

# Climate and Oceanographic Summary, Great Australian Bight 2019 - 2

Kirsten Rough – 18<sup>th</sup> November 2018

Please find below the latest update for recent and expected conditions for the 2018-fishing season. Please don't hesitate to call or email if there are any questions, contact details and links to the various websites used are listed at the end.

## **Summary:**

The situation continues to look like an-historically typical season, with nothing to indicate an early or a late start, nor fish leaving or moving through the area at an unusually rapid rate.

The broader climate systems are now indicating a season with weather patterns more similar to that of 2014 → that was a very easy season with reasonable periods of calm between the south-easterlies.

Upwelling began mid October, and has had several strong pulses over the past few weeks.

There are no seismic surveys with approval to operate through the 2019 season. The seismic application lodged for the area covering Rocky Island and the Cabbage Patch (in the Duntroon Basin adjacent to Eyre Peninsula) is scheduled for a decision by NOPSEMA early December.

Norwegian Oil Company, Equinor are continuing to progress their plans to drill in the location of the 2012 BP seismic survey area of the central GAB. Their intention remains to have a Dynamic Positioned (DP) Rig in the area from October 2019. Dynamic Positioning means thrusters not anchors hold the rig on location. Equinor are proposing to release the Environmental Plan for public comment in the first quarter of 2019.

All Commonwealth Marine Parks in the GAB and Kangaroo Island area are now active. This means there are restrictions on where activities can be done - and NO FISHING OR TOWING in Green Zones. A package of maps and class approvals will be provided prior to fishing operations.

## **Forecasts and areas of Ocean Warming coming into the 2019 fishing season:**

Climatically the situation remains similar to that reported in the 1<sup>st</sup> update – however the systems influencing weather patterns in the Bight are now indicating that the strong high-pressure systems will have longer periods of calm between the periods of stronger south-easterlies. This is good for upwelling and gives a “fishing opportunity” situation more similar to that of the 2014-fishing season. This was a quick and relatively easy season, and the shortest ever on record for the SBT Industry. Though please note that 2014 was off the back of a very strong Leeuwin Current over the 2013-winter, which was NOT the situation through 2018. The SST through October 2018 is more similar to October last year (see GAB SST later).

The Southern Ocean has a major influence on weather systems in the Bight and longer-term forecasts are less reliable for this compared with those for the Indian and Pacific Oceans ==> as with previous fishing seasons - these updates will continue to include significant shifts or changes as they become known.

Strong upwelling has started early this season and should continue with regular pulses of cold water throughout the fishing season – this is also favourable to hold SBT in the GAB area for the entire summer-autumn period.

The distribution of warmer water masses to the west and northwest of Australia is shown in Figure 1. From these and the seasonal forecasts of Sea Surface Temperature (SST) and SBT habitat, there are no indications of strong currents, rapid warming, suppressed upwelling, SBT moving through GAB unusually quickly or leaving early.

The distribution of warmer water masses along the east coast of Australia is shown in Figure 2. The trend towards El Niño may reduce the extension of warmer water southwards towards Tasmania.

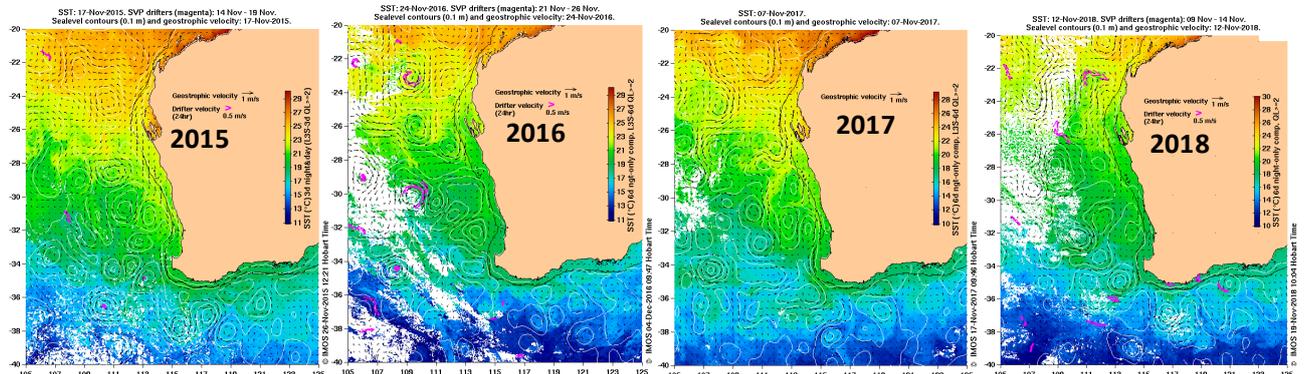


Figure 1: Snap shot of SST and currents adjacent to Western Australia for the 3rd week of November now and the previous 3 seasons (IMOS 2018)

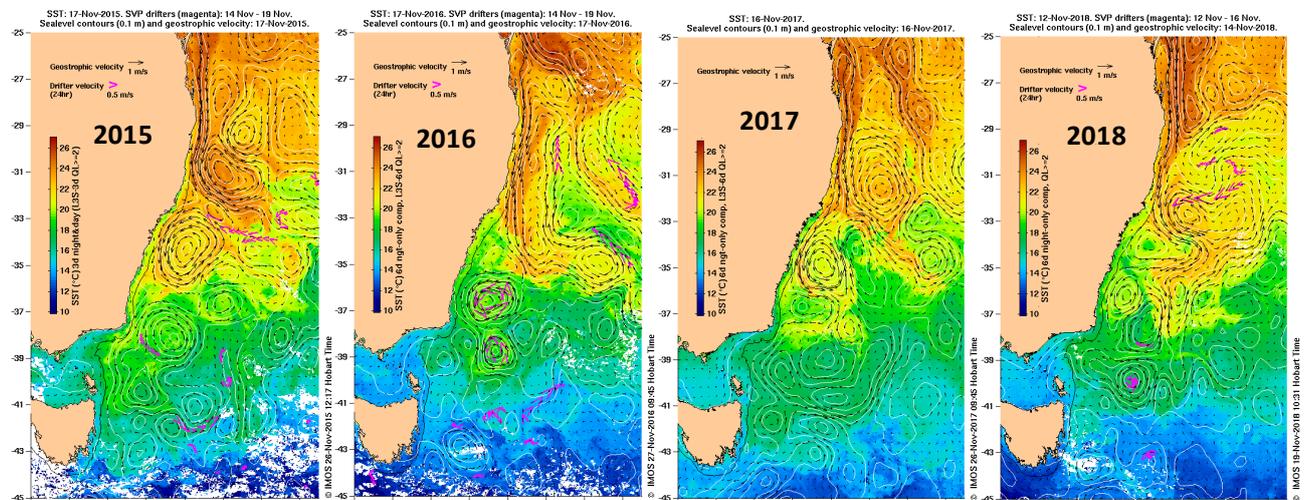


Figure 2: Snap shot of SST and currents adjacent to the East Coast for the 3rd week of November now and the previous 3 seasons (IMOS 2018).

### GAB Sea Surface Temperature (SST):

The situation across the GAB for the month of October 2018 and for the same period of time over the previous 5 years is shown in Figure 3. And across the broader area of the GAB over the past week is shown in Figure 4, including for a similar period before the last season.

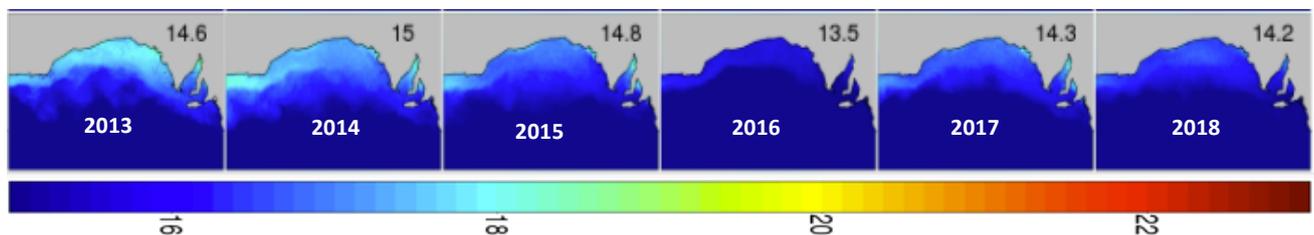


Figure 3: GAB sea surface temperatures for the area from longitude 120 to 140°E, through the month of October for 2018 and the previous 5 years; in these images aqua can contain early entry SBT (CSIRO 2018).

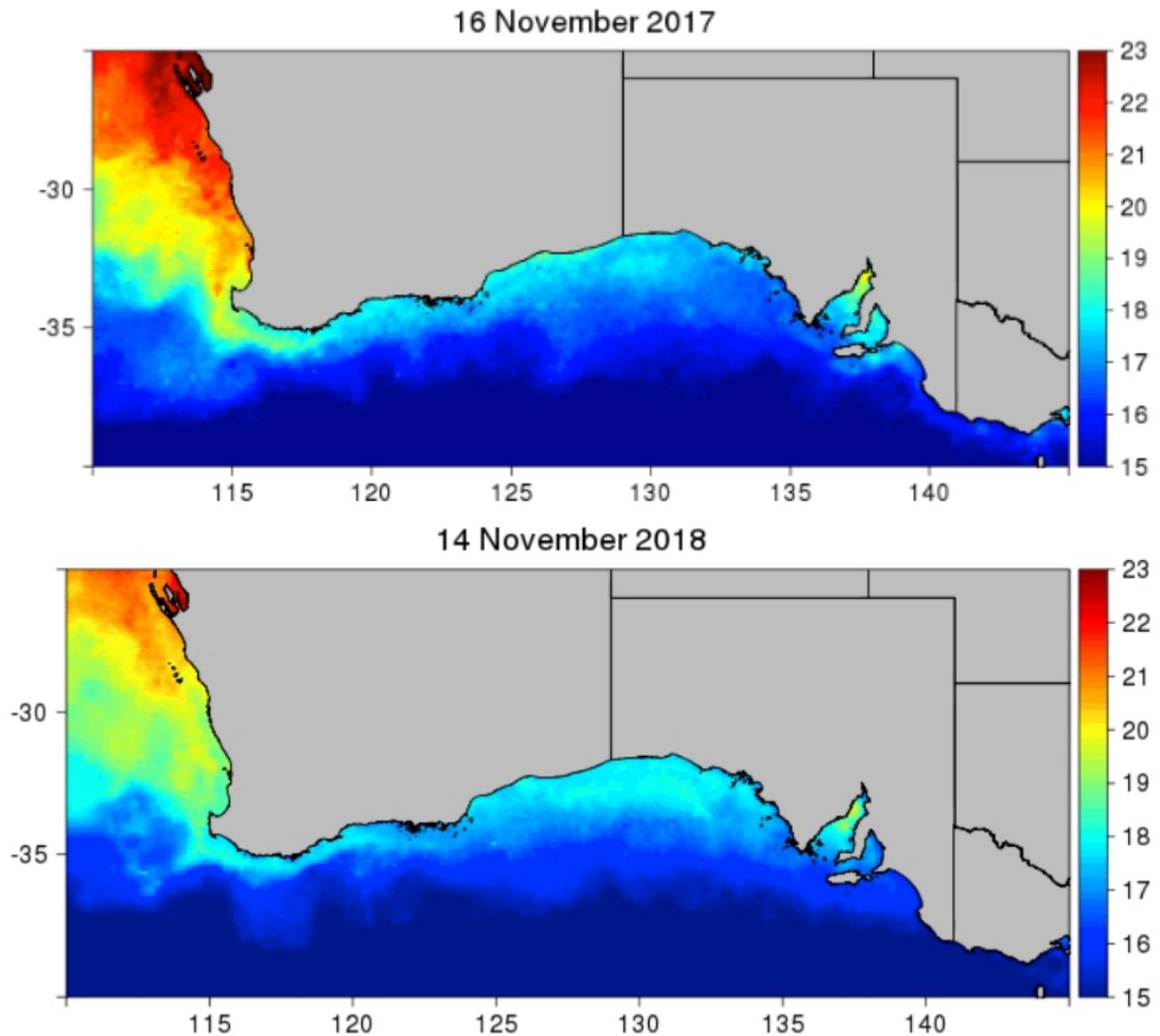


Figure 4: GAB Sea Surface Temperatures mid November 2017 (top) and 2018 (bottom); in these images aqua can contain early entry SBT (CSIRO 2018).

At this stage it is warmer over a larger area of the shelf through the central and western GAB than it was for the same period last year; but it is cooler in the Southern Kangaroo Island/Sanders Banks area.

Figure 5 and Figure 6 show the finer scale sea temperature situation at the sea surface and the sea floor. The coastal fringe areas to the west of Streaky Bay are suitable for early surfacing schools of SBT, however the offshore areas are probably still a little on the cool side and being influenced by the upwelling. The temperature profile from the sea surface down through the water column to the sea floor for the central GAB towards the shelf edge ( $132^{\circ}\text{E} \times 33^{\circ}30'\text{S}$ ); to the South west of Rocky ( $134^{\circ}30'\text{E} \times 35^{\circ}\text{S}$ ); and near Sanders Banks ( $138^{\circ}\text{E} \times 36^{\circ}\text{S}$ ) is shown in Figure 7.

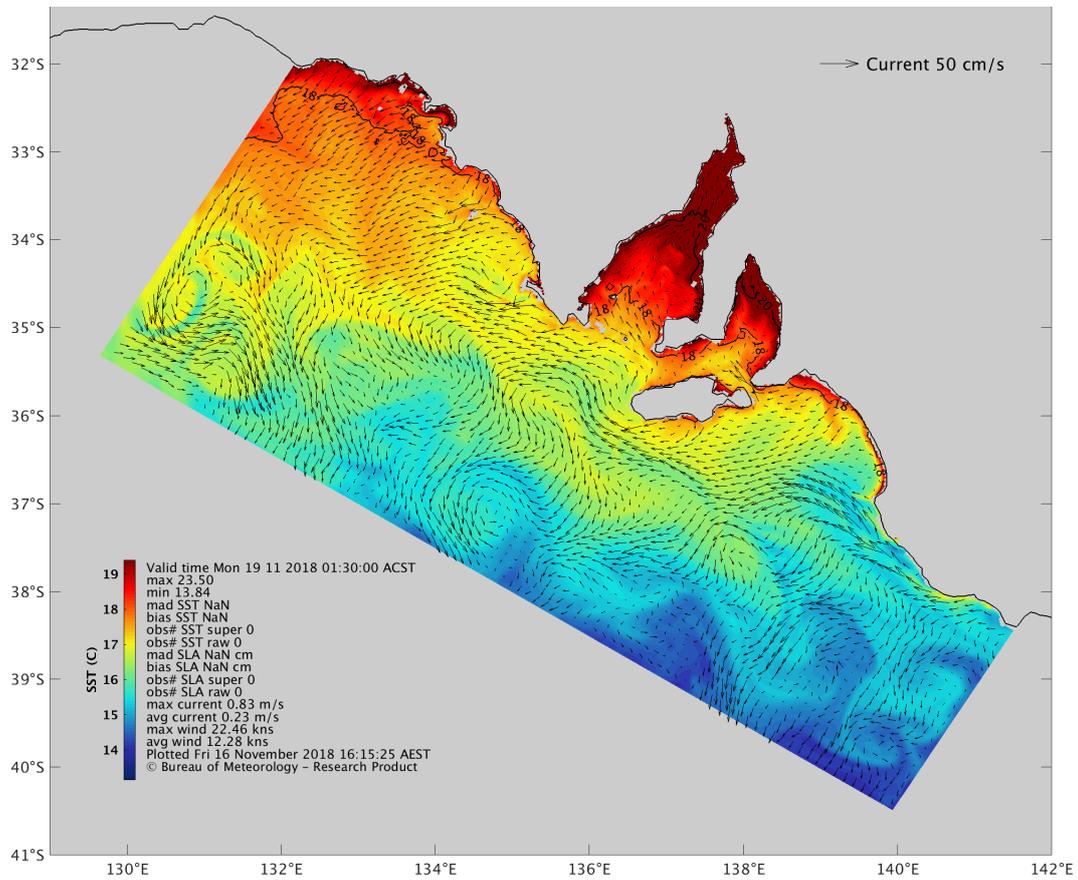


Figure 5: Fine scale SEA SURFACE Temperature and local currents on the 19<sup>th</sup> November 2018 with the 18°C temperature contour marked; please check the colour scale for ACTUAL temperatures (SARDI-BoM 2018)

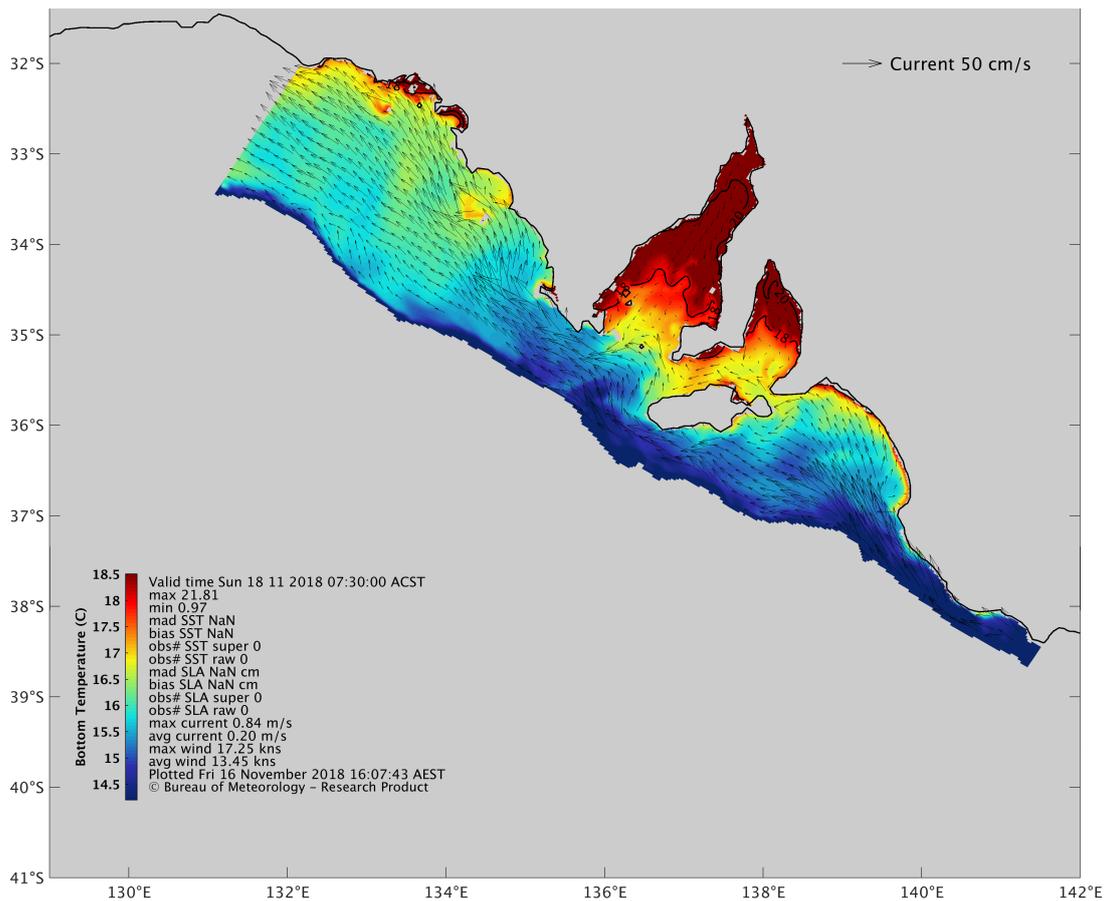


Figure 6: Fine scale SEA FLOOR Temperature and local currents on the 18<sup>th</sup> November 2018 with the 18°C temperature contour marked; please check the colour scale for ACTUAL temperatures (SARDI-BoM 2018)

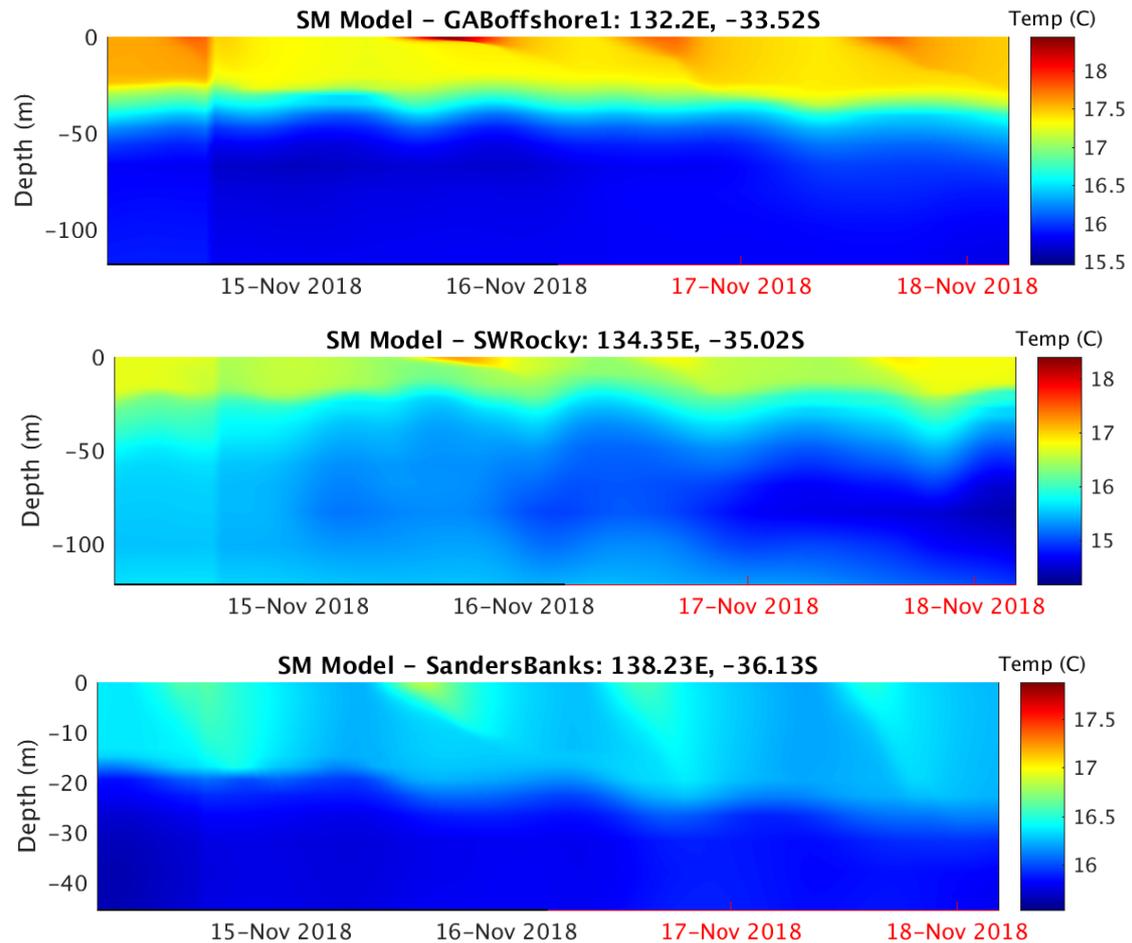


Figure 7: Sea temperature through the water profile from sea surface to sea floor at 3 historic and recent fishing locations; near shelf edge central GAB (top), near Rocky Island (middle) and near Sanders Banks (bottom) (SARDI-BoM 2018)

## **Oil & Gas Exploration Update:**

### **SEISMIC SURVEYS:**

There are no surveys scheduled through the 2019 season. ASBTIA and other fishing associations continue to be actively involved in “consultations” on a number of seismic and drilling applications in the Great Australian Bight.

PGS lodged the 3<sup>rd</sup> revision of the Duntroon MC2D, MC3D (Figure 8) application to NOPSEMA on the 7<sup>th</sup> November 2018. ASBTIA has continuously voiced concerns related to this survey over the now 2 year consultation and has now written directly to NOPSEMA. The NOPSEMA decision is expected to be on the 7<sup>th</sup> December 2018.

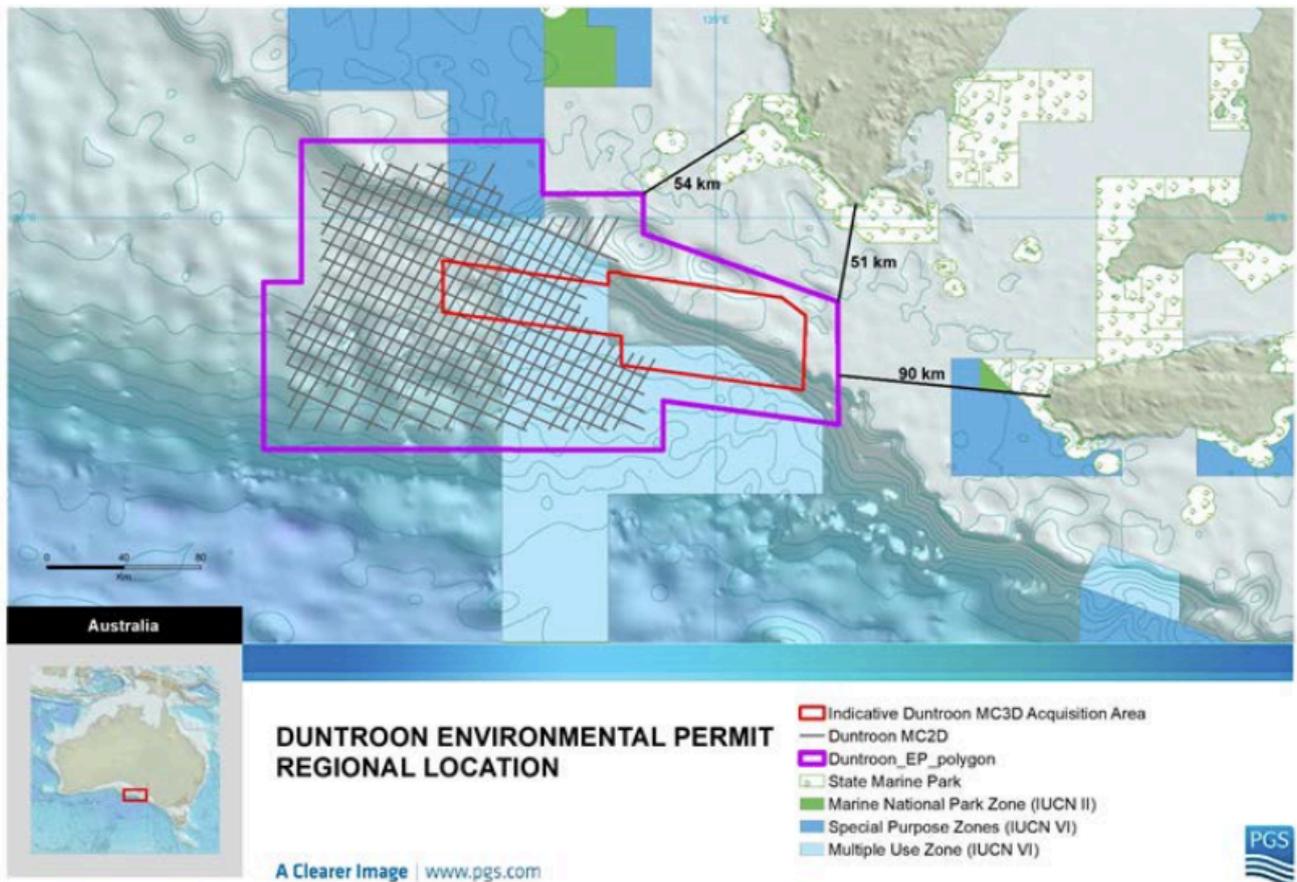


Figure 8: Duntroon Seismic Survey; total operational area outlined in Pink, proposed for 2019-2020 fishing season are the 2D transect lines in Grey and a more intense 3D survey within the area outlined in Red. (PGS 2018)

#### EXPLORATION DRILLING:

EquiNor have formally started their 'stakeholder engagement' with the fishing and aquaculture sectors through September 2018. ASBTIA has responded with a comprehensive letter of concerns. GreenPeace recently leaked a draft copy of EquiNor's Oil Pollution Emergency Plan; this has gained considerable media interest given the potential distribution of oil if they lose control of the well (Albany to Newcastle, or Great Barrier Reef if the response is delayed due to weather or issues with transporting equipment from the northern hemisphere). EquiNor have indicated through the media that the full Environment Plan will be released for public comment through the first quarter of 2019.

Any questions on any items in this update – please don't hesitate to call or email; contact details and links to the various websites used for this update are listed here:

GAB SBT Habitat Forecasts: <http://www.cmar.csiro.au/gab-forecasts/env-observed.html>

eSA Marine: [http://pir.sa.gov.au/research/esa\\_marine/sarom](http://pir.sa.gov.au/research/esa_marine/sarom)

IMOS ocean monitoring: <http://oceancurrent.imos.org.au/index.php>

Bureau of Meteorology: <http://www.bom.gov.au>

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