



Australian Government

Australian Fisheries Management Authority

Northern Prawn Fishery Resource Assessment Group (NPRAG)

Final meeting minutes

4-5 June 2024

View Hotel – Brisbane

Meeting held on Turrbal and Jagera Country

Meeting participants

Position	Participant
Chair	Ian Knuckey, Fishwell Consulting
NPRAG members	Ian Boot, Industry member Denham Parker, Scientific member Rik Buckworth, Scientific member Tom Kompas, Economic member (via teams) Éva Plagányi, CSIRO ¹ , Scientific member Phil Robson, Industry member Bryan van Wyk, Industry member Darci Wallis, AFMA ²
AFMA Employees	Sarah Kirkcaldie (Executive Officer) Anna Willock Brodie Macdonald (via teams) Dan Corrie (via teams)
Invited participant	Annie Jarrett, NPFI ³
Observers / Presenters	Ian Butler, ABARES ⁴ Michael Dylewski, ABARES Roy Deng, CSIRO Trevor Hutton, CSIRO Rob Kenyon, CSIRO Brandon Meteyard, NPFI (via teams and in-person) Sean Pascoe, CSIRO Steph Brodie, CSIRO Amelia Desbiens, CSIRO Beau Anderson, Industry Dwayne Klinkhammer, Industry
Apologies	
Nil	

¹ Commonwealth Scientific and Industrial Research Organisation

² Australian Fisheries Management Authority

³ Northern Prawn Fishery Industry

⁴ Australian Bureau of Agricultural and Resource Economics and Sciences

Agenda item 1. Preliminaries

a. Welcome and apologies

Ian Knuckey, the Chair, opened the meeting with an Acknowledgement of Country at 12:30 AEST⁵.

The Chair welcomed people in person and online. As this was the first time NPRAG were meeting as a new committee the Chair explained the roles and responsibilities of being a RAG member. The RAG noted that *Fisheries Administration Paper 12* ([FAP12](#)) outlines the roles and responsibility of members and observers.

Members noted that all interests in the matter being considered, not limited to pecuniary gain, must be declared and that any interests should be disclosed prior to the item relevant to the interest being discussed. The other NPRAG members should then discuss the nature of the interest, decide if there is any conflict of interest, and what action should be taken when that item is discussed. If an interest arises during the meeting, the member should inform the Chair immediately. The Chair further noted that members will sometimes be receiving information before it becomes public and members must respect that this is confidential information.

The Chair reminded members and attendees to be respectful at all times including listening to all members and not being biased based on gender, race etc.

Members noted that the meeting was being recorded, however, the recording will be deleted once the minutes finalised.

b. Declarations of interest

The RAG discussed potential conflicts of interest and participation under specific agenda items as outlined in FAP12, noting:

- The register of interest is at [Attachment A](#).
- Attendees with research interests were deemed to have a potential conflict of interest with *Agenda Item 15: 2025-26 annual research statement*. Research attendees left the meeting so the remaining attendees could discuss participation in the item. It was agreed that these attendees should be present for the discussion as no new projects were being considered. Additionally, if it is recognised that there is a conflict for researchers during the meeting they will be asked to leave.
- Industry attendees were deemed to have a potential conflict of interest with Agenda Items: 6 (Tiger prawn stock assessment), 7 (Redleg banana prawn stock assessment), 8 (2024 and 2025 TAE setting), and 10 (Harvest Strategy review). Industry attendees left the meeting so the remaining attendees could discuss industry participation in the items. It was agreed that industry should be present for all of Agenda Items 6, 7 and 10 and the initial discussion but not final recommendations under Agenda Item 8.

c. Adoption of agenda

The RAG adopted the draft agenda with no changes, outlined at [Attachment B](#).

⁵ Australian Eastern Standard Time

d. Minutes from previous meetings

The 21 February 2024 NPRAG meeting minutes were circulated on 15 May with comments due 29 May 2024. Members endorsed the minutes as a true and accurate record of the meeting. The RAG noted that they will be published on the AFMA website on the [NPRAG past meetings](#) webpage.

e. Correspondence

The RAG noted the correspondence provided since the October 2023 meeting related to the: 2024-25 research proposals; the call for application for NPRAG membership, and the February and June meetings.

Agenda item 2. Actions arising from previous meetings

The RAG noted the status of the action items from previous meetings and an update provided by the Executive Officer at [Attachment C](#).

Tom Kompas noted that the following agenda item was still pending:

‘Tom Kompas and Sean Pascoe were yet to consult with industry to enable a better understanding of the economics of the fishery as a whole to assist in the development of breakeven scenarios, ensuring that both variable and fixed costs are being considered appropriately.’

The AFMA member noted that an update on the electronic monitoring trial will be provided at November meeting.

A list of action items established at this meeting are listed in [Attachment D](#).

Agenda item 3. Update reports

a. Industry update report

The RAG noted the update provided by industry members and NPFI:

- Summary of the 2024 banana prawn season:
 - It was a strong wet season so industry thought it would be a good catching year, but industry struggled to get good quantities of prawns.
 - The East Coast is a major concern for industry with catches lower than last year with no prawns caught in key areas including Weipa to Spring Creek. Members agreed further investigation into the drivers behind this is warranted, noting that the Tiger Prawn MICE project may provide some explanation.
 - Overall prawn size was good, although industry noted they had adjusted their fishing operations this year – focusing on catching larger, better quality prawns over quantities. Skippers were encouraged to do shorter shots of between 500kgs – 1 tonne.
 - An added benefit of the shorter, more targeted shots was an observed reduction in bycatch of sawfish and seasnakes.
 - The export market continues to be challenging, with the NPF competing against a glut of other wild-caught and aquaculture prawns.
 - Industry suggested that an extended survey in summer may be required to determine if larger prawns are present early in the year.
 - Major issues continue to be low prawn prices and high fuel prices, although it was noted that the fuel price has dropped recently.

- Ten crew-member observers (CMOs) were selected for the 2023 tiger prawn season, although only nine CMOs collected data during the 2023 tiger prawn season – with all meeting the key performance indicators. The CMOs monitored 2,707 shots over 850 fishing days for TEP and at-risk species. Three CMOs were selected to collect data during the 2024 banana season but only two participated. The NPF is currently recruiting 11 CMOs for the 2024 tiger prawn season.
- The data extraction process and data accuracy have significantly improved with NPF collaborating closely with AFMA. NPF completed the first annual data summary using the new coding that significantly reduced the time and effort required.
- The 2024 banana prawn maximum economic yield (MEY) trigger was calculated using inputs on estimates of average prawn and fuel prices provided by NPF on 1 May 2024. The MEY trigger was calculated to be 575Kg/boat/day.
- Five water temperature monitoring devices were distributed to industry for the 2024 banana season – the vessels deploying the temperature monitoring devices are Territory Spirit and Territory Achiever (Austfish), Austral Hunter and Beachlands (Austral) and Raptis Pearl (Raptis).
- The NPF logbook data was used to compile a dataset spanning from 2010 to 2022, including information on specific gear and Bycatch Reduction Device (BRD) types used per vessel. The dataset included metrics such as trawl swept area and catch per unit effort of sea snake interactions pre and post the implementation of the Tom’s fisheye. CSIRO was contracted to conduct a Generalised Linear Model analysis on the dataset. The objective was to determine whether accounting for variations in vessel, year, season, zone, and gear could still reveal significant differences between the instances of sea snake interactions pre and post the introduction of the Tom’s Fisheye. Results are being finalised with the final report due to be published in June 2024.

b. AFMA management update

The RAG noted the update provided by AFMA about key issues relevant to the NPF:

- The new NPF WTO approval came into force on 5 January 2024, expiring on 6 January 2027, which includes four new conditions (in additions to the standard conditions applied to all Commonwealth Fisheries):
 - Undertaking a review of the NPF Scientific Observer program (focusing on spatial and temporal coverage distribution), due 30 June 2025;
 - Completion of an electronic monitoring (EM) trial in the NPF, due 15 December 2024;
 - Develop a sawfish bycatch mitigation strategy for the NPF (considering the current research underway), due 30 June 2026; and,
 - Ensuring where possible, all sawfish and sea snakes interactions in the NPF are reported to the species level.
- The AFMA Commission has approved the current broodstock catch limit (a 9,000 supply limit) until the 2024 fishing season, noting a stock assessment was scheduled for late 2024. However, as a new assessment was delayed (due to high upcoming research costs in the NPF and the current limit sufficient to meet demand), a decision is required from the AFMA Commission prior to the 2025 banana prawn season. Per previous decisions, a multi-year process is proposed with NPRAG and NORMAC advice to be sought later in 2024.
- In late 2023, the Commission considered the proposed amendments to the NPF Management Plan (the Plan) and agreed that the proposed amendments to the Plan should not be progressed at this time, noting the revised advice from NPF regarding the removal of the minimum gear requirement.

- AFMA Management will still progress with the other proposed amendments to the Plan during 2024 around other priorities and resourcing, noting Commission approval will be required prior to seeking Ministerial approval.
- The Fisheries Research and Development Corporation (FRDC) project on Indigenous engagement is nearing completion, which aims to meet AFMA’s operational legislative requirement to take account of Indigenous interests in commercial fisheries decisions and any wider implications of the Department of Agriculture, Fisheries and Forestry (DAFF) resource sharing policy. The key findings and suggested approach were the development of a national level engagement structure which includes:
 - A national coalition/peak body for Indigenous fisheries and fisheries related Sea Country issues (funded through by the Indigenous Land and Sea Corporation (ILSC) in co-operation with other Commonwealth agencies);
 - An Indigenous Fisheries Technical Working Group (funded and implemented by DAFF);
 - An Indigenous unit within DAFF to advance Indigenous engagement in their day to day operations.
- AFMA’s MAC/RAG consultative framework review is complete, with Commission approval of the framework review implementation plan. The implementation plan aims to make obtaining stakeholder advice/recommendations more efficient, effective, and transparent. The plan includes both short (developing induction material and standardised templates) and longer-term actions (dedicated MAC/RAG admin team, expanding stakeholder engagement and enhancing transparency/communication), specifically:
 - Review of the key policies (FMP1, FAP12, FAP7);
 - Costed plan to centralize (or potentially outsource) some functions (e.g. minute taking/chairing); and,
 - Broader community engagement.
- AFMA will initially work with a limited number of MACs and RAGs and/or Chairs (not yet determined) to test the practicality/usability of aspects of the implementation plan.
- The 2023 banana and tiger prawn season observer coverage targets were met, with continued cooperation between NPFI and the Observer Program to get observers deployed slightly earlier in the season than usual in the banana season.
- Due to limited resources/competing commitments, the 2024 banana season deployments were later in the season, although remain on target to complete the required coverage days.
- An eObserver system trial (a digital data collection application) is underway, with positive results to date. Once rolled out, this will streamline and improve the observer data collection processes. A recruitment process is almost completed, with eight new observers to come on board – which will assist in meeting observer coverage targets for all of AFMA’s fisheries moving forward.

The RAG noted the presentation by Andrew Powell providing an update on the data transformation project:

- The aim of the data transformation project is to improve the ways AFMA collects and stores data, by standardised AFMA’s systems to treat all data the same. Some key outcomes include:
 - Development of the eObserver platform, allowing observers to enter data directly onto a tablet with quality control (QC) built in,
 - Updating database/supporting (SIDac and WORDac) systems, and
 - Digitising the NPF season landing reports.
- Other work underway includes:

- Simplifying and modernising our databases (remove technical debt, decommissioning unnecessary databases, move to ORACLE cloud based system and new internal reporting platforms),
- Linking data across systems (e.g. consistent trip and shot ID on all databases), and
- Improving governance and data skills within AFMA.

The RAG thanked Andrew Powell for the update on the data transformation project.

c. CSIRO update

The RAG noted the update provided by CSIRO including:

- CSIRO have been involved on the Indigenous Working Group in an advisory capacity.
- The importance of the national and international climate briefings will continue to increase, with involvement from the Bureau of Meteorology, CSIRO (specifically Éva Plagányi and Steph Brodie), AFMA and FRDC. NPRAG members were asked to provide any feedback on the briefings to help improve these moving forward.
- CSIRO are currently conducting a strategic supply chain project and while the NPF is not a case study, the outcomes of this work will be provided to NPRAG.
- CSIRO attended the 9th World Fisheries Congress in Seattle to present the MICE project, with significant interest from attendees in this project.
- A workshop on the Limmen Bight Marine Park was recently held in Darwin, with additional workshops to be held in the future. The workshop brought together people from Parks and Wildlife Commission, NT Marine Parks, Marine Parks Australia, Charles Darwin University, Indigenous rangers and James Cook University. The aim of the workshop was to scope, assess and evaluate risks to the integrity of the coastal and near-coast terrestrial environment in the Limmen Bight/ Roper region of the western Gulf. While initially some participants expressed concerns with the impacts of the NPF, CSIRO provided further details on the NPF management and previous and current research underway (sawfish in particular) – which assisted in a more objective understanding around the potential impacts of trawling. Further detail was requested from CSIRO at the meeting to examine the VMS data and identify any fishing activity in culturally sensitive areas.
- The February 2024 survey wasn't able to undertake the usual mangrove recovery assessment, although photos provided industry from a spotter plane showing current mangroves coverage indicates recovery has continued.
- Two Roper River 'Ecology' reports (NAWRA2) (Asset Description Report and Asset Analysis Report) have been finalised and delivered to the National Water Grid. The MICE modelling was not included in the final Asset Analysis Report despite initial inclusion as a quantitative assessment of the impact of flow modification scenarios on the catch and abundance of the key species due to both water impoundment (dam placement) and water harvesting (pumping), as well as changed-climate scenarios. Reports are available online.

d. ABARES update

The RAG noted the update provided by the ABARES regarding recent data pertaining to the economic conditions in the NPF and preliminary results of the 2023 economic survey of the NPF including:

- The preliminary GVP for 2022/23 financial year has increased to the average levels (since 2000). While banana prawn catches have been on an upward trend since 2021, these have been offset by

decreasing tiger prawn catches and lower prawn prices (with banana and endeavour prices approaching historical lows).

- The net fuel prices remain at high levels, which together with low prawn prices is driving the current economic conditions which were last seen around 2007/2008. Crew and fuel remain the biggest costs for the fishery.
- The ABARES economic survey data is not available for 2020/21 because the survey sample for that year is biased towards larger vessels and unrepresentative of the NPF fleet. This issue is not present in the 2021/22 survey sample, which is consistent with previous surveys (around 60% of the fleet surveyed).
- ABARES are looking to adjust the timing of the economic surveys to allow the results to be delivered in a more timely manner and thanked industry for voluntarily contributing to the economic survey and ongoing support.

Members noted that Tom Kompas presented figures at the February NPRAG meeting showed negative profits, questioning whether this might be the result of sample size or vessel size sampled. Industry noted that they have given beach prices for previous surveys but did not use this in the latest survey.

Action Item 1: Tom Kompas, Brandon Meteyard and Michael Dylewski to review data collected to understand inconsistencies between ABARES information and economic data.

NPRAG thanked Michael Dylewski from ABARES for his presentation.

Agenda item 4. Climate and ecosystem status reports

The RAG noted the brief update by Dan Corrie on AFMA's Climate Adaptation Program which include the following three components:

1. Fishery Ecosystem status reports – providing insight on environmental conditions that have the potential to influence stock.
2. Climate Adaptation Handbook – to assist managers and industry identify long-term effective responses to climate change by working through an evidence-based process.
3. Climate risk framework (CRF) – a risk based assessment approach that identifies climate risk to species, considers science and management currently in place to mitigate risk and identifies where additional precautionary adjustments are required. The AFMA Commission has approved a trial application of the CRF for key fisheries in 2024, including the NPF. The CRF will be discussed at the November NPRAG meeting.

The RAG noted and discussed the climate and ecosystem status report presented by Steph Brodie from CSIRO including:

- The purpose of environmental report cards is to provide a simple overview on the latest relevant environmental data, giving an indication on the current state (or health) of the environment or ecosystem relative to longer-term trends and/or targets.
- Nationally, the biggest fisheries climate driver is the increase in water temperature with a 0.5 degree temperature change over the last decade.
- Global sea surface temperatures continue to rise, remaining at record highs in 2024.
- The ENSO (El Nino Southern Oscillation) phase is currently in neutral, with the outlook classified as 'La Nina watch'. La Nina typically sees higher rainfall, earlier rain onset and warmer oceans.
- Seagrass health is currently considered good around Weipa and Karumba.

- The 2024 January to February rainfall (438mm) was above the long-term median, with the January Southern Oscillation Index (SOI) index neutral.
- The eastern Gulf of Carpentaria has seen a moderate marine heat wave since March.
- Industry noted that there was good rainfall but it came late and that historically it wasn't unusual to see larger prawns off main fishing areas early in the year (around February) which could mean that the current season start of 1 April could result in these prawns being missed.

NPRAG agreed that CSIRO will talk to industry regarding on water observations, with further discussions to occur at the November meeting.

Action Item 2: CSIRO to discuss the 'on water' observations with industry, with a further update on the status report to be provided at the November NPRAG meeting.

Agenda item 5. Tiger Prawn Stock Assessment

Denham Parker, CSIRO, presented the 2024 Tiger Prawn Stock Assessment, which included the data inputs, stock status, bio-economic model outputs and sensitivity tests, with key discussions outlined below.

Model Inputs

- 2023 catches increased from 2022 for all species except for red endeavour prawns, largely due to 2022 effort being lower (restricted) than normal. However, 2023 catches of grooved tiger prawns, brown tiger prawns, blue endeavour prawns and red endeavour prawns were 2%, 22%, 15% and 30% below the average catch for the period 2019-22 average, respectively.
- Tiger prawn effort increased in 2023 compared to 2022, although grooved tiger prawn and brown tiger prawn effort was 8% and 10% below the 2019-22 average, respectively.
- The overall 2024 recruitment survey indices were positive for grooved tiger prawns and red endeavour prawns. The grooved tiger index was 10% above the 2023 indices and the highest since 2019 and the red endeavour index was up from 2023 and was the highest since 2015. The 2024 Weipa regional index was very optimistic for grooved tiger prawns.
- The 2024 brown tiger prawn and blue endeavour indices remain low, with the brown tiger index below 2023 (and 2nd lowest of the series) and the blue endeavour index down from 2023 and remaining below the series average.
- While poor weather during the 2024 survey resulted in sites in some areas being missed, all survey areas had sites covered, which lessens any potentially uncertainty in the recruitment indices. CSIRO has recently assessed the potential impact of missing any survey sites (broadly applying an average of previous observations for the site). The variance on the 2024 indices is very low, which shows the missed 2024 sites hasn't resulted in more uncertainty (which can occur with missing data points).
- NPRAG expressed thanks to survey team to extending the survey to ensure all areas were covered and also to Raptis and industry for covering the additional costs.
- The recent tiger prawn fishing power has continued to increase (as predicted), although the recent increases (2019-2023) are far below normal trends, with a total increase of 1.4% for the period 2019-2023 (compared with the annual average increases of 2.7% since 2008). The swept area index drives the overall increasing trend, with the other components driving the inter-annual variability.
- The endeavour prawn fishing power has been consistent over time, reflecting that fishery effort is focused on tiger prawns with improved technology allowing more accurate targeting of tiger prawn species.

- The 2024 economic data inputs were compared against the previous assessment, with labour costs up by 15%, other costs down by 48%, repairs and maintenance up by 28%, fuel costs up by 104%, annual vessel costs down by 6% and average capital value up by 5%. There was no change to the opportunity cost of capital and the economic depreciation rate.
- Due to the significant increase in fuel prices compared with the 2022 assessment inputs, CSIRO undertook a sensitivity test using the 2022 economic inputs. The objective was to quantify the sensitivity of the assessment results to changes in economic data.

Revised Endeavour Prawn Assessments

Amy Desbiens (CSIRO) provided a presentation on the updated endeavour prawn assessments. The new endeavour stock assessment model (Zhou et al. 2023) was being used in the NPF tiger prawn stock assessment in 2024 for first time. Her presentation noted the following key points:

- The updated assessments incorporate improved data parameters, including specific endeavour prawn biological inputs and fishing power model, compared with the previous assessment that had significant uncertainty for some parameters. Inputs include catch and effort data and standardised CPUE to 2023 and spawning indices to 2022.
- The nominal CPUE for both endeavour prawn species follows similar trend, although they diverge in 2023, reducing for red endeavour prawns and increasing for blue endeavours. The standardised CPUE increased by 45% in 2023 from 2022 for blue endeavour prawns although decreased by 12% for red endeavours. The reason for this change was likely due to reduced effort in the key red endeavour areas, with this effort redirected to the south west of the gulf.
- The model outputs showed that both blue and red endeavour prawn stocks are well above B_{MSY} in 2023, with the estimated 2023 biomass at 1.94 and 1.95 of B_{MSY} respectively.
- The results of the single species endeavour prawn models, which assume endeavour prawns are the target species (which they are not), are consequently more optimistic than the final results from the tiger prawn multi-species model where they are considered more correctly as an economic byproduct.
- As per previous assessments, the results from the multi-species model are used to report on the stock status for both endeavour prawn species. This reflects the multi-species nature of the fishery, with endeavour prawns not the key target species, and is consistent with the application of the NPF harvest strategy.
- NPRAG thanked Amy Desbiens for her presentation.

Model Outputs

- Overall, the stocks are in a healthy state with all stocks well above the limit reference point (LRP) and either at or above maximum sustainable yield (MSY), except for brown tiger prawns which are at 87% of S_{MSY} . Considering the lower effort on brown tigers over the last 10 years, and the lower effort levels overall in 2022 and 2023, the NPRAG discussed potential reasons as to why the brown tiger prawn stock hasn't recovered as quickly as could be expected.
- There has been a shift in the spatial coverage of the fishery in recent years, with the 2023 fleet fishing further south (on average) than previously. NPRAG considered this was likely caused by climate impacts, which are changing the spatial distribution of some species.
- The table below shows the key stock assessment outputs for each species from the multi-species assessment, with red endeavour prawns included as a sensitivity in the model.

Species	S_{MEY}/S_{MSY}	5-year mav ($S_{2019-2023}/S_{MSY}$)	S_{2023}/S_{MSY}	S_{2023}/S_{MEY}
Grooved Tiger Prawn	1.5	1.07	1.08	0.72

Species	S_{MEY}/S_{MSY}	5-year mav ($S_{2019-2023}/S_{MSY}$)	S_{2023}/S_{MSY}	S_{2023}/S_{MEY}
Brown Tiger Prawn	1.43	0.87	0.81	0.57
Blue Endeavour Prawn	0.99	0.95	1.17	1.18
Red Endeavour Prawn	0.88	1.00	1.08	1.22

- While the biological aspect of the assessment is positive overall, the poor economic model inputs (driven by higher fuel prices and lower prawn prices) have resulted in a lower projected total allowable effort (TAE) and catches, compared with 2023, outlined in the tables below.

	2023 observed effort (days)	2024 model projected effort (days)	2025 model projected effort (days)
Grooved Tiger Prawn	3,314	2,645	3,036
Brown Tiger Prawn	1,116	1,368	977
Total	4,430	4,013	4,013
% change from 2023		-417 (-9.4%)	-417 (-9.4%)

	2023 observed catch	2024 model projected catch	% change from 2023
Grooved Tiger Prawn	921	675	-36%
Brown Tiger Prawn	321	361	11%
Blue Endeavour Prawn	233	209	-11%
Total	1 475	1 275	-18%

- The model outputs are being driven by two key elements (one biological and one economic). The key biological driver is the use of the new species distribution model, which provides an updated catch and effort time series input to the model. This revised time series shows lower catches of brown tiger prawns and higher grooved tiger prawn catches in recent years, compared with old model. The key economic driver impacting the model outputs are the higher 2024 fuel price inputs.
- It was too resource intensive to update the old species distribution model as a sensitivity test to directly compare the two models.
- A sensitivity of stock status on the TAE outputs was done using the mid-high fishing power. This sensitivity uses a higher fishing power timeseries, showing the impact of higher effort levels on stock status and how this effects TAE projections. The results from this sensitivity were comparable to the base case. This confirmed that the economic indicators are primarily driving the model recommended TAE outputs.
- While the revised minimum effort threshold (MET) was only implemented in the 2024 assessment, the model is already being constrained by the MET due to the poor economic conditions in the fishery. The S_{MEY}/S_{MSY} for both tiger prawn species are above the nominal 1.2 proxy, which means substantial increases in stock biomass are required to achieve MEY.
- Consistent with the better state of the grooved tiger prawn stocks (compared with brown tigers), the bio-economic model projections return grooved tiger prawns to the target reference point earlier than brown tiger prawns. However, due to the poor economic conditions, the annual profits across the fishery remain negative to 2030 (the timeframe to realise MEY).

Sensitivity Tests

- Eleven sensitivity tests were undertaken to compare to the 2024 base case, including eight of the standard sensitivities and three additional economic sensitivities. Only three of the 'standard' sensitivities demonstrated a significant difference from the base case including the delayed difference model (uses the discrete delay-difference or DDD model instead the SSB model), no effort threshold (no MET is applied) and estimate season (weekly fishing pattern is estimated instead of a recent average).
- There was no significant different in the model outputs when red endeavour prawn was included in the assessment (base case, 4 species), which is a positive sign for potentially including this sensitivity as the base case in the next assessment.
- The DDD and estimate season sensitivities were more optimistic for grooved tiger prawns but less so for brown tiger prawns, resulting in a slightly lower 2024 and 2025 TAEs overall compared with the base case. As expected, the no effort threshold sensitivity resulted in a significantly lower TAE for 2024 and 2025.
- Of the three economic sensitivities (using the 2022 fuel price, 2022 prawn price and 2022 fuel and prawn price), only the 2022 fuel price resulted in any significant change to the model outputs, with no change to the 2024 TAE but a higher 2025 TAE output of 4,171 boat days (compared with 4,013).

Compared with the base case, the economic sensitivities showed a similar pathway to MEY over 7 years, however, profit improves significantly with the 2022 fuel prices (producing a profit within 5 years of projections) and an increased TAE trajectory from 2025. This sensitivity also reduces the S_{MEY}/S_{MSY} comparison, reducing to 1.36 and 1.21 for grooved and brown tiger prawns respectively.

- While the model optimises profit over much longer period (to 2050), most of this impact is seen within the first 2-7 years of projections. The model (within the MET restriction) is discounting for the future, aiming to build stocks in the short term with the aim of increasing catch and effort (profitability) in future years.
- An MEY target doesn't guarantee profit at individual vessel level, it guarantees the maximum profit possible, noting this may be negative in poor economic conditions.
- Industry members noted that lower levels of nightly catches are required to cover operational costs, compare with individual boats/companies making an overall profit (and being able to pay off some fixed costs). Considering that fuel prices have already fallen, and are predicted to fall further, industry raised concerns about locking in a 4,013 boat day TAE for two years when economic conditions may improve – especially considering the 2022 and 2023 effort reductions.

NPRAG discussed the assessment results, noting the following points:

- The fishery is currently in a period of combined economic and biological variability, confounded by potential shifts in underlying environmental conditions in the fishery. While the FRDC/AFMA funded Tiger Prawn MICE project is still in the early stages, it has identified some potential drivers in the fishery (although further work is needed to confirm this), with further information available for consideration later in 2024.
- There are a number of factors that have influenced the relatively low TAE output by the stock assessment including challenging economic conditions reflected in the economic inputs to the assessment, which result in the model reducing effort to reduce costs but also increase biomass (and therefore maintain a higher CPUE in future).
- The final NPRAG recommendation was deferred to item 8, 2024 and 2025 TAE recommendation.
- NPRAG thanked CSIRO for all their hard work undertaking the assessment and industry for their input in the fishery and economic data.

Agenda item 6. Tiger Prawn MICE project update

Dr Chris Izzo joined the meeting for this agenda item. NPRAG noted the update from Éva Plagányi (CSIRO) on the project '*Methods to account for climate impacts in fisheries models and management: Case study example of environmental contributors that affect Tiger Prawn population dynamic*', known as the Tiger Prawn MICE project. The following key points were discussed:

- The three project objectives are: Data Analysis, Ecosystem modelling and Field-based study, which include the following key elements:
 - 1) Data Analysis Objective
 - a) Collate and analyse relevant environmental, biological and fishery data to inform as to potential environmental drivers of tiger prawn population dynamics.
 - b) Recommend a structured approach to analyse and account for environmental impacts on tiger prawns, and more broadly, recommendations for other fisheries.
 - 2) Ecosystem modelling
 - a) Use a spatial, ecosystem model to rigorously analyse and quantify the potential role of environmental variability in driving tiger prawn population dynamics, including exploring plausibility of alternative hypotheses and possible role of changes in predation and habitat.
 - b) Recommend if and how environmental bottlenecks identified could be considered or incorporated into the NPF stock assessment process. Broader advice will also be provided as to how these methods and outputs could be generalized and applied in other fisheries.
 - 3) Field-based study
 - a) Obtain data on inshore tiger prawn juvenile abundance and associated habitat, which will be used to provide broader modelling guidance through highlighting critical data gaps. The field studies, together with an illustrative cost-benefit analysis, will provide objective advice to inform research priorities and planning.
- The key progress made to date include:
 - Characterisation of the fishery and biology of the key commercial species (two tiger, endeavour and banana prawn species), providing helpful insights towards understanding spatial differences in abundance and catches.
 - Synthesis and analysis on the influence of different environmental drivers impacting different species spatially and across their life history.
- An important preliminary finding is the critical role of seagrass in supporting recruitment of tiger (and endeavour) prawns. Tiger prawns in the NPF, make the largest contribution to the GVP. This highlights the importance of maintaining seagrass habitats given increasing negative impacts of climate change on seagrass (e.g. rising temperatures and increased frequency/intensity of storms and cyclones).
- Further work will be undertaken over the next few months to test the preliminary hypotheses, through ecosystem modelling and the field survey, with a further update to be provided at the November NPRAG meeting.

Agenda item 7. Redleg banana prawn stock assessment

Éva Plagányi, CSIRO, provided a presentation on the 2024 Redleg Banana Prawn Stock Assessment, noting the following key points:

- The redleg banana prawn assessment data inputs are relatively few compared with the tiger prawn assessment, using a simpler model that has CPUE as the key abundance index input (as no independent survey data is available).
- Key environmental indicators, including the SOI and mean sea levels, are considered alongside the stock assessment. The January SOI is key indicator, with a negative SOI indicating lower redleg banana prawn catches and CPUE and a positive indicating good catches and CPUE. The 2024 SOI is neutral, which makes the upcoming tiger prawn season harder to predict.
- The assessment focuses on the JBG but also tracks catches in the Colville-Melville (CM) and Fog Bay (FB) regions. In 2024, 82.4% of the redleg banana prawn catches were in the JBG, which is lower than the 2020-22 catches but is consistent with an associated reduction of 85% of redleg banana prawn effort days in the JBG.
- The 2023 effort level of 212 days was lower than the 2023 TAE of 689 boat days, although this was accompanied with a proportional catch reduction. The 2023 redleg banana prawn catch was 254 tonnes, which was lower than the predicted 2023 catches of 952 tonnes.
- Recent catch and effort is below historical levels, although variable with very low levels seen in 2019, 2020 and 2023. Catch and effort in 2023 was below the 1999-2022 average level.
- Catch and effort levels by quarter have been variable over the last ~15 years, although this has become more stable since the first season closure was introduced in 2021 and effort is now focused within the 3rd quarter.
- The fishing power model was updated with 2023 data, showing a 5% decrease in 2023 fishing power relative to 2021. The fishing power inputs are used to standardise CPUE in the model.
- Overall, the model fit the standardised CPUE data for quarters 2, 3 and 4, except for the 2022 CPUE data points which the model estimated to be higher than occurred. This was due to higher levels of fishing occurring later in 2022, and couldn't accurately fit to both the 2022 and 2023 3rd quarter observations.
- This resulted in a lower 2023 recruitment residual as the model was expecting much higher 2023 catch than occurred (due to the 2022 point fit to the model). This can be explained by fishing pattern; the model assumes an average fishing pattern and the 2023 fishing pattern deviated slightly from this due to high operating costs combined with the early closure of the tiger prawn season in 2023.
- NPRAG requested that an explanation for this be included within the final assessment report.
- The recruitment indices fluctuating from good to average over the last few years.
- Since the low stock levels in 2015 and 2016, the assessment indicates the stocks have been recovering with the 2023. The spawning biomass estimated to be above B_{MSY} (117% B_{MSY}) and approximately at the B_{MEY} target level.
- The stock recovery is consistent with expectations given recent environmental conditions, predictions that the first season closure would allow the stock to recover rapidly and recent lower fishing effort.
- NPRAG accepted the 2024 Redleg Banana Prawn Stock Assessment, which recommended a TAE of 412 boat days and predicted catch of 683 tonnes.

Action Item 3: CSIRO to include an explanation for the reduced 2023 recruitment indices within the final stock assessment report.

Agenda item 8. 2024 and 2025 TAE setting

Industry participants, deemed to have a potential conflict of interest, left the room for this item.

Tiger Prawn Fishery

NPRAG provided the following advice on the 2024 and 2025 TAE for the tiger prawn fishery:

- Recent changes to the assessment inputs and methods have improved the quality and reliability of the assessment. The stock assessment outputs provided a base case recommendation of 4013 boat days for 2024 and 2025, with the model being constrained by the recently revised MET introduced in early 2024.
- There are a number of factors that have influenced the relatively low TAE output by the stock assessment that were discussed, including:
 - As indicated in previous RAG reports, there are very challenging economic conditions facing the fishery, and with an MEY target, these are reflected in the economic inputs to the 2024 bio-economic assessment model. Most important of these is the high fuel costs, but low prawn prices due to the global glut in prawns is also influential.
 - An MEY target aims to maximise the profits of the fishery (at a fleet level) in the longer term. Thus, when fuel prices are high and prawn prices are low the bio-economic assessment will decrease effort levels, both to reduce variable costs but also to increase stock size and thus maintain higher CPUE in future.
 - Therefore, high prawn densities are necessary to achieve required higher CPUE levels to offset the poor economics, demonstrated by a S_{MEY}/S_{MSY} value of around 1.5 for both tiger prawn species (compared to the 1.2 proxy in the Commonwealth Harvest Policy).
 - None of the four key prawn stocks in the tiger prawn assessment (two tiger prawns and two endeavour prawns) is overfished or subject to overfishing. Of the four stocks considered in the tiger prawn assessment, three stocks were above B_{MSY} . Brown tiger prawns are below B_{MSY} but well above the limit reference point.
 - Recent work on environmental drivers indicates that brown tiger prawns may take longer to recover from the recent poor environmental conditions linked to climate change. These findings are, however, preliminary.
 - The low fishing effort levels output from the assessment will also assist in increasing the stock levels of brown tiger prawns.
- NPRAG noted, however, that fuel price is particularly volatile and had recently decreased compared to early 2024. In 2023, the RAG agreed to fix the fuel price in the bioeconomic model projections, largely due to the current complexities around accurately projecting fuel prices. The RAG noted that economists expect further reductions during 2024 and 2025 but are currently unable to quantify the potential drop in prices.

NPRAG Recommendation

1. Noting the recent changes to the assessment inputs and methods have improved the quality and reliability of the assessment, NPRAG accepted the 2024 stock assessment for the tiger prawn fishery and the recommended TAE of 4,013 boat days for 2024 and 2025 derived from the assessment.
2. Considering the recent variability in fuel price, NPRAG acknowledged that if fuel prices continued to reduce, the fuel price used in the assessment to estimate the 2025 TAE would unlikely reflect the economic reality at that time. Therefore, NPRAG supported potentially updating the stock assessment in 2025, with the following two options identified:

- a. Updating the base case assessment with revised fuel and prawn prices from the 2024 NPFI economic surveys (would be available in early 2025), which could be undertaken for a relatively low cost.
- b. Undertaking a full stock assessment in 2025, including 2024 catch and effort data, 2024 winter and 2025 summer survey indices and updated economic inputs. This would be a significant cost.

These recommendations were made by the RAG noting that:

- Any potential assessment update in 2025 needs to consider CSIRO’s capacity to undertake the work, the additional cost to the NPF levy base and current constraints within the AFMA research budget. These are particularly important considerations for the second option.
- If the decision is to undertake a full stock assessment, the preferred option would be to adjust the assessment schedule, bringing the 2026 assessment forward to 2025, then recommencing the two-year cycle (with the next assessment to occur in 2027).
- Bringing the assessment forward to 2025 would have the benefit of aligning the assessment and winter spawning survey schedule (which currently isn’t incorporated into the assessment until 18 months after the survey).
- NPFI will present its recommendation to NORMAC on how the recommended 2024 TAE will be operationalised at the meeting on 7 June 2024.
- NPRAG will further discuss the potential 2025 assessment update at the November meeting, noting the latest possible deadline for a decision on any 2025 assessment is the February NPRAG 2025.

Redleg Banana Prawn Fishery

NPRAG confirmed its acceptance of the outputs of the 2024 Redleg Banana Prawn Stock Assessment.

NPRAG Recommendation

NPRAG accepted the 2024 Redleg Banana Prawn Stock Assessment and recommended 2024 TAE of 412 boat days for the redleg banana prawn fishery.

Following the above recommendations, industry participants re-entered the meeting and the Chair summarised the RAG recommendations.

Agenda item 9. Banana prawn MEY in-season trigger annual review

The RAG reviewed the retrospective analysis of the 2023 industry estimated fuel and prawn prices compared with the actual 2023 prices and costs data input:

- In previous years, the industry fuel and prawn price estimates used in the MEY trigger analysis were similar to those identified in the subsequent economic survey of the fishery.
- However, in 2023 industry marginally overestimated banana prawn prices and significantly underestimated fuel prices. This was not surprising considering the volatility of fuel prices over the last couple of years.
- While the costs for repair and maintenance on boats increased substantially, these costs do not change predictably during either profitable or non-profitable periods of catch.
- Prawn prices remain volatile. As such, the 2023 banana prawn prices predictions may differ from the actual prices.
- To improve retrospective analysis, NPRAG agreed that providing mid-year costs/prices would assist.

NPRAG noted that a new approach was required in 2024 to provide fuel prices, as the mothership wasn’t operating – with the Cairns, Darwin and Karumba fuel prices used to calculate an average fuel price across the fishery. This approach will need to be confirmed in the future, as the mothership services are not expected to return in the short-term.

Action Item 4: NPFI to include the mid-year prawn prices and fuel costs in the economic survey.

Action Item 5: NPFI/AFMA/NPRAG to confirm the approach to calculate fuel price for the MEY trigger in the future.

CSIRO thanked NPFI for their assistance with the process.

Agenda item 10. Harvest Strategy review

Darci Wallis (AFMA) provided a presentation to NPRAG on the key changes proposed to the NPF harvest strategy. The final required changes were approved by NPRAG at its February 2024 meeting, agreeing that only the time-critical updates should be incorporated in this review. The revised draft NPF harvest strategy had been developed by the Harvest Strategy Working Group (HSWG), with NPRAG noting the following key points:

- The current application of the tiger prawn fishery limit reference point (LRP), with the stocks assessed against the LRP ($0.5 S_{MSY}$) based on the most recent five-year moving average (mav) (immediately preceding the assessment). Therefore, if any stock falls below the LRP, it has been sitting at very low levels of multiple years for the mav to fall below the LRP.
- Inclusion of the red endeavour prawn decision rule, with the following two options provided for NPRAG decision, noting the clarification on the application of the LRP:
 - **Option 1:** If the LRP is triggered, there will be no targeting of red endeavour prawns until next assessment (either first or second fishing season)
 - **Option 2:** If the LRP is triggered, there will be no targeting of red endeavour prawns for 12 months, targeting re-considered after this based on next IMP survey results
- Inclusion of the new agreed MET of 4,004 days.
- Clarification on the application of the MET, noting that different management responses would be appropriate dependant on whether a tiger prawn (a target species) or endeavour prawn stock (a byproduct species) was below the LRP.
- Where a tiger prawn stock was below the LRP, an effort level below the MET would be recommended by the model, as currently the MET would not apply. However, for endeavour prawns alternative management options, other than an overall effort reduction, are available to prevent targeting if either stock was below the LRP. This would allow higher effort levels to be maintained, as appropriate, if either endeavour prawn stock was below the LRP, although this would not prevent NPRAG setting an effort level below the MET if required if either endeavour prawn stock was below the LRP.
- This remains consistent with the current application of the tiger prawn decision rules, which assume that controlling the tiger prawn effort will equally maintain the stock size of blue and red endeavour prawns (caught as a bycatch of the tiger prawn fishery) and also the Commonwealth Harvest Strategy Policy (CHSP), which requires that no targeted fishing occurs on species below the LRP.
- Combining previous decision rule 4 and 5, providing further clarification on how effort controls are applied and remove repeating statement. Additional explanation was also included to confirm:
 - That for all species, there will be no targeted fishing until the stock is confirmed to be above the LRP (consistent with the CHSP requirements), and
 - Specifying that NPRAG will consider the need to undertake a stock assessment prior to the next scheduled assessment (2-year cycle).
- Other minor updates were identified during the review updates, to provide further clarification where required in the overview sections and to correction of editorial errors.

- The HSWG considered the proposed changes against the previous MSE analysis, confirming that except for the new red endeavour prawn decision rule and revised MET, all other proposed changes remain within the previous MSE testing. It was noted that the revised MET of 4,004 boat days is more precautionary than the previous 5,444 MET.
- Further review of the NPF harvest strategy will be required following release of new CHSP (expected in early 2025), with potential previously identified updates on the tiger and blue endeavour prawn decision rules and squid catch triggers to be considered in this review.
- Clarification was provided by RAG members on the consistency of the NPF LRP with the CHSP and how this relates to the B₂₀ proxy. NPRAG confirmed that while the CHSP includes an LRP proxy of B₂₀, the CHSP guidelines allow alternative LRPs to be used in Commonwealth fisheries if these have been appropriately tested, with the current NPF harvest strategy used an example within the current CHSP guidelines.
- NPRAG noted that NORMAC will consider the revised NPF Harvest Strategy and the NPRAG advice at its upcoming meeting on 7 June 2024.

Action Item 6:

AFMA to include a paragraph in the revised NPF harvest strategy to clarify how the LRP relates to the B₂₀ LRP proxy in the CHSP, with input from RAG members as required. In developing the wording, the wording in the initial 2007 harvest strategy, the CHSP guidelines (which includes specific references to the NPF) and that LRP has been MSE tested.

This clarification should also be provided to the AFMA staff involved in the broader harvest strategy review.

NPRAG Recommendation

NPRAG endorsed the revised draft NPF harvest strategy, specifically the:

- Adoption of Option 1 for the red endeavour prawn decision rule, which is consistent with the other tiger prawn fishery decision rules and the CHSP:
 - *If the LRP is triggered, there will be no targeting of red endeavour prawns until the stock is confirmed to be above the LRP.*
- Proposed updates clarifying that targeted fishing won't commence until the relevant stock is assessed as above the LRP breach.
- New MET of 4,004 boat days and clarification on its application, that the MET does not apply if either tiger prawn stock is below the LRP.
 - NPRAG agreed on a slight adjustment to the wording proposed, to be updated to '*Providing the LRP for either tiger prawn species is not breached*' instead of the proposed inclusion in the footnote.
- Addition of a paragraph that clarify how the current NPF LRP relates to the B₂₀ proxy.
- Other minor editorial changes and clarification points.

Agenda item 11. MSC conditions update

NPRAG noted the following update on the Marine Stewardship Council (MSC) conditions provided by NPFI:

- The NPF was recertified by the MSC for the third time on 18 July 2023 with the certificate valid until 2028.
- The first annual audit will take place later in the year with annual audits occurring thereafter until the fourth annual audit/ full reassessment commences in 2027.
- The fishery received two rollover conditions from the previous assessment in relation to red endeavour prawns which are due for completion by September 2024. Once approved by the AFMA Commission, the proposed revisions NPF Harvest Strategy (for consideration under Agenda Item

10) is intended to meet these conditions – demonstrating a responsiveness to the state of the red endeavour prawn stock and includes well-defined harvest control rules.

- The current MSC framework uses species-specific MSY targets, not a fishery MEY target. As the current assessment suggests that the stock is fluctuating around the MSY target, this demonstrates that current management arrangements are maintaining the stock in line with MSC requirements.
- A new condition was imposed in relation to sawfish in the white banana and tiger prawn fisheries which is due for completion by September 2027 (the fourth annual audit), requiring:
 - Milestone 1: By Sept 2024, NPMI will provide a Plan detailing how uncertainties about the magnitude of the impact from the NPF tiger prawn and white banana sub-fisheries will be reduced in order to demonstrate with a probability > 80% that those sub-fisheries do not hinder recovery of the sawfish species.
 - Milestone 2: By September 2027, demonstrate that systems are in place that allow >80% certainty that the tiger prawn and the white banana prawn sub-fisheries do not hinder recovery of the sawfish species.
- The draft NPF Sawfish Work Plan 2024-2027 provided to NPRAG outlines the processes, actions, timelines and entities responsible for undertaking actions that will assist to meet Milestone 1 and was developed in consultation with AFMA and CSIRO.
- The MSC concluded their usual four-year review of the Standard in 2022/23, which resulted in a number of changes to previous requirements. Since the launch of Version 3.0 in May 2023, MSC has engaged in an intensive roll-out program, testing these new requirements with fisheries and gathering extensive feedback from independent assessors and fishery partners at workshops held around the world. This process has identified a significant number of areas which need to be amended to ensure application of the Fisheries Standard delivers the intended sustainability outcomes. MSC is currently undertaking a review of V3.0 and will release an updated Standard which will clarify new requirements and remove inconsistencies in July 2024.

NPRAG Recommendation

NPRAG endorsed the draft NPF Sawfish Plan 2024-27, with the addition of an opening paragraph which includes further details on how the different research projects and other components fit together to meet the MSC condition, including tagging (survivability), tissue sampling to get an estimate of population and logbook interaction reporting.

Agenda item 12. ERA update

The RAG noted the information presented by AFMA on the NPF ERAs and the broader ERA/ERM process:

- An ERA automation trial commenced in 2023, with four/five fisheries taking part including the NPF redleg banana prawn sub-fishery. To date, the automation process does not appear to have resulted in cost savings in provision of the ERAs.
- The draft ERA report for the redleg banana prawn fishery was submitted by CSIRO in mid-2023. Following an extensive internal review on the draft report, a number of NPF-specific updates were identified for the draft report along with broader feedback on the ERA template and automation process.
- The broader feedback will be considered by the AFMA ERM steering committees during 2024, to improve the AFMA ERA/ERM process. The NPF specific comments on the draft redleg banana prawn report were considered by AFMA and NPMI earlier in 2024 to identify the priority changes on the draft ERA.

- The priority changes were provided to CSIRO in late April 2024, although CSIRO is yet to confirm the timeframes and potential costs of these changes.
- Once a revised report is received, this will be reviewed by the ERA working group (per the October 2023 NPRAG meeting recommendation). NPRAG approval on the final redleg banana prawn ERA will be sought following working group consideration.
- The white banana prawn and tiger prawn sub-fishery ERAs are based on data up to 2017, which is concerning as this is a key input in the MSC certification.
- NPRAG agreed to reconsider the scheduling for these ERAs later in 2024, following ERA working group consideration, noting that the tiger prawn fishery is a higher priority as it has higher bycatch levels, including sawfish interactions.
- NPRAG nominated Rik Buckworth for the ERA working group, to replace Dave Brewer who is no longer an NPRAG member.
- AFMA's review of the Ecological Risk Management Framework (which ERA's sit under) is currently on hold pending the outcome from the Review of the Commonwealth Harvest Strategy and Bycatch Policies. The AFMA Ecological risk Management Steering Group is scheduled to meet in June to discuss the status of the review.

Action Item 7:

Rik Buckworth to be added to the ERA working group membership to replace Dave Brewer.

Agenda item 13. Data Collection in the NPF

a. EM trial update

The RAG noted the information presented by Brodie Macdonald on the electronic monitoring (EM) trial including:

- It was a requirement of the new Wildlife Trade Operation conditions that AFMA must complete an electronic monitoring trial in the NPF.
- A trial started on two vessels in the pre-season surveys.
- The aim of the trial is to determine the feasibility and cost effectiveness to monitor protected species using electronic monitoring.
- An additional three vessels were fitted with EM systems, with two vessels using Archipelago Asia-Pacific system (the current provider in AFMA's existing EM programs and the third vessel is fitted with a system from an overseas provider (Satlink).
- AFMA considered another provider but their system has continuous recording, rather than just recording when triggered by fishing activity being undertaken, and therefore the decision was made to not include this in the NPF trial.
- During the initial EM trips there was some issues with quality of footage due to camera placement and maintenance which AFMA is working with vessels to improve.
- Brandon Meteyard developed a one pager guide to operating the EM systems, including required maintenance by skippers and crew, and will be the primary liaison point between AFMA EM team and industry.
- Further analysis will occur following the tiger prawn season to provide information on the capabilities of the systems, review times and costs.

b. Environmental data collection

The AFMA member stated that the Environmental Data Monitoring Working Group (EMDWG) was formed following a recommendation from the May 2023 NPRAG meeting, to consider ways to improve the environmental data collected in the NPF.

Members noted the key outcomes and actions of the two EMDWG meetings held on 11 August 2023 and 17 January 2024.

- Following the FRDC trial, it is likely that the current Fish SOOP project will receive ongoing funding from IMOA to assist in collecting temperature-at-depth data around Australia though calibrated temperature-depth loggers being placed on fishing gear. Two NPF vessels were part of the initial FRDC project, with an additional three units placed on NPF vessels through some additional funding provided by AFMA.
 - Options for ongoing funding for this project is being discussed with IMOS, noting the value of this information to numerous industries across Australia.
 - AFMA provided an update at the February NPRAG meeting that the AFMA EM team had recently advised that funding for additional data-logger units to be used in the IMOS project is not currently a priority.
- Key points agreed by the WG included:
 - Both fixed site data loggers along with data loggers on fishing gear are important to improve information across the Gulf, with the following sites identified as the key initial focus:
 - North West Bay
 - Blue Mud Bay
 - Groote Eyland
 - Macarthur River
 - Potentially an Eastern Gulf site if the region performs poorly again this year.
 - Funding should be sought for additional data loggers in the FishSOOP project, with the goal of a total of 12 loggers on NPF boats.
 - Requests should be made to oil and gas companies operating in the NPF (noting most activities are in the JBG) to request available environmental data. Previous discussions have indicated this would be possible.
 - It's important to ensure co-ordination between relevant agencies (e.g. IMOS, BOM, research organisations) and other stakeholders to maximise the benefits/coverage of the future environmental data collection/monitoring.
 - The need to focus on long-term cost-effective monitoring programs that have minimal ongoing maintenance needs (i.e. resourcing/costs). Collaboration with ranger programs was identified as a potential option.
- Two options were identified for permanent monitoring sites including:
 - Satellite linked sensors: installed on permanent (weather-proof) platforms. These had high estimated set-up costs (~\$20,000) but minimal ongoing maintenance.
 - Non-satellite linked sensors: installed on unobtrusive temporary structure (e.g. star pickets). These had low estimated set-up costs (~\$2,000) but annual deployment would be required.
- The following actions were identified by the EMDWG, which are currently underway following the meeting:
 - CSIRO to follow up with relevant contacts regarding:
 - CSIRO/JCU researchers: The best way to engage with ranger programs on collaboration on environmental monitoring data projects.

- BOM: gauge interest/potential funding options for permanent environmental monitoring sites in key areas across Northern Australia
- NPFi to follow up regarding some temperature stations around Groote, Karumba and Weipa.
- AFMA to touch base with relevant State/Territory governments on the required permissions/permits for permanent monitoring sites.

Members noted that there is considerable ongoing work and thanked Annie Jarrett and CSIRO for using contacts and knowledge to get information on environmental monitoring work already being done to ensure that there is no work being repeated.

The scientific member noted that Northern Australia has been identified as a data sparse area. Members noted that CSIRO are setting up a system with rangers and other researchers to share environmental monitoring information.

NPRAG noted that an aim of the group is to improve the number of fixed spots and data loggers on vessels. There are currently 5 data loggers on vessels with the EMDWG recommending 12 data loggers be placed on vessels noting that an alternative funding source will need to be sought to pay for the additional data loggers. NPRAG agreed that there needs to be a focus on spatial coverage of the loggers not just the number of vessels.

The AFMA observer stated that AFMA had contacted Fish Aggregation Devices (FADs) in the area and noted that one person had responded and was willing to install a weathering monitoring device noting that maintenance is done every 7 months. Members further noted that there is an animal tracking university project being conducted on the eastern side of the Gulf and NPFi agreed to provide contact details of researchers to CSIRO.

The Chair noted that a sea surface temperature FRDC project is ending at the end of 2024, however, the Integrated Marine Observing System (IMOS) will continue the project with funding. IMOS will continue the current project with thirty vessels using the data loggers. The Chair noted that he will be involved with the project in the future as industry consultation. IMOS will also be working with Queensland and New South Wales boats as well.

Action Item 8:

NPFi to provide the contact details of the animal tracking project in the Eastern Gulf to CSIRO.

Agenda item 14. Research project updates

a. Integrated monitoring program

The RAG noted the update by Rob Kenyon on the recruitment survey undertaken in February 2024.

- This is the 22nd and 16th time respectively that the February and July surveys have been undertaken.
- The survey was conducted from 1 -19 February 2024 with two hundred and eighty-three sites trawled by two vessels in five regions during night hours. The 2024 survey was interrupted by weather. However, an extra day of survey was supported by NPFi as well as an extra day supported by A.Raptis and sons which enabled 93% of planned trawl sites within the sampling frame to be sampled.
- The gulf-wide indices from the survey for:
 - Banana prawns - wide index was moderate 8.9 ± 1.4 prawns ha^{-1} (historical range ~ 1 to 18 prawns ha^{-1}), the seventh highest of the series, and about half that of 2023.

- Brown tiger prawns had decreased significantly from 2023 to be the second lowest index of the series (3.9 ± 0.4 prawns ha^{-1} , historical range ~ 3 to 15 prawns ha^{-1}). The 2024 gulf-wide index was about half of the 2023 index and about one quarter of the highest index from 2016. The recruitment of brown tiger prawns in the vicinity of Mornington Island in 2024 (5.8 ± 0.7 prawns ha^{-1} , historical range ~ 3 to 25 prawns ha^{-1}) had declined to one third of the 2023 index, the third lowest of the series: only the 2003 and 2004 indices were lower.
- Grooved tiger prawns were about 10% higher in 2024 than in 2023 (4.9 ± 0.4 prawns ha^{-1} , historical range ~ 3 to 11 prawns ha^{-1}), and the highest index since 2019. At north and south Groote, catches of grooved tiger prawns remained very low but were about a 27% increase in 2024 over 2023 (4.4 ± 0.4 prawns ha^{-1} , historical range ~ 3 to 26 prawns ha^{-1}), and higher than during 2021 to 2023.
- Blue endeavour prawns had decreased from 2023, though it remained higher than the low 2022 index. The index was below ‘average of the series’ at 2.3 ± 0.2 prawns ha^{-1} (historical range ~ 1 to 5 prawns ha^{-1}).
- During the three months prior to the February 2024 survey (November to January) 600–800 mm of rainfall over Cape York was recorded, including 800 mm in the catchments of the Embley, Mitchell and Gilbert rivers. Generally, less than 400 mm of rainfall fell over the Gulf savannah and the eastern Top End. In mid-February, Cyclone Lincoln deposited >800 mm of rainfall in the vicinity of the Northern Territory/ Queensland border, declining through 400 mm inland. East and west of the border region, 400 mm of rain fell from the Roper River to the Leichardt River, while about 200 mm of rain fell further inland. Eastern Arnhem land received 200–300 mm of rainfall during February. High rainfall (~ 600 -800 mm) also occurred in the Joseph Bonaparte Gulf hinterland from November to January, which an optimistic sign for JBG catches during the second season.
- The draft final report for the project “An integrated monitoring program for the Northern Prawn Fishery 2022–24” was submitted to AFMA in early June 2024.

The Chair thanked Rob Kenyon for presentation noting that this is a very important time series.

b. Sawfish projects

The RAG noted the update on relevant sawfish projects provided by NPFI:

- All skippers received updated sawfish I.D. posters and were encouraged to keep crew learning species I.D. and report interactions to species level in logbooks.
- NPFI acknowledged the skippers who are always willing to assist and continue achieving all targets with an increase in the fleet reporting sawfish interactions for both banana and tiger prawn seasons in 2023.
- In 2023, a total of 936 sawfish interactions were recorded. Among the interactions only 17% of species were unidentified to species level, which is a slight increase from 12% in 2022. 12,643 seasnakes and 119 turtles were also reported in 2023.
- 51 sawfish tissue samples were collected, bringing the total to 465 samples since the project began in the 2018. Members noted to encourage further participation in this project CSIRO has generously offered four \$1000 prize incentives over the next three seasons. Additionally, NPFI is awarding 15 project-branded t-shirts (5 each season) to the winning boats that collect the most tissue samples.
- During the 2023 tiger prawn season, 30 satellite tags were distributed to CMOs and AFMA observers. Ten tags were deployed (6 by CMOs and 4 by AFMA observers). Three tags released prematurely, yielding inconclusive data on survival. Two tags released after 2-3 weeks with the animals still alive, and one tag completed the 60-day deployment, showing the animal moving

approximately 140km east within JBG. For the 2024 banana prawn season, 22 tags have been distributed to the NPF fleet and AFMA observers.

- The MSC Grant Funding looking at alternative fishing gear mitigation has commenced, initially analysing the available data to identify the key interaction points in the gear. To assess any differences, the introduction of “grey magna mesh” was systematically categorised and incorporated into the NPF fishery dataset for comparison with vessels utilising the original black mesh Turtle Excluder Devices (TED) flaps. The dataset also amalgamated individual vessel TED orientations and BRDs used throughout fishing years and seasons. Members noted that results are being finalised with the final report to be published by the end of June 2024.
- The Department of Climate Change, Energy, the Environment and Water (DCCEEW) provided funding in 2022 to look at gear mitigation to reduce sawfish interactions. Different net mesh designs were trialled during the 2023 tiger season during a 14-day period on three vessels (Admiralty Pearl, Flinders Pearl and the Arnhem Pearl). The aim was to determine the effectiveness of the modified net mesh design in reducing sawfish bycatch and/or escapement. Underwater cameras were installed on all four nets 600mm behind the TED forward facing to capture all sawfish interactions during fishing operations. Members noted that the footage is yet to be analysed but hoping to have the results by the end of 2024.
- Eight vessels from fishing companies: Australia Bay Seafoods, Raptis, Austral and WA Seafoods, participated in the gear trials comparing the grey magna mesh (experimental) against the control standard black mesh TED flap material. Vessels used the same gear type on port and starboard sides for the entire season. The vessels recorded all sawfish interactions on provided field sheets noting species, length, fishing location, interaction location within the gear and whether the interaction was on the control or experimental gear. NPRAG noted that a total of 62 sawfish interactions occurred on the control gear and 45 with the experimental gear with most interactions occurring in the throat of the net, codend and within the TED area. NPF noted that CSIRO will complete a full analysis of the raw data by October 2024.
- The Flinders Pearl trialled a different gear design during the tiger season where a 15-mesh extension 2m forward of the TED was used in the throat section (experimental) and compared sawfish interactions to the standard black mesh material (control) in the throat section. Members noted that four out of the five sawfish interactions were in the control throat gear type with none on the experimental magna mesh throat section.
- NFPI hosted a sawfish bycatch mitigation workshop on the 15 January 2024, specifically aimed at engaging key skippers from the NPF for potential gear modification ideas to reduce interactions with sawfish.
- One vessel continued the trial of the grey magna material 15 meshes 2m forward of the TED during the banana season with only one sawfish interaction.
- Austral designed a smaller bar spacing TED, reducing the bar space from 110mm to 70mm, to compare against the standard TED. The trial began on 22 May 2024 aboard the Beachlands for a 14-day sea trial. The aim of the trial is to reduce sawfish bypassing the TED into the codend where there is no chance of escapement. Members noted that the trial just finished and only 1 sawfish was observed, which wasn't tangled in the net. Industry noted that the large bycatch numbers have decreased with a 30-50% reduction in medium range species with an increase in prawn catch. NPRAG noted that Austral were now getting these manufactured with the aim of having 50% boats using them.

The NPRAG Chair thanked Brandon Meteyard for the sawfish projects update.

Agenda item 15. Annual Research statement 25/26 draft

The AFMA member noted that each year, RAGs are asked to provide advice on upcoming research needs for their fisheries. This is required in the context of the *Northern Prawn Fishery Strategic Research Plan 2024-28* (which incorporates needs from the [AFMA's five-year strategic research plan 2017-22](#)).

At that meeting, members noted that the ARC budget for 2025/26 is nearly fully subscribed with previously approved research and only essential projects should be put forward for funding. Members did not identify any projects for funding in 2025/26 in February and therefore no research scopes were developed to be considered at this meeting. Members noted that business as usual projects were funded in the 2024-25 call for research. NPRAG acknowledged the financial difficulties currently facing the industry makes it difficult to fund any additional projects.

Members noted that although the following projects were due for completion before 30 June 2025 they have been extended and therefore should not be removed from the 2025/26 research statement:

- a) Investigating potential for fishing gear, technology and management measures to reduce sawfish and sea snake interactions in Australia's Northern Prawn Fishery (NPF).
- b) Mitigating Sawfish Interactions in the Northern Prawn Fishery (NPF).

NPRAG confirmed that the following projects should be retained in the table titled 'Research projects identified for inclusion in future research statements':

- a) Estimation of banana prawn price flexibilities.
- b) Developing assessment methods and harvest strategy for by-product species in the NPF.
- c) Scampi identification project (raised at NPRAG November 2019).

Members noted that the 2025-26 Research Statement will be considered for endorsement by NORMAC at its the meeting on 7 June 2024.

NPRAG Recommendation

NPRAG endorsed the 2025-26 research statement, noting that the two projects proposed for removal (as initially were to be completed prior to 2025/26), should be retained as these projects have been extended.

Agenda item 16. Next meeting

The RAG agreed that the next meeting will be on 11-12 November 2024.

Agenda item 17. Other Business

The Chair recommended that previous NPRAG member Dr David Brewer be invited to a dinner when the next face-to-face meeting is held in Brisbane to thank him for his significant contribution to NPRAG over numerous years.

Industry member Bryan van Wyk provided a paper on the low banana prawn catches along the Queensland coast during 2024. Members noted that:

- Despite having a strong wet season with plenty of rain the entire east coast (between Cape Keerweer to the Staaten River) had hardly produced any prawns compared to previous seasons.
- Industry indicated that the traditional coastal fishing grounds received adequate coverage from vessels and sounders checking key areas on relevant moon phases.

- The grounds were checked numerous times with spotter planes and mud boils were found only containing fish marks.
- No prawns were found when try-gear trawling in many of these areas.
- These areas have generally been consistent fishing grounds.
- These areas traditionally combine to make up around 30% of Austral's banana prawn catch, regardless of rainfall.
- These areas traditionally produce the largest prawn sizes in the fishery (which is currently very important).
- 2023 production was down 92% compared to the fleets 10 year average. 2024 was down 80%, however, down 98% between the Edward and Mitchel River; and CSIRO are currently examining why this may have occurred.

NPFI noted that there is currently a pilot project to grow broodstock (*Penaeus monodon*) in Tiwi Islands. The CSIRO observer noted that a site had been selected, however, there was still testing to be done before it could start. NPFI expressed concern with the project going ahead especially with whitespot issue, with the RAG agreeing that an update be provided at the next meeting.

Action Item 9:

CSIRO to provide an update on the pilot broodstock project at the Tiwi Islands at future RAG meeting (as available).

Close of meeting: 16:45 AEST

Attachment A – Register of interest

Participants	Declared Interest
Chair	
Ian Knuckey	<p>Positions:</p> <p>Director –Fishwell Consulting Pty Ltd</p> <p>Director –Olrac Australia (Electronic logbooks)</p> <p>Chair –Northern Prawn Fishery Resource Assessment Group</p> <p>Chair –Tropical Rock Lobster Resource Assessment Group</p> <p>Chair –Victorian Rock Lobster and Giant Crab Assessment Group</p> <p>Chair –Victorian Central Zone Abalone Fisheries Resource Advisory Group</p> <p>Chair –Gulf of St Vincent’s Prawn Fishery MAC Research Scientific Committee</p> <p>Scientific Member –Northern Prawn Management Advisory Committee</p> <p>Scientific Member –Gulf of St Vincent’s Prawn Fishery Management Advisory Committee</p> <p>Scientific Member –Tropical Tuna Resource Assessment Group</p> <p>Scientific Member – SESSF Resource Assessment Group</p> <p>Member –The Geelong Agri Collective</p> <p>Fishwell current/recent projects:</p> <p>DAWE Project: Multi-sector fisheries capacity building</p> <p>AFMA 2022: Annual monitoring, reporting and assessment of SPF marine mammal interactions, including effectiveness of mitigation measures</p> <p>AFMA 2020-0807: Bass Strait Scallop Fishery Survey – 2020-22</p> <p>FRDC 2019-027: Improving and promoting fish-trawl selectivity in the SESSF and GABTS</p> <p>FRDC 2018-021: Development and evaluation of SESSF multi-species harvest strategies</p> <p>Traffic Project: Shark Product Traceability</p> <p>Sea Cucumber Assn: Design and implementation of various sea cucumber dive surveys.</p> <p>Australia Bay: Queensland Gulf of Carpentaria Developmental Fin Fish Trawl Fishery</p> <p>Northern Marine Parks</p>
Members	
Rik Buckworth	<p>Scientific Member – NPRAG</p> <p>Director -Sea Sense Australia Pty Ltd</p> <p>Adjunct Professor – Charles Darwin University</p> <p>CSIRO Honorary Fellow</p> <p>Current and pending projects with government agencies, CDU and fishing industry for projects in the NT, Torres Strait and Qld</p> <p>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</p>

	Member – Data Working Group for the GABTF
Tom Kompas	Economic member – NPRAG Employed by University of Melbourne. Research provider. Has in the past and may in future seek and receive funding for research in the fishery.
Éva Plagányi	Scientific member – NPRAG Employed by the CSIRO and through the organisation has in the past, and may in the future, receive funding for research related to the fishery Research provider involved particularly in stock assessment research in NPF Also currently receiving FRDC funding related to development of a GoC ecosystem model. Scientific member of TRLRAG and TS HCRA G
Denham Parker	Scientific member – NPRAG & NORMAC Employed by the CSIRO and through the organisation has in the past, and may in the future, receive funding for research related to the fishery Research provider involved particularly in stock assessment research in NPF
Phil Robson	Industry member – NPRAG Employee of A Raptis and Sons, responsible for managing NPF vessels & an NT demersal fish trawler. Has provided charter for scientific surveys in NPF in the past and may in future
Bryan van Wyk	Industry member – NPRAG Employed by Austral Fisheries, a company with SFR holdings in the fishery
Ian Boot	Industry member – NPRAG & NORMAC Managing Director of Austfish, a company that operates NPF vessels. Has a commercial interest in the fishery. NPF broodstock permit holder. Participates in scampi fishing
Darci Wallis	AFMA member – NPRAG Employed by AFMA, Manager of Northern Prawn Fishery. No interest, pecuniary or otherwise
Invited participants	
Annie Jarrett	CEO – NPFI Commonwealth Fisheries Association Director Chair – Australian Council of Prawn Fisheries (ACPF) Member of the FRDC selection panel. Invited participant - NORMAC No pecuniary interests Represents the interests of industry
AFMA	
Sarah Kirkcaldie	Employed by AFMA No interest, pecuniary or otherwise
Brodie Macdonald	Employed by AFMA No interest, pecuniary or otherwise

Anna Willock	Employed by AFMA No interest, pecuniary or otherwise
Observers / Presenters	
Ian Butler	Employed by ABARES. No pecuniary interests, personal or otherwise in the fishery.
Michael Dylewski	Research interests for ABARES projects, in particular the economic survey of operators in the NPF. No pecuniary interests, personal or otherwise in the fishery.
Roy Deng	Employed by the CSIRO and through the organisation has in the past, and may in the future, receive funding for research related to the fishery
Trevor Hutton	Employed by the CSIRO and through the organisation has in the past, and may in the future, receive funding for research related to the fishery
Rob Kenyon	Employed by the CSIRO and through the organisation has in the past, and may in the future, receive funding for research related to the fishery
Sean Pascoe	Employed by the CSIRO and through the organisation has in the past, and may in the future, receive funding for research related to the fishery
Amelia Desbiens	Employed by the CSIRO and through the organisation has in the past, and may in the future, receive funding for research related to the fishery
Steph Brodie	Employed by the CSIRO and through the organisation has in the past, and may in the future, receive funding for research related to the fishery
Chris Izzo	Employed by the Fisheries Research and Development Corporation (FRDC). No pecuniary interests.
Brandon Meteyard	Employed by NPFI. No pecuniary interests. Represents the interests of industry
Beau Anderson	Employee of A Raptis and Sons. No pecuniary interests.
Dwayne Klinkhammer	Employed by Austral Fisheries (skipper), a company with SFR holdings in the fishery. No pecuniary interests.

Attachment B – Final meeting agenda

FINAL AGENDA – Day 1: 4 June 2024 / Time: 1200 (lunch) to 1730 AEST

Time	Item	Purpose	Presenter
1230	1. Preliminaries <ul style="list-style-type: none"> a. Welcome and apologies b. Reminder of RAG roles, responsibilities and behaviour c. Declarations of interest d. Adoption of Agenda e. Minutes from previous meeting f. Correspondence 	For action	Chair (30 mins)
1300	2. Actions arising from previous meetings	For information/discussion	AFMA (15 mins)
1315	3. Update reports <ul style="list-style-type: none"> a. Industry update b. AFMA management update c. CSIRO update d. ABARES update 	For information	<ul style="list-style-type: none"> a. Industry members b. Darci c. Eva d. Michael D (50 mins)
1405	4. Climate and ecosystem status report	For information	CSIRO (30 mins)
1435	<i>Afternoon Tea – 15 min break</i>		
1450	5. Tiger prawn stock assessment <ul style="list-style-type: none"> a. Tiger prawn base case assessment outcomes/sensitivities 	For recommendation	CSIRO (2 hrs 10 mins)
1700	6. Tiger Prawn MICE project update	For information	CSIRO (30 min)

FINAL AGENDA – Day 2: 5 June 2024 / Time: 0830 to 1700 AEST

Time	Item	Purpose	Presenter
0830	Conflicts of interest – recap	For action	Chair (5 mins)
0835	Tiger prawn stock assessment (cont.)	For recommendation	CSIRO (30 mins)
0905	7. Redleg banana prawn stock assessment	For recommendation	CSIRO (1 hr)
1005	8. 2024 and 2025 TAE setting		AFMA

			(25 mins)
1030	<i>Morning Tea – 15 min break</i>		
1045	9. Banana prawn MEY in-season trigger annual review	For recommendation	CSIRO (30 mins)
1115	10. Harvest Strategy review	For decision	AFMA (1 hr 30 mins)
1245	<i>Lunch – 45 min break</i>		
1330	11. MSC conditions update	For information	NPFI (30 mins)
1400	12. ERA update	For recommendation	AFMA (30 mins)
1430	<i>Afternoon Tea – 15 min break</i>		
1445	13. Data collection in the NPF a. EM trial update b. Environmental data collection	For information	AFMA (30 mins)
1515	14. Research project update a. Integrated monitoring program b. Sawfish projects	For information / recommendation	a. Rob b. NPFI/CSIRO (30 mins)
1545	15. Annual research statement – 25/26 draft	For decision	AFMA (30 mins)
1615	16. Next meeting	For information	EO (5 mins)
1620	17. Other business a. Banana prawn catches in the Eastern Gulf	For Discussion	a. Industry (40 mins)
1700	<i>End of Meeting</i>		

Attachment C – NPRAG action items

Table 1: Status of action items from previous NPRAG meetings

Complete		Redundant	Underway	Need NPRAG advice	Not yet started
No.	Mtg Date	Action Item	Agency / Person	Timeframe	Progress
3	8-9 February 2022	AFMA, CSIRO and NPFI to develop a proposal to review the information on squid to support updating the NPF harvest strategy. Need to ensure that the protection of spawning aggregations and the experience from other squid fisheries (including pre-season surveys) are considered. An update to be provided to the NPRAG in May 2022, with further consideration to occur at the October/November 2022 if required.	AFMA, CSIRO and NPFI	As soon as practicable	Pending – When resources are available to direct to this task, likely to be during next update of the Harvest Strategy for tiger prawns.
1	17-18 May 2022	AFMA to continue development of a data and monitoring plan for the fishery in consultation with the RAG. The following items to be considered: <ul style="list-style-type: none"> Refining the objectives of the data and monitoring plan including updating the drivers of data needs by considering habitat and communities, social licence / values and acceptability, market access, animal welfare and indigenous interests; Determining the temporal and spatial observer needs of the fishery, taking into consideration the scientific report that originally established the program; Consider setting and monitoring of observer program targets on an annual basis; Determining the worth of continuing to collect species abundance counts and, if retained, whether the current protocols are suitable; Exploring options for validating the CMO and Scientific Observer eyeball estimates of total bycatch; Automating data quality checks and the rectification of data errors; Consider if there are any required changes to byproduct species data collection and monitoring; and 	AFMA	During development of the data plan	Underway – Preliminary work has been undertaken to develop the data plan. Progress has stalled until there are resources available to undertake the work.

		Consider the feasibility (including costs) and options of introducing finer scale reporting (shot level) for tiger prawn fishing and, potentially, banana prawn fishing.			
4	17-18 May 2022	NPFI to consider the importance and cost/benefit of maintaining MSC certification for red endeavour prawns.	NPFI	As soon as practicable	Pending – Will be considered once changes to the Harvest Strategy are undertaken and MSC provides further information.
14	17-18 May 2022	Annie Jarrett and Toby Patterson to discuss the development of processes that will enable appropriate management responses to occur in parallel with [sawfish] research, rather than needing to wait until the completion of research projects.	NPFI / CSIRO	As soon as practicable	Pending – Lack of available resources. <i>Note: Sawfish gear mitigation trials are currently underway.</i>
2	24-25 May 2023	AFMA to provide an update to the NPRAG when the ERA review is completed, noting that one of the main drivers for moving to an automated system was the potential cost savings.	AFMA	As soon as practicable	Complete – For discussion under agenda item 12.
5	24-25 May 2023	Ian Knuckey and Annie Jarrett to discuss the potential for additional calibrated data loggers in the fishery, potentially on more NPF vessels as part of the IMOS Ships of Opportunity program.	Ian Knuckey / Annie Jarrett	As soon as practicable	Complete
6	24-25 May 2023	Members of the MSC condition working group to consider the implications of, and how to meet, the MSC milestone requirement: <i>By September 2027, demonstrate that systems are in place that allow >80% certainty that the tiger prawn and the white banana prawn sub-fisheries do not hinder recovery of the sawfish species</i> Membership: Toby Patterson, Rich Pillans, Darci Wallis, Dave Brewer, Bryan van Wyk, Brandon Meteyard	MSC condition working group	As soon as practicable	Not yet started
12	24-25 May 2023	Annie Jarrett to provide AFMA her fishery history document. AFMA to consider collating the history.	NPFI / AFMA	As soon as practicable	Pending – lack of available resources.
14	24-25 May 2023	Tom Kompas to consider approaches that might enable the forecast prawn and fuel price estimates to be improved for use in the bioeconomic model.	Tom Kompas	NPRAG meeting in February 2024	Complete – Presented at 21 February 2024 NPRAG meeting. NPRAG supported the continuation of the AI modelling/projection, with an update to be provided at the NPRAG meeting in mid-2025 and re-consideration of the fuel price inputs to occur prior to the 2026 stock assessment.

1	27 November 2023	<p>AFMA to raise and discuss concerns with CSIRO regarding the increase in the costs for research undertaken by the CSIRO relating to:</p> <ul style="list-style-type: none"> the changes in co-contribution ratios; the lack of transparency in how the costs are apportioned across the projects; and that the work undertaken, while appearing to be standard research, are strategic and innovative. 	AFMA	As soon as practicable	Complete – Discussions resulted in a revised co-contribution in the first year of the 2024/25 projects. ARC approved funding for core NPF projects. Discussions will continue as required.
2	27 November 2023	AFMA to update the research proposal assessment forms and provide to the RAG for finalisation.	AFMA	As soon as practicable	Complete
3	27 November 2023	Tom Kompas and Sean Pascoe to consult with industry to enable a better understanding of the economics of the fishery as a whole to assist in the development of breakeven scenarios, ensuring that both variable and fixed costs are being considered appropriately.	Tom Kompas and Sean Pascoe	As soon as practicable	Ongoing – Discussions have occurred between NPFI, AFMA, CSIRO and Tom on the key economic data, with an update to be provided at the November NPRAG meeting
4	27 November 2023	CSIRO to test the impact of different penalties in the stock assessment model to ensure that the change limiter isn't impacting.	CSIRO	NPRAG meeting in May 2024	Complete – For discussion under agenda item 5.
5	27 November 2023	CSIRO to provide a re-costed stock assessment proposal without the black tiger prawn assessment and the redleg banana prawn effort threshold review.	CSIRO	NPRAG meeting in February 2024	Complete
1	1 February 2024	AFMA to invite Andrew Powell, Senior manager, Innovation and Data Transformation, to provide an update at the June NPRAG meeting on the program.	AFMA	NPRAG meeting in May 2024	Complete – Andrew Powell to provide an update under agenda item 3b.
1	21 February 2024	Industry to establish at the NPFI meeting in March the number of boats that currently have VSAT available.	NPFI	March/April 2024	Complete – Verbal update to be provided at meeting.

2	21 February 2024	AFMA to report back to June meeting regarding using alternative sources (such as electronic monitoring) for geolocation data.	AFMA	NPRAG meeting in May 2024	Ongoing. The AFMA member noted that an update regarding using alternative sources (such as electronic monitoring) for geolocation data will be provided at the November meeting.
3	21 February 2024	NPFI will provide pre-season fuelling price across key ports to CSIRO by the first week in April 2024.	NPFI	Early April 2024	Complete
4	21 February 2024	Harvest Strategy working group to be established to develop an updated draft Harvest Strategy for NPRAG approval at the June 2024 meeting.	AFMA	Following February NPRAG meeting	Complete – A working group was formed comprising of Ian Knuckey, Darci Wallis, Annie Jarrett, Brandon Meteyard, Éva Plagányi, and Denham Parker. The group met two times (15 April and 1 May 2024). For discussion under agenda item 10.
5	21 February 2024	AFMA to circulate a document with the stock assessment basecase changes that have been requested.	AFMA	Following February NPRAG meeting	Complete – See Attachment A .

Attachment D – Action items arising from the meeting

No.	Action Item	Agency / Person	Timeframe
1	Tom Kompas, Brandon Meteyard and Michael Dylewski to review data collected to understand inconsistencies between ABARES information and economic data.	Tom Kompas, Brandon Meteyard and Michael Dylewski	ASAP
2	CSIRO to discuss the 'on water' observations with industry, with a further update on the status report to be provided at the November NPRAG meeting.	CSIRO/Industry	November NPRAG meeting
3	CSIRO to include an explanation for the reduced 2023 recruitment indices within the final stock assessment report.	CSIRO	ASAP
4	NPFI to include the mid-year prawn prices and fuel costs in the economic survey.	NPFI	
5	NPFI/AFMA/NPRAG to confirm the approach to calculate fuel price for the MEY trigger in the future.	NPFI/AFMA/NPRAG	
6	AFMA to include a paragraph in the revised NPF harvest strategy to clarify how the LRP relates to the B ₂₀ LRP proxy in the CHSP, with input from RAG members as required. In developing the wording, the wording in the initial 2007 harvest strategy, the CHSP guidelines (which includes specific references to the NPF) and that LRP has been MSE tested.	AFMA	ASAP
7	Rik Buckworth to be added to the ERA working group membership to replace Dave Brewer.	AFMA	Completed
8	NPFI to provide the contact details of the animal tracking project in the Eastern Gulf to CSIRO.	NPFI	ASAP
9	NPFI to provide an update on the pilot broodstock project at the Tiwi Islands at the next RAG meeting.	NPFI	November NPRAG meeting

