



# CLEVE HILL SOLAR PARK

ENVIRONMENTAL STATEMENT  
VOLUME 4 - TECHNICAL APPENDIX A9.2  
BREEDING BIRD SURVEY REPORT 2014 AND 2015

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# Cleve Farm – Breeding Bird Survey Report



2014 and 2015

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1 Summary

AECOM was commissioned by Hive Energy in 2014 and 2015 to carry out a breeding bird survey of Cleve Farm near Graveney, Kent (hereafter referred to as the Site).

A full two years’ worth of breeding bird data collection for the Site, were deemed appropriate due to the nature of the way the Site sits within the landscape, its environs and the very close proximity and encompassing nature of the Swale SPA, SSSI and Ramsar site. The Site therefore has the potential to act as supporting habitat for species of the statutory designated site.

The Site comprises an extensive area of low lying arable land intersected with water filled drainage ditches with associated wide rough grassland verges. Perimeter habitats include reedbed, pasture fields to the east and the farm yard, with hedgerows, tree lines and areas of scrub, rough grassland and houses with gardens. The adjacent Swale Special Protection Area (SPA) and Ramsar site is in part designated for its wintering wildfowl populations. The aim of this survey was to record species and numbers of breeding birds on the Site and to map all activity related to the habitats present within the proposed development area. A particular focus was specially protected species and/or those for which the Swale SPA and Ramsar sites were designated.

Bird species were recorded over two breeding seasons with a total of eight survey visits during the two peak breeding periods (April to July). The greatest proportion of breeding territories were recorded within the reed filled ditches, with the most significant of the breeding birds recorded here being marsh harrier (*Circus aeruginosus*). This species was confirmed to be nesting in close proximity to the Site boundary.

The species most likely to be affected by the works on Site would be farmland nesting species, especially skylark (*Alauda arvensis*), which had a large number of breeding territories recorded over the majority of arable fields on the Site and to a lesser extent yellow wagtail (*Motacilla flava*), also associated with the arable fields. The Site is also used by a number of birds of prey including barn owl (*Tyto alba*), peregrine (*Falco peregrinus*), kestrel (*Falco tinnunculus*), hobby (*Falco subbuteo*) and sparrow hawk (*Accipiter nisus*), as well as marsh harrier for hunting prey.

2 Introduction

AECOM was commissioned by Hive Energy in 2014 and 2015 to carry out breeding bird surveys of the Site and report the findings.

The Site has been earmarked as a development area for a solar farm or park. No detailed design or proposed layout or works programme is available to date, but would likely include extensive PV panel rows and small sub-station buildings spread across the Site. There will also be new road networks and possibly ditch crossings, and all surrounded by tall security fencing and potentially lighting.

The aim of this survey was to record species and numbers of breeding birds both on the Site and in directly adjacent habitats, if relevant, and to map all breeding activity related to the habitats present within the proposed development area. Particular attention was paid to specially protected species and/or those for which the adjacent Swale Special Protection Area (SPA) and Ramsar sites were designated. The Ramsar site is in part designated for its wintering wildfowl populations, whilst the SPA is designated both for several breeding water birds of note and its wintering wildfowl populations. The Ecological Desk Study and Phase 1 Habitat Survey Report (AECOM, 2016), sets out the designations and ecological interest of each of these important nature conservation sites.

The Swale SSSI citation states that:

The commoner breeding dry-land birds include skylark *Alauda arvensis*, meadow pipit *Anthus pratensis* and yellow wagtail *Motacilla flava* and among the wetland birds mallard *Anas platyrhynchos*, shelduck *Tadorna tadorna*, coot *Fulica atra*, moorhen *Gallinula chloropus*, lapwing *Vanellus vanellus* and redshank *Tringa totanus*. Scarcer breeding birds include teal *Anas crecca*, gadwall *Anas strepera*, *Anas clypeata* and pochard *Athyia ferina*. Garganey *Anas quercedula*, pintail *Anas acuta*, ruff *Philomachus pugnax* and black-tailed godwit *Limosa limosa* have bred, or attempted to do so in recent years.

The 1993 Swale SPA citation states a similar situation, including species, mallard, moorhen, coot, reed warbler and reed bunting.

3 Legislation

3.1 Legislation

Wild birds are afforded protection under different tiers of legislation and policy in the UK.

All birds in the UK are protected under the EC Directive 2009/147/EC on the conservation of wild birds (codified version) and Part 1 Section 1(1) of the Wildlife and Countryside Act 1981 (as amended). This gives protection to all species of wild bird from deliberate:

- killing, injuring or taking birds or their young and keeping in captivity;
- egg collecting or destroying eggs; and
- taking, damaging or destroying nests in use or being built.

Specially protected birds are listed in Annex 1 of the Directive. Many are afforded protection by designation of land as Special Protection Areas (SPA). Special protection is also afforded to species listed in Schedule 1 of the Wildlife and Countryside Act 1981 (as amended). These birds are rare, endangered, declining or vulnerable species. In addition to the protection afforded to all bird species, it is an offence to cause reckless or intentional disturbance to the specially protected Schedule 1 listed species when they are building nests or when they are nesting.

Bird species are also listed as species of principal importance for conservation in England under Section 41 of the Natural Environment and Rural Communities Act (1996) (NERC). Bird species listed under Section 41 of the NERC Act are to be given material consideration during planning.



4 Methodology

Two separate breeding bird survey methodologies were utilised in order to capture all species that would potentially be present on the Site. As well as the two seasons of daytime breeding bird surveys, additional dusk time surveys were undertaken during the 2015 season with a main focus on any barn owl (*Tyto alba*) that may be present on the Site.

4.1 Breeding bird survey

A total of eight survey visits (see Tables 1 and 2) were made to the survey area over two breeding seasons (2014 and 2015), by experienced ornithologists, covering the peak breeding season from May to July 2014 and April to June 2015, in order to ensure recording of all bird species present on and utilising the Site.

In order to establish a sufficient level of detail on the baseline condition of the site for birds during the breeding season, it was deemed that a Common Birds Census (CBC) approach was most appropriate. As such, an adapted version of the full CBC method to four survey visits were made to the Site, covering the full breeding season. Four survey visits spread across a season, was deemed sufficient to capture the required data for a Site such as Cleve, with its ubiquitous and uniform arable habitat. A spread of dates across the season provides a more robust method to ensure territory mapping of all bird species utilising the Site across the season. Surveys followed the standard British Trust for Ornithology (BTO) CBC method (Marchant, 1983).

All visits were completed during the early morning, when birds were likely to be most active, thereby maximising the chance of observing the majority of species present and territorial behaviour. Surveys were also undertaken during favourable weather conditions (see Tables 1 and 2).

A survey transect (see Figure 5) was devised that allowed observation of all major areas of habitat within and adjacent to the proposed development area. This included the Site and adjacent habitats of the sea wall, grasslands, reed bed, treelines, houses and hedgerows. The survey did not include the Swale Estuary. Visits lasted approximately 4 hours. All bird activity was recorded following the standard CBC notation (Marchant 1983) and recorded using standard BTO species codes (BTO, N.D).

The CBC field records were subsequently used to compile territory maps for legally protected or conservation concern species, based on a cumulative assessment of registrations made on all visits. Where behaviour indicative of breeding territories was recorded (e.g. singing males, nest building, aggressive interactions) on two or more occasions in a suitably sized area ('suitable size' being dependent on species), a 'cluster' was drawn around these registrations and the centre point taken as the most likely location of the nest. Once complete, established territories were then plotted on a figure to illustrate location and spread across the Site.

The breeding status of birds recorded is defined by activity; those that are confirmed via the establishment of an identified territory, those that are possibly breeding or likely to be breeding nearby, and those that are foraging, visiting or resting only. Birds flying over only are also recorded.

The conservation status of recorded birds, was assessed against the following criteria:

- EC Directive 2009/147/EC on the conservation of wild birds (codified version) Annex 1;
- Wildlife and Countryside Act 1981 (As Amended) Schedule 1; and
- Natural Environment and Rural Communities Act (2006) Section 41 (in England).

Birds are also categorised according to their level of conservation concern as indicated by their population status and stability. These are known as the Birds of Conservation Concern (BOCC) (Eaton *et al.*, 2015) Red, Amber and Green lists. The lists categorise species according to their level of conservation concern as indicated by their population status and stability. Where these species are present, their conservation status should be taken into account in determining the likely impacts of proposed projects and plans.

Red list species are:

- those that are 'Globally Threatened' according to IUCN (International Union for Conservation of Nature and Natural Resources) criteria;
- those whose population or range has declined rapidly in recent years, and;
- those that have declined historically and not shown a substantial recent recovery.

Amber list species are:

- those with an unfavourable conservation status in Europe;
- those whose population or range has declined moderately in recent years;
- those whose population has declined historically but made a substantial recent recovery;
- those with limited populations and low breeding rates, and;
- those with internationally important or localised populations.

Green list species are not of conservation concern. Several introduced species are not accorded Red, Amber or Green status.

Bird species listed as priority species under the Kent Biodiversity Action Plan (KBAP) relevant to the Site include dark-bellied Brent goose (*Branta bernicla bernicla*), lapwing (*Vanellus vanellus*), curlew (*Numenius arquata*) and house sparrow (*Passer domesticus*).

Table 1. 2014 season Breeding Bird Survey (BBS) dates and weather conditions record.

Date	Time	Temperature (°C)	Weather	Wind Speed Beaufort Scale
06/05/2014	09:00 – 12:00	17	Cloudy turning sunny, with moderate wind	SW 3
30/05/2014	08:00 – 11:00	17	Cloudy	NE 3 – 4
20/06/2014	08:45 – 11:30	22	Partly cloudy	N 3
14/07/2014	09:00 – 12:00	17	Sunny	W 4

Table 2. 2015 season BBS survey dates and weather conditions record.

Date	Time	Temperature (°C)	Weather	Wind Speed Beaufort Scale
22/04/2015	08:00 – 11:00	9	Sunny, cold and breezy	NE 3
12/05/2015	08:15 – 12:00	15	Breezy, warm, sunny, cloudy towards the end	SW 4 – 5
03/06/2015	08:30 – 12:00	15	Dry, partly sunny, breezy	SW 3 – 4
23/06/2015	08:30 – 11:30	14	Warm, breezy, cloud, brightening to sun later	NW 4

4.1.1 Barn owl survey methodology

Four barn owl survey visits were undertaken by experienced ornithologists between April and June 2015, in order to determine the value of the Site for barn owl.

The survey method followed the standard approach as set out (Gilbert, *et al*, 1998) for surveying barn owl. All four visits focused around dusk when barn owl were likely to be most active, thereby maximising the chance of observing the majority of barn owl activity and any territorial behaviour. Surveys commenced 30 minutes before dusk, until 1.5 hours after sunset during favourable weather conditions (see Table 3).

A survey route that combined both vantage points and walked transects was devised that allowed observation of all major areas of suitable habitat within and adjacent to proposed development. All barn owl present were identified by sight and recorded following the standard CBC notation and using BTO species code (BTO, N.D).

Table 3. Barn owl survey dates and weather conditions record.

Date	Time	Temperature (°C)	Weather
21/04/2015	20:00 – 22:00	9	Clear
11/05/2015	20:30 – 22:30	15	Mild, windy, clear to partly cloudy later.
02/06/2015	20:30 – 22:30	15	Cool, dry, breezy, partly cloudy
22/06/2015	21:00 – 23:00	12	Partly cloudy, cool and breezy

5 Results

The assessment of site usage by breeding birds is based on the presence of birds within open fields or internal features within and adjacent to the Site. Due to the close proximity of statutorily designated sites, there is potential that birds using the designated sites may move to and from the Site interacting either on an intermittent or daily basis with the Site providing some supporting habitat. The results therefore include bird species utilising habitats adjacent to the Site, such as reedbed, to enable assessment of the potential importance of the Site for such species.

5.1 Breeding bird surveys

The analysis of the results for the 2014 and 2015 seasons is based on the four visits undertaken between May and July 2014 and then April and June 2015.

A total of 59 species were recorded during the 2014 surveys (see Table 4) and 64 species were recorded during the 2015 surveys (see Table 5) (and see Appendix A).

The focus of breeding activity is primarily in the reed filled drainage ditches with associated rough semi-improved grassland and/or tall ruderal field margins. In addition to the field margins, the arable fields are of value for certain species, such as skylark and yellow wagtail.

In addition to the below results, kingfisher (*Alcedo atthis*) was also noted on Site during surveys for reptiles in September 2015 using the waterways of the northern adjacent nature reserve. It is possible that kingfisher breed within close proximity of the Site.

Table 4. Status of Breeding Bird species recorded during surveys in 2014 within and along the Site perimeter.

Species (code)	Scientific Name	Breeding Status	Conservation status	Confirmed Territories of Protected and/or Conservation Concern Species
Blackcap (BC)	<i>Sylvia atricapilla</i>	B		
Blackbird (B.)	<i>Turdus merula</i>	B		
Black-headed gull (BH)	<i>Chroicocephalus ridibundus</i>	V		
Blue tit (BT)	<i>Cyanistes caeruleus</i>	B		
Brent goose (BG)	<i>Branta bernicla</i>	V		
Buzzard (BZ)	<i>Buteo buteo</i>	V		
Carrion crow (C.)	<i>Corvus corone</i>	V		
Cetti's warbler (CW)	<i>Cettia cetti</i>	P	W&CA	
Chaffinch (CH)	<i>Fringilla coelebs</i>	B		
Chiffchaff (CC)	<i>Phylloscopus collybita</i>	B		
Cormorant (CA)	<i>Phalacrocorax carbo</i>	F		
Cuckoo (CK)	<i>Cuculus canorus</i>	B	NERCS41; Kent BAP	1
Dunnock (D.)	<i>Prunella modularis</i>	B	NERCS41	3
Curlew (CU)	<i>Numenius arquata</i>	V	NERCS41	
Feral pigeon (FP)	<i>Columba livia domestica</i>	I	None	
Goldfinch (GO)	<i>Carduelis carduelis</i>	B		
Great tit (GT)	<i>Parus major</i>	B		
Green woodpecker (G.)	<i>Picus viridis</i>	B		
Grey heron (H.)	<i>Ardea cinerea</i>	V		
Greylag goose (GJ)	<i>Anser anser</i>	V		
Herring gull (HG)	<i>Larus argentatus</i>	F	NERCS41	
Hobby (HY)	<i>Falco subbuteo</i>	V	W&CA	

House martin (HM)	<i>Delichon urbicum</i>	V		
House sparrow (HS)	<i>Passer domesticus</i>	B	NERCS41; Kent BAP	4
Kestrel (K.)	<i>Falco tinnunculus</i>	V		
Lapwing (L.)	<i>Vanellus vanellus</i>	V	NERCS41	
Lesser black-backed gull (LB)	<i>Larus fuscus</i>	F		
Linnet (LI)	<i>Carduelis cannabina</i>	B	NERCS41; Kent BAP	3
Little egret (ET)	<i>Egretta garzetta</i>	V	Birds Dir	
Magpie (MG)	<i>Pica pica</i>	B		
Mallard (MA)	<i>Anas platyrhynchos</i>	P		
Marsh harrier (MR)	<i>Circus aeruginosus</i>	B	Birds Dir; W&CA	1
Meadow pipit (MP)	<i>Anthus pratensis</i>	B		1
Moorhen (MH)	<i>Gallinula chloropus</i>	B		
Mute swan (MS)	<i>Cygnus olor</i>	P		
Oystercatcher (OC)	<i>Haematopus ostralegus</i>	V		
Peregrine (PE)	<i>Falco peregrinus</i>	P	Birds Dir; W&CA	
Pheasant (PH)	<i>Phasianus colchicus</i>	I	None	
Pied wagtail (PW)	<i>Motacilla alba</i>	B		
Red-legged partridge (RL)	<i>Alectoris rufa</i>	I	None	
Reed bunting (RB)	<i>Emberiza schoeniclus</i>	B	NERCS41; Kent BAP	41
Reed warbler (RW)	<i>Acrocephalus scirpaceus</i>	B		
Robin (R.)	<i>Erithacus rubecula</i>	B		
Sedge warbler (SW)	<i>Acrocephalus schoenobaenus</i>	B		
Shelduck (SU)	<i>Tadorna tadorna</i>	V		
Skylark (S.)	<i>Alauda arvensis</i>	B	NERCS41; Kent BAP	55
Snipe (SN)	<i>Gallinago gallinago</i>	P		
Song thrush (ST)	<i>Turdus philomelos</i>	P	NERCS41	
Sparrowhawk (SH)	<i>Accipiter nisus</i>	V		
Starling (SG)	<i>Sturnus vulgaris</i>	P	NERCS41	
Stock dove (SD)	<i>Columba oenas</i>	P		
Stonechat (SC)	<i>Saxicola torquata</i>	B		
Swallow (SL)	<i>Hirundo rustica</i>	V		
Swift (SI)	<i>Apus apus</i>	V		
Turtle dove (TD)	<i>Streptopelia turtur</i>	P/V	NERCS41; Kent BAP	
Whitethroat (WH)	<i>Sylvia communis</i>	B		
Wood pigeon (WP)	<i>Columba palumbus</i>	B		
Wren (WR)	<i>Troglodytes troglodytes</i>	B		
Yellow wagtail (YW)	<i>Motacilla flava</i>	B	NERCS41; Kent BAP	10

59 species, 27 confirmed breeding.

Key:

- B = breeding
- P = possible breeding or breeding nearby (off site)
- V = visitor/resting/foraging only
- F = flying over the site only
- I = Introduced species

Table 5. Status of Breeding Bird species recorded during surveys in 2015 within and along the Site perimeter.

Species (code)	Scientific Name	Breeding Status	Conservation status	Confirmed Territories of Protected and/or Conservation Concern Species
Bearded tit (BR)	<i>Panurus biarmicus</i>	B	W&CA	3
Blackcap (BC)	<i>Sylvia atricapilla</i>	B		
Blackbird (B.)	<i>Turdus merula</i>	B		
Black-headed gull (BH)	<i>Chroicocephalus ridibundus</i>	V		
Blue tit (BT)	<i>Cyanistes caeruleus</i>	B		
Buzzard (BZ)	<i>Buteo buteo</i>	V		
Carrion crow (C.)	<i>Corvus corone</i>	V		
Cetti's warbler (CW)	<i>Cettia cetti</i>	B	W&CA	2
Chaffinch (CH)	<i>Fringilla coelebs</i>	B		
Chiffchaff (CC)	<i>Phylloscopus collybita</i>	B		
Collard dove (CD)	<i>Streptopelia decaocto</i>	P		
Coot (CO)	<i>Fulica atra</i>	B		
Cormorant (CA)	<i>Phalacrocorax carbo</i>	F		
Cuckoo (CK)	<i>Cuculus canorus</i>	P	NERCS41	
Dunnock (D.)	<i>Prunella modularis</i>	B	NERCS41	3
Curlew (CU)	<i>Numenius arquata</i>	V	NERCS41	
Garden warbler (GW)	<i>Sylvia borin</i>	P		
Goldfinch (GO)	<i>Carduelis carduelis</i>	B		
Great tit (GT)	<i>Parus major</i>	B		
Green woodpecker (G.)	<i>Picus viridis</i>	B		
Grey heron (H.)	<i>Ardea cinerea</i>	V		
Greylag goose (GJ)	<i>Anser anser</i>	V		
Herring gull (HG)	<i>Larus argentatus</i>	F	NERCS41	
House martin (HM)	<i>Delichon urbicum</i>	F		
House sparrow (HS)	<i>Passer domesticus</i>	B	NERCS41	4
Jackdaw (JD)	<i>Corvus monedula</i>	V		
Jay (J.)	<i>Garrulus glandarius</i>	P		
Kestrel (K.)	<i>Falco tinnunculus</i>	V/P		
Lapwing (L.)	<i>Vanellus vanellus</i>	V	NERCS41	
Lesser black-backed gull (LB)	<i>Larus fuscus</i>	F		
Linnet (LI)	<i>Carduelis cannabina</i>	B	NERCS41	3
Little egret (ET)	<i>Egretta garzetta</i>	V		
Magpie (MG)	<i>Pica pica</i>	P		
Mallard (MA)	<i>Anas platyrhynchos</i>	P		
Marsh harrier (MR)	<i>Circus aeruginosus</i>	P	Birds Dir; W&CA	
Meadow pipit (MP)	<i>Anthus pratensis</i>	P		
Moorhen (MH)	<i>Gallinula chloropus</i>	B		
Mute swan (MS)	<i>Cygnus olor</i>	P		
Oystercatcher (OC)	<i>Haematopus ostralegus</i>	V		
Peregrine (PE)	<i>Falco peregrinus</i>	P	Birds Dir; W&CA	
Pheasant (PH)	<i>Phasianus colchicus</i>	I	None	
Pied wagtail (PW)	<i>Motacilla alba</i>	B		
Red-legged partridge (RL)	<i>Alectoris rufa</i>	I	None	
Reed bunting (RB)	<i>Emberiza schoeniclus</i>	B	NERCS41	32



Reed warbler (RW)	<i>Acrocephalus scirpaceus</i>	B		
Ringed plover (RP)	<i>Charadrius hiaticula</i>	V		
Robin (R.)	<i>Erithacus rubecula</i>	B		
Rook (RO)	<i>Corvus frugilegus</i>	V		
Sedge warbler (SW)	<i>Acrocephalus schoenobaenus</i>	B		
Shelduck (SU)	<i>Tadorna tadorna</i>	V		
Skylark (S.)	<i>Alauda arvensis</i>	B	NERCS41	35
Snipe (SN)	<i>Gallinago gallinago</i>	P		
Starling (SG)	<i>Sturnus vulgaris</i>	P	NERCS41	
Stock dove (SD)	<i>Columba oenas</i>	P		
Stonechat (SC)	<i>Saxicola torquata</i>	B		
Swallow (SL)	<i>Hirundo rustica</i>	F		
Swift (SI)	<i>Apus apus</i>	F		
Turtle dove (TD)	<i>Streptopelia turtur</i>	P/V	NERCS41	
Wheatear (W.)	<i>Oenanthe oenanthe</i>	V		
Whitethroat (WH)	<i>Sylvia communis</i>	B		
Wood pigeon (WP)	<i>Columba palumbus</i>	B		
Wren (WR)	<i>Troglodytes troglodytes</i>	B		
Yellow wagtail (YW)	<i>Motacilla flava</i>	B	NERCS41	6
Yellowhammer (Y)	<i>Emberiza citrinella</i>	P	NERCS41	

64 species, 26 confirmed breeding.

5.2 Discussion of Results

A total of 59 and 64 bird species were recorded during the surveys 2014 and 2015, of which 27 in year 1 and 26 in year 2 were confirmed as breeding, or were considered likely to be breeding.

A total of 27 and 26 confirmed breeding species indicates that the diversity of the breeding species recorded on the Site is of local significance, as measured against Fuller’s (1980) breeding diversity criteria, as follows.

National	Regional	County	Local
85+ species	84-70 species	69-50 species	49-25 species

Figure 1 illustrates the confirmed territories of the legally protected and conservation concern species recorded in 2014 and Figure 2 for 2015. Other common species, such as wren and blackbird are assumed to be breeding either on Site or in most cases in perimeter habitats offsite with likely territories. These common and widespread species are not mapped here to maintain the focus on those legally protected and conservation concern species.

Figures 3 and 4 illustrate the marsh harrier movements and distribution across the site during 2014 and 2015.

The value of the Site for breeding species is provided primarily by the reedbeds and ditches and Site perimeter vegetation such as tree-lines, houses, scrub and hedgerows. The northern adjacent nature reserve with large reedbed, waterways, rough grassland and seawall also has value for many species groups and species such as marsh harrier, wildfowl and reed nesting birds as well as foraging value for other species. The open field areas of the Site have value for ground nesting species such as skylark and also have value for foraging, by a number of species, such as marsh harrier, brent geese, carrion crow, mute swan and wood pigeon.

Two species listed under the Directive 2009/147/EC on the conservation of wild birds (codified version) Annex 1 were recorded on Site during the survey visits. The more significant of the two was marsh harrier, listed due to the species suffering a steep decline between 1970 and 1990. The main threats to this species are loss of wetland habitat, burning of surrounding vegetation, persecution by hunting and water pollution. During the 2014 visits a single pair of marsh harrier was identified as breeding in reed beds

adjacent to the Site (see Figure 1). A family group was observed on later visits, indicating breeding success. In addition to the family group, adult marsh harriers were observed over the majority of the Site, in particular favouring foraging along the field ditches and their associated grassland verges (see Figures 3 and 4). The second Annex 1 species, peregrine (*Falco peregrinus*), was only observed a single time flying over the arable fields during the 2014 surveys and was seen during three of the four 2015 surveys either perching on the pylons or foraging close to the pylons in the west of the Site.

Both marsh harrier and peregrine are also listed under the Wildlife and Countryside Act 1981 (as amended) Schedule 1. Three additional species recorded on the Site over the two years are also listed under Schedule 1; hobby which was observed a single time flying over the Site in 2014, bearded tit and Cetti’s warbler both of which were recorded with two territories in 2015 within the reeds of field ditches and the large reedbed immediately adjacent to the north of the Site (see Figure 2).

Three species, skylark, meadow pipit and yellow wagtail, which are listed under the Swale SSSI citation as breeding and also likely breeders mallard, coot and moorhen, were all recorded either on or directly adjacent to the Site, The Site is therefore deemed as supporting habitat for the species of the SSSI and SPA.

Out of the 45 Natural Environment and Rural Communities Act (2006) Section 41 (England) (NERC) species recorded on Site, seven had confirmed territories. These included reed bunting , cuckoo, house sparrow, linnet, dunnoek, skylark and yellow wagtail.

Reed bunting territories were associated with the reedbeds and ditches both on the Site and along its perimeter. A single territory was observed for cuckoo in 2014 on the southern boundary of the Site. The remaining six species had territories on the Site over both years. House sparrow, linnet and dunnoek territories were associated with hedgerows and close to buildings along the boundaries of the Site. Skylark and yellow wagtail territories were associated with the arable fields themselves. Territories for skylark were observed in the majority of arable fields of both wheat and bean crops (Figures 1 and 2).

Other NERC species such as starling and turtle dove observed on the Site, had no confirmed territories. Starlings were observed on the Site in large numbers across the majority of the Site. Turtle dove was observed on two occasions in 2014 and a single occasion in 2015 close to Cleve Farm and the boundary fence of the London Array Substation.

5.3 Barn owl survey

Barn owl is protected under Schedule 1 of the Wildlife and Countryside Act (as amended) 1981. It is an offence to deliberately kill, injure or take barn owls or their young from the wild, collect or destroy their eggs, or take, damage or destroy their nests. Barn owl is also listed on the Birds of Conservation Concern (BOCC) amber list due to its status as a Species of European Conservation Concern. A single barn owl was observed flying over rough grassland immediately north of the Site boundary to the south of the sea wall in the north west of the Site on the 2<sup>nd</sup> June 2015 at 10:05pm (see Table 6). Barn owls were not observed during the other three surveys. Barn owl utilise the Site for foraging, but no records or evidence of nesting on Site, were obtained. No features suitable for nesting or roosting are present on or adjacent to Site. It is likely that barn owl nest and/or roost nearby to the Site, such as a local farm and fly in to forage along the extensive ditch and rough grassland networks.

Table 6. Results of the barn owl surveys.

Species (code)	Numbers on 21 <sup>st</sup> April 2015 ( ) = birds flying over	Numbers on 11 <sup>th</sup> May 2015 ( ) = birds flying over	Numbers on 2 <sup>nd</sup> June 2015 ( ) = birds flying over	Numbers on 22 <sup>nd</sup> June 2015 ( ) = birds flying over	Conservation status
Barn owl (BO)	-	-	(1)	-	W&CA

Three further observations of barn owl were noted during dusk bat surveys conducted during the summer of 2015. These consisted of a single adult barn owl passing through the Site on the 29th July, the 10th August and the 10<sup>th</sup> September 2015. On all occasions the adult bird appeared to be foraging along the linear field ditch habitats.

6References

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Appendix A. Breeding bird survey results.

A.1 Bird species recorded during breeding bird surveys 2014 season.

Species (code)	Numbers on 6 <sup>th</sup> May 2014 ( ) = birds flying over	Numbers on 30 <sup>th</sup> May 2014 ( ) = birds flying over	Numbers on 20 <sup>th</sup> June 2014 ( ) = birds flying over	Numbers on 14 <sup>th</sup> July 2014 ( ) = birds flying over	Conservation status
Blackcap (BC)	3			1	
Blackbird (B.)	4 (1)	8	4	4	
Black-headed gull (BH)	26 (4)	3 (3)	104 (3)	49 (11)	
Blue tit (BT)		1			
Brent goose (BG)		(3)			
Buzzard (BZ)	(3)			2	
Carrion crow (C.)	13 (6)	8 (5)	6 (1)	79 (7)	
Cetti's warbler (CW)	2 (2)		1		W&CA
Chaffinch (CH)	1	6	4	4	
Chiffchaff (CC)	1	3			
Cormorant (CA)				1 (1)	
Cuckoo (CK)			3	1	NERCS41; Kent BAP
Dunnock (D.)	3	2	6	1	NERCS41
Curlew (CU)	3			1	NERCS41
Feral pigeon (FP)				2	None
Goldfinch (GO)		(2)	4 (2)	10 (2)	
Great tit (GT)				1	
Green woodpecker (G.)	2				
Grey heron (H.)	(2)	1 (2)	3		
Greylag goose (GJ)	(4)				
Herring gull (HG)	(1)	(1)	15	(1)	NERCS41
Hobby (HY)			1		W&CA
House martin (HM)			(4)		
House sparrow (HS)	10	4	55	132	NERCS41; Kent BAP
Kestrel (K.)				2	
Lesser black-backed gull (LB)		(2)		1	
Linnet (LI)	30	11	23	8 (6)	NERCS41; Kent BAP
Little egret (ET)	(5)	(3)	(1)	20	
Magpie (MG)	3	2	3	5	
Mallard (MA)	8	(1)			
Marsh harrier (MR)	2 (2)	2 (1)	5 (3)	8 (1)	Birds Dir; W&CA
Meadow pipit (MP)	4	1			
Moorhen (MH)	1				

Mute swan (MS)			(2)		
Lapwing (L.)				15	NERCS41
Oystercatcher (OC)	12		5	5	
Peregrine (PE)	(1)				Birds Dir; W&CA
Pheasant (PH)	5	6			None
Pied wagtail (PW)				1	
Red-legged partridge (RL)			7		None
Reed bunting (RB)	25 (1)	36	42	43	NERCS41; Kent BAP
Reed warbler (RW)	15	18	16	16	
Robin (R.)	2	1			
Sedge warbler (SW)	10	4	5		
Shelduck (SU)	2			1	
Skylark (S.)	49	65	46	28	NERCS41; Kent BAP
Snipe (SN)		1			
Song thrush (ST)	1				NERCS41
Sparrowhawk (SH)	1				
Starling (SG)	11 (3)	72 (39)	10 (2)	264 (21)	NERCS41
Stock dove (SD)			1	1	
Stonechat (SC)	1				
Swallow (SL)	(16)	(1)	(2)	(9)	
Swift (SI)	(7)	3	(1)		
Turtle dove (TD)		3		1	NERCS41; Kent BAP
Whitethroat (WH)	15	9	12	3	
Wood pigeon (WP)	23	19 (1)	36 (2)	40 (3)	
Wren (WR)	5	4	3	1	
Yellow wagtail (YW)	8	9	14	10	NERCS41; Kent BAP

A.2 Bird species recorded during breeding bird surveys 2015 season.

Species (code)	Numbers on 22 <sup>nd</sup> April 2015 ( ) = birds flying over	Numbers on 12 <sup>th</sup> May 2015 ( ) = birds flying over	Numbers on 3 <sup>rd</sup> June 2015 ( ) = birds flying over	Numbers on 23 <sup>rd</sup> June 2015 ( ) = birds flying over	Conservation status
Bearded tit (BR)	5		2		W&CA
Blackcap (BC)	2	1	1		
Blackbird (B.)	13	6	6 (1)	6	
Black-headed gull (BH)	(2)	(5)	(11)	10 (13)	
Blue tit (BT)	2	2	1	2	
Buzzard (BZ)	(2)	1 (2)			
Carrion crow (C.)	81 (6)	73 (8)	44 (52)	15 (21)	
Cetti's warbler (CW)		2	2		W&CA
Chaffinch (CH)	8	8	7	5	
Chiffchaff (CC)	4	1	2		
Collard dove (CD)	1 (4)	1		2	

Coot (CO)	2				
Cormorant (CA)	(2)			(2)	
Cuckoo (CK)		1	1		NERCS41
Dunnock (D.)	2	1	3	6	NERCS41
Curlew (CU)				(1)	NERCS41
Garden warbler (GW)		1	1		
Goldfinch (GO)	7	3 (1)	8	4	
Great tit (GT)	2		2	1	
Green woodpecker (G.)		1	1	2	
Grey heron (H.)	(2)	1 (6)	3 (2)	1 (1)	
Greylag goose (GJ)	2	(5)			
Herring gull (HG)		(1)	1 (3)	4 (9)	NERCS41
House martin (HM)	(1)	(1)			
House sparrow (HS)	8	28	34	20	NERCS41
Jackdaw (JD)	15	20	7		
Jay (J.)			(1)		
Kestrel (K.)	(2)	1	1	5	
Lapwing (L.)	11			1 (8)	NERCS41
Lesser black-backed gull (LB)				1	
Linnet (LI)	39 (2)	14 (4)	20	23 (1)	NERCS41
Little egret (ET)	1	(4)	2 (3)	1 (3)	
Magpie (MG)	3	1	7	3 (1)	
Mallard (MA)	8	13 (6)	17	11	
Marsh harrier (MR)		(3)	(3)	(2)	Birds Dir; W&CA
Meadow pipit (MP)	6	4			
Moorhen (MH)			1		
Mute swan (MS)	3	1 (4)	(2)		
Oystercatcher (OC)	2	6	10	156	
Peregrine (PE)		1	(2)	(1)	Birds Dir; W&CA
Pheasant (PH)	3	5	2	2	None
Pied wagtail (PW)		2	2	1	
Red-legged partridge (RL)			1		None
Reed bunting (RB)	23	29	45	38	NERCS41
Reed warbler (RW)	18	49	46	55	
Ringed plover (RP)				1	
Robin (R.)	2		4	4	
Rook (RO)	35 (2)	74			
Sedge warbler (SW)	6	4	1	3	
Shelduck (SU)	(2)				
Skylark (S.)	75	50 (1)	53	56 (4)	NERCS41
Snipe (SN)		1			
Starling (SG)	48 (8)	6	133 (2)	46 (84)	NERCS41
Stock dove (SD)	2	7 (1)	2 (1)	5	

Stonechat (SC)	3	2 (4)	2	5	
Swallow (SL)	(7)	(7)	(5)	(6)	
Swift (SI)		(12)	(27)	(36)	
Turtle dove (TD)		1			NERCS41
Wheatear (W.)		5	1		
Whitethroat (WH)	9	14	4	7	
Wood pigeon (WP)	43	9	51	20 (55)	
Wren (WR)	9	10	6	7	
Yellow wagtail (YW)	1	7	13	19	NERCS41
Yellowhammer (Y)	1				NERCS41

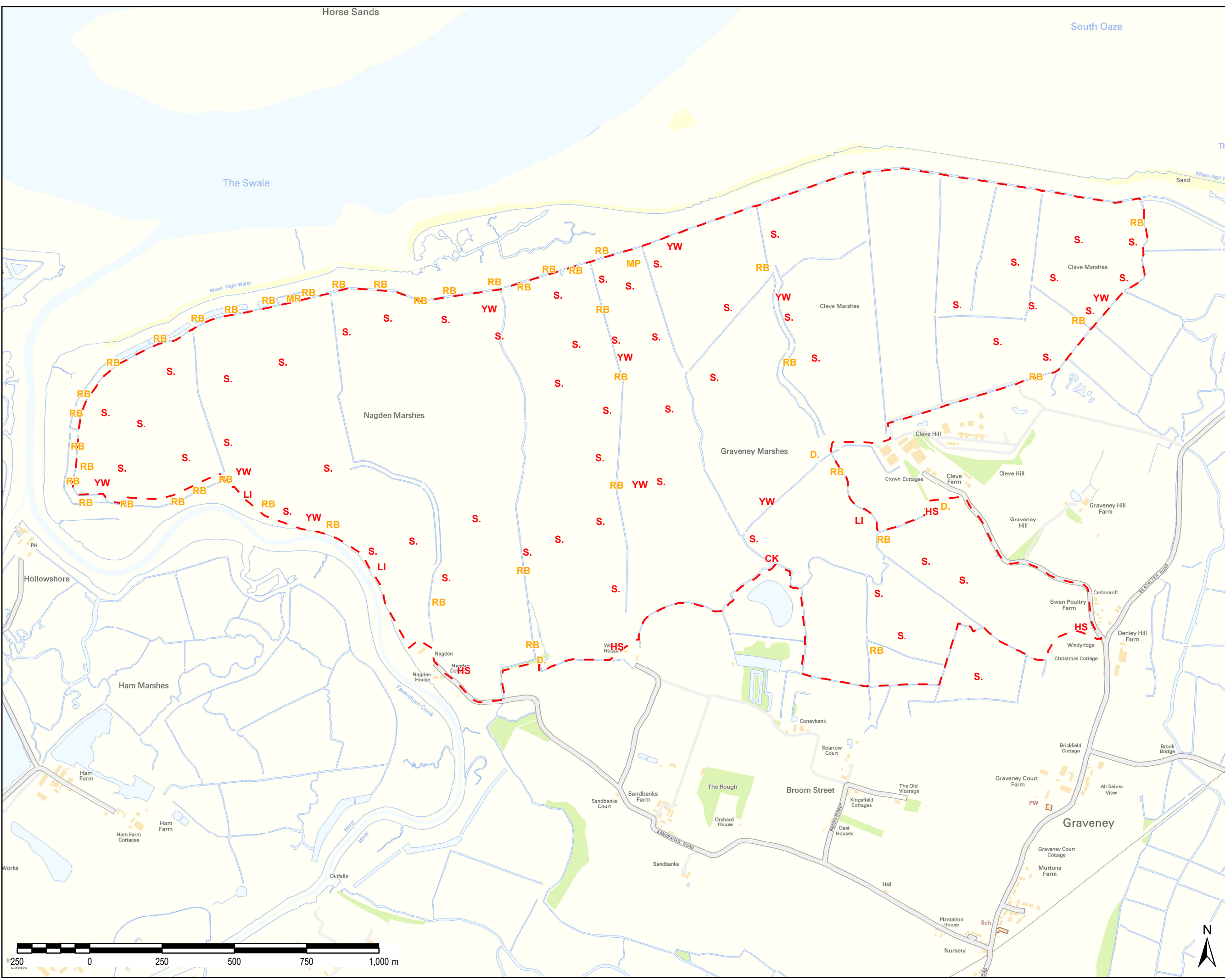
Table 4. Breeding bird results key.

Abbreviation	
Birds Dir	Annex 1 of the EC Directive 2009/147/EC on the conservation of wild birds (codified version)
W&CA	Schedule 1 of the Wildlife and Countryside Act 1981 (as amended)
NERCS41	Section 41 of the Natural Environment and Rural Communities Act (2006)
	Birds of Conservation Concern (2015) Red Listed Species
	Birds of Conservation Concern (2015) Amber Listed Species
	Birds of Conservation Concern (2015) Green Listed Species
None	No Conservation Status – Introduced/Non-native species.

Figures 1 – 5.



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**LEGEND**

Site boundary

Bird species conservation status (RSPB 2015)

B Green  
B Amber  
B Red

**Bird species key**

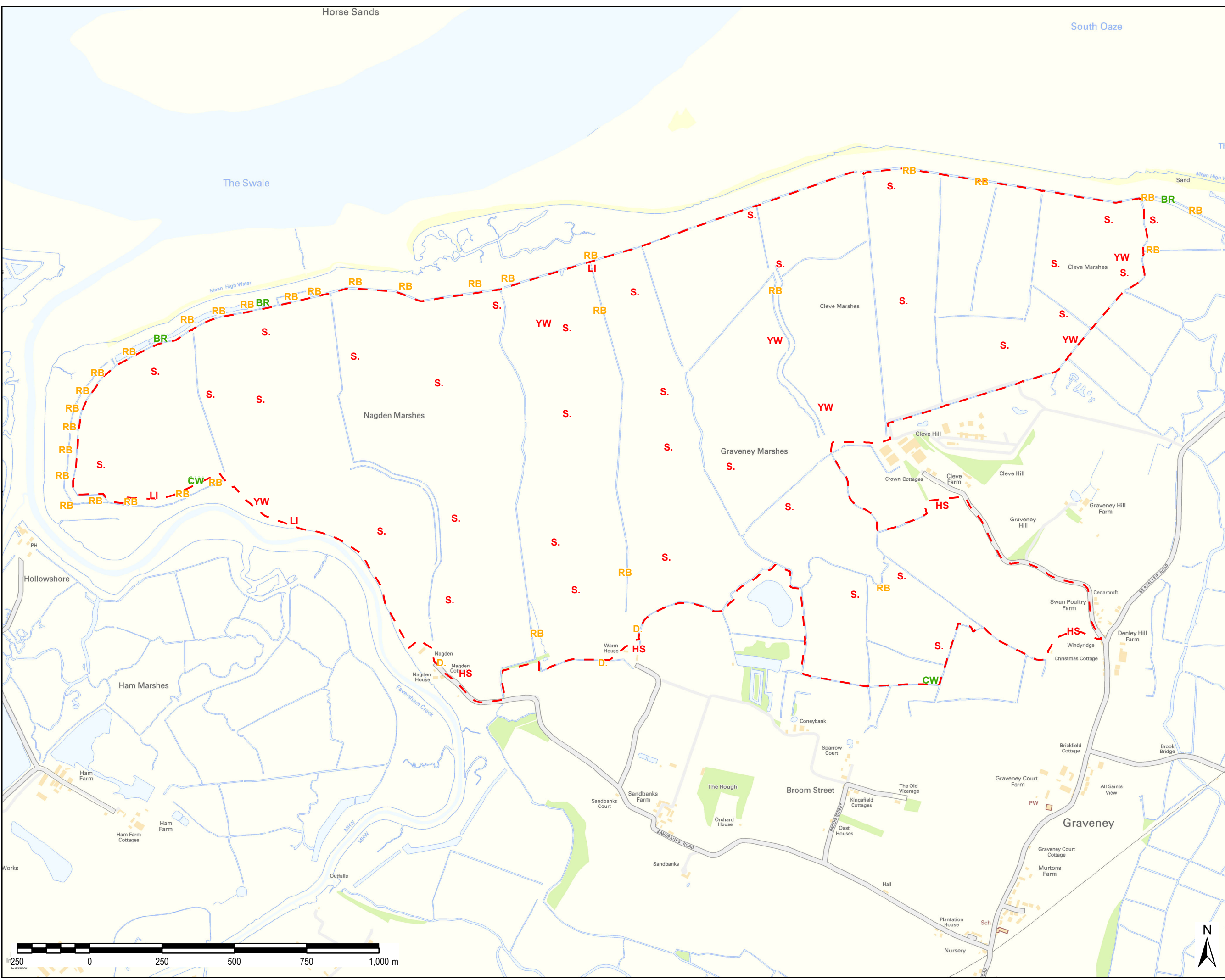
Code	Name
CK	Cuckoo
D.	Dunnock
HS	House Sparrow
LI	Linnet
MP	Meadow Pipit
MR	Marsh Harrier
RB	Reed Bunting
S.	Skylark
YW	Yellow Wagtail

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Project Title	CLEVE FARM		
Drawing Title	2014 BREEDING BIRD TERRITORY MAP		
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**LEGEND**

Site boundary

Bird species conservation status (RSPB 2015)

B. Green

B. Amber

B. Red

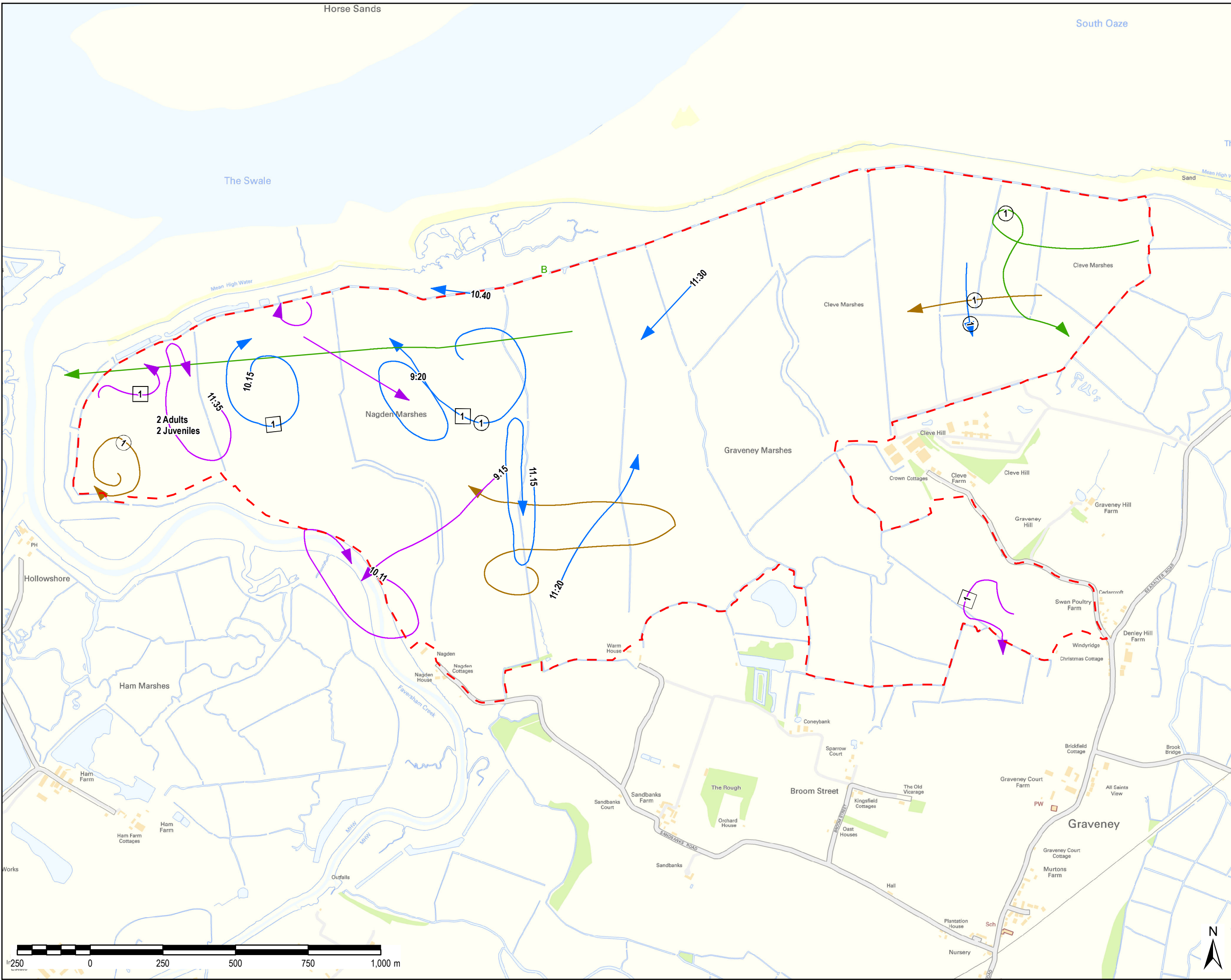
**Bird species key**

Code	Name
BR	Bearded Tit
CW	Cetti's Warbler
D.	Dunnock
HS	House Sparrow
LI	Linnet
RB	Reed Bunting
S.	Skylark
YW	Yellow Wagtail

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**LEGEND**

Site boundary

Marsh Harrier sat in vegetation

Flight paths

Survey 1 (6/5/14)

Survey 2 (30/5/14)

Survey 3 (20/6/14)

Survey 4 (14/7/14)

Female

Male

\*number refers to individuals observed

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Drawing Title

MARSH HARRIER 2014 DISTRIBUTION MAP

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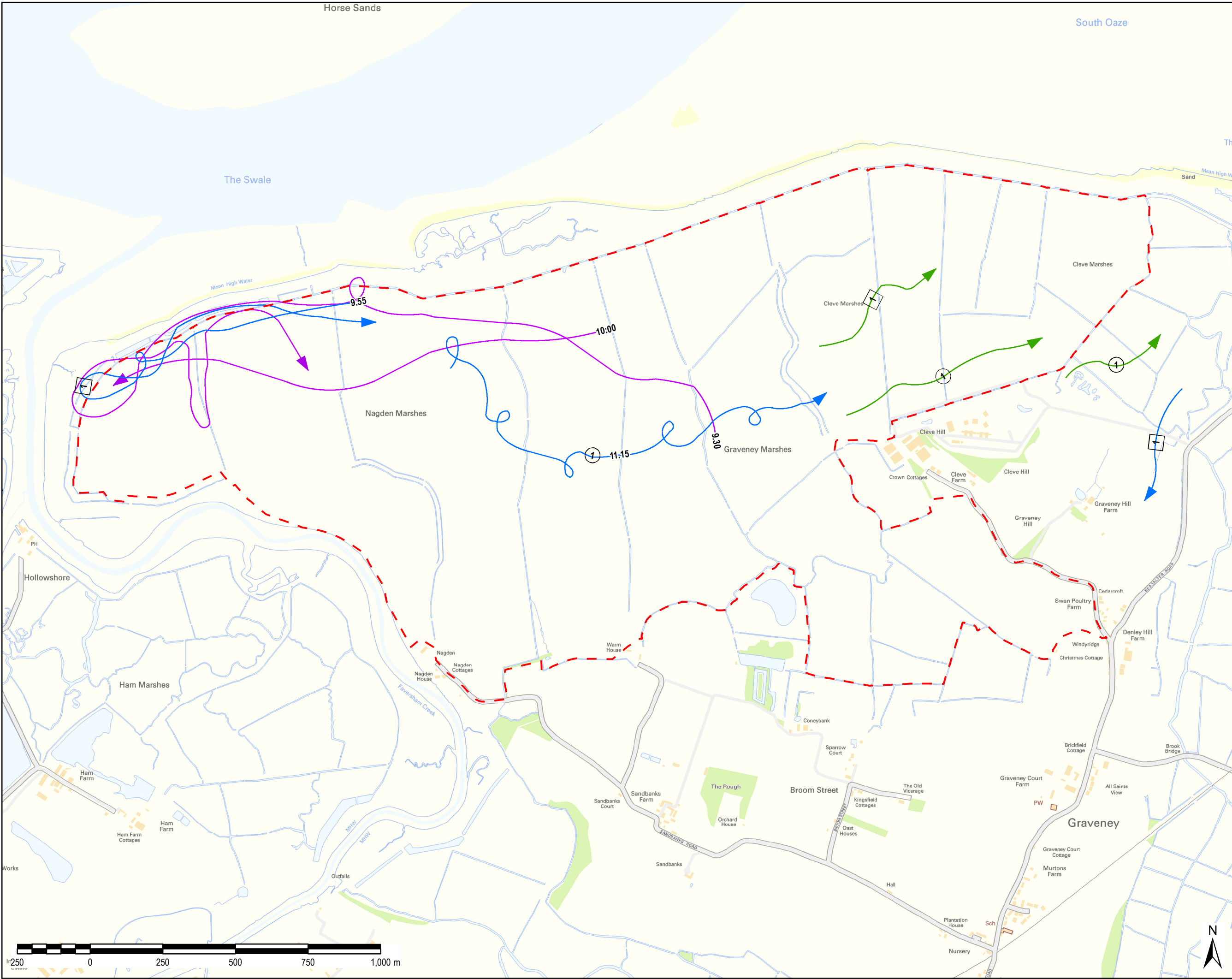
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FIGURE 3	



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#### LEGEND

Site boundary

Flight paths

Survey 1 (22/4/15)

Survey B (12/5/15)

Survey C (3/6/15)

Survey D 23/6/15)

Female

Male

\*number refers to individuals  
observed

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Drawing Title  
MARSH HARRIER 2015  
DISTRIBUTION MAP

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FIGURE 4

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LEGEND

- Site boundary
- Breeding bird transect route

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