

APPENDIX 9.6
WINTERING BIRD SURVEY



WINTER BIRD SURVEY

LAND AT FORD, WEST SUSSEX

REDROW HOMES LIMITED AND WATES DEVELOPMENTS

APRIL 2016

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Executive summary

- Artemis Ecological Consulting Limited was appointed by Redrow Homes Limited and Wates Developments to undertake a wintering bird survey of land at Ford, West Sussex.
- During the phase 1 habitat survey undertaken in 2015 a number of scarce farmland species were recorded. The arable fields on site were considered to have the potential to support wintering birds such as lapwing (*Vanellus vanellus*) and golden plover (*Pluvialis apricaria*).
- Four monthly transect surveys were undertaken between November 2015 and February 2016. The wintering bird survey used a methodology adapted from the BTO Winter Farmland Bird Survey. The survey visits were timed to coincide with high tide on the adjacent River Arun to ensure the site was visited when birds present within the Arun Valley were most likely to be using surrounding habitats.
- A total of 56 species were recorded during the field surveys. The survey findings demonstrated that waders and wildfowl from the Arun Valley are not regularly using the site.
- Of the 56 species recorded during the wintering bird survey at Ford thirteen are red list species, twelve are amber list species and the remaining 31 species are included on the green list. The wintering bird population at Ford is fairly typical of the wider wintering bird community recorded on arable sites across the county.
- The presence of grey partridge on site is considered to be of county importance. The wintering populations of yellowhammer, house sparrow, skylark, song thrush and dunnoek are considered to be of district importance. The wintering populations of other red and amber list species on site are considered to be of local importance only.
- The development proposals offer opportunities to provide new habitats for birds on site through new hedgerow, scrub and woodland planting. The creation of areas of wildflower meadow and conservation headlands along hedgerows will benefit farmland birds. Attenuation features and installation of nest boxes on new buildings will provide new habitats on site.

1.0 Introduction

- 1.1 Artemis Ecological Consulting Limited was appointed by Redrow Homes Limited and Wates Developments to undertake a wintering bird survey of land at Ford, West Sussex. The developing Ford Neighbourhood Plan sets out the vision of the Neighbourhood Planning Group for the parish over the period of the Arun Local Plan. An illustrative master plan showing potential development within the survey area has been developed as part of this process (see appendix 1).
- 1.2 A series of four monthly transect surveys were undertaken between November 2015 and February 2016. The wintering bird survey used a methodology adapted from the BTO Winter Farmland Bird Survey. Visits were made on calm, dry days with good visibility. A fixed transect route was walked and all bird activity observed recorded. The starting point and direction the transect was walked were changed each month. The survey covered both early mornings and late afternoons to include periods when crepuscular species such as barn owl (*Tyto alba*) could be active.
- 1.3 The survey visits were timed to coincide with high tide on the adjacent River Arun. Undertaking survey work over high tide periods ensured the site was visited when birds present within the Arun Valley were most likely to be using surrounding habitats.
- 1.4 During the phase 1 habitat survey undertaken in 2015 a number of scarce farmland species were recorded including the red list species skylark (*Alauda arvensis*), song thrush (*Turdus philomelos*) and yellowhammer (*Emberiza citrinella*). A grey partridge (*Perdix perdix*) with young was also recorded on site. The field margins and stubbles on site were identified as providing a food source for wintering passerines such as skylark, yellowhammer and linnet (*Linaria cannabina*).
- 1.5 The arable fields on site were considered to have the potential to support wintering birds such as lapwing (*Vanellus vanellus*) and golden plover (*Pluvialis apricaria*); both species utilise arable habitats for feeding and roosting during the winter. Large numbers of lapwing winter in Pagham Harbour, Chichester Harbour and the Arun Valley with golden plover occurring mainly at Pagham and Chichester Harbours. The proximity of these wintering populations to the site increases the likelihood of these species occurring.
- 1.6 The objective of the survey work was to record the wintering population of birds on site and evaluate the conservation significance of the bird species recorded. The developing Ford Neighbourhood Plan identifies the survey area for future development. The potential impacts of the

loss of habitat associated with development and potential mitigation measures are discussed.

- 1.7 Jeff Picksley MIEEM conducted the survey work. Incidental observations made during other surveys have been used to supplement the bird survey results.

2.0 Desk-top research

- 2.1 The Sussex Biodiversity Records Centre (SBRC) were contacted and a request made for the following information within 2km of the site:
- Protected species
 - Notable birds
 - BAP and notable species
- 2.2 Records returned from within 2km of the site included 48 for wigeon (*Anas penelope*), nine for white-fronted goose (*Anser albifrons*), 112 for brent goose (*Branta bernicla*), 25 for Bewick's swan (*Cygnus columbianus*), 207 for ringed plover (*Charadrius hiaticula*), 233 for oystercatcher (*Haematopus ostralegus*), 31 for golden plover, 169 for lapwing and 81 for curlew (*Numenius arquata*). All these species are known to use farmland during winter for feeding or roosting.
- 2.3 Other notable records of resident or wintering species include 193 of grey partridge, 167 of skylark, 88 for corn bunting (*Emberiza calandra*), 147 for yellowhammer, 126 for linnet, 126 for song thrush, 24 of merlin (*Falco columbarius*), 55 for short-eared owl (*Asio flammeus*) and 73 of common snipe (*Gallinago gallinago*).
- 2.4 Recent Sussex Bird Reports (2013 and 2014) were consulted to determine if there were any recent notable records of wintering birds in the Ford area not submitted to the SBRC. These reports were also used to establish population levels and abundance of wintering species in Sussex. This allows for an assessment to be made of the significance of the species recorded at a county level. Table 1 below shows the numerical ranges used in the bird reports to describe the status of species in Sussex.

Table 1: Population classification used in Sussex Bird Report.

	Breeding pairs	Winter/passage
Very rare		1 - 10 records in total
Rare	Less than annual	Less than annual
Very scarce	1 - 10 per year	1 - 20 per year
Scarce	11 - 100	21 - 200
Fairly common	101 – 1,000	201 – 2,000
Common	1,001 – 5,000	2,001 – 10,000
Very common	5,001 – 30,000	10,001 – 60,000
Abundant	30,000+	60,000+

- 2.5 Breeding and wintering bird populations in the UK are subject to periodic review to identify species of conservation concern. The review subdivides populations into three categories: red list species are those of highest conservation concern, amber list species are species experiencing moderate declines in populations or range and those on the green list are of no immediate conservation concern. The most recent review was undertaken in 2015 (Birds of Conservation Concern 4). Appendix 2 gives further details of the assessment criteria used in the compilation of these lists.

3.0 Survey results

- 3.1 Table 2 shows the dates, duration and weather conditions during the four survey visits. The table also includes the high tide time for Littlehampton harbour entrance. The survey visits were timed to coincide with the high water period as it was considered this was the period when birds using the Adur Valley for feeding were most likely to be displaced onto neighbouring farmland.

Table 2 – Survey timings, tide times and weather conditions during surveys

Date of survey	Time	Weather
23/11/15	07:40 – 11:30	Sunny after overnight frost. Cloud cover 5/8. No wind BF0 High tide (Littlehampton Harbour entrance): 08:41 (5.7m)
27/12/15	09:45 – 13:55	Overcast and very mild. Cloud cover 8/8. South-west wind BF4 easing to BF2 by end of survey High tide (Littlehampton Harbour entrance): 12:24 (6.0m)
28/1/16	11:45 – 15:35	Sunny after overnight frost. Cloud cover 0/8 increasing to 5/8 by end of survey. South-west wind BF2 – BF3 High tide (Littlehampton Harbour entrance): 13:53 (5.5m)
19/2/16	07:30 – 11:50	Sunny and mild after overnight frost. Occasional light showers lasting 2-3 minutes. Cloud cover 2/8 increasing to 4/8 by end of survey. South-west wind BF1 – BF3 High tide (Littlehampton Harbour entrance): 08:49 (4.91m)

- 3.2 There were no access constraints during the survey. The site is subject to a degree of public access from the neighbouring areas, however this is largely restricted to defined paths and tracks and it is thought most species are habituated to the presence of people. During the January survey the market was operational but as this takes place in a confined area on the old runway it was not considered to have affected the survey results. In February a gas gun was operational in one of the oil seed rape fields. The presence of the gas gun was observed having a localised effect on the distribution of some species, notably woodpigeon.
- 3.3 During the four visits a total of 56 species were recorded during the field surveys. Of the 56 species recorded during the wintering bird survey at Ford thirteen are red list species, twelve are amber list species and the remaining 31 species are included on the green list.
- 3.4 The number of species recorded in each visit varied between 44 recorded in November and 35 in December. The mean number of species recorded per visit was 39. Appendix 3 includes tables detailing the results of each survey and maps showing the distribution of birds across the survey area.
- 3.5 Twenty seven species were recorded during each survey (48% of the total species recorded). These species represent the main wintering bird community within the survey area. Table 3 lists the species recorded on every survey visit. The species names are coloured appropriately for those species that occur on the red or amber list (BoCC4).

Table 3: List of species recorded during every survey visit

Species					
Woodpigeon	Collard dove	Feral pigeon	Stock dove	Common gull	Black-headed gull
Herring gull	Carrion crow	Magpie	Jackdaw	Kestrel	Green woodpecker
Blackbird	Song thrush	Starling	Skylark	Pied wagtail	Duncock
Wren	Robin	Great tit	Blue tit	Long-tailed tit	Goldcrest
House sparrow	Goldfinch	Chaffinch			

- 3.6 Of the regularly recorded species five are red list species and five feature on the amber list.
- 3.7 Sixteen species were recorded on one survey visit only (29% of the total species recorded). These species are likely to be sporadic visitors to the survey area during the winter months. Table 4 lists those species recorded on only one survey visit.

Table 4: List of species recorded on only one survey visit

Species					
Little egret	Cormorant	Golden plover	Common snipe	Mallard	Moorhen
Lesser black-backed gull	Raven	Rook	Jay	Redwing	Mistle thrush
Chiffchaff	Coal tit	Lesser redpoll	Linnel		

- 3.8 Of the species recorded on only one occasion four are red list species and three are included on the amber list.
- 3.9 The remaining thirteen species were recorded on two or three of the survey visits. Those recorded during three surveys are considered to be either species wintering within the survey area at low densities such as great spotted woodpecker (*Dendrocopos major*) and greenfinch (*Chloris chloris*), or those present on site sporadically such as fieldfare (*Turdus pilaris*) and siskin (*Carduelis spinus*). Species recorded on during two survey visits include birds that may be on passage such as Mediterranean gull (*Larus melanocephalus*) and great black-backed gull (*Larus marinus*) and also species whose home range includes the survey area such as common buzzard (*Buteo buteo*) and sparrowhawk (*Accipiter nisus*).
- 3.10 Table 5 shows the twenty species most numerous species recorded during the surveys ranked by the total number of birds recorded over all four visits. The three most numerous species are known to form large flocks in winter. The rest of the list comprises mainly passerines and gives an indication of the typical wintering bird community within the survey area.

Table 5: Twenty most numerous species recorded at Ford during wintering bird surveys

Species	Maximum monthly count				Total
	November	December	January	February	
Woodpigeon	256	292	436	226	1210
Black-headed gull	165	130	89	319	703
Herring gull	167	119	193	71	550
Carrion crow	17	57	38	24	136
Blackbird	42	31	23	27	123
Feral pigeon	9	44	53	15	121
Goldfinch	24	46	28	19	117
Magpie	43	22	24	23	112
Robin	25	19	23	28	95
House sparrow	11	22	34	14	81
Chaffinch	15	11	16	34	76
Starling	21	1	10	35	67
Wren	16	19	9	18	62
Fieldfare	1	0	20	40	61
Skylark	32	1	8	18	59
Great tit	6	8	15	19	48
Song thrush	9	22	9	8	48
Blue tit	12	12	9	14	47
Dunnock	13	4	11	17	45
Pied wagtail	11	12	4	2	29
Collard dove	1	9	8	11	29
Stock dove	10	6	6	7	29

- 3.11 Table 5 shows that a significant proportion of the commonest wintering species are passerines, largely species associated with woodlands and hedgerow. Large flocks of woodpigeon (*Columba palumbus*) and black-headed gull (*Chroicocephalus ridibundus*) were recorded feeding on the arable field with significant numbers of herring gull associated with the MRF. Fieldfare, carrion crow (*Corvus corone*) and skylark were recorded foraging on the arable areas.
- 3.12 Virtually all the house sparrow (*Passer domesticus*) and starling (*Sturnus vulgaris*) records came from the periphery of the site with house sparrow particularly numerous on the western side of the survey area, associated with the housing and industrial units along Rollaston Park.

4.0 Assessment

- 4.1 This assessment considers the significance of the birds recorded at Ford. In order to provide context the wintering bird populations on site are considered against the wider wintering populations within the county. The main data sources used for this are the 2013 and 2014 Sussex Bird Reports. The assessment focuses mainly on those species of conservation concern (red and amber list species) recorded during the survey. Records of scarce wintering species within the county are also considered even if the species concerned is not of wider conservation concern. The definition of scarce is taken from the criteria used in the Sussex Bird Report as set out in Table 1.
- 4.2 The size of the county wintering population for each species is taken from the Sussex bird Report. Where species are resident with numbers augmented by winter visitors the resident population size has been used as the baseline for assessment. As the size of the wintering population will vary each year depending on factors such as severity of winter this precautionary approach will tend to underestimate the size of the overall wintering population.
- 4.3 The importance of the wintering bird populations has been assessed at four levels: regional, county, district and local. A regionally important population will contain a significant proportion of the wintering population of birds within the counties of Hampshire, Sussex and Kent. A population of county importance will support a significant proportion of the wintering population of a species within Sussex, or notable populations of species of conservation concern. Populations of district importance are those considered to be significant in a localised area (in this case the local authority area) and local populations are significant at a parish level.
- 4.4 The Sussex Wintering Bird Survey (SWBS) is undertaken each winter between November and February. The surveys undertaken between November 2012 and February 2015 covered between 113 and 143 1km squares within the county. The survey gives a good indication of the abundance and distribution of different species within the county.
- 4.5 The SWBS results are used to compile a list of the twenty most widespread wintering bird species in Sussex based on recorded presence in 1km squares during each survey year. Table 6 shows the twenty most widespread wintering species recorded in Sussex in the 2014/2015 survey period in column 1. The second column shows abundance of these species at Ford (the ranking is derived from summed maximum counts over survey period) for comparison. The figures in parenthesis in column 2 show the ranking of species recorded at Ford which fall outside the twenty most numerous.

Table 6: Comparison of twenty most numerous wintering species at Ford and the most widespread wintering species recorded in SWBS 2014/15.

Species	Winter November 2014 to February 2015	Ford Survey
Blackbird	1	5
Woodpigeon	2	1
Carrion crow	3	4
Blue tit	4	18
Robin	5	9
Magpie	6	8
Great tit	7	16
Wren	8	13
Chaffinch	9	11
Jackdaw	10	(25)
Song thrush	11	16
Duncock	12	19
House sparrow	13	10
Goldfinch	14	7
Pheasant	15	(44)
Starling	16	12
Green woodpecker	17	(33)
Common buzzard	18	(40)
Rook	19	(35)
Great spotted woodpecker	20	(40)

- 4.6 Comparing the results from the Ford wintering bird survey to the SWBS results shows that 70% of the most numerous wintering birds at Ford are also among twenty most abundant wintering species at a county level. All twenty of the most widespread wintering species in Sussex were recorded at Ford during the survey period. These results indicate that the wintering bird population at Ford is fairly typical of the wider wintering community recorded across the county.
- 4.7 The survey area supports relatively high numbers of gulls, with most of the herring gull activity related to birds associated with the MRF. The recorded black-headed gull activity consisted mainly of birds feeding on the arable fields. Small numbers of other gull species were recorded during the survey. Great black-backed gull, lesser black-backed gull (*Larus fuscus*) and common gull (*Larus canus*) are all amber list species. Given the proximity of the site to the coast and the regular presence of herring and black-headed gulls on site it is not surprising small numbers of other gull species were recorded.
- 4.8 Herring gull is included on the red list due to a severe decline in the non-breeding population over 25 years and a severe long-term decline in the breeding population. Despite these declines this species is still a

widespread wintering species in Sussex with the wintering population estimated to be in the region of 10,001 - 60,000 birds.

- 4.9 Black-headed gull is included on the amber list due to a moderate decline in the non-breeding population over 25 years. The wintering population in Sussex is similar to that of herring gull. The numbers recorded at Ford are not exceptional for aggregations of these species in the county.
- 4.10 Small numbers of Mediterranean gulls (another amber list species) were recorded in the black-headed gull flocks in January and February. The presence of these birds may be related to the beginning of the eastward movement of Mediterranean gulls that occurs in Sussex during spring. These movements usually peak in March and April. This species frequently forms mixed flocks with other gull species and counts in excess of 100 birds are regular at coastal sites in West Sussex. The winter gull flocks recorded at Ford made are not significant at a county level, but are of local importance.
- 4.11 Three raptor species recorded during the survey work: common buzzard, sparrowhawk and kestrel (*Falco tinnunculus*). All three species are widespread in the county and the common buzzard population is increasing. Kestrel is included on the amber list due to a moderate long term decline in the breeding population. Both male and female kestrel were recorded on site and it is likely the survey area forms part of a home range of a breeding pair. The wintering raptor population is considered to be of local importance.
- 4.12 Grey partridge were recorded on three visits with a peak count of six birds in November. It is thought the group on site are a family group as a pair with a minimum of three young were recorded during the Phase 1 survey in 2015. This species is included on the red list due to a severe long-term decline in the breeding population.
- 4.13 Grey partridge are a scarce resident in Sussex with most of the records of birds coming from the west of the county where it was recorded from 49 1km squares in 2014. With the exception of one or two key sites the majority of birds reported were in groups of four or less. The wintering population in the county is estimated to be 21 - 200 individuals and the small population of grey partridge using the site are considered to be of county importance.
- 4.14 A peak count of 16 yellowhammer was recorded in December, when a single flock was recorded feeding on a small area of uncultivated land within an oil seed rape crop. A single bird was recorded in February with two birds recorded in November. All the birds were recorded from the same area during each time suggesting the presence of a wintering population in the local area.

- 4.15 This species is included on the red list due to a severe long-term decline in the breeding population. Yellowhammer is still a fairly common resident in Sussex and the numbers recorded at Ford are not large by county standards. Double figure wintering flocks were recorded at 21 sites west of Brighton in the early winter period in 2014 including several flocks of 30 or more birds. The numbers of yellowhammer recorded at Ford are significant at a district level.
- 4.16 House sparrow were consistently recorded along the western side of the site. This species is very common within Sussex with a breeding population estimated to be in the region of 5,001 – 30,000 pairs. House sparrow is included on the red list due to a severe long-term decline in the breeding population. The numbers recorded during the surveys are significant at a district level.
- 4.17 Variable numbers of skylark were recorded during the surveys with a peak count of 32 in November and a low count of a single bird in December. The November birds were associated with stubble that had been ploughed by the time of the December survey. It is likely that birds foraging in oil seed rape would have been difficult to detect if not calling or flying so some undercounting may have occurred.
- 4.18 Skylark is a very common resident in Sussex with wintering flocks in excess of 50 birds recorded at 16 locations in November and December 2014 during fieldwork undertaken for the SWBS. The highest count in Sussex over the 2014 winter period was a flock of 500 birds at Beachy Head in December. Skylark is included on the red list due to a severe long-term decline in the breeding population. The wintering skylark population at Ford is of importance at a district level.
- 4.19 Small numbers of redwing (*Turdus iliacus*) and fieldfare were recorded on site during the surveys. Both species are included on the red list; redwing due to a severe decline in the breeding population over 25 years and fieldfare to a severe long-term decline in the breeding population and a severe breeding range decline over 25 years. Both species are common winter visitors to Sussex and the numbers recorded during the survey are of local importance only.
- 4.20 With the exception of a peak count of 22 birds in December only single figure counts of song thrush were made during the surveys. Starling counts fluctuated with three double figure counts were made during the surveys. Song thrush is a very common resident and starling a very common winter visitor and resident within the county.
- 4.21 Both species are included on the red list due to a severe long-term decline in the breeding population. The numbers of starling recorded are not exceptional at a county level. The peak count of song thrush is a high winter count for Sussex suggesting the wintering population could be of district importance. The wintering population of starling is considered to be of local importance only.

- 4.22 A number of other red list species were recorded during the wintering bird survey: grey wagtail (*Motacilla cinerea*), mistle thrush (*Turdus viscivorus*), linnet and lesser redpoll (*Carduelis cabaret*). All four species are included on the red list due to severe long-term declines in the breeding population. The numbers of all four species recorded were low, with total counts of 3 birds or less over the survey period. These species are of local importance only.
- 4.23 The survey recorded good numbers of dunnock (*Prunella modularis*) within the survey area. This species is included on the amber list for a moderate long-term decline in the breeding population. Information on the wintering population of this very common species is limited with few counts listed in the Sussex Bird Report. The wintering population of dunnock may be of district importance.
- 4.24 Small numbers of other amber list species were recorded during the survey work: stock dove (*Columba oenas*), meadow pipit (*Anthus pratensis*), reed bunting (*Emberiza schoeniclus*), mallard (*Anas platyrhynchos*) and common snipe. Counts made during the survey were low and the wintering populations of these species are considered to be of local importance only.

5.0 Conclusion and recommendations

- 5.1 There is no evidence from the surveys to suggest wildfowl or waders from the Arun Valley are using the site for feeding or roosting. Only two records of waders were made during the survey; a single common snipe flushed from a field margin and a calling golden plover. Mallard were recorded on two occasions close to the STW. It is concluded that waders and wildfowl from the Arun Valley are not regularly using the site.
- 5.2 The Ford site supports a fairly typical assemblage of wintering birds. The composition of the wintering bird community is similar to that recorded at other sites in Sussex during county wide wintering bird surveys. A number of species of conservation concern were recorded wintering on site. No regionally important populations of wintering birds were recorded during the survey.
- 5.3 The presence of grey partridge on site is considered to be of county importance. The wintering populations of yellowhammer, house sparrow, skylark, song thrush and dunnock are considered to be of district importance. The wintering populations of other red and amber list on site are considered to be of local importance only.
- 5.4 The plan proposals will result in the loss of arable fields used by a number of species of county or district importance: grey partridge, skylark and yellowhammer. Suitable foraging habitat for these species could be retained on site through the provision of areas of wild flower

meadow and hedgerow margins managed to provide areas of species-rich grassland. These habitats would be sources of both invertebrates and seeds important for all three species.

- 5.5 The retention of existing shelterbelts and hedgerows with the site along with the provision new areas of native planting will ensure foraging opportunities for these species are retained within the proposed development. These habitats will also be of importance to wintering dunnoek.
- 5.6 The local area appears to support a healthy population of house sparrow. The proposals should look to incorporate nesting sites, in the form of specially designed boxes on suitable buildings, within the development area. The retention and creation of new habitats as described in paragraphs 5.4 and 5.5 will provide suitable foraging opportunities for this species.
- 5.7 New attenuation areas associated with the proposed development will offer the opportunity to create new wetland habitats on site. These areas can act as a source of invertebrate food for passerines in the breeding season and can also be used by wintering species such as common snipe, little egret (*Egretta garzetta*), reed bunting and grey wagtail.
- 5.8 Given the extent of similar foraging habitat in the vicinity of the site the loss of arable land associated with the proposals is unlikely to have a significant effect on wintering gulls. The proposed sports pitches will offer some foraging opportunities for these species.
- 5.9 The development proposals at Ford will result in the loss of habitat used by wintering birds. The wintering bird community is considered to be of district importance and includes species present in numbers considered to be of county or district importance. A large proportion of the species recorded during the surveys were associated with the hedgerow and shelterbelts on site. Through the retention of these and the creation of new woodland, scrub and hedgerow habitats it should be possible to minimise the impacts on species using these habitats.
- 5.10 The incorporation of measures such as the creation of conservation headlands along hedgerows, sympathetic hedgerow management and the creation of species-rich native grassland will ensure suitable habitats for species such as grey partridge, yellowhammer and song thrush are retained on site.
- 5.11 The development proposals offer opportunities to provide new habitats for birds on the site, through the creation of new attenuation features and installation of nest boxes on new buildings.

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Appendix 1: Draft illustrative master plan



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Revision	Date	Drm	Ckd
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Project

FORD NEIGHBOURHOOD PLAN

Drawing Title

SKETCH MASTER PLAN WITH NORTHERN EXPANSION

Date

28.09.15

Scale

1:5000@A2

Drawn by

M.D.

Check by

D.S.

Project No

23885

Drawing No

RG-M-19

Revision

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Appendix 2: Classification system used for BoCC4

BoCC4 classification criteria

Red list

Species that are globally threatened (Critically endangered, endangered and vulnerable but not near threatened) using IUCN guidelines, as assessed by Birdlife International in 2015.

Historic decline: Historic decline in breeding populations. Species judged to have declined severely between 1800 and 1995 from an assessment conducted by Gibbens *et al* (1996) and which have not recovered subsequently.

Breeding population decline: Severe decline in UK breeding population size, either a decline of over 50% over 25 years or the longer-term defined as the period since first BoCC review (1969).

Non-breeding population decline: Severe decline in UK non-breeding population of over 50% over 25 year period or over longer-term defined as the period since first BoCC review (1969). Non-breeding trends were only assessed if a species has substantially independent breeding and non-breeding populations, otherwise only breeding population was assessed.

Breeding range decline: Species that have experienced a severe decline in the UK range between the breeding bird atlases in 1988-91 and 2007-11 or 1968-71 and 2007-2011 as measured by the calculated change in the number of occupied 10km squares.

Non-breeding range decline: Severe decline in UK range (more than 50%) between the wintering bird atlases in 1981-84 and 2007-2011 as measured by the calculated change in the number of occupied 10km squares.

Amber list

ERLOB: The European red list of birds was published in 2015 by Birdlife International. It covers IUCN red list assessments of regional extinction risk with no consideration of the wider suite of measures (species rarity, localization, moderate decline and depletion) included in SPEC assessments. Any species on the European red list (Critically endangered, endangered, vulnerable) is included on the amber list.

Historic decline – recovery: Species red listed for historic decline in a previous review but with a substantial recent recovery (at least 100% in last 25 years or the longer term period). Longer-term is defined as the period since first BoCC review (1969).

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Breeding population decline: Species experiencing a moderate decline in UK breeding population (more than 25% but less than 50%) over 25 years of the longer term period. Longer-term is defined as the period since first BoCC review (1969).

Non-breeding population decline: Moderate decline in UK non-breeding population (more than 25% but less than 50%) over 25 year period or over longer-term defined as the period since first BoCC review (1969). Non-breeding trends were only assessed if a species has substantially independent breeding and non-breeding populations, otherwise only breeding population was assessed.

Breeding range decline: Species that have experienced a moderate decline (more than 25% but less than 50%) in the UK range between the breeding bird atlases in 1988-91 and 2007-11 or 1968-71 and 2007-2011 as measured by the calculated change in the number of occupied 10km squares.

Non-breeding range decline: Moderate decline in UK range (more than 25% but less than 50%) between the wintering bird atlases in 1981-84 and 2007-2011 as measured by the calculated change in the number of occupied 10km squares.

Breeding and non-breeding rarity: Species with a UK breeding population of fewer than 300 pairs or with a UK non-breeding population of less than 900 individuals.

Breeding and non-breeding localisation: Localised breeding or non breeding population with at least 50% of UK population found in 10 or fewer sites. Sites were defined as either Special Protection Areas or Important Bird Areas. Rare breeding and non-breeding species were not assessed against this criteria as the small population size predisposes them to be restricted to a small number of sites.

Breeding or wintering population of International importance: Species with at least 20% of European breeding or non-breeding population found in the UK.

Birds of Conservation Concern 4: the population status of birds in the UK, Channel Islands and Isle of Man. Eaton, M., Aebischer, N., Brown, A., Hearn, R., Lock, L., Musgrove, A., Noble, D., Stroud, D and Gregory, R. (2015) British Birds 108 708-746.

Appendix 3: Tables of survey results and field maps

WINTERING BIRD SURVEY
FORD, WEST SUSSEX

Visit 1
Date: 23/11/15

Species	Scientific name	Count	Observations
Little egret	<i>Egretta garzetta</i>	1	Single bird landed in field before flying off
Cormorant	<i>Phalacrocorax carbo</i>	1	Single bird over
Mallard	<i>Anas platyrhynchos</i>	2	Two birds, possibly from treatment works
Sparrowhawk	<i>Accipiter nisus</i>	1	Single bird over
Kestrel	<i>Falco tinnunculus</i>	1	Bird hunting on rough grassland
Grey partridge	<i>Perdix perdix</i>	6	One small family group
Golden plover	<i>Pluvialis apricaria</i>	1	Single bird heard (not seen off-site)
Black-headed gull	<i>Chroicocephalus ridibundus</i>	165	Large flock in fields early morning
Common gull	<i>Larus canus</i>	9	Associated with black-headed gull flock
Herring gull	<i>Larus argentatus argenteus</i>	167	Small groups on fields, buildings and flying over
Great black-backed gull	<i>Larus marinus</i>	1	Single bird over
Feral pigeon	<i>Columba livia</i>	9	
Stock dove	<i>Columba oenas</i>	10	Single flock high over site
Woodpigeon	<i>Columba palumbus</i>	256	Mainly feeding on oilseed rape
Collard dove	<i>Streptopelia decaocto</i>	1	
Green woodpecker	<i>Picus viridis</i>	5	
Great spotted woodpecker	<i>Dendrocopos major</i>	1	
Skylark	<i>Alauda arvensis</i>	32	Small flock (16 birds) in stubble. Singles noted across most fields.
Meadow pipit	<i>Anthus pratensis</i>	6	
Pied wagtail	<i>Motacilla alba</i>	11	
Wren	<i>Troglodytes troglodytes</i>	16	
Dunnock	<i>Prunella modularis</i>	13	
Robin	<i>Erithacus rubecula</i>	25	
Blackbird	<i>Turdus merula</i>	42	
Fieldfare	<i>Turdus pilaris</i>	1	
Song thrush	<i>Turdus philomelos</i>	9	
Chiffchaff	<i>Phylloscopus collybita</i>	1	Bird feeding in shelterbelt
Goldcrest	<i>Regulus regulus</i>	8	
Long-tailed tit	<i>Aegithalos caudatus</i>	1	
Blue tit	<i>Cyanistes caeruleus</i>	12	
Great tit	<i>Parus major</i>	6	
Jay	<i>Garrulus glandarius</i>	7	

WINTERING BIRD SURVEY
FORD, WEST SUSSEX

Species	Scientific name	Count	Observations
Magpie	<i>Pica pica</i>	43	Group of 13 around treatment works (possible roost site)
Jackdaw	<i>Corvus monedula</i>	2	
Carrion crow	<i>Corvus corone corone</i>	17	
Starling	<i>Sturnus vulgaris</i>	21	One flock of 18 birds
House sparrow	<i>Passer domesticus</i>	11	Mainly around fringes of site
Chaffinch	<i>Fringilla coelebs</i>	15	
Greenfinch	<i>Chloris chloris</i>	3	
Goldfinch	<i>Carduelis carduelis</i>	24	Several groups feeding in alders
Siskin	<i>Carduelis spinus</i>	1	Single bird over
Lesser redpoll	<i>Carduelis cabaret</i>	1	Single bird over
Yellowhammer	<i>Emberiza citrinella</i>	2	Two separate birds over
Reed bunting	<i>Emberiza schoeniclus</i>	2	