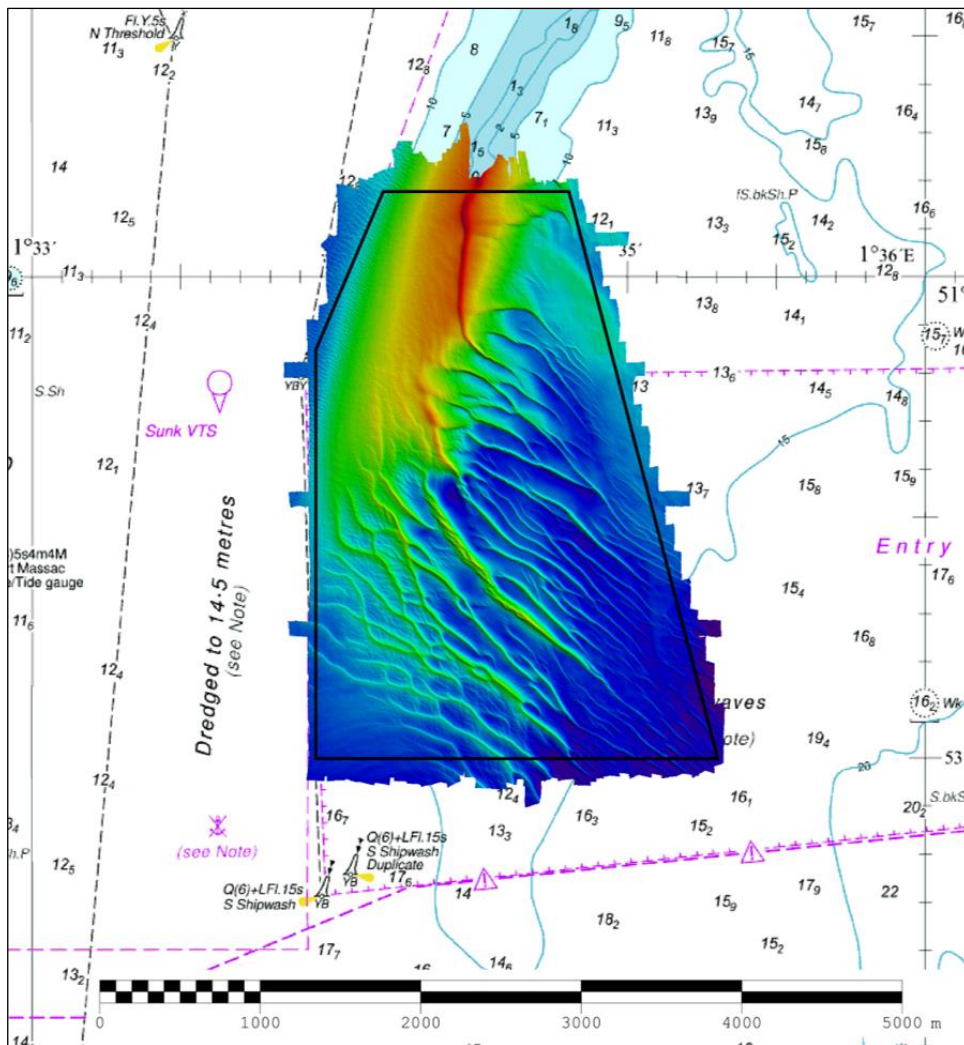




### THAMES ESTUARY SOUTH SHIP HEAD (TE3) 2020 ASSESSMENT

An assessment of the 2020 hydrographic survey of the area TE3: to monitor recent seabed movement; to identify any implications for shipping; and to make recommendations for future surveys.



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### Notes

This Assessment is produced by the UK Hydrographic Office (UKHO) for the Maritime and Coastguard Agency (MCA). Analysis of the Routine Resurvey Areas forms part of the Civil Hydrography Programme and the reports are made available to through the UKHO website and are presented to the Civil Hydrography Working Group. When approved, the recommendations are incorporated into the Routine Resurvey Programme. The report is governed by a Memorandum of Understanding between the DfT (including the MCA) and the MOD (including the UKHO).

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No analysis of shipping traffic has been included within this report due to no AIS data being supplied by MCA.

All depths are to Chart Datum, defined using the UKHO VORF Model.

# SOUTH SHIP HEAD, 2020

## 1. SUMMARY

### Changes Detected

1.1 There has been a 100m migration of the crest of the bank eastward and a decrease in the shoalest depth of the ridge of 1.3m. There has been little change in position of the main body of South Ship Head.

### Reasons for Continuing to Resurvey the Area

1.2 Due to its proximity to the busy approach into the Harwich Deep Water Channel, South Ship Head requires periodic resurveying. However, the bank falls outside the heavily trafficked area, which is covered by area TE3A to the south.

### Recommendations

1.3 Given the short distance from Harwich Deep Water Channel and the continued movement of South Ship Head, TE3 should remain on the 6-year survey interval.

1.4 The current extents of TE3 adequately covers the region of variable depths adjacent to the dredged channel, no adjustments are required.

## 2. LOCATION

2.1 Survey interval at time of resurvey: 6 years

2.2 Area Covered: 2.7 km<sup>2</sup>

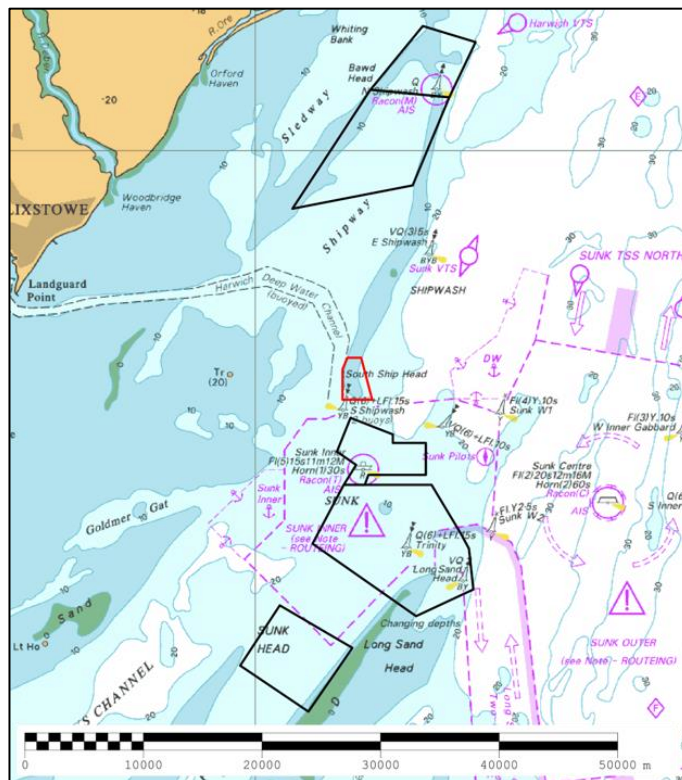


Figure 1: 2020 Thames Estuary Routine Resurvey areas overlaid on BA Chart 1406 with area TE3 in red

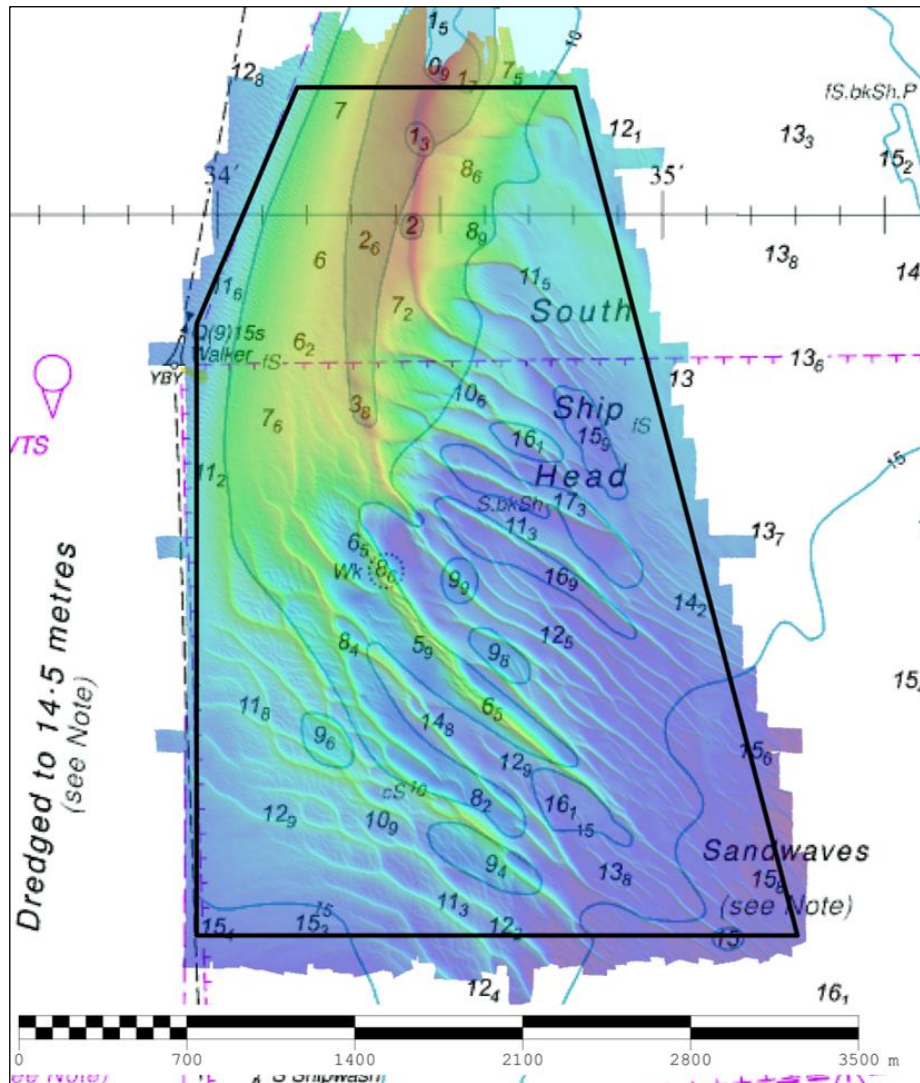


Figure 2: 2020 survey data overlaid on BA Chart 2692

### 3. REFERENCE SURVEY DETAIL

- 3.1 The previous survey was conducted in July 2014 as part of HI1459.
- 3.2 The Report of Survey for this survey is available upon request from the UKHO and the validated bathymetric surfaces are available to download from the Admiralty Marine Data Portal.

### 4. NEW SURVEY DETAIL

- 4.1 The latest survey of TE3 was conducted in September 2020 as HI1690.
- 4.2 The Report of Survey for this survey is available upon request from the UKHO and the validated bathymetric surfaces are available to download from the Admiralty Marine Data Portal.



## 5. DESCRIPTION OF RECENT BATHYMETRIC CHANGE

- 5.1 The difference surface in Figure 3 shows the changes in depths between the 2014 and 2020 surveys. It shows the migration of South Ship Head eastward and the movement of the surrounding sandwaves perpendicular to the main bank.
- 5.2 The depth plot in Figure 4 shows that the shoal depth in the 2020 survey is 1.3m, the shoalest depth in 2014 was 2.6m located further south along the ridge of the bank, indicating a shoaling of 1.3m. There is a decrease in depth along the western edge of the survey area alongside the dredged channel identified in Figure 4 which can also be identified in the difference surface, Figure 3, and the 10m contour, Figure 6.
- 5.3 The bank's main ridge has migrated up to 100m eastward, however the southern tip's depths remain unchanged as seen in the 5m contours in Figure 5. There is little change in the bulk of the bank as seen in the 10m contour, Figure 6.

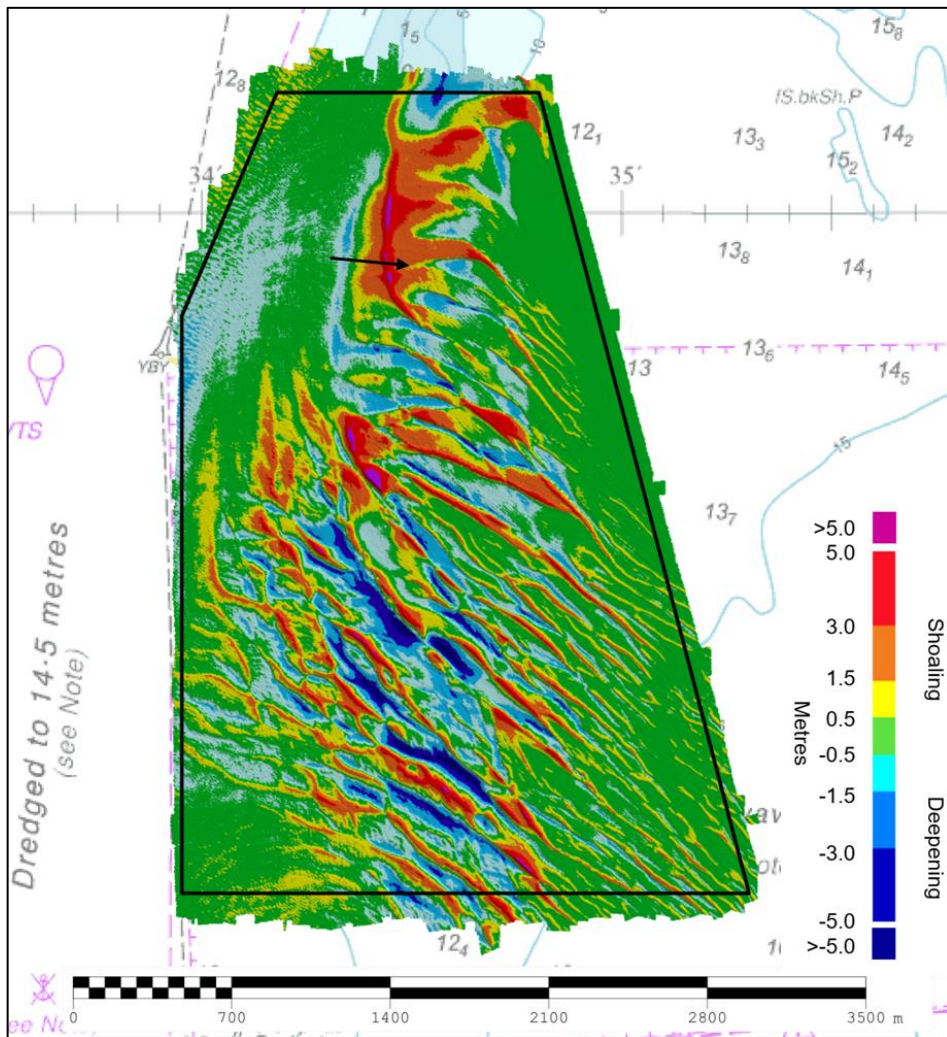


Figure 3: Difference surface showing bathymetric changes between the 2020 and 2014 surveys overlaid on BA Chart 2692 (Black arrow represents bank migration since 2014 survey)

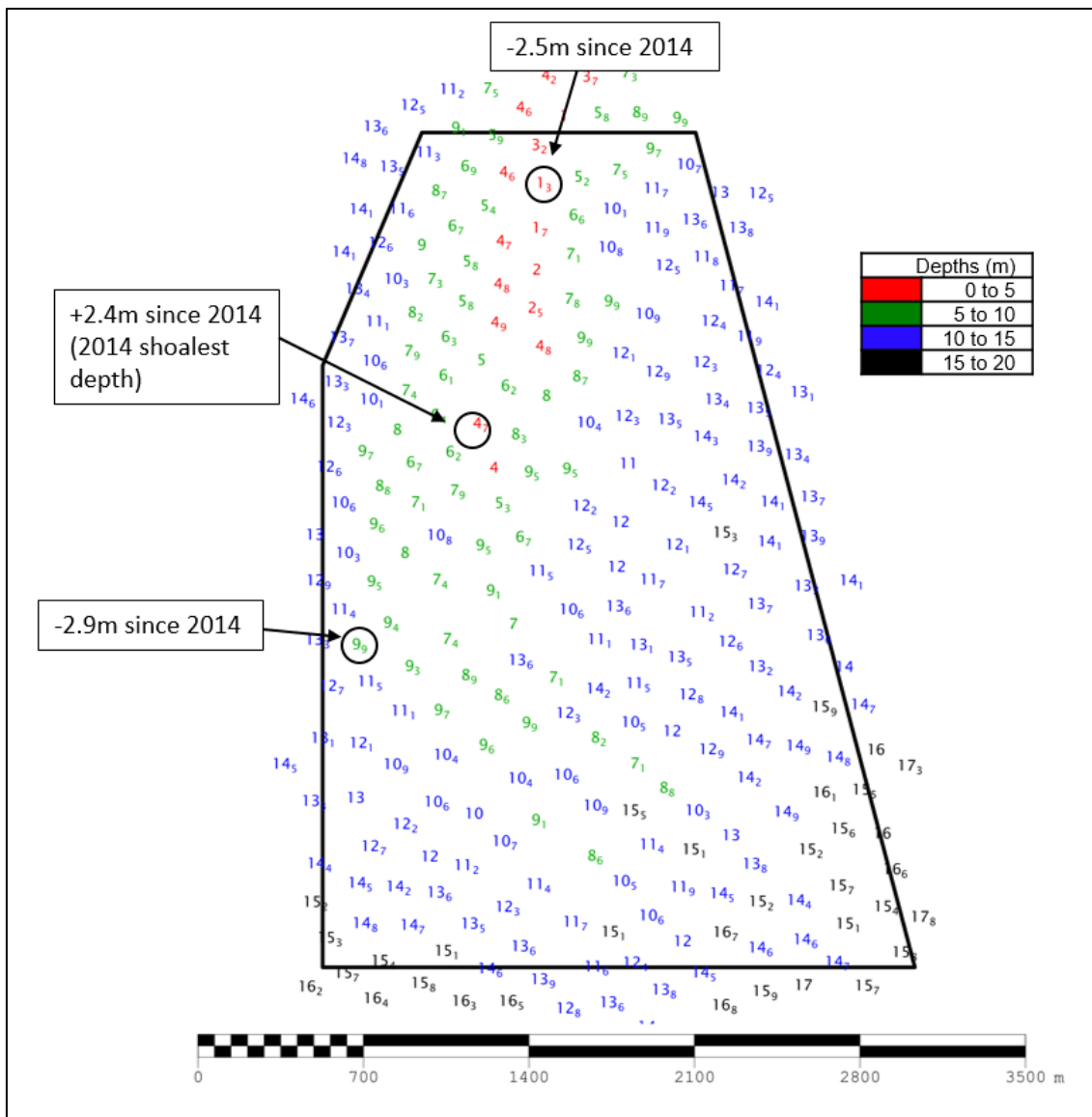
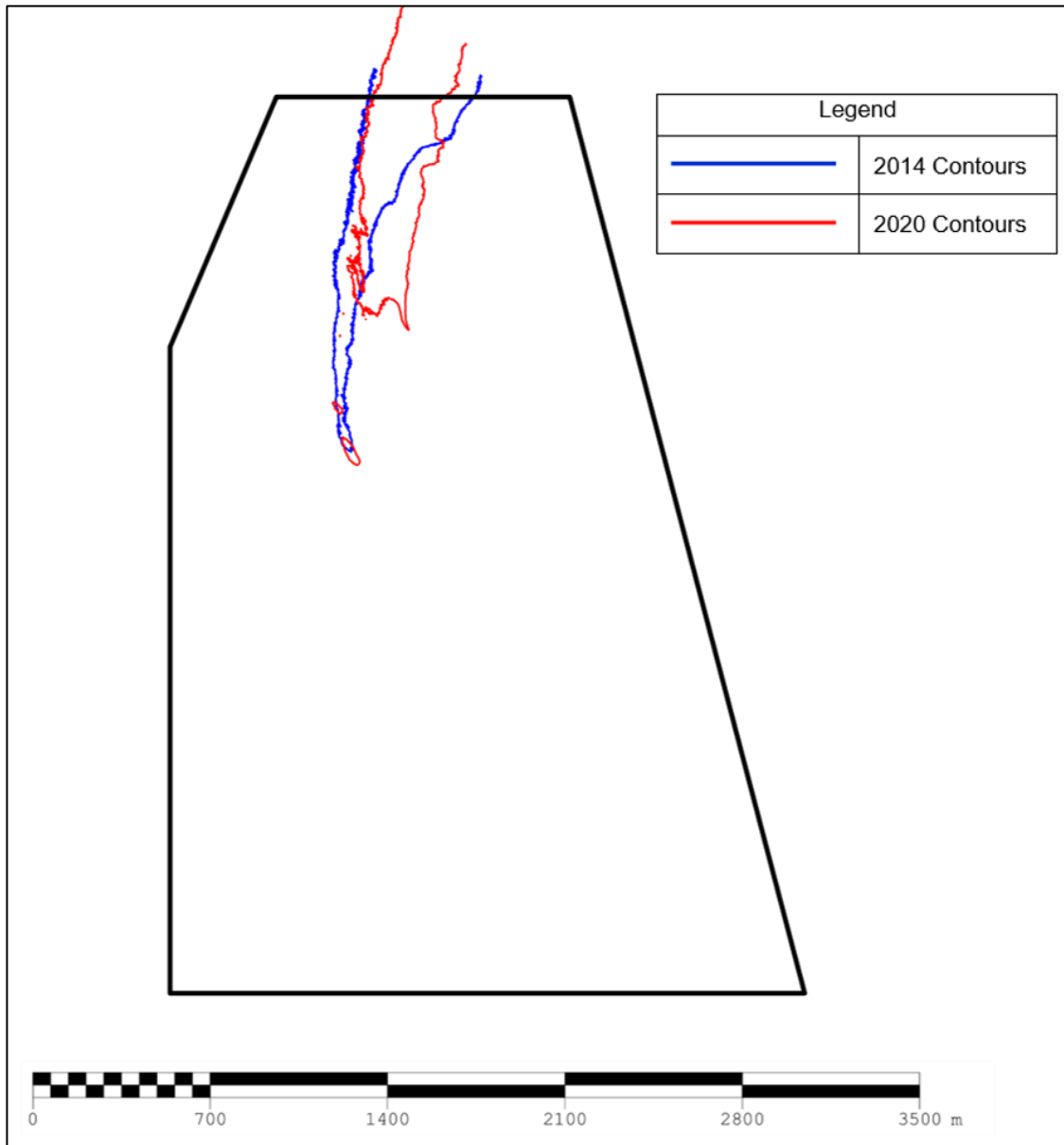


Figure 4: Colour banded depth plot from the 2020 survey with selected depth changes since the 2014 survey. Positive values (+) represent deepening. Negative values (-) represent shoaling.



*Figure 5: 5m contours from the 2014 and 2020 surveys.*

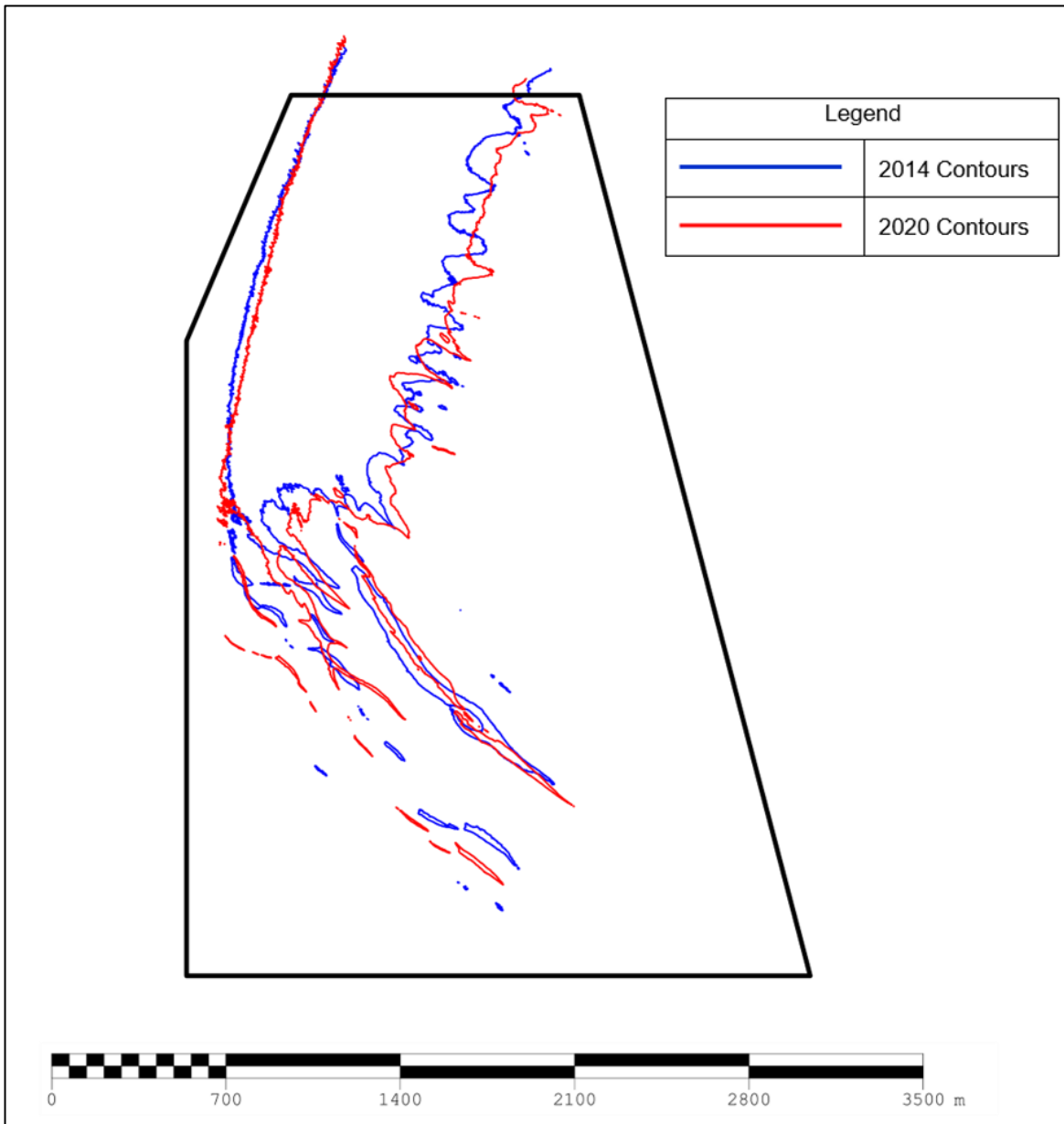


Figure 6: 10m contours from the 2014 and 2020 surveys.

## 6. RECOMMENDATIONS FOR FUTURE SURVEYS

### Survey Interval

6.1 Given the proximity to Harwich Deep Water Channel and the continued movement of South Ship Head, TE3 should remain on the 6-year survey interval.

### Survey Area

6.2 The current extents of TE3 adequately covers the region of variable depths adjacent to the dredged channel, no adjustments are required.