

Volume
2



Broadford Bridge-1 Exploratory Well Site
**Environmental Statement:
Figures and Appendices**

July 2012



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**Environmental Statement:
Figures and Appendices**



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Chapter 2 - EIA Methodology

Appendix 2.1 - Scoping Report

Jane Moseley
County Development
West Sussex County Council
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Chichester
PO19 1RQ

Our Ref: 19630/A3/HH/NF
9 May 2012

Dear Jane,

EXPLORATORY WELLSITE (BROADFORD BRIDGE 1), LAND AT WOODBARN FARM, ADVERSANE LANE, BROADFORD BRIDGE, BILLINGSHURST - REQUEST FOR A SCOPING OPINION UNDER REGULATION 13 OF THE TOWN AND COUNTRY PLANNING (ENVIRONMENTAL IMPACT ASSESSMENT) REGULATIONS 2011

This letter and the supporting plan represent a formal request, on behalf of Celtique Energie Weald Ltd, for a Scoping Opinion, in accordance with Regulation 13 of the EIA Regulations 2011, from West Sussex County Council (WSSC).

In accordance with Regulation 13(2) of the EIA Regulations we have provided the following information:

- (a) a plan sufficient to identify the land; and
- (b) a brief description of the nature and purpose of the development and of its possible effects on the environment (provided below).

The Site and Proposed Development

The proposal seeks the temporary development of an exploratory wellsite (Broadford Bridge 1) on land at Woodbarn Farm, Adversane Lane, Broadford Bridge, Billingshurst RH14 9ED for the exploration, testing and evaluation of hydrocarbons in the Willow Prospect, within PEDL 234.

The proposal is to construct a temporary well site within an enclosed compound to drill an exploratory borehole. Should hydrocarbons be encountered, preliminary short term "drill stem" testing (DST) will be undertaken to assess economic viability. Should no hydrocarbons be encountered or upon completion of the drill stem testing, all structures, buildings and enclosures will be removed and the site restored. If suitable quantities of oil or gas are encountered the valve or "Christmas Tree", access and hardstanding will be retained on site whilst an application is prepared and submitted to WSSC for production.

The planning application seeks permission for four phases – construction, drilling, testing and retention or restoration, as detailed in **Table 1.1** below. These Phases might not be carried out consecutively depending on for example, the availability of equipment or staff, the need for site maintenance or off site laboratory testing, and the applicability of the Phases is also dependent upon whether oil or gas, or neither are encountered. Moreover, the technical constraints associated with the drilling and maintenance of an exploratory borehole means that until operations begin on site, it is difficult to anticipate how long it will take to complete the development. Therefore both a

best case and worst case scenario have been illustrated in **Table 1.1** so that environmental impacts associated with the Proposed Development will never be "worse" than those identified in the ES.

Table 1.1 Timescales and phasing of the Proposed Development

Phase	Best Case Scenario	Worst Case Scenario
Phase 1 Construction	6 weeks	6 weeks
Phase 2 Mobilisation and drilling	6 weeks	10 weeks (includes a 4 week contingency)
Phase 3a Testing (gas)	1 week (includes mobilisation, 1 wk test with rig and flaring)	2 weeks (includes mobilisation, 2 weeks test with rig and flaring)
Phase 3b Testing (oil)	2 weeks – (1 week mobilisation, 1 week testing with rig and flaring)	14 weeks (2 weeks mobilisation, 12 weeks testing, but rig will not be at site during an extended test such as this)
Phase 4a Restoration	6 weeks	6 weeks
Phase 4b Retention	1 month	30 months

It is anticipated that the best case scenario will apply but the worst case scenario allows for any contingencies required during the operation of the development. As a worst case scenario, a 4 week contingency has been included during mobilisation and drilling in case maintenance of the borehole, drill rig or other ancillary equipment is required. Should planning permission be granted for a period of three years and the discharge of conditions, development of the site, drilling and testing undertaken within 6 months, the worst case scenario is that the site would be retained for a period of up to 30 months whilst an application for production is prepared and submitted.

Based on the above, it is the worst case scenario which will be assessed for the EIA although it should be noted that the impacts are anticipated to be considerably less than those detailed in the Environmental Statement (ES), as the best case scenario is the likely development programme.

EIA Scoping

The Proposed Development comprises of the development of an access road and well site which will encompass all of the ancillary infrastructure and equipment associated with the drilling and testing of an exploratory borehole, with the Application Site comprising of 5.11 acres (2.07ha). The Proposed Development does not fall within 'Schedule 1' of the Town and Country Planning (Environment Impact Assessment) Regulations 2011. It may possibly be considered to constitute 'Schedule 2' development, if judged to qualify as a 'deep drilling' or 'surface industrial installation for the extraction of petroleum' in accordance with Sections 2(d) or 2(e) respectively of Schedule 2 of the Regulations. The threshold for 'deep drilling' is an area exceeding 1ha whilst the threshold for a 'surface industrial installation' is an area exceeding 0.5ha. If a development is considered to fall within Schedule 2, an EIA is only required if the site is located within a sensitive area or the proposal would be likely to generate significant environmental effects.

Although neither the Application Site nor the adjoining land is classified as a 'sensitive area' the site is surrounded by woodland, some of which consists of Ancient Woodland that is likely to have ecological and landscape value. There are also a number of ponds near the Proposed Development site and some Listed Buildings. This includes Broadford Bridge Farmhouse and Brook House Farmhouse both of which are Grade II Listed buildings which are located within approximately 500m of the Proposed Development. Consequently we will be treating this proposal as an EIA development and therefore are seeking to confirm the scope of the ES with WSCC. A review of each of the topics identified with the EIA Regulations 2011 was undertaken as part of this scoping request.

Guidance regarding the content of the EIA is contained in Schedule 4 of the EIA Regulations. This, *inter alia*, requires the ES to include:

'A description of the aspects of the environment likely to be significantly affected by the proposed project, including, in particular, population, fauna, flora, soil, water, air, climate factors, material assets, including the architectural and archaeological heritage, landscape and inter-relationship between the above factors'.

Based on the Proposed Development, national planning policy, the relevant policies of the West Sussex Mineral Local Plan and The Chichester District Local Plan and the project team's knowledge of the site and its environs, an assessment has been made regarding which of these topics or particular aspects of them can be 'scoped in' and 'scoped out' of the EIA. Issues that are scoped into the EIA are judged likely, without effective mitigation, to have the potential to cause significant effects. Issues that are scoped out of the EIA are those which are not anticipated to result in significant effects. The decision to scope out issues is based upon factors such as a high degree of development - receptor separation, the lack of effect pathways or the known low value or sensitivity of effected resources.

It should be noted that as the assessment precedes any omitted topics will be reviewed and their significance may be re-evaluated in response to additional information or changes to the proposed development.

Baseline

The purpose of baseline studies is to identify and describe the environmental conditions against which the Proposed Development can be measured or predicted. The baseline situation for this ES will assume that the environmental conditions at the site are as they exist at the present time in 2012. We are currently not aware of any consented developments that may be built out before the well site construction starts which will affect the baseline. We would be grateful if you could advise us of any proposals you consider which may affect the baseline.

Assessment of Effects

The EIA Regulations stipulate that an ES should identify, describe and assess the likely significant effects of a development on the environment, including consideration of:

- Beneficial and adverse effects;
- Short, medium and long term effects;
- Direct and indirect effects;
- Permanent and temporary effects; and
- Cumulative effects and effect interactions.

The ES will identify and assess the likely significant effects of the Proposed Development in relation to both the construction and completed phases of the proposed development. Environmental effects will be evaluated with reference to best practice guidance, standards and legislation where available.

Temporal Scope

The EIA will address all the Phases identified in Table 1.1, with Phase 1 anticipated to take place in Autumn 2012.

Spatial Scope

The geographical coverage of the EIA will be determined by a number of factors including:

- the physical extent of work;
- the nature of the baseline environment, including the location of sensitive receptors;

- the distance over which effects will be significant; and
- the presence and type of "pathways" along which effects may be spread.

Scope of the ES

A. Ecology

Potential effects on ecology arising from the development include habitat loss, habitat fragmentation and also degradation from damage or indirect effects such as noise and light emissions. No statutory designated sites would be affected and the proposed site layout generally affects agricultural land of relatively low ecological value and this, combined with and the temporary nature of the proposals followed by reinstatement, means that significant, long-term, adverse impacts on vegetation and habitats are unlikely to occur. Effects on vegetation are likely to be limited to small scale habitat losses, which will be compensated by new planting. Effects on fauna may include habitat loss and disturbance and these are likely to be temporary and reversible.

Ecological investigations will include desk-based study to identify records of designated sites, ancient woodland (and other priority habitats), as well as protected and notable species of flora and fauna, including those listed on s41 of the NERC Act 2006. Field studies will include Phase 1 habitat Survey (JNCC, 2011) and assessment of habitat suitability for protected and notable flora and fauna, particularly (but not limited to) hazel dormouse, badger, bats (roosting and foraging/commuting), breeding birds, reptiles, amphibians and invertebrate assemblages. Surveys shall be undertaken in accordance with published guidance, and during the appropriate seasons.

Consideration will be given to interactions with other topics including lighting, drainage, noise and landscape, to assess effects on flora and fauna arising from these aspects of the development proposals.

The impact assessment will consider direct and indirect effects arising from all the development phases and will be based on the 'Guidelines for Ecological Impact Assessment in the UK' (IEEM, 2006). Ecology has therefore been scoped into the ES and the assessment will: identify significant effects on ecological receptors that are valued on a geographic scale of importance; describe avoidance, reduction compensation and enhancement measures; and assess the significance of residual effects on flora and fauna.

B. Landscape and Visual Impact Assessment

The Proposed Development will involve the temporary loss of 5.11 acres (2.07ha) of Grade 3 agricultural land which will not affect the continued operation of the farm during or after operations. The introduction of landforms and the industrial nature of the Proposed Development are anticipated to have a temporary adverse effect on the landscape character of the site and surrounding area which is rural and agricultural in nature.

The Proposed Development is also anticipated to be partially visible from some views. It is anticipated that it may be possible to see lower level elements of the Proposed Development from close views from Public Rights of Way (PROW) and Adversane Lane, and upper sections of the rig from a wider area from PROW and local roads.

Landscape and Visual Impact has therefore been scoped into the ES and a technical assessment (Landscape and Visual Impact Assessment) will be undertaken to identify the baseline situation, sensitivities of the landscape as a resource, and the sensitivity of visual receptors and assess the effects of the Proposed Development on them and the significance of these. The Landscape and Visual Impact Assessment will be prepared using guidelines set out in the Landscape Institute and Institute of Environmental Management and Assessment's 'Guidelines for Landscape and Visual Impact Assessment', second edition, (2005).

C. Air Quality

Air quality effects from traffic will be limited through the temporary nature of the Proposed Development. Diesel exhausts from the generators powering the rig, vehicle exhausts and venting from any possible extended well testing is likely to have a negligible impact upon air quality. No hazardous, toxic or noxious substances will be emitted and therefore air quality has been scoped out of the ES. The site is not within an Air Quality Management Area and due to the temporary nature of the Proposed Development combined with the use of non-hazardous, toxic or noxious substances, Air Quality has been scoped out of the ES.

D. Noise and Vibration

Noise and vibration from on-site enabling works and operations and off-site road traffic could potentially adversely affect sensitive receptors. Sensitive receptors within the study area are limited to residential properties.

Due to the short-term and temporary nature of the works, noise from all aspects of on-site work associated with the Proposed Development will be assessed using calculation methods and noise limits proposed in British Standard (BS) 5228 – Part 1: Noise. Using an indicative list of equipment during the various stages of the development, noise levels at the closest sensitive receptors to the Assessment Site will be calculated, using the library of equipment noise levels within BS 5228 and the SoundPLAN noise modelling software package. The calculations will incorporate activity within the well site compound and vehicles on the proposed site access track. The significance of noise effects from on-site activity will be assessed against noise limits from BS 5228. This Standard provides 3 sets of noise limits, based on existing ambient noise levels, the lowest of which are: daytime - 65dB $L_{Aeq,T}$; evening – 55dB $L_{Aeq,T}$; and night – 45dB $L_{Aeq,T}$.

Noise has been scoped into the ES and increases in road traffic noise due to additional traffic generated by the Proposed Development will be predicted using the standard UK calculation method - Calculation of Road Traffic Noise (DoT, 1988). The assessment will not consider specific receptors, but rather will assess the change in noise level adjacent to affected road links. Using baseline and predicted traffic generation for each phase of the proposed development, the relative increase in road traffic noise that may potentially affect roadside receptors will be calculated. The significance of the relative increase due to generated traffic will be determined using criteria taken from the "Design Manual for Road and Bridges" (2011).

Ground-borne vibration from works such as that associated with the Proposed Development has the potential to affect residential and other premises. However, due to the large separation distance between sensitive receptors and the well site and access track – 400m and 300m respectively, vibration effects have been scoped out of the ES.

E. Transport and Access

Traffic survey data will be obtained from WSCC for two locations on Adversane Lane. The data will comprise speed, volume and classification of traffic. The traffic surveys will be factored to a common base year of 2012 using TEMPRO traffic growth factors.

Personal Injury Accident (PIA) data will be obtained from WSCC for the adjoining highway network for the most recent five year period available. A review of existing facilities for walking, cycling and public transport usage will be made although it is noted that due to the nature of the Proposed Development which will require specialist engineering equipment, these modes of travel may not be practical. Details of expected operations and traffic volumes estimated will be based on operational requirements, and expected traffic movements are provided at **Appendix 1**.

Transport and Access have been scoped into the ES and the environmental assessment of generated traffic will be undertaken in accordance with Guidelines for the Environmental Assessment of Road Traffic (Guidance Note No. 1), published by the Institute of Environmental Assessment (IEA) (1993), now the Institute of Environmental Management and Assessment, with reference to Volume 11 of

the Design Manual for Roads and Bridges (DMRB), (2011). These are recommended tools for the appraisal of environmental effects of transport and they identify appropriate standards for assessment. Reference will also be made to the "Guidance on Transport Assessment" (2007) published by the Department for Transport; "Guidelines for the Environmental Assessment of Road Traffic" (1994) published by the Institute of Environmental Assessment; and "The Design Manual for Roads and Bridges" published by the Department for Transport.

The IEA Guidelines recommend two rules to be considered when assessing the effect of development on a highway link:

- Rule 1: Include highway links where traffic flows will increase more than 30% (or the number of HGV's will increase by more than 30%); and
- Rule 2: Include any other specifically sensitive areas where traffic flows have increased by 10% or more.

Subject to the outcome of the screening test set out above, the IEA Guidelines sets out a list of environmental effects which should be assessed for their significance and these are set out below:

- Noise and Vibration;
- Visual Effects;
- Severance;
- Driver Delay;
- Pedestrian Delay;
- Pedestrian Amenity;
- Accidents and Safety;
- Hazardous Loads;
- Air Pollution; and
- Dust and Dirt.

Vibration and Air Quality have been scoped out of the ES and Noise and Visual effects will be assessed elsewhere in the ES. The Transport and Access section will assess the remaining traffic related environmental effects.

F. Flood Risk, Hydrology and Drainage

Based on correspondence with the Environment Agency and a review of the Proposed Development, it is considered that due to the temporary nature of the development and its location within Flood Zone 1, the Proposed Development is unlikely to have a negative impact on flood risk. Additionally, measures will be implemented to ensure that there is no impact on or from the development as a result of increased surface water runoff. Flood Risk has therefore been scoped out of the ES.

G. Ground and Groundwater Protection

At Phase 1, the storage and use of chemical additives to form drilling fluids plus lubricants etc creates a potential risk of ground and groundwater contamination in the event of accidental spillages and leaks. At Phases 2 and 3, similar risks apply in respect of the temporary storage of recovered hydrocarbons. In all cases these risks are mitigated by the secure, bunded storage of such materials. In addition, site preparation will involve the installation of an impermeable HDPE liner across the entire drill site, lain above a level, crushed and compacted layer of 6F2 aggregate.

The risk of such contaminants migrating off-site in run-off to the nearest water courses is mitigated by the installation of a ditch system which leads to an interceptor that traps any run off before it is released. Uncontrolled release of potentially contaminated surface run off is thereby prevented.

The drilling of the borehole at Phase 1 creates the potential risk of contaminants entering aquifers via drilling fluids. In this case, the ground to be penetrated by the borehole is practically devoid of usable groundwater but also, in practice, the use of non-toxic drilling fluids, the temporary nature of

the exposure, and the mud-balance control, are all such that the risk of contaminating fresh groundwater is negligible. No such risk exists during Phases 2 – 4 because the upper freshwater horizons will by that time have been cased-off.

In the event of borehole abandonment the restoration of the borehole will be completed to the most rigorous industry standards and no long-term adverse effects on ground or fresh groundwater are anticipated.

A requirement not to adversely affect the soil moisture conditions in Prince's Wood has been recognised and will be assessed. In practice there will be no such effects as the water balance in the woodland area is a local one that will be entirely unaffected by the development proposals.

Ground and Groundwater Protection has been scoped into the ES although based on our initial research, overall the Proposed Development is expected to have a negligible effect in terms of ground and groundwater contamination.

H. Archaeology

Pastscape (<http://www.pastscape.org.uk/>) which holds records on the archaeological and architectural heritage of Britain and is derived from the National Monuments Record database indicates that there are no monuments within 500m of the proposed well site. In addition, the National Heritage List for England (<http://list.english-heritage.org.uk/mapsearch.aspx>) has been assessed and it shows that there are no world heritage sites, protected wreck sites, scheduled ancient monuments, registered parks or gardens or battlefields near to the site. However, discussions with the County archaeologist suggest that the proposed well site may be located in a 17th century glass working area. Consequently a Heritage Statement including details of the relevant Historic Environment Record, map regression, and summary of the impact of the development on any potential archaeology, will accompany the ES. There are Listed Buildings located near the Application Site, and these will be assessed in the Landscape and Visual Impact Chapter of the ES, including Broadford Bridge Farmhouse and Brook House Farmhouse both of which are Grade II Listed. Archaeology has otherwise been scoped out of the ES.

I. Lighting

The Proposed Development includes installing lighting on the drilling rig and at various low level locations within the site compound for the health and safety of employees during operations. This lighting has the potential to affect receptors in the area and it is proposed that the ES will assess these effects. The assessment will include a site visit in order to describe the existing sources of illumination and to establish relative heights between the site and the local landscape including any existing adjacent properties or structures.

The significance level attributed to each effect will be assessed based on the magnitude of change due to the proposed development, and the sensitivity of the affected receptor/receiving environment to change. The criteria used to determine the "significance" of any change in baseline lighting levels will be defined qualitatively using professional judgement and best practice guidance. The lighting assessment will be based on "Lighting in the Countryside: Towards Good Practice" (DEFRA, 2001) and this discipline has therefore been scoped into the ES.

J. Agricultural Land and Soils

Although the site is greenfield land, the proposal is for a temporary period only, and following the cessation of works and site remediation, it will return to greenfield status. It is anticipated that there will be no damage to soils which will be handled and stored in accordance with best practice guidance including the storage of separate top and sub soil bunds on site so that when restored, no alien soils will be brought onto site. The technical assessment on agricultural land and soils will therefore be scoped out of the ES.

K. Waste

The proposed volumes of waste material generated during construction and operation of the Proposed Development are considered negligible. Although the drilling phase produces significant quantities of drilling mud and rock cuttings, this is for a limited period of 6 weeks and they are disposed of at a registered site, therefore Waste has been scoped out of the ES.

L. Socio Economics

Socio Economics have been scoped into the ES as the Proposed Development is likely to have an effect at both a local and national level through employment, employee spending, improving security of energy supply and supporting agricultural diversification. There is a recognised national 'need' to increase our domestic energy supplies, reduce our dependency on foreign energy imports and support the development of new infrastructure, and if approved this application would assist in meeting those national objectives.

The construction works for the well site are likely to generate some local employment where the relevant skills exist which may have a beneficial effect on the local economy. Drilling operations require a specialist team which are sourced with the rig which is likely to benefit the national economy. Employee spending would benefit the local economy as would the use of local materials such as aggregates, landscaping, security and accommodation facilities. Moreover, the temporary use of agricultural land for the Proposed Development would support agricultural diversification. Socio-Economic data will be derived from the Office for National Statistics (ONS) including Census data and ancillary surveys.

Cumulative and Interactive Effects

In accordance with Schedule 4 of the EIA Regulations, the ES will include an assessment of the cumulative and interactive effects of the Proposed Development and any known developments in the surrounding area. We would therefore be grateful if the Council could advise us of any known developments in the surrounding area which may be effected by our Proposed Development.

ES Structure

The ES will address the requirements of Parts 1 and 2 of Schedule 4 of the EIA Regulations. The anticipated structure and contents of the ES will be as follows:

Chapter	Title
1	Introduction – explanation of the background to the scheme and the ES
2	EIA Methodology – a definition of the EIA process and explanation of the assessment methodology undertaken
3	Site and Surroundings – a detailed description of the Application Site and the surrounding area
4	Project Description – a detailed description of the proposed development
5	Need and Alternative Sites – a review of all viable alternatives and the need for the proposed development
6	Construction Programme – a review of expected construction method and format

Each of the subsequent technical chapters will include a description of baseline conditions, identification of the potential significant effects, assessment of the significant effects, identification of mitigation measures and a review of the residual effects.

Chapter	Title
7	Ecology
8	Landscape and Visual Impact
9	Noise

10	Transport and Access
11	Ground and Groundwater Protection
12	Lighting
13	Socio Economics

The two end chapters will summarise findings of the technical assessments including Mitigation and Monitoring and a Statement of Significance.

Chapter	Title
14	Mitigation and Monitoring – a summary of all mitigation and monitoring measures proposed
15	Statement of Significance – a summary of the significance of the residual effects of the proposed development

We trust the enclosed information is sufficient to enable you to consult the relevant consultees and for you to subsequently adopt a Scoping Opinion, but please do not hesitate to contact the writer if there are any matters arising in the interim. We would be grateful for an acknowledgement or formal receipt for this submission, together with notification of the expiry date of the statutory period.

Yours sincerely,

HENRIETTA HOPKINS

Senior Planner

Enc. Site Location Plan

APPENDIX 1

Proposed Traffic Movements Associated with Exploratory Borehole – Willow Prospect, Broadford Bridge, West Sussex.

Construction (Phase 1)

Initially there would be movement of site preparation plant comprising 3-4 low-load articulated trucks at the outset of construction activity. The access, car-park and site would require approximately 5562 tonnes of stone (i.e. 278 lorry loads) delivered during a period of 5 weeks plus a small number of deliveries by HGV of ancillary construction materials/plant and 5-10 personnel movements per day by car or van. In total, the above movements equate to an average of 1 vehicle movement every 45 minutes during the normal working day of 8.00 am-5.00 pm, Monday to Friday, & 8.00 am-1.00 pm on Saturdays.

Mobilisation of the Drill Rig and Drilling of the Exploratory Borehole (Phase 2)

The following deliveries are for a typical drilling rig, 3 or 4 deliveries of which may be assisted by police escort, and would arise at the time of drill rig mobilisation: -

Derrick	1 load
Trailer with draw-works and rotary table	1 load
Sub-structure and ramp	1 load
Matting boards, Blow-out preventers & manifold	1 load
Mud pump buildings	2 loads
Mud tanks	2 loads
Light plant, accumulator & change house	1 load
Water tank and doghouse	1 load
Toolhouse and fuel tank	1 load
Catwalk, junk rack, V doors & stairs	1 load
Toolpush cabin	1 load
Forklift & washroom building	1 load
Cranes (for assembly)	2 loads
Total loads	16 loads

Additional deliveries would be required during mobilisation for ancillary services, as follows: -

Mud logging cabin & equipment	2 loads
Wireline logging	1 load
Drilling Mud Solids control equipment	1 load
Operational control cabin	1 load
Materials & chemicals	4 loads
Drill pipe & tubulars	4 loads
Accommodation modules	3 loads
Total loads	16 loads

The total number of deliveries (32) equates to 64 HGV movements would occur over an anticipated period of 3-4 days when the drill rig will be mobilised.

During drilling mode deliveries of equipment and removal of drilling mud and cuttings would generate 3-4 vehicles (6-8 trips) per day over a 4-5 week period. 20 light vehicle trips would be generated at 0800 and 2000 hrs at personnel shift changes.

Following the completion of the drilling work, the rig would be demobilised and removed from the site over a period of 3-4 days. Traffic movements would be the same as those during the mobilisation phase, that is, a maximum of 64 HGV movements.

Carrying out of a short-term test and evaluation programme (Phase 3)

It is anticipated that testing would be carried out over a period of up to 6 months. It is anticipated that vehicle movements would comprise no more than 6 movements by tanker per week. In addition, it is expected that there would two car movements per day for personnel to visit the site.

Restoration (Phase 4)

The restoration of the site would take place over a period of 5-6 weeks. Traffic movements are anticipated to be broadly similar to the construction phase as materials are removed from site. Movements may take place over a slightly longer period if adverse weather conditions prevent restoration and earth movements taking place. It is also possible that traffic movements could be significantly reduced compared to the construction period should the landowner wish to retain the stone on an adjoining part of the farm which does not involve access onto the public highway.

Appendix 2.2 - Scoping Opinion

**THE TOWN AND COUNTRY PLANNING (ENVIRONMENTAL
IMPACT ASSESSMENT) REGULATIONS 2011:
REGULATION 13 – Request for a Scoping Opinion**

Proposal

Exploratory wellsite on land at Woodbarn Farm, Adversane Lane, Broadford Bridge, Billingshurst, RH14 9ED

Applicant

Celtique Energie Weald Ltd.

Date received

15 May 2012

Classification of the Proposed Development and requirement for an EIA

The development is considered to fall within either **Part 2 (d)** of Schedule 2 to the Town and Country Planning (Environmental Impact Assessment) Regulations 2011 (the 'EIA Regulations') as it relates to "deep drillings", or **Part 2(e)** of the same, relating to "surface installations for the extraction of coal, petroleum, natural gas and ores, as well as bituminous shale".

The applicant has decided to treat the proposal as 'EIA development' within the meaning of the EIA Regulations, because of the site's proximity to sensitive receptors, the nature of the development and the resulting potential for the development to result in significant effects on the environment.

The EIA Regulations allow for a developer to ask the local planning authority for their formal opinion (a 'Scoping Opinion') on the information to be supplied in the Environmental Statement (ES). This provides clarity as to what the local planning authority considers the main effects of the development are likely to be and, accordingly, the main topics on which the ES should focus.

The applicant has submitted a request for Scoping Opinion to WSCC. The following forms the Scoping Opinion of the County Council, based on the information provided by the developer on 15 May 2012.

SCOPING OPINION

1. Location

- 1.1 The proposed development would be located on land at Woodbarn Farm, between Pocock's Wood and Prince's Wood, some 500 metres west of the hamlet of Broadford Bridge, and nearly 3 kilometres south of Billingshurst (Ordnance Survey Grid Reference TQ 09057 21771). The proposed site location and boundary is identified on drawing number 3261/WL/01 and drawing number 3261/WL/02 submitted with the Scoping Request.

- 1.2 The application site extends to some 2 hectares in area, including the proposed exploration pad and new site access. It is in the open countryside, with various agricultural uses and buildings in the immediate area. Access to the site would be taken from a dedicated access extending to some 450m in length, taken from the western side of Adversane Lane.
- 1.3 The site is not subject to any landscape or ecological designations but is adjacent to and near woodland, some of it ancient, and near to several ponds and listed buildings.

2. Proposal

- 2.1 The development to which this Scoping Opinion relates is the development of an exploratory wellsite for the exploration, testing and evaluation of hydrocarbons (oil/gas). A temporary wellsite would be constructed within a compound, in which an exploratory borehole would be drilled. If hydrocarbons are found, 'drill stem testing' would be undertaken – i.e. using the drilling apparatus to carry out various tests, to determine the viability of the location.
- 2.2 The works proposed would be undertaken in four phases comprising construction, mobilisation/drilling, testing, and either restoration or retention. If a viable gas/oil source is found a new application would be submitted for production. If not, the site would be restored.
- 2.3 It is proposed that the construction, mobilisation and testing phases of the development would take between 21 weeks and 38 weeks, with a further 6 weeks for restoration. If the site is to be taken forward for production, it will need to be retained while an application for planning permission is prepared, a period which could take from 1 to 30 months. A temporary three year permission would therefore be sought.

3. Scope of the Environmental Statement

- 3.1 Every Environmental Statement (ES) must provide a full factual description of the development, and consideration of the 'main' or 'significant' environmental effects to which the development is likely to give rise. The ES should, wherever possible avoid the use of jargon and be written in easily-understood language.
- 3.2 Every ES must also contain all of the information set out in Part 2 of Schedule 4 to the EIA Regulations, along with such information from Part 1 as is reasonably required to assess the effects of the project. The ES should therefore contain, as a minimum:
 - o a full description of the development;
 - o measures to avoid/reduce/remedy significant adverse effects;
 - o data to identify and assess the main environmental effects;
 - o an outline of the main alternatives and reasons for the choice made; and
 - o a non-technical summary.
- 3.3 In addition, the following sets out the County Council's views as to what main/significant areas will need to be considered within any forthcoming ES.

- 3.4 It does not prevent the County Council from further requests for information at a later stage under Regulation 22 of the EIA Regulations, if deemed necessary.
- 3.6 **Ecology:** A desk-based assessment of the ecological potential of the site should be undertaken, along with a Phase 1 habitat survey and assessment of habitat suitability for protected and notable flora and fauna. Direct and indirect impacts should be considered for all phases of the development, including restoration, along with the potential interaction with other topics/impacts. If these initial studies indicate potential risks to ecological features, more detailed studies should be undertaken.
- 3.7 Supporting assessments should include detailed ecological surveys and mitigation/compensation measures to be taken in order to avoid any negative impact during all phases of development, and to investigate the opportunities to maintain and improve the biodiversity of the site and surroundings.
- 3.8 **Landscape/Visual Impact:** Whilst not in a designated landscape, the proposed site is within a previously undeveloped location and is potentially sensitive. The landscape shows a high level of intactness in the area with the landscape layout typically dating to the medieval period, demonstrating significant time/depth. There is a well used local public rights of way network and a number of residences within the locality of the proposals. There is potential for the proposal to have significant landscape impacts.
- 3.9 A Landscape and Visual Impact Assessment (LVIA) should be carried out taking into account, in particular:
- o the WSCC Land Management Guidance Sheet LW5 – Southern Low Weald;
 - o the WSCC Landscape Strategy (in particular guidelines for conserving historic landscapes and features; guidelines for commercial and industrial development including rural diversification; and guidelines for protecting the character of rural roads and lanes); and
 - o the Horsham District Council Landscape Character Assessment. Ref Character Areas J1 &2
- 3.10 'Zone of theoretical visibility/zone of visual influence' mapping is recommended to take account of the height of the proposed temporary rig.
- 3.11 A Tree Survey and Arboricultural Impact Assessment should be prepared in accordance with BS5837 (Trees in Relation to Construction) to accompany the application, taking into account, in particular, the potential impact on existing hedgerows and wooded boundaries.
- 3.12 The WSCC Historic Landscape Character Analysis should also be considered.
- 3.13 The LVIA should take into account the interaction with other topics/impacts such as road safety (e.g. the impact of visibility splays, highway improvements, signage and road markings), ecological surveys, security requirements and the outcome of the tree survey/arboricultural impact assessment. The findings of the LVIA should be presented in the ES.

- 3.14 **Noise:** The site is relatively remote and is likely to experience very low levels of ambient noise. Typical noise levels at similar locations monitored by Horsham District Council have produced daytime background noise levels of 30dBA.
- 3.15 As such it is considered that in preparing noise assessments, the adoption of the threshold criterion of 65dBA in Annex E to BS5228:2009 may still represent a significant impact even at some distance from the site. It should be noted that Annex E is informative only and that the assessment protocol is based on noise levels at exposed dwellings.
- 3.16 This annex also references a lower noise threshold of 55dB(LAeq 1 hour) for works involving large scale earth moving and other long term construction projects. Although the proposed works do not fall strictly within these descriptions the adoption of this lower noise limit should be considered in order to limit noise impacts in this tranquil area.
- 3.17 Taking this into account, noise levels at sensitive receptors, the location of which should be agreed with WSCC, should be assessed in accordance with the methodology set out in BS5228:2009. The calculations should include noise from all operations on the site, including vehicles making use of the access road, as well as a generalised assessment of the noise impact of additional traffic on the affected road network, in accordance with the relevant criteria set out in the Design Manual for Roads and Bridges.
- 3.18 **Transport and Access:** A separate Transport Assessment should be undertaken, reviewing the highway safety and capacity consequences of the proposal in accordance with the current Department for Transport 'Transport Assessment Guidance' and the WSCC Transport Assessment local guidance note¹. The applicant should agree the scope of the Transport Assessment with WSCC, along with the need for any other supporting highway information, notably a Stage One Safety Audit to review the proposed access.
- 3.19 The outcome of the Transport Assessment should feed into the Environmental Statement which should consider the potential transport and access impacts, in accordance with the Guidelines for the Environmental Assessment of Road Traffic (Guidance Note 1) and the Design Manual for Roads and Bridges.
- 3.20 **Ground and Groundwater Protection:** A source-pathway-receptor analysis should be undertaken for each stage of the proposed development to identify the potential for ground and groundwater contamination. The potential for the development to generate polluted run-off with resulting adverse effects on both water quality and surface water movements should be assessed together with measures to mitigate such effects during all stages of the development.
- 3.21 **Lighting:** An assessment of the potential impact of the lighting elements of the development should be undertaken, in accordance with Defra's document 'Lighting in the Countryside: Towards Good Practice'.
- 3.22 **Socio-Economic Impacts:** This should take into account the potential impact of the development on the health and well-being of the local community including an appraisal of the likely changes to employment, income, demand for

¹ <http://www2.westsussex.gov.uk/roadsandtransport/WSCC%20Transport%20Assessments%20-%20Guidance%20on%20Methodology%20for%20Developers.pdf>

local services, community demographics, and the aesthetic quality of the community.

Topics to be Scoped Out:

- 3.23 We agree that the following topics are unlikely to result in significant impacts so can be excluded from detailed consideration in the Environmental Statement:
- o Air Quality;
 - o Vibration;
 - o Flood Risk, Hydrology and Drainage;
 - o Archaeology: though a Heritage Statement should be submitted. This should include a desk-based archaeological risk assessment, along with measures for further, field-based assessment if necessary or desirable, and measures to mitigate the impact of groundworks on buried archaeological features, known or presently unknown;
 - o Agricultural Land and Soils: though the ES should detail how impacts on the land on which the site is located will be mitigated; and
 - o Waste.

Signed:



Jane Moseley, Principal Planner

for the Divisional Manager (County Development)

Date: 13 June 2012

Chapter 4 - Project Description

Appendix 4.1



MASSARENTI MR 7000

HYDRO DRILLING INTERNATIONAL S.p.A.

The "MR" series rigs, fully mechanically driven, are designed to ensure ease of operation in a wide variety of extreme terrain and climatic conditions and to enable the operator to work in areas requiring all-terrain vehicles such as in desert, swamp or jungle conditions and arctic tundra. The drawworks, carrier and mast capacities are matched to provide good performances. The rig is manufactured from high strength material and equipped with heavy duty hydraulic systems capable of providing power for all the hydraulic services.

The rig is trailer mounted and is designed to satisfy the needs of quick rig-up and easily transportable unit

In order to guarantee operations on multi-well cluster, the rig is equipped with a skidding system so to reduce idle time between wells

The drilling control panel is placed in such a way to provide to the driller a complete vision of the drill floor area.

Moreover:

- All decks are checkered plate to ensure a safe walking surface in icy or wet conditions;
- All rig's components can be designed for operations ranging from - 45 °C up to + 50 °C;
- Weather protection on the drill floor area is available;
- Sound-proof shelter for engine is available.



MAIN RIG CHARACTERISTICS

DEPTH RATING

8800 Ft w/ 5" DPs
12000 Ft w/ 3 1/2" DPs

MAST SPECS: 117Ft - Telescopic type hydraulic raising w/Guy lines tied to substructure base beams

Gross Cap. 550.000 Lbs
Static hook load 350.000 Lbs = 160 T

SUBSTRUCTURE

Height 17 Ft = 5.20 m
Rotary cap. 400.000 Lbs = 180 T
Setback cap. 250.000 Lbs = 113 T

DRILLING

D-WORKS: Massarenti MAS 2500 TR
DRIVE COMPOUND: 2 Engines
GM12V-71 acoustic housing
ROTARY TABLE: Ideco 23"
TRAVELING BLOCK: Massarenti T 430-G 175
SWIVEL: Mass. I-200

TOP DRIVE

BOWEN 250 HTP HYDRAULIC Rated load capacity 225 Ton
Maximum continuous output torque 2.200 Kg-m
At rotating speed 75 RPM
Maximum rotating speed 200 RPM
Top Drive pipe handler w/ maximum output torque cap. 3.300 Ft-Lbs



MUD SYSTEM

MUD PUMPS

MUD PUMPS: 2 x MAS 1000 Hp
Drive engine GM 16V-149T/12V149T1100-1200 HP acoustic housed
CENTR. PUMPS: 3 each 5x 6R

MUD SYSTEM

MUD SYSTEM: Tanks cap. 1130 bls = 180mc. c/w 6 mud agitators
DRLG.WATER TANK: 250 bls = 40 mc and ground reserve pit

S/SHAKER

Triple Cobra Shaker Package

DESANDER

3 x 8" cones

MUD CLEANER

Swaco 6T4 12 x 4" cones

DEGASSER

Burgess Magnavac 1000
Drive eng. SAME 75 Hp for mud treatment and mixing



WELL CONTROL EQUIPMENT

CHOKE MANIFOLD

3 1/16" - 10000 3 chokes, 2 manual and remote control

BLOW OUT PREVENTERS

Hydril MSP 21 1/4 - 2000
Hydril 13 5/8 - 5000
CIW double 13 5/8 - 5000 U
CIW single 13 5/8 - 5000 U (shear rams)

BOP CONTROL

Koomey 120 Gls (22 x 11 gls bottles) - 8 control stations



OTHER EQUIPMENT

AC RIG GENS

SCANIA 400 KVA 380 V - 3 Ph - 50 Hz - Drive SCANIA DC12-54
+ backup

FUEL TANKS

23 mc cap.

RIG SITE

Housing and auxiliary equipment to run operations Firefighting equipment and safety aids

RACKING IN DOUBLE

5" DPs 9360 Ft
3 1/2" DPs 13000 Ft

DRILLSTRING

5"-19.5 Grade G105 - S135
3 1/2-13.3 Grade G105
DCs 8" - 6 1/2" - 4 3/4" NT



HYDRO DRILLING INTERNATIONAL S.p.A.



Via Bruno Buozzi, 56 - 48123 Ravenna (Italy)
Tel. +39 0544 683311 - Fax +39 0544 683391
E-mail: info@hydrodrilling.com - www.hydrodrilling.com

Appendix 4.2

With the development of the Clean Enclosed Burner (CEB[®]) Bekaert CEB Technologies Canada Ltd. offers an environmentally safe alternative for the conventional industrial flares. A solution for reducing emissions from petroleum refinery operations, oil & gas processing plants and the chemical industry, is now ready to be deployed!

What about 'Flaring'?

Flaring is a high-temperature oxidation process used to burn waste gases from industrial operations, mostly hydrocarbons. Flares are used extensively to dispose of (1) purged and wasted products from refineries, (2) unrecoverable gases emerged with oil from oil wells, (3) vented gases from blast furnaces and (4) gaseous wastes from chemical industries.

Why is flaring an issue within the industry?

Conventionally, combustion is done using an open pipe in combination with a pilot-flame on top. The flame is completely atmospheric and may, on full capacity, reach lengths up to 75 meters and more. The quality of this combustion is very poor. The emission contains several percentages of un-burned Methane, Hydro-carbons and CO due to incomplete combustion. Because of the long flame length there's time enough to form a lot of NO_x, which causes acid rain (next to SO_x and NH₃). There's also a huge amount of emitted radiation in terms of heat and light. Steam injection, used to reduce black smoke and thermal radiation from elevated flares, creates irritating high-frequency jet-like whines and low-frequency rumbles.



CEB test unit at NAM test location. Both flares in operation !

Why is the CEB a better alternative?

The Clean Enclosed Burner is a better alternative due to a complete combustion process, which has the following important benefits:

1. A complete combustion transforms the Methane for 100% into CO₂ and water. Considering the greenhouse effect, the Global Warming Potential (GWP) of Methane is 21 times higher than the GWP of CO₂. So, the more complete the combustion process, the less influence it has on global warming.
2. Hydrocarbons (NM-VOS) and CO formed by incomplete combustion create the condition of producing ozone directly at ground levels which is the prior cause of smog. Also, CO itself is very toxic.
3. A clean combustion hardly produces any NO_x. Next to SO_x and NH₃, NO_x causes acid rain. NO_x also causes the production of toxic ozone (as mentioned at point 2).
4. An enclosed combustion prevents the environment being exposed to IR radiant, heat and light.
5. A combustion in the CEB, with a controlled flame length, offers the possibility to recover heat and energy. With an optional heat exchanger, the system is capable of producing low pressure steam, which can be transferred for instance back into the plant for re-use.

How does the CEB work?

The CEB combustion process is based on surface combustion. This is a gas burning technique where premixed gas and air burns on a surface layer of a permeable medium. The CEB combustion occurs in the blue flame mode: blue flames hover above the surface and release the major part of the energy in a convective way.

Additional features

Beside the recovery of heat and energy, the Clean Enclosed Burner offers another advantage. The off-gases can be permanently monitored, both on quality and quantity. In terms of environmental protection the CEB produces extremely low NO_x quantities. Also the CO production is second to none compared to any existing flare system. As the CEB does not produce any visible flame, any radiation, smoke or soot it is a fact that the CEB can be placed at a very small area. In other words, we do not need any large areas anymore and therefore the existing areas that are now solely being reserved for flaring activities can be minimised: less than 10% of the traditional area will be occupied by CEB units.



Three CEB Units in operation ¹(10.5 Million Scuff /day)

Bekaert CEB Technologies Canada Ltd.
3000 Petro Canada Centre
150 – 6th Avenue S.W.
Calgary, Alberta
Canada T2P 3Y7
Tel. 1(403) 399-9927
Fax. 1(403) 539 5098
E-mail swen.theil@bekaert.com
Website www.ceb-technologies.com



[product portfolio](#)

Show contact persons

Products/Services

- CEB Technology Description
- General specifications
- CEB 100
- CEB 350
- CEB 500
- CEB 4500**
- CEB Modular HP
- CEB Modular LP
- CEB Services

Bekaert > Home > Products/Services > CEB 4500

**Bekaert Flaring
CEB 4500**



Capacity*	100 000 Nm ³ /day	3.5 MM SCFD
Power	45 MW	153 mmBtu/h
Minimum turndown ratio**	1/10	
Footprint and Height	3 x 2,6 x 6,2 m	10' x 8'5" x 20' ft
Weight	7 500 kg	16,000 lbs
Inlet pressure	25 mbarg - 8 barg	10"WC - 116 psig
Electrical power consumption	5 kW	
Battery limit	3" ANSI 150 lbs RF	
Operating Temperature	1100 - 1200°C	2,000 - 2,200 °F
Ground Temperature	Ambient during operation	

* Capacity is based on natural gas with gross heating value of 39,82 MJ/Nm³.
 ** Turndown ratio can be increased for specific projects with customized units.
 *** Electrical power consumption for high pressure unit. With low pressure systems, power consumption is determined case per case.

Chapter 7 – Ecology

Appendix 7.1 - Desktop Report



Desktop Biodiversity Report

Land at Willow Prospect, Billingshurst + 1km radius

ESD/11/376

Prepared for Sam Patrone (URS Scott Wilson Ltd)
30th August 2011



This report is not to be passed on to third parties without prior permission of the Sussex Biodiversity Record Centre.
Please be aware that printing maps from this report requires an appropriate OS licence.

**Sussex Biodiversity Record Centre
report regarding
land at Willow Prospect + 1km radius
30/08/2011**

**Prepared for Sam Patrone
URS Scott Wilson Ltd
ESD/11/376**

The following information is enclosed within this report:

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

SNCI

None

SSSI

None

Other Designations/Ownership

None

Habitats

Ancient Woodland;Traditional Orchard.

Important information regarding this report

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

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

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

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

Copyright

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

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

Data usage

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

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

Ordnance Survey maps

Members of the public wishing to reproduce maps made by the SxBRC under East and West Sussex County Council or Brighton and Hove City Council licences must use copying facilities that have been authorised by the Ordnance Survey. A list of printers and copying shops licensed to reproduce maps can be found on the Ordnance Survey website: www.ordnancesurvey.co.uk/oswebsite/business/copyright/printers/index.html

Impartiality

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

Supplying records

Our desktop biodiversity reports are only as good as the data we hold. We rely on the continuous submission of records to keep our database up-to-date. We are always grateful to receive records from ecological consultants and members of the public alike. We accept records in many different formats – please see our website for more details: <http://sxbr.org.uk/biodiversity/recording/#sending-records>

Confidential Records

Badgers

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



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

With continued persecution of badgers, often for the most cruel and barbaric 'sport', **badger records are not included in Sussex Biodiversity Record Centre (SxBRC) reports**, as it has been requested that they remain confidential.

If you need further information about badgers in your enquiry area please call the Badger Trust Sussex on 07910 198720 or visit their website: www.badgertrust-sussex.org.uk

The following species are not included in desktop biodiversity reports, but are flagged up as confidential at the end of the separate species inventories.

Otters

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



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

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

If you require further information about otters in your enquiry area, please contact the SxBRC. Permission to release record details will be required from the Sussex Wetland Landscapes Project and the SxBRC will liaise with the project officer on the enquirer's behalf.

Wood White and Duke of Burgundy butterflies

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

Other confidential records

The SxBRC holds records of other species that are confidential. Confidentiality can be for a variety of reasons but is usually to benefit the site or the species. Full details of these records are not disclosed but the enquirer is referred back to the SxBRC if further information is needed.

Any confidential records for your enquiry area will be flagged up at the end of the Rare Species Inventory, the Protected Species Register and the BAP Species Inventory.

Birds

The SxBRC holds approximately one million bird records provided by the Sussex Ornithological Society (SOS). However, **records within the breeding season of 15 Schedule 1 birds and three other species which are classed as sensitive in Sussex are not included in our reports.** Please see the Sussex Bird Inventory explanation sheet for further information.














MAPS

There are three maps included in a standard desktop biodiversity report which show:






- 1) Designated sites (statutory and non-statutory)
- 2) Habitats and natural features
- 3) Ownership and management








The key on a map only shows those layers which are located within the enquiry area. Below are the details of all layers which we currently use in our maps.

Designated sites







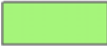


	Area of Outstanding Natural Beauty (AONB) Dataset downloaded from MAGIC website. Owned by NE.
	Country Park Dataset downloaded from NE website.
	Local Nature Reserve (LNR) Dataset downloaded from NE website.
	Marine Site of Nature Conservation Importance (MSNCI) Supplied by ESCC in 2005.
	National Nature Reserve (NNR) Dataset downloaded from NE website.
	National Park Dataset downloaded from NE website.
	Notable Road Verge Owned and provided by ESCC and WSCC.
	Ramsar Dataset downloaded from NE website.
	Regionally Important Geological/Geomorphological Site (RIGS) Data supplied by the Booth Museum, Brighton and digitised by SxBRC in April 2009.
	Site of Nature Conservation Importance (SNCI) Data supplied by WSCC, ESCC & BHCC.
	Site of Special Scientific Interest (SSSI) Dataset downloaded from NE website.
	Special Area of Conservation (SAC) Dataset downloaded from NE website.
	Special Protection Area (SPA) Dataset downloaded from NE website.

Habitats and natural features

	Ancient/Veteran Tree Merged dataset created in July 2009. Data from Ancient Tree Hunt (national survey carried out in 2007/2008) and Tree Register of the British Isles (a charity which collates and updates data on notable trees).
	Ancient Woodland Dataset downloaded from NE website.
	Black Poplar Dataset created by SxBRC based upon species records arising from Sussex Otters and Rivers Partnership.
	Chalk Grassland Merged dataset from NE and SDJC created in 2005.
	Floodplain Grassland Dataset downloaded from NE website.

	Ghyll Woodland Boundaries drawn on paper maps by Dr Francis Rose which were then digitised by SxBRC. Not ground-truthed.
	Heathland High Weald Heathland data created by the High Weald Unit in 2006. The rest of Sussex Heathland data was created by SxBRC, with funding from WSCC and RSPB in 2007.
	Reedbed/Fen Originally created in June 2007 by SxBRC. Ongoing updates provided by RSPB Sussex Reedbed Officer.
	Open Water Data extracted from Ordnance Survey Mastermap real world objects layers. This includes inland and tidal, running and standing water.
	Saline Lagoon Dataset downloaded from NE website.
	Traditional Orchard Dataset downloaded from NE website.
	Vegetated Shingle Dataset downloaded from NE website.

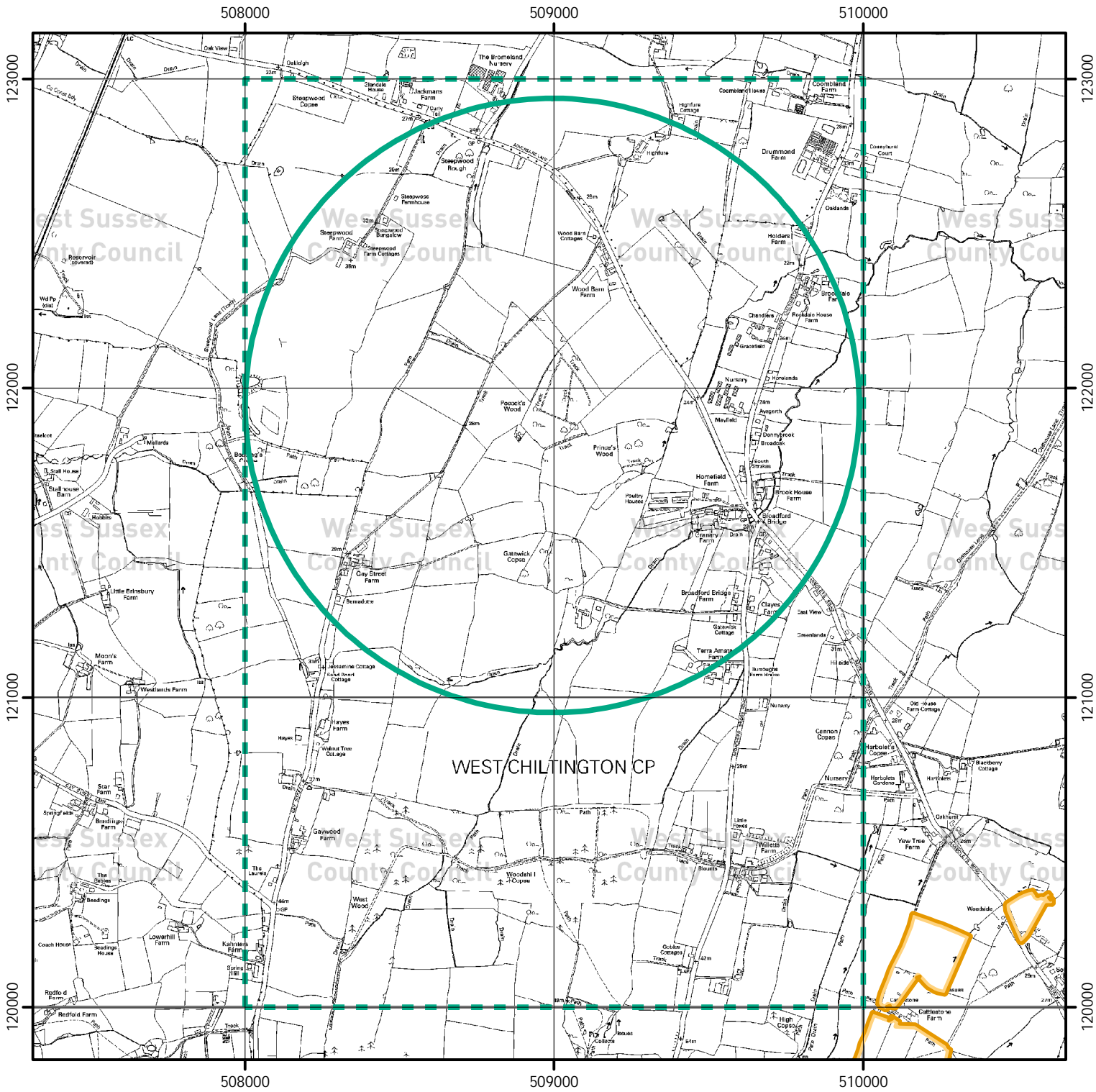
Ownership and management

	National Trust Property Owned and provided by National Trust.
	RSPB Reserve Owned and provided by RSPB.
	Sussex Wildlife Trust Reserve Created and maintained by SxBRC on behalf of SWT.
	Woodland Trust Site Owned and provided by the Woodland Trust.
	Environmental Stewardship Agreement Dataset downloaded from NE website.
	Higher Level Stewardship (HLS)
	Entry Level Stewardship (ELS)
	Organic ELS
	Organic HLS plus ELS
	ELS plus HLS




Abbreviations

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

Designated Site Map (ESD/11/376):
 Land at Willow Prospect, Billingshurst + 1km radius
 Prepared for Sam Patrone (URS Scott Wilson Ltd) - 30/08/2011

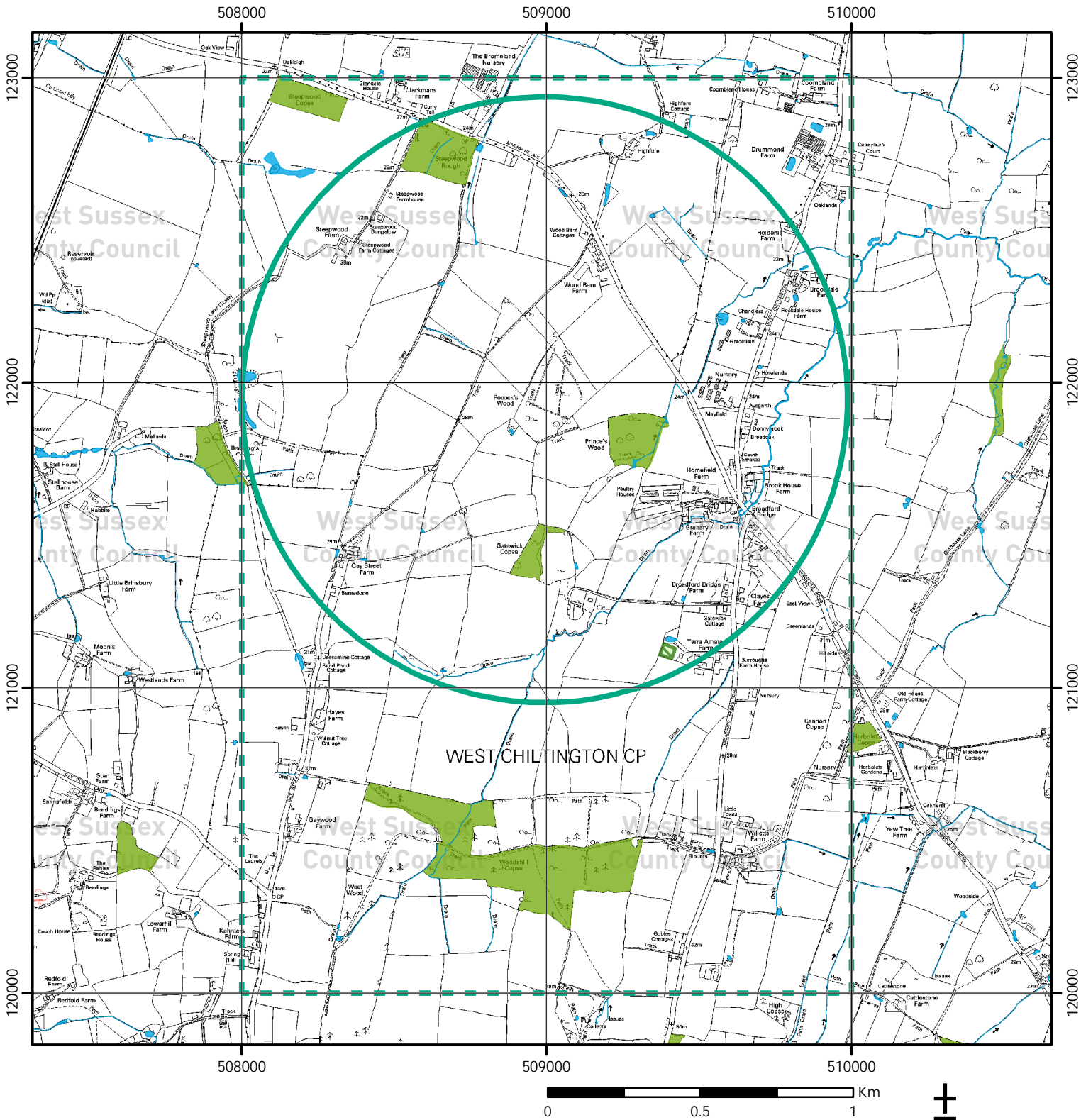


Key to Map:







-  Enquiry Area
-  Species Search Area
-  SNCI

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RAMSAR, Special Area of Conservation (SAC), Special Protection Area (SPA), National Park, Area of Outstanding Natural Beauty (AONB), National Nature Reserve (NNR), Site of Special Scientific Interest (SSSI), Local Nature Reserve (LNR) and Country Park data reproduced with permission of Natural England. Site of Nature Conservation Importance (SNCI) data provided by East and West Sussex County Councils, and Brighton & Hove City Council. Notable Road Verge data supplied by East and West Sussex County Councils. Regionally Important Geological/Geomorphological Sites (RIGS) data provided by Booth Museum of Natural History (on behalf of Sussex RIGS Group). © Crown Copyright. All rights reserved 2011.



Key to Map:

-  Enquiry Area
-  Species Search Area
-  Ancient/Veteran Tree
-  Open Water
-  Ancient Woodland
-  Traditional Orchard

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Ancient woodland, traditional orchards, floodplain grassland (coastal and floodplain grazing marsh), vegetated shingle and saline lagoon data reproduced with permission of Natural England. Chalk grassland data supplied by Natural England and South Downs Conservation Board. Black Poplar data supplied by Sussex Otters & Rivers Partnership. Ghyll woodland data supplied by Dr Francis Rose. Reedbed data funded by Environment Agency and West Sussex County Council is provided by Sussex Biodiversity Record Centre and maintained by RSPB. Heathland data funded by West Sussex County Council, RSPB and High Weald AONB Unit. Ancient/Veteran tree data derived from results of the Ancient Tree Hunt Project and the Tree Register of the British Isles (TROBI). © Crown Copyright. All rights reserved 2011.

This map contains ancient woodland data revised under the Weald and Downs Ancient Woodland Program (2010) on behalf of Natural England. Whilst every effort has been made to make this revision as accurate as possible, the inventories contain limitations and remain provisional. Further revisions are also pending within East Sussex. Habitat data held by Sussex Biodiversity Record Centre (SxBRC) are created in-house or obtained from a variety of dataset providers. SxBRC continually strive to further improve and update these data wherever possible. However, this map should be treated as indicative rather than definitive: data may be generated from a range of field survey and/or predictive methods, each of which may have its own inherent limitations. In some situations a recent ground survey may be required to establish definitively the current status of a particular habitat at a specific location.

Ownership & Management Map (ESD/11/376):

Land at Willow Prospect, Billingshurst + 1km radius

Prepared for Sam Patrone (URS Scott Wilson Ltd) - 30/08/2011



Sussex Biodiversity Record Centre

Woods Mill, Henfield, W Sussex BN5 9SD

Tel: 01273 497 558/557

Email: sxbrcc@sussexwt.org.uk

Website: www.sxbrcc.org.uk

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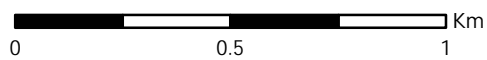
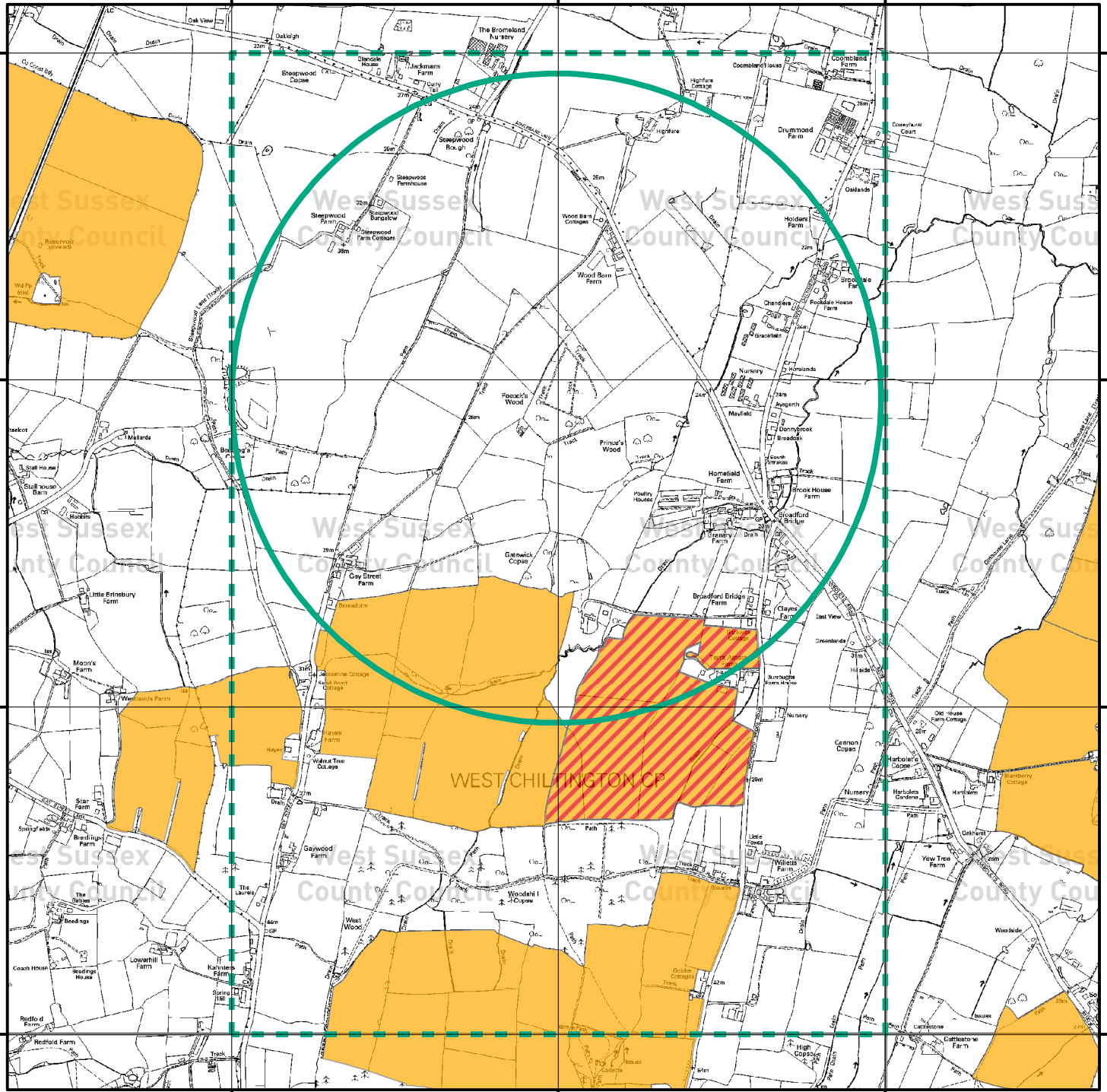
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Key to Map:

-  Enquiry Area
-  Species Search Area

Environmental Stewardship Agreements:

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

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Environmental Stewardship Agreement data reproduced with permission of Natural England. Other datasets reproduced respectively with permission of the Woodland Trust, National Trust, Sussex Wildlife Trust and Royal Society for the Protection of Birds. © Crown Copyright. All rights reserved 2011.

Bat species

There are 18 species of bat in the UK (17 of which are known to be breeding here), all of which have been recorded in Sussex, although some more frequently than others and at different times of the year:

Barbastella barbastellus **Barbastelle**

Eptesicus serotinus **Serotine**

Myotis alcathoe **Alcathoe**

Myotis bechsteinii **Bechstein's**

Myotis brandtii **Brandt's**

Myotis daubentonii **Daubenton's**

Myotis myotis **Greater mouse-eared**

Myotis mystacinus **Whiskered**

Myotis nattereri **Natterer's**

Nyctalus leisleri **Leisler's**

Nyctalus noctula **Noctule**

Pipistrellus nathusii **Nathusius's pipistrelle**

Pipistrellus pipistrellus **Common pipistrelle**

Pipistrellus pygmaeus **Soprano pipistrelle**

Plecotus auritus **Brown long-eared**

Plecotus austriacus **Grey long-eared**

Rhinolophus ferrumequinum **Greater horseshoe**

Rhinolophus hipposideros **Lesser horseshoe**

Three other bat species have been recorded in Sussex as migrants or vagrants: Savi's pipistrelle (*Hypsugo savii*), Kuhl's pipistrelle (*Pipistrellus kuhlii*) and parti-coloured bat (*Vespertilio murinus*).

Five species are included in Annex II of the EU Habitats Directive: Barbastelle, Bechstein's, greater mouse-eared, greater horseshoe and lesser horseshoe. All 18 species are included in Annex IV.

Seven species are included in the UK Biodiversity Action Plan: Barbastelle, Bechstein's, brown long-eared, greater horseshoe, lesser horseshoe, noctule and soprano pipistrelle.

Background

Bats are the only mammals capable of true flight. Those found in the UK feed exclusively on insects and use a sophisticated form of sonar to navigate and catch their prey at night. In late spring and summer, female bats form maternity colonies to raise their young. This is when they are most obvious to us, as they leave the roost at or after sunset in search of food. Bats hibernate during the winter when insects are scarce, usually at a different site to the maternity roost where a constant cool temperature can be found i.e. in underground sites or within deep crevices in trees or buildings. **Bats return to the same roost sites every year, so even if the animals themselves are not present, the roost is still legally protected.**

Unfortunately there are many misconceptions about bats. They are in fact sociable, intelligent, clean animals that rarely come into contact with humans. They do not build nests and very rarely cause structural damage to buildings.

Current status and threats

Bat populations have suffered huge declines in the last century. The common pipistrelle (*Pipistrellus pipistrellus*) and soprano pipistrelle (*Pipistrellus pygmaeus*) remain the most abundant and widespread species of bat, but are thought to have suffered from a huge reduction in numbers. Estimates from a National Bat Colony Survey suggest a population decline of around 70% between 1978 and 1993.

This reduction in bat numbers is largely due to their roosts being disturbed or destroyed, a loss of suitable feeding and flightline habitat (e.g. hedgerows) and a reduction in insect numbers (e.g. through farming intensification and the use of pesticides). A number of species are now included in the National Bat Monitoring Programme, run by the Bat Conservation Trust (BCT), which gives up-to-date information on population trends.

Bats are also particularly vulnerable to human interference for the following reasons:

- They have a low reproductive rate; generally one baby a year.
- They require specific conditions for each of their roost types.
- They are very secretive and often go unnoticed until discovered by building works or home improvements.

Consequently, bats and their roosts receive some of the highest levels of legal protection.

Bats and the law

All species of bat and their roosts are protected by UK and European law; under the Wildlife & Countryside Act 1981 (WCA) in the UK (to implement the Berne Convention) and the Habitats Directive in the EU, which is implemented in the UK through the The Conservation of Habitats and Species Regulations 2010. Bats and their roosts may also be protected by site designations, for example if their roost site or feeding grounds are notified as a Special Area of Conservation (SAC) or a Site of Special Scientific Interest (SSSI).

You could be committing a criminal offence if you:

1. Deliberately capture, injure or kill a bat
2. Intentionally or recklessly disturb a bat in its roost or deliberately disturb a group of bats
3. Damage or destroy a bat roosting place (even if bats are not occupying the roost at the time)
4. Intentionally or recklessly obstruct access to a bat roost
5. Possess or advertise/sell/exchange a bat (dead or alive) or any part of a bat

It is not illegal to:

Tend/care for a bat solely for the purpose of restoring it to health and subsequent release. (This should always be done by an experienced bat handler, contact details of which can be found through the Sussex Bat Group.)

Licensing

If you have a bat roost in your property, it does not necessarily mean that building work cannot take place. Work can be planned so as not to interfere with the roost and at a time that bats may be absent. If you are planning any sort of work that may interfere with bats, advice must be sought first from Natural England (see contact details below). Similarly, if you discover bats after work has begun, you must stop and contact Natural England for their advice before continuing.

Licences to permit illegal activities relating to bats and their roost sites can be issued for specific purposes. It is an offence not to comply with the terms and conditions of such a licence. If you carry out work affecting bats or roosts without a licence, you will be breaking the law.

Further advice and information:

Bat Conservation Trust

The national charity working for bat conservation.

Website: www.bats.org.uk

Bat helpline: 0845 1300 228

Email: enquiries@bats.org.uk

Natural England

The government body responsible for issuing licences for work that may affect bats or their roosts.

Website: www.naturalengland.org.uk

General and licensing enquiries. Tel: 0845 601 4523 (local rate).

West & East Sussex Regional Office (Contact Jo Clarke).

Tel: 0300 060 0300

Email: jo.clarke@naturalengland.org.uk

Sussex Bat Group

A local voluntary group working for the conservation of bats in Sussex.

Website: www.sussexbatgroup.org.uk

Tel: 01903 816298

Email: contact@sussexbatgroup.org.uk

SUSSEX BAT INVENTORY REPORT SUMMARY

Please note that all species of bat and their roosts are protected by UK and European law, under the Wildlife and Countryside Act 1981 (WCA) in the UK and the Habitats Directive in the EU. Bats and their roosts may also be protected by site designations, for example if their roost site or feeding grounds are notified as Special Area of Conservation (SAC) or a Site of Special Scientific Interest (SSSI).

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4. Intentionally or recklessly obstruct access to a bat roost.
5. Possess or advertise/sell/exchange a bat (dead or alive) or any part of a bat.

Key to Indicators

M/S	Mating/Swarming
H	Hibernaculum
FR	Feeding Roost
MR	Maternity Roost
UR	Unspecified Roost
D	Droppings

Willow Prospect, Billingshurst + 1km radius

30 August 2011 ESD/11/376 Search Area: TQ0820 to TQ0922

Sam Patrone (URS Scott Wilson Ltd)

Common Name	Latin Name	No of Records	Key to Indicators					
			M/S	H	FR	MR	UR	D
Bat sp.	<i>Chiroptera</i>	3	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Brown Long-eared Bat	<i>Plecotus auritus</i>	1	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Long-eared sp.	<i>Plecotus</i>	2	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Natterer's Bat	<i>Myotis nattereri</i>	1	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Pipistrelle Bat (species aggregate)	<i>Pipistrellus pipistrellus</i>	3	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Pipistrelle sp.	<i>Pipistrellus</i>	2	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>

SUSSEX BAT INVENTORY REPORT

Please note that all species of bat and their roosts are protected by UK and European law, under the Wildlife and Countryside Act 1981 (WCA) in the UK and the Habitats Directive in the EU. Bats and their roosts may also be protected by site designations, for example if their roost site or feeding grounds are notified as Special Area of Conservation (SAC) or a Site of Special Scientific Interest (SSSI).

You could be committing a criminal offence if you :

1. Deliberately capture, injure or kill a bat.
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Key to Indicators

M/S	Mating/Swarming
H	Hibernaculum
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MR	Maternity Roost
UR	Unspecified Roost
D	Droppings

Willow Prospect, Billingshurst + 1km radius

30 August 2011 ESD/11/376 **Search Area:** TQ0820 to TQ0922

Sam Patrone (URS Scott Wilson Ltd)

The contextual information in this report is based on the latest data available to the Record Centre and is regularly updated.

Chiroptera

Bat sp.

Chiroptera (from the ancient Greek for 'wing hand') is the natural group, or order, that covers all the bats. In Britain we have 14 bat species and all have the highest level of legal protection. Many people simply record bats in general when they are not able to assign them to a particular species and these are then included under Chiroptera in our reports.

Date	Location	Grid Reference	Recorder	Sampling Method	M/S	H	FR	MR	UR	D	Abundance	Notes
28/08/1987	Willets End, Broadford Bridge, West Sussex (VC13)	TQ096214	NE Bat Worker	Building Inspection	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>		

01/07/1985	Gay Street Farmhouse, Gay Street, West Sussex (VC13)	TQ083214	NE Bat Worker	Building Inspection	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>		
01/05/1982	South Strakes, Broadford Bridge, West Sussex (VC13)	TQ096217	NE Bat Worker	Building Inspection	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	1 Dead	Dead in water butt.

Myotis nattereri

Natterer's Bat

A medium-sized bat with long ears inhabiting woodland and mixed farmland, often flying near water. In summer it roosts in old buildings, barns and hollow trees and it hibernates in caves, mines and other underground places. Found throughout much of the British Isles, but generally scarce. The UK population of Natterer's bats may be of international importance and it is widespread in Sussex.

Date	Location	Grid Reference	Recorder	Sampling Method	M/S	H	FR	MR	UR	D	Abundance	Notes
24/04/2003	Gaywood Farmhouse, Gay Street, Pulborough, West Sussex (VC13)	TQ082207	NE Bat Worker	Building Inspection	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	1 Present	

Pipistrellus

Pipstrelle sp.

There are three species of Pipistrelle bat found in the UK; common (*Pipistrellus pipistrellus*), soprano (*P. pygmaeus*) and Nathusius (*P. Nathusii*). Common and soprano pipistrelles were previously recorded as one species, but they are now recognised as separate species, with a peak frequency echolocation at 45 kHz and 55 kHz respectively. The following records refer to an aggregate of the two species, where the audio frequency or specific species is undetermined. Little is known about the Nathusius pipistrelle, but the other two species are found in all types of countryside (except very exposed areas) as well as in towns and suburbs. Summer roosts are usually in buildings, though tree holes and bat boxes are also used. Hibernation sites are in buildings and tree holes. Both common and soprano pipistrelles are widespread in Sussex, while Nathusius' is much rarer.

Date	Location	Grid Reference	Recorder	Sampling Method	M/S	H	FR	MR	UR	D	Abundance	Notes
23/04/2003	Gaywood Farmhouse, Gay Street, Pulborough, West Sussex (VC13)	TQ082206	NE Bat Worker	Building Inspection	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		
24/02/1998	Broadford Bridge Farm, Adversane, West Sussex (VC13)	TQ096212	Martin Love	Building Inspection	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>		

*Pipistrellus pipistrellus***Pipistrelle Bat (species aggregate)**

The commonest bat in the British Isles, this small species is found in all types of countryside, except very exposed areas, as well as in towns and suburbs. Summer roosts are usually in buildings, though tree holes and bat boxes are also used. Winter roosts are in buildings, tree holes and caves.

Pipistrelles were often recorded as either 45 kHz or 55 kHz depending on the pitch of the echolocation calls picked up by bat detectors. These are now separate species; *Pipistrellus pipistrellus* being the 45 kHz animal and *P. pygmaeus* the 55 kHz.

This is the aggregate version of the Pipistrelle where the audio frequency or specific species is undetermined.

Both *Pipistrellus pipistrellus* (45 kHz) and *P. pygmaeus* (55 kHz) are widespread in Sussex and, like all bats are a legally protected species.

Date	Location	Grid Reference	Recorder	Sampling Method	M/S	H	FR	MR	UR	D	Abundance	Notes
01/06/1982	Coombes Nursery, Broadford Bridge, West Sussex (VC13)	TQ0921	NE Bat Worker	Building Inspection	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>		
31/05/1982	Coombes Nursery, Broadford Bridge, West Sussex (VC13)	TQ0922	NE Bat Worker	Building Inspection	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		Identified by signs.
31/05/1982	Broadford Bridge, Coombes Nursery, West Sussex (VC13)	TQ096216	Anon	Droppings	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		1950s bungalow, in attic.

*Plecotus***Long-eared sp.**

It is difficult to distinguish the rare grey long-eared bat from the much more common brown long-eared bat without studying in the hand. This also applies to identifying the species from their droppings.

Date	Location	Grid Reference	Recorder	Sampling Method	M/S	H	FR	MR	UR	D	Abundance	Notes
06/09/2003	Gaystreet Farmhouse, Gay Street, Pulborough, West Sussex (VC13)	TQ083214	NE Bat Worker	Building Inspection	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	57 Present	
23/04/2003	Gaywood Farmhouse, Gay Street, Pulborough, West Sussex (VC13)	TQ082206	NE Bat Worker	Building Inspection	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		

Plecotus auritus

Brown Long-eared Bat

BAP

One of the more common British bat species, but difficult to distinguish from the much rarer grey long-eared bat (*Plecotus austriacus*), unless in the hand. It frequents woodland and orchards and has summer roosts in older buildings and trees. It often hibernates in caves, tunnels and mines. The brown long-eared has declined in the British Isles though it remains widespread.

Date	Location	Grid Reference	Recorder	Sampling Method	M/S	H	FR	MR	UR	D	Abundance	Notes
04/11/1995	Gay Street Farm, Gay Street, W. Chiltington, West Sussex (VC13)	TQ083214	NE Bat Worker	Building Inspection	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	8 Adult	

SUSSEX BIRD INVENTORY



The SxBRC holds approximately one million bird records provided by the Sussex Ornithological Society (SOS). These records range from 1990 to 2009. We are confident that this information will aid developers, consultants and members of the public to make informed decisions as birds are important indicator species of key habitats and can be more easily monitored than many other species groups.

N.B. The SxBRC does not hold all SOS bird data. Records within the breeding season of 15 Schedule 1 birds and three other species which are classed as sensitive in Sussex are not included in our biodiversity reports. Any breeding season records of these species within your search area will be flagged up at the top of the Sussex Bird Inventory. It is critical that you contact the SOS directly for further information as the birds in question will be protected by law and may be affected if you are carrying out potentially damaging operations. (Email: conservation@sos.org.uk)

The list of Schedule 1 and other sensitive birds for which only the SOS holds breeding data for is available on our website: www.sxbrc.org.uk/enquiries/SOS-excluded-data.pdf

Birds, their statuses and the law

Wildlife and Countryside Act

All British birds, their nests and eggs are protected by UK Law. It is an offence to take, kill or injure any wild bird or to take, damage, destroy any nest or egg of any wild bird under Part 1 of the Wildlife and Countryside Act 1981. Details of Schedule 2 and Schedule 3 can be found on:

www.rspb.org.uk/ourwork/policy/wildbirdslaw/birdsandlaw/wca/schedules.asp

! Schedule 1 birds

Schedule 1 of the Wildlife and Countryside Act 1981 provides an additional tier of protection so that rare species are specially protected by increased penalties and cannot be intentionally or recklessly disturbed when nesting. **Schedule 1 status also infers a right of arrest** by a police officer if someone is suspected of committing certain offences against one of these species.

Nesting birds

It is an offence under Section 1 of the Wildlife and Countryside Act of 1981 to intentionally take, damage or destroy the nest of any wild bird while it is in use or being built.

Hedgerow removal and birds

It is advisable not to trim, cut or remove hedgerows during the bird nesting season. You will be violating the Wildlife and Countryside Act if there are birds nesting within it due to the disturbance or destruction of their habitat whilst nesting (see **nesting birds** section above). The Hedgerows Regulations were introduced in 1997 to protect important hedgerows in the countryside. The regulations state that it is a criminal offence, unless an exception applies, to deliberately remove or otherwise destroy a hedgerow without permission. Please apply to your local planning authority for a Hedgerow Removal Application. Domestic hedges are not included in this regulation, however it is still illegal to cut or remove any hedges if birds are suspected to be nesting in it.

Birds in roofs

There are various species that may nest in roofs. Unless they are causing a health hazard, the nests, eggs and chicks are protected by law. The parent birds must not be prevented from gaining access to their nest. Many of the birds that use roof spaces are now species of conservation concern because of their population decline over the past 25 years. Starlings and House Sparrows are Red listed, and Barn Owls, House Martins and Swallows are Amber listed (see overleaf for details). Roofs are also important for Swifts.

For further information about birds and the law contact the RSPB: www.rspb.org.uk or phone 01767 680551.

Environmental Stewardship Target Species

Farmland birds are one of the key targets of which a landowner can be awarded points through the Higher Level Stewardship scheme. Each Joint Character Area (e.g. High Weald, South Downs, South Coast Plain etc.) has specific key bird species whose populations must be maintained or enhanced to gain points as part of the land owner's 'Farm Environment Plan'. This can be done through a combination of management practices which should provide year round habitat requirements, in locations where these birds are known to be present or within 2km of such sites. If a key farmland bird species appears in your report, it will show to which Joint Character Area it is linked.

For more information about agri-environment schemes visit:

www.defra.gov.uk/erdp/schemes/es or www.rspb.org.uk/ourwork/farming/policy/index.asp

BAP Biodiversity Action Plan Species (UK BAP)

Twenty-six species of bird are identified as Priority Species in the UK Biodiversity Action Plan (UK BAP), each the subject of a dedicated action plan which seeks to reverse their declines and protect vulnerable populations. Any Priority Species recorded within your enquiry area will be indicated in the species information of the bird report. Visit www.ukbap.org.uk for more information.

Sussex Biodiversity Action Plan Species

Barn Owl is the only bird to have a Sussex Biodiversity Action Plan, however Skylark, Song Thrush and Swift each have a Species Statement for Sussex. These can be viewed on the Sussex Biodiversity Partnership website:

www.biodiversitysussex.org

N Natural Environment & Rural Communities (NERC) Act

There are 49 bird species on the England Biodiversity List which was drawn up to meet the requirements of Section 41 of the Act. Further details of the NERC Act can be found at: www.opsi.gov.uk/acts/acts2006/ukpga_20060016_en_1

Birds of Conservation Concern 3 (2009)

Every five years the leading governmental and non-governmental conservation organisations in the UK review the population status of the 247 species of bird that are regularly found in the UK. There are three lists – Red, Green and Amber into which each of the species has been placed. Forty species are Red-listed, 121 are Amber-listed and 86 are Green-listed. You will see an icon next to a species within the bird report indicating which category it is in. The status decisions are based on several factors which include: the species' global and European conservation status; recent and historical decline; whether it is a rare breeder; if it is only confined to a few sites in the UK; and if the species is of international importance (if we get over 20% of a European species' population breeding in the UK for example).

R Red List species are those that are **Globally Threatened** according to IUCN criteria; those whose population or range has decline rapidly in recent years; and those that have declined historically and not shown a substantial recent recovery.

A Amber List species are those with **Unfavourable Conservation Status** in Europe; those whose population or range has declined moderately in recent years; those whose population has declined historically but made a substantial recent recovery; rare breeders; and those with internationally important or localised populations.

Green List species are those that do not fulfil any of the above criteria. Some of these species are however protected by law and the list includes some Schedule 1 species which have the highest level of protection. Please see the Schedule 1 birds section on page 1. A green icon will not appear in our reports but the status will be listed with any bird records.

This information has been obtained from '**Birds of Conservation Concern 3**' (**BoCC3**) which can be downloaded from the RSPB website: www.rspb.org.uk/wildlife/birdguide/status_explained.asp

EU Birds Directive

The Birds Directive addresses the conservation of all wild birds throughout the European Union, including marine areas, and covers their protection, management, control and exploitation. It applies to the birds, their eggs, nests and habitats. It places a broad requirement on Member States to take necessary measures to maintain the populations of all wild birds at levels determined by ecological, scientific and cultural needs. In doing so, Member States must also consider economic and recreational needs. For more information about the EU Birds Directive and its annexes please visit: www.birdlife.org/action/awareness/eu_birds_directive/what

The Directive divides into two main parts: **habitat conservation** and **species protection**. In summary, it requires Member States to preserve, maintain and re-establish sufficient diversity and area of habitats for all wild birds.

Annex 1:

Species listed in Annex 1 of the Birds Directive are the subject of special conservation measures concerning their habitat to ensure their survival and reproduction. This includes the designation of areas as Special Protection Areas (SPAs).

Annex 2:

Annex 2 of the Birds Directive lists birds that can be hunted under the legislation of the Member States. The Directive bans certain non-selective methods of hunting and defines the limits within which Member States can set the hunting season.

IUCN Red List

The World Conservation Union (IUCN) has been assessing the conservation status of species, subspecies, varieties and even selected sub-populations on a global scale in order to highlight taxa threatened with extinction, and therefore promote their conservation. The IUCN Red List (different from the previously mentioned Red List) is the world's most comprehensive inventory of the global conservation status of plant and animal species. It uses a set of criteria to evaluate the extinction risk of thousands of species and subspecies. These criteria are relevant to all species and all regions of the world. With its strong scientific base, the IUCN Red List is recognized as the most authoritative guide to the status of biological diversity.

For more information about the Red List visit: www.redlist.org

SUSSEX BIRD INVENTORY REPORT SUMMARY

Please note that this is a summary page. Full details of these records are on the following pages.

N.B. The breeding season records of 15 Schedule 1 birds and three other species which are classed as sensitive in Sussex are not included in our biodiversity reports (see www.sxbrcc.org.uk/enquiries/SOS-excluded-data.pdf for the list of excluded species). 6 such records have been flagged up in this search. It is critical that the Sussex Ornithological Society (SOS) is contacted directly for more information on these records if potentially damaging operations are to occur in the enquiry area. Email: conservation@sos.org.uk

Willow Prospect, Billingshurst + 1km radius

30 August 2011 ESD/11/376 Search Area: TQ0820 to TQ0922
Sam Patrone (URS Scott Wilson Ltd)

Common Name	Latin Name	First Date	Last Date	No. of Rec's
Common Buzzard	<i>Buteo buteo</i>	20/03/2009	-	1
Common Kestrel	<i>Falco tinnunculus</i>	20/03/2009	-	1
Common Moorhen	<i>Gallinula chloropus</i>	17/04/2006	-	1
European Turtle Dove	<i>Streptopelia turtur</i>	17/05/1999	-	1
Little Owl	<i>Athene noctua</i>	20/05/1990	-	1
Lesser Spotted Woodpecker	<i>Dendrocopos minor</i>	12/05/1992	-	1
Barn Swallow	<i>Hirundo rustica</i>	17/04/2006	-	1
Winter Wren	<i>Troglodytes troglodytes</i>	17/04/2006	-	1
European Robin	<i>Erithacus rubecula</i>	17/04/2006	-	1
Common Nightingale	<i>Luscinia megarhynchos</i>	17/05/1999	25/05/1999	3
Fieldfare	<i>Turdus pilaris</i>	20/03/2009	-	1
Blue Tit	<i>Cyanistes caeruleus</i>	17/04/2006	-	1
Great Tit	<i>Parus major</i>	17/04/2006	-	1
Eurasian Jackdaw	<i>Corvus monedula</i>	17/04/2006	-	1
Rook	<i>Corvus frugilegus</i>	27/04/1996	-	2
European Greenfinch	<i>Carduelis chloris</i>	17/04/2006	-	2
Eurasian Siskin	<i>Carduelis spinus</i>	20/03/2009	-	2

SUSSEX BIRD INVENTORY REPORT

Willow Prospect, Billingshurst + 1km radius

30 August 2011 ESD/11/376 Search Area: TQ0820 to TQ0922
Sam Patrone (URS Scott Wilson Ltd)

The contextual information in this report is based on the latest information available to the Record Centre and is regularly updated. If relying on these statements for important decisions please check with the Record Centre for the most up-to-date position of this species in Sussex.

Please note that all British birds, their nests and eggs are protected in British law. It is an offence to deliberately take, kill or injure any wild bird or to take, damage, or destroy any nest or egg of any wild bird under Part 1 of the Wildlife and Countryside Act 1981 (as amended). However, Schedule 1 of this act provides an additional tier of protection so that rare species are specially protected by increased penalties and cannot be intentionally or recklessly disturbed when nesting. Schedule 1 status also infers a right of arrest by a police officer if someone is suspected of committing certain offences against one of these species. Other statuses listed below can be referenced in the attached sheets.

Buteo buteo

Common Buzzard

A fairly common resident, passage migrant, and regular visitor. Probably much more frequent before persecution reduced its numbers. Well-established in Ashdown Forest and central West Sussex with occasional records from elsewhere. It feeds on small mammals, birds and carrion.

Convention on Migratory Species
Appendix 2
EC CITES Annex A

First Date	Last Date	No. of Records
20/03/2009	-	1

Falco tinnunculus

Common Kestrel



This well-known bird of prey is a fairly common resident and passage migrant, which can often be seen hovering over roadside verges, open country, parks and towns looking for small mammal prey. It is our commonest raptor and it is widespread in Sussex. The Kestrel has characteristic pointed wings, long tail and chestnut colour. They have been recently declining as a result of habitat degradation due to continuing intensive management of farmland.

Bern Convention Appendix 2
Bird Population Status - amber
Convention on Migratory Species
Appendix 2
EC CITES Annex A

First Date	Last Date	No. of Records
20/03/2009	-	1

Gallinula chloropus

Common Moorhen

This ground-dwelling medium-sized bird is a very common resident and winter visitor. It is found all year round in virtually all freshwater habitats across Sussex, where it feeds on water plants, seeds, fruit, grasses, insects, snails and worms. It is slate grey, brown and white with a striking red and yellow bill.

Birds Directive Annex 2.2
Convention on Migratory Species
Appendix 2

First Date	Last Date	No. of Records
17/04/2006	-	1

Streptopelia turtur

European Turtle Dove

BAP N R

A scarce summer visitor and passage migrant that breeds at the northern edge of its range in the UK. It is confined largely to the south and east of England and is associated with fertile arable farmland in warm, dry situations where it feeds on seed. Nests in thick hedges, bushes and low trees in woodland edges, copses, commons, heaths and parkland. Easily identified by its evocative purring call.

Bird Population Status - red
Birds Directive Annex 2.2
EC CITES Annex A
Environmental Stewardship Target Species (High Weald)
Environmental Stewardship Target Species (Low Weald)
Environmental Stewardship Target Species (Romney Marsh)
Environmental Stewardship Target Species (South Downs)
Environmental Stewardship Target Species (Wealden Greensand)
Natural Environment and Rural Communities Act 2006 - Species of Principal Importance in England (sec
UK Biodiversity Action Plan priority species

First Date	Last Date	No. of Records
17/05/1999	-	1

Athene noctua

Little Owl

This is the UK's smallest owl and is a fairly common resident in Sussex. It is not a British native but was introduced at various times from the mid-19th century, including to the Knepp Estate in West Sussex. Now well established and widespread in the two counties. It can be found around agricultural land, trees, copses, hedges, parkland and orchards where it can feed on small mammals and birds, beetles and worms. It nests in farm buildings and in nestholes in trees and it is often seen in the day time perched on tree branches.

Bern Convention Appendix 2
EC CITES Annex A

First Date	Last Date	No. of Records
20/05/1990	-	1

Dendrocopos minor

Lesser Spotted Woodpecker

BAP R

The size of a sparrow, this is Europe's smallest woodpecker and it is a scarce Sussex resident that favours damp, open, broad leaved woodland. It feeds on insects, especially larvae, spiders and wood-boring insects. It requires decaying wood in which it makes a new nest chamber each year. Its population is scattered across Sussex in suitable areas; the county holds a significant proportion of the national population.

Bern Convention Appendix 2
Bird Population Status - red
UK Biodiversity Action Plan priority species

First Date	Last Date	No. of Records
12/05/1992	-	1

Hirundo rustica

Barn Swallow



Our familiar swallow with long tail streamers is a common summer visitor and abundant passage migrant. They are agile in flight and spend most of their time on the wing hunting. They often breed in quiet farm buildings with nearby ponds and open pasture especially near cattle where they can feed on plentiful insects. Reedbeds are used as pre-migration roosts in late summer and early autumn.

Bern Convention Appendix 2
Bird Population Status - amber

First Date	Last Date	No. of Records
17/04/2006	-	1

Troglodytes troglodytes

Winter Wren

This tiny red-brown bird is an abundant resident, breeding in Sussex wherever there is available cover, particularly in dense undergrowth. It is found in most habitats ranging from gardens to woodland and orchards to hedgerows. Often seen moving about like a mouse looking for insect and spider prey. It can decline significantly after hard winters, especially in more exposed places. It has a beautiful loud trilling song.

Bern Convention Appendix 2

First Date	Last Date	No. of Records
17/04/2006	-	1

Erithacus rubecula

European Robin

The quintessential British bird, the Robin "redbreast" is an abundant and well-known resident, passage migrant and winter visitor. It favours woodlands, parks and gardens with plenty of undergrowth where it can find worms and seeds, fruits and insects.

Bern Convention Appendix 2

First Date	Last Date	No. of Records
17/04/2006	-	1

Luscinia megarhynchos

Common Nightingale



This rufous-coloured bird is slightly larger than a robin and is a fairly common summer visitor and infrequently seen passage migrant. Nightingales feed on insects and like dense thickets and scrub with thick foliage or nesting in; the edges of clearings or rides, or clumps of bushes surrounded by heath or open space, are ideal. This secretive bird is more often heard than seen; they have an unmistakable loud, rich and mellow song often heard at night.

Bern Convention Appendix 2
Bird Population Status - amber

First Date	Last Date	No. of Records
17/05/1999	25/05/1999	3

Turdus pilaris

Fieldfare



This large, colourful thrush is a common, occasionally very common, passage migrant and winter visitor usually seen in flocks of anything from a dozen or two to several hundred. They feed on insects, worms and berries and can be seen in open countryside with grass fields, and berry-bearing hedgerows, especially hawthorn. Also frequent visitors to orchards, gardens and parks especially ones with apple trees. They will come into towns and feed in parks and on playing fields too.

Bird Population Status - red
Birds Directive Annex 2.2
Wildlife and Countryside Act 1981 (Schedule 1 Part 1)

First Date	Last Date	No. of Records
20/03/2009	-	1

Cyanistes caeruleus**Blue Tit**

This colourful small bird is an abundant resident found mainly in deciduous woodland. It has adapted to gardens with mature trees or nestboxes and is also found in parkland, hedgerows and conifers. Recorded almost everywhere in Sussex. It feeds on insects, caterpillars, seeds and nuts, and is a regular visitors to garden birdfeeders.

Bern Convention Appendix 2

First Date	Last Date	No. of Records
17/04/2006	-	1

Parus major**Great Tit**

This is the UK's largest tit, and is an abundant resident. It is a woodland bird which has readily adapted to man-made habitats and is a familiar garden visitor. It feeds on insects, seeds and nuts and will readily visit garden birdfeeders and use nestboxes. It can also be found along hedgerows and in parks and coniferous woodland. Recorded almost everywhere in Sussex.

Bern Convention Appendix 2

First Date	Last Date	No. of Records
17/04/2006	-	1

Corvus monedula**Eurasian Jackdaw**

This small black and grey crow is a very common resident of woodland, parks and gardens with areas of grassland, often seen in pairs or small flocks. In towns it will nest in roofs and chimneys which simulate its more natural tree hole sites. In winter it spends time in stubble and ploughed fields and pasture, often in the company of Rooks. It feeds on insects, seeds and scraps.

Birds Directive Annex 2.2

First Date	Last Date	No. of Records
17/04/2006	-	1

Corvus frugilegus**Rook**

This large black crow with a prominent white beak is a very common resident of lowland farmland of open fields, especially grassland with tall trees close by where they build their nests. Nearly always found in gregarious flocks, and regularly with Jackdaws. Widespread in Sussex though less so in the north east Weald. The Rook feeds on worms, grain and insects.

Birds Directive Annex 2.2

First Date	Last Date	No. of Records
27/04/1996	-	2

Carduelis chloris**European Greenfinch**

This finch has distinctive green-yellow wing patches and is very common resident, scarce passage migrant and winter visitor. It can be found anywhere in Sussex with tall, fairly dense trees and plenty of seeds and insects. In winter it tends to feed in fields, gardens and along the seashore, often joining with flocks of other finches and buntings.

Bern Convention Appendix 2

First Date	Last Date	No. of Records
17/04/2006	-	2

Carduelis spinus**Eurasian Siskin**

A yellow-green and black bird that is a common winter visitor, passage migrant and a very scarce breeder mainly in mature conifer woods close to heathlands. There are many coastal records and it is often seen feeding on alder seeds along rivers. There is an increasing tendency to visit peanut feeders in gardens.

Bern Convention Appendix 2

First Date	Last Date	No. of Records
20/03/2009	-	2

BIODIVERSITY ACTION PLAN SPECIES INVENTORY

**The BAP Species Inventory does not include bat, bird or otter records.
Bat and bird records are included in separate inventories, while otter records are not included in SxBRC reports.**

The background

In 1992 the UK and 159 other governments signed the Convention on Biological Diversity (CBD) at the Earth Summit in Rio de Janeiro. The CBD called for signatories to develop national strategies and action plans to conserve biodiversity, and the UK responded with the UK Biodiversity Action Plan (UK BAP). This was first published in 1994 and included specific plans for species and habitats afforded priority conservation action. These plans set out the threats faced by species and habitats as well as the actions being taken or to be taken to help tackle the threats.

The UKBAP list was updated in 2007 and now contains **1,149 species** and **65 habitats**. The new list replaces the previous one, with the majority of original species being reselected. 123 species did not meet the new criteria (at least 13 have met their UK BAP targets).

Further information on the UKBAP and details of the species and habitat action plans can be found at: www.ukbap.org.uk

Given the importance of the UK BAP in stimulating action and mobilising resources, it is important that the list is reviewed periodically. The 2007 list was a result of such a review made by the Biodiversity Reporting and Information Group (BRIG), with JNCC as chair and secretariat. The aim was to ensure a focus on the correct priorities for action by considering emerging priorities, conservation successes, new drivers and the large amount of new information.

At the local level

An important aspect to the success of the UK BAP is the translation of the national strategy into effective action at the local level. To achieve this, Local Biodiversity Action Plans (LBAP) have been established and there are currently over 160 at some stage of development in the UK. In Sussex, the LBAP is co-ordinated by the Sussex Biodiversity Partnership and contains 473 species, 39 of which are birds. Details of the species and habitats included in the local plan can be found at www.biodiversitysussex.org

(Contact: Laurie Jackson, Conservation Officer. 01273 497551 or email biodiversityofficer@sussexwt.org.uk)

BAP species within this report

- **BAP records are labelled so that only one record per species per grid reference is included in a SxBRC report. This will usually be the most up to date record.**
- **Species which appear in the 'England Biodiversity List' to meet the requirements of Section 41 of the NERC Act (2006) * are labelled with the symbol N.**

* Natural Environment & Rural Communities (NERC) Act

The NERC Act (2006) was established with the intention to help ensure that biodiversity becomes an integral consideration in the development of policies, and that decisions of public bodies work with nature and not against it.

The England Biodiversity List has been drawn up to meet the requirements of Section 41 of the Act. The S41 list consists of **943 species** and **56 habitats** of principal importance in England and will be used to guide decision-makers such as public bodies, including local and regional authorities, in implementing their duty under Section 40 of the NERC Act.

Further details of the NERC Act can be found at: www.opsi.gov.uk/acts/acts2006/ukpga_20060016_en_1

SUSSEX INVASIVE ALIEN SPECIES REPORT

The Sussex Invasive Alien Species Report is produced in order to help minimise the threat posed by invasive alien species in Sussex. Records are labelled so that only one record per species per grid reference is included in a SxBRC report. This will usually be the most up to date record.

Most alien species pose no threat to native species, and indeed many naturalised non natives represent important additions to our flora and fauna. An older record of an alien invasive species may denote that there was once a problem at this site, but it has subsequently been dealt with. However, the problem may still persist but no up to date information is available.

What is an Invasive Alien Species?

The term alien is synonymous with the term non-native. An invasive alien is defined as an alien species whose introduction and/or spread threatens biological diversity. Invasive alien species are referred to by several names, which are often used interchangeably: non-natives, introduced, non-indigenous, exotic, foreign, noxious species, aggressive species, pest species, harmful species.

What's the problem?

With no natural predators and a benign climate invasive alien species can out-compete our native plant and animal species. For example some invasive alien plants species can change light levels, decrease dissolved oxygen in water, change soil chemistry and its structure, and increase surface run-off and soil erosion. On a more subtle level, invasive alien species can affect ecosystem processes such as nutrient cycling, pollination and regeneration of soils. Invasive fauna can compete with native species, displace them, consume them, act as parasites or transmit diseases, reduce growth and survival rates, cause the decline or extinction of local populations or even entire species.

What control is in place?

Section 14 of the Wildlife and Countryside Act prohibits the release to the wild of animals which are listed in Schedule 9 (Part I). It also prohibits planting in the wild of plants listed in Schedule 9 (Part II) or otherwise causing them to grow there.

The spread and control of invasive species are covered by Article 8(h) of the Convention on Biological Diversity. The Global Invasive Species Programme was established to address concerns with alien invasive species, formulated in the Convention on Biological Diversity.

How to combat invasive species

The best way to limit the impact of invasive alien species is to prevent them from invading in the first place. If this fails, complete removal may still be feasible very early in an invasion. Priority, then, should be given to preventing entry; if entry has already taken place, actions should be undertaken to prevent establishment and spread. Where eradication is not feasible or cost-effective, containment and long term control measures should be considered.

The most appropriate response to an invasive alien species is best gauged on a species and site basis.

What to do if there is an invasive alien species on your site

If you have any of the plants listed in this report in your site, make sure that you dispose of them properly. Do not put them into local rivers, canals or ponds. The safest way of disposing of them is by burying, composting or burning. You should also avoid moving anything from one pond to another, including frogspawn, other pond plants or even just pond water. These plants can regenerate from a tiny fragment.

Investigate the recommended control for your species of concern.

If there are invasive alien species at your site that are not in this report please contact us on sxbrc@sussexwt.org.uk or 01273 497521 so that we can amend our records.

SUSSEX INVASIVE ALIEN SPECIES REPORT

Willow Prospect, Billingshurst + 1km radius

30 August 2011 ESD/11/376 **Search Area:** TQ0820 to TQ0922
Sam Patrone (URS Scott Wilson Ltd)

The contextual information in this report is based on the latest data available to the Record Centre and is regularly updated. If relying on this information for important decisions please check with record centre for the most up to date position of this species in Sussex.

Petasites fragrans

Winter Heliotrope

A large-leaved, rampant perennial plant from the Far East spreading by means of underground stems by up to 1 metre per year. Very invasive, often forming large wayside colonies to the exclusion of all other species. Sweet scented mauve pink spikes of flower in winter.

flowering plant

Grid Reference	Recorder	Date	Locality
TQ02W	C. M. Holt;Sylvia Simkin	12/07/2008	Coneyhurst, Balls Green, West Sussex (VC13)

KEY NATIONAL AND INTERNATIONAL SITE DESIGNATIONS

National Nature Reserve (NNR)

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

Special Area of Conservation (SAC)

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

Special Protection Area (SPA)

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

Ramsar

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

For further information on the designations described above please contact:

Natural England, Phoenix House, 32-33 North Street, Lewes, East Sussex BN7 2PH.

Tel: 01273 476595

Email: enquiries.southeast@naturalengland.org.uk

Website: www.naturalengland.org.uk

National Park

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

The creation of the South Downs National Park was confirmed on 12th November 2009 and will come into being on 31st March 2010. A National Park authority is in the process of being established, but in the meantime the South Downs Establishment Team can be contacted:

South Downs National Park Authority, Establishment Team, Rosemary's Parlour, Midhurst, West Sussex GU29 9SB.

Tel: 01730 817285

Website: www.southdownsonline.org

Area of Outstanding Natural Beauty (AONB)

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

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

Chichester Harbour Conservancy, Harbour Office, Itchenor, Chichester, West Sussex PO20 7AW.
Tel: 01243 512301. Email: harbourmaster@conservancy.co.uk

High Weald AONB Unit, Woodland Enterprise Centre, Hastings Road, Flimwell, East Sussex TN5 7PR.
Tel: 01580 879500. Email: info@highweald.org

Local Nature Reserve (LNR)

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

For further information please contact:

West Sussex County Council, Planning Department, Environment and Development, The Grange, Tower Street, Chichester, West Sussex PO19 1RH
Tel: 01243 756691. Email: don.baker@westsussex.gov.uk

East Sussex County Council, Transport and Environment Department, County Hall, St Anne's Crescent, Lewes, East Sussex BN7 1UE
Tel: 01273 481621. Email: kate.cole@eastsussex.gov.uk

Country Park

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

Regionally Important Geological / Geomorphological Site (RIGS)

Regionally Important Geological/Geomorphological Sites are non-statutory sites. They are designated by locally driven criteria and are currently the most important places for geology and geomorphology outside statutorily protected land such as SSSIs. There are over 120 RIGS in Sussex.

For further information please contact:

Booth Museum of Natural History, 194 Dyke Road, Brighton, BN1 5AA
Tel: 01273 292781. Email: Gerald.Legg@brighton-hove.gov.uk

Marine Site of Nature Conservation Importance (MSNCI)

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

For further information please contact:

Natural England, Phoenix House, 32-33 North Street, Lewes, East Sussex BN7 2PH
Tel: 01273 476595
Email: enquiries.southeast@naturalengland.org.uk
Website: www.naturalengland.org.uk

ANCIENT WOODLAND

Ancient woodland is defined by Natural England as a site that has had a continuous woodland cover since at least 1600 AD. It is an irreplaceable, wildlife-rich habitat, and often includes important archaeological features.

Sussex is one of the most wooded parts of lowland Britain with ancient woodland covering approximately 39,000ha (10%) of the county. Bluebell woods associated with coppicing, open wood pasture associated with deer parks and the small Wealden woods in ghyll valleys are a key part of Sussex's distinctive and varied landscape.

The habitat can be placed into two broad categories:-

Ancient semi-natural woodland – woodland that retains a native tree and shrub cover that has not been planted, although it may have been managed by coppicing or felling and allowed to regenerate naturally. This covers all stands of ancient woodland which do not obviously originate from planting.

In terms of its nature conservation value, ancient semi-natural woodland is regarded as an important woodland type due to:

- The variety of native woodland plants and animals it supports, many of which are found only or mainly in ancient woodland.
- The natural and undisturbed water courses.
- The soils, which may never have been ploughed.
- The variety of woodland structure (often including very old trees and dead wood).
- The mosaic of semi-natural habitats such as grassland, heathland and marsh which may survive within the wood, often a result of past management practices.



Plantations on ancient woodland sites – woodland where the original tree cover has been felled and replaced by planting, often with conifers and usually this century.

In ancient replanted woodland the original woodland structure may have been substantially altered, water courses may have been displaced, soils may have been disturbed or drained and natural openings may have been planted up. However, these woods can still be important for nature conservation due to:

- The remnant ancient woodland species, which persist beneath the canopy or in areas where light levels are higher such as woodland rides or glades.
- The soil seed bank, which will often retain dormant ancient woodland plants.
- The potential for restoration to a semi-natural condition.



Bluebell

Other important terms:

Primary woodland constitutes the relicts of the natural tree cover which developed after the retreat of glaciation 10,000 years ago. Such woodland may have been managed by humans, but it has never been completely cleared of trees and converted to another land use.

Ancient secondary woodland is woodland that had developed on land which may have been open ground or farmland at some stage before the year 1600AD. Many ancient woods in West Sussex are likely to be of this type.

Planning Policy Statement 9: Biodiversity & Geological Conservation (2005) states that "ancient woodland is a valuable biodiversity resource both for its diversity of species and for its longevity as woodland. Once lost it cannot be

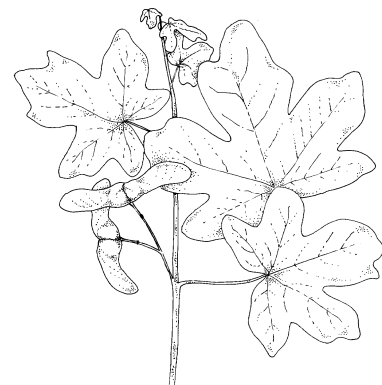
recreated.” Many ancient woodlands have some form of statutory protection and local planning authorities are advised to identify unprotected areas of ancient woodland.

Ancient woodland in Sussex can be identified by using the Ancient Woodland Inventory held by Natural England. The Ancient Woodland Inventory was set up in 1981 by the Nature Conservancy Council (now Natural England). Ancient woodland status is determined using information from historic Ordnance Survey and estate maps and information about the name of the wood, its shape, relief, internal boundaries and location relative to other features such as parish boundaries. Ground survey information such as flora and historical features plus aerial photography interpretation is also used when available.

Initially, the original inventory only included sites over two hectares in size. However, the inventory did contain some smaller sites due to the subsequent clearance of parts of larger woods. Furthermore, measuring techniques were less precise and more laborious than the latest digital methods so some smaller woods were accidentally included, whilst some larger woods were overlooked.

The original inventory was produced on a county-by-county basis in the 1980's and 1990's. At first it was a paper-based inventory, which was converted to a digital map in 2000. Subsequent revisions and versions are available as digital maps.

Advances in digital mapping techniques mean that it is now possible to map woodlands under two hectares with greater ease and accuracy. This has led to a revision of the Ancient Woodland Inventory within the South East. The surveys for the revision of the inventory for Sussex were completed in 2010 and have been adopted by Natural England. However, the inventory will always be classed as "provisional" because it is reviewed and updated as new information comes to light.



Field maple

(Illustrations courtesy of Natural England.)

TRADITIONAL ORCHARDS

Traditional orchards are defined as groups of fruit and/or nut trees planted at low densities and managed in a low intensity way. There are many regional variations on this theme, including apple, pear, cherry, plum and walnut orchards. Cobnut plots are also included in the definition. As with wood pasture and parkland, the habitat is defined by its structure rather than vegetation type.

Fruit and vines have been grown in the UK since the Roman occupation and traditional orchards represent a much-loved part of our British heritage.

The total area of traditional orchards has declined dramatically across the country in recent years. The conservation of remaining orchards is a high priority and so they were designated as a BAP Priority Habitat in 2007.

Traditional orchard ecology

The mosaic of habitats often associated with traditional orchards is important for a wide variety of wildlife. Many animals depend on the proximity of dead wood, hedgerows, scrub, unimproved grassland and ponds. For example, bumblebees which pollinate the fruit trees require tussocky grassland for nesting and hedgerows or scrub to hibernate in.



There are many other features of traditional orchards which are beneficial to wildlife:

- Fruit tree blossom is a good source of nectar for insects.
- Fruit trees tend to be short-lived in comparison to other hardwood species, and so produce features such as rot holes, split bark and hollow trunks relatively quickly. These features provide feeding, nesting and roosting opportunities. Over 400 saproxylic (dead wood) invertebrates have been recorded in traditional orchards, including 102 Red Data Book or Nationally Scarce species.
- Mistletoe is often found in the canopies of orchard trees, providing a valuable winter food source for some birds, such as mistle thrush and blackcap. Also associated with mistletoe is the mistletoe marble moth (*Celypha woodiana*), a BAP Priority Species.
- A number of other BAP species are associated with orchards, including dormouse, great crested newt, tree sparrow, noble chafer and stag beetle.
- Lichens characteristic of a continuity of tree cover can be found on orchard trees, as well as rare and scarce species, including the very rare and protected *Parmelinopsis minarum*.

The Traditional Orchard Inventory for England

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

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

In Sussex, 949 traditional orchards have been identified from aerial photographs (689 in West Sussex and 260 in East Sussex).

Further information on traditional orchards can be found here: www.orchardnetwork.org.uk

Sussex Biodiversity Record Centre

Woods Mill
Henfield
West Sussex
BN5 9SD

Tel: 01273 497 553/521

Fax: 0203 070 0709

Email: sxbrc@sussexwt.org.uk

Website: www.sxbrc.org.uk

The Sussex Biodiversity Record Centre is managed by the Sussex Wildlife Trust as a partnership project between East and West Sussex County Councils, Natural England, Environment Agency, South Downs Joint Committee, High Weald AONB Unit, Southern Water and Local Authorities throughout Sussex.

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Appendix 7.2 - Target Notes

Target Notes (TN)

TN 1 Wild service tree *Sorbus torminalis*;

TN 2 Ash tree with low-moderate bat roost potential

TN 3 Medium sized pond with potential for great crested newts is located within a field adjacent to the survey site. This is open to cattle on one side and surrounded by blackthorn and hawthorn on the other.

Appendix 7.3 - Badger Results

Appendix 7.3

CONFIDENTIAL Badger Results

Not viewable on web

Chapter 8 - Landscape and Visual Impact

Appendix 8.1

APPENDIX 8.1: LVIA METHODOLOGY

EIA Regulations

- 1.1 Under 'The Town and Country Planning (Environmental Impact Assessment) (England and Wales) Regulations 1999' the development is classed as an Annex 1 Projects and a full Environmental Impact Assessment is required.

Scope of Study

- 1.2 The geographical scope of the landscape and visual impact assessment element of the report includes the Application Site itself and a surrounding area of up to 3 km with potential to be impacted by the proposals. The extent of the study area has been agreed in discussions with West Sussex County Council to be appropriate to assess the effects of the Proposed Development.

Methodology guidance

- 1.3 General guidance for the methodology for this study is from two key documents:
 - 'Landscape Character Assessment' (The Countryside Agency, 2002);
 - 'Guidelines for Landscape and Visual Impact Assessment' (Landscape Institute and IEMA, 2002);

Desktop Research

- 1.4 The desktop survey has involved the review of OS mapping data, aerial photographs, landscape character assessment documents and related planning policy, as well as the development proposals.

Landscape Effects Assessment

Methodology

- 1.5 A site visit has been made and physical aspects and landscape characteristics of the site and surrounding area noted. Study has been made of available landscape character assessments.

Evaluation criteria for landscape effects

- 1.6 Sensitivity of the landscape or feature of the landscape as a resource is dependent on:

- Character: the extent to which a distinct and recognisable pattern of elements occur in a particular type of landscape and how these are perceived; a sense of place.
- Quality: a judgement on the physical state, intactness and state of repair of the landscape or feature.
- Value : this can be based on landscape designations of an area, or values without formal designation recognising perceptual aspects (scenic beauty or tranquillity), special cultural associations, the influence or presence of other conservation interests or the existence of a consensus about importance either nationally or locally.
- Capacity: the scope for change in character with the existing landscape

1.7 The level of sensitivity of a landscape character or landscape feature can be defined as:

High Importance

- Positive character and quality, with valued features
- Particularly sensitive to change in general; change may be detrimental if inappropriately dealt with.
- Area or feature of high importance or rarity on a national, regional or local scale.

Medium Importance

- Generally positive in character and quality, but which may have alteration to, degradation or erosion of features resulting in areas of more mixed character and diminished value.
- Moderately sensitive to change in general; change may be detrimental if inappropriately dealt with; tolerant of some change.
- Area of feature of medium importance or rarity on a regional or local scale

Low Importance

- Generally negative in character and quality, with few if any valued features
- Tolerant of substantial change
- Area or feature of low importance and rarity at a local scale.

1.8 Scale or magnitude of landscape effects is described by reference to the:

- Loss or addition of key elements of the baseline pre-development landscape character or feature

- Introduction of elements in the landscape and resultant changes in character

1.9 The quantification of the magnitude of landscape effects can be defined as high, medium, low or nil and can be either adverse or beneficial. This is defined more fully below:

Adverse	High	Total loss of or major alteration to key elements of the baseline pre-development landscape character or feature, or introduction of elements considered to be uncharacteristic when set within the attributes of the receiving landscape.
	Medium	Partial loss of or alteration to one or more key elements of the baseline pre-development landscape character or feature, or introduction of elements that may be prominent but may not necessarily be considered substantially uncharacteristic when set within the attributes of the receiving landscape.
	Low	Minor loss or alteration to one or more key elements of baseline pre-development landscape character or feature, or introduction of elements that are not uncharacteristic when set within the attributes of the receiving landscape.
Neutral	Nil	No perceptible change to key elements of the baseline pre-development landscape character or feature.
Beneficial	Low	Minor beneficial change to one or more key elements of the baseline pre-development landscape character or feature.
	Medium	Medium beneficial change to one or more key elements of the baseline pre-development landscape character or feature, or introduction of elements that may have a moderate beneficial benefit to the receiving landscape.
	High	Large beneficial improvement created by loss or reduction of adverse key elements of baseline pre-development landscape character or feature, or addition of beneficial landscape features.

1.10 The criteria determining the significance of landscape effects are the sensitivity of the landscape receptors, and the magnitude of landscape effect as described above. The table below shows how the significance is assessed and encompasses both adverse and beneficial significance.

		Sensitivity of Landscape		
		High	Medium	Low
Magnitude of landscape effect	High	Major adverse significance	Major / Moderate adverse	Moderate adverse significance
	Medium	Major / Moderate adverse	Moderate adverse significance	Moderate / Minor adverse
	Low	Moderate adverse significance	Moderate / Minor adverse	Minor adverse significance
	Nil	Neutral significance	Neutral significance	Neutral significance
	Low beneficial	Minor beneficial significance	Minor beneficial significance	Minor beneficial significance
	Medium beneficial	Moderate beneficial	Moderate beneficial	Moderate beneficial
	High beneficial	Major beneficial significance	Major beneficial significance	Major beneficial significance

Visual Effects Assessment

Methodology

- 1.11 A set of photographs were taken to represent viewpoints in the surrounding area. These were taken using a Nikon D60 digital SLR camera. Most photographs were taken with the lens set at a focal length of 35mm. This is equivalent to 50mm on a non-digital SLR, which is generally accepted to most closely represent views seen with the naked eye. Photographs are noted where a wide-angle focal length setting was used in order to show close up foreground views, or where a zoom setting was used to show more detail in a distant view.
- 1.12 The aperture used for all photography was f/11 and the camera was set to automatically determine the appropriate shutter speed using a film speed setting of ISO-100.
- 1.13 An exercise has been undertaken to establish the visibility of the drilling rig from viewpoint where there are blocks of woodland between the viewer and the site. This was undertaken by plotting the viewer at 1.5m height on the correct AOD height and distance from site, with the site plotted at the correct AOD and the rig located at 30m height and with the intervening blocks of woodland plotted at the correct AOD. These diagrams can be seen on Figure 14.

- 1.14 Other viewpoints are assumed to have a view of the rig, however there maybe intervening hedgerows, hedgerow tree and individual trees that may restrict views.

Evaluation Criteria

- 1.15 Sensitivity of visual receptors is dependent on the
- Location, angle and context of the viewpoint
 - Activity or occupation of the receptor and the expectation of view that brings
 - Importance of the view; this can be determined by number of people affected and popularity i.e. appearance in guidebooks, tourism maps, facilities provided for its enjoyment or references in art or literature.
- 1.16 The level of sensitivity can be defined as:

High Sensitivity

- Viewpoints within a high quality landscape.
- A recognised viewpoint referred to on maps and guidebooks.
- View receptors with a high interest in their environment and prolonged viewing opportunities i.e. where engaged in leisurely pursuits that involve aesthetic appreciation of their surroundings such as walking and cycling.
- Occupiers of residential properties, where there are a large number of properties with similar views.

Medium Sensitivity

- Viewpoints within a medium quality landscape.
- View receptors with a moderate interest in their environment i.e. where engaged in outdoor sport or recreation activities (other than appreciation of the landscape), or travelling through engaged in daily business.
- Occupiers of residential properties, where there are a small number of properties with similar views.

Low Sensitivity

- Viewpoints within a low quality landscape.
- View receptors with a passing or momentary interest in their environment i.e. where attention is focused on work or some similar activity or travelling through at speed on occasional basis.

1.17 Scale or magnitude of visual change is described by reference to the:

- Loss or addition of features in a view
- Changes in the composition of the view, including the proportion of the view occupied by the proposed development
- Degree of contrast or integration of changes with the existing landscape in terms of scale, mass, line, height, colour and texture,
- Duration of change i.e. permanent or temporary, intermittent or continuous
- Distance of viewpoint from the proposed development
- Extent of area over which the changes would be visible.
- Angle of view in relation to main activity of receptor

1.18 Quantification of the magnitude of change of visual effects can be defined as high, medium, low or nil and can be either adverse or beneficial. This is defined more fully below:

Adverse	High	The proposals form an immediately apparent total loss of or major alteration to key elements of scene that are substantially uncharacteristic in the overall scene and change its character detrimentally.
	Medium	The proposals form a partial loss of or alteration to one or more key elements of the scene, or introduce elements to the scene, that may be prominent and readily noticed and uncharacteristic in the overall visual character.
	Low	The proposals form a minor loss or alteration to one or more key elements of the scene, or introduction of elements that are uncharacteristic when set in the overall visual character.
Neutral	Nil	No perceptible change to elements of the scene or overall visual character.
Beneficial	Low	Minor changes to one or more key elements of the scene that may change the scene or overall visual character beneficially.
	Medium	Moderate changes to one or more key elements of the scene, or introduction of elements, that may change the scene or overall visual character beneficially.
	High	Large changes to one or more of the key elements of the scene, or introduction of prominent elements, that may change the scene or overall visual character beneficially.

1.19 The criteria determining the significance of visual effects are the sensitivity of receptors and the magnitude of visual effect as described above. The table below shows how the significance is assessed and encompasses both adverse and beneficial significance.

		Sensitivity of receptor		
		High	Medium	Low
Magnitude of visual effect	High	Major adverse significance	Major / Moderate adverse	Moderate adverse significance
	Medium	Major / Moderate adverse	Moderate adverse significance	Moderate / Minor adverse
	Low	Moderate adverse significance	Moderate / Minor adverse	Minor adverse significance
	Nil	Neutral significance	Neutral significance	Neutral significance
	Low beneficial	Minor beneficial significance	Minor beneficial significance	Minor beneficial significance
	Medium beneficial	Moderate beneficial	Moderate beneficial	Moderate beneficial
	High beneficial	Major beneficial significance	Major beneficial significance	Major beneficial significance

Chapter 10 - Transport and Access

Appendix 10.1 - Traffic growth

TEMPRO Attraction and Production Factors

Billigshurst

Time period	Production	Attraction	Average
am peak	1.0078	1.0076	1.0077
pm peak	1.0080	1.0090	1.0085
Ave. weekday	1.0085	1.0086	1.0086

Horsham




Time period	Production	Attraction	Average
am peak	1.0082	1.0077	1.0080
pm peak	1.0084	1.0091	1.0088
Ave. weekday	1.0089	1.0086	1.0088




West Sussex





Time period	Production	Attraction	Average
am peak	1.0099	1.0098	1.0099
pm peak	1.0095	1.0097	1.0096
Ave. weekday	1.0099	1.0098	1.0099

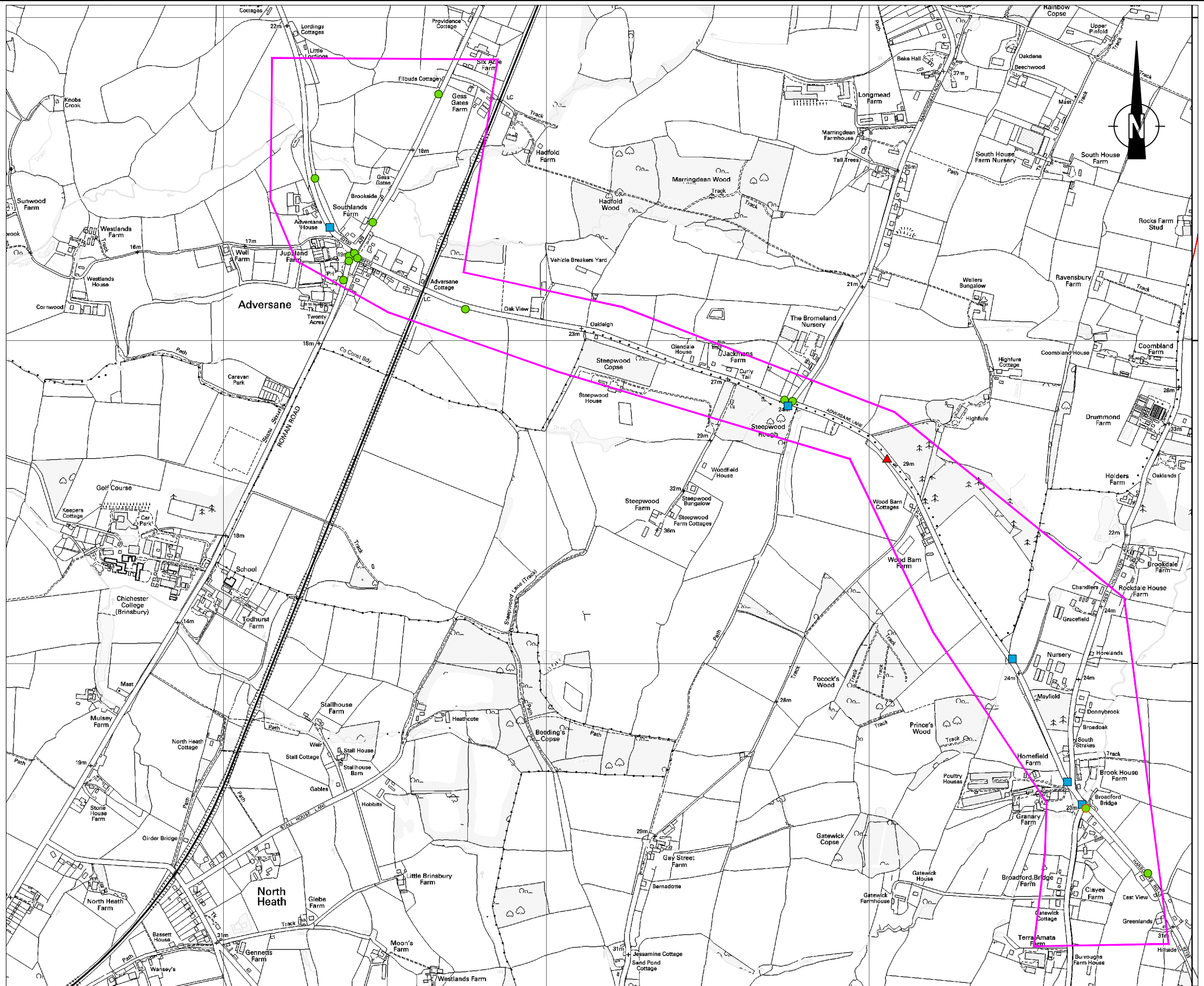
Dataset version 62

Appendix 10.2 - PIA Summary

Accident Severity	
	Slight 13
	Serious 5
	Fatal 1

Casualty Severity	
	Slight 21
	Serious 5
	Fatal 1

Casualty Class	
	Driver 22
	P.Riders 0
	Pass. 4
	Ped. 1



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AREA	GD	DRAWN	dn
ROUTE No.		CHECKED	
FILE No.	12042	DATE	17/2/12
Rev	Date	Amendment	Name



West
Sussex
County
Council

PIA Search Ref 12042
Adversane
5 Yrs to 31 Jan 2012

DRG No.
SCALE Not Std

Tony Toynton
Director of
Infrastructure Operations
County Hall, West Street
Chichester,
West Sussex, PO19 1RH
(Tel: 01243 642105)

Appendix 10.3 - Construction traffic

**Proposed Traffic Movements Associated with Exploratory Borehole –
Willow Prospect, Broadford Bridge, West Sussex.**

Construction (Phase 1)

Initially there would be movement of site preparation plant comprising 3-4 low-load articulated trucks at the outset of construction activity. The access, car-park and site would require approximately 5562 tonnes of stone (i.e. 278 lorry loads) delivered during a period of 5 weeks plus a small number of deliveries by HGV of ancillary construction materials/plant and 5-10 personnel movements per day by car or van. In total, the above movements equate to an average of 1 vehicle movement every 45 minutes during the normal working day of 8.00 am-5.00 pm, Monday to Friday, & 8.00 am-1.00 pm on Saturdays.

Mobilisation of the Drill Rig and Drilling of the Exploratory Borehole (Phase 2)

The following deliveries are for a typical drilling rig, 3 or 4 deliveries of which may be assisted by police escort, and would arise at the time of drill rig mobilisation: -

Derrick	1 load
Trailer with draw-works and rotary table	1 load
Sub-structure and ramp	1 load
Matting boards, Blow-out preventers & manifold	1 load
Mud pump buildings	2 loads
Mud tanks	2 loads
Light plant, accumulator & change house	1 load
Water tank and doghouse	1 load
Toolhouse and fuel tank	1 load
Catwalk, junk rack, V doors & stairs	1 load
Toolpush cabin	1 load
Forklift & washroom building	1 load
Cranes (for assembly)	2 loads
Total loads	16 loads

Additional deliveries would be required during mobilisation for ancillary services, as follows: -

Mud logging cabin & equipment	2 loads
Wireline logging	1 load
Drilling Mud Solids control equipment	1 load
Operational control cabin	1 load
Materials & chemicals	4 loads
Drill pipe & tubulars	4 loads
Accommodation modules	3 loads
Total loads	16 loads

The total number of deliveries (32) equates to 64 HGV movements would occur over an anticipated period of 3-4 days when the drill rig will be mobilised.

During drilling mode deliveries of equipment and removal of drilling mud and cuttings would generate 3-4 vehicles (6-8 trips) per day over a 4-5 week period. 20 light vehicle trips would be generated at 0800 and 2000 hrs at personnel shift changes.

Following the completion of the drilling work, the rig would be demobilised and removed from the site over a period of 3-4 days. Traffic movements would be the same as those during the mobilisation phase, that is, a maximum of 64 HGV movements.

Carrying out of a short-term test and evaluation programme (Phase 3)

It is anticipated that testing would be carried out over a period of 6 months. It is anticipated that vehicle movements would comprise no more than 6 movements by tanker per week. In addition, it is expected that there would two car movements per day for personnel to visit the site.

Restoration (Phase 4)

The restoration of the site would take place over a period of 5-6 weeks. Traffic movements are anticipated to be broadly similar to the construction phase as materials are removed from site. Movements may take place over a slightly longer period if adverse weather conditions prevent restoration and earth movements taking place. It is also possible that traffic movements could be significantly reduced compared to the construction period should the landowner wish to retain the stone on an adjoining part of the farm which does not involve access onto the public highway.