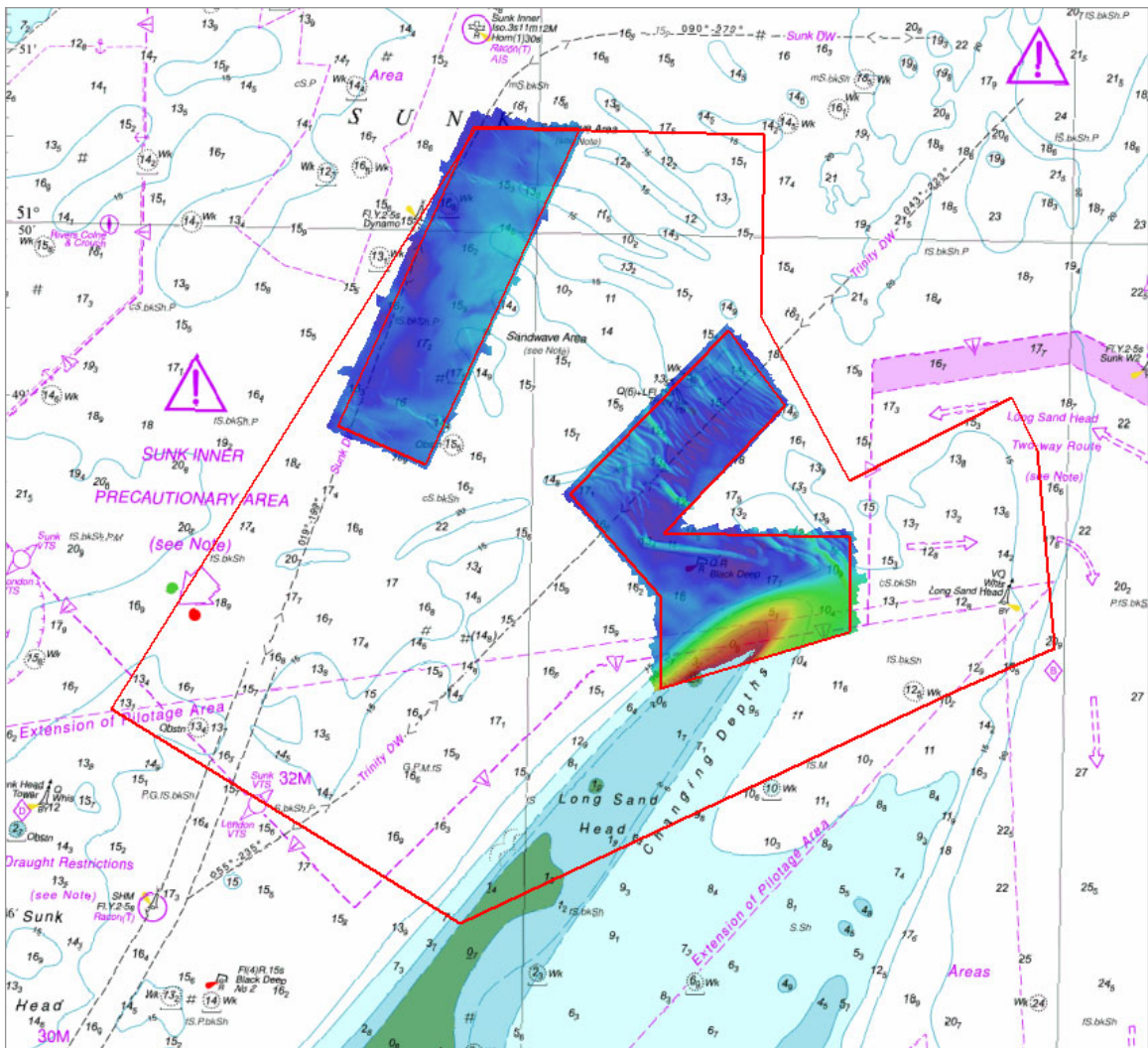




# THAMES ESTUARY LONG SAND HEAD

## SUMMARY ASSESSMENT ON THE ANALYSIS OF ROUTINE RESURVEY AREA TE5A FROM THE 2013 SURVEY



# THAMES ESTUARY

## LONG SAND HEAD

### Summary Assessment TE5A/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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## **LONG SAND HEAD, 2013**

### **1 Introduction**

- 1.1 TE5A is scheduled to be fully re-surveyed every 3 years; within the area, there are two focused sub-areas, which are surveyed annually (as shown on the front of this report). These focused areas concentrate on the areas of greatest concern, taking into account sediment mobility, depth of water and draught of shipping using the areas.
- 1.2 This summary report looks at the latest focused survey of TE5A and compares it against the previous survey. For more details on the area, including long-term changes, the more detailed report on the last full 3-year survey, conducted in 2012, should be consulted.

### **2 Description of the Area**

- 2.1 The two focused areas cover parts of the Sunk and Trinity Deep Water tracks and the northern edge of Long Sand Head.
- 2.2 Sandwaves within the Trinity area provide the controlling depths for vessels using the route as an approach to Black Deep. Shoal sandwaves also fall on or near the Sunk route, but do not currently form the controlling depths. Long Sand Head has extended north-eastwards over recent years, requiring the repositioning of Black Deep buoy.

### **3 Survey Data**

- 3.1 The 2012 survey was conducted from 10 October to 5 December, in conjunction with other areas. The 2013 survey was conducted from 29 October to 7 November, with both surveys experiencing days lost due to bad weather. 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 and Bathymetric Estimator) gridded surface. Agreement between the two surveys is very good away from mobile bedforms.

### **4 Changes since the 2012 Survey**

#### **Long Sand Head & Trinity Deep Water Track**

- 4.1 Differences between the 2012 and 2013 surveys are shown in the surface difference plot at [Annex A](#).
- 4.2 Over recent years, Long Sand Head has undergone significant expansion, and this trend has continued albeit at a reduced rate. Between the 2012 and 2013 surveys, the 10 metre contour has extended around 145 metres north-eastwards as shown in [Annex B](#). The rate of expansion is less than the 300 m/yr average seen over the previous 4 years and more eastwards in nature, indicating that the northern extension of Long Sand Head may be reaching its maximum.
- 4.3 Away from Long Sand Head, minimum depths over sandwaves are broadly similar to the 2012 survey.

## Sunk Deep Water Track

- 4.4 Differences between the 2012 and 2013 surveys are shown in the surface difference plot at [Annex A](#).
- 4.5 A sandwave extending into the Sunk focused area has produced the controlling depth along the Sunk Deep Water route in the past. As shown in figure 1, the minimum depth shoaled to 12.2 metres in 2005, but has since deepened to 14.0 metres. Five hundred metres to the south of this, a sandwave has shoaled from 14.6 metres to 13.8 metres, as shown in figure 2, but both these sandwaves lie over 700 metre to the east of the revised sunk Deep Water track.

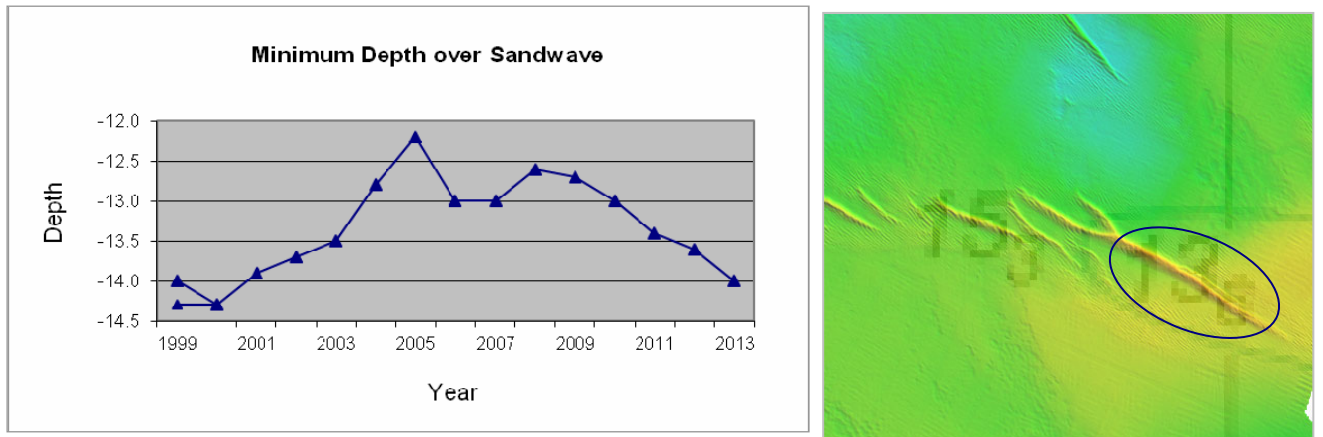


Fig 1: Changes to minimum depths over a shoal sandwave in the north of the area

- 4.6 Two depths of 15.7 metres are found over sandwaves close to the Sunk Deep Water track in the 2013 survey, as shown in figure 2; both these depths are slightly shallower than those found in the 2012 survey.

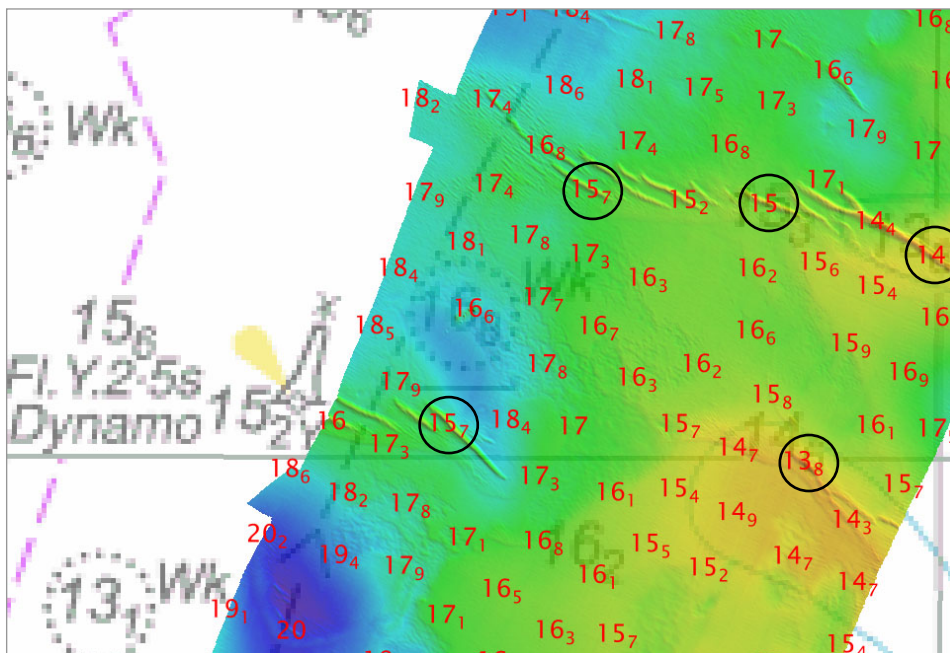


Fig 2: Selected depths from the 2013 survey in the north of the area

- 4.7 In the south of the area depths over sandwaves are generally slightly shallower than those found in the 2012 survey.

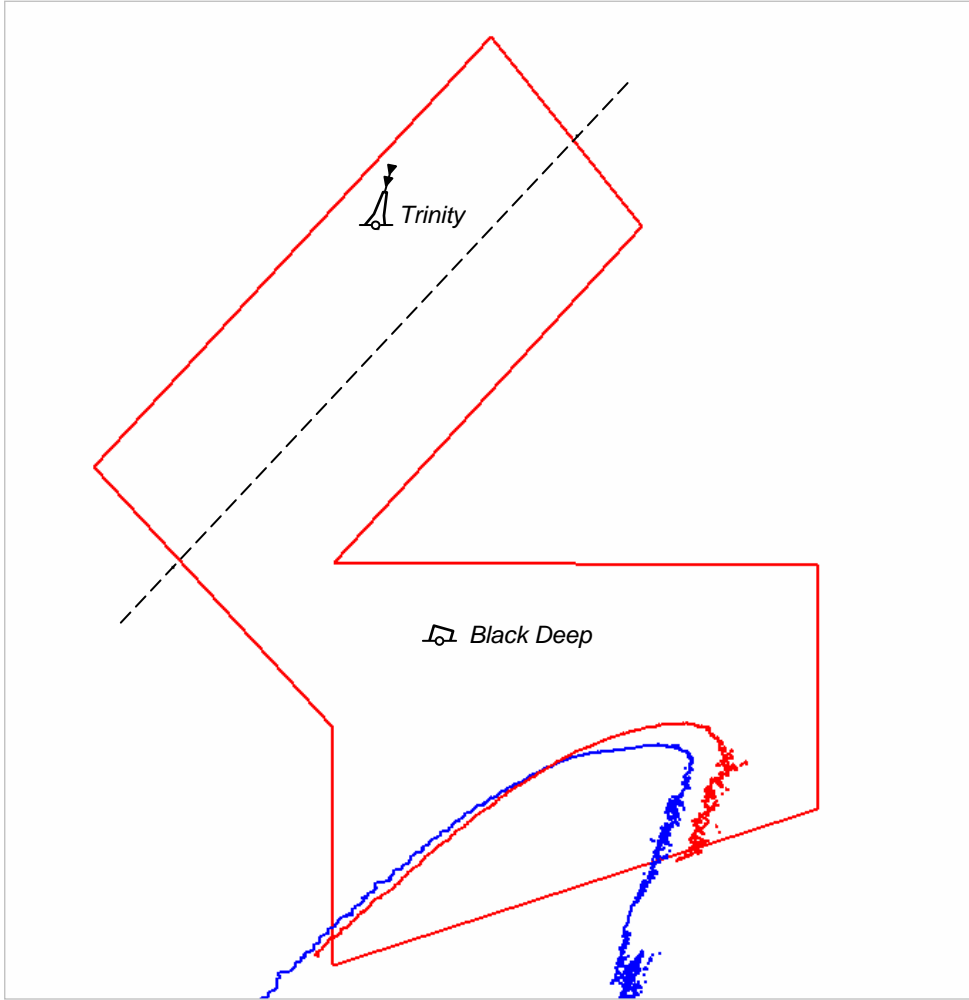
## **5 Recommendations**



- 5.1 Following analysis of the full 2012 survey of TE5A, the area was re-schemed and changes approved by the Civil Hydrography Working Group. Changes to the Sunk area reflected a realignment of the Sunk Deep Water track; changes to the Long Sand Head & Trinity Deep Water track area reflected shoaling to the northeast of Long Sand Head, as shown in Annex C.
- 5.2 It is recommended that these revised annual focused areas remain unchanged.



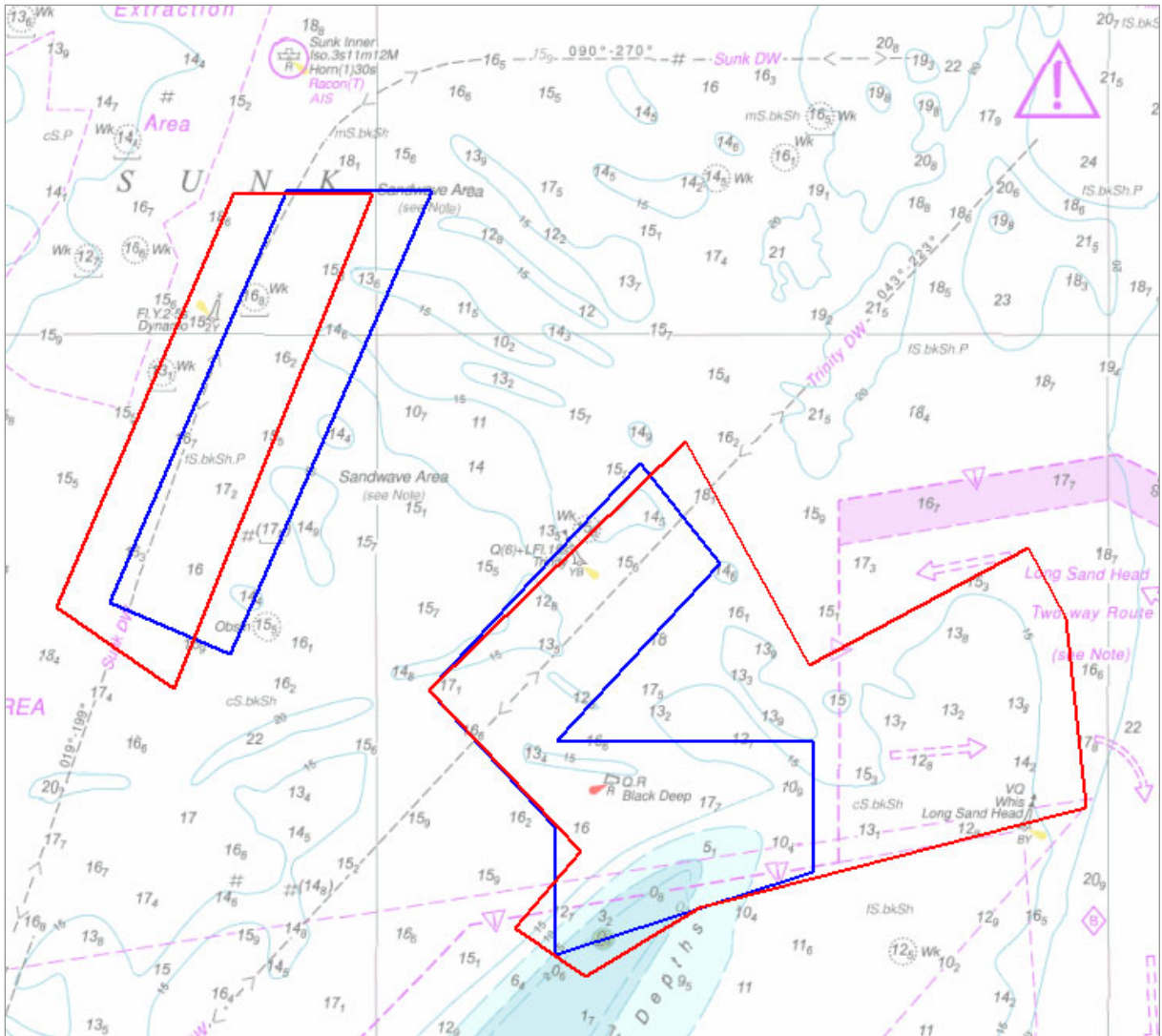




### LONG SAND HEAD 10 METRE CONTOUR COMPARISON



	2013
	2012

CHANGES TO THE FOCUSED ANNUAL LIMITS  
APPROVED BY THE CIVIL HYDROGRAPHY WORKING GROUP  
FOLLOWING ANALYSIS OF THE 2012 SURVEY



	Current approved Annual Focused Limits
	2013 Survey Limits