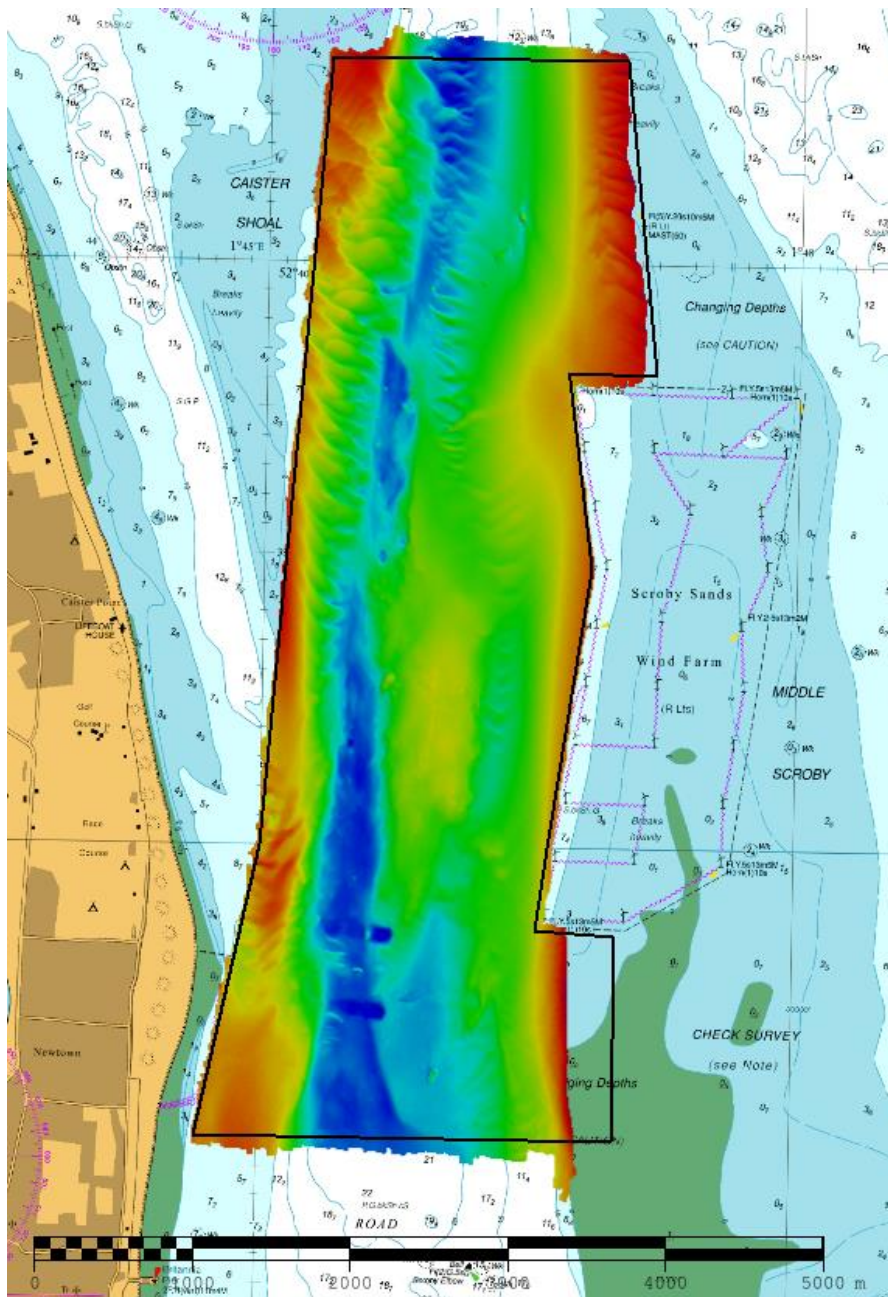




UK Hydrographic  
Office

## EAST ANGLIA EA4 – CAISTER ROAD 2017 ASSESSMENT

An assessment of the 2017 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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### 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 Department for Transport (including the MCA) and the Ministry of Defence (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 local chart datum, defined using the UKHO VORF Model.

## **EA4 – CAISTER ROAD, 2017**

### **1. SUMMARY**

#### **Changes Detected**

- 1.1 The west side of Middle Scroby is moving west, encroaching into Caister Road.
- 1.2 North Scroby is moving east, 10m contour has moved 140m since 2005, 40m of which was since 2014.
- 1.3 Bedforms in the north-west of Caister Road, part of the eastern side of Caister Shoal, have moved, but general seabed depth has not changed.
- 1.4 The north end of Caister Shoal is migrating into Caister Road (also seen in report EA3/2017) with the 10m contour moving approximately 100m East since 2014.

#### **Reasons for Continuing to Resurvey the Area**

- 1.5 Depths in the area remain mobile and potentially hazardous vessels with a draught of 3m or more navigating the area and therefore require continued monitoring through 12-year resurveys, with focused areas every 3-year.

#### **Recommendations**

- 1.6 The Main survey area of EA4 and the focused area EA4b adequately cover mobile areas so do not require updating at this time.
- 1.7 Focused area EA4a needs to be revised, the Northern end of the area requires adjusting to the East to follow the movement of Caister Shoal into Caister Road.

### **2. LOCATION**

- 2.1 Survey interval at time of resurvey: 12-years full area, 3-years focused.
- 2.2 Area Covered:
  - 2.2.1 Full area: 13.98 km<sup>2</sup>.
  - 2.2.2 Focused area EA4a: 2.13 km<sup>2</sup>
  - 2.2.3 Focused area EA4b: 2.07 km<sup>2</sup>

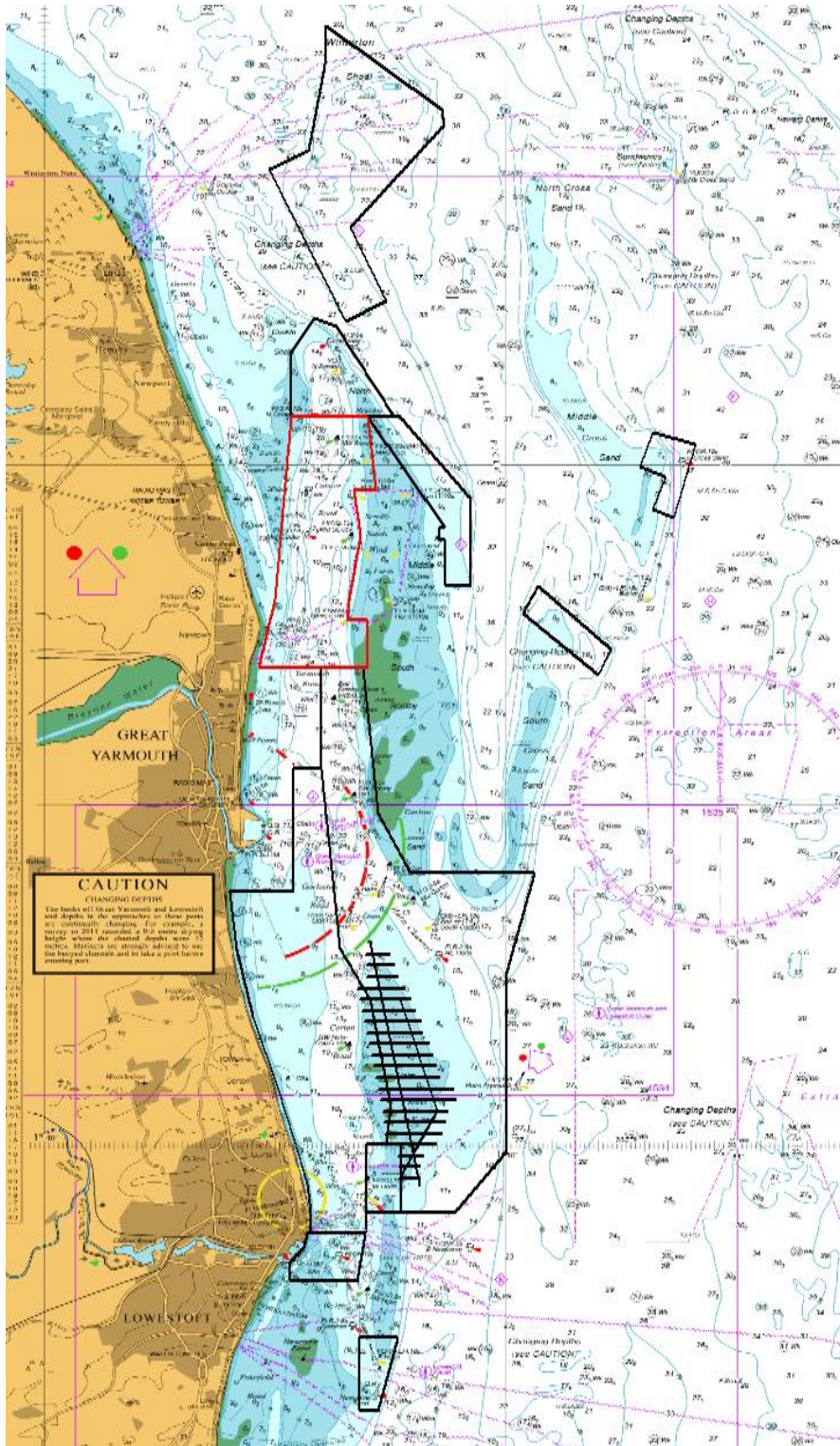


Figure 1 – 2017 East Anglia RRS areas overlaid on BA 1543 with EA4 shown in Red

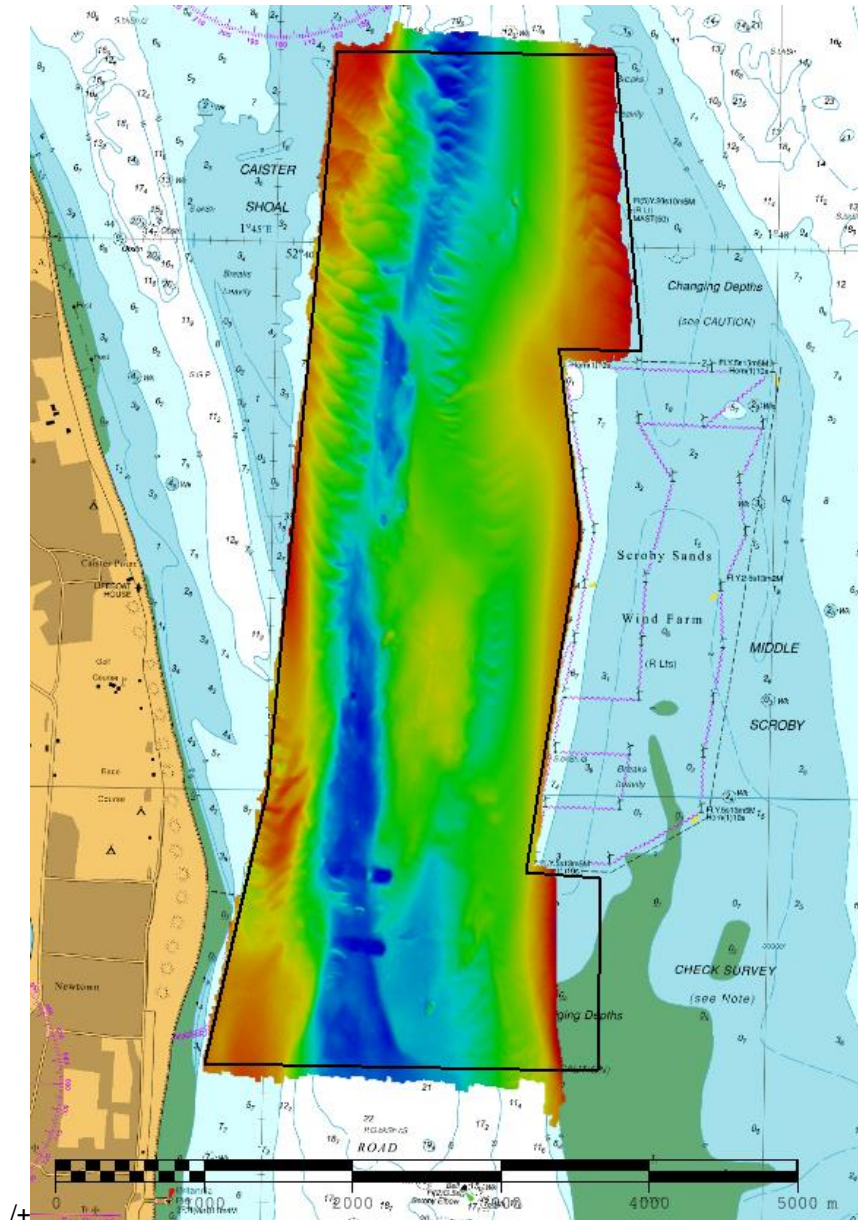


Figure 2 – 2017 survey data sun-illuminated view overlaid on BA Chart 1534

### 3. REFERENCE SURVEY DETAIL

- 3.1 Previous focused survey conducted in June and August of 2014 as part of HI1458 and previous full survey conducted in April 2005 as part of HI1110.
- 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 INSPIRE portal and MEDIN Bathymetry Data Archive Centre.

### 4. COMPARISON SURVEY DETAIL

- 4.1 Full survey was conducted in July and September to November of 2017 as part of HI1545.
- 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 INSPIRE portal and MEDIN Bathymetry Data Archive Centre.

## **5. DESCRIPTION OF RECENT BATHYMETRIC CHANGE**

- 5.1 The controlling depth in the 2017 survey is an obstruction of 10.4m (Figure 3) in the centre of Caister Road channel. There are shoal depths of 1.6m meters on North Scroby with a similar shoal depth of 1.8m on Middle Scroby.
- 5.2 The difference plot between the 2014 and 2017 surveys (figure 4) shows shoaling depths on the western side of Middle Scroby where it is moving west.
- 5.3 There is also shoaling on the eastern edge of Caister Shoal at both the north and south ends.
- 5.4 Changing bedforms on the east of Caister shoal can also be seen, but with no change in general depth.
- 5.5 The difference plot between the 2005 and 2017 surveys (Figure 5) shows similar movements on the east and west of Caister Road, and a shoaling in the north of the channel, but there is generally very little change to depths in the channel further south.

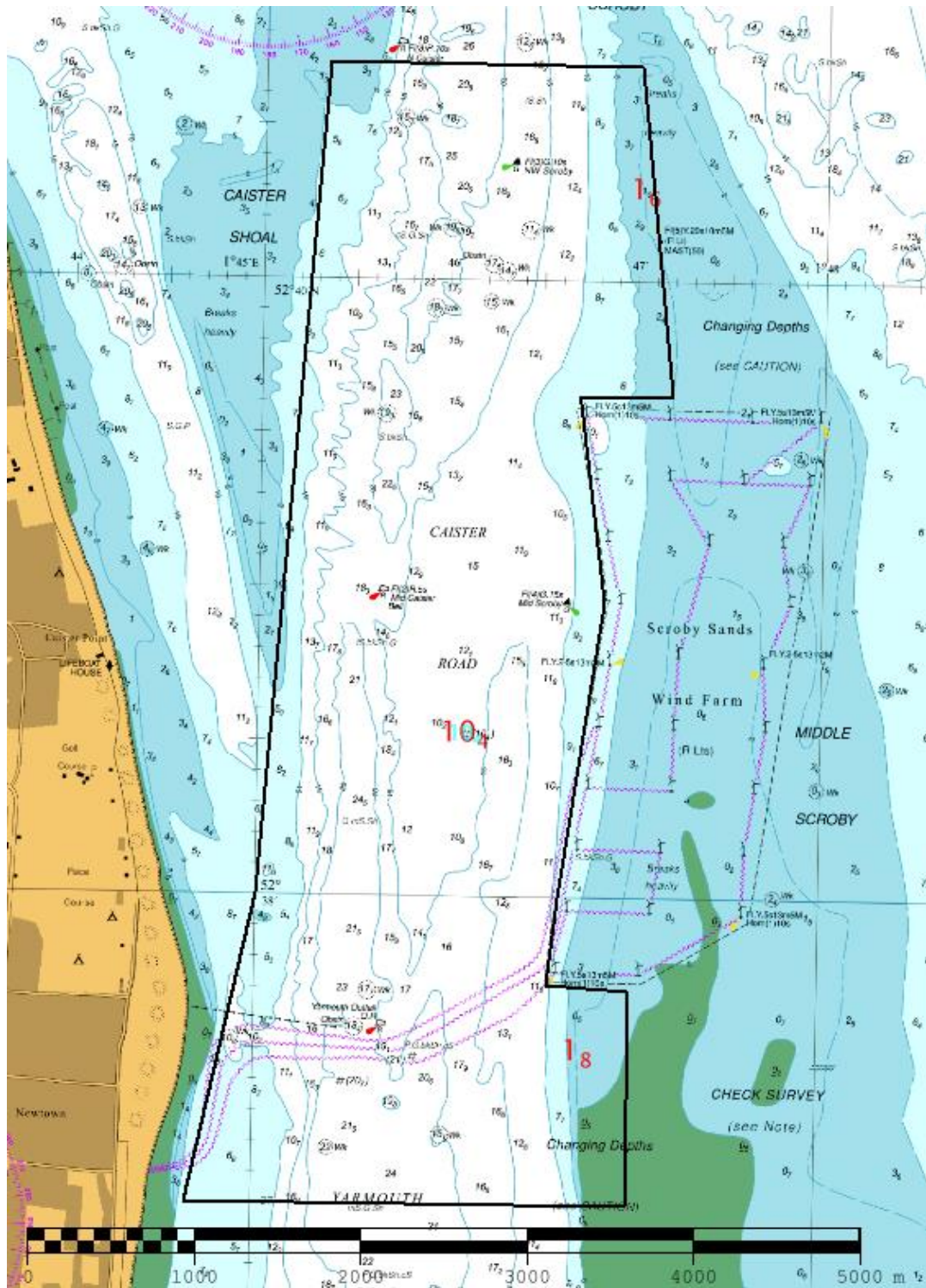


Figure 3 Controlling depths from 2017 survey (shown in red) overlaid on BA Chart 1534

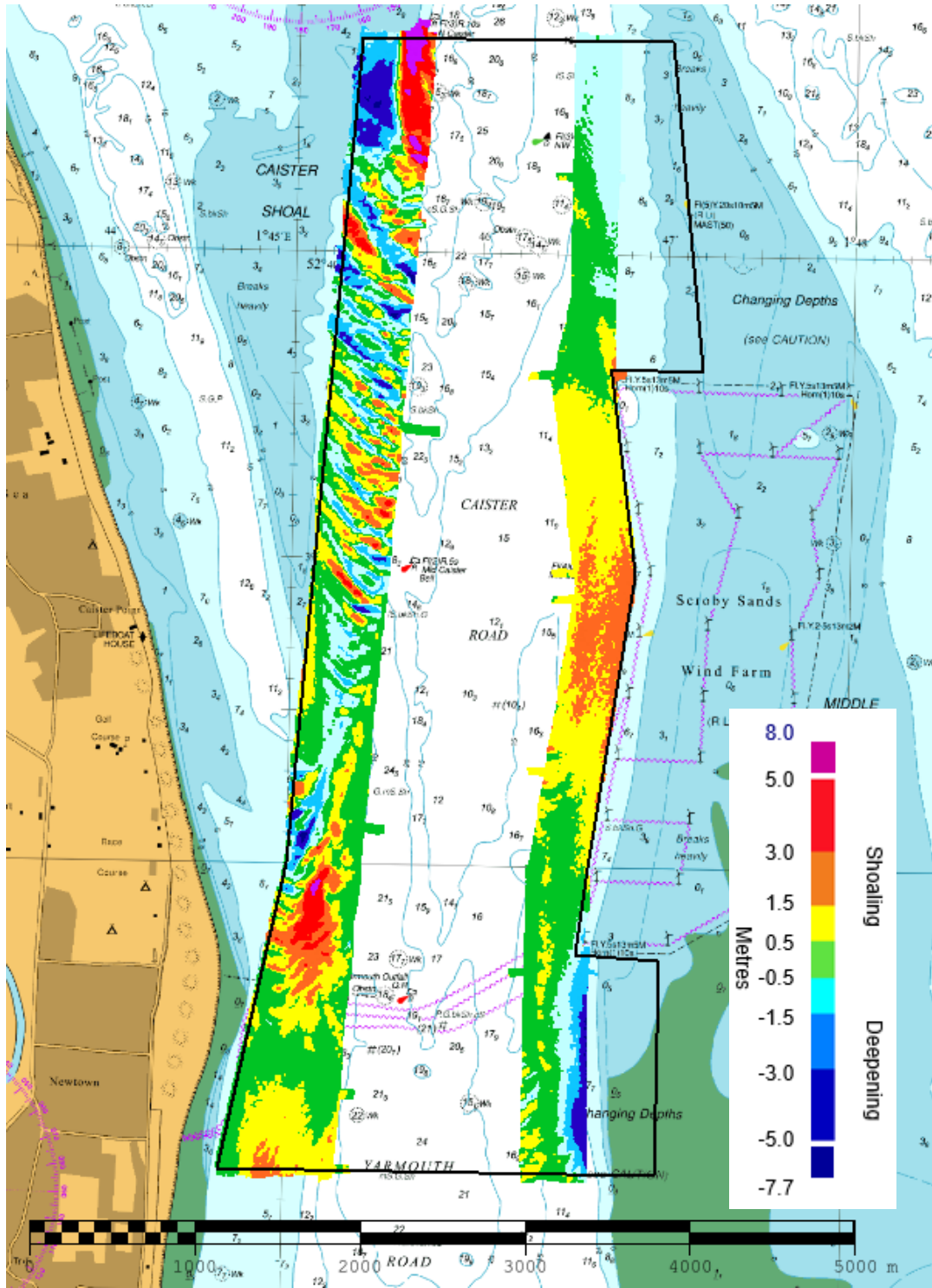


Figure 4 Difference plot 2014 focused survey vs 2017 survey overlaid on BA Chart 1534



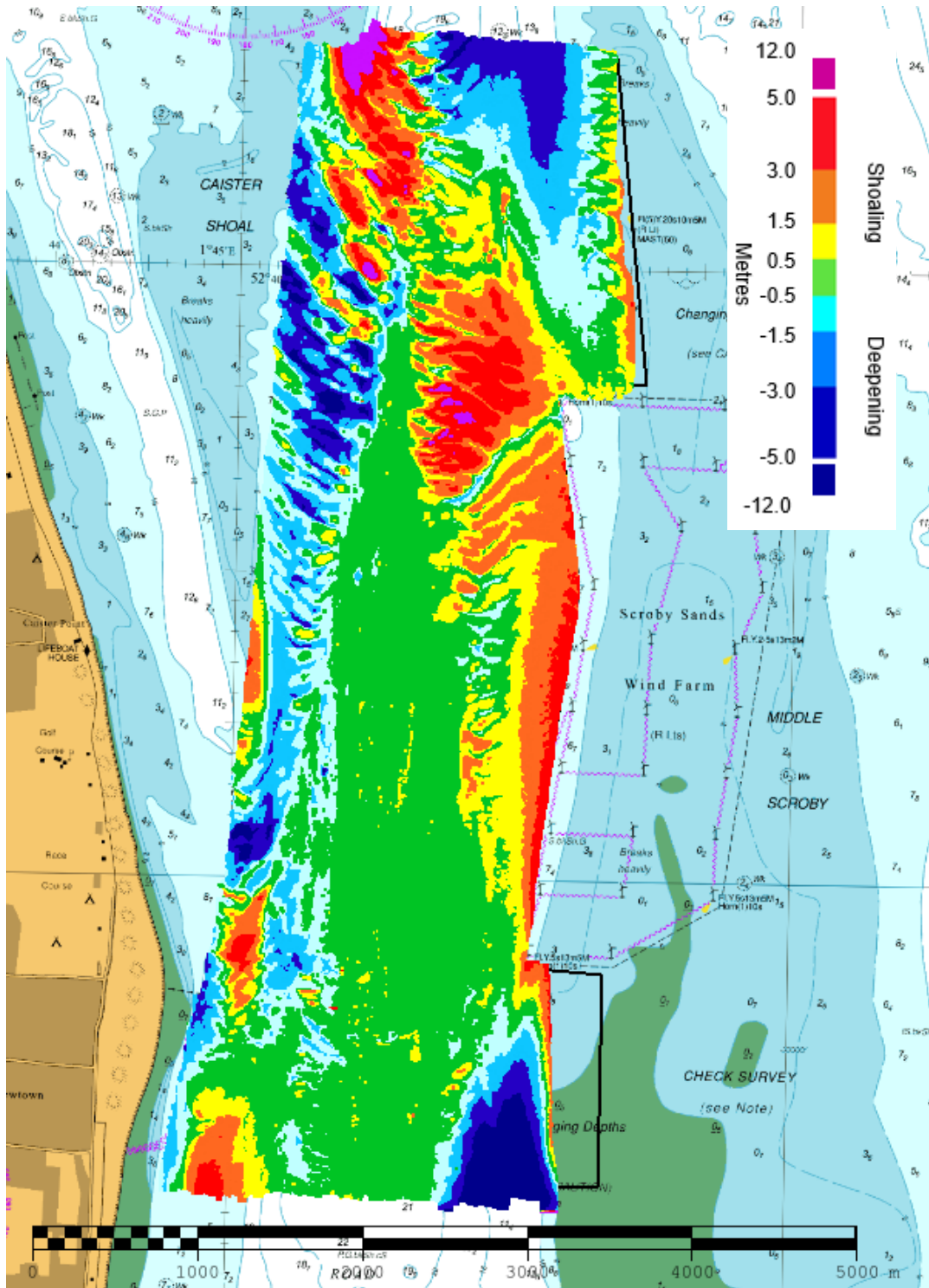
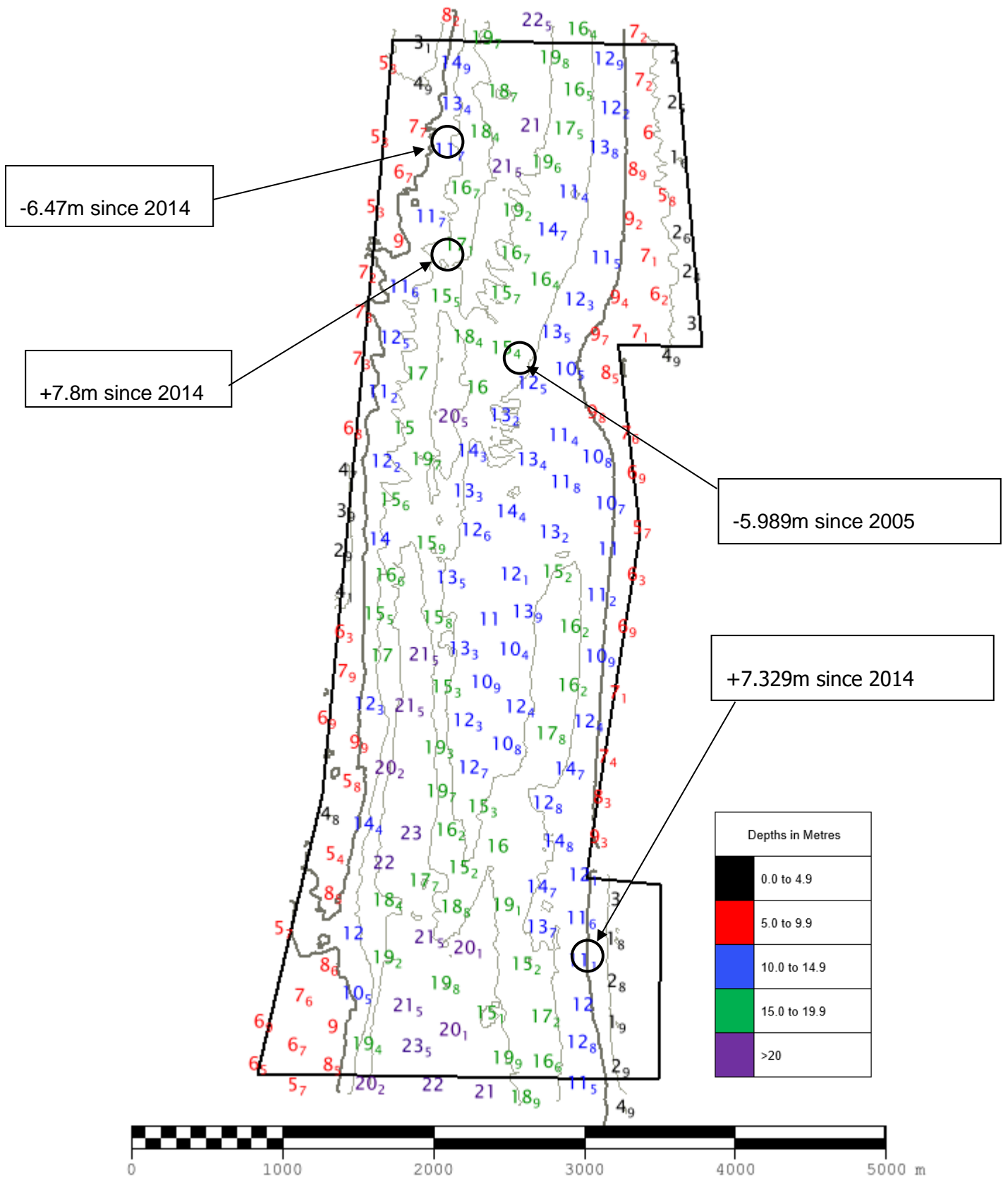


Figure 5 Difference plot 2005 vs 2017 survey overlaid on BA Chart 1534



Positive values (+) represent deepening. Negative values (-) represent seabed depths becoming shallower.

Figure 6 – Colour Banded Depth Plot from the 2017 Survey with selected depth changes since the 2014 and 2005 survey

## 6. RECOMMENDATIONS FOR FUTURE SURVEYS

### Survey Interval

6.1 The seabed remains mobile in these areas, which could potentially have an impact on shipping so the 12-year full area and 3-year focused area intervals can continue.

### Survey Area

6.2 Due to the encroaching sediment from Caister Shoal into the north end of Caister Road the focused survey area EA4a should be adjusted; with the north end moving east to follow the movement of Caister Shoal.

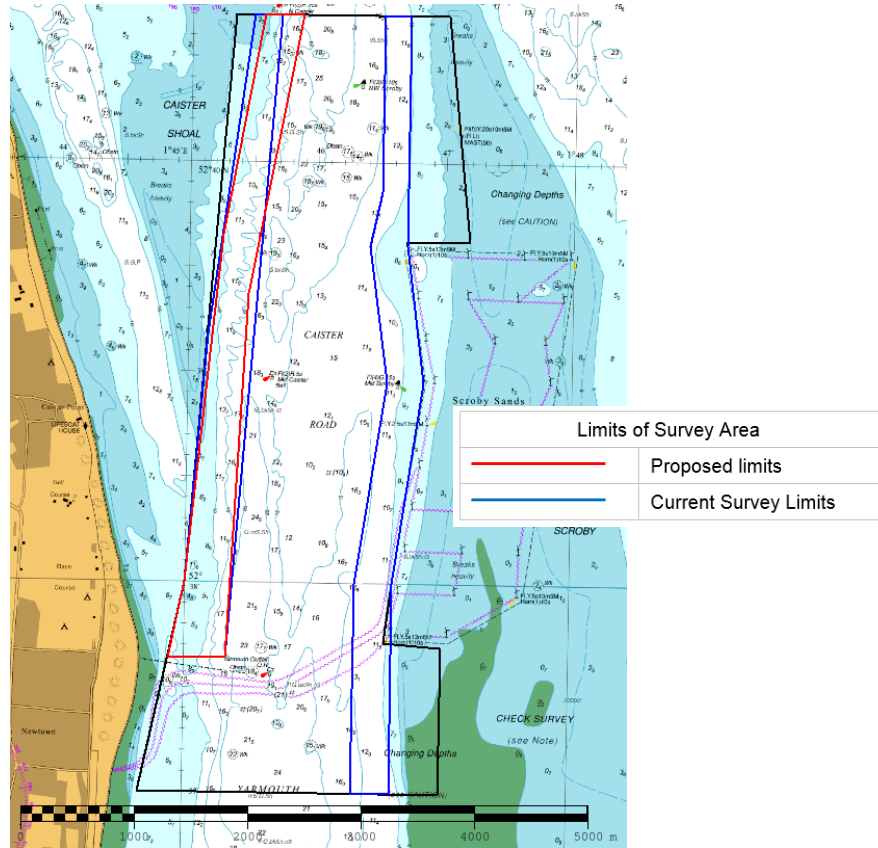


Figure 6 – Proposed survey limits of area EA4a (current limits given in Blue; future limits given in red; full area given in Black)

The WGS'84 coordinates of the recommended adjusted survey area limits for the 3-year focused area EA4a are shown below:

Revised EA4a total area: 1.98 km<sup>2</sup>

A	52.62734	1.75536
B	52.62726	1.74803
C	52.63335	1.75000
D	52.66085	1.75429
E	52.67833	1.75936
F	52.67833	1.76442
G	52.65615	1.75776