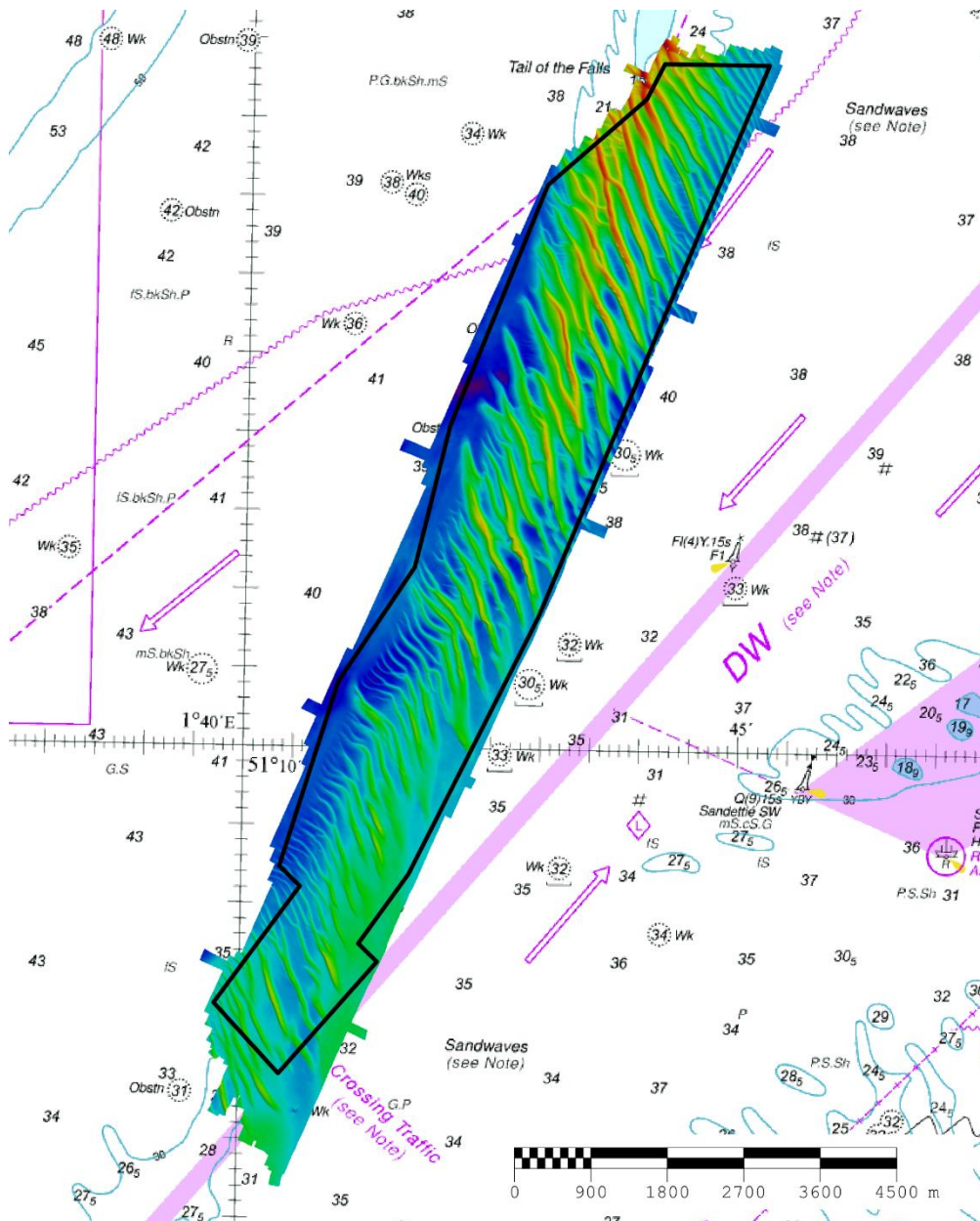




UK Hydrographic  
Office

## DOVER STRAIT TAIL OF THE FALLS (DWR C1) 2021 ASSESSMENT

An assessment of the 2021 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 to 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 VORF Model.

## **TAIL OF THE FALLS (DWR C1), 2021**

### **1. SUMMARY**

#### **Changes Detected**

- 1.1 Changes since 2020 are minimal:
- 1.2 The least depth has deepened by 0.5m and moved 4m to the SE.
- 1.3 Average depth over the whole survey area has decreased by 0.09m.
- 1.4 Sand waves have continued to migrate north-eastwards, but only by about 10m since 2020.
- 1.5 The main Tail of the Falls bank feature has maintained its shape since last year even with continuing sandwave migration.

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

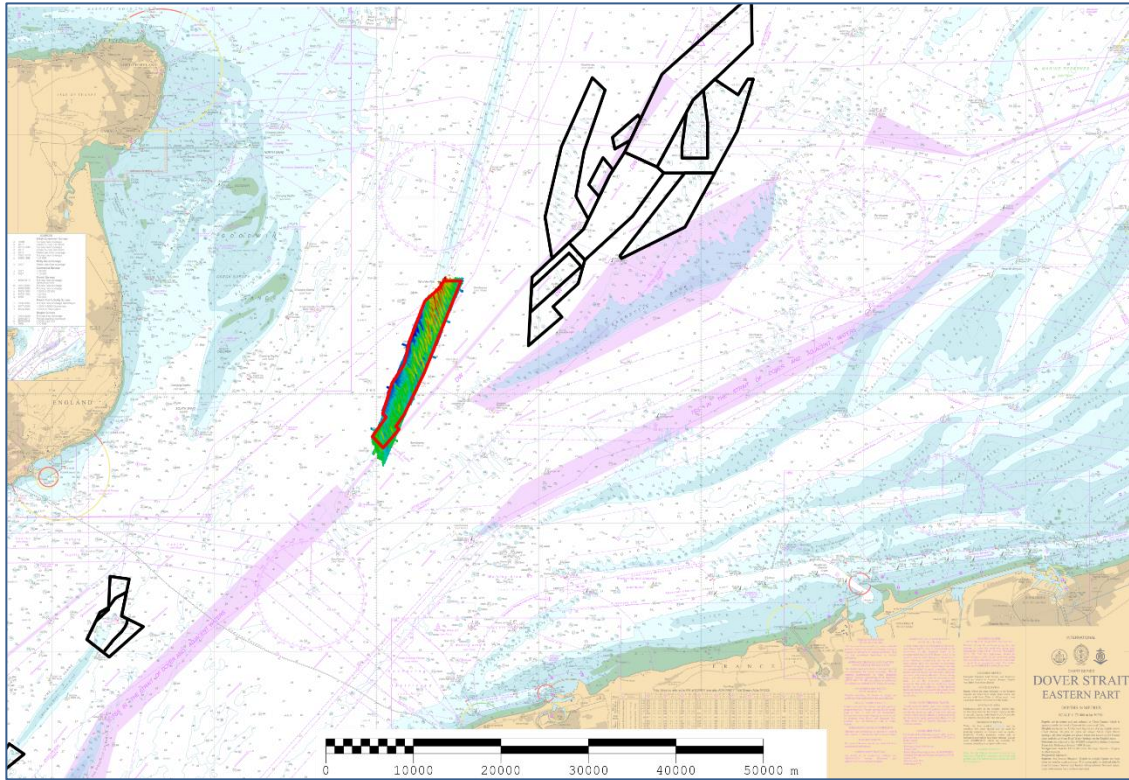
- 1.6 Depths in the area remain hazardous and changeable to deep draught vessel navigating the area and therefore require continued monitoring through annual resurveys.

#### **Recommendations**

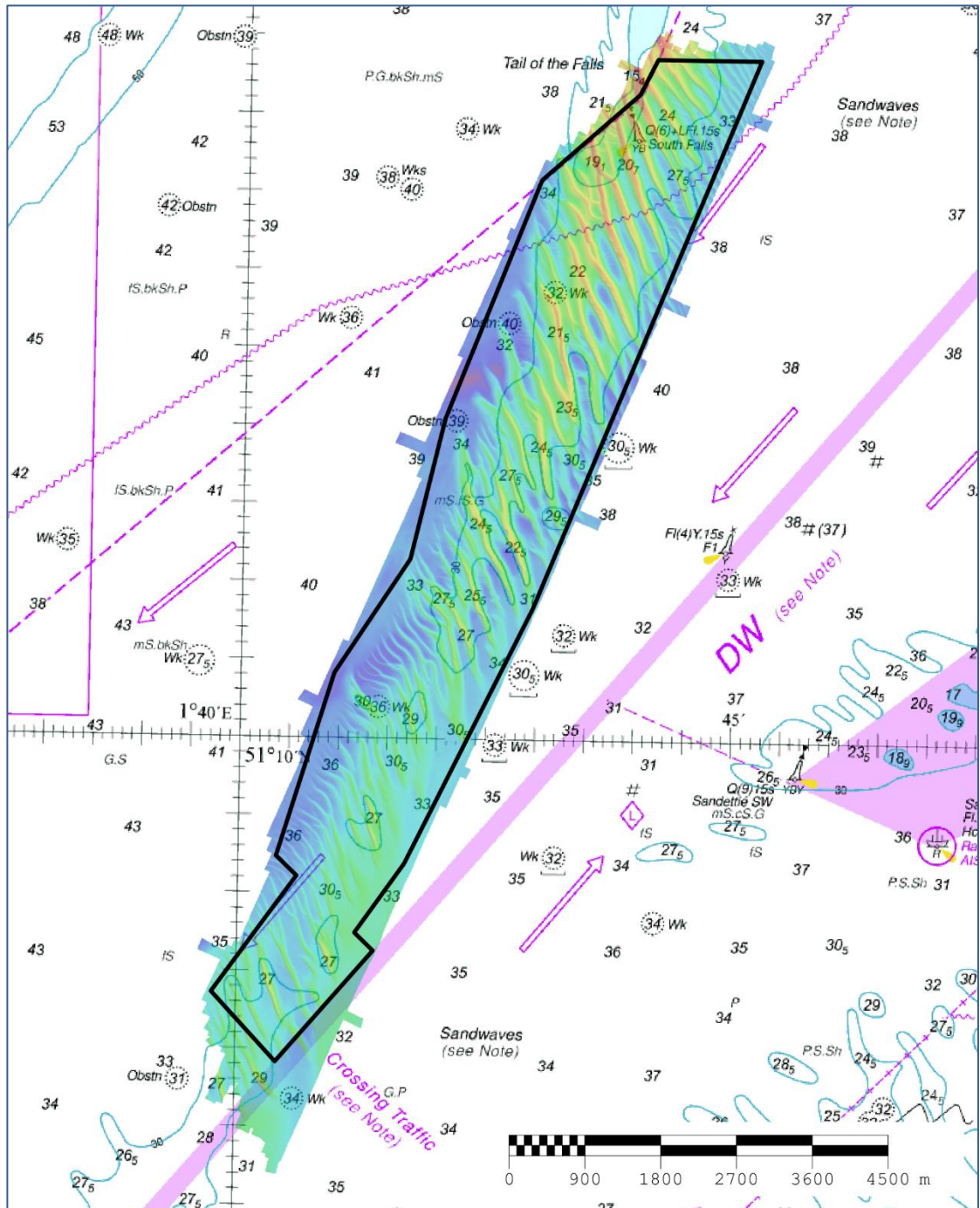
- 1.7 As the area is fairly stable, but for now it is recommended that the annual survey interval be retained.
- 1.8 No changes to the survey area needed at present. But survey area should be closely monitored due to continuing sandwave migration.

### **2. LOCATION**

- 2.1 Survey interval at time of resurvey: Annual
- 2.2 Area Covered: 20.1 km<sup>2</sup>



**Figure 1: 2021 Dover Strait Routine Resurvey areas overlaid on BA Chart 323 with area DWR C1 in red**



**Figure 2: 2021 survey data overlaid on BA Chart 323**

### 3. REFERENCE SURVEY DETAIL

- 3.1 The previous survey was conducted in August 2020 (HI1694) as part of the 2020 Routine Resurvey Programme. It was surveyed prior to that in July 2019 (HI1649, covering the southern half, and HI1651 for the northern half).
- 3.2 The Report of 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 Latest survey: HI1744 (August/September 2021)



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

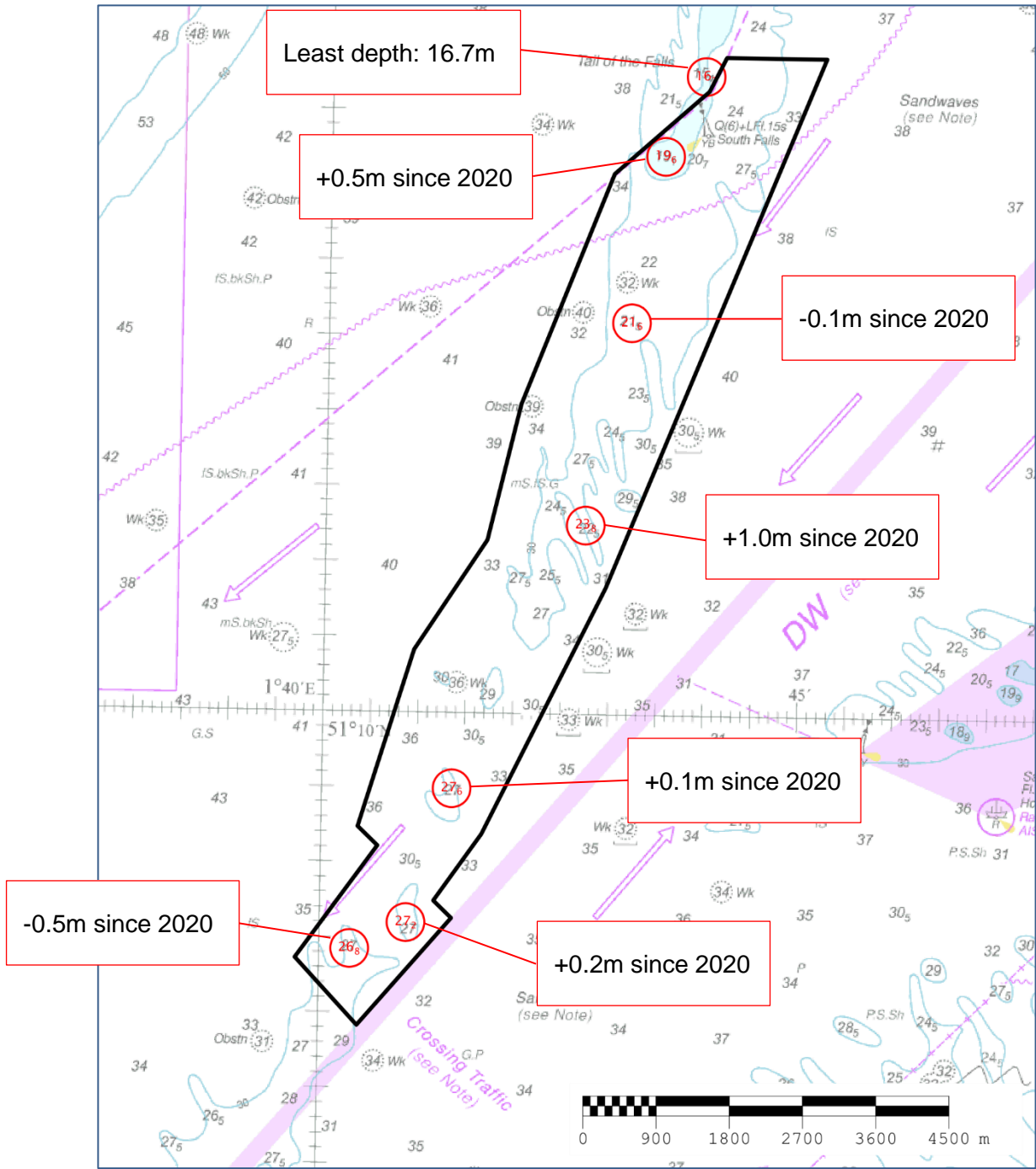
5.1 Significant depths from the 2021 survey can be seen in Figure 3:

- The least depth within the HI area is 19.6m at 51°13.701'N, 001°43.522'E. This is 0.5m deeper than in the 2020 survey (19.1m) and has barely moved (4m to the south-east).
- The controlling depth is 21.6m at 51°12.594'N, 001°43.192'E. This is 0.1m shallower than in 2020 and has moved 134m SE due to sandwave migration.

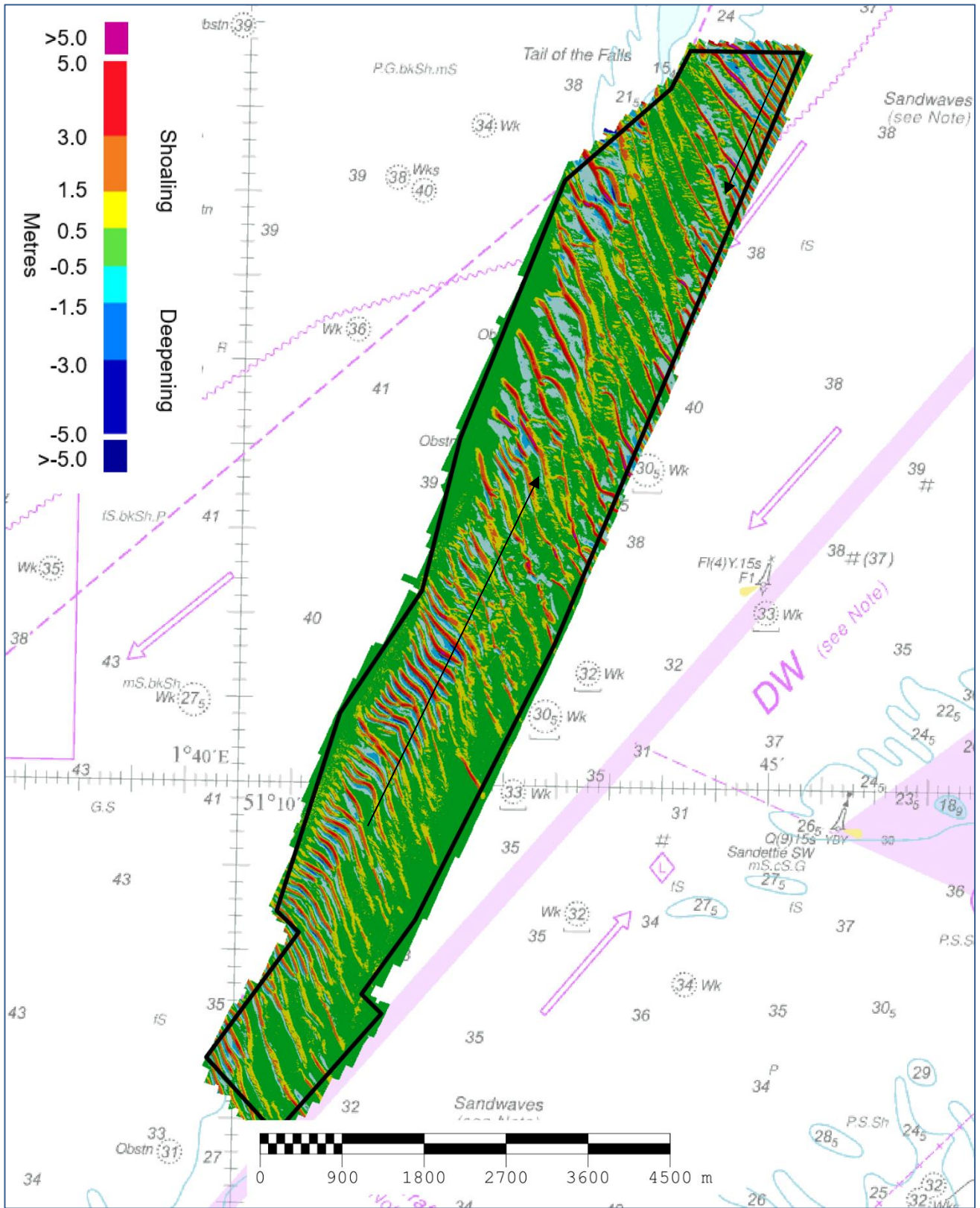
5.2 The difference surfaces in *Figure 4* and *Figure 5* shows sand-wave migration across much of the survey area travelling north-east and continuing the trend seen in the 2020 reports. The movement is less than from 2019 to 2020: typically about 10m, compared to 30m previously. This is most clear when looking at the changes in the 30m contour – see *Figure 6* and *Figure 7*.

5.3 Although sand waves are continuing to migrate, the main Tail of the Falls bank has maintained its shape and position, and overall depth of water in the survey has stayed relatively consistent.

5.4 The mean difference between the 2021 and 2020 surveys is -0.09m - i.e. the survey area is on average 0.09m shallower. However, this small change is well within the data uncertainty limits, so should not be over-interpreted.

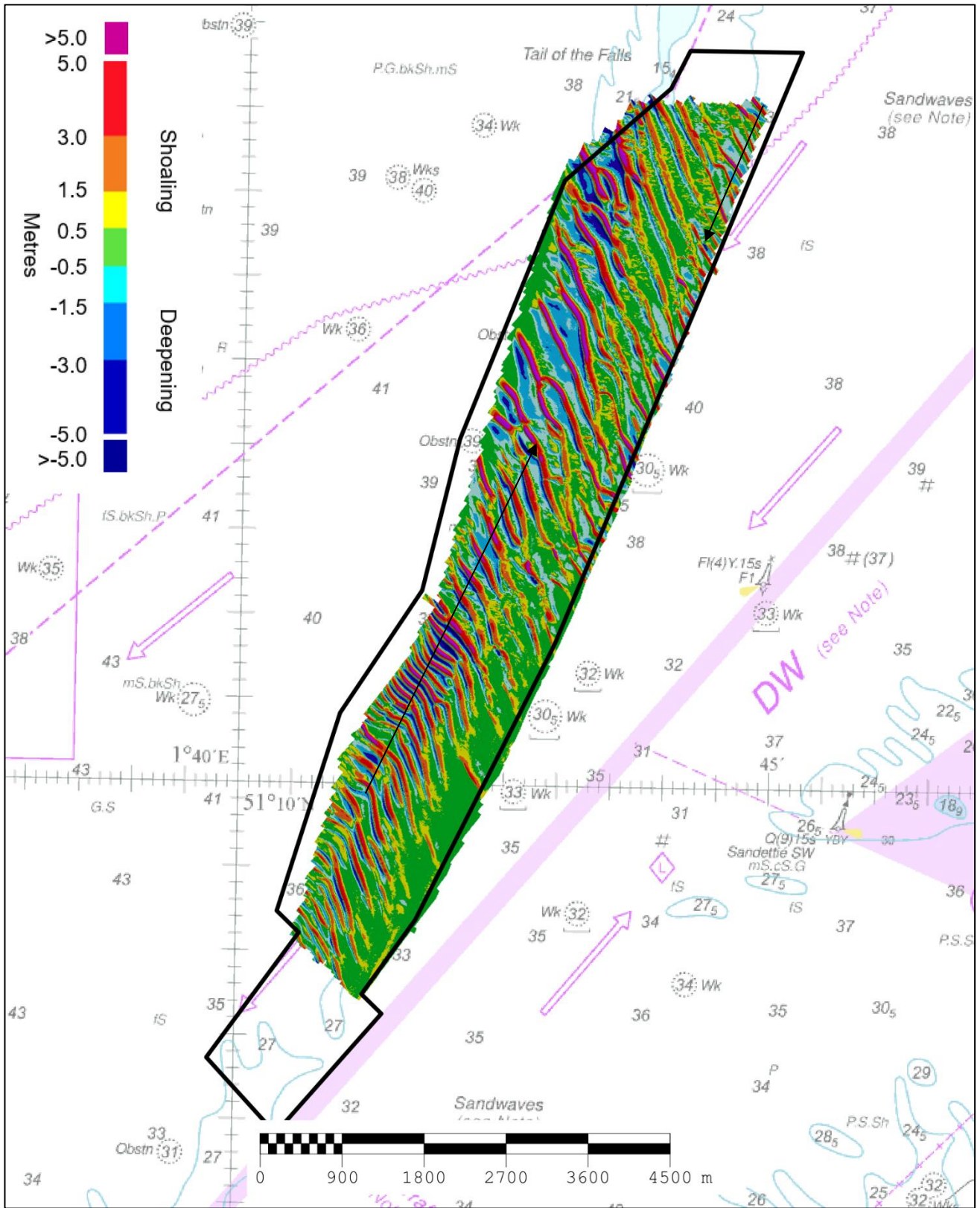


**Figure 3: Controlling Depth sounding(s) highlighted, overlaid on BA Chart 323**

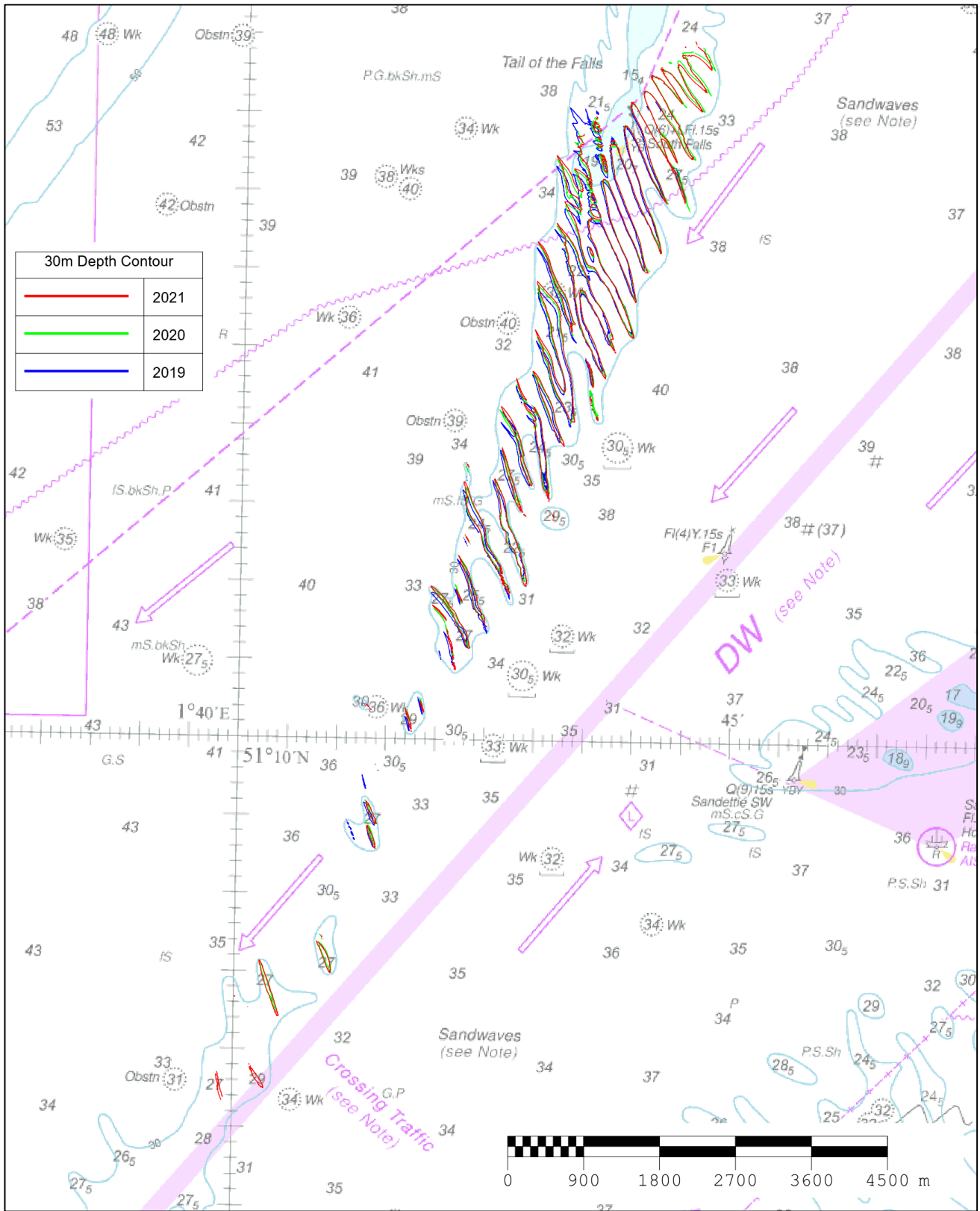


**Figure 4: Difference surface showing bathymetric changes between the 2020 and 2021 surveys overlaid on BA Chart 323 (Black arrows represent sandwave migration since 2020 survey)**

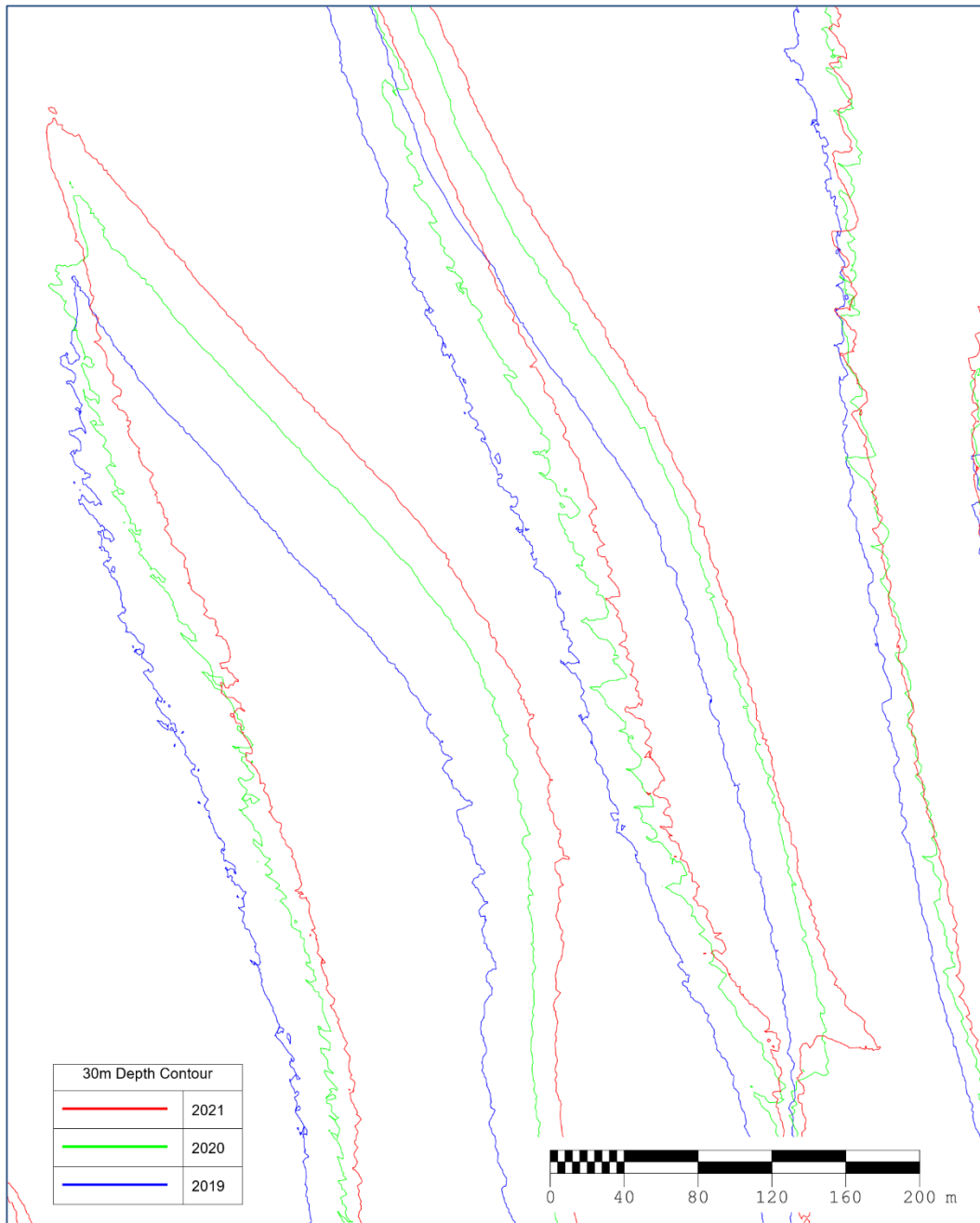




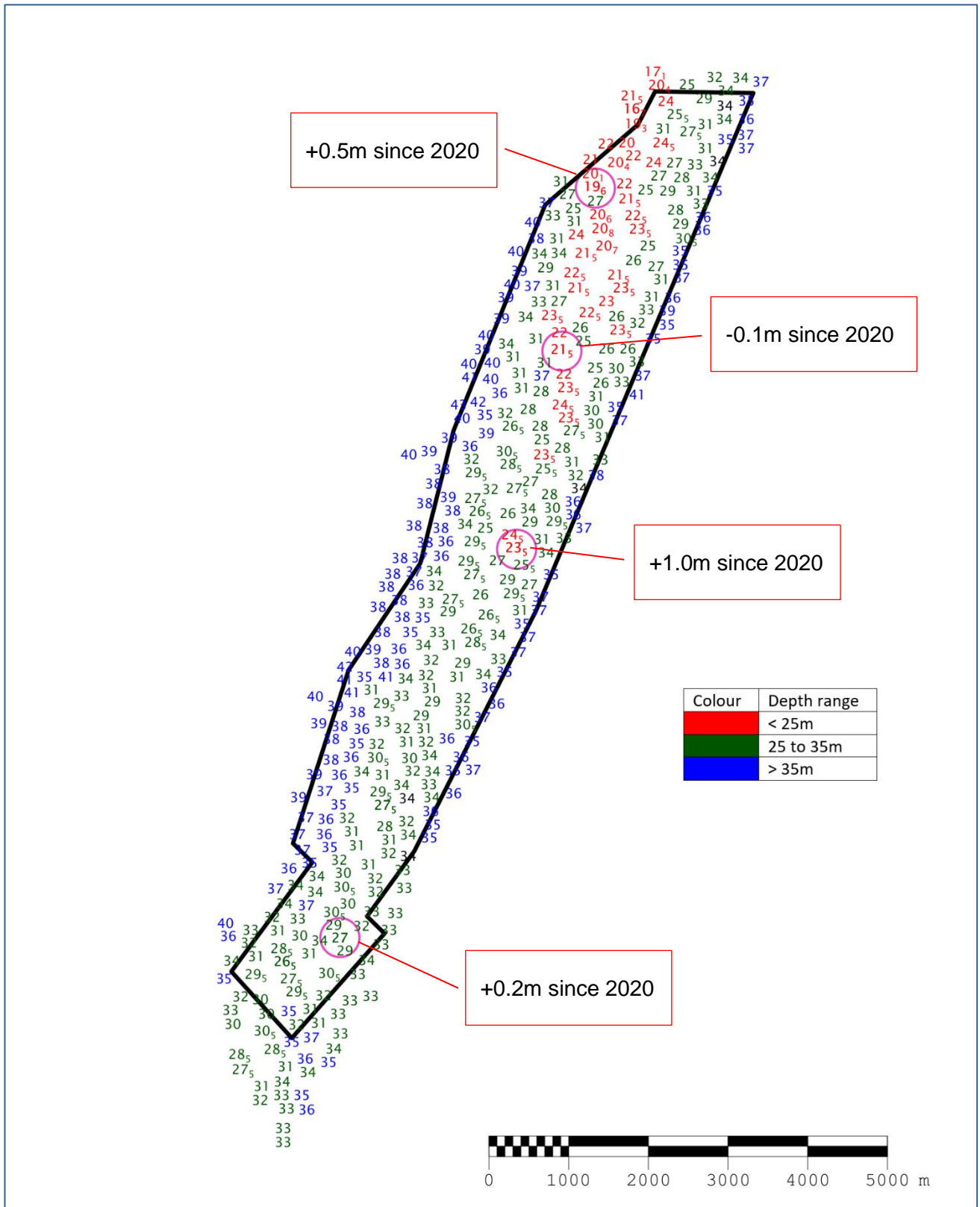
**Figure 5: Difference surface showing bathymetric changes between the 2019 and 2021 surveys overlaid on BA Chart 323 (Black arrows represent sandwave migration since 2019 survey)**



**Figure 6: Contour plot showing changes in the 30m contours between 2019 (blue), 2020 (green) and 2021 (red).**



**Figure 7: Close-up of contours at 51 12.775N, 001 43.204E**



**Figure 8: Colour banded depth plot from the 2021 survey with selected depth changes since the 2020 survey. Positive values (+) represent deepening. Negative values (-) represent shoaling.**

## **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, in addition to the continued migration of sand waves, DWR C1 should remain in the programme. The area has been fairly stable since last year, and if this stability is repeated in future surveys, UKHO will consider recommending that the interval may be increased. However, for now, it is recommended that the annual survey interval be retained.

### **Survey Area**

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