

South West of England Regional Development Agency

Wave Hub

Appendix C to the Environmental Statement

June 2006



Halcrow



South West of England
Regional Development Agency

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Wave Hub Environmental Impact Assessment
Extended Phase 1 Habitat Survey
May 2006

Halcrow Group Limited

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Wave Hub Environmental Impact Assessment Extended Phase 1 Habitat Survey

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1 Introduction

This report presents the results of an Extended Phase 1 habitat survey undertaken to inform the environmental impact assessment for the Wave Hub project at Hayle. The survey has been undertaken at the proposed electricity substation site, following a more general survey of the area undertaken at the viability stage of the project by Halcrow Group Limited during 2004.

1.1 *Methodology*

A Phase 1 habitat survey was undertaken on 25 May 2005. The survey was focused on the area around existing electricity sub-station compounds, which will provide the location for new buildings to allow connection of the sub-sea cable to the national grid. The survey was undertaken in accordance with the methodology in Handbook for Phase 1 habitat survey – A technique for environmental audit (JNCC 1993). In addition, signs of evidence of protected species were sought where possible, and areas which appeared to provide suitable conditions for such species noted.

Particular attention was paid to seeking a number of plant species that are rare or uncommon and known to be present in the area. These are:

- Pyramidal orchid *Anacamptis pyramidalis*
- Sea holly *Eryngium maritimum*
- Ivy broomrape *Orobanche hederæ*
- Yellow bartsia *Parentucellia viscosa*
- Wild mignonette *Reseda lutea*
- Balm-leaved figwort *Scrophularia scorodonia*

Further to the extended Phase 1 survey carried out on 25 May 2005, the site was revisited on 22 July 2005. The purpose of the visit was to note any species which would not be apparent during the first survey.

2

Results

The results are presented on the attached figure, with habitats colour coded broadly in accordance with the Phase 1 standard. Where deviations have been made these are shown in the figure key. Target notes have been used to provide supplementary information, for example where features or species of note were encountered. These target notes are detailed below. The survey was undertaken in good weather conditions at a time of year generally favourable for the survey of most species.

2.1

General site description



Photo 1 – General View of Site

The survey was undertaken adjacent to the existing Sub-station compounds and within the confines of a large semi-natural ‘bowl’ that grades into surrounding coastal sand dunes. A general view of the site from the northwest is shown on Photo 1. The site is entered from the southeast via a rough dirt-track that largely consists of uneven bare ground. To the north and west, the survey site is bordered by a number of holiday homes located at the top of the bank amongst the sand dunes and some of which have gardens that back onto the site. The bank forms a partial screen between the holiday homes and the existing sub-station and has been thinly planted with sapling tree species, such as sycamore *Acer pseudoplatanus* and pedunculate oak *Quercus robur*.

The enclosed site at the base of the slopes is predominantly wasteland consisting of spoil heaps, other industrial waste and tipping, and bare ground. As a

consequence, the site largely consists of vegetation associated with disturbed land including ruderals, such as charlock *Sinapis arvensis*, scrub, such as bramble *Rubus fruticosus*, and garden escapes, such as montbretia *Crococsmia x crocosmiflora*. Gradation from ruderal vegetation, through to scrub and finally to a dune species dominated by marram grass *Ammophila arenaria* occurs on the bank slopes from bottom to top respectively.

2.2

Protected and Notable Species

Only one of the six notable plant species specifically targeted was recorded from within the survey area; balm-leaved figwort. A number of plants were present around the spoil heap and lower slopes [TN1]. None of the other species was recorded during the May or July surveys, although common broomrape *Orobanche minor* was noted on the dune slopes.

A number of birds were recorded using the area, and it is expected that some of these will nest in scrub and other vegetation in the area, particularly on the slopes surrounding the site.

A number of features are present on the site that are likely to be used by common reptiles for basking, foraging and hibernation. This includes rock piles and dumped timber.

The site is not considered to contain features that might be used by other protected species. For example, there are no buildings or other structures that might be used by roosting bats, or waterbodies that could be used by great-crested newts.

2.3

Additional information from July Survey

The dune slope in the SW corner of the site (in region of target note 22) was noted to be of particular significance for invertebrates. The presence of rabbits has maintained close-cropped vegetation and bare sand. Several large skipper butterflies *Ochlodes venatus* were observed, suggesting that there is a breeding colony close by. Numerous mining bees were observed (*Andrena* sp.?) in this area.

An adult common lizard *Lacerta vivipara* was observed on the pile of railway sleepers (target note 6).

Viper's bugloss *Echium vulgare* was observed just outside the survey area, <5m south of target note 20. Vervain *Verbena officinalis* was noted on the dune slopes.

Rest-harrow *Ononis spinosa* was flowering on the disturbed ground in the region of target note 6.

2.4

Target notes

Dunnock (*Prunella modularis*), linnet (*Carduelis cannabina*), song thrush (*Turdus philomelos*), greenfinch (*Carduelis chloris*), goldfinch (*Carduelis carduelis*), chaffinch (*Fringilla coelebs*), whitethroat (*Sylvia communis*), blackbird (*Turdus merula*) and robin (*Erithacus rubecula*) were noted. Gatekeeper (*Pyronia tithonus*), orange-tip (*Anthocharis cardamines*) and green-veined white (*Pieris napi*) butterflies were noted within the survey area. Rabbits (*Oryctolagus cuniculus*) were also noted.

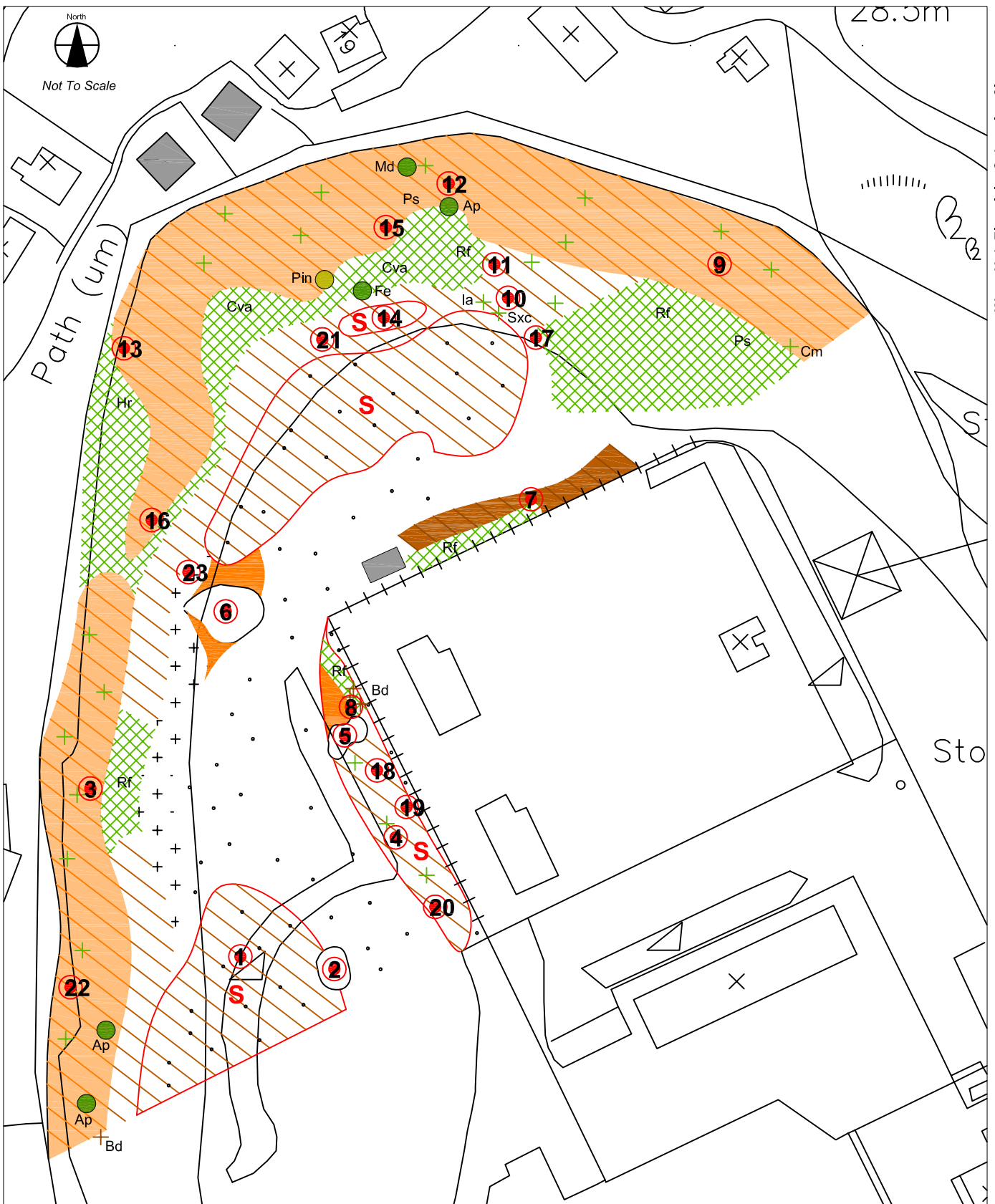
1. Spoil heap consisting of rubble and soil. Mainly bare ground with some dense patches of charlock. Also ruderals such as broad-leaved dock (*Rumex obtusifolius*), nettle (*Urtica dioica*), scarlet pimpernel (*Anagallis arvensis*), balm-leaved figwort and bristly ox tongue (*Picris ecbioides*).
2. A large rock pile with good potential as a reptile refuge.
3. 'Dune' slopes. Upper slopes marram dominated, with abundant kidney vetch (*Anthyllis vulneraria*), mouse-ear hawkweed (*Pilosella officinarum*), common cat's-ear (*Hypochaeris radicata*), hart's tongue fern *Phyllitis scolopendrium*, common broomrape, wild carrot *Daucus carota* with ribwort plantain *Plantago major*, yarrow *Achillea millefolium*, lady's bedstraw *Galium verum*, wild madder *Rubia peregrina*, early forget-me-not *Myosotis ramosissima*, black medick *Medicago lupulina*, common scurvy grass *Cochlearia officinalis*, perforate st.john's wort *Hypericum perforatum*, red valerian *Centranthus ruber*, cut-leaved crane's-bill *Geranium dissectum*, common sorrel *Rumex acetosa*. Grass species in addition to marram include red fescue *Festuca rubra*, Yorkshire fog *Holcus lanatus*, cock's foot *Dactylis glomerata* with sand sedge *Carex arenaria*. Some stands of sea-buckthorn *Hippophae rhamnoides* and blackthorn *Prunus spinosa*, becoming scrubbier on lower slopes with bramble. Some small sycamore, buddleia *Buddleia davidii* and a small Pine tree *Pinus sp.* Becoming ruderal and scrubby at bottom of slope with charlock, hogweed *Heracleum sphondylium* and bramble.
4. Spoil heap - mainly ruderals with buddleia, broad-leaved dock, ribwort plantain, creeping buttercup *Ranunculus acris*, large-flowered evening primrose

Oenothera glazioviana, creeping cinquefoil *Potentilla reptans*, silverweed *Potentilla anserina*, common ragwort *Senecio jacobaea*, white clover *Trifolium repens*, charlock, red campion *Silene dioica*, creeping thistle *Cirsium arvense*, scented mayweed *Matricaria recutita*, large patch of montbretia.

5. A large log pile with good potential as reptile habitat.
6. A pile of railway sleepers with good potential as a reptile refuge.
7. Bracken *Pteridium aquilinum*/ tall ruderal mix with charlock, balm-leaved figwort, hogweed and foxglove *Digitalis purpurea*.
8. Garden plant escapes including montbretia.
9. Grassland dune slope with frequent herbaceous species including hart's tongue fern, bird's-foot trefoil *Lotus corniculatus*, eyebright sp. *Euphrasia sp* and marram grass.
10. A crow's nest in goat willow *Salix caprea* (possibly unused – no signs of activity). Chaffinch, robin and dunnock (alarm calling).
11. Lower dune slopes, mainly ruderals including traveller's-joy *Clematis vitalba* , hart's tongue fern, wild strawberry *Fragaria vesca*, large-flowered evening primrose, charlock, balm-leaved figwort with ivy *Hedera helix* and low stands of hawthorn *Crataegus monogyna*.
12. Disused crow's nest.
13. Strong fox scent.
14. Small spoil heap with cinquefoil, bristly ox tongue, creeping buttercup, cut-leaved crane's-bill *Geranium pusillum* and some twiggy spurge *Euphorbia uralensis*.
15. Passing green-veined white butterfly.
16. Gatekeeper – flying.

17. Rabbit burrows (active).
18. Goldfinch perched.
19. Bluebells *Hyacinthoides non-scriptus* sparsely distributed amongst tall ruderals and grasses. Some stands of buddleia.
20. Spikes of weld *Rhuseda luteola*.
21. Great mullein *Verbascum thapsus* spike (in seed).
22. A pair of gatekeepers at rest (warming up in the sun).
23. Whitethroat singing

Figure - Phase 1 Habitat Plan



Wave Hub Electricity Substation Site
Phase 1 - Habitat Survey

Rf	Bramble - <i>Rubus fruticosus</i>		Tall ruderal		Spoil		Neutral grassland
Ap	Sycamore - <i>Acer pseudoplatanus</i>		Dense/continuous scrub		Bracken/tall ruderal mix		Fence
Bd	Buddleia - <i>Buddleja davidii</i>		Scattered scrub/saplings		Man made structure		Target note
Hr	Sea-buckthorn - <i>Hippophae rhamnoides</i>		Broadleaved tree		Introduced shrub		Bare ground
Cva	Traveller's joy - <i>Clematis vitalba</i>		Coniferous tree		Ephemeral/short perennial		
Pin	Pine - <i>Pinus sp.</i>		Dune grassland				
Fe	Ash - <i>Fraxinus excelsior</i>						
Ps	Blackthorn - <i>Prunus spinosa</i>						
Ia	Holly - <i>Ilex aquifolium</i>						
Sxc	Goat willow - <i>Salix caprea</i>						
Md	Apple - <i>Malus domestica</i>						
Cm	Hawthorn - <i>Crataegus monogyna</i>						