

# **Appendix A**

## **Designations**

## National and Local Sites within Sevenoaks

### Sites of Special Scientific Interest (SSSI)

Cowden Meadow  
Cowden Pound Pastures  
Dryhill  
Farningham Wood  
Greatness Brickworks  
Hubbard's Hill  
Knole Park  
Lullingstone Park  
Magpie Bottom  
Oldbury and Seal Chart  
One Tree Hill and Bitchet Common  
Otford to Shoreham Downs  
Polebrook Farm  
Scords Wood and Brockhoults  
Sevenoaks Gravel Pit  
Westerham Mines  
Westerham Woods

### Local Wildlife Sites (LWS)

SE01 Horton Wood, Horton Kirby  
SE02 Churchdown Wood, Fawkham  
SE03 Sutton at Hone Lakes  
SE04 Hog Wood, East Hill  
SE05 Austin Lodge Valley  
SE06 Magpie Bottom (extra to SSSI)  
SE07 Lullingstone Park, Shoreham  
SE08 Dalhanna Chalk Slope, Shoreham  
SE09 Woodlands West of Shoreham  
SE10 Woods and Pasture at Pratt's Bottom  
SE11 Meadow and Woods at Noah's Ark, Kemsing  
SE12 Woods and Downs above Kemsing

SE14 Sevenoaks Common, Hubbard's Hill and Beechmont Bank  
SE15 Norsted Valley Woods, Green Street Green  
SE16 Great Norman Street Farm, Pasture and Stream, Ide Hill  
SE17 Woods and Pastures, Toy's Hill  
SE18 Boons Park Pastures, Toy's Hill  
SE19 Bough Beech Reservoir and Environs  
SE20 River Eden and Environs  
SE21 Moorden Meadow, Chiddingstone Causeway  
SE22 Chiddingstone Old Clay Pits, Chiddingstone Causeway  
SE23 Tapners Wood, Upper Hayesden  
SE24 Bore Place Ponds and Woods  
SE25 Pasture and Shaws below Polebrook Farm  
SE27 Hever Pasture  
SE28 Woods South of Chiddingstone Castle  
SE29 Stonewall Park, Chiddingstone Hoath  
SE30 Pasture and Woods near Hobbs Hill Farm, Cowden  
SE31 Woods and Pasture, Cowden  
SE33 Scarlett's Pond, Swamp and Cave, Cowden  
SE34 Gilridge, Cobhambury and Shernden Woods, Gilridge  
SE35 Jub's Hill and Ridley Woods, Ridley  
SE39 Crockhamhill Common, Westerham  
SE40 Hosey Common, Westerham  
SE41 Dryhill Country Park, Sundridge  
SE42 One Tree Hill, Underriver (extra to SSSI)  
SE43 Knatts Valley, West Kingsdown  
SE44 Parish Churchyard, Kemsing  
SE45 Rectory meadow, Longfield  
SE46 Hartley Wood  
SE47 Chevening Churchyard  
SE49 Chevening Estate

SE50 Combe Wood, Brasted  
SE51 Laundry Field, Lullingstone Castle  
SE53 St Mary's Churchyard, Sundridge  
SE54 Leigh Pasture and Marsh  
SE56 Pasture and Woods, Cowden Pound  
SE57 Tubbs Hole Pastures, Chiddingstone Hoath  
SE58 Saxten's Wood, Fawkham Green  
SE59 Old Orchard and Oasture near Markbeeceh  
SE60 Farningham Woods (grassland adjacent)  
SE61 Field Edge near Fawkham  
SE62 Hill Water Bottom Wood, Brasted  
SE63 Farley Common near Westerham  
SE64 Hook Spring and Tile Kilns Woods, Hockenden  
SE65 Owen and Doctor's Woods, Well Hill

Rye Wood/Home Wood and parts of Bradbourne  
Lakes,  
Land between Speedgate Hill, Valley and Three gates  
road  
Land to the north of Gay Dawn Farm Fawkham  
Land east of Hartley to Hartley Bottom.  
Land to the east of Fawkham Road Hartley  
Land north of Hever Road Hever  
Land to the east of Horton Kirby and South Darenth  
Land to the west and east of Childsbridge Farm  
Kemsing  
Ash Place Farm/White Ash Wood  
Hartley Hill /Hartley Bottom Road/Nine Horse wood.

### **Country Parks**

Downs Seal Chart  
Fawke & Bitchet Commons  
Hanging Bank Ide Hill.  
Igtham Mote  
Lullingstone Park  
Oldbury Hill Picnic site  
Oxenhill Shaw & Meadow Kemsing  
Preston Hill  
Shoreham Woods  
Stubbs Wood  
Westerham Commons

### **Local Nature Reserves**

Farningham Woods SSSI  
Dryhill

### **Areas of Local Landscape Importance**

Swanley Park between Swanley and Hextable.  
Land around Edenbridge,

Nature Conservation Areas				Historic Parks and Gardens	
Town/Parish	Sites of Special Scientific Interest	Local Nature Reserves	Areas of Local Landscape Importance	Parks & Gardens of Special Historic Interest, incorporating Historic Buildings & Monuments	Historic Parks & Gardens
Ash-cum-Ridley		Jubb's Hill and Ridley Woods, Ridley; Ashplat Wood (part of Elbows Wood, Meopham) (Woodland and Grassland)	Ash Place Farm/White Ash Wood/Pease Hill (Pasture and Woodland); Hartley Hill/Hartley Bottom Road/Nine Horse Wood (Pasture and Woodland)		
Brasted	Scords Wood and Brockhoul Mount, Toy's Hill/Ide Hill (Stanhope Wood, Round Wood, Weardale, Quorden Wood)	Ide Hill Scarp (Woodland and grassland); Boons Park Pasture, Toy's Hill (Grassland and stream); parts of Chevening House Estate (Woodland, grassland, pasture, lake & marsh)			Emmetts Garden
Chevening		Parts of Chevening House Estate (Woodland, grassland, pasture, lake & marsh); Chevening Churchyard (Walls, tombs & war memorial); Dry Hill Picnic Park (Grassland, cliffs and woodland)		Chevening - House and garden	
Chiddingstone	Polebrook Farm	Bough Beech Reservoir and environs (Open water, scrub and woodland); Chiddingstone Old Clay Pits (Woodland, scrub and pond); Bore Place (Woodland and ponds); Polebrook Farm (Woodland and Grassland); parts of River Eden (Open water, pasture and woodland); Woodland south of Chiddingstone Castle; Pasture and woods near Hobb's Hill Farm, Cowden; Old Orchard, Markbeech (Grassland and woodland); Stonewall Park, Chiddingstone Hoath (Parkland, open water, stream, woodland and		Chiddingstone Castle and Grounds Stonewall Bank - House and grounds and woodland	

		sandstone cliff)			
Kemsing		Woods and Downs to the north of Kemsing; Meadow and woods at Noah's Ark; Parish Churchyard (Tombs and walls and grassland)	Land to the west and east of Childsbridge Farm		
Knockholt		Norsted Valley Woods near Green Street Green (Woodland, grassland and chalk mine); parts of Chevening House Estate (Woodland, grassland, pasture, lake & marsh)			
Leigh		Tapner's Wood, Upper Haysden (Woodland/ stream); River Medway, south of Leigh (Open water, woodland, dykes and rough grass); Leigh pasture and Marsh		Hall Place - House and gardens, and park	
Otford	Greatness Brickworks; Otford to Shoreham Downs (principally Hillydeal and Greenhill Woods; parts of Bradbourne Lakes	Otford Mount; Flatdeal Wood			
Penshurst		Parts of River Eden (Open water, pasture and woodland); Moorden Meadow, Chiddingstone Causeway (Grassland); Tubb's Hole Pastures, Chiddingstone Hoath (Grassland, open water and woodland); part of Avery Woods, Bullingstone		Penshurst Place - House, gardens and park; Redleaf - House, gardens and park; Swaylands - former school and grounds	
Seal	Redhill Wood and Seal Chart; One Tree Hill; Bitchett Common and Broadhoath	One Tree Hill, Underriver (Grassland and woodland)			The Japanese Garden, Bitchett

	Wood				Wood
Sevenoaks Weald	Hubbard's Hill	Hubbards Hill and Beechmont Bank (Woodland); pasture north of village		Long Barn House and gardens; Riverhill House-House & gdns	
Shoreham	Magpie Bottom; parts of Shoreham Downs (Preston Hill Plantation, Dunstall Woods, White Hill)	Owen and Doctor's Wood, Well Hill (Woodland); Magpie Bottom (Grassland and woodland); parts of Lullingstone Park (Pasture and woodland); Woodland west of Shoreham; Dalhanna Chalk Slope (Grassland); woodlands north of Badger's Mount; land north of Cockerhurst Road			
Sundridge		Great Norman Street Farm, Ide Hill (Pasture and stream); Combe Wood, Brasted; parts of Chevening Wood Estate (Woodland, grassland, pasture, lake and marsh); St. Michael's Churchyard (Tombs and walls and grassland); Hill Water Bottom Wood		Combe Bank - House and gardens, and pleasure grounds	
Swanley			Swanley Park between Swanley and Hextable; land to the north-east of Swanley between the M25/ railway		
Westerham	Westerham Mines (Hosey Common); Westerham Wood	Old Chalk Quarry, Westerham Hill (Grassland); Crockham Hill Common (Woodland); Hosey Common (Woodland, heath and grassland)		Chartwell - House and gardens; Squerreyes Court - House, gardens and park	
West Kingsdown		Knatts Valley (Grassland and woodland); Hog Wood, East Hill (Woodland)			

# **Appendix B**

**Biodiversity**

## **Biodiversity Opportunity Areas (BOAs)**

1. In addition to linking the urban spaces 16 Biodiversity Opportunity Areas (BOAs) have been formulated largely within the rural areas. The BOAs incorporate the majority of designated sites, as well as much of the Biodiversity Action Plan habitat contained within the County. The aim of the BOAs is to link these valuable habitats and sites into connected ecological corridors with the aim of:-
  - Conserving and extending the Biodiversity Action Plan Habitats within Kent.
  - Conserving and strengthening Biodiversity Action Plan Species which use this habitat.
  - Buffering designated sites
  - Providing wildlife friendly routes through which species can migrate in response to climate change or development.
2. The BOA's within Kent provide links across County and district boundaries, with all areas in the South East containing interconnected corridors.

The objectives of the GI and a list of are the

- protection and enhancement of biodiversity, including the need to mitigate the potential impacts of new development
- creating a sense of place and opportunities for greater appreciation of valuable landscapes and cultural heritage
- increasing recreational opportunities, including access to and enjoyment of the countryside and supporting healthy living improved water resources, flood mitigation and reduced flood risk through sustainable surface water run-off management
- making a positive contribution to combating climate change through adaptation and mitigation of impacts
- sustainable transport
- minimising the potential for crime and disorder, and the fear of crime
- improved educational opportunities.

Policy CC8 ensures that connected networks of green spaces around new built environment are treated as integral to a planning and design process which is conscious of its place within wider GI networks.

## **Central North Downs Biodiversity Opportunity Area**



## Geology

1. The geology present throughout much of the BOA is that of the North Downs and Darent valley. The Plateaus are of acidic clay with flints, or Thanet sands with the slopes being chalk. Where soils are deeper on the chalk, neutral conditions are created in small pockets where lowland meadow is present.
2. The Central North Downs BOA contains a number of Biodiversity Action Plan habitats and species which are detailed below.

## Broadleaved Mixed and Yew Woodland

### Acidic Ancient Woodland

3. Ancient broadleaved mixed and yew woodland can be found throughout the Central Downs Biodiversity Opportunity Area both on the plateau and clothing some of the slopes. Woodland on the plateau generally comprises pedunculate oak (*Quercus robur*) or sessile oak (*Quercus petraea*) and ash (*Fraxinus excelsior*) standards with the coppice containing ash, hornbeam, (*Carpinus betulus*) hazel, (*Corylus Avallana*) field maple, (*Acer campestre*) whitebeam (*Sorbus hibernica*) and the ancient indicator Midland hawthorn. (*Crataegus laevigata*) Many sites also contain beech (*Fagus sylvatica*) and yew (*Taxus baccata*) groves.
4. Due to the acidic nature of the geology on the plateau the ground flora generally contains bluebell, (*Hyacinthoides non-scripta*) bramble, (*Rubus fruticosus agg*) dog mercury (*Mercurialis perennis*) and wood anemone (*Anemone nemerosa*). Rare flora found within the ground cover include the BAP species of lesser butterfly orchid (*Platanthera bifolia*) at SE04 Hog Wood East Hill LWS

### Calcareous Ancient Woodland

5. On the slopes the woodland changes in character, with species present reflecting the calcareous geology. Beech and yew groves occur in some locations with a more mixed woodland of beech, pedunculate oak with occasional ash standards over ash, hazel, whitebeam, hornbeam, spindle, (*Euonymus europaeus*) field maple, wych elm (*Ulmus glabra*) and spurge laurel (*Daphne laureola*) coppice on other sites. Spurge laurel is indicative of ancient woodland on calcareous soils. Within Otford to Shoreham Downs SSSI the BAP species juniper (*Juniperus commubi*) is found within the scrub at the base of the scarp.<sup>1 2 3 4 5</sup>

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<sup>1</sup> Appendix B Local Wildlife Site Citations

<sup>2</sup> Natural England Lullingstone Park SSSI at [http://www.english-nature.org.uk/citation/citation\\_photo/1000095.pdf](http://www.english-nature.org.uk/citation/citation_photo/1000095.pdf) accessed on 11.1.2010

<sup>3</sup> Natural England Otford to Shoreham SSSI at [http://www.english-nature.org.uk/citation/citation\\_photo/1000333.pdf](http://www.english-nature.org.uk/citation/citation_photo/1000333.pdf) accessed on 11.1.2010

<sup>4</sup> Natural England Magpie Bottom SSSI at [http://www.english-nature.org.uk/citation/citation\\_photo/1000201.pdf](http://www.english-nature.org.uk/citation/citation_photo/1000201.pdf) accessed on 11.1.2010

<sup>5</sup> Natural England Farningham Wood SSSI [http://www.english-nature.org.uk/citation/citation\\_photo/1003636.pdf](http://www.english-nature.org.uk/citation/citation_photo/1003636.pdf) accessed on 11.1.2010

6. The ground flora is more diverse on the chalk slopes with a number of BAP species present. Fly orchid (*Ophrys insectifera*) and white helleborine (*Cephalanthera damasonium*) occur at SE06 Magpie Bottom LWS with white helleborine also present at SE09 Woodlands West of Shoreham LWS along with yellow bird's-nest (*Monotropa hypopitys*) at SE09<sup>6</sup> and Magpie Bottom SSSI.<sup>7</sup>

### High forest and Wood Pasture

Lullingstone Park SSSI and the western slopes of SE07 Lullingstone Park LWS support high forest and wood pasture. Over 300<sup>8</sup> veteran beech, pedunculate and sessile oaks, hornbeam, ash and sweet chestnut pollards are present in Lullingstone Park. Some of the pollards are thought to be at least 400 years old. They have been unmanaged for the last 150 years and now have girths of 10m.<sup>9</sup> Veteran trees are also present on the boundary of SE43 Knatts Valley, West Kingsdown LWS, with huge ash, oak, and field maples dominating the hedge, at SE08 Dalhanna Chalk Slope Shoreham and within the wood pasture at SE 49 Chevening Estate LWS.<sup>10</sup>

### Wet Woodland

7. Two small areas of wet woodland are present on the gault clay plateaus at SE49. The standard and coppice species mirror that in dryer areas with the addition of alder (*Alnus glutinosa*). Within SE51 Laundry Field, Lullingstone Castle LWS alder and willow (*Salix*) are found in the locality of the River Darent and on the boundaries of the site.<sup>11</sup>

### Ancient Woodbanks, Shaws and Hedgerows

8. Ancient wood banks are present in SE09 and Magpie Bottom SSSI, with ancient Shaw and hedgerow habitat within SE05 Austin Lodge Valley LWS and SE43 LWS. All these features are evidence of the sites ancient status.<sup>12 13</sup>

### Fungi, Lichen and Mosses

9. Many of the ancient woodland habitats support diverse communities of fungi, moss and lichen species. Lullingstone Park SSSI<sup>14</sup> and LWS containing 60 lichens and

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<sup>6</sup> Appendix B Local Wildlife Site Citations

<sup>7</sup> Natural England Magpie Bottom SSSI at [http://www.english-nature.org.uk/citation/citation\\_photo/1000201.pdf](http://www.english-nature.org.uk/citation/citation_photo/1000201.pdf) accessed on 11.1.2010

<sup>8</sup> Kent County Council Lullingstone Country Park at [http://www.kent.gov.uk/leisure\\_and\\_culture/countryside\\_and\\_coast/parks\\_and\\_open\\_spaces/country\\_park/lullingstone\\_country\\_park.aspx](http://www.kent.gov.uk/leisure_and_culture/countryside_and_coast/parks_and_open_spaces/country_park/lullingstone_country_park.aspx) accessed on 17.1.2010

<sup>9</sup> Natural England Lullingstone Park SSSI at [http://www.english-nature.org.uk/citation/citation\\_photo/1000095.pdf](http://www.english-nature.org.uk/citation/citation_photo/1000095.pdf) accessed on 11.1.2010

<sup>10</sup> Appendix B Local Wildlife Site Citations

<sup>11</sup> Appendix B Local Wildlife Site Citations

<sup>12</sup> Appendix B Local Wildlife Site Citations

<sup>13</sup> Natural England Magpie Bottom SSSI at [http://www.english-nature.org.uk/citation/citation\\_photo/1000201.pdf](http://www.english-nature.org.uk/citation/citation_photo/1000201.pdf) accessed on 11.1.2010

<sup>14</sup> Natural England Lullingstone Park SSSI at [http://www.english-nature.org.uk/citation/citation\\_photo/1000095.pdf](http://www.english-nature.org.uk/citation/citation_photo/1000095.pdf)

500 fungi species with records of fungi species unknown to science and SE49 Chevening Estate LWS supporting 250 species of fungi throughout the park. SE12 LWS contains 60 mosses with good communities of lichen and fungi with SE43 LWS also noted for its chalk loving mosses.<sup>15</sup>

## Calcareous Grassland

10. On the slopes of the North Downs and the Darent Gap, where ancient woodland is not present, calcareous grassland can be found on the shallow soils. The grassland supports a number of rare flora species indicative of this habitat. At least 11 species of orchid are found within the area. Abundant communities of the more common orchids such as fragrant orchid (*Gymnadenia conopsea*), common spotted orchid (*Dactylorhiza fuchsii*), pyramidal orchid (*Anacamptis pyramidalis*), common twayblade (*Listera ovata*) and bee orchid (*Ophrys apifera*) are present within the BOA. In addition to the above species the County rare lizard orchid (*Himantoglossum hircinum*) is found at SE07 LWS, the nationally scarce lady orchid (*Orchis purpurea*) at SE43 LWS and green-flowered helleborine (*Epipactis phyllanthes*) at SE05 A225 Shoreham Road RNR.<sup>16</sup> Of particular note however are the healthy populations of BAP orchids, with man orchid (*Aceras anthropophorum*) occurring on SE05, SE09, SE12 and SE43 LWSs, SE05 RNR and Magpie Bottom SSSI,<sup>17</sup> musk orchid (*Herminium monorchis*) at SE09 LWS, fly orchid at SE04 and SE05 LWS and white helleborine at SE05 RNR. Other flora of interest is county scarce chalk milkwort (*Polygala calcarea*) present at Otford to Shoreham Downs SSSI<sup>18</sup> and Magpie Bottom SSSI and LWS and dodder (*Cuscuta epithymum*) at SE09 LWS.<sup>19</sup>

## Lowland Meadow

11. Although the majority of grassland within the BOA is calcareous on the deeper soils and within the valley bottom is at times neutral in character forming patches of lowland meadow within the chalk complex. Examination of the area shows numerous small areas of neutral grassland throughout, with more extensive *fields* at SE08 and SE06 LWSs,<sup>20</sup> Magpie Bottom SSSI<sup>21</sup> and the environmental centre, along the valley floor.

## Acidic Grassland and Lowland Heath

12. There is only very small areas of acidic grassland and very little lowland heath within

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[nature.org.uk/citation/citation\\_photo/1000095.pdf](http://nature.org.uk/citation/citation_photo/1000095.pdf) accessed on 11.1.2010

<sup>15</sup> Appendix B [Local Wildlife Site Citations](#)

<sup>16</sup> Appendix C [Roadside nature Reserve Management Plans](#)

<sup>17</sup> Natural England [Magpie Bottom SSSI](#) at [http://www.english-nature.org.uk/citation/citation\\_photo/1000201.pdf](http://www.english-nature.org.uk/citation/citation_photo/1000201.pdf) accessed on 11.1.2010

<sup>18</sup> Natural England [Otford to Shoreham SSSI](#) at [http://www.english-nature.org.uk/citation/citation\\_photo/1000333.pdf](http://www.english-nature.org.uk/citation/citation_photo/1000333.pdf) accessed on 11.1.2010

<sup>19</sup> Appendix B [Local Wildlife Site Citations](#)

<sup>20</sup> Appendix B [Local Wildlife Site Citations](#)

<sup>21</sup> Natural England [Magpie Bottom SSSI](#) at [http://www.english-nature.org.uk/citation/citation\\_photo/1000201.pdf](http://www.english-nature.org.uk/citation/citation_photo/1000201.pdf) accessed on 11.1.2010

the BOA as the majority of the acidic plateaus are clothed with ancient woodland. Of particular importance is the area of acidic grassland within Farningham Woods SSSI<sup>22</sup> which supports the BAP Deptford pink (*Dianthus armeria*). Cladonia heath is forming on the plateau at SE09<sup>23</sup> with a sizeable area of acidic grassland at Broom Hill.<sup>24</sup>

## Rivers and Streams

13. A feature of the BOA is the River Darent which runs throughout the BOA passing through SE49, SE51, SE05 and SE43 LWSs as well as Otford to Shoreham SSSI.<sup>25</sup> The associated floodplain and ditches are important for the habitat they provide for BAP fauna. One plant of interest within this habitat is the County scarce fan-leaved water crowfoot (*Ranunculus circinatus*) at SE49 Chevening Estate LWS. Within the damp woods at this site two streams are present feeding the woodland, the ornamental pond and the river.<sup>26</sup> Closer examination shows small tributaries are present throughout the BOA.<sup>27</sup>

## Standing Open Water and Canals

14. Within Chevening Estate a large ornamental lake is present within the park with a pond at SE51 LWS beside the Darent.<sup>28</sup> A network of ponds runs through the centre of Farningham Woods SSSI.<sup>29</sup> Examination of the wider landscape of the BOA shows numerous ponds are present throughout the area. These are likely to provide good habitat and connectivity for the amphibians and grass snakes (*Natrix natrix*) known to be present.<sup>30</sup>

## Lowland Fen

15. Although not extensive there are marshy areas within SE51 and SE49 LWS as well as along the length of the River Darent.<sup>31</sup>

## Invertebrates

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<sup>22</sup> Natural England Farningham Wood SSSI [http://www.english-nature.org.uk/citation/citation\\_photo/1003636.pdf](http://www.english-nature.org.uk/citation/citation_photo/1003636.pdf) accessed on 11.1.2010

<sup>23</sup> Appendix B Local Wildlife Site Citations

<sup>24</sup> Kent County Council Kent Landscape Information System at <http://extranet7.kent.gov.uk/klis/default.asp> accessed 4.1.2010

<sup>25</sup> Natural England Otford to Shoreham SSSI at [http://www.english-nature.org.uk/citation/citation\\_photo/1000333.pdf](http://www.english-nature.org.uk/citation/citation_photo/1000333.pdf) accessed on 11.1.2010

<sup>26</sup> Appendix B Local Wildlife Site Citations

<sup>27</sup> Kent County Council Kent Landscape Information System at <http://extranet7.kent.gov.uk/klis/default.asp> accessed 4.1.2010

<sup>28</sup> Appendix B Local Wildlife Site Citations

<sup>29</sup> Natural England Farningham Wood SSSI [http://www.english-nature.org.uk/citation/citation\\_photo/1003636.pdf](http://www.english-nature.org.uk/citation/citation_photo/1003636.pdf) accessed on 11.1.2010

<sup>30</sup> Kent County Council Kent Landscape Information System at <http://extranet7.kent.gov.uk/klis/default.asp> accessed 4.1.2010

<sup>31</sup> Appendix B Local Wildlife Site Citations

16. Due to the wealth of ancient woodland and calcareous grassland within the Central Downs BOA there is a rich population of invertebrates within both habitats. Butterflies and moths proliferate with BAP species of small blue (*Cupido minimus*) at SE05 RNR,<sup>32</sup> grizzled skipper (*Pyrgus malvae*) at SE05, SE08 and SE06 LWS, dingy skipper (*Erynnis tages*) at SE06 LWS and white admiral (*Limenitis Camilla*) at SE06 and SE09 LWS.<sup>33</sup> Lullingstone Park is particularly rich in Lepidoptera with 270 species of moths and butterflies recorded on the SSSI and 21 on the LWS, with SE12 LWS supporting 24 species.
17. Lullingstone Park SSSI is important for a number of other orders of invertebrate. 340 species of beetle are present with 30 nationally scarce species and the fairy winged beetle (*Ptenidium gressneri*) and a scirtid beetle (*Prionocyphon serricornis*) which are nationally scarce. The BAP species of Roman snail (*Helix pomatia*) is also present. There are a number of invertebrate species within Lullingstone SSSI not found anywhere else in Kent.<sup>34</sup>

## Amphibians and Reptiles

18. Within Chevening Estate the ornamental pond supports a large population of the BAP common toad (*Bufo bufo*). This species spend the majority of the year within the woodlands on the estate coming down to the pond to breed in the spring. The estate also supports grass snake within the wet areas, ponds and streams. Grass snake is also found on SE51 with slow worm (*Anguis fragilis*) recorded at SE05 LWS and common lizard (*Lacerta vivipara*) at SE12. Of especial note is the presence of adder (*Vipera berus*) within SE12 and SE43. This species is rare in Kent and the population within the borough adds to the ecological richness.<sup>35</sup> Great crested newts (*Triturus cristatus*) have been noted within the complex of ponds at Farningham Woods SSSI.<sup>36</sup>

## Birds

19. Due to the large areas of ancient woodland present within the Central Downs BOA good populations of a number of BAP woodland birds are present, with turtle dove (*Streptopelia turtur*) recorded at SE49 LWS, common cuckoo (*Cuculus canorus*) at SH09 LWS, lesser spotted woodpecker (*Picoides minor*) at SE09, SE07 and SE12 as well as Lullingstone Park SSSI. This site also supports hawfinch (*Coccothraustes coccothraustes*).<sup>37</sup> Nightingale (*Luscinia megarhynchos*) has been recorded at SE07 and SE09. Although not a BAP species nightingale populations are important

<sup>32</sup> Appendix C Roadside Nature Reserve Management Plans

<sup>33</sup> Appendix B Local Wildlife Site Citations

<sup>34</sup> Natural England Lullingstone Park SSSI at [http://www.english-nature.org.uk/citation/citation\\_photo/1000095.pdf](http://www.english-nature.org.uk/citation/citation_photo/1000095.pdf) accessed on 11.1.2010

<sup>35</sup> Appendix B Local Wildlife Site Citations

<sup>36</sup> Natural England Farningham Wood SSSI [http://www.english-nature.org.uk/citation/citation\\_photo/1003636.pdf](http://www.english-nature.org.uk/citation/citation_photo/1003636.pdf) accessed on 11.1.2010

<sup>37</sup> Natural England Lullingstone Park SSSI at [http://www.english-nature.org.uk/citation/citation\\_photo/1000095.pdf](http://www.english-nature.org.uk/citation/citation_photo/1000095.pdf) accessed on 11.1.2010

within Kent as the County contains a quarter of the national population. Skylark (*Alauda arvensis*) has been noted within the grassland at SE05 LWS.<sup>38</sup>

## Mammals

20. Badger (*Meles meles*) is present throughout, with setts found in all the LWSs within the area. The habitat present provides ideal habitat for this species with woodlands providing shelter and enabling sett construction and grassland providing adequate foraging opportunities. Daubenton (*Myotis daubentonii*) and pipistrelle (*Pipistrellus pipistrellus*) bats are present at SE51 LWS with pipistrelles also roosting in SE07 LWS. Dormouse (*Muscardinus avellanarius*) has been recorded at SE09 with a brown hare (*Lepus europaeus*) population within the grassland of SE07.<sup>39</sup>

## Greensands, Heaths and Commons Biodiversity Opportunity Area

### Sevenoaks Nature Reserve

21. Sevenoaks Nature Reserve covers 55 hectares and is run as a visitors centre by Kent wildlife Trust. The reserve was first created by James and Jeffery Harrison in co-operation with Redlands in 1956. The 5 lakes were created by flooding old sand and *grave* pits, the ponds being dug by hand and the secondary woodland planted. The Jeffery Harrison memorial Trust was set up in 1978 and management passed to Kent Wildlife Trust in 2005.<sup>40</sup>
22. Kent Wildlife Trust runs the reserve as a visitors centre. As well as walking the woodland and lakeside routes, visitors can visit the Jeffery Harrison visitors centre and view displays illustrating the prehistory and history of the site, the creation of the nature reserve, its habitats and the wildlife which they support. There are displays of stuffed birds in dioramas of local habitats as well as touch tables where visitors can handle all sorts of 'treasures' such as nests, feathers and thirty-thousand year old mammoth teeth. Throughout the year events such as guided walks, family days, talks and practical study days are held and the centre is a *facility* where local schools can bring children to learn about natural history<sup>41</sup>

### Sevenoaks Living Landscape Scheme

23. The Sevenoaks Living Landscape scheme (SOLL) was launched in 2008 and is a key project within Kent Wildlife Trust's Living Landscape strategy, which focuses on conservation management on a landscape-scale. The area covered by the scheme

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<sup>38</sup> Appendix B [Local Wildlife Site Citations](#)

<sup>39</sup> Appendix B [Local Wildlife Site Citations](#)

<sup>40</sup> Kent Wildlife Trust [SNR General Information](#)

<sup>41</sup> Kent Wildlife Trust [The Jeffery Harrison Visitor Centre](#) at

<http://www.kentwildlifetrust.org.uk/reserves/jeffery-harrison/jeffery-harrison-visitor-centre-sevenoaks-overview/> accessed on 21.1.2010

is of approximately 30 square miles and stretches from the reservoir at Bough Beech to Shipbourne in the east of the district and Knole Park in the north. The project covers area in the Greensands Heaths and Commons BOA and the Medway and Low Weald Wetland and Grasslands BOA. The area already contains important core sites for biodiversity, and the scheme focuses on working with a range of public and private landowners to buffer these core areas by encouraging the surrounding land to be managed in a wildlife-friendly manner. The scheme also aims to inspire local people about the value of the natural environment in the area and demonstrate how a more wildlife rich environment can support local businesses and benefit local communities.

24. Four habitats have been identified for targeted action, species rich grassland, woodland, hedgerows and ponds. Species or species groups have been chosen because they provide good indicators of habitat quality and permeability to *movement* of wildlife, and include the following: yellowhammer, barn owl, common frog, common toad, bats, butterflies and moths. Monitoring schemes are helping to assess species distribution in the area and how this changes over time as a measure of the success of the action taken and guide future proposals. It is hoped that involving local communities in the monitoring process will raise awareness of conservation issues and wildlife richness in the area.
25. In the year and a half since the project was launched, staff and volunteers have engaged with over twenty landowners, including Knole Estate, National Trust and the Fairlawne Estate. Kent Wildlife Trust have accessed funding for woodland management work to be carried out on 5 ha of ancient woodland in 2010, and continue to work with landowners with a view to securing more gains for wildlife in the area. As well as undertaking face to face landowner liaison work, several land management and wildlife identification courses were facilitated attracting over 120 volunteers and landowners. The courses will continue in 2010. Significant amounts of monitoring work have been undertaken, with the help of volunteers, resulting in up-to-date information on the distribution of several species/species groups in part of the project area and providing a baseline for future survey work. A project focusing on the management of churchyards for wildlife and people was also launched in June 2009 and is now being rolled out through the rest of the county, in partnership with the Dioceses of Rochester and Canterbury.<sup>42</sup>

## Geology

26. The geology on the plateau of the Greensands Ridge is lower greensand, with the ragstone on the scarp slopes and the base on the low weald comprising gault clay.<sup>43</sup> The Greensands Heaths and Commons BOA contain a number of Biodiversity Action *Plan* habitats and species which are detailed below.

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<sup>42</sup> C Blackburn (Living Landscapes Project Officer) KWT 17.1.2009 Personal communication

<sup>43</sup> Kent Biodiversity Action Plan Greensands, Heath and Commons Biodiversity Opportunity Area at [http://www.kentbap.org.uk/assets/library/documents/Opportunity\\_Area\\_Statement\\_-\\_Greensand\\_Heaths\\_and\\_Commons\\_FI.doc](http://www.kentbap.org.uk/assets/library/documents/Opportunity_Area_Statement_-_Greensand_Heaths_and_Commons_FI.doc) accessed 19.1.2010

## Broadleaved Mixed and Yew Woodland

### Acidic Ancient Woodland

27. As in the previous BOA there are a number of important ancient woodlands within the Greensand Heaths and Commons BOA. Much of the plateau woodland is secondary in nature, with scrub having colonised the open heath; however a number of the LWSs and SSSIs are ancient in origin. Acidic ancient woodland is very rare not only in Kent but throughout the Greensand Ridge. Much of the woodland was cleared in the Bronze Age or subsequently to provide common land for grazing and the remaining ancient woods have value in relation to the ecology of the South East.
28. Acidic ancient woodland can be found along the plateaus within SE14 Sevenoaks Common, Hubbard's Hill and Beechmount Bank LWS, SE40 Hosey Common LWS<sup>44</sup> and Knole Park,<sup>45</sup> One Tree and Bitchet Common,<sup>46</sup> Scords Wood and Brockhoul Mount<sup>47</sup> and Oldbury and Seal Chart<sup>48</sup> SSSIs. There is some question as to the age of the woodland on SE39 Crockhamhill Common LWS, but 23 ancient woodland indicators have been found on site. On all sites sessile oaks (*Quercus petraea*) and beech (*Fagus sylvatica*) standards predominate. Scords Wood and Brockhoul Mount SSSI, was managed as wood pasture until the 19<sup>th</sup> Century, when it was enclosed and contains the best examples of sessile oak stands in Kent.<sup>49</sup> Ancient pollards dating from the 15<sup>th</sup> Century are present at Knole Park SSSI.<sup>50</sup> Coppiced species include birch (*Betula*), hazel (*Corylus Avallana*), oak, holly (*Ilex aquifolium*); rowan (*Sorbus aucuparia*) and sweet chestnut (*Fagus castanea*). Within Oldbury and Seal Chart SSSI European gorse (*Ulex europeaus*) and the non indigenous Scots pine (*Pinus sylvestris*) are common throughout and within Scords Wood and Brockhoul Mount SSSI Thuringian whitebeam, a hybrid between rowan and whitebeam grows. The SSSI is one of only four sites in Kent that contain this hybrid.
29. Where light is able to penetrate the tree cover and in the rides and clearings relict heathland species can be found. These include the shrubs ling heather (*Calluna vulgaris*), bell heather (*Erica cineria*) and bilberry (*Vaccinium myrtillus*, as well as ground flora of bracken (*Pteridium aquilinum*), heath bedstraw (*Galium saxatile*) and wavy hair grass (*Deschamsia flexuosa*). Within Oldbury and Seal Chart SSSI heath dog-violet (*Viola canina*) and climbing corydalis (*Ceratocapnos claviculata*) can be

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<sup>44</sup> Appendix B Local Wildlife Site Citations

<sup>45</sup> Natural England Knole Park SSSI at [http://www.english-nature.org.uk/citation/citation\\_photo/1004530.pdf](http://www.english-nature.org.uk/citation/citation_photo/1004530.pdf) accessed on

<sup>46</sup> Natural England One Tree and Bitchet Common SSSI at [http://www.english-nature.org.uk/citation/citation\\_photo/1000317.pdf](http://www.english-nature.org.uk/citation/citation_photo/1000317.pdf) accessed on 11.1.2010

<sup>47</sup> Natural England Scords Wood and Brockhoul Mount SSSI at [http://www.english-nature.org.uk/citation/citation\\_photo/1001159.pdf](http://www.english-nature.org.uk/citation/citation_photo/1001159.pdf) accessed on 13.1.2010

<sup>48</sup> Natural England Oldbury and Seal Chart SSSI at [http://www.english-nature.org.uk/citation/citation\\_photo/1000279.pdf](http://www.english-nature.org.uk/citation/citation_photo/1000279.pdf) accessed on 11.1.2010

<sup>49</sup> Natural England Scords Wood and Brockhoul Mount SSSI at [http://www.english-nature.org.uk/citation/citation\\_photo/1001159.pdf](http://www.english-nature.org.uk/citation/citation_photo/1001159.pdf) accessed on 13.1.2010

<sup>50</sup> Natural England Knole Park SSI at [http://www.english-nature.org.uk/citation/citation\\_photo/1004530.pdf](http://www.english-nature.org.uk/citation/citation_photo/1004530.pdf) accessed on 13.1.2010.0



found which are County rare and County scarce respectively.<sup>51</sup> Within Knole Park the ground flora is poorer due to overgrazing by the park's deer herd.<sup>52</sup>

### Calcareous Ancient Woodland

30. On the steeper scarp slopes of the Greensands Ridge calcareous ragstone replaces the acidic greensands. Calcareous ancient woodland is present at SE14<sup>53</sup>, One Tree and Bitchet Common SSSI<sup>54</sup>, Scords Wood and Brockhoul Mount SSSI<sup>55</sup> and Oldbury and Seal Chart SSSI.<sup>56</sup> As in the Central Downs BOA the species mix of the woodlands on the slopes favour chalk loving species, with pedunculate oak (*Quercus robur*) replacing sessile oak as a standards, and ash (*Fraxinus excelsior*), field maple (*Acer campestre*) and elm (*Ulmus glabra*) making up the coppiced understory.
31. Of note within the ground flora of the calcareous woodlands is common wintergreen (*Pyrola minor*) and green flowered helleborine (*Epipactis phyllanthes*), which are County scarce and nationally rare respectively and early purple orchid. (*Orchis mascula*) Calcareous mosses and liverworts are particularly rich on One Tree and Bitchet Common SSSI, with liverwort (*Porella arboris-vitae*), predominantly found in the west. The SSSI is the species only known location in Kent.<sup>57</sup>
32. Within many of the ancient woodland sites there are good communities of fungi with Oldbury and Seal Chart SSSI supporting 250 species of which 10 are either scarce or rare in Britain. 2 fungi species on the site are very uncommon to the South East usually being found in Scotland. 58 SE40 LWS is also known to contain a good fungal community<sup>59</sup> with Knole Park sheltering many rare and unusual species.<sup>60</sup>

### Ancient Wet Woodland

33. At the foot of the ragstone escarpment, on the clay of the low weald there are a number of ancient wet woodlands, SE17 Woods and Pasture Toy's Hill, LWS, SE42 One Tree Hill, Underriver LWS<sup>61</sup> and parts of One Tree and Bitchet Common SSSI,

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<sup>51</sup> Natural England Oldbury and Seal Chart SSSI at [http://www.english-nature.org.uk/citation/citation\\_photo/1000279.pdf](http://www.english-nature.org.uk/citation/citation_photo/1000279.pdf) accessed on 11.1.2010

<sup>52</sup> Natural England Knole Park SSSI at [http://www.english-nature.org.uk/citation/citation\\_photo/1004530.pdf](http://www.english-nature.org.uk/citation/citation_photo/1004530.pdf) accessed on 13.1.2010

<sup>53</sup> Appendix B Local Wildlife Site Citations

<sup>54</sup> Natural England One Tree and Bitchet Common SSSI at [http://www.english-nature.org.uk/citation/citation\\_photo/1000317.pdf](http://www.english-nature.org.uk/citation/citation_photo/1000317.pdf) accessed on 11.1.2010

<sup>55</sup> Natural England Scords Wood and Brockhoul Mount SSSI at [http://www.english-nature.org.uk/citation/citation\\_photo/1001159.pdf](http://www.english-nature.org.uk/citation/citation_photo/1001159.pdf) accessed on 13.1.2010

<sup>56</sup> Natural England Scords Wood and Brockhoul Mount SSSI at [http://www.english-nature.org.uk/citation/citation\\_photo/1001159.pdf](http://www.english-nature.org.uk/citation/citation_photo/1001159.pdf) accessed on 13.1.2010

<sup>57</sup> Natural England One Tree and Bitchet Common SSSI at [http://www.english-nature.org.uk/citation/citation\\_photo/1000317.pdf](http://www.english-nature.org.uk/citation/citation_photo/1000317.pdf) accessed on 11.1.2010

<sup>58</sup> Natural England Oldbury and Seal Chart SSSI at [http://www.english-nature.org.uk/citation/citation\\_photo/1000279.pdf](http://www.english-nature.org.uk/citation/citation_photo/1000279.pdf) accessed on 11.1.2010

<sup>59</sup> Appendix B Local Wildlife Site Citations

<sup>60</sup> Natural England Knole Park SSSI at [http://www.english-nature.org.uk/citation/citation\\_photo/1004530.pdf](http://www.english-nature.org.uk/citation/citation_photo/1004530.pdf) accessed on 13.1.2010

<sup>61</sup> Appendix B Local Wildlife Site Citations

<sup>62</sup> Scords Wood and Brockhoul Mount SSSI <sup>63</sup> Westerham Woods SSSI <sup>64</sup> and Sevenoaks Gravel Pit.<sup>65</sup> These are fed by the flushes and streams that emanate from the foot of the scarp. (See section 11.7 for information of rivers and streams and section 11.6 for fens, marshes and swamps) Downwash, from the calcareous slopes and acidic plateau, has given rise to clays and sandy loams overlying much of the gault clay. This leads to a variation in the ph of the soils and therefore a diverse ground flora

34. The standards are generally pedunculate oak, particularly fine specimens being found in Martin Wood, part of One Tree and Bitchet Common SSSI.<sup>66</sup> Hazel, ash, hornbeam, (*Carpinus betulus*) field maple and spindle (*Euonymus europaeus*) coppice make up the shrub layer with water loving alder (*Alnus glutinosa*) willow (*Salix*) and European aspen (*Populus tremula*) on some sites reflecting their hydrology. At SE17 willow scrub borders the grassland.<sup>67</sup>
35. The ground flora within the wet woodland at the base of the scarp differs again from that found on the acidic and calcareous soils higher up. Due to water levels the ground flora contains wetland species especially within the rides and clearings. In Westerham Woods SSSI 12 sedge species have been recorded including pale sedge (*Carex pallescens*) which is county scarce as well as 77 species of moss.<sup>68</sup> Early purple orchid (*Orchis mascula*) and green hellebore (*Helleborus viridis*) are found on a number of sites at the base of the scarp.
36. SE62 Hill Water Bottom Wood, Brasted LWS is situated on the plateau and slopes of the greensands ridge but is wet woodland as it contains a gill. Its character reflects other acidic and calcareous woodland on the plateau and scarp with the addition of alder in the shrub layer and 51 species of moss in the ground flora.<sup>69</sup>

### Wood Pasture and Parkland

37. Wood pasture is present within SE42 LWS <sup>70</sup> and within the parkland at Knole Park.<sup>71</sup>

### Shaws, Woodbanks, Hedgerows and Veteran Trees

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<sup>62</sup> Natural England One Tree and Bitchet Common SSSI at [http://www.english-nature.org.uk/citation/citation\\_photo/1000317.pdf](http://www.english-nature.org.uk/citation/citation_photo/1000317.pdf) accessed on 11.1.2010

<sup>63</sup> Natural England Scords Wood and Brockhoul Mount SSSI at [http://www.english-nature.org.uk/citation/citation\\_photo/1001159.pdf](http://www.english-nature.org.uk/citation/citation_photo/1001159.pdf) accessed on 13.1.2010

<sup>64</sup> Natural England Westerham Woods SSSI at [http://www.english-nature.org.uk/citation/citation\\_photo/1001326.pdf](http://www.english-nature.org.uk/citation/citation_photo/1001326.pdf) accessed on 11.1.2010

<sup>65</sup> Kent Wildlife Trust SMR General Information

<sup>66</sup> Natural England One Tree and Bitchet Common SSSI at [http://www.english-nature.org.uk/citation/citation\\_photo/1000317.pdf](http://www.english-nature.org.uk/citation/citation_photo/1000317.pdf) accessed on 11.1.2010

<sup>67</sup> Appendix B Local Wildlife Site Citations

<sup>68</sup> Natural England Westerham Woods SSSI at [http://www.english-nature.org.uk/citation/citation\\_photo/1001326.pdf](http://www.english-nature.org.uk/citation/citation_photo/1001326.pdf) accessed on 11.1.2010

<sup>69</sup> Appendix B Local Wildlife Site Citations

<sup>70</sup> Appendix B Local Wildlife Site Citations

<sup>71</sup> Natural England Knole Park SSSI at [http://www.english-nature.org.uk/citation/citation\\_photo/1004530.pdf](http://www.english-nature.org.uk/citation/citation_photo/1004530.pdf) accessed on 13.1.2010

38. Additional ancient woodland Shaws are present in SE17 and SE42 LWSs, with an ancient wood bank and hedgerow present at SE16 Great Norman Street Farm, Pasture and Stream, Ide Hill LWSs.<sup>72</sup> Veteran trees can be found at Knole Park,<sup>73</sup> Scords Wood and Brockhoul Mount SSSI<sup>74</sup> and Sevenoaks Gravel Pit SSSI.<sup>75</sup>

## Secondary Woodland with relict Heathland

39. Acidic secondary broadleaved woodland is present on the plateau at SE39 Crockham Hill Common LWS, SE40 Hosey Common, Westerham LWS, SE14 LWS on Sevenoaks Common<sup>76</sup> and within SE04 Section of road between Goathurst Common and Bayley Hill Roadside Nature Reserve<sup>77</sup> which adjoins Scords Wood and Brockhoul Mount SSSI. Again beech and oak are found as mature groves with SE40 being largely coniferous. Where coppice is present species include birch, hazel and oak. Ground flora on these sites is indicative of that found in the more ancient sites with relict heath and acidic grassland within the rides and glades. Secondary calcareous woodland is present at Dryhill SSSI<sup>78</sup> and Westerham Mines SSSI.<sup>79</sup> At SE16 alder and willow is present along the stream<sup>80</sup> and 30-40% of Sevenoaks Gravel Pit is covered by secondary wet woodland.<sup>81</sup>

## Lowland Heathland

40. Lowland heath is generally present along the rides and within the clearings of the woodland on the plateau with secondary woodland having seeded into what once was open common. Examination of KLIS shows that there are still recognisable pockets of acidic grassland and heath throughout the BOA but these have become fragmented and provide no connectivity for heathland species other than those that can fly.<sup>82</sup> There is a fragment of heathland which is kept clear of scrub within SE04 RNR<sup>83</sup> and another on the plateau of Scords Wood and Brockhoul Mount SSSI.<sup>84</sup> Pockets of remnant heath can be found throughout Westerham Mines SSSI.<sup>85</sup> The

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<sup>72</sup> Appendix B Local Wildlife Site Citations

<sup>73</sup> Natural England Knole Park SSSI at [http://www.english-nature.org.uk/citation/citation\\_photo/1004530.pdf](http://www.english-nature.org.uk/citation/citation_photo/1004530.pdf) accessed on 13.1.2010

<sup>74</sup> Natural England Scords Wood and Brockhoul Mount SSSI at [http://www.english-nature.org.uk/citation/citation\\_photo/1001159.pdf](http://www.english-nature.org.uk/citation/citation_photo/1001159.pdf) accessed on 13.1.2010

<sup>75</sup> Natural England Sevenoaks Gravel Pit at [http://www.english-nature.org.uk/citation/citation\\_photo/1001202.pdf](http://www.english-nature.org.uk/citation/citation_photo/1001202.pdf) accessed on 11.1.2010

<sup>76</sup> Appendix B Local Wildlife Site Citations

<sup>77</sup> Appendix C Roadside Nature Reserve management Plans

<sup>78</sup> Natural England Dryhill SSSI at [http://www.english-nature.org.uk/citation/citation\\_photo/2000064.pdf](http://www.english-nature.org.uk/citation/citation_photo/2000064.pdf) accessed on 11.1.2010

<sup>79</sup> Natural England Westerham Mines SSSI at [http://www.english-nature.org.uk/citation/citation\\_photo/1004499.pdf](http://www.english-nature.org.uk/citation/citation_photo/1004499.pdf) accessed on 11.1.2010

<sup>80</sup> Appendix B Local Wildlife Site Citations

<sup>81</sup> Kent Wildlife Trust SMR General Information

<sup>82</sup> Kent County Council Kent Landscape Information System at <http://extranet7.kent.gov.uk/klis/default.asp> accessed on 11.1.2010

<sup>83</sup> Appendix C Roadside Nature Reserve management Plans

<sup>84</sup> Natural England Scords Wood and Brockhoul Mount SSSI at [http://www.english-nature.org.uk/citation/citation\\_photo/1001159.pdf](http://www.english-nature.org.uk/citation/citation_photo/1001159.pdf) accessed on 13.1.2010

<sup>85</sup> Natural England Westerham Mines SSSI at [http://www.english-nature.org.uk/citation/citation\\_photo/1004499.pdf](http://www.english-nature.org.uk/citation/citation_photo/1004499.pdf)

species present include ling and bell heather, European gorse, wavy hair grass, tormentil (*Potentilla erecta*) and heath bedstraw. These fragments would provide useful stepping stones if further areas of secondary woodland were restored to heath.

## Lowland Dry Acid Grassland

41. Examination of GIS data shows small pockets of acidic grassland running along the plateau of the greensands ridge, between the ancient woodland fragments.<sup>86</sup> Like the heath habitats much potential acid grassland has been lost as invasive birch, oak and other species have grown up over the grassland habitat.
42. In SE17 however there are two patches of species poor acidic grassland with some bracken and bramble invasion from the adjoining wood. To the south of the site large swathes of acid grassland have been recreated or preserved. These are flower rich. The area protects good populations of common spotted orchids. (*Dactylorhiza fuchsii*)<sup>87</sup> Acid grassland is present on the central plateau at Knole Park with good communities of lichen present on the turf buildings and trees that border the grassland.<sup>88</sup>

## Lowland Calcareous Grassland and Meadow

43. Calcareous grassland and neutral grassland are less common than in the previous BOA; however there are fragments on the calcareous and wet woodlands within clearings and banks and the pasture land in the locality. Scords Wood and Brockhoul Mount SSSI contain a pasture south of Emmets House which is neutral in nature with communities of common spotted orchid and bee orchid (*Ophrys apifera*).<sup>89</sup> SE41 supports grassy herb rich banks which are calcareous and contain a good small clover community, with SE42 incorporating dry calcareous and neutral grassland.

## Fen, Marsh and Swamp

44. Swamp habitat can be found on the greensands ridge within SE16 on the northern face where flushes feed the pasture land. Species of interest include ivy-leaved crowfoot (*Ranunculus hederaceus*), which is County rare and marsh valerian (*Valeriana dioica*) and blinks (*Montia Fontana*) which are county scarce. A wet ditch on the periphery of the site supports brown sedge (*Carex disticha*) which is County scarce. SE16, SE17, SE42 and SE53 LWSs are situated at the base of the scarp on the wealden clay and are fed by flushes and streams. Characteristic wetland flora is

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[nature.org.uk/citation/citation\\_photo/1004499.pdf](http://nature.org.uk/citation/citation_photo/1004499.pdf) accessed on 11.1.2010

<sup>86</sup> Kent County Council [Kent Landscape Information System](http://extranet7.kent.gov.uk/klis/default.asp) at <http://extranet7.kent.gov.uk/klis/default.asp> accessed on 11.1.2010

<sup>87</sup> Appendix B [Local Wildlife Site Citations](#)

<sup>88</sup> Natural England [Knole Park SSSI](http://www.english-nature.org.uk/citation/citation_photo/1004530.pdf) at [http://www.english-nature.org.uk/citation/citation\\_photo/1004530.pdf](http://www.english-nature.org.uk/citation/citation_photo/1004530.pdf) accessed on 13.1.2010

<sup>89</sup> Natural England [Scords Wood and Brockhoul Mount SSSI](http://www.english-nature.org.uk/citation/citation_photo/1001159.pdf) at [http://www.english-nature.org.uk/citation/citation\\_photo/1001159.pdf](http://www.english-nature.org.uk/citation/citation_photo/1001159.pdf) accessed on 13.1.2010

present, and pasture land is rich in common rushes and sedges.<sup>90</sup>

## Reedbeds

45. Reedbeds are present within Sevenoaks Gravel Pit SSSI.<sup>91</sup>

## Rivers and Streams

46. Streams which feed the flushes within the swamp habitats are present at SE16, and SE17 LWS, with a wooded gill at the top of the scarp in SE62 LWS.<sup>92</sup> The River Darent runs through Sevenoaks Gravel Pitt SSSI and feeds the water environments in the reserve.<sup>93 94</sup>

## Ponds

47. Westerham Woods SSSI contains a number of ponds which have formed from the disused marl workings on site.<sup>95</sup> The 5 lakes, ponds and seasonally flooded pools within Sevenoaks Gravel Pit SSSI form the Sevenoaks Wildlife Reserve managed by Kent Wildlife Trust. The lakes are of ecological significance for bird *and* invertebrate interest, (See section 11.10 for invertebrate species and section 11.12 for bird species.) As the habitat has matured the botanical interest has increased with nationally rare small cudweed (*Filago minima*), the County rare species of dwarf elder (*Sambucus ebulus*) and slender bird's-foot trefoil (*Lotus angustissimus*) have colonised the site.<sup>96 97</sup> 2 ponds on SE17 LWS add interest to the site.<sup>98</sup>

## Quarries and Churchyards

48. Although not BAP habitats both quarries and churchyards can provide sheltered *habitat* and are often rich in biodiversity. Within the BOA there are a number of quarries which are SSSI's for their geology namely Hubbard's Hill SSSI,<sup>99</sup> Dryhill SSSI<sup>100</sup> and Greatness Brickworks SSSI.<sup>101</sup> As well as these sites the flooded

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<sup>90</sup> Appendix B Local Wildlife Site Citations

<sup>91</sup> Natural England Sevenoaks Gravel Pit at [http://www.english-nature.org.uk/citation/citation\\_photo/1001202.pdf](http://www.english-nature.org.uk/citation/citation_photo/1001202.pdf) accessed on 11.1.2010

<sup>92</sup> Appendix B Local Wildlife Site Citations

<sup>93</sup> Kent Wildlife Trust SMR General Information

<sup>94</sup> Kent Wildlife Trust Sevenoaks Wildlife Reserve at <http://www.kentwildlifetrust.org.uk/reserves/sevenoaks-darent-valley-area/sevenoaks-wildlife-reserve/> accessed on 21.1.2010

<sup>95</sup> Natural England Westerham Mines SSSI at [http://www.english-nature.org.uk/citation/citation\\_photo/1004499.pdf](http://www.english-nature.org.uk/citation/citation_photo/1004499.pdf) accessed on 11.1.2010

<sup>96</sup> Natural England Sevenoaks Gravel Pit at [http://www.english-nature.org.uk/citation/citation\\_photo/1001202.pdf](http://www.english-nature.org.uk/citation/citation_photo/1001202.pdf) accessed on 11.1.2010

<sup>97</sup> Kent Wildlife Trust Sevenoaks Wildlife Reserve at <http://www.kentwildlifetrust.org.uk/reserves/sevenoaks-darent-valley-area/sevenoaks-wildlife-reserve/>

<sup>98</sup> Appendix B Local Wildlife Site Citations

<sup>99</sup> Natural England Hubbard's Hill SSSI at [http://www.english-nature.org.uk/citation/citation\\_photo/2000062.pdf](http://www.english-nature.org.uk/citation/citation_photo/2000062.pdf) accessed on 11.1.2010

<sup>100</sup> Natural England Dryhill SSSI at [http://www.english-nature.org.uk/citation/citation\\_photo/2000064.pdf](http://www.english-nature.org.uk/citation/citation_photo/2000064.pdf)

gravel quarries at Sevenoaks Gravel Pits <sup>102</sup> and the mine shafts at Westerham Mines SSSI <sup>103</sup> have identified ecological interest. (See other sections for further details)

49. SE53 St Mary's Churchyard, Sundridge LWS is designated for its lichen and fungi communities. Due to its damp nature and acidic and calcareous conditions on gravestones and walls of the church 80 species of lichen have been found on site. *Uncommon* species of fungi also proliferate at SE53 LWS <sup>104</sup> and Seven oaks Gravel Pit SSSI. <sup>105</sup>

## Invertebrates

50. Due to the variety of conditions within the ancient woodland the BOA is extremely rich in rare invertebrate species. This is not surprising as ancient woodland often shelters invertebrate species. Invertebrates that inhabit ancient woodland generally need specialist conditions with mature diverse habitats, dead wood and minimal disturbance. The area is particularly important for dragonflies with 17 species recorded at Sevenoaks Gravel Pit SSSI <sup>106</sup> and 7 species at Westerham Woods SSSI. <sup>107</sup> Common butterflies have been recorded throughout the BOA with the BAP small heath (*Coenonympha pamphilus*) recorded at SE40 LWS. SE41 LWS is particularly rich in invertebrates with 113 species being recorded. <sup>108</sup> The Sevenoaks Living Landscape Scheme monitoring showing white admiral present throughout the project area. <sup>109</sup>

## Crustaceans

51. White clawed crayfish (*Austropotamobius pallipes*) are present at Sevenoaks Gravel Pits SSSI. <sup>110</sup>

## Amphibians and Reptiles

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accessed on 11.1.2010

<sup>101</sup> Natural England Greatness Brickworks SSSI at [http://www.english-nature.org.uk/citation/citation\\_photo/1003761.pdf](http://www.english-nature.org.uk/citation/citation_photo/1003761.pdf) accessed on 11.1.2010

<sup>102</sup> Natural England Sevenoaks Gravel Pit at [http://www.english-nature.org.uk/citation/citation\\_photo/1001202.pdf](http://www.english-nature.org.uk/citation/citation_photo/1001202.pdf) accessed on 11.1.2010

<sup>103</sup> Natural England Westerham Mines SSSI at [http://www.english-nature.org.uk/citation/citation\\_photo/1004499.pdf](http://www.english-nature.org.uk/citation/citation_photo/1004499.pdf) accessed on 11.1.2010

<sup>104</sup> Appendix B Local Wildlife Site Citations

<sup>105</sup> Kent Wildlife Trust Sevenoaks Wildlife Reserve at <http://www.kentwildlifetrust.org.uk/reserves/sevenoaks-darent-valley-area/sevenoaks-wildlife-reserve/>

<sup>106</sup> Natural England Sevenoaks Gravel Pit at [http://www.english-nature.org.uk/citation/citation\\_photo/1001202.pdf](http://www.english-nature.org.uk/citation/citation_photo/1001202.pdf) accessed on 11.1.2010

<sup>107</sup> Natural England Westerham Woods SSSI at [http://www.english-nature.org.uk/citation/citation\\_photo/1001326.pdf](http://www.english-nature.org.uk/citation/citation_photo/1001326.pdf) accessed on 11.1.2010

<sup>108</sup> Appendix B Local Wildlife Site Citations

<sup>109</sup> The Sevenoaks Living Landscape Scheme (2009) Initial butterfly Data Published by Kent Wildlife Trust

<sup>110</sup> Kent Wildlife Trust SMR General Information

52. Common toad (*Bufo bufo*) has been recorded in Westerham Woods SSSI <sup>111</sup> as well as throughout the BOA By Kent Reptile and Amphibian Group.<sup>112</sup> Common lizard (*Lacerta vivipara*) at SE40 and SE41, grass snake (*Natrix natrix*) at SE16 and SE17 and adder (*Vipera berus*) at Westerham woods SSSI, SE40 and SE41 LWSs.<sup>113</sup>

## Birds

53. Birds of note to be found within the BOA tend either to be associated with the wetland areas, woodlands and in one case heathland. Water birds are numerous at Sevenoaks Gravel Pit SSSI teal (*Anas crecca*), greenshank (*Tringa nebularia*) little ringed plover (*Charadrius dubius*) and green sandpiper (*Tringa ochropus*) present. These species are protected by European legislation under the Bern Convention. The reserve also supports one of only a few significant colonies of nationally rare sand martin (*Riparia riparia*) in Kent and a substantial rookery.<sup>114</sup> The BAP willow tit (*Parus montanus*) is present at SE41 LWS.<sup>115</sup>

54. The nightjar (*Caprimulgus europaeus*), a BAP species and protected under the Bern Convention is present in Westerham Mines SSSI <sup>116</sup> and SE16. The latter site also supports tree pipit.<sup>117</sup> Nightingale (*Luscinia megarhynchos*) has been recorded at Westerham Woods SSSI <sup>118</sup> and SE17 LWS with BAP lesser spotted woodpecker recorded at Sevenoaks Gravel Pit SSSI.<sup>119</sup> Yellowhammers (*Emberiza citronella*), skylarks (*Alauda arvensis*), song thrush (*Turdus philomelos*), turtle dove (*Streptopelia turtur*), and cuckoo *Cuculus canorus* were recorded in the project area by the Sevenoaks Living Landscapes Scheme.<sup>120</sup>

## Mammals

55. Westerham Mines SSSI is a disused ragstone mine, designated mainly for its bat interest. This site is an important winter hibernation site for five species: Daubenton's (*Myotis daubentonii*), natterers (*Myotis nattereri*), whiskered (*Myotis mystacinus*), Brandt's (*Myotis brandtii*) and long eared bats. It is also used by bats for swarming in the autumn.<sup>121</sup> Common pipistrelle, (*Pipistrellus pipistrellus*) soprano pipistrelle

<sup>111</sup> Natural England Westerham Woods SSSI at [http://www.english-nature.org.uk/citation/citation\\_photo/1001326.pdf](http://www.english-nature.org.uk/citation/citation_photo/1001326.pdf) accessed on 11.1.2010

<sup>112</sup> Kent Reptile and Amphibian Group (2009) Toad Records within the Sevenoaks Living Landscapes Scheme Area. Published by KRAG

<sup>113</sup> Appendix B Local Wildlife Site Citations

<sup>114</sup> Natural England Sevenoaks Gravel Pit at [http://www.english-nature.org.uk/citation/citation\\_photo/1001202.pdf](http://www.english-nature.org.uk/citation/citation_photo/1001202.pdf) accessed on 11.1.2010

<sup>115</sup> Appendix B Local Wildlife Site Citations

<sup>116</sup> Natural England Westerham Mines SSSI at [http://www.english-nature.org.uk/citation/citation\\_photo/1004499.pdf](http://www.english-nature.org.uk/citation/citation_photo/1004499.pdf) accessed on 11.1.2010

<sup>117</sup> Appendix B Local Wildlife Site Citations

<sup>118</sup> Natural England Westerham Woods SSSI at [http://www.english-nature.org.uk/citation/citation\\_photo/1001326.pdf](http://www.english-nature.org.uk/citation/citation_photo/1001326.pdf) accessed on 11.1.2010

<sup>119</sup> Kent Wildlife Trust Sevenoaks Wildlife Reserve at <http://www.kentwildlifetrust.org.uk/reserves/sevenoaks-darent-valley-area/sevenoaks-wildlife-reserve/>

<sup>120</sup> Sevenoaks Living Landscapes Scheme (2009) Initial Breeding bird Data published by Kent Wildlife Trust

<sup>121</sup> Natural England Westerham Mines SSSI at [http://www.english-nature.org.uk/citation/citation\\_photo/1001326.pdf](http://www.english-nature.org.uk/citation/citation_photo/1001326.pdf)

(*Pipistrellus pygmaeus*) and serotine bats (*Eptesicus serotinus*) were recorded in the locality of Romshed Farm above Underriver by the Sevenoaks Living Landscape Scheme.<sup>122</sup> Badger (*Meles meles*) setts have been recorded at SH16 and SH17 LWS<sup>123</sup> and there are records for water vole and pipistrelle bats (*Pipistrellus pipistrellus*) at Sevenoaks Gravel Pit SSSI<sup>124</sup>

## Medway and Low Weald Wetlands and Grasslands Biodiversity Opportunity Area

### Beech Visitors Centre

56. Beech visitors' centre is situated within the Low weald. It comprises an Oast House with a brook running through the grounds feeding into Bough Beech Reservoir. Throughout the season family events range from fossil and woodcraft days to moth and bat evenings. The Centre also provides educational facilities for local schools.

(For details of the work undertaken by the North West Countryside Project the Sevenoaks Living Landscape Project and Sevenoaks Nature Reserve see above.)

### Geology

57. The geology is weald clay with deposits of alluvium head gravel, river blackearth and river gravel along the river valleys.<sup>125</sup>

## Broadleaved, Mixed and Yew Woodland

### Ancient Wet Woodland

58. Throughout the BOA there are numerous fragments of ancient woodland.<sup>126</sup> Within the core sites this is generally wet, being associated with the river corridor or large waterbodies. Wet woodland is present in SE19 Bough Beech Reservoir and Environs LWS, SE21 Moorden Meadow, Chiddingstone Causeway LWS and SE24 Bore Place Ponds and Woods LWS. Tree cover comprises pedunculate oak (*Quercus robur*) standards with ash (*Fraxinus excelsior*), alder (*Alnus glutinosa*), field maple (*Acer campestre*), hazel (*Corylus Avallana*), holly (*Ilex aquifolium*), Midland hawthorn (*Crataegus laevigata*) and the occasional wild service tree (*Sorbus torminalis*) coppice. The ground cover is generally bramble (*Rubus*

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[nature.org.uk/citation/citation\\_photo/1004499.pdf](http://nature.org.uk/citation/citation_photo/1004499.pdf) accessed on 11.1.2010

<sup>122</sup> Newcombe M (2009) Bat Transect at Rushed Farm Published by Kent Wildlife Trust

<sup>123</sup> Appendix B Local Wildlife Site Citations

<sup>124</sup> Kent Wildlife Trust SMR General Information

<sup>125</sup> Kent Biodiversity Action Plan Medway and Low Weald Biodiversity Opportunity Area at [http://www.kentbap.org.uk/assets/library/documents/Opportunity\\_Area\\_Statement\\_-\\_Low\\_Weald\\_Woodland\\_FINAL.doc](http://www.kentbap.org.uk/assets/library/documents/Opportunity_Area_Statement_-_Low_Weald_Woodland_FINAL.doc) accessed on 25.1.2010

<sup>126</sup> Kent County Council Kent Landscape Information System at <http://extranet7.kent.gov.uk/klis/default.asp> accessed 4.1.2010



*fruticosus agg*) with some dog mercury (*Mercurialis perennis*), with richer flora within the rides and clearings.<sup>127</sup>

## Shaws Woodbanks and Hedgerows

59. Ancient woodland Shaws are present throughout the BOA associated with the wet woodland within SE19 LWS, at SE25 Pasture and Shaws below Polebrook Farm LWS, Polebrook Farm SSSI<sup>128</sup> and SE20 River Eden and Environs LWS where copses are also present. Species rich and relict hedgerows can be found at SE08 Bough Beech Reservoir RNR,<sup>129</sup> Polebrook Farm SSSI and SE20 LWS. An ancient woodbank is present at SE19 LWS. Species composition in the hedgerows Shaws, copses and woodbanks reflect that present in the ancient woodland blocks.<sup>130</sup>

## Traditional Orchards

60. A traditional apple orchard is present within SE19 containing some veteran apple trees.<sup>131</sup>

## Mature Trees

61. Mature trees and scrub can be found overhanging the river and streams at SE20 LWS and SE22 Chiddingstone Old Clay Pits, Chiddingstone Causeway LWS. Species present are willow (*Salix*), alder, aspen (*Populus tremula*), ash, birch (*Betula*) and pedunculate oak. This species mix reflects the wet habitat on these sites.<sup>132</sup>

## Lowland Meadow and Fen

62. The grassland within the BOA is neutral in character due to the underlying gault clay. Within the drier habitats further from the River Eden a lowland meadow habitat is present whereas nearer to the river the grassland becomes wet forming fen habitat.

63. Extensive unimproved lowland meadow habitat is present on Polebrook Farm SSSI<sup>133</sup> and SE25<sup>134</sup> which adjoins the SSSI. The meadows contain 14 species of grass as well as dyers greenweed (*Genista tinctoria*), sneezewort (*Achillea ptarmica*), adders tongue fern (*Ophioglossum vulgatum*) and green winged orchid (*Orchis morio*) all of which are County scarce and the BAP Southern marsh orchid (*Dactylorhiza praetermissa*). Kent Landscape information system shows a number of neutral grassland pockets throughout the BOA.<sup>135</sup>

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<sup>127</sup> Appendix B [Local Wildlife Site Citations](#)

<sup>128</sup> Natural England [Polebrook Farm SSSI](#) at [http://www.english-nature.org.uk/citation/citation\\_photo/1001016.pdf](http://www.english-nature.org.uk/citation/citation_photo/1001016.pdf) accessed on 23.1.2010

<sup>129</sup> Appendix C [Roadside Nature Reserve Management Plans](#)

<sup>130</sup> Appendix B [Local Wildlife Site Citations](#)

<sup>131</sup> Appendix B [Local Wildlife Site Citations](#)

<sup>132</sup> Appendix B [Local Wildlife Site Citations](#)

<sup>133</sup> Natural England [Polebrook Farm SSSI](#) at [http://www.english-nature.org.uk/citation/citation\\_photo/1001016.pdf](http://www.english-nature.org.uk/citation/citation_photo/1001016.pdf) accessed on 23.1.2010

<sup>134</sup> Appendix B [Local Wildlife Site Citations](#)

<sup>135</sup> Kent County Council [Kent Landscape Information System](#) at

64. Fen habitat is present at SE19 LWS on the banks of the reservoir and within the cattle grazed pasture, on the verge at SE08 RNR <sup>136</sup> and within the River Eden corridor SE20 LWS South East of Edenbridge and at Hever, SE22 and SE24 LWS. <sup>137</sup> Many uncommon types of sedge occur in these areas with bladder sedge (*Carex intumescens*), common yellow sedge (*Carex viridula*) and pale sedge (*Carex pallescens*) at SE22 LWS, slender tufted sedge (*Carex acuta*) at SE20 and carnation sedge (*Carex panacea*) at SE21 LWS. All these species are scarce within Kent. Other more common species proliferate throughout the BOA with SE22 containing 14 sedge species.
65. Other flora of note within the fen habitat are the County scarce sneezewort and adder's tongue fern present throughout and the County scarce bristle club rush (*Isolepis setacea*) and Southern marsh orchid present on SE21 LWS.

## Rivers and Streams

66. The River Eden runs throughout the BOA and is designated as a LWS for its flora and fauna. There are tributary streams within SE21 LWS <sup>138</sup> and Polebrook SSSI. <sup>139</sup>

## Open Water

67. Bough Beech reservoir is present at SE19 LWS where islands and shallow ponds provide ideal habitat for a number of uncommon birds. Five small ponds contribute to the habitat network at Polebrook Farm SSSI <sup>140</sup> with ponds at SE24 LWS and a wet dyke at SE21 LWS. Kent Landscape Information System shows numerous pond complexes throughout the Low Weald. <sup>141</sup>

## Invertebrates

68. The habitats present provide ideal habitat for butterflies, dragonflies and damselflies, with many sites supporting large numbers. The BAP white admiral (*Limenitis Camilla*) is present at SE19 and SE22 <sup>142</sup> with the Sevenoaks Living Landscape Scheme monitoring showing this species present throughout the project area. <sup>143</sup> The BAP grizzled skipper also present at SE19 LWS. SE22 supports 20 species of butterfly with common species recorded in SE21.

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<http://extranet7.kent.gov.uk/klis/default.asp> accessed 4.1.2010

<sup>136</sup> Appendix C Roadside Nature Reserve Management Plans

<sup>137</sup> Appendix B Local Wildlife Site Citations

<sup>138</sup> Appendix B Local Wildlife Site Citations

<sup>139</sup> Natural England Polebrook Farm SSSI at [http://www.english-nature.org.uk/citation/citation\\_photo/1001016.pdf](http://www.english-nature.org.uk/citation/citation_photo/1001016.pdf) accessed on 23.1.2010

<sup>140</sup> Natural England Polebrook Farm SSSI at [http://www.english-nature.org.uk/citation/citation\\_photo/1001016.pdf](http://www.english-nature.org.uk/citation/citation_photo/1001016.pdf) accessed on 23.1.2010

<sup>141</sup> Appendix B Local Wildlife Site Citations

<sup>142</sup> Appendix B Local Wildlife Site Citations

<sup>143</sup> The Sevenoaks Living Landscape Scheme (2009) Initial Butterfly Data Published by Kent Wildlife Trust

69. Moth monitoring undertaken as part of the Sevenoaks Living Landscape Scheme recorded 69 species of macro moth at Bough Beech LWS and Bore Place including the BAP species august thorn (*Ennomos quercinaria*), blood-vein moth (*Timandra comae*), cinnabar moth (*Tyria jacobaeae*), dusky thorn (*Ennomos fuscantaria*), feathered gothic (*Tholera decimalis*), oak hook-tip (*Watsonalla binaria*), oak lutestring (*Cymatophorima diluta*), rosy rustic (*Hydraecia micacea*), small square-spot (*Diarsia rubi*), and white ermine moth (*Spilosoma lubricipeda*). 30 species of micro moth were found at Romshed Farm.<sup>144</sup>
70. The River Eden and the River Medway are one of the last strongholds for many dragonfly and damselfly species. There 12 species of dragonfly at SE22, with numbers abundant at SE19 and SE20 along the River Eden. SE21 supports the BAP species of white legged damselfly (*Platycnemis pennipes*).

## Amphibians and Reptiles

71. Grass snake (*Natrix natrix*) has been recorded at SE20.<sup>145</sup> Common toad (*Bufo bufo*) was recorded throughout the BOA by Kent Reptile and Amphibian Group.<sup>146</sup>

## Birds

72. SE19 Bough Beech Reservoir is particularly rich in bird life sheltering over 150 species. Of note are little ringed plover (*Charadrius dubius*), great crested grebe (*Podiceps cristatus*), grey heron (*Ardea cinerea*), common tern (*Sterna hirundo*), stock dove (*Columba oenas*) and little egret (*Egretta garzetta*) all of which are protected under international law by the Berne Convention. The BAP turtle dove (*Streptopelia turtur*), is present within the woodland and winter migrants include teal (*Anas crecca*), widgeon (*Anas penelope*), gadwell (*Anas strepera*) and pochard (*Aythya ferina*) also protected internationally. SE22 LWS is also rich in bird life with 30 species being recorded on site. Yellowhammers (*Emberiza citronella*), skylarks (*Alauda arvensis*), song thrush (*Turdus philomelos*), turtle dove and cuckoo (*Cuculus canorus*) were recorded in the project area by the Sevenoaks Living Landscapes Scheme.<sup>147</sup>

## Mammals

73. Harvest mouse (*Micromys minutus*) have been recorded along the River Eden.<sup>148</sup> Common pipistrelle (*Pipistrellus pipistrellus*), soprano pipistrelle (*Pipistrellus pygmaeus*) and serotine bats (*Eptesicus serotinus*) were recorded in the locality of

<sup>144</sup> The Sevenoaks Living Landscape Scheme (2009) Initial Moth Data Published by Kent Wildlife Trust

<sup>145</sup> Appendix B Local Wildlife Site Citations

<sup>146</sup> Kent Reptile and Amphibian Group (2009) Toad Records within the Sevenoaks Living Landscapes Scheme Area. Published by KRAG

<sup>147</sup> Sevenoaks Living Landscapes Scheme (2009) Bird Records within the Sevenoaks Living Landscapes Scheme Area. Published by Kent Wildlife Trust

<sup>148</sup> Appendix B Local Wildlife Site Citations

## High Weald Biodiversity Opportunity Area

### Geology

74. The High Weald geology comprises sandstone on the higher ground and clay on lower *ground* and within the valleys which is of the Hastings beds series.<sup>150</sup>
75. There are number of Biodiversity Action Plan habitats and species within the High *Weald* at Sevenoaks, which are explored in the following sections.

### Broadleaved Mixed and Yew Woodland

76. Broadleaved woodland is present throughout the BOA. The woodland falls into two categories being either ancient in origin or wet woodland which follow the streams, *gills* and flushes. Some woodland is ancient and wet in nature and these are important as wet ancient woodland is uncommon in Kent.

### Ancient Broadleaved Woodland

#### Ancient Woodland

77. On the lower ground the ancient woodland fragments and small woods are based on clay and so are wet in nature. The tree cover is generally pedunculate oak (*Quercus robur*) standards over ash (*Fraxinus excelsior*), field maple, (*Acer campestre*) and hornbeam (*Carpinus betulus*) coppice with an understory of hazel (*Corylus Avallana*). Wild cherry (*Prunus avium*), wild service tree (*Sorbus torminalis*), hazel, alder (*Alnus glutinosa*) and aspen (*Populus tremula*) can also be found occasionally as coppiced stools. The ground flora consists of common *wet* woodland species such as lady fern (*Athyrium felix-femina*), male fern (*Dryopteris filix-mas*) and broad buckler fern (*Dryopteris dilatata*), remote sedge (*Carex remota*) and pendulous sedge (*Carex pendula*) along with dog mercury (*Mercurialis perennis*) and bramble (*Rubus fruticosus agg.*). Species of note include County scarce greater butterfly orchid (*Platanthera chlorantha*), marsh valerian (*Valeriana dioica*) and licorice fern (*Polypodium glycyrrhiza*).
78. On higher ground the geology changes to Tunbridge Wells sands and pedunculate oaks are replaced by sessile oak *Quercus petraea*) and beech (*Fagus sylvatica*). Coppice species include hazel hornbeam and field maple however on higher area sweet chestnut (*Fagus castanea*) has been planted both as a coppice and as

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<sup>149</sup> Sevenoaks Living Landscapes Scheme (2009) Bat Records within the Sevenoaks Living Landscapes Scheme Area. Published by Kent Wildlife Trust

<sup>150</sup> Kent Biodiversity Action Plan High Weald Biodiversity Opportunity Area at [http://www.kentbap.org.uk/assets/library/documents/Opportunity\\_Area\\_Statement\\_-\\_High\\_Weald\\_FINAL.doc](http://www.kentbap.org.uk/assets/library/documents/Opportunity_Area_Statement_-_High_Weald_FINAL.doc) accessed on 25.1.2010

plantation stock. The ground flora reflects the acidic nature of the sands. Bluebell (*Hyacinthoides non-scripta*), bramble and dogs mercury predominate, however heath bedstraw (*Galium saxatile*) and early purple orchid (*Orchis mascula*) are also present over wide areas.<sup>151 152</sup>

## Wet Woodland

79. Along the numerous streams, within the wooded gills and damp areas of woodland, species tolerant to wet conditions such as alder, aspen, ash, and willow (*Salix*) are present. Within some sites these species are coppiced whereas in other areas the woodland consists wholly of willow and alder Carr. Mosses, lichens, ferns and fungi are abundant within the wet areas with SE29 Stonewall Park, Chiddington Hoath LWS being designated for its lower plant interest with 60 mosses, 72 lichens and a rich community of fungi present. As well as the more common ferns the County scarce polypody, licorice fern occurs on Cowden Pound Pastures SSSI and SE59 Old Orchard and Pasture near Markbeech LWS.<sup>153 154</sup>

## Woodbanks, Shaws and Hedgerows

80. Woodbanks are widespread throughout the BOA, being recorded within more core sites than elsewhere in Sevenoaks district. Woodbanks are present at SE34 Gilridge, Cobhambury and Shernden Woods LWS within the woods and along the *boundary*, and on the boundary of SE28 Woods South of Chiddingstone Castle LWS and SE59 LWS.<sup>155</sup>
81. Associated woodland Shaws and copses are included within the Local Wildlife Site boundary at SH30 Pasture and Woods near Cobbs Hill Farm, Cowden and SH27 Hever Pasture with species rich hedgerows at SE34 and SE27 LWSs and veteran trees at SE34 and SE31 Woods and Pastures LWS.<sup>156</sup>

## Lowland Meadow and Fen

82. Lowland meadows are an integral part of the habitat network within the High Weald BOA. The meadows are situated between the woodland blocks and have often retained their historical structure, being surrounded by ancient hedgerow habitat or containing veteran trees. The grassland is neutral in composition being *situated* on the Wealden clay within the valley bottoms and on the lower slopes and is often wet due to the flushes, streams and pond networks within the area. Species of note include the County scarce species of fragrant agrimony (*Agrimonia procera*) found at SE34 LWS and lousewort (*Pedicularis sylvatica*) and smooth stalked sedge (*Carex laevigata*) at SE56 Pasture and Woods, Cowden Pound LWS and the BAP southern

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<sup>151</sup> Appendix B [Local Wildlife Site citations](#)

<sup>152</sup> Natural England [Cowden Pound Pastures SSSI](#) at [http://www.english-nature.org.uk/citation/citation\\_photo/1007128.pdf](http://www.english-nature.org.uk/citation/citation_photo/1007128.pdf) accessed on 21.1.2010

<sup>153</sup> Appendix B [Local Wildlife Site citations](#)

<sup>154</sup> Natural England [Cowden Pound Pastures SSSI](#) at [http://www.english-nature.org.uk/citation/citation\\_photo/1007128.pdf](http://www.english-nature.org.uk/citation/citation_photo/1007128.pdf) accessed on 21.1.2010

<sup>155</sup> Appendix B [Local Wildlife Site citations](#)

<sup>156</sup> Appendix B [Local Wildlife Site citations](#)

marsh orchid (*Dactylorhiza praetermissa*) at Cowden Meadows SSSI <sup>157</sup> and SE27 Hever Pasture LWS. Hever Pasture LWS also contains sneezewort (*Achillea ptarmica*) and the county scarce marsh arrow grass (*Triglochin palustre*) with common spotted orchid (*Dactylorhiza fuchsii*), is abundant throughout the BOA. As well as at the above sites neutral grassland and fen habitat is present at Cowden Pound Pastures SSSI, <sup>158</sup> SE31, SE28, SE30 and SE33 Scarlet's Pond Swamp and Cave, Cowden LWS. <sup>159</sup>

## Acidic Grassland

83. On the higher slopes where the geology changes the Tunbridge Wells sand the grassland is well drained and acidic in nature. Acid grassland is present at Cowden Pound Pastures SSSI <sup>160</sup> and SE29 Stonewall Park, Chiddingstone Hoath LWS. Species of note include the county scarce heath grass (*Sieglingia decumbens*), brown sedge (*Carex disticha*) and heath dog-violet (*Viola canina*) at Cowden Pound Pastures SSSI.

## Rivers and Streams

84. The streams within the High Weald BOA are extremely important to the ecosystem of the area. Numerous streams run through the area feeding the wet woodland, grassland and gills. Streams are present in SE27, SE28, SE29, SE30, SE34, SE59 LWS <sup>161</sup> and Cowden Pound Pastures SSSI <sup>162</sup>. Gills are present in SE31, SE28, SE30, SE31 and SE56 LWS. Along the banks of the streams and gills there are good communities of uncommon lichen, mosses and fungi generally seen in the less polluted west of Britain. These species survive due to the sheltered conditions within the BOA. <sup>163</sup>

## Open Water

85. Numerous ponds and lakes are associated with the streams and gills. They extend throughout the BOA and are present in many core sites. Some are badly sited up and of *lower* biodiversity value than the more open ponds.

## Inland Rock and Scree Habitat

86. The High Weald is interlaced with sandstone outcrops and bluffs which contain bio

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<sup>157</sup> Natural England Cowden Meadows SSSI at [http://www.english-nature.org.uk/citation/citation\\_photo/1003525.pdf](http://www.english-nature.org.uk/citation/citation_photo/1003525.pdf) accessed on 21.1.2010

<sup>158</sup> Natural England Cowden Pound Pastures SSSI at [http://www.english-nature.org.uk/citation/citation\\_photo/1007128.pdf](http://www.english-nature.org.uk/citation/citation_photo/1007128.pdf) accessed on 21.1.2010

<sup>159</sup> Appendix B Local Wildlife Site citations

<sup>160</sup> Natural England Cowden Pound Pastures SSSI at [http://www.english-nature.org.uk/citation/citation\\_photo/1007128.pdf](http://www.english-nature.org.uk/citation/citation_photo/1007128.pdf) accessed on 21.1.2010

<sup>161</sup> Appendix B Local Wildlife Site citations

<sup>162</sup> Natural England Cowden Pound Pastures SSSI at [http://www.english-nature.org.uk/citation/citation\\_photo/1007128.pdf](http://www.english-nature.org.uk/citation/citation_photo/1007128.pdf) accessed on 21.1.2010

<sup>163</sup> Appendix B Local Wildlife Site citations

diverse communities of lichens and mosses. One such outcrop passes through SE29 and SE30 LWSs.<sup>164</sup>

## Invertebrates

87. Within this BOA as in the Medway and Low Weald Wetlands and Grasslands BOA the invertebrate interest generally centers on butterflies, dragonflies and damselflies. At SE33 LWS there are 15 species of dragonfly and damselfly including the BAP white legged damselfly (*Platycnemis pennipes*). As a comparison with the rest of Kent this is of County important for these species. Within SE28 LWS the BAP white admiral (*Limenitis Camilla*) and the County rare silver-washed fritillary (*Argynnis paphia*) are present with the latter species also recorded on SE30 LWS with the BAP small heath (*Coenonympha pamphilus*) also on this site. Common butterflies, dragonflies and damselflies are abundant in all habitats.<sup>165</sup>

## Amphibians and Reptiles

88. Grass snake (*Natrix natrix*) is recorded on SE34, SE31 and SE33 LWS. This is likely to be due to the proliferation of ponds streams and gills and the wet habitats within the BOA.<sup>166</sup>

## Birds

89. Common birds are present through out the BOA with BAP Lesser spotted woodpecker (*Picoides minor*) on a number of sites and the European protected grey heron (*Ardea cinerea*) at SE33 and hobby (*Falco subbuteo*) at SE28 LWS.<sup>167</sup>

## Mammals

90. Badger (*Meles meles*) is present throughout the BOA as they are provided with woodland for shelter and grassland in which they can forage. Many of the core sites contain setts. <sup>168</sup>

91. Brown long eared (*Plecotus auritus*) and pipistrelle (*Pipistrellus pipistrelles*) bats roost within the caves in the sandstone cliff at the eastern end of SE30 LWS.<sup>169</sup>

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<sup>164</sup> Appendix B [Local Wildlife Site citations](#)

<sup>165</sup> Appendix B [Local Wildlife Site citations](#)

<sup>166</sup> Appendix B [Local Wildlife Site citations](#)

<sup>167</sup> Appendix B [Local Wildlife Site citations](#)

<sup>168</sup> Appendix B [Local Wildlife Site citations](#)

<sup>169</sup> Appendix B [Local Wildlife Site citations](#)

## Biodiversity Action Plans

<b>BAP Broad Habitat</b>	<b>BAP Habitat</b>	<b>Location</b>
Broadleaved Mixed and Yew Woodland	Lowland Mixed Deciduous Woodland	Central North Downs BOA Greensands, Heaths and Commons BOA High Weald BOA
Broadleaved Mixed and Yew Woodland	Wood Pasture and Parkland	Central North Downs BOA Greensands, Heaths and Commons BOA
Broadleaved Mixed and Yew Woodland	Traditional Orchards	Medway and Low Weald Wetlands and Grasslands BOA
Broadleaved Mixed and Yew Woodland	Wet Woodland	Central North Downs BOA Greensands, Heaths and Commons BOA Medway and Low Weald Wetlands and Grasslands BOA High Weald BOA
Broadleaved Mixed and Yew Woodland	Hedgerows	Central North Downs BOA Greensands, Heaths and Commons BOA Medway and Low Weald Wetlands and Grasslands BOA High Weald BOA
Acid Grassland	Lowland Dry Acid Grassland	Central North Downs BOA Greensands, Heaths and Commons BOA High Weald BOA
Calcareous Grassland	Lowland Calcareous Grassland	Central North Downs BOA Greensands, Heaths and Commons BOA
Neutral Grassland	Lowland Meadows	Central North Downs BOA Greensands, Heaths and Commons BOA Medway and Low Weald Wetlands and Grasslands BOA High Weald BOA
Dwarf Shrub Heaths	Lowland Heathland	Central North Downs BOA Greensands, Heaths and Commons BOA



Standing Open Water & Canals	Aquifer Fed Naturally Fluctuating Water-bodies	Central North Downs BOA Greensands, Heaths and Commons BOA Ponds occur throughout the Medway and Low Weald Wetlands and Grasslands BOA. With Bough Beech containing a reservoir. Throughout High Weald BOA
Rivers and Streams	Rivers & Streams	The River Darent and tributaries in Central North Downs BOA The River Darent runs through Sevenoaks Gravel Pitt SSSI and numerous streams run throughout Greensands, Heaths and Commons BOA The River Eden and tributaries run throughout Medway and Low Weald Wetlands and Grasslands BOA Numerous streams throughout High Weald BOA
Fen, Marsh & Swamp	Reedbeds	Greensands, Heaths and Commons BOA
Fen, Marsh & Swamp	Lowland Fens	Along the River Darent and within SE51 and SE49 LWS in Central North Downs BOA Greensands, Heaths and Commons BOA at the base of the scarp Medway and Low Weald Wetlands and Grasslands BOA High Weald BOA
Inland Rock	Inland Rock Outcrop and Scree Habitat	High Weald BOA

# Threats to Biodiversity Action Plan Habitats and Species

## Pollution

1. All unimproved grassland species survive only if the soil is nutrient-poor with flora growing in a thin layer of soil on top of sandstone, ragstone, chalk, clay or gravel. In many cases, species rely on a few food plants or even a single species, as in the case of the small blue (*Cupido minimus*) which feeds solely on kidney vetch.<sup>170</sup>
2. Grassland is vulnerable to increases in soil nutrients, particularly nitrogen, as a result of agricultural run-off and deposition of aerial pollution (such as the (NOx) emitted by car exhausts). Fertiliser used in cultivation increases nutrients, conditions becoming conducive to growth of invasive grasses which swamp tender grasses flowering plants and shrubs on which the specialised fauna feed.<sup>171</sup>
3. Development which emits large amounts of these compounds should be positioned well away from sensitive grassland habitats. Background levels of NOx can be lowered by policies which limit car use by improvements in public transport, green pedestrian and cycle routes within the Green Infrastructure and developments with limited parking. Policies supporting renewable energy will reduce emissions from fossil fuel based energy sources.
4. Pollution may also affect the water bodies and water courses which in turn would have an impact on the habitats with which they are associated. Runoff from roads can contain oil, heavy metals and salt. Oil will cause a layer to form on the water and deprive the aquatic life of oxygen, heavy metals in high concentration will poison the ecosystems present within the water network and salt can increase the water's salinity providing conditions not conducive to freshwater species survival
5. The health of the water network can be protected by buffering water courses so polluting elements are absorbed by the surrounding land before entering the water. Highways and large roads should have flood attenuation built in with traps to filtrate any runoff.

## Human Disturbance

6. Human disturbance can have an impact on lowland meadow and calcareous grassland. Trampling, caused by high visitor pressure damages sensitive flora species within the grassland, depriving the specialised fauna of essential food species. Dog faeces left by dog walkers nutrfies the soil encouraging the growth of the thistles, docks and the more invasive grasses limiting opportunities for the growth of the tendered more beneficial species.<sup>172</sup>

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<sup>170</sup> Debbie Salmon Kent Wildlife Trust

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<sup>172</sup> Debbie Salmon Kent Wildlife Trust

7. Trampling can also be a threat to the delicate woodland ground flora present in ancient woodland. These species are slow to spread with germination depending on good management and lack of disturbance. This is one reason why such species are an important indicator of the age of this habitat. If the ground flora is damaged within these sites it is likely to take generations for the woodland to recover.
8. Priority habitats and species can be protected from human disturbance by formulating policies to ensure either development has no impact on sensitive ecology or that the developer provides appropriate mitigation and compensation measures to counter balance any impacts. The management of footpath routes away from sensitive areas, the creation of an urban green infrastructure providing more convenient, less sensitive natural spaces for the population to enjoy and extension, re-creation and buffering of designated sites will limit human impact on the most ecologically valuable habitats and species.

## **Development**

9. Ancient woodland has been in existence for over 400 years. Ground flora and invertebrate fauna is often diverse with certain species existing only in these habitats. Plant species particularly associated with ancient woodland are referred to as ancient woodland indicator species, and can be used to identify ancient woodland sites. The importance of this habitat for wildlife is directly related to its long existence, and is irreplaceable if lost. Historically, much ancient woodland has been lost to development and agriculture. This has slowed, and further, significant, direct loss of ancient woodland is unlikely.
10. Development can also have an impact on other Biodiversity habitats either by direct take or added human pressure on the surrounding countryside. *See previous section for the impacts of human disturbance.)*
11. Policies and ensure no further development is agreed which contributes to loss of priority habitats would ensure preservation of habitat remaining will help to protect priority habitats. Substantial buffers of habitats within developments and appropriate funding for long term management would ensure all existing and created habitats are kept in favourable condition.

## **Lack of Management**

12. The biggest threat to ancient woodland is neglect and poor management. Traditionally, woods were coppiced. However as wood use declined, coppicing has become less common and now many ancient woodlands are unmanaged and overgrown. Reduction of coppicing has led to a change in the physical structure of woodland, a decrease in diversity of woodland ground flora and a catastrophic loss of woodland butterflies.<sup>173</sup>

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<sup>173</sup> Moyse R Personal Communication Kent Wildlife Trust

13. Grassland composition is largely dependant on the ph of soils within the area. Soils with a ph below 7 form acidic grassland and heathland, a ph of 5-7 will lead to neutral grassland and ph above 7 is alkaline forming downland. The above habitats originally evolved as large ungulates created clearings in primeval woodland by grazing. Specialist flora colonised these clearings with fauna adapting to survive within the particular habitat. With the settlement of man these glades were extended by clearing woodland, in the Bronze Age to create grazing for cattle and land for crops.
14. As grassland was originally created, and maintained, by man, it is vulnerable to changes in management. Abandonment of grazing or more labour intensive mowing regimes lead to changes in the flora, including increases in competitive plants such as tor grass (*Brachypodium pinnatum*) in calcareous habitats purple moore grass (*Molinia caerulea*) in acidic areas and cocksfoot (*Dactylis glomerata*) and yorkshire fog (*Holcus lanatus*) on lowland meadow. Scrub clearance is essential within these habitats. Although grazing animals eat woody material, periodic scrub clearance by cutting or firing has been historically used to enable tender herbs grasses and shrubs to survive in open ground. If scrub invasion occurs, habitats quickly become lost to woodland, tree cover stifling growth of distinctive flora and limiting food for fauna. Specialised fauna and flora become scarce or extinct.
15. Policy can influence appropriate management by ensuring all land owned by the district is in favourable condition. Priority habitats are protected and extended within development by the use of appropriate conditions and that landowners and communities are encouraged to manage land for biodiversity with the council supporting agri-environmental schemes and other funding streams.

## **Fragmentation**

16. The loss of ancient woodland bought about by development has led to fragmentation, with only small pockets of ancient woodland remaining where once there was extensive woodland cover. Due to the age of this woodland, the species which rely on this habitat such as dormice, specialised invertebrates and woodland orchids are unable to spread between fragments and have become isolated. Due to the low populations the fragments are able to support these species are vulnerable the local extinction due to local weather events and further loss or degradation of the woodlands.
17. The growth in industry and urban development, pollution and climate change have led to unimproved grassland becoming increasingly rare. What remains often comprises of small fragments, unconnected to other habitat. The size of remaining fragments and populations of both flora and fauna are often small, with decreasing genetic diversity, leading to inbreeding. The remaining populations become vulnerable to local disasters with bad weather, increase in pollution, or more habitat loss wiping out isolated populations, re-colonisation being unlikely due to the distance between habitat fragments.

18. Declines due to food shortage have effected small blue (*Cupido minimus*) butterfly populations since the 1950's with this species becoming extinct from the northern half of Britain and Wales, with numerous local extinctions recorded in southern England their last stronghold.<sup>174</sup>
19. The modelling, delivery and management of a comprehensive multifunctional green infrastructure in line with NRM5 and CC8 of the South East Plan will do much to decrease fragmentation. By focusing on greening urban open spaces and infrastructure within towns and new development as detailed in part 1-8 of this report, permeability will be assured for wildlife within the urban environment. Landscape habitat enhancement of the Biodiversity Opportunity Areas will provide habitat connections between the urban and rural environment of Sevenoaks, linkages between districts and Counties. This infrastructure will remove barriers to migration, ensure small local populations can form larger meta populations and create landscape scale gains to aid the increase of BAP species and habitats.

### **Invasion by alien species**

20. The popularity of gardening with non indigenous species in Victorian times resulted in foreign species escaping into the natural environment either by deliberate planting on estates, dumping of cuttings in the countryside or general spread. With no predators to limit growth and an ability to produce huge amounts of seeds and runners, alien plants quickly spread swamping indigenous ground and shrub flora and creating a monoculture of one species. The most virulent species are rhododendron (*Rhododendron ponticum*) in acidic conditions, buddleia (*Buddleia davidii*) on chalk and Himalayan balsam (*Impatiens glandulifera*, Japanese knotweed (*Fallopia japonica syn. Polygonum cuspidatum*) and giant hogweed (*Heracleum mantegazzianum*), on wetland habitats.<sup>175</sup>
21. Within planning applications, countryside management and the creation of green infrastructure every effort should be made to eradicate the above species to ensure healthy native ecosystems in Sevenoaks and beyond.

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<sup>174</sup> Debbie Salmon Kent Wildlife Trust

<sup>175</sup> Debbie Salmon Kent Wildlife Trust

## Green Infrastructure Assets

The following areas can form part of networks of Green Infrastructure:

- parks and gardens - including urban parks, country parks and formal gardens
- natural and semi-natural urban greenspaces
- woodlands, including ancient woodland, wet woodland and broadleaved woodland, urban forestry and scrub,
- grasslands including downlands, acidic grassland, lowland meadows and wetlands,
- Rivers and streams and open water,
- Wastelands, derelict open land and rock areas e.g. cliffs, quarries and pits commonly known as Brownfield sites.
- green corridors - including river and canal banks, cycleways, and rights of way
- outdoor sports facilities (with natural or artificial surfaces, either publicly or privately owned) including tennis courts, bowling greens, sports pitches, golf courses, athletics tracks,
- school and other institutional playing fields, and other outdoor sports areas
- amenity greenspace (most commonly, but not exclusively, in housing areas) – including informal recreation spaces, greenspaces in and around housing, domestic gardens and village greens.
- provision for children and teenagers - including play areas, skateboard parks, outdoor basketball hoops, and other more informal areas (e.g. 'hanging out' areas, teenage shelters)
- allotments, community gardens, and city (urban) farms
- cemeteries and churchyards
- accessible countryside in urban fringe areas
- river and canal corridors
- green roofs and walls