

Minutes

Meeting	Mulloway Harvest Strategy Working Group		
Meeting Number(s)	12	Dates	18 th & 19 th of March 2024
Location	Sydney	Time	10:00 – 17:00 08:30 – 13:00
Members	<p>Independent Members: James Findlay (Chair), Sevaly Sen (Economist), Bob Kearney (Scientist)</p> <p>Aboriginal fishing: Stephan Schnierer</p> <p>Commercial fishers: Johnny Alessi, Stephen Reed, Troy Billin</p> <p>Recreational fishers: David Rae, Paul Lennon, Mark Corbin</p> <p>DPI Fisheries Manager: Heath Folpp</p> <p>DPI Fisheries Scientist: Julian Hughes</p>		
Observers	<p>Rowan Chick (DPI Fisheries Scientist, Harvest Strategies), Ashley Fowler (DPI Fisheries Scientist, Harvest Strategies), Josh Cansdell (DPI, Executive Officer), Nick Giles (DPI, Fisheries Manager, Harvest Strategies), Blake Fallon (DPI Fisheries Management Officer)</p>		
Guest	<p>Simon Clark (DPI, A/Director, Fisheries & Aquaculture Management), Thor Saunders (DPI, Director, Fisheries Research)</p>		
Apologies	<p>18/03/2024 - David Rae, Paul Lennon (10:00 – 11:30)</p> <p>19/03/2024 - Stephan Schnierer</p>		

Agenda Item	Issue	Notes & Actions
1.	Welcome and Introduction	<p>1.1 Acknowledgment of Country</p> <p>The meeting opened with an acknowledgment of the Traditional Custodians and paying respects to Elders past, present and emerging.</p> <p>1.2 Apologies and Recognition of Observers</p> <p>The Mulloway Harvest Strategy Working Group (Working Group) members and observers were welcomed, and</p>

		<p>meeting guest attendance noted for the 18th and 19th of March 2024.</p> <p>1.3 Confirmation of Agenda</p> <p>The meeting agenda was accepted by the Working Group with minor amendments to timing of agenda items to accommodate availability of meeting guests.</p> <p>1.4 Declaration of pecuniary interests</p> <p>Updates to the register of pecuniary interests were confirmed.</p> <p>1.5 Progress of other NSW fisheries harvest strategies</p> <p>The NSW Line and Trap Harvest Strategy Working Group has currently held five meetings and are working towards establishing harvest strategy decision rules for Snapper and Yellowtail kingfish.</p> <p>It was noted that the Total Allowable Fishing Committee (TAF Committee) will meet for the Total Allowable Catch determinations of Spanner crab for the 2024-25 fishing period and the Spanner Crab Harvest Strategy will be considered as part of the process.</p> <p>1.6 Minutes of the 10th meeting</p> <p>The Minutes of the 10th meeting were formally adopted by the Working Group, noting previous review by the Working Group at the 11th meeting.</p> <p>1.7 Minutes of the 11th meeting</p> <p>Minutes of the 11th meeting were adopted by the Working Group following minor revision.</p> <p>Discussion</p> <p>The Working Group acknowledged that individual Aboriginal persons faced cultural difficulty in expressing positions on behalf of the Aboriginal community through Government processes, and as such should be considered as providing advice on cultural issues and perspectives rather than formal representation to the Working Group. It was also recognised that the member for Aboriginal fishing has made several contributions to the draft harvest strategy out of session following previous Working Group meetings.</p> <p>Members remarked that the 11th meeting minutes should better clarify discussions regarding the relatively high level of uncertainty in the assessment and determination of Mulloway's, stock status due to data limitations and resulting broad confidence intervals around the estimated</p>
--	--	---

		<p>level of biomass depletion. It was noted that data limitations are a common issue facing fisheries management, that the draft harvest strategy has been developed to account for uncertainty during its early and subsequent operation, and that programs are underway to reduce uncertainty under future assessments to further support operation of the harvest strategy.</p> <p>Discussion extended to the value of scientific review of the assessment, particularly as the species has a high profile with passionate and engaged sectors, including the potential for an additional external review. The current assessment has been subject to internal scientific review by senior scientists in DPI, with the assessment and rationale for the status determination under the Status of Australian Fish Stocks classification framework undergoing review by independent scientist/s through the Fisheries Research and Development Corporation (FRDC) before the assessment is finalised. In the absence of adequate independent scrutiny of the assessment some members do not believe that the assessment should be used until an independent assessment has been finalised. The ongoing development of the assessment, and the data sources that underpin it, is also subject to a current FRDC project, specifically designed to address these (and other) issues.</p> <p>1.8 Mulloway supporting measures</p> <p>DPI gave an update on Mulloway support measures including compliance operations Mulloway Assist and Charlie Echo, continued Bycatch Reduction Device enhancement trials and the DPI Mulloway stocking program, as well as an update on catch reporting.</p> <p>Members suggested the number of outstanding catch records relevant to Mulloway may overestimate the impact on the completeness of data as the figures likely include outstanding reports for periods of nil fishing activity.</p>
2.	Guest Speakers – A/Director, Fisheries and Aquaculture Management and Director, Fisheries Research	<p>2.1 Guest Speakers – A/Director, Fisheries and Aquaculture Management</p> <p>The Working Group welcomed the Director of Fisheries and Aquaculture Management to discuss the Mulloway management arrangements implemented on 1 September 2023.</p> <p>Following many observations during the recent high rainfall years of high abundances of juvenile Mulloway in NSW</p>

		<p>estuaries and river systems, in combination with the classification of the Mulloway stock as overfished or depleted since the early 2000's and uncertainty around current depletion levels, management changes were implemented from 1 September 2023 to assist protection of recent recruitment interim to finalisation of the harvest strategy.</p> <p>DPI requested advice from the Ministerial Advisory Councils and the Mulloway Harvest Strategy Working Group on potential changes that could assist reducing Mulloway mortality interim to commencement of the Mulloway Harvest Strategy. This request brought about a mix of recommendations both between groups and between members of each group.</p> <p>The 2023 changes were implemented considering the existing scientific evidence, the advice provided, and the responsibility of the Department to support the ongoing sustainability of fisheries resources. The changes also aimed to provide equitable contributions from fishing sectors to reduce fishing mortality.</p> <p>DPI also noted the response to the recent advisory, education and compliance programs has been positive, with feedback that these measures have provided a positive contribution to protecting the current and future health of Mulloway stocks.</p> <p>Discussion</p> <p>Members questioned the Departments reasoning behind implementing the current commercial daily trip limits as part of the management changes, remarking trip limits do not stop juvenile Mulloway being caught and impacts the likelihood of incidental discard of Mulloway of all sizes, with unknown mortality. The comment was debated with recognition that many commercial fishers are highly skilled in their ability to target or avoid Mulloway, and the changes were made to provide additional protection to juveniles as well as the broader stock.</p> <p>Members asked for clarity regarding the current commercial possession limit regarding storage and transport. DPI agreed to provide further advice on the current regulations and noted that daily trip and possession limits provide a common and enforceable approach to manage total catch and therefore the primary sources of mortality.</p>
--	--	--

		<p>Members discussed commercial catch reporting and expressed strong support for mandatory reporting of all Mulloway data (including catch, gear details and discards) through FishOnline systems, including a 'pre-fish' report as a means to identify targeted Mulloway fishing.</p> <p>Members questioned if current management arrangements have been successful at protecting the Mulloway stock, noting some impact on industry with more effort and cost now required to catch Mulloway, and no changes made to management fees. Discussion clarified it is currently too early to determine the specific stock response to the recent management changes, particularly considering the influence of recent environmental factors on recruitment and catch levels, noting positive feedback has been received and the changes were made following the process noted earlier in the meeting.</p> <p>Discussion acknowledged the balance required to protect the Mulloway stock against continued access. It was noted that management charges do not commonly change due to changes in abundance of fish stocks, as base services are required to support ongoing management and assessment regardless of species abundance.</p> <p>It was then highlighted that success may be acknowledged through increased fisher awareness regarding the vulnerability of Mulloway as a consequence of the management changes. Commercial fishers have commented they are consciously avoiding areas that have large numbers of juveniles present to assist with rebuilding the stock.</p> <p>The Chair then asked if DPI could provide data to examine changes in fishing activity since the current arrangements commenced in September 2023. DPI presented catch data for the months September to February since management arrangements were changed (2023-24) and under previous management arrangements (2019-20 to 2022-23).</p> <p>Commercial members advised that although environmental factors may have contributed to some change in catch levels, the current arrangements are likely to have had a significant effect on commercial catch since implementation. The period usually associated with highest commercial catch rates (April to August) will provide additional data to assess if the current arrangements have brought any significant change to commercial catch levels.</p>
--	--	---

		<p>Discussion then turned to the changes current management arrangements may have had on recreational fishing. It was noted that the arrangements were mostly well received, however, it was also noted that many recreational fishers are concerned that further restrictions were being imposed on the recreational sector, though they may be unaware of restrictions to commercial fishing occurring at the same time, despite advice provided through NewsCast and DPI Facebook. Members suggested continued promotion of Mulloway-based reporting and compliance awareness programs and the positive effects these provide to current and future Mulloway stock health.</p> <p>2.2 Guest Speakers – Director, Fisheries Research</p> <p>The Chair welcomed the Director of Fisheries Research to discuss the stock assessment process for Mulloway.</p> <p>An updated Mulloway assessment has been developed, which has been through expert internal review and is currently undergoing review through the Status of Australian Fish Stocks (SAFS) process, and as such the information provided to the HSWG is currently in a 'final draft' stage.</p> <p>A significant amount of work has gone into developing a new integrated assessment model for Mulloway, with further development to be supported through the Fisheries Research and Development Corporation (FRDC) project to improve the data and modelling that underpins the assessment. This work is expected to significantly improve the precision of the assessment into the future.</p> <p>Whilst the updated assessment uses a weight-of-evidence approach to assess the current stock status (including early integrated modelling outputs), there remains a high level of uncertainty in the model outputs, as acknowledged in the assessment, such that it is not possible to conclude with a high level of confidence that the stock is above or below the biomass limit reference point, although there are signs of improvement in both biomass and fishing mortality indicators.</p> <p>Discussion</p> <p>DPI clarified work already underway towards collection of additional data sources and noted these data sources to be high priority.</p> <p>Members questioned if otoliths could be collected as a priority, stating age composition data to be critical for</p>
--	--	---

		<p>establishing recruitment pulses entering the fishery. It was also commented by members that the large numbers of juveniles observed recently in NSW estuaries and river systems have declined or disappeared in some areas. DPI clarified that a large otolith sample has already been collected ready for analysis, and this work will be completed as a priority.</p> <p>Members discussed improvements to inform ongoing assessments on Mulloway and how often assessments would be used to inform the decision rules of the harvest strategy. It was noted that considering existing uncertainty around the specific level of depletion, the aim would be to formally assess the stock either annually, or biennially with alternate year summary statistics. It was also noted that the goal to improve on the data sources to achieve higher certainty from assessment outputs is within five years, with expected improvements in some available data subject to voluntary efforts of stakeholders.</p> <p>Action items</p> <ol style="list-style-type: none"> 1. DPI clarify and communicate to industry, current regulations regarding commercial possession limit of Mulloway regarding storage and transport/Fish Receiver permits. 2. DPI consider additional communications around the outcomes of recent management changes.
3.	Presentation – Mulloway stock assessment update	<p>DPI presented details of the data sources, analyses and results of the stock assessment underpinning determination of 2023 SAFS Mulloway stock status, due to be published in 2024. The presentation explicitly outlined the data sources used in the analyses (data to the end of 2021/22), the stock assessment methods used including, standardised catch per unit effort (CPUE; for estuary meshing and offshore handlining), catch curve analysis, spawning potential ratio (SPR) modelling and preliminary outputs, including scenario testing, from surplus production (CMSY++) and an integrated catch and length-structured model (Stock Synthesis). Results from the analyses were presented in a weight-of-evidence approach to support an assessment outcome. While some analyses estimate biomass may be greater than the 20% of B_0 limit reference point, none do so with high certainty. However, all fishing mortality and biomass indicators show reductions in fishing pressure and increases in biomass in recent years with a high degree of certainty. Importantly, key uncertainties, assumptions and knowledge gaps were included, providing necessary</p>

		<p>context around the analyses and the assessment, and it was highlighted where data collection and research programs will contribute to reducing uncertainty and knowledge gaps into the future.</p> <p>As requested by members, DPI also presented an update on catch data not included in the 2023 assessment. This included commercial catch data from the most recent complete fishing period (2022/23) and preliminary recreational harvest estimates for 2021/22 survey year.</p> <p>Discussion</p> <p>The Working Group expressed their appreciation for the presentation.</p> <p>There was extensive discussion around the levels of uncertainty in the outputs from analyses, particularly current levels of biomass, and the limitations this has on providing prescriptive, high resolution management responses within the harvest strategy.</p> <p>There was unanimous agreement among working group members that there be a strong focus on reducing uncertainty in the assessment. To this end the working group expressed strong support for the ageing research outlined in the new DPI FRDC project as well as the other monitoring initiatives in that project and the objective to utilise these data in an integrated stock assessment.</p> <p>Commercial members noted the current assessment is more consistent with recent observations across the commercial fishing sectors. Members discussed the difference in data sources and analysis outcomes, noting some variance between the commercial fisheries.</p> <p>Recreational harvest estimates were discussed. It was reiterated that the first (2000/01) recreational estimates included recording of Mulloway and a similar species (Teraglin) within the reporting group 'Mulloway/jewfish', likely resulting in inflated estimates of the recreational catch of Mulloway in that survey.</p> <p>DPI highlighted, due to acknowledged uncertainty in earlier recreational catch estimates of Mulloway, scenario testing of different levels of recreational catch had been undertaken to understand the influence of this uncertainty on assessment outcomes for current biomass.</p> <p>Members revisited previous discussions around whether larger fish had recruited from production in recent wet years or through movement, and when recruitment pulses</p>
--	--	---

		<p>may enter the fishery. Discussion recognised improved monitoring, including the collection of age composition data, would help identify when recruitment pulses were entering the fishery, and reduce uncertainty in attempting to establish this from length composition data.</p> <p>It was noted for several reasons that a large proportion of the recently observed apparent increase in abundance of juvenile Mulloway may not enter the fishery, and it should not be assumed that this would definitely contribute to rebuilding.</p> <p>Working Group members reiterated their unanimous agreement to support the data monitoring initiatives developed to support the assessment and harvest strategy. This included the collection of age data and improved catch information amongst other reliable data types, for ongoing monitoring and to fill the knowledge gaps to improve future assessments, as outlined in the recent successfully funded FRDC project.</p> <p>The Chair noted that although the stock assessment presentation aligns with some of the recent year's 'on water' observations, there is difference in opinions and observations, and reiterated that the assessment outcomes do have a high degree of uncertainty. Therefore, it is important to continue with precaution until the work scheduled through the FRDC project and other data monitoring methods can improve on the knowledge gaps and provide greater certainty around biomass estimates.</p> <p>Discussion led to enhancements of the commercial reporting system to improve future estimates of fishery-dependent data, including CPUE for Mulloway across the commercial fisheries and the application of other potential methods to generate a CPUE series more indicative of Mulloway biomass (e.g. stratified sampling of key fishers specifically targeting Mulloway through time).</p> <p>Members reiterated their recommendation to establish enhanced mandatory reporting for commercial Mulloway fishing effort and recreational catch as a high priority. It was recognised that the voluntary Mulloway length reporting survey available through the DPI website has been developed to provide industry the opportunity to provide this information. Although current uptake is limited, it is anticipated that it will improve as the main meshing season commences in coming months.</p>
--	--	--

		<p>Discussion then moved to available recreational tag-recapture data and consideration of its limitations for use in stock assessments, with members revisiting previous meeting discussions regarding the suitability of this dataset to defensibly inform stock assessments using re-capture rates for Mulloway. Members also discussed the advice from an expert review of this dataset undertaken recently to independently assess its suitability for use in stock assessments or as a potential indicator in the harvest strategy. As in previous meetings, DPI cautioned against the use of tag-recapture data for these purposes, because of numerous limitations present in the dataset, including data deficiencies, non-representativeness, substantial knowledge gaps and uncorrected-for biases. It was further highlighted to the group that the independent expert review of the tag-recapture dataset came to similar conclusions regarding its suitability, recommending that estimates derived from the tag-recapture dataset in its current state may carry a significant degree of uncertainty, such that it would not be useful in the context of management decision-making. DPI noted that the review concluded that this dataset cannot contribute substantial information about relative abundance but may be useful in future if the limitations identified could be overcome, and the dataset be combined with other more reliable and informative datasets (e.g. CPUE, acoustic tagging data).</p> <p>Discussion also recognised the processes regarding obtaining the required animal ethics approvals and funding to continue recreational tagging in future. However, it was acknowledged that this data is an available and useable source, and is also a means of enhancing engagement in Mulloway monitoring, particularly in the recreational sector. Members then discussed the tag-recapture dataset in comparison with data sources that are being used in the current assessment, and agreed the current data set is not fit for purpose as a primary indicator, however continuing the tag-recapture program would be useful. The Chair questioned if the Working Group supported the use of tagging data as a secondary indicator to inform the harvest strategy, with members declaring mixed opinions.</p> <p>Following discussion, it was agreed that tag-recapture data could be included as a secondary indicator, providing a potentially useful measure of fishing pressure, abundance and spatial movement patterns inferred from tag-recapture</p>
--	--	---

		rates, with further formal integration into the assessment or harvest strategy able to be considered.
4.	Voluntary commercial Mulloway length reporting survey	<p>DPI requested feedback from members on what improvements could be made to the voluntary Mulloway Length Reporting Survey so that it would be more appealing to commercial fishers to voluntarily report important information on their Mulloway catches (including lengths of retained and discarded catch, mesh sizes used, targeting information), noting a low number of fishers have contributed to the survey since its availability in late December 2023.</p> <p>Discussion</p> <p>The Chair noted support from commercial members at previous meetings so that additional data could be collected to fill knowledge gaps and to support improved ongoing assessments and the harvest strategy.</p> <p>Ease of access was suggested to be the main reason why fishers may not be voluntarily reporting additional information. Members reiterated the importance of progressing to mandatory reporting of this information through the current commercial reporting system (Fisher Mobile/Direct).</p> <p>Members supported the voluntary length reporting survey and noted that since the survey had been available, fishers who target Mulloway have likely been targeting other species due to closure of overnight setting, and noted that there would likely be more data from commercial fishers with increased targeting in the peak season (i.e. winter months).</p>
5.	Q & A – Draft harvest strategy and management options	<p>DPI presented a summary of management options presented at Meeting 11 for further consideration by the Working Group.</p> <p>Commercial members reiterated their concerns about the potential for a race to fish under a global catch limit option, considering this to likely focus attention on Mulloway and bring an increase in effort on the stock early in the fishing period.</p> <p>Members queried if the draft version of the Mulloway Harvest Strategy would be considered by the TAF Committee for the Total Allowable Effort determination for the 2024-25 fishing period for the commercial Estuary General Fishery, as it would be relevant to the Estuary</p>

		<p>General meshing quota regime. It was clarified that the draft harvest strategy would not be ready for the 2024-25 fishing determination. NSW harvest strategies will formally guide Total Allowable Catch or Total Allowable Effort determinations once they have been adopted by the Minister, noting this harvest strategy would be only one factor relevant to the meshing effort quota, and consideration will also be dependent on the management arrangements included to manage Mulloway catch.</p> <p>The Chair led discussions back to the commercial members and options to limit total catch, noting that harvest strategies that don't apply strict limits to catch, do require management measures that will manage catch to achieve the goals of the harvest strategy.</p> <p>The draft Mulloway Harvest Strategy has been developed with several management objectives for both the recreational and commercial fishing sectors, and a management framework will be required to limit catch to appropriate levels, with a precautionary approach considering existing uncertainty in assessment outcomes.</p> <p>Commercial members stated that further controls should not be required in addition to current commercial restrictions including daily trip and possession limits as well as meshing and hauling effort quota management.</p> <p>Discussion revisited previous meeting suggestions regarding allocation of Mulloway to fishing businesses or a combination of current arrangements with a sectoral allocation of Mulloway. Discussion again indicated that fishers have different opinions on whether individual commercial allocations should be undertaken for Mulloway, and how this could be undertaken (e.g. if undertaken, allocating numbers of fish vs kilograms).</p> <p>Discussion acknowledged that although the specific level of catch required to achieve the strategy objective is yet to be determined, the management framework needs to be established and members should consider the best approach to manage catch to appropriate levels.</p> <p>Commercial members suggested that annual catch should be set slightly higher than recent annual catches to allow for fishing to continue as usual without compromising data collection, to maintain markets, and limit the potential for a 'race to fish' and increases in incidental discard mortality. The suggestion raised concern that members may be disregarding the initial objective of the harvest strategy,</p>
--	--	---

		<p>that is to first rebuild the stock to target levels specified in the harvest strategy. Notwithstanding recent observations of apparent increase in abundance of juvenile Mulloway, it cannot be concluded that current estimates of stock biomass indicate with adequate certainty that rebuilding has started, and it is highly unlikely the rebuilding target has been met therefore reductions to catch may still be required until the objectives have been achieved with certainty.</p> <p>The Chair noted that restrictions on catch are likely required to rebuild the stock, which would be based around achieving the rebuilding objectives, however they may not need to be as restrictive as initially expected based on more recent evidence.</p> <p>Members confirmed preference for an equitable share of catch between the commercial and recreational fishing sectors, allowing each allocation to be managed using the best tools to achieve this for each sector.</p> <p>Commercial members did not reach a consensus on a preferred approach, noting the following as potentially desirable:</p> <ul style="list-style-type: none"> • Allocating a number of Mulloway per fishing business or relevant share to be taken each year • Weekly limit instead of daily limit • No change to current arrangements • Retain current trip limit and remove possession component <p>Spatial or temporal restrictions were identified as not desirable, and potential to consider ITQ management held mixed opinions.</p> <p>DPI noted that allocating a different level of catch (including number of individual Mulloway or kilograms per fishing business) should be achieved through quota management under current regulations, which includes processes for establishing arrangements and determining individual allocations. To support effective compliance of an individual number limit, additional controls such as requiring tagging of individuals may also be needed. Managing by allocating the number of individuals per fisher/fishing business may also need to include additional precaution as the weight of individuals has the potential to vary substantially,</p> <p>The Chair suggested that maintaining current limits may be suitable, allowing assessment of options or adjustment of</p>
--	--	--

		<p>limits as information on the relationship of the daily limits with catch levels improves.</p> <p>Recreational members noted the following as options, also noting establishment of a recreational Total Allowable Catch was viewed as desirable:</p> <ul style="list-style-type: none"> • Cease fishing if catch limit is reached • Increasing the minimum size limit • Seasonal closures (focusing on winter period) • Amending bag/possession and boat limits • Temporal closures (e.g. weekday closure) • Limiting the number of individuals harvested through a tagging system <p>Suggestions regarding catch limits, size limit changes, and seasonal closures were provided assuming similar measures would be provided across sectors. Spatial closures were identified as not desirable.</p> <p>DPI noted that the feasibility of limiting catch through a tag allocation system was being investigated, however may not be achievable under current regulations.</p> <p>Discussion included the potential to limit the catch of one sector to no more than that of the other sector, however this was agreed as not feasible or equitable. The intent of the suggestion could however be achieved through establishing sectoral catch allocations and managing catch to those allocations.</p>
6.	Harvest strategy regulatory framework	<p>DPI presented a draft timeline of working elements of the harvest strategy previously presented at meeting 11 for further consideration, including the stock assessment schedule, application of decision rules and review points for the harvest strategy.</p> <p>Discussion</p> <p>The Working Group discussed the timeline, noting that extended development and subsequent process meant that the timeline may commence later than initially anticipated. As some elements (e.g. real time reporting) are likely to require consultation, will require system changes and will take time to implement, management may need to commence using existing arrangements with longer-term measures commencing as they become available.</p> <p>Discussion recognised that whilst the underpinning principles of the harvest strategy and some management elements had been agreed, consensus had not been</p>

		<p>achieved regarding the complete management framework under which catch levels determined through the harvest strategy would be managed. It was recognised that DPI would need to take the recommendations provided by the Working Group and finalise the management framework, or options if needed, and consult on this through the Ministerial Fishing Advisory Councils or alongside consultation on the harvest strategy if needed. Any recommendations made by the Working Group would be considered for public consultation along with the draft harvest strategy.</p>
7.	Draft harvest strategy review	<p>The Working group reviewed the draft harvest strategy with the aim to finalising the draft to proceed to the Ministerial Fishing Advisory Councils as the next development stage.</p> <p>Discussion</p> <p>It was proposed that the harvest strategy should be clear regarding existing uncertainty around precise estimates of depletion (and therefore the status of the stock), and the consequent rationale for determining the approach to ensure rebuilding of biomass in successive stages. It was recognised that projects underway to reduce existing uncertainty have also played a key factor to the management strategy proposed to meet the objectives, allowing information to improve and management to strengthen during the early operation of the strategy. Minor wording changes were made to the draft to address findings of the latest draft stock assessment and ensure the strategy is clear regarding these fundamental issues.</p> <p>It was suggested that previous management actions aimed to protect Mulloway under the Mulloway Recovery Program may be leading to improvements detailed in the latest stock assessment. It was agreed that recent improvements in biomass and fishing mortality indicators were in accordance with the observations of some stakeholders, noting the draft harvest strategy has been developed to provide a framework that can adapt to new information including changing estimates of biomass or stock status.</p> <p>Members discussed requirements of the Ecologically Sustainable Development component of the harvest strategy, reiterating existing knowledge gaps and the benefits of completing such assessments. Discussion recognised that the harvest strategy is designed to manage harvest levels, and some environmental and anthropogenic impacts are or will be managed outside the harvest strategy</p>

		<p>through broader programs. However, the harvest strategy does recognise that where needed, it may be reviewed consequent to significant risks being identified.</p> <p>Members queried if the draft stock assessment due to be released in 2024 gives any indication if the stock may or may not be tracking to reach the harvest strategy rebuilding target within the objective timeframe. It was clarified that the weight of evidence assessment undertaken does not model biomass changes to assess if the stock will achieve this objective, however capacity will progress through improved data and further development and assessment of the utility and further incorporation of the integrated stock assessment model to the assessment process. For commencement of the harvest strategy, appropriate catch levels will be determined using the best available information, with the strategy designed to monitor and adjust catch levels if needed to ensure the strategy's objectives are met.</p> <p>Members questioned if the management changes introduced from September 2023 will impact on the data set and assessment process for Mulloway in future. It was clarified that the assessment can account for changes of this nature, for example by looking at information subsets such as specialist fishers or independent information programs, to assess and verify broader trends in stock information.</p> <p>Commercial members suggested that current management arrangements have only reduced catch for a low number of fishing businesses, and fishing effort has further reduced because some fishers who would regularly target Mulloway are now targeting other species due to it not being viable to fish for Mulloway under current trip and possession limits. It was clarified that there are several assessment methods that make it possible to get an understanding of changes to fishing effort as part of the assessment process. The Chair recommended that commercial fishers who regularly target Mulloway liaise regularly with the DPI Fisheries Research team to achieve the best assessment and understanding of the commercial Mulloway fishery possible.</p> <p>Further to previous meeting discussions regarding regional management for Mulloway, DPI proposed to include spatial monitoring to provide regional biomass indicators noting the likelihood of localised stock components. Whilst the regional biomass estimates will initially include inherent</p>
--	--	---

		<p>uncertainty, robustness will be improved through the commencing FRDC research project, providing quantification of finer-scale stock components. Members also discussed alternate use of regional CPUE and catch as potential finer-scale indicators, noting that a biomass indicator provides a more direct link to stock status and that these and other factors contribute to the determination of biomass levels.</p> <p>Members revisited information on regional catch and potential boundaries, agreeing on an option for three areas based on regions of the Estuary General fishery as the most appropriate for assessment against the regional indicators considering available information sources and historical catch levels.</p> <p>Members discussed options for a secondary mean length indicator included to assess the potential for recreational fishers to be able to catch larger Mulloway, refining the indicator to reflect the intent of assessing the proportion of larger fish present in the Mulloway population. Discussion noted that whether the numbers of larger fish in the population would reach historical levels remains uncertain, however this indicator provides a clear mechanism to assess changes under ongoing management under the harvest strategy.</p> <p>An additional secondary indicator based on tag-recapture rates (from the NSW Gamefish Tagging Program) was agreed as a secondary indicator of fishing pressure, noting nominal recapture rates for Mulloway are considered high but affected by numerous identified issues concerning data deficiencies, non-representativeness, knowledge gaps and uncorrected-for biases.</p> <p>The Working Group reviewed the decision rules of the draft harvest strategy, agreeing that the management approach provided a logical and robust management strategy to meet the strategies objectives, and is suitable to incorporating additional fishery information as this improves. It was agreed that whilst the harvest strategy establishes the primary framework for managing catch to appropriate levels, some management elements will be established outside the harvest strategy as per discussions during the meeting. These may be adjusted as provided by the harvest strategy, noting the primary aim of the strategy is to determine harvest levels appropriate to meeting the strategy objectives.</p>
--	--	---

8.	Recommendations of the Mulloway HSWG	<p>The Chair questioned the recreational and commercial representative members to revisit recommendations regarding preference for management actions/decision rules to effectively manage harvest of Mulloway under the harvest strategy.</p> <p>Members discussed several options to manage recreational catch and noted potential benefits to spatial or temporal management of Mulloway particularly within areas already indicating signs of localised depletion, with members acknowledging the difficulties faced when applying fine scale management to fisheries or species.</p> <p>Members discussed the probability for a recreational harvest limit to be breached without appropriate methods to report recreational catch data in the initial stage of the harvest strategy.</p> <p>It was acknowledged to manage recreational harvest appropriately at the commencement of the harvest strategy, several mechanisms to slow or reduce catch may be required, and any measures applied may require adjustments as the harvest strategy progresses.</p> <p>Members discussed advantages and disadvantages of a range of potential options to manage commercial harvest of Mulloway under the harvest strategy. Discussion recognised preference for an equitable distribution across fisheries that currently catch Mulloway. Members again acknowledged fishers will have varying opinions towards the most suited option, and recommended several of the options discussed, be provided for public consultation.</p> <p>The Chair questioned the working group if the draft harvest strategy is considered ready for public release, with members confirming agreement.</p>
9.	Next steps	<p>The draft harvest strategy will be provided to the Commercial Fishing NSW Advisory Council and Recreational Fishing NSW Advisory Council for review before progressing to public consultation.</p>

The next meeting will be scheduled following public consultation, or earlier if requested through the Ministerial Fishing Advisory Councils.