

8 COASTAL AND TERRESTRIAL ECOLOGY

1. This section describes the coastal and terrestrial ecology of the proposed development area and comprises the area to the south of the existing port in the vicinity of Landguard Fort, including View Point Road and the shingle beach extending to the south along the Landguard Peninsula. The scope of this section includes vegetation, habitats, invertebrates, reptiles and birds. Targeted surveys for each of these aspects were undertaken and the results are presented.

2. The potential impacts of the proposed development are assessed. Impacts are predicted to arise largely due to the effect of the reclamation and the proposed works to View Point Road. However, the indirect implications of the proposed development, in terms of a predicted increase in visitor numbers, are also assessed.

8.1 EXISTING ENVIRONMENT

8.1.1 Introduction

1. Ecological Surveys Ltd (ESL) were commissioned to undertake ecological surveys of the coastal and terrestrial habitats to the south of the Port of Felixstowe. The survey area was divided into 3 smaller areas as shown on Figure 1 (Appendix 4) and illustrated in the photographs included in Appendix 4. The surveys were designed to assess the status of the following interests:

- Vegetation;
- Habitats;
- Invertebrates;
- Reptiles, and;
- Birds.

2. In addition, the study included a study of the available records of the ecological interest of the area.

8.1.2 Description of the survey area

1. Area 1 (Figure 1; Appendix 4) lies between Landguard Fort and the Orwell Estuary and comprises the shingle foreshore and land behind as far as the palisade fence which marks the perimeter of Landguard Fort. Area 2 is the western verge of View Point Road, between the road and the boundary fence of the container port, from the end of the car park at the fort to the junction with the A154 (Carr Road). Area 3 is the eastern verge of this length of View Point Road together with a 5 to 10m wide strip of land on the eastern side of the road verge where the road runs alongside Landguard Common. In places there is low metal fence defining the far edge of the verge. Towards the caravan park this boundary also includes a tall bund, and adjacent to the caravan park the fence runs behind the bund.

8.1.3 Methodology

Data search

1. Biological data for Suffolk are held by the Suffolk Biological Records Centre (SBRC) at Ipswich Museum. These data are supplied by many individual naturalists and organisations, including the Suffolk Wildlife Trust and Landguard Bird Observatory. SBRC was therefore approached to supply the available records for the survey area and adjoining areas, including Landguard Common and Nature Reserve. The education ranger for Landguard Common NR also supplied personal observations.

Botanical survey

2. Each survey area was walked over by an experienced botanist on 23 July 2003. All plants present were recorded onto standard BSBI Atlas 2000 recording cards with a separate list made for each area. So far as possible, the plant communities present were recorded in terms of their location, extent and species composition. Sample quadrats were recorded and representative photographs were taken.

Habitat assessments

3. An invertebrate habitats appraisal was carried out on 30 June 2003. The area was walked over, noting the available habitats, the availability of potentially important food plants and the degree of disturbance. Having regard to the poor weather during this visit and the extent of information already available on this site, no recording was carried out.

4. A general assessment of habitats available for reptiles within the survey area was carried out on 1 July 2003. Cold searching was then employed in these habitats to locate animals. This involves walking slowly through suitable areas looking for basking animals and listening for movements in the vegetation. Due to the high degree of public access and disturbance the use of 'tinning' was not considered to be possible on this site. Tinning is a generic term for using pieces of corrugated iron, roofing felt, carpet etc to attract reptiles. These animals use them for basking upon and hiding beneath since they tend to warm-up more quickly and stay warm longer than the surrounding vegetation. However, natural refugia such as logs, stones, rubbish were also turned over to check beneath.

5. An assessment of the use of the survey area by breeding birds was carried out on 1 July 2003. This involved noting the species present and available habitats, together with the extent of disturbance in each area.

8.1.4 Description of vegetation interest of the survey area

1. A full description of the vegetation recorded from the survey area and its nature conservation importance is provided in Appendix 4. Full species lists are also included in Appendix 4. The findings are summarised below for each of the areas surveyed.

Area 1: Landguard Fort

Plant communities and habitats

2. A detailed description of the species found within the different parts of this area is included in Appendix 4.

3. Much of this area is occupied by plant communities which occur in artificial or much disturbed environments. These include the plant communities of the shingle and concrete paths which lead south from the view point car park, the communities of the built-up shingle ridge and the partly artificial ground behind the ridge, and the communities of the tall grassland/more open grassland lying north of the remnant cross-fence. These communities are therefore generally unlikely to comprise readily recognisable forms in the context of the National Vegetation Classification (NVC) (Rodwell, 1991-2000).

4. The only part of this survey area where the plant communities are in a more natural environment is the shingle beach on the estuary side of the low concrete sea wall. The main community here is probably the SD1a *Rumex crispus-Glaucium flavum* shingle community, typical sub-community, where the vegetation is reasonably well-developed. Where the beach vegetation is very sparse and consists of little more than *Atriplex prostrata* (i.e. at the northern end of the shingle foreshore adjacent to the Port) it is probably not realistic to assign it to a community, although in some other instances it has been described as a rather poor version of the strand-line community (SD2 *Honckenya peploides-Cakile maritime*) or of a certain sea-cliff vegetation (MC6 *Atriplex prostrata-Beta maritima*). The vegetation of the artificial shingle bank is probably also a form of SD1a (photograph 7).

5. The communities of the remainder of this site may include an as yet unrecognised maritime form of the MG1 *Arrhenatherum elatius* grassland, where this species occurs with much *Smyrniolum olustrum*, and small fragmentary stands of a short sand-dune grassland community (e.g. SD7 *Ammophila arenaria-Festuca rubra* or SD8 *Festuca rubra-Galium verum*). The open grassland of most of this site is not accommodated within the NVC but it may relate to one or more of the secondary pioneer communities described by the National Shingle Survey (Sneddon & Randall, 1993), such as the SH27 *Tripleurospermum maritimum-Atriplex prostrata-Rumex crispus* community or the SH23 *Tripleurospermum maritimum-Silene maritima-Euphorbia paralias* community. Whichever system this vegetation can be classified under it may prove to be a reasonably widespread type or types which appear in the maritime zone where there is a sand-shingle substratum subject to disturbance. This combination of factors gives rise to the mix of maritime species, with more or less ubiquitous ruderal species and those of sandy and/or calcareous soils.

6. The most important community of this area is the form of SD1a. This shingle vegetation occurs around the English southern and eastern coasts, with a few outliers elsewhere.

7. Vegetated shingle on the coast is a national Biodiversity Priority Habitat (Anon, 1999). The definition of coastal vegetated shingle given in the Habitat Action Plan (HAP) includes more than the characteristic pioneer vegetation (i.e. the SD1 community) since it encompasses the more stable and better vegetated areas which occur inland and may support various grassland, heath, scrub, lichen and bryophyte communities.

The shingle beach at this site is therefore included in the Priority Habitat but it is less clear if the disturbed other vegetation would be. If the disturbed vegetation were not included in the Priority Habitat, it would be of lower importance than the beach. However since the HAP includes the restoration of degraded shingle habitat as an objective, it is more likely that the entire area would be included as Priority Habitat. All of the botanical survey Area 1 is therefore of some (future potential) nature conservation importance in habitat terms.

Plant species

8. The survey recorded five species from this area which are notable in a Suffolk context (Simpson, 1982). Present on the shingle beach is *Crambe maritima*, which is formerly a Nationally Scarce plant (Stewart, Pearman & Preston, 1994) and although it is more widespread now, it remains notable in Suffolk because it occurs in only small colonies or as single plants and is therefore vulnerable to disturbance and loss. *Atriplex laciniata* occurs in small quantity in the open disturbed path vegetation; this species is scarce in Suffolk. *Cakile maritima* also occurs in the path vegetation and is present on the shingle bank; this species is only scattered in the county along the coast. *Euphorbia paralias*, present in the open vegetation behind the shingle bank, is local in Suffolk and is declining. *Tripleurospermum maritimum*, which occurs throughout this area, is considered rare in Suffolk, but may be under-recorded.

9. This area also supports much *Lepidium latifolium*, which is a Nationally Scarce plant in its native coastal stations (Stewart, Pearman & Preston, 1994). The plants in this area may include some native stands, such as those on the shingle in the SD1a community, as well as casual stands where the ground has been disturbed, such as on the paths or along the fence-line. This may be too fine a distinction however and all plants here are probably best treated as part of the same native shingle population. This area therefore has some plant species interest.

Area 2: Western verge of the access road

Plant communities and habitats

10. As with Area 1, much of this area is disturbed, particularly towards the car park, where it consists of only a narrow verge sandwiched between the container port and the busy road. Only where the verge widens out in a few places are there relatively undisturbed but very small areas of more typical maritime grassland. Much of the verge vegetation is not therefore capable of description and assessment in terms of the NVC.

11. Some of the scrub in the wider areas of verge corresponds to the common and widespread W24 *Rubus fruticosus*–*Holcus lanatus* and W23 *Ulex europaeus*–*Rubus fruticosus* communities. The *Hippophae rhamnoides* scrub, although planted, is probably a form of the SD18 *Hippophae rhamnoides* vegetation type, a community of restricted occurrence in the country where native. *Hippophae rhamnoides* is doubtfully native in Suffolk (Simpson, 1982) therefore these planted stands are of no conservation significance.

12. The verge grassland south of the Customs House access is open and disturbed, and in its possession of ubiquitous ruderals, general grassland plants, plants of sandy soils and maritime species, this vegetation is not dissimilar from that at Landguard Fort. As with that area, this is probably a reasonably common vegetation type of disturbed industrial coastal areas and may be seen in other port and dock areas in the country.

13. The more intact grassland of the verge north of the Customs House, where *Arrhenatherum elatius* is prominent, is probably a form of the MG1 *Arrhenatherum elatius* community. This is a more or less ubiquitous grassland of the lowlands and is of little nature conservation significance. Some of its constituent species may have arisen from the landscaping which took place in 1987 at the time of the works associated with the construction of the Customs House (Copping, 1990). One of the areas of open grassland near the northern end may also have arisen from the landscaping works, since some of its constituent species are known to have been sown (Copping, 1990).

14. These species also occur in the area of short grassland south of the Customs House, so this too may originally have been seeded, although it does have some features which relate to the nature of this area's original vegetation (Copping, 1983). These include the local abundance of *Pilosella officinarum* and the presence of *Trifolium scabrum*. Each of these grassland areas may be forms of the SD7 or SD8 vegetation types, but they are very small in extent and so of little nature conservation significance.

Plant species

15. Three species which are notable in a Suffolk context (Simpson, 1982) were recorded. These are *Tripleurospermum maritimum*, *Leontodon saxatilis* (which is rather local and scarce in the county and occurs in small quantity in the disturbed verge grassland) and *Inula conyzae*, which is not very frequent and declining in Suffolk, and is also present in this vegetation (again in small quantity). This area also supports frequent *Lepidium latifolium*, but here the populations are probably casual.

Area 3: Eastern verge of the access road

Plant communities and habitats

16. The disturbed grasslands of this area lie at and near the viewpoint car park, at the fort and around the fort car parks. Here there is a similar vegetation to Area 2, and it is of similar nature conservation interest: a reasonably commonly encountered mixture of grassland plants, maritime plants and ruderals, found in disturbed built-up places by the sea. The bunds along the road which support a tall rank grassland are probably all the MG1 *Arrhenatherum elatius* vegetation type, enriched with ruderals, and alien and garden plants. The MG1 community is common in lowland Britain and disturbed examples such as here are probably equally widespread in and around built-up and industrial areas.

17. In the part of the survey area through Landguard Common, there are patches of scrub which are the common W24 and W23 types. Where *Arrhenatherum elatius* is dominant in the grasslands there are stands of the MG1 vegetation type, and where *Elytrigia atherica* is prominent, the vegetation may be a form of the SM24 *Elytrigia atherica* saltmarsh community. This is a common and widespread upper saltmarsh and shingle vegetation type in south-east Britain.

18. The shorter grasslands may be forms of the SD8 vegetation type, although the peculiarities of the substratum (shingle mixed with sand) may mean that the grassland is not well described by the NVC. The National Shingle Survey (Sneddon & Randall, 1993) may provide a better description of the vegetation: the short grassland may be a form of the SH50 *Festuca rubra-Aira praecox-Plantago coronopus* grassland type. This has affinities to the NVC sea cliff vegetation MC5 *Armeria maritima-Cerastium diffusum*

community. The presence of a sea cliff vegetation type on more or less flat ground at this site is an indication that local environmental conditions are somehow similar to the grassland's more normal cliff habitat; this is an unusual feature and it makes this short vegetation of some nature conservation interest.

19. The vegetated shingle of Landguard Common included in this survey area probably falls in the scope of the national Biodiversity Priority Habitat of Coastal Vegetated Shingle (Anon, 1999).

Plant species

20. From this area the current survey recorded four species which are notable in a Suffolk context (Simpson, 1982). These are *Tripleurospermum maritimum*, *Leontodon saxatilis* which occurs in the short grassland of the Common; *Crambe maritima* which is found in small quantity on the verge; and the rare alien *Cynosurus echinatus*, present on the bunds. This survey area also supports frequent *Lepidium latifolium* which is Nationally Scarce where native (Stewart, Pearman & Preston, 1994) but here is probably of casual origin.

8.1.5 Invertebrates

1. There are no features on the site of interest to freshwater invertebrates. Nor are there any saline or brackish pools. The tidal zone is a beach of pure shingle and has no value to either terrestrial or freshwater invertebrates.

2. The area above the mean high water mark is rather narrow in the northern two-thirds, and has few features on it that are of particular invertebrate interest. For much of this narrow section the vegetation is limited to a few small areas. Public access to the foreshore area of Landguard Point, as an alternative to passing via the nature reserve area, is via this narrow section and, consequently, it is well trampled. The invertebrate interest here is extremely limited.

3. As the site widens in the southern third some vegetation becomes apparent but the poor variety of plant species restricts the phytophagous invertebrate assemblage to a minimum, although those plants which are there may well support some invertebrate species. In particular plants of *Glaucium flavum* may support the weevil *Ethelcus verrucatus*, formerly known as *Ceutorhynchus verrucatus*. This Red Data Book species is restricted to *G. flavum* where adults and larvae are found within a cavity in the tap root, below ground. The species is known only from a very few sites but is present on the Essex coast and so could easily be in this adjacent area of Suffolk. However, there are very few poppy plants within the survey area.

4. Those parts of the survey area which immediately abut Landguard Common are better vegetated including some areas dominated by *Ononis spinosa*. The rare Rest Harrow moth *Aplasta ononaria* prefers *Ononis repens*, (which is also present) but is, in any event, confined to Kent and so is unlikely to be found here.

5. Landguard Point Nature Reserve and Bird Observatory is an important invertebrate area. However, this interest does not appear to spread to the secondary habitat which dominates most of the present survey area. Plants such as *Echium vulgare*, which are known to support nationally rare moths such as *Ethmia bipunctella* on the nature reserve (and also further south along the beach), are rare and very scattered

in the study area. *Tamarix gallica*, which may also support uncommon species, is absent. In short, there is minimal intrinsic invertebrate interest in the area surveyed.

6. In terms of invertebrate ecology, human pressure on the survey area has, evidently, been responsible for at least an element of the depletion of invertebrate interest, primarily through physical erosion of a relatively small area. This has led to a restriction of floral biodiversity with a consequential effect on the invertebrate community. There is also visual evidence of major changes in the vegetative structure of the Landguard Nature Reserve area. This may be, in part, due to an altered hydrology over several years, but it is certainly at least exacerbated by the erosion that results from the currently unregulated public access.

8.1.6 Reptiles

1. No reptiles were found during any of the fieldwork visits. The area adjacent to Landguard Fort was considered to provide very poor habitat for reptiles due to lack of cover and disturbance.

2. The access road verges were also considered to provide poor habitat for reptiles, again due to sparse cover and disturbance. With greater distance from the road on the eastern side, on Landguard Common, the habitat improves for reptiles, becoming a mosaic of bare areas, rough grassland and scrub. Land beyond the western road verge would provide very poor reptile habitat due to its built-up nature.

3. There are records of two reptile species from the general area of Landguard Common on the SBRC database. The most recent record of common lizard was in 1990 (recorder unknown) and for slow-worm 1980 (Suffolk Wildlife Trust). The lack of more records was confirmed by the education ranger.

4. The site of the NNRT is also considered to have minimal potential to support reptiles. This area is in the final stages of reclamation (i.e. it is in the process of being surfaced) and, therefore, it is within the boundaries of the working port and is highly disturbed. As a result, the area is unlikely to provide a suitable habitat for reptiles.

8.1.7 Breeding birds

1. The access road verges are of limited value to breeding birds due to high levels of disturbance and lack of suitable cover. The dense scrub areas just outside the survey area, to the north of Landguard Fort and east of the road, are likely to be the best breeding bird habitats locally, particularly for finches and warblers. Further from the access road species such as skylark and meadow pipit probably nest within the rough grassland areas.

8.2 POTENTIAL IMPACTS DURING THE CONSTRUCTION PHASE

8.2.1 Potential disturbance to terrestrial habitats due to works to View Point Road

1. The works that are proposed to View Point Road are described in Section 3.1.11 and are shown on Figures 3.1.2 to 3.1.5. In summary, the works comprise removal of a length of existing footpath on the eastern verge, construction of a length of footpath on the western verge, widening of the road in places and localised removal of vegetation to provide adequate visibility around junctions. The terrestrial surveys that were carried out covered all areas potentially directly impacted by these works and also extended beyond the potentially impacted areas.

2. The findings of the terrestrial surveys are presented in Section 3.1. In summary, it is concluded that both the east and west verges of View Point Road are of little ecological interest, partly due to the high level of disturbance experienced by these areas. There is no evidence of reptiles being present and the margins of the road are not of significance for breeding birds due to the lack of adequate cover. The plant communities are not of significance as they are subject to disturbance and exist as small isolated areas.

3. Although part of the proposed works would not result in an impact on terrestrial habitats (i.e. the widening of part of the road into the area where the footpath would be removed), there would be some impact on terrestrial habitats elsewhere due to removal of vegetation, footpath construction and localised road widening. Given that the communities present are of low nature conservation importance and the localised nature of the works, the impact is considered to be of **minor adverse significance**.

Mitigation and residual impact

4. During the construction works, the area impacted should be kept as limited as possible through, for example, selection of areas for storage of construction materials to avoid terrestrial habitats, as far as practicable. The working area (i.e. the area where construction plant would manoeuvre) should also be kept as localised as possible. In spite of the above mitigation measures, it is considered that a residual impact of **minor adverse significance** would arise.

8.2.2 Potential disturbance to terrestrial habitats in the vicinity of the viewing area

1. In addition to the proposed works to View Point Road (described above), the reclamation would have a direct impact on terrestrial habitats in the vicinity of the existing viewing area. The reclamation in this area would accommodate car parking and a new viewing area that would be displaced due to the reclamation work.

2. The terrestrial habitats of the existing viewing area, car parking area and immediate surroundings were found to be of low nature conservation interest and much of the area lacks vegetation due to the fact that it is surfaced and is subject to a high level of disturbance. Overall, the potential impact is considered to be of **negligible significance**.

Mitigation and residual impact

3. The mitigation measures described above (Section 8.2.1) would also apply here. The residual impact would be of **negligible significance**.

8.2.3 Potential disturbance to coastal habitats in the vicinity of the viewing area

1. The reclamation would cover an area of sand and shingle to the south of the existing port. The vegetation of this area is of more interest than that of the terrestrial habitat to landward of the seawall. Vegetation communities that are typical of shingle habitats are present along the shingle beach, although in the northern area of the shingle beach (i.e. that area that would be directly affected by the reclamation) the vegetation is sparse, probably due to human impact, and is therefore considered to be of relatively low interest. There was no evidence of breeding birds along the stretch of shingle within the survey area; again, this is probably due to high levels of disturbance.

2. Despite the low ecological interest of the existing vegetation of the shingle, vegetated shingle on the coast is a national Biodiversity Priority Habitat. Given a reduction in disturbance, the area would have the potential to be of greater interest. However, in its existing condition, the impact of the proposed development on this habitat is considered to be of **minor adverse significance** at worst.

3. The potential impact on the ecological interest of the intertidal area to the south of the existing port is addressed in Section 6.2 (marine ecology).

Mitigation and residual impact

3. This impact is not possible to mitigate and the residual impact would be of **minor adverse significance** at worst.

8.3 POTENTIAL IMPACTS DURING THE OPERATIONAL PHASE

8.3.1 Potential disturbance to terrestrial and coastal habitats due to increased visitor pressure

1. The terrestrial and coastal habitats around the Landguard Fort and viewing area currently experience a high level of disturbance due to visitor pressure as these areas act as a focus for visitors. This situation would continue during the operational phase and visitor pressure is likely to increase, at least in the short term, due to the improved facilities and increased interest in the proposed development and new viewing area. However, it should be noted that the capacity of the area, in terms of number of car parking spaces provided, would be unchanged from the existing situation. Similarly, there are no proposals to improve existing paths in the area or to provide additional paths as part of the proposed development. Therefore, although visitor numbers are likely to increase, it is unlikely that there would be a noticeable increase in the level of disturbance to terrestrial and coastal habitats and species in the surrounding area, including the Landguard Common SSSI.

2. Given the above, it is expected that the impact would be of **negligible significance**.

Mitigation and residual impact

3. No mitigation measures are possible and the impact would be of **negligible significance**.