

Climate and Oceanographic Summary for the Great Australian Bight No. 16

Kirsten Rough – 8th February 2013

This is the sixteenth update of sea surface temperature, ocean currents and chlorophyll distribution. If anyone has any questions or further suggestions please call or email.

Summary:

Sea Surface Temperature (SST) throughout the historic and current fishing areas are generally between 19 to 22°C. This is still generally within the preferred temperature range of our size SBT¹.

Temperature this week in the central western GAB at 131°E 33°S has increased to 21.6°C and temperature in the central east at 133°E 34°S is 20.9°C. Upwelling of cold water onto the shelf continues and is pushing along the coast further to the west. The warm water band along the shelf break continues below Kangaroo Island and extends as far as the SA - Victoria border.

The Leeuwin current continues to show a relatively 'normal' progression along the WA coastline. Actual SST out from Exmouth this week is 31.5°C, passing Cape Leeuwin is 22.4°C and passing Esperance is now 21.2°C.

Current directions at specific locations can be provided on request – call or email if anyone wants anything further on this. A zoomed in map can be generated and sent to you - this will have the orange cursor in the position of your vessel to make it easier to see where the water is moving in relation to where you are.

CSIRO Aerial Survey flew 2 days over the past week. Conditions were cool on one the day in the western sector and SBT sightings were limited (90-tonne). The second day was favourable warm weather and in the eastern sector and in excess of 4000-tonnes was sighted.

Moon Phase: the next full moon is on the 25th February.

Sea Surface Temperature and Ocean Currents:

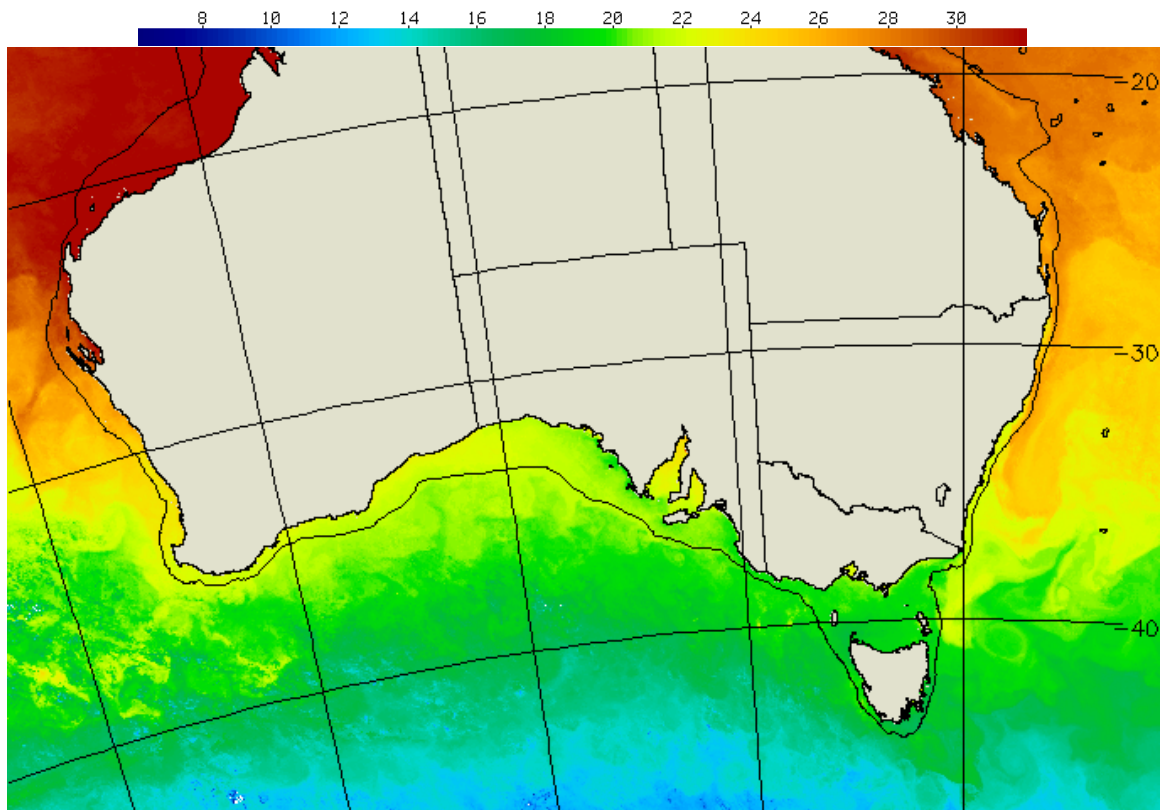
An update of the water temperature across southern Australia and through the fishing grounds to the 7th February 2013 can be seen in Figure 1 and Figure 2. The temperature through the GAB ranges from 19.2 to 21.9°C.

The movement and mixing of water bodies continues over this past week, with warm currents extending along the shelf break to the south of Kangaroo Island and across to the south east coast of SA. Upwelling continues along the west and southern coast of Eyre Peninsula; this cool water continues to hug the coast and extends westward to 130°E (Figure 1).

The SST at a number of specific sites averaged from 2nd to 7th February were obtained from the CSIRO (2013):

130°E 32.5°S is 21.7°C ²	131°E 32°S is 21.6°C	131°E 33°S is 21.6°C	132°E 33.5°S is 21.2°C ²
133°E 34°S is 20.9°C	134°E 34.5°S is 20.8°C ²	135°E 35°S is 21.1°C	135.5°E 35°S is 20.3°C ¹

¹ These co ordinates are Degree Decimal Minutes



Mean SST from 02/02/2013 to 07/02/2013

Copyright 2013, CSIRO MAR, Hobart

Figure 1: Sea Surface Temperature around Australia for the 5 days to 7th February 2013 (source: CSIRO 2013 <http://www.marine.csiro.au>)

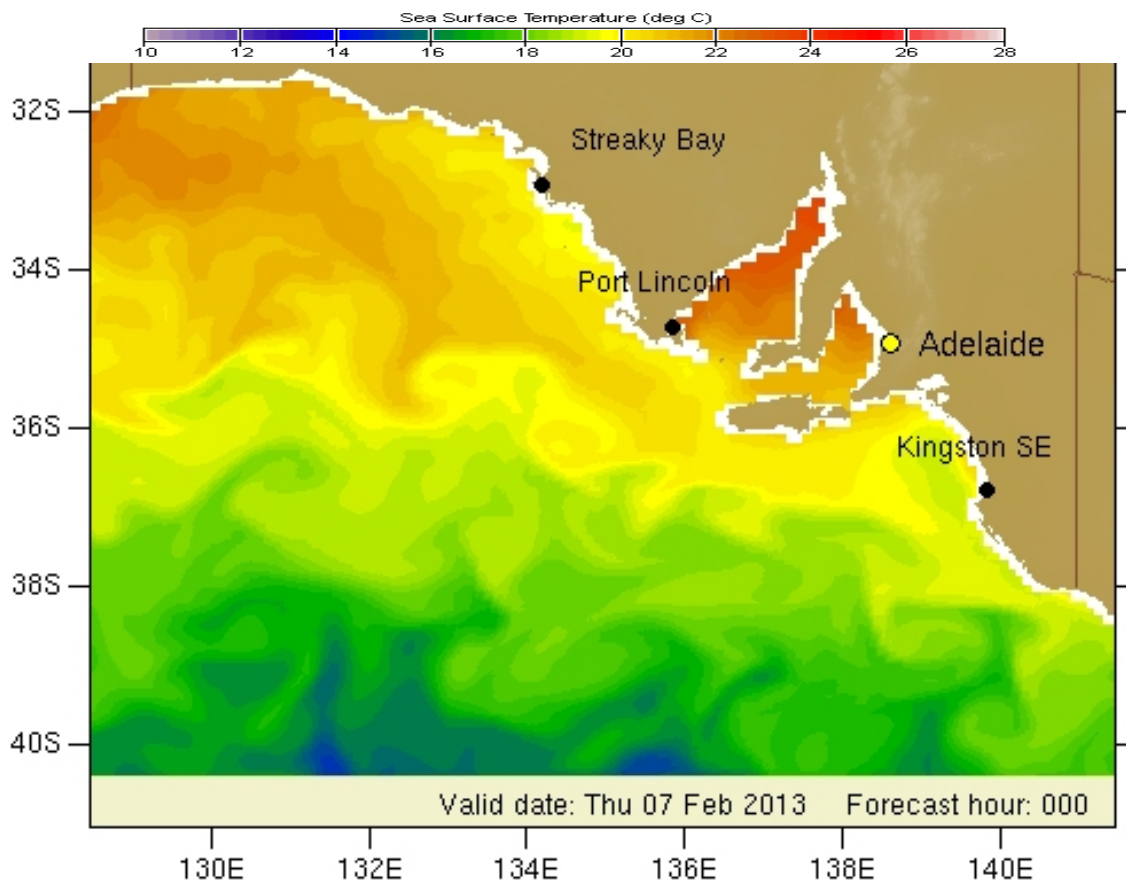


Figure 2: South Australian sea surface temperature and current direction from the Bureau of Meteorology website for the 3 days to the 7th February 2013 (source: Bureau of Meteorology 2013; <http://www.bom.gov.au>).

Leeuwin Current:

The status of sea surface temperature patterns off WA can be seen in Figure 1 above. The actual SST off the coast of North West Cape (Exmouth) is now 31.5°C, out from Cape Inscription (Shark Bay) is 28.3°C, out from Cape Leeuwin (Augusta) is 22.4°C and out from Esperance is 21.2°C (CSIRO 2013). Water derived from a tropical is within the GAB area with reports of tropical jellyfish and algae species from local waters.

GAB Currents:

A general plot of where the water currents are moving within the eastern GAB area can be seen in Figure 3; the position of the orange cursor is 34°35'S 134°47'E. The area covered by the image spans from just south of Streaky Bay to Kangaroo Island. The currents below Eyre Peninsula are pushing more from west to east this week. There continues to be a strong push of water from the south over the canyon system and onto the shelf to the southwest and west of EP. Currents along the west coast of Eyre Peninsula continue to move from the south to the north along the coastal fringe.

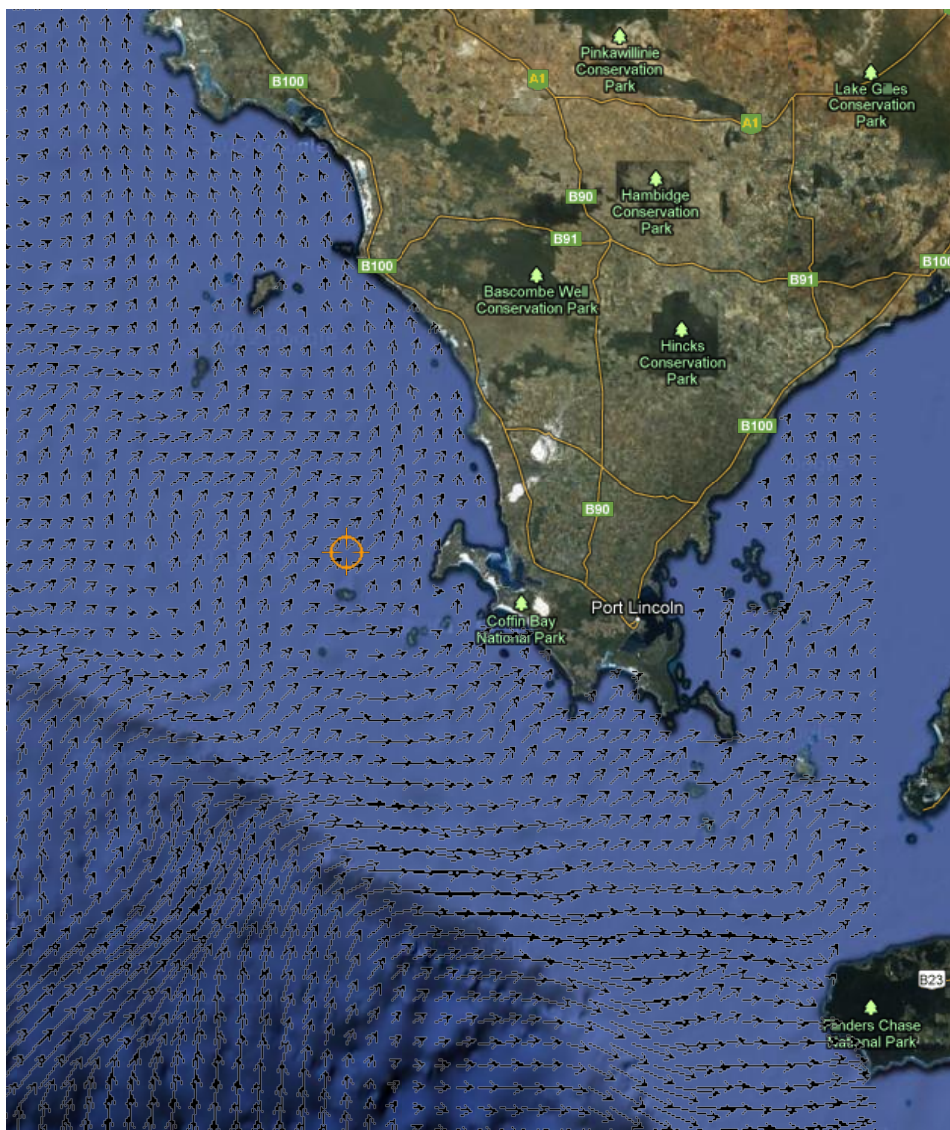


Figure 3: Direction of water movement within the eastern section of the Great Australian Bight, Streaky Bay to Kangaroo Island, on the 5th February 2013 (source: <http://www.fishtrack.com>)

Chlorophyll / Productivity:

The amount of chlorophyll around southern Australia can be seen on the IMOS image (Figure 4), and the GAB area on the 5th February (Figure 5). This shows chlorophyll concentrated in the coastal regions and denser patches within Spencers Gulf. The entire shelf of the GAB has some degree of colour with isolated pockets of clearer areas west of lower Eyre Peninsula and below EP.

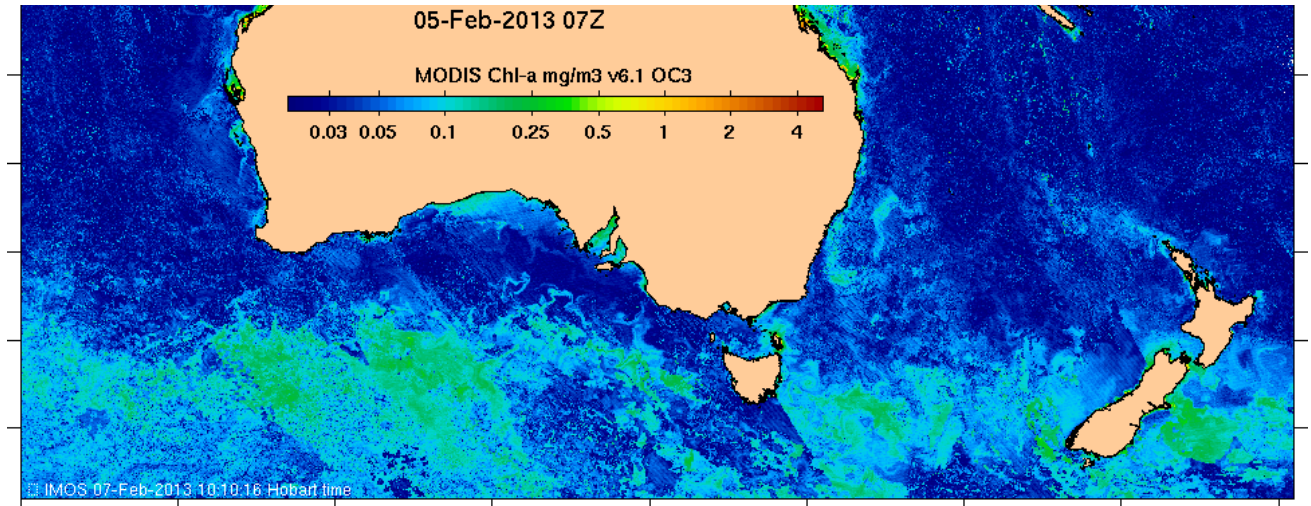


Figure 4: Productivity across southern Australia on the 5th February 2013 (IMOS 2013).

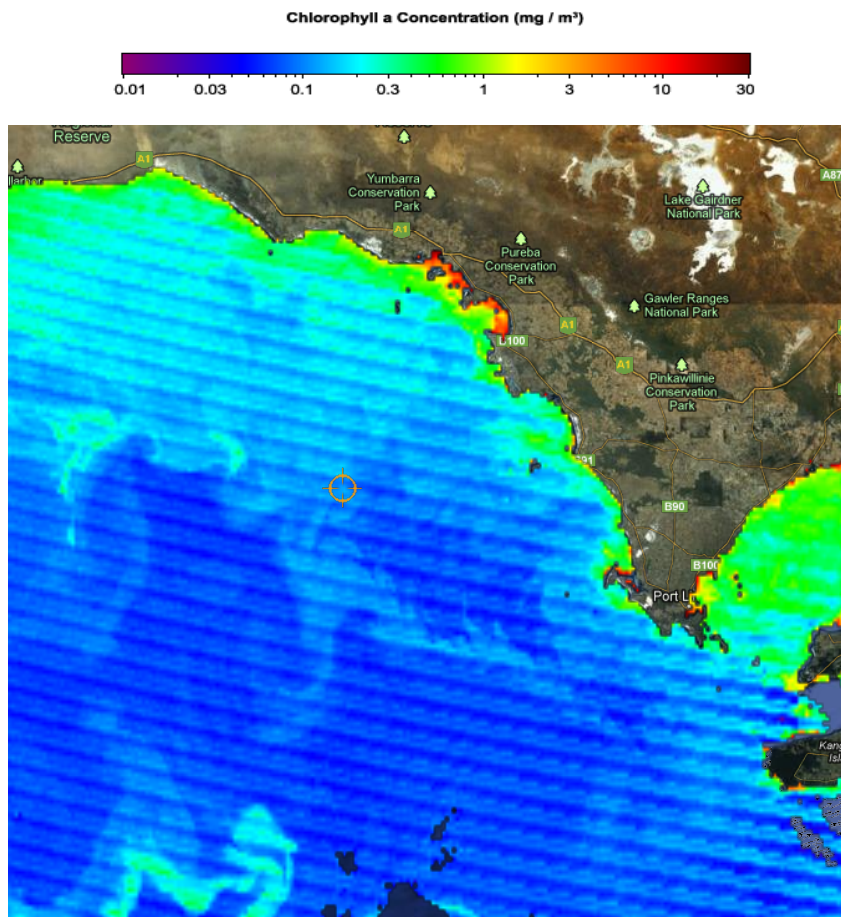


Figure 5: Areas of productivity within the GAB on the 5th February 2013 (source: <http://www.fishtrack.com>).

CSIRO Aerial Survey:

Summary of SBT sightings through this past week are shown by longitude in the table below. Note that the survey lines may not have been flown in full due to weather restrictions – this is only raw data and not calibrated per area covered on any particular day AND includes everything regardless of size.

Five transect lines in the west of the survey were flown on the 2nd February; weather conditions were cool with intermittent showers. Six of the eastern transect lines were flown on the 5th February in favourable warm weather.

DATE	129° to 130°	130° to 131°	131° to 132°	132° to 133°	133° to 134°	134° to 135°
2 nd Feb	50 tonnes	40 tonnes				
5 th Feb			580 tonnes	855 tonnes	2170 tonnes	640 tonnes

An overview of the climate situation will be covered in the next issue.

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

Port Lincoln SA 5606

Email: SBT_Research@bigpond.com