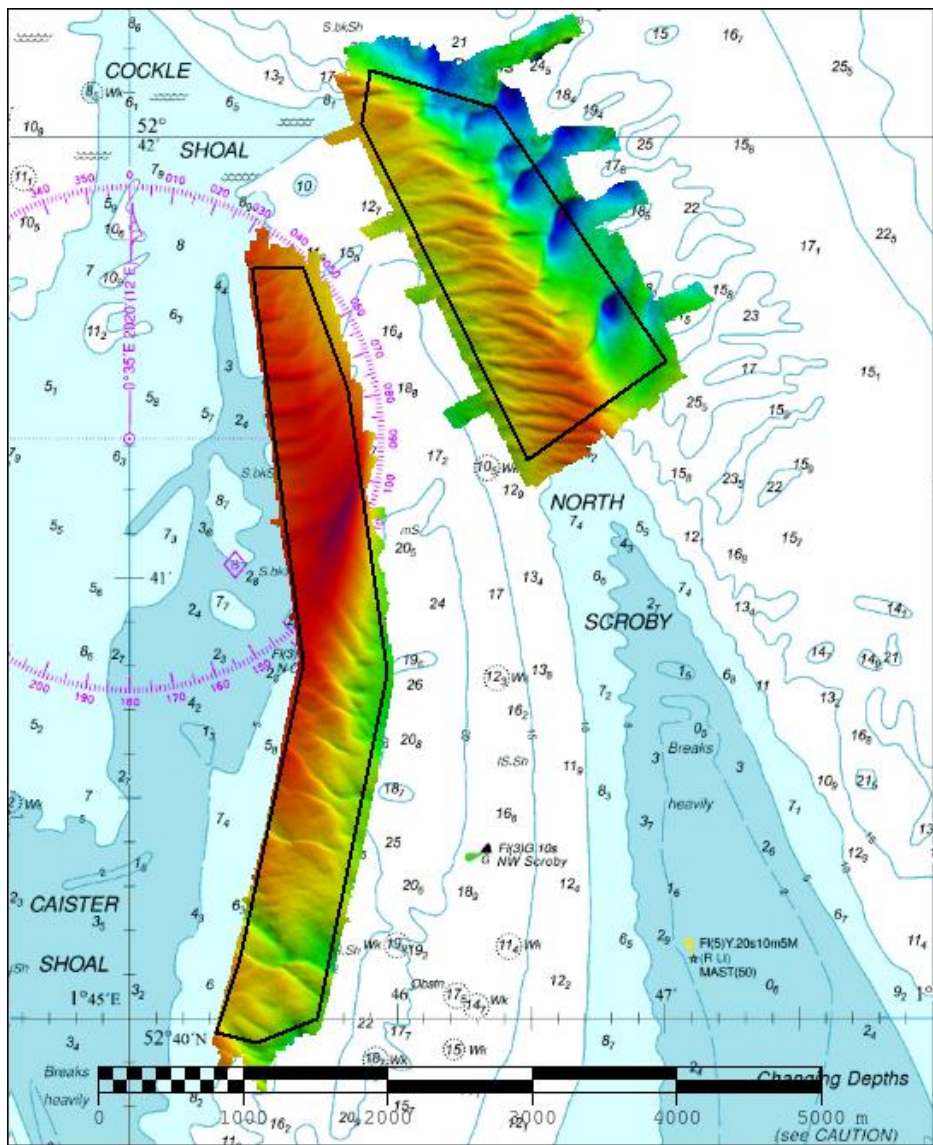




EAST ANGLIA EA3 A & B – COCKLE SHOAL 2021 ASSESSMENT

An assessment of the 2021 hydrographic survey of the areas EA3 A & B 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.

COCKLE SHOAL (EA3 A & B) FOCUSED 2021

1. SUMMARY

Changes Detected

- 1.1 Caister Shoal continues to migrate eastwards, consistent with historical trends with shoaling in the northern edge of EA3A by up to 8.2m since 2020.
- 1.2 Some stability in the central section of EA3A in the vicinity of N. Caister buoy.
- 1.3 Some deepening in the southern section of EA3A.
- 1.4 Significant changes in the north-eastern edge of EA3B since 2020, due to continued migration of sandwaves in a south-easterly direction.
- 1.5 The 9.6m shoal patch between Hemsby buoy and N. Scroby buoy has moved north-westwards by 60m.
- 1.6 The 9.8m shoal patch close eastwards of Hemsby buoy is no longer present. There is now a depth of 10.1m immediately SE of Hemsby buoy.

Reasons for Continuing to Resurvey the Area

- 1.7 Depths in both areas remain potentially hazardous and highly changeable in sections of the survey areas and therefore require continued monitoring through annual resurveys.

Recommendations

- 1.8 Given the location of the and the significant changes in sections of the survey areas, EA3A and EA3B should remain on the annual survey interval.
- 1.9 Due to the migration of Caister Shoal in an easterly direction, the northern section of EA3A survey area should be extended further east.

2. LOCATION

- 2.1 Survey interval at time of resurvey: 3 years (The full EA3 area is surveyed every 3 years with two annual focused areas covering EA3A and EA3B).
- 2.2 Area Covered: 2.0 km²

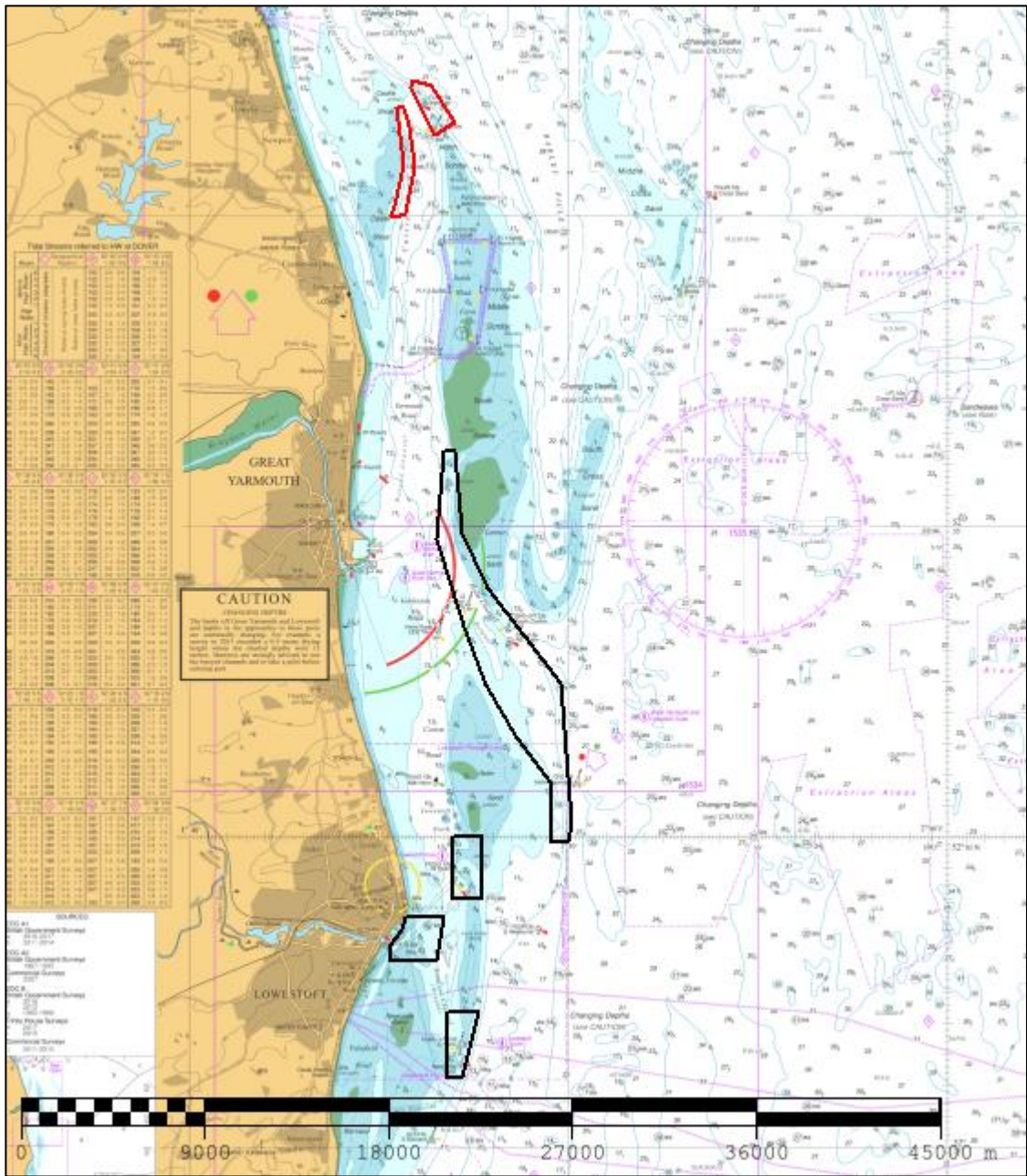


Figure 1: 2021 East Anglia RRS areas overlaid on BA1543 and BA106 with EA3a and EA3b in red

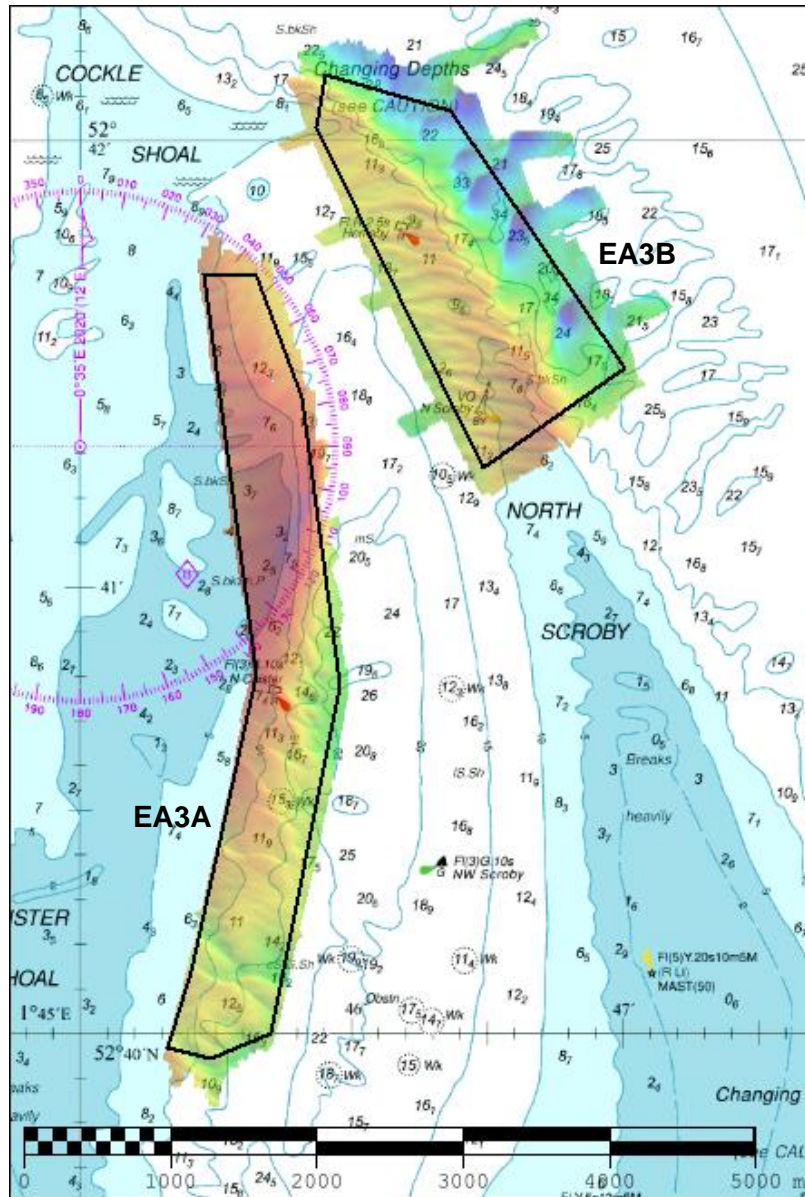


Figure 2: 2021 survey data overlaid on BA Chart 1534

3. REFERENCE SURVEY DETAIL

3.1 The previous focused surveys conducted within the Routine Resurvey Programme were conducted in June 2020 as part of HI1684 and HI1685. The previous focused surveys before that were conducted between September and October 2019 as part of HI1636 and HI1637. The previous focused surveys before that were conducted

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 Focused surveys were conducted in September and October as part of HI1736.

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 Significant depths within the northern section of area EA3A indicate the continued eastwards migration of the eastern edge of Caister Shoal.
- 5.2 No evidence of the 15.3m wreck charted in the southern section of area EA3A was found within the 2021 survey. A depth of 14.2m was found close eastward of the charted position of the wreck and a shoaler depth of 12.4m was found approximately 85m north of the wreck's charted position (See Figure 3).
- 5.3 In area EA3B the controlling depth of 11.3m 275m north-westwards of Hemsby buoy is unchanged. The 9.6m shoal patch between Hemsby buoy and N. Scroby buoy has moved north-westwards by 60m. The 9.8m patch close eastwards of Hemsby buoy is no longer present but there is now a new depth of 10.1m close south eastwards of Hemsby buoy (See Figure 3).

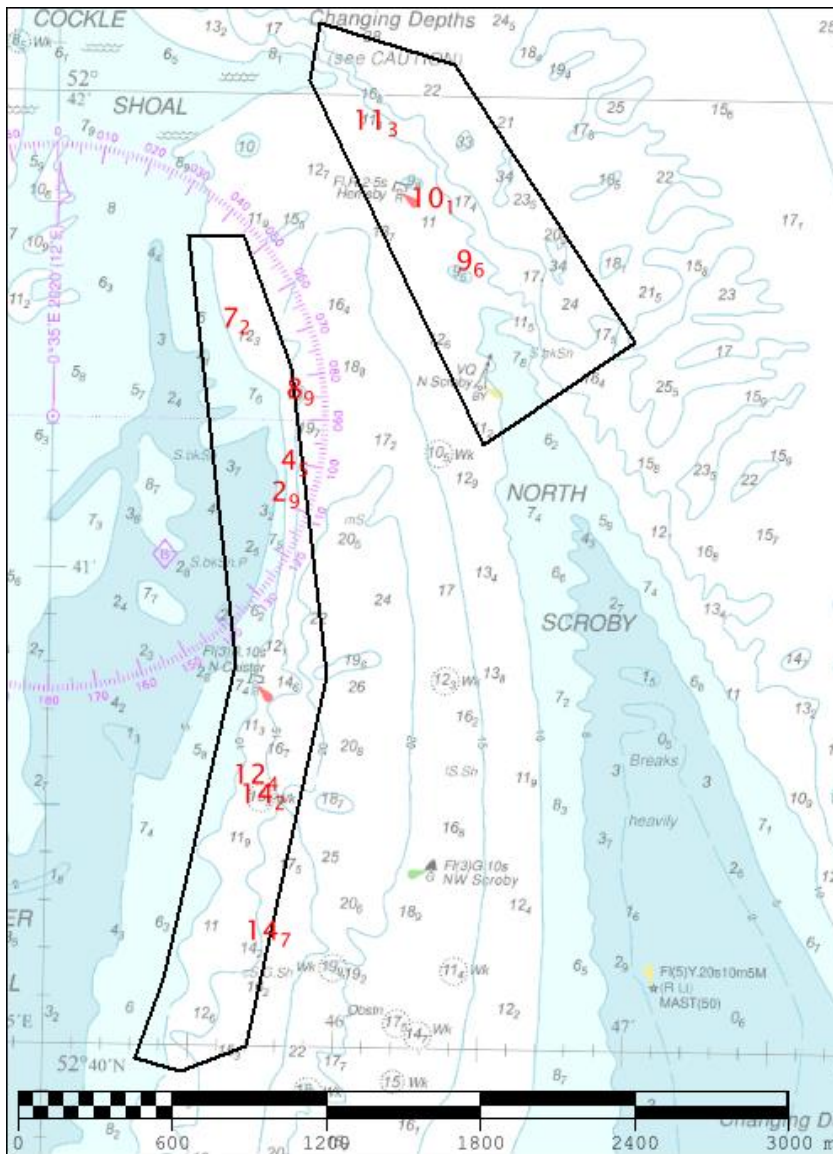


Figure 3: Significant Depth soundings, evidence of eastward migration of Caister Shoal (with shoaling depths) and shoaler depths in vicinity of 15.3m charted wreck (not found) highlighted, overlaid on BA Chart 1534

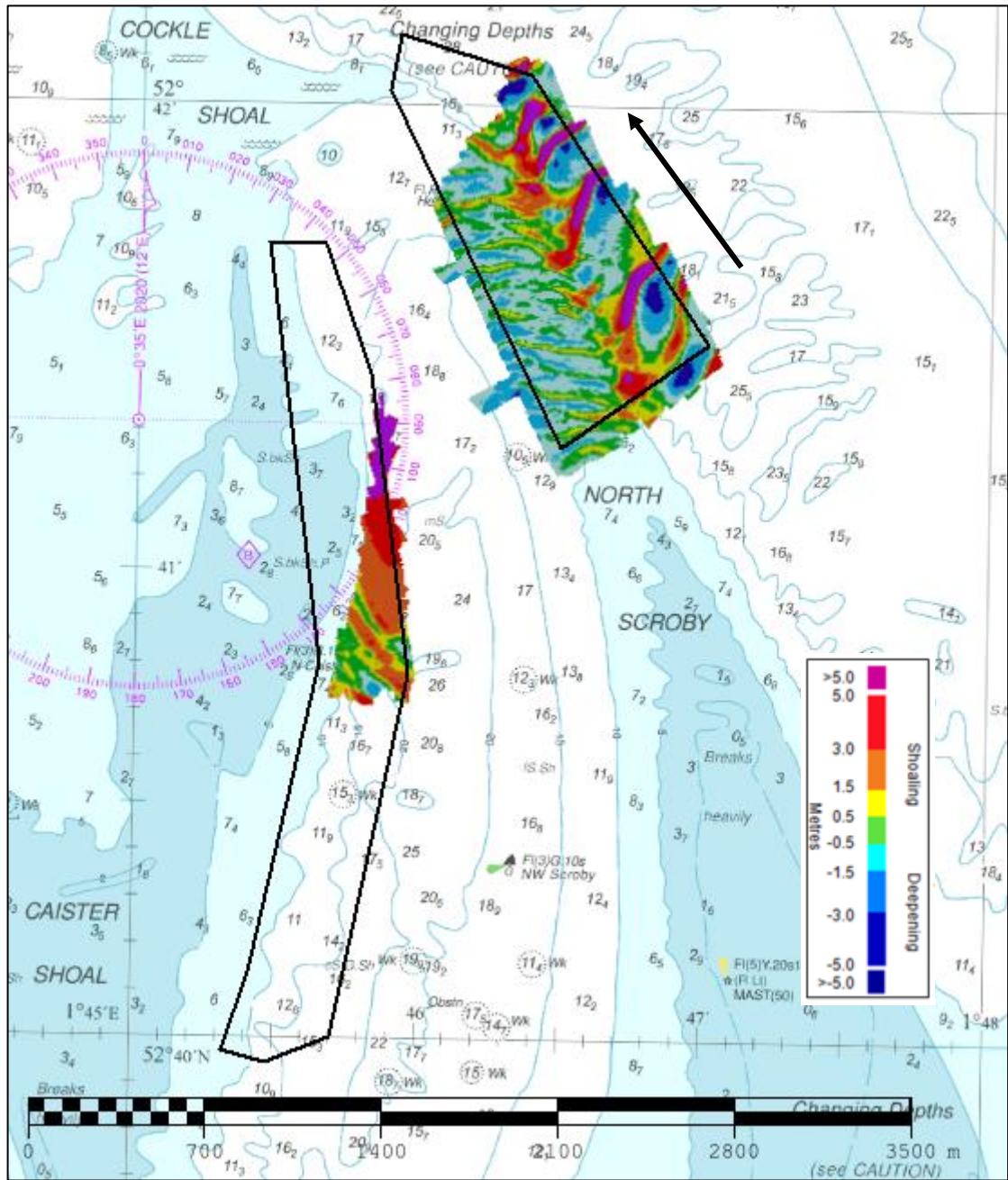


Figure 4: Difference surface showing bathymetric changes between the 2021 and 2020 surveys overlaid on BA Chart 1534-0 (Black arrows represent sandwave migration)

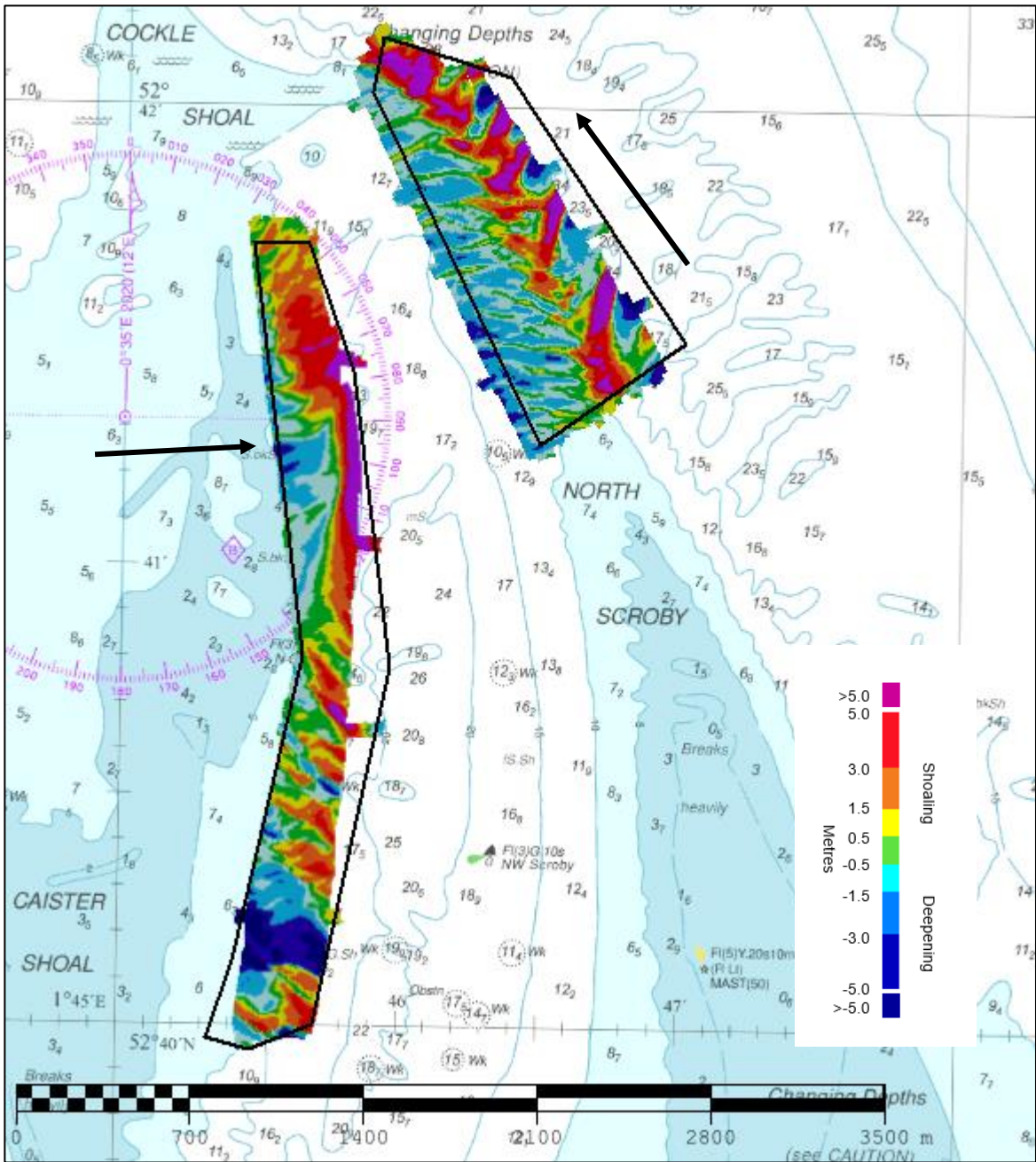


Figure 5: Difference surface showing bathymetric changes between the 2021 and 2019 surveys overlaid on BA Chart 1534-0 (Black arrows represent sandwave migration)

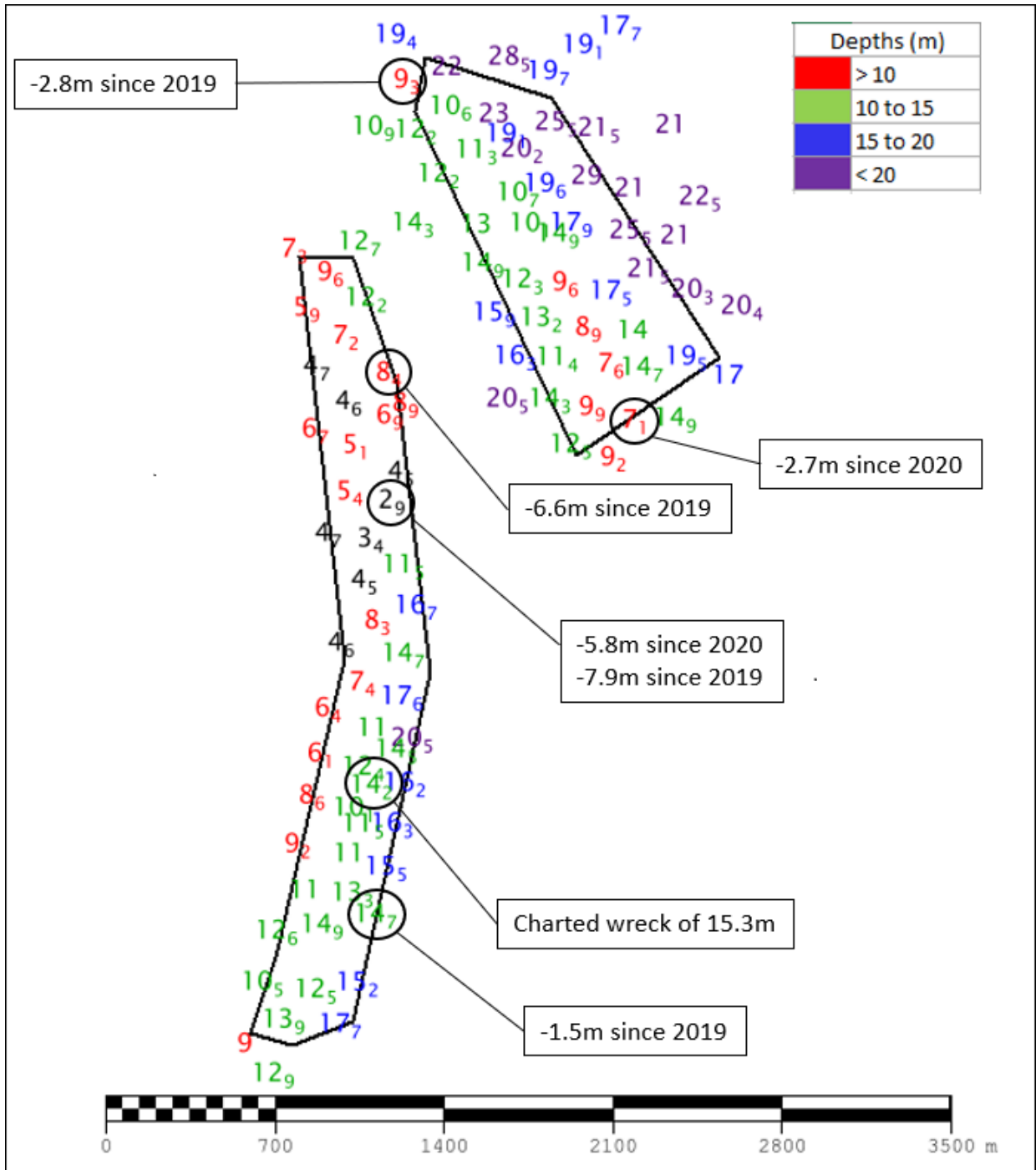


Figure 6: Colour banded depth plot from the 2021 survey with selected depth changes since the 2020 and 2019 surveys. Positive values (+) represent deepening. Negative values (-) represent shoaling.

6. RECOMMENDATIONS FOR FUTURE SURVEYS

Survey Interval

- 6.1 Due to the mobile nature of North Scroby and Caister Shoal the 3-year frequency should be maintained, with 1-year focused surveys continued over these two banks.

Survey Area

6.2 Due to the shoaling and movement of Caister Shoal eastwards towards Caister Road, the focused area EA3A should be adjusted in the northern section to follow this movement and monitor its impact upon Caister Road. Revised limits (with coordinates listed) are shown in Figure 6 below:

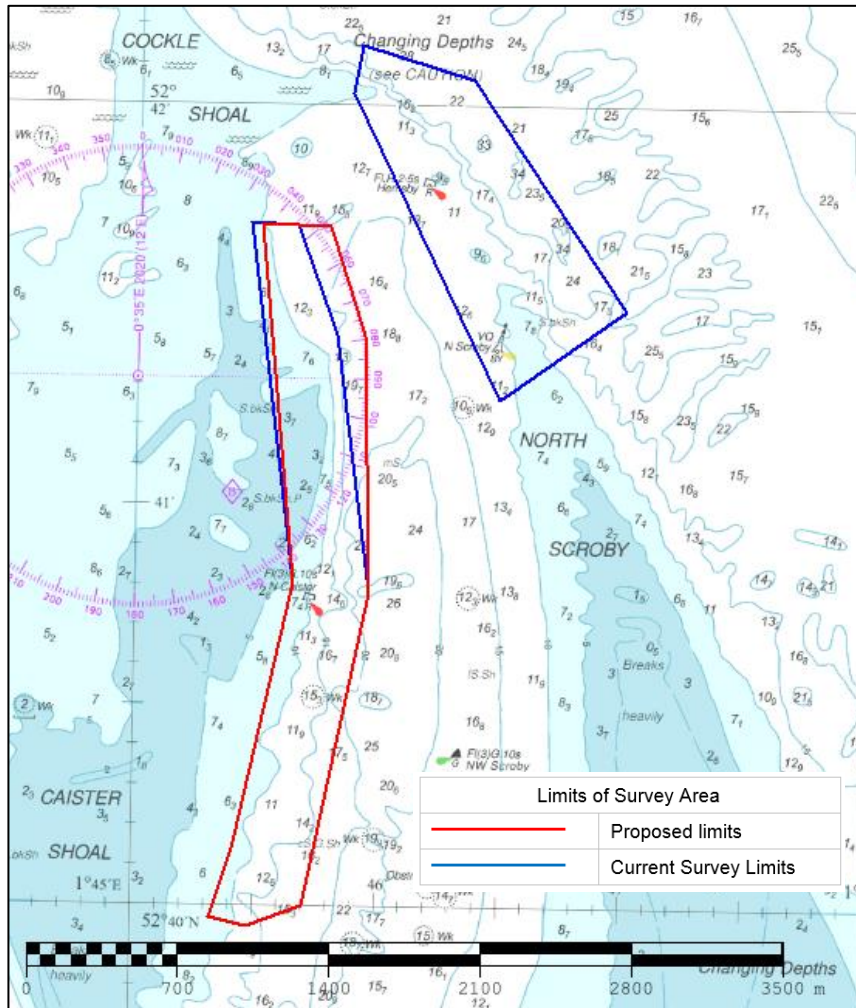


Figure 7: Recommended changes to survey limits of area EA3A. (Current limits for the focused area in blue with proposed adjustment in red)

Recommended coordinates for survey limits of area EA3Aa

	Latitude	Longitude
1	52-41.700036N	001-45.648888E
2	52-41.695272N	001-45.780330E
3	52-41.422728N	001-45.929424E
4	52-40.781070N	001-45.958524E
5	52-39.999906N	001-45.699306E
6	52-39.945564N	001-45.477408E
7	52-39.969900N	001-45.320058E
8	52-40.139442N	001-45.410604E
9	52-40.806126N	001-45.647070E
10	52-41.702580N	001-45.500676E