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WOODLAND CONSULTANCY LIMITED

**Report on Ecological Appraisals Presented in Support
of Applications For Housing Development at
Pagham, West Sussex**

March 2017



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1 Executive Summary

- 1.1. Petra Billings Woodland Consultancy Ltd was contracted in March 2017 to review three planning proposals for housing development in the parish of Pagham, West Sussex. In each case, the developers have submitted an Ecological Appraisal of the development site. In two of the three cases, Pagham South and Sefter Road, the developers have also submitted a Habitats Regulations Assessment (HRA) Screening Report. The latter is required to assess whether the development proposals will result in any 'likely significant effect' on qualifying bird species for nearby Pagham Harbour Special Protection Area and Ramsar Site. The Hook Lane developers have not submitted an HRA Screening Report.
- 1.2 Pagham Harbour is designated at local, (Local Nature Reserve) national (Site of Special Scientific Interest), European (Special Protection Area) and international (Ramsar site) level. Dark-bellied Brent goose is a qualifying species for the SPA and uses all three sites as supporting habitat.
- 1.3 The Biodiversity records provide compelling evidence not just of the use of all three sites as supporting habitat for Pagham Harbour SPA qualifying species but also for additional species for which Pagham Harbour is designated as SSSI. There is evidence of regular use of the Pagham South site in particular, with many records of significant numbers of Brent goose, Pintail and Black-tailed Godwit using the site, as well as Grey Plover and Ringed Plover. In addition seventy-two Birds of Conservation Concern have been recorded at the Pagham South site, 55 at the Hook Lane Site and 77 at the Sefter Road site. Clearly high numbers of protected species which are vulnerable to development use the three application sites and would be adversely affected by the proposed developments.
- 1.4 Ecological survey effort by the developers has been inadequate. Winter bird surveys were not undertaken at the Sefter Road site. Those undertaken at the Hook Lane and Pagham South sites failed to record Brent geese, despite photographic evidence from local residents for both sites. Many records of Brent Geese at all three sites have been provided by the Sussex Biodiversity Records Office.
- 1.5 HRA screening by the developers has been inadequate. Conclusions as to the potential significant impacts of the Hook Lane development were based on those drawn in the HRA for the Arun Local Plan (2013) which in turn was based on out-of-date and inaccurate Brent Goose records for the application sites.
- 1.6 No consideration has been given by any of the three developers as to the potential adverse effects of the three development proposals in combination. Given the ecology of the Brent Goose, it is likely that the three sites are linked ecologically to such an extent that approval of any one development would adversely affect Dark-Bellied Brent geese using either of the other two sites.
- 1.6 The European Habitats Directive requires that, where a plan or project is likely to have a significant effect upon an SPA, either individually or in combination with other plans or projects, it must be subject to an Appropriate Assessment of its implications on the site. In all three

cases, despite conclusions to the contrary in the HRA Screening/Information reports, it is clear that the application proposals will significantly affect supporting habitat for Dark-Bellied Brent geese. It is also likely that there will be significant disturbance effects on the SPA through increased recreational pressure. Therefore, an Appropriate Assessment of the Development Proposals is required.

1.7 In addition, ecological surveys have demonstrated the presence of a number of protected species on the application sites, the most significant of which are the Barbastelle bat, a Habitats directive Annex 2 species which has been shown to use flightlines along the western and northern boundaries of the Hook Lane site, and the Water Vole, which is fully protected under Schedule 5 of the Wildlife and Countryside Act 1981 and is a priority conservation species.

1.8 The importance of the Barbastelle bat flightlines along the western and northern boundaries of the Hook Lane site has been undervalued as has the potential disturbance effect of lighting from the development on the flightlines. Mitigation for disruption of Barbastelle flightlines is not an option. Therefore according to the National Planning Policy Framework, planning permission for the Hook Lane site should be refused.

1.9 The importance of the Water Vole population at the Hook Lane site has been undervalued in assuming that the proposed translocation measures could 'make a demonstrable net conservation gain for water voles' (NE, Water Vole Class Licence) as would be required to obtain a licence for the measures from Natural England. This is an extremely important area for Water Vole: a development can be extremely detrimental to population connectivity yet the risk of population fragmentation has not been addressed nor the population size estimated.

1.10 In conclusion:

- (i) **Many Birds of Conservation Concern use all three application sites and would be severely and adversely affected by the proposed developments.**
- (ii) **There is a strong likelihood of significant effects upon the Brent Goose, a qualifying species of the Pagham Harbour SPA which uses all three application sites as supporting habitat. Therefore all the proposals must be subject to Appropriate Assessments.**
- (iii) **There is sufficient evidence that harm to the Barbastelle could result from the Hook Lane development that planning permission should be refused.**
- (iv) **This is an extremely important area for Water Vole yet the risk of population fragmentation by the Hook Lane development has not been addressed.**

2 Introduction

Petra Billings Woodland Consultancy Ltd was contracted in March 2017 to review three planning proposals for housing development in the parish of Pagham, West Sussex. In each case, the developers have submitted an Ecological Appraisal of the development site together with a report or other information to inform a Habitats Regulations Assessment (HRA). The latter is required to decide whether the development proposals will result in any 'likely significant effect' on qualifying bird species for nearby Pagham Harbour Special Protection Area and Ramsar Site. If so, or if it is uncertain whether the effects will be significant, a full Appropriate Assessment of the likely effects of the development plans will be required.

The remit was to carry out a desk-top study to review the Ecological Appraisals, HRA Screening Reports and any other relevant information that was submitted with the proposals. An assessment and comment would then be made on the suitability of the three sites for housing development. The evaluation and report would be undertaken by Dr Petra Billings who is a full member of the Chartered Institute of Ecology and Environmental Management and a Chartered Ecologist.

The three applications are for:

- Land South of Pagham South
The proposal is for a mixed use development comprising of up to 400 dwellings, a care home, a Local Centre, and provision of land for various other functions including a primary school and a scout hut.
- Land West of Hook Lane
The proposal is for a residential development of up to 300 units with associated infrastructure including a care home, play area and road infrastructure. There is also scope for a school to be incorporated within the development.
- Land North of Sefter Road
The proposal is for a development of up to 250 dwellings with provision of land for a replacement scout hut, land for an Ambulance Community Response Post facility and land for a primary school.

Hereafter the sites are referred to as, respectively, the Pagham South, Hook Lane and Sefter Road sites.

Figure 1 shows the proximity of the three sites to each other and to Pagham Harbour Special Protection Area, Ramsar site and Site of Special Scientific Interest.

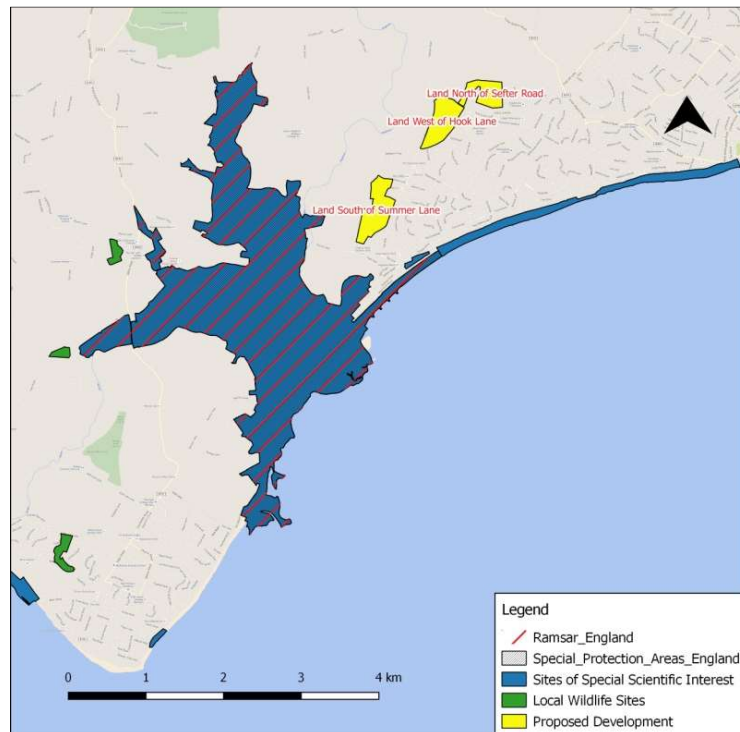


Figure 1 Location of Proposed Development Sites and Proximity to Pagham Harbour

3 Conservation Designations

- 3.1 Pagham Harbour is designated at local, national, European and international level. It is less than 500m west and less than 600m south from the Pagham South site, see Figure 1. Descriptions and/or the key qualifying criteria for each designation provided by the relevant statutory authority are summarised below.

Pagham Harbour Local Nature Reserve (LNR) The main habitats include intertidal mudflats, saltmarsh, saline lagoons and vegetated shingle. Up to 10,000 waders and wildfowl winter in the harbour with Dark-bellied Brent geese, Pintail and Black-tailed godwit present in national/international numbers. Spring and autumn bird migrations include Osprey, Marsh Harrier, Honey Buzzard, Hobby and Montagu's Harrier. Other wildlife includes Purple Hairstreak butterfly, Childling Pink, Water Vole and numerous species of dragonflies.

Pagham Harbour Site of Special Scientific Interest (SSSI). Pagham Harbour is of national importance for wintering wildfowl and waders and also for breeding birds both within the Harbour and the surrounding grazing pasture. The numbers of wintering Pintail, Ringed and Grey Plover and Black-tailed Godwit regularly reach 1% of British populations and the site is of international importance for wintering Ruff and Dark-bellied Brent geese. The damp unimproved grassland surrounding the Harbour is used as a major wader roost and is grazed by large numbers of Dark-bellied Brent geese.

Pagham Harbour Special Protection Area (SPA) and Ramsar Site. This extensive area of saltmarsh and intertidal mudflat is designated for its breeding and overwintering bird populations. The site supports in winter an average of 3045 dark-bellied Dark-bellied Brent geese (2% of the European wintering populations). Other qualifying species are Pintail (1% of the British wintering population, Grey Plover (3%) and Black-tailed Godwits (7%). The site qualifies also by supporting 10% of the British wintering population of Ruff and breeding populations of Little Tern and Common Tern.

The area qualifies as a wetland of international importance (Ramsar site) for its waterfowl under Article 4.2 of the European Birds Directive (79/409/EEC) by regularly supporting at least 20,000 waterfowl.

Notably, the importance of the populations of Dark-Bellied Brent goose, Pintail and Black-Tailed Godwit is highlighted for each designation.

- 3.2 Chichester Harbour is also designated at national, European and international level and lies 6.5 km north-west of the application sites. It is included here as further illustration of the importance of the local area for conservation and in particular for its importance for wintering populations of the Dark-bellied Brent goose. However given the distances involved, determination of 'any likely significant effects' of the development proposals on SPA qualifying species are limited to Pagham Harbour SPA and therefore Chichester Harbour is not discussed beyond this section.

Chichester Harbour SSSI Chichester Harbour is a large estuarine basin in which at low water extensive mud and sandflats are exposed, drained by channels which unite to make a common exit to the sea. The site is of particular significance for wintering wildfowl and waders and also breeding birds both within the Harbour and in the surrounding permanent pasture fields and woodlands. Amongst the wildfowl, Shelduck, Teal and Dark-bellied Brent goose numbers are of international importance with 5% of the world population of the latter.

Chichester and Langstone Harbour SPA Qualifying species for the European designation include Dark-bellied Brent goose, (5.7% of the overwintering European population), Black-tailed Godwit (1.4%), Dunlin (3.2%), Grey Plover (2.5%), Redshank (1.2%) and Ringed Plover (1.7%). The site also supports notable British overwintering populations of Bar-tailed Godwit (3.2%) and Little Egret (20.0%).

In addition, the site supports breeding populations of Little Tern (4.2% of the British breeding population), Sandwich Tern (1.1%), and significant populations of Little Egret (17.1% of the British passage migrants) and Ringed Plover (4.9%).

The area qualifies as a wetland of international importance (Ramsar site) for its waterfowl under Article 4.2 of the European Birds Directive (79/409/EEC) by regularly supporting at least 20,000 waterfowl.

4 Biodiversity Data

Ecological data searches were requested from the Sussex Biodiversity Records Centre for the three application sites in March 2017. The records include those for the grid squares in which the application land lies, where the original records are submitted by 4-figure grid reference only.

Records of Pagham Harbour SPA qualifying species (Brent Goose, Pintail, Black-tailed Godwit, Little Tern and Common Tern) have been extracted and are summarised in Tables 1-3. The Pagham Harbour SSSI citation lists also Grey and Ringed Plovers as important species and these are also included in the tables.

Table 1: Pagham Harbour SPA Qualifying Species Recorded at the Pagham South Site

Pagham Harbour SPA Qualifying Species	Earliest Record	Latest Record	Number of Records	Maximum Abundance
Brent Goose (overwintering)	11/08/1988	22/11/2015	28	2000
Pintail (overwintering)	28/11/1998	22/11/2015	10	220
Black-tailed Godwit (overwintering)	11/08/1988	22/11/2015	13	150
Little Tern (breeding)	18/05/2008	31/05/2014	6	4
Common Tern (breeding)	16/07/2007	18/06/2015	11	8
Ringed Plover	23/06/1987	22/11/2015	21	61
Grey Plover	11/08/1988	22/11/2015	22	500

Table 2: Pagham Harbour SPA Qualifying Species Recorded at the Hook Lane Site

Pagham Harbour SPA Qualifying Species	Earliest Record	Latest Record	Number of Records	Maximum Abundance
Brent Goose (overwintering)	15/01/1996	24/12/2008	4	2000
Common Tern (breeding)	28/05/2002	16/07/2015	17	4

Table 3: Pagham Harbour SPA Qualifying Species Recorded at the Sefter Road Site

Pagham Harbour SPA Qualifying Species	Earliest Record	Latest Record	Number of Records	Maximum Abundance
Brent Goose (overwintering)	12/06/2002	26/12/2015	4	1000
Common Tern (breeding)	28/05/2002	16/07/2015	19	4

The records provide compelling evidence of the use of all three sites as supporting habitat for Pagham Harbour SPA qualifying species and for additional species for which Pagham Harbour is designated as SSSI. There is evidence of regular use of the Pagham South site in particular, with many records of significant numbers of Brent goose, Pintail and Black-tailed Godwit using the site, as well as Grey Plover and Ringed Plover. The total numbers of bird species recorded at each site respectively are 218 species at the Pagham South site, 104 at the Hook Lane site and 110 at the Sefter Road site.

The Sussex Notable Bird List consists of species that are particularly scarce or vulnerable to development. It includes species which are either on the Birds of Conservation Concern Red and Amber lists or Schedule 1 species known to have bred in Sussex, or which have been recorded in summer and may breed in the future. The Ecological Data Searches have provided many records of Sussex Notable Birds, listed in Appendix 1, by site, in Tables 4 to 6. Seventy-two notable bird species have been recorded at the Pagham South site, 55 at the Hook Lane Site and 77 at the Sefter Road site. Clearly high numbers of Birds of Conservation Concern would be adversely affected by the proposed developments.

5 Ecological Appraisals of the Application Sites

The Ecological Appraisals and HRA Screening Reports submitted in respect of each of the three application sites were reviewed and the key points are summarised and evaluated below.

5.1 Land South of Pagham South

5.1.1 This site comprises approximately 23 ha of arable land bounded by hedgerows and drainage ditches. Ecological surveys were undertaken in the spring and summer 2016 based around extended Phase One survey methodology. Specific surveys of bats, Badger, breeding birds, Otter, Great Crested Newt and reptiles were undertaken. In addition winter bird surveys were undertaken between November 2014 and March 2015 to inform a Habitat Regulations Assessment (HRA) of the implications of the proposed development on the Pagham Harbour SPA/Ramsar.



Figure 2 Pagham South Site

5.1.2 The following protected species were recorded:

- Seven bat species including the Common Pipistrelle, Soprano Pipistrelle, Nathusius Pipistrelle, Brown Long-eared, Noctule, Serotine and a *Myotis sp*,
- Field signs of Water Vole on land immediately north of the application site but not on the site itself,
- Three Red List bird species (Mallard, Skylark and Song Thrush), on site and a further two species (Grey Partridge and House Sparrow), in the wider area,
- Two Amber List bird species (House Martin and Dunnock), on site with a further three species (Stock Dove, Kestrel and Swift), in the wider area,
- Small populations of Common Lizard, Grass Snake and Slow Worm,
- No records of Dark-Bellied Brent geese were found during the winter bird surveys however the reports acknowledge that 'use of the application site by Dark-Bellied Brent geese on at least an occasional basis cannot be ruled out'. Local residents confirm that Dark-Bellied Brent geese regularly use the site, see Figure 3 (©Jim Weston, March 2015)



Figure 3 Brent Geese on Pagham South site

5.1.3 The HRA Information document for the site considers the potential impacts of the development (page 21). It considers that disturbance effects, hydrological impacts

and loss of functionally linked (supporting) habitat for qualifying bird interest features of the SPA may be significant and must be considered. It highlights (page 24) that detailed consideration of the Dark-Bellied Brent goose, one of the qualifying bird species, is required because it is known to use arable land in the local area for foraging and loafing. It cites research that shows that the Dark-Bellied Brent goose increasingly grazes on winter cereal fields near the coast (Scott & Rose, 1996) and acknowledges that farmland in the local area is of value to the species. British Trust for ornithology (BTO) Wetland Bird Survey Brent Goose counts for the application site and surrounding area show reasonably consistent counts of more than 2000 Brent geese in the winter of most years between 2010 and 2015. The HRA Information document (page 30) dismisses the evidence that the application site is used by Dark-Bellied Brent Geese on the basis that the scale of their use of the site is not significant despite compelling photographic evidence to the contrary.

- 5.1.4 Site proposals for mitigation measures for disturbance effects on the SPA are based upon the provision of 5.2 ha of open space through the development linking with land to the north of Pagham South. Other measures include attempting to deter visitors to the SPA by providing homeowner packs emphasising the sensitivities of Pagham Harbour and promoting the recreational opportunities available elsewhere. The planning authority must consider whether these small-scale measures are sufficient to mitigate against the potential recreational disturbance of 400 new households within 0.5 km of such an important European site. Indeed the report notes Natural England's view that, even where open space is provided for new residents, increased visitor pressure is likely to result and further mitigation/avoidance measures will be required.
- 5.1.5 No consideration of the likely significant effects on qualifying species of the SPA of the three application sites in combination have been presented.

5.2 Land West of Hook Lane

5.2.1 This site comprises approximately 17.2 ha of arable land bordered with grassy field margins and hedges. A central ditch crosses the field from east to west, linking with another woody ditch along the north-western boundary.

An extended Phase 1 Habitat and Preliminary Protected Species survey was undertaken in September 2015. Subsequent surveys were carried out in 2015 and 2016 of UK bat species, Hazel Dormouse, Great Crested Newt, European Water Vole and Badger. Winter bird surveys were carried out on 8 survey dates in the winter of 2015/16. All the surveys were carried out using standard and appropriate methodologies. No specific HRA Screening was undertaken for this site however there is reference to the Arun HRA (March 2013) based on which it was concluded that the Hook Lane development would have no significant effects on the SPA alone or in combination.



Figure 4 Hook Lane Site

5.2.2 The results of the surveys include records of many protected species on-site including:

- A good population of Common Lizard along the east and west field margins and both sides of the central ditch,
- Seven bat species including the Annex 2 species, Barbastelle,
- Evidence of Water Vole on both banks of the central drainage ditch,
- Seven Red List bird species (Curlew, Herring Gull, Skylark, Starling, Song Thrush, House Sparrow, Grey Wagtail and Linnet),
- Ten Amber List bird species (Common Shelduck, Mallard, Common Snipe, Black-headed Gull, Great Black-backed Gull, Stock Dove, Kestrel, Dunnock, Meadow Pipit and Reed Bunting).

5.2.3 Natural England advised in October 2015 that *'Arable land used by Brent geese in the vicinity of Pagham Harbour can be important supporting habitat which may have a functional link with the ecological integrity of the SPA. We advise that bird surveys should be carried out throughout the winter to establish whether Brent Geese are using the application site'*. The Winter Bird Surveys documented in the Ecological Appraisal recorded no Brent geese and it was concluded that the development would have no significant effect on the Pagham Harbour SPA alone or in combination. However photographic evidence has been provided by local residents of a large flock of Dark-bellied Brent geese on the application site on 10th February 2017, see figure 5 below, therefore this conclusion is unsafe.



Figure 5 Brent Geese on Hook Lane Site

- 5.2.4 The bat surveys found seven bat species including the Barbastelle, which is an Annex 2 species under the Habitats Directive and a species of Principal Importance under Section 41 of the NERC Act (2006). Most Barbastelle activity occurred along hedgerow H1 on the northern boundary and H4 on the western boundary of the site. In Section 4.56, the Ecological Appraisal discusses the foraging habits of the Barbastelle, suggesting that they forage over large distances and that their foraging routes change during the season. It concludes that the site is not an important resource for the Barbastelle.

However the author's comments on changing foraging routes are not referenced and in fact, research on Barbastelle foraging behaviour in the Sussex West Weald has shown that Barbastelles are faithful to their commuter routes between their woodland roosts and wetland feeding areas, sometimes for many years (Greenaway, 2008). Other research highlights the disruptive impacts of lighting on Barbastelle populations, for example, research by Stone *et al* (2009) demonstrated that '*The illumination of flightlines can significantly affect the ability of some bat species to commute between roosts and foraging grounds*'. If the Barbastelle flightlines along the boundary hedgerows of the site are rendered unusable by artificial lighting, bats could be cut off from their foraging habitats, making it harder for them to hunt and survive. Proposals to minimise such lighting impacts are made within the Ecological Appraisal but are based on the unsafe premise that the application site is not an important resource for the Barbastelles.

- 5.2.5 The site is 2km from Pagham Harbour SSSI along a public right of way. Contrary to their conclusions in Section 4.5, where the author postulates that a circular walk to the harbour and back would be in excess of average walking distance, it could equally be argued that a circular walk of 4km is close to the ideal walking distance for the majority of visitors. There is the potential for considerable additional disturbance by visitors to the wildfowl and wetland bird populations of Pagham Harbour.
- 5.2.6 The Ecological Appraisal proposes mitigation measures for the Common Lizard and Water Vole populations including translocation of the lizards and voles.

The Manhood Peninsular (Pagham) is a stronghold for Water Vole, one of the rarest British mammals. Translocation in mitigation for development can be successful but the method statement for translocation would require careful scrutiny, in particular the proposed timing and the structure and location of the proposed receptor site. It would also be important to investigate how the proposed development would impact the connectivity between populations. As water voles suffer from low seasonal survivorship, a major impact on population is loss of connectivity between populations, which is vital for their persistence in an area. A development can be extremely detrimental to population connectivity and given the area is a regional stronghold, fragmentation of populations is a major threat. The genetic work on water voles on the peninsular show them to have unique haplotypes meaning that translocation to other receptor sites is not advocated. In any EIA, an estimate of the population size by latrine counts is required, not just presence/absence as has been presented in the Ecological Appraisal. Any translocation proposal should also include CVs of the ecologists concerned to ensure that only experienced water vole ecologists carry out translocations.

Furthermore in order to issue a licence to translocate Water Vole, Natural England would require assurance that there is no reasonable alternative to the development; that there are no practical alternatives which would allow Water Vole to be retained, and that translocation would result in a demonstrable net conservation gain for the Water Vole. According to the Ecological Appraisal, the creation of additional water bodies would have a beneficial effect on the Favourable Conservation Status of the species but without discussion of the risk to population connectivity, this conclusion is unfounded.

- 5.2.7 Arun District Council commissioned a Habitats Regulations Assessment for the Arun Local Plan. This HRA (June 2016) concludes that, for the Hook Lane application site, there would be no significant effect on Pagham Harbour SPA/Ramsar alone, however ‘significant effects are possible in combination and lists disturbance, supporting habitat and water pollution’. This assessment supersedes any advice previously given by Natural England in 2015 with regards to a specific HRA for the site. Significantly, this conclusion was drawn prior to evidence that Brent geese do use the application site as supporting habitat, from which it can be inferred that significant effects are possible both for this application site alone and in combination with the other application sites.

5.3 Land North of Sefter Road

5.3.1 This site comprises arable land with a range of other habitats including semi-improved grassland, hedgerows, scrub and drainage ditches. The site was surveyed in March 2014 with a further survey in May 2016 using standard Extended Phase One Survey methodology. In addition, specific surveys were conducted for bats, Badger, reptiles and breeding birds. A Winter Bird Survey was not undertaken.



Figure 6 Sefter Road Site (1)



Figure 7 Sefter Road site 2

5.3.2 The following protected species were recorded:

- Five bat species including Common Pipistrelle, Soprano Pipistrelle, Nathusius' Pipistrelle, Noctule and 'big bat' (probably Noctule, Leisler's or Serotine).
- A good population of Slow Worm (peak count of 19) and a low population of Common Lizard in the grassland in the west of the site.
- Six Red List bird species (House Sparrow, Song Thrush, Linnet, Herring Gull, Starling, Yellowhammer)
- Five Amber List bird species (Dunnock, Bullfinch, Mallard, Swift, Willow Warbler)
- Various mitigation and enhancement measures have been proposed to minimise the risk of harm to protected species.

5.3.3 The Ecological Appraisal concludes that the habitats are of low to moderate ecological value at the local level and that the proposed habitat losses can be offset by extensive habitat creation. Further the report summarises limited opportunities for protected species. It states that some could be adversely affected by the proposals but concludes that appropriate mitigation and enhancements could result in net gains in biodiversity.

5.3.4 The HRA screening report states that 'on occasions when ecological surveys or other visits by ecologists have been undertaken during winter months ...there are no records of Brent Geese using the site'; that it is sub-optimal for Brent Geese and that therefore there is no likely significant effect of development of the site in respect of supporting habitat. The ecologists did not undertake a winter bird survey. A map included in the HRA Screening Report shows that 4 records of Brent geese on the application site have been submitted to

the Sussex Biodiversity Records Centre but the report does not discuss that the latest record was as recently as December 2015 and that the maximum abundance was 1000 geese.

- 5.3.5 The likely significant effect of this site in combination with the other proposed development sites on Pagham Harbour SPA and Ramsar site has not been considered.

5.4 Arun District Local Plan Habitats Regulations Assessment

According to the Habitats Regulations Assessment for the Arun District Local Plan (March 2013), the most likely significant effects of the core strategy on Pagham Harbour SPA are recreational disturbance and loss of supporting habitats.

The Arun Local Plan HRA considers that the more significant of these two potential impacts is likely to be recreational disturbance, which is predicted to increase. It recommended that *'sufficient avoidance and mitigation measures are incorporated into the Local Plan as policy provisions, in order to avoid impacts on the shorebird, wader and wildfowl distribution within the SPA/Ramsar due to disturbance resulting from residential development'*. However the mitigation measures outlined in the Arun HRA and quoted in the Hook Lane HRA Screening Report (section 2.2.2) are based on mitigation for disturbance from the 100 dwelling residential allocation for Pagham town and not the 950 dwellings under consideration. Therefore these measures are inadequate.

Pagham Harbour SPA/Ramsar is also notified as a Site of Special Scientific Interest (SSSI) of national importance for its populations of wintering wildfowl and waders, for breeding birds both within the Harbour and the surrounding grazing pasture, and for nationally important communities of plants and invertebrates. Natural England conducts periodic condition monitoring of all SSSIs. Currently 93% is in favourable condition. The Wetland Bird Survey undertaken annually by the British Trust for Ornithology and other counts indicates the wintering wader and wildfowl numbers are in favourable condition. One of the key environmental conditions supporting site integrity is 'Maintenance of suitable feeding areas with winter wheat/grass close to Pagham Harbour for wintering Brent goose'. Another is 'Protection from human disturbance (all features)'.

6 Evaluation

6.1 National Planning Policy Framework

According to the National Planning Policy Framework, point 118, 'When determining planning applications, local planning authorities should aim to conserve and enhance biodiversity by applying the following principles:

- if significant harm resulting from a development cannot be avoided (through locating on an alternative site with less harmful impacts), adequately mitigated, or, as a last resort, compensated for, then planning permission should be refused;

- proposed development on land within or outside a Site of Special Scientific Interest likely to have an adverse effect on a Site of Special Scientific Interest (either individually or in combination with other developments) should not normally be permitted.

European Habitats Directive

The European Habitats Directive requires that, where a plan or project is likely to have a significant effect upon an SPA, either individually or in combination with other plans or projects, it must be subject to an Appropriate Assessment of its implications on the site.

Evaluation of the relevant ecological documentation presented by the developers shows that:

- 6.2 Ecological survey effort has been inadequate. Winter bird surveys were not undertaken at the Sefter Road site. Those undertaken at the Hook Lane and Pagham South sites failed to record Brent geese, despite photographic evidence from local residents for both sites, see Figures 3 and 5.
- 6.3 HRA screening has been inadequate. Conclusions as to the potential significant impacts of the Hook Lane development were based on those drawn in the HRA for the Arun Local Plan (2013) which in turn was based on out-of-date and inaccurate Brent Goose records for the application sites.
- 6.4 None of the three developers have considered the potential 'in combination' significant effects upon the Pagham Harbour SPA qualifying species, in particular, the Dark-Bellied Brent Goose, which has already been shown to use all three of the application sites as supporting habitat individually. Given the ecology of the Brent Goose, it is likely that the three application proposals will adversely affect its supporting habitat in combination and that, were any one of the proposals to be approved, the development would have a significant effect upon Brent geese using either of the other sites.
- 6.5 Records of an Annex 2 protected species have been dismissed. The importance of the Barbastelle bat flightlines along the western and northern boundaries of the Hook Lane site has been undervalued as has the potential disturbance effect of lighting from the development on the flightlines. Mitigation for disruption of Barbastelle flightlines is not an option.
- 6.6 The importance of the Water Vole population at the Hook Lane site has been undervalued in assuming that the proposed translocation measures could 'make a demonstrable net conservation gain for water voles' (NE, Water Vole Class Licence) as would be required to obtain a licence for the measures from Natural England. Licences cannot be issued for the specific purpose of development. The result of the translocation must be the 'reasonable expectation that there will be a significantly greater extent of good quality water vole habitat after the completion of the works than there was before the works began'. This is an extremely important area for Water Vole: a development can be extremely detrimental to population connectivity yet the risk of population fragmentation has not been addressed.

7 Conclusion

It is likely that all three of the application proposals will adversely affect supporting habitat for Dark-Bellied Brent geese, a qualifying species for the Pagham Harbour SPA, both individually and in combination. It is also likely that there will be significant disturbance effects on the SPA through increased recreational pressure. Therefore on both counts, an Appropriate Assessment of the Development Proposals is required.

Surveys have demonstrated the presence of a number of protected species on the application sites, the most significant of which are the Barbastelle bat, a Habitats directive Annex 2 species which has been shown to use flightlines along the western and northern boundaries of the Hook Lane site, and the Water Vole, which is fully protected under Schedule 5 of the Wildlife and Countryside Act 1981 and is a priority conservation species. Licences can only be granted for translocation of Water Vole if the measures will result in a demonstrable net conservation gain for Water Vole. The threat of population fragmentation by the proposed Hook Lane development has not been addressed in the Ecological Appraisal. With regard to the Barbastelle, mitigation measures are not an option, therefore planning permission should be refused.

8 References

- Aspect Ecology (December 2016) Ecological Appraisal for Land North of Sefter Road, Pagham
- Aspect Ecology (December 2016) Report to Inform a Habitats Regulations Assessment Screen Report for Land at Sefter Road, Pagham
- Ecology Solutions Ltd (December 2016) Ecological Assessment for Pagham South
- Ecology Solutions Ltd (December 2016) Information to Enable a Habitats Regulations Assessment for Pagham South
- FPCR Environmental & Design Ltd (January 2017) Ecological Appraisal on behalf of Hallam Land Management Ltd for Hook lane, Pagham
- Greenaway, F. 2008. *Barbastelle Bats in the Sussex West Weald, (1997 – 2008)*. Available on www.westweald.org.uk. 38pp.
- Stone, E.L., Jones, G. & Harris, S. 2009. *Street Lighting Disturbs Commuting Bats*. Current Biology 19, 1–5.
- Scott, D. A., & Rose, P. M. 1996. *Atlas of Anatidae populations in Africa and western Eurasia*. Wetlands International Publication No. 41, Wageningen.
- Urban Edge Environmental Consulting (March 2013) Habitats Regulations Assessment for the Arun District Local Plan

Appendix 1

Table 4: Notable Birds Recorded at Pagham South Site Since 1980 (72 species)

Notable Bird Species	Latest Record	Number of Records	Maximum Abundance
Avocet	15/03/2015	3	12
Barn Owl	11/6/2010	3	1
Black Redstart	11/12/2015	6	2
Black-headed Gull	13/12/2015	108	641
Cetti's Warbler	13/12/2015	41	4
Common Cuckoo	27/04/2014	5	2
Common Gull	22/11/2015	17	23
Common Redshank	22/11/2015	31	35
Common Sandpiper	11/8/2015	11	5
Common Shelduck	22/11/2015	45	47
Common Snipe	26/12/2010	18	9
Common Swift	19/07/2011	13	25
Common Tern	18/06/2015	11	8
Common Whitethroat	7/5/2010	16	6
Curlew	22/11/2015	34	91
Duncock	13/12/2015	73	14
Gadwall	15/03/2015	6	10
Garganey	8/8/2008	6	2
Great Black-backed Gull	22/11/2015	30	296
Green Woodpecker	11/8/2015	68	4
Grey Partridge	30/05/2009	6	14
Hen harrier	11/1/2006	1	1
Herring Gull	13/12/2015	106	130
House martin	28/09/2010	8	60
House Sparrow	13/12/2015	96	60
Kestrel	13/12/2015	44	3
Kestrel	13/12/2015	44	3
Kingfisher	22/11/2015	4	3
Lapwing	15/10/2015	31	1500
Lesser Black-backed Gull	28/03/2014	17	6
Lesser Spotted Woodpecker	11/2/1980	1	1
Linnet	22/11/2015	36	80
Little Egret	22/11/2015	28	20
Little Grebe	22/11/2015	45	53

Little Tern	31/05/2014	6	4
Mallard	13/12/2015	94	90
Meadow Pipit	13/12/2015	47	49
Mediterranean Gull	20/01/2015	45	379
Mistle Thrush	7/5/2009	7	8
Mute Swan	13/12/2015	94	42
Northern Wheatear	12/10/2010	9	5
Osprey	5/6/2014	2	3
Oystercatcher	22/11/2015	29	60
Peregrine	13/12/2007	1	2
Peregrine	13/12/2007	1	2
Pied Flycatcher	26/07/2010	2	1
Pintail	22/11/2015	10	220
Pochard	1/4/2011	3	25
Red Kite	23/03/2003	1	2
Reed Bunting	13/12/2015	36	8
Ringed Plover	22/11/2015	21	61
Sand martin	13/03/2009	2	3
Sandwich Tern	3/8/2014	5	8
Short-eared owl	12/10/2012	6	2
Shoveler	15/03/2015	4	40
Skylark	11/8/2015	70	205
Song Thrush	19/10/2010	25	7
Spotted Flycatcher	31/05/2014	4	2
Starling	11/08/2015	87	220
Stock Dove	3/6/2014	10	5
Swallow	15/10/2015	48	147
Swift	19/07/2011	13	25
Tawny Owl	14/03/2013	1	1
Teal	13/12/2015	46	300
Tree Sparrow	20/10/1983	1	12
Tufted Duck	22/11/2015	54	34
Turtle Dove	6/11/1992	1	2
Whinchat	29/04/2014	1	3
Wigeon	22/11/2015	19	150
Willow Warbler	15/04/2014	11	8
Woodcock	17/01/1985	1	1
Yellow Wagtail	28/09/2010	1	1
Yellowhammer	15/10/2015	25	100
Yellow-legged Gull	22/03/2015	5	1

Table 5: Notable Bird Species Recorded at the Hook Lane Site Since 1980 (55 species)

Notable Bird Species	Latest Record	Number of Records	Maximum Abundance
Barn Owl	11/6/2010	5	1
Black-headed Gull	13/12/2015	179	975
Bullfinch	27/11/2005	5	1
Cetti's Warbler	13/12/2015	71	4
Common Redshank	3/9/2013	14	4
Common Sandpiper	11/8/2015	25	5
Common Shelduck	14/06/2015	62	30
Common Snipe	17/04/2015	72	37
Common Tern	16/07/2015	17	4
Common Whitethroat	14/06/2015	49	14
Corn Bunting	30/06/2004	1	1
Cuckoo	29/05/2011	7	2
Curlew	15/10/2015	28	86
Duncock	13/12/2015	169	17
Gadwall	4/7/2013	29	6
Great Black-backed Gull	29/05/2011	13	24
Green Woodpecker	11/8/2015	167	5
Grey Partridge	18/06/2011	31	11
Grey Wagtail	13/12/2015	23	3
Herring Gull	13/12/2015	171	178
House martin	19/09/2015	26	21
House Sparrow	13/12/2015	191	56
Kestrel	13/12/2015	106	3
Kingfisher	15/03/2003	2	1
Lapwing	15/10/2015	62	550
Lesser Black-backed Gull	6/4/2012	22	6
Linnet	19/09/2015	53	45
Little Egret	1/2/2011	31	2
Little Grebe	11/4/2014	50	4
Mallard	13/12/2015	186	90
Meadow Pipit	13/12/2015	110	49
Mediterranean Gull	20/12/2002	1	4
Mistle Thrush	7/5/2009	31	8
Mute Swan	13/12/2015	176	42
Northern Wheatear	10/9/2011	2	1

Oystercatcher	18/06/2011	4	2
Peregrine	30/07/2010	2	1
Pochard	20/02/2012	11	25
Reed Bunting	13/12/2015	130	17
Ringed Plover	17/04/2010	1	1
Skylark	11/8/2015	153	205
Song Thrush	14/06/2015	88	12
Spotted Flycatcher	11/2/2009	3	3
Starling	11/8/2015	153	400
Stock Dove	22/07/2012	25	10
Swallow	15/10/2015	87	147
Swift	16/07/2015	34	25
Tawny Owl	30/06/2003	3	1
Teal	13/12/2015	92	138
Tufted Duck	15/10/2015	87	28
Turtle Dove	7/10/2005	1	1
Wigeon	24/01/2003	1	3
Willow Warbler	18/04/2014	22	8
Woodcock	11/1/2004	2	1
Yellowhammer	15/10/2015	89	100

Table 6: Notable Birds Recorded at the Sefter Road Site Since 1980 (77 species)

Notable Bird Species	Latest Record	Number of Records	Maximum Abundance
Barn Owl	11/6/2010	5	1
Black-headed Gull	13/12/2015	179	975
Bullfinch	27/11/2005	5	1
Cetti's Warbler	13/12/2015	71	4
Common Redshank	3/9/2013	14	4
Common Sandpiper	11/8/2015	25	5
Common Shelduck	14/06/2015	62	30
Common Snipe	17/04/2015	72	37
Common Tern	16/07/2015	17	4
Common Whitethroat	14/06/2015	49	14
Corn Bunting	30/06/2004	1	1
Cuckoo	29/05/2011	7	2
Curlew	15/10/2015	28	86
Duncock	13/12/2015	169	17
Gadwall	4/7/2013	29	6
Great Black-backed Gull	29/05/2011	13	24
Green Woodpecker	11/8/2015	167	5
Grey Partridge	18/06/2011	31	11
Grey Wagtail	13/12/2015	23	3
Herring Gull	13/12/2015	171	178
House martin	19/09/2015	26	21
House Sparrow	13/12/2015	191	56
Kestrel	13/12/2015	106	3
Kingfisher	15/03/2003	2	1
Lapwing	15/10/2015	62	550
Lesser Black-backed Gull	6/4/2012	22	6
Linnet	19/09/2015	53	45
Little Egret	1/2/2011	31	2
Little Grebe	11/4/2014	50	4
Mallard	13/12/2015	186	90
Meadow Pipit	13/12/2015	110	49
Mediterranean Gull	20/12/2002	1	4
Mistle Thrush	7/5/2009	31	8

Mute Swan	13/12/2015	176	42
Northern Wheatear	10/9/2011	2	1
Oystercatcher	18/06/2011	4	2
Peregrine	30/07/2010	2	1
Pochard	20/02/2012	11	25
Reed Bunting	13/12/2015	130	17
Ringed Plover	17/04/2010	1	1
Skylark	11/8/2015	153	205
Song Thrush	14/06/2015	88	12
Spotted Flycatcher	11/2/2009	3	3
Starling	11/8/2015	153	400
Stock Dove	22/07/2012	25	10
Swallow	15/10/2015	87	147
Swift	16/07/2015	34	25
Tawny Owl	30/06/2003	3	1
Teal	13/12/2015	92	138
Tufted Duck	15/10/2015	87	28
Turtle Dove	7/10/2005	1	1
Wigeon	24/01/2003	1	3
Willow Warbler	18/04/2014	22	8
Woodcock	11/1/2004	2	1
Yellowhammer	15/10/2015	89	100