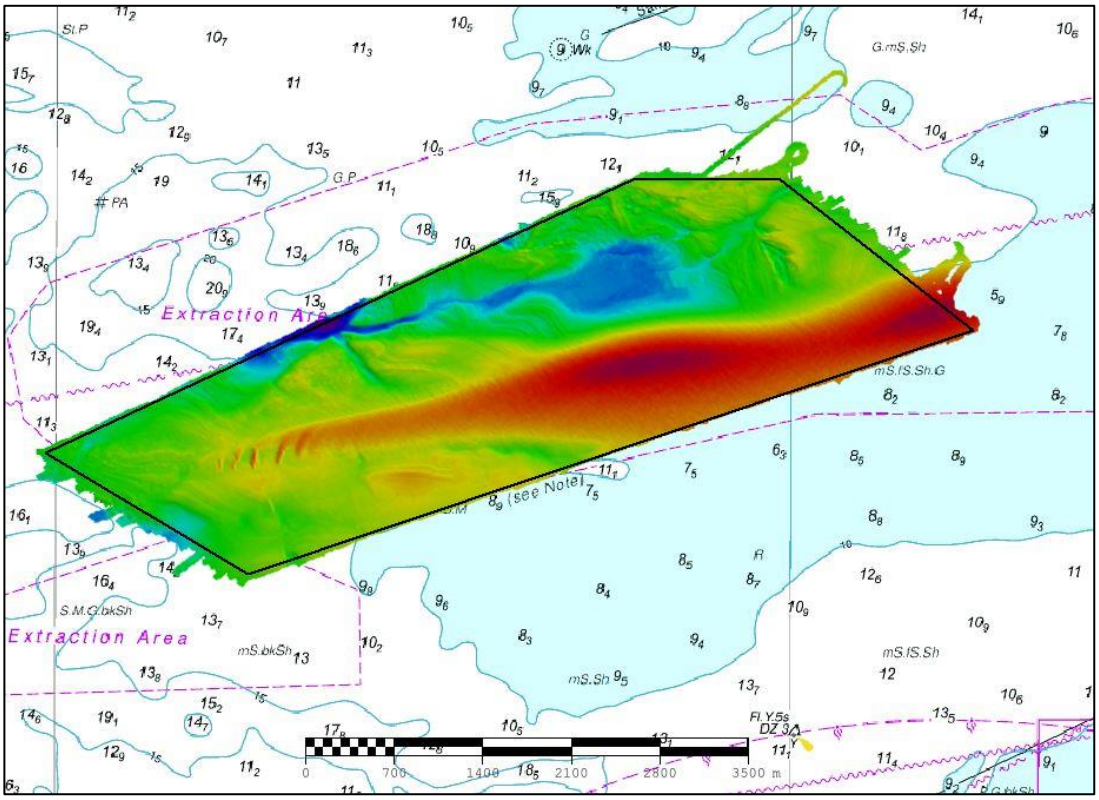
UK Hydrographic Office

BRISTOL CHANNEL
CULVER SAND (BC C)
2025 ASSESSMENT

An assessment of the 2025 hydrographic survey of the area Bristol Channel C, Culver Sand: to monitor recent seabed movement; to identify any implications for shipping; and to make recommendations for future surveys.



CONTENTS

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.

BRISTOL CHANNEL C CULVER SAND - 2025

1. SUMMARY

Changes Detected

1.1 The controlling depth over Culver Sand is 0.2m deeper than currently charted and located 480m to the east of the charted position. The least depth in 2025 was surveyed as 3.2m. The charted least depth is 3m.

1.2 Culver Sand shows a general deepening towards the centre of the survey area, with the 5m contour migrating eastwards, and the 10m contour retreating south-eastwards.

1.3 There is a shoaling by up to 3.1m in the east of the survey area, with the 5m contour extending and migrating eastwards by 616m since 2019.

Reasons for Continuing to Resurvey the Area

1.4 The sandbank of Culver Sand remains dynamic and potentially hazardous to nearby shipping and therefore requires continued monitoring through resurveys.

Recommendations

1.5 Civil Hydrography Working Group (CHWG) to review ongoing inclusion of Culver Sand in the RRS programme.

1.6 If BC C Culver Sand remains on the programme, it should remain on the 6-year survey interval.

1.7 If BC C Culver Sand remains on the programme, the survey limits should be extended further east to cover the eastward migration and subsequent shoaling of Culver Sand.

2. LOCATION

2.1 Survey interval at time of resurvey: 6 years

2.2 Area Covered: 11.65 km^2

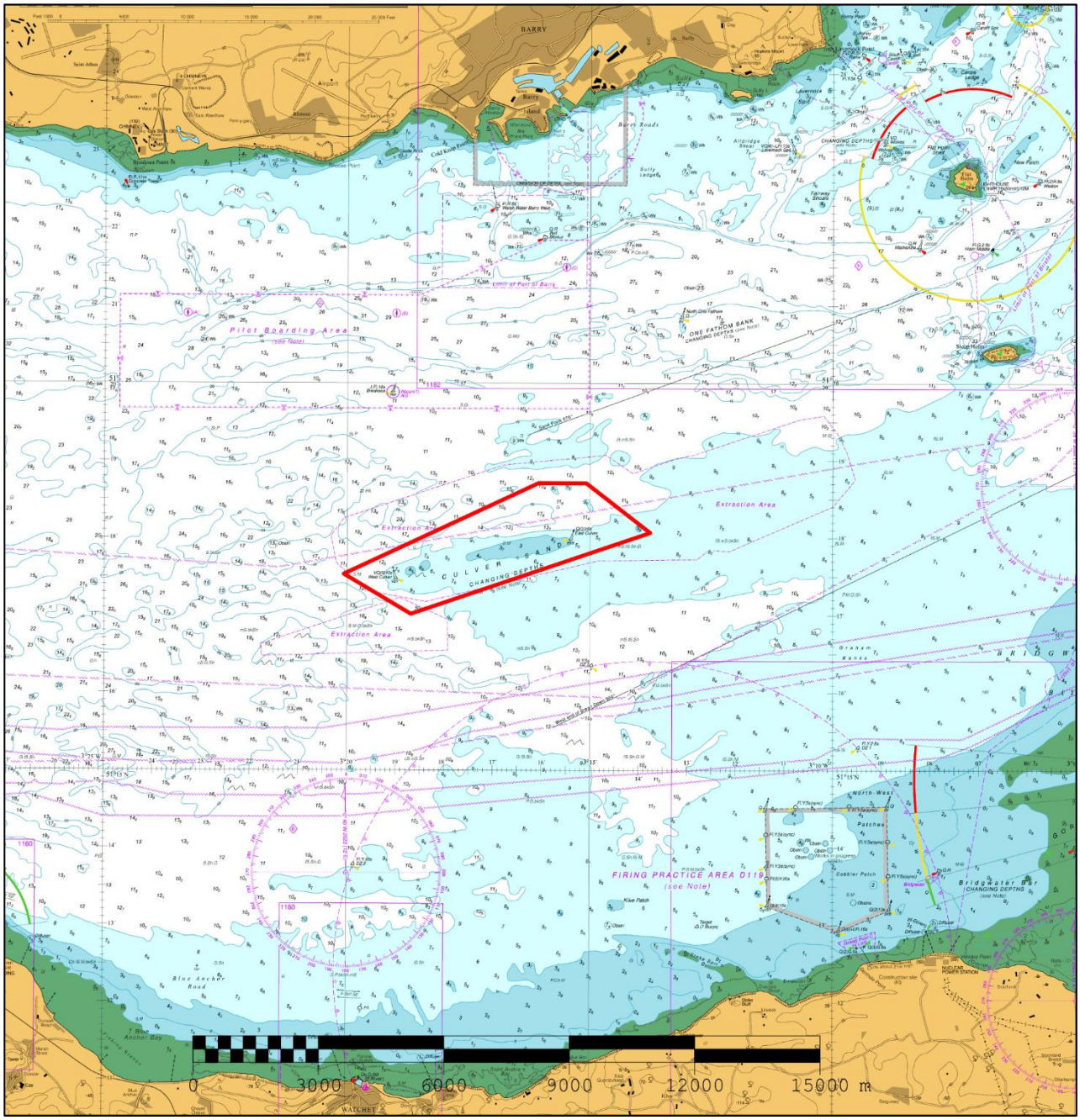


Figure 1: 2025 Bristol Channel Routine Resurvey BC C overlaid on BA Chart 1152-0

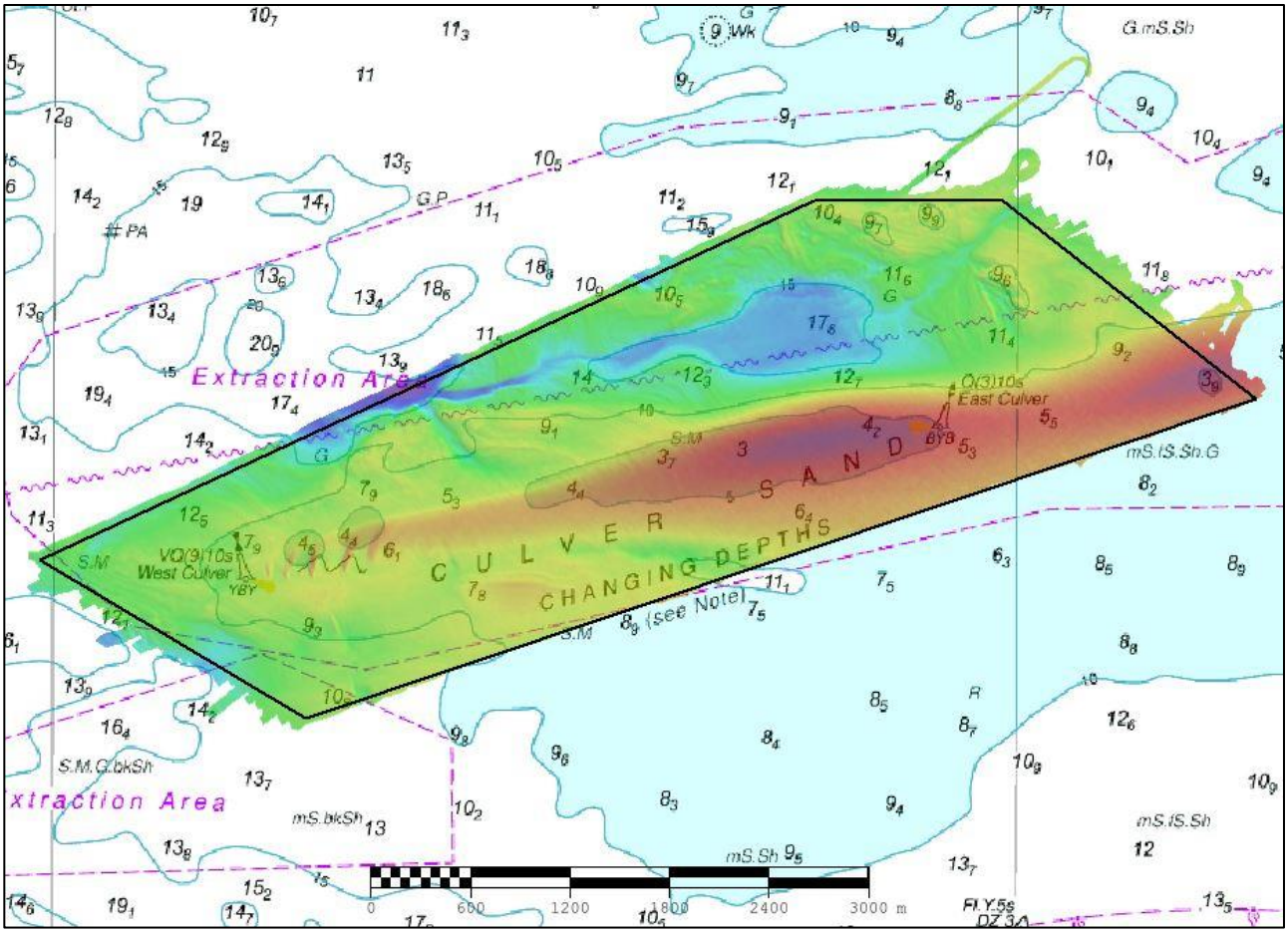


Figure 2: 2025 survey data overlaid on BA Chart 1152-0

3. REFERENCE SURVEY DETAIL

3.1 The previous full survey was conducted as part of the 2019 Routine Resurvey Programme in July 2019 as part of HI1662.

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 HI1867, 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 The least depth on Culver Sand (which is also the least depth within the survey limits) has changed from 4.0m in the 2019 survey to 3.2m in the 2025 survey, as seen in Figure 3. To the east of East Culver buoy, the migration of Culver Sand means there is now a 3.3m controlling depth outside of the buoyed area for Culver Sand, in an area that sees a significant volume of traffic (see AIS in Figure 8).

5.2 Figure 3 shows that the controlling depth west of West Culver buoy, 10.4m, has remained relatively unchanged since the 2019 survey, deepening by 0.1m.

5.3 The difference surface in Figure 4, and the depth plot in Figure 7, show a general deepening in the centre of the survey, with a maximum deepening of 6.6m since 2019, as the sandbank migrates to the east. This is also seen in Figure 6, which shows that the 10m contour marking the northern edge of Culver Sand is retreating south-eastwards.

5.4 Figures 4 and 7 also show that there is a general eastward trend in the movement of Culver Sand since 2019, with the area shoaling by 3.1m.

5.5 Figures 5 shows that in the area east of East Culver buoy the 5m contour has extended and migrated 616m eastwards since 2019.

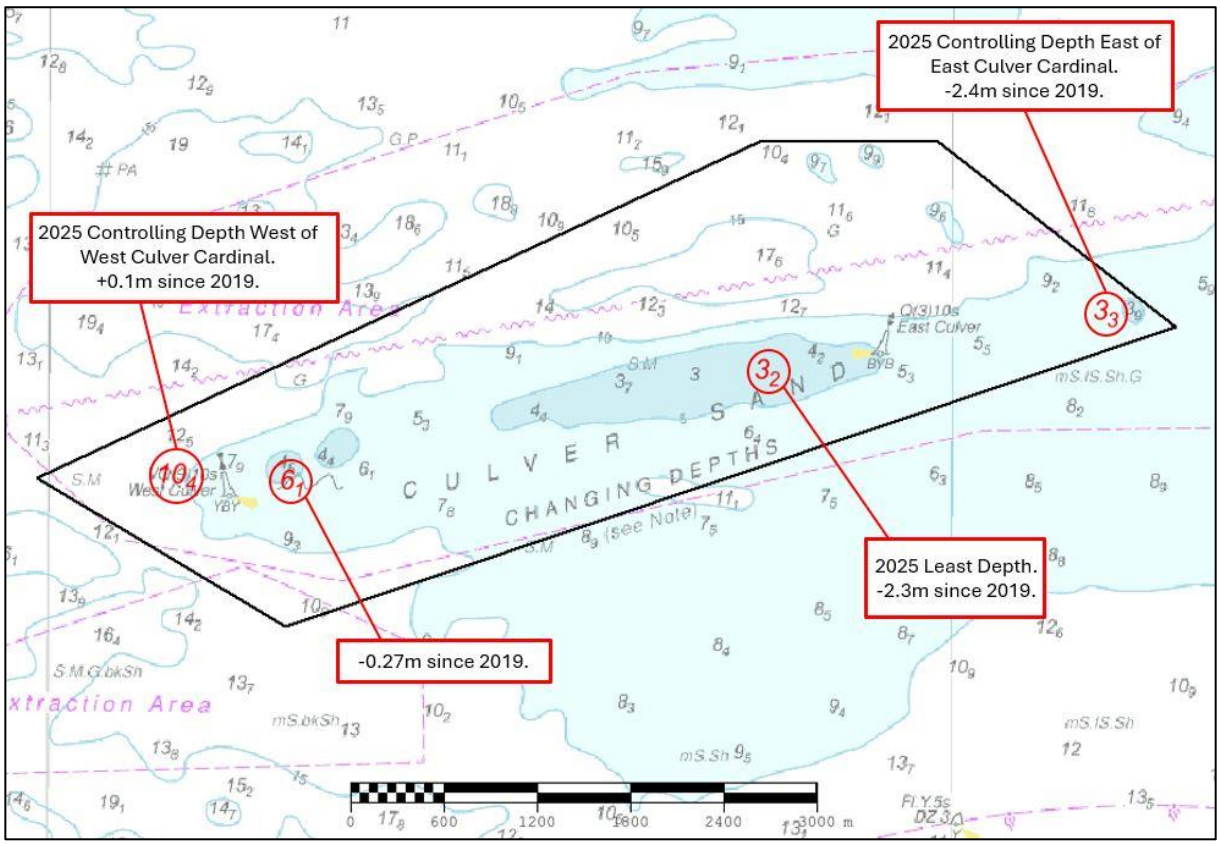


Figure 3: Significant Depth soundings highlighted, overlaid on BA Chart 1152-0

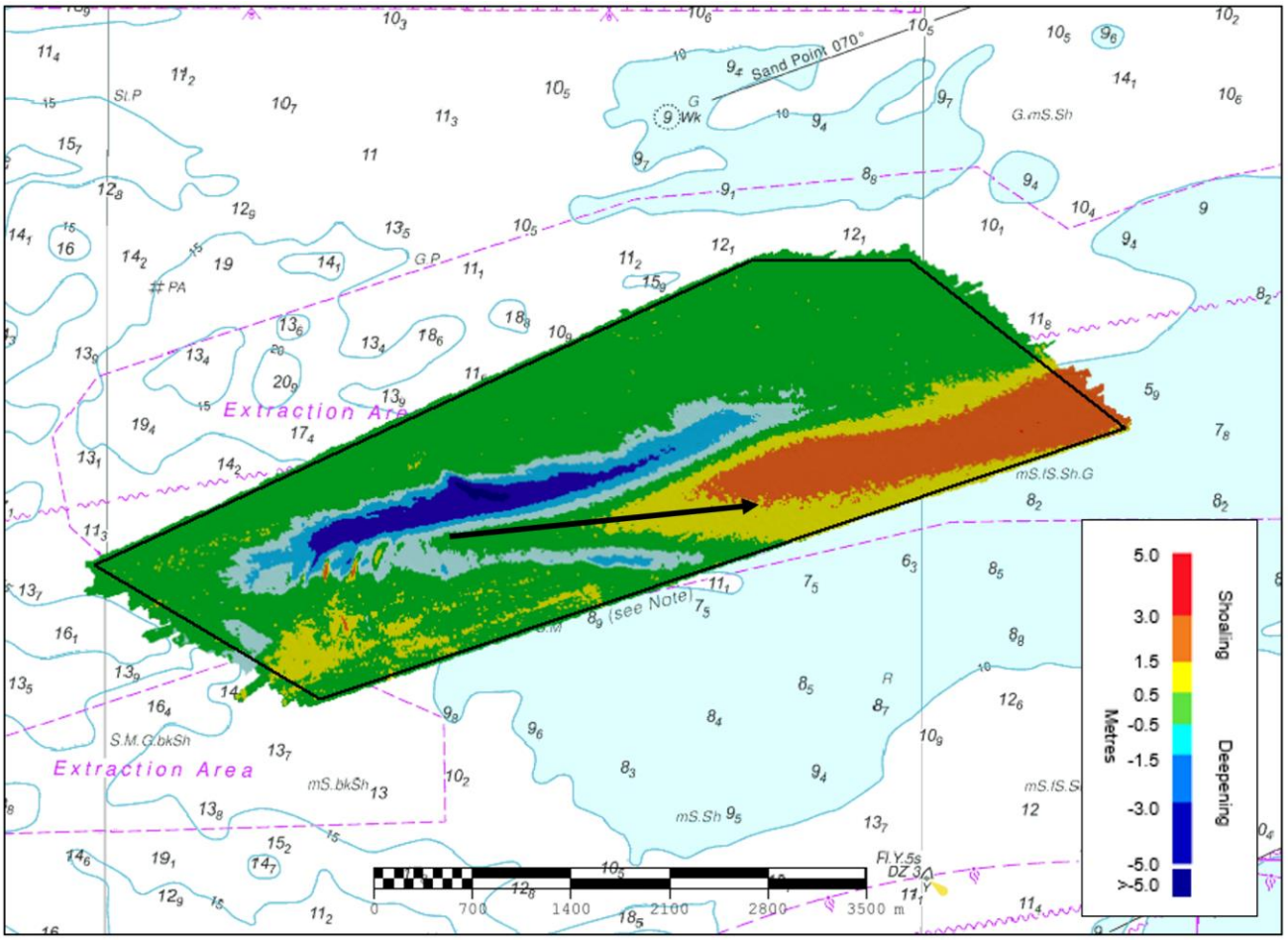


Figure 4: Difference surface showing bathymetric changes between the 2025 and 2019 surveys overlaid on BA Chart 1152-0 (Black arrow represents sandwave migration since 2019 survey)

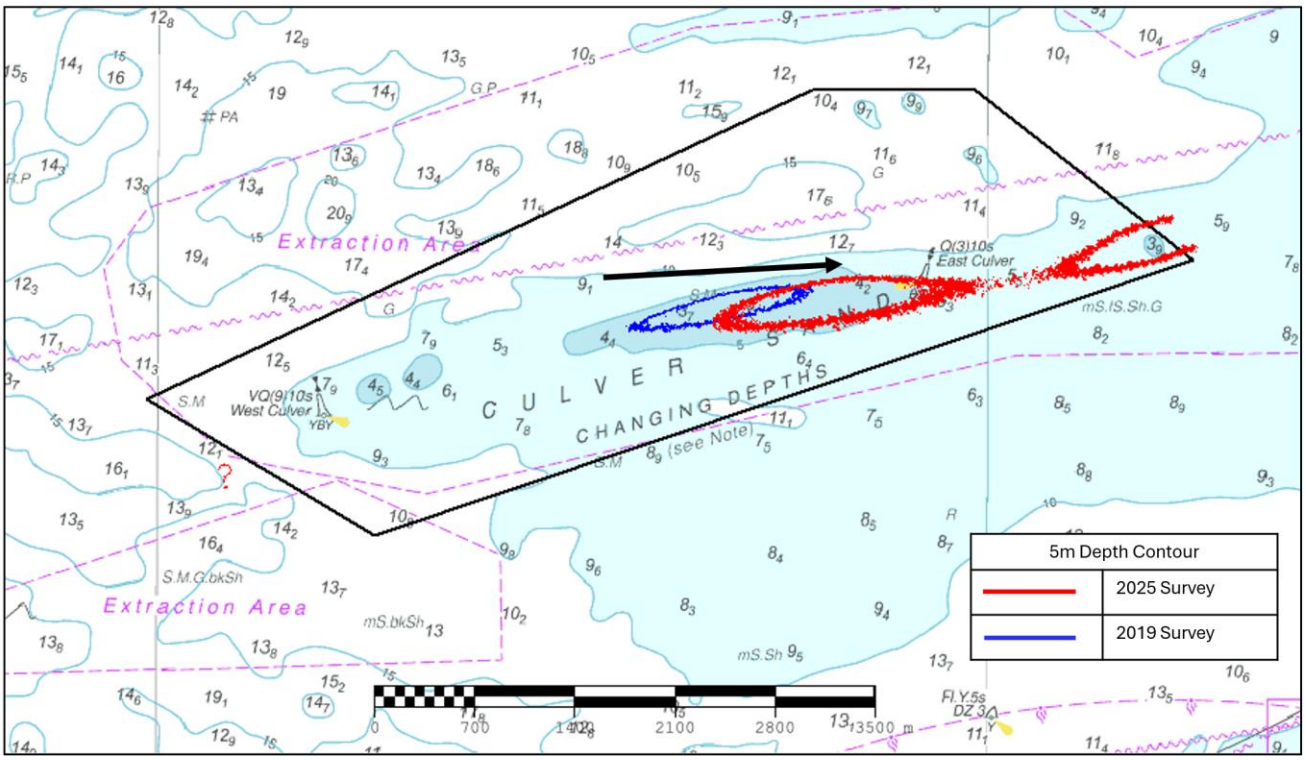


Figure 5: Contour plot showing changes in the 5m contour between 2025 (red) and 2019 (blue). Black arrow represents feature migration.

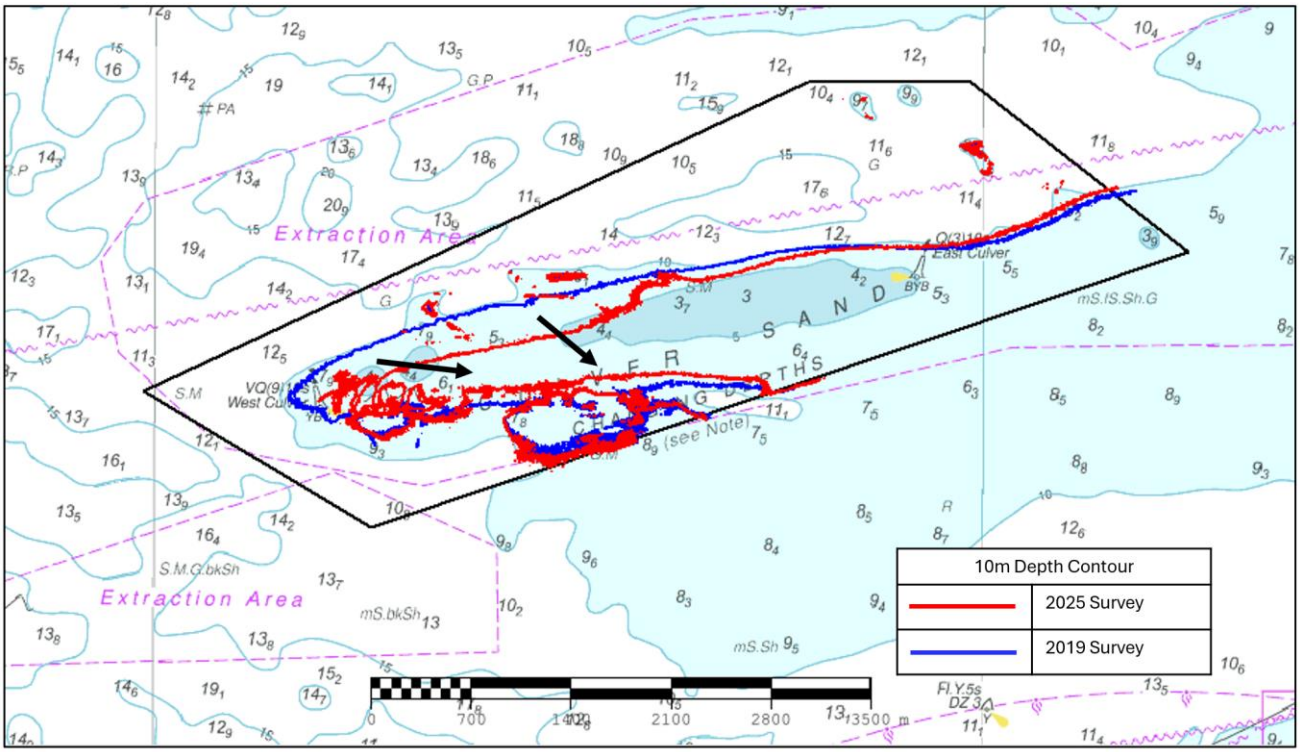


Figure 6: Contour plot showing changes in the 10m contour between 2025 (red) and 2019 (blue). Black arrow represents feature migration.

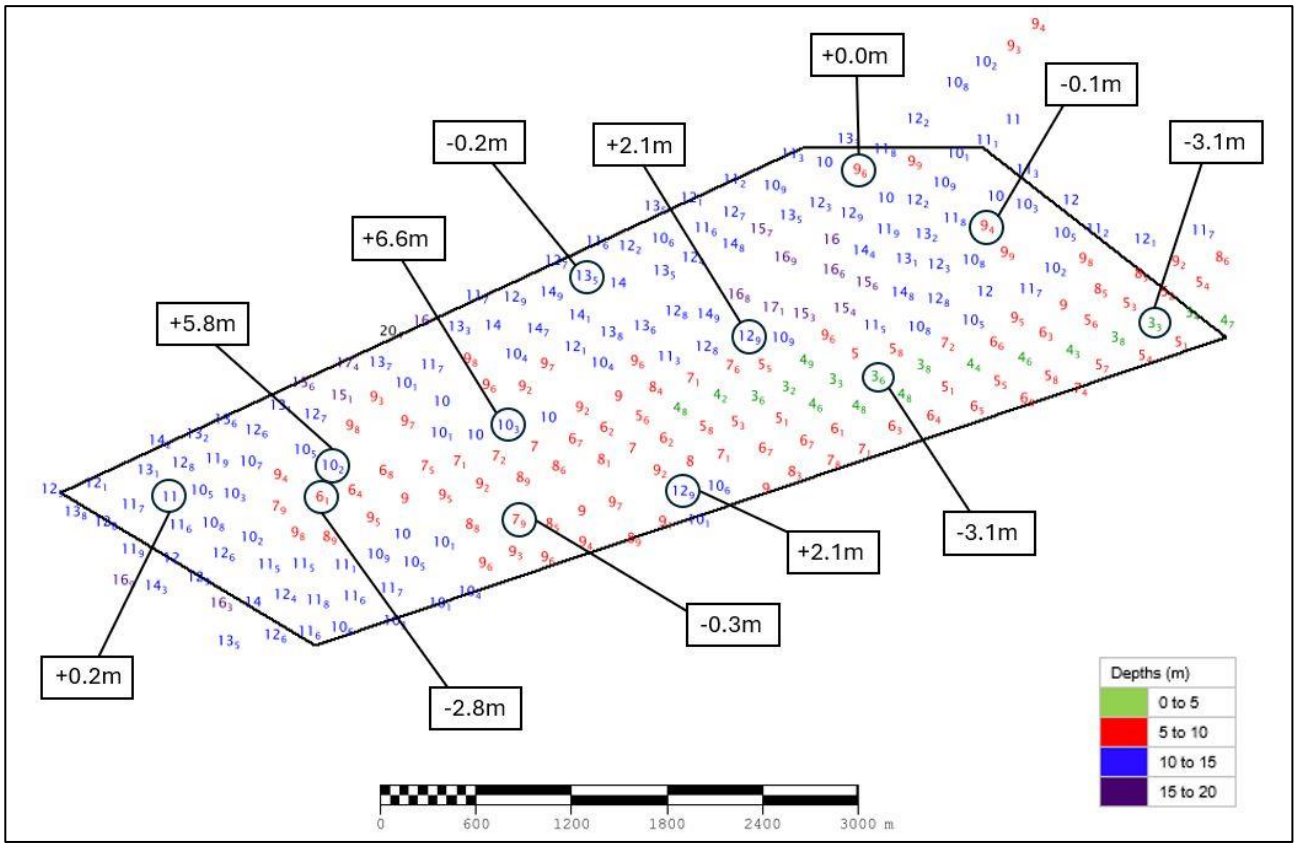


Figure 7: Colour banded depth plot from the 2025 survey with selected depth changes since the 2019 survey. Positive values (+) represent deepening. Negative values (-) represent shoaling.

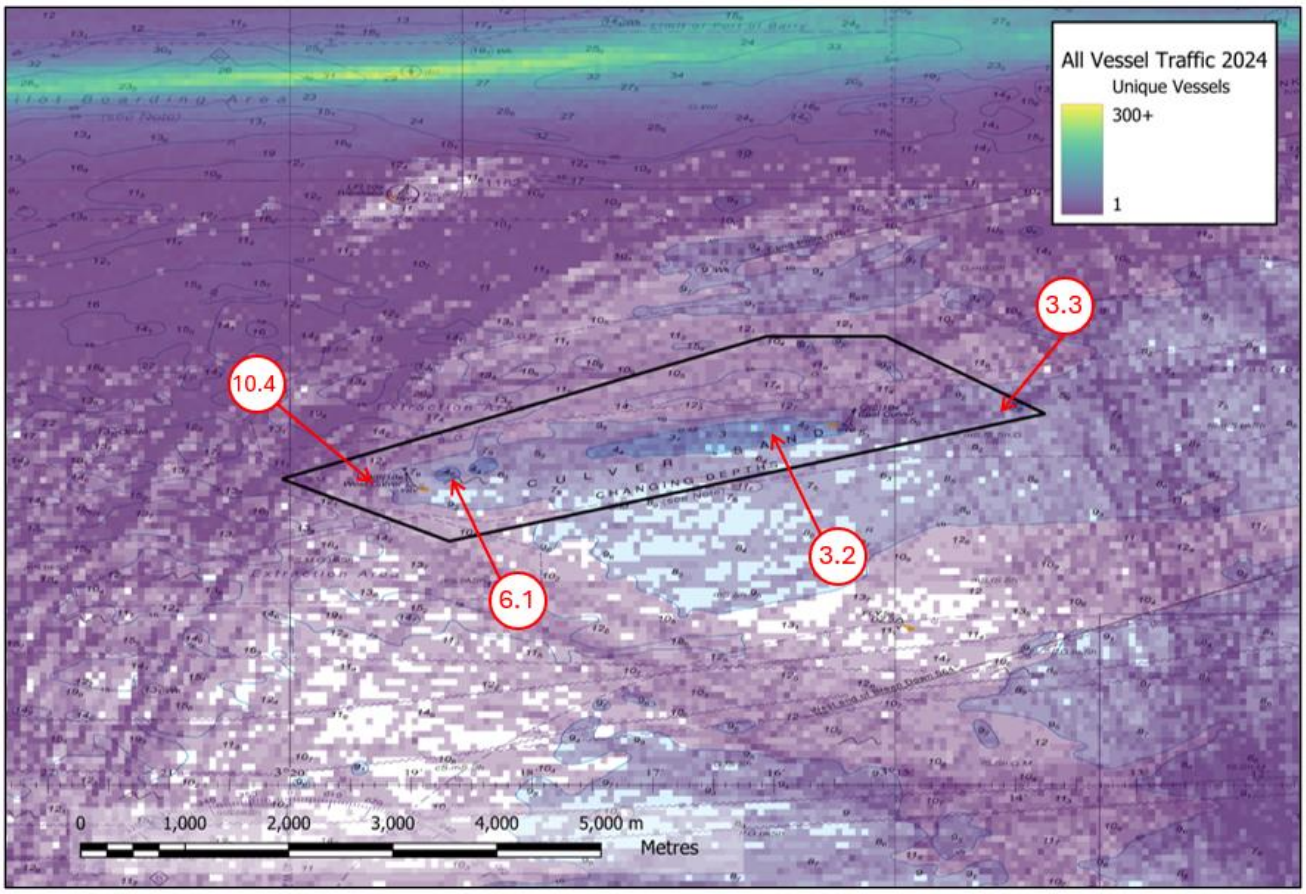


Figure 8: AIS heatmap at 100m resolution grid size. Density unit is unique vessels within the grid square within 2024. BC C area in black and significant depth soundings (m) overlaid on chart 1152

6. RECOMMENDATIONS FOR FUTURE SURVEYS

Survey Interval

6.1 It is recommended during the CHWG to review the necessity of continuing to survey the BC Culver Sand Routine Resurvey area for the following reasons:

- The area is surveyed annually by Trinity House for maintenance of the cardinal buoys
- It is within an extraction area where dredgers are removing sand, which could be causing artificially influenced migration
- The main route for vessels transiting the area is a considerable distance to the north of the BC C area

Survey Area

6.2 If it is decided to continue to include BC C in the Routine Resurvey cycle, then it is recommended to extend the BC C area to the east. This will capture the eastward movement and subsequent shoaling of Culver Sand, particularly the 5m contour.

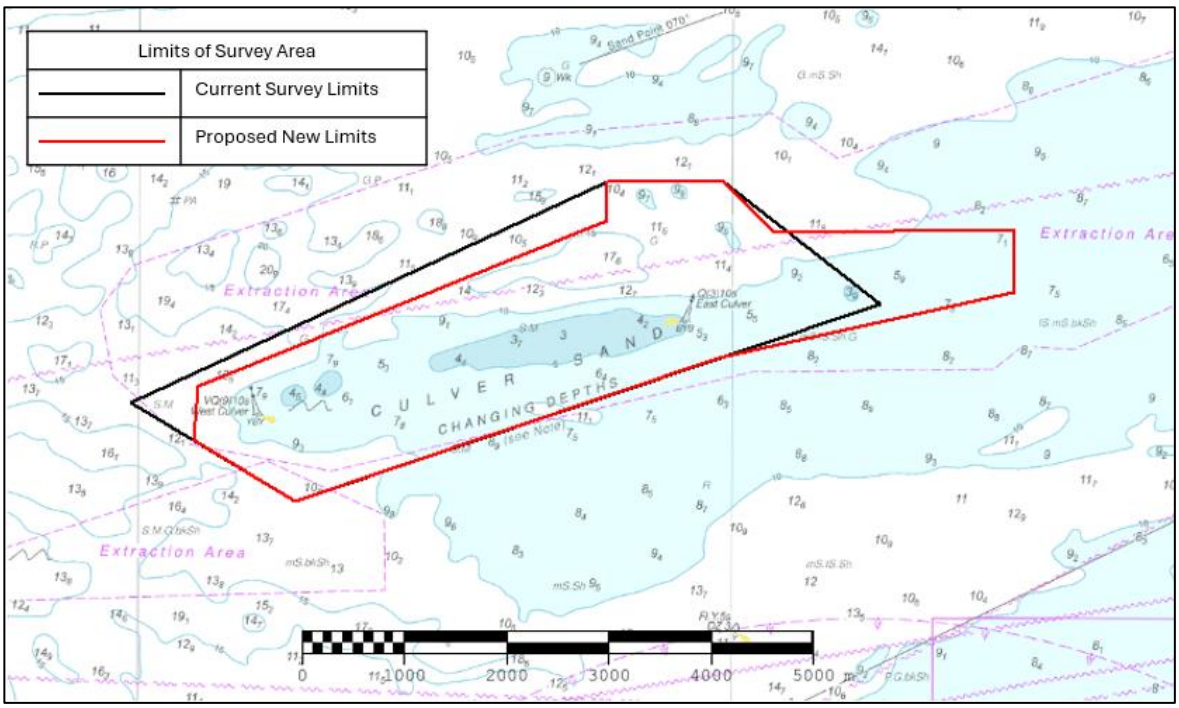


Figure 9: Recommended changes to survey limits of area BC C

The coordinates of the recommended adjusted survey area limits for the full area BC C are shown below:

Current Limits:
BC C total area: 10.65 km^2

Proposed New Limits:
BC C total area: 10.77 km^2

	Latitude	Longitude
1	51-18.709998 N	003-16.060002 W
2	51-18.709998 N	003-15.079800 W
3	51-18.440844 N	003-14.656038 W
4	51-18.465570 N	003-12.632094 W
5	51-18.134796 N	003-12.632094 W
6	51-17.780160 N	003-15.114738 W
7	51-17.016432 N	003-18.684468 W
8	51-17.334306 N	003-19.538136 W
9	51-17.616762 N	003-19.538136 W
10	51-18.502224 N	003-16.060002 W
11	51-18.709998 N	003-16.060002 W