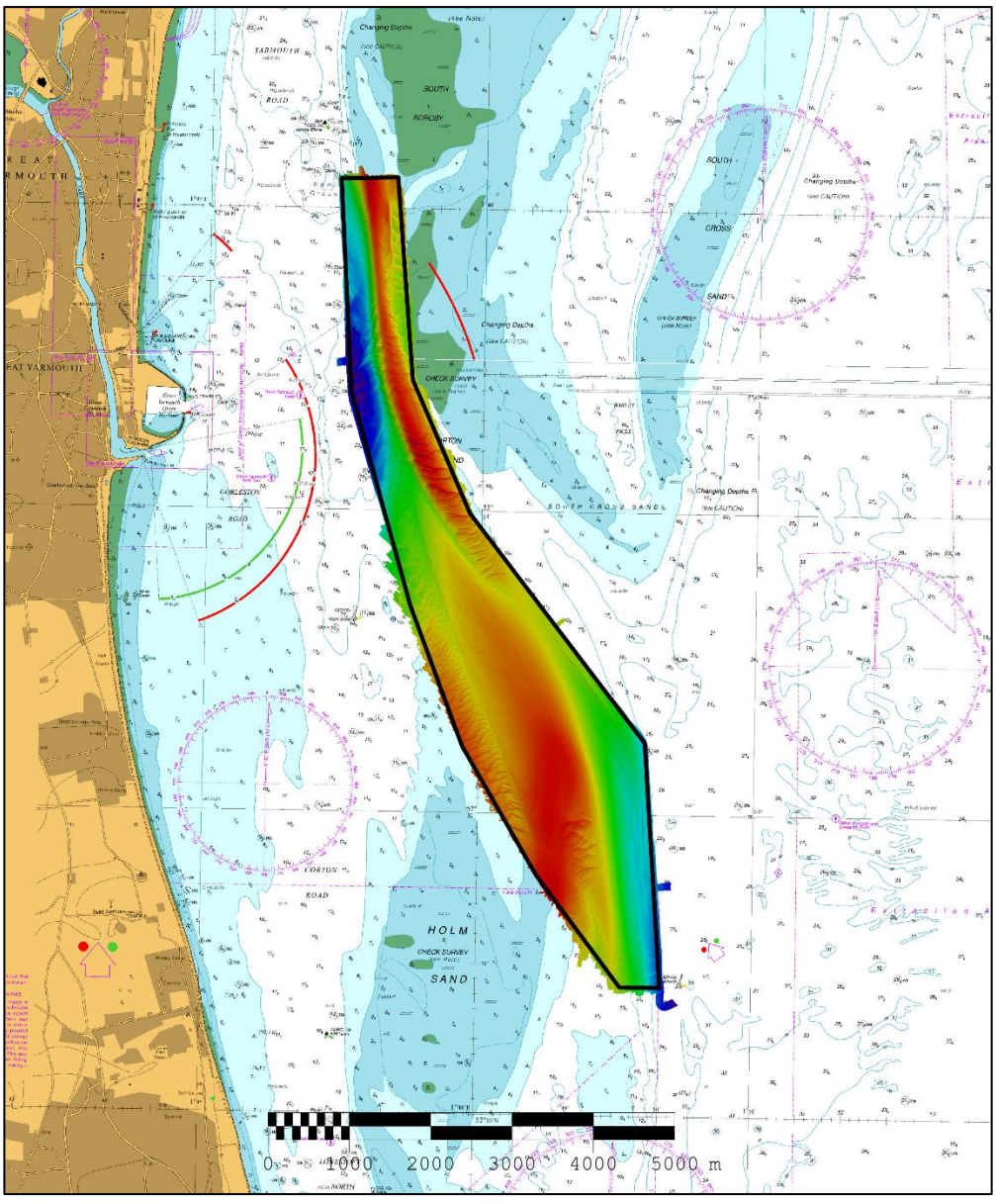
UK Hydrographic Office

EAST ANGLIA

HOLM CHANNEL FOCUSED (EA9A) 2025 ASSESSMENT

An assessment of the 2025 hydrographic survey of the area EA9A: 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 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).

The Admiralty Chart extracts, other graphics and tables in this Report are included for illustrative purposes only and are NOT TO BE USED FOR NAVIGATION.

All depths are to Chart Datum, defined using the UKHO Vertical Offshore Reference Frame (VORF) Model.

HOLM CHANNEL FOCUSED, 2025

1. SUMMARY

Changes Detected

1.1 In contrast to previous years, Holm Sand has retreated in a southwest direction at the narrowest section of Holm Channel.

1.2 The significant depth of Holm Channel has shoaled to 9.1m.

1.3 Holm Channel has retained a 110m horizontal distance between the 10m contours at its narrowest point. Holm Sand and Corton Sand sandwaves both moving west approximately 25m.

1.4 Corton Sand has remained in a stable position but is increasing in depth over time.

Reasons for Continuing to Resurvey the Area

1.5 Changing depths and position of the sand banks alongside Holm Channel require continued monitoring through annual resurveys to retain access to Great Yarmouth.

Recommendations

1.6 Given the mobility of Holm Channel and the high usage by vessels, EA9A should remain on the annual survey interval.

1.7 The area limits should be retained.

2. LOCATION

2.1 Survey interval at time of resurvey: Focused survey annually, and Full survey every 3 years.

2.2 Area Covered: 13.4 km^2

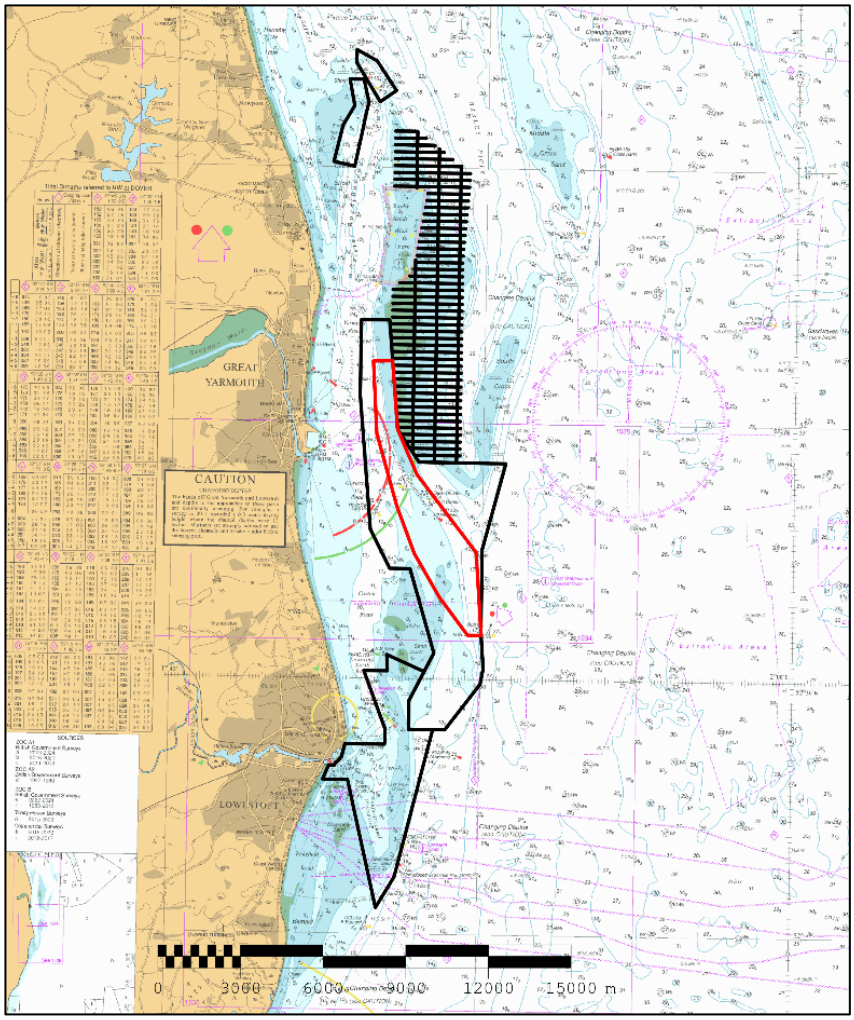

Figure 1: 2025 East Anglia Routine Resurvey and EA9 full areas overlaid on BA Chart 1543 with area EA9A in red

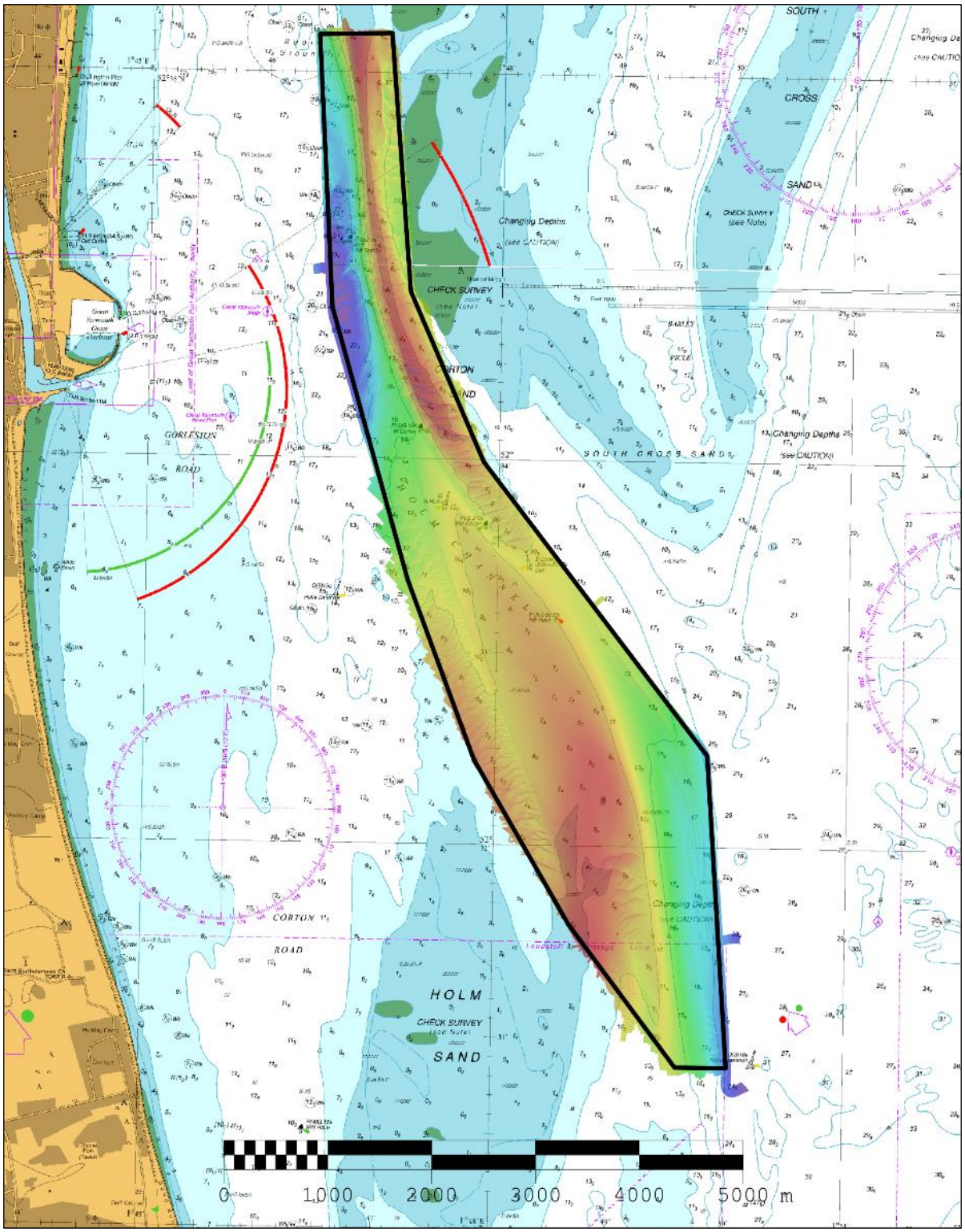

Figure 2: 2025 survey data overlaid on BA Charts 1534 &1535

3. REFERENCE SURVEY DETAIL

3.1 The previous focused surveys HI1857 and HI1761 were conducted as part of the Routine Resurvey (RRS) Programme in August 2024, and September 2022. The previous full survey, HI1828, was surveyed in September 2023.

3.2 The Report of Survey for these surveys are available upon request, and the validated bathymetric surfaces are available to download from the Admiralty Marine Data Portal.

4. NEW SURVEY DETAIL

4.1 The latest focused survey, HI1894, was surveyed during August 2025 as part of the 2025 Routine Resurvey Programme.

4.2 The Report of Survey for this survey is available upon request, and the validated bathymetric surfaces are available to download from the Admiralty Marine Data Portal.

5. DESCRIPTION OF RECENT BATHYMETRIC CHANGE

5.1 Figures 3 and 4 show the controlling depths of Holm Channel, between Holm Sand and Corton Sand. The controlling depth of the channel has shoaled to 9.1m, the same point was 9.8m in 2024 and 9.5m in 2023. The controlling depth of the channel in 2024 was 9.3m, and in 2023 was 9.4m.

5.2 The least depth over Holm Sand within the focused survey area is 4.2m, which has shoaled from 4.5m in 2024 and deepened from 4.1m in 2023 as shown in Figure 3. The least depth over Corton Sand captured in this survey area is 2.9m, deepened from 2.8m in 2024 and 2.6m in 2023.

5.3 The highly mobile seabed is visible from the difference plots in Figures 5,6 and 7. There is a general shoaling over the Holm Sand bank along the centre of the survey area shown in Figure 5, which is consistent with findings from previous surveys.

5.4 Additionally, there has been an increase in depth of Corton Sand. Difference plots, Figures 5,6 and 7, show a loss in sediment of Corton Bank in the north of the survey area whereas the 10m contour has remained relatively stable, Figure 8.

5.5 Figure 9 shows the 10m contour in Holm Channel between 2022 and 2025. At the channels narrowest point, the 10m contour of Holm Sand has moved west by approximately 25m, and the tip has retreated south approximately 100m between 2025 and 2024. Holm Sand Bank appears to have changed its north-eastern migration that has been consistent since the progression started in 2017; further monitoring will be required to understand the new migration pattern. The southern edge of Corton Sand is characterised by sandwaves and show a general migration westward by approximately 25m. The current width of channels narrowest point between the 10m contours of Holm Sand and Corton Sand remains approximately 110m due to the combined movement of both Holm Sand and Corton Sand.

5.6 Figure 10 shows the migration of the 5m contour on the NE sand bank of Holm Sand. There is significant shoaling of this sand bank, supported by the difference plots 5, 6, and 7. This may reduce the opportunity for shallow draught vessel to cut below the buoyed channel and should be monitored.

5.7 Consistent with previous years the leading cause of change is the mobility of Holm Sand and Corton Sand; The colour banded depth plot shown in Figure 11 helps to show these changes. The largest change was a shallowing of 2.3m of Holm Sand, likely from eastward migration of sediment as shown in Figures 5,6, and 7.

5.8 Figure 12 shows the AIS data of density of vessels in the survey area; there is a high density of vessels using the narrow Holm Channel to access Great Yarmouth.

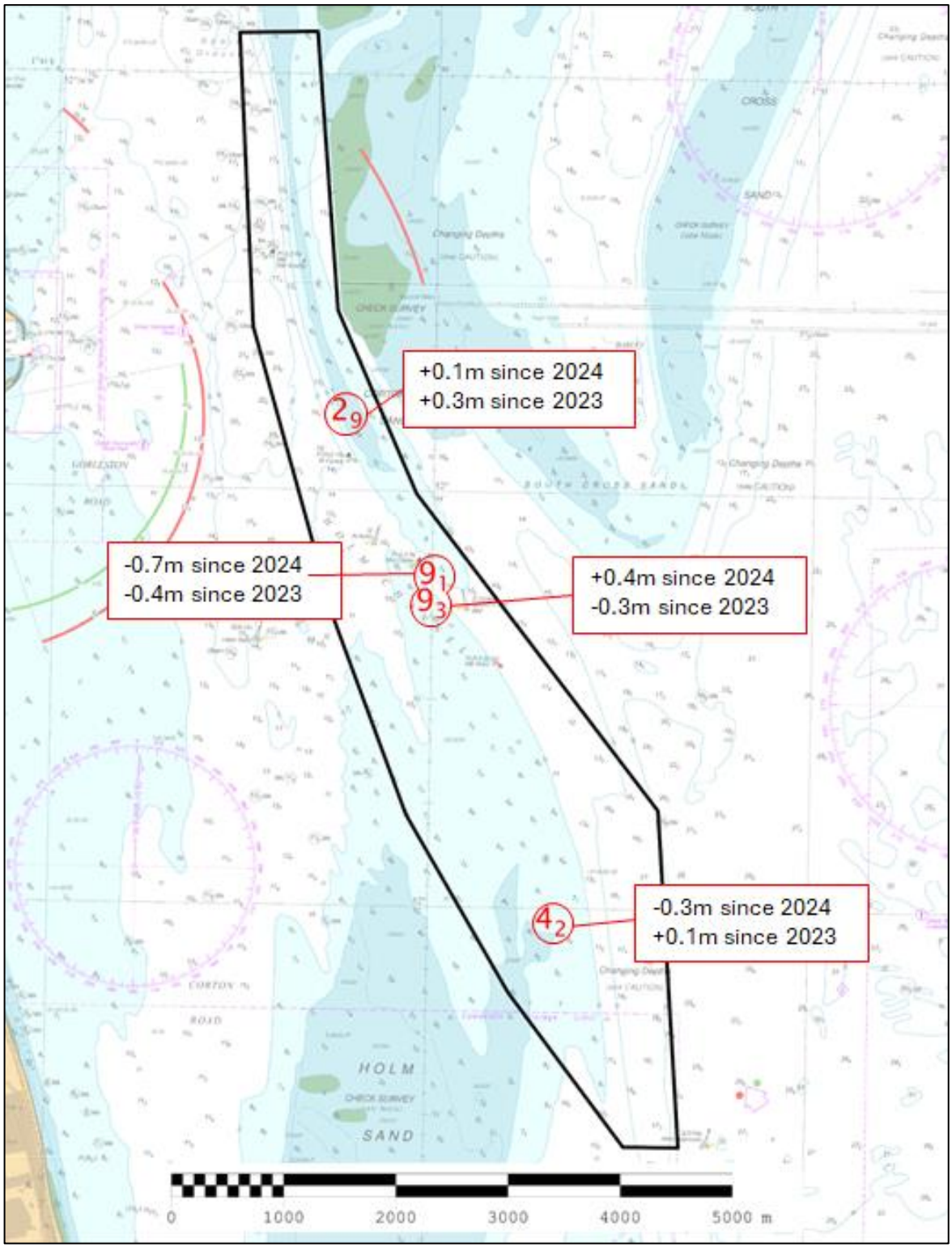

Figure 3: Significant Depth sounding(s) highlighted, overlaid on BA Charts 1534 &1535

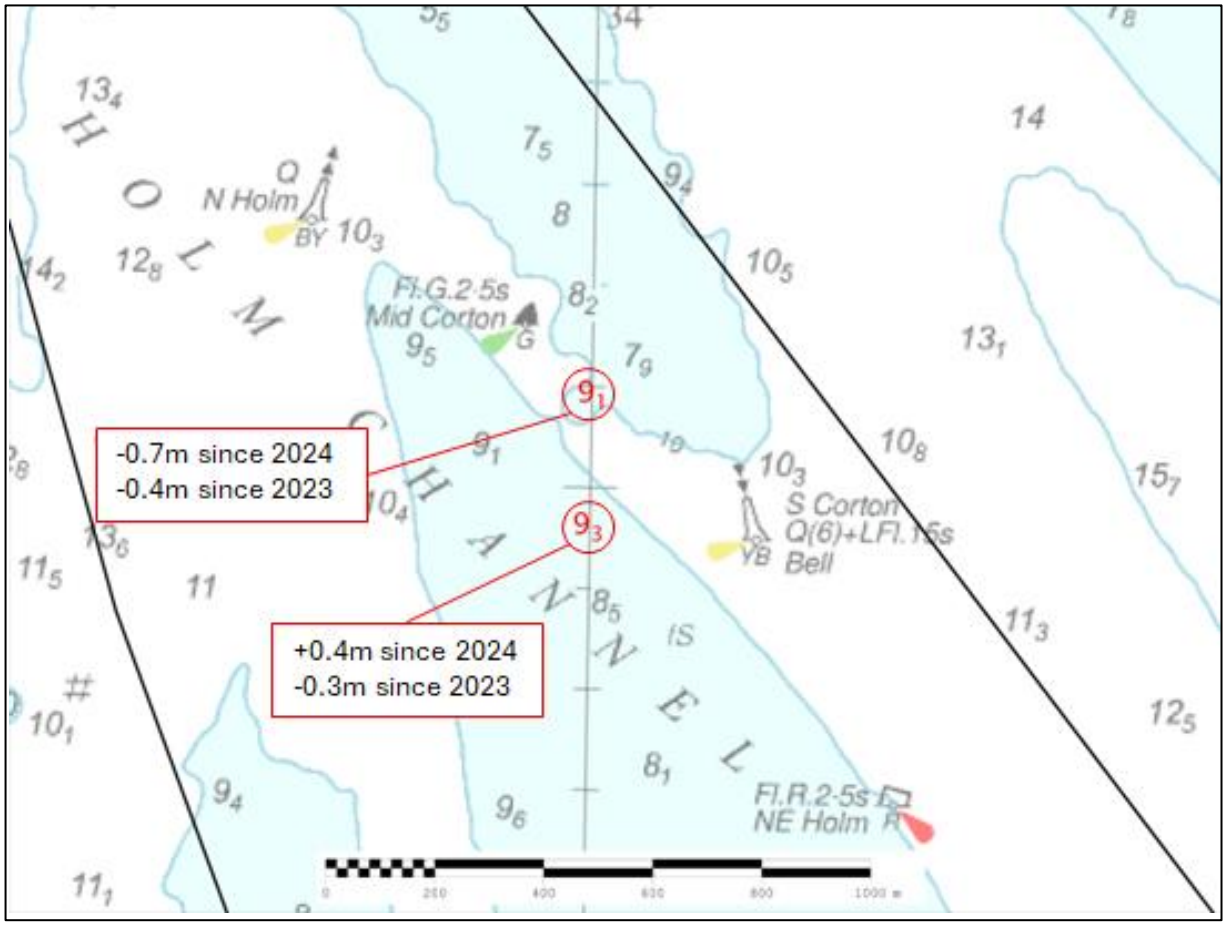

Figure 4: Significant Depth soundings of Holm Channel highlighted, overlaid on BA Chart 1535

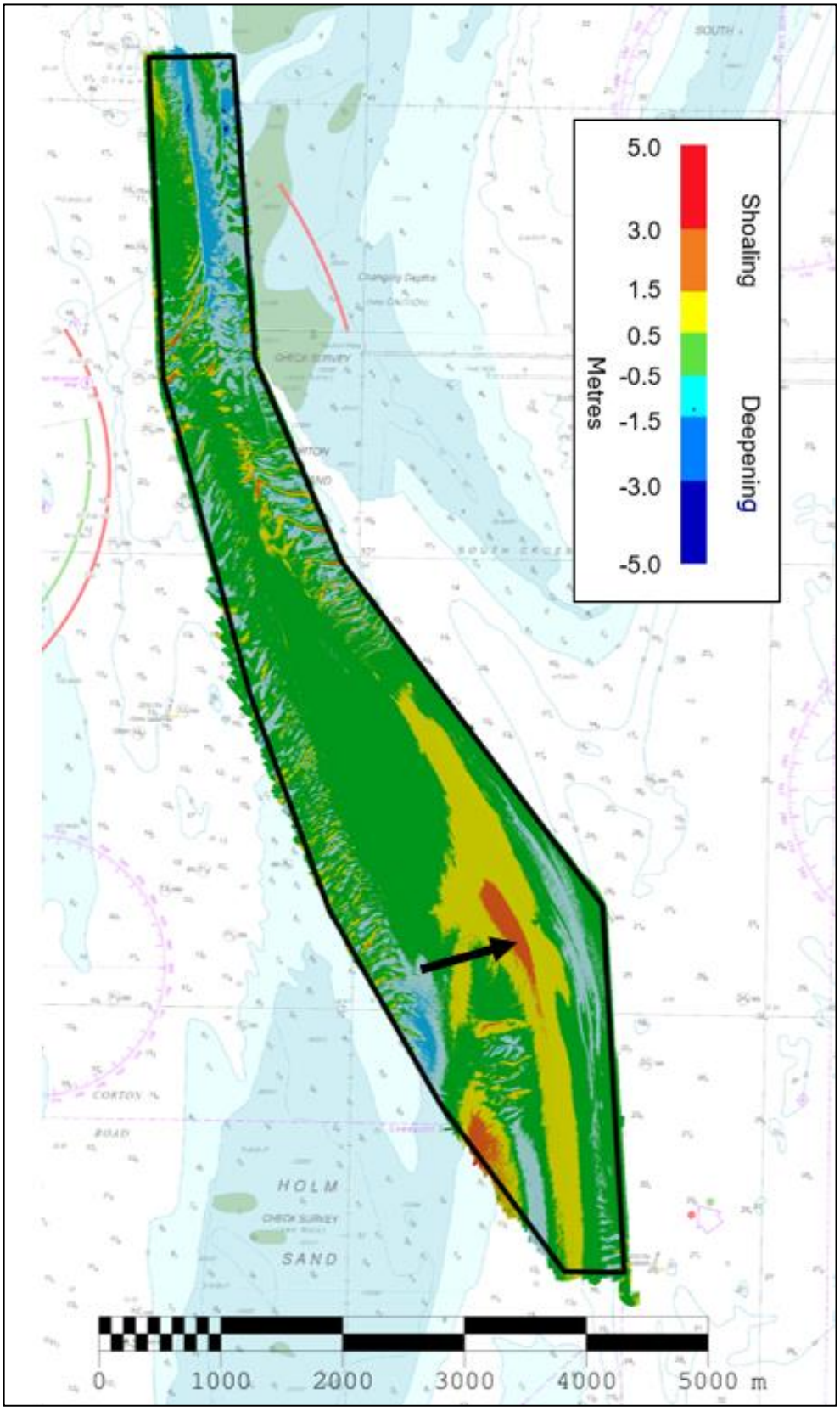

Figure 5: Difference surface showing bathymetric changes between the 2025 and 2024 surveys overlaid on BA Chart 1534 &1535

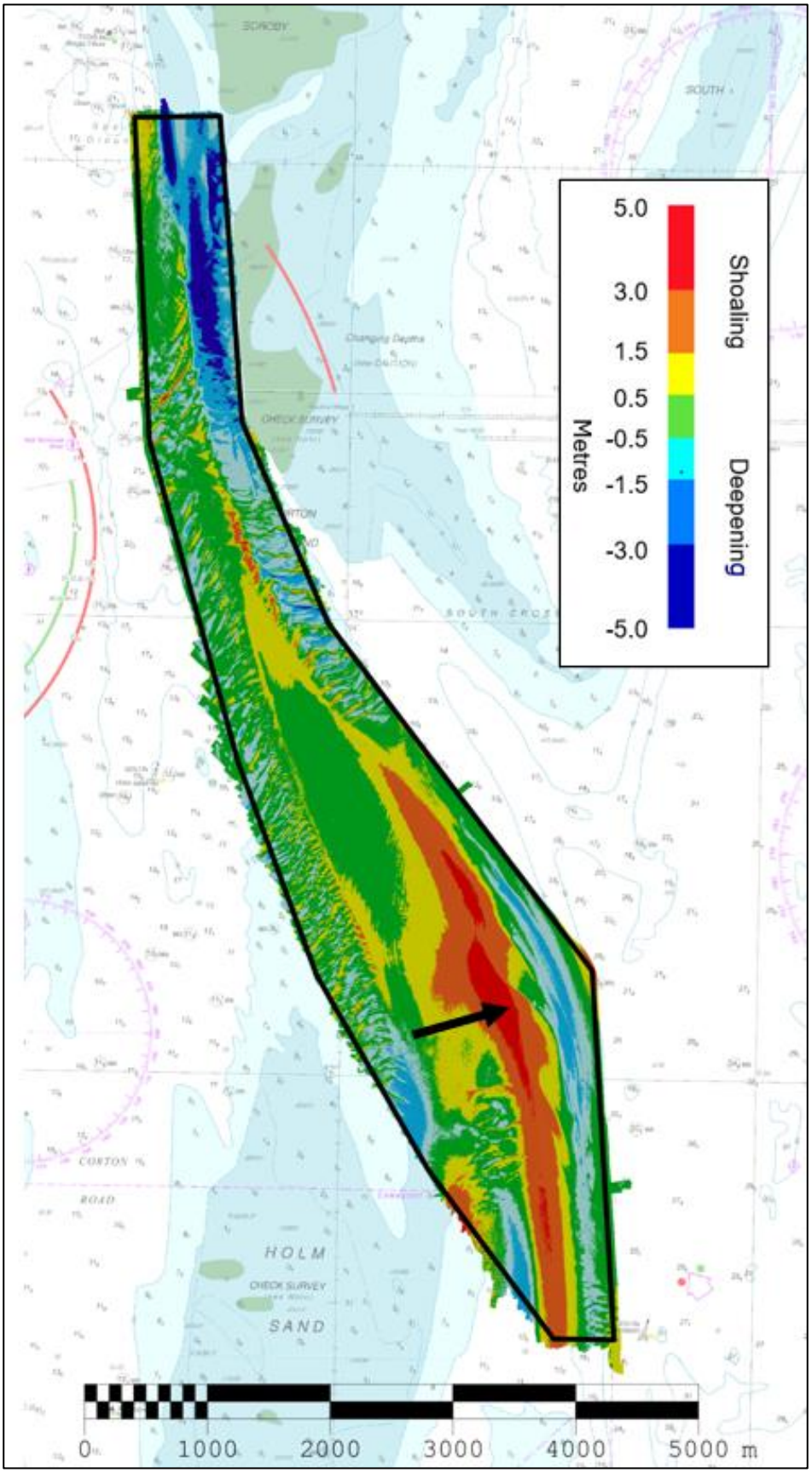

Figure 6: Difference surface showing bathymetric changes between the 2025 and 2023 surveys overlaid on BA Chart 1534 &1535

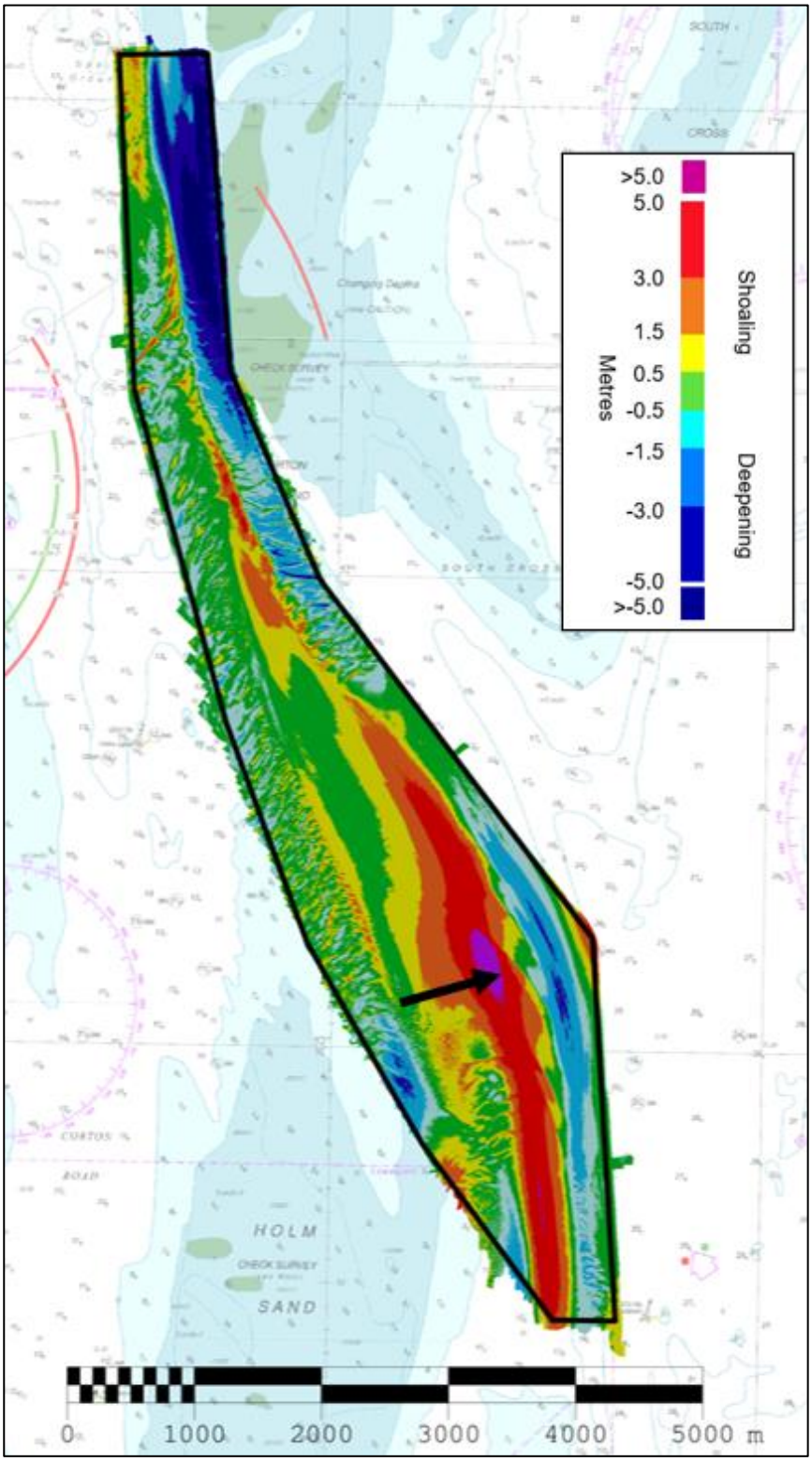

Figure 7: Difference surface showing bathymetric changes between the 2025 and 2022 surveys overlaid on BA Chart 1534 &1535

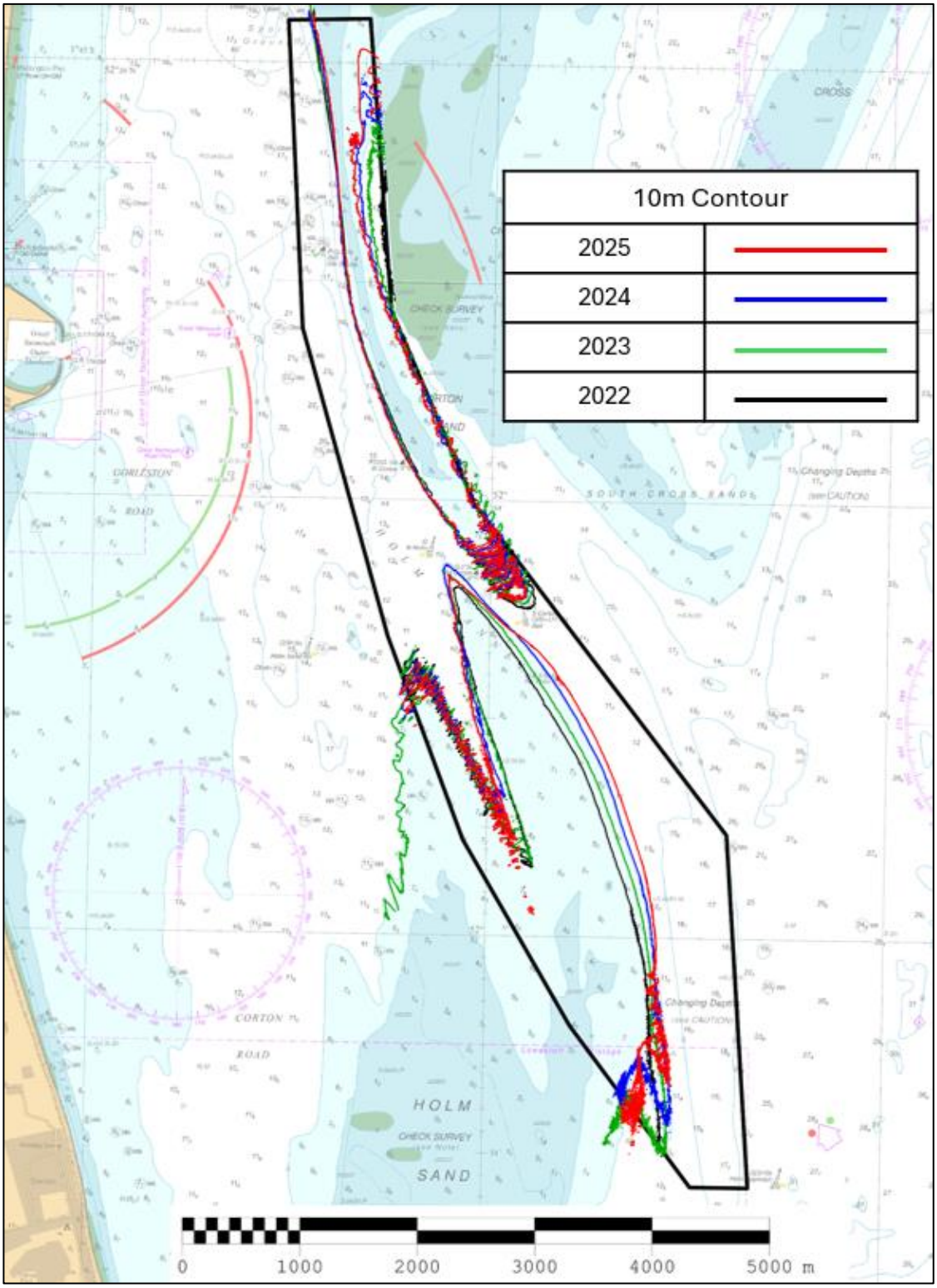

Figure 8: Contour plot of the full area showing changes in the 10m contours between 2025 (red), 2024 (blue), 2023 (green) and 2022 (black).

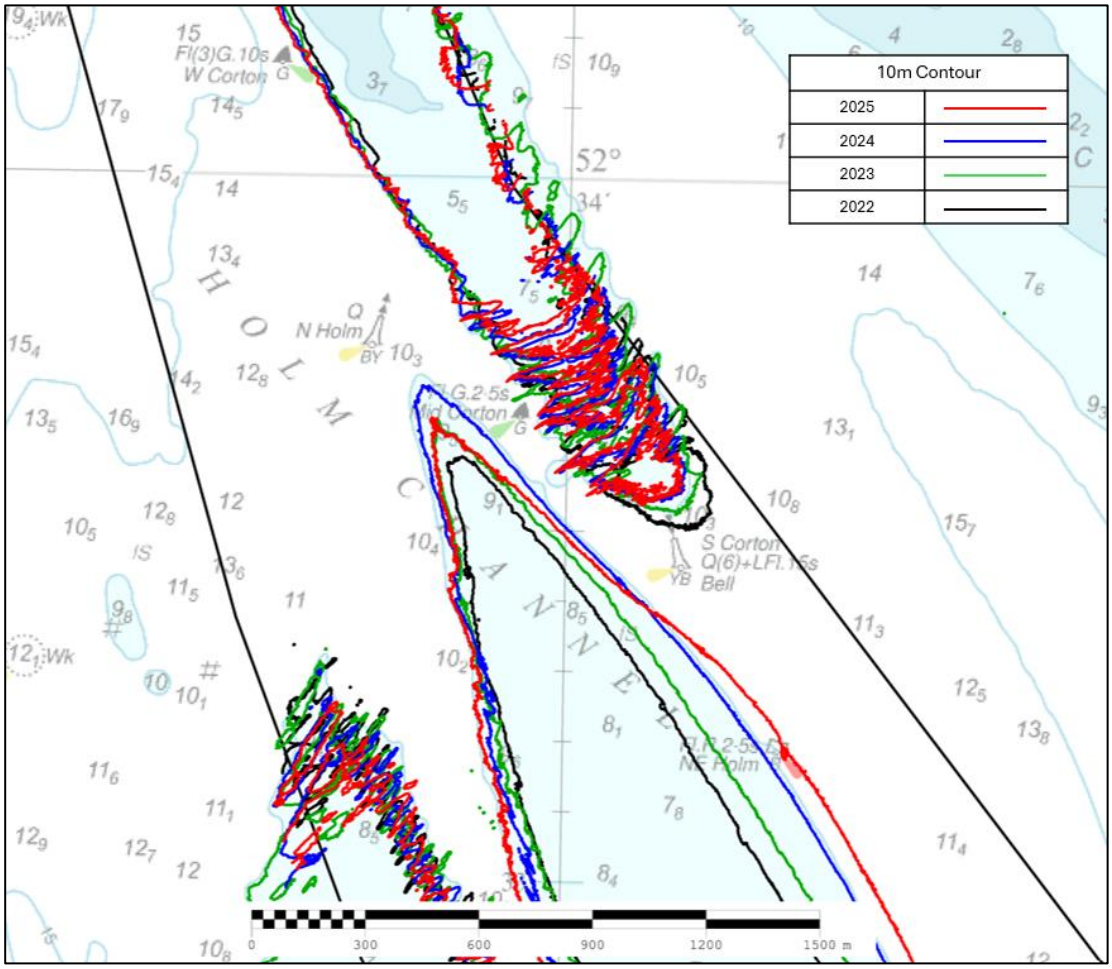

Figure 9: Contour plot of Holm Channel showing changes in the 10m contours between 2025 (red), 2024 (blue), 2023 (green) and 2022 (black).

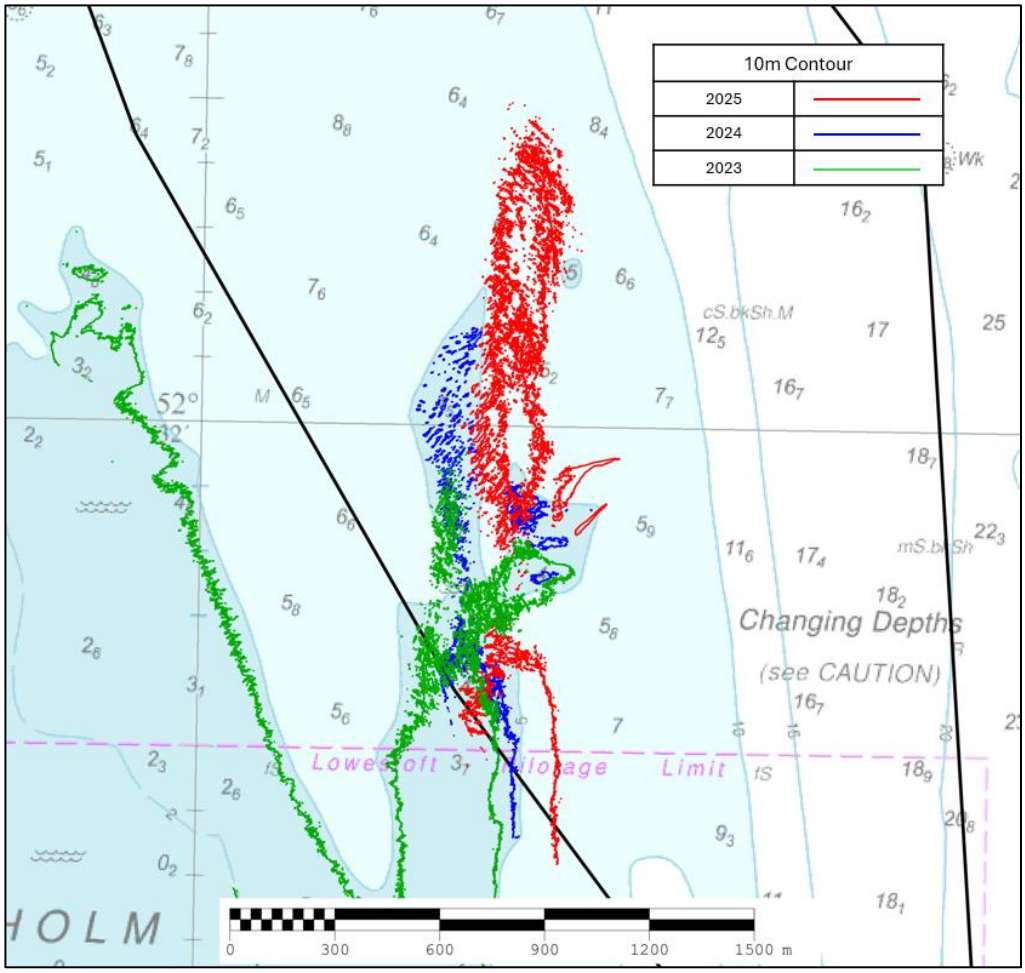

Figure 10: Contour plot of the sand bank NE of Holm Sand showing changes in the 5m contours between 2025 (red), 2024 (blue) and 2023 (green).

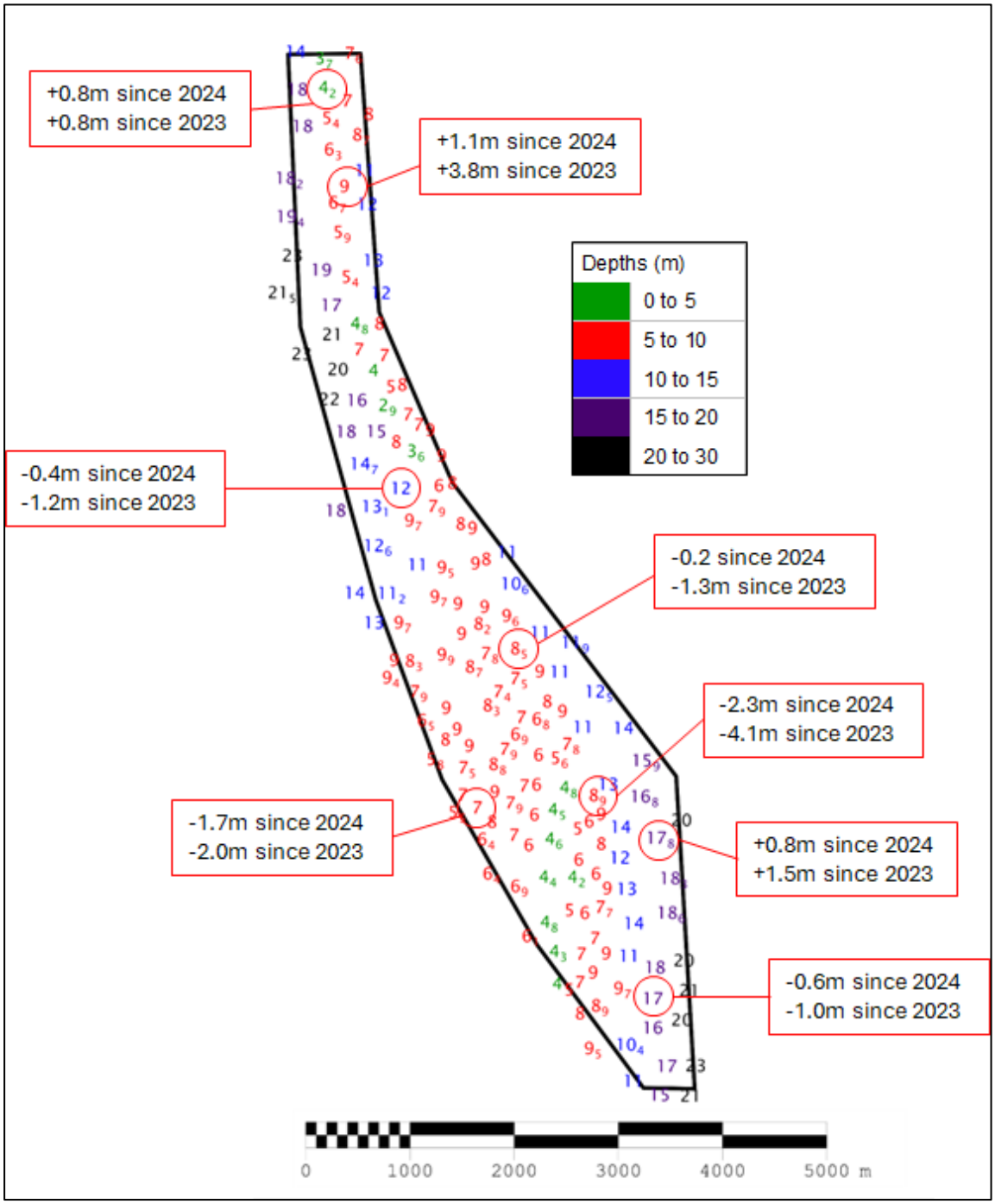

Figure 11: Colour banded depth plot from the 2025 survey with selected depth changes since the 2024 and 2023 survey. Positive values (+) represent deepening. Negative values (-) represent shoaling.

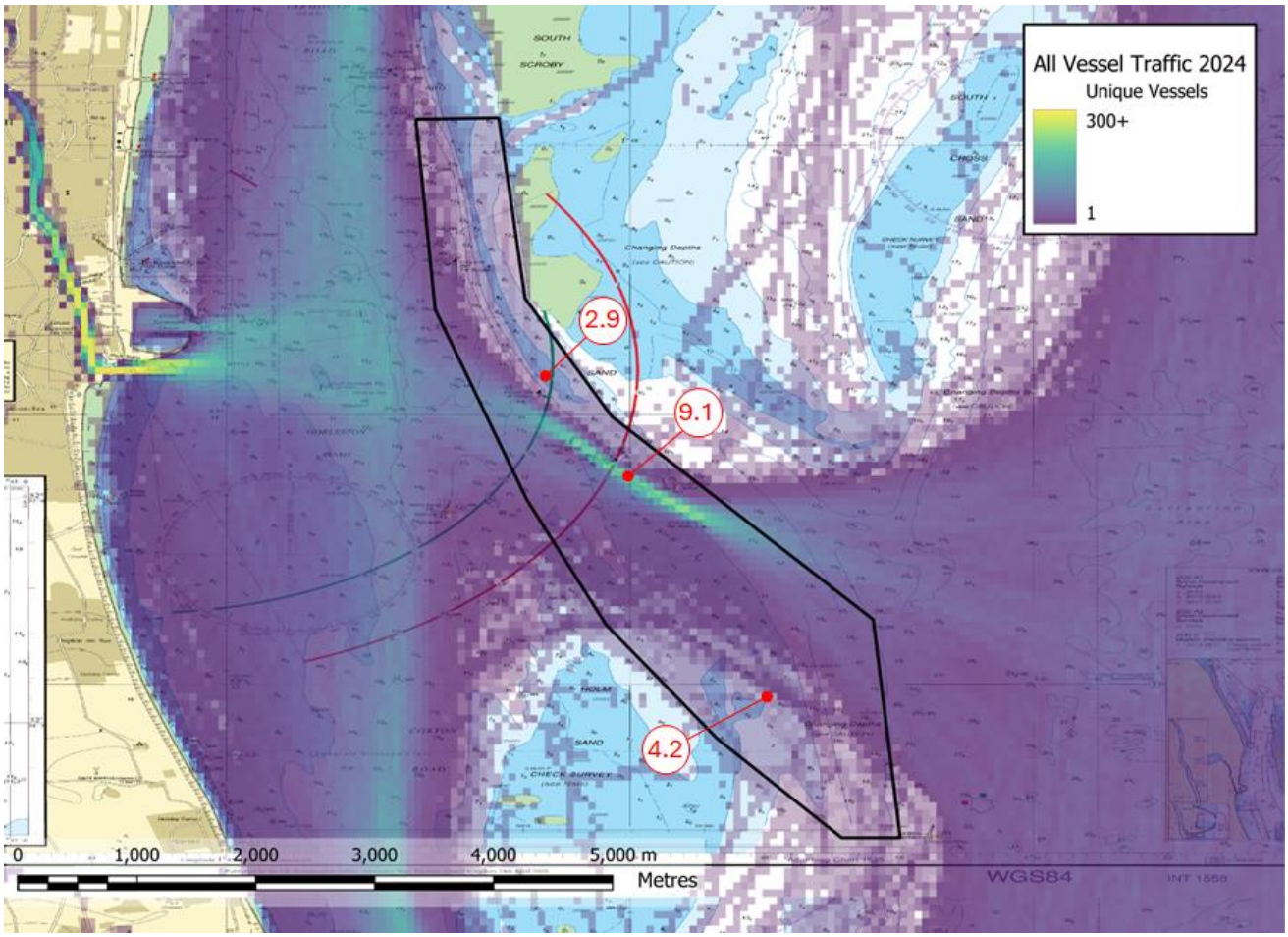

Figure 12: AIS heatmap at 100m resolution grid size. Density unit is unique vessels within the grid square within 2024. EA9A area in black and significant depth soundings (m) overlaid on chart 1543.

6. RECOMMENDATIONS FOR FUTURE SURVEYS

Survey Interval

6.1 Due to the migration of the Holm Sand bank and the developing restriction this poses to Holm Channel, the annual focused survey interval and three-year full survey interval should be maintained.

Survey Area

6.2 The focused limits are sufficient to monitor the mobile sand banks alongside Holm Channel. The full area wholly encompasses the mobility of the larger seabed features of concern. Both limits should be retained.