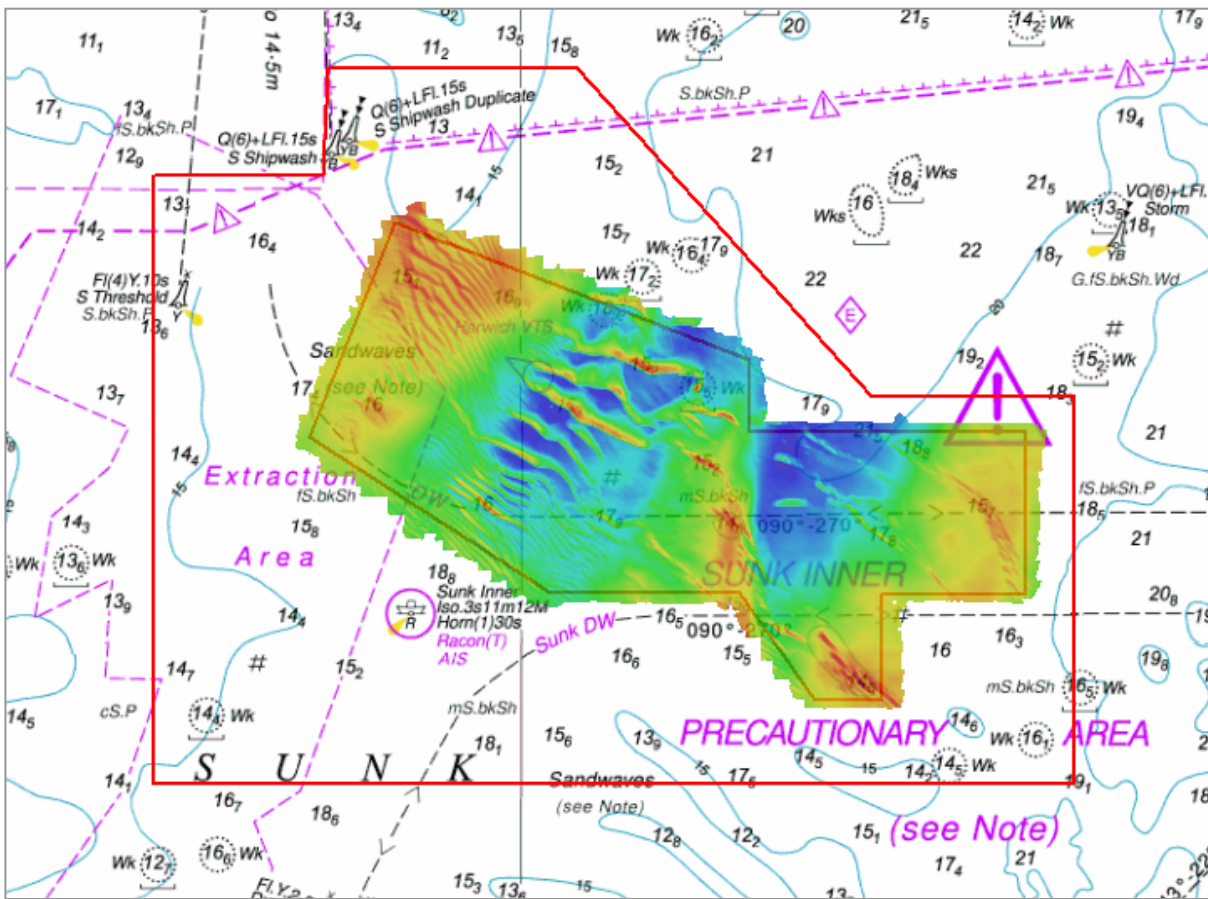




# THAMES ESTUARY

## SUNK

### SUMMARY ASSESSMENT ON THE ANALYSIS OF ROUTINE RESURVEY AREA TE3A FROM THE 2013 SURVEY



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### Summary Assessment TE3A/2013

A summary assessment of the 2013 hydrographic survey of the area: to monitor recent seabed movement; to identify any implications for shipping; and to make recommendations for future surveys.

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## **SUNK, 2013**

### **1 Introduction**

- 1.1 The full area of TE3A is re-surveyed every 2 years, within which a sub-area is surveyed annually (as shown on the front of the report). This focused area concentrates on the area of greatest concern, taking into account sediment mobility, depth of water and draught of shipping.
- 1.2 This summary report looks at the latest Focused Survey of TE3A. For more details on the area, including survey history, the report on the last full 2-year survey (conducted in 2012) should be consulted.

### **2 Description of the area**

- 2.1 Area TE3A covers the main approach to the Harwich Deep Water Channel. The focused area covers part of the Harwich Deep Water track and potentially critical sandwaves that lie either side of it, along with an area covering a shoal sandwave south of the Sunk Deep Water track.
- 2.2 The Harwich Deep Water Channel to the north-west has a maintained depth of 14.5 metres and sandwaves shoaling to less than this would be of concern to deep draught shipping using the area as an approach to the channel.

### **3 Survey Data**

- 3.1 The 2012 survey was conducted from 8 to 13 October. The 2013 survey was conducted from 2 to 11 November, with days lost due to weather stand-by. In both surveys, the Vertical Offshore Reference Frame (VORF) and GPS heighting were used to reduce depths to Chart Datum, with the final deliverable being a 1 metre CUBE (Combined Uncertainty Bathymetry Estimator) gridded surface.

### **4 Changes since the previous Survey**

- 4.1 Depths in five areas containing shoal sandwaves have been examined against earlier surveys, with the location of the areas shown in figure 1. Changes in minimum depth in these areas are shown in figures 2, 3 and 4. Depths in the 2013 survey have remained broadly similar when compared against the 2012 survey, but with the shallowest sandwave on the Harwich Deep Water track, deepening by 0.5 metres.
- 4.2 The shallowest depth in the far south of the area, over sandwave E, remains unchanged at 14.5 metres but a sandwave to the northeast of this, 250 metres to the south of the Sunk Deep Water track, has shoaled from 15.61 to 15.07 metres.

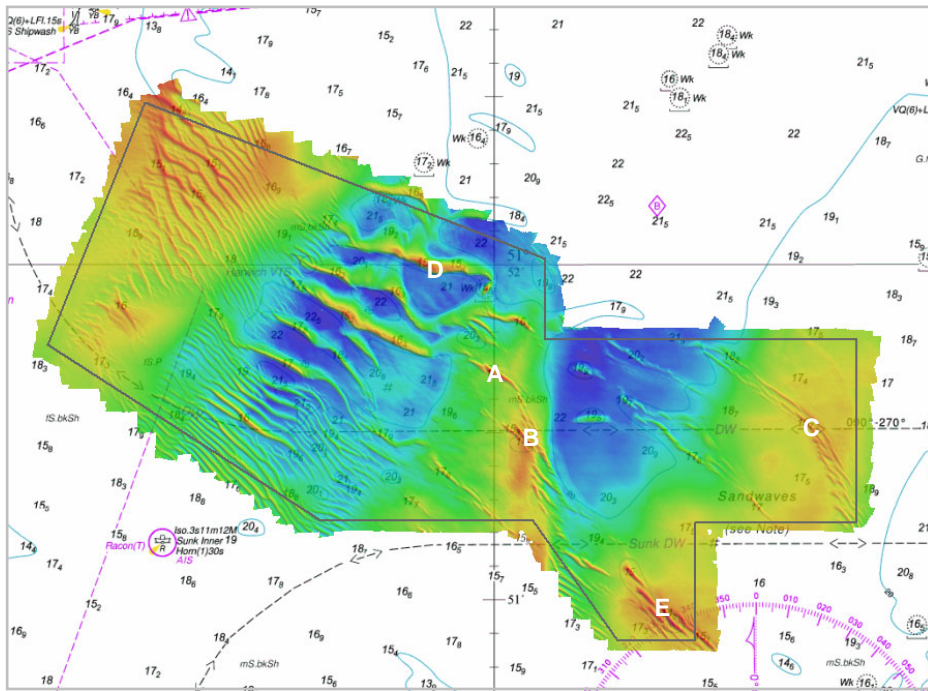


Figure 1: Location of sandwave depth comparisons

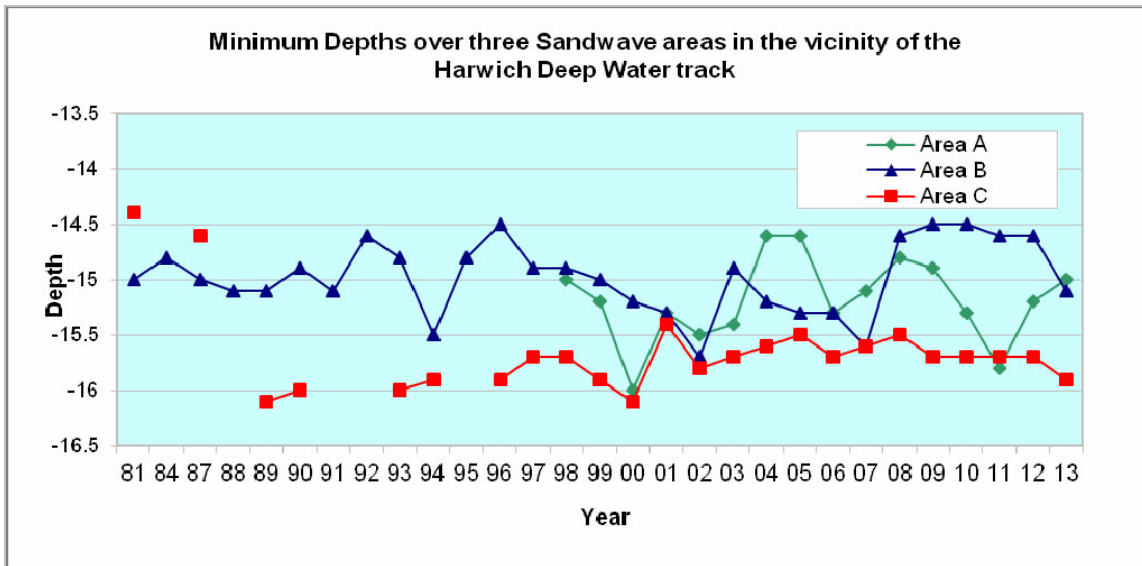


Figure 2: Minimum depths in areas A, B and C

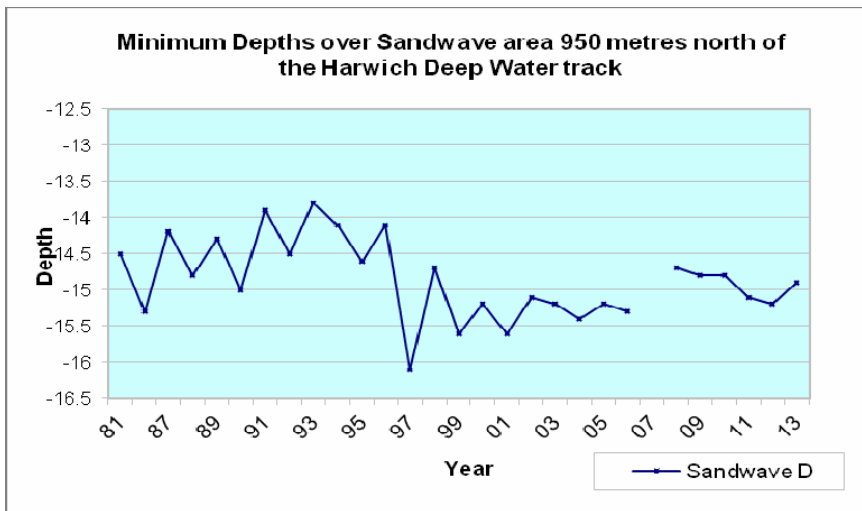


Figure 3: Minimum depths in area D

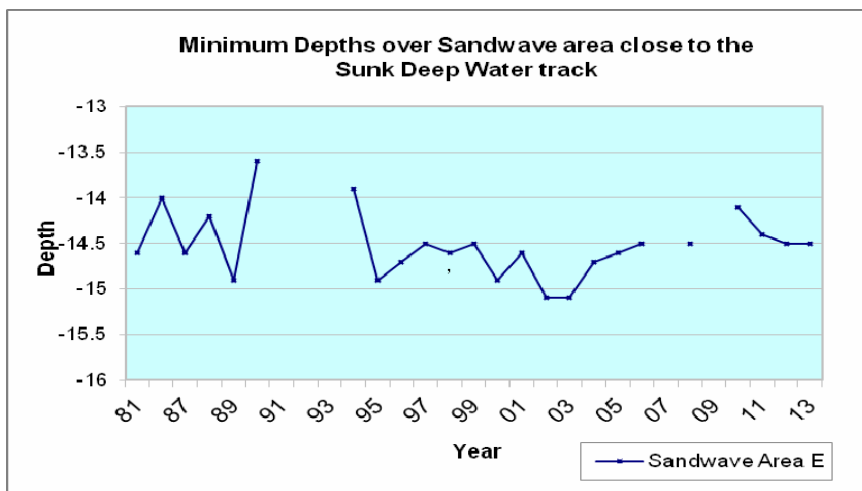


Figure 4: Minimum depths in area E

4.3 A surface difference plot of the 2012 and 2013 surveys shows extremely good agreement in featureless areas (see figure 5). Changes in the position of sandwaves are consistent with the long-term south-westerly migration of these features.

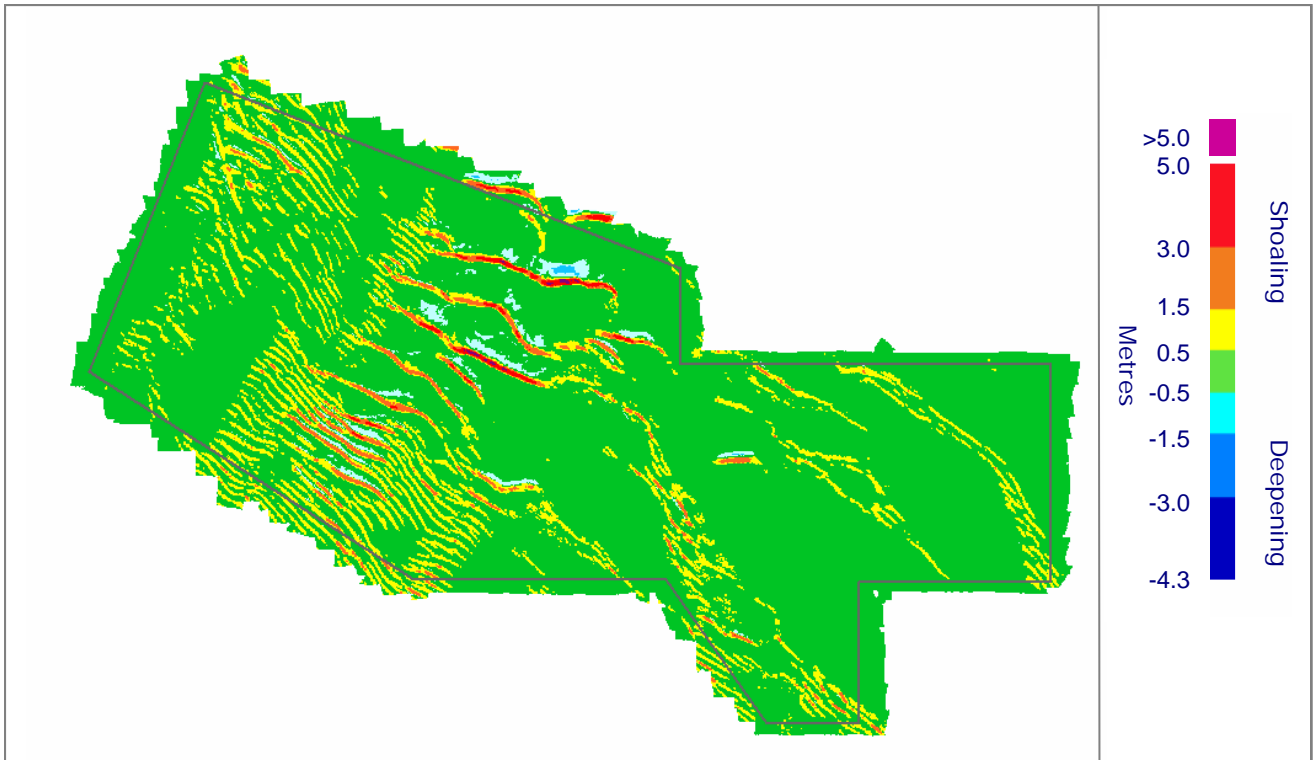


Figure 5: Surface difference between the 2012 and 2013 surveys

## 5 Implications for Shipping

- 5.1 The minimum depth of 15<sub>1</sub> along the Harwich Deep Water track is deeper than the previous survey and 14<sub>5</sub> to the south of the Sunk Deep Water track the same as that found in the 2012 survey and present no new concern to shipping, although a sandwave 250 metres south of the Sunk Deep Water track has shoaled by 54cm to 15 metres.

## 6 Recommendations

- 6.1 Due to the high volume of shipping using the area, the focused area should continue to be resurveyed annually under the programme.