

Minutes

Line & Trap Harvest Strategy Working Group meeting 8

Details

Location: Wolli Creek NSW 2205

Date: 23–24 April 2025

Chairperson: Ian Cartwright

Attendees

1. Tony Smith, Independent Scientist
2. Sevaly Sen, Independent Economist
3. Brad Gibson, Recreational Fishing Member
4. Ian Puckeridge, Recreational Fishing Member
5. James Norris, Recreational Fishing Member
6. Daniel Stewart, Commercial Fishing Member

7. Mitchell Sanders, Commercial Fishing Member
8. Stephen McGuire, Commercial Fishing Member
9. John Stewart, DPIRD Fisheries Scientist Member
10. Darren Hale, DPIRD Fisheries Manager Member
11. Nicholas Giles, DPIRD Fisheries Harvest Strategy Manager Member
12. Aaron Puckeridge, Executive Officer
13. Ashley Fowler, DPIRD Invited Participant
14. Rowan Chick, DPIRD Invited Participant
15. Philip Bolton, DPIRD Invited Participant
16. Chad Lunow, QLD DAF Observer
17. Taylor Hunt, VFA Invited Participant

Apologies

Ian Puckeridge

This Meeting:

No.	Issue	Action
1	Acknowledgement of country	The Chair opened the meeting with an Acknowledgment of Country, paying respect to the traditional owners of the land on which the Line & Trap Harvest Strategy Working Group (the Working Group) was meeting and paying respect to Elders past and present.
2	Introduction and action items	The Executive Officer updated the Working Group on the progress of the ongoing action items: 4.1 During the Working Group's lifespan (before 12 February 2026), the Working Group is to create a document to brief the DPIRD executive on fishery level management options for the broader Line & Trap fishery. DPIRD is currently developing an assessment to determine options to structure the various harvest strategies needed across NSW fisheries and sectors, including how best to group and categorise

various species and fisheries for future harvest strategy approaches. DPIRD will continue to update the Working Group on progress during 2025.

6.6 DPIRD to prepare an explanatory document which will accompany the draft harvest strategies when they are released for publication.

DPIRD distributed a draft of the explanatory document in the meeting 8 briefing package for feedback, which was suggested to be separated to apply to each species. This action item will be kept open, and revised drafts provided to the Working Group before the harvest strategies are released for public consultation.

7.1 Using the developing NSW Snapper stock assessment, DPIRD to provide a figure demonstrating likely change to recommended biological catch and the recreational and commercial catch shares as biomass changes.

7.2 DPIRD to organise an informal stock assessment meeting with the members of the Working Group.

DPIRD held a Snapper stock assessment briefing with members of the Working Group on 14 and 15 April 2025. This included an overview of assessment development and information around catch levels under alternate biomass building scenarios.

3 Snapper stock assessment update

DPIRD provided an update on the NSW Snapper stock assessment under development:

- DPIRD has made significant progress developing the Snapper stock assessment since meeting 7 and now have a stock assessment model which can be used to make robust inferences on the NSW portion of the eastern Snapper stock.
- The improved modelling uses data only from NSW and is likely to better represent population dynamics within the NSW managed part of the broader east-coast biological stock. The base case stock assessment model estimated the NSW Snapper stock to be at approximately 23% of unfished levels at the end of 2022, but with biomass building since the 1990s. This upward trajectory is a positive sign for the stock.
- Noting the current draft of the NSW Snapper Harvest Strategy includes a hockey stick harvest control rule, the harvest control rule is likely to recommend a precautionary Recommended Biological Catch (RBC).
- Noting the positive trends in the Snapper stock biomass over the last 30 years, it is likely low risk to keep catches consistent

with current levels as the stock would be expected to increase based on the current trajectory, subject to further modelling and consideration of control rule options.

Discussion

The Working Group discussed on-water observations of the NSW Snapper stock, and how this relates to the stock assessment outputs:

- Commercial fishers have generally observed improvements to Snapper catches, which correlates with the stock assessment results.
- Most recreational fishers have not observed improvements to the Snapper stock (noting potential for localised or spatially different experiences), and substantial effort is sometimes required to access good catches of Snapper or trophy sized fish.

The Working Group discussed the effect of recruitment on the stock assessment model, and how it is estimated:

- The model estimates recruitment, based on a combination of fishery and biological data, including catch rates, and age and length frequencies of fish, which are signals of new fish entering the fishery.
- Estimates of recruitment are used to forecast future biomass levels in the model and setting sustainable catch levels for future fishing seasons.
- A stock assessment model can use recruitment as predicted from the modelled stock/recruitment relationship estimated over the entire catch history, or recruitment estimated over a more recent period, for example 5-years. Recent recruitment estimates are thought to account for current environmental conditions, and the possible effects of climate change on the number of larval fish growing to adults.
- In the case of NSW Snapper, recruitment is estimated to have been below the long-term average in the last 5-years, so when using recent recruitment, the model produces lower sustainable catch estimates into future years.
- There is potential for Snapper recruitment to be measured (rather than estimated) through scientific surveys. However, such surveys are not part of existing research programs. DPIRD has previously surveyed juvenile Snapper using demersal fish traps with fine mesh.

- As previously discussed, QLD have completed periodic Snapper recruitment surveys in Moreton Bay using trawl methods. These have been paired with prawn recruitment surveys for cost efficiency. It is unlikely that recruitment variation in Moreton Bay could be used to infer Snapper recruitment in NSW waters.

The Working Group discussed the hockey stick harvest control rule, and whether it is still fit for purpose given the updated stock assessment information:

- The hockey stick rule is a robust option to set catch levels, but it could create an overly precautionary catch level at the commencement of the harvest strategy, followed by large catch increases in future. This initial catch drop could have a strong impact on all fishers.
- An alternative scenario could use a constant catch limit for an interim period and transition to the hockey stick rule after additional stock building has occurred. Continued stock building is expected as it has occurred since the 1990s.
- The harvest strategy could either transition to a new harvest control rule after at a set number of years, or after the stock hits a certain biomass level (e.g., B_{30}).

4 Yellowtail Kingfish stock assessment update

DPIRD provided an update on the developing NSW Yellowtail Kingfish stock assessment, which similarly to Snapper, has developed substantially since meeting 7:

- Previously DPIRD has assessed Kingfish for the Status of Australian Fish Stocks (SAFS) reports (see the [meeting 7 minutes](#) for a further description of existing Kingfish assessments).
- DPIRD have now developed an integrated stock assessment for the NSW portion of the eastern Yellowtail Kingfish stock.
- This assessment integrates a rich timeline of biological data, and commercial and recreational catch data, to produce a biomass estimate.
- One aspect of the assessment DPIRD is seeking the Working Group's advice on, is the selectivity function to be used, which relates to uncertainties around Kingfish ecology, and the likelihood large Kingfish have of being harvested at a given time, noting that large Kingfish may use offshore habitats such as seamounts at times.
- There are 3 possible selectivity scenarios for Kingfish:

- Dome shaped selectivity – legal sized fish are the most likely to be harvested, as they grow, their likelihood of being harvested decreases substantially.
- Logistic selectivity – all fish above the minimum legal length have an equal likelihood of being harvested.
- Hybrid selectivity – legal sized fish are the most likely to be harvested, and as they grow their likelihood of being harvested decreases slightly.

Discussion

The Working Group discussed theories around Kingfish ecology, and the implications for selectivity in the stock assessment model:

- It is plausible that there are areas where large Kingfish may aggregate away from heavy fishing pressure, however they may also move back into areas where there is fishing pressure. NSW fishers capture large fish at times, and these fish are known to move large distances as inferred from tagging data.
- Noting these factors, hybrid selectivity is currently considered the most realistic selectivity scenario, although, the Working Group noted that when the current Kingfish assessment model uses hybrid selectivity, the biomass estimate appears unrealistically high (i.e. not consistent with the observations of many fishers in NSW). However, an assumption of hybrid selectivity is that there is a substantial amount of biomass in inaccessible areas, which could be consistent with the potential for Kingfish to be congregating on inaccessible seamounts.

The Working Group discussed current on-water perspectives of Kingfish in NSW:

- The Working Group reiterated previous perspectives, that Kingfish fishing has become increasingly difficult.
- In the commercial sector Kingfish traps were removed in 1996, and several structural adjustments have occurred including changes to minimum shareholding under the BAP. Noting these changes, commercial Kingfish pressure is expected to have dropped substantially.
- From the results of recent Project Kingfish satellite tagging work, large Kingfish regularly travel beyond the continental

shelf. Gamefish tagging programs also indicate large cross-jurisdiction movements by Kingfish.

- Understanding of Kingfish movements can be accounted for in the stock assessment model through the selectivity scenario which is used. However, the model does not currently include spatial structuring.

The Working Group discussed secondary indicators that might provide additional insight into the Kingfish stock status:

- The Catch Per Unit Effort (CPUE) series could be observed, however CPUE presents hyperstability issues with aggregating and schooling fish species such as Kingfish. Despite this, the CPUE series is relatively stable.

The Working Group noted that an integrated stock assessment has been developed for Kingfish, and it was agreed to discuss how it will be integrated in the harvest strategy:

- The NSW Mulloway Harvest Strategy may be a useful case study, as it prescribes a framework for management of catch, while further research and stock assessment development occurs.
- A precautionary constant catch scenario for Kingfish (like Mulloway) may be a sensible approach, ensuring stock building while further assessment is undertaken to inform Kingfish population dynamics.

5 VFA Kingfish perspectives

DPIRD noted that it had been discussing collaborative Kingfish management with the Victorian Fisheries Authority (VFA), and a VFA representative attended the meeting to present their perspectives on Kingfish:

- Victoria has been observing increasing Kingfish availability and catches since 2010. It is believed that climate change, and forecasted warmer waters throughout Victoria, will continue to enhance Kingfish availability.
- Victorian Kingfish catches are primarily from the recreational sector, with commercial catch peaking at 2 tonnes in one year.
- Current recreational fishing regulations include a bag limit of 5 per person and a minimum legal length of 60 cm. Some fishers believe these controls could be tightened for the benefit of the Kingfish stock and Victorian recreational fishing sector.

		Noting the catches reported in the <u>2023 Yellowtail Kingfish SAFS report</u>, Victorian fishers take a small portion of the total Kingfish catch, and isolated management approaches are unlikely to have a large effect on the entire Kingfish stock. VFA is therefore interested in collaborative Kingfish management, to support a healthy eastern Kingfish stock. The Working Group thanked the VFA for their presentation and acknowledged that there were likely benefits to gain from collaborative approaches to Kingfish management. DPIRD and VFA will continue to discuss progress of the NSW Yellowtail Kingfish Harvest Strategy, and any associated management changes.
6	Overview of the current harvest strategy drafts	Noting that meetings 5–7 had focussed on discussing management of the commercial and recreational fishing sectors, DPIRD presented an overview of the current harvest strategy drafts, how all components interact, and key components the Working Group needs to discuss and resolve.
7	Harvest strategy indicators discussion	The Working Group noted that DPIRD recommends using a stock assessment derived biomass estimate as the primary indicator for both the Snapper and Kingfish harvest strategies, and these had been discussed in Agenda items 3 and 4. The Working Group discussed the relationship between the primary and secondary indicators to be used in the harvest strategies, and specifics around these: - At present it is proposed that the full stock assessment be run every 3-years, providing RBC guidance for 3-year periods. - In interim years, it is proposed that secondary indicators such as CPUE be used as a ‘health check’, and if secondary indicators are performing poorly, could trigger more precautionary management or an early re-run of the full stock assessment. The finer rules of monitoring CPUE need to be considered further. - One option could be projecting expected CPUE using the stock assessment, then each year comparing the measured CPUE to the projection, to see if the stock is performing as expected. The Working Group noted the following specific to the Kingfish harvest strategy: - Regarding CPUE in both the stock assessment and as a secondary indicator, the aggregating nature of Kingfish

means CPUE may be hyper-stable and not a robust proxy for biomass levels.

- Furthermore, anecdotal reports indicate recent spikes in Kingfish market prices, which could have implications for targeting and CPUE. Kingfish price may need to be a factor included in CPUE analyses.
- There is capacity in other fisheries, such as the Commonwealth managed Southern and Eastern Scalefish and Shark Fishery (SESSF) to increase Kingfish catches if there is high market demand.
- NSW commercial catch data indicates relatively constant catches in recent years, but recreational catches are decreasing. This is broadly consistent with the conversations of the Working Group.
- It was noted that while standardised CPUE trends are relatively stable (noting concerns around hyperstability), the stock assessment model could be rerun using only catch, length and age data (excluding effort). This could be used to highlight the effects of effort and CPUE on biomass estimates.
- As with all stock assessments, there are confidence intervals around the biomass estimates. The Working Group will need to decide how the harvest strategy selects a biomass estimate from within the confidence intervals.
- With further research into Kingfish ecology distribution and behaviour (through projects such as Project Kingfish), and future development of the stock assessment, these confidence intervals may become narrower.

Action items

8.1 DPIRD to rerun the Yellowtail Kingfish assessment model using only catch, length and age data (excluding effort data), to assess the effect of effort and CPUE on biomass estimates.

8 Harvest strategy decision rules discussion

The Working Group noted that in Agenda item 3, they had discussed the costs and benefits of a hockey stick harvest control rule, and the alternative of having a constant catch harvest control rule. The Working Group further discussed integrating a constant catch harvest control rule into the harvest strategies:

- If a constant catch limit system was adopted, details around its application will need to be resolved:

- Firstly, whether the harvest strategies will introduce constant catch as an introductory measure, with a transition to a dynamic hockey stick harvest control rule at a later point.
- Secondly, if constant catch is used as an introductory measure, what will trigger the transition to a hockey stick? This could be after a set time, or biomass level is reached.
- Although Mulloway is rebuilding from a ‘depleted’ level, the NSW Mulloway Harvest Strategy may provide a good case study, as it identifies interim biomass targets before shifting the approach of the harvest strategy decision rules.

The Working Group noted that quota management was a commercial management option being considered under the Snapper and Kingfish harvest strategies, and DPIRD was seeking the Working Group’s advice on how best to incorporate non-Ocean Trap and Line Fishery (OTLF) activities into the quota management system. The Working Group discussed the following:

- DPIRD noted that while it would require legislative amendments, a cross-fishery quota scheme could be used to manage all commercial harvest of Snapper and Kingfish.
- Alternatively, non-OTLF fisheries could be managed by daily catch limits.
- Cross-fishery quota management presents an opportunity for more flexible quota management schemes across NSW commercial fisheries.
- However, noting that the OTLF accounts for over 95% of the commercial harvest for both Snapper and Kingfish, a simple single fishery quota scheme may be most appropriate.
- The Working Group noted that if quota management is pursued for Snapper or Kingfish, daily catch limits will likely be most suitable to manage the catches of non-OTLF fisheries, with DPIRD to add further detail on the estimated limits in the next version of the draft harvest strategies.

The Working Group also noted that if quota management is supported, interim management arrangements will be needed while the quota system is implemented. Furthermore, if quota management is not supported, alternative long-term management arrangements will be needed. The Working Group discussed the detail of these interim or alternative management arrangements:

- In lieu of quota, the Working Group's preferred option is monthly catch limits, although these are difficult to implement without real-time reporting.
- Noting the likely need for reporting changes, these remain as the preferred interim or alternative management option, and DPIRD should seek to make the necessary systems and regulatory changes to implement monthly catch limits.
- The NSW Mulloway Harvest Strategy has been released for consultation from 11 April to 25 May (since extended to 31 July), and through this, DPIRD is consulting on real-time reporting arrangements for both recreational and commercial fishers. DPIRD can advise the working group of feedback and potential reporting direction back to the Working Group.

The Working Group discussed the likely process for setting TACs under the harvest strategies:

- DPIRD would likely establish Snapper and Kingfish TAC setting as a departmental process, to be approved by the department's Secretary.
- DPIRD could seek advice from the Total Allowable Fishing Committee (TAFC) if needed.

Action items

8.2 DPIRD to draft daily catch limits for non-OTLF fisheries to be included in the next draft of the NSW Snapper and Yellowtail Kingfish harvest strategies, which will be considered at meeting 9.

8.3 DPIRD to update the Working Group on any reporting developments following consultation on the draft NSW Mulloway Harvest Strategy.

9 Review of the NSW Snapper Harvest Strategy

The Working Group noted the discussions around the transition from a potential interim constant catch limit to a hockey stick control rule, and the implications for the NSW Snapper Harvest Strategy:

- Management under a constant catch limit is expected to be low risk, since the Snapper stock has been building since the 1990s. Furthermore, the number of fishing businesses in the OTLF has dropped substantially since the 1990s, reducing fishing pressure.

- While unexpected, if biomass begins to decline under constant catch provisions, arrangements will need to be made to ensure the stock starts to build again.

10 Review of the Yellowtail Kingfish Harvest Strategy

The Working Group reviewed and discussed the current draft of the NSW Yellowtail Kingfish Harvest Strategy:

- As discussed in Agenda item 4, uncertainty and knowledge gaps are a key challenge with the Kingfish assessment and harvest strategy. This should be explicitly addressed early in the harvest strategy to contextualise the management and monitoring approach.
- The constant catch management approach is well suited to Kingfish, as fine scale tuning of catch limits under a dynamic system would be difficult.
- Constant catch management could be conditional on positive stock indicators, and decision rule breakouts will be included in the event the stock needs more precautionary management.
- One risk which needs to be considered is how quickly stock monitoring may be able to identify poor stock trends.
- Where there is uncertainty, the precautionary principle should be applied to address this.

The Working Group discussed alternative data sources that could help supplement the Working Group's understanding of large Kingfish availability:

- As discussed in previous Working Group meetings, improvements are being made to the recreational and commercial fisheries monitoring programs, which will improve future data quality.
- Voluntary commercial length reporting was introduced as an interim data collection option for Mulloway. Similar voluntary programs could be introduced for Kingfish, however such programs need to have sufficient robustness and uptake.

The Working Group discussed the draft NSW Kingfish Harvest Strategy's current management measures, and the appropriateness of these given recent discussion:

- While it has been established that greater precaution may be needed in the Kingfish harvest strategy, it may be sensible to first establish likely catch level scenarios, then design management controls which accomplish this. NSW

DPIRD should provide the Working Group with further information given current assessment information, and management options which would support this.

- Noting the uncertainty in the stock assessment, the Working Group revisited discussions around recommending interim management changes, however, again concluded that since the harvest strategy is close to being completed, the best course to achieve sustainable Kingfish management is to do this through the harvest strategy. In particular, the management decisions should follow the same rationale, in considering the current stock status, existing uncertainty, and likely management targets.

Action items

8.4 DPIRD to provide further analysis of the Yellowtail Kingfish management options for meeting 9.

11	Review of background document	The Working Group noted that as requested in Action item 6.6, DPIRD had prepared a draft background document, which will accompany the draft harvest strategies when they are released for publication. The Working Group provided advice on further advancements to the document to be included in a revised draft.
12	Other business and next meeting admin	The Working Group noted that an additional Working Group meeting will be needed to finalise the draft harvest strategies before they are recommended for review by the commercial and recreational fishing advisory councils.

Next meeting:

The ninth meeting will be held on 14–15 August 2025.

Table 1. Ongoing action items at the close of meeting 8.

Meeting	Item	Action item	Status
4	1	During the Working Group's lifespan (before 12 February 2026), the Working Group is to create a document to brief the DPIRD executive on fishery level management options for the broader Line & Trap fishery	Pending

6	6	DPIRD to prepare an explanatory document which will accompany the draft harvest strategies when they are released for publication	In progress – a draft was provided to the Working Group in the meeting 8 briefing package, and feedback was provided. DPIRD will provide an updated draft prior to meeting 9.
8	1	DPIRD to rerun the Yellowtail Kingfish assessment model using only catch, length and age data (excluding effort data), to assess the effect of effort and CPUE on biomass estimates.	In progress – this will be prepared for meeting 9.
8	2	DPIRD to draft daily catch limits for non-OTLF fisheries to be included in the next draft of the NSW Snapper and Yellowtail Kingfish harvest strategies, which will be considered at meeting 9.	In progress – this will be prepared for meeting 9.
8	3	DPIRD to update the Working Group on any reporting developments following consultation on the draft NSW Mulloway Harvest Strategy.	Any updates following consultation on the NSW Mulloway Harvest Strategy will be provided to the Working Group.
8	4	DPIRD to provide further analysis of Yellowtail Kingfish management options for meeting 9.	In progress – this will be prepared for meeting 9.