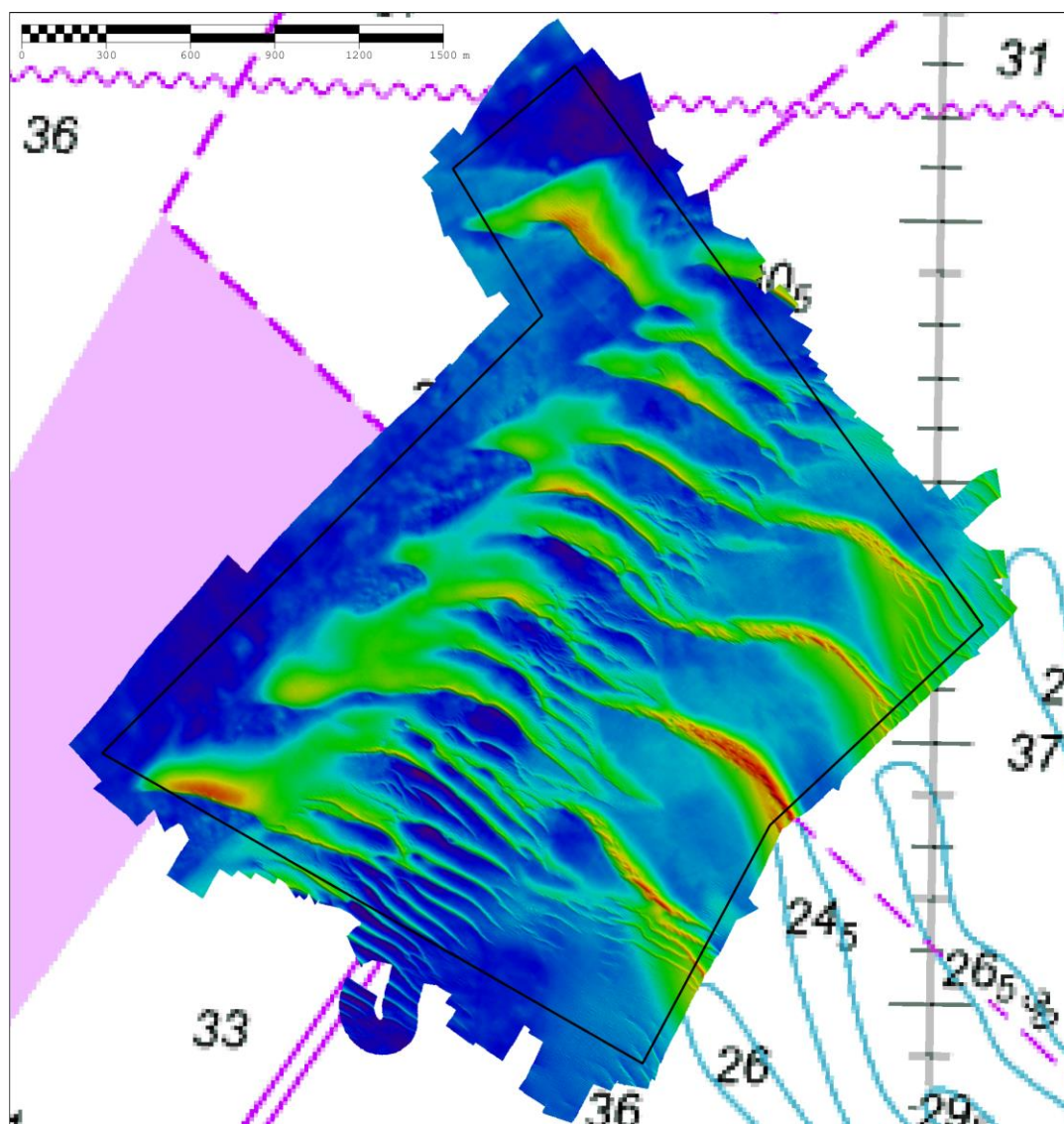


DOVER STRAIT
NORTH WEST SANDETTIE FOCUSED (DWR R)
2025 ASSESSMENT

An assessment of the 2025 hydrographic survey of the area DWR R: 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.

NORTH WEST SANDETTIE FOCUSED, 2025

1. SUMMARY

Changes Detected

- 1.1 Sandwaves in the north and west are migrating to the southwest, whereas sandwaves in the east are moving to the northeast.
- 1.2 The western portion is moving in a southwesterly direction, parallel to the TSS at a constant rate of approx. 50m every 6 years.
- 1.3 The eastern portion is relatively static in its lateral movement but does exhibit slower migration in a northeast direction at approx. 5-10m every 6 years.
- 1.4 The key soundings on the western portion of the survey area shows shoaling of the sand waves against that of previous RRS.

Reasons for Continuing to Resurvey the Area

- 1.5 Depths in the area remain changeable and the largest sandwaves are encroaching on the survey limits, these require continued monitoring through periodic resurvey.

Recommendations

- 1.6 Given the mobility of the seabed and changing depths DWR R should remain on the current survey interval.
- 1.7 The area may require an extension further northeast to capture a sandwave that was observed nearing in the survey boundary extents. Two additional sections should be added to the southwest facing limits to continue tracking the movement of the shoalest of sandwaves.

2. LOCATION

- 2.1 Survey interval at time of resurvey: 6 years Focused, 12 years Full
- 2.2 Area Covered: 6.32 km²

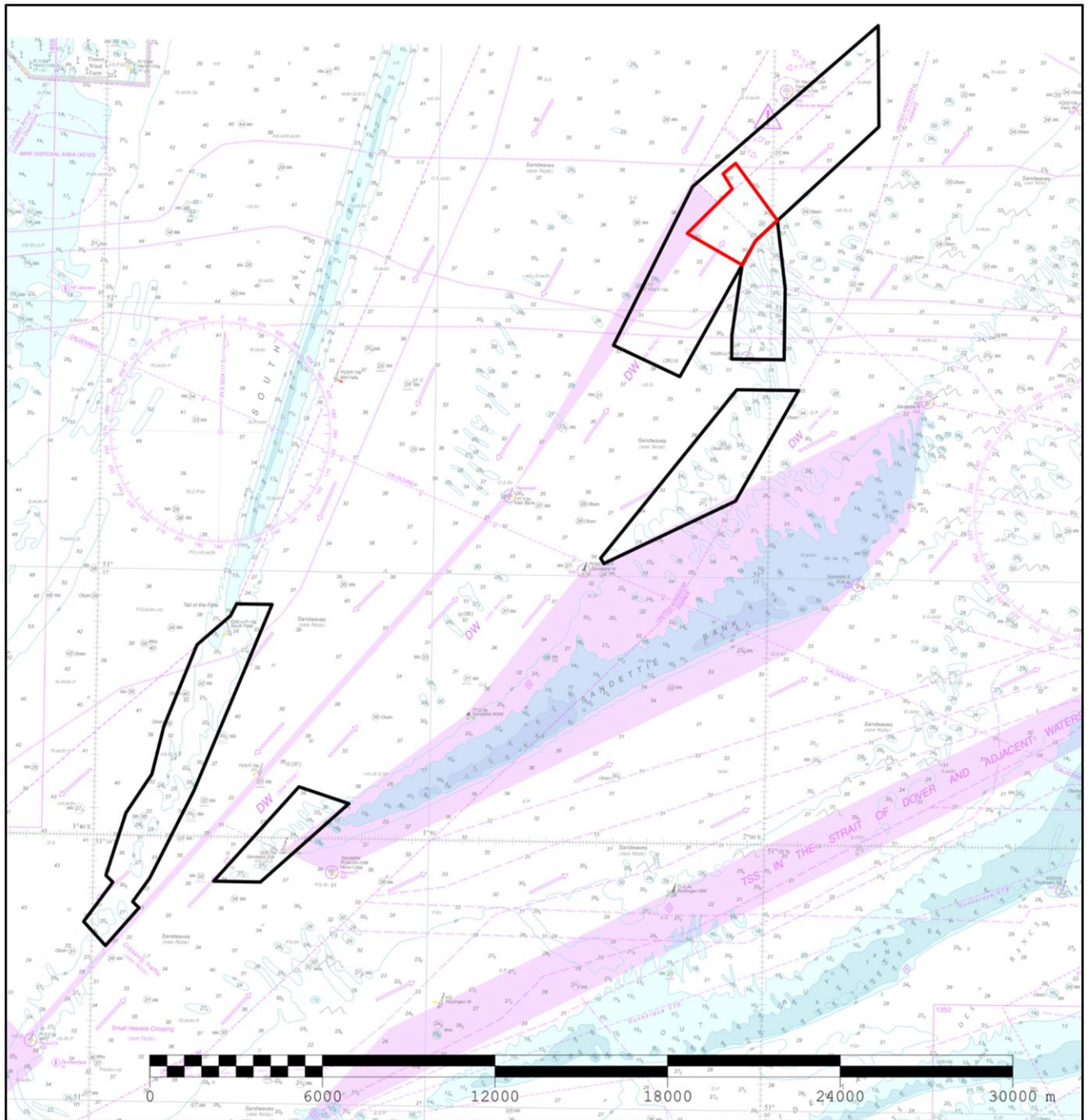


Figure 1: 2025 Deep Water Route Routine Resurvey areas and DWR R Full, overlaid on BA Chart 0323-0 with area DWR R in red

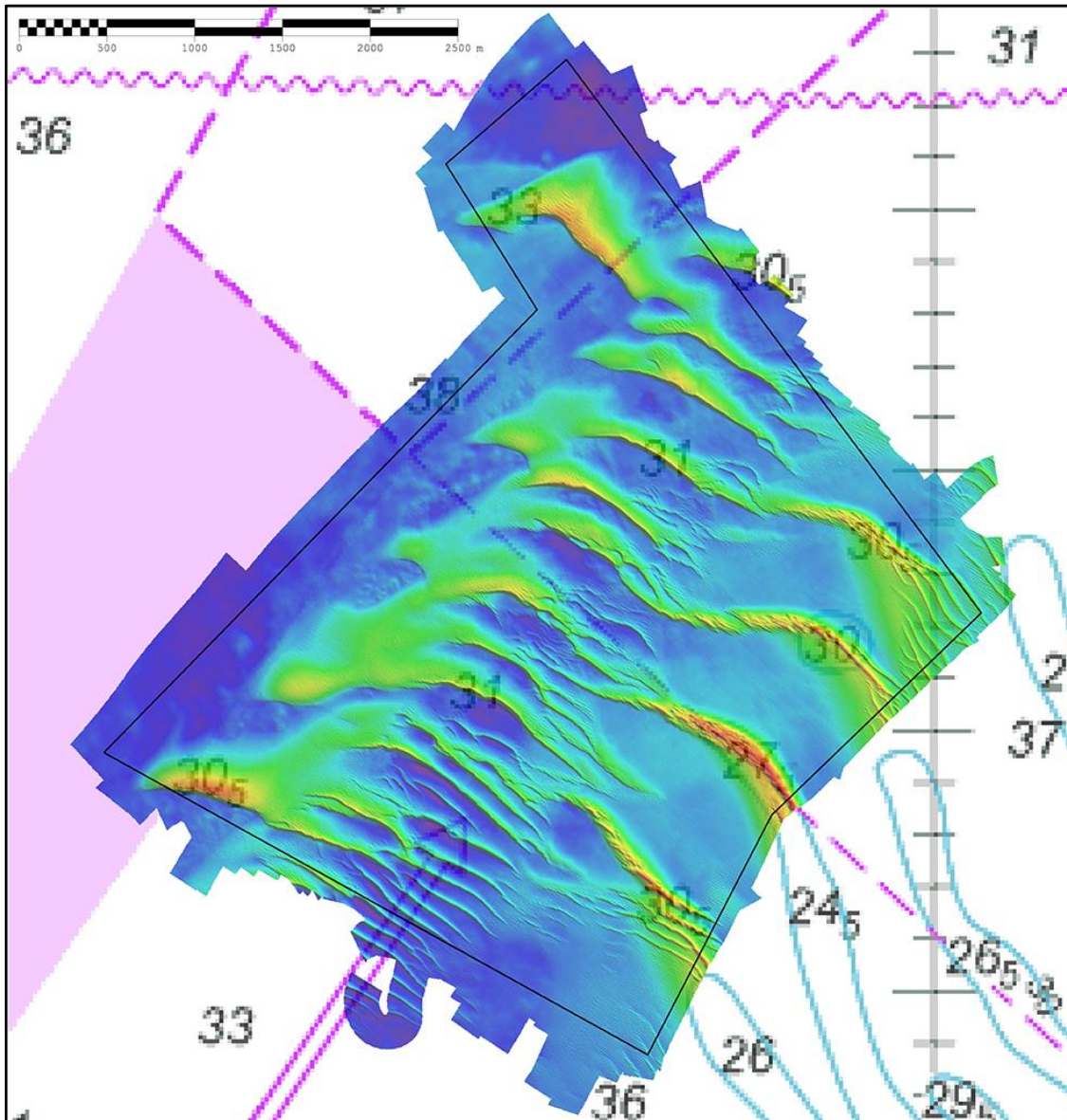


Figure 2: 2025 survey data overlaid on BA Chart 0323-0

3. REFERENCE SURVEY DETAIL

- 3.1 The previous full survey was conducted as part of the 2019 Routine Resurvey Programme, between May and October 2019 as part of HI1656. Prior to this the last focused survey was conducted in November and December 2013 as part of the 2013 Routine Resurvey Programme.
- 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 HI1903, 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

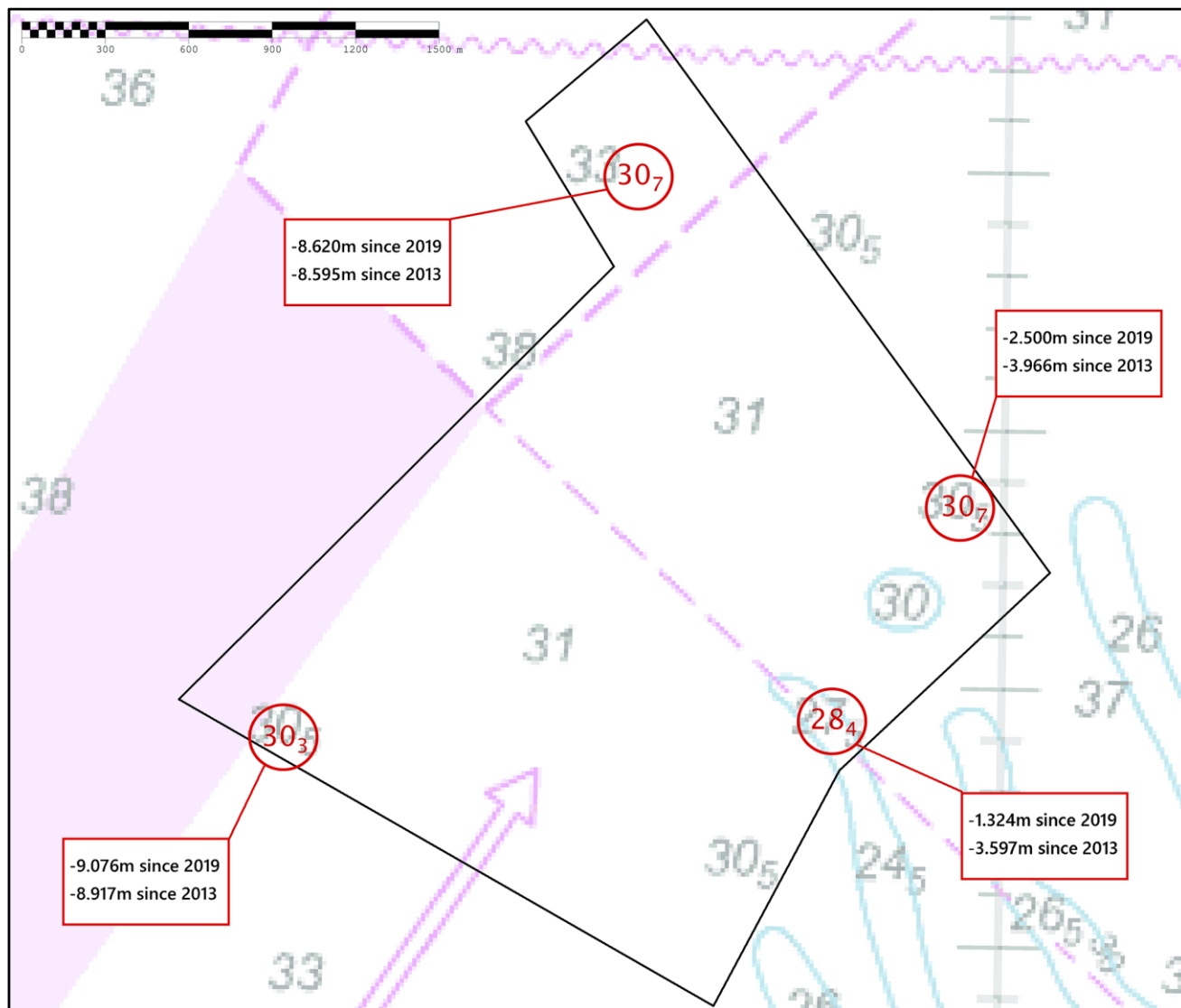
- 5.1 Figure 3 shows that the controlling depth in the 2025 survey is 28.4 m, a shoaling of 1.32m since 2019 and 3.59m since 2013. The previous controlling depth recorded was 27.8 m in 2019.

Significant depth changes in the northern and eastern areas of DWR R, can be attributed to the migration of sandwaves. The most northern highlighted depth, currently 30.7m, has shoaled by 8.62m since 2019 and 8.59m since 2013.

The same trend is evident in the southwest of the survey area, where the highlighted depth of 30.3m has shoaled by 9.07m since 2019 and by 8.91m since 2013.

In both cases above, the least depth over the sand waves has shoaled by 0.3m since 2019.

- 5.2 Figures 4a and 4b illustrate changes in depths between the 2025 survey and those conducted in 2019 and 2013. Overall, seabed depths have remained largely stable, with the most notable variations attributed to the lateral migration of sandwaves rather than significant vertical changes in the seafloor.
- 5.3 Migration patterns are clearly illustrated in Figure 5, which highlights a distinct directional divergence in sandwave movement, delineated by the orange reference line. West of this line, sandwaves exhibit a southwesterly migration trend, advancing at an average rate of approximately 50 m per six-year interval, with migration intensity increasing toward the western sector of the survey area. In contrast, the eastern portion remains comparatively stable, where sandwaves migrate at a much slower rate of approximately 5–10 m per six-year interval in a northeasterly direction.
- 5.4 Figure 6 shows that areas without sandwaves experience little to no depth variation, for example along the northwestern edge of the survey extents there is a 40m depth which has only shoaled by 0.12m since 2019.



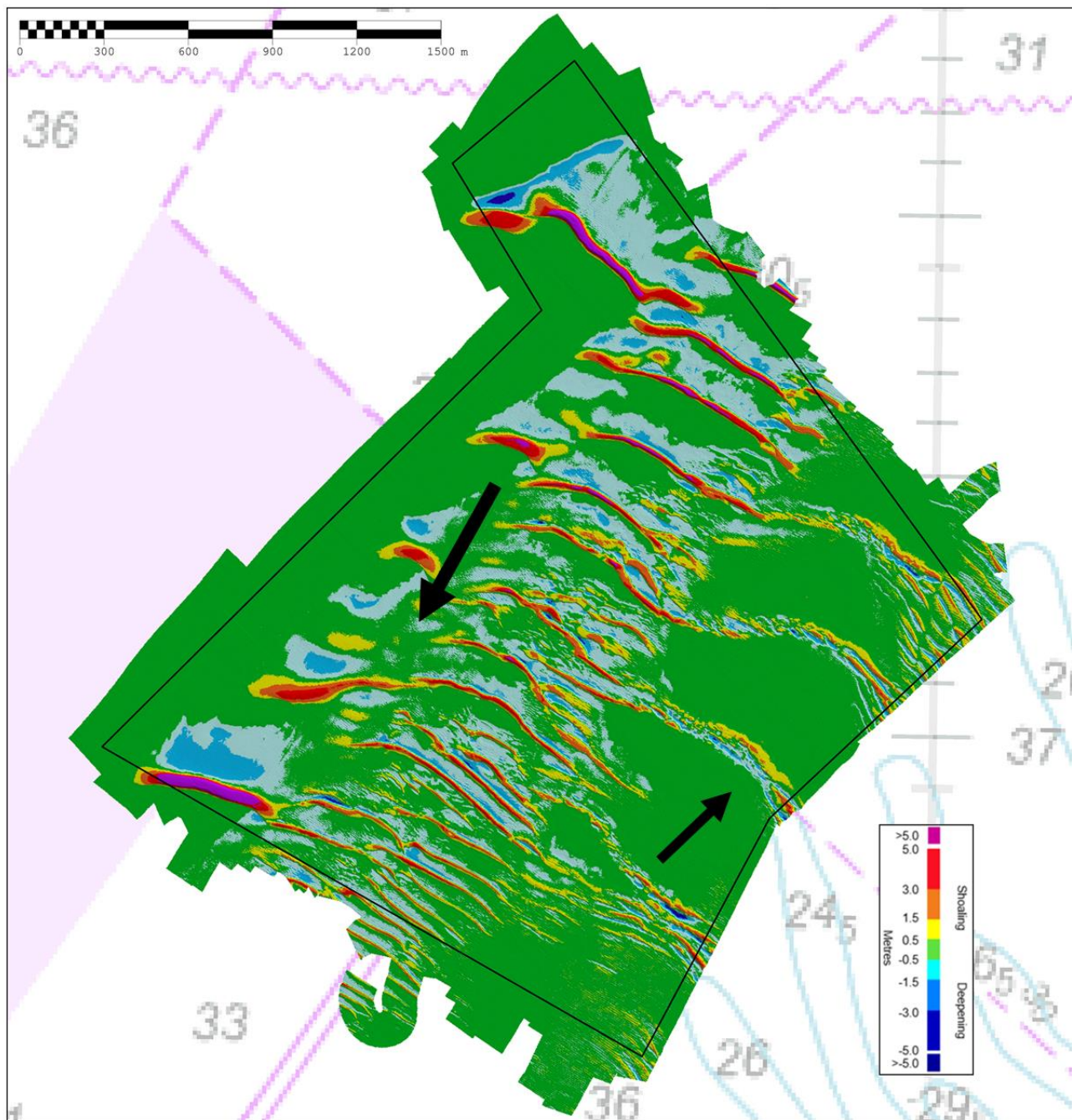


Figure 4a: Difference surface showing bathymetric changes between the 2025 and 2019 surveys overlaid on BA Chart 0323-0 (Black arrows represent sandwave migration since 2013 survey)

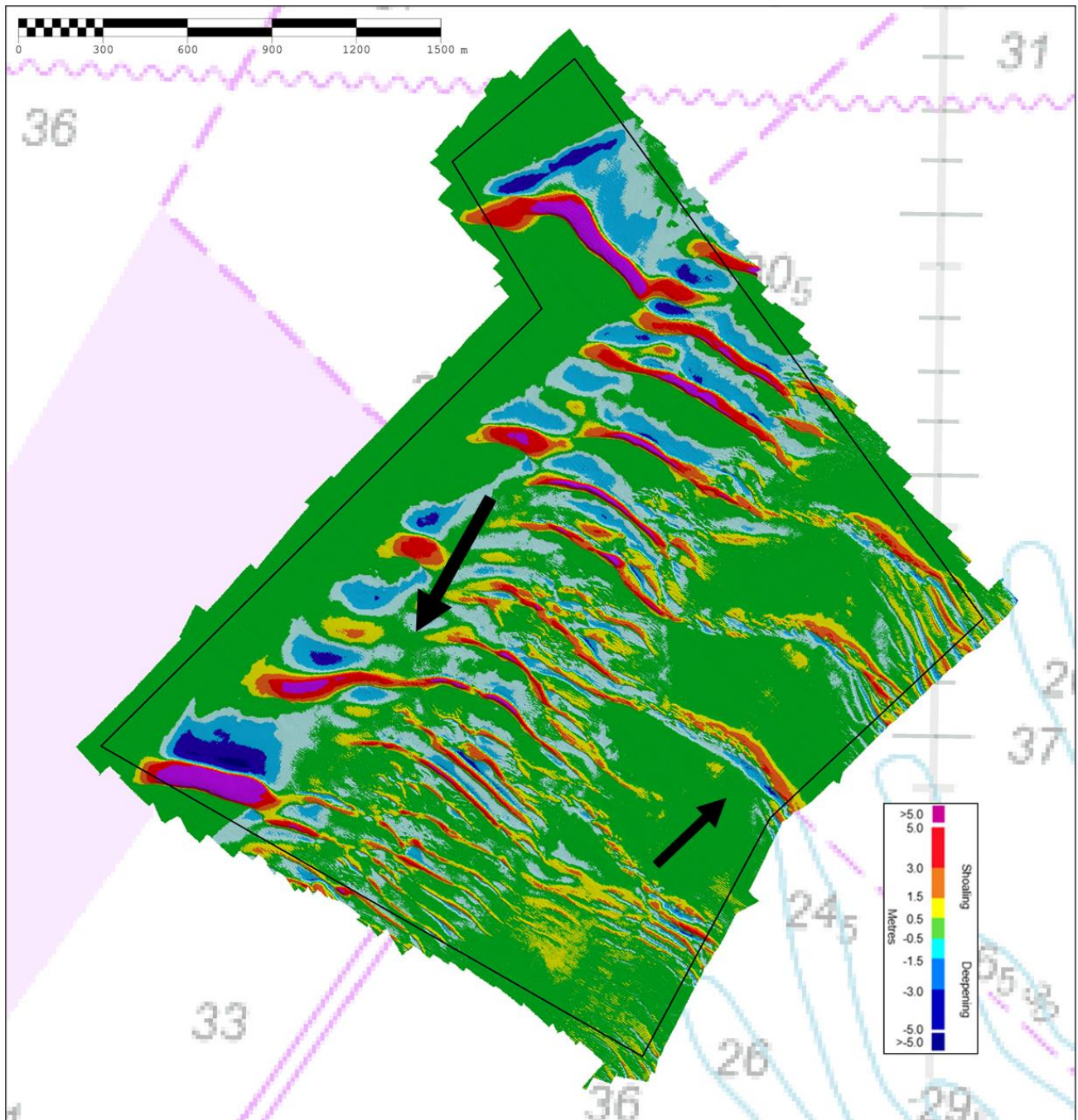


Figure 4b: Difference surface showing bathymetric changes between the 2025 and 2013 surveys overlaid on BA Chart 0323-0 (Black arrows represent sandwave migration since 2013 survey)

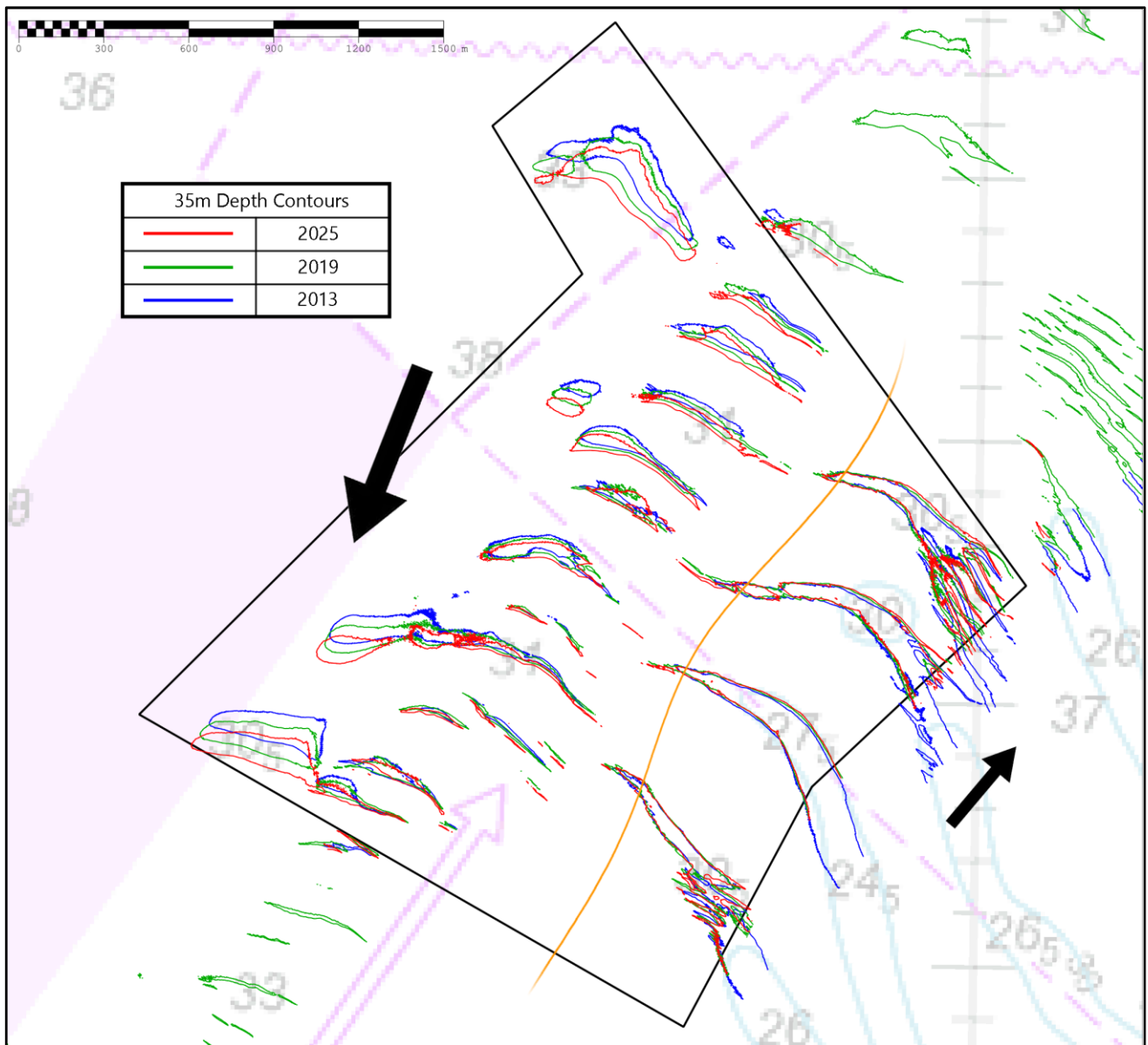


Figure 5: Contour plot showing changes in the 35m contours between 2025 (red), 2019 (green) and 2013 (Blue). Black arrows represent feature migration; orange line represents approximate location of the contour migration directional divide.

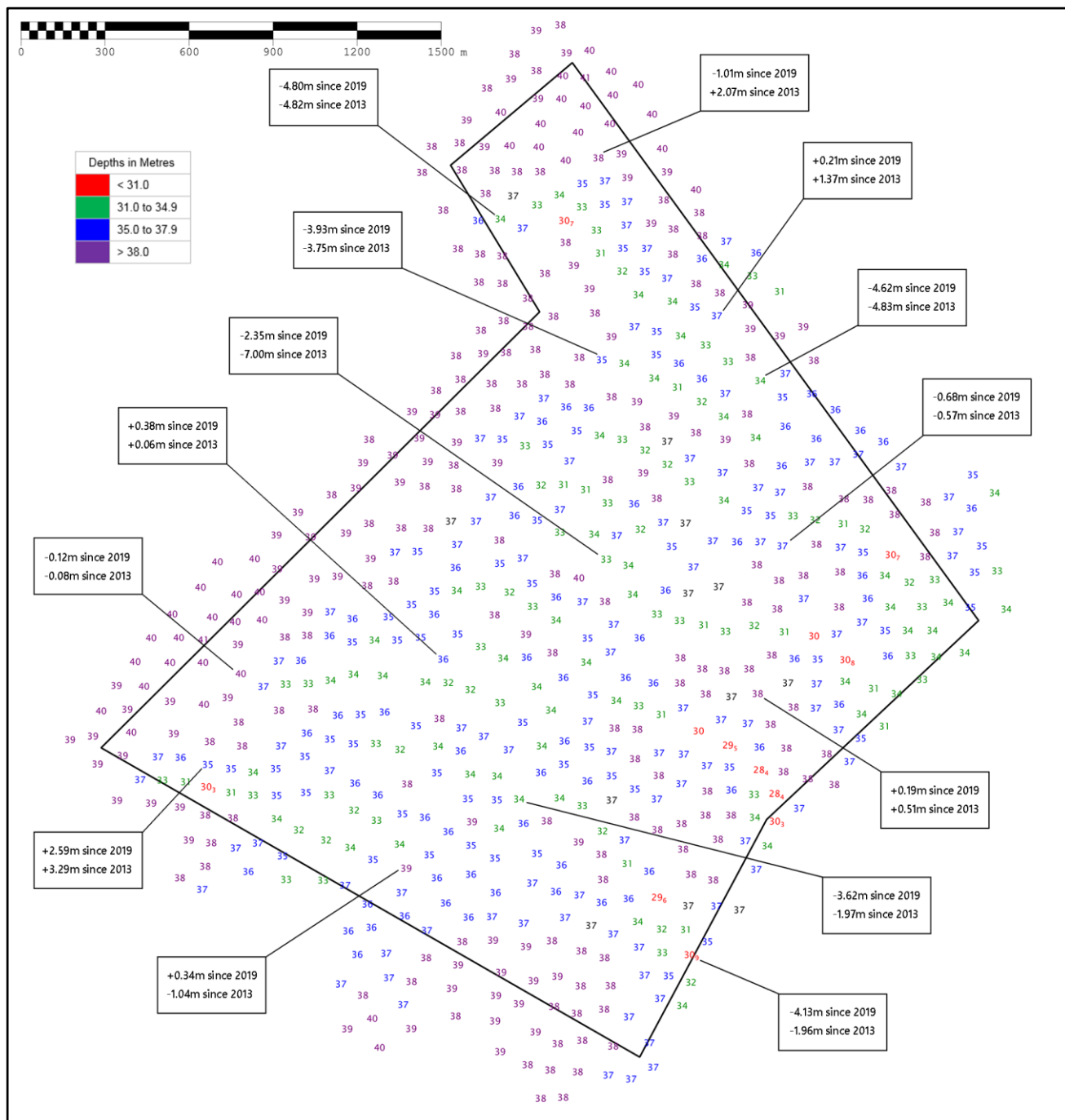


Figure 6: Colour banded depth plot from the 2025 survey with selected depth changes since the 2019 and 2013 surveys. Positive values (+) represent deepening. Negative values (-) represent shoaling.

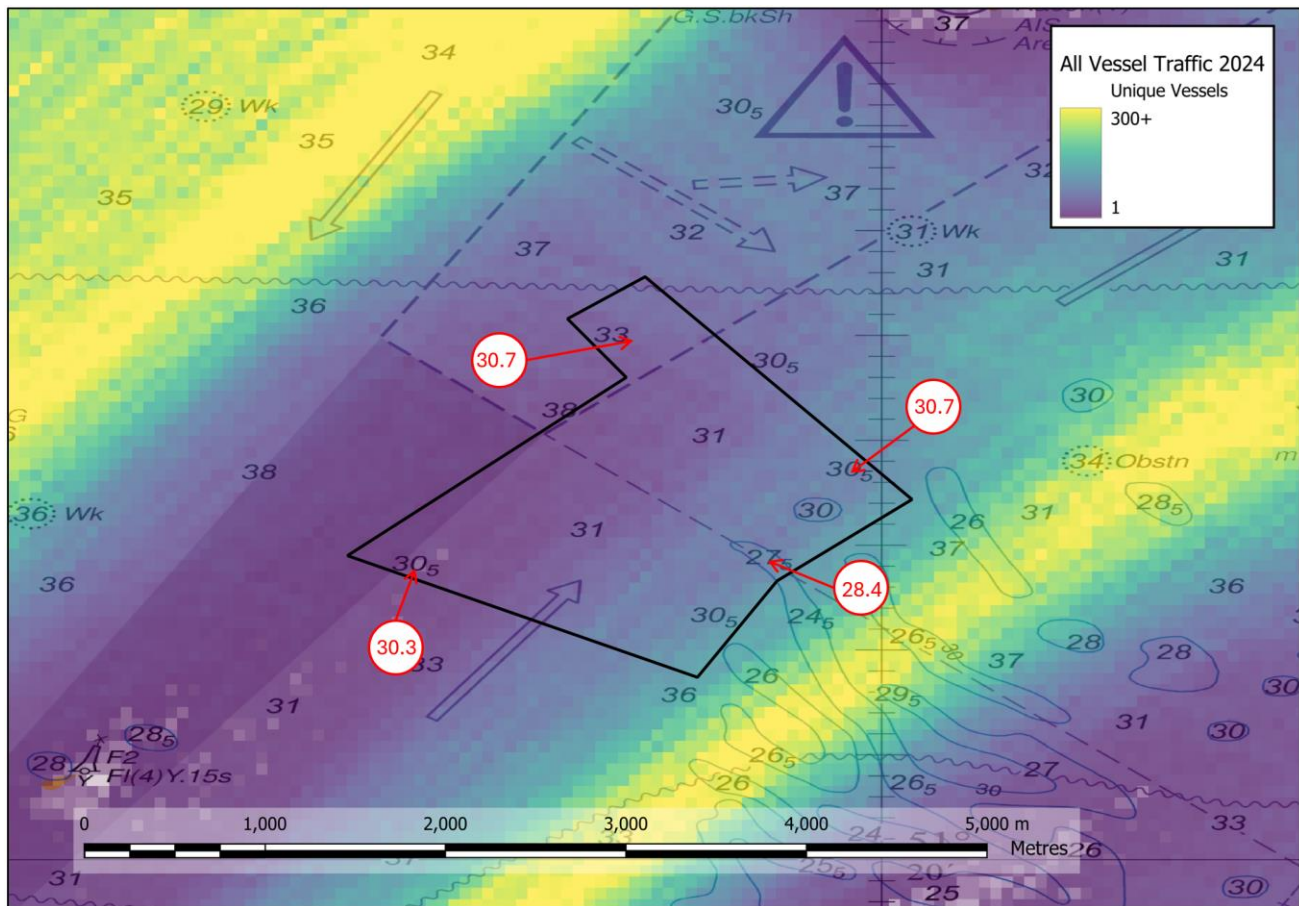


Figure 7: AIS heatmap at 100m resolution grid size. Density unit is unique vessels within the grid square within 2024. DWR R area in black and significant depth soundings (m) overlaid on chart 0323.

6. RECOMMENDATIONS FOR FUTURE SURVEYS

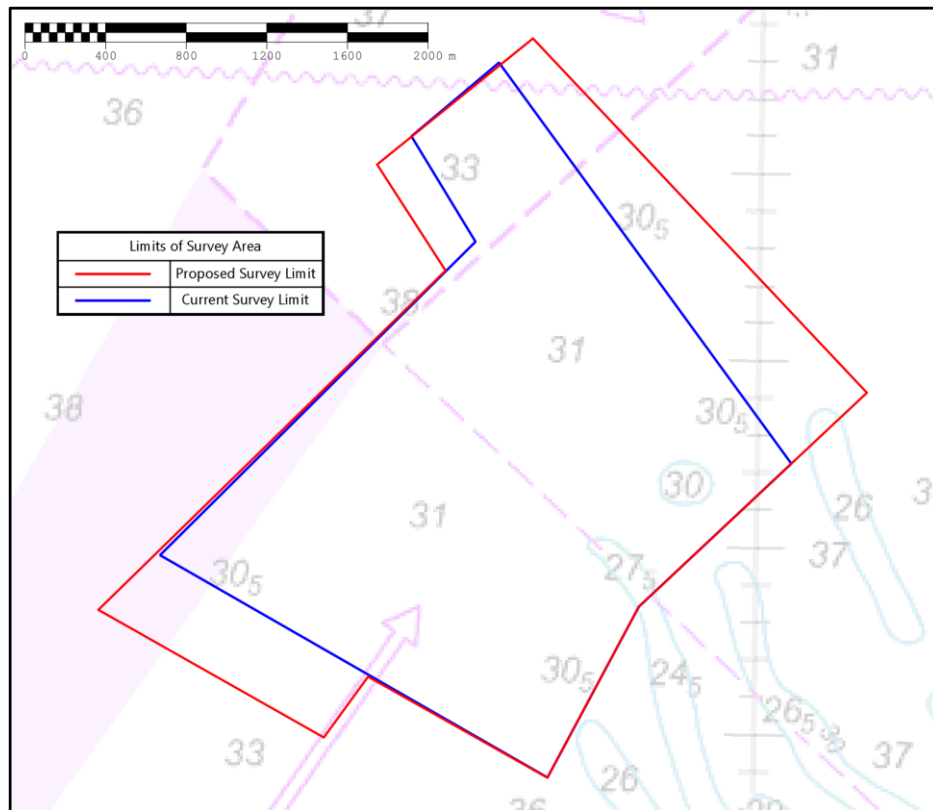
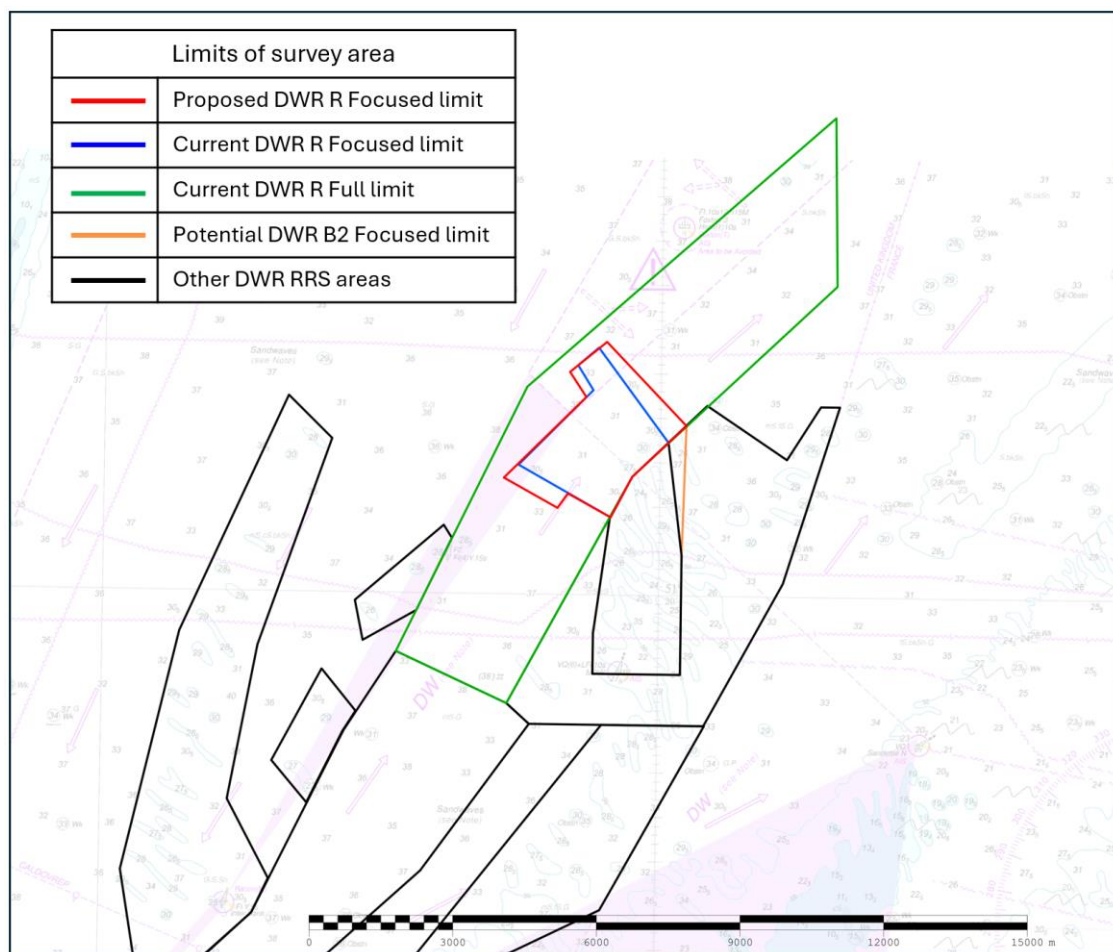
Survey Interval

6.1 The current survey schedule is sufficient to monitor DWR R region

Survey Area

6.2 Figure 8 illustrates the current and proposed changes to the DWR R limits. Based on observed sandwave migration trends, two significant depth changes identified in the 2025 survey are projected to extend beyond the existing survey boundary by the 2031 resurvey. Additionally, a new sandwave appears to be entering the DWR R boundary from the north. To ensure effective monitoring of these features, consideration should be given to expanding the southwest and northeast boundaries to accommodate these shoals.

6.3 Figure 9 shows how this proposed change fits in with the Full DWR R area and surrounding DWR RRS areas. This also shows a potential change to DWR B2 focused area to match the extended limits of DWR R and capture more of the 26m sandwave.



The coordinates of the recommended adjusted survey area limits for the 12 yearly focused DWR R are shown below:

Current Limits:

DWR R (focused) total area: 5.01 km²

Proposed New Limits:

DWR R (focused) total area: 6.52km²

	Latitude	Longitude
1	51.3494753N	001.9693537E
2	51.3550234N	001.9531625E
3	51.3703660N	001.9775639E
4	51.3750517N	001.9725795E
5	51.3807676N	001.9835667E
6	51.3651765N	002.0077168E
7	51.3554998N	001.9916703E
8	51.3478214N	001.9853206E
9	51.3522129N	001.9724470E