

Oceanographic Summary, Great Australian Bight 2016 - 10

Kirsten Rough – 3rd January 2016

Please find following the latest update for recent and expected oceanic conditions for the 2016 fishing and aerial survey season.

Summary:

The sea temperatures of the GAB area continue to warm generally, water of suitable temperature occurs over a wide area with localised hotter spots below Eyre Peninsula and in the Sanders Banks region.

Upwelling was visible on satellite images along the coastal area adjacent to Robe today, with sea surface temperatures of 13 to 14°C. The coastal fringe of lower and western Eyre Peninsula also has cooler water (16°C), but at this stage this does not extend much beyond Elliston.

GAB Sea Surface Temperature (SST):

The GAB area generally continues to warm, and upwelling is influencing sea surface temperatures along the western coastal fringe Eyre Peninsula and in the South East of SA. Plots over the previous 2-weeks are shown in Figure 1 (satellite image on the left and the temperature along the shelf break in the corresponding graph on the right).

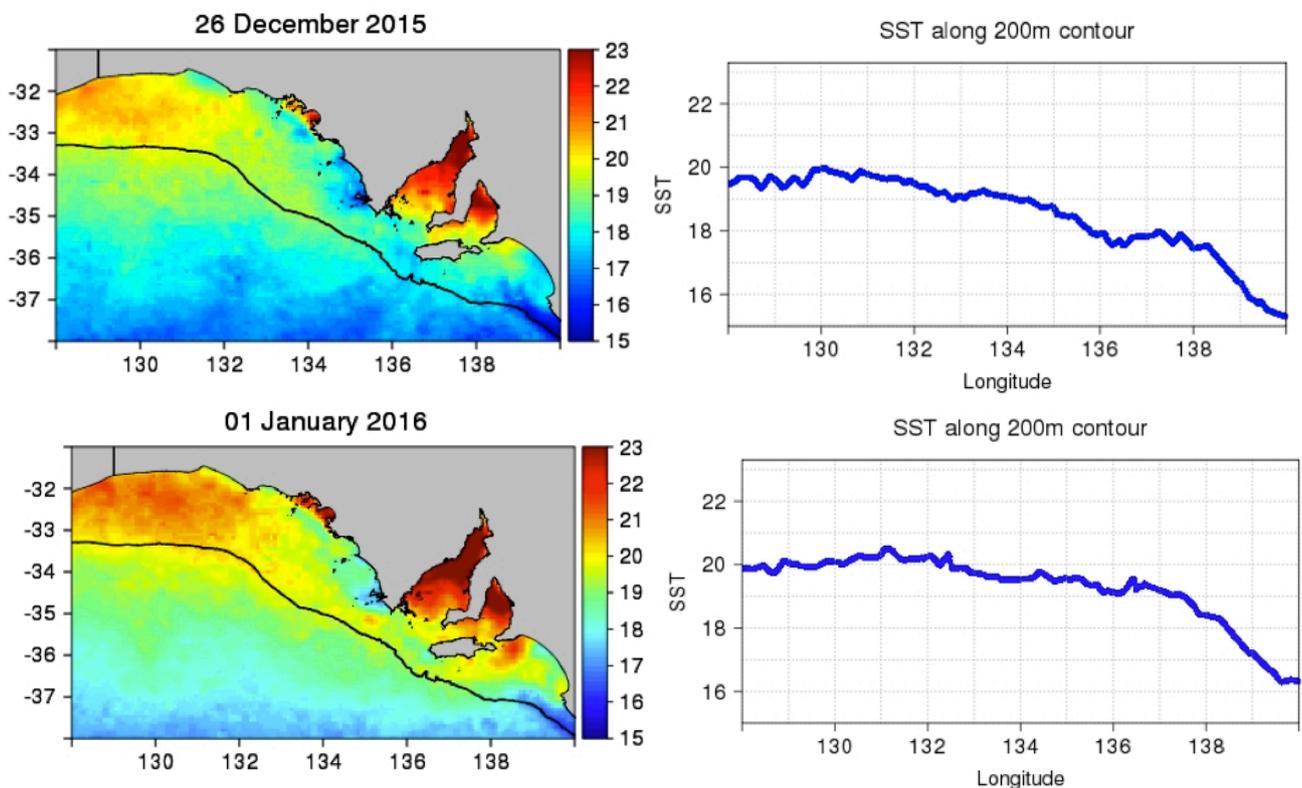


Figure 1: Snapshots of sea surface temperatures across the Eastern GAB over the past 2 weeks, satellite image on left and graph of temperature along the shelf break (black line) on the right (CSIRO 2015).

Specific Sea Surface Temperatures at some of the key fishing locations historically, and from recent years are detailed in Table 1 and shown in Figure 2. The clear still hot days are likely contributing to the marked temperature increases at all locations compared to those reported last week.

Table 1: Sea Surface Temperature for 30th December 2015, at some important historic and recent catching areas.

131°00'E 33°05'S = 22.0°C	132°00'E 33°23'S = 21.7°C
133°00'E 34°05'S = 21.3°C	134°00'E 34°15'S = 22.7°C
Yatala Reef 21.4°C	Cannan Reef 21.0°C
SW Rocky Island 21.7°C	Cabbage Patch area 20.3°C
SW Cape de Cudiac 19.3°C	Young Rocks area 20.7°C
SE Pelorus Rocks 18.5°C	Sanders Banks area 20.6°C

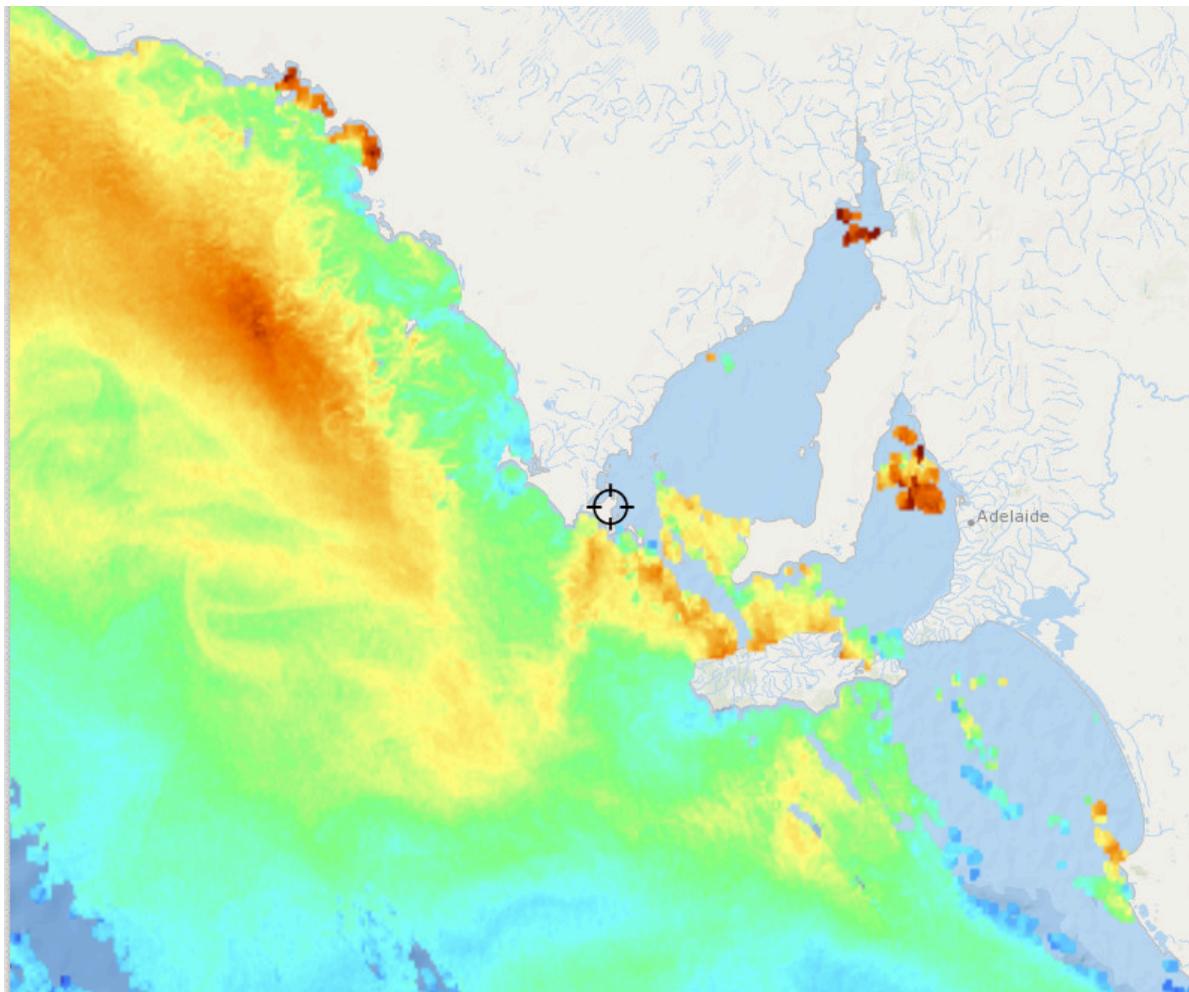


Figure 2: A satellite image from the 30th December 2015 showing an area extending from the Head of the Bight to the South East of SA (note the areas with no colour are obscured by cloud) (FishTrack 2015).

SBT Habitat:

From a habitat perspective, how the situation now compares to a similar point in time last season can be seen in Figure 3; where the top image is sea temperature on left and preferred habitat on the right leading into the 2015-fishing season; the lower image is the past week leading into the 2016-fishing season. The area of warmth generally across the western and central GAB extends further to the east than for the same point in time coming into the previous season.

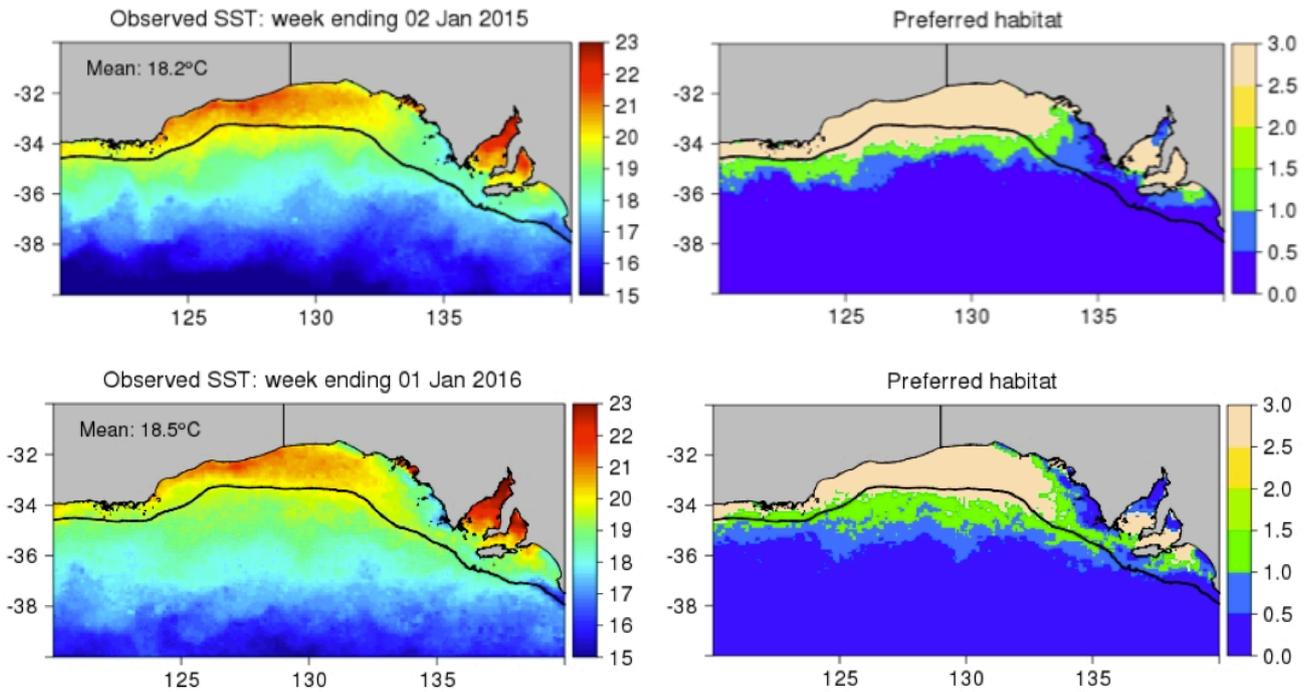


Figure 3: Comparison of SST and preferred habitat distribution for this point in time coming into the last season (top) and the situation now (bottom image) (CSIRO 2015; 2016).

SST and Habitat Forecasts

The medium and longer-term forecasts of conditions in the GAB can be seen in Figure 4. In the habitat forecast images (on the right) the areas at or above 1 (green to skin colour) are more preferred habitat for SBT.

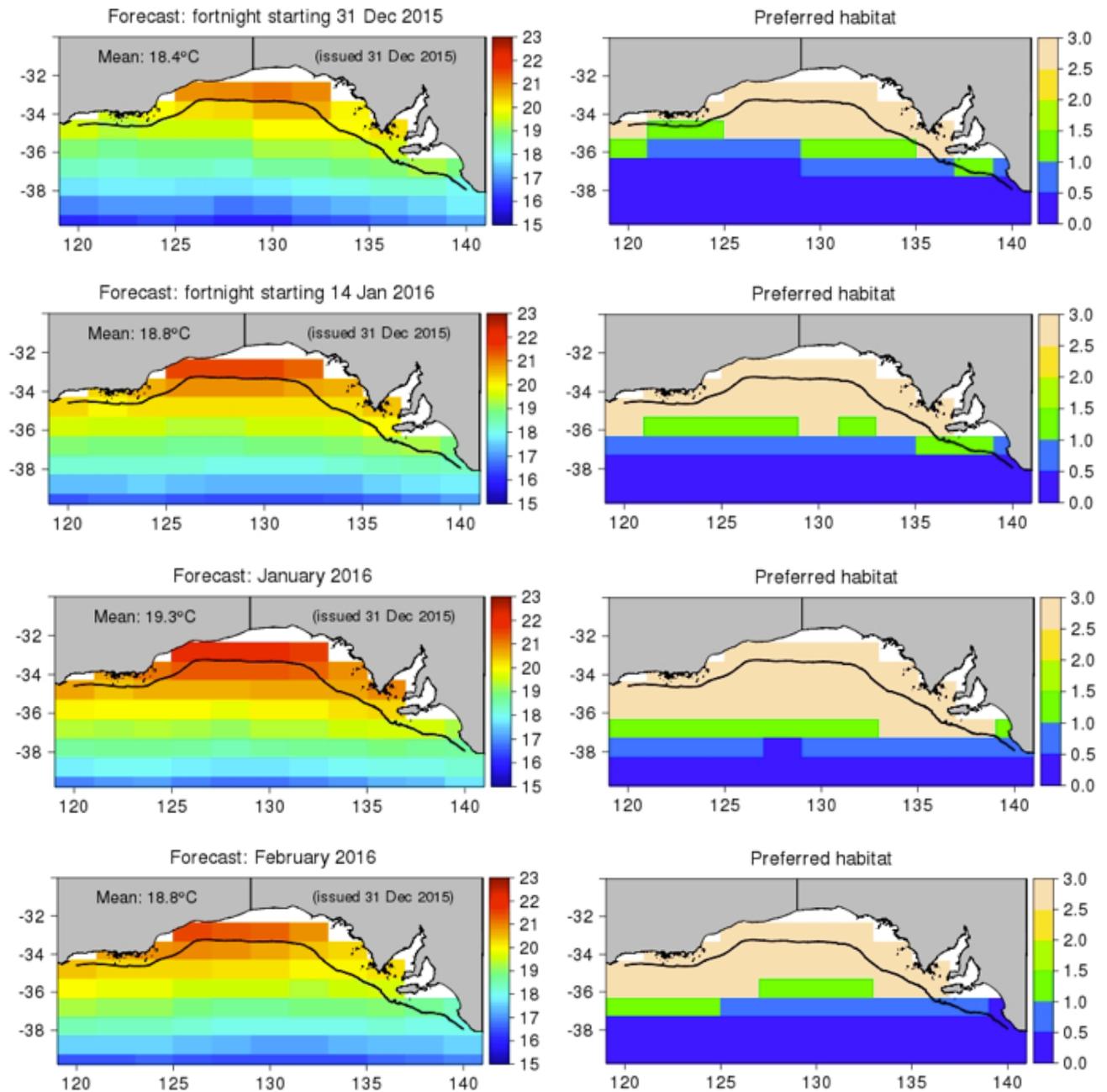


Figure 4: SBT Habitat forecasts issued on the 31st December for the likely conditions for the next 2 fortnightly time periods; and the 2 months beyond that, i.e. starting end of January and end of February (CSIRO 2015).

Chlorophyll / Productivity:

The most recent clear satellite image of chlorophyll distribution across fishing areas of past and recent years was from the 30th December 2015 (Figure 5). Areas of what would appear as “dirty water” (from vessels and planes) are located through the upwelling and coastal areas along the western fringe of Eyre Peninsula.

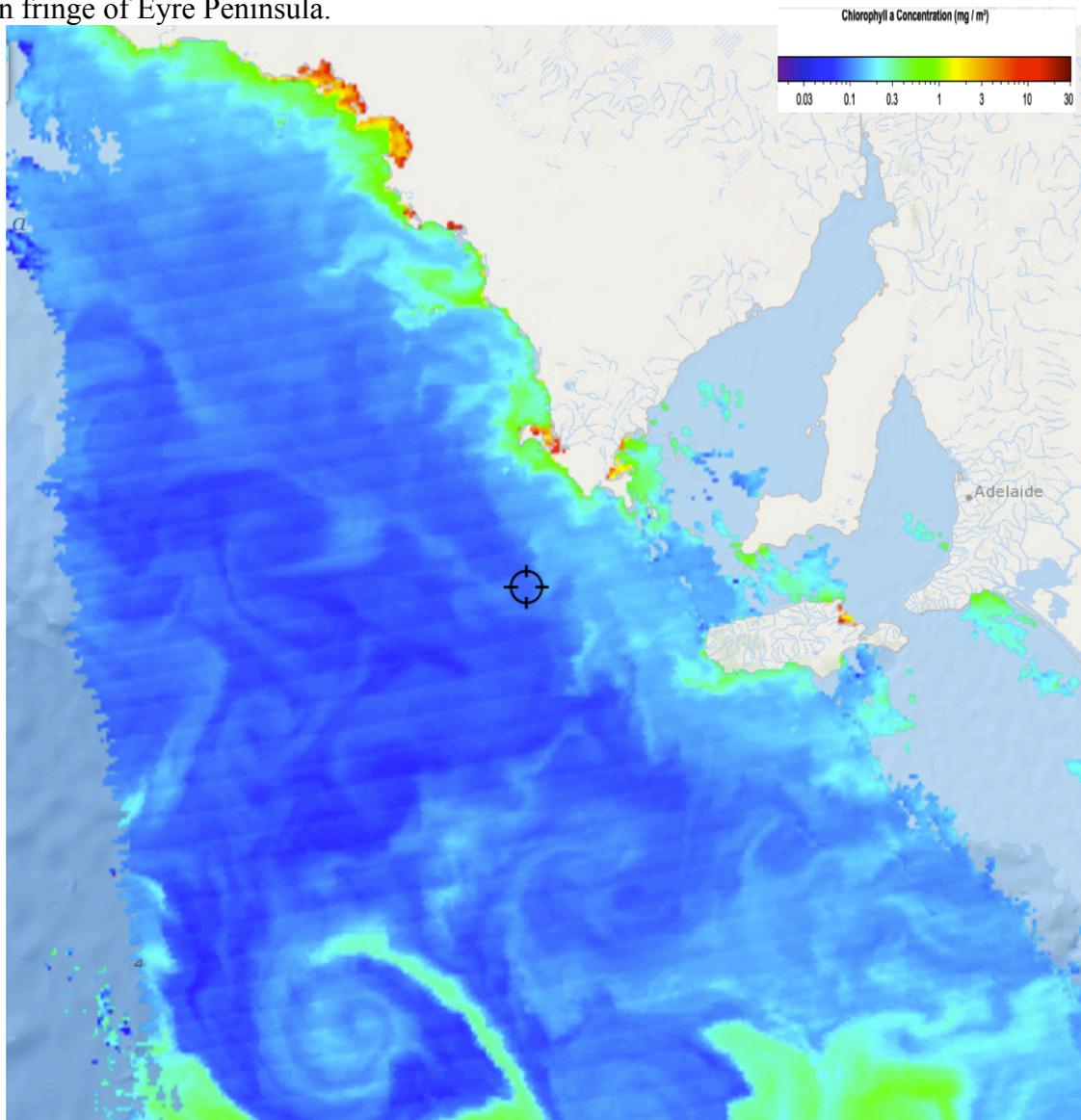


Figure 5: Processed satellite image of chlorophyll taken on the 30th December 2015 (FishTrack 2016).