Torres Strait Tropical Rock Lobster Resource Assessment Group Meeting 38

FINAL Meeting Record 10-11 December 2024 Thursday Island

Note all meeting papers and record available on the PZJA webpage: www.pzja.gov.au



Australian Government Australian Fisheries Management Authority

Contents

(Contents	2		
Me	Meeting participants			
ſ	Vembers	3		
(Observers	4		
1	Preliminaries	5		
2	Updates from members	6		
3	Revising the empirical Harvest Control Rule (eHCR)	8		
4	Climate Adaptation	12		
5	Catch and effort analyses for the 2023-24 fishing season	13		
6	Results of the 2024 pre-season survey	15		
7	Recommended Biological Catch 2024-25	18		
7a	Preliminary Stock Assessment Results	20		
8	Revising the TRL Harvest Strategy	20		
9	Other Business	21		
10	Date and Venue for the next meeting	21		

Meeting participants

Members

Name	Position	Declaration of interest	
lan Knuckey	Chair	Full declaration of interests provided at Attachment A.	
Eva Plaganyi	Scientific Member	Lead scientist for PZJA funded TRL research projects conducted by CSIRO. Contribute to other Torres Strait research projects that receive research funding, including currently Torres Strait climate change project and shared science and Indigenous knowledge to support fisheries capacity building in Torres Strait. No other interests in the fishery. Independent scientific member of HCRAG and NPFRAG.	
Andrew Penney	Scientific Member	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. 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. 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.No shareholding and hold no positions relating to any other companies, including any fishing companies or industry associations.	
Les Pitt	Traditional Inhabitant Member – Kemer Kemer Meriam	Traditional Inhabitant Member Kemer Kemer Meriam, TIB licence holder and runs an independent freezer facility on Erub Island. Board member of Zenadth Kes Fisheries.	
Charles David (joined at 9am)	Traditional Inhabitant Member - Kulkalgal	Traditional Inhabitant Member Kulkalgal, TSRA Fisheries Advisory Committee and Zenadth Kes Fisheries member.	
Patrick Mooka	Traditional Inhabitant Member – Guda maluylgal	Traditional Inhabitant Member, Guda maluylgal. TSRA Board Member. Zenadth Kes Fisheries member.	
Jermaine Reuben	Traditional Inhabitant Member - Maluyilgal	Apology.	

Name	Position	Declaration of interest	
Thomas Fujii	Traditional Inhabitant Member - Kaiwalalgal	Traditional Inhabitant Member Kaiwalalgal. Queensland East Coast TRL and TIB licence holder. Zenadth Kes Fisheries member.	
Brett Arlidge	Industry Member	Director of MG Kailis Pty Ltd. MG Kailis Pty Ltd is a holder of 5 TVH licences. Seafood buyer from Torres Strait, QLD and PNG TRL fisheries.	
Ken McKenzie	Industry Member	TVH licence and quota holder. Queensland East Coast TRL licence and quota holder.	
Damian Miley	TSRA Member	TSRA Fisheries Project Manager, TSRA holds multiple TVH TRL fishing license on behalf of Torres Strait Communities but dos not benefit from them. No personal pecuniary interest.	
Jenny Keys (online)	Queensland Department of Primary Industries Member	Queensland Fishery manager of tropical rock lobster fishery, aquarium and coral fisheries. Nil interests.	
Steven Harris	AFMA Member	Nil interests.	
Georgia Langdon	Executive Officer	Senior Management Officer for Tropical Rock Lobster Fishery. Nil interests.	

Observers

Name	Position	Declaration of interest
Joseph Posu	PNG National Fisheries Authority	Nil interests.
Yen Loban	TSRA Fisheries Portfolio member	Traditional Owner. TSRA Board member and TSRA Fisheries Portfolio member. Chair of Zenadth Kes Fisheries
Quinten Hirakawa	TSRA	TSRA employee, TIB license holder with a TRL endorsement.
Brooke D'Alberto	Australian Bureau of Agricultural Resource Economics and Sciences	Nil interests.
Laura Blamey	CSIRO and TRL Working Group scientific member	Contributes to Torres Strait research projects that receive research funding, including leading the Torres Strait climate change project. No other interests in the fishery.
Leo Dutra	CSIRO	Contributes to Torres Strait research projects that receive research funding, including currently Shared science and Indigenous knowledge to support fisheries capacity building in Torres Strait, viability of sea cucumber aquaculture, and tropical rock lobster survey. No other interests in the fishery.
Steph Brodie	CSIRO	Scientist for PZJA funded TRL research projects conducted by CSIRO.

Name	Position	Declaration of interest
Denham Parker (online)	CSIRO	Contributes to Torres Strait research projects that receive research funding
Richard Takai	TIB fisher	TIB licence holder
Roy Deng (online)	CSIRO	Contributes to Torres Strait research projects that receive research funding
James Ahmat (joined at 9am)	Former TIB fisher	Not declared
Daniel Corrie (online)	AFMA	Nil interests
Maluwap Nona	TIB fisher	Not declared
Graham Hirakawa (joined at 930am)	TIB fisher	Not declared
Daniel Takai	Zenadth Kes Fisheries	CEO of Zendath Kes Fisheries

1 Preliminaries

Welcome and apologies

- 1. The 38th meeting of the Tropical Rock Lobster Resource Assessment Group (the RAG) was held on Thursday Island and opened in prayer at 8:40am on Tuesday 10 December 2024. The Chair welcomed participants and acknowledged the Traditional Owners of the various lands on which members were participating from and paid respects to Elders past, present and emerging. Members and observers introduced themselves.
- 2. Participant tables at the start of this meeting record reflect attendance. An apology was received from Traditional Inhabitant member from Maluilgal, Jermaine Reuben.

Adoption of agenda

- 3. The RAG considered the draft agenda, which was circulated to members on 29 October 2024.
- 4. Scientific member, Eva Plaganyi advised the RAG that CSIRO had undertaken an update to the TRL stock assessment, even though it was not a stock assessment year under the TRL Harvest Strategy. She noted that the usual process is to discuss the inputs to the empirical Harvest Control Rule (eHCR), and then the stock assessment, suggesting to present the preliminary results under Agenda Item 7. It was noted that although an assessment was conducted, per the usual process, the 2025 TAC would be set based on the agreed eHCR.
- 5. The RAG adopted the agenda with the above-mentioned addition and is provided at Attachment B.

Declarations of interest

6. The Chair advised members and observers of their PZJA Fisheries Management Paper No. 1 (FMP1) conflict of interest obligations and requested that members update the record of declarations. These are detailed in the meeting participant tables at the start of this record.

- 7. Scientific member, Eva Plaganyi advised the RAG that after 36 years of undertaking the TRL scientific surveys, CSIRO had not submitted a research proposal for the next three-year TRL research project 2025-2028. Reasons include reduced capacity for undertaking remote field work, staff departures and removal of equipment that have not been replaced, further impacted by broader financial constraints. She added that CSIRO continue to have an ongoing commitment to research in the Torres Strait and will continue to address issues related to climate change, the ecosystem and broader genetics work. CSIRO are very proud of their long involvement in the fisheries research and the impact it's had in supporting sustainable management of the TRL Fishery.
- 8. Ian Knuckey, as RAG Chair then disclosed to the RAG that, following the call for Expressions of Interest, his company—Fishwell Pty Ltd—had submitted a proposal to undertake the next TRL survey, stock assessment and recommended biological catch project.
- 9. Members noted that the RAG had an opportunity to comment on the research scope for the TRL Project and were advised of the targeted process for submitting research proposals through the Torres Strait Scientific Advisory Committee (TSSAC) call for research in September 2024. AFMA advised that the RAG would need to meet in early 2025 to appraise the proposals before the TSSAC met in early February 2025.
- 10. Scientific members and observers, including the Chair left the meeting temporarily while remaining members discussed their declared conflicts and involvement in the meeting. Noting that research priorities was not on the agenda, all other members agreed that scientific members and the Chair could participate in discussions and recommendations for this meeting.
- 11. All industry members and observers then left the meeting temporarily while remaining members discuss their declared conflicts and subsequent involvement in the RAG discussions. It was agreed that all industry members could participate in the discussions but that at the time of providing advice on an RBC, industry members may be asked to leave the room.
- 12. Government members were also asked to temporarily leave the meeting. It was agreed that there were no agenda items under which Government agency members or observers should not participate in the meeting.

Action Items

- 13. The RAG noted the process and status of actions arising from previous RAG meetings (refer to Agenda paper 1), in particular:
 - a) Action Item #3 the AFMA CEO and TSRA CEO had met earlier in December to discuss compliance matters and involvement Torres Strait Islanders. It was the view of TSRA that the Ranger program is not a good option as it is a distraction from their primary roles and presents a range of risks that cannot be adequately mitigated.

2 Updates from members

- 14. The RAG noted verbal updates provided by traditional inhabitant members, industry members and observers regarding the performance of the Torres Strait TRL Fishery during the 2023-24 fishing season and start of the 2024-25 season, in particular:
 - a) For the start of the 2024-25 season in the inner islands, there are more small lobsters than medium, and not very many large lobsters so far. If the weather remains good, it should be a good season.

- b) There hadn't been much activity out at Erub, but observations made by the traditional inhabitant member for Kemer Kemer Meriam indicate a reasonable amount of 0+ lobsters in some areas and a few 2+ lobsters also. There appears to be lots of "moss" (probably filamentous green algae) on top of the reef, and less on the edges.
- c) There had been no commercial activity in Gudamaluilgal to date (this season), but some traditional take. The water clarity is at its best at this time of year (December).
- d) Fishers are still catching live TRL in the central islands however price is an ongoing issue. In some instances there is a difference of around \$10 per kilogram between buyers.
- e) The statement about Australian lobster being permitted back into China by the end of the 2024 calendar year is somewhat misleading and has not yet occurred. Industry is still faced with the impediment of TRL being declared an endangered species by Chinese authorities.
- f) There had been good lobster numbers coming out of most places across the region, around lama and the western islands and less so around the inner islands. Very few lobsters have been over 1kg. Other TVH operators have noted lots of undersize cray (~800g). The high tides and tidal streams should be as strong this year compared to last.
- 15. The RAG noted updates from scientific members, in particular that:
 - a) Some of the TRL and Torres Strait Climate Change work has been presented at the recent Australian Marine Sciences Association (AMSA) conference in September and most recently at the Australian Society for Fish Biology in Newcastle.
 - b) As part of the Torres Strait Climate Change project, the two data moorings that were deployed in the region for 12 months in total were changed over after 6 months in November. Both moorings were successfully retrieved and replaced, with both expected to be moved at the end of May/start of June 2025. The second meeting of the project steering committee is meeting later this week.
- 16. The AFMA member provided a brief update on the following points:
 - a) The latest Australian Bureau of Agricultural Resource Economics and Sciences (ABARES) Fishery Status Reports (2024) is out, and the status of TRL remains not subject to overfishing and not overfished.
 - b) AFMA has commenced some work to review FMP1.
- 17. The Queensland Department of Primary Industries and Fisheries (QDPIF) member noted that following the recent state election there have been no changes to the management of the Queensland TRL Fishery. Only 35% of the 2024 TRL TAC was caught.

ACTION ITEM – QDPIF to report back to the RAG on the total catch from the 2023 Queensland TRL fishing season.

18. AFMA queried the jurisdiction and rationale of the new TRL recreational closure with the QDPIF member which appears to also apply to the Torres Strait region.

ACTION ITEM – QDPIF to report back to the RAG with more information on the jurisdiction and rational for the new TRL closure.

19. The traditional inhabitant member for Kulkalgal sought clarity from QDPIF on the status of Torres Strait islanders on the Queensland Cape York Special Fisheries Working Group (CYSFWG). QDPIF advised that a decision was made regarding membership and that it would only include indigenous persons from Cape York (and not extend into the Torres Strait).

Torres Strait Tropical Rock Lobster Resource Assessment Group Meeting 38 Record – 10-11 December 2024

afma.gov.au 7 of 24

ACTION ITEM – QDPIF to follow up with written advice to TSRA regarding the participation of Torres Strait Islands in the CYSWG.

- 20. The TSRA member noted that TSRA through their Land and Sea Management Unit are progressing the crown of thorns starfish eradication project in conjunction with the Australian Institute of Marine Science (AIMS) reef health work. The TSRA board agreed to a multi-million-dollar project with the Great Barrier Reef Marine Park Authority (GBRMPA) and AIMS to expand the TS Cots work to compliment the GBR.
- 21. The Papua New Guinea National Fisheries Authority representative advised the RAG that the TRL catch data submitted to date for the period January to September 2024 indicated the PNG TAC had been exceed by approximately 40 tonnes. As a result, NFA implemented a fishery-wide closure (both hookah and free-diving) and NFA is now in consultation with industry about whether free-diving can open up earlier than usual.
- 22. NFA have also completed a first redraft of the TRL Management Plan which is expected for approval and gazettal in 2025. The Plan will include improved catch reporting and chain of custody requirements to support Marine Stewardship Council certification.
- 23. The NFA representative queried if there would be any technical implication if PNG free-divers fished until January noting that TRL is very important for traditional livelihoods in PNG communities. The AFMA member thanked NFA for their openness and notification of the catch reporting and acknowledged this matter is best placed at the TRL Working Group.

3 Revising the empirical Harvest Control Rule (eHCR)

- 24. Prior to TRLRAG 38, TRLRAG 37 had considered a series of Management Strategy Evaluation (MSE) tested options on possible revisions to the empirical Harvest Control Rule (eHCR) within the TRL Harvest Strategy. This work was undertaken by the CSIRO upon recommendation by TRLRAG 32, that formal revisions to the eHCR be investigated because the average catch multiplier adopted in the eHCR was considered an unreliable indicator when actual catches have been much lower than expected due to non-stock-related reasons (COVID and closure of the Chinese market). In the interim, the RAG had agreed to use the average TAC as the multiplier as an ad-hoc adjustment to the eHCR. Given that previous MSE testing of the default eHCR had assumed that the TAC was completely caught, the RAG was comfortable using this as an interim arrangement but were concerned that it was not actually the formal eHCR stipulated in the Harvest Strategy. Also, testing had revealed that it tended to result in a ratcheting-down effect on the recommended biological catch (RBC) TAC over time. It was planned that a replacement and fully-tested eHCR, that did not involve average catch as a multiplier, could be agreed and formally adopted as part of the Harvest Strategy.
- 25. The RAG recalled an overview of the two rules considered by TRLRAG 37:
 - a) **The 'Turtle Rule':** Considered the most similar to the current eHCR and would change the existing average catch multiplier value (which has been impacted by low total catches in recent years) with a new multiplier value that does not use actual average catch numbers. It had the following characteristics:
 - i. Low variability depending on whether the indicator slopes are trending up or down, the Turtle Rule will adjust the RBC but will dampen inter-annual variability.
 - ii. Based on a run of 800 computer simulations of 20-year projections, the Turtle Rule would expect to generate a RBC in the range of 512-680t, 80 per cent of the time.

- iii. Has a lower catch limit of 300t and an upper catch limit of 1000t.
- b) The 'Dolphin Rule': Similar to the current eHCR and the Turtle Rule but includes an extra multiplier term based on the results of the most recent pre-season 1+ index (which has a 70% weighting in the eHCR). In years when the pre-season 1+ index is low the RBC reduces and increases when the index is higher, but not symmetrically. The RBC can decrease by up to 40% in bad years, but in good years the increase is approximately 12%. This feature addresses feedback from traditional inhabitant members to be more precautionary in 'bad' years. It had the following characteristics:
 - Accounts for survey precision (e.g. variability in average survey index could be due to survey methods or spatial stock variability). Greater weighting on the most recent preseason 1+ index, therefore a more rapid response). The more precise survey index has a greater weighting versus downweighting a less precise survey estimate.
 - ii. Depending on whether the indicator slopes are trending up or down, and how good or bad the current year's preseason survey 1+ index is, plus how precise it is, the Dolphin Rule will adjust the RBC more strongly up or down (more variable).
 - iii. Based on a run of 800 computer simulations of 20-year projections, the dolphin rule would expect to generate a RBC in the range of 432-912t, 80 per cent of the time.
 - iv. Has a lower catch limit of 300t and an upper catch limit of 1000t.
- 26. TRLRAG 37 was unable to reach consensus on an agreed way forward for amending or applying an eHCR for the 2024-25 fishing season and beyond.
 - a) TVH industry members expressed a preference for the 'Dolphin Rule' but were willing to accept either.
 - b) Government members expressed no preference but noted that both alternatives, 'dolphin rule' or the 'Turtle Rule' were acceptable as both adequately meet the objectives of the TRL Harvest Strategy.
 - c) Both scientific members supported either rule, noting that the CSIRO scientific member advised that taking into account feedback from RAG members and using the best scientific advice, the 'Dolphin Rule' would best meet the objectives but was confident that either rule was suitably precautionary and performed well.
 - d) Advice from traditional inhabitant industry members (including views of traditional inhabitant casual observers) with the support of TSRA, out of session, indicated that those members were not in support of either the turtle or dolphin rule, and do not wish to amend the current eHCR but rather continue to apply the ad-hoc (average TAC) method that has been applied in the past three fishing seasons.
- 27. Having regard to TRLRAG 37 discussions and feedback, CSIRO undertook additional MSE testing of the 'ad-hoc method' (substituting average catch with average TAC value) from previous seasons to test its robustness and performance; named the 'Seahorse Rule'. The **Seahorse Rule** is thus most similar to the 'ad-hoc method' and involves changing the existing average catch multiplier value with a new multiplier value that is calculated as the average of the 5 most recent TACs. As with the other rules, the Seahorse Rule was MSE-tested to demonstrate it adequately meets fishery objectives.
- 28. The RAG recalled when conditions are good or poor, the Turtle Rule will adjust up and down but the level of variation is dampened (does not, on average, go as high or low as the Dolphin Rule).

- 29. The Dolphin Rule is more immediately responsive to changes in stock levels and adjusts up and down more quickly, and goes to higher and lower levels on average than the Turtle Rule.
- 30. The Seahorse Rule will track down or up much more slowly and have a slower turn around.
- 31. It was pointed out that each of the options meet the objectives of the Harvest Strategy: maintaining the stock on average around the target reference point, and pushing the stock away from the limit reference point with very low risk of breaching the limit reference point. Given this, the scientific members, and AFMA and Queensland government members considered it was a matter for industry to consider the trade-offs in variability of each and make a decision as to which was preferred.
- 32. **Figure1** and **Table 1** provides an overview of the 20-year predicted catch levels under each rule, with the black line being the median, the dark grey shaded area being the RBC range 50% of the time and the lighter grey band being the RBC range 80% of the time.

	Median RBC (20 yr projection period)	50% of time RBC in range	80% of time RBC in range	minim um	maximu m
Turtle rule 600	590t	538-637t	512-680t	300t	845t
Dolphin rule 670	624t	520-767t	432-912t	300t	1000t
Dolphin 556	556t	519-601t	484-641t	300t	796t
SEA HORSE	560t	521-605t	486-642t	300t	818t

Table 1. Comparison of 'turtle', 'dolphin' and 'seahorse' rules with 20-year projections of RBC ranges.



Figure 1. Comparison of 'Turtle', 'Dolphin' and 'Seahorse' rules with 20-year projections of RBC ranges.

- 33. The RAG considered a summary table of three different candidate rules tested across each of the four operating models, comparing the median RBC over a 20-year projection period, the RBC range 50% of the time, the RBC range 80% of the time, as well as a minimum and maximum RBC value. The RAG noted that the Seahorse Rule upper range of RBC outputs 80% of the time, is comparable with the total average catch of the fishery since 2000 (644 tonnes) which includes the lower RBCs of recent years.
- 34. Using hypothetical data, the RAG compared examples of recommended biological catch (RBC) outputs of each of the candidate rules, and a stock assessment RBC in examples under different scenarios being a bad year, an average year and a good year. In each scenario the CPUE inputs remain the same, but the survey inputs changed to hypothetical data to compare.

	EXAMPLE comparing RBCs under different scenarios					
csiRo						
	Method	BAD yr	AVE yr	GOOD yr		
	Stock assess	390	645	921		
	Ad hoc	477	554	616		
AS .	Turtle 566	489	559	617		
1	Turtle 619	534	611	675		
-	Dolphin 619	353	599	756		
TA	Dolphin 640	365	620	782		
	Dolphin 670	382	649	818		
19 Torres St	rait TRL Harvest Strategy Eva Plaganyi					

Table 2. Comparison of hypothetical RBC outputs under different scenarios of bad, average and good years.

- 35. Some traditional inhabitant members expressed frustration with revisiting this discussion after already having had put forward their views and preference to continue using an ad-hoc rule (i.e. one not formally part of the Harvest Strategy). Members were reminded that other RAG members did not share that same preference. AFMA further cautioned members that continuing to step outside the harvest strategy in an ongoing capacity could put the Fishery 10-year LENS approval at risk. If the ad-hoc rule is preferred, then CSIRO have undertaken MSE testing of a very similar alternative (Seahorse Rule). Formal adoption of any of the tested rules in the Harvest Strategy would likely satisfy the conditions of the Wildlife Trade Operation LENS approval.
- 36. The RAG was reminded again that the intention was to seek a recommendation on an eHCR method and process, not a specific 2025 TAC value. Considering any results of the survey or other eHCR inputs before locking in a robust eHCR and process tends to be considered 'TAC shopping'.
- 37. Noting that testing had shown that none of the eHCR options would result in stock depletion below the limit reference point (B₃₂) with any significant likelihood, RAG members were encouraged to think about the objectives for the eHCR and which of the presented rules may best suit the desired outcomes for the Fishery.

Torres Strait Tropical Rock Lobster Resource Assessment Group Meeting 38 Record – 10-11 December 2024 afma.gov.au 11 of 24

- 38. Traditional inhabitant members unanimously expressed a firm preference for the Seahorse Rule, consistent with their previous position in support of the 'ad-hoc rule', expressed from TRLRAG 37 and during pre-RAG briefing meetings.
- 39. TVH industry members, Ken McKenzie and Brett Arlidge reaffirmed their initial preference for the Dolphin Rule but indicated that they would also accept the Turtle Rule. However, noting there wasn't a significant difference between the Turtle and the Seahorse Rule, they supported the Seahorse Rule in order to reach consensus.
- 40. The independent scientific member Andrew Penney did not express a preference but reaffirmed that each of the rules are scientifically robust. Similarly, the CSIRO scientific member Eva Plaganyi-Lloyd did not express a preference and supported any of the options.
- 41. The TSRA acknowledged their priority was ensuring a sound process, that traditional inhabitant members concerns were heard and expressed a preference for the Seahorse Rule in support of the traditional inhabitant members.
- 42. The QDAF member did not express a preference but supports the view of the traditional inhabitant members.
- 43. The AFMA member commended the group on arriving on a recommendation that aligns with the Harvest Strategy.
- 44. The National Fisheries Authority representative also expressed a preference for the Seahorse Rule, noting that it provides more certainty of what future catches may be and did not go to as low levels as the Dolphin Rule.
- 45. As such, the RAG members reached consensus¹ and the RAG agreed to recommend the application of the Seahorse Rule to derive a recommended biological catch for the 2024-25 fishing season and beyond. They noted that a separate process would be undertaken to formally adopt the recommended revisions to the eHCR and any other Harvest Strategy revisions (discussed under Agenda Item 8) by the PZJA, including broader consultation with the TRL Working Group.

4 Climate Adaptation

- 46. Steph Brodie (CSIRO) introduced the 2024 Climate and Ecosystem Status Report for the TRL Fishery and noted the following key points:
 - a) Australian waters have warmed significantly over time. The last decade has been ~0.5°C warmer than the 1960-1990 average. Global sea surface temperatures (SST) have been at record highs in 2023-2024.
 - b) The mean SST anomaly in Torres Strait for the last 10 years (2015-2024) was +0.41°C.
 - c) Spatial maps of SST anomalies show Torres Strait had average temperatures for the season, except for April which was ~1.5°C warmer than normal.
 - d) In relation to ecosystem trends, the lobster survey's 1+ index in 2022 and 2023 was below the long-term average; live coral and hard substrate cover has been increasing since

12 of 24

Torres Strait Tropical Rock Lobster Resource Assessment Group Meeting 38 Record – 10-11 December 2024 afma.gov.au

¹ The day following the TRLRAG 38 meeting and subsequent RBC recommendation, RAG members received an email from TVH industry member Brett Arlidge formally withdrawing support for the application of the Seahorse Rule and reaffirmed his original position and support for the Dolphin Rule.

2018; algae cover has been below or close to average since 2020 and sand and seagrass cover has been low in recent years.

- e) The Bureau of Meteorology Outlook indicates a La Niña watch (chance of La Niña in 2024-25 summer). Most forecasts indicate neutral El Niño-Southern Oscillation (ENSO) conditions will remain.
- f) The SST is forecast to be 0.4-1.2°C warmer than average through to February 2025
- 47. Dan Corrie (AFMA) then introduced AFMA's Climate Risk Framework. The RAG noted that the Torres Strait TRL Fishery is being considered under a trial application of the framework with the aim of integrating climate impacts into decision making processes across fisheries. The framework is a risk assessment process, designed to integrate with existing management frameworks in response to climate impacts and broadly applicable to any jurisdiction.
- 48. The RAG considered an overview of the four-step process to evaluate overall risk to a particular species:
 - Step 1 assess the overall risk to a species based on the impacts of climate change and the biological status of the stock using the best available information;
 - Step 2 consider whether there are sufficiently precautionary measurers in the existing science, management or industry adaptation pathways to respond to the impacts of climate change;
 - Step 3 assess the residual risk to a species, and where required;
 - Step 4 provide advice to the PZJA (or other management body) on any additional measures required to respond to the impacts of climate change.
- 49. While there could potentially be a high level of risk associated with climate change on TRL, the stock is assessed to be 'well above target' resulting in an overall risk rating of 'None'.
 - Climate risk = High
 - Relatively short-lived species that experiences large fluctuations in recruitment depending on the prevailing environmental conditions.
 - Stock status risk = Well above target
 - 2022 stock assessment estimate the 2022 biomass to be 104% of unfished biomass.
- 50. When considering the combined science, management and industry adaptation practices, the RAG noted the residual climate risk is 'None'.
- 51. The RAG further noted that crustaceans are generally highly sensitive to temperature at different stages of their life cycle. This can have a positive impact, causing faster growth rates in warmer waters, however all animals have an upper threshold. Once animals get closer to their thermal optimal, studies indicate that crustaceans can tolerate this for a while, with increased growth rates however if increased temperatures are sustained, their oxygen consumption increases, impacting their metabolic rate and increasing mortality. TRL already have a high thermal tolerance for temperatures above 29°C, but at 30-33°C for sustained periods of time they begin to be stressed. Sustained temperature increases have an impact on the entire food web.
- 52. Though the impacts are not yet fully understood, it is expected that increased ocean acidification under climate change will impact the development and integrity of crustacean exoskeletons.

5 Catch and effort analyses for the 2023-24 fishing season

53. 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 2023-24 season

undertaken by CSIRO and presented by Denham Parker. Further detail is available in Attachments 5c of the TRLRAG 38 meeting papers.

Catch and Effort Data

- 54. At the time of the meeting, the total reported catch for the Australian TRL fishery (1 December 2023 30 September 2024) was 200.2 tonnes, with 107.7 tonnes caught by the Traditional Inhabitant Boat (TIB) sector and 92.5 tonnes caught by the Transferable Vessel Holder (TVH) sector.
- 55. Total reported catch from Papua New Guinea for 2024 was 120.64 tonnes (January September 2024, as at 12 November 2024) however, the RAG noted that this number is incomplete for the entire PNG TRL season. Using the same method applied last year (and agreed at TRLRAG 33), that assumes an average monthly catch is also caught in the missing months (October to November), the total extrapolated PNG catch was increased to 154 tonnes, which also includes 12.5 tonnes taken by cross-endorsed PNG boats who fished in Australian jurisdiction.
- 56. This results in a total Torres Strait TRL catch of 354.2 tonnes, under a 530 tonne global TRL TAC, equating to 66.8 per cent of the TAC.
- 57. The proportion of monthly catch by sector indicates key differences in the way TVH have fished in 2024 compared to the average trends of previous seasons. Both industry members agreed this is because the TVH fishers were fishing to the best market prices. Other than the months of December and June, 2024 was a relatively consistent year for the TIB sector. Some members queried the accuracy of the lack of TIB catches in December and CSIRO and AFMA committed to verifying out of session the reason for the discrepancy.
- 58. In 2024, the TVH fishing effort was 452 tender-days (down 60.9% from the previous season, and the TIB sector was 1,659 days fished (down 31.8%).
- 59. Nominal catch rates for both TIB and TVH sectors increased, and were significant increases for the TVH sector in 2024. However, the record low effort level for both can be expected to substantially bias the nominal CPUE which is why the standardisation process is always applied.

TVH CPUE Standardisation

60. The RAG also noted that missing information on TRL04 daily fishing logbooks relating to fishing hours lead to about 27% of the 2024 logbook data records being excluded from the CPUE standardisation process.

ACTION ITEM – AFMA to follow up missing 'hours fished' field from TVH records.

- 61. The RAG was reminded that missing fields on any CDR or logbook has a significant impact on the data analyses. Due to the limited data set available from 2024 through the filtering process which removes records with incomplete data, only three of the usual four General Linear Models (GLMs) were used for analysing the data in order to obtain a standardised index of stock abundance in each year. Relative to the nominal index, each of the standardised indices is similar but is higher at the start of the time-series and lower from 2012-2019. The 2024 standardised CPUE values for all models are substantially lower than the nominal index. 2024 catch rates were slightly lower than the average across the entire fishery. Overall, the annual relative CPUE index fluctuates about the standards mean of 1 and there is no clear trend throughout the time series.
- 62. After the annual effect (e.g. season), vessel effect is the second most influential variable in the main effects standardisation model on the annual index. The influence of Vessel is likely twofold;

14 of 24

(1) variation in fishing efficiency between vessels operating within the same season and (2) the (expected) increase in the relative fishing power of vessels over time.

63. The RAG noted that the "Int-1 model" is the previously agreed default model used in the eHCR, and supported that this continues to be applied.

TIB CPUE Standardisation

- 64. The nominal and standardised TIB CPUE suggest an increasing trend in catch rates since the 2015 season. The RAG noted differences between the nominal and standardised TIB indices; the standardised indices are generally lower than the nominal index over the first half of the time-series (2004-2011) and higher than the nominal index during the second half (2012-2024).
- 65. The seller effect had the most substantive influence on the annual index, followed by *Area* and then *Season*. The influence of *Seller* has increased in recent seasons, indicating an increase in the fishing skill or efficiency of divers, which leads to a decrease in the standardised CPUE.
- 66. 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.
- 67. Fewer sellers have been operating in 2024 (52) compared to 2023 (77) and previous years in general (353). The RAG noted that 'sellers' in this context, means individual TIB fishers.

6 Results of the 2024 pre-season survey

- 68. The RAG considered a presentation provided by CSIRO observer, Dr Leo Dutra, detailing the preliminary results of the 2024 pre-season survey.
- 69. The pre-season dive survey was conducted between 4 16 November 2024, across 77 repeated pre-season sites in an anti-clockwise direction aboard the Wild Blue with a dive tender "Chris B". The CSIRO team included Leo Dutra (science leader), Nicole Murphy (survey leader), Kinam Salee, Steven Edgar (dive coordinator) and Mark Tonks.
- 70. The pre-season TRL surveys provide indices of abundance for recruiting age lobsters (age 1+) and recently-settled lobsters (Age 0+), as well as length-frequency data and sex ratios. Generally, most older lobsters (Age 2+) have migrated out of the survey area to breed by the time of the survey and those that remain are mostly remnant males.
- 71. A total of 391 lobsters were counted and categorised into three age classes

Representative samples of TRL were caught, have their sex determined, and measured (tail width, TW) to provide fishery-independent size-frequency data. with 162 lobsters measured. The sex ratio of lobsters was 49 per cent females and 51 per cent males.

- 72. As in the 2023 survey, a multi-parameter 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 25m.
- 73. Additionally, species of interest (i.e. pearl oyster (*Pinctada maxima*), crown-of-thorns starfish and holothurian species) were counted and the habitat recorded, including presence of bleached corals (where applicable).

Age 1+ recruiting lobster counts and index

- a) This is the most important index for the eHCR (with a 70% weighting).
- b) Most of the lobsters observed in 2024 were from the Age 1+ cohort and were more numerous on transects in the eastern and north western regions of the survey. The

surveys between 2022-2024 exhibited higher counts along the eastern side, but still variable across sites.

- c) The 2024 1+ abundance index was the highest on record since the pre-season surveys started in 2005, and well above the long-term average (2005-2023). The survey variance was higher than 2023.
- d) The high numbers of Age 1+ in 2024 was expected because of the very high Age 0+ counts in 2023.
- e) The abundance index for 1+ lobsters in 2024 indicates that abundance was generally widespread across the different strata surveyed with 2024 estimates all above average except for Mabuiag and TI Bride. The highest indices were in South-East, Warraber Bridge, and Reef Edge respectively. High standard errors were seen for Warraber Bridge, South-East, Reef Edge and Buru because of high count variability within these regions. South-East and Reef Edge Age 1+ indices are consistently above average. Mabuiag and TI Bridge are more likely to have low counts of Age 1+ lobsters.



Age 0+ recently settled lobster counts and index

- a) In 2024 the 0+ abundance index estimate was significantly lower than 2023 and the second lowest abundance index for 0+, only above 2017. There was also low variability in counts compared to previous years (similar to 2017).
- b) Historically, survey data indicate that Age 0+ lobsters typically settle on the western side of survey area and in 2024 they followed the historical trend settling more on the western side.
- c) The survey team observed Age 0+ TRL in all regions but Kirkaldie and Buru. All point estimate indices were 'low' (below average). Age 0+ lobsters settled mostly at Reef Edge region (across the survey area) and in the West in Mabuiag and TI Bridge. Historically, Age 0+ TRL were observed in Mabuiag and TI Bridge in all pre-season surveys. Counts in Buru, Reef Edge, South-East and Warraber Bridge are also consistent but more variable across the years. Age 0+ are rarely observed in Kirkaldie and one have been observed in the last four survey years (only 6 out of 15 surveys).



Habitat changes

- a) There was an increase in the average percentage cover of seagrass compared to 2023.
- b) Minor sand incursions were observed at four sites.

Discussion

- 74. The independent scientific member noted it was very encouraging to see that the observations of high Age 0+ lobster counts in 2023 correlated well with the high Age 1+ counts from 2024.
- 75. The RAG discussed whether a low Age 0+ index in 2024 will mean a low Age 1+ index for 2025. The Age 0+ index is not as reliable as the 1+ which is why it only has a 10 % weighting in the eHCR. There is greater uncertainty in the Age 0+ index because of the cryptic nature of Age 0+ lobsters, and the timing of their settlement. There is some evidence to support this where good years of 0+ have resulted in above average years of 1+, however the opposite is not always true. A poor 0+ count does not necessarily equal a poor 1+ count. The relationship between 0+ this year and the 1+ next year is difficult to ascertain and will be influenced by the time the lobsters settle, food availability and survivability. There are two examples from 2017 and 2018 where a below average 'poor' Age 0+ count resulted in a higher-than-average 1+ count the following year.
- 76. An industry member queried whether the 0+ lobsters from 2023 have reappeared in the same or similar places as the 1+ lobsters in 2024. CSIRO noted that they do move as there tends to be more 1+ counts on the east and more 0+ counts on the west. The RAG agreed that a comparison between years and spatial variability will be useful for future analyses.
- 77. The RAG also noted a good alignment between years on Age 1+ lobster tail width size frequencies. The independent scientific member noted this could be an indication that temperature, so far, doesn't appear to be having an impact on growth rates for 1+ lobsters. CSIRO staff agreed but noted the impact of temperature on growth is being more closely examined in the climate change project.
- 78. 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 to analyse and report on the survey results in a short time for presentation for the RAG meeting.

7 Recommended Biological Catch 2024-25

- 79. Having regard to the discussions and analyses from agenda items 3, 5 and 6, the RAG considered the outputs of the empirical Harvest Control Rule (eHCR), by applying the 'Seahorse Rule', noting the following key points:
 - a) this rule has an upper limit of 1000 tonnes and a lower limit of 300 tonnes;
 - b) the agreed seahorse eHCR applies an average of the previous five years TAC values, being 574 tonnes (see table below).

Season	TAC
2019-20	582
2020-21	623
2021-22	615
2022-23	521
2023-24	530
5 year average input to eHCR	574

c) There is good correspondence between the CPUE indices (tracking the abundance of Age 2+ lobsters) and the pre-season survey 1+ index

Comparing trends in indices of abundance



Indicator slopes



- d) The four indicator slopes:
 - i. The pre-season 0+ slope is trending down due to the most recent low poor estimate in 2024
 - ii. The pre-season 1+ slope is trending up due to the most recent high 1+ index
 - iii. TIB CPUE trend is slightly positive, and the TVH CPUE slope is slightly negative but relatively flat.

80. When using each of these inputs into the seahorse eHCR calculation, it provides a recommended biological catch of 581 tonnes.

Discussion

- 81. Traditional inhabitant member for Kaiwalagal, Thomas Fujii expressed frustration with having a higher TAC from last season (an increase of 51 tonnes more than the 2023-24 season), yet the survey indicated areas around Thursday Island are likely to have lower lobster counts. The RAG noted the RBC was likely to be higher due to the high Age 1+ lobster counts from the pre-season survey across the region, but acknowledged that the distribution of lobsters is very spatially variable, which can affect different people in their ability to access them.
- 82. Mr Fujii added that it is of no benefit to the TIB sector and that it will be a greater working effort to compete against the TVH operators, as well as put added pressure on the outer island communities with an influx of TIB fishers. The RAG agreed those are management issues that should be raised and discussed in the Working Group.
- 83. The traditional inhabitant member for Kemer Kemer Meriam, Les Pitt noted they were comfortable with the RBC if people from the inner islands were ok, acknowledging that the majority of the catch comes from the inner and central islands. Based on these discussions, CSIRO responded to the requests for further information related to movements and spatial distribution of TRL by circulating on 15 December 2024 some additional summaries based on past Midyear survey results.
- 84. Mr Arlidge noted that it's a really positive thing that there is such good abundance of lobsters this year, however this RBC value illustrates why they preferred the Dolphin Rule, as the dampening effect of the Seahorse Rules has kept the RBC at a lower level. If the abundance is expected to be high, then industry should be taking advantage of that. He added that, survey results indicated high abundance of lobsters in the South East region (i.e. around Johnson Islet, and South ledge) which is where a number of the inner island fishers typically fish anyway.
- 85. Mr Mckenzie acknowledged that he expected the RBC to be higher than it is due to the high preseason 1+ index, but that each year the lobsters are always going to be more abundant in some places than others.
- 86. The traditional inhabitant member for Kulkalgal, Charles David expressed concern that all of the fishing effort is going to be applied at Mabuiag and Warrior Reef and reiterated that management measures need to be implemented to protect the livelihoods of those communities.
- 87. The Chair concluded by acknowledging that the RAG went through a stringent process to arrive at a recommendation on a process for revising the eHCR that minimises any risk to the fishery. He further noted that while there is a slight increase in the RBC, this is weighted down by the dampening effect of the Seahorse Rule.

19 of 24

7a Preliminary Stock Assessment Results

- 88. The RAG recalled that under the Harvest Strategy, a stock assessment is run every three years, and that this was last undertaken in 2022. However, the CSIRO team had, in-kind, run a stock assessment update in 2024 for reasons including:
 - a) It is useful work to support the Torres Strait Climate Change project;
 - b) It complemented some of the Management Strategy Evaluation testing ;
 - c) The stock assessment is an essential component of ongoing high level discussions relating to the export ban of *Panulirus ornatus* to help demonstrate that the Torres Strait TRL fishery is sustainably managed;
 - d) To support discussions on revising the eHCR; and
 - e) Concluding the current CSIRO project by providing an updated assessment before changing research providers.
- 89. The RAG noted the presentation on the preliminary stock assessment results from CSIRO, in particular:
 - a) An overview of the summary of the lobster life cycle and how this is considered in the model, including the data inputs for the assessment and the benchmark surveys to which the model is fitted.
 - b) The model showed an excellent fit to the pre-season survey 1+ index, and is also fitted to the mid-year survey series for past years, as well as the benchmark surveys. The model also fits both TVH and TIB CPUE series reasonably well and accounts for hyperstability (0.75).
 - c) All three indices of abundance (TIB CPUE, TVH CPUE, and the survey index) show very similar trends which provides confidence in the results.
 - d) The model results indicate that the TRL spawning biomass is at about 84% of the 1973 reference (B₀) level, which is well above the agreed target reference point of B₆₅ under the harvest strategy. It was noted that the target reference point is deliberately conservative to allow for non-commercial take of TRL in support of traditional practices and livelihoods in the Torres Strait.
- 90. Although it is not used in this manner under the harvest strategy, **the stock-assessment RBC estimate for 2024-25 is 946 tonnes** which is significantly higher than the Seahorse Rule eHCR output of 581 tonnes.

8 Revising the TRL Harvest Strategy

- 91. Having regard to the discussions on revising the empirical Harvest Control Rule under the TRL Harvest Strategy, the RAG noted that reviewing other components of the Harvest Strategy, including the decision rules, and developing other meta rules for exceptional circumstances is important for completeness.
- 92. The RAG noted that in undertaking the Management Strategy Evaluation (MSE) testing for a revised eHCR, a number of the candidate rules produced RBCs below 300 tonnes. Noting that the start of season TAC is set at 200 tonnes, CSIRO suggested that a lower limit RBC of 300 tonnes is likely the most viable minimum limit to support the commercial sector. This lower limit would complement the previously agreed 1000 tonne upper limit already in the Harvest Strategy.

- 93. The RAG also acknowledged that there may be some exceptional circumstances (e.g. a cyclone) that could prevent the pre-season survey from going ahead in a given year. Members noted earlier preliminary work undertaken by CSIRO in 2016 on development of a tiered harvest strategy approach for TRL. This work considered potential changes in the amount of monitoring information available and the number and timing of surveys (therefore changes in the associated level of confidence in scientific advice for decisions making).
- 94. This work indicated that in a scenario where no data are available to inform on trends in the stock, the RBC would need to be set at a lower level to be adequately precautionary. The testing indicated an RBC of 360t would achieve this, but given additional climate change factors, this level may not be precautionary enough on an ongoing basis. This is because it will be difficult to monitor any possible stock decline due to climate change impacts.
- 95. Having regard to this previous work, and noting the suggested minimum RBC limit of 300 tonnes as the minimum economically viable limit, the RAG recommended to retain the 1000 tonnes maximum, implement a minimum RBC limit of 300 tonnes and in the event of exceptional circumstances, when the data required to provide advice on an RBC is not available (e.g. unable to undertake the pre-season survey), the RBC for the season should be set at 300 tonnes with any follow up action to be determined by the RAG.
- 96. The RAG noted that a separate process will be undertaken to formally adopt the recommended revisions (a PZJA decision) to the eHCR and any other Harvest Strategy revisions, following broader consultation including with the TRL Working Group.

9 Other Business

97. In response to a question about the occurrence of berried lobsters in the Torres Strait, Eva Plaganyi presented some research information on TRL movements and breeding (tagging studies).

10 Date and Venue for the next meeting

- 98. The RAG noted a virtual meeting in late January 2025 will be convened to discuss any proposals submitted for a new TRL RBC and stock assessment project and agreed that CSIRO's participation in that meeting will be critical.
- 99. The meeting was closed in prayer at 3:20pm on Wednesday 11 December 2024.

Declaration of interests

Dr Ian Knuckey – August 2024

lan 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 – Gulf of St Vincent's Prawn Fishery Management Advisory Committee Scientific Member – Tropical Tuna Resource Assessment Group Scientific Member – SESSF Resource Assessment Group Member – The Geelong Agri Collective

Fishwell current projects:

AFMA 2022- Annual monitoring, reporting and assessment of SPF marine mammal interactions, including effectiveness of mitigation measures

AFMA 2020-0807 Bass Strait Scallop Fishery Survey - 2024/25

FRDC 2019-027 Improving and promoting fish-trawl selectivity in the SESSF and GABTS

FRDC 2018-021 Development and evaluation of SESSF multi-species harvest strategies

Traffic Project Shark Product Traceability

Sea Cucumber Ass. Design and implementation of various sea cucumber dive surveys.

Australia Bay Queensland Gulf of Carpentaria Developmental Fin Fish Trawl Fishery

TROPICAL ROCK LOBSTER RESOURCE ASSESSMENT GROUP 38

(TRLRAG 38)

Tuesday 10 December 2024 | 830am – 5pm Wednesday 11 December 2024 | 830am – 5pm TSRA Board Room | Thursday Island

ADOPTED AGENDA

1 PRELIMINARIES

Welcome and apologies

The Chair will welcome members and observers to the 38th meeting of the TRL RAG.

Adoption of agenda

The RAG will be invited to adopt the draft agenda.

Action items from previous meetings

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

Out of session correspondence

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

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.

2 UPDATES FROM MEMBERS

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 for the 2023-24 season and the start of the 2024-25 season.

Government agencies

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

Papua New Guinea National Fisheries Authority

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

Native Title

The RAG will be invited to note a verbal update from Malu Lamar (Torres Strait Islander) Corporation RNTBC and other RAG members on native title matters relevant to the TRL Fishery.

3 REVISING THE HARVEST CONTROL RULE

Noting that consensus was not reached at TRLRAG 37 (9 October 2024) on revising the empirical Harvest Control Rule (eHCR), the RAG is invited to provide advice an appropriate application of a eHCR for the 2024-25 fishing season and beyond. Advice is sought in advance of consideration of any data inputs to the HCR.

4 CLIMATE ADAPTATION

4.1 AFMA Climate Risk Framework

The RAG is invited to provide advice on the application of AFMA's Climate Risk Framework (CRF) to Tropical Rock Lobster in the Torres Strait. The draft assessment is based on initial input at a CRF Working Group meeting held on 1 November, 2024.

4.2 Other Climate Updates

The RAG is invited to note:

- the Climate and Ecosystem Status report for the TRL Fishery; and
- an update on the project "Modelling climate change impacts on key fisheries in the Torres Strait to co-develop adaptation and mitigation strategies" by the CSIRO.

5 CATCH AND EFFORT ANALYSES FOR THE 2023-24 FISHING SEASON

The RAG will be invited to discuss TRL fishery catch and effort data for the 2023-24 fishing season, including catch-per-unit-effort (CPUE) analyses to be presented by the CSIRO.

6 RESULTS OF THE NOVEMBER 2024 PRE-SEASON SURVEY

The RAG is invited to discuss the results of the November 2024 pre-season survey to be presented by the CSIRO.

7 RECOMMENDED BIOLOGICAL CATCH 2024-25

Having regard to the discussions from TRLRAG 37 and Agenda Item 3, including the analyses and results from agenda items 4, 5, and 6, the RAG will be invited to consider the outputs of the agreed eHCR and provide advice on a recommended biological catch (RBC) for the TRL Fishery for the 2024-25 fishing season.

7a PRELIMINARY STOCK ASSESSMENT RESULTS

8 REVIEWING THE TRL HARVEST STRATEGY

The RAG is invited to consider any other broader changes required to the TRL Harvest Strategy.

9 OTHER BUSINESS

The RAG will be invited to raise any other matters for consideration. There is no agenda paper for this item.

10 DATE AND VENUE FOR NEXT MEETING

The RAG will be invited to consider the RAGs workplan and 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 (fisheriesti@afma.gov.au)