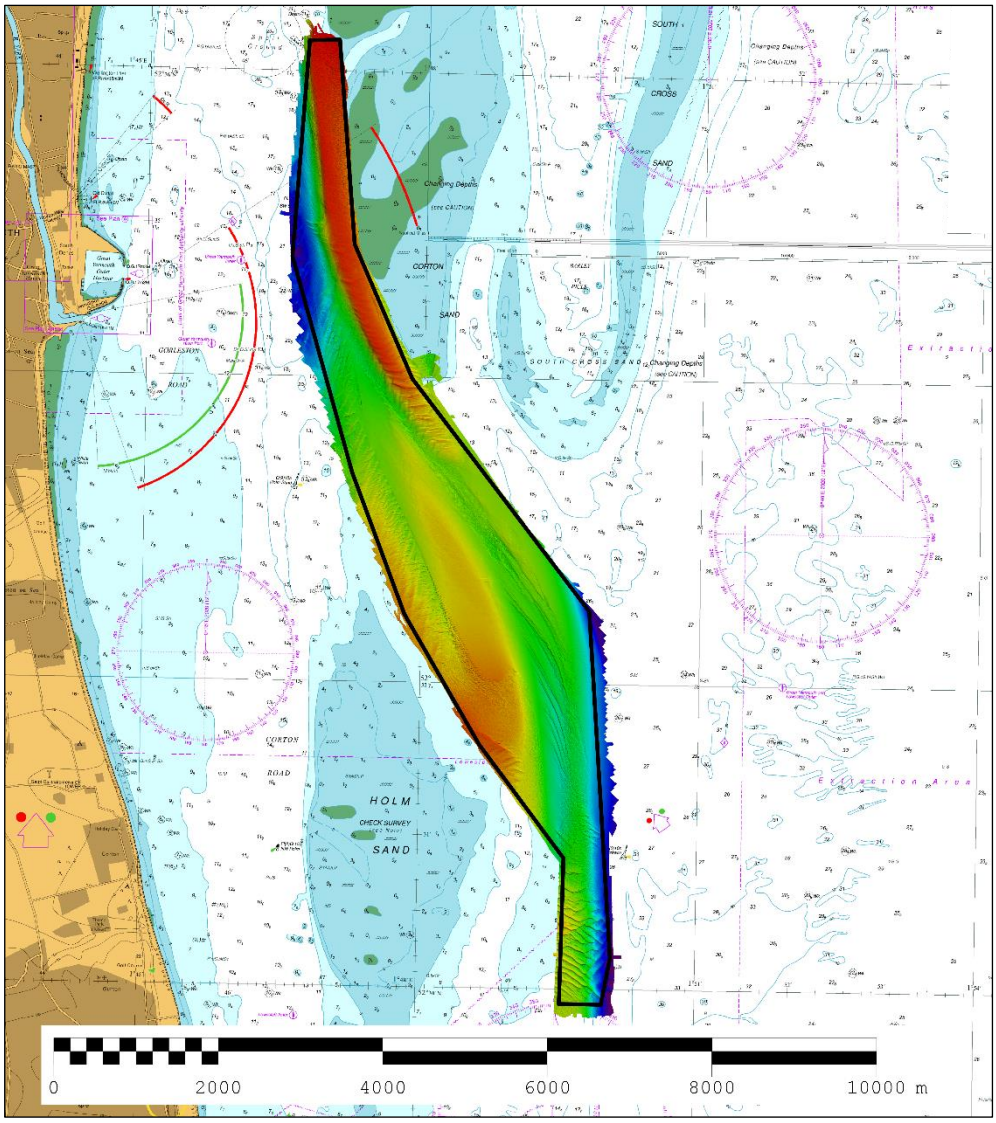
UK Hydrographic Office

EAST ANGLIA

EA9A HOLM CHANNEL (FOCUSED)

2021 ASSESSMENT

An assessment of the 2021 hydrographic survey of the area EA9a: 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.

HOLM CHANNEL (FOCUSED), 2021

1. SUMMARY

Changes Detected

1.1 The 2021 EA9A survey shows continued migration of the bedforms surrounding Holm channel, consistent with previous years analysis.

1.2 The controlling depth in the centre of Holm Channel has remained at the same depth and position.

1.3 There have been changes of up to 150m to the 5m and 10m contours due to the north-eastern migration of Holm Sand to the south of the channel and the westerly migration of Corton Sand to the north.

Reasons for Continuing to Resurvey the Area

1.4 Depths in the area are changeable and hazardous to vessels navigating the channel and surrounding area and therefore require continued monitoring through annual focused resurveys, and 3-year full resurveys.

Recommendations

1.5 Given the migration of the banks surrounding Holm Channel, EA9 should remain on the 3 yearly survey intervals with annual focused resurveys.

1.6 It is recommended to extend the western edge at the north of the survey to continue to monitor the westward sand bank movement.

2. LOCATION

2.1 Survey interval at time of resurvey: full survey 3-year interval, focused survey in intermittent years.

2.2 Area Covered: 15.25 km^2

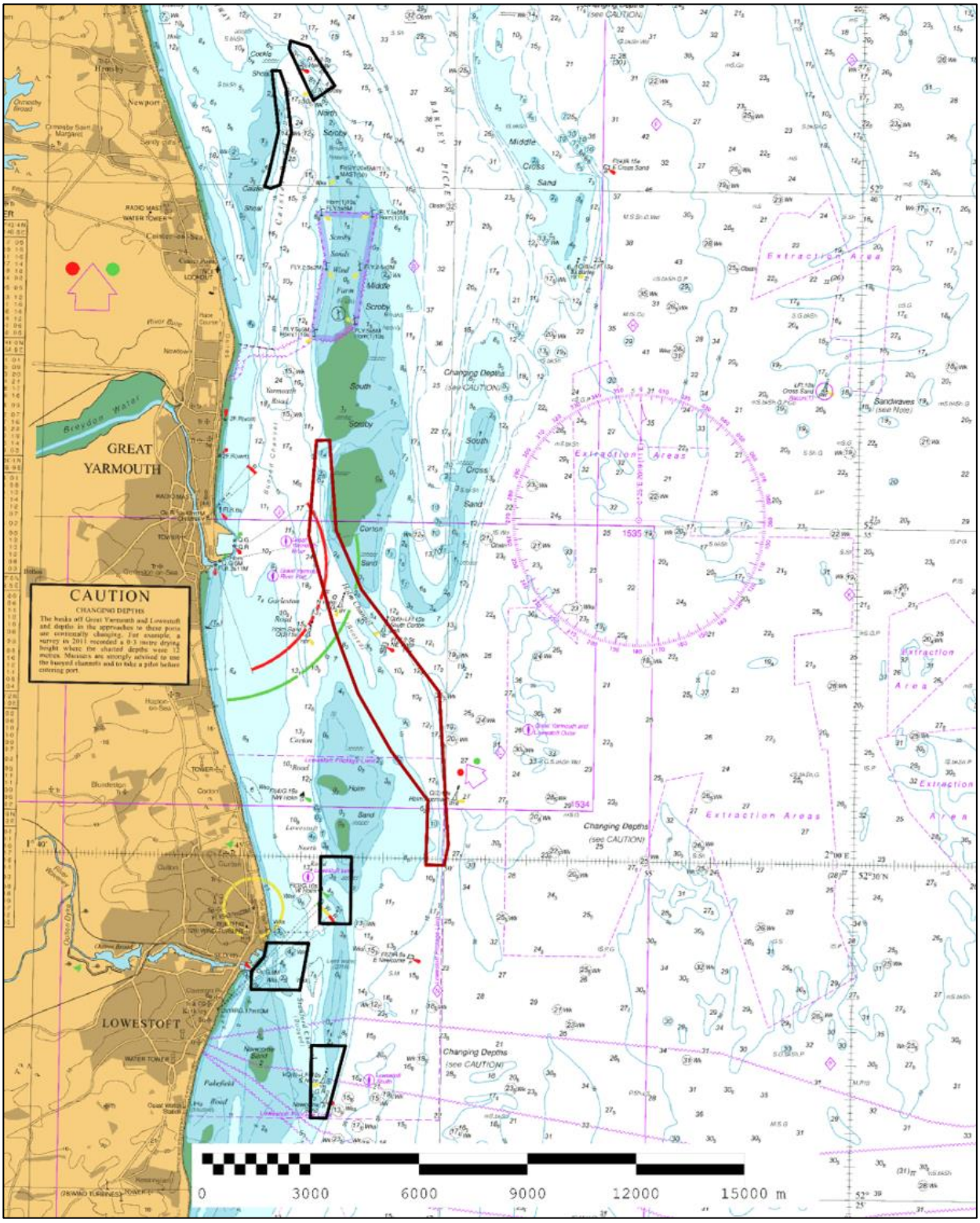

Figure 1: 2021 East Anglia Routine Resurvey areas overlaid on BA Chart 1543 with area EA9A in red

Figure 2: 2021 survey data overlaid on BA Charts 1534 & 1535

3. REFERENCE SURVEY DETAIL

3.1 The previous full survey was conducted as part of the 2020 Routine Resurvey Programme in October 2020 as part of HI1687.

3.2 A focused survey was conducted as part of the 2019 Routine Resurvey Programme between September and October 2019 as part of HI1638.

3.3 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 The latest focused survey was conducted between September and October 2021 as part of HI1737.

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 Figure 3 shows that the controlling depth in the 2021 survey is 9.4m, located in the narrow of Holm channel. It is at the same depth and location as the 2020 survey.

5.2 The difference surface in Figure 4 shows the depth difference between the 2021 and the 2020 survey. Figure 5 shows the difference between the 2021 and 2019 survey. They show the increasing and continued migration of Corton Sand and South Scroby westwards into Yarmouth Road. The bank to the south of Holm channel is migrating north-eastwards towards the channel.

5.3 Figure 6 shows the 5m depth contours and Figure 7 shows the 10m contours from 2019, 2020 and 2021. They show the movement of the bank and sandwaves as described previously. The 5m contour has moved up to 150m westwards at the northern extent of the survey between 2021 and 2020; it has reached the extents of the survey area. The 10m contour to the south of the channel has moved up to 120m north-eastwards between 2021 and 2020.

5.4 Figure 8 shows a colour banded sounding selection of the 2021 survey. Select depth differences between the 2020 and 2019 surveys have been highlighted. They show shoaling or deepening in certain areas, consistent with the seabed movement.

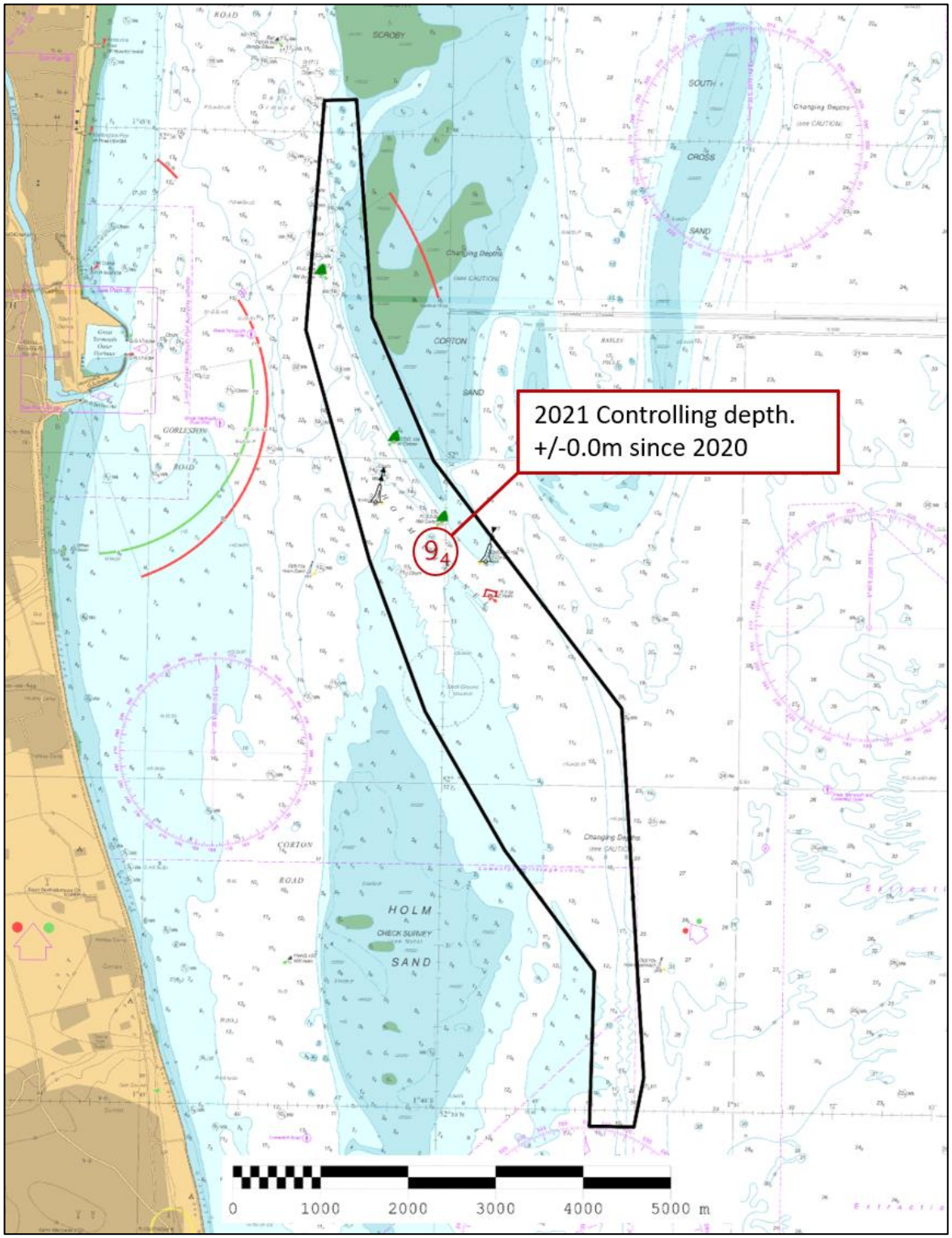

Figure 3: Controlling Depth sounding highlighted, overlaid on BA Charts 1534 & 1535 with navigation buoys highlighted.

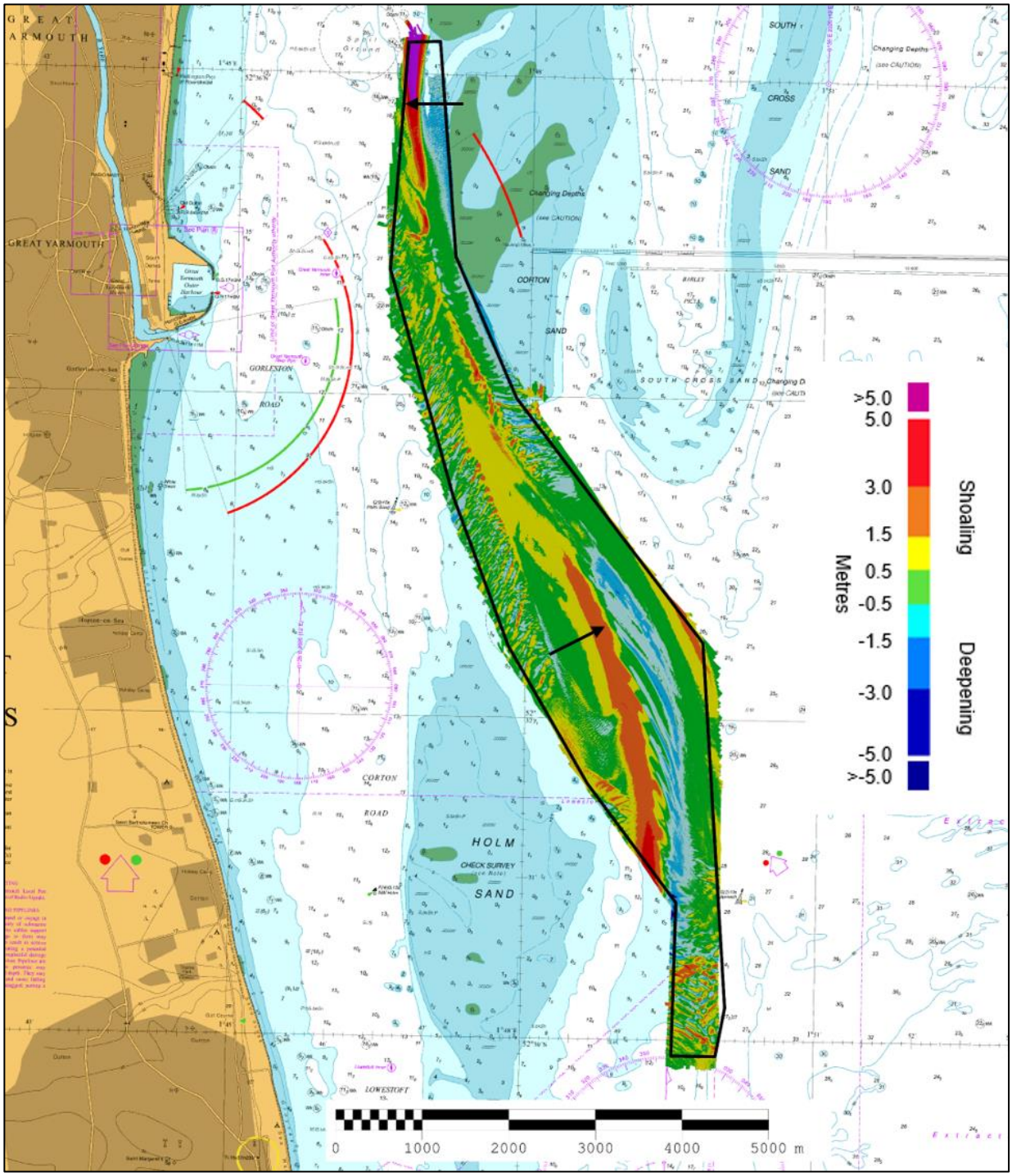

Figure 4: Difference surface showing bathymetric changes between the 2021 and 2020 surveys overlaid on BA Charts 1534 & 1535 (Black arrows represent bank migration since 2020 survey)

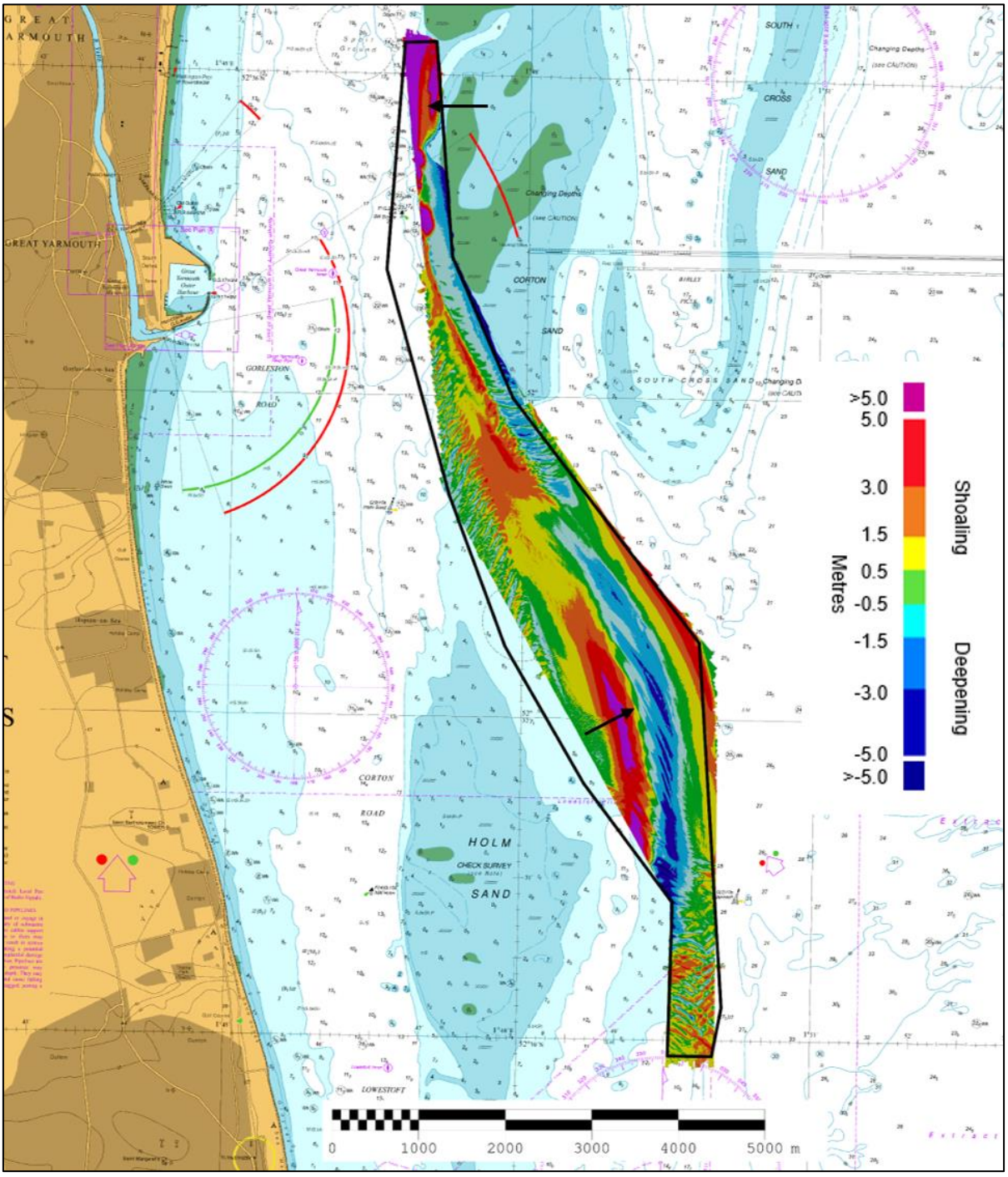

Figure 5: Difference surface showing bathymetric changes between the 2021 and 2019 surveys overlaid on BA Charts 1534 & 1535 (Black arrows represent bank migration since 2019 survey)

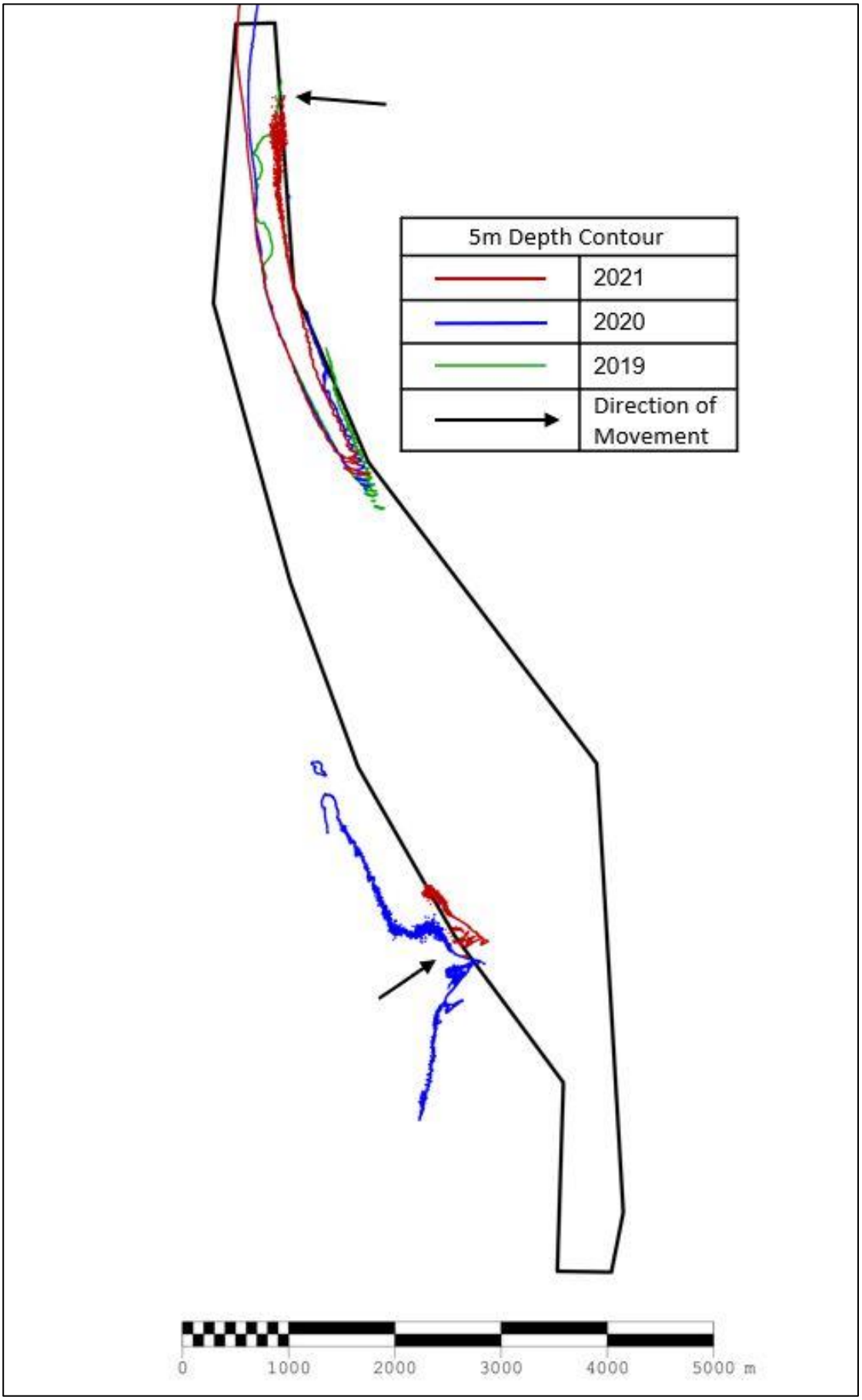

Figure 6: Contour plot showing changes in the 5m contours between 2021 (red), 2020 (blue) and 2019 (green). Black arrow represents feature migration.

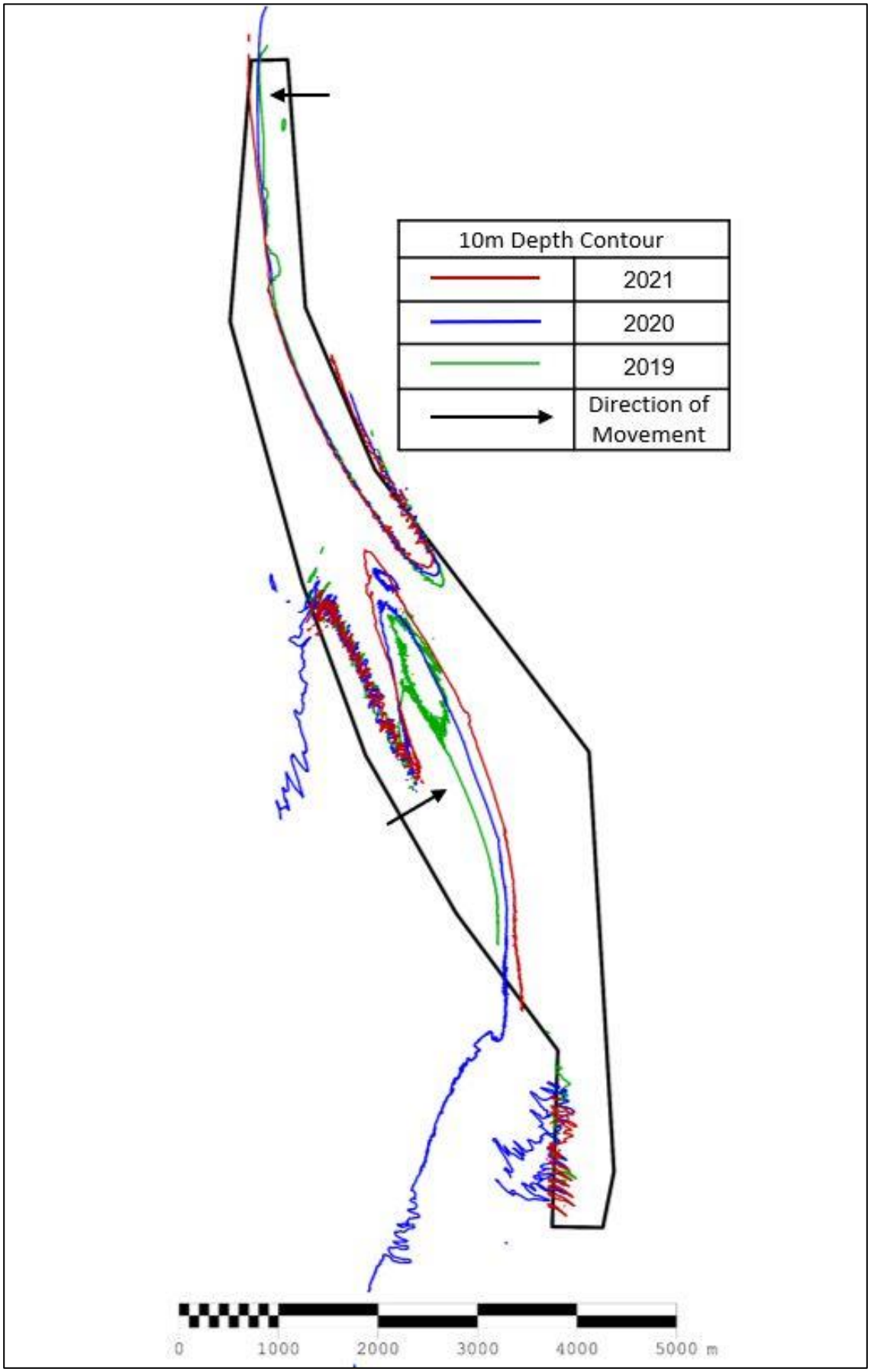

Figure 7: Contour plot showing changes in the 10m contours between 2021 (red), 2020 (blue) and 2019 (green). Black arrow represents feature migration.

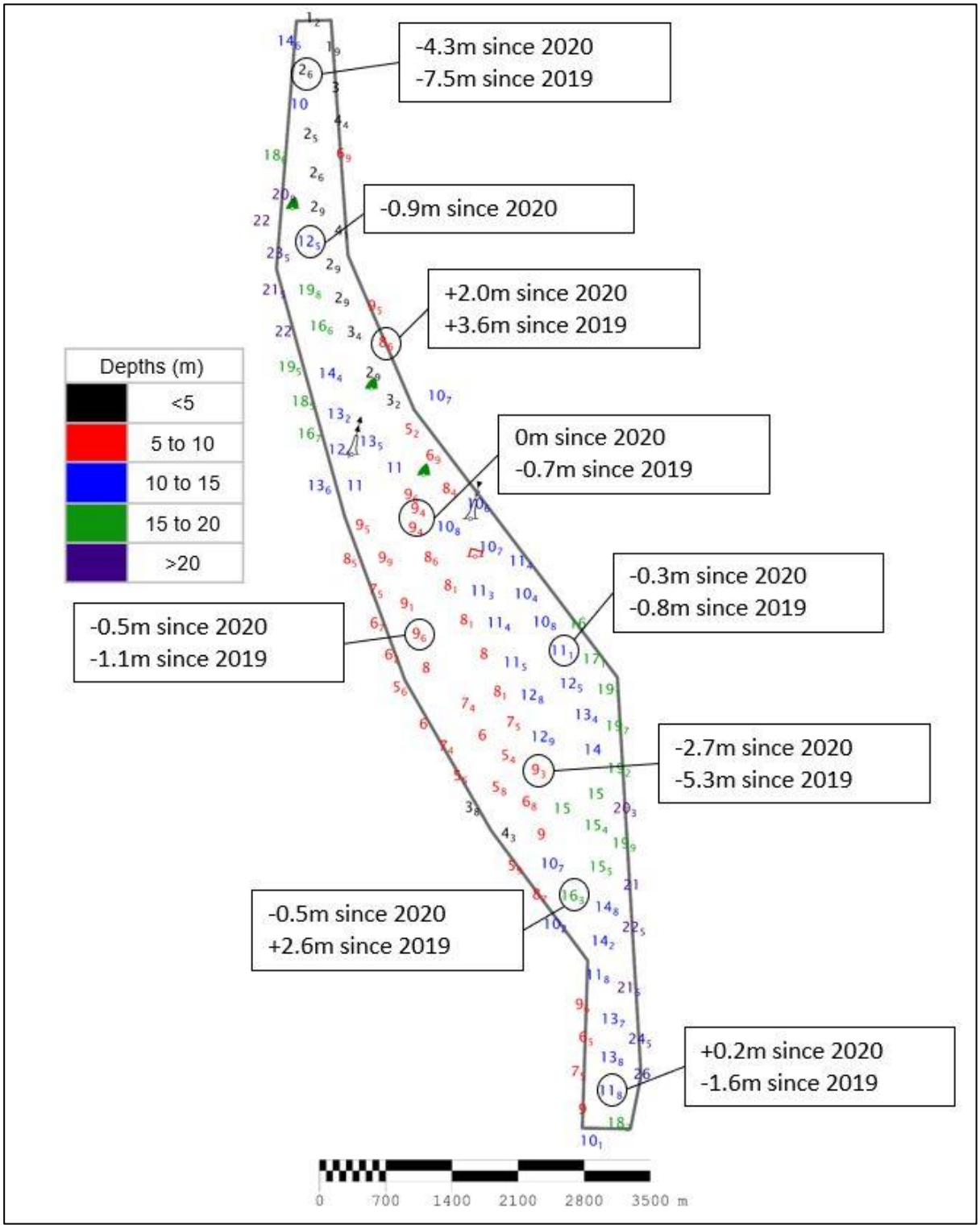

Figure 8: Colour banded depth plot from the 2021 survey with selected depth changes since the 2020 and 2019 surveys. Positive values (+) represent deepening. Negative values (-) represent shoaling.

6. RECOMMENDATIONS FOR FUTURE SURVEYS

Survey Interval

6.1 Given the continued bedform migration around Holm Channel, EA9 should remain a 3 yearly full survey with the yearly focused surveys in-between.

Survey Area

6.2 Due to the proximity of the 5 and 10m contours to the western extents in the North of the survey area, and the continued movement of the sand banks, it is recommended to extend the upper boundary slightly westwards to monitor the movement of the bank in the annual focused survey.

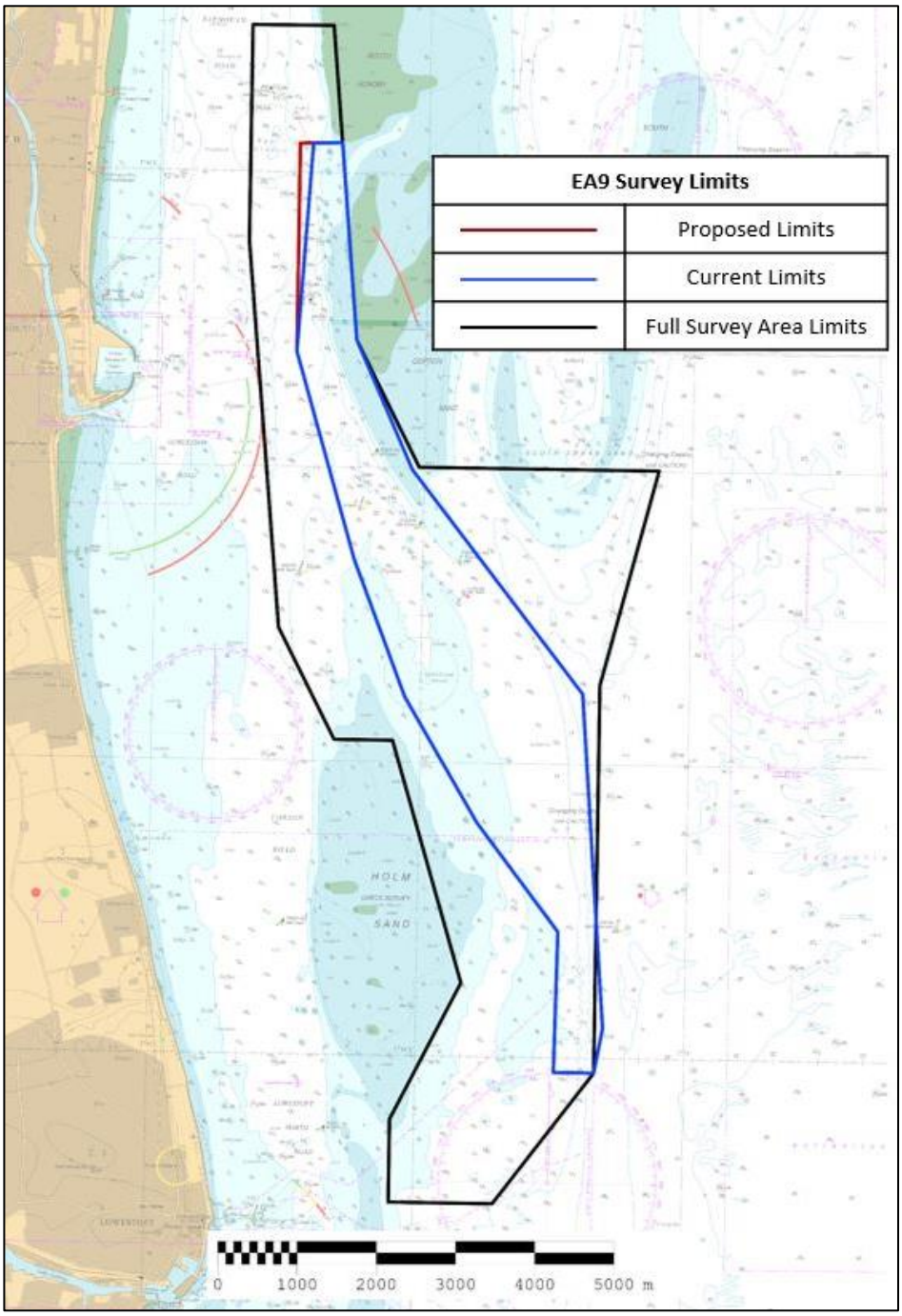

Figure 9: Recommended changes to survey limits of area EA9A

The coordinates of the recommended adjusted survey area limits for the annual focused area EA9A are below:

EA9A total area: 13.19 km^2

Point	Latitude	Longitude
1	52.581080N	001.787000E
2	52.566474N	001.797741E
3	52.541305N	001.830151E
4	52.503403N	001.834847E
5	52.498330N	001.833330E
6	52.498330N	001.825830E
7	52.514279N	001.826246E
8	52.526542N	001.810828E
9	52.540688N	001.797029E
10	52.556169N	001.787202E
11	52.579673N	001.775873E
12	52.603300N	001.775873E
13	52.603436N	001.783742E