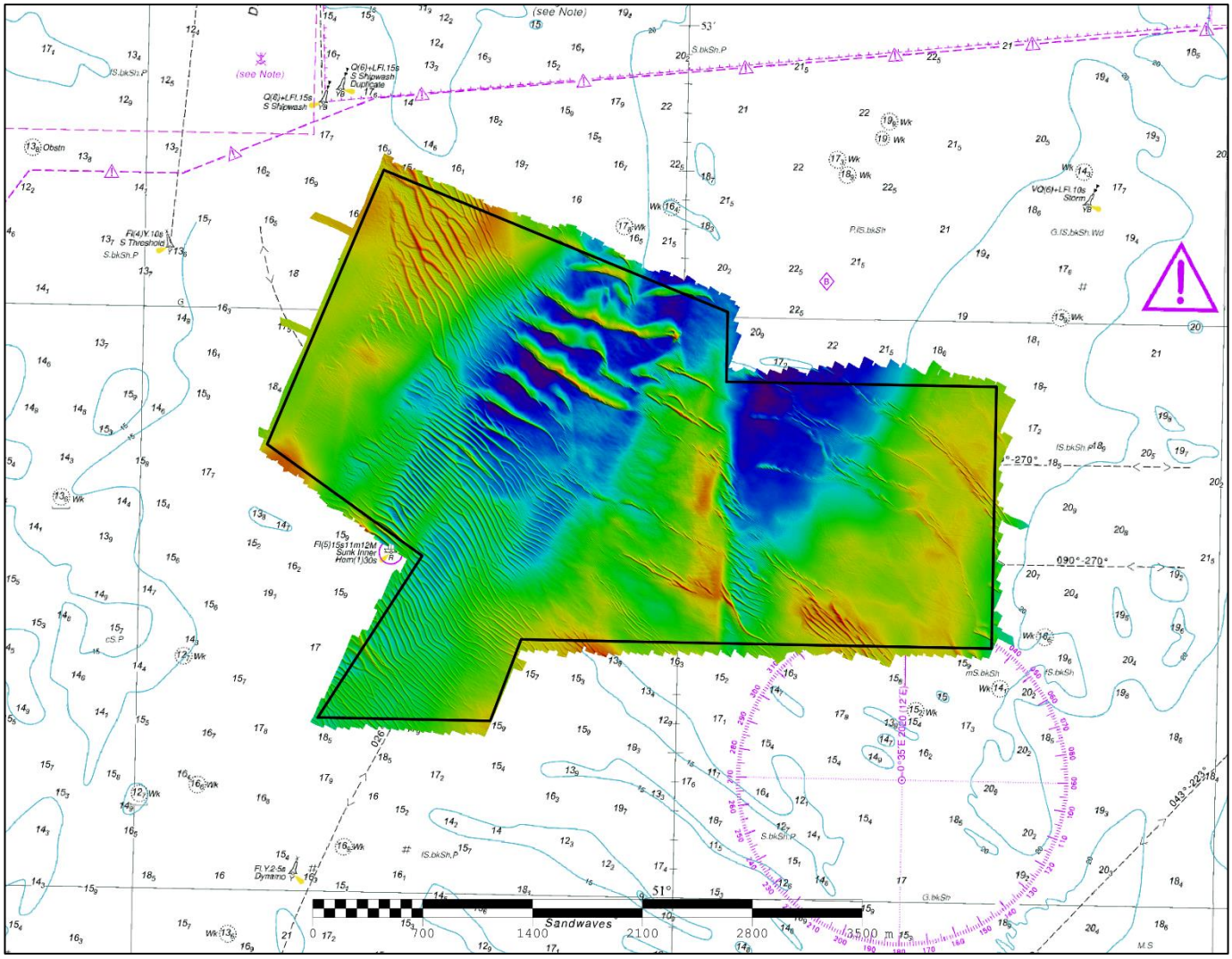
UK Hydrographic Office

Maritime & Coastguard Agency

THAMES ESTUARY
SUNK FOCUSED (FOCUSED)
2020 ASSESSMENT

An assessment of the 2020 hydrographic survey of the area TE3A: 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).

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.

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.

SUNK FOCUSED (TE3A), 2020

1. SUMMARY

Changes Detected

1.1 The controlling depth along the Harwich Deep Water Route (DWR) is 0.3m shoaler than in 2019.

1.2 Sandwaves have moved in a southwest direction since 2018, which is consistent with historical bedform movement. Outside of sandwave areas, depths have been stable.

1.3 Any significant depths changes noted from the 2019 full area survey are due to sandwave migration.

Reasons for Continuing to Resurvey the Area

1.4 Depths in the area remain close to the draught of larger vessels which transit the area. The sandwave areas which appear to be moving more significantly are migrating towards the charted Deep Water Routes.

Recommendations

1.5 The 1-year focused survey area should be retained.

1.6 The survey limits should remain unchanged.

2. LOCATION

2.1 Survey interval at time of resurvey: 1 year (The focused TE3A area is surveyed every year and the full area is surveyed every 3 years).

2.2 Area Covered: 10.87 km^2

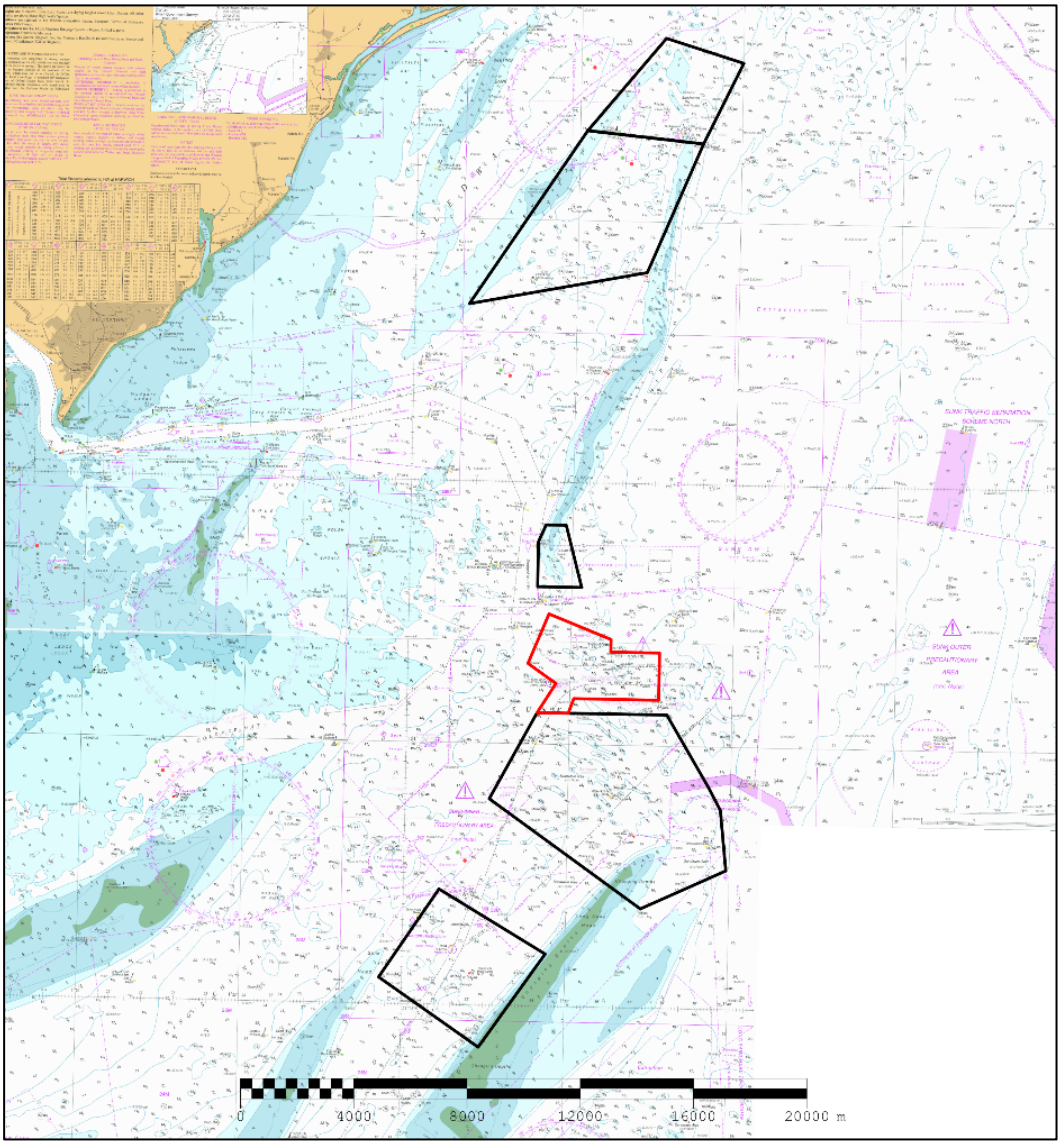

Figure 1: 2020 Thames Estuary Routine Resurvey areas overlaid on BA Charts 1975_0 and 2052_0 with area TE3A in red

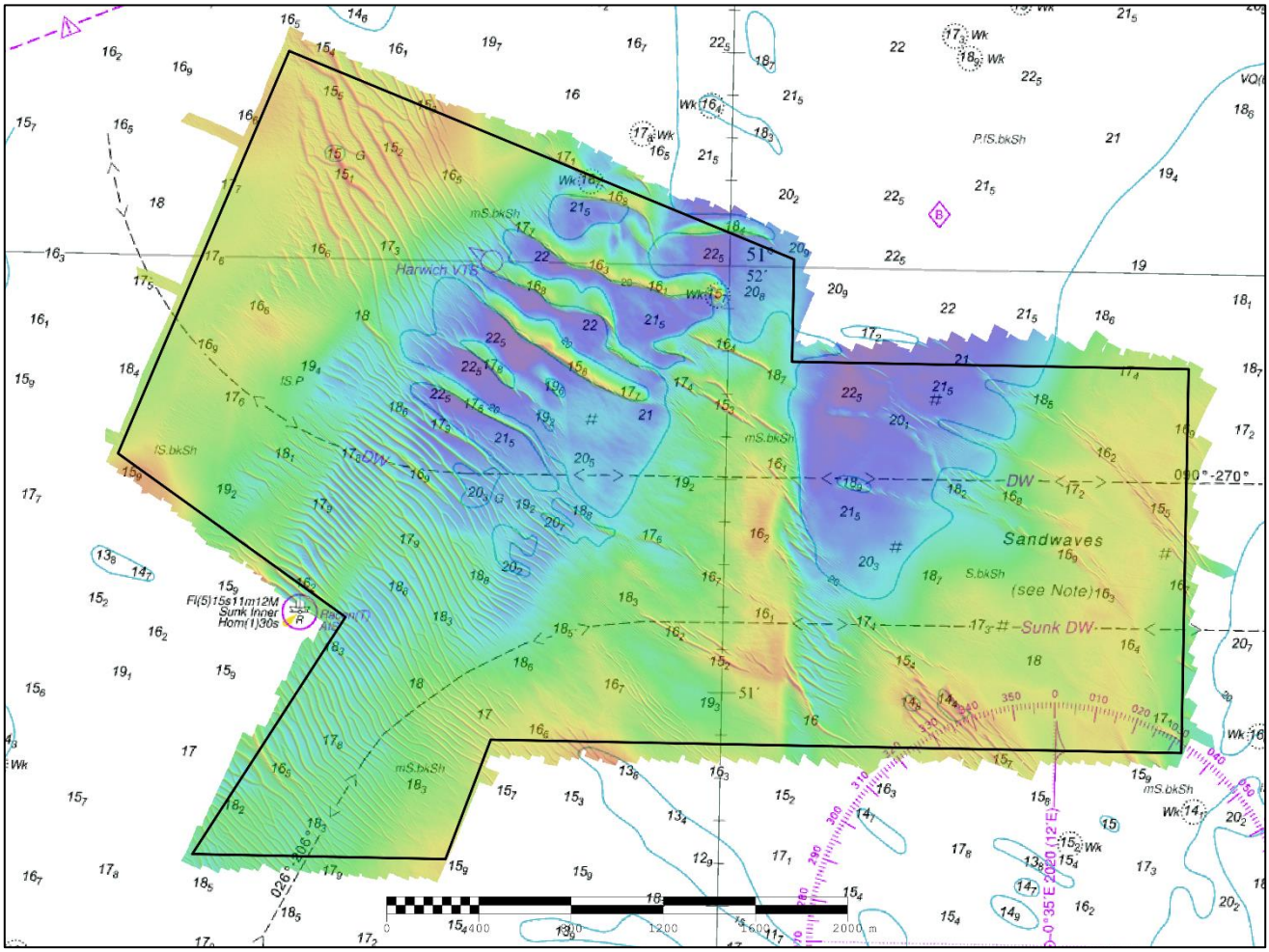

Figure 2: 2020 survey data overlaid on BA Chart 2692_0

3. REFERENCE SURVEY DETAIL

3.1 The previous full survey within the Routine Resurvey Programme was conducted in August and September 2019 as part of HI1641. The previous focused survey was conducted in July and November 2018 as part of HI1614.

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 The latest survey from the 2020 Routine Resurvey Programme was conducted in September 2020 as part of HI1691.

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 2020 survey can be seen in Figure 3. The controlling depths along the Harwich DWR are 15.7m (16.0m in 2019) and the controlling depth along the Sunk DWR

is 16.8m (16.1m in 2019 and 470m further east). The least depth within the survey is 14.5m, located along the south of Sunk DWR, which is slightly deeper than the 2019 14.4m depth (14.7m in 2018).

5.2 There has been a slight shoaling of depths in places along the Deep Water Routes which has meant the 15.7m controlling depth along Harwich DWR is 0.4m shoaler than currently charted. Elsewhere depths remain stable. This appears to be consistent with the data from previous years.

5.3 The difference surfaces in Figure 4 and 5 shows the prominent sand waves in the north of the survey area are migrating in a southwest direction, gradually getting closer to the Harwich DWR.

5.4 Figure 6 is a colour banded depth plot, with changes since the 2019 full and 2018 focused surveys labelled. The largest differences within the survey area since 2019 are -5.1m and +3.5m in the north but these changes are associated with the large migrating sandwaves in the area.

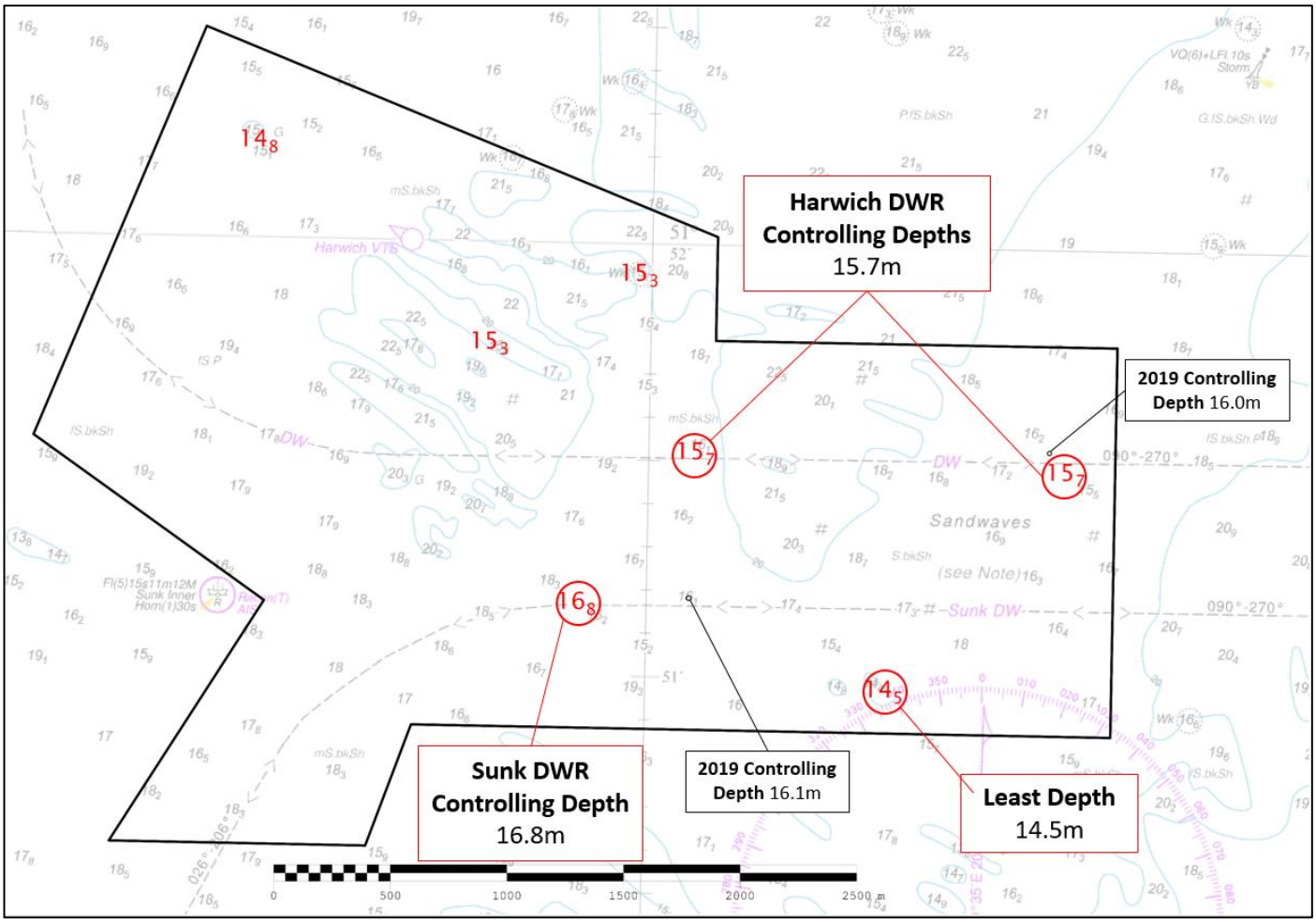

Figure 3: Significant depth soundings highlighted, overlaid on BA Chart 2692_0

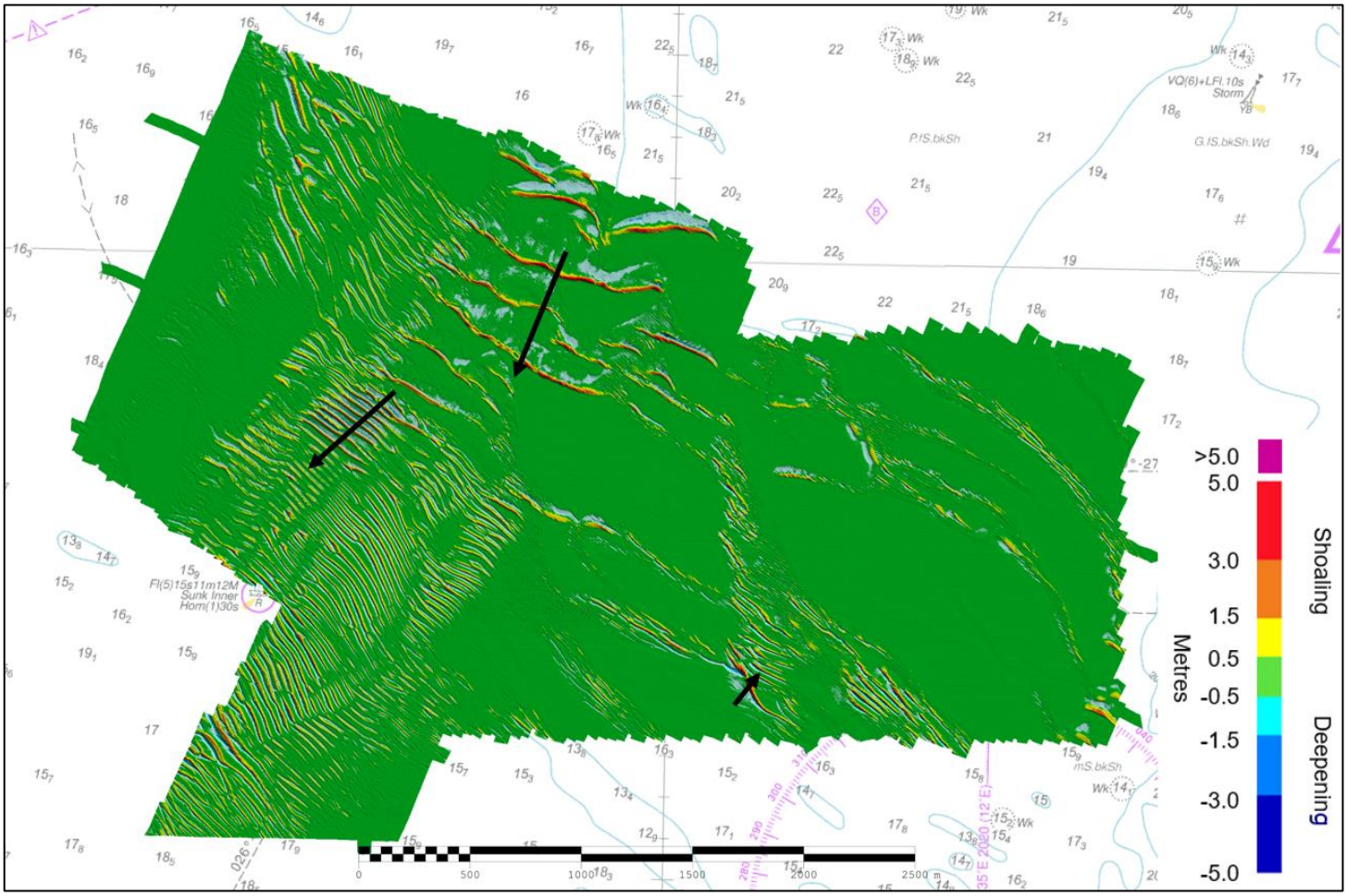

Figure 4: Difference surface showing bathymetric changes between the 2020 focused and 2019 full surveys overlaid on BA Chart 2692_0 (Black arrows represent sandwave migration since 2019 survey)

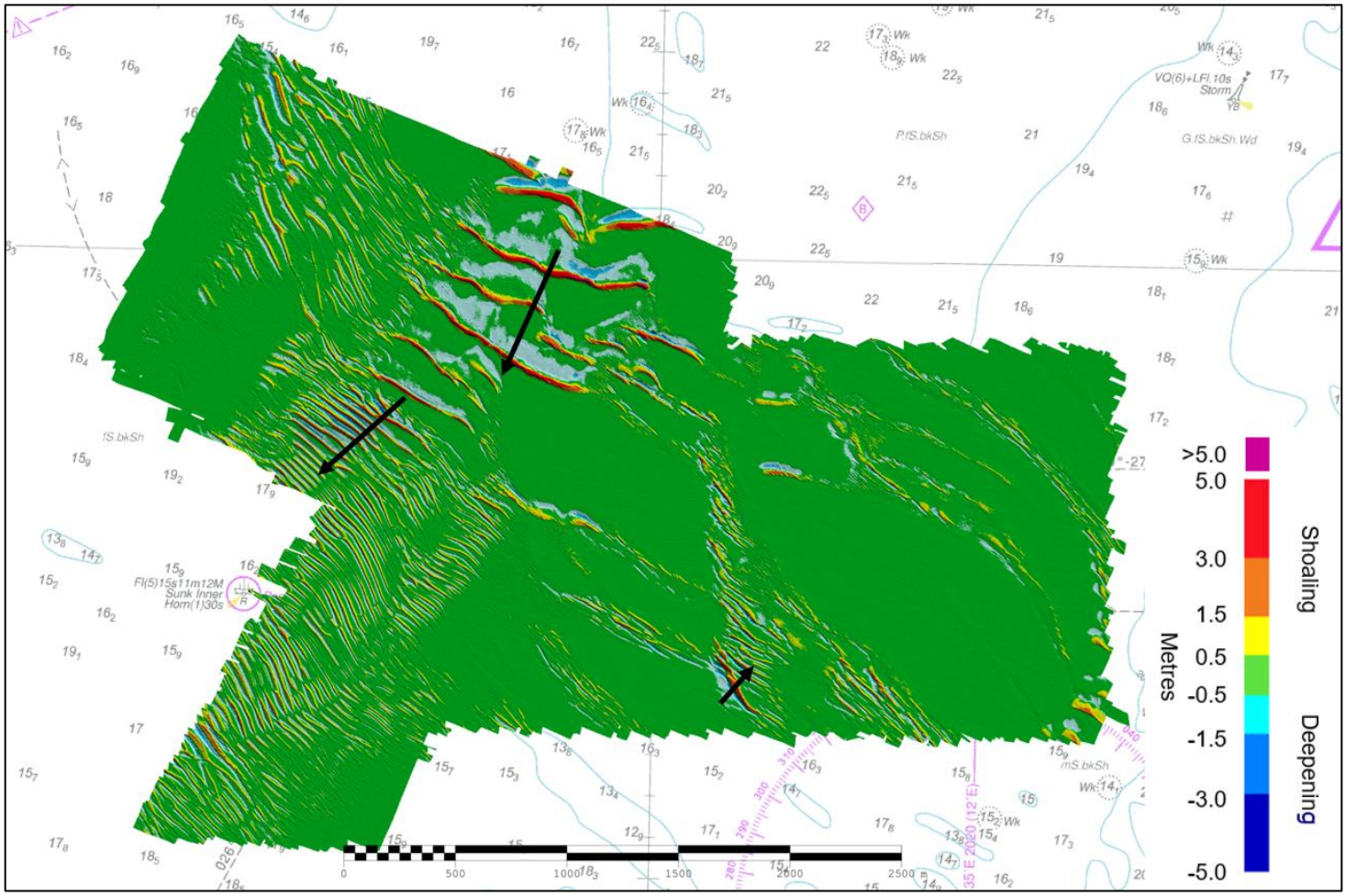

Figure 5: Difference surface showing bathymetric changes between the 2020 focused and 2018 focused surveys overlaid on BA Chart 2692_0 (Black arrows represent sandwave migration since 2018 survey)

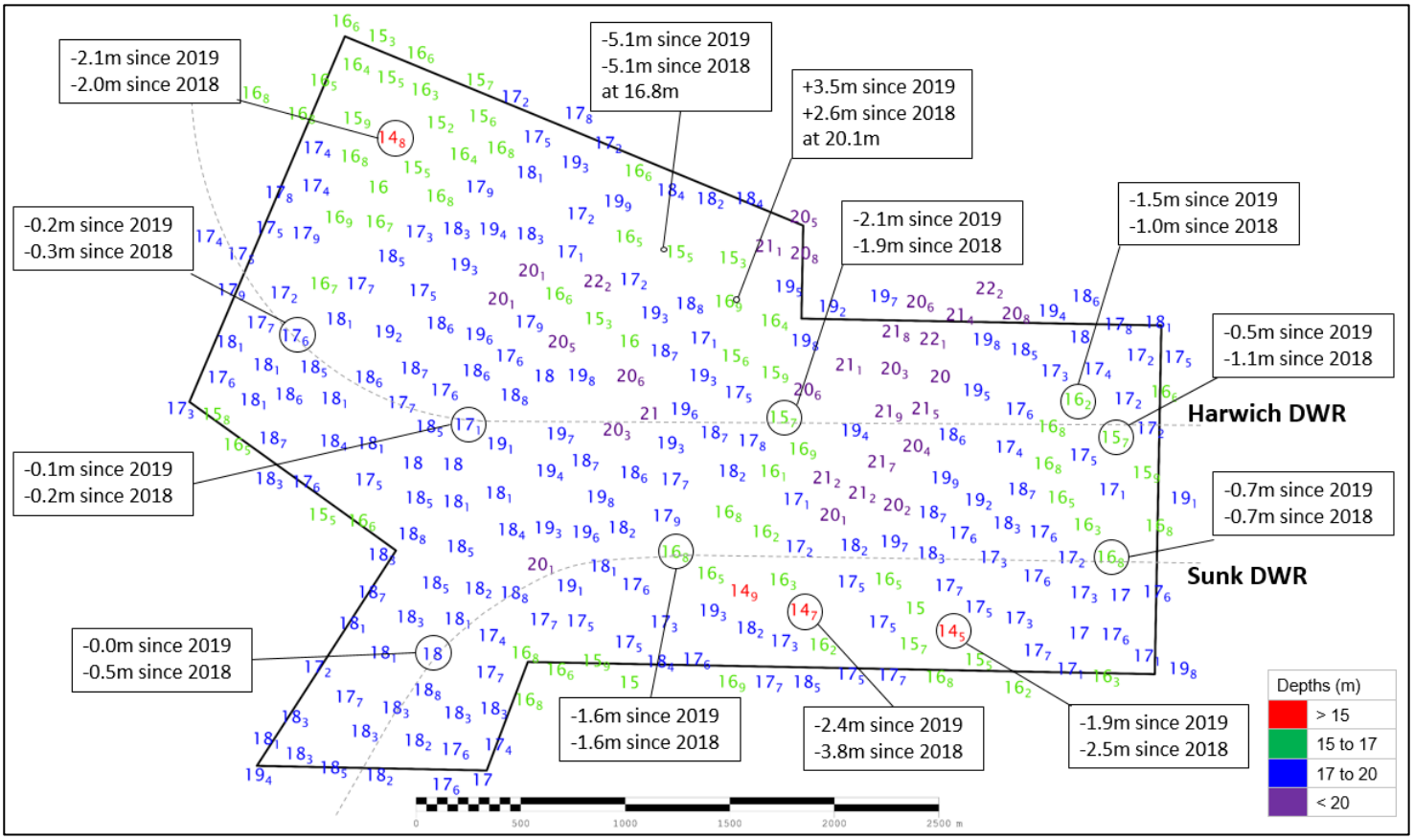

Figure 6: Colour banded depth plot from the 2020 focused survey with selected depth changes since the 2019 full survey and 2018 focused survey.

Positive values (+) represent deepening. Negative values (-) represent shoaling.

6. RECOMMENDATIONS FOR FUTURE SURVEYS

Survey Interval

6.1 Despite much of the survey area remaining consistent in the last year, there is obvious migration of sandwaves in a southwest direction, encroaching on charted Deep Water Routes. Therefore, the 2-year frequency for full surveys, with focused survey in the intervening year, should be retained.

Survey Area

6.2 The full and focused survey limits should be retained to ensure the location and depth of sandwaves are adequately charted.