

Welsh Government

M4 Corridor around Newport

August 2017 Environmental
Statement Supplement
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Phase 1 Habitat Survey

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**M4 Corridor around Newport
Newport Docks - South: 2017
Phase 1 Habitat Survey**

01 | 3 July 2017

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S Summary

- S.1** RPS was commissioned to undertake a Phase 1 habitat survey of an area of land in Newport Docks in Newport, South Wales. The survey area is shown on Figure 1.
- S.2** The survey area included land that would be affected by the proposed M4 Corridor around Newport Scheme (M4CaN). Should the Orders for the Scheme be confirmed, buildings located elsewhere on the docks would be relocated to the survey area in order to enable the motorway construction to be carried out.
- S.3** The survey was undertaken over the 14th and 15th June 2017.
- S.4** The survey followed the Phase 1 habitat survey methodology described in the *Handbook for Phase 1 habitat survey - a technique for environmental audit* (Joint Nature Conservation Committee, 2010).
- S.5** Terrestrial habitats recorded on site included: ephemeral/short perennial vegetation, the most widespread vegetation type; scattered areas of grassland; tall ruderal vegetation that reflected the mosaic of differing substrates and waste materials that were scattered across the survey area; scrub generally comprising goat willow and buddleia with dense stands of bramble and some birch seedlings; small parcels of broadleaved woodland including white poplar, sycamore and willow; and areas of bare ground and hard-standing.
- S.6** Aquatic habitat included: several ponds and areas of marshland, primarily located in the north-east and north-west of the survey area, which contained limited amounts of aquatic and semi-aquatic vegetation and appeared likely to dry up during the summer months; a reedbed of approximately 0.1 hectares in the west of the survey area; and two main drainage ditches.
- S.7** Japanese knotweed was recorded across the survey area.
- S.8** The following species-specific surveys are recommended:
- botanical survey;
 - great crested newt eDNA water analysis (to confirm presence/likely absence);
 - breeding and wintering birds;
 - invertebrates;
 - otters;
 - reptiles; and
 - Japanese knotweed.
- S.9** Should existing buildings be affected by construction, a detailed assessment for roosting bats should be undertaken; however results of the Phase 1 habitat survey reported very low potential for roosting bats.
- S.10** Although it is considered unlikely that water voles are present and no signs of water voles were recorded during the Phase 1 habitat survey, it is advised that additional detailed water vole surveys be undertaken at the same time as the recommended otter survey.

1 Introduction

- 1.1.1** RPS was commissioned to undertake a Phase 1 habitat survey of an area of land in Newport Docks in Newport, South Wales. The survey area is shown on Figure 1.
- 1.1.2** The survey area included land that would be affected by the proposed M4 Corridor around Newport Scheme (M4CaN). Should the Orders for the Scheme be confirmed, buildings located elsewhere on the docks would be relocated to the survey area in order to enable the motorway construction to be carried out.
- 1.1.3** The survey was undertaken over the 14th and 15th June 2017 by Sean Flynn (Senior Ecologist at RPS with over ten years' experience of Phase 1 habitat surveys), assisted by Nathan Redman (Ecologist at RPS).
- 1.1.4** The purpose of the survey was to inform an assessment of likely ecology and nature conservation effects of the M4CaN Scheme on the survey area and any ecological mitigation required.
- 1.1.5** The objectives of the survey were to:
- identify and map habitats within the survey area;
 - assess the potential value of the area for protected or otherwise notable species;
 - identify and map signs of protected or otherwise notable species; and
 - assess the need for additional ecology surveys.

2 Survey Methods

- 2.1.1** The survey followed the Phase 1 habitat survey methodology described in the Handbook for Phase 1 habitat survey - a technique for environmental audit (Joint Nature Conservation Committee, 2010).
- 2.1.2** Vegetation types were mapped using standard Phase 1 mapping codes and a Phase 1 habitat plan (Figure 1) was produced along with target notes giving a description of particular areas of interest (Appendix 1). A plant species list is provided at Appendix 2. All botanical names used in this report follow the nomenclature of Stace (2010).
- 2.1.3** The potential value of the survey area for protected or otherwise notable species was assessed and any evidence of such species was recorded.

3 Results

3.1 Habitats

Ephemeral/short perennial vegetation

- 3.1.1** Ephemeral/short perennial vegetation was the most widespread vegetation type recorded in the survey area. The vegetation was scattered across compacted coal and industrial waste and other more calcareous materials.
- 3.1.2** Areas of species-rich perennial vegetation were recorded in the eastern part of the survey area and there is the potential for rare or otherwise notable plant species across the whole area. Frequent species included red fescue (*Festuca rubra*) and creeping cinquefoil (*Potentilla reptans*); occasionally occurring species included annual meadow grass (*Poa annua*), Yorkshire fog (*Holcus lanatus*), creeping bent (*Agrostis stolonifera*), wild carrot (*Daucus carota*), scentless mayweed (*Tripleurospermum maritimum*) and herb Robert (*Geranium robertianum*).
- 3.1.3** Generally ground cover provided by ephemeral short perennial vegetation was patchy, with between 25% and 75% bare open ground.
- 3.1.4** A typical example of this habitat type is shown in Plate 1 below.

Plate 1: Ephemeral/short perennial vegetation



Grassland

- 3.1.5** Areas of grassland were scattered across the survey site. Plant species diversity was considerably greater than that of ephemeral/short perennial vegetation.
- 3.1.6** Predominant grass species recorded included Yorkshire fog, red fescue and creeping bent (*Agrostis stolonifera*). Areas of greater species-diversity were typified by the presence of carpets of common bird's foot trefoil (*Lotus corniculatus*) and red clover (*Trifolium pratense*). A stand of approximately 30 southern marsh orchids (*Dactylorhiza praetermissa*) was recorded in the southern part of the survey area (TN25, Figure 1).
- 3.1.7** A typical area of grassland is shown in Plate 2 below.

Plate 2: Grassland



Tall ruderal vegetation

- 3.1.8** Tall ruderal vegetation reflects the mosaic of differing substrates and waste materials that were scattered across the survey area. Species recorded are generally associated with high nutrient levels. In some areas, ruderal vegetation included a wide range of nectar and pollen bearing plant species, such as dittander (*Lepidium latifolium*), evening primrose (*Oenothera biennis*), ribbed melilot (*Melilotus officinalis*), hedge mustard (*Sisymbrium officinale*) and fennel (*Foeniculum vulgare*).
- 3.1.9** Typical areas of tall ruderal vegetation are shown in Plates 3 and 4 below.

Plate 3: Tall ruderal vegetation in the eastern part of the survey area



Plate 4: Tall ruderal vegetation in the southern part of the survey area along the banks of a drainage ditch (River Usk in background)



Scrub

3.1.10 Scrub recorded in the survey area generally comprised goat willow (*Salix caprea*) and buddleia (*Buddleia davidii*), with dense stands of bramble (*Rubus fruticosus*). Some birch seedlings were also recorded.

3.1.11 A typical area of scrub is shown in Plate 5 below.

Plate 5: Scrub vegetation



Broadleaved woodland

3.1.12 Small parcels of broadleaved woodland were recorded in the survey area. Tree species included white poplar (*Populus alba*), sycamore (*Acer pseudoplatanus*) and willow (*Salix sp.*).

3.1.13 A typical area of woodland is shown in Plate 6 below.

Plate 6: Woodland



Ponds and Marsh

- 3.1.14** Ponds and areas of marshland were generally recorded in the north-east and north-west of the survey area. These features were located on hard-standing areas as well as in grassland areas. Aquatic and semi-aquatic vegetative cover was limited, water-levels were typically low and the features appeared likely to dry up during the summer months.
- 3.1.15** A typical pond and area of marshland are shown in Plates 7 and 8 below.

Plate 7: Ephemeral pond in the eastern part of the survey area



Plate 8: Area of marsh vegetation adjacent to a reedbed in the western part of the survey area



Reedbed

3.1.16 A reedbed covering an area of approximately 0.1 hectares was recorded in the west of the survey area. The reedbed consisted of a dense, single species stand of common reed (*Phragmites australis*).

3.1.17 The edge of the reedbed is shown in Plate 9 below.

Plate 9: Reedbed edge



Drainage ditches

3.1.18 Two main drainage ditches were recorded in the survey area. These were located to the west and south of Atlantic Shed (a large building in the centre of the survey area, Figure 1). The ditches appeared to flow southwards to the River Usk.

3.1.19 Both ditches were established with dense stands of common reed and contained areas of standing water. The banks of the ditch to the south of Atlantic Shed were established with naturally regenerating ruderal vegetation including saplings of Japanese knotweed (*Fallopia sachalinensis*), as shown on Figure 2.

3.1.20 The drainage ditch located to the west of the Atlantic shed is shown in Plate 10 below.

Plate 10: Drainage ditch



Bare ground, hard-standing and rubble piles

- 3.1.21** Areas of bare ground and hard-standing were recorded throughout the survey area. In some areas this formed a mosaic with patches of short perennial, ruderal vegetation and scattered scrub.
- 3.1.22** An example of the open mosaic of vegetation and bare ground is shown in Plate 11 below.

Plate 11: Open mosaic of vegetation and bare ground



Non-native trees

- 3.1.23** A line of non-native leylandii (*Cupressus × leylandii*) trees was recorded along the road to the north of the survey area.

Japanese knotweed

- 3.1.24** Japanese knotweed (an invasive plant species) was scattered throughout the survey site. The locations are shown on Figure 2.

3.2 Protected or Otherwise Notable Species

Invertebrates

- 3.2.1** “Open Mosaic Habitats of Previously Developed Land” is a UK Biodiversity Action Plan (BAP) habitat and, in part, is of ecological and nature conservation interest due its potential value to notable assemblages of generalist and specialist invertebrates.

Incidental sightings of invertebrates:

- 3.2.2** Red-tailed bumblebee, common carder bee, honey bee, white tailed bee, possible shrill/brown banded carder bee, hairy dragonfly, broad bodied chaser and blue tailed damselfly were all recorded in the survey area during the Phase 1 habitat survey visit.

Reptiles

- 3.2.3** The mosaic of scrub / woodland edge, grassland, ruderal and ephemeral vegetation and bare ground provided a wide range of microhabitats of potential value to foraging, basking, breeding and hibernating reptiles.

Great crested newt

- 3.2.4** The survey area was relatively isolated, being largely surrounded on all sides by salt water, although the access road and associated corridor of vegetation in the north-east corner of the survey area provided some connectivity to habitat of potential value to newts further to the north. Overall, due to this relatively isolated location and the unfavourable condition of waterbodies (i.e. limited aquatic vegetation and ephemeral nature) it is considered unlikely that the area could support a viable population of great crested newts.

Otter

- 3.2.5** Otters are known to use habitat along the banks of the River Usk and River Ebbw. Areas of dense scrub, woodland and reedbeds in the survey area and the immediately surrounding area provided suitable habitat for otters. However, no signs of their presence were recorded.

Water vole

- 3.2.6** Although drainage ditches and dense bankside vegetation provided potential for water voles, no signs of the presence of water voles were recorded during the survey visit and no signs of water voles have been recorded elsewhere on the docks.

Bats

- 3.2.7** The mosaic of habitats in the survey area provided suitable habitat for foraging bats.
- 3.2.8** The Atlantic Substation (TN16, Figure 1) is a flat roofed building with concrete eaves and walls. A single small hole, located on the south-facing wall provided some minor potential as an access point for roosting bats. Taking into account the nature of the structure, with no obvious internal roof space and apparently good condition, with limited potential for access and a relatively isolated location surrounded by water and built-up areas with no immediately adjacent vegetation, the building is considered to be of negligible potential value to roosting bats.

Breeding birds

- 3.2.9** A range of habitats including the reedbed, scrub, grassland and open vegetation provide suitable nesting habitat for a diversity of bird species.

Birds observed exhibiting breeding / nesting behaviour:

- 3.2.10** A total of 14 lapwings were recorded to be using the survey area during the survey visit (eight in the eastern part of the area and six in the southern part of the area). These birds may have bred in the area; however, it was not possible to confirm this during the survey visit.

- 3.2.11** Other bird species recorded during the survey visit included meadow pipit, dunnock, wood pigeon song thrush, blackbird and reed bunting.

Wintering birds

- 3.2.12** The intertidal areas which adjoin the site to the south provide potential feeding areas for wintering water birds. There is some potential that such birds may roost on the more open parts of the site.

4 Recommendations

4.1 Protected Species

Botanical survey

- 4.1.1** Areas of ephemeral and neutral grassland contained interesting assemblages of vegetation, including some species-rich assemblages. It is recommended that a detailed botanical survey be undertaken across the whole survey area.

Invertebrates

- 4.1.2** Invertebrate surveys of the survey area would be required to ascertain the importance of the site for invertebrates.

Great crested newt

- 4.1.3** The survey area is considered likely to be too small and too isolated to sustain a population of great crested newts. Furthermore, ponds and drainage ditches are of low potential value for breeding newts due to the limited amount of aquatic vegetation and likely ephemeral nature. Consequently, the likelihood of great crested newt being present is considered to be very low. However, in order to confirm absence/presence), it is recommended that great created newt eDNA analysis of water samples be carried out before the end of June 2017 or between mid-April and the end of June 2018.

Reptiles

- 4.1.4** The mosaics of rubble piles, ephemeral ruderal species, grassland and woodland and scrub, provide good habitats for reptiles. Therefore, a reptile survey of the area is recommended. Surveys can be undertaken between April/May and September, with optimal survey times being September and April/May.

Otter

- 4.1.5** An otter survey of the area and a 100 metre wide buffer zone should be undertaken in order to determine whether or not otters are resting or breeding in habitat within the likely zone of influence of the proposed works. Surveys can be undertaken at any time of year during suitable weather conditions.

Water vole

- 4.1.6** No signs of water vole were recorded during the survey visit and due to the isolated location of the survey area and the absence of water voles from the rest of Newport Docks, it is considered unlikely that water voles would be present. However, a search for signs of water voles could be undertaken at the same time as the otter survey. Surveys should be undertaken between May and September inclusive.

Birds

- 4.1.7** Breeding bird surveys should be completed between April and June inclusive; however, a survey visit in July/August would provide an indication of species present.
- 4.1.8** The potential value of the site for wintering bird species should be assessed. Wintering bird surveys can be undertaken between (September/October 2017 and March 2018).

Bats

- 4.1.9** Of the buildings on site, only the Atlantic Substation had any, albeit minor potential for roosting bats. However, should the works proposed include any direct impact on the existing buildings, they should be fully assessed for bat roost potential, i.e. a detailed internal and external inspection of the buildings should be undertaken and if results of these inspections confirm potential roost sites, dusk emergence/dawn swarming surveys should be undertaken as necessary in order to confirm presence/likely absence of roosting bats and, if present, to identify bat species and the importance of any roost.

Japanese knotweed

- 4.1.10** A Japanese knotweed survey should be undertaken in order to inform an eradication strategy for the area, which should be set in place prior to the commencement of any works that could result in the disturbance of Japanese knotweed.

References

Joint Nature Conservation Committee (2010) *Handbook for Phase 1 habitat survey - a technique for environmental audit*. Joint Nature Conservation Committee, Peterborough.

Stace, C. (2010) *New Flora of the British Isles (Edition 3)*. Cambridge University Press.

Figure 1: Phase 1 Habitat Plan



Legend

- Land Parcels
- Species poor hedgerow
- Non- native treeline
- Broadleaved woodland
- Intertidal mud/ sand
- Saltmarsh habitats (NVC required)
- Drainage ditch
- Standing water (ephemeral)
- Reed bed
- Establishing grassland on made ground
- Amenity grassland
- Building
- Hardstanding
- Ephemeral/ short perennial
- Bare ground
- Scrub dense continuous
- Scattered scrub
- Tall ruderal
- Rubble mound (unvegetated)
- Rubble mound
- Target note



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Phase 1 Habitat Survey

Figure: 1	Revision: 1
Date: August 2017	Status: AT ISSUE
Drawn: CR	Checked: JW



Figure 2: Locations of Japanese Knotweed



Legend

- Land Parcels
- Japanese Knotweed
- X1 = 2m²
- X2 = 25m²
- X3 = JK treatment area on concrete hardstanding
- X4 = 25m²
- X5 = JK saplings
- X6 = 1m²
- X7 = Single JK plant stem
- X8 = less than 5m²
- X9 = less than 5m²
- X10 = less than 5m²



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**Newport Docks (south): 2017 Phase
1 Habitat Survey - Locations of
Japanese Knotweed**

Figure: 2	Revision: 1
Date: August 2017	Status: AT ISSUE
Drawn: CR	Checked: JW

Scale: A3 @ 1:4,000
0 65 130m



Appendix 1: Target Notes

Target Note, Figure 1	Description of Feature of Interest
TN1	Eight lapwings recorded in TN1 area. Habitat suitable for breeding lapwing was recorded, i.e. relatively large, open areas of short ephemeral vegetation, ephemeral ponds and bare ground.
TN 2	Mosaic of scrub, hard-standing, grassland, ephemeral and ruderal vegetation, ponds and marshland and bare ground. Scrub approximately 50% of this area.
TN 3	Access track along the River Usk. Species-poor hedgerow recorded along the track. Dominant woody species: hawthorn (<i>Crataegus monogyna</i>) and occasional oak (<i>Quercus</i> sp.), willow (<i>Salix</i> sp.) and Buddleia.
TN 4	Dense stands of common reed between high and low tide lines of the River Usk. Of potential value to otters; however, no signs of otter recorded.
TN 5	Species-rich ephemeral vegetation with relatively open canopy (approximately 60% bare ground) established on industrial bi-product materials. A stand of southern marsh orchid was recorded in the area. High quality invertebrate habitat.
TN 6	Mown grassland generally species-poor with patches of species-rich vegetation along the edges and adjacent to areas of hard-standing.
TN 7	Hard-standing with mosaic of short ephemeral vegetation established in the cracks of the hard-standing, and buddleia and willow saplings.
TN 8	Species-rich vegetation on industrial bi-products more established than habitat described at Target Note 5 and with less exposed bare ground.
TN 9	Areas of shallow-standing water, some aquatic vegetation including small stand of Bullrush (<i>Typha latifolia</i>). Likely to dry up during the summer months.
TN 10	A large mound of materials deposited on hard-standing. Potentially an area where Japanese Knotweed has been treated.
TN 11	Willow woodland, trees approximately 20 metres in height, contains frequent Buddleia, and a small stand of bracken (<i>Pteridium aquilinum</i>) in the west of the area.
TN 12	Spoil mound established with tall ruderal vegetation, abundant ribbed melilot.
TN 13	Area of species-rich short ephemeral vegetation with 50% bare ground. Ribbed melilot encroaching from north.
TN 14	Area of dense scrub with hawthorn and buddleia.
TN 15	Area of open mosaic habitat with species-rich grassland, bare ground, scattered and dense scrub, and tall ruderal stands of common reed. Large rubble piles and areas of bare ground along with profusion of nectar bearing vegetation provide excellent habitat for a range of invertebrate species.
TN 16	Building named Atlantic substation - flat rooved with concrete eaves and walls. Single small hole on the south-facing aspect provided negligible potential as an access point for roosting bats. Taking into account the apparently good condition of the building and lack of obvious internal roof space, and the relatively isolated location, with no adjacent vegetation of

	foraging value, the building is assessed to be of negligible value as a bat roost.
TN 17	Open mosaic of bare ground, short ephemeral vegetation and small depressions of compacted ground holding shallow standing water with scattered scrub.
TN 18	Area of dense scrub established on a series of rubble piles forms a mosaic with dense stand of common reed and tall ruderal vegetation.
TN 19	Scrub established on large banks of spoil. Sea buckthorn (<i>Hippophae rhamnoides</i>).
TN 20	Short ephemeral vegetation with relatively reduced species diversity, scattered willow and young birch established in the area.
TN 20a	Short ephemeral vegetation with relatively reduced species diversity and no scrub.
TN 21	Tall ruderal vegetation along banks of drainage ditch approximately 10 metres in height. Japanese knotweed saplings (approximately 150 mm in height) recorded throughout the area.
TN 22	Establishing grassland, slightly less species-rich than more established grassland.
TN 23	Establishing ephemeral vegetation with high (70%) proportion of bare ground.
TN 24	Scattered and dense scrub with abundant buddleia, birch and willow.
TN 25	Stand of southern marsh orchids (approximately 30 plants).
TN 26	Dense stand of common reed, approximately 70 x 50 metres in size, including apparently permanently wet areas with bulrush, hard rush (<i>Juncus inflexus</i>) and willow saplings covering areas of approximately 20 x 4 metres and 5 x 10 metres.

Appendix 2: Plant Species List

Key:

Value	Percentage cover
D - Dominant	> 75%
A - Abundant	51 - 75%
F - Frequent	26 - 50%
O - Occasional	11 - 25%
R - Rare	1 - 10%

Species	Ruderal	Short ephemeral	Scrub	Woodland	Ephemeral Ponds & marshy areas	Hedgerow	Grassland	Drainage ditches
Annual meadowgrass		O						
American willowherb		R						
Birch Sp.			O	O				
Bistort (Amphibious)	O							
Biting Stone Crop		R						
Black Medic		R					R	
Bracken				R				
Bramble			O (LA)					
Buddleia			A	O				
Bullrush					O			
Cleavers	R							
Cocksfoot	F						O	
Common Birdsfoot Trefoil		O (LA)						
Common Couch	R						R	

Species	Ruderal	Short ephemeral	Scrub	Woodland	Ephemeral Ponds & marshy areas	Hedgerow	Grassland	Drainage ditches
Common Figwort	R							
Common Fleabane		R						
Common mallow	O	R						
Common Nettle	F							
Common Reed					O (LA)			A
Common ragwort	O							
Common Storksbill		R					R	
Common valarian		R						
Creeping Bent		O					O (LA)	
Creeping Buttercup		O					R	
Creeping Cinquefoil		F						
Creeping Thistle	F							
Curled Dock	R							
Dittander	O							
Dog Rose			R					
Elder			R					
European Gorse			R					
Evening primrose	O	R						
False Fox Sedge		R					R	
False Oat Grass	F						O (LA)	
Fennel	O							
Foxglove						R		
Goat Willow			F	O			R	
Greater plantain	R	R						
Great Willowherb	R							R

Species	Ruderal	Short ephemeral	Scrub	Woodland	Ephemeral Ponds & marshy areas	Hedgerow	Grassland	Drainage ditches
Hairy Sedge							R	
Hard Rush						R	R	O
Hawthorn			R			A		
Hedge Bindweed	R					R		
Hedge Mustard	O (LA)							
Hedge Woundwort	R							
Hemp-Agrimony	R							
Herb Robert	R	O						
Hogweed	R							
Honeysuckle						O		
Horsetail Sp.	O							
Ivy			O	R		O		
Ivy leaved toadflax		R						
Japanese Knotweed								
Jointed Rush		R			R			R
Lesser Trefoil		R					R	
Mugwort	F							
Oak Sp.				R				
Ox Eye Daisy	F						R	
Perforated St John's Wort	O							
Prickly Sowthistle	R							
Primrose		R						
Ratstail Sp.		R						
Red clover		R					O	
Red fescue		F					F	
Reed Canary Grass					R			R

Species	Ruderal	Short ephemeral	Scrub	Woodland	Ephemeral Ponds & marshy areas	Hedgerow	Grassland	Drainage ditches
Restharrow		R					R	
Ribbed Melilot	F (LA)							
Ribwort Plantain		O					R	
Rosebay willowherb								
Rye Grass sp.							R	
Willow sp.								O
Scarlet Pimpernel		R						
Scentless mayweed		O						
Sea buckthorn			R					
Selfheal		R					R	
Silverweed		R						
Slender St John's wort		R						
Small toadflax		R						
Southern Marsh Orchid							R	
Spear Thistle	R							
Greater Stitchwort						R		
Sycamore				R				
Teaseal	F							
Tufted Vetch							R	
Vipers Bugloss		R						
Water Figwort		R			R			R
Water Plantain					R			R
White campion		R						
White Clover		R						
White Poplar				R				
Wild Carrot		O					R	

Species	Ruderal	Short ephemeral	Scrub	Woodland	Ephemeral Ponds & marshy areas	Hedgerow	Grassland	Drainage ditches
Wild Pansy		R						
Woody Nightshade	R							
Yarrow	R	R					R	
Yellow Wort		R						
Yorkshire Fog		O (LA)					O	