Torres Strait Tropical Rock Lobster Resource Assessment Group

Meeting Record 19

13 December 2016

In-session meeting

Note all meeting papers and record available on the PZJA webpage:

www.pzja.gov.au

Australian Government

Australian Fisheries Management Authority

Box 7051, Canberra Business Centre, ACT 2610 / Ph (02) 6225 5555 / Fax (02) 6225 5500 / AFMA Direct 1300 723 621 afma.gov.au

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Meeting participants

Members

Name	Position	Declaration of interest
Ian Knuckey	Chair	Nil Member of other RAG's and conducts various AFMA research projects eLog agent
Dean Pease	TRLRAG Executive Officer	Nil
Selina Stoute	AFMA Member	Nil
Tom Roberts	Queensland Fisheries	Nil
John Ramsay	TSRA Member	Nil
Charles David	TSRA Member	Nil
Eva Plaganyi	CSIRO Scientific Member	Project staff for PZJA funded TRL research projects.
Andrew Penney	Independent Scientific Member	Member of other RAG's and research consultant
Maluwap Nona	Chairperson Malu Lamar	TIB licence holder
Mark David	Industry Member	TIB licence holder
Terrence Whap	Industry Member	Nil
Ray Moore	Industry Member	TVH Licence Holder
Brett Arlidge	Industry Member	General Manager MG Kailis Pty Ltd, holder of TVH licences

Observers

Name	Position	Declaration of interest
Jerry Stephen	TSRA Deputy Chair TSRA Fisheries Portfolio	TIB Licence Holder
Darren Dennis	CSIRO Scientific Observer	Project staff for PZJA funded TRL research projects
Roy Deng	CSIRO Scientific Observer	Project staff for PZJA funded TRL research projects
Mick Haywood	CSIRO Scientific Observer	Project staff for PZJA funded TRL research projects
Robert Campbell	CSIRO Scientific Observer	Project staff for PZJA funded TRL research projects
Mark Dean	Industry Observer	TVH operator
Trent Butcher	Industry Observer	TVH Licence Holder
Ken McKenzie	Industry Observer	TVH Licence Holder

Action items and recommendations

Action Items

Number	Action
1.	AFMA to verify PNG catch data for 2015 and 2016, including: - For PNG NFA to provide the 2015, 2016 and future catch data split by fishing method (trawl caught and dive caught); and - Update the 2016 catch figure.
2.	AFMA and CSIRO to provide a paper at the next RAG meeting of the TIB and TVH sectors catch history for agreement and use in the stock assessment. The paper will include the agreed decision rules used to filter the data.
3.	AFMA to look into incorporating discards in the CDR as part of the review of developing a Torres Strait fish receiver system.
4.	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 out-of-session for comment before sending to PNG NFA.

Number	Action
5.	AFMA to circulate the ratified TRLRAG 19 meeting record to the Torres Strait Fishers Association (TSFA) with the risk analysis information completed by CSIRO for a constant catch scenario for setting a TAC.

Recommendations

Recommendations
AFMA request Torres Strait seafood buyers and processors to use the TDB01 docket-book for reporting catch and effort information for the TIB sector as an interim arrangement until the fish receiver system is introduced.
A global TAC of 495 t (inclusive of Australian and PNG waters) for the 2016/17 fishing season. The notional allocations are: TIB: 188 t; TVH: 144 t and PNG: 163 t.
The Fishery closure rule: If the Fishery is closed, targeted fishing can only continue once the Fishery is assessed to be above the biomass limit reference point (B_{LIM}).
The biomass threshold reference point (B_{THRES}) is not used in the empirical harvest control rule to control harvest. B_{THRES} will be incorporated into the review of the empirical harvest control rule, including testing how many times the Fishery biomass falls below B_{THRES} and B_{LIM}.

Agenda Item 1 - preliminaries

1.1 and 1.2 Apologies / adoption of agenda / declaration of interest

Apologies were received from Ian Liviko (PNG NFA), Phillip Ketchell (industry member), Les Pitt (industry member), Aaron Tom (industry member) and Daniel Takai (industry observer).

The RAG adopted the agenda with no changes.

The RAG generally noted that there could be potential conflicts of interest for members and observers when providing information and advice on some agenda items. These conflicts should be tabled by members.

Observers were welcomed to the meeting noting the potential benefits from greater industry awareness of RAG business and industry contributions in RAG discussions. It was noted that only Members could participate in agreeing to recommendations of the RAG.

1.3 Ratification of RAG #18 meeting record

The RAG noted that consistent with broader AFMA practice, draft meeting records are ratified out-of-session. The RAG 18 meeting record was not ratified out-of-session due to competing work priorities. The RAG adopted the draft meeting record of the 18th meeting as true and accurate.

1.4 Action items from previous meetings

The progress of action items from previous meetings was provided by the AFMA Executive Officer. The list of action items and progress is provided in **Appendix A**.

Agenda Item 2 - updates

Industry

The RAG noted the updates provide by industry members that:

- Catches for the 2016 fishing season were back to about the average historical catch, prices were more consistent than previous years and generally the beach price of TRL was around $50-$60 per kilogram.
- Factors that have contributed to more consistent pricing are thought to be political stability in China resulting in more stable markets and the Australia-China free trade agreement which has reduced tariffs for exported TRL. America and Canada are supplying more lobsters to the Chinese market but they are a lower value product.
- Sea surface temperature information is monitored by some fishers, if there is a spike in temperature the TRL held in cages or tanks will be monitored more closely (2 to 3 times a day) and they will be tailed or frozen whole if they are weak or not a suitable grade for live product.
- One industry member recently observed that a number of the shallow fishing grounds around Warrior Reef have bleached or dead coral and there are high amounts of sediment on some parts of the reef. Recently there has been good numbers of 0+ and 1+ TRL observed in some areas.
- PNG trawl caught TRL are sold as frozen tail to the Thailand market and it is a lower value product (approx. 25 per cent of the value of live TRL).

AFMA

The RAG noted the update provided by the AFMA member that:

- The Australia and Papua New Guinea bilateral meeting was held on 22 October 2016. At the meeting PNG NFA advised of plans to issue ongoing exemptions to allow trawlers to retain TRL. PNG NFA have been providing exemptions for trawlers to retain TRL since 2014.
- PNG NFA advised that trawl catches may be taken outside the known migratory pathway for TRL. Meeting participants acknowledged that TRL is a shared stock between Australia and PNG and the stock is reliant on spawners that migrate from the Protected Zone to Yule Island, these migrating TRL provide recruits to the Torres Strait TRL Fishery.
- PNG NFA requested further collaboration with AFMA to further assess the impact of trawling on TRL spawning migrations and to provide catch and effort information to support the stock assessment. AFMA agreed to write to PNG NFA outlining the concerns of trawlers targeting and/or retaining TRL and to provide further information on TRL spawning and migration.
- The Torres Strait Tropical Rock Lobster Fishery Management Plan (the Plan) closed for public comment on 31 October 2016. Next steps are for the TRL Working Group

to meet in March/April to consider the submissions on the Plan and all comments and TRL Working Group recommendations will be considered by the PZJA.

TSRA

The RAG noted the update from the TSRA member that:

- TSRA assisted AFMA with Torres Strait community consultations on the Plan, the member noted that all submissions are publically available on the PZJA website (pzja.gov.au).
- TSRA developed a video due to be released next year that focuses on maximising the value of the TRL Fishery. The video shows how to catch live TRL, post-capture handling of live TRL and transport to the market. The video includes information from the TVH sector and TRL buyers and processors. TSRA thanked those who contributed to the development of the video.

QDAF

The RAG noted the update from the QDAF member:

- The Queensland East Coast Fishery was fully caught in 2016 with 194 t of the 195 t TAC landed.
- The maximum vessel size has increased from 20 m to 25 m.
- The 2017 fishing season will start on 1 January.

Agenda Item 3 – catch information 2015/16

The RAG noted the 2015 and 2016 reported TRL catches are as follows:

Year	TIB	TVH	PNG	Total Catch	Global TAC
2015	173.9 t	152.7 t	235.7 t	562.3 t	769 t
2016	207.1 t	237.6 t	127.1 t*	571.8 t	796 t

*updated by PNG NFA on 15 August 2016

The AFMA executive officer noted that the 2015 PNG catch was revised from 415 t to 235.7 t. PNG NFA advised that the catch figure of 415 t was comprised of all PNG caught lobster species (more than one species) and the revised catch figure of 235.7 t was the catch of tropical rock lobster only (*Panulirus ornatus*). Some RAG members questioned what other species of lobster would account for the difference and where it might have been caught.

The RAG noted industry member advice that the PNG catch figure of 127 t for 2016 may be inaccurate and based on their business knowledge is likely 30-40 t less than actual catch by August 2016. The RAG noted further industry advice that there are 2-3 other buyers operating in PNG and catch is likely to be around 200 t.

The RAG noted advice from the scientific observer that:

- 2015 and 2016 PNG catch was reported combined dive and trawl caught TRL, the observer noted it was important for catch to be split by fishing methods (dive caught and trawl caught).

- Accurate catch records are an important component of the stock assessment and will be important for the harvest control rule once approved. Since 2014 a large portion of TIB catch has been reported as monthly aggregated catch, the data does not include information about fishing effort.

1. The RAG **agreed** for AFMA to verify PNG catch data for 2015 and 2016, including:
   - For PNG NFA to provide the 2015, 2016 and future catch data split by fishing method (trawl caught and dive caught); and
   - Update the 2016 catch figure.

Agenda Item 4 – catch per unit effort indices

The RAG noted the CSIRO scientific observer's update on catch and effort statistics and standardised CPUE indices as presented and detailed in the papers titled '*Use of TVH Logbook Data to construct an Annual Abundance Index for Torres Strait Rock Lobster – 2016 Update*' and '*Use of TIB Docket-Book Data to construct an Annual Abundance Index for Torres Strait Rock Lobster – 2016 Update*.'

The RAG noted the following advice from the scientific observer:

- The standardised TIB and TVH catch per unit effort (CPUE) indices have a relatively high correlation (ρ =0.86) and this provides confidence that both indices may be a representative indicator of stock abundance.

- Duplicated catch information for both the TVH and TIB sector remains an issue for catch and effort data analysis. CSIRO and AFMA completed out-of-session work in 2016 that led to significant improvements to filtering TDB01 docket-book and TRL04 logbook data. A total of 72,930 catch records in the docket-book have now been attributed to the TIB sector for the years 2004 to 2016. Further work is planned in 2017 to remove any more duplicated catch data.

- There has been a shift in the TIB sector to report aggregate monthly catch data rather than daily catch and effort data using the TDB01 docket-book. The aggregate catch data doesn't include information on fishing effort and therefore the data cannot be used in the TIB sector CPUE standardisation and analysis.

- The RAG noted that accurate catch and effort data is important information that underpins the stock assessment and the empirical harvest control rule (eHCR). The eHCR relies on CPUE indices (10 per cent weighting for each of TVH and TIB) to provide a recommended biological catch (RBC) and total allowable catch (TAC) for the Fishery.

- The independent scientific member noted that generally, about 70 per cent of catch and effort information in needed for the data to be considered representative of the Fishery. The TIB sector catch and effort data may not be included in future CPUE analysis if reporting levels drop further or if there is uncertainty whether the data is considered representative.

- The AFMA member noted that a fish receiver system, also known as a catch disposal record (CDR), is proposed to be implemented in the Fishery by December 2017. The system will require the catch and fishing effort information to be recorded at the first point of landing (when the fisher first lands their product to a buyer or processor).

- The TSRA member noted that PZJA agencies could engage local media to increase the awareness and importance of accurate catch reporting for Torres Strait fisheries. The AFMA member noted that media engagement should take place once the PZJA has agreed to implement a Torres Strait fish receiver system.

- One industry member noted the CDR should include a field to report the number and weight of TRL discarded to account for total fishing mortality.

2. The RAG **agreed** for AFMA and CSIRO to provide a paper at the next RAG meeting of the agreed TIB and TVH sectors catch history for the stock assessment. The paper will include the agreed decision rules used to filter the data.
3. The RAG **recommended** that AFMA request Torres Strait seafood buyers and processors to use the TDB01 docket-book for reporting catch and effort information for the TIB sector as an interim arrangement until the fish receiver system is introduced.
4. The RAG **agreed** that AFMA look into incorporating discards in the CDR as part of the review of developing a Torres Strait fish receiver system.

Agenda Item 5 – results November 2016 pre-season survey

The RAG noted an update on the November 2016 pre-season survey presented by the scientific observer from CSIRO.

- The November 2016 pre-season survey was conducted from 3 to 14 November 2016, 77 dive sites were surveyed as done for the November 2015 pre-season survey. Seabed habitat monitoring was conducted concurrently and representative samples of TRL were measured and sexed at each site.

  Compared to the full extensive surveys conducted in 1989 (542 sites) and 2002 (375 sites), the reduced number of survey pre-season sites is nevertheless considered to provide a reasonably accurate representation of abundance, though there may be a drop in precision compared to a pre-season survey with more sites.

- 50 m photo transects were conducted at eight reef-edge sites to monitor the impact of coral bleaching as per the November 2015 pre-season survey.

- The density of 0+ TRL in 2016 was similar to the levels recorded in 2014 and 2015. The pre-season survey focusses on counting 1+ TRL in the Torres Strait, additional

future run surveys could provide greater certainty about the strength of 0+ year classes.

- There were low densities of 1+ TRL in 2016 across the entire study area, the 2016 1+ index was significantly lower than 2014 and 2015 1+ index. The 2016 1+ index is similar to the low indices recorded in 2005 and 2008 which led to a low total allowable catch (TAC).
- The TRL sampled from 2014 to 2016 were smaller (tail width) than recorded in previous years and fewer legal size TRL were measured in 2016 than previous years.
- The average size distribution of TRL caught in 2016 was lower than previous years.

Agenda Item 6 – TRL larval movement

The RAG noted advice from the scientific observer that:

- Preliminary modelling of TRL larvae that originate from Yule Island PNG shows that some larvae are transported by the Coral Sea Gyre and recruit into the Torres Strait Tropical Rock Lobster Fishery and the Queensland East Coast Tropical Rock Lobster Fishery.
- The largest single source of recruits into the Torres Strait TRL Fishery are from Yule Island and the Queensland East Coast. Up to 35 per cent of recruits into the Torres Strait TRL Fishery come from TRL spawning at Yule Island.
- TRL south of 16 degrees are unlikely to recruit into the Torres Strait TRL Fishery due to the distance and prevailing oceanic currents.
- PNG have already agreed that TRL caught in PNG waters are from the same stock as the Torres Strait caught TRL for the purpose of export accreditation of PNG caught TRL to Australia.

The RAG noted advice from one industry member that:

- A tag-recapture program was conducted by PNG in the early 1970's and all trawled TRL from all areas of the Gulf of Papua had tag-returns of TRL that were tagged in the Torres Strait Protected Zone.
- There is no resident population of TRL in the Gulf of Papua, only TRL that migrate from the Torres Strait to spawn. There is limited suitable habitat in the Gulf of Papua that could support resident TRL. Fishery independent surveys have indicated that these sites do not support resident populations of TRL.

5. The RAG **agreed** for 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 out-of-session for comment before sending to PNG NFA.

Agenda Item 7 – stock assessment update and RBC

The RAG noted advice from the scientific member and the presentation based on the paper titled '*2016 Updated Assessment of the Tropical Rock Lobster* (*Panulirus ornatus*) *Fishery in the Torres Straits following November 2016 preseason survey*.'

- The RAG accepted the 2016 updated TRL Fishery stock assessment and noted that the low pre-season 1+ indices had resulted in a reduced RBC for the 2016/17 fishing season.

Based on the interim harvest strategy the RAG **recommended** a global TAC of 495 t (inclusive of Australian and PNG waters) for the 2016/17 fishing season. The notional allocations are: TIB: 188 t; TVH: 144 t and PNG: 163 t.

The RAG noted advice from the CSIRO scientific member that:

- The TVH and TIB CPUE series does not fit to the model prediction for 2015 (observed CPUE was less than the model predicted), it is unknown if this is related to catchability or a mortality related issue.

The RAG noted advice from one industry observer that:

- The anomalous high and low years (e.g. 2001, 2005 and 2011) of CPUE for the TIB and TVH sector may be related to the food availability for TRL, the observer noted that if there is a high abundance of food the TRL are often on fishing grounds with less structure and they can be more easily caught.

The RAG noted advice from some industry members and observers that:

- they are concerned about a drop in the RBC and TAC for the 2016/17 fishing season and questioned if removing the mid-season survey from the stock assessment regime had increased uncertainty and resulted in a lower RBC and TAC.
- The independent scientific member noted that conducting an additional survey is unlikely to result in a commensurate increase in the RBC or TAC because the 0+ and 1+ TRL indices of abundance in the pre-season survey and the mid-season survey have a strong correlation.
- The Chair noted that the change in frequency and type of fishery independent survey regime and its effect on the stock assessment was discussed and agreed by the RAG at previous meetings and previous meeting records explain the rationale behind the RAG agreed survey and assessment regime.

Agenda Item 8 – harvest strategy development

8.1 Harvest strategy further work

The RAG noted advice from the AFMA member as presented and detailed in the paper titled '*Development of a Torres Strait Tropical Rock Lobster Fishery Harvest Strategy*.'

- The process for finalising the TRL Fishery Harvest Strategy is: 1) draft final report sent out for comments and agreed by the TRLRAG, 2) draft final report provided to

the TRL Working Group (TRLWG) for comment and agreed by the TRLWG and 3) draft final report sent to the Protected Zone Joint Authority (PZJA) to be considered by the Standing Committee and the PZJA for agreement.

The RAG noted the progress on development of the Harvest Strategy and it considered the following outstanding items:

- Fishery closure rule: if the Fishery drops below the biomass limit reference point (B_{LIM}) the Fishery is closed (zero commercial TAC - subsistence fishing only)
- The Fishery will only re-open to targeted fishing once it is assessed to be above the B_{LIM} reference point.
- The biomass threshold reference point (B_{THRES}) was used in the testing and evaluation of the performance of various harvest control rules, for example how often the Fishery will drop below B_{THRES}.
  The B_{THRES} reference point is not used in the empirical harvest control rule to control harvest and therefore should not be included in the TRL Fishery Harvest Strategy Framework.

6. The RAG **recommended** the following:
   - Fishery closure rule: If the Fishery is closed, targeted commercial fishing can only continue once the Fishery is assessed to be above the biomass limit reference point (B_{LIM}).
   - The biomass threshold reference point (B_{THRES}) is not used in the empirical harvest control rule to control harvest. B_{THRES} will be incorporated into the review of the empirical harvest control rule, including testing how many times the Fishery biomass falls below B_{THRES} and B_{LIM}.

8.2 – Harvest control rule spreadsheet

The RAG noted advice from the scientific member as presented and detailed in the Microsoft Excel Spreadsheet titled '*Torres Strait Tropical Rock Lobster / Kaiar Panulirus Ornatus Harvest Control Rule Recommended Biological Catch Calculator*.'

- The harvest control rule spreadsheet is based on the agreed empirical harvest control rule (eHCR): pre-season survey 1+ indices 70%, pre-season survey 0+ indices 10%, TVH CPUE indices 10% and TIB CPUE indices 10%. RAG members noted the HCR spreadsheet was a useful tool for industry.
- Based on the draft empirical harvest control rule (eHCR) the recommended biological catch (RBC) inclusive of Australian and PNG waters for the 2016/17 fishing season is 602.1 t.
- The empirical harvest control rule (eHCR) recommended biological catch (RBC) of 602.1 t was higher compared to the stock assessment RBC of 495 t because the eHCR uses the regression slope averaged over the last five years of data and this reduces the variability of the RBC from year to year compared to running an annual assessment.

The RAG noted the Torres Strait Fishers Association (TSFA) proposal for a constant catch strategy for the TRL Fishery based on the last 10 years of catch data. The RAG noted advice from the scientific member and scientific observers that:

- If a constant catch strategy were to be adopted for the TRL Fishery, the TAC would need to be set at 360 t, if the level of risk to the stock was to be kept consistent with the current preferred rule in the draft TRL Harvest Strategy.
- If the average catch was used to set a TAC, there would be considerably greater risk to the stock of recruitment overfishing.

7. The RAG **agreed** for AFMA to circulate the ratified TRLRAG 19 meeting record to the Torres Strait Fishers Association (TSFA) with the risk analysis information completed by CSIRO for a constant catch scenario for setting a TAC.

8.3 – Developing a tiered approach for the harvest control rule

The RAG noted preliminary advice from the CSIRO scientific member as presented and detailed in the paper titled '*Development of a tier Harvest Strategy approach for Torres Strait Tropical Rock Lobster (TRL)*.'

- The Independent scientific member noted that the development of a tiered harvest strategy should be consistent with the principles of the FRDC final report 2012/225 '*Technical Reviews of Formal Harvest Strategies*', and that five tiers is consistent with recommendations of the paper.
- The discount factors applied to recommended biological catches (RBCs) should be tested so that there is a comparable level of risk to the resource across all tiers. For example, a tier 3 assessment is no more likely to breach the biomass limit reference point (BLIM) than a tier 1 assessment.

The RAG noted that further work is required to develop a tiered approach for the TRL Harvest Strategy and that development of a tiered approach will be considered by the RAG in the future. The RAG thanked the scientific member and scientific observers for the presentation and paper provided.