Australian Government
Australian Fisheries Management Authority

Fourth Meeting of the Commonwealth Fisheries Marine Mammal Working Group
CFMMWG 4

Meeting Minutes

QANTAS Meeting Room, Melbourne Airport
17 May 2018

Participants

Name	Role
Mr Bill Talbot	Chair
Dr Mike Double	Australian Antarctic Division (AAD)
Dr Karen Evans	Scientific member (CSIRO)
Mr Tony Harman	Department of Agriculture (DAWR)
Dr John Wakeford	Industry member
Dr Alice Mackay	Scientific member (SARDI)
Mr Phil Ravanello	AFMA member
Ms Georgia Langdon	Executive Officer, AFMA,
Mr Ryan Murphy	Invited Participant, AFMA
Ms Jessica Morris	Observer, Humane Society International
Ms Natalie Rivero	Observer, AFMA

1 Preliminaries

1.1 Welcome and apologies

1. The meeting commenced at 9:02am.

2. Mr Bill Talbot (CFMMWG Chair) welcomed members, invited participants and observers to the meeting. The Chair acknowledged apologies from Mr Mark Hindell, Dr Julian Pepperell and Ms Alexia Wellbelove. The working group noted that Ms Jessica Morris was attending as an observer on behalf of Ms Wellbelove and Ms Natalie Rivero was also attended the meeting as an observer on behalf of AFMA.

1.2 Declaration of interests

3. Members, invited participants and observers provided declarations of conflicts of interest as prescribed in Fisheries Administration Paper 12 and incorporated updates from the previous meeting where required **(Appendix 1)**.

4. The working group noted that Ms Jessica Morris had no declarations of interest, pecuniary or otherwise.

1.3 Ratification of CFMMWG 3 Minutes

5. The working group noted that a first draft of the CFMMWG 3 teleconference minutes had been circulated to members on 21 March 2018 for comment. A rev2

version was then circulated on 16 April 2018 with incorporated changes. The working group ratified the revised draft minutes as a final and accurate reflection of the teleconference meeting.

1.4 Adoption of Agenda

6. No additional items to add to the draft agenda, which was adopted as final **(Appendix 2)**.

2 Action Items from previous meetings

7. The working group reviewed and noted the status of each action arising from previous meetings and noted the progress that had been made against each item since the last meeting as detailed in **Appendix 3**. A summary of new action items arising from this meeting are listed in **Appendix 4**.

Action Item 1 (CFMMWG 2)

8. The group agreed this action item should be marked as complete. The group noted that at present there is no specific funding available directly through AFMA or the CFMMWG to undertake the suggested Australia Sea Lion (ASL) population modelling work as highlighted in previous CFMMWG meetings. However, the proposal for the desktop study for this work has been provided by Dr Simon Goldsworthy and others to the CFMMWG, should the opportunity for funding become available. The group was reminded that this remains a key piece of work that should be undertaken as concerns remain about ongoing population decline in ASLs.

9. The group noted that the proposed amount of funding required to undertake this work is not substantial. Dr Mackay added that it has been difficult to source funding for this project. It is not necessarily considered 'new research' as it is updating an existing population model. The group noted that AFMA would take responsibility for this action.

Action Items 6, 9, 11, 12, 13 and 14 (CFMMWG 2)

10. The group noted that tasks outlined in action items 6, 9, 11, 12, 13 and 14 from CFMMWG 2 have been incorporated in the proposed approach to review the Gillnet and SPF dolphin mitigation strategies. Additional details of these action items and how they will be undertaken were discussed under Agenda Item 6.

11. Dr Karen Evans questioned who would be undertaking the work highlighted in these action items and whether the work would be sourced outside of AFMA. Mr Ryan Murphy noted this was yet to be determined but likely that advice and input may be sought from the CFMMWG.

Action Item 14 (CFMMWG 2)

12. Dr Evans enquired about the status of Action Item 14 from CFMMWG 2. AFMA noted that this type of work on addressing the potential compliances issues

associated with any discrepancies between observer and logbook data is continually assessed as part of AFMA's normal operations. Any compliance issues with reporting are referred to AFMA's compliance section as necessary and mis-reporting or under-reporting is a risk that is mitigated and addressed as required.

13. For the purposes of the Gillnet and SPF dolphin mitigation strategy reviews, this action item will likely form part of the data analysis that is undertaken. AFMA also noted the effectiveness of tools like electronic monitoring (EM) and how EM can be used as a tool to evaluate and improve reporting discrepancies.

Action Item 2 (CFMMWG 3)

14. Mr Murphy informed the group of a one page summary on the outcomes of the Year of the Marine Top Predator Workshop (YoMTP) hosted in March by CSIRO and the University of Tasmania (UTAS) was circulated to AFMA staff as the meeting commenced.

15. The working group noted that the proposed goal of the "Year of the marine top predator" was to have "*transformational understanding and management of air-breathing marine predators (seabirds and marine mammals) in southern Australia, delivered by a collaborative network of researchers and managers*".

ACTION ITEM #1 – AFMA to circulate the one page document about the outcomes of the Year of the Marine Top Predator (YoMTP) workshop to the broader membership of the CFMMWG.

16. The working group understood the YoMTP workshop as a wider collaborative effort to source funding from potential partners, noting that some Government bodies including the Australian Antarctic Division (AAD), the Fisheries Research Development Council (FRDC), the National Environmental Science Program (NESP) and others had not been directly involved thus far.

17. Some members of the working group agreed that it was disappointing that so few managers and policy representatives were in attendance at the workshop to provide some overlaying management context about potential research priorities.

18. Dr Evans noted that it would be useful to have Dr Nick Rayns provide an update on the benefits of the YoMTP workshop and the work that is being proposed by that group, and how it may influence the work of the CFMMWG going forward. The working group agreed to keep this action item (Action Item #2 from CFMMWG 3) on the list for now.

19. The group did note however that the scope of the proposed work will only be pursued "…if developed and supporting funding is available…" reiterating that this workshop appears to be the first step towards a larger more collaborative research project. AFMA encouraged the CFMMWG to stay engaged with the researchers and people involved with the YoMTP.

Action Item 4 (CFMMWG 3)

20. The group noted that the key changes to the updated Terms of Reference for the CFMMWG included a focus on mitigation with the science member criteria now incorporating a greater emphasis on mitigation and behavioural and ecological sciences.

21. Dr Evans questioned if each of the criteria listed under the Scientific/Mitigation member role were all essential, which may an impact on the number and type of applicants. AFMA noted that the criteria are to help guide the selection process but are not all essential criteria that must be met by each applicant.

22. The AFMA member reminded the group that applications close on 26 May 2018 and that the recruitment process is intended to be finalised before 1 July when the new memberships are due to commence.

3 AFMA Update

23. The AFMA member, Mr Phil Ravanello provided a verbal update on the latest issues, priorities and activities AFMA is undertaking with regards to marine mammals in Commonwealth Fisheries.

24. The key piece of work to note is the upcoming electronic monitoring trial in the Commonwealth Trawl Sector (CTS). Mr Ravanello noted that AFMA is in the process of finalising a project plan and selecting vessels to participate in the trial. It is intended there will be one larger otter board trawler, one smaller otter board trawler and one Danish seine vessel involved in the trial.

25. A memorandum of understanding is being developed between the trial vessels and AFMA to formalise the arrangements. The intent of the trial is to collect data on the capability of electronic monitoring systems in supporting the verification of fishery dependent catch and effort information in trawl fisheries. The results are likely to available by January 2019.

26. With particular regard to threatened, endangered and protected (TEP) species; the trial objectives are to:
    - determine if TEP interactions can be captured by EM including:
        - The capture and species ID of larger TEPs (seals/dolphins);
        - The capture and species ID of smaller TEPs (pipefish);
        - The capture/interaction and species ID of seabirds;
        - The life status of TEPs;
        - Warp strikes for seabirds;
        - Detection of seabirds behind the vessels where the risk of interactions is increased; and
    - determine if deployment of TEP mitigation devices can be observed by EM including:

- The deployment of Bycatch Reduction Devices (BRDs) in nets;
- The deployment of seabird mitigation devices;
- The effective deployment and use of seabird mitigation devices

27. The working group noted the potential benefits of electronic monitoring which include:
    - Reduced costs
    - Improved data quality
        - Combined with e-logs, near real time high quality data
    - Ability to monitor more fishing events
        - Cost of increasing monitoring level relatively small
    - No 'observer effect'
        - Industry do not know when they are being monitored
    - Reduced health and safety risks
        - Less staff in dangerous workplaces
        - Lower insurance premiums?
    - Improved compliance and risk assessments
        - Can be used as evidence for prosecution, or
        - Intelligence to better focus other compliance assets
    - Potential to understand and regulate handling practices
        - Sea turtle handling guidelines
        - Release of live sharks
    - Auditable
        - Can be viewed by more than one person
        - Less susceptible to corruption
28. The group also noted some of the limitations of electronic monitoring which includes;
    - Collecting otoliths / genetic samples
    - Tag fish
    - Weigh fish
    - Take length samples*
    - Collect human intelligence
    - See everything a human observer would

29. Mr Ravanello presented an overview on AFMA's electronic monitoring program. The working group noted the following key points from the presentation:
    - AFMA employs a suite of data collection methods in its fisheries including: logbooks, observers, VMS, port sampling, crew member observers and electronic monitoring (EM).
    - An EM set up is comprised of an electronic monitoring centre which monitors sensors, records data and displays system summaries; a satellite modem which reports system status with hourly updates; a GPS receiver which tracks the vessel route and pinpoints the vessels fishing times and locations; hydraulic and

drum rotation sensors which monitor gear usage to indicate fishing activity; and video cameras which record fishing activity from multiple views.

- Cameras are digital high definition single lens cameras with between three and five cameras per boat.
- The fundamental question when establishing an electronic monitoring program is to determine what the data needs are, whether the data are reliable, and is the system going to be cost effective.
- Video footage is stored on hard drives which are returned to AFMA once a month. This footage is copied by AFMA for potential forensic purposes and is then analysed by third party service providers, *Archipelago Asia Pacific*.
- Depending on the fishery, a minimum of 10 per cent of random fishing effort is analysed, which is then compared to logbook reported data.
- EM is currently established in four Commonwealth fisheries including the Eastern Tuna and Billfish Fishery (ETBF), the Western Tuna and Billfish Fishery (WTBF), the Gillnet, Hook and Trap fishery (GHAT) and the Small Pelagic Fishery (SPF).

30. AFMA will report back to the CFMMWG on the progress of the electronic monitoring trial in the CTS.

ACTION ITEM #2 – AFMA to report back to the CFMMWG on the status and progress of the electronic monitoring trial in the Commonwealth Trawl Sector.

31. Dr Evans noted that when determining the data needs, the fishery operations must be considered, highlighting that large volume catches in nets may be difficult to analyse. The group noted some of the limitations in identifying catch from trawls (i.e. the camera can't see and discern the whole catch) as opposed to single hook sectors such as longlines. The AFMA member agreed and acknowledged that this is a challenge that the trial will attempt to address. He added that no two EM installations are the same and the set up will need to be tailored depending on the vessels superstructure and fishing operations e.g. deck spilling, or spilling directly into the wells below. Mr Murphy noted that in other trawl fisheries outside of Australia, cameras are placed over discard shoots to discern what is being thrown overboard.

32. With regards to copying and storage of EM footage, Dr Mackay reminded the group of a previous action item which described AFMA investigating the possibility of retaining TEP interaction EM footage longer than the standard six month period to help with understanding marine mammal interactions in fishing gear. Dr Evans reiterated Dr Mackay's point about the merit in maximising the footage retention and utilisation of data that is already being collected and it's potential to help better understand the behaviour and nature of interactions with TEPs. Video footage may provide insights in to how and where marine mammals are being meshed in the gear; whether the interactions are occurring during setting or hauling operations; and how a minor modifications in such processes may help mitigate against the

incidental capture of marine mammals. Retaining the data over time beyond the current six month retention period may help to better understand any potential signals that may not otherwise be apparent with the small dataset that is currently available. Dr Evans added that there many cost effective and secure storage options for EM footage, including within 'the cloud'. Dr Wakeford and Dr Double supported this view by highlighting that the volume of data associated with rare TEP interactions is likely to be relatively small compared to the full complement of fishing effort data.

33. AFMA noted that in some fisheries (i.e. the ETBF) most TEP interactions are outside the field of view of the cameras, as TEPs are typically cut off the line before reaching the side of the vessel. There is a trade-off between survivability of the TEP species versus getting an accurate species identification. Dr Double noted however that in gillnet fisheries in particular, dolphins will often come up over the net roller allowing identification of species using EM. Dr Wakeford added that dual camera lenses can be useful in this instance, where one lens can be viewing the deck, while the other is viewing alongside the vessel.

34. Mr Murphy reminded the group that EM TEP interaction imagery is turned in to a dataset (without imagery) that is not destroyed, and is supplemented and cross referenced by the broader information reported in interaction evaluation forms. Dr Mackay reiterated that there are still issues with species identification and questioned the interactions that are reported in logbooks as 'unidentified dolphin species' and how many of these interactions are later identified through the review of EM imagery.

35. AFMA noted that the data entry and fisheries teams will often contact operators to get them amend to their logbooks where discrepancies are identified. However in some instances, due to drop outs or cut offs, further species identification is simply not possible. Dr Evans added that in the interests of potentially developing species specific mitigation measures in the future for some TEP species, accurate species identification is very important.

ACTION ITEM #3 – AFMA to confirm whether logbook reported data (particularly unidentified TEP species) is updated after electronic monitoring review is undertaken to confirm TEP species identification for each TEP interaction.

ACTION ITEM #4 - AFMA to assess the feasibility of long-term retention of EM footage capturing TEP interactions.

36. Dr Mackay added that it would be useful to understand what proportion of logbook reported interactions are considered drop outs and what proportion of interactions are reported as unidentified species and why.

37. Dr Double questioned if the EM trial will be run simultaneously with observers on board as well, noting that despite the many potential benefits that EM presents, there are still some things that EM cannot achieve (e.g. identifying cut-offs). AFMA highlighted that there will be a dedicated AFMA staff member associated with the trial who will be reviewing footage, adjusting camera angles and analysing data to ascertain what the most effective EM set up looks like. Dr Wakeford reminded the group that there is still the element of the human factor in both *in situ* observations and analysis of EM data which must be considered. AFMA added that for the CTS trial, it is likely that a representative amount of fishing effort will be selected for review while still considering the cost and value of that review in achieving the objectives of the trial.

38. Dr Evans questioned how the 10 per cent footage review is selected and whether it is completely independent of what is reported on the logbook or is the selection of footage influenced by actual reported interactions. AFMA advised that for the purposes of logbook verification, the selection of footage is random at a minimum 10 per cent of fishing effort per month, but there is an additional 20 per cent review for mitigation deployment (i.e. tori lines in the ETBF) and another 20 per cent review specifically for TEP interactions. These can vary by fishery depending on the fishery objectives for their respective electronic monitoring programs. As an example, the SPF is looking to do 100 per cent TEP review for the past 12 months.

39. AFMA acknowledged that the random selection of footage is useful in improving data reporting and encouraging positive behavioural change in crew and operators.

4 Seal bycatch sub-strategy update

40. The AFMA member Mr Phil Ravanello introduced Agenda Item paper 4 on the seal bycatch sub-strategy. The working group noted the following key points:

41. The AFMA seal bycatch strategy (the seal strategy) is the second, following the seabird strategy, in a suite of protected species sub-strategies being developed under the overarching AFMA Bycatch Strategy. The AFMA Bycatch Strategy serves as a guide for responding to bycatch issues across Commonwealth Fisheries in order to operationally pursue the objectives of the Government Bycatch Policy and higher legislation.

42. The seal sub-strategy is designed to pursue the five overarching bycatch management principles as approved by the AFMA Commission. These are:
    - **Principle 1:** Management responses are proportionate to the conservation status of affected species and Ecological Risk Assessment result
    - **Principle 2:** Consistency with Government policy and legislative objectives (including to ‘avoid’ and ‘minimise’) and existing national protected species management strategies such as Threat Abatement Plans (TAP) and National Plans of Action.

- **Principle 3:** Incentives should encourage industry-led solutions to minimise bycatch of protected species utilising an individual accountability approach.
- **Principle 4:** Cumulative impact of Commonwealth fisheries on protected species is accounted for when making management decisions on mitigation.
- **Principle 5:** Appropriate, and where possible consistent, monitoring and reporting arrangements across fisheries.

43. The strategy aims to ensure consistency in the management of interactions between seals and Commonwealth fisheries using a risk based approach. This includes improved data collection and monitoring of seal interactions; applying appropriate mitigation and management measures; streamlining consultative arrangements for seal bycatch management; improving environmental stewardship by fishers and understanding cumulative impacts of Commonwealth Fisheries.

44. The working group noted that Australian Sea Lions (ASLs) were not included in the seal strategy at this stage. This is due to ASLs already being managed separately under a separate strategic document for the gillnet sector of the Southern and Eastern Scalefish and Shark Fishery (SESSF). The seal strategy is intended to be more encompassing of all other fisheries and more generally aimed at fur seal species off Southern Australia. There is no intention to integrate the two strategies at this stage.

45. The group noted that AFMA was seeking feedback on the current framework of the seal strategy, acknowledging that some additional background information is still to be completed. Dr Evans noted that the document is lacking specific detail on how the actions in the strategy are to be implemented and sought clarification if this detail was to be provided elsewhere.

46. Mr Ravanello added that additional details of how the strategy will be applied in each specific fishery will be outlined in each respective Fishery Management Strategies (FMS). It is intended that the higher level protected species sub-strategies, while applicable across all fisheries, will serve as a single point of information that describes how AFMA manages fisheries interactions with protected species or species groups. Mr Murphy added that at present, it can be difficult to locate such information across multiple documents. The protected species sub-strategies aim to set standards for each fishery without setting out any specific requirements as those details are intended to be captured within FMS's. The working group agreed that this approach needs to be more clearly articulated at the start of the document.

47. Dr Evans questioned the details of the process to identify current mitigation measures or to develop new mitigation measures, including the process for identifying trigger limits or rates, and the associated time periods for implementing such measures.

48. Dr Mackay added that the time period for implementation of mitigation measures is very important when determining bycatch rates or trigger levels. As an example, the rate used in the gillnet dolphin mitigation strategy was selected in an ad-hoc fashion based on a rate in the Coorong Area. This was then more broadly applied to the gillnet fishery with the intention of using ongoing data to inform the true interaction rate of the broader gillnet fishery. She added that moving forward with the strategy review, and for other protected species strategies in the future, it would be useful to produce an annual report that outlines how the bycatch rate or trigger was determined to establish an understanding of a baseline to manage from moving forward. The group agreed that it is important to have a clear understanding on how decisions on trigger limits and rates are made.

49. AFMA posed the question about whether seals and dolphins could be combined into a single protected species sub-strategy. Some members of the group argued this would not work well as the two species groups are very different, occupying different habitats, possessing different behavioural traits and different reproductive strategies. These factors need to be considered on a species specific basis or groups of similar species particularly when examining mitigation requirements.

50. Some members of the working group noted that there may be potential conflict across the overarching bycatch principles. As an example, principles 1 and 2 may be difficult to achieve together. The group questioned if the principles were weighted, or if any one principle took precedent over another. The group noted that there is significant interaction between each of the overarching principles and it may be useful to identify these interactions in order to apply the strategy effectively. It may be that taking a more staged approach and prioritising one over the other while considering them all in the longer term would be more effective e.g. focussing on Principle 1 first, to understand that the interactions are unlikely to impact on the conservation status (Principle 2).

51. The working group noted that it is essential to highlight data dependencies within the strategy (e.g. population estimates to determine potential biological removals [PBRs]). Recognising the data dependencies of the strategy and identifying any changes or gaps in those data needs is a necessary step in determining the applicability of any strategy.

52. Dr Evans noted that there is currently some strong language and statements written in to the strategy (i.e. AFMA *will*…) which are also dependent on a suite of activities that are undertaken and data sets that are collected.

53. Referencing overarching Principle 2 with regards to ‘avoid and minimise’, Mr Harman highlighted to the group that this is within the extent practicable, noting that ‘minimise’ is constrained by reasonableness to do so.

54. The group noted that AFMA are aiming to put the draft seal sub-strategy to the AFMA Commission for approval before the end of the 2018 calendar year. Following some rounds of internal consultation, the CFMMWG will be included in the first round of external consultation, however members of the working group are encouraged to send through any immediate comments to the Executive Officer out of session before 30 June.

5 US Marine Mammal Rule update

55. Mr Tony Harman of the Department of Agriculture and Water Resources (DAWR) provided a verbal update on the United States Marine Mammal Rule.

56. The working group noted the following key points:

- The US has introduced new measures designed to provide equivalent protection to marine mammals for those countries seeking to import fisheries product in to the US.
- The new measures have been formally endorsed but do not take effect until 1 Jan 2022.
- The first stage of implementation has required Australia to provide a suite of information to the US on how Australia manages its commercial fisheries with regards to marine mammal interactions. The US have since assessed this information and categorised Australia's fisheries as either 'exempt' or 'export'.
- Exempt fisheries include those that are considered as having limited interactions with marine mammals (e.g. lobster pot fishery in South Australia). The remainder of the fisheries are considered as export. Australia is then required to have compatible management measures with what the US imposes on their fisheries, in order to be able to import produce into the US.
- The US has not provided enough detail on such requirements at this stage, however Australia would like to consider that the *Environmental Protection and Biodiversity Conservation Act 1999* processes and standards based on the principle of avoiding and minimising bycatch to the extent practicable, are arguably more rigorous, than the potential biological removal (PBR) methods applicable in the US.
- It is not known how this may be interpreted by the US at this stage. There have been some indications that flexibility in this interpretation may be limited which may have some politically detrimental implications for Australia's export supply.
- The Australian Embassy in the United States has been meeting with the National Oceanic and Atmospheric Administration (NOAA) regularly to seek clarity on the impending requirements. The DAWR will continue to work with the US to ensure more Australian fisheries are categorised as 'exempt' and to better understand what is required of Australia.
- The CFMMWG DAWR member will continue to provide updates to both AFMA and the CFMMWG on this issue.

57. AFMA noted that the decisions used to determine how fisheries were categorised was surprising, with some considerably data poor fisheries being listed as exempt, while other fisheries with very rigorous management regimes and minimal marine mammal interactions (e.g. the Heard Island Macquarie Island fishery) not considered exempt.

58. Dr Evans noted that all fisheries, commencing with those data poor fisheries, will be assessed further by NOAA under an externally funded process. This process is being undertaken by the University of Washington and other third party accreditation bodies including the Marine Stewardship Council (MSC). It is intended that the methods for assessing each fishery will be developed over the next two years.

59. Dr Wakeford encouraged Australia to remain engaged in the assessment process and suggested including an Australian observer to relevant meetings or stronger engagement through MSC representation.

6 Gillnet & SPF Dolphin Mitigation Strategy Review

60. Ms Natalie Rivero introduced Agenda Item 6 and provided a brief overview of the dolphin mitigation strategies in both the Small Pelagic Fishery (SPF) and the Gillnet sector of the Southern and Eastern Scalefish and Shark Fishery (SESSF).

61. The working group noted the following key points:

- The strategies were developed with the objective of minimising dolphin interactions in each of the fisheries, using an individual accountability approach to management.
- This is to be achieved by improving the information and data collected on the nature of dolphin interactions and to encourage operators to develop best practice mitigation measures to support minimising such interactions.
- Since implementation on 11 May 2017, seven dolphins have been captured in the SPF by one vessel; four of these were bottlenose dolphins captured in a single shot due to a gear malfunction. The other three interactions were common dolphins also captured in a single shot, on a separate trip that took place at night.
- A total of 66 dolphins interactions have been reported in the gillnet fishery since the strategy was implemented in May 2017.
- Operators have performed well in completing their Dolphin Interaction Evaluation Reports for each dolphin interaction providing useful data to help understand the nature of the interactions.
- To review the strategies, AFMA is proposing to:
  a) Review all data collected through the Dolphin Interaction Evaluation Reports. The review will aim to identify any trends in data contributing to interactions,

assess quality and type of data recorded, any factors contributing to this and identify gaps in data.

b) Analysis of other data sources and ability or not to use other data sources to support the review, i.e. catch and effort data, observer data, electronic monitoring data and logbook reported interaction data.

c) Develop a summary of mitigation methods used in the Gillnet, Hook and Trap (GHAT and SPF. This is intended to indicate relative uptake of different mitigation devices and assess the level of implementation versus interaction rates versus effort.

d) Review the management responses that were implemented for each dolphin interaction under each strategy. This assessment is to include the effectiveness and consistency of responses, communication of responses, and compliance with decisions made in response to interactions under the strategy.

e) Assess the suitability of maximum interaction rates adopted under each strategy and identify appropriate methods to determine suitable interaction rates or triggers.

f) Asses the suitability of the escalated management response approach to interactions under each strategy.

g) Identify any new information to improve future strategies such as:

    (i) trends identified in Dolphin interaction evaluation reports;

    (ii) dolphin conservation status and population abundance;

    (iii) cumulative impacts of dolphin interactions on populations;

    (iv) the effectiveness of management measures in mitigation interactions; and

    (v) any other areas identified by the CFMMWG.

h) Seek stakeholder feedback regarding implementation of the strategies to identify which elements of the strategy worked, which didn't.

62. Dr Wakeford explained that some animals learn to intact safely with some fishing operations but this relationship relies on routine behaviour by the fishers. Any disruptions to normal operations (e.g. the gear malfunction in the SPF causing the trawl gear to be dormant in the water for longer than normal) can sometimes increase the likelihood of interactions. He added that such concerns need to be considered when analysing triggers or rates and implementing the individual accountability approach.

63. Dr Mackay noted that our understanding of dolphin interactions with midwater trawl gear in the SPF is so uncertain, compared with our knowledge of other data rich bottom trawl fisheries (e.g. The Pilbara Trawl Fishery). Dr Wakeford added that both operational gear and environmental parameters including depth of tow, moon phase, and the animals (learned) behaviour are so important to understand. Dr

Evans added there may be a behavioural change that is confounding what we might think is happening in an interaction.

64. Dr Mackay noted that these reasons further support the need for species specific strategies but one-off incidences and low interaction rates (e.g. in the SPF) make it difficult to develop species and fishery specific mitigation. In contrast, the gillnet fishery data interaction data set is much larger and while gillnets are notoriously difficult to mitigate against cetacean bycatch, it is important to start the review at a higher level, overlaying fishing effort with interactions before drilling down to the boat level.

65. AFMA noted that in the SPF, despite the lack of interaction data and vessel numbers, the strategy has been useful from a management perspective. The SPF vessel has been proactive in managing its dolphin interactions. On both occasions when interactions occurred the vessel has returned to port to revaluate its operations and made any necessary changes in an attempt to reduce the likelihood of further interactions (e.g. adding additional dolphin pingers to the trawl gear).

66. Dr Double questioned the intent of sub point 2(e) in Agenda Item Paper 6, noting that the wording is ambiguous. The group clarified that the actions in 2(e) should be interpreted as using the best available data to assess the suitability of the current bycatch interaction rate; determine which are the most appropriate methods to develop a bycatch interaction rate; determine whether that rate is appropriate at a species level; and determine how that bycatch rate will be reviewed.

67. The working group noted that the key component of the gillnet strategy review will be dependent on what data is available and where the data gaps are. Despite good fishing effort, logbook and electronic monitoring data, a key issue will be discerning bottlenose dolphin interactions from common dolphin interactions.

68. Dr Evans questioned whether a higher level of detail and data was being collected through the dolphin interaction evaluation reports compared to before the strategy was implemented, noting that the dolphin bycatch issue has been occurring longer than the current strategy. The working group noted that what is being proposed is only a review of the past 12 months of the strategy implementation. There is a need however, to recognise that the data collected during that period will not be directly comparable to before the strategy was implemented which makes it difficult to evaluate its effectiveness.

69. Dr Mackay reminded the group that while the evaluation forms are very specific to the individual interactions and will be able to help identify trends in the nature of interactions, the initial component of the review should focus on determining what the annual interaction rate is for the fishery and where these interactions occur. She added that the initial rate of 1 dolphin in 50 shots was selected from the Coorong strategy rate which was deemed publicly unacceptable however there was very little

quantitative data to support that determination of 1 in 50. Also noting that with electronic monitoring implemented across the entire gillnet fleet, which has rapidly improved logbook data, there is now an opportunity to use more reliable data to determine a new interaction rate for the fishery, and/or each dolphin species.

70. The working group agreed that the review should highlight where dolphin interaction data has improved and where there are opportunities for further improvements, with explicit delineation of bottlenose versus common dolphins where possible.

71. Dr Evans questioned if the review will incorporate evaluation of whether AFMA achieved the actions set out in the strategy (e.g. holding a gear workshop). AFMA noted that a gear workshop was held in Lakes Entrance for gillnet operators in 2017. Discussions were had about gear setting techniques, net length restrictions and other mitigation options including dolphin dissuader devices (DDDs, a.k.a 'dolphin pingers'). As a result of that workshop, net lengths in the gillnet fishery were changed to unrestricted. Some fishers argued that operators who were not familiar with using longer nets, that were potentially set incorrectly or left to soak longer than necessary may have been the cause of increased dolphin interactions.

72. Dr Mackay noted that pingers have been useful in the US for deterring harbour porpoise interactions in gillnet fisheries, and there is some success with common dolphins in drift nets. However, there is considerable variability in the type of pingers available and the frequency they emit as well as their effect on interaction rates. Dr Double agreed, adding they can be very successful in some species and ineffective for others. Dr Wakeford added that it is important to understand what you are trying to achieve with the sounds the pingers create. For passive fishing gear (i.e. gillnets), an alert tone can be useful, however for active fishing gear (i.e. trawl nets), pingers may detrimentally disrupt the animals' behaviour. It would be most useful to have a longer time series with a standardised set of variables in order to tease apart the most effective pinger types, frequencies and deployment methods.

7 Meeting Close

73. No other business was raised by the group.

74. Noting that the current membership terms of the group were expiring on 30 June 2018, the Chair encouraged all current members to reapply for membership on the group.

75. The Chair thanked members of the working group for their contributions over the past two years and the meeting was closed at 12:05pm.

Appendices

1 Declared of conflicts of interest

2 Adopted Agenda

3 Status of previous action items

4 New action items as at end of CFMMWG 4

Appendix 1

Declared conflicts of interest

Member	Declared Interest
Mr Bill Talbot	No interest, pecuniary or otherwise.
Dr Mike Double	Employed by the Department of Environment and Energy. No interest, pecuniary or otherwise.
Dr Karen Evans	Employed by CSIRO. Has received funding from AFMA to support scientific research in the past.
Mr Tony Harman	Employed by the Department of Agriculture and Water Resources (DAWR). No interest, pecuniary or otherwise.
Ms Alexia Wellbelove	Employed by HSI. No interest, pecuniary or otherwise.
Dr Mark Hindell	No interest, pecuniary or otherwise.
Dr Alice Mackay	Employed by SARDI. No interest, pecuniary or otherwise.
Dr John Wakeford	Independent fishery engineer/fishing technologist consultant. Engaged on projects seeking to optimise commercial fishing gear performance, including bycatch reduction. Also engaged in the training/supervising of commercial fishers/fishery research personnel.
Dr Julian Pepperell	Independent fisheries consultant and representative of the recreational fishing sector. Is currently undertaking research into game fishing. Involved in projects including the monitoring of fish landed at game fishing tournaments and pop-up satellite tagging on juvenile Black Marlin.
Mr Phil Ravanello	Employed by AFMA, Manager of Bycatch & Discard Program, and Manager of Observer Program. No interest, pecuniary or otherwise.
Ms Georgia Langdon	Executive Officer of CFMMWG; employed by AFMA. No interest, pecuniary or otherwise.
Invited Participant	**Declared Interest**
Mr Ryan Murphy	Employed by AFMA, Senior Manager of Fisheries Services. No interest, pecuniary or otherwise.
Observers	**Declared Interest**
Ms Jessica Morris	Employed by Humane Society International. No interest, pecuniary or otherwise.
Ms Natalie Rivero	Employed by AFMA, Senior Management Officer in the Small Pelagic Fishery No interest, pecuniary or otherwise

Appendix 2

Adopted Agenda

Date	Thursday 17 May 2018	**Time**	9:00am – 12:30pm
Location	QANTAS Meeting Room, Melbourne Airport		
Chair	Mr Bill Talbot		
Members	Dr Mike Double Dr Karen Evans Mr Tony Harman Mr Phil Ravanello Ms Alexia Wellbelove		Dr John Wakeford Dr Julian Pepperell Dr Alice Mackay Mr Mark Hindell Ms Georgia Langdon
Invited Participant	Mr Ryan Murphy (AFMA)		
Observers	Ms Jessica Morris (Humane Society International), Ms Natalie Rivero (AFMA)		
Apologies	Dr Mark Hindell, Ms Alexia Wellbelove, Dr Julian Pepperell		
Morning Tea 10:15 - 10:30am		**Lunch** 12:00 pm	

Agenda Item	Presenter	Time
1. Preliminaries 1.1 Welcome and apologies 1.2 Declarations of interest 1.3 Ratification of CFMMWG 3 teleconference minutes 1.4 Adoption of agenda	Chair	9:00am – 9:15am
2. Action Items of previous meeting *The working group will note and discuss the status of action items arising from previous CFMMWG meetings*	Executive Officer (paper)	9:15am – 9:45am
3. AFMA Update *The AFMA member will provide a verbal update on the latest marine mammal matters in Commonwealth Fisheries*	Phil Ravanello	9:45am – 10:15am
4. AFMA Seal Bycatch Sub-strategy update *The CFMMWG is invited to provide comments and feedback on the suggested framework for the seal bycatch sub-strategy*	Phil Ravanello (paper)	10:30am – 11:00am
5. US Marine Mammal Rule update *The Department of Agriculture and Water Resources member will provide an update on the United States Marine Mammal Rule*	Tony Harman	11:00am – 11:15am
6. GHAT and SPF Dolphin Mitigation Strategy Review methodology *The CFMMWG is invited to provide comments and feedback on the proposed methodology for the upcoming GHAT and SPF dolphin mitigation strategy review*	AFMA (paper)	11:15am – 12:00pm
7. Meeting close	Chair	12:30pm

Appendix 3

Status of previous Action Items

Complete	Underway / Not yet complete	Not a priority / Redundant / On hold

Action Item Number	Original (Agenda Item) / Meeting #	Description	Responsibility	Update as of March 2018	Update as of May 2018
1	(4) Pop^{n} estimate update for ASL / CFMMWG 2	AFMA to finalise Action Item 7 from the 2015 meeting of the MMWG, regarding exploration of funding sources for re-modelling of ASL population data as originally queried by Ian Knuckey.	AFMA	No longer a high priority for this group.	The group noted that at present there is no specific funding available directly through AFMA or the CFMMWG to undertake the suggested Australia Sea Lion (ASL) population modelling work as highlighted in previous meetings. However, the proposal for the desktop study for this work has been provided by Dr Simon Goldsworthy and others to the CFMMWG should the opportunity for funding become available.
6	(6) Update on GHAT & SPF Dolphin Mitigation Strategies / CFMMWG 2	AFMA to produce list of mitigation devices used in the GHAT, including current relative uptake of these techniques, collate data on levels of implementation on various dolphin mitigation devices vs interaction rates vs effort and provide to the CFMMWG for consideration/ranking where possible.	AFMA	This information will be included as part of the first review of the Gillnet Dolphin Mitigation Strategy scheduled for May 2018.	Underway. This action item is currently included as part of the proposed approach to review the GHAT and SPF dolphin mitigation strategies. See agenda item paper 6.
9	(7) Dolphin Bycatch; frequency and factor determination – Review & limitations of	AFMA and Karen Evans to investigate sourcing cleaned SESSF effort data used for stock assessments, and AFMA to explore provision of: a) clean catch and effort data, b) all observer data c) all EM events and d) logbook reported interaction data	AFMA ~~CSIRO~~	If appropriate the tasks will be pursued through reviews of Strategies e.g. Gillnet Dolphin Mitigation Strategy.	Underway. This action item is currently included as part of the proposed approach to review the GHAT and SPF dolphin mitigation strategies. See agenda item paper 6.

Action Item Number	Original (Agenda Item) / Meeting #	Description	Responsibility	Update as of March 2018	Update as of May 2018
	AFMA data / CFMMWG 2	Above data sets to be used to support desk top study of cetacean interactions in the GHAT (marine mammal CPUE, changes in effort, and regional variation in interaction rates) and high level review of CTS data prior to exploration of marine mammal CPUE and base interaction rates between seals and CTS vessels.			
10	(7) Dolphin Bycatch; frequency and factor determination – Bycatch estimation study / CFMMWG 2	AFMA to provide the ERA for the GHAT to the CFMMWG for determination of data availability prior to initiating a high level data review.	AFMA	All fisheries are currently going through new and updated Ecological Risk Assessment (ERA) processes. AFMA recommends awaiting the results of these new ERAs to determine next steps.	Underway. The otter board trawl ERA report is currently in draft. AFMA to circulate the ERA reports once they are publicly available.
11	(7) Dolphin Bycatch; frequency and factor determination / CFMMWG 2	AFMA to explore fishery-based funding for a short, multi-day high level review of the data to explore whether it can do what we need, and if not, where the holes are and how they could be fixed for the GHAT and the wet boat sector of the CTS.	AFMA	If appropriate the tasks will be pursued through reviews of Strategies e.g. Gillnet Dolphin Mitigation Strategy.	Underway. This action item is currently included as part of the proposed approach to review the GHAT and SPF dolphin mitigation strategies, not including the wet boat sector of the CTS. See agenda item paper 6.
12	(7) Dolphin Bycatch; frequency and factor determination – Bycatch estimation study / CFMMWG 2	AFMA to provide for the GHAT and CTS: - a timeline of management measures in the fishery (e.g. roll out of EM) and likely impacts on logbook data -a summary of observer/monitoring coverage (including an indication of how observer coverage has been distributed across the fishery, and how observer reporting requirements or training have varied through time) and variation in effort for the previous	AFMA	If appropriate the tasks will be pursued through reviews of Strategies e.g. Gillnet Dolphin Mitigation Strategy.	Underway. Elements of this action item are included as part of the proposed approach to review the GHAT and SPF dolphin mitigation strategies. See Agenda Item Paper 6.

Action Item Number	Original (Agenda Item) / Meeting #	Description	Responsibility	Update as of March 2018	Update as of May 2018
		10 years for the fishery in question; and - a summary of how many of the AFMA logbook reports are from a trip where an observer was present.			
13	(7) Dolphin Bycatch; frequency and factor determination – Species ID & Dropouts / CFMMWG 2	AFMA to review costings for development of ability to provide clips related to marine mammal interactions, and longer storage of these clips or photos, and advise the CFMMWG on Archipelago's species ID process if possible, and what proportion of dolphins are identified to species.	AFMA	If appropriate the tasks will be pursued through reviews of Strategies e.g. Gillnet Dolphin Mitigation Strategy.	Underway. Elements of this action item are included as part of the proposed approach to review the GHAT and SPF dolphin mitigation strategies. See Agenda Item Paper 6.
14	(8) Fur seal bycatch: frequency & factor determination / CFMMWG 2	Pending review of the data, the group recommended that AFMA needs to review the potential compliance issue associated with the discrepancy between observer and logbook data, noting the requirements of fishers to report all TEPS interactions.	AFMA	This action item was added to the CFMMWG 2 list during CFMMWG 3	Underway. Elements of this action item are included as part of the proposed approach to review the GHAT and SPF dolphin mitigation strategies. See Agenda Item Paper 6.

Action Item Number	Original (Agenda Item) / Meeting #	Description	Responsibility	Update as of May 2018
1	(1) Preliminaries – Minutes of Previous Meeting / CFMMWG 3	CFMWWG Executive Officer to update the action item list to include the following action item from the CFMMWG 2 meeting minutes: *Pending review of the data, the group recommended that AFMA needs to review the potential compliance issue associated with the discrepancy between observer and logbook data, noting the requirements of fishers to report all TEPS interactions.*	CFMMWG Executive Officer	See action item 14 from CFMMWG 2.
2	(2) Setting the Scene / CFMMWG 3	AFMA to report the outcomes of the Top Marine Predator Workshop back to the CFMMWG at its next face to face meeting in May.	AFMA	A one page summary of outcomes of the workshop was provided to AFMA the day of CFMMWG 4. Feedback from Nick Rayns to yet be provided.

Action Item Number	Original (Agenda Item) / Meeting #	Description	Responsibility	Update as of May 2018
3	(2) Setting the Scene / CFMMWG 3	AFMA to request the workshop organisers for permission to circulate information about the workshop (e.g. agenda and background information) to the broader CFMMWG membership.	AFMA	Complete. AFMA requested information about the workshop and circulated this information via email on Tuesday 20 March 2018.
4	(2) Setting the Scene / CFMMWG 3	AFMA to review the CFMMWG Terms of Reference relative to the revised bycatch and harvest strategy policies, as well as the outcomes of the CSIRO and UTAS Marine Top Predator Workshop.	AFMA	Ahead of commencing the recruitment process for new members of the CFMMWG, AFMA reviewed the ToR for the group and made some amendments to the ToR and Operating Procedures. These are provided in **Attachment A**
5	(2) Setting the Scene / CFMMWG 3	AFMA to circulate information on the new legislative objectives regarding recreational and indigenous fisher representation in AFMA's fisheries management processes.	AFMA	AFMA circulated this information to the working group on Thursday 3 May 2018. A copy of this information is also included in **Attachment B**.
6	(3) Action Items / CFMMWG 3	AFMA to enquire with the Southern Oceans Technical Coordinator about what information is available to observers to assist them in collecting additional sex and length data for Southern Elephant Seals in the Southern Ocean.	AFMA	AFMA provides observers with a protected marine species identification guide **(Attachment C)** which contains some key information on southern elephant seals about size and key features between males and females. Tim Lamb from AAD has also provided some scaled figures of elephant seals (**Attachment D**). Tim advised that this information is being included in the Supplementary Instructions AAD sends to the Observers in the HIMI Fishery.
7	(3) Action Items / CFMMWG 3	Dr Mike Double to follow up with CCAMLR to see if the John van den Hoff et al. paper is to be presented at the CCAMLR Ecosystem Monitoring and Management Working Group.	Dr Mike Double	Advice received from Dr Mike Double on Wednesday 2 May: *The elephant seal paper hasn't been tabled and isn't likely to creep up the priority list for our work in CCAMLR. However we have picked up some of the recommendations in the AFMA Subantarctic Resource Assessment Group so observers now receive material to help them identify, sex and*

Action Item Number	Original (Agenda Item) / Meeting #	Description	Responsibility	Update as of May 2018
				age any elephant seals that are bycaught.
8	(3) Action Items / CFMMWG 3	AFMA to update the responsibility of Action Item #9 (from CFMMWG 2) and progress the task given that additional data (SESSF catch and effort, observer and electronic monitoring data) will now be available since the development of the original action item. AFMA will follow up and engage with CSIRO where necessary with regards to cleaning said data.	AFMA	Responsibility has been updated – see Action Item 9 from CFMMWG 2 above. Original task will be pursued through review of dolphin mitigation strategies.

Appendix 4

New action items as of end of CFMMWG 4

Action Item Number	Original (Agenda Item) / Meeting #	Description	Responsibility
1	2 / CFMMWG 4	AFMA to circulate the one page document about the outcomes of the Year of the Marine Top Predator (YoMTP) workshop to the broader membership of the CFMMWG.	AFMA
2	3 / CFMMWG 4	AFMA to report back to the CFMMWG on the status and progress of the electronic monitoring trial in the Commonwealth Trawl Sector.	AFMA
3	3 / CFMMWG 4	AFMA to confirm whether logbook reported data (particularly unidentified TEP species) is updated after electronic monitoring review is undertaken to confirm TEP species identification for each TEP interaction.	AFMA
4	3 / CFMMWG 4	AFMA to assess the feasibility of long-term retention of EM footage capturing TEP interactions.	AFMA