

Torres Strait Tropical Rock Lobster Resource Assessment Group Meeting 32

Final Meeting Record

15 December 2021

Cairns / Video Conference

Note all meeting papers and record available on
the PZJA webpage: 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	In addition to the declaration of interests provided at Attachment A , the Chair also declared that he has been commissioned to design a fishery independent survey for the Commonwealth Coral Sea Sea Cucumber Fishery.
Dr Andrew Penney	Scientific member	<p>Director of Pisces Australis Pty Ltd, an Australian registered marine/coastal research and management consultancy based in Canberra - interests in any opportunities in this regard.</p> <p>Currently Principal Investigator on FRDC Projects Nos 2017-180: Design and implementation of an Australian National Bycatch Report: Phase 1 – Scoping; and 2019-036: Implementation of dynamic reference points and harvest strategies to account for environmentally-driven changes in productivity in Australian fisheries, potentially red leg banana prawns or TRL.</p> <p>Independent scientific member on the AFMA Southeast RAG, the Tropical Rock Lobster RAG and the Small Pelagic Fishery RAG. Member of the AFMA ERA Technical Working Group.</p> <p>No shareholding and hold no positions relating to any other companies, including any fishing companies or industry associations.</p>
Dr Éva Plagányi	Scientific member	<p>Lead scientist for PZJA funded TRL research projects conducted by CSIRO. Contribute to other Torres Strait research projects that receive research funding, including currently Shared science and Indigenous knowledge to support fisheries capacity building in Torres Strait. No other interests in the fishery.</p> <p>Independent scientific member of HCRAG and NPFRAG.</p>
Aaron Tom	Traditional Inhabitant member	Traditional Inhabitant Gudamalulgal and TIB licence holder.
Les Pitt	Traditional Inhabitant member	Traditional Inhabitant Kemer Kemer Meriam, TIB licence holder and runs an independent freezer facility on Erub Island. Board member of Zenadth Kes Fisheries.
Harry Nona	Traditional Inhabitant member	Traditional Inhabitant Kaiwalalgal and TIB licence holder. Board member of Zenadth Kes Fisheries.

Name	Position	Declaration of interest
James Ahmat	Traditional Inhabitant member	Traditional Inhabitant Maluililgal and TIB licence holder.
Dr Ray Moore	Industry member	Torres Strait Master Fisherman's licence holder and East Coast TRL fishery licence holder. Has previously undertaken research relevant the TRL Fishery (~1974).
Brett Arlidge	Industry member	General Manager, MG Kailis Pty Ltd. MG Kailis Pty Ltd is a holder of 5 TVH licences. Seafood buyer from Torres Strait, Queensland and PNG fisheries and exporter of TRL.
Selina Stoute	AFMA member	Nil.
Keith Brightman	TSRA member	Employee of TSRA. TSRA holds multiple TVH TRL fishing licences on behalf of Torres Strait Communities but does not benefit from them. Has no personal pecuniary interest.
Georgia Langdon	AFMA Executive Officer	Nil.

Observers

Name	Position	Declaration of interest
Joseph Posu	Papua New Guinea National Fisheries Authority	Works in the Fisheries Management Unit responsible for managing the prawn and lobster fisheries in the Western Province.
Yen Loban	TSRA	TSRA Board member and TSRA Fisheries Portfolio member. Board member of Zenadth Kes Fisheries.
Maluwap Nona	Malu Lamar (Torres Strait Islander) Corporation RNTBC	Chair of Malu Lamar RNTBC
Dr Leo Dutra	CSIRO	Scientist for PZJA funded TRL research projects conducted by CSIRO. Recently received Fisheries Research and Development Council (FRDC) funding to undertake a capacity building project. Project lead on an AFMA funded climate change project (2019/0830).
Dr Rob Campbell	Scientific observer	Independent fisheries consultant with no pecuniary interest in the Torres Strait Rock Lobster fishery. Former employee of CSIRO and former team member of PZJA funded TRL research projects conducted by CSIRO. Currently contracted to CSIRO to undertake CPUE analyses for the TRL fishery.
Dr Laura Blamey	CSIRO	Scientist for PZJA funded TRL research projects conducted by CSIRO.
Nicole Murphy	CSIRO	Scientist for PZJA funded TRL research projects conducted by CSIRO. Cruise leader

Name	Position	Declaration of interest
		and dive supervisor for TRL pre-season survey. Project lead on AFMA funded Torres Strait Beche-de-mer project (2019/0826).
Marjoleine Roos	CSIRO	Scientist for PZJA funded TRL research projects conducted by CSIRO.
Dr Fay Helidoniotis	Fisheries Queensland	Undertaking a stock assessment for the Queensland East Coast TRL Fishery. No pecuniary interests or otherwise in the TRL fishery.
Mark David	TRL Working Group	Traditional inhabitant member, Kulkalgal
Patrick Mills	TRL Working Group	Traditional inhabitant member, Kaiwalagal and member of Torres Strait Fishers Association. Member of Torres Strait Scientific Advisory Committee. TIB licence holder with TRL, mackerel and trochus endorsements.
Daniel Takai	Zenadth Kes Fisheries	CEO of Zenadth Kes Fisheries
Quinten Hirakawa	TSRA	TSRA senior project officer. TIB licence holder, with a TRL entry
Tamre Sarhan	AFMA Observer Coordinator	Nil.
Lisa Cocking	AFMA Senior Management Officer	Nil.

1 Preliminaries

1.1 Welcome and apologies

1. The 32nd meeting of the Tropical Rock Lobster Resource Assessment Group (the RAG) was opened in prayer at 9:03 am on Wednesday 15 December 2021. The Chair welcomed participants and acknowledged the Traditional Owners of the various lands on which members were participating from and paid respect to the elders' past, present and emerging.
2. Attendees at the RAG meeting are detailed in the meeting participant tables at the start of this meeting record. Members from interstate attended the meeting via video conference. Apologies were received from Jenny Keys, Queensland Department of Agriculture and Fisheries (QDAF) member. Kulkalgal Traditional Inhabitant member, James Billy was not in attendance.
3. AFMA officers, Tamre Sarhan and Lisa Cocking attended the meeting via video conference for Agenda Item 8 only.
4. The Chair sought consent from the RAG to record the meeting for the purpose of ensuring an accurate meeting record. The Chair advised that the recorded is kept secure and is deleted once the final meeting record is published. There were no objections to the meeting proceedings being recorded.

1.2 Adoption of agenda

5. The RAG considered draft v3 agenda which was circulated to members on 2 December 2021. Traditional inhabitant industry members requested that an additional agenda item on reporting and compliance monitoring of discards in the fishery.
6. The draft agenda with the additional item was adopted by the RAG and is provided at **Attachment B**.

1.3 Declaration of interests

7. Consistent with PZJA Fisheries Management Paper No. 1 (FMP1), all members of the RAG must declare all real or potential conflicts of interest in the Torres Strait TRL Fishery at the commencement of the meeting.
8. Where it is determined that a direct conflict of interest exists, the RAG may allow the member(s) to continue to participate in the discussions relating to the matter but may also determine that, having made their contribution to the discussions, the member should retire from the meeting for the remainder of the discussions on that issue. The Chair noted that this is a standard RAG and Working Group process that aids in protecting the integrity of the advice provided by the group as well as the individual members.
9. The Chair requested that members update the record of declarations. These are detailed in the meeting participant tables at the start of this meeting record.
10. The Chair then proposed that the RAG agree for all members to be participate in discussions and recommendation making across all agenda items noting the:
 - a) declarations remain relatively unchanged since the last RAG meeting.
 - b) experience of the RAG with dealing with potential conflicts of interests.
 - c) potential technical difficulties and challenges with convening a further process to exclude members to allow consideration of declared interests given some members were joining the meeting via video conference.
 - d) members are encouraged and obliged to raise any new concerns with potential conflicts of interest during the meeting.
11. There were no objections to the Chair's proposed approach.

1.4 Actions arising from previous meetings

12. The RAG noted an update from the RAG Executive Officer on the status of action items arising from previous RAG meetings and where relevant, TRL Working Group meetings (**Agenda item paper 1.4a**), including the finalisation of the TRLRAG 31 meeting record which was completed out of session and circulated to members on 1 December 2021.
13. The RAG was supportive of the development of the TRL management history timeline and members were encouraged to review the document out of session and provide feedback to AFMA on its completeness and accuracy. The TSRA Fisheries Portfolio member noted that the first event in the timeline is incorrect and should be amended to state that commercial fishing in the Torres Strait began in the late 1960's, rather than in 1960.
14. The RAG noted further updates provided by CSIRO on the following Action Items:
 - a) Action Item 2 – CSIRO is continuing to work on this analysis and hopes to be able to provide an update in the coming months (early 2022).
 - b) Action Item 5 – This action is ongoing and is aimed at trying to tease out some of the influences and effects different variables have on the CPUE analyses.
 - c) Action Item 6 – This item is related to understanding whether diver skill or experience has an influence on the CPUE of certain vessels in the TVH sector. In 2019 AFMA had the diver names entered into the data base which was provided to CSIRO for analysis. There were 1,539 diver names/combinations, which requires further work to 'clean' the data to ensure it can be used in the analysis.
15. The RAG also noted an update from Industry member Brett Arlidge on the status of Action 9 which was to provide any available size distribution data on tailed PNG product to CSIRO. Brett Arlidge committed to providing CSIRO with at least the five most recent years' worth of data, and to provide any historical data if possible.

1.5 Out of session correspondence

16. The RAG noted the out of session correspondence on RAG matters since the previous meeting.

2 Updates from members

2.1 Industry and scientific members

17. The RAG noted verbal updates provided by industry and scientific members and observers on the trends and observations in the TRL fishery during the 2020-21 season, and the start of the 2021-22 season, in particular:

- a) Fishing effort has not been as high as previous years, and likely contributed to the under-caught TAC. Industry members attribute this to the impacts of COVID-19, increased fuel prices and at times, limited fuel availability and low buying prices associated with changed Chinese markets.
- b) Observations in the eastern Islands indicate that there has been some unusual movement and/or location of crays (around Erub), with movement heading towards the central islands (Poruma) since the start of the 2021-22 season. This type of movement (in terms of good catches from this area) has not been seen in the past few years.
- c) An ongoing obstacle for vessel operators not being able to catch the TAC is due to the crewing restriction policy and being unable to employ non-traditional inhabitant divers.
- d) Since the start of the 2021-22 season, early catches have been mainly coming from the central and eastern parts of the Torres Strait, with less coming from the western side.
- e) Australia is still unable to send Australian TRL product directly into China. Any live lobster being sold is being sent to South East Asia. Prices are intermediate. For the first time in months, MG Kailis have been able to secure a shipment of live lobster out of Daru direct to Cairns.

18. Industry members noted that the PNG TRL fishery has a hookah closure during the months of January, February and March each season. One industry member been informed that allegedly to help alleviate the effects of COVID-19, that the PNG TRL hookah closure had been lifted however this was unable to be confirmed by the NFA officer present at the meeting.

19. A scientific member queried if fishers were able to catch more product, whether there would still be the market demand. The RAG noted industry advice that the strategy remains to continue selling Australian TRL into South East Asian markets, which is dependent on those markets selling into China. If the demand from China of South East Asian product was to reduce, this could impact market demand of Australian, and therefore Torres Strait TRL product. Industry advised that China still has an 'zero COVID' policy, and that new and ongoing outbreaks are creating negative sentiment within the Chinese market, and therefore demand.

20. The RAG noted that CSIRO continue to look for opportunities for Torres Strait Islanders to participate in scientific conferences, with one position available for a suitable person to be involved in the upcoming international lobster conference (Perth, Oct 2022). The TSRA Fisheries Portfolio member recounted his involvement in presenting at the World Fisheries Congress in 2021 and expressed support for more industry members to get involved. CSIRO noted that while there is only limited funding, if there is greater interest from industry then additional funds could be sought.

ACTION ITEM – PNG NFA to follow up on reports of the PNG TRL Fishery hookah closure being lifted and report back to AFMA.

2.2 Government agencies

21. The RAG noted an overview of key management updates relating to the TRL Fishery provided by the AFMA member, in particular:
- a) The TRL fishery was re-accredited as an approved Wildlife Trade Operation (WTO) on 4 December 2020 under the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act).
 - b) In recent months, AFMA has launched electronic Catch Disposal Records (eCDRs) as part of the mandatory Fish Receiver System. AFMA hopes to talk more with industry about using eCDRs during their round of community visits planned for early 2022.
 - c) AFMA continues to liaise with Fisheries Queensland to look at opportunities for PZJA advisory committee members to accompany AFMA when attending Fisheries Queensland Working Group meetings relevant to Torres Strait fisheries.
22. An update from the QDAF member was not provided as the QDAF member was not in attendance.
23. The RAG also noted the following update provided by the acting TSRA member:
- a) The focus of the TSRA Fisheries Program has been preparing traditional inhabitant members for all PZJA advisory committee meetings.
 - b) There has been increasing demand for TSRA to support the members, however with the establishment of the Fisheries Advisory Committee of the TSRA Board and Zenadth Kes Fisheries, TSRA's direct involvement will start to reduce as Traditional Owners to take on a more prominent role.

2.3 Papua New Guinea National Fisheries Authority

24. The RAG noted the following updates from the PNG National Fisheries Authority representative who participated in the meeting via video conference:
- a) Both the TRL fishing industry, and capacity of NFA have been significantly impacted by COVID-19 in PNG in recent years. The provision of data from industry is also slow and remains a pending management item for the NFA to follow up. Additional quality checks will need to be conducted before providing any further catch and effort data to AFMA.
 - b) Catches from January 2021 through to mid-November have been provided and NFA commit to providing the remaining data for November and December 2021 to AFMA by the end of January 2022.
 - c) Reported catches from the PNG TRL Fishery inside the Torres Strait Protected Zone (TSPZ) in 2021 are 40.3 tonnes, with 27.8 tonnes reported from outside the TSPZ. NFA acknowledged that while the catches inside and outside the TSPZ are part of the same stock for the purposes of stock assessment and calculating the TAC, NFA do not consider that the catches 'outside but near the TSPZ' should count towards PNG's total catch share allocation because that would contribute towards PNG reaching their TAC sooner.
 - d) NFA remain committed to discussing the increasing use of a new fishing method – the 'electric spike' or 'electrode' that is being used by some commercial fishers in the Western Province. The electrodes are described as being an electric rod, powered by four rechargeable size D batteries and a switch at one end. Fishers reportedly poke the crayfish with the rod which stuns them from anywhere between 20 seconds up to one minute and allows the diver to retrieve the crayfish without any struggle or damage to the animal. Based on advice from PNG industry operators, the crays revive back to normal when brought back to the storage cage, though to what extent still needs to be confirmed. There are other reports that the use of electrode is also having a negative impact on coral reefs. NFA are working to verify this information and assess the impacts. The RAG noted that the effectiveness of this new fishing equipment could have a significant impact on catch rates and mortality and should be monitored closely.

- e) NFA are also investigating the validity of the video circulating the TRL industry in recent months of a prawn trawler hauling up a significant catch of TRL and suggested that observers on board trawlers during the TRL migration months would be useful to monitor ongoing interactions between the two fisheries.
- f) Both NFA and AFMA acknowledged that the use of the electrode, and the trawling video should be part of the upcoming bilateral discussions in early 2022.

2.4 Native Title

- 25. As Chairperson of Malu Lamar (Torres Strait Islanders) Corporation Registered Native Title Body Corporate (RNTBC), Mr Maluwap Nona that Malu Lamar, as a trustee under section 203(b) of the *Native Title Act 1993*, has a mandated duty of care to support the aspirations of and protect the rights and interests of Torres Strait Islanders.

3 Catch and effort analyses for 2020-21 fishing season

- 26. The RAG considered an overview of total reported catches for Australia and PNG and the following catch and effort analyses for the Australian TRL Fishery for the 2020-21 season undertaken by CSIRO and presented by Rob Campbell. Further detail is available in Attachments 3d, 3f and 3g of the TRLRAG 32 meeting papers.

Catch and Effort Data

- 27. Total reported catch for the Australian TRL fishery (1 December 2020 – 30 September 2021) was 240.3 tonnes, with 123.2 tonnes caught by the Traditional Inhabitant Boat (TIB) sector and 116.3 tonnes caught by the Transferable Vessel Holder (TVH) sector.
- 28. Total reported catch from Papua New Guinea was 68.17 tonnes (January – the first half of 2021) however, the RAG noted that this number is incomplete for the PNG TRL season. Using the same methodology applied last year (at TRLRAG 30), and assuming an average monthly catch is also caught in the missing months (December 2020 and a completed November 2021), the total extrapolated PNG catch is increased to 81.24 tonnes (1 December 2020 – 30 November 2021).
- 29. This extrapolated PNG catch results in a total Torres Strait TRL catch of 320.7 tonnes, under a 623.5 tonne global TRL TAC, equating to 51.3 per cent of the TAC. 2021 catches were the lowest recorded since 2009.

TVH sector trends

- 30. Almost all fishing activity used the hookah method in 2021, after several seasons of a small amount of free diving (~5 per cent). Prior to 2020, almost all lobster product was reported as “whole” however there has been a small increase in tailed product in the past two years (6 per cent in 2021).
- 31. Catch in the last two seasons during December to March was the lowest since 2012-13 which can largely be attributed to the disruptions fishers experienced during the early impacts of COVID-19 on the markets.
- 32. The greatest proportion of catches continues to come from Warrior (42 per cent), Warraber (21 per cent), Kircaldie (11 per cent) and Northern (19 per cent) regions.
- 33. In 2021, the highest proportion (27 per cent) of “sets” (fishing duration per day) were of 8 hours duration, with a large decline in 6-hour sets in the past two seasons and an increase in 10-hour sets which reinforces the need to better understand the accuracy of this data. The RAG noted it also remains on the agenda for the RAG Data Sub-group to work on differentiating the difference between time searching and time in the water fishing when analysing logbook data.

34. Data for 2021 indicates a 32 per cent increase in hours fished compared to 2020 and a 28 per cent increase in the number of tender-sets. Hours fished in 2021 is slightly higher (2.4%) than in 2019 despite a 15 % decrease in tender-sets.

TIB sector trends

35. The provision of voluntary effort data by the TIB sector continues to suffer from incomplete data, which creates problems in providing analyses of the information in the TIB sector.
36. Catch in the 2020-21 season during December and January was lower than during the 2019-20 season, though catches in February were higher. Most of the catch was recorded as taken in the Thursday Island area, which is a higher proportion than in recent seasons.
37. Hookah continues to be the dominant catch method in the TIB sector, followed by freediving however there remains a high proportion of catch taken using an 'unknown' fishing method. There continues to be an increase in the proportion of catch taken as whole lobsters.
38. During 2020 and 2021 there has been an increase in the proportion of trips with a length of 1 day (77% in 2021).

TVH CPUE Standardisation

39. The RAG noted some differences between the nominal and standardised indices, but little differences between the four standardising models that consider the effects of month, area, method, vessel, proportion of tails, Southern Oscillation Index and moon-phase.
40. There has been a decrease in catch rates over time due to a shift to less tails in the catch, but an increase in catch rates due to the vessel-effect.
41. The point estimates of each standardised index, and the nominal CPUE index for 2020-21 show a slight decrease compared to 2020 but still contribute to a positive five-year trend in the empirical Harvest Control Rule (eHRC).
42. **The RAG noted that the "Int-1 model" is the previously agreed default model used in the eHCR.**
43. A series of sensitivity analyses were undertaken to examine the impact of COVID on the distribution of fishing effort. While the distribution of fishing effort during 2018 is seen to be very low in some months due to the low TAC that season, the number of tender-sets each month has generally been lower since 2019 than during previous seasons. During 2020 and 2021, effort levels in both February and March were the lowest of all the seasons. This was due to the low market prices available for lobsters and the lack of suitable markets during the early stages of the 2021 fishing season.
44. To ascertain whether the low effort in these months could influence the annual index, the models were fitted to the data with these two months excluded. An extra model was also fitted where the data for the 2018 season was also excluded. However, excluding the data for 2018 had no influence on the index based on only excluding the data for February and March.

TIB CPUE Standardisation

45. The RAG noted a number of differences between the nominal and standardised TIB indices without a seller-effect, generally being lower than the nominal index over the first half of the time-series and higher than the nominal index during the second half (i.e., since 2014). The influence on the season index is seen to be greatest for the *proportion-tails* effect, and the decreasing trend observed over time is correlated with the shift from the catch being predominately for frozen tails to now being predominantly whole live lobsters, with the latter process type decreasing catch rates.
46. Similarly, there are a number of differences between the Nominal and Standardised TIB indices with the seller effect, with both *proportion-tails* and *seller effects* having a substantial influence on the annual index. The seller effect index is considerably flatter than without the seller effect which can possibly be explained by a general increase in the skill or efficiency of the Sellers in the fishery over time.

47. The RAG noted that the “Seller model” is the default model used in the eHCR, which accounts for an increase in the relative fishing efficiency of *Sellers* in recent seasons.

Further work for data analyses

48. The RAG noted further work to be potentially undertaken, informed through discussions of the RAG data sub-group including:
- a) Data issues; completeness and accuracy; finer spatial resolution; clarity on fields.
 - b) Investigation the potential for effort creep:
 - i. Is ‘vessel-effect’ a proxy for skill of divers?
 - ii. Increase in boat size; can larger boats search more?
 - iii. Other changes in fishing gears leading to increased CPUE
 - c) What factors influence the spatial distribution of lobsters and ‘hot-spots’, and what influences the spatial distribution of fishing effort?
 - d) How do fishing aggregations influence CPUE, and what factors influence aggregation dynamics?
 - e) Does hyper-stability in CPUE require further investigation?
 - f) Further investigation of the influence of oceanographic conditions (e.g. water temperature, prevailing winds).

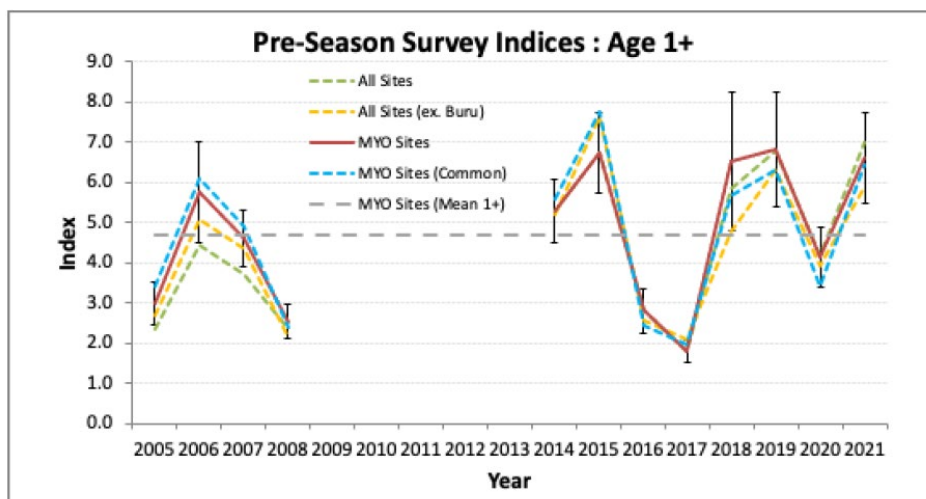
4 Results of the 2021 pre-season survey

49. The RAG considered a presentation provided by Dr Leo Dutra, CSIRO detailing the preliminary results of the 2021 pre-season survey (as detailed in Attachment 4-5a and 4b of the TRLRAG 32 meeting papers).
50. The pre-season diver survey was conducted between 10 - 20 November 2021 aboard the *Wild Blue* with a CSIRO dive tender. For the first time, the CSIRO team included a TIB fisher, Mr Tony Salam, along with four CSIRO divers; Leo Dutra, Nicole Murphy, Kinam Salee and Steven Edgar.
51. The pre-season TRL surveys provide indices of abundance for recruiting age lobsters (age 1+) and recently-settled lobsters (age 0+), abundance indices by stratum (region) and length-frequency and sex ratios. At the time of the survey, most older lobsters (age 2+) have migrated and those that remain are mostly remnant males.
52. Dive transects were conducted at 77 repeat pre-season sites (with four partial transects), starting with shallow dives in the western Torres Strait while currents were at their weakest and moving in an easterly direction to utilise stronger currents for deeper dives. Survey conditions ranged from 0-10 knots in the first week, up to raining and windy with 15-20 knot winds in the last four days. Visibility ranged from 1 to 9 metres and on average around 3 metres.
53. A total of 356 lobsters were counted and 172 lobsters were measured. The sex ratio of lobsters was 55 per cent males and 45 per cent females.
54. At each survey site:
- a) Two divers swim with the current to survey a 2000m² belt transect (each diver scanning 2m by 500m);
 - b) Lobsters are counted for each age-class;
 - c) Habitat is assessed (i.e. substrate type and biota);
 - d) Temperature/depth profiles are collected; and,
 - e) lobsters are measured (TW), sex determined and datasheets completed.

55. Additionally this year, a multiparameter water quality sonde was also used to collect data on chlorophyll, depth, fluorescent dissolved organic matter, conductivity, dissolved oxygen, salinity, turbidity, total suspended solids, total dissolved solids, pH and temperature down to 17m.

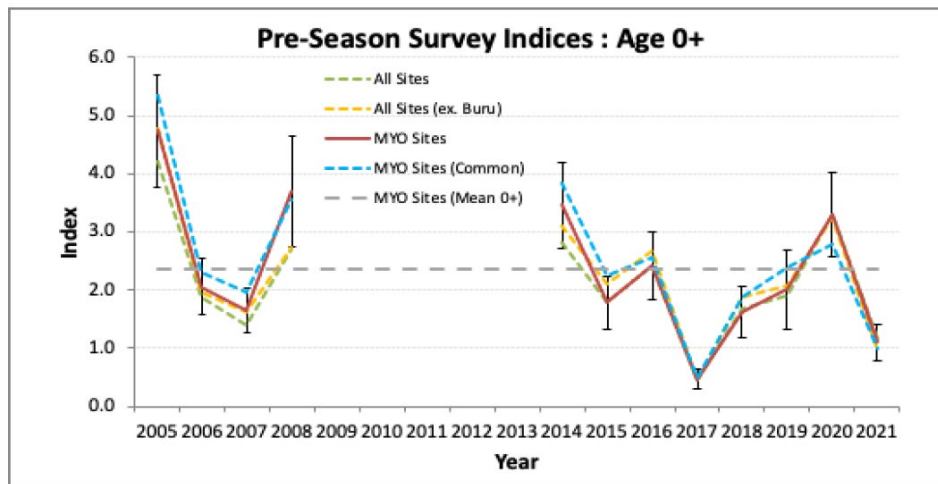
Age 1+ recruiting lobster counts and index

- The 2021 1+ abundance index was above the Mid-Year Only (MYO) sites long term average (2006-2021) and higher than in 2020. The survey variance was higher than 2020, but lower than high variances in both 2018 and 2019.
- Lobster counts were higher in the north western side compared to 2020, and similar to 2019. 1+ lobsters were generally widespread across different regions (strata). South-East strata had the highest abundance index, followed by Buru and Warraber Bridge.
- The abundance index for 1+ lobsters in 2021 indicates that recruitment into the fishery is generally widespread across the different strata surveyed, with the highest recruitment recorded at South-East, followed by Buru and Warraber Bridge. All strata point-estimate abundance indices were above average apart from TI Bridge, though this historically has a relatively low abundance.
- Buru and Reef Edge exhibited the greatest count variability between sites indicated by the high standard error at these strata.
- South East recorded the second highest densities across all surveys in 2021.



Age 0+ recently settled lobster counts and index

- The 2021 0+ abundance index was the second lowest point estimate abundance recorded since 2017 and well below the long-term pre-season survey average index (2005-2020). Variability was smaller in 2021 compared to 2020.
- The 2021 survey indicated a typical lobster settlement pattern, with most 0+ lobsters counted on the western side of the survey area, though there were very different observations/counts of 0+ lobsters in 2021 (45) compared to 2020 (101). Historically 0+ counts are highly variable between east and west, however contrary to previous years, 0+ lobsters were observed more consistently across the western and eastern sides. This demonstrates highly variable spatial distribution of lobster settlement year to year.
- The highest abundance of 0+ indices were recorded for South East, Buru and Mabuyag strata and Buru exhibited a very large variability. All strata indices were below the 2006-2020 average with no counts at Kircaldie or Reef Edge.



Habitat changes

56. There were some improvements in the average percentage cover of algae, live coral and sea grass. Percentage coverage of seagrass has improved since 2020 but not compared to pre-2018. Some minor sand incursions were observed at one site in the north west.

Discussion

57. The independent scientific member noted that there is some international work being conducted on the decline of seagrass beds in response to increasing temperatures and queried whether changes in temperature in the Torres Strait have been impacting the settlement of 0+ lobsters.
58. CSIRO advised that there was not enough time between the survey and the RAG to analyse such results, but that an increase in temperatures has been observed since 2019.
59. The Fisheries Portfolio member noted that for the last three years, the North West winds (*Kuki*) have come late (in January or February) but this year the NW winds are early with the wind and rains having started in November. The RAG noted that the weather, rainfall, wind, turbidity, flooding etc can all have a significant impact on the growth of seagrass though it is complex to understand which components might be the most influential. CSIRO are also working closely with JCU to compare the results of their annual seagrass surveys to further understand.
60. On behalf of the RAG, the Chair acknowledged and thanked the CSIRO team for the significant level of work undertaken to complete the survey safely and successfully; and within a matter of weeks, analyse and report on the survey results in time for the RAG meeting.

5 Recommended Biological Catch

61. The RAG considered information provided by the Scientific Member Dr Éva Plagányi on the RBC for the 2021-22 fishing season as derived through the application of the empirical harvest control rule (eHCR) under the TRL harvest strategy, as detailed in Attachment 4-5a of the TRLRAG 32 meeting papers, titled *Summary of Torres Strait TRL 2021 CPUE, Pre-season population survey and eHCR analyses*.
62. The eHCR is applied in December and outputs an RBC for the following year. This formula is the multiple of the average annual catch over the last 5 years (using available catch from TIB, TVH, PNG) and a statistic which measures the relative performance of the fishery based on the following data inputs:
- Pre-season survey recruiting lobster (1+) standardised relative numbers (70 per cent);
 - Pre-season survey recently-settled lobster (0+) standardised relative numbers (10 per cent);
 - nominal CPUE for TIB sector (10 per cent); and,
 - standardised CPUE for TVH sector (using data available up until end of October) (10%).

Average annual catch

63. The RAG noted that the actual reported total catch for the 2020-21 season was the lowest on record, being only 51.3 per cent of the global TAC. If the fishery was genuinely experiencing low catches due to low lobster abundance, then it would be appropriate for the RBC value to be reduced. However, if the low catches are due to factors other than stock abundance (such as markets and COVID-19) (as discussed by TRLRAG 30 and TRLRAG 31), then the low five-year average catch value can unjustifiably penalise the TRL industry with a lower RBC. Reduced catches are considered to be primarily a result of impediments to exports.
64. Noting that the 2020-21 fishing season exhibited lower than expected total catch, TRLRAG 31 (12 October 2021) discussed the implications of a lower-than-expected average catch multiplier on the eHCR. TRLRAG 31 recommended that CSIRO present two different options for dealing with the anomalous under-catch in both the 2019-20 and 2020-21 fishing season in eHCR.
- **Option 1:** substitute the actual catch values with the TAC value in outlier years (2019-20 and 2020-21); use the actual catches in the three years prior (2016-17, 2017-18 and 2018-19) and apply an average of these five values.
 - **Option 2:** noting that there has been a change in the relative proportion of the TAC caught between the TIB and TVH sectors in recent years, use the combined sector (TIB, TVH and PNG) average catch proportion against the global TAC over the recent five-year period, capping any overcatch at 100 per cent of the TAC, and apply this proportion to the TAC for 2019-20 and 2020-21 to obtain an estimated catch value for those years. As above, use the actual catches in the three years prior (2016-17, 2017-18 and 2018-19) and apply an average of these five values.
65. The RAG considered the results of the analyses on the two options as outlined in **Table 1**.

Table 1. Summary of RBC values using options 1 and 2 as recommended by TRLRAG 31.

Season	Reported Torres Strait Total Catch (t)	Option 1: Adjusted total catch for eHCR	Global TAC (t)	Catch / TAC	Adjusted catch proportion (capped)	Option 2: Adjusted total for eHCR based on ave. catch proportion	Global TAC (t)	Catch / TAC
2012-13	612.5	-	871	70.3%	-	-	871	70.3%
2013-14	733.2	-	616	119.0%	-	-	616	119.0%
2014-15	591.0	-	769	76.9%	76.9%	-	769	76.9%
2015-16	758.2	-	796	95.2%	95.2%	-	796	95.2%
2016-17	390.8	390.8	495	79.0%	79.0%	390.8	495	79.0%
2017-18	412.1	412.1	320	128.8%	100.0%	412.1	320	128.8%
2018-19	583.5	583.5	641	95.1%	95.1%	583.5	641	95.1%
2019-20	451.7	582	582	77.6%		519.4	582	77.6%
2020-21	320.6	623.5	623.5	51.3%		556.4	623.5	
5 year average input to eHCR	431.7	518.4			89.24%	492.4		

eHCR indices

66. When considering the recent log-transformed slopes of the four eHCR indices, the RAG noted that:

- although the most recent 0+ pre-season survey value, the TIB CPUE and the TVH CPUE values in 2021 (each with a 10 per cent weighting in the eHCR) had come down since 2020, the overall average five-year trend remained positive for all three indices.
- the 1+ pre-season survey index saw an increase in the 2021 value which maintains a positive slope. This index carries a 70 per cent weighting and is used to best predict how many lobsters are available to be sustainably caught next season.
- together, these indices indicate that the TRL stock has not declined, confirming that reduced catches are likely due to marketing limitations.

Application of the empirical Harvest Control Rule (eHCR)

67. Table 2 illustrates a comparison of all eHCR RBC outputs the different average catch values with ad-hoc adjustments from Options 1 and 2 above, a default application using non-adjusted catch values (Option 3), as well testing alternative CPUE indices inputs combined with options 1 and 2 as a comparison (referred to as Option 4 and Option 5) ranging between 512 tonnes and 617.5 tonnes. Options 4 and 5 were presented as sensitivities to illustrate that using an alternative CPUE index has very little impact on the RBC outputs.

68. The RAG noted that the eHCR has been MSE-tested and is shown to be robust and precautionary. It captures longer-term trends over a five-year period, it places substantially more weighting (70%) on the pre-season survey which is not affected by trade and other disruptions. Also, using a five-year average (including average catch) helps to dampen the influence of a single anomalous year.

Table 2. Comparison of eHCR RBC outputs.

eHCR Inputs	Option 1	Option 2	Option 3	Option 4	Option 5
	Index_MY0; Seller; Int1 - using avg catch option 1	Index_MY0; Seller; Int2 - using avg catch option 2	Default -using actual 2021 catch	Alternative CPUE (Mod3) for TIB & TVH - using avg catch option 1	Alternative CPUE (Mod3) for TIB & TVH - using avg catch option 2
Pre-season 1+	1.215	1.215	1.215	0.850	1.215
Pre-season 0+	1.242	1.242	1.242	0.124	1.242
CPUE_TIB	1.058	1.058	1.058	0.108	1.081
CPUE_TVH	1.057	1.057	1.057	0.109	1.086
Ave Catch (t)	518.4	492.44	431.7	518.4	492.44
RBC (t)	614.8	584.0	512.0	617.5	586.6

69. The RAG had previously agreed at TRLRAG 30 that application of the catch multiplier in the eHCR was not appropriate where catches had been significantly impacted by external factors (COVID and markets). The RAG debated the appropriateness of applying either Option 1 or Option 2 to the eHCR to address the lower-than-expected catch values in both the 2019-20 and 2020-21 fishing seasons and discussed the following key points:

- Depending on whether the current market issue is ongoing into next season, the impact on total catches could also be expected to continue. In that regard, Option 1 will allow the

eHCR to be applied without the impacts of external factors reducing the recommended total catch amount. Option 2 will slowly continue to drive the RBC output down as a result of marketing constraints.

- b) An industry member queried whether the total catch figures included all lobsters that have died, or only those that are sold. The RAG noted that the total catch value should include all lobsters that have died, including those that are sold, those that might die in cages, and those that might be discarded. Considering the catches in the 2020-21 season were so low, any substantial mortality of discards would not be very influential in the eHCR calculation.
- c) In the absence of formally recording all lobster mortality, the harvest control rule assumes a small proportion of mortality, though if this proportion was to suddenly change (for example, due to an increase in water temperatures causing an increase in mortality), then that should be considered. The RAG agreed that it is important to report all discards and report all lobsters that come out of the water, not only those that are sold, particularly in the face of a warming climate and increasing water temperatures.
- d) Acknowledging that the eHCR is robust to (and tested against) the TAC being fully caught, the independent scientific member expressed a preference to use Option 1 this year and replace the anomalous years catch values with the TAC. It was suggested the RAG consider a future revision of the eHCR that uses the previous year's TAC, rather than catch, as a multiplier. The RAG noted that this may require the harvest strategy to be re-tested using management strategy evaluation (MSE).
- e) The RAG noted that whilst likely to be more reflective of what actual catches may have been in the absence of COVID-19 and market impacts, Option 2 provides a level of precaution on top of what is already a precautionary harvest strategy. This is because the average catch will continue going downwards, particularly if external factors like the export market continue to impact catches. An industry member added that the current, fragile market situation is expected to continue in 2022, and expressed support for using the TAC values in substitution for the actual catches (i.e., Option 1).
- f) An industry member noted that if the current circumstances of low catches were to continue, unrelated to stock abundance, the default application of the eHCR will cause the RBC to continue to be unjustifiably reduced over time. If the RAG is confident that catches are low because of external factors and not low lobster abundance, then the eHCR catch should be adjusted by applying Option 1.
- g) Noting that the eHCR is precautionary, and the harvest strategy was rigorously tested based on the assumption that the TAC would be close to or fully caught in a standard fishing season, the AFMA member supported the application of Option 1 to set the RBC for the 2021-22 fishing season.
- h) The RAG also noted that in the event there was in fact a low stock abundance, reflected in the CPUE indices and the 1+ survey index (which has a 70 per cent weighting) then the eHCR would produce an RBC to reflect those trends. This reinforces the concept that applying Option 1 and using the TAC as the total catch value will not undermine the already precautionary harvest control rule.

70. Following an informal break-out discussion requested by traditional inhabitant industry members to review each of the options, and **having considered both options to address the lower than expected recent two years' catch, the RAG recommended the application of Option 1 (to substitute the anomalous catches of 2019-20 and 2020-21 with the fishery global TAC) in the average catch multiplier in the eHCR. This resulted in an RBC value of 615 tonnes (rounded) for the 2021-22 season.**

71. **The RAG further recommended that revision of the eHCR be investigated, e.g. to use previous year TAC rather than catch as a multiplier, noting that the stock assessment scheduled for 2022 will help to recalibrate the stock biomass with the eHCR.**

6 Compliance monitoring and reporting of discards

72. On behalf of the traditional inhabitant members, the TSRA Fisheries Portfolio member raised the issue of discarded or dead crayfish not being reported to AFMA, and the need for better reporting and compliance monitoring to ensure these crayfish are accounted for. The concern arises from industry reports of an apparent increase in crayfish mortality and discards, in some cases due to increasing water temperatures causing higher mortality.
73. Traditional inhabitant members advised of their intention to get the TIB sector to lead the way in monitoring and data collection of all discarded crayfish. The members are willing to work with the broader TIB industry to start educating and encouraging the reporting of discards and all crayfish that come out of the water, with the support of AFMA.
74. The RAG noted that Torres Strait Fisheries have no requirements to report lobsters that are discarded, neither on the TDB02 Catch Disposal Records (CDRs), nor the TRL04 Daily Fishing Logbooks. Some Torres Strait fisheries operators do record this information informally on the CDRs but it will need to be formalised through changes to the CDR books and logbooks to enable this.
75. The RAG further noted that in other fisheries, it is very challenging to monitor and keep records on discards at an individual accountability level. Other tools, such as independent monitoring using on board observers are used to then estimate discards at the fishery level, which is then subtracted from the final TAC calculation.
76. An industry member added that on the East Coast, boats have a policy that live tanks must be checked twice a day, and any weaker lobsters must be processed and frozen to ensure that every lobster that is caught, is also sold and mortalities are reduced. The same should apply for live cages sitting off islands, whereby cages are regularly checked and maintained to ensure maximum value for the fishery and reduce the number of crays that are lost. On average, 10 per cent of lobsters should be frozen.
77. The Chair commended the traditional inhabitant members on raising the issue and taking the initiative to improve reporting of discards. AFMA expressed support for the initiative and acknowledged that there is further work to be done to ensure the reporting can be facilitated and that the data can be extracted and used from the database as required.
78. An observer sought advice from AFMA on time required to amend CDR and daily fishing logbooks to support discard reporting. AFMA advised that changes could be enacted before the next fishing season.

7 Overview of the Queensland East Coast TRL Fishery stock assessment

79. The RAG noted a presentation on the Queensland East Coast TRL Fishery stock assessment as provided by Dr Fay Helidoniotis (via video conference). A copy of the presentation slides is provided in Attachment 6a of the TRLRAG32 meeting papers.
80. Noting that the TRL Fisheries between the Queensland east coast and the Torres Strait are considered a single biological population, the RAG was invited to provide any experiences and input to the parameters of the preliminary stock assessment model.
81. Noting that the model presented was preliminary, and the data contained within is confidential, the RAG discussed the following key points:
 - a) Although the area of Queensland TRL fishery extends only both the east and west coasts of Queensland, on the east coast fishery grounds are considered as part of the stock assessment.

- b) Catch data inputs start from roughly 1988, and CPUE indices start in 1994 due to the poorer catch records prior to 1994, though one industry member noted that the fishery in fact commenced in the 1960s when catch was mostly unloaded in Thursday Island.
- c) Noting a sharp increase in the standardised CPUE index between 2002 and 2008, Dr Helidoniotis sought input from the RAG as to whether the CPUE series should commence in 2004 or be considered to have two split series as two separate fleets. The RAG Chair noted that unless something is known to have fundamentally changed in 2003, then the CPUE index cannot be simply considered as two separate fleets or series. An industry member also noted that operators in 1994/95 were inexperienced as they began switching from spearing lobsters to live catch operators till around 2001-02. After that period, more experienced operators began working out of Cairns (rather than unloading to Thursday Island) and the effort in the fishery increased.
- d) Noting that the model predicts that males grow faster than females, Dr Helidoniotis sought input from the RAG as to whether that is what is observed in the east coast lobsters. An industry member noted that males do grow larger than females and so it is assumed they would also grow faster. An observer to the meeting also noted that generally, lobsters on the east coast are a lot larger than Torres Strait lobsters, particularly the males. A scientific member also noted that older lobsters are rarely observed in the Torres Strait as the mature crays walk out of the fishery at around three years of age. However, it is assumed that the age at maturity between the two fisheries are similar. Another industry member noted that there have been some observations of 6.5 – 7cm berried females in PNG, but more data would be available from trawl catch data.
- e) The CSIRO scientific member advised that it would be useful to have a discussion offline about some of the parameters which may change depending on assumptions made regarding the CPUE series, which may also then impact recruitment variability and steepness parameters in the model.
- f) The RAG noted that the model sex ratio of male to female lobsters is 50:50, but that the ratio for observed data is yet to be calculated.
- g) Noting the low catches early on in the time series followed by a sharp increase in CPUE, the model must be estimating a higher recruitment residual which will be an area requiring closer examination as to how plausible that scenario is to explain those trends.
- h) The AFMA member noted it would be important to better understand how and if the results of the stock assessment will be applied in the context of the TRL Harvest Strategy for the East Coast.

82. The Chair thanked Fay for the opportunity for the RAG to provide input on the development of the stock assessment. The RAG noted that Fisheries Queensland are aiming to have a base case model developed by the end of December and present the final model by February 2022.

8 Interactions between the Torres Strait TRL and Prawn fisheries

83. Understanding TRL interactions in both the Australian Torres Strait Prawn Fishery (TSPF) and PNG prawn trawl fisheries for the purposes of the TRL stock assessment and monitoring overall fishing mortality against the TRL TAC is an important issue for the TRL RAG, WG and the Australian-PNG Fisheries Committee bilateral meetings.

84. To help understand the interactions better, the RAG noted a presentation by CSIRO on the results of preliminary analyses of available observer data on TRL bycatch in the Australian TSPF. The RAG also noted that some of the data presented is commercial in confidence and should not be distributed beyond the RAG. In particular, the RAG noted the following:

- a) The TSPF is required to obtain 2.6 per cent observer coverage of the total prawn fishing effort each year which over time generates a sizeable dataset of fishery independent scientific data.

- b) Trawling effort mainly occurred in Great North East Channel area, and western zone of the Darnley area with 35 per cent of all recorded shots containing at least one lobster and the greatest counts of lobsters occurring in the central part of the Great North East Channel area.
 - c) There was no trawling effort that occurred in the western part of the Torres Strait, west of Warrior reef (due to spatial closures in the TSPF). These grounds are considered key TRL fishing grounds. There is also little trawling effort east of Warrior Reef as a spatial closure applies in this area of the TSPF from December to July each year.
 - d) Lobster bycatch was greatest in March 2013 and March 2015, which is attributed to a small number of trawl shots with high lobster counts. For other months and other years, the catch was variable but considerably smaller than March 2013 and March 2015.
 - e) The age class ratio of lobsters was generally even across years, however the ratio of 1+ lobster to 2+ lobsters in 2010 was considerably different with more 2+ lobsters were recorded. Sex ratio was also generally similar across years, except in 2008, 2010 and 2019 more females were observed, and in 2017 more males were observed.
85. The RAG noted a summary of results illustrating the observed TRL bycatch in tonnes from 2012 to 2019, and the scaled up TRL bycatch as a percentage of the total TRL catch in the Torres Strait. The scaled TRL bycatch ranged from 0.6 tonnes in 2017 (0.15 per cent of the total TRL catch), to 25.7 tonnes in 2013 (4.2 per cent of the total TRL catch).
86. However, the RAG noted that it is important to understand that the extrapolated values may not be an accurate indication of the true annual lobster bycatch values due to the limited representation of the observer data and spatial and temporal patchiness of the TRL bycatch. For example, there is uncertainty in the extrapolation method which is potentially biased by a small number of anomalously high lobster bycatch in the months of March. It remains unknown whether observed lobster bycatch from March was representative of the total spatial and temporal coverage of the TSPF. The RAG noted that this requires further investigation. If the months of March in 2013 and 2015 are excluded from the analyses, then the total extrapolated TRL bycatch ranges from 0.15 per cent and 2.0 per cent of the total TRL catch.
87. While 98.5 per cent of observed discarded lobsters are reported as being alive, post-capture mortality is uncertain.
88. Having regard to the preliminary analyses, the RAG noted that there is scope for potential future work to refine the analyses, including:
- a) Better understanding the small number of high lobster bycatch counts and their effect on the extrapolated values, including how these outliers may be handled in future analyses.
 - b) Undertaking a more detailed spatial analysis of the data (e.g., fishery regions); and
 - c) If feasible, collecting weight data on all individual lobsters as bycatch (to look at age class information).
89. The Chair suggested that in examining the spatial footprint of the bycatch more closely, using a gridded approach by month may help dampen the influence of the high outlier data in March and provided a more robust overall estimated of annual bycatch levels.
90. An industry member noted that there are two migrations of lobsters often observed in the Torres Strait, the first being the annual spawning migration later in the year where breeding lobsters march off into the Gulf of Papua which generally has a greater proportion of females to males. However there are theories about 1+ lobsters migrating from the South East corner in to the Torres Strait which is not captured in the annual pre-season lobster survey. If these lobsters in fact do recruit to the Torres Strait and become part of the fishery, that could be one reason for any discrepancies between the survey and catches of 2+ lobsters later on.
91. There are old reports from the 1970s where high numbers of juvenile TRL were being caught by trawl boats around Dugong Island and aeroplane sandbanks, though there are no firm records to verify this. If in fact the high number of lobsters caught in March are 1+ lobsters, this would reaffirm the theory of 1+ lobster migration during through the trawling grounds at that time of year. However, the RAG noted that from the data available, there appeared to be no trawling

effort around Dugong Island indicating that the high lobster counts in March occurred within the Great North East Channel.

92. The RAG noted that although individual weights of lobsters were not recorded after 2012, carapace length data is collected on all lobsters (which can be used to convert into weight data and categorise into 1+ and 2+ age classes). CSIRO added that these data were not part of the data they received and so AFMA will undertake another data extract of the available observer data to ensure that all available length data is also included.
93. The RAG noted that reporting of bycatch in the TSPF is challenging, which is why independent monitoring is required through observers, but that TRL is a species of interest for the TSPF which places greater emphasis on the collection of data for species like TRL. CSIRO also noted that cross-correlation with available logbook data is another avenue that can be used in the analysis (with respect to extrapolating observer data).
94. Noting that the observer coverage in the TSPF is as random as practically possible in terms of vessel selection and subsequent temporal scaling of the data, the Chair suggested that future analyses may need to be pooled over years and this may also address confidentiality issues. AFMA added that although there is generally two observer TSPF trips undertaken each year, there is scope to do more targeted observer trips to better suit the value of the data for the TRL fishery, provided it aligns with the AFMA observer program needs.
95. The RAG would first need to consider what kinds of further analyses would be beneficial, which in turn would help guide the timing for future observer trips in the TSPF that may improve the value of the observer data to the TRL Fishery.
96. The RAG acknowledged that these analyses were not part of CSIRO's contracted work but it has created a very valuable baseline for future analyses. AFMA expressed that this work is a high priority and AFMA is supportive for this agenda item to be a standing item for the RAG's consideration noting that it is an important issue at the bilateral level and specific objective of the PZJA. Any future analyses of the data are subject to available resourcing.
97. **Subject to future resourcing, the RAG recommended to continue further analysis of the available observer data from the TSPF with the aim of getting an annual assessment of likely TRL catch to be included in the TRL stock assessment and eHCR, noting that the extrapolation method will need to be revised, and noting that further analysis presents opportunities for potential investigation of other species of interest in other Torres Strait fisheries such as sea cucumbers.**

ACTION ITEM – AFMA to ensure that all available length data for TRL in the TSPF observer data is provided to future analysis.

9 Research priorities

98. This agenda item was deferred until the next RAG meeting.

10 Other business

99. No other business was nominated for discussion.

11 Date and venue of next meeting

100. On behalf of the RAG, the Chair thanked and congratulated the AFMA member, Selina Soute for her seven years of dedicated service as Senior Manager of Torres Strait Fisheries.
101. The RAG noted that the dates and venues for future RAG meetings will be discussed out of session.

102. The 32nd TRL RAG meeting was closed in prayer at 4:22pm on Wednesday 15 December 2021.

Declaration of interests

Dr Ian Knuckey – October 2021

Ian Knuckey positions:

Director –	Fishwell Consulting Pty Ltd
Director –	Olrac Australia (Electronic logbooks)
Chair –	Northern Prawn Fishery Resource Assessment Group
Chair –	Tropical Rock Lobster Resource Assessment Group
Chair –	Victorian Rock Lobster and Giant Crab Assessment Group
Chair –	Victorian Central Zone Abalone Fisheries Resource Advisory Group
Chair –	Gulf of St Vincent's Prawn Fishery MAC Research Scientific Committee
Scientific Member –	Northern Prawn Management Advisory Committee
Scientific Member –	SESSF Shark Resource Assessment Group
Scientific Member –	SESSF Great Australian Bight Resource Assessment Group
Scientific Member –	Gulf of St Vincent's Prawn Fishery Management Advisory Committee
Scientific Member –	Tropical Tuna Resource Assessment Group
Scientific Member –	SESSF Resource Assessment Group
Member –	Victorian Marine and Coastal Council
Member –	The Geelong Agri Collective

Fishwell current projects:

DAWE Project	Multi-sector fisheries capacity building
AFMA 2020-0807	Bass Strait Scallop Fishery Survey – 2020-22
AFMA 2019-0836	Information the Bass Strait Central Zone Scallop Fishery Harvest Strategy and TAC setting process with economic data and MEY proxies
FRDC project	Principal Investigator for SA Peak Industry body project
AFMA project	Design sea cucumber fishery-independent survey for Coral Sea
FRDC 2019-027	Improving and promoting fish-trawl selectivity in the SESSF and GABTS
FRDC 2019-072	A survey to detect change in Danish Seine catch rates of Flathead and School Whiting resulting from CGG seismic exploration.
FRDC 2019-129	Potential transition of shark gillnet boats to longline fishing in Bass Strait - ecological, cross-sectoral, and economic implications
FRDC 2018-021	Development and evaluation of SESSF multi-species harvest strategies
Traffic Project	Shark Product Traceability
NT Fisheries	Design and implementation of a tropical snapper trawl survey
Sea Cucumber Ass.	Design and implementation of various sea cucumber dive surveys.
Australia Bay	Queensland Gulf of Carpentaria Developmental Fin Fish Trawl Fishery
Tas. Abalone	Scientific Advisor for Tasmanian Abalone Council Ltd
PEMSEA	Developing EAFM Plan for Red Snapper in Arafura and Timor Seas
Beach Energy	BACI study of Prion Marine Seismic Survey impacts relative biomass of scallops on beds in the immediate vicinity.
Expert Witness	Gladstone Harbour development impact

**TROPICAL ROCK LOBSTER RESOURCE ASSESSMENT
GROUP 32**

Wednesday 15 December 2021 9am – 5pm

The Sebel, Cairns / Video conference

ADOPTED AGENDA

1 PRELIMINARIES

1.1 Welcome and apologies

The Chair will welcome members and observers to the 32nd meeting of the TRL RAG.

1.2 Adoption of agenda

The RAG will be invited to adopt the draft agenda.

1.3 Declaration of interests

Members and observers will be invited to declare any real or potential conflicts of interest and determine whether a member may or may not be present during discussion of or decisions made on the matter which is the subject of the conflict.

1.4 Action items from previous meetings

The RAG will be invited to note the status of action items arising from previous meetings.

1.5 Out of session correspondence

The RAG will be invited to note out of session correspondence on RAG matters since the previous meeting.

2 UPDATES FROM MEMBERS

2.1 Industry and Scientific members

Industry, scientific and government agency members and observers will be invited to provide verbal updates on matters concerning the Torres Strait TRL Fishery including updates on fishing patterns, behaviours, prices, and market trends this season.

2.2 Government agencies

The RAG will be invited to note updates from AFMA, TSRA and QDAF on matters concerning the Torres Strait TRL Fishery.

2.3 Papua New Guinea National Fisheries Authority

The RAG will be invited to note a verbal update from the PNG National Fisheries Authority.

2.4 Native Title

The RAG will be invited to note a verbal update from Malu Lamar (Torres Strait Island) Corporation RNTBC.

3 CATCH AND EFFORT ANALYSES FOR THE 2020-21 FISHING SEASON

The RAG will be invited to discuss TRL fishery catch and effort data for the 2020-21 fishing season, including catch-per-unit-effort (CPUE) analyses to be presented by the CSIRO.

4 RESULTS OF THE NOVEMBER 2021 PRE-SEASON SURVEY

The RAG is invited to discuss the results of the November 2021 pre-season survey to be presented by the CSIRO.

5 RECOMMENDED BIOLOGICAL CATCH

The RAG will be invited to provide advice on a recommended biological catch (RBC) for the TRL Fishery for the 2021-22 fishing season, based on estimates derived through the application of the empirical harvest control rule (eHCR). The RAG will also consider the options for managing the lower than expected total catch value for the 2021-22 fishing season and its implications for applying the eHCR, as per the recommendations of TRLRAG 31 (12 October 2021), to be presented by the CSIRO.

6 COMPLIANCE MONITORING AND REPORTING OF DISCARDS

(NEW)

Traditional inhabitant members requested this agenda item to discuss the issue of reporting and compliance monitoring of discards in the fishery to ensure accurate reports of the total amount of lobsters being taken from the fishery.

7 OVERVIEW OF THE QUEENSLAND EAST COAST TRL FISHERY STOCK ASSESSMENT

The RAG is invited to note an overview of the Queensland East Coast TRL Fishery Stock Assessment presented by Fisheries Queensland Scientist, Fay Helidoniotis. Given that both the Torres Strait and Queensland East Coast fisheries are considered part of a single population, it is useful for the TRLRAG and the Queensland TRL Working Group liaise together on the stock assessments for the TRL fisheries and ensure consistency where possible.

8 INTERACTIONS BETWEEN THE TRL AND TORRES STRAIT PRAWN FISHERY

The RAG is invited to note a presentation from CSIRO on the results of the preliminary analyses of available observer data on TRL bycatch in the Torres Strait Prawn Fishery (TSPF) as collected from the AFMA Observer Program from 2007 to 2019.

9 RESEARCH PRIORITIES

The RAG will be invited to discuss and provide advice on future research priorities for the TRL Fishery.

10 OTHER BUSINESS

The RAG will be invited to raise any other matters for consideration.

11 DATE AND VENUE FOR NEXT MEETING

The RAG will be invited to discuss a suitable date for the next RAG meetings.

The Chair must approve the attendance of all observers at the meeting. Individuals wishing to join the meeting as an observer must contact the Executive Officer – Georgia Langdon (georgia.langdon@afma.gov.au)