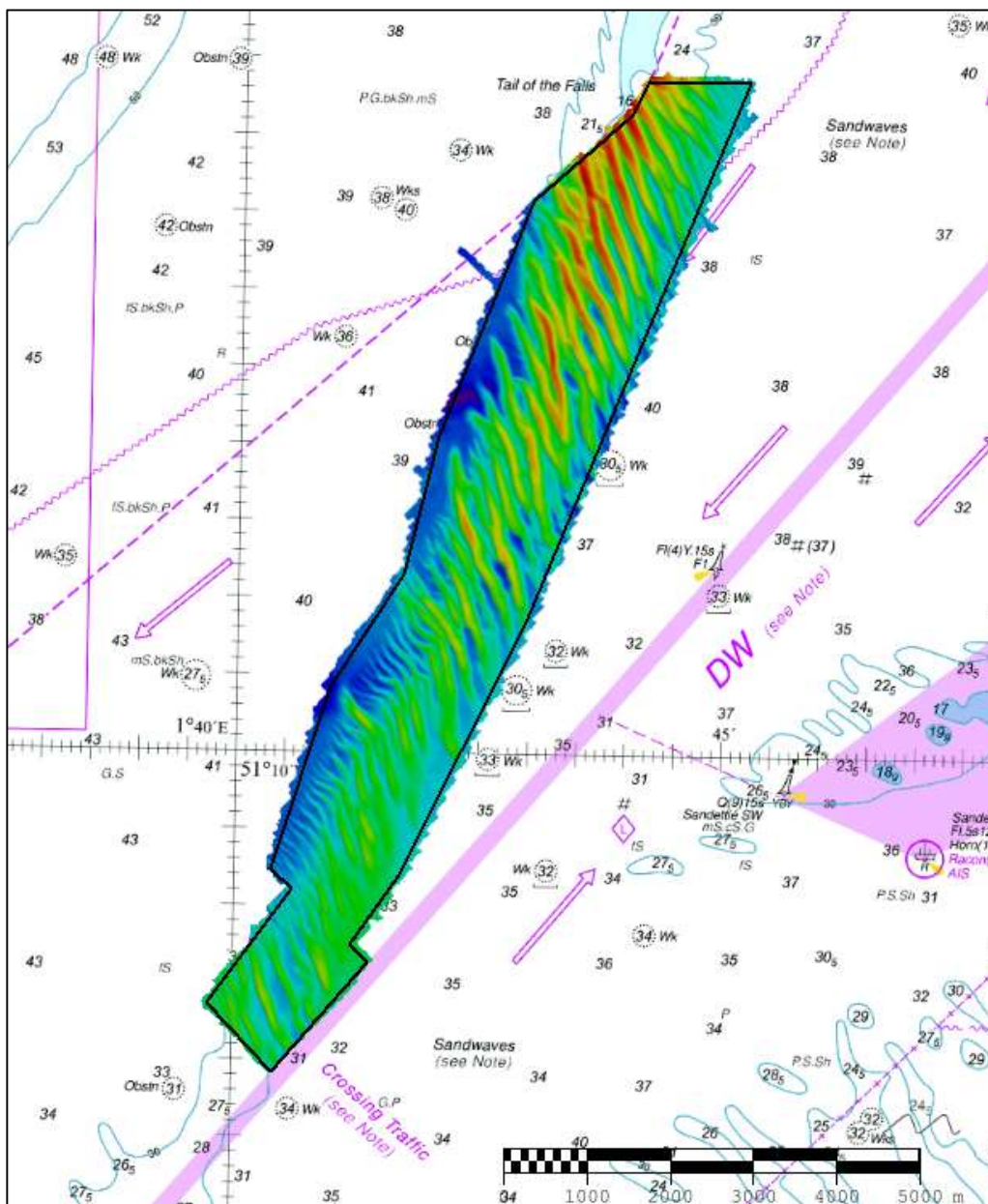




UK Hydrographic  
Office

## DOVER STRAIT TAIL OF THE FALLS (DWR C1) 2022 ASSESSMENT

An assessment of the 2022 hydrographic survey of the area DWR C1: 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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No analysis of shipping traffic has been included within this report due to no AIS data being supplied by MCA.

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

## **TAIL OF THE FALLS (DWR C1), 2022**

### **1. SUMMARY**

#### **Changes Detected**

- 1.1 The least depth with the HI limits has deepened by 0.1m and moved 15m to the west. Most other significant depths have deepened.
- 1.2 The controlling depth remains the same as 2021, at 21.6m in the middle of the Deep Water Route. It has moved 60m to the southwest.
- 1.3 Sandwaves have migrated south-westwards by between 10 and 40m.
- 1.4 Despite continued sandwave movement, the main Tail of the Falls bank has maintained its shape since 2021.

#### **Reasons for Continuing to Resurvey the Area**

- 1.5 Depths in the area remain hazardous and changeable to deep draught vessel navigating the area and therefore require continued monitoring through annual resurveys.

#### **Recommendations**

- 1.6 Given the location of the area in relation to the Deep Water Route and the draught of vessels navigating the area, C1 should remain on the annual survey interval.
- 1.7 As the area is fairly stable no changes to the survey area are recommended at present. But this should be closely monitored due to continued sandwave migration.

### **2. LOCATION**

- 2.1 Survey interval at time of resurvey: Annual
- 2.2 Area Covered: 22.34 km<sup>2</sup>

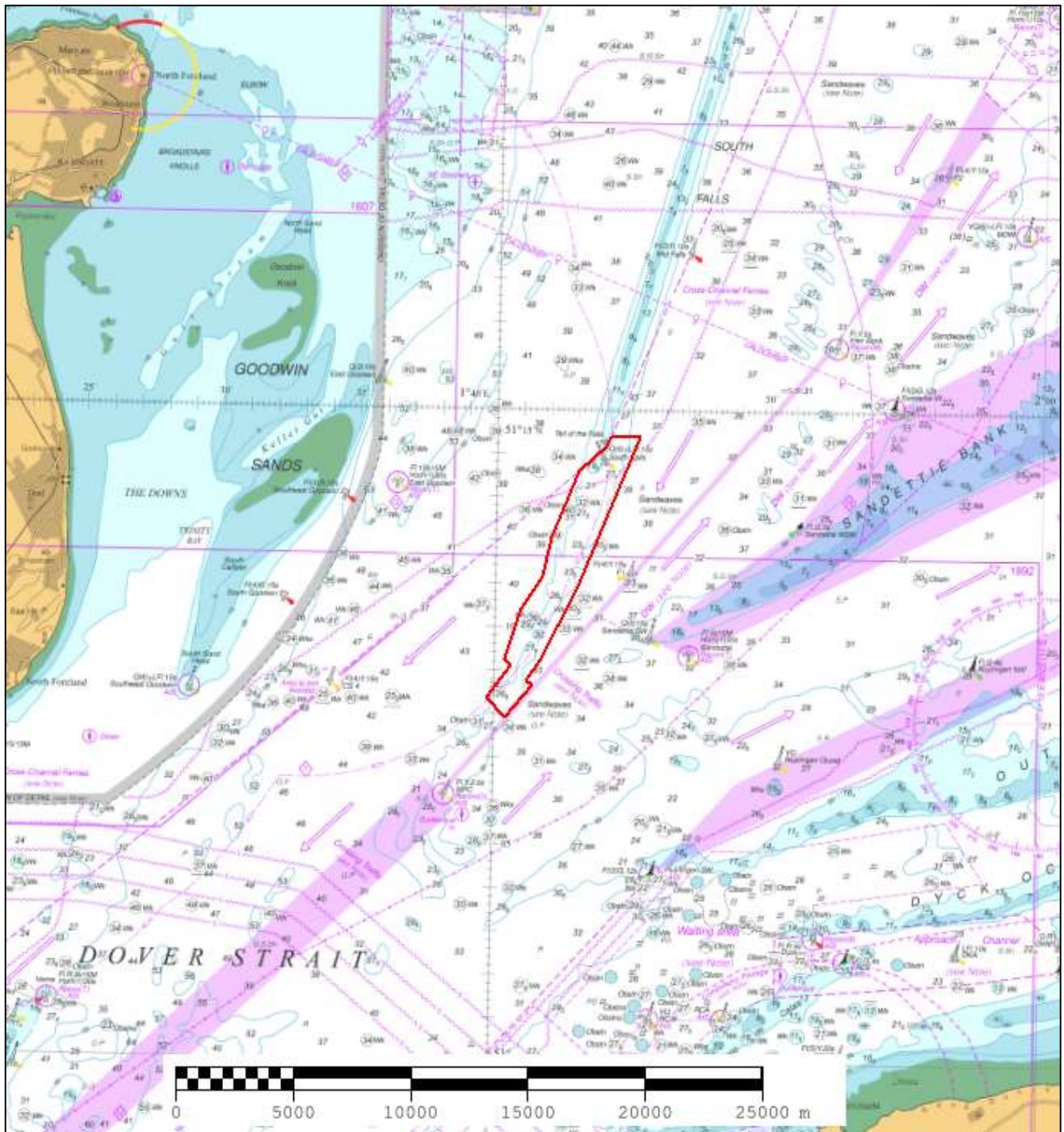


Figure 1: 2022 Dover Strait Routine Resurvey areas overlaid on BA Chart 1610 with area DWR C1 in red (Note: DWR C1 was the only Dover Strait RRS area to be surveyed in 2022)

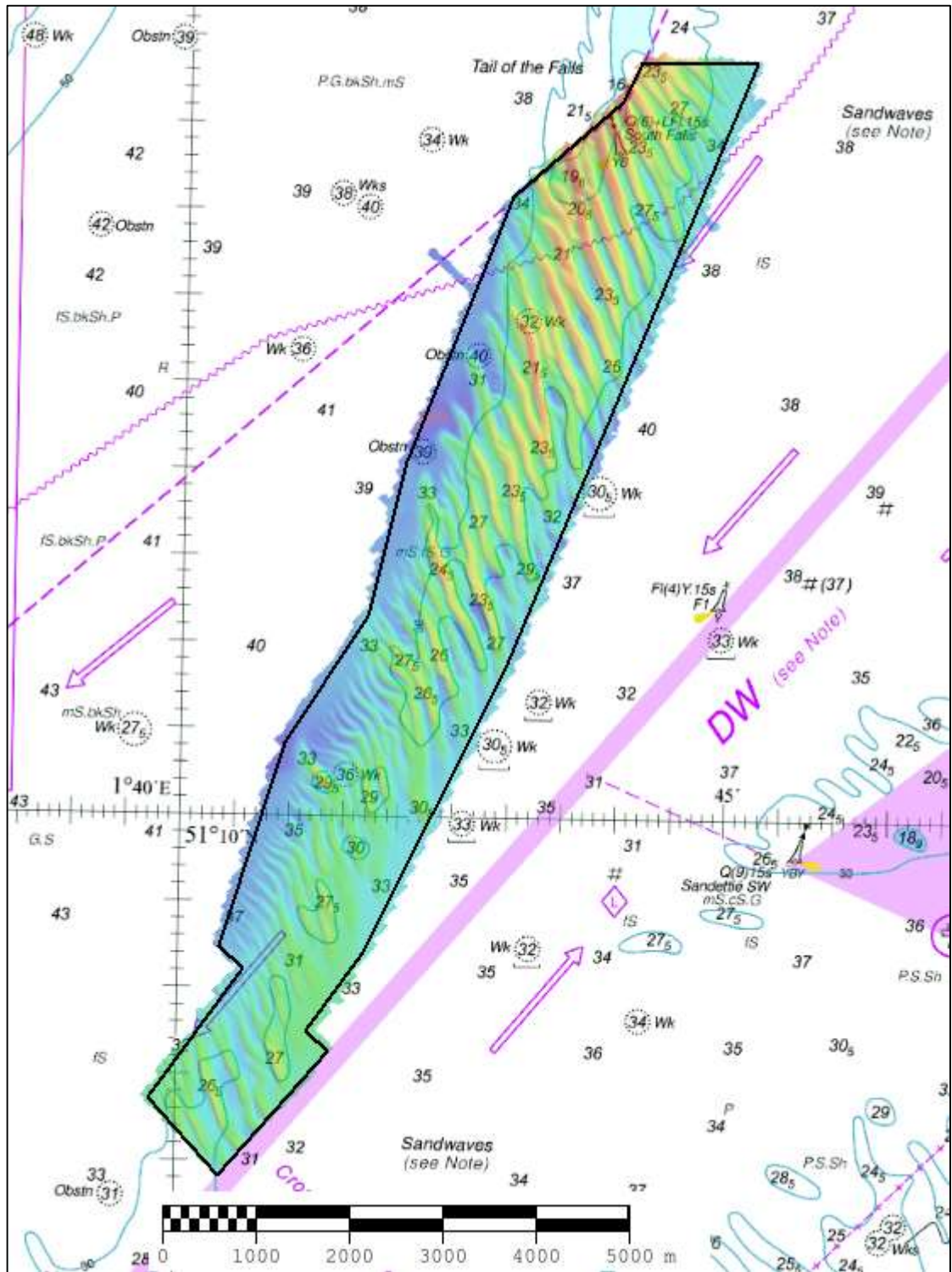


Figure 2: 2022 survey data overlaid on BA Chart 0323

### 3. REFERENCE SURVEY DETAIL

- 3.1 The previous survey was conducted in August/September 2021 (HI1744) as part of 2021 Routine Resurvey Programme. It was surveyed prior to that in August 2020 (HI1694).
- 3.2 The Report of Survey for these surveys are available upon request from the UKHO and the validated bathymetric surfaces are available to download from the Admiralty Marine Data Portal.

#### **4. NEW SURVEY DETAIL**

- 4.1 The most recent survey is HI1766 (September 2022).
- 4.2 The Report of Survey for this survey is available upon request from the UKHO and the validated bathymetric surfaces are available to download from the Admiralty Marine Data Portal.

#### **5. DESCRIPTION OF RECENT BATHYMETRIC CHANGE**

- 5.1 Significant depths from the 2022 survey are shown in Figure 3:
  - The least depth from the 2022 survey is 18.4m, located at 51-14.22495N, 001-43.95480E in the north of the area 90m outside the charted Deep Water Route and HI1766 limits.
  - The least depth within the HI limits is 19.7m, located in the north of the area at 51-13.71211N, 001-43.51487E, close to the edge of the Deep Water Route and Tail of the Falls. This has deepened by 0.1m and moved 15m westward since the 2021 survey.
  - The controlling depth is 21.6m, located at 51-12.56361N, 001-43.18012E in the middle of the Deep Water Route. This has stayed the same depth since 2021 and has moved 60m to the southwest.
  - The largest change to a significant depth is in the southwest of the area, where the least depth at 51-08.41257N, 001-40.31572E has deepened by 2.1m from 26.8m in 2021 to 28.9m in 2022.
- 5.2 The Difference surface in Figure 4 and Contour plots in Figures 5 and 6 show that sandwaves have migrated in a south-west direction across the survey area between 2021 and 2022.
- 5.3 The contour plots show the distance of seabed movement is between 10 and 40m in the north of the area, 20 to 25m in the middle, and 30m in the south. This is greater movement than seen between 2020 and 2021, which was typically about 10m.
- 5.4 Between 2021 and 2022 sandwave migration in the north of the area has continued the trend of moving in a southwest direction between 2020 and 2021. However, in the middle of the survey area, direction has shifted from north-eastward movement between 2020 and 2021 to south-westward between 2021 and 2022.
- 5.5 Although sandwaves have continued to migrate throughout the area, the main Tail of the Falls bank has maintained its shape and position, the overall depth has stayed relatively consistent, and significant depths have mostly deepened.

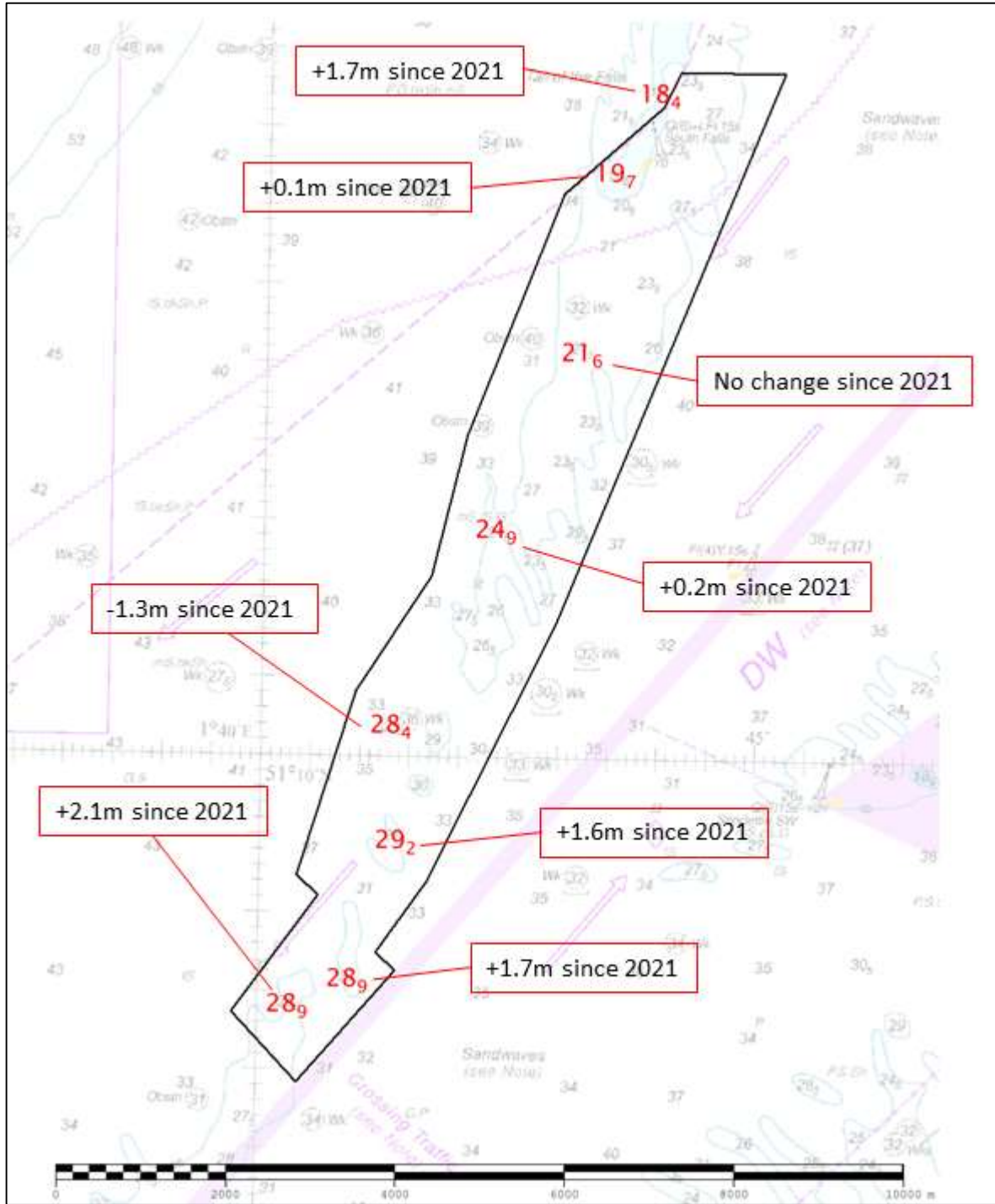


Figure 3: Controlling and other significant depths highlighted, overlaid on BA Chart 0323, including changes since previous survey. Positive values (+) represent deepening. Negative values (-) represent shoaling.

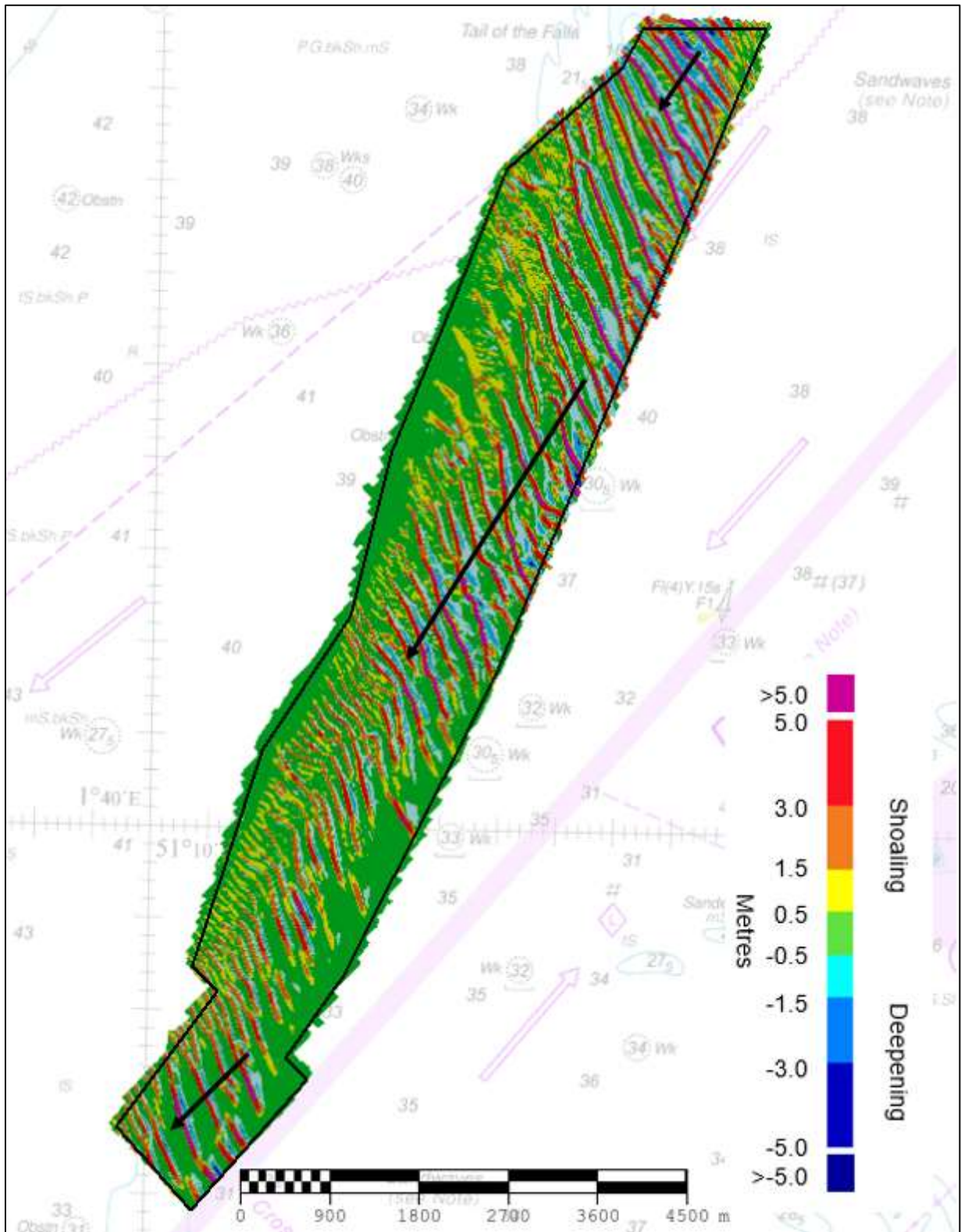


Figure 4: Difference surface showing bathymetric changes between the 2021 and 2022 surveys overlaid on BA Chart 0323 (Black arrows represent sandwave migration since 2021 survey)



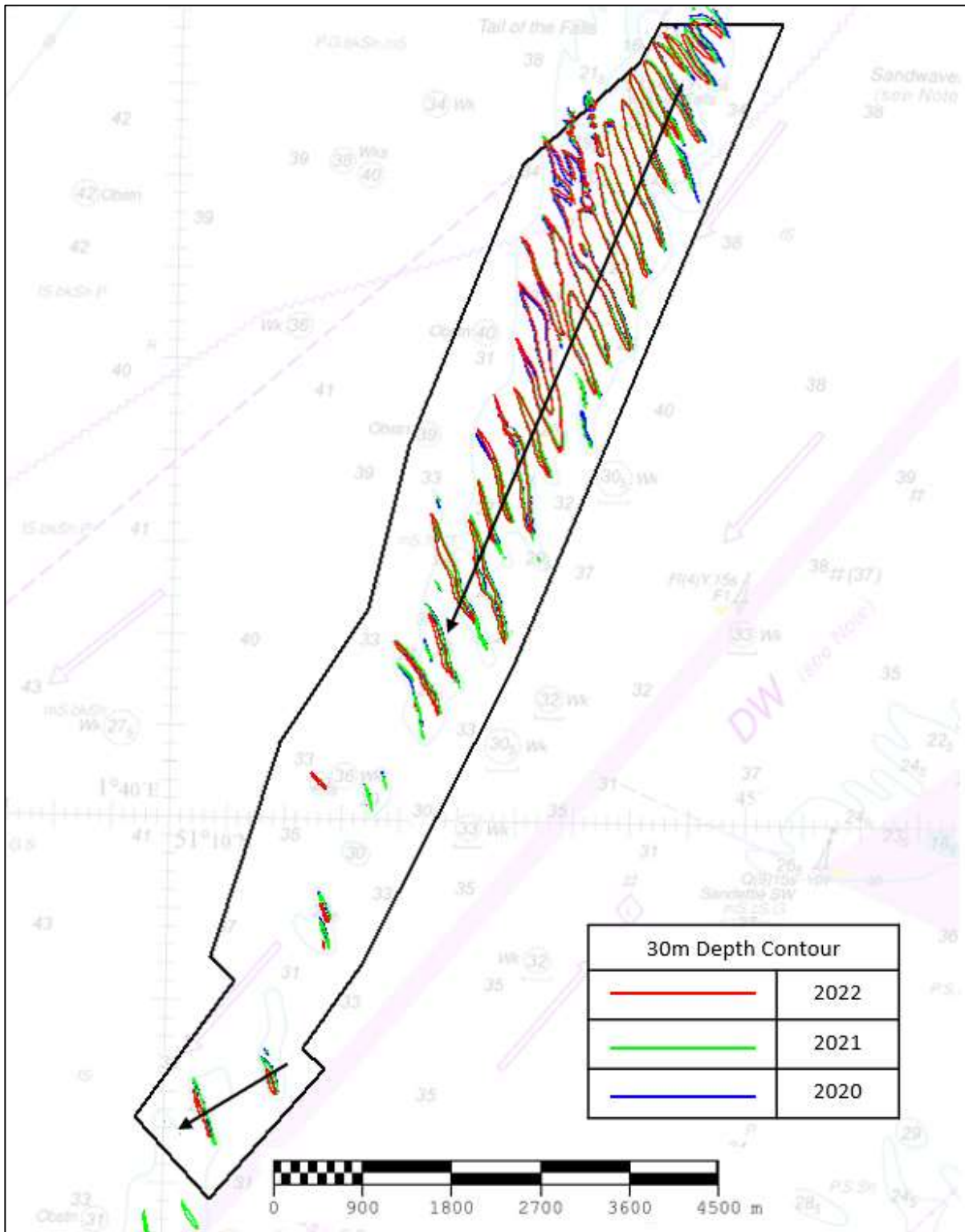


Figure 5: Contour plot showing changes to the 30m contour between 2022 (red), 2021 (green) and 2020 (blue), overlaid on BA Chart 0323. Black arrows represent seabed migration.

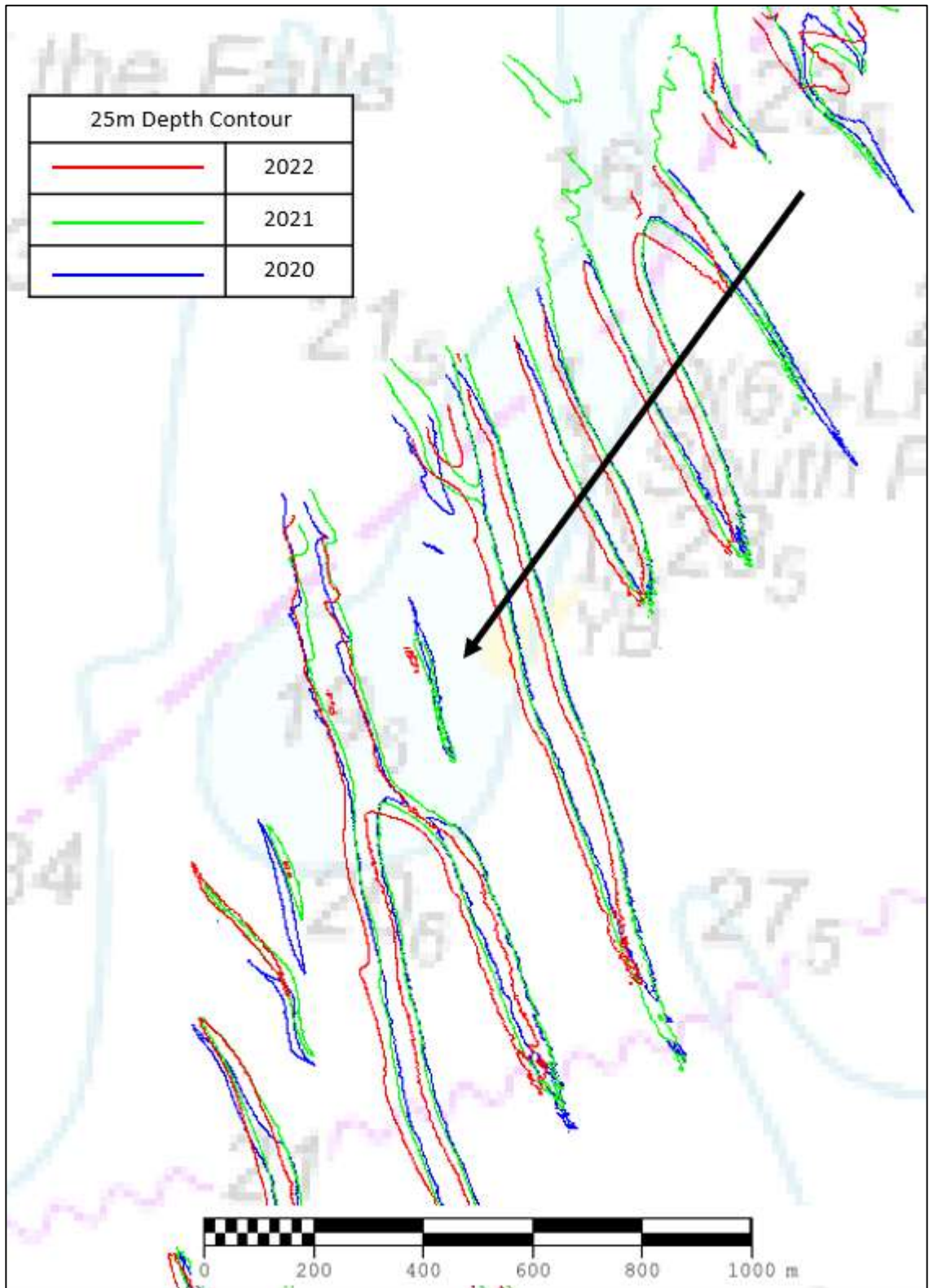


Figure 6: Contour plot showing changes to the 25m contour between 2022 (red), 2021 (green) and 2020 (blue), overlaid on BA Chart 0323. Black arrows represent seabed migration.

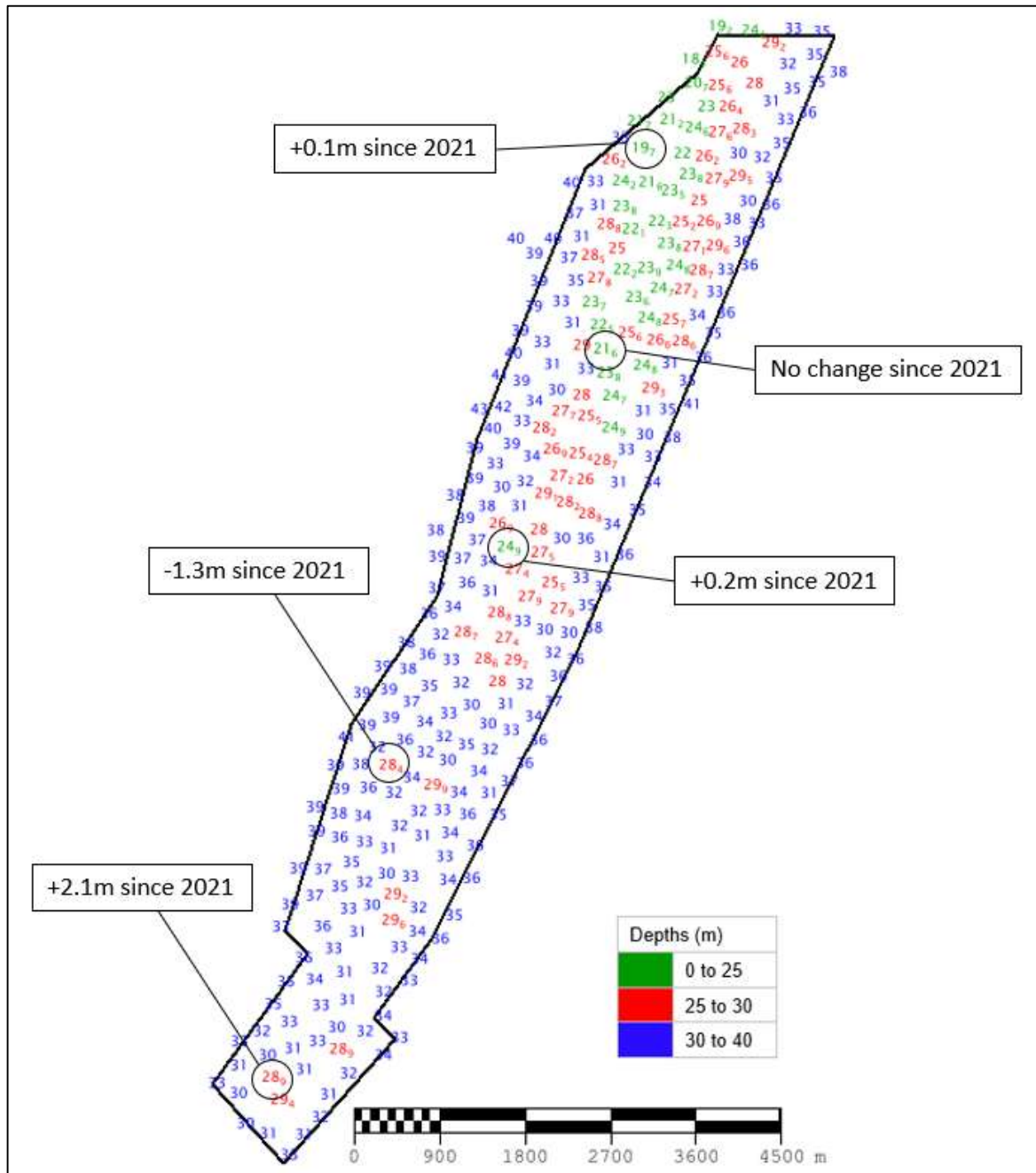


Figure 7: Colour banded depth plot from the 2022 survey with selected depth changes since the 2021 survey. Positive values (+) represent deepening. Negative values (-) represent shoaling.

## 6. RECOMMENDATIONS FOR FUTURE SURVEYS

### Survey Interval

6.1 DWR C1 should remain in the RRS programme due to its location in relation to the Deep Water Route, the deep draught of vessels navigating the area, and the continued migration of sandwaves. The area has been fairly stable since 2021, so for now it is recommended that the annual survey interval be retained. However, if seabed stability is repeated in future surveys, UKHO will consider recommending an increase to the interval.

### Survey Area

6.2 The survey area limits are adequate at present but should be closely monitored due to continued sandwave migration.