

7 MARINE AND COASTAL ORNITHOLOGY

1. This section describes the nature of the feeding and roosting waterfowl resource of the estuarine system, with particular focus on the Harbour area as this is in the vicinity of the proposed development. This area includes the intertidal areas within the footprint of the proposed development and the shingle foreshore of the Landguard Peninsula to the south. The designated status of the estuarine system is described with respect to ornithological interest.

2. The potential direct and indirect impacts of the proposed development on the ornithological interest of the in then described. Direct impacts include the effect of the loss of potential feeding and roosting area. As for marine ecology, the indirect effects on waterfowl arise due to the predicted effect of the development on the hydrodynamic and sedimentary regime and the consequences of this for intertidal habitats that support waterfowl and the potential feeding resource (i.e. benthic invertebrate communities) of these habitats.

7.1 EXISTING ENVIRONMENT

7.1.1 Designated status of the area

1. The intertidal and subtidal areas within the footprint of the reclamation and capital dredging are not within the boundaries of any designated site.

2. The intertidal boundary of the Landguard Common Site of Special Scientific Interest is located some 500m to the south of the proposed reclamation. The closest inland boundary of the SSSI to the proposed reclamation is some 200m distant. Landguard Common is a sand and shingle spit and consists of the loose shingle foreshore backed by stabilised, vegetated beach, earth banks and scrub. The site is of some ornithological interest as a landfall site for passage migrants and for breeding shorebirds. The bare shingle is used by nesting little tern and ringed plover (SSSI citation).

3. The northern end of the proposed reclamation is located approximately 1.5km to the south of the boundary of the Orwell Estuary SSSI and Stour and Orwell Estuaries Special Protection Area and Ramsar site and 2km to the south-east of the Stour Estuary SSSI.

4. The Harwich Foreshore SSSI is located on the western side of the entrance to the Stour and Orwell estuary system. This is a geological SSSI notified for fossil flora and as such is not relevant to this ES.

Stour and Orwell Estuaries SPA

5. The Stour and Orwell Estuaries SPA is a wetland of major international importance comprising extensive mudflats, low cliffs, saltmarsh and small areas of vegetated shingle on the lower reaches. It provides wintering habitats for important wetland bird species (wildfowl and waders). The total area of the SPA is approximately 3677ha (see Appendix 2).

6. The Stour and Orwell Estuaries qualifies as a SPA under Article 4.1 of the EC Wild Birds Directive (79/409/EEC) as it is used by 1% or more of the Great Britain populations of avocet *Recurvirostra avosetta*, a bird species included on Annex 1 of the Directive. Over the period 1996 to 2000 the SPA supported 21 breeding pairs of avocet.

7. The European site qualifies under Article 4.2 of the Directive as it is used regularly by 1% or more of the biogeographical populations of a number of migratory species (other than those listed in Annex I to the Directive), as summarised in Table 7.1.1.

Table 7.1.1 Internationally important populations of regularly occurring migratory bird species in the Stour and Orwell Estuaries SPA for the five year period 1995/96 to 1999/00

Migratory species	5 year peak mean (1995/96-1999/00) and season	% of subspecies/population
Dunlin <i>Calidris alpina alpina</i>	19,114 (wintering)	1.4% <i>alpina</i> , Western Europe (non-breeding)
Pintail <i>Anas acuata</i>	741 (wintering)	1.2% North-western Europe (non-breeding)
Dark-bellied Brent goose <i>Branta bernicla bernicla</i>	2,627 (wintering)	1.2% <i>bernicla</i> , Western Siberia (breeding)
Redshank <i>Tringa totanus</i>	2,588 (autumn passage)	1.0% <i>totanus</i> , Eastern Atlantic (non-breeding)
Grey plover <i>Pluvialis squatarola</i>	3,261 (wintering)	1.3% Eastern Atlantic (non-breeding)
Black-tailed godwit <i>Limosa limosa islandica</i>	2,559 (wintering)	7.3% <i>islandica</i>
Knot <i>Calidris canutus islandica</i>	5,970 (wintering)	1.3% <i>islandica</i>
Redshank <i>Tringa totanus</i>	3,687 (wintering)	1.5% <i>totanus</i> , Eastern Atlantic (non-breeding)

8. The European site further qualifies under Article 4.2 of the Directive as it is used regularly by over 20,000 waterbirds in any season. In the non-breeding season, the site regularly supports 63,017 individual waterbirds (5 year peak mean 1993/94 to 1997/98).

Stour and Orwell Estuaries Ramsar site

9. With respect to waterfowl interest, the Stour and Orwell Estuaries qualify as a Ramsar site under Criterion 5 of the Ramsar Convention because the system supports,

in the non-breeding season, 20,000 or more waterbirds. The site also qualifies under Criterion 6 because it regularly supports 1% of the individuals in the populations of a number of species or subspecies; these species, numbers of individuals and status are as summarised in Table 7.1.1.

7.1.2 Usage of the area by birds

Intertidal areas within the footprint of the proposed development

1. The small, isolated areas of intertidal habitat within the footprint of the proposed reclamation consist of loose shingle and sand to the south (see Plates 6.1.4 and 6.1.5) and artificial boulders, rubble and patches of sand and gravel to the north in the area around the oil jetty and along the quay face as far as the entrance to the Dock Basin (see Plate 6.1.3). There are no significant areas that can be described as mudflat within the footprint. On this basis, the intertidal area is unlikely to represent a feeding habitat of any value for waterfowl. Furthermore, the intertidal areas are subject to disturbance due to their close proximity to the Port. Intertidal areas within the footprint of the development may, at certain states of the tide, be used by a small number of birds for roosting.
2. For the reasons stated above, the intertidal areas that would be directly affected by the proposed development are not included within the Wetland Birds Survey (WeBS) counts or the low water counts that are undertaken over the winter period by the HHA. Both of these counts focus on the intertidal sedimentary habitats of the estuary system that are used significant number of feeding and roosting birds and the vast majority of which are included within the Stour and Orwell Estuaries SPA.
3. The NNRT is to be constructed on an area of land that has been recently reclaimed for port development. This area is in the final stages of its construction and is currently being surfaced. As such, the area is effectively already within the working port and is highly disturbed. Specific measures have also been undertaken to discourage use of this area by birds. The bird usage of this area is, therefore, considered to be negligible.

Usage of the shingle spit by breeding birds

1. The shingle habitat (Area 1) adjacent to Landguard Fort is used by breeding ringed plover and oystercatcher, numbers depending on the level of human disturbance. In 2003 both species nested successfully in roped-off areas (M. Iden, *pers. comm.*). Only small patches of scrub occur in this survey area and these are so small and disturbed that they are of little value to nesting birds.
2. Little tern, common tern and black-headed gull were noted feeding just off-shore from the Landguard Fort area but do not breed in the study area. Little terns have nested here in the past but did not do so in 2003 and this was thought to be due to human disturbance (M. Iden, *pers. comm.*).
3. Information of the ornithological interest of the area to landward of the shingle spit is provided in Section 8.1.7 (coastal and terrestrial ecology).

7.1.3 Landguard Bird Observatory

1. The Landguard Bird Observatory was founded in 1982 to study bird migration at Landguard Point. Daily counts of birds present and flying past are carried out. Most birds passing through are common migrants that can occur in very large numbers, although Landguard is well known to attract rarities and less common species.

7.2 POTENTIAL IMPACTS DURING THE CONSTRUCTION PHASE

7.2.1 Direct loss of potential feeding and roosting habitat

1. The proposed reclamation would result in the direct loss of approximately 1.7ha of intertidal area in total. The likely usage of this area by birds is discussed in Section 7.1.2. It is concluded that, given the nature of the intertidal area that would be lost and the high levels of disturbance of the area, the impact on birds as a result of the loss of intertidal area would be of **negligible** significance.

Mitigation and residual impact

2. The direct loss of intertidal habitat is not possible to mitigate and the residual impact is of **negligible** significance.

7.2.2 Disturbance to feeding and roosting birds during the construction works

1. Feeding and roosting birds can potentially be disturbed during the construction works due to noise and movement of plant and personnel. The noisiest aspect of the construction work is likely to be the piling that would be required to construct the quay wall and dredging of the approach channel. When assessing the potential for disturbance it is important to consider the level of disturbance under the existing situation (and, therefore, the extent to which birds may be accustomed to disturbance) and the proximity of intertidal areas used by feeding birds to the source of disturbance.

2. With regard to the reclamation works, the closest intertidal areas that are used by feeding waterfowl are on the opposite side of the Harbour on the foreshore to the east of Harwich; this area is approximately 1.2km distant. The Shotley foreshore is approximately 2.3km distant and the intertidal areas on the east shore of the Orwell Estuary are 2.5km distant. The shingle shore immediately to the south of the proposed reclamation (which was re-engineered in November 2000) is not used by significant numbers of feeding birds.

3. The dredging of the berths and approaches to the proposed reclamation on the eastern side of the existing channel is at a similar distance from intertidal area described above. However, the dredging on the western side of the channel would be approximately 400m from the intertidal area to the east of Harwich at its closest point.

4. Overall, there is a minimal potential for disturbance to feeding and roosting waterfowl given the distance between the source of disturbance and intertidal areas that may be used by waterfowl. Any disturbance would also be temporary in nature and any birds that are disturbed would take flight and continue to feed elsewhere. In addition, the area is already subject to a certain level of disturbance from shipping, construction

and dredging. It is considered that there is the potential for an impact of **negligible significance**.

Mitigation and residual impact

5. The disturbance to waterfowl that may be caused by reclamation and dredging is not possible to mitigate and the residual impact would be of **negligible significance**.

7.2.3 Implications of the conversion of intertidal to subtidal habitat

1. As described in Section 5.7.2, it is predicted that the conversion of 0.7ha of intertidal to shallow subtidal habitat, in a narrow strip around the estuarine system, would occur due to the effect of the proposed reclamation and dredging on tidal range. Although this theoretically represents a decrease in the area of intertidal habitat exposed, this effect is considered to be insignificant. The conversion of intertidal to shallow subtidal would not have an impact on the invertebrate resource of the intertidal/subtidal margin and the impact on feeding birds is, therefore, considered to be of **negligible significance**.

2. When this predicted effect is considered in light of the designated status of the estuarine system, the change does, in theory, represent a decrease in the exposure of designated mudflat. However, in the overall context of the predicted effect of the proposed development on the sedimentary regime of the estuarine system, this effect would be offset within the first few years of the completion of the development by the predicted reduction in the underlying rate of intertidal erosion of the estuary system (predicted to be of the order of 0.5ha/year).

Mitigation and residual impact

3. The predicted effect of the proposed development on tidal range is not possible to mitigate and the residual impact would be of **negligible significance**.

7.3 POTENTIAL IMPACTS DURING THE OPERATIONAL PHASE

7.3.1 Indirect impact on potential feeding habitats due to effects of the development on current speeds

1. Indirect impacts on bird feeding and roosting areas can potentially arise as a result of the effect of the proposed development on current speeds. These effects are described in detail in Section 5.3.2 which concludes that there would be small changes to current speeds in the Harbour area. These changes are predicted to have a negligible impact on benthic invertebrate communities and it is expected that there would be **no impact** on waterfowl feeding ability or efficiency as a result.

Mitigation and residual impact

2. No mitigation is required and there would be **no residual impact**.

7.3.2 Potential impact on waterfowl feeding and roosting habitats due to effects on the rate of intertidal erosion rates

1. It is predicted that the rate of intertidal erosion of the Stour and Orwell estuary system would decrease (by up to 0.5ha per year) compared with the baseline situation as a result of the proposed development (see Section 5.7.3). Given that the intertidal habitats within the system are currently eroding, this decrease in the rate of intertidal erosion represents an decrease in the rate of loss in intertidal feeding habitats for waterfowl within the estuarine system (much of which is designated as SSSI, SPA and Ramsar site). It is considered, over the long term, that this represents a potential impact of **minor beneficial significance**.

Mitigation and residual impact

2. No mitigation is required and the residual impact would be of **minor beneficial significance**.

7.3.3 Potential impact on bird breeding sites (shingle beach)

1. Although the area of shingle within the footprint of the proposed development is of minimal interest as a breeding area for birds, birds do breed along the shingle beach to the south of the proposed development where the level of human disturbance is considerably lower than around the viewing area. Therefore, in the longer term, should the proposed development affect the integrity of the shingle spit there would be an impact on birds that use the beach as a breeding habitat.

2. The predicted effect of the proposed scheme on the hydrodynamic regime of the Landguard frontage within the Harbour is described in Section 5.6.1. It is concluded that there is no mechanism for an effect on the hydrodynamic regime along the frontage and consequently the supply and movement of material along the shingle beach would not be affected by the proposed development. As a result, the proposed scheme does not have the potential to adversely affect the integrity of the shingle beach and, therefore, the scheme would have **no impact** on bird breeding sites on the shingle to the south of the proposed development.

Mitigation and residual impact

3. No mitigation measures are required and there would be **no residual impact**.

7.3.4 Potential impact on bird migration

1. At certain periods of the year, a significant number of migratory birds pass through the area; this phenomenon is studied by the Landguard Bird Observatory. It is likely that some species may use visual cues on the ground as navigational aids and, therefore, significant changes in these could affect migration.

2. As a result of the proposed development, the main visual changes would be the presence of more cranes in the southern part of the port and a different configuration of the quayside. In the context of the Port of Felixstowe as a whole, these changes do not represent a change in character of the area that would affect bird navigation and, therefore, **no impact** would be expected on migration routes or migratory birds.

Mitigation and residual impact

3. No mitigation is required and there would be **no residual impact**.

7.3.5 Potential impact on feeding waterfowl due to changes in intertidal biotopes

As described in Section 6.3.3, it is predicted that in the longer term the effect of increased wave action in parts of Erwarnton Bay could lead to a change in the nature of the benthic community (i.e. if longer term erosion occurred to reveal areas of underlying clay). This is considered to represent a potential impact of **negligible to minor adverse significance** in that the distribution of feeding waterfowl may change. However, it is unlikely that there would be an effect on waterfowl populations.

Mitigation and residual impact

The proposed mitigation described in Section 6.3.3 would offset the potential effect on intertidal communities and, therefore, there would be **no residual impact** on feeding waterfowl.

