Much of the character area has little Iron Age evidence, but in the north there is a considerable range of activity that spills out from the river valley across the character area following the Oxney stream. It seems to be associated with a pottery industry developed possibly on an industrial scale. This continued into the Roman period when a nationally significant Roman pottery industry emerged at Alice Holt; associated with villas and enclosures, as well as field systems, and a Roman road. It would appear that the northern part of the area became quite developed, and connected across to the Roman town, and the settlements of the Wey valley and the chalk. In the southern part of the character area the evidence is much less intense, but it does have a series of important Roman villa sites stretching along its length, suggestive of a Roman routeway running in this direction.

### **6.2 Historic Landscape**

- 6.2.1 This area is characterised by the relatively high survival of informal enclosures. These evolved in a piecemeal fashion from the Forests of Alice Holt and Woolmer. The lowland mosaic medium scale has a prevailing pattern of larger scale



enclosures and more woodland assarts than south of Greatham where the landscape changes to small scale landscape. Both Forests were disafforested in the mid 19<sup>th</sup> century.

- 6.2.2 In the north, the field system is strongly influenced by assarts and former deer parks such as East Worldham, Binstead and Alice Holt; suggesting a less intensively exploited landscape and one used for hunting. By the time of disafforestation most of the landscape had been enclosed in a piecemeal fashion, often retaining assart field characteristics. There are numerous tracks linking this area with the greensand terrace to the west. Since first edition mapping there has been fairly substantial boundary loss and alteration, creating a landscape of larger fields.
- 6.2.3 The landscape to the south was much more on the fringe of the Forest and evolved a more organised pattern of field enclosures, probably of medieval and post medieval origin, the pattern of which can be discerned today. By the mid 19<sup>th</sup> century there was very little that remained unenclosed. The landscape focused much more on supporting the towns of Liss and Petersfield.
- 6.2.4 The Lowland Mosaic Open landscape was not part of the aforementioned Forests, and probably has a history of more open field systems, with post medieval enclosure. The field boundaries which are associated with track and paths radiating from Petersfield are likely to be the longest established and have medieval origins. Since first edition mapping this area has suffered the greatest boundary loss, particularly in the east.
- 6.2.5 The area contains a number of parks of local importance on the Hampshire Register including: Lyss Place, Stodham park, Broadland House and Blackmoor Park, although none are listed on the national register.
- 6.3 **Built Environment**
- 6.3.1 The settlement pattern is generally a high density of dispersed settlements in the south, the exceptions being the larger settlements of Petersfield and Liss. The northern half is characterised by an absence of villages and hamlets, with the settlement form comprising a scatter of isolated farmsteads. Many small farmsteads and hamlets, often with origins dating back to the 13<sup>th</sup> and 14<sup>th</sup> century, are closely spaced.
- 6.3.2 Farmsteads are a prominent feature of most of the smaller villages and hamlets and buildings are often set close to the village street. There are a comparatively high number of farmsteads (in terms of the County distribution) especially where the Lowland Mosaic Small Scale Wooded type occurs in the south. The field sizes tend to be small reflecting the ancient enclosures often associated with their small farmsteads. There is a significant distribution of farmsteads of medieval origin. The roofs of many farm buildings of all periods are half hipped. Many barns are aisled to one or more sides which creates a low eaves line and emphasises the mass of the roof. Granaries are less commonly found in this character area than in downland landscapes.
- 6.3.3 There is a significant concentration of pre-19<sup>th</sup> century buildings using locally quarried stone, from Upper (malmstone) and particularly, Lower (carstone )

Greensand outcrops. This material was used on higher status buildings from the 18 century to mid 19<sup>th</sup> century. The economic success of Liss and Petersfield reflects the use of this material in its vernacular architecture.

- 6.3.4 There is a local concentration of post-1800 brickworks in this character area, particularly in the northern half. It is likely that this area has some of the earliest examples of buildings incorporating brick from local sources.

# EVALUATION

## 7.0 Forces for Change

1. New small scale development within and on the fringes of settlements.
2. Farm conversion to residential and possible loss of grazing land management practices.
3. Pressure for urban fringe use related activities.
4. Climate change.
5. Forestry and woodland management change.
6. Mineral extraction particularly on the eastern side associated with the Folkestone Formation and soft sand resource.

## KEY QUALITIES AND EFFECTS OF FORCES

<b>7.1</b> <i>A landscape strongly influenced by medieval and post medieval field patterns, including informal enclosures, assarts and deer parks. It appears to have little late enclosure of commons and few 18<sup>th</sup> and 19<sup>th</sup> century formal enclosures.</i>	
<b>FORCES FOR CHANGE:</b>	<b>CONSEQUENCES</b>
2.3.5	<p><b>Threats:</b>  Further field amalgamation and boundary loss as pressure potentially increases for conversion to arable.  Potential mineral extraction particularly in areas of soft sand to the north.  Pressure around the major settlements of Liss and Petersfield for formal recreation sites.</p> <p><b>Opportunities:</b>  Reflect the likelihood and presence of medieval origin enclosures and deer park evidence in FEPs for agri-environment schemes.  Influence planning and restoration of minerals schemes to minimise long term effects on pattern of enclosures.  Influence agri-environment schemes in relation to characteristic hedges and impacts e.g. run off onto adjoining woodland sites.  Further interpretation of the historic landscape to influence local level assessments.</p>
<b>7.2</b> <i>Dispersed settlement pattern of hamlets and isolated medieval and C.17<sup>th</sup> origin farmsteads, becoming denser further south with the larger settlements of Petersfield and Liss being well integrated and of low visual impact on the landscape.</i>	
<b>FORCES FOR CHANGE:</b>	<b>CONSEQUENCES</b>
1.2	<p><b>Threats:</b>  Cumulative impact of small scale development in visually prominent parts of existing settlement could dramatically increase their visual presence in the landscape.  Change of use of existing farmsteads and farmland to residential use, gardens and horse paddocks appears to be quite high, especially in the southern half of the character area.</p> <p><b>Opportunities:</b>  When assessing potential development sites on the edge of settlement it is essential to retain the quality of the existing rural setting.  The retention of the isolated setting to the character of some of the historic buildings and farmsteads is a feature which could be addressed in local level assessments and village design statements.</p>

**7.3**

***A predominantly farmed and grazed landscape where the biodiversity interest is limited to semi natural and ancient woodland of wood pasture origin, particularly in the north and small stream valley floor wetland habitats of the Wey, Rother and Tilmore.***

**FORCES FOR CHANGE:****CONSEQUENCES**

All

**Threats:**

Alteration of ground water levels and run off from adjoining agricultural land adversely affecting valley bog and mire habitats.

**Opportunities:**

The potential for reversion of plantation on ancient woodland sites (PAWS) is quite significant in this landscape, including Alice Holt Forest.

Potential to target agri-environment and woodland grants schemes and other grant funding sources towards conservation and enhancement of this key quality. Encourage the current area under HLS to expand.

Support BOA target habitats in the north and south for conservation, habitat linking, creation and reversion opportunities for lowland woodland, wet woodland and other wetland habitats.

**7.4**

***A clay vale landscape of scenic beauty with views to the adjoining wooded hangers and Weald with a fairly dense lane and track network becoming increasingly peaceful moving northward.***

**FORCES FOR CHANGE:****CONSEQUENCES**

I.3.6

**Threats:**

Increase in traffic related issues associated with the A3

Over formalisation of semi-natural areas to provide recreation facilities.

Increasing access opportunities can introduce greater likelihood of conflict through misuse (e.g. fly tipping, trespassing) on local farmland.

**Opportunities:**

Increase draw to the area from national park designation– particularly as striking off point from settlements of Liss and Petersfield and reduce reliance on car to access the area.

## **APPENDIX E**

### **SDNP Integrated Landscape Character Assessment Landscape Type L**



## Appendix L

### Landscape Character Type L: Mixed Farmland and Woodland Vales

The *Mixed Farmland and Woodland Vale* landscape type is found on the mudstones of the Gault Formation and the Lower Greensand beds which are exposed to the north and east of the Greensand Terrace, along the southern and western edges of the Greensand and the Weald. It comprises a gently undulating lowland vale supporting fields of arable, pasture and woodland.

#### Description

##### Key Characteristics

- Gently undulating landform underlain by mudstones of the Gault Formation and sandstones of the Lower Greensand.
- Slowly permeable seasonally waterlogged clay soils support mixed farmland and deciduous woodland copses dominated by oak, hazel and ash woodland.
- Drained by numerous water courses, many of which are tributary streams of the Rother or Wey.
- The wet and unproductive soils have given rise to a remote and marginal character.
- A largely medieval landscape of isolated farmsteads set within irregular fields, some of which retain the original lobate form of medieval assarts providing a strong sense of historical continuity.
- Thick hedgerows with spreading hedgerow oaks, or narrow strips of woodland ('rews'), provide a sense of enclosure.
- Ponds and meadows on the fringes of tributary streams provide biodiversity interest.
- Settlement is characterised by a high density of dispersed settlement across the clay comprising hamlets and isolated farmsteads of medieval origin with larger settlements on the sandstone beds.
- Later farmsteads of 18<sup>th</sup>-19<sup>th</sup> century date are situated within areas representing later enclosure of marshland and parkland.
- The presence of landscape parks indicates the recreational use made by wealthy landowners of this poor and unproductive landscape.
- This low lying landscape provides a convenient transport corridor, containing main roads (e.g. A3(T) and the mainline railway), which affect tranquillity.

## Physical Landscape

**L.1** The *Mixed Farmland and Woodland Vale* is underlain by Gault Clay, a formation of soft mudstones and silty mudstones which have weathered to yellow and brown clays, which create a low lying 'vale' like landform. Between Petersfield and Liss is an outcrop of Lower Greensand which gives rise to a much more undulating landform. Overlying the bedrock geology are drift deposits of alluvium (along the numerous streams) and 'head' (downwash deposits at the base of the Greensand Hills around Liss and Petersfield).

**L.2** The underlying clay geology has given rise to slowly permeable seasonally waterlogged loamy and clay soils, known as Pelo-stagnogley soils. The sandstones have given rise to well drained coarse loamy soils with slowly permeable subsoils. These soils have retained a high proportion of woodland cover, interspersed with mixed pasture and arable farmland. Fields are enclosed by thick, high hedgerows with hedgerow oaks, and rews.

**L.3** The vales are drained by streams and the underlying clay substrate supports a number of ponds. These lowland vales also provide a convenient route for communication routes.

## Perceptual/Experiential Landscape

**L.4** The relatively small fields, high proportion of woodland cover and thick, high hedgerows contribute to a sense of intimacy and enclosure in this landscape. These features also contribute to the lush lowland character which contrasts with the adjacent open sandy landscapes and exposed chalk scarps. Although the *Mixed Farmland and Woodland Vale* is perceived as an organised landscape as a result of its division into fields, the fields are irregular in form.

**L.5** Views are limited due to the enclosure of the gently undulating landform by woodland and tall hedgerows, except for occasional long distance views towards the escarpments which run parallel to the character type either to the west or south.

**L.6** The presence of communication routes and settlements detract from the tranquil character of the landscape. The settlements and roads also contribute to visible human impact on the landscape (including artificial lighting) which reduces the perceived naturalness of the landscape. This is an area with a high density of scattered settlement as well as some larger villages/ towns.

**L.7** A relatively sparse network of rights of way and small areas of common land provide limited opportunity for countryside access.

**L.8** The lowland farmlands of this landscape type have not attracted artists and writers as have the adjacent Chalk downs and Greensand hills – there are therefore few recorded perceptions of this area through literature and art.

## Biodiversity

**L.9** Essentially this is a mixed farmland landscape with arable agriculture interspersed with permanent pasture grassland and frequent woodland. Arable and pasture grassland fields are typically bordered by intact and thick hedgerows, which together with mature boundary oaks provide important ecological features. Numerous ponds and tributary streams also form key ecological components of the landscape.

**L.10** Many of the woodlands are of ancient origin and support characteristic ancient woodland plant species, as well as providing important habitat for a range of breeding bird species and invertebrates. Many of these deciduous woodlands are identified as BAP Priority Habitat and carry non-statutory nature conservation designations such as LWS or LNR. Two large nationally important areas of common land occur within this type - Binswood SSSI and Shortheath Common SSSI. The former is a fragment of the old Royal Forest of Woolmer, still actively managed as wood pasture. The latter embraces a wide range of heathland habitats with a substantial valley mire. Occasional areas of unimproved grassland also occur (primarily floodplain grazing marsh along tributary streams), together with man-made habitats, for example disused railway lines and ponds, which in some instances have developed significant ecological interest.

Key Biodiversity Features	Importance
Deciduous woodland (a BAP Priority Habitat), many of which are ancient in origin.	Many of the ancient woodlands carry non-statutory designation and support a range of characteristic woodland plant species, as well as being valuable areas for breeding birds and invertebrates.
Areas of unimproved semi-natural grasslands, often with non-statutory designation, most commonly coastal and floodplain grazing marsh as well as small isolated areas of lowland dry acid grassland and purple moor grass and rush pastures. There are also areas of semi-improved grassland (all BAP Habitats).	Unimproved grasslands are valued for supporting a diversity of plant and animal communities, and floodplain grazing marsh is notable for supporting breeding and wintering birds. Semi-improved grassland is valued for the potential for habitat enhancement.

Key Biodiversity Features	Importance
Scattered woodland, woodland strips, hedgerows, mature trees and ditches	Within the mixed farmland, the presence of additional habitat contributes significant to ecological value. The network of hedgerows and mature trees provide important wildlife corridors.

**L.11** Areas around Shortheath Common SSSI/SAC are identified by Natural England's National Habitat Networks Mapping project as providing potential for connecting existing BAP priority habitats of lowland fens, heathland and dry acid grassland with purple moor grass and rush pastures at Hartley Woods LWS. A Network Enhancement Zone is also identified linking Sutton Meadows LWS with an area of existing lowland heath in the Weald to the north.

### Historic Character

**L.12** The development of deciduous woodland cover following the last glaciation (c.8500BC) saw the exploitation of this lowland landscape by Mesolithic hunters. Later prehistoric and Romano-British communities, dependent largely on agriculture, were deterred by the thick woodland and heavy, wet clay soils. However, the lighter soils on the sandstone beds between Petersfield and Liss were settled from the Bronze Age (the recently discovered Roman Villa at West Liss has evidence of a Bronze Age settlement underneath).

**L.13** Little attempt to clear the land was made until the Saxon period, when communities situated on better soils elsewhere in the region began to exploit the landscape, initially as swine pastures within the woodland. By the 12<sup>th</sup>-13<sup>th</sup> centuries, piecemeal clearance of the woodland was in progress.

**L.14** The area is characterised by this largely medieval landscape of isolated farmsteads set within irregular fields, some of which retain the original lobate form of medieval assarts, surrounded by woodland. Later blocks of 18<sup>th</sup>-19<sup>th</sup> century enclosure represent later piecemeal enclosure of marshland and parkland. These historic fieldscapes are interspersed with larger fields from modern amalgamation.

**L.15** Today the woodland of pre-1800 (and probably medieval) origin survives as small blocks scattered across the character area, but combines with the wooded field boundaries (rews) to give the landscape a much more wooded visual appearance.

Key Features of the Historic Environment	Importance
Marginal nature of the landscape	Provides a continuing sense of remoteness.

Key Features of the Historic Environment	Importance
Isolated farmsteads set within areas of early enclosure and surrounded by woodland	Landscape largely unchanged since the medieval period providing a strong sense of historical continuity.
Designed landscapes	Provide evidence of the use of agriculturally marginal land by the wealthy strata of society for recreational use.
Pre-1800 woodland	Landscape largely unchanged since the medieval period providing a strong sense of historical continuity.

### Settlement Form and Built Character

**L.16** The settlement pattern in this area is characterised by a high density of dispersed settlement with some larger villages/towns on the sandstone outcrop. This conforms to Historic England's rural settlement designation of Weald Sub-Province within the South-eastern Province. The settlement form typically comprises a scatter of hamlets and isolated farmsteads of medieval origin set within areas of early enclosure surrounded by woodland. Later farmsteads of 18<sup>th</sup>-19<sup>th</sup> century date are situated within areas of recent enclosure.

**L.17** Building materials include sandstone extracted from the local greensands, red brick formed from local clays, and clay tiles.

## Evaluation

### Ecosystem Services in Mixed Farmland and Woodland Vales

**L.18** Ecosystem services are the benefits people and society get from the natural environment. The *Mixed Farmland and Woodland Vales* provides:

Provisioning	<ul style="list-style-type: none"> <li>Food provision – mixed farming producing arable crops, and livestock grazing</li> <li>Timber provision – mainly from commercial plantations on larger estates</li> <li>Water availability – numerous tributary streams and ponds feed the main rivers</li> </ul>
Regulating	<ul style="list-style-type: none"> <li>Regulating water flows – the slowly permeable subsoils absorb and store winter rainfall.</li> <li>Regulating soil quality and soil erosion – permanent vegetation cover such as pasture and woodland maintains soil quality and reduces soil erosion.</li> <li>Climate regulation – permanent grassland and woodland provides carbon sequestration and storage benefits.</li> <li>Air quality regulation – woodlands play an important role in regulating local air quality.</li> <li>Pollination – unimproved and semi-improved grasslands are important nectar sources for pollinating insects.</li> </ul>
Cultural	<ul style="list-style-type: none"> <li>Sense of place – a lush lowland character with small fields enclosed by tall hedgerows and woodland rews creating intimate remote pockets.</li> <li>Tranquillity – the farmland is generally tranquil, especially away from the main settlements and transport corridors.</li> <li>Recreation – limited network of footpaths and some small areas of open access</li> </ul>
Supporting	<ul style="list-style-type: none"> <li>Biodiversity - deciduous woodland and grassland habitats support a range of species.</li> </ul>

### Sensitivities

**L.19** This landscape type has many sensitive physical and aesthetic/perceptual features that are vulnerable to change, as set out in the table below:

Key Landscape Sensitivities	
1.	The rural, pastoral character of the landscape which results from areas of grazing and lack of settlement.
2.	The unimproved semi-natural grasslands are particularly important ecological habitats.
3.	Woodlands, rews, thick hedgerows and spreading hedgerow oaks which create a lush, wooded character and sense of enclosure which contrasts with the adjacent open downs. Woodlands of ancient origin are particularly important habitats.
4.	The strong sense of historical continuity provided by the remnants of the medieval landscape including the hamlets and isolated farmsteads of medieval origin and irregular fields, particularly those that retain the original lobate form of medieval assarts.
5.	The landscape parks (Burton and Bignor Parks) indicate historic recreational use of the landscape.
6.	The unity of the built components of the landscape arising from a consistent palette of building materials including sandstone extracted from the local Greensands, red brick formed from local clays, and clay tiles.
7.	The remote and tranquil character of the landscape.
8.	The dark skies associated with the South Downs International Dark Skies Reserve which are vulnerable to light sources, particularly in the 'Dark Sky Core' of the International Dark Sky Reserve around Dumpford and Dunton.
9.	Despite high tree cover and high hedges, the landscape is visible from the adjacent scarps and downs to the south, the Greensand Terrace to the west, and the Greensand Hills to the north and east which increases its visual sensitivity.

## Change – Key Issues and Trends

### Past Change

**L.20** Past change includes:

Past Change
1. Development of horse paddocks, particularly on the edge of farms and settlements leading to introduction of inappropriate 'ranch' style fencing and overgrazing of pastures.
2. Loss of some field boundaries due to decline in hedgerow management.
3. Loss of meadows and river valley grasslands as a result of agricultural improvements

### Future Landscape Change

**L.21** The likely further changes are set out in the table below:

Future Change
1. Increased rainfall could lead to high water flow in the streams and localised flooding, contrasting with periods of drought and low flows.
2. Increased temperatures may result in changes to the species composition of habitats (particularly affecting the ancient woodlands and medieval rews) and formation of pathogens which could result in the decline in the ability of woodland to regenerate and the loss of mature/significant landscape trees.
3. Wind damage, due to increases in severe gales, is another possible issue - the predominance of the older age classes may increase the susceptibility of woodland to damage from droughts and storms.
4. Agricultural management will be driven by the changes in the world market and agricultural policy. In this area of heavy clay soils, it is possible that some land may become marginal for farming and vulnerable to scrub encroachment or purchase as hobby farms or for horse grazing or other diversification activities.
5. Positive landscape change could result from regimes to promote enhanced environmental management of hedgerows, hedgerow trees, woodland and wet pastures alongside streams. Future management of woodlands for fuel or for timber in construction may be a positive benefit.
6. If Net Zero commitments are implemented it is likely that there will be a major programme of afforestation including woodlands, on-farm wood and shelterbelts.
7. The pastures are vulnerable to summer drought and it is possible that climate change and Net Zero commitments may lead to key changes in land use including a reduction in grazing land to free up land for other uses such as bioenergy crop planting.
8. Small alterations to individual properties (such as introduction of external lighting or suburban style fencing and boundaries), plus increased demand for leisure land uses such as horse riding, fishing and golf.
9. Infrastructure upgrades to the A3(T) or the mainline London to Woking railway, as well as an increasing traffic pressure, may have a negative impact on the tranquillity of the landscape.

## Broad Management Objective and Landscape Guidelines

**L.22** The overall management objective should be to conserve the lush pastoral character of the clay vales, the intact medieval landscape, and a rural setting to hamlets and villages.

### Guidance for Landscape Management

- A.** Conserve ancient woodland and medieval rews, and plan for long term woodland regeneration. Monitor the spread of introduced invasive species in ancient deciduous woodland, and plan for long term woodland regeneration. As conditions change, plant suitable species and manage woodlands to improve structure, health and diversity of habitat, improving the connectivity of woodland across the *Mixed Farmland and Woodland Vales*.
- B.** Consider re-introducing traditional woodland management techniques, such as coppicing, and encourage interest in, and marketing of, local wood products.
- C.** Conserve and manage the network of thick hedgerows, hedgerow oaks and field oaks that characterise the landscape. Consider re-planting hedgerows that have been lost, encourage buffer strips along hedgerows and encourage new tree planting to maintain the hedgerow tree population.
- D.** Maintain the lush, pastoral character of the landscape and seek to manage and extend a rich habitat mosaic including unimproved grassland.
- E.** Encourage sympathetic integration of horse paddocks through maintenance of hedgerow field boundaries and avoiding overgrazing of pastures.
- F.** Encourage the retention and management of riverside trees. Seek to minimise water pollution from agriculture through sensitive land management practices, including creating buffer strips along watercourses to minimise run-off.
- G.** Safeguard early enclosures that are remnants of a medieval landscape.
- H.** Manage parkland habitats, particularly the succession of veteran trees which form an integral part of the historic landscape.
- I.** Be alert to potential new pests and diseases and plan for their management. Continue to monitor native species to assess changes in numbers and distribution. Monitor and control the spread of invasive species which are a cause of decline in native habitats, such as Giant hogweed *Heracleum mantegazzianum* on grazing marsh and *Rhododendron ponticum* in woodland. Refer to the SDNP INSS.
- J.** Encourage and support the development of soil management plans to reduce soil erosion and compaction. Minimise soil structural deterioration and improve water infiltration and drainage.

### Guidance for Integrating Development into the Landscape

- A.** Integrate built development on the edges of villages into the rural landscape, through native planting, to maintain the rural setting to hamlets and villages.
- B.** Monitor the effects of incremental change to buildings – develop design guidance to help resist suburban style garden boundaries, kerbs, and lighting.
- C.** Ensure careful siting of stables and ménages and encourage sympathetic integration of horse paddocks through the maintenance of existing field boundaries, avoiding the overgrazing of pastures.
- D.** Take account of views from the adjacent greensand terrace, scarps and downs in relation to any change.
- E.** Conserve the tranquil wooded and undeveloped character of the landscape and associated dark skies. Pay particular attention to the introduction of any new lighting into this landscape, particularly in the 'Dark Sky Core' of the International Dark Sky Reserve around Duncton and Duncton, taking account the technical guidance advice note: <https://www.southdowns.gov.uk/wp-content/uploads/2018/04/TLL-10-SDNPA-Dark-Skies-Technical-Advice-Note-2018.pdf>



### Woodland strategy and suitable species

**L.23** The LCT contains 18.63km<sup>2</sup> of woodland, approximately 21% of woodland cover, making it one of the more wooded parts of the National Park. The woodland is predominantly associated with woodland copses of oak, hazel and ash and woodland strips along field boundaries. Hedgerow oaks and field oaks also characterise the landscape. There is an opportunity for create new areas of woodland cover to reinforce the wooded character of this area, as well as to buffer, link and extend existing copses and woodland strips, particularly areas of ancient woodland. Thickening hedgerow boundaries is a further opportunity.

**L.24** Appropriate plant species may be informed by the National Biodiversity Network Gateway, relevant Biodiversity Action Plans and biological records from the relevant Biological Records Centre

**L.25** Ensure any purchased plant stock is through reputable nurseries, operating the Plant Health Assurance Scheme (once it has been trialled) to protect against the risk of *Xylella fastidiosa* and other plant health risks.

#### Character Areas

There are three distinct areas of *Mixed Farmland and Woodland Vales* in the South Downs. One is located along the Rother Valley and is drained by the River Rother, while the other two are located further north within the catchment of the River Wey. The watershed between the two river catchments forms the boundary between the most southern character area and the two character areas located further north.

<b>L1:</b>	Rother Valley Mixed Farmland and Woodland Vales
<b>L2:</b>	Kingsley/Blackmoor Mixed Farmland and Woodland Vales
<b>L3</b>	Alice Holt Mixed Farmland and Woodland Vales

## L1: Rother Valley Mixed Farmland and Woodland Vales

### Location and Boundaries

The *Rother Valley Mixed Farmland and Woodland* occurs on the clays and sandstones that separate the *Greensand Hills* from the chalk downs of Hampshire and West Sussex. It contains the course of the upper Rother between Greatham Mill and Liss. The area's outer boundary (closest to the chalk) is well defined by the locally prominent slope leading up to the *Greensand Terrace* and the area's inner boundary (closest to the Weald) represents a transition to the sandier ridges of the *Rother Farmland and Heath Mosaic* and the *Blackdown to Petworth Greensand Hills*.

#### Key Characteristics

- Low lying clay and sandstone 'vale' containing numerous tributary streams and ponds. Contains the wooded course of the upper Rother valley which flows across the sandstone.
- Slowly permeable soils support mixed farmland, unimproved neutral grassland and woodland in which thick hedgerows and spreading hedgerow oaks create a lush, wooded character.
- Woodlands of ancient origin support characteristic ancient woodland plant species, as well as providing important habitat for a range of breeding bird species and invertebrates.
- Thick, high hedgerows, small blocks of scattered woodland and wooded field boundaries (rews) contribute to a sense of intimacy and enclosure.
- A medieval landscape of scattered hamlets and isolated farmsteads of medieval origin set within irregular fields, some of which retain the original lobate form of medieval assarts, surrounded by woodland.
- Medieval market town of Petersfield, a planned settlement, and the modern dormitory development of Liss, which originated as a medieval hamlet, are located on the sandstone, linked by the A3(T) and mainline railway.
- Distinctive building materials including sandstone extracted from the local Greensands, red brick formed from local clays, and clay tiles.
- Landscape parks (Burton and Bignor Parks) indicate the recreational use made by wealthy landowners of this heavy clay landscape.
- Views over this area from surrounding high land including the chalk downs and greensand hills.

### Specific Characteristics Unique to the Rother Valley Mixed Farmland and Woodland Vales

**L.26** The underlying clay geology creates a flat landform across much of the vale. However, the sandstones around Liss and Petersfield result in a more undulating topography, for example at Steep Marsh. Although dominated by arable agriculture, this is interspersed with permanent pasture grassland and frequent woodland creating a mosaic of mixed farmland and woodland. Medieval assarted fields survive in the more undulating areas, which have not been subject to agricultural improvement. A well-developed hedgerow network exists, which together with mature boundary oaks are an important landscape and ecological resource.

**L.27** Many of the woodlands are of ancient origin and support characteristic ancient woodland plant species, as well as providing important habitats for a range of breeding bird species and invertebrates. Many of these woodlands carry

non-statutory nature conservation designation as LWS or LNRs, for example Paddock Wood LWS. In addition, occasional small areas of semi-improved grassland also occur (e.g. Sutton Meadow LWS), and man-made habitats for example disused railway lines and ponds have also developed significant ecological interest. Traditional orchards are also characteristic, for example at West Liss and Steep Marsh.

**L.28** The valley is drained by the River Rother and its tributaries. The wooded course of the upper River Rother is a key component of this landscape character area, hidden amongst the undulating sandstone outcrop between Liss and Petersfield. The River Rother does not have a great visual influence on the landscape, but is of ecological importance for its associated wetland habitats, including BAP Priority Habitat coastal and floodplain grazing marsh, willow and alder carr, and its associated bird interest. It is designated as a LWS from its source to the Hampshire/Sussex border. Semi-improved grassland habitats and floodplain grazing marsh can also be

found along its tributaries. Burton Pond is notable for its wetland flora and breeding birds.

**L.29** The settlement pattern in this character area is generally typical of its type (a high density of dispersed settlement). However, the exceptions to the dispersed pattern are the settlements of Liss and Petersfield on the sandstone. Petersfield is a medieval market town, a deliberately planned settlement established as a market town to serve the surrounding chalklands. Building materials characteristic of Petersfield include red and blue brick buildings (including distinctive red and blue brick chequer patterns) and timber framed buildings with flint infill. Liss originated as a Bronze Age settlement. A Roman Villa was then developed on the site that grew into a medieval hamlet. It subsequently developed as a railway village. Although it has expanded considerably it is hidden within the undulating topography of this part of the upper Rother valley. This area also forms a convenient route for communication infrastructure – in this case the A3(T) and the mainline railway. These major transport routes contribute to the visible human impact on the landscape of this character area (including artificial lighting) which reduces the perceived naturalness of the landscape. However, away from the main settlements and transport routes the landscape is relatively tranquil.

**L.30** Two landscape parks exist at the eastern end of this character area (Burton and Bignor Parks Registered Park and Garden), indicating the recreational use made by wealthy landowners of this poor and unproductive landscape. There are also a number of smaller historic parks and gardens around Petersfield which are listed on Hampshire's list of local parks and gardens of historic interest.

**L.31** Some parts of the landscape are accessible via a network of rights of way, particularly the upper Rother valley. Rights of way include the long distance Hanger's Way, which passes through Petersfield, the Royal Woolmer Way which starts from Liss, and the Sussex Border Path, which crosses the area just east of Harting Pond. There are cycle hire facilities at Petersfield and both on-road and traffic free cycle routes promoted by Sustrans between Petersfield and Liss. The disused railway line provides recreational opportunities and is designated as the Liss Riverside Railway Way LNR. The Shipwrights Way path and cycle route also passes through Petersfield. The areas of common land at Goose Green, Three Cornered Piece, Didling Common, Bex Lane Waste, Fuller's Piece and Sware Lane offer little available access due to scrub encroachment.

### Sensitivities Specific to the Rother Valley Mixed Farmland and Woodland Vales

**L.32** All of the landscape and visual sensitivities listed in the landscape type evaluation apply to this character area. Specific sensitivities relevant to this character areas are included in the table below:

Key Landscape Sensitivities	
1.	The extensive area of medieval assarts surviving around Nyewood.
2.	The two landscape parks of Burton and Bignor which indicate the recreational use of this relatively unproductive clay landscape.
3.	The relative tranquillity of the landscape in areas away from the A3(T), mainline railway, Petersfield and Liss.
4.	Views of the area from viewpoints in the adjacent Greensand Terrace and as well the chalk landscapes beyond, including those identified as representative in the View Characterisation and Analysis report <sup>1</sup> .

### Change Specific to the Rother Valley Mixed Farmland and Woodland Vales

**L.33** Past change specific to this area includes:

Forces for Change	
1.	The development and widening of transport corridors including the A3(T) which has fragmented fields, introduced lighting into the rural landscape and increased noise levels and visual clutter along the road corridor.
2.	Development of scrub and woodland on formerly grazed commons.
3.	Pressure for built development and land use change, particularly on the outskirts of Petersfield and Liss. This could result in increases in artificial lighting, new urban edges and increases in traffic pressures on rural roads. Existing industrial developments have produced a harsh urban edge to Petersfield.

### Landscape Management/Development Considerations Specific to the Rother Valley Mixed Farmland and Woodland Vales

**L.34** In addition to the generic landscape management and development considerations for this landscape type, the following landscape management considerations are specific to this character area:

<sup>1</sup> LUC. 2015 South Downs National Park: View Characterisation and Analysis

- a. Conserve the field and woodland patterns associated with the area of assarts surviving at around Nyewood.
- b. Conserve the setting of the landscape parks at Burton and Bignor, as well as the many small parks and gardens on Hampshire's register of local historic parks and gardens.
- c. Manage areas of common land to provide a balance of habitats and improved access.

**L.35** The following development considerations are specific to this character area:

- a. Integrate built development on the edges of Petersfield and Liss into the rural landscape and maintain the rural setting to these settlements.
- b. Consider opportunities to further mitigate the impact of the A3(T) on the rural character of the landscape through conservation of existing visual screening and noise attenuation.
- c. Consider the impact of development in this area in views from surrounding higher land.

## L2: Kingsley/Blackmoor Mixed Farmland and Woodland Vales

### Location and Boundaries

The *Kingsley/Blackmoor Mixed Farmland and Woodland* occurs on the clays to the east of the *East Hampshire Greensand Terrace*. The western boundary (closest to the chalk) is well defined by the locally prominent Greensand scarp the marks the edge of the *Greensand Terrace* and its eastern boundary is defined by the National Park boundary which coincides with a change in geology to the sandy landscapes of the *Wealden Farmland and Heath Mosaic*.

#### Key Characteristics

- Low lying clay 'vale' at the foot of the East Hampshire Greensand 'terrace' containing the headwaters of the River Wey, numerous streams and ponds.
- Slowly permeable seasonally waterlogged clay soils support mixed farmland, unimproved neutral grassland and woodland in which thick hedgerows and spreading hedgerow oaks create a lush, wooded character.
- Two large area of common land at Binswood and Shortheath provide rich habitats for biodiversity (designated SSSIs) as well as providing open public access.
- Woodlands of ancient origin support characteristic ancient woodland plant species, as well as providing important habitat for a range of breeding bird species and invertebrates.
- Thick, high hedgerows, small blocks of scattered woodland and wooded field boundaries (rews) contribute to a sense of intimacy and enclosure.
- Essentially a medieval landscape of scattered hamlets and isolated farmsteads of medieval origin set within irregular fields, with two medieval deer parks located at East Worldham and Blackmoor House.
- Some areas of recent enclosures have overlaid the medieval field pattern, for example in the area east of the Selborne orchards.
- Distinctive building materials including sandstone extracted from the local greensands, red brick formed from local clays, and clay tiles.
- Blackmoor Park is a 19<sup>th</sup> century landscape park that indicates the recreational use made by wealthy landowners of this relatively unproductive landscape.
- Views over this area from the adjacent *East Hampshire Greensand Terrace* to the west.

### Specific Characteristics Unique to the Kingsley/Blackmoor Mixed Farmland and Woodland Vales

**L.36** This landscape character area retains a medieval landscape structure – comprising an early enclosure pattern and the remnants of two medieval deer parks – one at East Worldham and the other at Blackmoor House. The majority of the area today is characterised by arable agriculture, together with scattered small woodland blocks, some of which are of ancient in origin and also designated as LWS, for example Blackmoor Wood LWS and Rookery Copse LWS. This area is drained by numerous streams which flow eastwards into the River Wey with associated wetland habitats including floodplain grazing marsh (a BAP Priority Habitat) particularly along the Kingsley and Oakhanger Stream. As well as the streams, the vale contains a number of ponds, some of which are former clay pits.

**L.37** Of particular note in this character area is the presence of common land. Binswood comprises an actively managed wood pasture, of acidic poorly drained unimproved pasture with scattered old oaks and beeches, and areas of dense woodland. The site is particularly important for its invertebrate and lichens assemblages and is recognised for its contribution to biodiversity at a national level (being designated as a SSSI). Shortheath Common is located on an outcrop of Lower Greensand on the eastern edge of the vale - it is a distinctive feature of this character area, comprising ancient common land which supports bogs, marshes, water bodies, heath, grassland and woodland. This site is of international nature conservation value, particularly for its valley mire system and is designated as an SSSI/SAC. Of particular note are the mire and bog communities which support a number of notable plants species, such as marsh cinquefoil, round-leaved

sundew, cranberry and a many species of bog moss. These commons now provide open access as well as recreational opportunities for horse riding, dog walking and angling at Shortheath. The network of public rights of way provides further opportunities for countryside access, including the long distance Hanger's Way, which borders Binswood Common.

**L.38** The area is particularly tranquil and remote as a result of the low density of settlement and absence of major transport routes. The presence of pylons across the landscape and communications mast and reservoir at Hartleywood Farm, and the MOD transmitting station at Oakhanger also affect the perception of tranquillity and remoteness.

#### Sensitivities Specific to the Kingsley/Blackmoor Mixed Farmland and Woodland Vales

**L.39** All of the landscape and visual sensitivities listed in the landscape type evaluation apply to this character area. In additions, specific sensitivities to this character area are:

Key Landscape Sensitivities	
1.	The medieval deer parks at East Worldham and Blackmoor House.
2.	Blackmoor Park which indicates 18 <sup>th</sup> century recreational use of this relatively unproductive clay landscape.
3.	The two large areas of common land at Binswood and Shortheath. which are designated for their ecological value.
4.	The high degree of tranquillity and remoteness within this area.

#### Change Specific to the Kingsley/Blackmoor Mixed Farmland and Woodland Vales

**L.40** In addition to the generic changes listed in the landscape type evaluation, specific changes relevant to this character area include:

Forces for Change	
1.	Pressure for development and land use change, outside the National Park, particularly around Oakhanger and Kingsley or redevelopment of MOD sites.

#### Landscape Management / Development Considerations Specific to the Kingsley/Blackmoor Mixed Farmland and Woodland Vales

**L.41** In addition to the generic landscape management and development considerations for this landscape type, the following landscape management considerations are specific to this character area:

- a. Safeguard the medieval deer parks at East Worldham and Blackmoor House that are remnants of a medieval landscape.
- b. Conserve the features and setting of Blackmoor Park and maintain its pastoral character.
- c. Ensure management of areas of common land at Binswood and Shortheath support a balance of biodiversity, historic and recreational objectives.
- d. Conserve the high degree of tranquillity and remoteness within this area.
- e. Consider the impact of development in this area in views from the East Hampshire Greensand Terrace and the chalk landscape beyond.



## L3: Alice Holt Mixed Farmland and Woodland Vales

### Location and Boundaries

This small character area is located on Gault Clay and defined by the extensive woodland/plantation cover (Forestry Commission). The eastern edge of this character area is defined by the National Park boundary which also coincides with the edge of woodland cover. The northern and southern boundaries are also largely delineated by the extent of woodland cover and the transition to lower lying adjacent landscapes. A change in the underlying geology (to Upper Greensand) defines the western boundary.

#### Key Characteristics

- Underlain by mudstones of the Gault Formation which create a gently undulating landform and are prone to slippage.
- Predominantly seasonally wet acid and loamy and clayey soils support broadleaf and coniferous woodland. Over 100ha of original 19<sup>th</sup> century oak dominated woodland is of particular ecological interest.
- A number of small fields of pasture are contained within the woodland.
- The forest supports a wide range of breeding birds, and a population of the purple emperor butterfly, a species which is now restricted to a limited number of broadleaved woodlands in Southern England.
- Drained by tributaries of the Slea and the Wey with a number of ponds (e.g. Lodge Pond).
- Small nuclear villages located along the A325 (such as Bucks Horn Oak) with some dispersed, linear settlement along rural roads.
- Extensive recreational opportunities associated with the forest, plus several recreation sites (e.g. Blacknest Golf Course).
- Cut north-south by the A325 with a number of rural roads separating woodland inclosures.
- A peaceful landscape away from the A325.

### Specific Characteristics Unique to the Alice Holt Mixed Farmland and Woodland Vales

**L.42** The underlying mudstones of the Gault Formation creates a gently undulating landform. Drift deposits of head covering the north eastern half of the character area correspond to tributaries of the River Wey (South Branch). The geology gives rise to predominantly slowly permeable, seasonally wet acid and loamy and clayey soils. A high proportion of semi-natural woodland cover has been retained (all of which is ancient) on these clay based soils. Woodland is divided into Inclosures which contain varying proportions of broadleaf and coniferous woodland with Corsican pine and oak as key species. For example, Holt Pound is a predominantly coniferous, Abbots Wood is predominantly broadleaf and Lodge Inclosure is mixed woodland. A number of small areas of pasture are contained within woodland with field boundaries formed by the woodland edge (Halfway Farm and Woodlands Farm). The farmland to the west of the forest edge (e.g. Broadview Farm) is of recent enclosure whereas the farmland enclosed by woodland or on the edge of the forest are due to 19<sup>th</sup> century parliamentary enclosure or

isolated 20<sup>th</sup> enclosure). The character area is drained by tributaries of the River Wey and Slea. A number of ponds occur within the landscape e.g. Lodge Pond.

**L.43** The diversity in woodland provides a variety of texture and colour and offers different experiences, for example Abbots Wood has an impressive avenue of beech which lines one of the tracks. The open clearings of pasture contrast with the enclosure provided by tree cover. The area is dissected by the A325 with several settlements, however away from the roads, within the forest enclosures this is a peaceful and natural landscape with a strong sense of seclusion.

**L.44** The forest is managed to produce timber, encourage wildlife and provide recreational opportunities. Access to the forest is good with a number of car parks, a comprehensive footpath network and is well used by off-road cyclists. Alice Holt visitor centre provides an important educational facility. Alice Holt is the home to one of the Forestry Commission's two main research stations. Other recreational facilities include Blacknest Golf Course.

**L.45** The forest gives its name to coarse Roman period pottery produced at various sites in the area from the first to 4<sup>th</sup> centuries AD. This is recognised by a Scheduled Monument listing which identifies the southern part of Goose Green Inclosure and part of Abbots Wood Inclosure as Romano-British kiln sites. Alice Holt Pottery is characterised as coarse grey sandy clay which has a very rough look. The forest is also famous for its oak trees, which once supplied timber for building navy ships.

**L.46** The extensive forestry area includes a number of component LWS sites. The majority of the woodland is considered to be of ancient origin, although much has been replanted and now comprises coniferous forest dominated by Corsican pine. However, over 100ha of 19<sup>th</sup> century oak dominated woodland also occurs and is of particular ecological interest. As a whole this area supports a wide range of breeding birds, and a population of the purple emperor butterfly, a species which is now restricted to a limited number of broadleaved woodlands in Southern England. Bentley Station Meadow on the edge of the Forest is dedicated to butterfly conservation.

**L.47** This is a heavily wooded landscape of pre-1800 origin, although subsequently replanted. The unproductive Gault Clay was historically used as common woodpasture. Occasional archaeological monuments include an important Roman pottery industry surviving in the landscape as a series of dumps of wasters (misfired pottery) forming mounds (protected as Scheduled Monuments).

**L.48** Settlement is largely post-1800 common-edge settlements (e.g. Bucks Horn Oak) forming linear patterns associated with regular small garden plots. Local building materials include sandstone, red brick and clay tiles. Modern 20<sup>th</sup> century additions include scientific (Forestry Commission Research Station) and leisure (Blacknest Golf Course) facilities as well as the expansion of existing nucleated settlements located along the A325 and other dispersed, linear settlements along roads. The A325 transport corridor which crosses the character area has introduced visual clutter, lighting and increased noise levels into the landscape.

#### Sensitivities Specific to the Alice Holt Mixed Farmland and Woodland Vales

**L.49** All of the landscape and visual sensitivities listed in the landscape type evaluation apply to this character area. Specific sensitivities relevant to this character area are included in the table below:

Key Landscape Sensitivities	
1.	The large tracts of ancient woodland (particularly the 19 <sup>th</sup> century oak dominated woodland) containing small pastoral fields, and the important habitat it provides.
2.	The sensitive balance between biodiversity, recreation and productive use of the forest.
3.	The sense of peacefulness found within the woodland, away from the main road.
4.	Views within and to this landscape are contained and restricted by the high proportion of woodland which limits visual sensitivity.

#### Change Specific to the Alice Holt Mixed Farmland and Woodland Vales

**L.50** Past change specific to this area includes:

Forces for Change	
1.	Pressure for incremental ribbon development along the A325 transport corridor.
2.	Pressure for 'suburbanisation' of the landscape, particularly along roads.

#### Landscape Management / Development Considerations Specific to the Alice Holt Mixed Farmland and Woodland Vales

**L.51** In addition to the generic landscape management and development considerations for this landscape type, the following landscape management considerations are specific to this character area:

- a. Conserve the natural and tranquil character of the woodland and the opportunities it provides for timber production, wildlife and recreation.
- b. Conserve the pattern of small pastoral fields which survive within the woodland.

**L.52** The following development considerations are specific to this character area:

- a. Conserve the settlement pattern and avoid further incremental linear development along the A325.
- b. Maintain the rural character of the roads and avoid use of excessive lighting, signage and 'suburban' features.

## **APPENDIX F**

### **SDNP Integrated Landscape Character Assessment Landscape Type M**

## Appendix M

### Landscape Character Type M: Wealden Farmland and Heath Mosaic

The *Wealden Farmland and Heath Mosaic* lies on the sandstones of the Folkestone Formation, to the north of the chalk escarpment of the South Downs. The geology gives rise to a well-drained, sandy lowland landscape supporting a mosaic of oak-birch woodland, conifer plantations, open sandy heaths, and rough grazed pasture.

#### Description

##### Key Characteristics

- Flat or gently undulating lowland 'plateau' landscape on outcrops of sandstones of the Folkestone Formation.
- Well-drained sandy, acidic soils support a mix of nationally important heathland habitats including open heather heath, acid grassland, bracken, gorse, woody scrub, and oak-birch woodland.
- Small to medium sized fields of rough grazed pasture and horse paddocks bounded by hedgerows with gorse and bracken, and hedgerow oaks. Clusters of oak trees and Scots pine trees form visual accents.
- An irregular and intimate mix of semi-natural habitats and agriculture creating valuable foraging and over-wintering sites for a range of bird species.
- Ponds, bogs and wet grassland in low lying areas.
- Commons (historically used for rough grazing or heath-cutting) often covered by 19<sup>th</sup> or early 20<sup>th</sup> century woodland plantations, but some remnant unenclosed commons providing open access.
- Settlement is relatively late, typically comprising isolated farmsteads of 18<sup>th</sup>-19<sup>th</sup> century origin set within areas of recent enclosure, and 'squatter' settlement on the edges of the common land. Building materials include local sandstones.
- Generally straight lanes and tracks provide access to heathland and heath edge settlements.
- Numerous Bronze Age barrow cemeteries are signs of a prehistoric ritual landscape.
- Large number of sand pits indicating the economic value of the sands of the Folkestone Beds.
- Views limited by dense woodland cover.

## Physical Landscape

**M.1** The *Wealden Farmland and Heath Mosaic* is underlain by sandstones of the Folkestone and Sandgate Beds, which form slightly elevated, flat topped plateaux with undulating sides. The plateaux are drained by small streams along which are deposits of river terrace gravels and downwash deposits ('Head') which mask the underlying bedrock.

**M.2** The plateaux are associated with free-draining, acid sandy soils which support an irregular patchy mosaic of open heathland, oak-birch woodland, coniferous plantation, acidic grassland, gorse and bracken scrub, and rough grazing land.

**M.3** A number of water bodies are present – many of these are former mill ponds, decoy ponds or sand pits. The sands of the Folkestone Beds are of economic value and the landscape is therefore pitted with active and disused quarries.

## Perceptual/Experiential Landscape

**M.4** This is a distinctive landscape with a mix of various elements juxtaposed to form an organic mosaic. The presence of many trees, including tall conifers which cast dark shadows, gives the landscape an almost overpowering sense of enclosure in places. However, this can also be a colourful landscape, particularly when swathes of heather turn purple in summer.

**M.5** The *Wealden Farmland and Heath Mosaic* is essentially a quiet landscape with a high sense of 'naturalness' deriving from the mix of woodland and heathland. There is very little overt human impact, although there are some active sand pits hidden within the woodland. Settlement tends to be located around the edges of the heaths and commons and these areas are perceived as remote and tranquil.

**M.6** The *Wealden Farmland and Heath Mosaic* typically has good public access as a result of a number of registered commons, open access land, and a good public rights of way network.

**M.7** The sandy heaths have received less attention than the neighbouring downland landscapes by writers and artists. However, Gilbert White, a naturalist who lived in Selborne in the late 18<sup>th</sup> century wrote about the area, and Flora Thompson (1876 – 1947) wrote of Weavers Down '*Out in the lanes and upon the open heath the broom in flower is a glorious sight. Upon Peverel there are large, long established thickets of it... All down the tough, dark stems the pea-shaped blossoms hang, like a myriad of golden butterflies poised for flight*'. In her guide to the Liphook area (1925) she articulates the views from this landscape, sandwiched between the chalk downs and Greensand hills: '*...a perfect panorama of beauty. Forestmere Lake (Folly Pond) lies like a mirror in the woods*

*directly beneath; to the south is the blue ridge of the South Downs; to the north the heathery heights of Hindhead*'. Hilaire Belloc noted the '*bunches of pine trees, making a peculiar note in the landscape*' in his book *The County of Sussex* (published in 1936).

## Biodiversity

**M.8** The sandy soils have given rise to a diverse mix of heathland habitats including open heather heath, acid grassland, bracken, gorse, woody scrub, oak-birch woodland, some sweet chestnut coppice and conifer plantation. These often extensive areas of lowland heathland, lowland dry acid grassland and lowland fens (all BAP Priority Habitats) support a range of characteristic plant species, and important invertebrate and bird populations, including uncommon species such as woodlark, nightjar and Dartford warbler. Woolmer Forest SAC/SPA is the best area of lowland heath outside the New Forest and is the largest area of heathland existing on Folkestone Beds in southern England.

**M.9** Occasional areas of acid bog also occur, for example at Hurston Warren SSSI, and provide additional ecological interest. This quaking bog is considered to be one of the best examples of its type in the southeast and supports many locally notable plant species, such as cranberry and hare's tail cotton grass.

**M.10** Good quality semi-improved grassland and some traditional orchards also occur scattered within the heavily wooded landscape (much of which is deciduous woodland and a BAP Priority Habitat).

**M.11** The ecological importance of these varied habitats is reflected in the significant number of local and national designations across the character type, including numerous LWS and SSSI and international protection of Woolmer Forest SAC/SPA. Areas of open arable land create valuable foraging and over-wintering sites for a range of bird species, particularly when managed appropriately e.g. over-wintering stubble.

Key Biodiversity Features	Importance
Significant areas of heathland habitat, with a mosaic of associated habitat types including dry and wet lowland heathland, lowland dry acid grassland, scrub, woodland, and lowland fens with bog (all BAP Priority Habitats) and open water	Extensive areas of lowland heath, recognised as a nationally important habitat, support populations of Dartford warbler, nightjar and woodlark of European significance. Many plant species associated with heathland habitat have a locally restricted distribution.
Intimate mix of semi-natural habitats and agriculture	Provides important habitat mosaics of benefit to a wide range of faunal species,

Key Biodiversity Features	Importance
	including foraging and over-wintering birds.
Significant woodland cover including BAP Priority Habitat deciduous woodland	Extensive areas of plantation woodland form an important component of the heathland/woodland mosaic, and buffer sensitive heathland habitats. Areas of semi-natural deciduous woodland are recognised as nationally important habitats.

**M.12** Areas of BAP Priority Habitat lowland heathland across the *Wealden Farmland and Heath Mosaic* are identified as providing effective habitat networks within Natural England's National Habitat Networks Mapping Project. Adjacent to these heathland habitats are areas identified as suitable for restoration where they exist in a degraded or fragmented form (such as areas adjacent to the SSSI at Parkham Park, Hurston Warren, Lavington Common, Ambersham Common, Iping Common or within Woolmer Forest). The project also indicates that work is underway to improve or restore these habitats in some areas (such as at Graffham Common and Fir Toat LWS or Woolmer Forest SAC/SPA).

**M.13** Network Enhancement Zones are identified across the landscape type, where land connecting existing habitats are likely to be suitable for the creation of heathland habitats, and subsequently improve connections between them. A number of potential 'network joins' have been identified stretching across the *Wealden Farmland and Heath Mosaic*, including networks extending across Woolmer Forest and around Iping Common, or connecting Ambersham and Lavington Commons, Parkham Park and Huston Warren.

### Historic Character

**M.14** The presence of a number of Bronze Age barrow cemeteries (all Scheduled Monuments) indicates that the marginal nature of the area is of some antiquity. The original hazel 'wildwood' would have been cleared for farming.

**M.15** The landscape is characterised by large areas of commonland, originally cleared in the prehistoric period, and utilised by communities based on more favoured soils (generally to the south along the foot of the downland scarp) as pasture (particularly for sheep), wood pasture and as a source of fuel. Woolmer Forest formed part of a Royal Hunting Forest during the medieval period.

**M.16** The soils became impoverished, leading to the creation of heathland. Most of the commons have, since 1800, been appropriated for plantations, many of them coniferous. These,

together with a scatter of earlier blocks of ancient (probably medieval) woodland, produce the wooded character of the landscape. Relatively small areas of unenclosed common still survive.

**M.17** Some of the more fertile areas of land within the landscape were enclosed for agricultural use – these areas are evident today as medieval assarts or early enclosures. However, most of the enclosures are either recent enclosures (18<sup>th</sup>-19<sup>th</sup> century) of former commonland scattered in and around the extensive woodland, or large areas of modern fields, which themselves represent modifications of pre-existing field systems (both early and recent enclosures, with the latter probably predominant). These enclosures represent a fundamental change in the last few centuries, with several millennia of communal use and access to the heathlands being replaced by private ownership.

**M.18** Features such as 'hammer ponds', large ponds formed by damming streams, are evidence of the Wealden iron industry in the 16-18th century.

**M.19** There are limited traditional examples of designed landscapes, i.e. gentry houses and landscape parks, although there are remnants of a medieval deer park at Burton Park (Registered Park and Garden) and a deer park at Coates Castle. This testifies to the lack of a wealthy population in the past and the traditional dependency of the area on the surrounding lowland zone.

Key Features of the Historic Environment	Importance
Numerous Bronze Age barrow cemeteries	Prehistoric ritual landscape indicating that marginal nature of the area is of some antiquity and caused by human action.
Remnant areas of unenclosed commons	Evidence of the communal use of land in the past.
Assarts and other early enclosures	Represent historic agricultural use of more fertile areas.
18-19 <sup>th</sup> century field enclosures	Represent the change from communal use of land to private ownership.
Hammer and mill ponds	Remaining features of former iron smelting industry now valuable for wildlife.

### Settlement Form and Built Character

**M.20** The settlement pattern of the *Wealden Farmland and Heath Mosaic* is characterised by a high density of dispersed settlement. This conforms to Historic England's rural



settlement designation of Weald Sub-Province within the South-eastern Province. The typical settlement form is relatively late in origin, and comprises isolated farmsteads of 18<sup>th</sup>-19<sup>th</sup> century origin set within areas of recent enclosure derived from former commonland, together with irregular small-scale agglomerations of common-edge settlement representing 'squatter' settlement on the edges of the commonland.

**M.21** Building materials are typically local sandstones which vary in colour from light yellow to dark purple-browns. Also typical is red brick detailing, particularly around windows and doors. Locally distinctive Cowdray Estate yellow window sills and doors feature in parts of this area. Timber boarding is frequently used on agricultural buildings. Clay tile is the most typical roofing material.

## Evaluation

### Ecosystem Services in the Wealden Farmland and Heath Mosaic

**M.22** Ecosystem services are the benefits people and society get from the natural environment. The *Wealden Farmland and Heath Mosaic* provides:

Provisioning	<ul style="list-style-type: none"> <li>Food provision – from grazing of livestock, although other food production is limited due to the low fertility of the sandy soils.</li> <li>Timber provision – large areas of commercial plantation, predominantly coniferous with smaller portions of mixed and deciduous woodland.</li> <li>Water availability – this area forms part of the sandstone aquifer which plays an integral role in maintaining the base flow of the region's rivers and streams.</li> </ul>
Regulating	<ul style="list-style-type: none"> <li>Regulating water quality – the sandstone substrate acts as a natural filtering system helping to maintain water quality.</li> <li>Regulating water flow – permeable sandy soils allow groundwater levels to recharge easily. Significant canopy cover allows for rainfall interception which aids recharge as well as reducing surface water flow and the risk of flooding downstream.</li> <li>Climate regulation – woodlands and heathlands play an important role in carbon sequestration and storage.</li> <li>Air quality regulation – trees in this landscape play an important role in the removal of pollutants from the air.</li> <li>Soil erosion – much of the land is uncultivated and dominated by semi-natural vegetation such as woodland and heathland, which plays an important role in maintaining soil structure and reduce soil erosion.</li> <li>Pollination – heathland is a particularly important nectar source for pollinators.</li> </ul>
Cultural	<ul style="list-style-type: none"> <li>Sense of place – a distinctive and varied landscape of lowland heath, historic commons and woodland which creates a strong sense of place.</li> <li>Tranquillity – little overt human impact on the landscape results in a tranquil and remote nature, particularly associated with areas of heathland and common land.</li> <li>Recreation – generally well served by PRoWs, open access land and commons.</li> </ul>
Supporting	<ul style="list-style-type: none"> <li>Biodiversity – extensive areas of lowland heathland and deciduous woodland form a network of BAP Priority Habitats which supports a wide range of species.</li> </ul>

### Sensitivities

**M.23** This landscape has many sensitive physical and aesthetic/perceptual features that are vulnerable to change. Key landscape sensitivities include:

Key Landscape Sensitivities	
1.	Nationally important lowland heathland that requires active management.
2.	Rich biodiversity and perception of 'naturalness' provided by oak-birch woodland, lowland heath and pasture on acidic grassland.
3.	The intimate mix of semi-natural habitats and agriculture creating valuable foraging and over-wintering sites for a range of bird species, including extensive areas of lowland heathland which support important invertebrate and bird populations including uncommon species such as Dartford warbler, nightjar and woodlark of European importance.
4.	Relative absence of settlement limited to isolated farmsteads of 18 <sup>th</sup> -19 <sup>th</sup> century origin and 'squatter' settlement on the edges of the common land which form a distinctive settlement pattern and indicate the late settlement of the area. This low settlement is especially vulnerable to infill and consolidation creating a more compact solid settlement character.
5.	The consistent use of building materials - local sandstones, red brick detailing, particularly around windows and doors, timber boarding on agricultural buildings and clay tile.

Key Landscape Sensitivities	
6.	The numerous Bronze Age barrow cemeteries which provide signs of a prehistoric ritual landscape which are hidden in the landscape by woodland or have been covered by trees.
7.	Remnant unenclosed commons which are important in providing a sense of time depth, a high perceived naturalness, opportunities for countryside access, and a rich biodiversity.
8.	The dark skies associated with the South Downs International Dark Skies Reserve which are vulnerable to light sources, particularly in the 'Dark Sky Core' of the International Dark Sky Reserve (concentrated in LCA M2).
9.	The landscape's visibility from adjacent upland areas increases its visual sensitivity (although this is tempered by the high proportion of woodland cover).

## Change – Key Issues and Trends

### Past Change

**M.24** Past change includes:

Past Change	
1.	Enclosure of former common land for agricultural use in the 18 <sup>th</sup> -19 <sup>th</sup> century.
2.	Modifications of pre-existing field systems into larger modern enclosures as well as more recent sub-division of fields associated with horse grazing.
3.	Planting of coniferous plantations on former common land in the 19 <sup>th</sup> and 20 <sup>th</sup> centuries. These large-scale areas of monoculture have had a negative effect on biodiversity, although in recent years plantations have become more diverse.
4.	Quarrying of sand which has had a negative effect on tranquillity.
5.	Invasion of scrub and bracken onto remaining areas of heathland in areas of low grazing pressure which has affected ecological value.
6.	Decline in traditional woodland management techniques as forestry has concentrated on coniferous rotations and the spread of introduced invasive species such as rhododendrons and laurel which thrive on the acidic sandy soils, within deciduous woodland.
7.	Increase in hobby farming or private stables resulting in sub-division of fields with additional fencing, tracks, hardstanding, jumps and other paraphernalia.
8.	The military base located at Longmoor Camp.

### Future Landscape Change

**M.25** The likely future changes are set out in the table below:

Future Change	
1.	Increased temperatures may result in changes to the species composition of habitats, including heathland and acidic grassland, although lack of management/ under-grazing is a bigger threat to these heathlands. Warmer and wetter winters may result in spread of bracken on lowland heaths. Positive landscape change could result from ongoing work to restore, manage and link heathland sites.
2.	Open access land, particularly heathland, is vulnerable to erosion and compaction of soil leading to waterlogging caused by increased visitor numbers.
3.	Increased temperatures could lead to the formation of pathogens which in time could result in the decline in ability of woodland to regenerate and the loss of mature/significant landscape trees.
4.	Wind damage, due to increases in severe gales, is another concern for areas of deciduous woodland.

Future Change	
5.	Enhanced environmental management of woodland, changes to tree cover, particularly in relation to commercial forestry plantations and improved management for fuel may all result in positive landscape change.
6.	If Net Zero commitments are implemented, it is likely that there will be a key changes to land use, including a reduction in grazing land to free up land for other uses such as woodlands related to afforestation initiatives.
7.	The risk of wildfires will increase with climate change as summers become hotter and drier. This is of particular concern due to the extent of coniferous plantations and lowland heathlands which are at higher risk.
8.	Agricultural management will be driven by the changes in the world market and agricultural policy. In this area of low fertility sandy soils, key changes to land use may include a reduction in grazing land and it is possible that marginal farms may cease active agricultural production. The land is likely to be vulnerable to purchase as hobby farms, for horse grazing, or for other uses such as golf courses and these uses could change the rural character of the area.
9.	Pressure for built development may result in expansion and infill of the loose common edge 'squatter settlements' and over 'gentrification'. This would change the original character of settlement and could result in increases in artificial lighting, expansion of villages, and increases in traffic pressures on the rural roads.
10.	Continued pressure for sand extraction may lead to a loss of landscape features and a negative impact on surface water quality. However, strict environmental assessments are required before proposals for sand extraction can go ahead and restoration of former sites can be a positive landscape change.

## Broad Management Objective and Landscape Guidelines

**M.26** The overall management objective should be to conserve the distinctive heathy character of this landscape and aim to create new inter-connected open heathlands, within a mixed mosaic of pasture and woodland.

### Guidance for Landscape Management

- A.** Manage existing heathland to prevent excessive encroachment of scrub and promote the restoration and creation of new, interconnected heathlands, particularly on former common land. Restoration of coniferous plantations and sand quarries to heathland is a key opportunity.
- B.** Consider opportunities to re-instate common grazing to restore the historic and cultural character of the landscape and secure the ongoing management and conservation of the commons which are important in providing a sense of time depth, perceived 'naturalness', opportunities for countryside access, and a rich biodiversity.
- C.** Promote an informal and irregular mosaic of oak-birch woodland, lowland heath, gorse and bracken scrub, and acid grassland which contribute to a rich biodiversity and the perception of 'naturalness'.
- D.** Where arable land exists, aim to create a wildlife-rich habitat supporting farmland birds, including retaining areas of fallow land, maintaining an unploughed margin around arable land, and management of existing hedgerows and hedgerow trees.
- E.** Encourage active management of land which is no longer farmed to ensure the rural character of the area is maintained.
- F.** Encourage replanting of conifer plantations with appropriate broadleaved species (where heathland re-creation is not appropriate). Mixing different species could also minimise the risk of damage as a result of increased storms and high winds.
- G.** Conserve, and consider planting of new, clusters of oak trees and Scots pine trees as visual accents.
- H.** Encourage re-introduction of traditional woodland management techniques. Promote interest in, and marketing of, local wood products, including wood for fuel and timber for construction.
- I.** Ensure planning for wildfires is incorporated into forest and heathland management plans. Promote responsible recreation behaviour. This is particularly important during periods of heat wave, where there is increased risk of fire in areas of open grassland/heathland and woodland.
- J.** Be alert to potential new pests and diseases and plan for their management. Continue to monitor native species to assess changes in numbers and distribution. Monitor and control the spread of invasive species which are a cause of decline in native habitats, such as *Rhododendron ponticum* and Yellow azalea *Rhododendron luteum* in the lowland heathlands. Refer to the SDNP INNS Strategy.
- K.** Encourage and support the development of soil management plans to prevent soil erosion.
- L.** Encourage the creative restoration of redundant sand quarries, exploiting the potential for geological interest, nature conservation, and recreation.
- M.** Conserve the historic Bronze Age barrow cemeteries which provide a sense of time depth and evidence of a prehistoric ritual landscape. Maintain these sites free of trees and open up views to the sites.

### Guidance for Integrating Development into the Landscape

- A.** Conserve the characteristic settlement pattern of dispersed isolated farmhouses and loose agglomerations of common edge settlement. Extensions and infill would change the historic pattern.
- B.** Ensure recreational facilities, such as horse riding centres and golf courses, do not erode the rural character of the landscape. Avoid use of excessive lighting (see separate point on lighting below), signage and 'suburban' features.

- C.** Use woodland to screen unsightly developments and quarries. Ensure heathland restoration programmes consider possible adverse visual impact resulting from the exposure of existing buildings, particularly large-scale industrial or military buildings.
- D.** Maintain a consistent palette of building materials including local sandstones, which vary in colour from light yellow to dark purple-browns, red brick detailing (particularly around windows and doors), timber boarding, and clay tile.
- E.** Conserve the rural character of the villages and their setting through design guidance to discourage the introduction of suburban features such as artificial lighting, concrete kerbs, Leylandii hedges, and suburban style fences.
- F.** Consider views towards the chalk escarpment from open and elevated land, including those representative views identified in the View Characterisation and Analysis report<sup>1</sup>.
- G.** Pay particular attention to the introduction of any new lighting into this landscape, particularly in the 'Dark Sky Core' of the International Dark Sky Reserve, taking account of the technical guidance advice note:  
<https://www.southdowns.gov.uk/wp-content/uploads/2018/04/TLL-10-SDNPA-Dark-Skies-Technical-Advice-Note-2018.pdf>.

### Woodland strategy and suitable species

**M.27** The LCT is a mix of pasture, open sandy heathland, and woodland covering 32.88km<sup>2</sup>, including oak-birch woodland and extensive conifer plantations. With approximately 45% woodland cover, the type is one of the more wooded parts of the National Park. The woodland strategy for this area is to seek to replant conifer plantations with appropriate broadleaved species, extending oak-birch woodland to provide a buffer to open sandy heathland. Woodland planting is appropriate where it does not conflict with the restoration and creation of new, interconnected heathlands.

**M.28** Appropriate plant species may be informed by the National Biodiversity Network Gateway, relevant Biodiversity Action Plans and biological records from the relevant Biological Records Centre.

**M.29** Ensure any purchased plant stock is through reputable nurseries, operating the Plant Health Assurance Scheme (once it has been trialled) to protect against the risk of *Xylella fastidiosa* and other plant health risks.

Character Areas	
There are three distinct areas of <i>Wealden Farmland and Heath Mosaic</i> . These are all located on the Folkestone and Sandgate Beds of the Lower Greensand.	
<b>M1:</b>	Parham Farmland and Heath Mosaic
<b>M2:</b>	Rother Farmland and Heath Mosaic
<b>M3:</b>	Woolmer Forest/Weaver's Down Farmland and Heath Mosaic

<sup>1</sup> LUC. 2015 South Downs National Park: View Characterisation and Analysis



## M1: Parham Farmland and Heath Mosaic

### Location and Boundaries

The *Parham Farmland and Heath Mosaic* forms two elevated undulating 'plateaux' divided by the River Stor. It is a small area which is separated from the *Rother Farmland and Heath Mosaic* (LCA M2) by the River Arun – its western boundary is therefore clearly defined by the floodplain of the River Arun. The southern boundary is defined by a public right of way which represents a transition to the scarp footslopes to the south. The northern and eastern boundaries are defined by the National Park boundary which also coincides with a change of character to a much more settled landscape.

#### Key Characteristics

- Slightly elevated plateaux formed from sandstones of the Folkestone and Sandgate Formations, rising to 35m at Northpark Wood.
- Well-drained sandy soils support a mix of nationally important heathland habitats, including open heather heath, acid grassland, bracken, gorse, woody scrub, and oak-birch woodland.
- Areas of lowland heath and wetland including lowland bog, for example at Parham Park SSSI, Hurston Warren SSSI, and Wiggonholt Common LWS support many locally notable plant species.
- Large areas of woodland plantations and enclosures are of 18<sup>th</sup>-19<sup>th</sup> century date covering areas of former commonland illustrating the change from communal use to private ownership.
- Open canopied mature oak woodland supports one of the richest epiphytic lichen floras in southeast England.
- Surviving early enclosures around Wiggonholt on better agricultural land located on an outcrop of Gault Clay.
- An intimate mix of semi-natural habitats and agriculture create valuable foraging and over-wintering habitat for a range of bird species.
- Numerous Bronze Age barrow cemeteries at Rackham Plantation are signs of a prehistoric ritual landscape.
- Settlement is relatively late, comprising isolated farmsteads of 18<sup>th</sup>-19<sup>th</sup> century origin set within areas of recent enclosure and modern recreational buildings associated with West Sussex Golf Club.
- The plateau is drained by small streams which flow into the River Stor and River Arun – a large pond, Wassell Pond, is located close to Wiggonholt Common.
- Sand pits on the edge of the Arun Valley indicate the economic value of the sands of the Folkestone Beds.

### Specific Characteristics Unique to the Parham Farmland and Heath Mosaic

**M.30** The Folkestone and Sandgate Beds underlying the *Parham Farmland and Heath Mosaic* form an undulating plateau reaching 35m at Northpark Wood. In this character area most of the commons have, since 1800, been appropriated for plantations or enclosed for agricultural use in the 18<sup>th</sup>-19<sup>th</sup> century. This illustrates the change from communal use to private ownership that has occurred in this landscape - there are no unenclosed commons with open access remaining. Opportunities for countryside access are therefore more restricted in this character area than others of the *Farmland and Heath Mosaic* type.

**M.31** The character area is well wooded, although much of this woodland is mixed plantation and has suffered from replanting with exotic species. The planting of plantations during the 20<sup>th</sup> was accompanied by development associated with forestry e.g. the sawmill at Northpark Wood. However, the area also contains ancient oak *Quercus robur* woodland, most notably at Parham Park SSSI. The open canopied mature oak woodland within this medieval deer park is particularly notable for supporting one of the richest epiphytic lichen floras in southeast England. Some of the dilapidated wooden fencing in the area also supports rare lichens.

**M.32** Although most of the enclosures are of 18<sup>th</sup>-19<sup>th</sup> century date, a block of medieval enclosures survive around Wiggonholt, indicating an area of better agricultural land

located on an outcrop of Gault Clay. The plateau is drained by small streams which flow into the River Stor and River Arun. The character area also contains a large pond, Wassell Pond, close to Wiggonholt Common as well as other notable habitats, including bog and alder carr. Areas of arable agriculture and improved pasture grassland, together with semi-natural habitats are important areas for foraging and over-wintering birds.

**M.33** To the north of the character area is Hurston Warren SSSI, a site that comprises a range of heathland habitats including wet and dry heath, open water and bog. The quaking bog is considered to be one of the best examples of its type in the southeast and supports many locally notable plant species, such as cranberry and hare's tail cotton grass. However, part of the area is now used as a golf course at Hurston Warren and public rights of way. Elsewhere public access is limited.

**M.34** The settlement form in this character area is typical of the landscape type, being relatively late in origin, and comprising isolated farmsteads of 18<sup>th</sup>-19<sup>th</sup> century origin set within areas of recent enclosure derived from former commonland. However, there are no common edge squatter settlements or registered Common Land in this character area. The northern part of the character area contains localised groupings of modern recreational buildings associated with the golf course at Hurston Warren.

#### Sensitivities Specific to the Parham Farmland and Heath Mosaic

**M.35** Most of the landscape and visual sensitivities listed in the landscape type evaluation apply to this character area. Specific sensitivities relevant to this character area are included in the table below:

Key Landscape Sensitivities
1. Former commons surviving only as place names.
2. Surviving early enclosures around Wiggonholt.
3. The network of small streams that flow into the River Stor and Wassell pond and other smaller ponds which support aquatic and marginal plants and have associated invertebrate interest.
4. Areas of wetland and lowland bog, for example at Parham Park SSSI and Hurston Warren SSSI.
5. The area's inter-visibility with the Chalk scarp to the south.

#### Change Specific to the Parham Farmland and Heath Mosaic

**M.36** In addition to the generic landscape management and development considerations for this landscape type, the following landscape management considerations are specific to this character area:

##### Forces for Change

1. Pressure for development outside the National Park boundary, particularly associated with Pulborough, West Chiltington Common or development associated with the A283.

#### Landscape Management / Development Considerations Specific to the Parham Farmland and Heath Mosaic

**M.37** In addition to the generic landscape management and development considerations for this landscape type, the following landscape management considerations are specific to this character area:

- a. Conserve the area of early enclosures around Wiggonholt.
- b. Continue to manage the network of streams that flow across the area into the Stor and existing ponds e.g. Wassell Pond.
- c. Protect and manage wetland and lowland bog at Parham Park and Hurston Warren SSSIs.

**M.38** The following development considerations are specific to this character area:

- a. Consider the impact of any further built development outside the National Park boundary or associated with the A283 on this area and ensure that it is integrated into its landscape context using native vegetation.
- b. Ensure any change in this area takes account of views from the Chalk scarp to the south.

## M2: Rother Farmland and Heath Mosaic

### Location and Boundaries

The *Rother Farmland and Heath Mosaic* forms a long, elevated 'plateau' located between the Wealden landscapes to the north and the main chalk ridge of the South Downs to the south. The northern boundary adjoins the *River Rother* and the *River Valley Farmland* that surrounds the Rother while the southern boundary adjoins the *Rother Valley Mixed Farmland and Woodland Vale* on Gault clay. The boundaries of this area form transitions with adjacent farmland landscapes and therefore areas on the edge may share characteristics with adjacent landscapes but boundaries have been drawn to follow the nearest convenient field boundary or woodland edge.

#### Key Characteristics

- Slightly elevated, flat topped plateau formed from sandstones of the Folkestone formation, reaching 65m at Ambersham Common.
- Well-drained sandy soils support a mix of nationally important heathland habitats including open heather heath, acid grassland, bracken, gorse, woody scrub, and oak-birch woodland.
- Large areas of woodland plantations covering areas of former commonland and earlier blocks of ancient (probably medieval) woodland.
- An intimate mix of semi-natural habitats and agriculture creating valuable foraging and over-wintering sites for a range of bird species.
- Numerous Bronze Age barrow cemeteries are indicative of a prehistoric ritual landscape.
- Roman roads and a posting station at Hardham reinforce the historic function of the area as a landscape to traverse rather than settle.
- Settlement is relatively late, comprising isolated farmsteads of 18<sup>th</sup>-19<sup>th</sup> century origin set within areas of recent enclosure, and 'squatter' settlement on the edges of the common land.
- Includes the planned medieval market town of Midhurst, constructed from local sandstones.
- Remnant unenclosed commons are of cultural and historic significance and provide open access for recreation.
- Features including a large pond at Burton, formed by damming a stream, are evidence of the Wealden iron industry in the 16-18<sup>th</sup> century.
- Large number of sand pits indicating the economic value of the sands of the Folkestone Beds.

### Specific Characteristic Unique to the Rother Farmland and Heath Mosaic

**M.39** The Folkestone Beds underlying the *Rother Farmland and Heath Mosaic* form a slightly elevated, flat topped plateau in this area. The highest points are at Ambersham Common (65m AOD), Trotton Common (63m AOD), and West Heath (60m AOD). The plateau becomes fragmented to the west with outliers such as West Heath and Heath Common standing as 'islands' amongst the lower lying farmland. This character area contains surviving areas of unenclosed common at Iping, Heyshott and Lavington.

**M.40** The well-drained sandy soils of this character area support an irregular, organic mosaic of open heathland, oak-

birch woodland, acidic grassland, gorse and bracken scrub, and rough grazing land – this intimate mix of semi-natural habitat and agriculture contributes to the overall ecological value of the character area. In total five nationally important heathland sites occur in this character area, at Ambersham Common SSSI, Burton Park SSSI, Coates Castle SSSI, Iping Common SSSI and Lavington Common SSSI. These sites support a range of characteristic heathland communities, such as wet and dry heath, bog and scrub, and provide important habitats for a number of notable plant and animal species. Coates Castle SSSI, for example, supports the only known native British population of field cricket *Gryllus campestris* (field crickets have been and are planned to be introduced to a number of other sites within the area). These habitats are set

within a context of coniferous plantation which casts dark shadows and gives the landscape an almost overpowering sense of enclosure in places.

**M.41** Areas of arable land also occur throughout, and within the heavily wooded landscape. These open areas create valuable foraging and over-wintering sites for a range of bird species, particularly when managed appropriately e.g. as over-wintering stubble. Although most of the enclosures are of 18<sup>th</sup>-19<sup>th</sup> century date, some of the better land within this character area, typically along the margins of the Rother valley, was enclosed for agricultural use at a much earlier date. Examples include a block of characteristically lobate medieval assarts north west of Coldwaltham and west of Coates Castle, and an extensive area of surviving early enclosures south of Fittleworth.

**M.42** This is essentially a quiet landscape with a high sense of 'naturalness' deriving from the mix of woodland and heathland and dark skies identified as the 'Dark Sky Core' of the South Downs International Dark Sky Reserve. Opportunities for countryside access are provided by a number of Registered Commons and an extensive network of public rights of way.

**M.43** The plateau is drained by small streams which flow into the Rother – plus a large pond at Burton, formed by damming a tributary stream, associated with the former Wealden iron industry. It later fed an 18<sup>th</sup> century mill for corn milling (no longer operational).

**M.44** The settlement pattern in this character area is generally typical of the landscape type (a high density of dispersed settlement comprising farmsteads of 18<sup>th</sup>-19<sup>th</sup> century origin and irregular small-scale agglomerations of common-edge settlement). The exception to the dispersed pattern is the medieval market town of Midhurst. This was a deliberately planned settlement established at a strategic location after the Norman Conquest by the new Norman overlord, Roger de Montgomery. Its location seems to have been determined mainly by military considerations (it had a suitable knoll upon which to site a castle) rather than any pre-existing locational factors. During the 20<sup>th</sup> century the town expanded rapidly.

**M.45** Two small and lately established landscaped parks occur at Coates Castle and Nyewood House. The northern part of Burton Park also lies within the character area and is listed on Historic England's Register.

**M.46** This character area contains evidence of Roman activity, comprising a mansio (posting station) at Hardham and two Roman roads – the Chichester to London Road and the Chichester to Silchester Road. These sites reinforce the

marginal nature of the area as a landscape to traverse rather than settle. Active and disused quarries occur, hidden within the woodland, indicating the economic value of the sands of the Folkestone Beds.

### Sensitivities Specific to the Rother Farmland and Heath Mosaic

**M.47** All of the landscape and visual sensitivities listed in the landscape type evaluation apply to this character area. Specific to this character area are:

Key Landscape Sensitivities	
1.	Surviving areas of unenclosed common at Iping, Trotton, Heyshott, and Lavington.
2.	The medieval assarts at Coldwaltham and Coates Castle, and an extensive area of surviving early enclosures near Fittleworth.
3.	Burton mill pond (associated with the former Wealden iron industry) and 18 <sup>th</sup> century mill.
4.	The wet and dry heath, bog and scrub, of Ambersham Common SSSI, Burton Park SSSI, Coates Castle SSSI, Iping Common SSSI and Lavington Common SSSI which support a range of characteristic heathland communities.
5.	The small parks at Coates Castle and Nyewood House, and part of Burton Park, which provide a sense of historic continuity.
6.	The mansio (posting station) at Hardham two stretches of Roman road which provide evidence for Roman activity in the area.
7.	The area's inter-visibility with the Greensand hills to the north and the Chalk scarp to the south. Representative views are identified in the View Characterisation and Analysis report <sup>2</sup> .

### Change Specific to the Rother Farmland and Heath Mosaic

**M.48** In addition to the generic changes listed in the landscape type evaluation, specific changes to this area include:

Forces for Change	
1.	Pressure for built development, particularly on the outskirts of Petersfield, Midhurst, Coldwaltham and Fittleworth. Pressure for expansion could threaten historic field patterns around these settlements.

<sup>2</sup> LUC. 2015 South Downs National Park: View Characterisation and Analysis – View 71

Forces for Change	
2.	Increased traffic and upgrades to roads, particularly in relation to a potential bypass around Midhurst.

### Landscape Management / Development Considerations Specific to the Rother Farmland and Heath Mosaic

**M.49** In addition to the generic landscape management and development considerations for this landscape type, the following landscape management considerations are specific to this character area:

- a. Maintain the surviving areas of unenclosed common at Iping, Trotton, Heyshott, and Lavington, and consider opportunities for creating further unenclosed commons within the area.
- b. Conserve the medieval assarts and extensive area of surviving early enclosures, such as those near Fittleworth.
- c. Conserve Burton mill pond and its 18<sup>th</sup> century mill and their landscape setting. Ensure that the impressive views of South Downs across the pond are maintained.
- d. Manage heathland sites at Ambersham Common, Burton Park, Coates Castle, Iping Common, Trotton Common and Lavington Common, and aim to link these sites through new heathland creation.
- e. Conserve the landscape features of the small parks at Coates Castle and Nyewood House, and the northern part of Burton Park which falls within this LCA, to ensure these parks continue to provide a sense of historic continuity.
- f. Conserve the mansio (posting station) at Hardham and stretch of Roman road as features in the landscape.

**M.50** The following development considerations are specific to this character area:

- a. Consider the impact of any further built development, particularly on the outskirts of Petersfield, Midhurst, Coldwalham and Fittleworth on historic field patterns around these settlements. and ensure any expansion is integrated into its landscape context using native vegetation.
- b. Conserve the early enclosures under threat of development on the edge of settlements.

- c. Seek to minimise use of excessive lighting and signage on road improvement, particularly in relation to a potential bypass at Midhurst.
- d. Ensure any change in this area takes account of views from the Greensand hills to the north and the Chalk scarp to the south.

### M3: Woolmer Forest/Weaver's Down Farmland and Heath Mosaic

#### Location and Boundaries

The *Woolmer Forest/Weaver's Down* landscape character area forms an elevated undulating 'plateau' located to the west of Liphook. The western boundary of this area is quite clearly defined and has been drawn along the woodland edge. The southern boundary represents a transition to the Greensand hills and has been drawn along the mainline railway. This landscape character area continues northwards beyond the National Park boundary at Bordon.

#### Key Characteristics

- Undulating 'plateau' formed from sandstones of the Folkestone formation, reaching 155m at Weaver's Down.
- Well-drained sandy soils which support extensive tracts of conifer plantations, oak-birch woodland, lowland heath and bog.
- Extensive area of lowland heathland habitat represents an internationally important ecological resource.
- Settlement is relatively late in origin, comprising isolated farmsteads of 18<sup>th</sup>-19<sup>th</sup> century origin set within areas of recent enclosure, and localised groupings of modern military buildings.
- Recent and modern enclosures in and around the woodland edge are evidence that landuse history remained one of common grazing until relatively late in the post-medieval period.
- Numerous Bronze Age barrow cemeteries are indicative of a prehistoric ritual landscape.
- Remnant unenclosed commons, historically used for common grazing, are now used by the military as firing ranges.
- Extensive areas of post-1800 woodland plantations covering areas of former commonland indicate the location of areas of former common (now open access land) and contribute to a great sense of enclosure.

#### Specific Characteristic Unique to the Woolmer Forest/Weaver's Down

**M.51** The Folkestone Beds underlying the *Woolmer Forest/Weaver's Down* form an undulating 'plateau' reaching 155m at Weaver's Down. The areas around Polecat Hill, to the north-east, and The Wylds/Forest Mere to the south, are underlain by softer sandstones of the Sandgate Beds, a formation of soft yellow sandstones which form a gently rolling relief at slightly lower altitude. The eastern part of the area, around Foley Manor, is underlain by the more resistant cherts and sandy limestones of the Hythe Beds. These underlying bedrocks give rise to some variety across the character area.

**M.52** The very well drained acid sandy soils of this character area support extensive tracts of common land, most of which were appropriated during the 19<sup>th</sup>/20<sup>th</sup> century for coniferous plantations that make up Woolmer Forest. During the 20<sup>th</sup> century there was an increase in invasive species in these woodlands, such as rhododendrons and laurel which thrive in the acidic sandy soils. The presence of vast expanses of conifer forest gives rise to a simple and unified landscape on a large scale. The presence of tall conifers also gives the landscape a strong sense of enclosure, which is only broken by the presence of clearings at Woolmer Pond, Palmer's Ball,

and Weaver's Down where areas of oak-birch woodland, lowland heath, acid grassland, and low-lying bogs and pools occur. This extensive area of lowland heathland supports three breeding bird species in numbers of European importance, namely nightjar, woodlark and Dartford warbler, as well as being of national value for its heathland flora and invertebrates. Woolmer Forest SAC/SPA is also the only site in Britain known to support all 12 species of native reptile and amphibian.

**M.53** Typically of the *Wealden Farmland and Heath Mosaic* landscape type, this character area has good public access as a result of a number of Registered Commons, open access land, and public rights of way. A large proportion of Woolmer Forest, Longmoor Inclosure and Weaver's Down is designated as open access land, and there are also a number of Registered Commons including Weaver's Down, Griggs Green, Holm Hills and Holly Hills, which allow open public access. However, in practice public access is restricted to some of these areas by the army who use Woolmer Forest as a training ground although access is permitted when not in use. Access to Wheatsheaf Common is restricted to users of the golf course.



**M.54** The south eastern part of the area, overlying the Hythe Formation of the Lower Greensand, is a small area of recent and modern enclosures which represents better quality commonland enclosed for agricultural use. Although there are no traditional examples of designed landscapes, i.e. gentry houses and landscape parks, this area contains two small and lately established parks at The Wylds and Foley Manor. The plateau is drained by small streams which flow southwards into the River Rother and northwards into the River Wey. There are several large ponds, for example Woolmer Pond (created as a result of former peat cutting), Folly Pond (forms part of Forest Mere SSSI), Cranmer Pond and The Lake.

**M.55** Although the settlement pattern is typical of the landscape type (characterised by dispersed farmsteads of 18<sup>th</sup>-19<sup>th</sup> century origin), the area now contains localised groupings of modern military buildings. The area is in close proximity to the larger settlements of Bordon, Liphook and Liss. Despite this the landscape is seemingly devoid of human settlement. However, the presence of the A3(T) and overt human impact due to the presence of army camps and associated built development, and industrial buildings, particularly along the A3 corridor, impinge on the sense of remoteness and tranquillity in localised areas.

#### Sensitivities Specific to the Woolmer Forest/Weaver's Down

**M.56** All of the landscape and visual sensitivities listed in the landscape type evaluation apply to this character area. Specific to this character area are:

Key Landscape Sensitivities	
1.	Surviving areas of common at Weaver's Down, Griggs Green, Holm Hills, Holly Hills, and Wheatsheaf Common.
2.	The small parks at The Wylds and Foley Manor which provide a sense of historic continuity.
3.	Ponds e.g. Woolmer Pond, Folly Pond (part of Forest mere SSSI) and The Lake.
4.	The area's inter-visibility with the <i>East Hampshire Greensand Terrace</i> .

#### Change Specific to the Woolmer Forest/Weaver's Down

**M.57** In addition to the generic changes listed in the landscape type evaluation, specific changes to this area include:

Forces for Change	
1.	Pressure for development due to the location of this character area close to the settlements of Bordon, Liphook and Liss, and its location along the A3 corridor.

Forces for Change	
2.	The redevelopment of MOD sites at Bordon and Whitehill.
3.	Increases in traffic pressures particularly in relation to the A3(T), leading to road improvements or widening.
4.	Pressure for recreational use of the land e.g. golf courses and equine holdings which affect land management and extend urbanising features into the undeveloped landscape.

#### Landscape Management / Development Considerations Specific to the Woolmer Forest/Weaver's Down

**M.58** In addition to the generic landscape management and development considerations for this landscape type, the following landscape management considerations are specific to this character area:

- a. Maintain the surviving areas of commonland at Weaver's Down, Griggs Green, Holm Hills, Holly Hills, and Wheatsheaf Common, and maintain through grazing.
- b. Conserve the landscape features of the small parks at The Wylds and Foley Manor to ensure these parks continue to provide a sense of historic continuity.
- c. Continue to manage the existing ponds e.g. Woolmer Pond, Folly Pond, Cranmer Pond and The Lake.

**M.59** The following development considerations are specific to this character area:

- a. Consider views from the *East Hampshire Greensand Terrace* in relation to any change in this area.
- b. Consider the impact of any further built development outside the National Park boundary or associated with the A3(T) on this area and ensure it is integrated into its landscape context.
- c. Ensure that on going and future redevelopment of MOD sites do not impact on the tranquil and rural character of the area and its dark skies.