



Australian Government

Australian Fisheries Management Authority

Torres Strait Hand Collectables Working Group

Meeting 18

28-29 October 2021

Final record

Note all meeting papers and minutes
are available on the PZJA webpage:

www.pzja.gov.au

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1 Preliminaries

1.1 Acknowledgment of traditional owners, welcome and apologies

1. The meeting was opening in prayer by Sereako Stephen around 8.45am.
2. The Chair welcomed members and observers to the 18th meeting of the Torres Strait Hand Collectables Working Group (the WG), in particular Nicholas Pearson and Gerald Bowie to their first meeting as newly appointed members for Kulkalgal and Maluialgal. The Chair acknowledged the traditional owners of the lands on which members were participating both in the meeting and those members on video conference and paid respect to Elders past, present and emerging.
3. The Chair noted that no apologies had been received.
4. The meeting was conducted as a face-to-face in Cairns and a video conference. All scientific members, the QDAF member and observers participated in the meeting via video conference whilst all other members and the Malu Lamar (Torres Strait Islander) Corporation RNTBC (Malu Lamar) observer participated from the Novotel Hotel conference room in Cairns.

1.2 Adoption of agenda

5. The WG adopted the draft agenda without any changes. Members and observers did not object to the meeting being voice recorded for the purposes of developing the meeting record. The recording is deleted once the meeting record is finalised and ratified by the WG.

1.3 Declarations of interest

6. The Chair advised members and observers, that as provided in the PZJA Fisheries Management Paper No. 1 (FMP1), all members must declare all real and potential conflicts of interest in the Torres Strait Beche-de-mer Fishery at the commencement of the meeting.
7. Where it is determined that a direct conflict of interest exists, the WG may allow the member(s) to continue to participate in the discussions relating to the matter but may also determine that, having made their contribution to the discussions, the member should retire from the meeting for the remainder of the discussions on that issue.
8. Declared interests are detailed in **Table 1** below. Each group of members and observers with similar interests were usually asked to leave the meeting to enable the remaining members to:
 - a. Freely comment on the declared interests;
 - b. Discuss if the interests preclude the members from participating in any discussions; and
 - c. Agree on any actions to manage declared conflicts of interest.

but in this meeting the WG agreed to address any additional conflicts of interest should they arise throughout the discussion of agenda items.

Table 1. Declared interests from each attendee

Name	Position	Declaration of interest
Members		
Anne Clarke	Chair	Previously contracted with Regional Development Australia Far North Queensland and Torres Strait. No pecuniary interests or otherwise.
Tim Skewes	Scientific Member	Independent Consultant. Previously employed by CSIRO. Scientific Member on the Hand Collectables Resource Assessment Group. Has been involved in Torres Strait research for about 30 years as a principal scientist and co-investigator for Torres Strait Scientific Advisory Committee (TSSAC) and TSRA funded projects focused on the sea cucumber, tropical rock lobster, finfish and traditional fisheries in Torres Strait. More recently involved in the 2019-20 sea cucumber survey and assisted with the report on developing options to measure non-commercial fishing in the Torres Strait. No current pecuniary interest in the fishery.
Steve Purcell	Scientific Member	Scientific Member on the Hand Collectables Resource Assessment Group. Lecturer at the Southern Cross University. Has interest in invertebrate fishery research has previously worked in the assessment of sea cucumber fisheries in the Pacific and New Caledonia, and on restocking/sea-ranching research. Specialist in sea cucumber ecology and fisheries. Will be involved in a sea cucumber population survey in New Caledonia to inform the CITES Appendix II listing of black and white teatfish. No other pecuniary interests or otherwise in the TS BDM Fishery.
Michael Passi	Traditional Inhabitant Member Kemer Kemer Meriam	Traditional inhabitant boat (TIB) licence holder and full time BDM operator. Hand Collectables Working Group Member.
Anthony Salam	Traditional Inhabitant Member Kaiwalagal	Traditional inhabitant boat (TIB) licence holder.
Nicholas Pearson	Traditional Inhabitant Member Kulkalgal	Traditional inhabitant boat (TIB) licence holder. TSRA Board Member. Owner of a fishing company that operates in the BDM and TRL Fisheries.
Maluwap Nona	Traditional Inhabitant Member Gudumalulgal	TIB licence holder and full time BDM operator. Chairperson of Malu Lamar; Director of MDW Fisheries Association on Mer; Traditional Inhabitant Member on TSSAC. Applicant on the Torres Strait Sea Claim Part B with other representatives.

Name	Position	Declaration of interest
		Employed as a Case Manager in the Northern Peninsula Area.
Gerald Bowie	Traditional Inhabitant Member Maluialgal	Traditional inhabitant boat (TIB) licence holder.
Selina Stoute	AFMA Member	Employed by AFMA, no pecuniary interests or otherwise
Mark Anderson	Torres Strait Regional Authority (TSRA) Member	Employed by TSRA in the Fisheries and Infrastructure programs, no pecuniary interests as an individual, TSRA holds fishing licences on behalf of traditional inhabitants.
Samantha Miller	QDAF Member	Employed by Queensland Government and working in the Management and Reform Section, managing the East Coast Sea Cucumber and other harvest fisheries in Queensland. No pecuniary interests or otherwise.
Executive officer		
Danait Ghebregabhier	Executive Officer AFMA	Employed by AFMA, no pecuniary interests or otherwise
Permanent Observers		
Sereako Stephen	Malu Lamar (Torres Strait Islander) Corporation RNTBC	Malu Lamar Director, TSRA Board Member for TRAWQ, Director on Gur A Baradharaw Kod Torres Strait Sea and Land Council (GBK), Chair of the Ugar Prescribed Body Corporate, Ugar Traditional Owner has previously held TIB fishing licence
Observers and invited industry participants		
Yen Loban	TSRA	TSRA Board Member and Fisheries Portfolio Member
Quinten Hirakawa	TSRA	Employed by TSRA and TIB licence holder with a BDM endorsement.
Keith Brightman	TSRA	Employed by TSRA working on PZJA related matters no pecuniary interests as an individual, TSRA holds fishing licences on behalf of traditional inhabitants.
Ian Butler	Australian Bureau of Agriculture and Resource Economics (ABARES)	Employed by the Australian Bureau of Agricultural and Resource Economics and Science (ABARES), Department of Agriculture, Water and the Environment (DAWE). No pecuniary interests or otherwise.

1.4 Action items from previous meetings

9. The WG noted the progress update provided against action item arising at previous HCWG meetings and that the meeting records for the HCWG Member's meeting on 7 August and the HCWG17 meeting on 12 October 2020 have been finalised and published on the PZJA website.
10. The HCWG noted further updates in relation to the specific action items outlined below:
 - a. Item 4 (HCWG16) - *Malu Lamar to take the lead in convening a stakeholder workshop to further discuss and agree on cultural lore and industry agreements with respect to fishing for black teatfish and report outcomes to the HCWG:*
 - HCWG TI members, including new ones, will continue to be involved in this process.
 - The TSRA's Fisheries Advisory Committee is currently seeking advice from GBK on how to proceed given this process needs to be led by Traditional Inhabitants.

2 Working group updates

2.1 Industry members

11. The WG noted the following updates from Industry members.
12. Fishers on Thursday Island and surrounding islands are seeking an update on the process for the review of the current hookah prohibition in the TS BDM Fishery in relation to fishing for white teatfish. Fishers had mixed feelings about the black teatfish opening, they were happy it opened but upset that they couldn't participate as it was during the TRL hookah season although they understood that there would have been too much effort if the opening had occurred during a TRL hookah closure.
13. Fishers at Mer Island have mainly focussed on prickly redfish and white teatfish and fishers on Erub and Ugar and the Central cluster on curryfish during this fishing season. There have been ups and downs due to the weather but it has been a good season overall. Reporting has been good throughout the year especially the reporting and other management arrangements that were in place during the black teatfish opening earlier this year which worked out really well. Fishers from the eastern cluster landed their catches back at their respective islands while fishers from the central cluster were based on Bourke Island.
14. Fisher members generally approved that AFMA closed the fishery before the 20t TAC was exceeded thus allowing the fishery to potentially remain open. Fishers were concerned that the TAC would be overcaught. Industry members that fished during the opening reported that it was beneficial to have Compliance fisheries officers on ground on Mer Island. As well as enforcing the regulatory arrangements for the opening, the compliance officers also supported fishers and fish receivers with the reporting and licencing requirements to be able to participate in the opening.
15. The Gudamaluylgal Nation was privileged to participate in the black teatfish opening and exercise their cultural protocols. Dorries from Saibai and Dauan arrived on Mer Island and met with the Traditional Owners. Fishers were able to make returns for their families in Gudamaluylgal Nation. Gudamaluylgal Nation also supports the concept of lifting the hookah ban to fish for white teatfish as a much needed fishery for everyone. Gudamaluylgal Nation is the only nation that does not have any accessible fisheries at the moment and it is working with the TSRA Fisheries Portfolio Member and others at the moment to have the Western Line closure lifted north of Buru (Turnagain Island). Gudamaluylgal fishers will continue to seek the permission and guidance from relevant Traditional Owners as per protocols as they continue to participate at future black teatfish openings even though the TIB licence does not restrict fishing grounds they can access.
16. Stakeholders in the Maluialgal Nation were not happy about the directness with which fisheries officers on Mer and other islands were boarding and searching some boats and disregarding their privacy. However, on the other hand they were happy about the TAC not being exceeded and fishers complying with maritime safety requirements although some fishers were not fully compliant. There have been complaints about there not being enough buyers during the black teatfish opening and those that where available being mostly based on Mer and Masig Islands.
17. It was discussed that fisheries officers need to be able to visually inspect boats in the course of undertaking their role such as checking for compliance with catch limits and fishing gear/equipment requirements. AFMA has received feedback from some operators from Mer Island

that they found this process confronting and is looking for feedback from Industry members on how fisheries officers might approach fishers when undertaking inspections. Industry members suggested that AFMA consider engaging a liaison officer that is across the cultural protocol during future black teatfish opening compliance operations.

18. Fish receivers based in the central region during the black teatfish opening worked with fishers from Poruma and Masig Islands as well as some that were based on Memey. The weather was a bit rough and therefore not ideal, but they managed to catch a few tonnes. An Industry member commented that some fishers weighed their catch with salt thus overestimating its weight and suggested that AFMA clarify the weighing requirements with industry leading up to the next black teatfish opening.
19. Fishers from Poruma and lama are not able to fish for curryfish at Dungeness and Warrior at the moment.
20. An Industry member proposed that consideration be given to allowing the use of hookah equipment to fish for curryfish found in deep waters (e.g. at Cumberland) as well as white teatfish.

2.2 Scientific members

21. The WG noted the following updates from the Scientific member, Tim Skewes:
 - The Western Australia sea cucumber fishery has recently received Marine Stewardship Council (MSC) certification for access to the European and North American markets. The Northern Territory and QLD east coast fishing industry is in the process of pursuing MSC certification. The TS BDM Fishery is in a good position to pursue this accreditation once the stock status of key species in relation to the limit reference point has been addressed.
 - He is assisting the Seychelles Government with a white teatfish and prickly redfish stock assessments. Stocks in the Seychelles are mostly now found in deeper water as the shallow reefs have been fished out.
22. The WG noted the following updates from the Scientific member, Steve Purcell:
 - There are new proposals lodged with CITES to consider listing for Thelenota species (prickly redfish, amberfish, lemonfish, candycane fish (*T. rubralineata*)) but there is not much data available to support the listing evaluation.
 - Currently involved in fisheries assessment in New Caledonia which include undertaking underwater surveys to determine stock size. Advice from the Sea Cucumber Assessment Group that fishers have moved north to new grounds and are targeting leopard fish (medium value species). Fishers in the north of the territory have been particularly active as stock in the southern grounds have been depleted. This is an interesting study as New Caledonia is one of the few fisheries that seems to have a sustainable sea cucumber fishery in the region and has some parallels with the BDM fishery and the east coast sea cucumber fishery.
 - Started a project with the World Food Organisation that includes undertaking a market study in China to provide information on the price of all sea cucumber species harvested in the Torres Strait which may be useful information for the fishery. Someone from Honk Kong will be commissioned to collect the price information.

2.3 Government Agencies

23. The WG noted the Communique from the Queensland Sea Cucumber Fishery Working Group's meeting on 23 August 2021 and the verbal update provided by the QDAF Member, Samantha Miller:

- Harvest Strategy updates for a number of fisheries are now available on the Fisheries Queensland website.
- The Queensland Sea cucumber and Coral sea fisheries are currently undergoing a challenging Wildlife Trade Operation approval process in relation to some of the requirements being proposed and the tight timeframes for meeting the requirements which include:
 - determining appropriate minimum size limits and conversion ratios
 - establishing supply chain of evidence documentation
 - interpretation of stock assessments
- economic data is available for Queensland fisheries but it has been challenging to publish data for small fisheries due to confidentiality considerations.
- Queensland fisheries is seeking to employ an Indigenous fisheries manager and requested that AFMA and TSRA distribute the job advert to appropriate organisations within their network.

24. The WG noted the following TSRA update provided by the TSRA Member:

- Zenadth Kes Fisheries was established as of Dec 2020 comprising 25 members, which is made up of 5 members from each Cluster Nation and 5 Board Members. The Chair of the Board is Mr Yen Loban (currently also the TSRA Board Fisheries Portfolio Member). Zenadth Kes Fisheries will be looking to monetise and increase the value of the fishery across the next 5-10 years.
- The TSRA Chair has formed a Fisheries Advisory Committee made up of seven committee members that are also TSRA Board members. Mr Yen Loban and Mr Nicholas Pearson are Chair and Vice Chair of the committee, respectively, and the rest of the membership consists of a TSRA Board member representative from each Cluster Nation. The committee's role is to provide advice from their communities to the TSRA.
- At the PZJA level, TSRA is developing a 5-year action plan in partnership with the TSRA Fishery Advisory Committee working towards a long held aspiration of Torres Strait Islanders of 100% ownership of all Torres Strait fisheries and developing actions towards 100% utilisation of the fisheries.
- The Wapil Project (employment and training project) was paused over the last 12 months due to travel restrictions and inability to do certain things but it is planned to resume and negotiations are underway with Prescribed Body Corporates (PBC) on locations to extend the program to Gudamaluylgal Nation which may tie in with opening the top western line closure.
- There is some interest in Badu with an established factory which is already operating.
- Commenced detailed conversations with the Ugar PBC regarding aquaculture, BDM being one of their species of interest – with some communities in the Central cluster also showing interest
- TSRA has approached Scientific Members on the Torres Strait Scientific Advisory Committee for their advice on how to pursue aquaculture opportunities across all Torres Strait Fisheries which has yielded some promising contacts.

25. The WG noted the written update provided by AFMA, including:

- Progress to date against the nine WTO conditions for the BDM Fishery that will be provided to DAWE in November 2021 as part of the annual reporting requirement. The WTO conditions for the BDM Fishery include additional requirements that need to be met by the PZJA in managing the harvest of black and white teatfish, species listed under Appendix II of CITES.
- An update on the status of proposed amendments to the *Torres Strait Fisheries Act 1984* and the *Torres Strait Fisheries Regulations 1985*, which includes an amendment to provide for catch

reporting across all licence holders to allow for the implementation of mandatory logbook reporting by the TIB sector.

- The launch of electronic catch disposal records (eCDRs) as part of the mandatory fish receiver system which provides fishers with a fast and easy way to electronically report received catch information to AFMA.

2.4 Native Title

26. The WG noted an update on the progress of Malu Lamar's request to become a member on the PZJA and advisory groups, the TSRA member advised that progress is underway to consider options on achieving this and working through the implications and significance of individual Director/Board members agreeing to recommendations that would require broader notification.
27. In response to a question about how information from Malu Lamar meetings is disseminated, the Malu Lamar Chairperson explained that this is supposed to occur through the PBC Chair of each Island and the GBK representatives. The TSRA also facilitates industry engagement and communications of outcomes through cluster visits with PZJA Traditional Inhabitant members.
28. Malu Lamar is under resourced and not able to engage with individual fishers on meetings outcomes but there is a process underway to secure funding to facilitate better engagement.

2.5 PNG National Fisheries Authority

29. The WG noted that although invited to the meeting, officials from the Papua New Guinea National Fisheries Authority were not in attendance to provide a further update to the background information on the PNG BDM fishery provided by AFMA in the agenda paper.
30. The WG further noted the reports from the Torres Strait Treaty Traditional Inhabitant Meeting held on 9 September 2021 and the Torres Strait Treaty Joint Advisory Council Meeting held on 10 September 2021.

3 Black teatfish trial opening 30 April – 3 May 2021 and future opening

31. The WG noted the update on the outcomes of the black teatfish trial opening on 30 April – 3 May 2021 and considered the HCRAG's draft recommendation on future black teatfish openings as outlined in the agenda paper. The WG also considered Dr Eva Plaganyi's presentation of the CSIRO analysis of the data collected during the black teatfish opening and the outcomes of the updated population modelling to include black teatfish catch data from the opening.

CONDITION 5 - If the Trial TAC is exceeded by more than 5%, then the fishery is automatically paused (i.e. no fishing allowed) for the following year

32. The WG noted that as the 20t TAC was not exceeded (total catch was 17.62t), the harvest strategy recommendation that the fishery automatically pause for the following year if the TAC is exceeded by 5 per cent does not apply.

CONDITION 6 - Was data collection during the trial conducted satisfactorily?

33. The WG agreed that data collection during the trial was conducted satisfactorily based on the HCRAG's advice on the reliability of the total catch reported and the results of the CSIRO analysis of the data. However, the voluntary reporting of area and effort information needs to improve

significantly. This is particularly relevant in light of the large amount of black teatfish catch that did not include corresponding location information.

34. The WG noted industry member comments that this catch is most likely from the Cumberland and Warrior areas and it should be followed up with the relevant fishers and fish receivers.
35. The WG noted that it is highly unlikely that there is damaged product that was discarded but not captured in the catch report due to the hardy nature of black teatfish as well as the daily catch landing and reporting requirements that applied during the opening. However, there is a provision in the CDRs to capture data on unmarketable catch due to damage.

CONDITION 7 - Noting the TAC was not exceeded and reliable data were collected, the data needs to be analysed to review the TAC and potential for the fishery to stay open in the future, or be re-opened periodically after a pre-specified interval

36. The WG supported HCRAAG's advice and **recommended** a black teatfish opening in 2022 with a 20t TAC. In making this recommendation, the WG considered the outcomes of the updated CSIRO population modelling which confirmed that a 20t TAC is sustainable and would not lead to a consistent decline in black teatfish biomass after the first year of fishing. In contrast the modelling found that catches of 30t could lead to a gradual depletion of the stock.
37. The WG also took into account industry member advice to ensure that all catch data continues to be captured during future openings.
38. Industry members discussed that closing the trial opening with a 2.4t residual TAC, whilst not ideal economically in the short term, was important to support the sustainability of the fishery to ensure that the competitive TAC was not overcaught given fishing effort can increase substantially.
39. The current BDM harvest strategy does not provide for the carryover of a rebuilding species, such provisions would need to be formulated and tested carefully before they can be considered for future openings.
40. The Queensland Member emphasized to the WG the need to be precautionary in setting a TAC for black teatfish. The east coast sea cucumber fishery is struggling to demonstrate to the Department of Environment why its black teatfish catch limit of 30t is acceptable and currently does not have a positive non-detriment finding, and hence a WTO approval, for the species.

Economic viability of current licencing arrangements

41. The WG discussed the HCRAAG's recommendation for it to consider the performance of the current licencing arrangements in the fishery given industry's concern about the economic viability of the fishery. Amongst other things, this may entail separating the licencing system for commercial and traditional fishing (noting traditional fishing does not require a licence). The WG commented that industry guidance is required to progress this issue and supported for the discussion to commence at an industry workshop ahead of the next black teatfish opening. Industry members supported this approach, including running the meeting with AFMA's support and with a standing invite for Malu Lamar.

CONDITION 8 - Additional data to be collected during future openings

42. The WG discussed ways in which voluntary area and effort reporting in catch disposal records (CDRs) by fishers can be improved while AFMA progressed the legislative amendments required to facilitate logbook reporting for the TIB sector. These include:
- ongoing education and engagement of individual fishers and fish receivers through workshops to reinforce the reporting system.
 - develop and engagement strategy for non-full time fishers that are either unfamiliar with the reporting requirements or may not understand the importance of providing the voluntary information.
43. The TSRA member sought the WG's endorsement to undertake a sea cucumber scientific stock survey in 2022/23.

4 Applying the harvest strategy to review total allowable catches (TACs)

44. The WG considered TACs for the 2022 fishing season commencing on 1 January 2022, in line with the BDM harvest strategy tiers and decision rules and taking into account new data and information available for the fishery since the harvest strategy was implemented and the HCRA's recommendations that:
- changes are not required to the current TACs for the 2022 fishing season.
 - that the basket trigger for curryfish vastus be increased to 30t in light of the additional information available for the species and the survey results indicating a more even relative abundance with curryfish herrmanni.
45. The WG further noted the HCRA's advice that all species remain in the low tier of the harvest strategy as a transition to middle tier requires at least two primary indicators and is not applicable during the initial years of harvest strategy implementation as insufficient detailed historical fishery data are available. For the high tier to apply a time series of high-quality species-specific surveys together with a reasonable level of catch is required.
46. Given the large number of species, the working group agreed to focus on the select species below, which were also assessed by the HCRA, with the rest of the species to be considered at the next meeting:
- White teatfish (target species)
 - Prickly redfish (target species)
 - Deepwater redfish (target species)
 - Hairy blackfish (target species)
 - Curryfish herrmanni (common) and Curryfish vastus (curryfish basket species)
 - Lollyfish (basket species)

White teatfish

47. The WG noted the HCRA's assessment outlined in the species assessment sheet (SAS) and:
- did not recommend any changes to the white teatfish TAC in 2022

- noted the HCRAAG's recommendation that it continue to consider the review of the current hookah prohibition in relation to white teatfish and undertake further community consultation on management arrangements that would support sustainable harvesting of white teatfish.

Prickly redfish

48. The WG noted that the prickly redfish TAC for 2020 was slightly overcaught although not enough to trigger the application of the overcatch rule in the harvest strategy. The WG further noted the HCRAAG's assessment of the species in the SAS, including advice to review the TAC if the species continues to be overcaught. The WG did not recommended any change to the prickly redfish TAC in 2022.
49. The stock is not considered to be at risk however Industry members commented that allowing hookah use to target deepwater sea cucumber species may help alleviate the pressure from frequently targeted species such as prickly redfish and optimise the value of the fishery. Targeting the same areas due to weather considerations may also have an impact on specific size classes and the industry more broadly may consider rotating their harvest of the species as practiced by Mer Island fishers. In addition to this, the industry might also need to do more work in finding markets for basket species.
50. The WG did not recommend any changes to the prickly redfish TAC in 2022.

Curryfish basket

Curryfish common (S. herrmanni)

51. The WG noted Scientific Member Tim Skewes' advice that recent survey trend indicates a decline in the density of curryfish common compared to previous years, however the biomass estimate is somewhat conservative as it does not include the central zone which wasn't surveyed but where there are known to be a significant biomass of curryfish. The surveyed areas predominantly consisted of large individuals, consistent with previous surveys and experience in the Pacific as it is rare to find juveniles. Part of it can be explained because small curryfish are cryptic and hide to avoid predation. They might also have a big interval between recruitments to the fishery.
52. Industry members advised that they mainly find curryfish at the top of the shallows at Dungeness and Warrior reef.

Curryfish vastus (S. vastus)

53. With regards to the HCRAAG's recommendation to double the curryfish vastus trigger limit, the WG sought clarification from the HCRAAG on the basis for the increase. The WG **recommended** that the HCRAAG revisit its advice given the modest standing stock biomass from the survey, relative to the 60t TAC for the curryfish basket. The WG sought further detail from the RAG to justify its recommendation to increase the trigger limit. The WG also noted that the approach to managing curryfish with a basket TAC may need to be reviewed.
54. Industry members advised that they do not encounter much curryfish vastus near Dungeness (~400kg per fishing event) and tend to process curryfish differently depending on the area they are from due to size differences.

55. The WG did not recommend any changes to the curryfish basket TAC or the curryfish vastus trigger limit in 2022. The WG agreed that species differentiation of reported curryfish catches needs to improve.

Lollyfish

56. The WG noted the decline in reported lollyfish catches over the last few fishing seasons and the HCRA's recommendation to AFMA to work with Poruma fishers to better understand fishing practices for the species. Industry members commented that fishing for this species had traditionally started as a source of income for women and children on the Island. Catches increased significantly as a buyer(s) offered attractive prices. Prices at landing have since dropped.
57. The WG did not recommend any changes to the lollyfish trigger limit in 2022.

Deepwater redfish

58. The WG noted the ABARES observer's comments that deepwater redfish was assessed individually as part of the annual ABARES Fishery Status Reports and the TAC for this species seems high relative to the standing stock biomass from the survey. The priority level for the ABARES assessment increased following its removal from the basket when the BDM harvest strategy was implemented in January 2020.
59. The WG did not recommend any changes to the deepwater redfish TAC in 2022 and **recommended** that the HCRA review the TAC in light of the biomass results from the survey.

Hairy blackfish

60. The WG noted the ABARES observer's comments that hairy blackfish was assessed individually as part of the annual ABARES Fishery Status Reports and the TAC for this species seems high relative to the standing stock biomass from the survey. The priority level for the ABARES assessment increased following its removal from the basket when the BDM harvest strategy was implemented in January 2020.
61. The Scientific member Tim Skewes commented that the scientific survey was not able to find many hairy blackfish due to their patchy distribution. They are a highly aggregating and cryptic species but can be found on Warrior Reef. Warrior Reef was not included in the 2019-20 survey.
62. The WG did not suggest any changes to the hairy blackfish TAC in 2022 and **recommended** that the HCRA review the TAC in light of the biomass results from the survey.

5 Management

5.1 Management options for the utilisation of white teatfish

63. The WG considered the AFMA agenda paper seeking its advice on the:
- relative priority of directing management resources to develop advice to the PZJA on management options to support the utilisation of the white teatfish TAC.
 - key considerations for assessing management options to help guide discussions with broader stakeholders; and

c. draft workplan proposed by AFMA to develop these management options.

64. In discussing this item, the WG noted the ongoing industry request to review the hookah prohibition to be able to fish in deeper water and further developments since it had last considered this matter, which include:

- i. the recent stock survey of sea cucumbers in east Torres Strait undertaken by CSIRO has confirmed previous understanding that white teatfish are a deeper water sea cucumber species. The survey found that over 75% of the stock is found in the deep water strata (>20 m deep), though none were found beyond 36m.
- ii. white teatfish was listed on appendix II of CITES meaning the harvest and export of the species is subject to additional requirements including a seasonal TAC limit of 15t and any increase would need to be demonstrated not to be detrimental to its survival in the wild.
- iii. the HCRAG recommended that:
 1. stock assessment modelling be undertaken for white teatfish in light of the recent scientific information to inform current management arrangements for the species such as the TAC.
 2. The WG continue to consider the review of the current hookah ban in relation to the species and undertake further community consultation on management arrangements that would support sustainable harvesting of white teatfish using hookah.

a) Relative priority of directing management resources to develop advice to the PZIA on management options to support the utilisation of the white teatfish TAC.

65. The WG **recommended** that the assessment and development of management options for the utilisation of white teatfish is a high short-medium term priority for the fishery requesting AFMA consider directing resources towards this management activity.

b) Key considerations for assessing management options to help guide discussions with broader stakeholders.

66. The WG noted that industry's preferred options for utilising the white teatfish TAC require the use of hookah equipment to access deeper waters and the advice put forward by industry and communities during consultations on how these options might be implemented include:

- Allowing the use of hookah to fish for white teatfish only.
- Allowing the use of hookah to fish for white teatfish only and in certain areas.
- Having a designated white teatfish hookah fishing season which may potentially involve closing fishing to all other BDM species.
- Trialling fishing for white teatfish using hookah with one fisher per community.

67. The WG further considered the AFMA Member's advice that the development and implementation of these options (and any other options that may be identified) is likely to be complex due to:

- divided views among stakeholders on the use of hookah equipment in the BDM Fishery generally.
- the potential impact of options on the performance of broader management objectives. The BDM Fishery is open access to traditional inhabitants. TACs are fished competitively by licence

holders and input controls are in place to constrain fishing efficiency. In doing so, the catch per unit of effort by a fisher is constrained allowing the TAC to be shared by relatively more fishers. These same arrangements however place a regulatory barrier to fishers being able to fully take the TAC of the white teatfish; and

- the feasibility (inclusive of cost) of implementing, monitoring, and enforcing different options (for example allowing the use of hookah equipment in certain areas, by certain fishers and for certain species only).

68. The WG discussed that any option to use hookah equipment to fish for white teatfish would require more real time monitoring arrangements (boat level monitoring such as VMS, electronic monitoring, compliance officers) to ensure compliance with rules and avoid any unintended impacts on sea cucumber stocks. The components of each management option and the nature of those components (e.g. spatial, temporal or boat level effort controls) will determine the complexity and combination of the associated monitoring and compliance tools, with more elaborate management options (e.g. fishing in certain areas by certain fishers and for certain species only) requiring more complex monitoring and compliance arrangements. Any management option will therefore need to be assessed in light of the key monitoring and enforcement considerations associated with each option.

69. The WG discussed that the management options developed by industry will still need to be consistent with the objectives of the *Torres Strait Fisheries Act 1984* and the objectives adopted by the PZJA for the Torres Strait BDM Fishery, as outlined in the agenda paper. However, it is important for industry to be aware of the trade-offs as different management options will perform differently against the objectives in light of the management arrangements that are in place for the BDM Fishery.

c) *draft workplan proposed by AFMA to develop these management options.*

70. The WG noted the draft workplan and indicative timeline proposed to develop and implement the management options to support the use of hookah to fish for white teatfish. This included the administrative and consultative processes required to seek PZJA approval on the preferred management option and review the management instrument for the fishery to allow the use of hookah equipment, which is currently prohibited.

71. The WG **recommended** an industry workshop be held to enable industry to develop its preferred management options while acknowledging the need for AFMA's assessment of the administrative feasibility of the preferred management option(s). The WG discussed the benefit of Traditional Inhabitant members on the WG and HCRAAG meeting in early 2022 initially to develop potential management options and associated monitoring and compliance considerations to provide to the workshop. The WG was of the view that this would be of limited benefit to progress this issue given discussions held to date and could potentially delay the industry workshop due to other management commitments scheduled for Torres Fisheries. The WG also saw the benefit in having broader industry stakeholder input in the development of the management options.

72. The WG took the advice of WG TI members to assist AFMA with the workshop by taking carriage of nominating participants and facilitation similar to the black teatfish industry workshop held in February 2021.

73. The WG noted a recommendation from an industry member to invite TVH operators from the TRL Fishery to advise industry participants on the workplace safety considerations of using hookah equipment.

5.2 Torres Strait Fisheries (Beche-de-mer) Management Instrument

74. The WG considered the draft new legislative instrument proposed by AFMA to replace the current legislative instrument, the *Torres Strait Fisheries Management Instrument No. 15*, made under section 16 of the Torres Strait Fisheries Act 1984 (the Act). The new management instrument is being proposed to reflect updated management arrangements in the BDM fishery, to meet current legislative drafting styles and to ensure consistency with provisions in other Torres Strait Fisheries, including:
- a. Implementation of new size limits prescribed in the BDM harvest strategy.
 - b. Strengthening current hookah gear/equipment restrictions to improve enforceability and maintain the integrity of the existing requirements by clarifying any ambiguity that may arise in relation to whether sea cucumber was caught with the use of prohibited equipment. This is especially relevant during limited fishery openings of previously closed species such as black teatfish.
 - c. Additional exemption to allow for persons without a boat to fish in the BDM Fishery provided they are appropriately licenced under subsection 19(4A) of the Act. The WG noted that AFMA will need to consult with stakeholders on the design of the actual licencing arrangements that would apply to ensure they are fit for purpose. This includes ensuring that any licencing arrangements are consistent with the objectives of the Act to promote economic development in the Torres Strait area and employment opportunities for traditional inhabitants. The WG **agreed** to discuss this issue at the BDM industry workshop.
 - d. Removing provisions in subclauses 8.1(a)(b) and (c) of the current instrument as the original purpose is unclear (no record of a PZJA decision and not discussed in the Explanatory Statement for the current Instrument) but appears inconsistent with the current understanding in the fishery that a licence is required to commercially fish and that licenced commercial fishers are not restricted to the number of sea cucumber they can have in their possession. The exemption basically states that anyone can take sea cucumbers with or without the use of a boat provided they stick to the limits specified in the instrument.
 - e. Remove provisions for activities that are outside of the PZJA's remit (e.g. traditional fishing) and/or create administrative burden (e.g. instrument cessation date as the PZJA can review legislative instruments at any time if required).

75. The WG **recommended** that AFMA seek Malu Lamar's comments on the proposed new instruments as the Native Title representative body that holds native title rights, including commercial fishing rights, covering most of the waters of the Torres Strait Protected Zone. The WG **recommended** that AFMA provide Malu Lamar a one month consideration period.

ACTION – AFMA to seek Malu Lamar comments on the proposed new instrument.

76. The WG did not have any further comments on the rest of the proposed changes to be implemented via the new Instrument, Torres Strait Fisheries (Beche-de-mer) Management Instrument 2021.

5.3 Ecological Risk Assessment for the BDM Fishery

77. The WG noted the draft results of the CSIRO Ecological Risk Assessment for the Effects of Fishing (ERA) on the Torres Strait BDM Fishery (ERA) as outlined in the draft report. The draft ERA assessed all direct and indirect impacts to and of the BDM Fishery as having either minor or negligible scores and the overall risk for the ecological impacts for the effects of fishing and external activities is low. The assessment outcome was based on the scale and nature of the fishery as well as available survey data. Fishing for sea cucumbers is very selective as done by hand collection. There is no by-catch or by-product. The assessment concluded that the direct ecological impact on the benthos from harvesting the species is low.
78. The WG noted that the HCRAAG provided some comments for the ERA project team to consider when finalising the ERA and understood that in doing so the assessment outcomes are not expected to change. The WG noted the draft ERA did not identify any moderate-high risks, that all ecological components were eliminated at Level 1 and no specific ecological risk management strategy is required.
79. The WG noted the clarification that golden sandfish is classified as a secondary commercial species in the ERA as it comprises less than 20% of the annual average catches for the fishery for the assessment period (2016-2020) (and not based on value). The WG briefly discussed golden sandfish as a species of interest given the endangered status of stocks globally and the lack of a biomass estimate from the recent BDM stock survey as the species is known to be rare in the area of east Torres Strait that was surveyed. The species is known to occur in the western region of the Torres Strait in high aggregations due to its distinct habitat preferences so there may be some data for the species from Tropical Rock Lobster surveys, but its status remains relatively unknown. The direct impacts of fishing on the species in the context of the ERA assessment are likely low as there have been no reported catches of the species in the 2020 and 2021 fishing seasons and previous reported catches have remained well below the conservative 0.5t basket trigger limit for the species.
80. The WG **recommended** that the HCRAAG assess golden sandfish in line with the BDM Harvest Strategy at a future meeting.

6 Research priorities

81. The WG considered the information provided on the status of identified research priorities and needs for the BDM Fishery, and on the TSSAC research funding process, including funding available for the 2022/23 financial year. The WG also considered the additional analysis and sampling needs identified by the HCRAAG to address some of the key data gaps that exist in the fishery. The WG reviewed all identified research needs and priorities as outlined in Table 1, taking into account HCRAAG's advice on priorities.
82. With regards to the collection of socioeconomic data, the WG **recommended** that

- a. this research need is a high priority noting Industry members' strong support for this work to address the large socioeconomic knowledge gap in the fishery.
- b. As per HCRAAG's recommendation, the scope development of a socio economic analysis of the fishery needs to be informed by AFMA's review of CDR participation data to date, by social science expertise and HCRAAG and WG advice before it is finalised.

83. The WG acknowledged Scientific member Steven Purcell's extensive experience conducting socioeconomic studies in Pacific Island fisheries that has informed the management of those fisheries. The WG invited Dr Purcell to present at future meetings of the WG and the HCRAAG on his work.

ACTION – Scientific member Steven Purcell to present at future meetings of the WG and HCRAAG his work on socioeconomic studies and how they have informed fisheries management.

7 Other business

84. There was no other business nominated for discussion.

8 Future priorities and date for the next meeting

85. The WG noted that the agenda paper on future priorities captures items previously identified and endorsed by the WG, as well as a progress update against each item. The WG also noted that the next WG meeting is tentatively scheduled for June-July 2022.

86. The Chair thanked all members and observers for their contribution to a productive meeting. The Chair and members acknowledged and thanked the outgoing AFMA member and Senior Manager of Torres Strait Fisheries, Selina Stoute for all her work in and contributions to Torres Strait Fisheries.

87. Mr Sereako Stephen closed the meeting at 12:10pm in Prayer.

Table colour key	Completed	Scoped and/or costed	Not scoped/not costed
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Table 1. Overview and status update of research needs identified or discussed for Hand Collectable Fisheries at previous HCWG meetings and the rolling five-year research plan including HCRAAG's recommendations and assigned priorities from its meeting on 6-7 October 2021.

	Research activity	Detail	Status	Comments/questions	HCRAAG priority	HCWG priority and comments
1	Status of BDM stocks in relation to harvest strategy reference points	Consistent with the BDM harvest strategy and where there is sufficient information available, a tactical research project is needed to determine the current status of sea cucumber stocks in relation to the harvest strategy reference points, noting that the first step is to define the reference points for the species for which it may be possible.	Not scoped/not costed		High priority	Scope of the project requires further consideration by the HCRAAG.
2	White teatfish modelling	Additional analysis on white teatfish to develop a rationale on the status of the stock in relation to harvest strategy reference points and modelling analysis on a sustainable TAC increase.	Not scoped/not costed		High priority	High priority. Estimate cost 60,000 (as per cost of similar projects for other species e.g. Spanish mackerel)
3	Black teatfish sampling	Representative sampling to collect size and weight frequencies during the black teatfish openings.	Not scoped/not costed		High priority	High priority. Estimated cost 40,000 – 80,000 depending on the level of work required (as per cost of similar projects for

	Research activity	Detail	Status	Comments/questions	HCRA priority	HCWG priority and comments
						other species e.g. Spanish mackerel)
4	Development of curryfish conversion ratios	Project to develop conversion ratios for curryfish with industry undertaking the sampling process.	Scoped and costed \$12,000	Full proposal developed and allocated funding in 2019/20 but did not proceed due to COVID-19.	High priority	High priority.
5	Sandfish stock survey	Outstanding stock survey of Sandfish at Warrior Reef to better understand its status	Not scoped/not costed	Identified as a research need for the fishery by HCWG17 at its meeting 12 October 2020. Was part of the 2019-20 stock survey but did not proceed.	High priority subject to confirmation of support from lama and Tudu Island PBC, GBK, Traditional Owners and fishers.	High priority. Contingent on support from lama and Tudu Traditional Owners which have already indicated through TSRA that they support a sandfish survey and this advice being provided to the HCRA. Estimated cost 150,000.
6	Black and white teatfish follow up surveys	Follow up black and white teatfish surveys focusing on specific areas and potentially including areas not surveyed previously such as south east TSPZ, barrier and deep-water strata.	Not scoped/not costed	The RAG will initially need to determine what is required, other than an independent survey, to meet the WTO requirement to provide a revised population estimate.	Medium term priority	Supported post another black teatfish opening. Estimate cost 290,000 (based on last survey).
7	Socio-economic	Collecting data on socioeconomic indicators for	Not scoped/not costed	Identified as a research need for the fishery by HCWG17 members.	Medium term priority and update the current wording to reflect RAG advice.	High priority. Subject to:

	Research activity	Detail	Status	Comments/questions	HCRA priority	HCWG priority and comments
		the fishery through recall surveys.			<p>Research scope and survey design and development to be:</p> <ul style="list-style-type: none"> • Informed by AFMA's review of CDR participation data to date and by social science expertise • further considered by the HCRA 	<ul style="list-style-type: none"> • further HCRA advice on the scope and additional work to be done to support it. • more clarity on questions being asked, data required and indicative cost. <p>Project may fall within the remit of ACR.</p>
8	Management Strategy Evaluation (MSE) of the Beche-de-mer Harvest Strategy	1. Collate all data and biological information; 2. Update and extend the spatial multispecies TS BDM operating model developed earlier (or construct a new model); 3. Use MSE to evaluate how well the HS achieves the pre-specified objectives; 4. In consultation with stakeholders, use the MSE framework to investigate ways to improve the current HS.	<p>Not scoped</p> <p>Est cost – \$130k</p>	<p>Identified as an essential research priority by HCWG in the rolling five-year research plan for Hand Collectable Fisheries.</p> <p>Requires 3-5 years of BDM HS implementation.</p>	<p>Medium priority and to be held off until the harvest strategy has been in place for a few years.</p>	Interacts with no.1
9	Supply chain	Better understanding of the supply chains as per other fisheries to better understand	Not scoped/not costed		Not prioritised	

	Research activity	Detail	Status	Comments/questions	HCWAG priority	HCWG priority and comments
		vulnerabilities and help develop an industry that is resilient to fluctuating export market conditions.				
10	Exploring sea ranching/re-seeding opportunities		Not scoped/not costed	Identified as a key research need for the fishery by HCWG Traditional Inhabitant members. Industry initiated pilot project currently underway on Ugar.	To be removed from the research plan - Aquaculture falls outside the remit of the PZJA. PZJA can provide support through provision of information and permitting collection of broodstock. With regarding to Sandfish aquaculture, the PZJA will initially want to establish the status of the sandfish stock on Warrior reef.	Noted
11	Ecological Risk Assessment (ERA) – Torres Strait Pearl Shell Fishery	Conduct an ERA for the Torres Strait Pearl Shell (TSPF) Fishery	Not scoped Est cost - \$20,400	Identified as an essential research priority by HCWG in the rolling five-year research plan for Hand Collectable Fisheries	To be remove from the research plan as there is no fishing activity and therefore no immediate ecological risk.	To be retained in research plan and activated when fishing for pearl oysters commences. There is some information on Pearl shell stock estimates from Tropical Rock Lobster surveys.
12	Understanding biological parameters of BDM species,	Identifying gaps in knowledge of biological parameters of BDM species and	Not scoped/not costed	Identified as an essential research priority by HCWG in the rolling five-year research plan for Hand Collectable	Low priority and proposed that it be addressed as the need arises.	There are conservative proxies that are best addressed through

	Research activity	Detail	Status	Comments/questions	HCRA priority	HCWG priority and comments
	including growth, mortality, size and breeding seasonality	investigating options for collaborative research		Fisheries Requires further scientific advice.		other avenues such as University students.
13	Stock Status Survey	To undertake a stock survey of all Torres Strait beche-de-mer species with a focus on deeper water species	Completed in 2019 - 2020	Final report identified research needs that the HCRA may want to consider further	N/A	
14	Ecological Risk Assessment (ERA)	Conduct an ERA for the TSBDM Fishery	Draft completed on 30 June 2021.	Needs to be completed by January 2022 to meet WTO condition 5 for the fishery.	N/A	
15	Climate Change impacts and vulnerability	Scoping study across all Torres Strait	Completed	Final report made recommendations for further research	N/A	
16	Data analysis	Further analysis of catch data collected during the 2021 trial reopening of black teatfish to inform future openings and follow up work from the stock survey.	Completed	HCWG identified this as the highest research need for the BDM Fishery. CSIRO completed the black teatfish catch data analysis from the 2021 opening and updated the modelling to inform future opening and TAC.	Completed	

Summary of actions arising from HCWG18

Action item	Responsibility
AFMA to seek Malu Lamar comments on the proposed new instrument proposed by AFMA to replace the current legislative instrument, the <i>Torres Strait Fisheries Management Instrument No. 15</i> , made under section 16 of the Torres Strait Fisheries Act 1984 (the Act).	AFMA
Scientific member Steven Purcell to present at future meetings of the WG and HCRAAG his work on socioeconomic studies and how they have informed fisheries management.	Steve Purcell

Summary of HCWG18 recommendations

Agenda item #	Recommendation
3	The WG supported HCRAAG's advice and recommended a black teatfish opening in 2022 with a 20t TAC, considering: <ul style="list-style-type: none"> the outcomes of the updated CSIRO population modelling which confirmed that a 20t TAC is sustainable and would not lead to a consistent decline in black teatfish biomass after the first year of fishing. In contrast the modelling found that catches of 30t could lead to a gradual depletion of the stock. industry member advice to ensure that all catch data continues to be captured during future openings.
4	The WG recommended that the HCRAAG revisit its advice given the modest standing stock biomass from the survey, relative to the 60t TAC for the curryfish basket. The WG sought further detail from the RAG to justify its recommendation to increase the trigger limit.
4	The WG did not recommend any changes to the deepwater redfish TAC in 2022 and recommended that the HCRAAG review the TAC in light of the biomass results from the survey.
4	The WG did not suggest any changes to the hairy blackfish TAC in 2022 and recommended that the HCRAAG review the TAC in light of the biomass results from the survey.
5.1	The WG recommended that the assessment and development of management options for the utilisation of white teatfish is a high short-medium term priority for the fishery requesting AFMA consider directing resources towards this management activity.
5.1	The WG recommended an industry workshop be held to enable industry to develop its preferred management options for the utilisation of white teatfish, while acknowledging the need for AFMA's assessment of the administrative feasibility of the preferred management option(s).
5.2	The WG recommended that AFMA seek Malu Lamar's comments on the proposed new instruments as the Native Title representative body that holds native title rights, including commercial fishing rights, covering most of the waters of the Torres Strait Protected Zone. The WG recommended that AFMA provide Malu Lamar a one month consideration period.
5.3	The WG recommended that the HCRAAG assess golden sandfish in line with the BDM Harvest Strategy at a future meeting.

Agenda item #	Recommendation
6	<p>With regards to the collection of socioeconomic data, the WG recommended that:</p> <ol style="list-style-type: none"> this research need is a high priority noting Industry members’ strong support for this work to address the large socioeconomic knowledge gap in the fishery. As per HCRAAG’s recommendation, the scope development of a socio economic analysis of the fishery needs to be informed by AFMA’s review of CDR participation data to date, by social science expertise and HCRAAG and WG advice before it is finalised.

List of attachments

Attachment A – Presentation on the results of the CSIRO analysis of data reported during the opening

Attachment B – Meeting Agenda



Torres Strait bêche de mer fishery: black teatfish trial re-opening

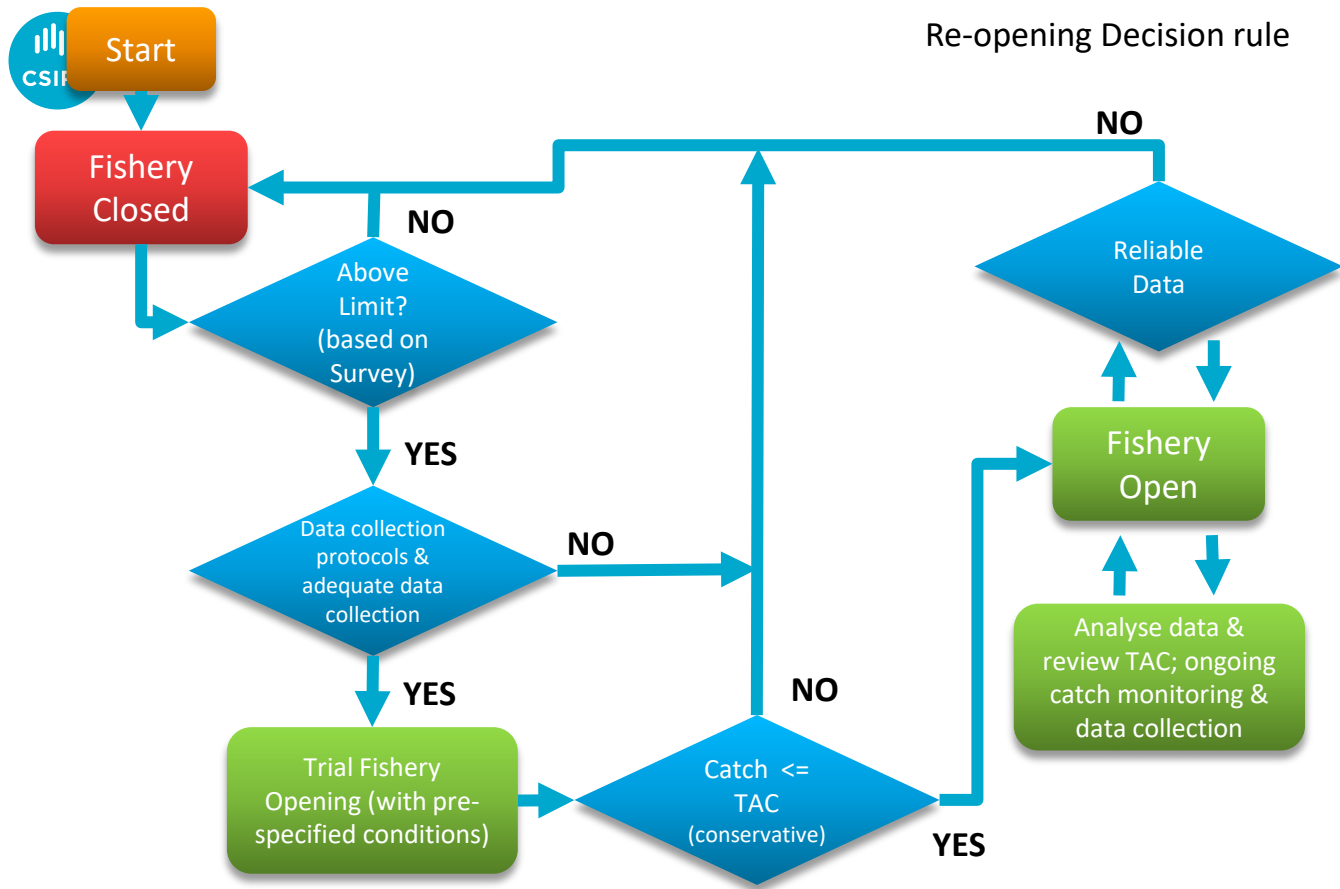
Éva Plagányi, Nicole Murphy and
Timothy Skewes

HCRAg | October 2021

Black teatfish 'Pauraber or
Goleh-Golher Pauraber'



*CSIRO acknowledges the Traditional Owners of the land, sea and
waters, of the area that we live and work on across Australia. We
acknowledge their continuing connection to their culture and we pay
our respects to their Elders past and present*





Re-opening

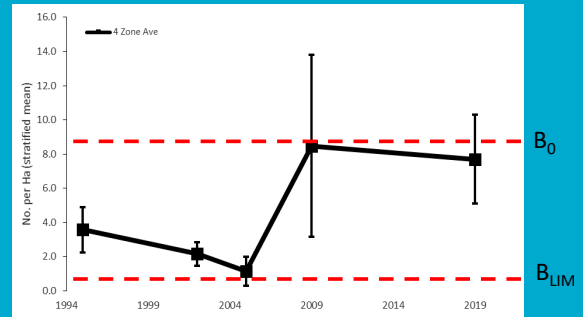
- New catch reporting measures in place
 - CDR catch reporting - compulsory since 2017
- Torres Strait Beche-de-mer Harvest Strategy

Re-opening Decision Rule applies for species that have been:

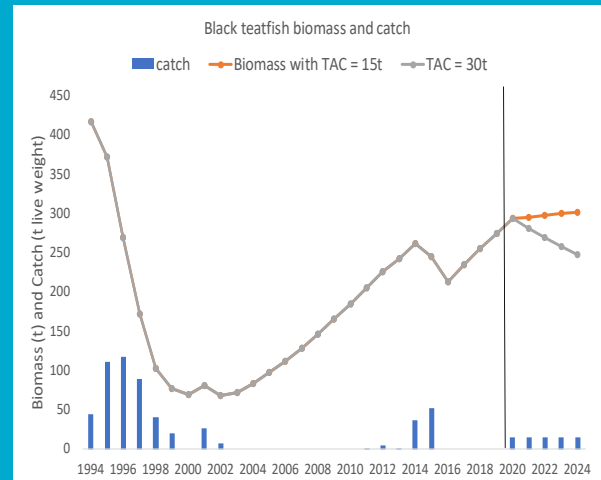
- *Closed to fishing due to concerns of overfishing or stock depletion, significantly exceeding catches beyond the TAC, or in the absence of reported catches*

- Stock above B_{LIM} from use of high quality survey data
 - Meets parameters of the Decision Rule - species to be opened with *Trial 15 t*
- Additional population modelling - 21 t can be removed
 - Allows for higher opening TAC (tier 3)
- Quota allowance: 20 t

SURVEY



POPULATION MODELLING





Re-opening

- Trial opening: 30th April 2021 for 20 t
 - Closed 3rd May 2021
 - 17.26 t caught as at 15:00 on 5th May 2021
- (<https://www.pzja.gov.au/2021-black-teatfish-trial-opening>)

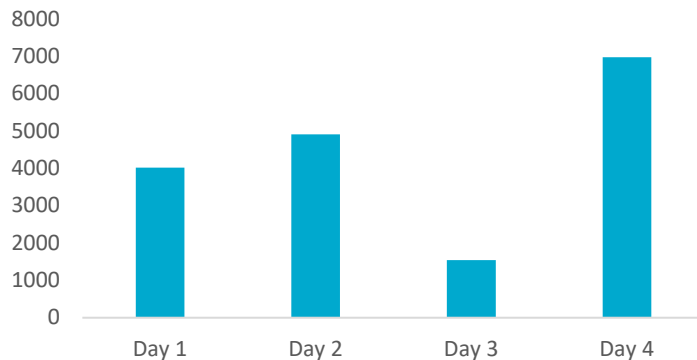
- Notes
 - Fishers organised among themselves, previous times described as 'free for all'
 - Went further out and worked in across days
 - Came in early on fourth day in anticipation that nearing quota
 - Happy with how the fishing went



Traditional Owner & fisher, Mr Tristen Passi – Mer Island

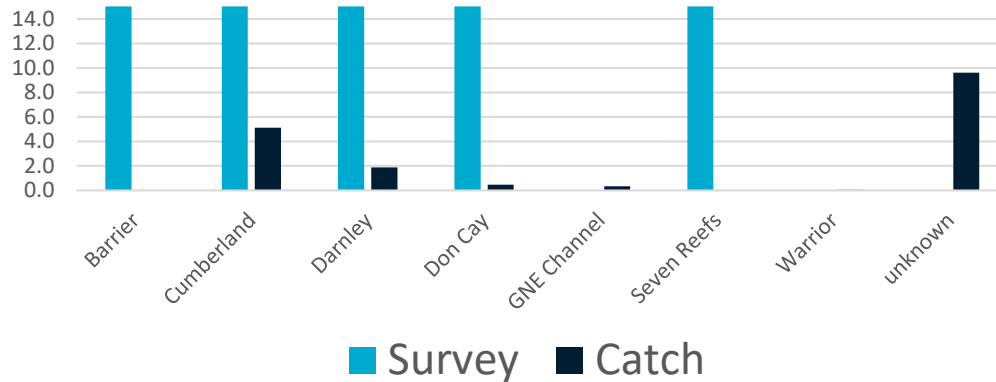
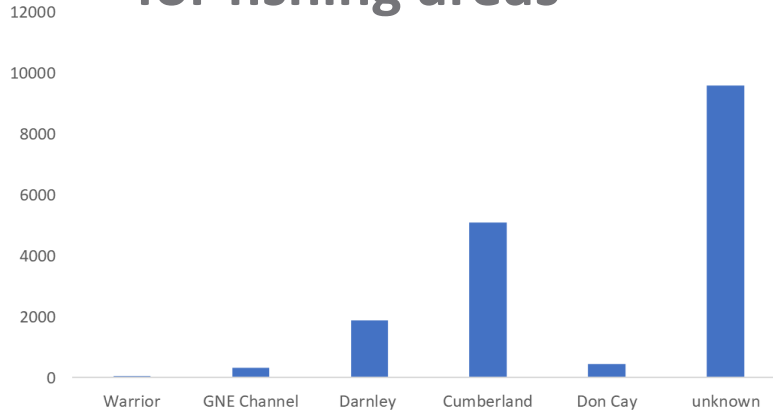


Sum of converted weight (kg) for catch taken for areas fished for each fishing day



Weight (kg)	Warrior	GNE Channel	Darnley	Cumberland	Don Cay	Blank*	Grand total
April total	-	119.78	41.24	468.95	311.13	3257.46	4198.57
30-Apr	-	119.78	41.24	468.95	311.13	3075.51	4016.62
May total	50.95	208.33	1837.69	4634.13	145.56	6358.28	13234.94
1-May	-	141.19	551.31	1392.45	-	2820.29	4905.24
2-May	-	67.15	276.20	1030.81	-	166.42	1540.57
3-May	50.95	-	1010.19	2210.87	145.56	3553.51	6971.08
Grand total	50.95	328.12	1878.94	5103.08	456.69	9615.74	17433.51

Total catch (converted weight - kg) for fishing areas





Missing Data to Inform assessments

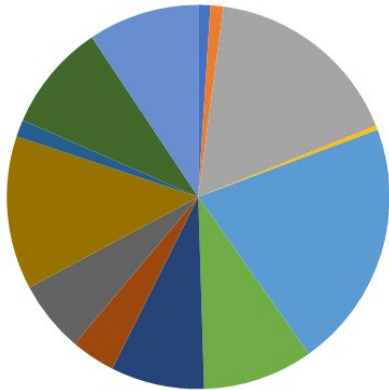
Day	Warrior	GNE Channel	Darnley	Cumberland	Don Cay	Unknown area
1	-	119.8	41.2	468.9	311.1	3075.5
2	-	141.2	551.3	1392.5	-	2820.3
3	-	67.1	276.2	1030.8	-	166.4
4	50.9	-	1010.2	2210.9	145.6	3553.5

Largest catch taken from 'unknown' area recorded in catch data

It is important to improve communication for future fishing around the need to record location, as this limits the usefulness of the data.

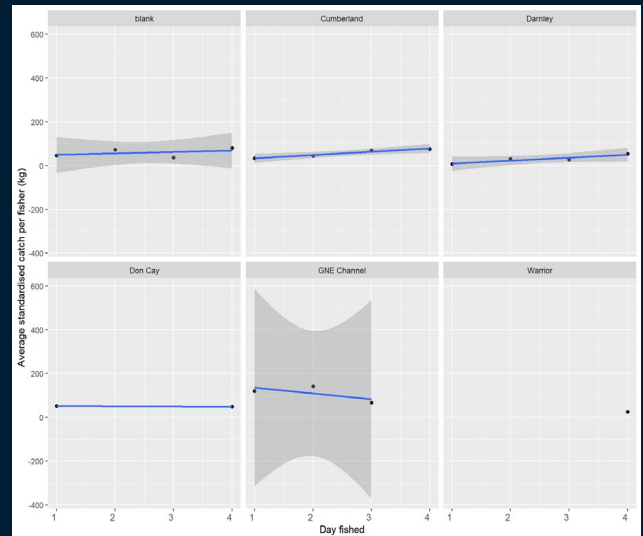
Information as to why Warrior Reef was only fished on day 4 – or whether this is the only day for which area was recorded – would also help scientific understanding of the information content of the data.

Catch landed at fish receivers

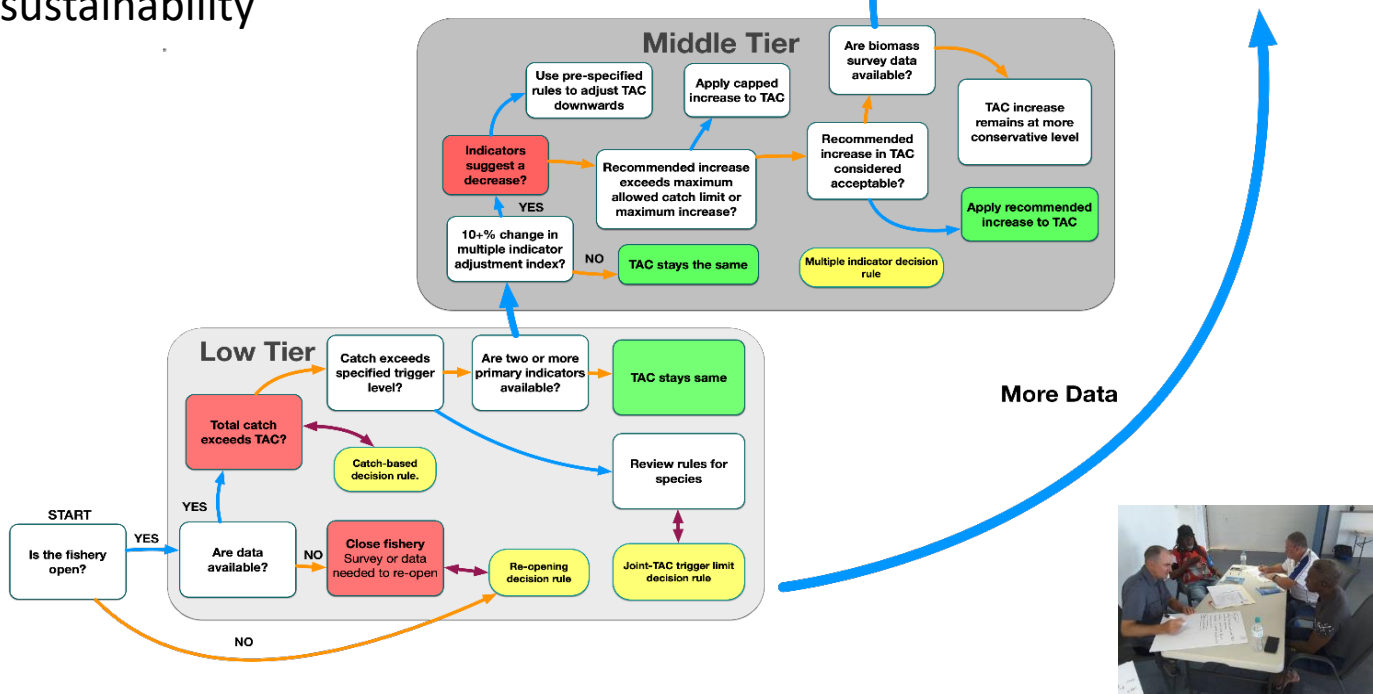


- Fairly good spread of the catch amongst fish receivers,
- 3 fish receivers landed ~half catch

- No trends or local depletion was seen for catch and areas fished. The high variance for the Great North East Channel results from the area not being fished on day 4



Pathway to economic growth without risking biological sustainability



Summary Framework Components

- **Management controls – static**

- Size limits
- Close areas or seasons eg during breeding season

- **Monitoring and data collection to determine indicators**

- **Management controls – dynamic - Decision Rules Needed:**

Low tier:

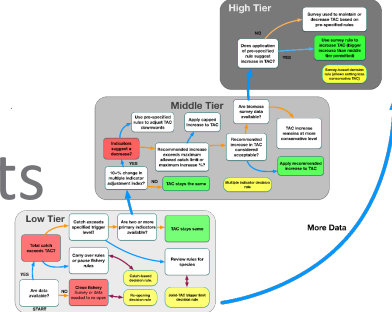
1. Catch-based Decision rule: for species-specific recommended biological catch
2. Joint TAC trigger-limit Decision rule: for lumped species category
3. Re-opening Decision rule: for re-opening a fishery or area

Middle tier:

4. Multiple Indicator Decision Rule: for adjusting species-specific TACs

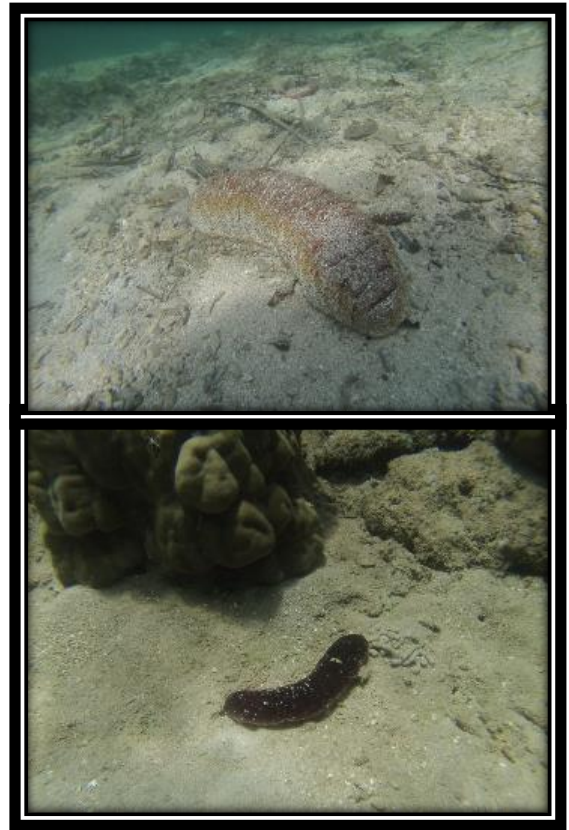
High tier:

5. Survey-based Decision Rule



Primary Indicators

- **Catch per species**
- Effort
- CPUE (Catch Per Unit Effort)
- Size/mass
- Spatial footprint
- Species composition



Summary

- Total catch amounts were reliably and timeously reported
- Majority (55%) of the catch did not include details such as the area caught and no. fishers
- Missing data limits the usefulness of the data to support additional analyses related to the sustainability and productivity of the stock
- Harvest Strategy can't just rely on surveys – need additional indicators going forward especially for CITES-listed species

Part 13A conditions to the Torres Strait Protected Zone Joint Authority on the approved wildlife trade operation declaration for the Torres Strait Beche-de mer Fishery - December 2020

Condition 7:

By 1 November 2023 the Protected Zone Joint Authority must provide the department with a revised population estimate for Black Teatfish (*Holothuria whitmaei*) and White Teatfish (*Holothuria fuscogilva*) in the Torres Strait that is based on new information for the fishery, including catch data and fishery-independent data or scientific expert advice and an assessment of the impact of harvest on the stocks.

Thank you

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Pella-Tomlinson equation

$$N_{t+1} = N_t + r N_t \left(1 - \left(\frac{N_t}{K} \right)^\mu \right) - C_t$$

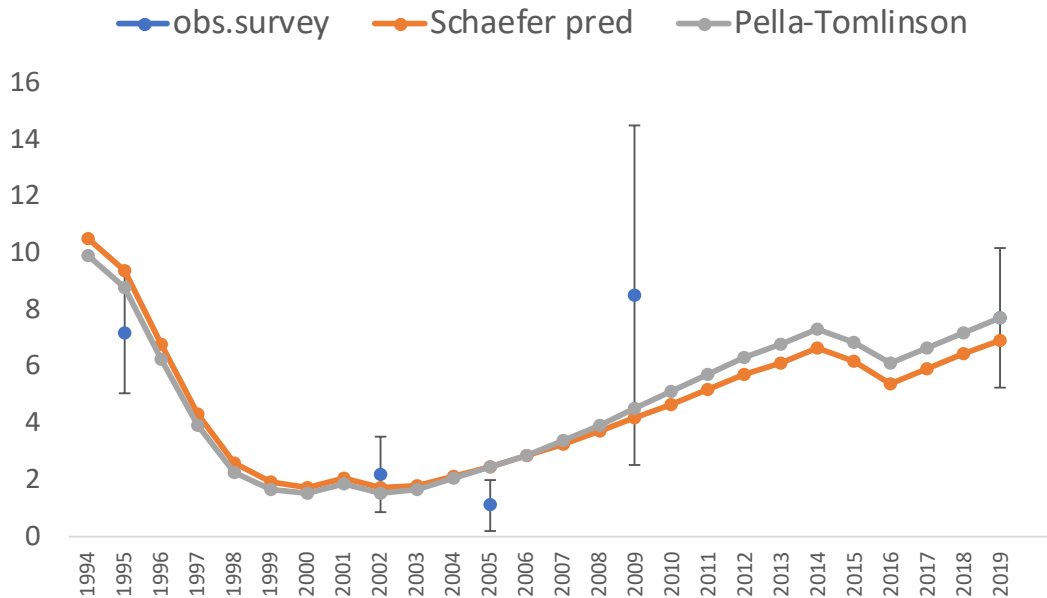
Diagram illustrating the Pella-Tomlinson equation with parameter annotations:

- N_{t+1} : Total biomass of BTF per year (indicated by a blue arrow pointing to N_{t+1})
- N_t : Total biomass of BTF per year (indicated by a blue arrow pointing to N_t)
- r : Intrinsic growth rate (indicated by a blue arrow pointing to r)
- K : Carrying capacity (pristine biomass) (indicated by a blue arrow pointing to K)
- μ : Shape parameter (indicated by a blue arrow pointing to μ)
- C_t : Total annual catch (indicated by a blue arrow pointing to C_t)

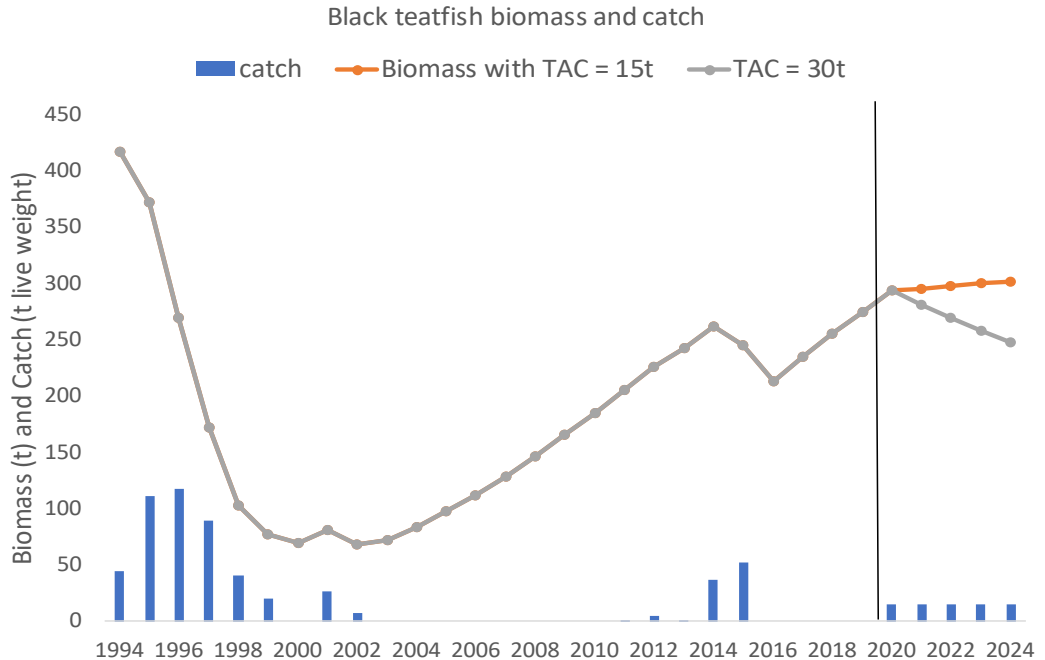
- Lumped biomass model
- Assumes growth is density-dependent
- The combination of r and K is more robust than these parameters on their own and informs on sustainable/replacement yield
- Implemented in ADMB

Model fit to survey data

Model fit to survey data : $r=0.2$; double surv(95)

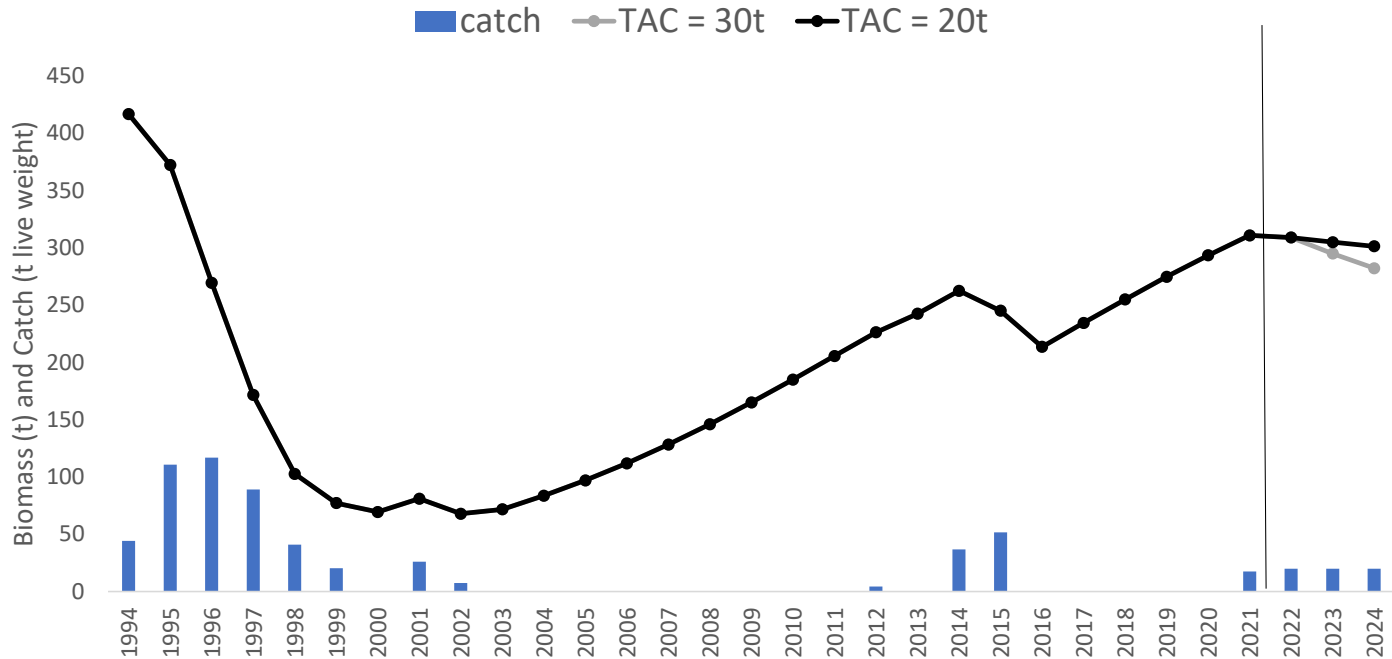


Base-case model estimated biomass trajectory and forward projection



Updated 2021 Modelling Results

Black teatfish biomass and catch (Model 4) - 2021 update with Catch(2021)=17.6t

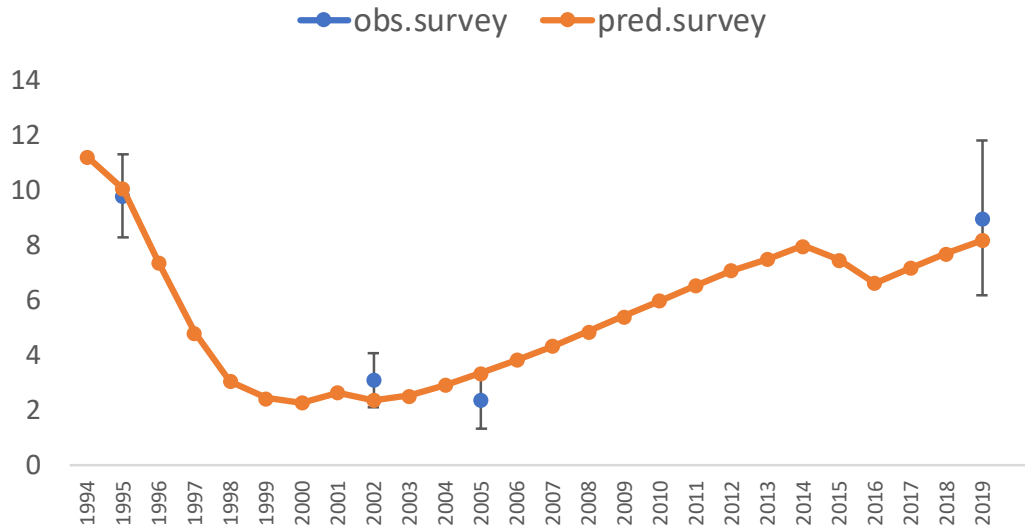


Model Results Summary: MSY

	Description	MSY (t)	BMSY (t)	B(2019) (t)	B2019/BMSY
Model 1	S; fix r	18.5	245.4	336.9	1.37
Model 2	double surv(95)	16.9	225	242.3	1.08
Model 3	S; fix r	15	300.5	385.7	1.28
Model 4	S; fix r; dbl	20.8	208.3	274.7	1.31
Model 5	S; est r,K	28.5	195.8	344.3	1.75
Model 6	S; est r,K; dbl	24.6	197.8	308.2	1.56
Model 7	P; est r,K,mu; dbl; mu=3.5	49.7	257.4	308.2	1.19
Model 8	Fix K, est r	19.9	410.2	647.8	1.57

Use survey series that includes outer barrier (less variable as less fishing there, but no data for 2009)

Model fit to "barrier "survey data : $r = \text{fix } 0.2$; $K = 430 \text{ t}$
 $[\text{STD } 87]$; $\text{MSY} = 21.5 \text{ t}$



18th MEETING OF THE PZJA TORRES STRAIT HAND COLLECTABLES WORKING GROUP

28 (8:30 am – 5:00pm) - 29 October 2021 (8:30 am – 12:00 pm)

Video Conference and Whittington Room, Novotel Oasis Cairns

FINAL AGENDA

AGENDA ITEM 1 PRELIMINARIES

1.1 Acknowledgement of Traditional Owners, welcome and apologies

The Chair will welcome HCWG members, permanent observers, and casual observers to the 18th Torres Strait Hand Collectables Working Group.

1.2 Adoption of agenda

The working group is invited to consider and adopt the draft agenda.

1.3 Declarations of interest

Working group members are invited to declare any real or potential conflicts of interests to the group and determine whether a member may or may not be present during discussion of or decisions made on the matter which is the subject of the conflict.

1.4 Action items from previous meetings

The working group will note the status of action items arising from previous HCWG meetings.

AGENDA ITEM 2 WORKING GROUP UPDATES

2.1 Industry and Scientific members

This agenda item is an opportunity for the Working Group to develop a common understanding of Hand Collectable fisheries including recent fishing, economic, biological and ecological trends. Industry and scientific members are asked to provide a brief verbal update on any recent developments relevant to Hand Collectable fisheries. The Working Group will note the updates from industry and scientific members and observers.

2.2 Government Agencies

The Working Group will note updates from each of the PZJA government agency members on the latest developments relevant to Hand Collectable fisheries.

2.3 Native Title

The Working Group will note a verbal update from the Malu Lamar representative if in attendance.

2.4 Papua New Guinea National Fisheries Authority

The Working Group will note an update from the PNG NFA officials if in attendance.

AGENDA ITEM 3 BLACK TEATFISH TRIAL OPENING 30 APRIL – 3 MAY 2021 AND FUTURE OPENINGS

Having regard for advice from the Hand Collectable Resource Assessment Group (HCRAAG) and the application of the Harvest Strategy, the Working Group will discuss

and provide advice on the potential for a future black teatfish opening and any arrangements required to support an opening.

AGENDA ITEM 4 APPLYING THE HARVEST STRATEGY TO REVIEW TOTAL ALLOWABLE CATCHES

Having regard for advice from the HCRAAG and applying the Harvest Strategy to all new information, the Working Group will discuss and provide advice TACs for the 2022 fishing season.

AGENDA ITEM 5 MANAGEMENT

5.1 Management options for the utilisation of white teatfish

The Working Group will discuss and provide advice on the relative management priority to develop advice to the PZJA on management options to support the utilisation of white teatfish TAC against other future management priorities. If recommended as a short-to-medium term priority the Working Group will discuss key considerations for assessing management options and an appropriate workplan.

5.2 Torres Strait Fisheries (Bech de Mer) Management Instrument

The *Torres Strait Fisheries Management Instrument No. 15* (the Instrument) needs to be remade to reflect the current management arrangements in the fishery including to give effect to the revised size limits in the BDM Harvest Strategy. The Working Group will discuss and provide advice on the proposed changes.

5.3 Ecological Risk Assessment for the BDM Fishery (CSIRO)

The CSIRO have completed a draft Ecological Risk Assessment for the fishery. The HCRAAG has considered the draft assessment outcomes. The Working Group will note the outcomes and implications.

AGENDA ITEM 6 RESEARCH PRIORITIES

Having regard for HCRAAG advice, the Working Group will discuss and provide advice to the TSSAC on research priorities for the beche-de-mer, trochus, mud crab and pearl shell fisheries under the Five-Year Rolling Research Plan. A five-year rolling research plan for Hand Collectable Fisheries is used to inform the Torres Strait Scientific Advisory Committee's (TSSAC) annual call for research funding proposals.

AGENDA ITEM 7 OTHER BUSINESS

The Working Group is invited to nominate any other business for discussion.

AGENDA ITEM 8 FUTURE PRIORITIES AND DATE FOR THE NEXT MEETING

The Working Group will discuss and provide advice on management priorities for Torres Strait Hand Collectable Fisheries. Having agreed management priorities and a work plan for Hand Collectable Fisheries aims to achieve a more efficient management process. The Working Group will consider a date and venue for HCWG19.

CLOSE OF MEETING