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## Appendix 3

Argos Ecology Report - Marine Walk, Roker, Ecological Risk  
Assessment and Wetland Bird Survey

March 2011



**Marine Walk, Roker, Sunderland**

**Ecological Risk Assessment and  
Wetland Bird Survey**

Final Report

Prepared for Sunderland City Council

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## **1 Introduction and background**

This document sets out the results of an Ecological Risk Assessment and Wetland Bird Survey (WeBS) with reference to the design and management of proposals for the redevelopment of the seafront at Marine Walk, Roker (see SCC<sup>1</sup> & Figure 1 - Location Plan).

Sunderland City Council has developed a Seafront Regeneration Strategy (SCC<sup>2</sup> & Figure 2 - Location Plan), with particular regard to the Marine Walk Masterplan at Roker, Sunderland, Tyne & Wear.

This includes:

- Lighting work to Spottee's Cave, Roker Ravine.
- Improvements to the visual environment including installation of new street furniture and lighting.
- An appropriate design solution to improve the appearance of two substations.
- New pedestrian areas as Holey Rock Corner and Marine Walk Roundabout to act as informal outside areas.
- Enhanced access from Holey Rock Corner leading onto the beach to add an additional visual feature.
- Gates to Roker Park pier will be the subject of artists' commissions to design a more sympathetic solution that incorporates interpretation opportunities.
- 'Pods' - sited along the seafront, potentially to be used as education, interpretation and retail spaces.

An Appropriate Assessment screening report for the Marine Walk Masterplan, plus initial scoping comments from Natural England have highlighted the need for further ecological assessment of the Marine Walk development proposals. Information from this survey report will also be used to support subsequent phases of the Seafront Regeneration Strategy, in particular Seaburn Promenade, and Cliff Park and Recreation Park.

The important areas of concern relate to the effect of the proposals on species and habitats associated with the Northumbria Coast Special Protection Area (JNCC<sup>1</sup>) and other, protected species of conservation interest.

## **2 Initial planning meeting**

On 20 May 2010, Frank Daly, (ecologist and experienced field ornithologist, Argus Ecology Ltd) met Andrew Bewick (Countryside Officer, Sunderland City Council) and Claire Jones (Senior Planner, Regeneration, Sunderland City Council) at 15 John

Street, Sunderland to discuss issues relating to methodology, delivery timetable, access, baseline information and reporting formats.

### 3 Assessment of site conservation status

An assessment of the conservation status of the coastline between North Pier, Roker (NZ 410 583) and Whitburn Steel can be made in relation to its inclusion in UK and European legislation and on RSPB/BTO conservation lists.

Specifically:

#### 3.1 Northumbria Coast Ramsar Site

Ramsar sites are designated under the Convention of Wetlands of International Importance. The Convention was adopted in Ramsar, Iran, in 1971 and ratified by the UK Government in 1976.

Parson's Rocks (Figure 3) and Whitburn Steel (Figure 4) form part of the Northumbria Coast Ramsar Site (JNCC<sup>2</sup>), and qualifies under Ramsar criterion 6 by supporting the following species / populations occurring at levels of international importance:

Species regularly supported during the breeding season:

- Little tern (*Sterna albrifrons*)  
W Europe 43 apparently occupied nests, representing an average of 2.2% of the GB population (Seabird 2000 Census)

Species with peak counts in winter:

- Purple sandpiper (*Calidris maritima*)  
E Atlantic - wintering 291 individuals, representing an average of 1.6% of the GB population (5 year peak mean 1998/9-2002/3)
- Turnstone (*Arenaria interpres*)  
NE Canada, Greenland/W Europe & NW Africa 978 individuals, representing an average of 1% of the population (5 year peak mean 1998/9-2002/3)

Species currently occurring at levels of national importance:

Species regularly supported during the breeding season:

- Cormorant (*Phalacrocorax carbo*)  
NW Europe 248 apparently occupied nests, representing an average of 2.9% of the GB population (Seabird 2000 Census)
- Kittiwake (*Rissa tridactyla*)  
E Atlantic 4070 apparently occupied nests, representing an average of 1.1% of the GB population (Seabird 2000 Census)
- Arctic tern (*Sterna paradisaea*)  
Europe/N Atlantic 1200 apparently occupied nests, representing an average of 2.2% of the GB population (Seabird 2000 Census)

Species with peak counts in spring/autumn:

- Golden plover (*Pluvialis apricaria*)  
Iceland & Faroes/E Atlantic 2911 individuals, representing an average of 1.1% of the GB population (5 year peak mean 1998/9-2002/3)

Species with peak counts in winter:

- Eider (*Somateria mollissima*)  
NW Europe 1361 individuals, representing an average of 1.8% of the GB population (5 year peak mean 1998/9-2002/3)
- Sanderling (*Calidris alba*)  
Eastern Atlantic 419 individuals, representing an average of 2% of the GB population (5 year peak mean 1998/9-2002/3)

### 3.2 Northumbria Coast Special Protection Area (SPA)

Special Protection Areas (SPAs) are strictly protected sites classified in accordance with Article 4 of the [EC Directive on the conservation of wild birds \(79/409/EEC\)](#), also known as the 'Birds Directive', which came into force in April 1979. A major provision of the Directive includes the identification and classification of SPAs for rare or

vulnerable species listed in Annex I of the Directive, as well as for all regularly occurring migratory species, paying particular attention to the protection of wetlands of international importance.

Also, to regulate the hunting of certain species of birds listed in Annex II, while Annex III regulates the sale, transport, keeping and offering for sale of certain live or dead game birds. In the UK, the provisions of the 'Birds Directive' are implemented through the Wildlife & Countryside Act 1981 (as amended).

Parson's Rocks and Whitburn Steel form part of the Northumbria Coast SPA.

During the breeding season the Northumbria Coast SPA regularly supports:

- Little tern 1.7% of the GB breeding population  
(Eastern Atlantic - breeding) 5-year peak means 1992/3-1996/7

Over winter the Northumbria Coast SPA regularly supports:

- Turnstone 2.6% of the East Atlantic Flyway population  
(Western Palearctic - wintering) 5-year peak means 1992/3-1996/7
- Purple sandpiper 1.6% of the East Atlantic Flyway population  
(Eastern Atlantic - wintering) 5-year peak means 1992/3-1996/7

### 3.3 Durham Coast Site of Special Scientific Interest (SSSI)

The Northumbria Coast SPA also incorporates Durham Coast Site of Special Scientific Interest. The Durham Coast between South Shields and Hart Warren is of considerable biological, geological and physiographic interest. It contains most of the paramaritime Magnesian Limestone vegetation in Britain, as well as a species-rich dune system, and supports nationally important numbers of wintering shore birds and breeding little terns which contribute to the internationally important populations of the north-east coast (Natural England, 1999).

Parson's Rocks and Whitburn Steel form part of Durham Coast SSSI, which supports nationally important numbers of wintering purple sandpiper. A number of discrete sections of intertidal rock with associated boulder and cobble beaches provide feeding areas for these birds at most stages of the tidal cycle. A beach at Crimdon was colonised by little tern in 1995 and now holds a nationally important breeding population. Sanderling is present in nationally important numbers and turnstone and knot (*Calidris canutus*) also use the site for feeding and roosting in winter. The cliffs at



Marsden Bay also support a well-known seabird colony, which includes kittiwake, fulmar (*Fulmarus glacialis*) and cormorant.

#### 3.4 Durham Coast Special Area of Conservation (SAC)

Special Areas of Conservation are strictly protected sites designated under the EC Habitats Directive. The listed habitat types and species are those considered to be most in need of conservation at a European level (excluding birds). Of the Annex I habitat types, 78 are believed to occur in the UK.

Whitburn Steel forms part of the Durham Coast SAC (JNCC<sup>3</sup>). It is the only example of vegetated sea cliffs on magnesian limestone exposures in the UK. This is an Annex I habitat and is the principal reason for the designation of this site. These cliffs extend along the North Sea coast for over 20 km from South Shields southwards to Blackhall Rocks. Their vegetation is unique in the British Isles and consists of a complex mosaic of paramaritime, mesotrophic and calcicolous grasslands, tall-herb fen, seepage flushes and wind-pruned scrub. Within these habitats rare species of contrasting phytogeographic distributions often grow together forming unusual and species-rich communities of high scientific interest. Natural processes including exposure to sea spray, erosion and slippage of the soft magnesian limestone bedrock and overlying glacial drifts, as well as localised flushing by calcareous water largely maintain the communities present on the sea cliffs.

#### 3.5 Other conservation status criteria

##### 3.5.1 Wildlife and Countryside Act (1981)

Section 1: makes it an offence to intentionally kill, injure or take any wild bird, nest or egg. The possession of any of these is an offence of strict liability. It covers special protection and increased fines of Schedule 1 species. Schedule 1, Part I - lists 80 rare, endangered, declining or vulnerable bird species which are protected by special penalties at all times, while Part II lists 3 birds that are protected by special penalties during the close season (February - August).

##### 3.5.2 Natural Environment and Rural Communities (NERC) Act (2006)

Section 41 (S41) of this Act (the 'England Biodiversity List') requires the Secretary of State to publish a list of habitats and species that are of principal importance for the conservation of biodiversity in England. The S41 list is used to guide decision-makers such as public bodies, including local and regional authorities, in implementing their duty under section 40 of the Natural Environment and Rural Communities Act 2006,

to have regard to the conservation of biodiversity in England, when carrying out their normal functions.

The S41 list replaces the list published under Section 74 of the Countryside and Rights of Way (CRoW) Act 2000.

### 3.5.3 BTO/RSPB 'Red List': birds of **high** conservation concern

'Red List' species are those that are globally threatened according to the IUCN (World Conservation Union) criteria; those whose population or range has declined rapidly in recent years; and those that have declined historically and not shown a substantial recent recovery, i.e.:

- Globally threatened according to the IUCN;
- Historical population decline in UK during 1800-1995;
- Rapid ( $\geq 50\%$ ) decline in UK breeding population over last 25 years; and
- Rapid ( $\geq 50\%$ ) contraction of UK breeding range over last 25 years.

### 3.5.4 BTO/RSPB 'Amber List': birds of **medium** conservation concern

'Amber List' species are those with an unfavourable conservation status in Europe; those whose population or range has declined moderately in recent years; those whose population has declined historically but made a substantial recent recovery; rare breeders; and those with internationally important or localised populations, i.e.:

- Historical population decline during 1800-1995, but recovering: population size has more than doubled over last 25 years;
- Moderate (25-49%) decline in UK breeding population over last 25 years;
- Moderate (25-49%) contraction of UK breeding range over last 25 years;
- $\geq 50\%$  of UK breeding population in 10 or fewer sites;
- $\geq 20\%$  of European breeding population in UK; and
- Species with unfavourable conservation status in Europe.

### 3.5.5 UK Biodiversity Action Plan (UK BAP)

The UK BAP sets priorities for nationally and locally important species and habitats. Each plan has costed actions and targets and reporting on the targets occurs on a 3-5 year cycle. An updated list of UK priority species and habitats was published in summer 2007.

### 3.5.6 Durham Biodiversity Action Plan (Durham BAP)

This contains action plans for species and habitats that are agreed to be of conservation importance in the Durham BAP area (i.e. the old Vice-county 66 - Durham). The geographical area includes County Durham, Darlington, Gateshead, Sunderland and South Tyneside.

#### 4 Consultation and data collation

Durham Biodiversity Data Service ([www.durhamwt.co.uk](http://www.durhamwt.co.uk)), Durham Bird Club ([www.durhambirdclub.org](http://www.durhambirdclub.org)) and Durham Bat Group ([www.durhambats.org.uk](http://www.durhambats.org.uk)) were contacted with regard to ecological records within 2km of the coastline between North Pier (NZ 410 583) and Whitburn Steel (NZ 408 612) - the local authority boundary with the Borough of South Tyneside.

##### 4.1 Durham Biodiversity Data Service - Non-statutory Conservation Sites

Data supplied by the Durham Biodiversity Data Service revealed the following non-statutory conservation sites:

##### 4.1.1 Roker Cliffs and Parson's Rocks

This is a Site of Nature Conservation Importance (SNCI) and a Regionally Important Geological/Geomorphological Site (RIGS). Its rocky shore is considered to be of great geological interest with its Magnesian Limestone cliffs and 'Cannonball Limestone'.

The RIGS boundary extends approximately 0.3km further south than the SNCI and includes the cliffs at the eastern entrance of Roker Park. At low tide, the site is also of value to wading birds for feeding and roosting including redshank (*Tringa totanus*), turnstone, oystercatcher (*Haematopus ostralegus*) and most notably, purple sandpiper.

##### 4.1.2 Whitburn Steel Rocks

This SNCI forms an extension to the Trow Point to Lizard Point SSSI in the adjacent Borough of South Tyneside. The rocky shore is considered to be of geological interest, and is also of particular note for its foreshore plant and animal communities, which provide a feeding habitat and a roost site for wading birds at various states of the tide.

This includes large numbers of oystercatchers, redshank and turnstone together with smaller groups of purple sandpipers and dunlin (*Calidris alpina*). At various states of the tide, rocky 'islands' protrude providing roost sites for the wading birds which are joined by large numbers of common (*Sterna hirundo*), arctic and sandwich terns (*Sterna sandvicensis*) on passage migration as well as gulls and occasional roseate terns (*Sterna dougallii*).

##### 4.1.3 Whitburn Bents

This SNCI is the only area of sand dunes in the district with natural vegetation and is primarily known for its orchids. Plant species include bee orchid (*Ophrys apifera*), common spotted orchid (*Dactylorhiza fuchsii*) and northern marsh orchid

(*Dactylorhiza purpurella*). The fore-dunes include large areas of lyme-grass (*Leymus arenarius*). Common stork's-bill (*Erodium cicutarium*) (largely confined to coastal sites) is also present, as are field horsetail (*Equisetum arvense*), red fescue (*Festuca rubra*), common bird's-foot-trefoil (*Lotus corniculatus*), restharrow (*Ononis repens*) and yarrow (*Achillea millefolium*).

#### 4.1.4 Mere Knolls Cemetery

This SNCI is located at NZ 400 604 and is situated immediately adjacent to south western corner of Ocean Park, one of the Character Areas specified in the Seafront Regeneration Strategy. It is an important regional feeding/roosting site for migrant birds during inclement weather.

Large numbers of common migrants such as willow warbler (*Phylloscopus trochilus*), chiffchaff (*Phylloscopus collybita*), goldcrest (*Regulus regulus*), redwing (*Turdus iliacus*), fieldfare (*Turdus pilaris*) and brambling (*Fringilla montifringilla*) occur every year. Scarce migrants from further afield are regular in small numbers; species recorded include great grey shrike (*Lanius excubitor*), red-breasted flycatcher (*Ficedula parva*), icterine (*Hippolais icterina*) and yellow-browed warblers (*Phylloscopus inornatus*).

The site has also attracted a number of vagrants in recent autumns; dusky, Pallas's (*Phylloscopus proregulus*) and Radde's warblers (*Phylloscopus schwarzi*) from Siberia and a red-eyed vireo (*Vireo olivaceus*) from North America (the latter being the first record for County Durham/Tyne and Wear). Wetland birds are also seen in the dene; species recorded there have included kingfisher (*Alcedo atthis*) and migrants such as jack snipe (*Lymnocyptes minimus*) and green sandpiper (*Tringa ochropus*).

#### 4.2 Durham Biodiversity Data Service - Protected Species Data

Data supplied by the Durham Biodiversity Data Service revealed the following records of protected species:

Species	Location	Grid Ref.	Date
Otter	River Wear, Sunderland Glass Centre	NZ 406 578	08/02/2008
Water vole	Cut Throat Dene, Mere Knowles Cemetery, Seaburn	NZ 3978 6053	01/02/2005

#### 4.3 Durham Biodiversity Data Service - Ornithological Data

Data supplied by the Durham Biodiversity Data Service revealed the following records of 'Birds of Conservation Concern' recorded in the survey area between 2005-08.

In order of relative importance, this includes:

- 3 species with special legal protection under or Annex I of the EU Birds Directive:
  - Peregrine falcon (*Falco peregrinus*), merlin (*Falco columbarius*), and roseate tern.
- 5 species with special legal protection under Schedule 1 of the Wildlife & Countryside Act (1981):
  - Peregrine falcon, merlin, purple sandpiper, little tern and roseate tern.
- 11 species listed under Section 41 of the Natural Environment and Rural Communities Act 2006:
  - Lapwing (*Vanellus vanellus*), curlew (*Numenius arquata*), roseate tern, skylark (*Alauda arvensis*), yellow wagtail (*Motacilla flava*), song thrush (*Turdus philomelos*), spotted flycatcher (*Muscicapa striata*), starling (*Sturnus vulgaris*), house sparrow (*Passer domesticus*), linnet (*Carduelis cannabina*) and reed bunting (*Emberiza schoeniclus*).
- 11 UK BAP priority species:
  - Lapwing, curlew, roseate tern, skylark, yellow wagtail, song thrush, spotted flycatcher, starling, house sparrow, linnet and reed bunting.
- 10 species on the RSPB/BTO 'Red List' of birds of **high** conservation concern:
  - Lapwing, dunlin, roseate tern, skylark, yellow wagtail, song thrush, spotted flycatcher, starling, house sparrow and linnet.
- 7 species on the RSPB/BTO 'Amber List' of birds of **medium** conservation concern:
  - Peregrine falcon, merlin, purple sandpiper, redshank, curlew, little tern and reed bunting.
- 18 Durham BAP priority species:
  - Peregrine falcon, merlin, lapwing, sanderling, purple sandpiper, dunlin, redshank, curlew, little tern, roseate tern, skylark, yellow wagtail, song thrush, spotted flycatcher, starling, house sparrow, linnet and reed bunting.

Note that there is some overlap between categories.

#### 4.4 Durham Bird Club - Ornithological Data

Data supplied by the Durham Bird Club revealed the following records (between 2006-10) of breeding, migratory and wintering bird species of conservation interest on, or within 500m of the coastline between North Pier and Whitburn Steel.

In order of relative importance, this includes:

- 15 species with special legal protection under or Annex I of the EU Birds Directive:
  - Red-throated diver (*Gavia stellata*), great northern diver (*Gavia immer*), whooper swan (*Cygnus cygnus*), peregrine falcon, merlin, bar-tailed godwit (*Limosa lapponica*), Mediterranean gull (*Larus melanocephalus*), little gull (*Larus minutus*), little tern, sandwich tern, common tern, Arctic tern, roseate tern, black tern (*Chlidonias niger*) and kingfisher.
  
- 19 species with special legal protection under Schedule 1 of the Wildlife & Countryside Act (1981):
  - Red-throated diver, great northern diver, whooper swan, scaup (*Aythya marila*), common scoter (*Melanitta nigra*), peregrine falcon, merlin, purple sandpiper, green sandpiper, black-tailed godwit (*Limosa limosa*), Whimbrel (*Numenius phaeopus*), Mediterranean gull, little tern, roseate tern, black tern, kingfisher, redwing, common crossbill (*Loxia curvirostra*) and snow bunting (*Plectrophenax nivalis*).
  
- 15 species listed under Section 41 of the Natural Environment and Rural Communities Act 2006:
  - (Dark-bellied) brent goose (*Branta bernicla*), scaup, common scoter, lapwing, black-tailed godwit, curlew, roseate tern, skylark, yellow wagtail, song thrush, spotted flycatcher, starling, house sparrow, linnets and reed bunting.
  
- 15 UK BAP priority species:
  - (Dark-bellied) brent goose, scaup, common scoter, lapwing, black-tailed godwit, curlew, roseate tern, skylark, yellow wagtail, song thrush, spotted flycatcher, starling, house sparrow, linnets, and reed bunting.
  
- 17 species on the RSPB/BTO 'Red List' of birds of **high** conservation concern:
  - Scaup, common scoter, lapwing, dunlin, greenshank (*Tringa nebularia*), black-tailed godwit, whimbrel, herring gull (*Larus argentatus*), roseate tern, skylark, yellow wagtail, song thrush, redwing, spotted flycatcher, starling, house sparrow and linnets.

- 59 species on the RSPB/BTO 'Amber List' of birds of **medium** conservation concern:
  - Red-throated diver, great northern diver, red-necked grebe (*Podiceps grisegena*), fulmar, Manx shearwater (*Puffinus puffinus*), shag (*Phalacrocorax aristotelis*), whooper swan, pink-footed goose (*Anser brachyrhynchus*), (Dark-bellied) brent goose, shelduck (*Tadorna tadorna*), mallard (*Anas platyrhynchos*), shoveler (*Anas clypeata*), wigeon (*Anas penelope*), teal (*Anas crecca*), eider, kestrel (*Falco tinnunculus*), merlin, oystercatcher, grey plover (*Pluvialis squatarola*), golden plover, lapwing, knot, purple sandpiper, turnstone, dunlin, green sandpiper, common sandpiper (*Actitis hypoleucos*), redshank, greenshank, bar-tailed godwit, curlew, woodcock (*Scolopax rusticola*), snipe, ringed plover (*Charadrius hiaticula*), black-headed gull (*Larus ridibundus*), common gull (*Larus canus*), Mediterranean gull, lesser black-backed gull (*Larus fuscus*), great black-backed gull (*Larus marinus*), little gull, kittiwake, Iceland gull (*Larus glaucooides*), little tern, sandwich tern, common tern, Arctic tern, black tern, guillemot (*Uria aalge*), razorbill (*Alca torda*), sand martin (*Riparia riparia*), swallow (*Hirundo rustica*), house martin (*Delichon urbicum*), water pipit (*Anthus spinoletta*), grey wagtail (*Motacilla cinerea*), willow warbler, wheatear (*Oenanthe oenanthe*), reed bunting and snow bunting.
  
- 19 Durham BAP priority species:
  - Peregrine falcon, merlin, lapwing, sanderling, purple sandpiper, dunlin, redshank, curlew, snipe, little tern, roseate tern, skylark, meadow pipit (*Anthus pratensis*), yellow wagtail, song thrush, spotted flycatcher, starling, house sparrow and reed bunting.

N.B. The British Trust for Ornithology was considered as a possible source of ornithological data. However, Durham Bird Club has stated that any data supplied by the BTO would have duplicated that supplied by Durham Bird Club, as this is the original source of their data from a local context.

#### 4.5 Durham Bat Group - Bat Records

Data supplied by the Durham Bat Group revealed the following records of bat roosts or bat activity on, or within 500m of the coastline between North Pier and Whitburn Steel:

Species	Location	Grid Ref.	Date	Number	Notes
Common pipistrelle	Sunderland Docks	NZ 4157	2009	1-6	Active roost
Pipistrelle spp.	64 Sea Road, Fulwell	NZ 398 597	1998	c. 50	Active roost
Common pipistrelle	Whitburn Comprehensive School	NZ 4161	2005	1	Foraging
Common pipistrelle	Cornthwaite Park, Whitburn	NZ 4061	2007	1	Foraging

#### Roker beach (NZ 4059/4060)

There is also a 2007 anecdotal record of unidentified bat species foraging along the coastline between the mock lighthouse at Seaburn, past Parson's Rocks before the observer lost sight of them adjacent to the Smugglers public house and Roker Park east entrance. There are no records of any active bat roosts along this section of coastline.



## 5 Bat and wetland bird risk assessment

A risk assessment of the Marine Walk Masterplan area revealed that bats and certain wetland birds of conservation significance were of relevance with regard to protected species.

### 5.1 Marine Walk, Roker

A bat risk assessment of the Marine Walk Masterplan area was undertaken on 8 July 2010 by Paul Lupton of Argus Ecology Ltd. He is a qualified ecologist with many years of experience in mammal surveys. He is also a Natural England licensed bat worker and a member of Durham Bat Group.

Buildings located on Marine Walk, Roker are unlikely to provide suitable habitat for bats as they are located in a very exposed location and would experience wide fluctuations in temperature. Consequently, they would not have a constant temperature, which is an important requirement for bats, particularly with regard to hibernation. It is more likely that the terrace of buildings adjacent to the western edge of Roker Terrace (A183), which are outside of the Marine walk Masterplan boundary, would offer more suitable roosting opportunities for bat species.

### 5.2 Spottee's Cave, Roker Ravine

The results of a bat activity transect survey within the boundary of the Marine Walk Masterplan area are detailed in Appendix 1. The appendix also includes a bat risk assessment of two caves on either side of Roker Ravine (see Figure 5). This enabled an assessment to be made of the likelihood of bat roosts and bat species composition in the Marine Walk Masterplan area, and the potential effect of the proposed development proposals (location and levels of lighting) on bat species.

The internal inspection of the caves revealed no signs of roosting bats. There are also no apparent entrance and exit points. The bat activity survey of the caves and Roker Ravine found that small numbers of common pipistrelle bats (*Pipistrellus pipistrellus*) were actively foraging in this area, though none were recorded feeding along the Marine Walk seafront.

### 5.3 River Wear (North Pier) to Whitburn Steel

Parson's Rocks and Whitburn Steel form part of the Northumbria Coast SPA and Ramsar Site and are an important wintering habitat for turnstone and purple sandpiper. Records from Durham Bird Club and Durham Biodiversity Data Service confirm that both turnstone and purple sandpiper have been recorded feeding at several locations outside of the Northumbria Coast SPA boundary between North Pier and Whitburn Steel. Turnstone has been noted at Roker Pier and Rocks, Roker

Beach, Parson's Rocks and Whitburn Steel, plus Sunderland North Dock / Sunderland Harbour. While purple sandpiper has been recorded at Roker Pier Rocks, Parson's Rocks, Whitburn Steel, North Pier (Roker), Roker Beach, plus Sunderland North Dock / Sunderland Harbour.

Little tern is another Northumbria Coast SPA bird species of conservation interest, which breeds further south along the coast at Crimdon, though has been recorded fishing off both Parson's Rocks and Whitburn Steel.

The following bird species that receive special legal protection under or Annex I of the EU Birds Directive and/or Schedule 1 of the Wildlife & Countryside Act (1981) have also been recorded at the locations specified above (within and outside of the Northumbria Coast SPA): red-throated diver, great northern diver, whooper swan, scaup, common scoter, peregrine falcon, merlin, purple sandpiper, green sandpiper, black-tailed godwit, bar-tailed godwit, whimbrel, Mediterranean gull, little gull, little tern, sandwich tern, common tern, Arctic tern, roseate tern, black tern, kingfisher, common crossbill and snow bunting.

## 6 Wetland Bird Survey

### 6.1 Introduction

The Wetland Bird Survey (WeBS) methodology (Calbrade *et al.*, 2010; Gilbert *et al.*, 1998; BTO, 2010) was used to conduct summer and winter bird surveys between the mouth of the River Wear (North Pier) and the Sunderland City Council boundary with the Borough of South Tyneside. Standard methodology involves monthly co-ordinated counts made principally from September to March, with fewer observations during summer months. This report includes details of WeBS data recorded during high and low tide surveys between May and August 2010 (a summer bird survey), and September 2010 and March 2011 (a winter bird survey).

### 6.2 High Tide Counts and Low Tide Counts

WeBS Core Counts on estuaries have, in general, been based around high tide roosts. Although significant in themselves, roost sites are usually of secondary importance to the way in which wetland birds make use of a site for feeding. As a result, information gathered from such a site at high tide will only provide part of the picture. Data from low tide counts can also be used to assess the spatial distribution of non-breeding waterfowl and the relative importance of the intertidal zone for feeding birds. They provide crucial information needed to assess the potential effects on waterbird populations of a variety of human activities which affect the extent or value of intertidal habitats, such as dock developments, proposals for recreational activities, tidal power barrages, marinas and housing schemes.

### 6.3 Methodology

The methodology involved two visits a month to record the total numbers of birds of each species. The first visit took place within two hours either side of high tide (a WeBS Core Count), and the second visit within two hours either side of low tide (a WeBS Low Tide Count). The exact dates were dependent on the times of the tides. The survey area was visited prior to the surveys in order to identify the best vantage points from which to carry out counts and to establish the number of counting sections required to cover the survey area within a four-hour time limit.

### 6.4 Vantage points

Six vantage point locations were chosen that would enable the optimal number of bird species to be recorded (see Figures 6-31):

- VP 1 - North Pier, Roker (NZ 41117 58421) - see Appendix 3: Photo 1.
- VP 2 - Roker Pier (NZ 41091 58896) - Photo 2.

- VP 3 - Parson's Rocks (NZ 40761 59725) - Photo 3.
- VP 4 - Whitburn Sands (NZ 40619 60559) - Photo 4.
- VP 5 - Whitburn Steel (NZ 40796 61189) - Photo 5.
- VP 6 - Sunderland Marina & River Wear (NZ 40745 58267) - Photo 6.

#### 6.5 Bird census technique

WeBS Core Counts and Low Tide Counts were made using the so-called 'look-see' methodology (Bibby *et al.*, 2000), whereby the observer, familiar with the species involved, surveys the whole of a predefined area. Numbers of all waterbird species, as defined by Wetlands International (Rose & Scott, 1997), were recorded. In the UK, this includes swans, geese, ducks, divers, grebes, cormorants, herons, spoonbill, rails, cranes, waders and kingfisher. Counts of gulls and terns were also included, if appropriate.

When undertaking a count, each counting section was scanned slowly (using binoculars and a telescope), with the observer counting the number of individuals in each species, starting with the most numerous. The locations of each bird species in each counting section were noted on a field survey plan using BTO standard species recording codes (Gilbert *et al.*, 1998). A uniform time period of twenty minutes was spent at each vantage point location. This enabled the surveyor to detect the presence of bird species difficult to perceive, such as diving birds. Days of inclement weather (persistent rain, high winds, and poor visibility) were, if possible, avoided. During each visit, a record was also be made of the start/finish time, the weather conditions and types of disturbance occurring in the survey area. Reference was also made to any birds that moved during each vantage point count, in particular the position to which they moved, so that they were not double-counted.

#### 6.6 Data collation

Following each count, these data were transferred to WeBS high tide count and low tide count recording forms: see Appendix 4 - WeBS High Tide Count - Summary Sheet (Visits: 1 - 11) and Appendix 5 - WeBS Low Tide Count - Summary Sheet (Visits: 1 - 11). Supplementary information regarding High and Low Tide Counts is detailed in Appendices 8 & 9.

## 6.7 Results

Forty-six species of bird were observed in and around the survey area, of which twenty-seven species were WeBS waterbird species (see Appendices 4 & 5). For a spatial distribution of bird species in the survey area during high and low tide, see Figures 6-31 (attached separately, as pdfs.).

### 6.7.1 Summer high and low tide bird surveys (May - August 2010)

#### Sunderland Marina & River Wear (Figures 6 & 12)

The beach at Potato Garth (River Wear) supports foraging redshank and oystercatcher, plus roosting black-headed gull and herring gull. Nearby, a pair of mute swan (*Cygnus olor*) was noted preening on the slipway or foraging in the marina. Cormorants were seen fishing in the river or roosting on green navigation posts at the entrance to the marina, while an adult common tern was observed feeding two juveniles perched on a moored boat in the marina.

#### North Pier, Roker (Figures 7 & 13)

The intertidal zone at the northern edge of Roker Pier supports roosting adult and juvenile sandwich tern and common tern, plus black-headed gull, herring gull, ringed plover, oystercatcher and cormorant. In addition, foraging meadow pipit, goldfinch (*Carduelis carduelis*) and starling were also present on the pier, while black-headed gull and herring gull were recorded loafing on the beach. Cormorant was noted fishing in the mouth of the River Wear (south of the North Pier), whilst common tern was seen fishing in the sea between the North Pier and Roker Pier. Starling and feral pigeon (*Columba livia*) were recorded foraging on the beach or in the adjacent car park.

#### Roker Pier and Roker Rocks (Figures 8 & 14)

The intertidal zone between the Roker Pier and the Coastguard Lookout supports several wading bird species, including foraging ringed plover, oystercatcher, curlew and dunlin, plus loafing black-headed gull, common gull, herring gull and great black-backed gull. Adult and juvenile common tern was noted roosting on the beach, while common tern was also observed fishing close to the beach. In addition, cormorant was roosting on an exposed rock, whilst pied wagtail (*Motacilla alba*), feral pigeon and starling were recorded foraging on the beach.

#### Parson's Rocks and Roker Cliff Park (Figures 9 & 15)

The exposed rocks support foraging turnstone, oystercatcher, redshank, plus black-headed gull, herring gull, common gull, great black-backed gull and a juvenile kittiwake. Common tern and cormorant was noted fishing in the sea close by, while

starling and carrion crow (*Corvus corone*) were observed foraging on the beach at low tide. Pied wagtail and wheatear were seen foraging on the amenity grassland of Roker Cliff Park, with house martin and swift (*Apus apus*) feeding overhead. Black-headed gull, common gull and herring gull were also recorded foraging on the beach, between Roker Cliff Park and the Coastguard Lookout.

Whitburn Sands (Figures 10 & 16)

Herring gull and black headed gull were seen roosting on the beach adjacent to an outfall pipe close to Dykelands Road.

Whitburn Steel (Figures 11 & 17)

The intertidal zone at Whitburn Steel supports several wading bird species, including bar-tailed godwit (occasional), dunlin, redshank, oystercatcher, sanderling, ringed plover and knot. Gull species include herring gull, black-headed gull, common gull and great black-backed gull. Common tern was recorded roosting on a buoy, adjacent to the southern edge of Whitburn Steel, and foraging along the high tide line adjoining Pebble Beach. Cormorant was observed roosting on outlying rocks, while curlew and a pair of preening eider were seen further north on Whitburn Steel (across the local authority boundary). Prior to migration, 200+ common terns (and several sandwich terns) were noted roosting on rocks, adjacent to the local authority boundary. At the same time, several swallow were feeding overhead. Moreover, a single kestrel was observed roosting on a rock, north of Whitburn Steel.

Whitburn Bents (Figures 11 & 17)

House sparrow, carrion crow, rook (*Corvus frugilegus*) and starling were observed scavenging in the sand dunes at Whitburn Bents, whilst pied wagtail, blackbird (*Turdus merula*) and carrion crow were seen foraging on amenity grassland, adjacent to the A183 (Pebble Beach)..

6.7.2 Winter high and low tide bird surveys (September 2010 - March 2011)

Sunderland Marina & River Wear (Figures 18 & 25)

The beach at Potato Garth supports foraging redshank, oystercatcher and curlew, plus roosting black-headed gull, herring gull and great black-backed gull. A pair of mute swan was present on the slipway, adjacent to the marina. Cormorants, which were noted roosting on green navigation posts at the entrance to the marina, were also observed fishing in the River Wear and marina, as were eider (on occasion). Black-headed gull, herring gull and great black-backed gull were recorded loafing on the River Wear, while meadow pipit and pied wagtail were foraging on the abutment,

adjoining Vantage Point 6. At high tide on 18 December 2010, a single young grey seal (*Halichoerus grypus*) (see Appendix 7: Photos 1 & 2) was observed resting on seaweed-covered rocks, adjacent to the entrance to the marina.

#### North Pier, Roker (Figures 19 & 26)

The intertidal zone between the Roker Pier and the Coastguard Lookout supports several wading bird species, including foraging purple sandpiper, turnstone, sanderling, ringed plover, redshank, oystercatcher, curlew and dunlin (including a count of 170+ birds during a high tide survey on 14 January 2011), plus loafing black-headed gull, common gull and herring gull. In addition, foraging meadow pipit, and starling were also present on the pier, plus turnstone bathing in pooled water on the southern edge of the pier (Photo 3). Black-headed gull, herring gull, great black-backed gull, sanderling, starling, goldfinch and carrion crow were also seen loafing or scavenging on the beach, while starling, feral pigeon, black-headed gull and herring gull were recorded foraging in the adjacent car park. Cormorant, eider and goldeneye (*Bucephala clangula*) were noted fishing in the sea between the North Pier and Roker Pier, alongside loafing herring gull and black-headed gull.

#### Roker Pier and Roker Rocks (Figures 20 & 27)

The intertidal zone between the Roker Pier and the Coastguard Lookout supports several wading bird species, including foraging golden plover (occasional), purple sandpiper, turnstone, sanderling, redshank (Photo 4), ringed plover and oystercatcher, plus loafing black-headed gull, herring gull, great black-backed gull and Canada goose (*Branta canadensis*) (occasional). In addition, eider was recorded fishing offshore, whilst meadow pipit, carrion crow, pied wagtail, feral pigeon and starling were recorded foraging on the beach.

#### Parson's Rocks and Roker Cliff Park (Figures 21 & 28)

At low tide, Parson's Rocks supports foraging purple sandpiper, turnstone, dunlin, lapwing, knot, oystercatcher, redshank, sanderling, plus grey heron (*Ardea cinerea*), black-headed gull, herring gull, common gull and great black-backed gull. Also present was scavenging carrion crow and pied (white) wagtail. Eider and herring gull were also noted loafing on the sea, nearby. Also, in close proximity, black-headed gull, herring gull, redshank, turnstone and meadow pipit were observed foraging along the high tide line on the beach, between Roker Cliff Park and the Coastguard Lookout.

Conversely, at high tide on 30 November 2010, 92 redshank, 18 turnstone, 3 dunlin, 3 oystercatcher, 64 black-headed gull, 3 herring gull, 1 common gull and 25+ starling were seen foraging on areas of amenity grassland at Roker Cliff Park, where previous

snowfall had thawed (Photo 5). Other bird species recorded on this area of grassland include scavenging carrion crow, woodpigeon (*Columba palumbus*) and pied wagtail.

#### Whitburn Sands (Figures 22 & 29)

At high tide, on 30 November 2010, 13 black-headed gull, 2 herring gull and 5 starling were observed foraging on a strip of amenity grassland, adjacent to the Pullman Lodge P.H. Nearby, 1 redshank alighted, temporarily, on a strip of amenity grassland adjoining the Promenade P.H. Immediately to the north, 50+ sanderling were recorded foraging along the tide line, while a single redwing was noted, resting, on the edge of the beach. At low tide, a herring gull was seen roosting on the beach adjacent to an outfall pipe close to Dykelands Road.

#### Whitburn Steel (Figures 23 & 30)

The intertidal zone at Whitburn Steel supports several wading bird species, including bar-tailed godwit (occasional), dunlin, lapwing, turnstone, redshank, oystercatcher, sanderling, ringed plover and curlew. Gull species include herring gull, black-headed gull, common gull and great black-backed gull. Cormorant and grey heron were observed on outlying rocks, whilst eider, teal and goosander were present on the sea. On one survey, 50+ lapwings were flushed from a rock, 300m north of the local authority boundary.

#### Whitburn Bents (Figures 23 & 30)

At high tide, on 20 October 2010, 300+ redshank, 200+ black-headed gull, 100+ starling, 4 herring gull, 4 common gull, 50+ turnstone, 8 dunlin, 8 knot, 7 sanderling, 2 purple sandpiper, 1 oystercatcher and 1 carrion crow were recorded foraging on a large deposition of seaweed along the high tide line (Photo 6). Other bird species noted foraging in this area includes meadow pipit, carrion crow, goldfinch and pied wagtail (plus on one separate occasion, 18 white wagtail foraging on a mass of seaweed). Also, swallow moving along the coast, prior to migration. In addition, a single sparrowhawk (*Accipiter nisus*) was observed, gliding while hunting, east-west, over the A183 at Pebble Beach.

#### Ocean Park (Figures 24 & 31)

Bird species recorded in the areas of amenity grassland, playing fields and introduced shrubbery adjacent to the western edge of Morrison's supermarket include herring gull, carrion crow, magpie (*Pica pica*) and robin (*Erithacus rubecula*). However, no WeBS bird species of conservation importance were noted.



## 6.8 Conservation status of bird species recorded

Appendix 6 summarises the conservation status of bird species recorded in and around the survey area. In order of relative importance, this includes:

- 4 species with special legal protection under Annex I of the EU Birds Directive:
  - Golden plover, bar-tailed godwit, sandwich tern and common tern.
  
- 2 species with special legal protection under Schedule 1, Part I of the Wildlife & Countryside Act (1981):
  - Purple sandpiper and redwing.
  
- 5 species listed under Section 41 of the Natural Environment and Rural Communities Act 2006:
  - Lapwing, curlew, herring gull, starling and house sparrow.
  
- 5 UK BAP priority species:
  - Lapwing, curlew, herring gull, starling and house sparrow.
  
- 6 species on the RSPB/BTO 'Red List' of birds of conservation concern:
  - Lapwing, dunlin, herring gull, redwing, starling and house sparrow.
  
- 24 species on the RSPB/BTO 'Amber List' of birds of conservation concern:
  - Teal, eider, goldeneye, kestrel, oystercatcher, ringed plover, golden plover, knot, purple sandpiper, turnstone, redshank, curlew, bar-tailed godwit, black-headed gull, common gull, great black-backed gull, kittiwake, sandwich tern, common tern, swift, swallow, house martin, meadow pipit and wheatear.
  
- 8 Durham BAP 'priority' species:
  - Lapwing, sanderling, purple sandpiper, dunlin, redshank, curlew, starling and house sparrow.

## 6.9 Survey constraints

Overall, the weather conditions for the WeBS high and low tide counts were satisfactory (see Appendices 8 & 9). Visibility from all vantage points was generally 'excellent' to 'good'. However, during one low tide survey (Visit 7: 27/11/10), the visit was halted at Parson's Rocks due to the sudden onset of a heavy snowstorm from the north.

The level of disturbance to wetland bird species utilising the intertidal zone along the coastline between the North Pier, Roker and the local authority boundary with South Tyneside at Whitburn Steel varied between a 'moderate' and a 'very high' level. 'Moderate' disturbance factors included the constant presence of anglers (at North Pier, Roker and Roker Pier), plus occasional bait diggers (Potato Garth, River Wear and Whitburn Steel), shellfishers (Potato Garth, River Wear; Roker Rocks & Whitburn Steel) and, on one occasion, a person collecting seaweed (Whitburn Bents).

Other occasional 'moderate' levels of disturbance included a man riding a mountain bike through Parson's Rocks at low tide; and people offshore engaged in recreational sport: surfers (northern edge of Roker Pier), and kite surfers (adjacent to Whitburn Steel). Also, several horses (with their riders) were observed 'bathing' in the sea and galloping along the beach at Whitburn Steel.

'High' levels of regular disturbance occurred primarily during the summer months due to the presence of holidaymakers, and occasional tractors pushing seaweed and aggregate up and down the beach, between North Pier, Roker and the sewage outfall pipe adjacent to Roker Ravine (see Appendix 7: Photo 7).

By far the greatest effect on foraging and roosting wetland bird species was the 'very high' level of disturbance caused by people walking their dogs, which occurred throughout the survey period. Indeed, during the final low tide survey visit (07/03/11), the largest number of dogs and their owners were seen on any of the surveys (Photo 8).

## 6.10 Conclusion

Different waterbird species occur in the UK at different times of year. The majority occur in largest numbers during the winter period (see Appendices 8 & 9), some are resident with numbers enhanced during the winter, whereas other occur mainly as passage migrants or even just as summer visitors.

Northumbria Coast SPA species of conservation interest such as wintering turnstone and purple sandpiper were recorded at North Pier, Roker; Roker Rocks; Parson's Rocks and Whitburn Steel.

Parson's Rocks and Whitburn Steel form part of the Northumbria Coast Ramsar Site. Under criterion 6 of the Ramsar Convention, a wetland is considered internationally important if it regularly holds at least 1% of the individuals in a population of one species or subspecies of waterbird. However, the Northumbria Coast Ramsar Site is not classified as one of the 'principal sites' for non-breeding waterbirds in the UK (as monitored by WeBS), as it is not on the list of sites that sustain 10,000 waterbirds or more (Calbrade *et al.*, 2010).

The data collated for this interim report, resulting from high and low tide WEBS surveys conducted during May 2010 and March 2011, corresponds with historical bird species data received from Durham Bird Club and Durham Biodiversity Data Service.

## 7 Habitat types present in WeBS survey area

Habitat types were specified according to Character Areas denoted in the Seafront Regeneration Strategy. The methodology was based on that of the BTO Habitat Recording Form (see Appendix 2). Data was recorded on 26 May 2010 before the commencement of the WeBS surveys.

### 7.1 Marine Walk

First habitat					
Level 1 (A-J)	Level 2	Level 3		Level 4	
H	1	2	7	1	3

Second habitat					
Level 1 (A-J)	Level 2	Level 3		Level 4	
F	1	3	5	2	6

### 7.1 Cliff Park and Recreation Park

77First habitat					
Level 1 (A-J)	Level 2	Level 3		Level 4	
H	1	2	7	1	3

Second habitat					
Level 1 (A-J)	Level 2	Level 3		Level 4	
F	1	3	5	2	6

7.3 Ocean Park

First habitat					
Level 1 (A-J)	Level 2	Level 3		Level 4	
F	2	1	5	1	2

Second habitat					
Level 1 (A-J)	Level 2	Level 3		Level 4	
E	1	1	5	1	16

7.4 Seaburn Promenade

First habitat					
Level 1 (A-J)	Level 2	Level 3		Level 4	
H	1	2	4	3	1

Second habitat					
Level 1 (A-J)	Level 2	Level 3		Level 4	
F	2	3	5	2	6

## **8 Assessment of impact of disturbance on key biodiversity interest features**

### **8.1 Impacts of disturbance due to dog walkers and holidaymakers**

Disturbance levels in the Marine Walk Masterplan study area are more evident during the spring and summer months due to the presence of holidaymakers. However, it is the presence of year-round dog walkers that provides continuous interruptions to the feeding and roosting patterns of wading bird species, especially during the winter months.

New potential byelaws, supported by Natural England, include a “Dog Prohibition Zone”, with a 50m buffer zone for Parson’s Rocks and Whitburn Steel during the winter months, between September and April (SCC<sup>3</sup>). Both sites sustain Northumbria Coast SPA species of conservation interest such as wintering turnstone and purple sandpiper, and are outside of the Marine Walk Masterplan Area, but within the Seaburn Masterplan Area.

It has been suggested that such a ban may move dog walkers further (northwards and southwards) along the beach. Such increased disturbance may have a negative impact on turnstone and purple sandpiper that utilise the intertidal zone at Roker Rocks and North Pier, Roker. Moreover, current disturbance levels may show an increase following the post-construction phase of the development due to increased usage of the Marine Walk seafront by the public.

In reality, a possible ban on owners walking their dogs in these specific areas of the Roker seafront may be ignored by the general public. Such an initiative proved unworkable when a similar proposal was instigated at Druridge Bay, Northumberland some year’s back.

The proposed redevelopment of the Ocean Park site for leisure and residential uses is not anticipated to have a negative effect on Northumbria Coast SPA species of conservation interest, turnstone and purple sandpiper, as these species were not recorded in this area during the WeBS survey.

#### Ocean Park

Bird species recorded in the areas of amenity grassland, playing fields and introduced shrubbery adjacent to the western edge of Morrison’s supermarket

### **8.2 Effects of lighting and structural works on bats and birds**

The northern boundary of the Marine Walk Masterplan study area is located approximately 350m south of Parson’s Rocks and 1.6km south of Whitburn Steel.

Both locations form part of the Northumbria Coast SPA and Ramsar Site. Therefore, due to the distance between both locations and the Marine Walk Masterplan Area, the impact of the development proposals upon specified bird species of interest such as wintering turnstone and purple sandpiper in these locations is considered to be insignificant.

Structural works include the construction of Roker Pods (kiosks) along the seafront that will have various uses including as an educational resource, a retail outlet, a bird hide and one manned by the Royal National Lifeboat Institution. On an evening, the Pods will be illuminated with LED lighting, while small wind turbines will be sited on the top of the pods. Such LED lighting and wind turbines are not predicted to have an adverse effect on bat species as this area is frequently exposed to high winds that deter their occurrence in this area. Moreover, the absence of mature tree or hedge lines means that there is no insect food source for bats, which further negates their presence in this area.

The small wind turbines (with LED lighting) mounted atop the Roker Pods are to be located on Marine Walk and are therefore unlikely to affect the movement of bird species along the coastline. This is with particular regard to specified wetland bird species of conservation significance that move up and down the coast some distance from the shoreline.

A proposal to illuminate the caves is not anticipated to affect bats. Results from the bat activity survey indicate that, although they do forage in Roker Ravine and Roker Park, they do not use the caves for roosting or hibernation. There are also plans to provide a wash of lighting on the cliff faces immediately east of the road bridge (Holey Rock Corner). However, bats are likely to remain unaffected, as they are not thought to forage in this area. If bats do occasionally occur, down lighters should be installed to light up specific features. As such, this will lessen the disturbance to foraging bats. Occasional bats may use ivy on the cliff face for roosting during the bat breeding season. However, the ivy has no potential as a hibernation roost due to its exposed nature.

The plans to replant areas of cliff face in Roker Ravine and Holey Rock Corner with shrubs, herbs and grasses is not likely affect bird species provided that such work takes place outside of the bird breeding season (March - August). Plant species of local provenance should be used such as those specified in the Durham Magnesian Limestone Natural Area Profile (Hedley *et al.*, 1997). Advice on planting regimes can be sourced from the Durham Biodiversity Action Plan Partnership and the Flora Locale website (<http://www.floralocale.org/>).

## 9 References

- Beaman, M. (1994). *Palaearctic Birds*. Harrier Publications, Stonehurst.
- Bibby, C.J.; Burgess, N.D.; Hill, D.A. & Mustoe, S. H. (2000). *Bird Census Techniques*. 2<sup>nd</sup>. Ed. Academic Press, London.
- BTO (2010). The Wetland Bird Survey (WeBS). British Trust for Ornithology, Thetford.  
(<http://www.bto.org/webs/about/index.htm>).
- Calbrade, N.A., Holt, C.A., Austin, G.E., Mellan, H.J., Hearn, R.D., Stroud, D.A., Wotton, S.R. & Musgrove, A.J. (2010). *Waterbirds in the UK 2008/09: The Wetland Bird Survey*. BTO/RSPB/JNCC in association with WWT, Thetford.  
([http://www.bto.org/webs/news/AR08\\_09/index.htm](http://www.bto.org/webs/news/AR08_09/index.htm)).
- Durham Biodiversity Action Plan.  
(<http://www.durhambiodiversity.org.uk/planstructure3.htm>).
- Gilbert, G.; Gibbons, D.W. & Evans, J. (1998). *Bird Monitoring Methods: A Manual of Techniques for Key UK Species*. RSPB, Sandy.
- Hedley, S., Clifton, S.J. & Mullinger, S. (1997). *No.6: The Durham Magnesian Limestone Natural Area Profile*. English Nature: Northumbria Team.  
(<http://www.naturalareas.naturalengland.org.uk/science/natural/profiles%5CnaProfile6.pdf>)
- JNCC<sup>1</sup> - Northumbria Coast Special Protection Area – citation.  
(<http://www.jncc.gov.uk/pdf/SPA/UK9006131.pdf>)  
Joint Nature Conservation Committee, Peterborough.
- JNCC<sup>2</sup> - Northumbria Coast Ramsar Site – citation.  
(<http://www.jncc.gov.uk/pdf/RIS/UK11049.pdf>)  
Joint Nature Conservation Committee, Peterborough.
- JNCC<sup>3</sup> - Durham Coast Special Area of Conservation – citation.  
(<http://www.jncc.gov.uk/protectedsites/sacselection/sac.asp?euocode=uk0030140>)
- Natural England (1999). Durham Coast Site of Special Scientific Interest - citation  
([http://www.sssi.naturalengland.org.uk/citation/citation\\_photo/1000255.pdf](http://www.sssi.naturalengland.org.uk/citation/citation_photo/1000255.pdf))
- Rose, P.M. & Scott, D.A. (1997). *Waterfowl Population Estimates - Second Edition*. Wetlands International Publ. 44, Wageningen, The Netherlands.



SCC<sup>1</sup>. *Marine Walk Masterplan*. Sunderland City Council, January 2010.  
(<http://www.sunderland.gov.uk/CHttpHandler.ashx?id=7157&p=0>)

SCC<sup>2</sup>. *Seafront Regeneration Project*. Sunderland City Council, January 2010.  
(<http://www.sunderland.gov.uk/index.aspx?articleid=2093>)

SCC<sup>3</sup>. *Seaburn Masterplan and Design Code*. Sunderland City Council, October 2010  
(<http://www.sunderland.gov.uk/CHttpHandler.ashx?id=9677&p=0>).

Voous, K. H. (1977). *List of Recent Holarctic Bird Species*. British Ornithologists' Union, London.

UK Biodiversity Action Plan (2007). UK List of Priority Species and Habitats  
(<http://www.ukbap.org.uk/newprioritylist.aspx>)

## 10 Bibliography

British Trust for Ornithology. Bird Atlas 2007-11: Mapping Britain and Ireland's Birds.  
([www.bto.org/birdatlas/index.htm](http://www.bto.org/birdatlas/index.htm)).

Brown, A. & Grice. P. (2004). *Birds in England*. T & AD Poyser, London.

Cabot, D. (2009). *Wildfowl*. The New Naturalist Library. HarperCollins, London.

Couzens, D. (2003). *Identifying Birds by behaviour*. Collins, London.

Ehrlich, P. R., Dobkin, D. S., Wheye, D. & Pimm, S. L. (1994). *The Birdwatcher's Handbook: A Guide to the Natural History of the Birds of Britain and Europe*. Oxford University Press, Oxford.

Sutherland, William J., Newton, Ian & Green, Rhys, E. (2004). *Bird Ecology and Conservation: A Handbook of Techniques*. Oxford University Press, Oxford.

Svensson, L. & Grant, P. J. (1999). *Collins Bird Guide*. HarperCollins, London.

UK Biodiversity Group (1999). *Tranche 2 Action Plans*. English Nature

UK Steering Group (1995). *Biodiversity: The UK Steering Group Report. Volume 2: Action Plans*. HMSO.

# **APPENDICES**

## **APPENDIX 1**

### **Spottee's Cave, Roker Ravine**

### **Bat Activity Survey Report**

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## **1 Introduction**

This report details the results of a single bat activity transect survey that was conducted within the boundary of the Marine Walk Masterplan area. It also included a risk assessment of two caves on either side of Roker Ravine (See Photo 1 & Figure 5). This would enable an assessment to be made of the likelihood of bat roosts and bat species composition in the Marine Walk Masterplan area, and the potential effect of the proposed development proposals (location and levels of lighting) on bat species.

## **2 Site location**

The cave on the southern edge of the ravine (Spottee's Cave) has two entrances that are enclosed by metal shutters (with railings on the outside of the shutters) (Photo 2) and is located between Roker Terrace (A183) and the footbridge over the ravine. There is a second, smaller cave (Photo 3), on the northern edge of the ravine that is located just below the footbridge. Mature broadleaved trees flank the ravine bank sides.

## **3 Pre-existing information on bats in the area**

Data supplied by the Durham Bat Group revealed no records of bat species in Roker Ravine or Roker Park. There is a 2007 anecdotal record of unidentified bat species foraging along the coastline between the mock lighthouse at Seaburn, past Parson's Rocks before the observer lost sight of them adjacent to the Smugglers public house and Roker Park east entrance. There are no records of any active bat roosts along this section of coastline.

## **4 Bat risk assessment of caves**

The internal inspection of Spottee's Cave took place on 8 July 2010, while the internal inspection of the 2nd Cave was conducted on 9 August 2010.

### **4.1 Spottee's Cave, Roker Ravine**

The cave is between 4-6m high, being 2.5m wide at the main entrance before widening out (Photo 4). It extends approximately 15m to a point where the cave has been bricked up for Health & Safety reasons (Photo 5). The cave system is thought to extend as far as Hylton Riverside and may be used by bat species as the local magnesian limestone is porous and may contain several entrance and exit points beyond the blocked off section.

It is very shallow and, as such, will not function as an even temperature habitat. It will afford some protection from outside temperatures in the same way that a well-insulated building might, but the accessible parts of the cave are unlikely to provide conditions suitable for hibernation.

No bat signs were found in the cave. There were no bats present and no bat droppings on the ground or on any of the ledges. The cave appears unsuitable for bats as there are no obvious entrance and exit points.

#### 4.2 2nd Cave, Roker Ravine

This is a much smaller cave than Spottee's Cave. It is totally enclosed with no visible gaps and is of much lower risk with regard to bats. It is approximately 5m high, 4m wide and 5m in length. It has also been bricked up for Health & Safety reasons (Photo 6).

There are also two flat-roofed substations located adjacent to the caves; however, these buildings are deemed very low risk in terms of roosting bats. There are no obvious gaps present and the ventilation panels are strewn with cobwebs.

## **5 Bat activity survey**

### 5.1 Transect route

The transect route began with ten minutes fixed-point monitoring of the entrances of the two caves on either side of Roker Ravine and then followed the footpath (westwards) through the ravine, passing the bandstand, and ending at a gate adjacent to the bowling greens on Roker Park Road. This route was then retraced to the caves and repeated twice due to the high level of bat activity found. The transect then moved in an easterly direction from the two caves, under the A183, and continued southwards along the seafront of Marine Walk before ending at the North Pier, Roker.

## 5.2 Timing

The bat activity survey was carried out on 12 August 2010; this is during the optimum survey period of the bats' active season (April-October).

## 5.3 Weather Conditions

Date	Weather	Times	Temp
12 August 2010	Overcast and dry with a moderate breeze (NW: 4)	20.51 - 21.43	13°C

Insects were flying during the survey.

## 5.4 Personnel

Paul Lupton and Frank Daly carried out the survey work. Paul is a Director of Argus Ecology Ltd and licensed bat worker with many years of survey and licensing experience for protected species. Frank is also an employee of Argus Ecology with an MSc in Ecological Assessment.

## 5.5 Equipment

Calls of bats were recorded on site by the lead surveyor using a Pettersson D240X time expansion detector with an Edirol MP3 recorder. These recordings were subsequently transferred to BatSound v3.31 for analysis of species composition.

## 5.6 Results

Table 1

Time	Species	Activity
20.30	On site	
20.51	Start of survey	
21.02	1 common pipistrelle	Flew north-south across ravine by bandstand.
21.05	1 common pipistrelle	Heard but not seen in trees by pond.
21.10	1 common pipistrelle	Foraging adjacent to steps.
21.13	1 common pipistrelle	Heard but not seen foraging in trees by footbridge.
21.15	2 common pipistrelles	Foraging adjacent to caves - circling within ravine.
21.24	1 common pipistrelle	Foraging near bandstand / play area.
21.25	1 common pipistrelle	Foraging adjacent to steps.
21.26	1 common pipistrelle	Foraging by caves, but not feeding east of road bridge (A183).
21.43	Survey ends	

## 6 Discussion and conclusion

The internal inspection of the caves revealed no evidence of roosting bats. Both caves extend a small distance into the cliff face where they have been bricked up for health and safety reasons. The caves do not appear to provide suitable conditions for roosting or hibernating bats due to their proximity to the ravine and its daily changes in temperature. There are also no noticeable entrance and exit points.

Results from the bat activity survey of the caves and Roker Ravine found that small numbers of common pipistrelle bats (*Pipistrellus pipistrellus*) were actively foraging in this area (see Table 1, Appendix A & Figure A). The ravine is sheltered from the wind and the mature woodland that lines the sides of the ravine provides ample feeding opportunities for bats. This contrasts with the seafront of Marine Walk, Roker, which is very exposed and, on occasion, very windy. There are also no mature trees in this area to provide a food source for bats. Unsurprisingly, no bats were recorded in this area.

## Appendix A - Photographs

Photo 1      Roker Ravine - looking westwards



Photo 2      Spottee's Cave - located on southern edge of Roker Ravine





Photo 3

2nd Cave - located on northern edge of Roker Ravine



Photo 4

Spottee's Cave - cave widens out from entrance





Photo 5

Spottee's Cave - bricked up to prevent further access to cave system



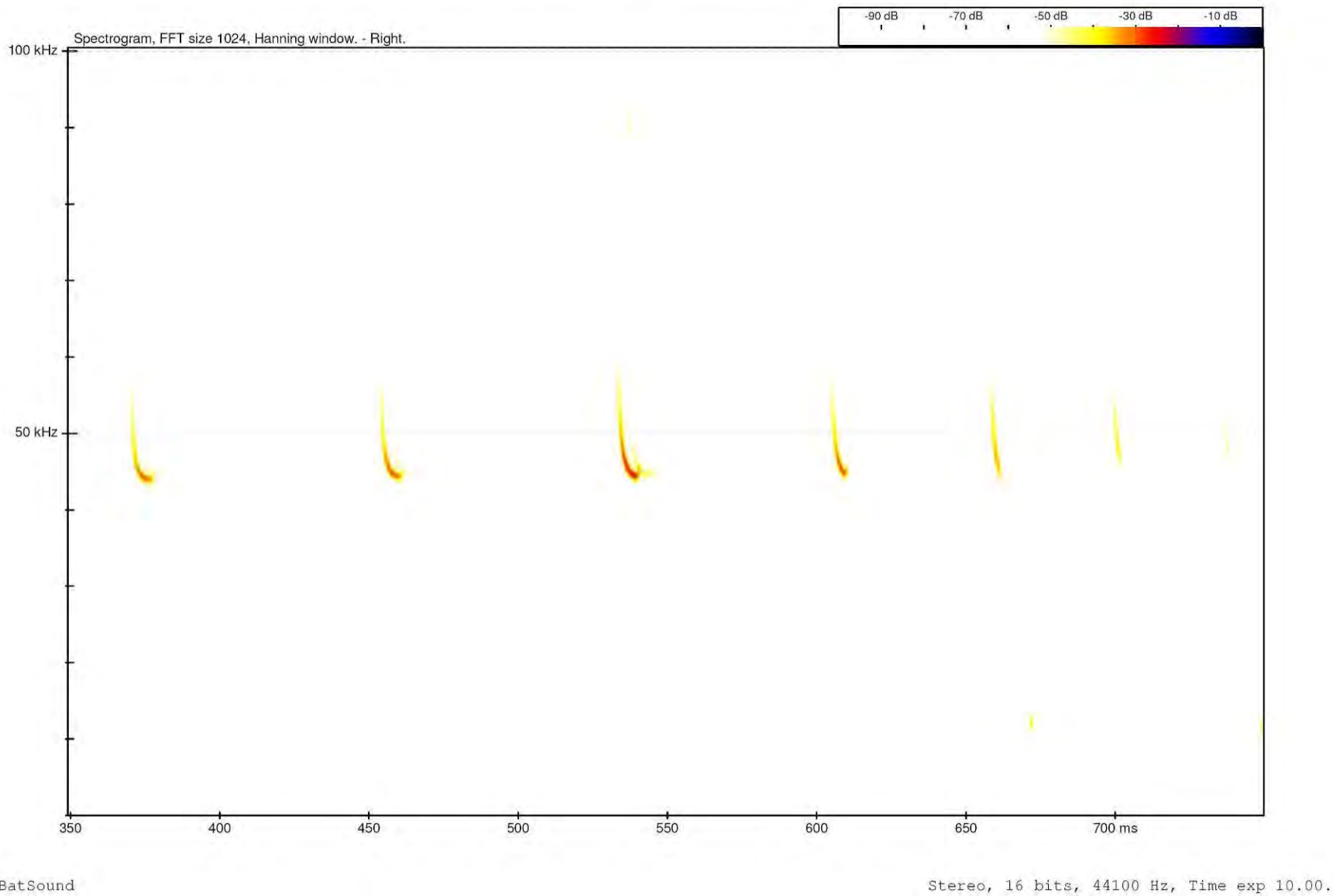
Photo 6

2nd Cave - bricked up



**Figure A Sonogram of common pipistrelle bat in Roker Ravine**

Roker Ravine (12-08-10) 2101.wav [Standard Wave]



**APPENDIX 2**

**BTO/JNCC/RSPB  
BREEDING BIRD SURVEY  
HABITAT RECORDING FORM**



PLEASE USE BLOCK CAPITALS

Observer name	Obs. code (office use only)
1-km square reference (e.g. TL1234)	Visit date / /

**ACTUAL HABITAT**

SEE BACK OF FORM FOR HABITAT CODES

Transect section	First habitat				Second habitat			
	Level 1 (A - J)	Level 2	Level 3	Level 4	Level 1 (A - J)	Level 2	Level 3	Level 4
1								
2								
3								
4								
5								
6								
7								
8								
9								
10								

For each transect section, enter details of the two most important habitats (First and Second habitats). Select the Level 1 habitat from the boxes on the back of the form (A - J), then select the relevant options for Levels 2, 3 and 4. You have the option to enter two Level 3 and two Level 4 codes. Each box in the grid should contain one letter (A - J) or one number (1 - 16).

If you received a colour OS map with your forms, please use the map to record your route (if required).  
**If you did not receive an OS map** (e.g. if your square is in Northern Ireland), please sketch your route on the square below, marking the transect sections (1 - 10), and any notable landscape features.

If there were major habitat changes between your early and late visits, please record these in the box below.

**CHANGED HABITAT**

Transect section	First habitat				Second habitat			
	Levels				Levels			
	1	2	3	4	1	2	3	4

If you are not using BBS-Online, please return all forms to your RO, or to BTO HQ if you do not have an RO



Each box refers to one Level 1 habitat (A - J). For each transect section, note the appropriate Level 1 habitat, then choose the relevant options for Levels 2, 3 and 4 from within the box.

### A - WOODLAND

LEVEL 2 options	LEVEL 3 options	LEVEL 4 options
1 Broadleaved	1 Mixed-aged or seminatural	1 Dense shrub layer
2 Coniferous	2 Coppices with standards	2 Moderate shrub layer
3 Mixed (10% of each)	3 Coppices without standards	3 Sparse shrub layer
4 Broadleaved water-logged	4 Mature plantation (taller than 10m, with closed canopy)	4 Dense field layer
5 Coniferous water-logged	5 Young plantation (5-10m, open canopy)	5 Moderate field layer
6 Mixed water-logged	6 Parkland (scattered trees and grassy areas)	6 Sparse field layer
	7 High-medium disturbance from people	7 Grazed (moderate to heavy)
	8 Low disturbance	8 Lightly grazed
	9 Near road (within 50m)	9 Dead wood present
		10 Dead wood absent

Shrub layer comprises woody plants less than 5m tall. Field layer comprises herbaceous, non-woody plants.

### B - SCRUBLAND (includes young woodland <5m tall)

LEVEL 2 options	LEVEL 3 options	LEVEL 4 options
1 Regenerating natural or seminatural woodland	1 Broadleaved	1 Predominantly tall (3-5m)
2 Downland (chalk)	2 Coniferous	2 Predominantly low (1-3m)
3 Heath scrub	3 Mixed (at least 10% of each)	3 Dense shrub layer
4 Young coppice	4 Broadleaved swamp scrub	4 Moderate shrub layer
5 New plantation	5 Coniferous swamp scrub	5 Sparse shrub layer
6 Clearfelled with or without new saplings	6 Mixed swamp scrub	6 Extensive bracken
7 Other	7 High-medium disturbance from people	7 Dense field layer
	8 Low disturbance	8 Moderate field layer
	9 Near road (within 50m)	9 Sparse field layer
		10 Grazed (moderate to heavy)

### C - SEMI-NATURAL GRASSLAND / MARSH

LEVEL 2 options	LEVEL 3 options	LEVEL 4 options
1 Chalk downland	1 Hedgerow with trees	1 Ungrazed
2 Grass-moor (unenclosed)	2 Hedgerow without trees	2 Cattle
3 Grass moor mixed with heather (unenclosed)	3 Tree-line without hedge	3 Sheep
4 Machair	4 Other field boundary (wall, ditch, etc.)	4 Horses
5 Other dry grassland	5 Isolated group of trees	5 Rabbits
6 Water-meadow/ grazing marsh	6 No field boundary	6 Deer
7 Reed swamp	7 Montane	7 Other grazers
8 Other open marsh	8 High-medium disturbance from people	8 Extensive bracken
9 Saltmarsh	9 Low disturbance	9 Hay
	10 Near road (within 50m)	

### D - HEATHLAND AND BOGS

LEVEL 2 options	LEVEL 3 options	LEVEL 4 options
1 Dry heath	1 Montane	1 Ungrazed
2 Wet heath	2 Raised bog	2 Cattle
3 Mixed heath	3 Valley/basin bog	3 Sheep
4 Bog	4 Blanket bog	4 Horses
5 Brackland	5 Heath mixed with rough grass	5 Rabbits
6 Drained bog	6 Heath without grass	6 Deer
7 Bare peat	7 Heath with extensive bracken	7 Other grazers
	8 Undetermined bog	8 Ploughed
	9 Isolated group of trees	9 Burned
	10 Disturbance from people	10 Planted with saplings less than 0.5m tall
	11 Low disturbance	
	12 Near road (within 50m)	

### E - FARMLAND

LEVEL 2 options	LEVEL 3 options	LEVEL 4 options
1 Improved grassland	1 Hedgerow with trees	1 Ungrazed
2 Unimproved	2 Hedgerow without trees	2 Cattle
3 Mixed grass/ tilled land	3 Tree-line without hedge	3 Sheep
4 Tilled land	4 Other field boundary (wall, ditch, etc.)	4 Horses
5 Orchard	5 Isolated group of trees	5 Other stock
6 Other farming	6 Farmyard (active)	6 Bare sown/ploughed
	7 Near road (within 50m)	7 Autumn cereal
	8 No field boundary	8 Spring cereal
		9 Root crops
		10 Other crops
		11 Oil seed rape
		12 Other brassicas
		13 Shrubble (clean)
		14 Shrubble (woody)
		15 Unsown/fallow
		16 Recently cut grass

### F - HUMAN SITES

LEVEL 2 options	LEVEL 3 options	LEVEL 4 options
1 Urban	1 Building	1 Industrial
2 Suburban	2 Gardens	2 Residential
3 Rural	3 Municipal parks/ grass/golf courses/ recreational areas	3 Wellwooded
	4 Sewage works "urban"	4 Not wellwooded
	5 Near road (within 50m)	5 Area of large gardens
	6 Near active railway line (within 50m)	6 Area of medium gardens
	7 Other	7 Area of small gardens
	8 Rubbish tip	8 Many shrubs
		9 Few shrubs
		10 Disturbed

### G - WATERBODIES (freshwater)

LEVEL 2 options	LEVEL 3 options	LEVEL 4 options
1 Pond (less than 50m <sup>2</sup> )	1 Undisturbed/ disused	1 Eutrophic (green water)
2 Small waterbody (50-450m <sup>2</sup> )	2 Water sports (angling etc.)	2 Oligotrophic (clear water, few weeds)
3 Lake/unlined reservoir	3 Angling (coarse or game)	3 Dystrophic (black water)
4 Lined reservoir	4 Coarse angling	4 Mire (clear water, large waterweeds)
5 Gravel pit/sand pit	5 Game fishing	5 Slow-medium running
6 Stream (<3m wide)	6 Industrial activity	6 Fastrunning
7 River (>3m wide)	7 Sewage processing "rural"	7 Drudged
8 Ditch with water (<2m wide)	8 Other disturbance	8 Ungrudged
9 Small canal (2-5m wide)	9 Small island	9 Banks cleared
10 Large canal (>5m wide)		10 Banks vegetated

### H - COASTAL

LEVEL 2 options	LEVEL 3 options	LEVEL 4 options
1 Marine - open shore	1 Mud or silt	1 Cliff - vertical/steeply sloping
2 Marine shore - inlet/cove/lack	2 Sand	2 Dune
3 Estuaries	3 Shingle	3 Flat/gently sloping
4 Brackish lagoons	4 Rocky	4 Small island
5 Open sea	5 Fully vegetated	5 Spit
	6 Sparse/medium vegetation	6 Dune slack
	7 Intertidal	7 Sloping ground
	8 Below low-water mark	8 Undisturbed
		9 Disturbed

### I - INLAND ROCK

LEVEL 2 options	LEVEL 3 options	LEVEL 4 options
1 Cliff	1 Active	1 Bare rock
2 Scree/boulder slope	2 Disused	2 Low vegetation present (mosses, liverworts, etc.)
3 Unstratified	3 Montane	3 Grasses present
4 Nonstratified	4 High disturbance from climbers/walkers etc.	4 Scrub present
5 Other rock outcrop	5 Medium disturbance	
6 Quarry	6 Low disturbance	
7 Mine/spoil/dag heap		
8 Cave		

### J - MISCELLANEOUS

**APPENDIX 3**

**Photographs of Vantage Point Locations**

Photo 1

VP 1 - North Pier, Roker - looking east towards Roker Pier



Photo 2

VP 2 - Roker Pier and Roker Rocks - looking northwards





Photo 3

VP 3 - Parson's Rocks - looking northwards



Photo 4

VP 4 - Whitburn Sands - looking southwards



Photo 5

VP 5 - Whitburn Steel - looking eastwards



Photo 6

VP 6 - Sunderland Marina & River Wear - looking south westerly



## APPENDIX 4

N.B. The nomenclature below follows Beaman (1994), Voous (1977)

### Marine Walk, Roker - WeBS High Tide Count- summary sheet (Visits: 1-11)

WILDFOWL: write NIL in the next row if no wildfowl were present												
Nil birds (wildfowl)	XW	Total number of individuals										
Bird species	BTO code	Visit 1	Visit 2	Visit 3	Visit 4	Visit 5	Visit 6	Visit 7	Visit 8	Visit 9	Visit 10	Visit 11
Red-throated diver	RH											
Black-throated diver	BV											
Great northern diver	ND											
Little grebe	LG											
Great crested grebe	GG											
Slavonian grebe	SZ											
Black-necked grebe	BN											
Cormorant	CA	1		12	7	1	2	2	2	1	28	
Little egret	ET											
Grey heron	H.											
Mute swan	MS								2	2		
Bewick's swan	BS											
Whooper swan	WS											
Bean goose	BE											
Pink-footed goose	PG											
European White-fronted goose	EW											
(Greater) White-fronted goose	NW											
Greylag goose	GJ											
Canada goose	CG											
Barnacle goose	BY											
Dark-bellied brent goose	DB											
Light-bellied brent goose	PB											
Bar-headed goose	HD											
Shelduck	SU											
Mallard	MA											
Gadwall	GA											
Pintail	PT											
Shoveler	SV											
Wigeon	WN											
Teal	T.											1
Pochard	PO											
Scaup	SP											
Tufted duck	TU											
Eider	E.					2						2
Common scoter	CX											
Goldeneye	GN											
Smew	SY											
Red-breasted merganser	RM											
Goosander	GD											
Ruddy duck	RY											
Water rail	WA											
Moorhen	MH											
Coot	CO											



<b>WADERS:</b> write NIL in the next row if no waders were present												
Nil birds (waders)	XS	<b>Total number of individuals</b>										
<b>Bird species</b>	<b>BTO code</b>	<b>Visit 1</b>	<b>Visit 2</b>	<b>Visit 3</b>	<b>Visit 4</b>	<b>Visit 5</b>	<b>Visit 6</b>	<b>Visit 7</b>	<b>Visit 8</b>	<b>Visit 9</b>	<b>Visit 10</b>	<b>Visit 11</b>
Oystercatcher	OC				75		1	3	1			
Avocet	AV											
Little ringed plover	LP											
Ringed plover	RP	2			2	7		42		29	13	
Golden plover	GP											
Grey plover	GV											
Lapwing	L.											
Knot	KN				1		8					
Sanderling	SS					8	7	51		8	32	
Little stint	LX											
Curlew sandpiper	CV											
Purple sandpiper	PS						4	8		5		
Dunlin	DN			14		72	8	3		170		
Ruff	RU											
Jack snipe	JS											
Snipe	SN											
Woodcock	WK											
Black-tailed godwit	BW											
Bar-tailed godwit	BA				1							
Whimbrel	WM											
Curlew	CU											
Spotted redshank	DR											
Redshank	RK			1	26	17	335	94				51
Greenshank	GK											
Green sandpiper	CE											
Wood sandpiper	OD											
Common sandpiper	CS											
Turnstone	TT				22	19	52	21	27	8	10	8

<b>GULLS:</b> write NIL in the next row if no gulls were present												
Nil birds (gulls)	XW	<b>Total number of individuals</b>										
<b>Bird species</b>	<b>BTO code</b>	<b>Visit 1</b>	<b>Visit 2</b>	<b>Visit 3</b>	<b>Visit 4</b>	<b>Visit 5</b>	<b>Visit 6</b>	<b>Visit 7</b>	<b>Visit 8</b>	<b>Visit 9</b>	<b>Visit 10</b>	<b>Visit 11</b>
Black-headed gull	BH			80	22	12	338	94	35	43	166	164
Common gull	CM				2			2				
Herring gull	HG	33	18	13	30	12	17	8	37	47	23	31
Lesser black-backed gull	LB											
Great black-backed gull	GB				6	23	1		3	3		

<b>TERNs:</b> write NIL in the next row if no terns were present												
Nil birds (terns)	XW	<b>Total number of individuals</b>										
<b>Bird species</b>	<b>BTO code</b>	<b>Visit 1</b>	<b>Visit 2</b>	<b>Visit 3</b>	<b>Visit 4</b>	<b>Visit 5</b>	<b>Visit 6</b>	<b>Visit 7</b>	<b>Visit 8</b>	<b>Visit 9</b>	<b>Visit 10</b>	<b>Visit 11</b>
Sandwich tern	TE			7								
Common tern	CN	1	8	5	14							
Arctic tern	AE											
Little tern	AF											

**APPENDIX 5**

**Marine Walk, Roker - WeBS Low Tide Count- summary sheet (Visits: 1-11)**

WILDFOWL: write NIL in the next row if no wildfowl were present												
Nil birds (wildfowl)	XW	Total number of individuals										
Bird species	BTO code	Visit 1	Visit 2	Visit 3	Visit 4	Visit 5	Visit 6	Visit 7	Visit 8	Visit 9	Visit 10	Visit 11
Red-throated diver	RH											
Black-throated diver	BV											
Great northern diver	ND											
Little grebe	LG											
Great crested grebe	GG											
Slavonian grebe	SZ											
Black-necked grebe	BN											
Cormorant	CA	11	5	17	1	3	5	1	2	1	1	
Little egret	ET											
Grey heron	H.					2	2					
Mute swan	MS				3	2		2		2		
Bewick's swan	BS											
Whooper swan	WS											
Bean goose	BE											
Pink-footed goose	PG											
European White-fronted goose	EW											
(Greater) White-fronted goose	NW											
Greylag goose	GJ											
Canada goose	CG							3				
Barnacle goose	BY											
Dark-bellied brent goose	DB											
Light-bellied brent goose	PB											
Bar-headed goose	HD											
Shelduck	SU											
Mallard	MA											
Gadwall	GA											
Pintail	PT											
Shoveler	SV											
Wigeon	WN											
Teal	T.											
Pochard	PO											
Scaup	SP											
Tufted duck	TU											
Eider	E.	2				2	1	2	4	3		11
Common scoter	CX											
Goldeneye	GN											1
Smew	SY											
Red-breasted merganser	RM											
Goosander	GD						1					
Ruddy duck	RY											
Water rail	WA											
Moorhen	MH											
Coot	CO											

<b>WADERS:</b> write NIL in the next row if no waders were present												
Nil birds (waders)	XS	Total number of individuals										
Bird species	BTO code	Visit 1	Visit 2	Visit 3	Visit 4	Visit 5	Visit 6	Visit 7	Visit 8	Visit 9	Visit 10	Visit 11
Oystercatcher	OC	4	3	6	15	25	17	6	16	37	7	19
Avocet	AV											
Little ringed plover	LP											
Ringed plover	RP	12		2	31	16	5	1	8			
Golden plover	GP							1				
Grey plover	GV											
Lapwing	L								3		1	
Knot	KN				1					1		
Sanderling	SS				22	47	9	3	2	10	22	8
Little stint	LX											
Curlew sandpiper	CV											
Purple sandpiper	PS						1	1	1	6	10	3
Dunlin	DN				6				57			
Ruff	RU											
Jack snipe	JS											
Snipe	SN											
Woodcock	WK											
Black-tailed godwit	BW											
Bar-tailed godwit	BA						1					1
Whimbrel	WM											
Curlew	CU			1	1	1			3			
Spotted redshank	DR											
Redshank	RK			4	14	41	11	5	21	9	21	25
Greenshank	GK											
Green sandpiper	CE											
Wood sandpiper	OD											
Common sandpiper	CS											
Turnstone	TT				8	24	8	1	19	7	6	5

<b>GULLS:</b> write NIL in the next row if no gulls were present												
Nil birds (gulls)	XW	Total number of individuals										
Bird species	BTO code	Visit 1	Visit 2	Visit 3	Visit 4	Visit 5	Visit 6	Visit 7	Visit 8	Visit 9	Visit 10	Visit 11
Black-headed gull	BH		1	65	64	162	85	102	283	148	163	148
Common gull	CM		20	3	1		1	2	8			
Herring gull	HG	20	117	134	212	138	82	19	139	83	68	81
Lesser black-backed gull	LB											
Great black-backed gull	GB	2		24	7	2	6	3	32	6	1	3
Kittiwake	KI				1							

<b>TERNs:</b> write NIL in the next row if no terns were present												
Nil birds (terns)	XW	Total number of individuals										
Bird species	BTO code	Visit 1	Visit 2	Visit 3	Visit 4	Visit 5	Visit 6	Visit 7	Visit 8	Visit 9	Visit 10	Visit 11
Sandwich tern	TE			20	1							
Common tern	CN	2	3	8	214							
Arctic tern	AE											
Little tern	AF											

**APPENDIX 6****MARINE WALK, ROKER - BIRD SPECIES RECORDED AND THEIR CONSERVATION STATUS**

(see footnote for relevant legislation/conservation lists)

Scientific Name	Common Name	BTO Code**	NERC - Sect. 41	WCA (1981)	EC 'Birds Directive' (79/409/EEC)	BTO/RSPB 'Red List'	BTO/RSPB 'Amber List'	UK BAP	Durham BAP
<i>Phalacrocorax carbo</i>	Cormorant*	CA							
<i>Ardea cinerea</i>	Grey heron*	H.							
<i>Cygnus olor</i>	Mute swan*	MS							
<i>Branta canadensis</i>	Canada goose*	CG							
<i>Anas crecca</i>	Teal*	T.					√		
<i>Somateria mollissima</i>	Eider*	E.					√		
<i>Mergus merganser</i>	Goosander*	GD							
<i>Bucephala clangula</i>	Goldeneye*	GN					√		
<i>Falco tinnunculus</i>	Kestrel	K.					√		
<i>Accipiter nisus</i>	Sparrowhawk	SH							
<i>Haematopus ostralegus</i>	Oystercatcher*	OC					√		
<i>Charadrius hiaticula</i>	Ringed plover*	RP					√		
<i>Pluvialis apricaria</i>	Golden plover*	GP			Annex I		√		
<i>Vanellus vanellus</i>	Lapwing*	L.	√			√		√	√
<i>Calidris canutus</i>	Knot*	KN					√		
<i>Calidris alba</i>	Sanderling*	SS							√
<i>Calidris maritima</i>	Purple sandpiper*	PS		√			√		√

Scientific Name	Common Name	BTO Code**	NERC - Sect. 41	WCA (1981)	EC 'Birds Directive' (79/409/EEC)	BTO/RSPB 'Red List'	BTO/RSPB 'Amber List'	UK BAP	Durham BAP
<i>Arenaria interpres</i>	Turnstone*	TT					√		
<i>Calidris alpina</i>	Dunlin*	DN				√			√
<i>Tringa totanus</i>	Redshank*	RK					√		√
<i>Numenius arquata</i>	Curlew*	CU	√				√	√	√
<i>Limosa lapponica</i>	Bar-tailed godwit*	BA			Annex I		√		
<i>Larus ridibundus</i>	Black-headed gull*	BH					√		
<i>Larus canus</i>	Common gull*	CM					√		
<i>Larus argentatus</i>	Herring gull*	HG	√			√		√	
<i>Larus marinus</i>	Great black-backed gull*	GB					√		
<i>Rissa tridactyla</i>	Kittiwake*	KI					√		
<i>Sterna sandvicensis</i>	Sandwich tern*	TE			Annex I		√		
<i>Sterna hirundo</i>	Common tern*	CN			Annex I		√		
<i>Columba livia</i>	Feral pigeon	FP							
<i>Columba palumbus</i>	Woodpigeon	WP							
<i>Apus apus</i>	Swift	SI					√		
<i>Hirundo rustica</i>	Swallow	SL					√		
<i>Delichon urbicum</i>	House martin	HM					√		
<i>Anthus pratensis</i>	Meadow pipit	MP					√		
<i>Motacilla alba</i>	White/Pied wagtail	PW							
<i>Turdus merula</i>	Blackbird	B.							

Scientific Name	Common Name	BTO Code**	NERC - Sect. 41	WCA (1981)	EC 'Birds Directive' (79/409/EEC)	BTO/RSPB 'Red List'	BTO/RSPB 'Amber List'	UK BAP	Durham BAP
<i>Erithacus rubecula</i>	Robin	R.							
<i>Oenanthe oenanthe</i>	Wheatear	W.					√		
<i>Turdus iliacus</i>	Redwing	RE		√		√			
<i>Pica pica</i>	Magpie	MG							
<i>Corvus frugilegus</i>	Rook	RO							
<i>Corvus corone</i>	Carrion crow	C.							
<i>Sturnus vulgaris</i>	Starling	SG	√			√		√	√
<i>Passer domesticus</i>	House sparrow	HS	√			√		√	√
<i>Carduelis carduelis</i>	Goldfinch	GO							

\* WeBS bird species' recorded in survey area

\*\* BTO standard species recording codes

Footnote:

NERC - Sect. 41	Natural Environment and Rural Communities Act 2006 - Section 41 species.
WCA (1981)	Schedule 1 species - Wildlife and Countryside Act (1981).
EC 'Birds Directive'	EC Directive (79/409/EEC) on The Conservation Of Wild Birds (the 'Birds Directive')
BTO/RSPB 'Red List'	Royal Society for the Protection of Birds - 'Red List' of Bird Species of High Conservation Concern
BTO/RSPB 'Amber List'	Royal Society for the Protection of Birds - 'Amber List' of Bird Species of Medium Conservation Concern
UK BAP	UK Biodiversity Action Plan - List of Priority Species for which a Costed Action Plan has been written.
Durham BAP	Durham Biodiversity Action Plan - Species of Local Importance for which an Action Plan has been prepared.

**APPENDIX 7**

**Other Photographs**

Photo 1      Sunderland Marina – young grey seal resting on rocks at high tide, adjacent to Sunderland Marina (15/12/10)



Photo 2      Sunderland Marina - young grey seal resting on rocks at high tide, adjacent to Sunderland Marina (15/12/10)





Photo 3

North Pier, Roker - turnstones bathing in pooled water on southern side of pier



Photo 4

Roker Pier (beach) - mixed flock of redshank, turnstone and purple sandpiper

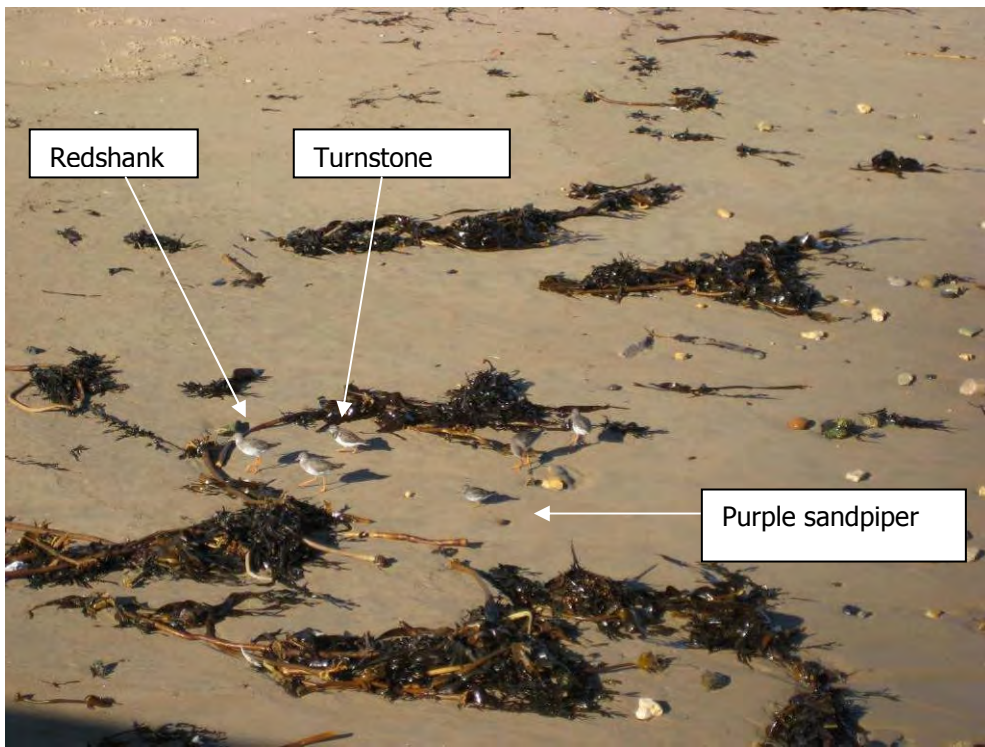




Photo 5      Roker Cliff Park - mixed flock of waders, gulls and starlings foraging on areas of grassland, where snow had thawed



Photo 6      Whitburn Bents - flock of 300+ redshank, 200+ black-headed gull, 100+ starling foraging on large deposition of seaweed, along high tide line.





Photo 7

Roker Rocks - tractor pushing seaweed up the beach



Photo 8

Roker Rocks - numerous dogs and their owners at low tide



## **APPENDIX 8 - WEBS HIGH TIDE COUNTS - OTHER INFORMATION**

**VISIT NO:** 1

<b>Date:</b> 27/05/10	<b>Time start:</b> 13.43	<b>High tide:</b> 14.48	<b>Time finish:</b> 15.38
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<b>Weather:</b>					
Wind speed/direction	NW: 2-3	Cloud cover (CC/8)	7/8	Conditions	Overcast and dry with occasional light showers

<b>Coverage:</b> highlight in <b>bold</b> the most appropriate choice below				
Were you able to cover "all" or only "part" of the count area?				
Area covered	<b>All</b>		Part	
Were you able to complete the count within about 3-4 hours?				
Within about 3-4 hours?	<b>Yes</b>		No	
Visibility: 1 Excellent (>2km); 2 Good (1-2 km); 3 Moderate (250m-1km); 4 Poor (<250m)				
Visibility	<b>1</b>	2	3	4
Disturbance: indicate overall level of disturbance: 1 None; 2 Moderate; 3 High; 4 Very high				
Disturbance level	1	<b>2</b>	3	4
Count accuracy: if count is reasonably accurate (highlight 'OK') or did factors (e.g. weather, disturbance) prevent recording of a significant numbers of wildfowl or waders present (highlight 'Low')?				
Count accuracy	<b>OK</b>		Low	

<b>Activity Type:</b> highlight in <b>bold</b> those activities occurring at the site and place a strikethrough on those affecting birds													
1	2	3	4	5	6	7	8	9	10	11	12	13	14
<b>1 Walkers</b>	<b>2 Dogs</b>	3 Horse riders	<b>4 Anglers</b>	5 Shooters	<b>6 Bait-diggers</b>	7 Shellfishers	8 Unpowered boats	9 Powered boats	10 Vehicles	11 Micro-lights	12 Wind-surfers	13 Jet skis	14 Aircraft
Others (please specify) 15								16					
Bait digging at Whitburn Steel.													

<b>Birds of Prey:</b> highlight in <b>bold</b> those birds of prey present at the site, indicating which were disturbing wildfowl with a strikethrough									
MR	HH	SH	K.	ML	PE	BZ	SE	O.	
MR Marsh Harrier	HH Hen Harrier	SH Sparrowhawk	K. Kestrel	ML Merlin	PE Peregrine	BZ Buzzard	SE Short-eared Owl	O. Other species (please specify)	

<b>Additional Information/Comments on Survey:</b>
<u>North Pier</u> – Feral pigeon.
<u>Roker Pier</u> – 7 Starling, 2 Ringed plover, Feral pigeon. Cormorant & Herring gull (flying past).
<u>Parson's Rocks</u> - Common tern – diving for food.
<u>The Bents</u> – Blackbird – foraging on amenity grassland, House sparrow – on edge of housing.
<u>Whitburn Steel</u> – 32 Herring gull, 4 Rook & 7 Starling foraging on coast, just above tide line.

**VISIT NO: 2**

<b>Date:</b> 24/06/10	<b>Time start:</b> 13.01	<b>High tide:</b> 13.51	<b>Time finish:</b> 14.52
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<b>Weather:</b>					
Wind speed/direction	W:2-3	Cloud cover (CC/8)	2/8	Conditions	Dry, clear, warm and sunny

<b>Coverage:</b> highlight in <b>bold</b> the most appropriate choice below			
Were you able to cover "all" or only "part" of the count area?			
Area covered	<b>All</b>		Part
Were you able to complete the count within about 3-4 hours?			
Within about 3-4 hours?	<b>Yes</b>		No
Visibility: 1 Excellent (>2km); 2 Good (1-2 km); 3 Moderate (250m-1km); 4 Poor (<250m)			
Visibility	<b>1</b>	2	3 4
Disturbance: indicate overall level of disturbance: 1 None; 2 Moderate; 3 High; 4 Very high			
Disturbance level	1	2	<b>3</b> 4
Count accuracy: if count is reasonably accurate (highlight 'OK') or did factors (e.g. weather, disturbance) prevent recording of a significant numbers of wildfowl or waders present (highlight 'Low')?			
Count accuracy	<b>OK</b>		Low

<b>Activity Type:</b> highlight in <b>bold</b> those activities occurring at the site and place a strikethrough on those affecting birds													
1	2	3	4	5	6	7	8	9	10	11	12	13	14
<b>1 Walkers 2 Dogs 3 Horse riders 4 Anglers</b> 5 Shooters 6 Bait-diggers 7 Shellfishers 8 Unpowered boats 9 Powered boats 10 Vehicles 11 Micro-lights 12 Wind-surfers 13 Jet skis 14 Aircraft													
Others (please specify) <b>15 Surfer</b>										16			
All of seafront very busy with holidaymakers, locals walking dogs and several anglers at end of Roker Pier. 6 horses (with riders) bathing in the sea at Whitburn Steel.													

<b>Birds of Prey:</b> highlight in <b>bold</b> those birds of prey present at the site, indicating which were disturbing wildfowl with a strikethrough									
MR	HH	SH	K.	ML	PE	BZ	SE	O.	
MR Marsh Harrier	HH Hen Harrier	SH Sparrowhawk	K. Kestrel	ML Merlin	PE Peregrine	BZ Buzzard	SE Short-eared Owl	O. Other species (please specify)	

<b>Additional Information/Comments on Survey:</b>
<u>North Pier</u> – 2 Common tern fishing close to beach, north of pier. 1 common tern fishing in River Wear estuary.
<u>Roker Pier</u> - 1 Common tern fishing close to beach, north of pier.
<u>Parson's Rocks</u> - 3 Common tern fishing and 1 herring gull flying past.
<u>Whitburn Steel</u> - 1 Common tern fishing. 12 herring gull roosting on sea, north of border with South Tyneside. 2 Cormorants flying past (northwards).
<u>The Bents</u> – 2 Starlings foraging at HWM. 2 Carrion crows on amenity grassland by coast road.

**VISIT NO: 3**

<b>Date:</b> 20/07/10	<b>Time start:</b> 08.56	<b>High tide:</b> 10.11	<b>Time finish:</b> 10.47
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<b>Weather:</b>					
Wind speed/direction	Nil	Cloud cover (CC/8)	8/8	Conditions	Overcast and very humid

<b>Coverage:</b> highlight in <b>bold</b> the most appropriate choice below			
Were you able to cover "all" or only "part" of the count area?			
Area covered	<b>All</b>		Part
Were you able to complete the count within about 3-4 hours?			
Within about 3-4 hours?	<b>Yes</b>		No
Visibility: 1 Excellent (>2km); 2 Good (1-2 km); 3 Moderate (250m-1km); 4 Poor (<250m)			
Visibility	1	<b>2</b>	3 4
Disturbance: indicate overall level of disturbance: 1 None; 2 Moderate; 3 High; 4 Very high			
Disturbance level	1	2	<b>3</b> 4
Count accuracy: if count is reasonably accurate (highlight 'OK') or did factors (e.g. weather, disturbance) prevent recording of a significant numbers of wildfowl or waders present (highlight 'Low')?			
Count accuracy	<b>OK</b>		Low

<b>Activity Type:</b> highlight in <b>bold</b> those activities occurring at the site and place a strikethrough on those affecting birds													
1	2	3	4	5	6	7	8	9	10	11	12	13	14
<b>1 Walkers</b>	<b>2 Dogs</b>	3 Horse riders	<b>4 Anglers</b>	5 Shooters	6 Bait-diggers	7 Shellfishers	8 Unpowered boats	9 Powered boats	10 Vehicles	11 Micro-lights	12 Wind-surfers	13 Jet skis	14 Aircraft
Others (please specify) 15								16					

<b>Birds of Prey:</b> highlight in <b>bold</b> those birds of prey present at the site, indicating which were disturbing wildfowl with a strikethrough									
MR	HH	SH	K.	ML	PE	BZ	SE	O.	
MR Marsh Harrier	HH Hen Harrier	SH Sparrowhawk	K. Kestrel	ML Merlin	PE Peregrine	BZ Buzzard	SE Short-eared Owl	O. Other species (please specify)	

<b>Additional Information/Comments on Survey:</b>
<p><u>River Wear</u> – 1 Redshank on northern edge of river, south of Marina. 2 Cormorant flying, eastwards, out of estuary. Common tern hunting in estuary.</p> <p><u>Marina</u> – 1 cormorant roosting on post by Marina.</p> <p><u>North Pier</u> – 2 adult Common terns feeding 3 juveniles, plus 5 adult Sandwich terns and 2 juveniles. Also, 26 Black-headed gull, 2 Cormorant, plus Goldfinch calling from iron post.</p> <p><u>Short pier south (opposite) North Pier</u> – 4 Cormorant roosting on post,</p> <p><u>Roker Pier</u> – 54 Black-headed gull and 1 Herring gull loafing on sea south of pier. 3 Feral pigeon on beach south of pier.</p> <p><u>Roker Rocks</u> – 14 Dunlin and 12 Herring gull.</p> <p><u>Roker Cliff Park</u> – Several House martin feeding over grassland.</p> <p><u>Parson's Rocks</u> – 1 Cormorant fishing in sea close by.</p> <p><u>Pebble Beach</u> – 4 crows foraging on high tide line.</p> <p><u>Whitburn Steel</u> – 2 Cormorant on rocks north of local authority boundary.</p>

**VISIT NO: 4**

<b>Date:</b> 25/08/10	<b>Time start:</b> 14.57	<b>High tide:</b> 15.59	<b>Time finish:</b> 16.42
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<b>Weather:</b>					
Wind speed/direction	W:1-2	Cloud cover (CC/8)	6/8	Conditions	Dry, warm & overcast with sunny intervals

<b>Coverage:</b> highlight in <b>bold</b> the most appropriate choice below			
Were you able to cover "all" or only "part" of the count area?			
Area covered	<b>All</b>	Part	
Were you able to complete the count within about 3-4 hours?			
Within about 3-4 hours?	<b>Yes</b>	No	
Visibility: 1 Excellent (>2km); 2 Good (1-2 km); 3 Moderate (250m-1km); 4 Poor (<250m)			
Visibility	<b>1</b>	2	3 4
Disturbance: indicate overall level of disturbance: 1 None; 2 Moderate; 3 High; 4 Very high			
Disturbance level	1	2	<b>3</b> 4
Count accuracy: if count is reasonably accurate (highlight 'OK') or did factors (e.g. weather, disturbance) prevent recording of a significant numbers of wildfowl or waders present (highlight 'Low')?			
Count accuracy	<b>OK</b>	Low	

<b>Activity Type:</b> highlight in <b>bold</b> those activities occurring at the site and place a strikethrough on those affecting birds													
1	2	3	4	5	6	7	8	9	10	11	12	13	14
<b>1 Walkers</b>	<b>2 Dogs</b>	3 Horse riders	<b>4 Anglers</b>	5 Shooters	6 Bait-diggers	7 Shellfishers	8 Unpowered boats	9 Powered boats	10 Vehicles	11 Micro-lights	12 Wind-surfers	13 Jet skis	14 Aircraft
Others (please specify) <b>15 Sail boarders</b>										16			

<b>Birds of Prey:</b> highlight in <b>bold</b> those birds of prey present at the site, indicating which were disturbing wildfowl with a strikethrough									
MR	HH	SH	K.	ML	PE	BZ	SE	O.	
MR Marsh Harrier	HH Hen Harrier	SH Sparrowhawk	K. Kestrel	ML Merlin	PE Peregrine	BZ Buzzard	SE Short-eared Owl	O. Other species (please specify)	

<b>Additional Information/Comments on Survey:</b>
<u>Quay, adjacent southern edge of River Wear</u> – 5 Cormorant, 24 Herring gull & 1 Great black-backed gull.
<u>Marina</u> – 1 Cormorant roosting on green light post by Marina, plus 1 Herring gull.
<u>New South Pier</u> – 75+ Oystercatcher, 5 Great black-backed gull & 3 Herring gull roosting on decreasing area of beach adjacent to northern edge of pier.
<u>North Pier</u> – 1 Herring gull & 1 Feral pigeon on beach, plus 2 Black-headed gull loafing on sea.
<u>Roker Pier</u> – 2 Ringed plover, 5 Pied wagtail & 3 Starling.
<u>Roker Cliff Park</u> – 1 Wheatear & 8 Pied wagtail foraging on amenity grassland. 8 Black-headed gull, 2 Common gull and 1 Herring gull foraging in beach, immediately south of Roker Cliff Park.
<u>Pebble Beach</u> – 1 Bar-tailed godwit, 14 Common tern, 8 Redshank & 12 Black-headed gull foraging on high tide line.
<u>Whitburn Steel</u> (north of local authority boundary) – 22 Turnstone, 18 Redshank, 1 Knot & 2 Pied wagtail. Also, Wall brown basking on rock.

**VISIT NO: 5**

<b>Date:</b> 21/09/10	<b>Time start:</b> 13.44	<b>High tide:</b> 14.28	<b>Time finish:</b> 15.52
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<b>Weather:</b>					
Wind speed/direction	SW:1-2	Cloud cover (CC/8)	2/8	Conditions	Dry, warm & overcast with sunny intervals

<b>Coverage:</b> highlight in <b>bold</b> the most appropriate choice below			
Were you able to cover "all" or only "part" of the count area?			
Area covered	<b>All</b>		Part
Were you able to complete the count within about 3-4 hours?			
Within about 3-4 hours?	<b>Yes</b>		No
Visibility: 1 Excellent (>2km); 2 Good (1-2 km); 3 Moderate (250m-1km); 4 Poor (<250m)			
Visibility	<b>1</b>	2	3 4
Disturbance: indicate overall level of disturbance: 1 None; 2 Moderate; 3 High; 4 Very high			
Disturbance level	1	2	3 <b>4</b>
Count accuracy: if count is reasonably accurate (highlight 'OK') or did factors (e.g. weather, disturbance) prevent recording of a significant numbers of wildfowl or waders present (highlight 'Low')?			
Count accuracy	<b>OK</b>		Low

<b>Activity Type:</b> highlight in <b>bold</b> those activities occurring at the site and place a strikethrough on those affecting birds													
1	2	3	4	5	6	7	8	9	10	11	12	13	14
<b>1 Walkers</b>	<b>2 Dogs</b>	3 Horse riders	<b>4 Anglers</b>	5 Shooters	6 Bait-diggers	7 Shellfishers	8 Unpowered boats	9 Powered boats	<b>10 Vehicles</b>	11 Micro-lights	12 Wind-surfers	13 Jet skis	14 Aircraft
Others (please specify) <b>15 Swimmers</b>										16			
Lots of dog walkers, plus tractor pushing seaweed back down beach between Roker Rocks and outfall pipe.													

<b>Birds of Prey:</b> highlight in <b>bold</b> those birds of prey present at the site, indicating which were disturbing wildfowl with a strikethrough								
MR	HH	<b>SH</b>	K.	ML	PE	<b>BZ</b>	SE	O.
MR Marsh Harrier	HH Hen Harrier	SH Sparrowhawk	K. Kestrel	ML Merlin	PE Peregrine	BZ Buzzard	SE Short-eared Owl	O. Other species (please specify)

<b>Additional Information/Comments on Survey:</b>
<u>Marina</u> – Cormorant roosting on post at entrance to Marina, plus Great black-backed gull on adjacent rocks/breakwater.
<u>River Wear Estuary</u> (between North Pier and New South Pier) – 2 Eider, 22 Great Black-backed gull & 12 Herring gull loafing on sea.
<u>North Pier</u> – 5 Black-headed gull loafing on sea, plus 2 Starling foraging in car park.
<u>Roker Pier/Roker Rocks</u> – 7 Ringed plover & 2 Black-headed gull.
<u>Roker Cliff Park</u> – 1 Pied wagtail foraging on amenity grassland, plus Small tortoiseshell. 19 Starling roosting on railing of disused lighthouse.
<u>Parson's Rocks</u> – 2 Black-headed gulls foraging on beach, south of Parson's Rocks. Plus, 2 Black-headed gulls loafing on sea north of Parson's Rocks.
<u>Whitburn Steel</u> (north of local authority boundary) – 72 Dunlin, 19 Turnstone, 17 Redshank, 8 Sanderling & 10 Pied/White wagtails. Plus 1 Black-headed gull on Pebble Beach.
<u>Playing Fields</u> (adjacent Morrisons) – 2 foraging Carrion crows, plus 3 lots of dog walkers.

**VISIT NO: 6**

<b>Date:</b> 20/10/10	<b>Time start:</b> 12.44	<b>High tide:</b> 13.54	<b>Time finish:</b> 15.06
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<b>Weather:</b>					
Wind speed/direction	SW:14-5	Cloud cover (CC/8)	0/8	Conditions	Sunny and clear with a choppy sea
<b>Coverage:</b> highlight in <b>bold</b> the most appropriate choice below					
Were you able to cover "all" or only "part" of the count area?					
Area covered		<b>All</b>		Part	
Were you able to complete the count within about 3-4 hours?					
Within about 3-4 hours?		<b>Yes</b>		No	
Visibility: 1 Excellent (>2km); 2 Good (1-2 km); 3 Moderate (250m-1km); 4 Poor (<250m)					
Visibility		<b>1</b>	<b>2</b>	3	4
Disturbance: indicate overall level of disturbance: 1 None; 2 Moderate; 3 High; 4 Very high					
Disturbance level		1	<b>2</b>	3	4
Count accuracy: if count is reasonably accurate (highlight 'OK') or did factors (e.g. weather, disturbance) prevent recording of a significant numbers of wildfowl or waders present (highlight 'Low')?					
Count accuracy		<b>OK</b>		Low	

<b>Activity Type:</b> highlight in <b>bold</b> those activities occurring at the site and place a strikethrough on those affecting birds													
1	2	3	4	5	6	7	8	9	10	11	12	13	14
<b>1 Walkers</b>	<b>2 Dogs</b>	3 Horse riders	<b>4 Anglers</b>	5 Shooters	6 Bait-diggers	7 Shellfishers	8 Unpowered boats	9 Powered boats	10 Vehicles	11 Micro-lights	12 Wind-surfers	13 Jet skis	14 Aircraft
Others (please specify) 15								16					

<b>Birds of Prey:</b> highlight in <b>bold</b> those birds of prey present at the site, indicating which were disturbing wildfowl with a strikethrough									
MR	HH	<b>SH</b>	K.	ML	PE	<b>BZ</b>	SE	O.	
MR Marsh Harrier	HH Hen Harrier	SH Sparrowhawk	K. Kestrel	ML Merlin	PE Peregrine	BZ Buzzard	SE Short-eared Owl	O. Other species (please specify)	

<b>Additional Information/Comments on Survey:</b>
<u>River Wear</u> – 2 Cormorant fishing in river adjacent to Potato Garth.
<u>Wave Basin</u> – 3 Herring Gull and 1 Great Black-backed gull roosting on quayside just south of Wave Basin.
<u>North Pier</u> – 1 Meadow pipit foraging on end of pier. 2 Herring gull, 1 Black-headed gull, 15 Starling and 2 Feral pigeon scavenging in car park adjacent to pier. 9 Black-headed gull and 4 Herring gull loafing on choppy sea adjacent to car park.
<u>Roker Pier/Roker Rocks</u> – 2 Purple sandpiper, 1 Turnstone, 12 Redshank, 1 Meadow pipit, 2 Pied wagtail, 1 Starling, 1 Herring gull and 78 Black-headed gull feeding along high tide line.
<u>Roker Cliff Park</u> – 50+ Black-headed gull, 3 Herring gull, 23 Redshank, 1 Turnstone and 1 Meadow pipit foraging on high tide line on beach between Roker Cliff Park and Coastguard Lookout.
<u>Whitburn Steel</u> – 300+ Redshank, 200+ Black-headed gull, 100+ Starling, 4 Herring gull, 4 Common gull, 50+ Turnstone, 8 Dunlin, 8 Knot, 7 Sanderling, 2 Purple sandpiper, 1 Oystercatcher and 1 Carrion crow – all foraging on large deposition of seaweed along high tide line.
<u>Playing Fields (adjacent Morrisons)</u> – No birds, but 2 lots of dog walkers.



**VISIT NO: 7**

<b>Date:</b> 30/11/10	<b>Time start:</b> 08.48	<b>High tide:</b> 10.11	<b>Time finish:</b> 11.05
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<b>Weather:</b>					
Wind speed/direction	E: 4-5	Cloud cover (CC/8)	5/8	Conditions	Dry, cold and breezy with occasional sunny intervals and hail showers with a choppy sea

<b>Coverage:</b> highlight in <b>bold</b> the most appropriate choice below			
Were you able to cover "all" or only "part" of the count area?			
Area covered	<b>All</b>	Part	
Were you able to complete the count within about 3-4 hours?			
Within about 3-4 hours?	<b>Yes</b>	No	
Visibility: 1 Excellent (>2km); 2 Good (1-2 km); 3 Moderate (250m-1km); 4 Poor (<250m)			
Visibility	<b>1</b>	2	3 4
Disturbance: indicate overall level of disturbance: 1 None; 2 Moderate; 3 High; 4 Very high			
Disturbance level	1	<b>2</b>	3 4
Count accuracy: if count is reasonably accurate (highlight 'OK') or did factors (e.g. weather, disturbance) prevent recording of a significant numbers of wildfowl or waders present (highlight 'Low')?			
Count accuracy	<b>OK</b>		Low

<b>Activity Type:</b> highlight in <b>bold</b> those activities occurring at the site and place a strikethrough on those affecting birds														
1	2	3	4	5	6	7	8	9	10	11	12	13	14	
<b>1 Walkers</b>	<b>2 Dogs</b>	3 Horse riders	<b>4 Anglers</b>	5 Shooters	6 Bait-diggers	7 Shellfishers	8 Unpowered boats	9 Powered boats	10 Vehicles	11 Micro-lights	12 Wind-surfers	13 Jet skis	14 Aircraft	Others (please specify) 15
										16				

<b>Birds of Prey:</b> highlight in <b>bold</b> those birds of prey present at the site, indicating which were disturbing wildfowl with a strikethrough								
MR	HH	<b>SH</b>	K.	ML	PE	<b>BZ</b>	SE	O.
MR Marsh Harrier	HH Hen Harrier	SH Sparrowhawk	K. Kestrel	ML Merlin	PE Peregrine	BZ Buzzard	SE Short-eared Owl	O. Other species (please specify)

<b>Additional Information/Comments on Survey:</b>
<u>Wave Basin</u> – 1 Cormorant (on abutment).
<u>Marina</u> – 2 Herring gull, 1 Meadow pipit.
<u>North Pier</u> – 3 Turnstone, 3 Purple sandpiper, 1 Redshank, 17 Black-headed gull, 1 Meadow pipit, and 25 Feral pigeon (foraging on feed in adjacent car park).
<u>Roker Pier/Roker Rocks</u> – 42 Ringed plover, 5 Purple sandpiper, 1 Carrion crow (foraging).
<u>Smugglers P.H.</u> – 1 Cormorant (diving in surf), 1 Herring gull, 3 Feral pigeon.
<u>Roker Cliff Park</u> – 92 Redshank, 18 Turnstone, 3 Dunlin, 3 Oystercatcher, 64 Black-headed gull, 3 Herring gull, 1 Common gull, 25+ Starling - all foraging on areas of grassland, where snow had thawed.
<u>Promenade P.H.</u> – 1 Redshank (alighted, temporarily, on strip of amenity grassland, between A183 and coastline).
<u>Pullman Lodge P.H.</u> – 13 Black-headed gull, 2 Herring gull, 5 Starling (foraging on strip of amenity grassland, between A183 and coastline).
<u>Whitburn Sands</u> – 50+ Sanderling (foraging along tide line) and 1 Redwing (resting).
<u>Pebble Beach</u> – 4 Meadow pipit.
<u>Whitburn Steel</u> – 1 Sanderling, 1 Common gull.

**VISIT NO: 8**

<b>Date:</b> 15/12/10	<b>Time start:</b> 09.03	<b>High tide:</b> 10.27	<b>Time finish:</b> 11.17
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<b>Weather:</b>					
Wind speed/direction	N:3-4	Cloud cover (CC/8)	8/8	Conditions	Dry and overcast with a choppy sea

<b>Coverage:</b> highlight in <b>bold</b> the most appropriate choice below			
Were you able to cover "all" or only "part" of the count area?			
Area covered	<b>All</b>		Part
Were you able to complete the count within about 3-4 hours?			
Within about 3-4 hours?	<b>Yes</b>		No
Visibility: 1 Excellent (>2km); 2 Good (1-2 km); 3 Moderate (250m-1km); 4 Poor (<250m)			
Visibility	<b>1</b>	2	3 4
Disturbance: indicate overall level of disturbance: 1 None; 2 Moderate; 3 High; 4 Very high			
Disturbance level	1	<b>2</b>	3 4
Count accuracy: if count is reasonably accurate (highlight 'OK') or did factors (e.g. weather, disturbance) prevent recording of a significant numbers of wildfowl or waders present (highlight 'Low')?			
Count accuracy	<b>OK</b>		Low

<b>Activity Type:</b> highlight in <b>bold</b> those activities occurring at the site and place a strikethrough on those affecting birds													
1	2	3	4	5	6	7	8	9	10	11	12	13	14
<b>1 Walkers</b>	<b>2 Dogs</b>	3 Horse riders	<b>4 Anglers</b>	5 Shooters	6 Bait-diggers	7 Shellfishers	8 Unpowered boats	9 Powered boats	<b>10 Vehicles</b>	11 Micro-lights	12 Wind-surfers	13 Jet skis	14 Aircraft
Others (please specify) 15								16					
Tractor pushing seaweed up beach, adjacent to Smugglers P.H.													

<b>Birds of Prey:</b> highlight in <b>bold</b> those birds of prey present at the site, indicating which were disturbing wildfowl with a strikethrough								
MR	HH	<b>SH</b>	K.	ML	PE	<b>BZ</b>	SE	O.
MR Marsh Harrier	HH Hen Harrier	SH Sparrowhawk	K. Kestrel	ML Merlin	PE Peregrine	BZ Buzzard	SE Short-eared Owl	O. Other species (please specify)

<b>Additional Information/Comments on Survey:</b>
<u>River Wear</u> – 32 Herring gull, 11 Black-headed gull, 3 Great black-backed gull, 1 Cormorant.
<u>Marina</u> – 2 Mute swan (pair), 5 Herring gull, 1 Cormorant (roosting on green post), plus <b>one young grey seal</b> (resting on seaweed-covered rocks).
<u>North Pier</u> – 2 Turnstone (foraging on beach and in car park) and 10 Black-headed gull, plus 9 Turnstone (bathing in pooled water on southern side of pier).
<u>Roker Pier/Roker Rocks</u> –1 Carrion crow (foraging).
<u>Smugglers P.H.</u> – Tractor pushing seaweed up beach.
<u>Roker Cliff Park</u> – 16 Turnstone, 1 Oystercatcher, 14 Black-headed gull - all foraging on grassland.
<u>Whitburn Sands</u> – 3 Starling (perched on bench).
<u>Whitburn Bents SNCI</u> – 8 Meadow pipit.
<u>Ocean Park</u> – 1 Carrion crow.

**VISIT NO: 9**

<b>Date:</b> 14/01/11	<b>Time start:</b> 09.09	<b>High tide:</b> 10.22	<b>Time finish:</b> 11.10
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<b>Weather:</b>					
Wind speed/direction	N:3-4	Cloud cover (CC/8)	4/8	Conditions	Dry and partially overcast

<b>Coverage:</b> highlight in <b>bold</b> the most appropriate choice below			
Were you able to cover "all" or only "part" of the count area?			
Area covered	<b>All</b>		Part
Were you able to complete the count within about 3-4 hours?			
Within about 3-4 hours?	<b>Yes</b>		No
Visibility: 1 Excellent (>2km); 2 Good (1-2 km); 3 Moderate (250m-1km); 4 Poor (<250m)			
Visibility	<b>1</b>	2	3 4
Disturbance: indicate overall level of disturbance: 1 None; 2 Moderate; 3 High; 4 Very high			
Disturbance level	1	<b>2</b>	3 4
Count accuracy: if count is reasonably accurate (highlight 'OK') or did factors (e.g. weather, disturbance) prevent recording of a significant numbers of wildfowl or waders present (highlight 'Low')?			
Count accuracy	<b>OK</b>		Low

<b>Activity Type:</b> highlight in <b>bold</b> those activities occurring at the site and place a strikethrough on those affecting birds													
1	2	3	4	5	6	7	8	9	10	11	12	13	14
<b>1 Walkers</b>	<b>2 Dogs</b>	3 Horse riders	<b>4 Anglers</b>	5 Shooters	6 Bait-diggers	7 Shellfishers	8 Unpowered boats	9 Powered boats	<b>10 Vehicles</b>	11 Micro-lights	12 Wind-surfers	13 Jet skis	14 Aircraft
Others (please specify) 15								16					
Tractor on beach, adjacent to southern edge of Roker Pier.													

<b>Birds of Prey:</b> highlight in <b>bold</b> those birds of prey present at the site, indicating which were disturbing wildfowl with a strikethrough								
MR	HH	SH	K.	ML	PE	<b>BZ</b>	SE	O.
MR Marsh Harrier	HH Hen Harrier	<b>SH Sparrowhawk</b>	K. Kestrel	ML Merlin	PE Peregrine	BZ Buzzard	SE Short-eared Owl	O. Other species (please specify)

<b>Additional Information/Comments on Survey:</b>
<u>River Wear</u> – 44 Herring gull, 2 Great black-backed gull, 1 Cormorant.
<u>Potato Garth</u> – 3 Black-headed gull, plus 2 Mute swan on slipway (preening feathers).
<u>Marina</u> – 1 Herring gull.
<u>North Pier</u> – 170+ Dunlin, 29 Ringed plover, 8 Sanderling, 8 Turnstone, 5 Purple sandpiper and 40 Black-headed gull.
<u>Whitburn Bents SNCl</u> – 3 Meadow pipit.
<u>Whitburn Steel</u> – 2 Herring gull, 1 Great black-backed gull and 1 Carrion crow (scavenging on dead fish).
<u>Pebble Beach</u> – 1 Sparrowhawk (hunting over coast road).

**VISIT NO: 10**

<b>Date:</b> 18/02/11	<b>Time start:</b> 14.20	<b>High tide:</b> 15.18	<b>Time finish:</b> 16.11
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<b>Weather:</b>					
Wind speed/direction	SW:4-5	Cloud cover (CC/8)	8/8	Conditions	Overcast and cold with a choppy sea

<b>Coverage:</b> highlight in <b>bold</b> the most appropriate choice below			
Were you able to cover "all" or only "part" of the count area?			
Area covered	<b>All</b>		Part
Were you able to complete the count within about 3-4 hours?			
Within about 3-4 hours?	<b>Yes</b>		No
Visibility: 1 Excellent (>2km); 2 Good (1-2 km); 3 Moderate (250m-1km); 4 Poor (<250m)			
Visibility	1	<b>2</b>	3 4
Disturbance: indicate overall level of disturbance: 1 None; 2 Moderate; 3 High; 4 Very high			
Disturbance level	1	<b>2</b>	3 4
Count accuracy: if count is reasonably accurate (highlight 'OK') or did factors (e.g. weather, disturbance) prevent recording of a significant numbers of wildfowl or waders present (highlight 'Low')?			
Count accuracy	<b>OK</b>		Low

<b>Activity Type:</b> highlight in <b>bold</b> those activities occurring at the site and place a strikethrough on those affecting birds													
1	2	3	4	5	6	7	8	9	10	11	12	13	14
<b>1 Walkers 2 Dogs</b> 3 Horse riders <b>4 Anglers</b> 5 Shooters 6 Bait-diggers 7 Shellfishers 8 Unpowered boats 9 Powered boats 10 Vehicles 11 Micro-lights 12 Wind-surfers 13 Jet skis 14 Aircraft													
Others (please specify) <b>15 Kite surfer</b>										16			
2 kite surfers adjacent to Whitburn Steel.													

<b>Birds of Prey:</b> highlight in <b>bold</b> those birds of prey present at the site, indicating which were disturbing wildfowl with a strikethrough								
MR	HH	<b>SH</b>	K.	ML	PE	<b>BZ</b>	SE	O.
MR Marsh Harrier	HH Hen Harrier	SH Sparrowhawk	K. Kestrel	ML Merlin	PE Peregrine	BZ Buzzard	SE Short-eared Owl	O. Other species (please specify)

<b>Additional Information/Comments on Survey:</b>
<u>River Wear</u> (adjacent Marina) – 100+ Black-headed gull, 12 Herring gull, plus 8 Cormorant (roosting on green navigation posts).
<u>Wave Basin</u> – 20 Cormorant (on abutment),
<u>North Pier</u> – 10 Turnstone, 2 Black-headed gull (on pier). Also, 25 Black-headed gull, 2 Herring gull and 1 Cormorant (loafing on sea, between North Pier and Roker Pier). Plus, 36 Black-headed gull, 1 Herring gull & 12 Feral pigeon (foraging in car park).
<u>Roker Pier/Roker Rocks</u> – 13 Ringed plover (alighted, temporarily, before being displaced by dogs and their walkers), plus 1 Carrion crow and 1 Feral pigeon (foraging on beach).
<u>Roker Cliff Park</u> – 8 Herring gull, 3 Black-headed gull and 5 Carrion crow (foraging on grassland).
<u>Whitburn Steel</u> – 32 Sanderling (foraging along high tide line).

**VISIT NO: 11**

<b>Date:</b> 04/03/11	<b>Time start:</b> 14.24	<b>High tide:</b> 15.21	<b>Time finish:</b> 16.19
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<b>Weather:</b>					
Wind speed/direction	N:1-2	Cloud cover (CC/8)	8/8	Conditions	Overcast and dry with a choppy sea

<b>Coverage:</b> highlight in <b>bold</b> the most appropriate choice below			
Were you able to cover "all" or only "part" of the count area?			
Area covered	<b>All</b>		Part
Were you able to complete the count within about 3-4 hours?			
Within about 3-4 hours?	<b>Yes</b>		No
Visibility: 1 Excellent (>2km); 2 Good (1-2 km); 3 Moderate (250m-1km); 4 Poor (<250m)			
Visibility	1	<b>2</b>	3 4
Disturbance: indicate overall level of disturbance: 1 None; 2 Moderate; 3 High; 4 Very high			
Disturbance level	1	<b>2</b>	3 4
Count accuracy: if count is reasonably accurate (highlight 'OK') or did factors (e.g. weather, disturbance) prevent recording of a significant numbers of wildfowl or waders present (highlight 'Low')?			
Count accuracy	<b>OK</b>		Low

<b>Activity Type:</b> highlight in <b>bold</b> those activities occurring at the site and place a strikethrough on those affecting birds													
1	2	3	4	5	6	7	8	9	10	11	12	13	14
<b>1 Walkers 2 Dogs</b> 3 Horse riders <b>4 Anglers</b> 5 Shooters 6 Bait-diggers 7 Shellfishers 8 Unpowered boats <b>9 Powered boats</b> 10 Vehicles 11 Micro-lights 12 Wind-surfers 13 Jet skis 14 Aircraft													
Others (please specify) <b>15 Surfers</b> 16													
2 surfers adjacent to northern edge of Roker Pier.													

<b>Birds of Prey:</b> highlight in <b>bold</b> those birds of prey present at the site, indicating which were disturbing wildfowl with a strikethrough								
MR	HH	<b>SH</b>	K.	ML	PE	<b>BZ</b>	SE	O.
MR Marsh Harrier	HH Hen Harrier	SH Sparrowhawk	K. Kestrel	ML Merlin	PE Peregrine	BZ Buzzard	SE Short-eared Owl	O. Other species (please specify)

<b>Additional Information/Comments on Survey:</b>
<u>Potato Garth</u> – 1 Redshank.
<u>River Wear</u> (adjacent Marina) – 1 Eider (male), 2 Herring gull, 1 Black-headed gull.
<u>Marina</u> – 1 Herring gull (on rocks).
<u>Wave Basin</u> – 1 Magpie.
<u>North Pier</u> – 4 Black-headed gull (on rocks), plus 24 Black-headed gull (loafing on sea). In addition, 17 Black-headed gull, 12 Feral pigeon & 3 Starling (foraging in car park). Also, 1 Eider & 13 Herring gull (in harbour, between North Pier and New South pier).
<u>Roker Cliff Park</u> – 2 Woodpigeon & 1 Carrion crow.
<u>Whitburn Sands</u> – 18 Black-headed gull & 1 Teal (loafing on sea).
<u>Whitburn Steel</u> – 100+ Black-headed gull, 15 Herring gull (foraging along high tide line). Also, 50 Redshank, 8 Turnstone, 1 Carrion crow, 1 Pied wagtail (foraging along high tide line, north of local authority boundary).

## APPENDIX 9 - WEBS LOW TIDE COUNTS - OTHER INFORMATION

### VISIT NO: 1

Date: 28/05/10	Time start: 08.14	Low tide: 09.31	Time finish: 10.49
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<b>Weather:</b>					
Wind speed/direction	W:0-1	Cloud cover (CC/8)	5/8	Conditions	Dry, sunny and clear - clouding over later

<b>Coverage:</b> highlight in <b>bold</b> the most appropriate choice below					
Were you able to cover "all" or only "part" of the count area?					
Area covered	<b>All</b>			Part	
Were you able to complete the count within about 3-4 hours?					
Within about 3-4 hours?	<b>Yes</b>			No	
Visibility: 1 Excellent (>2km); 2 Good (1-2 km); 3 Moderate (250m-1km); 4 Poor (<250m)					
Visibility	<b>1</b>	2	3	4	
Disturbance: indicate overall level of disturbance: 1 None; 2 Moderate; 3 High; 4 Very high					
Disturbance level	1	<b>2</b>	3	4	
Count accuracy: if count is reasonably accurate (highlight 'OK') or did factors (e.g. weather, disturbance) prevent recording of a significant numbers of wildfowl or waders present (highlight 'Low')?					
Count accuracy	<b>OK</b>			Low	

<b>Activity Type:</b> highlight in <b>bold</b> those activities occurring at the site and place a strikethrough on those affecting birds													
1	2	3	4	5	6	7	8	9	10	11	12	13	14
<b>1 Walkers</b>	<b>2 Dogs</b>	3 Horse riders	<b>4 Anglers</b>	5 Shooters	6 Bait-diggers	7 Shellfishers	8 Unpowered boats	9 Powered boats	10 Vehicles	11 Micro-lights	12 Wind-surfers	13 Jet skis	14 Aircraft
Others (please specify) 15								16					

<b>Birds of Prey:</b> highlight in <b>bold</b> those birds of prey present at the site, indicating which were disturbing wildfowl with a strikethrough									
MR	HH	SH	K.	ML	PE	BZ	SE	O.	
MR Marsh Harrier	HH Hen Harrier	SH Sparrowhawk	K. Kestrel	ML Merlin	PE Peregrine	BZ Buzzard	SE Short-eared Owl	O. Other species (please specify)	

<b>Additional Information/Comments on Survey:</b>
<p><u>North Pier</u> – 2 Starling, Meadow pipit. Herring gull and swallow (flying past). Oystercatcher flying into River Wear. 10 Cormorant on South Pier.</p> <p><u>Roker Pier</u> – 12 Ringed plover, 3 Oystercatcher, 2 Herring gull, immature GBB.</p> <p><u>Parson's Rocks</u> – 15 Herring gull roosting on Parson's Rocks. Swifts and House martins feeding above Roker Cliff Park.</p> <p><u>Whitburn Steel</u> - 2 Common tern (roosting on buoy adjacent to southern edge of Whitburn Steel) chasing off immature GBB. 2 Herring gull (roosting) and Cormorant (feeding) at Whitburn Steel. Pair of Eider preening further north on Whitburn Steel (across LA boundary).</p> <p>The Bents – 2 House sparrows foraging on scrub.</p>

**VISIT NO: 2**

<b>Date:</b> 23/06/10	<b>Time start:</b> 05.49	<b>Low tide:</b> 06.46	<b>Time finish:</b> 08.15
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<b>Weather:</b>					
Wind speed/direction	W:2-3	Cloud cover (CC/8)	7/8	Conditions	Dry and clear - sunny and warm later

<b>Coverage:</b> highlight in <b>bold</b> the most appropriate choice below				
Were you able to cover "all" or only "part" of the count area?				
Area covered	<b>All</b>	Part		
Were you able to complete the count within about 3-4 hours?				
Within about 3-4 hours?	<b>Yes</b>	No		
Visibility: 1 Excellent (>2km); 2 Good (1-2 km); 3 Moderate (250m-1km); 4 Poor (<250m)				
Visibility	<b>1</b>	2	3	4
Disturbance: indicate overall level of disturbance: 1 None; 2 Moderate; 3 High; 4 Very high				
Disturbance level	1	<b>2</b>	3	4
Count accuracy: if count is reasonably accurate (highlight 'OK') or did factors (e.g. weather, disturbance) prevent recording of a significant numbers of wildfowl or waders present (highlight 'Low')?				
Count accuracy	<b>OK</b>		Low	

<b>Activity Type:</b> highlight in <b>bold</b> those activities occurring at the site and place a strikethrough on those affecting birds													
1	2	3	4	5	6	7	8	9	10	11	12	13	14
<b>1 Walkers</b>	<b>2 Dogs</b>	3 Horse riders	<b>4 Anglers</b>	5 Shooters	<b>6 Bait-diggers</b>	7 Shellfishers	8 Unpowered boats	9 Powered boats	10 Vehicles	11 Micro-lights	12 Wind-surfers	13 Jet skis	14 Aircraft
Others (please specify) 15								16					

<b>Birds of Prey:</b> highlight in <b>bold</b> those birds of prey present at the site, indicating which were disturbing wildfowl with a strikethrough									
MR	HH	SH	K.	ML	PE	BZ	SE	O.	
MR Marsh Harrier	HH Hen Harrier	SH Sparrowhawk	<b>K. Kestrel</b>	ML Merlin	PE Peregrine	BZ Buzzard	SE Short-eared Owl	O. Other species (please specify)	
1 male Kestrel (perched on rock at Whitburn Steel, north of Sunderland City boundary).									

<b>Additional Information/Comments on Survey:</b>
<p><u>North Pier</u> - Cormorant fishing in mouth of River Wear (south of North Pier). 3 Meadow pipit foraging on rocks. 6 Feral pigeon and 4 Herring gull on foreshore. Common tern fishing. Blackbird on amenity grassland.</p> <p><u>Roker Pier</u> - 3 Oystercatcher, 4 Herring gull, 2 Common tern fishing.</p> <p><u>Roker Rocks</u> - 12 Herring gull, 9 Common gull.</p> <p><u>Coastguard Lookout (beach)</u> - 2 Herring gull, 6 Common gull.</p> <p><u>Roker Cliff Park</u> - Several feeding swifts and house martins.</p> <p><u>Parson's Rocks</u> - 27 Herring gull, 5 Common gull, 2 Starling.</p> <p><u>Whitburn Sands</u> - 7 Herring gull, 1 Black-headed gull.</p> <p><u>Whitburn Steel</u> - 4 Cormorant, 61 Herring gull, 1 Swallow.</p>

**VISIT NO: 3**

<b>Date:</b> 19/07/10	<b>Time start:</b> 14.17	<b>Low tide:</b> 15.32	<b>Time finish:</b> 16.32
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<b>Weather:</b>					
Wind speed/direction	W:0-1	Cloud cover (CC/8)	5/8	Conditions	Dry and overcast with sunny intervals

<b>Coverage:</b> highlight in <b>bold</b> the most appropriate choice below			
Were you able to cover "all" or only "part" of the count area?			
Area covered	<b>All</b>		Part
Were you able to complete the count within about 3-4 hours?			
Within about 3-4 hours?	<b>Yes</b>		No
Visibility: 1 Excellent (>2km); 2 Good (1-2 km); 3 Moderate (250m-1km); 4 Poor (<250m)			
Visibility	<b>1</b>	2	3 4
Disturbance: indicate overall level of disturbance: 1 None; 2 Moderate; 3 High; 4 Very high			
Disturbance level	1	2	3 <b>4</b>
Count accuracy: if count is reasonably accurate (highlight 'OK') or did factors (e.g. weather, disturbance) prevent recording of a significant numbers of wildfowl or waders present (highlight 'Low')?			
Count accuracy	<b>OK</b>		Low

<b>Activity Type:</b> highlight in <b>bold</b> those activities occurring at the site and place a strikethrough on those affecting birds													
1	2	3	4	5	6	7	8	9	10	11	12	13	14
<b>1 Walkers</b>	<b>2 Dogs</b>	3 Horse riders	<b>4 Anglers</b>	5 Shooters	6 Bait-diggers	7 Shellfishers	8 Unpowered boats	9 Powered boats	10 Vehicles	11 Micro-lights	12 Wind-surfers	13 Jet skis	14 Aircraft
Others (please specify) <b>15 Sail boarders</b>						<b>16 Horse training</b>							
Horse training at Whitburn Steel.													

<b>Birds of Prey:</b> highlight in <b>bold</b> those birds of prey present at the site, indicating which were disturbing wildfowl with a strikethrough									
MR	HH	SH	K.	ML	PE	BZ	SE	O.	
MR Marsh Harrier	HH Hen Harrier	SH Sparrowhawk	K. Kestrel	ML Merlin	PE Peregrine	BZ Buzzard	SE Short-eared Owl	O. Other species (please specify)	

<b>Additional Information/Comments on Survey:</b>
<u>River Wear</u> – 2 Redshank on northern edge of river, south of Marina.
<u>New South Pier</u> – 10 Cormorant, plus, 52 herring gull, 22 Great Black-backed gull, 18 Black-headed gull, 2 Oystercatcher on adjacent, exposed sand. Common tern adult feeding a juvenile on exposed rocks opposite southern edge of mouth of River Wear.
<u>North Pier</u> – 2 Ringed plover, 13 Black-headed gull, 1 Herring gull and 25 Starling.
<u>Marina</u> – Adult common tern feeding 2 juveniles perched on moored boat.
<u>Roker Rocks</u> - 13 Black-headed gull and 1 Common gull on beach, plus 4 Herring gull and 1 Cormorant on rocks.
<u>Roker Cliff Park</u> – Several; House martin feeding over grassland.
<u>Parson's Rocks</u> – 4 Oystercatcher, 3 Redshank, 6 Herring gull, plus adult common tern feeding 2 juveniles. Also 4 foraging crows.
<u>Whitburn Sands</u> – 24 Herring gull and 16 Black-headed gull on beach, adjacent to sewage outfall pipe.
<u>Whitburn Steel</u> – 6 Cormorant, 22 Herring gull, 5 Black-headed gull, 2 Common gull. Also, 20 Sandwich tern, 25 Herring gull, 2 Great Black-backed gull, Curlew and Redshank on rocks north of local authority boundary. Plus, Pied wagtail foraging on amenity grassland by A183.



**VISIT NO: 4**

<b>Date:</b> 24/08/10	<b>Time start:</b> 08.36	<b>Low tide:</b> 09.27	<b>Time finish:</b> 11.13
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<b>Weather:</b>															
Wind speed/direction	W:1-2 gusting 3-4	Cloud cover (CC/8)	1/8	Conditions	Dry and warm with frequent sunny intervals										
<b>Coverage:</b> highlight in <b>bold</b> the most appropriate choice below															
Were you able to cover "all" or only "part" of the count area?															
Area covered				<b>All</b>					Part						
Were you able to complete the count within about 3-4 hours?															
Within about 3-4 hours?				<b>Yes</b>					No						
Visibility: 1 Excellent (>2km); 2 Good (1-2 km); 3 Moderate (250m-1km); 4 Poor (<250m)															
Visibility				<b>1</b>			2			3			4		
Disturbance: indicate overall level of disturbance: 1 None; 2 Moderate; 3 High; 4 Very high															
Disturbance level				1			2			<b>3</b>			4		
Count accuracy: if count is reasonably accurate (highlight 'OK') or did factors (e.g. weather, disturbance) prevent recording of a significant numbers of wildfowl or waders present (highlight 'Low')?															
Count accuracy				<b>OK</b>					Low						
<b>Activity Type:</b> highlight in <b>bold</b> those activities occurring at the site and place a strikethrough on those affecting birds															
1	2	3	4	5	6	7	8	9	10	11	12	13	14		
<b>1 Walkers 2 Dogs 3 Horse riders 4 Anglers 5 Shooters 6 Bait-diggers 7 Shellfishers 8 Unpowered boats 9 Powered boats 10 Vehicles 11 Micro-lights 12 Wind-surfers 13 Jet skis 14 Aircraft</b>															
Others (please specify) 15 16															
<b>Birds of Prey:</b> highlight in <b>bold</b> those birds of prey present at the site, indicating which were disturbing wildfowl with a strikethrough															
MR	HH	SH	K.	ML	PE	BZ	SE	O.							
MR Marsh Harrier HH Hen Harrier SH Sparrowhawk K. Kestrel ML Merlin PE Peregrine BZ Buzzard SE Short-eared Owl O. Other species (please specify)															
<b>Additional Information/Comments on Survey:</b>															
River Wear – 2 Redshank flying westwards into mouth of river.															
Potato Garth – 3 adult Mute swan on adjacent slipway, plus 75 Herring gull, 2 Black-headed gull, 5 Oystercatcher and a Magpie on beach. Also, 1 Cormorant fishing in river.															
Wave Basin (southern edge of mouth of River Wear) – 2 Herring gull, 1 Great black-backed gull & 1 Woodpigeon.															
North Pier – 2 adult Common terns and 2 juveniles, plus 1 juvenile Sandwich tern. Also, 13 Black-headed gull and 2 Oystercatcher. 1 adult Common tern fishing in sea, north of pier.															
Roker Pier – 2 Herring gull and 2 Black-headed gull foraging on beach, south of pier.															
Roker Rocks - 12 Black-headed gull, 1 Great black-backed gull, 16 Ringed plover, 3 Redshank, 2 Oystercatcher, 1 Dunlin, 4 adult & 3 juvenile common tern on beach, plus 16 Herring gull, 6 Black-headed gull and 1 Curlew on rocks.															
Roker Cliff Park – Several House martin feeding over grassland, plus 2 Pied wagtail & 1 Starling.															
Parson's Rocks – 8 Turnstone, 5 Oystercatcher, 7 Redshank, 86 Herring gull, 14 Black-headed gull, 1 Great black-backed gull, 1 juvenile Kittiwake & 4 Carrion crows, plus 2 Common Tern fishing in sea.															
Whitburn Steel – 200+ Common tern (plus several Sandwich tern), 22 Sanderling, 15 Ringed plover, 5 Dunlin, 2 Redshank, 1 Knot, 1 Oystercatcher, 31 Herring gull, 15 Black-headed gull, 1 Common gull & 4 Great black-backed gull.															

**VISIT NO: 5**

<b>Date:</b> 22/09/10	<b>Time start:</b> 07.41	<b>Low tide:</b> 08.56	<b>Time finish:</b> 10.14
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<b>Weather:</b>															
Wind speed/direction	SW:1-2	Cloud cover (CC/8)	8/8	Conditions	Dry and cool with sunny intervals later on										
<b>Coverage:</b> highlight in <b>bold</b> the most appropriate choice below															
Were you able to cover "all" or only "part" of the count area?															
Area covered				<b>All</b>					Part						
Were you able to complete the count within about 3-4 hours?															
Within about 3-4 hours?				<b>Yes</b>					No						
Visibility: 1 Excellent (>2km); 2 Good (1-2 km); 3 Moderate (250m-1km); 4 Poor (<250m)															
Visibility				<b>1</b>			2			3			4		
Disturbance: indicate overall level of disturbance: 1 None; 2 Moderate; 3 High; 4 Very high															
Disturbance level				1			2			3			<b>4</b>		
Count accuracy: if count is reasonably accurate (highlight 'OK') or did factors (e.g. weather, disturbance) prevent recording of a significant numbers of wildfowl or waders present (highlight 'Low')?															
Count accuracy				<b>OK</b>					Low						
<b>Activity Type:</b> highlight in <b>bold</b> those activities occurring at the site and place a strikethrough on those affecting birds															
1	2	3	4	5	6	7	8	9	10	11	12	13	14		
<b>1 Walkers</b> <b>2 Dogs</b> 3 Horse riders <b>4 Anglers</b> 5 Shooters <b>6 Bait-diggers</b> 7 Shellfishers 8 Unpowered boats 9 Powered boats <b>10 Vehicles</b> 11 Micro-lights 12 Wind-surfers 13 Jet skis 14 Aircraft Others (please specify) 15 16															
Lots of dog walkers, plus tractor pushing tractor push seaweed back down beach between Roker Rocks and outfall pipe.															
<b>Birds of Prey:</b> highlight in <b>bold</b> those birds of prey present at the site, indicating which were disturbing wildfowl with a strikethrough															
MR	HH	SH	K.	ML	PE	BZ	SE	O.							
MR Marsh Harrier HH Hen Harrier SH Sparrowhawk K. Kestrel ML Merlin PE Peregrine BZ Buzzard SE Short-eared Owl O. Other species (please specify)															
<b>Additional Information/Comments on Survey:</b>															
River Wear – 1 Redshank flying westwards into mouth of river.															
Potato Garth – 2 adult Mute swan on adjacent slipway, plus 10 Herring gull, 6 Oystercatcher on beach. Also, 1 Cormorant roosting on adjacent exposed rock.															
Marina – Cormorant roosting on post at entrance to Marina.															
Wave Basin (southern edge of mouth of River Wear) – 1 Cormorant on truncated pier (opposite North Pier), plus 12 Feral pigeon roosting nearby.															
North Pier – 13 Black-headed gull and 1 Oystercatcher on rocks, plus 12 Black-headed gull on beach. 13 Starling and 1 Herring gull roosting on post by slipway. 21 Feral pigeon and several Starling foraging in car park.															
Roker Pier – 10 Starling, 3 Pied wagtail and 1 Goldfinch foraging on mass of flotsam/seaweed situated on beach adjacent to southern edge of pier..															
Roker Pier/Roker Rocks – 2 Eider, 52 Black-headed gull, 31 Herring gull, 1 Great black-backed gull, 16 Ringed plover, 17 Redshank, 13 Oystercatcher & 19 Turnstone.															
Parson's Rocks – 55 Herring gull, 29 Black-headed gull, 1 Grey heron (adult), 6 Redshank, 2 Oystercatcher & 2 Carrion crow.															
Whitburn Sands – 10 Herring gull, 1 Black-headed gull & 2 Redshank foraging on beach.															
Whitburn Steel – 1 Grey heron (immature), 47 Sanderling, 1 Curlew, 15 Redshank, 3 Oystercatcher, 5 Turnstone, 31 Herring gull, 55 Black-headed gull, 1 Great Black-backed gull & 6 Starling.															
Pebble Beach – 50+ Starling & 18 White wagtail foraging on mass of seaweed, at high tide line, plus 2 Swallow and 10 Goldfinch moving along coast.															

Playing Fields (adjacent Morrisons) – 2 Carrion Crow, 2 Herring gull, and 1 Robin (calling from car park hedge), plus 4 lots of dog walkers.

**VISIT NO: 6**

<b>Date:</b> 27/10/10	<b>Time start:</b> 10.11	<b>Low tide:</b> 11.35	<b>Time finish:</b> 12.50
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<b>Weather:</b>															
Wind speed/direction	SW:1-2 (occ. 4-5)	Cloud cover (CC/8)	0/8	Conditions	Dry with bright sunshine, with occasional gusty winds										
<b>Coverage:</b> highlight in <b>bold</b> the most appropriate choice below															
Were you able to cover "all" or only "part" of the count area?															
Area covered				<b>All</b>					Part						
Were you able to complete the count within about 3-4 hours?															
Within about 3-4 hours?				<b>Yes</b>					No						
Visibility: 1 Excellent (>2km); 2 Good (1-2 km); 3 Moderate (250m-1km); 4 Poor (<250m)															
Visibility				<b>1</b>			2			3			4		
Disturbance: indicate overall level of disturbance: 1 None; 2 Moderate; 3 High; 4 Very high															
Disturbance level				1			<b>2</b>			3			4		
Count accuracy: if count is reasonably accurate (highlight 'OK') or did factors (e.g. weather, disturbance) prevent recording of a significant numbers of wildfowl or waders present (highlight 'Low')?															
Count accuracy				<b>OK</b>					Low						
<b>Activity Type:</b> highlight in <b>bold</b> those activities occurring at the site and place a strikethrough on those affecting birds															
1	2	3	4	5	6	7	8	9	10	11	12	13	14		
<b>1 Walkers 2 Dogs 3 Horse riders 4 Anglers 5 Shooters 6 Bait-diggers 7 Shellfishers 8 Unpowered boats 9 Powered boats 10 Vehicles 11 Micro-lights 12 Wind-surfers 13 Jet skis 14 Aircraft</b>															
Others (please specify) 15								16							
<b>Birds of Prey:</b> highlight in <b>bold</b> those birds of prey present at the site, indicating which were disturbing wildfowl with a strikethrough															
MR	HH	SH	K.	ML	PE	BZ	SE	O.							
MR Marsh Harrier HH Hen Harrier SH Sparrowhawk K. Kestrel ML Merlin PE Peregrine BZ Buzzard SE Short-eared Owl O. Other species (please specify)															
<b>Additional Information/Comments on Survey:</b>															
River Wear – 1 Female Eider feeding adjacent to Marina.															
Potato Garth – 9 Redshank, 1 Oystercatcher, 7 Herring gull & 3 Black-headed gull.															
Marina – 3 Cormorant, 7 Herring gull & 1 Great black-backed gull.															
Wave Basin (southern edge of mouth of River Wear) – 2 Cormorant and 3 Herring gull.															
North Pier – 47 Black-headed gull & 1 Herring gull on rocks, plus 2 Starling and 1 Meadow pipit.															
Roker Pier/Roker Rocks –1 Herring gull, 4 Ringed plover, 1 Redshank, 1 Oystercatcher 1 Turnstone & 1 Sanderling.															
Parson's Rocks – 23 Herring gull, 28 Black-headed gull, 1 Grey heron, 15 Oystercatcher, 6 Turnstone, 1 Redshank, 1 White wagtail & 1 Carrion crow.															
Whitburn Bay – 6 Black-headed gull loafing on sea.															
Whitburn Steel – 1 Goosander, 1 Grey heron, 8 Sanderling, 1 Bar-tailed godwit, 1 Turnstone, 1 Ringed plover, 40 Herring gull, 1 Black-headed gull 1 Common gull & 5 Great Black-backed gull.															
Also, 50+ Lapwing flushed from rock, 300m north of local authority boundary.															
Playing Fields (adjacent Morrisons) – 1 Herring gull, plus a family playing football.															

VISIT NO: 7

Date: 27/11/10	Time start: 11.45	Low tide: 12.58	Time finish: 13.15
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<b>Weather:</b>					
Wind speed/direction	N:2-3	Cloud cover (CC/8)	3/8	Conditions	Dry and cold with light snowflakes and occasional sunny intervals - survey curtailed at Parson's Rocks due to heavy snow shower from the north

**Coverage:** highlight in **bold** the most appropriate choice below

Were you able to cover "all" or only "part" of the count area?

Area covered	All	<b>Part</b>
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Were you able to complete the count within about 3-4 hours?

Within about 3-4 hours?	Yes	<b>No</b>
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Visibility: 1 Excellent (>2km); 2 Good (1-2 km); 3 Moderate (250m-1km); 4 Poor (<250m)

Visibility	1	<b>2</b>	3	4
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Disturbance: indicate overall level of disturbance: 1 None; 2 Moderate; 3 High; 4 Very high

Disturbance level	1	<b>2</b>	3	4
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Count accuracy: if count is reasonably accurate (highlight 'OK') or did factors (e.g. weather, disturbance) prevent recording of a significant numbers of wildfowl or waders present (highlight 'Low')?

Count accuracy	OK	<b>Low</b>
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**Activity Type:** highlight in **bold** those activities occurring at the site and place a strikethrough on those affecting birds

1	2	3	4	5	6	7	8	9	10	11	12	13	14
<b>1 Walkers</b>	<b>2 Dogs</b>	3 Horse riders	<b>4 Anglers</b>	5 Shooters	<b>6 Bait-diggers</b>	7 Shellfishers	8 Unpowered boats	9 Powered boats	10 Vehicles	11 Micro-lights	12 Wind-surfers	13 Jet skis	14 Aircraft
Others (please specify) 15							16						

Bait digging at Potato Garth

**Birds of Prey:** highlight in **bold** those birds of prey present at the site, indicating which were disturbing wildfowl with a strikethrough

MR	HH	<b>SH</b>	K.	ML	PE	BZ	SE	O.
MR Marsh Harrier	HH Hen Harrier	SH Sparrowhawk	K. Kestrel	ML Merlin	PE Peregrine	BZ Buzzard	SE Short-eared Owl	O. Other species (please specify)

**Additional Information/Comments on Survey:**

River Wear – 15 Herring gull (loafing).  
 Potato Garth –15 Black-headed gull, 1 Herring gull, 1 Great Black-backed gull, 1 Oystercatcher.  
 Marina – Pair of Eider, 1 Cormorant (roosting on buoy), 2 Mute swan, 1 Pied Wagtail.  
 North Pier – 52 Black-headed gull, 2 Common gull, 1 Herring gull, 5 Oystercatcher, 1 Redshank, 12 Feral pigeon (foraging on feed in adjacent car park).  
 Roker Pier/Roker Rocks – 3 Redshank, 3 Sanderling, 1 Golden Plover, 1 Ringed plover, 1 Turnstone, 1 Purple sandpiper, 3 Canada geese, 2 Herring gull.  
 Parson's Rocks – 35 Black-headed gull, 2 Great Black-backed gull, 1 Redshank.

**VISIT NO: 8**

<b>Date:</b> 22/12/10		<b>Time start:</b> 09.05		<b>Low tide:</b> 09.52		<b>Time finish:</b> 11.25							
<b>Weather:</b>													
Wind speed/direction	N:3-4	Cloud cover (CC/8)	7/8	Conditions	Dry with occasional light snow showers and sunny later on. Snow still on ground from previous downfall.								
<b>Coverage:</b> highlight in <b>bold</b> the most appropriate choice below													
Were you able to cover "all" or only "part" of the count area?													
Area covered		<b>All</b>			Part								
Were you able to complete the count within about 3-4 hours?													
Within about 3-4 hours?		<b>Yes</b>			No								
Visibility: 1 Excellent (>2km); 2 Good (1-2 km); 3 Moderate (250m-1km); 4 Poor (<250m)													
Visibility		<b>1</b>		2		3							
Disturbance: indicate overall level of disturbance: 1 None; 2 Moderate; 3 High; 4 Very high		1		<b>2</b>		3							
Disturbance level		1		<b>2</b>		3							
Count accuracy: if count is reasonably accurate (highlight 'OK') or did factors (e.g. weather, disturbance) prevent recording of a significant numbers of wildfowl or waders present (highlight 'Low')?													
Count accuracy		<b>OK</b>			Low								
<b>Activity Type:</b> highlight in <b>bold</b> those activities occurring at the site and place a strikethrough on those affecting birds													
1	2	3	4	5	6	7	8	9	10	11	12	13	14
<b>1 Walkers 2 Dogs 3 Horse riders 4 Anglers 5 Shooters 6 Bait-diggers 7 Shellfishers 8 Unpowered boats 9 Powered boats 10 Vehicles 11 Micro-lights 12 Wind-surfers 13 Jet skis 14 Aircraft</b>													
Others (please specify) 15 16													
2 Horse riders on beach at Whitburn Steel. Sunderland Council vehicle driving along Roker Pier.													
<b>Birds of Prey:</b> highlight in <b>bold</b> those birds of prey present at the site, indicating which were disturbing wildfowl with a strikethrough													
MR	HH	SH	K.	ML	PE	BZ	SE	O.					
MR Marsh Harrier HH Hen Harrier SH Sparrowhawk K. Kestrel ML Merlin PE Peregrine BZ Buzzard SE Short-eared Owl O. Other species (please specify)													
<b>Additional Information/Comments on Survey:</b>													
<u>River Wear</u> – 25 Herring gull and 37 Black-headed gull (loafing), plus 1 Cormorant (fishing).													
<u>Potato Garth</u> – 3 Oystercatcher and 1 Curlew.													
<u>North Pier</u> – 2 Turnstone (approached close to observer to beg for food), 1 Oystercatcher and 1 Curlew (on exposed rocks). 82 Black-headed gull, 28 Herring gull and 23 Great Black-backed gull (roosting on beach). Several Great Black-backed gull and 1 Sanderling (feeding on washed-up dead fish).													
<u>Roker Pier/Roker Rocks</u> – 4 Redshank and 4 Oystercatcher (foraging on exposed rocks), plus 5 Herring gull (loafing).													
<u>Parson's Rocks</u> – 112 Black-headed gull, 44 Herring gull, 6 Common gull, 3 Great Black-backed gull, 5 Redshank, 5 Turnstone, 3 Oystercatcher, 3 Dunlin, 1 Purple sandpiper, 1 Sanderling, plus 1 Lapwing (flying southwards).													
<u>Whitburn Bay</u> – 6 Herring gull (roosting on pipeline).													
<u>Whitburn Dunes</u> – 1 Redshank (flushed).													
<u>Whitburn Steel</u> – 52 Black-headed gull, 31 Herring gull, 6 Great Black-backed gull, 2 Common gull, 4 Eider, 1 Cormorant, 54 Dunlin, 12 Turnstone, 11 Redshank, 8 Ringed plover, 5 Oystercatcher, 3 Lapwing, 1 Curlew, 1 Carrion crow.													
<u>Ocean Park</u> – 1 Carrion crow (foraging).													

**VISIT NO: 9**

<b>Date:</b> 12/01/11		<b>Time start:</b> 13.19		<b>Low tide:</b> 14.16		<b>Time finish:</b> 15.29							
<b>Weather:</b>													
Wind speed/direction	Nil	Cloud cover (CC/8)	8/8	Conditions	Overcast and dry with no wind								
<b>Coverage:</b> highlight in <b>bold</b> the most appropriate choice below													
Were you able to cover "all" or only "part" of the count area?													
Area covered		<b>All</b>			Part								
Were you able to complete the count within about 3-4 hours?													
Within about 3-4 hours?		<b>Yes</b>			No								
Visibility: 1 Excellent (>2km); 2 Good (1-2 km); 3 Moderate (250m-1km); 4 Poor (<250m)													
Visibility	1	<b>2</b>	3	4									
Disturbance: indicate overall level of disturbance: 1 None; 2 Moderate; 3 High; 4 Very high													
Disturbance level	1	<b>2</b>	3	4									
Count accuracy: if count is reasonably accurate (highlight 'OK') or did factors (e.g. weather, disturbance) prevent recording of a significant numbers of wildfowl or waders present (highlight 'Low')?													
Count accuracy		<b>OK</b>			Low								
<b>Activity Type:</b> highlight in <b>bold</b> those activities occurring at the site and place a strikethrough on those affecting birds													
1	2	3	4	5	6	7	8	9	10	11	12	13	14
<b>1 Walkers</b>	<b>2 Dogs</b>	3 Horse riders	<b>4 Anglers</b>	5 Shooters	<b>6 Bait-diggers</b>	7 Shellfishers	8 Unpowered boats	9 Powered boats	<b>10 Vehicles</b>	11 Micro-lights	12 Wind-surfers	13 Jet skis	14 Aircraft
Others (please specify) <b>15 Bicycle rider</b>										16			
Bicycle rider on Roker Pier.													
<b>Birds of Prey:</b> highlight in <b>bold</b> those birds of prey present at the site, indicating which were disturbing wildfowl with a strikethrough													
MR	HH	SH	K.	ML	PE	BZ	SE	O.					
MR Marsh Harrier	HH Hen Harrier	SH Sparrowhawk	K. Kestrel	ML Merlin	PE Peregrine	BZ Buzzard	SE Short-eared Owl	O. Other species (please specify)					
<b>Additional Information/Comments on Survey:</b>													
<u>River Wear</u> – 9 Herring gull and 1 Great black-backed gull (loafing), plus 1 Cormorant (fishing).													
<u>Potato Garth</u> – 9 Herring gull, 7 Black-headed gull and 3 Oystercatcher.													
<u>Marina</u> – 2 Mute swan.													
<u>North Pier</u> – 65 Black-headed gull, 4 Herring gull and 2 Turnstone (on exposed rocks), plus 9 Feral pigeon (foraging in car park). 2 Herring gull loafing on exposed sand near Lifeboat Station.													
<u>Roker Pier/Roker Rocks</u> – 9 Redshank, 2 Oystercatcher and 1 Purple sandpiper (foraging on exposed rocks), plus 10 Sanderling (foraging along tide line).													
<u>Parson's Rocks</u> – 19 Black-headed gull, 3 Herring gull, 1 Great Black-backed gull, 5 Purple sandpiper, 5 Oystercatcher, 5 Turnstone and 1 Knot (on exposed rocks). 3 Black-headed gull and 2 Carrion crow foraging on grassland at Roker Cliff Park.													
<u>Whitburn Steel</u> – 56 Herring gull, 54 Black-headed gull, 4 Great Black-backed gull, 27 Oystercatcher and 3 Eider (loafing on exposed rocks).													
<u>Ocean Park</u> – 2 x dog walkers.													

**VISIT NO: 10**

<b>Date:</b> 08/02/11		<b>Time start:</b> 11.09		<b>Low tide:</b> 12.17		<b>Time finish:</b> 13.25							
<b>Weather:</b>													
Wind speed/direction	SW: 1-2	Cloud cover (CC/8)	0/8	Conditions	Dry, sunny and clear								
<b>Coverage:</b> highlight in <b>bold</b> the most appropriate choice below													
Were you able to cover "all" or only "part" of the count area?													
Area covered		<b>All</b>			Part								
Were you able to complete the count within about 3-4 hours?													
Within about 3-4 hours?		<b>Yes</b>			No								
Visibility: 1 Excellent (>2km); 2 Good (1-2 km); 3 Moderate (250m-1km); 4 Poor (<250m)													
Visibility	<b>1</b>	2	3	4									
Disturbance: indicate overall level of disturbance: 1 None; 2 Moderate; 3 High; 4 Very high													
Disturbance level	1	<b>2</b>	3	4									
Count accuracy: if count is reasonably accurate (highlight 'OK') or did factors (e.g. weather, disturbance) prevent recording of a significant numbers of wildfowl or waders present (highlight 'Low')?													
Count accuracy		<b>OK</b>			Low								
<b>Activity Type:</b> highlight in <b>bold</b> those activities occurring at the site and place a strikethrough on those affecting birds													
1	2	3	4	5	6	7	8	9	10	11	12	13	14
<b>1 Walkers 2 Dogs 3 Horse riders 4 Anglers 5 Shooters 6 Bait-diggers 7 Shellfishers 8 Unpowered boats 9 Powered boats 10 Vehicles 11 Micro-lights 12 Wind-surfers 13 Jet skis 14 Aircraft</b>													
Others (please specify) <b>15 Bicycle rider</b>										16			
At low tide, mountain bike rider rode on beach through Parson's Rocks; 3 x horse riders on beach at Whitburn Steel.													
<b>Birds of Prey:</b> highlight in <b>bold</b> those birds of prey present at the site, indicating which were disturbing wildfowl with a strikethrough													
MR	HH	SH	K.	ML	PE	BZ	SE	O.					
MR	HH	SH	K.	ML	PE	BZ	SE	O.	MR Marsh Harrier HH Hen Harrier SH Sparrowhawk K. Kestrel ML Merlin PE Peregrine BZ Buzzard SE Short-eared Owl O. Other species (please specify)				
<b>Additional Information/Comments on Survey:</b>													
<u>Potato Garth</u> – 18 Black-headed gull, 16 Herring gull, and 2 Oystercatcher.													
<u>Marina</u> – 2 Herring gull (on rocks).													
<u>North Pier</u> – 31 Black-headed gull (on exposed rocks), plus 7 Feral pigeon (foraging in car park). 54 Black-headed gull loafing on sea between North Pier and Roker Pier. 2 Starling on road near Lifeboat Station.													
<u>Roker Pier/Roker Rocks</u> – 20 Redshank, 4 Sanderling, 2 Oystercatcher, 1 Turnstone, 14 Black-headed gull & 1 Herring gull (foraging/loafing on exposed rocks and along tide line).													
<u>Coastguard Lookout</u> – 3 Herring gull and 3 Carrion crow (foraging on washed up seaweed).													
<u>Parson's Rocks</u> – 14 Black-headed gull, 8 Herring gull, 10 Purple sandpiper, 5 Turnstone, 4 Sanderling, 3 Oystercatcher, 1 Lapwing and 1 Redshank (on exposed rocks). 12 Herring gull loafing on sea, 50m east of Parson's Rocks.													
<u>Roker Cliff Park</u> -1 Carrion crow foraging on grassland.													
<u>Whitburn Bay</u> – 5 Black-headed gull (foraging by pipeline).													
<u>Whitburn Bents</u> – 1 Meadow pipit and 1 Pied wagtail.													
<u>Whitburn Steel</u> – 27 Black-headed gull, 26 Herring gull, 1 Great Black-backed gull, 14 Sanderling and 1 Cormorant.													



**VISIT NO: 11**

<b>Date:</b> 07/03/11		<b>Time start:</b> 09.25		<b>Low tide:</b> 10.50		<b>Time finish:</b> 11.58							
<b>Weather:</b>													
Wind speed/direction	W: 1-2	Cloud cover (CC/8)	0/8	Conditions	Sunny and clear								
<b>Coverage:</b> highlight in <b>bold</b> the most appropriate choice below													
Were you able to cover "all" or only "part" of the count area?													
Area covered		<b>All</b>			Part								
Were you able to complete the count within about 3-4 hours?													
Within about 3-4 hours?		<b>Yes</b>			No								
Visibility: 1 Excellent (>2km); 2 Good (1-2 km); 3 Moderate (250m-1km); 4 Poor (<250m)													
Visibility	<b>1</b>	2	3	4									
Disturbance: indicate overall level of disturbance: 1 None; 2 Moderate; 3 High; 4 Very high													
Disturbance level	1	2	<b>3</b>	4									
Count accuracy: if count is reasonably accurate (highlight 'OK') or did factors (e.g. weather, disturbance) prevent recording of a significant numbers of wildfowl or waders present (highlight 'Low')?													
Count accuracy		<b>OK</b>			Low								
<b>Activity Type:</b> highlight in <b>bold</b> those activities occurring at the site and place a strikethrough on those affecting birds													
1	2	3	4	5	6	7	8	9	10	11	12	13	14
<b>1 Walkers</b>	<b>2 Dogs</b>	3 Horse riders	<b>4 Anglers</b>	5 Shooters	<b>6 Bait-diggers</b>	<b>7 Shellfishers</b>	8 Unpowered boats	9 Powered boats	<b>10 Vehicles</b>	11 Micro-lights	12		
Wind-surfers	13 Jet skis	14 Aircraft											
Others (please specify)		15	16										
Shellfishers on Potato Garth, Roker Rocks & Whitburn Steel. Tractor moving gravel on beach, immediately south of Roker Pier. Seaweed collector at high tide line, adjacent to Whitburn Bents. Largest number of dogs and their owners seen on any of the surveys.													
<b>Birds of Prey:</b> highlight in <b>bold</b> those birds of prey present at the site, indicating which were disturbing wildfowl with a strikethrough													
MR	HH	SH	K.	ML	PE	BZ	SE	O.					
MR Marsh Harrier	HH Hen Harrier	SH Sparrowhawk	K. Kestrel	ML Merlin	PE Peregrine	BZ Buzzard	SE Short-eared Owl	O. Other species (please specify)					
<b>Additional Information/Comments on Survey:</b>													
Potato Garth – 19 Black-headed gull, 12 Oystercatcher & 10 Redshank.													
Marina – 2 Herring gull (on rocks).													
River Wear – 5 Black-headed gull, 4 Herring gull, 2 Eider.													
North Pier – 14 Black-headed gull & 1 Meadow pipit (on exposed rocks), plus 5 Feral pigeon & 2 Starling (foraging in car park). 5 Eider, 1 Goldeneye (male) & 13 Black-headed gull loafing on sea between North Pier and Roker Pier.													
Roker Pier/Roker Rocks – 43 Herring gull, 35 Black-headed gull, 5 Oystercatcher, 3 Purple sandpiper, 3 Turnstone, 2 Redshank & 1 Sanderling.													
Parson's Rocks – 2 Redshank & 1 Carrion crow. Also, 8 Herring gull & 4 Eider (loafing on sea, adjacent to exposed rocks).													
Roker Cliff Park -2 Carrion crow (foraging on promenade).													
Whitburn Steel – 62 Black-headed gull, 24 Herring gull, 3 Great black-backed gull, 11 Redshank, 7 Sanderling, 2 Oystercatcher, 2 Turnstone & 1 Bar-tailed godwit.													
Ocean Park – 1 Herring gull & 1 Carrion crow, plus a dog walker.													



## Marine Walk Masterplan

### KEY

 Marine Walk Masterplan Boundary

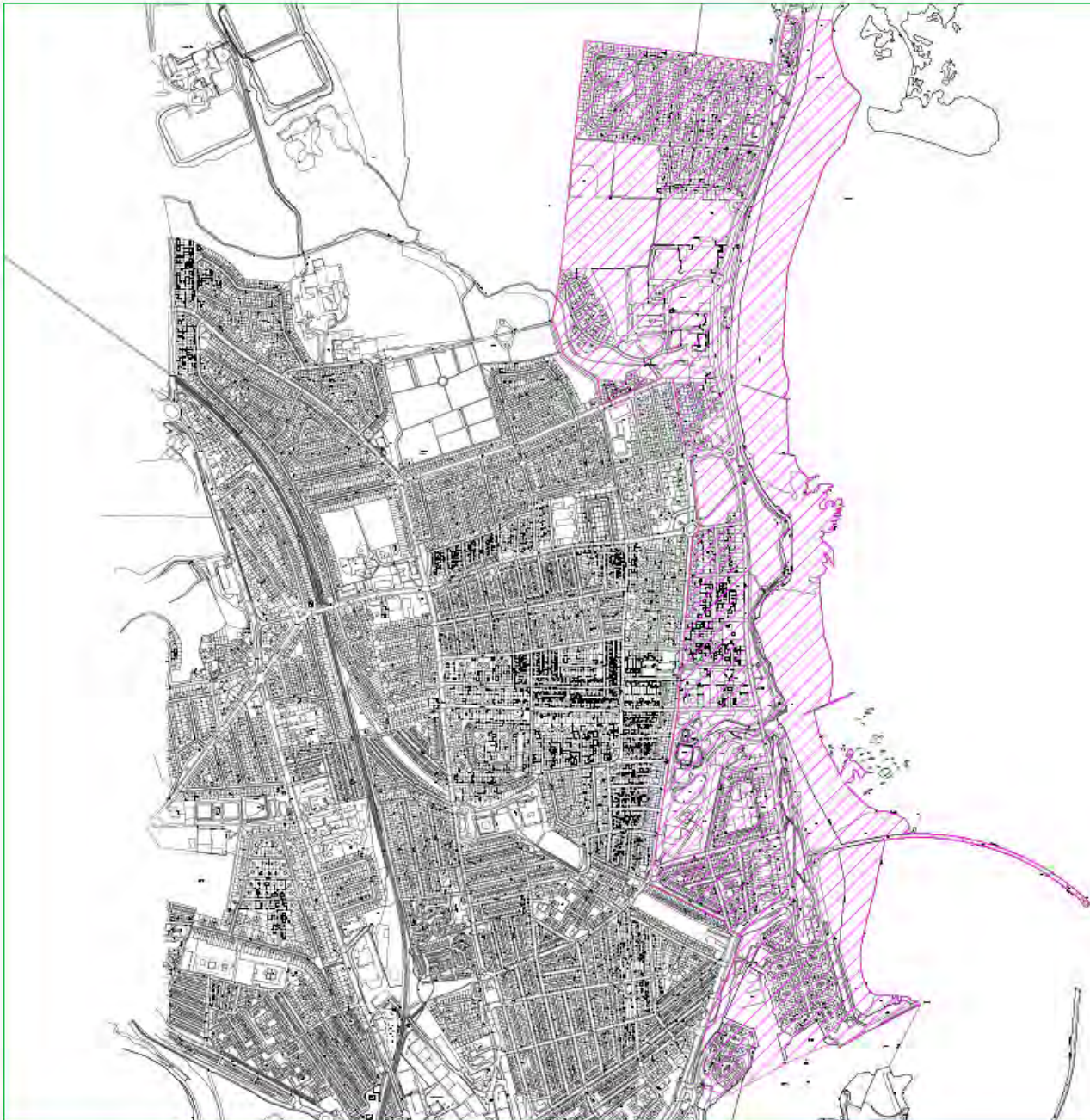
**argus ecology**

Unit 14, The Greenhouse, Greencroft Industrial Park, Anfield Plain, Co. Durham, DH9 7XN

Drawing Ref: Figure 1

Version 1.0: 18/08/10





## Seafront Strategy Area

### KEY

 Seafront Strategy Area Boundary

argus ecology

Unit 14, The Greenhouse, Greenport Industrial Park, Antfield Road, Co. Durham, DH9 7XN

Drawing Ref: Figure 2

Version 1.0: 18/08/10





**Parson's Rocks & Mere Knolls Cemetery**

**KEY**

-  Parson's Rocks Ramsar site, SPA & SNCI
-  Mere Knolls Cemetery SNCI

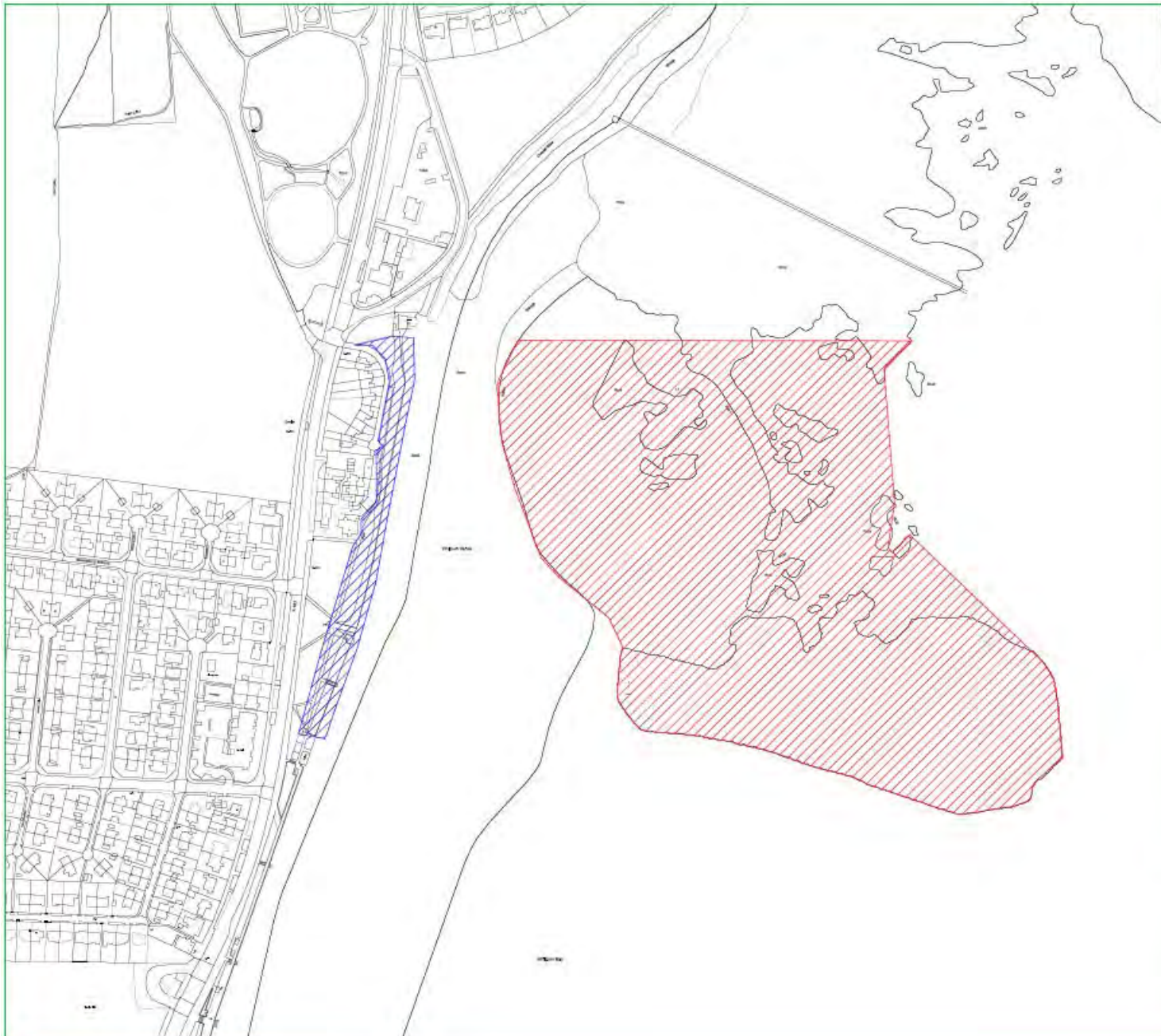


Unit 14, The Greenhouse, Greencroft Industrial Park, Anfield Plain, Co. Durham, DH8 7XN

Drawing Ref: Figure 3

Version 1.0: 18/08/10





## Whitburn Steel Rocks & Whitburn Bents

### Key

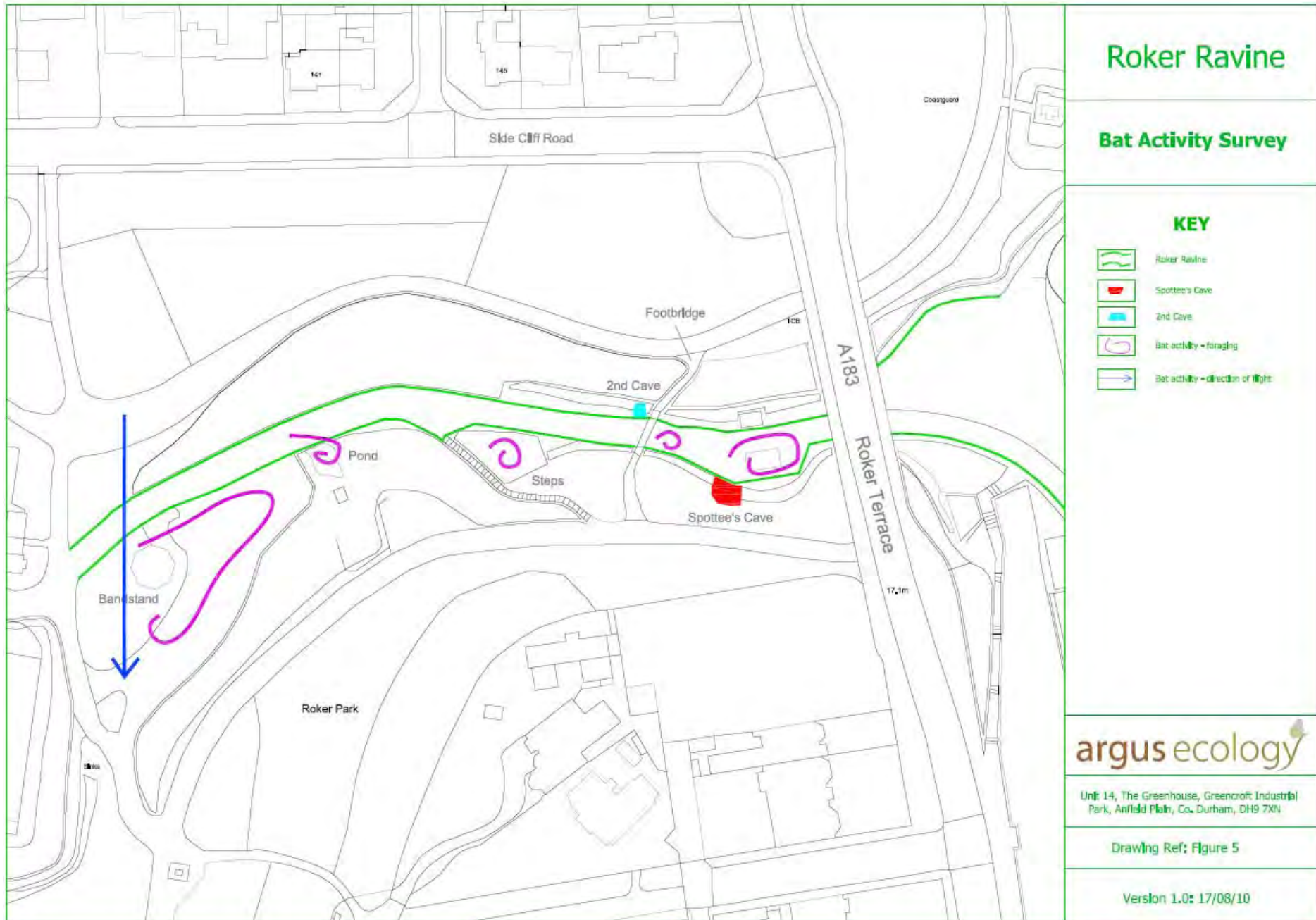
-  Whitburn Steel  
Rocks Ramsar site,  
SPA & SNCI
-  Whitburn Bents SNCI

argus ecology

Unit 14, The Greenhouse, Greencroft Industrial  
Park, Anfield Park, Co. Durham, DH9 7XN

Drawing Ref: Figure 4

Version 1.0: 18/08/10





# Sunderland Marina & River Wear

## Wetland Bird Survey - High Tide Count

May to August 2010

- KEY**
-  'Annex I' bird species
  -  'WCA 1981' bird species
  -  'Red List' bird species
  -  'Amber List' bird species
  -  'Green List' bird species - no conservation designation
  -  Vantage Point Locations
  -  Mean low water mark
  -  Mean high water mark

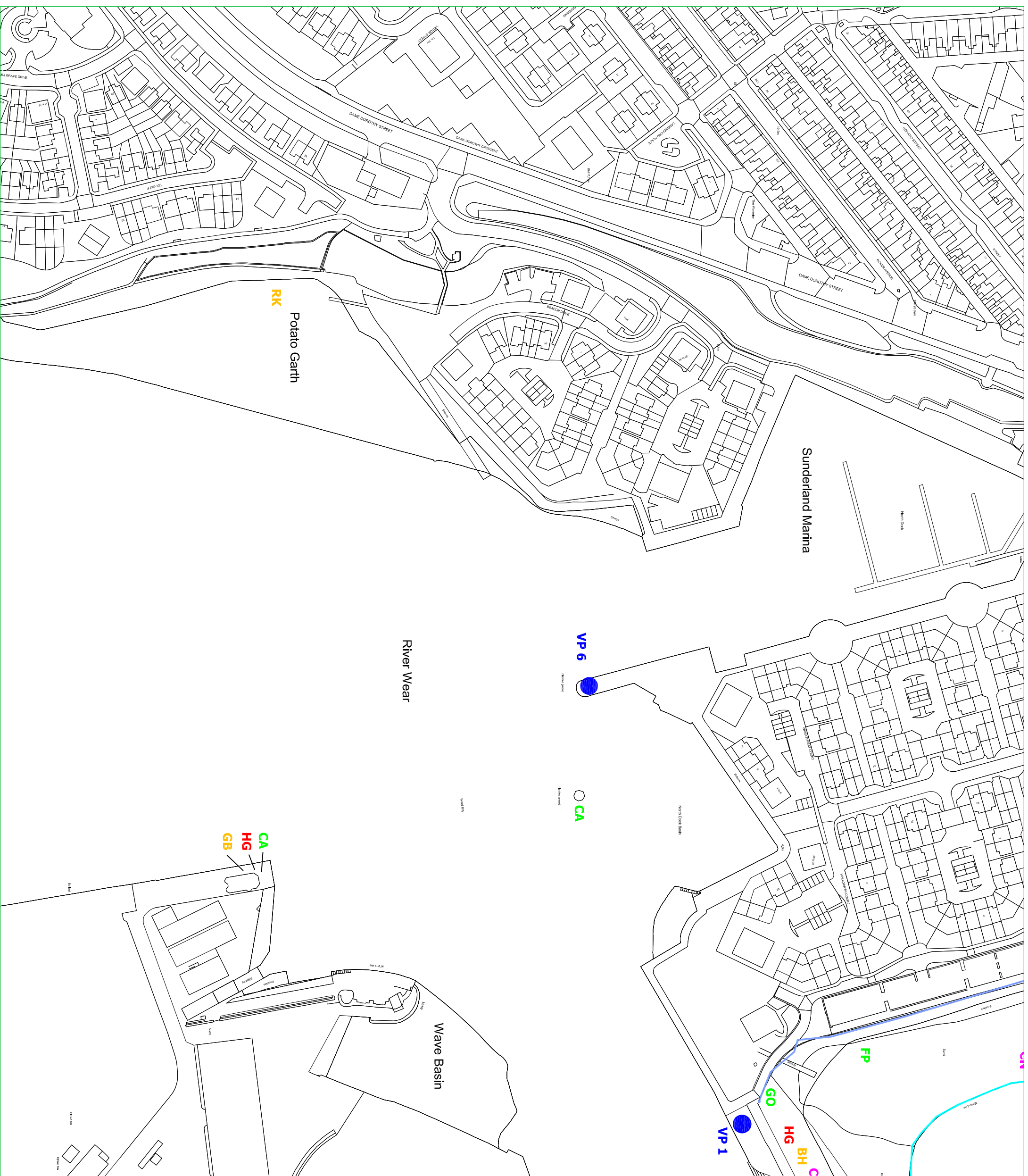
See text - Appendix 6 - for bird species codes



Unit 14, The Greenhouse, Greencroft Industrial Park, Anfield Plain, Co. Durham, DH9 7XN

Drawing Ref: Figure 6









Version 1.0: 13/01/11



# North Pier, Roker to Roker Pier

## Wetland Bird Survey - High Tide Count

May to August 2010

KEY	
	'Annex I' bird species
	'WCA 1981' bird species
	'Red List' bird species
	'Amber List' bird species
	'Green List' bird species - no conservation designation
	Vantage Point Locations
	Mean low water mark
	Mean high water mark

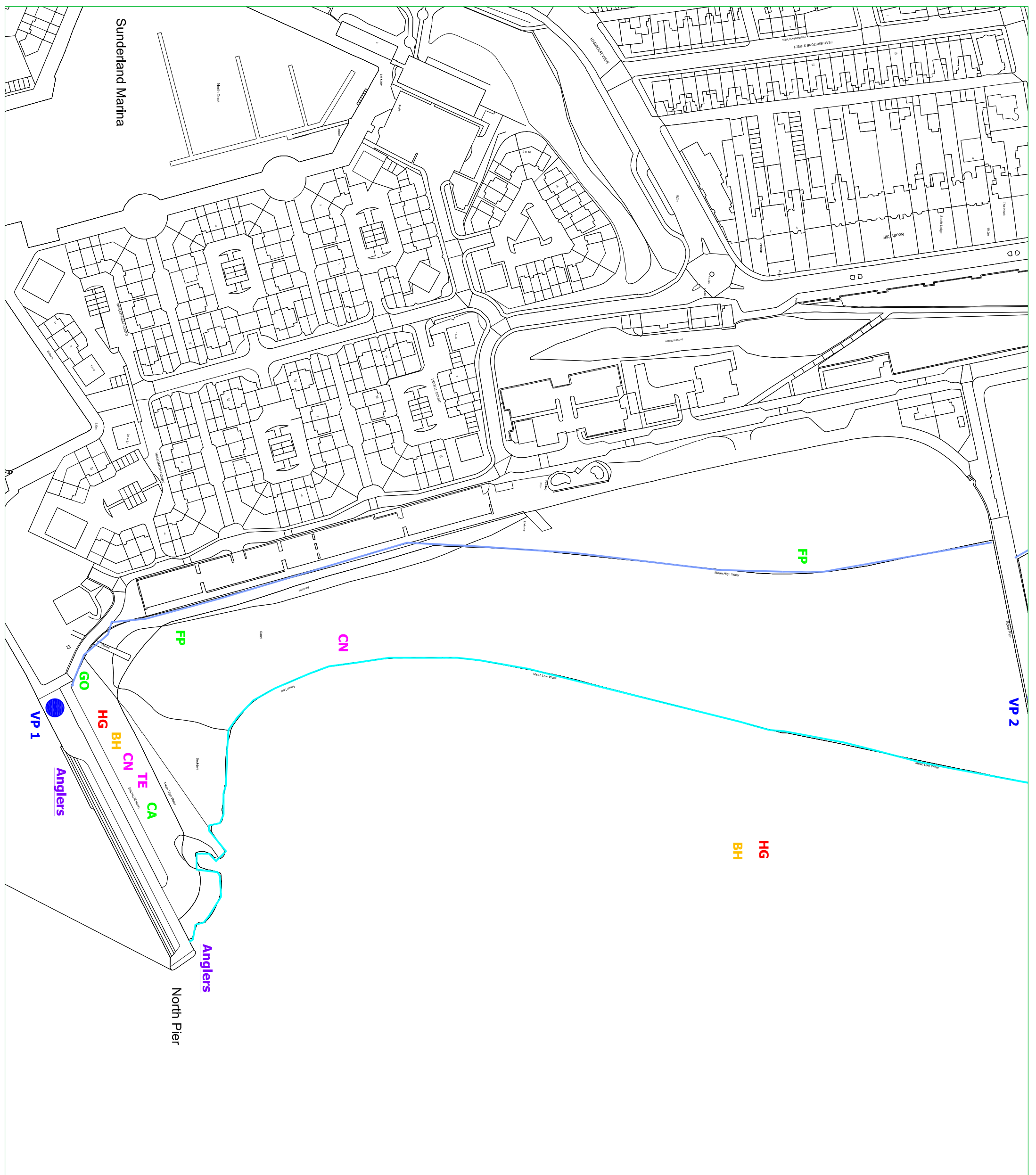
See text - Appendix 6 - for bird species codes



Unit 14, The Greenhouse, Greencroft Industrial Park, Anfield Plain, Co. Durham, DH9 7XN

Drawing Ref: Figure 7

Version 1.0: 13/01/11







# Parson's Rocks & Roker Cliff Park

## Wetland Bird Survey - High Tide Count

May to August 2010

- KEY**
- 'Annex I' bird species
  - 'WCA 1981' bird species
  - 'Red List' bird species
  - 'Amber List' bird species
  - 'Green List' bird species - no conservation designation
  - Vantage Point Locations
  - Mean low water mark
  - Mean high water mark

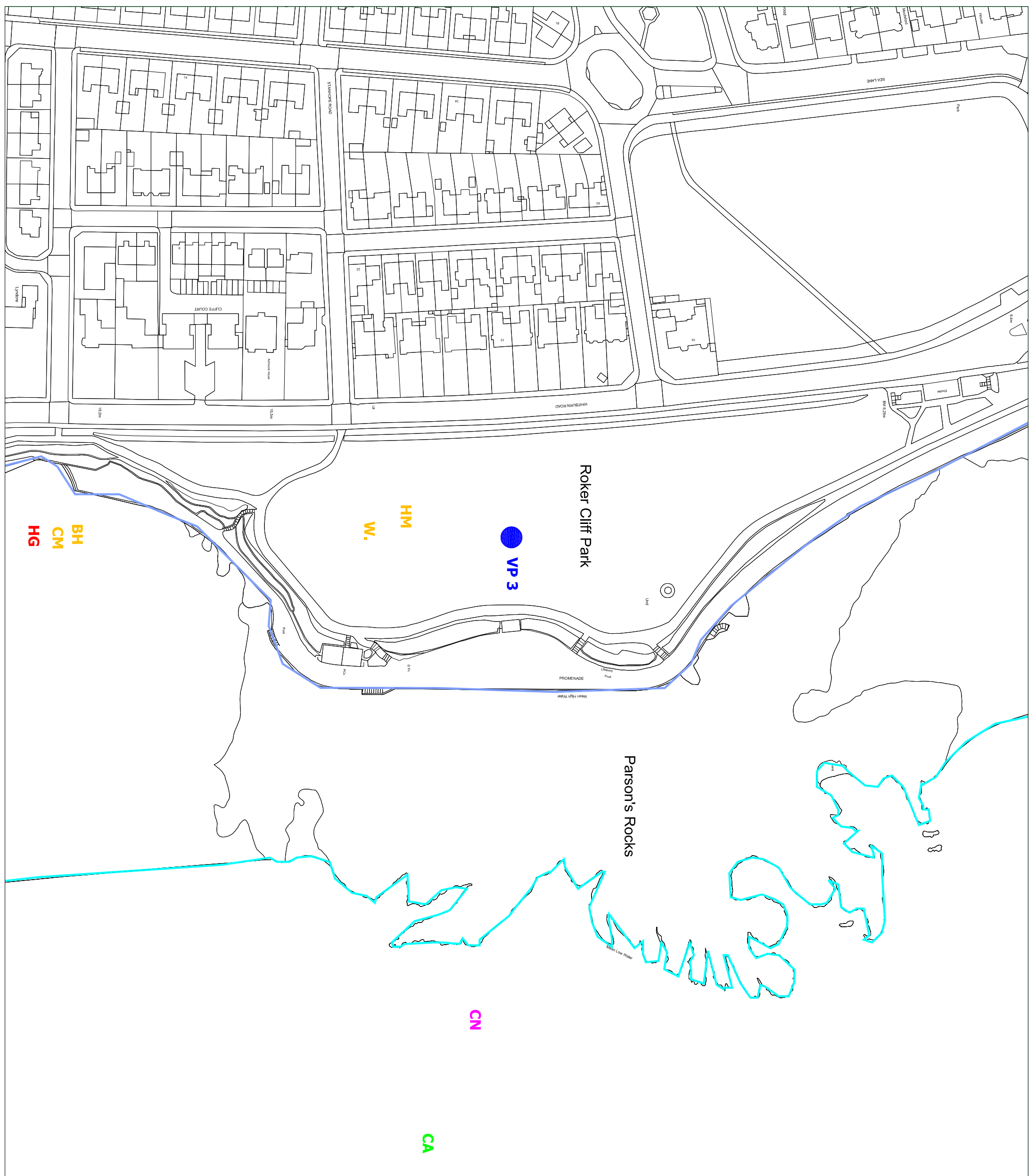
See text - Appendix 6 - for bird species codes



Unit 14, The Greenhouse, Greencroft Industrial Park, Anfield Plain, Co. Durham, DH9 7XN

Drawing Ref: Figure 9









Version 1.0: 13/01/11



# Whitburn Sands

## Wetland Bird Survey - High Tide Count

May to August 2010

- KEY**
-  'Annex I' bird species
  -  'WCA 1981' bird species
  -  'Red List' bird species
  -  'Amber List' bird species
  -  'Green List' bird species - no conservation designation
  -  Vantage Point Locations
  -  Mean low water mark
  -  Mean high water mark

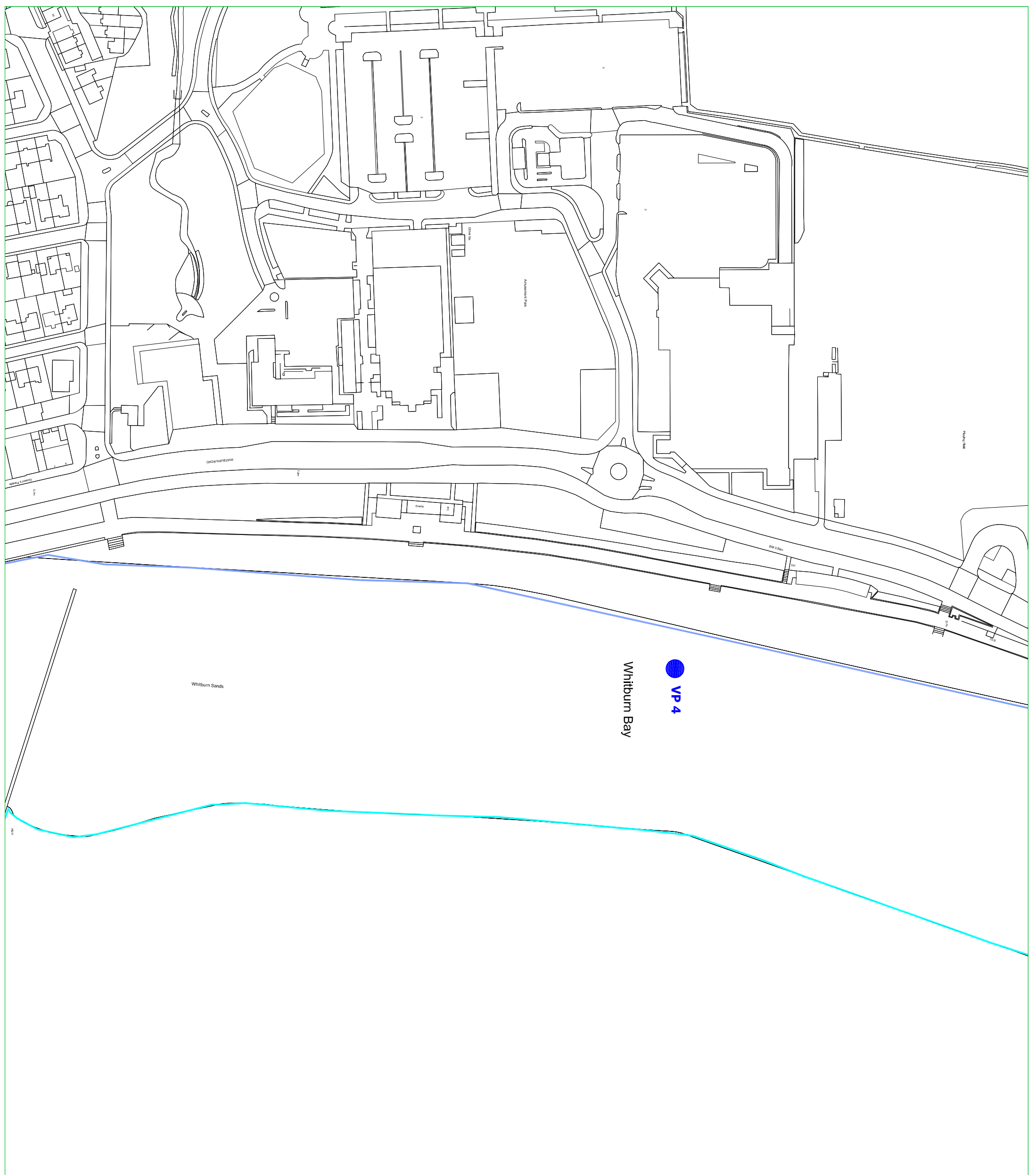
See text - Appendix 6 - for bird species codes



Unit 14, The Greenhouse, Greencroft Industrial Park, Anfield Plain, Co. Durham, DH9 7XN

Drawing Ref: Figure 10









Version 1.0: 13/01/11



# Whitburn Steel

## Wetland Bird Survey - High Tide Count

May to August 2010

KEY	
	'Annex I' bird species
	'WCA 1981' bird species
	'Red List' bird species
	'Amber List' bird species
	'Green List' bird species - no conservation designation
	Vantage Point Locations
	Mean low water mark
	Mean high water mark

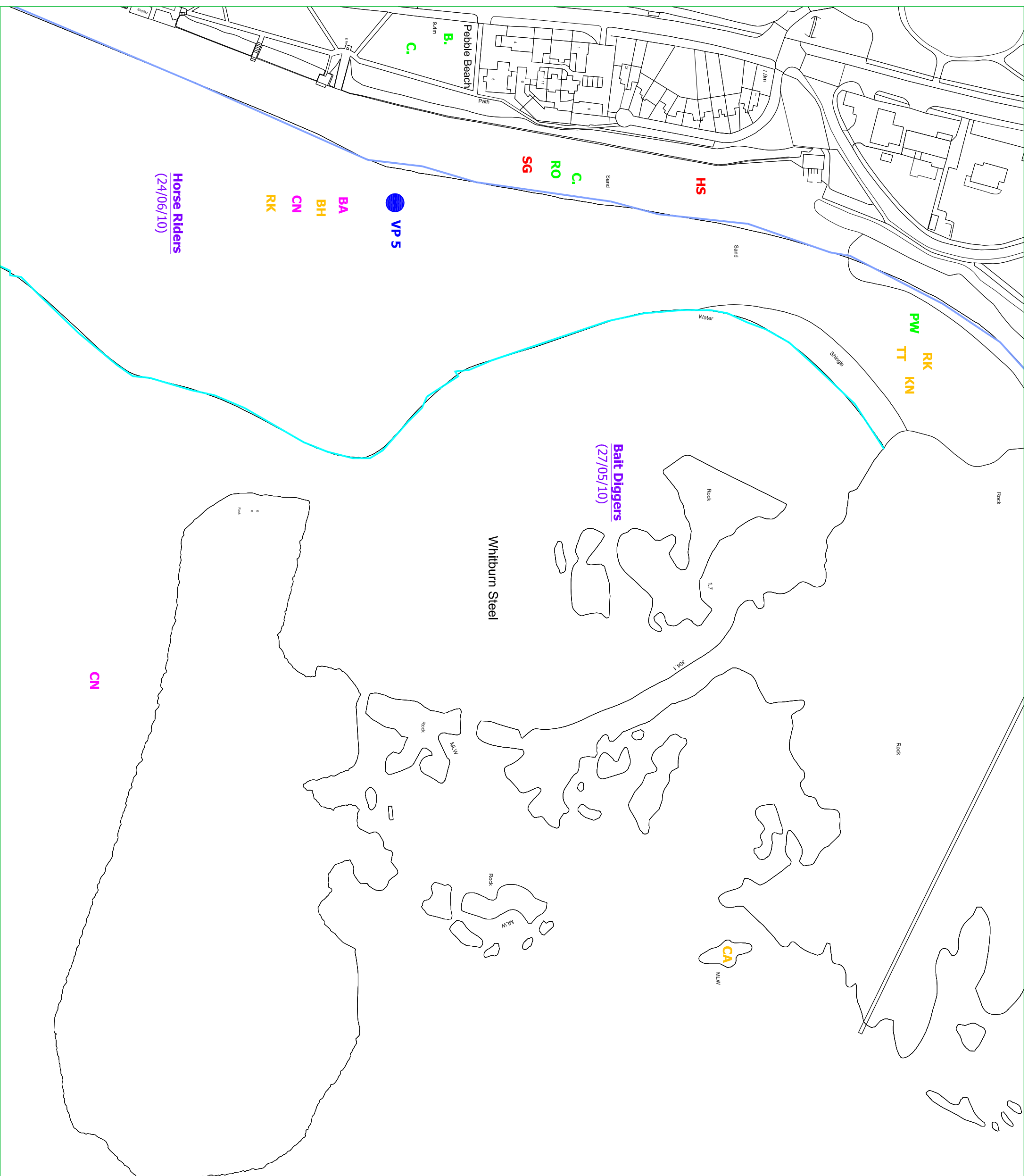
See text - Appendix 6 - for bird species codes



Unit 14, The Greenhouse, Greencroft Industrial Park, Anfield Plain, Co. Durham, DH9 7XN

Drawing Ref: Figure 11

Version 1.0: 13/01/11













# Sunderland Marina & River Wear

## Wetland Bird Survey - Low Tide Count

May to August 2010

KEY	
	'Annex I' bird species
	'WCA 1981' bird species
	'Red List' bird species
	'Amber List' bird species
	'Green List' bird species - no conservation designation
	Vantage Point Locations
	Mean low water mark
	Mean high water mark

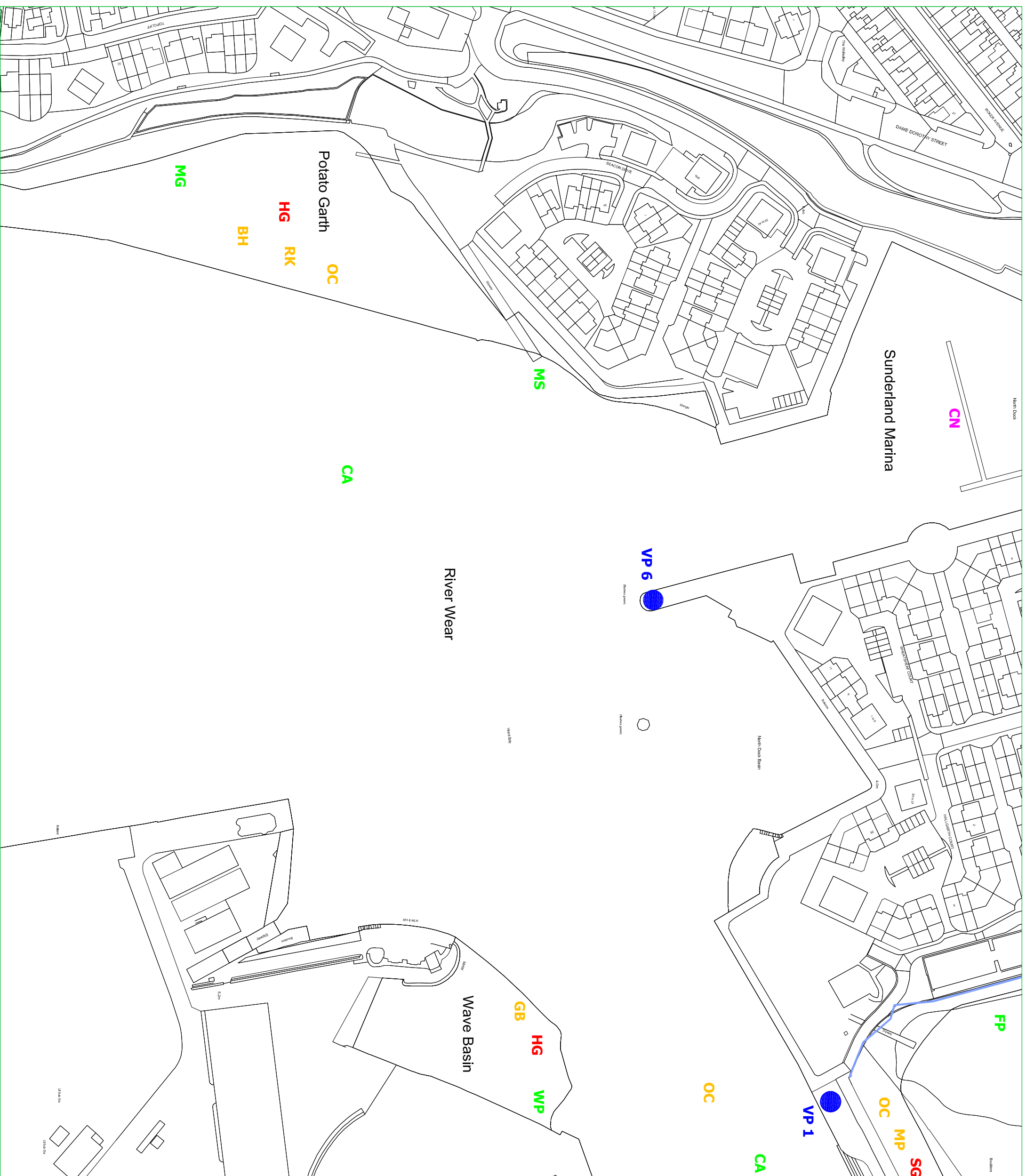
See text - Appendix 6 - for bird species codes



Unit 14, The Greenhouse, Greencroft Industrial Park, Anfield Plain, Co. Durham, DH9 7XN

Drawing Ref: Figure 12

Version 1.0: 13/01/11











# North Pier, Roker to Roker Pier

## Wetland Bird Survey - Low Tide Count

May to August 2010

### KEY

-  'Annex I' bird species
-  'WCA 1981' bird species
-  'Red List' bird species
-  'Amber List' bird species
-  'Green List' bird species - no conservation designation
-  Vantage Point Locations
-  Mean low water mark
-  Mean high water mark

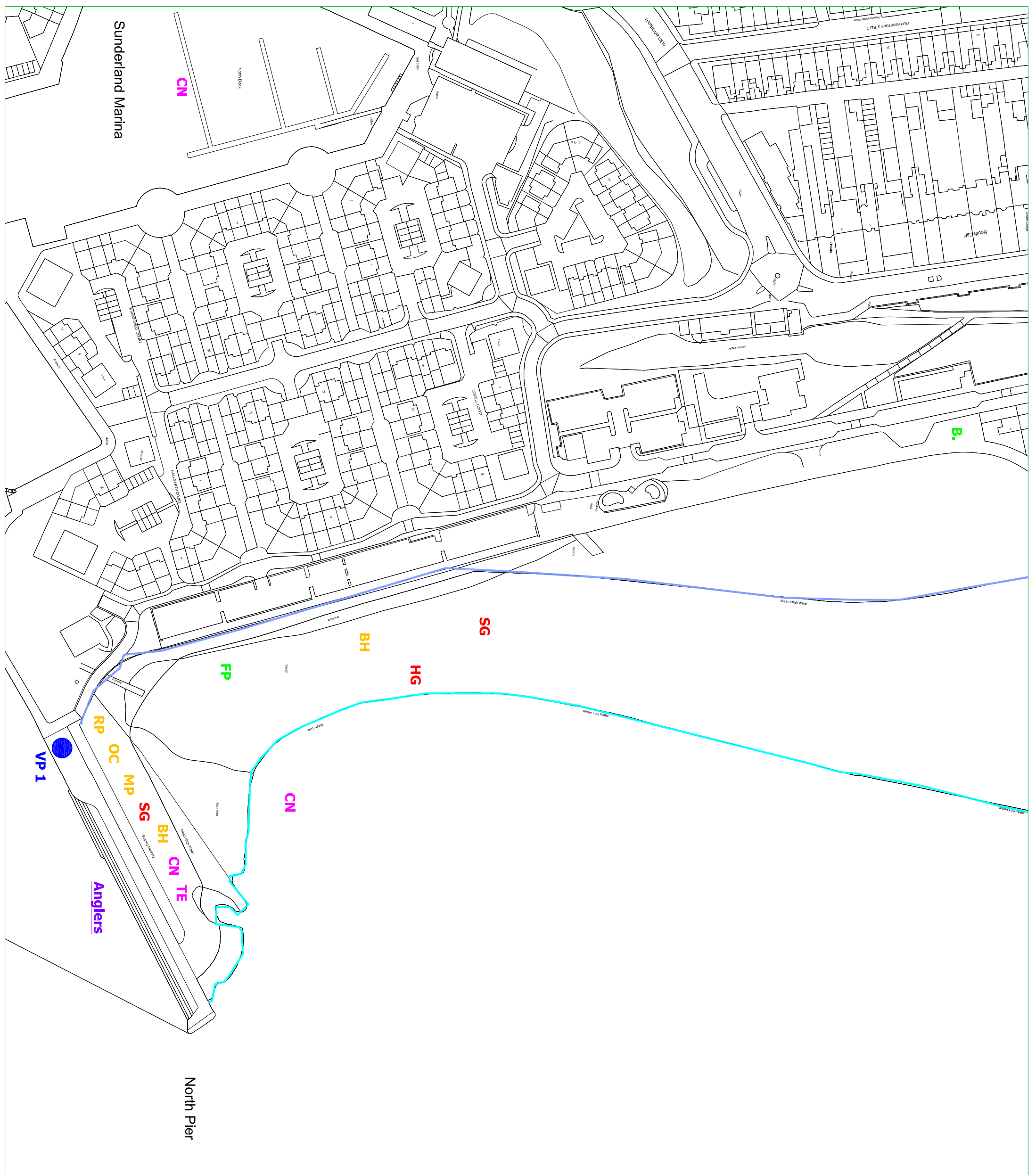
See text - Appendix 6 - for bird species codes



Unit 14, The Greenhouse, Greencroft Industrial Park, Anfield Plain, Co. Durham, DH9 7XN

Drawing Ref: Figure 13









Version 1.0: 13/01/11



# Roker Pier to Roker Rocks

## Wetland Bird Survey - Low Tide Count

May to August 2010

KEY	
	'Annex I' bird species
	'WCA 1981' bird species
	'Red List' bird species
	'Amber List' bird species
	'Green List' bird species - no conservation designation
	Vantage Point Locations
	Mean low water mark
	Mean high water mark

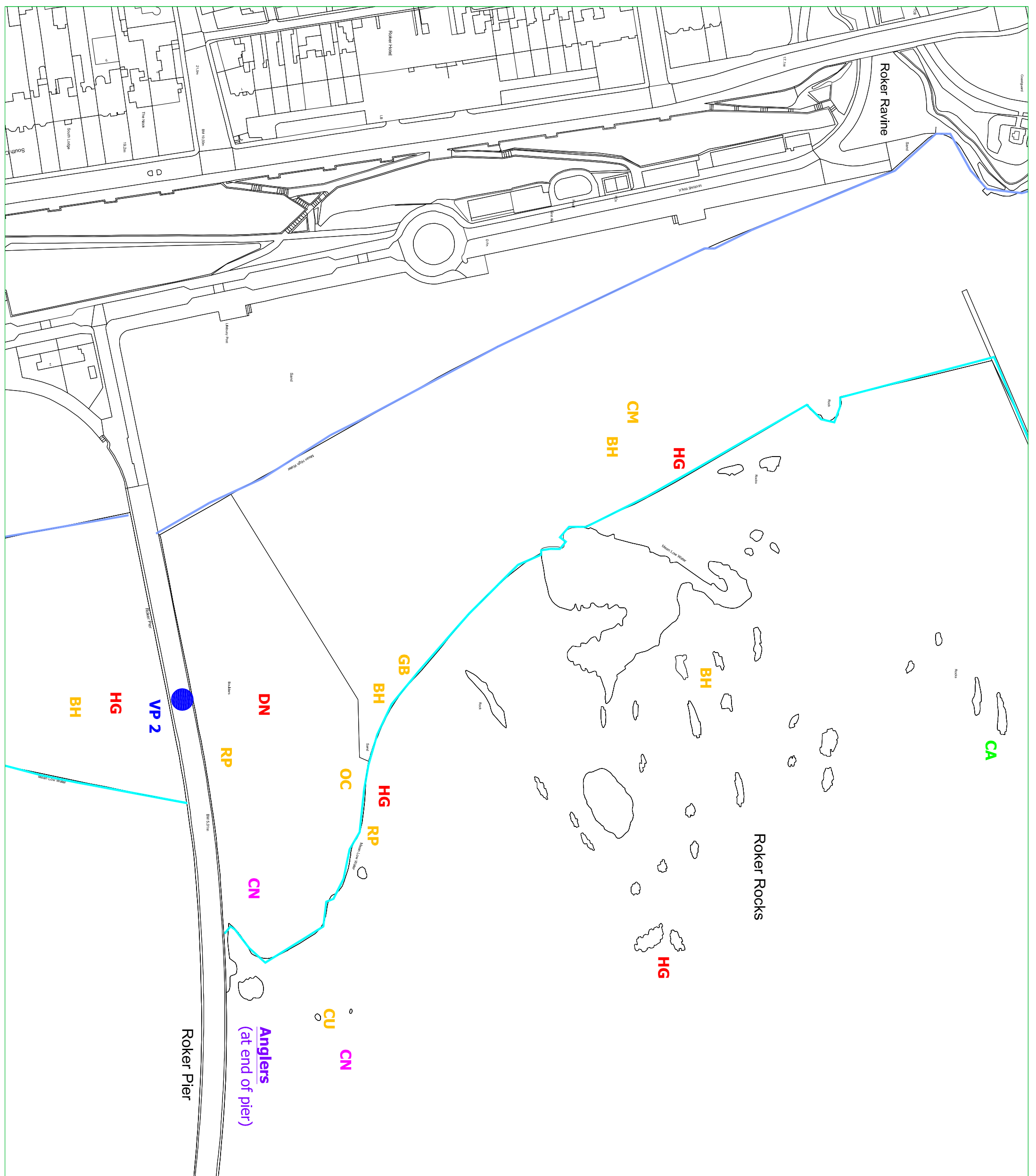
See text - Appendix 6 - for bird species codes



Unit 14, The Greenhouse, Greencroft Industrial Park, Anfield Plain, Co. Durham, DH9 7XN

Drawing Ref: Figure 14

Version 1.0: 13/01/11





# Parson's Rocks and Roker Cliff Park

## Wetland Bird Survey - Low Tide Count

May to August 2010

- KEY**
- 'Annex I' bird species
  - 'WCA 1981' bird species
  - 'Red List' bird species
  - 'Amber List' bird species
  - 'Green List' bird species - no conservation designation
  - Vantage Point Locations
  - Mean low water mark
  - Mean high water mark

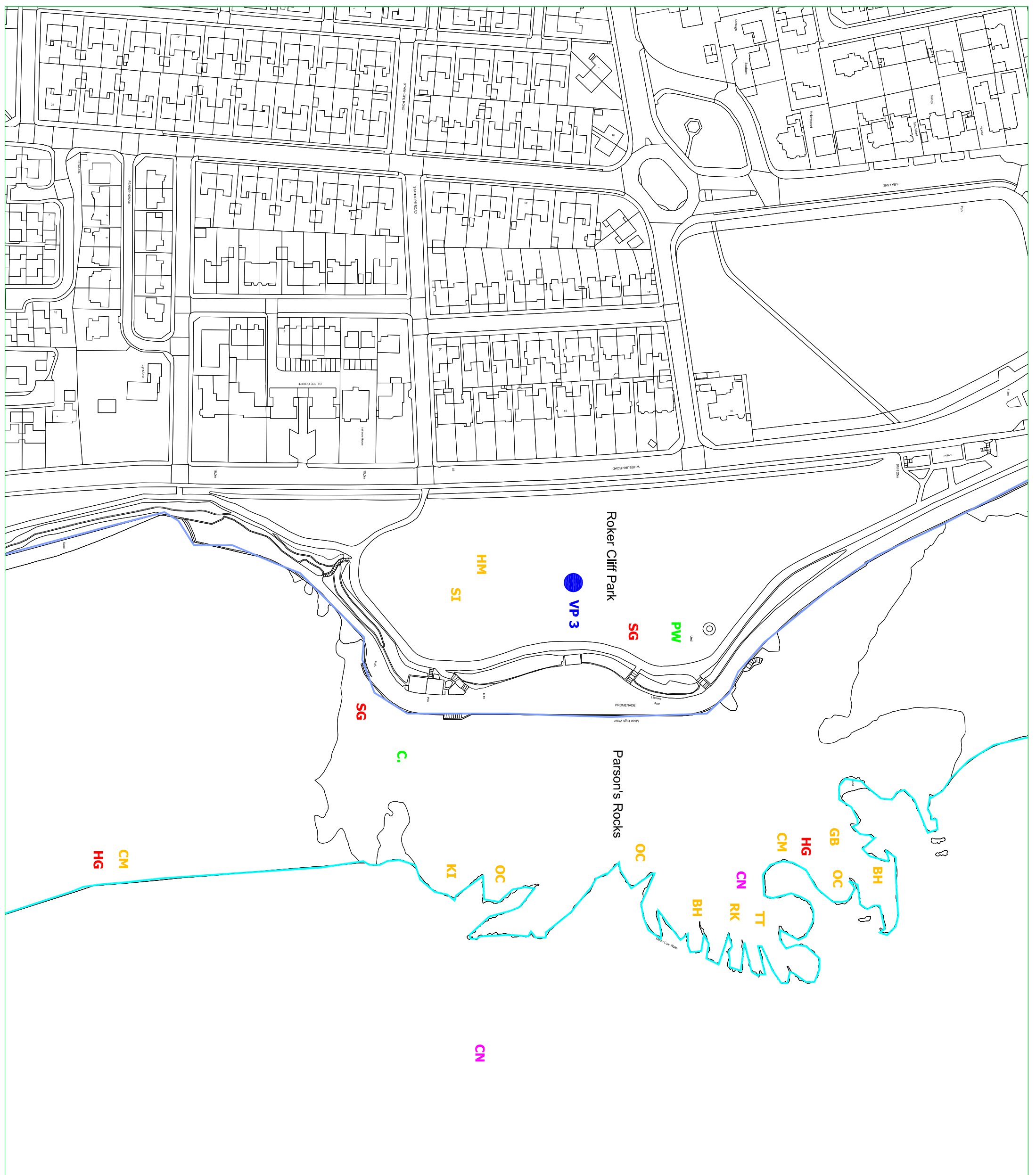
See text - Appendix 6 - for bird species codes



Unit 14, The Greenhouse, Greencroft Industrial Park, Anfield Plain, Co. Durham, DH9 7XN

Drawing Ref: Figure 15

Version 1.0: 13/01/11













# Whitburn Sands

## Wetland Bird Survey - Low Tide Count

May to August 2010

### KEY

-  'Annex I' bird species
-  'WCA 1981' bird species
-  'Red List' bird species
-  'Amber List' bird species
-  'Green List' bird species - no conservation designation
-  Vantage Point Locations
-  Mean low water mark
-  Mean high water mark

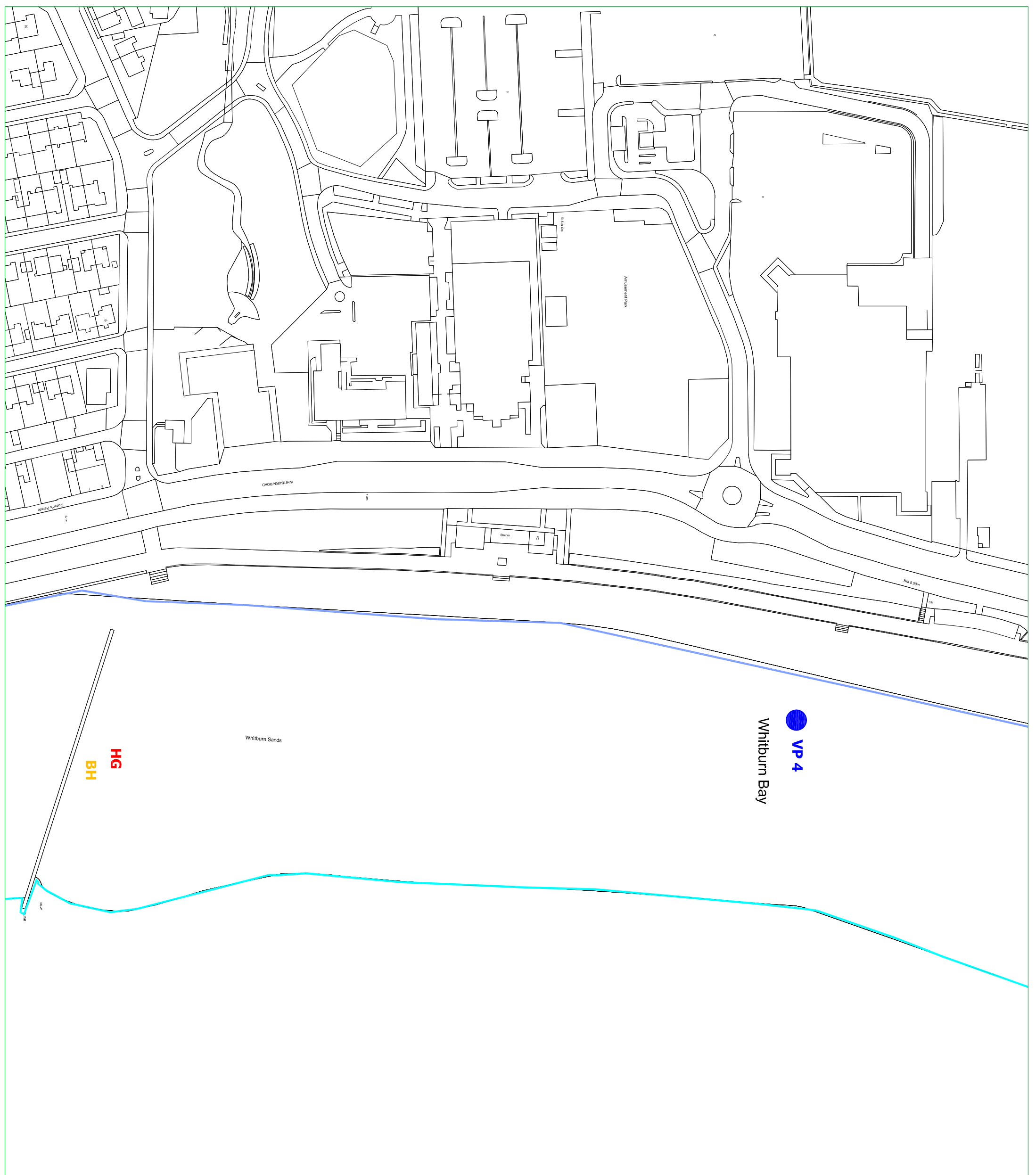
See text - Appendix 6 - for bird species codes



Unit 14, The Greenhouse, Greencroft Industrial Park, Anfield Plain, Co. Durham, DH9 7XN

Drawing Ref: Figure 16









Version 1.0: 13/01/11



# Whitburn Steel

## Wetland Bird Survey - Low Tide Count

May to August 2010

KEY	
	'Annex I' bird species
	'WCA 1981' bird species
	'Red List' bird species
	'Amber List' bird species
	'Green List' bird species - no conservation designation
	Vantage Point Locations
	Mean low water mark
	Mean high water mark

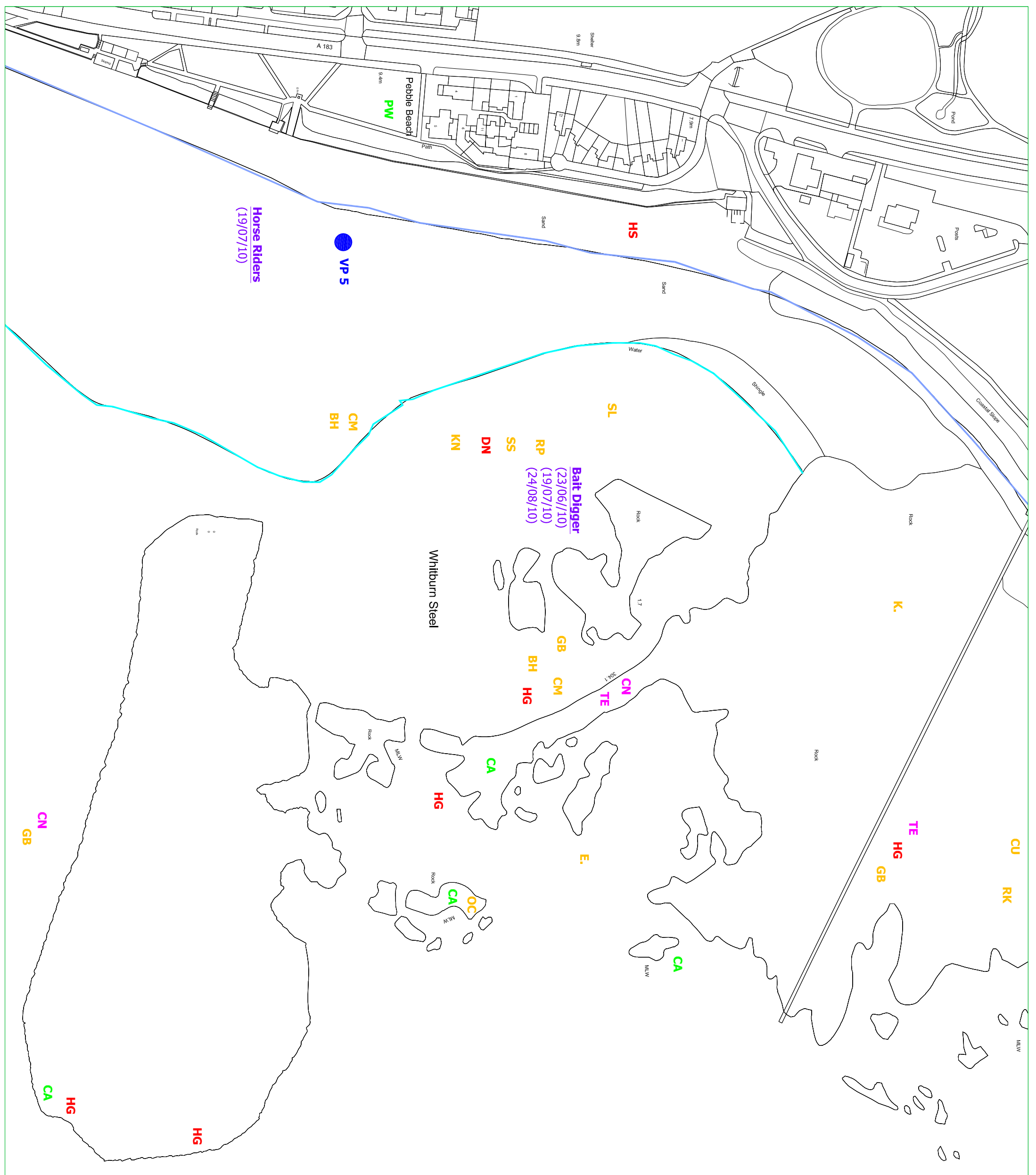
See text - Appendix 6 - for bird species codes



Unit 14, The Greenhouse, Greencroft Industrial Park, Anfield Plain, Co. Durham, DH9 7XN

Drawing Ref: Figure 17









Version 1.0: 13/01/11



# Sunderland Marina & River Wear

## Wetland Bird Survey - High Tide Count

September 2010 to March 2011

KEY	
	'Annex I' bird species
	'WCA 1981' bird species
	'Red List' bird species
	'Amber List' bird species
	'Green List' bird species - no conservation designation
	Vantage Point Locations
	Mean low water mark
	Mean high water mark

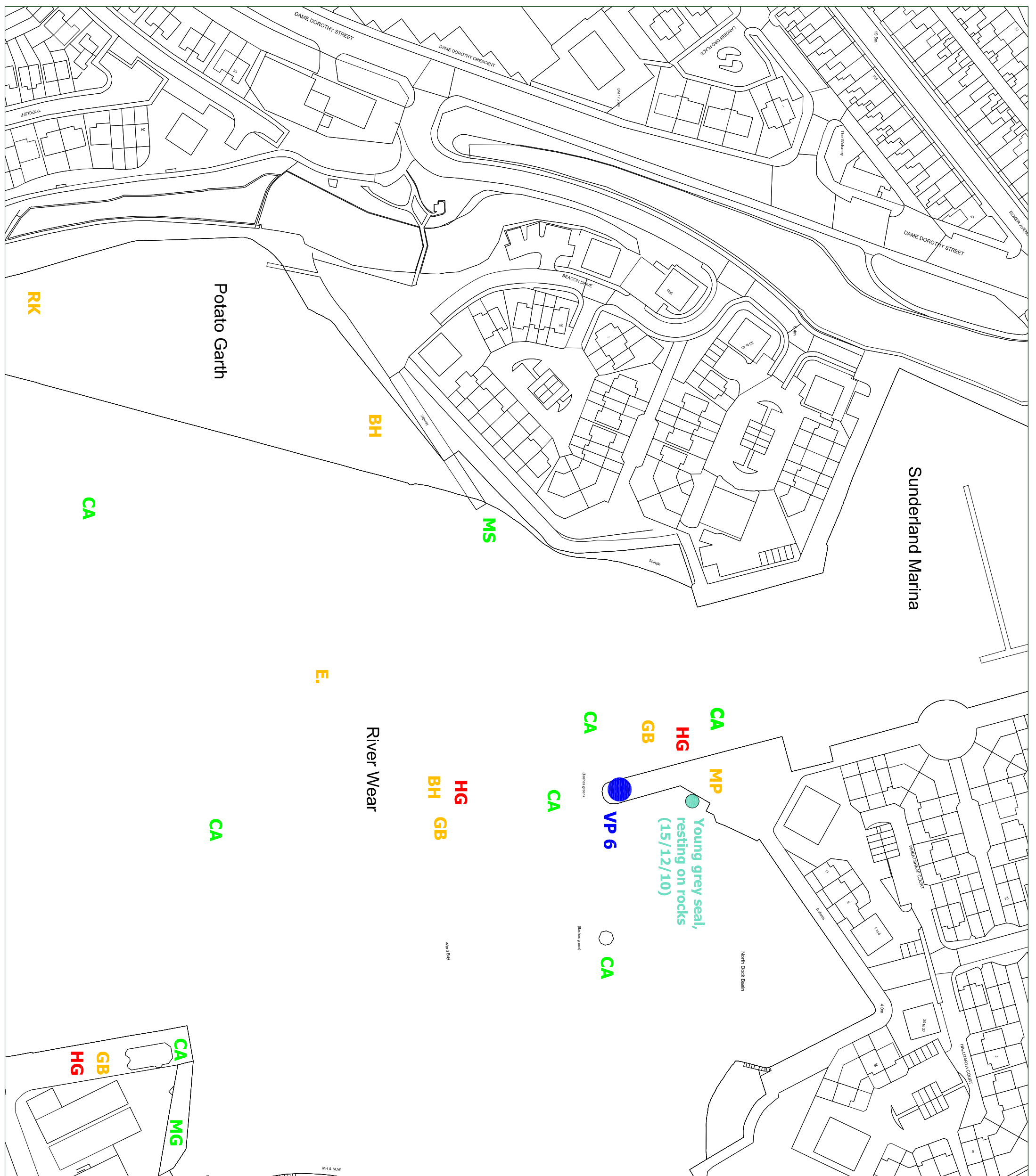
See text - Appendix 6 - for bird species codes



Unit 14, The Greenhouse, Greencroft Industrial Park, Anfield Plain, Co. Durham, DH9 7XN

Drawing Ref: Figure 18

Version 1.0: 07/03/11











# North Pier, Roker to Roker Pier

## Wetland Bird Survey - High Tide Count

September 2010  
to March 2011

### KEY

-  'Annex I' bird species
-  'WCA 1981' bird species
-  'Red List' bird species
-  'Amber List' bird species
-  'Green List' bird species - no conservation designation
-  Vantage Point Locations
-  Mean low water mark
-  Mean high water mark

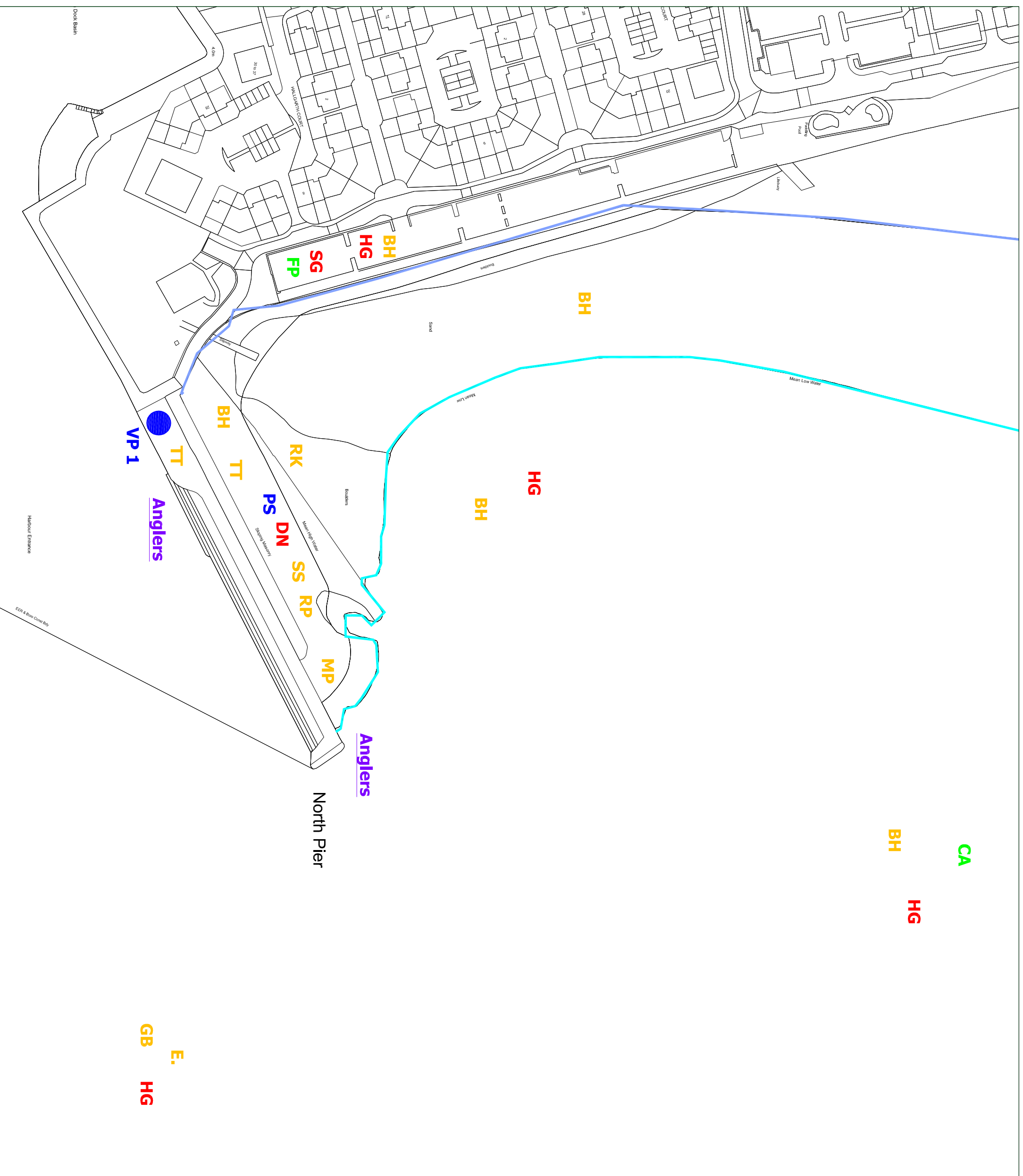
See text - Appendix 6 - for bird species codes



Unit 14, The Greenhouse, Greencroft Industrial Park, Anfield Plain, Co. Durham, DH9 7XN

Drawing Ref: Figure 19

Version 1.0: 07/03/11













# Roker Pier to Roker Rocks

## Wetland Bird Survey - High Tide Count

September 2010  
to March 2011

KEY	
	'Annex I' bird species
	'WCA 1981' bird species
	'Red List' bird species
	'Amber List' bird species
	'Green List' bird species - no conservation designation
	Vantage Point Locations
	Mean low water mark
	Mean high water mark

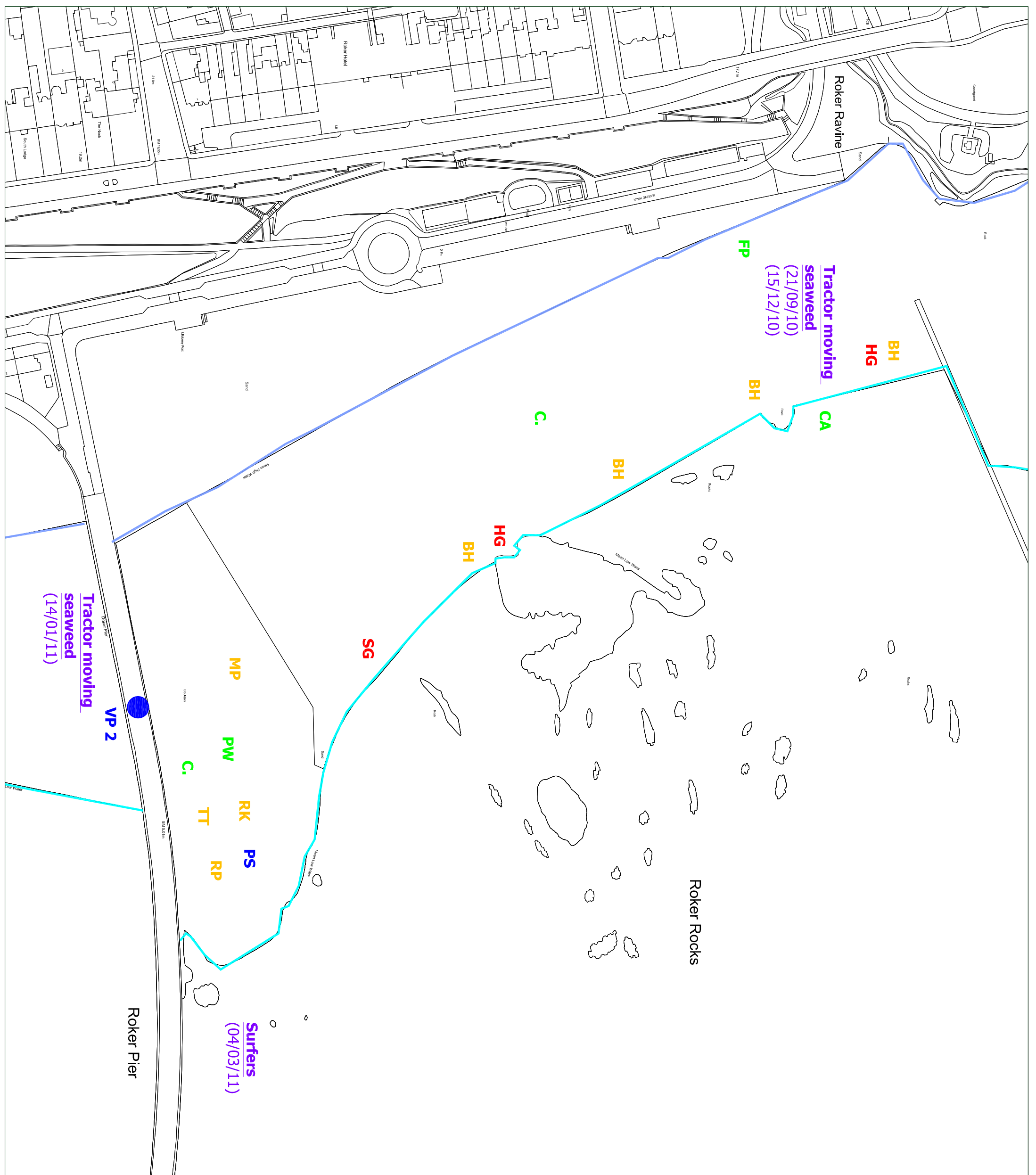
See text - Appendix 6 - for bird species codes



Unit 14, The Greenhouse, Greencroft Industrial Park, Anfield Plain, Co. Durham, DH9 7XN

Drawing Ref: Figure 20









Version 1.0: 07/03/11



# Parson's Rocks & Roker Cliff Park

## Wetland Bird Survey - High Tide Count

September 2010 to March 2011

KEY	
	'Annex I' bird species
	'WCA 1981' bird species
	'Red List' bird species
	'Amber List' bird species
	'Green List' bird species - no conservation designation
	Vantage Point Locations
	Mean low water mark
	Mean high water mark

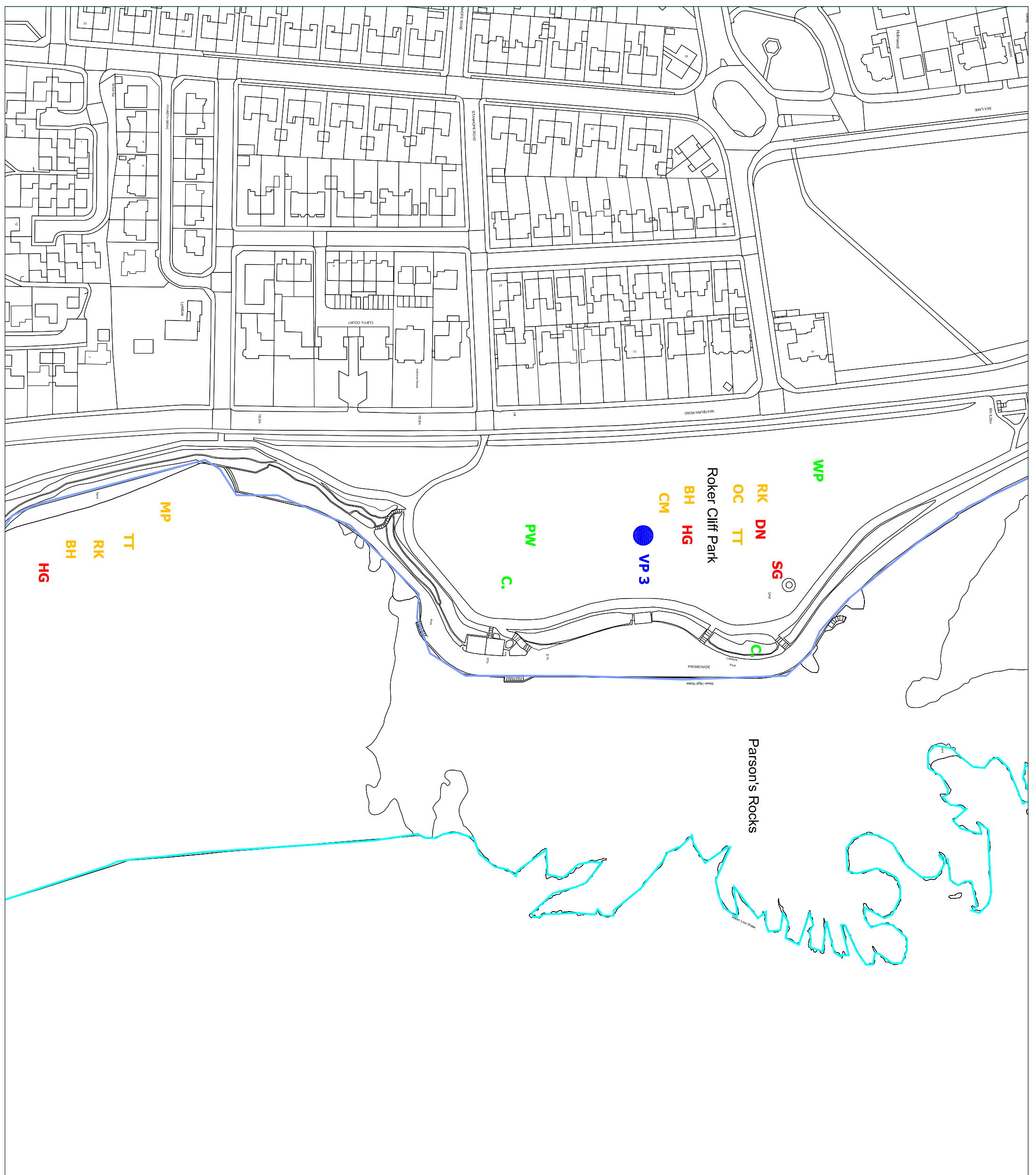
See text - Appendix 6 - for bird species codes



Unit 14, The Greenhouse, Greencroft Industrial Park, Anfield Plain, Co. Durham, DH9 7XN

Drawing Ref: Figure 21









Version 1.0: 07/03/11



# Whitburn Sands

## Wetland Bird Survey - High Tide Count

September 2010  
to March 2011

- KEY**
-  'Annex I' bird species
  -  'WCA 1981' bird species
  -  'Red List' bird species
  -  'Amber List' bird species
  -  'Green List' bird species - no conservation designation
  -  Vantage Point Locations
  -  Mean low water mark
  -  Mean high water mark

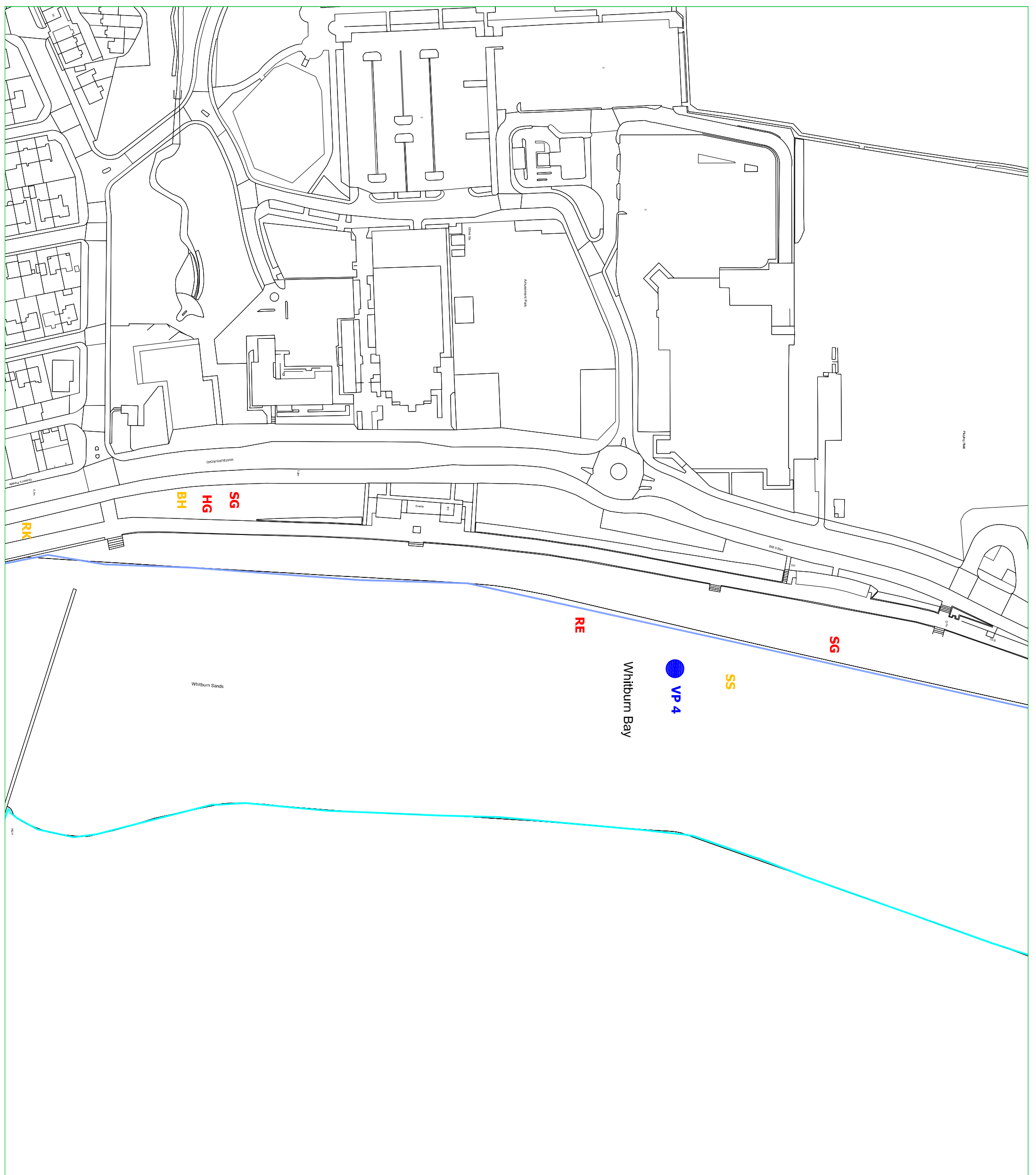
See text - Appendix 6 - for bird species codes



Unit 14, The Greenhouse, Greencroft Industrial Park, Anfield Plain, Co. Durham, DH9 7XN

Drawing Ref: Figure 22







Version 1.0: 07/03/11



# Whitburn Steel

## Wetland Bird Survey - High Tide Count

September 2010  
to March 2011

- KEY**
-  'Annex I' bird species
  -  'WCA 1981' bird species
  -  'Red List' bird species
  -  'Amber List' bird species
  -  'Green List' bird species - no conservation designation
  -  Vantage Point Locations
  -  Mean low water mark
  -  Mean high water mark

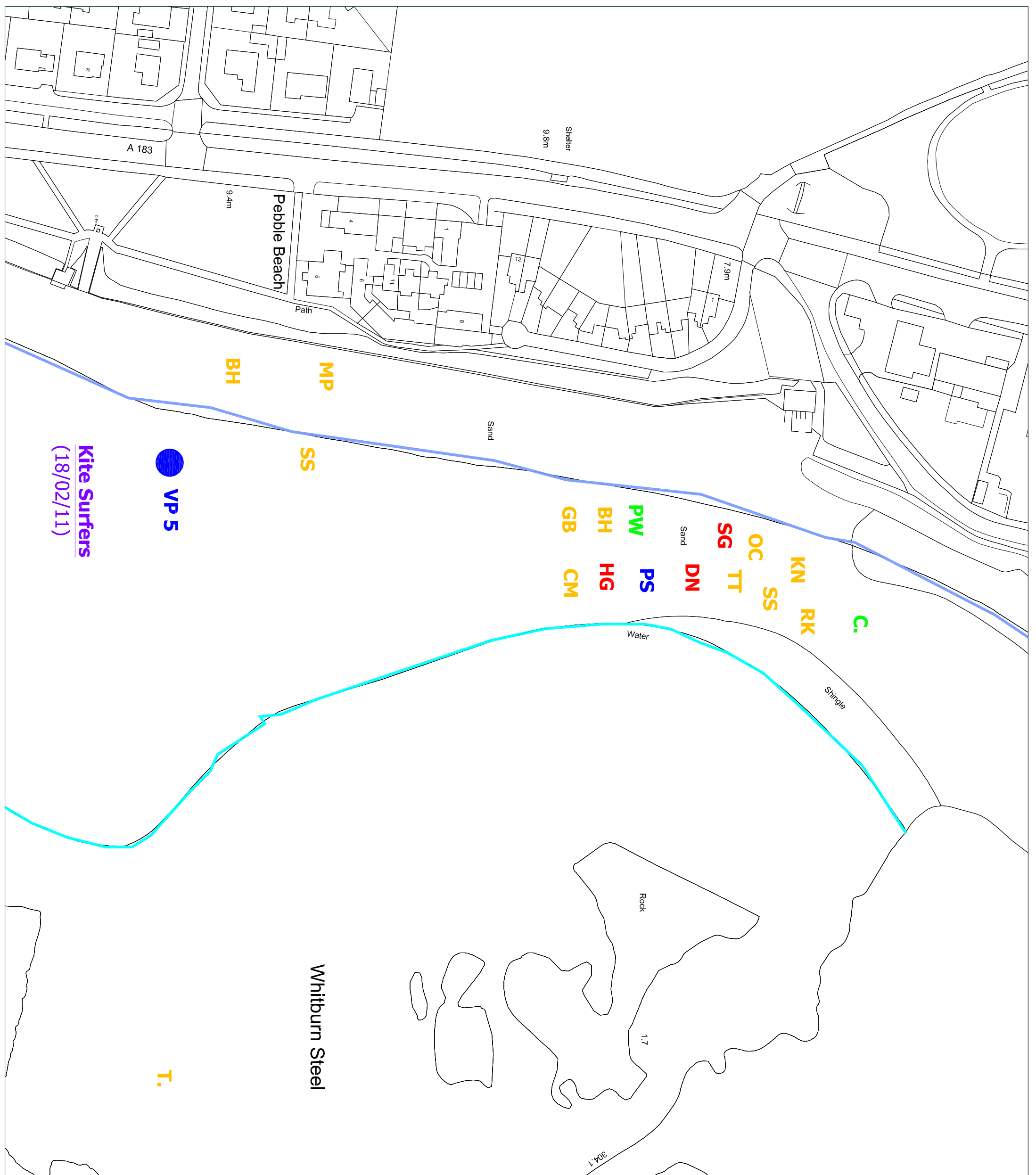
See text - Appendix 6 - for bird species codes



Unit 14, The Greenhouse, Greencroft Industrial Park, Anfield Plain, Co. Durham, DH9 7XN

Drawing Ref: Figure 23

Version 1.0: 07/03/11











**Kite Surfers**  
(18/02/11)



# Ocean Park

## Wetland Bird Survey - High Tide Count

September 2010  
to March 2011

KEY	
	'Annex I' bird species
	'WCA 1981' bird species
	'Red List' bird species
	'Amber List' bird species
	'Green List' bird species - no conservation designation
	Vantage Point Locations
	Mean low water mark
	Mean high water mark

See text - Appendix 6 - for bird species codes

**argus ecology**

Unit 14, The Greenhouse, Greencroft Industrial Park, Anfield Plain, Co. Durham, DH9 7XN

Drawing Ref: Figure 24









Version 1.0: 07/03/11



# Sunderland Marina & River Wear

## Wetland Bird Survey - Low Tide Count

September 2010 to March 2011

KEY	
	'Annex I' bird species
	'WCA 1981' bird species
	'Red List' bird species
	'Amber List' bird species
	'Green List' bird species - no conservation designation
	Vantage Point Locations
	Mean low water mark
	Mean high water mark

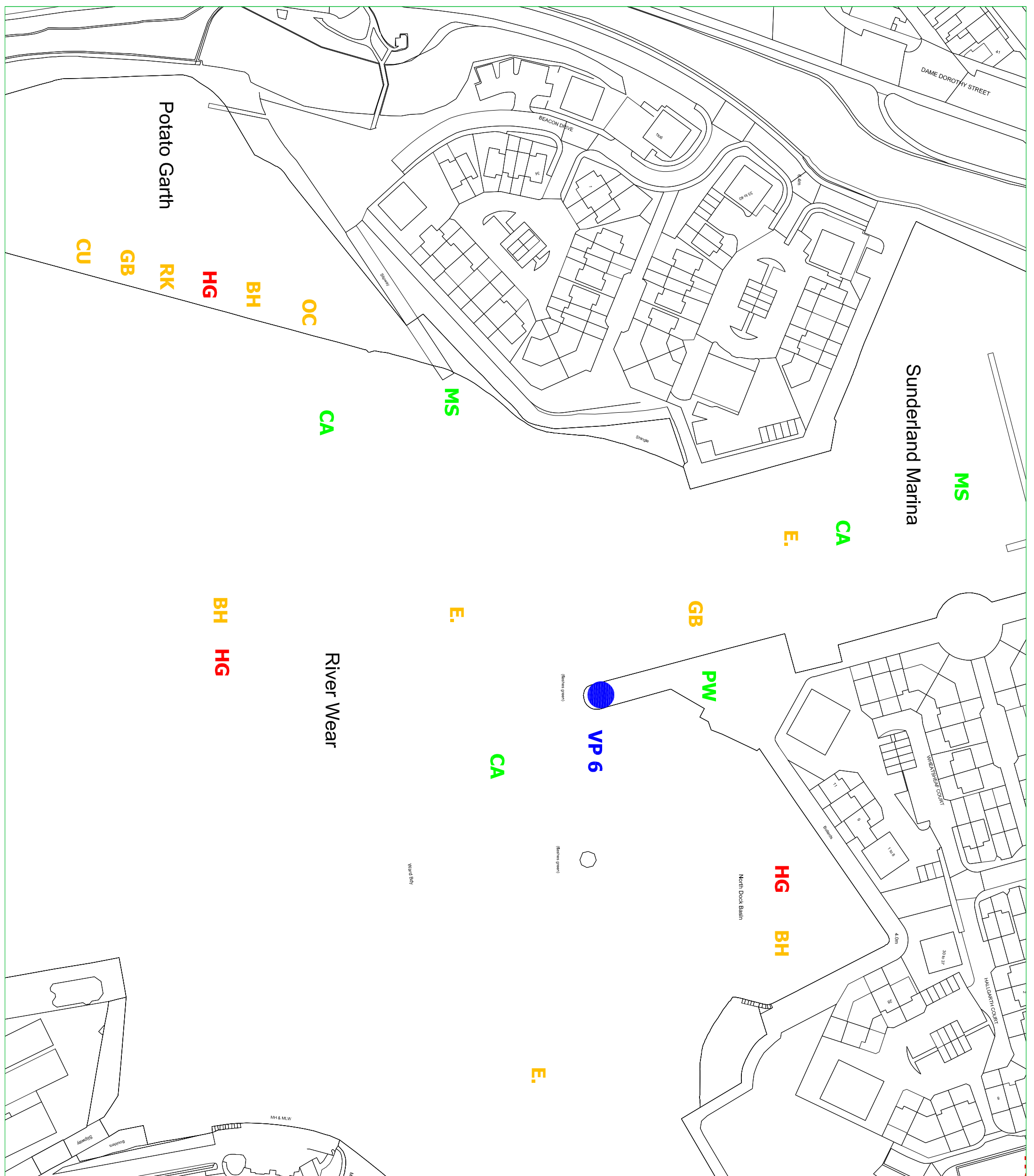
See text - Appendix 6 - for bird species codes



Unit 14, The Greenhouse, Greencroft Industrial Park, Anfield Plain, Co. Durham, DH9 7XN

Drawing Ref: Figure 25

Version 1.0: 07/03/11











# North Pier, Roker to Roker Pier

## Wetland Bird Survey - Low Tide Count

September 2010 to March 2011

### KEY

-  'Annex I' bird species
-  'WCA 1981' bird species
-  'Red List' bird species
-  'Amber List' bird species
-  'Green List' bird species - no conservation designation
-  Vantage Point Locations
-  Mean low water mark
-  Mean high water mark

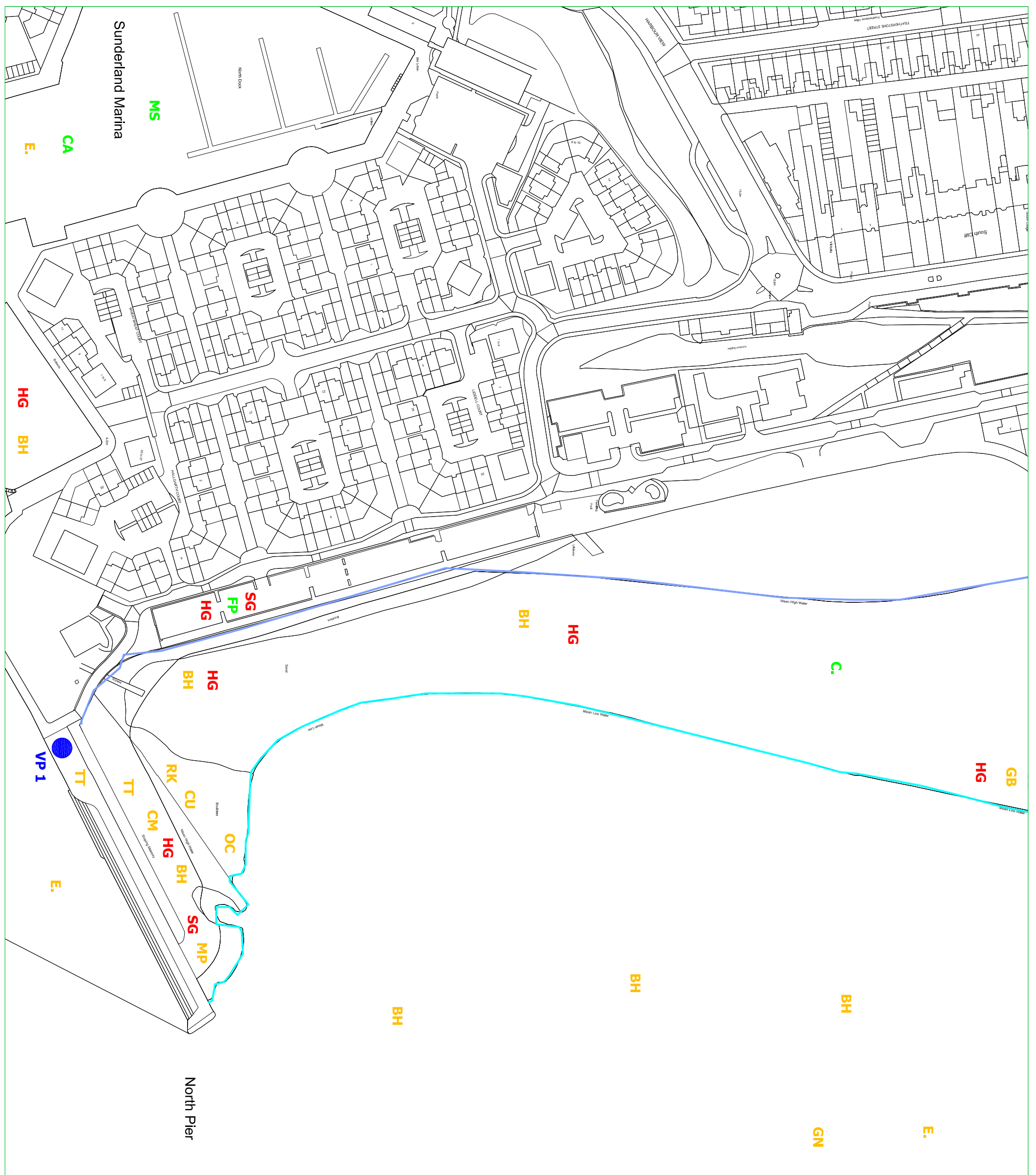
See text - Appendix 6 - for bird species codes



Unit 14, The Greenhouse, Greencroft Industrial Park, Anfield Plain, Co. Durham, DH9 7XN

Drawing Ref: Figure 26

Version 1.0: 07/03/11













# Roker Pier to Roker Rocks

## Wetland Bird Survey - Low Tide Count

September 2010 to March 2011

**KEY**

	'Annex I' bird species
	'WCA 1981' bird species
	'Red List' bird species
	'Amber List' bird species
	'Green List' bird species - no conservation designation
	Vantage Point Locations
	Mean low water mark
	Mean high water mark

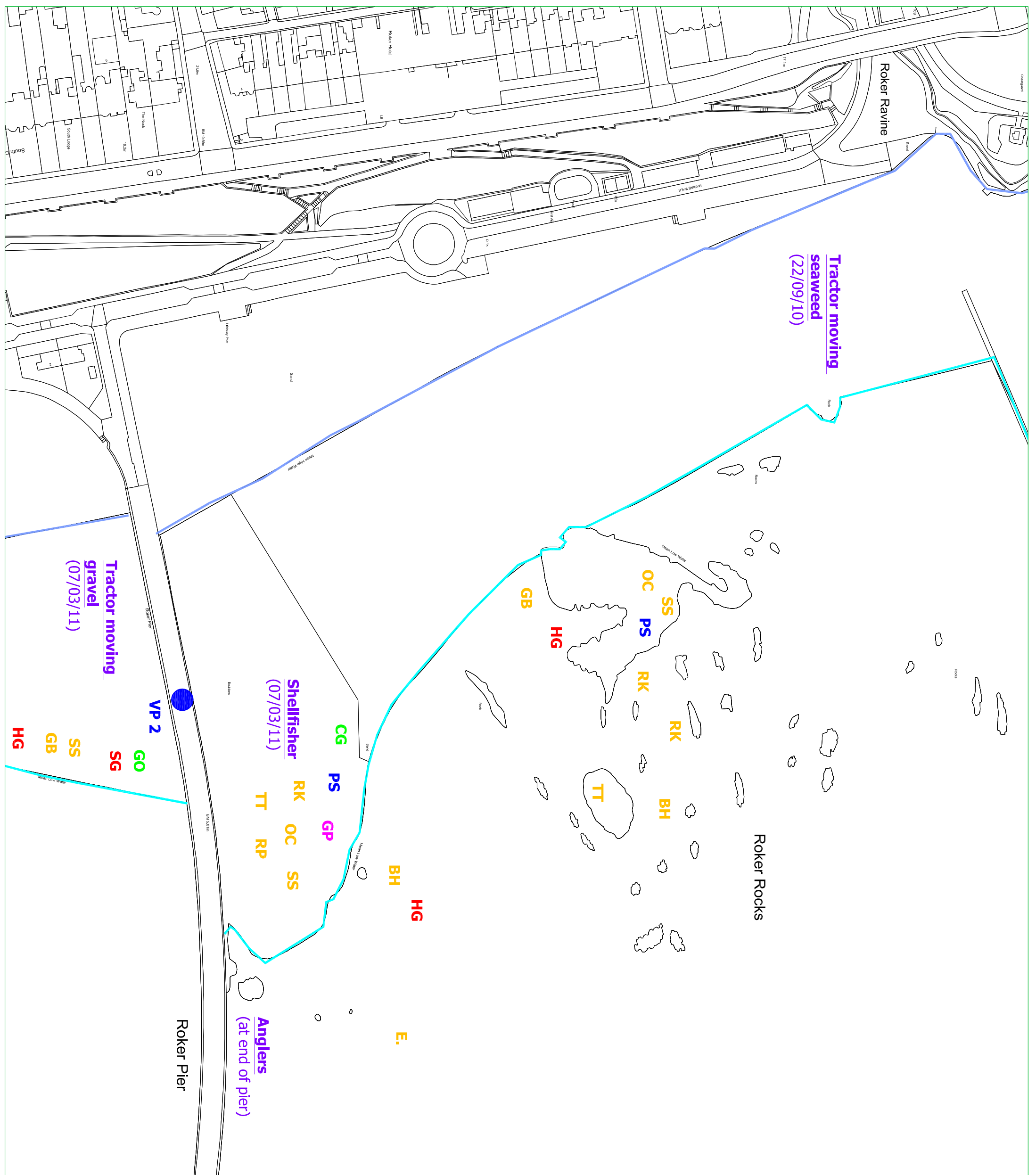
See text - Appendix 6 - for bird species codes



Unit 14, The Greenhouse, Greencroft Industrial Park, Anfield Plain, Co. Durham, DH9 7XN

Drawing Ref: Figure 27

Version 1.0: 07/03/11











# Parson's Rocks and Roker Cliff Park

## Wetland Bird Survey - Low Tide Count

September 2010 to March 2011

### KEY

-  'Annex I' bird species
-  'WCA 1981' bird species
-  'Red List' bird species
-  'Amber List' bird species
-  'Green List' bird species - no conservation designation
-  Vantage Point Locations
-  Mean low water mark
-  Mean high water mark

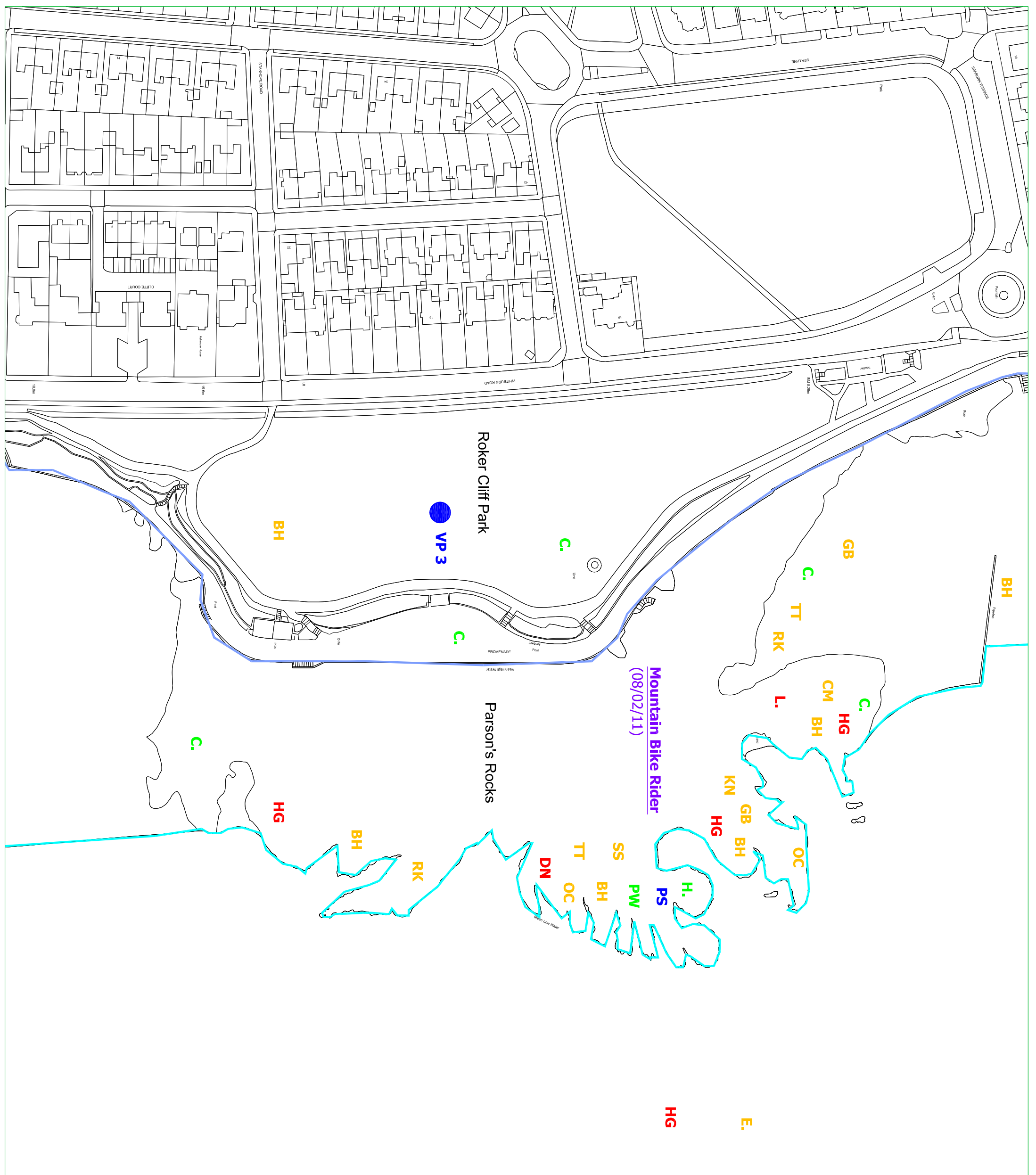
See text - Appendix 6 - for bird species codes



Unit 14, The Greenhouse, Greencroft Industrial Park, Anfield Plain, Co. Durham, DH9 7XN

Drawing Ref: Figure 28









Version 1.0: 07/03/11



# Whitburn Sands

## Wetland Bird Survey - Low Tide Count

September 2010  
to March 2010

KEY	
	'Annex I' bird species
	'WCA 1981' bird species
	'Red List' bird species
	'Amber List' bird species
	'Green List' bird species - no conservation designation
	Vantage Point Locations
	Mean low water mark
	Mean high water mark

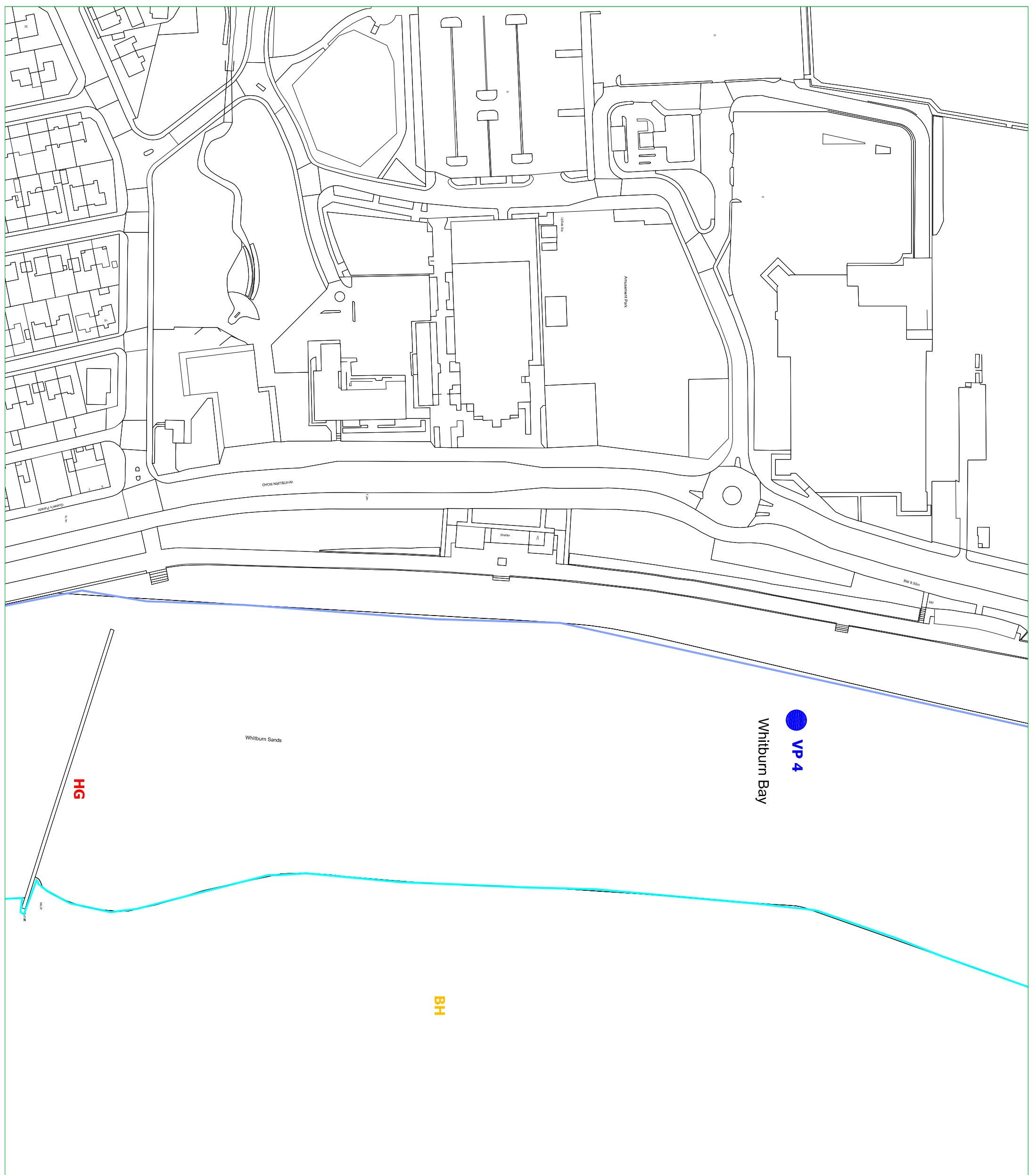
See text - Appendix 6 - for bird species codes



Unit 14, The Greenhouse, Greencroft Industrial Park, Anfield Plain, Co. Durham, DH9 7XN

Drawing Ref: Figure 29









Version 1.0: 07/03/11



# Whitburn Steel

## Wetland Bird Survey - Low Tide Count

September 2010  
to March 2011

KEY	
	'Annex I' bird species
	'WCA 1981' bird species
	'Red List' bird species
	'Amber List' bird species
	'Green List' bird species - no conservation designation
	Vantage Point Locations
	Mean low water mark
	Mean high water mark

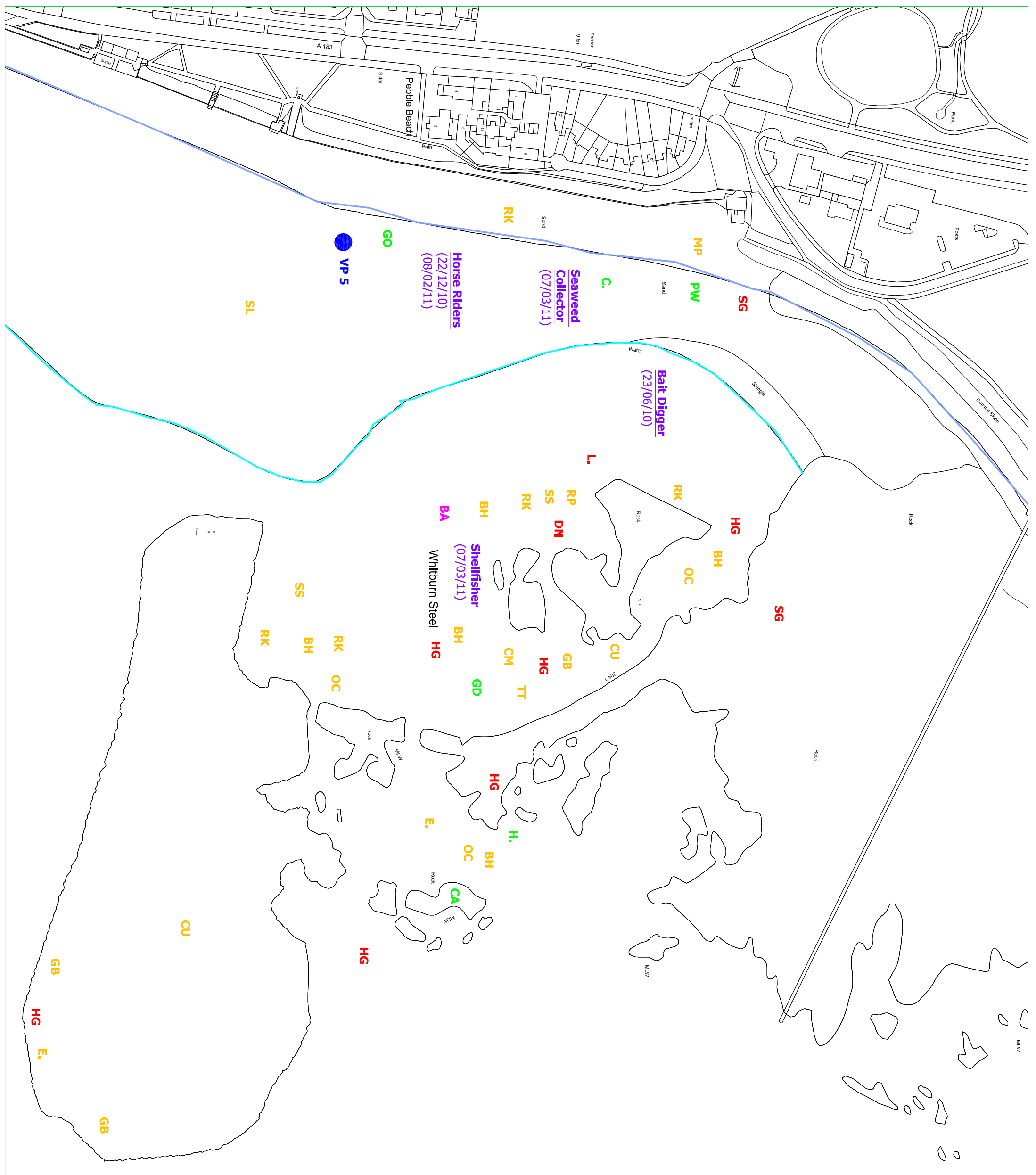
See text - Appendix 6 - for bird species codes



Unit 14, The Greenhouse, Greencroft Industrial Park, Anfield Plain, Co. Durham, DH9 7XN

Drawing Ref: Figure 30

Version 1.0: 07/03/11













# Ocean Park

## Wetland Bird Survey - Low Tide Count

September 2010  
to March 2011

### KEY

-  'Annex I' bird species
-  'WCA 1981' bird species
-  'Red List' bird species
-  'Amber List' bird species
-  'Green List' bird species - no conservation designation
-  Vantage Point Locations
-  Mean low water mark
-  Mean high water mark

See text - Appendix 6 - for bird species codes



**BH**  
Unit 14, The Greenhouse, Greencroft Industrial Park, Anfield Plain, Co. Durham, DH9 7XN

Drawing Ref: Figure 31

Version 1.0: 07/03/11

