



LAND NORTH EAST OF AMBERLEY DRIVE (GORRING-FERRING GAP) (SITE 4)
PRELIMINARY ECOLOGICAL SUMMARY REPORT

Prepared for Worthing Borough Council

by

Hankinson Duckett Associates

HDA ref: 454.2

November 2015

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The Stables, Howbery Park, Benson Lane, Wallingford, Oxfordshire, OX10 8BA

1 Site summary

- 1.1 Site 4 comprises 32ha of land bordered to the north by residential development, a recreation ground and hospital; to the east by a strip of woodland with residential development beyond; to the south by Marine Drive with public open space and coastline beyond; and to the west by arable land with residential development beyond.
- 1.2 In general terms, the site is dominated by arable land with smaller species-poor grassland fields in the east and south. Field boundaries comprise roads, defunct hedgerows, dry ditches and treelines, and the eastern site boundary borders an area of mixed woodland dominated by non-native species.
- 1.3 Locations and detailed descriptions of the habitats present at the site are provided in the Phase 1 habitat survey plan and target notes in *Appendix A*.

2 Desk study

- 2.1 No statutory or non-statutory nature conservation designations pertain to the site or adjacent land.
- 2.2 No areas of international importance (i.e. SPA, SAC or RAMSAR) occur within 10km and no areas of national importance (i.e. SSSI or NNR) occur within 5km of the site boundary. There are no Local Nature Reserves (LNRs) located within 2km of the site.
- 2.3 Four Sites of Nature Conservation Importance (SNCIs) occur within 2km of the site. The closest of these is 'Ferring Rife and Meadows' SNCI, which is located approximately 1.1km west of the site and designated for its stream and grassland habitats.
- 2.4 Protected and notable species records provided for within 2km of the site include bats, Great Crested Newts, reptiles, Water Vole, and notable birds, invertebrates and plants. A small number of notable bird records pertain to the site including a historic record of Tree Sparrow dating from 1977, and more recent records of Grey Partridge and Yellow Wagtail.
- 2.5 The full results of the desk study including plans showing the locations of nearby designated nature conservation sites and complete protected and notable species records for within 2km of the site are provided in *Appendix B*.

3 Constraints and opportunities

- 3.1 The site is dominated by habitats of **negligible/ less than local** ecological interest in their own right including arable land, species-poor grassland, defunct hedgerows and scrub. Linear vegetative features, such as hedgerows and scrub lines do however provide suitable

opportunities for movement of wildlife and compliment habitats in the wider area so are considered in combination to be of **low local** wildlife value.

3.2 The habitat of greatest ecological interest associated with the site is the mixed woodland bordering the eastern site boundary. Although the woodland is dominated by non-native species, it provides opportunities for a range of wildlife, complemented by gardens to the east and farmland to the west, and forms a substantial corridor of habitat suitable for facilitating the movement of wildlife through the local area. The woodland is therefore considered of **high local** value.

3.3 A small area of woodland with a similar species composition located in the centre of the site and lines of trees and scrub along the north-eastern and northern site boundaries also provide opportunities for a range of wildlife, enhance the interest of the site and wider area, and/ or form wildlife corridors through the local area. In addition, a pond is located on the western site boundary. These feature are considered to be of **moderate local** wildlife value.

3.4 Any development proposals for the site should seek to retain features of local value and where appropriate enhance these features and the wider site through management and complimentary habitat creation. Ways in which this could be achieved include:

- Enhancement of the existing pond though appropriate management and planting. This could include measure such as desilting, removal of debris from within the pond, removal/ coppicing of shading vegetation, and establishment of aquatic and marginal plant species within the water and around the pond's margins;
- Establishment of species-rich scrub, rough and meadow grassland along woodland edges to create 'ecotone' habitats noted for their ability to support a high diversity of species;
- Strengthening of the wildlife corridor network through appropriate management and complimentary planting to enhance existing features, and creation of new linear semi-natural habitats such as species-rich hedgerows and treelines. This could include new scrub and tree planting along the western site boundary.
- Creation of a range of habitats with high wildlife interest within areas of public open space such as species-rich grassland, native scrub, hedgerows, woodland and wetlands.
- Creation of new opportunities for roosting bats and nesting birds through provision of bird and bat boxes on existing trees and new buildings.
- Use native species typical of the local area in landscape planting where appropriate to do so. Where possible these should be sourced from stock of local provenance.
- Prioritising the use of plants which benefit native wildlife within formal landscaping schemes, including nectar- and pollen-rich and fruit- and nut-producing species.

4 Further information requirements

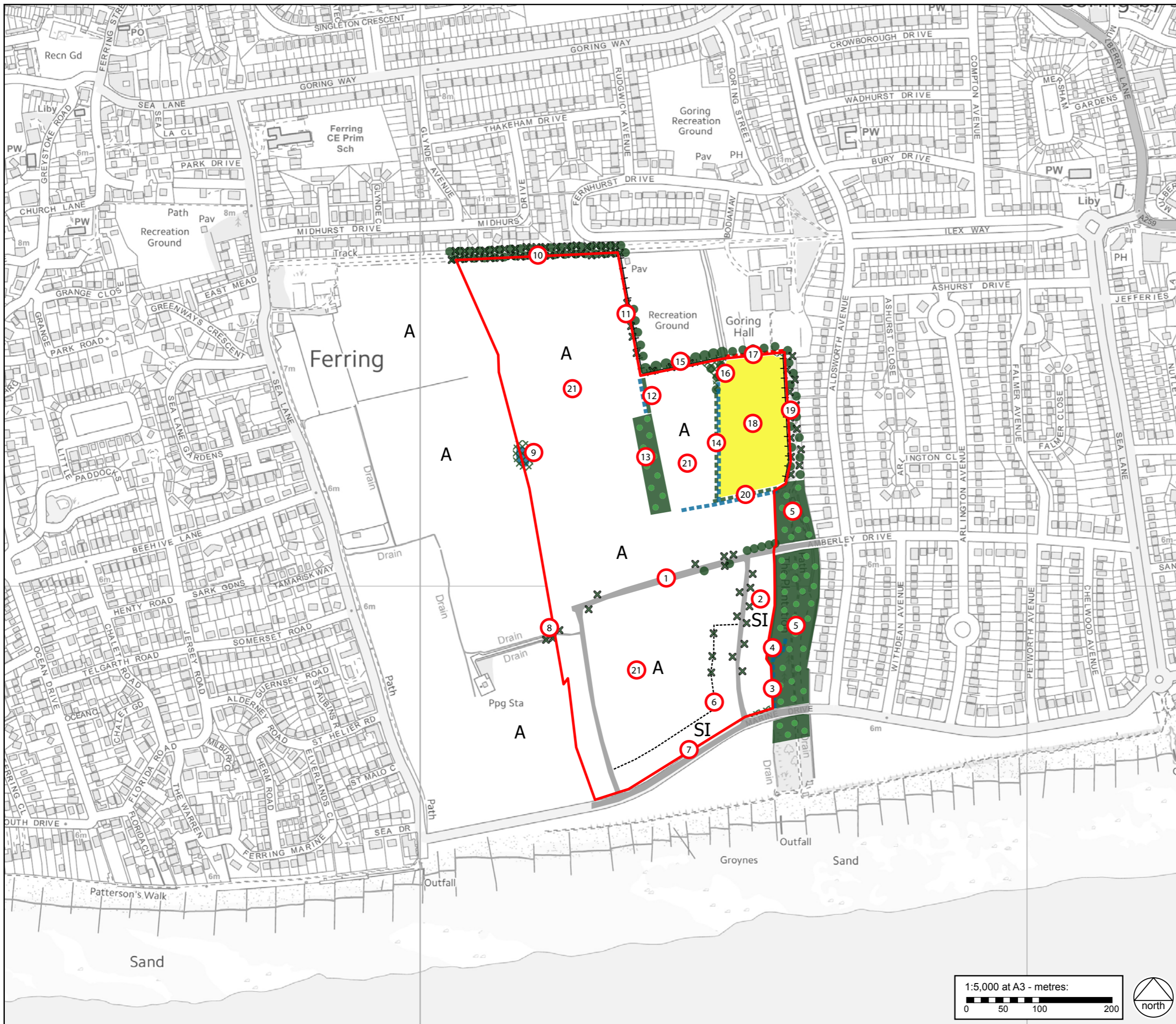
4.1 In view of the findings of the desk study and/or habitat resource of the site, consideration should be given to the requirement for the following further surveys and assessment work in support of a planning application:


















- Phase 1 bat survey (tree scoping inspections)
- Phase 2 emergence surveys (if potential for roosting bats identified during Phase 1 bat survey)
- Phase 2 bat activity survey
- Great Crested Newt survey
- Reptile survey
- Badger survey
- Wintering and breeding bird surveys
- Implications of increased recreational pressure on off-site designated areas both alone and in combination with other plans and projects.

4.2 It is recommended that the extended Phase 1 habitat survey and desk study are updated by the applicant prior to submission of a planning application. This is in order to ensure that the assessment of habitats at the site and its potential to support protected and notable species reflect any subsequent changes in the ecological character of the site and its surrounds, and strategic nature conservations objectives. The actual requirements for further work should also take into account the nature and extent of proposed development works.

APPENDIX A

Phase 1 habitat survey: Plan and Target Notes



- KEY**
-  Site boundary
 -  Mixed broadleaved and coniferous woodland
 -  Scattered mature trees
 -  Intact species-poor hedgerow
 -  Defunct species-poor hedgerow
 -  Dense scrub
 -  Scattered scrub
 -  Amenity grassland
 -  Species-poor semi-improved grassland
 -  Arable land
 -  Dry ditch
 -  Pond
 -  Fence
 -  Wall
 -  Hard standing
 -  Habitat boundary
 -  Target note

CLIENT:
Worthing Borough Council

PROJECT:
Worthing Landscape and Ecology Study

TITLE:
Site 4 - Phase 1 Habitat Survey

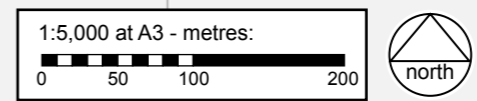
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Landscape Architecture Masterplanning Ecology 



Site 4 - Target Notes

- 1. Roads and verges:** Concrete roads along field boundaries in the south of the site with rough grassland verges. The verges are approximately 5m in width in combination with adjacent arable field margins. The verges/ field margins are generally dominated by grasses including Cocksfoot *Dactylis glomerata*, False Oat-grass *Arrhenatherum elatius*, Perennial Ryegrass *Lolium perenne*, Wall Barley *Hordeum murinum* and Common Couch *Elymus repens*. Forbs and ruderal species present in the sward include Common Nettle *Urtica dioica*, Field Bindweed *Convolvulus arvensis*, Common Hogweed *Heracleum sphondylium*, Prickly Sow-thistle *Sonchus asper*, Broadleaved Dock *Rumex obtusifolius*, Creeping Thistle *Cirsium arvense*, Spear Thistle *Cirsium vulgare*, Common Fleabane *Pulicaria dysenterica*, Hop Trefoil *Trifolium campestre*, Hairy Tare *Vicia hirsuta*, Mugwort *Artemisia vulgaris*, Horsetail *Equisetum* sp. and Sweet Pea *Lathyrus odoratus*.

Occasional outgrown scrub and young trees growing along the verges include Hawthorn *Crataegus monogyna*, Ash *Fraxinus excelsior*, Elder *Sambucus nigra*, Sycamore *Acer pseudoplatanus* and Bramble *Rubus fruticosus* agg.

- 2. Grassland fields:** Two small fields in the south-eastern area of the site comprise species-poor semi-improved grassland. The eastern field had been recently cut at the time of survey but is likely to have had a long tussocky sward prior to this. The area to the west was moderately rough and is also likely to be subject to infrequent cutting. The grassland swards have a fairly similar composition to the road verges (TN1), dominated by grasses including Cocksfoot, False Oat-grass, Yorkshire Fog *Holcus lanatus* and Common Couch with abundant ruderal species. Forb species included White Clover *Trifolium repens*, Creeping Buttercup *Ranunculus repens*, Common Ragwort *Senecio jacobaea*, Common Mouse-ear *Cerastium fontanum*, Ground Ivy *Glechoma hederacea*, Meadow Vetchling *Lathyrus pratensis*, Hairy Tare, Black Medic *Medicago lupulina*, Silverweed *Argentina anserina* and Greater Plantain *Plantago major*.
- 3. Woodland ditch:** The ditch along the woodland edge and south-eastern site boundary was dry at the time of survey and is mostly heavily choked by Bramble and occasional Elder *Sambucus nigra* and Sycamore scrub. Other species recorded along the ditch include Hart's Tongue Fern *Asplenium scolopendrium*, False Brome *Brachypodium sylvaticum* and Ivy *Hedera helix*.
- 4. Dense scrub:** An area of dense Blackthorn *Prunus spinosa* and English Elm *Ulmus procera* scrub along a short section of woodland edge on the eastern site boundary.
- 5. Off-site woodland:** A corridor of mixed woodland abutting the eastern boundary of the site. The woodland is heavily dominated by early-mature Sycamore of a similar age and is likely to have been planted. The understorey comprises mostly Sycamore saplings, Bramble and Ivy, with occasional Hazel *Corylus avellana*, Rowan *Sorbus aucuparia*, English Elm, Hawthorn, Ash and Wych Elm *Ulmus glabra*. Other trees species present in small numbers include early-mature Elm *Ulmus* sp., Pine *Pinus* sp., Sweet Chestnut *Castanea sativa* and Oak *Quercus* sp. Other occasional ground flora species include Wood Dock *Rumex sanguineus*, Hart's Tongue Fern, False Brome, Pendulous Sedge *Carex pendula* and Ground Elder *Aegopodium podagraria*.
- 6. Field boundary:** The boundary between the grassland and cultivated land in the south of the site comprises rough tussocky grassland (as for TN1) and occasional outgrown shrubs including Ash, Hawthorn and Elder.
- 7. Southern boundary:** The southern boundary of the site comprises the rough grassland verge of Marine Drive. The road verge has a similar species composition to TN1 but with a higher density of ruderal vegetation, particularly Creeping Thistle, and Bramble scrub.
- 8. Track and scrub:** An asphalt track on the western boundary of the site bordered by rough grassland field margins and a short section of defunct hedgerow comprising outgrown Blackthorn.
- 9. Pond:** A pond located on the western boundary of the site within the centre of an arable field. The pond was dry at the time of the survey with a base of dead leaves and no aquatic or marginal vegetation. It is heavily shaded by dense trees and scrub dominated by Goat Willow *Salix caprea*, Elder and

Bramble. The outer edges of the area of scrub support ruderal vegetation including Hedge Bindweed *Calystegia sepium*, Lesser Burdock *Arctium minus*, Hogweed and Nettle.

10. **Northern boundary:** The northern boundary of the site comprises a track lined by Evergreen Oak *Quercus ilex* trees and a mixture of native shrubs. Other tree species present include Monterey Cypress *Cupressus macrocarpa*, Sweet Chestnut and Red Oak *Quercus rubra*. Shrubs growing along the boundary of the site include Hawthorn, Elder and English Elm.
11. **Recreation ground western boundary:** The site boundary abutting the western edge of a recreation ground to the north-east of the site comprises a chain link fence with ruderal vegetation and occasional scrub along the field margin, including Elder, English Elm, Bramble, Nettle and Field Bindweed. Towards the southern end of this section of boundary there are trees overhanging from the recreation ground including Sycamore, Pine, Ash, Evergreen Oak, Sessile Oak *Quercus petraea* and Beech *Fagus sylvatica*.
12. **Hedgerow and ditch:** A short section of native hedgerow, outgrown and mostly intact, growing on both sides of a ditch. The hedgerow is dominated by Hawthorn with Sycamore, Ash and Elder. The ditch has a channel measuring approximate 1m deep and 1.5m wide. It was mostly dry at the time of survey with a few shallow puddles of standing water along its length.
13. **Mixed woodland:** A small area of mixed woodland along a field boundary in the central area of the site. The woodland has a dense canopy of predominately early-mature Sycamore, Pine, Ash and Evergreen Oak with an understorey of Elm *Ulmus* sp., Privet *Ligustrum vulgare*, Elder, young Sweet Chestnut and Bramble. The ground flora is generally very sparse due to the dense canopy but includes Ivy, False Brome, Nettle, Wood Dock and Wood Avens *Geum urbanum*.
14. **Hedgerow and ditch:** An outgrown defunct hedgerow with a high proportion of gaps and abundant Bramble. Occasional woody species along the field boundary include Hawthorn, Elder, Elm, Dog Rose *Rosa canina* and Holly *Ilex aquifolium*. The hedgerow is denser with woody species towards the northern end and also includes Blackthorn. A dry ditch with a channel measuring approximately 2m wide and up to 1m deep runs beneath the hedgerow.
15. **Recreation ground southern boundary:** The site boundary abutting the southern edge of the recreation ground comprises a fenceline with young trees and scrub including Sycamore, Elm, Hawthorn, Ash, Evergreen Oak and White Poplar. Mature trees overhanging from the recreation ground include hybrid Black Poplar *Populus* sp., White Poplar *Populus alba*, Evergreen Oak, Scot's Pine *Pinus sylvestris* and ornamental Oak species *Quercus* sp.
16. **Scrub and trees:** At the northern end of hedgerow TN14 is an area of dense outgrown scrub dominated by Blackthorn with occasional Ash, Elm, Cherry Laurel *Prunus laurocerasus*, and small Evergreen Oak trees.
17. **Wall:** Site boundary bordering a hospital, comprising a tall stone wall with Ivy growing over the top and trees behind.
18. **Playing field:** A playing field in the north-east of the site comprising regularly mown amenity grassland. The sward is dominated by Perennial Ryegrass with Hawkbit *Leontodon* sp., White Clover, Ribwort Plantain *Plantago lanceolata*, Dandelion *Taraxacum* agg., Selfheal *Prunella vulgaris* and Red Clover *Trifolium pratense*.
19. **North-east boundary:** Northern section of the eastern site boundary comprising a low post and wire mesh fence bordering a wooded strip with mature Evergreen Oak trees and dense Elm and Bramble in the understorey.
20. **Hedgerow and ditch:** A section of hedgerow forming the southern boundary of the playing field in the north-east of the site. The hedgerow is outgrown with frequent gaps, dominated by Blackthorn, Elm, Elder and Hawthorn with abundant Bramble. The parallel ditch was dry at the time of survey and had a base of rough grass and tall ruderals including Great Willowherb *Epilobium hirsutum*.

21. Arable fields: Large arable fields within the site generally supported Wheat stubble at the time of survey with smaller sections of the fields recently ploughed. Herbs growing within the crop stubble included Knotgrass *Polygonum aviculare*, Scentless Mayweed *Tripleurospermum inodorum*, Creeping Thistle, Black-grass *Alopecurus myosuroides* and Barren Brome *Bromus sterilis*.

APPENDIX B
Desk Study Results



Desktop Biodiversity Report

Land north of Amberley Drive, Worthing + 2km radius

ESD/15/561

Prepared for Alex Leishman (Hankinson Duckett Associates)

18th August 2015

Sussex Biodiversity Record Centre
report regarding
land north of Amberley Drive,
Worthing + 2km radius
18/08/2015

Prepared for Alex Leishman
Hankinson Duckett Associates
ESD/15/561

The following information was requested:

Maps	<input checked="" type="checkbox"/>
Sussex Protected Species Register - Excel	<input checked="" type="checkbox"/>
Sussex Bat Inventory - Excel	<input checked="" type="checkbox"/>
Sussex Bird Inventory - Excel	<input checked="" type="checkbox"/>
UK BAP Species Inventory - Excel	<input checked="" type="checkbox"/>
Sussex Rare Species Inventory - Excel	<input checked="" type="checkbox"/>
Sussex Invasive Alien Species - Excel	<input checked="" type="checkbox"/>
Full Species List	<input type="checkbox"/>
Environmental Survey Directory	<input checked="" type="checkbox"/>

SNCI

Ar12 - Ferring Rife & meadows;

SSSI

None

Other Designations/Ownership

Environmental Stewardship Agreement; National Park.

Habitats

Coastal and floodplain grazing marsh; Coastal vegetated shingle; Intertidal mudflat; Lowland fen; Reedbed; Traditional orchard.

Important information regarding this report

It must not be assumed that this report contains the definitive species information for the site concerned.

The species data held by the Sussex Biodiversity Record Centre (SxBRC) is collated from the biological recording community in Sussex. However, there are many areas of Sussex where the records held are limited, either spatially or taxonomically.

A desktop biodiversity report from SxBRC will give the user a clear indication of what biological recording has taken place within the area of their enquiry. The information provided is a useful tool for making an assessment of the site, but should be used in conjunction with site visits and appropriate surveys before further judgements on the presence or absence of key species or habitats can be made. It may be that the content of this report guides the reader as to which surveys should be carried out on the site.

This report was compiled using data held at SxBRC at the time of production. SxBRC takes data validation very seriously, but cannot be held responsible for the accuracy of data included in this report.

Copyright

The Sussex Biodiversity Record Centre must be acknowledged in all documents containing any part of the information contained in this report. You can also use the whole of a SxBRC report (unedited) as an appendix in your own report.

The SxBRC operates as agent to the individuals and groups who provide their records free of charge. The data suppliers retain copyright on their data, while SxBRC retains copyright on its desktop biodiversity reports.

Data usage

The data contained within this report is for use in the project for which the data was requested. It is not to be shared with third parties for use in other projects, unless permission is granted from SxBRC.

The data may be used for 12 months, after which a replacement SxBRC report must be requested. This ensures the most up-to-date information is being used.

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Impartiality

SxBRC functions as custodian of biological data. Our role is to collect, manage and disseminate wildlife and habitat data. As such, we have to remain impartial and cannot offer opinions on the biodiversity value of a given site. Similarly, we cannot put forward objections to planning applications or be involved in campaigns.

Supplying records

Our desktop biodiversity reports are only as good as the data we hold. We rely on the continuous submission of records to keep our database up-to-date. We are always grateful to receive records from ecological consultants and members of the public alike. We accept records in many different formats – please see our [website](#) for more details.

Confidential Records

The following species are not included in desktop biodiversity reports

Badgers

Badgers are one of our most recognisable native British mammals. They are not considered rare but are protected along with their setts under The Protection of Badgers Act 1992 and schedule 6 of the Wildlife and Countryside Act (1981, as amended).



It is an offence to kill, injure, or take a badger or interfere with a badger sett.

“Interference” is defined by section 3 of The Protection of Badgers Act and includes damaging or destroying a badger sett, obstructing any entrance to a sett and also disturbing a badger when it is occupying a sett. If you need to do any work near to a sett (within 30m) you must contact Natural England for guidance as your activities may require a licence.

With continued persecution of badgers, often for the most cruel and barbaric ‘sport’, badger records are not included in our species inventory reports, as it has been requested that they remain confidential.

If you need further information about badgers in your enquiry area please contact the Badger Trust Sussex. Contact details can be found on their website: www.badgertrust-sussex.org.uk

Otters

Otters are slowly making a return to Sussex after becoming extinct in the 1960s, but are nowhere near their former numbers and remain very vulnerable.

If there is a river or tributary within 1km of your enquiry area please be aware of the potential for otters in the vicinity, especially if you are undertaking operations that may impact potential otter habitat.



Otters are protected by European and UK law. It is an offence under the Wildlife and Countryside Act 1981 to kill, injure or take an otter from the wild without a licence; to damage or obstruct a holt; or disturb an otter in its resting place. Licences are required for checking holts or for carrying out work that may disturb otters, such as the management of trees that are known to be used as resting sites. Natural England are responsible for issuing these licences in England.

If you need to find out if otters have been recorded in your enquiry area, please get in touch with the Record Centre.

Wood White and Duke of Burgundy butterflies

These two rare butterfly species have a very restricted range in Sussex and records have been made confidential based on advice given from Butterfly Conservation Sussex Branch.

Other confidential records

SxBRC holds records of other species that are confidential. Confidentiality can be for a variety of reasons but is usually to benefit the site or the species. If you need to know if any confidential records have been recorded in your enquiry area, please get in touch with the Record Centre.

MAPS

There are three maps included in a standard desktop biodiversity report which show designated sites (statutory and non-statutory); habitats and natural features; and ownership and management.

The key on a map only shows those layers which are located within the enquiry area or immediate area. Below is a list of all layers which we currently show on our maps, with details of the data source. Citation sheets and further information on each layer can be found towards the back of the pdf report.

Designated sites	
Statutory	
Area of Outstanding Natural Beauty (AONB)	Downloaded from NE website.
Country Park	Downloaded from NE website.
Local Nature Reserve (LNR)	Downloaded from NE website.
Marine Conservation Zone (MCZ)	Downloaded from NE website.
Marine Site of Nature Conservation Importance (MSNCI)	Supplied by ESCC in 2005.
National Nature Reserve (NNR)	Downloaded from NE website.
National Park	Downloaded from NE website.
Ramsar	Downloaded from NE website.
Site of Special Scientific Interest (SSSI)	Downloaded from NE website.
Special Area of Conservation (SAC)	Downloaded from NE website.
Special Protection Area (SPA)	Downloaded from NE website.
Non-Statutory	
Local Geological Site (LGS)	Originally supplied as hand drawn maps by the Booth Museum (Brighton) in 2009, LGS boundaries were digitised by SxBRC. Site boundaries are now administered by SxBRC and the Sussex Geodiversity Partnership and have been further improved as a result of ground surveys between 2010 to 2012.
Notable Road Verge	Owned and provided by ESCC and WSCC.
Site of Nature Conservation Importance (SNCI)	Supplied by WSCC, ESCC & BHCC.
Habitats and natural features	
Ancient/veteran tree	Merged dataset created in July 2009. Data from Ancient Tree Hunt (national survey carried out in 2007/2008) and Tree Register of the British Isles (a charity which collates and updates data on notable trees).
Ancient woodland	Downloaded from NE website.
Black poplar	Created by SxBRC based upon species records arising from Sussex Wetland Landscapes Project.
Chalk stream	Created and owned by SWLP and SxBRC.
Coastal & floodplain grazing marsh	Downloaded from NE website.
Coastal saltmarsh	Supplied by EA, based on data from the SRCMP Habitat Mapping Project.
Coastal sand dune	Supplied by EA, based on data from the SRCMP Habitat Mapping Project.
Coastal vegetated shingle	Downloaded from NE website.
Ghyll woodland	Boundaries drawn on paper maps by Dr Francis Rose which were then digitised by SxBRC. Not ground-truthed.
Intertidal chalk	Supplied by EA, based on data from the SRCMP Habitat Mapping Project.

Intertidal mudflat	Supplied by EA, based on data from the SRCMP Habitat Mapping Project.
Lowland calcareous grassland	Merged dataset from NE and SDJC sources, created in 2005. Administered by SxBRC.
Lowland fen	Created by SxBRC in June 2011. Layer is an amalgamation of all the fen data currently available to SxBRC.
Lowland heathland	High Weald Heathland data created by the High Weald Unit in 2006. The rest of Sussex Heathland data was created by SxBRC, with funding from WSCC and RSPB in 2007.
Lowland meadow	Downloaded from NE website.
Maritime cliff and slope	Supplied by EA, based on data from the SRCMP Habitat Mapping Project.
Open water	Derived from OS mapping. This includes inland and tidal, running and standing water.
Reedbed	Created by SxBRC in June 2011. Layer is an amalgamation of all the reedbed data currently available to SxBRC.
Saline lagoon	Created by SxBRC.
Traditional orchard	Downloaded from NE website.
Wood-pasture & parkland	Downloaded from NE website.
Ownership and management	
Environmental Stewardship Agreement	Downloaded from NE website.
National Trust property	Owned and provided by National Trust.
RSPB reserve	Owned and provided by RSPB. Downloadable from their website.
Sussex Wildlife Trust reserve	Created and maintained by SxBRC on behalf of SWT.
Woodland Trust site	Owned and provided by the Woodland Trust.

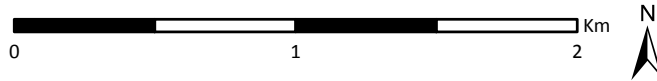
Abbreviations

BHCC	Brighton and Hove City Council
EA	Environment Agency
ESCC	East Sussex County Council
NE	Natural England
PTES	People's Trust for Endangered Species
RSPB	Royal Society for the Protection of Birds
SDJC	South Downs Joint Committee
SRCMP	Strategic Regional Coastal Monitoring Programme
SxBRC	Sussex Biodiversity Record Centre
SWLP	Sussex Wetland Landscapes Project
SWT	Sussex Wildlife Trust
WSCC	West Sussex County Council

Natural England datasets

These are available for anyone to download and use in their own Geographical Information System (GIS). Visit www.gis.naturalengland.org.uk for more information and register as a user.

Designated Site Map (ESD/15/561)
Land north of Amberley Drive, Worthing + 2km radius
 Prepared for Alex Leishman (Hankinson Duckett Associates) - 18/08/2015



Key to Map:

-  Enquiry area
-  Species search area
-  SNCI
-  National Park

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Habitat & Natural Features Map (ESD/15/561)

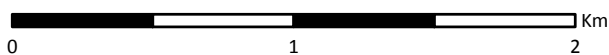
Land north of Amberley Drive, Worthing + 2km radius

Prepared for Alex Leishman (Hankinson Duckett Associates) - 18/08/2015



Key to Map:

-  Enquiry area
-  Species search area
-  Lowland fen
-  Reedbed
-  Intertidal mudflat
-  Coastal vegetated shingle
-  Open Water
-  Traditional orchard
-  Ancient woodland
-  Lowland calcareous grassland
-  Coastal & floodplain grazing marsh



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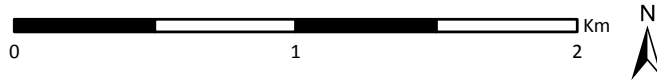
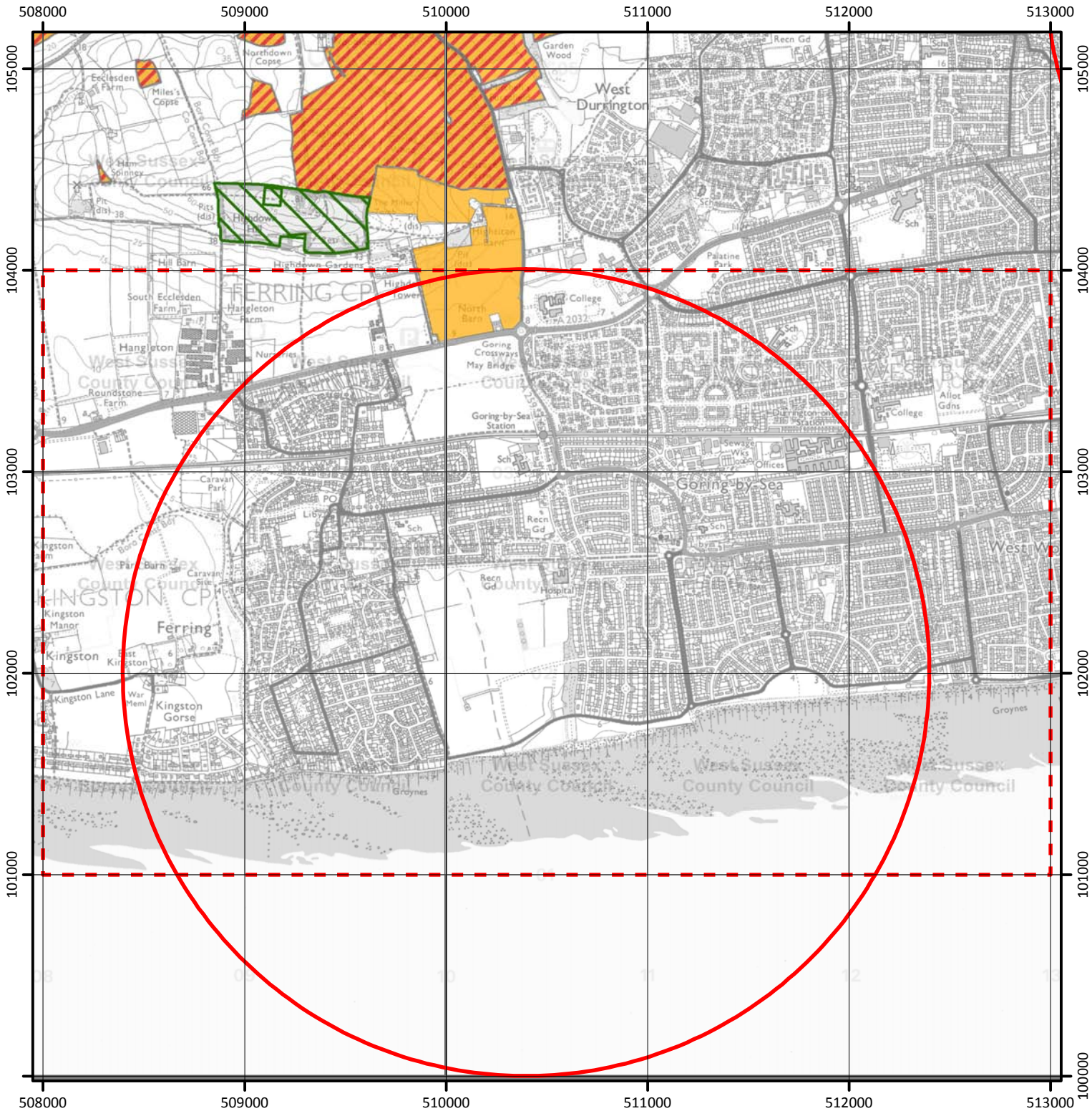
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Ownership & Management Map (ESD/15/561)

Land north of Amberley Drive, Worthing + 2km radius






Prepared for Alex Leishman (Hankinson Duckett Associates) - 18/08/2015



Key to Map:

-  Enquiry area
-  Species search area
-  National Trust property

Environmental Stewardship Agreements:

-  Higher Level Stewardship (HLS)
-  Entry Level Stewardship (ELS)
-  Organic ELS
-  Organic ELS plus HLS
-  ELS plus HLS

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Sussex Environmental Survey Directory

Report on behalf of Alex Leishman (Hankinson Duckett Associates) regarding land north of Amberley Drive, Worthing + 2km radius.

Our Ref: ESD/15/561

Date: 18-Aug-15

The Sussex Environmental Survey Directory (ESD) was initiated in 1990 as a tool to report on biological surveys that had taken place in Sussex. The directory now contains information on over 2,000 surveys covering over 22,000 sites. This report details what surveys have been carried out on specific sites and directs the enquirer to where this information is held. The Record Centre does not hold copies of all the reports that it refers enquirers to, but simply directs the enquirer to organisations or individuals who do.

The directory is updated on a weekly basis and also contains summary data on the county's ornithological data, (courtesy of the Sussex Ornithological Society) and on the county's geological sites (courtesy of the Booth Museum).

Survey Name	The Ferring Rife - (3661)		
Survey Author	MP Hall		
Survey Comment	The Ferring Rife is a small waterway running from Durrington in NW Worthing to the sea. The waterway is bounded on the east mainly by small gardens and on the west by farmland with large gardens.		
Date	June 1986		
Site Name	Ferring Rife & Meadows, Ferring - SNCI Ar12		TQ090022
Site Comment	A wide channel between two high grassy banks which is 1.3km. Also some of the grassy field adjacent to the rife.		
Copies Available	SxBRC Digital		

Survey Name	Brief Survey of Land at Old Manor Cottages, Sea Lane, Ferring - (162)		
Survey Author	GRIFFITHS, Ann		
Survey Comment	A brief visit to the site with an evaluation and plant species list. Not a comprehensive survey.		
Date	1.92		
Site Name	Land at Old Manor Cottages, Sea Lane, Ferring		TQ097025
Site Comment	An area of old buildings and open scrub with developing Elm and Sycamore woodland in the west of the site.		
Copies Available	WSCC		

Survey Name	Conservation of Riparian Habitats - (299)	
Survey Author	HAES, E. C. M., CHELMICK, David	
Survey Comment	A collation of the recorders' knowledge and records of the sites. The sites included are freshwater and brackish waters thought to be the most important in Sussex. Further information on sites can be gained from the recorders. [Held at SxBRC in Rivers Box H6a].	
Date	n/a	
Site Name	Ferring Rife (South of Railway)	TQ089026
Site Comment	A small stream with grassland and a few willow bushes. Meadow Rue and scarce grasshoppers occur here.	
Copies Available	WSCC, SxBRC Boxes	

Survey Name	West Sussex Potential SNCI Project - (397)	
Survey Author	FINCH, Marion, CLARK, Louise	
Survey Comment	A survey of potential SNCIs to assess their significance. Incidental records of mammals, birds, butterflies and moths, and ferns/bryophytes/lichens were included. ONLY West Sussex covered in the survey. Where relevant, info. In EN/SSSI Files. NB: some sites listed below have since been designated, and are now named accordingly.	
Date	1990-3.92	
Site Name	Kingston Fields & Ditches (pSNCI)	TQ086025
Site Comment	Potential SNCI. Improved fields separated by ditches, a small area of scrub and a patch of storm-damaged woodland. Includes most of SNCI Ar12.	
Copies Available	WSCC, EN/SSSI/SCI	

Survey Name	West Sussex Potential SNCI Project - (397)	
Survey Author	FINCH, Marion, CLARK, Louise	
Survey Comment	A survey of potential SNCIs to assess their significance. Incidental records of mammals, birds, butterflies and moths, and ferns/bryophytes/lichens were included. ONLY West Sussex covered in the survey. Where relevant, info. In EN/SSSI Files. NB: some sites listed below have since been designated, and are now named accordingly.	
Date	1990-3.92	
Site Name	Fields & Drains East of Ferring (pSNCI)	TQ100020
Site Comment	Potential SNCI. Arable fields separated by ditches and hedges.	
Copies Available	WSCC, EN/SSSI/SCI	

Survey Name	West Sussex Potential SNCI Project - (397)	
Survey Author	FINCH, Marion, CLARK, Louise	
Survey Comment	A survey of potential SNCIs to assess their significance. Incidental records of mammals, birds, butterflies and moths, and ferns/bryophytes/lichens were included. ONLY West Sussex covered in the survey. Where relevant, info. In EN/SSSI Files. NB: some sites listed below have since been designated, and are now named accordingly.	
Date	1990-3.92	
Site Name	Kingston & Ferring Vegetated Shingle	TQ090016
Site Comment	Area of vegetated shingle.	
Copies Available	WSCC, EN/SSSI/SCI	

Survey Name	West Sussex Potential SNCI Project - (397)	
Survey Author	FINCH, Marion, CLARK, Louise	
Survey Comment	A survey of potential SNCIs to assess their significance. Incidental records of mammals, birds, butterflies and moths, and ferns/bryophytes/lichens were included. ONLY West Sussex covered in the survey. Where relevant, info. In EN/SSSI Files. NB: some sites listed below have since been designated, and are now named accordingly.	
Date	1990-3.92	
Site Name	Shaw, Goring Gap (pSNCI)	TQ104022
Site Comment	Potential SNCI. A small strip of secondary woodland with a small area of coppice and a ditch bank boundary. It is set among arable fields.	
Copies Available	WSCC, EN/SSSI/SCI	

Survey Name	West Sussex Potential SNCI Project - (397)	
Survey Author	FINCH, Marion, CLARK, Louise	
Survey Comment	A survey of potential SNCIs to assess their significance. Incidental records of mammals, birds, butterflies and moths, and ferns/bryophytes/lichens were included. ONLY West Sussex covered in the survey. Where relevant, info. In EN/SSSI Files. NB: some sites listed below have since been designated, and are now named accordingly.	
Date	1990-3.92	
Site Name	The Plantation, Ferring (pSNCI)	TQ106020
Site Comment	Potential SNCI. A secondary woodland running north in a strip from the coast into arable land. A small stream runs through the site.	
Copies Available	WSCC, EN/SSSI/SCI	

Survey Name	West Sussex Potential SNCI Project - (397)		
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Survey Author	FINCH, Marion, CLARK, Louise		
Survey Comment	A survey of potential SNCIs to assess their significance. Incidental records of mammals, birds, butterflies and moths, and ferns/bryophytes/lichens were included. ONLY West Sussex covered in the survey. Where relevant, info. In EN/SSSI Files. NB: some sites listed below have since been designated, and are now named accordingly.		
Date	1990-3.92		
Site Name	Ilex Way, Goring (pSNCI)		TQ106025
Site Comment	Potential SNCI. Strip of rough, species-poor grassland plus species-rich hedgerow and an area of secondary woodland. Row of Ilex oak between the roads of Ilex Way		
Copies Available	WSCC, EN/SSSI/SCI		

Survey Name	West Sussex Potential SNCI Project - (397)		
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Survey Author	FINCH, Marion, CLARK, Louise		
Survey Comment	A survey of potential SNCIs to assess their significance. Incidental records of mammals, birds, butterflies and moths, and ferns/bryophytes/lichens were included. ONLY West Sussex covered in the survey. Where relevant, info. In EN/SSSI Files. NB: some sites listed below have since been designated, and are now named accordingly.		
Date	1990-3.92		
Site Name	Courtlands Hospital Grounds (pSNCI) (Developed)		TQ118025
Site Comment	Potential SNCI. The site consists of the amenity grassland, lake and areas of trees and shrubs and two small calcareous hay fields surrounded by hedges.		
Copies Available	WSCC, EN/SSSI/SCI		

Survey Name	Invertebrate Site Register - (480)		
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Survey Author	WILLING, Martin J, PARSONS, M.		
Survey Comment	The Invertebrate Site Register is a document listing sites which are important for invertebrates. It is regularly updated and revised. Information for each site usually includes a site description, the main invertebrate interest and some general comments. This is a collation of information from a variety of sources. (Phase II)		
Date	-		
Site Name	Ferring Grassland & Goring Shore ISR Site		TQ105020
Site Comment	Owned by the local authority. An area of coastal grassland and low cliffs near the sea. I.S.R. - April 82.		
Copies Available	EN		

Survey Name	Designated SNCIs (in West Sussex) - (500)
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Survey Author WSCC

Survey Comment All SNCIs in West Sussex are covered here. All sites have management prescriptions. Each site was surveyed botanically, but additional information on other groups is included where known. (A hand-book 'West Sussex Sites of Nature Conservation Importance' has been produced). (Phase II). In 1998 a further 26 new sites were added. In 2001 a further 23 new sites were added and 1 deleted. [NB: a number of additional sites are also included which are not designated, but which were presumably considered for designation at some stage, or which were at some time designated but which have since be deselected].

Date 1990-

Site Name Ferring Rife & Meadows, Ferring - SNCI Ar12 TQ090022

Site Comment A wide channel between two high grassy banks which is 1.3km. Also some of the grassy field adjacent to the rife.

Copies Available EN, SWT, WSCC

Survey Name	Wintering Waterfowl Count Scheme - (506)
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Survey Author Various

Survey Comment WWT covers inland sites and some coastal areas and sites are counted for waterfowl, rails, herons and Kingfishers every month over the winter. A summary of the results combined with BTO's Estuary counts are published in "Wildfowl and Wetland Counts" each year. Information on sites can be obtained via the above contact.

Date various

Site Name Ferring Duck Pond TQ081027

Site Comment A small pond between Ferring and Kingston.

Copies Available As contact

Survey Name	Vegetated Shingle Survey of the Sussex Coast - (603)
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Survey Author WILLIAMS, P. R., COOKE, R. J.

Survey Comment A survey to identify all areas of vegetated shingle along the Sussex coast so that the NRA can avoid these during emergency sea defence work. Only the areas of significance were included in this survey and species lists were usually compiled. Only the non-SSSI's were actually surveyed. (Phase II). [SxBRC copy held in H7b box].

Date 07.93

Site Name Kingston Vegetated Shingle TQ083014

Site Comment A 1.5km strip along the beach containing a basis shingle pioneer community. It should be protected from disturbance.

Copies Available EN, SxBRC Boxes, WSCC

Survey Name	Birds of Estuarine Enquiry - (654)	
Survey Author	Various	
Survey Comment	A summary of the results of surveys, combined with WWT's wintering waterfowl counts, are published annually in 'Wildfowl and Wader Counts'. Information on sites can be obtained via the above contact. BTO covers estuaries and sites are counted each month in the winter for waders.	
Date	NOV-MARCH	
Site Name	Goring to Kingston (incl Ferring) Beach & Intertidal Zone	TQ100020
Site Comment		
Copies Available	As contact	

Survey Name	Sussex Churchyard Survey - (916)	
Survey Author	DONOVAN, Pat	
Survey Comment	Botanical survey of most of the churchyards in Sussex. The majority will have just a species list, but the ones with ecological significance have more detail. (Phase II). NB: Results held at SxBRC for some of sites covered (with details for each site filed according to grid squares), including ESD site nos. 841[TQ33], 1370 [TQ32], 4470 [TQ32], 4341 [SU90]., 4382 [TQ01]. [SxBRC also holds documents in BRC box H2b].	
Date	1980-	
Site Name	St Andrew's Churchyard, Ferring	TQ095026
Site Comment		
Copies Available	As contact, SxBRC File Cabs, SxBRC Boxes	

Survey Name	Sussex Churchyard Survey - (916)	
Survey Author	DONOVAN, Pat	
Survey Comment	Botanical survey of most of the churchyards in Sussex. The majority will have just a species list, but the ones with ecological significance have more detail. (Phase II). NB: Results held at SxBRC for some of sites covered (with details for each site filed according to grid squares), including ESD site nos. 841[TQ33], 1370 [TQ32], 4470 [TQ32], 4341 [SU90]., 4382 [TQ01]. [SxBRC also holds documents in BRC box H2b].	
Date	1980-	
Site Name	St Mary's Churchyard, Goring	TQ111026
Site Comment		
Copies Available	As contact, SxBRC File Cabs, SxBRC Boxes	

Survey Name	Ecological Appraisal of Sites in Arun District - (945)
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Survey Author SPIERS, Tony, RYLAND, Kate

Survey Comment A habitat survey of Arun District was undertaken using aerial photographs. The more significant sites were then visited by a survey team and plant species indicated on a present/absent basis. (Phase II). [SxBRC copy held in S1 box].

Date 1988

Site Name Ferring Rife & Surrounds: S of Railway to Kingston Gorse TQ090021

Site Comment The rife water is remarkably clean and contained various flora and fauna. The rest of the area is rough grassland with quite a good range of plants.

Copies Available SxBRC Boxes, As contact

Survey Name	Water Vole Survey - West Sussex - (1059)
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Survey Author KEELING, Chris

Survey Comment Survey concentrated on the Adur catchment and the Chichester Rifes.

Date 17.8.98 - 6.9.98

Site Name Ferring Rife Water Vole Site, E of Ferring Lane TQ099035

Site Comment Water vole tunnel below water level - possible feeding remains in immediate area of tunnel (Aug 1998).

Copies Available WSCC

Survey Name	Survey of Land at Chatsmore Farm, Worthing - (1442)
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Survey Author HELLIWELL, D. R.

Survey Comment Survey, by Reading Agricultural Consultants, of arable farmland prior to proposed development.

Date 14.9.99

Site Name Chatsmore Farm (Arable Land S of Ferring Rife), Worthing TQ101033

Site Comment Site is flat, surrounded by housing and a dual carriageway. Mostly intensively cultivated with canalised stream.

Copies Available SxBRC Digital

Survey Name	Vegetated Shingle Survey - Kingston and Ferring Beaches - (1541)		
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Survey Author	TANNER, Michael		
Survey Comment	Survey of vegetated shingle on Kingston and Fering beaches with species list. [SxBRC copy filed under TQ00].		
Date	24.7.01		
Site Name	Kingston & Ferring Vegetated Shingle		TQ090016
Site Comment	Area of vegetated shingle.		
Copies Available	As Author, SxBRC File Cabs, WSCC		

Survey Name	Ecological survey of the proposed site of a croquet lawn, Ferring. - (1586)		
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Survey Author	DOLPHIN ECOLOGICAL SURVEYS		
Survey Comment	Survey includes spp. lists for two areas with distinct plant communities: the western area comprising woodland, the eastern area scrubland. Abundances of plant species are included, and the ecological importance of the site is discussed. Species lists reflect only those plants visible in March: many others may be present but not evident until later in the year. [SxBRC copy filed under TQ00].		
Date	6.3.95		
Site Name	Land at Old Manor Cottages, Sea Lane, Ferring		TQ097025
Site Comment	An area of old buildings and open scrub with developing Elm and Sycamore woodland in the west of the site.		
Copies Available	SxBRC Digital		

Survey Name	Ecological Survey of Ferring Rife - (1625)		
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Survey Author	RYLAND, Kate		
Survey Comment	Botanical surveys, casual observations of fauna + river corridor and habitat surveys. Management recommendations. Report covers area owned by Environment Agency. [SxBRC copy filed under TQ00].		
Date	05.96, 07.96		
Site Name	Ferring Rife River Corridor		TQ090020
Site Comment	Ferring Rife extends from the shore to Lower Northbrook Farm.		
Copies Available	SxBRC Digital		

Glossary of Abbreviations

Organisations:

BBCS	British Butterfly Conservation Society (now Butterfly Conservation)	www.sussex-butterflies.org.uk
BMONH	Booth Museum of Natural History	Tel: 03000 290900
BSBI	Botanical Society of the British Isles	www.bsbi.org.uk
BTO	British Trust for Ornithology	Tel: 01842 750050
EA	Environment Agency	Tel: 08708 506506 (Southern Regional Office)
EN	English Nature (now Natural England)	Tel: 03000 600 300 (Sussex Team)
ESCC	East Sussex County Council	Tel: 01273 481621 (County Ecologist)
FC	Forestry Commission	Tel: 01420 23337 (SE England)
FWAG	Farming and Wildlife Advisory Group	Tel: 01273 891190 (Sussex Area)
NCC	Nature Conservancy Council (now NE)	Contact NE
NE	Natural England	Tel: 03000 600 300 (Sussex Team)
NRA	National Rivers Authority (now EA)	Contact EA
NT	National Trust	Tel: 01372 453401 (South East Office)
RSPB	Royal Society for the Protection of Birds	Tel: 01273 775333 (SE Regional Office)
SBRS	Sussex Botanical Recording Society	www.sussexflora.org.uk
SOS	Sussex Ornithological Society	www.sos.org.uk
SxBRC	Sussex Biodiversity Record Centre	Tel: 01273 497521
SxWT/SWT	Sussex Wildlife Trust	Tel: 01273 492630
WSCC	West Sussex County Council	Tel: 01243 756691 (County Ecologist)

Designations

AONB	Area of Outstanding Natural Beauty
COGS	County Geological/Geomorphological Site
LNR	Local Nature Reserve
NNR	National Nature Reserve
NP	National Park
RAMSAR	RAMSAR (internationally important wetlands)
RIGS	Regionally Important Geological/Geomorphological Site
SAC	Special Area of Conservation
SNCI	Site of Nature Conservation Importance
SPA	Special Protection Area
SSSI	Site of Special Scientific Interest

Surveys:

Phase I	A broad habitat survey with a dominant species list and land use information.
Phase II	Mapping of vegetation communities with species lists and abundance/distribution.
Phase III	A detailed survey including ecological processes and long term monitoring information.
NVC	National Vegetation Classification.

SITE OF NATURE CONSERVATION IMPORTANCE (SNCI)

Sites of Nature Conservation Importance (SNCIs) are non-statutory designations which are identified at a county level. They typically form a network of sites that are recognised to be of local conservation importance and are often included in Local Authority development plans. In other areas of the country they are sometimes called SINCs (Sites of Importance for Nature Conservation) or County Wildlife sites.

There are many sites within East and West Sussex and Brighton and Hove that are not recognised under the national designation of SSSI (Site of Special Scientific Interest) but are of considerable wildlife value due to the special interest of their flora or fauna. In May 1990 a Sussex-wide project was instigated to identify which non-designated sites were important for wildlife. The selected sites are now known as SNCIs. The aim of this identification was to protect such sites from land management changes, which may lessen their nature conservation interest, and to encourage sensitive management to maintain and enhance their importance.

Sites within both rural and urban areas were considered but the evaluation process considers two types of site under slightly different criteria:

- **Rural sites**, that may contain habitats such as heathland or ancient woodland, must be of county-wide importance.
- **Urban sites** must recognise the importance to safeguard important urban wildlife sites, to link all significant greenspaces and to ensure that people in towns have easy access to wildlife areas.

The selection of SNCIs was made, after extensive survey work, by a panel of expert ecologists. This panel included representatives from the relevant County Council, English Nature (now Natural England) and the Sussex Wildlife Trust. A range of specialists with either specific species knowledge or a sound knowledge of the county's ecology were also involved with the selection process. Assessment and identification of SNCIs is a continuing process with new sites being identified and others deleted as ecological knowledge of the total resource and specific sites increase.

In West Sussex SNCI selection is steered by the County Council, whereas in East Sussex it is steered by the District Councils. Currently there are over 600 SNCIs in Sussex.

Although SNCIs have no statutory protection they need to be considered in the planning process through Planning Policy Guidance such as PPG9 which refers to the Town & Country Planning Act 1990 Section 30. This states that nature conservation issues should be included in the surveys of local authority areas to ensure that the plans are based on fully adequate information about local species, habitats, geology and landform. Plans should be concerned not only with designated areas but also with other land of conservation value and the possible provision of new habitats.

SNCI site accounts outline the characteristics of the area based on its semi-natural vegetation and the underlying geology and are in three main sections :-

- **Summary** which highlights the nature conservation importance of the site
- **Site description or site notes** which gives further descriptive details about the site and its associated species
- **Management recommendations** which give a brief indication of the type of management that would best maintain the nature conservation interest of the site.

It is important to realise that classification as an SNCI in no way reduces the value of other wildlife sites. Sites of SNCI quality may not have been surveyed for various reasons. All areas of semi-natural vegetation are important to wildlife. Many rare plants and animals occur in seemingly otherwise uninteresting sites and may be overlooked by the survey.

SITE OF NATURE CONSERVATION IMPORTANCE (SNCI)

West Sussex

Site Name:	Ferring Rife and Meadows		
Site Ref:	Ar12	Owner:	Private
District:	Arun	Size (ha):	9.5
Parish:	Kingston & Ferring	Date:	Identified May 1994
National Grid Ref:	TQ090022	Author:	Graham Roberts
Habitat:	Stream and neutral grassland		

Summary

This site consists of 1.3km of rife, plus several hectares of rough grassland. Situated adjacent to the urban area of Ferring it is of great local importance. It supports a nationally rare snail, *Monacha cartusiana* and a large proportion of a locally uncommon plant, Parsley Water-dropwort *Oenanthe lachenalii*. A good diversity of birds, butterflies and dragonflies have also been recorded.

Site description

Ferring Rife consists of a wide channel between two high grassy banks. The clear, shallow flowing water supports a fairly sparse aquatic flora. This includes submerged species such as Curled Pondweed *Potamogeton crispus*, Fringed Water-lily *Nymphoides peltata* and Canadian Waterweed *Elodea canadensis*. The marginal flora is more diverse and includes Water-plantain *Alisma plantago-aquatica*, Branched Bur-reed *Sparganium erectum*, Grey Club-rush *Schoenoplectus tabernaemontani*, Water Figwort *Scrophularia auriculata* and Water Cress *Nasturtium officinale*.

There is an interesting area of moderately species-rich rough grassland to the west of the rife. The presence of Parsley Water-dropwort is particularly notable. Other interesting plants include Pepper-saxifrage *Silaum silaus*, Strawberry Clover *Trifolium fragiferum*, Yellow Loosestrife *Lysimachia vulgaris*, Marsh Woundwort *Stachys palustris*, Meadow Vetchling *Lathyrus pratensis*, Common Spike-rush *Eleocharis palustris*, Meadowsweet *Filipendula ulmaria*, Wild Carrot *Daucus carota* and Carnation Sedge *Carex panicea*.

There are several small, shallow ponds within the area of rough grassland. Some of the marginal flora, such as Common Reedmace *Typha latifolia* and Yellow Iris *Iris pseudacorus*, has presumably been introduced.

The grassland supports a good colony of the nationally rare snail, *Monacha cartusiana*. Grey Wagtail and Kingfisher have been seen by the rife, and Meadow Pipit, Skylark and Snipe are known to frequent the rough grassland. Butterflies recorded include Small Copper, Common Blue, Orange-tip, Green-veined White, Ringlet and Wall Brown. The Common Darter dragonfly has been observed in large numbers along the rife.

Management recommendations

The rife vegetation is likely to require periodic clearance. A careful balance is required in order to maintain water flow without denuding it of vegetation.

KEY NATIONAL AND INTERNATIONAL SITE DESIGNATIONS

National Nature Reserve (NNR)

National Nature Reserves are statutory reserves established under the Wildlife and Countryside Act 1981. NNRs may be owned by the relevant national body (e.g. Natural England in England) or established by agreement. A few are owned and managed by non-statutory bodies, for example the Sussex Wildlife Trust. NNRs cover a selection of the most important sites for nature conservation in the UK. There are six NNRs in Sussex.

Special Area of Conservation (SAC)

Special Areas of Conservation are sites designated by Member States under the EC Habitats Directive. The aim is to establish a European network of important high quality conservation sites that will make a significant contribution to conserving habitats and species considered to be most in need of conservation at a European level. There are 12 SAC sites in Sussex.

Special Protection Area (SPA)

Special Protection Areas are designated under the EC Birds Directive, to conserve the habitat of certain rare or vulnerable birds and regularly occurring migratory birds. Any significant pollution or disturbance to or deterioration of these sites has to be avoided. All SPAs are also designated as SSSIs. There are six SPA sites in Sussex.

Ramsar

Ramsar sites are designated under the Convention on Wetlands of International Importance. Under the Convention, each government must select its best wetlands according to very clear criteria, which include: a wetland that regularly supports 20,000 or more waterbirds; a wetland that regularly supports 1% of the individuals in a population of one species or subspecies of waterbird. Wetlands are broadly defined to include marsh, fen, peatland and water. All designated Ramsar sites are also designated as SSSIs. There are four Ramsar sites in Sussex.

National Park

National Parks are beautiful, spectacular and often dramatic expanses of countryside. In the UK people live and work in the National Parks and the farms, villages and towns are protected along with the landscape and wildlife. They differ from Areas of Outstanding Natural Beauty (AONBs) in that each National Park has its own authority for planning control and other services.

The creation of the South Downs National Park (SDNP) was confirmed on 12th November 2009 and came into being on 1st April 2010.

Further information can be found on the [SDNP Authority website](#).

Area of Outstanding Natural Beauty (AONB)

Areas of Outstanding Natural Beauty are areas of high scenic quality that have statutory protection in order to conserve and enhance the natural beauty of their landscapes. They differ from National Parks in their more limited opportunities for extensive outdoor recreation and by the way they are managed. AONBs are designated by Natural England under the Countryside and Rights of Way Act 2000.

There are two AONBs in Sussex covering approx. 114,000 hectares; Chichester Harbour and High Weald. Each has an associated body concerned with the area's conservation:

Chichester Harbour Conservancy www.conservancy.co.uk

High Weald AONB Unit www.highweald.org

Marine Conservation Zone (MCZ)

MCZs protect a range of nationally important marine wildlife, habitats, geology and geomorphology. In November 2013 27 MCZs were designated in English inshore and English and Welsh offshore waters in the first tranche of sites. Three of these sites were designated off Sussex; Kingmere, Beachy Head West and Pagham Harbour. More MCZs will be designated in future rounds or 'tranches', although it is uncertain how many.

Further information can be found on the [JNCC website](#).

Local Nature Reserve (LNR)

Local Nature Reserves are for both people and wildlife. All district and county councils have powers to acquire, declare and manage LNRs. To qualify for LNR status, a site must be of importance for wildlife, geology, education or public enjoyment. Some are also SSSIs. There are 36 LNRs in Sussex.

Country Park

Country Parks were established as a result of the 1968 Countryside Act to provide a wide range of opportunities for recreation, health, education and improve the quality of life for local communities. Natural England recognises Country Parks as significant places that contribute to England's accessible natural green space. There are 11 Country Parks in Sussex, the details of which can be obtained from the local authorities.

Local Geological Site (LGS)

Previously known as Regionally Important Geological/Geomorphological Sites (RIGGS), LGS are non-statutory designations that have been identified by local geodiversity groups as being of importance. There are over 120 LGS in Sussex which have been assessed by the Sussex Geodiversity Partnership. The features identified as being important become a material consideration in any future development, and should be taken into account by the relevant local authority.

A selection of LGS with public access in Sussex can be viewed on the [Sussex Geodiversity Partnership's website](#).

Marine Site of Nature Conservation Importance (MSNCI)

Marine Sites of Nature Conservation Importance are non-statutory sites identified on account of the special interest of their marine habitats, the fauna and flora, or for unusual geological and geomorphological features. They are an extension of the series of terrestrial SNCIs. The identification of these sites is to highlight their importance for marine wildlife and to emphasise the risks of certain operations damaging their interest. There are 23 MSNCIs off the Sussex coast.

Environmental Stewardship

Environmental Stewardship is an agri-environment scheme managed by Natural England that provides funding to farmers and other land managers to deliver effective environmental management.

There are four elements to Environmental Stewardship, three of which are relevant in Sussex:

Entry Level Stewardship (ELS) goes beyond the Single Payment Scheme requirement to maintain land in good agricultural and environmental condition.

Organic Entry Level Stewardship (OELS) is the organic strand of ELS. It is geared to organic and organic/conventional mixed farming systems and is open to all farmers not receiving Organic Farming Scheme aid.

Higher Level Stewardship (HLS) involves more complex types of management where agreements are tailored to local circumstances.

Further information can be found on the [Natural England website](#).

Further information on many of the designations listed above can be found on the [Natural England website](#).

COASTAL & FLOODPLAIN GRAZING MARSH

Grazing marsh is periodically inundated pasture, or meadow with ditches that maintain the water levels, containing standing brackish or fresh water. Sites may contain seasonal water-filled hollows and permanent ponds with emergent swamp communities.

Why is it important?

- Wading birds such as redshank feed on invertebrates forced close to the surface by the high water table and shallow surface floods.
- Around 500 species of vascular plant have been recorded from grazing marsh including rare species such as narrow-leaved water-dropwort.
- It supports large numbers of invertebrates including over a thousand nationally notable species.
- Drainage channels and open water associated with grazing marsh support a number of fish species and can provide important spawning areas.
- Water filled ditches are often used by otter, water vole, and various dragonflies.



Lapwing

Coastal and floodplain grazing marsh in Sussex

Sussex has around 14,000 hectares of grazing marsh, with the rivers Arun, Adur, Ouse and Cuckmere all having important areas. Just under half of Sussex's floodplains consist of wet grassland, however much of this has been agriculturally improved decreasing its value for wildlife. Pevensey Levels is one of only three sites in Britain where the large fen raft spider is found, and two rare species of ramshorn snail can also be found in Sussex.

What are the threats?

- Conversion to agriculture through drainage and fertilizer application.
- Drainage and flood defences can disrupt the hydrology of sites.
- Overgrazing, neglect or early grazing, can affect breeding birds.
- Water pollution, which can be exacerbated if concentrated by over-abstraction.
- Floodplain development, aggregate extraction and recreational pressure.
- Isolation and fragmentation of sites reduces dispersal opportunities making species more susceptible to extinction.

Some associated species

- Lapwing *Vanellus vanellus*
- Merlin *Falco columbarius*
- Marsh mallow moth *Hydraecia osseola*
- Desmoulin's whorl snail *Vertigo moulinsiana*
- Greater water parsnip *Sium latifolium*
- Star sedge *Carex echinata*

Further information

- Floodplain Meadows Partnership: www.floodplainmeadows.org.uk
- Sussex Wetland Landscapes Project: www.sussexotters.org

(Illustration courtesy of Natural England.)

COASTAL VEGETATED SHINGLE

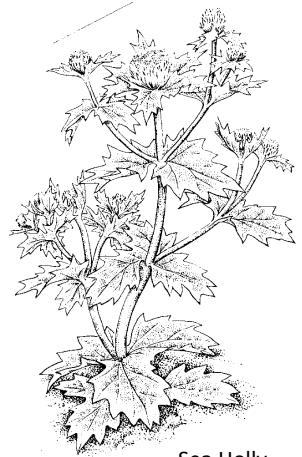
Shingle is an accumulation of pebbles with a diameter between 2-200mm. In Sussex the shingle is composed mainly of flint pebbles derived by marine or glacial erosion of Cretaceous chalk and Tertiary deposits.

Why is it important?

- Vegetated shingle is a rare habitat and some of the plants and animals found here are very restricted in their distribution.
- Shingle is important for breeding birds, in particular gulls and terns.
- Many rare species are found including species of moth and spider.

Coastal vegetated shingle in Sussex

A significant area of vegetated shingle exists in Sussex, accounting for almost a fifth of the total resource in England. Areas of vegetated shingle can be found in both East and West Sussex, with the most extensive area being in the Rye and Dungeness area.



Sea Holly

What are the threats?

- Coastal defence work can interrupt natural sediment movement which affects coastal habitats including vegetated shingle.
- Sea level rise and increased storms could destroy vegetated shingle areas.
- Recreation impacts including trampling, disturbance of animals and introduction of non-native plant species.

Some associated species

- Lesser black-backed gull *Larus fuscus*
- Little tern *Sternula albifrons*
- Toadflax brocade *Calophasia lunula*
- Brown-banded carder bee *Bombus humilis*
- Yellow horned poppy *Glaucium flavum*
- Sea holly *Eryngium maritimum*

(Illustration courtesy of Natural England.)

INTERTIDAL MUDFLAT

Mudflats are sedimentary intertidal habitats created by deposition in low energy coastal environments particularly estuaries and other sheltered areas.

Why are they important?

- Mudflats are part of a habitat sequence between open water and saltmarsh, and have an important role in reducing the impact of waves upon saltmarshes, damage to coastal defences and flooding of low-lying land.
- A wide range of invertebrates is supported including molluscs, annelids and lugworms.
- Mudflats are highly productive, making them important feeding areas for birds. They support internationally important populations of migrant and wintering waders.
- Due to their sheltered nature mudflats are important areas for fish, in particular flatfish, which use them as nursery areas.



Golden plover

Intertidal mudflats in Sussex

Sussex has just over 1,100 hectares of intertidal mudflats. Much of this occurs in a mosaic with saltmarsh and seagrass beds.

What are the threats?

- Sea level rise is expected to result in the loss of up to 10,000 hectares of intertidal mudflat by 2013, with much of this in southern England.
- Land claim for development, and industry including hard flood defences.
- Pollution from agricultural, industrial and urban sources.
- Human disturbance from fishing and bait digging can have adverse impacts.
- Introduction of invasive species such as cord grass.

Some associated species

- Golden plover *Pluvialis apricaria*
- Atlantic salmon *Salmo salar*
- Lugworm *Arenicola marina*
- Mud shrimp *Corophium volutator*
- Glasswort *Salicornia europaea*
- Spiral wrack *Fucus spiralis*

(Illustrations courtesy of Natural England.)

LOWLAND FEN

Lowland fens are permanently waterlogged wetlands which receive water and nutrients from soil, rock and groundwater as well as rainfall.



Water shrew

Why are they important?

- Lowland fen has declined dramatically and the UK has a large proportion on the European resource.
- They have a mosaic of plant communities and some fens contain up to 550 species of higher plants.
- Lowland fen is important for invertebrates including aquatic beetles and dragonflies.

Lowland fens in Sussex

Current estimates put the total hectareage of fen in Sussex at under 100 hecatres. It is often found alongside other wetland habitats such as marshy grassland and carr woodland.

What are the threats?

- Drainage and conversion to intensive agriculture.
- Lack of management resulting in succession to scrub and woodland.
- Changes to hydrology resulting from excessive water abstraction and development.
- Isolation and fragmentation.
- Nutrient enrichment which can affect species composition.

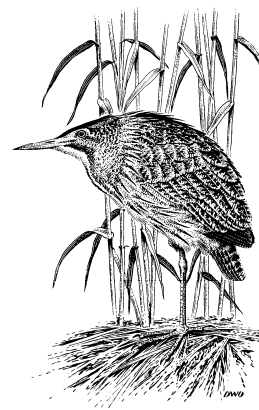
Some associated species

- Water shrew *Neomys fodiens*
- Reed bunting *Emberiza schoeniclus*
- Fen wainscot *Arenostola phragmitidis*
- Scarce chaser *Libellula fulva*
- Sphagnum moss *Sphagnum* spp.
- Gypsywort *Lycopus europaeus*

(Illustrations courtesy of Natural England.)

REEDBED

Reedbeds are wetlands dominated by stands of common reed where the water table is at or above ground level for most of the year. They tend to incorporate open water and ditches, and areas of wet grassland and carr woodland may also be associated with them.



Bittern

Why are they important?

- They provide important breeding and roosting habitat for birds including rare species such as bearded tit and Cetti's warbler.
- A number of invertebrates are recorded from reedbeds including moths, snails and beetles. Many of the species found are now uncommon.
- Reedbeds provide a refuge for shoals of fish, which in turn provide food for other species.

Reedbeds in Sussex

The majority of reedbeds in Sussex are less than five hectares in size. The largest reedbed in Sussex is at Filsham, which is around 17 hectares.

What are the threats?

- Drainage for farming and development, and over-abstraction of water.
- Water pollution can cause a loss of diversity and dominance by a few species.
- Flood defence measures can contribute to loss of reedbeds.
- A lack of management.

Some associated species

- Bittern *Botaurus stellaris*
- Grass snake *Natrix natrix*
- Swollen spire snail *Mercuria confusa*
- Flame wainscot *Mythimna flamma*
- Common reed *Phragmites australis*
- Reed sweet-grass *Glyceria maxima*

Further information

- Sussex Wetland Landscapes Project: www.sussexotters.org

(Illustration courtesy of Natural England.)

TRADITIONAL ORCHARDS

Traditional orchards are areas of land on which a range of fruit and nut trees are cultivated that are managed in a low intensity way. Permanent grassland beneath the trees was traditionally grazed by livestock.



Why are they important?

- The mosaic of habitats such as hedgerows, dead wood and fruit trees make traditional orchards important for a wide range of species.
- Traditional orchards provide the conditions needed for many bryophytes and lichens.
- Holes and crevices in old trees provide habitat for bats and nest sites for birds such as redstart and bullfinch.
- Dead and decaying wood makes traditional orchards hugely important for invertebrates, lichens and fungi.

Traditional orchards in Sussex

The traditional orchards inventory* lists over 900 sites in Sussex covering an area of approximately 300 hectares. It is estimated that around half of these orchards are currently in a poor condition.

What are the threats?

- Changes in farming policy and markets has led to a decline in income from traditional orchard produce.
- A decline in the skills and knowledge to manage traditional orchards can lead to neglect.
- Loss of orchards can occur as fruit trees dying of old age are not replaced.
- Lack of protection under the current planning system.

Some associated species

- Lesser spotted woodpecker *Picoides minor*
- Noctule *Nyctalus noctula*
- Lichen running-spider *Philodromus margaritatus*
- Noble chafer *Gnorimus nobilis*
- Mistletoe *Viscum album*
- A lichen *Ramonia chrysophaea*

**** The Traditional Orchard Inventory for England***

The traditional orchard data used in Sussex Biodiversity Record Centre reports are the result of a project run by the People's Trust for Endangered Species (PTES) on behalf of Natural England. The resulting inventory is based on combining existing survey data with aerial photograph interpretation, together with ground-truthing survey work by local volunteers. The inventory is provisional, and is still being refined and updated as new data becomes available. The project was completed in March 2011.

For the purpose of the inventory, traditional orchards are defined as sites where at least five fruit trees must be present with no more than 20m between their crown edges.

Further information

Orchard Network: www.orchardnetwork.org.uk

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The Sussex Biodiversity Record Centre is managed by the Sussex Wildlife Trust as a partnership project.
A list of our current funding partners can be found on our website: www.sxbrc.org.uk/about/partners

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