



Ditch Line

- 4.3.7 Running from the southern boundary to the northern boundary south of the Relief Road is a ditch line that is choked with Bramble scrub and Nettle banks. The ditch is not accessible and lacks aquatic vegetation along its length within the site and appears to be dry or mostly so. There is no grass edge to the field along its length. Occasional Hawthorn bushes are present.
- 4.3.8 North of the site the ditch meets a wet watercourse that drains into the Lidsey Rife to the west, here a small amount of Common Reed *Phragmites australis* starts to occur with the dominating Bramble scrub. The wet watercourse off site was about 20cm in depth during the survey and runs from north of the BNRR before turning east, south of the new road route, forming the northern boundary of the eastern arable unit (off site).
- 4.3.9 The wet watercourse is also present north of the Relief Road and here it was an open managed and engineered ditch that is about 1.5m below the ground level with steep sides. The water depth in February 2013 was c20cm at the centre of the channel. Aquatic species included locally dominant Common Reed, and small amounts of the following, Watercress *Nasturtium officinale*, Starwort *Callitriche sp.*, Yellow Flag *Iris pseudacorus*, Float Grass *Glyceria sp.* and Duckweed *Lemna sp.*. The banks of the watercourse are either Bramble dominated or rough improved grassland dominated by False Oat Grass and Yorkshire Fog (See **Photo 5**). A single mature Ash tree that looks to have been coppiced in the past is also present.
- 4.3.10 A second watercourse, also off site, is present along the railway boundary. This is Reed and Bramble dominated.



Photo 4: Ditch line running through the site dominated by Brambles and Nettles. The entire ditch line is covered in this way.





Photo 5: Wet Watercourse North of the BNRR Flood Compensation Area

BNRR Compound

- 4.3.11 Alongside the new A29 roundabout is a site compound for the construction offices of the BNRR. This is mostly bare ground car parking and portacabins.

Flora

- 4.3.12 No rare or scarce species were recorded on site.

Evaluation of Vegetation and Habitats

- 4.3.13 Habitats over the site are considered to be of negligible value to value within the zone of influence being either intensive arable production with limited ruderal field edges, or a species poor unmanaged ditch that is mostly dry and lacking in aquatic vegetation. The wet watercourse is of value within the zone of influence to local value. Although heavily engineered and with little diversity of species, it represents a semi-natural habitat corridor within an intensively farmed landscape.

4.4 Protected Species & Species of Conservation Concern

Birds

- 4.4.1 During the site visit the BAP and Red listed species Skylark *Alauda arvensis* and Linnet *Carduelis cannabina* were recorded on site. These species along with Yellowhammer *Emberiza citronella*, Reed Bunting *Emberiza schoeniclus*, Grey Partridge *Perdix perdix* and Lapwing *Vanellus vanellus* are known to breed within the Lidsey Rife floodplain. The arable units are connected to the wider arable landscape and in 2012 monitoring undertaken as part of the BNRR route recorded a couple of Skylark territories on the current site south of the Relief Road. The site is unlikely to be of value for Lapwing during the breeding season and

this species usually nests around the main Lidsey floodplain. Barn Owl *Tyto alba* also use the floodplain, but there is little foraging habitat currently on the site for this species.

- 4.4.2 The site is considered to be **value within the zone of influence** for bird populations on account of the fact that, whilst there are populations of BAP and red listed birds that utilise the habitats on site, these habitats are part of the farmland network in the wider landscape and are not of any higher value due to proximity to wetland features or other features within the site that would enhance its importance to farmland bird species.

Bats

- 4.4.3 The site is very open and with no opportunity for roosting potential. The wide open site does not provide good commuting or sheltered foraging for the majority of bat species. The Oldlands farmhouse and southern boundary provide some foraging and roosting potential, but bats are likely to move eastwards along the southern boundary off site into the floodplain and railway area. The southern and western boundaries are lit at night. The Bramble dominated ditch is a linear feature, but this is very open with little cover for commuting bats.
- 4.4.4 The data search returned records for two species of Bat; Pipistrelle *Pipistrellus sp.* and Brown Long-eared Bat *Plecotus auritus*, both present north of the BNRR in the hamlet of Shripney.
- 4.4.5 The lack of foraging habitats and linear commuting features suggest the site is considered to be of **negligible value** for bat populations.

Badgers

- 4.4.6 The site was searched for evidence of Badger *Meles meles* presence. Badgers are known from the wider area, being recorded to the west of the railway land around the proposed BNRR route (Aluco Ecology, 2008, 2011, 2012). The opportunity for sett creation on site is restricted to the Bramble ditch line and south east boundary. This area was examined for evidence of Badger presence, and no setts or foraging evidence was noted. Parts of these features could not be fully examined due to the extensive nature of the Bramble scrub.
- 4.4.7 The habitats on site are generally intensive arable and of lower foraging value to the social group of Badgers that are known to be present in the wider Rife valley. The site is therefore considered to be of **value in the zone of influence** as foraging habitat for the local Badger population.

Water Vole & Otter

- 4.4.8 Water Vole have been recorded on the Aldingbourne Rife at Berstead Brooks LNR (in 2009 - SxBRC) and along the Lidsey Rife as part of monitoring and mitigation for the BNRR (Aluco Ecology 2008, 2011, 2012). Both sets of survey data for these waterbodies suggests that Water Vole are still at a low population level in the local area and may be starting to re-colonise the watercourse network after a period of very low presence or absence.



- 4.4.9 Water Vole evidence has not been recorded on the watercourse that runs through the BNRR from the north, and then heads east north of the site, with survey work being restricted to the section of the watercourse within the BNRR land take.
- 4.4.10 On site the Bramble dominated ditch line currently contains very limited habitat for Water Vole presence with low potential due to reduced feeding opportunities because of the likely mostly dry nature of the ditch and dense Bramble dominance. There may be slightly higher potential if the valley was in flood and the ditch became seasonally wetter, given it is connected to the wet watercourse to the north. This was not noted to occur during survey work.
- 4.4.11 Survey work for Otter in the local area has not recorded the presence of this species to date, although they are expected to use watercourses in the area periodically, and are increasing in Sussex. The ditch line is also currently of low value for this species. The wet watercourse contains suitable habitat for movement through the local landscape as a wildlife corridor.

Other Protected Mammals

- 4.4.12 No other legally protected mammal species are likely to occur on site.

Reptiles

- 4.4.13 The habitats on site are arable and with a ruderal edge that has been affected by the intensive arable use of the land. There is little grassland habitats, even along the A29. Here monitoring work for the BNRR route has not recorded any reptile presence (Aluco Ecology, 2008, 2011, 2012). Grass Snake have been recorded in the wider area, and may occasionally use the ditch line running through the site. This use is however likely to be low on account of the mostly unsuitable Bramble or Nettle dominated habitat with no grassland edge. The wet watercourse contains suitable habitat for Grass Snake, which is likely to occur in low densities as recorded through monitoring for the BNRR project.
- 4.4.14 The site is considered to be of **negligible value** for reptiles, with the wet watercourse considered to be of **value within the zone of influence** for Grass Snake.

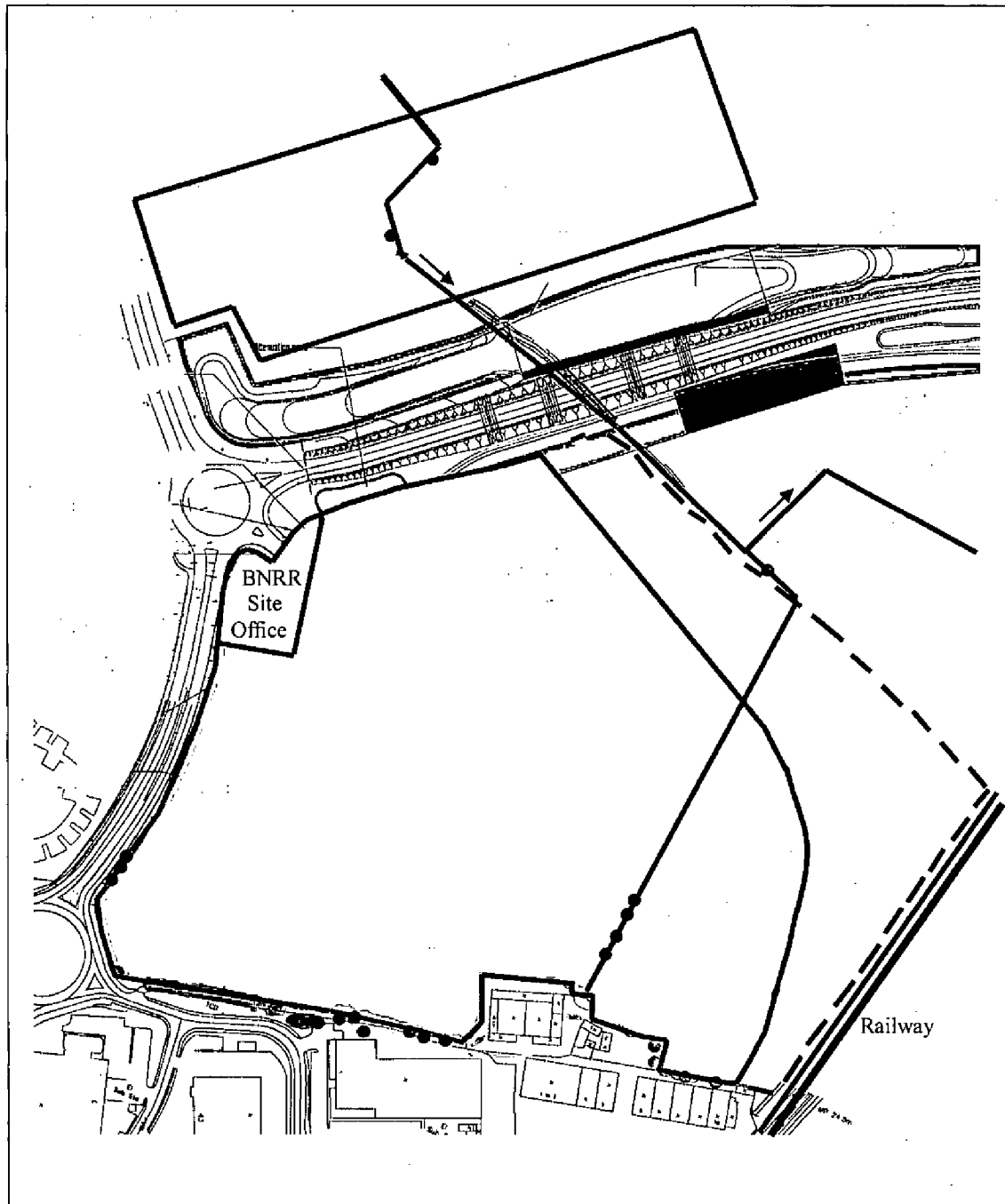
Amphibians

- 4.4.15 No waterbodies suitable for amphibians exist on site and no waterbodies are present within 500m with potential for the legally protected Great Crested Newt *Triturus cristatus* to be present.

Invertebrates

- 4.4.16 The habitats on site are considered of **negligible value** for invertebrate species of conservation concern on account of their intensive arable nature.





Key:

- | | | | | |
|--|---|--|---|--|
|  Planted Landscaping |  Ruderal |  Arable |  Site Boundary |  Extended |
|  Ditch Line (Bramble) |  Wet Watercourse (railway land and through BNRR) | | | |

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Figure 3: Habitats on Site



5.0 BRIEF ASSESSMENT OF LIKELY IMPACTS WITHOUT MITIGATION

5.1 Introduction

- 5.1.1 In view of the predicted activities and the resultant biophysical changes associated with the proposal, as described in Section 3, this section identifies the main potential ecological impacts within the predicted zone of influence, those considered potentially likely to arise in the absence of mitigation. This exercise provides focus for recommendations for further scheme design and mitigation.

5.2 Protected Sites

Potential Impacts on Designated Sites – Solent SPA/SAC/Ramsar sites

- 5.2.1 The nature, scale and location of the development are likely to be such that legally designated sites are considered to be of sufficient distance for the proposed development not to have significant adverse impacts on their features.

Potential Impacts on Berstead Brooks Local Nature Reserve

- 5.2.2 The nature, scale and location of the development are likely to be such that non statutory designated sites are considered to be of sufficient distance for the proposed development not to have significant adverse impacts on their features.

5.3 Habitats & Species on Site

Potential Impacts on Habitats and Vegetation

- 5.3.1 The habitats on site are of low nature conservation value. The general impact of loss of these habitats is considered to be insignificant. Whilst the ditch line that is present on site is of low intrinsic value being a bramble dominated hollow, its loss in a local context will see the reduction in a species poor semi natural habitat within the local environment. The wet watercourse that runs north to south on the eastern boundary and the wet watercourse along the railway are both on the edges of the site.

Potential for Impacts on Protected Species and Species of Conservation Concern

- 5.3.2 The potential for nesting bird species to be affected by development is present within the ditch line and boundaries affected, and any area of crop planted. If these areas were to be removed or cut there is the potential for the development to affect the nests of birds, which would be contrary to Section 1 of the Wildlife & Countryside Act 1981 (as amended).
- 5.3.3 The development will see the loss of arable farmland used by farmland birds including Skylark and Linnet in 2012. The loss of this farmland will have an adverse effect in a very local area only, and the wider landscape is retained as open farmed countryside. The wider landscape is also proposed in the draft Arun District Council Local Plan 2013-2028 as 'Green Infrastructure'.
- 5.3.4 Badgers are known in the wider environment. The development is unlikely to have any direct effects on Badger populations, and the site provides limited foraging potential.



- 5.3.5 If the site is to be lit for security, or through the road network, this could without mitigation adversely affect the use of the wider area by wildlife.
- 5.3.6 The loss of the ditch line in terms of habitat for Water Vole and Otter is a low impact as the current value of this ditch as habitat is considered low. A precautionary approach should however be taken with regard to construction effects on this feature. The wet watercourses on the site boundary may be affected as part of flood compensation and open space measures and if this is the case mitigation options to offset and avoid the potential to affect protected Water Vole and Grass Snake will need to be considered.
- 5.3.7 Off site there are watercourses that lead to the Lidsey Rife. Without mitigation for potential pollution from construction there is potential for run off to have adverse effects on these features in the short term.

6.0 ECOLOGICAL MITIGATION & ECOLOGICAL ENHANCEMENT

6.1 Introduction

- 6.1.1 The potential for impacts without mitigation was considered in Section 5, and mitigation recommendations are provided for consideration for a future development proposal. Recommendations are also made for further survey work on site and in the Zone of Influence.

6.2 Mitigation and Opportunities for Ecological Gain for Protected Habitats, Species and Species of Concern

Habitats

- 6.2.1 The loss of the ditch line as the only semi natural feature within the site's environment can be mitigated through the scheme. If new swales or a ditch is proposed as part of the drainage solution and flood compensation this should incorporate native wetland planting and wildlife features and connect to the existing ditch network. The boundaries of the scheme for part of its length abuts the new flood compensation areas of the BNRR. Landscaping along this boundary should be of native hedgerow and wildflower grassland species similar to the mix used in the BNRR proposals. Planting along the southern boundary could also include native species and be retained as a screening and linear wildlife corridor. The proposed flood compensation measures north of the BNRR could also include measures for wetland creation, seasonal or permanent depending upon hydrology.

Nesting Birds

- 6.2.2 Any woody habitat that could contain a bird's nest should be removed outside of the nesting bird season, which is usually from end February to end August. It may be possible to check certain woody vegetation does not contain a bird nest during the nesting period, but this should only be done by a suitably qualified ecologist. The development construction can avoid impacts on ground nesting Skylark by ensuring that the season prior to construction crops aren't planted and the ground is left ploughed bare. Weed growth should be restricted.



- 6.2.3 The landscaped southern edges of the site have been planted as part of the business park and are likely to be retained.

Badgers

- 6.2.4 As Badgers are known from the wider local area, prior to any construction a further Badger survey should be undertaken to ensure that Badgers are not harmed by the proposals.

- 6.2.5 It is possible that badgers will travel through the site during construction and therefore the following measures should be implemented to reduce the risk of secondary impacts to badgers:

- trenches in excess of one metre in depth should be covered or secured and a means of escape provided for any animal that does fall in (a suitable escape can be provided by wooden planks placed at a 45 degree angle);
- any temporarily exposed open pipe system should be capped in such a way as to prevent badgers gaining access;
- chemicals and fuels should be stored carefully and as far away from setts and badger paths as possible, and in accordance with the Code of Construction Practice; and
- any security lighting (if required) should be directed away from the sites north west boundary.

- 6.2.6 To facilitate these measures, contractors and subcontractors should be made aware of the location of setts and protection zones around setts as part of environmental site induction courses. They should also be informed of the protection afforded to badgers under the *Protection of Badgers Act 1992* and the need for confidentiality of the sett locations.

Lighting

- 6.2.7 Any scheme lighting and security lighting should aim to ensure that the southern boundary is not within the lit curtilage and remains a dark zone, through the use of downward facing directional lighting. Where possible the developing landscape planting on the other boundaries should avoid being lit. This will allow natural corridors to develop through the site.

Ditch line

- 6.2.8 In its current condition the ditch line has only limited potential for use by protected species (nesting birds, and low to negligible potential for Badger, Grass Snake and Water Vole use) and should be destructively searched according to a methodology agreed with the local planning authority, with landscaping and flood alleviation features on the scheme used to provide new semi-natural habitat for wildlife.

- 6.2.9 The methodology for removal of the ditch could involve the following:

- update survey prior to construction commencing;
- removal of woody vegetation outside the bird nesting season through strimming or use of a tractor mounted flail on an arm with ecologist supervision;



- Re survey of the ditch following removal of woody vegetation;
- Update of strategy as necessary;
- Destructive search with ecologist where ecological features have been noted.
- Prior agreement with local authority on new features within the landscaping scheme and any flood alleviation/surface water drainage measures.

Wet Watercourses

6.2.10 The watercourse running north to south through the eastern edge of the main area of the site and through the centre of the flood compensation area contains habitats potentially suitable for Water Vole and Grass Snake. The following principals should be followed to ensure that mitigation for protected species is put in place prior to development adjacent to these areas:

- Where these areas are to be retained a buffer zone should be instated to ensure the protection of watercrouses not directly affected. This should be fenced from construction activities;
- If parts of the watercourse are to be directly affected (eg linking of flood compensation areas to the watercourse a method statement for preparation works to watercourse stretches to provide best practice mitigation for Water Vole and Grass Snake. This should include update survey, mitigation methodologies and timing according to the Watervole Conservation Handbook Third Edition (Strachan, 2012), with method statements agreed with the Local Authority and Environment Agency as required. This approach has been applied locally for the affected stretches of watercourses crossed by the BNRR that are under 100m in length;
- Pollution prevention measures to prevent potential for construction run off into watercourses;
- Longer term habitat management of watercourses and wetland habitats created as part of flood compensation measures, to be written into detailed creation and management statements for the open space and flood compensation areas where they are not being returned to agriculture;
- Watercourses retained within the scheme should have access for management purposes and a buffer zone from the development edge, which can be managed informally to allow natural habitats to develop.

Ecology Gain

6.2.11 Where new landscaping is proposed this should include native locally sourced species. Areas of landscaping should include areas of informal green space along the linear features, this should be through reduced management of grassland or native hedgerow planting. Berry and nut bearing shrubs and bushes will provide new habitats for the local population of Badgers.

6.2.12 The landscaping and boundary planting scheme and the flood compensation and drainage solutions should be influenced by an ecologist during detailed drawing of the scheme. This will ensure that the open space and landscaping can serve a dual purpose of landscaping and wildlife enhancement, including new habitat for loss of the ditch line and any short term impacts on the wet watercourses on the eastern boundaries of the site.



7.0 CONCLUSIONS

- 7.1.1 An ecological appraisal of the site was undertaken in order to provide an indication of the potential for habitats and species of conservation concern to be present on site. The habitats on site have a generally low intrinsic value, and low potential for protected species to be present.
- 7.1.2 A number of options for mitigation and biodiversity gain are suggested. With such mitigation a future scheme would be likely to satisfy biodiversity policy (outlined in **Technical Appendix 3**), and national planning policy and legislation.

8.0 REFERENCES

Aluco Ecology (2012) BNRR Update Ecology Mitigation for Bognor Northern Relief Road, Lidsey Rife Temporary Crossing Works & Adjacent Watercourses

Aluco Ecology (2011) BNRR Update Ecology Strategy Bognor Northern Relief Road, A29 – Stanover Lane Section.

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Technical Appendix 1

Habitats Regulations and Schedule 2 Species

The Conservation (Natural Habitats & c.) Regulations SI 1994/2716 partially implement the Habitats Directive. This has recently been replaced by the Conservation of Habitats and Species Regulations 2010 (the Habitat Regulations). The Regulations contain provisions relating to the protection of European sites and European protected species. European Sites are defined within the Regulations as Special Areas of Conservation (SACs) or Special Protection Areas (SPAs) whether proposed, candidate or classified. European Protected Species are those species listed in Annex IV of the Directive that occur in the UK, and these have been listed in Schedule 2 of the Regulations.

Species listed under Schedule 2 of the Habitat Regulations were formally afforded protection by Regulation 39 (1994), this is now found under Regulation 41/42 (2010). European protected species include the great crested newt, dormice and all species of bats.

(1) The Habitats Regulations makes it an offence;

(a)deliberately to capture or kill a wild animal of a European protected species;

(b)deliberately to disturb any such animal;

(c)deliberately to take or destroy the eggs of such an animal; or

(d)to damage or destroy a breeding site or resting place of such an animal.

(2)It is an offence to keep, transport, sell or exchange, or offer for sale or exchange, any live or dead wild animal of a European protected species, or any part of, or anything derived from, such an animal.

(3)Paragraphs (1) and (2) apply to all stages of the life of the animals to which they apply.

(4)A person shall not be guilty of an offence under paragraph (2) if he shows-

(a)that the animal had not been taken or killed, or had been lawfully taken or killed, or

(b)that the animal or other thing in question had been lawfully sold (whether to him or any other person).

For this purpose "lawfully" means without any contravention of these Regulations or Part I of the Wildlife and Countryside Act 1981.

(5)In any proceedings for an offence under this regulation, the animal in question shall be presumed to have been a wild animal unless the contrary is shown.



(6) A person guilty of an offence under this regulation is liable on summary conviction to a fine not exceeding level 5 on the standard scale.

The Regulations go on to state exemptions and defences that apply to acts that may contravene the Regulation. Such exemptions include those listed in Regulation 40 (1994) now found at Regulation 42 of the 2010 Regulations

The granting of a licence under Regulation 44 (1994 Regulations) now Regulation 53-55 (of 2010 Regulations).

In order to carry out a lawful operation (e.g. development work which has full planning permission) that may result in any of the offences above, it is necessary to obtain a licence from Natural England to allow the operation to proceed.

However, in accordance with the requirements of the Habitats Regulations 2010, a licence can only be issued after the following conditions have been satisfied:

- *that there is no satisfactory alternative, and*
- *that the action authorized will not be detrimental to the maintenance of the population of the species concerned at a favourable conservation status in their natural range.*
- *that the action is required in preserving public health or public safety or other imperative reasons of overriding public interest including those of a social or economic nature and beneficial consequences of primary importance for the environment;*

Full planning permission is required to apply for a Natural England licence (where such a consent is necessary for the work to be carried out). In addition, a method statement which details the survey results, methodology of work to be undertaken, mitigation and compensation measures, must be submitted to Natural England with the licence application.

For Full details of the 2010 Habitat Regulations see:

<http://www.legislation.gov.uk/ukxi/2010/490/regulation/42/made>



Technical Appendix 2

Wildlife & Countryside Act 1981 & Countryside & Rights of Way Act 2000 (CRoW)

Wildlife & Countryside Act

The Wildlife and Countryside Act 1981 (as amended) (WCA) is the principle legislation in Britain for the protection and conservation of our wildlife and its habitats of national importance. The legislation adopts a habitat and species based approach to nature conservation. Habitats and some species are protected in designated Sites of Special Scientific Interest (SSSI). Other species are afforded some protection from harm or disturbance by way of inclusion in either Article 1 (birds), Schedule 1 (specially protected birds), Schedule 5 (specially protected animals) or Schedule 8 (specially protected plants).

(ii) Protection Afforded to SSSIs

The presence of an SSSI on or near to a development is a material consideration, and this is discussed further in policy (see PPS9)

(iii) Law Relating to Protected Species

The WCA provides protection to such species via Section 1 (birds) and Section 9 (animals). These sections provide protection from intentionally:

- killing, injuring or taking any wild bird or taking, damaging or destroying the nest or eggs of a wild bird
- disturbing any wild bird in Schedule 1 whilst building, on or near a nest, or disturbing dependant young of such birds
- damaging, destroying or obstructing access to any structure or place of shelter or protection of a schedule 5 animal, or disturbs any such animal whilst it is occupying a structure or place it uses for that purpose
- killing, injuring or taking any animal listed in Schedule 5
- Having in procession or control any live or dead wild bird or egg, or any wild animal in Schedule 5, or trading in any animal under Schedule 5.

As with European Protected species, there are exemptions from this legislation, and licences for development can be obtained in certain circumstances. Protected species are also a material consideration in planning applications.



Countryside & Rights of Way Act 2000 (CRoW) and Wildlife and Countryside Act 1981

(i) Protected Species & SSSIs

The Countryside and Rights of Way Act 2000 (CRoW Act 2000) adds to protected species legislation in the WCA. The lesser test of 'Recklessness' is added to the protection from disturbance in three circumstances. These are:

- disturbance to Schedule 1 birds and their nests, eggs and dependant young,
- disturbance to Schedule 5 animals in their place of shelter/protection, and
- disturbance to the places of shelter/protection of Schedule 5 animals.

This addition means that any person who deliberately takes an unacceptable risk or fails to notice an obvious risk is falls under the Section irrespective of intention.

The CRoW Act also provides greater protection to SSSIs from operations (and non operations) of owners, occupiers and third party users of an SSSI.

The CRoW Act also provides a basis for Local Authorities to consider Biodiversity within their functions and decision making.

2013-2028 Draft Local Plan Policies

Policy DM 26

Development and Biodiversity

Development schemes shall, in the first instance, protect existing habitats on site. They shall also however incorporate elements of biodiversity including green walls, roofs, bat and bird boxes as well as landscape features minimising adverse impacts on existing habitats (whether designated or not). Development schemes shall also be appropriately designed to facilitate the emergence of new habitats through the creation of links between habitat areas and open spaces. Together, these provide a network of green spaces which serve to reconnect isolated sites and facilitate species movement.

Where there is evidence of a protected species on a proposed development site, planning applications shall include a detailed survey of the subject species, with details of measures to be incorporated into the development scheme to avoid loss of the species. This involves consideration of any impacts that will affect the species directly or indirectly, whether within the application site or in an area outside of the site, which may be indirectly affected by the proposals. All surveys shall be carried out at an appropriate time of year and shall be undertaken by a qualified and, where appropriate, suitably licensed person.

All developments shall have regard to Natural England's standing advice for protected species.

Developments shall also be consistent with all other local plan policies.

Policy SP 23

Natural Environment

Arun District Council will encourage and promote the conservation and enhancement of biodiversity and the natural environment through policies for the protection of both designated and non-designated sites. Where possible it shall also promote the creation of new areas for habitats and species. In relation to designated sites, development will be permitted where it protects sites listed in Tables 19.1-19.6 that are recognised for the species and habitats contained within them.

Name	New Site Code ⁽³⁾
Pagham Harbour	UK 11052

Table 19.1 Ramsar Sites



Name	Site Code
Pagham Harbour	UK 9012041
Arun Valley	UK 9020281

Table 19.2 Special Protection Areas

Name	Site Code
Pagham Harbour	1000243
Bognor Reef	1000219
Felpham	1000357
Climping Beach	1000225

Table 19.3 Sites of Special Scientific Interest

Name	Site Code
Pagham Harbour	1009061
West Beach	1009233

Table 19.4 Local Nature Reserves

Name	Site Code
Ferring Rife & Meadows	Ar12
Littlehampton Golf Course and Atherington Beach, Littlehampton	Ar06
Elmer Rocks	Ar18
Fontwell Park Race Course	Ar01

Table 19.5 Sites of Nature Conservation Importance

Name	Site Code
Felpham Foreshore, Bognor Regis	1475602
Climping Sand Dune System	1475611
Bognor Foreshore	1475600
Pagham Harbour	1475608

Table 19.6 Local Geological Site



Policy DM 34

Designated Nature Sites

It is the policy of the Council to maintain, protect and where possible enhance the conservation value of International, European, National and Local designated sites as listed in Tables 19.1 - 19.6. Development not directly connected with or necessary to the management of the designated site(s) and which is likely to have an adverse effect on the site(s), will generally not be permitted however such development may be permitted where any of the following can be demonstrated:

1. there is no alternative solution (which shall be adequately demonstrated by the developer) or
2. there are reasons of public health or public safety or
3. there are benefits of primary importance to the environment or
4. there are imperative reasons of overriding public interest

Notwithstanding the above however, the presumption in favour of sustainable development does not apply where development requiring appropriate assessment under the Birds or Habitats Directives is being considered, planned or determined.

Where development is permitted, the use of conditions or planning obligations will be used in order to avoid and minimise harm to the site(s). In any event, any adverse impacts shall be minimised and mitigated or compensated in full as agreed with the planning authority.

Developments shall also be consistent with all other local plan policies.



Policy DM 35

Pagham Harbour

1. Within Zone A (<400m) as identified on the Proposals Map, development will only be permitted in exceptional circumstances which shall be demonstrated by the developer. These circumstances shall relate to the impact, type and the effects of any proposed development on Pagham Harbour, including on non-native species.

2. Within Zone B (400m – 5km) all new residential development will be required to:

(a) contribute financially towards improved access management at Pagham Harbour. Access management measures shall be undertaken and shall include wardening, access management and site protection, habitat improvements, provision for interpretation, education and signage and monitoring of wildlife and visitor numbers

and

(b) create easily accessible new green spaces for recreation within or adjacent to the development site, or to make developer contributions towards the provision of such green spaces to serve the area. New spaces shall be capable of accommodating the predicted increases in demand for local walking and dog walking. Good pedestrian links shall be provided between housing areas and new and existing green space in order to discourage car use.

3. Large scale developments taking place outside Zone B and close to its boundary will be considered on a case by case basis for potential effects on Pagham Harbour, and the need for avoidance or mitigation measures.

A tariff will be set to ensure sufficient funds are available to secure the required access management measures and the provision of alternative green space of a suitable size, design and location, where necessary, in advance of the occupation of new development and to ensure it is appropriately managed in perpetuity.

Developments shall also be consistent with all other local plan policies.



Policy DM 36

Appropriate Assessment

An Appropriate Assessment shall be carried out in respect of any plan or project likely to have a significant effect on Pagham Harbour or any other Natura 2000 sites outside the district (where appropriate), either individually or in combination with other plans or projects. If after completing an Appropriate Assessment of a plan or project the Planning Authority is unable to conclude that there will be no adverse effect on the integrity of these sites, the project will not be approved, unless otherwise in compliance with the Habitats Directive.

Projects which may give rise to significant cumulative, direct, indirect or secondary impacts on these sites will only be permitted (either individually or in combination with other plans or projects) for reasons of overriding public interest.

Developments shall also be consistent with all other local plan policies.

Policy DM 37

Non Designated Sites

Within Biodiversity Opportunity Areas (BOA's) and the Marine Conservation Zone (MCZ) (see Proposals Map), development shall

- (i) retain and sympathetically incorporate locally valued and important habitats, including wildlife corridors and stepping stones
- (ii) be designed in order to minimise disturbance to habitats

Where development proposals are likely to have an impact on species or habitats within either the BOA's or recommended MCZ, any application for planning permission shall include a properly conducted survey of the presence of that species and habitat and any impact that development may have on either. Development proposals that do not reasonably address opportunities for enhancing BOA's and the recommended MCZ through their design, layout and landscaping shall not be permitted. Where a development scheme would result in a habitat loss, mitigation measures shall be proposed as part of the proposed scheme and such measures agreed with the planning authority prior to the determination of any planning application.

Developments shall also be consistent with all other Local Plan policies.

Policy DM 38

Protection of Trees

Development will only be permitted where it will not damage or destroy tree(s) protected by a tree preservation order(s), (TPO) identified as ancient woodland, in a conservation area or contributing to local amenity, unless to do so:

- (i) would result in the removal of one or more trees in the interests of good arboricultural practice. This shall be demonstrated by the developer following the advice of a suitably qualified person which shall be guided by BS 5837. Details of any advice received having regard to BS 5837 shall be submitted, in writing, as part of a planning application or
- (ii) would enhance the survival and growth prospects of other protected trees
- (iii) the benefits of the proposed development in a particular location outweigh the loss of trees or woodland, especially ancient woodland

Where planning permission is granted in any of the above instances, conditions shall be used to ensure that, for any trees which are removed as part of a development, at least an equivalent number of a similar species and age (where practical) are planted on the proposed development site. Sufficient space for replacement trees to mature shall be provided. The planting of new trees shall form an integral part of the design of any development scheme.

Proper provision must be made for the protection and management of trees or areas of woodland on-site when undertaking development. A management plan shall be provided as part of a planning application in accordance with BS 5837 in order to ensure that trees are adequately protected during development. Conditions for the continued protection of trees on sites shall be included in any planning consent given.

Where there are existing trees on or adjacent to a development site, developers shall be required to provide:

- (i) land and tree surveys
- (ii) a tree constraints plan
- (iii) an arboricultural implications assessment to include a tree protection plan and arboricultural method statement

These will ensure that development is planned to take a comprehensive view of tree issues at an early stage in the design process and that development works do not have a negative impact on existing trees.

Developments shall also be consistent with all other Local Plan policies.



ARUN LOCAL PLAN POLICIES

Policies Relevant to Ecology saved from the Local Plan 2011 (Adopted 2003)

POLICY GEN3 Protection of the Countryside

Outside the Built-Up Area, as defined on the Proposals Map, the countryside will be safeguarded for its own sake. Development will not be permitted unless:

- (i) it meets the operational needs of agriculture, forestry, the extraction of minerals or the deposit of waste; or
- (ii) for quiet, informal recreation; or
- (iii) for the diversification of the rural economy; or
- (iv) for essential road schemes; or
- (v) it is in accordance with a policy in Sections 2 and 3 of the plan referring to a specific use or type of development.

Permission will not be given for the extension of isolated groups of buildings or the consolidation of linear or sporadic development unless the proposal accords with criteria (i) to (iii) or (v).

POLICY GEN23 The Water Environment

Development will not be permitted if it would have a direct or indirect unacceptable adverse impact on the water environment, notably in relation to rivers, ponds, wetlands, public access in river corridors and water related recreation.

Where appropriate, the Council will support initiatives which seek to restore or enhance the water environment.

POLICY GEN25 Water Resources

Development will only be permitted where the Local Planning Authority is satisfied that adequate water resources are available or will be provided in time to serve the development, and that provision is not considered detrimental to existing abstractions, river flows, water quality, fisheries, amenity or nature conservation.

POLICY GEN26 Water Quality

Development will only be permitted where the Local Planning Authority is satisfied that it would not lead to a deterioration in the quality or potential yield of surface and ground water resources.

POLICY GEN28 Trees and Woodlands

Development will not be permitted if it would damage or destroy one or more trees protected by a tree preservation order, identified as ancient woodland or in a conservation area unless:

- the removal of one or more trees would be in the interests of good arboricultural practice; or
- the benefits of the proposed development outweigh the amenity value of the protected trees.

Conditions may be used to ensure that, for any trees which are removed as part of a development, an equivalent number are planted on the site.



POLICY GEN29 Nature Conservation Across the District

Development will only be permitted on sites which contain semi-natural habitats, features of nature conservation interest, or within wildlife corridors, where these can be largely retained and sympathetically incorporated into the scheme. Legal agreements may be used to offset the loss of, or impact on, any nature conservation resource present on the site prior to development.

POLICY AREA13 Sites of International Importance for Nature Conservation

Proposals for development in, or likely to affect (directly or indirectly) a site of international importance for nature conservation will be subject to the most rigorous examination. Development not directly connected with or necessary to the management of the site which is likely to have an adverse effect on the site, will not be permitted unless: there is no alternative solution, there are reasons of public health or public safety, or there are benefits of primary importance to the environment.

Where such sites do not host a priority habitat or species, development will not be permitted unless there are imperative reasons of overriding public interest.

Where development is permitted, the use of conditions or planning obligations will be considered in order to avoid and minimise harm to the site, to enhance the site's nature conservation interest, and to secure any compensatory or mitigation measures and appropriate management that may be required.

POLICY AREA14 Sites of National Importance for Nature Conservation

Proposals for development in, or likely to affect (directly or indirectly) Sites of Special Scientific Interest will be subject to special scrutiny. Where such development is likely to have an adverse effect, it will not be permitted unless the reasons for the development clearly outweigh the nature conservation value of the site itself and the national policy to safeguard the national network of such sites.

Where the site concerned is a National Nature Reserve, a site identified by the Nature Conservation Review or Geological Conservation Review, particular regard will be paid to the national importance of that site.

Where development is permitted, harm to the nature conservation interest must be minimised. The use of conditions or planning agreements will be considered to ensure the protection and enhancement of the nature conservation interest, and to provide appropriate compensatory or mitigation measures and site management.

POLICY AREA15 Sites of Local Importance for Nature Conservation

Proposals for development in, or likely to have an adverse effect (directly or indirectly) on a Local Nature Reserve, Site of Nature Conservation Importance (including ancient woodlands or wildlife corridors) or Regionally Important Geological/Geomorphological Site will not be permitted unless it can be demonstrated that reasons for the proposal outweigh the need to safeguard the nature conservation value of the site/feature. Where development is permitted which would damage the nature conservation value of the site/feature, such damage should be kept to a minimum.

Conditions or planning obligations will be used to secure necessary compensatory or mitigation measures, enhancement and site management.

Where appropriate, the Authority will consider the use of legal agreements to provide appropriate compensatory measures, enhancement and site management.

Retained Ecology Policies of the West Sussex Structure Plan 2001-2016



Nature conservation

Policy ERA2

(a) Development should not be permitted unless the wide range of habitats, species and geological features of the County will be protected, conserved and, where possible, enhanced particularly through long-term management mechanisms and habitat creation schemes. A particularly high level of protection should be afforded to sites and features of national and international importance. Proposals for the extension or creation of new habitats should be permitted provided that they are consistent with wider environmental objectives.

(b) Local plans will include policies to:

(1) ensure that site evaluation is undertaken to establish the nature conservation importance of proposed development sites;

(2) protect sites or features of nature conservation importance, including those protected under legislation and prevent development unless there are no alternative solutions and there are overriding reasons which outweigh the need to safeguard the value of sites or features;

(3) ensure that where development would result in the loss of an important nature conservation resource, a new resource is provided which is of at least equivalent value, where possible;

(4) where appropriate, secure the restoration, creation and management of habitats through development proposals; and

(5) where necessary, ensure the investigation and recording of sites and features of nature conservation importance, and, where appropriate, the preservation of any finds.



Technical Appendix 4

Ecological Appraisal Method

Introduction

The methodology for this appraisal is based on the Guidelines for Ecological Impact Assessment (EclA) in the United Kingdom published by the Institute of Ecology and Environmental Management (IEEM June 2006). Regardless of whether a statutory Environmental Impact Assessment is required, these guidelines provide a robust framework for ecological assessment at any scale.

Desk Study

The first stage of the appraisal is a desk study of the proposed development site and associated Zone of Influence. This provides background information on the site and local environment so as to more effectively target field survey and further desk research.

The Multi Agency Geographical Information for the Countryside (MAGIC) database and Natural England's 'Nature on the Map' are interrogated for information regarding nationally or internationally designated sites within 1km or 5km of the site respectively. The National Biodiversity Network (NBN) data base is interrogated primarily for any relevant local protected species records within the area. The NBN provides access to a substantial volume of biodiversity data for the UK. Although rarely site specific, it does provide valuable information on the local occurrence of protected species.

Where appropriate, the local environmental Record Centre is approached to provide information regarding locally identified sites and records of protected and/or notable species within and around 1km of the site and European Protected species within 5km of the site.

Site Survey Methodology

The aims of the survey are to record land-use and broad vegetation types present on the site and in the surrounding areas, and to evaluate the habitats and vegetation communities ecological value along with the potential to support protected species, species of principal importance, and any other notable species.

Where relevant, habitat immediately adjacent to the site is also assessed as this can have a bearing on the possible presence of protected species on the site and the ecology of adjacent areas can be affected by development nearby.

Habitats and Vegetation

Habitats and vegetation communities are recorded on a broad scale by visually noting contrasting land uses, vegetation zones and landscape features, such as hedgerows and trees. Dominant plant species are recorded in each of the areas identified, as are any notable plant species, such as protected species and habitats or notifiable weeds.

Protected Species

Many plant and animal species are legally protected in the UK. Some, such as bats, badger, water vole and great crested-newt are commonly encountered on development sites. Protected species law is a serious consideration for developers and land owners, as failure to confirm their presence during initial



project conception can later lead to serious programming delays and their associated costs and to prevent any infringement of the law.

Case law has established (Regina vs. The Cornwall County Council ex parte Hardy 2001) that "It is essential that the presence or otherwise of protected species, and the extent that they may be affected by the proposed development, is established before the planning permission is granted.

For the most regularly encountered protected species, a brief summary of methods follows:

Bats

Bats use buildings and trees for roosting and breeding, and so the potential for any of these features on site to support bats was considered, as was the sites potential for providing bat foraging habitat.

External inspections of the trees and buildings on site were undertaken. The survey looked for the presence of bats as well as signs of their presence such as:

- Bat droppings, e.g. within cavities and buildings;
- Staining at potential roost access points;

Lack of bat evidence cannot be taken to mean the lack of use by bats and an assessment of potential roost sites was therefore also undertaken:

- Signs of bats can be easily washed off by wind or rain;
- Droppings are hard to see where rubble and other floor debris may obscure them;
- Low numbers of droppings can easily be missed especially where they may become damp and deteriorate;
- Evidence of bats may not be apparent where bats roost out of view, such as in tree cavities etc.

Badgers

The site and its boundaries were systematically searched for the presence of Badgers *Meles meles*, in particular badger setts, on or near (30-40m) of the site. The area was also assessed for the presence of badger foraging activity and territorial behaviour. Such signs include foraging trails, foraging scrapes in short grass, which are commonly known as 'snuffle holes' (shallow scrapes in soft ground or even turf rolling created by foraging for ground-dwelling invertebrates such as worms and grubs), footprints, hairs caught under fences, sett entrances, and latrine sites.

Dormice

The presence of Dormouse on or near the site was considered during the survey, principally through habitat suitability, combined with data on occurrence within the area. Where suitable habitat occurs, further survey for feeding signs on hazel nuts and honeysuckle where it occurs along with searches for arboreal nests. If it a site is considered suitable, further survey may be recommended.

Other Mammals

Consideration is also given to the potential for habitats to support other legally protected mammals and those of nature conservation importance. Where any water bodies occur on or near to the site species including Water Vole *Arvicola terrestris* and Otter *Lutra lutra* are considered, both are legally protected species under the Wildlife & Countryside Act 1981 (as amended) with their habitats also



being protected. Otter are also afforded protection under the Habitats Directive 92/43/EC. Depending upon the geographic location consideration is also given to species such as Red Squirrel.

Breeding Birds

Any notable bird species seen during the survey are recorded. The type and quality of breeding, foraging and roosting habitats available for birds is also considered and interpreted with particular reference to protected or more notable bird species.

Consideration is given to any features which could support nesting birds, (Buildings and other structures, and areas of vegetation) that will be cleared or disturbed as a result of the development.

Reptiles

Any areas of habitat considered suitable for supporting reptiles were noted (for example, areas of rough grassland and scrub, banks, burrows, and rubble piles, compost heaps).

Great Crested Newt

Due to declines in numbers predominantly due to habitat loss and restricted European range, Great Crested Newts *Triturus cristatus* are protected under Section 9 of the Wildlife and Countryside Act, 1981 (as amended) and Regulation 39 of the Conservation (Natural Habitats &c) Regulations 1994, which protects Great Crested Newts from harm, injury and deliberate capture, killing, disturbance, damage and destruction of eggs, breeding site or resting place. This includes deliberate or reckless damage or disturbance.

Survey was by habitat suitability (the occurrence of suitable ponds and terrestrial habitat) combined with knowledge on their distribution from biological records for the area. If a site is considered suitable, further survey is usually required if an impact is considered likely.

Invertebrates

A very small proportion of invertebrates are afforded legal protection under the Wildlife and Countryside Act 1981 (as amended), although a relatively high number of invertebrates are included within the UK and local BAPs, and many more species are identified as being Nationally Scarce. Most invertebrates require specialist knowledge in order to identify them, although some groups, including butterflies and dragonflies, can be readily identified by generalists. Therefore, apart from recording any species of these readily identifiable groups, the survey concentrated on recording the presence of any key habitats of nature conservation importance considered suitable for supporting more scarce and restricted invertebrates, for example bare ground, dead wood and botanically rich habitats.

Survey Constraints and Limitations

Walkover surveys are carried out during a brief window of time. And therefore, the survey will provide only a snapshot of the range of plants and animals that might be present. However, professional judgement is used to interpret the habitat features recorded, and their likely value for supporting protected and notable species, including species of principal importance. Where timing is likely to significantly affect the results of a survey, further survey work is often recommended. Survey can also be restricted through land access, especially land adjacent to the site.

Assessment Guidelines

Introduction

The IEEM guidelines (2006) provide three principal reasons for an ecological feature being valued and therefore included within the EcIA: biodiversity value, social/community value, and economic value.

The evaluation and assessment undertaken assigns one of a number of value labels based on a geographic scale as follows:

- International
- National
- Regional
- County
- District
- Local (Parish)
- Within the zone of influence

Value is determined with reference to the following factors:

- level of designation (sites) or biodiversity-based protection (legal and policy);
- biodiversity value (e.g. inclusion in Biodiversity Action Plans, rarity, position in ecosystem, assemblages and communities, size and diversity);
- social and economic value;
- legal issues (eg protected sites).

All impacts of the scheme on features of local importance or greater are assessed in the impact assessment stage

Assessment of Likely Impacts

The ecological impact assessment methodology used is based on the following considerations.

Characterisation of Likely Impacts

The potential impacts identified as a result of the proposals are characterised according to the following parameters:

- Positive or negative
- Magnitude (and extent if not synonymous)
- Duration
- Reversibility
- Timing and frequency

Significance of Impact

A significant impact on a valued ecological feature (whether negative or positive) is defined in IEEM's guidelines as an impact on the integrity of a defined site or ecosystem, and/or the conservation status of habitats or species within a given geographical area. These terms are defined below.

Integrity

Integrity is defined as follows. *'The integrity of a site is the coherence of its ecological structure and function, across its whole area, that enables it to sustain the habitat, complex of habitats and/or the levels of populations of the species for which it was classified.'* A site or ecosystem that achieves this is considered to be at favourable conservation status.

Conservation Status

For habitats, conservation status is determined by the sum of the influences acting on the habitat and its typical species, which may affect its long-term distribution, structure and functions as well as the long-term survival of its typical species within a given geographical area.

For species, conservation status is determined by the sum of the influences acting on the species, which may affect the long-term distribution and abundance of its populations within a given geographical area.

Impact Prediction

For guidance as to whether an impact is likely to result in an adverse effect on the integrity or conservation status of a feature, reference has been made to the conservation objectives for that feature where they are available, for example in habitat and species action plans. Otherwise professional judgement has been made based on available information.

The confidence in the prediction that an activity will give rise to a significant adverse impact on a valued ecological feature is given based on a four point scale:

- Certain (or near-certain);
- Probable;
- Unlikely; and
- Extremely unlikely

Drawing Assessment Together

The above factors – value, integrity and conservations status of the feature, prediction and characterisation of the impact and overall significance of the impact is brought together in the final assessment. This is done without additional mitigation measures that may be proposed. An impact is then summarised as significant or not.

Mitigation, Compensation and Enhancement

Where impacts are characterised as significant mitigation or compensation may be offered to prevent, reduce or offset such impacts. In addition enhancement measures may be built into a scheme to ensure that the scheme is compliant with the proactive measures outlined in the latest Government policy on nature conservation (PPS 9).



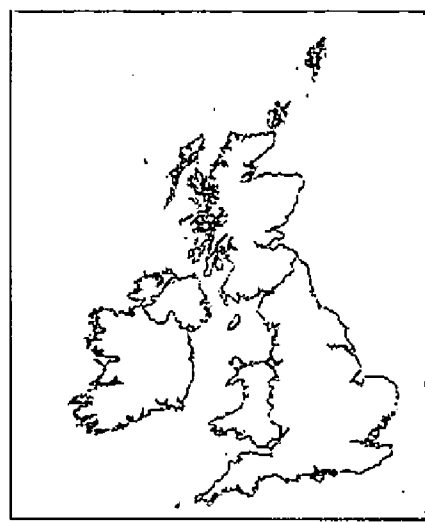
SPA description

(information as published 2001)

Pagham Harbour

Country	England
Unitary Authority	West Sussex
SPA status	Classified 30/03/1988
Latitude	50 45 48 N
Longitude	00 45 38 W
SPA EU code	UK9012041
Area (ha)	636.68
Component SSSI/ASSIs	Pagham Harbour

Pagham Harbour is located on the south coast of England in West Sussex. It is an estuarine basin that comprises an extensive central area of saltmarsh and intertidal mud-flats, surrounded by lagoons, shingle, open water, reed swamp and wet permanent grassland. The mud-flats are rich in invertebrates and algae, and provide important feeding areas for birds. The lower saltmarsh is dominated by Common Cord-grass *Spartina anglica*, with patches of Glasswort *Salicornia* spp. The area supports breeding Little Tern *Sterna albibrons* in summer, as well as wintering concentrations of Rufi *Philomachus pugnax* and Pintail *Anas acuta*.



Qualifying species

For individual species accounts visit the [Species Accounts section](#)

This site qualifies under Article 4.1 of the Directive (79/409/EEC) by supporting populations of European importance of the following species listed on Annex I of the Directive:

During the breeding season;

Little Tern *Sterna albibrons*, 12 pairs representing 0.5% of the breeding population in Great Britain (Count as at 1995)

Over winter;

Rufi *Philomachus pugnax*, 160 individuals representing at least 22.9% of the wintering population in Great Britain

This site also qualifies under Article 4.2 of the Directive (79/409/EEC) by supporting populations of European importance of the following migratory species:

Over winter;

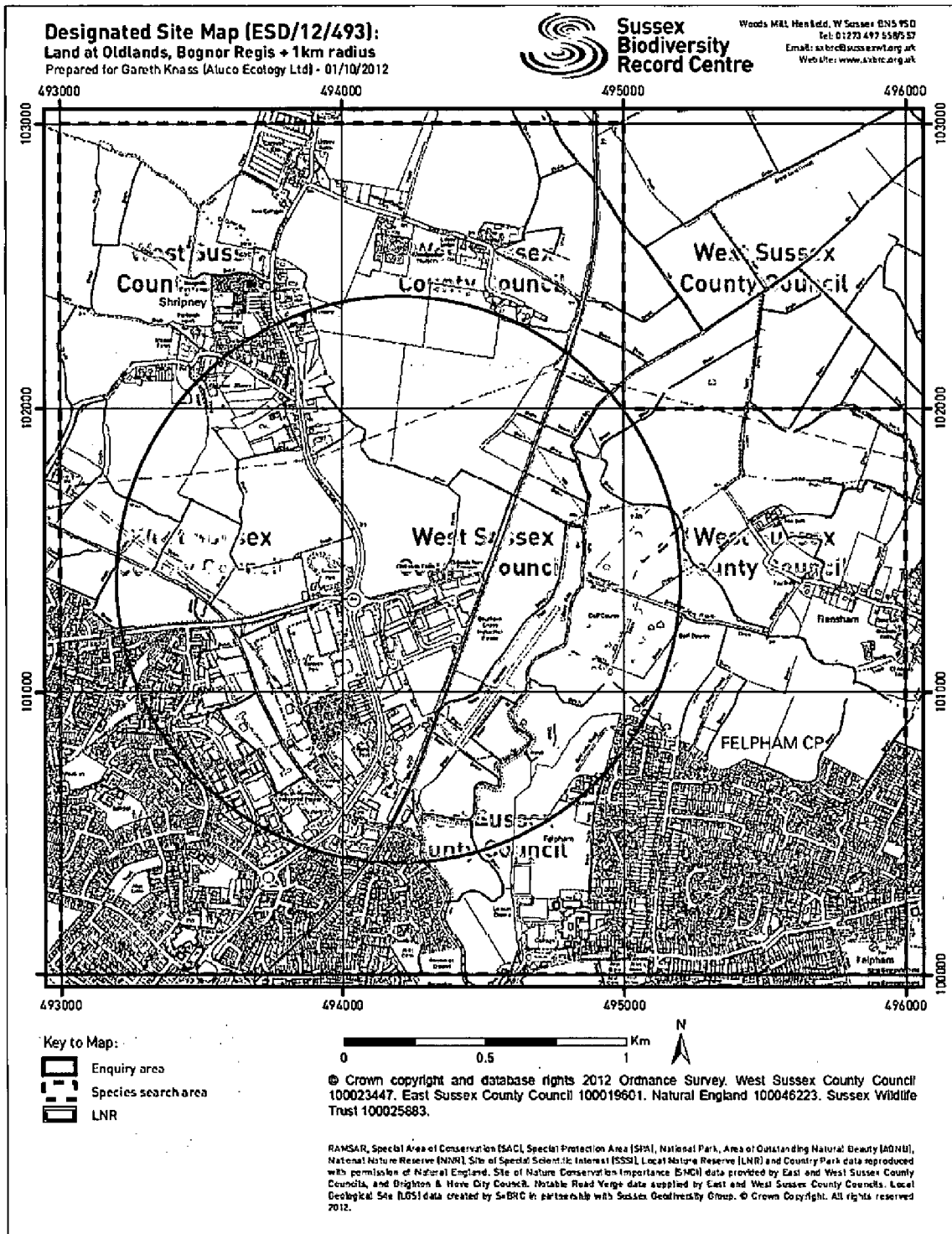
Pintail *Anas acuta*, 628 individuals representing at least 1.0% of the wintering Northwestern Europe population (5 year peak mean 1991/2 - 1995/6)

Note:

Many designated sites are on private land: the listing of a site in these pages does not imply any right of public access.

Note that sites selected for waterbird species on the basis of their occurrence in the breeding, passage or winter periods also provide legal protection for these species when they occur at other times of the year.





Berstead Brooks LNR (Map: Sussex Biodiversity Records Centre)

