Seaburn Masterplan SPD

Habitats Regulations Assessment

Final Report
June 2011

Prepared for

Sunderland City Council

Revision Schedule

Habitats Regulations Assessment
June 2011

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1 Introduction

1.1 Background

As part of its Seafront Regeneration Strategy (SRS), Sunderland City Council (SCC) has produced the Seaburn Masterplan (henceforth referred to as 'the Masterplan'), which will become a Supplementary Planning Document (SPD) within the SCC Local Development Framework (LDF). The SRS is an overarching document to guide the regeneration of Roker and Seaburn seafronts and deliver the objective set out in the Sunderland Strategy (2008-2025), the overarching strategy for the city, which states that: '*by 2025 Roker and Seaburn will have a key role in providing cultural tourism attractions*.'

1.2 The Process

URS Scott Wilson became engaged in the development of the SRS at the Issues and Options stage in 2008, which enabled an initial broad scale exercise to identify potential risks and conflicts between particular Strategy Options and the maintenance of favourable conservation status of European sites[1], and to suggest mechanisms or policy considerations that would enable such impacts to be avoided as far as possible.

A Habitats Regulations Assessment (HRA) screening report was produced to accompany the Issues and Options report for the SRS (Scott Wilson 2008). The report considered broad issues associated with upgrading the seafront, and was based on three options that formed the basis for public consultation. The initial screening concluded that given the nature of the options and their proximity to European sites, significant effects on the European sites could not be ruled out, and that further consideration of effects was necessary.

The Marine Walk Masterplan has also been subject to a similar HRA screening exercise (Scott Wilson 2010) and this report concluded that given the nature of the proposals and the proximity to Parson's Rocks (a component site of the Northumbria Coast Special Protection Area), a significant disturbance impact upon purple sandpiper and turnstone during the non breeding season (i.e. the period August-April) could not be ruled out, and that further investigation and consideration of this potential effect was necessary.

1.3 Purpose of this report

This document concludes the HRA process for the Seaburn Masterplan.

The report explains how SCC has determined whether the Masterplan will or will not have a likely significant effect upon nearby European sites.

The objectives of this report are to:

- ensure that SCC complies with the requirements of Article 6(3) of the Habitats Directive 92/43/EEC, as transposed into English law by Regulations 61 and 102 of the Conservation of Habitats and Species Regulations (CHSR) 2010;

[1] European sites (Natura 2000 sites) are classified as Special Area of Conservation (SAC), Special Protection Area (SPA) and Ramsar site

- identify any aspects of the Masterplan that are likely alone, or in combination with other projects or plans, to have a likely significant effect on European sites;

1.4 Report Structure

This report comprises the following sections:

- Section 2 summarises the methods that have been used in undertaking the assessment, including sources of data;
- Section 3 describes the European sites potentially affected by the Masterplan and includes details of their conservation importance and identifies the types of activity likely to result in a significant effect on the qualifying features or the integrity of a European site (site vulnerabilities);
- Section 4 provides details of the Masterplan, focussing upon those aspects that might give rise to significant effect upon the qualifying features of the European sites;
- Section 5 identifies other projects and plans that may contribute to “in combination” effects;
- Section 6 considers the significance of potential effects that have been identified in Sections 4 and 5;
- Section 7 draws together the conclusions of the assessment and identifies the next steps required to assess the likely effects of the Masterplan.

2 Methodology

2.1 Guidance

Case law and best practice of the application of Habitats Regulations Assessment to Land Use plans is still evolving. The methods used in this report are designed to be compliant with the draft guidance issued by the Department for Communities and Local Government (DCLG) (August 2006) *Planning for the protection of European Sites: Appropriate Assessment*, in turn based on guidance produced by the European Commission: EC (2000) *Managing Natura 2000 Sites: The provisions of Article 6 of the 'Habitats' Directive 92/43/EEC*, and EC (2002) *Assessment of plans and projects significantly affecting Natura 2000 sites: Methodological guidance on the provisions of Article 6(3) and (4) of the Habitats Directive 92/43/EEC*.

The approach is also informed by current best practice gleaned from a review of current HRA documents produced by Scott Wilson for a selection of regional spatial plans and has been informed by a variety of guidance including advice for local authorities prepared by Scott Wilson *et al.* (2006) *Appropriate Assessment of Plans*, advice published by RSPB (2007), and Scott Wilson's past work on the Sunderland Seafront Strategy and the Marine Walk Masterplan.

The above guidance is used cautiously and in conjunction with more recent case law such as the ruling by European Court of Justice in relation to the Waddenzee, Netherlands (C-127/02)

All documents reviewed are included in the Bibliography and References section of this report.

2.2 Approach

The assessment is limited to effects on the internationally important habitats and species (the qualifying features) for which a European site is designated. Although there is differing opinion as to whether the assessment should only consider the effects on these habitats and species when they are present within the boundaries of a European site, or on these species wherever they occur within the plan area, during past consultation with Natural England, undertaken as part of the HRA for the UDP Alteration No.2, it advised that the effects on the bird qualifying features of the Northumbria Coast SPA should be considered wherever the birds occur, i.e. within or outwith the area of the plan and the boundary of the European site (i.e. effects should not just be considered on birds within the SPA boundary). This approach supports the precautionary principle because many birds rely on 'functional land', i.e. land which supports the functioning of a European site outwith its boundary. For example, functional land can act as alternative foraging or roosting areas around high tide and during periods of severe weather or during disturbance to regular foraging or roosting areas.

2.3 Consultation

The views of Natural England have been taken into account during screening for likely significant effects. The following consultation has taken place:

- Meeting between Scott Wilson Ltd, Sunderland City Council, Environment Agency and Natural England North East Region on 15 June 2010;

- An earlier version of this report was issued to Natural England as part of statutory consultation during October 2010, as required by Clause 3 of the CHSR 2010. Natural England's comments have been taken into account in completion of this report and a copy of the consultation response, received on 17 November 2010, is included in Appendix 2.
- The report was also distributed to the Environment Agency and RSPB, as well as other organisations, and underwent public consultation, soliciting wider views on any likely significant effects on European sites, and to ensure that all relevant projects and plans have been considered in combination. A full list of consultation responses is provided in Appendix 2.

2.4 Information sources

Information to assist with HRA was sought from a variety of sources, including the Internet (e.g. websites of the Joint Nature Conservation Committee (JNCC) and Natural England), and consultation with Natural England and Sunderland City Council. The exercise has also drawn on information obtained during the HRA of the Sunderland UDP Alteration No. 2, conducted in 2007, the Core Strategy, conducted in 2010, and the Marine Walk Masterplan, conducted in 2009/10. This included additional information on coastal waterbirds obtained from the British Trust for Ornithology (BTO) and through consultation with the Durham Bird Club (DBC). To inform the HRA process, bird survey of Sunderland Seafront was undertaken between May 2010 and March 2011. The results of this survey have been used to inform likely significant effects. A copy of the bird survey report is provided in Appendix 3.

2.5 Identification of European sites and assessment of their characteristics

European sites that may be adversely affected by the Seaburn Masterplan were identified during the screening stage of HRA. This required the identification of:

- European sites not affected (i.e. no further assessment required);
- European sites for which there may be a likely significant effect; and
- a review of the qualifying features, conservation objectives, current site condition and site vulnerabilities of European sites within the potential zone of influence of the Masterplan proposals;
- an assessment of the conservation objectives for each site against the types of activity that might lead to impacts and lead to a significant effect;
- where a likely significant effect on a European site(s) is probable an Appropriate Assessment is required.

2.6 Description of the Masterplan and identification of elements that have the potential to result in significant effects on European sites

As noted in section 2.2, consideration of likely impacts of the Masterplan objectives and proposals commenced at an early stage, so that avoidance mitigation to reduce the risk of

impacts on European sites could be adopted. This report is based upon the screening exercise, the final Masterplan proposals, and subsequent survey and assessment of ornithological interests. This has enabled a more detailed consideration of the likelihood of alone and in combination effects on the qualifying features and to determine whether the Masterplan may affect the key environmental conditions that need to be maintained or improved, in order to preserve the integrity of European Sites (Scott Wilson *et al*. 2006).

A key element of Masterplan analysis is to identify any objectives or proposals that may affect a European site, as it is only after the competent authority (in this case Sunderland City Council) has ascertained that a plan will not adversely affect the integrity of a site that the plan can be approved. Integrity is defined by the European Commission as:

"The integrity of a site is the coherence of the site's ecological structure and function, across its whole area, or the habitats, complex of habitats and/or populations of species for which the site is or will be classified."

It further states:

"a site can be described as having a high degree of integrity where the inherent potential for meeting site conservation objectives is realised, the capacity for self repair and self renewal under dynamic conditions is maintained, and a minimum of external management support is required."

Thus, whilst the focus of HRA is upon ensuring the integrity of the qualifying features for which the site was designated, it is axiomatic that the ecological processes maintaining those qualifying features should also be considered.

Two different approaches to documenting plan analysis have been proposed. Tyldesley (2006) suggest focussing upon the policies included within plans, and grouping these into three different categories depending upon their likely effect upon European sites. By contrast, Scott Wilson *et al*. (2006) advocates preparation of a matrix that summarises the types of effect that may arise from the plan in its totality upon the qualifying features of European sites, i.e. the features of each European site form the focus of consideration. By comparing the types of effect against the vulnerabilities highlighted for the qualifying features of each site, it is possible to identify the types of activity that may impact upon them. It is also easier to combine the influence of other policies in plans which may act on these sites "in combination" with each other. A combined approach is used in this report.

2.7 "In combination" effects

Habitats Regulations Assessment considers the potential effects of a proposed plan or project alone and "in combination" with other plans and projects on one or more European sites. The identity of plans or projects that should be considered "in combination" with the Masterplan was informed by a review of the type of documents considered in HRA for other plans or projects, such as the Regional Spatial Strategy for the North East. Natural England was also consulted informally to identify additional documents of relevance.

New plans/projects are constantly being produced/determined, and it may be that there are additional documents that should also be considered "in combination" with the Masterplan. Relevant additional documents will be identified through the consultation process.

2.8 Assessment of significance

The determination of significant effects follows European Commission guidance (European Commission, 2000).

Assessment of significant effects arising from the Masterplan will be based on the assessment of impacts on habitats within European sites or habitats deemed to be 'functional land' for bird qualifying features of a European site. A significant effect may also arise from disturbance to bird qualifying features, both within and outwith (i.e. on functional land) a European site.

An effect will be deemed significant if it is likely to be detrimental to the conservation objectives of a European site.

3 European Sites

3.1 Identification of sites

The Masterplan area does not overlap any European site but the potential zone of influence may extend beyond its boundary, possibly resulting in indirect effects on European sites, and these must be fully considered. No definitive buffer distance between a plan or project and a European site has been prescribed in formal guidance, as this would be too rigid for adequate assessment. The potential impacts of a plan or project are often unique to that project or plan as are potential effects on European sites concerned. Such effects are influenced by the qualifying features, conservation objectives and vulnerabilities of the European sites concerned. Individual plans are therefore best assessed on their merits.

The location and limited geographical extent of the Masterplan area and the proposals within the plan means that many European sites including other coastal sites in the North East region are unlikely to be affected and can be scoped out of further assessment.

Other coastal European sites scoped out of this assessment are:

- Teesmouth and Cleveland Coast SPA, and
- Castle Eden Dene SAC

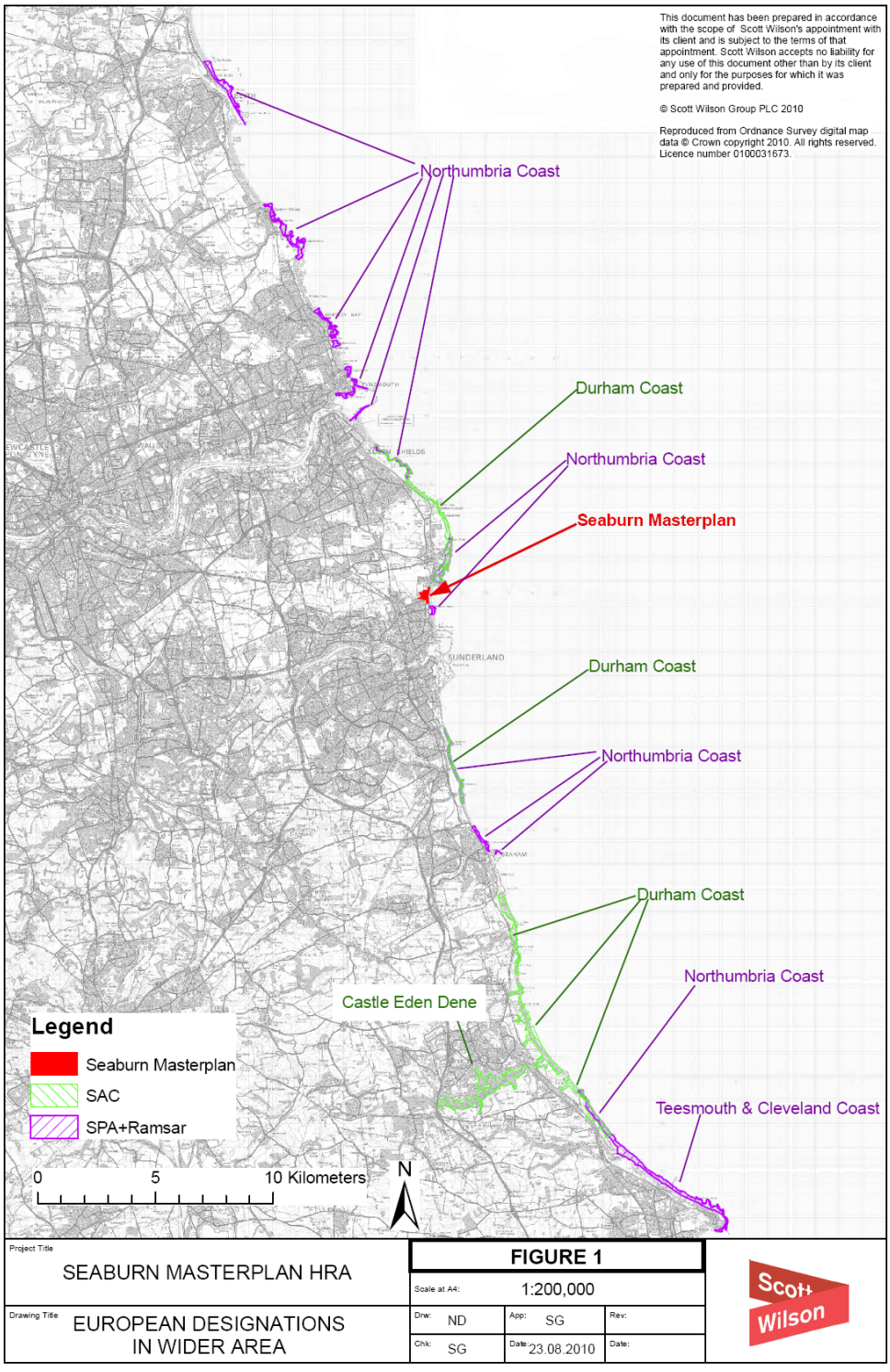
Based on the above criteria, two European sites are considered to require further assessment, due to their close proximity to the Masterplan area. These are:

- Durham Coast Special Area of Conservation (SAC); and
- Northumbria Coast Special Protection Area (SPA)/Ramsar site[2].

These two European sites stretch considerable distances along the North Sea coast from Northumberland to Durham but are fragmented, comprising the sum of discrete component sites, which in turn comprise a network of internationally important coastal habitat supporting internationally important flora and fauna populations. Component sites of two European sites lie within 500m of the Masterplan area. The location of the European sites considered in this report (as listed above) is presented in Figure 1. Further analysis of these sites is presented below.

[2] The boundaries of the SPA and Ramsar site are concurrent.

Figure 1. Location of Seaburn Masterplan area in relation to Durham Coast SAC and Northumbria Coast SPA



3.2 Durham Coast SAC

The Durham Coast Site of Special Scientific Interest (SSSI) underpins the Durham Coast SAC and also has limited overlap with the Northumbria Coast SPA/Ramsar site.

Natural England has sub-divided the Durham Coast SSSI (and hence the Durham Coast SAC & Northumbria Coast SPA/Ramsar sites) into a number of management units. Five of these units are considered to lie within the influence of the Masterplan. Three units are particularly important for bird qualifying features within the SPA/Ramsar site, one unit for coastal cliffs and rocky foreshore habitats and one unit for its grassland communities within the SAC.

3.2.1 Qualifying features

The qualifying features are:

- Durham Coast SAC – Vegetated sea cliffs

A summary of the qualifying features for the SAC are set out in Appendix 1, which also includes details of the features that Natural England consider are important to maintain the interest of the sites.

3.2.2 Component sites identified to be at risk

The closest component sites of the Durham Coast SAC is at Whitburn comprising Whitburn Bents coastal grassland communities and areas of littoral rock, some 500 m north of the Masterplan area. These sites are accessible via the Whitburn coast road and footpaths, such as Bede's Way which links to the South Tyneside Heritage Trail.

3.2.3 Current status and trends in features

The likelihood of a significant effect resulting from a proposal of the Masterplan depends on the qualifying features of a site, the current site (habitat) condition and sensitivity to changes likely to arise due to implementation of the Masterplan.

Appendix 1 includes details of potential hazards to notified interest features of the Durham Coast SSSI, and details of the current condition of features and comments on factors affecting the current condition. A summary of these is provided below.

Based on the management statement published by Natural England and the monitoring objectives for coastal cliffs (JNCC, 2004) (Appendix 1), the qualifying features of the Durham Coast SAC are vulnerable to:

- loss of habitat, e.g. as a result of natural erosion processes being constrained;
- loss of habitat, particularly related to changes in vegetation composition and structure, e.g. as a result of changes in grazing, fertiliser application and/or trampling pressure from people and wildlife.

The closest management unit to the Masterplan area comprises grassland habitats at Whitburn South Bents, which are considered to be in favourable[3] condition (Natural England 29 July 2009).

3.2.4 Conservation Objectives

The conservation objectives for the Durham Coast SAC are:

- *Subject to natural change, to maintain*, in favourable condition, the vegetated sea cliffs of the Atlantic and Baltic Coast.*

*Maintenance implies restoration if the feature is not currently in favourable condition.

3.2.5 Site sensitivities

Appendix 1 identifies the key environmental conditions required to maintain the integrity of the European sites. These have been based on the Favourable Condition Tables.

3.3 Northumbria Coast SPA / Ramsar site

Natural England has sub-divided the Durham Coast SSSI (and hence the Durham Coast SAC & Northumbria Coast SPA/Ramsar sites) into a number of management units. Five of these units are considered to lie within the influence of the Masterplan. Three units are particularly important for bird qualifying features within the SPA/Ramsar site.

3.3.1 Qualifying features

The qualifying features are:

- breeding little tern *Sternula albifrons*
- wintering purple sandpiper *Calidris maritima* and turnstone *Arenaria interpres*

A summary of the qualifying features is set out in Appendix 1.

3.3.2 Conservation objectives

The conservation objectives of the Northumbria Coast SPA/Ramsar site are:

- *To maintain* in favourable condition the habitats for the populations of Annex 1 species (Little tern) of European Importance, with particular reference to (i) intertidal sand and mudflats, (ii) sand dunes and (iii) coastal waters*;
- *To maintain* in favourable condition the habitats for the populations of migratory bird species (purple sandpiper and turnstone) of European importance, with particular reference to intertidal sand and mudflats, rocky shores with associated boulder and cobble beaches and artificial high tide roost sites*;
- *To maintain in favourable condition the habitats for the populations of waterfowl that contributes to the wintering waterfowl assemblage of European importance, with particular reference to intertidal sand and mudflats*.

[3] Favourable condition means that the SSSI land is being adequately conserved and is meeting its conservation objectives, however, there is scope for the enhancement.

*Maintenance implies restoration if the feature is not currently in favourable condition.

3.3.3 Site sensitivities

Appendix 1 identifies the key environmental conditions required to maintain the integrity of the European sites. These have been based on the Favourable Condition Tables.

3.3.4 Component sites identified to be at risk

The principal component sites considered to be at potential risk from the Masterplan due to their close proximity are the areas known as Parson's Rocks (Durham Coast SSSI Unit 13) and South Bents (Units 6 & 10).

Parson's Rocks is an isolated rock outcrop adjoining the seawall, surrounded either side by sandy beach. The site is situated some 300m south of the Seaburn Masterplan area but also lie some 500m north of the Marine Walk Masterplan area. The Rocks are centrally located within the Sunderland Seafront Regeneration Strategy zone.

To the south, Roker Rocks and the Roker Pier are the next most suitable areas of rock and hard substrate for purple sandpiper and turnstone. Whitburn Bents (South Bents to more accurate) is situated some 500m north of the Masterplan area at the northern end of Whitburn Sands.

South Bents is a component site of both the Northumbria Coast SPA and the Durham Coast SAC, and extends north for 2 km to Souter Point; the rocky shoreline then extends for another 2 km to Marsden, South Shields. Adjacent to Whitburn Bents lies the intertidal rocky outcrop called Whitburn Steel which is a component site of the Northumbria Coast SPA/Ramsar and an important foraging area for purple sandpiper, turnstone and many other waterbird species.

Whitburn Sands is not designated as part of the European sites but it provides intertidal foraging and roosting habitat between the SPA component sites of Parson's Rocks and Whitburn Bents and thus forms "functional land" for purple sandpiper and turnstone qualifying features as well as supporting other coastal waterbird species, such as ringed plover, knot and sanderling (DBC 2010).

3.3.5 Ecology, status and population trends of bird qualifying features

Ecology

Little tern

Little tern occurs in the UK between April and September. It is a largely coastal species, breeding on sand or shingle seashore or islands. Its food is mainly crustacea, fish and molluscs (Hollom, 1988). It nests on the ground and nests are thus very vulnerable to damage, disturbance and predation.

The Northumbria Coast SPA/Ramsar site supports around 40 breeding pairs of little tern, representing an average of 1.7% of the Great Britain population. The little tern colonies in North East England are nationally important. The nearest breeding sites to the Masterplan area for little tern are at Low Newton, *c*.65 km to the north, and at Crimdon, *c*.30 km south. Threats to little tern colonies include habitat loss, disturbance and declines in food supply.

Both colonies are considered to be beyond the influence of the Masterplan which is not expected to cause any of the above effects. It is considered that the Masterplan will not cause an adverse significant effect to little tern. Little tern qualifying feature is not considered further in this report.

Purple sandpiper

Purple sandpiper is mainly a winter visitor to the UK. The majority of the wintering population occurs between September and April but wintering birds from further south migrate through the UK thus potentially extending the period of occurrence in North East England from mid July to May.

In the UK, the species is strictly coastal and requires rocky or boulder-strewn shores, seaweed covered reefs or islets. Occasionally it will feed on sandy shores amongst stranded seaweed. It is frequently found on piers, groynes and similar masonry constructions. The species often associates with turnstone. Food is crustacea, molluscs, insects, small fish and vegetable matter (Hollom, 1988).

This species regularly occurs within the zone of influence of the Seaburn Masterplan and the potential for a likely significant effect is considered further within this assessment.

Turnstone

Turnstone is mainly a winter visitor to the UK. The majority of the wintering population occurs between September and April but wintering birds from further south migrate through the UK in thus extending the potential period of occurrence in North East England from mid July to May.

In the UK, the species is strictly coastal but migrants may occur inland on lake shores. It requires rocky, boulder-strewn or pebble shores, seaweed-covered reefs or tide lines, and will occur on sandy or muddy shores especially where stony patches or banks or stranded seaweed occurs. It is frequently found roosting on piers, groynes and similar masonry constructions (Hollom, 1988). Birds are known to be faithful to their wintering grounds (Cramp & Simmons, 1983).

The species often associates with purple sandpiper, dunlin and other small waders. Food is mainly molluscs, insects and crustacea (Hollom, 1988).

This species regularly occurs within the zone of influence of the Seaburn Masterplan and the potential for a likely significant effect is considered further within this assessment.

Status - baseline bird data

Wetland Bird Survey (WeBS) data

The Wetland Bird Survey (WeBS) is coordinated by the British Trust for Ornithology (BTO). It is a national monitoring scheme which is conducted using standardised methodology. It achieves regular monitoring of wetland sites (coastal and inland) providing mean counts of birds on a national down to a per site basis. The standard analysis produces five-year peak mean counts for sites or count sectors within sites where enough data is available. The nearest count section for Seaburn Masterplan is the River Wear to South Bents (Du 8) (Durham Coast) (54425). Only 3 years of data are available for this count section thus the mean counts are less accurate than for long established sites but due to the standardised nature of the survey the data offers the best indication of bird usage of the area that is available at present (except

for Whitburn Steel). Other caveats of the WeBS are that it is not a comprehensive survey for some waterbird species as it does not generally cover stretches of open coast, but focuses on estuaries, reservoirs, lakes and ponds.

WeBS data for the count section between River Wear to South Bents was provided by BTO.

Durham Bird Club data

The Durham Bird Club data for the Sunderland coastline has been recorded in an *ad hoc* temporal and spatial fashion and is therefore considered to be merely indicative of the birds that occur in most of the area. The exception is Whitburn Steel which appears to be well-watched by ornithologists such that enough data was available to plot peak monthly counts of purple sandpiper and turnstone for the period January 2007 to May 2010. For this site the DBC data is more accurate than the WeBS data alone (Figure 2).

Bird data for the period 2006 to 2009 was supplied by Durham Bird Club (DBC). The data comprises anecdotal records of roosting and feeding by waders collected at sites along the coastline between Roker and Seaham. The data is shown in Table 1 below.

Neither dataset can be considered as a comprehensive fine-scale representation of how birds utilise the Sunderland coastline due to the methods by which the data is recorded and reported.

Purple Sandpiper

Purple sandpiper is a qualifying feature of the Northumbria Coast SPA, which supports a five-year mean population of 787 birds, some 1.7% of the Eastern Atlantic (winter) population.

The data provided by BTO and DBC identified several feeding and roosting areas along the Sunderland coast that are mainly outside of the Northumbria Coast SPA but which are used during the winter period. Sunderland Harbour provides an important feeding and roosting habitat for purple sandpipers.

WeBS data for River Wear to South Bents Count Section (Table 1) found that single-figure numbers of purple sandpiper utilise this stretch of coast between 2004 and 2007, reaching a maximum of eight during the winter period of 2005-2006.

Table 1 WeBS count data for purple sandpiper 2004 to 2007 River Wear to South Bents.

Date	Oct	Nov	Dec	Jan	Feb	Mar	Apr
2004-2005	-	4	3	-	-	3	-
2005-2006	-	1	8	7	8	3	-
2006-2007	-	2	-	-	-	-	-

Durham Bird Club data supports the WeBS data with mostly single to low double-figure numbers recorded feeding and roosting along the Sunderland seafront, despite the data being collected from a larger area. Purple sandpiper records are provided in Table 2. The records are ranked by number of birds and the numbers of birds placed into context of the Northumbria Coast SPA/Ramsar population.

Although the number of purple sandpiper appears to be low, this is typical of the species low density, dispersed distribution utilising many sites with suitable habitat. Therefore in general the Sunderland coastline is just as important resource for the birds as other sites with the area supporting the integrity of the Northumbria Coast SPA. An important factor is mobility of birds

between, and their reliance on, many sites along the coast over the non breeding season, with many sites forming a habitat network underlying the integrity of the SPA.

Table 2 Durham Bird Club purple sandpiper records for Sunderland seafront 2006-2009, ranked by number of birds

Site	No. of Purple Sandpiper	Date	% Northumbria Coast SPA Population (787)
Sunderland Harbour	16	28/12/2009	2.0
Seaham	9	05/04/2006	1.1
Salterfen Rocks	8	16/04/2006	1.0
Roker and Harbour	8	12/02/2006	1.0
Salterfen Rocks	7	06/01/2009	0.9
Roker and Harbour	7	15/01/2006	0.9
Salterfen Rocks	6	21/04/2007	0.8
Roker North Pier – Feeding on rocks	5	14/11/2007	0.6
Parson's Rocks	5	13/12/2009	0.6
Sunderland North Dock/Roker Beach – new south pier	3	05/01/2008	0.4
Roker Beach	3	12/03/2006	0.4
Parson's Rocks	2	17/01/2010	0.3
Sunderland North – Dock/Roker Beach – on the small beach at the south of the North Pier	1	31/12/2007	0.1
Sunderland Docks	1	03/05/2009	0.1

There are no extensive stretches of favoured rocky shore habitat for purple sandpiper along the seafront directly adjacent to the Seaburn Masterplan area. There are areas of rock outcrop to the south at Parson's Rocks and to the north at Whitburn Steel, where the species would be expected to spend most of its time (for records from Whitburn Steel see Figure 2). However prior to the recent bird survey of the Sunderland seafront there was a lack of detailed local information on bird distribution, and therefore insufficient data to determine how important the interconnecting beach habitat or the non tidal habitats are for this species, particularly through the non breeding portion of the birds annual cycle, and especially taking into account high spring tides or during extreme weather conditions.

Turnstone

The Northumbria Coast SPA is in part designated for its internationally important population of overwintering turnstone with a five-year mean peak count of 1,739 birds representing some 2.6% of the Western Palearctic (winter) population.

River Wear to South Bents WeBS counts for turnstone are shown in Table 3.

Table 3 WeBS count data for turnstones from River Wear to South Bents, 2004 to 2007, provided by Durham Bird Club

Date	Oct	Nov	Dec	Jan	Feb	Mar	Apr
2004-2005	112	19	19	48	1	11	7
2005-2006	7	21	35	14	30	3	27
2006-2007	11	24	6	-	-	-	-

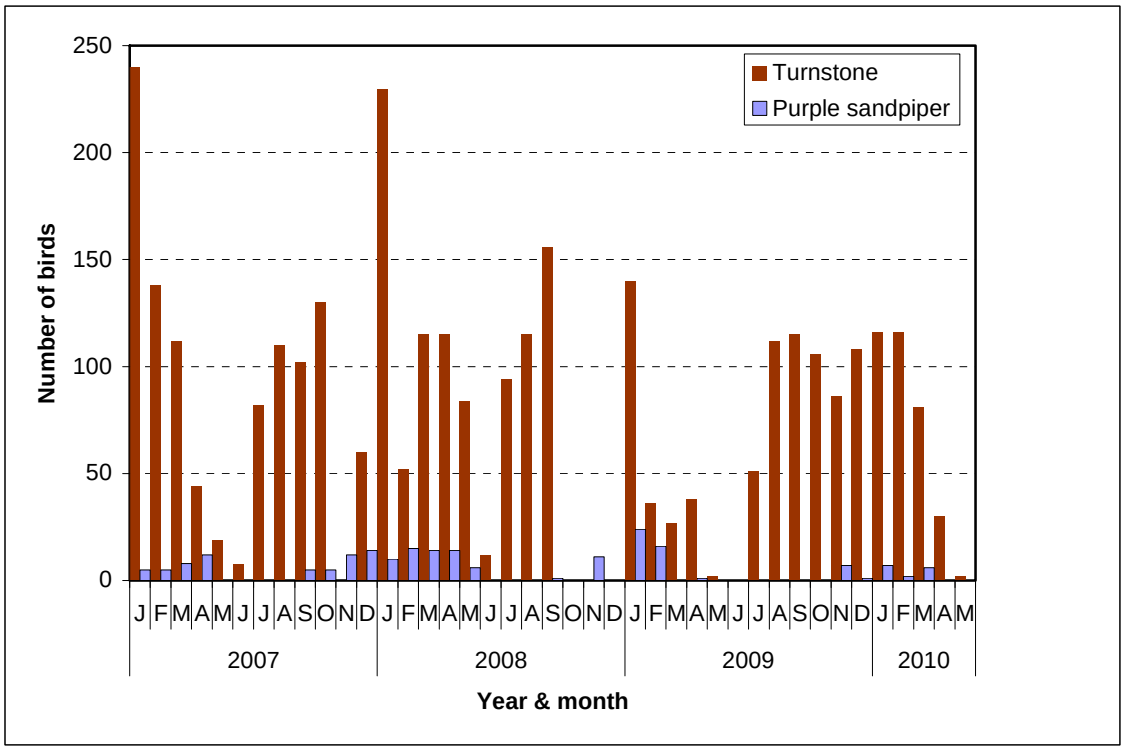
Durham Bird Club records show that generally turnstone uses this section of coast in a similar way to purple sandpiper which would be expected based on the species' ecology and food resources. Both species use rocky shore habitat for feeding and roosting, but turnstone will also utilise a wider variety of habitats such as beaches, especially seaweed strewn beaches (e.g. 50+ at Whitburn Beach on 5 Sep 2009), shingle and amenity grassland. Numbers of turnstone recorded by Durham Bird Club are higher than those recorded for purple sandpiper. The turnstone records for Sunderland seafront are ranked by descending number of birds in Table 4. Most turnstone records over the period 2007-2010 arose from rocky shore at Whitburn Steel, some 500m north of Seaburn Masterplan area (Figure 2).

Table 4 Durham Bird Club turnstone records for Sunderland seafront 2006 to 2009 ranked by number of birds

Site	Numbers of Turnstone	% Northumbria Coast SPA population (1739)	Date
Sunderland South Pier	100	5.8	11/02/2006
Whitburn Beach	50+	2.9	05/09/2009
Sunderland North Dock/Rocker Spread around both north and south piers and also new south pier	40	2.3	05/01/2008
Sunderland Harbour	40	2.3	20/02/207
Roker Beach	35	2.0	29/08/2006
Sunderland Harbour	33	1.9	28/12/2008
Salterfen Rocks	30	1.7	06/01/2009
Sunderland North Dock/Roker Beach	30	1.7	24/01/2008
Roker and Harbour	30	1.7	12/02/2006
Sunderland North Dock	28	1.6	29/12/2007
Roker and Harbour	27	1.6	08/04/2006
Sunderland Harbour	25	1.4	20/12/2008
Sunderland: North Dock/Roker Beach spread about the harbour area	20	1.2	31/12/2007
Hendon	17	1.0	30/01/2009
Sunderland North Dock/Roker Beach	14	0.8	01/01/2009
Roker north pier	9	0.5	14/11/2007
Sunderland north pier	8	0.5	07/01/2009

Site	Numbers of Turnstone	% Northumbria Coast SPA population (1739)	Date
Roker	6	0.3	09/09/2006
Sunderland Glass Centre	2	0.1	07/01/2009
Sunderland Glass Centre	2	0.1	11/12/2008
Seaburn Links	2	0.1	11/12/2008
Parson's Rocks	2	0.1	17/01/2010

Figure 2 Durham Bird Club purple sandpiper and turnstone maximum monthly counts at Whitburn Steel rocky shore 2007-2010



Population trends

Wetland Bird Survey (WeBS) - Alerts (BTO, 2010) shows that purple sandpiper has declined within the Northumbria Coast SPA at a similar rate to the regional and national trends for the species indicating that the SPA is the main site for this species. Turnstone numbers have also declined nationally over the past 20 years but whilst the SPA and regional trend continues to decline in recent years, nationally there is an indication of stabilisation, indicating re-distribution of birds away from the SPA.

There are no proven reasons for the recent declining trend, although climate change (successive milder winters) has been widely implicated in changes in numbers and distribution of other wintering shorebird species in the UK (Austin & Rehfisch 2005) and a reasonable assumption is that it is a factor influencing turnstone and purple sandpiper populations in North East England.

Three of the five management units located within the potential zone of influence of the Masterplan are considered to be important for purple sandpiper, and are currently in favourable condition for this qualifying feature (Natural England 2010).

Rocky shores and associated bird specialists have been identified as being especially vulnerable to the effects of climate change, both due to loss of habitat *per se* as a result of rising sea levels as well as changes to invertebrate communities (Kendall et al. 2004, Rehfisch *et al*. 2004).

The re-development of Seaburn Masterplan area would not directly affect the existing rocky habitat or other intertidal habitats. However, one of its objectives is to boost trade and use of the area by attracting visitors to the area. Increased visitor numbers may lead to increased disturbance of the shoreline in the absence of mitigation. This requires further information, data and analysis to determine.

There is also an existing (not quantified) level of human disturbance along this stretch of coast which will be affecting current shorebird distribution. These aspects require further study to determine a baseline against which to assess in detail for significant effects. However, in the absence of disturbance this section of coastline appears to provide limited feeding habitat for purple sandpiper.

In order to maintain feeding and roosting resource for the bird qualifying features the rocky shore habitat must be protected from damage and human disturbance minimised during construction, and post construction by implementing careful visitor management between August and April.

Summary

Rocky shores are vital feeding areas for purple sandpiper and turnstone during the non breeding season, with purple sandpiper virtually restricted to this habitat for foraging. Shores with associated boulder and cobble beaches or seaweed accumulations are also used by both species but more so by turnstone. Turnstone has a more catholic choice of diet and foraging habitat than purple sandpiper and will sometimes use docks and amenity grasslands (Pers. Obs.).

High tide roost sites are important for purple sandpiper, turnstone and other shorebirds. Durham Bird Club has identified the South Pier of Sunderland Harbour as a long-established and important roost site for these species and other shorebirds. The South Dock area is also used for foraging by purple sandpiper and turnstone. A site on the River Wear, upstream of Alexandra Bridge (NZ374581), is used for roosting on an infrequent basis by turnstone. These three main roost sites will not be directly affected by the Masterplan. However, episodic increases in human visitors to Sunderland Seafront during events or popular times of year may lead to an indirect effect of increased disturbance on the South Pier. Other undocumented roost sites may exist and in need of identification and evaluation.

Key threats to wintering purple sandpiper and turnstone are the potential loss of feeding habitat or roost sites as a result of habitat removal or smothering, or persistent displacement of birds due to disturbance (e.g. from recreational activities and uncontrolled pet dogs).

3.4 Potential types of impact

These two coastal European sites are vulnerable to several main types of impact that may arise directly or indirectly from the Seaburn Masterplan or "in combination" effects with other plans and projects. These main impacts are discussed in more detail, below.

Direct damage to habitats

Habitats may be damaged as a result of overgrazing, trampling, reclamation, dumping/littering, pollution or burning. Natural England considers that the nearest component sites of the Durham Coast SAC to Seaburn Masterplan area are currently in favourable condition but the Whitburn area has suffered in the past from dumping of materials and burning.

Unintentional changes in habitat quality, such as those caused, for example, by changes in grazing or trampling pressure may result from an increase in the number of people using a particular area for recreational purposes.

Disturbance to qualifying features

Many coastal bird species are vulnerable to disturbance, particularly from human activities such as recreation and the uncontrolled exercising of dogs. During winter, disturbance can limit the time available for birds to feed, thus reducing their energy intake and the use of additional energy at a time of year when opportunities for feeding may be further limited by poor weather and short day length. Disturbance can also affect roosting birds over high tide periods when the birds' feeding grounds are submerged, again putting a demand on energy reserves. These impacts can affect winter survival, particularly during periods of cold weather.

Increased disturbance to purple sandpiper and turnstone qualifying features could arise from increased recreational pressure on key habitats, such as Parson's Rocks, Whitburn Steel or functional land outwith the SPA boundary, such as Whitburn Beach and semi-natural habitat within or adjoining the Masterplan area.

Effects on coastal sediment dynamics

Coastal processes (erosion and accretion) and the hydrodynamic regime (waves and tidal currents) can maintain, create or destroy habitats within the Durham Coast SAC and the Northumbria Coast SPA and Ramsar site. Plans that affect the hydrodynamic regime can result in changes to sediment dynamics and would thus have a potential impact upon both European sites.

The types of plans that may have a significant effect on European sites include dredging, coastal engineering (e.g. sea defences) or changing land use. The Masterplan does not involve changing the sea defences or directly affecting intertidal areas, and is unlikely to result in the introduction of significant quantities of sediment into the sea, thus is unlikely to cause a significant effect in this respect.

Pollution

Changes in coastal water quality could affect the availability of food for bird qualifying features. Activities that could potentially cause changes to water quality include major discharges or pollution events. Significant effects upon water quality emanating from the development via Cut Throat Dene (a minor watercourse which enters the sea at Seaburn) or otherwise affecting nearshore waters are unlikely to occur because adequate mitigation will be in place. Environment Agency consent will be required for works affecting the Dene and consent will require adherence to Environment Agency Pollution Prevention Guidelines. Discharges causing significant marine water pollution are therefore unlikely to occur and are unlikely to result in a significant effect on European sites.

Marine litter can result in smothering and pollution of foraging habitats, whilst ingestion of degraded plastic particles can be disabilitating or fatal to birds and other marine wildlife. Without mitigation, this potential impact may become of greater concern because an objective of the Masterplan is to make more use of the waterfront areas through holding gatherings and events, thus attracting more people to the area and increasing the chances of litter finding its way into the marine environment. During development and operation of the Masterplan, an ongoing litter management plan will prevent litter accumulation and thus minimise the occurrence of terrestrial litter being jettisoned or blowing into the marine environment.

Sea-level rise

Although not directly linked with the Masterplan, sea-level rise may result in coastal squeeze, particularly where the line of the coast is defended by hard engineering, such as sea walls at Seaburn and elsewhere along Sunderland seafront. This may result in loss of, or significant changes to, intertidal habitat which supports bird qualifying features. The current hard engineering along Whitburn Bay and south along the Sunderland seafront is considered to be causing long-term beach erosion and lowering. Baseline erosion rates for Whitburn and Whitburn Bay sections of shoreline if left unchecked might result in more rocky habitats becoming available to purple sandpiper and turnstone as sand is eroded and transported offshore uncovering previously unexposed rock. However, it is questionable whether a suitable ecosystem would develop on such new rock exposures which would be capable of providing food resources for these species. The Shoreline Management Plan 2 River Tyne to Flamborough Head and the Whitburn to Ryhope Coastal Protection Strategy is to 'hold the line' of the Sunderland seafront to protect existing properties. It is not expected that the Masterplan will exacerbate this situation as no works are proposed to the sea defences or marine environment, although indirectly the regeneration proposals will add support to the current strategy.

Climate change

This potential impact is considered to drive re-distribution of flora and fauna over wide geographical areas, potentially disrupting food chains and making current habitats both within and outwith the boundaries of protected sites more or less important to bird qualifying features with time. The Masterplan will not directly affect the availability or extent of intertidal habitats currently used by bird qualifying features but by increasing the socio-economic worth of the area will enhance the argument to maintain a hold the line strategy for this section of coast which in turn may affect the integrity of nearby European sites in the long-term.

4 Masterplan Description and Analysis

4.1 Introduction

As the Seaburn Masterplan is not directly connected or necessary to the management of European sites, this section describes the objectives and proposals of the Masterplan to identify any aspects that might influence the environmental conditions required to maintain the integrity of European sites. The aim is to provide a clear basis for excluding impacts on sites. The Masterplan needs to be considered in its entirety and not as a series of disconnected objectives.

None of the objectives of the Masterplan are explicitly concerned with maintaining and improving the biodiversity features of Sunderland, however some proposals do seek to provide for the enhancement of biodiversity habitats in the area. The Seafront Regeneration Strategy acknowledges the protection of the Northumbria Coast SPA as an environmental constraint. The requirements of environmental objectives and policies in the Sunderland Core Strategy will go some way to avoiding and mitigating potential direct environmental effects on European sites, but environmental policies may not address the indirect and secondary effects on sites that may result from other policies and objectives (e.g. in terms of increased access to and usage of the coast and implications for increased levels of disturbance to birds.)

The Seaburn Masterplan presents three options:

1. Minimal Intervention
2. Moderate Intervention
3. Comprehensive re-development

The Seaburn Masterplan concludes that a comprehensive approach to development, would best address the Masterplan objectives. The analysis of significant effects conducted in section 6 therefore takes into account the objectives and specific plans that are contained within the Draft Masterplan (as of October 2010)

4.1.1 Site context

Site location

The Seaburn Masterplan area is a large site covering an area of approximately 16.7 ha and takes up a prominent location along the city's seafront. Being located on Whitburn Road (A183) – the cities primary coast road – and being easily accessible to all within the city, the Masterplan area takes up a prime location, capable of providing a major leisure destination to be enjoyed by all within Sunderland and the wider region.

The Masterplan area includes a large area of land located along the Seaburn seafront. It is defined by Seaburn Beach to the East, Seaburn Camp to the North, the Seafields residential estate and Mere Knolls Cemetery to the West, and properties bounding Dyklands Road and the Marriot Hotel to the South. The site includes the entirety of Lowry Road, and includes sections of Whitburn Road (A183), Dykelands Road (B1291) and Seafields.

Figure 3 Seaburn Masterplan Wider Geographical Location

4.1.2 Baseline conditions

The following text in sections 4.1.2 to 4.3 is taken from the Draft Seaburn Masterplan (supplied on 5 August 2010).

The Masterplan area is still largely dominated by leisure uses and other mixed use/commercial developments. These include a number of independently owned restaurants, retail units, amusement arcades and two hotels. These uses are also supplemented by the Seaburn Centre and a large foodstore currently occupied by Morrison's. There are a number of vacant properties also located within the site including a vacant funfair site and the derelict Lambton Worm Gardens.

In addition, there are two seafront shelters located along the promenade running through the site – one of which has been converted into a small restaurant, the other is currently vacant.

As well as these uses, large areas of the site are also taken up by hard standing for use as permanent and overflow car parking, as well as large areas of open green space.

Physical context

Whilst the site has witnessed high levels of development in the last 50 years, the site still remains largely open, with areas of open green space and hard standing take up a large proportion of the site.

Cut Throat Dene, to the southern edge of the site, and a large area of recreation space formerly used as the Miniature Golf Course located along the western edge of the site account for a majority of such green space. Notwithstanding this, smaller areas of green space worth noting such as those between Whitburn Road and the Promenade also play a valuable role in the area, which should be acknowledged.

The site is largely level and does not contain any substantial areas of natural tree growth due to the sites coastal setting. Any planting on the site, such as that around the form Lambton Worm Park and along the perimeter of the site bounding the Seafields estate is poorly maintained.

With regard to the build form of the site, in relation to its scale, the site only contains a small number of buildings, and these are predominantly focused along Whitburn Road up the eastern edge of the site. Given the varied uses currently occupying the site, the scale and proportions of these buildings are quite varied, ranging small scale, single storey beach shelters along the seafront, to a two storey, inter-war period terraced shopping arcade, to large scale open plan modern buildings such as the Seaburn Centre and Morrison's supermarket. The massing of these building however, are not so varied, with a majority being between 1 and 2.5 storeys in height. The exception to this however is the Marriot Hotel located in the southern extreme of the site which standing between 4 and 5 storeys in height – its scale helping indentify the building as a local landmark.

The varied age, style and use of buildings around the site, and the many reincarnations the Masterplan area has experience in its lifetime make the area appear fragmented and disjointed with a distinct lack of coherent identity. That said, in broad terms the site can be categorised into three general areas:

Area 1 – Marriot Hotel and Queens Parade shops, the only surviving group of buildings constructed in the 1930s. This is located in the southern most part of the area.

Area 2 – Ocean Park and seafront, modern leisure and entertainment uses built since the 1970s lining the seafront. This is located along the eastern edge of the area.

Area 3 – Open space, including areas of car parking and recreation land. This is located along the western edge of the area.

Figure 4 Seaburn Masterplan Area and Current Land Use

4.2 Components of the Masterplan

The Masterplan is a detailed, area-based implementation document which is part of the emerging Local Development Framework and which sets out the re-development of a section of Sunderland seafront to meet an objective of the Sunderland Seafront Regeneration Strategy 2010.

This Masterplan is latest of the area based implementation documents to be progressed and develops upon the Seafront Regeneration strategy by translating its vision and objectives into detailed development guidance for Seaburn and Ocean Park.

A spatial masterplan develops broad planning principles for the area, which reflect the identified constraints and opportunities as well as the messages from the extensive consultation exercises.

An indicative layout for the site illustrates the City Council's aspirations for the area, and is accompanied by a design code which provides developers with more specific design guidance to ensure that proposals will meet the City Council's ambition for the site.

The Masterplan also provides developer information on the implementation and delivery of proposals including the intended phasing of development, planning and other statutory requirements and opportunities for funding.

The objectives:

1. To maximise the impact and improve the economic vibrancy of the area
2. To provide high quality public amenities and facilities
3. To create a family friendly environment which is safe and clean
4. To offer high quality and affordable activities and events throughout the year
5. To create an attractive and high quality environment where both residents and visitors can relax
6. To create an area which is physically and intellectually accessible

The vision for Seaburn is for a family focussed resort offering high quality indoor and outdoor facilities. It will be a welcoming place to enjoy all year round, providing activities and events for everyone.

The Masterplan represents the councils own interpretation of how the key components of the Masterplan document may be realised in a spatial form across the site. The spatial masterplan recognises the key objectives of the project, takes into consideration the area's primary constraints, and adopts the development principles identified in Chapter Seven. In doing so, the spatial masterplan offers a clear indication on how a strong urban design agenda and sound design principles can be realised across the site.

Figure 5 The Draft Seaburn Masterplan (spatial form)

4.3 Analysis of proposals and likely significant effects

4.3.1 Site Access Plan

Plans to improve visitor access will increase the level of disturbance to presently under-utilised open space. The following text is taken from the Draft Masterplan "Pedestrians and Cyclists are also well catered for with the area playing host to a number of regional and national cycle ways and footpaths. National Cycle Route 1, which also acts as part of the North Sea cycle route and Bede's Way passes through the area via the north-south promenade, offering links between Jarrow and St Peter's in Sunderland and connecting to the start/finish of the C2C route in Roker. In addition to this, there are a number of minor footpaths passing through the site which successfully link the site with surrounding residential areas and communities."

4.3.2 Development Plans

Plans to develop open space areas or improve recreational facilities or build new residential properties within the Masterplan area will result in direct changes to habitat. This may lead to a significant effect on bird qualifying features but this conclusion is subject to the results of the winter bird survey of the Sunderland Seafront.

The new developments will attract more visitors and result in more residents in the area potentially increasing the levels of disturbance and displacement of bird qualifying features in the intertidal zone due to recreational activities.

4.3.3 Renovation or replacement of infrastructure

Works to replace or renovate public realm are unlikely to result in any significant effects.

4.3.4 Masterplan objectives

The Masterplan has six objectives (see section 4.2) with a general theme of increasing the accessibility, amenities and facilities, economical viability, safety and environmental quality of the area. These objectives are aimed at or will contribute to an overall increase in visitor numbers and the number of residents in the area, which may result in increased disturbance to bird qualifying features of the Northumbria Coast SPA/Ramsar site.

The Masterplan is generic in some respects and it has been necessary to make some interpretation of the ways in which they may be implemented in order to assess the potential for impacts.

Table 5 Analysis of Seaburn Masterplan objectives and components in respect of the conservation objectives of the Durham Coast SAC and Northumbria Coast SPA / Ramsar site

	Seaburn Masterplan	Durham Coast SAC conservation objective		Northumbria Coast SPA / Ramsar site conservation objectives	
	Objectives (O) and components (C) of the Masterplan	Subject to natural change, to maintain*, in favourable condition, the vegetated sea cliffs of the Atlantic and Baltic Coast.	To maintain* in favourable condition the habitats for the populations of Annex 1 species (Little tern) of European Importance, with particular reference to (i) intertidal sand and mudflats, (ii) sand dunes and (iii) coastal waters.	To maintain* in favourable condition the habitats for the populations of migratory bird species (purple sandpiper and turnstone) of European importance, with particular reference to intertidal sand and mudflats, rocky shores with associated boulder and cobble beaches and artificial high tide roost sites	To maintain in favourable condition the habitats for the populations of waterfowl that contributes to the wintering waterfowl assemblage of European importance, with particular reference to intertidal sand and mudflats.
	O1. To maximise the impact and improve the economic vibrancy of the area	Aspiration of the council. No effect likely.	Aspiration of the council. No significant effect can be attributed. Little tern does not breed with zone of influence of masterplan..	Aspiration of the council. No likely effect.	Aspiration of the council. No likely significant effect.
	O2. To provide high quality public amenities and facilities	No effect likely	No significant effect likely. Little tern does not breed with zone of influence of masterplan..	Improving amenities and facilities increases the capacity for more visitors. As above, bird disturbance may increase but in comparison to the base line disturbance levels currently experienced by this urban foreshore (based on data from the bird survey). Demonstration of a likely significant effect from the Masterplan is not possible to determine	Improving amenities and facilities increases the capacity for more visitors. As above, bird disturbance may increase but in comparison to the base line disturbance levels currently experienced by this urban foreshore (based on data from the bird survey). Demonstration of a likely significant effect from the Masterplan is not possible to determine
	O3. To create a family friendly environment which is safe and clean	Aspiration of the council. No effect likely.	Aspiration of the council. No significant effect can be attributed. Little tern does not breed with zone of influence of masterplan..	Aspiration of the council. No likely effect.	Aspiration of the council. No likely significant effect..

	Seaburn Masterplan	Durham Coast SAC conservation objective		Northumbria Coast SPA / Ramsar site conservation objectives	
	O4. To offer high quality and affordable activities and events throughout the year	No effect likely	No significant effect can be attributed. Little tern does not breed with zone of influence of masterplan..	Activities and events will attract many people to the area for short periods and lead to potential increased disturbance to bird qualifying features and possible impacts to habitats through littering. As above, it is not possible to determine if there would be a likely significant effect.	Activities and events will attract many people to the area for short periods and lead to potential increased disturbance to bird qualifying features and possible impacts to habitats through littering. As above, it is not possible to determine if there would be a likely significant effect.
	O5. To create an attractive and high quality environment where both residents and visitors can relax	No effect likely	No significant effect likely. Little tern does not breed with zone of influence of masterplan..	Aspiration of the council. No likely effect.	Aspiration of the council. No likely significant effect..
	O6. To create an area which is physically and intellectually accessible	Aspiration of the council. No effect likely.	Aspiration of the council. No significant effect likely. Little tern does not breed with zone of influence of masterplan..	Aspiration of the council. No likely effect.	Aspiration of the council. No likely significant effect..
	C1. Site access plan	No effect likely	No significant effect likely. Little tern does not breed with zone of influence of masterplan..	No effect likely: No significant change to existing situation	No likely significant effect.: No significant change to existing situation
	C2. Development plans	No effect likely	No significant effect likely. Little tern does not breed with zone of influence of masterplan..	No likely significant effect: The Sunderland seafront bird survey found that areas of existing open space/semi-natural habitats within the Masterplan site did not form 'functional land' supporting the integrity of the SPA/Ramsar	No likely significant effect: The Sunderland seafront bird survey found that areas of existing open space/semi-natural habitats within the Masterplan site did not form 'functional land' supporting the integrity of the SPA/Ramsar
	C3. Renovation and replacement of infrastructure	No effect likely	No effect likely. Little tern does not breed with zone of influence of masterplan..	No effect likely: No significant change to existing situation	No likely significant effect: No significant change to existing situation

5 In Combination Effects

The purpose of this cumulative assessment is to identify any impacts from the Seaburn Masterplan and other plans or projects that may act "in combination" to result in significant effects on the integrity of European sites.

5.1 Plans

The plans listed in Table 6 have been considered for 'in combination' assessment.

Many of the above plans have been produced to address issues at a very high/strategic level and have no direct links with the Seaburn Masterplan area, and such plans have therefore been scoped out of 'in combination' assessment.

Habitats Regulations Assessment has been undertaken on some of these plans at the time they were prepared (e.g. Sunderland Seafront Strategy, Marine Walk Masterplan and Shoreline Management Plan 2). Based on the precautionary principle, likely significant effects on European sites of a similar nature to those for Seaburn Masterplan have been identified for the Sunderland Seafront Strategy and the Marine Walk Masterplan (see section 6).

The following documents have been reviewed for consideration of "in combination" effects:

- The Sunderland Strategy 2008 – 2025
- Local Area Agreement 2008 – 2011
- Sunderland Local Development Framework evolving options
- Sunderland UDP Alteration No. 2
- Sunderland Climate Change Action Plan
- The Sunderland Seafront Strategy
- Marine Walk Masterplan
- Shoreline Management Plan 2 River Tyne to Flamborough Head
- Wear Catchment Flood Management Plan (Scoping phase August 2005)
- Tyne & Wear Strategic Flood Risk Assessment July 2007
- Local Transport Plan Tyne & Wear 2006 – 2011
- Regional Planning Guidance for the North East (RPG1), November 2002
- "Leading the way" Regional Economic strategy 2006 – 2016
- North East Tourism Strategy 2005-2010
- Regional Spatial Strategy for the North East
- Countryside and Rights of Way Act 2000 for coastal land
- "The North East England Regional Housing Strategy 2007
- North East Regional Renewable Energy Strategy, March 2005

- Rural Action Plan, 2002
- Emerging Regional Spatial Strategy for the North East
- LDF Core strategy issues and options report for Chester-le-street
- County Durham structure plan saved policies
- District of Easington LDF (evolving papers)
- City of Durham Development Control policies preferred options, LDF (evolving policies)
- South Tyneside LDF Core Strategy, adopted June 2007
- North Tyneside LDF Core Strategy Options and Issues report (policies not yet available on website)
- Durham Heritage Coast Management Plan
- Local Area Agreement
- Gateshead UDP

Some of the above plans were subject to their own HRA during their preparation (e.g. the Shoreline Management Plan 2, Sunderland LDF Core strategy, with no likely significant effects being identified.

The Seaburn Masterplan forms part of the Seafront Regeneration Strategy, which also includes the Marine Walk Masterplan. Key elements of the Seafront Regeneration Strategy are included within the Seaburn Masterplan, and are therefore considered within this report. The Marine Walk Masterplan has been subject to its own HRA.

Table 6 sets out the proposals within these plans that could contribute to "in combination" effects on European sites. Most plans are unlikely to result in significant effects on European sites. Four plans contain policies/proposals that promote greater access to the coast. These are:

- Local Transport Plan Tyne & Wear
- Leading the Way - Regional Economic Strategy
- North East Tourism Strategy
- Marine Walk Masterplan

It is concluded that the first three plans or strategies are unlikely to result in significant effects as these describe aspirations rather than defined actions.

The Seaburn Masterplan shares similarities with Marine Walk Masterplan in terms of regenerating the Sunderland seafront through improvements to public realm, access, recreation and new business opportunities. In combination, the two masterplans will act to encourage more visitations to the Sunderland seafront which could result in greater disturbance to bird qualifying features.

The "in combination" effects of these plans and strategies together with the Marine Walk Masterplan on the qualifying features of the European sites, is considered in section 6.

Table 6 Plans considered for "in combination" effects

Plan/Document	Aim and purpose of the plan/document	Possible aspects of the plan that could contribute to "in combination" effects
Sunderland Strategy 2008 – 2025	Sets out how the people who live, work and study in Sunderland would like to see the City evolve by 2025.	Contains five broad aims, including one to promote a strong culture of sustainability. No significant effects likely.
Local Area Agreement 2008 – 2011	Sets out the long term aims and key objectives identified in the Sunderland strategy and identifies related priority improvement indicators that will be used to set a focus for activity and provide the basis for measuring progress towards the vision in the short term.	None.
Sunderland Local Development Framework (LDF) evolving options	Establishes the planning framework for the City. Preferred options are still being developed, but likely to include policies relating to access to and enjoyment of the coast, and protection of biodiversity assets.	Acts as the framework for the Seaburn Masterplan, and will require its own HRA/AA.
Sunderland UDP Alteration No. 2	Provides the planning framework pending development of the LDF. Includes policies for protection of biodiversity assets, and has been subject to its own AA.	None.
Sunderland Seafront Strategy	"an overarching document to guide the regeneration of Roker and Seaburn seafronts and deliver the objective set out in the Sunderland Strategy (2008-2025), the overarching strategy for the city which states that: 'by 2025 Roker and Seaburn will have a key role in providing cultural tourism attractions." The strategy has a number of purposes: • To establish an agreed vision and regeneration objectives for the seafront • To act as a supporting document for future funding bids • To ensure development at the seafront is cohesive and joined up	This aspirational strategy aims to promote and secure development or re-development along Sunderland's seafront and thus in itself is too non specific to identify potential effects. However, some aspects of development may be insensitive to the conservation objectives of the nearby coastal European sites and will need further assessment as they develop. Generally, improvements to the area, e.g. new visitor attractions and service industry, will attract more visitors and increase levels of disturbance to waterbird qualifying features of Northumbria Coast SPA/Ramsar, and possible damage to, or littering of, intertidal habitats on which they

Plan/Document	Aim and purpose of the plan/document	Possible aspects of the plan that could contribute to "in combination" effects
	• To pull together and supplement the various policies relating to the seafront in emerging Development Plan Documents as part of the Local Development Framework process	depend. Such potential impacts would be greatest during period Sept-Mar.
Marine Walk Masterplan	"In order to support the delivery of the objectives set out in the Seafront Regeneration Strategy, the Marine Walk Masterplan has been prepared to guide the proper planning and regeneration of Marine walk." "…City Council's aspirations for Marine Walk, and is accompanied by a design code which provides developers with more specific design guidance to ensure that proposals will match the City Council's ambition for the site."	Possible in combination effects from increased visitors and disturbance to wildlife, litter in marine environment, artificial lighting, paving of amenity grassland near coast
Shoreline Management Plan 2 River Tyne to Flamborough Head	The plan establishes management policies over three time periods.	The proposals include options for hard sea defences, potentially in part of the SPA, and allowance of natural erosion, which could lead to a loss of coastal habitat. Scheme specific AA suggests that following inclusion of mitigation measures no adverse impacts are likely.
Wear Catchment Flood Management Plan (Scoping phase August 2005)	The plan aims to reduce the risk of flooding, to work with natural processes, to support the implementation of International and national legislation and policies, to promote sustainable flood risk management and inform and support the development of planning policies and plans.	None
Tyne & Wear Strategic Flood Risk Assessment, July 2007	Provides a planning tool and reference document which identifies the extent and severity of flood risk within the Tyne and Wear catchment area. This document will help to guide development towards areas of low flood risk and will help avoid unnecessary development within high flood risk areas, other than exceptional cases and support the development of planning policies and plans.	This document classifies the proposed development area as a High Flood Risk area. However, given the already developed nature of the area it is not thought that further development at the proposed level will worsen the hydrodynamic processes of the coastline and therefore the SFRA contains no aspects that will cause 'in combination' effects.
Local Transport Plan Tyne & Wear 2006 – 2011	The aim is to support and enhance regeneration and greater economic prosperity in the region	The Sunderland Strategic Corridor, linking the A19, the city centre and the docks, including the

Plan/Document	Aim and purpose of the plan/document	Possible aspects of the plan that could contribute to "in combination" effects
	through maintaining and improving linkages within and beyond the area, ensuring transport systems are safe and secure, improving efficiency of transport, and reducing the environmental impact of transport.	Sunderland Arc regeneration area is identified as a focus for growth over the next five years. The Core Strategy covers aspects of this development; possible impacts on the European sites are related to increased recreational use of the coast and possible disturbance of wildlife.
Regional Planning Guidance for the North East (RPG1), November 2002	Provides a vision and strategy to achieve sustainable development of the NE region based on four themes: acceleration of the renaissance of the Tyne, Wear and Tees conurbations; provision of job opportunities and support of communities in the former coalfield areas; adaptation and revitalisation of the region's town and city centres; and securing rural regeneration. The need for a strategic employment site north of Sunderland is identified. Targets for new housing and the generation of renewable energy are included.	Implementation of the plan will be realised through documents produced by Sunderland City Council e.g. UDP Alteration No. 2 and this core strategy. No additional possible impacts are identified upon the European sites.
"Leading the way" Regional Economic strategy 2006 – 2016	Sets out priorities to achieving sustainable economic development. Includes targets for the creation of new jobs and businesses.	Plan includes recommendations/aspirations for improvement to transport infrastructure, which could ultimately have knock-on effect on access to the coast and disturbance but is too vague to attribute significant effects.
North East Tourism Strategy 2005-2010	Establishes ten objectives for promoting tourism in the North East area. The focus is on increasing visitor numbers, improving investment, improving the visitor experience conserving the region's resources. Coastal areas are seen as a priority, together with improving transport links for visitors.	Increased recreational use of parts of the coast could lead to elevated levels of disturbance, particularly to bird populations, and damage to habitats.
Regional Spatial Strategy for the North East	Sets out a long-term strategy for the spatial development of the North East. Four objectives are identified: economic prosperity, sustainable communities, enhanced environment and improving connectivity. Economic development	Sunderland City Council will achieve implementation of key areas through the LDF core strategy, UDP Alteration No. 2 and other policy documents. Main impacts on European sites could arise from increased disturbance and

Plan/Document	Aim and purpose of the plan/document	Possible aspects of the plan that could contribute to "in combination" effects
	and development of retail opportunities in Sunderland are promoted. Targets for allocation of employment land and dwelling provision within the Sunderland area are also included. Other key elements include support for regeneration of the River Wear corridor, growth of the Port, development of small-scale urban wind farms, development of the Sunderland Strategic Transport Corridor and the Sunderland Southern radial route.	damage to coastal habitats arising from increased population numbers and better road access to the coast.
Marine and Coastal Access Act 2009	Sets out a vision for improving recreational access to the English Coast by introducing new powers to extend access to the English coast and enable the creation of a continuous access route around the English coast.	Improved access or increased recreational use of remoter / sensitive parts of the coast could result in localised elevated levels of disturbance to wildlife, e.g. bird populations, and damage to habitats. However, it is considered that the strategic level of this legislation, which facilitates better coastal access amongst other things, is unlikely to result in adverse effects along the Sunderland Seafront, which already has comprehensive public access.

Note: Green shading denotes no likely significant effect; Yellow shading denotes LSE cannot be ruled out

5.2 Projects

The projects listed in Table 7 have been considered for “in combination” effects as accessed via the on-line applications facility of the Sunderland City Council website (accessed 20 August 2010).

A number of planning applications have been screened out where the plans would be highly unlikely to impact on European sites, e.g. simple, self-contained plans such as house extensions, etc, or at locations geographically or otherwise unconnected to the Sunderland seafront or European sites.

Table 7 Projects included in the assessment of "in combination" effects

Planning Application	Location	Details of works	Potential 'in combination' effect?
Ref. No: 10/02495/LAP	Seaburn Promenade Whitburn Road Sunderland	Replace existing damaged concrete edging to the grass banks on Seaburn promenade with granite edging. The granite edging to the east (facing the lower promenade) will be stepped to act as formal informal seating. The granite edging to the west (facing the upper promenade) will be a lowered kerb.	Unlikely as remote from SPA
Development brief prepared	Redevelopment of vacant shelter on Seaburn Promenade	Conversion to café/restaurant use with the option of an ancillary retail use.	Low potential for ongoing disturbance to SPA bird qualifying features. Not located close to important rocky shore habitat; but potential for incidental littering of intertidal areas and indirect pollution effects
Unlikely that planning permission will be required	Forthcoming works at Marine Walk	To deliver proposals in Marine Walk Masterplan: to include Public Realm works, new lighting, street furniture and improvements to Spottee's Cave	Potential for ongoing disturbance to SPA bird qualifying features. However, seafront works will not be undertaken during the critical winter period for qualifying birds
Forthcoming planning application (no number at present)	Roker Pier	Replacement of Roker Pier gates	Low potential for short term disturbance to SPA bird qualifying features. Works will not be undertaken during sensitive winter period for bird qualifying features

Based on search of Sunderland City Council planning portal Jan-Oct 2010 for Fulwell and St Peter's Wards, accessed 05 October 2010. http://www.sunderland.gov.uk/

6 Likely significant effects

6.1 General

Both European sites could be affected by the overarching effects of marine pollution through waterborne contaminants and littering.

Plans to preserve and enhance the natural assets of Cut Throat Dene and to manage flood risk may adversely affect water quality during construction works which could lead to suspended sediment discharge or other contaminants inadvertently entering the marine environment. Appropriate mitigation has been advised by the Environment Agency and will be adopted during construction phases. It is considered that adherence to Environment Agency Pollution Prevention Guidelines and site specific advice will prevent a likely significant effect from waterborne pollution.

The Seaburn Masterplan and Design Code Consultation Draft October 2010 (page 92 - *Future management and maintenance of the coast*) addresses litter management, which will be especially important during gatherings and special events. With litter management plans in place it is considered that a likely significant effect on European sites due to marine litter will not occur

6.2 Durham Coast SAC

The sensitivity of the Durham Coast SAC to different types of impacts/disturbance was summarised in section 3. In the past, habitat damage has resulted through dumping of materials and burning, and potentially from changes in trampling pressure was identified as a concern at the site. Recent assessment by Natural England has determined that the site is now in favourable condition.

The analysis of the proposals in the Masterplan and other plans, has identified that several aspects of these plans and policies could give rise to increased access to the coast (e.g. as a result of improved transportation links or increases in local population size), which has a potential increased risk of increased habitat damage or disturbance through shear visitor numbers or increased recreational activities.

However, the main type of visitors likely to be attracted to the facilities and events at Seaburn are unlikely to disperse far from the developed seafront areas and this combined with the distance between the Masterplan area and the closest section of the SAC is such that a significant increase in casual visitor numbers to the Durham Coast SAC (i.e. as proportion of those attracted to public events) is unlikely, and the SAC is only likely to continue to be visited by people with intent to use this section of coast. A likely significant effect of habitat damage from excess trampling or direct littering is therefore not anticipated and this is not considered further.

6.3 Northumbria Coast SPA/Ramsar

The sensitivity of the Northumbria Coast SPA/Ramsar site to different types of impacts/disturbance were summarised in section 3. Potential increased disturbance to purple sandpiper and turnstone qualifying features whilst foraging or roosting was identified.

The analysis of the proposals in the Seaburn Masterplan and other plans assessed here, has identified that several aspects of these plans, policies and legislation could give rise to increased access to the coast (e.g. as a result of improved road links, and increases in local population size), which has a potential increased risk of disturbance to the bird qualifying features of the site. These aspects are considered further in light of the a non breeding waterbird survey of the Sunderland seafront during 2010-2011

6.4 Summary of the Sunderland seafront bird survey

6.4.1 Introduction

The Habitats Regulations Assessment report for the Seaburn Masterplan (URS/Scott Wilson October 2010) identified a deficiency in ornithological data for the Sunderland Seafront, specifically data on bird foraging distribution and usage of intertidal and adjacent non tidal habitats. To address this deficiency and to inform Appropriate Assessment, Sunderland City Council commissioned Argus Ecology Ltd to undertake a non breeding bird survey of the Sunderland seafront, including the Seaburn Masterplan development area, to inform HRA and enable adequate mitigation to be incorporated into the Masterplan to avoid likely significant effects on Northumbria Coast SPA bird qualifying features. Specifically, the bird survey sought to address uncertainties regarding:

- **Increased disturbance to bird qualifying features within and outwith the Northumbria Coast SPA and Ramsar site due to an increase in the number of visitors and residents:**

This may occur due to an increase in the number of visitors and residents – an increase in visitor numbers is likely to lead to an increased number of people accessing the intertidal zone and a potential for increased damage to the habitats or disturbance to bird qualifying features both within and outwith European sites.

- **Loss of suitable non tidal (functional land) roosting or foraging habitat, e.g. undeveloped amenity grassland, for turnstone and other shorebirds outwith the Northumbria Coast SPA and Ramsar site:**

This will occur due to proposals to develop or radically alter habitat structure within current amenity grassland areas.

The following sections provide a summary of the survey findings and the likely significant effects based on desk study and bird survey data. . The full bird survey report including bird distribution maps forms Appendix 3 to this report.

6.4.2 Methods

The survey area extended between the mouth of the River Wear and the Sunderland boundary with South Tyneside and included amenity grassland habitats immediately adjacent and landward of the shoreline including within the Seaburn Masterplan boundary.

The survey was undertaken using Wetland Bird Survey methodology with monthly bird counts from selected vantage points along the coast between May 2010 and March 2011

6.4.3 Results

Purple sandpiper

Maximum counts of purple sandpiper were ten in February, eight in November and six in January. Numbers varied between monthly counts with no birds recorded between May and September.

The number of birds varied between vantage points with the species most consistently recorded at Parson's Rocks during high and low tide and on or very close to the piers at high tide or Roker Rocks at low tide.

Turnstone

Maximum counts of turnstone were 52 in October, 27 in December and 24 in September. Numbers varied between monthly counts with birds recorded in every month between August and March, but absent between May and July.

The number of birds varied between vantage points with the species most consistently recorded at North Pier, Parson's Rocks and Whitburn Steel during high and low tide, with the piers or nearby intertidal habitats, including Roker Rocks, used more at low tide.

Other waterbirds

Whitburn Sands, the closest intertidal habitat to Seaburn Masterplan, supported other species typical of sandy beaches, with the most notable record being a peak count of 50 sanderling *Calidris alba* on 30 November 2010 but otherwise numbers of gulls and typical wrack-line foraging passerine species such as starling, meadow pipit and pied wagtail. A single redshank *Tringa totanus* briefly alighted on amenity grassland adjacent the Pullman Lodge Public House on the southern edge of the Masterplan area. This was the only wading bird recorded on amenity grassland in proximity to the Masterplan area.

Whitburn Steel (for low tide foraging) and Whitburn Bents (for high tide roosts/foraging) are the most important year round locations for waterbirds (including purple sandpiper and turnstone).

Disturbance to birds

The Sunderland seafront is a popular area for visitors and it was no surprise that recreational activities were by far the greatest sources of disturbance to birds in the survey area. The existing level of disturbance is described as moderate to high with different types of activity creating different levels of disturbance. Some activities were more localised (e.g. angling from the piers) and therefore created more localised disturbance than other activities, e.g. dog walking which was widespread in the intertidal zone. The temporal nature of disturbance also varied with activity type, whereby angling caused prolonged (but localised) displacement to birds, whereas dog walking caused frequent, short term disturbance and displacement incidents, often repeated in many locations and cumulatively affecting wide areas of intertidal habitat, including Parson's Rocks. This corroborates Natural England's site condition monitoring report for Unit 13 of the Durham Coast SSSI (i.e. Parson's Rocks), which states "The only negative factor on the unit was the amount of dog walking occurring on the accessible parts of the unit. The birds are forced to the seaward edge of the rocky shore so the amount of useable habitat during these times is reduced."

Other recreational/commercial activities causing disturbance to birds comprised surfing and kite surfing, mountain biking, horse riding, bait digging, shell fishing and seaweed collecting. Occasional disturbance was also caused due to the removal of seaweed/debris and re-profiling of beach sediments by tractors. Removal of seaweed has the secondary affect of reducing food resources for birds which feed on invertebrates that live amongst, or depend on the nutrients released from, decaying seaweed.

Summary of results

Overall, the number of purple sandpiper and turnstone recorded during the bird survey agree with the counts recorded by Durham Bird Club (DBC).

To a large extent, the distribution of bird records of these two species also match records from DBC with birds recorded on rocky outcrops at Whitburn Steel, Parson's Rocks, Roker Rocks and the two piers. Purple sandpiper was not recorded away from rocks or piers. Neither species were recorded along open stretches of beach at Roker or Whitburn Sands.

The record of turnstone foraging with other wetland birds on amenity grassland at Roker Cliff Park reinforces this species capacity to use such habitat and reflects its broader choice of foraging habitat compared with purple sandpiper. However, despite survey of non tidal amenity grassland at Seaburn, no birds were recorded using this habitat or other areas within or adjacent to the Masterplan area.

Existing levels of human disturbance was clearly a factor in affecting temporal and spatial bird distribution and it is concluded that potential disturbance / displacement impacts on bird qualifying features of the Northumbria Coast SPA/Ramsar site will remain possible due to the close proximity of the human seafront environment including the Masterplan zone to intertidal habitats used by birds.

6.4.4 Likely significant effects

This study has identified existing disturbance impacts on the bird qualifying features.

The seafront is a popular location to visit and that the aims of the Seaburn Masterplan are to make the area more attractive to people through boosting local businesses and providing services, activities and events.

Given the existing level of disturbance to birds along the Sunderland seafront during winter, it is likely that many birds cannot forage for very long periods before being disturbed or displaced. It is possible that the abundance of birds using the Sunderland seafront may currently be depressed by the existing level of human disturbance. It is reasonable to expect that the development of visual/aesthetic enhancements, or additional visitor attractions/businesses, in the area will at very least maintain the current level of visitation and disturbance and will likely enhance the number and frequency of visits and corresponding levels of disturbance at any one time.

The effects of disturbance and displacement to SPA qualifying features and other birds are therefore likely to increase in the future. However, it is likely that most visitors and tourists will occur during the summer which is outside the most sensitive period for birds. Notwithstanding this, the management of seafront visitors and activities particularly during the winter is therefore very important in order to mitigate the impacts of their activities on bird qualifying features and the integrity of the European site.

Appropriate mitigation measures have been formulated to reduce potential impacts. These are discussed in section 7.

An assessment of a likely significant effect on SPA qualifying features (little tern, purple sandpiper and turnstone) due to increased visitor numbers to the Seaburn seafront is provided in Table 8.

Table 8. Assessment of the implications of increased visitor numbers to Seaburn seafront for the Northumbria Coast SPA in respect of the SPA's conservation objectives

Conservation Objectives for the Northumbria Coast SPA	Implications of increased visitor numbers to Seaburn seafront on the conservation objectives for the Northumbria Coast SPA
To maintain* in favourable condition the habitats for the populations of Annex 1 species (Little tern) of European Importance, with particular reference to (i) intertidal sand and mudflats, (ii) sand dunes and (iii) coastal waters	The nearest little tern breeding sites to the Masterplan area are at Low Newton, *c*.65 km to the north, and at Crimdon, *c*.30 km south. The breeding sites are considered to be well beyond the zone of influence of the Masterplan. The seaburn seafront is not regularly used or important for this species as verified by the lack of little tern records for the seaburn seafront area. The Masterplan or an increase in visitor to the seafront as a consequence of the seafront regeneration will not result in a likely significant effect on little tern.
To maintain* in favourable condition the habitats for the populations of migratory bird species (purple sandpiper and turnstone) of European importance, with particular reference to intertidal sand and mudflats, rocky shores with associated boulder and cobble beaches and artificial high tide roost sites	Parson's Rocks and Whitburn Steel [rocks] are habitat features used by purple sandpiper and turnstone. These areas, particularly Parson's Rocks, already receive a high level of human disturbance. It is a logical assumption that an increase in overall visitor numbers will have a proportional effect on disturbance levels but this is very difficult to quantify and whether this could result in a likely significant effect on the rocky shore habitat of the birds and on the qualifying features themselves is uncertain. However, given the uncertainty the precautionary principle must be applied and the overall conclusion has to be that there could be a likely significant effect on rocky shore habitat (perhaps due to trampling or marine litter) and due to direct disturbance to the qualifying features. Albeit the effect is likely to be very small.
To maintain in favourable condition the habitats for the populations of waterfowl that contributes to the	Purple sandpiper inhabits exclusively rocky shores and does not use intertidal mudflats or sand. Turnstone will occasionally forage on intertidal sand

wintering waterfowl assemblage of European importance, with particular reference to intertidal sand and mudflats	(i.e. beaches) where there is a well-developed wrack line of decaying seaweed. It does not use intertidal mudflat habitat. This conservation objective does not therefore apply directly to purple sandpiper or turnstone in terms of effects on their main habitat. However, similar comments to above on human disturbance apply indirectly as use of the beaches, adjacent to the rocky shore outcrops, by increased numbers of visitors has potential for people or their pets to wander onto rocks at low tide. A high level of human disturbance exists on the Seaburn seafront and the assessment of likely significant effect on the wintering waterfowl assemblage is addressed with a similar conclusion to that above.

*Maintenance implies restoration if the feature is not currently in favourable condition.

7 Mitigation measures

In order to avoid most of the potential impacts described above, especially on bird qualifying features of the Northumbria Coast SPA, the following embedded mitigation will be adopted by Sunderland City Council and implemented as part of the Seaburn Masterplan and Design Code Consultation Draft October 2010:

- **Dog Prohibition Zones** for Parson's Rocks and Whitburn Steel including a 50m buffer zone during the core winter period October to March. Measures to control dogs in the areas around Parson's rocks and Whitburn Steel shall be implemented and enforced by the City Council. This will include dialogue with South Tyneside Council to ensure that dog walkers are not moved further north along the beach to affect other parts of the SSSI and SPA between the coastal zone of the two local authorities;
- **Litter Management Plan** – a general and events focussed plan to ensure prompt clean up after events, continuous litter removal during events and prevent wind blown littering of marine areas;
- **Increased Advisory / Interpretive Signage** – to encourage responsible recreational activities and guide people to use less sensitive areas for birds;
- **Events Management Plan** – to include plans for patron management, guidance on the sensitive scheduling for organisers and the sensitive location of certain types of events to avoid significant disturbance to birds and general.

This mitigation has been written into the Seaburn Masterplan and Design Code Consultation Draft October 2010 (page 92 - Future management and maintenance of the coast).

The non breeding bird survey has highlighted the existing moderate to high level of disturbance to birds along Sunderland seafront, particularly during the sensitive winter season. Given this existing situation and the likelihood that the regeneration of the seafront, together with general planning policy promoting access to the coast will ultimately attract more visitors to the seafront, a degree of mitigation is required to control access and certain activities particularly in sensitive locations.

It is recognised that Seaburn effectively lies adjacent to the conurbation of Sunderland and as such is always going to be subject to higher numbers of visitors than more rural stretches of coastline. Furthermore it would be extremely difficult if not impossible without the permanent presence of a bird warden to prevent people disturbing birds at sensitive locations. As the warden option is probably commercially unfeasible, passive management of public access and recreational activities in certain areas at certain times must be adopted in order to reduce impacts on the most sensitive habitats and reduce disturbance to birds. The following additional management is to be adopted:

- In conjunction with mitigation for the Marine Walk Masterplan, interpretive and directive signage will be erected at Parson's Rocks and I respect of the Seaburn Masterplan additional similar signage will be installed on the approaches to Whitburn Steel Rocks. This will explain the importance of the habitats for wintering birds, show paintings of the species concerned and information about their ecology relevant to the location. The signage should be inclusive in its intended addressees in order to address all disturbing activities, such as mountain biking, dog walking or general walking/commuting over Parson's Rocks or Whitburn Steel Rocks during winter.

- Artificial lighting at Seaburn Promenade will be controlled (as described in the Bird Survey Report with regard to Marine Walk– Appendix 3) to prevent direct illumination or incidental light spill over intertidal habitats. This can be achieved by applying sensitive design, directionality, timing devices and fittings such as hoods/cowls/shields.
- New developments that may arise under the Masterplan which may arise in future must be screened for likely significant effects by seeking professional ecological opinion and assessment and/or statutory consultation where it is considered appropriate through normal development controls.
- Based on advise received from the Environment Agency, measures have been set out in the Seaburn Masterplan to avoid pollution events as a result of alterations to Cut Throat Dene, such as the installation of sustainable urban drainage systems (SUDS), as well as flood alleviation measures. Such measures will aim to reduce any impacts of waterborne pollution within the coastal zone.

8 Summary and Conclusions

Two European sites are located in the vicinity of the Seaburn Masterplan: Durham Coast SAC and Northumbria Coast SPA / Ramsar site.

No likely significant effects upon the Durham Coast SAC will result from the Seaburn Masterplan proposals.

No direct impacts on the habitats of the Northumbria Coast SPA / Ramsar site are likely as no development will occur in the intertidal zone.

A likely significant effect on bird qualifying features, albeit probably very small and difficult to quantify against the background level of existing disturbance, may result from a probable increase in human disturbance due to a potentially greater number of visitors along the seafront, a proportion of whom will access the intertidal zone for recreational or commercial purposes. This has been assessed in Table 8. Of particular concern is the existing extent and frequency of dog walking, particularly during winter, and the potential for this activity to increase proportionally with visitor numbers.

Although purple sandpiper and turnstone are mainly present between September and April[4], outside of the main tourist season, disturbance during winter can be significant if it affects the birds' chances of winter survival, particularly during periods of cold weather.

The main areas where increased visitation is likely to occur are along the promenade and street areas away from intertidal habitats and some distance from Parson's Rocks or Whitburn Steel Rocks, the closest areas of important habitat. This will preclude disturbance from the majority of visitors. However, the nature of recreational activities are such that often open spaces or challenging environments, such as beaches and intertidal habitats are sought (as evidenced by a mountain biker on Parson's Rocks) or are transited to reach the sea (e.g. surfers) or other nearby areas (e.g. horse riding/dog walking) and therefore many recreational activities can result in far reaching disturbance.

The level of disturbance to birds is already high and is likely to be significantly affecting the localised distribution, and possibly the numbers, of bird qualifying features. However, given that the Masterplan area is small in relation to the geographical extent of the Northumbria Coast SPA it is unlikely to have a likely significant effect on the majority of the SPA bird population and as such will not affect the integrity of the Northumbria Coast SPA.

The embedded environmental mitigation proposals listed in section 6 of the "Seaburn Masterplan and Design Code Draft October 2010" will be adopted and will substantially mitigate for the majority of potential impacts on habitat and bird qualifying features of European Sites.

The Sunderland Seafront Management Plan is currently under production and will provide more details on the management of visitors. However, Sunderland City Council has made a commitment to management of visitors and recreational activities in the Seaburn Masterplan and Design Code Draft October 2010 through implementing the mitigation listed in section 7 of this document relating to events management, litter management, dog control and interpretive signage advocating responsible access and recreational use of the seafront.

[4] The bird survey did not cover April, but it would be expected (as supported by DBC data) that both purple sandpiper and turnstone would occur during April (either remaining wintering birds and/or passage migrants from further south).

Given the type and scale of development proposed in the Seaburn Masterplan and the present high level of human disturbance (which would likely continue in the area, irrespective of the Masterplan), it is considered that, with the mitigation applied, the Masterplan alone or in combination with other plans or projects will not contribute a detectable or significant amount of additional disturbance to wintering birds. Given this conclusion, and taking account of the likely geographical reach of the Masterplan, it is considered that, with application of the precautionary principle, the Masterplan may contribute to an increase in disturbance to bird qualifying features but will not adversely affect the integrity of the Northumbria Coast SPA.

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Appendix 1

Table 9 Summary details of Durham Coast SAC and Northumbria Coast SPA and Ramsar site

European site	Reasons for which the site has been designated (Qualifying Features)	Management Objectives	Sub-features identified by Natural England as key ecosystem elements that need to be maintained if management objectives are to be met.	Potential hazards/site vulnerabilities
Durham Coast SAC	Vegetated sea cliffs of the Atlantic and Baltic coasts	Subject to natural change, to maintain, in favourable condition, the vegetated sea cliffs of the Atlantic and Baltic Coasts.	None supplied by Natural England, but the following are likely: Extent of cliffs Vegetation structure – showing zones and transitions Indicators of local distinctiveness, e.g. notable species.	Loss of habitat, changes in flushing regime (both quantity and quality of water), changes to geomorphological processes (e.g. introduction of sea defences), changes to grazing regime, changes to trampling regime (recreation).
Northumbria Coast SPA/Ramsar	Wintering - *Arenaria interpres* (Turnstone) Wintering - *Calidris maritima* (Purple sandpiper) Breeding - *Sternula albifrons* (Little tern)	To maintain the condition of the habitats (sub-features) used by the bird qualifying features	For the wintering birds: Rocky shores with associated boulder and cobble beaches, which are used as feeding areas. High tide roost sites, e.g. the littoral rock of Whitburn Steel. For the breeding birds: Sandy and shingle beaches above the high-tide mark, which are used by nesting little terns (sandy beaches adjacent to the Long Nanny at Low Newton are the key area). Shallow inshore areas used by little tern for foraging. (Waters off Long Nanny and inshore waters.) Most feeding occurs offshore. Disturbance - the birds are vulnerable to disturbance.	Potential hazards identified by Natural England for qualifying features & sub-features that may be relevant to the Seaburn Masterplan: • Effects on hydrodynamic regime especially with respect to silt/sand movements along coast & effect on beaches (little tern); • Disturbance to non breeding birds by human activities, e.g. dog walking, recreation, public events. • Toxic contamination (pollution risks) (little tern, turnstone, purple sandpiper) – Tyne listed as greatest potential risk. • Disturbance (all spp.) • Habitat loss (all spp.)

Table 10 Summary of management units of the Durham Coast SSSI that underpin the sections of the Durham Coast SAC and Northumbria Coast SPA and Ramsar site that are considered to lie within the zone of influence of the Seaburn Masterplan

Unit number	Main habitat	Condition (& date assessed)	Condition assessment comment.
6 (Whitburn Steel to Souter Point)	Littoral Rock	Favourable	This unit is geologically important for its coastal cliffs which are exposed and not affected by sea defences. The favourable condition of the rocky foreshore is also maintained. (22/07/2009)
10 (Whitburn Bents)	Neutral grassland – lowland	Favourable	Grassland dominated by false oat-grass *Arrhenathrum elatius* and tall herbs including *Cirsium arvense*. There is very localised dumping of garden waste affecting species composition. (22/07/2009)
13 (Parson's Rocks)	Littoral Rock	Favourable	Site fabric is maintained to support purple sandpiper, but dog-walking is a disturbance factor on accessible parts of unit. (23/07/2009)
14 (Salterfen Rocks)	Littoral Rock	Favourable	Site fabric is maintained to support purple sandpiper. (23/07/2009)
15 (Pincushion)	Littoral Rock	Favourable	Site fabric is maintained to support purple sandpiper. (23/07/2009)

[1] Information extracted from Condition of SSSI units on Natural England's website. Data downloaded 20/07/2010

Appendix 2

Table 11 Consultation responses

Respondent	Relevant HRA/Design Code paragraph	Comment	Proposed Action
Natural England	Section 6.2 Page 40	Will the proposed Dog Prohibition Zone for Parson's Rocks and Whitburn Steel be a seasonal arrangement? Given the non-breeding bird interest, a seasonal buffer zone will only be required over the winter months – September to April	ACTION - The matter of dog control orders and other relevant byelaws across the City (including the foreshore area) is currently under discussion including details such as the timescale of any restrictions. Due to the significance of the two sites at Seaburn, before these are taken forward for approval by Cabinet, Natural England will be consulted further and their views considered. In advance of an agreed approach, the Masterplan and HRA shall be amended to read: Measures to control dogs in the areas around Parson's rocks and Whitburn Steel shall be implemented and enforced by the City Council
		There will need to be some dialogue with South Tyneside to ensure the 'Dog Prohibition Zone' does not move dog walkers further north along the beach to other parts of the SSSI and SPA	RESPONSE - The City Council will look to cooperate with South Tyneside Council in the development of dog control orders for the foreshore location
		The HRA acknowledges that the finding of 'No significant effect' is not possible until the results of the seafront bird study become available in March 2011. This may result in further necessary changes to the Masterplan. Therefore adoption must be postponed until such a time that the test of significant effect can be determined	RESPONSE - The outcome of the bird study will be considered and its recommendations taken into account prior to adoption of the masterplan
		Masterplan and Design Code River basin Management Plan for Northumbria suggests that this river has moderate ecological status therefore welcome proposals for improvements and returning the watercourse back to its natural channel. Given proximity to SPA consideration should be given to water quality. Environment Agency may have comments.	RESPONSE - See above for Environment agency comments and responses. Consideration has been given to the impact on water quality both through the Masterplan and design Code and sustainability Appraisal. The Sustainability appraisal concludes that the potential increase in visitor numbers and of development may increase scope for pollution; however is satisfied that measures proposed in the document such as SUDS and the necessary investment into waste water infrastructure in the longer term will mitigate this risk. Notwithstanding the above, water quality in the area is constantly

Respondent	Relevant HRA/Design Code paragraph	Comment	Proposed Action
			monitored by the City Council's Environmental Health team. Future work into the Seafront Management Plan will oversee measures in relation to management of visitors and litter control, which could also have a bearing on water quality.
		Light pollution on the intertidal area of the coast should be managed and reduced through this plan. Public realm improvements should be considered against this plan.	ACTION - insert new section p.85 (Street furniture, materials and public art) to read: All new developments will be expected to incorporate a lighting scheme to frame and enhance the appearance of developments at night particularly at the key gateways and routes identified in this plan. A thorough approach to lighting may also assist in crating a sense of community safety and way finding. Due to the sensitive habitat in the area, considerable care must also be taken to minimize the impact of light pollution particularly on the inter tidal area. Consideration must also be given to minimizing energy consumption.
RSPB	General comments	Masterplan and Design Code Welcome the acknowledgement that the Masterplan could potentially disturb the interest features of the Northumbria Coast Special Protection Area (SPA).	Comment noted
		Commend the Council for the 4 management and mitigation measures that it has identified	Comment noted
		Support the dog prohibition zone at Parson's Rocks and Whitburn Steel including the 50m buffer zone. Considered an appropriate measure for the European site and as a measure to reduce impact of increased recreational disturbance However it is unclear whether this would be a voluntary zone or would be achieved formally through a Dog Control Order. The latter option is likely to be more effective but in either event monitoring of the effectiveness of the prohibition zone (and enforcement) will be crucial to its success. New restrictions will require careful liaison with affected communities in order to get people to behave sensitively. Recommended that the Council identify its preferred mechanism for the prohibition zone, how it will be implemented and enforced in the	Comment noted

Respondent	Relevant HRA/Design Code paragraph	Comment	Proposed Action
		finalised SPD.	
		HRA Screening Agreed that an adverse effect on the integrity of the SPA cannot be ruled out at this stage	Comment noted
		The council is commended for undertaking the winter bird survey work to inform a more detailed assessment. The study will allow for the final HRA to provide additional detail on what the embedded mitigation measures should cover – e.g. the months in which disturbance would be likely to affect significant numbers of water birds. The study will help rule out an adverse effect in integrity	Comment noted
Environment Agency	Masterplan and Design Code Section 4.0 P.23	Supplement to PPS25, development and Coastal Change is relevant to the Masterplan and should be included as part of the policy review.	**ACTION - Insert text page 23 to read:** PPS25 Supplement: Development and Coastal Change identifies the need for impacts of coastal change to be taken into account at the planning stages. It should be ensured that new development at Seaburn be prevented from being put at risk from coastal change. Areas identified for coastal change (Coastal Change management Areas) should be identified through an evidence base. Applications for development within these areas need to be accompanied by an assessment of the vulnerability of the proposed development to coastal change The North East Shoreline Management Plan (SMP2) provides an evidence base identifying risks associated with coastal evolution and a policy framework to address these risks. In the case of Seaburn (Coastal management area MA06) improved management of coastal defences is recommended with no further construction of defences, allowing the cliffs to erode naturally ('Hold the Line'). The control of land use within the Seaburn Coastal management Area will therefore need to be carefully considered.
		PPS23 Planning and pollution Control should be reviewed. Seaburn lies above a principal aquifer (Magnesian Limestone rock) which is an important resource which needs to be protected against the risk of flooding	**ACTION - Insert text page 23 to read:** PPS23 clarifies that the impact upon the quality of land, air or water arising from development is capable of being a material planning issue. Consideration will therefore be given to whether development is an acceptable use of the land given the impacts of that use. The potential for contamination must be considered in relation to the existing use and

Respondent	Relevant HRA/Design Code paragraph	Comment	Proposed Action
			circumstances of the land, the proposed new use and the possibility of encountering contamination during development. The potential for contamination and any risks arising must be properly assessed and any necessary remediation and management measures incorporated. Advice must be taken from the Environment Agency and other relevant bodies such as Drainage Boards, and water and sewerage undertakers who will be responsible for the control of processes or emissions.
	P.26	EA are pleased to note that the SFRA has been used to identify specific flooding issues. It should be clarified that any land within Flood Zone 3b is not suitable for any development other than water compatible land uses in line with PPS25. Strong support for the plan to leave the area around Cut Throat Dene as open space.	**ACTION - amend paragraph on SSFRA to read:** '…This indicates that the areas of undeveloped land to the south of the Masterplan area are at higher risk of flooding and no existing undeveloped land will be offered for development'.
	Section 5.0 P.29	Support for the proposal to create and enhance biodiversity in the area particularly within Cut Throat Dene area and recognition of the benefits this may bring	Comment noted
	Section 7.0 Page 37	Support the consideration of landscaping and measures to reduce flood risk (in line with PPS1 and PPS9)	Comment noted
	Section 8.0 Page 40	The need for information on the Sequential Test for development in Flood Zones 2 and 3 is highlighted. Concern with the development proposal at Block F in relation to flood risk. This appears to be partially in flood zones including Flood Zone 3B. In line with PPS25 The Environment Agency would not support development within Flood Zone 3B unless it was water compatible. The sequential test would first need to be undertaken and feasibility of the development measured through an appropriate Flood Risk Assessment.	**ACTION - insert text on Flood risk (P.89 3rd paragraph)** Any proposed new uses located within Flood Zones 2 and 3 will require the application of a Sequential Test in line with Planning Policy Statement 25 (PPS25). More information on the Sequential Test can be found in the Practice guide to PPS25 and at www.environment-agency.gov.uk/planning **RESPONSE -** The Seaburn Masterplan is not a blueprint for development. It sets out a comprehensive framework to guide future development and reflect the City Council's regeneration and design ambition for Seaburn. To this end the development block F forms part of an indicative Masterplan of leisure led mixed-use development at Seaburn. Nevertheless in assessing development proposals consideration will also be given to extent to which schemes reduce the overall risk of flooding in the area. In all cases, it is

Respondent	Relevant HRA/Design Code paragraph	Comment	Proposed Action
			recognised that in order to mitigate against any future flood risk careful design work, combined with incorporation of measures such as sustainable urban drainage systems will be paramount.
	Section 9.0 Page 49	Strongly support the aim of the document to preserve and enhance natural assets in the area and avoid development within the floodplain.	**Comment noted**
	Page 81	Recommend use of a variety of SUDS methods throughout the Masterplan area where appropriate	**ACTION - amend 3rd bullet page 80 to read:** Due to the sensitivity of the Seaburn area as a coast location and a partial flood zone, landscape design and materials must be suitable for their context. All areas of public realm and landscaping must be designed to mitigate the risk of flooding through appropriate sustainable drainage techniques where feasible. Permeable paving should be utilised for all large areas of hard surfacing. New developments should incorporate green roofs to increase green infrastructure. The impacts of coastal flooding also need to be taken into account. **Add bullet Page 85 (Street furniture, materials and public art) to read:** • All areas of hard surfacing should utilise permeable paving in order to mitigate flood risk.
	Section 10 Page 86	Reiterate the need for SUDS and the enhancement of biodiversity throughout the Masterplan area. This should be phased in with each new development to ensure that flood risk and green infrastructure is managed throughout the phases of development rather than left to the end.	**RESPONSE -** The need for green infrastructure and sustainable drainage across the site is now made using the amendments above. Improvements to green infrastructure and SUDS will be integrated across all phases of development. As clarified in the Masterplan and Design Code, improved green infrastructure and landscaping is a key component of the vision for regenerating the Seaburn area (e.g. residential park) and therefore will not be considered as an afterthought to development.
	Page 88	Support the requirement for an Environmental Impact Assessment and Flood risk assessment. Encourage applicants to submit a preliminary risk assessment to ensure that land contamination is taken into account and any necessary remediation identified to reduce pollution to groundwaters.	**ACTION** - **amend P.89 to include new section to read:** Preliminary Risk Assessment For all new development a preliminary risk assessment will be required regardless of the site history, contaminated or otherwise. This must

Respondent	Relevant HRA/Design Code paragraph	Comment	Proposed Action
			consider the potential for contamination to be present in relation to the existing use and circumstances of the land, the proposed new use and the possibility of encountering contamination during development and any necessary remediation and subsequent management measures to deal with unacceptable risks.
		Encourage flood risk to be considered on all planning applications given the issues in the area.	**ACTION - amend P.89 1st paragraph (Flood risk section) to read:** A Flood risk assessment and Drainage impact assessment for **all** proposed development sites within the Masterplan area will be required. The Flood Risk Assessment will identify the potential sources of flooding, from tidal, fluvial, groundwater and on-site drainage sources, review flooding history, obtain critical water levels and determine the influences on river hydraulics. The FRA will consider flooding both individually and in combination. The assessment also covers a number of other factors such as loss of floodplain storage and surface water drainage issues The Drainage Impact assessment shall provide a preliminary review of the potential options for drainage designs that may be developed in avoidance or mitigation of flood risks and will consider the physical changes the proposed drainage measures may cause to the development and to the area drainage efficiency beyond the proposed development. DIA will invariably offer an outline design for an appropriate sustainable drainage system that will consider betterment compared with the existing flood protection measures
		Any proposal to remove concrete from watercourses and create more natural riparian areas, or remove culverts and obstructions will be supported. These works may require land drainage consent under the Land drainage Act 1991.	**Comment noted**
		Recommend that developer contributions could be used towards mechanisms for maintenance and adoption of SUDS or the implementation of future flood alleviation schemes.	**ACTION - amend P91 additional paragraph (Developer Contributions) to read:** SUDS maintenance and adoption

Respondent	Relevant HRA/Design Code paragraph	Comment	Proposed Action
			The implementation of SUDS across the site will require ongoing maintenance. Should this require adoption by the City Council, developers will be expected to contribute towards the adoption and ongoing maintenance. **http://www.ciria.org.uk/suds/model_agreements.htm**
		Depending on the recommendations of the Shoreline Management Plan for the area it may also be relevant to require contributions towards sea defences particularly in areas where the policy is to hold the line.	**RESPONSE -** The issue of sea defences is to be explored and contributions sought where required.
		Support the proposal to obtain contributions for biodiversity and open space	**Comment noted**

Appendix 3

Sunderland seafront bird survey report

argus ecology

Marine Walk, Roker, Sunderland

Ecological Risk Assessment and Wetland Bird Survey

Final Report

Prepared for Sunderland City Council

Revised: 29 March 2011

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Contents

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[1] & Figure 1 - Location Plan).

Sunderland City Council has developed a Seafront Regeneration Strategy (SCC[2] & 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 scooping 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[1]) 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[2]), 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 (S*terna 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[3]). 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 who 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 (≥50%) decline in UK breeding population over last 25 years; and
- Rapid (≥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 who 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;
- ≥50% of UK breeding population in 10 or fewer sites;
- ≥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), Durham Bird Club (www.durhambirdclub.org) and Durham Bat Group (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-browned 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 (*Lymnocryptes 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, linnet 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, linnet, 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 linnet.

- 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 glaucoides*), little tern, sandwich tern, common tern, Arctic tern, black tern, guillemot (*Uria aalge*), razorbill (*Alca torda*)l, 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[3]). 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/).

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APPENDICES

APPENDIX 1

Spottee's Cave, Roker Ravine **Bat Activity Survey Report**

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 form 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

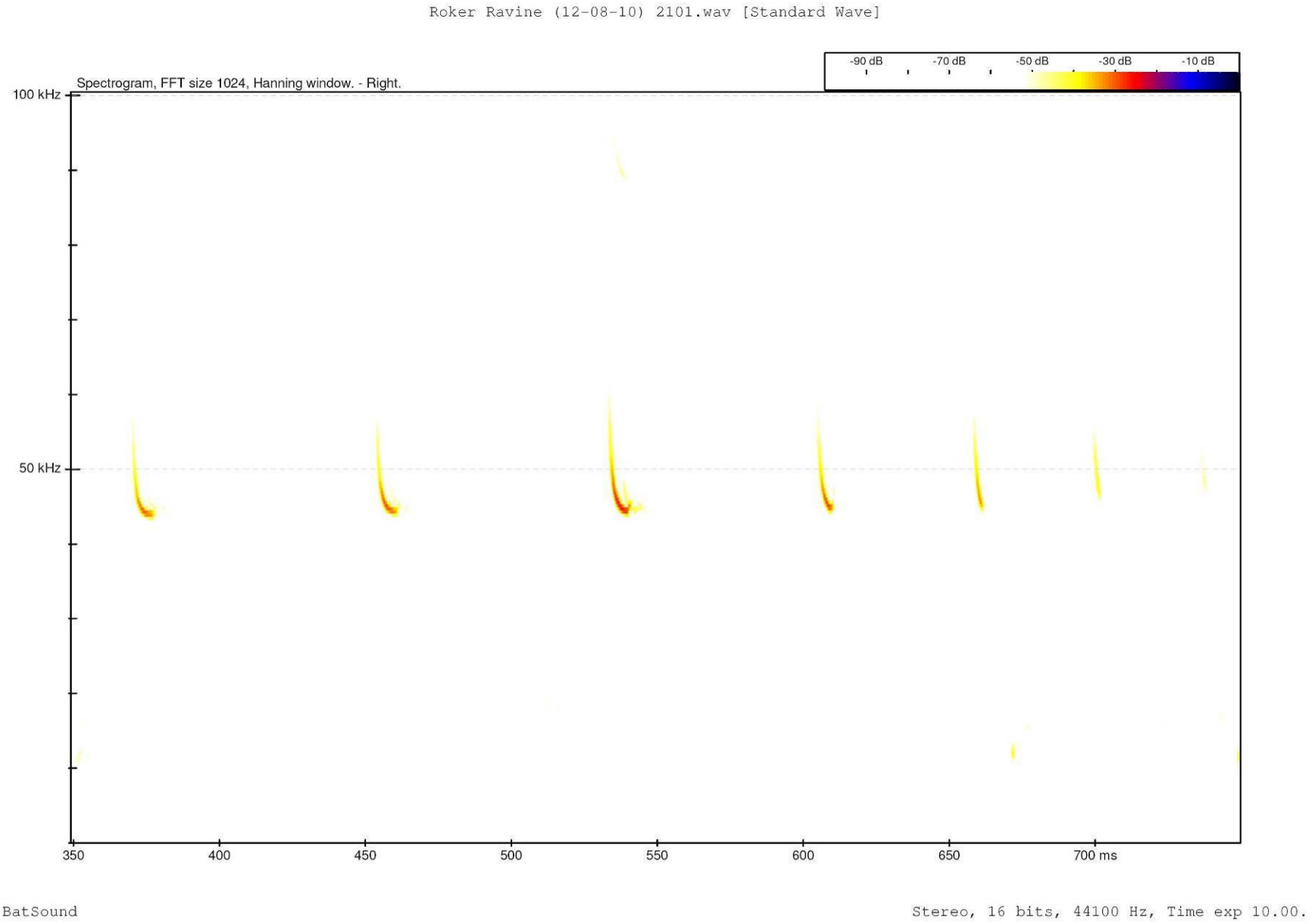
Photo 3 2nd Cave - located on northern edge of Roker Ravine

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



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	dd/mm/yyyy

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 Levels				Second habitat 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 semi-natural	1 Dense shrub layer
2 Coniferous	2 Coppice with standards	2 Moderate shrub layer
3 Mixed (10% of each)	3 Coppice 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 semi-natural 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 Clear-felled 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 earth/plough
	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 Stubble (clean)
		14 Stubble (weedy)
		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 Well-wooded
	4 Sewage works "urban"	4 Not well-wooded
	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 Disused

G - WATERBODIES (freshwater)

LEVEL 2 options	LEVEL 3 options	LEVEL 4 options
1 Pond (less than 50m²)	1 Undisturbed/ disused	1 Eutrophic (green water)
2 Small waterbody (50-450m²)	2 Water sports (sailing 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 Marl (clear water, large waterweeds)
5 Gravel pit/ sand pit	5 Game fishing	5 Slow-medium running
6 Stream (<3m wide)	6 Industrial activity	6 Fast-running
7 River (>3m wide)	7 Sewage processing "rural"	7 Dredged
8 Ditch with water (<2m wide)	8 Other disturbance	8 Undredged
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/loch	2 Sand	2 Dune
3 Estuarine	3 Shingle	3 Flat/gently sloping
4 Brackish lagoon	4 Rocky	4 Small island
5 Open sea	5 Fully vegetated	5 Spit
	6 Sparse/medium vegetation	6 Dune slack
	7 Inter-tidal	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 Limestone	3 Montane	3 Grasses present
4 Non-montane	4 High disturbance from climbers/walkers etc.	4 Scrub present
5 Quarry	5 Medium disturbance	
6 Mine/spoil/slag heap	6 Low disturbance	
7 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											

WADERS: 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				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

GULLS: 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			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		

TERNS: 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			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											

WADERS: 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

GULLS: 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							

TERNS: 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
Phalacrocorax carbo	Cormorant*	CA							
Ardea cinerea	Grey heron*	H.							
Cygnus olor	Mute swan*	MS							
Branta canadensis	Canada goose*	CG							
Anas crecca	Teal*	T.					√		
Somateria mollissima	Eider*	E.					√		
Mergus merganser	Goosander*	GD							
Bucephala clangula	Goldeneye*	GN					√		
Falco tinnunculus	Kestrel	K.					√		
Accipiter nisus	Sparrowhawk	SH							
Haematopus ostralegus	Oystercatcher*	OC					√		
Charadrius hiaticula	Ringed plover*	RP					√		
Pluvialis apricaria	Golden plover*	GP			Annex I		√		
Vanellus vanellus	Lapwing*	L.	√			√		√	√
Calidris canutus	Knot*	KN					√		
Calidris alba	Sanderling*	SS							√
Calidris maritima	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
Arenaria interpres	Turnstone*	TT					√		
Calidris alpina	Dunlin*	DN				√			√
Tringa totanus	Redshank*	RK					√		√
Numenius arquata	Curlew*	CU	√				√	√	√
Limosa lapponica	Bar-tailed godwit*	BA			Annex I		√		
Larus ridibundus	Black-headed gull*	BH					√		
Larus canus	Common gull*	CM					√		
Larus argentatus	Herring gull*	HG	√			√		√	
Larus marinus	Great black-backed gull*	GB					√		
Rissa tridactyla	Kittiwake*	KI					√		
Sterna sandvicensis	Sandwich tern*	TE			Annex I		√		
Sterna hirundo	Common tern*	CN			Annex I		√		
Columba livia	Feral pigeon	FP							
Columba palumbus	Woodpigeon	WP							
Apus apus	Swift	SI					√		
Hirundo rustica	Swallow	SL					√		
Delichon urbicum	House martin	HM					√		
Anthus pratensis	Meadow pipit	MP					√		
Motacilla alba	White/Pied wagtail	PW							
Turdus merula	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
Erithacus rubecula	Robin	R.							
Oenanthe oenanthe	Wheatear	W.					√		
Turdus iliacus	Redwing	RE		√		√			
Pica pica	Magpie	MG							
Corvus frugilegus	Rook	RO							
Corvus corone	Carrion crow	C.							
Sturnus vulgaris	Starling	SG	√			√		√	√
Passer domesticus	House sparrow	HS	√			√		√	√
Carduelis carduelis	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

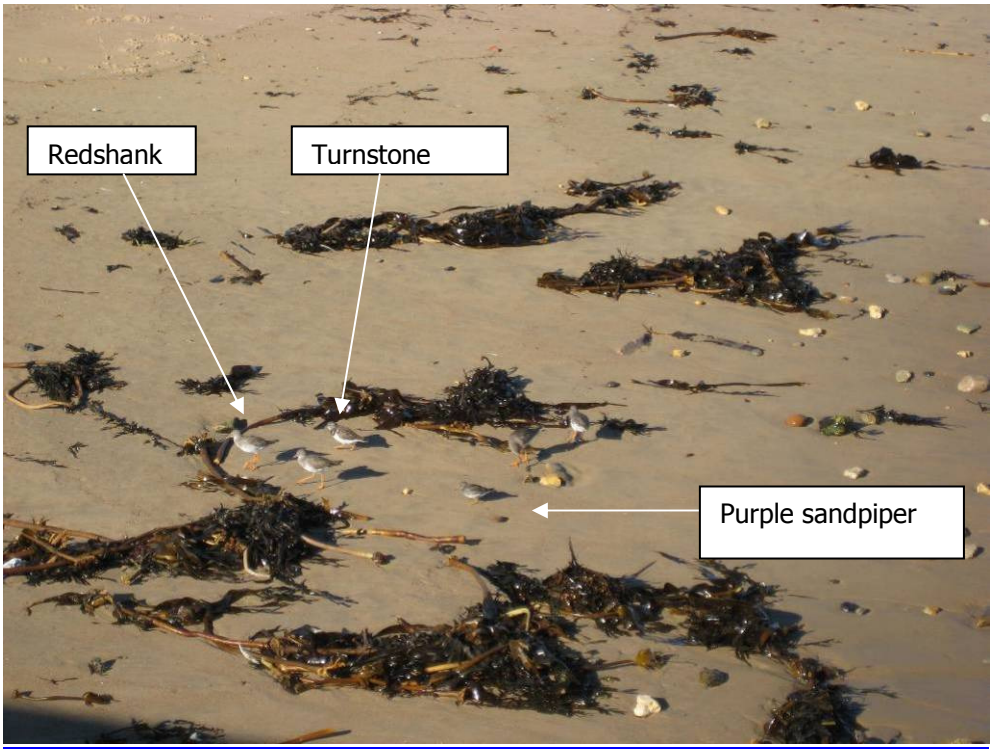


Photo 5 Roker Cliff Park - mixed flock of waders, gulls and starlings foraging on areas of grassland, where snow had thawed

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

Date: 27/05/10	**Time start**: 13.43	**High tide**: 14.48	**Time finish**: 15.38

Weather:					
Wind speed/direction	NW: 2-3	Cloud cover (CC/8)	7/8	Conditions	Overcast and dry with occasional light showers

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**		Part	
Were you able to complete the count within about 3-4 hours?				
Within about 3-4 hours?	**Yes**		No	
Visibility: 1 Excellent (>2km); 2 Good (1-2 km); 3 Moderate (250m-1km); 4 Poor (<250m)				
Visibility	**1**	2	3	4
Disturbance: indicate overall level of disturbance: 1 None; 2 Moderate; 3 High; 4 Very high				
Disturbance level	1	**2**	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	**OK**		Low	

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
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 Others (please specify) 15 16													
Bait digging at Whitburn Steel.													

Birds of Prey: highlight in **bold** 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)								

Additional Information/Comments on Survey:

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

VISIT NO: 2

Date: 24/06/10	**Time start**: 13.01	**High tide**: 13.51	**Time finish**: 14.52

Weather:					
Wind speed/direction	W:2-3	Cloud cover (CC/8)	2/8	Conditions	Dry, clear, warm and sunny

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**		Part	
Were you able to complete the count within about 3-4 hours?				
Within about 3-4 hours?	**Yes**		No	
Visibility: 1 Excellent (>2km); 2 Good (1-2 km); 3 Moderate (250m-1km); 4 Poor (<250m)				
Visibility	**1**	2	3	4
Disturbance: indicate overall level of disturbance: 1 None; 2 Moderate; 3 High; 4 Very high				
Disturbance level	1	2	**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	**OK**		Low	

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
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 Others (please specify) **15 Surfer** 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.													

Birds of Prey: highlight in **bold** 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)								

Additional Information/Comments on Survey:

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

VISIT NO: 3

Date: 20/07/10	**Time start**: 08.56	**High tide**: 10.11	**Time finish**: 10.47

Weather:					
Wind speed/direction	Nil	Cloud cover (CC/8)	8/8	Conditions	Overcast and very humid

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**		Part	
Were you able to complete the count within about 3-4 hours?				
Within about 3-4 hours?	**Yes**		No	
Visibility: 1 Excellent (>2km); 2 Good (1-2 km); 3 Moderate (250m-1km); 4 Poor (<250m)				
Visibility	1	**2**	3	4
Disturbance: indicate overall level of disturbance: 1 None; 2 Moderate; 3 High; 4 Very high				
Disturbance level	1	2	**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	**OK**		Low	

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
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 Others (please specify) 15 16													

Birds of Prey: highlight in **bold** 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)								

Additional Information/Comments on Survey:

River Wear – 1 Redshank on northern edge of river, south of Marina. 2 Cormorant flying, eastwards, out of estuary. Common tern hunting in estuary.
Marina – 1cormorant roosting on post by Marina.
North Pier – 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.
Short pier south (opposite) North Pier – 4 Cormorant roosting on post,
Roker Pier – 54 Black-headed gull and 1 Herring gull loafing on sea south of pier. 3 Feral pigeon on beach south of pier.
Roker Rocks – 14 Dunlin and 12 Herring gull.
Roker Cliff Park – Several House martin feeding over grassland.
Parson's Rocks – 1 Cormorant fishing in sea close by.
Pebble Beach – 4 crows foraging on high tide line.
Whitburn Steel – 2 Cormorant on rocks north of local authority boundary.

VISIT NO: 4

Date: 25/08/10	**Time start**: 14.57	**High tide**: 15.59	**Time finish**: 16.42

Weather:					
Wind speed/direction	W:1-2	Cloud cover (CC/8)	6/8	Conditions	Dry, warm & overact with sunny intervals

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**		Part	
Were you able to complete the count within about 3-4 hours?				
Within about 3-4 hours?	**Yes**		No	
Visibility: 1 Excellent (>2km); 2 Good (1-2 km); 3 Moderate (250m-1km); 4 Poor (<250m)				
Visibility	**1**	2	3	4
Disturbance: indicate overall level of disturbance: 1 None; 2 Moderate; 3 High; 4 Very high				
Disturbance level	1	2	**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	**OK**		Low	

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
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 Others (please specify) **15 Sail boarders** 16													

Birds of Prey: highlight in **bold** 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)								

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

VISIT NO: 5

Date: 21/09/10	**Time start**: 13.44	**High tide**: 14.28	**Time finish**: 15.52

Weather:					
Wind speed/direction	SW:1-2	Cloud cover (CC/8)	2/8	Conditions	Dry, warm & overact with sunny intervals

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**		Part	
Were you able to complete the count within about 3-4 hours?				
Within about 3-4 hours?	**Yes**		No	
Visibility: 1 Excellent (>2km); 2 Good (1-2 km); 3 Moderate (250m-1km); 4 Poor (<250m)				
Visibility	**1**	2	3	4
Disturbance: indicate overall level of disturbance: 1 None; 2 Moderate; 3 High; 4 Very high				
Disturbance level	1	2	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	**OK**		Low	

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
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 Others (please specify) **15 Swimmers** 16													
Lots of dog walkers, plus tractor pushing seaweed back down beach between Roker Rocks and outfall pipe.													

Birds of Prey: highlight in **bold** 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)								

Additional Information/Comments on Survey:
Marina – Cormorant roosting on post at entrance to Marina, plus Great black-backed gull on adjacent rocks/breakwater.
River Wear Estuary (between North Pier and New South Pier) – 2 Eider, 22 Great Black-backed gull & 12 Herring gull loafing on sea.
North Pier – 5 Black-headed gull loafing on sea, plus 2 Starling foraging in car park.
Roker Pier/Roker Rocks – 7 Ringed plover & 2 Black-headed gull.
Roker Cliff Park – 1 Pied wagtail foraging on amenity grassland, plus Small tortoiseshell. 19 Starling roosting on railing of disused lighthouse.
Parson's Rocks – 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.
Whitburn Steel (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.
Playing Fields (adjacent Morrisons) – 2 foraging Carrion crows, plus 3 lots of dog walkers.

VISIT NO: 6

Date: 20/10/10	**Time start**: 12.44	**High tide**: 13.54	**Time finish**: 15.06

Weather:					
Wind speed/direction	SW:14-5	Cloud cover (CC/8)	0/8	Conditions	Sunny and clear with a choppy sea

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**	Part
Were you able to complete the count within about 3-4 hours?		
Within about 3-4 hours?	**Yes**	No

Visibility: 1 Excellent (>2km); 2 Good (1-2 km); 3 Moderate (250m-1km); 4 Poor (<250m)				
Visibility	**1**	**2**	3	4

Disturbance: indicate overall level of disturbance: 1 None; 2 Moderate; 3 High; 4 Very high				
Disturbance level	1	**2**	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	**OK**	Low

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

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
Others (please specify) 15 16

Birds of Prey: highlight in **bold** 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)

Additional Information/Comments on Survey:
River Wear – 2 Cormorant fishing in river adjacent to Potato Garth.
Wave Basin – 3 Herring Gull and 1 Great Black-backed gull roosting on quayside just south of Wave Basin.
North Pier – 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.
Roker Pier/Roker Rocks – 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.
Roker Cliff Park – 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.
Whitburn Steel – 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.
Playing Fields (adjacent Morrisons) – No birds, but 2 lots of dog walkers.

VISIT NO: 7

Date: 30/11/10	**Time start**: 08.48	**High tide**: 10.11	**Time finish**: 11.05

Weather:					
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

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**		Part	
Were you able to complete the count within about 3-4 hours?				
Within about 3-4 hours?	**Yes**		No	
Visibility: 1 Excellent (>2km); 2 Good (1-2 km); 3 Moderate (250m-1km); 4 Poor (<250m)				
Visibility	**1**	2	3	4
Disturbance: indicate overall level of disturbance: 1 None; 2 Moderate; 3 High; 4 Very high				
Disturbance level	1	**2**	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	**OK**		Low	

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
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 Others (please specify) 15 16													

Birds of Prey: highlight in **bold** 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)								

Additional Information/Comments on Survey:
Wave Basin – 1 Cormorant (on abutment).
Marina – 2 Herring gull, 1 Meadow pipit.
North Pier – 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).
Roker Pier/Roker Rocks – 42 Ringed plover, 5 Purple sandpiper, 1 Carrion crow (foraging).
Smugglers P.H. – 1 Cormorant (diving in surf), 1 Herring gull, 3 Feral pigeon.
Roker Cliff Park – 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.
Promenade P.H. – 1 Redshank (alighted, temporarily, on strip of amenity grassland, between A183 and coastline).
Pullman Lodge P.H. – 13 Black-headed gull, 2 Herring gull, 5 Starling (foraging on strip of amenity grassland, between A183 and coastline).
Whitburn Sands – 50+ Sanderling (foraging along tide line) and 1 Redwing (resting).
Pebble Beach – 4 Meadow pipit.
Whitburn Steel – 1 Sanderling, 1 Common gull.

VISIT NO: 8

Date: 15/12/10	**Time start**: 09.03	**High tide**: 10.27	**Time finish**: 11.17

Weather:					
Wind speed/direction	N:3-4	Cloud cover (CC/8)	8/8	Conditions	Dry and overcast with a choppy sea

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**		Part	
Were you able to complete the count within about 3-4 hours?				
Within about 3-4 hours?	**Yes**		No	
Visibility: 1 Excellent (>2km); 2 Good (1-2 km); 3 Moderate (250m-1km); 4 Poor (<250m)				
Visibility	**1**	2	3	4
Disturbance: indicate overall level of disturbance: 1 None; 2 Moderate; 3 High; 4 Very high				
Disturbance level	1	**2**	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	**OK**		Low	

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
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 Others (please specify) 15 16													
Tractor pushing seaweed up beach, adjacent to Smugglers P.H.													

Birds of Prey: highlight in **bold** 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)								

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

VISIT NO: 9

Date: 14/01/11	**Time start**: 09.09	**High tide**: 10.22	**Time finish**: 11.10

Weather:					
Wind speed/direction	N:3-4	Cloud cover (CC/8)	4/8	Conditions	Dry and partially overcast

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**		Part	
Were you able to complete the count within about 3-4 hours?				
Within about 3-4 hours?	**Yes**		No	
Visibility: 1 Excellent (>2km); 2 Good (1-2 km); 3 Moderate (250m-1km); 4 Poor (<250m)				
Visibility	**1**	2	3	4
Disturbance: indicate overall level of disturbance: 1 None; 2 Moderate; 3 High; 4 Very high				
Disturbance level	1	**2**	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	**OK**		Low	

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
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 Others (please specify) 15 16													
Tractor on beach, adjacent to southern edge of Roker Pier.													

Birds of Prey: highlight in **bold** 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)								

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

VISIT NO: 10

Date: 18/02/11	**Time start**: 14.20	**High tide**: 15.18	**Time finish**: 16.11

Weather:					
Wind speed/direction	SW:4-5	Cloud cover (CC/8)	8/8	Conditions	Overcast and cold with a choppy sea

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**		Part	
Were you able to complete the count within about 3-4 hours?				
Within about 3-4 hours?	**Yes**		No	
Visibility: 1 Excellent (>2km); 2 Good (1-2 km); 3 Moderate (250m-1km); 4 Poor (<250m)				
Visibility	1	**2**	3	4
Disturbance: indicate overall level of disturbance: 1 None; 2 Moderate; 3 High; 4 Very high				
Disturbance level	1	**2**	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	**OK**		Low	

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
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 Others (please specify) **15 Kite surfer** 16													
2 kite surfers adjacent to Whitburn Steel.													

Birds of Prey: highlight in **bold** 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)								

Additional Information/Comments on Survey:
River Wear (adjacent Marina) – 100+ Black-headed gull, 12 Herring gull, plus 8 Cormorant (roosting on green navigation posts).
Wave Basin – 20 Cormorant (on abutment),
North Pier – 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).
Roker Pier/Roker Rocks – 13 Ringed plover (alighted, temporarily, before being displaced by dogs and their walkers), plus 1 Carrion crow and 1 Feral pigeon (foraging on beach).
Roker Cliff Park – 8 Herring gull, 3 Black-headed gull and 5 Carrion crow (foraging on grassland).
Whitburn Steel – 32 Sanderling (foraging along high tide line).

VISIT NO: 11

Date: 04/03/11	**Time start**: 14.24	**High tide**: 15.21	**Time finish**: 16.19

Weather:					
Wind speed/direction	N:1-2	Cloud cover (CC/8)	8/8	Conditions	Overcast and dry with a choppy sea

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**		Part	
Were you able to complete the count within about 3-4 hours?				
Within about 3-4 hours?	**Yes**		No	
Visibility: 1 Excellent (>2km); 2 Good (1-2 km); 3 Moderate (250m-1km); 4 Poor (<250m)				
Visibility	1	**2**	3	4
Disturbance: indicate overall level of disturbance: 1 None; 2 Moderate; 3 High; 4 Very high				
Disturbance level	1	**2**	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	**OK**		Low	

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
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 Others (please specify) **15 Surfers** 16													
2 surfers adjacent to northern edge of Roker Pier.													

Birds of Prey: highlight in **bold** 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)								

Additional Information/Comments on Survey:
Potato Garth – 1 Redshank.
River Wear (adjacent Marina) – 1 Eider (male), 2 Herring gull, 1 Black-headed gull.
Marina – 1 Herring gull (on rocks).
Wave Basin – 1 Magpie.
North Pier – 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).
Roker Cliff Park – 2 Woodpigeon & 1 Carrion crow.
Whitburn Sands – 18 Black-headed gull & 1 Teal (loafing on sea).
Whitburn Steel – 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

Weather:					
Wind speed/direction	W:0-1	Cloud cover (CC/8)	5/8	Conditions	Dry, sunny and clear - clouding over later

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**		Part	
Were you able to complete the count within about 3-4 hours?				
Within about 3-4 hours?	**Yes**		No	
Visibility: 1 Excellent (>2km); 2 Good (1-2 km); 3 Moderate (250m-1km); 4 Poor (<250m)				
Visibility	**1**	2	3	4
Disturbance: indicate overall level of disturbance: 1 None; 2 Moderate; 3 High; 4 Very high				
Disturbance level	1	**2**	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	**OK**		Low	

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
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 Others (please specify) 15 16													

Birds of Prey: highlight in **bold** 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)								

Additional Information/Comments on Survey:

North Pier – 2 Starling, Meadow pipit. Herring gull and swallow (flying past). Oystercatcher flying into River Wear. 10 Cormorant on South Pier.
Roker Pier – 12 Ringed plover, 3 Oystercatcher, 2 Herring gull, immature GBB.
Parson's Rocks – 15 Herring gull roosting on Parson's Rocks. Swifts and House martins feeding above Roker Cliff Park.
Whitburn Steel - 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).
The Bents – 2 House sparrows foraging on scrub.

VISIT NO: 2

Date: 23/06/10	**Time start**: 05.49	**Low tide**: 06.46	**Time finish**: 08.15

Weather:					
Wind speed/direction	W:2-3	Cloud cover (CC/8)	7/8	Conditions	Dry and clear - sunny and warm later

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**		Part	
Were you able to complete the count within about 3-4 hours?				
Within about 3-4 hours?	**Yes**		No	
Visibility: 1 Excellent (>2km); 2 Good (1-2 km); 3 Moderate (250m-1km); 4 Poor (<250m)				
Visibility	**1**	2	3	4
Disturbance: indicate overall level of disturbance: 1 None; 2 Moderate; 3 High; 4 Very high				
Disturbance level	1	**2**	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	**OK**		Low	

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
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 Others (please specify) 15 16													

Birds of Prey: highlight in **bold** 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)								
1 male Kestrel (perched on rock at Whitburn Steel, north of Sunderland City boundary).								

Additional Information/Comments on Survey:

North Pier - 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.
Roker Pier – 3 Oystercatcher, 4 Herring gull, 2 Common tern fishing.
Roker Rocks – 12 Herring gull, 9 Common gull.
Coastguard Lookout (beach) - 2 Herring gull, 6 Common gull.
Roker Cliff Park – Several feeding swifts and house martins.
Parson's Rocks - 27 Herring gull, 5 Common gull, 2 Starling.
Whitburn Sands – 7 Herring gull, 1 Black-headed gull.
Whitburn Steel – 4 Cormorant, 61 Herring gull, 1 Swallow.

VISIT NO: 3

Date: 19/07/10	**Time start**: 14.17	**Low tide**: 15.32	**Time finish**: 16.32

Weather:					
Wind speed/direction	W:0-1	Cloud cover (CC/8)	5/8	Conditions	Dry and overcast with sunny intervals

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**		Part	
Were you able to complete the count within about 3-4 hours?				
Within about 3-4 hours?	**Yes**		No	
Visibility: 1 Excellent (>2km); 2 Good (1-2 km); 3 Moderate (250m-1km); 4 Poor (<250m)				
Visibility	**1**	2	3	4
Disturbance: indicate overall level of disturbance: 1 None; 2 Moderate; 3 High; 4 Very high				
Disturbance level	1	2	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	**OK**		Low	

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
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													
Others (please specify) **15 Sail boarders** **16 Horse training**													
Horse training at Whitburn Steel.													

Birds of Prey: highlight in **bold** 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)								

Additional Information/Comments on Survey:

River Wear – 2 Redshank on northern edge of river, south of Marina.

New South Pier – 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.

North Pier – 2 Ringed plover, 13 Black-headed gull, 1 Herring gull and 25 Starling.

Marina – Adult common tern feeding 2 juveniles perched on moored boat.

Roker Rocks - 13 Black-headed gull and 1 Common gull on beach, plus 4 Herring gull and 1 Cormorant on rocks.

Roker Cliff Park – Several; House martin feeding over grassland.

Parson's Rocks – 4 Oystercatcher, 3 Redshank, 6 Herring gull, plus adult common tern feeding 2 juveniles. Also 4 foraging crows.

Whitburn Sands – 24 Herring gull and 16 Black-headed gull on beach, adjacent to sewage outfall pipe.

Whitburn Steel – 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

Date: 24/08/10	**Time start**: 08.36	**Low tide**: 09.27	**Time finish**: 11.13

Weather:					
Wind speed/direction	W:1-2 gusting 3-4	Cloud cover (CC/8)	1/8	Conditions	Dry and warm with frequent sunny intervals

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**	Part

Were you able to complete the count within about 3-4 hours?		
Within about 3-4 hours?	**Yes**	No

Visibility: 1 Excellent (>2km); 2 Good (1-2 km); 3 Moderate (250m-1km); 4 Poor (<250m)				
Visibility	**1**	2	3	4

Disturbance: indicate overall level of disturbance: 1 None; 2 Moderate; 3 High; 4 Very high				
Disturbance level	1	2	**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	**OK**	Low

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

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
Others (please specify) 15 16

Birds of Prey: highlight in **bold** 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)

Additional Information/Comments on Survey:

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

Date: 22/09/10	**Time start**: 07.41	**Low tide**: 08.56	**Time finish**: 10.14

Weather:					
Wind speed/direction	SW:1-2	Cloud cover (CC/8)	8/8	Conditions	Dry and cool with sunny intervals later on

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**	Part

Were you able to complete the count within about 3-4 hours?		
Within about 3-4 hours?	**Yes**	No

Visibility: 1 Excellent (>2km); 2 Good (1-2 km); 3 Moderate (250m-1km); 4 Poor (<250m)				
Visibility	**1**	2	3	4

Disturbance: indicate overall level of disturbance: 1 None; 2 Moderate; 3 High; 4 Very high				
Disturbance level	1	2	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	**OK**	Low

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

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
Others (please specify) 15 16

Lots of dog walkers, plus tractor pushing tractor push seaweed back down beach between Roker Rocks and outfall pipe.

Birds of Prey: highlight in **bold** 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)

Additional Information/Comments on Survey:

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

Date: 27/10/10	**Time start**: 10.11	**Low tide**: 11.35	**Time finish**: 12.50

Weather:					
Wind speed/direction	SW:1-2 (occ. 4-5)	Cloud cover (CC/8)	0/8	Conditions	Dry with bright sunshine, with occasional gusty winds

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**	Part

Were you able to complete the count within about 3-4 hours?		
Within about 3-4 hours?	**Yes**	No

Visibility: 1 Excellent (>2km); 2 Good (1-2 km); 3 Moderate (250m-1km); 4 Poor (<250m)				
Visibility	**1**	2	3	4

Disturbance: indicate overall level of disturbance: 1 None; 2 Moderate; 3 High; 4 Very high				
Disturbance level	1	**2**	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	**OK**	Low

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

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
Others (please specify) 15 16

Birds of Prey: highlight in **bold** 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)

Additional Information/Comments on Survey:
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 gull1 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

Weather:					
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	**Part**
Were you able to complete the count within about 3-4 hours?		
Within about 3-4 hours?	Yes	**No**

Visibility: 1 Excellent (>2km); 2 Good (1-2 km); 3 Moderate (250m-1km); 4 Poor (<250m)				
Visibility	1	**2**	3	4

Disturbance: indicate overall level of disturbance: 1 None; 2 Moderate; 3 High; 4 Very high				
Disturbance level	1	**2**	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	OK	**Low**

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

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
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	**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)

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

Date: 22/12/10	**Time start**: 09.05	**Low tide**: 09.52	**Time finish**: 11.25

Weather:					
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.

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**	Part

Were you able to complete the count within about 3-4 hours?		
Within about 3-4 hours?	**Yes**	No

Visibility: 1 Excellent (>2km); 2 Good (1-2 km); 3 Moderate (250m-1km); 4 Poor (<250m)				
Visibility	**1**	2	3	4

Disturbance: indicate overall level of disturbance: 1 None; 2 Moderate; 3 High; 4 Very high				
Disturbance level	1	**2**	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	**OK**	Low

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

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
Others (please specify) 15 16

2 Horse riders on beach at Whitburn Steel.
Sunderland Council vehicle driving along Roker Pier.

Birds of Prey: highlight in **bold** 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)

Additional Information/Comments on Survey:
River Wear – 25 Herring gull and 37 Black-headed gull (loafing), plus 1 Cormorant (fishing).
Potato Garth – 3 Oystercatcher and 1 Curlew.
North Pier – 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).
Roker Pier/Roker Rocks – 4 Redshank and 4 Oystercatcher (foraging on exposed rocks), plus 5 Herring gull (loafing).
Parson's Rocks – 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).
Whitburn Bay – 6 Herring gull (roosting on pipeline).
Whitburn Dunes – 1 Redshank (flushed).
Whitburn Steel – 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.
Ocean Park – 1 Carrion crow (foraging).

VISIT NO: 9

Date: 12/01/11	**Time start**: 13.19		**Low tide**: 14.16		**Time finish**: 15.29
Weather:					
Wind speed/direction	Nil	Cloud cover (CC/8)	8/8	Conditions	Overcast and dry with no wind

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**		Part	
Were you able to complete the count within about 3-4 hours?					
Within about 3-4 hours?		**Yes**		No	
Visibility: 1 Excellent (>2km); 2 Good (1-2 km); 3 Moderate (250m-1km); 4 Poor (<250m)					
Visibility	1		**2**	3	4
Disturbance: indicate overall level of disturbance: 1 None; 2 Moderate; 3 High; 4 Very high					
Disturbance level	1		**2**	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		**OK**		Low	

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

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
Others (please specify) **15 Bicycle rider** 16

Bicycle rider on Roker Pier.

Birds of Prey: highlight in **bold** 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)

Additional Information/Comments on Survey:

River Wear – 9 Herring gull and 1 Great black-backed gull (loafing), plus 1 Cormorant (fishing).

Potato Garth – 9 Herring gull, 7 Black-headed gull and 3 Oystercatcher.

Marina – 2 Mute swan.

North Pier – 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.

Roker Pier/Roker Rocks – 9 Redshank, 2 Oystercatcher and 1 Purple sandpiper (foraging on exposed rocks), plus 10 Sanderling (foraging along tide line).

Parson's Rocks – 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.

Whitburn Steel – 56 Herring gull, 54 Black-headed gull, 4 Great Black-backed gull, 27 Oystercatcher and 3 Eider (loafing on exposed rocks).

Ocean Park – 2 x dog walkers.

VISIT NO: 10

Date: 08/02/11	**Time start**: 11.09	**Low tide**: 12.17	**Time finish**: 13.25
Weather:			

Wind speed/direction	SW: 1-2	Cloud cover (CC/8)	0/8	Conditions	Dry, sunny and clear

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**	Part

Were you able to complete the count within about 3-4 hours?		
Within about 3-4 hours?	**Yes**	No

Visibility: 1 Excellent (>2km); 2 Good (1-2 km); 3 Moderate (250m-1km); 4 Poor (<250m)				
Visibility	**1**	2	3	4

Disturbance: indicate overall level of disturbance: 1 None; 2 Moderate; 3 High; 4 Very high				
Disturbance level	1	**2**	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	**OK**	Low

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

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
Others (please specify) **15 Bicycle rider** 16

At low tide, mountain bike rider rode on beach through Parson's Rocks; 3 x horse riders on beach at Whitburn Steel.

Birds of Prey: highlight in **bold** 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)

Additional Information/Comments on Survey:

Potato Garth – 18 Black-headed gull, 16 Herring gull, and 2 Oystercatcher.
Marina – 2 Herring gull (on rocks).
North Pier – 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.
Roker Pier/Roker Rocks – 20 Redshank, 4 Sanderling, 2 Oystercatcher, 1 Turnstone, 14 Black-headed gull & 1 Herring gull (foraging/loafing on exposed rocks and along tide line).
Coastguard Lookout – 3 Herring gull and 3 Carrion crow (foraging on washed up seaweed).
Parson's Rocks – 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.
Roker Cliff Park -1 Carrion crow foraging on grassland.
Whitburn Bay – 5 Black-headed gull (foraging by pipeline).
Whitburn Bents – 1 Meadow pipit and 1 Pied wagtail.
Whitburn Steel – 27 Black-headed gull, 26 Herring gull, 1 Great Black-backed gull, 14 Sanderling and 1 Cormorant.

VISIT NO: 11

Date: 07/03/11	**Time start**: 09.25		**Low tide**: 10.50	**Time finish**: 11.58	
Weather:					
Wind speed/direction	W: 1-2	Cloud cover (CC/8)	0/8	Conditions	Sunny and clear

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**		Part	
Were you able to complete the count within about 3-4 hours?				
Within about 3-4 hours?	**Yes**		No	
Visibility: 1 Excellent (>2km); 2 Good (1-2 km); 3 Moderate (250m-1km); 4 Poor (<250m)				
Visibility	**1**	2	3	4
Disturbance: indicate overall level of disturbance: 1 None; 2 Moderate; 3 High; 4 Very high				
Disturbance level	1	2	**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	**OK**		Low	

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

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
Others (please specify) 15 16

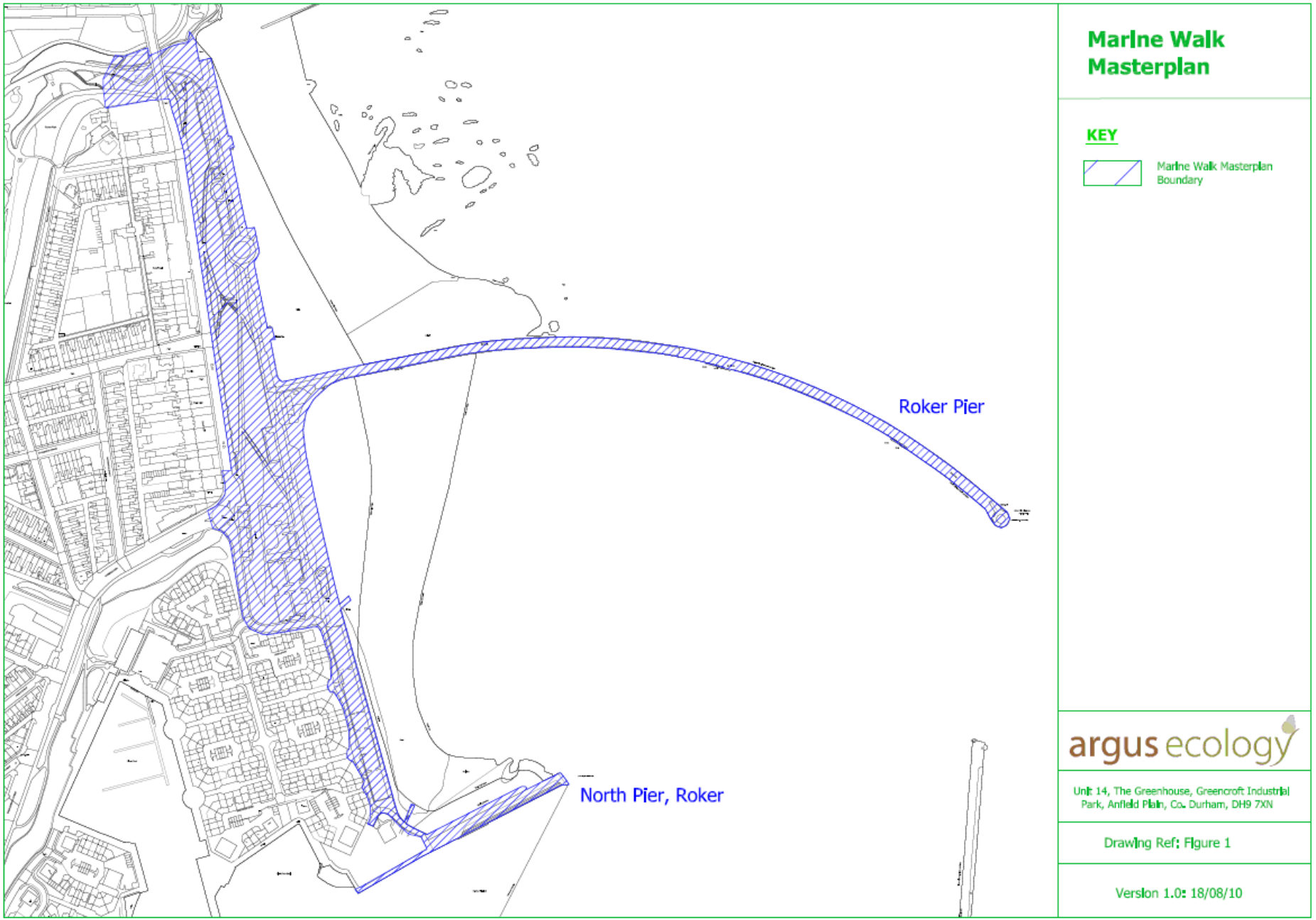
Shellfishers on Potato Garth, Roker Rocks & Whitburn Steel.
Tractor moving gravel on beach, immediately south of Roker Pier.
Seaweed collector at high tide line, adjacent to Whitburn Bents.
Largest number of dogs and their owners seen on any of the surveys.

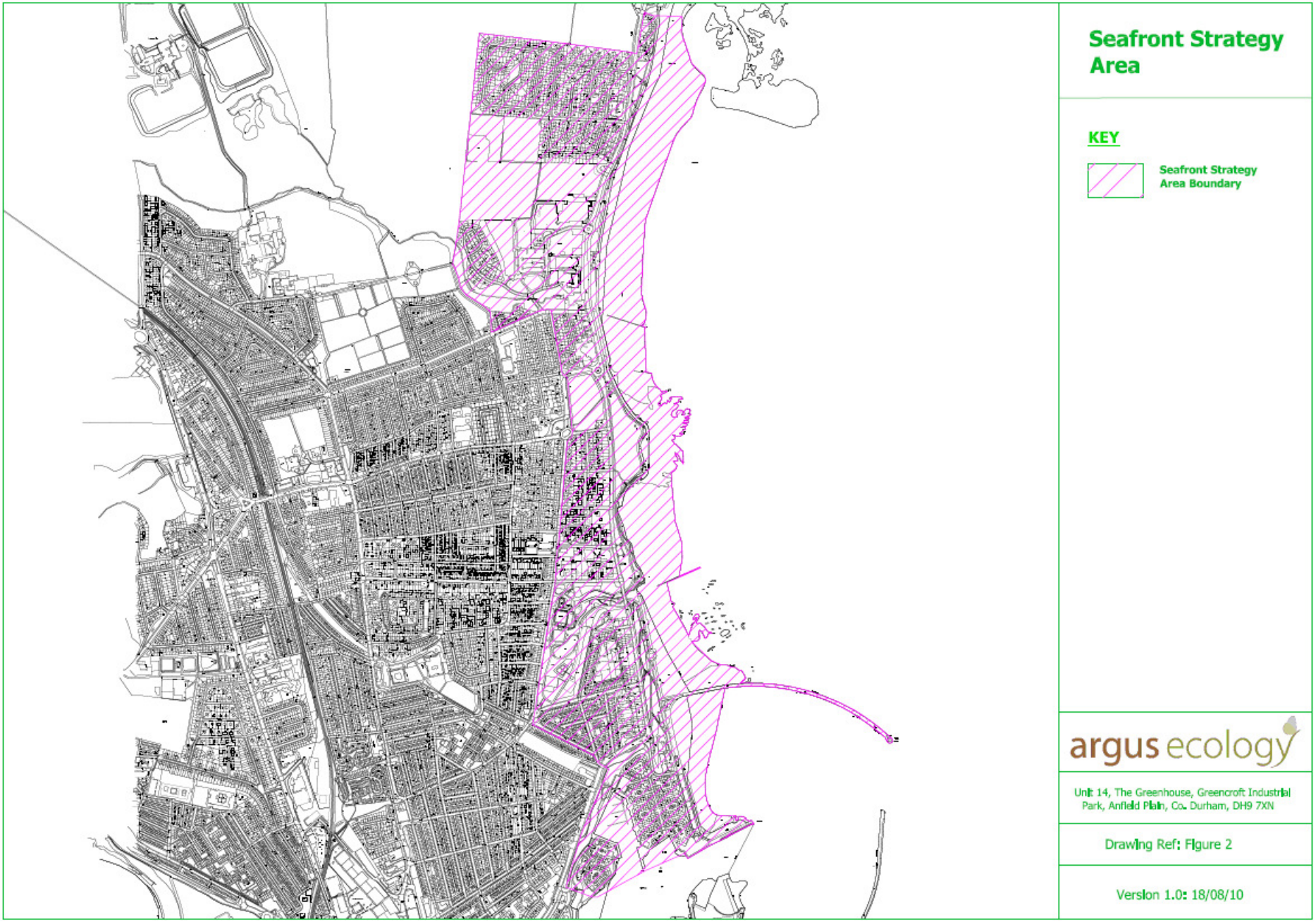
Birds of Prey: highlight in **bold** those birds of prey present at the site, indicating which were disturbing wildfowl with a strikethrough

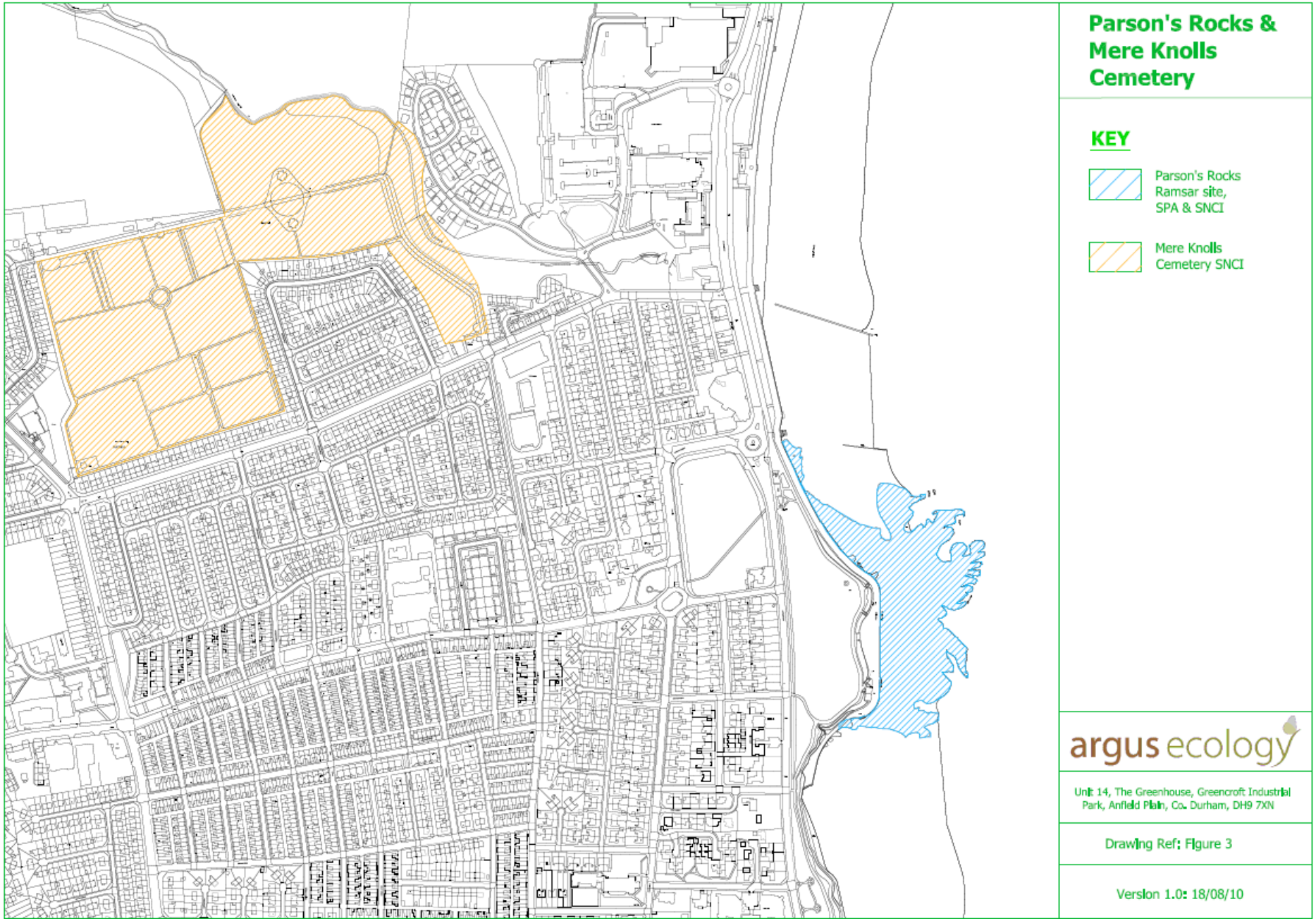
MR	HH	SH	K.	ML	PE	BZ	SE	O.

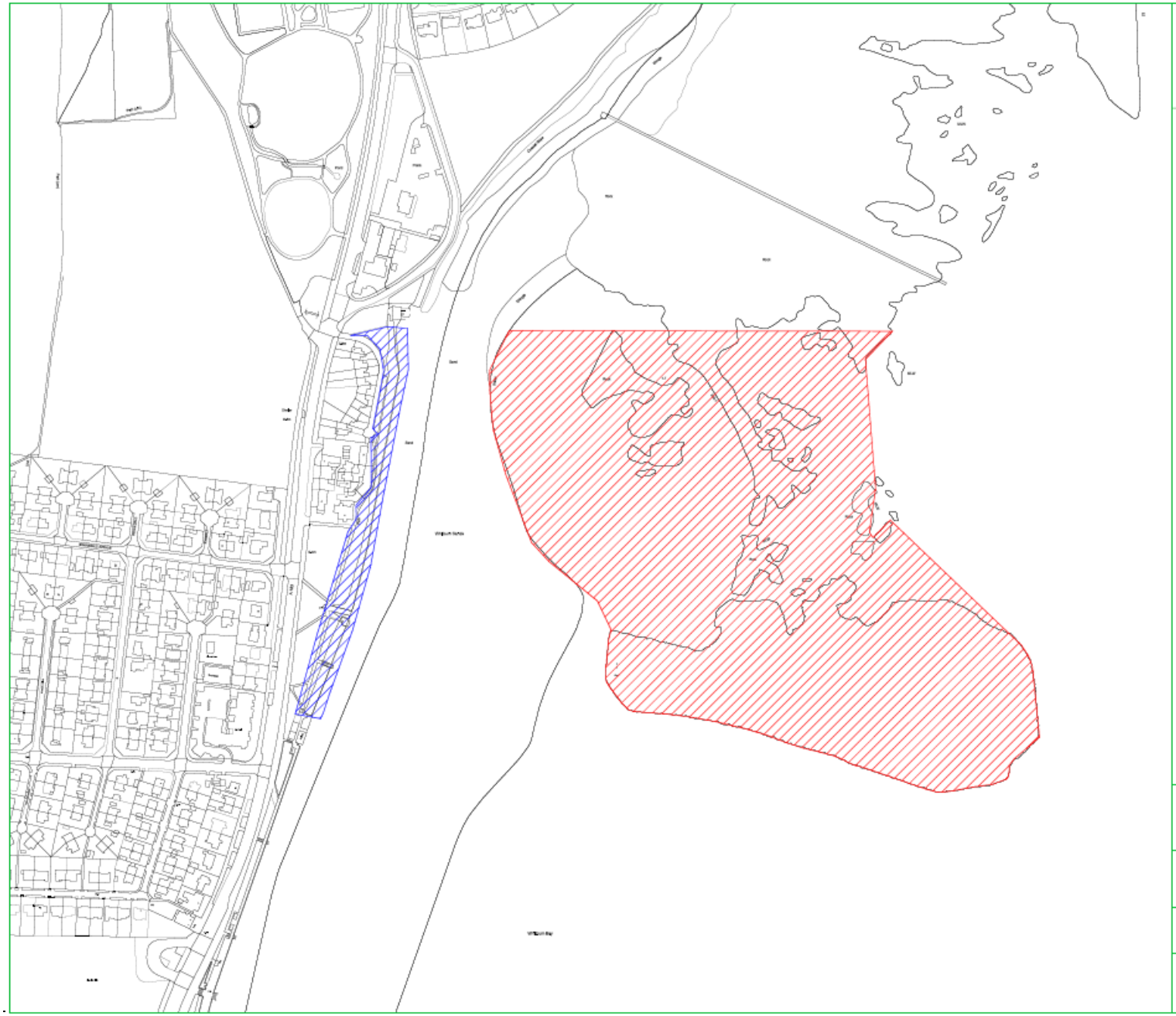
MR Marsh Harrier HH Hen Harrier SH Sparrowhawk K. Kestrel ML Merlin PE Peregrine BZ Buzzard SE Short-eared Owl O. Other species (please specify)

Additional Information/Comments on Survey:
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.


Roker Pier
North Pier, Roker
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, Greencroft Industrial Park, Anfield Plain, 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
argus ecology
Unit 14, The Greenhouse, Greencroft Industrial
Park, Anfield Plain, Co. Durham, DH9 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

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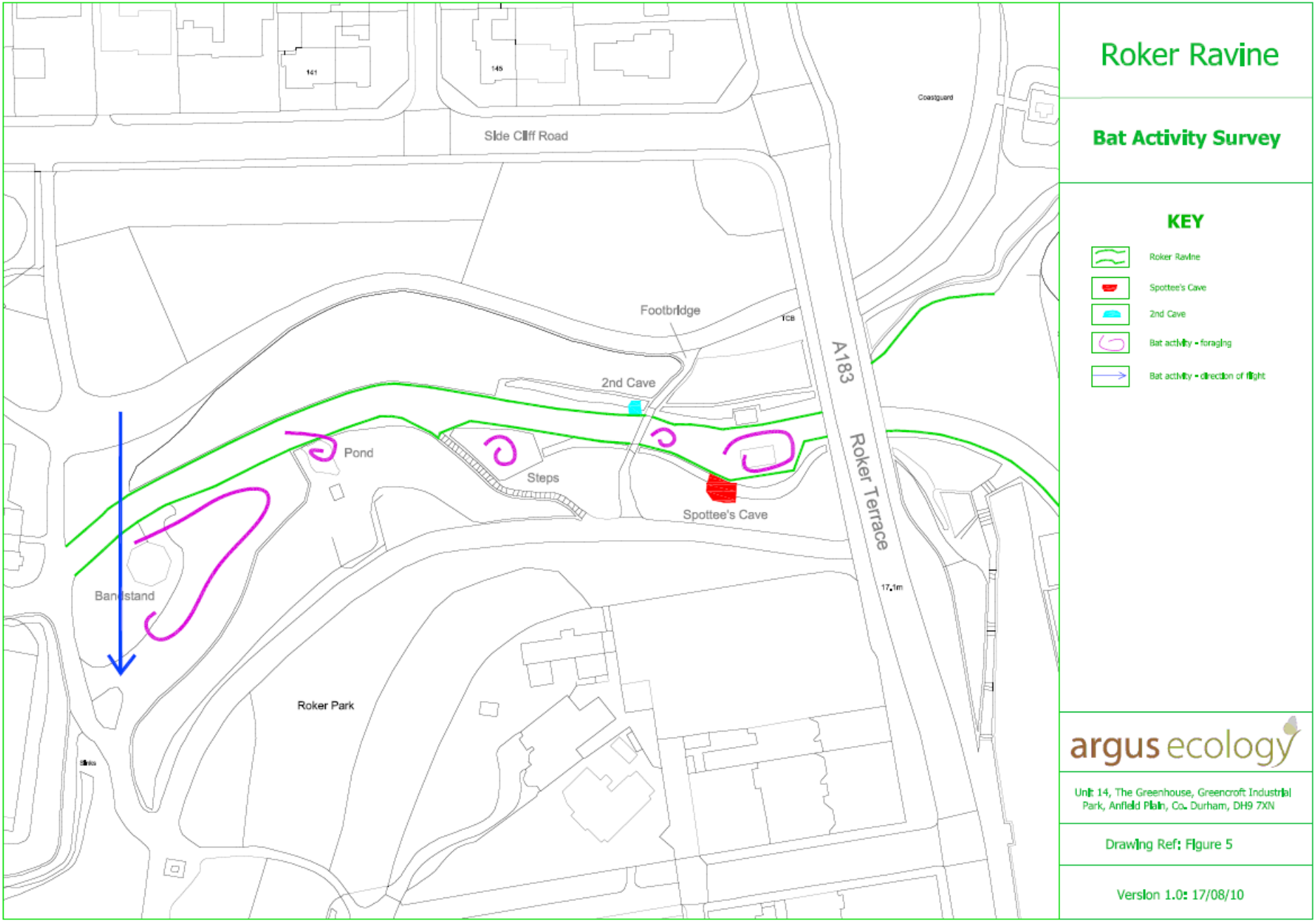
Unit 14, The Greenhouse, Greencroft Industrial Park, Anfield Plain, Co. Durham, DH9 7XN

Drawing Ref: Figure 4

Version 1.0: 18/08/10


Roker Ravine
Bat Activity Survey
KEY
Roker Ravine
Spottee's Cave
2nd Cave
Bat activity - foraging
Bat activity - direction of flight
Side Cliff Road
Footbridge
2nd Cave
Pond
Steps
Spottee's Cave
A183
Roker Terrace
Bandstand
Roker Park
Coastguard
141
145
TCB
17.1m
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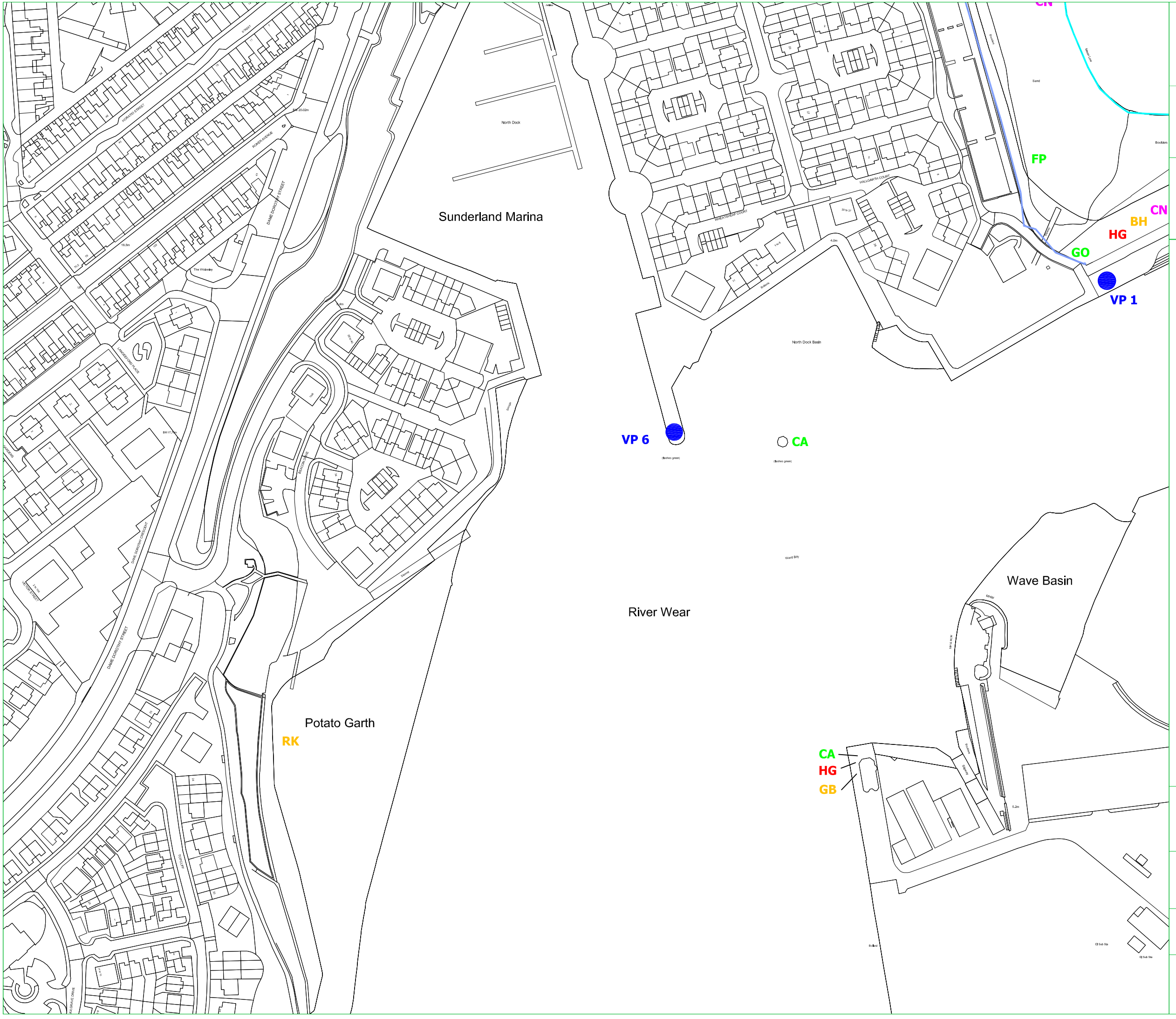
Unit 14, The Greenhouse, Greencroft Industrial Park, Anfield Plain, Co. Durham, DH9 7XN
Drawing Ref: Figure 5
Version 1.0: 17/08/10

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

argus ecology

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

VP 2

FP

HG

BH

CN

FP

Anglers

North Pier

CA

TE

CN

BH

HG

GO

Anglers

VP 1

Sunderland Marina

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 7

Version 1.0: 13/01/11

Roker Pier to Roker Rocks

Wetland Bird Survey - High Tide Count

May to August 2010

Roker Ravine

Roker Rocks

Roker Pier

HG

DN

PW

RP

SG

VP 2

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 8

Version 1.0: 13/01/11

Parson's Rocks & Roker Cliff Park

Wetland Bird Survey - High Tide Count

May to August 2010

Roker Cliff Park

Parson's Rocks

VP 3

HM

W.

CN

CA

BH

CM

HG

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 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

argus ecology

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

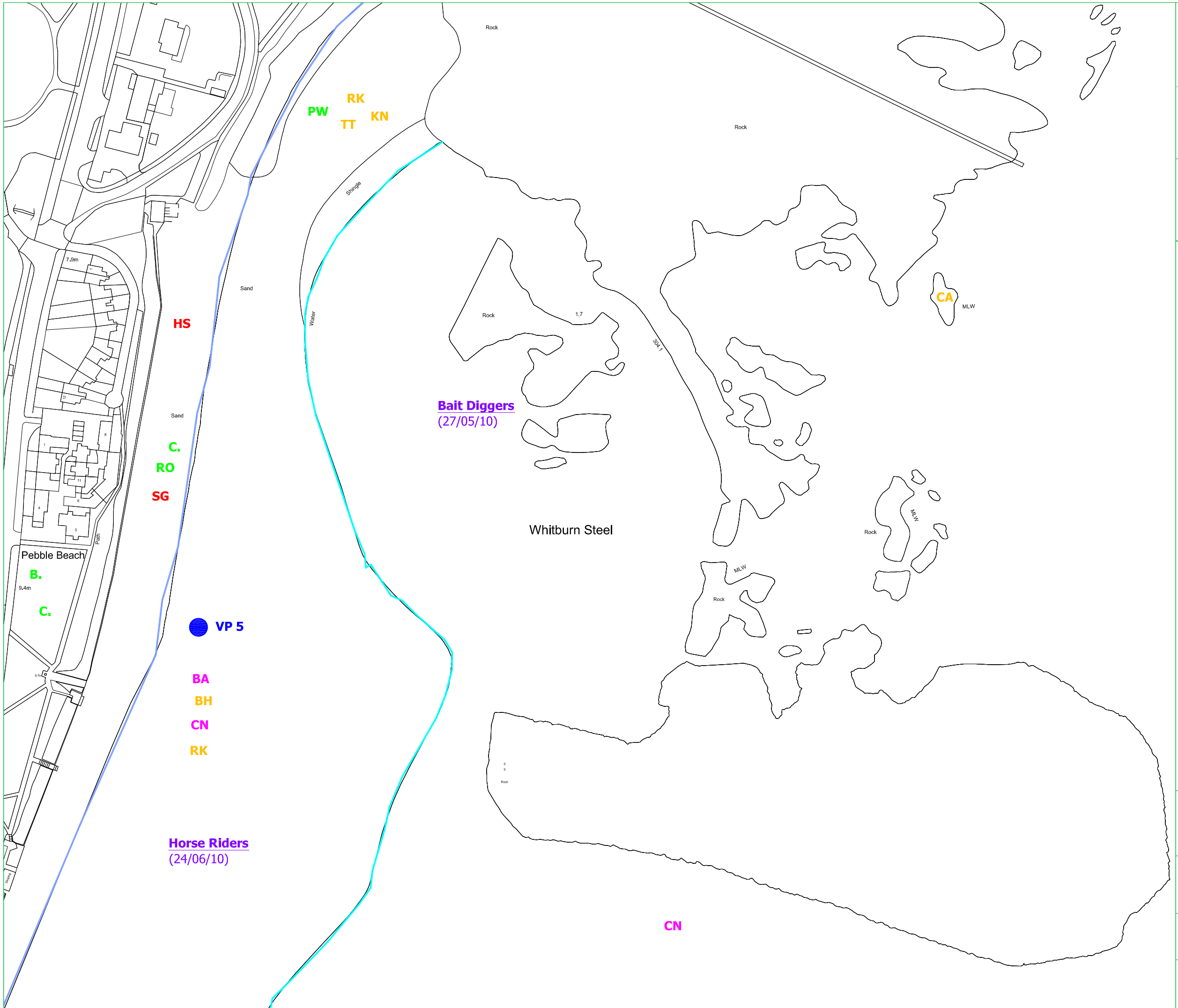
Drawing Ref: Figure 10

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

argus ecology

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

North Dock

CN

Sunderland Marina

FP

Boulders

SG

MP

OC

VP 1

CA

OC

North Dock Basin

VP 6

(flashes green)

(flashes green)

MS

HG

WP

GB

Wave Basin

River Wear

CA

Potato Garth

OC

HG

RK

BH

MG

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

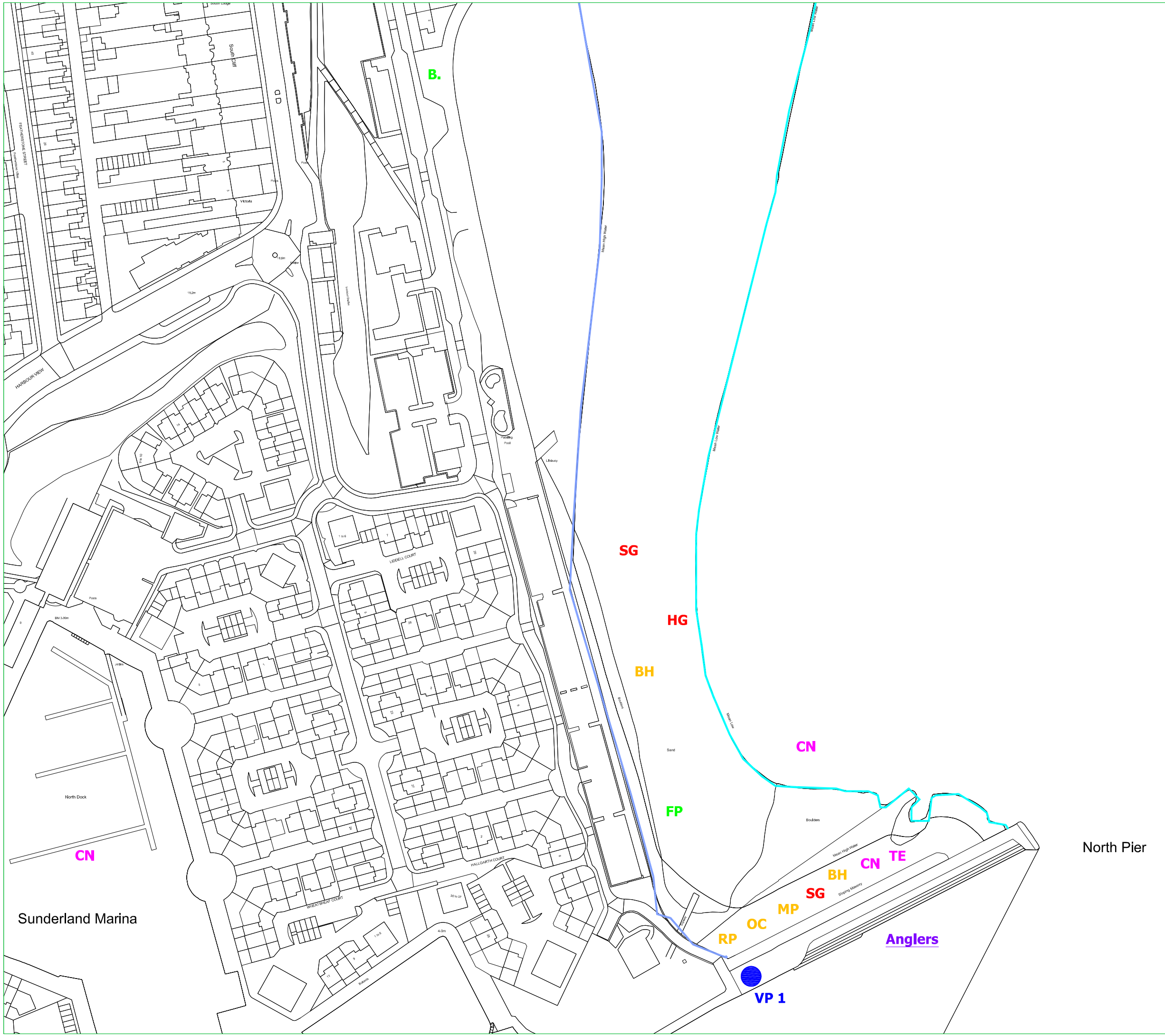
Drawing Ref: Figure 12

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

argus ecology

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

Roker Ravine

Roker Rocks

Roker Pier

Roker Hotel

Anglers (at end of pier)

CA

HG

BH

CM

BH

HG

GB

BH

HG

RP

OC

CN

CU

DN

RP

CN

VP 2

HG

BH

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 14

Version 1.0: 13/01/11

Parson's Rocks and Roker Cliff Park

Wetland Bird Survey - Low Tide Count

May to August 2010

Roker Cliff Park

Parson's Rocks

VP 3

PW

SG

HM

SI

C.

SG

BH

GB

OC

HG

CM

TT

CN

RK

BH

OC

OC

CN

KI

CM

HG

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

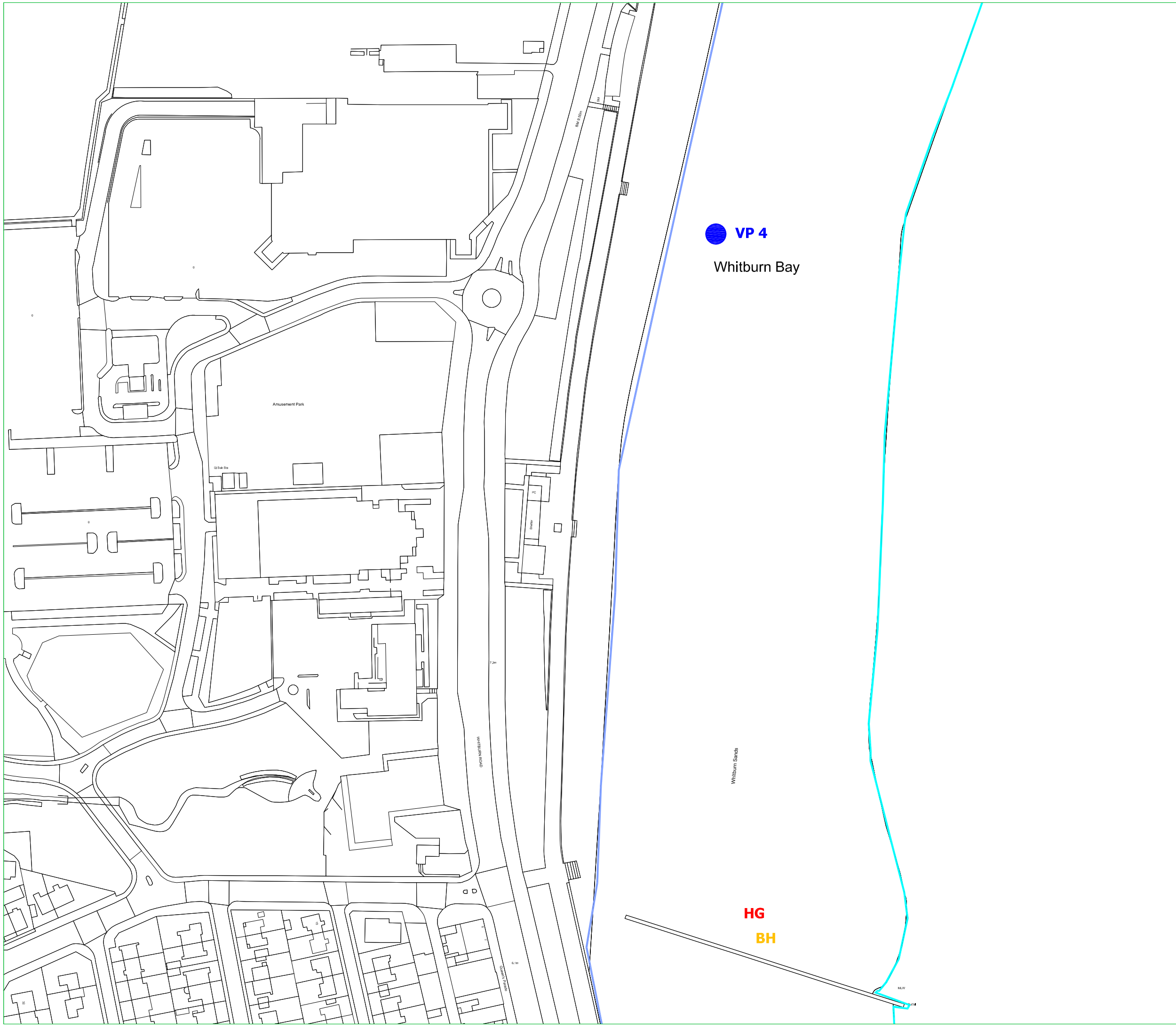
See text - Appendix 6 - for bird species codes

argus ecology

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

Drawing Ref: Figure 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

argus ecology

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

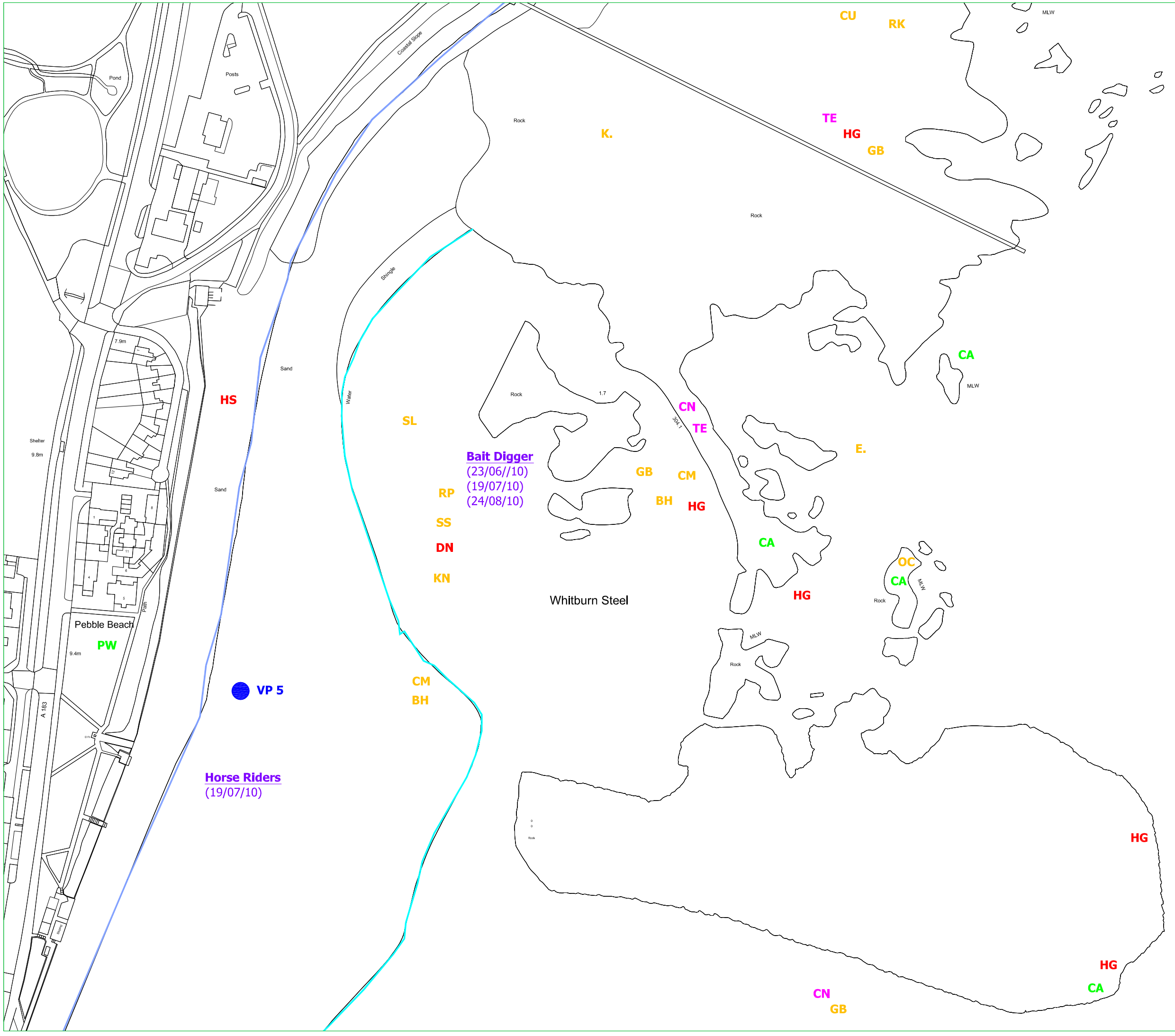
Drawing Ref: Figure 16

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

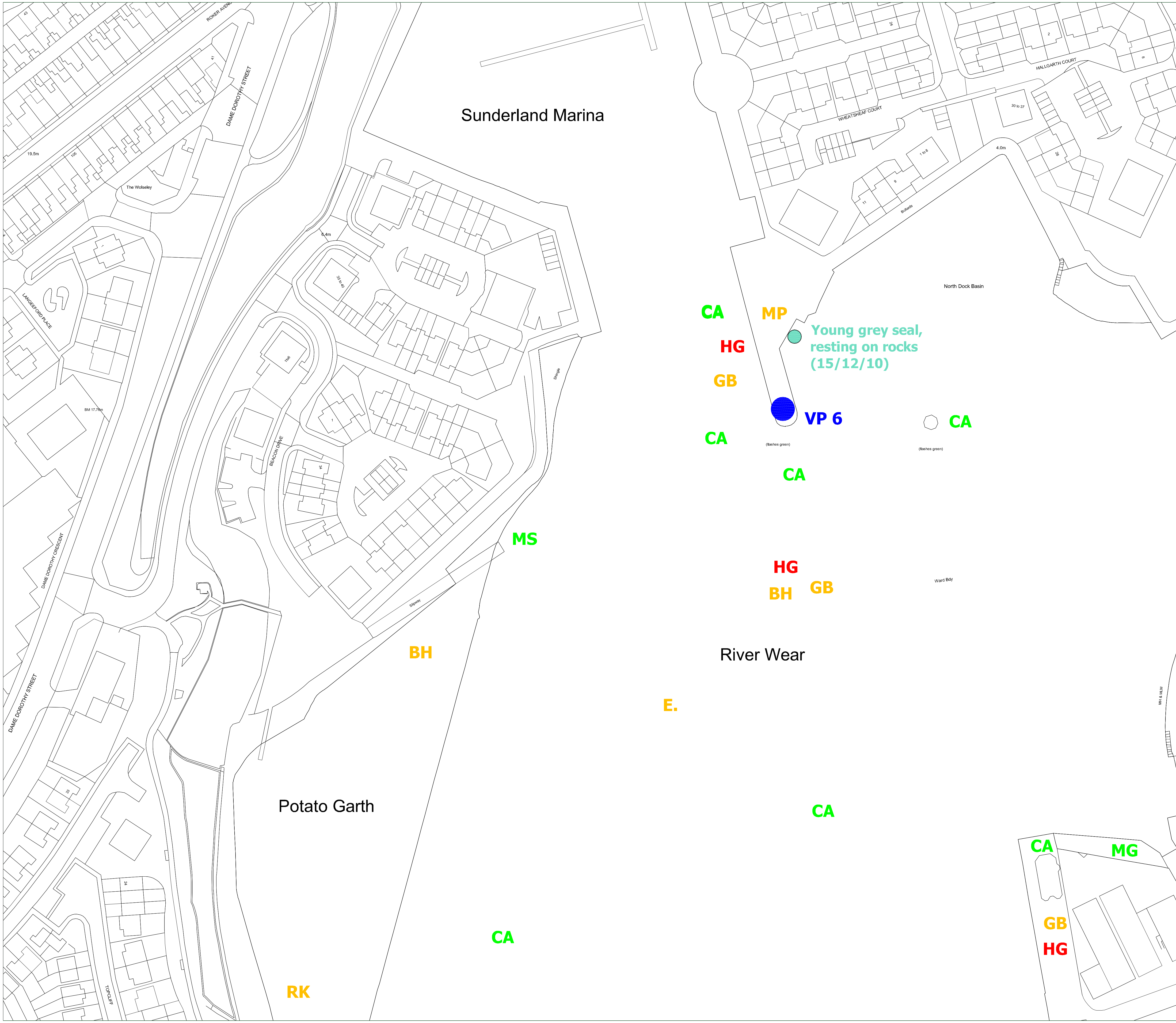
See text - Appendix 6 - for bird species codes

argus ecology

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

Septermber 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, Annfield Plain, Co. Durham, DH9 7XN

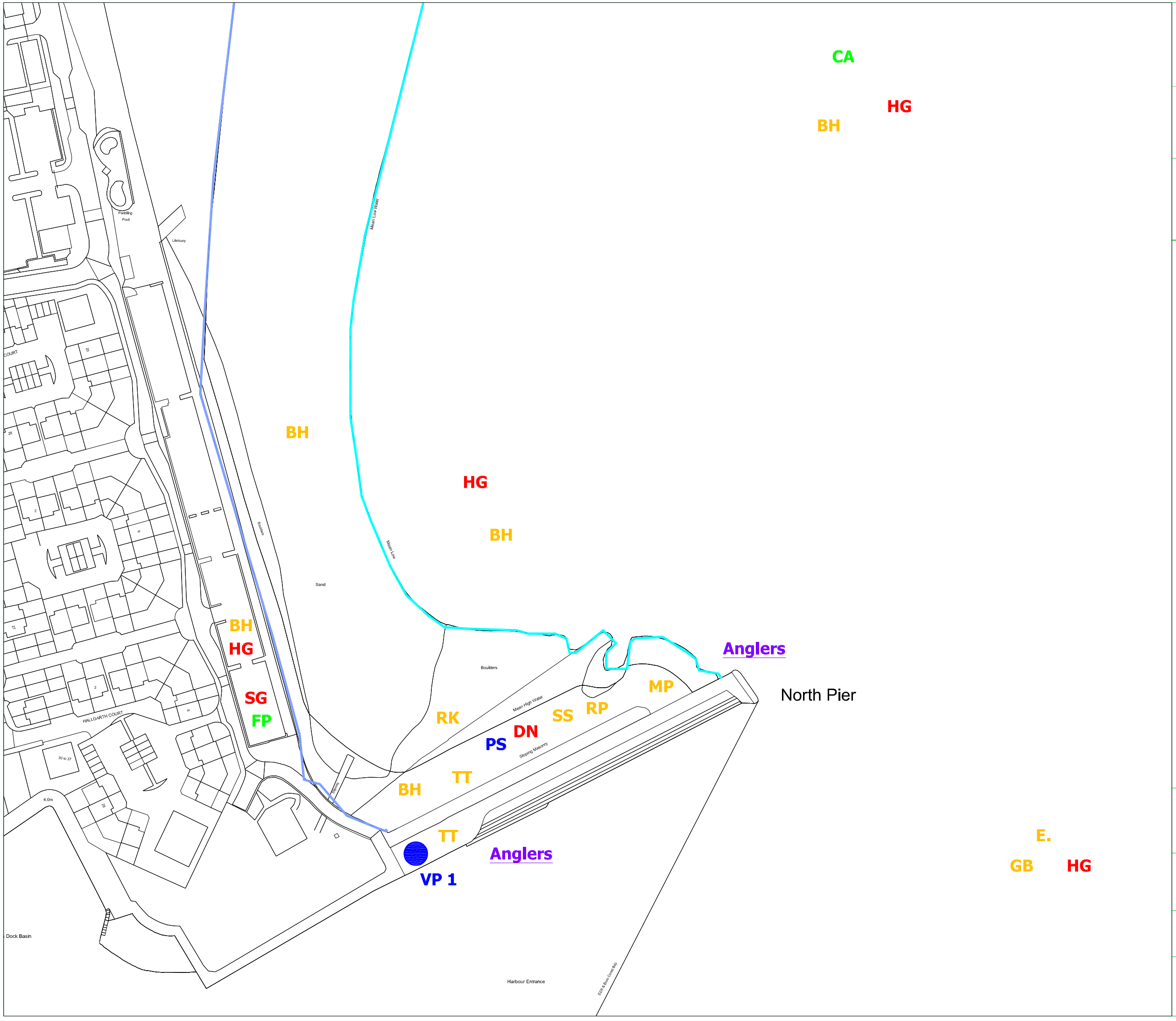
Drawing Ref: Figure 18

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

argus ecology

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

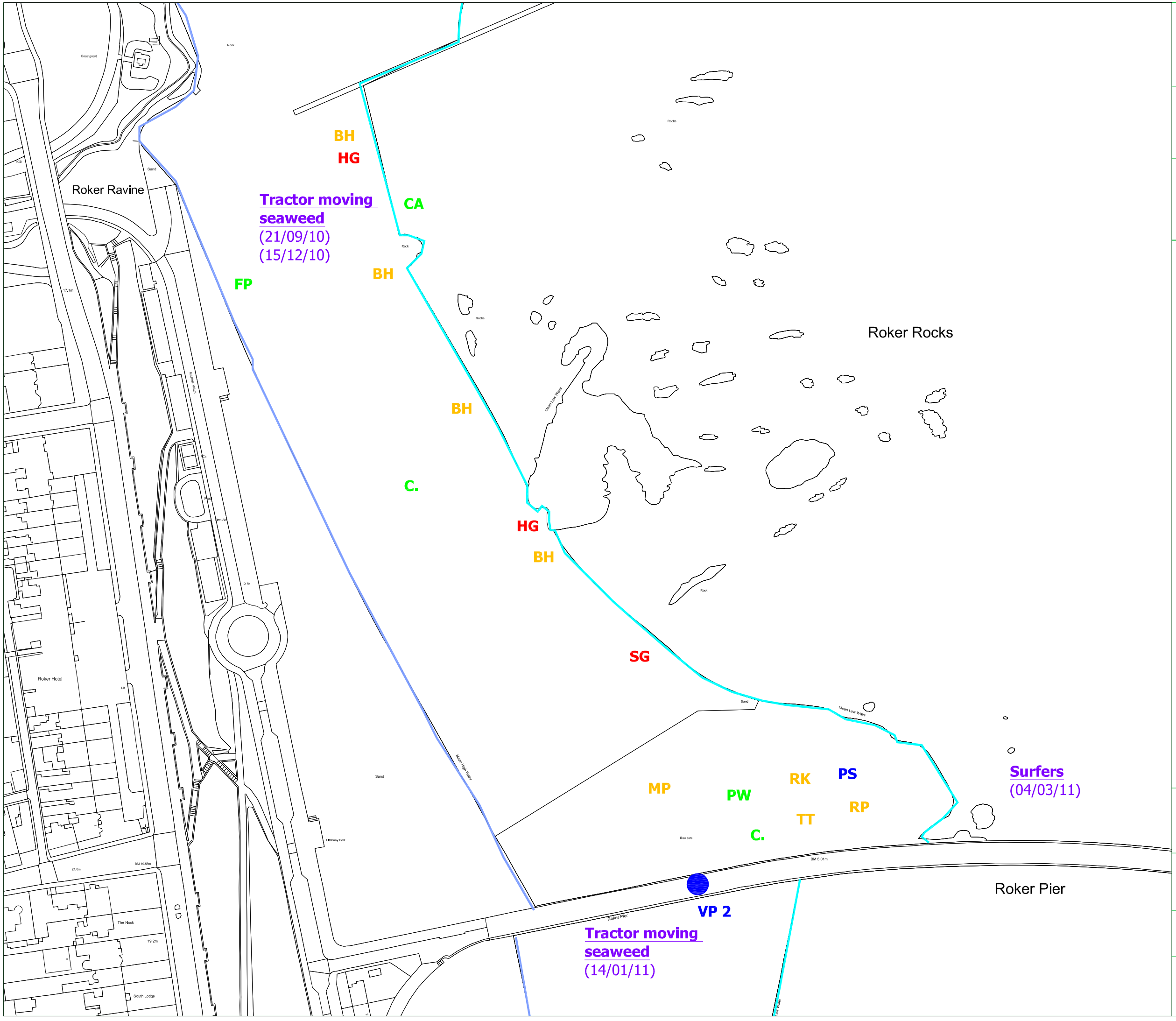
Drawing Ref: Figure 19

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

argus ecology

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

WP

SG

RK DN

OC TT

Roker Cliff Park

BH HG

CM

VP 3

PW

C.

MP

TT

RK

BH

HG

Parson's Rocks

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

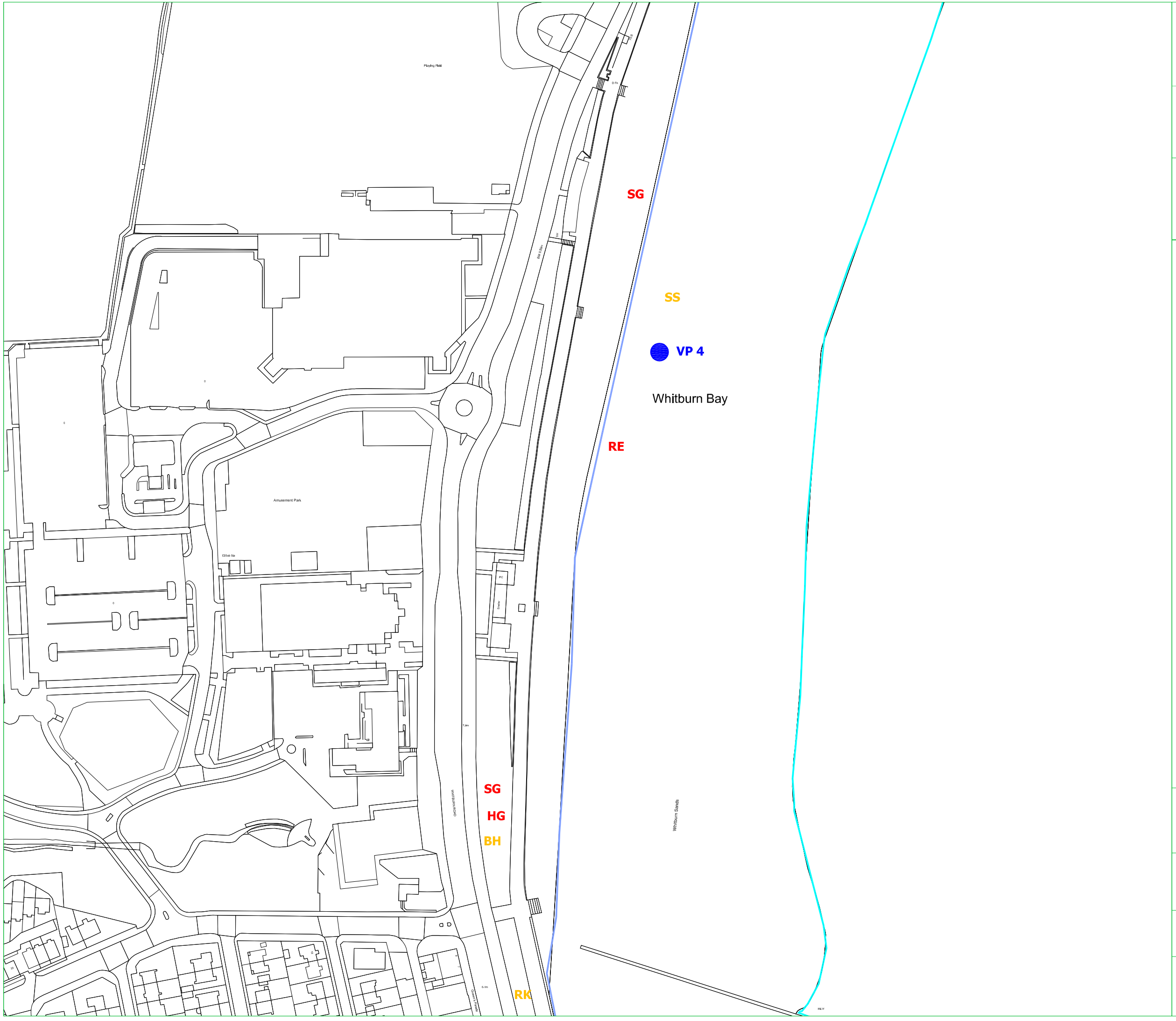
See text - Appendix 6 - for bird species codes

argus ecology

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

Drawing Ref: Figure 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

argus ecology

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

argus ecology

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

Drawing Ref: Figure 23

Version 1.0: 07/03/11

C.
RK
KN
SS
OC
TT
SG
DN
Sand
PS
PW
BH
HG
GB
CM
Shingle
Water
Rock
1.7
304.1
7.9m
Shelter
9.8m
Sand
MP
SS
BH
Pebble Beach
9.4m
Path
A 183
VP 5
Kite Surfers
(18/02/11)
Whitburn Steel
T.

Ocean Park

Wetland Bird Survey - High Tide Count

September 2010 to March 2011

C.

SG

SS

VP 4

Whitburn Bay

RE

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

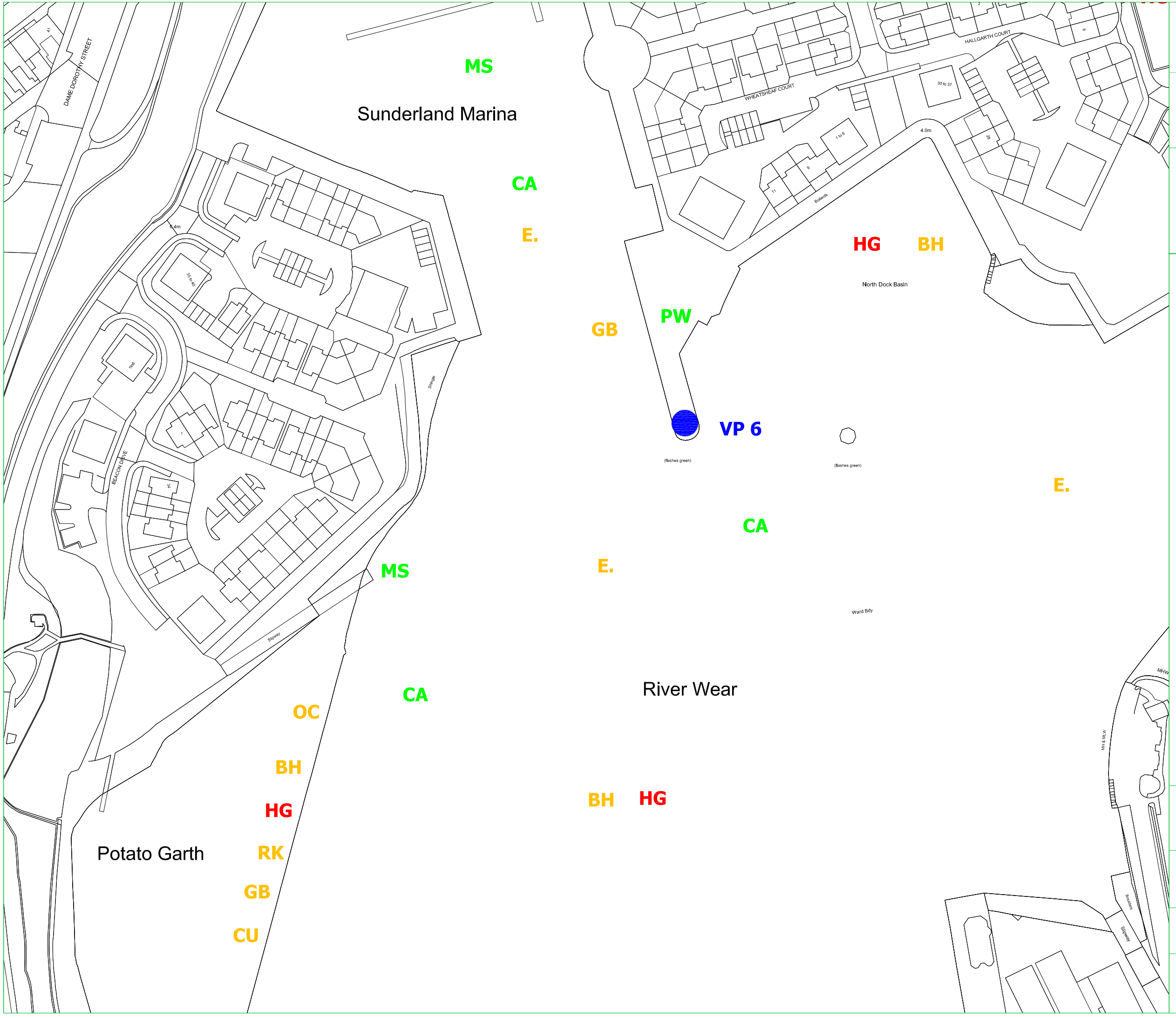
Drawing Ref: Figure 24

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

argus ecology

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

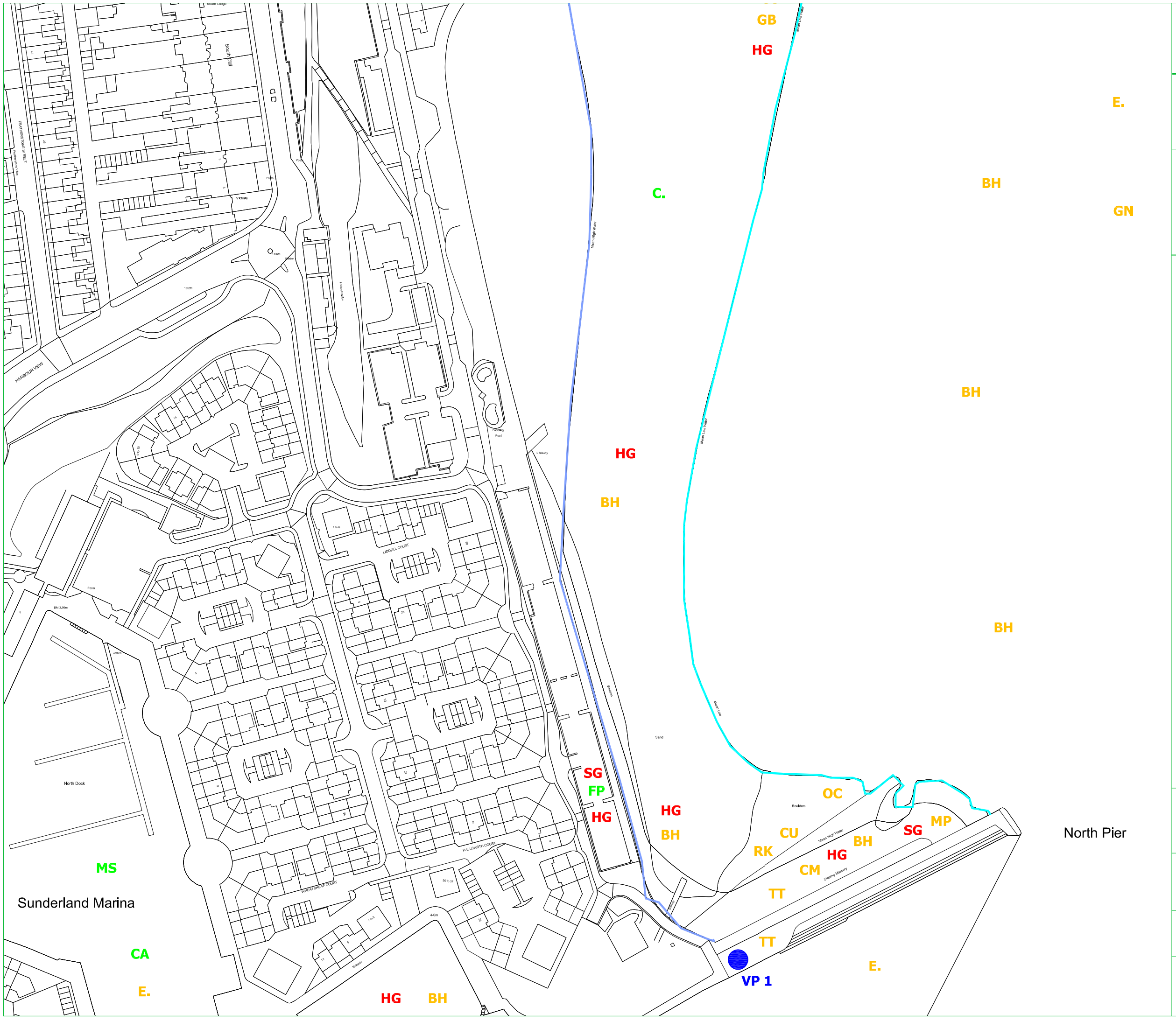
Drawing Ref: Figure 25

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

argus ecology

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

Roker Ravine

Roker Rocks

Tractor moving seaweed
(22/09/10)

SS
OC
PS
RK
RK
BH
TT
HG
GB

HG
BH
E.

CG
PS
GP
RK
OC
SS
TT
RP

Shellfisher
(07/03/11)

Anglers
(at end of pier)

Roker Pier

VP 2

GO
SG
SS
GB
HG

Tractor moving gravel
(07/03/11)

Roker Hotel

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

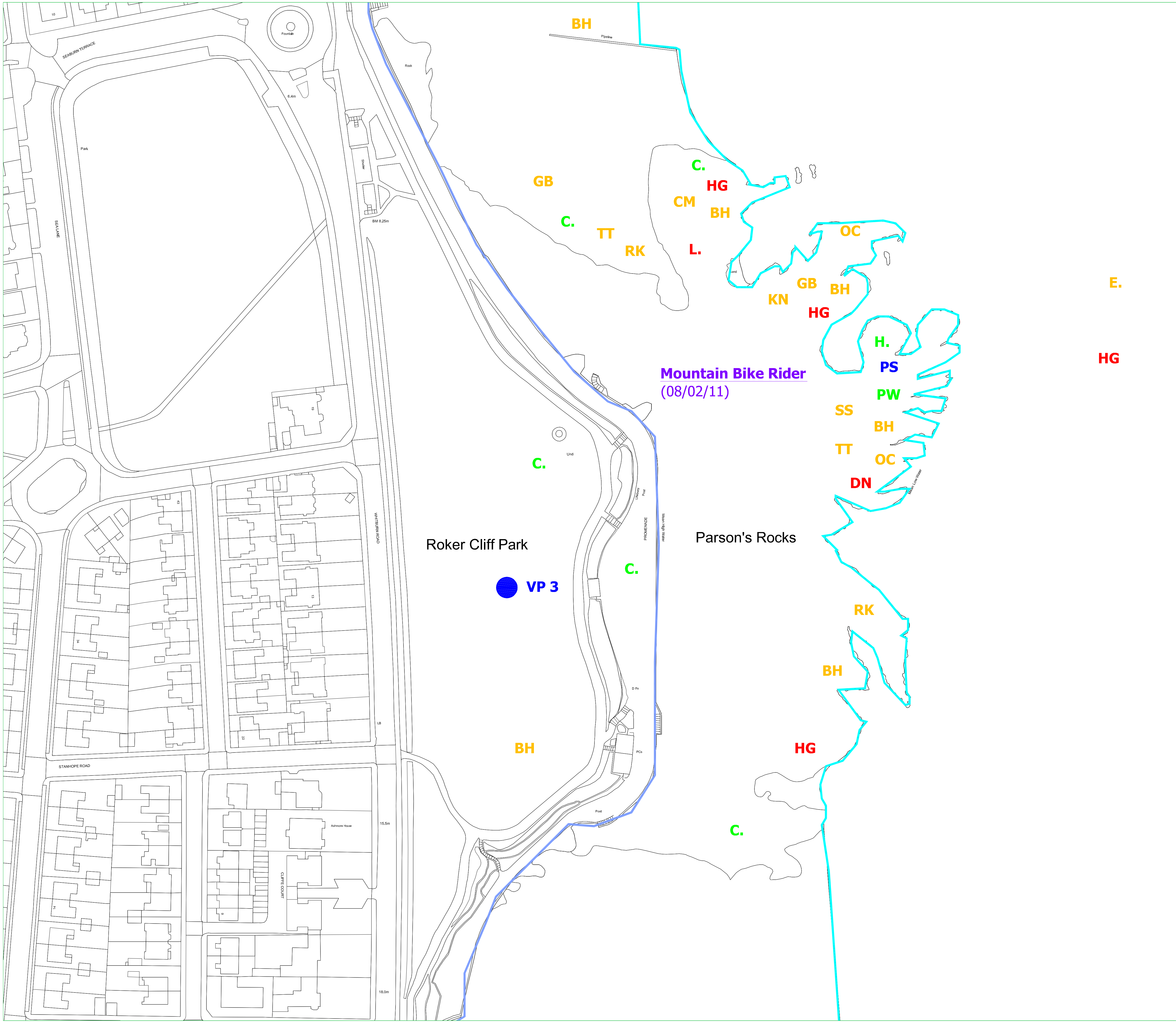
See text - Appendix 6 - for bird species codes

argus ecology

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

Drawing Ref: Figure 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

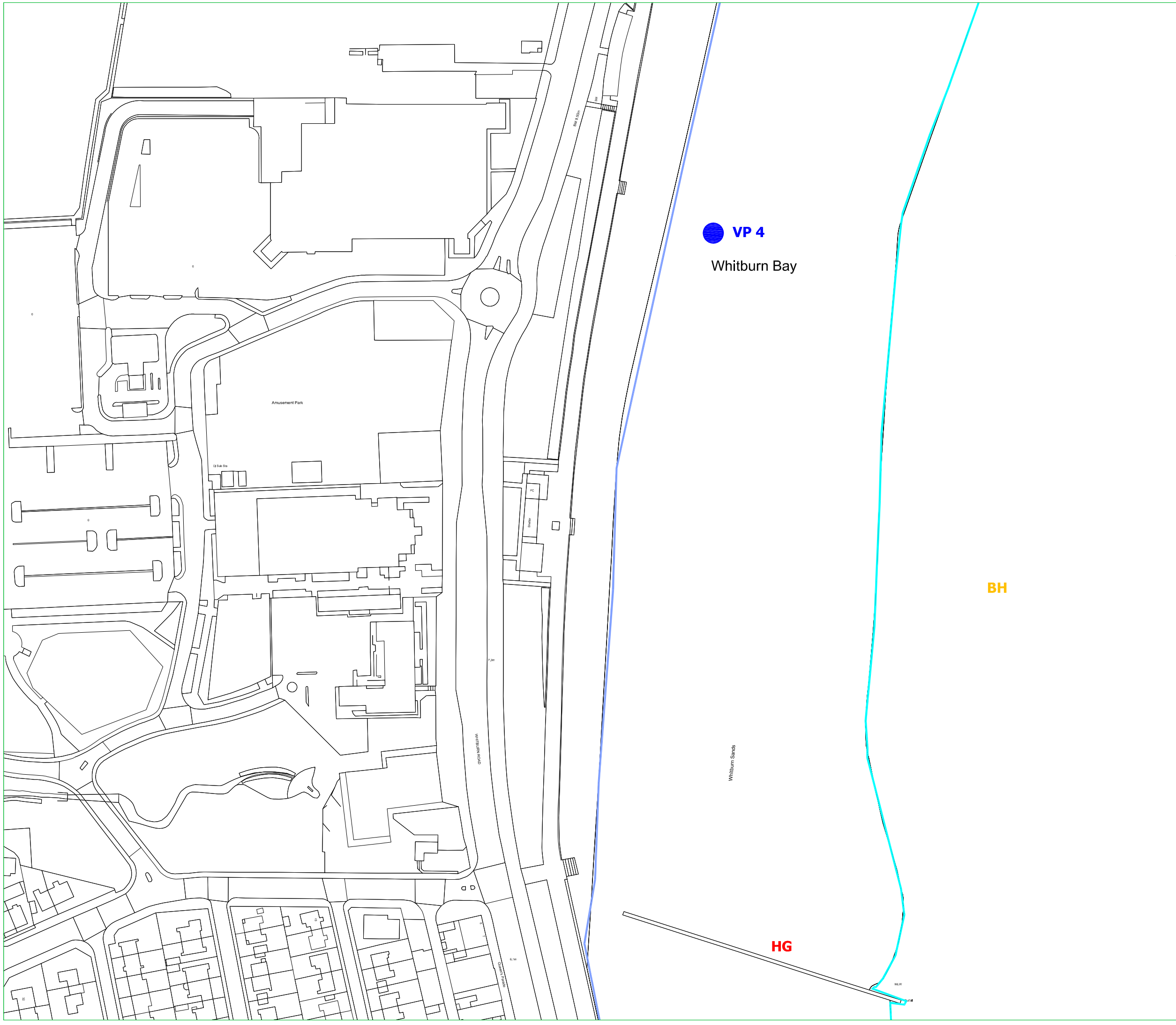
See text - Appendix 6 - for bird species codes

argus ecology

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

argus ecology

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

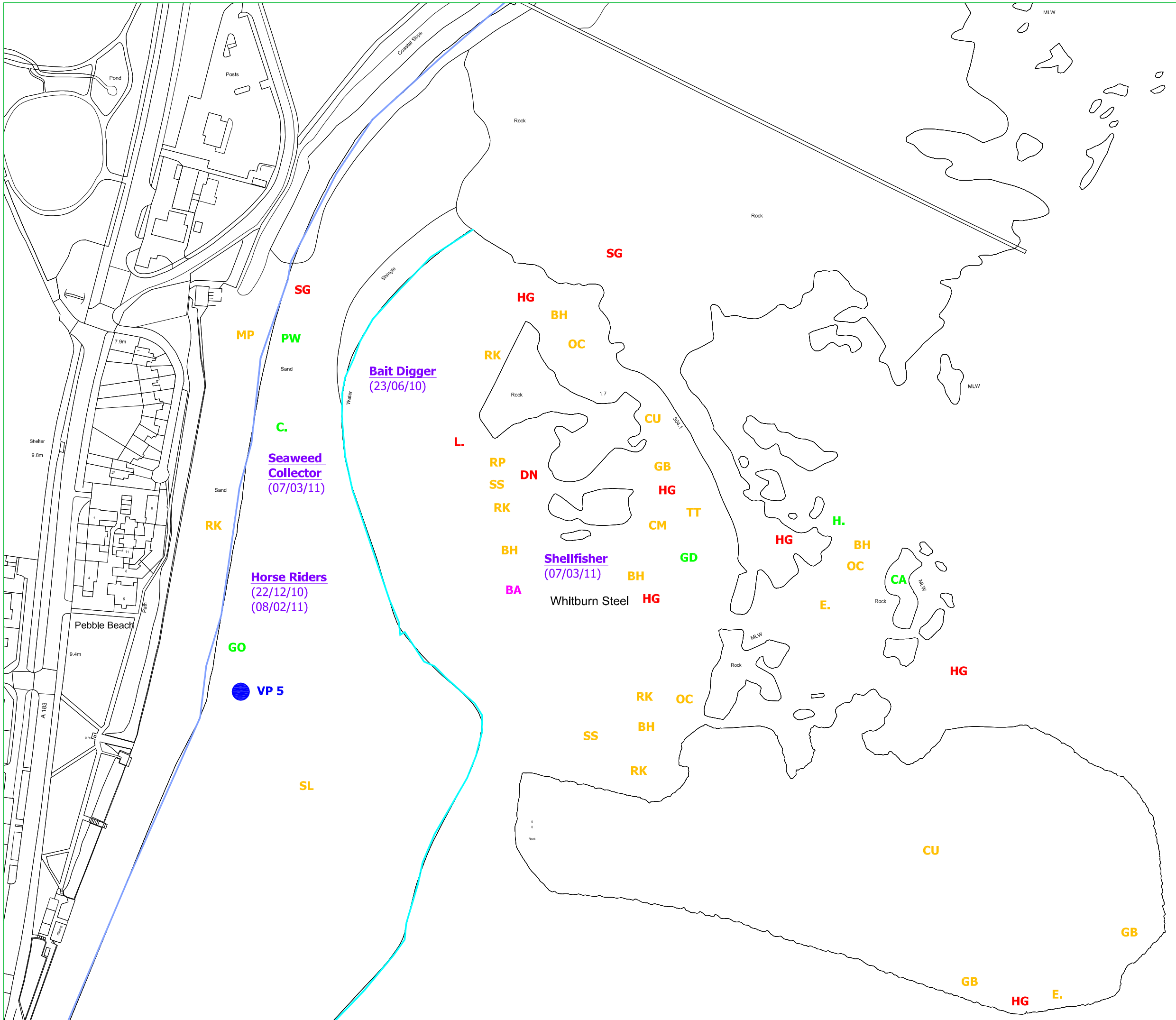
Drawing Ref: Figure 29

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

argus ecology

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

HG

MG

HG

R.

C.

VP 4

Whitburn Bay

BH

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 31

Version 1.0: 07/03/11