

# Oceanographic Summary, Great Australian Bight 2016 - 11

Kirsten Rough – 8<sup>th</sup> 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, particularly along the shelf break. Sea surface temperatures are fluctuating considerably from week to week depending on the prevailing weather patterns.

Upwelling is a particular feature through this week, with sea surface temperatures along the South East “Bonney Coast” around 13 to 14°C. The coastal fringe of lower and western Eyre Peninsula has water around 15-16°C extending to at least Streaky Bay, and cooler water continues westwards along the coast beyond the Head of the Bight.

The CSIRO Aerial Survey will get underway as soon as weather conditions are within survey specifications. A daily summary of sightings on days flown will be emailed as per previous years. Contact Jess Farley for specific details eg operating conditions etc: [Jessica.Farley@csiro.au](mailto:Jessica.Farley@csiro.au)

## GAB Sea Surface Temperature (SST):

The situation through the month of December for 2015 and the previous 5 years is shown in Figure 1. Over the past week, the GAB area generally continues to warm, particularly along the shelf break, and local weather patterns are contributing to marked differences in conditions from week to week. Plots of SST over the previous 2-weeks are shown in Figure 2 (satellite image on the left and the temperature along the shelf break in the corresponding graph on the right). Upwelling continues to influence sea surface temperatures along the western coastal fringe Eyre Peninsula and in the South East of SA (Figure 3). Sea surface temperatures in the upwelling zone east of longitude 138°E are currently around 13°C; this is cooler than those recorded through recent years.

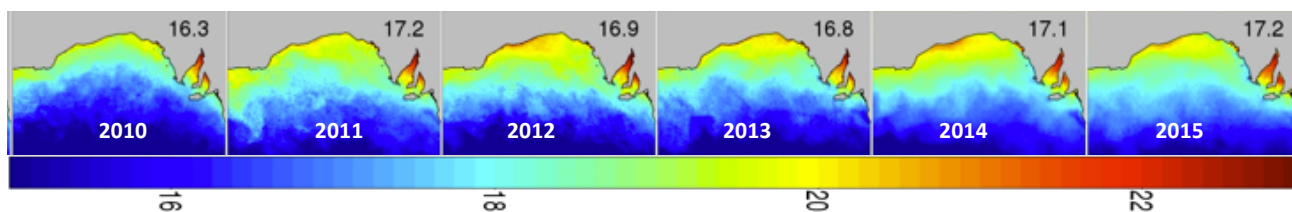


Figure 1: GAB sea surface temperatures averaged through the month of December for 2015 and the previous 5 years (CSIRO 2015).

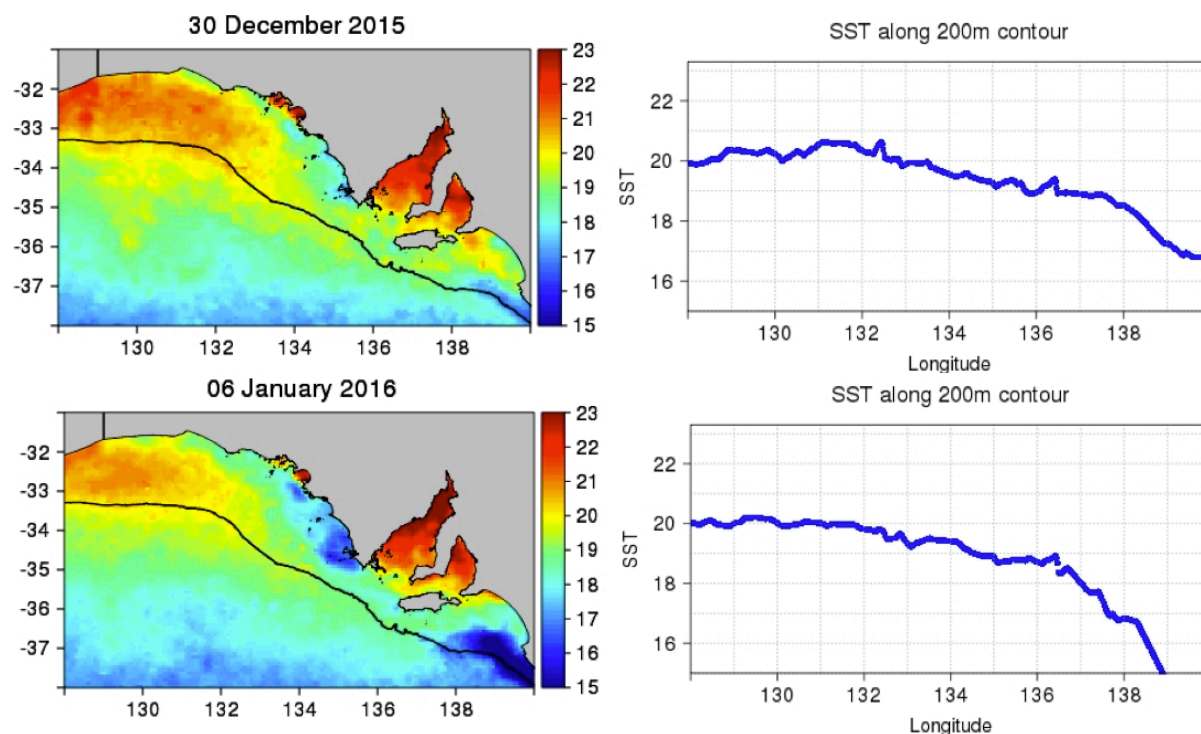


Figure 2: Snapshots of sea surface temperatures across the Eastern GAB over the past 2 weeks, satellite image on left and graph of temperature along the shelf break (black line) on the right (CSIRO 2015).

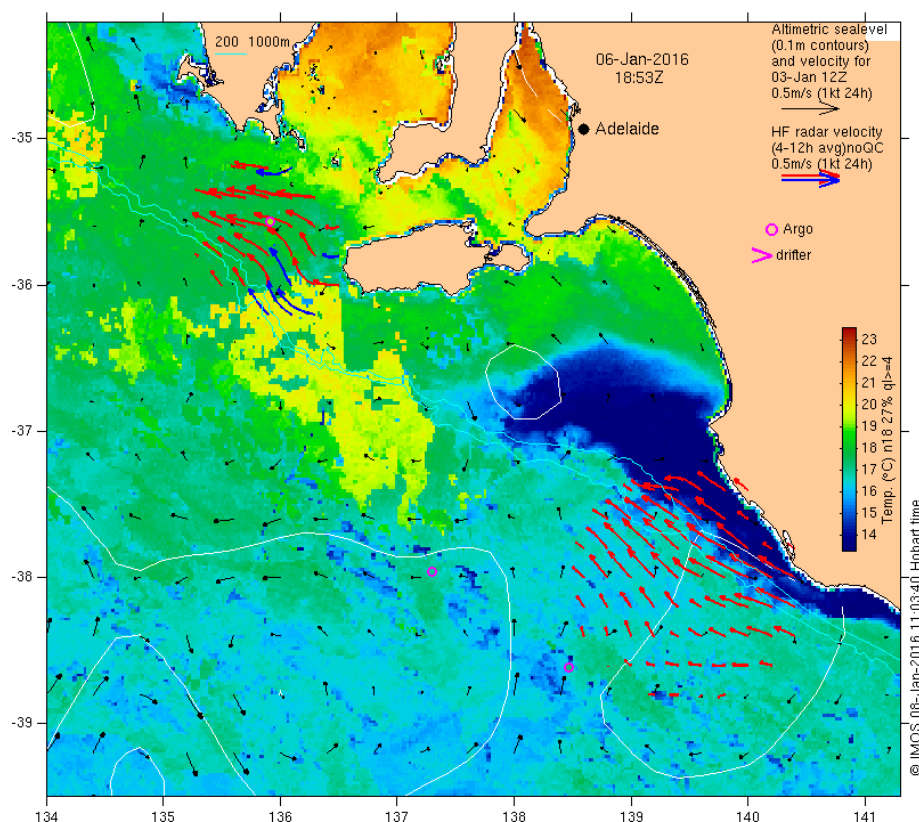


Figure 3: Surface temperature plot showing the intensity of the upwelling and the arrows show the direction of surface water currents; note the yellow blob to the south-southwest of KI is from cloud interference and is NOT a true reflection of water temperature (IMOS 2016).

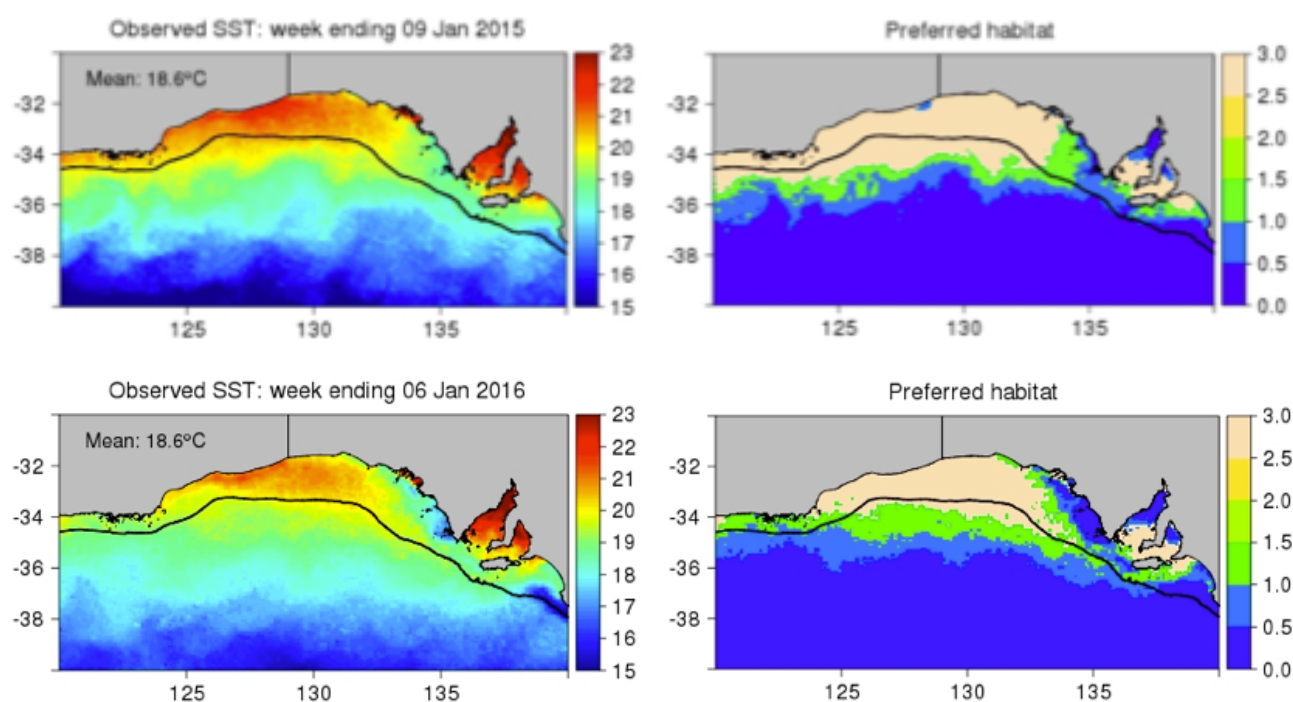
Specific Sea Surface Temperatures at some of the key fishing locations historically, and from recent years are detailed in Table 1.

**Table 1: Sea Surface Temperature for 7<sup>th</sup> January 2016, at some important historic and recent catching areas.**

131°00'E 33°05'S = 19.6°C	132°00'E 33°23'S = 19.2°C
133°00'E 34°05'S = 19.1°C	134°00'E 34°15'S = 18.5°C
Yatala Reef 18.7°C	Cannan Reef 19.0°C
SW Rocky Island 18.5°C	Cabbage Patch area 18.1°C
SW Cape de Cudiac 18.2°C	Young Rocks area 18.9°C
SE Pelorus Rocks 18.9°C	Sanders Banks area 18.8°C

### **SBT Habitat:**

From a habitat perspective, how the situation now compares to a similar point in time last season can be seen in Figure 4; 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 western and central GAB was generally warmer at a similar point in time last season. This season the warmth is distributed over a wider area along the shelf break, and the upwelling is much more pronounced.



**Figure 4: 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).**

## **Chlorophyll / Productivity:**

The most recent clear satellite image of chlorophyll distribution across fishing areas of past and recent years was from the 6<sup>th</sup> January 2016 (Figure 5). The influence of the upwelling is clearly seen with elevated readings particularly in the South East and coastal areas along the western fringe of Eyre Peninsula.

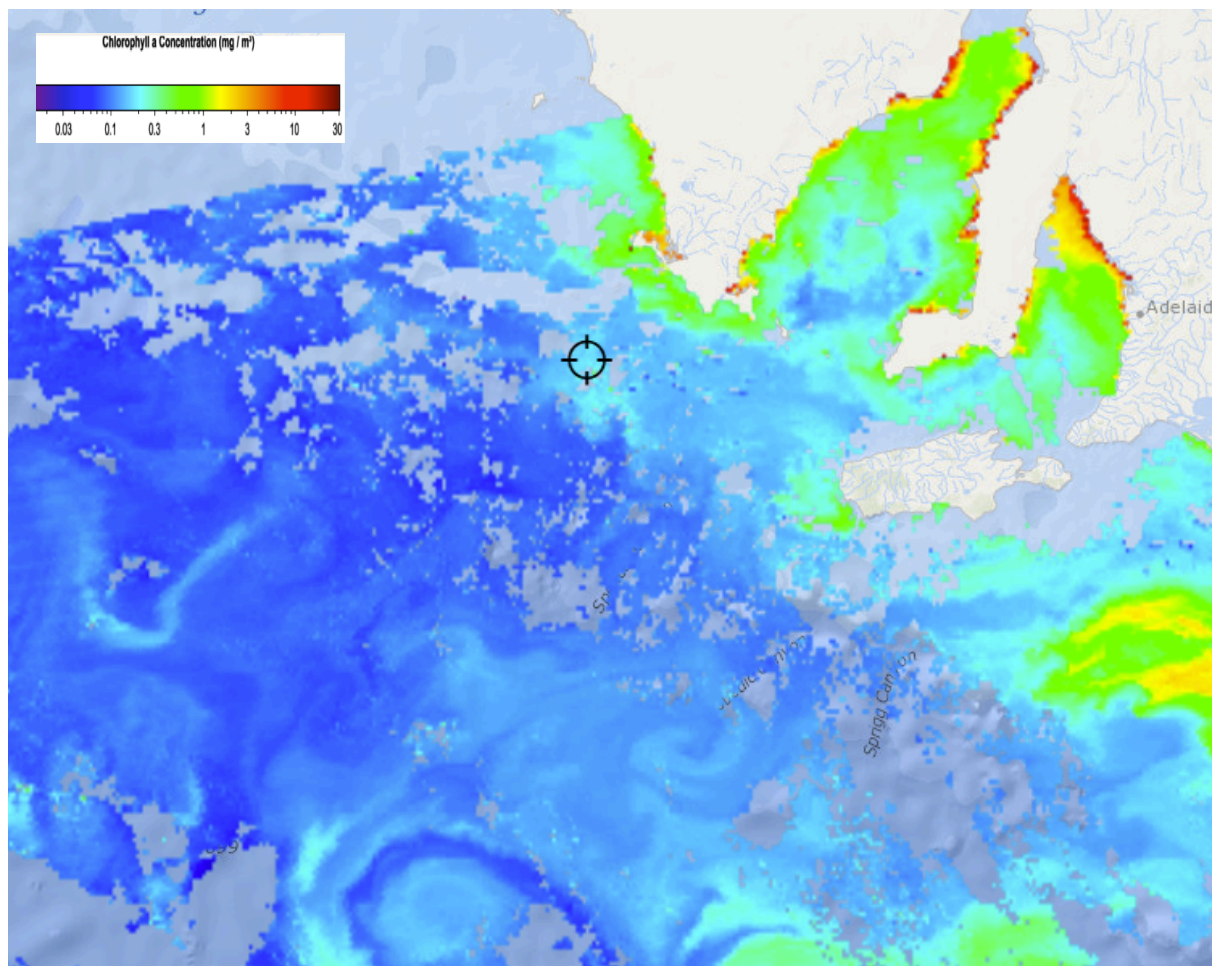


Figure 5: Processed satellite image of chlorophyll taken on the 6<sup>th</sup> January 2016 (FishTrack 2016).

### **Useful Websites:**

<http://www.bom.gov.au>

<http://www.csiro.au>

<http://www.fishtrack.com>

<http://www.imos.org.au>

<http://www.cmar.csiro.au/gab-forecasts/index.html>

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