

Consultation Report on Management Action for the Queensland East Coast Spanish Mackerel Fishery

Summary

A working group was established for the east coast Spanish mackerel fishery in early 2021 and met in May 2021, February 2022 and March 2022 to discuss stock status, future management arrangements and a draft harvest strategy in consideration of new evidence indicating a steep decline in stock biomass.

Subsequently, a round of public consultation was conducted between 6 April 2022 and 5 May 2022 on possible management measures to rebuild the east coast Spanish mackerel stock back to sustainable levels.

In total, 1486 submissions were received, of which 1437 were responses to the online survey and 49 were written submissions. The majority of respondents identified as recreational fishers (89%), with submissions also received from commercial fishers (7%), charter fishing operators (4%), interested community members (8%), seafood wholesales/marketers (<1%), hospitality workers/owners (1%), fishing tackle retailers (2%), Traditional Owners/fishers (2%) and environmental, industry peak body and other non-government organisations (2%). Feedback was also received through nearly 1000 free-form written comments and through discussions with fishery stakeholders over the phone and in meetings organised with affected fishers across Queensland's east coast.

It was observed that 65% of respondents preferred the shortest rebuilding timeframe of 7 years. To achieve this there would need to be a 100% reduction in harvest, or a total closure of the fishery, for 7 years. However, the responses to other survey questions regarding catch limits, minimum legal size and seasonal closures indicated that stakeholders would largely prefer a combination of management measures that would rebuild the stock in 13–16 years. Many survey respondents reasoned that their preference for a rebuilding timeframe of 7 years was to allow restrictions to be lifted as early as possible, but few appeared to recognise that this would require a total closure of the fishery.

Analysis of stakeholder preferences and an assessment of the potential ecological and socio-economic impacts and benefits under different management scenarios indicates that 13–14 years would be the most appropriate timeframe to rebuild the east coast Spanish mackerel stock back to sustainable levels.

Stakeholders also expressed the need to address shark depredation, improve recreational fishing data, conduct further research and monitoring, invest more resources in compliance and enforcement activities, consider non-regulatory approaches and explore options for alleviating the impacts of any proposed changes on adversely affected stakeholders.

All feedback and suggestions will be considered when developing management options to rebuild the stock and a draft harvest strategy to guide the long-term management of the fishery. Further consultation will be undertaken to inform a final decision by the Queensland Government.



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Background

In December 2021, the 2020 stock assessment for Australian east coast Spanish mackerel was released, which estimated the biomass to be approximately 17% (see Figure 1). Under Commonwealth and Queensland harvest strategy guidelines, immediate management action is required to rebuild fish stocks when the biomass falls below the limit reference point of 20% biomass. Doing nothing is not an option.

The latest Status of Australian Fish Stocks Report for the fishery, published by the Fisheries Research and Development Corporation, has classified the east coast Spanish mackerel stock as 'depleted'.

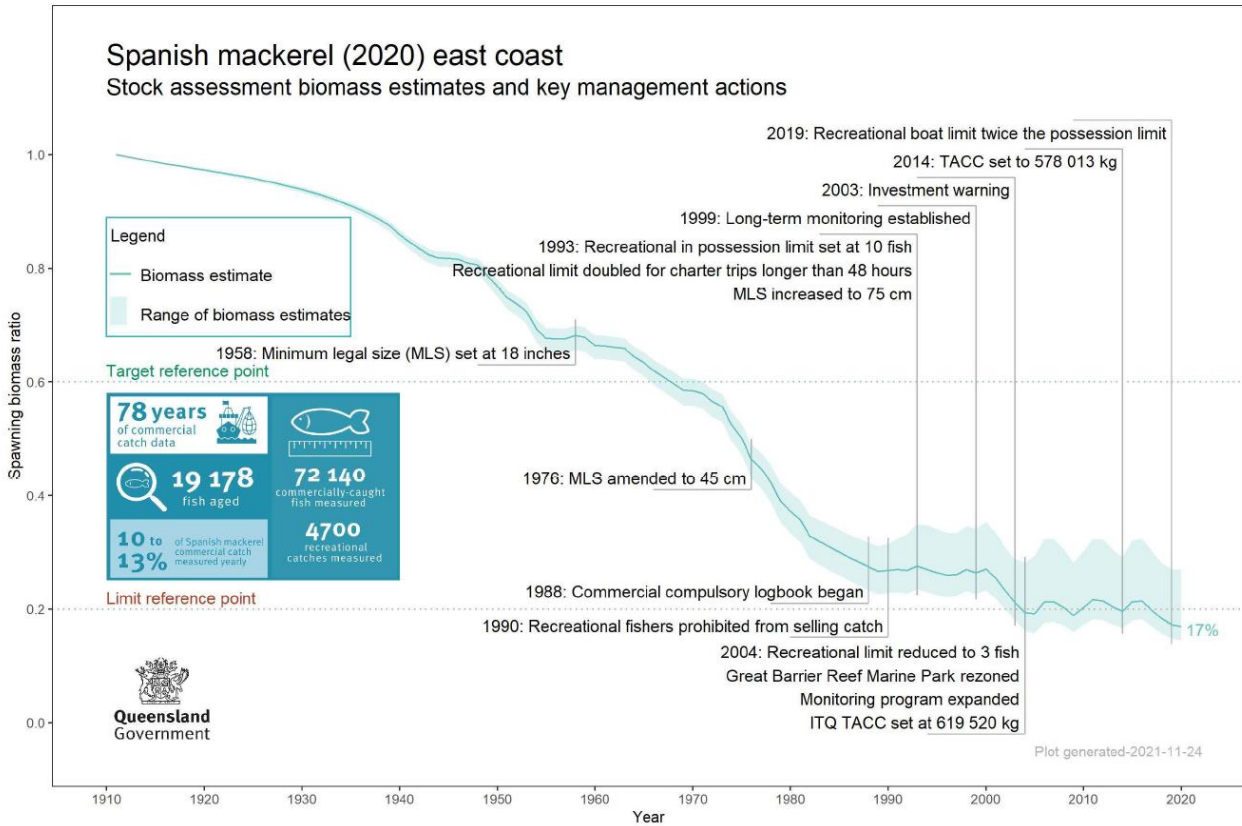


Figure 1: Chart of 2020 Australian east coast stock assessment biomass estimates and key management actions for Spanish mackerel

There are also longstanding concerns about the sustainability of the fishery, with evidence of a 70% reduction in the number of Spanish mackerel spawning aggregations within two decades, a decline in historically important spawning aggregations from waters east of Cairns, a reduction in the size and frequency of spawning aggregations in the Lucinda region and a long-term decline in commercial catch rates.

Consultation process

A Spanish mackerel fishery working group was established in early 2021 to provide advice on the management of the east coast Spanish mackerel fishery and includes representatives from commercial, recreational, charter and Indigenous fishing sectors, environmental groups and the Great Barrier Reef Marine Park Authority.

The working group held meetings in May 2021, February 2022 and March 2022 to discuss the status of the fishery, review the results of the latest stock assessment, consider management options, inform the development of a draft harvest strategy for broader consultation and relay concerns from the members' networks of fishers and other relevant stakeholders.

After this initial phase of consultation with the working group, a discussion paper and online survey were released based on the principles of the *Sustainable Fisheries Strategy 2017–2027*, rebuilding requirements under Commonwealth and Queensland guidelines and feedback from the working group and Sustainable Fisheries Expert Panel on rebuilding options, timeframes and reference points.

Survey questions were primarily presented in a multiple-choice format, with an opportunity at the end of the survey for respondents to freely suggest practical alternatives and viewpoints. Whilst all feedback is welcome, the options presented in the multiple-choice questions reflected the need to rebuild the east coast Spanish mackerel stock to sustainable levels and develop a harvest strategy for the fishery to achieve social, economic and ecological objectives in the long-term.

This first round of public consultation took place over a four-week period from 6 April to 5 May 2022, and consisted of:

- The discussion paper and structured online survey
- Email and eNewsletter notification to key stakeholder groups, working group members, the Sustainable Fisheries Expert Panel, charter fishing operators and commercial fishers with a Spanish mackerel (SM) endorsement
- Notification to broader stakeholders through social media (Facebook, Twitter, etc.) and Fisheries Queensland website
- Telephone 'call back' from a fishery manager
- Face-to-face meetings in regional locations across Queensland organised with commercial and charter fishers who rely on the fishery for their income as well as other industry members at their request – no charter fishers responded to meeting requests



Information on the Expert Panel (including membership, terms of reference and meeting communiques) is available at www.daf.qld.gov.au/business-priorities/fisheries/sustainable/sustainable-fisheries-expert-panel.

Information on the Spanish mackerel fishery working group is also available at www.daf.qld.gov.au/business-priorities/fisheries/sustainable/fishery-working-groups/spanish-mackerel-fishery-working-group.

Consultation results and analysis

Respondents

In total, 1486 submissions were received, of which 1437 were responses to the online survey and 49 were written submissions. The majority of respondents were recreational fishers, with submissions also received from commercial fishers, charter fishing operators, interested community members, seafood wholesalers and marketers, the hospitality sector, Traditional Owners and fishers, fishing tackle retailers and environmental, industry peak body and other non-government organisations (see Table 1 and Figure 2). Many respondents had multiple interests in the fishery and have identified themselves as aligning with more than one stakeholder group.

Table 1: Breakdown of survey respondents

Stakeholder group	Number of respondents	Percentage of respondents
Commercial fisher	105	7%
Recreational fisher	1328	89%
Charter fishing operator	65	4%
Traditional fisher / Traditional Owner	18	1%
Seafood wholesaler/marketer	11	<1%
Hospitality (restaurant, café, fish and chip) owner/worker	15	1%
Fishing tackle retailer	24	2%
Environmental, industry peak body or other non-government organisation	27	2%
Interested community member	117	8%
Other	49	3%

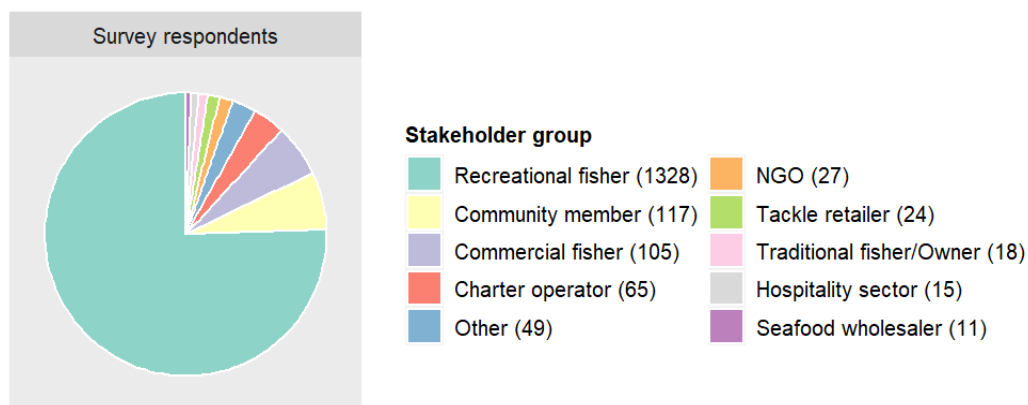


Figure 2: Breakdown of survey respondents by stakeholder group

Rebuilding timeframes

The majority of survey respondents supported the shortest rebuilding timeframe of 7 years, with lower levels of support for 14 years, 9 years and 11 years (see Figure 3). However, there were stronger levels of support for a longer rebuilding timeframe of 14 years from seafood wholesalers and the hospitality sector.

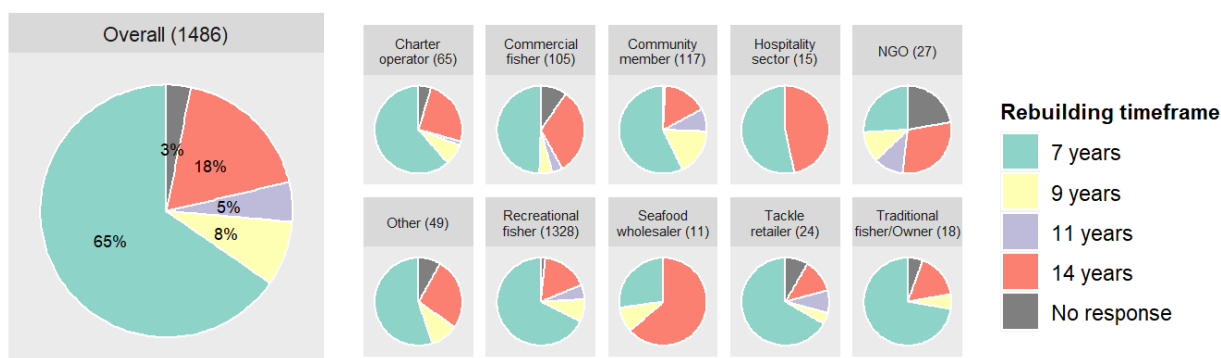


Figure 3: Responses to question 5 – ‘Which rebuilding timeframes should be considered?’

While 65% of respondents preferred the shortest rebuilding timeframe of 7 years, to achieve this there would need to be a 100% reduction in harvest, meaning a total closure of the fishery for 7 years.

However, the responses to other survey questions regarding commercial and recreational catch limits, minimum legal size and seasonal closures indicates that stakeholders would largely prefer a combination of management measures that would achieve a 25–40% reduction in harvest and a rebuilding time of 13–16 years.

Many survey respondents reasoned through written submissions and survey comments (survey question 16) that their preference for a rebuilding timeframe of 7 years was to allow restrictions to be lifted as early as possible, but few appeared to recognise that this would require a greater reduction in harvest and, subsequently, heavier fishing restrictions.

Overall, these findings suggest that most stakeholders would generally prefer a shorter rebuilding timeframe that would allow restrictions to be lifted earlier, but not at the cost of implementing heavier fishing restrictions associated with rebuilding timeframes of less than 13 years.

Total allowable commercial catch

More than one-third of survey respondents supported a total allowable commercial catch of 57 tonnes, with lower levels of support for 107 tonnes, 160 tonnes and 214 tonnes (see Figure 4). The sectors most affected by changes to the total allowable commercial catch – including the commercial fishing and seafood wholesale sectors – showed far greater support for a limit of 214 tonnes.

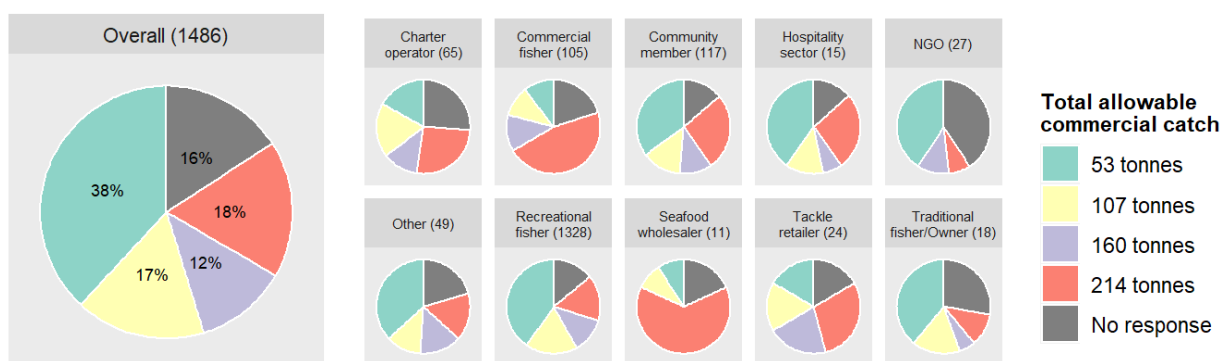


Figure 4: Responses to question 6 – What should the total allowable commercial catch be set at?

While the results indicate that most stakeholders would prefer a total allowable commercial catch of 53 tonnes, this result appears to be largely influenced by a significantly higher proportion of recreational fishers participating in the survey (89% of all respondents).

In contrast, the stakeholder groups that would be most affected by these changes, including commercial fishers (6%) and seafood wholesalers (<1%), were more supportive of setting the total allowable commercial catch at 214 tonnes.

Stakeholders that preferred a lower total allowable commercial catch suggested that:

- commercial fishing pressure, which often targets spawning aggregations, needs to be reduced
- a reallocation of the resource to recreational fishers would have its benefits
- a reduced limit would provide greater protection to the stock and lead to faster recovery.

Stakeholders that were favourable of a higher total allowable commercial catch reasoned that large quota reductions would:

- likely not be necessary with other restrictions in place, including seasonal closures and existing marine park zoning
- reduce individual quota holdings by more than 80%, which would not be commercially viable for most fishing businesses without some form of compensation for lost income
- affect market supply of locally caught Spanish mackerel, which may be permanently replaced with lower quality and less sustainable seafood imported from overseas
- lead to a consolidation of quota units and difficulties in fishers being able to access quota
- devalue any investments made by commercial fishers in fishing licences, vessels and gear
- increase the risk of effort shift into lower capacity or other unsustainable fisheries
- increase the cost to seafood consumers
- disproportionately affect those commercial fishers that rely on the fishery for most of their income
- have significant impacts on the harvest and post-harvest sectors and the broader community.

When considered alongside survey responses on other management measures (such as recreational in-possession and boat limits), the preferred total allowable commercial catch would not maintain the historic commercial versus recreational catch share in the fishery, which has remained at approximately 60% commercial and 40% recreational (including charter) since 2004. Under the *Sustainable Fisheries Strategy: 2017-2027* and *Fisheries Reallocation Policy 2018*, management measures should aim to maintain average historic catch shares. Significantly varying from this catch share would likely require a reallocation of fisheries resources under the *Fisheries Act 1994* from one fishing sector to another.

Survey responses that maintained the historic catch share of 60% commercial and 40% recreational were equally supportive of a total allowable commercial catch of either 160 tonnes or 214 tonnes. Overall, these findings indicate that a total allowable commercial catch between 160 and 214 tonnes is the most equitable option that stakeholders supported.

Recreational in-possession and boat limits

More than one-third of survey respondents supported a recreational in-possession limit and boat limit of 2 per person and 4 per boat, with lower levels of support for 1 per person and 2 per boat, 1 per person and 3 per boat, 1 per person and 6 per boat and 2 per person and 2 per boat (see Figure 5). These responses were generally reflective of those sectors most affected by changes to recreational limits, including recreational fishers and tackle retailers. However, the charter fishing sector showed a relatively even mix of support for all options except 2 per person and 2 per boat.

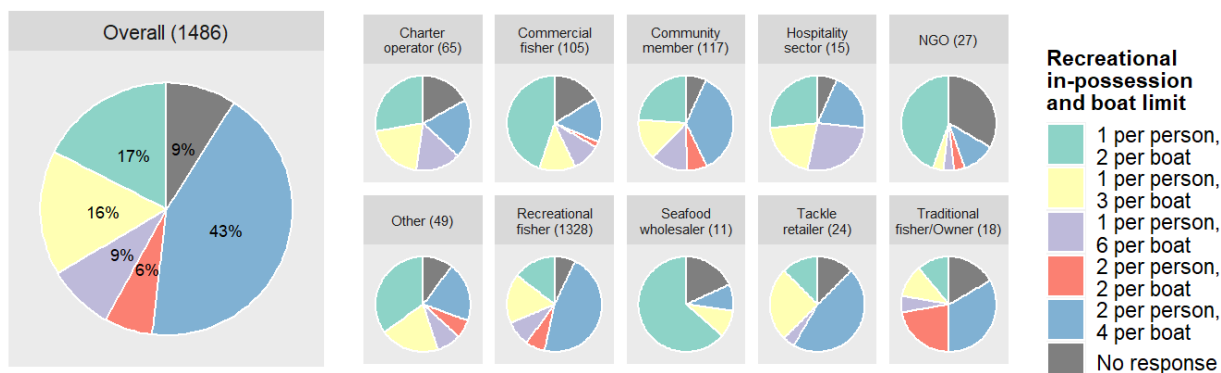


Figure 5: Responses to question 7 – What should the recreational in-possession and boat limits be set at?

Stakeholders provided several reasons for why a lower in-possession and boat limit would not be preferred, including:

- low motivation to fish with an in-possession limit of 1 per person, particularly given the increasing costs of fuel, registration, bait, fishing gear and other expenses
- impacts on charter fishing operators that target Spanish mackerel, tackle retailers and other businesses associated with recreational fishing
- reduced limits leading to high-grading, where fishers continue to fish after reaching their individual limits by discarding fish of lower quality as higher quality fish are captured
- high-grading combined with poor post-release survival of Spanish mackerel (including shark depredation) may mean that lower in-possession limits are not effective at reducing fishing pressure
- significantly reduced limits may lead to poor compliance and, subsequently, less accurate data on recreational fishing
- higher limits provide more flexibility for retaining fish that have been damaged and won't release well
- a limit of 5 per person is currently enforced in New South Wales.

While these concerns are acknowledged, in-possession and boat limits are the most direct and effective tool for managing recreational harvest in this fishery and will likely need to be a key part of any management action to rebuild the east coast Spanish mackerel stock. To reduce recreational harvest and rebuild the stock, in-possession and boat limits higher than 1 per person and 2 per boat would likely have to be offset by an increased minimum size limit and/or lengthier seasonal closures.

Stakeholders that were favourable of lower recreational limits reasoned that:

- a single fish provides a significant amount of food given the average size of Spanish mackerel and the high percentage of meat that can be recovered from each fish
- a reduced limit would still allow for a good recreational fishing experience
- other fish species can be targeted (e.g. the combined in-possession limit of 20 reef fish)
- lower limits would help to mitigate against effort creep, where fishing pressure from the recreational sector may continue to increase with a growing population and improvements to fishing technology
- reduced limits would provide greater protection to the stock and lead to faster recovery.

Some stakeholders also raised concerns about the lack of controls on the charter fishing sector, particularly with regards to the lack of boat limit and provision for recreational fishers on extended charter trips to take twice the in-possession limit of Spanish mackerel.

Overall, these findings suggest that reducing the recreational in-possession limit (including the increased limits for extended charter trips) and boat limit may be used in combination with other management measures to rebuild the east Spanish mackerel stock, but any reductions should be kept to a minimum wherever possible due to concerns of business and social impacts, poor post-release survival, poor compliance and contrast with fishing rules in New South Wales.

Minimum size limit

The majority of survey respondents supported maintaining the current minimum size limit of 75 cm. However, nearly one-third of respondents supported an increase to 85 cm, with some level of support of an increase to 90 cm as well (see Figure 6). Most sectors were supportive of maintaining the current limit, although almost half of the respondents from the hospitality sector supported an increase to 85 cm.

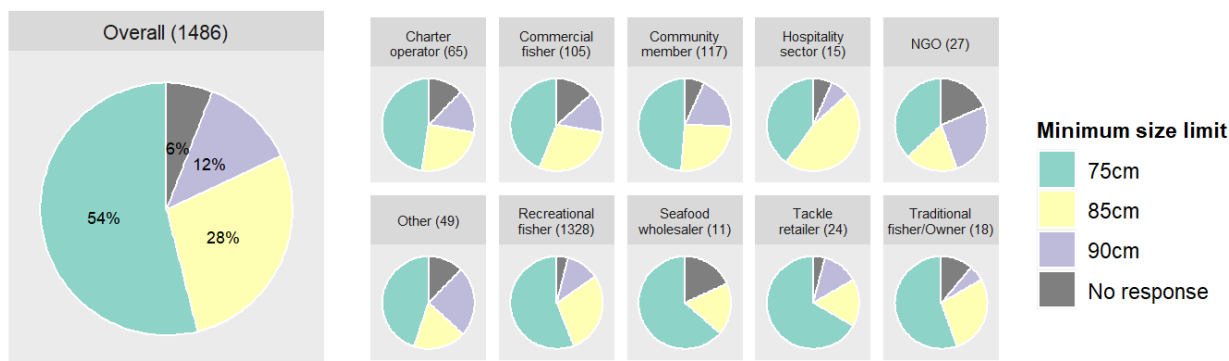


Figure 6: Responses to question 8 – What should the minimum size limit for Spanish mackerel be set at?

Stakeholders provided a number of reasons why the minimum size limit should not be increased, including:

- larger fish are less likely to survive being released and are more dangerous for fishers to handle
- poor post-release survival of Spanish mackerel (including shark depredation) may mean that an increased minimum size limit may not be effective at reducing fishing pressure
- most Spanish mackerel are caught over the size of 90 cm, meaning that increasing the minimum size limit to 85 cm or 90 cm may not be effective.

Stakeholders that were in favour of an increased minimum size limit reasoned that it would:

- provide greater protection for juvenile fish and improve the chances of fish spawning at least once
- allow fish to grow to sizes that would be more valuable to commercial and recreational fishers.

Overall, these findings suggest that increasing the minimum legal size may be used in combination with other management measures to rebuild the east Spanish mackerel stock, but other management measures such as reduced catch limits would generally be preferable given concerns around poor survival of released fish and the dangers associated with releasing large active fish.

Seasonal closures

The results indicate that most stakeholders do not support seasonal closures, with a general preference to limit harvest through other measures where possible. Similarly, stakeholders largely preferred the shortest closure periods. Stakeholders' reasons for preferring limited or no seasonal closures included:

- other management measures, including a reduced recreational in-possession limit and total allowable commercial catch, would be preferable as they would allow continuous fishing throughout the year
- the ability to target Spanish mackerel is largely dependent on weather and fishers may not be able to access the fishery for extended periods if weather is poor outside the closure in some years
- impacts on commercial and charter fishing and post-harvest businesses that rely on seasonal catches
- poor post-release survival of Spanish mackerel (including shark depredation) could mean that closures may not be effective at reducing fishing pressure.

Stakeholders that were in favour of seasonal closures reasoned that their implementation would:

- be necessary to protect spawning aggregations when fish are vulnerable to fishing pressure, leading to faster stock recovery
- reduce fishing pressure at other times of the year when fish are migrating up and down the coast
- align with the management of other species such as barramundi and coral reef fish.

Support for, and timing of, a whole east coast seasonal closure

With the exception of non-government organisations and seafood wholesalers, the majority of survey respondents did not support the introduction of a seasonal closure for the whole east coast (see Figure 7). Similarly, the majority of respondents selected the shortest closure option of 4 weeks, with lower levels of support for 8 weeks, 12 weeks and 16 weeks (see Figure 8). Responses from non-government organisations indicated a greater level of support for longer closure periods of 12 or 16 weeks.

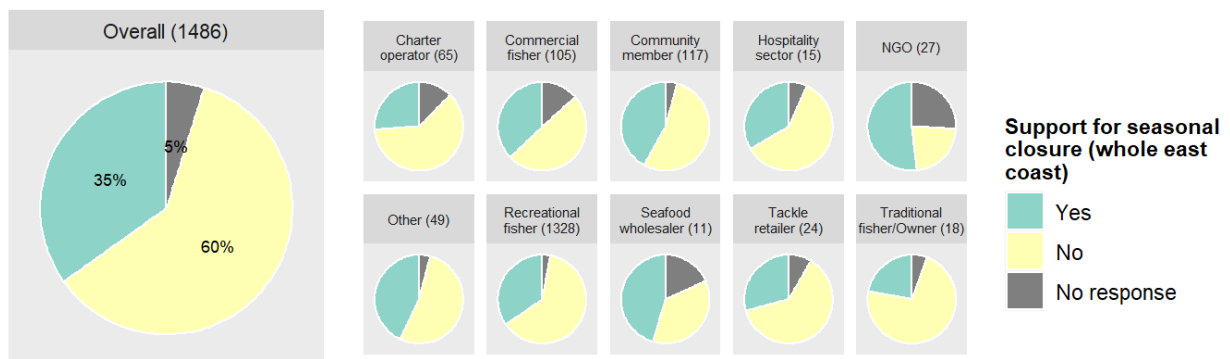


Figure 7: Responses to question 9 – Do you support a whole east coast seasonal closure?

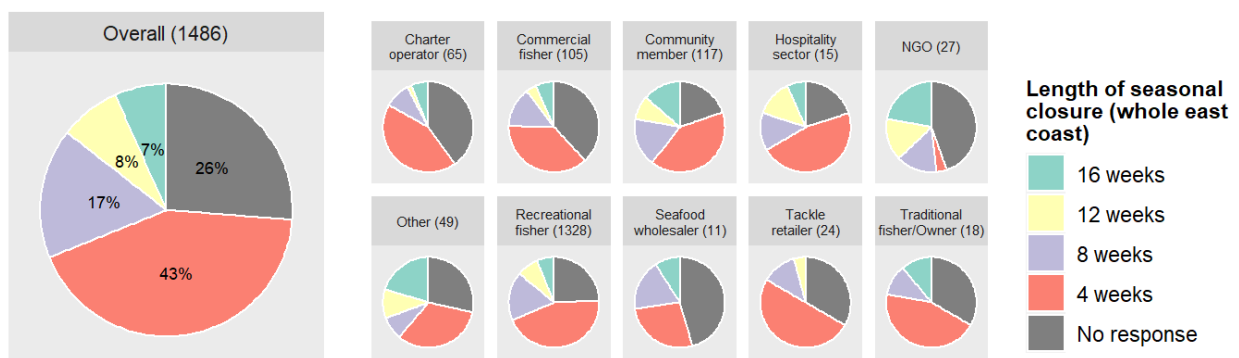


Figure 8: Responses to question 10 – How long should a whole east coast seasonal closure be?

Support for, and timing of, a split north/south seasonal closure

Support for a split north/south seasonal closure was mixed, with varying levels of support between the sectors (see Figure 9). Overall, there was slightly more support for a split north/south seasonal closure compared to a whole east seasonal closure. Nearly one-third of respondents selected the shortest closure period of 2 weeks each north and south, with just under 20% of respondents supporting a closure of 4 weeks each north and south and 8 weeks each north and south (see Figure 10). There was little support for a closure of 6 weeks each north and south.

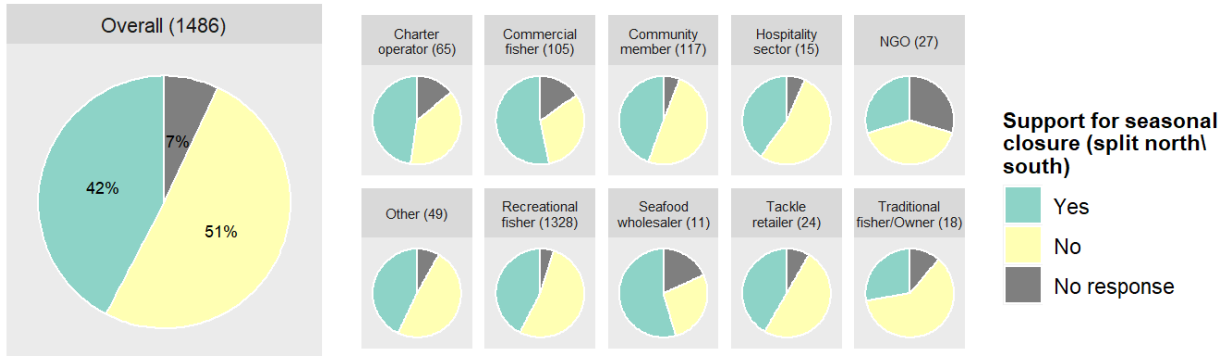


Figure 9: Responses to question 11 – Do you support a split north/south seasonal closure?

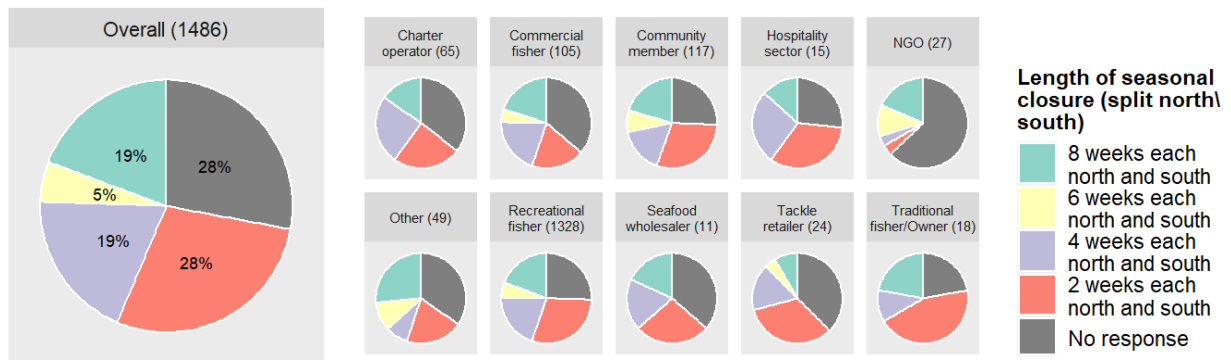


Figure 10: Responses to question 12 – How long should a split north/south seasonal closure be?

Different recreational and commercial seasonal closures

The majority of survey respondents across all sectors did not support different recreational and commercial closures (see Figure 11). This finding suggests that any potential seasonal closures that may be implemented should be consistent across all fishing sectors wherever possible.

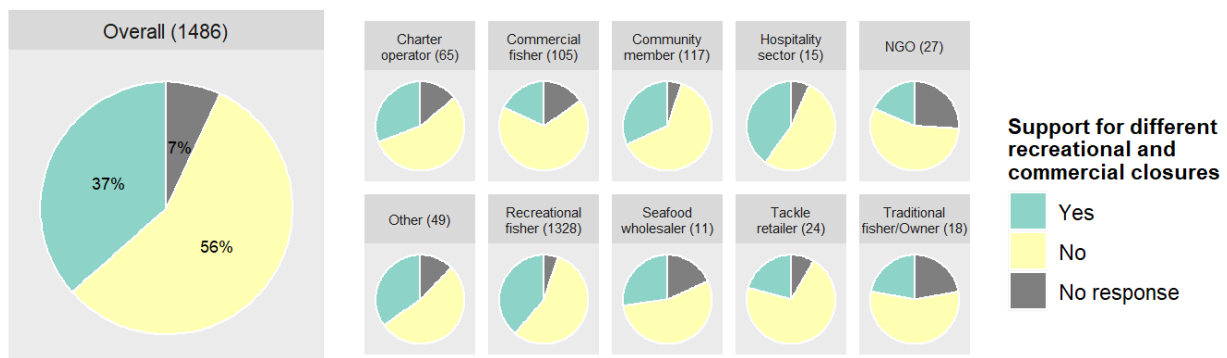


Figure 11: Responses to question 13 – Would you support different recreational and commercial seasonal closures?

Recreational closure and in-possession limit combinations

The majority of survey respondents across all sectors preferred the combination of lower recreational in-possession limits and shorter recreational seasonal closures to higher in-possession limits and longer closures (see Figure 12). This finding suggests that any proposed combination of management measures to rebuild the east coast Spanish mackerel stock should prioritise a reduction to the recreational in-possession limit over lengthier seasonal closures.

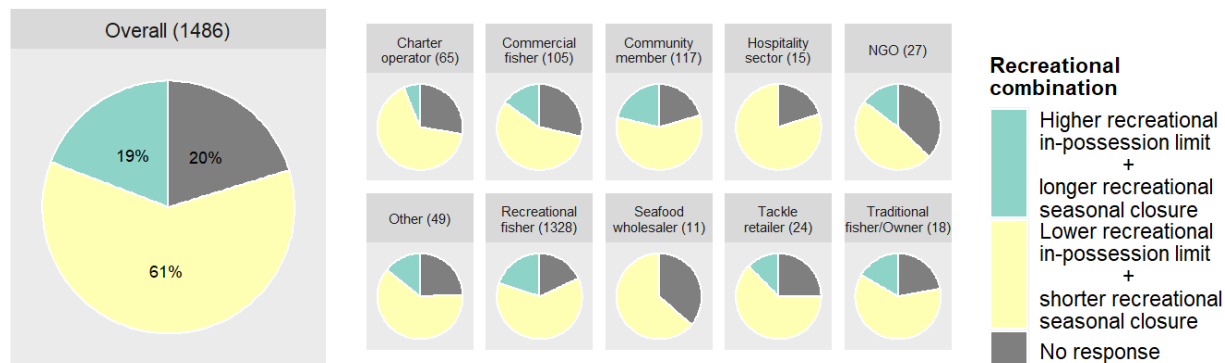


Figure 12: Responses to question 14 – Which recreational combination would you prefer?

While it is acknowledged that other measures might be preferable for most stakeholders, there is strong evidence that seasonal closures are an effective tool in reducing harvest, fishing pressure and protecting fish at vulnerable times in their life cycle – such as when fish are migrating in large numbers or in the lead up to, during or after spawning events.

Based on the seasonal movement patterns of Spanish mackerel along Queensland's east coast each year, closures that are applied separately in the northern and southern areas of the fishery would prove less restrictive than fishery-wide closures while offering a comparable level of protection. When considered alongside stakeholder feedback, this indicates that a split north/south closure would be the most appropriate form of seasonal closure for this fishery.

Some feedback indicated that stakeholders prefer closures that only apply to the specific areas where spawning aggregations occur (e.g. only on key spawning reefs in waters off Lucinda). However, the highly mobile nature of Spanish mackerel and their vulnerability to fishing across the east coast indicates that these finer scale area closures would be less effective than fishery-wide or regional closures. Further research would be required to assess the effectiveness of fine-scale area closures.

According to Spanish mackerel fishery working group feedback, analysis of commercial and recreational fishing data and research on seasonal movement patterns, a split north/south seasonal closure would be most effective for the east coast Spanish mackerel fishery if:

- the boundary between the northern and southern areas is at 22°S (slightly north of Stanage Bay, between Mackay and Yeppoon)
- the northern area is closed for a period during, and possibly leading up to, the spawning season between September and December
- the southern area is closed for a period after the spawning season between February and May.

These arrangements should:

- avoid logistical and compliance issues associated with setting boundaries near major ports, regional centres or fishing grounds
- protect Spanish mackerel that aggregate in northern tropical waters during October and November to spawn
- protect Spanish mackerel that aggregate in southern waters between December and April to extend their feeding range (southern closure during post-spawning, migratory period)
- ensure a shared responsibility between fishing sectors
- maximise the effectiveness of closures by targeting periods of peak harvest to contribute to reducing fishing pressure
- need to be combined with other management measures to effectively reduce harvest and allow rebuilding in an acceptable timeframe.

Stakeholders also recommended that the specific timing of closures be informed by species biology and set according to moon phases, aligning with existing coral reef fish closures in Queensland where possible. While a strong link between Spanish mackerel spawning activity and moon phase has yet to be documented, Spanish mackerel catch rates in the Torres Strait and in waters off Lucinda are higher after a new moon compared to after a full moon – although these effects were less pronounced in other parts of Queensland. This would indicate that the start of any northern closures should coincide with new moons during the spawning season, with the start of southern closures informed by other considerations such as fishing rules that are simpler to understand and easier to enforce (e.g. closures that start on a fixed calendar date).

Overall, these findings suggest that seasonal closures may be used as part of a combination of management measures to rebuild the east Spanish mackerel stock, but other management measures such as reduced catch limits would generally be preferable given concerns around poor survival of released fish, impacts on businesses that rely on seasonal catches and removing the ability for fishers to maintain a constant market supply or adapt to poor weather conditions. Additionally, the timing and location of any potential closures should be informed by stakeholder feedback and in consideration of fishing behaviour, seasonal movement patterns, species biology and existing reef line closures.

Recreational catch reporting

The majority of survey respondents across all sectors supported better recreational reporting (see Figure 13).

These findings suggest that options to improve recreational catch reporting should accompany any proposed management action to rebuild the east coast Spanish mackerel stock.

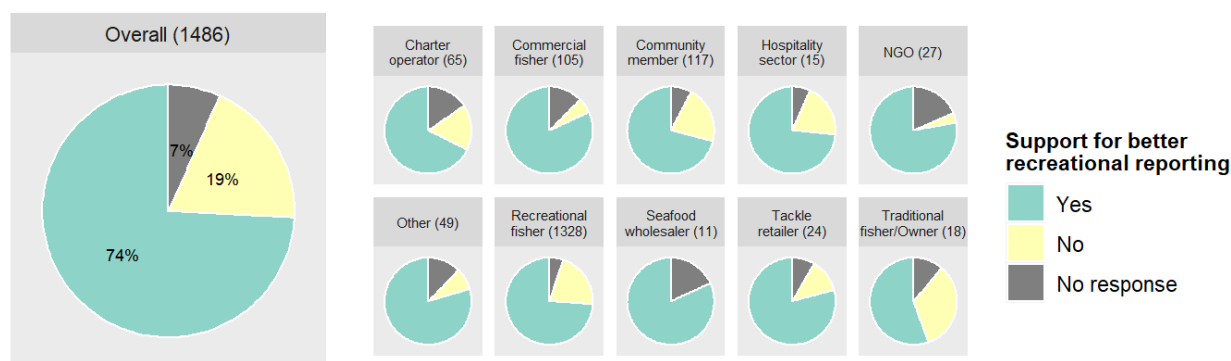


Figure 13: Responses to question 15 – Would you support better recreational catch reporting?

Other issues, opportunities or solutions

Respondents raised a number of other issues through written submissions and survey comments, which are summarised in Table 2.

Table 2: Summary of feedback raised in written submissions and responses to question 16 – Are there any other issues, opportunities or solutions that you would like to raise?

Issue	Feedback from stakeholders
Shark depredation	<p>Shark depredation is a major issue affecting all fishing sectors, which may be directly responsible for a decline in catch rates and/or stock biomass.</p> <p>This issue is a key priority for further research, with calls for action including:</p> <ul style="list-style-type: none"> • measures to manage shark populations • review of recreational and commercial fishing rules for taking sharks in Queensland • development of a market for shark catch, including promotion of flake for consumption • research into extent and underlying causes of shark depredation • trialling and funding of potential shark deterrents.

Issue	Feedback from stakeholders
Recreational catch data	<p>The accuracy of recreational catch data is critical in assessing the health of fish stocks and managing the recreational sector effectively.</p> <p>This issue is a key priority for further action, with suggestions including:</p> <ul style="list-style-type: none"> • greater coverage for current monitoring programs (e.g. boat ramp surveys at all times of day) • better utilisation of existing apps and citizen science programs • introduction of mandatory reporting for recreationally caught Spanish mackerel, preferably using existing systems, including paper logbooks, Queensland's recreational fishing app (Qld Fishing 2.0) or Queensland's commercial fishing app (Qld eFisher) • introduction of a recreational fishing licence with mandatory catch reporting requirements and a licence fee to fund further research and monitoring and other fisheries-related programs • introduction of a harvest tag system with a set limit of tags issued for Spanish mackerel.
Additional research and monitoring	<p>Many stakeholders hold concerns about the accuracy of the latest stock assessment results, data inputs (including recreational harvest estimates and commercial fishing effort data) and assumptions regarding stock resilience, effectiveness of marine park zoning, environmental effects and shark depredation.</p> <p>Further research and monitoring should be conducted before, or to support, any management change. Suggested areas for further research and monitoring include:</p> <ul style="list-style-type: none"> • environmental triggers affecting recruitment and spawning behaviour • timing and location of spawning aggregations • movement patterns and migratory behaviour • effectiveness of area/rotational closures • alternative measures of abundance • identification of important nursery habitats • shark depredation, including possible deterrents • an additional and independently funded stock assessment and/or scientific review • addressing uncertainties in the stock assessment • socio-economic impacts (possibly as part of a Regulatory Impact Statement).
Compliance and enforcement	<p>Additional resourcing needs to be allocated to compliance and enforcement activities to ensure management measures are effective and combat black-marketing, illegal fishing and non-compliance with existing regulations.</p> <p>Suggested areas for improved compliance and enforcement include:</p> <ul style="list-style-type: none"> • on-water compliance with marine park zoning, in-possession and boat limits, minimum size limits and commercial fishing rules • bycatch retained in commercial netting operations • detection of illegal foreign fishing vessels • heavier penalties for black-marketing • greater presence at boat ramps and on the water.
Non-regulatory approaches	<p>Non-regulatory options should be considered alongside any regulatory changes, including:</p> <ul style="list-style-type: none"> • educational programs to encourage fishing practices that improve the survival of released fish, reduce the risk of shark depredation, moves fishing pressure to more sustainable fish species, allows better recovery of meat from the fish, etc. • installation of artificial reefs and habitats • marine stocking • improvement of nursery habitats • promotion of alternative fish species • address external factors such as pollution and loss of habitat • investment in aquaculture to relieve fishing pressure.
Compensation, buyouts and other financial support	<p>Options should be considered for reducing any adverse impacts of management change, including:</p> <ul style="list-style-type: none"> • compensation for affected parties in the harvest and post-harvest sectors • government-funded buyouts of commercial fishing licences and/or individual transferable quotas • reduction of licensing fees. <p>Consideration should be given to businesses that rely on the fishery for the vast majority of their income.</p>

Issue	Feedback from stakeholders
Other fishing rules	<p data-bbox="395 226 783 253">Other considerations should include:</p> <ul data-bbox="403 264 1401 667" style="list-style-type: none"> <li data-bbox="403 264 1401 320">• reducing commercial netting in areas where Spanish mackerel, particularly juveniles, are incidentally caught <li data-bbox="403 324 1217 351">• addressing any flow-on issues of commercial quota liquidity and access <li data-bbox="403 356 1297 383">• management action that would reduce noise disturbance on spawning grounds <li data-bbox="403 387 1238 414">• further restrictions on fishing gear (no spearfishing or use of treble hooks) <li data-bbox="403 418 1054 445">• permanent or rotating closures in key spawning grounds <li data-bbox="403 450 1289 477">• implementing a staged approach over multiple years to allow industry to adapt <li data-bbox="403 481 1129 508">• restricting recreational fishing while on a commercial fishing trip <li data-bbox="403 512 1054 539">• commensurate management action in New South Wales <li data-bbox="403 544 874 571">• additional restrictions on charter fishing <li data-bbox="403 575 1169 602">• effort shift into, or importing product from, less sustainable fisheries <li data-bbox="403 607 1390 663">• implementation of some restrictions (e.g. capping harvest at current levels) with another stock assessment in 1–3 years before considering further restrictions.

Management scenarios

The critical status of the east coast Spanish mackerel stock, the complexity in managing a multi-sector resource and the fishery's high socio-economic value to Queensland communities means that management scenarios must be carefully considered to avoid any outcomes that stall or prevent stock recovery. The social and economic impacts associated with these scenarios must also be considered.

Scenarios that would not achieve the primary objective of rebuilding the stock to 40% of unfished biomass in 7–14 years have not been modelled. This includes taking no action, which would mean continuing to overfish the east coast Spanish mackerel stock. Failing to take action to rebuild this important fishery could lead to further declines and, in the worst-case scenario, a fishery collapse that may take decades to recover from and with long-lasting impacts on Queensland's communities and marine ecosystem.

This is not an acceptable option and, aside from failing to meet Commonwealth and Queensland policy requirements, would go against the fundamental principles of the *Queensland Sustainable Fisheries Strategy: 2017–2027*, the main objective of the *Fisheries Act 1994* and the Queensland's Government's responsibility to ensure our public fisheries resources are managed in a responsible and sustainable manner.

All fishing sectors have a shared responsibility in the management of this stock, meaning an equitable approach that reduces fishing pressure from all sectors is required for successful stock rebuilding. All management scenarios aim to maintain the historic catch share of 60% commercial and 40% recreational (including charter).

Management scenarios also generally aim to minimise impacts on fishing efficiency (prioritising output controls over input controls) and mitigate unintended effects such as increased post-release mortality or effort shift into low-capacity fisheries.

Management scenarios with a rebuilding timeframe of 7 years

Under this rebuilding timeframe, Spanish mackerel would become a no-take species in all east coast Queensland waters from 1 July 2023 until the stock has rebuilt to sustainable levels (40% of unfished biomass). This rebuilding timeframe would stop targeted fishing for Spanish mackerel and reduce the current Queensland harvest (for all sectors) of 478 tonnes to near zero in Queensland waters. This would mean that the vast majority of the stock is protected, providing those fish that would have otherwise been harvested a much greater chance of spawning and contributing to stock recruitment.

Table 3: Combination of management measures to achieve a rebuilding timeframe of 7 years

			Current arrangements	Scenario 1
Approximate time to rebuild to 40% biomass			Not possible to rebuild under these arrangements	7 years
Fishing sector	All sectors	Minimum legal size	75 cm	TOTAL CLOSURE FOR 7 YEARS
		Seasonal closures	—	
	Commercial	Total allowable commercial catch	578 tonnes	
	Recreational	In-possession limit	3 fish per person	
		Boat limit	6 fish per boat (2 or more people on board)	
	Charter	In-possession limit	3 fish per person OR 6 fish per person for extended trips	
Indigenous	Commercial fishing development	—		

The targeting, take and/or possession of Spanish mackerel (including targeted catch and release fishing) would be prohibited. Spanish mackerel incidentally hooked while fishing for other species would have to be handled carefully and returned to the water as soon as possible.

This scenario would rebuild the stock in the least amount of time possible by placing a lower priority on social and economic values to focus exclusively on maximising ecological benefits and protecting the stock. This provides the highest chance of successful recovery and the fastest rebuilding times, but also involves the most significant social and economic impacts on stakeholders.

In 2018–19, the fishery’s commercial sector contributed 66 full-time equivalent jobs and \$6.7 million (including flow-on effects) to the economy, while recreational fishers spent approximately \$6.8 million on Spanish mackerel fishing trips. The total value of commercially landed catch was estimated to be \$3.4 million, with around 90% sold in Queensland and the remainder sold interstate.

Many commercial and charter fishing businesses would be directly affected, including the small fleet (20–25 boats) of dedicated commercial Spanish mackerel fishers that rely on the fishery for more than 80% of their income. Impacts on individuals in the wider community (including seafood wholesalers, hospitality owners/workers and tackle retailers) may also be significant. Additionally, many of these businesses and services may not be able to re-establish after the fishery has reopened, permanently affecting Queensland’s coastal communities.

A total closure would also present challenges for ongoing assessment of the status of the stock, since fishery-dependent data (e.g. catch, effort, biological samples) would not be available from commercial and recreational fishers until the fishery reopened. There are no fishery-independent data options immediately available that could be a reliable or scientifically valid substitute for the existing fishery-dependent data.

This scenario is not the preferred approach for rebuilding the east coast Spanish mackerel stock. However, if stocks continue to decline, a total fishery closure may need to be considered in the future.

EXPECTED BENEFITS	POTENTIAL IMPACTS (and other considerations)
<ul style="list-style-type: none"> • Maximum protection for the stock with the greatest chance of successful recovery • Fastest rebuilding times (estimated 7 years), allowing restrictions to be lifted after a shorter period • Simpler to communicate and comply with • No risk of further restrictions • Easier to identify and manage black-marketing and non-compliance due to no-take status 	<ul style="list-style-type: none"> • Significant socio-economic impacts with flow-on effects for all stakeholders, including commercial and recreational fishers, charter operators, tackle store owners, seafood processors, tourism operators, etc. • No fishery-dependent data, meaning fishery-independent surveys will have to be paid for and carried out to monitor recovery • Lack of supply affecting future market access • Removes the supply of locally caught Spanish mackerel to Queenslanders on the east coast • Devaluation of commercial fishing endorsements and equipment • Increased risk of effort shift into other fisheries • Action will still need to be taken to reduce excess fishing capacity (unused quota entitlements) • Increased risk of black-marketing and non-compliance

Management scenarios with a rebuilding timeframe of 10–11 years

These scenarios would rebuild the stock within acceptable timeframes (7–14 years) with some level of fishing mortality allowed from all sectors, providing a balance between socio-economic and ecological values while still meeting rebuilding requirements.

These measures are predicted to bring the current harvest of 478 tonnes across all fishing sectors in Queensland below 230 tonnes. This would protect a much greater proportion of the stock, so fish that would have otherwise been harvested have a significantly higher chance of spawning and contributing to stock recruitment.

Rebuilding projections indicate that a 50–60% reduction in harvest across all sectors is required to rebuild the stock to 40% of unfished biomass within approximately 10–11 years of first management action, subject to year-to-year recruitment success, environmental influences and other factors. This could be achieved through one of the following combinations of management measures.

Table 4: Combination of management measures to achieve a rebuilding timeframe of 10–11 years

			Current arrangements	Scenario 2
Approximate time to rebuild to 40% biomass			Not possible to rebuild under these arrangements	10–11 years
Fishing sector	All sectors	Minimum legal size	75 cm	75 cm
		Northern seasonal closure (north of 22°S)	–	12 weeks (Sep – Nov)
		Southern seasonal closure (south of 22°S)	–	12 weeks (Feb – Apr)
	Commercial	Total allowable commercial catch	578 tonnes	132 tonnes
	Recreational	In-possession limit	3 fish per person	1 fish per person
		Boat limit	6 fish per boat (2 or more people on board)	2 fish per boat
	Charter	In-possession limit	3 fish per person OR 6 fish per person for extended trips	1 fish per person
	Indigenous	Commercial fishing development	–	Up to 2 tonnes

Although this scenario would involve slightly longer rebuilding times and a slightly higher risk of further stock decline compared to a total fishery closure, it has the major advantage of ongoing collection of valuable fisheries-dependent data to monitor stock recovery and assess the effectiveness of any management action.

While there would be lower social and economic costs than a total closure, the impacts of a 50–60% reduction in harvest across all sectors would still be severe. Stakeholder feedback indicates that the fishing restrictions necessary to achieve this level of harvest reduction would mean most businesses relying solely or predominately on the harvest of east coast Spanish mackerel would no longer be profitable or commercially viable. Diversified fishing business (that is those that rely on the harvest across multiple fisheries) may not be a significantly impacted.

This scenario appears to be the least preferred by stakeholders. No more than 5% of survey respondents supported a rebuilding timeframe of 11 years and very few stakeholders proposed a combination of management measures that would rebuild the stock in less than 13 years.

EXPECTED BENEFITS

- Allows restricted fishing to occur, maintaining a local supply and market for Spanish mackerel and supporting a limited number of commercial/tourism operations
- Fishery-dependent data will still be collected, meaning fishery-independent surveys won't be required to monitor the stock
- Lower socio-economic impacts than a total closure in the short term
- Spanish mackerel will achieve a higher beach price
- Removes excess fishing capacity from the fishery (unused quota entitlements)
- Tradeable quota and fishing endorsements allows for industry-led adjustment
- Still provides protection for spawning aggregations and other types of aggregations (e.g. migrating, feeding) when the fish are most vulnerable
- Can utilise or build on existing management tools (total allowable commercial catch, individual transferable quota, in-possession limits, coral reef fin fish closures, size limits)

POTENTIAL IMPACTS (and other considerations)

- Heavier restrictions compared to a 35–40% harvest reduction, generally meaning a lower total allowable commercial catch and longer seasonal closures
- Significant socio-economic impacts with flow-on effects for all stakeholders, including commercial and recreational fishers, charter operators, tackle store owners, seafood processors, tourism operators, etc.
- Lack of supply affecting future market access
- Increased discard mortality due to high-grading
- Consolidation and limited access of quota (including increased lease prices)
- Devaluation of commercial fishing endorsements and equipment
- More complex fishing rules that are more difficult to communicate and enforce effectively
- Increased risk of effort shift into other fisheries
- Increased cost to seafood consumers
- Slightly slower rebuilding times, meaning restrictions will be in place longer
- Slightly lower level of protection for the stock with a greater risk of further decline
- Increased risk of black-marketing and non-compliance
- Disproportionate effects on some commercial fishers, particularly those that rely on the fishery for the majority of their household income

Management scenarios with a rebuilding timeframe of 13–14 years

These scenarios would rebuild the stock within acceptable timeframes (7–14 years) with some level of fishing mortality allowed from all sectors, providing a greater emphasis on socio-economic values while still meeting rebuilding requirements.

These measures are predicted to bring the current harvest of 478 tonnes across all fishing sectors in Queensland below 300 tonnes. This would protect a greater proportion of the stock, so fish that would have otherwise been harvested have a higher chance of spawning and contributing to stock recruitment.

Rebuilding projections indicate that a 35–40% reduction in harvest across all sectors is required to rebuild the stock to 40% of unfished biomass within approximately 13–14 years, subject to year-to-year recruitment success, environmental influences and other factors. This could be achieved through one of the following combinations of management measures.

Table 5: Combination of management measures to achieve a rebuilding timeframe of 13–14 years

			Current arrangements	Scenario 3	Scenario 4	Scenario 5	
Approximate time to rebuild to 40% biomass			Not possible to rebuild under these arrangements	13–14 years			
Fishing sector	All sectors	Minimum legal size	75 cm	75 cm	75 cm	TOTAL CLOSURE FOR 2 YEARS then reopening at:	
		Northern seasonal closure (north of 22°S)	–	6 weeks (Oct – Nov)	12 weeks (Sep – Nov)		4 weeks (Oct – Nov)
		Southern seasonal closure (south of 22°S)	–	6 weeks (Feb – Mar)	12 weeks (Feb – Apr)		4 weeks (Feb – Mar)
	Commercial	Total allowable commercial catch	578 tonnes	165 tonnes	184 tonnes		230 tonnes
	Recreational	In-possession limit	3 fish per person	1 fish per person	2 fish per person		2 fish per person
		Boat limit	6 fish per boat (2 or more people on board)	2 fish per boat (2 or more people on board)	4 fish per boat (2 or more people on board)		4 fish per boat (2 or more people on board)
	Charter	In-possession limit	3 fish per person OR 6 fish per person for extended trips	1 fish per person	2 fish per person		2 fish per person
	Indigenous	Commercial fishing development	–	Up to 2 tonnes	Up to 2 tonnes		Up to 2 tonnes

Although these scenarios would involve longer rebuilding times and a higher risk of further stock decline compared to a total fishery closure or a 50–60% harvest reduction scenario, they have two major advantages:

- lower social and economic costs in the short term by maintaining a local supply and seafood/tourism market for Spanish mackerel to support Queensland businesses
- allows the collection of valuable fisheries-dependent data to monitor stock recovery and assess the effectiveness of any management action.

This is an acceptable trade-off given that fishing mortality is reduced to a level that minimises the risk of further decline and supports stock recovery within acceptable timeframes.

These scenarios mostly closely align with stakeholder feedback on management measures, which indicated a strong preference for measures that would reduce total harvest by 25–40% and equate to rebuilding timeframe of 13–16 years.

EXPECTED BENEFITS	POTENTIAL IMPACTS (and other considerations)
<ul style="list-style-type: none"> • Allows some fishing to occur, maintaining a local supply and market for Spanish mackerel and supporting some commercial/tourism operations • Fishery-dependent data will still be collected, meaning fishery-independent surveys won't be required to monitor the stock • Lower socio-economic impacts than a total closure or 50–60% harvest reduction in the short term • Spanish mackerel will achieve a higher beach price • Removes excess fishing capacity from the fishery (unused quota entitlements) • Tradeable quota and fishing endorsements allows for industry-led adjustment • Still provides protection for spawning aggregations and other types of aggregations (e.g. migrating, feeding) when the fish are most vulnerable • Can utilise or build on existing management tools (total allowable commercial catch, individual transferable quota, in-possession limits, coral reef fin fish closures, size limits) • Smoother transition once rebuilding has been achieved 	<ul style="list-style-type: none"> • Significant socio-economic impacts with flow-on effects for all stakeholders, including commercial and recreational fishers, charter operators, tackle store owners, seafood processors, tourism operators, etc. • Lack of supply affecting future market access • Increased discard mortality due to high-grading • Consolidation and limited access of quota (including increased lease prices) • Devaluation of commercial fishing endorsements and equipment • More complex fishing rules that are more difficult to communicate and enforce effectively • Increased risk of effort shift into other fisheries • Increased cost to seafood consumers • Slower rebuilding times, meaning restrictions will be in place longer • Lower level of protection for the stock with a greater risk of further decline • Increased risk of black-marketing and non-compliance • Disproportionate effects on some commercial fishers, particularly those that rely on the fishery for the majority of their household income

Next steps

Feedback from this consultation will be considered in the development of management options that will rebuild the east coast Spanish mackerel stock to sustainable levels. This feedback will also be used to develop a draft harvest strategy, which will underpin future decision-making for this fishery and ensure that ecological, economic and social objectives are achieved in the long-term.

Further consultation will be undertaken to inform a final decision by the Queensland Government later in 2022 on management action and a harvest strategy to rebuild this important fishery.