

# Climate and Oceanographic Summary, Great Australian Bight 2014 - 14

## Kirsten Rough – 5<sup>th</sup> January 2014

This is the fourteenth 2014-season update of sea surface temperature, ocean currents and chlorophyll distribution in the Great Australian Bight (GAB). If anyone has any questions or further suggestions please call or email (details appear at the end of this document).

### Summary:

The general GAB sea temperatures remain between 17 and 21°C. Cold water from upwellings continues to keep temperatures cooler along the coastal fringe of Eyre Peninsula, than they are along the shelf break.

The effect of the upwelling and the influence of the Southern Ocean climate system this season is clearly seen in the comparison of satellite images (figure 1) included in this update.

This week January 2013 the GAB is very warm across the entire shelf and eastwards into Victorian waters and the warm water extends well south of the shelf-break.

This week January 2014 most of the GAB is within a suitable temperature range for our size SBT, but generally temperatures are not as hot as last year, and they aren't over such a vast area. Warm water suitable for SBT now extends along the shelf-break past longitude 136°E, and there are also isolated pockets to the south and southeast of Kangaroo Island (KI).

A band of 17 - 18°C water extends along the edge of the shelf from below KI to east of the Victorian border.

### Actual Sea Surface Temperature (SST) this past week:

- Western GAB at 130°E 33°S is 19.8°C
- Central GAB at 133°E 34°S is 19.1°C
- Eastern GAB at 135°E 35°S is 17.8°C

The Leeuwin Current (LC) continues to have very little influence on the GAB fishing area.

The Southern Ocean continues to be the main influence on weather and ocean conditions through this fishing season.

The next full moon is on the 18<sup>th</sup> January.

### GAB Sea Surface Temperature (SST):

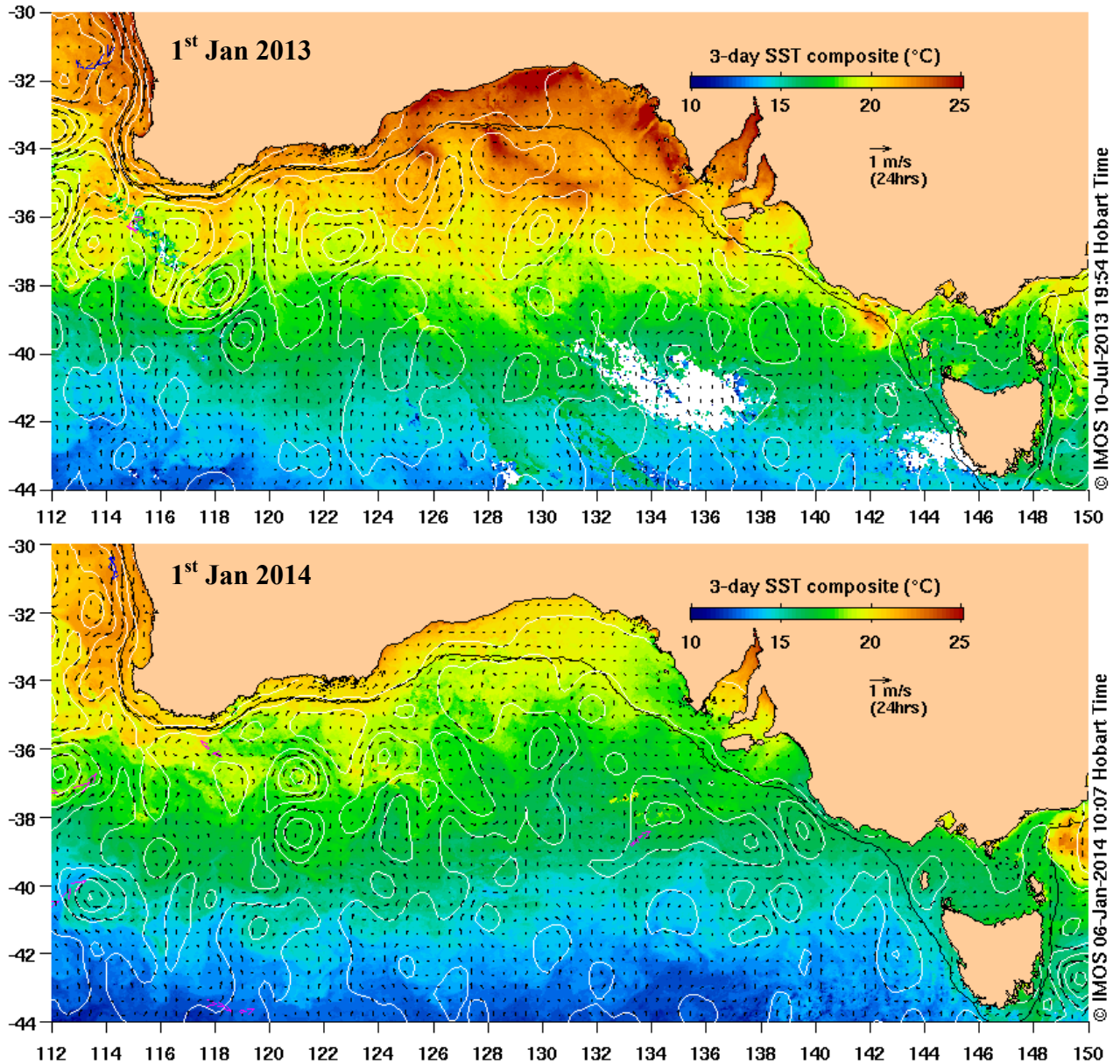
A snapshot across southern Australia to compare this week of the 2013 and 2014 fishing seasons can be seen in Figure 1. At this point in time (2014) the Bight is generally cooler than last year, the area of warmer water is smaller and is being held in position through the influence of both the upwelling, and the Southern Ocean climate system.

Temperatures range from 17 to 21°C.

The SST's at the specific sites routinely monitored across the fishing grounds, for the 5<sup>th</sup> January 2014 are shown in Table 1. At these positions the temperatures are similar to what they were at this time last year; I will include some graphs to compare the situation in the next issue.

**Table 1: Sea Surface Temperatures at specific locations along the shelf and shelf break of the Great Australian Bight, co-ordinates as degrees, minutes, seconds (FishTrack 2013).**

130°E 33°S is 19.8°C	131°E 32°S is 20.3°C	131°E 33°S is 19.9°C	132°E 33°30'S is 19.4°C
133°E 34°S is 19.1°C	134°E 34°30'S is 19.1°C	135°E 35°S is 17.8°C	136°E 35°30'S is 17.5°C



**Figure 1: Comparison of Sea Surface Temperature and currents across the Bight at the 1<sup>st</sup> January 2013 (top) and 2014 (bottom) (source: IMOS 2014).**

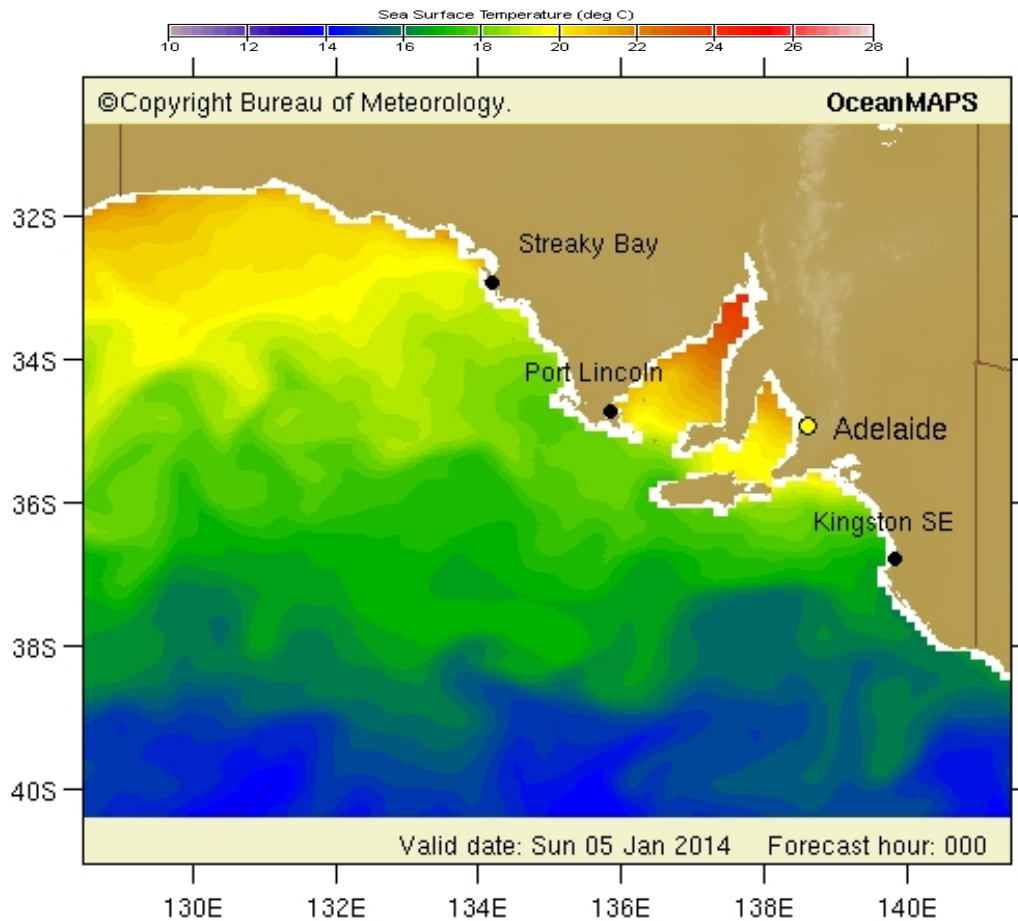


Figure 2: South Australian sea surface temperature from the Bureau of Meteorology website for the 3 days to the 5<sup>th</sup> January 2014 (source: Bureau of Meteorology 2013; <http://www.bom.gov.au>).

**Leeuwin Current Temperature:**

Sea surface temperatures and ocean currents around the Western Australian coastline for the 29<sup>th</sup> December 2012 and 2013 are shown below (Figure 3). Still having trouble accessing the satellite data to obtain temperatures at specific locations this week; but there is nothing of immediate concern for us in the area adjacent to Australia.

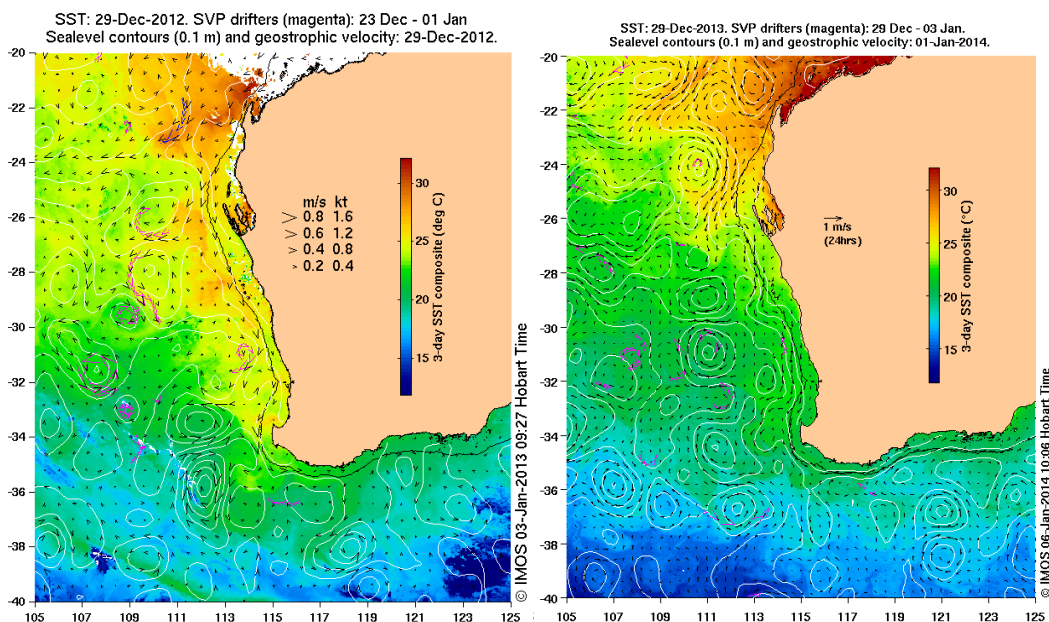


Figure 3: A comparison of the Leeuwin Current sea surface temperature and current speed and direction for the 29<sup>th</sup> December 2012 (left), 2013 (right) (Source: IMOS 2013; <http://www.oceancurrent.imos.org.au>).

### SA Water Currents:

A general plot of where the water currents are moving within the eastern GAB area can be seen in Figure 4 below. Please note that through the last fishing season there were occasions when the currents experienced by vessels were different to those shown in these maps. There is no real time data on water currents available for the areas you fish. Please let me know when these are different to what you are experiencing on the vessel. Specific maps at particular locations can be provided - just contact on the email or numbers detailed at the end of this document.

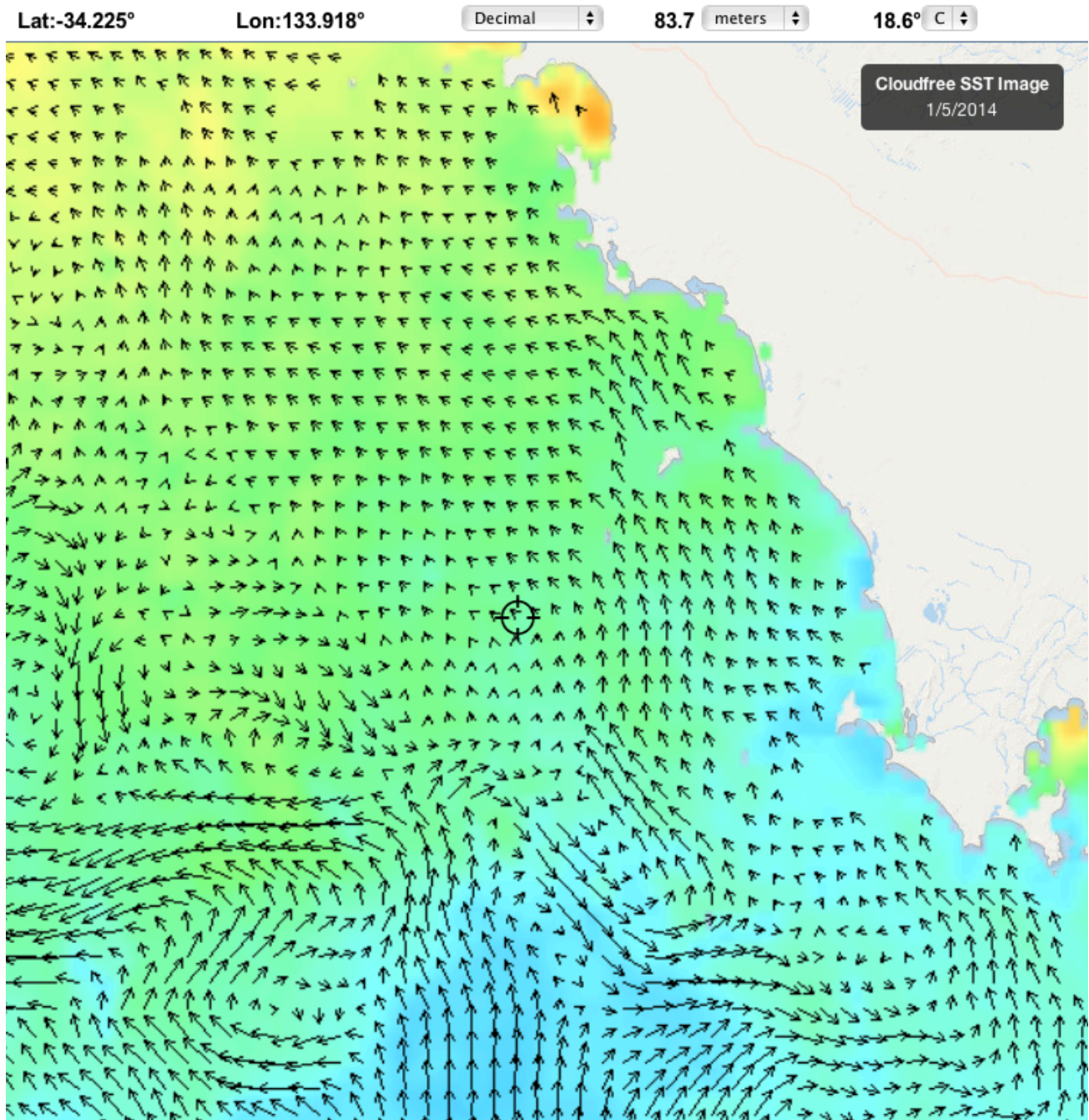


Figure 4: Water currents on the 5th January 2014 (source: <http://www.fishtrack.com>).

### **Chlorophyll / Productivity:**

Cloud cover has blocked the satellite images for most of the past week; the clearest image was taken on the 31<sup>st</sup> December (Figure 5). From what is visible, it appears that productivity remains concentrated at the same locations shown and discussed last week.

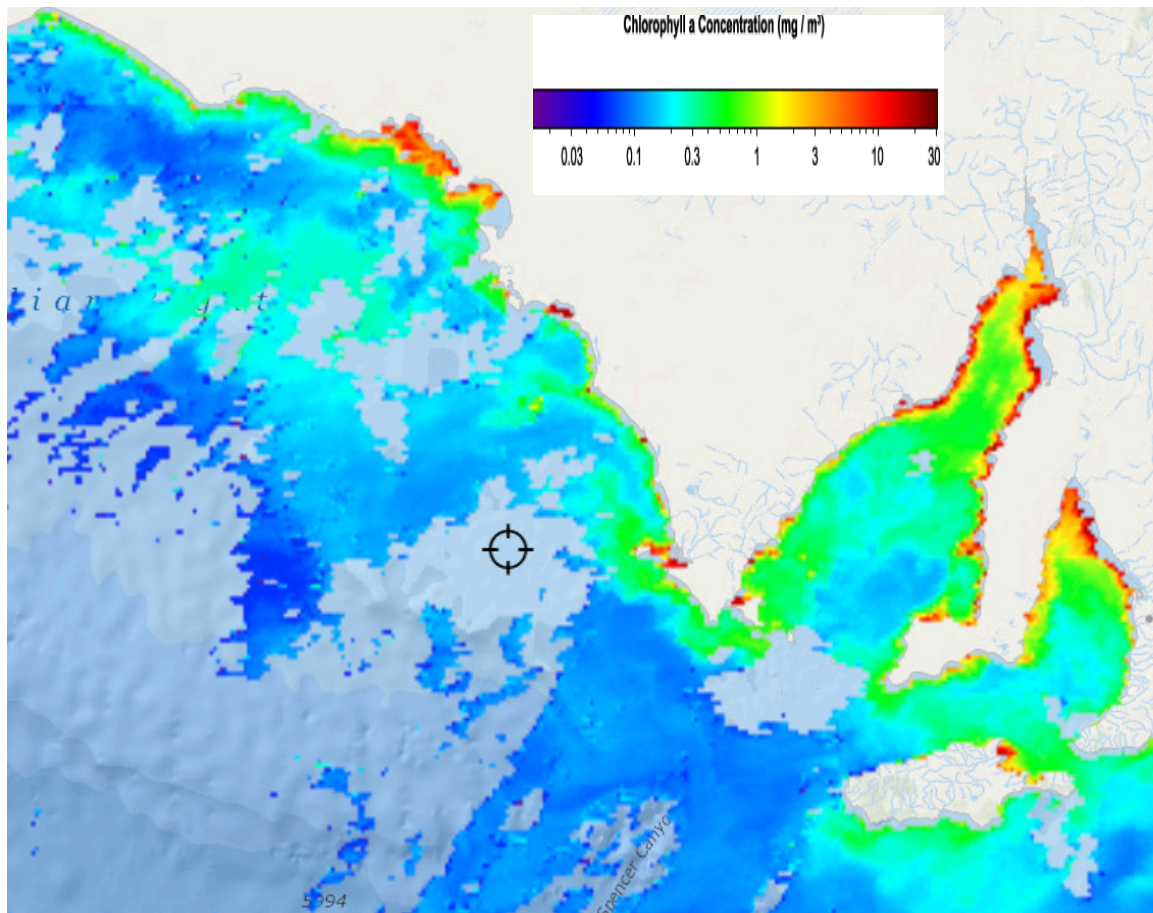


Figure 5: Areas of productivity within the GAB on the 31<sup>st</sup> December 2013 (source: <http://www.fishtrack.com>).

#### **Useful Websites:**

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

<http://www.csiro.au>

<http://www.fishtrack.com>

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

#### **Further details contact:**

Kirsten Rough 0429 833 697

ASBTIA – Research Office

Email: [kirstenrough@bigpond.com](mailto:kirstenrough@bigpond.com)

[SBT\\_Research@bigpond.com](mailto:SBT_Research@bigpond.com)