

# Torres Strait Tropical Rock Lobster Resource Assessment Group Meeting 23

Meeting Record

15 May 2018

Northern Fisheries Centre, Cairns

Note all meeting papers and record available on  
the PZJA webpage: [www.pzja.gov.au](http://www.pzja.gov.au)



Australian Government

Australian Fisheries Management Authority

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## Meeting participants

### Members

Name	Position	Declaration of interest
Dr Ian Knuckey	Chair	Chair/Director of Fishwell Consulting Pty Ltd and Olrac Australia (electronic logbooks). Chair/member of other RAGs and MACs. Conducts various AFMA and FRDC funded research projects including FRDC Indigenous Capacity Building project. Nil interests in TRL Fishery and no research projects in the Torres Strait. Full declaration of interests provided at <b>Attachment A</b> .
Natalie Couchman	AFMA Executive Officer	Nil
Selina Stoute	AFMA member	Nil
Allison Runck	TSRA member	Nil. TSRA holds multiple TVH TRL fishing licences on behalf of Torres Strait Communities but does not benefit from them
John Dexter	Queensland Department of Agriculture and Fisheries (QDAF) member	Nil
Dr Andrew Penney	Scientific member	Research consultant (Pisces Australis), member of other RAGs. Nil pecuniary or research interests in the Torres Strait
Dr Eva Plaganyi	Scientific member	Project staff for PZJA funded TRL research projects
Aaron Tom	Industry member	Nil. Traditional Inhabitant Gudumalulgal and TIB licence holder
Terrence Whap*	Industry member	Nil. Traditional Inhabitant Maluialgal and Traditional Owner. Does not hold a TIB licence

Name	Position	Declaration of interest
Les Pitt	Industry member	Nil. Traditional Inhabitant Kemer Meriam and TIB licence holder
Phillip Ketchell**	Industry member	Nil. Traditional Inhabitant Kaiwalagal and Traditional Owner
Daniel Takai	Industry member	Pearl Island Seafoods, Tanala Seafoods, TIB licence holder and lessee of TSRA TVH licence
Dr Ray Moore	Industry member	Industry representative, Torres Strait Master Fisherman licence holder and East Coast TRL Fishery licence holder
Brett Arlidge*	Industry member	General Manager MG Kailis Pty Ltd. MG Kailis Pty Ltd is a holder of TVH licences

## Observers

Name	Position	Declaration of interest
Dr Robert Campbell	CSIRO scientific observer	Nil pecuniary interests. Project staff for PZJA funded TRL research projects
Jerry Stephen	TSRA Deputy Chair, TSRA Member for Ugar and TSRA Portfolio Member for Fisheries	TIB licence holder and Native Title holder
Trent Butcher*	Industry observer	TVH licence holder
Kenny Bedford*	Observer	Finfish RAG industry member and TIB licence holder
Suzannah Salam	Industry observer	TIB licence holder and lessee of TSRA TVH licence

### Notes:

\* Arrived at 8:30 am, partway through agenda item 1.2.

\*\* Arrived at 9:15 am, partway through agenda item 2.1 and departed at 3:15 pm partway through agenda item 5.

# 1 Preliminaries

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## 1.1 Apologies

1. Mr Jerry Stephen opened the meeting in prayer at 8:15 am on 15 May 2018.
2. The Chair welcomed attendees to the 23<sup>rd</sup> meeting of the Torres Strait Tropical Rock Lobster Resource Assessment Group (TRLRAG 23). The Chair acknowledged the Traditional Owners of the land on which the meeting was held and paid respect to Elders past and present.
3. Attendees at the RAG are detailed in the meeting participant tables at the start of this meeting record.
4. Apologies were received from Charlie Kaddy (TSRA Member) and Tom Roberts (QDAF member). Mark David (Industry Member), Ian Liviko (PNG National Fisheries Authority (NFA)) and Benjamin (Maluwap) Nona (Chair, Malu Lamar (Torres Strait Islander) Corporation RNTBC) were invited but did not confirm attendance.
5. The Chair noted that the RAG's role is to provide advice for the TRL Fishery based on the best available science. In this regard, the Chair thanked CSIRO, the independent scientific member, industry and other agencies for pulling together the required data and analyses to enable the meeting to be held at such short notice.

## 1.2 Adoption of agenda

6. The draft agenda was adopted without change (**Attachment B**).
7. The RAG noted that the draft record of the 22<sup>nd</sup> meeting of TRLRAG held from 27-28 March 2018 had been circulated to members for out-of-session comment on 14 May 2018. Comments on the draft record are due by 25 May 2018, after which time the record would be finalised.

## 1.3 Declaration of interests

8. The Chair stated that as outlined in PZJA Fisheries Management Paper No. 1 (FMP1), all members of the RAG must declare all real or potential conflicts of interest in Torres Strait TRL Fishery at the commencement of the meeting. Declarations of interests were provided by each meeting participant. These are detailed in the meeting participant tables at the start of this meeting record.

## 1.4 Action items from previous meetings

9. The RAG noted the report provided by the Executive Officer advising of the status of actions arising from previous TRLRAG meetings (**Attachment C**).
10. The RAG discussed the following action items further:
  - a. Action item 3 - an industry member queried whether more information was available from PNG on the location and quantum of PNG TRL trawl catches. The AFMA member advised that at recent meetings with the PNG NFA, including the Fisheries Bilateral meeting held on 5 February 2018, the updated stock assessment results and key findings of the larval advection model were presented. PNG acknowledged that the larval advection modelling together with past research provides strong evidence that TRL is a shared stock between Australia and PNG. AFMA has requested more detailed catch and effort data from PNG, in particular from their trawl fleet as well as length frequency, sex and spatial data where available. PNG showed an interest in participating in future

stock surveys and AFMA will work with CSIRO and PNG to identify opportunities to do so.

- b. Action item 4 – Mr Les Pitt advised that he has a compilation of traditional names for the areas around Erub and can provide this if it will assist. The CSIRO scientific member noted that they are using the traditional names provided for a number of purposes and are working through Malu Lamar to obtain names that have been broadly agreed. AFMA agreed to follow up with Mr Pitt and Malu Lamar on this matter.

#### **Action 1**

AFMA to liaise with Mr Pitt and Malu Lamar to provide agreed traditional names for the area around Erub.

## **2 Updates from members**

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### **2.1 Industry and scientific**

11. The RAG noted updates provided by industry and scientific members and observers on the recent performance and key issues affecting the TRL Fishery:

- a. An industry member advised that there have been major impacts from the hookah closure implemented on 30 April 2018 for both fishers and buyers. The member further advised that one buyer has already shut down their operations in the Torres Strait and other buyers are feeling the pinch. MG Kailis has diversified sources of TRL supply, including the East Coast and PNG TRL fisheries and have been able to adapt but not without losses. Catches have dropped to 1-2 tonnes per week. The member advised that they estimate the lost earnings from the closure to be \$11 million for all licence holders (\$4 million for TIB licence holders). He emphasised that this is money that is not flowing back into Torres Strait communities.
- b. The member also stated that he has written two letters to AFMA detailing MG Kailis' and other operators' concerns as to the reliability of pre-season surveys to accurately estimate stock abundance. Based on catch and effort data for the season to date, the member estimated that stock abundance has been underestimated by 50% and there remain uncertainties around the actual abundance of residual 2+ lobsters. On this basis, the member advised that they believe the prohibition on the use of hookah gear to be unjustified. The member noted they have contributed detailed length frequency data to CSIRO to assist in the development of analyses and to support the RAG in providing advice.
- c. Another industry member advised that he stopped diving a while back in the Eastern region of the Fishery as the catch rate had dropped too low. The member fishes a large area out past Mer, towards Cumberland Passage and back towards Erub. The member is aware of ten or more divers operating in the Eastern region. He has heard reports that divers around Masig are experiencing good catches.
- d. Another industry member confirmed that the central islands are getting decent catches. Masig is catching better than this time last year and is doing better than Warraber and Poruma. More recently there have been some adverse weather conditions and community issues which has slowed effort. Fishers have reported areas of abundance which were not surveyed in the pre-season survey. Divers from lama free dive and are fishing around Warrior Reef. Catches out of Badu

and Mabuiaq are good. The member suspects there are some catches that remain unreported. The component of his business that relies on the TRL Fishery is struggling at the moment and he is having to absorb staff and costs into other parts of his business but does not know how sustainable this is over the longer term.

- e. Another industry member noted that catches around Thursday Island and the inner group of islands are very low. The only significant catches are around Mabuiaq.
  - f. Another industry member advised that effort is low around Boigu. The lobsters are there but can't be fished due to dirty water. PNG is reportedly using set nets and catching good amounts. There are lots of lobsters to be found and moulted shells are washing up on the shore around Mari Village (adjacent to Deliverance Island). The member noted that some historical fishing grounds down the East Coast are no longer accessible by Torres Strait fishers. The RAG noted that this area is now managed by QDAF.
12. The Chair acknowledged members concerns with regards to the impacts the advice the RAG provides to the PZJA can have on the livelihoods of the industry and their communities. He pointed out that the RAG does not take this responsibility lightly and utmost care is taken to fully understand not just the biological but also the economic and social impacts of RAG advice when it is being provided.
13. An industry observer sought clarification on the survey regime for the TRL Fishery. The CSIRO scientific member advised that the last mid-season survey was conducted in 2014. The move to a single pre-season survey has been subject to close scrutiny by the RAG prior to the change being implemented. This included consideration of trade-offs and costs of such a change. It was noted that analysis considered by the RAG showed a good correlation between pre-season surveys and actual catches.
14. An industry member suggested that the design of the pre-season survey needs to be reviewed, particularly around the number and spatial structuring of survey sites and the timing of surveys. The member expressed concerns that some areas were not surveyed adequately this season, particularly to the North of Mabuiaq, and this may have affected estimates of abundance. The CSIRO scientific member noted that there can be variations from year to year. The survey is timed to align with the average over the available time series. The RAG noted that the natural variability of the stock and limits on funding create challenges for the science.

## 2.2 Government

15. The RAG noted an update provided by the AFMA member regarding management initiatives relevant to the TRL Fishery:
- a. Catches in the TRL Fishery to date - as at 10 May 2018, the total reported catch for the TRL Fishery was 156 tonnes. There have been delays in receiving catch disposal records, and given this, this amount is likely to be under-reported.
  - b. Management changes since TRLRAG22 - there have been two major management changes since the last meeting. Additional moon-tide hookah closures commenced on 13 April 2018 followed by a prohibition on the use of hookah for the remainder of the season commencing 30 April 2018. The intent of these management changes was to give effect to the TRL Working Group recommendations that catches should not exceed the RBC and to prolong the opportunity for TIB fishers to fish for the duration of the season. While the additional moon-tide hookah closures did slow fishing, projections following these meetings indicated the Australian share of the RBC would be reached by the end of May 2018. The decision to prohibit the use of hookah was taken to

slow fishing further. The impacts of these changes on the data is one reason for this meeting.

- c. Finalisation of catch sharing arrangements with PNG – AFMA continues to pursue a meeting with PNG in order to finalise catch sharing arrangements for the 2017/18 fishing season, noting that Australia cannot make a unilateral decision about catch shares. Under the terms of the Torres Strait Treaty, the Australian share is 190.65 tonnes in Australian waters and 11.2 tonnes in PNG waters. Cross-endorsement arrangements to enable Australian boats to access the 11.2 tonnes in PNG waters have yet to be agreed with PNG, and AFMA is looking at alternatives under the Treaty to enable Australian boats to access Australia's full share. In a situation in which the TAC is so low, AFMA does not want to see catch go uncaught. Should Australia cross-endorse PNG boats to fish in Australian waters, they would be subject to the same management requirements as Australian boats, including licence conditions.

16. An industry member noted that PNG had caught approximately 30 tonnes to date, noting hookah fishing was not permitted until 30 April 2018. The member expects that PNG will catch their full share regardless of whether catch sharing arrangements have been agreed.

17. The RAG noted an update provided by the QDAF member regarding QDAF activities relevant to the management of the TRL Fishery:

- a. Catches in the East Coast TRL Fishery to date - as at 14 May 2018, the total reported catch for the TRL Fishery was 80 tonnes or 41% of the TAC for the Fishery (195 tonnes). Fishing slowed in March 2018 but is picking up again.
- b. East Coast TRL Working Group – the next meeting will take place in late July 2018 and will look at finalising the management objectives as well as have discussions on the biomass proxies for the Fishery to enable an adjustable TAC. The Department will also be putting out a reform discussion paper for public comment at the end of May 2018, which includes a review of management and licensing arrangements with a view to improve the efficiency and effectiveness of the arrangements and provide greater consistency with other jurisdictions.

18. An industry observer questioned the impacts of the change to the East Coast TRL Fishery season start date on the TRL stock. The Chair advised that this matter was considered at the last RAG meeting in March 2018, and there was no evidence to suggest that this change has had an impact on the Torres Strait TRL Fishery.

19. The RAG noted an update provided by the TSRA member regarding TSRA activities relevant to the management of the TRL Fishery:

- a. Fisheries Summit – the summit planned for May 2018 has been postponed. This will affect nominations for Traditional Inhabitant representatives on PZJA fora. The existing terms for members will be extended until new representatives can be appointed. TSRA will advise once new dates for the Summit are confirmed.

## 2.3 PNG NFA

20. An update from PNG NFA was not available as a representative was not in attendance.

## 2.4 Native Title

21. An update from Malu Lamar (Torres Strait Islander) Corporation RNTBC (Malu Lamar) was not available as a representative was not in attendance.



### 3 2017/18 TRL CPUE and length frequency trends

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22. The RAG considered a presentation provided by Dr Robert Campbell, CSIRO scientific observer, detailing analyses of catch and effort data pertaining to the TRL Fishery for the 2017/18 season:
- a. The Chair explained that this is the third in-season CPUE analyses conducted for the TRL Fishery. It is not normal for such analyses to be conducted in-season, but that the unusual circumstances experienced in the 2017/18 season has meant processes have had to be adapted. This and other analyses to be provided at this meeting, will ensure the RAG has the best available science upon which to provide advice. The Chair thanked CSIRO for pulling together the required data and analyses at such short notice. The Chair also thanked MG Kailis for voluntarily providing the detailed length frequency data for the RAG's consideration.
  - b. Data informing the analysis was received on 8 May 2018. In considering the analyses, the March and April 2018 data is not complete (~80% for March and ~60% for April). There are three sources data drawn on for the analysis:
    - i. the TRL04 logbook - mandatory for TVH licence holders only;
    - ii. TDB01 docket book - voluntary for all licence holders, no longer in use; and
    - iii. TDB02 catch disposal record - mandatory for all licence holders, replaced the TDB01 docket book from 1 December 2018.
  - c. With regards to the TVH sector's catch and effort data, AFMA are investigating some discrepancies between the TRL04 and TDB02 returns. With regards to the TIB sector's catch and effort data, the monthly catches for the 2013-2016 fishing seasons is an estimate as the catch month is not known for a substantive portion (33-55%) of the total catch in these seasons.. With regards to catch per unit effort (CPUE), the data presented was nominal, not standardised.
  - d. A comparison of TIB sector's catch and effort data shows:
    - i. Catch by month – December 2017 and January 2018 are considerably higher than those in the previous year, while February and March 2018 are similar. The trend seen in March 2018 may be attributable to incomplete data.
    - ii. Catch by method – the hookah fishing method as a percent of total catch was highest in 2017 and has declined in 2018. There is a clear correlation between methods reported as hookah fishing and unknown, so the unknown is likely to be hookah fishing.
    - iii. Catch by processed form – there is a clear correlation between hookah fishing and the catch composition skewing to whole (generally live) lobsters. The data also indicates there has been a move to whole lobsters over the years with the highest catch of whole lobsters as a per cent of overall catch occurring in 2017.
    - iv. Catch by area fished – catches around Thursday Island as a percent of total catch were high (>50%) in 2017, but the data indicates this is not the case this season. Catches in the 2018 season are mainly coming from the Mabuiag, Badu, Thursday Island and Warrior Reef areas. There was some discussion on the accuracy of the area information being recorded on TDB01 docket book and TDB02 CDR forms, with some industry members suggesting that this recorded area often reflects where the lobsters are sold and not where the catch was caught.
    - v. Catch by effort (days fished) – during 2018 there has been an increase in proportion of trips of >1 day in length in recent years, noting however that 'days fished' is a crude measure of effort. Total effort (days fished) during

December-April this season is estimated to be around 30% higher than during the same period in the previous season.

- vi. Nominal CPUE – CPUE by month was found to be similar to recent years. CPUE for hookah fishing is variable but there is no clear trend. CPUE for lamp fishing is the lowest since 2004. Overall the CPUE for 2018 is looking average, again noting ‘days fished’ is a crude unit of measure.
  - vii. CPUE by area – catch rates in 2018 are highest in Mabuiag, Northern and Mt Adolphus areas. Mean catch rates over all areas lowest since 2015.
- e. A comparison of TVH sector’s catch and effort data shows:
- i. Catch by month – catches in February and March 2018 are slightly higher than those in the previous year.
  - ii. Catch by method and processed form – hookah fishing is the predominant method used and whole lobsters comprise the majority of catch.
  - iii. Catch and effort by area fished – in 2018, ~55% of effort and catch from the TVH sector was in the Northern area, followed by Mabuiag, Warrior and Warraber areas.
  - iv. Catch by effort (‘hours fished’) – there was a higher proportion of catch taken in periods of >6 hours in 2018, compared with previous years. Dr Campbell questioned how accurately ‘hours fished’ is reported. Industry members and observers noted that they take ‘hours fished’ to mean different things (e.g. hours the tender spends away from the boat, hours divers are in the water) and that AFMA needs to clarify how this needs to be reported. The RAG noted that there was a significant proportion of ‘unknown’ catch by ‘hours fished’ data for the TVH sector in 2017. The AFMA member advised that this has been looked into as noted at the previous RAG meeting.
  - v. CPUE – generally, while catches may have been high, effort was also high and the CPUE reflects this. Catch rates decrease after February and remain similar in March and April. In 2018, mean catch rate in March and April is 28.4% lower than in February (average decrease over past 6 years is 20.5%). Mean catch rates in 2018 of 12.6 kg/hour are lower than mean catch rates over past 6 years of 14.8 kg/hour, though slightly higher than 2017.
  - vi. ‘Hours fished’ per tender set - greater proportion of tender-sets with >5 hours of effort.
  - vii. Total effort - data for 2018 is incomplete but indicates an increase over 2017. Dr Campbell advised that looking at individual boat data (which could not be presented due to data confidentiality rules), it may be the case that one or two boats may have fished harder thus accounting for a greater proportion of catch and effort, in effect skewing the data across the whole sector.

23. Dr Campbell advised that following the RAG meeting he would recirculate his paper with corrections, as raised and discussed with members throughout the presentation.

## **Action 2**

Dr Campbell’s corrected paper to be circulated to the RAG following the meeting.

24. The RAG considered a presentation provided by Dr Eva Plaganyi, CSIRO scientific member, detailing further analyses of available data pertaining to the TRL Fishery for the 2017/18 season:

- a. The stock assessment is reliant on accurate information from all 4 indicators. The empirical harvest control rule detailed in the draft harvest strategy will also rely on these indicators with the following weighting: CPUE data for the TIB sector (10% weighting); CPUE data for the TVH sector (10% weighting); pre-season survey 0+ lobster index of abundance (10% weighting); and, pre-season survey 1+ lobster index of abundance (70% weighting).
- b. Available data for the Fishery to date (e.g. catch, effort, length composition) does not indicate a better than average season, although it could be argued that it is a low-average season rather than a low season. Combined Fishery catch over the period December to March 2018 is 87% of the average catch in the preceding period 2005-2017, and 37% of the maximum catch over this period.
- c. Although there is evidence of localised hotspots, CPUE estimates for 2017/18 fishing season are low to average relative to historical levels, noting the CPUE data presented were nominal and would likely be scaled down if standardised. There is some evidence that fishing effort (days/hours fished) may have increased.
- d. Length composition data indicates that catch is shifting as expected from larger males to a more even sex ratio. The data are also showing an increase in the proportion of recruiting 1+ lobsters being caught alongside a decrease in the proportion of residual 2+ lobsters.
- e. PNG TRL Fishery length composition data is different to that provided for the Australian TRL Fishery. The PNG data indicates there may be stronger recruitment in PNG waters, however further information is needed on the spatial distribution of catches to further inform analyses.
- f. MG Kailis data detailing the proportion (of total catch) of different size grades for catch received from both the Australian and PNG TRL Fishery does not show a marked deviation from average. Additional data were provided to members by Mr Brett Arlidge during discussion on this item. Noting that the data presented encompasses more than 50% of total catches for the Fishery, Mr Arlidge suggested that the data does not align with what would be expected under a low RBC.

25. An industry member queried whether there may have also been environmental factors that have affected the stock this season, for example high turbidity from South Fly River outflows impacting on migration. The AFMA member advised that studies on this matter can be tabled at the next TRL and Finfish RAG meetings for consideration.

### **Action 3**

South Fly River studies to be provided for consideration at the next TRL and Finfish RAG meetings.

26. The RAG agreed that catch and effort data (and the indicators derived from these data e.g. CPUE) are fundamental to understanding the dynamics of the TRL stock and performance of the TRL Fishery and discussed improvements that could be made to its collection and analysis:

- a. The RAG noted that any analysis of data will only be as good as the data itself.
- b. Spatial structure - industry members advised that catches attributed to the Badu and Thursday Island areas are likely to be overstated, as fishers are reluctant to

disclose the areas in which they have fished and may instead nominate the area the lobsters are being landed - catches are more likely coming from the Mabuig and Northern areas. Dr Campbell agreed that this is a credible conclusion given anecdotal reports do not appear to align spatially with the catch and effort data. With regards to the TVH sector, the TRL04 logbook limits the reporting of catch and effort to a single location. Given this, the location the primary boat is anchored is generally recorded, not the location where tenders are actually fishing (which can range as far as 20 nm from the primary boat).

- c. Measure of effort – the RAG agreed that the ‘days fished’ measure used in the TDB02 catch disposal record is a crude measure of effort and may not include travel or searching time nor indicate what portion of the day was spent actively fishing. Industry members advised it is common practice for fishers to round-up to whole days. Further, the ‘hours fished’ measure used in the TRL04 logbook is being reported inconsistently across fishers (e.g. hours the tender spends away from the boat, hours divers are in the water).
- d. CPUE – noting the CPUE data presented was nominal, the RAG agreed that there is a need to standardise the CPUE data. Standardisation of CPUE data involves making adjustments to the data to take into account factors other than stock abundance that may influence catch rates. An important one of these factors is changes in fishing behaviour and fishing power over time. These changes can otherwise confound results by overestimating CPUE and by inference stock abundance. This “effort creep” includes changes to the size of engines, use of GPS, gear, areas fished, time fished and experience of divers. Current CPUE data may also be confounded by a hyperstability effect, seen when fishers remain on fishing “hotspots” or move from one hotspot to another – thereby maintaining high catch rates that don’t represent the population size of the entire stock. Industry members and observers acknowledged the best way to understand effort creep is to talk to the fishers themselves.
- e. Voluntary fields - Given constraints under the *Torres Strait Fisheries Act 1984* (the Act), some data fields on the TDB02 catch disposal record are voluntary and as such often left uncompleted. This creates problems in providing a complete analysis of the data for the TIB sector and it is recommended that all fields be made mandatory. The AFMA member advised that amendments to the Act are being progressed to provide the capacity to require all licence holders to complete logbooks, but that this process is lengthy one and these amendments are a number of years off.
- f. Length frequency – the RAG noted that length frequency data is currently provided by Kailis. The RAG agreed this data is of high value and has been particularly useful this season in informing analyses on the performance of the Fishery. However, there is a longer term need to collect representative length frequency data from across the Fishery.

27. The RAG agreed that if the catch and effort data for the TRL Fishery is not accurate, this undermines:

- a. general confidence in the science and the ability of the RAG to understand the dynamics of the stock and performance of the Fishery;
- b. the effectiveness of the standardisation of the CPUE data series used in the stock assessment as well as survey design both of which are informed by data on the spatial structure of catch and effort;
- c. the accuracy of the stock assessment itself as catch and effort data from both the TIB and TVH sectors is expressly considered in the assessment (10% weighting per sector).

### Recommendation 1

For these reasons, the RAG recommended that the accuracy of catch and effort data for the TRL Fishery be improved as a matter of priority, with a particular focus on:

- improving the accuracy of the spatial information on catch and effort data (e.g. point of capture as opposed to point of anchoring or landing) and providing further guidance to fishers on how this data should be recorded;
- developing a finer scale measure of effort for the TDB02 catch disposal record (e.g. 'hours fished' as opposed to 'days fished') and providing further guidance to all fishers on how effort should be recorded in both the TDB02 catch disposal record and TRL04 logbook (e.g. to include time spent travelling, searching and actively fishing);
- developing a better understanding on changes in fishing behaviour and power over time (e.g. changes to the size of engines, use of GPS, gear, areas fished, time fished, experience of divers), to inform the standardisation of CPUE data. This should be done through close consultation with industry;
- in the longer term, consider the inclusion of travelling time, searching time and fishing time as separate effort fields in the logbooks.

## 4 2017/18 trends in 2+ lobster abundance

28. The RAG considered a presentation provided by Dr Eva Plaganyi, CSIRO scientific member, detailing the current stock assessment methods and analyses pertaining to residual 2+ lobsters in the TRL Fishery:

- a. RBCs - Reflecting the variable nature of the TRL stock, the RBCs for the Fishery between seasons have also varied. However, catches have generally corresponded with the RBCs as set. For the 2017/18 fishing season, taking into account considerable uncertainty across a range of different inputs, the assessment suggested an RBC of 299 tonnes with a 90% confidence interval of 196-401 tonnes.
- b. Draft harvest strategy - the target and limit reference points for the TRL Fishery, as detailed in the draft harvest strategy, have been deliberately set at conservative levels (and  $0.65 B_0$  and  $0.40 B_0$  respectively) to take account of the fact that the resource is shared and important for the traditional way of life and livelihood of traditional inhabitants. The target reference point is currently set at a level that gives higher average stock biomass consistently across years. Increasing catch levels above the RBC will result in the Fishery fluctuating around a lower average stock biomass level. Whilst this can be done under a harvest strategy, there will be trade-offs (e.g. higher risks, lower highs) and it did not align with previous recommendations of all RAG members to have a conservative harvest strategy.
- c. Implications of exceeding catch limits - The conservative settings in place for the TRL Fishery mean there is a fairly low risk that exceeding the RBC one season will significantly deplete the stock. However, scientific analyses of fisheries from around the world have demonstrated that when a scientifically determined catch limit is regularly exceeded, it results in a decline in the stock biomass and leads to overfished stocks that are no longer able to produce the same large yields as in the past. The CSIRO scientific member explained that this is one of the reasons that it can be beneficial to not deviate from the best available science (which could include advice that conditions are anomalous) and is also part of the motivation for the development of harvest strategies which include pre-agreed rules for decision making.

- d. The stock assessment model - the model used in the TRL Fishery is an age-structured model (includes different selectivities for 1+ and 2+ lobsters) and is similarly conservative to that of the draft harvest strategy. The complexity of the model matches the management needs for the Fishery as well as the availability and reliability of data. There are other models that could be used in the Fishery (e.g. a spatially-disaggregated model or a length-based and age-disaggregated model), however these options are more data “hungry” and would cost more as a result. The existing model is considered to perform reasonably given management needs and budget constraints.
- e. Uncertainties in the stock assessment – the TRL stock exhibits considerable natural inter-annual variability with regards to spawning, settlement and growth. Further, environmental influences (e.g. climate change) also affect these relationships. It is generally understood that when less data is available for a fishery, a more conservative approach needs to be taken. More data can help address some of these uncertainties and allow for a more precise (less conservative) RBC to be set. However, the more complex an assessment, the more costly it is to maintain.
- f. TRL biology - catches over December to February are mostly made up of large male lobsters (referred to as residual 2+ lobsters). The incoming (recruiting) 1+ lobsters are usually only accessible to fishers from around March, when they have grown to legal size as 2+ lobsters. There is significant variability in the length composition data caused by the relative abundance of the two age groups (cohorts), inter-annual variations in size and spatial distribution. It is therefore difficult to quantify the biomass of the residual 2+ lobsters each season.
- g. Residual 2+ lobsters - because there is insufficient data to quantify the biomass of the residual 2+ lobsters each season, the stock assessment model assumes there to be an average size each year which is scaled up or down based on the inter-annual variability of the 1+ lobsters as determined through survey data. The assessment focuses on what can be quantified from the available data, that being the 1+ lobsters that grow to legal size to be fished that season.
- h. Survey data – the pre-season survey samples recruiting 0+, 1+ and residual 2+ lobsters. Mid-season surveys sample 1+ and 2+ lobsters. Pre-season survey data for 2+ lobsters is highly variable due to the small sample size and so is unreliable as an index of abundance (e.g. 2+ lobster index coefficient of variation (CV) of 0.19-0.89 vs. 1+ lobster index CV of 0.12-0.19). In addition, the pre-season survey 2+ lobster index does not show a strong correlation with catch the following season. Further, the stock assessment model does not show a clear relationship between the relative number of 3+ lobsters in the pre-season survey and the catch taken the following year.
- i. Observed variability - given small inter-annual variability in the December-March proportion of total catch (average 0.37, range 0.26-0.44) and December-February proportion of total catch (average 0.21, range 0.15-0.29), residual biomass could be estimated and used to adjust the RBC. However the quantum of these adjustments (up or down) would only be in the range of 30-60 tonnes per year. The lower the RBC, the smaller the adjustment. The model predicted December 2017-March 2018 proportion of total catch is higher than past observations since 2005 and may indicate a slight anomaly.
- j. Data needs to support a RBC adjustment – any adjustment to the RBC based on observed variability would need to occur in-season. As neither the survey data nor stock assessment model provide a means to accurately estimate the biomass of residual 2+ lobsters, a mid-season survey and representative length composition data would be needed. Given historical variability has not been that

great, any adjustment from this process would only be small, and may not be justified by the additional monitoring, analysis and review costs.

29. The RAG considered a presentation provided by Dr Andrew Penney, independent scientific member, detailing analyses pertaining to residual 2+ lobsters in the TRL Fishery:

- a. Did the pre-season survey underestimate abundance? – if the November 2017 pre-season survey 1+ lobster index of abundance was underestimated, this could mean early season catches of 2+ lobsters were higher than predicted. However, data presented to the RAG to date does not indicate an alternative to the below average abundance of recruiting 1+ lobsters.
- b. Did industry fish harder at the start of the season? – if industry fished harder at the start of the season in response to the lower RBC, this could result in higher than expected early season catches. Data presented to the RAG to date indicates that CPUE for the start of the 2017/18 season was average or slightly higher compared to the previous season. However, data for the current season is incomplete and further work is needed to better understand those factors affecting CPUE before it can be reliably interpreted.
- c. Is there a greater abundance of residual 2+ lobsters than expected? – if there was a higher than expected abundance of residual 2+ lobsters at the start of the season, this could explain the good catches experienced despite a low abundance of recruiting 1+ lobsters. Length composition data (from January 2008, 2015, 2016, 2018) indicates residual 2+ lobsters make up a significant proportion of early season catches across these years. Compared to the average contribution of residual 2+ lobsters to early season catches across years, the catches from January 2018 appear to be above average. However, the variation from this average varies between years but is small in scale (3-4%, or if scaled to weight <1 tonne).
- d. Relationship between 1+ and 2+ lobster catches – the data showed a clear correlation that when there is a high abundance of recruiting 1+ lobsters then there is an increased contribution of 1+ and corresponding reduced contribution of 2+ lobsters in early season catches. This suggests fishers catch what is there, not how much is there (e.g. spatial vs. volume). Again further work is needed to better understand those factors affecting CPUE before this relationship can be reliably interpreted.
- e. Relative contribution – estimation of the relative contribution of residual 2+ lobsters to January catches could provide the basis for an index of abundance against which a RBC adjustment could be considered. Given the scale of variation, any adjustment would only be small (e.g. approximately 10 tonnes).
- f. Data needs to support a RBC adjustment – as with CSIRO's analysis, any adjustment to the RBC based on relative contribution would need to occur in-season. Representative length composition data would be needed. Any adjustment from this process would only be small, and given this may not be justified by the additional monitoring, analysis and review costs.
- g. Alternative strategy – a better strategy to respond to inter-annual variability is to implement a harvest control rule which smooths variation to the RBC across years, resulting in less highs but also less lows.

30. In summary, the RAG noted:

- a. The scale of any adjustment would be small (e.g. 30-60 tonnes or 10 tonnes depending on the methods presented). The lower the RBC, the smaller the adjustment. Adjustments would need to apply equally (i.e. increasing and decreasing the RBC).

- b. Additional real-time data would be needed to support any adjustment (e.g. mid-season survey, representative length composition data).
- c. Given the data needed to inform any adjustment, the adjustment itself would need to happen in-season.
- d. The additional monitoring, analysis and review costs may not be justified given the considerations detailed above.

## 5 Evaluation of additional survey options to support future stock assessments

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31. The RAG noted a summary provided by the Chair regarding developments in the TRL Fishery in the 2017/18 season to date:

- a. At meetings in December 2017 and March 2018, the RAG considered the results of the November 2017 pre-season survey and stock assessment. Driven primarily by a low index of abundance for recruiting 1+ lobsters obtained from the survey, the stock assessment suggested an RBC of 299 tonnes.
- b. Some industry members have expressed concerns that the catches experienced in-season to date do not align with what would be expected from a low RBC. For this reason they believe the assessment may be misaligned with actual abundance this season.
- c. However, available data and analyses does not indicate a better than average season, although it could be argued that it is a low-average season rather than a low season. Nor does the data or analyses support an alternative to the survey prediction of a below average abundance of recruiting 1+ lobsters when averaged across the whole Fishery. Early season catches have comprised largely of residual 2+ lobsters. The data has not shown an input of recruiting 1+ lobsters into the Fishery that is higher than expected.
- d. The spatial distribution of catches is notably different from previous seasons, and are concentrated in the North West of the Fishery.
- e. Changes to the management arrangements and fishing effort this season has impacted on the reliability of CPUE data, used as an indicator of abundance for the Fishery. The CPUE can be standardised to take account of these changes however some uncertainties will remain. In addition, should the Fishery be closed early this season, the CPUE data would be incomplete and less usable in the stock assessment. The assessment will still function, but there will be greater uncertainty around the results.
- f. The low RBC and changes to management arrangements are having social and economic impacts on communities across the region.

32. Noting these developments, the RAG was asked to provide advice on survey options to support future stock assessments and management of the TRL Fishery. The RAG discussed three survey options as presented by Dr Eva Plaganyi, CSIRO scientific member:

- a. Mid-season survey – this option would cost \$174,000 (CSIRO contribution \$69,000, external contribution \$104,000). Given the indications from available data for the Fishery to date, it would be unlikely that the survey results would result in a change to the current RBC. However, the survey would provide a better understanding of current stock status to validate previous surveys and inform on the standardisation of CPUE for future stock assessments. It would also provide forewarning of low indexes of abundance for recruiting age classes and as such potential for another low RBC for the 2018/19 season. Should the Fishery close



early this season, the survey would also provide information on the stock that would otherwise be unavailable. The bias caused by sampling sites that may not have been fished for a number of months should the Fishery close early would also need to be accounted for in any analyses.

- b. Extension to pre-season survey – this option would cost \$55,000 (CSIRO contribution \$22,000, external contribution \$33,000). This would involve adding approximately 5 days to the November 2018 pre-season survey. Sites would be chosen to provide increased precision in predictions, particularly for a couple of key areas where there may have been changes in stock distribution. Given the timing, this survey would not provide a basis to change the current RBC. Nor would it provide information on current stock status to validate previous surveys or provide information on the stock that would otherwise be unavailable should the Fishery close early. However it would improve the precision (less uncertainty) of the pre-season survey indexes of abundance for the 2018/19 season.
- c. Benchmark survey – this option would cost \$486,000 (CSIRO contribution \$194,000, external contribution \$291,000). This would build on previous benchmark surveys conducted in 1989 and 2002. Timing would be similar to the current November pre-season survey. Given the timing, this survey has similar limitations as the extension to the pre-season survey. However it would improve the precision of the pre-season survey indexes of abundance for the 2018/19 season and future seasons. It would also provide additional data to inform on habitat changes across the Fishery that may need to be taken into account in the stock assessment.

33. The TSRA member suggested, that if the timing of the mid-season survey does not provide for a review of the RBC, then an extension of the pre-season survey may be the better option. The TSRA advised that they are unable to commit funding for additional survey work this season due to competing projects.

34. The RAG discussed the selection of survey sites noting concerns expressed by industry members earlier in the meeting that some areas were not adequately surveyed in the November 2017 pre-season survey, particularly to the North of Mabuiag. The CSIRO scientific member advised that sites are randomly stratified and in the case of a mid-season survey, would be selected to expressly provide for comparison with previous mid-season surveys. It is possible to include additional sites to cover off on areas which may not have been covered in the November 2017 pre-season survey. CSIRO agreed to work with industry to ensure areas fished in the current season are adequately represented in any survey conducted.

35. The CSIRO scientific member advised that there are a number of constraints around when a mid-season survey can be conducted. These constraints include scientific permit requirements and processes, funding availability, contract negotiations with funding and charter providers, and availability and mobilisation of resources to actually do the survey. Given these constraints, a mid-season survey is most likely to occur in July 2018, with results available around August 2018. This timing is within the window of when previous mid-season surveys have been conducted. The RAG agreed that industry and PZJA agencies should contribute to and facilitate the mid-season survey wherever possible.

36. The AFMA member advised that industry could contribute to a mid-season survey and the broader science underpinning the management of the Fishery in a number of ways. This could be through a commitment of funding, an in-kind contribution of vessels to support the conduct of surveys or the voluntary provision of additional data on catch and effort to support analyses on the dynamics of the stock and performance of the Fishery. One industry member noted that an industry contribution is justified and they would be willing to work with AFMA and CSIRO on possible options to provide an in-kind vessel for future surveys.

37. The RAG agreed that a broader discussion is needed at the next meeting on available data as well as data and analyses needs, and how this may be facilitated by industry.

### **Recommendation 2**

The RAG recommended that a mid-season survey be conducted as soon as practically possible, to be facilitated by industry and PZJA agencies, for the purposes of:

- providing further data on the abundance and spatial distribution of all age classes in the current season to input to the 2018/19 stock assessment, noting that CPUE data for the current season is now biased by management changes and may be unusable should the Fishery close early this season;
- providing further data to validate the 0+ and 1+ indexes of abundance from the November 2017 pre-season survey, noting the 0+ index may not have been reliably estimated from the November 2017 pre-season survey and the model was unable to satisfactorily fit this index;
- providing an 2+ index of abundance to more accurately inform on stock status and for comparison with CPUE data;
- provide a preliminary prediction of the expected 1+ lobster recruitment for the 2018/19 season (0+ lobsters in November 2017 pre-season survey) to provide forewarning on the likelihood of another low RBC for the 2018/19 season.

The survey will consist of 77 pre-determined sites expressly selected to provide for comparison with previous mid-season surveys.

The RAG further recommended that CSIRO work with industry to ensure areas fished in the current season are adequately represented in the sites sampled in the mid-season and future pre-season surveys.

38. The RAG discussed at what point the mid-season survey may trigger a review of the RBC for the TRL Fishery. The AFMA member advised that there would need to be a significant variation between the results of the November 2017 pre-season survey and the 2018 mid-season survey to trigger a review. Such an “anomalous” result is considered unlikely at this point given indications from available data for the Fishery to date. The CSIRO scientific member supported this view and suggested an anomalous result be defined as a 2018 mid-season survey 2+ survey index that falls outside the 95% confidence interval associated with the model forward prediction based on the November 2017 pre-season survey 1+ index. This is given uncertainties in available data and the fact that a mid-season survey has not been conducted since 2014. The RAG noted that a 95% confidence interval sets a high bar, but agreed that this would be appropriate.

39. The CSIRO scientific member noted that should a review of the RBC be triggered, a revised RBC would be calculated based on an updated stock assessment fitted to the mid-season survey data. The November 2017 pre-season survey results will remain an input into the stock assessment but may be weighted differently depending on the reliability of the 2 surveys.

### **Recommendation 4**

The RAG recommended a review of the RBC be undertaken if the results of the 2018 mid-season survey 2+ survey index falls outside the 95% confidence interval associated with the model forward prediction based on the November 2017 pre-season survey 1+ index, in relation to directly comparable sites (e.g. sites sampled in both surveys only).

## **6 Other business**

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40. The TSRA member sought an update on progress to finalise the harvest strategy for the TRL Fishery. The AFMA member advised that the draft harvest strategy has been referred back to the TRL Working Group for further consideration at their next meeting.
41. An industry member sought clarification on the area of waters to which the RBC applies. The RAG noted that the RBC encompasses the Torres Strait Protected Zone (TSPZ) as well as the outside but near areas and PNG waters. The TRL stock moves from the TSPZ through PNG waters as part of its spawning migration.

## **7 Date and venue for next meeting**

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42. The RAG noted that the next meeting is tentatively scheduled for August 2018 for the purpose of discussing the results of the mid-season survey.
43. The meeting was closed in prayer at 3:45 pm on 15 May 2018.

**Declaration of interests**  
**Dr Ian Knuckey – April 2018**

**Positions:**

- Director – Fishwell Consulting Pty Ltd
- Director – Olrac Australia (Electronic logbooks)
- Chair / Director – Australian Seafood Co-products (seafood waste utilisation)
- Chair / Director – ASCo Fertilisers (seafood waste utilization)
- Chair – Northern Prawn Fishery Resource Assessment Group
- Chair – Tropical Rock Lobster Resource Assessment Group
- Chair – Victorian Rock Lobster and Giant Crab Assessment Group
- Scientific Member – Northern Prawn Management Advisory Committee
- Scientific Member – SESSF Shark Resource Assessment Group
- Scientific Member – Great Australian Bight Resource Assessment Group
- Invited scientific participant – SEMAC, SERAG

**Current / Recent Projects and funding:**

- Principal Investigator – FRDC Project 2017-069 Indigenous Capacity Building
- Principal Investigator – VFA Project 17-646976 – Ocean Scallop Biomass Survey – 2018
- Principal Investigator – FRDC Project 2017/122 - Review of fishery resource access and allocation arrangements across Australian jurisdictions
- Principal Investigator – FRDC Project 2016/116 - 5-year RD&E Plan for Northern Territory fisheries and aquaculture
- Principal Investigator – AFMA Project 2017/0803 - Analysis of Shark Fishery Electronic Monitoring data
- Principal Investigator – AFMA Project 2017/0807 - Resource Survey of the Great Australian Bight Trawl Sector – 2018
- Principal Investigator – AFMA Project 2016/0809 – Improved targeting of arrow squid
- Principal Investigator – AFMA Project 2018/08xx – Bass Strait and Central Zone Scallop Fishery – 2018 and 2019 Survey
- Principal Investigator – DPIPWE Project – Review of abalone dive rates
- Principal Investigator – FRDC Project 2015/204 – Realising economic returns of reducing waste through utilization of bycatch in the GAB Trawl Sector of the SESSF
- Principal Investigator – FRDC Project 2014/203 – Review of Monitoring and Assessment in the SESSF
- Principal Investigator – AFMA Project 2014/0809 – Fishery Independent Survey of shelf resources in the Great Australian Bight Trawl Fishery 2017
- Principal Investigator – Survey for Black teatfish in the Queensland Sea Cucumber Fishery.
- Principal Investigator – CRC Project 2013/748.40 – Improved understanding of economics in fisheries harvest strategies.
- Principal Investigator – FRDC Project 2014/207 – The social drivers and implications of conducting an ecological risk assessment of both recreational and commercial fishing - a case study from Port Phillip Bay
- Co-Investigator – Optimising processes and policy to minimise business and operational impacts of seismic surveys on the fishing industry and oil and gas industry.
- Co-Investigator – FRDC Project 2017/014 – SA Marine Scalefish Review
- Co-investigator – AFMA Project - SESSF 2018 Fishery Independent Survey

- Co-investigator – Bird mitigation in the SESSF trawl sector
- Researcher – Various fishing industry liaison projects for oil and gas industry
- Scientific Advisor – Atlantis, GABIA, Gulf St Vincent Prawn Fishery, Seafish JV, SETFIA, SSIA
- MSC Auditor – Falklands Is 2016 Surveillance Audit (Acoura), Macquarie Is Toothfish (SCS)
- Facilitator – WWF shark traceability workshop
- Facilitator – SPC Tuna Data Collection Committee
- Facilitator – Indonesian fishery training and development

**Current / Recent Clients (>\$5000):**

- ABARES
- Acoura
- Atlantis Fisheries Consulting Group
- Australian Fisheries Management Authority (AFMA)
- CRC – Seafoods
- Department of Agriculture and Water Resources
- Department of Primary Industry - Victoria
- Dept. Primary Industry, Parks Water and Environment (DPIPWE) Tasmania
- Fisheries Research and Development Corporation (FRDC)
- Great Australian Bight Fishing Industry Association (GABIA)
- Gulf of St Vincent Prawn Boat Owners Association
- Monash University
- NT Fisheries
- Richey Fishing
- South Australian Rock Lobster Advisory Council (SARLAC)
- SARDI Aquatic Sciences
- SCS Global Services
- Seafood Industry Victoria
- Seafish JV
- SeaFresh
- Secretariat of the Pacific Community
- South East Trawl Fishing Industry Association (SETFIA)
- Southern Shark Industry Alliance (SSIA)
- Tasmanian Seafoods
- Victorian Fisheries Authority
- Western and Central Pacific Fisheries Commission
- World Wildlife Fund – Australia (WWF)

**23<sup>rd</sup> MEETING OF THE PZJA TORRES STRAIT TROPICAL  
ROCK LOBSTER RESOURCE ASSESSMENT  
GROUP (TRLRAG 23)**

**Tuesday 15 May 2018 - 8:00 AM - 4:00 PM**

**Cairns - Northern Fisheries Centre, 38-40 Tingira Street, Portsmith**

**DRAFT AGENDA**

1. Preliminaries
  - 1.1. Welcome and apologies
  - 1.2. Adoption of agenda
  - 1.3. Declaration of interests
  - 1.4. Action items from previous meetings
2. Updates from members
  - 2.1. Industry and scientific members
  - 2.2. Government agencies
  - 2.3. PNG National Fisheries Authority
  - 2.4. Native Title
3. 2017/18 TRL CPUE and length frequency trends
4. 2017/18 trends in 2+ lobster abundance
5. Evaluation of additional survey options to support future stock assessments
6. Other business
7. Date and venue for next meeting

## Action items from previous TRLRAG meetings

#	Action Item	Agenda	Agency	Due Date	Status
1.	<p>AFMA to review the effectiveness of certain TIB licensing arrangements (in its 2016 licencing review) including:</p> <ul style="list-style-type: none"> <li>TIB licenses should share a common expiry date</li> <li>licences to last for longer than the current 12 month period.</li> </ul>	TRLRAG14	AFMA	2017	<p><b>Ongoing</b></p> <p>AFMA has begun undertaking a review of licensing of Torres Strait Fisheries, this issue will be considered as part of this review. At present however, AFMA resources are focused on progressing the proposed legislative amendments as a matter of priority.</p>
2.	AFMA and CSIRO prepare a timeline of key events that have occurred in the Torres Strait Tropical Rock Lobster Fishery (e.g. licence buy backs, weather events and regulation changes) and provide a paper to TRLRAG.	TRLRAG14	AFMA CSIRO	TRLRAG17	<p><b>Ongoing</b></p> <p>AFMA to complete further work. This has been difficult to action ahead of other priorities for the TRL Fishery.</p>
3.	AFMA to prepare a summary of evidence that PNG trawl-caught TRL are a shared stock between Australia and PNG, including details such as the TRL biological characteristics, larvae dispersal, tag recapture data and catch and effort information. AFMA will circulate the paper to the RAG	TRLRAG19	AFMA		<p><b>Ongoing</b></p> <p>AFMA sent a letter to PNG NFA outlining concerns of trawlers retaining TRL on 8 March 2017.</p> <p>The key findings of the CSIRO larval advection model was presented at the Fisheries Bilateral meeting held in Port Moresby on 5 February 2018. The bilateral meeting noted that the findings show the Australian and PNG TRL fisheries are based on a single stock.</p> <p>AFMA and CSIRO (Dr Plaganyi) met with PNG NFA officials, including the NFA Managing Director, John Kasu on 7 February 2018 at the NFA offices in Port</p>

	out-of-session for comment before sending to PNG NFA.				Moresby. Dr Plaganyi presented the updated stock assessment results and larval advection modelling. There was agreement that the updated larval modelling together with past research provides strong evidence that TRL is a shared stock between Australia and PNG. These meetings have been followed up with teleconference between the PNG NFA Managing Director and AFMA CEO which included discussions on the importance of controlling catches so they do not exceed each jurisdiction's catch share of the recommended biological catch (RBC).
4.	Malu Lamar RNTBC to provide AFMA with the map of traditional boundaries and regional area and reef names for each of the Torres Strait Island nations and for CSIRO to examine possible revised naming conventions for survey sites	TRLRAG20	Malu Lamar		<b>Ongoing</b> AFMA is awaiting advice from Malu Lamar and will assist where possible. CSIRO advised that they have received some maps with information on traditional names but that this is not complete. They will work with Malu Lamar if further information is needed.

#### Relevant action items from previous TRLWG meetings\*

#	Action Item	Agenda	Agency	Due Date	Status
1.	TRLRAG to provide advice on any findings relating to the impacts of changing the season start date to provide industry with a longer TAC notice period.	TRLWG #5 held on 5-6 April 2016	AFMA to draft RAG paper	TRLRAG22	<b>Ongoing</b> AFMA are working with CSIRO to progress this action, noting competing priorities relating to the TRL Fishery have caused delays.

\*TRLWG actions not relevant to TRLRAG have not been included in the above.