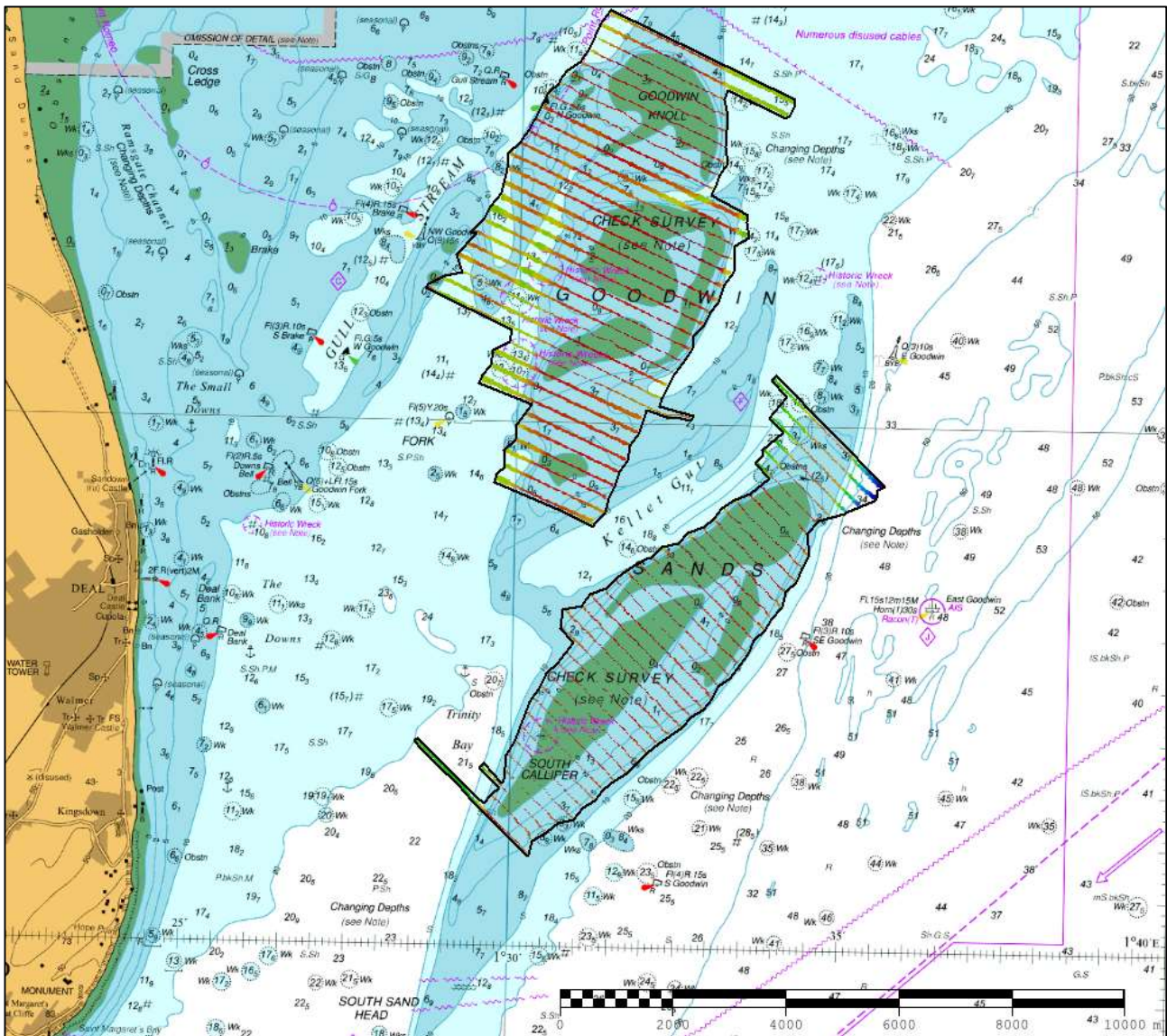




UK Hydrographic Office

DOVER STRAIT HI1769 GOODWIN SANDS GS4 CHECKLINES 2022 ASSESSMENT

An assessment of the 2022 hydrographic survey of the area Goodwin Sands: 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.

HI1769 GOODWIN SANDS GS4 CHECKLINES 2022

1. SUMMARY

Changes Detected

- 1.1 Shoaling of drying heights since 2015 survey and of depths in the vicinity of Goodwin Knoll since 2021 survey. Movement to the SE of the southern area of Goodwin Sands compared to 2021 survey.

Reasons for Continuing to Resurvey the Area

- 1.2 Depths in the area remain hazardous with evidence of shoaling especially over drying areas. The seabed is moderately mobile which requires continued monitoring.

Recommendations

- 1.3 The GS4 Checkline Survey should remain on the current six year interval.

2. LOCATION

- 2.1 Survey interval at time of resurvey: 6 years for checkline surveys (12 years full and 6 years focussed)
- 2.2 Area Covered: 60.64 km²

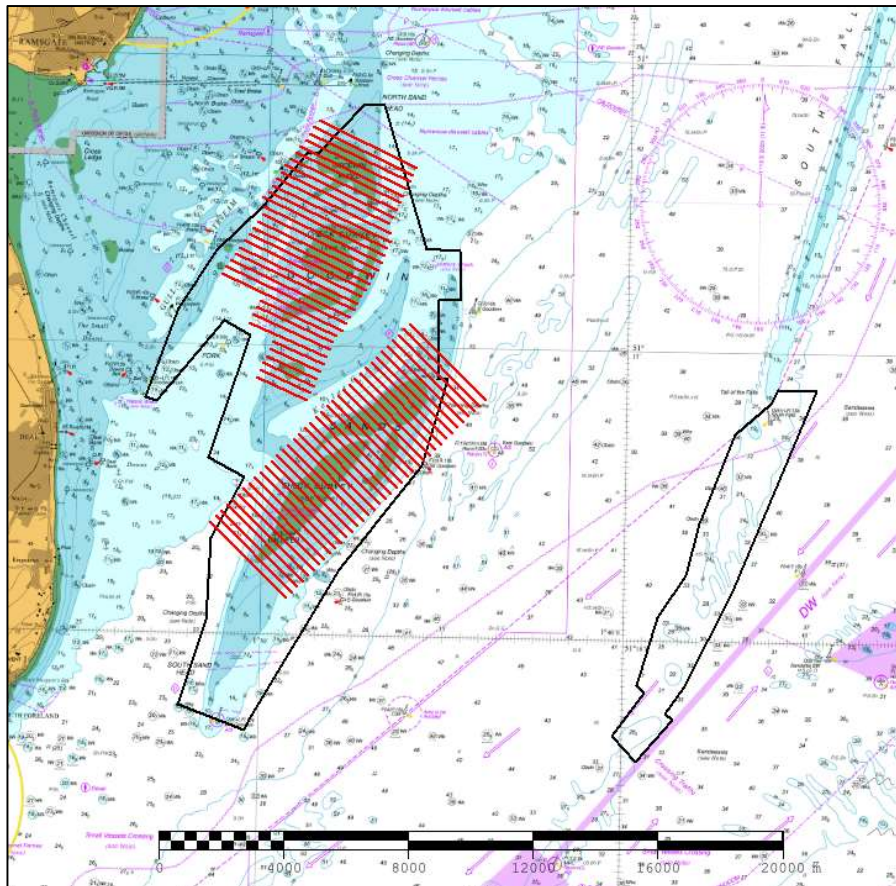


Figure 1: 2022 Dover Strait RRS areas overlaid on BA Chart 0323-0 with Goodwin Sands Crosslines area in red.

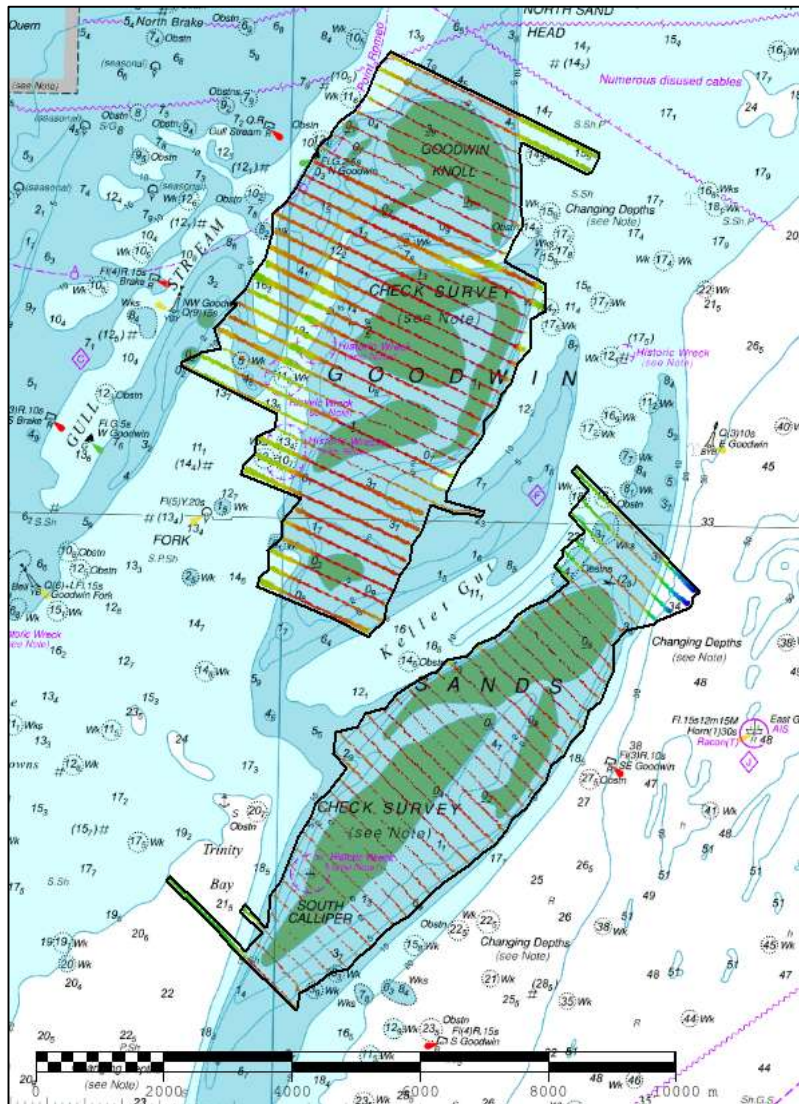


Figure 2: 2022 survey data overlaid on BA Chart 0323-0

3. REFERENCE SURVEY DETAIL

- 3.1 The Previous Full Survey was part of the 2021 RRS between 14/08/2021 and 07/10/2021 as part of HI1743 GS4 Goodwin Sands. Inaccessibility over shoaler areas in HI1743 means the previous checkline survey has been used for comparison in some areas from the 2015 RRS between 08/08/2015 to 19/10/2015 as part of HI1484.
- 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 HI1769 Goodwin Sands GS4 Checklines 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

The principal changes have been over the drying areas which are not generally covered by the 2021 survey due to accessibility. The checkline survey from 2015 is the only comparable data for the majority of the drying areas. In general, there has been a shoaling of the drying areas since 2015 with the most significant changes around Goodwin Knoll. Compared to the 2021 survey there has been shoaling of depths in this area especially in the N/NW of but also to the E and SW.

In the drying area South of Goodwin Knoll there has been a shoaling of drying heights since the 2015 survey and shoaling of depths to the SE and W/NW of the area.

In the southern section of Goodwin Sands survey area, the depths are deeper than the 2021 survey to the S of Kellet Gut and there appears to be a general movement to the SE of the southern part of Goodwin Sands with shoaling of depths on the SE side of the bank. There is also a shoaling of depths and drying heights in the vicinity of South Calliper.

There is not enough coverage to determine if the controlling depth in Kellet Gut has been affected.

- 5.1 Figure 3 shows that the controlling depth in the 2022 survey is -3.3 metres, located to the NE of the Southern area of Goodwin Sands. It also illustrates the shoalest drying heights over each bank in the survey area.
- 5.2 The difference surface in Figure 4a shows the changes between the 2022 and 2021 surveys especially the extension of the drying areas around Goodwin Knoll and the shoaling of depths to the NW of this area. The difference surface in Figure 4b shows the changes between the 2022 survey and the 2015 checkline survey over the drying areas showing shoaling of drying heights throughout the survey area.

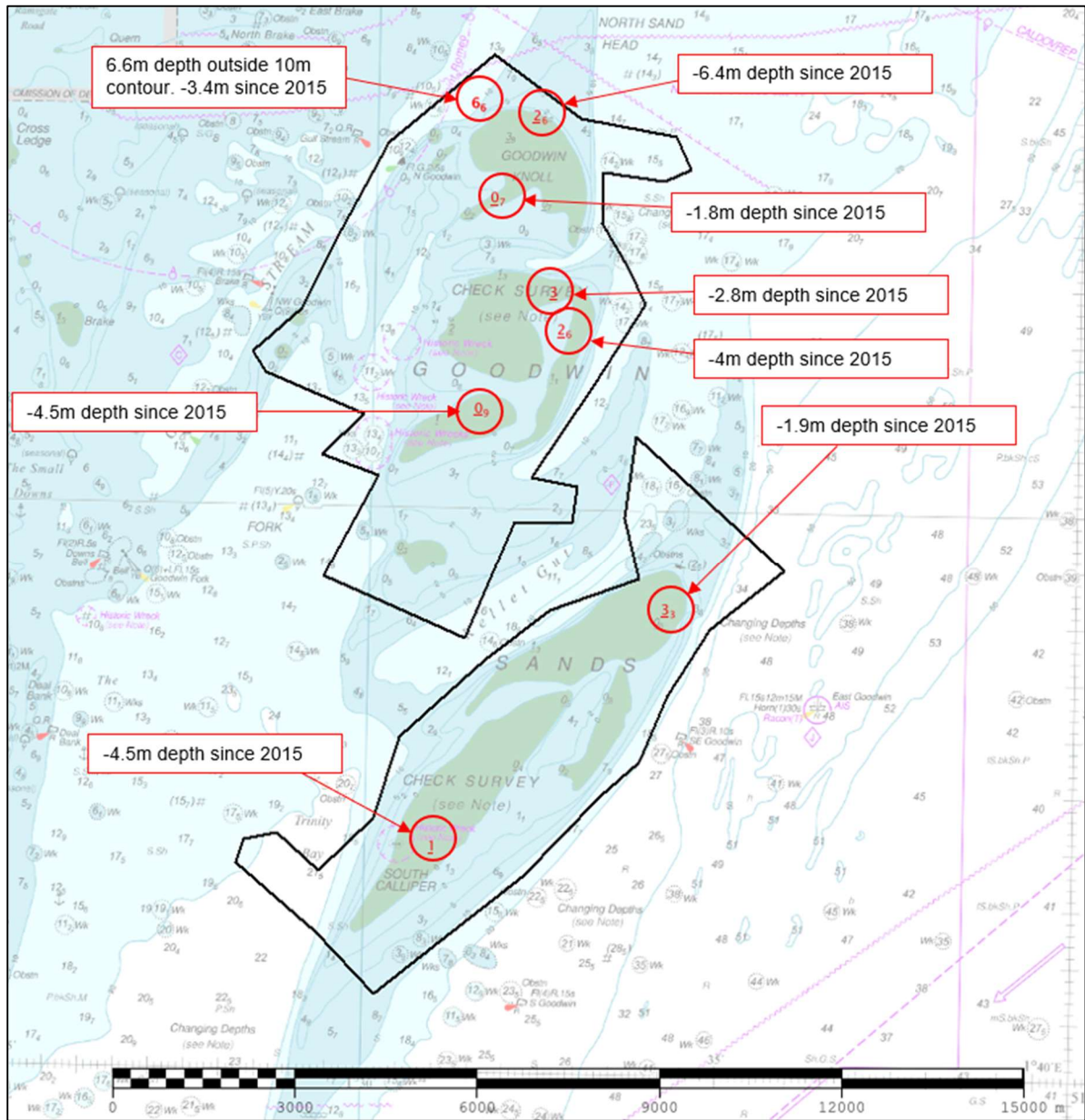


Figure 3: Significant Depth sounding(s) highlighted, overlaid on BA Chart 0323-0. 2015 checkline survey used for comparison as drying areas not accessible on H11743 GS4 Goodwin Sands 2021.

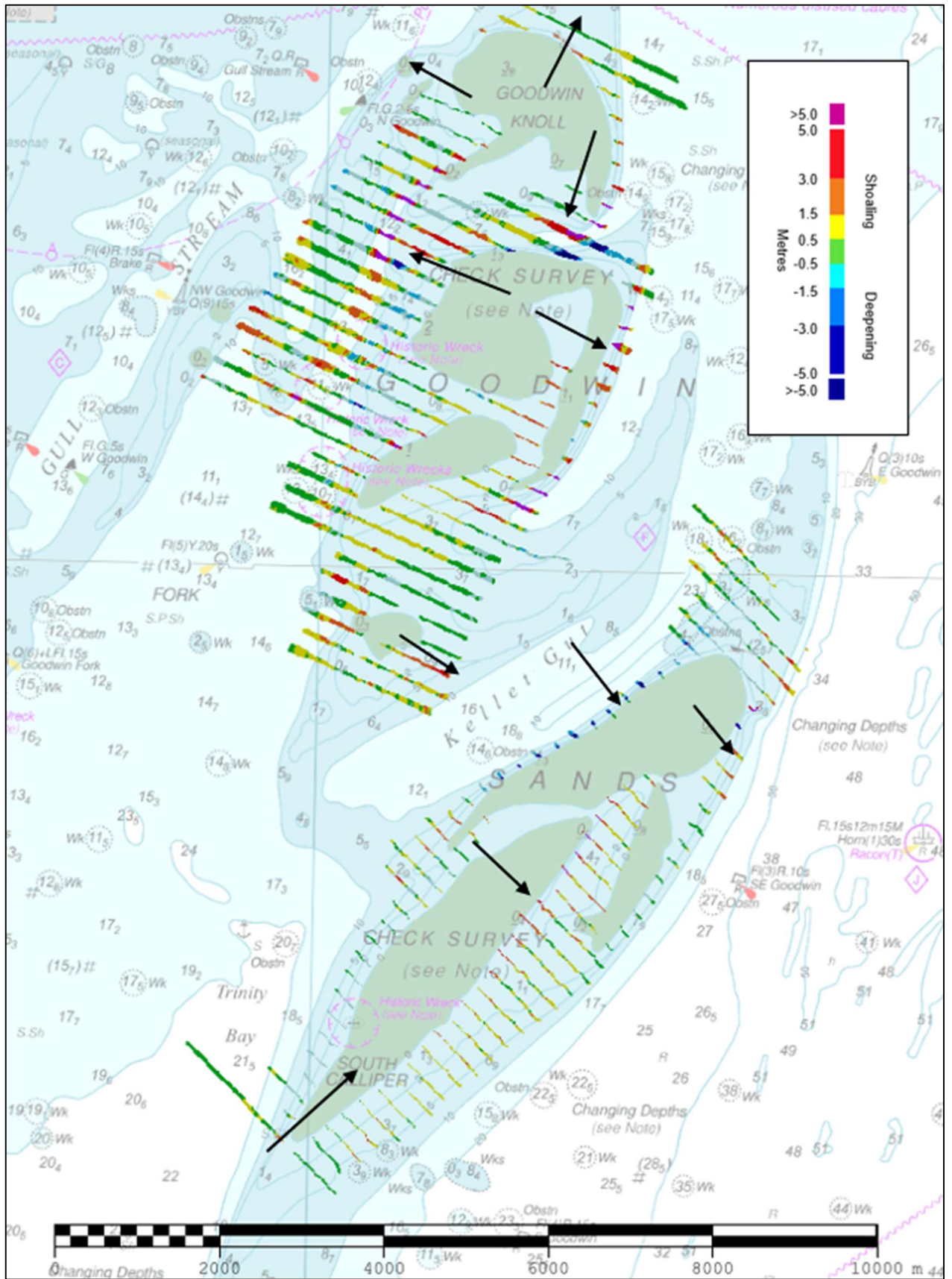


Figure 4a: Difference surface showing bathymetric changes between the 2022 and 2021 surveys overlaid on BA Chart 0323-0 (Black arrows indicate direction of sand wave migration since 2021)

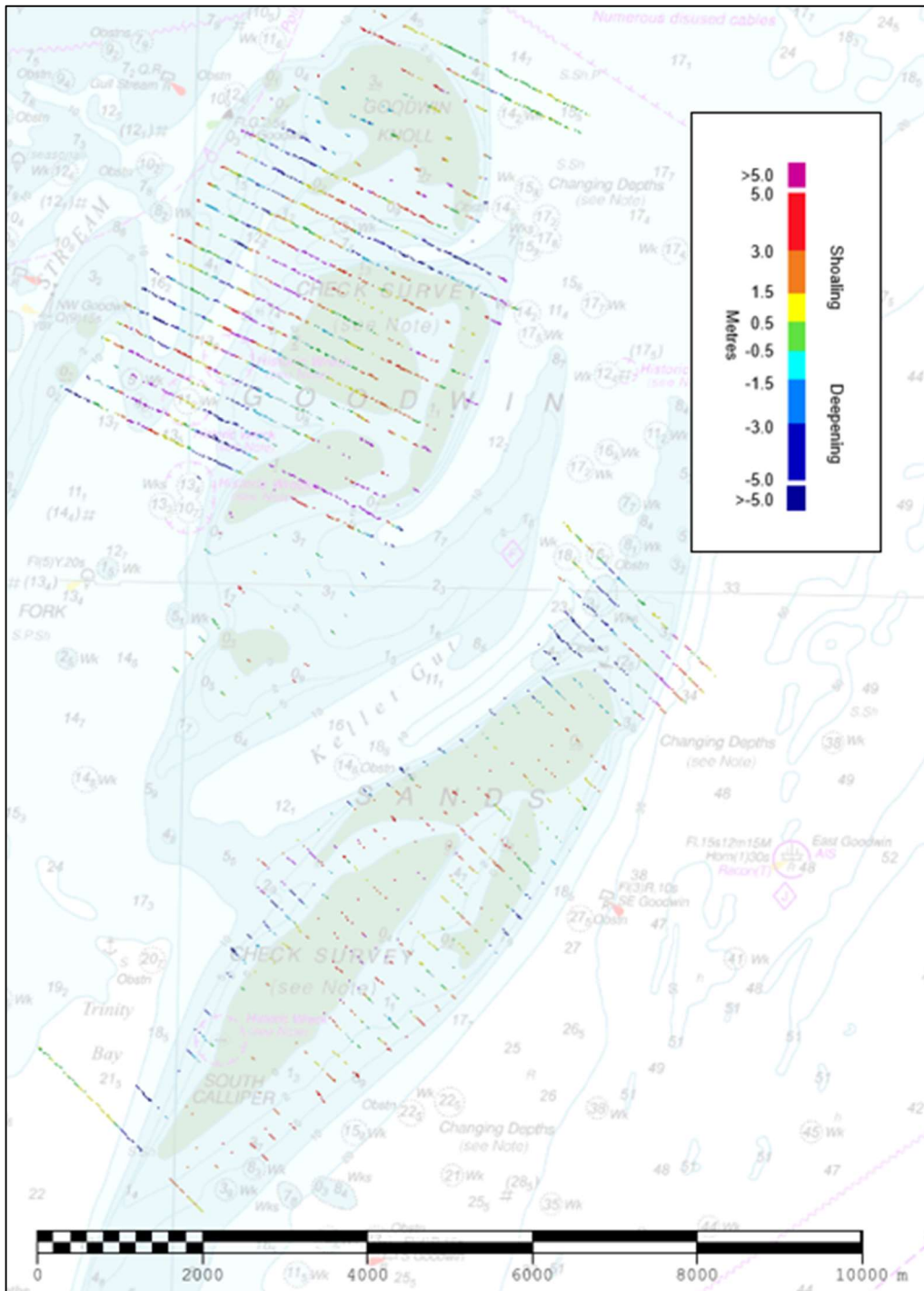


Figure 4b: Difference surface showing bathymetric changes between the 2022 and 2015 surveys overlaid on BA Chart 0323-0

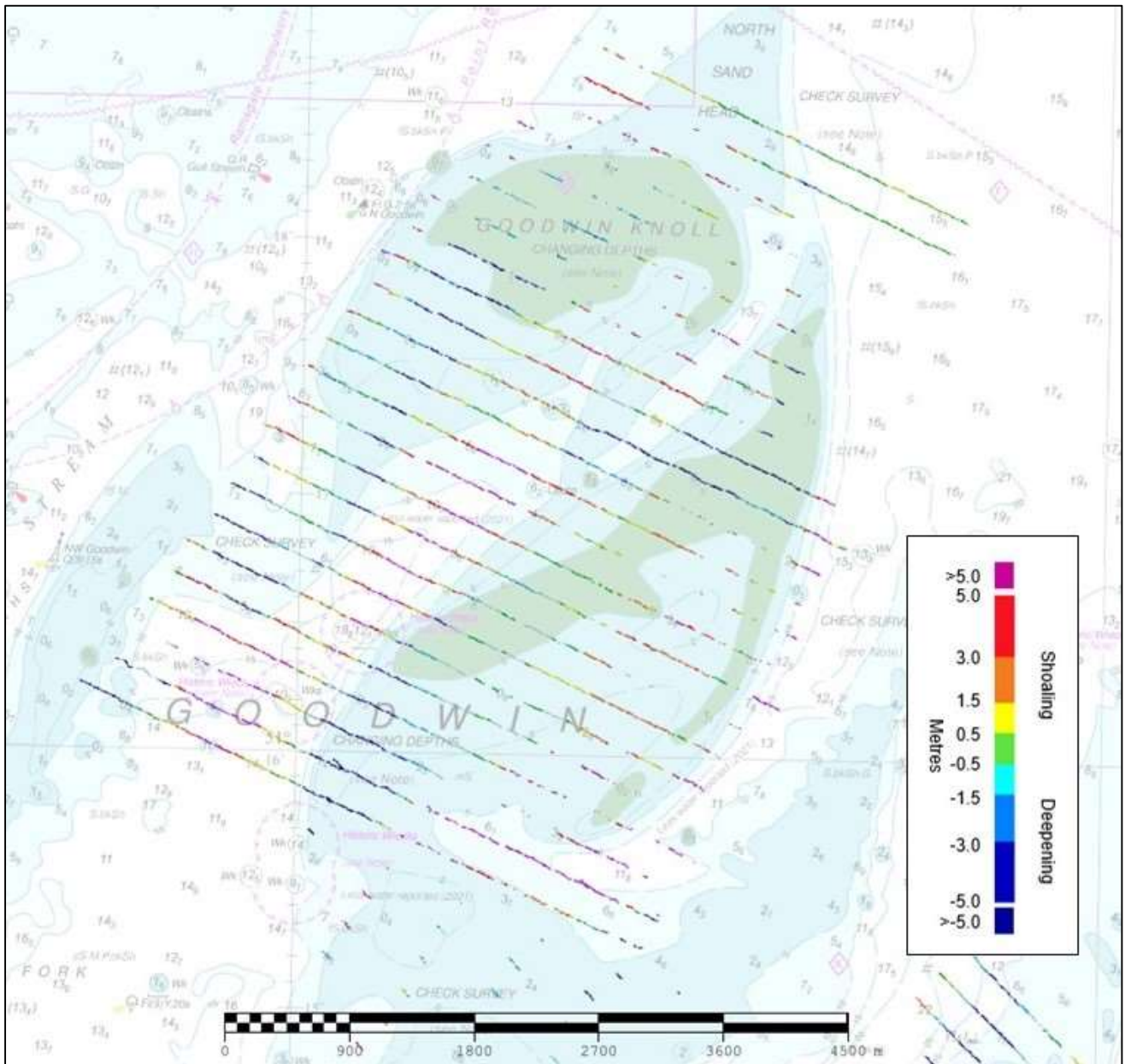


Figure 4c: Close-up of north area for the difference surface showing bathymetric changes between the 2022 and 2015 surveys overlaid on BA Chart 1828-0

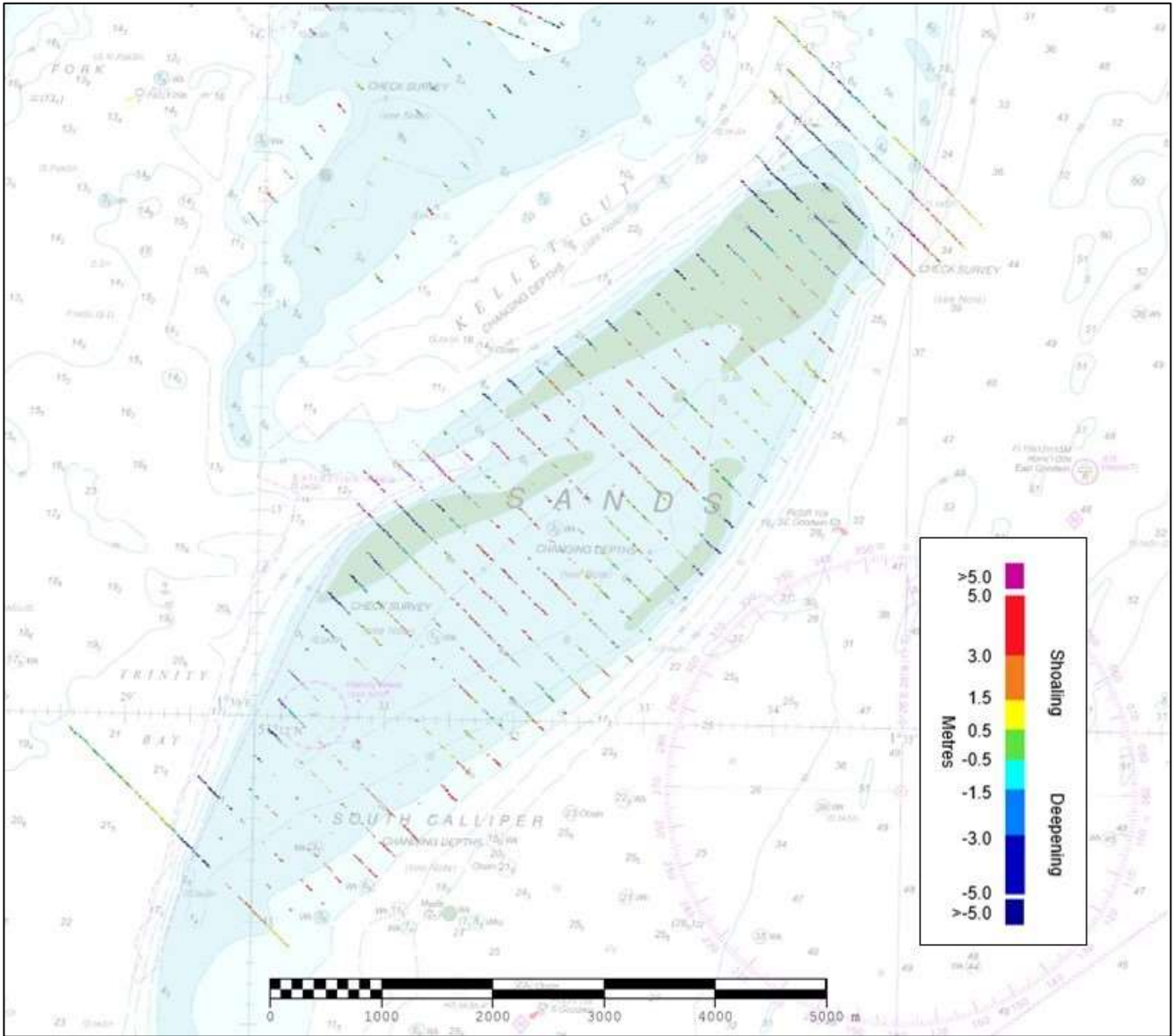


Figure 4d: Close-up of south area for the difference surface showing bathymetric changes between the 2022 and 2015 surveys overlaid on BA Chart 1828-0

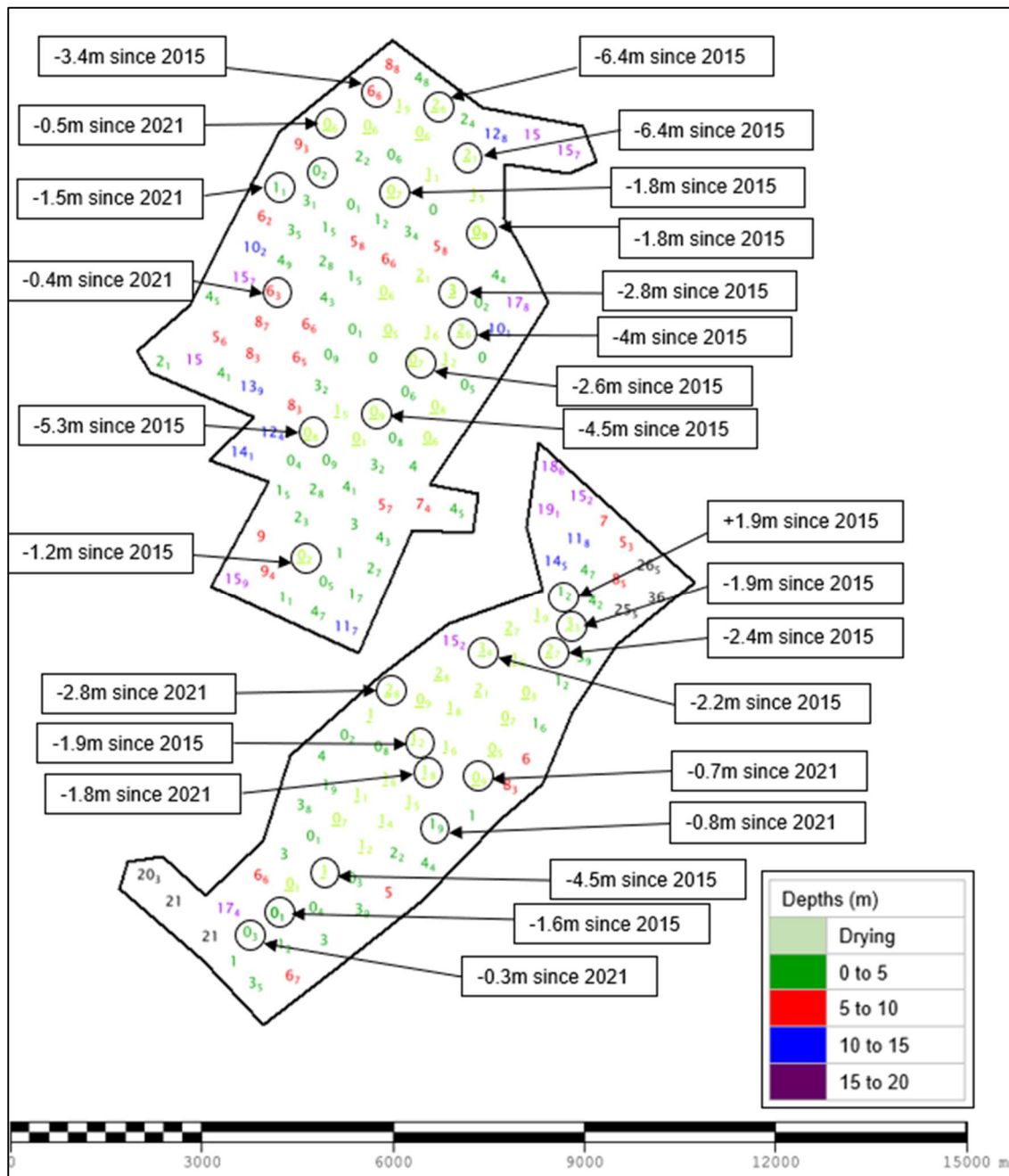


Figure 5: Colour banded depth plot from the 2022 survey with selected depth changes since the 2021 and 2015 surveys. Positive values (+) represent deepening. Negative values (-) represent shoaling.

6. RECOMMENDATIONS FOR FUTURE SURVEYS

Survey Interval

6.1 Although there have been some changes to the depths and drying heights it is recommended to retain the existing survey programme of 12 years (full) and six years (focussed) and checkline surveys.

Survey Area

6.2 There is no requirement to extend the survey area at present. The area of shoaling to the NW and W of Goodwin Knoll should be monitored but is covered by the existing GS4 and GS4

Checkline Survey areas, and the GS2 and GS2 A/B survey areas of Gull Stream. It may be beneficial in future to extend the GS4 full Survey area and/or GS2 Gull Stream surveys to cover these areas but at present the coverage is adequate.