

## **16 IN-COMBINATION EFFECTS**

This section considers the potential in-combination effects from the various projects proposed or existing in the Thames Estuary.

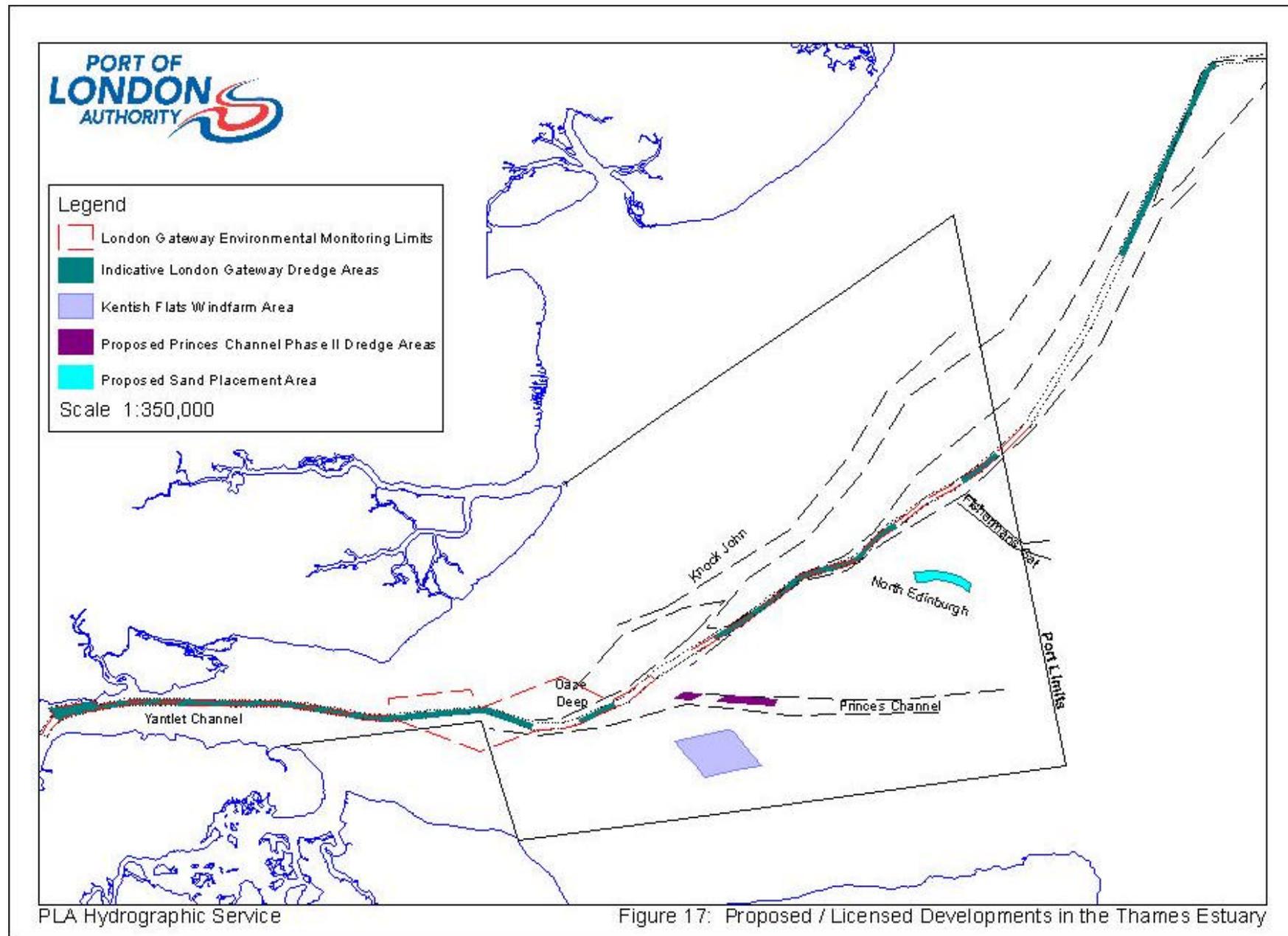
### **16.1 Introduction**

For the purposes of this assessment, in-combination effects has been taken to mean effects on environmental features caused by the use of the North Edinburgh Placement Site in combination with the effects of other projects. Cumulative effects on environmental features resulting solely from this project have been discussed in the relevant sections.

The other projects that have been identified as possibly operating before the end of 2006 are as follows:

- Kentish Flats Windfarm: construction commencing 2004;
- London Gateway Development: outcome of the HEO Public Inquiry and FEPA licence applications awaited;
- Two marine cables: timescale not known, EIA underway;
- Round 2 windfarms: at scoping and survey stage of EIA.

In addition, the effects of the Phase II Princes Channel dredge must be considered. Figure 17 shows the approximate location and extent of direct effects of each of these projects.



## 16.2 In-Combination effects

An initial screening of the environmental features suggests that, in respect of the effects of this project, in-combination effects should be considered for the following features:

- Designated conservation sites;
- Birds;
- Marine Biology;
- Fish; and
- Fishing Activity.

The distance between the various projects indicates that for other, geographically localised effects, an assessment of in-combination is not necessary,

An assessment of in-combination effects must draw upon available environmental data, for example, in the form of published Environmental Statements. These exist for the Kentish Flats Windfarm and the proposed London Gateway Development. Applications for the Round 2 windfarms are not expected until early 2005, long after a decision is expected to have been made on the FEPA application for the designation of the North Edinburgh Channel placement site. It will, therefore, be the responsibility of the windfarm developers to take into account the effects of the activities in the North Edinburgh Channel as part of their consideration of in-combination effects. The same reasoning applies to the marine cable developers who have not yet produced Environmental Statements.

The assessment of in-combination effects, therefore, includes the Princes Channel dredge, the proposed London Gateway Development and the Kentish Flats windfarm. Figure 17 shows the extent of direct effects from each of these developments; including sediment plumes from the dredging operations exceeding  $100\text{mgI}^{-1}$ . It can be seen that there is no geographical overlap between any of the direct effects. Consideration, therefore, should be given to the effects on mobile species and the additive loss of marine biological habitat (for the London Gateway Development only the outer estuary effects on marine biology are to be considered).

## 16.3 Designated Conservation Sites

No significant impacts are predicted on designated conservation sites as a result of the Princes Channel dredge, Kentish Flats Windfarm or North Edinburgh Placement site. There are, therefore, no additional impacts on those features to those that may be caused should the London Gateway Development proceed. No in-combination effects are predicted.

## **16.4 Birds**

The effects on birds as a result of the presence of a dredger (London Gateway, Princes Channel and North Edinburgh) are not considered to be significant, and will not, therefore, add to any effects on birds from the operation of the Kentish Flats Windfarm. Figure 17 demonstrates the limited geographic area affected by the projects and indicates that there will remain a large amount of clear water (for feeding divers), should the dredging projects be underway at the same time.

## **16.5 Marine Biology**

Each project will result in the loss or change of seabed habitat. However, in the context of the outer Estuary the area to be effected is approximately 21km<sup>2</sup> out of a total of approximately 1,226.5km<sup>2</sup> and the only area permanently lost relates to the turbine locations for the windfarm that has been consented and is, therefore, considered acceptable. The seabed habitats affected by the two capital dredges will gradually recolonise, while following the placement operations at the North Edinburgh Channel there will be a more rapid recolonisation. Further, as discussed in Section 15.5 the two dredging projects in the outer Estuary are likely to take place subsequent to each other rather than concurrently thus removing the potential for in-combination effects.

## **16.6 Fish**

As discussed in Section 16.4, should the projects proceed concurrently there will remain large expanses of unaffected water. However, it is possible that the dredging of the inner estuary for the London Gateway Development (assuming consent is achieved) would displace sole, either further into the River or out into the estuary. To avoid any in-combination effects on sole during the sensitive spawning period, the PLA is committed to managing the dredging and placement operations associated with the Princes Channel Development to avoid the spawning period of March to May. Whilst the numerous operations may displace adult fish the geographical extent of the effects on water quality from the Princes Channel dredge and North Edinburgh placement operations are minimal, as shown by Figure 17. Further the cycle time for the operations means that any effects would have disappeared before the next cycle commences.

## **16.7 Fishing Activity**

Neither the area to be dredged in the Princes Channel nor the North Edinburgh Channel are fishing grounds and the projects will not, therefore, add to any displacement effects caused by the Kentish Flats Windfarm or proposed London Gateway Development.

## **16.8 Conclusion**

With the exception of spawning sole, there are no predicted in-combination effects of the North Edinburgh Channel and the other developments that are ongoing or proposed for the Thames Estuary. To remove this potential impact, the PLA will seek to manage the

Princes Channel dredge, where possible, to avoid the sole spawning period of March to May. This commitment will be included in the Sand Placement Management Plan.