

Climate and Oceanographic Summary, Great Australian Bight 2019 - 9

Kirsten Rough – 29th January 2019

Please find below the latest update for recent and expected conditions for the 2019-fishing season. Please don't hesitate to call or email if there are any questions, contact details and links to the various websites used are listed at the end.

Summary:

Hot weather continues to contribute to warming over a broad area of the GAB sea surface. Suitable surface temperatures extend well south of the shelf break and forecasts suggest this will be the situation for the remainder of the fishing season.

The upwelling continues to be an obvious feature at the seafloor this season especially in the Kangaroo Island Pool area to the south of Eyre Peninsula. These conditions are perfect for stimulating life throughout the water column.

I'd be very keen to receive photos or samples of the small creatures that can be attracted to the surface with deck lights at night.

Long-term Forecasts of Sea Surface Temperature (SST):

The sea surface temperature and SBT habitat distribution across the broader area of the GAB over this past 2 weeks are shown in Figure 1. In these images green and bone/tan colour denotes areas 'highly suitable' for SBT.

Forecasts for the remainder of the fishing season are shown in Figure 2. Interestingly for the first time since this website was started in 2013, the shelf area to the west of the Head of the Bight has reduced attractiveness because the water is too hot. The green and tan below Eyre Peninsula and Kangaroo Island suggests SBT will remain in the region for the remainder of the fishing period.

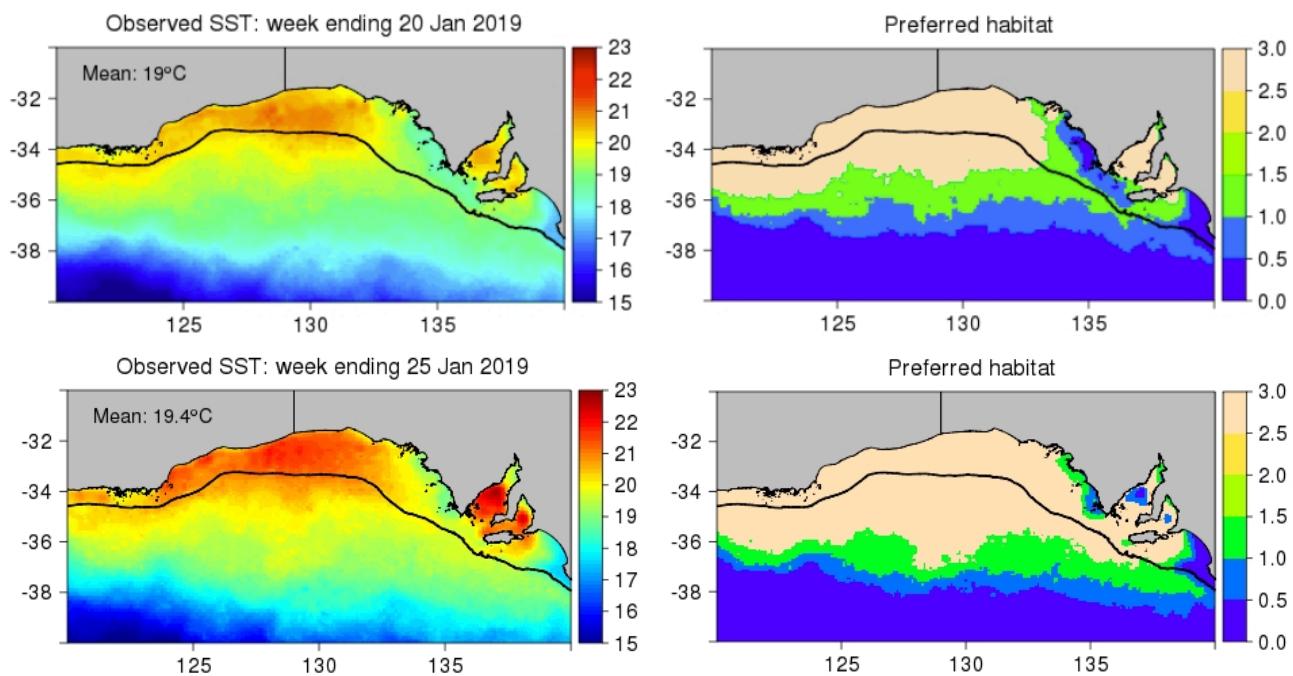


Figure 1: Now-cast of the sea surface temperature and SBT habitat situation over the week up to 20th January 2019 (top) and this week up to the 27th January 2019 (bottom) (CSIRO 2019)

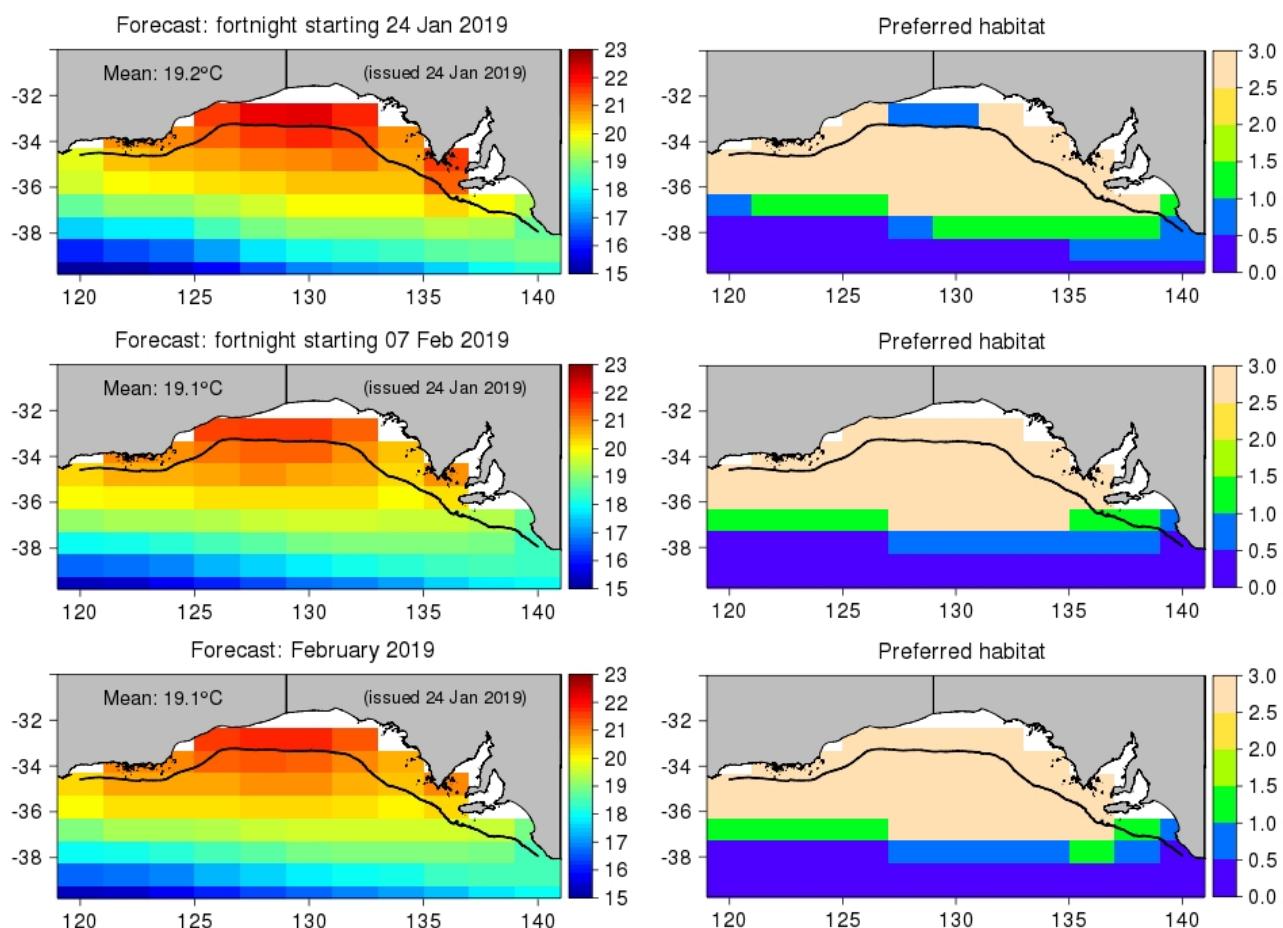


Figure 2: Longer term forecast of sea surface temperature and habitat distribution for end of January and beginning of February (top); middle of February (middle); and last week Feb and into March (bottom). (CSIRO 2019)

GAB Sea Surface Temperature (SST):

The situation across the broader area of the GAB over the past week is shown in Figure 3. This year continues to have less input from the Leeuwin Current rounding the southwest corner of WA. But there continues to be a very broad area of upper layer or surface warmth across the area including crossing the border into Bass Strait.

The most recent fine-scale Sea Surface Temperature image clearly shows a very large area of the shelf and beyond at or exceeding 20°C. The Sea Floor Temperature image from the same date and time shows cold water upwelled from the deep Southern Ocean basin continues to sit along the sea floor of a large area of the shelf, particularly noticeable in the Kangaroo Island Pool area below Eyre Peninsula and extending below Kangaroo Island (Figure 4).

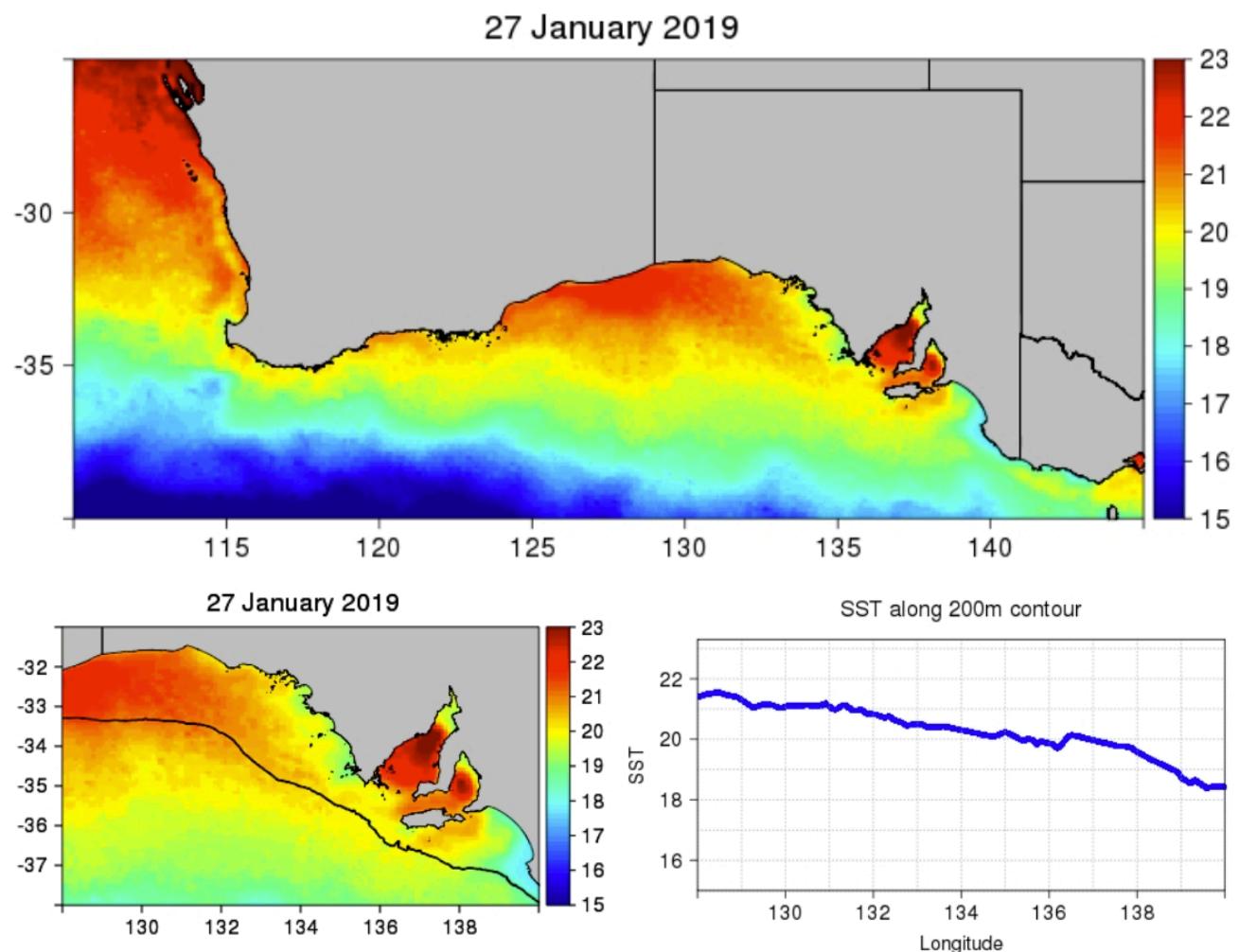


Figure 3: GAB Sea Surface Temperatures for the 3-day period centered around the 27th January 2019, for southern Australia (top) and between longitudes 128° to 140° (bottom). In these images aqua to orange are highly suited to SBT (CSIRO 2019 - GAB Forecasting Website).

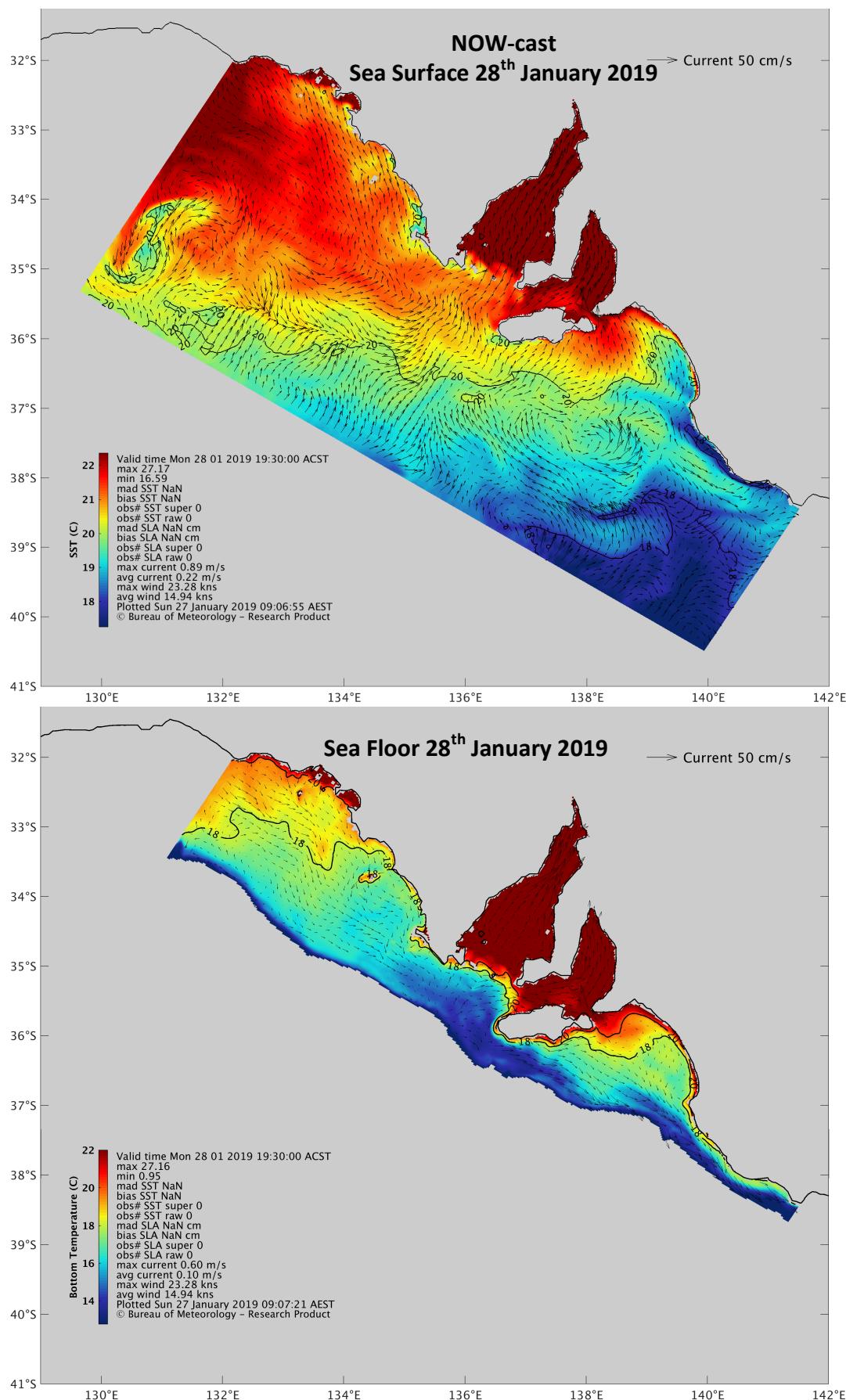


Figure 4: Fine scale SEA SURFACE (Top) and SEA FLOOR (Bottom) Temperature and local currents on the 28th January 2019. The 18°C and the 20°C temperature contours are marked; please check the colour scale on each image for the ACTUAL temperatures that various colours represent (SARDI-BoM 2019)

Chlorophyll/ Productivity levels:

Clear skies have given good satellite coverage of water quality across the broader GAB area (Figure 5). The larger area of the shelf and beyond the shelf-break has productivity levels perfect for tuna.

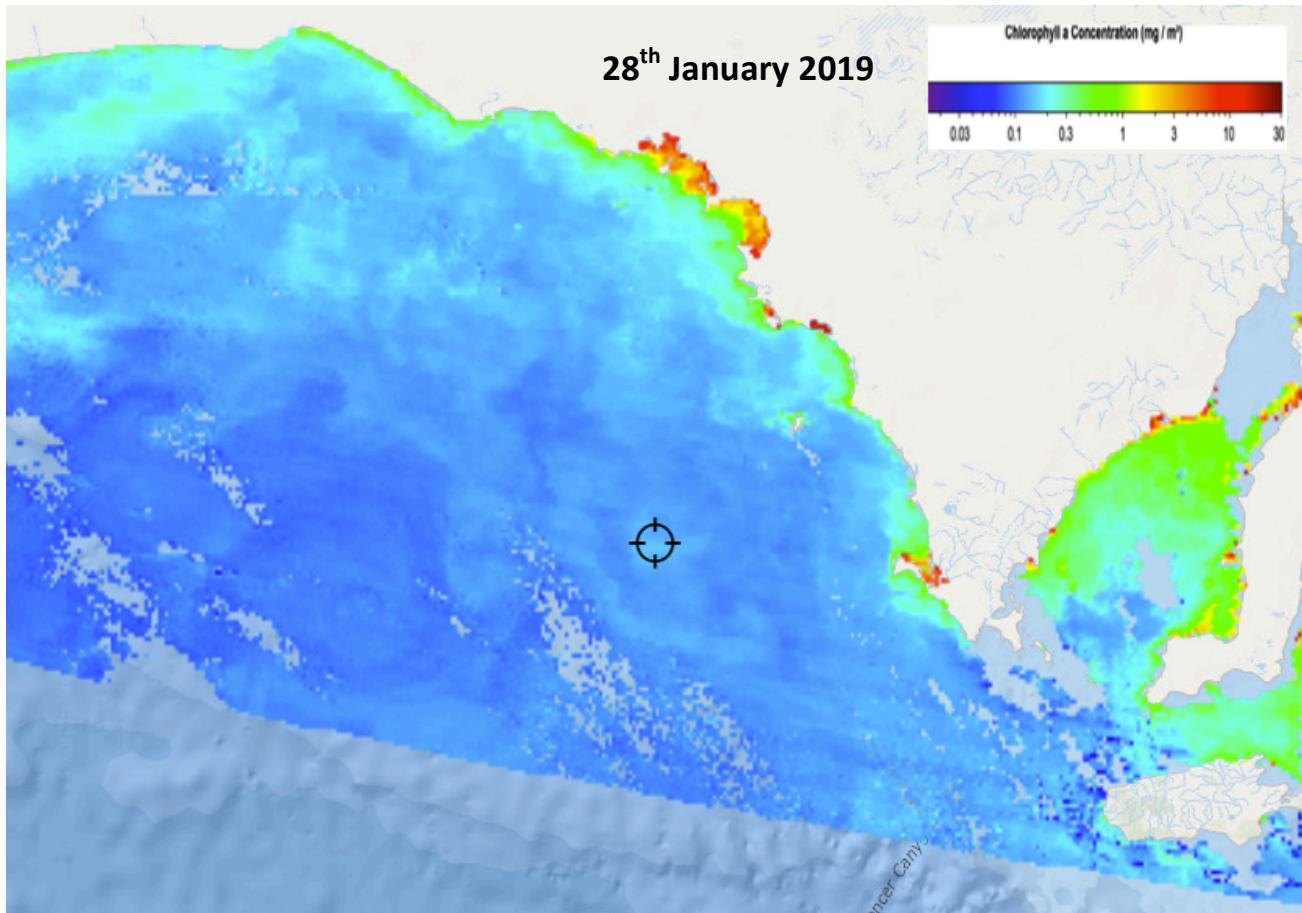


Figure 5: Chlorophyll plot covering the area from near the WA/SA border to eastern Kangaroo Island taken on the 28th January 2019. The cursor is located at 34°23'S 133°31'E, towards the eastern extremity of the historic fishing area. Pale blue-grey areas have no readings due to cloud cover or not coverage in the satellite pass. (FishTrack 2019)

Whales:

Whales continue to be a significant feature of the GAB through this fishing season. Blue whale numbers now exceed the previous highest recorded from the area, which was 2005. The fact that the Blue whales have not followed their typical migration to the South East by this stage of the season as well as the colour of their faeces suggests there is an abundance of food down through the water column (although not krill which is more commonly part of their diet). Blue whale mating behavior has also been observed.

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

eSA Marine (SARDI BoM): http://pir.sa.gov.au/research/esa_marine/sarom

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

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