Gravity

Smart Campus

Gravity LDO Environmental Statement

Volume 2 – Appendices

Appendix 12.1

Habitat Survey Report

COPYRIGHT

The copyright of this document
remains with Ecology Solutions
The contents of this document
therefore must not be copied or
reproduced in whole or in part
for any purpose without the
written consent of Ecology Solutions.

CONTENTS

1	INTRODUCTION	1
2	SURVEY METHODOLOGY	3
3	ECOLOGICAL FEATURES	4
4	DESIGNATED SITES	14
6	SUMMARY	18

PLANS

PLAN ECO1	Statutory Designated Sites Locations
PLAN ECO2	Local Wildlife Sites Within the Site Boundary
PLAN ECO3	Ecological Features
PLAN ECO4	Priority Habitats Considered Present

APPENDICES

APPENDIX 12.1A	MAGIC Maps
APPENDIX 12.1B	Hedgerow Descriptions
APPENDIX 12.1C	Citations for Statutory Designated Sites
APPENDIX 12.1D	Local Wildlife Site Citation and SERC Survey Sheets
APPENDIX 12.1E	SERC Data Search Records

1. INTRODUCTION

1.1. Background

1.1.1. Ecology Solutions Ltd was commissioned on behalf of This Is Gravity in March 2020 to undertake a comprehensive programme of ecology survey work for This is Gravity Ltd (TIGL), at the site known as Gravity, at Puriton, near Bridgwater, Somerset; hereafter referred to as the 'Site'.

1.1.2. Survey work undertaken at the Site includes a range of habitat and species-specific surveys covering the 2020 survey period. This report has been produced in order to detail the methodologies and findings of the habitat survey work undertaken.

1.1.3. It should also be recognised that the Site has already been subject to previous extensive ecological survey and assessment work as part of the decommissioning and remediation works which have planning consent, as well as to inform the extant hybrid planning permission for the Site redevelopment and Natural England licence applications.

1.1.4. The majority of the Site has been the subject of numerous ecological surveys since 2008. EnvironPlus International Limited (EPI) undertook an initial suite of surveys in 2008, with Ecology Solutions having undertaken regular update work since 2011. The results of the survey works are detailed in the Environmental Statement (2013) and ES Addendum (2017) produced by Ecology Solutions in support of the extant planning permission.

1.1.5. The majority of the site and the previous surveys on it, did not include the 'full' Site, therefore as well as updating previous surveys, surveys of the additional land to be contained in the LDO were included.

1.1.6. The extensive historic survey information available has been used to inform the update survey work and is referenced, where necessary, within this report.

1.2. Site Characteristics

1.2.1. The main component of the Site is located to the north east of Puriton. In addition, the Site includes a railway spur to the north west, a road connection from Junction 23 of the M5 motorway to the south west of the Site and a reedbed system that connects the Site to the River Huntspill to the north. The Site is within an agricultural setting, and is located between the villages of Puriton (to the west) and Woolavington (to the east).

1.2.2. Broadly, the Site comprises grasslands, woodland, scrub, hedgerows, tall ruderal and ephemeral vegetation along with standing water, reed bed, wet and dry ditches as well as buildings and hardstanding. There are also areas of disturbed / bare ground.

1.3. Habitat Survey Report

1.3.1. This document describes the results of ecological baseline habitat survey work undertaken and provides a broad assessment of the current ecological

interest of the Site as a whole, based upon field and desk-based studies. The importance of the habitats within the site is evaluated with due consideration given to the guidance published by the Chartered Institute of Ecology and Environmental Management (CIEEM) [1].

[1]CIEEM (2018) Guidelines for Ecological Impact Assessment in the UK and Ireland: Terrestrial, Freshwater, Coastal and Marine version 1.1. Chartered Institute of Ecology and Environmental Management, Winchester

2. SURVEY METHODOLOGY

2.1. The methodology utilised for the survey work undertaken can be split into three areas, namely desk study, habitat survey, and faunal surveys. These are discussed in more detail below.

2.2. Desk Study

2.2.1. In order to compile background information on the sites and their immediate surroundings including species and habitat records, Ecology Solutions contacted Somerset Ecological Records Centre (SERC).

2.2.2. Further information on designated sites from a wider search area was obtained from the online Multi-Agency Geographic Information for the Countryside (MAGIC)[2] database. This information is reproduced where appropriate on Plan ECO1, Plan ECO2 and at Appendix 12.1A.

2.2.3. As part of the preliminary appraisal of the Site and to determine the scope and methodologies of further survey effort, the historic survey information available from ES Chapter and other intervening *Ad hoc* survey work has been reviewed.

2.3. Habitat Survey Methodology

2.3.1. Habitat surveys have been undertaken throughout 2020 and 2021 to ascertain the general ecological value of the Site and to identify the main habitats and associated plant species.

2.3.2. The site was surveyed based around extended Phase 1 survey methodology[3], as recommended by Natural England, whereby the habitat types present are identified and mapped, together with an assessment of the species composition of each habitat. This technique provides an inventory of the basic habitat types present and allows identification of areas of greater potential which require further survey. Any such areas identified can then be examined in more detail.

2.3.3. Using the above method, the site was classified into areas of similar botanical community types, with a representative species list compiled for each habitat identified.

2.3.4. All the species that occur in each habitat would not necessarily be detectable during survey work carried out at any given time of the year, since different species are apparent at different seasons. Nonetheless, the timing of the surveys undertaken allows for habitats present to be identified and as such it is considered that a robust appraisal has been made of the habitat interest.

---

[2] http://magic.defra.gov.uk

[3] Joint Nature Conservation Committee (2010). *Handbook for Phase 1 Habitat Survey – a Technique for Environmental Audit*. England Field Unit, Nature Conservancy Council, reprinted JNCC, Peterborough.

3. ECOLOGICAL FEATURES

3.1. The Site was subject to numerous ecological surveys since 2008, with initial work undertaken by EPI and subsequent update work carried out by Ecology Solutions in 2011 and 2017 to document any material changes have occurred within the Site. Over this period the Site has experienced a change in land use, with the decommissioning of the original BAE facility and the remediation of contaminated land within the ROF site. In the wider Site boundary, construction of the new road connection in the southwest and clearance related to the Hinckley 'C' grid connection has commenced. As such, the extent and condition of some habitats previously recorded have changed recently.

3.2. The vegetation present enabled the habitat types to be satisfactorily identified and an accurate assessment of the ecological interest of the habitats to be undertaken.

3.3. The following main habitat / vegetation types were identified:

- Improved Grassland;
- Semi-Improved Grassland;
- Amenity / Rough Grassland;
- Marshy Grassland;
- Plantation Woodland / Orchard;
- Trees;
- Scrub;
- Hedgerows;
- Tall Ruderal Vegetation;
- Ephemeral / Short Perennial Vegetation;
- Standing Water;
- Reed Bed;
- Bare Ground;
- Seasonal Wet Ditches / Dry Ditches; and
- Buildings and Hardstanding.

3.4. Each habitat present is described below with an account of their representative plant species. The location of these habitats is shown on Plan ECO3.

3.5. Consideration of the habitats present within areas of the Site that are also designated for their nature conservation interest are discussed further within section 5 of this report.

<u>Improved Grassland</u>

3.6. The majority of the fields within the Site including the fields in the south east, north east and north west of the Site are cattle, sheep or horse grazed pastures. This reflects the main land use of the wider landscape within which the Site is located. This habitat is typically intensively managed, either as grazing or as a combination of grazing and forage harvesting.

3.7. The grassland sward is typically species-poor as a result of the management / grazing regime in place. Perennial Rye *Lolium perenne* is typically dominant throughout, however localised patches of relatively higher herb content occur

within certain fields particularly where management is not as intensive. Equally, localised patched of pernicious weed species are also present.

Semi-Improved Grassland

3.8. There are areas of this habitat throughout the Site. These grassland areas are typically grazed (less intensively as improved grasslands) or cut for hay / silage.

3.9. These grasslands display a relatively greater floral diversity than the improved grasslands onsite, although the quality is variable across the Site. Areas of greater overall quality are limited to the north west of the Site in fields adjacent to the GCN pond mitigation area and the small field in the south of the Site known as the 'Puriton Cowslip Field'. Other areas of semi-improved grassland are of lower relative quality and are considered to be species-poor semi-improved grassland.

3.10. As noted above, the species composition of the semi-improved grassland varies somewhat across the Site. The species present are typical of the National Vegetation Classification habitats MG5 and contain species such as Species recorded include; Perennial Rye, False-oat Grass *Arrhenatherum elatius*, Meadow Foxtail *Alopecurus pratensis*, Meadow Barley *Hordeum brachyantherum*, Yellow Oat *Trisetum flavescens*, Common Mousear *Cerastium fontanum*, Field Bindweed *Convolvulus arvensis*, Hogweed *Heracleum sphondylium*, Cock's-foot *Dactylis glomrata*, Creeping Thistle *Cirsium arvense*, Meadow Vetchling *Lathyrus pratensis*, Red Fescue *Festuca rubra,* Tall Fescue *Festuca arundinacea*, Common Ragwort *Jacobaea vulgaris*, Hoary Ragwort *Jacobaea erucifolia*, Pyramidal Orchid *Anacamptis pyramidalis*, Oxeye Daisy *Leucanthemum vulgare* and False Fox Sedge *Carex obtubrae*.

Amenity / Rough Grassland

3.11. A large component of the grassland within the Site is associated with now mostly demolished buildings and internal road network related to the Sites former use. These amenity grasslands were formerly intensively managed, with a short, even and low diversity sward maintained. However, since the cessation of regular mowing, rough grassland has developed in many of these areas.

3.12. The botanical composition has been affected by both the regular mowing regime in the past and intensive grazing by rabbits. The mounds surrounding a number of existing buildings within the Site were originally constructed from both on-site and imported material, resulting in a variety of plant communities, from species-poor swards to relatively herb-rich communities. However, the majority of this grassland consists or Perennial Rye, Red Fescue, Yorkshire Fog, Daisy and Creeping Buttercup *Ranunculus repens* with rough grassland elements containing Cock's Foot and False Oat Grass. In some areas the rough grassland has developed into tall ruderal communities.

Marshy Grassland

3.13. The most extensive area of this habitat is present to the north and west of the 37 Club (west of the existing Site entrance). An area of marshy grassland was also created as part the GCN mitigation area in the north west of the Site.

3.14. The land to the north and west of the 37 Club contains habitats indicative of wetter ground. These areas contain a mix of communities that have developed, likely to a lack of regular management and/or the variations in hydrology. Vegetative communities range from scrub, ruderal species, rush pasture and wet grassland.

3.15. The wettest areas contain areas of tall herb and sedges, often forming dense stands of vegetation dominated by a limited number of species. Notably, dense areas of Greater Pond Sedge *Carex riparia* and Soft Rush *Juncus effusus* were recorded. Other species recorded in these areas include; Hemlock Water-dropwort *Oenanthe crocata*, Bittersweet *Solanum dulcamara*, Ragged Robin *Silene flos-cuculi*, Great Willowherb *Epilobium hirsutum*, Teasel *Dipsacus fullonum*, Common Nettle *Urtica dioica*, Water Figwort *Scrophularia umbrosa*, Field Horsetail *Equisetum arvensis* and Reedmace *Typha latifolia*.

3.16. Other areas support species or communities associated with drier conditions or are tolerant of occasional, or seasonal inundation / waterlogging. Species recorded include; Common Ragwort, Chickweed *Stellaria media*, Creeping Buttercup, Creeping Cinquefoil *Potentilla reptans*, Selfheal *Prunella vulgaris*, Common Spikerush *Eleocharis palustris*, Square-stalked Willowherb *Epilobium tetragonum*, Yorkshire Fog, Great Willowherb, Common Mousear, Hard Rush *Juncus inflexsus*, Short-fruited Willowherb *Epilobium obscurum*, White Clover, Spear Thistle *Cirsium vulgare*, Prickly Sedge *Carex muricata* agg., Hairy Sedge *Carex hirta*, Ground Ivy *Glenchoma hedera*, Cut-leaved Cranesbill *Geranium dissectum*, False Fox Sedge, Soft Rush, Broad-leaved Dock *Rumex obtusifolius*, Curled Dock *Rumex crispus*, Red Fescue, False Oat Grass, Creeping Thistle, Meadow Barley and Common Fleabane *Pulicaria dysenterica*,

3.17. The marshy grassland associated with the GCN mitigation area in the north west of the Site consisted of a similar compliment of species as described above. Although additional species present include; Quaking Grass *Briza media*, Sweet Vernal Grass *Anthoraxum odoratum*, Tufted Hair-grass *Deschampsia cespitosa*, Meadowsweet *Filipendula ulmaria*, Oxeye Daisy, Greater Bird's-foot Trefoil *Lotus pedunculatus*, Cowslip *Primula veris* and Common Sorrel *Rumex acetosa*.

<u>Plantation Woodland / Orchard</u>

3.18. There are discrete blocks of plantation woodland present throughout the Site, with larger areas present in the north west and south east and smaller isolated blocks scattered elsewhere within the Site. Given the nature of the plantation, the woodlands lack structural, age and species diversity.

3.19. In the north western part of the ROF site this habitat is more mature and is dominated by Poplar species *Populus nigra* and *Populus alba*. Throughout the rest of the ROF site, the plantation contains a mixture of native and non-native species, including Ash *Fraxinus excelsior*, Field Maple *Acer campestre*, Small-leaved Lime *Tilia cordata*, Silver Birch *Betula pendula*, Rowan *Sorbus aucuparia*, Black-poplar *Populus nigra*, Alder *Alnus glutinosa*, Pedunculate Oak *Quercus robur* and Sycamore *Acer pseudoplatanus*.

3.20. Due to low ambient light levels there are few understorey species, although tall herbs and Bramble *Rubus fruticosus* agg. scrub is present in many areas along the edge of plantation.

3.21. A remnant orchard is located to the south east of the Site. This area contains relatively few orchard trees (*Malus* sp.) while the remaining area consists of a mix of scrub, tall ruderal and semi-improved grassland.

Trees

3.22. Outside of the woodland, orchard and hedgerow treelines, there are relatively few mature trees within the Site.

3.23. Within the ROF site and along the approach roads, there are tree lined avenues consisting primarily of Horse Chestnut *Aesculus hippocastanum*. The majority of the trees present have been subject to pollarding, that had ceased in recent years resulting in an increased risk of structural failure as the pollards over mature. As such, an arboricultural management regime has initiated as of 2020. This has involved selective thinning of tree crowns and reinstating pollard management where possible.

3.24. In general, above the bole, the main branches lack any loose bark, cracked limbs or obvious holes. However, in some instances where specimens contained dead wood, conspicuous cracks and holes have been identified. As part of the ongoing management, this dead wood is to be removed or the tree removed entirely, where necessary. The removal of these features was facilitated by detailed internal inspections in search of evidence for potential roosting bats. Further details on the survey is provided below.

3.25. Other standard trees present along the roads within the ROF site include; Tulip Tree *Liriodendron tulipifera*, Gum Tree *Liquidambar* sp., Cherry *Prunus avium* and Leyland Cypress *Cupressus* × *leylandii*. None of these trees are considered to offer any suitable roost features for bats.

Scrub

3.26. Large areas of dense scrub are present across the Site. Furthermore, given the recent change in use of the Site and current construction activities underway, the extent of this habitat has varied over time. Scrub is also found in smaller patches throughout the Site, often alongside buildings which have been decommissioned and ditches.

3.27. The scrub is typically dominated by Bramble, most notably in areas that have been subject to recent clearance or in areas where no recent management has taken place. Other areas of more mature scrub present within the site consist of Goat Willow *Salix caprea*, Grey Willow *Salix cinerea*, Hawthorn *Crataegus monogyna*, and Blackthorn *Prunus spinosa*.

3.28. The railway corridor to the north-west of the Site has also been subject to extensive encroachment by scrub. The footprint of the (now removed) railway track is formed of railway ballast that remains free of scrub in areas, although Bramble has spread over significant portions of it. Areas adjacent have developed into dense scrub and is formed of Goat Willow, Hawthorn, Blackthorn and Field Maple.

Hedgerows

3.29. In line with the broad definition of hedgerows utilised by EPI, hedgerows identified within the Site include traditional hedgerows, tree belts and belts of woody scrub that form boundary features.

3.30. Hedgerows are largely isolated from one another across the Site, with low levels of connectivity. However, the complex of fields to the south east of the Site and along the route of the new access road are typically bound by hedges. However, it should be noted that these areas are currently subject to construction activities requiring the removal of hedgerow sections.

3.31. Construction activity related to the Hinkley Point C Connection Project, is currently underway in the south east of the Site. This project has required the removal of several hedgerows along the corridor of the connection route. The hedgerows in this area vary in species composition and structure, with a mix of treelines and hedges with trees also present. Species present include; Blackthorn, Hawthorn, Wild Privet *Ligustrum vulgare*, Elder *Sambucus nigra*, Field Maple; Elm *Ulmus procera*, Hazel *Corylus avellena*, Wayfaring Tree *Viburnum lantana*, Ash, Bramble, Sycamore *Acer pseudoplatanus*, Horse Chestnut and Dogwood *Cornus sanguinea*.

3.32. To the south west of the Site, the road connection from the Site to Junction 23 of the M5 motorway is under construction. This development also required the removal of section of hedgerow along the road corridor. The hedgerows within this part of the Site are generally in poor condition, with poor structure and low species diversity, consisting mainly of Hawthorn.

3.33. It is evident that hedgerows within the main part of Site have been subject to variable management over recent years; the majority are either open based and forming a canopy, or have broadened into more substantial corridors as a result of encroachment into areas of former grassland. Most hedgerows within the Site have limited botanical diversity consisting mainly of Hawthorn, Blackthorn and Bramble.

3.34. Hedgerow features are described further within Appendix 12.1B.

<u>Tall Ruderal</u>

3.35. Patches of tall ruderal vegetation are present across the Site in locations where disturbance has occurred, notably in the northern, central and western parts of the Site. In addition, ruderal vegetation has become established in areas where mowing and cattle grazing has been reduced or excluded. Tall ruderal communities have also developed on areas of cleared ground and stockpiled material.

3.36. Species present include Common Nettle *Urtica dioica*, Hogweed, Great Willowherb, Creeping Thistle *Circium arvense*, Prickly Sow-thistle *Sonchus asper* and Broad-leaved Dock, Hemlock *Conium maculatum*, Vervain *Verbena officinalis*, Teasel, Oxeye Daisy, Common Forget-me-not *Myosotis arvensis*, Common Vetch *Vicia sativa*, Field Bindweed, Cleavers *Galium aparine*, Bristly Oxtongue *Helminthotheca echioides* and Spotted Medick *Medicago arabica*.

<u>Ephemeral / Short Perennial Vegetation</u>

3.37. This habitat is present across the Site although often to a limited extent and persists in areas that are subject to regular disturbance. However, in the south west of the Site, in an area where boiler ash was historically disposed of, a larger area of ephemeral / short perennial vegetation has established. The deep bed of hardcore in this part of the site has slowed scrub encroachment (in the absence of active management) and has promoted the development of ephemeral vegetation.

3.38. The ephemeral vegetation supports a relatively wide diversity of herbs and grasses in localised patches, with many species demonstrating stunted growth due to nutrient deficiency as well as rabbit grazing. Vervain, Bugle *Ajuga reptans*, Common Stork's-bill *Erodium cicutarium*, Butterfly Bush *Buddleja davidii*, Prickly Sow-thistle, Creeping Cinquefoil *Potentilla reptans* and Ground Ivy *Glechoma hederacea* are present. Most notably the area contains a distinct cover of lichen *Cladonia portentosa* and mosses.

3.39. Although the process of scrub encroachment into this area is slowed due to the ground conditions, a notable amount of scrub have developed, reducing the extent of the open ground vegetation. Furthermore, a landscape bund has been created adjacent to and within the area thereby reducing its overall extent.

Standing Water

3.40. The most prominent water feature is the Borrow Pit located in the east of the Site, which is currently utilised for angling. The pit forms a relatively substantial aquatic habitat supporting a range of plant communities, including open water communities, reedbed and scrub. The open water habitat was recorded to consist of Canadian Pond Weed *Elodea canadensis*, Rigid Hornwort *Ceratophyllum demersum*, Frogbit *Hydrocharis morsus-ranae*, Water Lillie *Nymphaea alba*, Ivy-leaved Duckweed *Lemna trisulca* and Common Duckweed *Lemna minor*. Marginal species include Corky-fruited Water-dropwort *Oenanthe pimpinelloides*, Fool's Watercress *Apium nodiflorum*, Lesser Water-parsnip *Berula erecta*, Watermint *Mentha aquatica*, False Fox Sedge *Carex otrubae* and Gypsywort *Lycopus europaeus*.

3.41. A number of small seasonal ponds are located to the south east of the Site associated with grasslands, hedgerows and orchard. The ponds are generally small and noted to regularly dry out. The ponds commonly support dense vegetation growth, including aquatic, emergent and marginal vegetation, but are generally isolated from other aquatic features within the Site.

3.42. Four ponds have been created in the north west of the Site as part of the GCN mitigation area. These ponds have become well established and are considered to be in good condition. Aquatic and marginal species recorded include; Reedmace, Frogbit, Water Plantain *Alisma plantago-aquatica*, Celery-leaved Buttercup *Ranunculus sceleratus*, Gypsywort and Water-crowfoot *Ranunculus* subgenus *Batrachium*.

3.43. A number of built aquatic features are also present which supported operation of the factory, including save-alls, drainage bunds and emergency fire water tanks. Whilst the save-alls were subject to regular management, some of the other artificial features have not been in operation for an extended period of time.

Reed Bed

3.44. A substantial corridor of reed bed is present to the north of the Site which connects to the River Huntspill to the north. This series of connected reed beds was developed specifically to filter runoff from the site. The reed beds almost exclusively comprise Common Reed *Phragmites australis* although there is some scrub encroachment. As a result of decommissioning operations there has been a significant reduction in through flow.

3.45. There is also an area of extensive reed bed habitat adjacent to the Borrow Pit, as described previously. An invasive species, Himalayan Balsam *Impatiens glandulifera* is present within the reed bed located in this area.

Bare Ground

3.46. As part of the ongoing operation of the Site as well as historic and current remediation and construction works taking place, areas of bare ground have been created. These areas include footprints of demolished buildings, cleared ground, crushed hardcore, stockpiled materials or areas subject to regular disturbance by vehicle movements. These areas are, in the main, devoid of vegetation, although some ephemeral / ruderal species (as described above) occur sparingly across this habitat.

Seasonal Wet Ditches / Dry Ditches

3.47. Across the Site are a number of drainage ditches, forming a network of wetland habitats. Many of these features appear to pre-date the explosives factory, and would have formed part of the 'natural' drainage system of the former agricultural landscape. However, more recent drainage features, associated with the operations of the factory, are also present.

3.48. The more recently engineered drainage features include principal drainage ditches, flowing south to north through the centre of the Site and along the western boundary of the site, and an effluent ditch, which is connected to the reed bed to the north of the Site. A number of older ditches are connected to the effluent ditch.

3.49. In general, the main drainage ditches across the Site are deep, steep sided channels that are permanently wet. They are subject to regular maintenance, including dredging and scrub removal. As such, the vegetation associated with many of these ditches is limited.

3.50. The characteristics of the original 'natural' drainage ditches vary considerably across the Site. A number of ditches have become redundant, and now represent dry ditches. In many cases these are subject to extensive scrub growth, although this is limited where livestock have access.

3.51. Other ditches present within the Site are either seasonally inundated, support flows or permanently support water. Few features support standing water all year round and it is considered that the majority of watercourses only support water for part of the year, typically winter.

3.52. Consequently, the vegetation supported by ditches varies considerably across the Site. Many periodically dry ditches contain communities dominated by Sedges *Carex* sps., Common Reed or Willowherbs *Epilobium* sps., or have been subject to scrub encroachment.

3.53. Ditches supporting water all year round are typically more diverse; these features are most prevalent in the north eastern part of the Site (such as those associated with the Puriton Ponds and Rhynes LWS). Ditches in this area are typically unshaded, with wide channels and shallow banksides. Species associated with the ditches include; Greater Pond Sedge, Lesser Pond Sedge *Carex acutiformis*, Common Reed, Duckweed *Lemna* sp., Reedmace, Frogbit, Water Crowfoot and Water Plantain.

Buildings and Hardstanding

3.54. There are a number of buildings / buildings complexes remaining within the Site, although the majority of the previously existing buildings have been demolished. Those remaining are described below and shown graphically on Plan ECO3.

3.55. Building **B1** is known as the 37 Club and is a social and function venue. The building is a single storey structure with a complex shape that is of varied construction. The building is primarily of rendered brick construction with a mix of flat and pitched roof structures. The majority of the roof is felt covered, with smaller areas that are tiled.

3.56. Previous evidence (from 2008) of bat droppings was recorded on part of the roof edge, although subsequent emergence survey work did not record any roosting activity. Internal inspections of the building undertaken in 2020 observed a dead juvenile Pipistrelle below a void near the roof edge previously identified as a roosting location.

3.57. Building complex **B2** is formed of a gate house and reception with other smaller storage buildings. The buildings are all single storey with flat roofs.

3.58. Building **B3** is a disused fire depot. The structure is brick built with steel frames and large garage doors to the southern aspect. The building is currently used for storage.

3.59. Building **B4** is a disused office building with several flat concrete roof sections. No significant enclosed roof voids exist. The structure is understood to be in poor condition with sections of roof susceptible to leaking.

3.60. This building has previously been identified as a bat Brown Long-eared bat roost (in 2008), although further update work (2017) recorded no evidence of use by bats.

3.61. Building **B5** is a large shed comprised of a metal pitched roof structure used for storage as part of construction works.

3.62. Building **B6** is a currently in use as an office building with flat concrete roof sections. No significant enclosed roof voids exist. The building is considered to be in relatively good condition.

3.63. Building **B7** is a disused brick-built structure with concrete roofs without enclosed voids.

3.64. Building **B8** is a disused warhead lining facility that is a double storey brick-built / stell framed structure with a flat roof. The northern aspect consists of a single storey elevation.

3.65. Building **B9** is a disused double storey brick-built structure with a flat roof. The southern elevation is single storey.

3.66. Building **B10** is a residential dwelling location to the south of the Site, along Woolavington Road. The structure is a brick-built, two-storey dwelling with a pitched and tiled roof. A loft void is present. A small single storey, flat roof extension is present on the western aspect. The structure is in a state of disrepair with a number of large holes in the eaves of the roof, creating large access points to the loft void.

3.67. In 2008, abundant Brown Long-eared droppings were recorded within the loft, although subsequent emergence surveys recorded no roosting activity. In 2020 Brown Long-eared bat droppings were again recorded within the loft void.

3.68. A series of other smaller structures including small stores and utilities housings are present around the ROF site. They are predominantly constructed of brick or concrete blocks, with concrete or corrugated composite/iron roofs without enclosed voids.

3.69. In addition, a number of pillboxes are present at the Site boundary. Again, these are typically formed of brick walls with concrete slab roofs. No voids are present, although loopholes and open doorways are usually present. Those that remain are considered to be of no value to roosting bats, due structures providing no perching sites or crevices to shelter within as well as their exposure to climatic changes (e.g. temperature and humidity). However, during inspections undertaken in 2020, two pill boxes (shown as buildings **B11** and **B12**) were noted to have developed suitable perching sites, where part of the concrete ceilings had eroded and exposed the reinforcing metal bar.

3.70. None of the buildings are considered to offer suitable roosting features, except for those with a history of roosting bat evidence being present (**B1**, **B4** and **B10**) and **B11** and **B12** all of which are considered to offer low suitability for roosting bats, except for B10 with is considered to offer moderate roost potential.

3.71. Where these buildings have been removed there are areas of bare ground, cleared land and crushed hardcore.

3.72. Areas of hardstanding in the form of roads, tracks and rail head are distributed throughout the Site.

<u>Priority Habitats</u>

3.73. Of the several habitats identified during survey work a number fulfil criteria for UK priority habitats. The following Priority habitats are identified on Natural England spatial datasets:

- Traditional Orchard;
- Lowland Mixed Deciduous Woodland;
- Coastal and Floodplain Grazing Marsh; and
- Lowland Calcareous Grassland.

3.74. The distributions of these habitats are illustrated within Appendix 12.1A.

3.75. Traditional Orchard is characterised by fruiting trees set within herbaceous vegetation. Trees are grown in low intensity for fruit or nut production rather than timber. Given the presence of fruiting trees and the lack of apparent intensive management it is considered that this Priority Habitat is present in the form of the orchard habitat.

3.76. Lowland Mix Deciduous Woodland include most semi-natural woodland in lowland England. The woods tend to be small and vary greatly in species composition and can include both primary and secondary woodland. Given the broad nature of the Priority Habitat description and the characteristics of the onsite woodlands, it is considered that this Prior Habitat is present onsite in the form of plantation woodland.

3.77. Coastal and Floodplain Grazing Marsh is defined as periodically inundated pasture, or meadow with ditches which maintain the water levels, containing standing brackish or fresh water. The ditches are especially rich in plants and invertebrates. Almost all areas are grazed and some are cut for hay or silage. Seasonal water-filled hollows and permanent ponds with emergent swamp communities, but not extensive areas of tall fen species like reeds. It is considered that this description fits with some areas of semi-improved grassland onsite, although the majority of the improved fields lack the presence of species rich rhynes or emergent swamp vegetation.

3.78. Lowland Calcareous Grassland is defined by the presence of calcareous plant communities with agricultural enclosures as well as other locations such as roadside verges. However, the small area identified within the Puriton Cowslip Field LWS is considered to support semi-improved neutral grassland and it is considered that this Priority Habitat is not present onsite.

3.79. The Natural England spatial datasets also identify areas of good quality semi-improved grassland (a Non Priority Habitat) in association with the fields to the northwest of the Site. However, areas of semi-improved grassland at the Site may be classified under Lowland Meadow, which shares a crossover with good quality semi-improved grassland.

3.80. The extent to which the above priority habitats are considered to be present, based on survey information collected within the Site are shown at Plan ECO4.

3.81. In addition to the above, other habitats within the Site that may fall within Priority Habitat descriptions include:

- Reed bed;
- Ponds;
- Hedgerows; and
- Open Mosaic Habitats on Previously Developed Land (OMHPDL)

3.82. Reedbeds, as defined by UK BAP priority habitat descriptions, are wetlands dominated by stands of the Common Reed that maintain water for the majority of the year. Areas of open water, ditches, wet grassland and carr woodland may be associated with them. Areas of Reedbed were recorded, namely to the north of the Site.

3.83. Ponds, as defined within the UK BAP priority habitat descriptions, are seasonal standing water bodies up to 2 ha in size and which meet at least one of the following criteria:

- Pond habitat is of international importance;
- Is host to floral and faunal species of high conservation importance;
- Exceptional assemblages of key biotic groups;
- Ponds of high ecological quality; and
- Individual ponds or groups of ponds with a limited geographic distribution recognised as important because of their age, rarity of type or landscape context.

3.84. Ponds recognised for supporting Great Crested Newts (a species of high conservation importance) are considered to meet this criteria.

3.85. All hedgerows consisting predominantly (i.e. 80% or more cover) of at least one woody UK native species are covered by the Priority Habitat. On this basis the Priority Habitat is considered to be present onsite in the hedgerow sections containing native species.

3.86. To identify OMHPDL all the following criteria set out in the UK BAP priority habitat descriptions must be met. The area of open mosaic habitat is at least 0.25 ha in size.

3.87. There must be a known history of disturbance at the site or evidence that soil has been removed or severely modified by previous use(s) of the site. Extraneous materials/substrates such as industrial spoil may have been added.

3.88. The site contains some vegetation. This will comprise early successional communities consisting mainly of stress-tolerant species (e.g. indicative of low nutrient status or drought).

3.89. The site contains unvegetated, loose bare substrate and pools may be present. The site shows spatial variation, forming a mosaic of one or more of the early successional communities plus bare substrate, within 0.25ha.

3.90. By applying the above criteria it is considered that some parts of the Site would qualify. This is considered to be limited to areas of sparsely vegetated ephemeral / short perennial vegetation present in the south west of the Site, in association with the Puriton Ash Grounds LWS. It is noted that given the Site has been subject to remediation and active construction works are taking place, other parts of the Site may superficially fit with this description. However, this is considered to the very recent / continuing activities onsite that are temporary in nature. As such, the habitat will not have the required time to establish as a distinct habitat type or develop a notable diversity of supported species.

3.91. **Background Information**

3.91.1. The desk study undertaken by SERC returned several records of protected or notable plant species from within the Site.

3.91.2. These included Rootless Duckweed *Wolffia arrhizal,* Greater Water-parsnip *Sium latifolium*, Frogbit, all these records pre-date 2000 with the most recent from 1997.

3.91.3. Other records of plant species from within the local area that were returned post-2000 include Greater Butterfly-orchid *Platanthera chlorantha*, Sea barley *Hordeum marinum* and Yellow vetchling *Lathyrus aphaca.*

3.91.4. Species records received from SERC are included at Appendix 12.1E

4. DESIGNATED SITES

4.1. Statutory Designated Sites

4.1.1. The nearest statutory designated site is the Huntspill River NNR, which is located immediately to the north of the Site, with a small section (c.0.7ha of a total 148.98ha) within the Site boundary itself. The legal protection afforded to NNRs is usually underpinned by their designation as a Site of Special Scientific Interest (SSSI), however in this case there is no such designation. The Huntspill River NNR consists of open water, lowland grassland and small areas of woodland. It supports populations of Otter *Lutra lutra* and Barn Owl *Tyto alba*. It is also designated due to its supporting and connecting habitat between the Severn Estuary SPA and the Somerset Levels and Moors SPA.

4.1.2. The next nearest statutory designated site is Bridgwater Bay SSSI which is situated approximately 2.2km to the west of the Site at its closest point. The SSSI forms part of the Severn Estuary SPA and Ramsar Site (approximately 2.2km to the west of the Site). Part of the Bridgwater Bay SSSI also forms part of the Severn Estuary SAC located approximately 2.6km to the west of the Site. This area is designated for its internationally important populations of wildfowl and waders, its coastal habitats and three annex II species of fish.

4.1.3. Catcott, Edington and Chilton Moors SSSI is situated 3.1km to the east of the Site. This SSSI forms part of the Somerset Levels and Moors SPA and Ramsar site. The Somerset Levels and Moors SPA and Ramsar site is designated for its important assemblages of wintering wildfowl and waders including four Annex I species.

4.1.4. Other statutory sites considered include three Bat SACs known as North Somerset and Mendip Bat SAC (located approximately 15.9km northeast of the Site at its closest point), Hestercombe House SAC (approximately 14.7km southwest of the Site) and Exmoor and Quantock Oakwoods SAC (approximately 14.3km west of the Site).

4.1.5. North Somerset and Mendip Bat SAC is designated on account of its orchid rich calcareous grasslands, caves, woodlands and the presences of Lesser Horseshoe Bats *Rhinolophus hipposideros* and Greater Horseshoe Bats *Rhinolophus ferrumequinum*. Hestercombe House SAC is designated on account of it supporting Lesser Horseshoe bats. Exmoor and Quantock Oaklands SAC is designated on account of it supporting Oakwoods, alluvial woods and Barbastelle bat *Barbastella barbastellus*, Bechstein's bat *Myotis bechsteini* and Otter.

4.1.6. Citations for the above statutory designated sites are included at Appendix 12.1C. The locations of these sites are included at Plan ECO1.

4.2. Non-statutory Designated Sites within the Site

4.2.1. There are eight non-statutory designated sites of nature conservation interest within the Site (as illustrated on Plan ECO2). These are described below individually, with further details provided on the type and condition of

habitats present as well as protected / notable species present where relevant. Relevant citation and SERC survey sheets for these sites are included at Appendix 12.1D.

4.2.2. In the northeast corner of the Site lies **Puriton Rhyne and Ponds LWS**, which includes an area of reed bed that runs north of the Site to the Huntspill River. It is designated for its notable plant species within the rhynes, and as it has been noted to support Otter and the nationally scarce Hairy Dragonfly *Brachytron pratense*. The shape of the LWS has been subject to a minor alteration following a resurvey in 2015 that noted historic features as no longer being present.

4.2.3. The reed bed to the north is notable for its extent, rather than its inherent ecological diversity. Floristically the area is dominated by Common Reed. This area is known to support Water Vole, breeding birds and provides wetland habitat connectivity between the River Huntspill and the rest of the Site.

4.2.4. The LWS is designated for its aquatic drainage ditches and the species that they support. During update habitat surveys undertaken in 2020, the main ditches within the LWS were noted to contain a diverse flora compared to the rest of the rhyne / ditch system in the Site. Evidence of Water Vole have also been recorded within the ditches, although no evidence of Otter presence has been recorded. Detail on the invertebrate assemblage within the ditch system required further analysis.

4.2.5. Dry and seasonally wet areas of ditch that are heavily overshaded by encroaching scrub. None of these ditches have been recorded as supporting any notable or protected species. Furthermore, the grasslands within the LWS consist of improved grasslands that are of little ecological significance. Areas of hardstanding and cleared ground resultant from the demolition of buildings are equally insignificant in ecological terms.

4.2.6. **Borrow Pit, Puriton LWS** is situated in the east of the Site. It is designated for its breeding population of Cetti's Warbler.

4.2.7. The Borrow Pit is currently used as a fishing lake. The area has been subject to works to improve drainage across the Site, with a new ditch created in the north west of the Borrow Pit and the shape of the lake has been formalised. This has modified the drainage across the LWS and reduced the areas of inundated reed bed. The smaller areas of reed bed within the Borrow Pit are developing among existing scrub consisting of Goat Willow and Blackthorn. The wetland habitat is considered to continue to offer breeding habitat for Cetti’s Warbler.

4.2.8. Small instances of Himalayan Balsam were recorded within the LWS.

4.2.9. **Stoning Pound Field and Rhyne LWS** is situated in the east of the Site and to the south of the Borrow Pit LWS. It is designated for its notable aquatic plant species present within boundary rhynes and on account of it previously supporting Otter.

4.2.10. The field itself consists of improved grassland which does not form part of the designating features for this LWS and it not considered to be of any significant ecological value.

4.2.11. The rhyne system varies in quality and in 2020 extensive build up of duckweed was noted across much of the Stoning Pound rhyne to the north, whilst the rhyne to the east was devoid of duckweed and contained greater species diversity. The western rhyne was heavily overshadowed by scrub.

4.2.12. **Woolavington Road and Fields North LWS** is situated immediately south of the Site. It is designated for the mire habitats that it supports. The LWS also contains areas of semi-improved grassland, rushes and scrub.

4.2.13. The majority of the LWS consists of semi-improved grassland that is generally species poor with False Oat grass and Yorkshire Fog forming much of the sward present. Other areas are heavily rabbit grazed and show signs of disturbance with nettle bed having formed. These areas are not considered to be of any great ecological significance.

4.2.14. Further north the ground level drops and conditions become wetter. In the wetter zones, extensive areas of Soft Rush and Greater Pond Sedge are present among dense areas of scrub formed primarily of Blackthorn. The species diversity within this area was noted to be limited.

4.2.15. **Puriton Cowslip Field LWS** is situated within the Site to the north of the Woolavington Road and Fields North LWS. It is designated for its calcareous to neutral grassland habitat and the plant species it supports.

4.2.16. Recent inspections of the LWS notes that the eastern field was is relatively good condition, with a sward that contain a mix of wildflowers and grasses. A notable population of Pyramidal Orchids was noted amongst the sward. This area represents one of the more ecologically valuable areas of grassland within the context of the Site. However, the field edges become more species poor, with a greater assemblage of robust grasses and scrub present. The western field shares a similar species composition as the eastern field although is generally less diverse. As such, the areas of greatest value are located centrally within the eastern field of the LWS.

4.2.17. **Puriton Ash Ground LWS** is situated within the western part of the Site and is designated for notable plant species that it supports. It is a species rich re-colonising waste ground with areas of scrub. The area was used as tip for rubble and ash associated with the factory. This has provided a basic nutrient poor substrate allowing the associated plant community to establish and also slows the establishment of perennial vegetative communities (such as permanent grasslands).

4.2.18. As part of the remediation of this part of the Site the LWS has been partially capped under a recently constructed landscape feature that is to be seeded native wildflower seed mixes. Areas within the LWS that have not been subject to treatment remain and comprise open ephemeral vegetation with scattered scrub, although in some areas the scrub is becoming more dense and reducing the open nature of the LWS.

4.2.19. This LWS is of potential value to the invertebrate assemblage at the Site due to vegetation that has developed on the nutrient poor substrate.

4.2.20. **Northmead Drove Fields LWS** is situated immediately to the northwest of the Site. It is designated for its mosaic habitats of grassland and rhynes. However, the grasslands themselves are species poor, consisting of improved grasslands that are of little ecological value. The rhynes are comparatively more species rich and therefore, more ecologically significant.

4.2.21. **Puriton Meadows and Rail Spur LWS** is situated in the northwest of the Site and then continues along the railway spur to the northwest where it bisects the Northmead Drove Fields LWS. It is designated for its notable species that it supports and an area of semi-natural grassland.

4.2.22. The vegetation along the railway spur is dominated by dense scrub consisting of Bramble, Blackthorn, Hawthorn and Willow species. Open areas are generally limited to railway ballast where vegetation has been unable to establish.

4.2.23. The grassland fields to the south east of the LWS consist of improved grassland, with a relatively diverse sward compared to other areas of more species-poor grassland within the Site.

5. SUMMARY

5.1. Ecology Solutions Ltd was commissioned on behalf of This Is Gravity in March 2020 to undertake a suite of ecology survey work at the site known as the Gravity Smart Campus, Puriton, Somerset.

5.2. The Site was surveyed based around extended Phase 1 survey methodology, as recommended by Natural England.

5.3. The results of the survey work undertaken are present within this report and it is considered that an extensive habitats baseline has been established that can fully inform the current state of the environment at the Site.

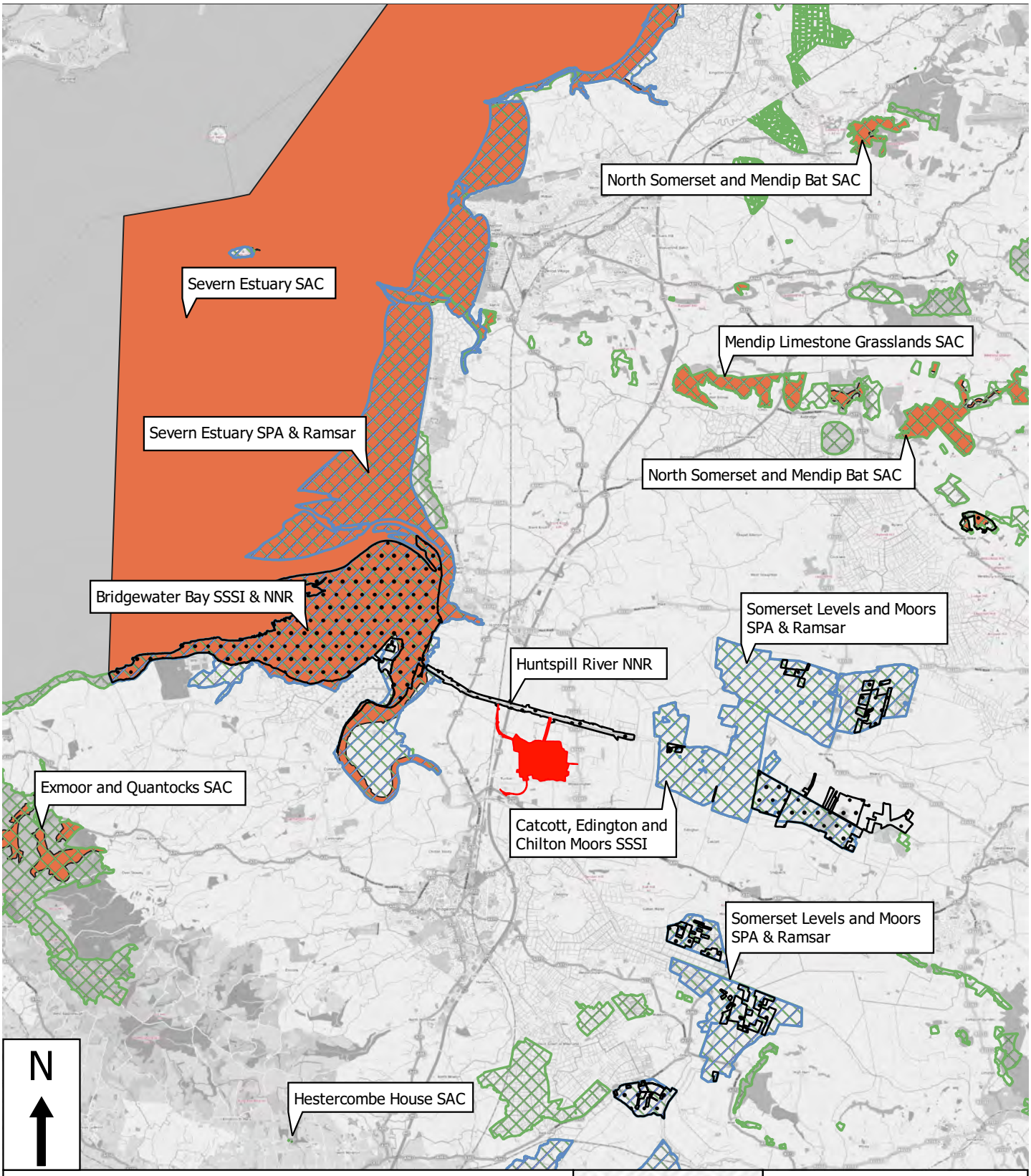
5.4. The survey work will inform the LDO process and the related environmental assessment process.

PLANS AND APPENDICES

PLANS

PLAN ECO1

Statutory Designated Sites Locations



Key:

- Site Boundary
- Special Protection Areas (SPAs) and Ramsar sites
- Sites of Special Scientific Interest (SSSI)
- Special Areas of Conservation (SAC)
- National Nature Reserves (NNR)

ECOLOGYSOLUTIONS
Part of the ES Group

Farncombe House
Farncombe Estate | Broadway
Worcestershire | WR12 7LJ

+44(0)1451 870767
info@ecologysolutions.co.uk
ecologysolutions.co.uk

7761: PROJECT GRAVITY

PLAN ECO1 STATUTORY DESIGNATED SITES LOCATIONS

Rev: A

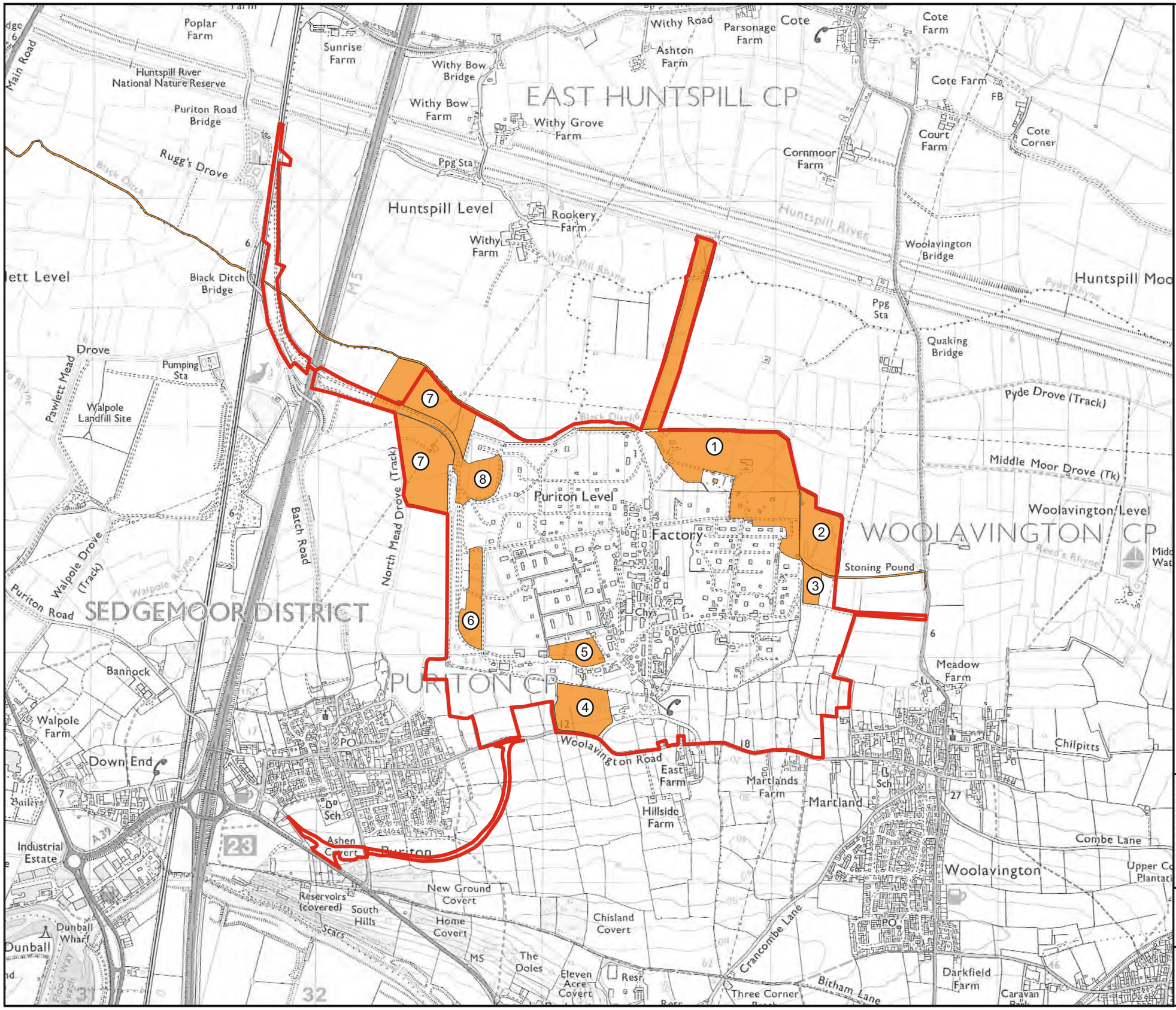
Aug 2021

Based upon the Ordnance Survey map with permission of the Controller of Her Majesty's Stationery Office, © Crown Copyright. Ecology Solutions Ltd, Farncombe House, Farncombe Estate, Broadway, WR12 7LJ. AL 100044628

QGIS.org (2020). QGIS Geographic Information System. Open Source Geospatial Foundation Project. http://qgis.org

PLAN ECO2

Local Wildlife Sites Within the Site Boundary



SITE LOCATION

LOCAL WILDLIFE SITE (LWS)

1. PURITON RHYNES & PONDS
2. BORROW PIT, PURITON
3. STONING POUND FIELD SOUTH & STONING POUND RHYNE
4. WOOLAVINGTON ROAD & FIELDS NORTH
5. PURITON COWSLIP FIELD
6. PURITON ASH GROUND
7. NORTH MEAD DROVE FIELDS
8. PURITON MEADOWS & RAIL SPUR

N

ECOLOGYSOLUTIONS
Part of the ES Group

Farncombe House
Farncombe Estate | Broadway
Worcestershire | WR12 7LJ

+44(0)1451 870767
info@ecologysolutions.co.uk
ecologysolutions.co.uk

7761: GRAVITY

PLAN ECO2: LOCAL WILDLIFE SITES WITHIN THE SITE BOUNDARY

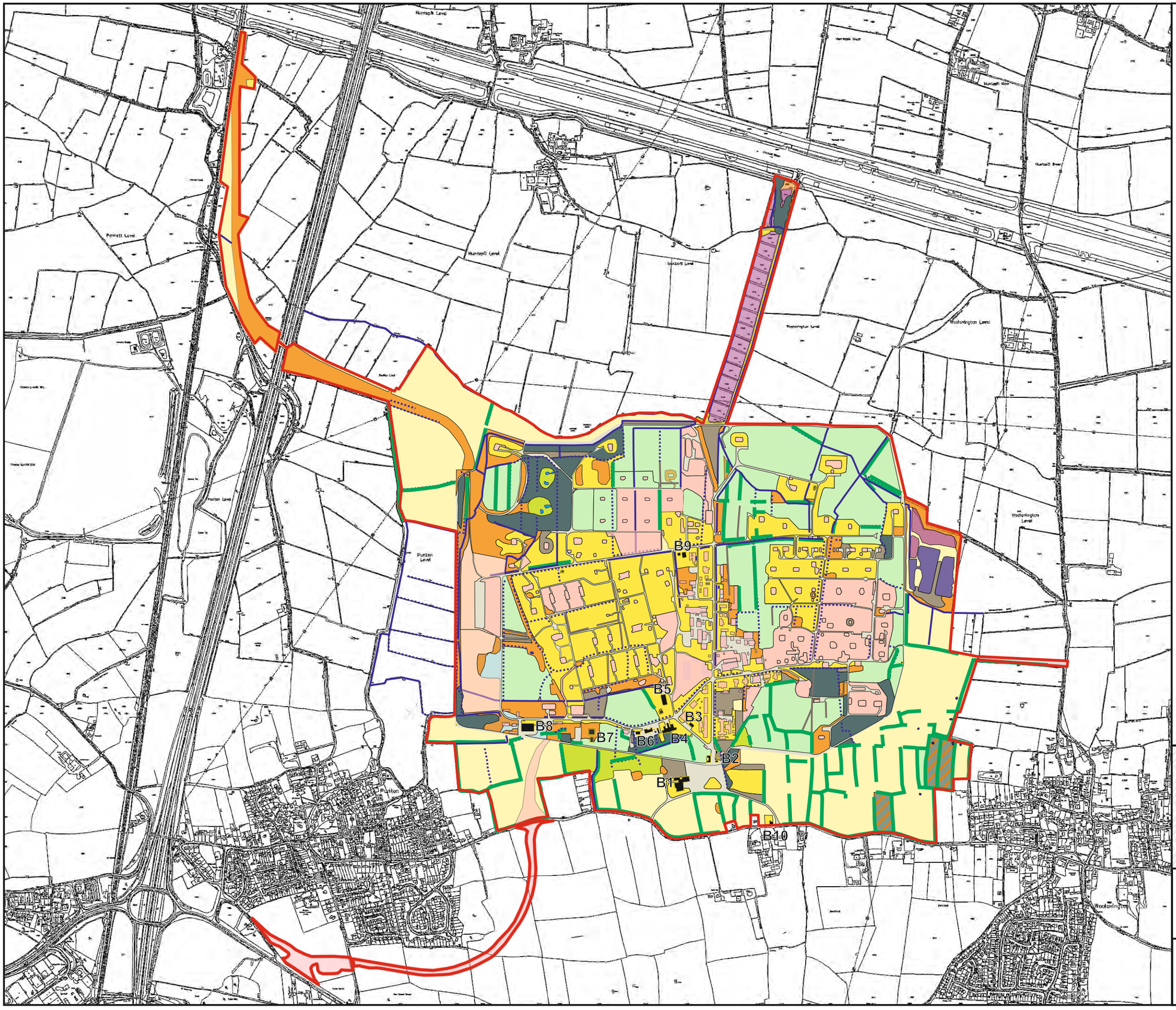
Rev: C

Feb 2021

Based upon the Ordnance Survey map with permission of the Controller of Her Majesty's Stationery Office, © Crown Copyright. Ecology Solutions Ltd, Crossways House, The Square, Stow on the Wold, Gloucestershire, GL54 1AB. AL 100044628

PLAN ECO3

Ecological Features



KEY:

- BOUNDARY OF SITE
- IMPROVED GRASSLAND
- SEMI-IMPROVED GRASSLAND
- AMENITY / ROUGH GRASSLAND
- MARSHY GRASSLAND
- PLANTATION / WOODLAND
- ORCHARD
- SCRUB
- HEDGEROW
- TALL RUDERAL VEGETATION
- EPHEMERAL / SHORT PERENNIAL VEGETATION
- STANDING WATER
- REED BED
- DRAINAGE DITCH
- SEASONAL DRAINAGE DITCH
- DRY DITCH
- BUILDING
- HARDSTANDING
- BARE GROUND

N

ECOLOGYSOLUTIONS
Part of the ES Group

Farncombe House
Farncombe Estate | Broadway
Worcestershire | WR12 7LJ

+44(0)1451 870767
info@ecologysolutions.co.uk
ecologysolutions.co.uk

7761: GRAVITY

PLAN ECO3: ECOLOGICAL FEATURES

Rev: B

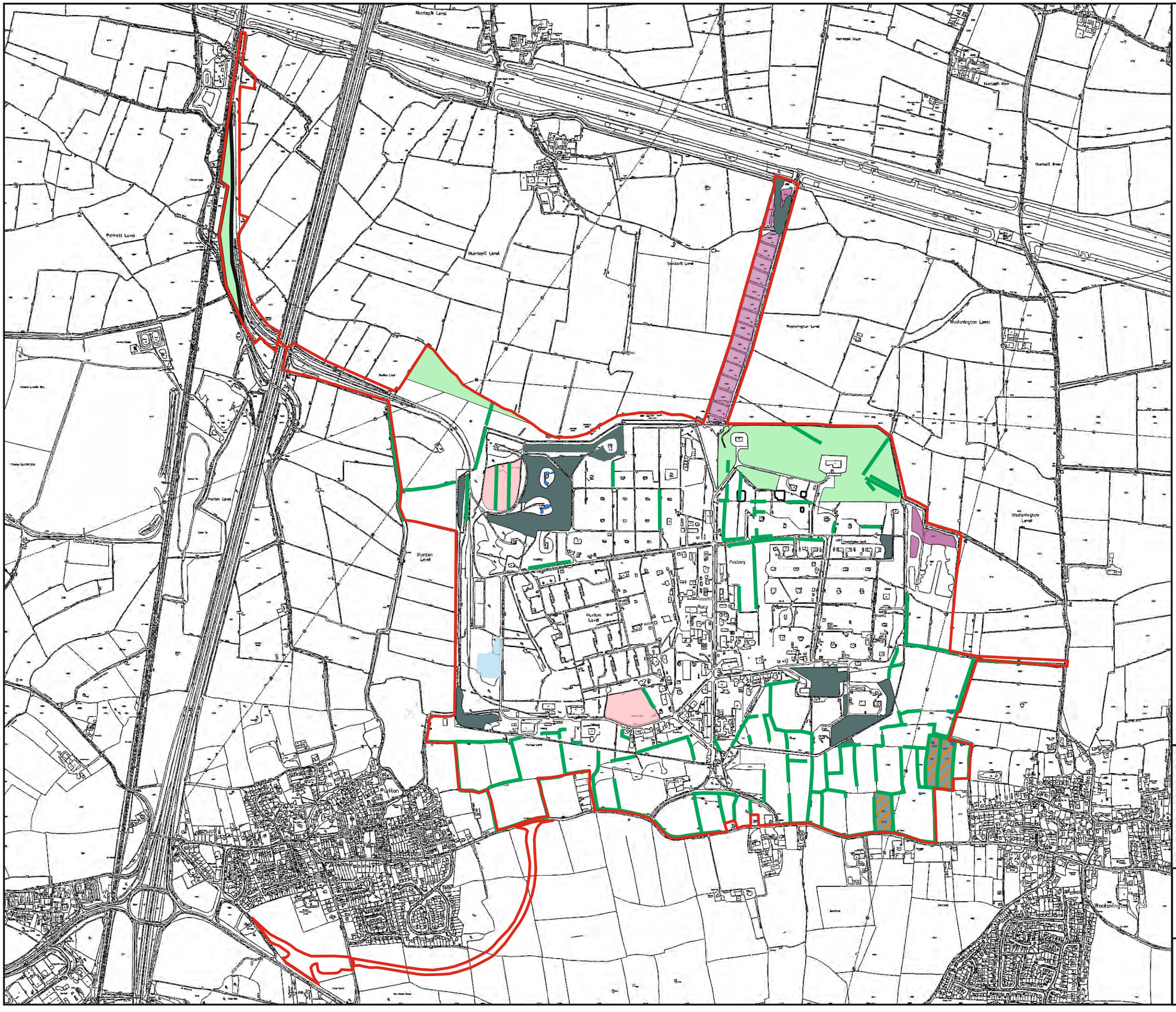
Sept 2021

Based upon the Ordnance Survey map with permission of the Controller of Her Majesty's Stationery Office, © Crown Copyright. Ecology Solutions Ltd, Crossways House, The Square, Stow on the Wold, Gloucestershire, GL54 1AB. AL 100044628

PLAN ECO4

Priority Habitats Considered Present

Based upon the Ordnance Survey map with permission of the Controller of Her Majesty's Stationery Office, © Crown Copyright. Ecology Solutions Ltd, Crossways House, The Square, Stow on the Wold, Gloucestershire, GL54 1AB. AL 100044628



KEY:

- BOUNDARY OF SITE
- COASTAL AND FLOODPLAIN GRAZING MARSH
- GOOD QUALITY SEMI IMPROVED GRASSLAND (NON PRIORITY)
- DECIDUOUS WOODLAND
- TRADITIONAL ORCHARD
- HEDGEROW
- REED BED
- OPEN MOSAIC HABITAT ON PREVIOUSLY DEVELOPED LAND
- PONDS

N

ECOLOGYSOLUTIONS
Part of the ES Group

Farncombe House
Farncombe Estate | Broadway
Worcestershire | WR12 7LJ

+44(0)1451 870767
info@ecologysolutions.co.uk
ecologysolutions.co.uk

7761: GRAVITY

PLAN ECO4: PRIORITY HABITATS CONSIDERED PRESENT

Rev: A

Sept 2021

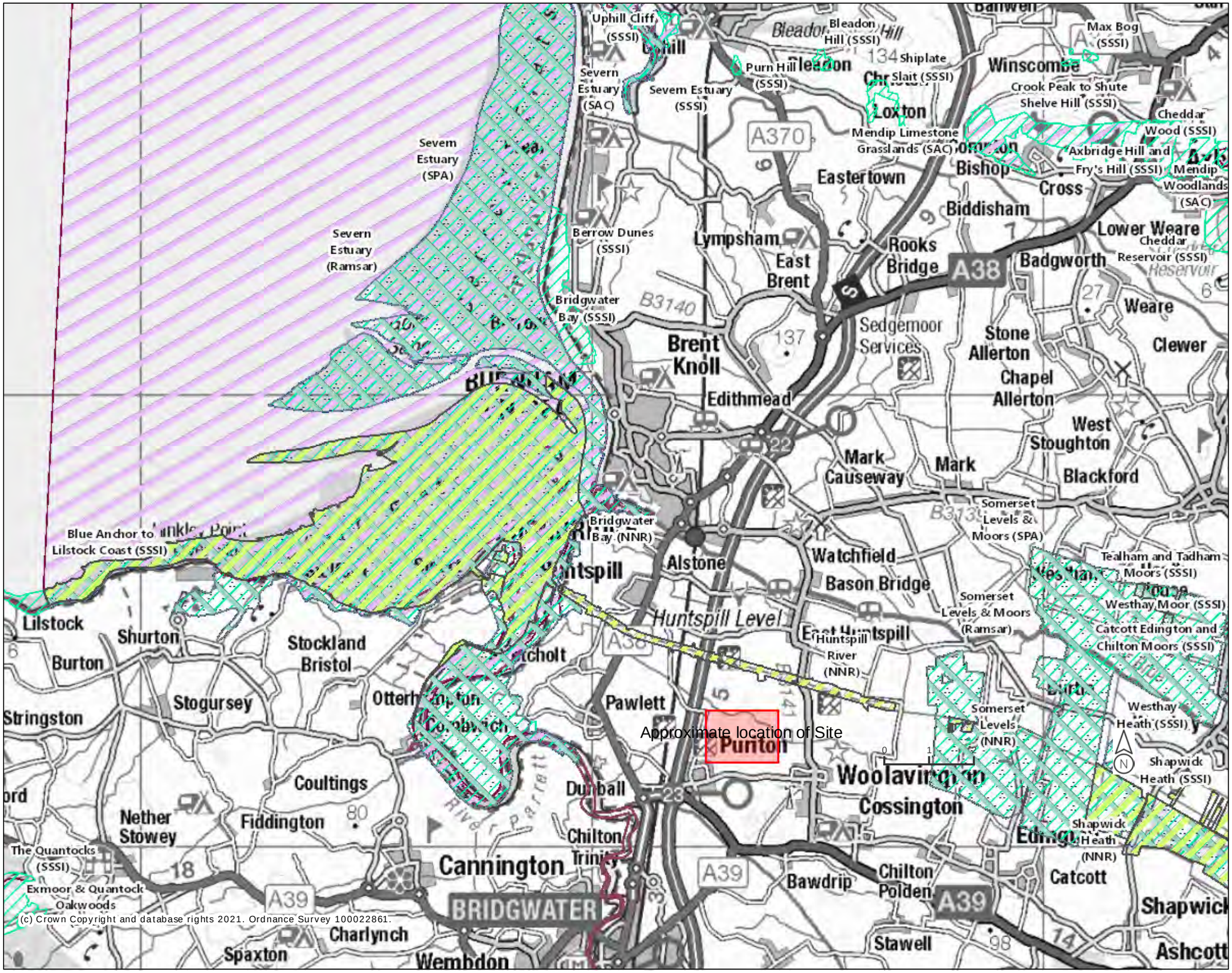
APPENDICES

APPENDIX 12.1A

MAGIC Maps

MAGIC

Magic Map



(c) Crown Copyright and database rights 2021. Ordnance Survey 100022861.

Legend

- National Nature Reserves (England)
- Ramsar Sites (England)
- Sites of Special Scientific Interest (England)
- Special Areas of Conservation (England)
- Special Protection Areas (England)

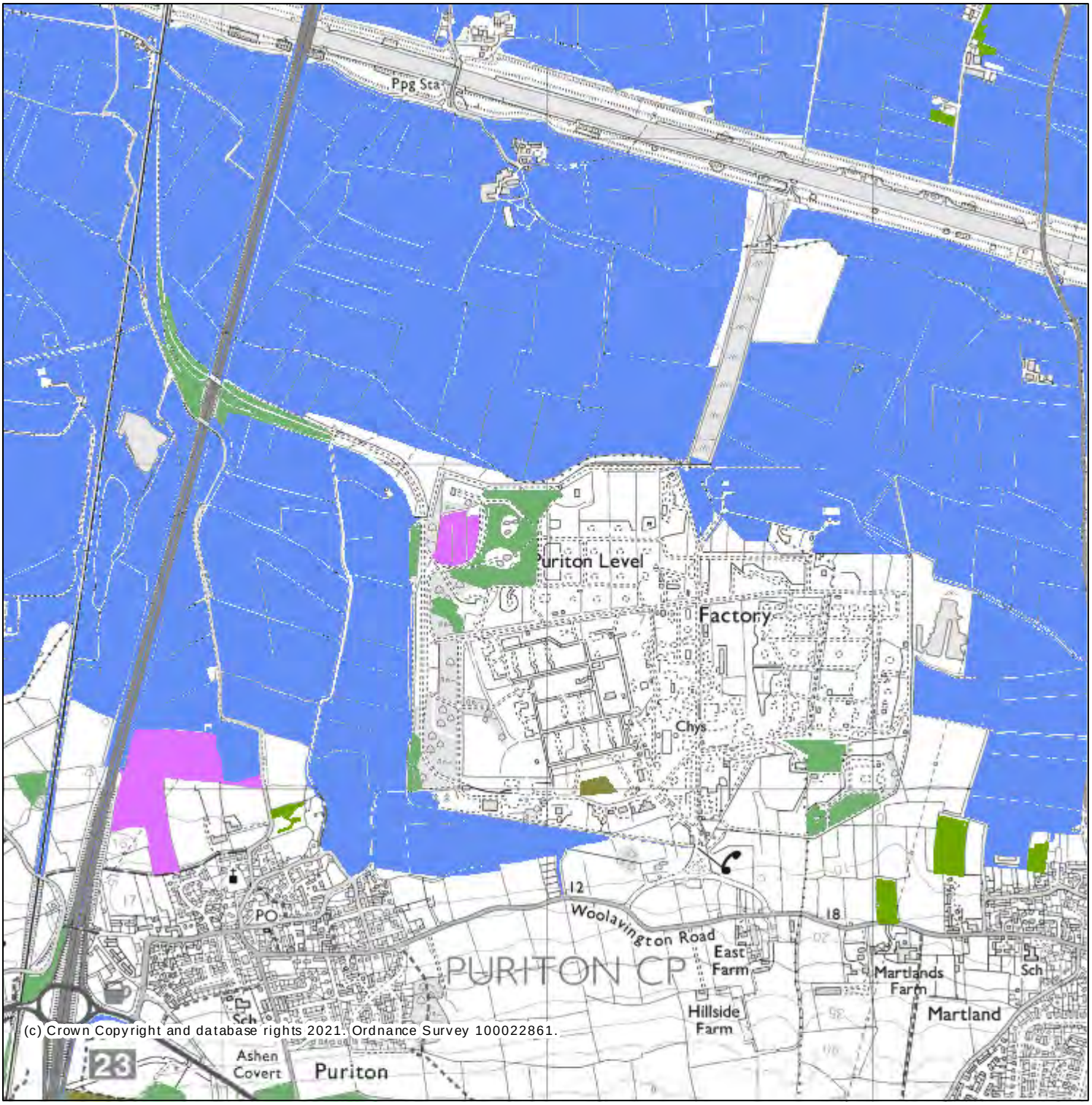
Projection = OSGB36
xmin = 301800
ymin = 137000
xmax = 359200
ymax = 158900

0 1.5 3
km

Map produced by MAGIC on 16 August, 2021.

Copyright resides with the data suppliers and the map must not be reproduced without their permission. Some information in MAGIC is a snapshot of the information that is being maintained or continually updated by the originating organisation. Please refer to the metadata for details as information may be illustrative or representative rather than definitive at this stage.

Priority Habitats



(c) Crown Copyright and database rights 2021. Ordnance Survey 100022861.

Legend

- Priority Habitat Inventory - Coastal and Floodplain Grazing Marsh (England)
- Priority Habitat Inventory - Good quality semi-improved grassland (Non Priority) (England)
- Priority Habitat Inventory - Lowland Calcareous Grassland (England)
- Priority Habitat Inventory - Deciduous Woodland (England)
- Priority Habitat Inventory - Traditional Orchards (England)

0 0.5 1
km

Projection = OSGB36
xmin = 327200
ymin = 140600
xmax = 338700
ymax = 144900

Map produced by MAGIC on 22 September, 2021.

Copyright resides with the data suppliers and the map must not be reproduced without their permission.

Some information in MAGIC is a snapshot of the information that is being maintained or continually updated by the originating organisation. Please refer to the metadata for details as information may be illustrative or representative rather than definitive at this stage.

APPENDIX 12.1B

Hedgerow Descriptions

Appendix 12.1B: Hedgerow Descriptions

1. Hedgerows within the Site are descripted within the table and shown graphically on the plan below.

Hedgerow Number	Hedgerow Description	Species Recorded
H1	Maintained Hedgerow 1.8m tall and 2m wide with wet ditch.	Blackthorn, Hawthorn, Elm, Bramble, Field Maple and Ash.
H2	Well maintained Hedgerow 1.5m tall and 1.8m wide with a ditch on northern side	Blackthorn, Hawthorn and Bramble.
H3	Well maintained Hedgerow 1.8m tall and 2m wide.	Blackthorn, Hawthorn and Common Reed
H4	Well maintained Hedgerow with occasional trees 1.5m tall and 4m wide with shaded ditch running through centre	Hawthorn, Blackthorn, Elm, Elder, Crack willow and Ash
H5	Well maintained Hedgerow with occasional trees 1.5m tall and 2m wide. Wet ditch along its length	Hawthorn, Blackthorn, Elm, Elder and Ash.
H6	Hedgerow / Treeline 1.4m and 2m wide. Well maintained except for last 20m of eastern end which has no management and young elm trees to 7m.	Elm, Hawthorn and Blackthorn.
H7	Well maintained hedgerow 1.4m and 2m wide with a wet ditch on south side	Elm, Hawthorn and Blackthorn.
H8	Well maintained hedgerow 1.4m and 2m wide.	Elm, Hawthorn and Blackthorn.
H9	Well maintained hedgerow 1.4m and 2m wide.	Elm, Hawthorn and Blackthorn.
H10	Hedgerow / Treeline 6m tall and 3m wide.	Hawthorn and Willow
H11	Hedgerow / Treeline 6m tall and 3m wide.	Hawthorn and Willow
H12	Overgrown Hedgerow 5m tall.	Blackthorn, Hawthorn, Ash, Sycamore and Bramble
H13	Hedgerow 6m tall and 5m wide with dry ditch	Hawthorn, hazel, Crack Willow, Blackthorn, Ash, Goat Willow and Elm
H14	Hedgerow 6m tall and 5m wide with dry ditch	Hawthorn, hazel, Crack Willow, Blackthorn, Ash, Goat Willow and Elm
H15	Hedgerow 4m tall and 3m wide next to deep ditch	Hawthorn, Blackthorn, Bramble and Willow
H16	Hedgerow 3m tall and 2m wide with dry ditch.	Hawthorn, Blackthorn and Elm
H17	Hedgerow 3m tall and 2m wide	Hawthorn and Blackthorn
H18	Hedgerow / Treeline 7m tall with outgrowing sections. Dutch Elm Disease present on some Elm	Ash, Bramble, Elm, Hawthorn and Goat Willow.
H19	Hedgerow with tree 5m tall and 3m wide. Dutch Elm Disease present on some Elm	Elder, Hawthorn, Blackthorn and Elm.
H20	Unmanaged Treeline 25m tall and 3m wide.	Leyland Cypress and Sycamore, garden Privet and Blackthorn.
H21	Hedgerow 2m tall and 1m wide.	Hawthorn and Bramble
H22	Hedgerow 2m tall and 1m wide.	Hawthorn, Blackthorn and Bramble
H23	Hedgerow 2m tall and 1m wide.	Hawthorn, Blackthorn and Bramble
H24	Treeline 12m tall and 4m wide	Leyland Cypress
H25	Outgrown Hedgerow / Treeline 14m tall	Sycamore, Ash, Hawthorn and Bramble
H26	Outgrown hedgerow 5m tall	Blackthorn
H27	Hedgerow / Treeline 14m tall and 3m wide.	Hawthorn, Bramble and Ash
H28	Defunct remnant Hedgerow 2m tall and 2m wide.	Bramble and Elder
H29	Hedgerow 5m tall and 2m wide.	Elder, Hawthorn, Field Maple Blackthorn and Bramble
H30	Outgrowing Hedgerow / Treeline 15m tall and 5m to 8m wide	Hawthorn, Field Maple, Italian Alder, Blackthorn, Elm and Ash
H31	Outgrowing Hedgerow / Treeline 15m tall and 5m to 8m wide	Hawthorn, Field Maple, Italian Alder, Blackthorn, Elm and Ash

Appendix 3: Hedgerow Descriptions

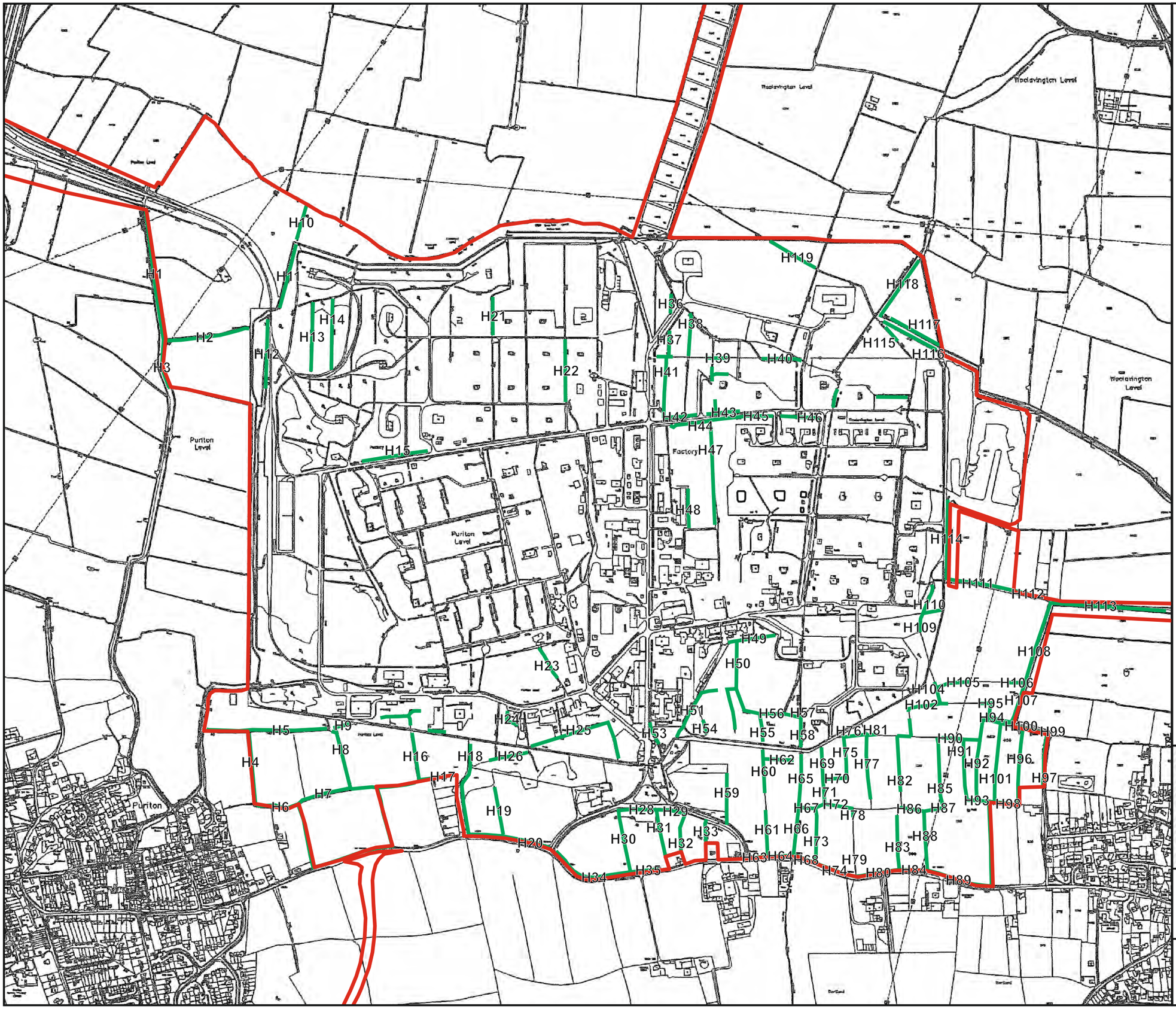
H32	Unmanaged Hedgerow 4m tall and 4m wide.	Elder, Bramble, Hawthorn, Dog Rose and Ash.
H33	Hedgerow / Treeline 14m tall and 3m wide	Ash, Crack Willow, Sycamore and Elder.
H34	Hedgerow 7m tall and 2m wide.	Hawthorn, Field Maple, Italian Alder, Elm and Ash
H35	Hedgerow 6m tall and 2m wide.	Hawthorn, Field Maple, Italian Alder, Elm, Ash and Blackthorn
H36	Hedgerow / Treeline 12m tall and 4m wide.	Crack Willow, Hawthorn, Blackthorn and Bramble
H37	Hedgerow 3m tall and 2m wide.	Hawthorn, Elder, Blackthorn and Bramble
H38	Hedgerow 3m tall and outgrown into dense scrub	Blackthorn, Hawthorn and Bramble
H39	Defunct Hedgerow along internal palisade fencing	Hawthorn, Elder and Bramble
H40	Defunct Hedgerow along internal palisade fencing	Hawthorn, Elder, Willow and Bramble
H41	Defunct Hedgerow / Treeline 8m tall and 4m wide	Horse Chestnut, Bramble, Elder and Hawthorn
H42	Hedgerow 3m tall and 2m wide.	Horse Chestnut, Bramble, Elder and Hawthorn
H43	Hedgerow 3m tall and 2m wide.	Bramble, Elder and Hawthorn
H44	Defunct Hedgerow 7m tall and 4m wide along wet ditch.	Blackthorn, Hawthorn, Elder, Willow and Bramble
H45	Defunct Hedgerow 7m tall and 4m wide along wet ditch.	Blackthorn, Hawthorn, Elder, Willow and Bramble
H46	Defunct Hedgerow 7m tall and 4m wide along wet ditch.	Blackthorn, Hawthorn, Elder, Willow and Bramble
H47	Defunct Hedgerow 4m tall and outgrown at the middle and southern sections.	Blackthorn, Hawthorn and Bramble
H48	Defunct Hedgerow 4m tall and 2m wide	Blackthorn, Hawthorn, Elder and Bramble
H49	Hedgerow / Treeline 20m tall and 3m wide.	Poplar sp., Alder, Elder, Hawthorn and Bramble
H50	Treeline 15m tall.	Crack Willow, Blackthorn and Bramble.
H51	Treeline 15m tall.	Crack Willow, Hawthorn, Blackthorn and Bramble.
H52	Hedgerow / Treeline 10m tall and 4m wide	Bramble, Ash, Blackthorn, Hawthorn and Sycamore.
H53	Treeline 15m tall with some evidence of recent thinning	Leyland Cypress
H54	Outgrown hedgerow 5m tall and up to 12m wide.	Hawthorn, Blackthorn and Bramble.
H55	Hedgerow 5m tall and 5m wide.	Hawthorn, Elm, Elder, Ash and Field Maple
H56	Treeline 14m tall and 4m wide.	Crack Willow and Italian Alder
H57	Hedgerow / Treeline 14m tall and 4m wide.	Crack Willow and Bramble
H58	Treeline / Woodland Edge 10m tall	Oak, Ash and Bramble
H59	Treeline 14m tall and 2m wide	Horse Chestnut and Sycamore.
H60	Treeline 18m tall and 4m wide.	Italian Alder, Silver Birch, Willow and Sycamore
H61	Defunct hedge, 6m tall and 1m wide.	Hawthorn, Blackthorn, Field Maple and Dog Rose
H62	Treeline adjacent to 113 in the north of the field	Sycamore
H63	Hedgerow 2m tall and 1m wide.	Hawthorn and Bramble
H64	Hedgerow 2m tall and 1m wide.	Elder Blackthorn and Bramble.
H65	Hedgerow 4m tall and 2m wide with seasonal ditch.	Blackthorn, Hawthorn and Bramble.
H66	Double Hedgerow / Treeline 20m tall and 4m wide.	Crack Willow, Hawthorn, Elm, Blackthorn and Bramble
H67	Treeline 20m tall and 2m wid.	Ash, Italian Alder, Crack Willow.
H68	Hedgerow 3m tall and 3m wide.	Blackthorn, Elm, Elder, Ash and Wild Privet.
H69	Treeline / Hedgerow 20m tall and 2m wide with seasonal ditch.	Elm, Hawthorn, Elder, Norway Maple, Ash, Goat Willow and Bramble

Appendix 3: Hedgerow Descriptions

H70	Hedge 4m tall and 4m wide with a seasonal ditch.	Bramble, Blackthorn, Hawthorn and Sycamore
H71	Hedgerow / Treeline 20m tall and 2m wide with seasonal ditch.	Ash, Hawthorn, Bramble and Sycamore.
H72	Hedgerow / Treeline 20m tall and 3m wide.	Ash, Blackthorn, Dog Rose, Hawthorn and Sycamore.
H73	Hedgerow 3m tall and 3m wide.	Blackthorn, Elm and Field Maple
H74	Hedgerow cut low.	Elm, Blackthorn, and Wayfaring Tree
H75	Hedgerow / Treeline 12m tall and 4m wide with a dry ditch.	Bramble, Ash, Spindle, Blackthorn and Ash
H76	Hedgerow 5m tall and outgrown into a small area of dense scrub behind toward ROF site boundary. Covers a dry ditch.	Blackthorn
H77	Hedgerow / Treeline 20m tall and 3m wide.	Ash, Blackthorn, Dog Rose, Hawthorn and Sycamore.
H78	Hedgerow / Treeline 20m tall and 3m wide.	Ash, Blackthorn, Dog Rose, Hawthorn and Sycamore.
H79	Hedgerow has been cut low, includes dry ditch	Hawthorn and Elder.
H80	Hedgerow 3m tall and 3m wide.	Elder, Blackthorn and Elm.
H81	Hedgerow / Treeline 18m tall and 5m wide with a wet ditch.	Sycamore, Elm, Bramble and Elder.
H82	Hedgerow / Treeline 16m tall and 3m wide.	Elm, Alder, Blackthorn and Dog Rose.
H83	Hedgerow 3m tall and 3m wide.	Blackthorn, Elm and Hawthorn
H84	Hedgerow 3m tall and 3m wide.	Elm, Elder, Field Maple and Hazel.
H85	Hedgerow recent cut to 2m tall.	Elder, Blackthorn, Elm, Dog Rose and Ash.
H86	Hedgerow recent cut to 2m tall.	Elder, Blackthorn, Elm, Dog Rose, Ash, Crack Willow and Field Maple.
H87	Hedgerow 5m tall and 3m wide.	Elder, Blackthorn, Elm, Dog Rose and Ash.
H88	Hedgerow 5m tall and 3m wide with dry ditch.	Field Maple, Blackthorn, Hawthorn and Hazel
H89	Roadside Hedgerow 2m tall and 3m wide.	Blackthorn, Hawthorn, Wild Privet, Elder and Field maple
H90	Hedgerow / Treeline 12m tall and 3m wide with a wet ditch	Elm and Bramble
H91	Defunct Hedgerow partially cut to 2m	Blackthorn, Elm, Bramble, Dog rose, Hawthorn and Elder
H92	Hedgerow / Treeline 12m tall and 6m wide with dry ditch.	Blackthorn, Elm, Bramble, Dog rose, Hawthorn and Elder
H93	Hedgerow 6m tall and 3m wide.	Blackthorn, Elm, Bramble, Dog rose, Hawthorn and Elder
H94	Double Hedgerow / Treeline 25m tall and 10m wide	Crack Willow, Blackthorn, Hawthorn, Elm, Bramble, Dog Rose, Ash, Spindle and Field Maple
H95	Hedgerow / Treeline 16m tall and 6m wide	Elm, Bramble, Blackthorn and Crack Willow.
H96	Hedgerow / Treeline 18m tall and 7m wide	Blackthorn, Ash, Elm and Elder.
H97	Hedgerow / Treeline 18m tall and 7m wide	Blackthorn, Ash, Elm and Elder.
H98	Hedgerow / Treeline 16m tall and 6m wide becoming defunct toward northern end.	Elm, Bramble, Blackthorn and Crack Willow.
H99	Double Hedgerow / Treeline 25m tall and 10m wide with footpath running between.	Crack Willow, Blackthorn, Hawthorn, Elm, Bramble, Dog Rose, Ash, Spindle and Field Maple
H100	Double Hedgerow / Treeline 25m tall and 10m wide with footpath running between.	Crack Willow, Blackthorn, Hawthorn, Elm, Bramble, Dog Rose, Ash, Spindle and Field Maple
H101	Double Hedgerow / Treeline 25m tall and 10m wide	Crack Willow, Blackthorn, Hawthorn, Elm, Bramble, Dog Rose, Ash, Spindle and Field Maple
H102	Hedgerow / Treeline 18m tall and 3m wide. Evidence of Dutch Elm disease	Elm, Blackthorn, Ash, Hawthorn, Bramble, Sycamore and Italian Alder
H103	continuation of H162	

Appendix 3: Hedgerow Descriptions

H104	Hedgerow / Treeline 16m tall and 4m wide with a dry ditch	Elm, Ash, Bramble, Blackthorn and Field Maple
H105	Hedgerow 5m tall and 3m wide.	Hawthorn, Blackthorn, Bramble, Ash and Elm.
H106	Partially removed, with Treeline remnant	Crack Willow
H107	Double Hedgerow / Treeline 25m tall and 10m wide with footpath running between.	Crack Willow, Blackthorn, Hawthorn, Elm, Bramble, Dog Rose, Ash, Spindle and Field Maple
H108	Double Hedgerow / Treeline 25m tall and 10m wide with footpath running between.	Crack Willow, Blackthorn, Hawthorn, Elm, Bramble and Dog Rose
H109	Hedgerow 3m tall and 2m wide with wet ditch	Blackthorn, Elm, Bramble, Dog rose, Hawthorn and Elder
H110	Hedgerow 3m tall and 2m wide with wet ditch	Blackthorn, Elm, Bramble, Dog rose, Hawthorn and Elder
H111	Hedgerow 4m tall and 4m wide with a wet ditch.	Hawthorn, Dog Rose, Bramble and Blackthorn
H112	continuation of H175	continuation of H175
H113	Double Hedgerow / Treeline with access track running between, 10m tall and 10m wide.	Elder, Elm, Blackthorn, Bramble, Goat Willow, Ash, Hawthorn, Dog Rose, Wild Privet, Guelder Rose, Field Maple, Hazel and Spindle
H114	Hedgerow 4m tall and 4m wide with a wet ditch.	Hawthorn, Dog Rose, Elder, Bramble and Blackthorn
H115	Defunct Hedgerow 3m tall and 2m wide with a wet ditch	Hawthorn, Crack Willow, Blackthorn and Goat Willow
H116	Hedgerow 5m tall and 2m wide with wet ditch	Hawthorn, Crack Willow, Blackthorn and Goat Willow
H117	Hedgerow 5m tall and 2m wide with dry ditch	Blackthorn, Hawthorn, Elm, Bramble, Field Maple and Ash.
H118	Hedgerow 5m tall and 4m wide with dry ditch	Blackthorn, Hawthorn, Elm, Bramble, Field Maple and Ash.
H119	Defunct Hedgerow 3m tall and 2m wide with a wet ditch	Hawthorn, Crack Willow, Blackthorn and Goat Willow



KEY:

BOUNDARY OF SITE

HEDGEROW

N

ECOLOGYSOLUTIONS
Part of the ES Group

Farncombe House
Farncombe Estate | Broadway
Worcestershire | WR12 7LJ

+44(0)1451 870767
info@ecologysolutions.co.uk
ecologysolutions.co.uk

7761: GRAVITY

APPENDIX 12.1B:

HEDGEROW NUMBERS

Rev: A

Dec 2020

Based upon the Ordnance Survey map with permission of the Controller of Her Majesty's Stationery Office, © Crown Copyright. Ecology Solutions Ltd, Crossways House, The Square, Stow on the Wold, Gloucestershire, GL54 1AB. AL 100044628

APPENDIX 12.1C

Citations for Statutory Designated Sites

NATURA 2000 – STANDARD DATA FORM

Special Protection Areas under the EC Birds Directive.

Each Natura 2000 site in the United Kingdom has its own Standard Data Form containing site-specific information. The data form for this site has been generated from the Natura 2000 Database submitted to the European Commission on the following date:

22/12/2015

The information provided here, follows the officially agreed site information format for Natura 2000 sites, as set out in the Official Journal of the European Union recording the Commission Implementing Decision of 11 July 2011 (2011/484/EU).

The Standard Data Forms are generated automatically for all of the UK's Natura 2000 sites using the European Environment Agency's Natura 2000 software. The structure and format of these forms is exactly as produced by the EEA's Natura 2000 software (except for the addition of this coversheet and the end notes). The content matches exactly the data submitted to the European Commission.

Please note that these forms contain a number of codes, all of which are explained either within the data forms themselves or in the end notes.

Further technical documentation may be found here
http://bd.eionet.europa.eu/activities/Natura_2000/reference_portal

As part of the December 2015 submission, several sections of the UK's previously published Standard Data Forms have been updated. For details of the approach taken by the UK in this submission please refer to the following document:
http://jncc.defra.gov.uk/pdf/Natura2000_StandardDataForm_UKApproach_Dec2015.pdf

More general information on Special Protection Areas (SPAs) in the United Kingdom is available from the SPA home page on the JNCC website. This webpage also provides links to Standard Data Forms for all SPAs in the UK.

Date form generated by the Joint Nature Conservation Committee
25 January 2016.

NATURA 2000 - STANDARD DATA FORM

For Special Protection Areas (SPA),
Proposed Sites for Community Importance (pSCI),
Sites of Community Importance (SCI) and
for Special Areas of Conservation (SAC)

SITE	**UK9015022**
SITENAME	**Severn Estuary**

TABLE OF CONTENTS

- 1. SITE IDENTIFICATION
- 2. SITE LOCATION
- 3. ECOLOGICAL INFORMATION
- 4. SITE DESCRIPTION
- 5. SITE PROTECTION STATUS AND RELATION WITH CORINE BIOTOPES
- 6. SITE MANAGEMENT

1. SITE IDENTIFICATION

Back to top

1.1 Type	1.2 Site code
A	UK9015022

1.3 Site name

Severn Estuary

1.4 First Compilation date	1.5 Update date
1995-07	2015-12

1.6 Respondent:

Name/Organisation:	Joint Nature Conservation Committee
Address:	Joint Nature Conservation Committee Monkstone House City Road Peterborough PE1 1JY
Email:	

1.7 Site indication and designation / classification dates

Date site classified as SPA:	1995-07
National legal reference of SPA designation	Regulations 12A and 13-15 of the Conservation Habitats and Species Regulations 2010, (http://www.legislation.gov.uk/uksi/2010/490/contents/made) as amended by The Conservation of Habitats and Species (Amendment) Regulations 2011 (http://www.legislation.gov.uk/uksi/2011/625/contents/made).

2. SITE LOCATION

Back to top

2.1 Site-centre location [decimal degrees]:

Longitude	Latitude
-3.049166667	51.22472222

2.2 Area [ha]:

24487.91

2.3 Marine area [%]

90.3

2.4 Sitelength [km]:

0.0

2.5 Administrative region code and name

NUTS level 2 code	Region Name
UKK2	Dorset and Somerset
UKK1	Gloucestershire, Wiltshire and Bristol/Bath area
UKL2	East Wales
UKL1	West Wales and The Valleys

2.6 Biogeographical Region(s)

Atlantic (100.0 %)

3. ECOLOGICAL INFORMATION

Back to top

3.2 Species referred to in Article 4 of Directive 2009/147/EC and listed in Annex II of Directive 92/43/EEC and site evaluation for them

Species					Population in the site						Site assessment			
G	Code	Scientific Name	S	NP	T	Size		Unit	Cat.	D.qual.	A|B|C|D	A|B|C		
						Min	Max				Pop.	Con.	Iso.	Glo.
B	A051	Anas strepera			w	282	282	i		G	B		C	
B	A394	Anser albifrons albifrons			w	2664	2664	i		G	A		B	
B	A672	Calidris alpina alpina			w	44624	44624	i		G	B		C	
B	A037	Cygnus columbianus bewickii			w	280	280	i		G	B		C	
B	A048	Tadorna tadorna			w	3330	3330	i		G	B		C	
B	A162	Tringa totanus			w	2330	2330	i		G	B		C	

- **Group:** A = Amphibians, B = Birds, F = Fish, I = Invertebrates, M = Mammals, P = Plants, R = Reptiles
- **S:** in case that the data on species are sensitive and therefore have to be blocked for any public access enter: yes
- **NP:** in case that a species is no longer present in the site enter: x (optional)
- **Type:** p = permanent, r = reproducing, c = concentration, w = wintering (for plant and non-migratory species use permanent)
- **Unit:** i = individuals, p = pairs or other units according to the Standard list of population units and codes in accordance with Article 12 and 17 reporting (see reference portal)
- **Abundance categories (Cat.):** C = common, R = rare, V = very rare, P = present - to fill if data are deficient (DD) or in addition to population size information
- **Data quality:** G = 'Good' (e.g. based on surveys); M = 'Moderate' (e.g. based on partial data with some extrapolation); P = 'Poor' (e.g. rough estimation); VP = 'Very poor' (use this category only, if not even a rough estimation of the population size can be made, in this case the fields for population size can remain empty, but the field "Abundance categories" has to be filled in)

3.3 Other important species of flora and fauna (optional)

Species					Population in the site				Motivation					
Group	CODE	Scientific Name	S	NP	Size		Unit	Cat.	Species Annex		Other categories			
					Min	Max		C|R|V|P	IV	V	A	B	C	D
B	WATR	Waterfowl assemblage			84317	84317	i						X	

- **Group:** A = Amphibians, B = Birds, F = Fish, Fu = Fungi, I = Invertebrates, L = Lichens, M = Mammals, P = Plants, R = Reptiles
- **CODE:** for Birds, Annex IV and V species the code as provided in the reference portal should be used in addition to the scientific name
- **S:** in case that the data on species are sensitive and therefore have to be blocked for any public access enter: yes
- **NP:** in case that a species is no longer present in the site enter: x (optional)
- **Unit:** i = individuals, p = pairs or other units according to the standard list of population units and codes in accordance with Article 12 and 17 reporting, (see reference portal)
- **Cat.:** Abundance categories: C = common, R = rare, V = very rare, P = present
- **Motivation categories: IV, V:** Annex Species (Habitats Directive), **A:** National Red List data; **B:** Endemics; **C:** International Conventions; **D:** other reasons

4. SITE DESCRIPTION

Back to top

4.1 General site character

Habitat class	% Cover
N02	89.0
N03	6.0
N14	1.0
N04	4.0
Total Habitat Cover	100

Other Site Characteristics

3 Marine:
Geology: limestone/chalk,sandstone/mudstone,clay,shingle,sedimentary,mud,sand,cobble,peat,gravel,biogenic reef 4 Marine: Geomorphology: islands,intertidal rock,subtidal rock (including rocky reefs),tidal rapids,intertidal sediments (including sandflat/mudflat),open coast (including bay),subtidal sediments (including sandbank/mudbank),pools,cliffs,estuary

4.2 Quality and importance

ARTICLE 4.1 QUALIFICATION (79/409/EEC) Over winter the area regularly supports: Cygnus columbianus bewickii (Western Siberia/North-eastern & North-western Europe) 3.9% of the GB population 5 year peak mean 1991/92-1995/96 ARTICLE 4.2 QUALIFICATION (79/409/EEC) Over winter the area regularly supports: Anas strepera (North-western Europe) 0.9% of the population 5 year peak mean 1991/92-1995/96 Anser albifrons albifrons (North-western Siberia/North-eastern & North-western Europe) 0.4% of the population 5 year peak mean 1991/92-1995/96 Calidris alpina alpina (Northern Siberia/Europe/Western Africa) 3.3% of the population 5 year peak mean 1991/92-1995/96 Tadorna tadorna (North-western Europe) 1.1% of the population 5 year peak mean 1991/92-1995/96 Tringa totanus (Eastern Atlantic - wintering) 1.3% of the population 5 year peak mean 1991/92-1995/96 ARTICLE 4.2 QUALIFICATION (79/409/EEC): AN INTERNATIONALLY IMPORTANT ASSEMBLAGE OF BIRDS Over winter the area regularly supports: 84317 waterfowl (5 year peak mean 1991/92-1995/96) Including: Cygnus columbianus bewickii , Tadorna tadorna , Anas strepera , Calidris alpina alpina , Tringa totanus

4.3 Threats, pressures and activities with impacts on the site

The most important impacts and activities with high effect on the site

Negative Impacts			
Rank	Threats and pressures [code]	Pollution (optional) [code]	inside/outside [i|o|b]
H	G01		I
H	E06		B
H	A02		I
H	M01		B
H	J02		B

Positive Impacts			
Rank	Activities, management [code]	Pollution (optional) [code]	inside/outside [i|o|b]
H	A04		I
H	D05		I
H	A02		I
M	G03		B
H	A04		I
H	A02		I
H	A03		I
H	A03		I
H	D05		I

Rank: H = high, M = medium, L = low
Pollution: N = Nitrogen input, P = Phosphor/Phosphate input, A = Acid input/acidification,
T = toxic inorganic chemicals, O = toxic organic chemicals, X = Mixed pollutions
i = inside, o = outside, b = both

4.5 Documentation

Conservation Objectives - the Natural England links below provide access to the Conservation Objectives (and other site-related information) for its terrestrial and inshore Natura 2000 sites, including conservation advice packages and supporting documents for European Marine Sites within English waters and for cross-border sites. The Natural Resources Wales weblink below provides access to information on its designated sites. Detailed information about this Natura 2000 site can be accessed via the Management Plan link provided in Section 6.2. See also the 'UK Approach' document for more information (link via the JNCC website).

Link(s): http://jncc.defra.gov.uk/pdf/Natura2000_StandardDataForm_UKApproach_Dec2015.pdf

https://naturalresources.wales/conservation-biodiversity-and-wildlife/find-protected-areas-of-land-and-seas/designated-s

http://publications.naturalengland.org.uk/category/3212324
http://publications.naturalengland.org.uk/category/6490068894089216

5. SITE PROTECTION STATUS (optional)

Back to top

5.1 Designation types at national and regional level:

Code	Cover [%]	Code	Cover [%]

Code	Cover [%]
UK01	9.0
UK04	100.2

6. SITE MANAGEMENT

Back to top

6.1 Body(ies) responsible for the site management:

Organisation:	Natural England
Address:	
Email:	

Organisation:	Natural Resources Wales
Address:	
Email:	

6.2 Management Plan(s):

An actual management plan does exist:

[X] Yes Name: SEVERN ESTUARY
Link:
https://naturalresources.wales/media/673887/severn-estuary-sac-spa-and-ramsar-reg-33-advice-from-ne-and-ccw-jur

[ ] No, but in preparation

[ ] No

6.3 Conservation measures (optional)

For available information, including on Conservation Objectives, see Section 4.5.

EXPLANATION OF CODES USED IN THE NATURA 2000 STANDARD DATA FORMS

The codes in the table below are also explained in the official European Union guidelines for the Standard Data Form. The relevant page is shown in the table below.

1.1 Site type

CODE	DESCRIPTION	PAGE NO
A	Designated Special Protection Area	53
B	SAC (includes candidates Special Areas of Conservation, Sites of Community Importance and designated SAC)	53
C	SAC area the same as SPA. Note in the UK Natura 2000 submission this is only used for Gibraltar	53

3.1 Habitat representativity

CODE	DESCRIPTION	PAGE NO
A	Excellent	57
B	Good	57
C	Significant	57
D	Non-significant presence	57

3.1 Habitat code

CODE	DESCRIPTION	PAGE NO
1110	Sandbanks which are slightly covered by sea water all the time	57
1130	Estuaries	57
1140	Mudflats and sandflats not covered by seawater at low tide	57
1150	Coastal lagoons	57
1160	Large shallow inlets and bays	57
1170	Reefs	57
1180	Submarine structures made by leaking gases	57
1210	Annual vegetation of drift lines	57
1220	Perennial vegetation of stony banks	57
1230	Vegetated sea cliffs of the Atlantic and Baltic Coasts	57
1310	Salicornia and other annuals colonizing mud and sand	57
1320	Spartina swards (Spartinion maritimae)	57
1330	Atlantic salt meadows (Glauco-Puccinellietalia maritimae)	57
1340	Inland salt meadows	57
1420	Mediterranean and thermo-Atlantic halophilous scrubs (Sarcocornetea fruticosi)	57
2110	Embryonic shifting dunes	57
2120	Shifting dunes along the shoreline with Ammophila arenaria ("white dunes")	57
2130	Fixed coastal dunes with herbaceous vegetation ("grey dunes")	57
2140	Decalcified fixed dunes with Empetrum nigrum	57
2150	Atlantic decalcified fixed dunes (Calluno-Ulicetea)	57
2160	Dunes with Hippopha rhamnoides	57
2170	Dunes with Salix repens ssp. argentea (Salicion arenariae)	57
2190	Humid dune slacks	57
21A0	Machairs (* in Ireland)	57
2250	Coastal dunes with Juniperus spp.	57
2330	Inland dunes with open Corynephorus and Agrostis grasslands	57
3110	Oligotrophic waters containing very few minerals of sandy plains (Littorelletalia uniflorae)	57
3130	Oligotrophic to mesotrophic standing waters with vegetation of the Littorelletea uniflorae and/or of the Isoëto-Nanojuncetea	57
3140	Hard oligo-mesotrophic waters with benthic vegetation of Chara spp.	57
3150	Natural eutrophic lakes with Magnopotamion or Hydrocharition - type vegetation	57

CODE	DESCRIPTION	PAGE NO
3160	Natural dystrophic lakes and ponds	57
3170	Mediterranean temporary ponds	57
3180	Turloughs	57
3260	Water courses of plain to montane levels with the Ranunculion fluitantis and Callitricho-Batrachion vegetation	57
4010	Northern Atlantic wet heaths with Erica tetralix	57
4020	Temperate Atlantic wet heaths with Erica ciliaris and Erica tetralix	57
4030	European dry heaths	57
4040	Dry Atlantic coastal heaths with Erica vagans	57
4060	Alpine and Boreal heaths	57
4080	Sub-Arctic Salix spp. scrub	57
5110	Stable xerothermophilous formations with Buxus sempervirens on rock slopes (Berberidion p.p.)	57
5130	Juniperus communis formations on heaths or calcareous grasslands	57
6130	Calaminarian grasslands of the Violetalia calaminariae	57
6150	Siliceous alpine and boreal grasslands	57
6170	Alpine and subalpine calcareous grasslands	57
6210	Semi-natural dry grasslands and scrubland facies on calcareous substrates (Festuco-Brometalia) (* important orchid sites)	57
6230	Species-rich Nardus grasslands, on silicious substrates in mountain areas (and submountain areas in Continental Europe)	57
6410	Molinia meadows on calcareous, peaty or clayey-silt-laden soils (Molinion caeruleae)	57
6430	Hydrophilous tall herb fringe communities of plains and of the montane to alpine levels	57
6510	Lowland hay meadows (Alopecurus pratensis, Sanguisorba officinalis)	57
6520	Mountain hay meadows	57
7110	Active raised bogs	57
7120	Degraded raised bogs still capable of natural regeneration	57
7130	Blanket bogs (* if active bog)	57
7140	Transition mires and quaking bogs	57
7150	Depressions on peat substrates of the Rhynchosporion	57
7210	Calcareous fens with Cladium mariscus and species of the Caricion davallianae	57
7220	Petrifying springs with tufa formation (Cratoneurion)	57
7230	Alkaline fens	57
7240	Alpine pioneer formations of the Caricion bicoloris-atrofuscae	57
8110	Siliceous scree of the montane to snow levels (Androsacetalia alpinae and Galeopsietalia ladani)	57
8120	Calcareous and calcshist screes of the montane to alpine levels (Thlaspietea rotundifolii)	57
8210	Calcareous rocky slopes with chasmophytic vegetation	57
8220	Siliceous rocky slopes with chasmophytic vegetation	57
8240	Limestone pavements	57
8310	Caves not open to the public	57
8330	Submerged or partially submerged sea caves	57
9120	Atlantic acidophilous beech forests with Ilex and sometimes also Taxus in the shrublayer (Quercion robori-petraeae or Ilici-Fagenion)	57
9130	Asperulo-Fagetum beech forests	57
9160	Sub-Atlantic and medio-European oak or oak-hornbeam forests of the Carpinion betuli	57
9180	Tilio-Acerion forests of slopes, screes and ravines	57
9190	Old acidophilous oak woods with Quercus robur on sandy plains	57
91A0	Old sessile oak woods with Ilex and Blechnum in the British Isles	57
91C0	Caledonian forest	57
91D0	Bog woodland	57
91E0	Alluvial forests with Alnus glutinosa and Fraxinus excelsior (Alno-Padion, Alnion incanae, Salicion albae)	57
91J0	Taxus baccata woods of the British Isles	57

3.1 Relative surface

CODE	DESCRIPTION	PAGE NO
A	15%-100%	58
B	2%-15%	58
C	< 2%	58

3.1 Conservation status habitat

CODE	DESCRIPTION	PAGE NO
A	Excellent conservation	59
B	Good conservation	59
C	Average or reduced conservation	59

3.1 Global grade habitat

CODE	DESCRIPTION	PAGE NO
A	Excellent value	59
B	Good value	59
C	Significant value	59

3.2 Population (abbreviated to 'Pop.' in data form)

CODE	DESCRIPTION	PAGE NO
A	15%-100%	62
B	2%-15%	62
C	< 2%	62
D	Non-significant population	62

3.2 Conservation status species (abbreviated to 'Con.' in data form)

CODE	DESCRIPTION	PAGE NO
A	Excellent conservation	63
B	Good conservation	63
C	Average or reduced conservation	63

3.2 Isolation (abbreviated to 'Iso.' in data form)

CODE	DESCRIPTION	PAGE NO
A	Population (almost) Isolated	63
B	Population not-isolated, but on margins of area of distribution	63
C	Population not-isolated within extended distribution range	63

3.2 Global Grade (abbreviated to 'Glo.' Or 'G.' in data form)

CODE	DESCRIPTION	PAGE NO
A	Excellent value	63
B	Good value	63
C	Significant value	63

3.3 Assemblages types

CODE	DESCRIPTION	PAGE NO
WATR	Non breeding waterfowl assemblage	UK specific code
SBA	Breeding seabird assemblage	UK specific code
BBA	Breeding bird assemblage (applies only to sites classified pre 2000)	UK specific code

4.1 Habitat class code

CODE	DESCRIPTION	PAGE NO
N01	Marine areas, Sea inlets	65
N02	Tidal rivers, Estuaries, Mud flats, Sand flats, Lagoons (including saltwork basins)	65
N03	Salt marshes, Salt pastures, Salt steppes	65
N04	Coastal sand dunes, Sand beaches, Machair	65
N05	Shingle, Sea cliffs, Islets	65
N06	Inland water bodies (Standing water, Running water)	65
N07	Bogs, Marshes, Water fringed vegetation, Fens	65
N08	Heath, Scrub, Maquis and Garrigue, Phygrana	65
N09	Dry grassland, Steppes	65
N10	Humid grassland, Mesophile grassland	65
N11	Alpine and sub-Alpine grassland	65
N14	Improved grassland	65
N15	Other arable land	65
N16	Broad-leaved deciduous woodland	65
N17	Coniferous woodland	65
N19	Mixed woodland	65
N21	Non-forest areas cultivated with woody plants (including Orchards, groves, Vineyards, Dehesas)	65
N22	Inland rocks, Screes, Sands, Permanent Snow and ice	65
N23	Other land (including Towns, Villages, Roads, Waste places, Mines, Industrial sites)	65
N25	Grassland and scrub habitats (general)	65
N26	Woodland habitats (general)	65

4.3 Threats code

CODE	DESCRIPTION	PAGE NO
A01	Cultivation	65
A02	Modification of cultivation practices	65
A03	Mowing / cutting of grassland	65
A04	Grazing	65
A05	Livestock farming and animal breeding (without grazing)	65
A06	Annual and perennial non-timber crops	65
A07	Use of biocides, hormones and chemicals	65
A08	Fertilisation	65
A10	Restructuring agricultural land holding	65
A11	Agriculture activities not referred to above	65
B01	Forest planting on open ground	65
B02	Forest and Plantation management & use	65
B03	Forest exploitation without replanting or natural regrowth	65
B04	Use of biocides, hormones and chemicals (forestry)	65
B06	Grazing in forests/ woodland	65
B07	Forestry activities not referred to above	65
C01	Mining and quarrying	65
C02	Exploration and extraction of oil or gas	65
C03	Renewable abiotic energy use	65
D01	Roads, paths and railroads	65
D02	Utility and service lines	65
D03	Shipping lanes, ports, marine constructions	65
D04	Airports, flightpaths	65
D05	Improved access to site	65
E01	Urbanised areas, human habitation	65
E02	Industrial or commercial areas	65

CODE	DESCRIPTION	PAGE NO
E03	Discharges	65
E04	Structures, buildings in the landscape	65
E06	Other urbanisation, industrial and similar activities	65
F01	Marine and Freshwater Aquaculture	65
F02	Fishing and harvesting aquatic ressources	65
F03	Hunting and collection of wild animals (terrestrial), including damage caused by game (excessive density), and taking/removal of terrestrial animals (including collection of insects, reptiles, amphibians, birds of prey, etc., trapping, poisoning, poaching, predator control, accidental capture (e.g. due to fishing gear), etc.)	65
F04	Taking / Removal of terrestrial plants, general	65
F05	Illegal taking/ removal of marine fauna	65
F06	Hunting, fishing or collecting activities not referred to above	65
G01	Outdoor sports and leisure activities, recreational activities	65
G02	Sport and leisure structures	65
G03	Interpretative centres	65
G04	Military use and civil unrest	65
G05	Other human intrusions and disturbances	65
H01	Pollution to surface waters (limnic & terrestrial, marine & brackish)	65
H02	Pollution to groundwater (point sources and diffuse sources)	65
H03	Marine water pollution	65
H04	Air pollution, air-borne pollutants	65
H05	Soil pollution and solid waste (excluding discharges)	65
H06	Excess energy	65
H07	Other forms of pollution	65
I01	Invasive non-native species	65
I02	Problematic native species	65
I03	Introduced genetic material, GMO	65
J01	Fire and fire suppression	65
J02	Human induced changes in hydraulic conditions	65
J03	Other ecosystem modifications	65
K01	Abiotic (slow) natural processes	65
K02	Biocenotic evolution, succession	65
K03	Interspecific faunal relations	65
K04	Interspecific floral relations	65
K05	Reduced fecundity/ genetic depression	65
L05	Collapse of terrain, landslide	65
L07	Storm, cyclone	65
L08	Inundation (natural processes)	65
L10	Other natural catastrophes	65
M01	Changes in abiotic conditions	65
M02	Changes in biotic conditions	65
U	Unknown threat or pressure	65
XO	Threats and pressures from outside the Member State	65

5.1 Designation type codes

CODE	DESCRIPTION	PAGE NO
UK00	No Protection Status	67
UK01	National Nature Reserve	67
UK02	Marine Nature Reserve	67
UK04	Site of Special Scientific Interest (UK)	67

EC Directive 79/409 on the Conservation of Wild Birds: Special Protection Area

SEVERN ESTUARY (GLOUCESTERSHIRE, AVON, SOMERSET, SOUTH GLAMORGAN, MID GLAMORGAN, GWENT)

The Severn Estuary is one of the largest estuaries in Britain and it has the second largest tidal range in the world. Its classic funnel shape and south-west orientation makes it susceptible to extreme weather conditions in the east Atlantic. There are large urban developments on the estuary including the cities of Bristol and Cardiff.

The Severn Estuary qualifies under Article 4.1 of the Birds Directive by regularly supporting an internationally important wintering population of Bewick's swan *Cygnus columbianus bewickii*, an Annex 1 species. During the period 1988/89 to 1992/93 a mean peak of 289 birds (1.7% of the north-west European population, 4.1% of the British wintering population) used the estuary.

The Severn Estuary qualifies under Article 4.2 as a wetland of international importance by regularly supporting in winter over 20,000 waterfowl. In the five year period 1988/89 to 1992/93 the average peak count was 68,026 waterfowl comprising 17,502 wildfowl and 50,524 waders.

The Severn Estuary also qualifies under Article 4.2 by regularly supporting in winter internationally important numbers of the following 5 species of migratory waterfowl (average peak means for the period 1988/89 to 1992/93): 3,002 European white-fronted goose *Anser albifrons albifrons* (1.0% NW European, 50.0% British), 2,892 shelduck *Tadorna tadorna* (1.2% NW European, 3.9% British), 330 gadwall *Anas strepera* (2.8% NW European, 5.5% British), 41,683 dunlin *Calidris alpina* (2.9% east Atlantic flyway (EAF), 9.6% British) and 2,013 redshank *Tringa totanus* (1.3% EAF, 2.6% British).

The Severn Estuary also supports nationally important wintering populations of a further 10 species: 3,977 wigeon *Anas penelope* (1.6% British), 1,998 teal *Anas crecca* (2.0% British), 523 pintail *Anas acuta* (2.1% British), 1,686 pochard *Aythya ferina* (3.8% British), 913 tufted duck *Aythya fuligula* (1.5% British), 227 ringed plover *Charadrius hiaticula* (1.0% British), 781 grey plover *Pluvialis squatarola* (3.7% British), 3,096 curlew *Numenius arquata* (3.4% British), 246 whimbrel N. phaeopus (4.9% British total) and 3 spotted redshank *Tringa erythropus* (1.5% British).

In addition, during passage periods, the estuary supports nationally important numbers of ringed plover (spring migration: 442 birds (1.4% British passage), autumn migration: 1,573 birds (5.2% British passage)), dunlin (spring: 3,510 birds (1.7% British passage), autumn: 5,500 birds (2.7% British passage)), whimbrel *Numenius phaeopus* (spring: 246 birds (4.9% British passage), autumn: 66 birds (1.3% British passage)) and redshank (autumn: 2,456 birds (2% British passage)).

The Severn Estuary also supports a nationally important breeding population of a migratory species. In 1993 2040 pairs of lesser black-backed gulls *Larus fuscus* bred on the islands of Steep Holm and Flat Holm within the estuary. This represents 2.5% of the British total.

SPA Citation
CAR
December 1993

This citation / map relates to a site entered in the Register of European sites for Great Britain
Register reference number UK0015020
Date of registration 25 AUG 1993
Signed .....
on behalf of the Secretary of State for the Environment

Information Sheet on Ramsar Wetlands (RIS)

Categories approved by Recommendation 4.7 (1990), as amended by Resolution VIII.13 of the 8th Conference of the Contracting Parties (2002) and Resolutions IX.1 Annex B, IX.6, IX.21 and IX. 22 of the 9th Conference of the Contracting Parties (2005).

Notes for compilers:

1. The RIS should be completed in accordance with the attached *Explanatory Notes and Guidelines for completing the Information Sheet on Ramsar Wetlands*. Compilers are strongly advised to read this guidance before filling in the RIS.

2. Further information and guidance in support of Ramsar site designations are provided in the *Strategic Framework for the future development of the List of Wetlands of International Importance* (Ramsar Wise Use Handbook 7, 2nd edition, as amended by COP9 Resolution IX.1 Annex B). A 3rd edition of the Handbook, incorporating these amendments, is in preparation and will be available in 2006.

3. Once completed, the RIS (and accompanying map(s)) should be submitted to the Ramsar Secretariat. Compilers should provide an electronic (MS Word) copy of the RIS and, where possible, digital copies of all maps.

1. Name and address of the compiler of this form:

FOR OFFICE USE ONLY.

DD MM YY	
Designation date	Site Reference Number

Joint Nature Conservation Committee
Monkstone House
City Road
Peterborough
Cambridgeshire PE1 1JY
UK
Telephone/Fax: +44 (0)1733 – 562 626 / +44 (0)1733 – 555 948
Email: RIS@JNCC.gov.uk

2. Date this sheet was completed/updated:

Designated: 13 July 1995

3. Country:

UK (England/Wales)

4. Name of the Ramsar site:

Severn Estuary

5. Designation of new Ramsar site or update of existing site:

This RIS is for: Updated information on an existing Ramsar site

6. For RIS updates only, changes to the site since its designation or earlier update:

a) Site boundary and area:

** Important note: If the boundary and/or area of the designated site is being restricted/reduced, the Contracting Party should have followed the procedures established by the Conference of the Parties in the Annex to COP9 Resolution IX.6 and provided a report in line with paragraph 28 of that Annex, prior to the submission of an updated RIS.

b) Describe briefly any major changes to the ecological character of the Ramsar site, including in the application of the Criteria, since the previous RIS for the site:

7. Map of site included:

Refer to Annex III of the *Explanatory Notes and Guidelines*, for detailed guidance on provision of suitable maps, including digital maps.

a) A map of the site, with clearly delineated boundaries, is included as:

i) **hard copy** (required for inclusion of site in the Ramsar List): *yes* ✓ -or- *no* ;
ii**) an electronic format** (e.g. a JPEG or ArcView image) Yes
iii) **a GIS file providing geo-referenced site boundary vectors and attribute tables** *yes* ✓ -or- *no* ;

b) Describe briefly the type of boundary delineation applied:
e.g. the boundary is the same as an existing protected area (nature reserve, national park etc.), or follows a catchment boundary, or follows a geopolitical boundary such as a local government jurisdiction, follows physical boundaries such as roads, follows the shoreline of a waterbody, etc.

The site boundary is the same as, or falls within, an existing protected area.

For precise boundary details, please refer to paper map provided at designation

8. Geographical coordinates (latitude/longitude):

51 13 29 N 03 02 57 W

9. General location:

Include in which part of the country and which large administrative region(s), and the location of the nearest large town.

Nearest town/city: Bristol

In the south-west of the United Kingdom, between Wales and England

Administrative region: Bro Morgannwg/ Vale of Glamorgan; Caerdydd/ Cardiff; Casnewydd/ Newport; Avon; City of Bristol; Fynwy/ Monmouthshire; Gloucestershire; Gwent; North Somerset; Somerset; South Glamorgan; South Gloucestershire

10. Elevation (average and/or max. & min.) (metres)**:**

Min. -4
Max. 17
Mean 0

11. Area (hectares)**:** 24662.98

12. General overview of the site:

Provide a short paragraph giving a summary description of the principal ecological characteristics and importance of the wetland.

The estuary's classic funnel shape, unique in Britain, is a factor causing the Severn to have the second-largest tidal range in the world (after the Bay of Fundy, Canada). This tidal regime results in plant and animal communities typical of the extreme physical conditions of liquid mud and tide swept sand and rock. The species-poor invertebrate community includes high densities of ragworms, lugworms and other invertebrates forming an important food source for passage and wintering waders.

A further consequence of the large tidal range is the extensive intertidal zone, one of the largest in the UK, comprising mudflats, sand banks, shingle, and rocky platforms.

Glassworts and annual sea-blite colonise the open mud, with beds of all three species of eelgrass *Zostera* occurring on more sheltered mud and sandbanks. Large expanses of common cord-grass also occur on the outer marshes. Heavily grazed saltmarsh fringes the estuary with a range of saltmarsh types present. The middle marsh sward is dominated by common saltmarsh-grass with typical associated species. In the upper marsh, red fescue and saltmarsh rush become more prominent.

13. Ramsar Criteria:

Circle or underline each Criterion applied to the designation of the Ramsar site. See Annex II of the *Explanatory Notes and Guidelines* for the Criteria and guidelines for their application (adopted by Resolution VII.11).

1, 3, 4, 5, 6, 8

14. Justification for the application of each Criterion listed in 13 above:

Provide justification for each Criterion in turn, clearly identifying to which Criterion the justification applies (see Annex II for guidance on acceptable forms of justification).

Ramsar criterion 1

Due to immense tidal range (second-largest in world), this affects both the physical environment and biological communities.

Habitats Directive Annex I features present on the pSAC include:

H1110 Sandbanks which are slightly covered by sea water all the time

H1130 Estuaries

H1140 Mudflats and sandflats not covered by seawater at low tide

H1330 Atlantic salt meadows (*Glauco-Puccinellietalia maritimae*)

Ramsar criterion 3

Due to unusual estuarine communities, reduced diversity and high productivity.

Ramsar criterion 4

This site is important for the run of migratory fish between sea and river via estuary. Species include Salmon *Salmo salar*, sea trout *S. trutta*, sea lamprey *Petromyzon marinus*, river lamprey *Lampetra fluviatilis*, allis shad *Alosa alosa*, twaite shad *A. fallax*, and eel *Anguilla anguilla*. It is also of particular importance for migratory birds during spring and autumn.

Ramsar criterion 8

The fish of the whole estuarine and river system is one of the most diverse in Britain, with over 110 species recorded. Salmon *Salmo salar*, sea trout *S. trutta*, sea lamprey *Petromyzon marinus*, river lamprey *Lampetra fluviatilis*, allis shad *Alosa alosa*, twaite shad *A. fallax*, and eel *Anguilla anguilla* use the Severn Estuary as a key migration route to their spawning grounds in the many tributaries that flow into the estuary. The site is important as a feeding and nursery ground for many fish species particularly allis shad *Alosa alosa* and twaite shad *A. fallax* which feed on mysid shrimps in the salt wedge.

Ramsar criterion 5

Assemblages of international importance:

Species with peak counts in winter:
70919 waterfowl (5 year peak mean 1998/99-2002/2003)

Ramsar criterion 6 – species/populations occurring at levels of international importance.

Qualifying Species/populations (as identified at designation):

Species with peak counts in winter:

Tundra swan , *Cygnus columbianus bewickii*, NW Europe	229 individuals, representing an average of 2.8% of the GB population (5 year peak mean 1998/9-2002/3)
Greater white-fronted goose , *Anser albifrons albifrons*, NW Europe	2076 individuals, representing an average of 35.8% of the GB population (5 year peak mean for 1996/7-2000/01)
Common shelduck , *Tadorna tadorna*, NW Europe	3223 individuals, representing an average of 1% of the population (5 year peak mean 1998/9-2002/3)
Gadwall , *Anas strepera strepera*, NW Europe	241 individuals, representing an average of 1.4% of the GB population (5 year peak mean 1998/9-2002/3)
Dunlin , *Calidris alpina alpina*, W Siberia/W Europe	25082 individuals, representing an average of 1.8% of the population (5 year peak mean 1998/9-2002/3)
Common redshank , *Tringa totanus totanus*,	2616 individuals, representing an average of 1% of the population (5 year peak mean 1998/9-2002/3)

Species/populations identified subsequent to designation for possible future consideration under criterion 6.

Species regularly supported during the breeding season:

Lesser black-backed gull , *Larus fuscus graellsii*, W Europe/Mediterranean/W Africa	4167 apparently occupied nests, representing an average of 2.8% of the breeding population (Seabird 2000 Census)

Species with peak counts in spring/autumn:

Ringed plover , *Charadrius hiaticula*, Europe/Northwest Africa	740 individuals, representing an average of 1% of the population (5 year peak mean 1998/9-2002/3)

Species with peak counts in winter:

Eurasian teal , *Anas crecca*, NW Europe	4456 individuals, representing an average of 1.1% of the population (5 year peak mean 1998/9-2002/3)
Northern pintail , *Anas acuta*, NW Europe	756 individuals, representing an average of 1.2% of the population (5 year peak mean 1998/9-2002/3)

Contemporary data and information on waterbird trends at this site and their regional (sub-national) and national contexts can be found in the Wetland Bird Survey report, which is updated annually. See www.bto.org/survey/webs/webs-alerts-index.htm.

See Sections 21/22 for details of noteworthy species

Details of bird species occuring at levels of National importance are given in Section 22

---

15. Biogeography (required when Criteria 1 and/or 3 and /or certain applications of Criterion 2 are applied to the designation)**:**

Name the relevant biogeographic region that includes the Ramsar site, and identify the biogeographic regionalisation system that has been applied.

a) biogeographic region:

Atlantic

b) biogeographic regionalisation scheme (include reference citation):

Council Directive 92/43/EEC

---

16. Physical features of the site:

Describe, as appropriate, the geology, geomorphology; origins - natural or artificial; hydrology; soil type; water quality; water depth, water permanence; fluctuations in water level; tidal variations; downstream area; general climate, etc.

Soil & geology	alluvium, basic, biogenic reef, clay, cobble, gravel, limestone/chalk, mud, neutral, nutrient-rich, peat, sand, sandstone/mudstone, sedimentary, shingle
Geomorphology and landscape	cliffs, coastal, estuary, floodplain, intertidal rock, intertidal sediments (including sandflat/mudflat), islands, lowland, open coast (including bay), pools, subtidal rock (including rocky reefs), subtidal sediments (including sandbank/mudbank), tidal rapids
Nutrient status	eutrophic
pH	circumneutral
Salinity	brackish / mixosaline, saline / euhaline
Soil	mainly mineral
Water permanence	usually permanent
Summary of main climatic features	Annual averages (Cardiff, 1971–2000) (www.metoffice.com/climate/uk/averages/19712000/sites/cardiff.html) Max. daily temperature: 14.3° C Min. daily temperature: 6.8° C Days of air frost: 33.0 Rainfall: 1111.7 mm Hrs. of sunshine: 1518.0

General description of the Physical Features:

The Severn Estuary is a large estuary with extensive intertidal mudflats and sandflats, rocky platforms and islands. Saltmarsh fringes the coast backed by grazing marsh with freshwater ditches and occasional brackish ditches. The seabed is rock and gravel with subtidal sandbanks. The estuary's classic funnel shape, unique in the UK, is a factor causing the Severn to have the second-highest tidal range in the world. This tidal regime results in plant and animal communities typical of the extreme physical conditions of liquid mud and tide-swept sand and rock. A further consequence of the large tidal range is an extensive intertidal zone, one of the largest in the UK.

17. Physical features of the catchment area:

Describe the surface area, general geology and geomorphological features, general soil types, general land use, and climate (including climate type).

The Severn Estuary is a large estuary with extensive intertidal mudflats and sandflats, rocky platforms and islands. Saltmarsh fringes the coast backed by grazing marsh with freshwater ditches and occasional brackish ditches. The seabed is rock and gravel with subtidal sandbanks. The estuary's classic funnel shape, unique in the UK, is a factor causing the Severn to have the second-highest tidal range in the world. This tidal regime results in plant and animal communities typical of the extreme physical conditions of liquid mud and tide-swept sand and rock. A further consequence of the large tidal range is an extensive intertidal zone, one of the largest in the UK.

18. Hydrological values:

Describe the functions and values of the wetland in groundwater recharge, flood control, sediment trapping, shoreline stabilization, etc.

Shoreline stabilisation and dissipation of erosive forces, Sediment trapping

19. Wetland types:

Inland wetland, Marine/coastal wetland

Code	Name	% Area
G	Tidal flats	84.1
H	Salt marshes	4.7
D	Rocky shores	4.7
E	Sand / shingle shores (including dune systems)	4.4
Tp	Freshwater marshes / pools: permanent	1
B	Marine beds (e.g. sea grass beds)	0.9
F	Estuarine waters	0.2

20. General ecological features:

Provide further description, as appropriate, of the main habitats, vegetation types, plant and animal communities present in the Ramsar site, and the ecosystem services of the site and the benefits derived from them.

The large tidal range leads to strong tidal streams and high turbidity, producing communities characteristic of the extreme physical conditions of liquid mud and tide-swept sand and rock. Broad intertidal flats with areas of unstable sand and muddy flats support high densities of invertebrates. Intertidal rock platforms support a wide variety of invertebrate species. There are large areas of subtidal sand, rock and gravel with a variety of aquatic estuarine communities including *Sabellaria alveolata* reef. Areas of saltmarsh fringe the estuary, mostly grazed with a range of vegetation communities. There are gradual and stepped transitions between bare mudflat to upper marsh and grassland. Main vegetation types are: upper saltmarsh with *Festuca rubra* and *Juncus gerardii*; middle marsh dominated by *Puccinellia maritima* with *Glaux maritima* and *Triglochin maritima*; dense monocultures of *Spartina anglica* at the edge of the mudflats-brackish pools and depressions with *Phragmites australis* and *Bolboschoenus maritimus*.

Ecosystem services

21. Noteworthy flora:

Provide additional information on particular species and why they are noteworthy (expanding as necessary on information provided in **12**. Justification for the application of the Criteria) indicating, e.g. which species/communities are unique, rare, endangered or biogeographically important, etc. *Do not include here taxonomic lists of species present – these may be supplied as supplementary information to the RIS.*

Nationally important species occurring on the site.

Higher Plants.

Aster linosyris (nationally rare),

Alopecurus bulbosus, *Althaea officinalis*, *Bupleurum tenuissimum*, *Hordeum marinum*, *Lepidium latifolium*, *Petroselinum segetum*, *Puccinellia rupestris*, *Trifolium squamosum*, *Zostera marina/angustifolia*, *Zostera noltei* (all nationally scarce)

22. Noteworthy fauna:

Provide additional information on particular species and why they are noteworthy (expanding as necessary on information provided in **12**. Justification for the application of the Criteria) indicating, e.g. which species/communities are unique, rare, endangered or biogeographically important, etc., including count data. *Do not include here taxonomic lists of species present – these may be supplied as supplementary information to the RIS.*

Birds

Species currently occurring at levels of national importance:

Species regularly supported during the breeding season:

Herring gull , *Larus argentatus argentatus*, NW Europe and Iceland/W Europe)	1540 apparently occupied nests, representing an average of 1.1% of the GB population (Seabird 2000 Census)

Species with peak counts in spring/autumn:

Little egret , *Egretta garzetta*, West Mediterranean	17 individuals, representing an average of 1% of the GB population (5 year peak mean 1998/9-2002/3)
Ruff , *Philomachus pugnax*, Europe/W Africa	12 individuals, representing an average of 1.7% of the GB population (5 year peak mean 1998/9-2002/3)
Whimbrel , *Numenius phaeopus*, Europe/Western Africa	333 individuals, representing an average of 11.1% of the GB population (5 year peak mean 1998/9-2002/3 - spring peak)
Eurasian curlew , *Numenius arquata arquata*, N. a. arquata Europe (breeding)	2021 individuals, representing an average of 1.3% of the GB population (5 year peak mean 1998/9-2002/3)
Common greenshank , *Tringa nebularia*, Europe/W Africa	26 individuals, representing an average of 4.3% of the GB population (5 year peak mean 1998/9-2002/3)
Species with peak counts in winter:	
Eurasian wigeon , *Anas penelope*, NW Europe	4658 individuals, representing an average of 1.1% of the GB population (5 year peak mean 1998/9-2002/3)
Northern shoveler , *Anas clypeata*, NW & C Europe	297 individuals, representing an average of 2% of the GB population (5 year peak mean 1998/9-2002/3)
Common pochard , *Aythya ferina*, NE & NW Europe	1118 individuals, representing an average of 1.8% of the GB population (5 year peak mean 1998/9-2002/3)
Water rail , *Rallus aquaticus*, Europe	11 individuals, representing an average of 2.4% of the GB population (5 year peak mean 1998/9-2002/3)
Spotted redshank , *Tringa erythropus*, Europe/W Africa	10 individuals, representing an average of 7.3% of the GB population (5 year peak mean 1998/9-2002/3)

Species Information

Species occurring at levels of international importance on the site.

Fish.

Alosa alosa (IUCN Red data book – threatened; Habitats Directive Annex II, Annex V (S1102)),
Alosa fallax (IUCN Red data book – threatened; Habitats Directive Annex II, Annex V (S1103))
Lampetra fluviatilis (IUCN Red data book – threatened; Habitats Directive Annex II (S1099)),
Petromyzon marinus (Habitats Directive Annex II (S1095))

Nationally important species occurring on the site.

Invertebrates.

Tenellia adspersa (nationally rare); *Corophium lacustre* (nationally scarce); *Gammarus insensibilis* (nationally scarce)

23. Social and cultural values:

Describe if the site has any general social and/or cultural values e.g. fisheries production, forestry, religious importance, archaeological sites, social relations with the wetland, etc. Distinguish between historical/archaeological/religious significance and current socio-economic values.

Aesthetic
Archaeological/historical site
Environmental education/ interpretation

Fisheries production
Livestock grazing
Non-consumptive recreation
Scientific research
Sport fishing
Sport hunting
Tourism
Traditional cultural
Transportation/navigation

b) Is the site considered of international importance for holding, in addition to relevant ecological values, examples of significant cultural values, whether material or non-material, linked to its origin, conservation and/or ecological functioning? No

If Yes, describe this importance under one or more of the following categories:

i) sites which provide a model of wetland wise use, demonstrating the application of traditional knowledge and methods of management and use that maintain the ecological character of the wetland:

ii) sites which have exceptional cultural traditions or records of former civilizations that have influenced the ecological character of the wetland:

iii) sites where the ecological character of the wetland depends on the interaction with local communities or indigenous peoples:

iv) sites where relevant non-material values such as sacred sites are present and their existence is strongly linked with the maintenance of the ecological character of the wetland:

24. Land tenure/ownership:

Ownership category	On-site	Off-site
Non-governmental organisation (NGO)	+	+
Local authority, municipality etc.	+	+
National/Crown Estate	+	
Private	+	+
Public/communal	+	+
Other	+	

25. Current land (including water) use:

Activity	On-site	Off-site
Nature conservation	+	+
Tourism	+	+
Recreation	+	+
Current scientific research	+	+
Fishing: commercial	+	+
Fishing: recreational/sport	+	+
Gathering of shellfish	+	
Bait collection	+	
Arable agriculture (unspecified)		+
Grazing (unspecified)	+	+
Permanent pastoral agriculture		+

Hunting: recreational/sport	+	+
Industrial water supply	+	
Industry	+	+
Sewage treatment/disposal	+	+
Harbour/port	+	+
Flood control	+	+
Mineral exploration (excl. hydrocarbons)	+	+
Mining/quarrying	+	+
Transport route	+	+
Urban development		+
Military activities	+	+

26. Factors (past, present or potential) adversely affecting the site's ecological character, including changes in land (including water) use and development projects:

Explanation of reporting category:

1. *Those factors that are still operating, but it is unclear if they are under control, as there is a lag in showing the management or regulatory regime to be successful.*
2. *Those factors that are not currently being managed, or where the regulatory regime appears to have been ineffective so far.*

NA = Not Applicable because no factors have been reported.

Adverse Factor Category	Reporting Category	Description of the problem (Newly reported Factors only)	On-Site	Off-Site	Major Impact?
Dredging	1		+	+	+
Erosion	1		+		+
Recreational/tourism disturbance (unspecified)	1		+	+	

For category 2 factors only. What measures have been taken / are planned / regulatory processes invoked, to mitigate the effect of these factors?
Is the site subject to adverse ecological change? NO

27. Conservation measures taken:

List national category and legal status of protected areas, including boundary relationships with the Ramsar site; management practices; whether an officially approved management plan exists and whether it is being implemented.

Conservation measure	On-site	Off-site
Site/ Area of Special Scientific Interest (SSSI/ASSI)	+	+

National Nature Reserve (NNR)	+	
Special Protection Area (SPA)	+	
Land owned by a non-governmental organisation for nature conservation	+	+
Management agreement	+	+
Site management statement/plan implemented	+	
Other	+	
Management plan in preparation	+	+

b) Describe any other current management practices:
The management of Ramsar sites in the UK is determined by either a formal management plan or through other management planning processes, and is overseen by the relevant statutory conservation agency. Details of the precise management practises are given in these documents.

28. Conservation measures proposed but not yet implemented:

e.g. management plan in preparation; official proposal as a legally protected area, etc.

No information available

29. Current scientific research and facilities:

e.g. details of current research projects, including biodiversity monitoring; existence of a field research station, etc.

Contemporary.

Fauna.
Numbers of migratory and wintering wildfowl and waders are monitored annually as part of the national Wetland Birds Survey (WeBS) organised by the British Trust for Ornithology, Wildfowl & Wetlands Trust, the Royal Society for the Protection of Birds and the Joint Nature Conservation Committee.
Wildfowl shooting monitoring. Returns received annually from Wildfowling Clubs.

Completed.

Flora and Fauna.
CCW/EN Marine Intertidal Phase 1 survey of the biotopes of the Severn Estuary in 2003/4
BTO Research report 335 for CCW/EN (November 2003). Low tide distribution of waterbirds of Severn Estuary SPA. Results of 2002/03 WeBS low tide counts and a historical analysis (Burton *et al*. 2003).
WWT Wetlands Advisory Service. Report for CCW (April 2003). Baseline bird monitoring of the River Severn.
Joint Nature Conservation Committee (1997) Subtidal biotope survey at mouth of the River Parrett.
Joint Nature Conservation Committee (1997) Upper estuary intertidal rocky shore survey.
Mettam, C (1997) *Biotopes in the subtidal sandbanks of the Severn estuary*. Report to English Nature

30. Current communications, education and public awareness (CEPA) activities related to or benefiting the site:

e.g. visitor centre, observation hides and nature trails, information booklets, facilities for school visits, etc.

There are fixed interpretation panels and hides at Bridgwater Bay, Newport Wetlands Reserve, Flat Holm LNR and field centre. Interpretation boards at Black Rock.

31. Current recreation and tourism:

State if the wetland is used for recreation/tourism; indicate type(s) and their frequency/intensity.

Activities, Facilities provided and Seasonality.
Walking, dog walking, and birdwatching are concentrated along the sea walls all the year round and on the saltmarsh and sandy beaches.

Bathing, beach recreation, including sand yachting and wind surfing are practised on the sandy beaches, mainly in the summer.

There are boat clubs/marinas in the sub-estuaries with sailing, motor boats, and jet skiing.

Angling is carried out from the shore and small boats. There is a certain amount of bait digging.

Wildfowling is carried out from September to February all around the Estuary; consents and further management measures are being addressed. There are agreed refuge areas for the birds.

32. Jurisdiction:

Include territorial, e.g. state/region, and functional/sectoral, e.g. Dept. of Agriculture/Dept. of Environment, etc.

Head, Natura 2000 and Ramsar Team, Department for Environment, Food and Rural Affairs, European Wildlife Division, Zone 1/07, Temple Quay House, 2 The Square, Temple Quay, Bristol, BS1 6EB

Head, Countryside Division, Welsh Assembly Government, Cathays Park, Cardiff, CF1 3NQ

33. Management authority:

Provide the name and address of the local office(s) of the agency(ies) or organisation(s) directly responsible for managing the wetland. Wherever possible provide also the title and/or name of the person or persons in this office with responsibility for the wetland.

Site Designations Manager, English Nature, Sites and Surveillance Team, Northminster House, Northminster Road, Peterborough, PE1 1UA, UK / Site Safeguard Officer, International Designations, Countryside Council for Wales, Maes-y-Ffynnon, Penrhosgarnedd, Bangor, Gwynedd, LL57 2DW

34. Bibliographical references:

Scientific/technical references only. If biogeographic regionalisation scheme applied (see **15** above), list full reference citation for the scheme.

Site-relevant references

Association of Severn Estuary Relevant Authorities (2003) *Severn Estuary European Marine Site. Foundation document for the management scheme*. Association of Severn Estuary Relevant Authorities. www.severnestuary.net/asera/pubs/Final%20version.doc

Association of Severn Estuary Relevant Authorities (2003) *Severn Estuary European Marine Site. Management scheme*. Association of Severn Estuary Relevant Authorities. www.severnestuary.net/asera/pubs/Final%20version.doc

Barne, JH, Robson, CF, Kaznowska, SS, Doody, JP, Davidson, NC & Buck, AL (eds.) (1996) *Coasts and seas of the United Kingdom. Region 11. The Western Approaches: Falmouth Bay to Kenfig*. Joint Nature Conservation Committee, Peterborough. (Coastal Directories Series.)

Bratton, JH (ed.) (1991) *British Red Data Books: 3. Invertebrates other than insects*. Joint Nature Conservation Committee, Peterborough

Bratton, JH (2002) Aquatic invertebrates recorded in the Gwent levels: introduction, checklist and bibliography. *CCW Natural Science Report*, No. **02/5/2**

Buck, AL (ed.) (1993) *An inventory of UK estuaries. Volume 2. South-west Britain*. Joint Nature Conservation Committee, Peterborough

Burd, F (1989) *The saltmarsh survey of Great Britain. An inventory of British saltmarshes*. Nature Conservancy Council, Peterborough (Research & Survey in Nature Conservation, No. 17)

Burton, NHK, Marchant, JH, Musgrove, AJ, Armitage, MJS, Holloway, SJ & Phillips, J (2003) *Low-tide distributions of waterbirds on the Severn Estuary SPA: results of the 2002/03 WeBS Low Tide Counts and a historical analysis*. British Trust for Ornithology, Thetford (BTO Research Report, No. 335)

Countryside Council for Wales (1993) *Welsh estuaries review*. Countryside Council for Wales, Bangor

Countryside Council for Wales (2004) CCW Phase 1 Intertidal Survey dataset (unpublished data)

Cranswick, PA, Waters, RJ, Musgrove, AJ & Pollitt, MS (1997) *The Wetland Bird Survey 1995–96: wildfowl and wader counts*. British Trust for Ornithology, Wildfowl and Wetlands Trust, Royal Society for the Protection of Birds & Joint Nature Conservation Committee, Slimbridge

Crowther, PR (ed.) (1992) *The coast of Avon*. *Proceedings of the Bristol Naturalists' Society*, **50** (Special issue, No. 3)

Dargie, T (1999) NVC survey of saltmarsh habitat in the Severn estuary 1998. Final report to the Countryside Council for Wales and English Nature. *CCW Contract Science Report*, No. **341**

Dargie, T (1999) Scarce plants survey of saltmarsh on the Welsh side of the Severn estuary. *CCW Contract Science Report*, No. **367**

Dargie, T (2000) Description of the Severn estuary survey sectors identified in the 1998 NVC survey. *CCW Contract Science Report*, No. **399**

Davies, J (1998) Chapter 9. Bristol Channel and approaches (Cape Cornwall to Cwm yr Eglwys, Newport Bay) (MNCR Sector 9). In: *Benthic marine ecosystems of Great Britain and the north-east Atlantic*, ed. by K. Hiscock, 255-295. Joint Nature Conservation Committee, Peterborough. (Coasts and Seas of the United Kingdom. MNCR series)

English Nature (1996) *The scientific interest of the Severn Estuary/Môr Hafren pSAC*. English Nature, Peterborough

English Nature (1998) *Bridgwater Bay National Nature Reserve Management Plan*. English Nature, Somerset Team, Taunton

English Nature & Countryside Council for Wales (2003) *English Nature & the Countryside Council for Wales' draft advice for the Severn Estuary Special Protection Area given under Regulation 33(2) of the Conservation (Natural Habitats &c.) Regulations 1994. Consultation draft*. English Nature, Peterborough. www.english-nature.gov.uk/pubs/publication/PDF/SPAandmaps.pdf

Environment Agency (2004) *Gwent Levels Foreshore Management Plan. Holistic analysis of foreshore evolution scheme and monitoring options, Phase 3 final report, AK4065.500/DGO8*. Environment Agency Wales

Ferns, PN (n.d.[1978]) *The Severn estuary. A heritage of wildlife*. Severn Estuary Conservation Group

Ferns, PN (1984) Birds of the Bristol Channel and Severn estuary. *Marine Pollution Bulletin*, **15**(2), 76-81

Ferns, PN (1994) The Severn estuary's changing shorebird population during the last two decades. *Biological Journal of the Linnaean Society*, **51**, 219-227

Ferns, PN, Green, GH & Round, PD (1979) Significance of the Somerset and Gwent Levels in Britain as feeding areas for migrant whimbrels *Numenius phaeopus*. *Biological Conservation*, **16**(1), 17-22

Fowles, A (1994) *Invertebrates of Wales: a review of important sites and species*. Joint Nature Conservation Committee, Peterborough

Gifford Associated Consultants (on behalf of the Severn Estuary Coastal Group) (2000) *Severn Estuary Shoreline Management Plan*. English Nature

Goodger, B (2005) *Mapping locations of non-breeding birds on the Welsh section of the Severn estuary SSSI, Ramsar site, SPA and cSAC*. (Contractor: Just Ecology, Berkeley). Unpublished report to Countryside Council for Wales

Halcrow (on behalf of the North Devon and Somerset Coastal Group) (1998) *Bridgwater to Bideford Bay Shoreline Management Plan*. English Nature

Holbrook, A (1992) *The Severn Barrage: a bibliography 1909–1991*. 2nd edn. Bath University Library

Jones, PS, Stevens, DP, Blackstock, TH, Burrows, CR & Howe, EA (eds.) (2003) *Priority habitats of Wales: a technical guide*. Countryside Council for Wales, Bangor

Lacambra, C, Cutts, N, Allen, J, Burd, F & Elliott, M (2004) *Spartina anglica*: a review of its status, dynamics and management. *English Nature Research Reports*, No. **527**. www.english-nature.org.uk/pubs/publication/PDF/527.pdf

Langston, WJ, Chesman, BS, Burt, GR, Hawkins, SJ, Readman, J & Worsfield, P (2003) *Characterisation of the South West European Marine Sites: The Severn Estuary (possible) Special Area of Conservation, Special Protection Area*. Marine Biological Association of the United Kingdom, Plymouth (Occasional publication, No. 13) www.mba.ac.uk/nmbl/publications/occasionalpub13.htm

Little, C, Wilson, RS, Hinton, RG & Morritt, D (1985) Ecology of the upper Severn estuary. *Nature Conservancy Council, CSD Reports*, No. **604**

Lovell, MA & Mettam, C (1991) *Severn tidal power. Intertidal sediments and fauna: 1, Distribution of shore birds and their invertebrate prey; 2, Collated bibliography of macroinvertebrates from intertidal sediments*. United Kingdom Atomic Energy Authority (UKAEA), Didcot

McLeod, CR, Yeo, M, Brown, AE, Burn, AJ, Hopkins, JJ & Way, SF (eds.) (2004) *The Habitats Directive: selection of Special Areas of Conservation in the UK*. 2nd edn. Joint Nature Conservation Committee, Peterborough. www.jncc.gov.uk/SACselection

Mettam, C (1997) *Biotopes in the subtidal sandbanks of the Severn estuary*. Report to English Nature

Milton, T & Dargie, T (2000) *Severn estuary: evaluation of CASI and digital salt marsh survey information*. (Contractor: University of Southampton, GeoData Institute). Unpublished report to English Nature.

Moore, J, Smith, J, Northen, KO & Little, M (1998) *Marine Nature Conservation Review Sector 9. Inlets in the Bristol Channel and approaches: area summaries*. Joint Nature Conservation Committee, Peterborough (Coasts and seas of the United Kingdom. MNCR series)

Morley, JV (1992) *The birds of Bridgwater Bay*. Unpublished, English Nature

Musgrove, AJ, Langston, RHW, Baker, H & Ward, RM (eds.) (2003) *Estuarine waterbirds at low tide. The WeBS Low Tide Counts 1992–93 to 1998–99*. WSG/BTO/WWT/RSPB/JNCC, Thetford (International Wader Studies, No. 16)

Musgrove, AJ, Pollitt, MS, Hall, C, Hearn, RD, Holloway, SJ, Marshall, PE, Robinson, JA & Cranswick, PA (2001) *The Wetland Bird Survey 1999–2000: wildfowl and wader counts*. British Trust for Ornithology, Wildfowl and Wetlands Trust, Royal Society for the Protection of Birds & Joint Nature Conservation Committee, Slimbridge. www.wwt.org.uk/publications/default.asp?PubID=14

Otto, S (1996) *A scientific bibliography of the Bristol Channel and Severn estuary*. Kimberley Services, Reading (Publication No. 96/2)

Palmer, M & Probert, K (1981) *Natural environment of the Severn estuary and Bristol Channel area*. Nature Conservancy Council, Information and Library Services, Banbury (Bibliography Series, No. 4)

Potts, GW & Swaby, SE (1993) Review of the status of estuarine fishes. *English Nature Research Reports*, No. **34**

Ratcliffe, DA (ed.) (1977) *A Nature Conservation Review. The selection of biological sites of national importance to nature conservation in Britain*. Cambridge University Press (for the Natural Environment Research Council and the Nature Conservancy Council), Cambridge (2 vols.)

Severn Estuary Partnership (2003) *Severn Estuary Gateway site*. www.severnestuary.net

Stewart, A, Pearman, DA & Preston, CD (eds.) (1994) *Scarce plants in Britain*. Joint Nature Conservation Committee, Peterborough

Stroud, DA, Chambers, D, Cook, S, Buxton, N, Fraser, B, Clement, P, Lewis, P, McLean, I, Baker, H & Whitehead, S (eds.) (2001) *The UK SPA network: its scope and content*. Joint Nature Conservation Committee, Peterborough (3 vols.) www.jncc.gov.uk/UKSPA/default.htm

Ward, R, Marshall, P & Woodward, R (2003) Baseline bird monitoring of the River Severn. (Contractor: WWT Wetlands Advisory Service, Slimbridge.) *CCW Contract Science Report*, No. **582**

Weighell, AJ, Donnelly, AP & Calder, K (eds.) (2000) *Directory of the Celtic coasts and seas*. Joint Nature Conservation Committee, Peterborough

---

Please return to: **Ramsar Secretariat, Rue Mauverney 28, CH-1196 Gland, Switzerland**

Telephone**: +41 22 999 0170** • Fax: **+41 22 999 0169** • email: **ramsar@ramsar.org**

NATURA 2000 – STANDARD DATA FORM

Special Protection Areas under the EC Birds Directive.

Each Natura 2000 site in the United Kingdom has its own Standard Data Form containing site-specific information. The data form for this site has been generated from the Natura 2000 Database submitted to the European Commission on the following date:

22/12/2015

The information provided here, follows the officially agreed site information format for Natura 2000 sites, as set out in the Official Journal of the European Union recording the Commission Implementing Decision of 11 July 2011 (2011/484/EU).

The Standard Data Forms are generated automatically for all of the UK's Natura 2000 sites using the European Environment Agency's Natura 2000 software. The structure and format of these forms is exactly as produced by the EEA's Natura 2000 software (except for the addition of this coversheet and the end notes). The content matches exactly the data submitted to the European Commission.

Please note that these forms contain a number of codes, all of which are explained either within the data forms themselves or in the end notes.

Further technical documentation may be found here
http://bd.eionet.europa.eu/activities/Natura_2000/reference_portal

As part of the December 2015 submission, several sections of the UK's previously published Standard Data Forms have been updated. For details of the approach taken by the UK in this submission please refer to the following document:
http://jncc.defra.gov.uk/pdf/Natura2000_StandardDataForm_UKApproach_Dec2015.pdf

More general information on Special Protection Areas (SPAs) in the United Kingdom is available from the SPA home page on the JNCC website. This webpage also provides links to Standard Data Forms for all SPAs in the UK.

Date form generated by the Joint Nature Conservation Committee
25 January 2016.

NATURA 2000 - STANDARD DATA FORM

For Special Protection Areas (SPA),
Proposed Sites for Community Importance (pSCI),
Sites of Community Importance (SCI) and
for Special Areas of Conservation (SAC)

SITE	**UK9010031**
SITENAME	**Somerset Levels and Moors**

TABLE OF CONTENTS

- 1. SITE IDENTIFICATION
- 2. SITE LOCATION
- 3. ECOLOGICAL INFORMATION
- 4. SITE DESCRIPTION
- 5. SITE PROTECTION STATUS AND RELATION WITH CORINE BIOTOPES
- 6. SITE MANAGEMENT

1. SITE IDENTIFICATION

Back to top

1.1 Type	1.2 Site code
A	UK9010031

1.3 Site name

Somerset Levels and Moors

1.4 First Compilation date	1.5 Update date
1997-06	2015-12

1.6 Respondent:

Name/Organisation:	Joint Nature Conservation Committee
Address:	Joint Nature Conservation Committee Monkstone House City Road Peterborough PE1 1JY
Email:	

1.7 Site indication and designation / classification dates

Date site classified as SPA:	1997-06
National legal reference of SPA designation	Regulations 12A and 13-15 of the Conservation Habitats and Species Regulations 2010, (http://www.legislation.gov.uk/uksi/2010/490/contents/made) as amended by The Conservation of Habitats and Species (Amendment) Regulations 2011 (http://www.legislation.gov.uk/uksi/2011/625/contents/made).

2. SITE LOCATION

Back to top

2.1 Site-centre location [decimal degrees]:

Longitude	Latitude
-2.866666667	51.17055556

2.2 Area [ha]:

6395.47

2.3 Marine area [%]

0.0

2.4 Sitelength [km]:

0.0

2.5 Administrative region code and name

NUTS level 2 code	Region Name
UKK2	Dorset and Somerset

2.6 Biogeographical Region(s)

Atlantic (100.0 %)

3. ECOLOGICAL INFORMATION

Back to top

3.2 Species referred to in Article 4 of Directive 2009/147/EC and listed in Annex II of Directive 92/43/EEC and site evaluation for them

Species					Population in the site						Site assessment			
G	Code	Scientific Name	S	NP	T	Size		Unit	Cat.	D.qual.	A|B|C|D	A|B|C		
						Min	Max				Pop.	Con.	Iso.	Glo.
B	A052	Anas crecca			w	13307	13307	i		G	B		C	
B	A037	Cygnus columbianus bewickii			w	191	191	i		G	B		B	
B	A140	Pluvialis apricaria			w	3029	3029	i		G	C		C	
B	A142	Vanellus vanellus			w	36316	36316	i		G	B		C	

- **Group:** A = Amphibians, B = Birds, F = Fish, I = Invertebrates, M = Mammals, P = Plants, R = Reptiles
- **S:** in case that the data on species are sensitive and therefore have to be blocked for any public access enter: yes
- **NP:** in case that a species is no longer present in the site enter: x (optional)
- **Type:** p = permanent, r = reproducing, c = concentration, w = wintering (for plant and non-migratory species use permanent)
- **Unit:** i = individuals, p = pairs or other units according to the Standard list of population units and codes in accordance with Article 12 and 17 reporting (see reference portal)
- **Abundance categories (Cat.):** C = common, R = rare, V = very rare, P = present - to fill if data are deficient (DD) or in addition to population size information
- **Data quality:** G = 'Good' (e.g. based on surveys); M = 'Moderate' (e.g. based on partial data with

some extrapolation); P = 'Poor' (e.g. rough estimation); VP = 'Very poor' (use this category only, if not even a rough estimation of the population size can be made, in this case the fields for population size can remain empty, but the field "Abundance categories" has to be filled in)

3.3 Other important species of flora and fauna (optional)

Species					Population in the site				Motivation					
Group	CODE	Scientific Name	S	NP	Size		Unit	Cat.	Species Annex		Other categories			
					Min	Max		C|R|V|P	IV	V	A	B	C	D
B	WATR	Waterfowl assemblage			73014	73014	i						X	

- **Group:** A = Amphibians, B = Birds, F = Fish, Fu = Fungi, I = Invertebrates, L = Lichens, M = Mammals, P = Plants, R = Reptiles
- **CODE:** for Birds, Annex IV and V species the code as provided in the reference portal should be used in addition to the scientific name
- **S:** in case that the data on species are sensitive and therefore have to be blocked for any public access enter: yes
- **NP:** in case that a species is no longer present in the site enter: x (optional)
- **Unit:** i = individuals, p = pairs or other units according to the standard list of population units and codes in accordance with Article 12 and 17 reporting, (see reference portal)
- **Cat.:** Abundance categories: C = common, R = rare, V = very rare, P = present
- **Motivation categories: IV, V:** Annex Species (Habitats Directive), **A:** National Red List data; **B:** Endemics; **C:** International Conventions; **D:** other reasons

4. SITE DESCRIPTION

Back to top

4.1 General site character

Habitat class	% Cover
N06	5.0
N15	1.0
N10	52.0
N21	2.0
N16	4.0
N07	5.0
N14	26.0
N23	5.0
Total Habitat Cover	100

Other Site Characteristics

1 Terrestrial: Soil & Geology: peat,neutral,alluvium,clay 2 Terrestrial: Geomorphology and landscape: lowland,floodplain

4.2 Quality and importance

ARTICLE 4.1 QUALIFICATION (79/409/EEC) Over winter the area regularly supports: Cygnus columbianus bewickii (Western Siberia/North-eastern & North-western Europe) 2.7% of the GB population 5 year peak mean 1991/92-1995/96 Pluvialis apricaria [North-western Europe - breeding] 1.2% of the GB population 5 year peak mean 1991/92-1995/96 ARTICLE 4.2 QUALIFICATION (79/409/EEC) Over winter the area regularly supports: Anas crecca (North-western Europe) 3.3% of the population 5 year peak mean 1991/92-1995/96 Vanellus vanellus (Europe - breeding) 0.5% of the population 5 year peak mean

1991/92-1995/96 ARTICLE 4.2 QUALIFICATION (79/409/EEC): AN INTERNATIONALLY IMPORTANT ASSEMBLAGE OF BIRDS Over winter the area regularly supports: 73014 waterfowl (5 year peak mean 1991/92-1995/96) Including: Cygnus columbianus bewickii , Anas crecca , Pluvialis apricaria [North-western Europe - breeding], Vanellus vanellus

4.3 Threats, pressures and activities with impacts on the site

The most important impacts and activities with high effect on the site

Negative Impacts			
Rank	Threats and pressures [code]	Pollution (optional) [code]	inside/outside [i|o|b]
H	A02		I
H	A01		I
H	J02		B

Positive Impacts			
Rank	Activities, management [code]	Pollution (optional) [code]	inside/outside [i|o|b]
H	B02		I
H	D05		I
H	D05		I
H	A02		I
H	G03		I
H	A04		I
H	A03		I

Rank: H = high, M = medium, L = low
Pollution: N = Nitrogen input, P = Phosphor/Phosphate input, A = Acid input/acidification,
T = toxic inorganic chemicals, O = toxic organic chemicals, X = Mixed pollutions
i = inside, o = outside, b = both

4.5 Documentation

Conservation Objectives - the Natural England links below provide access to the Conservation Objectives (and other site-related information) for its terrestrial and inshore Natura 2000 sites, including conservation advice packages and supporting documents for European Marine Sites within English waters and for cross-border sites. See also the 'UK Approach' document for more information (link via the JNCC website).

Link(s): http://jncc.defra.gov.uk/pdf/Natura2000_StandardDataForm_UKApproach_Dec2015.pdf

http://publications.naturalengland.org.uk/category/3212324
http://publications.naturalengland.org.uk/category/6490068894089216

5. SITE PROTECTION STATUS (optional)

Back to top

5.1 Designation types at national and regional level:

Code	Cover [%]	Code	Cover [%]	Code	Cover [%]
UK01	11.9	UK04	100.0		

6. SITE MANAGEMENT

Back to top

6.1 Body(ies) responsible for the site management:

Organisation:	Natural England
Address:	
Email:	

6.2 Management Plan(s):

An actual management plan does exist:

	Yes
	No, but in preparation
X	No

6.3 Conservation measures (optional)

For available information, including on Conservation Objectives, see Section 4.5.

EXPLANATION OF CODES USED IN THE NATURA 2000 STANDARD DATA FORMS

The codes in the table below are also explained in the official European Union guidelines for the Standard Data Form. The relevant page is shown in the table below.

1.1 Site type

CODE	DESCRIPTION	PAGE NO
A	Designated Special Protection Area	53
B	SAC (includes candidates Special Areas of Conservation, Sites of Community Importance and designated SAC)	53
C	SAC area the same as SPA. Note in the UK Natura 2000 submission this is only used for Gibraltar	53

3.1 Habitat representativity

CODE	DESCRIPTION	PAGE NO
A	Excellent	57
B	Good	57
C	Significant	57
D	Non-significant presence	57

3.1 Habitat code

CODE	DESCRIPTION	PAGE NO
1110	Sandbanks which are slightly covered by sea water all the time	57
1130	Estuaries	57
1140	Mudflats and sandflats not covered by seawater at low tide	57
1150	Coastal lagoons	57
1160	Large shallow inlets and bays	57
1170	Reefs	57
1180	Submarine structures made by leaking gases	57
1210	Annual vegetation of drift lines	57
1220	Perennial vegetation of stony banks	57
1230	Vegetated sea cliffs of the Atlantic and Baltic Coasts	57
1310	Salicornia and other annuals colonizing mud and sand	57
1320	Spartina swards (Spartinion maritimae)	57
1330	Atlantic salt meadows (Glauco-Puccinellietalia maritimae)	57
1340	Inland salt meadows	57
1420	Mediterranean and thermo-Atlantic halophilous scrubs (Sarcocornetea fruticosi)	57
2110	Embryonic shifting dunes	57
2120	Shifting dunes along the shoreline with Ammophila arenaria ("white dunes")	57
2130	Fixed coastal dunes with herbaceous vegetation ("grey dunes")	57
2140	Decalcified fixed dunes with Empetrum nigrum	57
2150	Atlantic decalcified fixed dunes (Calluno-Ulicetea)	57
2160	Dunes with Hippopha rhamnoides	57
2170	Dunes with Salix repens ssp. argentea (Salicion arenariae)	57
2190	Humid dune slacks	57
21A0	Machairs (* in Ireland)	57
2250	Coastal dunes with Juniperus spp.	57
2330	Inland dunes with open Corynephorus and Agrostis grasslands	57
3110	Oligotrophic waters containing very few minerals of sandy plains (Littorelletalia uniflorae)	57
3130	Oligotrophic to mesotrophic standing waters with vegetation of the Littorelletea uniflorae and/or of the Isoëto-Nanojuncetea	57
3140	Hard oligo-mesotrophic waters with benthic vegetation of Chara spp.	57
3150	Natural eutrophic lakes with Magnopotamion or Hydrocharition - type vegetation	57

CODE	DESCRIPTION	PAGE NO
3160	Natural dystrophic lakes and ponds	57
3170	Mediterranean temporary ponds	57
3180	Turloughs	57
3260	Water courses of plain to montane levels with the Ranunculion fluitantis and Callitricho-Batrachion vegetation	57
4010	Northern Atlantic wet heaths with Erica tetralix	57
4020	Temperate Atlantic wet heaths with Erica ciliaris and Erica tetralix	57
4030	European dry heaths	57
4040	Dry Atlantic coastal heaths with Erica vagans	57
4060	Alpine and Boreal heaths	57
4080	Sub-Arctic Salix spp. scrub	57
5110	Stable xerothermophilous formations with Buxus sempervirens on rock slopes (Berberidion p.p.)	57
5130	Juniperus communis formations on heaths or calcareous grasslands	57
6130	Calaminarian grasslands of the Violetalia calaminariae	57
6150	Siliceous alpine and boreal grasslands	57
6170	Alpine and subalpine calcareous grasslands	57
6210	Semi-natural dry grasslands and scrubland facies on calcareous substrates (Festuco-Brometalia) (* important orchid sites)	57
6230	Species-rich Nardus grasslands, on silicious substrates in mountain areas (and submountain areas in Continental Europe)	57
6410	Molinia meadows on calcareous, peaty or clayey-silt-laden soils (Molinion caeruleae)	57
6430	Hydrophilous tall herb fringe communities of plains and of the montane to alpine levels	57
6510	Lowland hay meadows (Alopecurus pratensis, Sanguisorba officinalis)	57
6520	Mountain hay meadows	57
7110	Active raised bogs	57
7120	Degraded raised bogs still capable of natural regeneration	57
7130	Blanket bogs (* if active bog)	57
7140	Transition mires and quaking bogs	57
7150	Depressions on peat substrates of the Rhynchosporion	57
7210	Calcareous fens with Cladium mariscus and species of the Caricion davallianae	57
7220	Petrifying springs with tufa formation (Cratoneurion)	57
7230	Alkaline fens	57
7240	Alpine pioneer formations of the Caricion bicoloris-atrofuscae	57
8110	Siliceous scree of the montane to snow levels (Androsacetalia alpinae and Galeopsietalia ladani)	57
8120	Calcareous and calcshist screes of the montane to alpine levels (Thlaspietea rotundifolii)	57
8210	Calcareous rocky slopes with chasmophytic vegetation	57
8220	Siliceous rocky slopes with chasmophytic vegetation	57
8240	Limestone pavements	57
8310	Caves not open to the public	57
8330	Submerged or partially submerged sea caves	57
9120	Atlantic acidophilous beech forests with Ilex and sometimes also Taxus in the shrublayer (Quercion robori-petraeae or Ilici-Fagenion)	57
9130	Asperulo-Fagetum beech forests	57
9160	Sub-Atlantic and medio-European oak or oak-hornbeam forests of the Carpinion betuli	57
9180	Tilio-Acerion forests of slopes, screes and ravines	57
9190	Old acidophilous oak woods with Quercus robur on sandy plains	57
91A0	Old sessile oak woods with Ilex and Blechnum in the British Isles	57
91C0	Caledonian forest	57
91D0	Bog woodland	57
91E0	Alluvial forests with Alnus glutinosa and Fraxinus excelsior (Alno-Padion, Alnion incanae, Salicion albae)	57
91J0	Taxus baccata woods of the British Isles	57

3.1 Relative surface

CODE	DESCRIPTION	PAGE NO
A	15%-100%	58
B	2%-15%	58
C	< 2%	58

3.1 Conservation status habitat

CODE	DESCRIPTION	PAGE NO
A	Excellent conservation	59
B	Good conservation	59
C	Average or reduced conservation	59

3.1 Global grade habitat

CODE	DESCRIPTION	PAGE NO
A	Excellent value	59
B	Good value	59
C	Significant value	59

3.2 Population (abbreviated to 'Pop.' in data form)

CODE	DESCRIPTION	PAGE NO
A	15%-100%	62
B	2%-15%	62
C	< 2%	62
D	Non-significant population	62

3.2 Conservation status species (abbreviated to 'Con.' in data form)

CODE	DESCRIPTION	PAGE NO
A	Excellent conservation	63
B	Good conservation	63
C	Average or reduced conservation	63

3.2 Isolation (abbreviated to 'Iso.' in data form)

CODE	DESCRIPTION	PAGE NO
A	Population (almost) Isolated	63
B	Population not-isolated, but on margins of area of distribution	63
C	Population not-isolated within extended distribution range	63

3.2 Global Grade (abbreviated to 'Glo.' Or 'G.' in data form)

CODE	DESCRIPTION	PAGE NO
A	Excellent value	63
B	Good value	63
C	Significant value	63

3.3 Assemblages types

CODE	DESCRIPTION	PAGE NO
WATR	Non breeding waterfowl assemblage	UK specific code
SBA	Breeding seabird assemblage	UK specific code
BBA	Breeding bird assemblage (applies only to sites classified pre 2000)	UK specific code

4.1 Habitat class code

CODE	DESCRIPTION	PAGE NO
N01	Marine areas, Sea inlets	65
N02	Tidal rivers, Estuaries, Mud flats, Sand flats, Lagoons (including saltwork basins)	65
N03	Salt marshes, Salt pastures, Salt steppes	65
N04	Coastal sand dunes, Sand beaches, Machair	65
N05	Shingle, Sea cliffs, Islets	65
N06	Inland water bodies (Standing water, Running water)	65
N07	Bogs, Marshes, Water fringed vegetation, Fens	65
N08	Heath, Scrub, Maquis and Garrigue, Phygrana	65
N09	Dry grassland, Steppes	65
N10	Humid grassland, Mesophile grassland	65
N11	Alpine and sub-Alpine grassland	65
N14	Improved grassland	65
N15	Other arable land	65
N16	Broad-leaved deciduous woodland	65
N17	Coniferous woodland	65
N19	Mixed woodland	65
N21	Non-forest areas cultivated with woody plants (including Orchards, groves, Vineyards, Dehesas)	65
N22	Inland rocks, Screes, Sands, Permanent Snow and ice	65
N23	Other land (including Towns, Villages, Roads, Waste places, Mines, Industrial sites)	65
N25	Grassland and scrub habitats (general)	65
N26	Woodland habitats (general)	65

4.3 Threats code

CODE	DESCRIPTION	PAGE NO
A01	Cultivation	65
A02	Modification of cultivation practices	65
A03	Mowing / cutting of grassland	65
A04	Grazing	65
A05	Livestock farming and animal breeding (without grazing)	65
A06	Annual and perennial non-timber crops	65
A07	Use of biocides, hormones and chemicals	65
A08	Fertilisation	65
A10	Restructuring agricultural land holding	65
A11	Agriculture activities not referred to above	65
B01	Forest planting on open ground	65
B02	Forest and Plantation management & use	65
B03	Forest exploitation without replanting or natural regrowth	65
B04	Use of biocides, hormones and chemicals (forestry)	65
B06	Grazing in forests/ woodland	65
B07	Forestry activities not referred to above	65
C01	Mining and quarrying	65
C02	Exploration and extraction of oil or gas	65
C03	Renewable abiotic energy use	65
D01	Roads, paths and railroads	65
D02	Utility and service lines	65
D03	Shipping lanes, ports, marine constructions	65
D04	Airports, flightpaths	65
D05	Improved access to site	65
E01	Urbanised areas, human habitation	65
E02	Industrial or commercial areas	65

CODE	DESCRIPTION	PAGE NO
E03	Discharges	65
E04	Structures, buildings in the landscape	65
E06	Other urbanisation, industrial and similar activities	65
F01	Marine and Freshwater Aquaculture	65
F02	Fishing and harvesting aquatic ressources	65
F03	Hunting and collection of wild animals (terrestrial), including damage caused by game (excessive density), and taking/removal of terrestrial animals (including collection of insects, reptiles, amphibians, birds of prey, etc., trapping, poisoning, poaching, predator control, accidental capture (e.g. due to fishing gear), etc.)	65
F04	Taking / Removal of terrestrial plants, general	65
F05	Illegal taking/ removal of marine fauna	65
F06	Hunting, fishing or collecting activities not referred to above	65
G01	Outdoor sports and leisure activities, recreational activities	65
G02	Sport and leisure structures	65
G03	Interpretative centres	65
G04	Military use and civil unrest	65
G05	Other human intrusions and disturbances	65
H01	Pollution to surface waters (limnic & terrestrial, marine & brackish)	65
H02	Pollution to groundwater (point sources and diffuse sources)	65
H03	Marine water pollution	65
H04	Air pollution, air-borne pollutants	65
H05	Soil pollution and solid waste (excluding discharges)	65
H06	Excess energy	65
H07	Other forms of pollution	65
I01	Invasive non-native species	65
I02	Problematic native species	65
I03	Introduced genetic material, GMO	65
J01	Fire and fire suppression	65
J02	Human induced changes in hydraulic conditions	65
J03	Other ecosystem modifications	65
K01	Abiotic (slow) natural processes	65
K02	Biocenotic evolution, succession	65
K03	Interspecific faunal relations	65
K04	Interspecific floral relations	65
K05	Reduced fecundity/ genetic depression	65
L05	Collapse of terrain, landslide	65
L07	Storm, cyclone	65
L08	Inundation (natural processes)	65
L10	Other natural catastrophes	65
M01	Changes in abiotic conditions	65
M02	Changes in biotic conditions	65
U	Unknown threat or pressure	65
XO	Threats and pressures from outside the Member State	65

5.1 Designation type codes

CODE	DESCRIPTION	PAGE NO
UK00	No Protection Status	67
UK01	National Nature Reserve	67
UK02	Marine Nature Reserve	67
UK04	Site of Special Scientific Interest (UK)	67

EU Directive 79/409 on the Conservation of Wild Birds:
Special Protection Area

SOMERSET LEVELS AND MOORS
(1003A)

The Somerset Levels and Moors is the largest area of lowland wet grassland and associated wetland habitat remaining in Britain, covering about 35,000 hectares in the floodplains of the Rivers Axe, Brue, Parrett, Tone and their tributaries. The proposed SPA comprises a series of sites within the extensive area bounded by Bridgwater Bay in the west and the higher ground of the Mendips, Dorset Hills, Blackdown Hills, Brendons and Quantocks. The majority of the site is only a few metres above mean sea level and drains through a large network of ditches, rhynes and rivers. Flooding may affect large areas in winter to an extent that depends on levels of rainfall on the moors and surrounding higher ground, and on tidal conditions. The site is mainly given over to cattle grazing, often in conjunction with hay or silage production, although withy growing is also an important traditional activity. Parts of the site around Westhay Moor and Shapwick Heath include areas of former raised peat bog, now substantially modified by agricultural improvement and peat extraction. The pSPA supports internationally important numbers of waterfowl in winter and is one of the most important sites in southern Britain for breeding waders associated with lowland wet grassland.

The pSPA covers 6,386.01 hectares and includes the following twelve Sites of Special Scientific Interest (SSSI), notified under the Wildlife and Countryside Act, 1981: Catcott, Edington & Chilton Moors, Curry & Hay Moors, King's Sedgemoor, Moorlinch, Shapwick Heath, Southlake Moor, Tealham & Tadham Moors, West Moor, West Sedgemoor, Westhay Heath, Westhay Moor and Wet Moor.

The Somerset Levels and Moors pSPA qualifies under Article 4.1 of the EU Birds Directive by regularly supporting nationally important numbers of wintering Bewick's swan *Cygnus columbianus bewickii* and golden plover *Pluvialis apricaria*, both Annex 1 species. In the five year period 1989/90 to 1993/94 the site supported a peak mean of 310 Bewick's swan (4.4% of the British and 1.8% of the north-west European population) and 3,110 golden plover (1.2% of the British population).

The site qualifies under Article 4.2 of the Directive as a wetland of international importance by regularly supporting over 20,000 waterfowl in winter. The five year peak mean for the period 1989/90 to 1993/94 was 58,093 birds, comprising 41,442 waders and 16,651 wildfowl.

The site further qualifies under Article 4.2 by regularly supporting internationally important numbers of the migratory species teal *Anas crecca* and lapwing *Vanellus vanellus*. In the five year period 1989/90 to 1993/94 the site supported a peak mean of 7,476 teal (5.3% of the British and 1.9% of the north-west European population) and 36,565 lapwing (exceeding 20,000 threshold for a wetland of international importance).

Notable also are nationally important numbers of the following species in winter (figures are five year peak means for the period 1989/90 to 1993/94): 94 gadwall *Anas strepera* (1.2% of British population), 5,927 wigeon *A. penelope* (2.1% of British population) and 217 shoveler *A. clypeata* (2.1% of British population). The site also supports an important assemblage of breeding and wintering birds in addition to the species mentioned above, including important populations of breeding waders associated with lowland wet grassland. The Annex 1 marsh harrier *Circus aeruginosus* breeds and the Annex 1 species bittern *Botaurus stellaris,* merlin *Falco columbarius*, peregrine *F. peregrinus*, hen harrier *Circus cyaneus* and short-eared owl *Asio flammeus* are regularly present in winter.

SPA Citation
ICC/CAR
March 1995

This citation / map relates to a site entered in
the Register of European sites for Great Britain
Register reference number UK90\0031
Date of registration 25 AUG 1996
Signed
on behalf of the Secretary of State for the Environment

Information Sheet on Ramsar Wetlands (RIS)

Categories approved by Recommendation 4.7 (1990), as amended by Resolution VIII.13 of the 8th Conference of the Contracting Parties (2002) and Resolutions IX.1 Annex B, IX.6, IX.21 and IX. 22 of the 9th Conference of the Contracting Parties (2005).

Notes for compilers:

1. The RIS should be completed in accordance with the attached *Explanatory Notes and Guidelines for completing the Information Sheet on Ramsar Wetlands*. Compilers are strongly advised to read this guidance before filling in the RIS.

2. Further information and guidance in support of Ramsar site designations are provided in the *Strategic Framework for the future development of the List of Wetlands of International Importance* (Ramsar Wise Use Handbook 7, 2nd edition, as amended by COP9 Resolution IX.1 Annex B). A 3rd edition of the Handbook, incorporating these amendments, is in preparation and will be available in 2006.

3. Once completed, the RIS (and accompanying map(s)) should be submitted to the Ramsar Secretariat. Compilers should provide an electronic (MS Word) copy of the RIS and, where possible, digital copies of all maps.

1. Name and address of the compiler of this form:

FOR OFFICE USE ONLY.

DD MM YY	
Designation date	Site Reference Number

Joint Nature Conservation Committee
Monkstone House
City Road
Peterborough
Cambridgeshire PE1 1JY
UK
Telephone/Fax: +44 (0)1733 – 562 626 / +44 (0)1733 – 555 948
Email: RIS@JNCC.gov.uk

2. Date this sheet was completed/updated:

Designated: 26 June 1997

3. Country:

UK (England)

4. Name of the Ramsar site:

Somerset Levels and Moors

5. Designation of new Ramsar site or update of existing site:

This RIS is for: Updated information on an existing Ramsar site

6. For RIS updates only, changes to the site since its designation or earlier update:

a) Site boundary and area:

** Important note: If the boundary and/or area of the designated site is being restricted/reduced, the Contracting Party should have followed the procedures established by the Conference of the Parties in the Annex to COP9 Resolution IX.6 and provided a report in line with paragraph 28 of that Annex, prior to the submission of an updated RIS.

b) Describe briefly any major changes to the ecological character of the Ramsar site, including in the application of the Criteria, since the previous RIS for the site:

7. Map of site included:

Refer to Annex III of the *Explanatory Notes and Guidelines*, for detailed guidance on provision of suitable maps, including digital maps.

a) A map of the site, with clearly delineated boundaries, is included as:

i) **hard copy** (required for inclusion of site in the Ramsar List): *yes* ✓ -or- *no* ;
ii**) an electronic format** (e.g. a JPEG or ArcView image) Yes
iii) **a GIS file providing geo-referenced site boundary vectors and attribute tables** *yes* ✓ -or- *no* ;

b) Describe briefly the type of boundary delineation applied:
e.g. the boundary is the same as an existing protected area (nature reserve, national park etc.), or follows a catchment boundary, or follows a geopolitical boundary such as a local government jurisdiction, follows physical boundaries such as roads, follows the shoreline of a waterbody, etc.

The site boundary is the same as, or falls within, an existing protected area.

For precise boundary details, please refer to paper map provided at designation

8. Geographical coordinates (latitude/longitude):

51 10 14 N 02 52 00 W

9. General location:

Include in which part of the country and which large administrative region(s), and the location of the nearest large town.

Nearest town/city: Weston-super-Mare

The Somerset Levels and Moors Ramsar site is bounded by Bridgwater Bay in the west and the higher ground of the Mendips, Dorset Hills, Blackdown Hills, Brendons and Quantocks

Administrative region: North Somerset; Somerset

10. Elevation (average and/or max. & min.) (metres): 11. Area (hectares): 6388.49

Min.	2
Max.	9
Mean	4

12. General overview of the site:

Provide a short paragraph giving a summary description of the principal ecological characteristics and importance of the wetland.

The Ramsar site consists of a series of Sites of Special Scientific Interest (SSSI) within the largest area of lowland wet grassland and associated wetland habitat remaining in Britain. It covers about 35,000 ha in the flood plains of the Rivers Axe, Brue, Parrett, Tone and their tributaries. The majority of the site is only a few metres above mean sea level and drains through a large network of ditches, rhynes, drains and rivers. Flooding may affect large areas in winter depending on rainfall and tidal conditions. Parts of the site in the Brue Valley include areas of former raised peat bog which have now been substantially modified by agricultural improvement and peat extraction which has created areas of open water, fen and reedbed.

The site attracts internationally important numbers of wildfowl in winter and is one of the most important sites in southern Britain for breeding waders. The network of rhynes and ditches support an outstanding assemblage of aquatic invertebrates, particularly beetles.

13. Ramsar Criteria:

Circle or underline each Criterion applied to the designation of the Ramsar site. See Annex II of the *Explanatory Notes and Guidelines* for the Criteria and guidelines for their application (adopted by Resolution VII.11).

2, 5, 6

14. Justification for the application of each Criterion listed in 13 above:

Provide justification for each Criterion in turn, clearly identifying to which Criterion the justification applies (see Annex II for guidance on acceptable forms of justification).

Ramsar criterion 2

Supports 17 species of British Red Data Book invertebrates.

Ramsar criterion 5

Assemblages of international importance:

Species with peak counts in winter:
97155 waterfowl (5 year peak mean 1998/99-2002/2003)

Ramsar criterion 6 – species/populations occurring at levels of international importance.

Qualifying Species/populations (as identified at designation):
Species with peak counts in winter:

Tundra swan , *Cygnus columbianus bewickii*, NW Europe	112 individuals, representing an average of 1.3% of the GB population (5 year peak mean 1998/9-2002/3)
Eurasian teal , *Anas crecca*, NW Europe	21231 individuals, representing an average of 5.3% of the population (5 year peak mean 1998/9-2002/3)
Northern lapwing , *Vanellus vanellus*, Europe - breeding	36580 individuals, representing an average of 1% of the population (5 year peak mean 1998/9-2002/3)

Species/populations identified subsequent to designation for possible future consideration under criterion 6.
Species with peak counts in winter:

Mute swan , *Cygnus olor*, Britain	842 individuals, representing an average of 2.2% of the population (5 year peak mean 1998/9-2002/3)
Eurasian wigeon , *Anas penelope*, NW Europe	25759 individuals, representing an average of 1.7% of the population (5 year peak mean 1998/9-2002/3)
Northern pintail , *Anas acuta*, NW Europe	927 individuals, representing an average of 1.5% of the population (5 year peak mean 1998/9-2002/3)
Northern shoveler , *Anas clypeata*, NW & C Europe	1094 individuals, representing an average of 2.7% of the population (5 year peak mean 1998/9-2002/3)

Contemporary data and information on waterbird trends at this site and their regional (sub-national) and national contexts can be found in the Wetland Bird Survey report, which is updated annually. See www.bto.org/survey/webs/webs-alerts-index.htm.
Details of bird species occuring at levels of National importance are given in Section 22

15. **Biogeography** (required when Criteria 1 and/or 3 and /or certain applications of Criterion 2 are applied to the designation)**:**

Name the relevant biogeographic region that includes the Ramsar site, and identify the biogeographic regionalisation system that has been applied.

a) biogeographic region:

Atlantic

b) biogeographic regionalisation scheme (include reference citation):

Council Directive 92/43/EEC

16. Physical features of the site:

Describe, as appropriate, the geology, geomorphology; origins - natural or artificial; hydrology; soil type; water quality; water depth, water permanence; fluctuations in water level; tidal variations; downstream area; general climate, etc.

Soil & geology	acidic, basic, neutral, clay, alluvium, peat
Geomorphology and landscape	lowland, floodplain
Nutrient status	eutrophic
pH	acidic, circumneutral
Salinity	fresh
Soil	mainly organic
Water permanence	usually seasonal / intermittent
Summary of main climatic features	Annual averages (Cardiff, 1971–2000) (www.metoffice.com/climate/uk/averages/19712000/sites/cardiff.html) Max. daily temperature: 14.3° C Min. daily temperature: 6.8° C Days of air frost: 33.0 Rainfall: 1111.7 mm Hrs. of sunshine: 1518.0

General description of the Physical Features:

The Somerset Levels and Moors are one of the largest and richest areas of traditionally managed wet grassland and fen habitats in lowland UK. The majority of the site is only a few metres above mean sea level and drains through a large network of ditches, rhynes, drains and rivers. Flooding may affect large areas in winter depending on rainfall and tidal conditions. Parts of the site in the Brue Valley include areas of former raised peatbog that have now been substantially modified by agricultural intensification and peat extraction. This has created areas of open water, fen and reedbed.

17. Physical features of the catchment area:

Describe the surface area, general geology and geomorphological features, general soil types, general land use, and climate (including climate type).

The Somerset Levels and Moors are one of the largest and richest areas of traditionally managed wet grassland and fen habitats in lowland UK. The majority of the site is only a few metres above mean sea level and drains through a large network of ditches, rhynes, drains and rivers. Flooding may affect large areas in winter depending on rainfall and tidal conditions. Parts of the site in the Brue Valley include areas of former raised peatbog that have now been substantially modified by agricultural intensification and peat extraction. This has created areas of open water, fen and reedbed.

18. Hydrological values:

Describe the functions and values of the wetland in groundwater recharge, flood control, sediment trapping, shoreline stabilization, etc.

Flood water storage / desynchronisation of flood peaks, Maintenance of water quality (removal of nutrients)

19. Wetland types:

Inland wetland

Code	Name	% Area
4	Seasonally flooded agricultural land	85.1
U	Peatlands (including peat bogs swamps, fens)	5
O	Freshwater lakes: permanent	3
Other	Other	2.9
9	Canals and drainage channels	2
Xp	Forested peatland	2

20. General ecological features:

Provide further description, as appropriate, of the main habitats, vegetation types, plant and animal communities present in the Ramsar site, and the ecosystem services of the site and the benefits derived from them.

The majority of the site is dominated by open wet grassland and ditches with a range of plant communities: Species-poor grassland including the semi-improved grassland communities with perennial rye grass and naturally-occurring species-poor floodplain or inundation grassland communities (National Vegetation Classification communities (NVC) include MG13, MG6, MG7, MG10).

Species-rich fen meadows and flood pastures where agricultural improvement has been less intense with MG8 *Cynosurus cristatus- Caltha palustris* grassland with *Cirsium dissectum* and *Caltha palustris* and mire communities such as M23, M24 and M25 with more *Juncus* and *Carex* species.

Smaller areas of drier species-rich hay meadows (MG5) with *Centaurea nigra, Orchis morio* and *Briza media*.

In the rivers, rhynes and ditches the floristic diversity is largely dependent upon sympathetic cleaning practises. The field ditches support the greatest floristic diversity including the species; *Wolffia arrhiza, Hottonia palustris* and *Hydrocharis morsus-ranae*.

Other habitats include - withy beds, orchards and pollarded willows.

The remaining habitats are largely restricted to the SSSIs within the Bure Valley where areas of former raised bog have been modified by peat extraction and agricultural improvement.

Small areas of tall herb fen (S24) with *Lathyrus palustris, Peucedanum palustre* and *Thelypteris palustris* and small remnants of raised bogs which are very degraded and support vegetation more akin to wet heath with *Erica tetralix* and *Molinia caerulea*.

Open water, reed swamp and reedbed with a range of species from submerged plants to tall stands of *Phragmites australis* and *Typha latifolia* are found in the flooded peat workings.

Wet woodland where peat has been cut many years ago and dominated by *Salix* spp., *Betula* spp. and *Alnus glutinosa*.

Ecosystem services

21. Noteworthy flora:

Provide additional information on particular species and why they are noteworthy (expanding as necessary on information provided in **12**. Justification for the application of the Criteria) indicating, e.g. which species/communities are unique, rare, endangered or biogeographically important, etc. *Do not include here taxonomic lists of species present – these may be supplied as supplementary information to the RIS.*

Nationally important species occurring on the site.

Higher Plants.

Althaea officinalis, Persicaria laxiflora, Lathyrus palustris, Peucedanum palustre, Potamogeton coloratus, Potamogeton trichoides, Sium latifollum, Wolffia arrhiza

22. Noteworthy fauna:

Provide additional information on particular species and why they are noteworthy (expanding as necessary on information provided in **12**. Justification for the application of the Criteria) indicating, e.g. which species/communities are unique, rare, endangered or biogeographically important, etc., including count data. *Do not include here taxonomic lists of species present – these may be supplied as supplementary information to the RIS.*

Birds

Species currently occurring at levels of national importance:

Species with peak counts in winter:

Gadwall , *Anas strepera strepera*, NW Europe	522 individuals, representing an average of 3% of the GB population (5 year peak mean 1998/9-2002/3)
Water rail , *Rallus aquaticus*, Europe	36 individuals, representing an average of 8% of the GB population (5 year peak mean 1998/9-2002/3)
European golden plover , *Pluvialis apricaria apricaria*, P. a. altifrons Iceland & Faroes/E Atlantic	3857 individuals, representing an average of 1.5% of the GB population (5 year peak mean 1998/9-2002/3)
Ruff , *Philomachus pugnax*, Europe/W Africa	16 individuals, representing an average of 2.2% of the GB population (5 year peak mean 1998/9-2002/3)
Common snipe , *Gallinago gallinago gallinago*, Europe -breeding	1633 individuals, representing an average of 1.6% of the GB population (5 year peak mean 1998/9-2002/3)

Species Information

Nationally important species occurring on the site.

Invertebrates.

Hydrochara caraboides, Bagous nodulosus, Odontomyia angulata, Oulema erichsoni, Valvata macrostoma, Odontomyia ornata, Stethophyma grossum, Pteromicra leucopeza, Lejops vittata, Cantharis fusca, Paederus caligatus, Hydaticus transversalis, Dytiscus dimidiatus, Hydrophilus piceus, Limnebus aluta, Laccornis oblongus

23. Social and cultural values:

Describe if the site has any general social and/or cultural values e.g. fisheries production, forestry, religious importance, archaeological sites, social relations with the wetland, etc. Distinguish between historical/archaeological/religious significance and current socio-economic values.

Aesthetic
Aquatic vegetation (e.g. reeds, willows, seaweed)
Archaeological/historical site
Environmental education/ interpretation
Livestock grazing
Non-consumptive recreation
Scientific research
Sport fishing
Tourism
Traditional cultural

b) Is the site considered of international importance for holding, in addition to relevant ecological values, examples of significant cultural values, whether material or non-material, linked to its origin, conservation and/or ecological functioning? No

If Yes, describe this importance under one or more of the following categories:

i) sites which provide a model of wetland wise use, demonstrating the application of traditional knowledge and methods of management and use that maintain the ecological character of the wetland:

ii) sites which have exceptional cultural traditions or records of former civilizations that have influenced the ecological character of the wetland:

iii) sites where the ecological character of the wetland depends on the interaction with local communities or indigenous peoples:

iv) sites where relevant non-material values such as sacred sites are present and their existence is strongly linked with the maintenance of the ecological character of the wetland:

24. Land tenure/ownership:

Ownership category	On-site	Off-site
Non-governmental organisation (NGO)	+	
Local authority, municipality etc.	+	
National/Crown Estate	+	
Private	+	
Public/communal	+	

25. Current land (including water) use:

Activity	On-site	Off-site
Nature conservation	+	
Tourism	+	+
Recreation	+	+
Current scientific research	+	+
Collection of non-timber natural products: commercial	+	+
Commercial forestry	+	+

Cutting of vegetation (small-scale/subsistence)	+	+
Fishing: recreational/sport	+	+
Arable agriculture (unspecified)	+	+
Livestock watering hole/pond	+	+
Grazing (unspecified)	+	+
Permanent pastoral agriculture	+	+
Hay meadows	+	+
Hunting: recreational/sport	+	+
Industrial water supply		+
Flood control	+	+
Irrigation (incl. agricultural water supply)	+	+
Mining/quarrying	+	+
Transport route		+
Urban development		+
Non-urbanised settlements	+	

26. Factors (past, present or potential) adversely affecting the site's ecological character, including changes in land (including water) use and development projects:

Explanation of reporting category:

1. *Those factors that are still operating, but it is unclear if they are under control, as there is a lag in showing the management or regulatory regime to be successful.*
2. *Those factors that are not currently being managed, or where the regulatory regime appears to have been ineffective so far.*

NA = Not Applicable because no factors have been reported.

Adverse Factor Category	Reporting Category	Description of the problem (Newly reported Factors only)	On-Site	Off-Site	Major Impact?
No factors reported	NA				

For category 2 factors only. What measures have been taken / are planned / regulatory processes invoked, to mitigate the effect of these factors?
Is the site subject to adverse ecological change? NO

27. Conservation measures taken:

List national category and legal status of protected areas, including boundary relationships with the Ramsar site; management practices; whether an officially approved management plan exists and whether it is being implemented.

Conservation measure	On-site	Off-site

Site/ Area of Special Scientific Interest (SSSI/ASSI)	+	
National Nature Reserve (NNR)	+	
Special Protection Area (SPA)	+	
Land owned by a non-governmental organisation for nature conservation	+	
Management agreement	+	
Site management statement/plan implemented	+	
Other	+	+

b) Describe any other current management practices:
The management of Ramsar sites in the UK is determined by either a formal management plan or through other management planning processes, and is overseen by the relevant statutory conservation agency. Details of the precise management practises are given in these documents.

28. Conservation measures proposed but not yet implemented:

e.g. management plan in preparation; official proposal as a legally protected area, etc.

No information available

29. Current scientific research and facilities:

e.g. details of current research projects, including biodiversity monitoring; existence of a field research station, etc.

Fauna.
Numbers of migratory and wintering wildfowl and waders are monitored annually as part of the national Wetland Birds Survey (WeBS) organised by the British Trust for Ornithology, Wildfowl & Wetlands Trust, the Royal Society for the Protection of Birds and the Joint Nature Conservation Committee.
Separate surveys to assess bird populations in relation to the restoration of disused peat workings on Shapwick Heath SSSI.
Ditch fauna: repeat Levels and Moors wide surveys undertaken approximately every five years by EN.

Flora.
Ditch flora: repeat Levels and Moors wide surveys undertaken approximately every five years by EN.
Meadow flora: repeat surveys 4-5 year repeat surveys by EN.

Completed.

Fauna.
Analysis of most recent trends undertaken by RSPB 2002.
Breeding waders: Four most recent major collaborative surveys on Levels and Moors, 1992, 1995, 1997, 2004.

30. Current communications, education and public awareness (CEPA) activities related to or benefiting the site:

e.g. visitor centre, observation hides and nature trails, information booklets, facilities for school visits, etc.

Existing programmes: Guided walks and school group visits are available to Shapwick National Nature Reserves. Somerset Wildlife Trust run their own programme of events on Westhay Moor SSSI and likewise the RSPB on West Sedgemoor SSSI. English Nature's team newsletter for farmers and landowners runs regular features about the site.
Interpretation facilities: Are available at the Peat Moors visitor centre adjacent to the Shapwick National Nature Reserve. Interpretation panels have been located around the Reserve where appropriate. SWT have provided interpretation boards on Westhay Moor SSSI.

31. Current recreation and tourism:

State if the wetland is used for recreation/tourism; indicate type(s) and their frequency/intensity.

Activities.
Controlled microlighting with few reported incidences of disturbance.

Wildfowling on a number of moors across the area although the affects of disturbance on the Ramsar is largely unknown and requires further work. Further work on disturbance to waterfowl has been undertaken for EN. Closer working between Wildflowing Clubs, BASC is ongoing.

Facilities provided.
Limited facilities for visitors to use the site except at NNRs in Brue Valley. General visitors and bird watchers at Shapwick National Nature Reserve, Westhay Moor and West Sedgemoor. Walking, including dog walking on droves, cycling, bird watching, coarse angling on the Main Drains may cause some limited disturbance to sites.

Seasonality.
All year.

32. Jurisdiction:

Include territorial, e.g. state/region, and functional/sectoral, e.g. Dept. of Agriculture/Dept. of Environment, etc.

Head, Natura 2000 and Ramsar Team, Department for Environment, Food and Rural Affairs, European Wildlife Division, Zone 1/07, Temple Quay House, 2 The Square, Temple Quay, Bristol, BS1 6EB

33. Management authority:

Provide the name and address of the local office(s) of the agency(ies) or organisation(s) directly responsible for managing the wetland. Wherever possible provide also the title and/or name of the person or persons in this office with responsibility for the wetland.

Site Designations Manager, English Nature, Sites and Surveillance Team, Northminster House, Northminster Road, Peterborough, PE1 1UA, UK

34. Bibliographical references:

Scientific/technical references only. If biogeographic regionalisation scheme applied (see **15** above), list full reference citation for the scheme.

Site-relevant references

Bratton, JH (ed.) (1991) *British Red Data Books: 3. Invertebrates other than insects*. Joint Nature Conservation Committee, Peterborough

Brookhouse, J, Mills, S & Self, M (1999) *Reedbed creation at Ham Wall – interim report. A case study*. Royal Society for the Protection of Birds, Sandy

Campbell, S, Hunt, CO, Scourse, JD, Keen, DH & Stephens, N (1998) *Quaternary of south-west England*. Chapman & Hall, London, for Joint Nature Conservation Committee, Peterborough (Geological Conservation Review Series, No. 14)

Chown, D (2002) *Assessment of the potential for disturbance to winter waterfowl at Moorlinch SSSI, with emphasis on the Raised Water Level Area*. English Nature

Chown, D (2003) *Night-time use of the Somerset Levels and Moors floodplain by waterfowl: final report, winters 2001/02 and 2002/03*. English Nature

Dawes, A, Leece, J (2002) *Somerset Levels and Moors breeding waders of wet meadows*. Royal Society for the Protection of Birds

Evans, C, Street, L, Benstead, P, Cadbury, J Hirons, G, Self, M & Wallace, H (1995) Water and sward management for nature conservation: a case study of the RSPB's West Sedgemoor Reserve. *RSPB Conservation Review*, **9**, 60-72

Ferns, PN (n.d.[1978]) *The Severn estuary. A heritage of wildlife.* Severn Estuary Conservation Group

Ferns, PN, Green, GH & Round, PD (1979) Significance of the Somerset and Gwent Levels in Britain as feeding areas for migrant whimbrels *Numenius phaeopus*. *Biological Conservation*, **16**(1), 17-22

Musgrove, AJ, Pollitt, MS, Hall, C, Hearn, RD, Holloway, SJ, Marshall, PE, Robinson, JA & Cranswick, PA (2001) *The Wetland Bird Survey 1999–2000: wildfowl and wader counts*. British Trust for Ornithology, Wildfowl and Wetlands Trust, Royal Society for the Protection of Birds & Joint Nature Conservation Committee, Slimbridge. www.wwt.org.uk/publications/default.asp?PubID=14

O'Neil, P & Beebee, TJC (2005) The great silver water beetle in Britain: a cry for help *British Wildlife*, **16**(4), 265-269

Ratcliffe, DA (ed.) (1977) *A Nature Conservation Review. The selection of biological sites of national importance to nature conservation in Britain*. Cambridge University Press (for the Natural Environment Research Council and the Nature Conservancy Council), Cambridge (2 vols.)

Shirt, DB (ed.) (1987) *British Red Data Books: 2. Insects.* Nature Conservancy Council, Peterborough

Somerset Levels and Moors Partnership (2003) *The Somerset Levels and Moors. Bibliography*. Somerset County Council, Taunton, for Somerset Levels and Moors Partnership. www.somerset.gov.uk/levels/Bibliog/bibliogr.htm

Stewart, NF (2004) *Important stonewort areas. An assessment of the best areas for stoneworts in the United Kingdom*. Plantlife International, Salisbury

Stroud, DA, Chambers, D, Cook, S, Buxton, N, Fraser, B, Clement, P, Lewis, P, McLean, I, Baker, H & Whitehead, S (eds.) (2001) *The UK SPA network: its scope and content*. Joint Nature Conservation Committee, Peterborough (3 vols.) www.jncc.gov.uk/UKSPA/default.htm

Tallowin, JRB & Smith, REN (1994) The effects of inorganic fertilisers in flower-rich hay meadows on the Somerset Levels [and] Executive summary. *English Nature Research Reports*, No. **87**

Taylor, ARD (1999) *The Somerset Levels and Moors. An introduction to an internationally important wetland system*. Somerset County Council, Taunton, for Somerset Levels and Moors Partnership. www.somerset.gov.uk/levels/SLMint.htm

Williams, R (1992) Classic British wildlife sites: The Somerset Levels. Their landscape and wildlife – still under threat. *British Wildlife*, **3**(6), 350-365

Williams, R & Williams, R (1992) *The Somerset Levels*. Ex Libris Press, Bradford on Avon

Wolseley, PA, Palmer, MA & Williams R (1984) The aquatic flora of the Somerset Levels and Moors. *Nature Conservancy Council, CSD Report*, No. **545**

Please return to: **Ramsar Secretariat, Rue Mauverney 28, CH-1196 Gland, Switzerland**
Telephone**: +41 22 999 0170** • Fax: **+41 22 999 0169** • email: **ramsar@ramsar.org**

NATURA 2000 – STANDARD DATA FORM

Special Areas of Conservation under the EC Habitats Directive (includes candidate SACs, Sites of Community Importance and designated SACs).

Each Natura 2000 site in the United Kingdom has its own Standard Data Form containing site-specific information. The data form for this site has been generated from the Natura 2000 Database submitted to the European Commission on the following date:

22/12/2015

The information provided here, follows the officially agreed site information format for Natura 2000 sites, as set out in the Official Journal of the European Union recording the Commission Implementing Decision of 11 July 2011 (2011/484/EU).

The Standard Data Forms are generated automatically for all of the UK's Natura 2000 sites using the European Environment Agency's Natura 2000 software. The structure and format of these forms is exactly as produced by the EEA's Natura 2000 software (except for the addition of this coversheet and the end notes). The content matches exactly the data submitted to the European Commission.

Please note that these forms contain a number of codes, all of which are explained either within the data forms themselves or in the end notes.

Further technical documentation may be found here
http://bd.eionet.europa.eu/activities/Natura_2000/reference_portal

As part of the December 2015 submission, several sections of the UK's previously published Standard Data Forms have been updated. For details of the approach taken by the UK in this submission please refer to the following document:
http://jncc.defra.gov.uk/pdf/Natura2000_StandardDataForm_UKApproach_Dec2015.pdf

More general information on Special Areas of Conservation (SACs) in the United Kingdom is available from the SAC home page on the JNCC website. This webpage also provides links to Standard Data Forms for all SACs in the UK.

Date form generated by the Joint Nature Conservation Committee
25 January 2016.

NATURA 2000 - STANDARD DATA FORM

For Special Protection Areas (SPA),
Proposed Sites for Community Importance (pSCI),
Sites of Community Importance (SCI) and
for Special Areas of Conservation (SAC)

SITE	**UK0013030**
SITENAME	**Severn Estuary/ Môr Hafren**

TABLE OF CONTENTS

- 1. SITE IDENTIFICATION
- 2. SITE LOCATION
- 3. ECOLOGICAL INFORMATION
- 4. SITE DESCRIPTION
- 5. SITE PROTECTION STATUS AND RELATION WITH CORINE BIOTOPES
- 6. SITE MANAGEMENT

1. SITE IDENTIFICATION

Back to top

1.1 Type	1.2 Site code
B	UK0013030

1.3 Site name

Severn Estuary/ Môr Hafren

1.4 First Compilation date	1.5 Update date
2007-08	2015-12

1.6 Respondent:

Name/Organisation:	Joint Nature Conservation Committee
Address:	Joint Nature Conservation Committee Monkstone House City Road Peterborough PE1 1JY
Email:	

Date site proposed as SCI:	2007-08
Date site confirmed as SCI:	2008-12
Date site designated as SAC:	2010-12
National legal reference of SAC designation:	Regulations 11 and 13-15 of the Conservation of Habitats and Species Regulations 2010 (http://www.legislation.gov.uk/uksi/2010/490/contents/made).

2. SITE LOCATION

Back to top

2.1 Site-centre location [decimal degrees]:

Longitude	Latitude
-2.978055556	51.46861111

2.2 Area [ha]:

73714.11

2.3 Marine area [%]

98.0

2.4 Sitelength [km]:

0.0

2.5 Administrative region code and name

NUTS level 2 code	Region Name
UKL2	East Wales
UKK2	Dorset and Somerset
UKK1	Gloucestershire, Wiltshire and Bristol/Bath area
UKZZ	Extra-Regio

2.6 Biogeographical Region(s)

Atlantic (100.0 %)

3. ECOLOGICAL INFORMATION

Back to top

3.1 Habitat types present on the site and assessment for them

Annex I Habitat types						Site assessment			
Code	PF	NP	Cover [ha]	Cave [number]	Data quality	A|B|C|D	A|B|C		
						Representativity	Relative Surface	Conservation	Global
1110			11779.51		G	C	C	B	C
1130			73677.25		G	A	A	B	B
1140			20271.38		G	A	B	B	B
1170			1474.28		P	C	C	A	C
1310						D			
1320			191.66		G	D			
1330			656.06		G	A	B	B	A

2110						D			

- **PF:** for the habitat types that can have a non-priority as well as a priority form (6210, 7130, 9430) enter "X" in the column PF to indicate the priority form.
- **NP:** in case that a habitat type no longer exists in the site enter: x (optional)
- **Cover:** decimal values can be entered
- **Caves:** for habitat types 8310, 8330 (caves) enter the number of caves if estimated surface is not available.
- **Data quality:** G = 'Good' (e.g. based on surveys); M = 'Moderate' (e.g. based on partial data with some extrapolation); P = 'Poor' (e.g. rough estimation)

3.2 Species referred to in Article 4 of Directive 2009/147/EC and listed in Annex II of Directive 92/43/EEC and site evaluation for them

Species					Population in the site						Site assessment			
G	Code	Scientific Name	S	NP	T	Size		Unit	Cat.	D.qual.	A|B|C|D	A|B|C		
						Min	Max				Pop.	Con.	Iso.	Glo.
F	1102	Alosa alosa			p				P	DD	D			
F	1103	Alosa fallax			p				P	DD	A	B	C	A
F	1099	Lampetra fluviatilis			p				P	DD	C	B	C	B
F	1095	Petromyzon marinus			p				P	DD	C	A	C	B

- **Group:** A = Amphibians, B = Birds, F = Fish, I = Invertebrates, M = Mammals, P = Plants, R = Reptiles
- **S:** in case that the data on species are sensitive and therefore have to be blocked for any public access enter: yes
- **NP:** in case that a species is no longer present in the site enter: x (optional)
- **Type:** p = permanent, r = reproducing, c = concentration, w = wintering (for plant and non-migratory species use permanent)
- **Unit:** i = individuals, p = pairs or other units according to the Standard list of population units and codes in accordance with Article 12 and 17 reporting (see reference portal)
- **Abundance categories (Cat.):** C = common, R = rare, V = very rare, P = present - to fill if data are deficient (DD) or in addition to population size information
- **Data quality:** G = 'Good' (e.g. based on surveys); M = 'Moderate' (e.g. based on partial data with some extrapolation); P = 'Poor' (e.g. rough estimation); VP = 'Very poor' (use this category only, if not even a rough estimation of the population size can be made, in this case the fields for population size can remain empty, but the field "Abundance categories" has to be filled in)

4. SITE DESCRIPTION

Back to top

4.1 General site character

Habitat class	% Cover
N03	1.0
N02	99.0
Total Habitat Cover	100

Other Site Characteristics

1 Terrestrial: Soil & Geology: mud,clay,shingle,sedimentary,sand,peat 2 Terrestrial: Geomorphology and landscape: coastal 3 Marine:

Geology: sandstone/mudstone,pebble,sand,peat,gravel,shingle,sedimentary,cobble,biogenic reef,limestone/chalk,mud 4 Marine: Geomorphology: intertidal sediments (including sandflat/mudflat),estuary,subtidal rock (including rocky reefs),subtidal sediments (including sandbank/mudbank),intertidal rock,cliffs,pools,tidal rapids,islands,open coast (including bay),islands

4.2 Quality and importance

Sandbanks which are slightly covered by sea water all the time for which the area is considered to support a significant presence. Estuaries for which this is considered to be one of the best areas in the United Kingdom. Mudflats and sandflats not covered by seawater at low tide for which this is considered to be one of the best areas in the United Kingdom. Reefs for which the area is considered to support a significant presence. Atlantic salt meadows (Glauco-Puccinellietalia maritimae) for which this is considered to be one of the best areas in the United Kingdom. Petromyzon marinus for which this is considered to be one of the best areas in the United Kingdom. Lampetra fluviatilis for which this is considered to be one of the best areas in the United Kingdom. Alosa fallax for which this is considered to be one of the best areas in the United Kingdom.

4.3 Threats, pressures and activities with impacts on the site

The most important impacts and activities with high effect on the site

Negative Impacts			
Rank	Threats and pressures [code]	Pollution (optional) [code]	inside/outside [i|o|b]
H	E06		B
H	M01		B
H	J02		B
H	G01		I
H	A02		I

Positive Impacts			
Rank	Activities, management [code]	Pollution (optional) [code]	inside/outside [i|o|b]
H	A04		I
H	A02		I
M	G03		B
H	D05		I

Rank: H = high, M = medium, L = low
Pollution: N = Nitrogen input, P = Phosphor/Phosphate input, A = Acid input/acidification,
T = toxic inorganic chemicals, O = toxic organic chemicals, X = Mixed pollutions
i = inside, o = outside, b = both

4.5 Documentation

Conservation Objectives - the Natural England links below provide access to the Conservation Objectives (and other site-related information) for its terrestrial and inshore Natura 2000 sites, including conservation advice packages and supporting documents for European Marine Sites within English waters and for cross-border sites. The Natural Resources Wales weblink below provides access to information on its designated sites. Detailed information about this Natura 2000 site can be accessed via the Management Plan link provided in Section 6.2. See also the 'UK Approach' document for more information (link via the JNCC website).

Link(s): http://publications.naturalengland.org.uk/category/6490068894089216

https://naturalresources.wales/conservation-biodiversity-and-wildlife/find-protected-areas-of-land-and-seas/designated-s

http://publications.naturalengland.org.uk/category/3212324
http://jncc.defra.gov.uk/pdf/Natura2000_StandardDataForm_UKApproach_Dec2015.pdf

5. SITE PROTECTION STATUS (optional)

Back to top

5.1 Designation types at national and regional level:

Code	Cover [%]	Code	Cover [%]	Code	Cover [%]
UK04	22.7	UK00	77.3	UK01	3.4

6. SITE MANAGEMENT

Back to top

6.1 Body(ies) responsible for the site management:

Organisation:	Natural Resources Wales
Address:	
Email:	

Organisation:	Natural England
Address:	
Email:	

6.2 Management Plan(s):

An actual management plan does exist:

[X] Yes Name: SEVERN ESTUARY / MÔR HAFREN
Link:
https://naturalresources.wales/media/673887/severn-estuary-sac-spa-and-ramsar-reg-33-advice-from-ne-and-ccw-jur

[ ] No, but in preparation

[ ] No

6.3 Conservation measures (optional)

For available information, including on Conservation Objectives, see Section 4.5.

EXPLANATION OF CODES USED IN THE NATURA 2000 STANDARD DATA FORMS

The codes in the table below are also explained in the official European Union guidelines for the Standard Data Form. The relevant page is shown in the table below.

1.1 Site type

CODE	DESCRIPTION	PAGE NO
A	Designated Special Protection Area	53
B	SAC (includes candidates Special Areas of Conservation, Sites of Community Importance and designated SAC)	53
C	SAC area the same as SPA. Note in the UK Natura 2000 submission this is only used for Gibraltar	53

3.1 Habitat representativity

CODE	DESCRIPTION	PAGE NO
A	Excellent	57
B	Good	57
C	Significant	57
D	Non-significant presence	57

3.1 Habitat code

CODE	DESCRIPTION	PAGE NO
1110	Sandbanks which are slightly covered by sea water all the time	57
1130	Estuaries	57
1140	Mudflats and sandflats not covered by seawater at low tide	57
1150	Coastal lagoons	57
1160	Large shallow inlets and bays	57
1170	Reefs	57
1180	Submarine structures made by leaking gases	57
1210	Annual vegetation of drift lines	57
1220	Perennial vegetation of stony banks	57
1230	Vegetated sea cliffs of the Atlantic and Baltic Coasts	57
1310	Salicornia and other annuals colonizing mud and sand	57
1320	Spartina swards (Spartinion maritimae)	57
1330	Atlantic salt meadows (Glauco-Puccinellietalia maritimae)	57
1340	Inland salt meadows	57
1420	Mediterranean and thermo-Atlantic halophilous scrubs (Sarcocornetea fruticosi)	57
2110	Embryonic shifting dunes	57
2120	Shifting dunes along the shoreline with Ammophila arenaria ("white dunes")	57
2130	Fixed coastal dunes with herbaceous vegetation ("grey dunes")	57
2140	Decalcified fixed dunes with Empetrum nigrum	57
2150	Atlantic decalcified fixed dunes (Calluno-Ulicetea)	57
2160	Dunes with Hippopha rhamnoides	57
2170	Dunes with Salix repens ssp. argentea (Salicion arenariae)	57
2190	Humid dune slacks	57
21A0	Machairs (* in Ireland)	57
2250	Coastal dunes with Juniperus spp.	57
2330	Inland dunes with open Corynephorus and Agrostis grasslands	57
3110	Oligotrophic waters containing very few minerals of sandy plains (Littorelletalia uniflorae)	57
3130	Oligotrophic to mesotrophic standing waters with vegetation of the Littorelletea uniflorae and/or of the Isoëto-Nanojuncetea	57
3140	Hard oligo-mesotrophic waters with benthic vegetation of Chara spp.	57
3150	Natural eutrophic lakes with Magnopotamion or Hydrocharition - type vegetation	57

CODE	DESCRIPTION	PAGE NO
3160	Natural dystrophic lakes and ponds	57
3170	Mediterranean temporary ponds	57
3180	Turloughs	57
3260	Water courses of plain to montane levels with the Ranunculion fluitantis and Callitricho-Batrachion vegetation	57
4010	Northern Atlantic wet heaths with Erica tetralix	57
4020	Temperate Atlantic wet heaths with Erica ciliaris and Erica tetralix	57
4030	European dry heaths	57
4040	Dry Atlantic coastal heaths with Erica vagans	57
4060	Alpine and Boreal heaths	57
4080	Sub-Arctic Salix spp. scrub	57
5110	Stable xerothermophilous formations with Buxus sempervirens on rock slopes (Berberidion p.p.)	57
5130	Juniperus communis formations on heaths or calcareous grasslands	57
6130	Calaminarian grasslands of the Violetalia calaminariae	57
6150	Siliceous alpine and boreal grasslands	57
6170	Alpine and subalpine calcareous grasslands	57
6210	Semi-natural dry grasslands and scrubland facies on calcareous substrates (Festuco-Brometalia) (* important orchid sites)	57
6230	Species-rich Nardus grasslands, on silicious substrates in mountain areas (and submountain areas in Continental Europe)	57
6410	Molinia meadows on calcareous, peaty or clayey-silt-laden soils (Molinion caeruleae)	57
6430	Hydrophilous tall herb fringe communities of plains and of the montane to alpine levels	57
6510	Lowland hay meadows (Alopecurus pratensis, Sanguisorba officinalis)	57
6520	Mountain hay meadows	57
7110	Active raised bogs	57
7120	Degraded raised bogs still capable of natural regeneration	57
7130	Blanket bogs (* if active bog)	57
7140	Transition mires and quaking bogs	57
7150	Depressions on peat substrates of the Rhynchosporion	57
7210	Calcareous fens with Cladium mariscus and species of the Caricion davallianae	57
7220	Petrifying springs with tufa formation (Cratoneurion)	57
7230	Alkaline fens	57
7240	Alpine pioneer formations of the Caricion bicoloris-atrofuscae	57
8110	Siliceous scree of the montane to snow levels (Androsacetalia alpinae and Galeopsietalia ladani)	57
8120	Calcareous and calcshist screes of the montane to alpine levels (Thlaspietea rotundifolii)	57
8210	Calcareous rocky slopes with chasmophytic vegetation	57
8220	Siliceous rocky slopes with chasmophytic vegetation	57
8240	Limestone pavements	57
8310	Caves not open to the public	57
8330	Submerged or partially submerged sea caves	57
9120	Atlantic acidophilous beech forests with Ilex and sometimes also Taxus in the shrublayer (Quercion robori-petraeae or Ilici-Fagenion)	57
9130	Asperulo-Fagetum beech forests	57
9160	Sub-Atlantic and medio-European oak or oak-hornbeam forests of the Carpinion betuli	57
9180	Tilio-Acerion forests of slopes, screes and ravines	57
9190	Old acidophilous oak woods with Quercus robur on sandy plains	57
91A0	Old sessile oak woods with Ilex and Blechnum in the British Isles	57
91C0	Caledonian forest	57
91D0	Bog woodland	57
91E0	Alluvial forests with Alnus glutinosa and Fraxinus excelsior (Alno-Padion, Alnion incanae, Salicion albae)	57
91J0	Taxus baccata woods of the British Isles	57

3.1 Relative surface

CODE	DESCRIPTION	PAGE NO
A	15%-100%	58
B	2%-15%	58
C	< 2%	58

3.1 Conservation status habitat

CODE	DESCRIPTION	PAGE NO
A	Excellent conservation	59
B	Good conservation	59
C	Average or reduced conservation	59

3.1 Global grade habitat

CODE	DESCRIPTION	PAGE NO
A	Excellent value	59
B	Good value	59
C	Significant value	59

3.2 Population (abbreviated to 'Pop.' in data form)

CODE	DESCRIPTION	PAGE NO
A	15%-100%	62
B	2%-15%	62
C	< 2%	62
D	Non-significant population	62

3.2 Conservation status species (abbreviated to 'Con.' in data form)

CODE	DESCRIPTION	PAGE NO
A	Excellent conservation	63
B	Good conservation	63
C	Average or reduced conservation	63

3.2 Isolation (abbreviated to 'Iso.' in data form)

CODE	DESCRIPTION	PAGE NO
A	Population (almost) Isolated	63
B	Population not-isolated, but on margins of area of distribution	63
C	Population not-isolated within extended distribution range	63

3.2 Global Grade (abbreviated to 'Glo.' Or 'G.' in data form)

CODE	DESCRIPTION	PAGE NO
A	Excellent value	63
B	Good value	63
C	Significant value	63

3.3 Assemblages types

CODE	DESCRIPTION	PAGE NO
WATR	Non breeding waterfowl assemblage	UK specific code
SBA	Breeding seabird assemblage	UK specific code
BBA	Breeding bird assemblage (applies only to sites classified pre 2000)	UK specific code

4.1 Habitat class code

CODE	DESCRIPTION	PAGE NO
N01	Marine areas, Sea inlets	65
N02	Tidal rivers, Estuaries, Mud flats, Sand flats, Lagoons (including saltwork basins)	65
N03	Salt marshes, Salt pastures, Salt steppes	65
N04	Coastal sand dunes, Sand beaches, Machair	65
N05	Shingle, Sea cliffs, Islets	65
N06	Inland water bodies (Standing water, Running water)	65
N07	Bogs, Marshes, Water fringed vegetation, Fens	65
N08	Heath, Scrub, Maquis and Garrigue, Phygrana	65
N09	Dry grassland, Steppes	65
N10	Humid grassland, Mesophile grassland	65
N11	Alpine and sub-Alpine grassland	65
N14	Improved grassland	65
N15	Other arable land	65
N16	Broad-leaved deciduous woodland	65
N17	Coniferous woodland	65
N19	Mixed woodland	65
N21	Non-forest areas cultivated with woody plants (including Orchards, groves, Vineyards, Dehesas)	65
N22	Inland rocks, Screes, Sands, Permanent Snow and ice	65
N23	Other land (including Towns, Villages, Roads, Waste places, Mines, Industrial sites)	65
N25	Grassland and scrub habitats (general)	65
N26	Woodland habitats (general)	65

4.3 Threats code

CODE	DESCRIPTION	PAGE NO
A01	Cultivation	65
A02	Modification of cultivation practices	65
A03	Mowing / cutting of grassland	65
A04	Grazing	65
A05	Livestock farming and animal breeding (without grazing)	65
A06	Annual and perennial non-timber crops	65
A07	Use of biocides, hormones and chemicals	65
A08	Fertilisation	65
A10	Restructuring agricultural land holding	65
A11	Agriculture activities not referred to above	65
B01	Forest planting on open ground	65
B02	Forest and Plantation management & use	65
B03	Forest exploitation without replanting or natural regrowth	65
B04	Use of biocides, hormones and chemicals (forestry)	65
B06	Grazing in forests/ woodland	65
B07	Forestry activities not referred to above	65
C01	Mining and quarrying	65
C02	Exploration and extraction of oil or gas	65
C03	Renewable abiotic energy use	65
D01	Roads, paths and railroads	65
D02	Utility and service lines	65
D03	Shipping lanes, ports, marine constructions	65
D04	Airports, flightpaths	65
D05	Improved access to site	65
E01	Urbanised areas, human habitation	65
E02	Industrial or commercial areas	65

CODE	DESCRIPTION	PAGE NO
E03	Discharges	65
E04	Structures, buildings in the landscape	65
E06	Other urbanisation, industrial and similar activities	65
F01	Marine and Freshwater Aquaculture	65
F02	Fishing and harvesting aquatic ressources	65
F03	Hunting and collection of wild animals (terrestrial), including damage caused by game (excessive density), and taking/removal of terrestrial animals (including collection of insects, reptiles, amphibians, birds of prey, etc., trapping, poisoning, poaching, predator control, accidental capture (e.g. due to fishing gear), etc.)	65
F04	Taking / Removal of terrestrial plants, general	65
F05	Illegal taking/ removal of marine fauna	65
F06	Hunting, fishing or collecting activities not referred to above	65
G01	Outdoor sports and leisure activities, recreational activities	65
G02	Sport and leisure structures	65
G03	Interpretative centres	65
G04	Military use and civil unrest	65
G05	Other human intrusions and disturbances	65
H01	Pollution to surface waters (limnic & terrestrial, marine & brackish)	65
H02	Pollution to groundwater (point sources and diffuse sources)	65
H03	Marine water pollution	65
H04	Air pollution, air-borne pollutants	65
H05	Soil pollution and solid waste (excluding discharges)	65
H06	Excess energy	65
H07	Other forms of pollution	65
I01	Invasive non-native species	65
I02	Problematic native species	65
I03	Introduced genetic material, GMO	65
J01	Fire and fire suppression	65
J02	Human induced changes in hydraulic conditions	65
J03	Other ecosystem modifications	65
K01	Abiotic (slow) natural processes	65
K02	Biocenotic evolution, succession	65
K03	Interspecific faunal relations	65
K04	Interspecific floral relations	65
K05	Reduced fecundity/ genetic depression	65
L05	Collapse of terrain, landslide	65
L07	Storm, cyclone	65
L08	Inundation (natural processes)	65
L10	Other natural catastrophes	65
M01	Changes in abiotic conditions	65
M02	Changes in biotic conditions	65
U	Unknown threat or pressure	65
XO	Threats and pressures from outside the Member State	65

5.1 Designation type codes

CODE	DESCRIPTION	PAGE NO
UK00	No Protection Status	67
UK01	National Nature Reserve	67
UK02	Marine Nature Reserve	67
UK04	Site of Special Scientific Interest (UK)	67

EC Directive 92/43 on the Conservation of Natural Habitats and of Wild Fauna and Flora
Citation for Special Area of Conservation (SAC)

Name:	Severn Estuary/ Môr Hafren
Unitary Authority/County:	England: Bristol City, Gloucestershire, Bath & North East Somerset, Somerset, South Gloucestershire. Wales: Bro Morgannwg/Vale of Glamorgan, Caerdydd/Cardiff, Casnewydd/ Newport, Sir Fynwy/ Monmouthshire.
SAC status:	Designated on 10 December 2009
Grid reference:	ST321748
SAC EU code:	UK0013030
Area (ha):	73715.40
Component SSSI:	**Upper Severn Estuary SSSI, Severn Estuary SSSI, Bridgwater Bay SSSI.**

Site description:
The Severn Estuary lies on the south west coast of Britain at the mouth of four major rivers (the Severn, Wye, Usk, and Avon). The immense tidal range (the second highest in the world) and classic funnel shape make the Severn Estuary unique in Britain and very rare worldwide. This tidal range creates strong tidal streams and high turbidity, producing communities characteristic of the extreme physical conditions of liquid mud and tide-swept sand and rocks.

The **Estuary** includes a wide diversity of habitats including **Sandbanks which are slightly covered by sea water all the time, Mudflats and sandflats not covered by sea water at low tide**, **Atlantic salt meadows**, and **Reefs**, which are identified as Annex I habitat types in their own right.

The intertidal zone of mudflats, sand banks, rocky platforms and saltmarsh is one of the largest and most important in Britain. The estuary has a diverse geological setting and a wide range of geo-morphological features, especially sediment deposits. It is important for the interpretation of coastline dynamics and land-forms, and also past changes, in sea level, sediment supply, climate and river flow. The estuary's overall interest depends on its large size, and on the processes and interrelationships between the intertidal and marine habitats and its fauna.

The fluctuating salinity and highly mobile sediments with consequent high turbidity limits the benthic invertebrates of the mud and sandflats to relatively few species. Those which are tolerant of such conditions occur in very high densities on the more stable mudflats. Beds of eel-grass *Zostera* spp. also occur on some mudflats. A greater variety of invertebrates occurs on the intertidal rock platforms, a more stable habitat with rock pools and a relatively high cover of seaweeds.

The estuary fringes have large areas of saltmarsh. These are often grazed by sheep and/or cattle, a significant factor determining the plant communities. A range of saltmarsh types is present, with both gradual and stepped transitions between bare mudflat and upper marsh.

The estuarine fauna includes: invertebrate populations of importance (especially as a food resource for a wide range of bird and fish species), internationally important populations of waterfowl; and large populations of migratory fish, including **Sea lamprey** *Petromyzon marinus*, **River lamprey** *Lampetra fluviatilis* (both of which spawn in freshwater but complete part of their life cycle in the sea), **Twaite shad** *Alosa fallax* and the nationally rare and endangered Allis Shad *Alosa alosa*.

Qualifying habitats: The site is designated under Article 4(4) of the Directive (92/43/EEC) as it hosts the following habitats listed in Annex I:

- Estuaries
- Sandbanks which are slightly covered by sea water all the time. (Subtidal sandbanks)
- Mudflats and sandflats not covered by seawater at low tide. (Intertidal mudflats and sandflats)
- Atlantic salt meadows (*Glauco-Puccinellietalia maritimae*)
- Reefs

Qualifying species: The site is designated under Article 4(4) of the Directive (92/43/EEC) as it hosts the following species listed in Annex II:

- Sea Lamprey (*Petromyzon marinus)*
- River Lamprey (*Lampetra fluviatilis)*
- Twaite Shad (*Alosa fallax)*

This citation relates to a site entered in the Register of European Sites for Great Britain.
Register reference number: UK0013030
Date of registration: 10 December 2009

Signed: S G Hopkinson

On behalf of the Secretary of State for Environment, Food and Rural Affairs

NATURA 2000 – STANDARD DATA FORM

Special Areas of Conservation under the EC Habitats Directive (includes candidate SACs, Sites of Community Importance and designated SACs).

Each Natura 2000 site in the United Kingdom has its own Standard Data Form containing site-specific information. The data form for this site has been generated from the Natura 2000 Database submitted to the European Commission on the following date:

22/12/2015

The information provided here, follows the officially agreed site information format for Natura 2000 sites, as set out in the Official Journal of the European Union recording the Commission Implementing Decision of 11 July 2011 (2011/484/EU).

The Standard Data Forms are generated automatically for all of the UK's Natura 2000 sites using the European Environment Agency's Natura 2000 software. The structure and format of these forms is exactly as produced by the EEA's Natura 2000 software (except for the addition of this coversheet and the end notes). The content matches exactly the data submitted to the European Commission.

Please note that these forms contain a number of codes, all of which are explained either within the data forms themselves or in the end notes.

Further technical documentation may be found here
http://bd.eionet.europa.eu/activities/Natura_2000/reference_portal

As part of the December 2015 submission, several sections of the UK's previously published Standard Data Forms have been updated. For details of the approach taken by the UK in this submission please refer to the following document:
http://jncc.defra.gov.uk/pdf/Natura2000_StandardDataForm_UKApproach_Dec2015.pdf

More general information on Special Areas of Conservation (SACs) in the United Kingdom is available from the SAC home page on the JNCC website. This webpage also provides links to Standard Data Forms for all SACs in the UK.

Date form generated by the Joint Nature Conservation Committee
25 January 2016.

NATURA 2000 - STANDARD DATA FORM

For Special Protection Areas (SPA),
Proposed Sites for Community Importance (pSCI),
Sites of Community Importance (SCI) and
for Special Areas of Conservation (SAC)

SITE	**UK0030052**
SITENAME	**North Somerset and Mendip Bats**

TABLE OF CONTENTS

- 1. SITE IDENTIFICATION
- 2. SITE LOCATION
- 3. ECOLOGICAL INFORMATION
- 4. SITE DESCRIPTION
- 5. SITE PROTECTION STATUS AND RELATION WITH CORINE BIOTOPES
- 6. SITE MANAGEMENT

1. SITE IDENTIFICATION

Back to top

1.1 Type	1.2 Site code
B	UK0030052

1.3 Site name

North Somerset and Mendip Bats

1.4 First Compilation date	1.5 Update date
1998-03	2015-12

1.6 Respondent:

Name/Organisation:	Joint Nature Conservation Committee
Address:	Joint Nature Conservation Committee Monkstone House City Road Peterborough PE1 1JY
Email:	

Date site proposed as SCI:	1998-03
Date site confirmed as SCI:	2004-12
Date site designated as SAC:	2005-04
National legal reference of SAC designation:	Regulations 11 and 13-15 of the Conservation of Habitats and Species Regulations 2010 (http://www.legislation.gov.uk/uksi/2010/490/contents/made).

2. SITE LOCATION

Back to top

2.1 Site-centre location [decimal degrees]:

Longitude	Latitude
-2.746388889	51.28611111

2.2 Area [ha]:

555.93

2.3 Marine area [%]

0.0

2.4 Sitelength [km]:

0.0

2.5 Administrative region code and name

NUTS level 2 code	Region Name
UKK1	Gloucestershire, Wiltshire and Bristol/Bath area
UKK2	Dorset and Somerset

2.6 Biogeographical Region(s)

Atlantic (100.0 %)

3. ECOLOGICAL INFORMATION

Back to top

3.1 Habitat types present on the site and assessment for them

Annex I Habitat types						Site assessment			
Code	PF	NP	Cover [ha]	Cave [number]	Data quality	A|B|C|D	A|B|C		
						Representativity	Relative Surface	Conservation	Global
4030			10.56		G	D			
6210			151.77		G	B	C	A	B
8310			10.01		G	C	C	B	C
9180	X		138.43		G	B	C	B	B

- **PF:** for the habitat types that can have a non-priority as well as a priority form (6210, 7130, 9430) enter "X" in the column PF to indicate the priority form.
- **NP:** in case that a habitat type no longer exists in the site enter: x (optional)
- **Cover:** decimal values can be entered
- **Caves:** for habitat types 8310, 8330 (caves) enter the number of caves if estimated surface is not available.
- **Data quality:** G = 'Good' (e.g. based on surveys); M = 'Moderate' (e.g. based on partial data with some extrapolation); P = 'Poor' (e.g. rough estimation)

3.2 Species referred to in Article 4 of Directive 2009/147/EC and listed in Annex II of Directive 92/43/EEC and site evaluation for them

Species					Population in the site						Site assessment			
G	Code	Scientific Name	S	NP	T	Size		Unit	Cat.	D.qual.	A|B|C|D	A|B|C		
						Min	Max				Pop.	Con.	Iso.	Glo.
I	1065	Euphydryas (Eurodryas, Hypodryas) aurinia			p				P	DD	D			
M	1304	Rhinolophus ferrumequinum			p	101	250	i		M	B	A	C	A
M	1303	Rhinolophus hipposideros			p	101	250	i		M	C	B	C	B

- **Group:** A = Amphibians, B = Birds, F = Fish, I = Invertebrates, M = Mammals, P = Plants, R = Reptiles
- **S:** in case that the data on species are sensitive and therefore have to be blocked for any public access enter: yes
- **NP:** in case that a species is no longer present in the site enter: x (optional)
- **Type:** p = permanent, r = reproducing, c = concentration, w = wintering (for plant and non-migratory species use permanent)
- **Unit:** i = individuals, p = pairs or other units according to the Standard list of population units and codes in accordance with Article 12 and 17 reporting (see reference portal)
- **Abundance categories (Cat.):** C = common, R = rare, V = very rare, P = present - to fill if data are deficient (DD) or in addition to population size information
- **Data quality:** G = 'Good' (e.g. based on surveys); M = 'Moderate' (e.g. based on partial data with some extrapolation); P = 'Poor' (e.g. rough estimation); VP = 'Very poor' (use this category only, if not even a rough estimation of the population size can be made, in this case the fields for population size can remain empty, but the field "Abundance categories" has to be filled in)

4. SITE DESCRIPTION

Back to top

4.1 General site character

Habitat class	% Cover
N23	1.0
N08	22.5
N16	30.0
N09	27.5
N19	19.0
Total Habitat Cover	100

Other Site Characteristics

1 Terrestrial: Soil & Geology: sedimentary,nutrient-poor,basic,limestone 2 Terrestrial: Geomorphology and landscape: hilly,lowland,caves

4.2 Quality and importance

Semi-natural dry grasslands and scrubland facies: on calcareous substrates (Festuco-Brometalia) for which this is considered to be one of the best areas in the United Kingdom. Caves not open to the public for which the area is considered to support a significant presence. Tilio-Acerion forests of slopes, screes and ravines for

which this is considered to be one of the best areas in the United Kingdom. Rhinolophus ferrumequinum for which this is considered to be one of the best areas in the United Kingdom. Rhinolophus hipposideros for which this is considered to be one of the best areas in the United Kingdom.

4.3 Threats, pressures and activities with impacts on the site

The most important impacts and activities with high effect on the site

Negative Impacts			
Rank	Threats and pressures [code]	Pollution (optional) [code]	inside/outside [i|o|b]
H	U		O
H	E06		B
H	B02		I
H	K04		I
H	A04		I

Positive Impacts			
Rank	Activities, management [code]	Pollution (optional) [code]	inside/outside [i|o|b]
H	A04		I
H	B02		I
H	A02		I

Rank: H = high, M = medium, L = low
Pollution: N = Nitrogen input, P = Phosphor/Phosphate input, A = Acid input/acidification,
T = toxic inorganic chemicals, O = toxic organic chemicals, X = Mixed pollutions
i = inside, o = outside, b = both

4.5 Documentation

Conservation Objectives - the Natural England links below provide access to the Conservation Objectives (and other site-related information) for its terrestrial and inshore Natura 2000 sites, including conservation advice packages and supporting documents for European Marine Sites within English waters and for cross-border sites. See also the 'UK Approach' document for more information (link via the JNCC website).

Link(s): http://jncc.defra.gov.uk/pdf/Natura2000_StandardDataForm_UKApproach_Dec2015.pdf

http://publications.naturalengland.org.uk/category/6490068894089216

http://publications.naturalengland.org.uk/category/3212324

5. SITE PROTECTION STATUS (optional)

Back to top

5.1 Designation types at national and regional level:

Code	Cover [%]	Code	Cover [%]	Code	Cover [%]
UK04	100.0				

6. SITE MANAGEMENT

Back to top

6.1 Body(ies) responsible for the site management:

Organisation:	Natural England
Address:	
Email:	

6.2 Management Plan(s):

An actual management plan does exist:

☐ Yes

[ ]	No, but in preparation
[X]	No

6.3 Conservation measures (optional)

For available information, including on Conservation Objectives, see Section 4.5.

EXPLANATION OF CODES USED IN THE NATURA 2000 STANDARD DATA FORMS

The codes in the table below are also explained in the official European Union guidelines for the Standard Data Form. The relevant page is shown in the table below.

1.1 Site type

CODE	DESCRIPTION	PAGE NO
A	Designated Special Protection Area	53
B	SAC (includes candidates Special Areas of Conservation, Sites of Community Importance and designated SAC)	53
C	SAC area the same as SPA. Note in the UK Natura 2000 submission this is only used for Gibraltar	53

3.1 Habitat representativity

CODE	DESCRIPTION	PAGE NO
A	Excellent	57
B	Good	57
C	Significant	57
D	Non-significant presence	57

3.1 Habitat code

CODE	DESCRIPTION	PAGE NO
1110	Sandbanks which are slightly covered by sea water all the time	57
1130	Estuaries	57
1140	Mudflats and sandflats not covered by seawater at low tide	57
1150	Coastal lagoons	57
1160	Large shallow inlets and bays	57
1170	Reefs	57
1180	Submarine structures made by leaking gases	57
1210	Annual vegetation of drift lines	57
1220	Perennial vegetation of stony banks	57
1230	Vegetated sea cliffs of the Atlantic and Baltic Coasts	57
1310	Salicornia and other annuals colonizing mud and sand	57
1320	Spartina swards (Spartinion maritimae)	57
1330	Atlantic salt meadows (Glauco-Puccinellietalia maritimae)	57
1340	Inland salt meadows	57
1420	Mediterranean and thermo-Atlantic halophilous scrubs (Sarcocornetea fruticosi)	57
2110	Embryonic shifting dunes	57
2120	Shifting dunes along the shoreline with Ammophila arenaria ("white dunes")	57
2130	Fixed coastal dunes with herbaceous vegetation ("grey dunes")	57
2140	Decalcified fixed dunes with Empetrum nigrum	57
2150	Atlantic decalcified fixed dunes (Calluno-Ulicetea)	57
2160	Dunes with Hippopha rhamnoides	57
2170	Dunes with Salix repens ssp. argentea (Salicion arenariae)	57
2190	Humid dune slacks	57
21A0	Machairs (* in Ireland)	57
2250	Coastal dunes with Juniperus spp.	57
2330	Inland dunes with open Corynephorus and Agrostis grasslands	57
3110	Oligotrophic waters containing very few minerals of sandy plains (Littorelletalia uniflorae)	57
3130	Oligotrophic to mesotrophic standing waters with vegetation of the Littorelletea uniflorae and/or of the Isoëto-Nanojuncetea	57
3140	Hard oligo-mesotrophic waters with benthic vegetation of Chara spp.	57
3150	Natural eutrophic lakes with Magnopotamion or Hydrocharition - type vegetation	57

CODE	DESCRIPTION	PAGE NO
3160	Natural dystrophic lakes and ponds	57
3170	Mediterranean temporary ponds	57
3180	Turloughs	57
3260	Water courses of plain to montane levels with the Ranunculion fluitantis and Callitricho-Batrachion vegetation	57
4010	Northern Atlantic wet heaths with Erica tetralix	57
4020	Temperate Atlantic wet heaths with Erica ciliaris and Erica tetralix	57
4030	European dry heaths	57
4040	Dry Atlantic coastal heaths with Erica vagans	57
4060	Alpine and Boreal heaths	57
4080	Sub-Arctic Salix spp. scrub	57
5110	Stable xerothermophilous formations with Buxus sempervirens on rock slopes (Berberidion p.p.)	57
5130	Juniperus communis formations on heaths or calcareous grasslands	57
6130	Calaminarian grasslands of the Violetalia calaminariae	57
6150	Siliceous alpine and boreal grasslands	57
6170	Alpine and subalpine calcareous grasslands	57
6210	Semi-natural dry grasslands and scrubland facies on calcareous substrates (Festuco-Brometalia) (* important orchid sites)	57
6230	Species-rich Nardus grasslands, on silicious substrates in mountain areas (and submountain areas in Continental Europe)	57
6410	Molinia meadows on calcareous, peaty or clayey-silt-laden soils (Molinion caeruleae)	57
6430	Hydrophilous tall herb fringe communities of plains and of the montane to alpine levels	57
6510	Lowland hay meadows (Alopecurus pratensis, Sanguisorba officinalis)	57
6520	Mountain hay meadows	57
7110	Active raised bogs	57
7120	Degraded raised bogs still capable of natural regeneration	57
7130	Blanket bogs (* if active bog)	57
7140	Transition mires and quaking bogs	57
7150	Depressions on peat substrates of the Rhynchosporion	57
7210	Calcareous fens with Cladium mariscus and species of the Caricion davallianae	57
7220	Petrifying springs with tufa formation (Cratoneurion)	57
7230	Alkaline fens	57
7240	Alpine pioneer formations of the Caricion bicoloris-atrofuscae	57
8110	Siliceous scree of the montane to snow levels (Androsacetalia alpinae and Galeopsietalia ladani)	57
8120	Calcareous and calcshist screes of the montane to alpine levels (Thlaspietea rotundifolii)	57
8210	Calcareous rocky slopes with chasmophytic vegetation	57
8220	Siliceous rocky slopes with chasmophytic vegetation	57
8240	Limestone pavements	57
8310	Caves not open to the public	57
8330	Submerged or partially submerged sea caves	57
9120	Atlantic acidophilous beech forests with Ilex and sometimes also Taxus in the shrublayer (Quercion robori-petraeae or Ilici-Fagenion)	57
9130	Asperulo-Fagetum beech forests	57
9160	Sub-Atlantic and medio-European oak or oak-hornbeam forests of the Carpinion betuli	57
9180	Tilio-Acerion forests of slopes, screes and ravines	57
9190	Old acidophilous oak woods with Quercus robur on sandy plains	57
91A0	Old sessile oak woods with Ilex and Blechnum in the British Isles	57
91C0	Caledonian forest	57
91D0	Bog woodland	57
91E0	Alluvial forests with Alnus glutinosa and Fraxinus excelsior (Alno-Padion, Alnion incanae, Salicion albae)	57
91J0	Taxus baccata woods of the British Isles	57

3.1 Relative surface

CODE	DESCRIPTION	PAGE NO
A	15%-100%	58
B	2%-15%	58
C	< 2%	58

3.1 Conservation status habitat

CODE	DESCRIPTION	PAGE NO
A	Excellent conservation	59
B	Good conservation	59
C	Average or reduced conservation	59

3.1 Global grade habitat

CODE	DESCRIPTION	PAGE NO
A	Excellent value	59
B	Good value	59
C	Significant value	59

3.2 Population (abbreviated to 'Pop.' in data form)

CODE	DESCRIPTION	PAGE NO
A	15%-100%	62
B	2%-15%	62
C	< 2%	62
D	Non-significant population	62

3.2 Conservation status species (abbreviated to 'Con.' in data form)

CODE	DESCRIPTION	PAGE NO
A	Excellent conservation	63
B	Good conservation	63
C	Average or reduced conservation	63

3.2 Isolation (abbreviated to 'Iso.' in data form)

CODE	DESCRIPTION	PAGE NO
A	Population (almost) Isolated	63
B	Population not-isolated, but on margins of area of distribution	63
C	Population not-isolated within extended distribution range	63

3.2 Global Grade (abbreviated to 'Glo.' Or 'G.' in data form)

CODE	DESCRIPTION	PAGE NO
A	Excellent value	63
B	Good value	63
C	Significant value	63

3.3 Assemblages types

CODE	DESCRIPTION	PAGE NO
WATR	Non breeding waterfowl assemblage	UK specific code
SBA	Breeding seabird assemblage	UK specific code
BBA	Breeding bird assemblage (applies only to sites classified pre 2000)	UK specific code

4.1 Habitat class code

CODE	DESCRIPTION	PAGE NO
N01	Marine areas, Sea inlets	65
N02	Tidal rivers, Estuaries, Mud flats, Sand flats, Lagoons (including saltwork basins)	65
N03	Salt marshes, Salt pastures, Salt steppes	65
N04	Coastal sand dunes, Sand beaches, Machair	65
N05	Shingle, Sea cliffs, Islets	65
N06	Inland water bodies (Standing water, Running water)	65
N07	Bogs, Marshes, Water fringed vegetation, Fens	65
N08	Heath, Scrub, Maquis and Garrigue, Phygrana	65
N09	Dry grassland, Steppes	65
N10	Humid grassland, Mesophile grassland	65
N11	Alpine and sub-Alpine grassland	65
N14	Improved grassland	65
N15	Other arable land	65
N16	Broad-leaved deciduous woodland	65
N17	Coniferous woodland	65
N19	Mixed woodland	65
N21	Non-forest areas cultivated with woody plants (including Orchards, groves, Vineyards, Dehesas)	65
N22	Inland rocks, Screes, Sands, Permanent Snow and ice	65
N23	Other land (including Towns, Villages, Roads, Waste places, Mines, Industrial sites)	65
N25	Grassland and scrub habitats (general)	65
N26	Woodland habitats (general)	65

4.3 Threats code

CODE	DESCRIPTION	PAGE NO
A01	Cultivation	65
A02	Modification of cultivation practices	65
A03	Mowing / cutting of grassland	65
A04	Grazing	65
A05	Livestock farming and animal breeding (without grazing)	65
A06	Annual and perennial non-timber crops	65
A07	Use of biocides, hormones and chemicals	65
A08	Fertilisation	65
A10	Restructuring agricultural land holding	65
A11	Agriculture activities not referred to above	65
B01	Forest planting on open ground	65
B02	Forest and Plantation management & use	65
B03	Forest exploitation without replanting or natural regrowth	65
B04	Use of biocides, hormones and chemicals (forestry)	65
B06	Grazing in forests/ woodland	65
B07	Forestry activities not referred to above	65
C01	Mining and quarrying	65
C02	Exploration and extraction of oil or gas	65
C03	Renewable abiotic energy use	65
D01	Roads, paths and railroads	65
D02	Utility and service lines	65
D03	Shipping lanes, ports, marine constructions	65
D04	Airports, flightpaths	65
D05	Improved access to site	65
E01	Urbanised areas, human habitation	65
E02	Industrial or commercial areas	65

CODE	DESCRIPTION	PAGE NO
E03	Discharges	65
E04	Structures, buildings in the landscape	65
E06	Other urbanisation, industrial and similar activities	65
F01	Marine and Freshwater Aquaculture	65
F02	Fishing and harvesting aquatic ressources	65
F03	Hunting and collection of wild animals (terrestrial), including damage caused by game (excessive density), and taking/removal of terrestrial animals (including collection of insects, reptiles, amphibians, birds of prey, etc., trapping, poisoning, poaching, predator control, accidental capture (e.g. due to fishing gear), etc.)	65
F04	Taking / Removal of terrestrial plants, general	65
F05	Illegal taking/ removal of marine fauna	65
F06	Hunting, fishing or collecting activities not referred to above	65
G01	Outdoor sports and leisure activities, recreational activities	65
G02	Sport and leisure structures	65
G03	Interpretative centres	65
G04	Military use and civil unrest	65
G05	Other human intrusions and disturbances	65
H01	Pollution to surface waters (limnic & terrestrial, marine & brackish)	65
H02	Pollution to groundwater (point sources and diffuse sources)	65
H03	Marine water pollution	65
H04	Air pollution, air-borne pollutants	65
H05	Soil pollution and solid waste (excluding discharges)	65
H06	Excess energy	65
H07	Other forms of pollution	65
I01	Invasive non-native species	65
I02	Problematic native species	65
I03	Introduced genetic material, GMO	65
J01	Fire and fire suppression	65
J02	Human induced changes in hydraulic conditions	65
J03	Other ecosystem modifications	65
K01	Abiotic (slow) natural processes	65
K02	Biocenotic evolution, succession	65
K03	Interspecific faunal relations	65
K04	Interspecific floral relations	65
K05	Reduced fecundity/ genetic depression	65
L05	Collapse of terrain, landslide	65
L07	Storm, cyclone	65
L08	Inundation (natural processes)	65
L10	Other natural catastrophes	65
M01	Changes in abiotic conditions	65
M02	Changes in biotic conditions	65
U	Unknown threat or pressure	65
XO	Threats and pressures from outside the Member State	65

5.1 Designation type codes

CODE	DESCRIPTION	PAGE NO
UK00	No Protection Status	67
UK01	National Nature Reserve	67
UK02	Marine Nature Reserve	67
UK04	Site of Special Scientific Interest (UK)	67

EC Directive 92/43 on the Conservation of Natural Habitats and of Wild Fauna and Flora

Citation for Special Area of Conservation (SAC)

Name:	North Somerset and Mendip Bats
Unitary Authority/County:	Bath and North East Somerset, North Somerset, Somerset
SAC status:	Designated on 1 April 2005
Grid reference:	ST480544
SAC EU code:	UK0030052
Area (ha):	561.19
Component SSSI:	Banwell Caves SSSI, Banwell Ochre Caves SSSI, Brockley Hall Stables SSSI, Compton Martin Ochre Mine SSSI, King's Wood and Urchin Wood SSSI, The Cheddar Complex SSSI, Wookey Hole SSSI

Site description:
The Cheddar complex and Wookey Hole areas support a wide range of habitats which provide feeding grounds for bats. These include semi-natural dry grasslands of which the principal community present is sheep's-fescue – meadow oat-grass (*Festuca ovina – Helictotrichon pratense*) grassland which occurs on rock ledges and on steep slopes with shallow limestone soil, especially in the dry valleys and gorges and on the south-facing scarp of the Mendips. King's Wood and Urchin Wood have developed over limestone which outcrops in parts of the site and forms a steep scarp to the south-east. There is mostly oak *Quercus robur* and ash *Fraxinus excelsior* woodland, though some areas are dominated by small-leaved lime *Tilia cordata* with both maiden and coppice trees. Other canopy trees include yew *Taxus baccata*, cherry *Prunus avium* and wild service tree *Sorbus torminalis*. There is a rich ground flora including many ferns and mosses.

The limestone caves and mines of the Mendips and the north Somerset hills provide a range of important breeding and hibernation sites for lesser horseshoe bat *Rhinolophus hipposideros* and greater horseshoe bat *Rhinolophus ferrumequinum*.

Qualifying habitats: The site is designated under **article 4(4)** of the Directive (92/43/EEC) as it hosts the following habitats listed in Annex I:

- *Tilio-Acerion* forests of slopes, screes and ravines. (Mixed woodland on base-rich soils associated with rocky slopes)*
- Caves not open to the public
- Semi-natural dry grasslands and scrubland facies: on calcareous substrates (*Festuco-Brometalia*). (Dry grasslands and scrublands on chalk or limestone)

Qualifying species: The site is designated under **article 4(4)** of the Directive (92/43/EEC) as it hosts the following species listed in Annex II:

- Greater horseshoe bat *Rhinolophus ferrumequinum*
- Lesser horseshoe bat *Rhinolophus hipposideros*

Annex I priority habitats are denoted by an asterisk (*).

This citation relates to a site entered in the Register of European Sites for Great Britain.
Register reference number: UK0030052
Date of registration: 14 June 2005

Signed: Trevor Salmon

On behalf of the Secretary of State for Environment, Food and Rural Affairs

NATURA 2000 – STANDARD DATA FORM

Special Areas of Conservation under the EC Habitats Directive (includes candidate SACs, Sites of Community Importance and designated SACs).

Each Natura 2000 site in the United Kingdom has its own Standard Data Form containing site-specific information. The data form for this site has been generated from the Natura 2000 Database submitted to the European Commission on the following date:

22/12/2015

The information provided here, follows the officially agreed site information format for Natura 2000 sites, as set out in the Official Journal of the European Union recording the Commission Implementing Decision of 11 July 2011 (2011/484/EU).

The Standard Data Forms are generated automatically for all of the UK's Natura 2000 sites using the European Environment Agency's Natura 2000 software. The structure and format of these forms is exactly as produced by the EEA's Natura 2000 software (except for the addition of this coversheet and the end notes). The content matches exactly the data submitted to the European Commission.

Please note that these forms contain a number of codes, all of which are explained either within the data forms themselves or in the end notes.

Further technical documentation may be found here
http://bd.eionet.europa.eu/activities/Natura_2000/reference_portal

As part of the December 2015 submission, several sections of the UK's previously published Standard Data Forms have been updated. For details of the approach taken by the UK in this submission please refer to the following document:
http://jncc.defra.gov.uk/pdf/Natura2000_StandardDataForm_UKApproach_Dec2015.pdf

More general information on Special Areas of Conservation (SACs) in the United Kingdom is available from the SAC home page on the JNCC website. This webpage also provides links to Standard Data Forms for all SACs in the UK.

Date form generated by the Joint Nature Conservation Committee
25 January 2016.

NATURA 2000 - STANDARD DATA FORM

For Special Protection Areas (SPA),
Proposed Sites for Community Importance (pSCI),
Sites of Community Importance (SCI) and
for Special Areas of Conservation (SAC)

SITE	**UK0030168**
SITENAME	**Hestercombe House**

TABLE OF CONTENTS

- 1. SITE IDENTIFICATION
- 2. SITE LOCATION
- 3. ECOLOGICAL INFORMATION
- 4. SITE DESCRIPTION
- 5. SITE PROTECTION STATUS AND RELATION WITH CORINE BIOTOPES
- 6. SITE MANAGEMENT

1. SITE IDENTIFICATION

Back to top

1.1 Type	1.2 Site code
B	UK0030168

1.3 Site name

Hestercombe House

1.4 First Compilation date	1.5 Update date
2001-03	2015-12

1.6 Respondent:

Name/Organisation:	Joint Nature Conservation Committee
Address:	Joint Nature Conservation Committee Monkstone House City Road Peterborough PE1 1JY
Email:	

Date site proposed as SCI:	2001-03
Date site confirmed as SCI:	2004-12
Date site designated as SAC:	2005-04
National legal reference of SAC designation:	Regulations 11 and 13-15 of the Conservation of Habitats and Species Regulations 2010 (http://www.legislation.gov.uk/uksi/2010/490/contents/made).

2. SITE LOCATION

Back to top

2.1 Site-centre location [decimal degrees]:

Longitude	Latitude
-3.084166667	51.05194444

2.2 Area [ha]:

0.06

2.3 Marine area [%]

0.0

2.4 Sitelength [km]:

0.0

2.5 Administrative region code and name

NUTS level 2 code	Region Name
UKK2	Dorset and Somerset

2.6 Biogeographical Region(s)

Atlantic (100.0 %)

3. ECOLOGICAL INFORMATION

Back to top

3.2 Species referred to in Article 4 of Directive 2009/147/EC and listed in Annex II of Directive 92/43/EEC and site evaluation for them

Species					Population in the site						Site assessment			
G	Code	Scientific Name	S	NP	T	Size		Unit	Cat.	D.qual.	A|B|C|D	A|B|C		
						Min	Max				Pop.	Con.	Iso.	Glo.
M	1303	Rhinolophus hipposideros			p	250	250	i		G	C	B	C	B

- **Group:** A = Amphibians, B = Birds, F = Fish, I = Invertebrates, M = Mammals, P = Plants, R = Reptiles
- **S:** in case that the data on species are sensitive and therefore have to be blocked for any public access enter: yes
- **NP:** in case that a species is no longer present in the site enter: x (optional)
- **Type:** p = permanent, r = reproducing, c = concentration, w = wintering (for plant and non-migratory species use permanent)
- **Unit:** i = individuals, p = pairs or other units according to the Standard list of population units and codes in accordance with Article 12 and 17 reporting (see reference portal)
- **Abundance categories (Cat.):** C = common, R = rare, V = very rare, P = present - to fill if data are deficient (DD) or in addition to population size information
- **Data quality:** G = 'Good' (e.g. based on surveys); M = 'Moderate' (e.g. based on partial data with some extrapolation); P = 'Poor' (e.g. rough estimation); VP = 'Very poor' (use this category only, if not even a rough estimation of the population size can be made, in this case the fields for population size can remain empty, but the field "Abundance categories" has to be filled in)

4. SITE DESCRIPTION

Back to top

4.1 General site character

Habitat class	% Cover
N23	100.0
Total Habitat Cover	100

Other Site Characteristics

2 Terrestrial: Geomorphology and landscape: lowland

4.2 Quality and importance

Rhinolophus hipposideros for which this is considered to be one of the best areas in the United Kingdom.

4.3 Threats, pressures and activities with impacts on the site

The most important impacts and activities with high effect on the site

Negative Impacts			
Rank	Threats and pressures [code]	Pollution (optional) [code]	inside/outside [i|o|b]
H	J02		B
H	K02		I
H	G01		I
H	M02		B
H	E06		B

Positive Impacts			
Rank	Activities, management [code]	Pollution (optional) [code]	inside/outside [i|o|b]

Rank: H = high, M = medium, L = low
Pollution: N = Nitrogen input, P = Phosphor/Phosphate input, A = Acid input/acidification,
T = toxic inorganic chemicals, O = toxic organic chemicals, X = Mixed pollutions
i = inside, o = outside, b = both

4.5 Documentation

Conservation Objectives - the Natural England links below provide access to the Conservation Objectives (and other site-related information) for its terrestrial and inshore Natura 2000 sites, including conservation advice packages and supporting documents for European Marine Sites within English waters and for cross-border sites. See also the 'UK Approach' document for more information (link via the JNCC website).

Link(s): http://publications.naturalengland.org.uk/category/3212324
http://jncc.defra.gov.uk/pdf/Natura2000_StandardDataForm_UKApproach_Dec2015.pdf

http://publications.naturalengland.org.uk/category/6490068894089216

5. SITE PROTECTION STATUS (optional)

Back to top

5.1 Designation types at national and regional level:

Code	Cover [%]	Code	Cover [%]	Code	Cover [%]
UK04	100.0				

6. SITE MANAGEMENT

Back to top

6.1 Body(ies) responsible for the site management:

Organisation:	Natural England
Address:	
Email:	

6.2 Management Plan(s):

An actual management plan does exist:

[ ]	Yes
[ ]	No, but in preparation
[X]	No

6.3 Conservation measures (optional)

For available information, including on Conservation Objectives, see Section 4.5.

EXPLANATION OF CODES USED IN THE NATURA 2000 STANDARD DATA FORMS

The codes in the table below are also explained in the official European Union guidelines for the Standard Data Form. The relevant page is shown in the table below.

1.1 Site type

CODE	DESCRIPTION	PAGE NO
A	Designated Special Protection Area	53
B	SAC (includes candidates Special Areas of Conservation, Sites of Community Importance and designated SAC)	53
C	SAC area the same as SPA. Note in the UK Natura 2000 submission this is only used for Gibraltar	53

3.1 Habitat representativity

CODE	DESCRIPTION	PAGE NO
A	Excellent	57
B	Good	57
C	Significant	57
D	Non-significant presence	57

3.1 Habitat code

CODE	DESCRIPTION	PAGE NO
1110	Sandbanks which are slightly covered by sea water all the time	57
1130	Estuaries	57
1140	Mudflats and sandflats not covered by seawater at low tide	57
1150	Coastal lagoons	57
1160	Large shallow inlets and bays	57
1170	Reefs	57
1180	Submarine structures made by leaking gases	57
1210	Annual vegetation of drift lines	57
1220	Perennial vegetation of stony banks	57
1230	Vegetated sea cliffs of the Atlantic and Baltic Coasts	57
1310	Salicornia and other annuals colonizing mud and sand	57
1320	Spartina swards (Spartinion maritimae)	57
1330	Atlantic salt meadows (Glauco-Puccinellietalia maritimae)	57
1340	Inland salt meadows	57
1420	Mediterranean and thermo-Atlantic halophilous scrubs (Sarcocornetea fruticosi)	57
2110	Embryonic shifting dunes	57
2120	Shifting dunes along the shoreline with Ammophila arenaria ("white dunes")	57
2130	Fixed coastal dunes with herbaceous vegetation ("grey dunes")	57
2140	Decalcified fixed dunes with Empetrum nigrum	57
2150	Atlantic decalcified fixed dunes (Calluno-Ulicetea)	57
2160	Dunes with Hippopha rhamnoides	57
2170	Dunes with Salix repens ssp. argentea (Salicion arenariae)	57
2190	Humid dune slacks	57
21A0	Machairs (* in Ireland)	57
2250	Coastal dunes with Juniperus spp.	57
2330	Inland dunes with open Corynephorus and Agrostis grasslands	57
3110	Oligotrophic waters containing very few minerals of sandy plains (Littorelletalia uniflorae)	57
3130	Oligotrophic to mesotrophic standing waters with vegetation of the Littorelletea uniflorae and/or of the Isoëto-Nanojuncetea	57
3140	Hard oligo-mesotrophic waters with benthic vegetation of Chara spp.	57
3150	Natural eutrophic lakes with Magnopotamion or Hydrocharition - type vegetation	57

CODE	DESCRIPTION	PAGE NO
3160	Natural dystrophic lakes and ponds	57
3170	Mediterranean temporary ponds	57
3180	Turloughs	57
3260	Water courses of plain to montane levels with the Ranunculion fluitantis and Callitricho-Batrachion vegetation	57
4010	Northern Atlantic wet heaths with Erica tetralix	57
4020	Temperate Atlantic wet heaths with Erica ciliaris and Erica tetralix	57
4030	European dry heaths	57
4040	Dry Atlantic coastal heaths with Erica vagans	57
4060	Alpine and Boreal heaths	57
4080	Sub-Arctic Salix spp. scrub	57
5110	Stable xerothermophilous formations with Buxus sempervirens on rock slopes (Berberidion p.p.)	57
5130	Juniperus communis formations on heaths or calcareous grasslands	57
6130	Calaminarian grasslands of the Violetalia calaminariae	57
6150	Siliceous alpine and boreal grasslands	57
6170	Alpine and subalpine calcareous grasslands	57
6210	Semi-natural dry grasslands and scrubland facies on calcareous substrates (Festuco-Brometalia) (* important orchid sites)	57
6230	Species-rich Nardus grasslands, on silicious substrates in mountain areas (and submountain areas in Continental Europe)	57
6410	Molinia meadows on calcareous, peaty or clayey-silt-laden soils (Molinion caeruleae)	57
6430	Hydrophilous tall herb fringe communities of plains and of the montane to alpine levels	57
6510	Lowland hay meadows (Alopecurus pratensis, Sanguisorba officinalis)	57
6520	Mountain hay meadows	57
7110	Active raised bogs	57
7120	Degraded raised bogs still capable of natural regeneration	57
7130	Blanket bogs (* if active bog)	57
7140	Transition mires and quaking bogs	57
7150	Depressions on peat substrates of the Rhynchosporion	57
7210	Calcareous fens with Cladium mariscus and species of the Caricion davallianae	57
7220	Petrifying springs with tufa formation (Cratoneurion)	57
7230	Alkaline fens	57
7240	Alpine pioneer formations of the Caricion bicoloris-atrofuscae	57
8110	Siliceous scree of the montane to snow levels (Androsacetalia alpinae and Galeopsietalia ladani)	57
8120	Calcareous and calcshist screes of the montane to alpine levels (Thlaspietea rotundifolii)	57
8210	Calcareous rocky slopes with chasmophytic vegetation	57
8220	Siliceous rocky slopes with chasmophytic vegetation	57
8240	Limestone pavements	57
8310	Caves not open to the public	57
8330	Submerged or partially submerged sea caves	57
9120	Atlantic acidophilous beech forests with Ilex and sometimes also Taxus in the shrublayer (Quercion robori-petraeae or Ilici-Fagenion)	57
9130	Asperulo-Fagetum beech forests	57
9160	Sub-Atlantic and medio-European oak or oak-hornbeam forests of the Carpinion betuli	57
9180	Tilio-Acerion forests of slopes, screes and ravines	57
9190	Old acidophilous oak woods with Quercus robur on sandy plains	57
91A0	Old sessile oak woods with Ilex and Blechnum in the British Isles	57
91C0	Caledonian forest	57
91D0	Bog woodland	57
91E0	Alluvial forests with Alnus glutinosa and Fraxinus excelsior (Alno-Padion, Alnion incanae, Salicion albae)	57
91J0	Taxus baccata woods of the British Isles	57

3.1 Relative surface

CODE	DESCRIPTION	PAGE NO
A	15%-100%	58
B	2%-15%	58
C	< 2%	58

3.1 Conservation status habitat

CODE	DESCRIPTION	PAGE NO
A	Excellent conservation	59
B	Good conservation	59
C	Average or reduced conservation	59

3.1 Global grade habitat

CODE	DESCRIPTION	PAGE NO
A	Excellent value	59
B	Good value	59
C	Significant value	59

3.2 Population (abbreviated to 'Pop.' in data form)

CODE	DESCRIPTION	PAGE NO
A	15%-100%	62
B	2%-15%	62
C	< 2%	62
D	Non-significant population	62

3.2 Conservation status species (abbreviated to 'Con.' in data form)

CODE	DESCRIPTION	PAGE NO
A	Excellent conservation	63
B	Good conservation	63
C	Average or reduced conservation	63

3.2 Isolation (abbreviated to 'Iso.' in data form)

CODE	DESCRIPTION	PAGE NO
A	Population (almost) Isolated	63
B	Population not-isolated, but on margins of area of distribution	63
C	Population not-isolated within extended distribution range	63

3.2 Global Grade (abbreviated to 'Glo.' Or 'G.' in data form)

CODE	DESCRIPTION	PAGE NO
A	Excellent value	63
B	Good value	63
C	Significant value	63

3.3 Assemblages types

CODE	DESCRIPTION	PAGE NO
WATR	Non breeding waterfowl assemblage	UK specific code
SBA	Breeding seabird assemblage	UK specific code
BBA	Breeding bird assemblage (applies only to sites classified pre 2000)	UK specific code

4.1 Habitat class code

CODE	DESCRIPTION	PAGE NO
N01	Marine areas, Sea inlets	65
N02	Tidal rivers, Estuaries, Mud flats, Sand flats, Lagoons (including saltwork basins)	65
N03	Salt marshes, Salt pastures, Salt steppes	65
N04	Coastal sand dunes, Sand beaches, Machair	65
N05	Shingle, Sea cliffs, Islets	65
N06	Inland water bodies (Standing water, Running water)	65
N07	Bogs, Marshes, Water fringed vegetation, Fens	65
N08	Heath, Scrub, Maquis and Garrigue, Phygrana	65
N09	Dry grassland, Steppes	65
N10	Humid grassland, Mesophile grassland	65
N11	Alpine and sub-Alpine grassland	65
N14	Improved grassland	65
N15	Other arable land	65
N16	Broad-leaved deciduous woodland	65
N17	Coniferous woodland	65
N19	Mixed woodland	65
N21	Non-forest areas cultivated with woody plants (including Orchards, groves, Vineyards, Dehesas)	65
N22	Inland rocks, Screes, Sands, Permanent Snow and ice	65
N23	Other land (including Towns, Villages, Roads, Waste places, Mines, Industrial sites)	65
N25	Grassland and scrub habitats (general)	65
N26	Woodland habitats (general)	65

4.3 Threats code

CODE	DESCRIPTION	PAGE NO
A01	Cultivation	65
A02	Modification of cultivation practices	65
A03	Mowing / cutting of grassland	65
A04	Grazing	65
A05	Livestock farming and animal breeding (without grazing)	65
A06	Annual and perennial non-timber crops	65
A07	Use of biocides, hormones and chemicals	65
A08	Fertilisation	65
A10	Restructuring agricultural land holding	65
A11	Agriculture activities not referred to above	65
B01	Forest planting on open ground	65
B02	Forest and Plantation management & use	65
B03	Forest exploitation without replanting or natural regrowth	65
B04	Use of biocides, hormones and chemicals (forestry)	65
B06	Grazing in forests/ woodland	65
B07	Forestry activities not referred to above	65
C01	Mining and quarrying	65
C02	Exploration and extraction of oil or gas	65
C03	Renewable abiotic energy use	65
D01	Roads, paths and railroads	65
D02	Utility and service lines	65
D03	Shipping lanes, ports, marine constructions	65
D04	Airports, flightpaths	65
D05	Improved access to site	65
E01	Urbanised areas, human habitation	65
E02	Industrial or commercial areas	65

CODE	DESCRIPTION	PAGE NO
E03	Discharges	65
E04	Structures, buildings in the landscape	65
E06	Other urbanisation, industrial and similar activities	65
F01	Marine and Freshwater Aquaculture	65
F02	Fishing and harvesting aquatic ressources	65
F03	Hunting and collection of wild animals (terrestrial), including damage caused by game (excessive density), and taking/removal of terrestrial animals (including collection of insects, reptiles, amphibians, birds of prey, etc., trapping, poisoning, poaching, predator control, accidental capture (e.g. due to fishing gear), etc.)	65
F04	Taking / Removal of terrestrial plants, general	65
F05	Illegal taking/ removal of marine fauna	65
F06	Hunting, fishing or collecting activities not referred to above	65
G01	Outdoor sports and leisure activities, recreational activities	65
G02	Sport and leisure structures	65
G03	Interpretative centres	65
G04	Military use and civil unrest	65
G05	Other human intrusions and disturbances	65
H01	Pollution to surface waters (limnic & terrestrial, marine & brackish)	65
H02	Pollution to groundwater (point sources and diffuse sources)	65
H03	Marine water pollution	65
H04	Air pollution, air-borne pollutants	65
H05	Soil pollution and solid waste (excluding discharges)	65
H06	Excess energy	65
H07	Other forms of pollution	65
I01	Invasive non-native species	65
I02	Problematic native species	65
I03	Introduced genetic material, GMO	65
J01	Fire and fire suppression	65
J02	Human induced changes in hydraulic conditions	65
J03	Other ecosystem modifications	65
K01	Abiotic (slow) natural processes	65
K02	Biocenotic evolution, succession	65
K03	Interspecific faunal relations	65
K04	Interspecific floral relations	65
K05	Reduced fecundity/ genetic depression	65
L05	Collapse of terrain, landslide	65
L07	Storm, cyclone	65
L08	Inundation (natural processes)	65
L10	Other natural catastrophes	65
M01	Changes in abiotic conditions	65
M02	Changes in biotic conditions	65
U	Unknown threat or pressure	65
XO	Threats and pressures from outside the Member State	65

5.1 Designation type codes

CODE	DESCRIPTION	PAGE NO
UK00	No Protection Status	67
UK01	National Nature Reserve	67
UK02	Marine Nature Reserve	67
UK04	Site of Special Scientific Interest (UK)	67

EC Directive 92/43 on the Conservation of Natural Habitats and of Wild Fauna and Flora

Citation for Special Area of Conservation (SAC)

Name:	Hestercombe House
Unitary Authority/County:	Somerset
SAC status:	Designated on 1 April 2005
Grid reference:	ST240287
SAC EU code:	UK0030168
Area (ha):	0.08
Component SSSI:	Hestercombe House SSSI

Site description:
Hestercombe House is a former country house and estate consisting of mixed woodland, pasture, lakes and landscaped gardens. A colony of lesser horseshoe bats *Rhinolophus hipposideros* utilise two roof voids within the former stable block and domestic outbuildings as maternity (breeding) roosts during the summer months, with a small number of bats also using the roofs as hibernation sites during the winter.

Qualifying species: The site is designated under **article 4(4)** of the Directive (92/43/EEC) as it hosts the following species listed in Annex II:

- Lesser horseshoe bat *Rhinolophus hipposideros*

This citation relates to a site entered in the Register of European Sites for Great Britain.
Register reference number: UK0030168
Date of registration: 14 June 2005
Signed: Trevor Salmon
On behalf of the Secretary of State for Environment, Food and Rural Affairs

NATURA 2000 – STANDARD DATA FORM

Special Areas of Conservation under the EC Habitats Directive (includes candidate SACs, Sites of Community Importance and designated SACs).

Each Natura 2000 site in the United Kingdom has its own Standard Data Form containing site-specific information. The data form for this site has been generated from the Natura 2000 Database submitted to the European Commission on the following date:

22/12/2015

The information provided here, follows the officially agreed site information format for Natura 2000 sites, as set out in the Official Journal of the European Union recording the Commission Implementing Decision of 11 July 2011 (2011/484/EU).

The Standard Data Forms are generated automatically for all of the UK's Natura 2000 sites using the European Environment Agency's Natura 2000 software. The structure and format of these forms is exactly as produced by the EEA's Natura 2000 software (except for the addition of this coversheet and the end notes). The content matches exactly the data submitted to the European Commission.

Please note that these forms contain a number of codes, all of which are explained either within the data forms themselves or in the end notes.

Further technical documentation may be found here
http://bd.eionet.europa.eu/activities/Natura_2000/reference_portal

As part of the December 2015 submission, several sections of the UK's previously published Standard Data Forms have been updated. For details of the approach taken by the UK in this submission please refer to the following document:
http://jncc.defra.gov.uk/pdf/Natura2000_StandardDataForm_UKApproach_Dec2015.pdf

More general information on Special Areas of Conservation (SACs) in the United Kingdom is available from the SAC home page on the JNCC website. This webpage also provides links to Standard Data Forms for all SACs in the UK.

Date form generated by the Joint Nature Conservation Committee
25 January 2016.

NATURA 2000 - STANDARD DATA FORM

For Special Protection Areas (SPA),
Proposed Sites for Community Importance (pSCI),
Sites of Community Importance (SCI) and
for Special Areas of Conservation (SAC)

SITE	**UK0030148**
SITENAME	**Exmoor and Quantock Oakwoods**

TABLE OF CONTENTS

- 1. SITE IDENTIFICATION
- 2. SITE LOCATION
- 3. ECOLOGICAL INFORMATION
- 4. SITE DESCRIPTION
- 5. SITE PROTECTION STATUS AND RELATION WITH CORINE BIOTOPES
- 6. SITE MANAGEMENT

1. SITE IDENTIFICATION

Back to top

1.1 Type	1.2 Site code
B	UK0030148

1.3 Site name

Exmoor and Quantock Oakwoods

1.4 First Compilation date	1.5 Update date
2001-01	2015-12

1.6 Respondent:

Name/Organisation:	Joint Nature Conservation Committee
Address:	Joint Nature Conservation Committee Monkstone House City Road Peterborough PE1 1JY
Email:	

Date site proposed as SCI:	2001-01
Date site confirmed as SCI:	2004-12
Date site designated as SAC:	2005-04
National legal reference of SAC designation:	Regulations 11 and 13-15 of the Conservation of Habitats and Species Regulations 2010 (http://www.legislation.gov.uk/uksi/2010/490/contents/made).

2. SITE LOCATION

Back to top

2.1 Site-centre location [decimal degrees]:

Longitude	Latitude
-3.5825	51.18388889

2.2 Area [ha]:

1894.05

2.3 Marine area [%]

0.0

2.4 Sitelength [km]:

0.0

2.5 Administrative region code and name

NUTS level 2 code	Region Name
UKK4	Devon
UKK2	Dorset and Somerset

2.6 Biogeographical Region(s)

Atlantic (100.0 %)

3. ECOLOGICAL INFORMATION

Back to top

3.1 Habitat types present on the site and assessment for them

Annex I Habitat types						Site assessment			
Code	PF	NP	Cover [ha]	Cave [number]	Data quality	A|B|C|D	A|B|C		
						Representativity	Relative Surface	Conservation	Global
4030			0.57		G	D			
9120			70.08		G	D			
91A0			1414.86		G	A	C	B	B
91E0	X		45.46		G	C	C	A	C

- **PF:** for the habitat types that can have a non-priority as well as a priority form (6210, 7130, 9430) enter "X" in the column PF to indicate the priority form.
- **NP:** in case that a habitat type no longer exists in the site enter: x (optional)
- **Cover:** decimal values can be entered
- **Caves:** for habitat types 8310, 8330 (caves) enter the number of caves if estimated surface is not available.
- **Data quality:** G = 'Good' (e.g. based on surveys); M = 'Moderate' (e.g. based on partial data with some extrapolation); P = 'Poor' (e.g. rough estimation)

3.2 Species referred to in Article 4 of Directive 2009/147/EC and listed in Annex II of Directive 92/43/EEC and site evaluation for them

Species					Population in the site						Site assessment			
G	Code	Scientific Name	S	NP	T	Size		Unit	Cat.	D.qual.	A|B|C|D	A|B|C		
						Min	Max				Pop.	Con.	Iso.	Glo.
M	1308	Barbastella barbastellus			p	51	100	i		M	B	A	C	A
F	1163	Cottus gobio			p				C	DD	D			
F	1096	Lampetra planeri			p				R	DD	D			
I	1083	Lucanus cervus			p				P	DD	D			
M	1355	Lutra lutra			p				P	DD	C	B	C	C
M	1323	Myotis bechsteini			p				P	DD	C	B	C	C
M	1303	Rhinolophus hipposideros			p				P	DD	D			
F	1106	Salmo salar			p				C	DD	D			

- **Group:** A = Amphibians, B = Birds, F = Fish, I = Invertebrates, M = Mammals, P = Plants, R = Reptiles
- **S:** in case that the data on species are sensitive and therefore have to be blocked for any public access enter: yes
- **NP:** in case that a species is no longer present in the site enter: x (optional)
- **Type:** p = permanent, r = reproducing, c = concentration, w = wintering (for plant and non-migratory species use permanent)
- **Unit:** i = individuals, p = pairs or other units according to the Standard list of population units and codes in accordance with Article 12 and 17 reporting (see reference portal)
- **Abundance categories (Cat.):** C = common, R = rare, V = very rare, P = present - to fill if data are deficient (DD) or in addition to population size information
- **Data quality:** G = 'Good' (e.g. based on surveys); M = 'Moderate' (e.g. based on partial data with some extrapolation); P = 'Poor' (e.g. rough estimation); VP = 'Very poor' (use this category only, if not even a rough estimation of the population size can be made, in this case the fields for population size can remain empty, but the field "Abundance categories" has to be filled in)

4. SITE DESCRIPTION

Back to top

4.1 General site character

Habitat class	% Cover
N07	0.5
N19	1.0
N06	0.5
N08	6.0
N10	0.5
N23	0.5
N16	87.0
N17	1.0

N09	3.0
Total Habitat Cover	100

Other Site Characteristics

1 Terrestrial: Soil & Geology: sedimentary,acidic,sandstone,neutral,nutrient-poor 2 Terrestrial: Geomorphology and landscape: upland,hilly,valley,slope,floodplain

4.2 Quality and importance

Old sessile oak woods with Ilex and Blechnum in the British Isles for which this is considered to be one of the best areas in the United Kingdom. Alluvial forests with Alnus glutinosa and Fraxinus excelsior (Alno-Padion, Alnion incanae, Salicion albae) for which the area is considered to support a significant presence. Myotis bechsteini for which the area is considered to support a significant presence. Barbastella barbastellus for which this is considered to be one of the best areas in the United Kingdom. Lutra lutra for which the area is considered to support a significant presence.

4.3 Threats, pressures and activities with impacts on the site

The most important impacts and activities with high effect on the site

Negative Impacts			
Rank	Threats and pressures [code]	Pollution (optional) [code]	inside/outside [i|o|b]
H	A04		I
H	B02		I
H	H04		B
H	K04		I
H	I01		B

Positive Impacts			
Rank	Activities, management [code]	Pollution (optional) [code]	inside/outside [i|o|b]
H	B02		I
H	B06		I
H	A04		I
H	A02		I

Rank: H = high, M = medium, L = low
Pollution: N = Nitrogen input, P = Phosphor/Phosphate input, A = Acid input/acidification,
T = toxic inorganic chemicals, O = toxic organic chemicals, X = Mixed pollutions
i = inside, o = outside, b = both

4.5 Documentation

Conservation Objectives - the Natural England links below provide access to the Conservation Objectives (and other site-related information) for its terrestrial and inshore Natura 2000 sites, including conservation advice packages and supporting documents for European Marine Sites within English waters and for cross-border sites. See also the 'UK Approach' document for more information (link via the JNCC website).

Link(s): http://jncc.defra.gov.uk/pdf/Natura2000_StandardDataForm_UKApproach_Dec2015.pdf

http://publications.naturalengland.org.uk/category/3212324
http://publications.naturalengland.org.uk/category/6490068894089216

5. SITE PROTECTION STATUS (optional)

Back to top

5.1 Designation types at national and regional level:

Code	Cover [%]	Code	Cover [%]	Code	Cover [%]
UK01	22.4	UK04	100.0		

6. SITE MANAGEMENT

Back to top

6.1 Body(ies) responsible for the site management:

Organisation:	Natural England
Address:	
Email:	

6.2 Management Plan(s):

An actual management plan does exist:

- [ ] Yes
- [ ] No, but in preparation
- [x] No

6.3 Conservation measures (optional)

For available information, including on Conservation Objectives, see Section 4.5.

EXPLANATION OF CODES USED IN THE NATURA 2000 STANDARD DATA FORMS

The codes in the table below are also explained in the official European Union guidelines for the Standard Data Form. The relevant page is shown in the table below.

1.1 Site type

CODE	DESCRIPTION	PAGE NO
A	Designated Special Protection Area	53
B	SAC (includes candidates Special Areas of Conservation, Sites of Community Importance and designated SAC)	53
C	SAC area the same as SPA. Note in the UK Natura 2000 submission this is only used for Gibraltar	53

3.1 Habitat representativity

CODE	DESCRIPTION	PAGE NO
A	Excellent	57
B	Good	57
C	Significant	57
D	Non-significant presence	57

3.1 Habitat code

CODE	DESCRIPTION	PAGE NO
1110	Sandbanks which are slightly covered by sea water all the time	57
1130	Estuaries	57
1140	Mudflats and sandflats not covered by seawater at low tide	57
1150	Coastal lagoons	57
1160	Large shallow inlets and bays	57
1170	Reefs	57
1180	Submarine structures made by leaking gases	57
1210	Annual vegetation of drift lines	57
1220	Perennial vegetation of stony banks	57
1230	Vegetated sea cliffs of the Atlantic and Baltic Coasts	57
1310	Salicornia and other annuals colonizing mud and sand	57
1320	Spartina swards (Spartinion maritimae)	57
1330	Atlantic salt meadows (Glauco-Puccinellietalia maritimae)	57
1340	Inland salt meadows	57
1420	Mediterranean and thermo-Atlantic halophilous scrubs (Sarcocornetea fruticosi)	57
2110	Embryonic shifting dunes	57
2120	Shifting dunes along the shoreline with Ammophila arenaria ("white dunes")	57
2130	Fixed coastal dunes with herbaceous vegetation ("grey dunes")	57
2140	Decalcified fixed dunes with Empetrum nigrum	57
2150	Atlantic decalcified fixed dunes (Calluno-Ulicetea)	57
2160	Dunes with Hippopha rhamnoides	57
2170	Dunes with Salix repens ssp. argentea (Salicion arenariae)	57
2190	Humid dune slacks	57
21A0	Machairs (* in Ireland)	57
2250	Coastal dunes with Juniperus spp.	57
2330	Inland dunes with open Corynephorus and Agrostis grasslands	57
3110	Oligotrophic waters containing very few minerals of sandy plains (Littorelletalia uniflorae)	57
3130	Oligotrophic to mesotrophic standing waters with vegetation of the Littorelletea uniflorae and/or of the Isoëto-Nanojuncetea	57
3140	Hard oligo-mesotrophic waters with benthic vegetation of Chara spp.	57
3150	Natural eutrophic lakes with Magnopotamion or Hydrocharition - type vegetation	57

CODE	DESCRIPTION	PAGE NO
3160	Natural dystrophic lakes and ponds	57
3170	Mediterranean temporary ponds	57
3180	Turloughs	57
3260	Water courses of plain to montane levels with the Ranunculion fluitantis and Callitricho-Batrachion vegetation	57
4010	Northern Atlantic wet heaths with Erica tetralix	57
4020	Temperate Atlantic wet heaths with Erica ciliaris and Erica tetralix	57
4030	European dry heaths	57
4040	Dry Atlantic coastal heaths with Erica vagans	57
4060	Alpine and Boreal heaths	57
4080	Sub-Arctic Salix spp. scrub	57
5110	Stable xerothermophilous formations with Buxus sempervirens on rock slopes (Berberidion p.p.)	57
5130	Juniperus communis formations on heaths or calcareous grasslands	57
6130	Calaminarian grasslands of the Violetalia calaminariae	57
6150	Siliceous alpine and boreal grasslands	57
6170	Alpine and subalpine calcareous grasslands	57
6210	Semi-natural dry grasslands and scrubland facies on calcareous substrates (Festuco-Brometalia) (* important orchid sites)	57
6230	Species-rich Nardus grasslands, on silicious substrates in mountain areas (and submountain areas in Continental Europe)	57
6410	Molinia meadows on calcareous, peaty or clayey-silt-laden soils (Molinion caeruleae)	57
6430	Hydrophilous tall herb fringe communities of plains and of the montane to alpine levels	57
6510	Lowland hay meadows (Alopecurus pratensis, Sanguisorba officinalis)	57
6520	Mountain hay meadows	57
7110	Active raised bogs	57
7120	Degraded raised bogs still capable of natural regeneration	57
7130	Blanket bogs (* if active bog)	57
7140	Transition mires and quaking bogs	57
7150	Depressions on peat substrates of the Rhynchosporion	57
7210	Calcareous fens with Cladium mariscus and species of the Caricion davallianae	57
7220	Petrifying springs with tufa formation (Cratoneurion)	57
7230	Alkaline fens	57
7240	Alpine pioneer formations of the Caricion bicoloris-atrofuscae	57
8110	Siliceous scree of the montane to snow levels (Androsacetalia alpinae and Galeopsietalia ladani)	57
8120	Calcareous and calcshist screes of the montane to alpine levels (Thlaspietea rotundifolii)	57
8210	Calcareous rocky slopes with chasmophytic vegetation	57
8220	Siliceous rocky slopes with chasmophytic vegetation	57
8240	Limestone pavements	57
8310	Caves not open to the public	57
8330	Submerged or partially submerged sea caves	57
9120	Atlantic acidophilous beech forests with Ilex and sometimes also Taxus in the shrublayer (Quercion robori-petraeae or Ilici-Fagenion)	57
9130	Asperulo-Fagetum beech forests	57
9160	Sub-Atlantic and medio-European oak or oak-hornbeam forests of the Carpinion betuli	57
9180	Tilio-Acerion forests of slopes, screes and ravines	57
9190	Old acidophilous oak woods with Quercus robur on sandy plains	57
91A0	Old sessile oak woods with Ilex and Blechnum in the British Isles	57
91C0	Caledonian forest	57
91D0	Bog woodland	57
91E0	Alluvial forests with Alnus glutinosa and Fraxinus excelsior (Alno-Padion, Alnion incanae, Salicion albae)	57
91J0	Taxus baccata woods of the British Isles	57

3.1 Relative surface

CODE	DESCRIPTION	PAGE NO
A	15%-100%	58
B	2%-15%	58
C	< 2%	58

3.1 Conservation status habitat

CODE	DESCRIPTION	PAGE NO
A	Excellent conservation	59
B	Good conservation	59
C	Average or reduced conservation	59

3.1 Global grade habitat

CODE	DESCRIPTION	PAGE NO
A	Excellent value	59
B	Good value	59
C	Significant value	59

3.2 Population (abbreviated to 'Pop.' in data form)

CODE	DESCRIPTION	PAGE NO
A	15%-100%	62
B	2%-15%	62
C	< 2%	62
D	Non-significant population	62

3.2 Conservation status species (abbreviated to 'Con.' in data form)

CODE	DESCRIPTION	PAGE NO
A	Excellent conservation	63
B	Good conservation	63
C	Average or reduced conservation	63

3.2 Isolation (abbreviated to 'Iso.' in data form)

CODE	DESCRIPTION	PAGE NO
A	Population (almost) Isolated	63
B	Population not-isolated, but on margins of area of distribution	63
C	Population not-isolated within extended distribution range	63

3.2 Global Grade (abbreviated to 'Glo.' Or 'G.' in data form)

CODE	DESCRIPTION	PAGE NO
A	Excellent value	63
B	Good value	63
C	Significant value	63

3.3 Assemblages types

CODE	DESCRIPTION	PAGE NO
WATR	Non breeding waterfowl assemblage	UK specific code
SBA	Breeding seabird assemblage	UK specific code
BBA	Breeding bird assemblage (applies only to sites classified pre 2000)	UK specific code

4.1 Habitat class code

CODE	DESCRIPTION	PAGE NO
N01	Marine areas, Sea inlets	65
N02	Tidal rivers, Estuaries, Mud flats, Sand flats, Lagoons (including saltwork basins)	65
N03	Salt marshes, Salt pastures, Salt steppes	65
N04	Coastal sand dunes, Sand beaches, Machair	65
N05	Shingle, Sea cliffs, Islets	65
N06	Inland water bodies (Standing water, Running water)	65
N07	Bogs, Marshes, Water fringed vegetation, Fens	65
N08	Heath, Scrub, Maquis and Garrigue, Phygrana	65
N09	Dry grassland, Steppes	65
N10	Humid grassland, Mesophile grassland	65
N11	Alpine and sub-Alpine grassland	65
N14	Improved grassland	65
N15	Other arable land	65
N16	Broad-leaved deciduous woodland	65
N17	Coniferous woodland	65
N19	Mixed woodland	65
N21	Non-forest areas cultivated with woody plants (including Orchards, groves, Vineyards, Dehesas)	65
N22	Inland rocks, Screes, Sands, Permanent Snow and ice	65
N23	Other land (including Towns, Villages, Roads, Waste places, Mines, Industrial sites)	65
N25	Grassland and scrub habitats (general)	65
N26	Woodland habitats (general)	65

4.3 Threats code

CODE	DESCRIPTION	PAGE NO
A01	Cultivation	65
A02	Modification of cultivation practices	65
A03	Mowing / cutting of grassland	65
A04	Grazing	65
A05	Livestock farming and animal breeding (without grazing)	65
A06	Annual and perennial non-timber crops	65
A07	Use of biocides, hormones and chemicals	65
A08	Fertilisation	65
A10	Restructuring agricultural land holding	65
A11	Agriculture activities not referred to above	65
B01	Forest planting on open ground	65
B02	Forest and Plantation management & use	65
B03	Forest exploitation without replanting or natural regrowth	65
B04	Use of biocides, hormones and chemicals (forestry)	65
B06	Grazing in forests/ woodland	65
B07	Forestry activities not referred to above	65
C01	Mining and quarrying	65
C02	Exploration and extraction of oil or gas	65
C03	Renewable abiotic energy use	65
D01	Roads, paths and railroads	65
D02	Utility and service lines	65
D03	Shipping lanes, ports, marine constructions	65
D04	Airports, flightpaths	65
D05	Improved access to site	65
E01	Urbanised areas, human habitation	65
E02	Industrial or commercial areas	65

CODE	DESCRIPTION	PAGE NO
E03	Discharges	65
E04	Structures, buildings in the landscape	65
E06	Other urbanisation, industrial and similar activities	65
F01	Marine and Freshwater Aquaculture	65
F02	Fishing and harvesting aquatic ressources	65
F03	Hunting and collection of wild animals (terrestrial), including damage caused by game (excessive density), and taking/removal of terrestrial animals (including collection of insects, reptiles, amphibians, birds of prey, etc., trapping, poisoning, poaching, predator control, accidental capture (e.g. due to fishing gear), etc.)	65
F04	Taking / Removal of terrestrial plants, general	65
F05	Illegal taking/ removal of marine fauna	65
F06	Hunting, fishing or collecting activities not referred to above	65
G01	Outdoor sports and leisure activities, recreational activities	65
G02	Sport and leisure structures	65
G03	Interpretative centres	65
G04	Military use and civil unrest	65
G05	Other human intrusions and disturbances	65
H01	Pollution to surface waters (limnic & terrestrial, marine & brackish)	65
H02	Pollution to groundwater (point sources and diffuse sources)	65
H03	Marine water pollution	65
H04	Air pollution, air-borne pollutants	65
H05	Soil pollution and solid waste (excluding discharges)	65
H06	Excess energy	65
H07	Other forms of pollution	65
I01	Invasive non-native species	65
I02	Problematic native species	65
I03	Introduced genetic material, GMO	65
J01	Fire and fire suppression	65
J02	Human induced changes in hydraulic conditions	65
J03	Other ecosystem modifications	65
K01	Abiotic (slow) natural processes	65
K02	Biocenotic evolution, succession	65
K03	Interspecific faunal relations	65
K04	Interspecific floral relations	65
K05	Reduced fecundity/ genetic depression	65
L05	Collapse of terrain, landslide	65
L07	Storm, cyclone	65
L08	Inundation (natural processes)	65
L10	Other natural catastrophes	65
M01	Changes in abiotic conditions	65
M02	Changes in biotic conditions	65
U	Unknown threat or pressure	65
XO	Threats and pressures from outside the Member State	65

5.1 Designation type codes

CODE	DESCRIPTION	PAGE NO
UK00	No Protection Status	67
UK01	National Nature Reserve	67
UK02	Marine Nature Reserve	67
UK04	Site of Special Scientific Interest (UK)	67

EC Directive 92/43 on the Conservation of Natural Habitats and of Wild Fauna and Flora

Citation for Special Area of Conservation (SAC)

Name:	Exmoor and Quantock Oakwoods
Unitary Authority/County:	Devon, Somerset
SAC status:	Designated on 1 April 2005
Grid reference:	SS894440
SAC EU code:	UK0030148
Area (ha):	1895.17
Component SSSI:	Barle Valley SSSI, North Exmoor SSSI, The Quantocks SSSI, Watersmeet SSSI, West Exmoor Coast and Woods SSSI

Site description:
This site supports extensive tracts of old sessile oak *Quercus petraea* with transitions to heathland. The oakwoods are rich in bryophytes, ferns (including *Dryopteris aemula*) and epiphytic lichens, the latter often associated with old trees, since parts are former wood-pasture rather than the oak coppice that is more common with this type. In the Barle Valley the woods also occur in mosaic with glades and small fields and the combination results in good populations of fritillary butterflies. Valley woodland dominated by alder *Alnus glutinosa* as well as ash *Fraxinus excelsior* which occurs in small areas alongside some of the streams.

A maternity colony of barbastelle bats *Barbastella barbastellus* utilises a range of tree roosts in the oak *Quercus* spp. woodland. The woods also hold Bechstein's bats *Myotis bechstenii*, whilst rivers and streams flowing through the site support otters *Lutra lutra*.

Qualifying habitats: The site is designated under **article 4(4)** of the Directive (92/43/EEC) as it hosts the following habitats listed in Annex I:

- Alluvial forests with *Alnus glutinosa* and *Fraxinus excelsior* (*Alno-Padion*, *Alnion incanae*, *Salicion albae*). (Alder woodland on floodplains)*
- Old sessile oak woods with *Ilex* and *Blechnum* in the British Isles. (Western acidic oak woodland)

Qualifying species: The site is designated under **article 4(4)** of the Directive (92/43/EEC) as it hosts the following species listed in Annex II:

- Barbastelle bat *Barbastella barbastellus*
- Bechstein's bat *Myotis bechsteinii*
- Otter *Lutra lutra*

Annex I priority habitats are denoted by an asterisk (*).

This citation relates to a site entered in the Register of European Sites for Great Britain.
Register reference number: UK0030148
Date of registration: 14 June 2005
Signed: Trevor Salmon
On behalf of the Secretary of State for Environment, Food and Rural Affairs

COUNTY: SOMERSET SITE NAME: CATCOTT, EDINGTON AND CHILTON MOORS

DISTRICT: SEDGEMOOR

Status: Site of Special Scientific Interest (SSSI) notified under Section 28 of the Wildlife and Countryside Act 1981 (as amended)

Local Planning Authority: Somerset County Council, Sedgemoor District Council

National Grid Reference: ST 390420 Area: 1083 (ha) 2676 (ac)

Ordnance Survey Sheet 1:50,000: 182 1:10,000: ST 44 SW, ST 43, NW, ST 34 SE

Date Notified (Under 1949 Act): 1967 Date of Last Revision: –

Date Notified (Under 1981 Act): 1986 Date of Last Revision: –

Other Information:
Major part of site is new SSSI but includes Catcott Heath SSSI (nnotified inder 1949 Act: 1967)

Description:
Catcott, Edington and Chilton Moors form part of the extensive grazing marsh and ditch systems of the Somerset Levels and Moors. The land lies below 8m ODN in the basin of the River Brue. The soils are principally of the Altcar series reed peats which are overlain in parts by remnants of the Turberry Moor series moss peats. On the northern and southern fringes of the site the peat soils are overlain by Midelney series alluvial clay.

The water table is high for most of the year with occasional winter flooding by overtopping of the River Brue. The complex of rhynes and ditches has a high penned water level in summer and drains freely to the arterial system in winter.

A wide range of sward types has developed due to the variation in soils and in management practice. Unimproved swards are well represented with many meadows dominated by species-rich mire-type communities characterised by Meadow Thistle *Cirsium dissectum*, Meadow Rue *Thalictrum flavum*, Quaking-grass *Briza media*, Heath-grass *Danthonia decumbens*, Carnation Sedge *Carex panicea*, Common Sedge *C. nigra* and Southern Marsh-orchid *Dactylorhiza praetermissa*. Wetter unimproved marshy grassland may, in addition, contain Rushes *Juncus* spp, Marsh marigold *Caltha palustris*, Marsh Pennywort *Hydrocotyle vulgaris*, Tubular Water-dropwort *Oenanthe fistulosa*, Ragged-Robin *Lychnis flos-cuculi* and Creeping Jenny *Lysimachia nummularia*. A few meadows also contain Devil's-bit Scabious *Succisa pratensis*. Many of the semi-improved *Festu-Lolium* grasslands include components of the mire-type community, often with Oxeye Daisy *Leucanthemum vulgare*, Autumn Hawkbit *Leontodon autumnalis* and Meadow Vetchling *Lathyrus pratensis*.

Catcott Heath, on the south-eastern part of the site, contains an area of Purple Moor-grass *Molinia caerulea*, Bog Myrtle *Myrica gale* and Cross-leaved Heath *Erica tetralix* heathland with Alder *Anlus glutinosa* carr woodland and mixed scrub, containing Common Cotton-grass *Eriophorum angustifolium* and Royal Fern *Osmunda regalis*. The heath is noted for its rare vascular plants including Marsh Pea *Lathyrus palustris* Milk-parsley *Peucedanum palustre* and Marsh Fern *Thelypteris thelypteroides*. Other species with restricted distributions nationally include Marsh Cinquefoil *Potentilla palustris*, Great Fen-sedge *Cladium mariscus*, Slender Sedge *Carex lasiocarpa* and Marsh Stitchwort *Stellaria palustris*. A similar but less species-

rich area of alder carr and wet grassland is found on Burtle Whites on the North-eastern part of the site.

127 aquatic and bankside vascular plant species have been recorded in the field ditches, IDB-maintained rhynes and deep arterial watercourses. The diverse bankside flora, dominated by Reed Sweet-grass *Glyceria maxima*, includes Flowering Rush *Butomus umbellatus*, Bottle Sedge *Carex rostrata* and Water Dock *Rumex hydrolapathum*. Aquatic deep water species such as Yellow Water-lily *Nuphar lutea* and Arrowhead *Sagittaria sagittifolia* are largely confined to the eutrophic arterial channels. The ditches and rhynes contain a good range of submerged species: notably Fan-leaved Water-crowfoot *Ranunculus circinatus*, Spiked Water-milfoil *Myriophyllum spicatum*, Water-violet *Hottonia palustris* and Greater Bladderwort *Utricularis vulgaris*. Floating species include Frogbit *Hydrocharis morsus-ranea* and Rootless Duckweed *Wolffia arrhiza* with several notable emergent species including Mare's- tail *Hippuris vulgaris*, Greater Water-parsnip *Sium latifolium*, Lesser Water-plantain *Baldellia ranunculoides* and Fine-leaved-Water-dropwort *Oenanthe aquatica*.

A diverse invertebrate fauna is associated with these botanically rich water channels. The water beetle fauna is of exceptional interest, with the nationally rare species *Haliplus mucronatus* and *Hydrophilus piceus* present. The rare soldier fly *Stratiomys furcata* is found, and there are good numbers of dragonflies and damselflies, notably *Brachytron pratense* and *Sympetrum sanguineum.*

Other habitats present include hedges and hedgerow trees of Alder, Hawthorn *Crataegus monogyna* and willow *Salix spp*.

These diverse habitats provide suitable feeding and nesting sites for a wide range of birds. In winter, waterfowl such as Golden Plover *Pluvialis apricota*, Lapwing *Vanellus vanellus*, Snipe *Gallinago gallinago* and Dunlin *Calidris alpina* feed on the wet grasslands, whilst under flood conditions, wildfowl such as Teal *Anas crecca*, Wigeon *A. penelope* and Mallard *A. platyrhynchos* move on to the Moors. The pastures remain moist into spring and early summer when the tussocky fields support breeding Snipe, Lapwing, Curlew *Numenius arquata* and a few pairs of Redshank *Tringa totanus*, Yellow Wagtail *Motacilla flava* and Whinchat *Saxicola rubeta* breed on the moors and in spring, the pastures are an important feeding ground for Whimbrel *Numenius phaeopus* on migration.

Other vertebrate species present, include the Otter *Lutra lutra*, Grass Snake *Natrix natrix* and Common Frog *Rana temporaria*.

COUNTY: SOMERSET SITE NAME: BRIDGWATER BAY

DISTRICT: WEST SOMERSET

Status: Site of Special Scientific Interest (SSSI) notified under Section 28 of the Wildlife and Countryside Act 1981 (as amended)

Local Planning Authority: Sedgemoor District Council, West Somerset District Council, Somerset County Council

National Grid Reference: ST 290480 Area: 3574.1 (ha) 8831.6 (ac)

Ordnance Survey Sheet 1:50,000: 181 182 1:10,000: ST 14 NE, 24 SW, NW, SE, NE, 25 SW, SE, NE, 34 NW, 35 SW

Date Notified (Under 1949 Act): – Date of Last Revision: –

Date Notified (Under 1981 Act): 1989 Date of Last Revision: –

Other Information:
The site includes Bridgwater Bay National Nature Reserve declared under Section 23 of the National Parks and Access to the Countryside Act 1949 and designated a wetland of international importance under the Ramsar Convention. A Nature Conservation Review Grade 1* site. The site is contiguous with the Brean Down, Berrow Dunes and Blue Anchor to Lilstock Coast SSSIs.

Description and Reasons for Notification:
Bridgewater Bay comprises a succession of habitats ranging through extensive intertidal mudflats, saltmarsh, shingle beach and grazing marsh intersected by a complex network of freshwater and brackish ditches. It supports internationally and nationally important numbers of over-wintering and passage migrant waders and waterfowl. The ditches and ponds contain a diverse invertebrate fauna including six nationally rare species and eighteen nationally scarce species. The site is an integral part of the Severn Estuary system and is ecologically linked to the Somerset Levels which provide alternative winter feeding grounds for waders and wildfowl.

The Bay occupies the sweeping arc of coastline between the wave-cut platform of Jurassic Blue Lias at the northern tip of the Quantock Hills and the cliffs of Carboniferous Dolomites and Limestone at Brean Down which project into the Severn Estuary and provide some degree of protection from the erosive tidal currents. This has allowed the deposition of an extensive area of intertidal mud which nonetheless remains highly mobile. Strong prevailing westerly winds have thrown up sand dunes and a shingle ridge at Barrow and Steart, respectively. On the landward side of these features is the marine/estuarine alluvium of Pleistocene and geologically recent times. The River Parrett meanders across this plain, its final loop encircling Pawlett Hams before entering the Bay and flowing out between Stert and Berrow Flats. The Hams are a hydrologically discrete area with water provided by the Cannington Brook which originates in the Quantock Hills.

The site contains the most extensive area of saltmarsh within Somerset and one of the largest Common Cord-grass *Spartina anglica* swards in the Severn Estuary. This is located on a spit at the mouth of the River Parrett, occupies a wide coastal band from Wall Common to Stert Island and fringes the mouth of the Brue. Common Cord-grass dominates much of the seaward edge of the marsh, having vigorously invaded and consolidated the fronting mudflats. Higher up, Common Saltmarsh-grass *Puccinellia maritima* increases in abundance with Sea Aster *Aster tripolium.* Where ungrazed, Common Reed *Phragmites australis* frequently forms a zone above this. Grazing of the upper marsh tends to encourage Red Fescue *Festuca rubra* and Creeping Bent *Argostis*

stolonifera. Sea Couch *Elymus pycnanthus* and Sea Club-rush *Scirpus maritimus* occur at the landward edge of the marsh. Other members of this community include Sea Wormwood *Artemisia maritima*, Saltmarsh Rush J*uncus gerardi*, Common Sea-lavender *Limonium vulgare*, Common Scurvy-grass *Cochlearia officinalis*, Spear-leaved Orache *Atriplex prostrata* and Sea Purslane *Halimione portulacoides*. High level sheep-grazed marshes carry populations of the nationally scarce Bulbous Foxtail *Alopecurus bulbosus*, Slender Hare's-ear *Bupleurum tenuissimum* and Sea Barley *Hordeum marinum* while Stert Island is known to support the nationally rare Compact Brome *Bromus madritensis* and nationally scarce Ray's Knotgrass *Polygonum oxyspermum*.

The development of shingle ridges and construction of sea defences has prevented tidal inundation and encouraged a transition from saltmarsh to grazing marsh on Pawlett Hams, Wick Moor, Catsford and Wall Common. The majority of Pawlett Hams is semi-improved, permanent neutral grassland with Perennial Rye-grass *Lolium perenne* and Crested Dog's-tail *Cynosurus cristatus* abundant. Some fields have been converted to arable.

Pawlett Hams, Steart and Wick Moor are divided by networks of ditches which act as a drainage system in winter and as stock barriers and drinking water supplies in the summer. A wide variety of aquatic and bankside plant species occur in the ditches. Free-floating species include the nationally restricted Rootless Duckweed *Wolffia arrhiza*, together with uncommon species such as Frogbit *Hydrocharis morsus-ranae* and Water Fern *Azolla filiculoides*. Amongst the submerged waterweeds, Rigid Hornwort *Ceratophyllum demersum* and Spiked Water-milfoil *Myriophyllum spicatum* are common. Emergent species include Flowering Rush *Butomus umbellatus*, Common Reed and Water-plantain *Alisma plantago-aquatica*, while Brookweed *Samolus valerandi* and the local Parsley Water-dropwort *Oenanthe lachenalii* are found on the banksides. The slightly brackish nature of the water is indicated by the presence of plants such as the nationally restricted Brackish Water-crowfoot *Ranunculus baudotii*, Sea Clubrush *Scirpus maritimus*. Fennel Pondweed *Potamogeton pectinatus*, Lesser Pondweed *P. berchtoldii* and Grey Clubrush *Schoenoplectus tabernaemontani* form part of the community here. Many of the fields contain ponds which have well developed communities of plants and invertebrates very similar to those of the surrounding ditches.

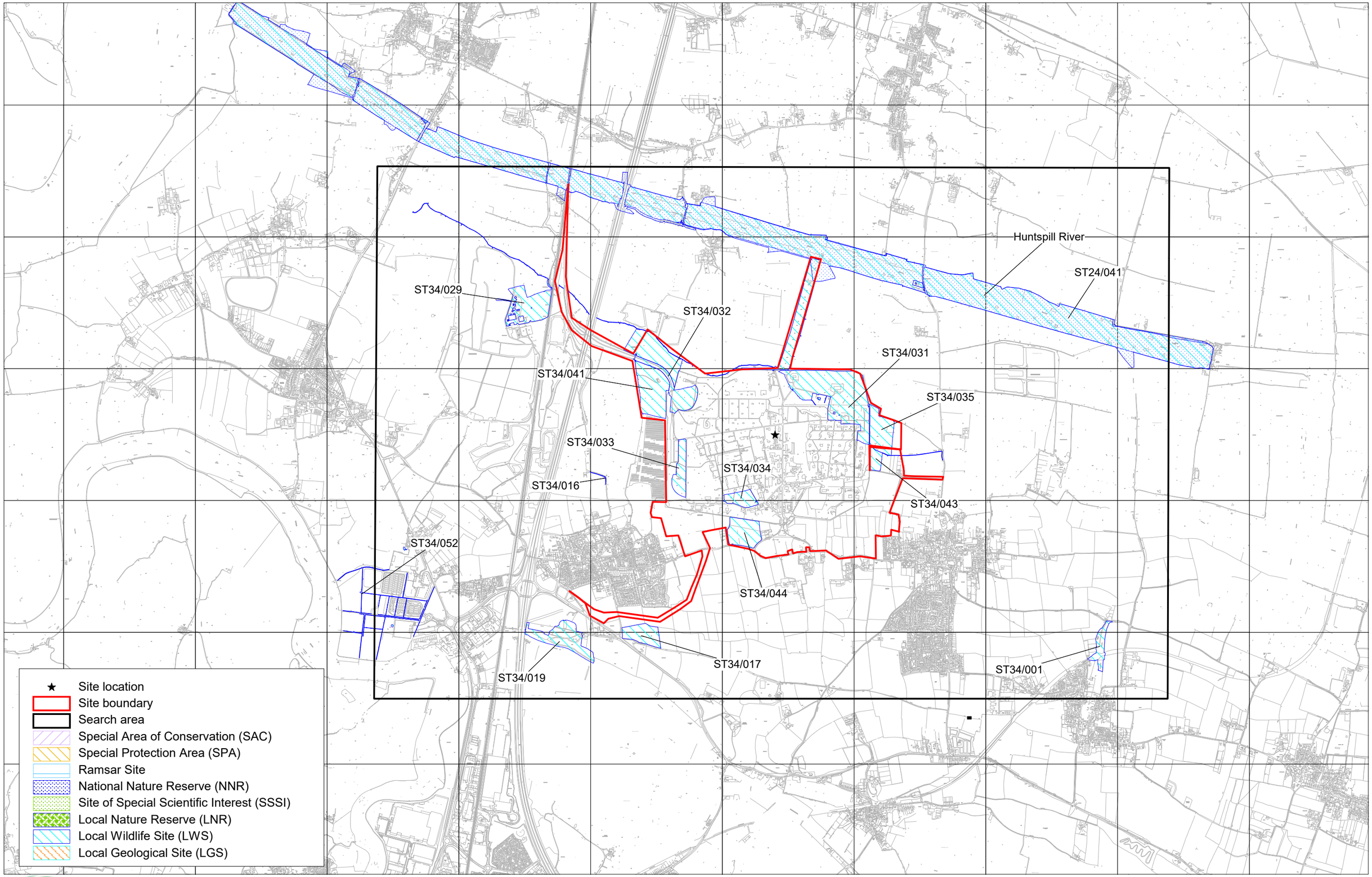
The invertebrate interest is associated with the brackish and freshwater rhyne systems and ponds of Pawlett Hams and Wick Moor and the saltmarsh communities within the site. Five Red Data Book species have been recorded from Pawlett Hams: the Great Silver Water Beetle *Hydrophilus piceus*, the water beetle *Hydrovatus clypealis*, the hover fly *Lejops vittata* and the soldier flies *Odontomyia ornata* and *Stratiomys singularior*. A water mite new to Britain, *Diplodontus scapalaris*, has recently been recorded here. Nationally scarce species include the aquatic snail *Cyraulus laevis*, the Hairy Dragonfly *Brachytron pratense* and a ladybird *Coccidula scutellata*. The Rhyne system of Wick Moor supports a Red Data Book water beetle *Haliplus mucronatus*. Other nationally scarce species include the water beetles *Rhantus suturalis*, *Enochrus bicolor*, and *Berosus affinis*, the ladybird *Coccidula scutellata* and a soldier fly *Odontomyia viridula*. The insect fauna of the ungrazed saltmarshes include the nationally notable beetles *Bembidion normannum*, *Phaedon concinnus* and *Tachyporus atriceps*. Two nationally scarce Diptera have also been recorded; *Nemotelus notatus* and *Thinophilus flavipalpis*. Common saltmarsh specialists include the Dipteran species *Scatomyza litorea* and *Dolidropus griseipennis*, and the beetles *Pogonus chalceus* and *Reichenbachia helferi*.

Bridgwater Bay is a critical feeding ground for passage and over-wintering waders and wildfowl. In its own right it supports internationally important numbers of Whimbrel *Numenius phaeopus* and Black-tailed Godwit *Limosa limosa* on passage. Of the over-wintering species it attracts nationally important numbers of Dunlin *Calidris alpina* and Wigeon *Anas penelope*. Shelduck *Tadorna tadorna* use the Bay as a moulting ground and are also present in nationally important numbers. The Bay forms an integral part of the Severn Estuary system and is used by a substantial proportion of the overall waterfowl

population which is of international importance. The assemblage of wildfowl and waders contains individual populations present in internationally important numbers including Dunlin, Shelduck, Wigeon, Curlew *Numenius arquata,* Redshank *Tringa totanus* and Teal *Anas crecca*. Populations of national importance are those of Ringed Plover *Charadrius hiaticula* and Grey Plover *Pluvialis squatarola.* Significant numbers of Knot *Calidris canutus,* Turnstone *Arenaria interpres*, Common Snipe *Gallinago gallinago* and Mallard *Anas platyrhynchos* also occur.

APPENDIX 12.1D

Local Wildlife Site Citation and SERC Survey Sheets



Search area: 6km x4km buffer around site at: ST334425
Requested Sites: Statutory designated sites
Non-statutory designated sites

For: Ecology Solutions

Client ref: Puriton 7761

Job no: 5010

Date: November 2020

© Crown copyright and database rights 2015 Ordnance Survey licence number 100038382 Use of this data is subject to terms and conditions as specified on our Data Search Request Form at www.somerc.com

Evaluated Site Details

Date: 06/11/2020
Client: Ecology Solutions
Job number: 5010
Reference / Project Title: Puriton 7761
Location: Puriton near Bridgwater
Search Area: 6km x 4km around site at ST334425

Refer to accompanying Sites Map for locations

Evaluated sites with statutory designations recorded within the area of search:

Name	Status
Huntspill River	NNR

For more information on designated sites please refer to the **Natural England web site**

Evaluated sites with non-statutory designations, Local Wildlife Sites (LWS) cLWS (Candidate Local Wildlife Sites) and/or Local Geological Sites (LGS), recorded within the area of search:

File Code	Name	Description	Status	Criteria[1]
ST24/041	Bridgwater Bay NNR	Part of NNR Outside of SSSI supporting legally protected species	LWS	5H4.9
ST34/001	Upper Combe Plantation	Broadleaved woodland (part ancient) with bare earth tracks.	LWS	5H2.2 5S1.2
ST34/016	Batch Road Fields	Semi- improved ridge and furrow grassland with a small pond and permanently wet ditches.	LWS	5S1.2
ST34/017	New Ground Covert	Ancient semi-natural broadleaved woodland.	LWS	H2.2
ST34/019	South Hills Wood	Ancient semi-natural broadleaved woodland with species rich grassland.	LWS	5H2.1 5S1.2
ST34/029	Pawlett Mead Drove Fields	Unimproved neutral grassland.	LWS	5H2.2 5S8.3 5H2.1
ST34/031**	Puriton rhynes and ponds	Rhyne network, ponds and reed beds with legally protected species.	LWS	6H5.6.1 6H7.4
ST34/032**	Puriton Meadows	Unimproved grassland and scrub-lined dissused railway.	LWS	5H2.1 5S1.2
ST34/033**	Puriton Ash Ground	Species rich ash-tip.	LWS	H11.3 S1.2
ST34/034**	Puriton Cowslip Field	Unimproved calcareous grassland with rhyne.	LWS	H3.2

Evaluated Site Details

File Code	Name	Description	Status	Criteria[1]
ST34/035**	Borrow Pit, Puriton	Lake with extensive reed beds.	LWS	5S4.2 5H7.2 5S1.2 5S4.2
ST34/041**	North Mead Drove Fields	Species rich rhynes and damp grassland used by wetland birds.	LWS	5H8.1
ST34/043**	Stoning Pound Field South and Stoning Pound Rhyne	Vascular plant species-rich rhynes with legally protected fauna and semi-improved grassland.	LWS	5S1.2 5S3.1.2
ST34/044**	Woolavington Road and Fields North	Semi-improved grassland with rush pasture and reedbeds.	LWS	5H5.1
ST34/052	Junction 23 Ponds & Ditches	Network of ditches and ponds supporting protected, UK BAP and Somerset notable species.	LWS	candidate LWS

[1]Criteria– Reasons for Selection for Local Wildlife Sites

For code prefixed by '**6**' refer to **Somerset Local Sites Guidelines 2010**

For code prefixed by '**5'** refer to **Local Wildlife Site Guidelines 1997 (revised 2004)**

For other codes refer to **Local Wildlife Site Guidelines 1991**

**** Site is within site boundary and additional survey report, if available supplied as requested**

[1]Criteria– Reasons for Selection for Local Geological Sites

LGS Criteria

ST34/31/03/A

SERC Survey Sheet	Site Name: PURITON RHYNES	Site Number: ST 34/031	Grid Reference(s): S T 3 3 9 4 2 9
	Date: 8TH AUGUST 1995	Recorder(s): V. BASHFORD, C BELLFIELD, L. GRIFFITHS, R ALLEN	

Species rich rhyne network

LOCATION, TOPOGRAPHY, BOUNDARIES AND SURROUNDING LAND USE

Puriton Rhynes, total length 1 km, are located approximately 1.5 km north west of Woolavington. The site lies on flat land with an underlying geology of Marine alluvium. Surrounding land use consists of semi-improved grassland which is cattle grazed on the south. Figure 1 illustrates the layout of the rhynes, with labelling to assist the description.

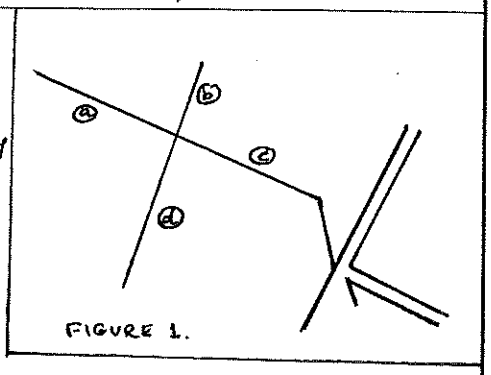


FIGURE 1.

DETAILED DESCRIPTION

Section (a) is fringed with Bramble (Rubus fruticosus agg) and some small Hawthorne (crataegus monogyna). Vegetation in the centre of the rhyne is dominated by ◆ Greater Water Parsnip (Sium latifolium) with some Hard Rush (Juncus inflexus), ◆ Frogbit (Hydrocharis morsus-ranae) and common Reed (Phragmites australis). A variety of species are present on the margins, these include False Fox Sedge (Carex otrubae), Hogweed (Hieracleum Sphondylium) ◆ Lesser Skullcap (Scutellaria minor) and Water Mint (Mentha aquatica). Common Fleabane (Pulicaria dysenterica), Marsh Bedstraw (Galium palustre), Ribwort Plantain (Plantago lanceolata), Agrimony (Agrimonia eupatoria) and Stone Parsley (Sison amomum) occur at the edge of the field. Grasses include Couch Grass (Elymus farctus), Timothy (Phleum pratense), False Oat Grass (Arrhenatherum elatius) and Yellow Oat Grass (Trisetum flavescens).

At the centre of the crossing rhynes section (b) is shaded by Hawthorn and here Greater Duckweed (Lemna Polyrhiza) and Common Water Plantain (Alisma Plantago-aquatica) are found. Tall growth of Bur Reed (Sparganium sp) with Redshank (Polygonum persicaria), Floating Sweet Grass (Glyceria fluitans), Common Spike Rush (Eleocharis palustris) Gipsywort (Lycopus europaeus) Water Mint and Hairy Sedge (Carex hirta) occur along the rhyne. More terrestrial vegetation is present such as Hedge Bindweed (Calystegia sepium ssp sepium), Bristly Oxtongue (Picris echeoides) and Dog Rose (Rosa canina). The water surface is visible and dominated by ◆ Frogbit. Banks are steep with overhanging rushes. ◆ Wild Parsnip (Pastinaca sativa) ◆ Lesser Skullcap and False Fox Sedge are also present. Where the rhyne meets the road large emergent vegetation dominates, overshadowing the water surface.

The centre of Section (c) is overgrown with Greater Water parsnip and Reed Sweet Grass (Glyceria maxima). There are also some patches of bramble. Many of the previously mentioned species occur here along with Perforate St Johns Wort (Hypericum perforatum), Marsh Bedstraw (Galium palustre), Pepper Saxifrage (Silaum silaus), Tufted Vetch (Vicia cracca) and Marsh Woundwort (Stachys palustris). Samples of aquatic vegetation revealed Ivy Leaved Duckweed (Lemna trisulca), Fat Duckweed (Lemna gibba), Common Duckweed (Lemna minor), ◆ Rootless Duckweed (Wolffia arrhiza) and ◆ Water Horsetail (Equisetum fluviatile). Poaching on the cattle grazed south side has created a sloping bank. At its furthest extremity the rhyne becomes completely choked with common Reed. Here an example of ◆ Strawberry Clover (Trifolium fragiferum) was also seen.

Section (d) of the rhyne system is steep sided with Hard Rush overhanging the banks. ◆ Lesser Pond Sedge (Carex acutiformis) and much water Mint are present as well as creeping Jenny (Lysimachia nummularia) ◆ Wild Parsnip and ◆ Water Horsetail. At the

Habitat[s]	G125										

ST 34/31/03/A

SERC Survey Sheet	Site Name: Puriton Rhynes	Site Number: ST 34/031	Grid Reference: S T 3 3 9 4 2 9
	Date: 8th August 1995	Recorders: V. BASHFORD, L GRIFFITHS, C. BELLFIELD, R. ALLEN	

fence the water surface contains much ◆ Frogbit and water Plantain. The surrounding substrate is generally wetter, Hard and Soft Rush (Juncus effusus) Marsh Woundwort and creeping Buttercup (Ranunculus repens) are found.

The remaining rhynes are dominated by Common Reed although occasional Purple Loosestrife (Lythrum Salicaria), Greater Pond Sedge (Carex riparia) and Marsh Ragwort (Senecio aquaticus) are found.

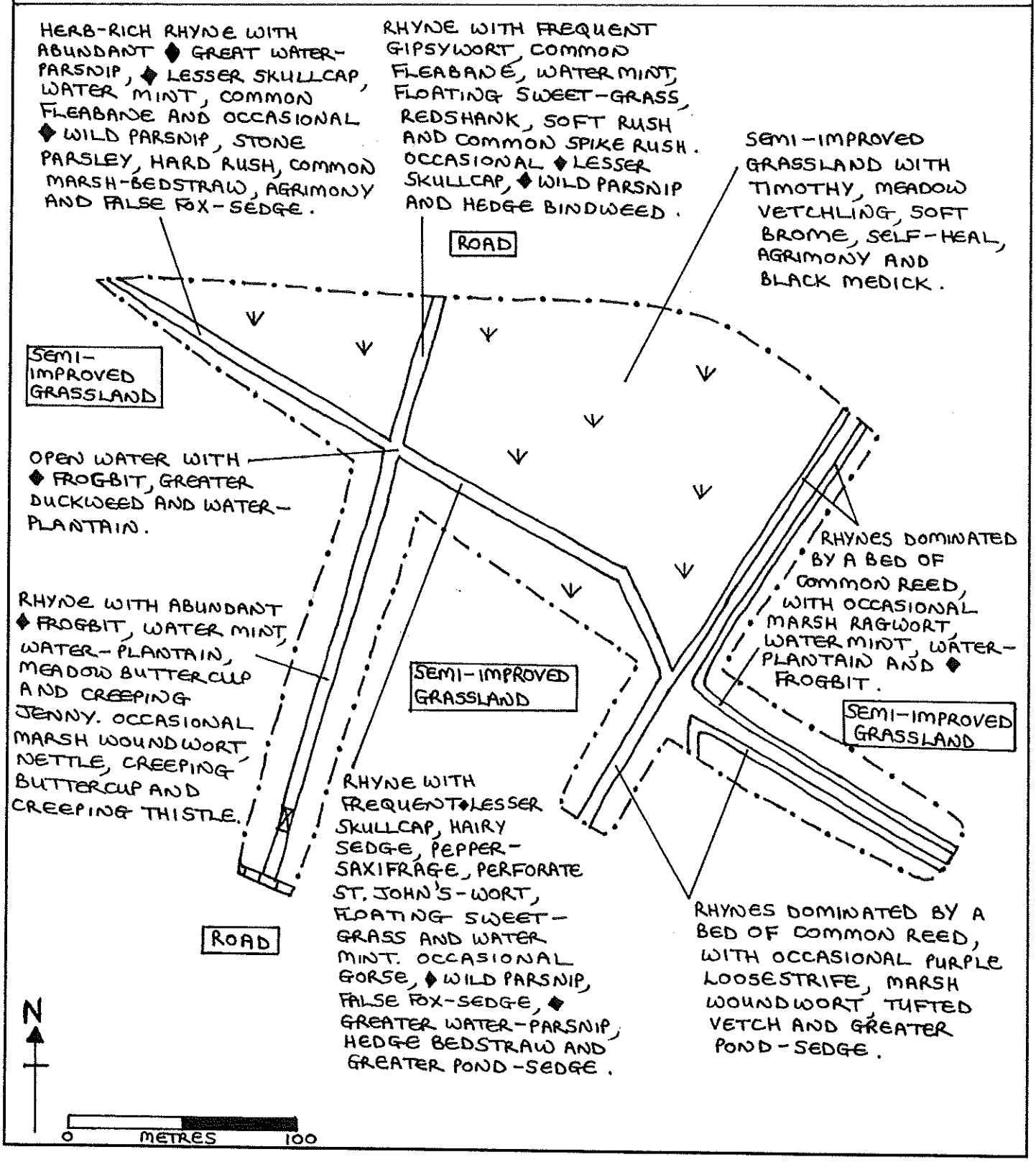
◆ Somerset Notable Species.

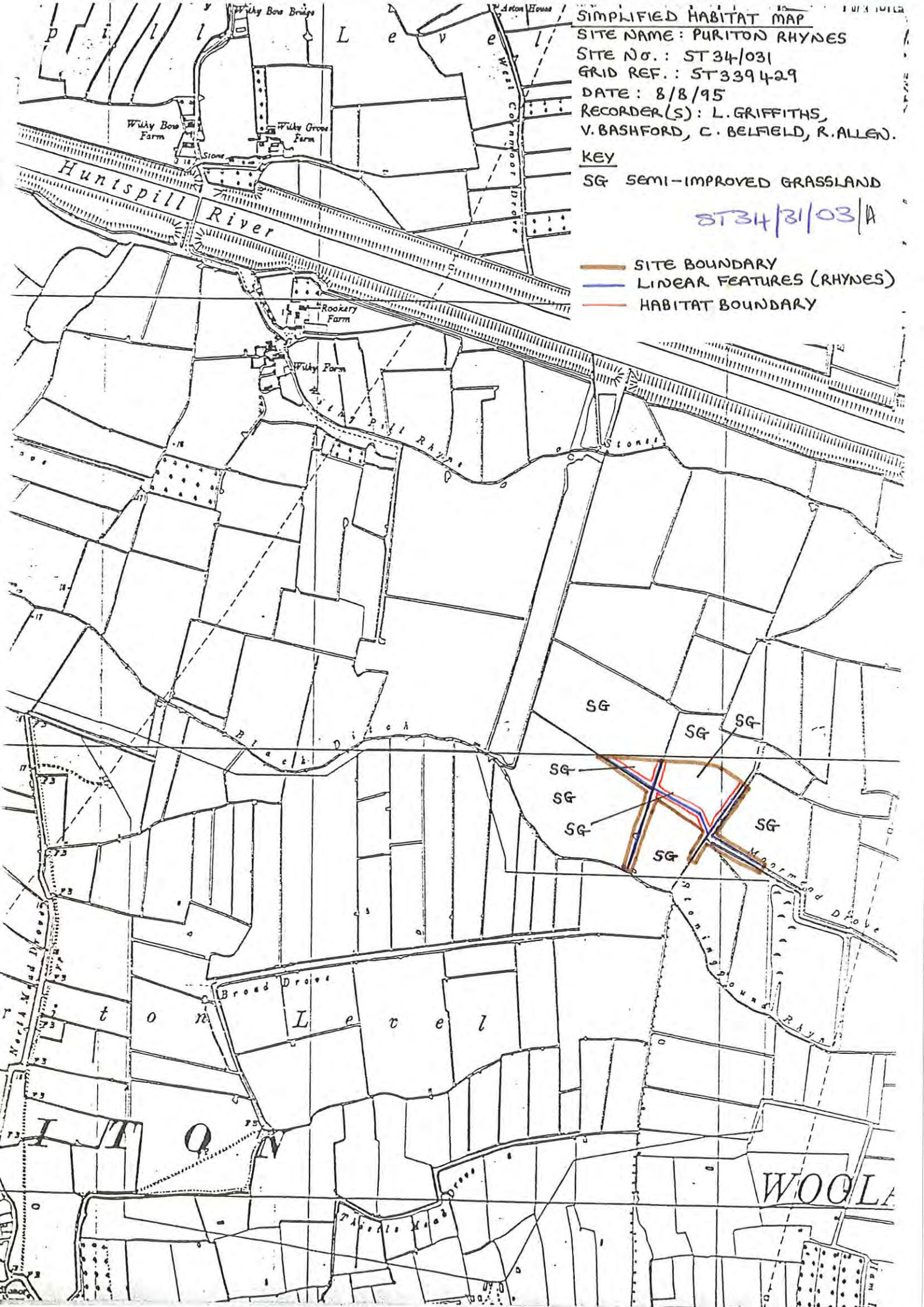
ST34/31/03/A

SERC Survey Sheet	Site Name: PURITON RHYNES	Site Number: ST 34/031	Grid Reference(s): ST 339429
	Date: 8/8/95	Recorder(s): L. GRIFFITHS, V. BASHFORD, C. BELFIELD, R. ALLEN.	

KEY:

- NO PHYSICAL BOUNDARY TO SITE
- WOODEN FENCE
- GATE
- SEMI-IMPROVED GRASSLAND
- ◆ SOMERSET NOTABLE SPECIES
- RHYNES
- HABITAT SURROUNDING LAND USE




SIMPLIFIED HABITAT MAP
SITE NAME: PURITON RHYNES
SITE No.: ST34/031
GRID REF.: ST339429
DATE: 8/8/95
RECORDER(S): L. GRIFFITHS, V. BASHFORD, C. BELFIELD, R. ALLEN.
KEY
SG SEMI-IMPROVED GRASSLAND
ST34/31/03/A
SITE BOUNDARY
LINEAR FEATURES (RHYNES)
HABITAT BOUNDARY
SG
Huntspill River
Willy Bow Bridge
Willy Bow Farm
Willy Green Farm
Rookery Farm
Willy Farm
West Common Drove
Broad Drove
Moorhead Drove
Broadground Rhyne
Black Ditch
Pillet Level
Puriton Level
WOOLA

ST 34/31/03/A

Vascular Plant Recording Form

Site Name	PURITON RHYNES	File Code	ST 34/031	Date	8/8/95
Grid Ref.	ST 339429	Recorder(s)	V. BASHFORD, L GRIFFITHS		

	O	L
Acer campestre		
Acer platanoides		
Acer pseudoplatanus		
Achillea millefolium		R
Achillea ptarmica		
Acinos arvensis		
Adoxa moschatellina		
Aegopodium podagraria		
Aesculus hippocastanum		
Aethusa cynapium		
Agrimonia eupatoria		
Agrostis canina / canina	O	
Agrostis capillaris		
Agrostis gigantea		
Agrostis stolonifera		
Aira caryophyllea		
Aira praecox		
Ajuga reptans		
Alchemilla filicaulis / vest.		
Alisma lanceolatum		
Alisma plantago-aquatica	O	
Alliaria petiolata		
Allium ursinum		
Allium vineale		
Alnus glutinosa		
Alopecurus geniculatus		
Alopecurus myosuroides		
Alopecurus pratensis		
Anacamptis pyramidalis		
Anagallis arvensis		
Anagallis tenella		
Anchusa arvensis		
Anemone nemorosa		
Angelica sylvestris		
Anthemis cotula		
Anthoxanthum odoratum		
Anthriscus caucalis		
Anthriscus sylvestris		
Anthyllis vulneraria		
Antirrhinum majus		
Aphanes arvensis agg.		
Apium graveolens		
Apium nodiflorum		
Aquilegia vulgaris		
Arabidopsis thaliana		
Arabis hirsuta		
Arctium lappa		
Arctium minus agg.		
Arenaria leptoclados		
Arenaria serpyll sens.lat.		
Armeria maritima		
Armoracia rusticana		
Arrhenatherum elatius	O	
Artemisia maritima		
Artemisia vulgaris		
Arum maculatum		
Asplenium ruta-muraria		
Asplenium trichomanes		
Aster novi-belgii		
Athyrium filix-femina		
Atriplex patula		
Avena fatua		
Avenula pratensis		
Avenula pubescens		
Azolla filiculoides		
Ballota nigra		
Barbarea vulgaris		
Bellis perennis		
Berula erecta		
Betula pendula		
Betula pubescens		
Bidens cernua		
Blackstonia perfoliata		
Blechnum spicant		
Botrychium lunaria		
Brachypodium sylvaticum		
Brassica napus		
Brassica nigra		
Brassica rapa		
Briza media		
Bromus commutatus		
Bromus erectus		
Bromus hordeaceus / hord.	O	
Bromus molis		
Bromus ramosus		
Bromus sterilis		
Bryonia dioica		
Buddleja davidii		
Butomus umbellatus		
Buxus sempervirens		
Calamintha sylvatica		
Callitriche brutia		
Callitriche obtusangu.		
Callitriche platycarpa		
Callitriche stagnalis		
Calluna vulgaris		
Caltha palustris		
Calystegia sepium / sepium	R	
Calystegia sepium / sil.		
Campanula glomerata		
Campanula rotundif.		
Campanula trachelium		
Capsella bursa-pastoris		
Cardamine flexuosa		
Cardamine hirsuta		
Cardamine pratensis		
Cardaria draba sens.lat.		
Carduus acanthoides		
Carduus nutans		
Carex acutiformis	O	

	O	L
Carex arenaria		
Carex binervis		
Carex caryophyllea		
Carex demissa		
Carex distans		
Carex divulsa / divulsa		
Carex echinata		
Carex flacca		
Carex hirta	O	
Carex nigra		
Carex otrubae	O	
Carex ovalis		
Carex panicea		
Carex pendula		
Carex pulicaris		
Carex remota		
Carex riparia		R
Carex spicata		
Carex strigosa		
Carex sylvatica		
Carlina vulgaris		
Carpinus betulus		
Castanea sativa		
Centaurea nigra		
Centaurea scabiosa		
Centaurium erythraea		
Centranthus ruber		
Cerastium diffusum		
Cerastium fontanum		
Cerastium glomeratum		
Ceratophyllum demersum		
Ceterach officinarum		
Chaenorhinum minus		
Chaerophyllum temu.		
Chamaecyparis lawsonian.		
Chamaenerion angustifoli.		
Cheiranthus cheiri		
Chelidonium majus		
Chenopodium alb agg.		
C. bonus-henricus.		
C. polyspermum		
Chenopodium rubrum		
Chrysosplenium alternif.		
Chrysosplenium opposit.		
Cichorium intybus		
Circaea lutetiana		
Cirsium acaule		
Cirsium arvense	O	
Cirsium dissectum		
Cirsium eriophorum		
Cirsium palustre		
Cirsium vulgare		
Clematis vitalba		
Clinopodium vulgare		
Cochlearia danica		
Cochlearia officinalis st		
Colchicum autumnale		
Conium maculatum		
Conopodium majus		
Convolvulus arvensis		
Conyza canadensis		
Cornus sanguinea		
Coronopus didymus		
Coronopus squamatus		
Corydalis claviculata		
Corydalis lutea		
Corylus avellana		
Crataegus monogyna		R
Crepis capillaris		
Crepis vesicaria		
X Cupressocyparis leyland.		
Cuscuta epithymum		
Cymbalaria muralis		
Cynoglossum officinale		
Cynosurus cristatus		
Cystopteris fragilis		
Cytisus scoparius		
Dactylis glomerata	O	
Dactylorhiza fuchsii / fuch.		
Dactylorhiza maculata		
Dactylorhiza praetermissa		
Danthonia decumbens		
Daphne laureola		
Daucus carota / carota		
Deschampsia cespitosa		
Deschampsia flexuosa		
Desmazeria rigida		
Digitalis purpurea		
Diplotaxis muralis		
Diplotaxis tenuifolia		
Dipsacus fullonum sl		
Dipsacus pilosus		
Dryopteris affinis		
Dryopteris dilatata		
Dryopteris filix-mas agg.		
Echium vulgare		
Eleocharis palustris	O	
Eleocharis uniglumis		
Elodea canadensis		
Elymus caninus		
Elymus repens		
Epilobium adnatum		
Epilobium angustifolium		
Epilobium collinum		
Epilobium hirsutum	O	D
Epilobium lanceolatum		
Epilobium montanum		
Epilobium obscurum		
Epilobium palustre		
Epilobium parviflorum		

	O	L
Epilobium roseum		
Epipactis helleborine		
Equisetum arvense		
Equisetum fluviatile	O	P
Equisetum sylvaticum		
Equisetum palustre		
Equisetum telmateia		
Erica cinerea		
Erica tetralix		
Erigeron acer		
Erodium cicutarium		
Erophila verna sens.lat.		
Euonymus europaeus		
Eupatorium cannabinum		
Euphorbia amygdaloides		
Euphorbia exigua		
Euphorbia helioscopia		
Euphorbia peplus		
Euphrasia nemorosa		
Fagus sylvatica		
Fallopia convolvulus		
Festuca arundinacea		
Festuca gigantea		
Festuca ovina		
Festuca pratensis		
Festuca rubra sens.str.		
Filipendula ulmaria		
Fragaria vesca		
Frangula alnus		
Fraxinus excelsior		
Fumaria muralis		
Fumaria officinalis		
Galanthus nivalis		
Galeopsis tetrahit su tetra.		
Galium aparine		
Galium cruciata		
Galium mollugo agg.		
Galium odoratum		
Galium palustre agg.	F	
Galium saxatile		
Galium uliginosum		
Galium verum		
Genista tinctoria		
Gentianella amarella agg.		
Geranium columbinum		
Geranium dissectum		
Geranium lucidum		
Geranium molle		
Geranium pratense		
Geranium pyrenaicum		
Geranium robertianum		
Geranium rotundifolium		
Geum rivale		
Geum urbanum		
Glechoma hederacea		
Glyceria declinata		
Glyceria fluitans	O	
Glyceria maxima	O	
Glyceria plicata		
Gnaphalium uliginosum		
Hedera helix		
Helianthemum nummula.		
Heracleum sphondylium	O	
Hesperis matronalis		
Hieracium sabaudum		
Hippocrepis comosa		
Holcus lanatus		
Holcus mollis		
Hordeum murinum		
Hordeum secalinum		
Hottonia palustris		
Humulus lupulus		
Hyacinthoides non-scripta		
Hydrocharis morsus-ran.	O	
Hydrocotyle vulgaris		
Hypericum androsaemum		
Hypericum calycinum		
Hypericum hirsutum		
Hypericum humifusum		
Hypericum maculatum		
Hypericum perforatum	O	
Hypericum tetrapterum		
Hypochoeris radicata		
Ilex aquifolium		
Iris foetidissima		
Iris pseudacorus		
Juncus acutiolia		
Juncus articulatus		
Juncus conglomeratus		
Juncus effusus	F	
Juncus inflexus	F	
Juniperus communis		
Knautia arvensis		
Koeleria macrantha		
Lamiastrum galeobdolon		
Lamium album		
Lapsana communis		
Larix sp.		
Lathyrus montanus		
Lathyrus pratensis	O	
Lemna gibba	O	D
Lemna minor	O	D
Lemna polyrhiza	O	A
Lemna trisulca	O	A
Leontodon autumnalis		
Leontodon hispidus		
Leontodon taraxacoides		
Lepidium campestre		
Leucanthemum vulgare		
Ligustrum vulgare		

	O	L
Linaria purpurea		
Linaria vulgaris		
Linum bienne		
Linum catharticum		
Listera ovata		
Lithospermum officinale		
Lolium multiflorum x per.		
Lolium perenne		
Lonicera periclymenum		
Lotus corniculatus		
Lotus uliginosus		
Luzula campestris		
Luzula forsteri		
Luzula multiflora		
Luzula pilosa		
Luzula sylvatica		
Lychnis flos-cuculi		
Lycopus europaeus	O	
Lysimachia nemorum		
Lysimachia nummularia	R	
Lythrum portula		
Lythrum salicaria	O	
Malus sylvestris sens.lat.		
Malva moschata		
Malva neglecta		
Malva sylvestris		
Matricaria matricarioides		
Matricaria recutita		
Medicago arabica		
Medicago lupulina	O	
Medicago sativa sens.str.		
Melica uniflora		
Melilotus alba		
Melilotus altissima		
Melilotus officinalis		
Mentha aquatica	F	
Mentha arvensis		
Mentha spicata		
Mercurialis annua		
Mercurialis perennis		
Milium effusum		
Moehringia trinervia		
Molinia caerulea		
Mycelis muralis		
Myosotis arvensis		
Myosotis discolor		
Myosotis laxa	O	
Myosotis ramosissima		
Myosotis scorpiodes		
Myosoton aquaticum		
Nardus stricta		
Nasturtium officinale sl		
Nasturtium microphyllum		
Nuphar lutea		
Nymphaea alba		
Odontites verna		
Oenanthe crocata		
Oenanthe fluviatilis		
Oenanthe pimpinelloides		
Oenothera erythrosepala		
Ononis repens		
Ononis spinosa		
Ophioglossum vulgart. sl		
Orchis mascula		
Orchis morio		
Origanum vulgare		
Orobanche hederae		
Orobanche minor		
Oxalis acetosella		
Papaver dubium		
Papaver lecoqii		
Papaver rhoeas		
Parietaria judaica		
Pastinaca sativa	O	D
Pedicularis sylvatica		
Pentaglottis sempervirens		
Petasites fragrans		
Petasites hybridus		
Phalaris arundinacea		
Phleum pratense / berto.		
Phleum pratense / prate.	O	
Phragmites australis	O	D
Phyllitis scolopendrium		
Picea abies		
Picea sitchensis		
Picris echioides	O	
Picris hieracioides		
Pilosella officinarum		
Pimpinella saxifraga		
Pinguicula lusitanica		
Pinus sylvestris		
Plantago coronopus		
Plantago lanceolata	O	
Plantago major	R	
Plantago media		
Platanthera chlorantha		
Poa annua		
Poa compressa		
Poa nemoralis		
Poa pratensis sens.lat.		
Poa trivialis		
Polygala serpyllifolia		
Polygala vulgaris		
Polygonatum multiflorum		
Polygonum amphibium	O	
Polygonum arenastrum		
Polygonum aviculare		
Polygonum bistorta		
Polygonum hydropiper		
Polygonum lapathifolium		

	O	L
Polygonum persicaria	O	
Polypodium interjectum		
Polypodium vulgare agg.		
Polystichum aculeatum		
Polystichum setiferum		
Populus sp.		
Populus tremula		
Porrhomma campbelli		
Potamogeton crispus		
Potamogeton natans		
Potamogeton pectinatus		
Potamogeton pusillus		
Potentilla anserina	O	
Potentilla erecta		
Potentilla reptans	E	
Potentilla sterilis		
Primula veris		
Primula vulgaris		
Prunella vulgaris		
Prunus avium		
Prunus domestica / institia		
Prunus laurocerasus		
Prunus spinosa	R	
Pseudotsuga menziesii		
Pteridium aquilinum		
Pulicaria dysenterica		
Quercus cerris		
Quercus petraea		
Quercus robur		
Ranunculus acris		
Ranunculus aquatilis st		
Ranunculus auricomus		
Ranunculus baudotii		
Ranunculus bulbosus		
Ranunculus circinatus		
Ranunculus ficaria		
Ranunculus flammula		
Ranunculus omiophyllus		
Ranuculus parviflorus		
Ranuculus repens	O	
Ranunculus sceleratus		
Ranunculus trichophyllus		
Raphanus raphanistrum		
Reseda lutea		
Reseda luteola		
Reynoutria japonica		
Rhamnus catharticus		
Rhinanthus minor agg.		
Rhododendron ponticum		
Ribes nigrum		
Ribes rubrum sens.str.		
Ribes uva-crispa		
Rorippa sylvestris		
Rosa arvensis		
Rosa canina	O	
Rosa stylosa		
Rubia peregrina		
Rubus caesius		
Rubus fruticosus agg.	F	
Rubus idaeus		
Rumex acetosa		
Rumex acetosella agg.		
Rumex confertus		
Rumex crispus	O	
Rumex hydrolapathum		
Rumex obtusifolius		
Rumex pulcher		
Rumex sanguineus		
Ruscus aculeatus		
Sagina apetala / apetala		
Sagina apetala / erecta		
Sagina procumbens		
Salix alba		
Salix caprea		
Salix cinerea		
Salix fragilis		
Salix triandra		
Salix viminalis		
Salvia verbenaca		
Sambucus nigra		
Sanguisorba minor / minor		
Sanguisorba minor / muric.		
Sanicula europaea		
Saponaria officinalis		
Saxifraga tridactylites		
Scabiosa columbaria		
Scrophularia auriculata		
Scrophularia nodosa		
Scutellaria galericulata		
Scutellaria minor	R	
Sedum acre		
Sedum album		
Senecio aquaticus	O	
Senecio erucifolius		
Senecio jacobaea	O	
Senecio squalidus		
Senecio vulgaris		
Serratula tinctoria		
Sherardia arvensis		
Silaum silaus	O	
Silene alba		
Silene dioica		
Silene vulgaris		
Sinapis arvensis		
Sison amomum	O	
Sisymbrium officinale		
Sisymbrium orientale		
Smyrnium olusatrum		
Solanum dulcamara		
Solanum nigrum		

	O	L
Solidago canadensis		
Solidago virgaurea		
Sonchus arvensis	O	
Sonchus asper		
Sonchus oleraceus		
Sorbus aria agg.		
Sorbus aucuparia		
Sparganium emersum		
Sparganium erectum		
Spergula arvensis		
Stachys officinalis		
Stachys palustris	O	
Stachys sylvatica		
Stellaria alsine		
Stellaria graminea		
Stellaria holostea		
Stellaria media sens. str.		
Stellaria neglecta		
Succisa pratensis		
Symphoricarpus rivularis		
Tamus communis		
Tanacetum parthenium		
Taraxacum officinale agg.		
Taxus baccata		
Teucrium scorodonia		
Thalictrum flavum		
Thlaspi arvense		
Thuja plicata		
Thymus praecox		
Thymus pulegioides		
Tilia cordata		
Tilia x vulgaris		
Torilis japonica		
Tragopogon pratensis		
Trifolium campestre		
Trifolium dubium		
Trifolium fragiferum	R	
Trifolium hybridum		
Trifolium medium		
Trifolium pratense		
Trifolium repens		
Triglochin palustris		
Tripleurosperm. mar. / ino.		
Trisetum flavescens	O	
Tsuga heterophylla		
Tussilago farfara		
Typha latifolia		
Ulex europaeus	R	
Ulex gallii		
Ulmus glabra		
Ulmus procera		
Umbilicus rupestris		
Urtica dioica	O	F
Urtica urens		
Vaccinium myrtillus		
Valeriana dioica		
Valeriana officinalis		
Valerianella carinata		
Valerianella locusta		
Verbascum thapsus		
Verbena officinalis		
Veronica anagallis-aquatica		
Veronica arvensis		
Veronica beccabunga		
Veronica catenata		
Veronica chamaedrys		
Veronica filiformis		
Veronica hederifolia		
Veronica montana		
Veronica officinalis		
Veronica persica		
Veronica polita		
Veronica serpyllifolia		
Viburnum lantana		
Viburnum opulus		
Vicia cracca	F	
Vicia hirsuta		
Vicia sativa / sativa		
Vicia sepium		
Vicia sylvatica		
Vicia tetrasperma		
Vinca major		
Vinca minor		
Viola arvensis		
Viola hirta		
Viola odorata		
Viola palustris		
Viola reichenbachiana		
Viola riviniana		
Viscum album		
Vulpia bromoides		
Vulpia myuros		
Wolffia arrhiza	O	
Sium latifolium	O	D
Elymus fluctus	O	
Sparganium sp.	F	

Notables count:

A.V. Plant count:

Somerset notable species in **BOLD**. Ancient woodland vascular plant species [A.V. Plants] in *ITALIC*. For long names: /=ssp. sl=sens.lat. st=sens.str.

Copyright © SERC 1995 Vplant01.ppp V1.1

ST 34/32/03

SERC Survey Sheet	Site Name: PURITON MEADOWS + RAIL SPUR	Site Number: ST34/32	Grid Reference(s): S T 3 2 7 4 2 7
	Date: 8/8/95	Recorder(s): C BELFIELD, R. ALLEN	

Unimproved grassland and scrub-lined disused railway.

Location, Topography, Boundaries and Surrounding Land Use.

The site, area 4.25 ha, is situated 1 km north of Puriton. The site consists of three fields and part of a disused railway which are within the boundary of the Royal Ordinance site and a section of the disused railway outside the boundary to the northwest. Boundaries to the fields are indistinct to the south, east and west with hedgerows to the north. The railway is bordered by a wooden fence to the northeast and hedgerow to the southwest. Surrounding land use is improved and semi-improved grassland to the north and west, unimproved grassland to the east and scrub to the south. At the time of survey the fields had recently been mown.

Detailed Description.

The three fields are unimproved and support a range of species, including frequent Crested Dogstail (*Cyanosurus cristatus*), Sweet Vernal Grass (*Anthoxanthum odoratum*), Meadow Foxtail (*Alopecurus pratensis*), Pepper Saxifrage (*Silaum silaus*), occasional Black Knapweed (*Centaurea nigra*), Birdsfoot Trefoil (*Lotus corniculatus*), Agrimony (*Agrimonia eupatoria*), and Cowslip (*Primula veris*). Adderstongue Fern (*Ophioglossum vulgatum*) is reported as being present in these fields. The middle field becomes wetter to the north and in this area are found Hard Rush (*Juncus inflexus*) and ♦Lesser Pond Sedge (*Carex acutiformis*). Vegetation grows to a height of 1.5 m around the field margins. Species include Tufted Hair Grass (*Deschampsia cespitosa*), False Oat Grass (*Arrhenatherum elatius*), Cocksfoot (*Dactylis glomerata*) and Rosebay Willowherb (*Chamerion angustifolium*). To the west of the fields is a small area of Common Reed (*Phragmites australis*). The fields are divided by mature hedgerows of Blackthorn (*Prunus spinosa*), Hawthorn (*Crataegus monogyna*) and Goat Willow (*Salix caprea*).

The disused railway runs to the northwest. In the southern section the gravel around the track is overgrown with Creeping Cinquefoil (*Potentilla reptans*), Perforate St John's-wort (*Hypericum perforatum*) and Ivy (*Hedera helix*). To the sides of the railway line there are patches of tall, dense scub of Hawthorn, Bramble (*Rubus fruiticosus* agg.) and Blackthorn. Between these patches of scrub is tall vegetation (*to 1.5 m*) including False Oat Grass, Tufted Hair Grass, Creeping Thistle (*Cirsium arvense*) and Nettle (*Urtica dioica*). Other species found on the dry railway banks, include locally frequent Tall Melilot (*Melilotus altissima*), occasional ♦Wild Parsnip (*Pastinaca sativa*), Spear Thistle (*Cirsium arvense*), ♦Pyramidal Orchid (*Anacamptis pyramidalis*) and Lady's Bedstraw (*Galium verum*).

♦ Somerset Notable Species.

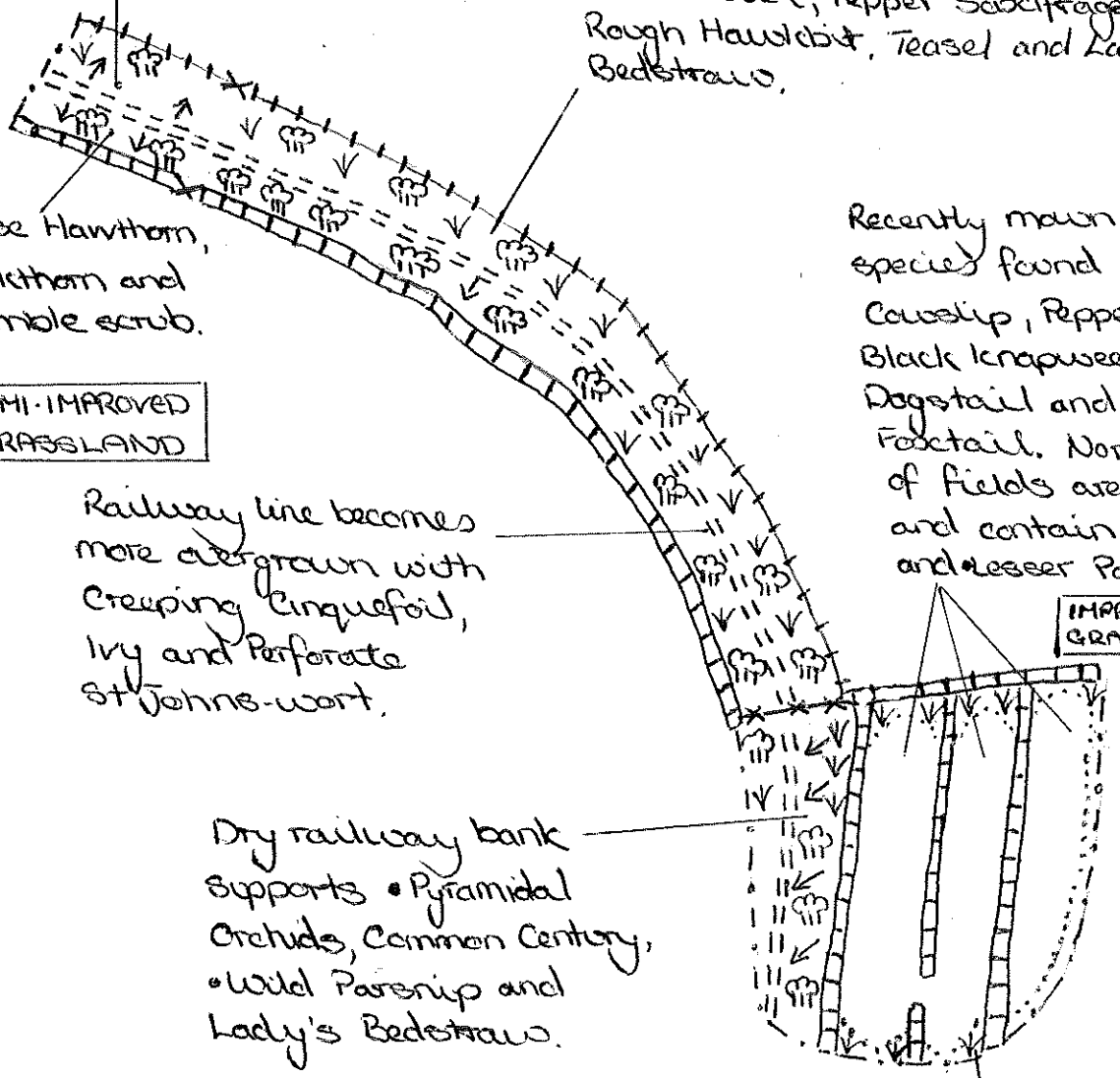
Habitat[s]	B012	A2	A22								

ST34/32/03

SERC Survey Sheet	Site Name: PURITON MEADOWS & RAIL SPUR.	Site Number: ST34/32	Grid Reference(s): ST 327427
	Date: 8/8/95	Recorder(s): C. BELFIELD R. ALLEN	

KEY

= = = Disused Railway
+++++ Wooden Fence
Stockproof Hedge
× Gate
Wire Fence
— · — · Indistinct Boundary
···· Habitat Boundary
HABITAT Surrounding Land Use
Scrub
Tall Vegetation (to 1.5m)
Slope



ST34/32/03

Vascular Plant Recording Form

Site Name	PURITON MEADOWS RAIL SPUR	File Code	ST 34/32
Date	8/8/95		
Grid Ref.	S T 3 2 7 4 2 7	Recorder(s)	C BELFIELD, R. ALLEN

	O	L
Acer campestre		
Acer platanoides		
Acer pseudoplatanus		
Achillea millefolium	O	
Achillea ptarmica		
Acinos arvensis		
Adoxa moschatellina		
Aegopodium podagraria		
Aesculus hippocastanum		
Aethusa cynapium		
Agrimonia eupatoria	O	
Agrostis canina / canina	O	
Agrostis capillaris	O	
Agrostis gigantea		
Agrostis stolonifera		
Aira caryophyllea		
Aira praecox		
Ajuga reptans		
Alchemilla filicaulis / vest.		
Alisma lanceolatum		
Alisma plantago-aquatica		
Alliaria petiolata		
Allium ursinum		
Allium vineale		
Alnus glutinosa		
Alopecurus geniculatus		
Alopecurus myosuroides		
Alopecurus pratensis	F	
Anacamptis pyramidalis	O	
Anagallis arvensis		
Anagallis tenella		
Anchusa arvensis		
Anemone nemorosa		
Angelica sylvestris		
Anthemis cotula		
Anthoxanthum odoratum	F	
Anthriscus caucalis		
Anthriscus sylvestris	O	
Anthyllis vulneraria		
Antirrhinum majus		
Aphanes arvensis agg.		
Apium graveolens		
Apium nodiflorum		
Aquilegia vulgaris		
Arabidopsis thaliana		
Arabis hirsuta		
Arctium lappa		
Arctium minus agg.		
Arenaria leptoclados		
Arenaria serpyll sens.lat.		
Armeria maritima		
Armoracia rusticana		
Arrhenatherum elatius	F	
Artemisia maritima		
Artemisia vulgaris		
Arum maculatum		
Asplenium ruta-muraria		
Asplenium trichomanes		
Aster novi-belgii		
Athyrium filix-femina		
Atriplex patula		
Avena fatua		
Avenula pratensis		
Avenula pubescens		
Azolla filiculoides		
Ballota nigra		
Barbarea vulgaris		
Bellis perennis		
Berula erecta		
Betula pendula		
Betula pubescens		
Bidens cernua		
Blackstonia perfoliata		
Blechnum spicant		
Botrychium lunaria		
Brachypodium sylvaticum		
Brassica napus		
Brassica nigra		
Brassica rapa		
Briza media		
Bromus commutatus		
Bromus erectus		
Bromus hordeaceus / hord.		
Bromus molis		
Bromus ramosus		
Bromus sterilis		
Bryonia dioica		
Buddleja davidii		
Butomus umbellatus		
Buxus sempervirens		
Calamintha sylvatica		
Callitriche brutia		
Callitriche obtusangu.		
Callitriche platycarpa		
Callitriche stagnalis		
Calluna vulgaris		
Caltha palustris		
Calystegia sepium / sepium		
Calystegia sepium / sil.		
Campanula glomerata		
Campanula rotundif.		
Campanula trachelium		
Capsella bursa-pastoris		
Cardamine flexuosa		
Cardamine hirsuta		
Cardamine pratensis		
Cardaria draba sens.lat.		
Carduus acanthoides		
Carduus nutans		
Carex acutiformis	O	

	O	L
Carex arenaria		
Carex binervis		
Carex caryophyllea		
Carex demissa		
Carex distans		
Carex divulsa / divulsa		
Carex echinata		
Carex flacca	O	
Carex hirta		
Carex nigra		
Carex otrubae		
Carex ovalis		
Carex panicea		
Carex pendula		
Carex pulicaris		
Carex remota		
Carex riparia		
Carex spicata		
Carex strigosa		
Carex sylvatica		
Carlina vulgaris		
Carpinus betulus		
Castanea sativa		
Centaurea nigra	O	
Centaurea scabiosa		
Centaurium erythraea	O	
Centranthus ruber		
Cerastium diffusum		
Cerastium fontanum		
Cerastium glomeratum		
Ceratophyllum demersum		
Ceterach officinarum		
Chaenorhinum minus		
Chaerophyllum temu.		
Chamaecyparis lawsonian.		
Chamaenerion angustifoli	O	
Cheiranthus cheiri		
Chelidonium majus		
Chenopodium alb agg.		
C. bonus-henricus.		
C. polyspermum		
Chenopodium rubrum		
Chrysosplenium alternif.		
Chrysosplenium opposit.		
Cichorium intybus		
Circaea lutetiana		
Cirsium acaule		
Cirsium arvense	A	
Cirsium dissectum		
Cirsium eriophorum		
Cirsium palustre		
Cirsium vulgare	O	
Clematis vitalba		
Clinopodium vulgare		
Cochlearia danica		
Cochlearia officinalis st		
Colchicum autumnale		
Conium maculatum	O	
Conopodium majus		
Convolvulus arvensis	F	
Conyza canadensis		
Cornus sanguinea		
Coronopus didymus		
Coronopus squamatus		
Corydalis claviculata		
Corydalis lutea		
Corylus avellana	R	
Crataegus monogyna	F	
Crepis capillaris		
Crepis vesicaria		
X Cupressocyparis leyland.		
Cuscuta epithymum		
Cymbalaria muralis		
Cynoglossum officinale		
Cynosurus cristatus	F	
Cystopteris fragilis		
Cytisus scoparius		
Dactylis glomerata	F	
Dactylorhiza fuchsii / fuch.		
Dactylorhiza maculata		
Dactylorhiza praetermissa		
Danthonia decumbens		
Daphne laureola		
Daucus carota / carota	O	
Deschampsia cespitosa	O	
Deschampsia flexuosa		
Desmazeria rigida		
Digitalis purpurea		
Diplotaxis muralis		
Diplotaxis tenuifolia		
Dipsacus fullonum sl	O	
Dipsacus pilosus		
Dryopteris affinis		
Dryopteris dilatata		
Dryopteris filix-mas agg.		
Echium vulgare		
Eleocharis palustris		
Eleocharis uniglumis		
Elodea canadensis		
Elymus caninus		
Elymus repens		
Epilobium adnatum		
Epilobium angustifolium		
Epilobium collinum		
Epilobium hirsutum	O	
Epilobium lanceolatum		
Epilobium montanum		
Epilobium obscurum		
Epilobium palustre		
Epilobium parviflorum		

	O	L
Epilobium roseum		
Epipactis helleborine		
Equisetum arvense		
Equisetum fluviatile		
Equisetum sylvaticum		
Equisetum palustre		
Equisetum telmateia		
Erica cinerea		
Erica tetralix		
Erigeron acer	R	
Erodium cicutarium		
Erophila verna sens.lat.		
Euonymus europaeus		
Eupatorium cannabinum		
Euphorbia amygdaloides		
Euphorbia exigua		
Euphorbia helioscopia		
Euphorbia peplus		
Euphrasia nemorosa		
Fagus sylvatica		
Fallopia convolvulus		
Festuca arundinacea	O	
Festuca gigantea		
Festuca ovina		
Festuca pratensis		
Festuca rubra sens.str.	O	
Filipendula ulmaria		
Fragaria vesca		
Frangula alnus		
Fraxinus excelsior	O	
Fumaria muralis		
Fumaria officinalis		
Galanthus nivalis		
Galeopsis tetrahit su tetra.		
Galium aparine		
Galium cruciata		
Galium mollugo agg.		
Galium odoratum		
Galium palustre agg.		
Galium saxatile		
Galium uliginosum		
Galium verum	O	
Genista tinctoria		
Gentianella amarella agg.		
Geranium columbinum		
Geranium dissectum		
Geranium lucidum		
Geranium molle		
Geranium pratense		
Geranium pyrenaicum		
Geranium robertianum	R	
Geranium rotundifolium		
Geum rivale		
Geum urbanum		
Glechoma hederacea		
Glyceria declinata		
Glyceria fluitans		
Glyceria maxima		
Glyceria plicata		
Gnaphalium uliginosum		
Hedera helix	F	
Helianthemum nummula.		
Heracleum sphondylium	O	
Hesperis matronalis		
Hieracium sabaudum		
Hippocrepis comosa		
Holcus lanatus	F	
Holcus mollis		
Hordeum murinum		
Hordeum secalinum	O	
Hottonia palustris		
Humulus lupulus		
Hyacinthoides non-scripta		
Hydrocharis morsus-ran.		
Hydrocotyle vulgaris		
Hypericum androsaemum		
Hypericum calycinum		
Hypericum hirsutum		
Hypericum humifusum		
Hypericum maculatum		
Hypericum perforatum	F	
Hypericum tetrapterum		
Hypochoeris radicata		
Ilex aquifolium		
Iris foetidissima		
Iris pseudacorus		
Juncus acutiolia		
Juncus articulatus		
Juncus conglomeratus		
Juncus effusus		
Juncus inflexus	F	
Juniperus communis		
Knautia arvensis		
Koeleria macrantha		
Lamiastrum galeobdolon		
Lamium album		
Lapsana communis		
Larix sp.		
Lathyrus montanus		
Lathyrus pratensis	O	
Lemna gibba		
Lemna minor		
Lemna polyrhiza		
Lemna trisulca		
Leontodon autumnalis	O	
Leontodon hispidus	O	
Leontodon taraxacoides		
Lepidium campestre		
Leucanthemum vulgare	O	
Ligustrum vulgare		

	O	L
Linaria purpurea		
Linaria vulgaris		
Linum bienne		
Linum catharticum		
Listera ovata		
Lithospermum officinale		
Lolium multiflorum x per.		
Lolium perenne		
Lonicera periclymenum		
Lotus corniculatus	O	
Lotus uliginosus		
Luzula campestris		
Luzula forsteri		
Luzula multiflora		
Luzula pilosa		
Luzula sylvatica		
Lychnis flos-cuculi		
Lycopus europaeus		
Lysimachia nemorum		
Lysimachia nummularia		
Lythrum portula		
Lythrum salicaria		
Malus sylvestris sens.lat.		
Malva moschata		
Malva neglecta		
Malva sylvestris		
Matricaria matricarioides		
Matricaria recutita		
Medicago arabica		
Medicago lupulina		
Medicago sativa sens.str.		
Melica uniflora		
Melilotus alba		
Melilotus altissima	F	
Melilotus officinalis		
Mentha aquatica		
Mentha arvensis		
Mentha spicata		
Mercurialis annua		
Mercurialis perennis		
Milium effusum		
Moehringia trinervia		
Molinia caerulea		
Mycelis muralis		
Myosotis arvensis		
Myosotis discolor		
Myosotis laxa		
Myosotis ramosissima		
Myosotis scorpiodes		
Myosoton aquaticum		
Nardus stricta		
Nasturtium officinale sl		
Nasturtium microphyllum		
Nuphar lutea		
Nymphaea alba		
Odontites verna		
Oenanthe crocata		
Oenanthe fluviatilis		
Oenanthe pimpinelloides		
Oenothera erythrosepala		
Ononis repens		
Ononis spinosa		
Ophioglossum vulgart. sl		
Orchis mascula		
Orchis morio		
Origanum vulgare		
Orobanche hederae		
Orobanche minor		
Oxalis acetosella		
Papaver dubium		
Papaver lecoqii		
Papaver rhoeas		
Parietaria judaica		
Pastinaca sativa	O	
Pedicularis sylvatica		
Pentaglottis sempervirens		
Petasites fragrans		
Petasites hybridus		
Phalaris arundinacea		
Phleum pratense / berto.		
Phleum pratense / prate.		
Phragmites australis	A	
Phyllitis scolopendrium		
Picea abies		
Picea sitchensis		
Picris echioides	O	
Picris hieracioides		
Pilosella officinarum		
Pimpinella saxifraga		
Pinguicula lusitanica		
Pinus sylvestris		
Plantago coronopus		
Plantago lanceolata	O	
Plantago major		
Plantago media		
Platanthera chlorantha		
Poa annua		
Poa compressa		
Poa nemoralis		
Poa pratensis sens.lat.		
Poa trivialis	O	
Polygala serpyllifolia		
Polygala vulgaris		
Polygonatum multiflorum		
Polygonum amphibium	O	
Polygonum arenastrum		
Polygonum aviculare		
Polygonum bistorta		
Polygonum hydropiper		
Polygonum lapathifolium		

	O	L
Polygonum persicaria	O	
Polypodium interjectum		
Polypodium vulgare agg.		
Polystichum aculeatum		
Polystichum setiferum		
Populus sp.		
Populus tremula		
Porrhomma campbelli		
Potamogeton crispus		
Potamogeton natans		
Potamogeton pectinatus		
Potamogeton pusillus		
Potentilla anserina		
Potentilla erecta		
Potentilla reptans	F	
Potentilla sterilis		
Primula veris	O	
Primula vulgaris		
Prunella vulgaris	O	
Prunus avium		
Prunus domestica / institia		
Prunus laurocerasus		
Prunus spinosa	F	
Pseudotsuga menziesii		
Pteridium aquilinum		
Pulicaria dysenterica		
Quercus cerris		
Quercus petraea		
Quercus robur		
Ranunculus acris	O	
Ranunculus aquatilis st		
Ranunculus auricomus		
Ranunculus baudotii		
Ranunculus bulbosus		
Ranunculus circinatus		
Ranunculus ficaria	O	
Ranunculus flammula		
Ranunculus omiophyllus		
Ranuculus parviflorus		
Ranuculus repens	O	
Ranunculus sceleratus		
Ranunculus trichophyllus		
Raphanus raphanistrum		
Reseda lutea		
Reseda luteola		
Reynoutria japonica		
Rhamnus catharticus		
Rhinanthus minor agg.		
Rhododendron ponticum		
Ribes nigrum		
Ribes rubrum sens.str.		
Ribes uva-crispa		
Rorippa sylvestris		
Rosa arvensis	O	
Rosa canina		
Rosa stylosa		
Rubia peregrina		
Rubus caesius		
Rubus fruticosus agg.	A	
Rubus idaeus		
Rumex acetosa		
Rumex acetosella agg.		
Rumex confertus		
Rumex crispus		
Rumex hydrolapathum		
Rumex obtusifolius		
Rumex pulcher		
Rumex sanguineus		
Ruscus aculeatus		
Sagina apetala / apetala		
Sagina apetala / erecta		
Sagina procumbens		
Salix alba	O	
Salix caprea	O	
Salix cinerea		
Salix fragilis		
Salix triandra		
Salix viminalis		
Salvia verbenaca		
Sambucus nigra		
Sanguisorba minor / minor		
Sanguisorba minor / muric.		
Sanicula europaea		
Saponaria officinalis		
Saxifraga tridactylites		
Scabiosa columbaria		
Scrophularia auriculata		
Scrophularia nodosa		
Scutellaria galericulata		
Scutellaria minor		
Sedum acre		
Sedum album		
Senecio aquaticus		
Senecio erucifolius		
Senecio jacobaea	O	
Senecio squalidus		
Senecio vulgaris		
Serratula tinctoria		
Sherardia arvensis		
Silaum silaus	F	
Silene alba		
Silene dioica		
Silene vulgaris		
Sinapis arvensis		
Sison amomum		
Sisymbrium officinale		
Sisymbrium orientale		
Smyrnium olusatrum		
Solanum dulcamara		
Solanum nigrum		

	O	L
Solidago canadensis		
Solidago virgaurea		
Sonchus arvensis		
Sonchus asper		
Sonchus oleraceus	O	
Sorbus aria agg.		
Sorbus aucuparia		
Sparganium emersum		
Sparganium erectum		
Spergula arvensis		
Stachys officinalis		
Stachys palustris		
Stachys sylvatica		
Stellaria alsine		
Stellaria graminea		
Stellaria holostea		
Stellaria media sens. str.		
Stellaria neglecta		
Succisa pratensis		
Symphoricarpus rivularis		
Tamus communis		
Tanacetum parthenium		
Taraxacum officinale agg.	O	
Taxus baccata		
Teucrium scorodonia		
Thalictrum flavum		
Thlaspi arvense		
Thuja plicata		
Thymus praecox		
Thymus pulegioides		
Tilia cordata		
Tilia x vulgaris		
Torilis japonica		
Tragopogon pratensis		
Trifolium campestre		
Trifolium dubium		
Trifolium fragiferum		
Trifolium hybridum		
Trifolium medium		
Trifolium pratense	O	
Trifolium repens		
Triglochin palustris		
Tripleurosperm. mar. / ino.		
Trisetum flavescens	F	
Tsuga heterophylla		
Tussilago farfara		
Typha latifolia		
Ulex europaeus		
Ulex gallii		
Ulmus glabra		
Ulmus procera	O	
Umbilicus rupestris		
Urtica dioica	F	
Urtica urens		
Vaccinium myrtillus		
Valeriana dioica		
Valeriana officinalis		
Valerianella carinata		
Valerianella locusta		
Verbascum thapsus	R	
Verbena officinalis		
Veronica anagallis-aquatica		
Veronica arvensis		
Veronica beccabunga		
Veronica catenata		
Veronica chamaedrys		
Veronica filiformis		
Veronica hederifolia		
Veronica montana		
Veronica officinalis		
Veronica persica		
Veronica polita		
Veronica serpyllifolia		
Viburnum lantana		
Viburnum opulus		
Vicia cracca		
Vicia hirsuta		
Vicia sativa / sativa	O	
Vicia sepium		
Vicia sylvatica		
Vicia tetrasperma		
Vinca major		
Vinca minor		
Viola arvensis		
Viola hirta		
Viola odorata		
Viola palustris		
Viola reichenbachiana		
Viola riviniana		
Viscum album		
Vulpia bromoides		
Vulpia myuros		
Wolffia arrhiza		
Notables count:	4	
A.V. Plant count:		

Somerset notable species in **BOLD**. Ancient woodland vascular plant species [A.V. Plants] in *ITALIC*. For long names: /=ssp. sl=sens.lat. st=sens.str.

Copyright © SERC 1995