

# Climate and Oceanographic Summary, Great Australian Bight 2014 - 23

Kirsten Rough – 10<sup>th</sup> March 2014

## Summary:

The upwelling continues to influence water temperatures with conditions cooler along the inshore regions of the GAB. The coolest region remains down the southeast of SA where temperatures are between 16 to 17°C. Along the western coastal fringe of Kangaroo Island and Eyre Peninsula temperatures range from 17 to 19°C. Along the shelf-break water temperatures remain suitable for SBT anywhere westwards of longitude 135°E.

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

- Western GAB at 130°E 33°30'S is 20.4°C
- Central GAB at 133°E 34°S is 20.3°C
- Eastern GAB at 135°E 35°S is 19.3°C

The next full moon is on the 17<sup>th</sup> of March.

The strong upwelling continues to influence the productivity in the sea around Eyre Peninsula, the patches of higher chlorophyll levels last week are dispersing.

CSIRO Aerial Survey SBT sightings from 1<sup>st</sup> January 2014 to date (10<sup>th</sup> Mar) tonnage per longitude:

128°	129°	130°	131°	132°	133°	134°
156 tonnes	1305 tonnes	1316 tonnes	2675 tonnes	7846 tonnes	2320 tonnes	5202 tonnes

## GAB Sea Surface Temperature (SST):

Sea temperatures around Australia and through the Great Australian Bight are shown in Figure 1 and Figure 2. The coastal fringe remains cool as upwelling continues to influence water temperatures. The cool water from upwelling continues to extend along the coast all the way to the West Australian border. Water temperatures remain suitable for SBT along the shelf break to longitude 135°E.

**Table 1: Sea Surface Temperatures at specific locations along the shelf and shelf break of the Great Australian Bight on the 9<sup>th</sup> March 2014, co-ordinates as degrees, minutes, seconds (CSIRO 2014).**

130°E 33°30'S is 20.4°C	131°E 32°S is 19.0°C	131°E 33°S is 20.6°C	132°E 33°30'S is 20.4°C
133°E 34°S is 20.3°C	134°E 34°30'S is 19.6°C	135°E 35°S is 19.3°C	136°E 35°30'S is 19.0°C
136°30'E 36°30'S is 18.8°C	137°E 36°30'S is 18.2°C	138°E 37S is 16.9°C	139°E 37S is 17.2°C

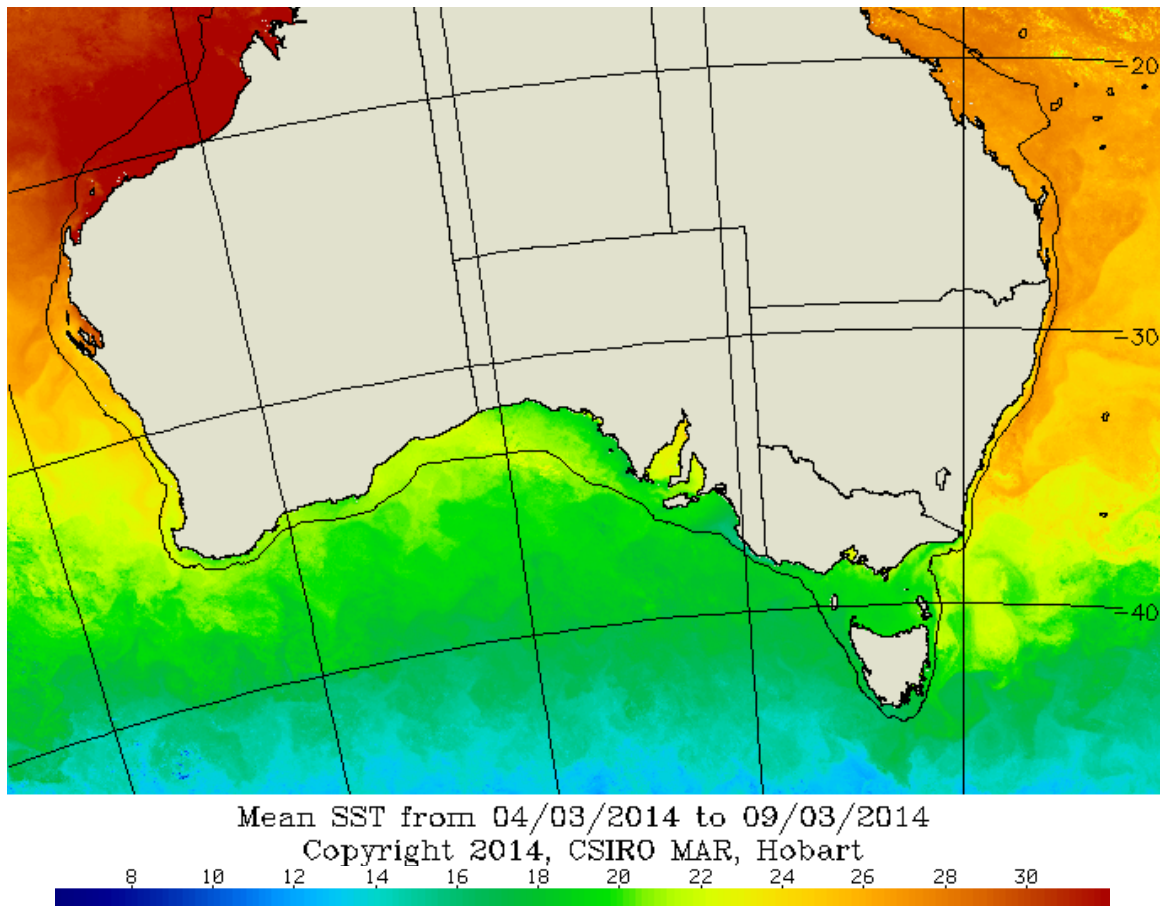


Figure 1: Sea Surface Temperature across southern Australia for the 5-days to the 9<sup>th</sup> March 2014 (source: CSIRO 2014).

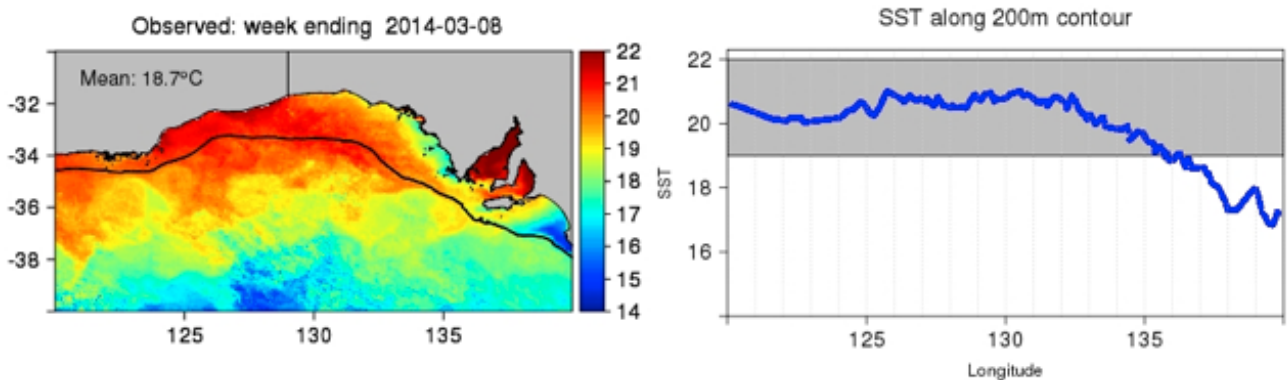


Figure 2: Snapshot of GAB water temperatures for the previous week (left) and corresponding graph of Sea Surface Temperature along the shelf break (right). Where the blue dotted line is within the gray band, conditions are within the range that archival tags suggest SBT prefer (source: CSIRO-ASBTIA TRF project web site 2014)

**SA Water Currents and Tide Times:**

The latest image from the IMOS radar on Cape Catastrophe is shown in Figure 3. Water currents below Eyre Peninsula are likely to continue to disperse the patches of higher algae density noted last week. The current direction is likely to continue to push the higher chlorophyll areas across and below Spencers Gulf rather than up the passage, thereby reducing the potential for these to pass through the lease area.

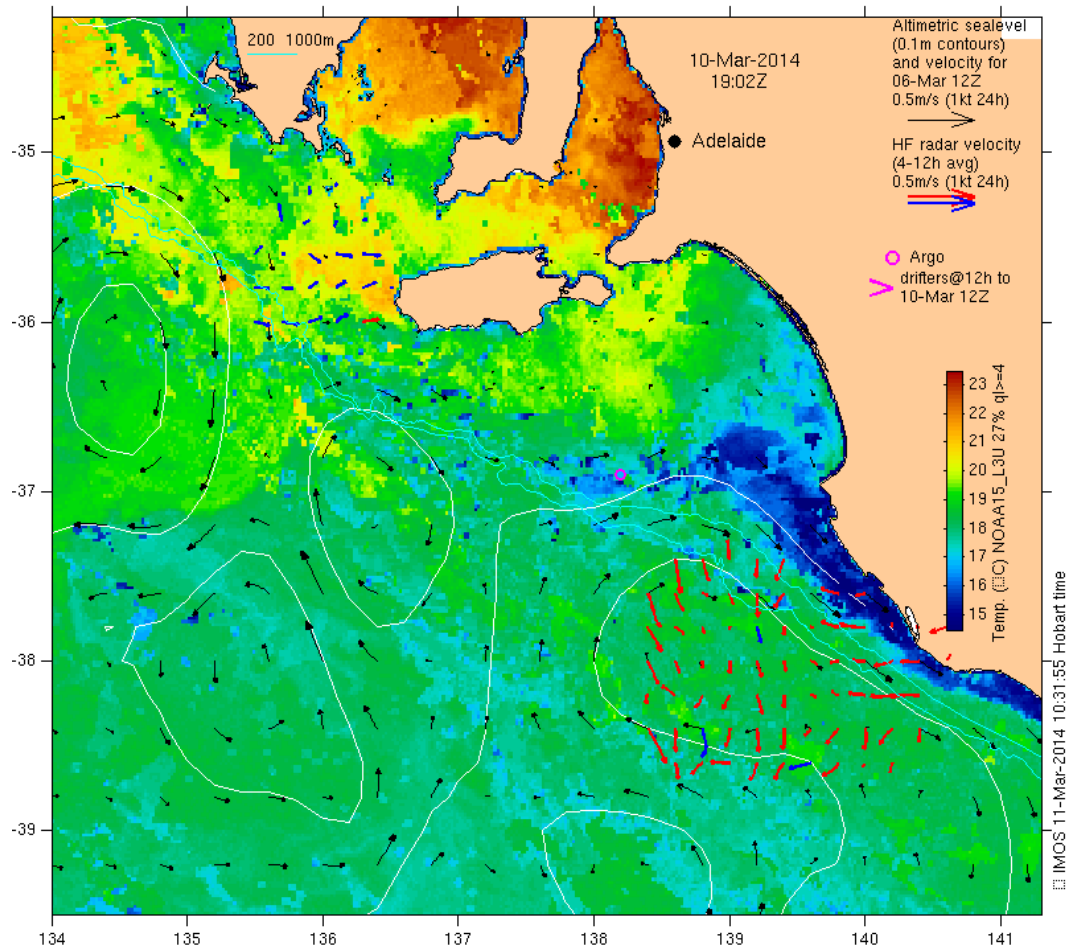


Figure 3: Water currents on the 10<sup>th</sup> March 2014, the arrows in blue below Eyre Peninsula are surface currents recorded by radar; the colour of the background is Sea Surface Temperature (IMOS 2014).

Local tide times for the next week in the SBT ranching lease area are shown in table 2. Tide movements are reduced at the moment but will improve over the next few days.

FRI 7 MAR		SAT 8 MAR		SUN 9 MAR		MON 10 MAR		TUE 11 MAR		WED 12 MAR		THU 13 MAR	
HIGH	4:58 am 1.02 m	HIGH	5:10 am 0.93 m	LOW	12:28 am 0.67 m	LOW	10:59 am 0.41 m	LOW	9:57 am 0.48 m	HIGH	12:46 am 1.07 m	HIGH	1:36 am 1.18 m
LOW	10:53 am 0.14 m	LOW	11:08 am 0.21 m	HIGH	3:51 am 0.86 m	HIGH	7:00 pm 1.02 m			LOW	8:42 am 0.44 m	LOW	8:39 am 0.37 m
HIGH	5:37 pm 1.38 m	HIGH	6:04 pm 1.29 m	LOW	11:11 am 0.30 m					HIGH	3:06 pm 0.81 m	HIGH	2:49 pm 0.91 m
LOW	11:58 pm 0.55 m			HIGH	6:32 pm 1.16 m					LOW	7:30 pm 0.73 m	LOW	8:04 pm 0.59 m
FRI 14 MAR		SAT 15 MAR		SUN 16 MAR		MON 17 MAR		TUE 18 MAR		WED 19 MAR		THU 20 MAR	
HIGH	2:08 am 1.27 m	HIGH	2:36 am 1.34 m	HIGH	3:03 am 1.39 m	HIGH	3:29 am 1.40 m	HIGH	3:53 am 1.37 m	HIGH	4:14 am 1.31 m	HIGH	4:34 am 1.22 m
LOW	8:49 am 0.30 m	LOW	9:06 am 0.24 m	LOW	9:24 am 0.19 m	LOW	9:43 am 0.16 m	LOW	10:02 am 0.14 m	LOW	10:17 am 0.15 m	LOW	10:29 am 0.17 m
HIGH	2:57 pm 1.03 m	HIGH	3:10 pm 1.14 m	HIGH	3:28 pm 1.26 m	HIGH	3:47 pm 1.36 m	HIGH	4:06 pm 1.44 m	HIGH	4:26 pm 1.49 m	HIGH	4:46 pm 1.51 m
LOW	8:32 pm 0.46 m	LOW	9:00 pm 0.34 m	LOW	9:28 pm 0.25 m	LOW	9:55 pm 0.20 m	LOW	10:21 pm 0.19 m	LOW	10:47 pm 0.22 m	LOW	11:13 pm 0.29 m

Table 2: Tide times for Port Lincoln for the next week (local daylight savings time). Note that Taylors Landing and Reevesby Island tides are 20-28 minutes behind Lincoln tides, so minus this to make these more representative of the Tuna Lease Zone.

### **Chlorophyll and Productivity:**

The best image of the past week was taken on the 8<sup>th</sup> March (Figure 4). Chlorophyll levels are higher along the coastal fringe and in the areas being fed by the recent upwelling. The very dense areas of chlorophyll in the last update have been dispersed and seem to be back to levels that are great for bait.

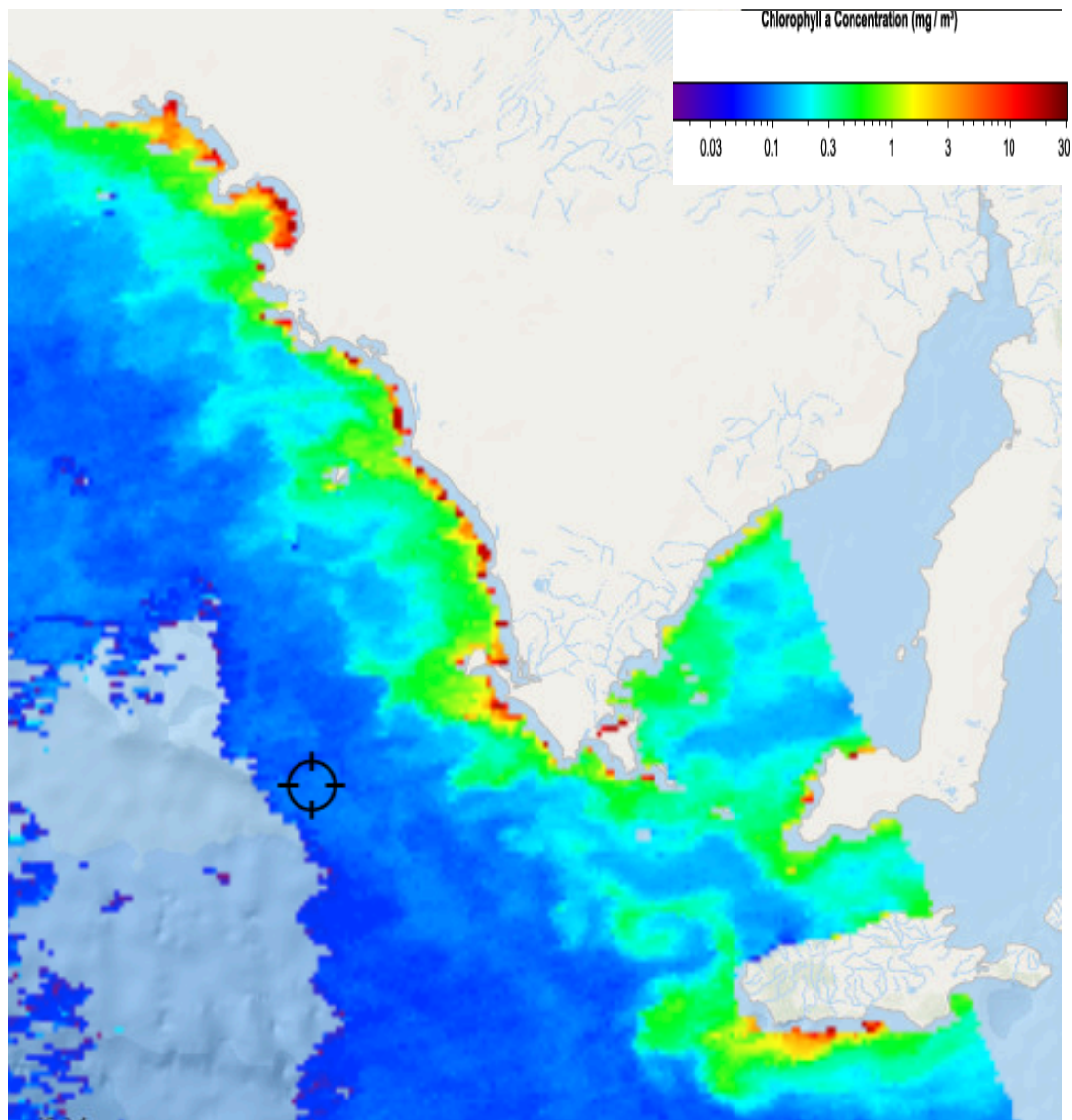


Figure 4: Areas of productivity around Eyre Peninsula on the 8<sup>th</sup> March 2014 (Fish Track 2014).

#### **Useful Websites:**

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

<http://www.csiro.au>

<http://www.fishtrack.com>

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