

A303 Amesbury to Berwick Down

TR010025

6.3 Environmental Statement Appendices

Appendix 8.1A Desk study summary tables

APFP Regulation 5(2)(a)

Planning Act 2008

Infrastructure Planning (Applications: Prescribed
Forms and Procedure) Regulations 2009

October 2018



Desk study

The potential for the study area of the Scheme to support legally protected species and notable species has been assessed using the results of the desk study and observations made during the survey of habitats. Desk study records from Wiltshire and Swindon Biological Records Centre (WSBRC) have only been considered below if they are recent (from the last 10 years) and if they relate to species that may be supported by the habitats within the Scheme boundary.

Table 8.1.1: Protected and notable species (excluding birds and invertebrates) for which WSBRC records have been identified within the 2km study area.

Biodiversity Receptor	Desk study summary
Ancient woodlands and Habitats of Principal Importance (HPI)	No ancient woodlands were identified within the study area although a single veteran beech (<i>Fagus sylvatica</i>) tree was identified to the north of New Kings Barrow, outside of the Scheme boundary. A total of six HPIs were identified within the study area, these were areas of lowland calcareous grassland, lowland fens, lowland meadows, good quality semi-improved grassland, deciduous woodland and rivers. All of these were identified as occurring within the Scheme boundary. These are illustrated in Figure 8.4.
Lichen	No records of lichen were identified within the study area. Stonehenge supports a diverse community of maritime species and a remarkable dominance of coastal cliff species. The lichen communities are considered to be of international importance (Appendix 8.2A).
Aquatic macro-invertebrate	Apart from Desmoulin's whorl snail (<i>Vertigo moulinsiana</i>), (which is a listed under Annex II of the Conservation of Habitats and Species Regulations 2010 as a primary reason for designation of the River Avon SAC) no designated sites which included rare or notable aquatic invertebrate assemblages in their reasons for designation were returned by the desk study. A single record of fairy shrimp (<i>Chirocephalus diaphanous</i>) was identified approximately 1km north of Parsonage Down. Fairy shrimp is a Schedule 5 species of the Wildlife and Countryside Act 1981 (as amended) and a local biodiversity action plan species, which occurs in disturbed temporary pools.
Terrestrial invertebrate	A total of 960 records for invertebrates were identified within the study area, of which two species were listed under Schedule 5 of the Wildlife and Countryside Act 1981 (as amended), these were marsh fritillary (<i>Euphydryas aurinia</i>) (also an Annex II species and a primary reason for designation of the Salisbury Plain SAC), and swallowtail butterfly (<i>Papilio machaon</i>). Of the 959 records, 20 species were listed as a Red Data Book species.
Amphibian	A total of 33 amphibian records were identified within the study area, of which two were great crested newt (<i>Triturus cristatus</i>), two were common toad (<i>Bufo bufo</i>) and 29 were common frog (<i>Rana temporaria</i>). The closest record of great crested newt was located over 900m north of the Scheme boundary in Shrewton. The desk study did not identify any great crested newt Natural England European Protected Species (EPS) licences within the study area. Salisbury Plain SSSI has been noted to contain populations of great crested newt, smooth newt (<i>Lissotriton vulgaris</i>), common frog and common toad in ephemeral dew ponds located throughout the site.
Reptiles	A total of 20 reptile records were identified within the study area, of which four were grass snake (<i>Natrix natrix</i>), seven were slow worm (<i>Anguis fragilis</i>), and nine were common lizard (<i>Zootoca vivipara</i>). The closest record was of a grass snake located within Countess Farm Swamp located approximately 100m north of the existing A303.
Birds (breeding and wintering)	The desk study identified 508 records of bird species within the study area, of which 23 species were listed under Schedule 1 of the Wildlife and Countryside Act

	<p>1981 (Appendix 8.1). These records included numerous Birds of Conservation Concern¹ (BoCC), red list and amber list species (these are considered to be of conservation concern because their populations have shown significant decreases since the 1970s).</p> <p>The records obtained from the Wiltshire Ornithological Society's bird atlas for 'wintering abundance 2007-2012'. Identified 89 species from the twenty tetrads (2x2km²) selected for the study area. This included nine species listed under Schedule 1 of the Wildlife and Countryside Act 1981, nine species listed under Annex I of the Bird's Directive, 15 SPIs and 38 species either listed on the red or amber list (Table 8.1.2).</p> <p>Notable Schedule 1 bird species recorded included fieldfare (<i>Turdus pilaris</i>) which was particularly abundant and widespread across the study area with a total abundance of 1458 across 19 of the 20 tetrads. Redwing (<i>Turdus iliacus</i>) with a total abundance of 281 across 14 tetrads.</p> <p>Notable Annex 1 species listed under the Bird's Directive included a large abundance (1855) of golden plover (<i>Pluvialis apricaria</i>) across 12 of the tetrads. Notable SPIs included starling (<i>Sturnus vulgaris</i>) located in every tetrad with a total abundance of 2745, skylark (<i>Alauda arvensis</i>) with an abundance of 943 across 18 of the tetrads, song thrush (<i>Turdus philomelos</i>) in 19 of the tetrads, corn bunting (<i>Emberiza calandra</i>) with an abundance of 267 across 11 of the tetrads, lapwing (<i>Vanellus vanellus</i>) with an abundance of 2202 across half of the tetrads, linnet (<i>Carduelis cannabina</i>) and yellowhammer (<i>Emberiza citrinella</i>).</p>
<p>Barn owl (<i>Tyto alba</i>)</p>	<p>11 records of barn owl from WSBRC were returned for the study area. A total of 19 barn owl boxes within 2km of the 2016 route options have been monitored annually. Of the 19 barn owl boxes, barn owls have been recorded within 11 boxes (breeding status was not confirmed). The majority of the occupied nest boxes are located to the south-east or north-west of Longbarrow junction. A total of 13 barn owl casualties associate with road traffic collisions (in the last ten years) have been recorded within the study area, all of which were located along the A303. The majority of the road traffic collisions were recorded between Long Barrow Roundabout and Amesbury.</p>
<p>Stone curlew (<i>Burhinus oediconemus</i>)</p>	<p>Data obtained from the RSPB and the breeding bird survey identified that stone curlew are consistently breeding within Normanton Downs RSPB reserve and other suitable habitat within the study area (Figure 8.11). Normanton Down RSPB Reserve has been recorded to support a large post-breeding aggregation of stone curlew, with a peak count of 105 birds being recorded in September 2017. The birds were recorded to be moving between suitable habitat to the north and south of the Scheme boundary.</p> <p>It is considered likely that the breeding population of stone curlew present in Normanton Downs RSPB Reserve interchanges with the breeding population in Salisbury Plain SPA and as such the population within the study area is considered to support the breeding population within the SPA.</p>
<p>Great bustard (<i>Ortis tarda</i>)</p>	<p>A total of 20 records of great bustard were identified within the study area. Great bustard has been recorded throughout the Salisbury Plain area from Yarnbury</p>

¹ The UK's leading bird conservation organisations reviewed the most up to date information on the status of birds in the UK and elsewhere in their range to produce the third review of the status of birds which occur regularly in the UK. This is presented as the Birds of Conservation Concern 4 (Eaton *et al*, 2015), comprising a 'red list' of species of high conservation concern, an 'amber' list of species of moderate conservation concern, with other species that do not qualify under red or amber list criteria on the green list. To qualify on the red list species may be listed as globally threatened by IUCN, have suffered a historical decline without substantial recent recovery, or a decline of more than 50% in breeding or non-breeding populations, or a 50% contraction in breeding range over 25 years (or the longer term). Amber list species can be those listed as Species of European Conservation Concern, those which have suffered a historical decline but shown significant recent recovery, have shown a decline of between 25 and 50% in breeding or non-breeding populations, or a contraction in breeding range of between 25 and 50% over 25 years (or the longer term) or be rare or localised breeders in the UK, or be species for which 20% of the breeding or non-breeding population is found in the UK.

Red or amber listing does not confer additional protection under legislation or planning policy, however it provides a basis for informing evaluation of a Site and for targeting conservation effort and is a widely used resource for interpreting bird populations.

	Castle to West Amesbury. Nesting sites of this species have been observed as being largely limited to the south of the existing A303 (Figure 8.11).
Badger (<i>Meles meles</i>)	A total of 32 badger records have been identified within the study area. The records consisted of individual sightings, sett locations, latrines, foraging activity and road casualties. One of these records was considered to be a badger sett, located approximately 450m north of the Scheme boundary within Bulford camp. A total of five records of badger road kill were recorded within the Scheme boundary at various locations along the A303.
Bats	<p>A total of 272 bat records from a minimum of 12 species of bat have been identified within the study area, these were:</p> <ul style="list-style-type: none"> • common pipistrelle (<i>Pipistrellus pipistrellus</i>); • soprano pipistrelle (<i>Pipistrellus pygmaeus</i>); • nathusius pipistrelle (<i>Pipistrellus nathusii</i>); • brown long-eared bat (<i>Plecotus auritus</i>); • lesser horseshoe bat (<i>Rhinolophus hipposideros</i>); • barbastelle bat (<i>Barbastella barbastellus</i>); • Daubenton's bat (<i>Myotis daubentonii</i>); • Natterer's bat (<i>Myotis nattereri</i>); • noctule bat (<i>Nyctalus noctula</i>); • serotine bat (<i>Eptesicus serotinus</i>); • Leisler's bat (<i>Nyctalus leisleri</i>); and • unidentified species. <p>Of the 197 bat records, 93 are considered to be roosts, with two records of hibernating bats found within trees and 17 records relating to a Natterer's, serotine, brown long-eared, soprano pipistrelle or noctule bat maternity roost. None of the bat roosting records were located within the Scheme boundary. A minimum of nine species were recorded roosting within the study area, these were:</p> <ul style="list-style-type: none"> • common pipistrelle; • soprano pipistrelle; • pipistrelle species; • barbastelle bat; • brown long-eared bat; • noctule bat; • serotine bat; • Natterer's bat; • Daubenton's bat; and • lesser horseshoe bat. <p>The closest bat roost was common pipistrelle located approximately 20m from the Scheme.</p> <p>A total of 12 Natural England EPS licences relating to bats were identified within the study area. The species covered by the Natural England EPS licences were Natterer's bat, Daubenton's bat, common pipistrelle, soprano pipistrelle, and serotine bat. The closest Natural England EPS licence was EPSM2013-6207 for the destruction of a brown long-eared bat resting place located approximately 100m from the A3028.</p>
Otter (<i>Lutra lutra</i>)	<p>A total of 5 otter records have been identified within the study area. The records consisted of individual sightings, road kill, and spraints. Otter records were identified within the River Avon and River Till. The closest record was a dead otter located within the Scheme along the A303 on the western onslip road to countess roundabout.</p> <p>The desk study did not identify any otter Natural England European Protected Species (EPS) licences have been identified within the study area².</p>
Water vole (<i>Arvicola amphibius</i>)	A total of 112 water vole records have been identified within the study area. The records consisted of latrines, burrows, individual sightings, and feeding remains. Water vole records were identified within the River Avon and River Till. The closest record was an inactive burrow located immediately adjacent to the Scheme

² <http://www.natureonthemap.naturalengland.org.uk/MagicMap.aspx> Accessed:- 20/11/2017

	boundary along the banks of the River Avon.
Hazel dormouse (<i>Muscardinus avellanarius</i>)	The records obtained from WSBRC did not contain any records of dormouse within the study area. No dormouse Natural England European Protected Species (EPS) licences have been identified within the study area.
Other notable species	A total of 108 brown hare (<i>Lepus europaeus</i>) records and 227 European hedgehog (<i>Erinaceus europaeus</i>) records were identified within the study area. The records of these species were located throughout the study area. A total of four polecat (<i>Mustela putorius</i>) records were identified within the study area. The closest record was located within the Scheme boundary along the A303 to the north of Normanton Gorse. Six records of harvest mouse (<i>Micromys minutus</i>) were identified within the study area. One record of water shrew (<i>Neomys fodiens</i>) was recorded within the study area, located in Shrewton approximately 1km north of the Scheme.

Data was obtained from the Wiltshire Ornithological Society’s bird atlas for ‘winter abundance 2007-2012’. This included abundance records from twenty tetrads (2x2km²) within proximity to the Scheme. These tetrads were as follows: SU04F (Yarnbury Castle), SU04K (Berwick Down), SU04Q (Winterbourne Stoke), SU04V (Oatlands Hill), SU14A (Normanton Down), SU14F (Normanton), SU14K (West Amesbury), SU14Q (Amesbury), SU14V (Boscombe Down West), SU03J (Steeple Langford Down), SU03U (Berwick St James), SU032 (Druid’s Lodge), SU13E (Westfield Farm), SU13J (Great Burnford), SU 13P (Amesbury Down), SU04X (Rollestone Camp), SU04 W (Airman’s Corner), SU14B (Fargo Plantation), SU14G (Stonehenge), and SU14R (Bulford).

A summary of the data can be seen in Table 8.1.12 below. The total abundance was taken from the sum of all the abundances records from the 20 tetrads identified above. Where there was no number for abundance and only ‘present’ was stated then the number was taken as 1.

Table 8.1.2: Summary of records from the Wiltshire Ornithological Society ‘winter abundance 2007-2012’ Atlas

Common name and BoCC status (red, orange, green or no status)	Latin name	Total abundance for the 20 tetrads within the study area	Number of tetrads containing records	Legal / Conservation Status
Barn Owl	<i>Tyto alba</i>	17	7	W&CA Schedule 1, LBAP
Blackbird	<i>Turdus merula</i>	466	20	BoCC Green
Blackcap	<i>Sylvia atricapilla</i>	2	2	BoCC Green
Black-headed Gull	<i>Chroicocephalus ridibundus</i>	193	8	BoCC Green
Blue Tit	<i>Cyanistes caeruleus</i>	320	19	BoCC Green
Brambling	<i>Fringilla montifringilla</i>	24	6	BoCC Green
Bullfinch	<i>Pyrrhula pyrrhula</i>	21	7	NERC
Buzzard	<i>Buteo buteo</i>	215	19	BoCC Green
Canada Goose	<i>Branta canadensis</i>	3	2	
Carrion Crow	<i>Corvus corone</i>	537	20	BoCC Green
Chaffinch	<i>Fringilla coelebs</i>	925	20	BoCC Green
Coal Tit	<i>Parus ater</i>	10	6	BoCC Green
Collared Dove	<i>Streptopelia decaocto</i>	177	9	BoCC Green
Common Gull	<i>Larus canus</i>	15	6	BoCC Amber
Coot	<i>Fulica atra</i>	6	4	BoCC Green
Cormorant	<i>Phalacrocorax carbo</i>	11	4	BoCC Green
Corn Bunting	<i>Emberiza calandra</i>	267	11	BoCC Red, NERC

Duncock	<i>Prunella modularis</i>	95	18	BoCC Amber, NERC
Feral Pigeon	<i>Columba livia</i>	2	1	
Fieldfare	<i>Turdus pilaris</i>	1458	19	W&CA Schedule 1, BoCC Red
Gadwall	<i>Anas strepera</i>	6	2	BoCC Amber
Goldcrest	<i>Regulus regulus</i>	45	8	BoCC Green
Golden Plover	<i>Pluvialis apricaria</i>	1855	12	BoCC Amber, BD1
Goldfinch	<i>Carduelis carduelis</i>	397	15	BoCC Green
Great Bustard	<i>Otis tarda</i>	4	2	BD1
Great Spotted Woodpecker	<i>Dendrocopos major</i>	39	12	BoCC Green
Great Tit	<i>Parus major</i>	171	19	BoCC Green
Green Sandpiper	<i>Tringa ochropus</i>	2	1	
Green Woodpecker	<i>Picus viridis</i>	8	6	BoCC Green
Greenfinch	<i>Chloris chloris</i>	103	13	BoCC Green
Grey Heron	<i>Ardea cinerea</i>	19	8	BoCC Green
Grey Partridge	<i>Perdix perdix</i>	17	3	
Grey Wagtail	<i>Motacilla cinerea</i>	4	4	
Hen Harrier	<i>Circus cyaneus</i>	18	9	
Herring Gull	<i>Larus argentatus</i>	18	7	
House Sparrow	<i>Passer domesticus</i>	275	8	
Jack Snipe	<i>Lymnocyptes minimus</i>	2	1	BoCC Green
Jackdaw	<i>Corvus monedula</i>	1155	18	BoCC Green
Jay	<i>Garrulus glandarius</i>	7	4	BoCC Green
Kestrel	<i>Falco tinnunculus</i>	9	3	BoCC Green
Kingfisher	<i>Alcedo atthis</i>	1	1	
Lapwing	<i>Vanellus vanellus</i>	2202	10	
Lesser Black-backed Gull	<i>Larus fuscus</i>	393	10	
Lesser Spotted Woodpecker	<i>Dendrocopos minor</i>	2	1	
Linnet	<i>Carduelis cannabina</i>	526	12	
Little Egret	<i>Egretta garzetta</i>	12	5	BD1, BoCC Green
Little Grebe	<i>Tachybaptus ruficollis</i>	14	4	BoCC Green
Little Owl	<i>Athene noctua</i>	5	3	BoCC Green
Long-tailed Tit	<i>Aegithalos caudatus</i>	117	12	BoCC Green
Magpie	<i>Pica pica</i>	153	16	BoCC Green
Mallard	<i>Anas platyrhynchos</i>	18	7	BoCC Amber
Mandarin Duck	<i>Aix galericulata</i>	2	1	
Meadow Pipit	<i>Anthus pratensis</i>	82	12	BoCC Amber
Merlin	<i>Falco columbarius</i>	15	7	BD1, W&CA Schedule 1, BoCC Red
Mistle Thrush	<i>Turdus viscivorus</i>	37	15	BoCC Red
Moorhen	<i>Gallinula chloropus</i>	26	7	BoCC Green
Mute Swan	<i>Cygnus olor</i>	16	5	
Nuthatch	<i>Sitta europaea</i>	5	3	BoCC Green
Peregrine	<i>Falco peregrinus</i>	13	8	BoCC Green
Pheasant	<i>Phasianus colchicus</i>	357	18	
Pied Wagtail	<i>Motacilla alba</i>	140	14	BoCC Green
Raven	<i>Corvus corax</i>	43	11	BoCC Green
Red Kite	<i>Milvus milvus</i>	31	9	BD1, W&CA Schedule 1, BoCC Green
Red-legged Partridge	<i>Alectoris rufa</i>	44	16	
Redwing	<i>Turdus iliacus</i>	281	14	W&CA Schedule 1, BoCC Red,
Reed Bunting	<i>Emberiza schoeniclus</i>	6	4	BoCC Amber
Robin	<i>Erithacus rubecula</i>	206	20	BoCC Green
Rook	<i>Corvus frugilegus</i>	3623	19	BoCC Green
Ruddy Shelduck	<i>Tadorna ferruginea</i>	1	1	
Short-eared Owl	<i>Asio flammeus</i>	15	1	BD1, BoCC Amber
Siskin	<i>Carduelis spinus</i>	81	9	BoCC Green
Skylark	<i>Alauda arvensis</i>	943	18	BoCC Red, NERC
Snipe	<i>Gallinago gallinago</i>	3	1	CoCC Amber
Song Thrush	<i>Turdus philomelos</i>	58	19	BoCC Red, NERC
Sparrowhawk	<i>Accipiter nisus</i>	13	6	BoCC Green

Starling	<i>Sturnus vulgaris</i>	2745	20	BoCC Red, NERC
Stock Dove	<i>Columba oenas</i>	86	14	BoCC Amber
Stonechat	<i>Saxicola rubicola</i>	26	8	BoCC Green
Tawny Owl	<i>Strix aluco</i>	5	3	BoCC Amber
Teal	<i>Anas crecca</i>	3	2	BoCC Amber
Tree Sparrow	<i>Passer montanus</i>	5	1	BoCC Red, NERC
Treecreeper	<i>Certhia familiaris</i>	2	2	BoCC Green
Tufted Duck	<i>Aythya fuligula</i>	1	1	BoCC Green
Water Rail	<i>Rallus aquaticus</i>	1	1	BoCC Green
Waxwing	<i>Bombycilla garrulus</i>	2	1	BoCC Green
Woodcock	<i>Scolopax rusticola</i>	1	1	BoCC Green
Woodpigeon	<i>Columba palumbus</i>	6089	20	BoCC Green
Wren	<i>Troglodytes troglodytes</i>	104	20	BoCC Green
Yellowhammer	<i>Emberiza citrinella</i>	154	13	BoCC Red, NERC

Table 8.1.3: Protected and notable species (excluding birds and invertebrates) for which records have been identified within the 2km study area.

Species common name	Species Latin name	No. of records	Legal / Conservation Status ³
Badger	<i>Meles meles</i>	32	Protection of Badgers Act (1992)
Otter	<i>Lutra lutra</i>	5	HabRegs 2, HSD2, W&CA Schedule 5, NERC
Water vole	<i>Arvicola amphibius</i>	112	W&CA Schedule 5, NERC
Common pipistrelle	<i>Pipistrellus pipistrellus</i>	33	HabRegs 2, W&CA Schedule 5
Soprano pipistrelle	<i>Pipistrellus pygmaeus</i>	35	HabRegs2, HSD4, W&CA Schedule 5, NERC
Nathusius pipistrelle	<i>Pipistrellus nathusii</i>	1	HabRegs2, HSD4, W&CA Schedule 5,
Brown long-eared bat	<i>Plecotus auritus</i>	14	HabRegs2, HSD4, W&CA Schedule 5, NERC
Lesser horseshoe bat	<i>Rhinolophus hipposideros</i>	1	HabRegs2, HSD2, HSD4, W&CA Schedule 5, NERC
Barbastelle bat	<i>Barbastella barbastellus</i>	1	HabRegs2, HSD2, HSD4, W&CA Schedule 5, NERC
Daubenton's bat	<i>Myotis daubentonii</i>	3	HabRegs2, HSD4, W&CA Schedule 5
Natterer's bat	<i>Myotis nattereri</i>	6	HabRegs2, HSD4, W&CA Schedule 5
Noctule bat	<i>Nyctalus noctula</i>	16	HabRegs2, HSD4, W&CA Schedule 5, NERC
Leisler's bat	<i>Nyctalus leisleri</i>	3	HabRegs2, HSD4, W&CA Schedule 5
Pipistrellus species	<i>Pipistrellus sp.</i>	25	HabRegs2, HSD4, W&CA Schedule 5, NERC
Unidentified bat	<i>Chiroptera sp.</i>	12	HabRegs2, HSD4, W&CA Schedule 5, NERC
Nyctalus species	<i>Nyctalus sp.</i>	11	HabRegs2, HSD4, W&CA Schedule 5, NERC
Plecotus species	<i>Plecotus sp.</i>	13	HabRegs2, HSD4, W&CA Schedule 5, NERC
Serotine bat	<i>Eptesicus serotinus</i>	23	HabRegs2, HSD4, W&CA Schedule 5, NERC
Water shrew	<i>Neomys fodiens</i>	1	LBAP
Harvest mouse	<i>Micromys minutus</i>	6	NERC
Polecat	<i>Mustela putorius</i>	4	HabRegs4, HSD5, NERC
European hedgehog	<i>Erinaceus europaeus</i>	227	NERC
Brown hare	<i>Lepus europaeus</i>	108	NERC
Grass snake	<i>Natrix natrix</i>	4	NERC
Slow-worm	<i>Anguis fragilis</i>	7	NERC
Common lizard	<i>Zootoca vivipara</i>	9	NERC
Common toad	<i>Bufo bufo</i>	2	NERC
Common frog	<i>Rana temporaria</i>	29	HSD5
Great crested newt	<i>Triturus cristatus</i>	2	HabRegs2, HSD4, HSD2, W&CA Schedule 5, NERC
Juniper	<i>Juniperus communis</i>	6	NERC, RD1
Pheasant's-eye	<i>Adonis annua</i>	3	NERC, RD1, RD2
Field garlic	<i>Allium oleraceum</i>	1	RD1

³ HabRegs 2 = Conservation of Habitats and Species Regulations (2010), Schedule 2; HabRegs 4 = Conservation of Habitats and Species Regulations (2010), Schedule 4; W&CA = Wildlife and Countryside Act (1981); NERC = Schedule 41 Natural Environment and Rural Communities Act (2006); HSD2 = Annex 2 of the Habitats Directive; HSD4 = Annex 4 of the Habitats Directive; HSD5 = Annex 5 of the Habitats Directive; UKBAP = UK Biodiversity Action Plan priority species; LBAP = Wiltshire Biodiversity Action Plan; RD1 (UK) = UK Red Data Book listing based on IUCN guidelines; RD2 (UK) = UK Red Data Book listing not based on IUCN guidelines (Nationally Rare and Scarce).

Green-winged orchid	<i>Anacamptis morio</i>	1	RD1
Bog pimpernel	<i>Anagallis tenella</i>	1	RD2
Corn Chamomile	<i>Anthemis arvensis</i>	2	RD1
Stinking Chamomile	<i>Anthemis cotula</i>	3	RD1
Hairy rock-cress	<i>Arabis hirsuta</i>	3	RD1
Purple milk-vetch	<i>Astragalus danicus</i>	1	NERC, RD1
Wild cabbage	<i>Brassica oleracea</i>	1	RD2
Quaking-grass	<i>Briza media</i>	45	RD1
Meadow brome	<i>Bromus commutatus</i>	4	County
Rye brome	<i>Bromus secalinus</i>	2	RD1, RD2
Thorow-wax	<i>Bupleurum rotundifolium</i>	2	NERC, RD1, RD2
Various-leaved water-starwort	<i>Callitriche platycarpa</i>	10	County
Heather	<i>Calluna vulgaris</i>	2	RD1
Spreading bellflower	<i>Campanula patula</i>	1	NERC, RD1, RD2
Harebell	<i>Campanula rotundifolia</i>	52	RD1
Slender tufted-sedge	<i>Carex acuta</i>	1	County
Star sedge	<i>Carex echinata</i>	1	RD1, County
Dwarf sedge	<i>Carex humilis</i>	14	RD2
Carlina thistle	<i>Carlina vulgaris</i>	5	RD1
Whorl-grass	<i>Catabrosa aquatica</i>	1	RD1, County
Cornflower	<i>Centaurea cyanus</i>	2	NERC
White helleborine	<i>Cephalanthera damasonium</i>	6	NERC, RD1
Field mouse-ear	<i>Cerastium arvense</i>	9	RD1
Good-king-henry	<i>Chenopodium bonus-henricus</i>	3	RD1
Maple-leaved goosefoot	<i>Chenopodium hybridum</i>	3	County
Chicory	<i>Cichorium intybus</i>	2	RD1
Basil thyme	<i>Clinopodium acinos</i>	12	NERC, RD1
Frog orchid	<i>Coeloglossum viride</i>	9	NERC, RD1
Crosswort	<i>Cruciata laevipes</i>	2	RD1
Dodder	<i>Cuscuta epithymum</i>	6	RD1
Hound's-tongue	<i>Cynoglossum officinale</i>	19	RD1
Mezereon	<i>Daphne mezereum</i>	1	RD1, RD2
Marsh willowherb	<i>Epilobium palustre</i>	1	County
Green-flowered helleborine	<i>Epipactis phyllanthes</i>	6	RD2
Treacle-mustard	<i>Erysimum cheiranthoides</i>	4	RD1, County
Dwarf spurge	<i>Euphorbia exigua</i>	16	RD1
Eyebright	<i>Euphrasia nemorosa</i>	1	RD1
Fine-leaved sheep's-fescue	<i>Festuca filiformis</i>	1	County
Wild strawberry	<i>Fragaria vesca</i>	13	RD1
Dense-flowered fumitory	<i>Fumaria densiflora</i>	8	County
Red hemp-nettle	<i>Galeopsis angustifolia</i>	1	NERC, RD1, RD2
Dyer's greenweed	<i>Genista tinctoria</i>	2	RD1
Autumn gentian	<i>Gentianella amarelle</i>	19	RD1
Early gentian	<i>Gentianella anglica</i>	3	HabRegs5, HSD4, W&CA Schedule 8, NERC
Corn marigold	<i>Glebionis segetum</i>	1	RD1
Common rock-rose	<i>Helianthemum nummularium</i>	50	RD1
Marsh pennywort	<i>Hydrocotyle vulgaris</i>	1	RD1, County
Henbane	<i>Hyoscyamus niger</i>	2	RD1
Field scabious	<i>Knautia arvensis</i>	89	RD1
Cut-leaved dead-nettle	<i>Lamium hybridum</i>	1	County
Yellow vetchling	<i>Lathyrus aphaca</i>	1	RD1, RD2
Narrow-leaved everlasting-pea	<i>Lathyrus sylvestris</i>	1	County
Field pepperwort	<i>Lepidium campestre</i>	2	RD1
Field gromwell	<i>Lithospermum arvense</i>	23	RD1

Corn mint	<i>Mentha arvensis</i>	8	RD1
Round-leaved mint	<i>Mentha suaveolens</i>	1	RD1, RD2
Bogbean	<i>Menyanthes trifoliata</i>	1	County
Fine-leaved sandwort	<i>Minuartia hybrid</i>	1	NERC, RD1, RD2
Weasel's-snout	<i>Misopates orontium</i>	1	RD1
Yellow bird's-nest	<i>Monotropa hypopitys</i>	2	NERC, RD1
Burnt orchid	<i>Neotinea ustulata</i>	9	NERC, RD1, RD2
Cat-mint	<i>Nepeta cataria</i>	1	RD1
River water-dropwort	<i>Oenanthe fluviatilis</i>	1	County
Sainfoin	<i>Onobrychis viciifolia</i>	81	RD1, RD2
Spiny restharrow	<i>Ononis spinose</i>	7	RD1
Greater broomrape	<i>Orobanche rapum-genistae</i>	2	RD1, RD2
Wood-sorrel	<i>Oxalis acetosella</i>	1	RD1
Prickly poppy	<i>Papaver argemone</i>	19	RD1
Rough poppy	<i>Papaver hybridum</i>	38	County
Marsh lousewort	<i>Pedicularis palustris</i>	1	County
Corn parsley	<i>Petroselinum segetum</i>	7	County
Hoary plantain	<i>Plantago media</i>	72	RD1
Narrow-leaved meadow-grass	<i>Poa angustifolia</i>	1	County
Spreading meadow-grass	<i>Poa humilis</i>	1	County
Early meadow-grass	<i>Poa infirma</i>	1	RD2
Cornfield knotgrass	<i>Polygonum rurivagum</i>	1	County
Blunt-leaved pondweed	<i>Potamogeton obtusifolius</i>	1	County
Perfoliate pondweed	<i>Potamogeton perfoliatus</i>	2	County
Tormentil	<i>Potentilla erecta</i>	3	RD1
Lesser spearwort	<i>Ranunculus flammula</i>	1	RD1
Pond water-crowfoot	<i>Ranunculus peltatus</i>	11	County
Thread-leaved water-crowfoot	<i>Ranunculus trichophyllus</i>	1	County
Small-flowered sweet-briar	<i>Rosa micrantha</i>	3	County
Sweet-briar	<i>Rosa rubiginosa</i>	2	County
Harsh downy-rose	<i>Rosa tomentosa</i>	1	County
Fiddle dock	<i>Rumex pulcher</i>	1	County
Wild clary	<i>Salvia verbenaca</i>	13	RD1, County
Dwarf elder	<i>Sambucus ebulus</i>	6	County
Great burnet	<i>Sanguisorba officinalis</i>	2	County
Sanicle	<i>Sanicula europaea</i>	4	RD1
Marsh ragwort	<i>Senecio aquaticus</i>	10	RD1
Small-flowered catchfly	<i>Silene gallica</i>	1	NERC, RD1, RD2
Night-flowering catchfly	<i>Silene noctiflora</i>	3	RD1
Milk thistle	<i>Silybum marianum</i>	2	County
Goldenrod	<i>Solidago virgaurea</i>	3	RD1, County
Devil's-bit scabious	<i>Succisa pratensis</i>	24	RD1
Field fleawort	<i>Tephrosieris integrifolia</i>	1	RD1, RD2
Field fleawort	<i>Tephrosieris integrifolia subsp. integrifolia</i>	8	NERC, RD1, RD2
Bastard-toadflax	<i>Thesium humifusum</i>	8	RD2
Spreading hedge-parsley	<i>Torilis arvensis</i>		NERC, RD1, RD2
Strawberry clover	<i>Trifolium fragiferum</i>	1	RD1
Marsh arrowgrass	<i>Triglochin palustre</i>	2	RD1
Marsh Valerian	<i>Valeriana dioica</i>	3	RD1
Common valerian	<i>Valeriana officinalis</i>	4	RD1
Keeled-fruited cornsalad	<i>Valerianella carinata</i>	1	County
Narrow-fruited cornsalad	<i>Valerianella dentata</i>	6	RD1
Pink water-speedwell	<i>Veronica catenata</i>	1	County

Heath speedwell	<i>Veronica officinalis</i>	1	RD1
Heath dog-violet	<i>Viola canina</i>	1	County
Rat's-tail fescue	<i>Vulpia myuros</i>	2	County

Table 8.1.4: Protected and notable birds for which WSBR records have been identified within the 2km study area.

Species common name	Species Latin name	No. of records	Legal / Conservation Status ⁴
Skylark	<i>Alauda arvensis</i>	65	NERC, BoCC Red
Kingfisher	<i>Alcedo atthis</i>	1	BD1, W&CA Schedule 1
Tree pipit	<i>Anthus trivialis</i>	1	NERC, BoCC Red
Short-eared owl	<i>Asio flammeus</i>	1	BD1, LBAP
Stone-curlew	<i>Burhinus oediconemus</i>	7	BD1, W&CA Schedule 1, NERC
Cetti's warbler	<i>Cettia cetti</i>	1	W&CA Schedule 1
Marsh harrier	<i>Circus aeruginosus</i>	3	BD1, W&CA Schedule 1
Hen harrier	<i>Circus cyaneus</i>	2	BD1, NERC, W&CA Schedule 1, BoCC Red
Montagu's harrier	<i>Circus pygargus</i>	8	BD1, W&CA Schedule 1
Quail	<i>Coturnix coturnix</i>	10	W&CA Schedule 1
Cuckoo	<i>Cuculus canorus</i>	1	NERC, BoCC Red
Little egret	<i>Egretta garzetta</i>	3	BD1
Yellowhammer	<i>Emberiza citrinella</i>	34	NERC, BoCC Red
Reed bunting	<i>Emberiza schoeniclus</i>	2	NERC
Merlin	<i>Falco columbarius</i>	1	BD1, W&CA Schedule 1, BoCC Red
Peregrine	<i>Falco peregrinus</i>	3	BD1, W&CA Schedule 1
Hobby	<i>Falco subbuteo</i>	6	W&CA Schedule 1
Brambling	<i>Fringilla montifringilla</i>	2	W&CA Schedule 1
Herring gull	<i>Larus argentatus</i>	1	NERC, BoCC Red
Grasshopper warbler	<i>Locustella naevia</i>	1	NERC, BoCC Red
Red kite	<i>Milvus milvus</i>	53	BD1, W&CA Schedule 1
Grey wagtail	<i>Motacilla cinerea</i>	4	BoCC Red
Spotted flycatcher	<i>Muscicapa striata</i>	5	NERC
Curlew	<i>Numenius arquata</i>	5	NERC, BoCC Red
Great bustard	<i>Otis tarda</i>	20	BD1, CMS_A1, RLGLB.VU
House sparrow	<i>Passer domesticus</i>	136	NERC, BoCC Red
Grey partridge	<i>Perdix perdix</i>	7	NERC, BoCC Red
Golden plover	<i>Pluvialis apricaria</i>	8	BD1
Whinchat	<i>Saxicola rubetra</i>	3	BoCC Red
Ruddy shelduck	<i>Tadorna ferruginea</i>	6	BD1
Redwing	<i>Turdus iliacus</i>	4	W&CA Schedule 1, BoCC Red
Fieldfare	<i>Turdus pilaris</i>	1	W&CA Schedule 1, BoCC Red
Mistle thrush	<i>Turdus viscivorus</i>	17	BoCC Red
Barn owl	<i>Tyto alba</i>	11	W&CA Schedule 1
Lapwing	<i>Vanellus vanellus</i>	75	NERC, UKBAP

Table 8.5.5: Protected and notable invertebrates for which WSBR records have been identified within the 2km study area.

Species common name	Species Latin name	No. of records	Legal / Conservation Status ⁵
Grey dagger	<i>Acronicta psi</i>	1	NERC
Knot grass	<i>Acronicta rumicis</i>	5	NERC
Forester	<i>Adscita staites</i>	4	NERC
Brown-spot pinion	<i>Agrochola litura</i>	8	NERC
Beaded chestnut	<i>Agrochola lychnidis</i>	19	NERC

⁴ HabReg = Conservation of Habitats and Species Regulations (2010), W&CA = Wildlife and Countryside Act (1981), NERC = Schedule 41 Natural Environment and Rural Communities Act (2006), LBAP = Wiltshire Biodiversity Action Plan, BoCC Red = Birds of Conservation Concern Red List, BoCC Amber = Birds of Conservation Amber List, BD1 = Birds Directive Annex 1, RLGLB.VU = IUCN red data list (1994) Vulnerable, CMS_A1 = Convention on Migratory Species, Appendix 1.

⁵ HabReg = Conservation of Habitats and Species Regulations (2010), W&CA = Wildlife and Countryside Act (1981), NERC = Schedule 41 Natural Environment and Rural Communities Act (2006), LBAP = Wiltshire Biodiversity Action Plan, RD1 (UK) = UK Red Data Book listing based on IUCN guidelines, RD2 (UK) = UK Red Data Book listing not based on IUCN guidelines (Nationally Rare and Scarce).

Green-brindled crescent	<i>Allophyes oxyacanthae</i>	5	NERC
Mouse moth	<i>Amphipyra tragopoginis</i>	10	NERC
Golden pearl	<i>Anania verbascalis</i>	1	RD2
Dusky brocade	<i>Apamea remissa</i>	4	NERC
Purple emperor	<i>Apatura iris</i>	2	RD1
Deep-brown dart	<i>Aporophyla lutulenta</i>	3	NERC
Garden tiger	<i>Arctia caja</i>	16	NERC
Hornet robberfly	<i>Asilus crabroniformis</i>	1	NERC
Centre-barred sallow	<i>Atethmia centrago</i>	3	NERC
Bulrush veneer	<i>Calamotropha paludella</i>	1	RD2
Mottled rustic	<i>Caradrina Morpheus</i>	6	NERC
Crescent	<i>Celaena leucostigma</i>	4	NERC
Streak	<i>Chesias legatella</i>	2	NERC
Latticed heath	<i>Chiasmia clathrate</i>	8	NERC
Fairy shrimp	<i>Chirocephalus diaphanous</i>	1	W&CA Schedule 5
Dusky-lemon sallow	<i>Cirrhia gilvago</i>	1	NERC
Sallow	<i>Cirrhia icteritia</i>	11	NERC
Small heath	<i>Coenonympha pamphilus</i>	127	NERC, RD1
Small Blue	<i>Cupido minimus</i>	48	NERC, RD1
Small Square-spot	<i>Diarsia rubi</i>	11	NERC
Dusky Thorn	<i>Ennomos fuscantaria</i>	7	NERC
August Thorn	<i>Ennomos quercinaria</i>	4	NERC
Dingy Skipper	<i>Erynnis tages</i>	47	NERC, RD1
Dotted Ermel	<i>Ethmia dodecea</i>	3	RD2
Pied Grey	<i>Eudonia delunella</i>	1	RD2
Autumnal Rustic	<i>Eugnorisma glareosa</i>	5	NERC
Spinach	<i>Eulithis mellinata</i>	1	NERC
Marsh Fritillary	<i>Euphydryas aurinia</i>	10	W&CA, NERC, RD1
Duke of Burgundy	<i>Hamearis lucina</i>	6	NERC, RD1
Small Emerald	<i>Hemistola chrysoprasaria</i>	1	NERC
Ghost Moth	<i>Hepialus humuli</i>	2	NERC
Rustic	<i>Hoplodrina blanda</i>	55	NERC
Rosy Rustic	<i>Hydraecia micacea</i>	12	NERC
Wall	<i>Lasiommata megera</i>	5	NERC, RD1
Shoulder-striped Wainscot	<i>Leucania comma</i>	3	NERC
Rosy Minor	<i>Litologia literosa</i>	4	NERC
Brindled Beauty	<i>Lycia hirtaria</i>	6	NERC
V-Moth	<i>Macaria wauaria</i>	1	NERC
Dot Moth	<i>Melanchnra persicariae</i>	22	NERC
Black Oil-beetle	<i>Meloe proscarabaeus</i>	4	NERC
Spindle Knot-horn	<i>Nephterix angustella</i>	1	RD2
Lunar Yellow Underwing	<i>Noctua orbona</i>	6	NERC
n/a	<i>Orellia falcata</i>	1	RD2
Powdered Quaker	<i>Orthosia gracilis</i>	10	NERC
Swallowtail	<i>Papilio machaon</i>	1	W&CA, RD1
n/a	<i>Paracorymbia fulva</i>	3	RD1
Adonis Blue	<i>Polyommatus bellargus</i>	81	RD1
Chalk Hill Blue	<i>Polyommatus coridon</i>	22	RD1
Grizzled Skipper	<i>Pyrgus malvae</i>	38	NERC, RD1
Large Wainscot	<i>Rhizedra lutosa</i>	1	NERC,
White-letter Hairstreak	<i>Satyrium w-album</i>	5	NERC, RD1
Shaded Broad-bar	<i>Scotopteryx chenopodiata</i>	2	NERC,
White Ermine	<i>Spilosoma lubricipeda</i>	50	NERC,
Buff Ermine	<i>Spilosoma lutea</i>	68	NERC,
Brown Hairstreak	<i>Thecla betulae</i>	103	NERC, RD1
Hedge Rustic	<i>Tholera cespitis</i>	4	NERC
Feathered Gothic	<i>Tholera decimalis</i>	8	NERC
Blood-Vein	<i>Timandra comae</i>	18	NERC
Cinnabar	<i>Tyria jacobaeae</i>	32	NERC
Oak Hook-tip	<i>Watsonalla binaria</i>	3	NERC
Dark-barred Twin-spot Carpet	<i>Xanthorhoe ferrugata</i>	1	NERC
Neglected Rustic	<i>Xestia castanea</i>	1	NERC

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