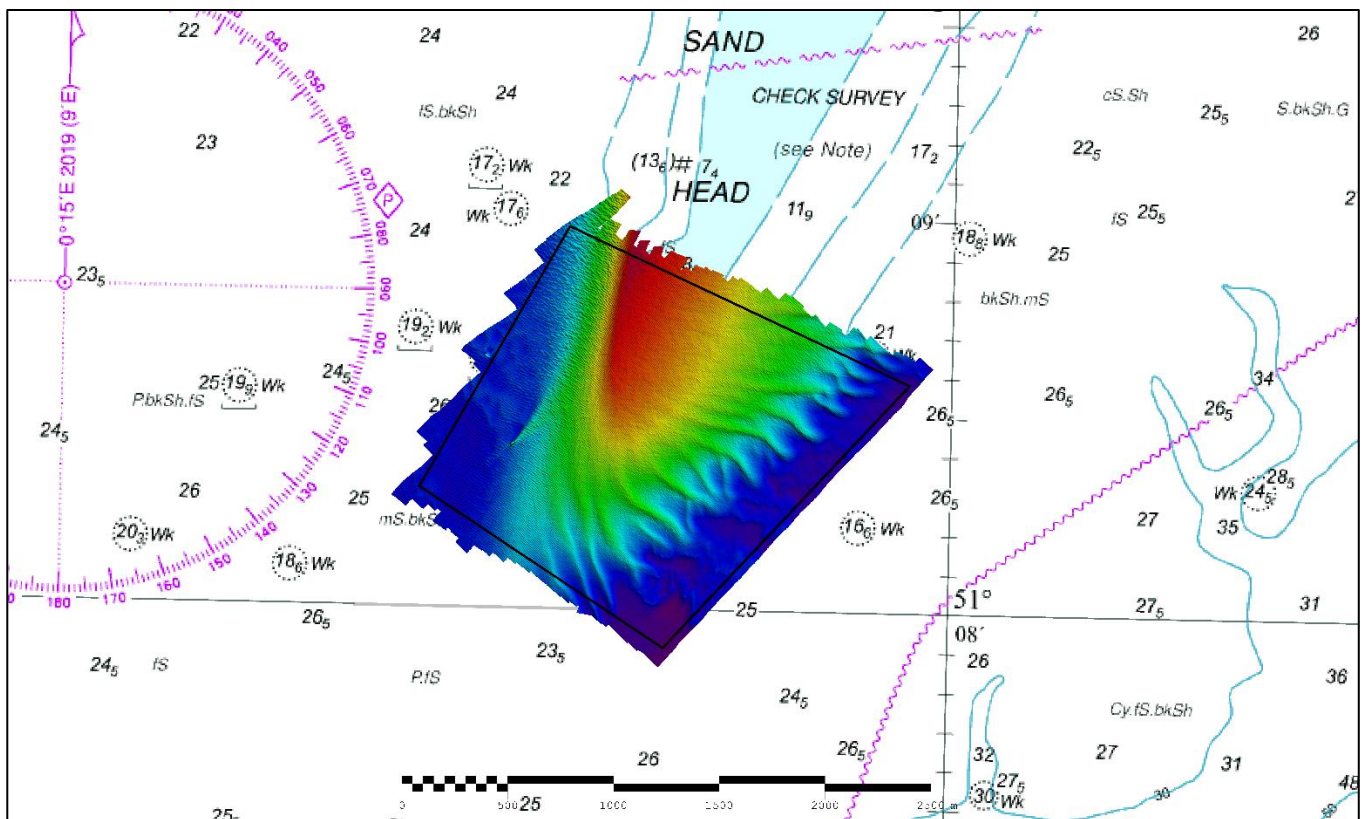




UK Hydrographic
Office

DOVER STRAIT SOUTH SAND HEAD (GS1) 2019 ASSESSMENT

An assessment of the 2019 hydrographic survey of the area GS1 South Sand Head: 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

SOUTH SAND HEAD (GS1), 2019

1. SUMMARY

Changes Detected

- 1.1 In GS1, sand waves continue to migrate in a south-westward direction, which is consistent with historical trends.
- 1.2 South Sand Head has migrated up to 230m in the 4-year period from the previous survey.
- 1.3 Significant shoaling in the north of the area, with depths changing up to 10m due to the movement of South Sand Head. Depths have deepened up to 3m at the north eastern side of South Sand Head.

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, the mobility and changes in the seabed within the survey area, GS1 should retain a survey interval of 4 years.
- 1.6 Based on the observations of the seabed changes around South Sand Head, the area should be extended further north to cover the extents of the charted sandwave.

2. LOCATION

- 2.1 Survey interval at time of resurvey: 4 years.
- 2.2 Area Covered: 2.4 km²

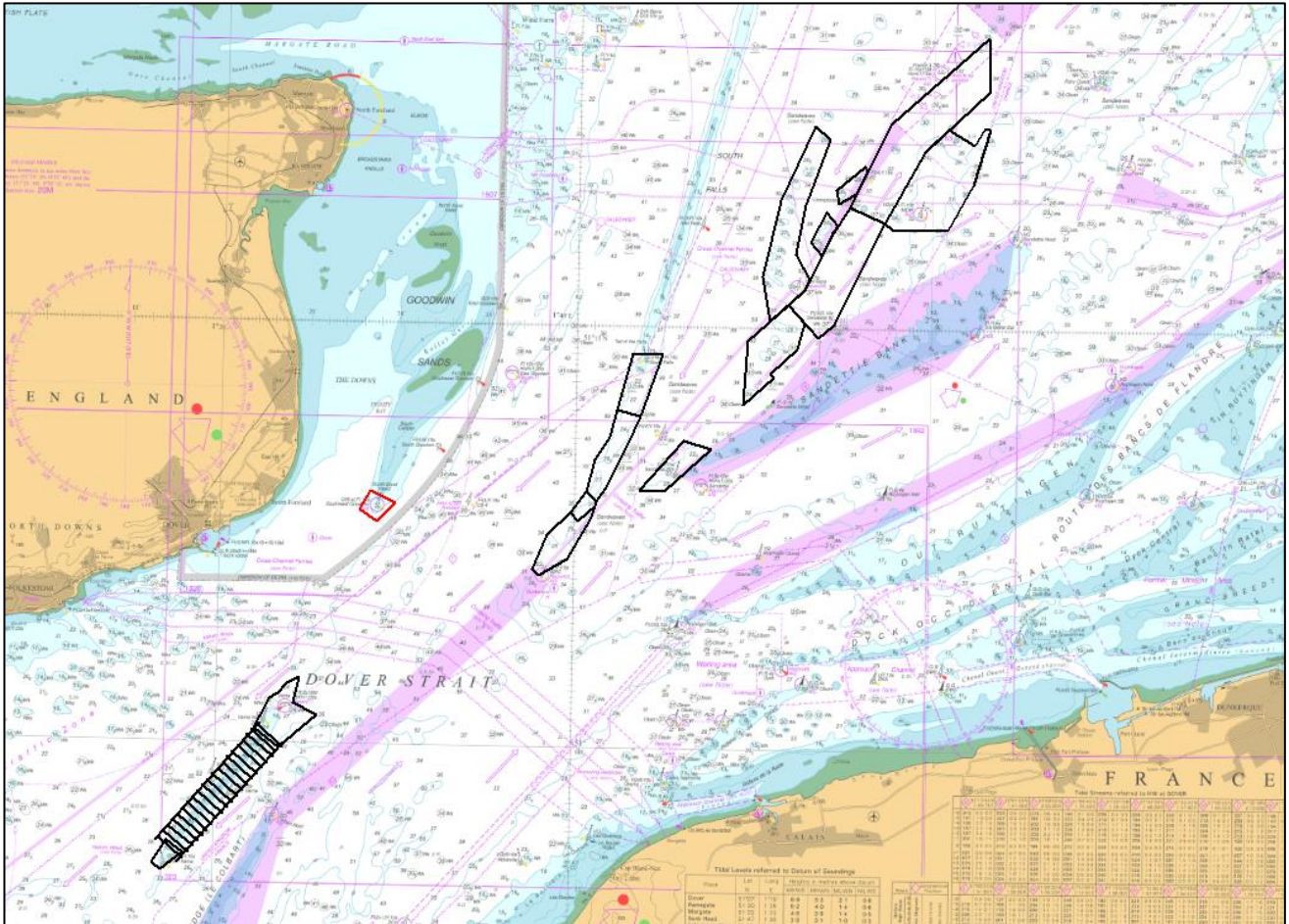


Figure 1: 2019 Dover Straits Routine Resurvey areas overlaid on BA Chart 1610-0 with area GS1 South Sand Head in red

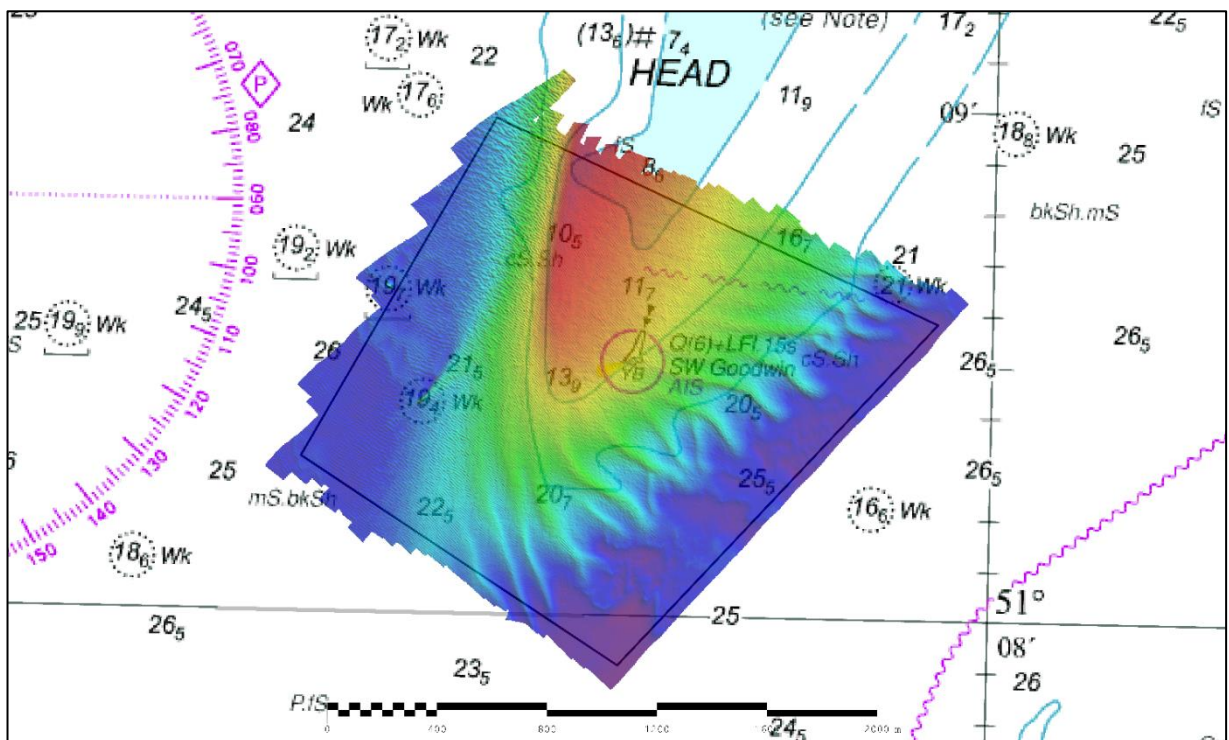


Figure 2: 2019 survey data overlaid on BA Chart 1828-0

3. REFERENCE SURVEY DETAIL

- 3.1 Previous surveys conducted were between August and September 2015 as part of HI1484, December 2012 as part of HI1399 and between July and September 2009 as part of HI1294.
- 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 Latest survey conducted between April and May 2019 as part of HI1646.
- 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 difference plot in Figure 3 shows a south-westward migration of sandwaves. It also highlights significant shoaling up to 10m since the 2015 survey along the main sandbank as it migrates south-westward. Deepening of up to 3m has been observed at the north-eastern side of South Sand Head.
- 5.2 The depth plot in Figure 4 shows that the shoalest depth in the 2019 survey is 9.7 meters, located on the top of the main sand bank, at the northern edge of the HI limit, and has shoaled 7.9m since the last survey in 2015.
- 5.3 The contour plot in Figure 5 shows the movement south-westwards of the 10m, 15m and 20m contours up to 230m since 2015.

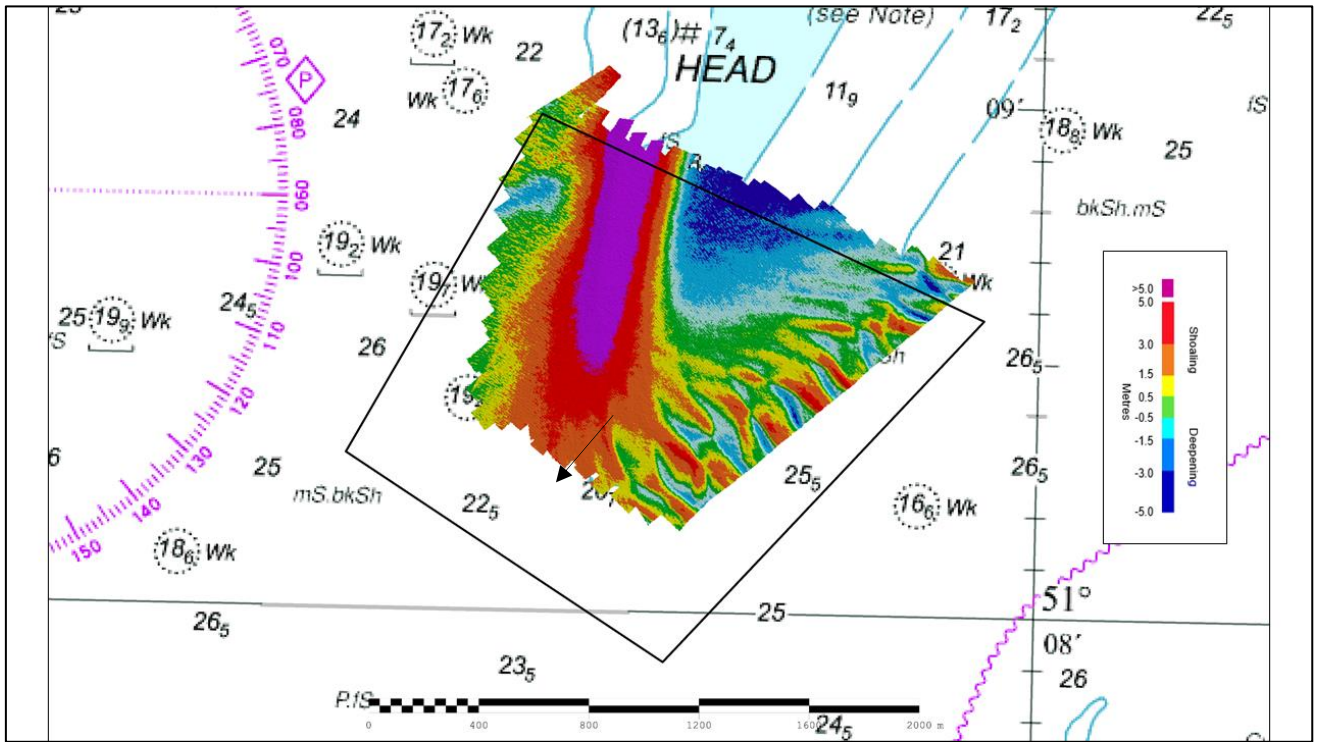


Figure 3: Difference surface showing bathymetric changes between the 2019 and 2015 surveys overlaid on BA Chart 1828-0 (Black arrow represents sandwave migration since 2015 survey)

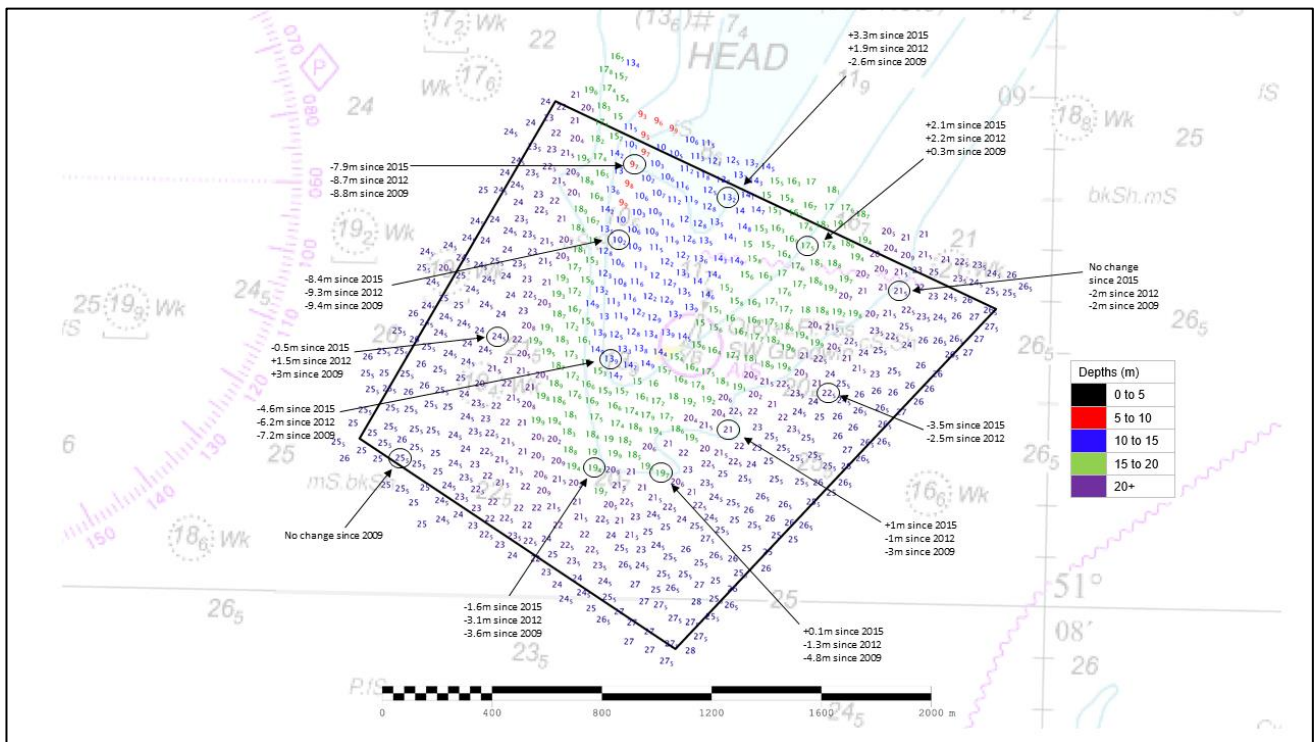


Figure 4: Colour banded depth plot from the 2019 survey with selected depth changes since the 2015, 2012 and 2009 surveys. Positive values (+) represent deepening. Negative values (-) represent shoaling.

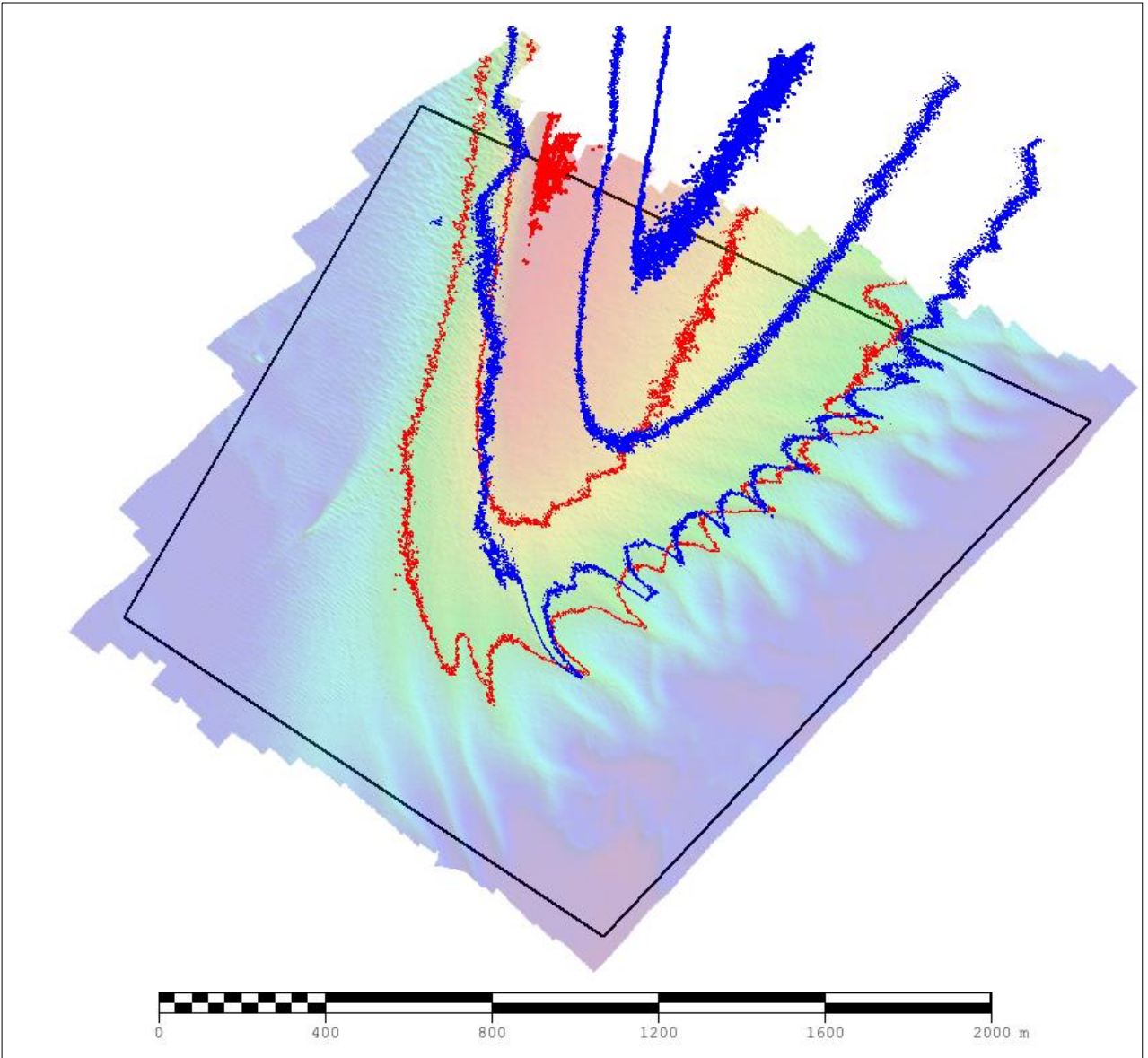


Figure 5: 10m, 15m and 20m contour comparison overlaid on 2019 bathymetric data
(Red line is 2019 contours; Blue line is 2015 contours)

6. RECOMMENDATIONS FOR FUTURE SURVEYS

Survey Interval

- 6.1 Given the location of the area, the mobility and changes in the seabed within the survey area, GS1 should retain a survey interval of 4 years.

Survey Area

- 6.2 The extents of GS1 were increased to the south following the 2015 survey. These limits should still be sufficient to analyse the next survey due in 2023 based on the observed movement of the seabed.

The shoaling to the north of the area is covered by the GS4 Goodwin Sands survey, which is next due in 2021. This can be assessed with relation to GS1 to see if the frequency of the survey is sufficient to depict the changes in the area.