Australian Government

Australian Fisheries Management Authority

TROPICAL ROCK LOBSTER WORKING GROUP 17

TRLWG 17

Thursday 12 December 2024

8:30am – 5pm

TSRA Boardroom, Thursday Island

Meeting Papers

17th MEETING OF THE TORRES STRAIT TROPICAL ROCK LOBSTER WORKING GROUP
TRLWG 17 – THURSDAY ISLAND – 12 DECEMBER 2024

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TROPICAL ROCK LOBSTER WORKING GROUP 17 (TRLWG 17)

Thursday 12 December 2024 | 830am – 5pm

TSRA Boardroom, Thursday Island

DRAFT AGENDA v2

Agenda item	Action required	Presenter	Time allocated
1 Preliminaries			
Welcome and apologies	**Noting**	**Chair**	**830am** 5 minutes
The Chair will welcome members and observers to the 17th meeting of the TRL Working Group.			
Adoption of agenda	**Decision**	**Chair**	**835am** 5 minutes
The Working Group will be invited to adopt the draft agenda			
Declaration of interests	**Decision**	**Chair**	**840am** 15 minutes
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 advice made on the matter which is the subject of the conflict.			
Action items from previous meetings	**Noting**	**AFMA**	**855am** 15 minutes
The Working Group will be invited to note the status of action items arising from previous meetings.			
Out of session correspondence	**Noting**	**AFMA**	**910am** 5 minutes
The WG will be invited to note out of session correspondence on WG matters since the previous meeting			
2 Updates from members and observers • Traditional inhabitant and industry members • Scientific and economic members • Government agencies • Papua New Guinea National Fisheries Authority • Native title	**Noting**	**All members**	**915am** 45 mins
TRL WG members and observers are invited to provide updates on matters relevant to the Torres Strait TRL fishery, including recent fishing conditions, research, management, compliance and native title matters.			
Morning Tea (10:00am – 10:15am)			
Agenda item	**Action required**	**Presenter**	**Time allocated**
3 Catch data for the 2023-24 fishing season	**Noting**	**-**	**Taken as read**

The WG is invited to note a summary of total catch of TRL in both the Australian and Papua New Guinean jurisdictions of the Torres Strait Protected Zone.

4 Overview of TRLRAG 38 outcomes and advice	**Noting**	**TRL RAG Chair**	**1015am** 30 minutes

The Working Group is invited to note an overview of the TRL RAG 38 outcomes to be presented by the TRL RAG chair. There is no agenda paper for this item.

5 Reviewing the TRL Harvest Strategy	**Recommendation**	**AFMA**	**1045am** 1 hour

Having regard to the advice of TRL RAG 37 and TRL RAG 38 on the revised eHCR, the Working Group is invited to consider any broader changes required to the TRL Harvest Strategy.

6 Total Allowable Catch.	**Recommendation**	**AFMA**	**1145am** 45 minutes

Having regard to the advice of TRL RAG 37 and TRL RAG 38 on the Recommended Biological Catch (RBC) for the TRL Fishery by applying the eHCR, the WG will then be invited to provide advice on a total allowable catch (TAC) for the TRL fishery for the 2024-25 fishing season

Lunch (12:30pm – 1:30pm)

7 Proposed changes to management arrangements	**Recommendation**	**AFMA**	**130pm** 1 hour

The Working Group will be invited to discuss any future changes to management arrangements in the fishery.

8 Climate Adaptation	**Recommendation**	**AFMA**	**230pm** 30 minutes

The WG is invited to provide advice on the application of AFMA's Climate Risk Framework (CRF) to Tropical Rosk Lobster in the Torres Strait. The draft assessment is based on initial input at a CRF Working Group meeting held on 1 November, 2024 and advice from TRLRAG 38 (10-11 Dec 2024).

Afternoon Tea (3:00pm – 3:15pm)

9 Cross-endorsement	**Recommendation**	**AFMA**	**315pm** 1 hour

The Working Group is invited to note an overview of the cross-endorsement 2024 fishing season and discuss and provide advice on management arrangements and conditions on future treaty endorsements in the TRL fishery.

10 Other business	**Discussion**	**All members**	**415pm** 15 minutes

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

11 Date and venue for next meeting	**Noting**	**Chair**	**445pm** 15 minutes

The WG will be invited to discuss suitable dates for the next working group 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)

TROPICAL ROCK LOBSTER WORKING GROUP (TRLWG) Thursday Island	MEETING 17 12 December 2024
PRELIMINARIES	Agenda Item 1 For NOTING and DECISION

RECOMMENDATIONS

1. That the WG **NOTE** an acknowledgement of Traditional Owners, the Chair's welcome address and any apologies received from members unable to attend.
2. That WG members and observers:
    a. **DECLARE** all real or potential conflicts of interest in the Torres Strait Rock Lobster Fishery at the commencement of the meeting (**Attachment 1a**);
    b. **DETERMINE** whether the member may or may not be present during discussion of or recommendations made on the matter which is the subject of the conflict;
    c. **ABIDE** by decisions of the WG regarding the management of conflicts of interest; and
    d. **NOTE** that the record of the meeting must record the fact of any disclosure, and the determination of the WG as to whether the member may or may not be present during discussion of, or recommendations made, on the matter which is the subject of the conflict.
3. That the WG consider and **ADOPT** the draft agenda, which was circulated to members on 1 November 2024.
4. That the WG **NOTE** the status of actions arising since TRL WG 16 (held on 5 June 2024) (**Attachment 1b**).
5. **PROVIDE ADVICE** on any new key events to be added to the TRL Management History timeline (**Attachment 1c).**
6. That WG members **NOTE** the out of session correspondence since TRL WG 16 (held on 5 June 2024 (**Attachment 1d**).

BACKGROUND

7. As at 12 November 2024, no apologies had been received.

Declarations of interest

8. Consistent with the *Protected Zone Joint Authority (PZJA) Fisheries Management Paper No. 1* (FMP1), which guides the operation and administration of PZJA consultative forums, members are asked to declare any real or potential conflicts of interest.
9. WG members are asked to confirm the standing list of declared interests (**Attachment 1a**) is accurate and provide an update to be tabled if it is not.

10. FMP1 recognises that members are appointed to provide input based on their knowledge and expertise and as a consequence, may face potential or direct conflicts of interest. Where a member has a material personal interest in a matter being considered, including a direct or indirect financial or economic interest; the interest could conflict with the proper performance of the member's duties. Of greater concern is the specific conflict created where a member is in a position to derive direct benefit from a recommendation if it is implemented.
11. When a member recognises that a real or potential conflict of interest exists, the conflict must be disclosed as soon as possible. Where this relates to an issue on the agenda of a meeting this can normally wait until that meeting, but where the conflict relates to decisions already made, members must be informed immediately. Conflicts of interest should be dealt with at the start of each meeting. If members become aware of a potential conflict of interest during the meeting, they must immediately disclose the conflict of interest.
12. Where it is determined that a direct conflict of interest exists, the forum may allow the member to continue to participate in the discussions relating to the matter but not in any recommendation making process. They may also determine that, having made their contribution to the discussions, the member should retire from the meeting for the remainder of discussions on that issue. Declarations of interest, and subsequent recommendations by the forum, must be recorded accurately in the meeting minutes

Adoption of agenda

13. This meeting was noted by members at TRL WG 15 and 16 with a draft agenda circulated to members on 1 November 2024.

Actions arising

14. Updates are provided on the status of actions arising from previous TRL WG meetings at **Attachment 1b**.

Out of session correspondence

15. Correspondence between AFMA and the WG was circulated out-of-session since the TRL WG 16 on 5 June 2024 is provided in **Attachment 1c.**

TRL Management History Timeline

16. As an action arising from TRLRAG 14 (25-26 August 2015), AFMA and CSIRO were tasked with preparing a timeline of key events that have occurred in the Torres Strait Tropical Rock Lobster Fishery.
17. The timeline is intended to be a living document, to be updated as relevant management events in the fishery occur. AFMA proposed at TRLRAG 32 that this document be a standing agenda item under Agenda Item 1.4 Actions Arising for the RAG and WG to be updated as required.
18. The WG is asked to provide advice on any new key events to be added to the Management History timeline since the last WG meeting (provided at **Attachment 1d**).

TRL WG Declarations of interests from most recent meetings

Name	Position	Declaration of interests
Members		
John Glaister	Chair	Member of Parks North, Chair of Northern Prawn Management Advisory Committee (NORMAC), Chair of the Torres Strait Prawn Management Advisory Committee (TSPMAC).
Laura Blamey	Scientific Member	Contributes to other Torres Strait research projects that receive research funding, including Torres Strait climate change and fisheries project. No other interests in the fishery.
Sevaly Sen	Independent Fisheries Economist	Nil pecuniary interests in Torres Strait fisheries. AFMA Commissioner and Director of Oceanomics Pty Ltd, a fisheries economics and management consultancy. Current contracts include: • Economics Lead, Human Dimensions Research Coordination program of the Fisheries Research and Development Corporation (contracted through the University of Tasmania) • Sustainability Advisor to Sydney Fish Market • Co-investigator on Fisheries Research and Development Corporation (FRDC) Project 2012-042, Impact of COVID-19 on the Australian Seafood Industry: January 2020-June 2021 and beyond • Contractor on FRDC Project 2022-176: ARDC: Food Security Data Challenges: Increasing food security through liberation of fishing and aquaculture data. • Independent economist member on the following: • NSW Marine Estate Expert Knowledge Panel • NSW Mulloway Harvest Strategy Working Group • NSW Ocean Trap and Line Harvest Strategy Working Group • NSW Total Allowable Fishing Committee • SA Allocation Review Committee.
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	Traditional Inhabitant Member - Kulkalgal	Traditional Inhabitant Member Kulkalgal, TSRA Board member and TSRA Fisheries Advisory Committee member. Zenadth Kes Fisheries member.
Patrick Mooka	Traditional Inhabitant Member – Guda maluylgal	Traditional Inhabitant Member, Guda maluylgal. Zenadth Kes Fisheries member.
Thomas Fujii	Traditional Inhabitant Member - Kaiwalalgal	Traditional Inhabitant Member Kaiwalalgal. Queensland East Coast TRL and TIB license holder. Zenadth Kes Fisheries member.
Jermaine Rueben	Traditional Inhabitant Member - Maluyilgal	Traditional Inhabitant Member Maluyilgal, TIB licence holder. Zenadth Kes Fisheries member.
Mark Dean	Industry Member	TVH operator
Peter Frazis	Industry Member	Employee of MG Kailis Pty Ltd. MG Kailis Pty Ltd is a holder of 5 TVH license. Seafood buyer from Torres Strait, QLD, and PNG TRL fisheries.
Steven Harris	AFMA Member	Senior Manager, Torres Strait Fisheries. No interests.
Jenny Keys	QDAF Member	Queensland Fishery manager of tropical rock lobster fishery, sea cucumber fishery and aquarium and coral fisheries.
Damian Miley	TSRA Member	TSRA Program Manager Fisheries. TSRA hold TRL licences on behalf of Torres Strait Islanders.
Georgia Langdon	Executive Officer	Senior Management Officer for Tropical Rock Lobster Fishery. No interests.
Observers		
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.
Eva Plaganyi	CSIRO and TRL RAG 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.
Richard Takai	TIB fisher	To be declared.
Kevin Sabatino Snr	TIB fisher	To be declared.
James Ahmat	Former TIB fisher	To be declared.
Paul Drummond	Traditional fisher	To be declared.

Actions arising from previous TRL WG meetings

#	Action Item	Meeting	Responsible Agency/ies	Status
1.	TIB Members and Malu Lamar to conduct further consultation with communities regarding Proposals 3 – 5	TRLWG13	TIB Members and Malu Lamar	**Ongoing** AFMA have not received additional advice from TIB Members or Malu Lamar. AFMA and TSRA agreed to explore what support may be needed to progress this, and other action items which may be assigned to TIB Industry Members as they arise.
2.	CSIRO to share presentation on how climate change projects in the Torres Strait fit together.	TRLWG14	CSIRO	**Complete** CSIRO delivered a presentation at TRLWG 16.
3.	QDAF Member to provide TRLWG with details of upcoming Cape York Special Fisheries Working Group meetings and opportunities for Torres Strait stakeholders to attend.	TRLWG 15	QDAF member	**Complete** QDAF provided an update on this action item at TRLWG 16. The QDAF member advised that the Chair of the Cape York Special Fisheries Working Group of the interest from traditional inhabitant industry in participating in their meetings. Penny Hamilton, First Nations Fishery Manager is also aware of the request and will connect with a TSRA staff member to facilitate this request further. Follow up action item (number 6 below) arose as a result.
4.	AFMA and TSRA to explore what support may be needed to progress action item #1 above, and any other action items which may be assigned to Traditional Inhabitant Members as they arise.	TRLWG 15	AFMA, TSRA	**Not commenced**

#	Action Item	Meeting	Responsible Agency/ies	Status
5.	AFMA to arrange a meeting with TRLWG Traditional Inhabitant Members and the Malu Lamar Observer to discuss concerns regarding the PNG applications for cross-endorsement in the 2023-24 fishing season, including compliance and localised competition and depletion.	TRLWG 15	AFMA	**Complete.** To be discussed under Agenda Item 9 of this meeting.
6.	QDAF member to connect TSRA with Penny Hamilton, the QDAF First Nations Fishery Manager regarding participation of traditional inhabitants in the Cape York Special Fisheries Working Group.	TRLWG 16	QDAF and TSRA	**Ongoing.** QDAF and TSRA are invited to provide an update at this meeting.
7.	QDAF to follow up on whether approval from Traditional Owners is required as part of the Indigenous Fishing Permit application process.	TRLWG 16	QDAF	**Ongoing.** QDAF to provide an update at the meeting
8.	TSRA to provide to the Working Group, copies of the minutes from the December 2023/January 2024 consultations on emergency measures to change the start of the hookah season from 1 February to 24 January 2024 and remove the February moontide hookah closure.	TRLWG 16	TSRA	**Not complete.** TSRA member to provide an update at the meeting.
9.	AFMA to undertake a preliminary assessment of benefits and risks/costs of each proposal put forward by MG Kailis against the	TRLWG 16	AFMA	**Ongoing.**

#	Action Item	Meeting	Responsible Agency/ies	Status
	objectives of the Act and the Fishery to be part of a broader discussion paper to be used in community consultations.			

Attachment 1c

Out of session correspondence since TRL WG 16 (5 June 2024)

Date	Item
26 June 2024	AFMA circulated the draft meeting record for TRLWG 16 for member comment.
3 July 2024	AFMA circulated the final meeting summary for TRLWG 15 (held on 14 December 2023).
26 July 2024	Following the member comment period, AFMA circulated the final meeting record for TRLWG 16.
17 September 2024	AFMA circulated information on the 2025-26 Torres Strait Fisheries call for research
1 November 2024	AFMA circulated a series of WG updates covering off on: a. Announcement of TRLWG 17 (12 December 2024) with a draft agenda for comment; b. An update on the TRL pre-season survey; and c. the latest TRL catch watch report.
1 November 2024	AFMA sent a Teams meeting invite for TRLWG 17.
12 November 2024	AFMA circulated the meeting papers for TRLWG 17.

Attachment 1d

Timeline of key events in the Torres Strait Tropical Rock Lobster Fishery[1]
Last updated November 2024

Commonly used acronyms and terms:

- **FMN** means Torres Strait Fisheries Management Notice.
- **FMI** means Torres Strait Fisheries Management Instrument.
- **LN** means Logbook Notice
- **PZJA** means Protected Zone Joint Authority.
- **TRL** means Tropical Rock Lobster.
- **TRL Fishery** means the Torres Strait Tropical Rock Lobster Fishery.
- **Instrument** means the *Torres Strait Fisheries (Tropical Rock Lobster) Management Instrument 2018*
- **Management Plan** means the *Torres Strait Fisheries (Quotas for Tropical Rock Lobster (Kaiar)) Management Plan 2018*

Time period	Topic/Keywords	Description
Late 1960's	Fishery development	Commercial fishing for TRL by the non-Traditional Inhabitant sector began in the Torres Strait
1970s-1980s	Fishery development	Traditional Inhabitant fishers begin to enter the fishery.
Dec-1978	Treaty, PNG	Torres Strait Treaty signed
Feb-1985	Legislation, regulations, PZJA	Torres Strait Treaty entered into force, *Torres Strait Fisheries Act 1984* and *Torres Strait Fisheries Regulations 1985* commenced and the PZJA is established
Feb-1985	Regulations	Under FMN 1: • Method restrictions introduced - only diving, collection by hand and use of spear permitted
Feb-1985	PNG, catch sharing	Agreement between PNG and Australia for the joint management of the TRL fishery concluded.

[1] This is intended to be a living document and is to be updated as key events happen.

Time period	Topic/Keywords	Description
Jul-1985	Regulations	Under FMN 9 (replaced FMN 1): • Method restrictions amended to introduce a time period within which the method restrictions are in place – only diving, collection by hand and use of spear permitted between 15 Jul-31 Oct
Jan-1986	Management arrangements	Introduction of prohibition on prawn trawlers taking TRL during the annual migration period (1 Jul-31 Oct) in order to reduce fishing pressure on the lobster population - in place until 1987, when all prawn trawlers were prohibited from taking TRL
Jun-1986	Regulations	Under FMN 12 (replaced FMN 9): • Method restrictions amended to change the dates between which methods are restricted – only diving, collection by hand and use of spear permitted between 1 July - 31 October only
Mar-1988	Regulations	Under FMN 19: • Introduction of prohibition on the take, processing or carrying of TRL by boats with a prawn endorsement
Jun-1988	Regulations	Under FMN 22: • Minimum size limit introduced - 100 mm tail length
Oct-1988	Regulations	Under FMN 24 (replaced FMN 12): • Method restrictions amended - only diving, collection by hand and use of spear permitted, no underwater breathing apparatus except hookah, no underwater mechanical propulsion • Introduction of exemption which can be sought for some method restrictions, specifically the use of underwater breathing apparatus and underwater mechanical propulsion • Traditional fishing bag limits introduced - 3 per person up to 6 per boat
October 1988	Management objectives	PZJA agrees to six key management objectives for the fishery: - To conserve the stock of tropical rock lobster - To maximise the opportunities for traditional inhabitants of both countries to participate, including by managing the fishery for tropical rock lobster as a dive fishery - To promote the dive fisheries for tropical rock lobster in Torres Strait - Encouragement and facilitation of participation by Australian traditional inhabitants for whom future expansion of the fishery should be reserved - Containment of the capacity of the existing commercially licensed fleet and elimination of entrepreneurial speculation and subsequent upgrading/replacement of commercially licensed dinghies with large boats

Time period	Topic/Keywords	Description
		- To minimise impact of any new management measures on existing operators.
March 1989	Traditional Inhabitant access, identification, definition	Tropical Rock Lobster Working Party agrees to Island Coordinating Council suggestion that "amnesty" Papua New Guineans be considered Traditional Inhabitants for fisheries management purposes. Following this, PZJA agrees to "measures to be used for identifying those Papuans resident in Torres Strait who should be treated as Australian traditional inhabitants for all fisheries management and enforcement purposes, including community fishing rights" in the fishery.
Aug-1989	Regulations	Under FMN 31 (replaced FMN 24): • No substantive changes to FMN 24
November 1989	PNG, catch sharing, cross-endorsement	Catch-sharing arrangements for the fishery agreed by PNG and Australia. 27 PNG lobster dinghies to be allowed to operate in Australian TSPZ waters, while Australian operations in PNG waters are precluded.
1989	Management arrangements, fishery surveys	Fishery independent surveys commence in the TRL Fishery
February 1990	PNG, catch sharing, cross-endorsement	Catch-sharing arrangements come into effect 15 February, but no PNG boats begin fishing.
Oct-1990	Regulations	Under FMN 34 (replaced FMN 22): • No substantive changes to FMN 22
1991-1992	Traditional Inhabitant access, identification, definition	PZJA establishes a working group to consider the involvement in PZJA fisheries of Torres Strait Islanders and Aboriginals living in the Northern Peninsula Area of Cape York and Australian citizens of Papua New Guinean origin.
June 1991	PNG, catch sharing, cross-endorsement	Cross-endorsements issued to 4 PNG mother ships with 18 dinghies on 14 June. PNG boats agreed to respect home reefs closures, not go ashore on Australian territory, and make no contact with Australian inhabitants, Australian vessels, or PNG traditional fishers.
Jun-1992	Native title	Mabo High Court decision recognises existence of native title (Aboriginal and Torres Strait Islander rights and interests to land and waters according to their traditional law and customs)

Time period	Topic/Keywords	Description
1993	Community licensing	Concerns about the current licensing systems run by the PZJA and Queensland for community fishing begin to be raised by Island Coordinating Council. Concerns include that Traditional Inhabitants living outside the Island Coordinating Council area are excluded from obtaining licences, the administrative and financial burden placed on island councils by the systems, a lack of detailed information to inform fisheries management decisions, and the fact that island chairmen rather than individual fishers are legally responsible for any fishing violations.
February 1993	PNG, catch-sharing, cross-endorsement	New PNG catch-sharing arrangements commence on 15 February 1993 for a three-year period to 14 February 1996. Allow for cross-endorsement of 27 PNG dinghies and associated freezer boats. Nominations received for cross-endorsement of 3 PNG TRL freezer boats with 27 associated dinghies.
Oct-1993	Regulations	Under FMN 38 (replaced FMN 31): • Introduction of prohibition on taking TRL using hookah between 1 Oct-30 Nov • Traditional fishing bag limits amended - 3 without a boat, 3 with 1 person in a boat, 6 with more than 1 person in a boat • All other requirements remained unchanged - method restrictions
Dec-1993	Native title, legislation	*Native Title Act 1993* commences, legislating the framework for recognition of native title (including over maritime areas) in Australia following the High Court's Mabo decision. The Act covers the determination of whether native title exists, acts affecting native title, and compensation for acts affecting native title.
1994	Logbooks	Noted under LN 8: • Tropical Rock Lobster Logbook TRL02 implemented – voluntary, records frozen tails only
1994	Legislation, TSRA	Torres Strait Regional Authority established under the *Aboriginal and Torres Strait Islander Commission Act 1989*
April-June 1995	Single jurisdiction, licensing	PZJA establishes Task Force to investigate the feasibility of introducing single jurisdiction fisheries management and to advise on matters such as eligibility criteria for entry to the newly created fisheries. Investment warning is issued.
Jul-1995	Regulations	Under FMN 42 (amended FMN 38): • No changes to regulation of fishing provided under FMN 38. Amendments made to correct a drafting error that excluded several words from the section relating to bag limits for traditional fishing.
October 1996	Single jurisdiction, licensing,	PZJA endorses single jurisdiction (the management of all Torres Strait fisheries by the PZJA, rather than a division of responsibility between the PZJA and the Queensland government) and the Task Force's

Time period	Topic/Keywords	Description
	community licences, TIB licensing	recommendations for licensing reform. Due to opposition from Islander representatives, related to broader issues such as autonomy and the desire for a regional agreement for Islander control over Torres Strait waters, the implementation of these reforms was delayed and then boycotted until agreement was reached in 1999.
Mar-1997	Regulations	Under FMN 44 (amended FMN 38): • Method restrictions amended - only collection by hand, use of spear or other handheld implement permitted, no underwater breathing apparatus except hookah, no underwater mechanical propulsion
May-1997	Logbooks	Under LN 8: • Tropical Rock Lobster Logbook TRL03 implemented – both TRL02 and TRL03 mandatory for boats with freezing capacity, records both live and frozen tails
Apr-1998	Regulations	Under FMN 48 (replaced FMN 34): • Minimum size limits amended - 80 mm carapace length, 100 mm tail length
1999	Traditional Inhabitant access, identification, definition	PZJA agrees that children of “amnesty” Papua New Guineans be considered Traditional Inhabitants, following the 1989 decision to include “amnesty” people within the definition of Traditional Inhabitants.
July-December 1999	Single jurisdiction, licensing, community licences, TIB licensing	Islander representatives propose a series of principles to underlie community licensing, consistent with the previously proposed system.
Apr-2000	Single jurisdiction, licensing, community licences, TIB licensing	Following a meeting between the PZJA and Islander representatives, the Traditional Inhabitant Boat (TIB) licence is introduced for a one year trial period.
Nov-2001	Regulations	Under FMN 58 (replaced FMN 38, 42, 44, 48): • Introduction of fishery closure from 1 Oct-30 Nov (revoking previous prohibition on taking TRL using hookah between 1 Oct-30 Nov). Exemption from closure but bag limits apply - 3 without a boat, 3 with 1 person in a boat, 6 with more than 1 person in a boat

Time period	Topic/Keywords	Description
		• Introduction of prohibition on taking or carrying of TRL while using, or in the possession of, hookah gear between 1 Oct-31 Jan • All other requirements remained unchanged - method restrictions, minimum size limits
2002	Legislation, TSRA, PZJA	*Torres Strait Fisheries Act 1984* is amended to make the Torres Strait Regional Authority Chairperson a member of the Protected Zone Joint Authority
Nov-2002	Latent effort, fishery participation	A 30% reduction in the number of tenders attached to each non-Traditional Inhabitant licence package was implemented, except where only 1 tender exists, in which case the tender will be entitled to continue working. This was done in order to reduce latent effort in the fishery and restrict expansion of effort by non-Traditional Inhabitant fishers. This arrangement was in place until 2011.
November 2002	Traditional Inhabitant access, Skehill report, management objectives	Skehill report – "A Fair Share of the Catch" – is delivered, evaluating Torres Strait fisheries and establishing an order of priority for their management. Recommends Traditional Inhabitants be given priority of access to the TRL Fishery.
Dec-2002	Regulations	Under FMN 62: • Introduction of prohibition of processing or carrying TRL meat removed from the shell on a boat. Exemption provided for traditional fishing.
Dec-2003	Latent effort	Cap on Traditional Inhabitant licences for boats greater than 6 m with a TRL Fishery endorsement – in place until 2006
2003	QLD East Coast Fishery	Size limit increased to 90mm carapace length and 115m tail length. Seasonal to be in place from 1 October to 31 January implemented.
Late 2003	Logbooks	Torres Strait Seafood Buyers and Processors Docket Book (TDB01) implemented – voluntary
Jun-2003	Logbooks	Under the *Torres Strait Fisheries Logbook Instrument No. 1*: • Tropical Rock Lobster Logbook TRL04 implemented – mandatory for all non-Traditional Inhabitant operators
Jan-2005	Management arrangements	Moon-tide hookah closures (a periodic closure on the use of hookah gear three days either side of the full or new moon each month during between Februrary and September) introduced – first implemented in 2005 as a way to reduce fishing effort to levels recorded in 2002. In 2013 the closures were removed following a buy-out

Time period	Topic/Keywords	Description
		of non-Traditional Inhabitant licences however were reintroduced in 2014 following agreement from both the sectors, and continue to date
Jul-2005	Management plan	PZJA agreed to create a plan of management to implement a quota management system in the fishery.
July 2005	Allocation	PZJA agrees to transition to initial 50:50 sectoral split in the fishery, brought about by government funded buyout, with a later goal of a 70:30 split between Traditional Inhabitants and non-Traditional Inhabitants, funded by an “open market and self-funded tender process”.
2006	TAC	Notional total allowable catches implemented (notional as allocation had not yet been undertaken nor a management plan developed)
Mar-2006	Regulations	Under FMN 73 (replaced FMN 58, 62): • Introduction of fishery closure from 1-30 Nov (revoking previous fishery closure from 1 Oct-30 Nov). Exemption from closure for traditional fishing only but bag limits apply - 3 without a boat, 3 with 1 person in a boat, 6 with more than 1 person in a boat • Introduction of prohibition on carriage of diving equipment between 1900-0600 AEST. Exemption can be sought, but all diving equipment (face mask and fins) in possession of that person, or on board the boat, is stowed and secured during the prohibited hours. ES states that this was implemented in response to concerns that night diving may occur in the Fishery • All other requirements remained unchanged - method restrictions, prohibition of processing or carrying TRL meat, minimum size limits, hookah gear restrictions
April 2006	IAAP, allocation	PZJA agrees to create an Independent Allocation Advisory Panel (IAAP) to advise on the appropriate basis for the allocation of fishing concessions in the non-Traditional Inhabitant sector.
Sep-2006	Regulations	Under FMN 80 (replaced FMN 73): • Correction made to error in FMN 73 regarding the fishery closure, reinstated to 1 Oct-30 Nov. Exemption from closure for traditional fishing only but bag limits apply - 3 without a boat, 3 with 1 person in a boat, 6 with more than 1 person in a boat • All other requirements remained unchanged - method restrictions, prohibition of processing or carrying TRL meat, minimum size limits, hookah gear restrictions, prohibition on carriage of diving equipment between 1900-0600 AEST
Jun-2007	IAAP, allocation	PZJA agrees to final Independent Allocation Advisory Panel (IAAP) report and a sectoral catch share ratio of 35:65 between the Traditional Inhabitant and non-Traditional Inhabitant sectors as detailed in the ‘Report to

Time period	Topic/Keywords	Description
		stakeholders on the data used to establish the historical catch ratios of the Community and non-community sectors'
Apr-2008	Buyback, structural adjustment	Australian Government buy-back of non-Traditional Inhabitant licences. 13 primary licences and 29 associated tenders removed from the TRL Fishery. Based on the provisional allocations associated with the 'bought-out' licences the sectoral catch share between the Traditional Inhabitant and non-Traditional Inhabitant sectors changed to 53.5:46.5.
2008	Conversion factor	TRL tail to whole weight conversion ratio (2.677) implemented
2009	Harvest strategy	Interim Harvest Strategy implemented for the TRL Fishery in response to the planned transition to a quota management system, laying out the biological objectives for the fishery and how this could be achieved.
Mar-2010	Environment	Torres Strait coral bleaching event
Aug-2011	Regulations	Under FMI 9 (replaced FMN 80): • Application of arrangements extended to PNG Treaty endorsed operators • All other requirements remained unchanged – method restrictions, prohibition of processing or carrying TRL meat, minimum size limits, hookah gear restrictions, prohibition on carriage of diving equipment between 1900-0600 AEST, fishery closure. FMI 9 was intended to amend an administrative oversight that had excluded cross-endorsed fishers from the provisions of FMN 80.
Apr-2012	Buyback, structural adjustment	Based on a further buy-out of one licence (1 primary and 1 tender) the sectoral catch share between the Traditional Inhabitant and non-Traditional Inhabitant sectors changed to 56.2:43.8
7-Aug-2013	Native title, sea claim	The High Court hands down decision regarding Torres Strait Sea Claim Part A. The decision overturned the Full Federal Court decision from March 2012 and found that the native title rights in the sea claim area include the right to take fish for commercial or trading purposes. This was found to be a non-exclusive right, and native title holders are still required to hold the appropriate licences and abide by the relevant laws and regulations.
2014	Fishery participation, Traditional Inhabitant access, 100% ownership	The Protected Zone Joint Authority acknowledges and supports the aspiration of Torres Strait Communities to own 100% of access to commercial Fisheries in the Australian area of the Torres Strait Protected Zone

Time period	Topic/Keywords	Description
May-2014	Native title	Malu Lamar (Torres Strait Islander) Corporation is appointed as the Registered Native Title Body Corporate for the Sea Claim Area Part A.
Mar-2016	Environment	Torres Strait coral bleaching and sea cage mortality event
Oct-2016 to Oct-2017	Buyback, structural adjustment	Based on a further buy-out of three licences (3 primaries and 7 tenders) the sectoral catch share between the Traditional Inhabitant and non-Traditional Inhabitant sectors changed to 66.17:33.83
Jul-2017	Vessel monitoring	Vessel monitoring system (VMS) implemented – mandatory for primary boat and/or operating with a Carrier Boat License (Class A, B, or C). Vessels operating for freight shipping are exempt from installing VMS. Exemptions may also be provided for carrier vessels that are six meters or less in length.
Dec-2017	Logbooks	Torres Strait Fisheries Catch Disposal Record (TDB02) implemented – mandatory for all Torres Strait licence holders
10-Apr-2018	Management arrangements	Following a low Recommended Biological Catch, additional moon-tide hookah closures introduced covering all new and full moon periods for the remainder of the 2017-18 fishing season, in order to slow down fishing effort and provide the TIB sector with the longest possible fishing season, avoiding an early closure of the fishery.
27-Apr-2018	Management arrangements, hookah	Prohibition on the carriage and use of hookah gear for the remainder of the 2017-18 fishing season.
29-Jun-2018	Management arrangements, hookah	Federal Court of Australia order to revoke prohibition on the carriage and use of hookah gear – reverted to additional moon-tide hookah closures.
20-Jul-2018	Regulations	Under the TRL Management Instrument 2018 (replaced FMI 9): • Traditional fishing bag limits removed. Noted that PZJA does not have jurisdiction in relation to traditional fishing conducted by Traditional Inhabitants • Introduction of capacity to close the TRL Fishery early to commercial fishing, when the total allowable catch is reached • Introduction of capacity to prohibit the use of hookah gear (i.e. moon-tide hookah closures) during the hookah season (1 Feb-30 Sep)

Time period	Topic/Keywords	Description
		• All other requirements remained unchanged – method restrictions, prohibition of processing or carrying TRL meat, minimum size limits, hookah gear restrictions, prohibition on carriage of diving equipment between 1900-0600 AEST, fishery closure
31-Jul-2018	Management arrangements	TRL Fishery closed for the remainder of the 2017-18 fishing season due to total allowable catch being reached.
1-Dec-2018	Management plan	*Torres Strait Fisheries (Quotas for Tropical Rock Lobster (Kaiar)) Management Plan 2018* commenced
1-Dec-2018	Regulations	Under the TRL Management Instrument 2018 (amendment to Jul-2018 Instrument): • Ability to close the TRL Fishery early to commercial fishing revoked • Implementation of a split of the total allowable catch for the TRL Fishery between the Traditional Inhabitant (66.17% of the total allowable catch) and non-Traditional Inhabitant sectors – applied from 1 Dec 2017-30 Sep 2018 only • Introduction of capacity to close of the TRL Fishery to the Traditional Inhabitant sector once their part of the total allowable catch is reached – applied from 1 Dec 2017-30 Sep 2018 only • Provide for individual transferrable quota arrangements to be established for the non-Traditional Inhabitant sector via licence conditions – applied from 1 Dec 2017-30 Sep 2018 only • Provide for the operation of the proposed Management Plan should the quota allocation process be finalised before the start of the 2019-20 fishing season • All other requirements remained unchanged – method restrictions, prohibition of processing or carrying TRL meat, minimum size limits, hookah gear restrictions, prohibition on carriage of diving equipment between 1900-0600 AEST, fishery closure, moon-tide hookah closures
16-Sep-2019	Management plan, allocation	Quota units allocated under the Management Plan: • 662,016 quota units to the Torres Strait Regional Authority (TSRA) comprising: 562,000 to hold for the benefit of the traditional inhabitant sector; and 100,016 for the TVH licences it holds • 337,981 quota units to the remaining TVH principal licence holders
19-Nov-2019	Harvest strategy	PZJA adopts final Harvest Strategy for the TRL Fishery
1-Dec-2019	Management plan, management arrangements	TRL Fishery commences operation under a quota management system as per the Management Plan

Time period	Topic/Keywords	Description
Early 2020	Markets, price, export	• Live export market into China closed temporarily prior to 2020 Chinese New Year. • Prices in the fishery were down significantly, similar to lowest prices on record in 2002-03. • TVH boats in Torres Strait and QLD East Coast were forced to stop fishing. • Whole frozen product only purchased at reject prices. • COVID-19 impacts affect flights and freight routes from Australia to Asian markets
~ October 2020	Markets, export, Cadmium	China began to increase inspection levels and testing of cadmium in Australian live lobster at the point of entry in major Chinese ports, causing considerable delays while inspection and testing was being undertaken. This resulted in high mortality rates of lobster product (not Torres Strait product).
November 2020	Markets, export	China formally notified the DAWE of two instances of non-compliance of lobster shipments with detections of cadmium above the maximum levels set by the Chinese Government.
November 2020	Management Plan, allocation	The PZJA (meeting 36) agreed to amend the TRL Management Plan to provide the PZJA with additional time in which to commence a review of the allocation of quota units to the Traditional Inhabitant sector, to within 4 years of the Plan commencement.
December 2020	Markets, export	China banned the import of Australian lobster product
December 2020	Wildlife Trade Operation	On 4 December 2020 the TRL Fishery was re-accredited as an approved Wildlife Trade Operation (WTO) under the *Environment Protection and Biodiversity Conservation Act 1999*.
December 2023	Wildlife Trade Operation, LENS	In October 2023 the TRL Fishery was re-assessed under the *Environment Protection and Biodiversity Conservation Act 1999* and added to the List of Exempt Native Specimens (LENS). Coming into force on 4 December 2023, this allows extended export approval though to 4 December 2033.
April 2024	Cross-endorsement	For the first time in ten years, the first PNG licenced boats with Treaty Endorsements commenced their first cross-endorsed fishing trips in the Australian jurisdiction of the TRL fishery. The boats *FV Jupiter* and *FV Dinh Thang* undertook 4 and 5 fishing trips respectively, with their last trip of the season completed on 2 July 2024.
October 2024	Markets, export	Announcement that China would lift its four-year import ban on Australian rock lobsters. This did not address the specific protected species listing of Tropical Rock Lobsters.

TROPICAL ROCK LOBSTER WORKING GROUP (TRLWG) Thursday Island	MEETING 17 12 December 2024
UPDATES FROM MEMBERS	Agenda Item 2 For NOTING

RECOMMENDATIONS

1. That the WG **NOTE** updates provided by:
    a) Industry members:
        i. TIB
        ii. TVH;
    b) Scientific and economic members;
    c) Government agencies, including a written update from AFMA management and compliance teams (**Attachment 2a** and **2b**);
    d) Papua New Guinea National Fisheries Authority (PNG NFA) representatives; and
    e) Native Title body representatives (if in attendance).

BACKGROUND

2. Verbal reports are sought from industry members, both as traditional inhabitant and transferrable vessel holders, scientific and economic members under this item, with particular emphasis on market and export impacts to the current 2023-24 fishing season.
3. It is important that the WG develops a common understanding of any strategic issues, including economic, fishing and research trends relevant to the management the TRL Fishery. This includes within adjacent jurisdictions. This ensures that where relevant, the WG is able to have regard for these strategic issues and trends.
4. WG members are asked to provide any updates on trends and opportunities in markets, processing and value adding. Industry is asked to contribute advice on economic and market trends where possible. Scientific members are asked to contribute advice on any broader strategic research projects or issues that may be of interest to the Torres Strait in future.
5. Government agency members are asked to provide updates relevant to the TRL Fishery. Specific AFMA updates are provided in **Attachment 2a and 2b.**
6. AFMA has a standing invite for officials from the PNG National Fisheries Authority (NFA) and a Native Title Body representative to attend all PZJA advisory committee meetings. If in attendance, updates are welcome from these participants.

UPDATE FROM AUSTRALIAN FISHERIES MANAGEMENT AUTHORITY

ABARES Fishery Status Report

7. Each year, the Australian Bureau of Agricultural and Resource Economics and Sciences (ABARES) compiles fishery status reports which provide an independent assessment of the biological status of fish stock and the economic status of fisheries managed, or jointly managed by the Australian Government (Commonwealth fisheries).
8. The latest ABARES Fishery Status Report 2024 (covering the performance of fisheries in 2022) have now been released. The reports assess all key commercial species from Commonwealth managed fisheries and examines the broader impact of fisheries on the environment, including on non-target species.
9. ABARES fishery status reports can be accessed on the ABARES website at:

https://www.agriculture.gov.au/abares/research-topics/fisheries/fishery-status

10. In summary, the TRL Fishery has been assessed for the 2023 period as outlined below.

Table 16.1 Torres Strait Tropical Rock Lobster Fishery – biological status

Stock	Fishing mortality 2022	Biomass 2022	Fishing mortality 2023	Biomass 2023	Comments
Tropical rock lobster (*Panulirus ornatus*)	Not subject to overfishing	Not overfished	Not subject to overfishing	Not overfished	Fishing mortality is less than the recommended biological catch. Spawning stock biomass is above the target reference point.

AFMA Compliance Update

11. AFMA has been delivering domestic compliance functions in the Torres Strait in accordance with the National Compliance and Enforcement Program. In 2023/24, there were two compliance officers based in the Thursday Island office delivering both domestic and foreign compliance outcomes.

12. AFMA fisheries officers have delivered the following outcomes during 2023/24:

    a) 60 vessel inspections;

    b) 52 fish receiver inspections;

    c) 14 at sea patrols of the TSPZ supported by Queensland Police Service (QPS) and Australian Border Force (ABF);

    d) 48 ports/freight hubs visits;

    e) 2 targeted operations.

13. To target priority risks in Torres Strait fisheries, AFMA have established a specialised multidisciplinary Compliance Risk Management Team (CRMT). Priority risks specific to the Torres Strait include unlicensed fishing, unlicensed fish receiving, and non-compliance with reporting catch. Failing to report catch is considered quota evasion and results in the undermining of the ongoing sustainable management of the Torres Strait fisheries.

14. Licence holders are reminded that as per licence conditions it is that concession holders' responsibility when landing catch to sign the catch disposal as an accurate account, fishers should retain the completed ‘pink copy’ of the catch disposal record. For operators unloading using electronic CDR’s you should receive a text message with your catch details. AFMA has received request from fishers for individual catch data however due to failure in completing this process AFMA has not been able to provide this information.

15. In March 2024 2 PNG licenced vessels were endorsed to fish in the Australian TRL fishery. The vessels completed 5 trips into Australian jurisdiction for this period. During this period AFMA compliance with the assistance of QPS and ABF conducted 2 at sea inspection in response to fishery complaints received from community.

16. In October 2023, AFMA compliance travelled to four Treaty Villages to reinvigorating the Treaty Village vessel registration scheme. The vessel registration scheme assists aerial surveillance and patrol assets including fishing industry to identify vessels operating in Australian jurisdiction of the TSPZ. AFMA compliance plans to attend the remaining Treaty Villages to complete this project.

Foreign Compliance update

17. During the 2023/24 reporting period, with the assistance of Australian Border Force, AFMA apprehended 2 foreign fishing vessels, and executed 4 legislative forfeitures. The apprehensions occurred in the vicinity of Deliverance Island and Kerr Islet. The apprehended fishing crew were transported to Darwin and prosecuted for offences against the *Torres Strait Fisheries Act 1984*.

18. During current reporting period 2024/25, there has been 1 apprehension, and 4 legislative forfeitures within the TSPZ. Recent new approved funding has allowed for further compliance options to focus on targeted operations at both Warrior Reef, and Deliverance Island and Kerr Islet combatting IUU fishing.

19. Further details are contained in AFMA’s National Compliance and Enforcement Program document accessible on the AFMA website at:

https://www.afma.gov.au/domestic-compliance. This document explains AFMA's compliance program priorities and objectives for the 2024/25 and 2025/26 financial years.

20. All stakeholders are encouraged to report any suspicious or illegal fishing activity involving your fisheries to AFMA, either directly to our Torres Strait office or CRIMFISH (1800 274 634).

TROPICAL ROCK LOBSTER WORKING GROUP (TRLWG) **Thursday Island**	**MEETING 17** **12 December 2024**
CATCH SUMMARY FOR THE 2023-24 FISHING SEASON	**Agenda Item 3** **For NOTING**

RECOMMENDATIONS

1. That the WG:
    a. **NOTE** the reported landed catch for the Australian Torres Strait Tropical Rock Lobster Fishery (TRL Fishery) (**Attachment 3a**).
    b. **NOTE** the reported landed catch for the PNG Licenced boats operating under cross-endorsement arrangements in the Australian jurisdiction of the TSPZ;
    c. **NOTE** the 2024 reported landed catch for the PNG TRL Fishery as reported by the PNG National Fisheries Authority (NFA) (**Attachment 3b**) and an update to the 2023 reported landed catch (**Attachment 3c**).

KEY ISSUES

Australian TRL Fishery catch

2. The Australian TRL Fishery fishing season runs from 1 December through to 30 September the following year. There is a prohibition on the use of hookah gear from 1 December through to 31 January the following year and periodically each month throughout the remainder of the season.
3. The reported landed catch for the Australian TRL Fishery for the 2023-24 fishing season is 200.21 tonnes. All reported catches are from inside the Torres Strait Protected Zone (TSPZ) and Australia's declared outside but near area combined.
4. This equates to about 55.936% per cent of Australia's 357.75.0 kilogram (357.75 tonnes) total allowable catch (TAC) for the 2023-24 fishing season. This catch data is sourced from Torres Strait Fisheries Catch Disposal Record (TDB02) and electronic Catch Disposal Records (e-CDRs) and covers the Traditional Inhabitant Boat (TIB) and Transferable Vessel Holder (TVH) sectors.
5. The TIB sector caught 107.67 tonnes of TRL which equates to 45.46 per cent of the TIB TAC and the TVH sector caught 92.54 tonnes of TRL which equates to 75.53% per cent of the TVH TAC.
6. A summary of the reported landed catch for the Australian TRL Fishery is provided at **Attachment 3a.**

PNG Cross-endorsed catch

7. Two PNG Licenced boats fished in the Australian jurisdiction of the TSPZ under cross-endorsement arrangements. The boats were granted Treaty endorsements on 1 March 2024 and permitted to fish until the earlier of catching their 92.75 tonne entitlement, or the

end of the TRL season on 30 September 2024. The two boats, *FV Jupiter* and *FV Ding Thang* undertook four, and five fishing trips respectively between 13 April and 2 July 2024.

8. The total reported landed catch for both boats is 12.49 tonnes, with 5.71 tonnes caught by *Jupiter* and 6.79 tonnes caught by Dinh Thang. This equates to 14 per cent of the total 92.75 tonne catch entitlement for PNG licenced boats in Australian waters.

9. Both boats were required to complete the TRL04 daily fishing logbooks. An analysis of this will be presented by CSIRO.

PNG TRL Fishery catch

10. The PNG TRL Fishery fishing season runs from 1 January through to 31 December each year. There is a prohibition on the use of hookah gear in the waters of Western Province and Torres Strait from 1 December through to 31 March the following year.

11. The total reported catch of the PNG TRL Fishery for 2024 was not available at the time of writing (**Attachment 3b – pending**). Any updates will be circulated to RAG members when available.

12. The TAC for the PNG TRL Fishery in 2024, in PNG waters was 79.5 kilograms.

13. On 3 June 2024, AFMA received updated PNG TRL Fishery catch data for the 2023 fishing season (**Attachment 3c**). The RAG is invited to note the update to the reported catch total for the 2023 season.

Total reported commercial catch for the TRL stock

14. The total reported commercial catch for the TRL stock is:

Area	Total (kg)	TAC (kg)	Remaining (kg)
Australian TRL Fishery (1 Dec 2023 – 30 Sept 2024)	200,206.19	357,750	157,543.81
PNG TRL Fishery* (January – September 2024)	120,642.04	79,500	-41,142.04
catches inside the TSPZ	80,946.12		
catches outside the TSPZ	39,695.92		
PNG catch allocation within Australian waters	12,493.14	92,750	80,256.86
Total	**454,424.86**	**530,000**	**75,575.14**

* Reported as at 12 November 2024.

Table 1. Reported landed catch (kilograms whole weight) of Tropical Rock Lobster (TRL) for the Australian Torres Strait TRL Fishery by month and sector for the 2023-24 fishing season.
Source: Torres Strait Fisheries Catch Disposal Records (TDB02) and electronic Catch Disposal Records as at 4 November 2024.

Month	Traditional Inhabitant Boat (TIB) sector	Transferable Vessel Holder (TVH) sector	Total (kg)
Dec-23	8,316.79	-	8,316.79
Jan-24	7,844.58	-	7,844.58
Feb-24	15,395.83	19,481.13	34,876.96
Mar-24	16,496.76	3,851.79	20,348.55
Apr-24	14,515.04	11,306.15	25,821.20
May-24	9,910.90	8,910.64	18,821.54
Jun-24	15,222.84	38,467.32[#]	69,122.46
Jul-24	8,682.43		
Aug-24	6,749.88		
Sep-24	4,531.65	10,522.45	15,054.11
Total reported catch (kg)	**92,539.48**	**107,666.71**	**200,206.19**
TAC (kg)	**236,836.94**	**120,913.06**	**357,750**
Reported catch as a per cent of the TAC*	**45.46%**	**75.53%**	**55.96%**

[#] In accordance with AFMA's Information Disclosure policy (*Fisheries Management Paper 12*), catches by month have been aggregated for June through to August 2024, as less than 5 boats operated in the Transferable Vessel Holder (TVH) sector. This data is sourced from raw Catch Disposal Records (TDB02) and electronic Catch Disposal Records, and may not account for data cleaning undertaken by CSIRO during CPUE analysis.

Table 2. Reported landed catch (kilograms) of TRL for the PNG Torres Strait TRL Fishery by month and processed weight for the 2024
Source: PNG National Fisheries Authority, as at 12 November 2024.

PNG Jurisdiction of the TSPZ: Jan - Sept 2024				
Month (2023)	Tail weight (kg)	Tail wt converted to whole wt (C. factor 2.677)	Whole weight (kg)	Total Catch (kg)
JANUARY	287.50	769.6375	4,453.71	5,223.35
FEBRUARY	24.30	65.05	4,537.60	4,602.65
MARCH	8.30	22.22	2,125.00	2,147.22
APRIL	2,387.10	6,390.27	2,386.90	8,777.17
MAY	1,374.70	3,680.07	4,675.70	8,355.77
JUNE	1,200.50	3,213.74	15,022.00	18,235.74
JULY	1,147.00	3,070.52	6594.2	9,664.72
AUGUST	877.63	2,349.42	11477.8	13,827.22
SEPTEMBER	140.90	377.19	9,735.10	10,112.29
TOTAL	**7,447.93**	**19,938.11**	**61,008.01**	**80,946.12**

PNG Waters outside but near TSPZ: Jan - Sept 2024				
Month (2023)	Tail weight (kg)	Tail wt converted to whole wt (C. factor 2.677)	Whole weight (kg)	Total Catch (kg)
JANUARY	47.40	126.89	2,175.50	2,302.39
FEBRUARY	406.50	1,088.20	1,322.80	2,411.00
MARCH	11.30	30.25	1,665.70	1,695.95
APRIL	677.70	1,814.20	1,810.60	3,624.80
MAY	84.10	225.14	2,558.70	2,783.84
JUNE	14.40	38.55	6,816.30	6,854.85
JULY	23.80	63.71	2,424.70	2,488.41
AUGUST	22.40	59.96	11,416.30	11,476.26
SEPTEMBER	30.90	82.72	5,975.70	6,058.42
TOTAL	**1,318.50**	**3,529.62**	**36,166.30**	**39,695.92**

PNG Catch Total: Jan - Sept 2024				
Month (2020)	Tail weight (kg)	Tail wt converted to whole wt (C. factor 2.677)	Whole weight (kg)	Total Catch (kg)
JANUARY	334.90	896.53	6629.21	7,525.74
FEBRUARY	430.80	1,153.25	5860.4	7,013.65
MARCH	19.60	52.47	3790.7	3,843.17
APRIL	3,064.80	8,204.47	4197.5	12,401.97
MAY	1,458.80	3,905.21	7234.4	11,139.61
JUNE	1,214.90	3,252.29	21838.3	25,090.59
JULY	1,170.80	3,134.23	9018.9	12,153.13
AUGUST	900.03	2,409.38	22894.1	25,303.48
SEPTEMBER	171.8	459.91	15710.8	16,170.71
TOTAL	**8,766.43**	**23,467.73**	**97,174.31**	**120,642.04**

Table 3. Reported landed catch (kilograms) of TRL for the PNG Torres Strait TRL Fishery by month and processed weight for the Jan – Dec 2023.
Source: PNG National Fisheries Authority reported as at 6 June 2024.

PNG Catch Total: Jan - Dec 2023				
Month (2020)	Tail weight (kg)	Tail wt converted to whole wt (C. factor 2.677)	Whole weight (kg)	Total Catch (kg)
JANUARY	700.30	1,874.70	6,659.97	8,534.67
FEBRUARY	265.80	711.55	8,155.84	8,867.39
MARCH	832.90	2,229.67	15,469.40	17,699.07
APRIL	431.00	1,153.79	15,531.30	16,685.09
MAY	653.70	1,749.95	13,781.10	15,531.05
JUNE	34.00	91.02	8,681.90	8,772.92
JULY	326.40	873.77	9,342.01	10,215.78
AUGUST	138.11	369.72	8,305.30	8,675.02
SEPTEMBER	757.6	2,028.10	6207.7	8,235.80
OCTOBER	147.9	395.93	5725.5	6,121.43
NOVEMBER	10.1	27.04	493.1	520.14
DECEMBER	30.5	81.65		81.65
TOTAL	**4,328.31**	**11,586.89**	**98,353.12**	**109,940.01**

PNG Jurisdiction of the TSPZ: Jan - Dec 2023				
Month (2023)	Tail weight (kg)	Tail wt converted to whole wt (C. factor 2.677)	Whole weight (kg)	Total Catch (kg)
JANUARY	376.20	1007.0874	3,516.23	4,523.32
FEBRUARY	152.10	407.17	4,804.71	5,211.88
MARCH	437.80	1,171.99	9,781.00	10,952.99
APRIL	328.90	880.47	8,790.60	9,671.07
MAY	181.30	485.34	6,893.50	7,378.84
JUNE	18.40	49.26	3,506.70	3,555.96
JULY	71.60	191.67	6341.4	6,533.07
AUGUST	41.90	112.17	6044.2	6,156.37
SEPTEMBER	642.60	1,720.24	4,408.60	6,128.84
OCTOBER	73.70	197.29	3335.4	3,532.69
NOVEMBER	4.5	12.0465		12.05
DECEMBER	2.1	5.6217		5.62
TOTAL	**2,331.10**	**6,240.35**	**57,422.34**	**63,662.69**

PNG Waters outside but near TSPZ: Jan - Dec 2023				
Month (2023)	Tail weight (kg)	Tail wt converted to whole wt (C. factor 2.677)	Whole weight (kg)	Total Catch (kg)
JANUARY	324.10	867.62	3,143.74	4,011.36
FEBRUARY	113.70	304.37	3,351.13	3,655.50
MARCH	395.10	1,057.68	5,688.40	6,746.08
APRIL	102.10	273.32	6,740.70	7,014.02
MAY	472.40	1,264.61	6,887.60	8,152.21
JUNE	15.60	41.76	5,175.20	5,216.96
JULY	254.80	682.10	3,000.61	3,682.71
AUGUST	96.21	257.55	2,261.10	2,518.65
SEPTEMBER	115.00	307.86	1,799.10	2,106.96
OCTOBER	74.20	198.63	2,390.10	2,588.73
NOVEMBER	5.60	14.99	493.10	508.09
DECEMBER	28.40	76.03	-	76.03
TOTAL	**1,997.21**	**5,346.53**	**40,930.78**	**46,277.31**

Reported catch at Dec 2023	Extrapolated catch from TRLRAG 35 (Dec 2023)	Updated reported catch as at June 2024
30 tonnes	36.6 tonnes	109.4 tonnes

TROPICAL ROCK LOBSTER WORKING GROUP (TRLWG) **Thursday Island**	**MEETING 17** **10-11 December 2024**
REVIEWING THE TRL HARVEST STRATEGY	**Agenda Item 5** **For DISCUSSION and ADVICE**

RECOMMENDATIONS

1. That the WG:
    a. **PROVIDE ADVICE** on proposed changes to the TRL Harvest Strategy, having regard to:
        (i) the overview of TRLRAG 38 outcomes as presented by the TRLRAG Chair under Agenda Item 4 and Agenda Item 8, specifically;
            - RAG advice on a revised eHCR; and
            - RAG advice on any new exceptional circumstances rules in the TRL Harvest Strategy.
    b. **NOTE** that a separate process (see expected timeline at **Attachment 5a**) will be undertaken to formally adopt the recommended revisions (a PZJA decision) to the eHCR and any other Harvest Strategy revisions, following broader public consultation.

KEY ISSUES

2. Although designed to give industry (both TIB and TVH) confidence in decision making, harvest strategies are intended to undergo regular review and may require ongoing refinement. This is especially true in the rapidly changing conditions (economic and environmental) that we are likely to experience in the coming years.
3. The Commonwealth Fisheries Harvest Strategy Policy and Guidelines, upon which the TRL Harvest Strategy is based as best practice, specifies that harvest strategies are to be reviewed every five years but may be reviewed earlier if necessary.
4. Section 2.13 of the TRL Harvest Strategy provides guidance on when a review may be required earlier than 5 years, including relating to changing external drivers.
5. As external drivers, ongoing market and economic pressures recently encountered in the fishery are beyond what was considered when the eHCR was developed and warrant a revision of the eHCR, TRL RAG recommended this revision at their 32nd meeting in December 2021. This work undertaken by CSIRO was considered at TRL RAG 37 and TRLRAG 38.
6. While the eHCR is considered to be the most critical component of the TRL Harvest Strategy in providing advice on a RBC, the decision rules contained within the broader Harvest Strategy should also be examined for completeness.

7. The WG is therefore being asked to consider section 2.10 of the TRL Harvest Strategy (**Attachment 5b**) and whether any decision rules require amendments in line with the recommended revisions of the eHCR or if new rules are required. Including:
    a. Exceptional circumstances (e.g. unable to complete the pre-season survey)
8. Earlier preliminary work was undertaken by CSIRO in 2016 on development of a tiered harvest strategy approach for TRL to accommodate 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).
9. 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 however with additional climate change factors, testing has indicated that 360t 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.
10. A revised eHCR and Harvest Strategy decision rules will allow the RAG and WG to continue to provide well informed and reliable advice, and provide confidence to the PZJA as the decision maker on the RBC and subsequent TAC.

BACKGROUND

11. The TRL Harvest Strategy was developed in consultation with the RAG and Working Group between 2016 and 2019.
12. It was developed to take into account key fishery specific attributes including:
    a. potential for large, unpredictable inter-annual variations in availability and abundance of TRL;
    b. that TRL is a shared resource important for the traditional way of life and livelihood of traditional inhabitants, commercial and recreational sectors; and
    c. advice from the RAG industry members to maintain stock abundance at recent levels (2005-2015) (TRLRAG17 on 31 March 2016).
13. The RAG recommended harvest strategy objectives that place greater emphasis on the on the importance of the TRL Fishery for traditional way of life and livelihood of traditional inhabitants. The operational objectives of the Harvest Strategy are to:
    a. Maintain the stock at (on average), or return to, a target biomass point BTARG equal to recent levels (2005-2015) that take account of the fact that the resource is shared and important for the traditional way of life and livelihood of traditional inhabitants and is biologically and economically acceptable.
    b. The agreed BTARG is more precautionary (65%) than the default proxy BMEY (biomass at maximum economic yield) level as outlined in the Commonwealth Harvest Strategy Policy and Guidelines 2007 (HSP).
    c. Maintain the stock above the limit biomass level (BLIM), or an appropriate proxy, at least 90 per cent of the time.
    d. The agreed BLIM is more precautionary than the default proxy HSP BLIM.
    e. Implement rebuilding strategies, if the spawning stock biomass is assessed to fall below BLIM in two successive years.

Process for formally amending the eHCR and TRL Harvest Strategy

STEP	TASK	TIMING (Indicative only, subject to capacity)
1	**CSIRO presented potential options** Consider options for amending the eHCR.	TRLRAG37 – October 2024
2	**RAG discuss options and recommend a way forward – no consensus reached**	TRLRAG37 – October 2024
3	**RAG to re-consider options for a revised eHCR to be applied when calculating 2024-25 RBC**	TRLRAG38 – December 2024
4	**RAG to provide advice on 2024-25 season RBC and review of draft changes to Harvest Strategy** Having regard to the advice from TRLRAG 38 and noting that formally amending the Harvest Strategy through a PZJA decision is expected in early 2025, the RAG can apply the new agreed eHCR/method to calculate the 2024-25 RBC.	TRLRAG38 – December 2024
5	**WG to provide advice on 2024-25 season TAC and amendments to Harvest Strategy** The WG will consider the draft amendments to the Harvest Strategy and having regard to the advice from TRLRAG 37 and 38, provide advice on a TAC for the 2024-25 fishing season.	TRLWG 17 – December 2024
3	**AFMA to prepare draft updates to the Harvest Strategy** Having regard to the advice from TRLRAG 38 and TRLWG 17, AFMA will prepare draft amendments to the Harvest Strategy in preparation for TRLRAG and WG review out of session and public consultation.	Out of session
6	**Update provided to the DCCEEW** As per Condition 3 of the TRL List of Exempt Native Species (LENS) approval under the Environment Protection Biodiversity and Conservation Act (EPBC Act), AFMA will update the Department of Climate Change, Energy, the Environment and Water (DCCEEW) regarding the intended updates to the Harvest Strategy, and feed any comments or questions back to the RAG.	Early January 2025
7	**Public/community consultation** Letter detailing the proposed change to be sent to all licences holders and made available on the PZJA website. There may also be the opportunity to provide an update during community visits if these occur.	Early 2025
8	**RAG and WG consider outcomes from public consultation period and final draft amendments to Harvest Strategy** Having regard to any comments received during the public comment period, the RAG and WG will have an opportunity to consider final draft amendments to the Harvest Strategy.	Out of session (TBC)
9	**PZJA approve amendments to Harvest Strategy**	Earliest opportunity 2025
10	**Update provided to DCEEW** AFMA to provide a further update to DCEEW following PZJA approval and finalisation of the amendments to the harvest strategy.	Mid 2025

2.10 DECISION RULES

The decision rules for the HS are:

Maximum catch limit

- The eHCR includes a maximum catch limit of 1000 t. Once the HS is implemented the cap will be reviewed after three years using MSE testing with the updated stock assessment model.

Pre-season survey trigger

- If in any year the pre-season survey 1+ index is 1.25 or lower (average standardised number of 1+ age lobsters per survey transect) it triggers a stock assessment.

Biomass limit reference point triggered

- If the pre-season survey trigger is triggered in the first year, a stock assessment update must be conducted in March.
    - If after the first year the stock is assessed below the biomass limit reference point, it is optional to conduct a mid-season survey, the pre-season survey must continue annually.
- If the pre-season survey trigger is triggered two years in a row, a stock assessment must be conducted in December (of the second year).

Fishery closure rules

- If the stock assessment determines the stock to be below the biomass limit reference point in two successive years, the Fishery will be closed to commercial fishing.
    - MSE testing of the eHCR has shown that it is extremely unlikely (<1%) for the Fishery to be closed based on its current performance (Plagányi *et al.* 2018).

Re-opening the Fishery

- Following closure of the Fishery, fishery-independent mid-season and pre-season surveys are mandatory. The Fishery can only be re-opened when a stock assessment determines the Fishery to be above the biomass limit reference point **(Attachment A, Figure 5)**.

TROPICAL ROCK LOBSTER WORKING GROUP	MEETING 17 12 December 2024
TOTAL ALLOWABLE CATCH	Agenda Item 6 For Discussion and Advice

RECOMMENDATIONS

1. The Working Group:

    a. **NOTE**, on 5 November 2024, the Hon. Julie Collins determined a total allowable catch (TAC) of 200,000 kilograms of TRL in the Australian waters of the TRL Fishery for the 2024-25 fishing season.

        (i) It is expected that the TAC will be increased once the outcomes of the scientific assessment process and the TAC sharing arrangements under the Treaty between Australia and Papua New Guinea (PNG) have been considered.

    b. **DISCUSS** and **PROVIDE ADVICE** on a global total allowable catch (TAC) for the Torres Strait Protected Zone (TSPZ) Tropical Rock Lobster Fishery (TRL Fishery) for the 2024-25 fishing season, taking into consideration:

        (i) the advice from the TRL RAG on the recommended biological catch (RBC) for the TSPZ TRL Fishery for the 2024-25 fishing season based on the application of the recommended revised empirical Harvest Control Rule (eHCR).

            - the TRLRAG advice and additional supporting information will be presented by the TRLRAG Chair (under **Agenda Item 4**)

        (ii) to date, based on previous TRLRAG advice, other sources of mortality (e.g. traditional and recreational catch of TRL), have not been deducted from the RBC when recommending a global TAC.

KEY ISSUES

2. The Working Group is asked to provide advice on a global TAC for the TSPZ TRL Fishery for the 2024-25 fishing season[1]. This is to include consideration of whether to deduct other sources of mortality from the RBC.

3. The RBC for the TSPZ TRL Fishery for the 2024-25 fishing season will be calculated by applying the recommended revised eHCR under the TRL Harvest Strategy, as per advice from TRLRAG 37 and TRL RAG 38. A summary of the advice will be presented to the Working Group in session.

[1] The Australian TRL Fishery fishing season runs from 1 December through to 30 September the following year. The PNG TRL Fishery fishing season runs from 1 January through to 31 December each year.

BACKGROUND

TAC setting process

4. Under subsection 13 of the Plan, the Minister must determine a TAC for the TRL Fishery prior to the start of a fishing season. In making a TAC determination, the Minister must:
    a. consult with any advisory committee that the PZJA has established under subsection 40(7) of the *Torres Strait Fisheries Act 1984*, to provide advice relating to the TRL Fishery; and
    b. have regard to Australia's obligations under the Torres Strait Treaty.
5. Under section 13 the Minister may also consider the views of any person with an interest in the TRL Fishery or the ecologically sustainable use of the TRL Fishery and take into account the amount of TRL taken in the TRL Fishery as a result of other fishing, such as traditional fishing or recreational fishing.
6. Subsection 14 provides for the Minister to determine an increase to the TAC for a fishing season. Subsections 8-11 prescribe how a TAC is to be administered, including the issuing of a notice when the TAC for the Traditional Inhabitant sector has been reached.
7. Further background on the TAC setting process, how catch is shared between Australia and PNG, and how each sector's catches will be managed for the 2024-25 fishing season is provided in the Tropical Rock Lobster Fishery Management Arrangements Booklet 2024-25 available from the PZJA website.

Setting the start of 2024-25 season TAC

8. At its meeting on 18-19 October 2018, the TRLRAG advised that the start of season catch limit should cover 1 December through to the end of February, and be based on the maximum annual catch amount for the period 2005-2018, being 200 tonnes. This is to minimise the risk that the limit could artificially constrain fishing effort, particularly in a year of high TRL abundance.
9. The TRLRAG further advised that if needed, an additional 100 tonnes be added to the start of season catch limit amount, to account for catches from PNG.
10. It was further agreed that the start of season catch limit be overridden in seasons where the TRL stock abundance is exceptionally low, and the final RBC is likely to fall below the start of season catch limit or where overridden by the Harvest Strategy decision rules. In such cases, the use of the start of season catch limit should not be used in subsequent seasons until reviewed by the TRLRAG.
11. The above approach was applied for setting the start of season TAC for the 2024-25 fishing season.
12. On 5 November 2024 the Minister determined a start of season TAC of 200,000 kgs (unprocessed weight) for the 2024-25 fishing season under section 13 of the *Torres Strait Fisheries (Quotas for Tropical Rock Lobster (Kaiar)) Management Plan 2018* (the Management Plan).
13. It is expected that the TAC will be increased once the outcomes of the scientific assessment process and the TAC sharing arrangements under the Treaty between Australia and PNG have been taken into account. Any increase in the TAC is expected to be determined by the end of February 2025.

Other sources of mortality and global TAC

14. When setting a TAC, all sources of fishing mortality (catch) are considered and, if needed, a discount is applied to the RBC. This generally means the TAC equates to the RBC for the species minus expected catches that will be taken outside of the fishery (e.g. recreational and traditional catches). This is consistent with the principles of the *Commonwealth Fisheries Harvest Strategy Policy: Framework for applying an evidence-based approach to setting harvest levels in Commonwealth fisheries (June 2018)*.

15. To date, estimates of catches taken outside of the TRL Fishery (recreational, charter, subsistence) have not be deducted from the RBC when providing advice on the TAC each fishing season.

16. At the TRLRAG meeting held on 2-3 August 2016 (TRLRAG 18), the TRLRAG:

    a. noted advice from the Independent Scientific Member that if unaccounted fishing mortality, for example catches taken in other sectors, recreational or traditional, remains constant and at low levels, there would be limited impact on the stock assessment if the catches were not included in the model. However, if unaccounted fishing mortality were to increase significantly this may impact on the performance of the stock assessment;

    b. agreed that overall catches are likely to be relatively low, although some industry members considered recreational catches to be increasing;

    c. noted currently there was no reliable estimate of recreational or traditional take of TRL but that future Queensland Government recreational fishing surveys may provide some data;

    d. noting the likely low level of overall catch and the lack of accurate data, recommended that traditional and recreational catches not be estimated in the stock assessment model or when setting the TAC at this time.

17. This advice was re-affirmed at the TRLRAG meeting held on 4-5 April 2017 (TRLRAG 20). At this meeting, scientific members advised that:

    a. there needs to be a time series of data or an estimate of historical catch to indicate if catch has increased or decreased over time;

    b. if recreational and traditional catch has remained constant over time then it may not be worthwhile including in the assessment because it is unlikely to adjust the RBC estimate;

    c. it is important to understand if catches are a lot bigger than assumed as that could impact the stock assessment; and

    d. recreational and traditional catch data are often expensive to collect because this requires surveys to be conducted periodically, therefore it may not be affordable to collect this information.

TROPICAL ROCK LOBSTER WORKING GROUP **Thursday Island**	**MEETING 17** **15 December 2024**
REVIEW OF MANAGEMENT ARRANGEMENTS	**Agenda Item 7** **For DISCUSSION and ADVICE**

RECOMMENDATIONS

1. That the Working Group:
    a. **NOTE** that the most recent emergency measure proposal to shift the start of the TRL hookah closure forward to try and improve the economic viability of the TRL fishery in the short term have not been successfully pursued, in part due to lack of support from industry (in 2023) and competing management priorities (in 2024).
    b. **NOTE** that the PZJA Standing Committee recently recommended the PZJA agree to implement the proposal to allow greater flexibility in towing tenders and providing accommodation to fishers in the Torres Strait Tropical Rock Lobster Fishery (the TRL Fishery).
        i. This was broadly supported by communities in 2021 and the TRLWG in 2022.
        ii. It is anticipated this will be implemented by early 2025.
    c. **RECALL** the agreed process for reviewing any arrangements in the fishery (**Attachment 7a**);
    d. Consider and **PROVIDE ADVICE** on:
        i. Pursuing the changes to the hookah closure for future seasons; and
        ii. any other changes to management arrangements to be prioritised and pursued in line with the agreed process.

KEY ISSUES

2. A review of management controls has been occurring through the TRL WG since 2021.
3. Ongoing external market challenges, supply chain disruptions and socio-economic concerns have continued to hamper fishing effort in the TRL fishery. These issues have been characterised by industry as the worst set of external circumstances ever faced by the TRL industry.
4. As such, these circumstances and impacts on profitability are driving proposed changes to management arrangements in the Fishery in an attempt to:
    a. increase participation in the TIB sector;
    b. remove barriers to maximise catch and market supply when market prices are at their peak (e.g. just before Chinese New Year); and
    c. increase prices and remove costs across the supply chain.
5. To address this in the interim, TRLWG 15 and TRLWG 16 discussed emergency measures to:

a. Open the hookah diving season for both TIB and TVH sectors earlier, with the following options:

   i. 1st Jan

   ii. 7th Jan (preference)

   iii. 15th Jan

   iv. Variable start (3 weeks prior to Chinese New Year)

   or

b. Remove the moontide closures during the months of February, April and May.

6. Due to divergent views among Working Group members on these proposals, the Working Group agreed that more time is required to discuss the proposals with communities first before convening an industry workshop to progress the issue. The Working Group agreed that a broader discussion paper be developed to assist traditional inhabitant Working Group members consult with their communities and that TSRA would convene an industry workshop for the TRL Working traditional inhabitant members and industry members to refine the proposals for implementation where applicable.

7. Competing management priorities in 2024 have meant that consultation and progression of these proposals has not been achieved in time for potential implementation in early 2025. However, may still be feasible for future seasons.

8. As such, the Working Group is being asked to consider and prioritise pursuing the most recently tabled proposals and, or put forward any other changes to management arrangements to be pursued.

BACKGROUND

9. Changes to management controls in the TRL Fishery have been discussed for several years in the Working Group before and since the implementation of the TRL Management Plan.

10. Prior to the TRL Management Plan, a suite of changes to management controls were due to be discussed at TRLWG 6 which met on 25-26 July 2017 however the meeting finished early due to a lack of quorum and none of the issues were addressed further.

11. Following this, all management efforts were directed in finalising the TRL Management Plan and developing the TRL Harvest Strategy. During this time the PZJA reaffirmed that no further changes would occur until after the implementation of the Plan which came into force in November 2018.

12. After two seasons of sectoral catch shares and quota under the Plan, the Working Group (TRLWG 11; 17 December 2020) was asked again to revisit proposed changes to management controls with the following considerations:

a. That AFMA's preference is to a conduct a review in a careful, and considered step-wise manner;

b. To ensure a clear understanding of the rationale of any proposed change, including an assessment of expected benefits and outcomes against objectives, relative to a clear set of evaluation criteria;

c. To understand who is likely to be affected or who is to benefit, and those might be distributed;

d. That any proposed change will need careful consideration of the potential impacts on fishing patterns or fisher behaviour, which may impact catch rates and CPUE indices; and

e. That any proposed changes would require broader stakeholder consultation.

13. TRLWG 11 then agreed to a review process which includes:

a. determining scope of the review using the list of previously raised proposals to change management controls as a starting point;

b. consider the benefits and/or impacts against with consideration of how the proposals align with the objectives for the fishery and the *Torres Strait Fisheries Act 1984* (the Act);

c. what criteria may be used to evaluate proposals for changes to management controls;

d. prioritisation of proposals;

e. consideration of broader stakeholder input on the above at a dedicated stakeholder workshop; and

f. public consultation.

14. The Working Group should note that the complexity and/or ease involved in changing an existing management control may be influenced by a range of factors:

g. Rationale - some proposals will have a clear rationale for change, while others may be less clear and require further discussion and consultation;

h. Benefits and impacts – some changes may benefit some individuals, or one sector, while disadvantaging others.

i. Objectives – some changes may or may not be consistent with the objectives of the Fishery and the Act.

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Table 1. Agreed method and process for reviewing management controls.

#	Review step
1	**Scope** Defining the scope of proposed changes that will be considered in the review process will provide for a more ordered and timely process.
2	**Initial assessment of benefits and/or impacts against objectives** Any proposal should have a clear rationale for change, and be considered alongside any expected benefits and/or impacts, including who any benefits or impacts may extend to. The proposed change should also be considered against the objectives listed under section 8 of the *Torres Strait Fisheries Act 1984* (the Act) and PZJA objectives for the TRL Fishery (**Attachment 6b**).
3	**Development of evaluation criteria** The Working Group should develop a clear set of criteria, to evaluate each proposal against. Evaluation criteria may include: - Social/cultural – equity of access, race to fish, participation rates, part-time vs. full-time fisher participation, new entrants, sense of self-determination, changes to 'ailan kastom', conflict between communities, conflict between individuals and families, traditional fishing rights. - Biological – stock status, risk to resource, spatial distribution of fishing. - Economic – total catch, value of fishery, market prices, operating costs, employment, access for duration of season, cost of implementation. - Management – complexity, enforceability, impact on fishery monitoring regime (e.g. does it impact on the data series). The selected criteria should be linked back to the objectives being pursued.
4	**Prioritisation of proposals** Noting scientific advice for careful consideration of the potential impacts of changes to management controls on fishing patterns or fisher behaviour, AFMA suggests that a review of management controls be progressed in a staged manner. Relevantly, it will be important to identify and recommend which proposals are to be addressed first, and in what order after that.
5	**Further development and analysis of proposals with broader stakeholders** AFMA suggests that a dedicated workshop be convened (outside of regular TRLWG business) to bring together a broader group of stakeholders to seek their views on a prioritised suite of proposals. This discussion is to include to further analysis of benefits and impacts and evaluation criteria.
6	**Public consultation** Opportunity for broader stakeholder comment on proposed changes. This step would usually be undertaken over a minimum 8 week period. Depending on the nature of the proposal/s, formal Native Title notification under the *Native Title Act 1993* may also be required.

7	**Consideration of public consultation outcomes** TRLRAG and TRL Working Group to consider the outcomes of the public consultation process and provide further advice as appropriate.
8	**Implementation** Depending on the nature of the changes/review, a PZJA decision is likely to be required, as well as potential amendments to legislation (e.g. the TRL Management Instrument).

TROPICAL ROCK LOBSTER WORKING GROUP	MEETING 17 12 December 2024
CLIMATE ADAPTATION	Agenda Item 8 For DISCUSSION and ADVICE

RECOMMENDATIONS

1. That the Working Group:
    a. **NOTE** work being undertaken to incorporate climate change information into fisheries management advice and decisions in other Commonwealth managed fisheries, with a view to implementing a similar process for Torres Strait fisheries;
    b. **DISCUSS** the Climate and Ecosystem Status report for the Torres Strait Tropical Rock Lobster Fishery (**Attachment 8a**)
    c. **PROVIDE ADVICE** on the trial application of AFMA's Climate Risk Framework (**Attachment 8b**) to Tropical Rock Lobster in the Torres Strait (species assessment report at **Attachment 8c**).

KEY ISSUES

Climate and Ecosystem Status Reports

2. Climate and Ecosystem Status Reports are a useful tool to provide an update or indication on the current state (or health) of the environment or ecosystem, relative to longer-term trends or target states. They provide a way to integrate a variety of diverse data into a simple overview that can be easily communicated, providing managers and stakeholders with up-to-date trends for a specific region or ecosystem.
3. Climate and Ecosystem Status Report Cards, incorporating readily accessible indicators and forecasts, were provided to TRLRAG in December 2023 (TRLRAG 35). RAG feedback was incorporated and the report card was published on the AFMA Website – TRL Fishery Climate and Ecosystem Status Report.
4. The draft 2024 Climate and Ecosystem Status Report (**Attachment 8a)** was provided to TRLRAG at its 10-11 December 2024 meeting. This information builds on that provided in December 2023 and is to be used as contextual information in the RAG and WG consideration of the stock assessment and TAC.
5. Feedback from the RAG will be provided as a verbal update to TRLWG. Any further comments from the TRLWG will be incorporated, and a final version uploaded to the AFMA website.
6. AFMA is seeking any additional observations from industry to include in the report.

AFMA's Climate Risk Framework

7. AFMA has developed a draft Climate Risk Framework (CRF) (**Attachment 8b**) to assess the risk to AFMA-managed species from climate change utilising the most robust information available, and then respond to or manage that risk using the tools that are available within the existing scientific, management and industry adaptation pathways.

8. The AFMA Commission has approved a proposal to proceed with a trial implementation of CRF as an approach to integrate climate risks into formal decision-making processes at AFMA.

9. A Working Group was established to support the trial implementation of the CRF and provide strategic advice to the AFMA Commission and AFMA Management on the development, coordination and implementation of the CRF across AFMA-managed fisheries. The Working Group membership includes Dr Beth Fulton, Dr Alistair Hobday, Dr David Smith and Dr Keith Sainsbury, with administrative support from AFMA's Climate Adaptation team.

10. The Working Group has already evaluated multiple species assessments using the CRF, including through seeking input from fisheries managers and assessment scientists. The CRF has been revised based on Working Group feedback, and the AFMA Commission has endorsed continued trials.

11. Over the past two months, AFMA has introduced the CRF to PZJA resource assessment group (RAG) meetings for Beche-de-mere (HCRAG, 17-18 Sept), Finfish (FFRAG, 15 October), Tropical Rock Lobster (TRLRAG, 10-11 Dec) and the PZJA Standing Committee (30 October). The CRF has been received well and stakeholders have expressed an interest in adapting the framework (currently focussed on Commonwealth fisheries) for the Torres Strait.

12. The Working Group met with TRL industry representatives, management and scientific stakeholders at a meeting on 1 November 2024 to consider the trial application of the CRF for TRL. A summary of the Working Group discussion follows here:

    - The process is not intended to be duplicative of work already completed or underway. It serves as a valuable tool for assessing the climate risks facing TRL in the Torres Strait and record the extensive research and management strategies implemented that allow the fishery to continuously assess, monitor, and adapt to these risks.
    - The CRF should include mechanisms to incorporate traditional knowledge into the risk assessment and decision-making process.
    - Additional management will only be required where the existing measures are considered insufficient to manage the risk of climate change.
    - The draft CRF Species Assessment Report (presented to the working group) will be updated to include more contemporary research which should allow further refinement of the climate risk score (Step 1) and capture the management arrangements that allow for adaptive responses to climate-driven changes in stock status (Step 2).

13. The draft CRF Species Assessment Report (**Attachment 8c**) has been updated based on feedback received at the working group and from fishery scientists and management since the 1 November meeting.

14. AFMA presented the assessment to TRLRAG at its 10-11 December meeting and will provide a verbal update on advice received to TRLWG. AFMA is now seeking advice from

TRLWG on the overall approach adopted in the CRF, including advice on each of the four steps applied to TRL:

- Consider risk to the species based on climate risk and estimated stock status.
- Identify whether there is sufficient precaution in the existing science, management or industry adaption.
- Determine the residual risk after considering the adequacy of mitigation in place.
- Provide advice on any additional measures required to respond to climate risk.

15. Following application of the CRF to other species, AFMA will prepare a trial report in 2025 for consideration by the AFMA Commission. Subject to the outcomes of the trial and Commission views, AFMA will engage with the PZJA regarding implementation of the CRF in the Torres Strait.

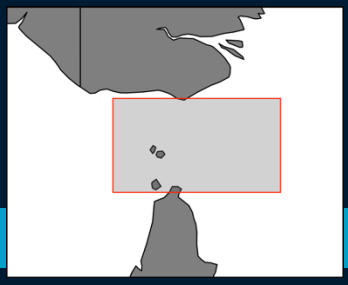
BACKGROUND

16. At its meeting on 19 July 2023, the Protected Zone Joint Authority (PZJA) agreed that a standing agenda item “Climate and ecosystem update” be introduced to all RAG and Working Group agendas where total allowable catch (TAC) and/or effort limits are to be considered.

47 Climate & Ecosystem Status Report

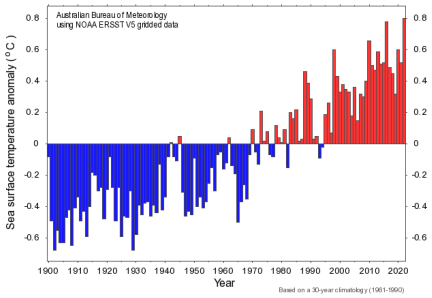
Torres Strait Kaiar - Tropical Rock Lobster Fishery

November 2024

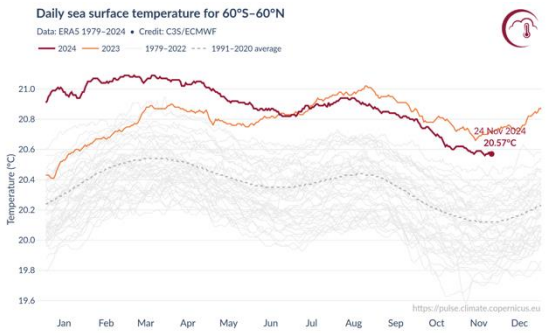


Historical Period

Climate Drivers

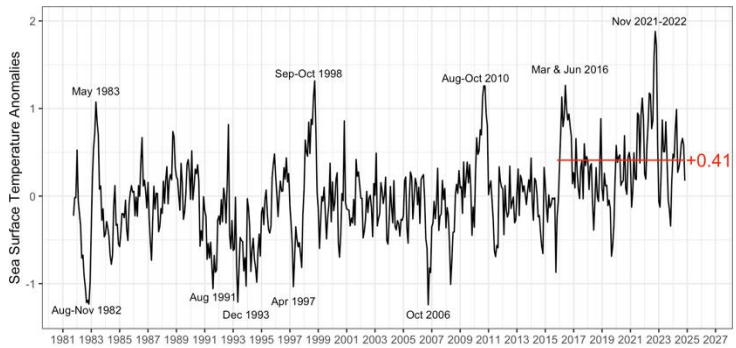


Australian waters have warmed significantly over time (link)[1]. The last decade has been ~0.5°C warmer than the 1960-1990 average.



Global Sea Surface Temperature (SST) have been at record highs 2023-2024 (link)[2].

Regional Dynamics: SST time-series

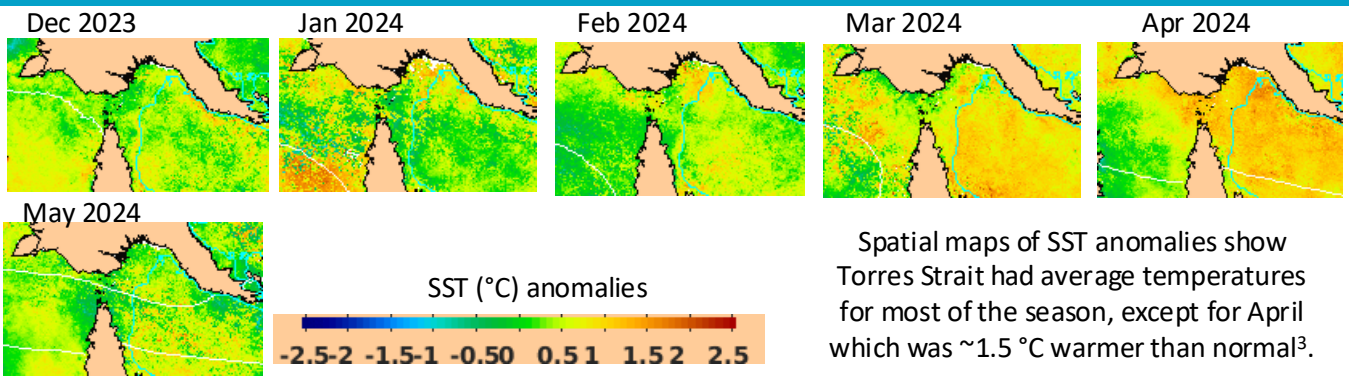


Mean monthly SST temperature anomalies (1982-2024) in Torres Strait[2].

Torres Strait has warmed over time. Hot and cool years are shown by text.

Mean SST anomaly for the last 10 years (2015-2024) was 0.41°C.

Regional Dynamics: 2024 SST



Spatial maps of SST anomalies show Torres Strait had average temperatures for most of the season, except for April which was ~1.5 °C warmer than normal[3].

Observations

To be sourced at RAG
Inc. non-TRL species abundances

Examples from 2023

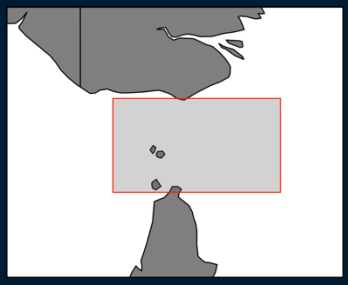
- Lots of sponge grass around that prohibits lobster movement. Typically, early onset of westerlies helps clear habitat for lobsters.
- Reports of sand incursion covering up seagrass.
- Reports of winds being different to normal.
- Recreational fishing observed to be higher in Oct-Nov.
- Fishing effort was low but reports of abundance being good in some areas. More smaller and medium sized lobsters observed.

Sources: BOM[1] CMEMS[2] IMOS[3] CSIRO[4]

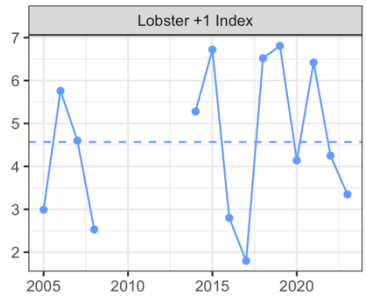
48 Climate & Ecosystem Status Report

Torres Strait Kaiar - Tropical Rock Lobster Fishery

November 2024



Ecosystem Trends[4]



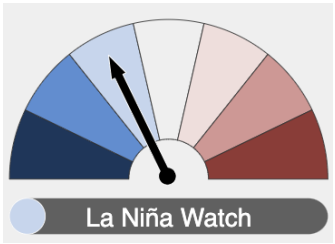
Lobster+1 index in 2022 & 2023 was below the long-term average.

Live Coral and Hard Substrate cover has been increasing since 2018.

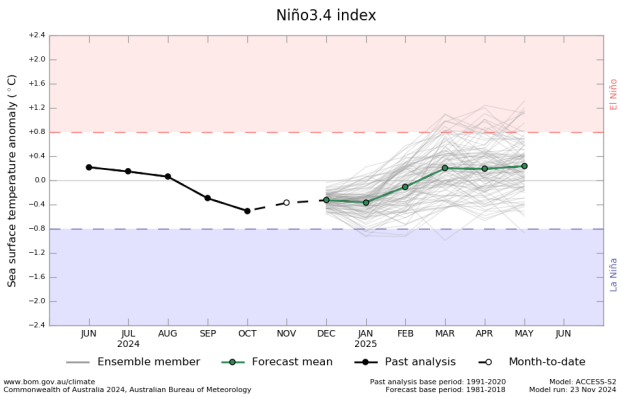
Algae cover has been below or close to average since 2020. Sand and Seagrass cover has been low in recent years.

Forecast Outlook for 2024-2025

Climate Drivers



BOM Outlook is La Niña watch (chance of La Niña in 2024/2025 summer) (link)[1].



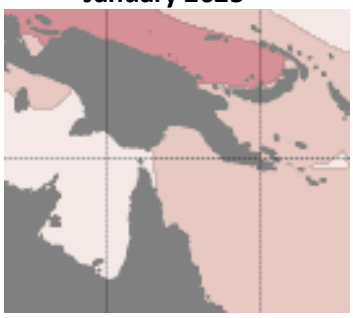
ENSO is currently neutral.

Most forecasts indicate neutral conditions will remain (link)[1].

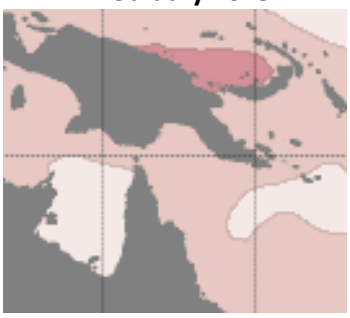
Ocean Forecasts

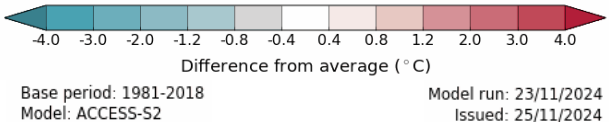
December 2024

January 2025



February 2025





Forecasts of SST anomalies[1]. SST is forecast to be 0.4-1.2 C warmer than average (link).[1]

Sources: BOM[1] CMEMS[2] IMOS[3] CSIRO[4]

Australian Government

Australian Fisheries Management Authority

Climate Risk Framework

Integrating climate risk in decision-making

Securing Australia's fishing future

www.afma.gov.au

Executive summary

The impact of climate change on Commonwealth fisheries is becoming increasingly evident. The effects of climate change on marine ecosystems are accelerating and Intergovernmental Panel on Climate Change (IPCC) projections indicate that fish production will be further affected within the relatively short term (e.g., 10 years), to the point where management advice that does not consider this change could be rendered invalid[1].

AFMA has developed the Climate Risk Framework (the Framework) to integrate climate risk into management decisions for Commonwealth-managed species/stocks (herein referred to as species). The framework is based on a risk assessment approach, similar to that which has been utilised in other fisheries internationally to integrate ecosystem and environmental considerations and uncertainty into existing management frameworks.

The Framework involves a four-step process that seeks to:

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,
2. Consider whether there are sufficiently precautionary measures in the existing science, management or industry adaptation pathways to respond to the impacts of climate change,
3. Assess the residual risk to a species, and where required
4. Provide advice to the AFMA Commission on any additional measures required to respond to the impacts of climate change.

The Framework is structured to ensure risks and appropriate adaptation measures are considered on an annual basis, with a view to providing advice to the AFMA Commission as part of the Total Allowable Catch (TAC) or Total Allowable Effort (TAE) setting process for the coming fishing year.

The Framework is one element of a broader program of climate adaptation work being undertaken by AFMA. It is intended as a transitional mechanism, to enable rapid integration of climate risk into decision-making processes until such time as climate impacts are more explicitly integrated into science and management processes, such as harvest strategies, stock assessments or Ecological Risk Assessments (ERAs). For data-poor species, the Framework will likely remain an appropriate tool to assess and respond to the impacts of climate change into the future.

[1] Duplisea DE, Roux MJ, Hunter KL, Rice J (2021) Fish harvesting advice under climate change: A risk-equivalent empirical approach. PLOS ONE 16(2): e0239503. https://doi.org/10.1371/journal.pone.0239503

Contents

Version	Updates	Approver
12 Jan 2024	Version for trials, commencing Feb 2024.	Alice McDonald
10 Jul 2024	Revised version for trials, commencing Aug 2024.	Dan Corrie

1 Introduction

Climate change is already impacting Australia's marine ecosystems and fisheries in a range of complex ways. Australian waters are becoming warmer and more acidic, sea-levels are rising, major ocean currents are changing, and extreme weather events are becoming more severe. The effects of climate change on marine ecosystems are accelerating and Intergovernmental Panel on Climate Change (IPCC) projections indicate that fish production will be further affected within the relatively short term (e.g., 10 years), to the point where management advice that does not consider this change could be rendered invalid (Duplisea, et al. 2021).

Research predicts that climate change will have both positive and negative impacts on reproduction, recruitment, and distribution of biomass of Australia's commercially important marine species (Fulton, et al. 2021). The Commonwealth Harvest Strategy Policy (HSP) and HSP Implementation Guidelines (the Guidelines) recognise that non-fishery effects can see species abundance fluctuate and conclude that timely responses by management to changes in stock productivity and distribution are important in areas where climate is shown to be changing rapidly.

AFMA's legislative obligations include the need to ensure that the exploitation of fisheries resources is conducted in a manner consistent with the principles of ecologically sustainable development, including the exercise of the precautionary principle:

> *Where there are threats of serious or irreversible environmental damage, lack of full scientific certainty should not be used as a reason for postponing measures to prevent environmental degradation.*

To ensure that these objectives continue to be met, AFMA has initiated a dedicated program focused on incorporating climate change information and potential risks into our decision-making processes. By doing so, we aim to make fisheries management more adaptable to the evolving marine environment.

1.1 Impacts of climate change on Commonwealth Fisheries

An increasing amount of information, research and data is available on the sensitivity of fish stocks to climate change and associated impacts on current and future stock status. This information is being considered by AFMAs Resource Assessment Groups (RAGs), Management Advisory Committees (MACs) and managers when providing advice and making management decisions for Commonwealth-managed species and stocks (herein generally referred to as 'species').

Climate and Ecosystem Status Reports are available for key fisheries, drawing upon readily accessible climatic and environmental data and trends. The first iterations of these reports are relatively high level, containing hindcast and forecasts derived from information such as sea surface temperature, El Nino Southern Oscillation (ENSO) cycle status, water chemistry and fishers' observations. These reports are still in their infancy in terms of development and use in Commonwealth fisheries, however as the indicators are refined and their relevance and influence on stock abundance and distribution is better understood, these will also provide an insight into climate impacts and risks for some stocks.

Over time, the Climate and Ecosystem Status Reports could evolve to include more sophisticated population and environmental indicators of climate-influence. Several Australian researchers have been leaders in the field of identifying ecosystem indicators and have close connections with US and EU groups who are applying indicators in this way. Lessons gained from that network suggest it is a useful framework which can be adapted to Australian conditions and refined through time, as has occurred elsewhere.

Potential indicators that could be considered in the future, to provide more sophisticated insight into climatic impacts and ecosystem shifts, can be found in the Alaska Marine Ecosystem Status Reports and in a list proposed by the National Oceanic and Atmospheric Administration (NOAA) for US fisheries in Link, et al., 2021.

Ideally the influence of climate and ecosystem factors on stocks would be integrated quantitatively into stock assessments and harvest strategies, so that they would directly influence Recommended Biological Catches (RBCs). However, many of these approaches are complex and unlikely to be implemented in the near-term. A fully quantitative integration may also not be necessary, possible, or cost effective for many species.

1.2 A transitional mechanism to integrate climate risk and impact

AFMAs legislative obligations include the need to ensure that the exploitation of fisheries resources is conducted in a manner consistent with the principles of ecologically sustainable development, which includes the exercise of the precautionary principle. The precautionary principle requires AFMA to address uncertainty and account for known risk, and potential risks, in decision making[2].

Given the increasingly evident impacts and risk of climate change, and the understanding that climate change is accelerating (Duplisea, et al. 2021), a mechanism to integrate climate risk into management decisions is needed in the short term, while more sophisticated longer-term solutions are being developed.

While climate and ecosystem status reports provide valuable contextual information, AFMA must ensure that climate and ecosystem risks are explicitly considered and appropriately integrated in the production of management advice for Commonwealth-managed fisheries. While 'Climate-ready' stock assessments and harvest strategies are unlikely in the near-term for most species, and may never be necessary or possible for others, semi-quantitative or qualitative approaches are already used in some jurisdictions.

Risk assessment approaches are utilised widely in fisheries, including in assessing and responding to ecological risks in Commonwealth fisheries under the Ecological Risk Management Framework. A risk table (see Dorn and Zador 2020) is being utilised in Alaskan groundfish fisheries to support TAC decision making in the North Pacific Fisheries Management Council (NPFMC). In these fisheries, RBC estimates and final TAC levels are presented alongside relevant information around assessment uncertainty or modifications, population dynamics not explicitly addressed in the model, and ecosystem state. This provides the context for the decision making, particularly when there are lower catch recommendations than the 'acceptable

[2] OECD Joint Working Party on Trade and Environment (2002) *Uncertainty and Precaution: Implications for Trade and Environment*, OECD, September.

biological catch' due to ecosystem/environment concerns (including climate impacts). The use of this Alaskan risk table is dependent on informative ecosystem indicators that have been identified and refined through time in Alaska (see for example the Alaska Marine Ecosystem Status Reports).

AFMA has developed the Climate Risk Framework to assess the risk to Commonwealth-managed species from climate change utilising existing information, and then respond to or mitigate that risk using the tools that are available within the existing scientific, management and industry adaptation pathways. While this might be considered a transitional mechanism for some species as the science evolves and more sophisticated approaches are developed, it will likely remain an appropriate measure for many data poor species into the future.

Development of the Climate Risk Framework has been an iterative process, including trial application in several AFMA-managed fisheries during early development. Ongoing development and refinement will continue to be a focus as more information becomes available and the utility of the framework becomes apparent. This current version will continue to be used on a trial basis throughout 2024. A trial report is scheduled for early 2025 to include a review of the trial process, and recommendations for future implementation (Figure 1).

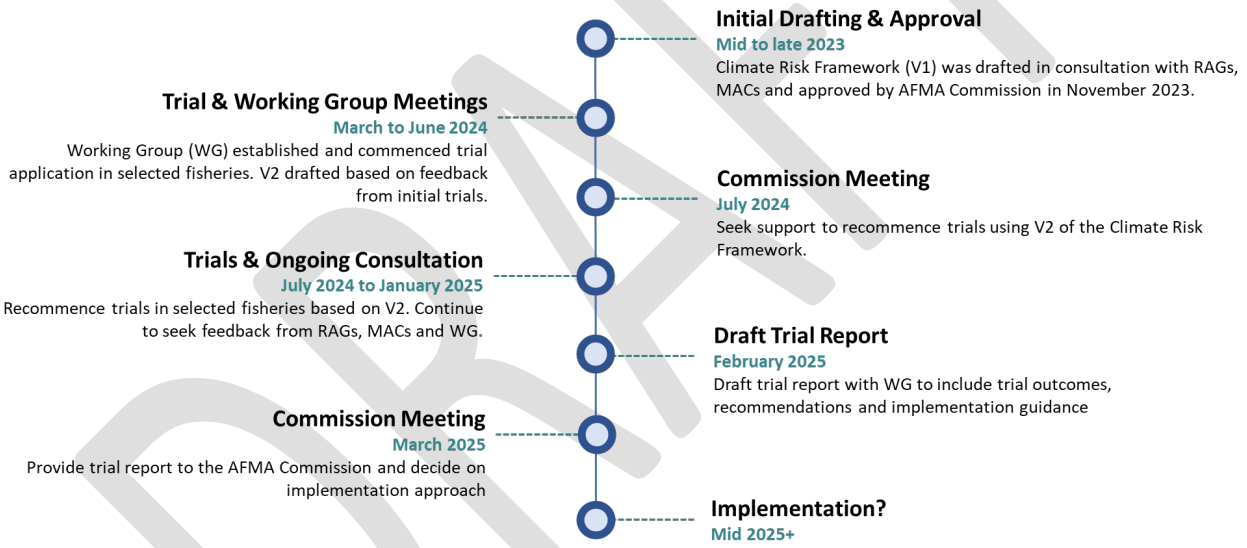


Figure 1 Development timeline for AFMA's Climate Risk Framework

2 AFMA Climate Risk Framework for Commonwealth Fisheries

The Climate Risk Framework employs a risk-based assessment approach to identify and integrate climate impacts and uncertainty into formal decision-making processes. The process allows for rapid identification of expected climate-driven changes in productivity using readily available information, and then determine whether additional measures are required to respond to the identified change. The approach has been adapted to integrate with existing management processes (Figure 2) and utilise tools already available to fisheries scientists, managers, and industry.

Figure 2 Linkages between the Climate Risk Framework, Science and Research, Management & Regulation and Commercial Fishing Industry

The Framework involves a four-step process that seeks to:

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,
2. Consider whether there are sufficiently precautionary measures in the existing science, management or industry adaptation pathways to respond to the impacts of climate change,
3. Assess the residual risk to a species, and where required
4. Provide advice to the AFMA Commission on any additional measures required to respond to the impacts of climate change.

The following section provides a detailed overview of each of the steps, including implementation guidance.

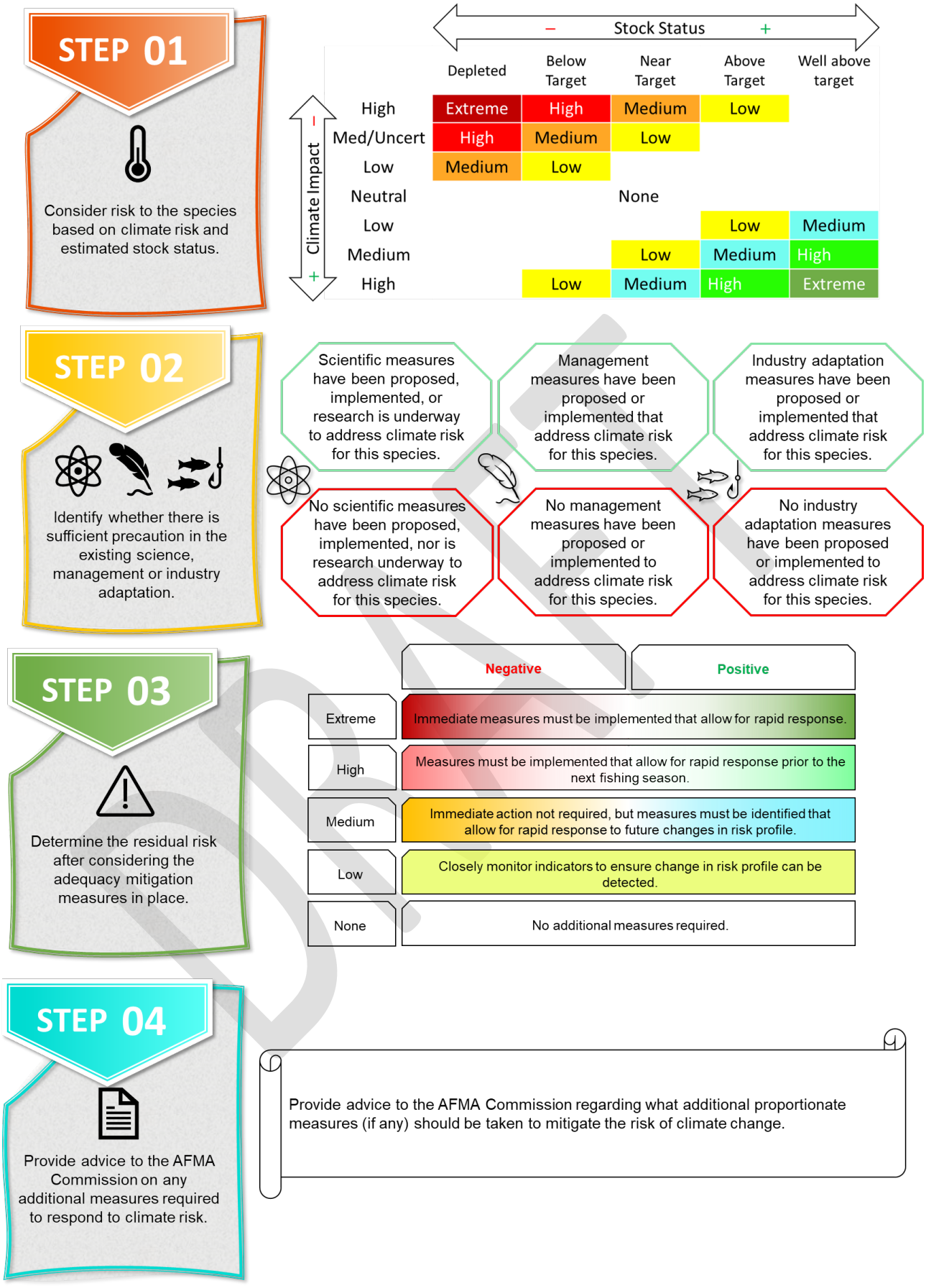


Figure 3 The AFMA Climate Risk Framework 4-step process

2.1 Implementation process

The Framework is designed to integrate with the existing consultation and advisory group processes and align with the annual TAC/E setting process. For each species, relevant RAGs and MACs (with support from AFMA management) will step through the process and provide advice to the AFMA Commission, prior to the start of the next fishing season. The Framework will be established as a guidance piece, rather than established as policy. This will allow for improvements over time, based on trials and implementation experience and as our understanding of climate impacts and appropriate mitigation evolves.

The RAG will complete Step 1 through to Step 4, including providing advice to the AFMA Commission. The MAC can review the risk ranking established at Step 1 but are largely responsible for validating or adding to the measures identified at Step 2, and then revising or validating the residual risk ranking at Step 3. Depending on the measures identified at Step 2, both groups should provide advice to the AFMA Commission at Step 4. It will be the responsibility of AFMA management to consolidate this advice and have it cleared by both groups, including where there is conflicting advice, and produce the Species Assessment Report (example at **Appendix A**).

The AFMA Commission will consider the advice, including where there is conflicting advice from the RAG and MAC, and make a final decision.

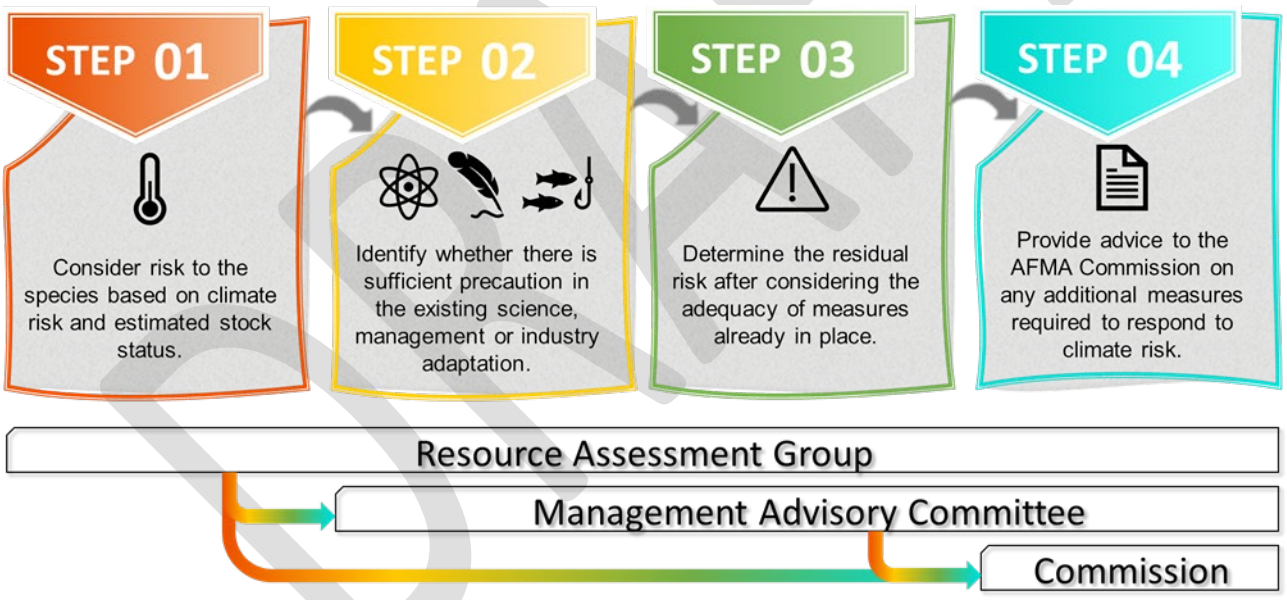


Figure 4 The role of RAGs, MACs and the AFMA Commission in implementation of the Climate Risk Framework

Step 1: Assess species risk due to climate change and stock status

Climate Risk

The RAG, utilising the best available climate information for the species, undertake an assessment of the climate risk ranking using the criteria set out in **Table 1** below. The RAG should draw upon the most robust information source available for the species, listed here as categories 1-4.

1. Attribution studies of counterfactual simulations include sophisticated ecosystem modelling of existing and projected climate impacts. These and are available for some Commonwealth species, for example climate forced modelling using CSIRO Atlantis ecosystem simulations for key species in the Southern and Eastern Scalefish and Shark Fishery (SESSF) (Fulton, et al. 2024). Models of Intermediate Complexity for Ecosystem assessments (MICE) being undertaken for some Commonwealth fisheries (CSIRO n.d.), are also more specifically fit. These robustly fit models have good model skill scores (i.e., have real information content that exceeds what would be gained from a time series alone).

2. Preliminary projections of change in abundance due to climate change is available for most Commonwealth fish species from the FRDC Project "Guidance on Adaptation of Commonwealth Fisheries management to Climate Change" (Fulton, et al. 2021). These projections come with varying levels of confidence and additional interpretive comments (e.g., likely geographic shifts) for some species. They are based on quantitative models that consider additional factors not picked up in the sensitivity assessments described below.

3. Climate sensitivity based on an assessment of life history characteristics is also available for all fish species in Commonwealth fisheries (Fulton, et al. 2021). This information poor assessment provides a climate sensitivity rating of 'low', 'medium' or 'high' for each species following the method of Pecl, et al. (2014) applied to all species currently listed in the ERA level 2 productivity-susceptibility analysis for each fishery.

4. Climate and ecosystem indicators are now actively considered as a standing agenda item at most AFMA RAG and MAC meetings when TACs or TAEs are being considered. Climate and Ecosystem Status Reports provide information that is useful in predicting species or stock-specific responses.

Only a few species are likely to have attribution studies or counterfactual simulations available, while most species will have preliminary projections and climate sensitivity assessments available to draw upon. AFMA will support the RAG by ensuring the available information for the species of interest is available.

Stock Status Risk

It is important to understand the most recent estimate of stock status in the context of climate risk. For species that are above the Target Reference Point (TRP), the potential risk of climate change impacting sustainability is lower than that for a species that is near or below the Limit Reference Point (LRP).

Estimates of stock status vary across AFMA-managed species and are based on a range of assessment approaches, from robust data-rich methods that provide estimates of spawning biomass and depletion, to data-poor methods that provide estimates of recent fishing mortality but provide no estimate of stock status.

Table 2 provides guidance on how to rank stock status based on a range of assessment methods, grouped here into three categories. The examples provided here (and in Table 2) are not considered exhaustive, and RAGs should use their own discretion and expertise when determining how stock status should be characterised at Step 1 where assessment methods/outputs do not reasonably align with the examples provided. (Derived from NOAA[3], ICES (2012) and Dowling, *et al*. (2016)).

1. Robust assessments of fishing mortality (F) and biomass (B) based on fishery-independent and/or fishery-dependent data. The models utilize statistical techniques to match information about age classes to assumptions about a stock's birth, growth, and death rates to estimate a stock's current size, harvest rate, and its management reference points associated with a target reference point. These models also provide forecasts of catch and biomass that managers can use to evaluate the risk associated with a range of harvest options.
2. Empirical or index-based models providing estimates of F (based on size and/or age data) or trends in relative abundance based on as indicator such catch-per-unit-effort (CPUE) from fishery-independent (e.g., surveys) or fishery-dependent (e.g. logbooks) data. Trends are analysed over time, including how they respond to various levels of catch, to provide advice on catches that are expected to maintain the index (considered a proxy for biomass) at a preferred level (i.e., a target reference point).
3. Data-poor or weight of evidence methods are used when there is little to no knowledge of a stock's size or fishery characteristics. Estimates of F might be available, so while they cannot determine the current status of the stock, they can assess whether recent fishing pressure is sustainable. In some instances, the collective outputs of multiple data poor assessment types can be used in a 'weight of evidence' approach to provide TAC/E advice.

Assessment uncertainty and trends in abundance

The precision of stock assessments depends on the quality and quantity of data available, the complexity of the models used, and the inherent variability of the fish population itself. Generally, the risk to a resource increases as fewer data are available due to biases in the assessments and slow response times to unexpected declines in resource status (Dichmont, et al. 2016).

While species assessed using data-limited methods are inherently at more risk due to uncertainty in the assessment outputs, even those assessed using robust quantitative stock assessments can be uncertain if the assumptions around life-history parameters are erroneous or dated (Evans, et al. 2022). Similarly, climate risk assessments will become uncertain (or less reliable) over time unless assumptions about species productivity and climate drivers are reviewed or updated. In addition, new climate information will become available (e.g., improved projections of physical environmental change which could modify estimates of future productivity at all levels). This means climate projections for individual species or ecosystem will also age, potentially becoming less reflective of likely future states.

Trends in estimated biomass should also be considered. Two species might have similar estimates of biomass, however, if one has an increasing trend in biomass, and the other a declining trend in biomass, the latter should be considered higher risk. If increased variability is predicted for a species, the risk should be based upon the likely overall trend over time.

[3] https://www.fisheries.noaa.gov/insight/stock-assessment-model-descriptions#stock-assessment-models

This framework does not propose to incorporate a buffer to account for time-induced uncertainty in stock assessments or climate risks, however, to ensure a level of risk equivalency at Step 1, the RAGs should use expert judgement (or metrics where available) to determine whether time-induced uncertainty associated with the stock assessment outputs and overall trends in estimated (or proxies) warrant a change to the risk ranking.

Example: Species A is assessed using a quantitative stock assessment that incorporates a long-term time-series of fishery dependent data and biological information derived from sampling in the early 2000's. The median estimate of stock abundance is 38%B_0 – a decline from 41%B_0 at the time of the last stock assessment[4]. Assuming a target of 48%B_0 this stock would be ranked as 'medium' risk with regards to stock status (See Table 2). However, likelihood profiles suggest a broad range of plausible biomass estimates ranging 28-44%B_0. The declining trend in biomass, dated biological information, and uncertainty around the estimate of current biomass should be taken into consideration when resolving the stock status risk at Step 1. In this instance, the RAG may consider a risk ranking of 'high' more appropriate.

Guidance notes – Step 1

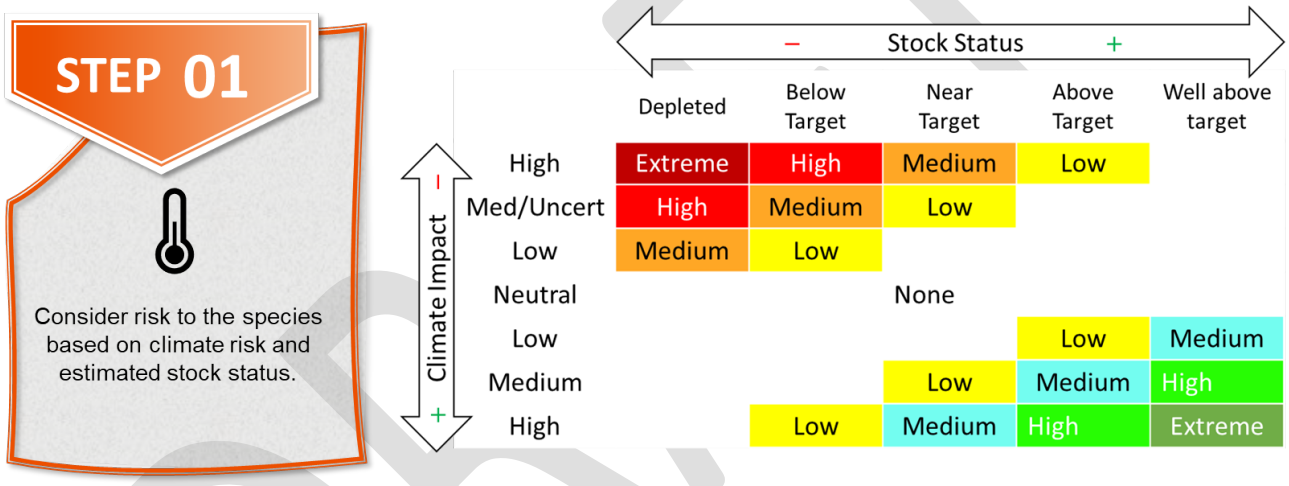


Figure 5 (Step 1) Preliminary risk rankings based on climate risk and stock status risk.

It is the role of the RAG to assess the overall risk to a species from climate risk (Table 1) and stock status risk (Table 2) using the most recent and robust information available. If two equally robust pieces of information indicate different risk rankings, the highest risk ranking should be used.

Using the matrix in Figure 5, a preliminary risk score can be determined. These progress from 'Extreme Negative' where a species is below the limit reference point and highly susceptible to climate change, to 'Extreme Positive' where a species is near virgin biomass levels and expected to benefit from climate change.

Note: Only species with a score of medium or above (positive or negative) need to progress to Step 2. Step 4 must be completed for all species.

[4] Revised in the most recent stock assessment.

Table 1 AFMA Climate Risk Framework - climate risk ranking criteria

CLIMATE RISK	1. Attribution studies or counterfactual simulations	2. Preliminary projections of change in abundance	3. Climate sensitivity assessment	4. Climate and ecosystem indicators
High	Climate change is the primary driver of stock abundance.	>20% change by 2040 with moderate to high confidence, OR >40% change with low confidence.	If projections are not available, where climate sensitivity has been rated high.	Relevant climatic or ecosystem indicators show adverse/positive signals in the near history and in short-medium term predictions
Uncertain	Where no information is available, significant uncertainty exists in available modelling and/or assessments, or both increases and decreases are considered equally possible.			
Medium	Climate change is contributing to changes in stock abundance.	10-20% change by 2040 with medium or high confidence, OR 10-40% change with low confidence.	If projections are not available, where climate sensitivity has been rated medium.	General climatic or ecosystem indicators indicate some changes to system productivity (e.g., recent marine heatwave in the fishery region)
Low	Climate Change is only a minor contributor to changes in stock abundance.	Up to 5% change by 2040 with medium or high confidence, OR 5-10% change with low confidence.	If projections are not available, where climate sensitivity has been rated low.	General climatic or ecosystem indicators indicate negligible changes to system productivity.
Neutral	Climate change does not have an influence on the stock.	Projections predict relative stability in abundance.		General climatic or ecosystem indicators indicate no change in system productivity

Table 2 AFMA Climate Risk Framework Stock Status Risk Ranking Criteria

STOCK STATUS RISK	1. Robust assessments of F and B	2. Empirical or index-based assessments	3. Data-poor methods or weight of evidence approaches
Depleted	Biomass is estimated to be below the limit reference point (LRP).	Recent index of abundance is estimated to be below the LRP. e.g., $CPUE_{REC}$ <$CPUE_{LIM}$	Available information suggests that the stock is depleted. Assessed as extreme high risk in the most recent ERA.
Below Target	Biomass is estimated to be above the LRP, but less than 75%B_{TARG}. e.g., <36%B_0 relative to a B_{48} target.	Recent index of abundance is estimated to be above the LRP but less than 75% of the TRP. e.g., $CPUE_{REC}$ < .75*$CPUE_{TARG}$.	Available information suggests the stock is not depleted or biomass is uncertain. Assessed as high risk in the recent ERA.
Near Target	Biomass is estimated to be within 25% of B_{TARG}. e.g., Between 36%B_0 and 60%B_0 relative to a B_{48} target.	Recent index of abundance is estimated to be within 25% of the TRP. e.g., $CPUE_{REC}$ is 0.75-1.25*$CPUE_{TARG}$.	Available information suggests the stock is sustainable and not subject to overfishing. Assessed as low risk in the most recent ERA
Above Target	Biomass is estimated to be more than 25% above the TRP. e.g. >60%B_0 relative to a B_{48} target.	Recent index of abundance is estimated to be more than 25% above the TRP. e.g., $CPUE_{REC}$ is >1.25*$CPUE_{TARG}$.	Available information suggests the stock has only been lightly exploited. Assessed as low risk in the most recent ERA
Well above target	Biomass is estimated to be within 25% of virgin biomass. i.e., >75%B_0.	Recent index of abundance is estimated to be more than 50% above the TRP. i.e., $CPUE_{REC}$ is >1.5*$CPUE_{TARG}$	

Step 2: Review existing mitigation and adaptation measures

Once the risk to the stock has been determined, the RAG needs to consider whether the existing science, management or industry adaptation measures in place are sufficiently responsive to the impacts of climate change, be they positive or negative. The mechanisms that are available and appropriate will depend on the fishery, species, and the sophistication of the stock assessments, harvest strategy and management arrangements.

The intent of Step 2 is to identify measures that have been taken to mitigate the risk of climate change for a species. Examples are provided here to illustrate how the impact of climate change on a species can be mitigated using measures this framework broadly refers to as 'science', 'management' or 'industry' adaptation.

There is not always a clear delineation between 'science', 'management' and 'industry' measures, as they are often intrinsically linked. For example, changes to stock assessment parameters (science) will translate to changes in TACs allocated as quota (management) which may influence fisher behaviour (industry adaptation). The examples are not exhaustive, and in some cases are still being explored as concepts. In practice, a mix of the three will exist in most fisheries. Provided these measures are sufficiently articulated, and their impact understood, the category they fall into is less important.

While many measures can be expected to reduce risk, it is important to consider the potential risks of 'maladaptive' responses. For example, fishing effort is redistributed due to shifts in stock distribution or the introduction of closures – this may increase the susceptibility of a different life history stage of the species or susceptibility of another species.

Science measures

Time-varying (or recent estimates of) life history and productivity parameters included in stock assessment models and projections. For example, high or low recruitment scenarios should be used to project future biomass where recruitment deviations show a long-term and consistent trend in recruitment success indicative of a change in productivity. These projections are typically only valid for a short period of time but are a useful way to illustrate the consequence of changes in recruitment and explore options for adjusted TACs.

Linking parameters in stock assessments to environmental variables. For example, sea-surface temperature could be used to modify the assumptions regarding life history traits, such as growth, used within a model. Careful consideration must be given to the resulting behaviour of the other standard parameter estimates.

Harvest Control Rules (HCRs). These are pre-determined rules that link the status of the fishery to management actions and typically result in more precautionary management actions if fishery status is low, or opportunistic measures if the fishery status is high. They are expected to account for uncertainties in both the current and prospective future stock status, and could include any uncertainties or observed changes that are caused by climate change (e.g., changes in species productivity, spatial distribution, ecosystems or fisheries operation). HCRs are usually selected on the basis of Management Strategy Evaluation (MSE) testing.

Management Strategy Evaluation (MSE). Compares the potential outcomes of alternative management actions across the objectives of management and can include climate scenarios when climate change is agreed to have caused, or is causing, a change. Where climate impacts are unknown, MSEs could include evidence from the fishery, or other similar fisheries, to understand the relative chance of the climate

effect occurring and the consequences to the fishery if it does occur. These are steps that are common in risk assessments, but they are not often applied to actual or potential climate change effects.

Dynamic reference points. Can be used to account for shifts in productivity. Shifts in productivity (non-stationarity) can be addressed by defining stock status (i.e., spawning biomass relative to unfished spawning biomass) using 'dynamic B_0' – the spawning biomass that would be expected in the absence of fishing. The implications of adopting a dynamic B_0 approach differs among species, with quite major changes in stock status and catch limits for some species and negligible changes for others (Bessell-Browne, et al. 2022). It has been shown that, in some cases, application of dynamic reference points can lead to a higher risk. This needs to be considered.

Ecosystem information provides context for stock assessment processes. This involves providing best available information on ecosystem and environmental properties to set the context for decision making or for any adjustments to be made to recommendations coming from stock assessments. For example, in years where environmental conditions have been poor (e.g., marine heatwaves or lower levels of primary production) then caution would be advised around any expansion of the fishing footprint or increases in recommended biological catch.

Ecosystem modelling informs stock assessment processes. This is where output from ecosystem modelling is used to modify operational considerations. For example, checking for unintended ecosystem consequences of recommendations coming from stock assessments; or considering driver interactions; or deriving time varying parameter values, reference points or exploitation rates from the ecosystem model (as has been done in a small number of systems in the USA and Scandinavia) and using that to modify what is used by (or comes from) the standard stock assessment process. Or joint climate informed "ecoviability" envelopes that look to find levels of fishing pressure that account for climate influenced productivity, economic and social objectives (as have been calculated for a small number of fisheries in Europe)**.**

Ecosystem model-based indicators. For example, ecosystem models can be used to correct target F to account for food web interactions. Another example is when recommended catches from single species assessments are selected against ecosystem measures (such as the "green band") to check for distortive pressure on ecosystem structure.

Monitoring and research. While on its own will not reduce on-the-water risk to a species, can provide fisheries scientists (and managers) with further insight to reduce uncertainty and understand risk, which then enables more tangible actions to be taken. For some species, particularly those ranked as negligible or medium risk, promoting monitoring and research may be a sufficient response to climate risk in the short-term. However, it cannot be used to reduce risk unless other measures are also in place.

For species with less sophisticated stock assessments, or no assessment at all, the RAG may choose to use less technical options to mitigate risk. These are likely to be case-specific but could include 'borrowing' attributes from species with similar life-history characteristics (e.g., in ERAs) or applying generic discounts (buffers) to assessment outputs.

Management Measures

The management measures available will also depend on the size and complexity of the fishery. In small single-species fisheries, targeted measures like closures or gear restrictions are likely to be effective mitigation options. However, in larger and more complex fisheries, particularly multi-species and multi-gear fisheries, technical interactions (the catch of a mix of species using a single gear type) may render similar options ineffective or undesirable. Positive climate impacts may not be able to be realised in multi-species fisheries with clear technical interactions. The management options listed here are not exhaustive and will be more applicable in some fisheries than others.

Catch limits. These can be adjusted to control total mortality of a species, depending on the risk profile. Catch limits are typically derived from outputs of a stock assessment or survey followed by application of a harvest strategy and are sometimes subject to **discount factors** or **buffers** that account for uncertainty or risk. In some cases, particularly in multi-species fisheries, they can be further adjusted to minimise unintended catch of associated bycatch species.

Spatial/temporal closures. Typically designed to control catches of at-risk species by preventing fishing in an area, either permanently or at certain times of the year. While closures are particularly effective for sessile species like scallops, they can also be targeted temporally and spatially to protect vulnerable age-classes of mobile or migratory species, such as juveniles or older spawning fish. Changes in zoning, or other reductions in fishing footprint as a result of other users of the marine estate (e.g., wind farm exclusion zones) should also be considered as they may indirectly mitigate climate-fishery risks for some species. Managers should consider modifying closure boundaries as risk profiles change, or as shifts in distribution become apparent.

Flexible season dates. Allows for key biological process to occur undisturbed by fishing activity (e.g., spawning prawn migration from estuaries to the ocean) or to align with expected aggregations and promote catching efficiency (e.g. orange roughy on seamounts). Flexible season dates allow industry to adapt to climate-driven changes in the fishery.

Gear modification can include amendments to existing gear to improve selectivity (e.g., increase mesh size) or the addition of exclusion devices to prevent capture of vulnerable species (e.g., turtle exclusion devices). Gear modification may be an effective solution if climate change is known to impact a particular species or age-class.

Buffers may be considered an appropriate option to adjust the TAC/E for a stock where the risk or uncertainty has not been sufficiently dealt with elsewhere. The RAG and MAC should use their expert judgment to recommend the size of the buffer, with consideration for the following factors:

- The climate risk rating and stock status of the species,
- The impact climate change is having (or is predicted to have) on the species,
- The role of the species in the ecosystem and fishery,
- Other discounts already included in the development of the RBC, and
- Other mitigating factors in the management of the fishery (e.g., spatial closures).

There are often a mix of management controls in place for each fishery. Some are species-specific, while others are broader. The RAG and MAC should take note of the various measures in place and determine the cumulative benefits to the species.

Industry Adaptation Measures

While governments and natural resource managers consider climatic changes, many marine-dependent individuals, organisations, and user-groups in fast-changing regions of the world are already adjusting their behaviour to accommodate these (Pecl, et al. 2019). The fishing industry is constantly adapting to change – market demands, operational challenges, legislative reform, technology advancements, and certainly, climate change. Some examples are provided here to illustrate how industry could adapt to climate-driven risks in the fishery, and would be considered voluntary (i.e., not enforced by management).

Regional catch limits. Can be agreed across a fleet to allow for vulnerable populations to rebuild. While catch could be taken equally across the species distribution, industry may agree to constrain catches in some areas of the fishery without the need for formal closures or catch limits.

Gear modification. Can be an effective way of excluding non-target species or age-classes that are particularly vulnerable to climate change. These may be adopted across an entire fleet (e.g., increased mesh size) or used only by operators that work in certain parts of the fishery.

Changes to fishing effort. This can take many forms. Redistribution of effort across the area of the fishery is likely to occur as stocks shift in response to changed oceanic conditions. Industry may actually fish less days, or fish longer/harder on some days, if severe weather conditions mean there are less days when it is safe to fish.

Data collection programs. These are becoming more prevalent in Australia as the fishing industry and management agency establish co-management agreements. While this typically involves collecting traditional biological data to support stock assessments (length and age) it could also include routine collection of environmental data to support ecosystem modelling and forecasting (Souza, et al. 2023).

Switching target species may occur in response to a change in a stocks size or distribution. This may occur in a change in the species mix rather than complete species shifts.

Guidance notes – Step 2

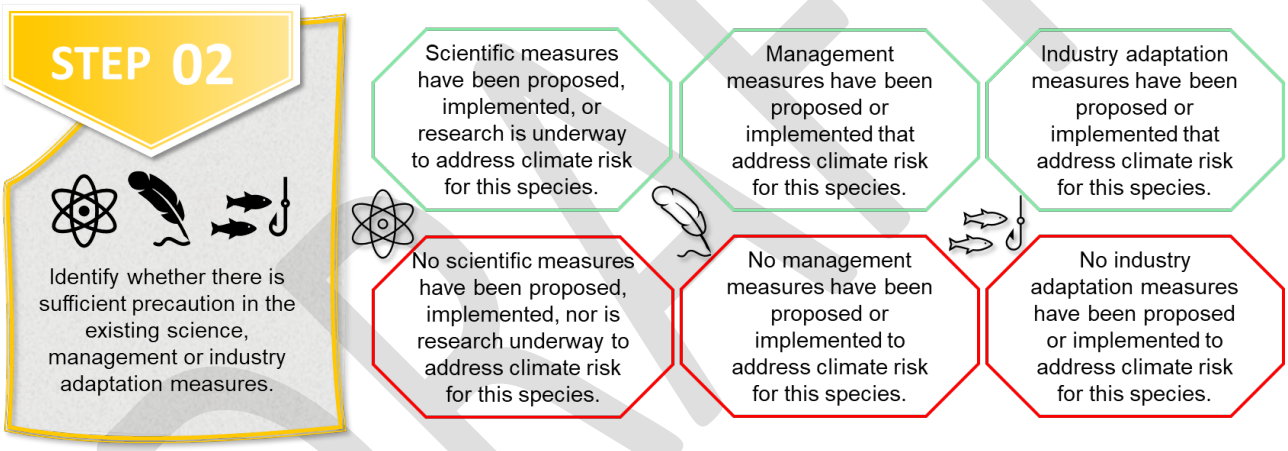


Figure 6 (Step 2) Review of existing science and management measures

The RAG should record the measures identified and how they translate to a reduction in risk for each species. This will not always be easily quantifiable, however, if there are instances where alternate scenarios have been forecast to understand their impact, this should be included. An example is provided at **Appendix A**.

Where a species is expected to benefit from climate change, the RAG and MAC should consider whether the arrangements are sufficiently responsive to potential productivity benefits. For example, can TACs be modified within season, or closures removed to allow full utilisation.

Step 3: Determine the residual risk

Once the measures in Step 2 have been recorded, the RAG and MAC need to determine the residual risk ranking. Each residual risk ranking is associated with additional guidance (Figure 7) that should inform advice provided to the AFMA Commission at Step 4.

Guidance Notes – Step 3

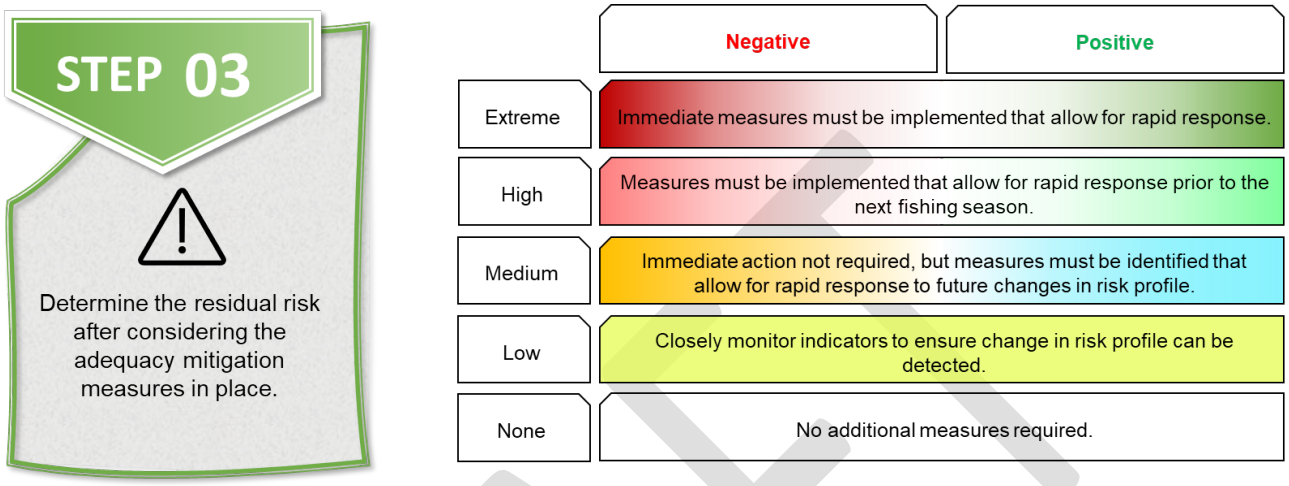


Figure 7 (Step 3) Residual risk analysis rankings and associated guidance

The risk profile can change where there are clear and demonstrable measures in place to mitigate or respond to the impacts of climate change for a species. The extent to which the risk changes is at the discretion of the RAG and MAC but should be supported by data or modelling where it is available. When providing advice to the AFMA Commission, there must be sufficient detail about how the measures identified at Step 2 are expected to take account of or mitigate the impacts of climate change. A detailed justification for each of the proposed measures will build confidence and facilitate informed decision-making by the AFMA Commission.

In some instances, it might be the case that research is underway, or measures have been proposed but are not yet implemented. In this case, the risk has not actually been treated, so the residual risk should remain the same.

If there are no measures identified in Step 2 that reduce the risk for a species, the original risk ranking will remain the same.

Some examples are provided at **Appendix B** to demonstrate how risk could be adjusted (or not) at Step 3 based on measure identified at Step 2.

Step 4: Provide advice to the AFMA Commission

The RAG and MAC must provide advice to the AFMA Commission for each species to conclude the process. The advice can be simple for species assessed as low risk at Step 1 (where Steps 2-3 have been bypassed) and conclude that no additional measures are required. For species with higher risk rankings, advice to the AFMA Commission will be more detailed. In providing their advice, RAGs need to demonstrate and clearly articulate the reasons for that advice.

The intent of the Climate Risk Framework is to identify proportionate adjustments to mitigate climate risk. Some will be short-term measures, such as TAC reductions, while others will be longer-term, such as incorporating environmental variable in stock assessments.

Longer-term and more comprehensive adaptation plans are also being progressed by AFMA through the Climate Adaptation Program.

Guidance notes – Step 4

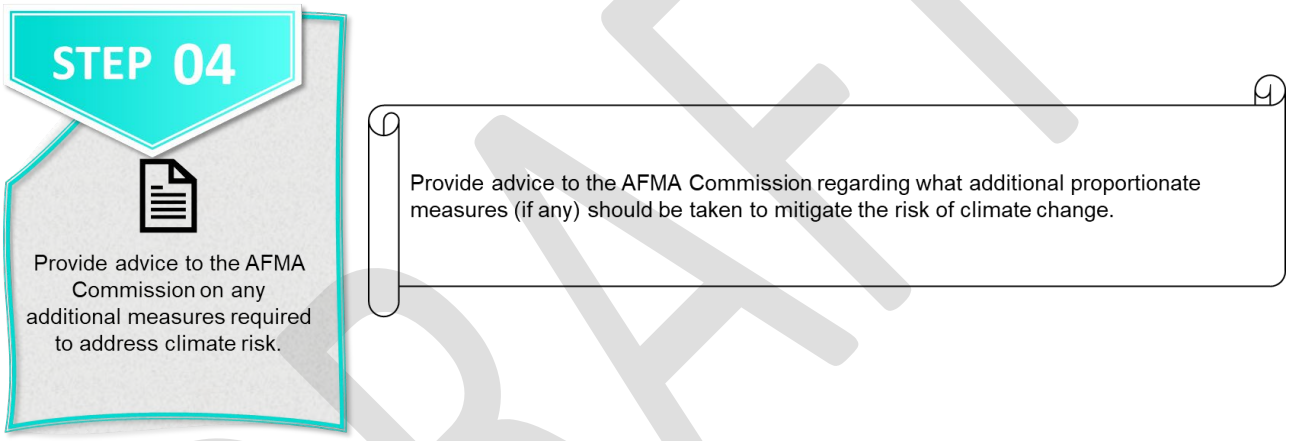


Figure 8 (Step 4) Providing advice to the AFMA Commission

A risk ranking of 'low' does not preclude the RAG or MAC from providing advice about additional measures, particularly where they are designed to reduce uncertainty or future-proof the fishery. This might include additional data collection or more frequent review of fishery indicators.

For any species with a residual risk ranking of medium or higher, the RAG and MAC must provide advice to the AFMA Commission regarding additional proportionate measures to mitigate risk to the species. For species with an extreme or high-risk ranking, particularly where the risk is associated with climate drivers, these should be tangible measures beyond application of the harvest strategy that are expected to mitigate risk.

An example is provided at **Appendix A** to demonstrate how Steps 1-4 should be recorded for each species.

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Appendix A

Species Assessment Report (Example)

Common Name	Southern Kraken
Species Name	*Piscis Fictitious*
Fishery	East Australian Squid Jig Fishery
Stock Assessment	Sverre (2022)

Step 1 – Consider risk to species based on climate risk and estimated stock status

Climate Risk	High **(Negative)** (Criteria 1) Atlantis modelling suggests that climate change has a major influence on the biomass and is contributing to a much lower biomass than would have occurred otherwise.
Stock Status Risk	Low (Category 1) The 2022 Tier 1 stock assessment estimated the 2023 biomass to be 44%B_0.
Overall Risk	Medium **(Negative)**

Step 2 – Identify whether there is sufficient precaution in the existing science or management setting

Science	A low recruitment scenario was used to project future catches on the basis that recruitment deviations are estimated to be below (albeit only slightly) the long-term average since 2012. Additional model sensitivities were explored: - Changing weighting on length and age data resulted in small changes to stock status estimates. - Doubling and halving weighting on the survey index resulted in large changes to total likelihood estimates but had minimal impact on stock status (41% and 49% of B_0). - All model sensitivities estimate the stock status to be at or above 40%B_0.
Management	No management measures have been proposed or implemented to respond to climate risk for this species.

Industry	Industry has implemented a voluntary move-on arrangement. If catches include large amounts of juvenile fish, vessels will steam 3nm and not return to the area for 48 hours.

Step 3 – Determine the residual risk after considering the adequacy of science and management measures in place

Residual Risk	Low **(Negative)**
Comments	Implementing the low recruitment scenario takes account of a potential shift in productivity and resulted in a lower TAC, allowing recovery towards the target reference point. While no specific management measures have been implemented (beyond a reduction to the TAC) additional industry move-on agreements should provide a level of protection to younger cohorts. The next stock assessment is scheduled for 2025 which will provide an opportunity to review the indicators and effectiveness of these measures.

Step 4 – Provide advice to the AFMA Commission on any additional measures required to respond to climate risk

Recommendation	The RAG and MAC are satisfied that the measures are proportionate to the risk identified for this species. No additional measures are required. The stock assessment will go ahead as scheduled in 2025 and the RAG will monitor fishery indicators.

Appendix B

Residual Risk Examples

Extreme → Medium (Negative): A species is ranked extreme (negative) risk because it was recently assessed as depleted (using a robust stock assessment) and is considered high risk from climate change. The stock assessment parameters were updated to include a revised estimate of natural mortality, and a low recruitment scenario was used to project biomass under various catch scenarios. A bycatch TAC was implemented based on catches that are expected to allow recovery, and a series of targeted closures were implemented to ensure total mortality is constrained. Recent catch and effort data suggests that total mortality is sufficiently low to allow recovery. This species' risk ranking could be reduced to medium because there are a number of science and management measures in place, and there is data to show total mortality has been constrained. The RAG and MAC might consider additional measures such as species-specific monitoring to closely monitor range shift and ensure spatial closures remain effective.

Medium → Low (Negative): A species is ranked medium (negative) risk because it was recently assessed as being just above the limit reference point (using an empirical stock assessment) and is considered medium risk from climate change. The default reference period in the stock assessment was adjusted and is now based on a period considered to be comparable with current environmental conditions. The RBC is based on fishing mortality that is expected to allow recovery, however, this species is primarily caught as a byproduct species, and it is unclear whether total mortality can be constrained to this level. This species could be ranked as 'low' risk and the RAG should continue to monitor total mortality.

High → High (Negative): A species is ranked as high (negative) risk because it was recently assessed as being just above the limit reference point (using an empirical stock assessment) and is considered high risk from climate change. The index of abundance has declined over the last two assessments, the estimate is considered uncertain, and the TAC is almost fully utilised. The RAG has recommended that an alternative and more robust stock assessment is pursued, and data collection has commenced. While data collection has commenced, it will be several years before the stock assessment is expected to yield results. This species should remain at high risk, and the RAG and MAC should consider additional measure to ensure risk is mitigated until a more robust assessment is available.

High → Medium (Positive): A species is ranked as medium (positive) risk because it is expected to benefit from climate change and was recently assessed as being well above the target reference point – approaching virgin biomass. The estimate of spawning biomass is derived from estimates of daily egg production (survey) and species-specific fecundity. Adult reproductive parameters used in the assessment are based on research conducted approximately 15 years ago, and there is evidence to suggest that fecundity will increase due to recent and future expected environmental conditions. The RAG and MAC may consider a short-term increase to the TAC to promote fishing and support data collection that will enable revisions to life-history parameters. Stock status should be closely monitored.

Last Updated: 2-Dec-24

Climate Risk Framework Species Assessment Report

Common Name: Tropical rock lobster

Species Name: *Panulirus ornatus*

Fishery: Torres Strait Tropical Rock Lobster Fishery

Stock Assessment: Plaganyi et al 2022

Step 1: *Consider risk to species based on climate risk and estimated stock status*

Climate Risk – High (Category 2 – See Table 1)

Tropical rock lobster (TRL, *Panulirus ornatus*) are a relatively short-lived species of spiny lobster that experience large fluctuations in recruitment depending on prevailing environmental conditions (Plagányi et al. 2019). There is a long history of considering climate change impacts and ways to account for these in the management of TRL (Plagányi , Weeks, et al. 2011). Biomass trajectories (Category 2) from climate-linked stock assessment models (Plagányi, et al. 2019a, 2019b), preliminary MICE (Fulton et al. 2018) and other studies (Plagányi, et al. 2018a) suggest a decrease of more than 20-40% is possible.

An integrated assessment of climate-change impacts on lobsters (Norman-Lopez, et al. 2013) as well as an information poor assessment of life history characteristics (Category 3) indicated a high sensitivity to climate change.

Climate & Ecosystem Indicators

Global trends

- 2024 continues to set records for sea surface temperature (SST). June 2024 marked the 12th month of global SSTs reaching 1.5°C above pre-industrial levels (Copernicus 2024).
- In the last decade, sea surface temperatures have been ~0.5°C warmer than the 1960-1990 mean (Bureau of Meteorology 2024), and eight of the ten warmest years on record have occurred since 2010 (Bureau of Meteorology, CSIRO 2022).

Fishery trends

- Increased ocean acidification is expected to occur into the future (State of the Climate 2024).
- Climate & Ecosystem Status Report Torres Strait Kaiar - Tropical Rock Lobster Fishery November 2023 (CSIRO, 2023)
    - Live coral and substrate cover has been increasing since 2018.
    - Seagrass cover has been low in recent years.
    - Industry noted that there has been lots of sponge grass that inhibits lobster movement and sand incursion covering up seagrass.

- Traditional owners and industry representatives also noted that winds have been different to normal and lobster abundance has been good in some areas, with more smaller and medium sized lobsters observed.
- The lobster 1+ (recruits) index in 2022 and 2023 was marginally below the long-term average.

- Comparison between sites and surveys between 2019 and 2021 shows approximately a 1°C increase in temperatures across all sites between the two years (Plagányi, Dutra, et al. 2022).

Stock Status Risk – Well Above Target (Category 2 – See Table 2)

The 2022 stock assessment estimated the 2022 biomass to be 4305 t or 104%B_0 (90% CI 2937-5637 t), which is well above the Target Reference Point (TRP) of 65%B_0 (Plagányi, Dutra, et al. 2023). This is an increase from the 2019 stock assessment which estimated the 2019 biomass to be 93%B_0 (Plagányi, Dutra, et al. 2022). However, the biomass of this short-lived highly variable species can be expected to fluctuate widely from year to year as recruitment is strongly linked to the environment.

The stock assessment uses a baseline biomass (B_0) value of B_{1973}; the model-estimate of spawning stock biomass in 1973 before the start of the fishery, and uses as a target a constant low fishing proportion (F=0.15) that accounts for the large natural variability and precautionary management preferences.

The fishery transitioned from an annual stock assessment to using an empirical Harvest Control Rule (eHCR) in December 2019 to inform the recommended biological catch (RBC) (Plagányi, et al. 2018b) (Plagányi, et al. 2022). The eHCR is a highly adaptive decision rule that is applied annually and adjusts TACs up or down based principally on the results of a fishery-independent pre-season survey (Plagányi, et al. 2024). In other words, the eHCR allows fisheries management to rapidly respond if environmental conditions are unfavourable for lobsters. Further, the long-term lobster and habitat monitoring provides baseline information to inform on climate change and is also an effective method to enable rapid adaptation to changing levels of recruitment (Plagányi et al. 2024). The eHCR is currently being revised with associated Management Strategy Evaluation (MSE) accounting for a broad range of climate change impacts in order to better climate proof the eHCR (Plagányi et al. in prep). Stock assessments are undertaken every three years and the next assessment is due to be completed in 2025.

Overall Risk – None

While there is a high level of risk associated with climate change, the stock is assessed to be 'well above target' resulting in an overall risk rating of 'None'.

Step 2: *Determine if current scientific, management, and industry practices have sufficient precaution*

Science

Stock assessments

A parallel climate-linked stock assessment model has been presented at TLRAG meetings since 2017 and is currently being revised to utilise updated physical data and climate projections (Plagányi, Dutra, et al. 2023).

Research

Dutra, *et al* (2020) found that the Tropical Rock Lobster is at risk from climate change based on life-history characteristics. In particular:

- There were negative effects associated with increased larval and juvenile mortality related to higher sea surface temperatures and detrimental effects on the juvenile lobster's seagrass habitats;
- Experimental studies demonstrated enhanced growth in all life history stages by warmer sea surface temperatures of up to 30 degrees;
- There was an increase in mortality for sea surface temperatures above 29 degrees;
- In contrast to the relatively simple trophic interactions documented in the temperate lobster fisheries, it is likely that a multitude of complex environmental factors influence the TRL population; and
- Changing environmental drivers may also have substantial impacts on the availability of stocks to fishers.

Increased ocean acidification is expected to occur in the future which is an important threat to crustaceans such as the Tropical Rock Lobster. A recent study demonstrated that increasing ocean acidity is impacting the shells of crab larvae, making them more vulnerable to predation as well as weakening support structures for muscles and possibly leading to a loss of important sensory and behavioural functions (Bednarsek, et al. 2020);

The project "Modelling climate change impacts on key fisheries in the Torres Strait to co-develop adaptation and mitigation strategies" will provide fishers and managers with information about the current and future risks of climate change to help them manage fisheries such as the Tropical Rock Lobster (Kaiar), sea cucumber (Aber) and finfish (CSIRO 2023).

A number of studies have also been undertaken to identify critical links in the Torres Strait lobster supply chain in order to build robustness to climate change and other external shocks (Plagányi, et al. 2014) as well as studies to investigate price integration in the Australian lobster industry to inform climate adaptation (Norman-López, et al. 2014).

Management

The fishery is managed using a precautionary approach rather than applying a B_{MEY} target because the stock is a shared resource and is important for traditional fishing. The stock has high variability and industry members recommended that the harvest strategy maintain the stock at a high level (Plagányi, Dutra, et al. 2022).

Within the harvest strategy, there is a decision rule that requires an additional stock assessment to be undertaken for the following year if the pre-season survey indicates that the stock is below the limit reference point (LRP) (Plagányi, Dutra, et al. 2023).

Industry

Since the extreme heating event in 2016, there ae ongoing discussions between scientists, industry and processor around capture and handling of lobsters when sea surface temperature is high. Advice was provided and implemented, for example:

- To keep lobster holding cages deeper in cooler water;
- To pack less densely when temperatures are high because this also reduces oxygen levels;
- Closer monitoring and discussion of discards because it is recognised that this is more of an issue during hot periods;
- The MSE modelling being conducted to inform revision of the eHCR also takes this into account.

The Australian and PNG catch has averaged 673 t per year over the period of 1989-2019. In 2022, the combined PNG-Australia catch was 380 t (Plagányi, Dutra, et al. 2023)

- TLRAG (2022) noted that the lower catch is due to market factors and not because of low lobster abundance, which was taken into account when calculating the RBC for the 2022-23 season (TLRAG 2022).

Step 3: *Determine the residual risk after considering the adequacy of measures identified at Step 2*

Residual Risk – To be resolved by working group, RAG and WG.

Step 4: *Provide advice to the PZJA*

Recommendation - To be resolved by working group, RAG and WG.

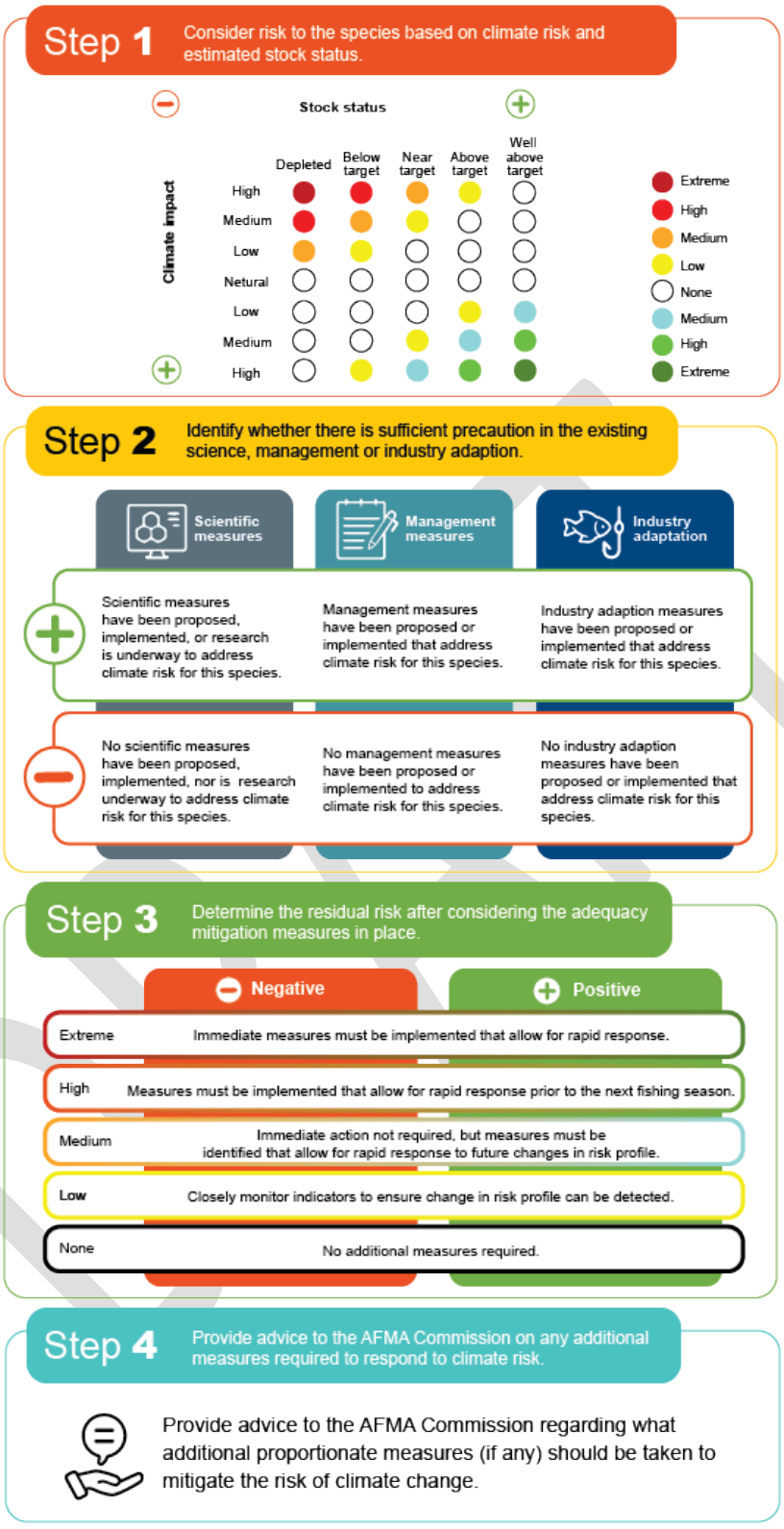

Figure 1 Climate Risk Framework 4-Step Process

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Table 1 AFMA Climate Risk Framework - climate risk ranking criteria

CLIMATE RISK	1. Attribution studies or counterfactual simulations	2. Preliminary projections of change in abundance	3. Climate sensitivity assessment	4. Climate and ecosystem indicators
High	Climate change is the primary driver of stock depletion	>20% change by 2040 with moderate to high confidence, OR >40% change with low confidence.	If projections are not available, where climate sensitivity has been rated high	Relevant climatic or ecosystem indicators show adverse signals in the near history and in short-medium term predictions
Uncertain	Where no information is available, significant uncertainty exists in available modelling and/or assessments, or both increases and decreases are considered equally possible.			
Medium	Climate change is contributing to a decline in stock abundance.	10-20% change by 2040 with medium or high confidence, OR 10-40% change with low confidence.	If projections are not available, where climate sensitivity has been rated medium.	General climatic or ecosystem indicators indicate changing system productivity (e.g., recent marine heatwave in the fishery region).
Low	Climate Change is only a minor contributor to changes in stock abundance.	Up to 5% change by 2040 with medium or high confidence, OR 5-10% change with low confidence.	If projections are not available, where climate sensitivity has been rated low.	General climatic or ecosystem indicators indicate negligible changes to system productivity.
Neutral	Climate change does not have an influence on the stock	Projections predict relative stability in abundance.		General climatic or ecosystem indicators indicate no change in system productivity.

Table 2 AFMA Climate Risk Framework Stock Status Risk Ranking Criteria

STOCK STATUS RISK	1. Robust assessments of F and B	2. Empirical or index-based assessments	3. Data-poor methods or weight of evidence approaches
Depleted	Biomass is estimated to be below the limit reference point (LRP).	Recent index of abundance is estimated to be below the LRP. e.g., $CPUE_{REC}$ <$CPUE_{LIM}$.	Available information suggests that the stock is depleted. Assessed as extreme high risk in the most recent ERA.
Below Target	Biomass is estimated to be above the LRP, but less than 75%B_{TARG}. e.g., <36%B_0 relative to a B_{48} target.	Recent index of abundance is estimated to be above the LRP but less than 75% of the TRP. e.g., $CPUE_{REC}$ < .75*$CPUE_{TARG}$.	Available information suggests the stock is not depleted or biomass is uncertain. Assessed as high risk in the recent ERA.
Near Target	Biomass is estimated to be within 25% of B_{TARG}. e.g., Between 36%B_0 and 60%B_0 relative to a B_{48} target.	Recent index of abundance is estimated to be within 25% of the TRP. e.g., $CPUE_{REC}$ is 0.75-1.25*$CPUE_{TARG}$.	Available information suggests the stock is sustainable and not subject to overfishing. Assessed as low risk in the most recent ERA.
Above Target	Biomass is estimated to be more than 25% above the TRP. e.g. >60%B_0 relative to a B_{48} target.	Recent index of abundance is estimated to be more than 25% above the TRP. e.g., $CPUE_{REC}$ is >1.25*$CPUE_{TARG}$.	Available information suggests the stock has only been lightly exploited. Assessed as low risk in the most recent ERA.
Well above target	Biomass is estimated to be within 25% of virgin biomass. i.e., >75%B_0.	Recent index of abundance is estimated to be more than 50% above the TRP. i.e., $CPUE_{REC}$ is >1.5*$CPUE_{TARG}$.	

TROPICAL ROCK LOBSTER WORKING GROUP	MEETING 17 12 December 2024
CROSS-ENDORSEMENT	Agenda Item 9 For Discussion and Advice

RECOMMENDATIONS

1. The Working Group:

    a. **NOTE** the 2023-24 TRL fishing season was the first time that Papua New Guinea (PNG) licenced boats have been authorised to fish in areas of Australian jurisdiction under cross-endorsement arrangements since 2014;

    b. **NOTE** that on 1 March 2024, consistent with the PZJA *Guidelines for authorising cross-endorsement in areas of Australian jurisdiction of the Protected Zone* (the Guidelines[1]), AFMA as the licensing delegate approved Treaty endorsements with a suite of conditions (**Attachment 9a**) for two PNG licenced boats and their associated tenders to fish for TRL in the 2023-24 fishing season.

    c. Having regard to requests from industry and Malu Lamar (Torres Strait Islander) Corporation RNTBC (Malu Lamar) to have greater input into the development of Treaty endorsement arrangements, the Working Group is being asked to:

        (i) **NOTE** an overview of the first cross-endorsement fishing season; and

        (ii) **PROVIDE ADVICE** on any changes to cross-endorsement arrangements for future seasons, consistent with the Guidelines.

KEY ISSUES

2. In September 2023, AFMA received nominations for two PNG licenced boats and their associated tenders to fish in the Torres Strait Tropical Rock Lobster fishery in areas of Australian jurisdiction under cross-endorsement arrangements.

3. After careful consideration of the nominations in accordance with the PZJA Guidelines for authorising cross-endorsement in areas of Australian Jurisdiction of the Torres Strait Protected Zone (the Guidelines), as of Friday 1 March 2024, AFMA as the licencing delegate approved two Treaty endorsements PNG licenced vessels, *FV Jupiter* (and associated seven tenders) and *FV Dinh Thang* (and associated seven tenders), operated by the company Aquila Enterprises Limited, to fish for TRL for the remainder of the 2023-24 TRL season.

4. The cross-endorsed boats commenced their first fishing trip in Australian waters on Saturday 13 April 2024. *FV Dinh Thang* and *FV Jupiter* undertook five and four fishing trips respectively with the last fishing trip completed by *FV Dinh Thang* on 2 July 2024. AFMA understands the two boats did not return due to poor weather conditions.

5. The boats fished primarily on South Warrior Reef and were boarded and inspected twice by authorities. An AFMA compliance officer will be available at the meeting to provide further information on compliance related activities.

[1] Available at www.pzja.gov.au/corporate-and-reports/cross-endorsement-guideline

6. Under 2023-24 catch sharing arrangements, PNG were entitled to take up to a total of 92.7 tonnes of TRL within areas of Australian jurisdiction and were subject to a suite of endorsement conditions.
7. These included, but were not limited to, conditions that are:
    a. the same to those applied in Australian Torres Strait TRL Fishery:
        (i) carrying an operational Vessel Monitoring System (VMS) on each primary boat;
        (ii) daily logbook reporting (the same as the TVH sector);
        (iii) catch reporting via the TDB02 Catch Disposal Record;
        (iv) a total catch limit (92.75 tonnes as per the catch sharing agreement); and
        (v) moontide hookah closures.
    b. applied to the Treaty endorsements only (i.e. are not conditions applied in the Australian TRL Fishery):
        (i) exclusion from the area commonly referred to as Australia's "outside but near" area;
        (ii) a prohibition on the landing or transhipment of catches in areas of Australian jurisdiction;
        (iii) prior entry/exit reporting requirements;
        (iv) exclusion from the Australian Territorial seas north of the Fisheries Jurisdiction Line (i.e. Anchor Cay, Black Rocks, Bramble Cay, Deliverance Island, East Cay, Kerr Islet, Pearce Cay and Turu Cay).
        (v) boat markings with a "T"; and
        (vi) a requirement to land all catches in PNG (specifically, the Port of Daru).
8. A prohibition on fishing in areas around inhabited islands in Australian waters was applied. This is consistent with Australia's obligations to acknowledge the traditional way of life and livelihood of traditional inhabitants regarding traditional fishing.
9. A complete copy of the 2024 Treaty endorsements is provided at **Attachment 9a**.
10. The Working Group is being asked to consider any changes to management arrangements for cross-endorsement in future seasons.

BACKGROUND

11. The Torres Strait Treaty provides for the catch sharing of Tropical Rock Lobster between Australia and Papua New Guinea. It is agreed that 85% of the global TAC is to be taken in Australian waters and 15% of the global TAC is to be taken in PNG waters. This is based on the agreed distribution of TRL in the area of the Torres Strait Protected Zone.
12. Of the 85% share of the TAC in Australian waters, PNG is entitled to catch 25% of that share under what is commonly referred to as "cross-endorsement" arrangements.
13. Based on a global TAC of 530 tonnes in the 2023-24 fishing season, split between the two countries, PNG were entitled to catch 92.75 tonnes in Australian waters.

Attachment 9a

COMMONWEALTH OF AUSTRALIA

TORRES STRAIT FISHERIES ACT 1984

PROTECTED ZONE JOINT AUTHORITY

TREATY ENDORSEMENT NUMBER: 1005916

Pursuant to Sections 20 and 36 of the *Torres Strait Fisheries Act 1984* and in accordance with Article 26 of the *Torres Strait Treaty*, the Torres Strait Protected Zone Joint Authority endorses the fishing boat licence specified below issued by the Government of Papua New Guinea so as to authorise the use of the boat and indicated number of tenders for taking **TROPICAL ROCK LOBSTER** in the course of commercial fishing in areas of Australian jurisdiction in the Torres Strait Protected Zone, and carrying, or processing and carrying, in areas of Australian jurisdiction, tropical rock lobster that have been taken with the use of the licensed boat in an area of Australian jurisdiction, the endorsement being subject to the conditions set out in the Schedule.

LICENCE NUMBER:	PNG-1322
BOAT NAME:	FV JUPITER
BOAT MARK:	P2V5528
NUMBER OF TENDERS:	SEVEN (7)
LICENSEE:	AQUILA ENTERPRISE LIMITED
PERIOD OF VALIDITY:	This Treaty endorsement will be valid until the earlier of:

a. 30 September 2024; or

b. the expiry of the Papua New Guinea licence; or

c. it is revoked by the Protected Zone Joint Authority (or a delegate); or

d. the time/date at which the total catch taken by all PNG Treaty endorsements reaches 92,750kg of whole tropical rock lobster.

Dated this 1st day of March 2024

Anna Willock

Anna Willock
Delegate
Protected Zone Joint Authority

SCHEDULE

Treaty endorsement conditions for the Torres Strait Protected Zone Tropical Rock Lobster Fishery for the 2023-24 fishing season

This Treaty endorsement is granted under section 20 of the *Torres Strait Fisheries Act 1984*

Definitions

Terms defined in the *Torres Strait Fisheries Act 1984*, *Torres Strait Fisheries Regulations 1985* or a relevant management plan or instrument made under the *Torres Strait Fisheries Act 1984*, have the same meaning in these conditions unless specifically stated otherwise in the condition.

Act means the *Torres Strait Fisheries Act 1984*.

Area of Australian Fisheries Jurisdiction means:

a) any area of waters in the Torres Strait Protected Zone to the south of the line described in Annex 8 to the Torres Strait Treaty;

Notes:

- *The line described in Annex 8 to the Torres Strait Treaty (established under Article 4 of that Treaty) is referred to as the Fisheries Jurisdiction Line.*

- *Access to areas of Australian jurisdiction under cross-endorsement arrangements will be limited to within the Protected Zone only and will not extend to areas proclaimed by Australia to be an area outside but near the Protected Zone (as defined in section 15 of the Act).*

AFMA means Australian Fisheries Management Authority.

Attached means the towing of tenders, physically connected to the primary boat by tow ropes or other towing device(s).

Conversion factor means, for the purposes of working out the number of kilograms of tropical rock lobster that a Treaty endorsement holder may take, the multiplication factor to be applied, if the holder processes tropical rock lobster so that only the tail of a lobster remains, is 2.677.

Fish means all the natural resources of the sea and seabed, including all swimming species and all sedentary organisms, but does not include cetaceans or minerals.

Hookah gear means equipment to enable a person to breathe underwater where the air is supplied from either an air compressor or one or more air cylinders above the surface of the water, and includes equipment which may described as surface supplied breathing equipment or surface supplied breathing apparatus.

Interaction**,** in relation to a protected species, means physical contact that:

a. occurs between a protected species and 1 or more of the following:

i. an individual other than an observer;

ii. the primary boat and/or tender(s) operating with the primary boat;

iii. any object on board, or attached to, the primary boat and/or tender(s), other than equipment that is being used by an observer;

iv. the primary boat's equipment and/or tender(s)' equipment; and

b. is of a kind that could cause the TEP species to be distressed.

Management Instrument means the *Torres Strait Fisheries (Tropical Rock Lobster) Management Instrument 2018* **(Attachment A),** made under section 16 of the Act.

Observer means a person approved by AFMA to carry out the functions of an observer.

Operate with, in relation to a primary boat and one or more tenders, means one or more of the following activities by the primary boat:

a. towing of tenders to or from the fishing grounds;

b. the provision of accommodation for tender operators;

c. the receipt of tropical rock lobster from tender(s).

Papua New Guinea licence means a licence in force under the laws of Papua New Guinea in respect of the primary boat, being a licence granted pursuant to the Torres Strait Treaty that authorises the use of the boat for commercial fishing in the Torres Strait Protected Zone Tropical Rock Lobster Fishery in the area of Papua New Guinea jurisdiction.

Primary boat means the principal fishing boat, operating with one or more tenders, nominated to Treaty endorsement number **1005916** and identified as **FV JUPTIER**, boat identification mark **P2V5528**, **18.23 metres**, Papua New Guinea licence number **PNG-1322.**

Protected species means:

a. a listed threatened species within the meaning of the *Environment Protection and Biodiversity Conservation Act 1999* (other than a conservation dependent species within the meaning of that Act); or

b. a listed marine species within the meaning of the *Environment Protection and Biodiversity Conservation Act 1999*; or

c. a listed migratory species within the meaning of the *Environment Protection and Biodiversity Conservation Act 1999*; or

d. a species of cetacean.

Processed form means where processing has occurred, if any, the nature of the processing must be indicated.

Note: Tailed tropical rock lobster refers to when tropical rock lobster has been processed so that only the tail of a lobster remains. See ***Conversion factor****.*

Regulations means the *Torres Strait Fisheries Regulations 1985*.

Torres Strait Protected Zone has the same meaning as the zone defined in Article 1(g) of the *Torres Strait Treaty*.

Torres Strait Treaty means the Treaty between Australia the Independent State of Papua New Guinea that was signed at Sydney on 18 December 1978.

Take has the same meaning as in section 3 of the *Torres Strait Fisheries Act 1984*.

Tender means a fishing boat measuring 6 metres or less in length which has the same licensee as the primary boat and operates with the primary boat, as specified in condition 16.

Treaty endorsement means the Papua New Guinea licence endorsed under subsection 20(1) of the *Torres Strait Fisheries Act 1984* and as identified as Treaty endorsement number **1005916**

Trip means a voyage in a primary boat with tender(s) to the area of Australian Fisheries Jurisdiction or from the area of Australian Fisheries Jurisdiction for the purpose of exercising a right under this Treaty endorsement.

Tropical rock lobster has the same meaning as in section 4 of the *Management Instrument.*

Valid means, in respect of a Papua New Guinea licence, that the expiry date has not been exceeded, or in respect of the Treaty endorsement, that the endorsement is in force.

Verified weight means weight that has been determined by accurate scales.

CONDITIONS APPLYING TO THIS TREATY ENDORSEMENT

The following conditions are specified for the purposes of subsections 22(1) and 36(3) of the Act. Under subsection 22(2), these conditions may be varied, revoked or a further condition(s) specified by written notice from the Protected Zone Joint Authority (or a delegate).

Note: It is an offence under the Torres Strait Fisheries Act 1984 to contravene or fail to comply with a condition of this Treaty endorsement.

1. The holder of this Treaty endorsement must comply with all the obligations prescribed by the Act, the Regulations, and the Management Instrument (**Attachment A**).

2. While operating within the area of Australian Fisheries Jurisdiction, persons on board the primary boat and tenders must allow authorised officers to board and inspect boats and must comply with directions given by those authorised officers.

3. The licence holder and the master of the primary boat must ensure that the tender operators are aware of and comply with the conditions applying to this Treaty endorsement.

Area of waters

4. This Treaty endorsement is granted for the area of waters in the area of Australian Fisheries Jurisdiction of the Torres Strait Protected Zone, other than any waters within:

    a. the area of waters described as Prohibited Areas, defined in **Attachment B**.

    Notes:

    - *Refer to definitions section for definition of the area of Australian Fisheries Jurisdiction.*
    - *Access to areas of Australian jurisdiction under cross-endorsement arrangements will be limited to within the Protected Zone only and will not extend to areas proclaimed by Australia to be an area outside but near the Protected Zone (as defined in section 15 of the Act).*

Period of validity

5. Persons aboard the primary boat and tender(s) may not undertake any fishing activity or take, process or carry any tropical rock lobster unless the Papua New Guinea licence and this Treaty endorsement are valid.

6. This Treaty endorsement will be valid until the earlier of:
    a. 30 September 2024; or
    b. the expiry of the Papua New Guinea licence; or
    c. it is revoked by the Protected Zone Joint Authority (or a delegate); or
    d. the time/date at which the total catch taken by all Papua New Guinea Treaty endorsements reaches 92,750kg of whole tropical rock lobster.
7. The holder of this Treaty endorsement must comply with a direction from AFMA to cease fishing at any time, including for the purpose of conducting an investigation to verify compliance with conditions 6(d), 9, and 10. An investigation may be triggered if the holder of this Treaty endorsement fails to comply with catch reporting conditions 14 and 15.

Approved species

8. The holder of this Treaty endorsement is prohibited from taking, processing and carrying any fish, other than tropical rock lobster, in the area of Australian Fisheries Jurisdiction.

9. The total amount of tropical rock lobster that may be taken by this Treaty endorsement and all other Treaty endorsements granted by the Protected Zone Joint Authority to take tropical rock lobster, in the area of waters described above must not exceed 92,750kg of whole weight tropical rock lobster.

10. The holder of this Treaty endorsement must ensure that the total cumulative take (catch) by all Papua New Guinea Treaty endorsed boats is accurately monitored to ensure compliance with condition 9.

11. If any tropical rock lobster is landed as tailed product, so that only the tail remains, a conversion factor will be applied to the landed tailed weight to convert it to the whole weight equivalent according to the formula: number of kilograms tailed weight multiplied by 2.677 = whole weight equivalent. This converted weight will be deducted from the amount of whole weight tropical rock lobster specified in condition 9.

    Note: Under section 14 of the Management Instrument, the carrying on a boat any part of a tropical rock lobster that has been processed by removing the meat from the shell is prohibited.

12. The holder of this Treaty endorsement must ensure the primary boat and tender(s) carry an accurate measuring device at all times whilst operating in the area of Australian Fisheries Jurisdiction.

    Note: Under section 9 of the Management Instrument, the taking, processing or carrying of tropical rock lobster that is undersize is prohibited.

Prohibition on the use of stun guns and electric fishing spears

13. The taking of Tropical Rock Lobster in the Australian Fisheries Jurisdiction using stun guns and electric fishing spears is prohibited.

Note: refer to the Management Instrument for further prohibitions on the use of certain methods and equipment.

Catch Reporting

14. When operating under this Treaty endorsement, when 70 per cent of the permitted tropical rock lobster catch limit is reached, or as otherwise requested by AFMA, the licence holder must submit daily reports to AFMA via email at tistaff@afma.gov.au or phone on 1300 723 621 that includes:

    a) Accurate estimate of the current total daily catch weight of tropical rock lobster by processed form.

    b) Accurate estimate of the current total weight by processed form of tropical rock lobster in possession of the licence holder onboard the primary boat and associated tenders.

15. Upon unloading of tropical rock lobster catch, the verified landed weight must be reported to AFMA via email at tistaff@afma.gov.au within 24 hours. These catch reports must utilise the Torres Strait Fisheries TDB02 Catch Disposal Record and include the following:

    a) Accurate verified weight by processed form of total tropical rock lobster taken during the applicable trip, including:

        I. the name and distinguishing symbol of the boat;

        II. the date and place of unloading;

        III. accurate weight of whole tropical rock lobster expressed as weight in kilograms;

        IV. accurate weight of tailed tropical rock lobster expressed as weight in kilograms.

Applicable Boats

16. The primary boat is permitted to operate with one or more of the following tenders (up to a maximum of 7 individual tenders), identified as:

    a. boat mark **P2V5528-01**, length of **5.8 metres**, Papua New Guinea licence number **PNG-1322**;

    b. boat mark **P2V5528-02**, length of **5.8 metres**, Papua New Guinea licence number **PNG-1322**;

    c. boat mark **P2V5528-03**, length of **5.8 metres**, Papua New Guinea licence number **PNG-1322**;

    d. boat mark **P2V5528-04**, length of **5.8 metres**, Papua New Guinea licence number **PNG-1322**;

    e. boat mark **P2V5528-05**, length of **5.8 metres**, Papua New Guinea licence number **PNG-1322**;

    f. boat mark **P2V5528-06**, length of **5.8 metres**, Papua New Guinea licence number **PNG-1322**;

    g. boat mark **P2V5528-07**, length of **5.8 metres**, Papua New Guinea licence number **PNG-1322**;

17. The holder of this Treaty endorsement must ensure, that when operating in the area of Australian Fisheries Jurisdiction, the primary boat is clearly marked with **P2V5528** followed by the letter "T" in letters of 300 mm high (minimum) and 35-40 mm bar width (minimum) at the following locations:
    a. on both sides of the bow above the waterline; and
    b. on a flat surface of the boat that is visible from an aircraft at all times.

18. The holder of this Treaty endorsement must ensure, that when operating in the area of Australian Fisheries Jurisdiction, each tender is clearly marked with **P2V5528** followed by the letter "T" and a number from 1 to 7 in letters at a minimum of 200 mm high (minimum) and 20-25 mm bar width (minimum) on:
    a. both sides of the bow above the waterline.

Moontide Hookah Closure

19. While operating in the area of Australian Fisheries Jurisdiction, the holder of this endorsement must ensure that no hookah gear is carried on board any boat (primary and tenders) during the seven-day hookah closure periods around the spring tides from March to September as established under section 13(2) of the Management Instrument and detailed in the calendar at **Attachment C** - *Hookah Moontide Notice*.

Entry and Exit Obligations

20. The holder of this Treaty endorsement must ensure all tenders operating with the primary boat, enter and exit the area of Australian Fisheries Jurisdiction attached to the primary boat.

21. The holder of this Treaty endorsement is not authorised to enter the area of Australian Fisheries Jurisdiction with fish on board the boat nominated under this Treaty endorsement or any associated tenders unless written approval is provided by AFMA.

22. Prior to the primary boat and tender(s) entering the area of Australian Fisheries Jurisdiction, the holder of this Treaty endorsement must provide a report to AFMA at least 24 hours prior to entry, containing the following details:
    a. the intended time and date of entry of the primary boat and tender(s) into the area of Australian Fisheries Jurisdiction.
    b. a complete and accurate list of the names and nationality of all of crew on board the primary boat;
    c. the number of tenders and boat identification mark for each tender operating with the primary boat under this Treaty endorsement;
    d. the area in which the primary boat and tender(s) will be operating.

23. Prior to the primary and tender boats departing the area of Australian Fisheries Jurisdiction, AFMA must be provided at least 48 hours' notice of the following:
    a. the intended departure date of the primary and tenders from the area of Australian Fisheries Jurisdiction;
    b. the name and distinguishing symbol of all boats;
    c. the port or other place of unload;

d. estimated time of arrival in the port or other place of unload;

e. the name of the premises and/or business all boats will be unloading to; and

f. the date and estimated time that unloading will commence.

24. Prior to the primary boat and tender(s) entering the port of Daru, Papua New Guinea, the holder of this Treaty endorsement must provide a report to AFMA and the Papua New Guinea National Fisheries Authority at least 12 hours' prior to entering port, containing the following details:

    a. the intended time and date of entry of the primary boat and tender(s) into the port of Daru, Papua New Guinea; and

    b. an accurate estimate of the weight and processed form of total tropical rock lobster taken during the applicable trip:

        I. accurate estimated weight of whole tropical rock lobster expressed as weight in kilograms (live and frozen); and

        II. accurate estimated weight of tailed tropical rock lobster expressed as weight in kilograms.

25. The holder of this Treaty endorsement must send the reports referred to in conditions 22, 23 and 24 in writing to AFMA via the email addresses tistaff@afma.gov.au and dutyofficer@afma.gov.au and the Papua New Guinea National Fisheries Authority via the email addresses: [redacted]

Transhipment and Carriage limitations

26. The transhipment of tropical rock lobster is prohibited unless done under the following conditions:

    a. from the tender(s) operating with the primary boat, to the primary boat.

27. The carriage of tropical rock lobster is prohibited unless done under the following conditions:

    a. it is taken by the tender(s) operating with the primary boat.

Vessel Monitoring System (VMS) requirements

28. The holder of this Treaty endorsement must ensure that:

    a. the primary boat has a vessel monitoring system that is capable of being operational at all times;

    b. the vessel monitoring system on the primary boat is operational at all times;

    c. If the vessel monitoring system stops operating for any reason, the holder of this Treaty endorsement must inform AFMA as soon as practicable after the Treaty endorsement holder becomes aware that the vessel monitoring system has stopped operating by calling 1300 723 621 or emailing ausvms@afma.gov.au.

    Note: A list of approved vessel monitoring systems is available at www.afma.gov.au

29. The holder of this Treaty endorsement (or any person acting on the holder's behalf) must not interfere, or attempt to interfere, with the operation of the VMS unit.

***Interfere** includes, but is not limited to:*

i. Physical obstruction or removal of the AFMA VMS unit, or

ii. Deliberately disconnecting or otherwise interfering with the power supply to the AFMA VMS unit, or

iii. Deliberate physical interference with the casing or any external or internal components of the AFMA VMS unit.

Landing Limitations

30. The holder of this Treaty endorsement must ensure all tropical rock lobster that has been taken, as authorised by this Treaty endorsement, is landed in the port of Daru (Daru Island Wharf, South-Fly district, Western Province, Papua New Guinea).

31. The primary boat and tender(s), as authorised by this Treaty endorsement, are prohibited from transferring product taken under this endorsement to any other boat, except as otherwise provided under condition 26.

32. Except for circumstances involving *force majeure* and other humanitarian emergencies involving the health or safety of crew members or the safety of the boats, or unless otherwise directed by Australian authorities or allowed in accordance with the Act, Papua New Guinea boats authorised to fish under this Treaty endorsement are not permitted to make landfall in any Australian territory. This includes activities to unload product, source provisions or refuel.

    Note: An emergency situation or event that developed suddenly, was not reasonably foreseeable and which is beyond reasonable human control. An example of a force majeure situation may include a storm or a cyclone.

Logbook Reporting obligations

33. The holder of this Treaty endorsement must ensure that relevant information about tropical rock lobster taken in the area of Australian Fisheries Jurisdiction is accurately and fully recorded and submitted in the logbook titled “The Tropical Rock Lobster Logbook - TRL04” in accordance with the General Information and Instructions for completion of that logbook dated February 2014. While the primary boat and tender(s) are operating in the area of Australian Fisheries Jurisdiction the logbook is to be completed daily.

34. The holder of this Treaty endorsement must provide to AFMA a legible copy of the log sheets completed for the fishing operations undertaken in the area of Australian Fisheries Jurisdiction within 72 hours of the taken tropical rock lobster being landed in the port of Daru, Papua New Guinea.

35. The holder of this Treaty endorsement must send all reports referred to in conditions 33-34 to AFMA via the email address tistaff@afma.gov.au

Purposes Limitations

36. The holder of this Treaty endorsement must not undertake fishing under any Papua New Guinea licence, while the primary boat and tender(s) are carrying tropical rock lobster taken in the area of Australian Fisheries Jurisdiction.

Protected species interactions

37. The holder of this Treaty endorsement must ensure that, as far as practicable, there is no interaction during a trip with a protected species.

38. If there is an interaction with a protected species during a trip, the holder of this Treaty endorsement must ensure that the interaction is recorded in the comments section of the TRL04 logbook kept on the primary boat.

39. If:

    a. the interaction results in the death of the protected species; and

    b. it is necessary to discharge the species' carcass;

    The holder of this Treaty endorsement must ensure that the carcass is discharged from the boat in a way that does not attract birds, mammals, or reptiles to the boat.

40. If the interaction injures the species, the holder of this Treaty endorsement must ensure that the species is given as much assistance as is practicable.

Handling and treatment of bycatch

41. The holder of this Treaty endorsement (or a person acting on the holder's behalf) must not mistreat any bycatch.

    Mistreat *means taking, or failing to take, any reasonable action or actions, which results, or is likely to result, in the;*

    i. death of, or
    ii. injury to, or
    iii. causing of physiological stress to any bycatch.

    Bycatch *means any species that physically interact with fishing boats and/or fishing gear (including auxiliary equipment) and which are not usually kept by commercial fishers. Bycatch species may include fish, crustaceans, sharks, molluscs, marine mammals, reptiles and birds. Bycatch includes listed protected species under the Environment Protection and Biodiversity Conservation Act 1999.*

    Note: For the purposes of this condition 'mistreat' does not include the taking, or failing to take, action where it is reasonably necessary to take, or not take, the action to ensure the safety of the boat and/or its crew.

Agent obligations

42. The holder of this Treaty endorsement accepts concurrent liability for all conduct by its servants or agents infringing the Act (or the Regulations, the Management Instrument or Treaty endorsement conditions made by virtue of that Act) who may be engaged by the holder to conduct on the holder's behalf activity under this Treaty endorsement.

43. Liability for the conduct of the holder's servants or agents arises, even if the conduct may be, or actually is, beyond the scope of the servant or agent's actual or apparent authority where it is a breach that occurs during the conduct of activity authorised by this Treaty endorsement.

44. The holder of this Treaty endorsement may avoid concurrent liability for conduct whilst conducting activity under this Treaty endorsement if, but only if, the holder can establish that the infringing conduct could not possibly have been prevented by any action or precaution that the holder might have reasonably taken.

45. The giving of an indemnity by the servant or agent to the holder for any penalties incurred by the holder, for infringing conduct by the servant or agent is not, of itself, a reasonable precaution to prevent infringing conduct.

46. The holder of this Treaty endorsement must ensure the master of the boat fishing under the authority of this Treaty endorsement is nominated as an authorised agent for the holder before any fishing operation may take place.
47. The holder of this Treaty endorsement must ensure the authorised agent signing the required logbook was the master of the boat (skipper) at the time the recorded fishing operation took place.
48. The holder of this Treaty endorsement may sign the required logbook if they were the master of the boat (skipper) when the recorded fishing operation took place.
49. If more than one master of the boat is on board the boat during the fishing trip, each master must complete and sign a separate logbook page for each of the fishing operations for which they had control over.

Concurrent conditions

50. This Treaty endorsement must only be used in conjunction with a Papua New Guinea licence held by the same holder such that:
    a. the conditions of the Papua New Guinea licence apply (to the extent those conditions are not inconsistent and are capable of doing so) as conditions of this Treaty endorsement.
    b. a breach, suspension or cancellation of the Papua New Guinea licence is a breach, suspension or cancellation of this Treaty endorsement.

Transfer limitations

51. This Treaty endorsement cannot be transferred.

Other Obligations

52. If a boat in respect of which this Treaty endorsement is made, at all times when the boat is being used under this endorsement, the holder must have provided to AFMA a current emergency contact facility for the nominated boat.
53. An emergency contact facility must enable AFMA to contact the boat immediately and directly at any time when the boat is at sea, including in the event of an emergency.
54. AFMA must be notified immediately of any change in contact details, by email to Licensing@afma.gov.au and the boat must not depart on a fishing trip unless AFMA has been so notified of the change in contact details.

    Note: The emergency contact facility may take the form of a satellite phone number, or skipper or crew member's mobile phone number - any number that may be used by AFMA to contact the boat while it is at sea at any time, including in the event of an emergency.

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Anna Willock
Delegate
Protected Zone Joint Authority

Prohibited Area Boundaries

The boundary of each of the 11 Areas is a line that begins at point 1 then continues along the geodesics sequentially connecting the rest of the points for the area.

Area 1 – Prince of Wales, Horn Is, Hammond Is, Thursday Is.

	Decimal Degrees		Deg. Min. Sec.	
Point	Latitude	Longitude	Latitude	Longitude
1	-10.442	142.217	10º 26' 31.2" S	142º 13' 1.2" E
2	-10.616	142.451	10º 36' 57.6" S	142º 27' 3.6" E
3	-10.800	142.267	10º 48' 0" S	142º 16' 1.2" E
4	-10.800	142.107	10º 48' 0" S	142º 6' 25.2" E
5	-10.654	142.002	10º 39' 14.4" S	142º 0' 7.2" E

Area 2 – Mabuiag Is, Badu Is, Moa Is.

	Decimal Degrees		Deg. Min. Sec.	
Point	Latitude	Longitude	Latitude	Longitude
1	-10.151	142.011	10º 9' 3.6" S	142º 0' 39.6" E
2	-9.877	142.141	9º 52' 37.2" S	142º 8' 27.6" E
3	-9.916	142.283	9º 54' 57.6" S	142º 16' 58.8" E
4	-10.02	142.218	10º 1' 12" S	142º 13' 4.8" E
5	-10.139	142.442	10º 8' 20.4" S	142º 26' 31.2" E
6	-10.354	142.282	10º 21' 14.4" S	142º 16' 55.2" E

Area 3 – Warraber Is

	Decimal Degrees		Deg. Min. Sec.	
Point	Latitude	Longitude	Latitude	Longitude
1	-10.154	142.765	10º 9' 14.4" S	142º 45' 54" E
2	-10.154	142.882	10º 9' 14.4" S	142º 52' 55.2" E
3	-10.263	142.882	10º 15' 46.8" S	142º 52' 55.2" E
4	-10.263	142.765	10º 15' 46.8" S	142º 45' 54" E

Area 4 – Poruma Is

	Decimal Degrees		Deg. Min. Sec.	
Point	Latitude	Longitude	Latitude	Longitude
1	-9.996	143.005	9º 59' 45.6" S	143º 0' 18" E
2	-9.996	143.13	9º 59' 45.6" S	143º 7' 48" E
3	-10.103	143.13	10º 6' 10.8" S	143º 7' 48" E
4	-10.103	143.005	10º 6' 10.8" S	143º 0' 18" E

Area 5 – Iama Is

	Decimal Degrees		Deg. Min. Sec.	
Point	Latitude	Longitude	Latitude	Longitude
1	-9.841	142.713	9º 50' 27.6" S	142º 42' 46.8" E
2	-9.841	142.836	9º 50' 27.6" S	142º 50' 9.6" E
3	-9.957	142.836	9º 57' 25.2" S	142º 50' 9.6" E
4	-9.957	142.713	9º 57' 25.2" S	142º 42' 46.8" E

Area 6 – Masig Is

	Decimal Degrees		Deg. Min. Sec.	
Point	Latitude	Longitude	Latitude	Longitude
1	-9.696	143.345	9º 41' 45.6" S	143º 20' 42" E
2	-9.696	143.477	9º 41' 45.6" S	143º 28' 37.2" E
3	-9.81	143.477	9º 48' 36" S	143º 28' 37.2" E
4	-9.81	143.345	9º 48' 36" S	143º 20' 42" E

Area 7 – Mer Is

	Decimal Degrees		Deg. Min. Sec.	
Point	Latitude	Longitude	Latitude	Longitude
1	-9.837	144.044	9º 50' 13.2" S	144º 2' 38.4" E
2	-9.897	144.139	9º 53' 49.2" S	144º 8' 20.4" E
3	-10.027	144.044	10º 1' 37.2" S	144º 2' 38.4" E
4	-9.943	143.939	9º 56' 34.8" S	143º 56' 20.4" E

Area 8 – Erub Is

	Decimal Degrees		Deg. Min. Sec.	
Point	Latitude	Longitude	Latitude	Longitude
1	-9.519	143.702	9º 31' 8.4" S	143º 42' 7.2" E
2	-9.519	143.836	9º 31' 8.4" S	143º 50' 9.6" E
3	-9.65	143.836	9º 39' 0" S	143º 50' 9.6" E
4	-9.65	143.702	9º 39' 0" S	143º 42' 7.2" E

Area 9 – Ugar Is

	Decimal Degrees		Deg. Min. Sec.	
Point	Latitude	Longitude	Latitude	Longitude
1	-9.453	143.491	9º 27' 10.8" S	143º 29' 27.6" E
2	-9.453	143.602	9º 27' 10.8" S	143º 36' 7.2" E
3	-9.562	143.602	9º 33' 43.2" S	143º 36' 7.2" E
4	-9.562	143.491	9º 33' 43.2" S	143º 29' 27.6" E

Area 10 – Saibai Is, Dauan Is

Points intersect with the Australian EEZ

	Decimal Degrees		Deg. Min. Sec.	
Point	Latitude	Longitude	Latitude	Longitude
1	-9.353	142.471	9º 21' 10.8" S	142º 28' 15.6" E
2	-9.504	142.481	9º 30' 14.4" S	142º 28' 51.6" E
3	-9.464	142.852	9º 27' 50.4" S	142º 51' 7.2" E

Area 11 – Boigu Is

Points intersect with the Australian EEZ

	Decimal Degrees		Deg. Min. Sec.	
Point	Latitude	Longitude	Latitude	Longitude
1	-9.239	142.08	9º 14' 20.4" S	142º 4' 48" E
2	-9.342	142.08	9º 20' 31.2" S	142º 4' 48" E
3	-9.342	142.35	9º 20' 31.2" S	142º 20' 60" E
4	-9.269	142.35	9º 16' 8.4" S	142º 20' 60" E

TROPICAL ROCK LOBSTER WORKING GROUP Thursday Island	MEETING 17 12 December 2024
DATE AND VENUE FOR NEXT MEETING	Agenda Item 11 For DISCUSSION and ADVICE

RECOMMENDATIONS

1. That the Working Group **NOMINATE** a date and a venue for the next meeting noting proposed meeting dates in the table below alongside key agenda items.

Proposed Date	Key agenda items
June 2025	- Discuss research priorities and any updates to the five-year research plan, having regard to TRLRAG advice.
11 December 2025	- Consider advice of the TRL Resource Assessment Group (TRLRAG) regarding: o Results of the November 2025 pre-season survey o CPUE analyses for the 2024-25 fishing season o recommended biological catch (RBC) for the 2025-26 fishing season - Provide advice regarding a total allowable catch (TAC) for the 2025-26 fishing season.