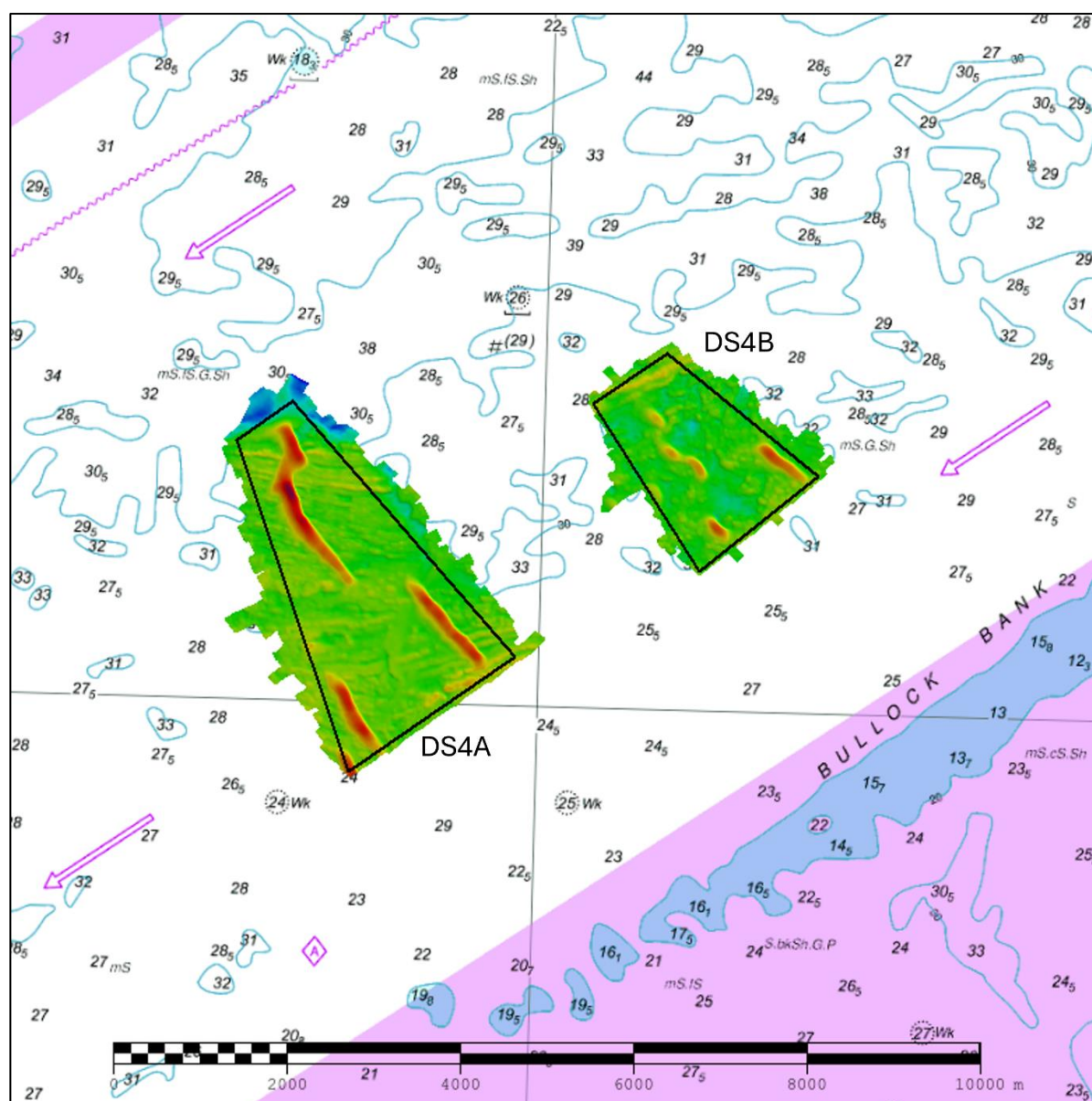


DOVER STRAIT WEST OF BULLOCK BANK (DS4A&B) 2025 ASSESSMENT

An assessment of the 2025 hydrographic survey of the area DS4A&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 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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All depths are to Chart Datum, defined using the UKHO Vertical Offshore Reference Frame (VORF) Model.

WEST OF BULLOCK BANK DS4A&B, 2025

1. SUMMARY

Changes Detected

- 1.1 The controlling depth for the DS4A area is 22.6m, 0.3m deeper than 2013. The controlling depth for the DS4B area is 25.2m, 0.3m deeper than 2013.
- 1.2 Sand wave migration is the primary cause of bathymetric change within the DS4A&B area. Observed sand wave movement varied between 15-20m, up to a maximum of 27m since 2013.

Reasons for Continuing to Resurvey the Area

- 1.3 Sand wave migration has continued from previous years, meaning depths in the area remain hazardous and changeable to deep draught vessels navigating the DS4A&B areas (see AIS data in Figure 7). Continued monitoring is advised.

Recommendations

- 1.4 Sand waves continue to migrate in a northeast direction. Due to the relatively stable nature of the rest of the seabed, the current survey interval of 12 years is considered sufficient and should be maintained.

2. LOCATION

- 2.1 Survey interval at time of resurvey: 12 years
- 2.2 Area Covered: 12.76 km²

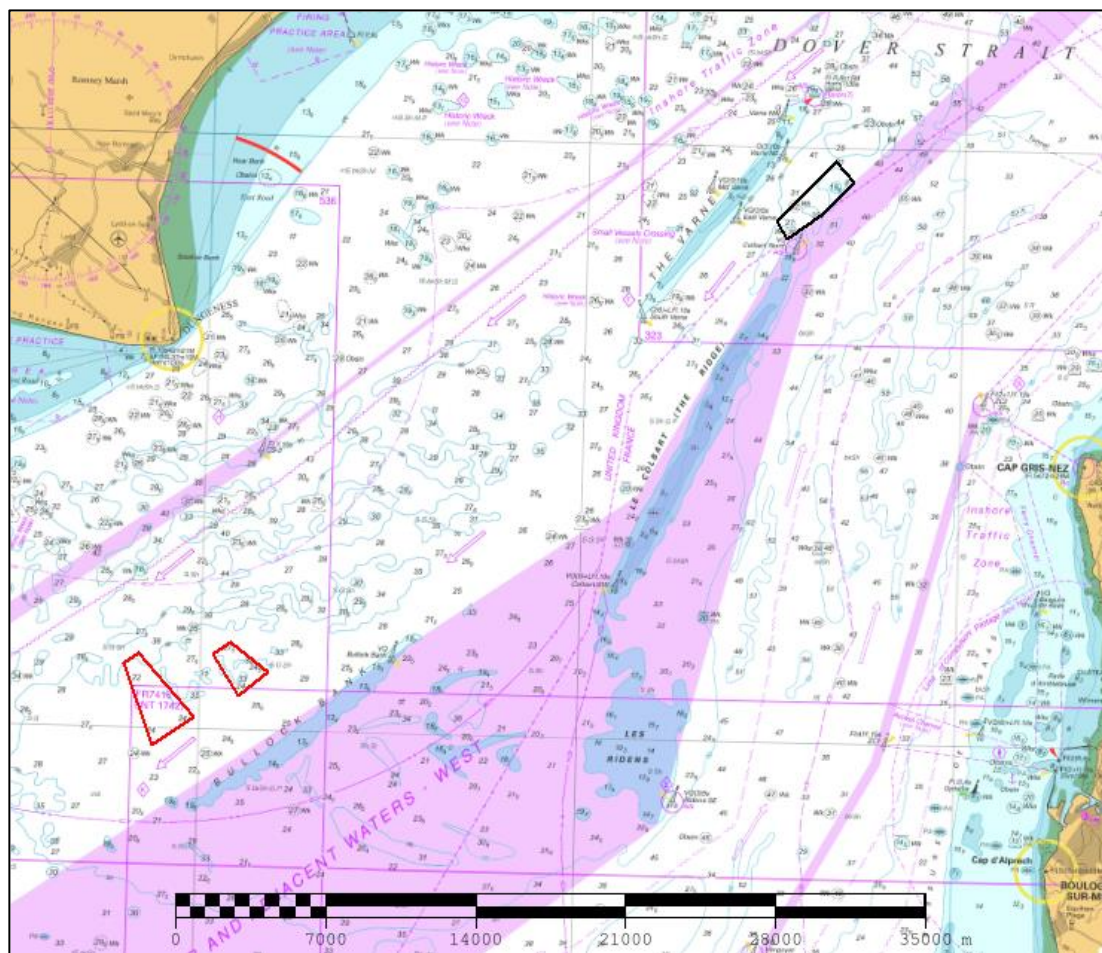


Figure 1: 2025 Dover Strait Routine Resurvey areas overlaid on BA Chart 2451 with area DS4A&B in red.

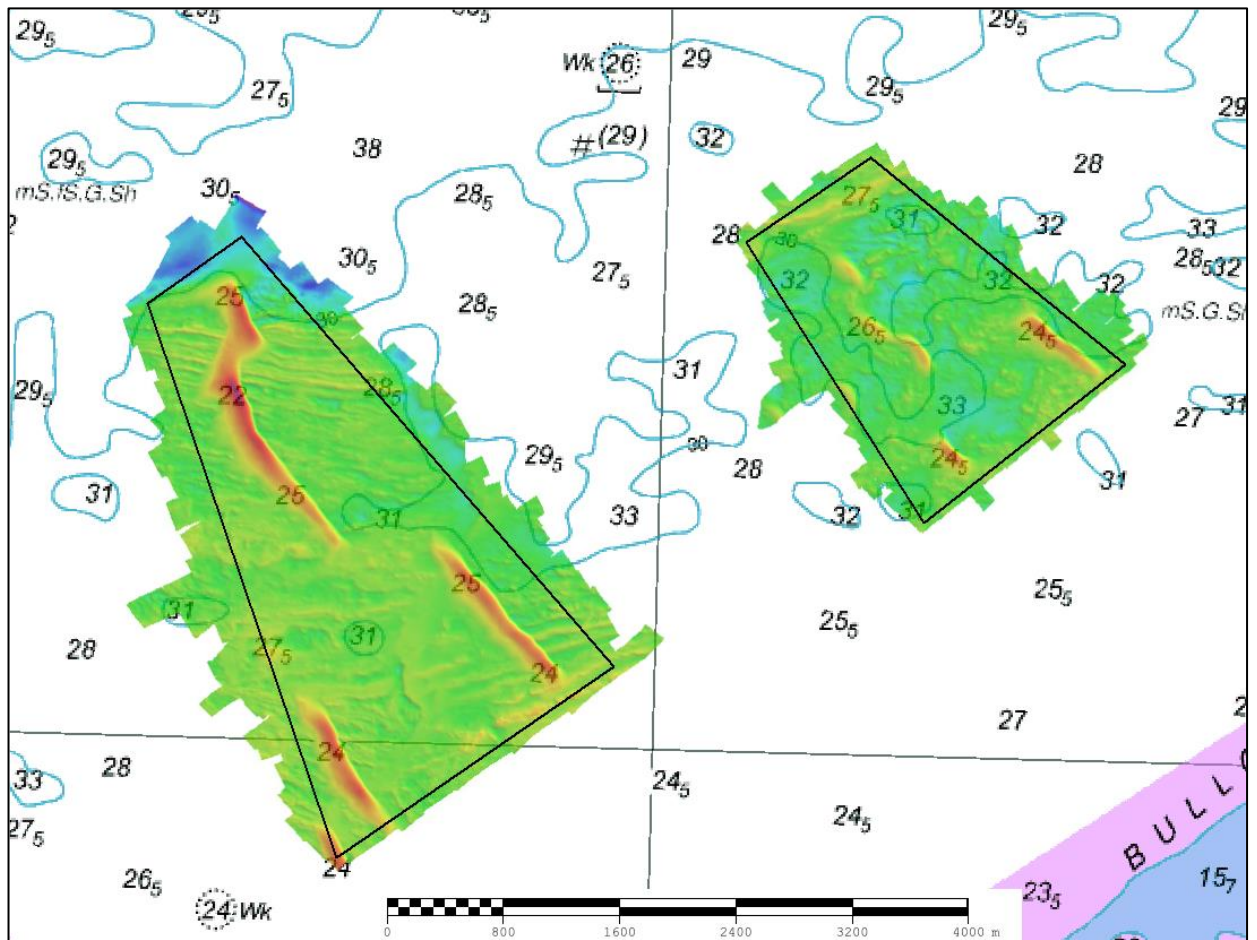


Figure 2: 2025 survey data overlaid on BA Chart 1892.

3. REFERENCE SURVEY DETAIL

- 3.1 The previous full survey HI1434 was conducted as part of the 2013 Routine Resurvey Programme in December 2013.
- 3.2 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.

4. NEW SURVEY DETAIL

- 4.1 The latest survey is HI1905, surveyed in May 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 Figure 3 shows that the controlling depth of the 2025 survey in the DS4A area is 22.6m, which has deepened by 0.3m since the 2013 survey. The controlling depth in the DS4B area is 25.2m, which has deepened by 0.3m since the 2013 survey.
- 5.2 The difference surfaces in Figures 4a and 4b show prevalent sand wave migration, the cause of changeable depths across the survey area. Figure 4a shows sand waves shifting northeast within the DS4A area. Figure 4b shows sand waves shifting northeast within the DS4B area. Movement is typically between 15-20m over the 12-year survey interval, although some sand waves show movement of up to 27m. This movement magnitude and direction is consistent with previous years.
- 5.3 Figures 5a and 5b show a contour plot tracking the movement of the 27m contour across the 2025 and 2013 surveys, highlighting sand wave movement in a northeast direction. Figure 5a shows the contour plot of the DS4A area. Figure 5b shows the contour plot of the DS4B area.
- 5.4 Figures 6a and 6b show a colour banded depth plot of the DS4A and DS4B survey areas, depicting bathymetric changes. The greatest changes in DS4A were observed in the eastern region of the survey area, due to sand wave migration. The greatest changes in DS4B were observed in the central and southern regions of the survey area, also because of sand wave migration. Away from the sand wave areas, the majority of the DS4 areas see little to no depth change.
- 5.5 Consistent with previous years surveys at this location, the primary cause of bathymetric variation is sand wave migration. Since the previous survey in 2013, the greatest change (as shown in Figure 3) is the deepening of a sand wave within the DS4A area by 0.7m. The most significant change, however, is the deepening of the controlling depths within the DS4A and DS4B areas, as covered in section 5.1 (Figure 3). The only significant depth to shoal since the previous survey is the sand wave within the DS4A area, which has shoaled by 0.3m (from 25.0m in 2013) as shown in Figure 6a.
- 5.6 Figure 7 shows AIS data from 2024, and both areas see significant levels of traffic. Depths in the area remain changeable due to the sandwave movement, requiring continued monitoring.

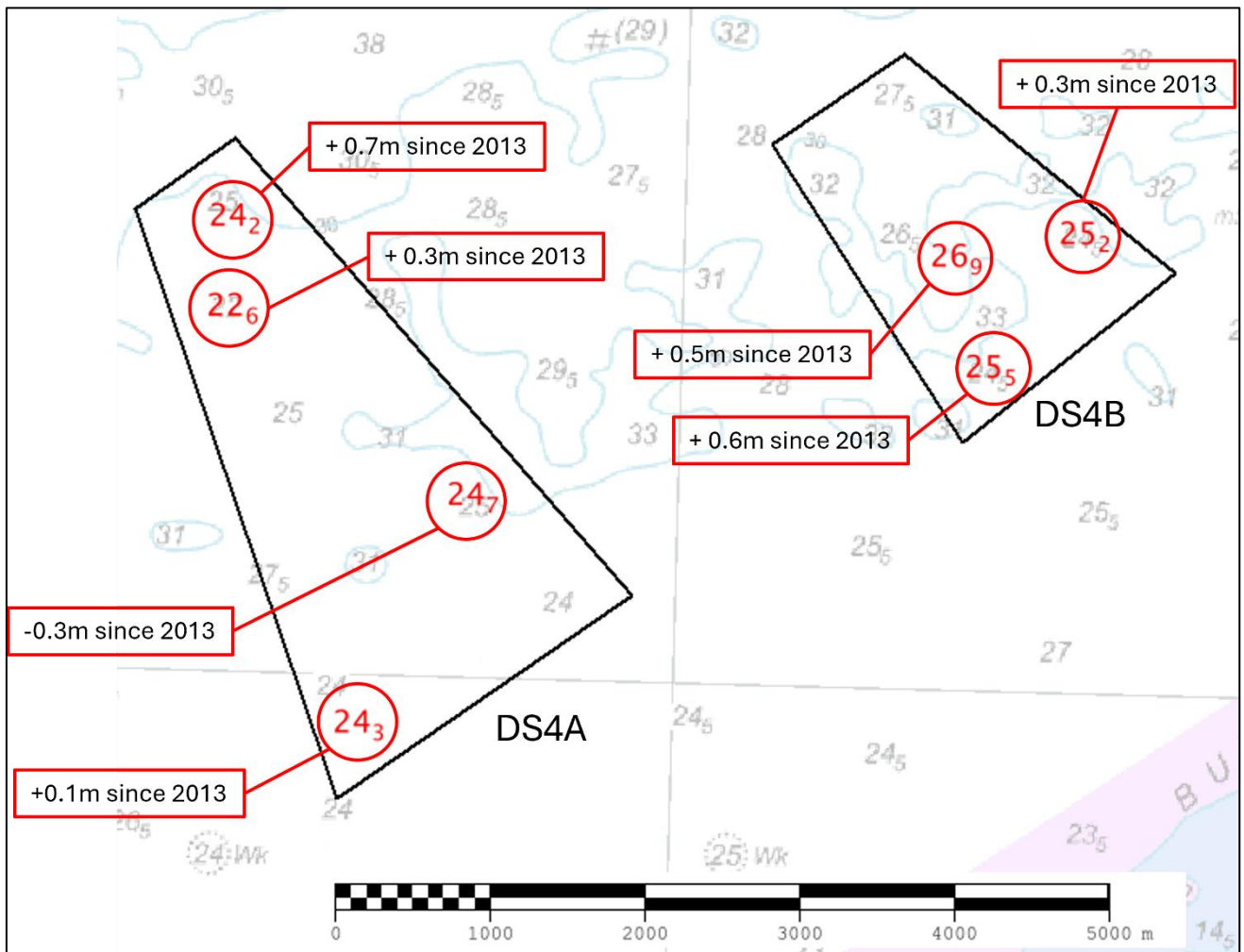


Figure 3: Controlling and Significant Depth soundings highlighted, overlaid on BA Chart 1892. (Positive values represent deepening; Negative values represent shoaling).

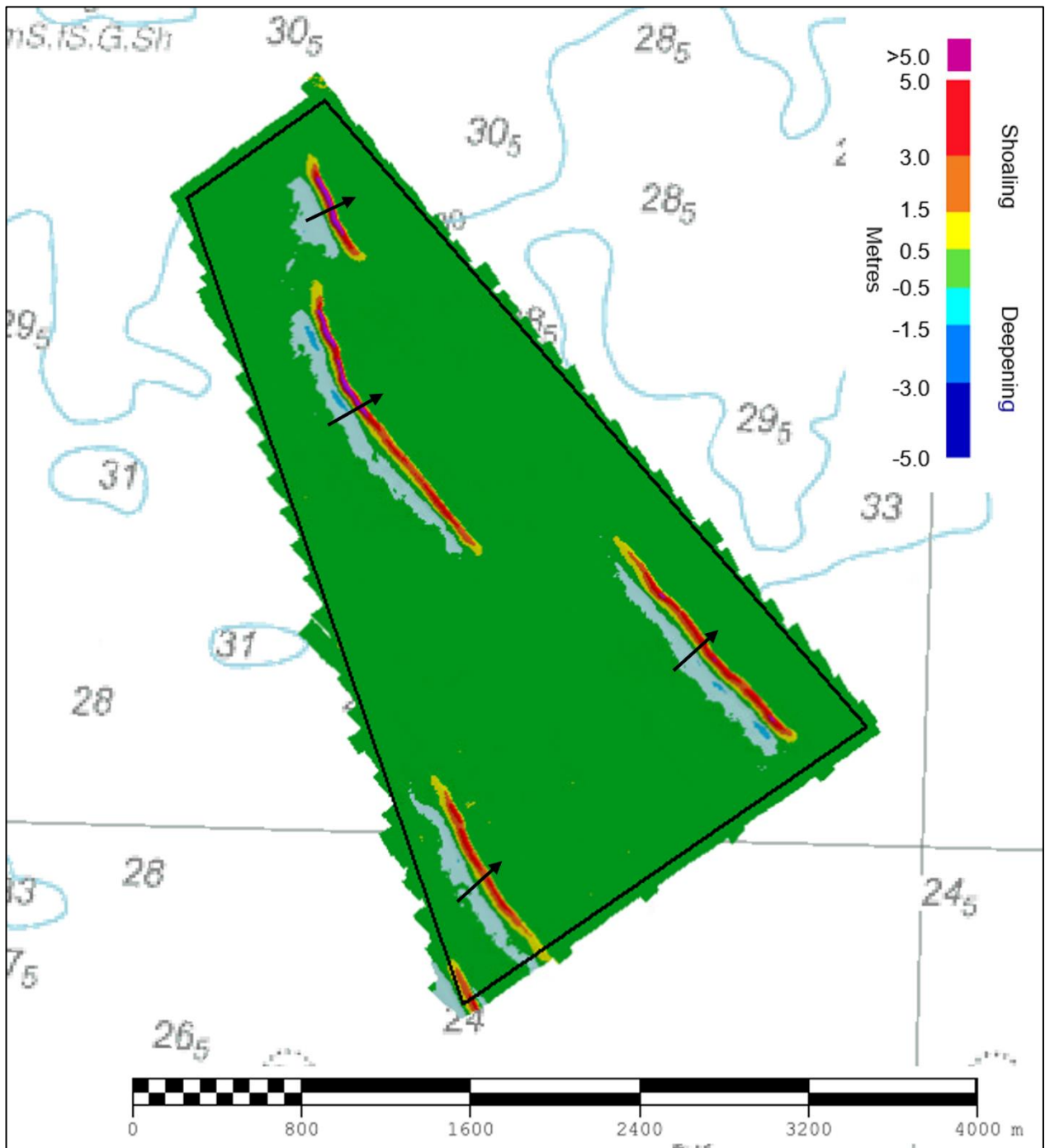


Figure 4a: Difference surface showing bathymetric changes between the 2013 and 2025 DS4A surveys overlaid on BA Chart 1892 (Black arrows represent direction of sand wave migration since 2013 survey).

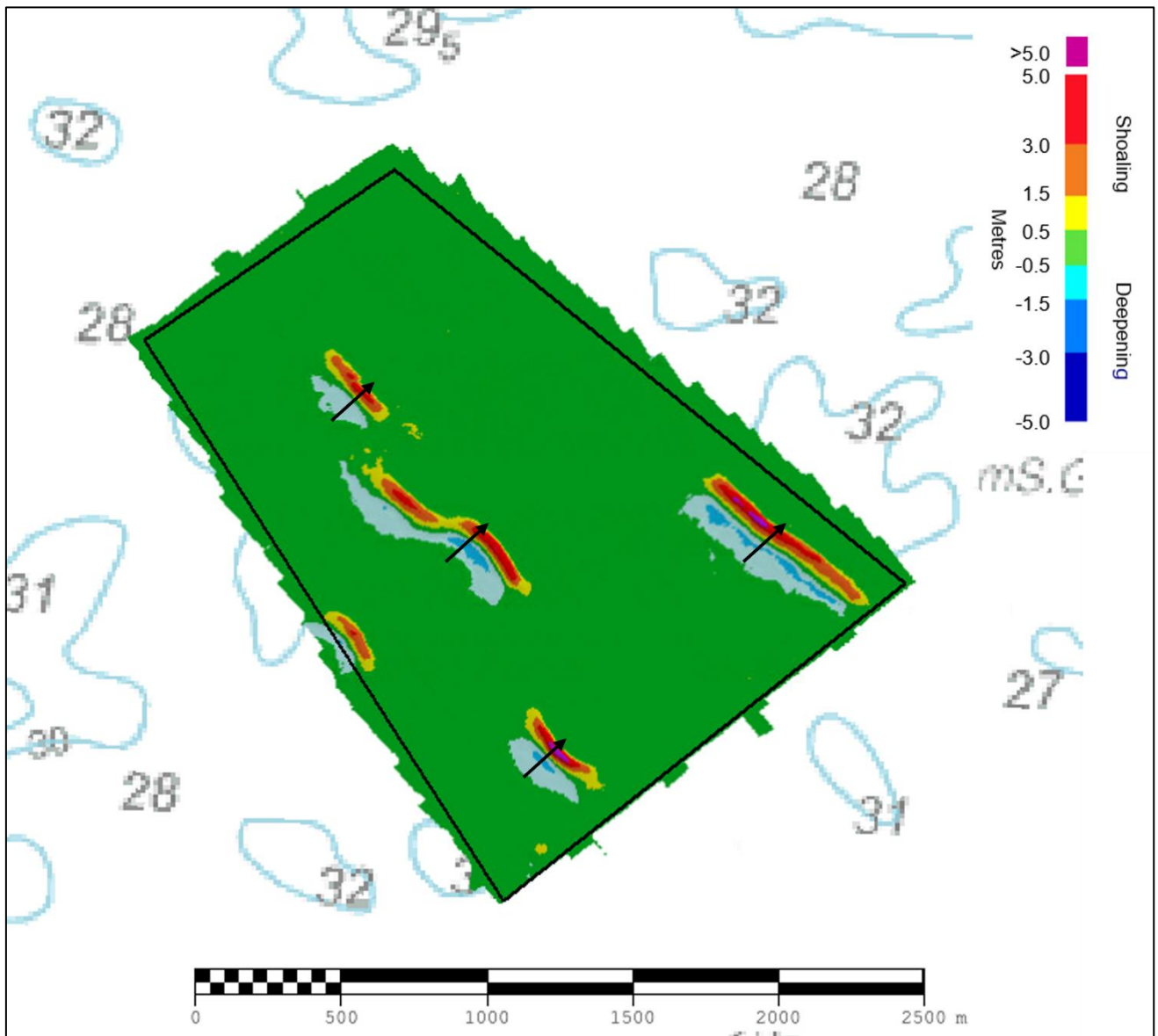


Figure 4b: Difference surface showing bathymetric changes between the 2013 and 2025 DS4B surveys overlaid on BA Chart 1892 (Black arrows represent direction of sand wave migration since 2013 survey).

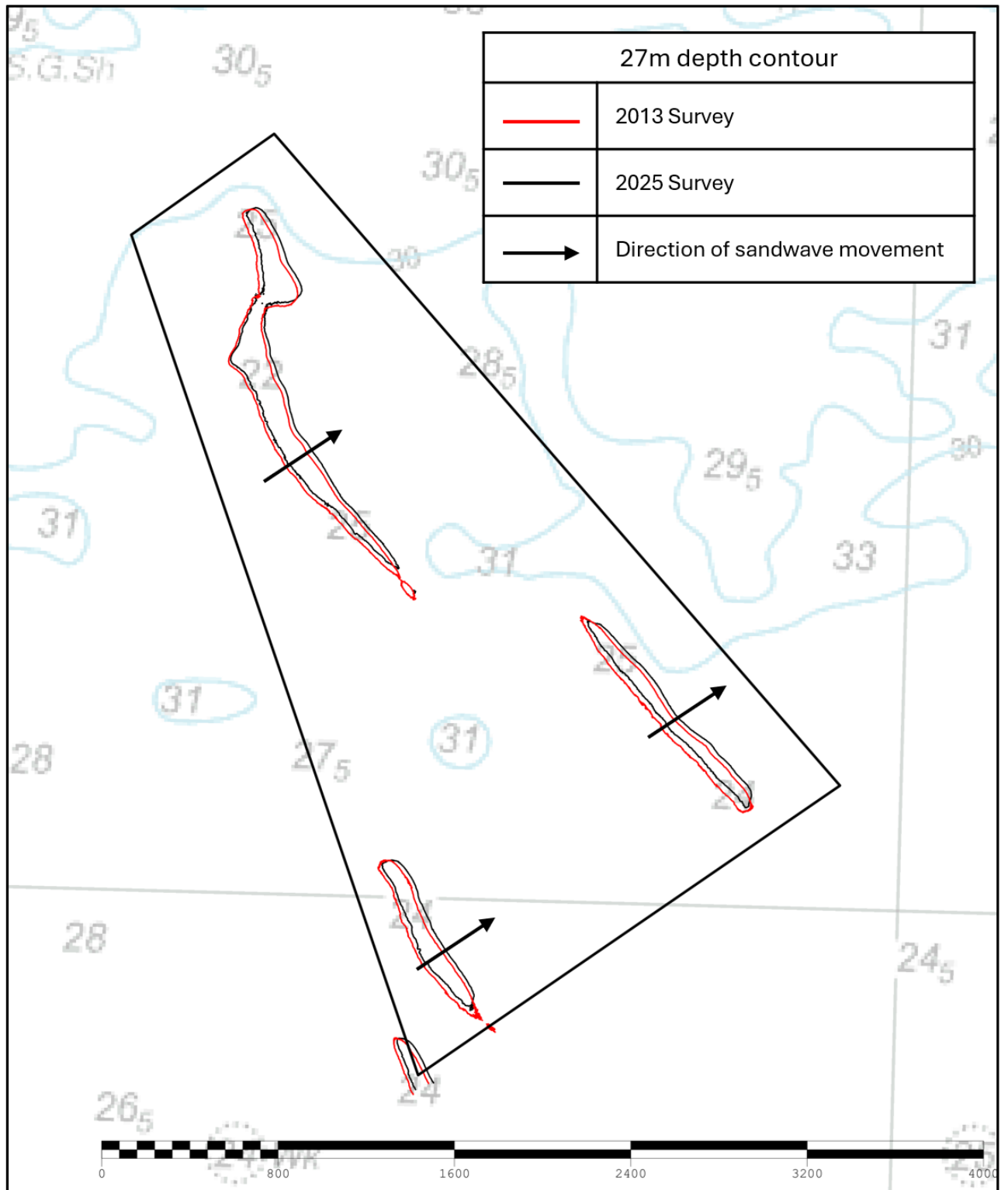


Figure 5a: Contour plot showing changes in the DS4A 27m contour between 2013 (red) and 2025 (black). Black arrow represents feature migration.

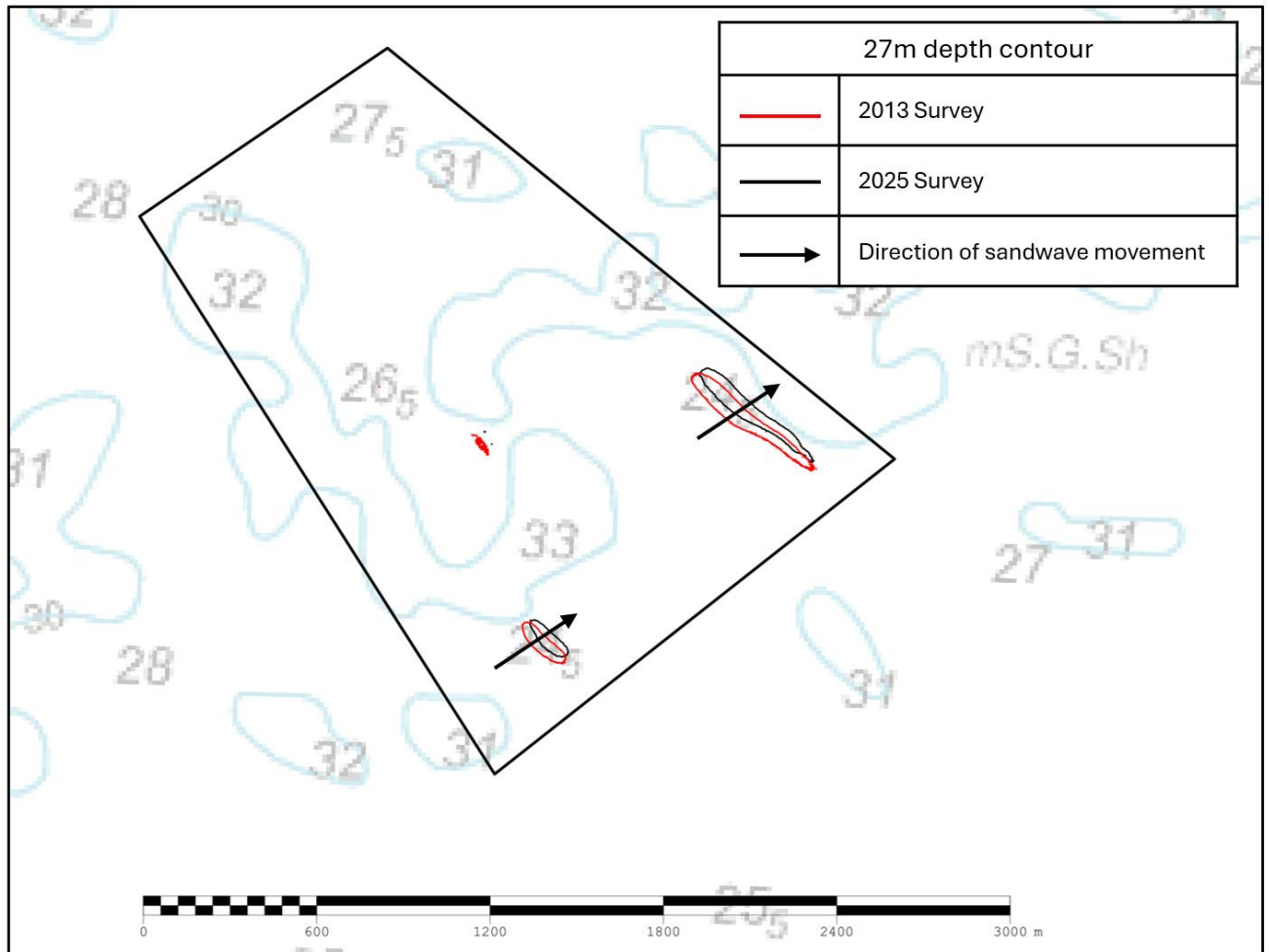


Figure 5b: Contour plot showing changes in the DS4B 27m contour between 2013 (red) and 2025 (black). Black arrow represents feature migration.

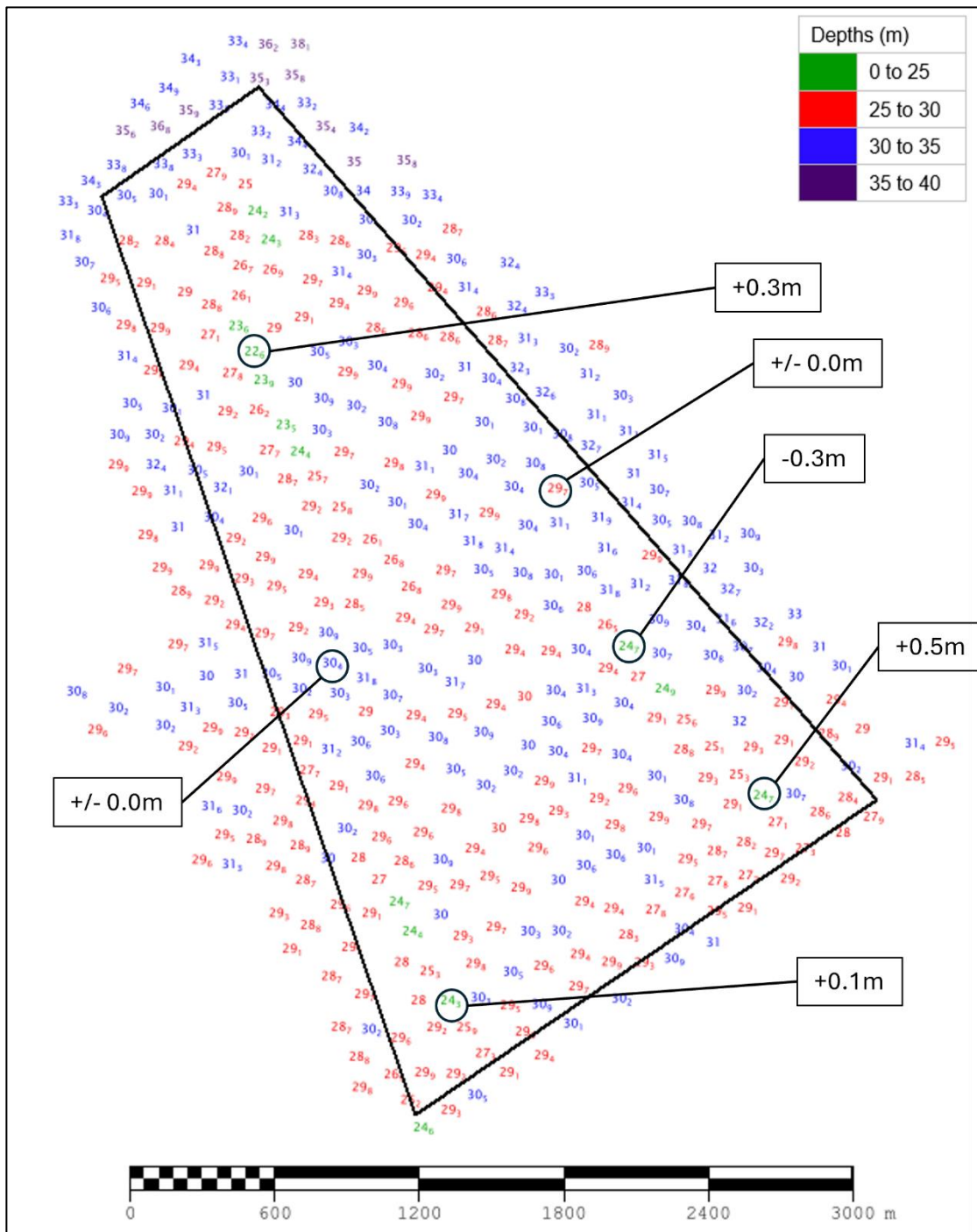


Figure 6a: Colour banded depth plot of DS4A from the 2025 survey with selected depth changes since the 2013 survey. Positive values (+) represent deepening. Negative values (-) represent shoaling.

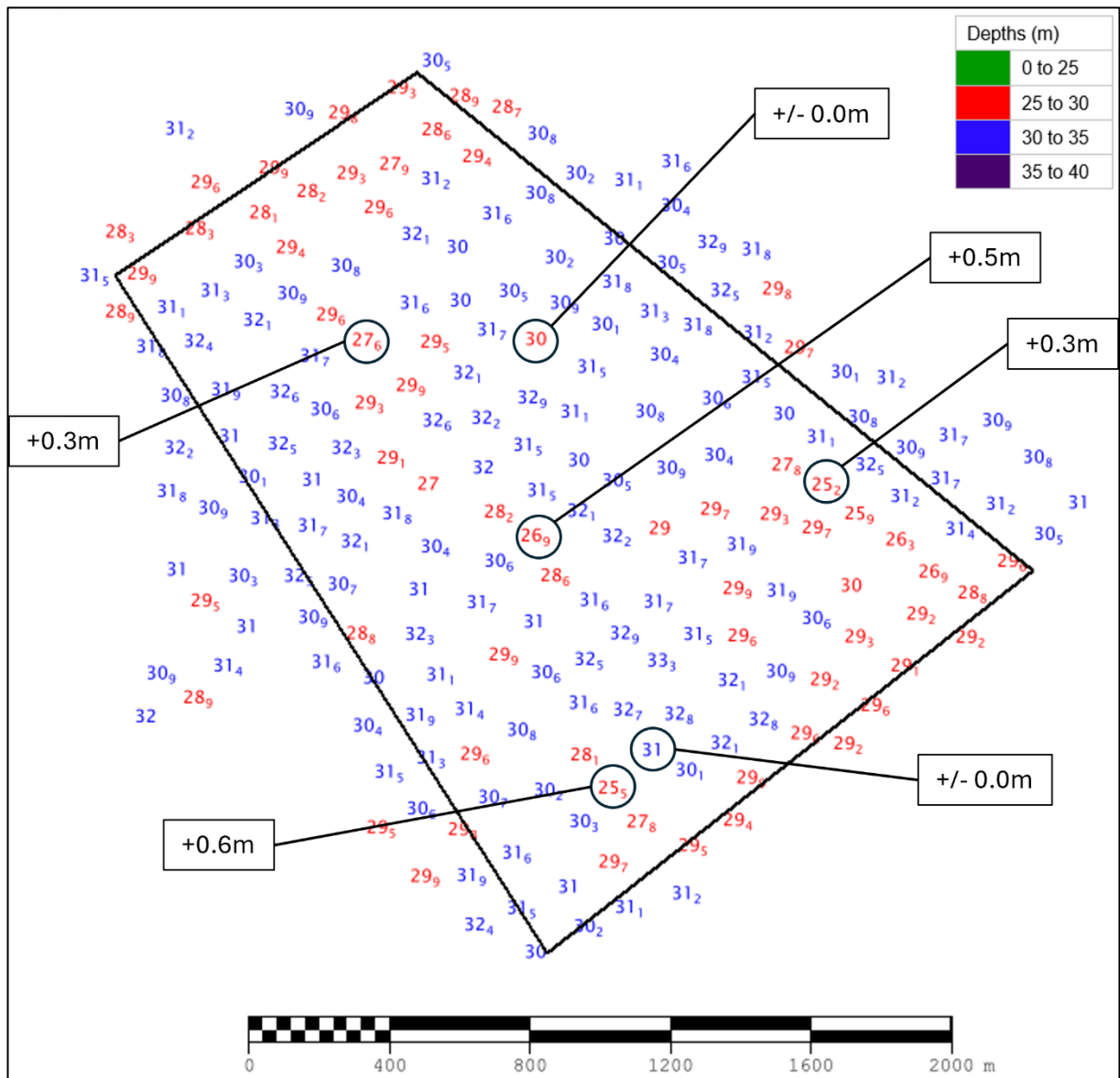


Figure 6b: Colour banded depth plot of DS4B from the 2025 survey with selected depth changes since the 2013 survey. Positive values (+) represent deepening. Negative values (-) represent shoaling.

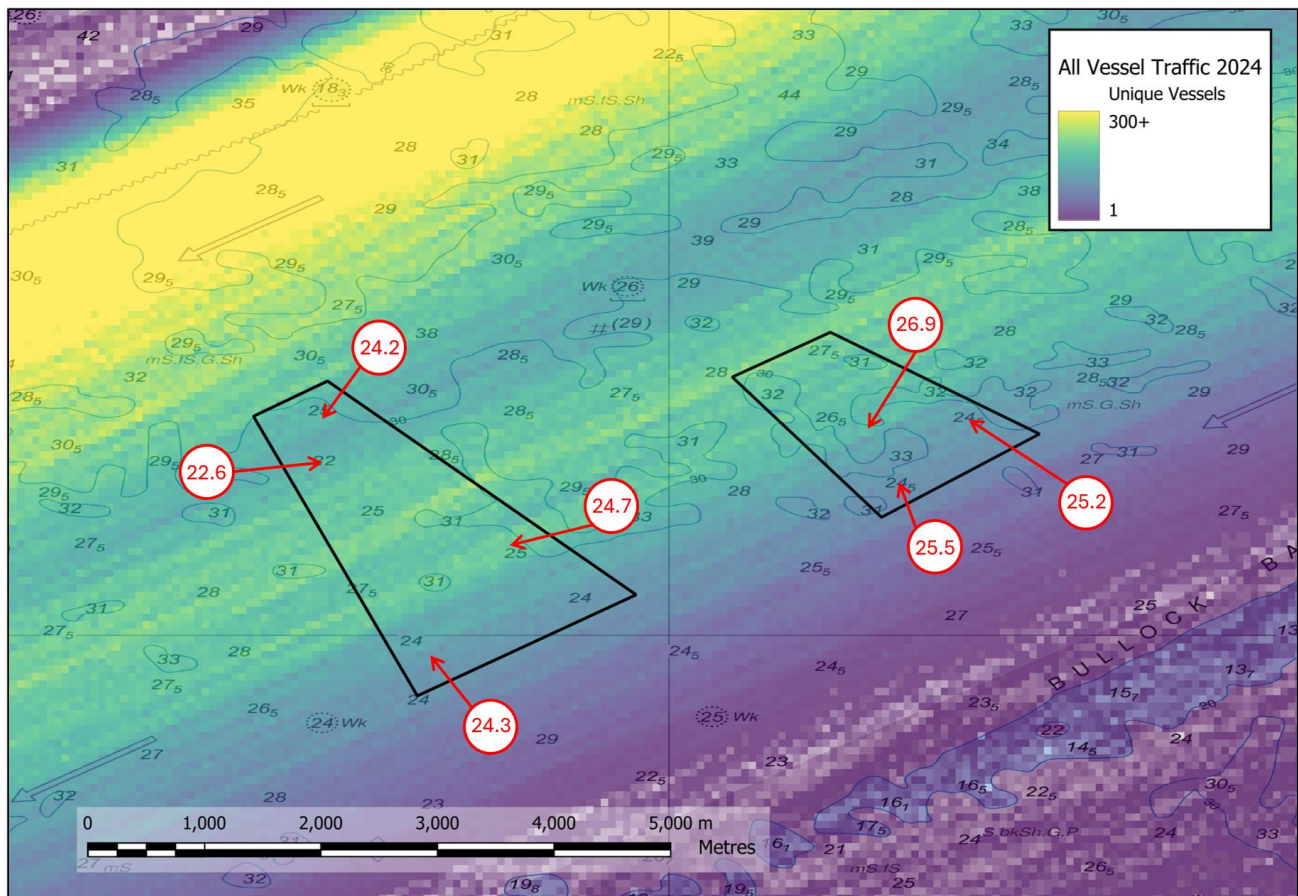


Figure 7: AIS heatmap at 100m resolution grid size. Density unit is unique vessels within the grid square within 2024. DS4A & DS4B areas in black and significant depth soundings (m) overlaid on chart 1892.

6. RECOMMENDATIONS FOR FUTURE SURVEYS

Survey Interval

- 6.1 Despite most of the DS4A&B areas having relatively stable seabed, the evidence of sand wave mobility and the proximity to shipping routes as seen in the AIS data (Figure 7) suggests that the current survey interval of 12 years is sufficient and should be maintained.

Survey Area

- 6.2 Based on the 2025 survey data, the current limits should be retained to ensure that any sand wave movement does not threaten the navigational safety of the shipping routes through the DS4A&B areas. If movement of the sand wave in the eastern region of DS4B continues at the current rate and direction, it may be encroaching on the survey limits at the next survey interval.

There are no further area recommendations resulting from this survey.