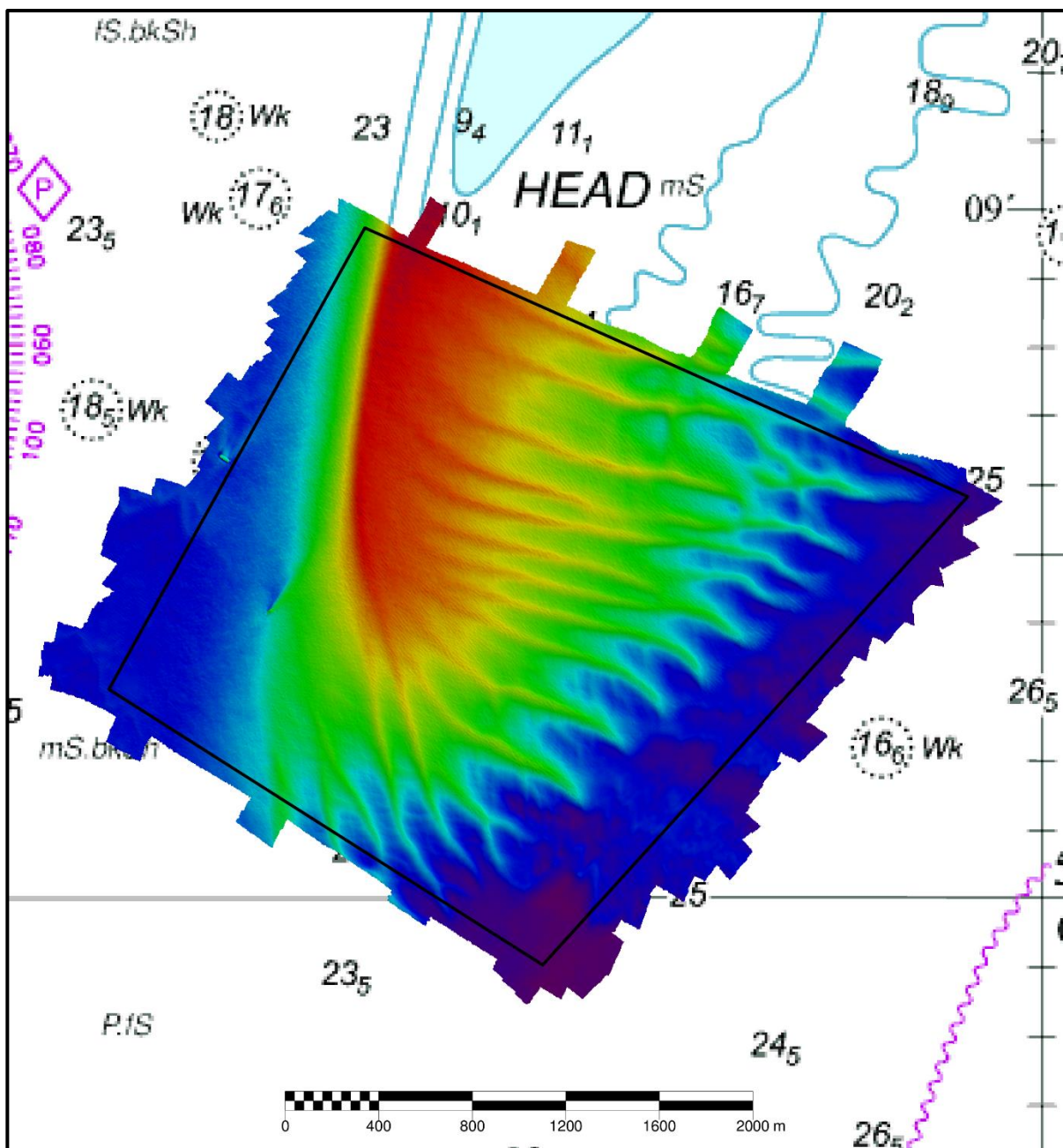




UK Hydrographic
Office

DOVER STRAIT SOUTH SANDS HEAD (GS1) 2023 ASSESSMENT

An assessment of the 2023 hydrographic survey of the area GS1: 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).

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.

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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.

SOUTH SAND HEAD (GS1), 2023

1. SUMMARY

Changes Detected

- 1.1 The sandbank has continued to move in a south-south-west direction. Superimposed on this general movement, individual sand wave and ripple features have continued to migrate in a broadly southerly direction.

Reasons for Continuing to Resurvey the Area

- 1.2 The seabed in area GS1 is highly-mobile and is in close proximity to some of the busiest shipping routes in the world. Routine surveying of this area mitigates potential risks from uncharted mobile seabed features migrating into shipping routes.

Recommendations

- 1.3 Given the highly-mobile nature of the seabed, and proximity to busy shipping routes, this area should remain on the four-year survey interval.
- 1.4 The area should be shifted 200-250 m to the west to fully capture the future movement of the sand bank and associated sand wave and ripple features.

2. LOCATION

- 2.1 Survey interval at time of resurvey: 4 years (GS1). The full survey of Goodwin Sand (GS4) occurs on a 12-year interval.
- 2.2 Area Covered: 3.06 km²

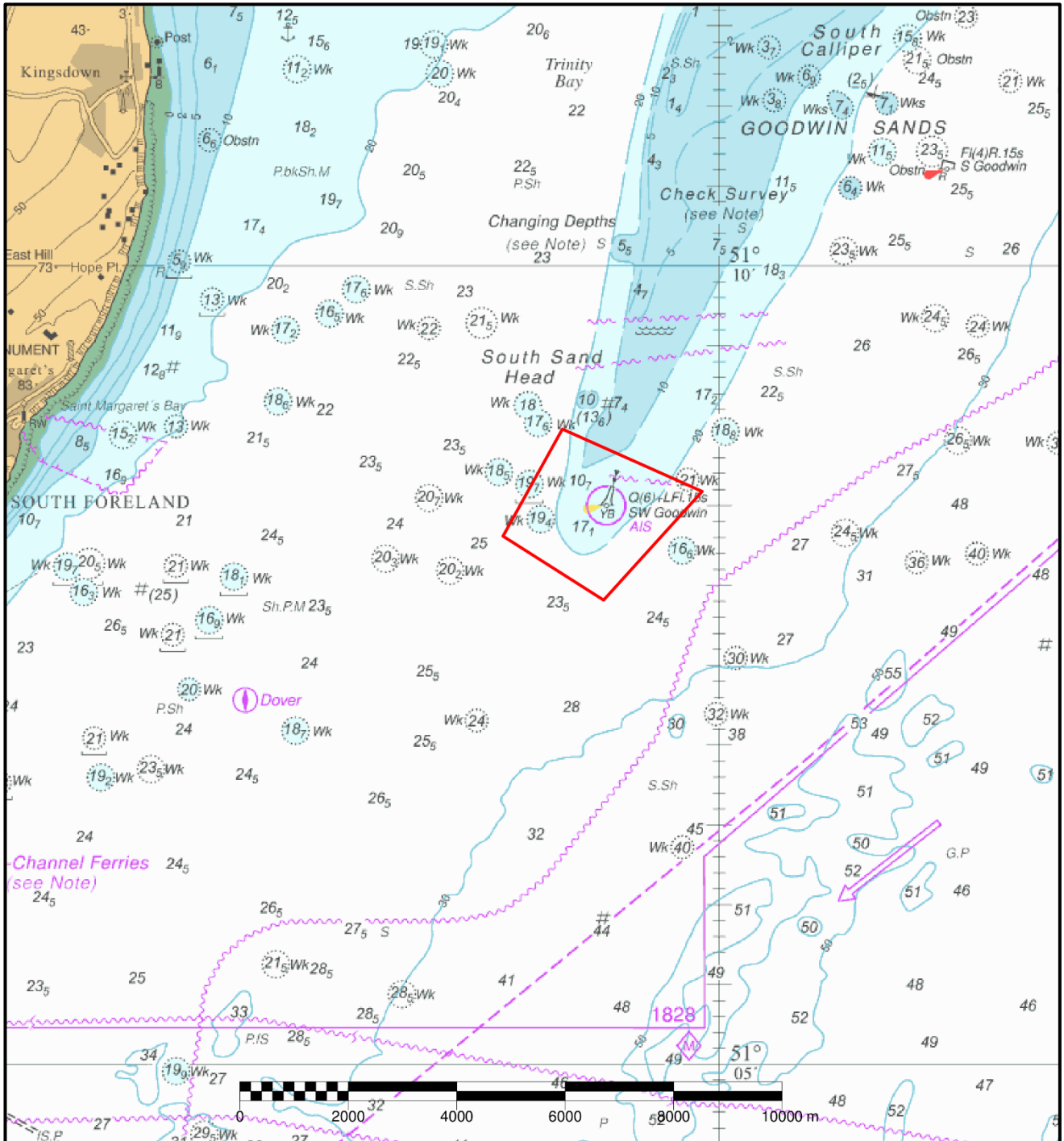


Figure 1: 2023 Dover Strait Routine Resurvey areas overlaid on BA Chart 1892-0 with area GS1 in red.

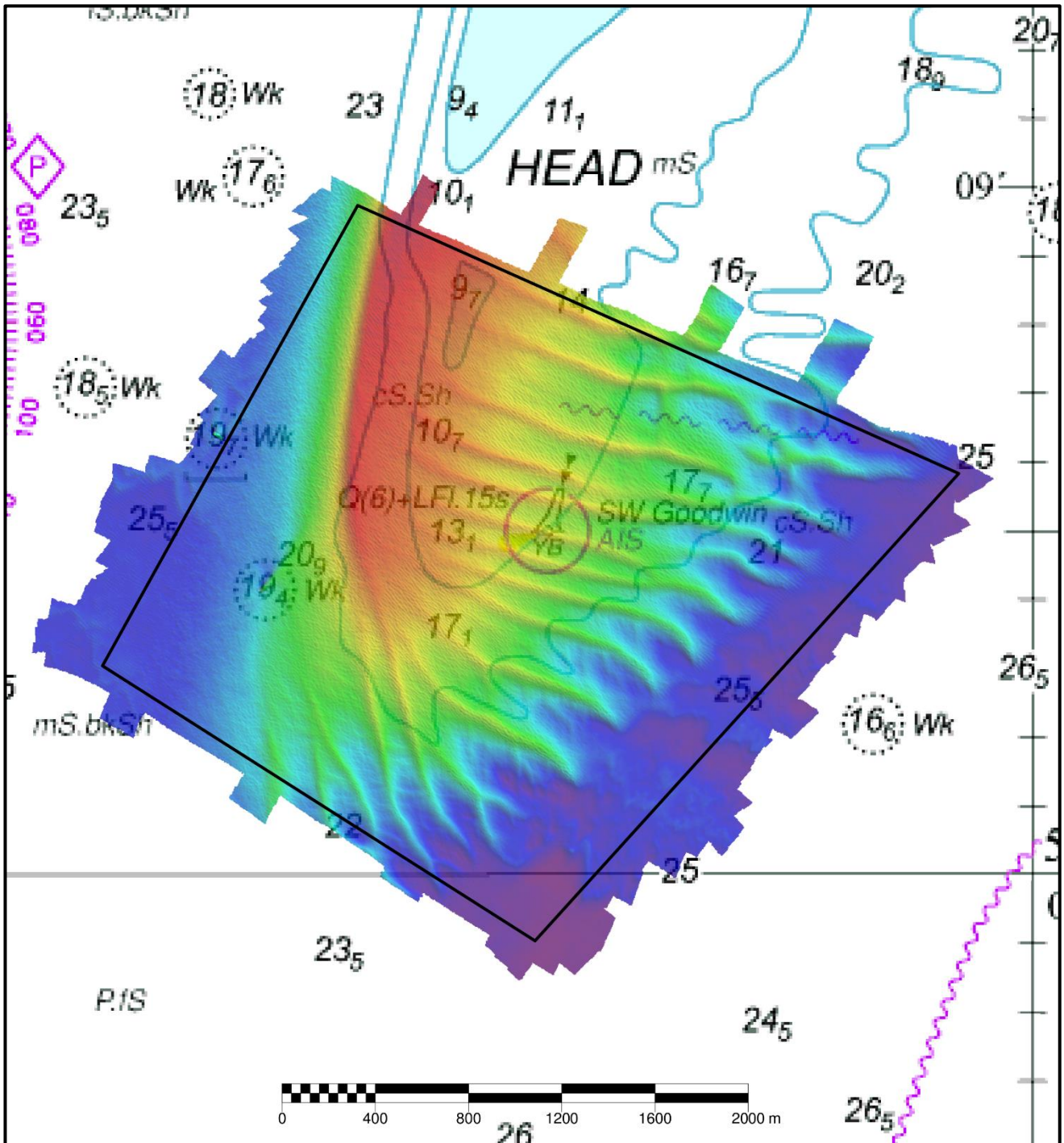


Figure 2: 2023 survey data overlaid on BA Chart 1828-0.

3. REFERENCE SURVEY DETAIL

- 3.1 Previous surveys were conducted between April and May 2019 under the designation HI1646, August and September 2015 under the designation HI1484, December 2012 under the designation HI1399, and between July and September 2009 as part of HI1294. Recent bathymetric changes are only assessed against the 2015 and 2019 surveys as there is insufficient overlap between modern and historic survey surfaces prior to this.
- 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 This survey of the GS1 South Sand Head area was undertaken as part of the 2023 Routine Resurvey Programme. It was conducted between the 20th and 22nd of October 2023 under the designation HI1836.
- 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 The sandbank has continued to move in a south-south-west direction. Superimposed on this general movement, individual sand wave and ripple features have continued to migrate in a broadly southerly direction. (Figures 4, 5, and 6).
- 5.2 Superimposed on the general movement of the sandbank, smaller scale features have continued to move in a generally southerly direction (Figures 4 and 5). Localised shallowing and deepening relate to the migration of these features.
- 5.3 Figure 3 shows that the least depth in the 2023 survey is 10.3 meters, located in the northernmost part of the survey area (Figure 3). Other significant soundings have been highlighted to show the locations of the new contours.

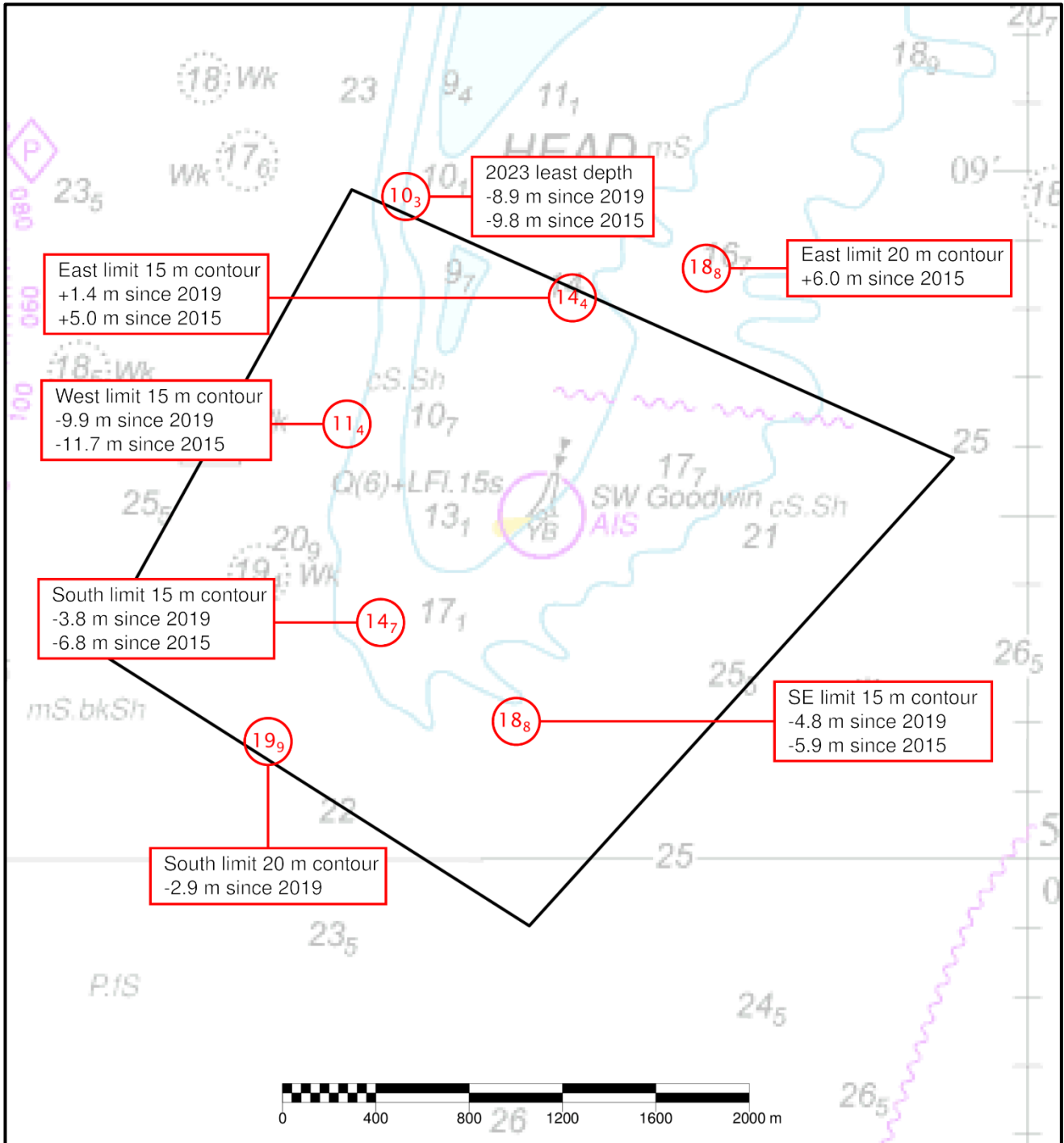


Figure 3: Controlling Depth soundings highlighted, overlaid on BA Chart 1828-0.

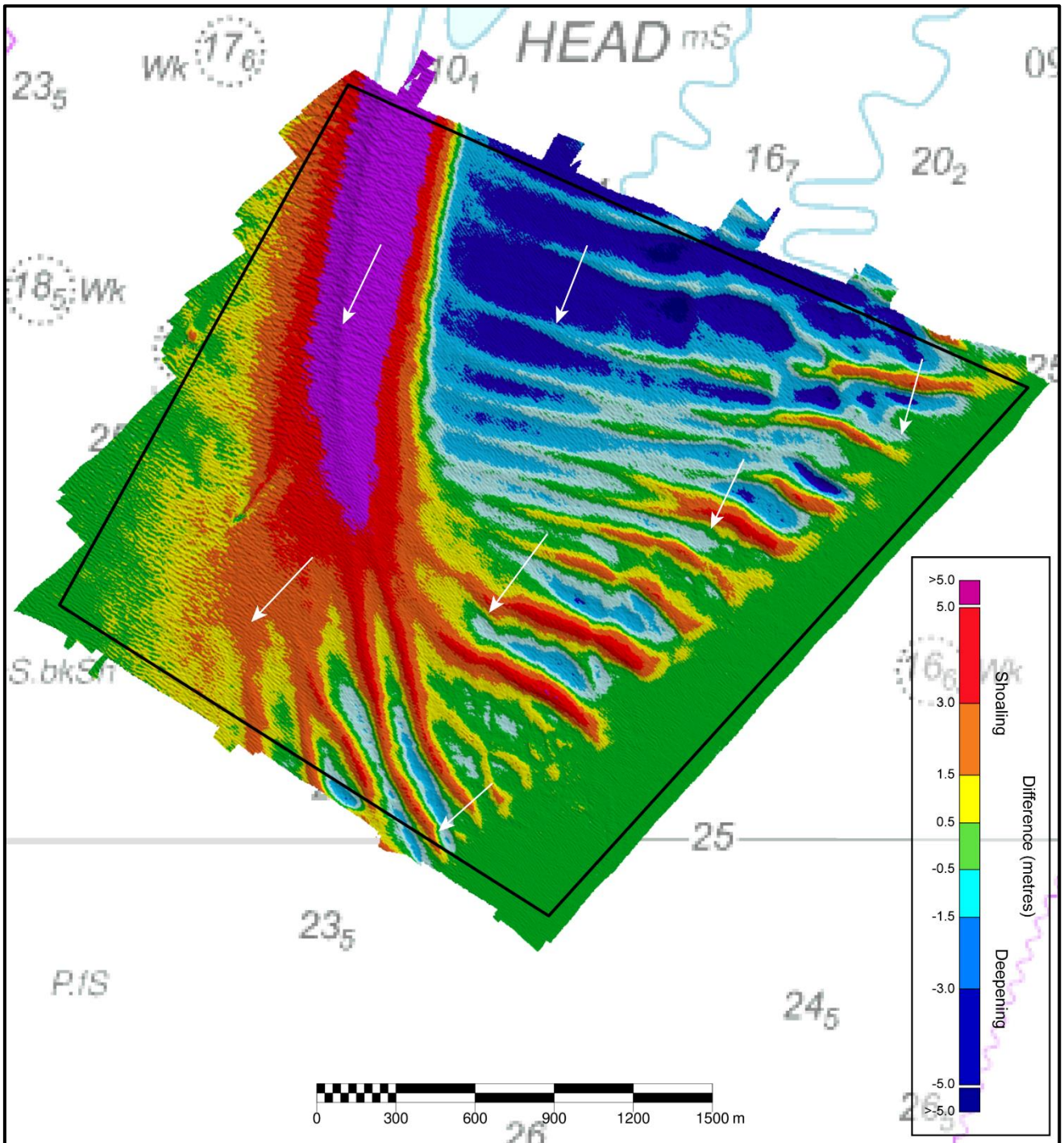


Figure 4: Difference surface showing bathymetric changes between the 2023 and 2019 surveys overlaid on BA Chart 1828-0. White arrows represent sand wave migration since the 2019 survey.

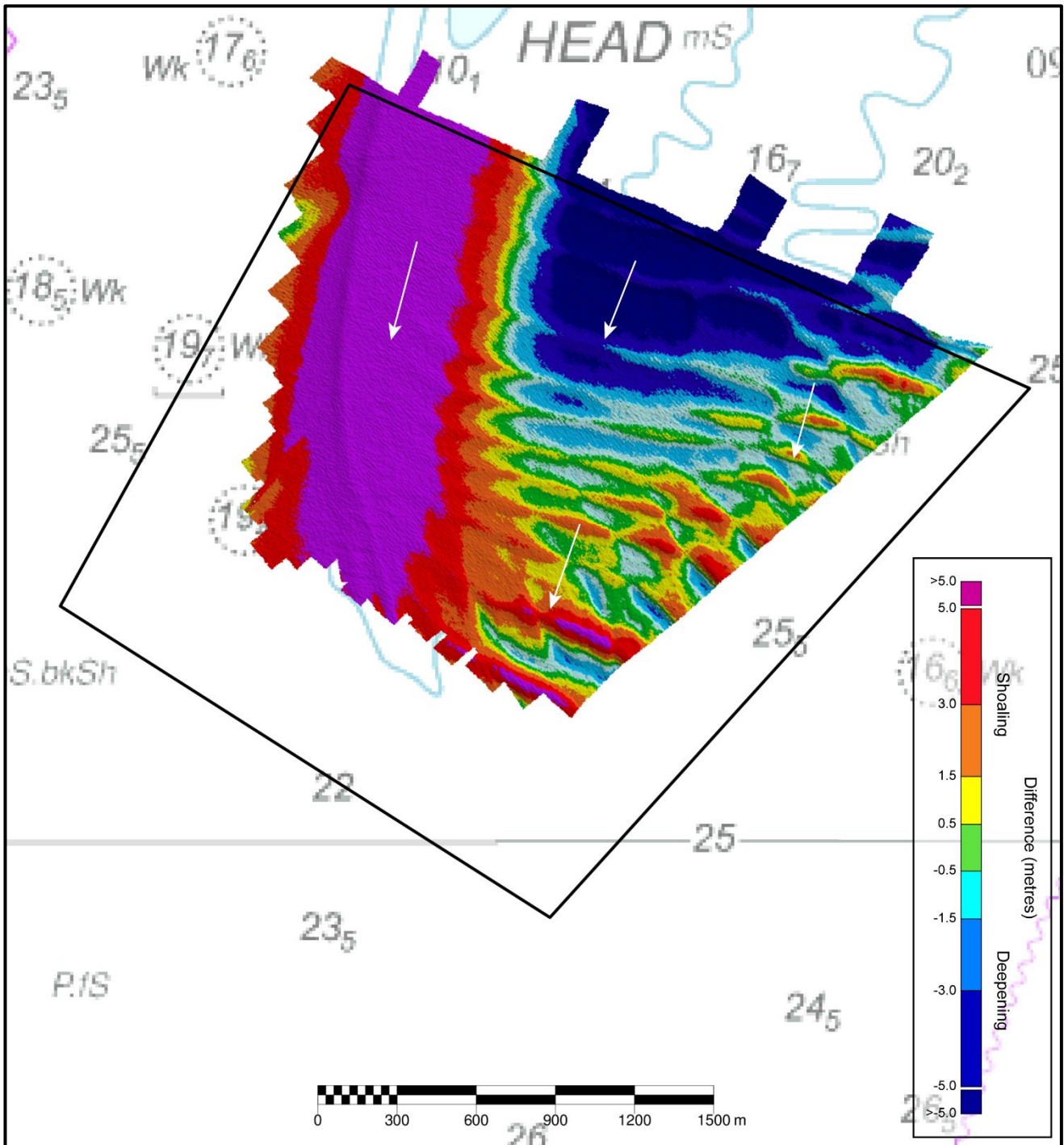


Figure 5: Difference surface showing bathymetric changes between the 2023 and 2015 surveys overlaid on BA Chart 1828-0. White arrows represent sand wave migration since the 2015 survey.

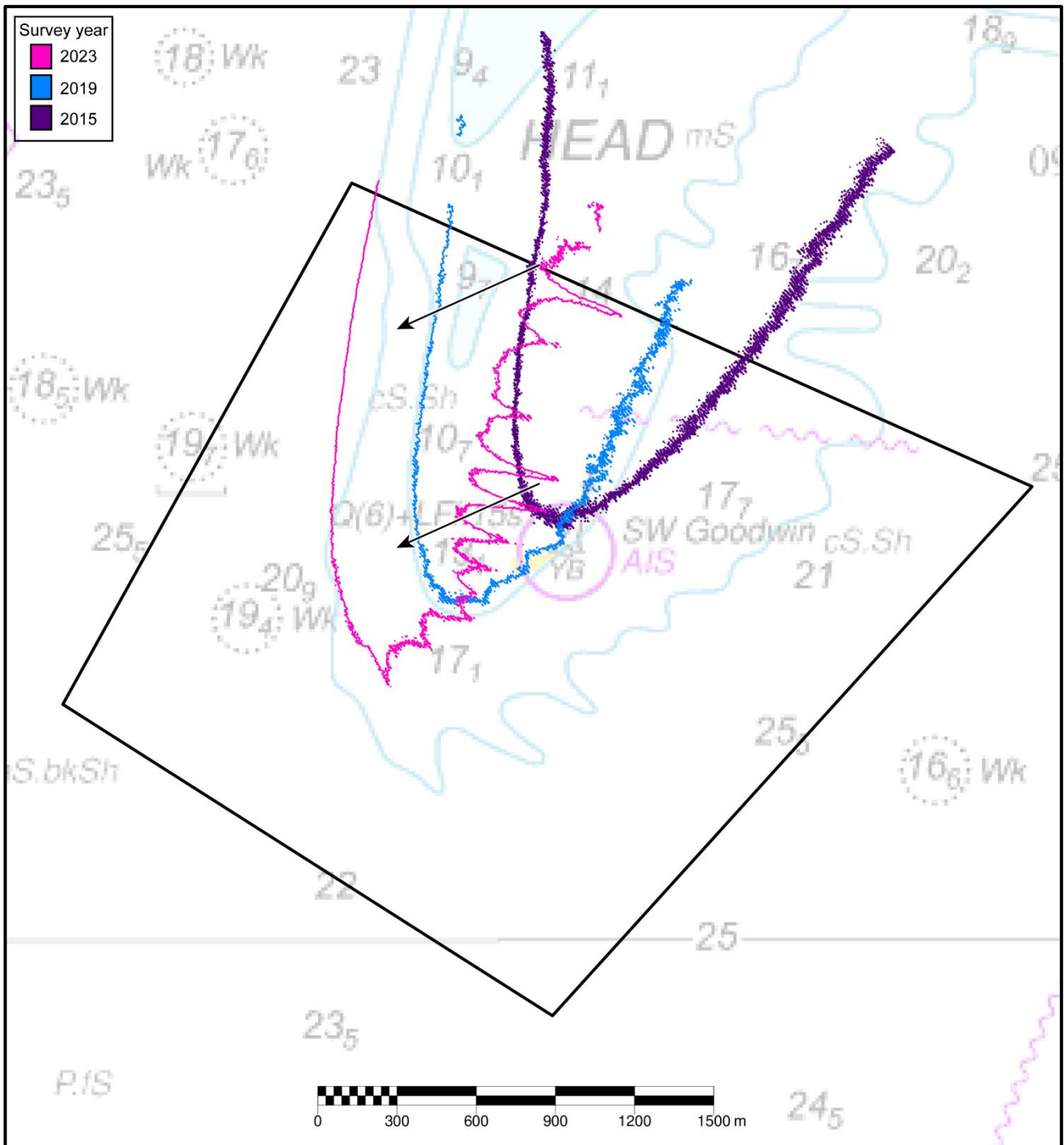


Figure 6: Contour plot showing changes in the 15 metre contour between 2015 (purple), 2019 (blue), and 2023 (magenta). Black arrows represent the direction of sand bank migration.

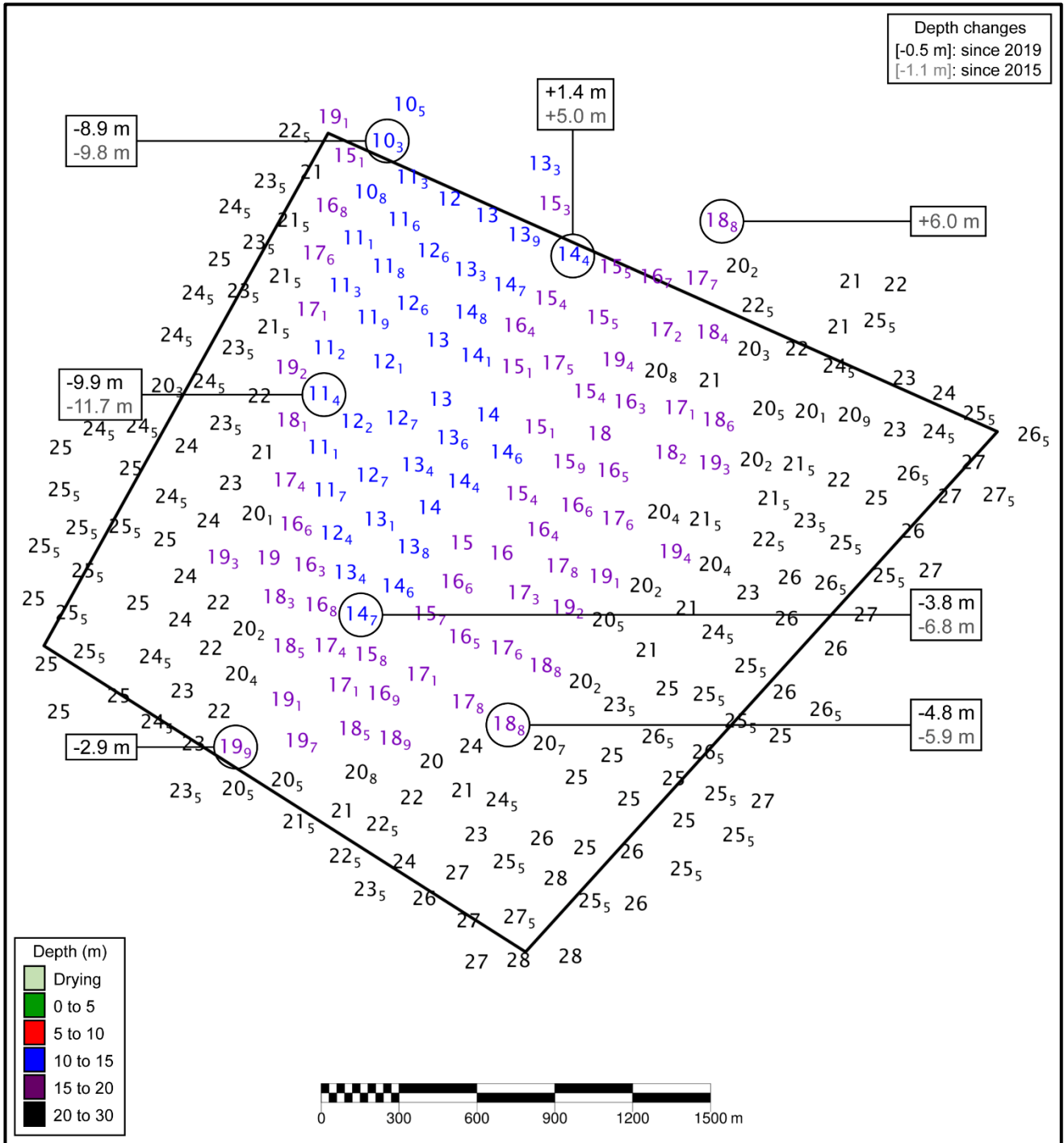


Figure 7: Colour banded depth plot from the 2023 survey with selected depth changes since the 2015 survey (grey), and the 2019 (black). Positive values (+) represent deepening. Negative values (-) represent shallowing.

6. RECOMMENDATIONS FOR FUTURE SURVEYS

Survey Interval

6.1 The seabed in area GS1 is highly-mobile and is in close proximity to some of the busiest shipping routes in the world. Area GS1 should remain on a 4-yearly interval in order to continue to track and mitigate potential risks from mobile seabed features migrating into shipping routes.

Survey Area

6.2 It is recommended that the survey area should be shifted 200-250 metres to the west to fully-capture the movement of the sand bank and sand wave features in future. The proposed amendment is shown in Figure 8. Coordinates for the proposed amendment to area GS1 are given below.

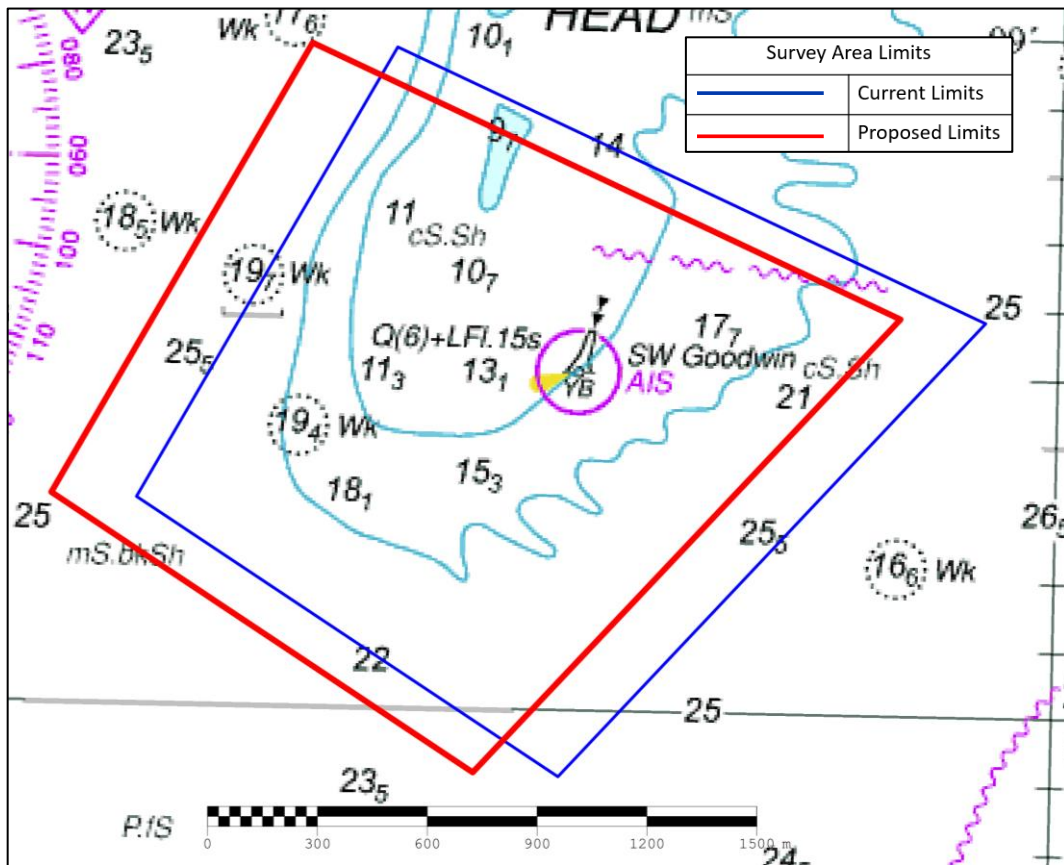


Figure 8: Recommended changes to survey limits of area GS1. Existing survey limit show in black. Proposed survey limit shown in Red.

The coordinates (WGS84) of the recommended adjusted survey area limits for the area GS1 are shown below:

GS1 total area: 2.42 km²

	Latitude	Longitude
1	51.149563N	001.470673E
2	51.143063N	001.493838E
3	51.131728N	001.477508E
4	51.138398N	001.460838E

