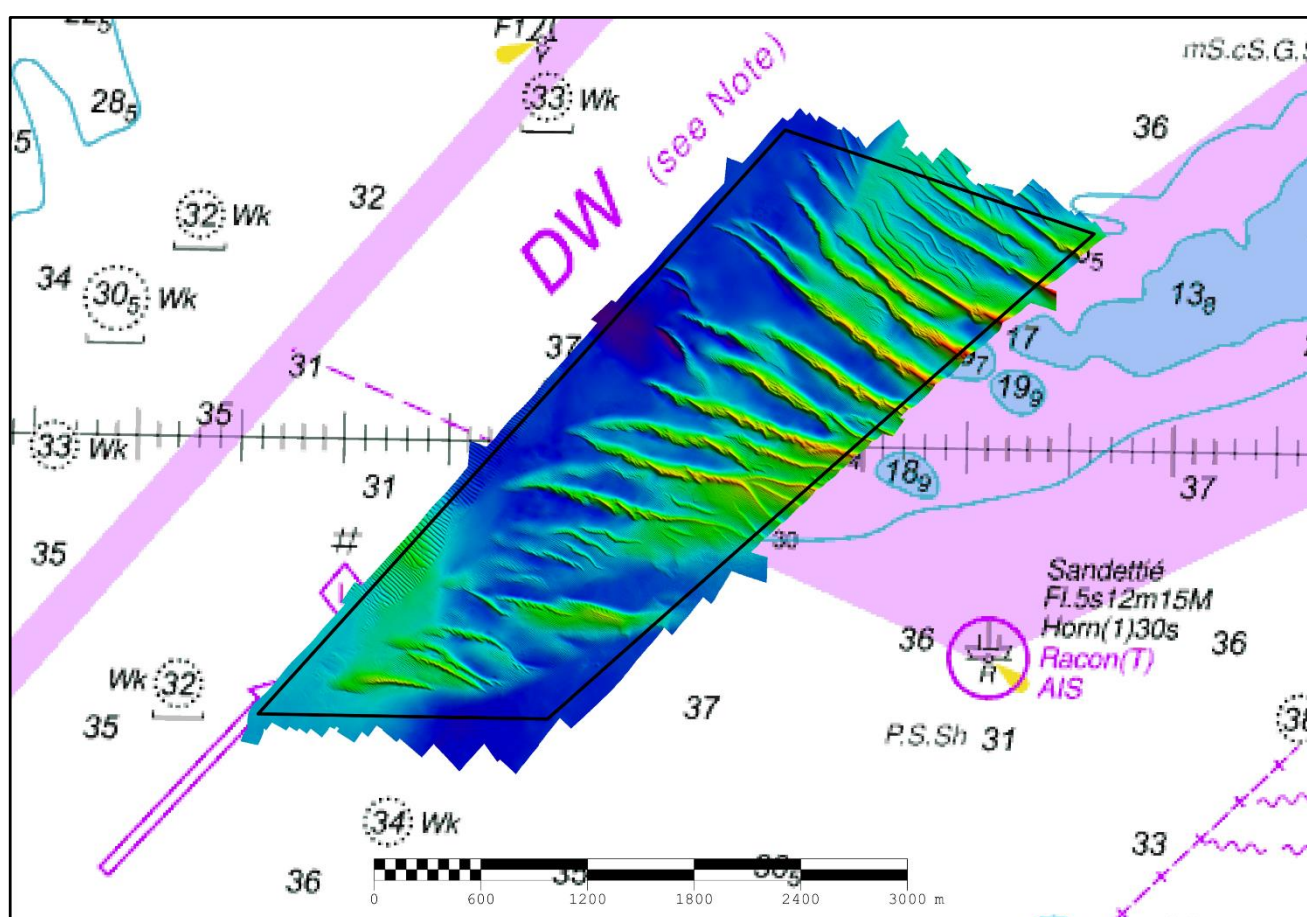


DWR A SW SANDETTIE

2025 ASSESSMENT

An assessment of the 2025 hydrographic survey of the area DWR A SW Sandettie: 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.

DWR A SW SANDETTIE, 2025

1. SUMMARY

Changes Detected

- 1.1 Sandwave movement over the 6 years since the last survey has led to some changes in depths, both shoaling and deepening of over 8m since the last survey in 2019.
- 1.2 The shoalest point is 20.3m, in the northeast outer edge of the survey area.
- 1.3 Sandwaves across the area are migrating both to the northeast and the southwest. There is very little contour movement for both the 30m and 40m contours in the survey area.

Reasons for Continuing to Resurvey the Area

- 1.4 Depths in the area around the Sandettie bank remain hazardous and changeable to deep draught vessel navigating the area and therefore require continued monitoring through routine resurveys every 6 years.

Recommendations

- 1.5 Given the location of the area in relation to the DWR and the draught of vessels navigating the area, DWR A should remain on the 6-year cycle survey interval.

2. LOCATION

- 2.1 Survey interval at time of resurvey: 6 years.
- 2.2 Area Covered: 7.04 km²

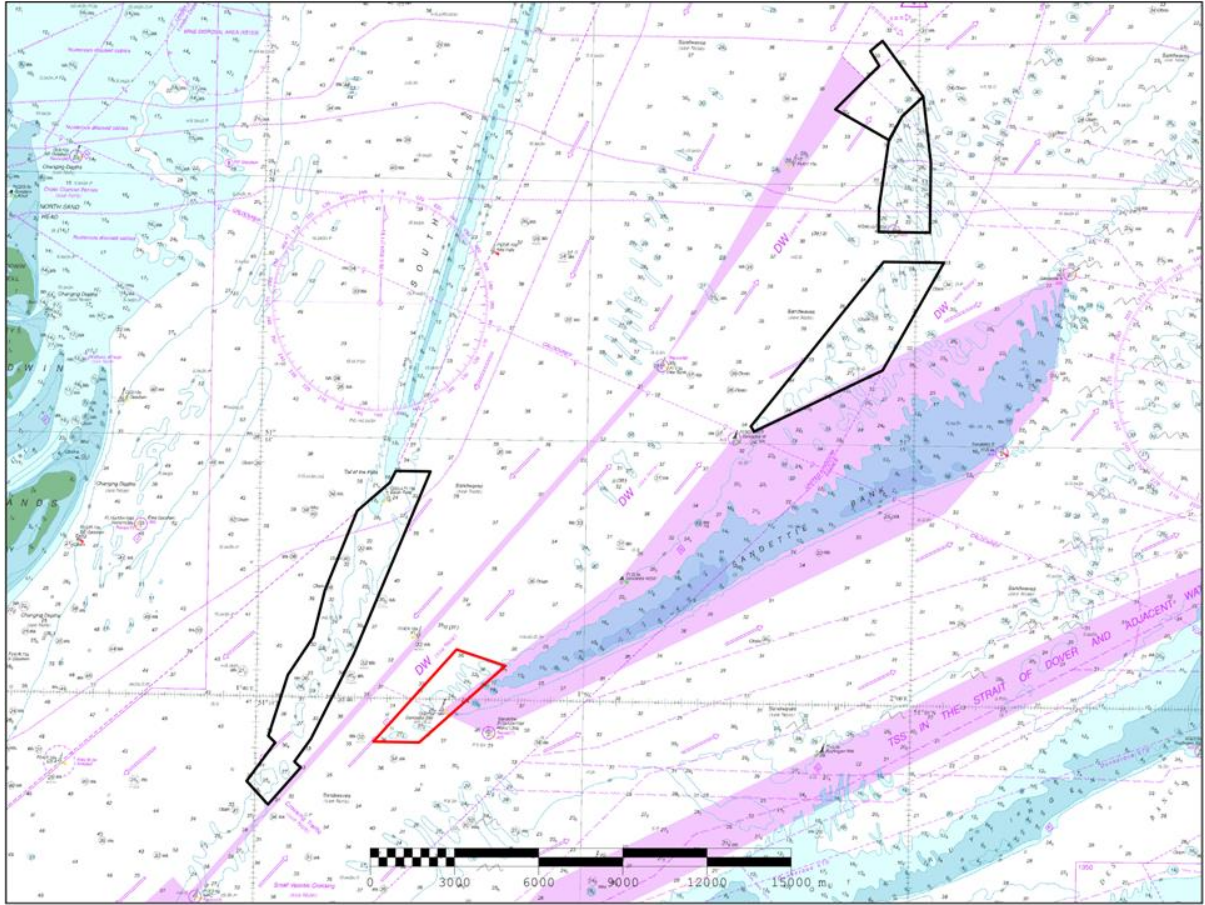


Figure 1: 2025 Deep Water Route Routine Resurvey areas overlaid on BA Chart 0323-0 with area DWR A in red

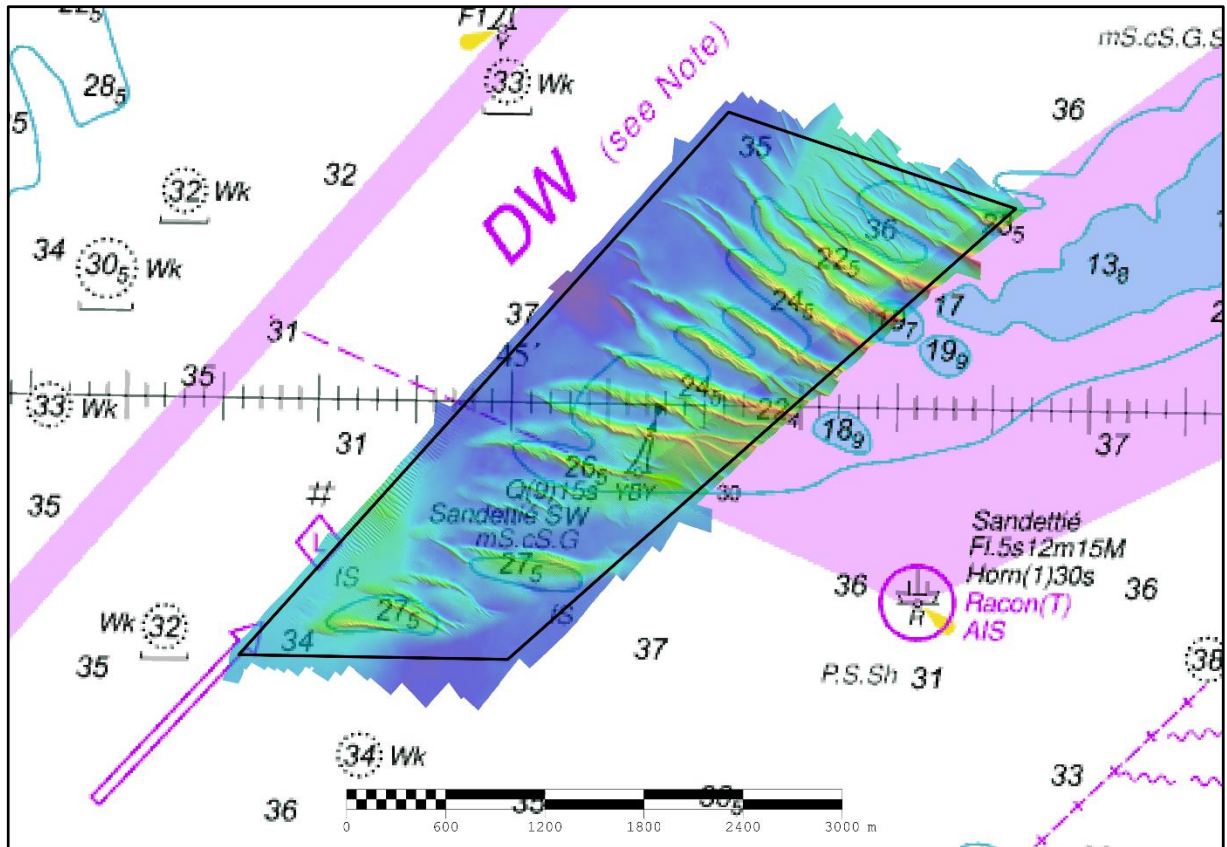


Figure 2: 2025 survey data overlaid on BA Chart 0323-0

3. REFERENCE SURVEY DETAIL

- 3.1 The previous survey was conducted as part of the 2019 Routine Resurvey Programme between June and October 2019 as part of HI1647. Another survey was conducted as part of the 2013 Routine Resurvey Programme between November and December 2013 as part of HI1434.
- 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 HI1899 which was surveyed May to June 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 the shoalest depth within the HI limits is 20.3m, found to the north on the southeast edge. This has shoaled by 4.2m since 2019 and 7.9m since 2013 due to sandwave movement. The previous least depth, in 2019, was 20.5m found on the same sandwave 20m southwest. The shoalest depth in the 2013 survey (within the current HI area) was 21.6m, on the same sandwave.
- 5.2 Other significant depths are seen on sandwave peaks shown in Figure 3, showing variation in depth changes. The 27.6m depth to the south has shoaled by 6.1m since 2019 and 11.1m since 2013. Whereas the 26.6m depth to the west of the Sandettie SW buoy has only shoaled by 0.7m since 2019 and 2.3m since 2013. The 27.0m in the southwest of the survey area has shoaled 4.2m since 2019, it is 1.7m shoaler than the shoalest on the same sand wave in 2019 and 0.8m shoaler than the least depth over the adjacent sandwave which was 27.8m in 2019.
- 5.3 The difference surfaces in Figures 4 and 5 show there has been sandwave migration consistently across the survey area since 2013. Sandwaves adjacent to the northwestern boundary of the survey area show movement in a southwestern direction, whilst sandwaves close to the southeastern edge of the survey move in a northeastern direction.
- 5.4 Figure 6 shows movement of the 30m contour has been minimal in the northern half of the area since 2013, with no overall trend. In the southern half of the area the 30m contour is displaying a northeasterly migration trend, moving up to 47m since 2013. The 40m contour shown in Figure 7 shows little movement.
- 5.5 The depth plot in Figure 8 shows significant depth changes where sandwaves have migrated, for example the 30m depth in the upper northeast has shoaled by 7.5m since 2019 and 7.6m since 2013. Where migration has occurred, it has led to both deepening and shoaling, for example in the lower southeast the 27.6m depth has shoaled by 11m since 2013, but the 34m on the other side of the wave has deepened by 4.8m since 2013. However, where sandwaves are not present there has been little to no change, as seen in the 38m depth in the upper northwest which has shoaled 0.3m since 2019 and 0.2m since 2013.

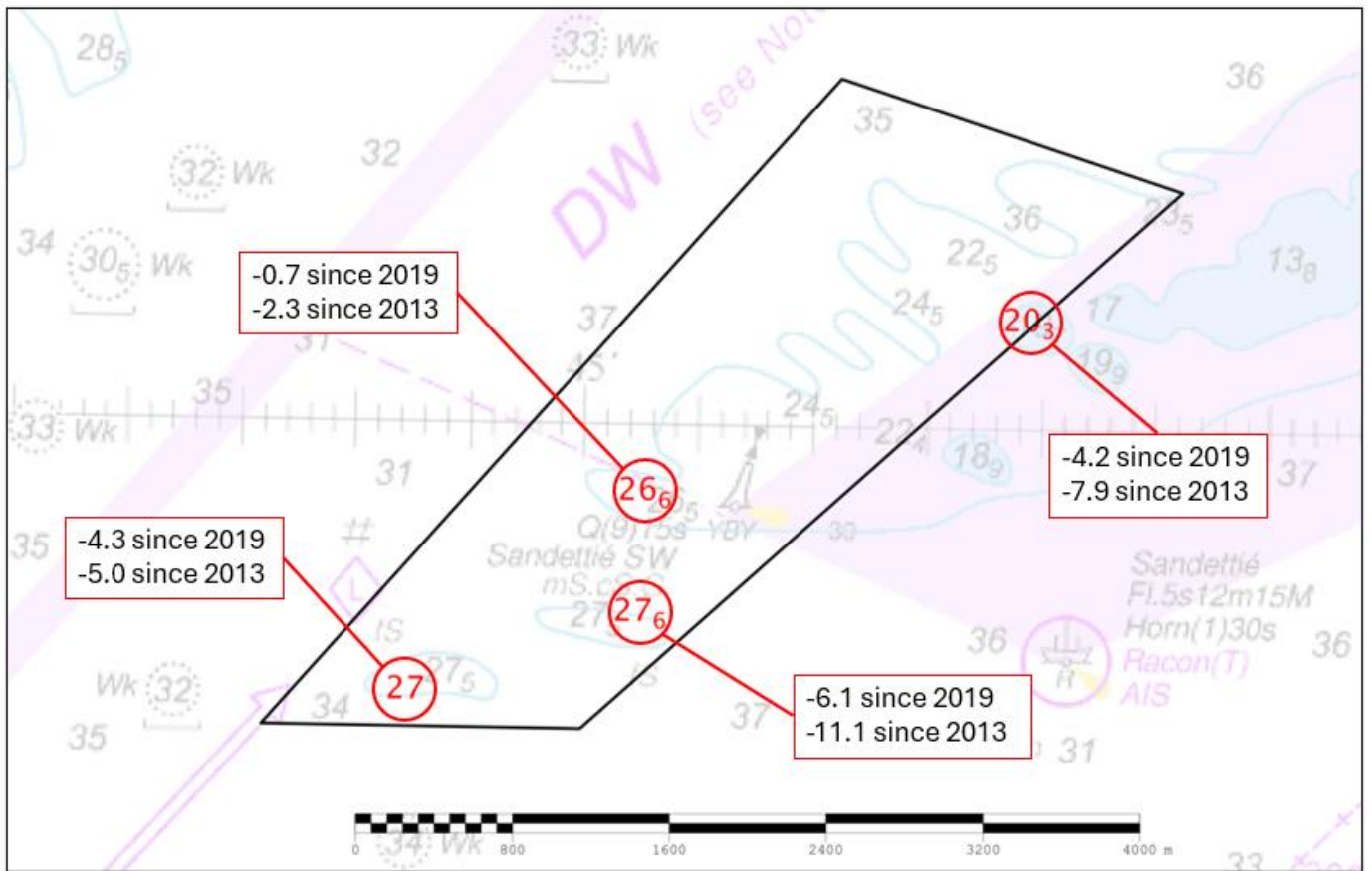


Figure 3: Significant Depth soundings highlighted, overlaid on BA Chart 0323-0

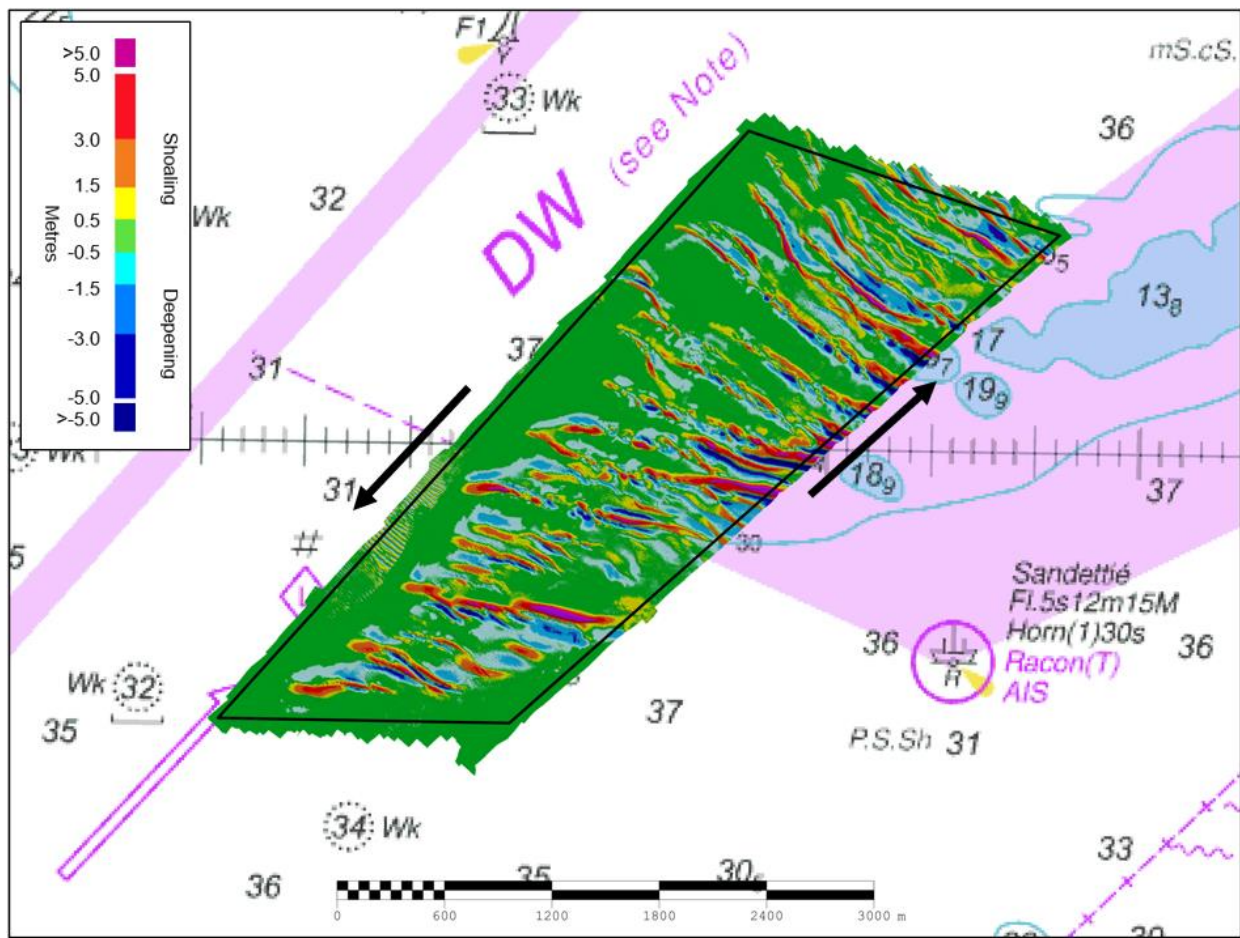


Figure 4: Difference surface showing bathymetric changes between the 2025 and 2019 surveys overlaid on BA Chart 0323-0 (Black arrows represent sandwave migration since 2019 survey)

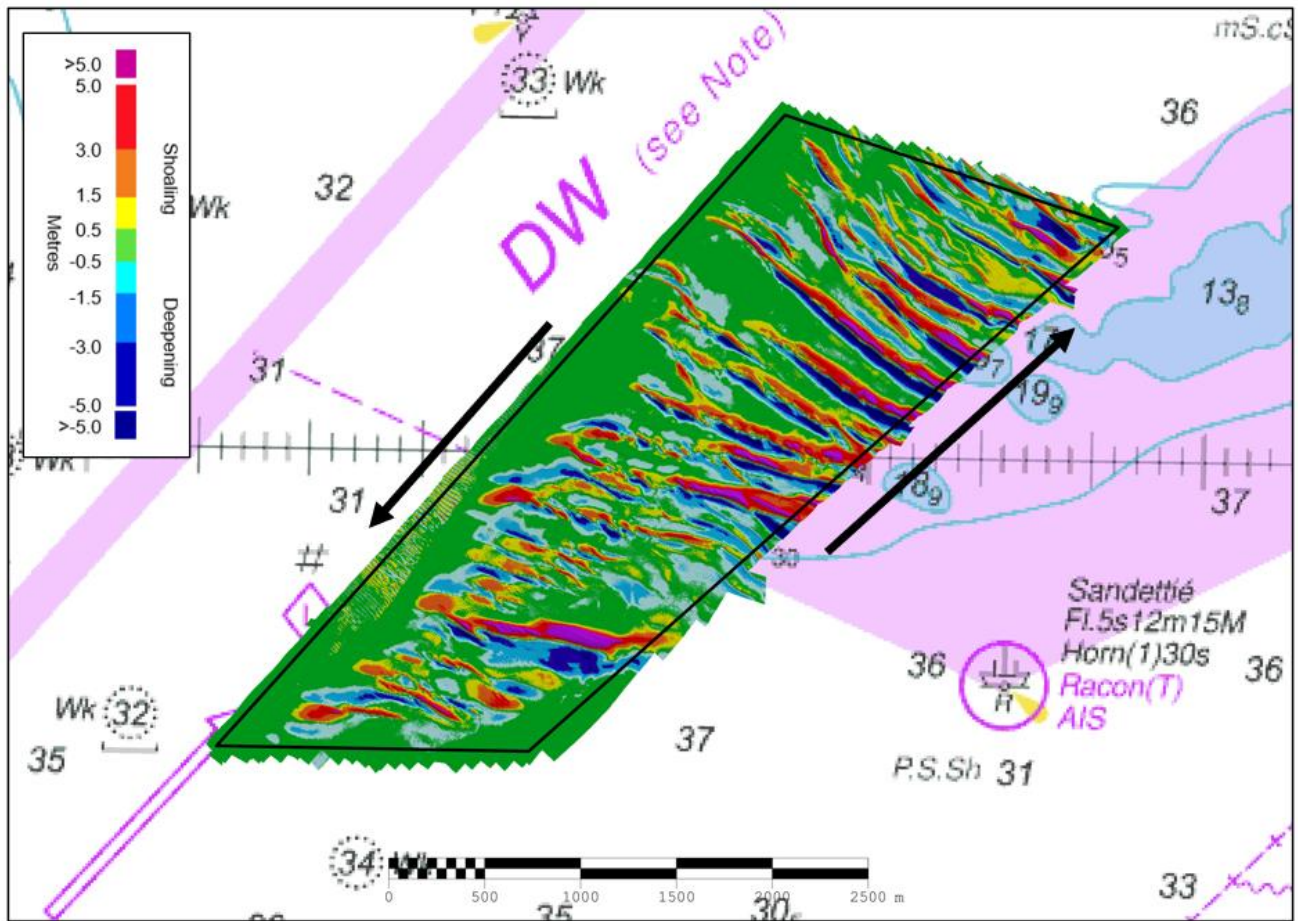


Figure 5: Difference surface showing bathymetric changes between the 2025 and 2013 surveys overlaid on BA Chart 0323-0 (Black arrows represent sandwave migration since 2013 survey)

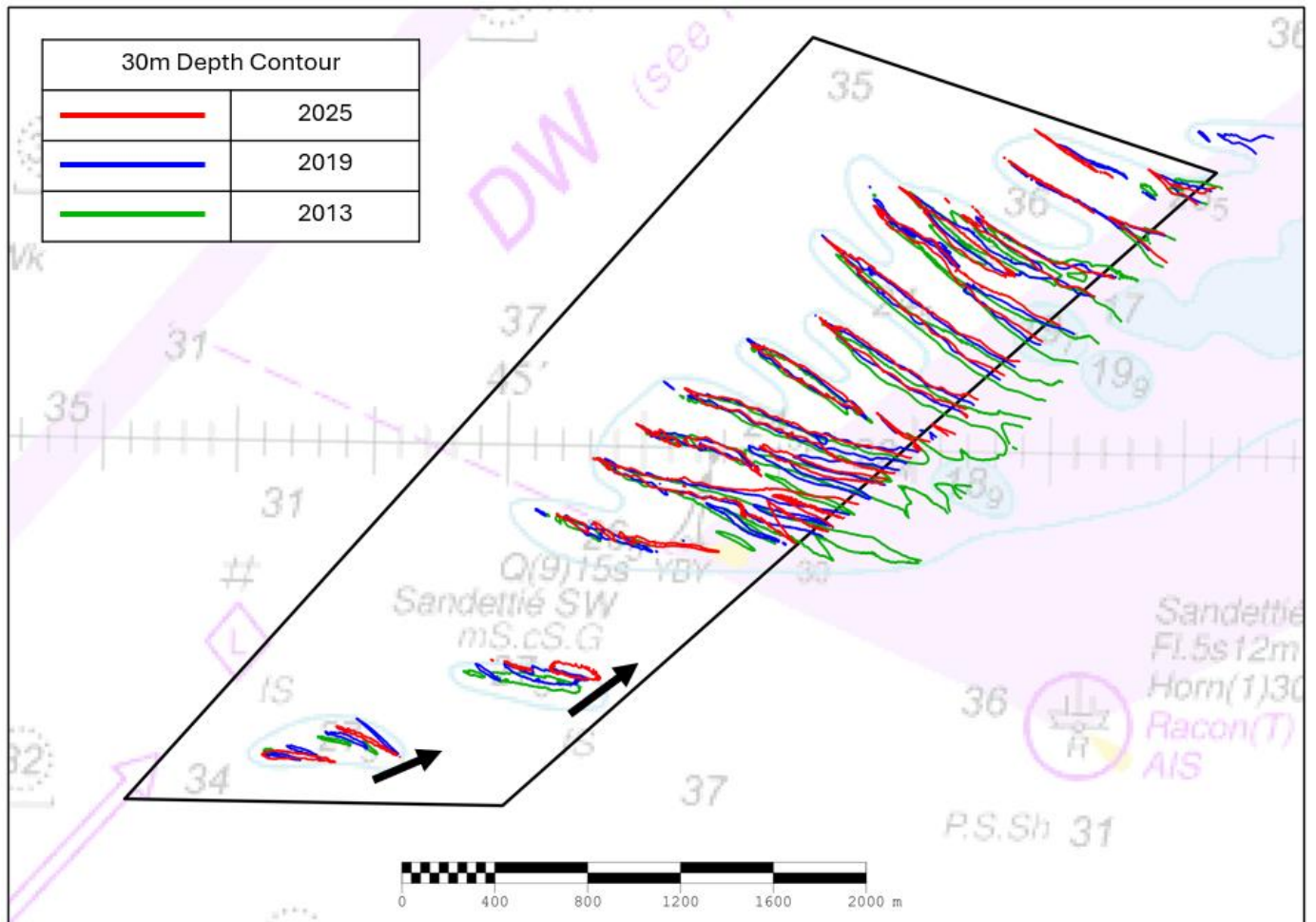


Figure 6: Contour plot showing changes in the 30m contours between 2025 (red), 2019 (blue) and 2013 (green). Black arrow represents feature migration.

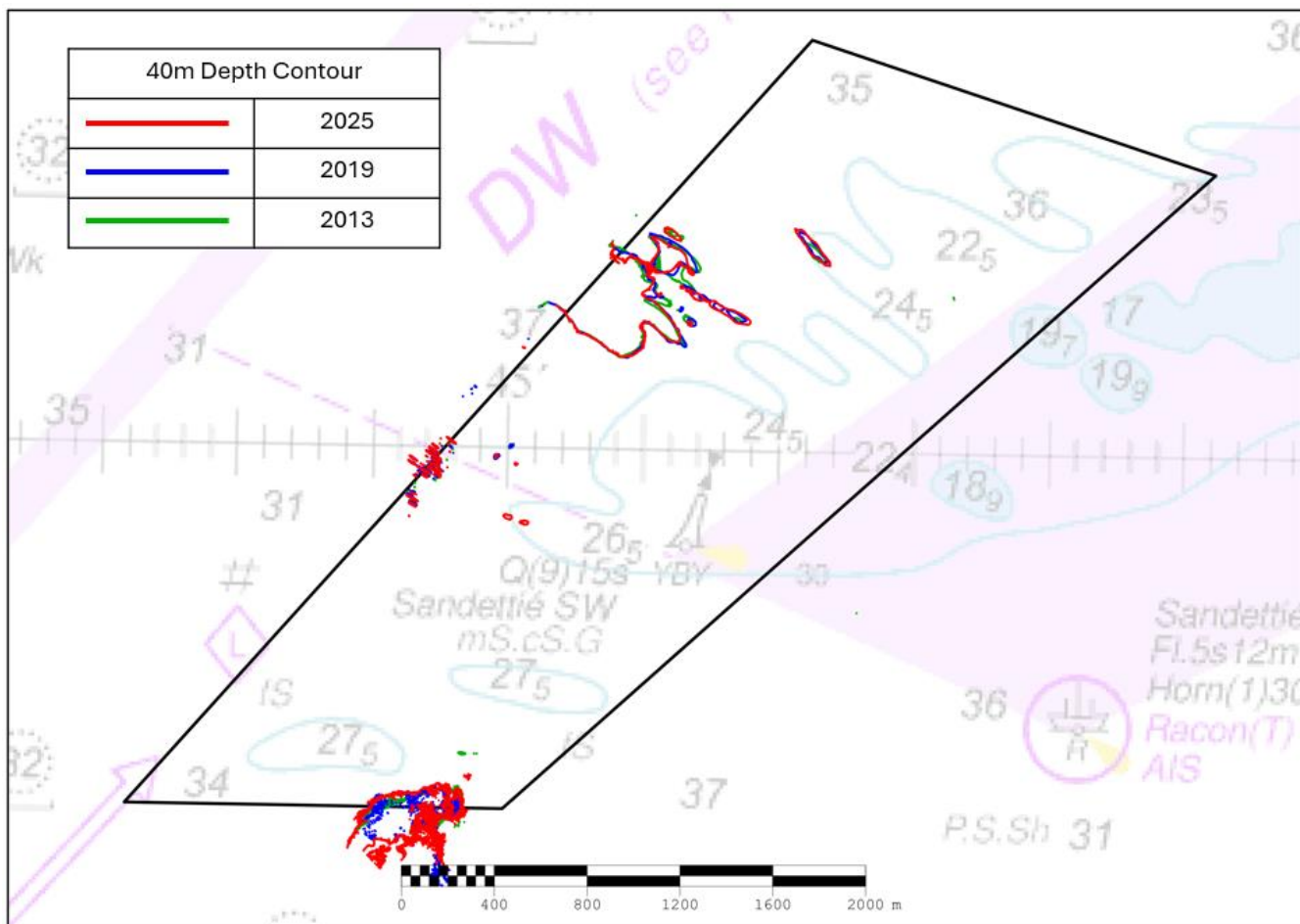


Figure 7: Contour plot showing changes in the 40m contours between 2025 (red), 2019 (blue) and 2013 (green).

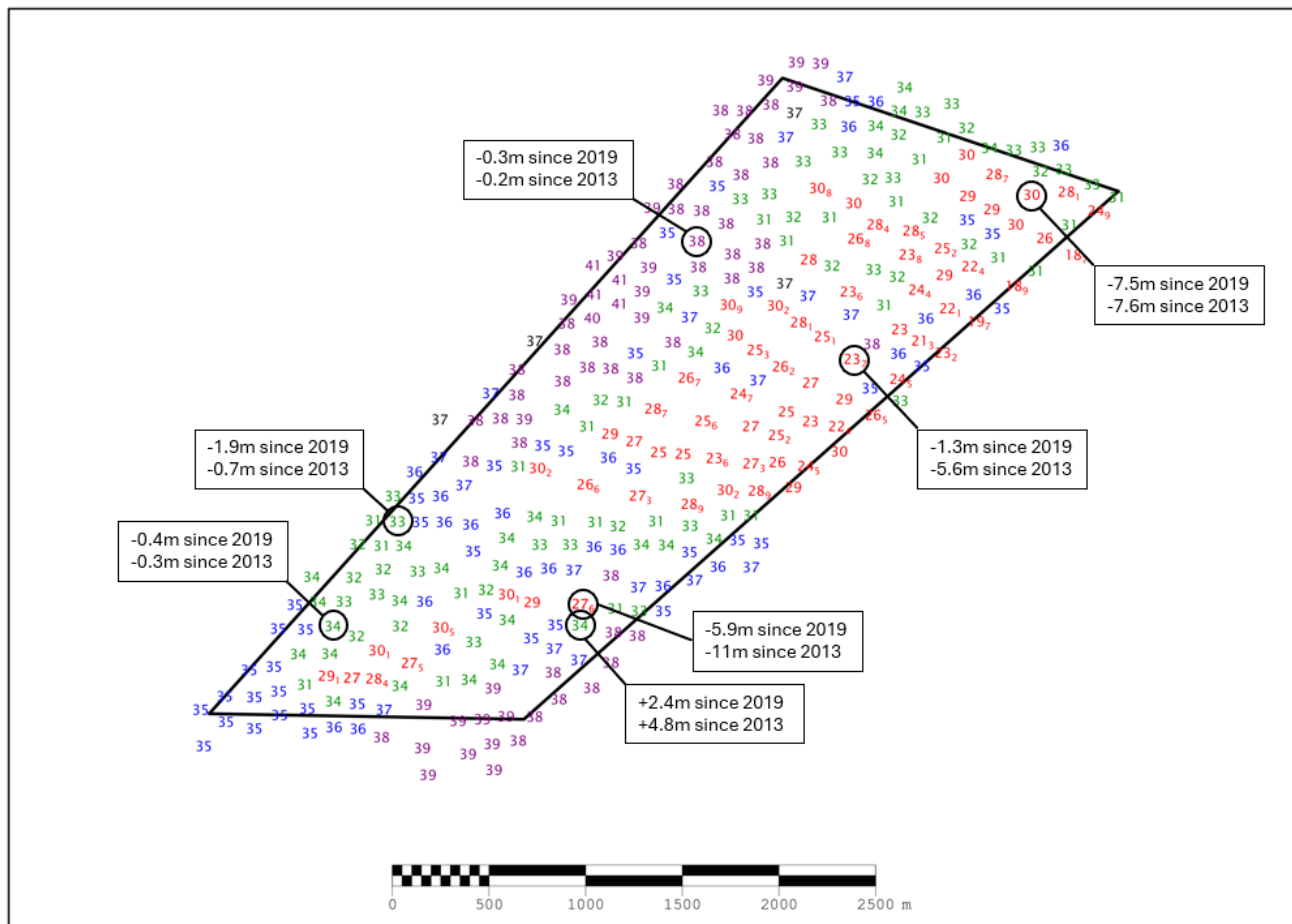


Figure 8: Colour banded depth plot from the 2025 survey with selected depth changes since the 2019 and 2013 surveys. Positive values (+) represent deepening. Negative values (-) represent shoaling.

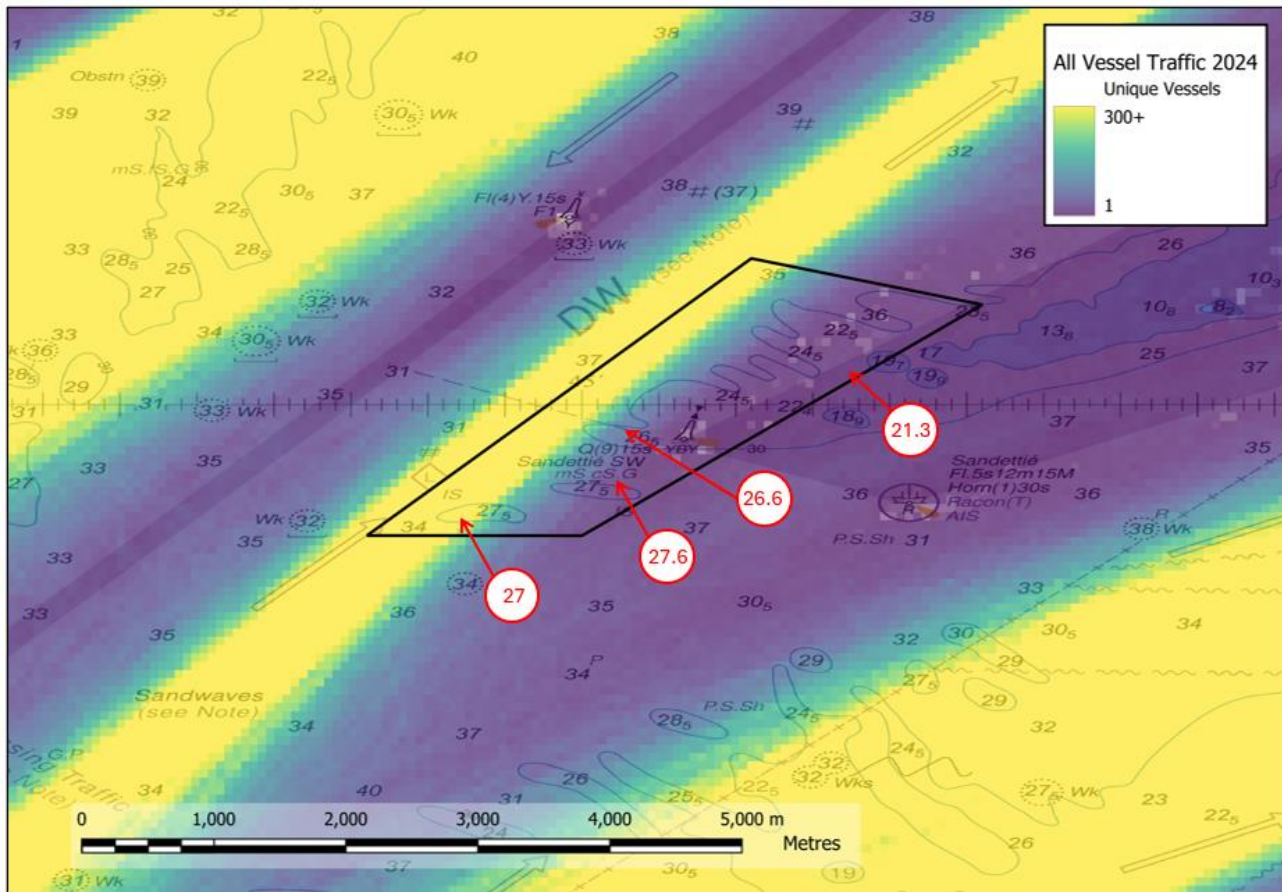


Figure 9: AIS heatmap at 100m resolution grid size. Density unit is unique vessels within the grid square within 2024. DWR A area in black and significant depth soundings (m) overlaid on chart 0323.

6. RECOMMENDATIONS FOR FUTURE SURVEYS

Survey Interval

- 6.1 Given the location of the area in relation to the DWR and the draught of vessels navigating the area, DWR A should remain on the 6-year cycle survey interval. Though there has been a lack of contour movement throughout the HI survey area, there has been variability in depth changes in the area but no consistent shoaling.

Survey Area

- 6.2 The shoalest points in the survey area are near the southeast limits, where there should be limited vessel traffic due to the Sandtietie SW west cardinal buoy (see Figure 9). No change recommended.