

PORTISHEAD BRANCH LINE PRELIMINARY
ENVIRONMENTAL INFORMATION REPORT
VOLUME 4

APPENDIX 9.3A

Ornithology of Portbury Wharf Nature Reserve



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Executive Summary

This report documents the ornithology of Portbury Wharf Nature Reserve and the ornithological features of interest at EU Natura 2000 sites i.e. Special Protection Areas (“SPA”) and /Ramsar sites).

Consideration was made of the Portishead Branch Line (MetroWest Phase 1) Development Consent Order Scheme (“DCO Scheme”) details in the light of all available information (citations, location maps etc. on the Joint Nature Conservation Committee (“JNCC”) and MAGIC websites) on the Severn Estuary Special Protection Area, Ramsar sites and Special Site of Scientific Interest (“SSSI”). Bird data from a Wintering Bird survey of Pill Marshes and monitoring data from Portbury Wharf Nature Reserve (provided by the Avon Wildlife Trust) were also reviewed. This report also includes the results of an ornithological survey undertaken in spring and summer 2017 along the DCO Scheme for Wildlife and Countryside Act (“WCA”) 1981 Schedule 1 species.

CHAPTER 1

Introduction

1.1 Introduction

- 1.1.1 This report documents the ornithology of Portbury Wharf Nature Reserve and the ornithological features of interest of the Severn Estuary Special Protection Area (“SPA”) /Ramsar/Site of Special Scientific Interest (“SSSI”) and Schedule 1 species protected under the Wildlife and Countryside Act (“WCA”) 1981
- 1.1.2 In the Scoping Opinion issued by the Planning Inspectorate in 2015, Natural England commented that *“the new railway Portishead to Pill lies partly within the Portbury Wharf Nature Reserve/local site, which is adjacent to the Severn Estuary designated site. It is possible that bird species associated with the SSSI, SPA and Ramsar will be present in significant numbers at certain times of the year and that the reserve may provide functionally linked habitat. We recommend that the EIA includes consideration of potential impacts on birds to understand whether there may be indirect effects on the Severn Estuary designated site”*.
- 1.1.3 During consultations with Natural England, they also commented on the proximity of the DCO Scheme to the Severn Estuary SPA / Ramsar / SSSI in the vicinity of Pill. A wintering bird survey in the Pill Marshes area was undertaken in autumn and winter 2014/2015.
- 1.1.4 It has also come to light that two bird species listed under Schedule 1 of the WCA have been observed in the vicinity of the DCO Scheme, namely Barn owl *Tyto alba* and Peregrine falcon *Falco peregrinus*. Barn owl is resident in the Portbury Wharf Nature Reserve.
- 1.1.5 This report presents the ornithology of Portbury Wharf Nature Reserve, and also summarises the wintering bird survey at Pill (Appendix 9.3b) and the WCA Schedule 1 bird survey (Appendix 9.3c).

1.2 The DCO Scheme

Description of the DCO Scheme

- 1.2.1 The Portishead Branch Line was built in the 1860s. Passenger services continued between Portishead and Bristol until 1964, and freight services continued to 1981. The Royal Portbury Dock opened in 1978 and in 2002 the currently operational part of the former Portishead Branch Line was re-opened to service the port for freight only. The owner of the Royal Portbury Dock, Bristol Port Company, has commercial rights to run up to 20 freight trains per day in each direction along the operational railway line. The current volume of freight trains operating is substantially less than this.
- 1.2.2 MetroWest Phase 1 proposes to re-open the disused section of the Portishead Branch Line from Portishead to Pill and operate an hourly passenger service between Portishead and Bristol Temple Meads. In order to reintroduce passenger services the remaining section of disused railway between Portishead and Pill has to be rebuilt including a new station at Portishead and the re-opening of the former Pill station. The project is a nationally significant infrastructure project (“NSIP”) as defined by the Planning Act 2008 and therefore a Development Consent Order (“DCO”) is required for powers to build and operate the railway, as well as to acquire land, where it cannot be acquired by negotiation.
- 1.2.3 The DCO Scheme also comprises a number of associated improvements to the rail network from Pill to Ashton Vale (Ashton Junction) to enable the operation of an hourly train service (or an hourly service plus) between Portishead and Bristol Temple Meads.

1.2.4 The NSIP as defined under the Planning Act 2008, is a permanent railway of approximately 5,450 metres long from Quays Avenue, Portishead, North Somerset (OSGR ST471765) to Pill in North Somerset (OSGR ST520762. It comprises the reconstruction of 4,750 metres of disused railway from Quays Avenue in Portishead to the existing operational railway (the Portbury freight line) to the east of the M5 Motorway). The NSIP then comprises 750 metres of new track through Pill village parallel to the operational railway line from Portbury Dock. The NSIP terminates at a new junction east of Pill Viaduct (Pill Junction), where it connects with the existing operational railway.

1.2.5 The associated permanent works in summary include:

- A new station, station building, forecourt, car parks and highway modifications in Portishead,
- New Trinity Primary School footbridge in Portishead,
- A new maintenance compound and road rail access point off the highway of Sheepway near Portishead,
- A new access for agricultural purposes to the west of Station Road, Portbury from the Portbury Hundred,
- Minor works to bridges and structures along the disused railway,
- Works to widen and strengthen the embankment where the disused railway meets the operational railway at Lodway Close, Pill,
- Replacing an existing rail bridge over the Avon Road / Lodway Close pedestrian and cycle underpass (to the west of Pill station) with a new wider bridge to support a new double track section of railway,
- Minor alterations to the Bridleway (LA8/66/10) and National Cycle Route 26 south of Royal Portbury Dock,
- Extension of bridleway LA8/67/10 north of the M5 underbridge to connect with the National Cycle Route 41 to the east of the M5 that connects with Pill,
- Construction of a new station at Pill on the site of the existing southern platform, with new access, forecourt and car park located on Monmouth Road,
- A new emergency and maintenance accesses to Pill Tunnel eastern portal,
- A new vehicular maintenance road rail access point from the highway of Clanage Road, Bower Ashton to the Portishead Branch Line Railway,
- Various improvement works along the operational railway line between Pill and Ashton Junction,
- Whilst the Ashton Vale Road (Ashton Junction) level crossing will remain operational and the following works are proposed to reduce the highway traffic impact from the increased use of the level crossing:
 - Extension of the left turn flare lane on Winterstoke Road,
 - Optimisation of the Ashton Vale Road signals, and upgrade of signals to “MOVA”, and
 - Provision of a ramp to the north of the level crossing to connect pedestrians and cyclists from Ashton Vale Road to Ashton Road.

- In light of the possibility that Baron’s Close pedestrian level crossing may not be closed permanently before MetroWest Phase 1 opens, MetroWest Phase 1 is proposing to close it as part of the DCO Scheme. Alternative pedestrian access will be provided, using a pedestrian and cycle path (currently under construction by the MetroBus scheme) linking to the Ashton Vale Road level crossing and the proposed MetroWest Phase 1 pedestrian / cycle ramp.
 - Improvements are also required along the operational railway line between Pill Junction and Ashton Junction, including replacement of ballast, minor works to bridges and structures, minor modifications to the vertical and horizontal alignment of the railway and new signalling, telecommunications including a mast in Avon Gorge and aerials at Pill Tunnel and Portishead station and new fencing for the entire branch line, where natural boundaries are not sufficient.
- 1.2.6 Refer to the Preliminary Environmental Information Report (“PEI Report”) Chapter 4 for the fully detailed project description.

Setting

- 1.2.7 The southern end of Portbury Wharf Nature Reserve adjoins the railway boundary of the disused railway corridor. The Portishead Ecology Park lies immediately to the west of the Nature Reserve. Both the Portbury Wharf Nature Reserve and the Portishead Ecology Park are now managed by North Somerset District Council.
- 1.2.8 Permanent and temporary land-take will be required from the Nature Reserve. It is proposed that part of the field at the southern end of the Nature Reserve is used as a temporary site compound during the construction phase and a smaller area is used as a permanent maintenance compound in the operation phase. A plan of this compound is shown on Figure 4.9 in Volume 3 of the PEI Report, including proposals for planting which will be developed in consultation with stakeholders and reported in the Environmental Statement to be submitted with the DCO application.
- 1.2.9 Details of the works at Pill and their proximity to the Severn Estuary SPA/Ramsar/SSSI are presented in Appendix 9.3b and commentary on the ecological characteristics of the whole DCO Scheme are presented in the PEI Report Chapter 9 Ecology and Biodiversity.

SECTION 2

Methodology

2.1 Review of information

2.1.1 Consideration was made of the DCO Scheme details in the light of all available information (citations, location maps etc. on JNCC and MAGIC websites) on nearby Natura 2000 SPA and Ramsar sites¹ designated for their bird interest. The following bird data were reviewed (looking especially at numbers of any species individually named in the designated site citations):

- Portbury Wharf Nature Reserve monitoring data provided by the Avon Wildlife Trust.
- Bristol Regional Environmental Records Centre data for the area.
- Bird survey information from the nearby Court House Farm Ecological Impact Assessment documents.
- Wintering (2015/2016) bird survey reports for Pill Marshes (see Appendix 9.3b).
- Reporting for 2017 survey of WCA Schedule 1 Bird species (see Appendix 9.3c).
- Specialist advice obtained on WCA Schedule 1 species from Ed Drewitt (peregrines) and Chris Sperring MBE (barn owls).

Based on the above it was possible to evaluate the numbers/population sizes of key bird species present (especially any SSSI, SPA, Ramsar listed and/or any National or Local Priority Species), and any species protected under Schedule 1 of the Wildlife and Countryside Act (1981 as amended) as well as the overall bird assemblages.

2.1.2 This information was then to be used to feed directly into and form part of an overall EclA for the DCO Scheme, which is presented in the PEI Report, Chapter 9 Ecology and Biodiversity.

2.2 Evaluation

2.2.1 The ecological value of the bird population has been determined based on the guidance from the Chartered Institute of Ecology and Environmental Management (CIEEM, 2016). The level of value of specific ecological receptors is assigned using a geographic frame of reference, with international value being most important, then national, regional, county, district, local and lastly, within the immediate zone of influence of the scheme area only.

2.2.2 The evaluation is made using a variety of characteristics, including the rarity of populations, either locally or within a wider area, the vulnerability of species (for example, to disturbance or fragmentation from other populations), and statutory recognition of biodiversity importance through inclusion in local or national biodiversity action plans. Note that legal protection is not in itself a consideration in the evaluation of species.

¹ Special Areas of Conservation ("SAC") are not considered here, as the Severn Estuary SAC is concerned with aquatic habitats and does not include ornithological features in the site designation.

SECTION 3

Bird assemblages

3.1 Baseline data from nearby Designated Sites

3.1.1 Severn Estuary SPA. This large site covers 73,715 ha in area, starting c.1.2 km north of the DCO Scheme in the vicinity of Portishead and within 40 m of temporary construction works and 80m of the permanent works in Pill. This statutory site is of value at the **international** level as it is an EU Natura 2000 site. It is designated in particular due to important wintering populations of:

- Tundra (Bewick's) swan *Cygnus columbianus bewickii*,
- Curlew *Numenius arquata*,
- Dunlin *Calidris alpina alpina*,
- Pintail *Anas acuta*,
- Common redshank *Tringa totanus* and,
- Common shelduck *Tadorna tadorna*,
- plus an internationally important assemblage of over wintering waterfowl, and important numbers of ringed plover *Charadrius hiaticula* on passage.

3.1.2 Severn Estuary Ramsar site. This site covers a sub-area within the extents of the SPA but is still large in area. The site boundaries in the vicinity of the DCO Scheme are the same as for the SPA. This site is also of value at the **international** level as it is an EU Natura 2000 site. The citation lists a range of ecological interest features, but with regard to birds this site is designated due to the following:

- Ramsar criterion 4: It is of particular importance for migratory birds during spring and autumn,
- Ramsar criterion 5: Assemblages of international importance - 70,919 waterfowl (5 year peak mean 1998/99-2002/2003),
- Ramsar criterion 6: species/populations occurring at levels of international importance:
 - Tundra (Bewick's) swan,
 - Greater white-fronted goose *Anser albifrons albifrons*,
 - Common shelduck,
 - Gadwall *Anas strepera*,
 - Dunlin and
 - Common redshank.

3.1.3 In addition to this, species/populations identified subsequent to designation for possible future consideration under criterion 6 are as follows:

- Species regularly supported during the breeding season:
 - Lesser black-backed gull *Larus fuscus graellsii*
 - Species with peak counts in spring/autumn:
 - Ringed plover *Charadrius hiaticula*
 - Species with peak counts in winter:

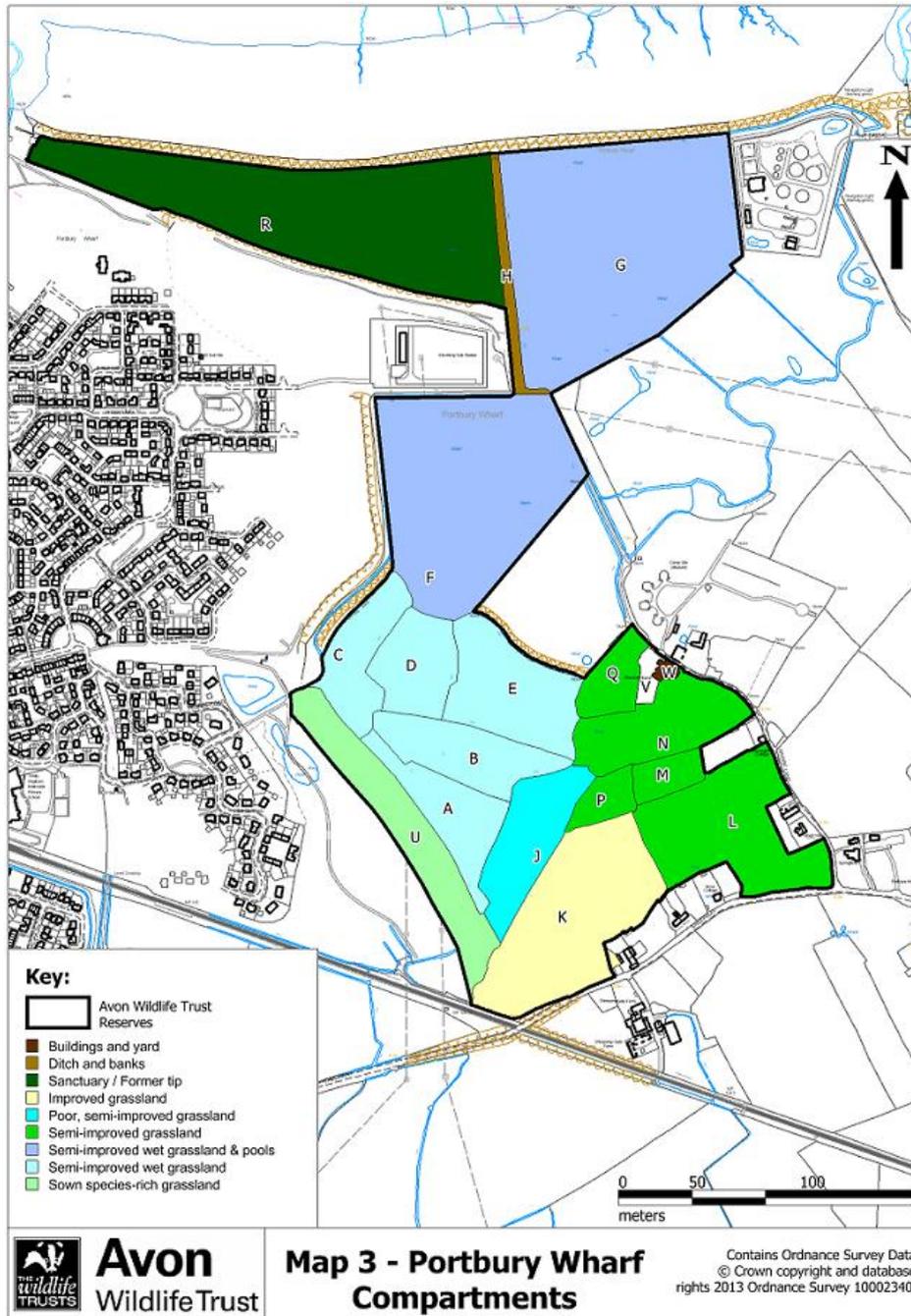
- Eurasian teal *Anas crecca* and
- Northern pintail.

- 3.1.4 **Severn Estuary Site of Special Scientific Interest.** This site covers 15,950 ha; once again comprising a sub-area within the extents of the SPA/Ramsar site, but still large and extensive; with 82 separate units subject to condition assessment monitoring by Natural England. The site boundaries in the vicinity of the DCO Scheme are the same as for the SPA/Ramsar sites –. This statutory site is of value at the **national** level as it is protected under the UK Wildlife and Countryside Act (1981, as amended). The SSSI is of international importance for wintering and passage wading birds, with total winter populations averaging about 44,000 birds. Numbers can be considerably higher during severe winters when, owing to its mild climate, the Severn Estuary supports wader populations that move in from the colder coasts of Britain.
- 3.1.5 The SSSI holds most of the estuary's internationally important populations of:
- Curlew and
 - Redshank
- 3.1.6 It also supports most of the estuary's nationally important populations of:
- Ringed plover and
 - Grey plover *Pluvialis squatarola*.
- 3.1.7 Other waders which occur in significant numbers within the SSSI are:
- Common snipe *Gallinago gallinago*,
 - Knot *Calidris canutus*,
 - Whimbrel *Numenius phaeopus*, and
 - Turnstone *Arenaria interpres*.
- 3.1.8 The SSSI is internationally important for dunlin and supports about 7.5% of the British wintering population of this species - the estuary as a whole supports about 10.5% of the British wintering population and is the single most important wintering ground of dunlin in Britain.
- 3.1.9 In late winter and early spring the SSSI supports nationally important numbers of shelduck, following the partial dispersal from their moulting grounds in Bridgwater Bay. There are also significant numbers of wigeon *Anas penelope*.
- 3.1.10 **Portbury Wharf Nature Reserve.** This is a non-statutory nature reserve, a North Somerset Wildlife Site located on the land between Portishead and Royal Portbury Dock, adjacent to the Severn Estuary. Planning consent for the nearby Port Marine housing development was granted on condition that the developers designate a nature reserve on the adjoining land. The site was previously managed by the Avon Wildlife Trust, but the management has recently transferred to North Somerset Council.
- 3.1.11 Habitats present on site include a network of pools/lagoons surrounded by grazing marsh grassland and hay meadows and hedgerows close to the estuary, which provide wetland and terrestrial habitats suitable for a range of bird species as well as for species such as water vole *Arvicola amphibius*, otter *Lutra lutra*, uncommon invertebrates (e.g. hairy dragonfly *Brachytron pratense*) and foraging greater horseshoe bat *Rhinolophus ferrumequinum*. The pools/lagoons are located in the northern part of the site closer to the estuary foreshore, and grassland meadow and associated ditch/hedge habitats are mainly in the southern part closer

to the DCO Scheme. The layout of the nature reserve and the extent of habitat types present is shown in Figure 1.

- 3.1.12 The southern end of the site adjoins the railway corridor, with part of the field at its southern end proposed as a site compound area during the construction phase and an ongoing maintenance compound in the operation phase.
- 3.1.13 Based on the wide range of bird and other notable species occurring here and uncommon habitats contained within the site boundaries, it is considered that the ecological features present at this non-statutory site are of value up to the **county** level.

Figure 1 Map showing the layout of Portbury Wharf Nature Reserve



3.2 Portbury Wharf Nature Reserve Bird Data

- 3.2.1 Four years of Wetlands Bird Survey (“WeBS”) bird data have been provided by Avon Wildlife Trust (“AWT”) from 2011 to 2015 inclusive. In addition to this various other relevant data sources and reports including bird information were provided by AWT (such as Wildlife Monitoring Reports, AWT 2011 and 2012) and were analysed as part of this assessment. The following text summarises the information provided.
- 3.2.2 Many bird species are found at the site, including at least 13 that are Red-listed and 33 that are Amber listed as Birds of Conservation Concern with numerous waterbirds (i.e. waders, gulls, ducks and geese) as well as notable farmland birds such as skylark *Alauda arvensis*, reed bunting *Emberiza schoeniclus* and barn owl *Tyto alba*. Table 3-1 indicates those species recorded on site which are regarded as being of greatest ecological importance. Several of these species are national and/or local Priority Species such as skylark.

Table 3-1: Target species identified within Portbury Wharf Management Plan (Landmark Environmental Consultants 2008) and Key Species listed in Wildlife Monitoring Plan 2006-2009 (Port Marine Development, 2006)

Portbury Wharf Management Plan - Target Bird Species	Wildlife Monitoring Plan 2006-2009 - Key Bird Species
Great spotted woodpecker <i>Dendrocopos major</i>	Curlew
Linnet <i>Carduelis cannabina</i>	Redshank
Bullfinch <i>Pyrrhula pyrrhula</i>	Whimbrel
Mute swan <i>Cygnus olor</i>	Lapwing <i>Vanellus vanellus</i>
Wintering thrushes	Snipe
Song thrush <i>Turdus philomelos</i>	Shelduck
Reed bunting	Teal
Autumn migrant and wintering birds	Skylark
Nesting birds (including warblers)	Barn owl
	Short-eared owl <i>Asio flammeus</i>

- 3.2.3 The wintering waterfowl (i.e. duck and geese species) population is arguably the feature of highest ecological value (based on nearby SSSI/SPA/Ramsar citations).
- 3.2.4 In addition to this the site holds year-round interest for migrants (including scattered records for uncommon species such as ring ouzel *Turdus torquatus*, various warbler species including grasshopper warbler *Locustella naevia* and little ringed plover *Charadrius dubius*).
- 3.2.5 The site has apparently yet to attract breeding waders apart from occasional oystercatcher, but a wide range of bird species do breed here, including several waterfowl species such as gadwall, notable species such as barn owl (WCA Schedule 1) and lesser black-backed gull.
- 3.2.6 Information on the locations of bird nesting activity is limited, but indicates that this is largely concentrated in the northern part of the site in the vicinity of the North Pools and the Scrapes and the foreshore.
- 3.2.7 Three barn owl nest boxes are positioned across the site (all potentially suitable for roosting or nesting), with one of these located c.200 m from the southern end of the nature reserve.

Breeding barn owls have been confirmed by AWT in at least one of these boxes in 2015, when four owlets were raised that year, and going back as far as 2010, but apparently no breeding activity has occurred within the reserve since 2015 although barn owls are considered to be resident.

- 3.2.8 It is anticipated that farmland birds which nest and forage in grassland subject to low management inputs are likely to be most numerous in the southern grassland meadows, with waterbirds mainly in the northern pool/lagoon area.

3.3 Data on SPA/Ramsar Interest Features

- 3.3.1 The most useful guide to SPA/Ramsar individually cited species can be derived using the WeBS data provided by AWT for Portbury Wharf Nature Reserve. WeBS data form the basis of five year “peak means” (i.e. the highest number of any given species at any one of the three monthly winter visits averaged over a five year time period) used in citations of Natura sites, so the figures produced are comparable and compatible with the numbers given within the citations. Therefore it is possible using these figures to calculate the percentage of the overall cited populations of a given species which could be present at a site. Only four years of WeBS data were available at the time of this study, so peak means were calculated for this period, which are considered likely to be broadly very similar to figures obtained over one more year. These data mainly relate to wintering waterbirds and are shown in Table 3-2. Breeding lesser black-backed gull is listed within the Ramsar citation so is also included in Table 3-3.

Table 3-2 Key winter bird data of relevance to SPA/ Ramsar designation – i.e. WeBS data for wintering birds (no records obtained for other cited species):

Winter birds (Dec to Feb incl)	Notable spp.	Cited popntn size	% of cited popntn	4yr Peak Mean (2012 to 2015)	2015* Peak count	2014 Peak count	2013 Peak count	2012 Peak count
Black-headed Gull				32.8	28	29	44	30
Canada goose				9.75	9	7	15	8
Common gull				6.3	0	10	9	6
Coot				53	33	59	72	47
Cormorant				1.5	4	1	0	1
Curlew	SSSI/ SPA	3903	0.06	2.5	6	0	1	3
Gadwall	Ramsar	241	12.03	29	21	23	36	36
Herring gull				63.3	1	135	60	57
Jack Snipe				1.8	0	0	0	7
Lapwing				45.3	50	44	19	68
Lesser black-backed gull				2.5	0	2	3	5
Little egret				0.3	0	1	0	0
Little grebe				9	7	8	10	11
Mallard				15.8	21	20	11	11

Table 3-2 Key winter bird data of relevance to SPA/ Ramsar designation – i.e. WeBS data for wintering birds (no records obtained for other cited species):

Winter birds (Dec to Feb incl)	Notable spp.	Cited poptn size	% of cited poptn	4yr Peak Mean	2015*	2014	2013	2012
Moorhen				19.3	17	18	21	21
Mute swan				11.75	16	7	7	17
Pintail	SPA	599 (SPA), 756 (Ramsar)	0.05/ 0.03	0.3	0	0	0	1
Pochard				3.3	1	4	5	3
Scaup				0.3	0	0	1	0
Shelduck	SPA	3330 (SPA), 3223 (Ramsar)	0.07/ 0.07	2.3	2	3	2	2
Shoveler				17.8	19	21	16	15
Snipe	SSSI			6.3	6	10	0	9
Teal	Ramsar	4456	0.31	13.8	8	19	15	13
Tufted				14	5	18	14	19
Water rail				0.5	2	0	0	0
Wigeon	SSSI			110	105	168	76	92
Total water- fowl*		c.94K (SPA), 71K (Ramsar)	0.5 (SPA), 0.66 (Ramsar)	472.5	361	607	437	482

Table 3-3 Key breeding bird data of relevance to SPA/Ramsar designation (no records obtained for other cited species)

Cited breeding birds (Mar to Jun incl)	Notable spp.	Populations of cited species	% of cited population	Peak Mean	2015*	2014	2013	2012
				2012 to 2015	Peak count	Peak count	Peak count	Peak count
Lesser black- backed gull	Ramsar	4,167 nests	0.06	2.5	8	9	12	4

- 3.3.2 Four of the cited bird species are present at very low percentages (less than 0.1%) of the cited population sizes with the exception of gadwall for which the nature reserve can hold up to c.12%, and teal on site are potentially up to 0.31% of the Ramsar populations of these species.
- 3.3.3 The overall waterfowl assemblage contains up to 0.5-0.66% of the populations of the designated sites as a whole.
- 3.3.4 These cited species and the assemblage as a whole are all anticipated to occupy the northern part of the site which starts approximately 600 m north of the DCO Scheme (although some ducks are likely to occur in the drainage ditches which lie in the southern part).

3.4 Wintering (2014/2015) bird survey reporting for Pill Marshes

Summary of the survey results

- 3.4.1 A total of 10 waterfowl species were recorded during these surveys (see Appendix 9.3c). Two of these, redshank and curlew, are qualifying species for the Severn Estuary SPA/Ramsar site and low numbers of these species were recorded. Generally, one to six redshank were recorded feeding on the intertidal mud at low tide and a peak count of 28 was obtained on one occasion. A maximum of two curlew were recorded during the surveys, also restricted to the intertidal area. Waterfowl were not recorded using the Pill Marshes to a significant extent during the survey and no SPA/Ramsar qualifying species were recorded in this area.
- 3.4.2 A range of human disturbance to birds was identified during the surveys, comprising:
- Walkers (mainly dog walkers) using the Pill Marshes area throughout the tidal cycle (except on high spring tides when the saltmarsh becomes inundated).
 - Noise and visual disturbance from the existing residential areas, which directly adjoin the designated site boundaries.
 - Noise disturbance from the M5 Avonmouth Bridge.
 - Existing rail traffic along the Portbury freight line.
 - Noise and visual disturbance from the industrial activity on the north-eastern side of the River Avon.

3.5 Reporting for 2017 survey of WCA Schedule 1 Bird species

- 3.5.1 A survey of the WCA Schedule 1 bird species, barn owl and peregrine falcon, was undertaken in spring 2017, comprising a walk through along the whole of the DCO Scheme between Portishead and the outskirts of Bristol on three separate occasions. The survey report is provided in Appendix 9.3c.
- 3.5.2 Key findings:
- No positive sightings were made of barn owls during the walkovers of the DCO Scheme (although an adult bird was observed on 25 July 2017 approximately 550 m from the disused section of the railway at Portbury Wharf Nature Reserve).
 - During the walkovers nine potential barn owl roosting/nesting locations and seven potential peregrine roosting/nesting locations were identified, and the desk study revealed one known location of barn owl breeding activity (Portbury Wharf Nature Reserve) and one nearby barn owl roosting location (a veteran oak tree at Court House Farm). Both of the desk study locations were assessed as far as was possible during site walkovers.
 - The barn owl features were all within the section from Portishead to the start of the Avon Gorge, where there is suitable foraging habitat (rough meadow and grassland) in good quantities nearby in addition to the potential roost/nest features.
 - The peregrine locations represent cliff habitats within the Avon Gorge where these birds could potentially nest. A potential peregrine nesting site was identified directly above the planned operational works corridor on a nest known to have been formerly occupied by

breeding ravens, and an adult bird was seen sitting on the nest with another nearby on the second visit. However, no sign of young birds or feeding behaviour was seen either at or near the nest and no signs of peregrine activity were observed on the third visit. The location was watched for about an hour on both the second and third visits. So peregrine breeding appears not to have occurred here in 2017 (but may potentially occur in future years).

SECTION 4

Conclusion

- 4.1.1 Using the WCA Schedule 1 bird survey and information gathered above, an impact assessment and robust mitigation strategy will be developed for the DCO Scheme.
- 4.1.2 HRA screening will be required for the Severn Estuary SPA/Ramsar, including consideration of potential impacts on birds at Portbury Wharf Nature Reserve to understand whether there may be indirect effects on the Severn Estuary designated site. Consent for work near to the SSSI may be required by Natural England.

SECTION 6

References

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SECTION 7

List of Abbreviations

AWT	Avon Wildlife Trust
BCC	Bristol City Council
B&NES	Bath and North East Somerset Council
EcOW	Ecological Clerk of Works
EcIA	Ecological Impact Assessment
CEMP	Construction Environmental Management Plan
DCO	Development Consent Order
HRA	Habitats Regulations Assessment
JNCC	Joint Nature Conservation Committee
LSE	Likely Significant Effect
NE	Natural England
NSC	North Somerset Council
SGC	South Gloucestershire Council
SPA	Special Protection Area
SSSI	Site of Special Scientific Interest
WCA	Wildlife and Countryside Act
WeBS	Wetland Bird Survey