

Oceanographic Summary, Great Australian Bight 2016 - 15

Kirsten Rough – 5th February 2016

Please find following the latest update for recent and expected oceanic conditions for the 2016 fishing and aerial survey season.

Summary:

The sea temperatures of the GAB area have stabilized this week and there are indications that the areas of warmth around Kangaroo Island are starting to decrease in size.

Upwelling continues as a particular feature, influencing sea surface temperatures and chlorophyll concentrations along the South East “Bonney Coast” and the coastal fringe of lower and western Eyre Peninsula.

Habitat forecasts are suggesting the current fishing areas are likely to persist for the remainder of this month, but start reducing in area through March.

The CSIRO Aerial Survey has now flown all transect lines at least once. General distribution of sightings is shown below; there have been 7 flying days so far.

CSIRO Aerial Survey SBT sightings from 1st January 2016 to date (5th Feb) tonnage per longitude:

| 128° | 129° | 130° | 131° | 132° | 133° | 134° |
|----------|-----------|------------|------------|-------------|-------------|------------|
| 0 tonnes | 95 tonnes | 430 tonnes | 560 tonnes | 3000 tonnes | 2125 tonnes | 970 tonnes |

GAB Sea Surface Temperature (SST):

The Sea Surface Temperature situation across the Great Australian Bight for the month of January 2016 and January of the previous 5-years is shown in Figure 1. The situation across southern Australia now is shown in Figure 2, and in the central and eastern GAB over the past 2-weeks in Figure 3. The upwelling continues to be a significant feature of the conditions expressed this season. Another notable observation this week is that the area of ideal temperature around Kangaroo Island appears to be getting smaller. It is possible that the extent of cloud cover over the past week has tempered readings – so will keep an eye on this over the next few days of predicted clearer skies. The area that is generally suitable for SBT continues to be much larger this season when comparing to a similar point in time last season, see Figure 4.

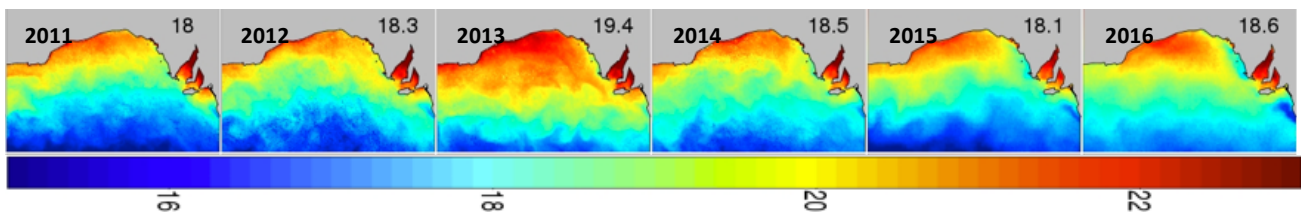


Figure 1: GAB sea surface temperatures through January for 2016 and the previous 5 years; in these images yellow is ideal for SBT. Note the year is shown top left and the average SST for the entire sea area through the month is shown top right (CSIRO 2016).

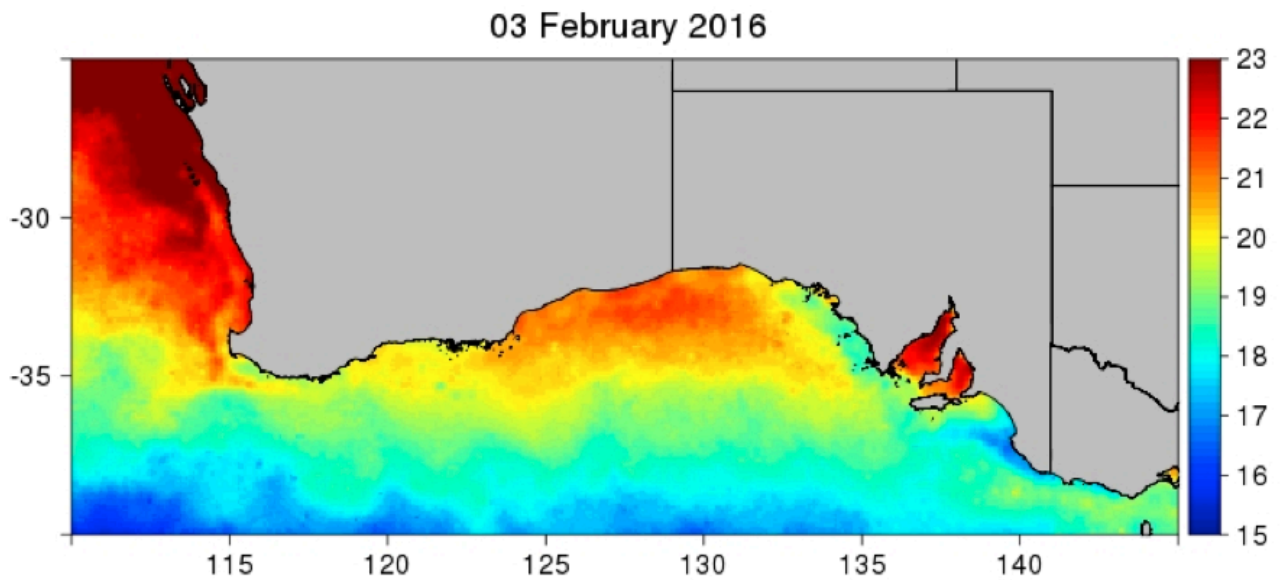


Figure 2: Sea Surface Temperature across southern Australia for the 3-day period around the 3rd February 2016 (CSIRO 2016).

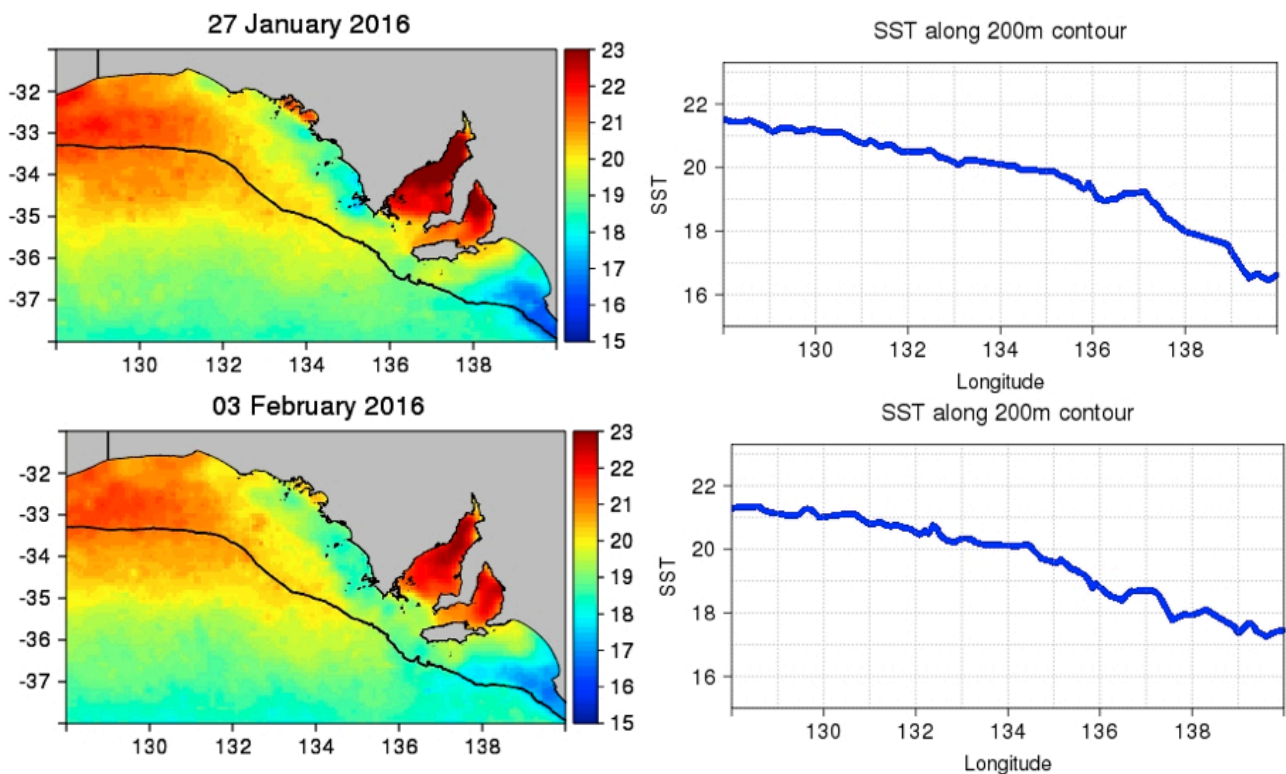


Figure 3: Snapshots of sea surface temperatures across the Eastern GAB over the past 2 weeks, satellite image on left and graph of temperature along the shelf break (black line) on the right (CSIRO 2016).

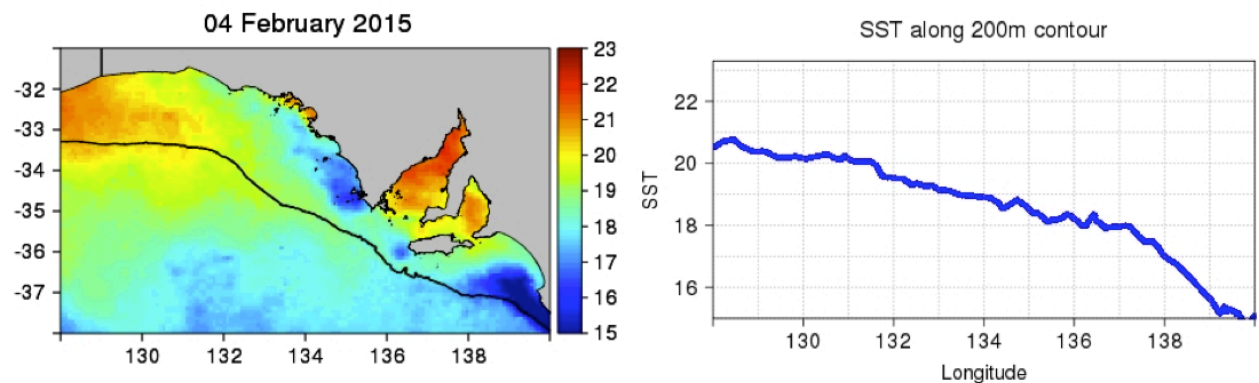


Figure 4: Sea surface temperature across the eastern GAB for a similar point in time last season (CSIRO 2015).

Specific Sea Surface Temperatures at some of the key fishing locations historically, and from recent years are detailed in Table 1. Cloud cover has interfered with most images over this past week.

Table 1: Sea Surface Temperature for 5th February 2016, at some important historic and recent catching areas.

| | |
|-------------------------------|-------------------------------|
| 131°00'E 33°05'S - too cloudy | 132°00'E 33°23'S - too cloudy |
| 133°00'E 34°05'S – too cloudy | 134°00'E 34°15'S = 19.4°C |
| Yatala Reef 19.5°C | Cannan Reef 19.4°C |
| SW Rocky Island 19.5°C | Cabbage Patch area 18.8°C |
| SW Cape de Cudiac 16.7°C | Young Rocks area 19.0°C |
| SE Pelorus Rocks 18.5°C | Sanders Banks area 18.8°C |

SBT Habitat:

From a habitat perspective, how the situation looked over the past week is shown in Figure 5; and for a similar point in time from the previous season in Figure 6. The main change from last week is that the area around Kangaroo Island is now becoming separated from the very large area of highest preference (3.0) in the GAB generally. However this separation is not as pronounced as it was at this time last season.

The areas currently within the “preferred habitat” are forecast as likely to persist though this month and start reducing in March (Figure 7).

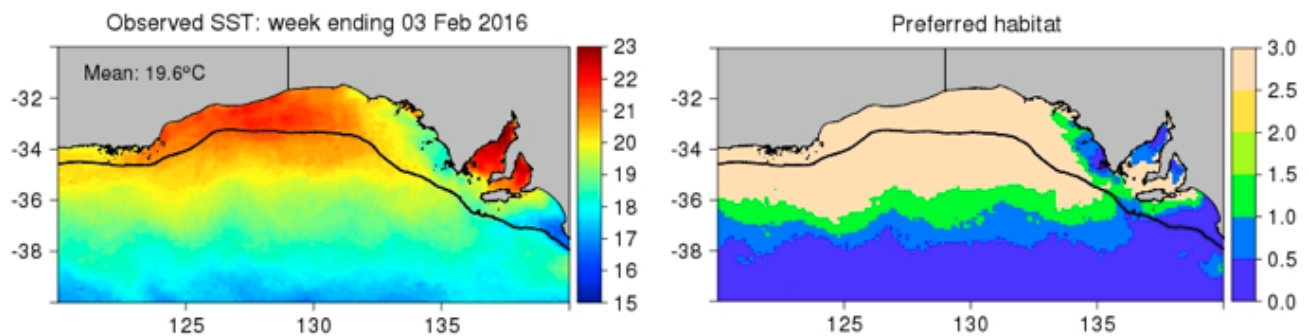


Figure 5: SST and preferred habitat distribution over the past week (CSIRO 2016).

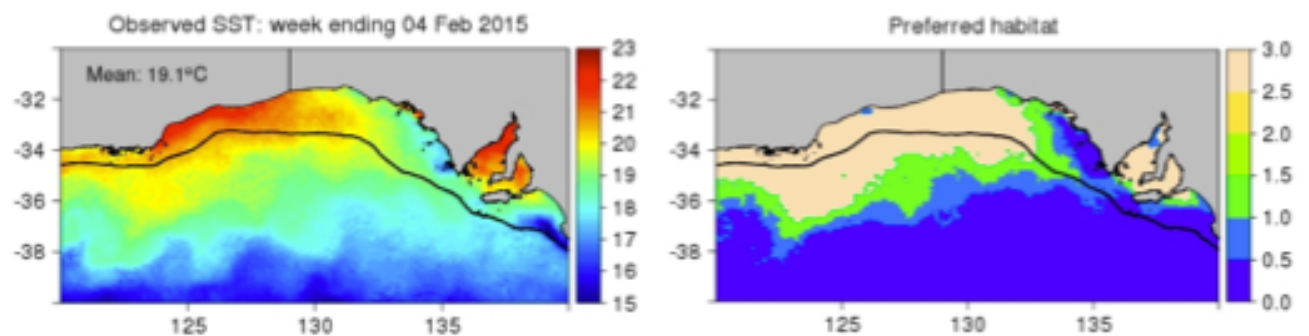


Figure 6: SST and preferred habitat distribution for a similar point in time through the 2015-fishing season (CSIRO 2015).

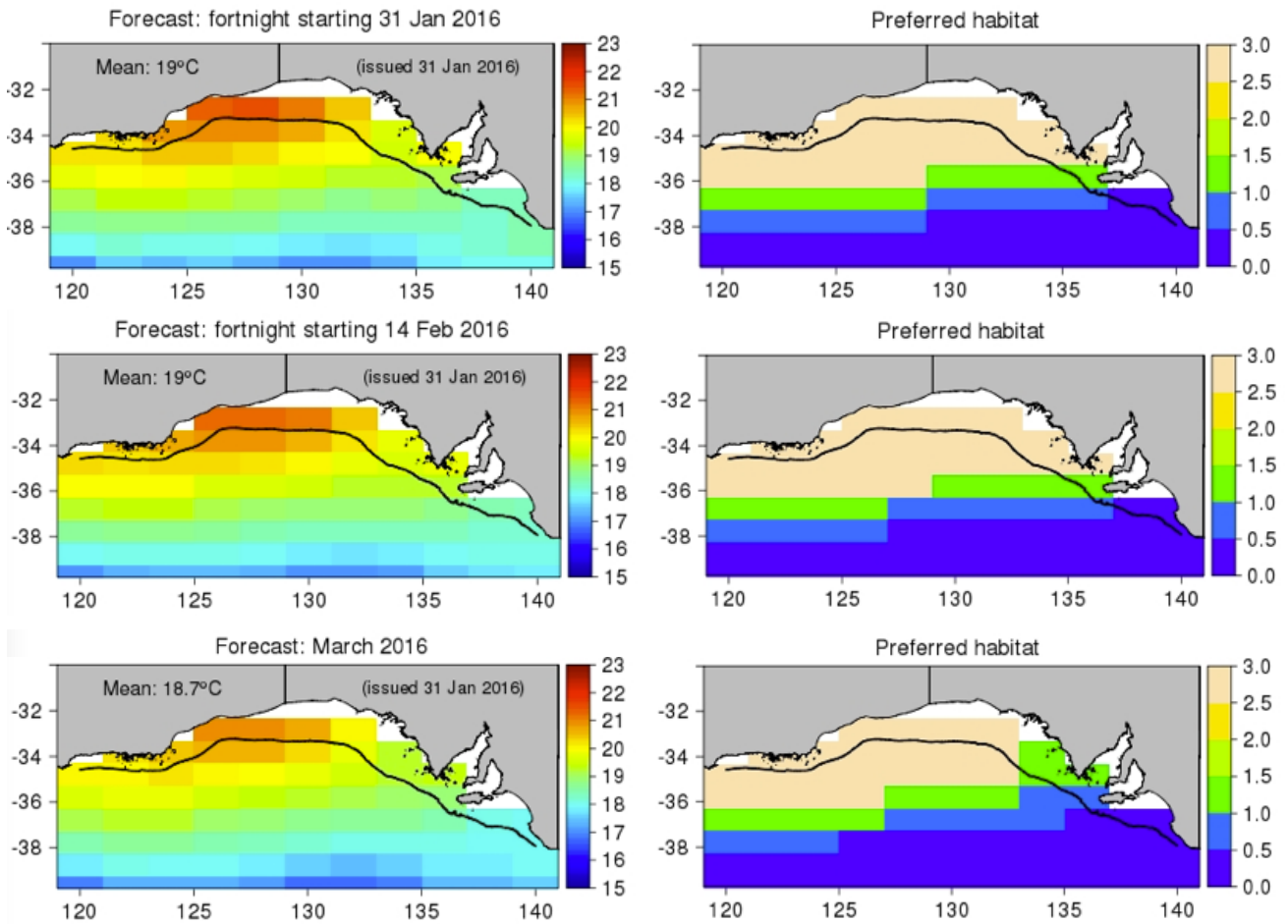


Figure 7: SST and Habitat forecasts for the next 2-fortnightly blocks and the following month (CSIRO 2016).

Chlorophyll / Productivity:

Cloud cover has obscured most images over the past week. Two clear satellite images of chlorophyll distribution around Kangaroo Island and across the greater GAB area were obtained 4th February (Figure 8 and Figure 9). Highest levels continue to be associated with areas influenced by upwelling. The cursor in each image is located over ideal areas for SBT.

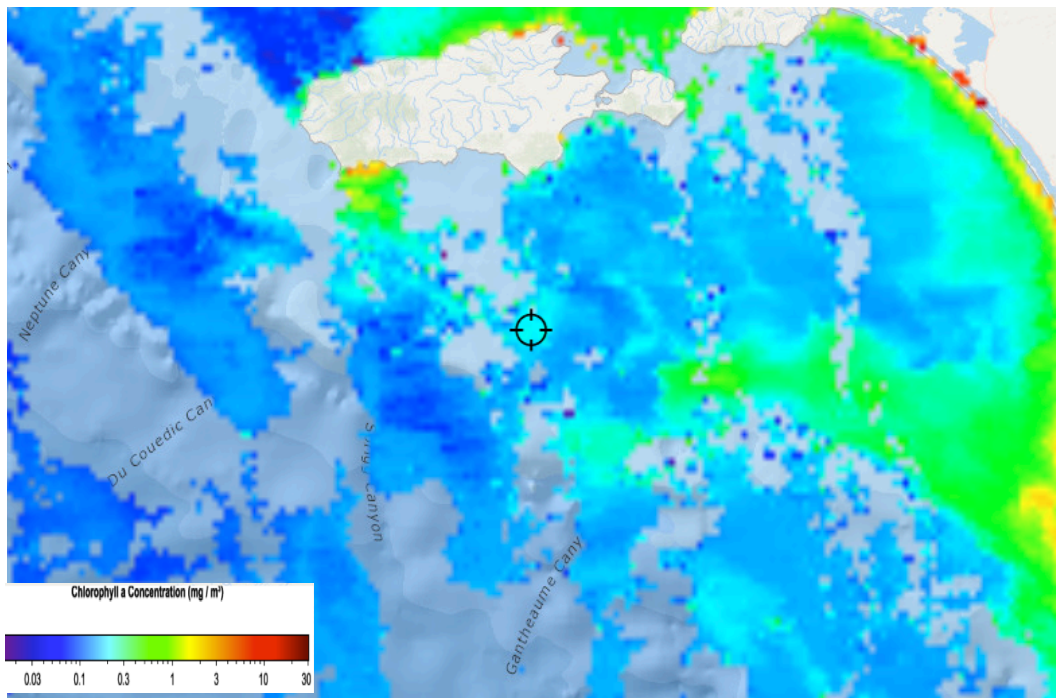


Figure 8: Distribution of chlorophyll concentrations around the Kangaroo Island area on 4th February 2016: cursor location 36° 34'S 137° 28'E (FishTrack 2016)

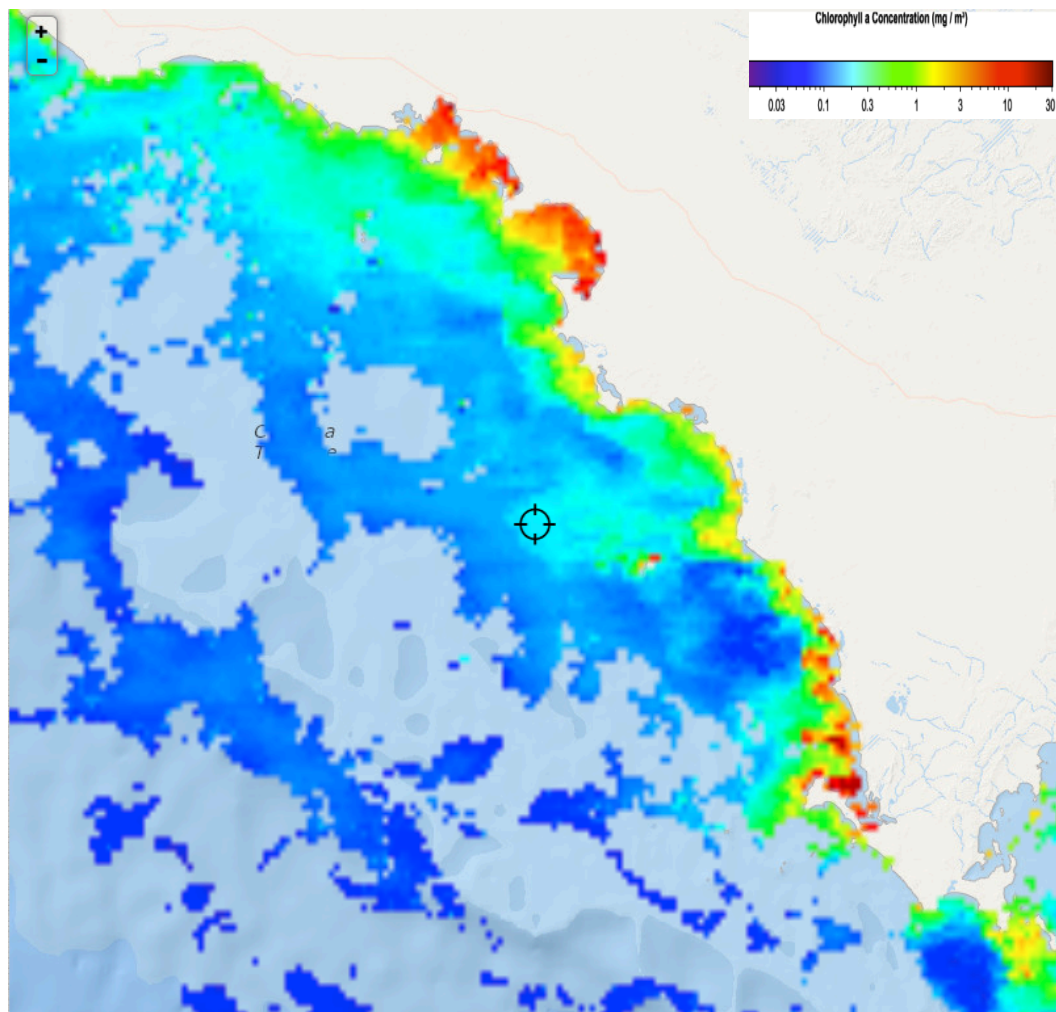


Figure 9: Distribution of chlorophyll concentrations across the eastern Great Australian Bight on the 4th February 2016: cursor located at 33° 34'S 134° 00'E (FishTrack 2016)

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>

Further details contact:

Kirsten Rough 0429 833 697

ASBTIA – Research Office

Port Lincoln SA 5606

Email: kirstenrough@bigpond.com

SBT_Research@bigpond.com