Australian Government

Australian Fisheries Management Authority

Northern Prawn Fishery Resource Assessment Group (NPRAG) Meeting

Meeting Minutes

Date: 30 November 2020 10:00 to 14:00
02 December 2020 13:00 to 17:30 (AEDT)

Tele/video conference

Australian Government

Australian Fisheries Management Authority

Attendees

Monday 30 November 2020	
Name	**Member type**
Ian Knuckey	*Chair*
Tom Kompas	*Economic Member*
Phil Robson	*Industry Member*
Ian Boot	*Industry Member*
David Brewer	*Scientific Member*
Rik Buckworth	*Scientific Member*
Darci Wallis	*AFMA Member*
Stephen Eves	*Executive Officer – AFMA*
Steve Bolton	*Observer – AFMA*
Annie Jarrett	*Invited Participant – NPFI*
Adrianne Laird	*Observer – NPFI*
Robert Curtotti	*Observer – ABARES*
Trevor Hutton	*Observer – CSIRO*
Rob Kenyon	*Observer – CSIRO*
Roy Deng	*Observer – CSIRO*
Laura Blamey	*Observer – CSIRO*
Shijie Zhou	*Observer – CSIRO*
Tonya Van Der Velde	*Observer – CSIRO*
Rob Kenyon	*Observer – CSIRO*
Margaret Miller	*Observer – CSIRO*
Toby Patterson	*Observer – CSIRO*
Wednesday 02 December 2020	
Ian Knuckey	*Chair*
Tom Kompas	*Economic Member*
Phil Robson	*Industry Member*
Ian Boot	*Industry Member*
David Brewer	*Scientific Member*
Rik Buckworth	*Scientific Member*
Darci Wallis	*AFMA Member*
Stephen Eves	*Executive Officer – AFMA*
Steve Bolton	*Observer – AFMA*
Annie Jarrett	*Invited Participant – NPFI*
Adrianne Laird	*Observer – NPFI*
Robert Curtotti	*Observer – ABARES*
Ian Butler	*Observer – ABARES*
Trevor Hutton	*Observer – CSIRO*
Margaret Miller	*Observer – CSIRO*

Rob Kenyon	Observer – CSIRO
Judy Upston	Observer – CSIRO
Roy Deng	Observer – CSIRO
Eva Plagányi	Observer – CSIRO
Laura Blamey	Observer – CSIRO
Tonya Van Der Velde	Observer – CSIRO
Toby Patterson	Observer – CSIRO
Miriana Sporcic	Observer – CSIRO

1   Preliminaries

1.1   Welcome and apologies

The Northern Prawn Fishery Resource Assessment Group (NPRAG) Chair, Ian Knuckey, opened the meeting at 10:00 am (AEST) on 30 November 2020 with an Acknowledgement of Country.

1.2   Adoption of Agenda

The Chair requested that the NPRAG consider the draft agenda (Attachment 1), identify any required amendments, and adopt the draft agenda for the meeting. The Agenda was adopted with adjustments made to the order of items to account for participant's availability.

1.3   Declaration of interests

The Chair requested that NPRAG members consider the standing table of declared interests (Attachment 2) and individually declare whether the stated interests remain accurate, and if not, provide an update on those.

It was noted industry participants had a potential conflict with agenda item 2 – broodstock, and were asked to leave the meeting while their involvement in this discussion was considered. It was agreed industry participants provided a valuable contribution to the broodstock discussion but would be asked to leave the meeting if a recommendation was to be made.

It was also noted RAG endorsement was being sought for a number of research proposals. It was agreed CSIRO participants should remain for research discussions but would be asked to leave the meeting when a recommendation was to be made.

No other conflicts were apparent but should a conflict with any individual or group arise, they would be asked to leave the meeting for the relevant discussion.

1.4   Minutes from previous meetings

It was noted that the minutes from the 06 August 2020 teleconference were accepted out-of-session via email as a true and accurate record of the meeting.

2   Broodstock

Ms Darci Wallis, AFMA Member, presented the item seeking a recommendation to the 2021 targeted broodstock collection limit. CSIRO presented the results of the *Penaeus monodon* stock assessment project. The following key points were highlighted and discussed:

- The catch per unit effort (CPUE) standardisation was undertaken on targeted broodstock fishing data and NPF commercial fishing data. As reliable targeted broodstock data is only available post-2017, there is a high degree of uncertainty in the CPUE standardisation.
- The CPUE standardisation analysis and stock assessment was performed on multiple levels including all areas where *P. monodon* are caught and also only those areas of high density.
- There is a high level of uncertainty in the stock assessment results due to a number of data issues. The targeted broodstock data is a short time series, has non-reporting of discards prior to 2017, includes errors in reporting, a narrow spatial coverage and inconsistencies in how data is reported. The commercial fishing data has a high rate of zero *P. monodon* catches, a low catch rate, high variability, and uncertainty regarding the minimum reported catch.
- It was suggested that some pre-2017 surveys undertaken by the CSIRO aquaculture area may provide some useful data. The RAG noted the data may not be useful for use in the stock assessment but agreed CSIRO should confirm the usefulness of the data.
- Results indicate the CPUE standardisation models explain between 31 and 55 percent of the catch rate deviation. The results are highly uncertain but comparable to the early results of the Brown/Grooved Tiger Prawn fishing power model.
- Due to a lack of biological data on *P. monodon*, the intrinsic population growth rate for brown and grooved tiger prawns was assumed.
- Noting the uncertainty in the data, the stock assessment results indicate that 2018, when the total *P. monodon* catch was approximately 90,000 individuals, was the only year that slight overfishing potentially occurred.
- In the targeted broodstock high catch areas, the more conservative stock assessment (OCOM model) indicates overfishing may have occurred in 2018 and 2019 and the *P. monodon* stock may have been overfished in 2018.
- Clarification was provided regarding the number of broodstock caught, retained and included in the catch limit. It was noted that broodstock individuals retained at-sea are recorded in logbooks but not all individuals are provided to the aquaculture operators. The catch limit only includes the number of individuals provided to aquaculture operators and it was acknowledged that any recommendation on a catch limit needs to account for the total number of individuals caught.
- It was suggested the large fluctuations in the annual catch of *P. monodon* were due to large fluctuations in recruitment, similar to other prawn species. The high catch years correlate with years of above average recruitment and consequently, higher abundance.
- A number of improvements to the collection of broodstock data were suggested that would reduce uncertainty in the assessment results. The improvements were noted and it was advised the 2021 introduction of e-logs for broodstock operators would aid the suggested data collection improvements.
- The use of a 70 per cent *P. monodon* survival rate in the assessment model was questioned. It was advised the survival rate was determined from a CSIRO preliminary study undertaken during the 2020 independent surveys. The RAG acknowledged the survival rate may have a minor influence on the assessment results but agreed it would be useful to include a sensitivity test in the *P. monodon* stock assessment that uses a survival rate of zero.

It was agreed CSIRO would update the assessment report to include the RAG's suggestions and distribute the report when complete. In early 2021, a RAG meeting will then be convened to discuss the report and make a recommendation on the targeted broodstock catch limit.

Actions:
- Tonya Van Der Velde to check if the CSIRO aquaculture data is useful to incorporate into the *P. monodon* stock assessment.
- CSIRO to undertake a sensitivity test to include a survival rate of zero in the *P. monodon* stock assessment.

3 ERA

Revised drafts of the White Banana Prawn sub-fishery and Tiger Prawn sub-fishery Ecological Risk Assessments (ERA) were provided for review and comment. NPRAG noted that its comments from the November 2019 meeting and subsequent feedback from the ERA working group had been incorporated into the drafts. The following key points were highlighted and discussed:

- Updates in the revised ERAs included sawfish being assessed under PSA instead of b-SAFE, the mudbug being reduced to medium potential risk following the revision of a susceptibility score, and commentary added to some of the low risk species (i.e. rays) highlighted by the RAG as particularly sensitive.
- The reason for higher susceptibility scores in the current ERA is due to the overall susceptibility calculation being updated in 2019. The susceptibility calculation has been rescaled so it is now on a scale of one to three, whereas previously it wasn't scaled. The previous calculation likely underestimated susceptibility scores.
- The post-capture mortality rates for sea snakes increased from two in the 2007 ERA to three in the current ERA. A scientific report (Wassenberg et al. 2001[1]) on sea snake post-capture mortality indicates there is a high level of uncertainty with results indicating an in-trawl mortality rate of between 21 and 44 per cent. The in-trawl mortality only includes those individuals that are recorded on-board as dead and doesn't include those that are released alive but die in the water column. Sea-snakes, being a protected species and without additional information to indicate a higher post-capture survival rate, are automatically given a post-capture mortality score of three.
- It was questioned why the Stokes' Sea Snake and the Olive-headed Sea Snake were assessed as potentially high risk when the NPF bycatch sustainability project indicates these species have shown no declining trend over the history of the program (seventeen years). It was advised that the in-trawl mortality rate for Stokes' Sea Snake referred to in the Wassenberg et al. paper was one of the higher rates at 44 per cent. Being a TEP species and taking a precautionary approach results in the post-capture mortality being rated as three. It was suggested to engage a sea snake expert to review the potential risk rating and provide expert advice on whether the CPUE trend in the NPF bycatch sustainability project can be used to override the post-capture mortality rating.
- It was also suggested to consult with an expert on the Red Champagne Lobster and squid species rated as potential high risk. Red Champagne Lobster are caught in a spatially distinct area of the NPF as part of the scampi sub-fishery and fishing effort is generally constrained to less than two months each year. Squid are generally productive and none of the species are listed as protected.
- It was noted that catches of Black Teatfish and Golden Sandfish were only a few kilograms a year. Acknowledging Black Teatfish is now an IUCN listed species, the RAG agreed to

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[1] Wassenberg, T. J., Milton, D. A., and Burridge, C. Y. (2001). Survival rates of sea snakes caught by demersal trawlers in northern and eastern Australia. *Biological Conservation, 100(3), 271-280.*

confirm the catch volumes of these species and reduce the risk rating if only a few kilograms are caught each year in the fishery.

> **Actions:**
> - AFMA to consult taxonomic experts to address data gaps for the squid species, sea snake species, and Red Champagne Lobster, assessed as potential high risk through the ERA process.
> - CSIRO to confirm catches of Black Teatfish and Golden Sandfish and reduce potential risk rating if catches are only minor.

4 Harvest strategy for JBG Redleg Banana Prawn sub-fishery

It was noted that the AFMA Commission supported NPRAG and NORMAC's recommendation and decided the Management Strategy Evaluation (MSE) harvest control rule two (HCR-2), which is to close the Joseph Bonaparte Gulf (JBG) during the banana prawn season (1 April – 15 June), in addition to the current rule, should be implemented from 2021.

The RAG discussed how to incorporate the new HCR in the existing NPF Harvest Strategy. CSIRO presented on the current harvest strategy and the rules that may need to be updated to incorporate the new HCR. The RAG agreed that the rules identified were the ones to be reviewed and supported a working group of CSIRO, AFMA and NPFI collaborating on a draft harvest strategy that could be considered by the RAG at its March 2021 meeting.

RAG comment was also sought on a CSIRO statement that explains the objectives and outcomes of the MSE research for Redleg Banana Prawns and it was agreed members would provide comment out-of-session.

> **Actions:**
> - CSIRO, AFMA and NPFI to develop a draft Redleg Banana Prawn harvest strategy for RAG consideration at its March 2021 meeting.
> - NPRAG members to provide comment on the CSIRO statement that explains the objectives and outcomes of the MSE research for Redleg Banana Prawns.

5 Harvest strategy approach for byproduct species

NPRAG noted that, following the release of the updated Commonwealth Harvest Strategy Policy in November 2018, the management arrangements for some NPF species may need to be updated to ensure they are managed in accordance with the policy. The RAG was asked to recommend terms of reference and scope for any changes to the NPF Harvest Strategy to ensure the management of byproduct species aligns with the Commonwealth Harvest Strategy Policy.

It was noted that research to address potential updates to the assessment and management of byproduct species was considered a priority in the 2021-2022 NPF Annual Research Statement. In response to AFMA's call for research, CSIRO submitted a proposal to undertake a more quantitative assessment on any byproduct species that were categorised as potential high risk in the NPF ecological risk assessment (ERA). CSIRO provided an overview on the research proposal

and the RAG discussed its preferred approach to updating the management arrangements for byproduct species under the NPF Harvest Strategy. It was suggested that, as there are no plans to further develop the fishery for any byproduct species, the objective is to reduce the risk for the byproduct species categorised as potential high risk. One method to do this is to consult experts on the relevant taxonomic groups to address some of the information gaps or provide expert opinion on the potential risk to each species.

The RAG agreed to take a stepped approach to managing the potential risk to byproduct species. The initial step is to consult relevant taxonomic experts to address any data gaps and following this, consider another approach, such as an e-SAFE assessment, for the species that remain at high risk.

Actions:
- AFMA to consult taxonomic experts to address any data gaps for the byproduct species assessed as potential high risk through the ERA process.

6 Bycatch strategy

The RAG reviewed the revised draft NPF Bycatch Strategy and noted the updates to include its previous comments. The RAG was supportive of the strategy and agreed it was focussed on the priority areas. An additional suggestion was made to update the vision statement to encompass all priority species, not just sea snakes and sawfish. Clarification was also sought regarding the testing of new bycatch reductions devices (BRDs) against the Tom's Fisheye and Square Mesh Panel. It was suggested improvements could be made to how the objective was written to provide more clarity and the RAG agreed that the strategy be circulated for RAG comment out-of-session.

Actions:
- NPFI to send a Microsoft Word version of the draft NPF Bycatch Strategy RAG members for comment out-of-session.

7 Research

Endeavour prawn assessment needs

NPRAG noted that the lack of adequate biological data for endeavour prawns has prevented the full adoption of stock assessments using size-structured weekly time-step models. Instead, a less data-intensive, age-aggregated Bayesian hierarchical production model (BHPM) with an annual time step was developed and adopted for Blue Endeavour Prawns. The Blue Endeavour Prawn CPUE data is currently 'standardized' using the fishing power model trend estimated for tiger prawns (which uses the so-called 'economic catch of the tiger fishery') and could be improved with the development of an endeavour prawn-specific fishing power modelling or CPUE standardisation.

Furthermore, the current endeavour prawn assessment models do not directly take into account management changes over time that may have specifically impacted endeavour prawns. Spatial and temporal closures, as well as changes in fishing season, imply that availability of prawns to the fishery can vary from year-to-year due to these management measures and the harvested prawns may be at different life stages. Red Endeavour Prawn is subject to the same issues and

assumptions as Blue Endeavour Prawn. In addition, there are no reliable growth estimates for Red Endeavour Prawn and no specific assessment model developed for this species apart from a model that uses the same model structure and priors as the Blue Endeavour Prawn model (i.e. assumed biological parameters, catchability, and carrying capacity, but applying the Red Endeavour Prawn catch and effort data).

It was noted that CSIRO undertook a preliminary analysis to understand the effect of changing the endeavour prawn catchability coefficient and, subsequently, included Red Endeavour Prawn in the bio-economic model as a sensitivity test. At its May 2020 meeting, NPRAG noted the assessment results and prioritised further work on endeavour prawns in the NPF Annual Research Statement. NPRAG was asked to prioritise endeavour prawn assessment needs, noting CSIRO had submitted a research proposal relating to the assessment of endeavour prawns during AFMA's call for research. Clarification was provided as to why the sensitivity test to include Red Endeavour Prawns in the tiger prawn stock assessment using a three-stage catchability time series was a preliminary assessment. Through an internal peer review process, it was suggested this approach confounds catchability and biomass but does indicate a change in catchability has a significant effect on the stock assessment results and is worth exploring further.

CSIRO provided an overview of the research proposal and how it addresses the endeavour prawn assessment needs including by conducting a depletion analysis or revising the fishing power analysis or CPUE standardisation. It was suggested that there are a number of uncertainties with the available data and it is difficult to determine how useful the results from the proposed assessment project may be. An alternative may be to take a stepped approach by first considering the usefulness of the data from the 1983-1985 Maxim surveys and then making a decision whether to pursue further assessment work. However, it was advised the growth parameters that may be able to be determined through the Maxim data will not provide the entire solution. Updating, to the extent possible, fishing power data that is currently borrowed from the tiger prawn assessment is also an important objective.

The RAG noted the objectives of the research proposal and suggested the immediate priority is to address the biological data deficiencies for Red Endeavour Prawns. Updating some of the Red Endeavour Prawn biological parameters may then align the Red and Blue Endeavour Prawn biological information and allow the Red Endeavour Prawns to be re-included in the tiger prawn stock assessment. Following this, improving the fishing power and CPUE standardisation for both Red and Blue Endeavour Prawns may resolve some of the assessment challenges highlighted in the discussion. It was agreed that CSIRO, AFMA and NPFI would collaborate out-of-session to revise the research proposal so the analysis of the Maxim data was costed separately to the fishing power revision and CPUE standardisation. It was noted the Maxim data analysis costing should include the analysis of both Red and Blue Endeavour Prawns.

Actions:
- CSIRO, AFMA and NPFI to revise the Red Endeavour Prawn research proposal so the analysis of the Maxim data is costed separately to the other objectives.

Sawfish close-kin mark-recapture project

The RAG noted that progress toward developing a sawfish close-kin mark-recapture (CKMR) project is continuing. Joint funding from AFMA, CSIRO and DAWE has enabled the continuation of sawfish tissue sample collections in 2020 and 2021 for any future CKMR project. Crew Member Observers (CMOs), Scientific Observers and skippers have previously collected samples under the

NESP population connectivity project. NT Fisheries also donated samples collected through its observer program. The DNA viability of samples currently stored indicates the samples collected by CMOs, Scientific Observers and skippers is positive.

The RAG noted that a full-costed CKMR proposal was being held-off until a stocktake on the number of useable samples collected so far was undertaken. Once the number of useable samples is known, a full-costed research proposal will be developed that details future sampling needs and the project analysis.

Update on MICE project

CSIRO presented a progress update on the models of intermediate complexity for ecosystem assessment (MICE) project relating to the impacts of water development in the GoC and NPF. The RAG noted that significant progress had been made and were interested in participating in a more comprehensive discussion with involvement of wider industry participants. It was advised that CSIRO would coordinate a targeted project workshop and extend an invite to RAG members and interested industry stakeholders.

Northern waters developments

CSIRO presented an update on developments in northern Australia that may alter river flow regimes. A background on the water development plans to date was provided and also how this information will be incorporated in the MICE model project. Feedback was sought on the type of water extraction scenarios the RAG was interested in analysing. NPRAG agreed that CSIRO was best placed to compile a list of the most useful water extraction scenarios and circulate the list to RAG members for comment.

Actions:
- CSIRO to distribute a list of the most useful water extraction scenarios to include in the MICE model to the RAG for comment out-of-session.

AFMA Research Committee (ARC) research proposals

NPRAG reviewed the NPF stock assessment proposal and the bycatch sustainability proposal. It was noted both research projects were essential research needs and the proposals were similar to the previous three-year proposals submitted in 2017 with a few minor changes. Of note was the reduced cost of the NPF stock assessment project due to a higher CSIRO contribution.

NPRAG agreed both projects met all the assessment criteria outlined in the AFMA research proposal assessment form and subsequently endorsed both research projects.

Species split project update

CSIRO provided an update on the species split project and progress to date. NPRAG noted that sampling was progressing well and industry was vital to the success of the project and incredibly cooperative in providing samples. It was also noted that, due to the impact of COVID-19 and the associated logistical challenges, too few samples were collected during the 2020 banana prawn season. The sparsity of samples means the sampling series has been disrupted and to get meaningful data out of the project it may need to be extended a year (an additional banana and tiger prawn season).

NPRAG agreed CSIRO was to provide a written proposal outlining the cost implications and reason as to why the extension to the project is necessary for the RAGs consideration out-of-session.

Actions:
- CSIRO to provide a written proposal outlining the cost implications and reason as to why the extension to the species split project is necessary for the RAGs consideration out-of-session.

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8 MSC

NPRAG reviewed the Marine Stewardship Certification (MSC) client action plan to assist NPF Industry in keeping it on track for meeting the agreed actions within the proposed timeframes. It was noted the NPF is currently on track for meeting the actions.

9 Sawfish

NPRAG noted an update from NPFI on sawfish catches during 2020, with the following key points discussed:

- An education campaign was undertaken during 2019 and 2020 aiming to increase reporting of sawfish and improve species identification, with ID posters provided to the boats.
- There has been a steady increase in reporting with more than 90 percent of skippers reporting sawfish catches during the most recent tiger prawn season.
- Reporting to species level is similar to previous years; however, a number of operators are selecting the generic sawfish option in the e-logs and including the species in the comments.
- NPFI is discussing with Catchlog some options to make it easier for operators to select the different species, rather than the unidentified sawfish, to improve the reporting to species level.
- There has been an increase in reported numbers of sawfish in 2020, with over one thousand reported, double the reported interactions in 2019.
- NPRAG noted that as the percentage of skippers reporting sawfish has significantly increased from previous years, this is likely an increase in reporting rather than an increase in interactions.

NPRAG also noted the continuation of the numerous sawfish projects, with the sampling project still ongoing and cameras being deployed in the nets of two boats to capture footage of sawfish behaviour within the nets. Preliminarily data analysis of the sawfish interactions recorded by CMOs indicate that top escape TEDs are more effective at allowing sawfish to escape; however, this data is heavily weighted to the tiger prawn season and more work on this will be done under the current FRDC project continuing this research.

10 Electronic logbooks

NPRAG considered the proposal from AFMA to move to shot-level reporting within the NPF. With the implementation of the new infrastructure and platforms for e-logs, which has occurred as part of the Agency Data Capture project, AFMA asked NPRAG to consider whether it is appropriate to

move to shot-level reporting for the commercial fishery. AFMA advised that if the decision is made to switch some or all of the fishery to shot-level reporting that the AFMA database and Catchlog are easily able to accommodate the change.

Potential benefits with moving to shot level reporting may include:

- closer representation of spatial effort
- provide finer scale data on catches of *P. monodon* in the broader NPF fleet
- finer scale catch and effort data which could be used in the future to improve assessments for target species and better inform future management decisions relating to bycatch or TEP species.

CSIRO confirmed that switching to shot level reporting would not impact the long time series of daily reporting as this data can be aggregated up.

NPRAG agreed that switching to shot-level reporting is definitely possible during tiger prawn fishing but noted advice from industry that it would be operationally difficult to report at the shot-level during banana prawn season when multiple short shots can be landed in quick succession and processed together (i.e. when targeting a banana prawn mark). Industry advised that it should be possible to report all catches from the same mark but if moving between marks that are close to each other it may not be possible to separate which catches came from which location.

NPRAG provided in principle support to a move to shot-level reporting for tiger prawn fishing, although noted there are some additional protocols that need to be developed and considered by the RAG before any recommendation can be made for shot-level reporting for banana prawn fishing. NPRAG also noted that further consideration is needed of any additional costs from AFMA, CSIRO or NPFI that may arise from this change and further consultation is required with the broader industry and skippers before any change is implemented.

> **Actions:**
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> - AFMA and NPFI to discuss any additional costs and develop some options for implementing finer scale reporting in the banana prawn sector and provide advice back to NPRAG.

11 Action items

NPRAG noted the list of action items and the status of each item. No comments were made in regards to any of the items.

12 Update reports

12.1 Industry update

NPRAG noted an update from Industry on bycatch reduction device (BRD) implementation during the banana prawn season, broodstock operations, the crew member observer (CMO) program, and the 2020 tiger prawn season.

BRD Implementation: banana prawn season
NPFI developed and implemented an industry code of conduct for the use of BRDs in the 2020 banana prawn season. The code requires NPF operators targeting tiger prawns to use an approved

BRD that has been shown to reduce bycatch by at least 30 per cent. This requirement is only necessary for half of a vessel's nets in operation, the other nets can continue to be used with the current BRD configuration.

The RAG previously agreed that NPFI would undertake an analysis of the quantity of tiger prawns caught in the banana prawn season (as a proportion of the yearly tiger prawn catch) to assist the RAG to determine a future trigger value for review of BRD use in future banana prawn seasons. The results of the analysis indicate that, on average, the catch of tiger prawns in the first season is 3.45 per cent of the total tiger prawn catch.

NPFI recommends that, given the very low level of average tiger prawn catch in the banana prawn season compared to the total annual catch, the RAG reconsider whether determining a 'trigger value' for the first season is necessary. An alternative approach could be to monitor first season tiger prawn catches and flag any substantive changes if they occur.

If deemed necessary, given that 2020 is the first year the NPFI Code of Conduct has been in place and the low percentage of tiger prawn catch in the banana prawn season, NPFI recommends deferring consideration of a 'trigger value' for at least two years to allow for data to be collected on whether operators are changing BRDs when they target tiger prawns and the overall effectiveness of the Code of Conduct.

Broodstock collection
NPFI continues to manage broodstock collection in the NPF through the NPFI/AFMA co-management contract. 2020 is the first year that NPFI has entered into contracts directly with individual farm operators for broodstock supply. NPFI contracted one full time and one part time vessel for broodstock collection in 2020.

Catches have been sporadic with considerable differences between numbers, size and sex of animals between timing of trips/ moon phases which has caused some angst amongst the farms when trip orders have not been filled.

CMO program
Two CMOs collected data during the 2020 banana prawn season and nine CMOs during the tiger prawn season. Of these, three are new and nine are returning CMOs.

Due to Covid-19 travel restrictions the annual CMO training workshop could not be held in July. CMO kits were compiled and sent to each port for individuals to collect, along with a sawfish tissue sampling kit. CMOs were contacted individually to discuss the data collection requirements and procedures for the season and to go through the species identifications.

2020 tiger prawn season
The RAG noted that catches in the 2020 tiger prawn season have been below average.

12.2   AFMA management update

NPRAG noted an update provided by AFMA management including:

- *NPF Harvest Strategy / Fisheries Management Strategy (FMS)* – Development of the FMS for the NPF has been progressing. The research plan component is complete and will reflect the existing strategic research priorities along with annual updates. NPFI is leading the development of the bycatch strategy components discussed under agenda item 6. Updates to the harvest strategy will include revised harvest control rules for Redleg Banana Prawns along with updates for byproduct species. The FMS will be a live document, subject

to annual review at each November RAG meeting. This timeline works well to ensure that an updated FMS is in place for each calendar year, documenting the management strategies, data needs, bycatch actions and research priorities for that year.

- *NPF Data Plan* – Development of the data plan is continuing out-of-session. Pending the results of the ERA, AFMA will coordinate an out-of-session discussion on the next draft with a sub-group of the RAG during 2021.
- *Ecological Risk Assessment (ERA)* – An updated ERA is a key step required under the revised Commonwealth Bycatch policy and will help prioritise actions for updates to the bycatch strategy. The NPF ERA Working Group met on 17 September to consider and provide feedback on the updated banana prawn and tiger prawn sub-fishery ERA results. The advice from this meeting, including the final risk ratings, along with other comments on the Draft Final Report will be incorporated into the Final Report. The drafting of the Redleg Banana Prawn sub-fishery ERA will commence in coming months.
- *Listing of narrow sawfish as migratory and update on sawfish recovery plan* – The Sawfish and River Sharks Multispecies Recovery Plan is due to be reviewed in 2020. Narrow sawfish will now be included for the first time as it is now listed as a migratory species. The narrow sawfish is now recommended for assessment for listing as a threatened species. This process is on the same timeline of assessment as the up-listing of the largetooth/freshwater sawfish (*Pristis pristis*). The proposal to up-list the status *P.pristis* to endangered status has been approved for assessment by the Minister responsible for the EPBC Act. The statutory timeframe in which the assessment must be completed is 30 October 2022.
- *Agency Data Capture* – The ADC project commenced in 2019 to create an improved platform for data coming in and out of AFMA, replacing the ageing data infrastructure, which is inflexible and requires complex data management processes to integrate all the current data sources received by AFMA. The initial stages of the project focus on e-logs and e-CDRs, however, the platform can be extended to other data streams e.g. VMS, Observers and EM. The benefits to AFMA and stakeholders include:
  - o All data coming in through the ADC platform can be validated against a live system, as it's submitted (minimising errors);
  - o Changes to data fields can be implemented faster;
  - o Improved data controls; and
  - o Future data sharing made easier.

  To date, the project has developed e-logs for all existing fishing methods within the new platform. The software has been developed by providers for these new systems, with the ETBF and GHAT fisheries currently transferring onto the new system and trawl fisheries (including NPF) to occur over the coming months. AFMA is currently trialling the e-CDR platform with some boats in the ETBF.

- *NPRAG membership* – The current NPRAG membership terms conclude in March 2021. The reappointment process will commence in January 2021 and AFMA will advise members when the call for applications is advertised.

13 Other business

No other items of business were raised for discussion.

The Chair closed the meeting at 17:30 (AEDT) on 02 December 2020.

Signed (Chairperson):

Date: 27/01/2021

Draft Annotated Agenda

Northern Prawn Fishery Resource Assessment Group (NPRAG) videoconference

30 November & 02 December 2020

Day 1 – 30 November 2020 (10:00 am to 14:00 pm (AEDT))				
Item	**Responsibility**	**Paper**	**Indicative Timing**	**Expected outcome**
1. Introduction / Meeting Management • Welcome • Adoption of agenda • Declaration of interests • Minutes from previous meetings	Chair	Yes	10.00 – 10.15 (15mins)	
2. Broodstock • CSIRO presentation on final results of the *P. monodon* stock assessment project • Review and provide recommendation on current catch limit • Broodstock data collection priorities	CSIRO/AFMA	Yes	10.15 – 11.30 (1.25hrs)	Review the 9000 cap and recommend limit for 2021. Recommend data to be collected to improve future assessments.
5. Harvest strategy approach for byproduct species • Review harvest strategy requirements of byproduct species • Recommend assessment needs for byproduct species	AFMA	Yes	11.30 – 12.30 (1hr)	Review ARC research proposal and provide recommendation on the species that need further assessment to meet HS policy.
Break			12.30 – 13.00 (30mins)	
7. Research • Endeavour prawn assessment priorities	CSIRO/AFMA/NPFI	Yes	13.00 – 14.00 (1hr)	Review and prioritise endeavour prawn assessment

• Close-kin mark recapture project on Sawfish • Species split project update • Endorse ARC research proposals				needs – project proposal; Comment on/endorse CKMR research proposal before submitting to FRDC; Note the species split project update - recommendation on extending the project; Review and comment on/endorse NPF related research applications.

Day 2 – 02 December 2020 (13:30 pm to 17:30 pm (AEDT))

4. Harvest strategy for JBG Redleg Banana Prawn sub-fishery • NORMAC recommendation and AFMA Commission decision • Provide recommendations to revise NPF Harvest Strategy for the JBG Redleg Banana Prawn sub-fishery • Progress update on stock assessment project.	CSIRO/AFMA	Yes	13.30 – 14.00 (30mins)	Note NORMAC recommendation and AFMA Commission decision on the Redleg Banana Prawn harvest control rule; Review the harvest strategy for Redleg Banana Prawns and recommend revisions to incorporate the updated harvest control rule.
6. Bycatch strategy • Review draft bycatch strategy	NPFI / AFMA	Yes	14.00 – 14.30 (30mins)	Review and comment on the draft bycatch strategy taking into consideration the results of the ERA.
3. ERA • CSIRO presentation on results of the updated ERA for tiger and banana prawn sectors • RAG feedback on ERA results	CSIRO/AFMA	Yes	14.30 – 15.30 (1hr)	Depending on resolving outstanding questions, review the draft ERA results, provide recommendations to finalise the ERA and provide recommendations

• RAG advice on any further ERA needs e.g. trips targeting scampi and broodstock.				on further ERA needs, e.g. scampi.
7. Research • Update on MICE project (impact of water development) and progress made • Northern waters developments	CSIRO/AFMA/NPFI	Yes	15.30 – 16.00 (30mins)	Note updates on MICE project and Northern waters development.
8. MSC • Review the NPF MSC client action plan	NPFI	Yes	16.00 – 16.15 (15mins)	Review the MSC client action plan to ensure the NPF is on track to meet the agreed actions of the plan within proposed timeframes.
9. Sawfish • Update on interaction trends	NPFI / AFMA	Yes	16.15 – 16.30 (15mins)	Note 2020 data on sawfish interactions.
10. Electronic logbooks • Shot-level reporting options • Update on e-log changes	AFMA	Yes	16.30 – 17.00 (30mins)	Consider change from daily to shot-level logbook reporting. Note an update on changes to e-logs.
11. Action Items	AFMA	Yes	17.00 – 17.15 (15mins)	Note progress on action items from previous meetings and provide feedback and comments where appropriate.

12. Update Reports
• Industry
   ○ BRD implementation – banana season
   ○ Broodstock
	NPFI/AFMA	Yes	17.15 – 17.30 (15mins)	Reports taken as read – open for questions. Operators to provide verbal season update.

o CMO program
• AFMA
  o NPF HS/FMS
  o NPF data plan
  o ERA
  o Sawfish CKMR project
  o Sawfish listing
  o Agency data capture
  o NPRAG appointments				

13. Other business	RAG			

NPRAG Declared Conflicts of Interest

Participant	Membership	Interest Declared
Ian Knuckey	Chair	Director - Fishwell Consulting Pty Ltd Director - Olrac Australia – a company associated with electronic logbooks. Scientific member – NORMAC Member – North Marine Parks Advisory Committee Chair - Tropical Rock Lobster RAG Chair - Victorian Rock Lobster RAG Scientific member - SESSF shark RAG Scientific member – GABRAG Works with Indigenous communities in capacity building activities Chair - South Australia's Gulf of St Vincent prawn fishery's research committee Scientific member - South Australia's Gulf of St Vincent prawn fishery's management advisory committee Current consultancy with NT Fisheries designing a snapper species survey Has a son working on a vessel in the fishery Various research interests in other Commonwealth and State fisheries.
Rik Buckworth	Scientific Member	Scientific Member - Torres Strait Finfish RAG Director - Aquatic Remote Biopsy Pty Ltd Director - Sea Sense Australia Pty Ltd University Professorial Fellow – Charles Darwin University Appointed as a CSIRO Fellow in 2020 Current consultancy contract with NPFI to review Red Endeavour Prawns Chair of the NT Aquarium Fishery Management Advisory Committee Various consultancy work with NT Fisheries Current consultancy contract with AFMA and QDAF for a project in the Torres Strait Researcher involved particularly in stock assessment research in NPF. Has in the past and may in future seek and receive funding for research in the fishery.
David Brewer	Scientific Member	Director – Upwelling P/L (David Brewer Consulting)

		Honorary Fellow – CSIRO Scientific member – NPRAG Scientific member – Torres Strait Fin Fish Working Group Chair - Torres Strait Fin Fish RAG Current consultancy work with AFMA, Torres Strait and the Quandamooka Yoolooburrabee Aboriginal Corporation, Moreton Bay.
Tom Kompas	Economic Member – University of Melbourne	Research provider. Has in the past and may in future seek and receive funding for research in the fishery.
Phil Robson	Industry Member	Employee of A Raptis and Sons, responsible for managing NPF vessels & an NT demersal fish trawler. Has provided charter for scientific surveys in NPF (none of which are in JBG) in the past and may in future.
Ian Boot	Industry Member	Managing Director of Austfish, a company which operates NPF vessels. Has a commercial interest in the fishery. NPF broodstock permit holder. Participates in scampi fishing.
Darci Wallis	AFMA Member	AFMA employee, no pecuniary interest in the fishery.
Stephen Eves	Executive Officer (AFMA)	AFMA employee, no pecuniary interest in the fishery.
Steve Bolton	Observer - AFMA	AFMA employee, no pecuniary interest in the fishery.
Annie Jarrett	Observer - NPFI	CEO- NPFI Member of the MSC Stakeholder Council Chair - Australian Council of Prawn Fisheries (ACPF). Some research items are of relevance to NPFI.
Adrianne Laird	Observer - NPFI	Employed as a contractor by NPFI. Some research items are of relevance to NPFI.
Rob Kenyon	Observer - CSIRO	Research provider. Has in the past and may in future seek and receive funding for research in the fishery.
Trevor Hutton	Observer - CSIRO	Research provider involved particularly in stock assessment research in NPF. Has in the past and may in future seek and receive funding for research in the fishery.
Eva Plagányi	Observer - CSIRO	Research provider involved particularly in stock assessment research in NPF. Has in the past and may in future seek and receive funding for research in the fishery.
Roy Deng	Observer - CSIRO	Research provider involved particularly in stock assessment research in NPF. Has in the past and may in future seek and receive funding for research in the fishery.
Judy Upston	Observer - CSIRO	Research provider. Has in the past and may in future seek and receive funding for research in the fishery.

Robert Curtotti	Observer - ABARES	Economics research provider. No current pecuniary interest in fishery. Potential to seek and receive funding for research in the fishery in future.
Ian Butler	Observer - ABARES	Economics research provider. No current pecuniary interest in fishery. Potential to seek and receive funding for research in the fishery in future.
Laura Blamey	Observer - CSIRO	Research provider. Has in the past and may in future seek and receive funding for research in the fishery.
Tonya Van Der Velde	Observer - CSIRO	Research provider. Has in the past and may in future seek and receive funding for research in the fishery.
Shijie Zhou	Observer - CSIRO	Research provider. Has in the past and may in future seek and receive funding for research in the fishery.
Margaret Miller	Observer - CSIRO	Research provider. Has in the past and may in future seek and receive funding for research in the fishery.
Toby Patterson	Observer - CSIRO	Research provider. Has in the past and may in future seek and receive funding for research in the fishery.
Miriana Sporcic	Observer - CSIRO	Research provider. Has in the past and may in future seek and receive funding for research in the fishery.

NPRAG Action items

Item	Person responsible	Description of action item	Progress
	18 May 2016 Meeting		
1.	Rik Buckworth/CSIRO	Upload research reports relevant to the NPF to the GovTEAMS site.	**Ongoing** – CSIRO has a student compiling a bibliography that will be available to NPF stakeholders
	17-18 November 2016 Meeting		
2.	CSIRO	Review/update the assessment inputs to consider the influence of price elasticity.	**Ongoing** – Tom Kompas to follow up and investigate whether this can be done and coordinate with the AFMA working group to ensure resources looking into price elasticity are not being doubled up. Tom to discuss at the July 2018 working group meeting
3.	NPRAG Chair	Send a thank you letter to the crews involved in the operational testing of the BRD.	**Ongoing** – letters with Chair for signing, will be sent out before end of 2019 tiger prawn season. Adrianne Laird to advise who to send the letters to.
	23-24 May 2018 Meeting		
4.	AFMA/NPFI	AFMA and NPFI to investigate the objective for collecting species abundance counts and whether this data should continue to be collected.	**Ongoing** – AFMA observers have collected data on bird warp strikes during 2019 and reported zero interactions. AFMA to consider the wildlife data collection protocols for the future. Will be

No.			
			considered as part of the NPF data plan.
5.	David Brewer, David Power, Steve Eves, Adrianne Laird	David Brewer, David Power, Steve Eves, Adrianne Laird and a representative from the CSIRO ERA team to form a working group to engage in the ERA process and report key results back to the RAG.	**Ongoing** - the ERA working group has met recently to consider the results. A final draft report, which incorporates these comments. To be discussed under Agenda Item 3.
	1 November 2018 Meeting		
6.	AFMA	AFMA to look into New Zealand's protocols for counting bird abundance	**Ongoing** - Will be considered as part of the NPF data plan.
7.	AFMA	AFMA to check the observer protocols to ensure the collection of the 10 kg subsample is in accordance with the method outlined by *Heales* et al.	**Ongoing** - Will be considered as part of the NPF data plan.
8.	David Brewer/Gary Fry	David Brewer and Gary Fry to provide comments/feedback to AFMA on the current observer manual and annual observer report	**Ongoing** – Will be considered as part of the NPF data plan.
	21 February 2019		
9.	AFMA	Organise for a field to be added into e-logs so broodstock individuals can be recorded directly to the AFMA database	**Complete** – AFMA database and e-logs are being updated. New reporting procedures will be in place before the start of the 2021 banana prawn season.
10.	AFMA	Ensure there is a way in the e-logs to record and distinguish between a broodstock trip and a regular NPF fishing trip	**Complete** – AFMA database and e-logs are being updated. New reporting procedures will be in place before the start of the 2021 banana prawn season.

11.	AFMA/NPFI	Develop a sawfish mitigation plan for consideration by RAG and MAC before the end of March. In developing the plan, investigate research options to assess post release survival of sawfish and consider closures in high interaction areas, move-on provisions and ensure near-real time reporting of sawfish interactions from the vessels	**Complete** – a move-on provision was developed and included as a permit condition for the 2019 and 2020 seasons.
12.	AFMA	Increase observer coverage on broodstock fishing trips and ensure that coverage is representative	**Complete** – the target observer coverage for broodstock operators is 20%. During 2020, observers were unable to undertake trips in the banana prawn season due to COVID-19 related logistical constraints. But the target coverage was achieved during the tiger prawn season.
13.	APFA	Provide a 5-year projection on the total number of *P. monodon* broodstock animals to be sourced from the NPF annually	
14.	AFMA/CSIRO	Ensure all catch data (including discards) from broodstock fishing operations are included in the NPF stock assessment	**Complete**
15.	AFMA	Conduct a SAFE assessment for the NPF including fishing for broodstock collection (within 6 months)	**Complete** – stock assessment undertaken instead.
16.	AFMA/NPRAG	Investigate options for further assessment of *P. monodon* stocks to provide information on the sustainable harvest of *P. monodon* from the NPF over the longer term	**Complete** – stock assessment project undertaken.

17.	NPFI	Review the size structure of the scampi catch using grading data from scampi operators	**Ongoing** – initial analysis will be presented during November meeting.
18.	NPRAG/NPFI	Collaborate out-of-session to help develop a project proposal for the marine parks grant opportunity	**Complete**
19.	AFMA/Phil Robson	Analyse the historical catch and effort data, by season, around Bountiful and Mornington Islands and present the analysis to the RAG at its May 2019 meeting for its consideration	**Ongoing**
	30-31 May 2019 Meeting		
20.	Rob Kenyon	Circulate the Andrew Broadley NESP report when it becomes available	**Ongoing** – Rob to circulate report when published.
21.	NPRAG Chair	Write to the CMOs acknowledging their efforts and contribution to the fishery	**Ongoing** – letters with Chair for signing, will be sent out before end of 2019 tiger prawn season. Adrianne Laird to advise who to send the letters to.
22.	AFMA	Investigate if data quality checks and rectifying data errors can be automated	**Ongoing -** Will be considered as part of the NPF data plan.
23.	AFMA	Consider including updating drivers of data needs to ensure they include habitat and communities, social licence/values and acceptability, market access, animal welfare and indigenous interests	**Ongoing -** Will be considered as part of the NPF data plan.
24.	AFMA/NPFI	Refine objectives and continue development of the data and monitoring plan in consultation with the RAG	**Ongoing -** Will be considered as part of the NPF data plan.
	ERA species list review		

25.	AFMA/CSIRO	Split the ERA species lists by logbook data and all other data sources (e.g. observers) to help clarify the species splits	**Ongoing** – will check final version of ERA
26.	CSIRO/AFMA	Consider splitting the logbook recorded squid species group in the ERA by the percentages recorded by CSIRO survey data	**Ongoing** – will check final version of ERA
27.	CSIRO/AFMA	Use the species split model to split the tiger prawns recorded in the banana prawn sub-fishery	**Ongoing** – will check final version of ERA
28.	CSIRO/AFMA	Double check the catch of Redleg Banana Prawns in the banana prawn sub-fishery	**Ongoing** – will check final version of ERA
29.	CSIRO/AFMA/ABARES	Review the ERA species value table and split the species using the species split model so that each species only appears once in the table	**Ongoing** – will check final version of ERA
30.	CSIRO/AFMA	Categorise all king prawns as a byproduct species group	**Ongoing** – will check final version of ERA
	Harvest Strategy review		
31.	AFMA	Compile all available data on each byproduct species to enable the RAG to assess what level of assessment is feasible and review if current harvest strategy triggers are appropriate	**Ongoing** – will review the data for byproduct species that require further assessment following the finalisation of the ERA.
	Bycatch Strategy review		
32.	AFMA/NPFI	Prepare a draft of the NPF bycatch strategy by the November 2019 RAG meeting	**Complete** – draft presented at May 2020 meeting. To be

			discussed under agenda item 6.
33.	AFMA/NPFI	Split general bycatch and TEPs into sub-sections under the NPF bycatch strategy	**Complete** – has been separated in draft bycatch strategy. To be discussed under agenda item 6.
34.	AFMA/NPFI	Include an overview of historical initiatives and bycatch reductions in the new bycatch strategy	**Ongoing**
35.	AFMA	Explore options for validating the CMO and Scientific Observer eyeball estimates of total bycatch	**Ongoing**
36.	AFMA	Update bycatch strategy template to align with the policy by including the words 'reasonable and practical' when the objective is to minimise bycatch or maximise post-release survival	**Ongoing** – NPF bycatch strategy wording to align with the wording of the Commonwealth policies
	P. monodon assessment		
37.	CSIRO	Include prawn discards (from targeted broodstock fishing) in the next tiger prawn stock assessment as a sensitivity test.	
38.	APFA	Provide weight data on individual prawns to determine the average weight of each *P. monodon* collected for broodstock purposes	**Complete** – NPFI advised of the average weights for male and females according to the prawn farmers' standard operating procedures.
	29 August 2019 Teleconference		
39.	AFMA/NPFI	Develop terms of reference for the NPF harvest strategy review for scampi and other byproduct species in light of the revised HSP	**Ongoing** – - to be discussed under agenda item 5.
	7-8 November 2019 Meeting		

40.	NPFI	Provide RAG with results of the analysis of the quantity of tiger prawns caught in the first half (as a proportion of the yearly tiger prawn catch) to determine a trigger value for review of BRD use in the first season	**Ongoing**
41.	CSIRO	Explore options to provide an update on *P. monodon* stock assessment results before March 2020 and the preliminary report by May 2020	**Complete** – - to be discussed under agenda item 2.
42.	Dave Brewer / Gary Fry	Review the AFMA Scientific Observer report and suggest a process for determining the temporal and spatial observer needs of the fishery, taking into consideration the scientific report that originally established the program	**Ongoing -** Will be considered as part of the NPF data plan.
43.	AFMA	Consider including the observer program targets in the annual observer report and a summary of how the program is tracking in relation to the targets	**Ongoing -** Will be considered as part of the NPF data plan.
44.	NPFI	Consider the NPF byproduct species and determine aspirations for each species to inform what level of assessment is required and what the data gaps are	**Ongoing** – - to be discussed under agenda item 5.
45.	AFMA	Explore options to maintain accessibility and usability of the various components of the FMS	**Ongoing -** Will be considered as part of the FMS development.
46.	AFMA	Explore the feasibility of changing the NPF logbook reporting requirement to a shot-by-shot report	**Ongoing –** - to be discussed under agenda item 10.
47.	NPFI	Work with individual skippers to improve sawfish data reported in the NPF logbooks	**Ongoing** – completed for March 2020 pre-season briefings.

			Improvements evident during 2020 tiger prawn season. To be discussed under agenda item 9.
48.	ERA sub-group	Review the draft ERA and identify species that need further enquiry and liaise with experts to try and fill any data gaps	**Ongoing –** to be discussed under agenda item 3.
49.	AFMA	Revise the NPF Harvest Strategy for squid to clarify that there is a review point at an annual catch of 300t and an annual limit of 500t	**Ongoing** – to be considered as part of the harvest strategy review.
50.	AFMA / CSIRO	Review data for all byproduct species (i.e. mudbugs and scallops) to inform the development of sustainable catch triggers in the NPF Harvest Strategy	**Ongoing** - to be discussed under agenda item 5.
51.	ERA sub-group / CSIRO	Include commentary in the ERA to clarify the different nature of scampi fishing (including the associated catch of red champagne lobster)	**Ongoing** – ERA subgroup to consider. To be discussed under agenda item 3.
52.	CSIRO	Develop a full project proposal for the close-kin mark recapture research, with each component costed, for RAG review before being submitted to FRDC	**Ongoing** – to be discussed under agenda item 7.
53.	AFMA	Liaise with Queensland and Northern Territory Fisheries to coordinate collaborative support for the project and sample collection	**Ongoing** – collaboration is continuing with the other jurisdictions and some jurisdictions are contributing to sawfish sample collection.
54.	AFMA	Scampi review project to assess the 'species identification problem'	**Ongoing** – will be considered as part of a scampi review project.
	11 March 2020 Meeting		

55.	CSIRO	Provide the RAG with explanatory paragraphs on the MSE proposed harvest control rules 2,3 and 4, that outline each rule, what they achieve, the differences between each rule and the logistical considerations	**Complete –** Commission approved the recommended HCR at its November meeting.
56.	CSIRO	Keep harvest control rule 1 for comparative purposes, but remove harvest control rules 1 and 5 from further sensitivity testing.	**Complete**
57.	CSIRO	Present a paper at the May 2020 meeting outlining the issues with the current banana prawn MEY calculation and potential solutions.	
	20-21 May 2020 Meeting		
58.	AFMA/NPFI/CSIRO	Discuss some of the *P. monodon* data issues and improvements that can be made to the stock assessment project	**Complete –** stock assessment to be discussed under agenda item 2.
59.	AFMA/NPFI	Inform CSIRO of the likelihood of targeted broodstock shots where all individuals are retained and zero discarded, and also where all individuals are discarded and zero retained	**Complete -** stock assessment to be discussed under agenda item 2.
60.	Gary Fry	Provide the *P. monodon* stock assessment team with information regarding the survivability of discarded *P. monodon*	**Complete -** stock assessment to be discussed under agenda item 2.
61.	AFMA/NPFI/CSIRO	Consult broodstock operators to validate some of the results from the CPUE standardisation, e.g. catch rates are lowest at dusk	**Complete -** stock assessment to be discussed under agenda item 2.
62.	AFMA/NPFI	Clarify whether reported catches of 1 kg are rounded, i.e. are catches less than 1 kg	**Complete**

		not reported or rounded to 1 kg	
63.	CSIRO *P. monodon* stock assessment team	Assess whether CPUE indices can be determined for sub-areas based on known stock high catch areas	**Complete -** stock assessment to be discussed under agenda item 2.
64.	Industry/CSIRO/AFMA	Meet in the next few weeks to discuss the CPUE standardisation progress, inform of the spatial dynamics of the stock and consider the table of variables used to develop the *P. monodon* CPUE standardisation to inform if any important variables were not included.	**Complete -** stock assessment to be discussed under agenda item 2.
65.	Tom Kompas/CSIRO	Explore the stock assessment model sensitivity test of a significant drop in fuel price and report back to the RAG in November 2020.	
66.	CSIRO	Add text to the Final Redleg Banana Prawn MSE report to clarify differences between OM model (monthly) and original stock assessment model (quarterly)(so that the differences in biomass trajectories shown in results are not misleading)	**Complete**
67.	NPFI/NORMAC	Consider the outputs from the MSE and recommend a future harvest strategy option for the Redleg Banana Prawn sub-fishery	**Complete**
68.	CSIRO	Present MSE results to Industry in the next two months (and a recommendation to be made by November 2020 NPRAG meeting)	**Complete**