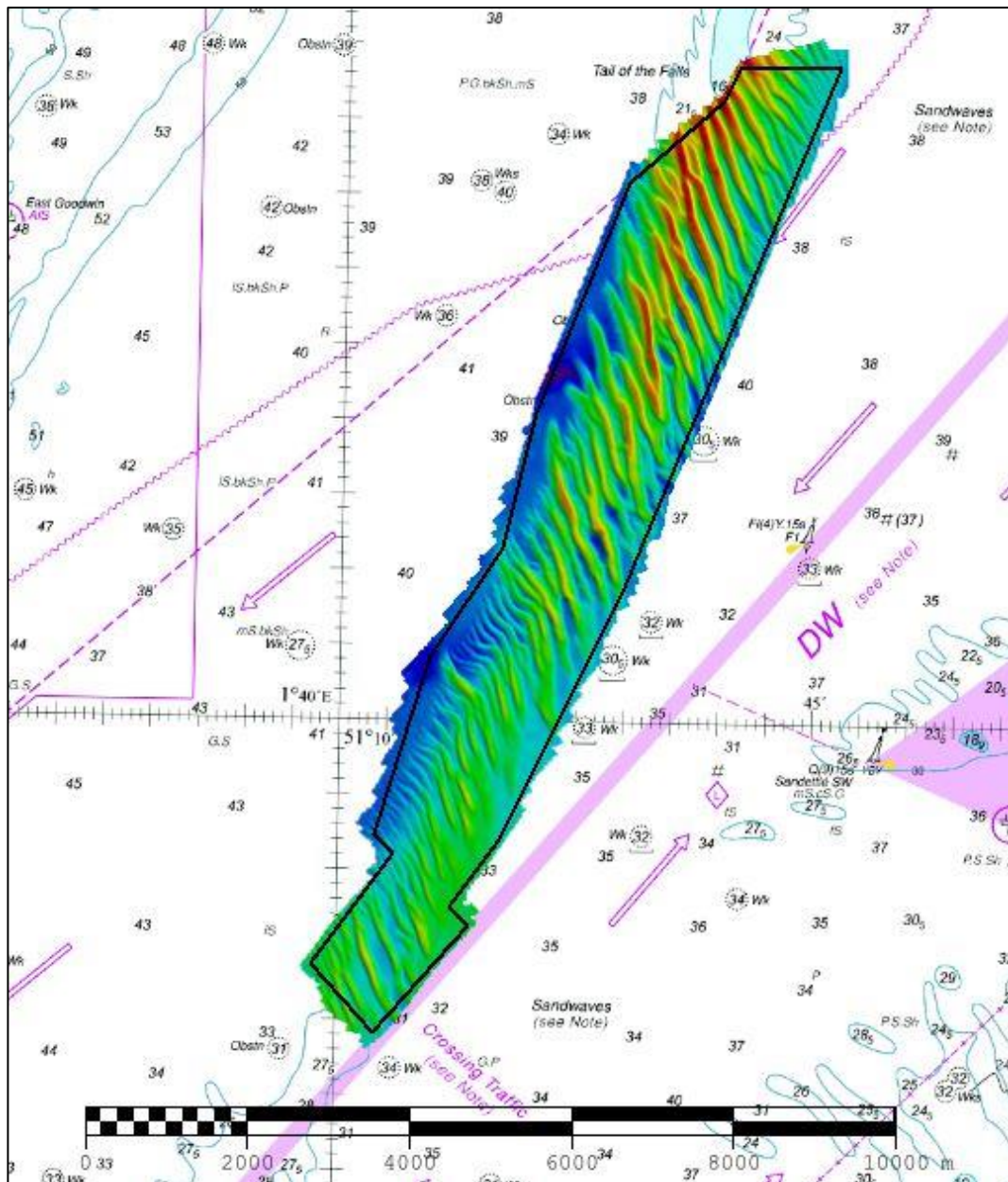




UK Hydrographic  
Office

## DOVER STRAIT TAIL OF THE FALLS (DWR C1) 2023 ASSESSMENT

An assessment of the 2023 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.



## CONTENTS

Notes	2
1. SUMMARY	1
2. LOCATION	1
3. REFERENCE SURVEY DETAIL	3
4. NEW SURVEY DETAIL	3
5. DESCRIPTION OF RECENT BATHYMETRIC CHANGE	4
6. RECOMMENDATIONS FOR FUTURE SURVEYS	8

### 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.

This material is protected by Crown Copyright. It may be downloaded from the UK Hydrographic Office's (UKHO) web site and printed in full for personal or non-commercial internal business use. Extracts may also be reproduced for personal or non-commercial internal business use on the condition that the UK Hydrographic Office is acknowledged as the publisher and the Crown is acknowledged as the copyright owner.

Applications for permission to reproduce the material for any other purpose (including any distribution of the material or extracts to third parties) can be made interactively on the UKHO's web site ([www.ukho.gov.uk](http://www.ukho.gov.uk)), by e-mail to [intellectualproperty@ukho.gov.uk](mailto:intellectualproperty@ukho.gov.uk) or in writing to Intellectual Property, UK Hydrographic Office, Admiralty Way, Taunton, Somerset, TA1 2DN.

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), 2023**

### **1. SUMMARY**

#### **Changes Detected**

- 1.1 The least depth is deeper at 19.1m and is now located 80m NE compared to the previous least depth of 18.4m in 2022.
- 1.2 Significant depths highlighted in the area in the two-way DWR are 21.5m, 21.6m, and 24.0m. The 24.0m depth – located on a sandwave – has shoaled by 0.9m compared to the shoalest depth of that sandwave in 2022.
- 1.3 Sandwaves display a rotational style movement, with the NW end shifting slightly NE, and the SE ends moving SW.

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

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

#### **Recommendations**

- 1.5 Given the location of the area in relation to the DWR and the draught of vessels navigating the area, C1 should remain on the annual survey interval.
- 1.6 Due to minimal horizontal sandwave migration there are no recommend changes to the survey area. However, the survey area should be closely monitored due to continuing sandwave shoaling.

### **2. LOCATION**

- 2.1 Survey interval at time of resurvey: Annual
- 2.2 Area Covered: 23.47 km<sup>2</sup>

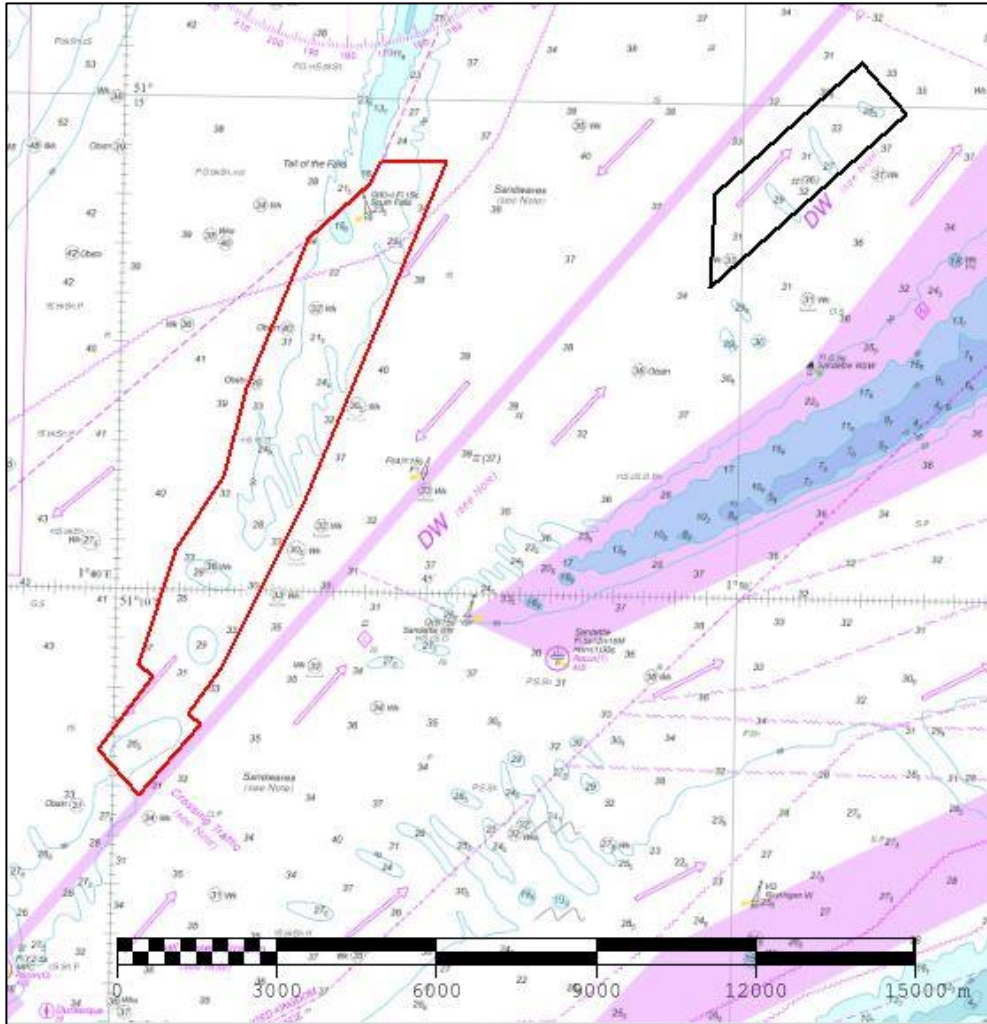


Figure 1: 2023 Dover Strait Routine Resurvey areas overlaid on BA Chart 0323 with area DWR C1 in red.

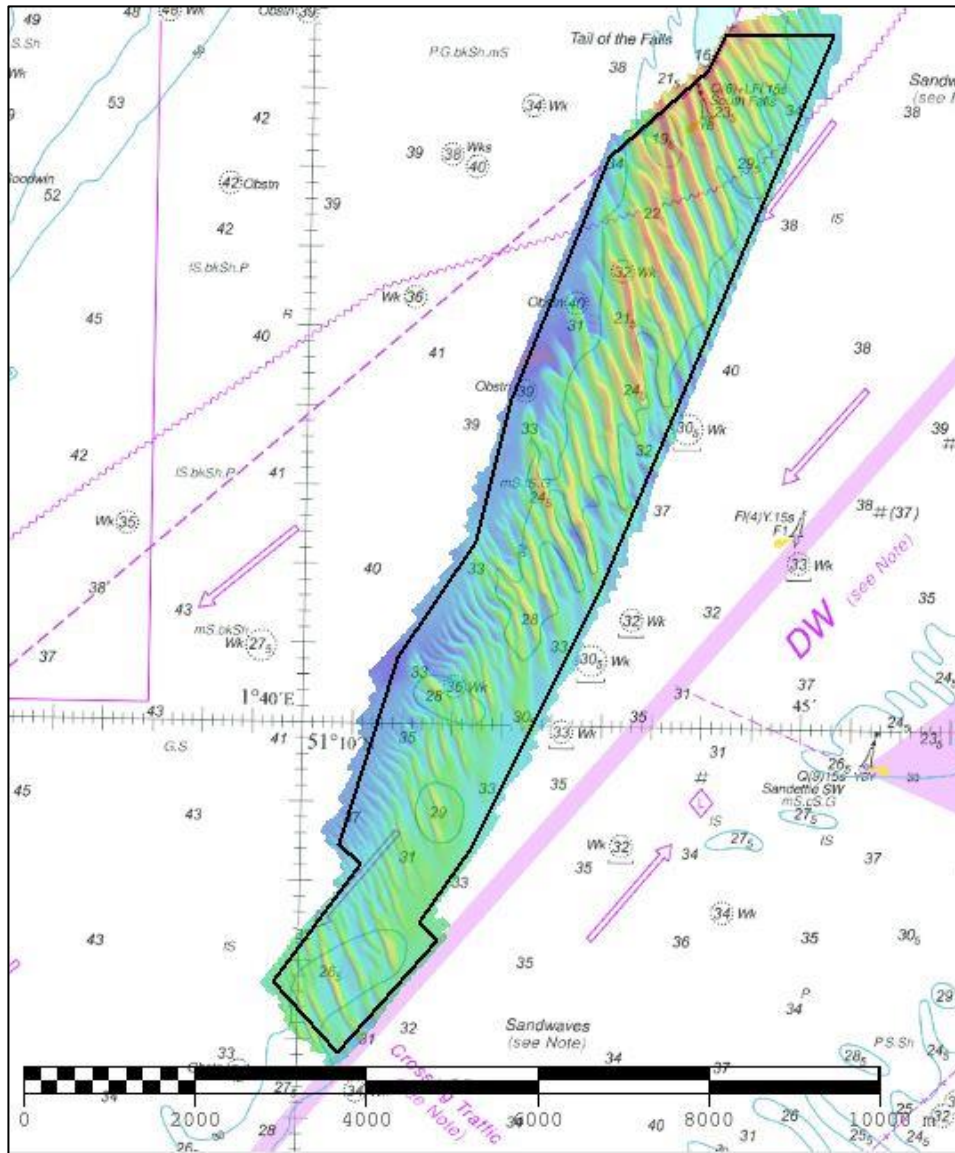


Figure 2: 2023 survey data overlaid on BA Chart 0323.

### 3. REFERENCE SURVEY DETAIL

- 3.1 The previous survey was conducted as part of the 2022 Routine Resurvey Programme, CHP in September 2022 as part of HI1766.
- 3.2 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.

### 4. NEW SURVEY DETAIL

- 4.1 The most recent survey is HI1834 (October 2023).
- 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 2023 survey are shown in Figure 3:

- The least depth from the 2023 survey is 19.1m, located at the northern edge of the survey limit, close to the Tail of the Falls. The least depth has shoaled by 0.1m in this particular location since 2022, however the previous least depth was ~80m SW at 18.4m, so overall the least depth has deepened and shifted.
- A significant depth of 21.5m is located north of the centre of the DWR, which has shoaled by 0.2m since 2022.
- There is another significant sounding in the middle of the two-way DWR of 24.0m, which has shoaled by 0.9m compared to the shoalest point on that sandwave (a depth of 24.9m) in 2022.

5.2 The difference surface in Figure 4 shows areas of shoaling (>5.0m) due to the migration of the sandwaves. The rest of survey area has relatively low rates of sediment change. The sandwaves seem to be moving in a rotational manner, with the western top of the sandwaves in the survey area shifting slightly NE, and the bottom of the sandwaves (in the eastern area) rotating slightly SW.

5.3 The 30m contour plot in Figure 5 also shows that the sandwaves have displayed this rotating migration in a NE to SW direction across the survey area between 2021 to 2023.

5.4 Continued sandwave mobility throughout the survey area can be seen since 2022, with the least depth only shoaling by 0.1m and remaining on the southern end of the Tail of the Falls. However, the significant 0.9m shoaling of the 24.0m sounding in the middle of the southwest bound lane of the DWR, highlighted in Figure 3, highlights the significant vertical mobility, and the need for continued monitoring.

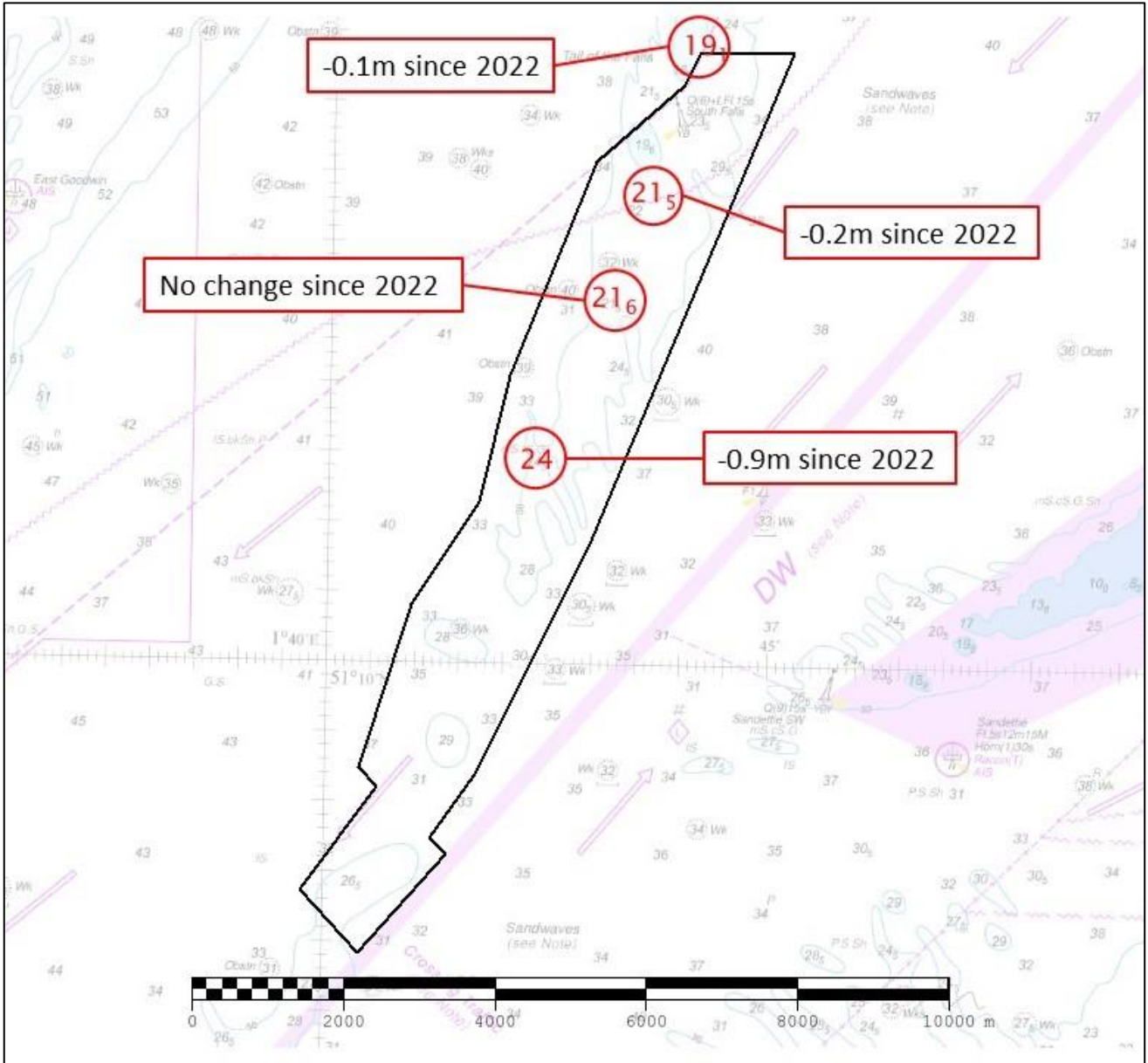


Figure 3: Significant Depth soundings highlighted, overlaid on BA Chart 0323.

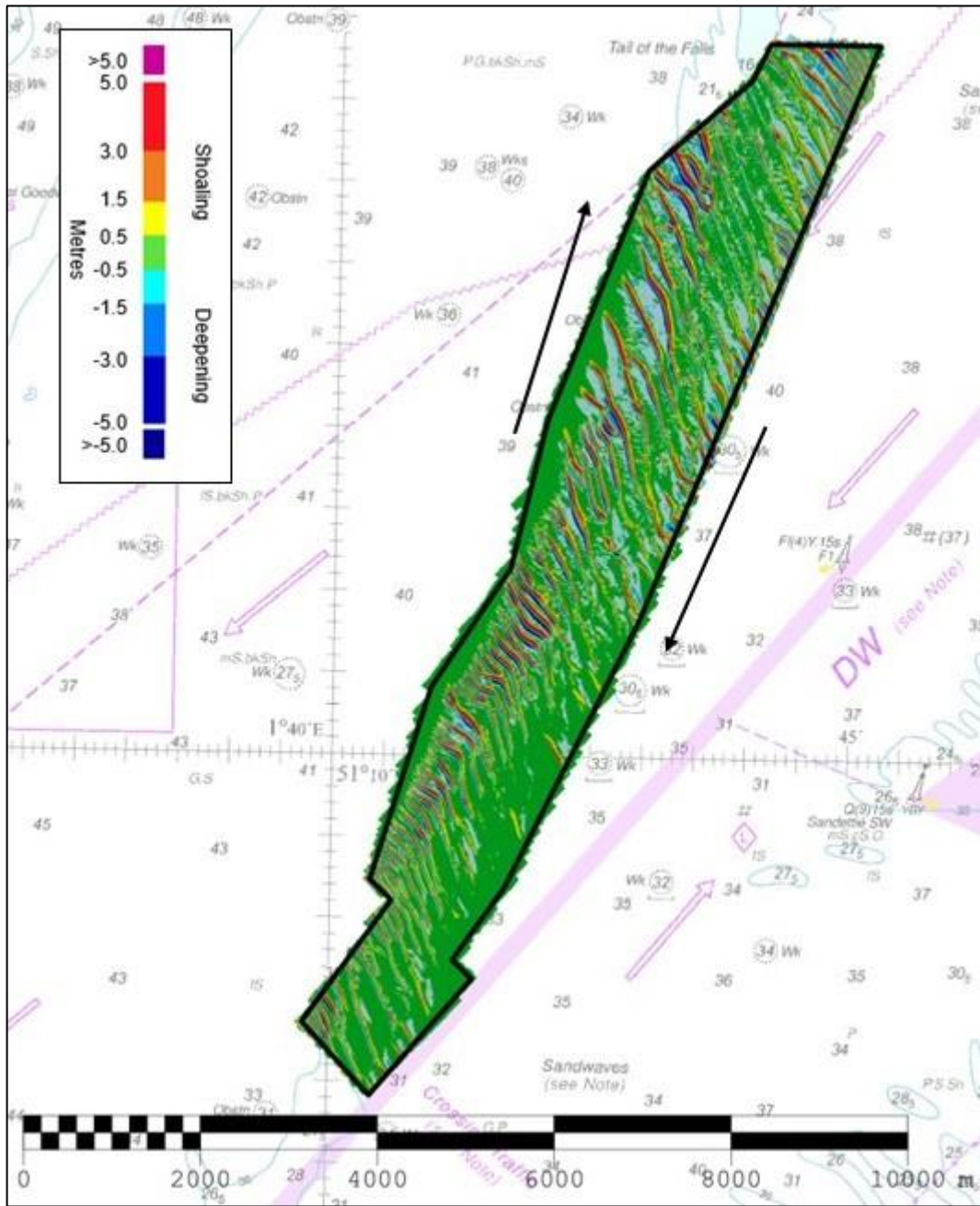


Figure 4: Difference surface showing bathymetric changes between the 2022 and 2023 surveys overlaid on BA Chart 0323 (Black arrows represent sandwave migration since 2022 survey)



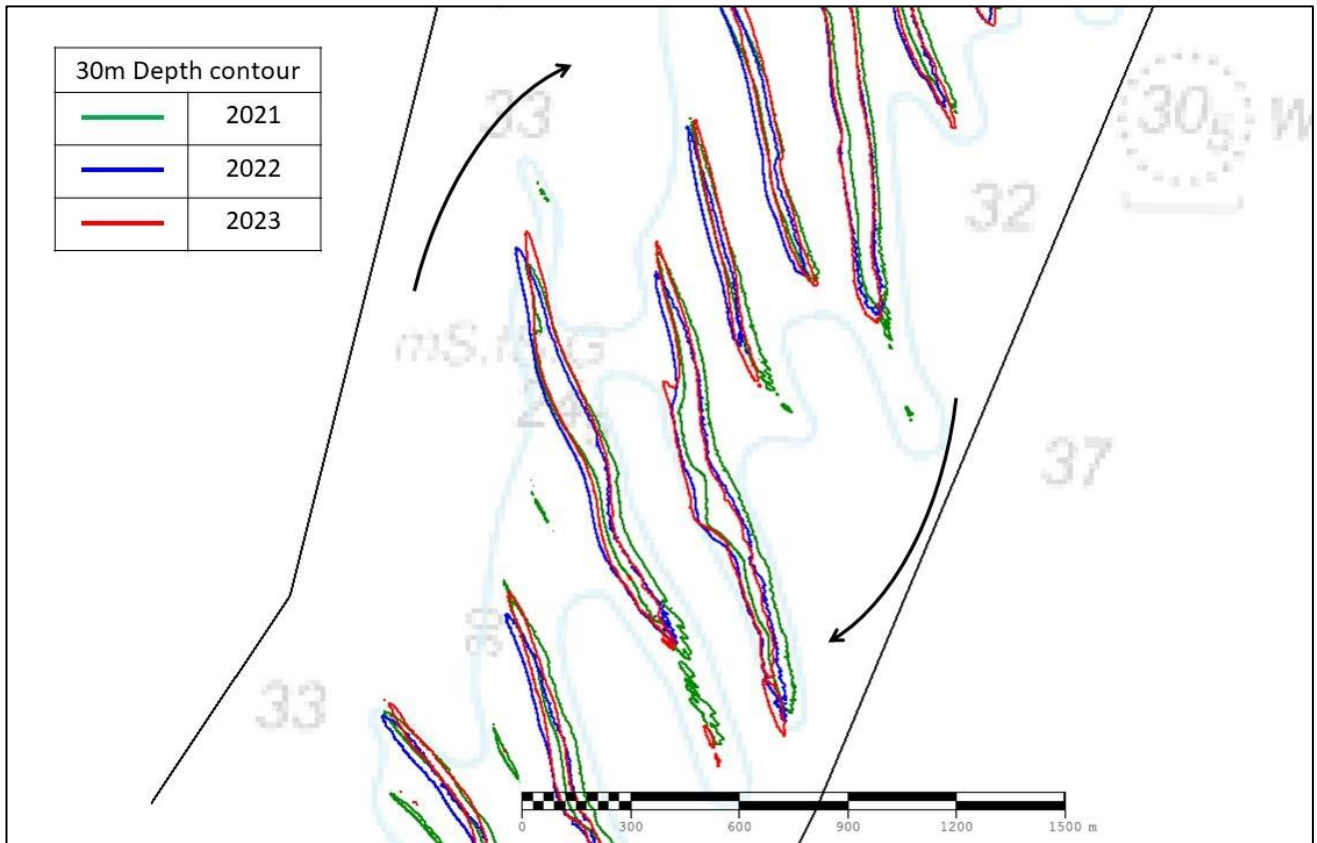


Figure 5: Contour plot showing changes to the 30m contour between 2023 (red), 2022 (blue) and 2021 (green), overlaid on BA Chart 0323. Black arrow represents feature migration.

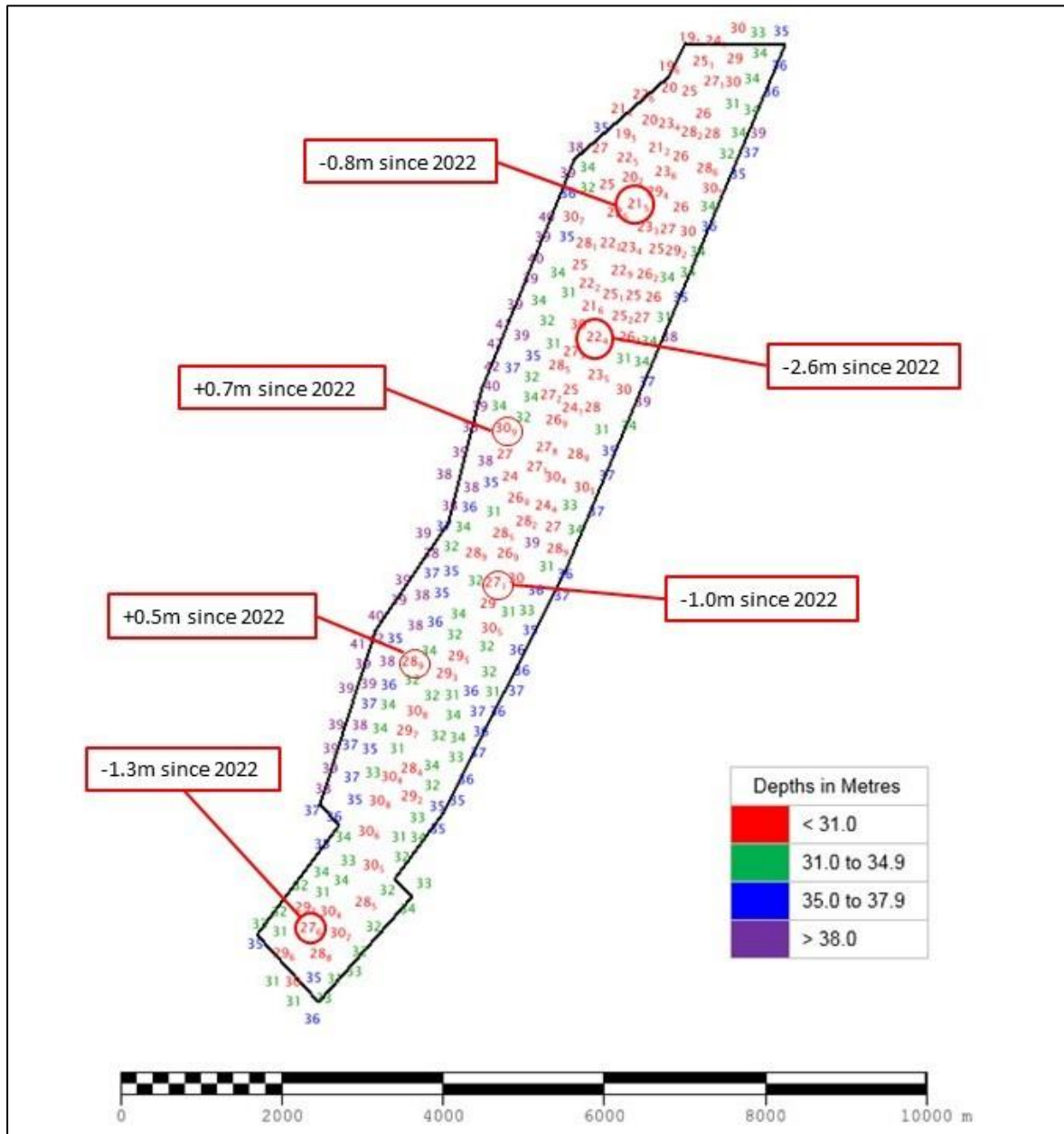


Figure 6: Colour banded depth plot from the 2023 survey with selected depth changes since the 2022 survey. Positive values (+) represent deepening. Negative values (-) represent shoaling.

## 6. RECOMMENDATIONS FOR FUTURE SURVEYS

### Survey Interval

- 6.1 DWR C1 should remain on an annual survey in the RRS programme due to its location in relation to the DWR, the deep draught of vessels navigating the area, and the continued migration and shoaling of sandwaves.

### Survey Area

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