

9 BIRDS

This section discusses the potential effects on birds using the outer Thames Estuary. The potential effects on birds at the designated coastal conservation sites are discussed in Section 10.

9.1 Existing Environment

The mud and sand flats that form the borders of the Kent and Essex coasts of the Thames Estuary are recognised for their international importance to bird populations. The intertidal muds and sands provide productive feeding areas for migrating and over-wintering birds during the months of October to late March. Both bird assemblages and individual species occur in numbers that exceed the threshold for Special Protection Area status under the Birds Directive 1979.

Offshore, the sandbanks, which either dry or are covered by shallow water at low tide also provide feeding grounds for divers and other birds. In addition, the sporadic appearance of large shoals of fish attracts divers to the estuary.

Aerial surveys undertaken by JNCC and the Wildfowl and Wetland trust for a number of proposed offshore windfarm developments found that the outer Thames Estuary supports a large population of divers (particularly red-throated diver) with common scoter, eider, grebes and other bird species also observed possibly on migration to or from the coastal SPAs (Gill et al., 2004). The aerial survey data show the following bird species on the sandbanks adjacent to the proposed placement site in the North Edinburgh Channel (Gill et al., 2004):

- Red-throated diver;
- Unidentified diver;
- Common tern;
- Cormorant; and
- Auk.

No accumulations of any bird species were recorded in the North Edinburgh Channel placement site itself during the two years of surveying, although individual and small numbers of birds (particularly red-throated divers and auks) were recorded on the channel edges and adjacent sandbanks. It is to be expected, however, that bird use of the estuary is geographically variable and dependent upon the abundance of food sources (for example, fish & shellfish) in an area at any time. Therefore, the assessment has assumed that, during the autumn and winter months, a larger number of divers could be present in the channel and that other bird species may use the adjacent banks as feeding habitat.

9.2 Displacement Caused by Presence of Dredger

9.2.1 Impact Description

Dredgers and other vessels have the potential to disturb and displace birds as a result of movement or noise during vessel operation and it has been observed during the boat based surveys for offshore windfarms that birds resting or feeding on the water surface will move off in response to the approach of a vessel (Gill et al., 2004). Dredgers are, however, generally quieter than survey vessels. The North Edinburgh Channel has been closed to shipping for a number of years and is now only occasionally used by recreational vessels. The nature of the present usage includes vessels moving under power and under sail although it is likely that the majority of such passages would occur in the summer months when the bird usage is lowest.

Given the PLA's commitment to find beneficial use, the placement operation may occur at any period during the year although the weather conditions of the winter months make these periods less favourable. During the placement operation the dredger would enter the North Edinburgh Channel from the western approach, move to the placement zone and discharge the sand before returning to the dredge site in Princes Channel via the Knob Channel, the route by which it came. The dredger would be in the channel for a maximum of ten minutes of which one to two minutes would comprise the placement operation. Any birds on the water (e.g. divers) are likely to be displaced, but given the distance from the sandbanks to the placement site (>360m), birds feeding on the adjacent sandbanks are unlikely to be disturbed. The WWT aerial surveys recorded birds throughout the estuary both on sandbanks and in the navigation channels, indicating that the presence of a moving vessel (including vessels significantly larger than a dredger) does not prevent birds from feeding and resting. The additional presence of one dredger moving to and from Princes Channel and the North Edinburgh Channel is considered to be of potentially **minor adverse significance**, although the nature of such disturbance would be temporary and short-lived.

9.2.2 Mitigation

Within operational constraints, should numbers of divers be observed in the North Edinburgh Channel placement site, placement will be directed to an available cell remote from the bird activity.

9.2.3 Residual Impact

The residual impact for displacement of birds is **negligible**.

9.3 Loss or Change to Feeding Habitat on Sandbanks

9.3.1 Impact Description

The shellfish and benthic fauna on the extensive sandbanks in the Thames Estuary provide a rich feeding ground for birds. One of the main factors in the decision of the location of the proposed placement site was the need to avoid any impacts on the shellfish beds. In practice this means avoiding increases in suspended sediment over the sandbanks and ensuring that material is not deposited directly or indirectly onto the sandbanks. The placement operation is described in Section 4.2. In addition, the placement site is in water depths of >12m and so there is no potential for a direct effect upon the adjacent sandbanks. Indirect effects could occur if significant quantities of silt were removed from the sand as it fell through the water column. Studies of disposal operations have shown that only 3% of material will be lost (see Section 6.2). Further, the placement operation will commence from about 6-10m below the water surface and so at most states of the tide, the sand will already be below the level of the adjacent banks before it starts to move to the seabed.

The dredging and placement operation will be constrained by weather although trailer suction hopper dredgers can work in swells of up to 3m (pers. comm.. Nick Bray, DRL, 2004). Wave action in such conditions affects the water column with effects reducing exponentially with depth. Given that the sand is released at 6-10m below the water surface the effects of wave action on the dynamic plume will be limited. It is considered that the potential for loss or change to feeding habitats on the adjacent sandbanks is of **negligible significance**.

9.3.2 Mitigation

There is no requirement for mitigation.

9.3.3 Residual Impact

The residual impact on the feeding habitat on the adjacent sandbanks is **negligible significance**.

9.4 Reduction in Visibility of Prey Items in the Water Column

9.4.1 Impact Description

The placement site has been chosen in discussion with local fishermen and KESFC as it is not presently considered a productive fishing ground. This may be related to the dynamic nature of the sands that form the channel, which prevent the establishment of stable biological communities (see Section 7). The placement site is considered of low value as a feeding ground for fish and thus birds, but there is the potential for a shoal of fish to move through the channel and to attract feeding divers. Effects will include temporary increases in suspended sediment as the material falls to the seabed. However,

given that the placement operation will commence about 6-10m below the surface water level and that the dredged material is sand with a very low fines content there will not be a plume of material remaining in the upper water column. It is predicted that the placement operation will affect turbidity in the lower water column for approximately 30 minutes before turbidity returns to previous levels. Red-throated divers can feed in water depths of up to 9m (pers. comm. English Nature, 2004). It is likely that fish would take avoiding action and move away from the disposal operation into clear water. The potential for impact relies on a shoal of fish and feeding divers coinciding with a placement operation and any impact would be temporary and short-lived. The reduction of water column visibility is considered to be of **minor adverse significance** and the likelihood of occurrence is very low.

9.4.2 Mitigation

Mitigation has been built into the choice of placement area due to the limited importance of North Edinburgh Channel as a fishing ground. Within operational constraints, should divers be observed in the North Edinburgh Channel placement site, placement will be directed to an available cell remote from the bird activity.

9.4.3 Residual Impact

The residual impact for reduction in water column visibility is **negligible**.

9.5 Summary of Impacts

Table 13 summarises the predicted potential impacts, any mitigation measures and the residual impact.

Table 13 Summary of Potential Impacts on Birds

IMPACT TITLE	SIGNIFICANCE LEVEL	MITIGATION	RESIDUAL IMPACT	COMMENTS
Displacement	Minor Adverse	Within operational constraints avoid areas of diver activity	Negligible	Applies to October to March
Loss or change to feeding Habitats	Negligible	Built into choice of site.	Negligible	-
Reduction in visibility of prey	Minor Adverse	Built into choice of site. Within operational constraints avoid areas of diver activity	Negligible	Applies October to March

Given that the residual impacts of all impacts are considered to be negligible no significant cumulative effects from the individual impacts are predicted.