



Australian Government

Australian Fisheries Management Authority

Small Pelagic Fishery Scientific Panel (the Panel) Meeting 9

Meeting Minutes

Date: 22 January 2018

Venue: Park Royal, Melbourne Airport

11:00am - ~3:15pm

Attendees

Name	Membership
Max Kitchell	Chair
Dr Jeremy Lyle	Scientific member
Associate Professor Tim Ward	Scientific member
Andrew Penney	Scientific member
Sally Weekes	AFMA member
Darci Wallis	Executive Officer
Dr Sean Pascoe	Economic member
Nic Marton	Observer – ABARES
Professor Caleb Gardner	Invited expert – Did not attend

Agenda Item 1.1 Welcome and apologies

The Chair opened the meeting at 11:00 am and welcomed participants. Members were advised the meeting was being recorded to assist with the preparation of the minutes, to which there were no objections. The Chair noted the apology from Caleb Gardner.

Agenda Item 1.2 Declaration of interests

The Panel members reviewed the table of members' and invited participants' declarations of interest as required in *Fisheries Administration Paper 12*, and all confirmed the table to be accurate.

The Chair asked participants to declare any conflicts of interest with items on the agenda. Jeremy Lyle, Tim Ward and Andrew Penney confirmed potential conflicts with item 4.3 on research priorities. As per the approach from recent meetings, the Panel agreed that the input of all members to the prioritisation of research was necessary and agreed that all members and observers were able to participate in both the discussion and prioritisation of research under this item. Tim Ward advised that he would excuse himself from the discussion on the Australian sardine research priority.

Declarations of Interest

Participant & Membership	Interest declared
Max Kitchell, Chair	No interest, pecuniary or otherwise, in the Small Pelagic Fishery (SPF). Chair of the Southern Bluefin Tuna Management Advisory Committee and AFMA's Ecological Risk Management Technical Working Group.
Dr Jeremy Lyle, scientific member	Senior Research Scientist, Institute for Marine and Antarctic Studies (IMAS) which undertakes research in relation to the SPF from time to time. Has led several research projects relevant to the SPF and is involved in the assessment of Tasmania's scalefish fishery.
Andrew Penney, scientific member	Director of Pisces Australis (Pty) Ltd which has a potential interest in research in relation to the SPF.
Associate Professor Tim Ward, scientific member	Leader of the finfish fisheries group in South Australian Research and Development Institute (SARDI) which undertakes

	research in the relation to the SPF including Daily Egg Production Method (DEPM) surveys. Conducts research for State fisheries and other jurisdictions. Member of South Australia Sardine Fishery Industry research/management committee. Advisor to Northern Territory on small pelagic fish and squid.
Dr Sean Pascoe, economic member	No interest, pecuniary or otherwise, in the SPF. Employee of CSIRO which undertakes research in relation to the SPF from time to time.
Professor Caleb Gardner, invited expert	No interest, pecuniary or otherwise, in the SPF. Employee of Institute for Marine and Antarctic Studies (IMAS), which conducts research on a range of fisheries issues including at times the SPF.
Sally Weekes, AFMA member	Employee of AFMA, no interest, pecuniary or otherwise, in the SPF.
Darci Wallis, Executive Officer	Employee of AFMA, no interest, pecuniary or otherwise, in the SPF.
Invited Observers	Interest declared
Nic Marton	Scientist, ABARES which undertakes research work in relation to the SPF from time to time.

Agenda Item 1.3 Adoption of agenda

The agenda was adopted with no changes. The Panel noted the timeframe for the finalisation of the minutes from this meeting, with comments requested by 9 February to ensure these are confirmed prior to the March Commission meeting.

Agenda Item 1.4 Actions arising from previous meetings

The Panel noted that most action items from previous meetings had been completed, with an update on the remaining item to be provided during the meeting.

Jeremy Lyle provided an update on the IMAS blue grenadier PhD project:

- The project is a collaboration between the New Zealand Ministry for Primary Industries and AFMA using the available data on seal interactions from the blue grenadier fishery to improve understanding of the effectiveness of mitigation devices and the issue of cryptic mortality of seals in trawl gear.
- The Panel noted that this project was not able to include SPF but that outcomes may be relevant to the SPF.
- The Panel reconfirmed that the marine mammal research project should remain a priority for the SPF (scope discussed under agenda item 4.3).

Agenda Item 2 SPF Scientific Panel and Stakeholder Forum Review

AFMA provided an update on the SPF Scientific Panel and Stakeholder Forum Review process and presented a summary of the feedback received from the individual Panel members through the self-assessment questionnaire.

The Panel noted the review process to date and provided the following comments:

- Overall the Scientific Panel has proved to be an effective mechanism for providing advice on scientific and economic matters relevant to the SPF.
- The Panel's deliberations would be improved by more timely input on practical, on-the-water, operational matters and hence it recommended that, in the event the current model was continued, relevant fishery observers be invited to attend meetings in order to input to initial discussions.
- Stakeholder Forums have proved to be a less successful component of the model. While they provide an opportunity to present the science directly to stakeholders, the issues raised at these forums by stakeholders are often outside the scope of the Panel (i.e. they are management issues relevant to AFMA as opposed to matters relevant to the science).
- Attendance by some stakeholder groups is inconsistent and forums would benefit from a broader range of stakeholder groups attending, noting this is difficult to achieve as attendance is voluntary. The Panel suggested that AFMA consider targeting key stakeholders from each sector with specific invitations and reviewing the incentives to attend.
- Use of a facilitator to run the forum meetings has provided the benefit of independence and allowed members to focus on the content rather than the conduct of the meetings. However, lack of understanding of the SPF by the facilitator has sometimes proved to be a difficulty. If the use of a facilitator is continued the Panel suggested that one with specific fisheries expertise should be appointed.
- The Panel recommended that AFMA consider amending the terms of reference (ToR) for the Panel in light of the *Fisheries Legislation Amendment (Representation) Bill 2017* which requires AFMA to specifically consider recreational and indigenous interests. Further, that if changes are made to the ToR that AFMA provide guidance on how to interpret / apply those, specifically given potentially conflicting social and economic objectives of the different sectors that are consistently raised at forum meetings.

Agenda Item 3 Accounting for other sources of mortality in the 2018-19

The Panel noted the options provided by AFMA on the method to calculate the other sources of mortality (State, discard and research catches), to be deducted from the 2018-19 recommended biological catches (RBCs).

The Panel recommended the use of an estimate of recent discard rate to calculate the discards to be deducted from the 2018-19 RBC. This should be calculated using the percentage of discards of the total retained and discarded catch from the last three complete fishing seasons (2014/15, 2015/16 and 2016/17), noting there is a high level of confidence in this discard data due to 100% observer coverage in the mid-water trawl sector. The rate should then be applied to the 2018-19 RBC to get a tonnage and that tonnage be deducted from the RBC.

Agenda Item 4 Finalisation of Panel advice following Stakeholder Forum

The Panel noted the key issues raised from the Stakeholder Forum all related to spatial management and are dealt with under items 4.5 and 5.

4.1 Jack mackerel DEPM survey results

The Panel noted that no issues were raised at the Stakeholder forum regarding the jack mackerel west DEPM survey.

The Panel confirmed its previous advice:

- **While the results of the DEPM do not provide conclusive evidence of a stock split within the western zone, the Panel recommended that any future jack mackerel DEPM should be designed to include coverage of Bass Strait.**
- **The Panel recommended that the biomass estimate to be used for the recommended biological catch (RBC) should be 34 978 tonnes. The Panel considered that this was conservative given that it is likely that the stock extends west of Kangaroo Island and there was clear evidence of spawning within Bass Strait, an area that was not extensively sampled (and therefore the biomass estimate is an underestimate).**
- **Considering the limited information on jack mackerel to the west of Kangaroo Island and the spatial separation of the two key spawning areas (Kangaroo Island and western Bass Strait) which may be evidence of a stock structuring, the Panel recommended that, until more is known about the biomass and / or stock structure of jack mackerel west, that catch taken directly south of Kangaroo Island should be restricted to 20 per cent of the RBC. This is equivalent to the proportion of the total spawning area found during the DEPM survey that was represented by this area.**

4.2 Annual Assessment of SPF Stocks and RBC advice

The Panel noted that no issues were raised at the Stakeholder forum regarding the Annual Assessment of SPF Stocks and RBC advice.

The Panel considered its previous advice regarding limiting the catches of jack mackerel west to 20% of the RBC in the area directly south of Kangaroo Island in the interim to take into account the uncertainty regarding stock structure in this area. The Panel agreed that it could not provide any additional advice on the risk to the stock if more than 20% of the RBC was taken from this area, as the risk would depend on whether there is a spatial separation of stocks within the Western zone of the fishery, which is currently unclear. The Panel noted that a research priority has been recommended which may provide additional information on the stocks of SPF species in the western zone.

The Panel confirmed its previous recommendations for RBCs as outlined in Table 1 below, which are based on the 2017 SPF Harvest Strategy.

The Panel noted that recommendations for the 2018-19 season are consistent with those provided for the 2017-18 season with the exception of jack mackerel west which moved to Tier 1 due to the recent DEPM survey undertaken.

Table 1: Summary of Panel recommendations for the 2018-19 RBCs

Species	Assessment results	Panel Advice	Recommendation for 2018-19
Jack mackerel east	<p>Annual Fishery Assessment.</p> <p>DEPM survey for jack mackerel conducted in 2014.</p> <p>Results published in March 2015 with a best estimate of biomass of 157 805 tonnes.</p>	<p>The Panel was provided with an overview presentation for Jack Mackerel east. There was an increase in catches in 2015-16 to 6,321 t and 3,966 t in 2016/17 which is still well below the historical peaks of ~40,000 t in the 1986-87. Trawl effort in 2015-16 and 2016-17 was primarily off NSW, with some fishing off eastern Tasmania. The 2016-17 catches were 2.5% of the DEPM biomass estimate and 21.2% of the TAC. The DEPM and associated adult sampling provided robust estimates of key parameters.</p> <p>The Panel noted a significant difference in the size classes north and south of 39°S (north-eastern Tasmania and Eastern Victoria/southern NSW) with larger fish seen off Tasmania, although it was difficult to detect any trends in the data as the recent age data from 2014/15 onwards has not been weighted by length frequency. There is currently further work underway to standardise ageing protocols from samples process at different regional laboratories.</p> <p>The CPUE data was variable but did not show any reduction in availability, indicating that localised depletion is unlikely to be occurring for this species. The Panel noted that while CPUE is not an accurate indicator of total abundance of stock given hyperstability, it does indicate availability of that fish within a particular area, with stable CPUE indicating that fishing did not reduce availability in the fished area.</p> <p>The DEPM and associated adult sampling provided robust estimates of key parameters. Results published in March 2015 with a best estimate of biomass of 157 805 tonnes.</p> <p>The annual assessment provided no basis to change the Panel’s previous advice for this species. The Panel agreed that the DEPM survey results were appropriate for setting jack mackerel RBCs under the Harvest Strategy for the 2018-19 season.</p>	<p>Fourth season at Tier 1</p> <p>RBC</p> <p>= 157 805 x 12%</p> <p>= 18 937 tonnes</p>
Jack mackerel west	Annual Fishery Assessment.	The Panel was provided with an overview presentation for Jack Mackerel west. The Panel noted that, while limited data were available given the recent lack of fishing,	First season at Tier 1

Species	Assessment results	Panel Advice	Recommendation for 2018-19
	<p>DEPM survey for jack mackerel conducted in 2017</p> <p>Results provide a best estimate of biomass of 34 978 tonnes.</p>	<p>there was an increase in catches to 634 t in 2015-16 and 686 t in 2016-17 (the previous peak was 365 t). A majority of the recent fishing effort was around Kangaroo Island, with some effort off western Tasmania.</p> <p>The CPUE was variable, with some reduction over 2016/17, due to the intermittent fishing effort for this species, trends are difficult to discern from the data. The Panel agreed that due to this variability in the data and sporadic fishing effort in the fishery over recent years that there is currently no clear evidence of localised depletion in the fishery.</p> <p>The Panel noted the increase in numbers of larger fish between the 2015/16 and 2016/17 samples, although as this species tends to school by size there are no disenable trends from this limited data.</p> <p>A DEPM survey for jack mackerel was conducted in 2017 which provided a best estimate of biomass of 34 978 tonnes which was considered to be conservative given that the stock extends west of Kangaroo Island and a large amount of spawning activity was detected in Bass Strait which was not extensively sampled (and therefore the biomass estimate is an underestimate).</p> <p>On the basis of the information provided, the Panel agreed that the DEPM survey results were appropriate for setting jack mackerel RBCs under the Harvest Strategy for the 2018-19 season.</p> <p>As there is a DEPM survey is now available for this stock, this species moves to Tier 1 under the Harvest Strategy. The Tier 1 exploitation for this stock is 12%.</p> <p>Considering the limited information on jack mackerel to the west of Kangaroo Island and the spatial separation of the two key spawning areas (Kangaroo Island and western Bass Strait) which may be evidence of a stock structuring, the Panel recommended that, until more is known about the biomass and / or stock structure of jack mackerel west, the catch taken to the west of the Bonney coast should be restricted to 20 per cent of the RBC. This is equivalent to the</p>	<p>RBC</p> <p>= 34 978 x 12%</p> <p>= 4 197 tonnes</p>

Species	Assessment results	Panel Advice	Recommendation for 2018-19
		<p>proportion of the total spawning area found during the DEPM survey that was represented by this area.</p>	
Blue mackerel east	<p>Annual Fishery Assessment.</p> <p>DEPM survey conducted for blue mackerel in 2014.</p> <p>Estimated biomass 83 300 tonnes</p>	<p>The Panel was provided with an overview presentation for blue mackerel east. There was an increase in catches to 2,368 t in 2015/16 and 1,529 t in the 2016-17, from the previous peak of ~1,400 t in the late 80s. The 2016-17 catches were 1.8% of the DEPM biomass estimate and 47.4% of the TAC.</p> <p>The effort over 2015-16 and 2016-17 was concentrated off NSW, with some fishing of eastern Tasmania. The Panel noted that it is difficult to draw conclusions from the length frequency and ageing data due to the variability in effort and fleets which would result in different sizes being caught each year.</p> <p>The CPUE was variable, with some reduction over 2016/17, due to the intermittent fishing effort for this species, trends are difficult to discern from the data. The Panel agreed that due to this variability in the data and sporadic fishing effort in the fishery over recent years that there is currently no clear evidence of localised depletion in the fishery.</p> <p>The annual assessment provided no basis to change the Panel’s previous advice for this species. The Panel confirmed that while there is uncertainty associated with the adult parameters used in the DEPM, the DEPM survey biomass estimate of 83 300 tonnes is appropriate to be used as the basis for providing RBC advice.</p> <p>The current exploitation rate of 15 per cent is considered to be precautionary (as shown by the MSE testing by Smith et al 2015) and accounts for uncertainties in the assessment.</p>	<p>Third season at Tier 1</p> <p>RBC = 83 300 x 15% = 12 495 tonnes</p>
Blue mackerel west	Annual Fishery Assessment.	<p>The Panel was provided with an overview presentation for blue mackerel west. The Panel noted that while recent catches of this species have been low, catches increased to 980 t in 2015-16 and 767 t in 2016/17 (previous peaks were ~2,000 t in 2006 and 2008). The 2016-17 catches were 1.4% of the DEPM biomass estimate and 12.4% of the TAC.</p>	Second season at Tier 3

Species	Assessment results	Panel Advice	Recommendation for 2018-19
	Estimated biomass 86 500 tonnes	<p>There were no discernible trends in the CPUE data, with intermittent fishing effort and likely seasonal variations in the availability of this species. A majority of the recent fishing effort was around Kangaroo Island with some effort off western Tasmania.</p> <p>The Panel noted that the size structures for this species differ between the east and west with much larger fish in the west. The Panel agreed that a research project should be recommended to review the existing data and new information from the 2018 SA Australian sardine surveys to provide further information for the relevant SPF stocks west of Kangaroo Island for which there is currently limited information.</p> <p>The Panel noted that the most recent DEPM survey for this stock had been undertaken in 2005 and 2006. The Panel confirmed its previous support of the SPFRAG approach which adopted a biomass estimate for blue mackerel of 86 500 tonne based on the results of the two surveys that covered most of the western spawning area.</p>	<p>RBC</p> <p>= 86 500 x 3.75%</p> <p>= 3 243 tonnes</p>
Australian sardines east	<p>DEPM survey conducted in 2015.</p> <p>Estimated biomass 49 575 tonnes</p>	<p>The Panel was provided with an overview presentation for Australian sardine east. Catches of this species peaked at 7,392 tonnes in 2016-17 due to a significant increase in Victorian State catches (previous peak of 4,690 tonnes in 2007-08). Excluding the recent increase, catches were relatively stable at around 1,300 t from 2012-13 and 2015-16. The 2016-17 SPF catches were 0.2% of the DEPM biomass estimate and 7% of the TAC, with the total catches of Australian sardines 14.9% of the DEPM biomass.</p> <p>The Panel noted that Victorian catches may not be available moving forward due to confidentially concerns. The issue of not providing State catches is becoming an issue with multiple jurisdictions in a number of jointly managed stocks.</p> <p>The Panel noted that two DEPM surveys have been undertaken for this species, a southern area survey (biomass estimate 10,962) was undertaken at the same time as the recent jack mackerel survey (Ward <i>et al.</i> 2015a) and a northern area survey (biomass estimate 49,575) was conducted at the same time as the blue mackerel east</p>	<p>Third season at Tier 1</p> <p>RBC</p> <p>=49 575 x 20%</p> <p>= 9 915 tonnes</p>

Species	Assessment results	Panel Advice	Recommendation for 2018-19
		<p>survey (Ward <i>et al.</i> 2015b). It was noted that the southern estimate is likely an underestimate.</p> <p>The annual assessment provided no basis to change the Panel's previous advice for this species. The Panel confirmed its previous recommendation to use the biomass estimate from the northern survey to determine a RBC for the northern area and that only the NSW State catches should be taken off the RBC when setting the TAC.</p> <p>This recommendation was based on recent research (Izzo <i>et al.</i> 2017, Ward <i>et al.</i> in prep, and Sexton <i>et al.</i> submitted to Fisheries Oceanography) that provides indications of stock structuring, with a north stock and south eastern stock (with the stock split occurring around the NSW/Victorian border).</p>	
Redbait east	<p>DEPMs conducted in 2005 and 2006</p> <p>Estimated biomass 68 886 tonnes</p>	<p>The Panel was provided with an overview presentation for redbait east. The catches in recent years have been low compared to the peak catches of ~7700 t in 2003/04, although catches increased from negligible levels to 217 tonnes in 2015-16 and 101 tonnes in 2016/17. The 2016-17 SPF catches were 0.14% of the agreed DEPM biomass estimate and 3.1% of the TAC. There were no discernible trends in the CPUE data, with highly variable fishing effort and catches for this species and very low catches over the last 5 years.</p> <p>The Panel noted the most recent biomass estimates from DEPMs in October 2005 and October 2006 of 86 990 tonnes and 50 782 tonnes, respectively. The annual assessment provided no basis to change the Panel's previous advice for this species. The Panel confirmed that the approach used by SPFRAG of adopting the average of these DEPM estimates (68 886 tonnes) should be continued, and the Harvest Strategy Tier 2 harvest rate for redbait of 5 per cent be used as the basis for RBC advice.</p>	<p>Seventh season at Tier 2</p> <p>RBC</p> <p>= 68 886 x 5%</p> <p>= 3 444 tonnes</p>

Species	Assessment results	Panel Advice	Recommendation for 2018-19
Redbait west	<p>Annual Fishery Assessment.</p> <p>No DEPM survey conducted. Some catch history data.</p> <p>Atlantis-SPF estimated mean biomass 66 000 t</p>	<p>The Panel was provided with an overview presentation for redbait west. The Panel noted that limited fishing for this stock has occurred over the last few years, although catches increased to 1,157 in 2015/16 and 1,140 t in 2016-17 (previous peaks were ~3,000 t from 2005-2007).</p> <p>The CPUE was variable, with some reduction over 2016/17, due to the intermittent fishing effort for this species, trends are difficult to discern from the data. The Panel agreed that due to this variability in the data and sporadic fishing effort in the fishery over recent years that there is currently no clear evidence of localised depletion in the fishery.</p> <p>There has been no DEPM survey for this stock and therefore this species remains a Tier 3 stock. It was noted that a DEPM survey is currently underway for this stock which will be available for the 2019-20 TAC setting process.</p> <p>Using the mean biomass estimate of 66 000 tonnes from Atlantis, the proposed Tier 3 exploitation for this stock with no DEPM is: $0.25 \times 5\%$ (Tier 2 rate) = 1.25%.</p>	<p>Second season at Tier 3</p> <p>RBC</p> <p>= 66 000 x 1.25%</p> <p>= 825 tonnes</p>

4.3 2019-20 research priorities

The Panel noted that no issues were raised at the Stakeholder forum regarding the recommended research priorities. Tim Ward excused himself for the discussions on the Australian sardine research priority due to a potential conflict of interest.

The Panel provided the following comments on the 2019-20 research priorities:

- That the undertaking of DEPM surveys and Annual Fishery Assessments remain highest priority for the SPF, followed by the marine mammal and Australian sardine research priority.
- The Panel did note that the Australian sardine research would be a higher priority than additional western DEPM surveys as this would inform the planning of a western zone DEPM.

The Panel confirmed its previous recommendations on the 2019-20 research priorities:

- **Retain the annual monitoring and assessment of the fishery as a priority for 2019-20.**
- **Maintain the current order of DEPM surveys (blue mackerel west then red bait east) but whether these proceed as planned in 2018-19 and 2019-20 respectively will be subject to fishing effort.**
- **Noting the support from the CMMWG, inclusion of the marine mammal research priority in the 2019-20 research plan.**
- **Additional research priority for 2019-20 to utilise the information collected from the previous and upcoming South Australian sardine survey to better understand the relevant SPF stocks west of Kangaroo Island for which there is currently limited information.**
- **Remove jack mackerel genetic research scope from the 2019-20 research plan as the Panel did not see the project as a current priority for the fishery.**

Action item 1	AFMA
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AFMA to update and circulate to the Panel the draft Annual Research Statement for 2019-20 incorporating the agreed research priorities for comment out of session.
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4.4 Ongoing Monitoring Requirements in the SPF

The Panel noted that no issues were raised at the Stakeholder forum regarding the project scopes on the ongoing monitoring requirements and catch composition sampling and therefore the Panel confirmed its previous advice:

In regards review scope 1, the Panel endorsed the project scope proposed to review the available observer and electronic monitoring data to provide advice on the ongoing data and monitoring requirements for the fishery.

Regarding the data needs for bycatch, given the low proportion of bycatch in this fishery the Panel considered that the priority for the monitoring regime under the current level of fishing effort is to be able to provide data on species composition only.

In regards to review scope 2, the Panel endorsed the proposed project scope to review the available data to provide advice on the ongoing catch composition sampling strategy for the current mid-water trawl vessel and any equivalent operations in the fishery.

Noting that the observer coverage in the SPF had been reduced to 20% for mid-water trawl, the Panel agreed that this level of coverage is still relatively high compared with other fisheries and would provide sufficient biological samples for the fishery. It was noted that AFMA advised that placement of observers would occur as close to one in every five trips as practical to ensure samples with spatial and temporal coverage of the fishery are collected.

Action Item 2 AFMA

AFMA to clarify the roles between SARDI, AFMA and the industry regarding the collection of biological samples and confirm whether observer reports can be provided to SARDI/the Panel to keep them abreast of what is happening in the fishery.

4.5 Spatial Management in the SPF

Recalling the agreed definition of localised depletion for the SPF as ‘a persistent reduction in fish abundance in a limited area, caused by fishing activity, over spatial and temporal scales that negatively impact on predatory species and/or other fisheries’, the Panel considered the two matters raised at the stakeholder forum regarding spatial management in the context of the impacts on the recreational sector:

1. Reduction in size of the spatial management grids to allow for more refined management.

The Panel considered that the current settings (1 degree, ~ 60 nm grids and a rolling 30 day period) are appropriate and balance the geographic size of the fishery with the practicalities of management. It was also noted that one degree squares are a common size used for various forms of spatial management in other fisheries in Australia and internationally.

2. Review of the proposed move-on trigger of 10% of the TAC.

The Panel considered that while the risk of localised depletion is low and that on a broad scale, depletion is best managed via conservative TACs, given the SPF is a developing fishery and knowledge on stocks is still building, the move-on rule provides a precautionary approach to management. In this context, the move-on rule aims to minimise significant quantities of fish being taken from a small area over a short period of time while still allowing the fishery to function effectively.

The Panel confirmed its draft advice that the fixed tonnage move on trigger should be replaced with a percentage of the TAC as the latter reflects changes to the TAC. However, upon further consideration of the actual percentage, the Panel revised it down from 10 percent to between 2 and 4 percent of the (combined) TAC on the following basis:

- a) A 10 per cent trigger would allow the full TAC to be taken from one grid over a year and, therefore, not meet the aim of the move-on rule;
- b) A 4 per cent trigger is equivalent to the current 2000 tonne trigger which constrained the operation of the large factory trawler that fished recently on a few occasions. If the intent is to ensure a greater spread of fishing effort then a trigger less than 4 percent will be required. A 2 per cent trigger would potentially constrain both large and small operations. The Panel noted that the move-on rule would apply to all boats combined so if the number of boats increases above one in any given area, there is the potential that either trigger will be more constraining.

The Panel noted that the settings of 2 to 4 percent of the TAC for the move-on rule are not based on scientific evidence but the recent fishing experience in the SPF.

The Panel confirmed its previous advice that the risk of localised depletion in the SPF is low, especially considering the current level of effort in the fishery. The most appropriate way to ensure the sustainability of target species is to set conservative catch limits which is achieved through the SPF Harvest Strategy. Further, in terms of spreading effort to support the collection of representative data on target species, the benefit of regional catch limits is minimal as this type of data collection is best achieved through research surveys, given the characteristics of the fishery.

On this basis, any ongoing justification for spatial management relates to the issue of localised depletion. In this context and in light of the experience in the fishery over the last two seasons, it was considered whether there was still a need for the spatial management provisions that currently apply.

In summary, the Panel concluded:

- the requirement that only 75 per cent of an individual's quota holdings can be taken in a single sub-area in a fishing year should be removed as any risk of localised depletion is best managed on a smaller scale
- the current trigger of 2 000 tonnes (all species combined) within a rolling 30 day period as the limit at which vessel/s must move out of that grid, should be replaced by a trigger of 2-4 per cent of the combined fishery TACs (rather than a fixed tonnage) within a rolling 30 day period. This provides a more robust system to changes in the TAC.

The Panel also considered that from time to time specific spatial management provisions that differ from the above general approach, might need to be adopted to address specific circumstances.

4.6 Proposed new fishing methods in the SPF

The Panel noted that no issues were raised at the Stakeholder forum regarding the proposed new fishing methods in the SPF and therefore the Panel confirmed its previous advice:

The Panel supported the proposal for the use of jigging and line methods in the SPF on the basis that:

- the fishery is largely undeveloped
- these methods do not pose any risk to the ecological sustainability of the target species, as catches will be within the TAC
- both methods are more selective and pose a lower risk to bycatch and protected species interactions than the currently permitted methods. The Panel identified seabirds as the most likely species group to interact with either method but noted that effective mitigation options are available if an issue is identified.

The Panel recommended that observer coverage for the initial five trips would be adequate to get an indication of any potential bycatch species, including protected species.

Agenda Item 5 Response to key issues raised at Forum

The Panel noted that the key issues raised by attendees at the Stakeholder Forum related to spatial management arrangements. Forum participants recommended that the Scientific Panel reconsiders the spatial management arrangements from the perspective of the recreational fishing sector, in particular:

1. Consideration/investigation of time required for re-aggregation or 'refill' of SPF species after trawling activity and the impacts of persistent trawling activity (including looking at impacts of a large trawlers on breaking up bait schools).

The Panel is not aware of any international or domestic research that has sought to address this issue directly and, therefore, consideration of this matter would require specific new research which, in essence, would involve getting a large trawler to steam repeatedly through pelagic schools and then assessing the change in abundance. Such research would be logistically difficult and very costly. Furthermore, the results would probably be inconclusive as there are a range of environmental variables that also impact the movement of pelagic fish, making it difficult to isolate the impact of trawling alone.

The Panel would be reluctant to recommend this type of research project within the context of the limited funding available. The Panel don't believe this work warrants ranking as a high priority research project in our 2018-19 research plan which focuses on projects critical to the ongoing management of the SPF. These research priorities were presented at the Forum.

In passing the Panel notes that significant commercial fishing activity occurs on a small pelagic species in the Australian sardine fishery off South Australia with no detected impact on other fisheries. This fishery has consistently taken in the order of 30,000 tonnes per year for over a decade with no discernible adverse affects on other sectors, including the Southern Bluefin Tuna recreational fishery.

2. Reduction of the current grid sizes (one degree squares) to allow for more refined management.

The Panel considers that the current spatial and temporal settings within the spatial management arrangements are appropriate and balance the geographic size of the fishery with the practicalities of management. In reaching this view the Panel noted that one degree squares are the common size used for various forms of spatial management in other fisheries internationally.

3. Review of the proposed move-on trigger of 10% of the TAC, with concern from the recreational representatives that 10% is too high.

On reflection the Panel agrees that 10% of the TAC from a grid square over 30 days is too high to achieve the objective of this measure, which is to spread fishing effort such that very large quantities of fish are not taken from relatively small areas over short time periods.

When first considering this matter, the Panel was more focused on the principle of the move-on trigger being a % of the TAC rather than a fixed tonnage as is currently the case and had not fully considered to what the % should be.

Having received the advice from participants at the Forum, the Panel gave further consideration to the % and believe it should be somewhere between 2% and 4%. This will be the advice provided to the AFMA Commission.

The Panel believes a move-on trigger in the range of 2%-4% of the TAC from a grid square over 30 days, strikes the correct balance between spreading fishing effort while remaining practical for the boats involved in the fishery. It should be noted that this setting is based on the expert opinion of the Panel and recent fishing activities in the SPF.

While the Panel recognises the move-on rule is in place to provide an extra element of precaution against localised depletion, it confirmed its view that localised depletion is unlikely

to occur within the SPF given the high mobility of the target species and conservative TACs that have been set for each of the seven stocks.

4. Use of the ETBF voluntary arrangement between the commercial and recreational sector as a model for the SPF.

The Panel agrees that any arrangements, voluntary or otherwise, that avoid spatial and temporal conflict at sea would be beneficial to this fishery. The Panel encourages the relevant parties within the SPF to consider such an arrangement.

By definition, this sort of arrangement can only be entered into by representatives of the recreational and industry sectors. The Panel could not be a party to such an agreement nor would play any part in its negotiation. If AFMA could play a role in bringing the parties together in the first instance that may prove helpful in initiating the process.

Action Item 3 Chair

Max Kitchell to summarise discussions to key points raised in a response to attendees and distribute to members for comments.

Agenda Item 6 Other Business

Next meeting

The Panel note that the next meeting has not yet been scheduled and they will be advised on further details in due course.

The Chair thanked participants and closed the meeting at 3:15 pm.

Signed (Chairperson):

Date: