Climate and Oceanographic Summary, Great Australian Bight 2018 - 11

Kirsten Rough – 16th February 2018

Summary:

GAB sea surface temperatures continue to be highly suited to wide range of fish sizes over a very wide area.

Longer-term forecasts indicate fishing areas will start contracting late February with best conditions still available in close proximity to Lincoln through early March.

Upwelling continues to have a significant influence over sea temperatures throughout the GAB.

Chlorophyll levels remain ideal for SBT across a very wide area of the GAB, though upwelling is leading to dirty water at some locations.

Forecast Sea Surface Temperature (SST) and SBT Habitat:

Conditions continue to warm on continental shelf areas and are suitable for SBT over a broad area of the GAB. The preferred habitat distribution over this past week is shown in Figure 1. The recent very strong upwelling is continuing to influence conditions in the eastern GAB.

The updated **medium and long-term forecasts** of conditions in the GAB are shown in Figure 2. These are indicating the upwelling will continue to have a significant influence on conditions for the remainder of this fishing season. Fishing areas are likely to start contracting from the end of February, though please note that the resolution of the current modeling system does not accommodate the shallower areas that have become increasingly important since 2012.

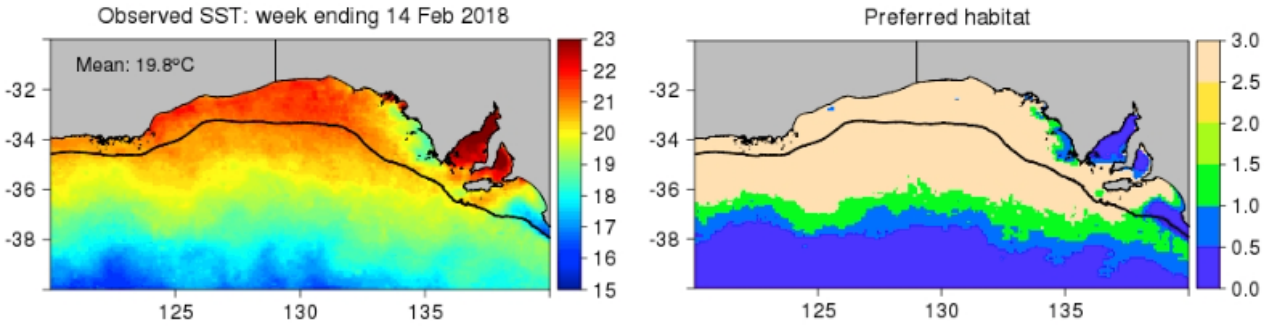

Figure 1: Sea Surface Temperature and SBT Habitat over the past week to 14th February 2018 (CSIRO 2018 - GAB Forecasting Website)

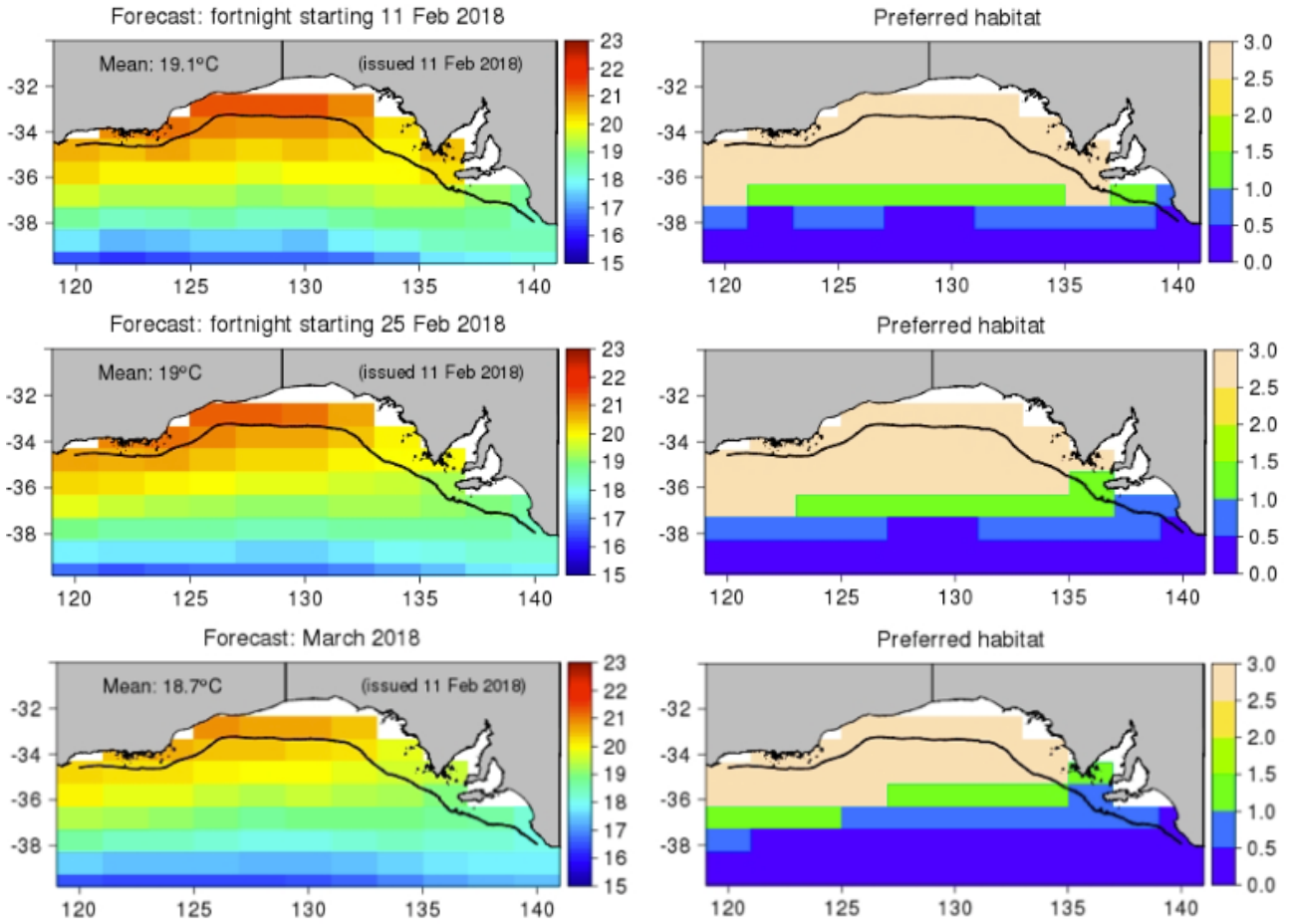

Figure 2: Longer term forecasts of Sea Temperature and SBT habitat issued on 11th February for the middle to end of February (top), last week of February, first week of March (middle) and the situation from mid March (bottom) (CSIRO 2018 – GAB Forecasting Website).

GAB Sea Surface Temperature (SST):

The broader GAB remains warm over a very wide area. The recent upwelling has pushed a significant amount of cold water onto the shelf and is moderating temperatures in both the central and eastern GAB areas (Figure 3 and Figure 4). This continues to contribute to well-defined areas suitable for SBT to aggregate at the sea surface and enable corridors of warm water between Sanders and other fishing locations south of Kangaroo Island. Higher resolution maps of current and forecast SST are shown in Figure 6 and Figure 7 - please note that colour scale bars shown on each image are only applicable to that image.

How the sea surface temperatures for the month of January, February and March compare across previous seasons is shown in Figure 5.

Plots of sea floor temperature are shown in Figure 8 and Figure 9. The recent upwelling continues to have a major influence on sea floor temperatures this week.

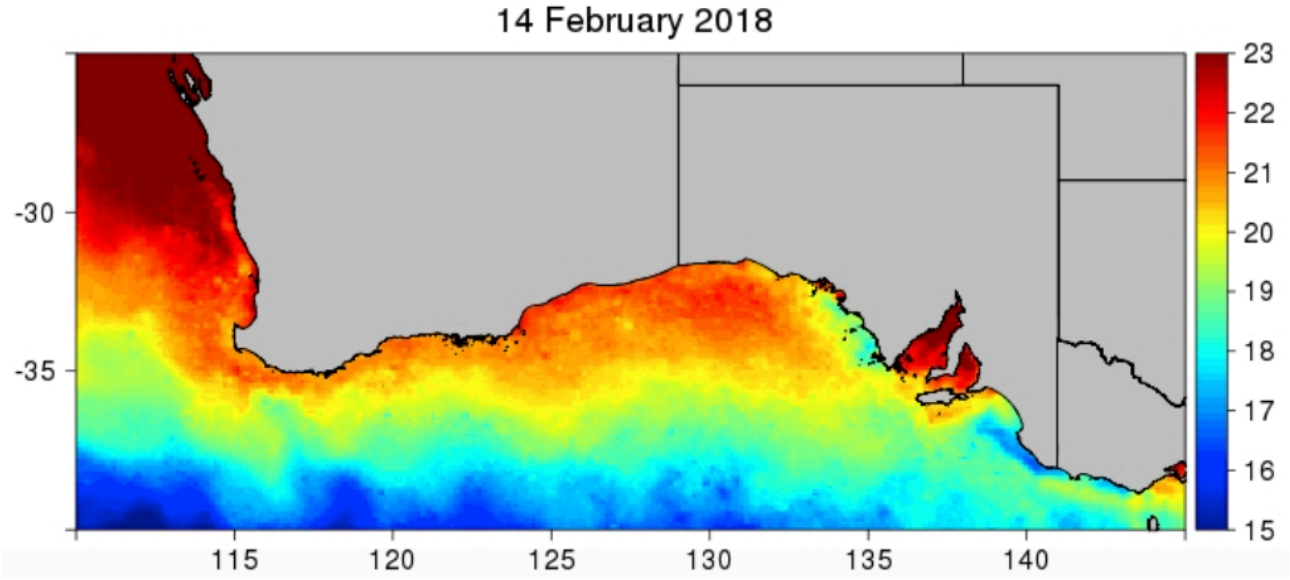

Figure 3: Sea Surface Temperature across southern Australia over the past week (CSIRO 2018 - GAB Forecasting Website)

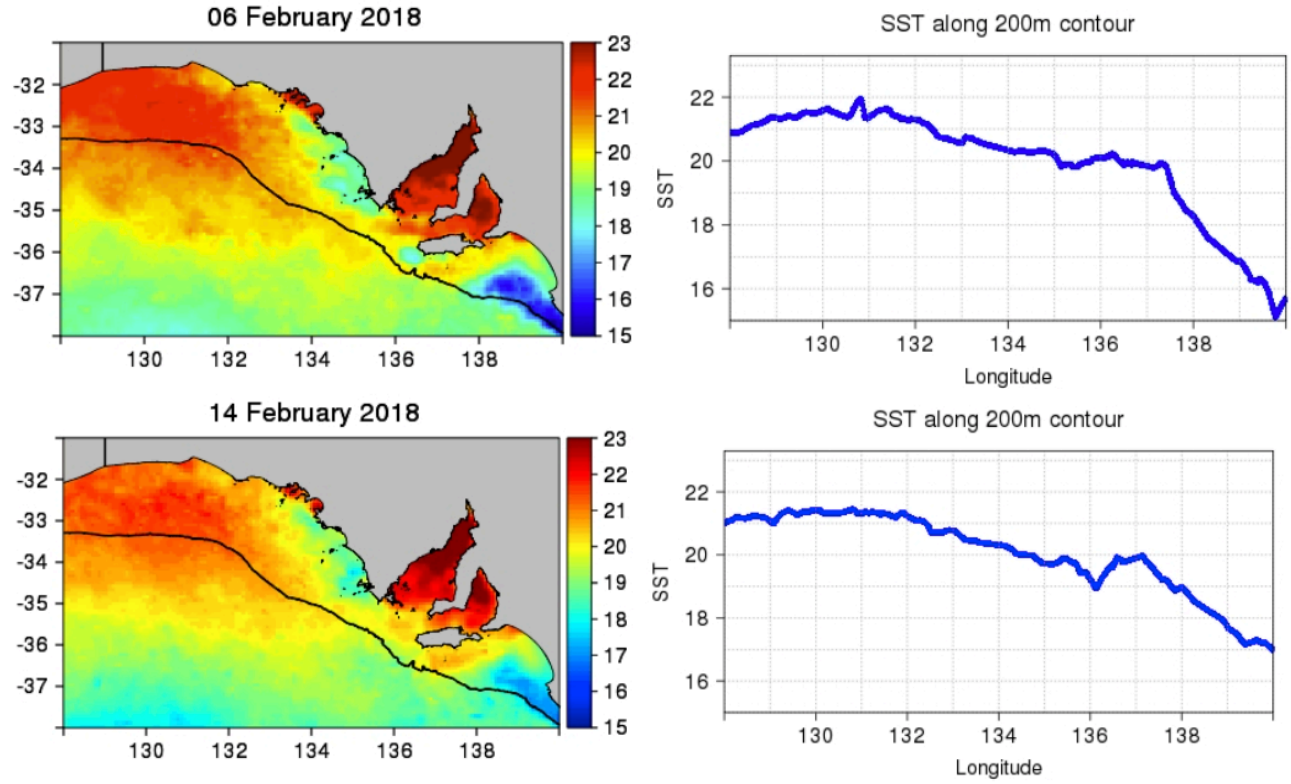

Figure 4: SST satellite image between longitudes 128° to 140°E (left) and corresponding graph of SST along the shelf break (right). Top image is the situation at the end of the previous week and the bottom image is the most recent (CSIRO 2018 - GAB Forecasting Website)

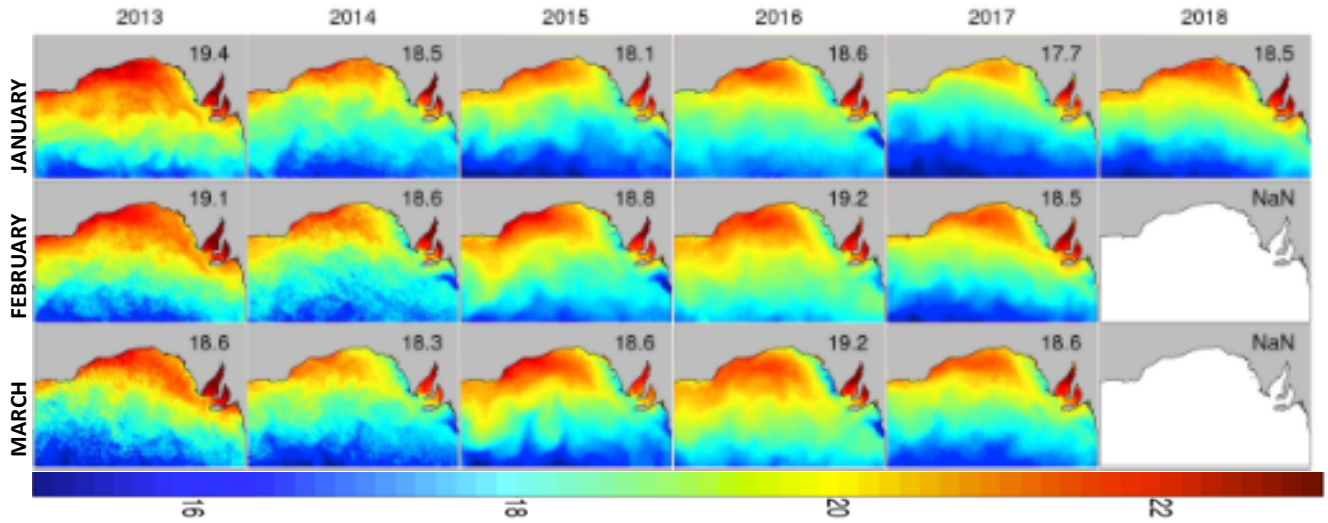

Figure 5: Average Sea Surface Temperatures for the month of January (top), February (middle) and March (bottom) for 2018 and the previous 5 years (CSIRO 2018 – GAB Forecasting Website)

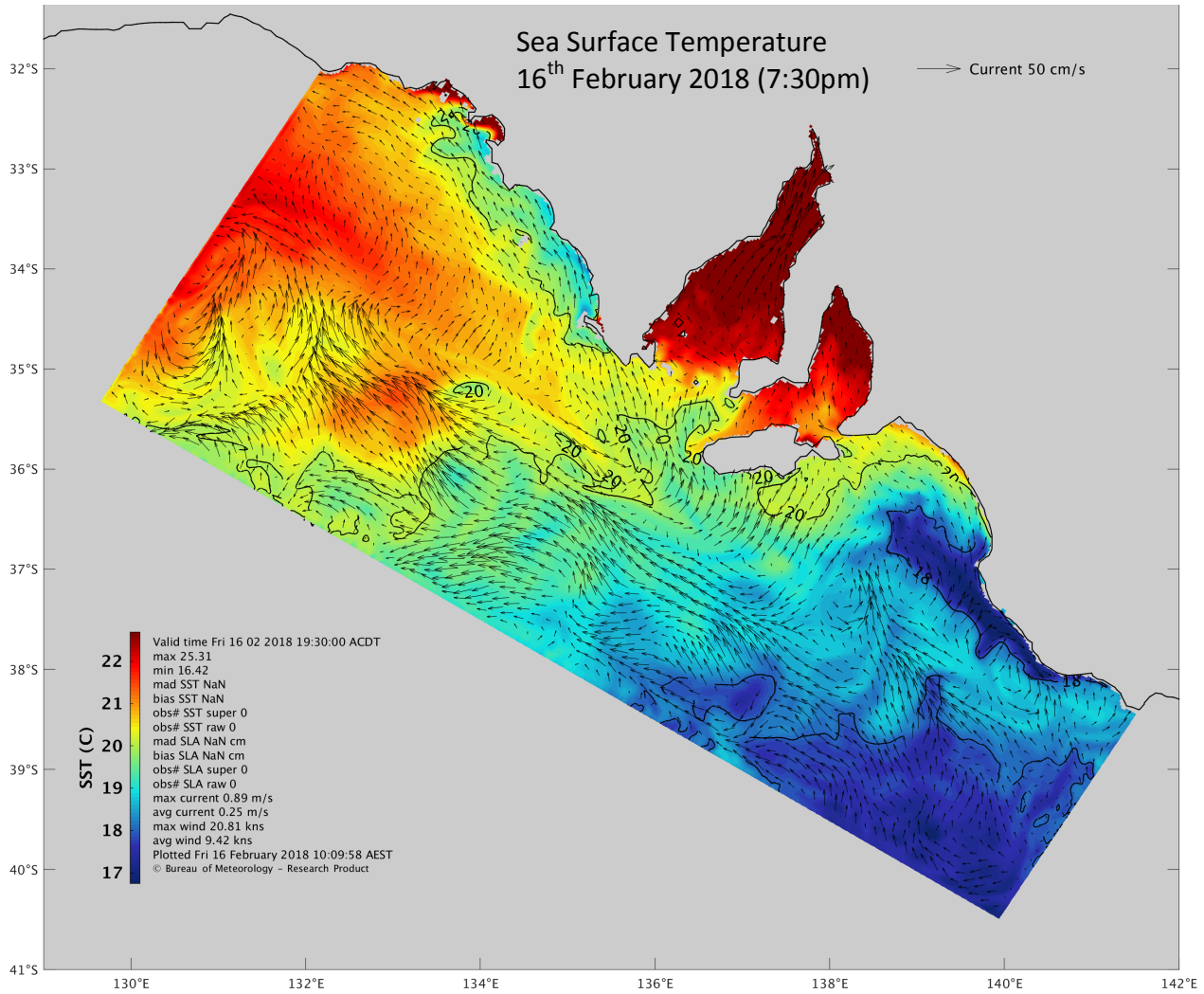

Figure 6: Sea Surface Temperature and water current direction on 16th February 2018. The 18 and 20°C temperature contours are marked by solid black lines, the direction and strength of the water currents are indicated by the black arrows. Note the scale bar changes between these images (SARDI-BoM 2018 – eSA Marine website).

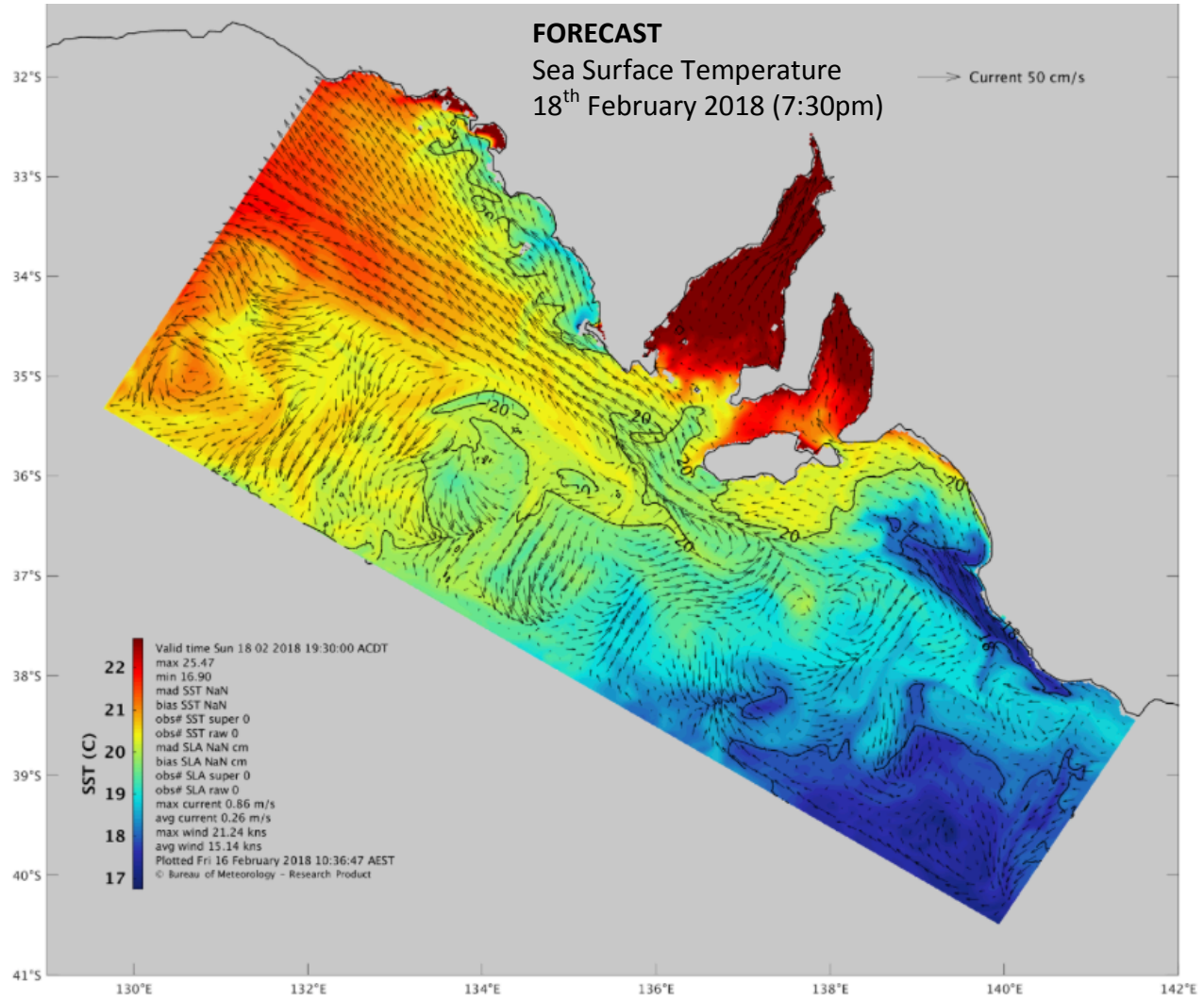

Figure 7: FORECAST of Sea Surface Temperature and water current direction for 18th February 2018. The 18 and 20°C temperature contours are marked by solid black lines, the direction and strength of the water currents are indicated by the black arrows. Note the scale bar changes between these images (SARDI-BoM 2018 – eSA Marine website).

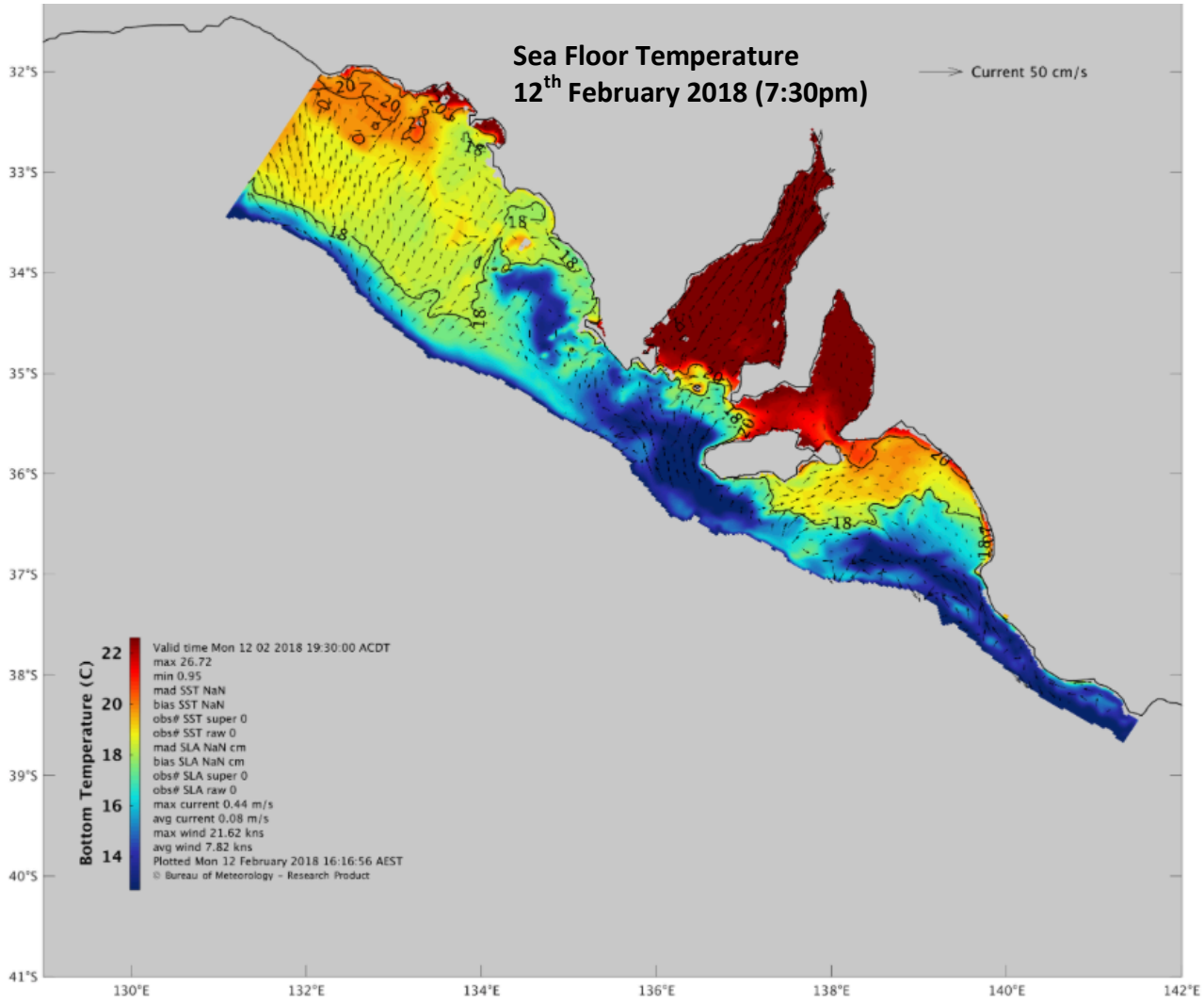

Figure 8: Sea Floor Temperature and water current direction on 12th February 2018. The 18 and 20°C temperature contours are marked by solid black lines, the direction and strength of the water currents are indicated by the black arrows. Note the scale bar changes between these images (SARDI-BoM 2018 – eSA Marine website).

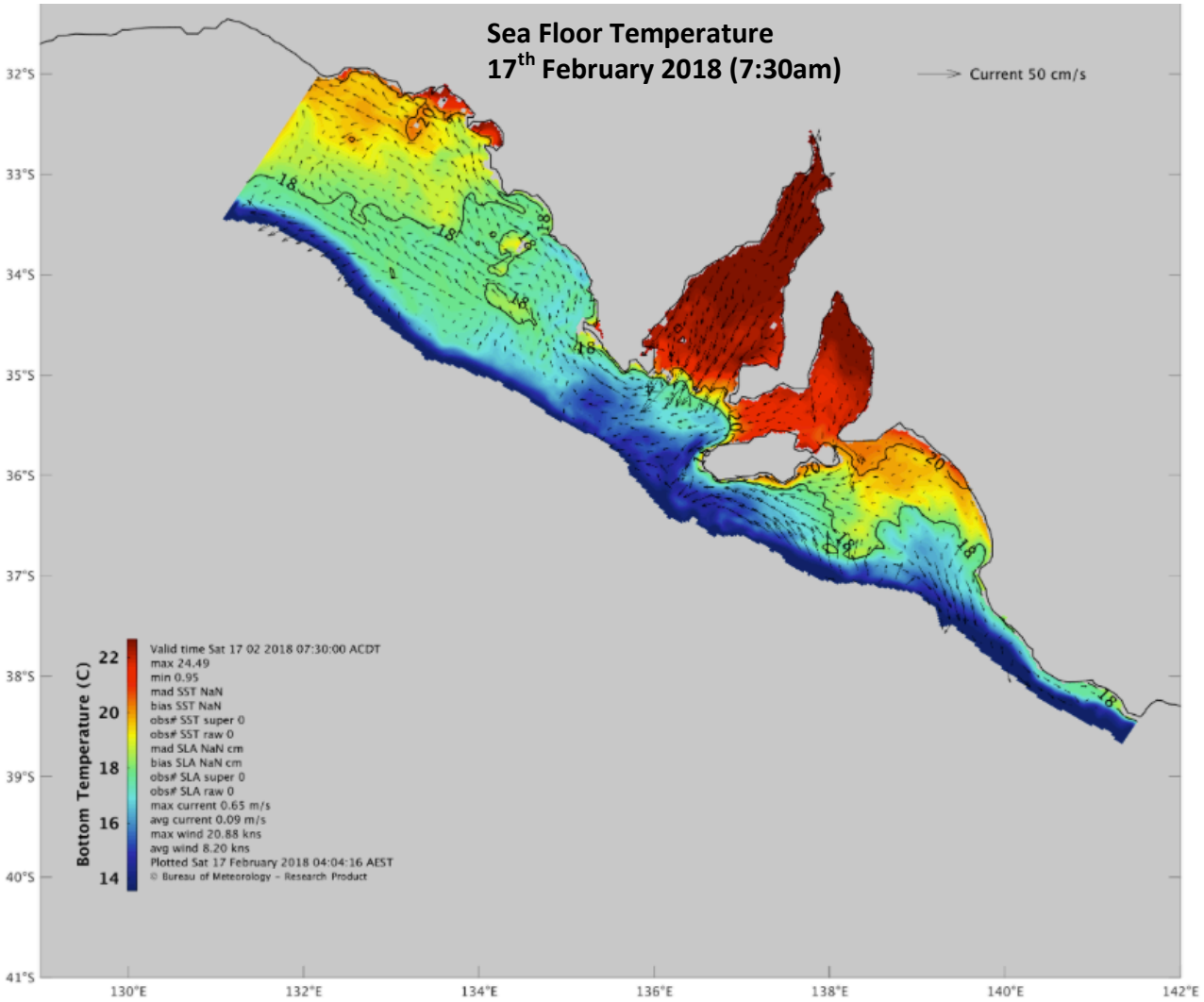

Figure 9: Sea Floor Temperature and water current direction on 17th February 2018. The 18 and 20°C temperature contours are marked by solid black lines, the direction and strength of the water currents are indicated by the black arrows. Note the scale bar changes between these images (SARDI-BoM 2018 – eSA Marine website).

SST Western Australia and East Coast:

The recent sea surface temperatures of regions adjacent to Western Australia and the East Coast of Australia are shown in Figure 10. Note that the temperature scales are different between these 2 areas – WA is 13-32°C and NSW 12-28°C.

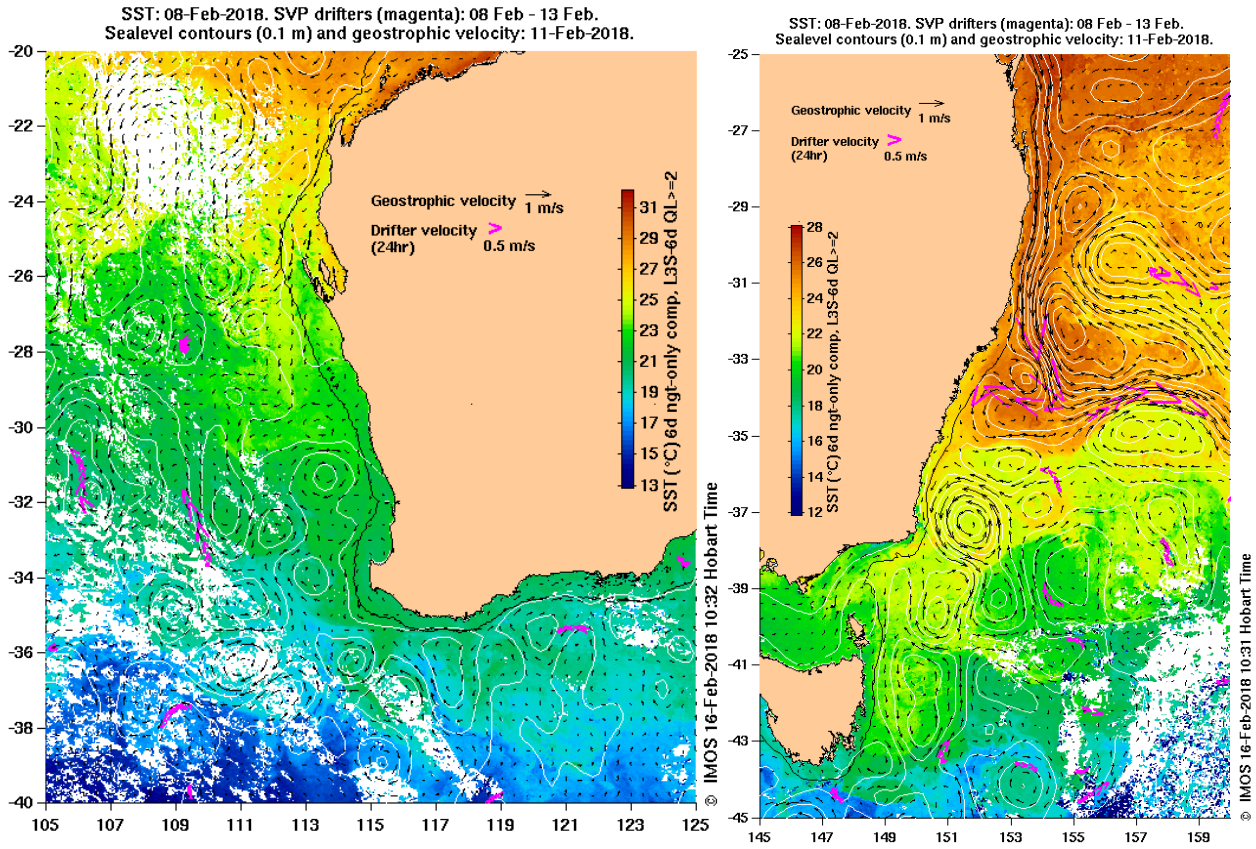

Figure 10: Snap shot of SST adjacent to Western Australia and along the East Coast (IMOS 2018)

Chlorophyll / Productivity Levels:

Low cloud is continuing to interfere with this satellites' view; the best recent image is shown in Figure 11. Conditions continue to be highly suited to SBT over much of the GAB; water remains dirtier in the immediate vicinity of regions experiencing upwelling. The area historically important for SBT fishing has cleared over the past week and now resemble conditions more suited to SBT.

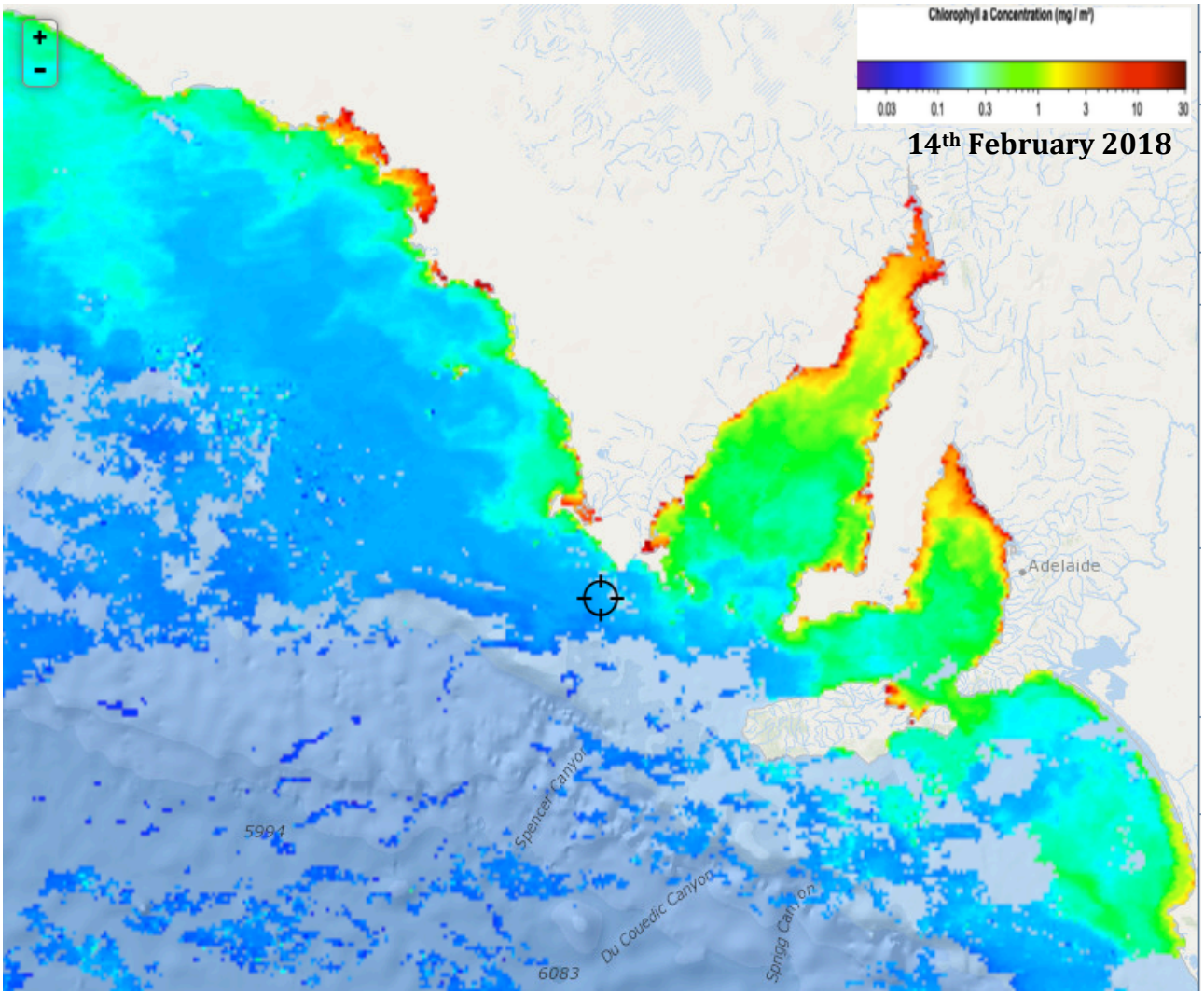

Figure 11: Chlorophyll plot from the Great Australian Bight taken on 14th February 2018, the grey areas have no readings due to cloud cover (FishTrack 2018).

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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