

Oceanographic Summary, Great Australian Bight 2015 - 11

Kirsten Rough – 13th February 2015

Summary:

The general GAB Sea Surface Temperatures continue to warm slowly, mainly due to expansion of warmish water to the south of the shelf break.

The upwelling systems of the South East of SA, along the southwest of Kangaroo Island and the west coast of Eyre Peninsula continue to be a prominent feature of satellite images over this last week. Influencing cold-water pools and the distribution of the warmer water masses.

Areas of high productivity including aggregations of bait fish, krill and diving birds were reported by Seismic Observers on transit in to Port Lincoln on the 10th February, these were located off the shelf south of the Cabbage patch in 2,100m water depth.

GAB Sea Surface Temperature (SST):

The most recent 3-day composite satellite image of water temperatures through the central and eastern GAB area and the graph of actual temperatures along the shelf break are shown Figure 1

The areas shown in yellow and the fringing areas in green are ideal temperatures for SBT.

The upwelling system continues to be the dominant influence over the location of water masses.

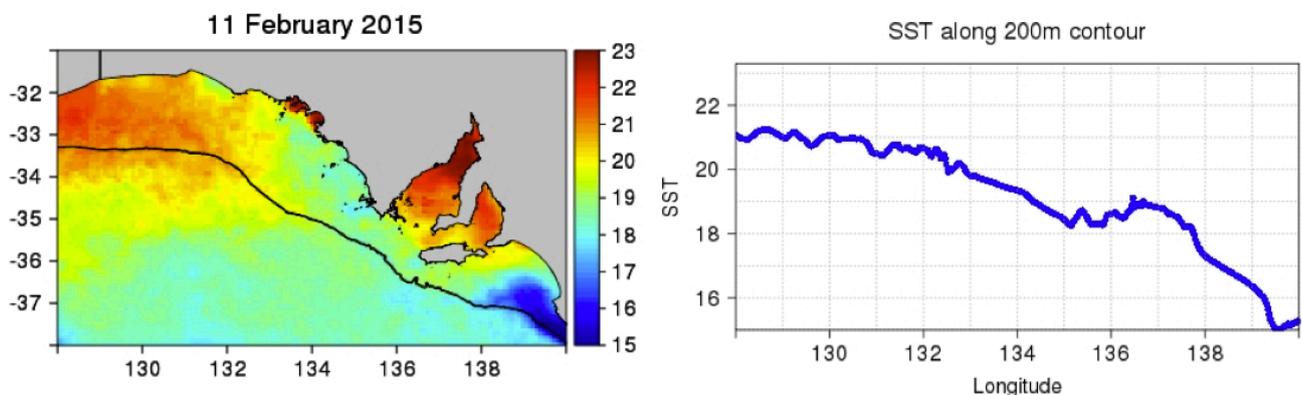


Figure 1: Sea Surface Temperatures through the central and eastern GAB over the 3-day period to the 11th February 2015, satellite image left and graph of temperature along the 200m-depth contour (shelf-break) on right (CSIRO 2015).

How the sea temperature images relate to preferred habitat of SBT can be seen in Figure 2. In the images on the right for this time of year, any area in green (right through to the bone colour i.e. scale 1 to 3) has conditions that are highly suitable for SBT. *Please note these preferred areas do not take into account any influence that seismic surveys may have on SBT distribution.*

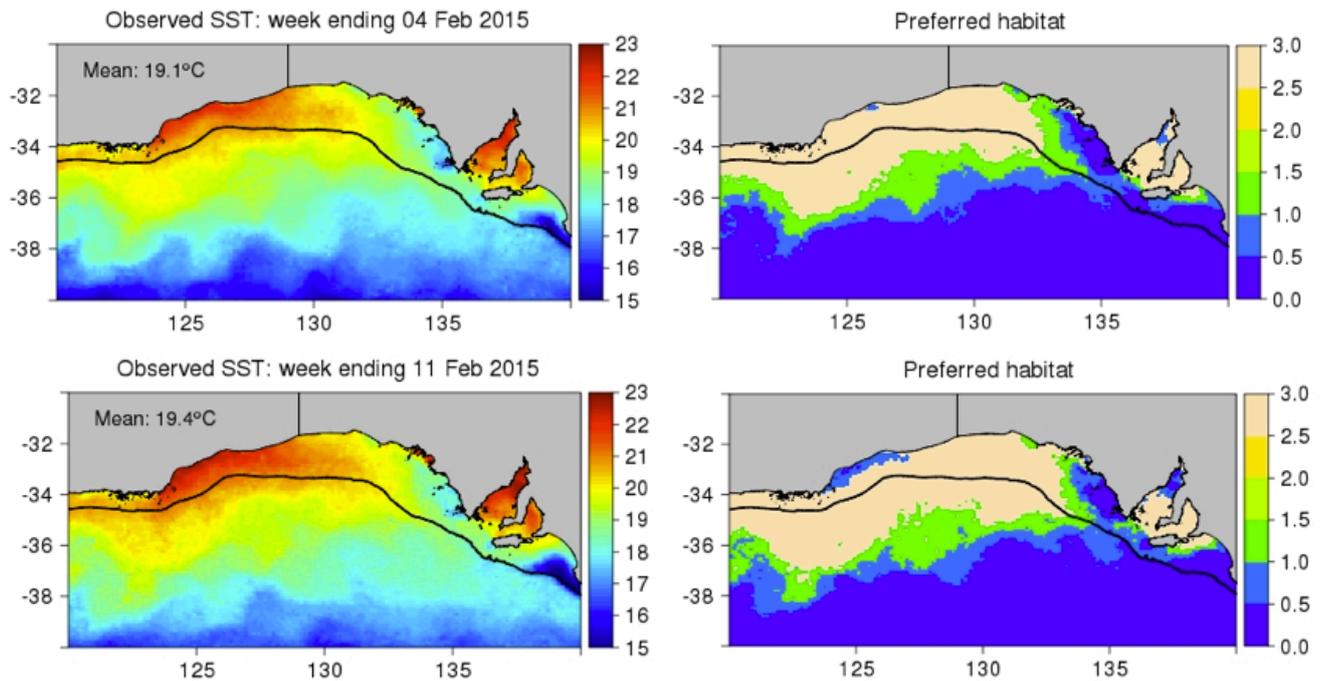


Figure 2: Sea Surface Temperatures across the entire GAB area for the week ending 4th February (top left) and 11th February (bottom left). The corresponding preferred SBT habitat map for each of these periods is shown on the right (CSIRO 2015).

Chlorophyll / Productivity:

The satellite image from the 10th February continues to show higher chlorophyll (algae) associated with the cold water from the upwelling (Figure 3). A very large and dense area of algae can be seen to the south west of Kangaroo Island, this is visible from aircraft as very dirty water.

The marker is located in the vicinity of Young Rocks.

Areas of high productivity including aggregations of bait fish, krill and diving birds were reported by Seismic Observers on transit back to Port Lincoln on the 10th February. These were located off the shelf south of the Cabbage patch in 2,100m water depth. 3 patches of small SBT (10-15Kg) were also recorded in the vicinity of 35°38'59"S 134°38'25"E; 35°38'00"S 134°46'35"E and 35°33'56"S 135°11'36"E.

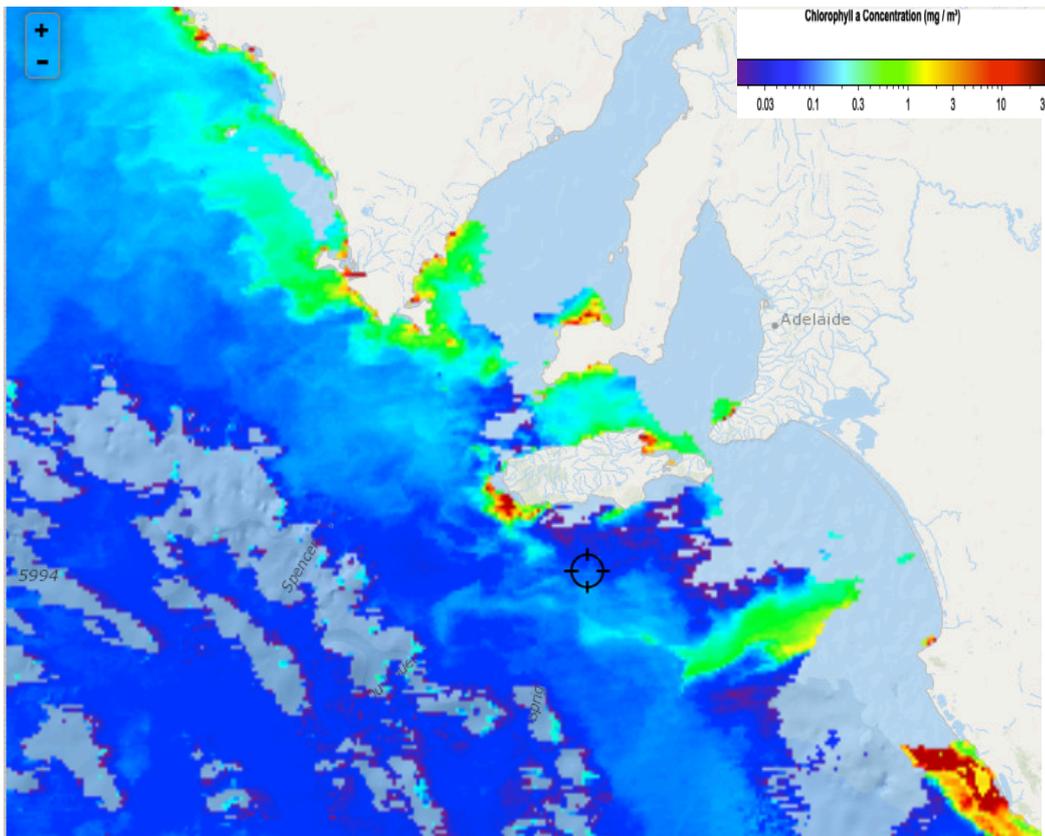


Figure 3: Chlorophyll levels through the eastern GAB area on the 10th February 2015 (FishTrack 2015).

Water Currents:

The red arrows in [Figure 4](#) below indicate the direction of the surface current. Sea Surface Temperatures that show in the background clearly show the large pool of warm water to the south east of Kangaroo Island.

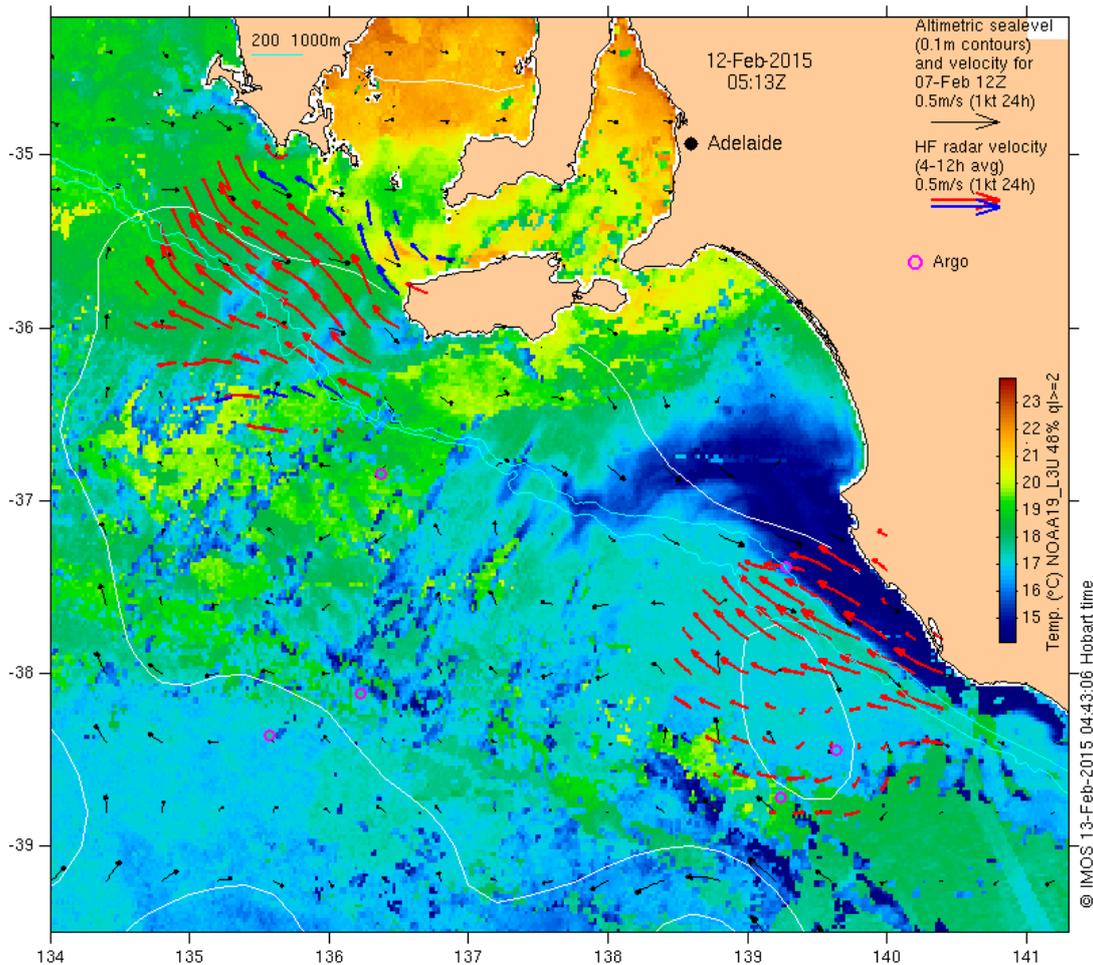


Figure 4: Direction of surface water currents measured by radar located on the southern tip of Eyre Peninsula (red arrows); the background colour represents sea surface temperature (IMOS 2015)

Seismic Surveys:

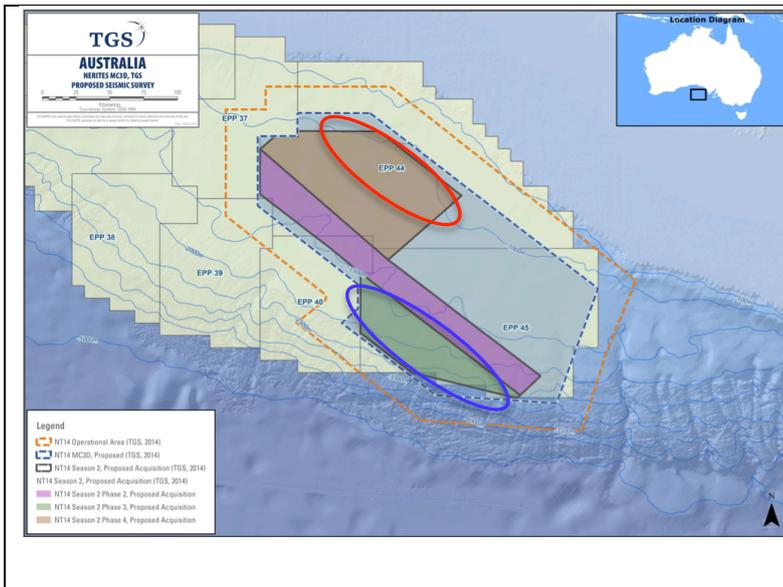
Two companies (3 vessels) continue to operate in the central and western GAB area. The third company (4th vessel) will not start operations until late March or early April at the absolute earliest. The fourth company (vessels 5&6) have now deferred their operations from this season entirely.

PGS:

Vessel currently heading back out to the survey site and will restart seismic acquisition between longitudes 129°05'E and 130°50'E through this week.

TGS-NOPEC:

Two vessels continue to operate in the areas shown below; one vessel is due into Port Lincoln around the 18th February, and the second approximately the 25th February.



1st vessel currently at:
 33°59'20"S 131°19'50"E
 operating between
 longitudes
 131°22'E and 132°08'E

2nd vessel currently at:
 35°44'15"S 132°23'46"E
 operating between
 longitudes
 131°35'E and 132°40'E

Useful Websites:

- <http://www.bom.gov.au>
- <http://www.csiro.au>
- <http://www.fishtrack.com>
- <http://www.oceancurrent.imos.org.au>
- <http://www.cmar.csiro.au/gab-forecasts/index.html>

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