

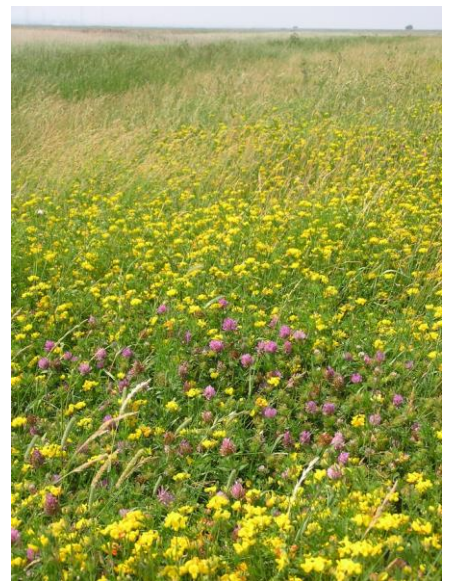
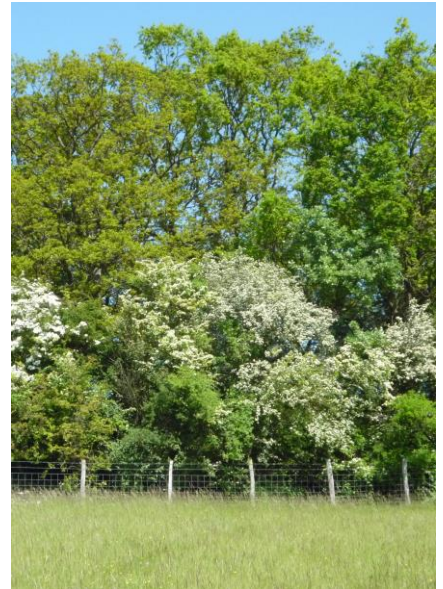
Local Wildlife Sites in Kent

(Formerly called Sites of Nature
Conservation Interest)

Criteria for Selection and Delineation

Version 1.5

August 2015



Kent Wildlife Trust
on behalf of the Kent Nature Partnership

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(Formerly Sites of Nature Conservation Interest)

Criteria for Selection and Delineation

Adopted by the Kent Nature Partnership
October 2015

Version 1.5

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Local Wildlife Sites in Kent: Criteria for Selection and Delineation ¹

Contents

| | |
|--|----|
| Local Wildlife Sites in Kent: Criteria for Selection and Delineation | 1 |
| Contents | 1 |
| List of revisions and amendments made..... | 2 |
| Introduction..... | 3 |
| Purpose of this document | 3 |
| Terminology..... | 4 |
| Purpose of Local Wildlife Sites | 4 |
| Criteria for selection of Local Wildlife Sites | 5 |
| Naturalness..... | 5 |
| Size | 6 |
| Rarity | 6 |
| Diversity..... | 7 |
| Fragility..... | 7 |
| Typicalness | 8 |
| Recorded History | 8 |
| Position in an Ecological Unit | 8 |
| Potential Value..... | 8 |
| Intrinsic Appeal..... | 9 |
| Applying the criteria | 9 |
| Selection of Local Wildlife Sites based on habitat features | 10 |
| Broadleaved woodland..... | 10 |
| Wood-pasture and parkland | 14 |
| Orchards..... | 15 |
| Acid grassland..... | 16 |
| Lowland Calcareous Grassland..... | 17 |
| Neutral grassland | 19 |
| Heathland | 22 |
| Fen, marsh and swamp | 23 |
| Standing open water..... | 24 |
| Running water | 25 |
| Coastal habitats | 27 |
| Open Mosaic Habitats on Previously Developed Land / “Brownfield sites” | 28 |
| Selection of Local Wildlife Sites based on species features | 29 |
| General..... | 29 |
| Biodiversity Action Plan species | 29 |
| Lower plants and fungi..... | 29 |
| Vascular Plants | 30 |
| Invertebrates..... | 31 |
| Amphibians and reptiles..... | 31 |
| Birds..... | 33 |
| Bats | 34 |
| Terrestrial & Marine Mammals (excluding bats) | 35 |
| Position in the wider landscape..... | 39 |
| Other considerations | 41 |
| Delineation of boundaries | 42 |
| Procedure for selection and designation of Local Wildlife Sites in Kent..... | 43 |
| Appendix 1 Ancient Woodland Indicator Species in Kent | 46 |
| Appendix 2 Indicators of Unimproved Acid Grassland in Kent | 48 |
| Appendix 3 Indicators of Unimproved Chalk Grassland in Kent..... | 49 |
| Appendix 4 Indicators of Unimproved Neutral Grassland in Kent | 50 |

List of revisions and amendments made**Page/Criterion Amendments from version 1.3**

| | |
|----------------------------|---|
| Introduction & all through | Update references to planning legislation & BAP terminology (such as changing Kent Biodiversity Partnership Steering group to Kent Nature Partnership, English Nature to Natural England, Kent Biodiversity Action Plans to Kent Biodiversity Strategy, and Natural Areas to National Character Areas). |
| All through | Change stats from the 2003 Kent Habitat Survey for stats from the 2012 (ARCH) Kent Habitat Survey. |
| WO3 | Addition of a reference to soil quality. |
| WO4 | It is not always sensible to include the hedgerow in the LWS if it is a link but very intensively managed so made optional. |
| OR1 | Fungal changed to bryophyte interest following Joyce Pitt's advice. |
| GN2 | Addition of a criterion point for semi-improved neutral grassland with potential for restoration because fully unimproved grassland is so rare in Kent that good semi-improved is also of county importance. |
| HE4 | Addition of a criterion for lichen heath. |
| FE1 | Allowance for damaged habitats added, providing there is potential for restoration. |
| SW3 | Remove mention of County Scarce relying on Philp's 1981 Atlas and use Kent Rare Plant Register instead as it is regularly updated. |
| p28 | Add specific mention of Open Mosaic Habitats on Previously Developed Land ("Brownfield Sites") |
| BS1 | Remove mention of Species Action Plans |
| LP4 | On Joyce Pitt's advice regarding county standards, raise the number of lichens per churchyard from 50 to 80 and bryophytes from 15 to 25 and add in a criterion for 15 species or more of fungi. |
| p30 | Remove county scarce and rare for vascular plants and use the Kent Rare Plant Register instead |
| p31 | Addition of KRAG updates to the amphibian and reptile criteria |
| p34 | Addition of bat criteria from Kent Bat Group |
| p35 | Addition of mammal criteria from Kent Mammal Group |
| P39 | Addition of position in the wider landscape criteria |
| Appendices 1, 2, 3 & 4 | Update scientific names to Stace 3. |
| Appendix 4 | Addition of FEP GO6 indicator species to the list to help identify good semi-improved grassland. |

Introduction

- 1) In the UK, those sites and areas considered to be of the greatest importance for nature conservation are protected in law as Sites of Special Scientific Interest (SSSIs). SSSIs which are of international significance are in many cases given additional protection as Special Areas of Conservation (SACs), Special Protection Areas (SPAs) or Ramsar Sites.
- 2) However, it is recognised that features and sites of significant nature conservation interest exist outside the network of statutorily protected wildlife areas. It is also recognised that the protection and conservation of this wider nature conservation interest is essential to the maintenance of the UK's natural heritage, to the achievement of national and local biodiversity targets, and to making sure everyone has access to wild places and natural countryside. One established method for the conservation of wildlife outside of statutory sites is the identification and designation of Local Wildlife Sites (LWSs), sometimes called Sites of Nature Conservation Interest (SNCIs), Sites of Importance for Nature Conservation (SINCs) or County Wildlife Sites (CWSs) in other counties.
- 3) In 2006, DEFRA published guidance on the creation and management of systems for identifying and protecting Local Wildlife Sites. The DEFRA 'Local Sites, Guidance on their Identification, Selection and Management', which states that: "1. Local Sites networks provide a comprehensive rather than representative suite of sites. 2. Local Sites provide wildlife refuges for most of the UK's fauna and flora and through their connecting and buffering qualities, they complement other site networks. 3. Local Sites have a significant role to play in meeting overall national biodiversity targets. 4. Local Sites represent local character and distinctiveness. 5. Local Sites contribute to the quality of life and the well-being of the community, with many sites providing opportunities for research and education."
- 4) The importance of international, national and locally designated sites is recognised in government policy. The 2012 National Planning Policy Framework says protection should be "commensurate with their status and give[s] appropriate weight to their importance and the contribution that they make to wider ecological networks". Annex 2 of the National Planning Policy Framework clarifies that locally designated sites includes Local Wildlife Sites.
- 5) In Kent, Local Wildlife Sites have been identified and designated by Kent Wildlife Trust since 1985. There is now a network of around 460 sites in the current administrative areas of Kent and Medway. The sites cover a total of around 27,000 hectares, or roughly 7% of the county's land area. The current system of identification of sites is recognised and supported by the Kent Nature Partnership which includes Natural England, the Environment Agency, Kent County Council, Medway Unitary Authority, and the various district councils.

Purpose of this document

- 6) This document presents an updated procedure for the identification of Local Wildlife Sites in Kent. In doing so, it draws on current best practice, as set out in the 2006 DEFRA guidance, and recognises the need for a robust system which is able to withstand rigorous scrutiny. The document sets out:
 - a) The purpose of Local Wildlife Sites;
 - b) A set of clear criteria for identifying sites of local wildlife importance on the basis of the habitats and species present;
 - c) An accountable process for consulting on the designation of Local Wildlife Sites; and
 - d) How information on the boundaries and special features of Local Wildlife Sites is to be presented and disseminated.

Terminology

- 7) In line with the 2006 DEFRA guidance, the term ‘Local Wildlife Site’ is now used where the term ‘Site of Nature Conservation Interest’ was used previously.

Purpose of Local Wildlife Sites

- 8) In April 2000, the Local Sites Review Group of the then DETR (now Department of Environment, Food and Rural Affairs) defined the overall objective of a Local Sites system as follows:
“The series of non-statutory Local Sites seeks to ensure, in the public interest, the conservation, maintenance and enhancement of species, habitats, geological and geomorphological features of substantive nature conservation value. Local Site systems should select all areas of substantive value including both the most important and the most distinctive species, habitats, geological and geomorphological features within a national, regional and local context. Sites within the series may also have an important role in contributing to the public enjoyment of nature conservation.”
- 9) The 2006 DEFRA guidance makes it clear that the ‘conservation, maintenance and enhancement’ of species and habitats should be achieved
- a) By Local Wildlife Sites systems having regard to the targets and priorities set out in national and local Biodiversity Action Plans (BAPs); and
 - b) Through the identification of sites and provision of protective policies in Local Plans, and other planning strategies as appropriate.
- 10) The primary purposes of the Local Wildlife Sites system are therefore:
- a) **To help secure the protection of nationally and locally threatened habitats and species, particularly where these are identified in the England and Kent Biodiversity Strategies.**
 - b) **To clearly identify sites of substantive nature conservation value that should be protected from damaging development.**
- 11) The reference in the DEFRA guidance to ‘maintenance and enhancement’ indicates a third purpose, which is
- a) **To provide a framework for the targeting of management work, advice, grant aid and other activities in order to secure the effective conservation of the most important features of Kent’s biodiversity.**
- 12) There is a fourth purpose implicit in any system for the identification of Local Wildlife Sites. Such a system relies on a clear understanding of the county’s biodiversity, and how it is changing. The fourth purpose could therefore be expressed as
- a) **To provide a clearer understanding of the nature and importance of Kent’s wildlife habitats and the ways in which these change over time.**

Criteria for selection of Local Wildlife Sites

13) The 2006 DEFRA guidance states:

‘Local Site systems should select all areas of substantive nature conservation value. Developing the criteria will hinge on defining what qualifies as ‘substantive’ in the local context.’

A Local Site system should therefore be seen as an information tool for identifying the suite of sites within a local area that contribute significantly to the natural capital of the area. This implies that all sites which meet the local criteria should be selected as Local Wildlife Sites. Whether a site is selected as a Local Wildlife Site should depend primarily on its nature conservation interest (present or potential), not on any specific intended use of the site. If a site is not of natural or semi-natural interest but primarily of recreational use, then it should be protected under recreational and open space planning policies and not policies that relate to nature conservation.

14) In judging whether a site is of ‘substantive ecological value’, it is considered appropriate to use the so-called Ratcliffe Criteria which were developed as part of the Nature Conservation Review which initially established the UK’s network of SSSIs. These criteria are as follows:

- a) Primary criteria
 - i) The **Naturalness** of a site.
 - ii) The **Size** of a site or of a population of a particular species.
 - iii) The **Rarity** of habitats or species, or of a particular assemblage or community of species, present on a site.
 - iv) The **Diversity** of a site in terms of species or habitats present.
 - v) The **Fragility** of a site or of a population of a particular species, that is, its vulnerability to damage.
 - vi) The **Typicalness** of a particular site or habitat, that is, how well it represents a particular type.
- b) Secondary criteria
 - i) The **Recorded History** of a site, which can add considerable scientific value.
 - ii) The site’s **Position in an Ecological Unit**, that is, how it contributes to the wildlife interest of a wider area.
 - iii) The **Potential Value** of a site, that is, whether its value to nature conservation could be readily enhanced.
 - iv) The **Intrinsic Appeal** of a site, that is, its wider social and cultural meaning.

Naturalness

15) The most important sites are those showing relatively natural assemblages of plants or animals. However, in applying this criterion it must be recognised that, with the possible exception of some coastal habitats, no part of Kent can be considered as more than semi-natural, because of the long history of economic land management in Britain.

16) Nonetheless, it is normally easy to recognise the difference between a semi-natural habitat and an entirely artificial one. In a semi-natural habitat, the species composition is the result of a natural response to human management practices. In an artificial habitat, the most or all of the species present will have been deliberately introduced, or deliberately favoured through highly intensive management.

17) As might be expected, the most important habitats for wildlife are those which are most natural. Thus a high value is placed upon:

- a) Semi-natural woodland;
- b) Water courses and wetlands which have not been heavily modified; and
- c) Unmanaged or undefended coastal habitats.

Within anthropogenic habitats, it is the more natural types which have the highest value, so that all the following are important:

- d) Grassland which has not been agriculturally improved;
- e) Artificial ponds and lakes which have been naturally colonised by wild plants and/or animals.

- 18) It must, however, be recognised that artificial habitats may also be of high value for wildlife. This is perhaps a more exceptional occurrence than with semi-natural habitats. Nonetheless there are a number of very rare plant species which are largely or entirely associated with arable cultivation. In addition, there is growing recognition of the importance for biodiversity of some post-industrial ('brownfield') sites: for some groups, including aculeate hymenoptera, brownfield sites may be substantially more important than many, more natural sites.

Size

- 19) It is a good general rule that larger areas of habitat (and larger populations of important species) are more important for biodiversity than smaller areas of the same habitat. However, the 2006 DEFRA guidance is that all sites of substantive nature conservation value should be protected as Local Wildlife Sites, suggesting that size is not a consideration in itself, and that even very small areas of very important habitats (or small populations of rare species) may be protected.
- 20) In practice, there is likely to be a lower size limit for a Local Wildlife Site, although this will vary with habitat type. The lower limit will be determined by:
- a) The viability of the habitat unit (or population). A Local Wildlife Site should not be so small that its important features could not be maintained, even with appropriate management.
 - b) The size distribution of habitat parcels (or discrete species populations) in the county. Where a large number of small patches (or discrete populations) constitute only a small proportion of the total area of a particular habitat (or total population of a species), designation of all those patches would place a disproportionate administrative burden on the system. In this case, a minimum practical size may be set as a compromise between protecting as much as possible of the habitat (or population) while minimising the use of administrative resources. In making such a decision, consideration would need to be given to the value of the habitat type (or species) concerned: where a habitat (or species) was particularly rare, it might be desirable to designate all remaining parcels (or populations).

Rarity

- 21) Habitat or species rarity is a key factor in determining whether or not a particular area should be designated as a Local Wildlife Site. Consideration should be given to rarity at a number of scales, including:
- a) International: i.e. species or habitats considered of European significance.
 - b) National: i.e. priority species or habitats as identified by the JNCC for the UK Biodiversity Action Plan in 2007 and now used to draw up statutory lists of priorities for the England Biodiversity Strategy; or habitats with a total area in Britain of less than 10 000 hectares; or species considered nationally rare (UK Red Data Book Species or Red List Birds of Conservation Concern).
 - c) County: i.e. habitats of limited extent within Kent; or species included in the Kent Red Data Book; or plants listed on the Kent Rare Plants Register; or species or habitats otherwise understood to be rare, scarce or atypical within the county.
 - d) National Character Area: i.e. species or habitats not qualifying under the above, but which are considered particularly rare within the National Character Area concerned.

Diversity

- 22) Sites of higher diversity are generally considered more important than sites of lower diversity, and it is reasonable to expect sites to reach a minimum 'diversity threshold' if they are to be considered as Local Wildlife Sites. However, care needs to be used in applying this criterion:
- a) Some habitat types tend to be more diverse than others, with habitats on acid substrates being generally less diverse than those on calcareous substrates (for instance, a high quality acid grassland site may support fewer species than a chalk grassland site of lower quality). Any threshold level for species richness must therefore be appropriate to the habitat type concerned.
 - b) Larger sites would be expected to be more diverse than smaller sites.
 - c) The diversity must be appropriate. For instance, the diversity of a chalk grassland site could potentially be increased by ploughing up part of it so that ruderal species become established, yet this would decrease its value. Therefore, consideration of species-richness should be limited to those species which are normally associated with the relevant habitat.
- 23) As well as the diversity of species, some consideration should be given to habitat diversity, so that, for example, a site with a range of NVC habitat types (for instance a woodland which grades from W10 oak-bracken-bramble woodland on acid soils into W8 ash-maple-mercury woodland on a chalk slope and thence to W6 alder-nettle woodland in wet valley bottom) might be considered of greater importance than an equivalent area of a single NVC type. Likewise, a site with a diversity of soil types or underlying geology, might be considered of greater importance than a site with uniform geology and soils.
- 24) The physical diversity of vegetation is also important, and can significantly influence the diversity of animal species supported by a site. For example:
- a) In grassland, a certain proportion of scrub, variation in sward height, variety of slope and aspect, and a certain proportion of bare ground may be important.
 - b) On heathland, variety of shrub height, a mosaic of grassland and dwarf shrubs, and a proportion of bare ground are all likely to be important.
 - c) In woodlands, the presence of open spaces, a complex, layered structure, and a range of tree ages are all likely to be important.

Fragility

- 25) This is best thought of as vulnerability to change or to damaging influences. Certain habitats are intrinsically more fragile than others, and for that reason are more worthy of designation as Local Wildlife Sites. For example
- a) Woodlands are relatively stable and resistant to damage, although in certain situations, for example where visitor pressure is high, they may be more susceptible to trampling damage than grasslands.
 - b) Grasslands are vulnerable to changes in management, particularly where grazing pressure is altered. Relaxation, and especially cessation, of grazing can lead to vegetation changes which may be very difficult to reverse. Overgrazing may be equally damaging.
 - c) Heathland can be susceptible to visitor pressure, and can rapidly lose its interest if not appropriately managed. Conversely, it can be a relatively easy habitat to restore, at least from the point of view of its vegetation.
 - d) Wetland habitats can be very vulnerable to reductions in water supply or groundwater levels.
- 26) Fragility also needs to take into account the ease with which a habitat may be recreated. Relatively stable habitats, such as ancient woodland, may be relatively resistant to damage, but once lost are impossible to replace.

- 27) The fragility of any populations of important species is also a consideration. Most rare species are rare precisely because of their vulnerability to recent and on-going changes in the natural environment, and, where possible, consideration should be given to how the designation of a Local Wildlife Site will compensate for this vulnerability.
- 28) The fragility of a habitat or particular species population is a consideration in the setting of the boundary of a Local Wildlife Site. It may be appropriate to include land which is not itself of Local Wildlife Site quality if this
- Buffers the important features from damaging influences, for example by including a strip of bankside vegetation along a water course; or
 - Provides some control over factors influencing the site, for the example by including a spring or water course which feeds a wetland habitat.

Typicalness

- 29) The maintenance of biodiversity is not just served by the protection of the rare or the vulnerable. It is important that a Local Wildlife Sites network includes good examples of the habitats typical of an area, and helps maintain viable populations of the species typical of an area. In considering what is typical, consideration should be given to:
- Habitats typical of the county;
 - Habitats typical of the relevant National Character Area; and
 - Habitats typical of each of the county's geological areas.

Recorded History

- 30) A site may be important if it has been subject to past survey or biological recording to a sufficient extent that it is able, or potentially able, to yield useful scientific data about habitats, species or the effects of site management.
- 31) A site may also be important if it is known as an historical location for a scarce or otherwise important species or habitat and (a) either that species or habitat is still present or (b) that species or habitat might be restored to the site with appropriate management.

Position in an Ecological Unit

- 32) Consideration should be given to the way in which a site functions to support the biodiversity interest of other important sites or the wider countryside. Thus an area of otherwise unsuitable habitat might be identified as a Local Wildlife Site if
- It acts as a key link between other important areas (for example a narrow strip of woodland connecting two larger sites known to support dormice);
 - It complements other important habitats (for example, scrub or woodland which might provide cover or refugia for amphibians in an adjacent pond; or
 - It is a key local breeding site for a species which exploits a wider area, such as a main breeding pond for a meta-population of great crested newts.
- 33) Value is also to be placed upon sites where two or more habitats occur adjacent to each other, as the interactions and interfaces between the different habitats will, in almost all cases, add to the biodiversity interest of an area. In this case, a site (or part of a site) which otherwise might not qualify for identification as a Local Wildlife Site may be designated if
- The area of each of the constituent habitats is above the lower size limit for designation; or
 - Small areas of non-qualifying habitat occur within a matrix of qualifying habitat.

Potential Value

- 34) Consideration may be given to the potential, rather than actual value of a site, but only where
- The potential of the site can be realised through a scheme of management which is practically possible;

- b) There is a real possibility that an appropriate system of management can be implemented in the short to medium term; and
- c) The site would qualify as a Local Wildlife Site under other criteria once its potential was realised.

Intrinsic Appeal

35) This is a difficult criterion to assess properly. While it can be argued that the cultural and/or social significance of a site might constitute part of its nature conservation value, this is, in most cases, likely to be a largely subjective assessment. In addition, the planning system provides other mechanisms for the protection of land for its local cultural or social value. It therefore seems appropriate to avoid the use of this criterion.

Applying the criteria

36) It is possible, and may in some cases be desirable, to apply the Ratcliffe Criteria individually to a site. However, there is considerable value, particularly from the points of view of clarity and consistency, in using the criteria to derive a set of clearer guidance relating to habitats and species. This is set out below.

Selection of Local Wildlife Sites based on habitat features

Broadleaved woodland

- 37) Without human interference, woodland would be the natural vegetation cover over most of the British Isles. After the last ice-age, and prior to the arrival of settled farming communities, woodland may have covered 80 to 90% of the British land surface. As a result of human activity, almost all this woodland disappeared, so that, by the end of the 19th century, woodland covered little over 4% of the British Isles. This area increased over the 20th century, primarily through planting, but also as a result of natural regeneration as marginally productive pastures have been abandoned.
- 38) Britain now has around 10% woodland cover. However, much of the wildlife interest of our woodlands resides in those fragments of previously existing woodlands which survived the centuries of clearance. A distinction is therefore made between ancient woodland, defined as woodland known to have been in existence since at least 1600, and woodland of more recent origin.
- 39) Ancient woodland normally has a more natural complement of species, and a greater diversity of species, than more recent woodland. Their soils, with long established microbial and mycorrhizal communities, have also been found to be of great importance and value, even when the tree species have been altered over time, such as in plantations on ancient woodlands.
- 40) By combining data from the 2012 Kent Habitat Survey and Natural England's Provisional Inventory of Ancient Woodlands, we find that
- a) There are approximately 28460 hectares of ancient woodland in Kent and Medway, representing around 7% of the land surface;
 - b) This area consists of some 9598 individual blocks of woodland, although some of these blocks are only separated from others by minor roads;
 - c) The 1518 woodland blocks of over 5 ha in extent make up 72% of the total area of ancient woodland in Kent;
 - d) The 2723 woodland blocks of over 2.5 ha in extent make up over 87% of the total area of ancient woodland in Kent;
 - e) The 4296 woodland blocks of over 1 ha in extent make up 96% of the total area of ancient woodland in Kent.
- 41) Woodland is the commonest type of semi-natural habitat found in Kent. Nevertheless, ancient woodland covers only around 7.3% of Kent's land surface, and continues to be lost despite strongly protective planning policies. The low capacity for dispersal of many plant and invertebrate species associated with ancient woodland means that it is an impossible habitat to recreate.

Wet Woodland and Lowland Beech and Yew Woodland are priority habitats in the England Biodiversity Strategy (EBS) and Kent Biodiversity Strategy (KBS). The KBS includes targets to maintain the current extent of both these habitats. In Kent, only 663 ha of Wet Woodland and 613 ha of Lowland Beech and Yew Woodland were identified by the 2012 Kent Habitat Survey. It should be noted that woodland need not be ancient to be considered as Wet Woodland or Lowland Beech and Yew Woodland priority habitat.

- 42) The JNCC gives the following description of Wet Woodland:

“Wet woodland occurs on poorly drained or seasonally wet soils, usually with alder, birch and willows as the predominant tree species, but sometimes including ash, oak, pine and beech on the drier riparian areas. It is found on floodplains, as successional habitat on fens, mires and

bogs, along streams and hill-side flushes, and in peaty hollows. These woodlands occur on a range of soil types including nutrient-rich mineral and acid, nutrient-poor organic ones. The boundaries with dryland woodland may be sharp or gradual and may (but not always) change with time through succession, depending on the hydrological conditions and the treatment of the wood and its surrounding land. Therefore wet woods frequently occur in mosaic with other woodland key habitat types (e.g. with upland mixed ash or oakwoods) and with open key habitats such as fens.”

43) The JNCC gives the following descriptions of Lowland Beech and Yew Woodland:

*“Calcareous beech and yew woodland forms perhaps 40% of the total amount of lowland beech and yew habitat type ... The canopy can include mixtures of beech, ash, sycamore (non-native), yew and whitebeam. Oak is less common than in the other beechwoods, and pure stands of yew occur in places. Promotion of high quality beech for silviculture has often led to an artificial dominance of beech. Characteristic uncommon or rare plants can include box *Buxus sempervirens*, red helleborine *Cephalanthra rubra*, coralroot bitter-cress *Cardamine bulbifera*, and bird’s nest orchid *Neottia nidus-avis*. In some areas, this woodland type occurs as intricate mosaics with lowland mixed deciduous woods. The majority of stands have a high forest structure. This type occurs on the limestone and chalk outcrops in southern Britain (e.g. chalk scarps of the North and South Downs ...*

*Beech woodland on neutral-slightly acidic soils comprises about 45% of the habitat. It is found on heavier soils (pH 7 to 4) and often where the drainage is poor or impeded. The boundary with the other beech types is often defined by pH, drainage and soil texture; thus it is common to find this type grading into one of the others. Again stands tend to be dominated by beech, but oak *Quercus robur* and sometimes *Q. petraea* is a common associate. Bramble *Rubus fruticosus* forms a characteristic ground layer. Often a shrub layer is lacking, although holly can form a second tier of trees, occasionally with yew. Violet helleborine *Epipactis purpurata* is a rare plant found in this community. Mosaics with oak/ bracken/ bramble woodland are common, and in some areas beech can be found colonising western oakwoods. This type tends to occur as high forest or relict wood-pasture (with pollards), less often abandoned coppice. It is common in (but not confined to) the High and Low Weald...”*

- 44) Woodland is not generally considered to be a particularly fragile habitat. However, many of the important features of woodland are fragile:
- a) Rides and glades quickly lose their interest if appropriate management ceases;
 - b) Many important woodland species, such as dormouse, are vulnerable to fragmentation and isolation; and
 - c) Woodland ground flora can be severely damaged by excessive trampling or grazing pressure.
- 45) Ancient woodland is a relatively natural habitat, is generally rich in species (certainly when compared to more recent woodland) and is impossible to recreate. It is therefore appropriate to consider all ancient woodland to be of substantive nature conservation value., even where it has become significantly damaged or degraded. The damage is generally restricted to the above ground component of the habitat, and the ancient woodland soils are considered more resilient, with a long-lived seedbank and well established microbial and mycorrhizal communities. With appropriate management, the above ground diversity of these sites can be restored with relative ease.
- 46) For practical purposes, it is considered appropriate to set a size threshold for sites to be considered for Local Wildlife Site status. This has been set at 5 hectares in order to reduce to a reasonable level the number of woodland blocks which will need to be considered for Local Wildlife Site status while still capturing the majority of the resource. Because this size threshold

has been set purely for practical purposes, it may be reasonable to revise it downwards at a future review of these criteria.

WO1

Ancient woodland in Kent should be identified by reference to the provisional ancient woodland inventory produced by Natural England (and/or shown with the habitat data on www.magic.gov.uk). Where a wood is not indicated as ancient, it may nonetheless be considered as ancient if

- **It holds at least ten ancient woodland indicator species drawn from the list in Appendix 1;**
OR
- **It holds at least five ancient woodland indicator species and includes other features associated with ancient woodland, such as a sinuous outline or marginal woodbank;**
OR
- **There is other clear, specified evidence that the woodland should be considered as ancient.**

WO2

All blocks of ancient woodland of 5 ha or more in continuous extent should be designated as Local Wildlife Sites, unless

- **The tree and/or shrub element has been substantially modified by replanting;**
OR
- **There are other clear and obvious reasons to believe that the wildlife interest of the site has been lost or substantially damaged.**

WO3

Blocks of ancient woodland which have been substantially modified by replanting should only be designated as Local Wildlife Sites where

- **They provide a link between blocks of otherwise isolated ancient woodland with a total area of more than 5ha;**
OR
Where they are EITHER over 5 ha in continuous extent OR are part of a larger ancient woodland which qualifies as a Local Wildlife Site AND
 - **They demonstrate the continuous quality of the soil by retaining a typical woodland ground flora with at least ten ancient woodland indicator species drawn from the list in Appendix 1,**
OR
 - **They support an important species or assemblages of species, such as woodland orchids,**
OR
 - **They form the matrix for an important network of woodland rides and/or glades.**

WO4

Blocks of ancient woodland under 5 ha in continuous extent may be designated as Local Wildlife Sites where

- **They are only narrowly separated from other ancient woodlands, for example, by a minor road of no more than two lanes, so that the joint area of these woodlands would be 5 ha or more;**
OR
- **They are linked to another woodland by a hedgerow or area of scrub or secondary woodland, so that the joint area of these woodlands would be more than 5 ha, in which**

case the connecting feature should be considered for inclusion within the Local Wildlife Site boundary;

OR

- **There is a clear potential for linking the blocks through the restoration of hedges, scrub or woodland;**

OR

- **They form part of a complex of separate but closely spaced (i.e. 200m or less apart at their closest point) woodlands of similar character, at least one of which is 5 hectares or more in extent;**

OR

- **They form part of a matrix of semi-natural habitats where the woodland contributes to the overall nature conservation value of the site, and where the matrix as a whole is considered worthy of identification as a Local Wildlife Site;**

OR

- **They consist of the UK BAP priority habitats of Wet Woodland or Lowland Beech and Yew Woodland;**

OR

- **Where the site is considered particularly important for its recorded history.**

WO5

Where the primary interest of a woodland is the network of rides and glades within the woodland matrix, for simplicity the boundary should be drawn around the woodland as a whole. However, it should be made clear on the Local Wildlife Site schedule where the particular interest of the site lies.

WO6

All blocks of Wet Woodland or Lowland Beech and Yew Woodland which are not ancient woodland should normally be designated as Local Wildlife Sites providing that they are 5 ha or more in continuous extent, or form part of a larger Wildlife Site which is 5 ha or more in continuous extent.

WO7

Where a Local Wildlife Site has been selected on the basis of its Wet Woodland, the boundary of the site should, where appropriate, be drawn to encompass the water courses or water bodies which support the habitat.

WO8

The boundaries of a Local Wildlife Site designated for its ancient woodland may include areas of secondary or replanted woodland or scrub where these are contiguous with the ancient woodland AND

- **They provide a connection with other blocks of ancient woodland or UK BAP priority woodland habitats;**
- OR**
- **They have the potential for colonisation by species associated with ancient woodland;**
- OR**
- **They provide a link between the woodland and another habitat which qualifies for Local Wildlife Site status;**
- OR**
- **They are used by national priority species (as identified by the JNCC), Nationally Rare species, Nationally Scarce species, Kent Red Data Book species, or other, specified, important species associated with the woodland.**

Wood-pasture and parkland

- 47) Wood pasture is a semi-natural habitat formed by long-term grazing on previously wooded land (though, in the case of parkland, this may have been mimicked by deliberate planting of trees on previously unwooded or cleared land). As a habitat, it may replicate conditions in natural woodlands where large herbivores are present.
- 48) The combination of large, often old trees, and open habitats often favours the development of good lichen communities and may support assemblages of specialised invertebrates associated with dead wood. Rot holes in trees may be used by bats and hole-nesting birds.
- 49) Thus, a great deal of the conservation value of wood-pasture and parkland lies in the trees and the continuity of their historic management. The most important sites are those on heathland or on unimproved grassland, where there are sufficient nectar-producing plants to support the adult stages of wood-boring beetles. Large, old trees are also important, particularly veteran trees (i.e. trees that are of large size for their species, with a large amount of dead wood in the canopy, rot holes, crevices, etc.).
- 50) The 2003 Kent Habitat Survey recorded some 2700 ha of land managed as pasture woodland, the majority of which was on agriculturally improved grassland. The 2012 Kent Habitat survey assessed the habitat differently, focussing on that found on unimproved grassland. It records 114 ha of managed wood pasture/parkland on acid or calcareous grassland.
- 51) Wood pasture is vulnerable to a range of factors, including
- a) Loss of grazing, leading to scrub and woodland development;
 - b) Agricultural improvement or over-grazing;
 - c) 'Tidying up' of dead wood or senescent trees; and
 - d) An absence of younger trees to replace those that die.
- 52) Historically, wood pasture is likely to have been a typical, though perhaps uncommon, habitat in Kent. Some currently wooded commons were almost certainly Wood Pasture in the past. Wood Pasture also provides an intrinsically appealing landscape, associated with large country estates.
- 53) The JNCC description states that Lowland Wood-pasture and Parkland habitats will display at least some of the following characteristics:
- *Open grown trees, some of which are ancient or veteran and may be hollow and support significant amounts of dead and decaying timber. If managed, the ancient or veteran trees have generally been pollarded (cut high so re-growth is not in reach of browsing animals), although wood-pastures may incorporate other forms of tree management. The trees often exhibit a browse line at the maximum height that browsing animals can reach.*
 - *Origins in medieval hunting forests (which may not have been completely treed) and emparkments, wooded commons, or pastures with trees in them. Many of these sites were later developed as landscaped parks creating a rich legacy of layers of designed landscapes and archaeological features also of historic importance. A range of native species usually predominates amongst the oldest trees but there may be non-native trees which have been planted or regenerated naturally.*
 - *Designed landscapes not originating from medieval parkland, but with veteran trees, including 19th century or later parklands with their origins in earlier agricultural landscapes.*
 - *Scrub as individual plants or clumps, in some instances providing tree protection or opportunities for tree regeneration. A vital source of nectar for invertebrates.*
 - *Wood-pasture or parkland that has been converted to other land uses such as arable fields, forestry and amenity land, but where surviving veteran trees are of nature conservation interest. Some of*

the characteristic wood-pasture and parkland species may be surviving this change in state in the short term while the veteran trees remain alive. Sites may contain ancient pollards and other less usual tree forms, which result from trees being managed for timber, fodder and other products in the presence of grazing animals.

54) In line with the national commitment to halt the loss of biodiversity, the Kent Biodiversity Strategy sets a target to maintain the current extent and distribution of the total resource of wood-pasture and parkland. The following policies are therefore appropriate to wood pasture and parkland habitats. Assessment of the importance of a wood pasture or parkland site for groups of plants and animals, as specified in WP2, below, should be based on appropriate expert opinion.

WP1

All wood pastures and parklands on heathland or unimproved grassland should be selected as Local Wildlife Sites.

WP2

Wood pasture or parkland on improved or semi-improved grassland, or underused wood pasture with veteran trees in a matrix of secondary woodland or scrub, or parkland or wood pasture which has been converted to another use should be selected as a Local Wildlife Site where

- **A substantial number of trees, or a substantial proportion of the trees present, are old and have an abundance of dead wood and/or rot holes;**
OR
- **The trees support an important fungal or lichen flora;**
OR
- **The trees support an important invertebrate fauna;**
OR
- **The site supports an important bat roost or feeding habitat;**
OR
- **The site is important for birds;**
OR
- **It is the best example of wood pasture in the relevant National Character Area.**

Orchards

55) The 2012 Kent Habitat Survey records 1676 ha of traditional orchard, whereas at the time of the first Kent Habitat Survey in the early 1990s there were around 4000 ha of traditionally managed orchards in Kent. Traditional orchards are generally composed of fruit trees on non-dwarfing rootstocks, standing in grassland which is often grazed by sheep. Individual trees may be of considerable age, and the orchard may be enclosed by hedgerows.

56) It is estimated that some 90% of Kent's traditional orchards have been lost since the 1950s (Kent Downs AONB Land Managers Pack Orchards section 2010-12), certainly the figures above show a 58% loss just from 1990 to 2012. The relative costliness of managing and harvesting traditional orchards makes them vulnerable to agricultural improvement (including grubbing and replanting, or conversion to another use) or to abandonment. The use of orchards for grazing horses may also be damaging, as horses may browse the trees and strip bark.

57) The Kent Biodiversity Strategy recognises that traditionally managed orchards may be of considerable importance for nature conservation, supporting fungi, lichens, and a range of common farmland bird species.

58) The Kent Biodiversity Strategy has a target of halting the continuing loss of old orchards. The following policy is therefore appropriate.

OR1

All traditionally managed orchards should be designated as Local Wildlife Sites where a substantial number of trees, or a substantial proportion of the trees present, are old and have an abundance of dead wood and/or rot holes AND

- **The trees support an important bryophyte or lichen flora;**
OR
- **The site includes or supports other features of substantive nature conservation value, such as unimproved grassland or wide hedges.**

Acid grassland

59) The 2012 Kent Habitat Survey has identified a total of 512 ha of Lowland Dry Acid Grassland. This is distributed in scattered blocks along the Greensand Ridge, in the High Weald and on Dungeness, with a few areas on acid substrates on the North Downs. The 2012 Kent Habitat Survey indicates that there are 572 blocks of acid grassland over 0.001 ha in extent. The following statistics have been derived concerning these blocks:

| Block size | Total area (hectares) | % of total resource |
|------------|-----------------------|---------------------|
| > 2 ha | 317 | 62 |
| > 1 ha | 396 | 77 |
| > 0.5 ha | 459 | 90 |
| >0.001 ha | 512 | 100 |

60) Some 180 ha of acid grassland in Kent lies within existing Sites of Special Scientific Interest.

61) Acid grassland is a semi-natural habitat formed by grazing over base-poor, freely draining substrates. Its low productivity makes it vulnerable to agricultural improvement, forestry, or abandonment, resulting a rapid loss of biodiversity interest.

62) Lowland Dry Acid Grassland currently occupies just over 0.1% of the county land surface, making it one of the county's rarest habitat types.

63) Acid grassland, like heathland, was undoubtedly once a much more common habitat on suitable substrates in Kent, and should be considered as a typical habitat of the Wealden Greensand, and as a typical component of heathland in the High Weald and North Downs.

64) The sparse vegetation and loosely consolidated substrates of many acid grasslands mean that they are vulnerable to physical disturbance. Although an element of bare ground is often important for associated invertebrates, excessive disturbance can destroy vegetation and render the ground unsuitable for burrowing insects.

65) Acid grasslands tend not to be especially diverse in terms of their flora, but rather support an assemblage typical of the habitat type. A list of plant species associated with high-quality acid grassland in Kent is given in Appendix 2.

- 66) Structural diversity is likely to be important in acid grasslands, with scattered trees and shrubs providing additional food sources or nesting/roosting sites for associated fauna.
- 67) Acid grassland can succeed quickly to scrub of gorse or birch, or may be rapidly colonised by rosebay willowherb following a fire. However, acid grassland is relatively easy to restore (it has been suggested that some U1 *Festuca-Agrostis-Rumex* grassland has been periodically cultivated), and it is therefore appropriate to include within acid grassland Local Wildlife Sites areas of scrub, willowherb and bare ground which have the potential for restoration.
- 68) In line with the national commitment to halt the loss of biodiversity, the Kent Biodiversity Strategy sets a target to maintain the current extent and distribution of the total resource of this grassland type. Because of this, and because of the rarity of acid grassland in Kent, the following policies are considered appropriate.

GA1

All areas of Lowland Dry Acid Grassland over 0.5 ha in extent should be designated as Local Wildlife Sites. Areas designated would normally be expected to support a suite of species from the list in Appendix 2.

GA2

All areas of Lowland Dry Acid Grassland up to 0.5 ha in extent should be included as parts of larger Local Wildlife Sites where they are contiguous with other habitats which qualify for designation.

GA3

Site boundaries should include any areas of bare ground, scrub, or other vegetation which could potentially be restored to acid grassland or which might contribute to the biodiversity interest of the acid grassland habitat.

GA4

On acid grassland sites managed as wood pasture and with mature, native trees, the trees should be considered an important element of the biodiversity interest of the site.

Lowland Calcareous Grassland

69) The 2012 Kent Habitat Survey has identified a total of 1922 ha of Lowland Calcareous Grassland (chalk grassland) larger than 0.001 ha in extent, distributed between over nearly individual blocks. This total area represents around 3% of all existing Lowland Calcareous Grassland in the UK. The UK BAP identifies fragmentation and reduction in size of sites as being a key factor negatively affecting this habitat. Statistics on a range of size classes of blocks of chalk grassland in Kent are presented below; it is notable that only 4% of all sites are 10 ha or more in extent.

| Block size | Number of sites | % of all sites | Total area (ha) | % of total resource |
|-------------|-----------------|----------------|-----------------|---------------------|
| >= 10 ha | 42 | 4 | 746 | 39 |
| >= 5 ha | 96 | 9 | 1119 | 58 |
| >= 2 ha | 237 | 22 | 1543 | 80 |
| >= 1 ha | 373 | 35 | 1733 | 90 |
| >= 0.5 ha | 530 | 50 | 1843 | 96 |
| >= 0.001 ha | 1005 | 95 | 1930 | 100 |

- 70) Some 554 ha of chalk grassland in Kent lies within existing Sites of Special Scientific Interest. This represents about 29% of the total resource in the county.
- 71) Chalk grassland is has undergone a rapid decline in extent over recent decades. Chalk grassland can be entirely destroyed by conversion to arable (although for larger sites this is now covered by the EIA regulations) or built development. However, much recent loss is due to neglect. Removal of grazing from chalk grassland results in changes in the sward, which may be difficult to reverse, and eventually to encroachment by scrub, although it may be some decades before all interest is lost from the site. The increase in traffic and road infrastructure over time has also increased nitrogen deposition in some areas, potentially affecting sensitive species.
- 72) Analysis of changes to existing Local Wildlife Sites surveyed during the period 1996 to 2002 shows that around 102 ha of chalk grassland was noted as having been damaged or lost since the sites were first designated. Of this area, 46% was lost to agricultural improvement or conversion to arable, and 13% was lost to built development. Only 4% was noted as having degraded due to lack of management.
- 73) From 2003-12 the Kent Habitat Survey change analysis shows almost 10% (164 ha) of the chalk grassland in Kent and Medway recorded in 2003 was lost by 2012 and the main loss (4.4%) was a change to the broadleaved woodland category which includes scrub woodland. This is likely to be due to a lack of management allowing scrub encroachment. Other significant losses occurred to neutral (3.6%) and improved (1.2%) grasslands, when the specialist chalk species are lost, often also after a reduction in management and/or an increase in nutrients (improvement) allowing coarse grass species to dominate.
- 74) However, the loss over the past 10 years has been balanced by gains of just over 10% (207 ha) due to conservation action: the habitat survey recorded gains of chalk grassland recovered by scrub control but more so from restoration of improved and neutral grassland and even arable land, often under agri-environment schemes.
- 75) The development of scrub may lead to deeper soils developing, so that scrub clearance may not immediately restore the habitat conditions which favour typical chalk grassland plant species. In addition, most of these species fail to persist in the seed bank, so that restoration of a badly degraded site may be a very long term process.
- 76) Chalk grassland is typically rich in herbaceous plant species. Typical chalk grassland which has not been improved agriculturally would probably be expected to hold at least ten of the indicator species listed in Appendix 3. There is probably a positive relationship between the number of indicator species and the size of a site, so that a large site, of, say, 10 ha or more, might be expected to support fifteen or more indicator species.
- 77) The structural diversity provided by scrub may add to the biodiversity interest of chalk grassland sites. The scrub which characteristically develops on chalk grassland sites is typically species-rich in itself, although species-poor hawthorn scrub can eventually come to dominate. Species-rich scrub is of nature conservation interest in its own right, providing habitat for a range of insect species. However, even species-poor scrub can be of value, particularly as cover for herpetofauna (the grass/scrub interface provides important basking habitat for lizards and snakes), and by protecting grazing-intolerant species (such as man orchid) from grazing animals.
- 78) In line with the national commitment to halt the loss of biodiversity the Kent Biodiversity Strategy includes a target to maintain the current extent of this habitat, and an action to protect

as Local Wildlife Sites all unimproved chalk grassland sites over 2ha in extent, although this would only result in protection of about 80% of the total resource in Kent (including all chalk grassland in existing SSSIs). In order to maximise the amount of chalk grassland protected, and to ensure that which is protected is of sufficient quality, the following policies are appropriate.

GC1

All areas of contiguous Lowland Calcareous Grassland of 10 ha or greater in extent should be designated as Local Wildlife Sites in order to prevent further fragmentation of the largest sites.

GC2

Areas of Lowland Calcareous Grassland over 2.0 ha in extent should be designated as Local Wildlife Sites if they support ten or more of the chalk grassland indicator species listed in Appendix 3.

GC3

All areas of Lowland Calcareous Grassland up to 2.0 ha in extent should be included as parts of larger Local Wildlife Sites if

- **They are contiguous with other habitats which qualify for designation;**
AND
- **They support five or more of the chalk grassland indicator species listed in Appendix 3.**

GC4

A chalk grassland site dominated by scrub, or with a substantial proportion of scrub, may be designated as Local Wildlife Site, providing that the scrub is of the species-rich type associated calcareous substrates and

- **There is potential for restoration to increase the area of chalk grassland present;**
OR
- **The scrub is important for supporting an identifiable element of the biodiversity interest of the site.**

GC5

A Local Wildlife Site designated for its chalk grassland may include species-poor scrub providing that

- **There is potential for restoration to increase the area of chalk grassland present;**
OR
- **The species-poor scrub does not constitute more than one-quarter of the overall area of the site;**
OR
- **The scrub is important for supporting an identifiable element of the biodiversity interest of the site.**

Neutral grassland

79) The 2012 Kent Habitat Survey has identified a total of 28494 ha of neutral grassland. 994 ha (3.4%) of the total has been identified as species-rich neutral grassland which meets the Natural England Farm Environment Plan Manual 3rd Edition Lowland Meadows BAP habitat type definition.

80) It is therefore clear that high-quality neutral grassland is actually a very rare habitat. This suggests that consideration should be given to designating semi-improved neutral grassland (i.e.

grassland that has been modified by the use of fertilizers, herbicides, reseeded or intensive grazing). The Integrated Habitat System, upon which the 2003 and 2012 Kent Habitat Surveys were based, does not classify grassland as ‘semi-improved’, unlike the Phase One methodology which underpinned the 1990 Habitat Survey. However we can use the GNZ Other Neutral Grassland category (definition: All unimproved and semi-improved neutral grasslands in the lowlands outside the indicative floodplain and/or not included in the plant communities described above i.e. lowland hay meadow, maritime grassland, grazing marsh, inundation grassland or coarse neutral grassland”) to gain a figure for grassland which is not classic Lowland Hay Meadow but still may be of substantial nature conservation interest. The total of this grassland category from the 2012 Kent Habitat Survey is 12703 ha.

This semi-improved neutral grassland is distributed over more than 9000 blocks, three-quarters of which are less than 2 ha in extent. The distribution of size classes is given in the following table.

| Block size | Number of sites | % of all sites | Total area | % of total resource |
|------------|-----------------|----------------|------------|---------------------|
| >= 50 ha | 5 | < 1 | 299 ha | < 1 |
| >= 25 ha | 22 | < 1 | 853 ha | < 1 |
| >= 10 ha | 206 | 2 | 3639 ha | 28 |
| >= 5 ha | 621 | 6 | 6491 ha | 51 |
| >= 2 ha | 1599 | 16 | 9609 ha | 75 |

- 81) It is therefore clear that if the all the unimproved and species-rich neutral grassland, and all blocks of semi-improved neutral grassland over 5 ha, were covered by a protective designation, this would still represent only the best 30% of the county’s neutral grassland resource.
- 82) Neutral grassland is particularly susceptible to agricultural improvement, as it responds well to fertilizers and, unlike, for example, chalk grassland, is usually on ground accessible to the plough. As a result, loss of unimproved neutral grassland has been substantial: the Kent Biodiversity Action Plan quoted a 97% decrease in area in the UK between the 1930s and the 1990s. The special interest of grazing marsh is dependent on the local water regime, and can be severely affected by improved drainage. Therefore, this does suggest that high quality neutral grassland should be treated as a rare habitat, and that consideration should be given to protecting the most important examples of semi-improved neutral grassland.
- 83) It is considered that when selecting neutral grassland Local Wildlife Sites, the emphasis should be on selection of sites which would normally be considered as unimproved, that is,
- Where there is evidence that the site has a long history of being managed unintensively and without reseeded, the addition of artificial fertilizers or use of herbicides;
 - Where the grassland does not appear to have been altered, or has only been slightly altered, by artificial drainage, or by the application of pesticides or fertilisers;
 - Where the sward is generally species-rich and includes suite of species from the list in Appendix 4;
 - Where perennial rye grass *Lolium perenne* and/or white clover *Trifolium repens* are infrequent or rare;
 - Where ant-hills are frequent; and/or
 - Where several species of wax caps, fairy clubs or gastromycetes are present.
- 84) If neutral grassland which does not meet the above criteria is to be considered for Local Wildlife Site status, then care must be taken to ensure that sites are of sufficiently high value before the designation is confirmed. Sites should

- a) Support grassland that does not appear to have been very substantially altered by artificial drainage, or by the application of pesticides or fertilisers;
- b) Be reasonably floristically diverse, with a range of grass and forb species (including at least 4 species from the list in Appendix 4); and
- c) Not have abundant perennial rye grass *Lolium perenne* or white clover *Trifolium repens*;
- d) Or, be a good example of NVC MG6 with potential to develop into MG5.

85) In line with the national commitment to halt the loss of biodiversity, a target of the Kent Biodiversity Strategy is to prevent the further loss of species-rich neutral grassland, and to maintain the existing extent of coastal grazing marsh. The following policies are considered appropriate for the selection of neutral grassland Local Wildlife Sites.

GN1

All areas of unimproved neutral grassland should be designated as Local Wildlife Sites.

GN2

Other areas of neutral grassland should be considered for selection as Local Wildlife Sites where forbs are well represented within the grassland, with at least 4 of the species listed in Appendix 4 present (2 frequent and 2 occasional) and where

- **The grassland area under consideration contributes to the nature conservation value of adjacent unimproved grassland (for example, where it provides additional habitat for key species found on the unimproved grassland);**
OR
- **Where it is reasonable to believe that there is potential for enhancement of the biodiversity interest of the grassland (e.g. good NVC MG6 with potential to become MG5);**
OR
- **Where the grassland is contiguous with ancient woodland, standing water or running water which qualifies as a Local Wildlife Site in its own right.**

GN3

Neutral grassland sites which do not meet the criteria for unimproved grassland may be selected as Local Wildlife Sites where they form all or part of an extensive area of grazing marsh important for breeding or wintering birds, OR where the grassland does not consist of sown grassland AND it supports

- **One or more scarce species of terrestrial or aquatic invertebrates;**
OR
- **An important network of wet dykes.**

Where a Local Wildlife Site is selected for its wet dykes, the dykes should qualify as Wildlife Sites in their own right.

GN4

Where the primary interest of an area of neutral grassland is the network of dykes within the grassland matrix, for simplicity the boundary should be drawn around the site as a whole. However, it should be made clear on the Local Wildlife Site citation where the particular interest of the site lies.

GN5

A neutral grassland site with a substantial proportion of scrub, may be designated as Local Wildlife Site, providing that

- **There is potential for restoration to increase the area of neutral grassland present;**

OR

- **The scrub is important for supporting an identifiable element of the biodiversity interest of the site.**

Heathland

- 86) The Kent Wildlife Habitat Survey shows only 74 ha of Lowland Heathland. This is characterised in the Integrated Habitat System as vegetation with a greater than 25% cover of ericoid shrubs and/or dwarf gorse *Ulex minor*. The heathland is recorded in more than 50 blocks spread over 10 locations plus a few outliers, showing the fragmented nature of Kent's remaining heathland resource.
- 87) Heathland is a semi-natural habitat which develops on poor, acid soils under a low level of grazing. It is vulnerable to some extent to agricultural improvement, and areas have been lost to planting for forestry. However, a more serious threat is the abandonment of grazing, which results in rapid succession to woodland.
- 88) Heathland is a rare and threatened habitat in the UK, and is listed in Annex 1 of the European Habitats Directive. The UK Habitat Action Plan noted that the total area of Lowland Heathland in the UK had declined by five-sixths since 1800. In Kent the area of heathland in the county in 1798 is estimated at 1910 ha. Restoration efforts over the 10 years prior to 2012 have reduced the loss slightly, but there is still 96% less heathland than in 1798.
- 89) Heathland can probably be considered a typical habitat of the Greensand, on sands and gravels in the High Weald, on Thames Terrace gravels and sands, and on surface deposits of sand and gravel on the North Downs. It was probably once a major component of many commons in the west of the county, and might therefore be considered a significant part of the county's cultural history.
- 90) Kent has a small number of lichen heath areas; these are of county importance due to their rarity and the uncommon lichen species they often support.
- 91) In line with the national commitment to halt the loss of biodiversity, the Kent Biodiversity Strategy sets a target to protect and enhance all existing heathland. The following policies are therefore considered appropriate.

HE1

All areas of Lowland Heathland should be selected as Local Wildlife Sites.

HE2

The boundaries of heathland Local Wildlife Sites should be drawn to include

- **Any contiguous areas of acid grassland;**
- AND**
- **Any contiguous stands of common gorse *Ulex europaeus* on acidic substrates.**

HE3

Site boundaries should include any areas of scrub, conifer plantation, secondary birch woodland or other vegetation which could potentially be restored to heathland or which might contribute to the biodiversity interest of the heathland habitat.

HE4

All areas of lichen heath should be selected as Local Wildlife Sites

Fen, marsh and swamp

- 92) The 2012 Kent Habitat Survey shows a total of 909 ha of fen, marsh and swamp habitats. This area includes
- a) 545 ha of Reedbed (a UK BAP priority habitat), equivalent to 0.1% of the county area;
 - b) 296 ha of other tall swamp vegetation, equivalent to 0.08% of the county area;
 - c) 33 ha of Fen (a UK BAP priority habitat), equivalent to 0.01% of the county area; and
 - d) 11 ha of rush pasture, equivalent to 0.003% of the county area.
- 93) The 2012 Kent Habitat Survey includes nearly 1238 blocks of Reedbed, of which 14% are less than 0.01 ha (i.e. 100m²) in extent. This is presumably due to the abundance of reed as an emergent species on the margins of water courses, ponds and lakes. There are only around 115 blocks of reed over 1 ha in extent, but these make up just under 70% of all the Reedbed habitat in the county. Blocks of more than 2 ha make up just over 50% of the all Kent's Reedbed area.
- 94) The 2012 Kent Habitat Survey includes over 1085 blocks of tall swamp vegetation, though more than 90% of these are less than 0.5 ha in extent. There are only 62 blocks of more than 1 ha in extent, though these make up 43% of the total resource in Kent.
- 95) The 2012 Kent Habitat Survey shows 49 blocks of Fen vegetation, of which only 9 are over 1 ha in extent. However, these 9 blocks make up over 80% of the total resource in Kent.
- 96) These are semi-natural forms of vegetation which occur as stages in the hydrosere succession from open water to dry woodland. The species composition of these habitats is generally relatively natural.
- 97) Reedbed and other tall swamp vegetation often consist of more-or-less single species stands. However, these stands are characteristic in themselves, particularly in the case of reed, very large stands of which are important for a range of important bird species. More characteristically, fen, marsh and swamp habitats occur as part of a wider wetland matrix which includes open water, wet woodland and/or grazing marsh, and where there are likely to be synergistic effects between the different habitat types.
- 98) Fen habitats are often, by contrast, species rich, supporting a large number of wetland plant species and often rich in invertebrates.
- 99) Fen, marsh and swamp habitats tend to be rather fragile, as they
- a) Rapidly succeed towards scrub and woodland in the absence of appropriate management;
 - b) Are vulnerable to land drainage and water abstraction; and
 - c) Are vulnerable to nutrient enrichment.
- 100) Relevant targets in the Kent Biodiversity Strategy are
- a) To maintain the current extent of Lowland Fen and reedbed, with targets set for restoration of both habitats
 - b) To maintain the current extent of reedbed.
- 101) Given the very great rarity in the county of these habitats, their fragility and their conservation importance, the following policies are therefore considered appropriate for fen, marsh and swamp habitats.

FE1

All areas of reedbed, tall swamp vegetation, or fen habitat of 1 ha of more in extent should be selected as Local Wildlife Sites, including those with habitats which have been damaged but are capable of being restored.

FE2

All areas of reedbed, tall swamp vegetation, or fen habitat up to 1.0 ha in extent, and which have not been substantially damaged, should be included as parts of larger Local Wildlife Sites where they are contiguous with other habitats which qualify for designation.

FE3

Where possible, fen, marsh and swamp habitats should be selected as parts of larger Local Wildlife Sites which include other qualifying habitats. Examples would be

- **Reedbed and tall swamp vegetation around water bodies in areas of grazing marsh;**
OR
- **Areas of flood plain including rivers or streams, wet woodland and scrub, ponds as well as swamp and fen habitats;**
OR
- **Fen, marsh and swamp habitats around springs and headwaters.**

Standing open water

- 102) Standing open water occurs in Kent in ponds, lakes (including former quarries), reservoirs, wet dykes and ditches, and short lengths of former canals. The 2012 data records that Kent holds
- a) Around 300 freshwater lakes covering 1276 ha;
 - b) Over 19,000 freshwater ponds (under 2 ha in size) covering over 1200 ha plus 2650 brackish or saline ponds covering another 120ha;
 - c) Over 1200 ha of wet freshwater ditches and dykes plus 55 ha of canal; and
 - d) 276 ha of saline lagoons.
- 103) Lakes and reservoirs can be botanically rather poor, especially lakes that have developed in deep quarries. Where the water is very deep, submerged vegetation does not generally establish well, although deep water bodies can be important for Charophytes. However, large water bodies may be important breeding and wintering sites for wetland birds.
- 104) Ponds and wet dykes can be species rich, with a range of submerged, emergent and marginal plant species. Natural England's criteria for the selection of Sites of Special Scientific Interest note that an exceptionally diverse freshwater ditch would be expected to hold at least 15 submerged, floating, emergent and/or wet bank plant species in a typical 20 m stretch. A count of 10 to 14 species in 20 m is considered 'good' (for brackish ditches, the corresponding figures are 10 species and 6 to 9 species).
- 105) Ponds and ditches are vulnerable to eutrophication and heavy shading, both of which can result in a substantial loss of species-richness. However, even species-poor ponds can support important species provided that habitat conditions are correct. For example, water voles will make use of species-poor dykes on grazing marshes. Heavily shaded ponds may also not be without interest, and can support specialised animal species. Woodland ponds, for example, may be used by palmate newts.
- 106) Bodies of standing water are typically found in the Low Weald and High Weald, where ponds are frequent, and, as wet dykes, in the grazing marshes of the North Kent coast, Stour

Valley and Romney Marsh. The species associated with standing water vary across Kent, so that, for instance, the water beetle communities of the Wantsum marshes are substantially different to those on the Hoo Peninsula.

107) Saline Lagoons are identified as a priority habitat by the JNCC. The total area of saline lagoons in England appears to be almost 1500 ha. Saline lagoons support a unique flora and fauna adapted to brackish water conditions, but are vulnerable to such factors as coastal defence work, eutrophication, natural succession, and artificial control of water levels. In line with the national commitment to halt the loss of biodiversity, the Kent Biodiversity Strategy includes a target to retain the current extent of ponds, saline lagoons in Kent, and its target to maintain the current extent of coastal and floodplain grazing marsh is inclusive of the network of ditches and wet dykes intrinsic to these habitats.

108) The following policies are therefore appropriate for standing water habitats.

SW1

When drawing the boundaries of Local Wildlife Sites selected for habitats other than standing water, all ponds or other standing water within or contiguous with the other habitats should normally be included within the Local Wildlife Site. Exceptions should only be made where the nature conservation function of the water body has been seriously compromised by

- **Pollution, including nutrient run-off leading to eutrophication;**
AND/OR
- **Intensive use for angling or amenity;**
AND/OR
- **Some other factor.**

SW2

All Saline Lagoons should be selected as Local Wildlife Sites, but they should normally support some typical lagoon fauna and flora, such as tasselweeds *Ruppia* spp. or lagoon cockle *Cerastoderma glaucum*, and should not be significantly damaged by eutrophication or other impacts.

SW3

Ponds, lakes, wet dykes or other water bodies (other than Saline Lagoons) should be selected as Local Wildlife Sites in their own right where

- **They hold a suite of appropriate wetland plant species, which would normally be expected to include two or more plant species which are considered rare or scarce in the UK as a whole or listed on the Kent Rare Plants Register;**
OR
- **They are high quality examples of typical open water habitat associated with a particular National Character Area;**
OR
- **They are important for wild birds;**
OR
- **They are important for other species of plants or animals.**

Running water

109) Kent contains part or all of five river catchments. These are

- a) The Thames;
- b) The Medway;
- c) The Great Stour;

- d) The Rother;
e) The Dour.
- 110) There is great variety in the biodiversity interest of these rivers, depending on the geology of the catchment and stream/river bed, and on saline influence. The Great Stour catchment, for instance, includes a winterbourne, acid and chalk headwaters, a stretch of chalk river, slow-flowing eutrophic stretches with fens, and a tidal estuary. Each section has its own associated species of plants and animals.
- 111) The demands of agriculture and flood defence have meant that very few rivers and streams can be considered to be very natural. Banks may be reinforced, and few areas of natural or semi-natural flood-plain vegetation remain.
- 112) Rivers and streams can be quite resilient to change, particularly as up- and down-stream colonisation can be rapid. However, they can still be damaged by such factors as
- a) Pollution, including diffuse pollution from agricultural land;
 - b) Bank modification and hard flood-defences;
 - c) Water abstraction from ground and surface waters;
 - d) Soil and silt run-off, particularly associated with built development;
 - e) Culverting or impoundment.
- 113) Headwater streams, and their associated specialist fauna and flora, appear to be particularly vulnerable, and their nature conservation importance is often overlooked.
- 114) The Water Framework Directive aims for good ecological and chemical status of all rivers and this is driving river conservation in England. , There is a UK Habitat Action Plan for Chalk Rivers. This includes a target to maintain the characteristic plants and animals of chalk rivers, including their winterbourne stretches. The Kent BAP includes a target to manage all catchments and maintain them in a condition which supports the full potential range of flora and fauna.
- 115) Running water is not an especially rare habitat in Kent, but
- a) Relatively natural stretches are rare;
 - b) Chalk rivers are a UK priority habitat; and
 - c) Certain features, especially headwaters, are particularly fragile.
- The following policies are therefore considered appropriate.

RW1

When drawing the boundaries of Local Wildlife Sites selected for habitats other than running water, all streams or other running water within or contiguous with the other habitats should normally be included within the Local Wildlife Site. Exceptions should only be made where the nature conservation function of the water course has been seriously compromised by

- **Pollution, including nutrient run-off leading to eutrophication;**
AND/OR
- **Intensive management for amenity or flood-defence;**
AND/OR
- **Substantial modification of the banks;**
AND/OR
- **Some other factor.**

RW2

On each river catchment, the most natural stretches of water course associated with each of the different surface geologies and/or National Character Areas should be selected as Local Wildlife Sites. These stretches should normally have well developed submerged, floating, emergent and marginal vegetation, made up of appropriate plant species, and should be in the ‘Good’ water quality class.

RW3

Springs and headwater streams should be selected as Local Wildlife Sites where they represent the best example of a headwater stream in for a particular catchment and on a particular surface geology and/or in a particular National Character Area, OR where

- **They have not been substantially artificially altered;**
AND
- **They flow at least seasonally in most years.**

RW4

Stretches of chalk river should be selected as Local Wildlife Sites where

- **The channel has not been significantly modified;**
AND
- **Where the water quality is in the ‘Good’ class;**
AND
- **They support typical submerged, floating, emergent and marginal vegetation, including river water crowfoot *Ranunculus penicillatus*;**
AND
- **Ideally where other typical chalk river species, including white-clawed crayfish *Austropotamobius pallipes* and brown trout *Salmo trutta*, also occur.**

RW5

When boundaries are set for running water Local Wildlife Sites, they should include

- **At least all the bank as far up as the first major break in the slope;**
AND/OR
- **Where there is semi-natural vegetation at the top of the bank, a strip of this vegetation at least 5m wide;**
AND/OR
- **Any contiguous fen, marsh, swamp, or wet woodland habitats where these are present.**

Coastal habitats

116) Kent holds the following coastal habitats which are priorities under the UK BAP.

- a) Maritime cliffs and slopes;
- b) Coastal sand dunes;
- c) Coastal vegetated shingle; and
- d) Coastal saltmarsh.

117) In each case, the habitats are of sufficient importance to be almost entirely included within Sites of Special Scientific Interest (SSSIs), as shown below. Note that the area measurement for maritime cliffs and slopes is not entirely meaningful as it does not take the angle of slope into account.

| Habitat type | Total area in Kent | Area in SSSIs |
|----------------------------|--------------------|---------------|
| Maritime cliffs and slopes | 192 ha | 176 ha |
| Coastal sand dunes | 455 ha | 433 ha |
| Coastal vegetated shingle | 2104 ha | 1870 ha |
| Coastal saltmarsh | 1431 ha | 1339 ha |

- 118) These are all undoubtedly rare habitats in the county, and consideration therefore needs to be given to those small areas outside SSSIs. All the habitats are vulnerable to coastal defence work or coastal built development. Sand dunes and vegetated shingle are particularly vulnerable to trampling and disturbance.
- 119) Where sites are not heavily disturbed or modified, then they can develop a virtually entirely natural vegetation, often with specialised species of restricted distribution.
- 120) In line with the national commitment to halt the loss of biodiversity, the Kent Biodiversity Strategy includes a target to maintain the current extent of maritime cliffs and slopes, coastal sand dunes, coastal vegetated shingle and coastal saltmarsh.
- 121) The following policies are therefore considered appropriate to identify and protect important coastal habitats outside SSSIs.

CO1

Blocks of maritime cliff and slope habitat, coastal sand dunes, coastal vegetated shingle and coastal saltmarsh over 2 ha in continuous extent should be selected as Local Wildlife Sites where

- **They support an assemblage of plant species typical of the habitat concerned, including a suite of species restricted or mainly restricted to the habitat concerned;**
- OR**
- **The habitat is soft maritime cliff and it supports herbaceous vegetation as well as areas of bare ground and/or wet seepages.**

CO2

All areas of maritime cliff and slope habitat, coastal sand dunes, coastal vegetated shingle and coastal saltmarsh up to 2 ha in extent should be included as parts of larger Local Wildlife Sites where they are contiguous with other habitats which qualify for designation.

CO3

When the boundary is set for a maritime cliff or slope Local Wildlife Site, it should include any semi-natural cliff-top vegetation demonstrating a clear maritime influence in its species composition to a depth of at least 5m inland of the top of cliff or slope.

Open Mosaic Habitats on Previously Developed Land / “Brownfield sites”

- 122) Owing to their nature as habitat mosaic sites often important for a range of species, these sites should qualify under other criteria such as invertebrates, reptiles, higher or lower plants and therefore no direct criterion is proposed.

Selection of Local Wildlife Sites based on species features

General

SG1

Where a Local Wildlife Site is designated on the basis of the species present, the boundaries should be drawn to include the area and range of habitats necessary to secure the continued presence of the species on the site.

Biodiversity Action Plan species

123) The UK BAP lists remain important and valuable reference sources underpinning the England Biodiversity Strategy. Outcome 3 of the Strategy is to secure an overall improvement in the status of our wildlife and prevent further human-induced extinctions of known threatened species. Protecting the sites that support important populations of UK BAP species remains a key mechanism to achieve this.

BS1

Sites supporting UK BAP Priority Species should be designated as Local Wildlife Sites where they meet the following criteria.

Lower plants and fungi

124) Natural England's criteria for the selection of Sites of Special Scientific Interest (SSSIs) treat lower plants together, and a similar approach is taken here. The criteria set out below are for use when identifying Wildlife Sites on the basis of communities of fungi, lichens, charophyte algae or bryophytes.

125) The criteria for the selection of SSSIs use a scoring system based upon the known frequency of species in the UK. It is appropriate to use a similar system here, but to adapt it to reflect local rather than national importance. The scoring system is set out in the table below; note that the most recent and authoritative records should be used in establishing the score for a site.

| Status | Score |
|--|--------------|
| Nationally rare (i.e. UK Red Data Book) | 100 |
| Nationally scarce | 50 |
| Rare in Kent (i.e. Kent Red Data Book 1, 2, 3 or K status) | 40 |
| Scarce in Kent (Not KRDB, but known to occur in <50 DINTY tetrads) | 25 |

LP1

A site with one nationally rare species should be selected as a Local Wildlife Site if

- **It supports the largest population of that species in a particular National Character Area;**
- AND/OR**
- **It is the only occurrence of that species in the county.**

LP2

Any site scoring at least 150 using the system set out above should be selected as a Local Wildlife Site.

LP3

A site should be selected as a Wildlife Site where it is considered by an appropriately expert organisation or individual as being of importance for the maintenance of the conservation status of one or more species of fungus, lichen or lower plant within the county or within a particular National Character Area, and where this decision is ratified through the decision-making process for the identification and delineation of Local Wildlife Sites.

LP4

A churchyard or graveyard site should be selected as a Local Wildlife Site where it

- **Supports at least 80 species of lichen;**
OR
- **Supports at least 25 species of bryophyte;**
OR
- **Supports a well-developed community associated with lime-based render on north-facing walls.**
OR
- **Supports 15 species of fungi such as waxcaps & fairy clubs.**

Vascular Plants

126) Natural England's criteria for the selection of SSSIs on the basis of their vascular flora use a scoring system based upon the known frequency of species in the UK. It is appropriate to use a similar system here, but to adapt it to reflect local rather than national importance. The scoring system is set out in the table below.

| Status | Score |
|--|--------------|
| Nationally rare (i.e. UK Red Data Book) | 100 |
| Nationally scarce | 50 |
| Rare in Kent (i.e. Kent Red Data Book 1, 2, 3 or K status) | 40 |
| Listed in the current version of the Kent Rare Plants Register | 25 |

VP1

A site with one nationally rare species should be selected as a Local Wildlife Site if

- **It supports the largest population of that species in a particular National Character Area;**
AND/OR
- **It is the only occurrence of that species in the county.**

VP2

Any site scoring at least 150 using the system set out above should be selected as a Local Wildlife Site.

VP3

A site should be selected as a Local Wildlife Site where it is considered by an appropriately expert organisation or individual as being of importance for the maintenance of the conservation status of one or more vascular plant species within the county or within a particular National Character Area, and where this decision is ratified through the decision-making process for the identification and delineation of Local Wildlife Sites.

Invertebrates

Currently, the invertebrate fauna of Kent is insufficiently known to allow the setting of minimum thresholds for the identification of Wildlife Sites on the basis of invertebrate communities. However, the county undoubtedly supports some outstanding invertebrate sites, and it is considered appropriate to have a mechanism by which their importance can be recognised.

IN1

A site should be selected as a Local Wildlife Site where it is considered by an appropriately expert organisation or individual as being of importance for the maintenance of the conservation status of one or more invertebrate species within the county or within a particular National Character Area, and where this decision is ratified through the decision-making process for the identification of Local Wildlife Sites.

Amphibians and reptiles

127) A set of criteria for selection of Local Wildlife Sites on the basis of their amphibian fauna has been drawn up by the Kent Reptile and Amphibian Group, as the relevant expert organisation. The criteria for both amphibians and reptiles are based upon nationally recognised scoring systems as well as additional local standards used to identify qualifying sites for KRAG's Key Site Register. The criteria for amphibians are based on a scoring system which forms the basis of the selection of Sites of Special Scientific Interest. This scoring system is set out in the table below.

| Species | Method | Low population | Good population | Exceptional population |
|-----------------|-----------------------------------|----------------|-----------------|------------------------|
| | | Score 1 | Score 2 | Score 3 |
| Gt crested newt | Seen or netted in day | <5 | 5-50 | >50 |
| | Counted at night | <10 | 10-100 | >100 |
| Smooth newt | Netted in day or counted at night | <10 | 10-100 | >100 |
| Palmate newt | Netted in day or counted at night | <10 | 10-100 | >100 |
| Common toad | Estimated | <500 | 500-5000 | >5000 |
| | Counted | <100 | 100-1000 | >1000 |
| Common frog | Spawn clumps counted | <50 | 50-500 | >500 |

Notes

- a) If four species are present, add 1 point; if five species are present, add two points to the total.
- b) Daytime netting should be carried out for a 15 minute period for sites with less than 50m of water's edge, for 30 minutes for sites with 50m to 100m of water's edge, and so on.

128) The use of a scoring system allows sites with exceptional populations to be identified, as well as sites with good assemblages of a range of species.

129) It is considered appropriate that the identification of Local Wildlife Sites on the basis of their reptile fauna uses the methodology established by Froglife to identify Key reptile Sites. This is similar to the above system in that it uses a scoring system, and that it identifies

- a) Sites which support a good assemblage of species;
- b) Sites which support high populations of one or more species; and
- c) Sites of importance for locally rare species.

The scoring system for identifying Key Reptile Sites is set out in the table below. It should be based on the maximum number of adult animals seen under artificial refugia (placed at a density of up to 10 per hectare) or by general observation by one person in one day.

| Species | Low population Score 1 | Good population Score 2 | Exceptional population Score 3 |
|-------------------|---------------------------|----------------------------|-----------------------------------|
| Adder | <5 | 5-10 | >10 |
| Grass snake | <5 | 5-10 | >10 |
| Viviparous lizard | <5 | 5-20 | >20 |
| Slow worm | <5 | 5-20 | >20 |

130) Kent Reptile and Amphibian Group consider that adder is sufficiently rare and threatened in Kent that ‘good’ or ‘exceptional’ populations should be considered for selection as Local Wildlife Sites.

131) Guidance on the selection of biological SSSIs states, ‘Any breeding site of [natterjack toad or great crested newt] adjacent to an existing SSSI should be considered for inclusion in the SSSI.’ It is considered appropriate to include a similar provision here.

AM1a

All sites with an exceptional population of great crested newts should be selected as Local Wildlife Sites.

AM1b

All sites with a good or exceptional population of common toads should be selected as Local Wildlife Sites.

AM2

Sites should be selected as Local Wildlife Sites if they score a total of at least 5 points based on the system detailed above.

AM3

For the purposes of selecting Local Wildlife Sites on the basis of their amphibian fauna, a site may be

- **A single water body;**
- OR**
- **A collection of water bodies supporting a metapopulation of one or more species.**

AM4

Where a site has been selected as a Local Wildlife Site on the basis of its amphibian fauna, the boundary should be drawn to include

- **Semi-natural vegetation immediate adjacent to the pond;**
- OR**
- **Where great crested newts are present, areas of semi-natural vegetation linking nearby ponds where this vegetation may be considered critical to the functioning of a metapopulation.**

AM5

Where a breeding pond used by great crested newts is adjacent to an existing or proposed Wildlife Site, the pond should be included within the Local Wildlife Site boundary.

AM7

Where potential Wildlife Sites are being assessed within 1km of a Local Wildlife Site designated on the basis of its breeding toad population, the foraging potential it offers to toads should be considered.

RE1*

Sites should be selected as Local Wildlife Sites where the site

- **Supports three or more reptile species;**
OR
- **Supports two snake species;**
OR
- **Supports an exceptional population of one species;**
OR
- **Supports an assemblage of species scoring at least 4 points using the system set out above;**
OR
- **Supports a ‘good’ or ‘exceptional’ population of adder.**

***Where reptiles are the main reason for Local Wildlife Site designation, the area should also be on KRAG’s Key Site Register.**

RE2

Greater emphasis will be placed on designating sites that include terrestrial habitat features that are deemed of particular importance to reptiles. Such features may include hibernation areas, nesting sites and foraging areas.

RE3

Greater emphasis will be placed on designating sites where data indicates that breeding is present based on the presence of eggs, neonates or juveniles.

Birds

- 132) A set of criteria has been established by Kent Ornithological Society, as the relevant expert organisation, for the selection of Wildlife Sites on the basis of their bird fauna (which is here taken to mean the naturally occurring populations of wild birds on a site). The criteria are based on established criteria for the selection of Sites of Special Scientific Interest, and on the Kent Red Data Book.
- 133) The criteria are intended to be applied to areas of habitat which are more-or-less discrete and homogenous. For example, a large block of woodland should not be treated as part of the same site as a large block of farmland. However, an intimately mixed area of small fields, hedges and small woods may be treated as a unit, as may the mix of scrub, swamp, marsh and open water vegetation associated with flood plains or around abandoned quarries.
- 134) The criteria have been designed to recognise
- a) The rarity of certain breeding and wintering bird species;
 - b) Birds which may be considered vulnerable because their populations are in decline;
 - c) Birds which are vulnerable because of their colonial nesting habitats;
 - d) Birds which may be considered vulnerable because their non-breeding populations are concentrated in a small number of sites; and
 - e) Sites of importance for the presence of a diversity of species.

BI1

A site should be selected as a Local Wildlife Site if it can be considered as a single, identifiable unit (as explained above) in terms of its bird fauna and where

- **It is occupied regularly by at least 2.5% of the county population of any one or more bird species, based on the most recent and authoritative data;**
OR
- **It is occupied regularly as a breeding site by species with a Kent population of 50 or fewer territories;**
OR
- **It holds ten or more Kent Red Data Book 2 (KRDB2) species in the breeding season;**
OR
- **It holds three or more Kent Red Data Book 3 (KRDB3) species at the appropriate time of year (normally this should not include a combination of breeding and wintering species);**
OR
- **It holds one of the five largest colonies of colonial seabirds (with the exception of herring gull and black-headed gull), grey heron, little egret or sand martin;**
OR
- **It is occupied regularly by 5% or more of the county population of any one or more species in non-breeding seasons, based on the most recent and authoritative data;**
OR
- **It has been recorded as being regularly used in recent years by at least 50 breeding bird species;**
OR
- **It has been recorded as being regularly used in recent years by at least 60 wintering bird species;**
OR
- **It has been recorded as being regularly used in recent years by at least 100 passage bird species.**

Bats

- 135) A set of criteria for selection of Local Wildlife Sites on the basis of their bat fauna has been drawn up by the Kent Bat Group, as the relevant expert organisation.
- 136) A site boundary should take in the most likely commuting and foraging habitats within 2km of a roost site, or the most likely commuting routes around a known foraging site within a buffer of 2km. This means a site designated for bats may include a variety of habitats for example pasture, parkland, woodland, open or running water, wetland, hedgerows etc. as bats require a diversity of invertebrate food sources and areas in which to feed and through which to commute.
- 137) 'Roosts' include maternity, pre/post maternity, hibernation and male roosts. Of particular importance are roost sites of multi-species occupancy and feeding sites targeted by several species.
- 138) NB As Kent Bat Group already has personal contact with owners of roosts, and details are often confidential, it is important that any approach or request regarding designation of such sites is made through KBG.
- 139) The table below sets out significance levels for bats recorded in Kent since 1983 and will be used to assess whether a site meets the criteria. Only records from 1980 onwards will be used to provide evidence for Local Wildlife Site selection.

| Species | Maternity roost | Other winter roost types e.g. hibernation | Known to breed in Kent |
|---|-----------------|--|------------------------|
| Bechstein's bat (<i>Myotis bechsteinii</i>) | Any | Any | Yes |
| Brandt's bat (<i>Myotis brandtii</i>) | Any | Any | |
| Whiskered bat (<i>Myotis mystacinus</i>) | Any | Any | Yes |
| Daubenton's bat (<i>Myotis daubentonii</i>) | Any | Any | Yes |
| Natterer's bat (<i>Myotis nattereri</i>) | Any | Any | Yes |
| Greater mouse-eared bat (<i>Myotis myotis</i>) (only 1 record) | Any | Any | |
| Common pipistrelle (<i>Pipistrellus nathusii</i>) | 50+ | 5+ | Yes |
| Soprano pipistrelle (<i>Pipistrellus</i> | 100+ | 5+ | Yes |
| Nathusius' pipistrelle (<i>Pipistrellus</i> | Any | Any | |
| Brown long-eared bat (<i>Plecotus auritus</i>) | Any | Any | Yes |
| Grey long-eared bat (<i>Plecotus austriacus</i>) (only 1 record) | Any | Any | |
| Noctule (<i>Nyctalus noctula</i>) | Any | Any | Yes |
| Leisler's bat (<i>Nyctalus leisleri</i>) | Any | Any | Yes |
| Serotine (<i>Eptesicus serotinus</i>) | Any | Any | Yes |

BA1

Maternity roost sites (excluding domestic properties) and the vital flight and commuting routes and priority feeding areas attached to such roosts

BA2

Any structures such as tunnels, dene holes, bridges, icehouses, cellars, ancient buildings and fortifications etc. which are used as winter roosts

BA3

Sites which have been recorded as swarming sites

BA4

Regular feeding and foraging sites for an assemblage of 4 species or more

Terrestrial & Marine Mammals (excluding bats)

140) A set of criteria for selection of Local Wildlife Sites on the basis of their terrestrial, riparian and marine mammal fauna has been drawn up by the Kent Mammal Group and Kent SeaWatch, as the relevant expert organisations. The criteria are listed below. Sites meeting one or more of the following criteria should be considered for selection as Local Wildlife Sites in Kent. As standard extant mammal populations should also be noted within the description for all new and existing Local Wildlife Sites to support designations as they are proposed or updated. The following should be considered for selection:

141) Any sites supporting breeding (or probable breeding) species (other than bats) which are listed as fully or partially protected on Schedule 5 of the Wildlife & Countryside Act 1981 (including amendments), together with any areas which are critical for nesting, foraging, roosting (laying up), territorial or other significant use, where this has been determined by survey. These species currently comprise:

Dormouse (*Muscardinus avellanarius*)

Water vole (*Arvicola amphibius*)

Otter (*Lutra lutra*)

Cetacea (all dolphins, whales and porpoises)

Those species in **bold** are afforded ‘European Protected Species’ status and are included on Schedule 2 of the European Habitats Directive (1992) implemented in UK law by The Conservation of Habitats and Species (Amendment) Regulations 2012 and The Offshore Marine Conservation (Natural Habitats, &c.) (Amendment) Regulations 2012.

- 142) Any sites supporting established breeding populations of the following species which are Listed on Schedule 3 of the European Habitats Directive, UK BAP Priority Species, nationally declining, or regionally important together with any areas which are critical for nesting, foraging, territorial or other significant use, where this has been determined by survey provided they are not the result of recent deliberate introductions which do not form part of a recognised species recovery programme. These species comprise:
- Brown hare (*Lepus europaeus*)
 - Hedgehog (*Erinaceus europaeus*)
 - Water shrew (*Neomys fodiens*)
 - Harvest mouse (*Micromys minutus*)
 - Common seal (*Phoca vitulina*)
 - Grey seal (*Halichoerus grypus*)
- 143) The presence of breeding badgers (*Meles meles*) is not, in itself, considered a valid reason for site selection, unless the sett is known to be historic (exceeding 50 years in existence). However, the presence of badger setts should be considered to be an additional, supporting reason for the selection of sites that qualify under other guidelines. Legal protection is given to both badgers and their setts on welfare grounds (The Protection of Badgers Act 1992).
- 144) Site boundaries are to be drawn as indicated where specific instructions exist in the criteria below, otherwise they are to be drawn around the habitats of importance to the species recorded within that tetrad or km square and include likely habitat corridors to other such areas.
- 145) The criteria cover Protected Species, species in decline in Kent and assemblage sites important for a number of native species.
- 146) Assemblage sites are chosen from a map of all terrestrial, riparian and marine mammals recorded per tetrad. The date of records used will be limited to 1990 onwards. Those tetrads with over 12 native/naturalised species recorded may be considered for selection; this total specifically excludes records of Grey squirrel (*Sciurus carolinensis*), Common rat (*Rattus norvegicus*), American mink (*Mustela vison*), Reeves’ Muntjac (*Muntiacus reevesi*) and Sika deer (*Cervus nippon*). The boundary of an assemblage site is to be drawn around all the habitats of value to the species recorded within the tetrad and likely corridors to other such areas.
- 147) Where a criterion requires “recent records”, records will only be used if recorded in the last 5 or 10 years (depending upon species) previous to the date the citation is written/updated.

MA1

Hazel dormice – any deciduous or mixed woodland over 20 ha known to support dormice, any other suitable habitat within 250m and the connections in between. The site boundary will be drawn around all such suitable areas within the set distance. Justification – these areas are core habitats in the county and provide local source populations.

MA2

Water vole – any waterway or connected waterway complex where in total more than 2,000 linear metres of habitat is known to hold water voles during summer. Justification – these areas are core habitats in the county and provide local source populations.

MA3

Otter - sites designated for otter may include:

- **Any known holt used in the last 5 years, the stretch of water body 200m either side of it and any semi-natural habitat of the bank 20m back from the water.**
- **Any water course with records of otter (spraints, footprints etc as well as sightings) in the last 5 years. When boundaries are drawn for running water sites they should include at least all the bank as far up as the first major break in the slope; AND/OR Where there is semi-natural vegetation at the top of the bank, a strip of this vegetation at least 5m wide; AND/OR any contiguous fen, marsh, swamp, or wet woodland habitats where these are present. Justification – otters are very rare and show limited distribution in Kent and important habitats require protection.**

MA4

Cetaceans -

- **areas with regularly observed pods/groups of any species (e.g. off Dungeness)**
- **areas used for calving, rearing young AND/OR for courtship behaviour.**

Justification – cetaceans are considered rare around Kent and important breeding and foraging habitats should be protected.

MA5

Brown hare – areas of 5 or more linked tetrads showing recent (last 10 years) presence of this species. Justification – these areas are core habitats in the county and provide local source populations.

MA6

Hedgehog – areas of 2 or more linked tetrads where this species is known to occur in the last 5 years. Justification - this species appears to be declining nationally and may become limited to small urban habitats.

MA7

Water shrew – areas of 2 or more linked tetrads where this species is known to occur in the last 10 years. Justification – these areas are potentially core habitats in the county and provide local source populations.

MA8

Harvest mice – areas of 2 or more linked tetrads where this species is known to occur in the last 10 years. Justification – these areas are potentially core habitats in the county and provide local source populations.

MA9

Common and Grey Seal –

- **all haul out sites with at least one annual count of 20+ in the last 10 years of seals of either species or a combination of species.**
- **all haul out sites used for pupping.**

Justification – these resting areas are potentially within core habitats and may also provide nursery places for these species in the county.

Where haul out sites are sandbanks boundaries will be drawn around these areas shown on the most up to date available aerial photographs but will be taken to apply to the current sand bank in the case of it shifting.

MA10

Badger – the presence of badger setts will not normally be a criterion for Local Wildlife Site selection in its own right but may contribute to the importance of a site selected for other reasons. However, if in the opinion of an appropriately qualified expert, a sett has been in use for over 50 years it may be considered for designation. Justification – badgers are widespread in Kent but historic setts may indicate core and relatively undisturbed badger habitat areas.

MA11

Assemblage sites - tetrads with 12 or more native/naturalized mammal species recorded, excluding bats and other more recent alien species listed in 6) above. Justification – high mammal species richness is likely to indicate a range of good quality habitat types rather than highly disturbed, highly improved or monoculture type landscapes.

Position in the wider landscape

- 148) The Wildlife Trusts began championing the Living Landscapes approach in 2006. It was a new way of thinking about how we manage land to do more for wildlife, people and the economy. The aims are to restore, recreate and reconnect habitats to work against the threat of fragmentation and enable wildlife a more permeable countryside to move about in. The motto is “bigger, better and more joined up” and work is usually outside recognised nature reserves. The RSPB launched its Futurescapes framework in 2010, contributing to the landscape-scale conservation effort that is needed in the UK and recognising the value of the ecosystem services represented by natural habitat areas. Local Wildlife Sites should be chosen which contribute towards this aim for Kent.
- 149) Habitat corridors and stepping stones form valuable links between areas of importance for wildlife enabling movement of species both in response to threats and to allow genetic exchange or adaption to a changing climate.
- 150) The mosaic option reflects the concept that groups of habitats can be of great wildlife value, even if the individual components are not particularly rich in the indicator plant species for their particular habitat.
- 151) The “bigger and better” elements of the Living Landscapes movement are recognised by the extending / buffering sites option below. Buffering protects more vulnerable habitats from influence such as nutrient run-off from arable land, impacts from people or cats from adjacent urban areas, or other unwanted edge effects. Extending and protecting sites increases the area and quality of habitats available for wildlife. This picks up on Ratcliffe’s fragility criterion at the start of this document.

Value in the wider landscapes

WL1

Where a site is of importance because of its position within the wider landscape. It should meet one or more of the following options:

- **Fall within an area of strategic importance to an existing landscape scale conservation project (e.g. KWT Living Landscape Project area or RSPB Futurescapes area);**
- **Fall within land in an adopted Green Infrastructure Plan;**
- **Contribute valuable ecosystem services to the local area;**
- **Be identified by a respected GIS habitat connectivity tool (such as the ARCH tool) as a valuable habitat connection.**

Habitat corridors or stepping stones

WL2

Where two or more Local Wildlife Sites are physically linked by additional habitat of a type that would allow the dispersal and interchange of species within each site, then these corridors should be included within the Local Wildlife Site. The habitat between them does not have to meet the criteria for that individual habitat.

Composite/Matrix sites

WL3

A site comprising two or more sub-habitats, each of which just fails to be selected as a Site within its own main habitat criterion group or on species grounds will be eligible for selection if it meets one of the options listed above.

Extending/buffering sites

WL4

Where a site that would not on its own qualify for consideration as a Local Wildlife Site provides a significant and clearly identifiable extension to the habitat of an adjacent approved Local Wildlife Site, then the habitat extension area should be added to the Local Wildlife Site.

WL5

Where an area that would not on its own qualify for consideration as a Local Wildlife Site provides a useful buffer around a vulnerable habitat separating it from intensive agriculture or the impact of urban areas, for example, then the buffering habitat/s should be added to the Local Wildlife Site.

Other considerations

Composite sites

OT1

Where a site includes a number of different habitat types, each habitat should normally qualify as a Local Wildlife Site in its own right in order to be included. The exceptions to this are

- **Where specific reference is made in policies relating to individual habitat types;**
OR
- **Where the site qualifies on the basis of species which use the set of habitats as a whole;**
OR
- **Where expert opinion determines that the habitats present, taken together, may be considered more important than the sum of their parts, based upon either habitat features, species features, or a combination of both, and where this decision is ratified through the decision-making process for the identification of Local Wildlife Sites.**

OT2

Where a site supports a number of different species of recognised national or county importance, but does not qualify as a Local Wildlife Site under the species criteria set out above, the site may still qualify as a Local Wildlife Site where, in the opinion of an appropriately expert organisation or individual, the combination of species present renders the site of substantive nature conservation value in a county context, and where this decision is ratified through the decision-making process for the identification of Local Wildlife Sites.

OT3

Where a site does not qualify as a Local Wildlife Site under any of the criteria set out in this document, it may still qualify as a Local Wildlife Site where, in the opinion of an appropriately expert organisation or individual, the features of the site are such that it should be considered of substantive nature conservation value in a county context, and where this decision is ratified through the decision-making process for the identification of Local Wildlife Sites.

OT4

In determining whether a site is of sufficient nature conservation importance to qualify as a Local Wildlife Site, consideration may be given to the potential, rather than actual value of a site, but only where

- **The potential of the site can be realised through a scheme of management which is practically possible;**
- **There is a real possibility that an appropriate system of management can be implemented in the short to medium term; and**
- **The site would qualify as a Local Wildlife Site under other criteria once its potential was realised.**

OT5

Once an area has been designated as a Local Wildlife Site, very careful consideration should be given before the designation is removed from part or all of the site. Deselection of part or all of a Wildlife Site should only generally occur

- **To correct mapping or other errors;**
- **To take into account built development; or**

- **Where irrevocable change has resulted in the loss of the feature(s) for which the site was designated.**

Where part or all of a site has been damaged or has degraded, deselection should not take place unless it is clear that there is no potential for repair or restoration of the feature(s) of special interest for which the site was designated.

Delineation of boundaries

- 152) The boundary to any Local Wildlife Site should normally be drawn tightly around the qualifying habitat or site using either the latest Kent Habitat Survey or Ordnance Survey Vector Map Local Raster map tiles. The exceptions to this are
- a) Where expert opinion determines that it is necessary to include a buffer of non-qualifying habitat to protect a particularly vulnerable habitat or species; or
 - b) Where for clarity it is easier to present a site boundary which coincides with an established boundary shown on the relevant scale Ordnance Survey map, or with a clear ownership or management boundary.
- 153) In the case of either exception, it must be made clear on the relevant citation document why the boundary was set as shown.

Procedure for selection and designation of Local Wildlife Sites in Kent

- 154) The Kent Nature Partnership will be the body responsible for the selection and designation of Local Wildlife Sites in Kent and Medway. As part of this role, it will establish, and review as necessary, the criteria by which Local Wildlife Sites are selected. As such, the Kent Nature Partnership will act as the Local Sites Partnership for Kent and Medway, in the meaning of the DEFRA guidance.
- 155) In its role as the Local Sites Partnership for Kent, the Kent Nature Partnership will be responsible for
- Overseeing the setting, publishing, monitoring and reviewing the criteria for the identification and delineation of Local Wildlife Sites in Kent;
 - Ensuring that the criteria and relevant procedures follow national guidelines for such systems;
 - Acting as an expert body to advise on the application of criteria and to ensure consistency of application;
 - Overseeing consultation with outside organisations on the criteria and system.
- 156) In its role as the Local Sites Partnership for Kent, the Kent Nature Partnership does not have any formal planning responsibility. It is role of the relevant local planning authorities to
- Decide whether or not to show or describe in any local planning documents the Local Wildlife Sites identified by the Kent Nature Partnership;
 - Decide how strategic planning policies will be applied to Local Wildlife Sites; and
 - Be responsible for all planning matters related to Local Wildlife Sites within their respective administrative areas, including making appropriate representation at planning inquiries or other hearings.
- 157) The Kent Nature Partnership may, at its discretion, establish a Site Selection Panel, the function of which will be to evaluate candidate Local Wildlife Sites, and to make recommendations to the Kent Nature Partnership as to which sites should be identified as Local Wildlife Sites.
- 158) The Site Selection Panel shall consist of no fewer than five representatives drawn from the membership of the Kent Nature Partnership.
- 159) The Kent Nature Partnership will, at its discretion, seek funding, or support bids by others for funding, in order to provide the necessary administrative support for the operation of the Local Wildlife Sites system in Kent and Medway.
- 160) Administrative support and day-to-day management of the Local Wildlife Sites system in Kent and Medway will be carried out by Kent Wildlife Trust, subject to the availability of appropriate resources. The Trust will, *inter alia*,
- Seek to identify sites which may qualify for selection as Local Wildlife Sites (any organisation may suggest areas they consider are likely to meet these criteria for investigation as potential new LWSs).
 - Provide the initial evaluation (including any site survey as appropriate) of proposed Local Wildlife Sites against established criteria;
 - Draw up supporting documents, including citation documents and boundary maps;
 - Circulate documents for consultation as appropriate, in accordance with Defra Local Sites guidance;
 - Maintain a register of Local Wildlife Sites;

- f) Maintain a register of details of land ownership;
 - g) Where appropriate, and at its discretion, act as mentor to any organisation or individual submitting a proposal for the identification, revision or deselection of a Local Wildlife Site; and
 - h) Carry out other appropriate activities, as determined by the Kent Nature Partnership, including the co-ordination of a programme of site monitoring.
- 161) The following procedure is to be followed in the selection and designation of Local Wildlife Sites.
- a) Kent Wildlife Trust will
 - i) Keep a register of all designated Local Wildlife Sites in Kent;
 - ii) Seek to identify sites which might qualify for designation as Local Wildlife Sites;
 - iii) Receive suggestions from outside agencies and individuals for sites which might qualify as Local Wildlife Sites.
 - b) Where potential Local Wildlife Sites are identified under 8a(ii) and 8a(iii) above, Kent Wildlife Trust will gather the information necessary to ascertain whether or not the site qualifies as a Local Wildlife Site under the criteria set out in this document. This will normally involve site survey to determine the biodiversity interest of the site, and to determine appropriate site boundaries.
 - c) A draft citation document for the site will be drawn up where
 - i) A site clearly qualifies as a Local Wildlife Site under the selection criteria; or
 - ii) Where further expert opinion is required to determine whether the site would qualify as a Local Wildlife Site under the selection criteria.
 - d) Where a site clearly does not qualify as a Local Wildlife Site, a set of detailed notes will be drawn up, explaining the basis of this judgement.
 - e) Where sites are resurveyed, Kent Wildlife Trust will
 - i) Draw up a draft revised citation document for the site where changes to the site description or site boundaries are required; or
 - ii) Draw up clear notes where it is considered a site should be deleted in its entirety.
 - f) The Kent Nature Partnership will consider, at an appropriate meeting, all outstanding
 - i) Draft citation documents;
 - ii) Draft revised citation documents;
 - iii) Notes relating to potential sites which have been found not to qualify as Local Wildlife Sites; and
 - iv) Notes relating to sites proposed for deletion.
 - g) The Kent Nature Partnership will then determine whether a site
 - i) Should be confirmed as a Local Wildlife Site as set out in the draft citation document;
 - ii) Should be confirmed as a Local Wildlife Site, but with a revised citation or boundary;
 - iii) Should not be confirmed as a Local Wildlife Site;
 - iv) Should be deleted as a Local Wildlife Site; or
 - v) Should be deferred for consideration at a further meeting.
 - h) If the Kent Nature Partnership has chosen to operate with a Site Selection Panel, then it will be the purpose of this panel to give full consideration to the matters set out in f) and g) above, and to make appropriate recommendations to a meeting of the Kent Nature

Partnership. However, it will be the responsibility of the Kent Nature Partnership to confirm or reject any recommendations.

- i) Where it is unclear whether a site meets the established criteria for selection as a Local Wildlife Site, or where its selection requires consideration of appropriate expert opinion, then the Kent Nature Partnership
 - i) Should give a considered opinion, which should be the majority view of those present at the relevant meeting, and which should be considered binding as the Steering Group's view on the matter; or
 - ii) Should seek the opinion of one or more relevant experts.
 - b) Prior to making any formal recommendations, the owner or owners of the site, and the relevant Local Planning Authority or Authorities, shall be given the opportunity to make observations relating to whether or not a site contains the feature or features considered to be of importance, and to whether the site meets the criteria for designation of Local Wildlife Sites. This consultation should be confined to factors relating directly to these Local Wildlife Site selection criteria.
 - c) Following its decision, Kent Wildlife Trust will draw up a confirmed citation document and site boundary plan, and will distribute copies to
 - i) The landowner;
 - ii) The appropriate local planning authority;
 - iii) Other interested agencies as appropriate.
- 162) This procedure will only apply to new Local Wildlife Sites, or to sites which are resurveyed as part of the on-going monitoring of the county's Local Wildlife Sites, or to sites which are reassessed for other reasons. All Local Wildlife Sites in Kent and Medway which were designated under previous systems and/or criteria, and which were recognised by Kent Wildlife Trust as Sites of Nature Conservation Interest at the time of adoption of the current criteria and procedures, will continue to be recognised as Local Wildlife Sites.

Appendix 1 Ancient Woodland Indicator Species in Kent

| Species | English name | Notes |
|--------------------------------------|-----------------------------------|--------------|
| <i>Acer campestre</i> | Field maple | 1 |
| <i>Adoxa moschatellina</i> | Moschatel | |
| <i>Agrimonia procera</i> | Fragrant agrimony | |
| <i>Allium ursinum</i> | Ramsons | |
| <i>Alnus glutinosa</i> | Alder | 1 |
| <i>Anemone nemorosa</i> | Wood anemone | |
| <i>Aquilegia vulgaris</i> | Columbine | 1, 2 |
| <i>Asplenium scolopendrium</i> | Hart's-tongue fern | |
| <i>Betonica officinalis</i> | Betony | |
| <i>Blechnum spicant</i> | Hard fern | |
| <i>Bromopsis benekenii</i> | Lesser hairy-brome | 3 |
| <i>Bromopsis ramosus</i> | Hairy-brome | |
| <i>Calamagrostis epigejos</i> | Wood small reed | |
| <i>Campanula trachelium</i> | Nettle-leaved bellflower | |
| <i>Cardamine bulbifera</i> | Coral root bittercress | 2 |
| <i>Cardamine impatiens</i> | Narrow-leaved bittercress | 2 |
| <i>Carex laevigata</i> | Smooth-stalked sedge | |
| <i>Carex leporina</i> | Oval sedge | |
| <i>Carex pallescens</i> | Pale sedge | |
| <i>Carex pendula</i> | Pendulous sedge | 1 |
| <i>Carex remota</i> | Remote sedge | |
| <i>Carex strigosa</i> | Thin-spiked wood sedge | 2 |
| <i>Carex sylvatica</i> | Wood sedge | |
| <i>Carpinus betulus</i> | Hornbeam | |
| <i>Centaurium pulchellum</i> | Lesser centaury | |
| <i>Centunculus minimus</i> | Chaffweed | |
| <i>Cephalanthera longifolia</i> | Narrow-leaved Helleborine | 2 |
| <i>Ceratocarpus claviculata</i> | Climbing corydalis | 2 |
| <i>Chrysosplenium alternifolium</i> | Alternate-leaved golden saxifrage | 2 |
| <i>Chrysosplenium oppositifolium</i> | Opposite-leaved golden saxifrage | |
| <i>Circaea lutetiana</i> | Enchanters nightshade | |
| <i>Conopodium majus</i> | Pignut | |
| <i>Convallaria majalis</i> | Lily of the valley | 1, 2 |
| <i>Crataegus laevigata</i> | Midland hawthorn | |
| <i>Daphne laureola</i> | Spurge laurel | |
| <i>Dipsacus pilosus</i> | Small teasel | 2 |
| <i>Dryopteris aemula</i> | Hay-scented buckler fern | |
| <i>Dryopteris affinis</i> | Scaly male fern | 2 |
| <i>Elymus caninus</i> | Bearded couch | |
| <i>Epipactis helleborine</i> | Broad-leaved helleborine | |
| <i>Epipactis leptochila</i> | Narrow-lipped helleborine | 2 |
| <i>Epipactis phyllanthes</i> | Green-flowered helleborine | 3 |
| <i>Epipactis purpurata</i> | Purple helleborine | 2 |
| <i>Equisetum sylvaticum</i> | Wood horsetail | 2 |
| <i>Euonymus europaeus</i> | Spindle | 1 |
| <i>Euphorbia amygdaloides</i> | Wood spurge | |
| <i>Fallopia dumetorum</i> | Copse-bindweed | 1, 2 |
| <i>Frangula alnus</i> | Alder buckthorn | 2 |
| <i>Galium odratum</i> | Woodruff | |
| <i>Gnaphalium sylvaticum</i> | Heath cudweed | 2 |
| <i>Helleborus foetidus</i> | Stinking hellebore | 2 |
| <i>Helleborus viridis</i> | Green hellebore | 2 |
| <i>Holcus mollis</i> | Creeping soft grass | |
| <i>Hypericum androsaemum</i> | Tutsan | |
| <i>Hypericum maculatum</i> | Imperforate St. John's Wort | |
| <i>Hypericum montanum</i> | Pale St. John's Wort | 2 |
| <i>Hypopitys monotropa</i> | Yellow bird's-nest | 2 |
| <i>Ilex aquifolium</i> | Holly | 1 |
| <i>Iris foetidissima</i> | Stinking iris | |
| <i>Lamium galeobdolon</i> | Yellow archangel | |

| | | |
|----------------------------------|-------------------------------|------|
| <i>Lathraea squamaria</i> | Toothwort | |
| <i>Lathyrus sylvestris</i> | Narrow-leaved everlasting pea | 2 |
| <i>Luzula forsteri</i> | Southern wood-rush | |
| <i>Luzula pilosa</i> | Hairy wood-rush | |
| <i>Luzula sylvatica</i> | Great wood-rush | |
| <i>Lysimachia nemorum</i> | Yellow pimpernel | |
| <i>Malus sylvestris</i> | Crab apple | 1 |
| <i>Melampyrum pratense</i> | Cow wheat | |
| <i>Melica uniflora</i> | Wood melick | |
| <i>Milium effusum</i> | Wood millet | |
| <i>Narcissus pseudonarcissus</i> | Wild daffodil | 1 |
| <i>Neottia nidus-avis</i> | Bird's-nest orchid | |
| <i>Ophrys insectifera</i> | Fly orchid | 2 |
| <i>Orchis mascula</i> | Early purple orchid | |
| <i>Orchis purpurea</i> | Lady orchid | 2 |
| <i>Oreopteris limbosperma</i> | Lemon-scented fern | 3 |
| <i>Oxalis acetosella</i> | Wood sorrel | |
| <i>Paris quadrifolia</i> | Herb paris | |
| <i>Pimpinella major</i> | Greater burnet saxifrage | |
| <i>Platanthera bifolia</i> | Lesser butterfly-orchid | |
| <i>Platanthera chlorantha</i> | Greater butterfly-orchid | |
| <i>Poa nemoralis</i> | Wood meadow grass | |
| <i>Polygonatum multiflorum</i> | Common Solomon's-seal | |
| <i>Polypodium vulgare</i> | Common polypody | |
| <i>Polystichum aculeatum</i> | Hard shield-fern | 2 |
| <i>Polyystichum setiferum</i> | Soft shield-fern | |
| <i>Populus tremula</i> | Aspen | |
| <i>Primula vulgaris</i> | Primrose | 1 |
| <i>Prunus avium</i> | Cherry | 1 |
| <i>Pyrus communis</i> | Wild pear | 1, 3 |
| <i>Quercus petraea</i> | Sessile oak | 1 |
| <i>Radiola linoides</i> | Allseed | |
| <i>Ranunculus auricomus</i> | Goldilocks buttercup | |
| <i>Rhamnus carthartica</i> | Buckthorn | 1 |
| <i>Ribes nigrum</i> | Black currant | 1 |
| <i>Rosa arvensis</i> | Field-rose | 1 |
| <i>Ruscus aculeatus</i> | Butcher's broom | |
| <i>Sanicula europae</i> | Sanicle | |
| <i>Schedonorus giganteus</i> | Giant fescue | |
| <i>Scirpus sylvaticus</i> | Wood club rush | |
| <i>Scrophularia nodosa</i> | Common figwort | |
| <i>Scutellaria minor</i> | Lesser skullcap | |
| <i>Sedum telephium</i> | Orpine | |
| <i>Serratula tinctoria</i> | Sawwort | |
| <i>Solidago virgaurea</i> | Goldenrod | |
| <i>Sorbus aria</i> | Whitebeam | 1 |
| <i>Sorbus aucuparia</i> | Rowan | 1 |
| <i>Sorbus torminalis</i> | Wild service tree | 2 |
| <i>Stellaria neglecta</i> | Greater chickweed | 2 |
| <i>Tilia cordata</i> | Small leaved lime | 1, 2 |
| <i>Ulmus glabra</i> | Wych elm | |
| <i>Vaccinium myrtillus</i> | Bilberry | |
| <i>Valeriana dioica</i> | Marsh valerian | 1 |
| <i>Veronica montana</i> | Wood speedwell | |
| <i>Viburnum opulus</i> | Guelder rose | 1 |
| <i>Vicia sylvatica</i> | Wood vetch | |
| <i>Vicia sylvatica</i> | Wood vetch | 2 |
| <i>Viola odorata</i> | Sweet violet | 1 |
| <i>Viola reichenbachiana</i> | Early dog violet | |
| <i>Wahlenbergia hederacea</i> | Ivy-leaved bellflower | 2 |

Appendix 2 Indicators of Unimproved Acid Grassland in Kent

| Species | English name | Notes |
|-----------------------------------|----------------------------|--------------|
| <i>Achillea ptarmica</i> | Sneezewort | |
| <i>Aira caryophyllea</i> | Silver hair-grass | |
| <i>Aira praecox</i> | Early hair-grass | |
| <i>Anagallis tenella</i> | Bog pimpernel | |
| <i>Betonica officinalis</i> | Betony | |
| <i>Campanula rotundifolia</i> | Harebell | |
| <i>Carex demissa</i> | Common yellow sedge | |
| <i>Carex distans</i> | Distant sedge | 1 |
| <i>Carex nigra</i> | Common sedge | 1 |
| <i>Carex panicea</i> | Carnation sedge | 1 |
| <i>Carex pilulifera</i> | Pill sedge | |
| <i>Dactylorhiza maculata</i> | Heath spotted orchid | |
| <i>Danthonia decumbens</i> | Heath grass | |
| <i>Deschampsia flexuosa</i> | Wavy hair grass | |
| <i>Euphrasia anglica</i> | Eyebright sp. | |
| <i>Festuca filiformis</i> | Fine-leaved sheep's fescue | |
| <i>Galium saxatile</i> | Heath bedstraw | |
| <i>Galium verum</i> | Lady's bedstraw | |
| <i>Genista anglica</i> | Petty whin | |
| <i>Hydrocotyle vulgaris</i> | Marsh pennywort | 1 |
| <i>Isolepis setacea</i> | Bristle club rush | |
| <i>Lathyrus linifolius</i> | Bitter-vetch | |
| <i>Luzula multiflora</i> | Heath wood-rush | |
| <i>Moenchia erecta</i> | Upright chickweed | |
| <i>Molinia caerulea</i> | Purple moor grass | 1 |
| <i>Ornithopus perpusillus</i> | Birds-foot | |
| <i>Pedicularis sylvatica</i> | Lousewort | 1 |
| <i>Pilosella officinarum</i> | Mouse-ear hawkweed | |
| <i>Plantago coronopus</i> | Buckshorn plantain | |
| <i>Polygala serpyllifolia</i> | Heath milkwort | |
| <i>Polygala vulgaris</i> | Common milkwort | |
| <i>Potentilla argentea</i> | Hoary cinquefoil | |
| <i>Potentilla erecta</i> | Tormentil | |
| <i>Ranunculus flammula</i> | Lesser spearwort | 1 |
| <i>Saxifraga granulata</i> | Meadow saxifrage | |
| <i>Scleranthus annuus</i> | Annual knawel | |
| <i>Silene flos-cuculi</i> | Ragged robin | 1 |
| <i>Spergularia rubra</i> | Sand spurrey | |
| <i>Succisa pratensis</i> | Devils bit | |
| <i>Trifolium glomeratum</i> | Clustered clover | |
| <i>Trifolium ornithopodioides</i> | Fenugreek | |
| <i>Trifolium scabrum</i> | Rough clover | |
| <i>Trifolium striatum</i> | Knotted clover | |
| <i>Trifolium subterraneum</i> | Subterranean clover | |
| <i>Viola canina</i> | Heath dog violet | |
| <i>Viola riviniana</i> | Common dog violet | |
| Bryophytes | | |
| <i>Brachythecium albicans</i> | | |
| <i>Hypnum jutlandicum</i> | | |

1 = Occurs in damp places

Appendix 3 Indicators of Unimproved Chalk Grassland in Kent

| Species | English name | Notes |
|---------------------------------|-----------------------|-------------------|
| <i>Anthyllis vulneraria</i> | Kidney vetch | |
| <i>Arabis hirsuta</i> | Hairy rock cress | |
| <i>Asperula cynanchica</i> | Squinancywort | |
| <i>Astragalus glycyphyllos</i> | Wild liquorice | |
| <i>Avenula pratensis</i> | Meadow oat-grass | |
| <i>Blackstonia perfoliata</i> | Yellow-wort | |
| <i>Briza media</i> | Quaking grass | |
| <i>Campanula glomerata</i> | Clustered bellflower | |
| <i>Campanula rotundifolia</i> | Harebell | |
| <i>Carex caryophyllea</i> | Spring sedge | |
| <i>Carlina vulgaris</i> | Carlina thistle | |
| <i>Centaurea scabiosa</i> | Greater knapweed | |
| <i>Cephalanthera damasonium</i> | White helleborine | |
| <i>Cirsium acaule</i> | Dwarf thistle | |
| <i>Cirsium eriophorum</i> | Woolly thistle | |
| <i>Clinopodium acinos</i> | Basil thyme | |
| <i>Clinopodium vulgare</i> | Wild basil | |
| <i>Coeloglossum viride</i> | Frog orchid | |
| <i>Danthonia decumbens</i> | Heath grass | At rabbit burrows |
| <i>Euphrasia pseudokernerii</i> | Eyebright | |
| <i>Festuca ovina</i> | Sheep's Fescue | |
| <i>Filipendula vulgaris</i> | Dropwort | |
| <i>Gentianella amarella</i> | Autumn gentian | |
| <i>Helianthemum nummularium</i> | Common rock rose | |
| <i>Helictotrichon pubescens</i> | Downy oat-grass | |
| <i>Hippocrepis comosa</i> | Horseshoe vetch | |
| <i>Juncus subnodulosus</i> | Blunt-flowered rush | In damp areas |
| <i>Koeleria macrantha</i> | Crested hair grass | |
| <i>Leontodon hispidus</i> | Rough hawkbit | |
| <i>Linum bienne</i> | Pale flax | East Kent |
| <i>Linum catharticum</i> | Fairy flax | |
| <i>Neottia ovata</i> | Common twayblade | |
| <i>Onobrychis viciifolia</i> | Sainfoin | |
| <i>Ophioglossum vulgatum</i> | Adder's-tongue fern | |
| <i>Ophrys apifera</i> | Bee orchid | |
| <i>Ophrys insectifera</i> | Fly orchid | |
| <i>Orchis anthropophora</i> | Man orchid | |
| <i>Orchis mascula</i> | Early-purple orchid | |
| <i>Origanum vulgare</i> | Marjoram | |
| <i>Orobanche elatior</i> | Knapweed broomrape | |
| <i>Pilosella officinarum</i> | Mouse-ear hawkweed | |
| <i>Pimpinella saxifraga</i> | Burnet saxifrage | |
| <i>Plantago media</i> | Hoary plantain | |
| <i>Polygala amarella</i> | Dwarf milkwort | |
| <i>Polygala calcarea</i> | Chalk milkwort | |
| <i>Polygala vulgaris</i> | Common milkwort | |
| <i>Poterium sanguisorba</i> | Salad burnet | |
| <i>Primula veris</i> | Cowslip | |
| <i>Ranunculus bulbosus</i> | Bulbous buttercup | |
| <i>Rhinanthus minor</i> | Yellow rattle | |
| <i>Salvia pratensis</i> | Meadow clary | |
| <i>Scabiosa columbaria</i> | Small scabious | |
| <i>Spiranthes spiralis</i> | Autumn lady's tresses | |
| <i>Thymus polytrichus</i> | Wild thyme | |
| <i>Thymus pulegioides</i> | Large thyme | |
| <i>Trisetum flavescens</i> | Yellow oat-grass | |
| <i>Viola hirta</i> | Hairy violet | |

Appendix 4 Indicators of Unimproved Neutral Grassland in Kent

| Species | English name | Notes |
|----------------------------------|-----------------------------------|-------|
| <i>Achillea ptarmica</i> | Sneezewort | 3 |
| <i>Agrimonia eupatoria</i> | Agrimony | 3 |
| <i>Agrimonia odorata</i> | Fragrant agrimony | |
| <i>Ajuga reptans</i> | Bugle | 3 |
| <i>Alopecurus bulbosus</i> | Bulbous foxtail | 1 |
| <i>Anagallis tenella</i> | Bog pimpernel | |
| <i>Avenula pubescens</i> | Downy oat grass | |
| <i>Betonica officinalis</i> | Betony | 3 |
| <i>Briza media</i> | Quaking grass | |
| <i>Bromus commutatus</i> | Meadow brome | |
| <i>Bromus racemosus</i> | Smooth brome | |
| <i>Caltha palustris</i> | Marsh marigold | 2, 3 |
| <i>Carex caryophylla</i> | Spring sedge | |
| <i>Carex distans</i> | Distant sedge | |
| <i>Carex disticha</i> | Brown sedge | |
| <i>Carex divisa</i> | Divided sedge | 1 |
| <i>Carex flacca</i> | Glaucous sedge | 3 |
| <i>Carex nigra</i> | Common sedge | 2, 3 |
| <i>Carex ovalis</i> | Oval sedge | |
| <i>Carex pallescens</i> | Pale sedge | |
| <i>Carex panicea</i> | Carnation Sedge | 3 |
| <i>Centaurea nigra</i> | Common knapweed | 3 |
| <i>Conopodium majus</i> | Pignut | 3 |
| <i>Dactylorhiza incarnata</i> | Early marsh orchid | |
| <i>Dactylorhiza praetermissa</i> | Southern marsh orchid | |
| <i>Euphrasia spp.</i> | Eyebrights | 3 |
| <i>Festuca pratensis</i> | Meadow fescue | |
| <i>Filipendula ulmaria</i> | Meadowsweet | 3 |
| <i>Filipendula vulgaris</i> | Dropwort | 3 |
| <i>Galium palustre</i> | Marsh-bedstraw | 3 |
| <i>Galium uliginosum</i> | Fen Bedstraw | 3 |
| <i>Galium verum</i> | Lady's Bedstraw | 3 |
| <i>Genista tinctoria</i> | Dyers greenwood | 3 |
| <i>Hordeum maritum</i> | Sea barley | 1 |
| <i>Hordeum secalinum</i> | Meadow barley | |
| <i>Hydrocotyle vulgaris</i> | Marsh pennywort | 2 |
| <i>Knautia arvensis</i> | Field Scabious | 3 |
| <i>Lathyrus linifolius</i> | Bitter vetch | 3 |
| <i>Lathyrus nissolia</i> | Grass vetchling | |
| <i>Lathyrus pratensis</i> | Meadow Vetchling | 3 |
| <i>Leontodon hispidus</i> | Rough Hawkbit | 3 |
| <i>Leucanthemum vulgare</i> | Oxeye Daisy | 3 |
| <i>Lotus pedunculatus</i> | Greater bird's-foot-trefoil | 2, 3 |
| <i>Lotus tenuis</i> | Narrow leaved bird's-foot-trefoil | 1 |
| <i>Lysimachia nummularia</i> | Creeping jenny | 2 |
| <i>Mentha aquatica</i> | Water Mint | 3 |
| <i>Oenanthe lachenalii</i> | Parsley water-dropwort | 2 |
| <i>Oenanthe pimpinelloides</i> | Corky fruited water-dropwort | 2 |
| <i>Oenanthe silaifolia</i> | Narrow leaved water-dropwort | 2, 3 |
| <i>Ononis spinosa</i> | Spiny restharrow | |
| <i>Ophioglossum vulgatum</i> | Adder's-tongue fern | |
| <i>Orchis morio</i> | Green winged orchid | |
| <i>Persicaria bistorta</i> | Common Bistort | 3 |
| <i>Petroselinum segetum</i> | Corn parsley | |
| <i>Pimpinella saxifraga</i> | Burnet saxifrage | 3 |
| <i>Polygala spp.</i> | Milkwort species | 3 |
| <i>Potentilla erecta</i> | Tormentil | 3 |
| <i>Poterium sanguisorba</i> | Salad Burnet | 3 |
| <i>Primula veris</i> | Cowslip | 3 |

Notes: 1 = Occurs on grazing marsh 2 = Occurs in damp areas 3 FEP GO6 indicator of neutral hay meadows

| | | |
|-----------------------------------|---------------------|------|
| <i>Pulicaria dysenterica</i> | Fleabane | 2 |
| <i>Rhinanthus minor</i> | Yellow rattle | 3 |
| <i>Scirpus sylvaticus</i> | Wood club-rush | 2 |
| <i>Scorzonerooides autumnalis</i> | Autumn Hawkbit | 3 |
| <i>Senecio erucifolius</i> | Hoary ragwort | |
| <i>Serratula tinctoria</i> | Saw-wort | 3 |
| <i>Silaum silaus</i> | Pepper saxifrage | 3 |
| <i>Silene flos-cuculi</i> | Ragged-Robin | 2, 3 |
| <i>Sison amomum</i> | Stone parsley | |
| <i>Succisa pratensis</i> | Devils bit scabious | 3 |
| <i>Thalictrum flavum</i> | Common Meadow-rue | 3 |
| <i>Tragopogon pratensis</i> | Goat's-beard | 3 |
| <i>Trifolium fragiferum</i> | Strawberry clover | 1 |
| <i>Trifolium medium</i> | Zigzag clover | |
| <i>Triglochin palustris</i> | Marsh arrowgrass | 1, 2 |
| <i>Valeriana dioica</i> | Marsh valerian | 2, 3 |
| <i>Valeriana officinalis</i> | Common valerian | |
| <i>Vicia cracca</i> | Tufted vetch | |
| <i>Viola riviniana</i> | Common dog violet | |
| | Orchid species | 3 |