

Climate and Oceanographic Summary, Great Australian Bight 2018 - 7

Kirsten Rough – 15th January 2018

Summary:

The GAB continues to warm progressively at the sea surface. The Sea Surface Temperatures are comparable to the average of the past 5-years over much of the shelf area, with surface waters in the South East and some areas over the Southern Ocean basin being slightly warmer.

Longer-term forecasts indicate a fishing season where conditions will be suitable for SBT over a wide area and remain suitable in current fishing locations until at least the end of February.

Upwelling continues to be a prominent feature on satellite images and is leading to marked differences between water temperatures at the sea surface and the sea floor, especially below Eyre Peninsula.

Chlorophyll levels remain ideal for SBT across a very wide area of the GAB with a bit of dirtier water to the south-southwest of Streaky Bay.

Forecast Sea Surface Temperature (SST) and SBT Habitat:

This year conditions continue to warm over a broader area at an earlier point in time compared to what has occurred coming into the last season; current habitat distribution is shown in Figure 1.

Updated **Longer-term forecasts** of conditions in the GAB Figure 2, indicate areas holding fish now will continue to do so throughout February. Forecasts are still indicating that the area west of Kangaroo Island will start cooling through March, though the Cabbage Patch and Rocky Island areas look to remain highly suited to SBT.

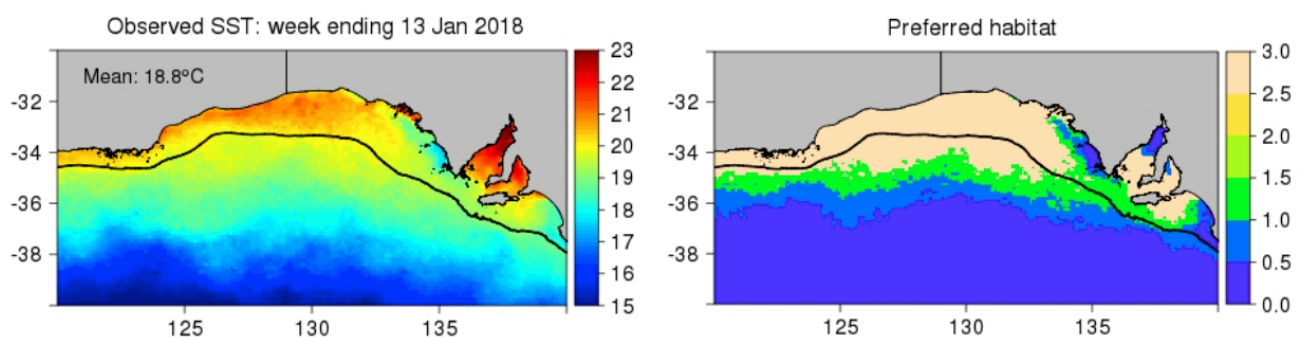


Figure 1: Sea Surface Temperature and SBT Habitat over the past week (CSIRO 2018 - GAB Forecasting Website)

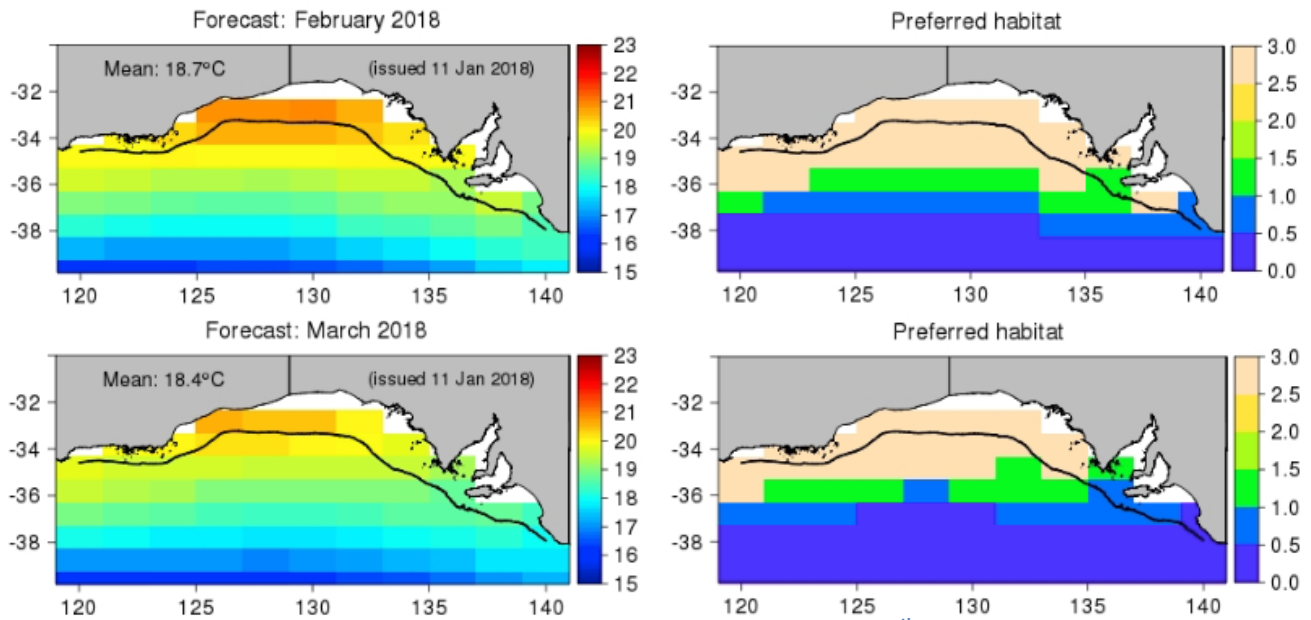


Figure 2: Longer term forecasts of Sea Temperature and SBT habitat issued on 11th January for February and March 2018 (CSIRO 2018 – GAB Forecasting Website).

GAB Sea Surface Temperature (SST):

The broader GAB area continues warming with the influence of local weather and warm currents continuing to feed in from the west. Cool water from the Bonney Upwelling remains a prominent feature in the east of the GAB and west coast of Eyre Peninsula (Figure 3). Actual SST along the 200m-depth contour is shown in Figure 4. This year (now), SST along the shelf-break is at or slightly exceeds 20°C to 133°30'E.

How the SST and currents across southern Australia compare for the 10th January across previous seasons is shown in Figure 5. And where areas are warmer or cooler than the average of the past 5-years (SST anomaly) is shown in Figure 6

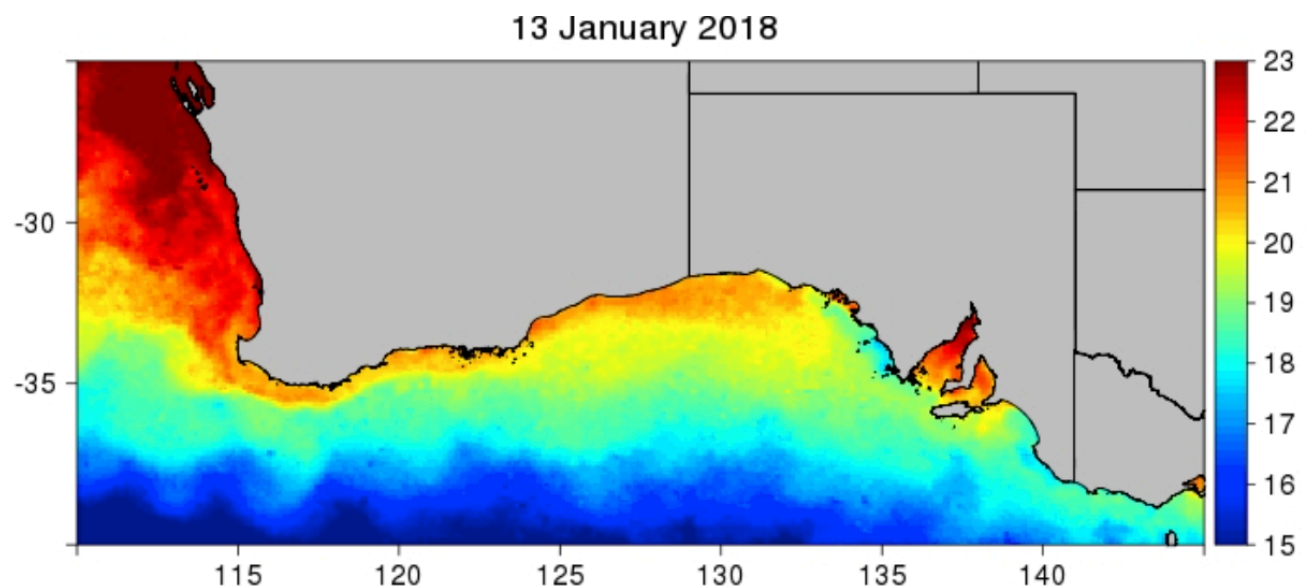


Figure 3: Sea Surface Temperature across southern Australia over the past week (CSIRO 2018 - GAB Forecasting Website)

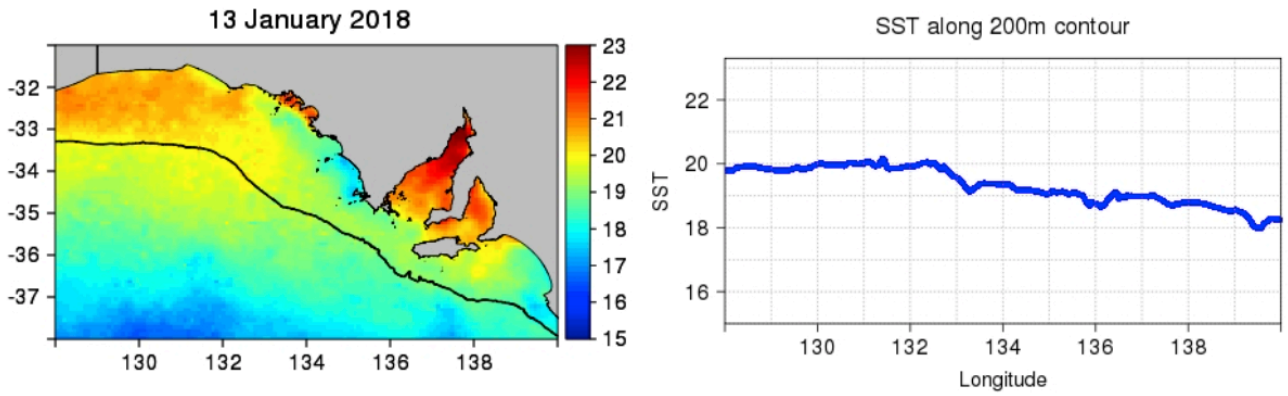
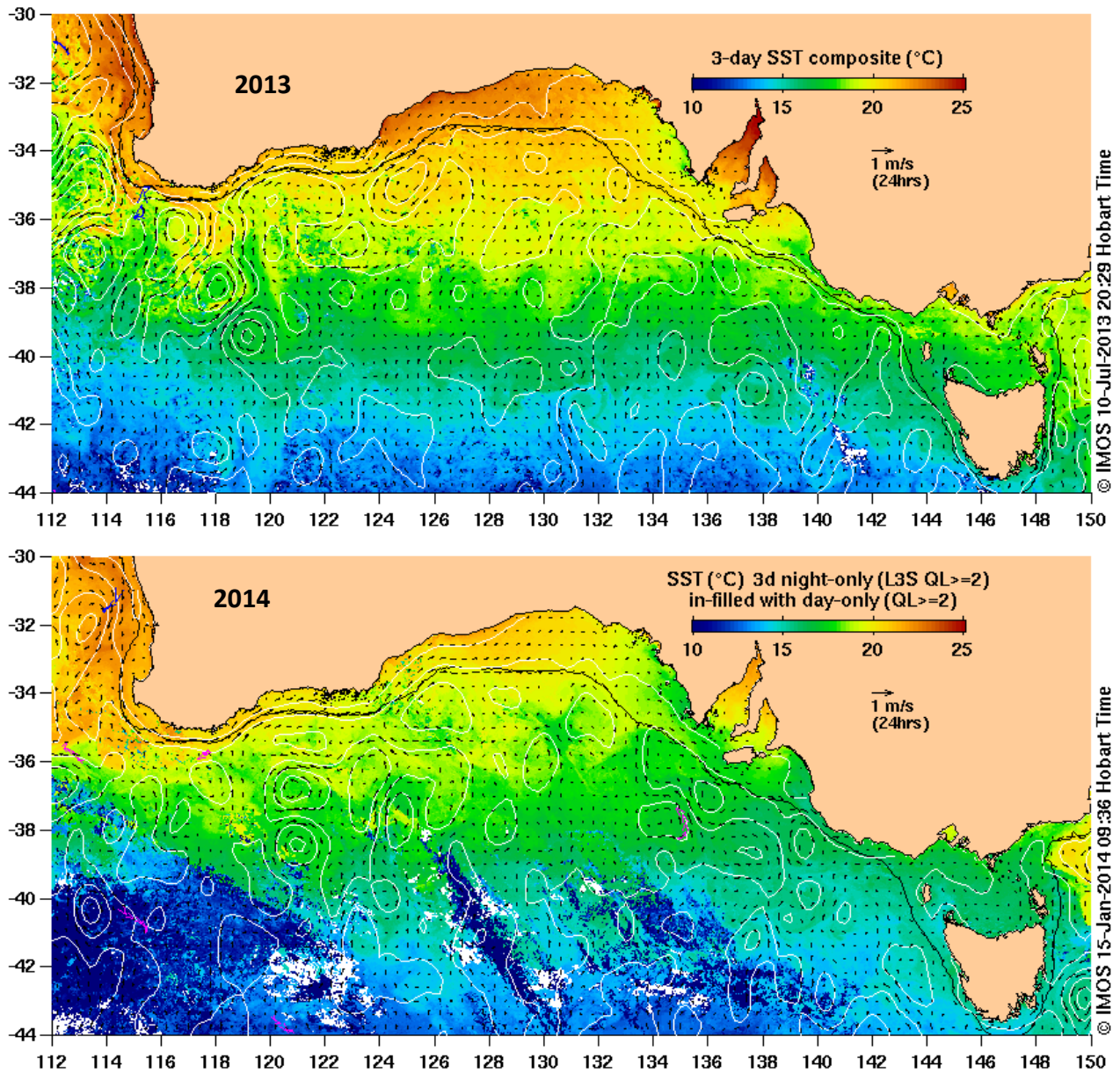
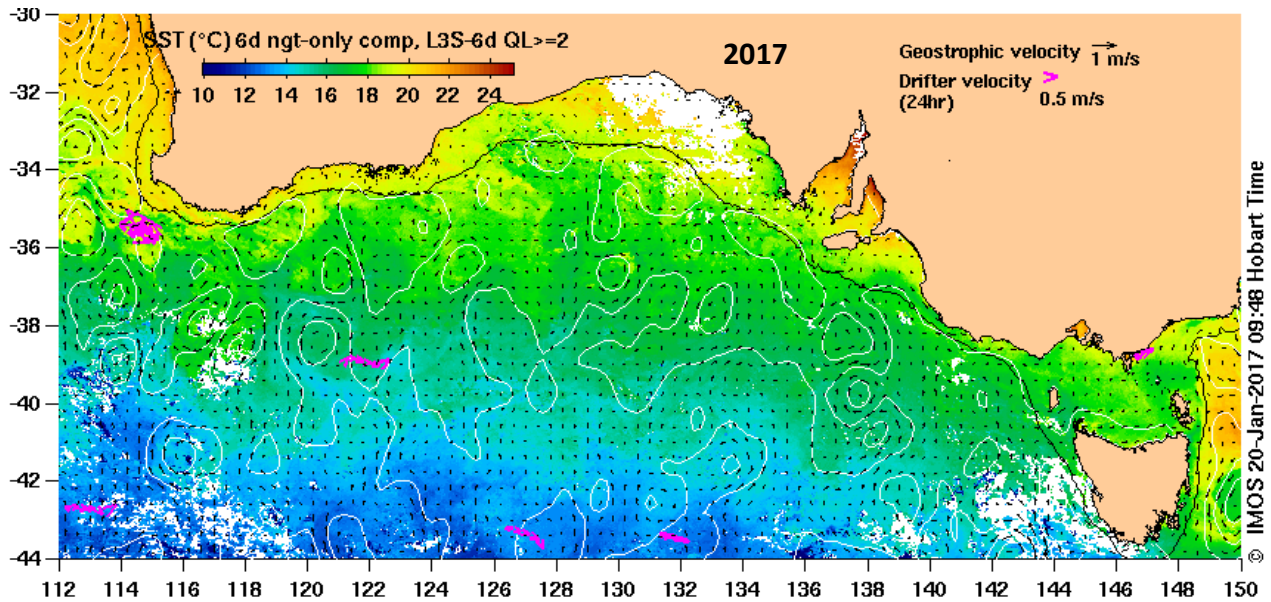
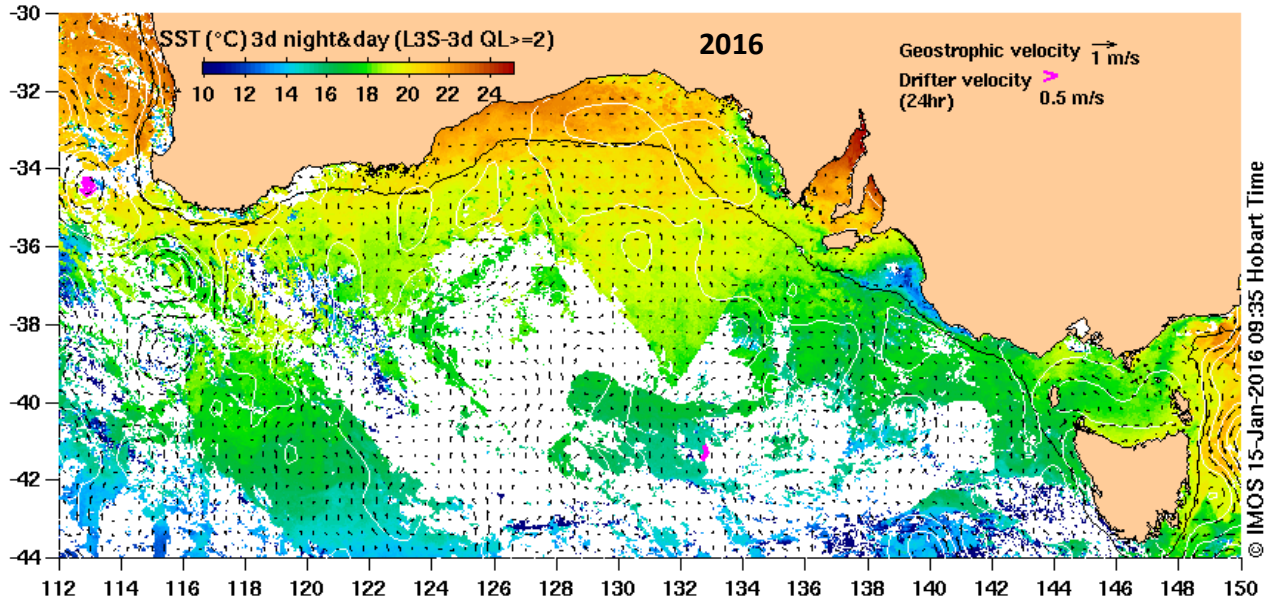
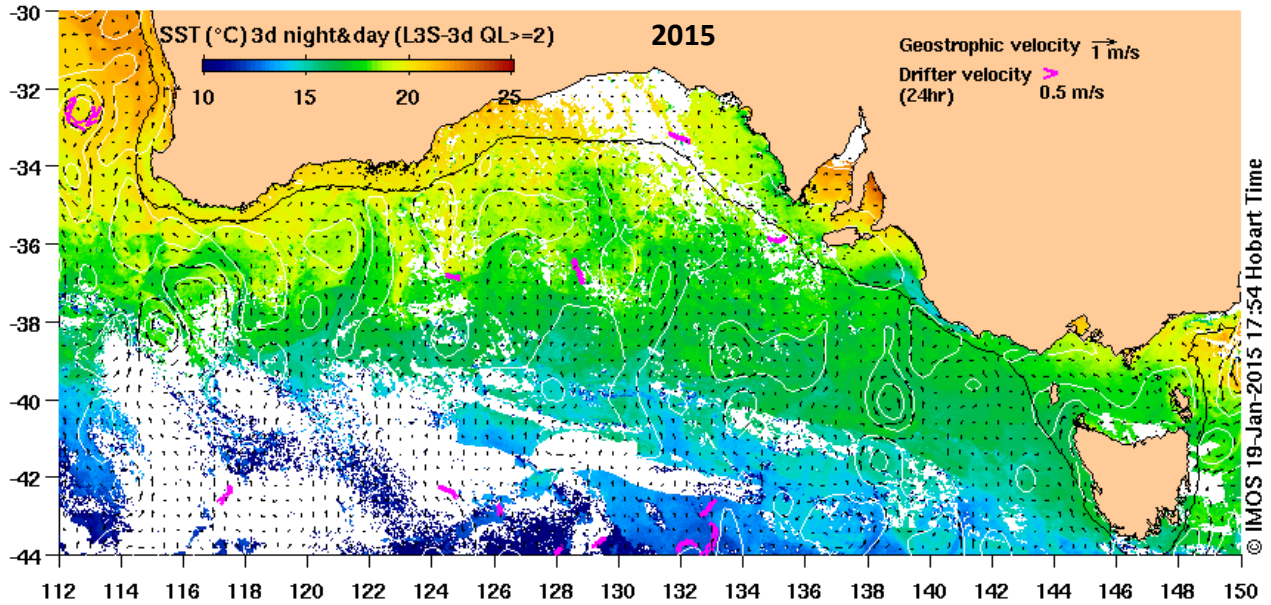


Figure 4: Most recent SST satellite image between longitudes 128° to 140°E (left) and corresponding graph of SST along the shelf break (right) (CSIRO 2018 - GAB Forecasting Website)





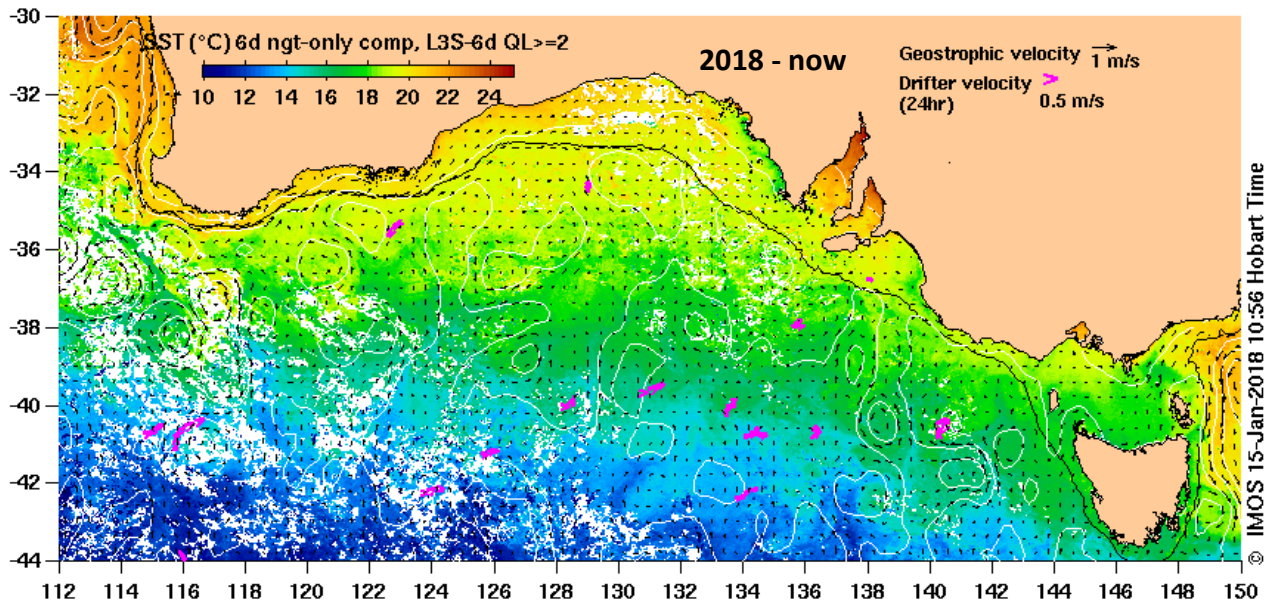


Figure 5: Snapshot of Sea Surface Temperatures and water currents across southern Australia on the 10th January 2013 to 2018 (IMOS 2018)

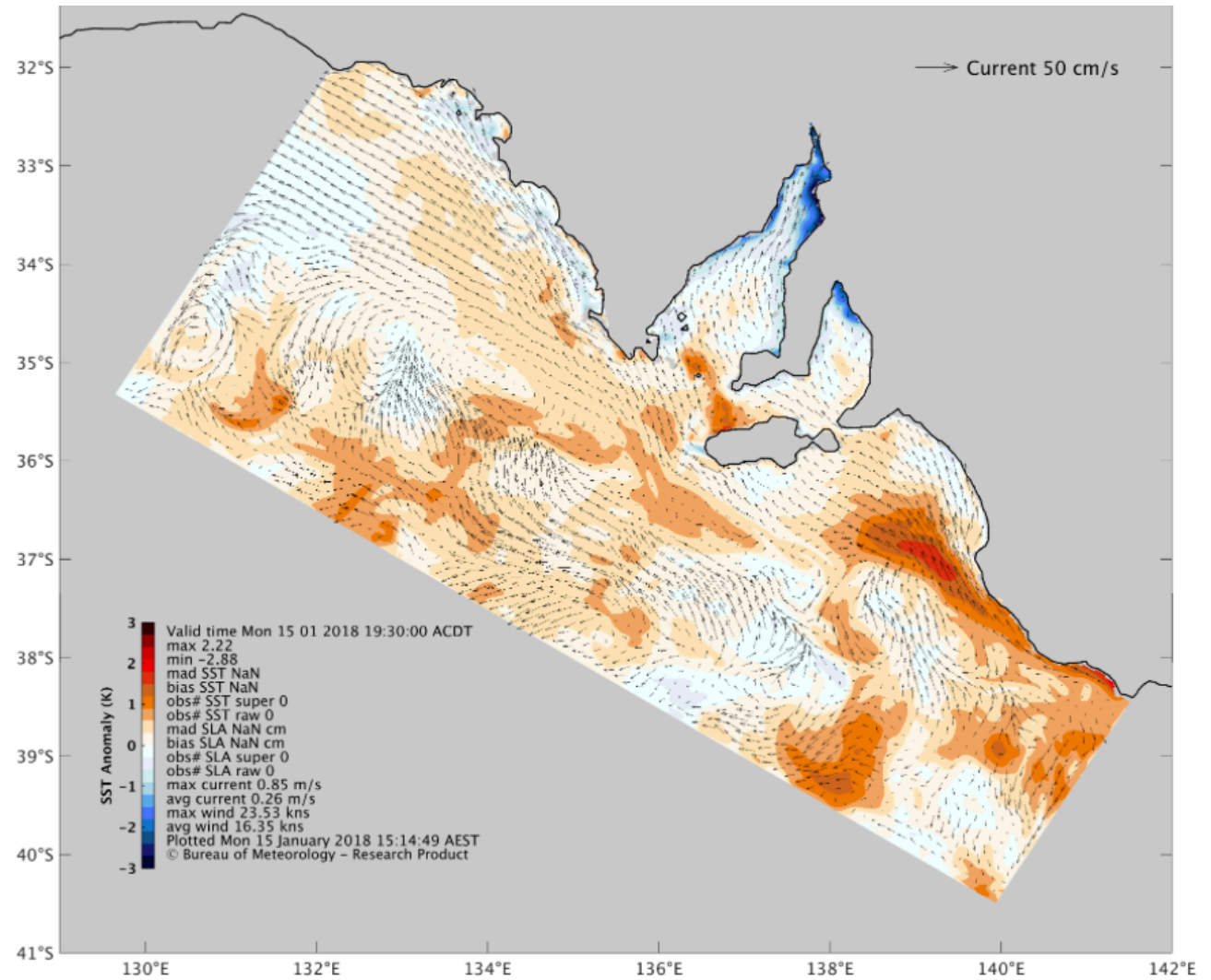
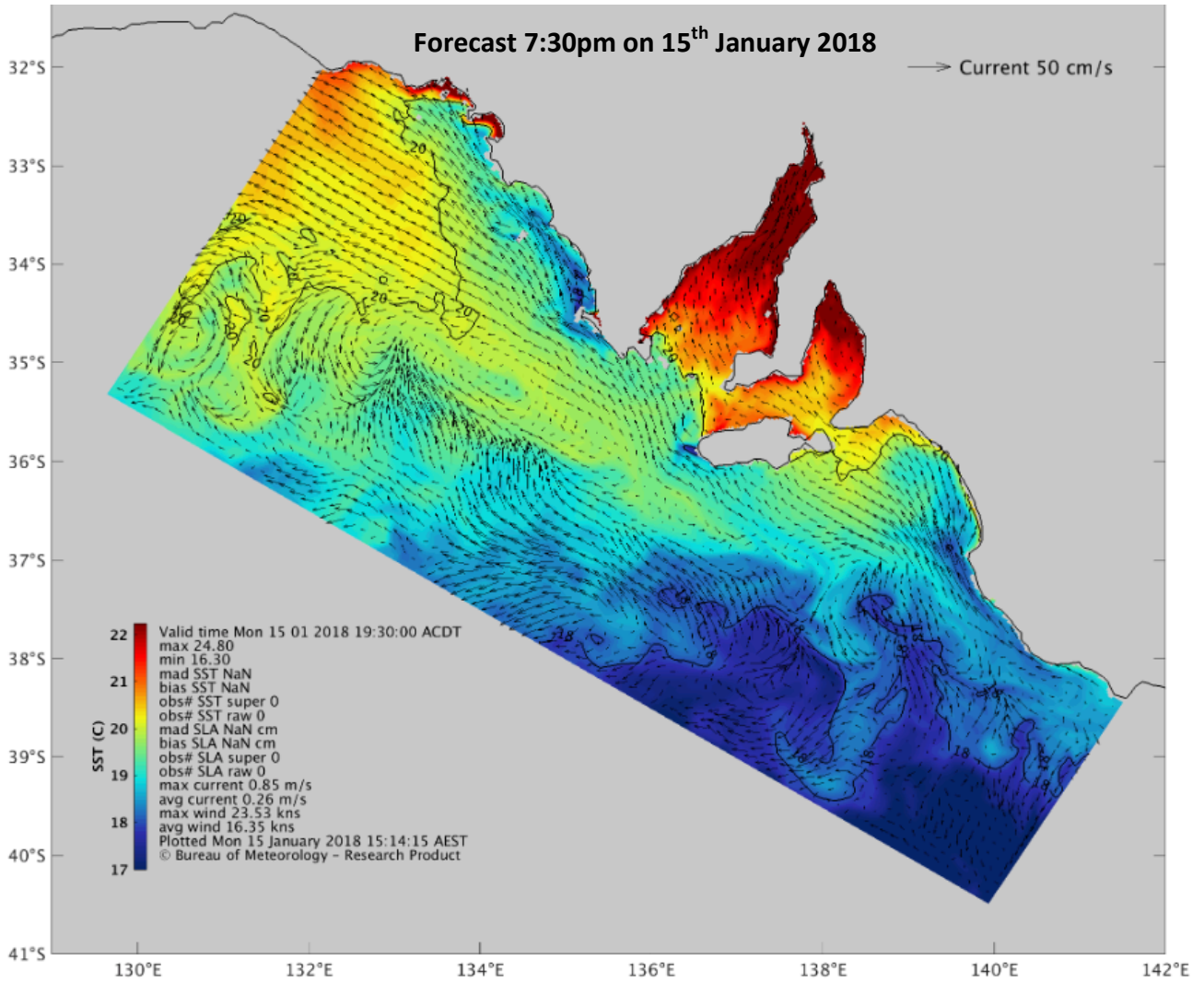


Figure 6: Sea Surface Temperature Anomaly (areas warmer or cooler than the average of the previous 5-years) for the 15th January 2018 (SARDI-BoM 2018 – eSA Marine website).

Fine-scale Sea Surface Temperature and short-term forecasts are shown in Figure 7. These are indicating that the warm weather expected mid week will lead to suitable surface temperatures across a huge area.



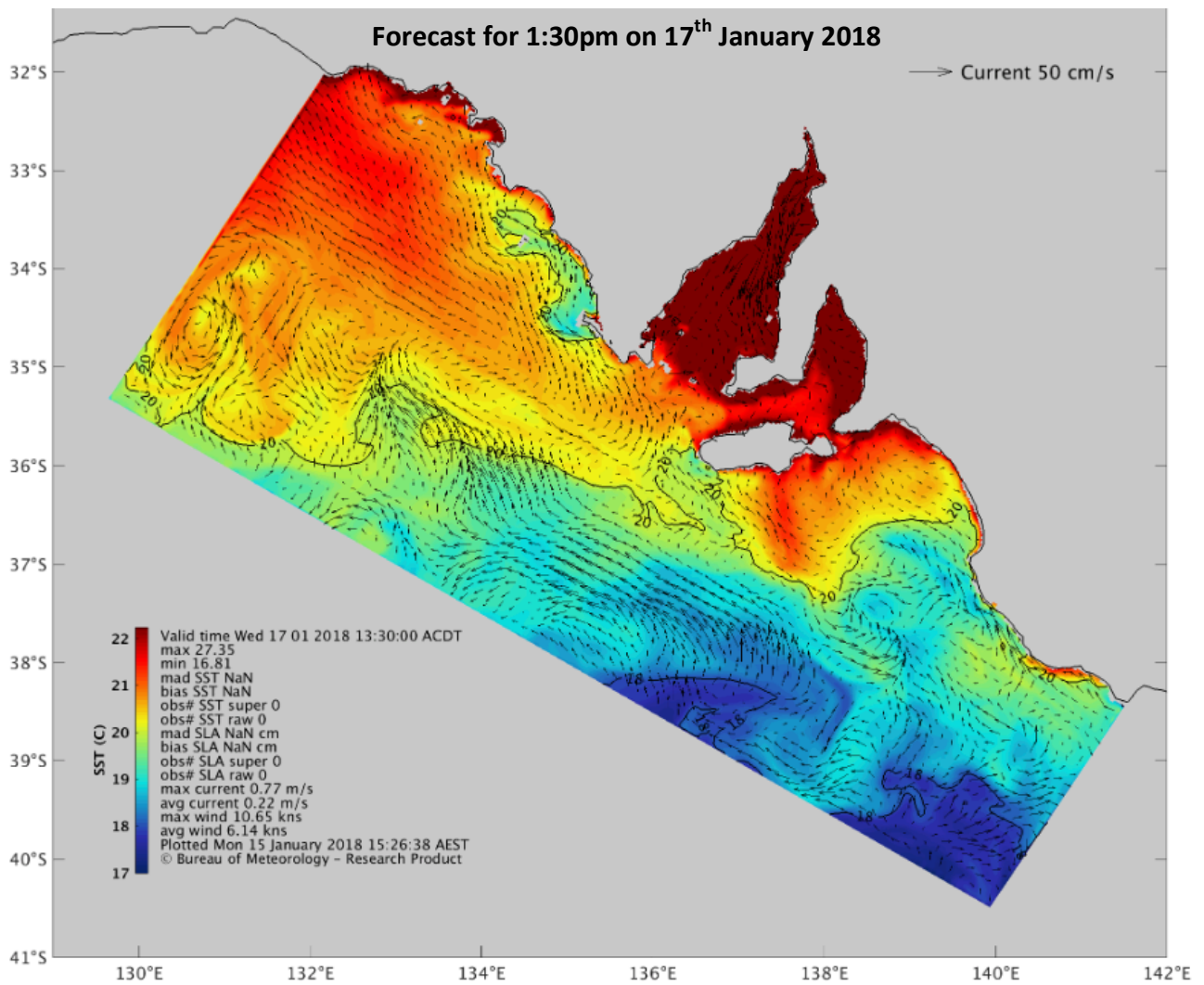


Figure 7: Snapshots of short-term forecasts of Sea Surface Temperature for the 15th January (top) and 17th January (bottom). The 18 and 20°C temperature contours are marked by solid black lines, the direction and strength of the water currents are indicated by the black arrows (SARDI-BoM 2018 – eSA Marine website).

The **Sea Floor Temperatures** remain cool over much of the GAB area, with upwelling having a significant influence to the west of Kangaroo Island and below Eyre Peninsula (Figure 8).

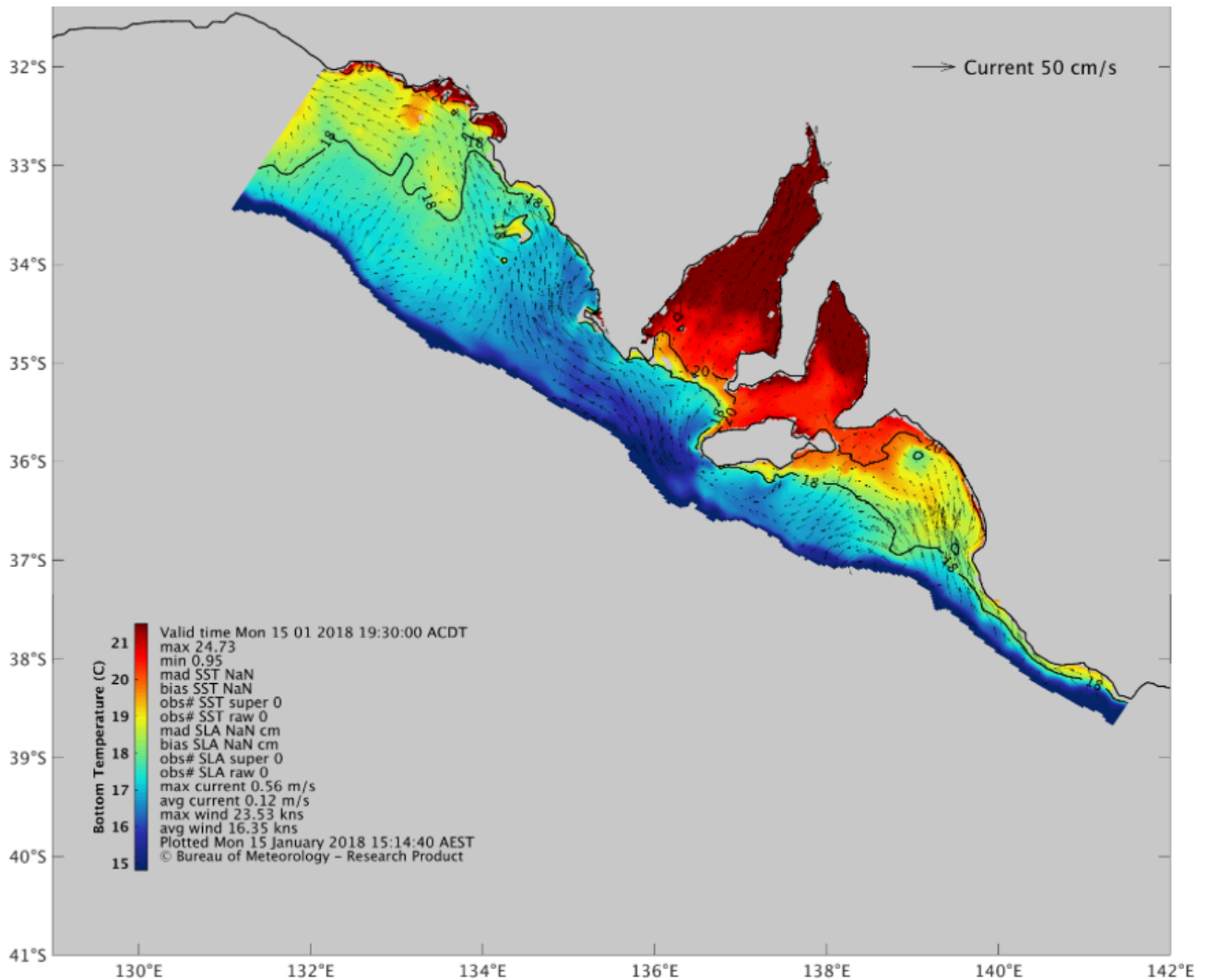


Figure 8: Snapshot of the Sea Floor Temperature on the 15th January 2018; the 18 and 20°C temperature contours are marked by solid black lines, the direction and strength of the water currents are indicated by the black arrows (SARDI-BoM 2018 – eSA Marine website).

Chlorophyll / Productivity Levels:

Satellite coverage and cloud cover have again limited the availability of clear images over this past week, 2 snapshots are included here to give a view of the entire area (Figure 9). These are showing some dirtier water to the south-southwest of Streaky Bay but conditions continue to be highly suited to SBT over much of the remainder of the GAB.

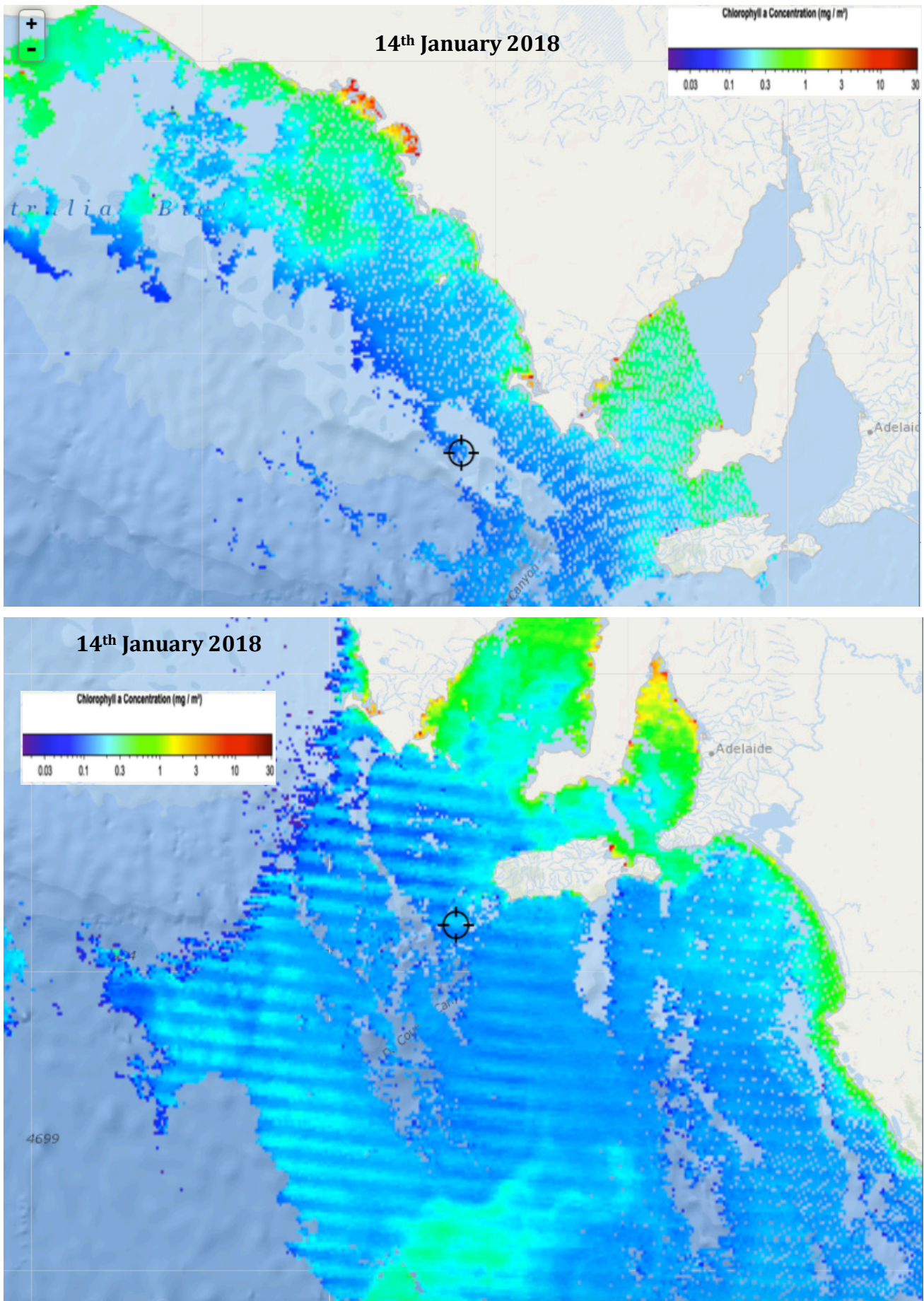


Figure 9: Chlorophyll plots from the Great Australian Bight taken on 14th January 2018, the grey areas have no readings due to cloud cover.

Relevant Websites:

GAB SBT Habitat Forecasts: <http://www.cmar.csiro.au/gab-forecasts/env-observed.html>

eSA Marine: http://pir.sa.gov.au/research/esa_marine/sarom

IMOS ocean monitoring: <http://oceancurrent.imos.org.au/index.php>

Bureau of Meteorology: <http://www.bom.gov.au>

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