

Climate and Oceanographic Summary for the Great Australian Bight No. 22

Kirsten Rough – 22nd March 2013

This is the twenty-second update of sea surface temperature, ocean currents and chlorophyll distribution. These updates will continue to the end of the month, then a climate update will be issued mid April.

Summary:

Sea Surface Temperature (SST) throughout the historic fishing area of the GAB is now between 20 to 21.7°C and in the eastern GAB 19.2 to 20.9°C.

Temperature this week in the central western GAB at 131°E 33°S is 21.2°C and temperature in the central east at 133°E 34°S is 20.9°C. Upwelling continues to moderate temperature in the eastern GAB and warm water continues along and below the shelf break, below Kangaroo Island and across to the SA - Victoria border.

The Leeuwin current continues to show a relatively 'normal' progression along the WA coastline. Actual SST out from Exmouth is 29.4°C, passing Cape Leeuwin is around 22°C and passing Esperance is now 20.8°C.

CSIRO Aerial Survey flew 2 days covering the central GAB area since the previous update, but no SBT were sighted.

Full moon is on the 27th March.

Sea Surface Temperature and Ocean Currents:

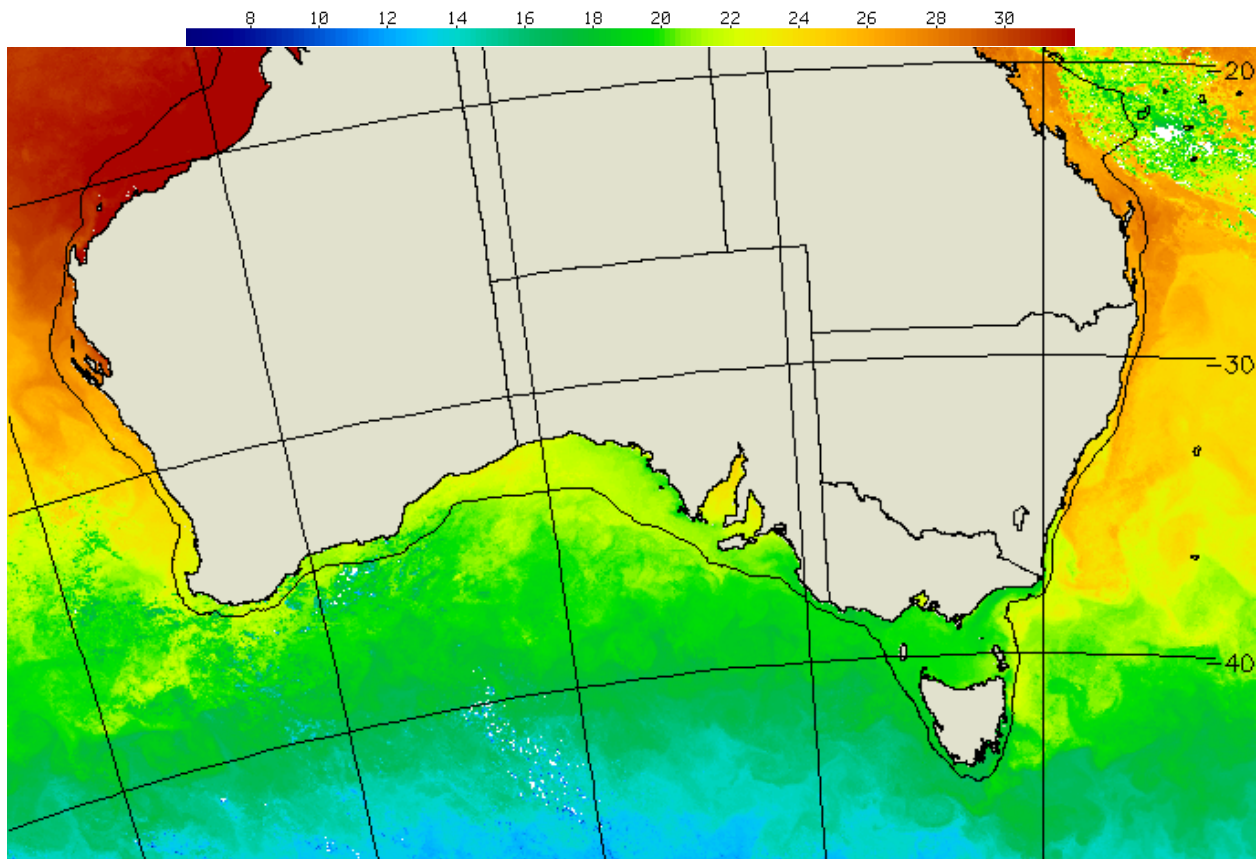
An update of the water temperature across southern Australia and through the fishing grounds to the 21st March 2013 can be seen in Figure 1 and Figure 2.

Warm currents continue to extend along the shelf break to the south of Kangaroo Island and throughout the southeast coast of SA. Upwelling continues to moderate the temperature along the west coast of Eyre Peninsula to 130°E and along the southern coastal area of the South East of SA (Figure 1).

The SST at a number of specific sites averaged between 16th and 21st March were obtained from the CSIRO (2013):

130°E 32.5°S is 21.7°C ¹	131°E 32°S is 21.2°C	131°E 33°S is 21.2°C	132°E 33.5°S is 21.2°C ¹
133°E 34°S is 20.9°C	134°E 34.5°S is 20.9°C ¹	135°E 35°S is 20.3°C	136°E 35°S is 20.4°C

¹ These coordinates are in Degree Decimal Minutes



Mean SST from 18/03/2013 to 21/03/2013
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Figure 1: Sea Surface Temperature around Australia for the 5 days to 21st March 2013 (source: CSIRO 2013 <http://www.marine.csiro.au>)

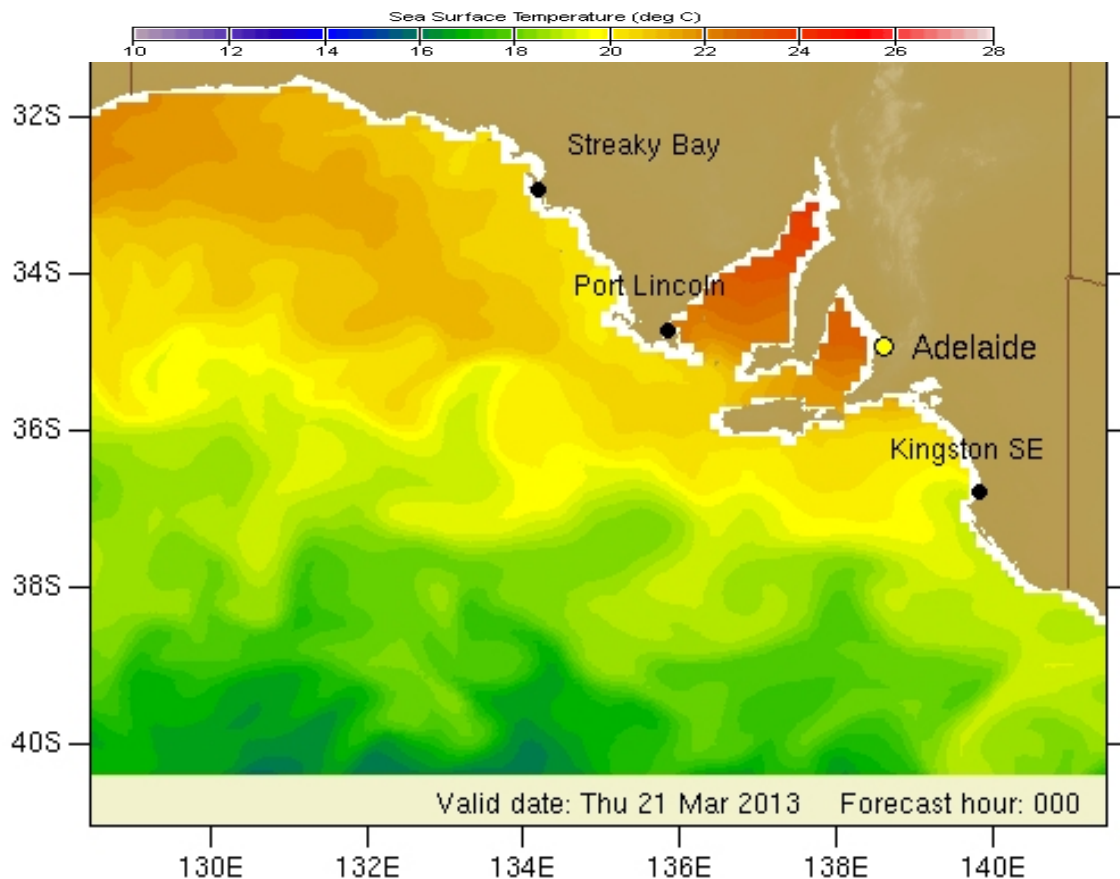


Figure 2: South Australian sea surface temperature and current direction from the Bureau of Meteorology website for the 3 days to the 21st March 2013 (source: Bureau of Meteorology 2013; <http://www.bom.gov.au>).

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 29.4°C, out from Cape Inscription (Shark Bay) is 27.3°C, out from Cape Leeuwin (Augusta) is 22°C and out from Esperance is 20.8°C (CSIRO 2013).

SA Currents:

A general plot of where the water currents are moving within the eastern GAB area can be seen in Figure 3. Note there has been some large differences between locations of these modeled currents and those experienced on the sea.

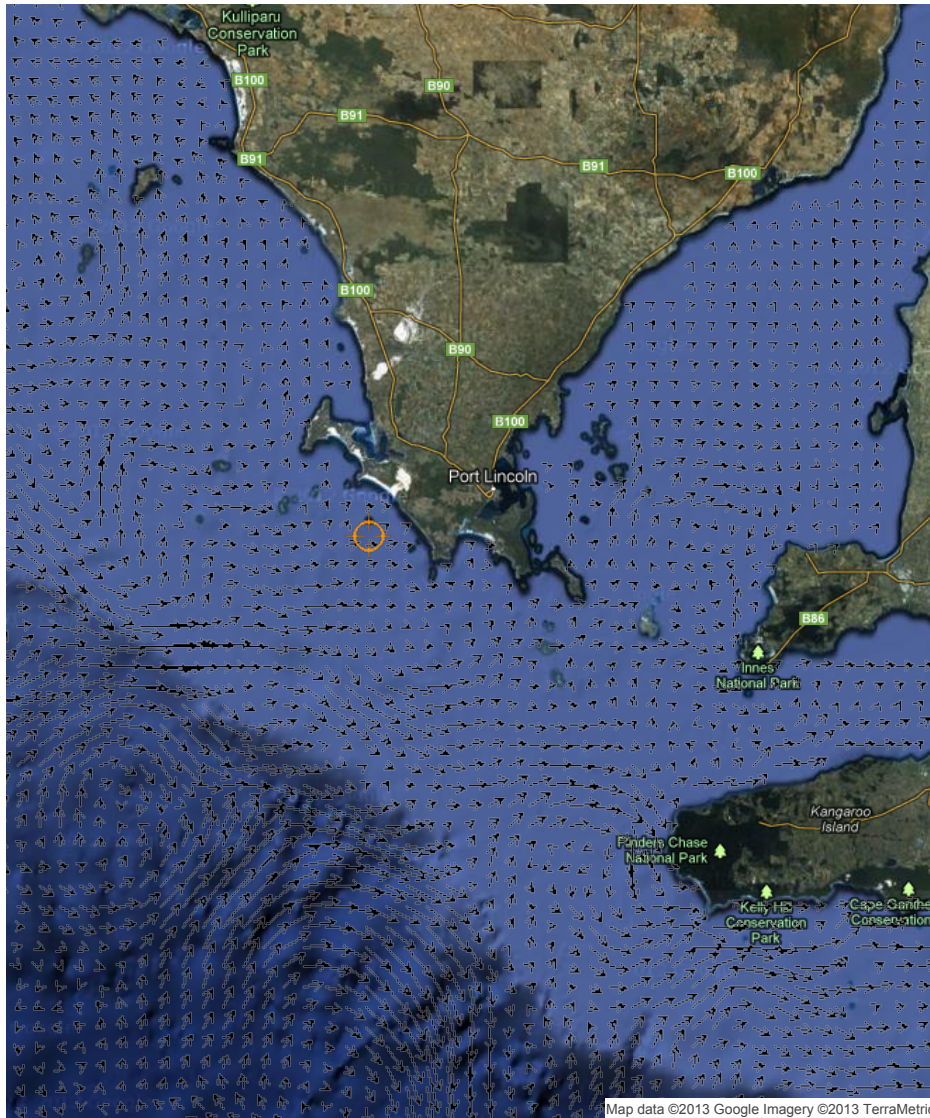


Figure 3: Direction of water movement within the eastern section of the Great Australian Bight, south of Streaky Bay to central Kangaroo Island, on the 19th March 2013 (source: <http://www.fishtrack.com>).

Local tides and moon cycle:

Tide times for Port Lincoln for the next week can be seen in Table 1 below, note these are in Central Standard Time – therefore add 1 hour (for daylight savings). To make this more representative of the Tuna Ranching zone minus between 20-28 minutes from the time that is listed. Taylors Landing

tide times are minus 20 minutes; Reevesby Island tide times are minus 28 minutes. Figure 4 shows the moon phase for the rest of the month, the full moon is on the 27th March.

Table 1: Tide times for Port Lincoln for the week of 22nd to 29th of March 2013. Add 1 hour to allow for daylight savings.

Friday 22		Saturday 23		Sunday 24		Monday 25		Tuesday 26		Wednesday 27		Thursday 28	
Time	Height	Time	Height	Time	Height	Time	Height	Time	Height	Time	Height	Time	Height
0749	0.48	0726	0.43	0036	1.19	0111	1.28	0142	1.34	0211	1.35	0238	1.31
2350	1.09	1351	0.88	0730	0.36	0744	0.29	0803	0.23	0822	0.20	0840	0.19
		1843	0.72	1343	1.00	1352	1.13	1408	1.26	1427	1.39	1446	1.50
				1911	0.56	1940	0.41	2010	0.28	2041	0.20	2109	0.18

South Australia Tide Book and Dredge tide information

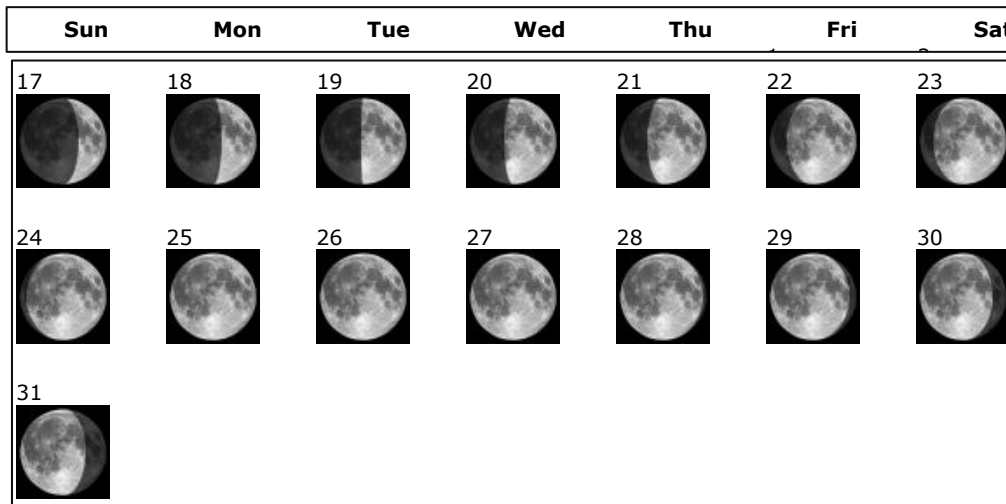


Figure 4: Moon phases for the remainder of March.

Chlorophyll / Productivity:

The amount of chlorophyll around southern Australia can be seen on the IMOS image 18th March (Figure 5). And within the GAB area across to the SE on the Fishtrack image 19th March (Figure 6). Both show chlorophyll concentrated in the coastal and inshore regions of the central and western Bight, within Spencers Gulf and along the coastal areas of the South East. The dense band previously stretching from southwest of WA to New Zealand is mostly obscured by patchy cloud through most of this week.

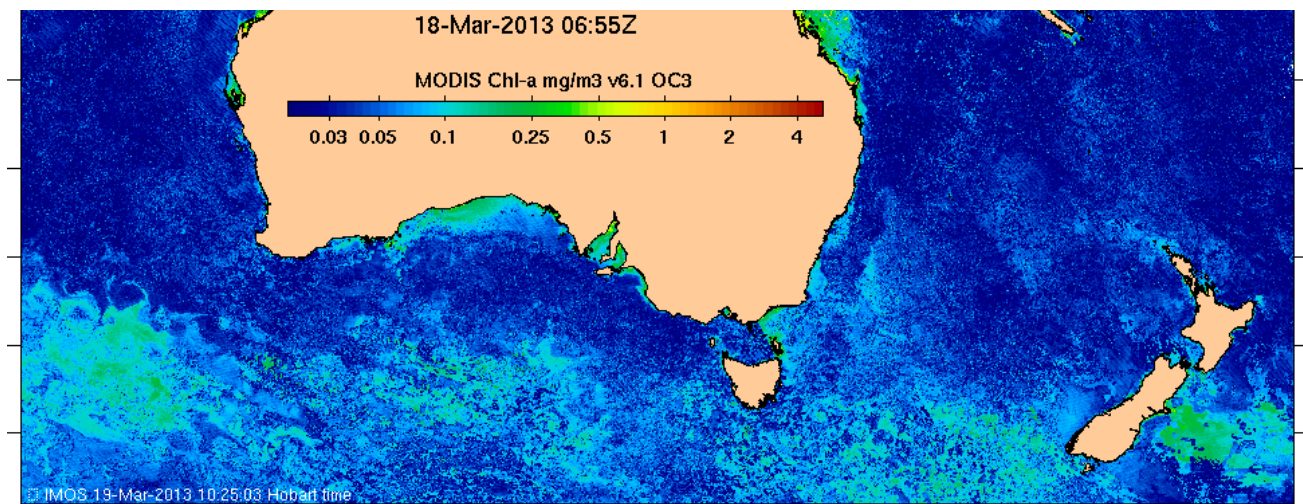


Figure 5: Productivity across southern Australia on the 18th March 2013 (IMOS 2013).

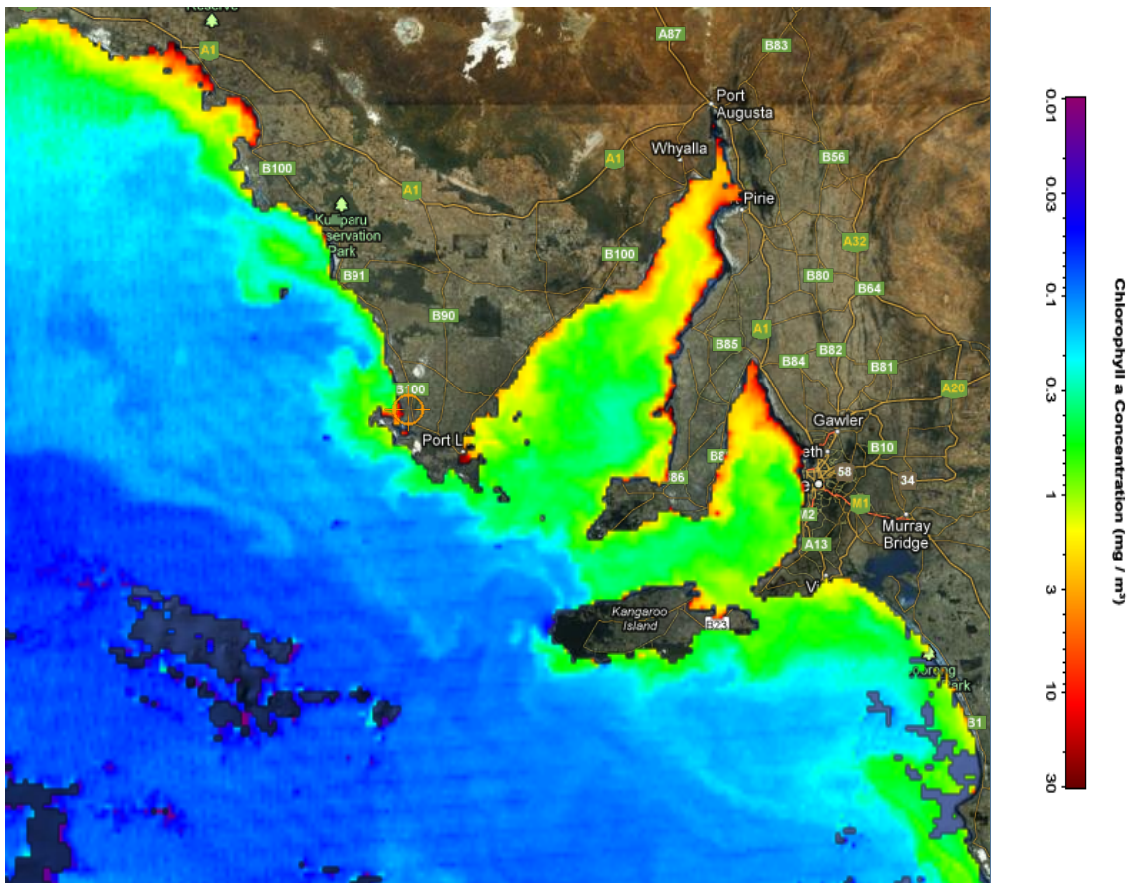


Figure 6: Areas of productivity within the eastern GAB and South East of SA on the 19th March 2013 (source: <http://www.fishtrack.com>).

CSIRO Aerial Survey:

Surveys were undertaken on the 15th and 19th of March but no SBT were sighted.

Three full lines in the central western section of the GAB were flown on the 15th March. Three full lines in the central eastern section of the GAB were flown on the 19th March. Both days were cooler air temperatures.

Useful Websites:

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

<http://www.csiro.au>

<http://www.fishtrack.com>

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

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