

Stakeholder comment

The Department of Agriculture, Fisheries and Forestry (DAFF) developed a discussion paper for a public consultation process to assist interested parties in making a submission to the review. The discussion paper identified a broad range of potential issues in the policy and/or guidelines and their implementation that might require refinement, elaboration or further development. DAFF sought input from interested parties on issues relevant to the review's terms of reference, which broadly cover the policy, guidelines and their implementation. All submissions received, and a summary of their content can be found at daff.gov.au/fisheries/domestic/harvest_strategy_policy/review.

Interested parties were invited to comment on:

- any issues raised in the discussion paper that should be a priority for the review
- any of the issues raised in the discussion paper that could benefit from additional context or a differing explanation/viewpoint to that provided in the paper
- any additional issues not raised in the discussion paper that should be considered under the review
- any areas where the policy, guidelines and/or their implementation have worked well that should be recognised by the review.

They were also invited to include the following information about each issue raised:

- why the issue is important and its relative priority
- how it has affected Commonwealth fisheries management
- any suggested measures to address the issues
- an explanation of why these measures would be successful
- examples of where this approach has been successfully applied in comparable situations.

The following outlines the key responses from the public consultation process to the issues raised in Chapters 4–12 of the review report.

The scope of the policy

Stakeholders were invited to comment on the policy and its scope including whether the policy should explicitly cover all commercial species (that is, key commercial and byproduct stocks); how best to achieve this in a manner consistent with legislative requirements; as well as risk-based approaches to differing levels of information quality, quantity and costs.

There was broad agreement that the harvest strategy policy and guidelines has been a successful and useful development in Commonwealth fisheries management.

The HSP [harvest strategy policy] has provided a sound platform for major improvements in the sustainability of Commonwealth Fisheries. *Commonwealth Fisheries Association*

The HSP [harvest strategy policy] ... was a major step forward in management of Commonwealth fisheries. *WWF-Australia, TRAFFIC, the Australian Marine Conservation Society and Humane Society International*

The current policy settings are conservative by world standards. *CSIRO*

However, all submissions identified some areas for improvement or further refinement. A number of stakeholders commented on the consistency of language used both in the policy and in the way the policy and stocks managed under it were reported.

The Department of Primary Industry and Fisheries Northern Territory recommended that the language in the harvest strategy policy be 'simple to read and easy to understand for stakeholders and fisheries managers alike'. Similarly, CSIRO supported any move to improve clarity and noted that 'revisions to the policy and guidelines should ensure that terms are well-defined and consistently used'.

The Commonwealth Fisheries Association and the Australian Southern Bluefin Tuna Industry Association were concerned that the different definitions of 'overfished' and 'overfishing' could cause confusion, highlighting that the Fisheries Research Development Corporation Status of Key Australian Fish Stocks Reports use a different system of stock status categorisation from those reported in the ABARES Commonwealth Fishery Status Reports.

There was some suggestion that the policy should use different terminology to describe the status of stocks whose biomass had fallen below the limit reference point. The Australian Southern Bluefin Tuna Industry Association recommended considering the New Zealand approach of defining the limit point as 'depleted' rather than 'overfished', as the limit point can be reached because of a combination of fishing and environmental factors.

Many stakeholders commented on the need for flexibility in the policy. The joint submission from WWF-Australia, TRAFFIC, the Australian Marine Conservation Society and Humane Society International stated the harvest strategy policy should provide as much flexibility as possible to sustainably manage the variety of species fished in Commonwealth fisheries. In their submission, the management advisory committees and resource assessment groups were concerned that greater prescription in the guidelines may reduce the flexibility that is necessary to enable adaptive fisheries management. The Department of Primary Industry and Fisheries Northern Territory also suggested that sufficient flexibility should be more clearly built into the policy to enable development opportunities in fisheries within ecological sustainable limits.

Several stakeholders supported the policy explicitly incorporating a risk-based approach to uncertainty:

CFA [Commonwealth Fisheries Association] supports the principles of the risk based framework being included in the HSP [harvest strategy policy]. However, the detail of the framework, and its implementation method, will be an evolving science and should be left in the Guidelines which are less prescriptive. *Commonwealth Fisheries Association*

Similarly,

We support the incorporation of explicit requirements on the adoption of a risk-based approach to implementation of the HSP [harvest strategy policy] in the Policy proper with retention of detail in the Guidelines. *WWF-Australia, TRAFFIC, the Australian Marine Conservation Society and Humane Society International*

A number of submissions identified inconsistencies between the policy and guidelines or suggested that elements of the guidelines should be promoted to policy status

The submission from WWF-Australia, TRAFFIC, the Australian Marine Conservation Society and Humane Society International suggested the policy would benefit from:

... incorporation of the statement on p. 14 of the Guidelines that the harvest strategies “take into account mortality resulting from all types of fishing, including state managed and recreational fisheries” ...

Some stakeholders suggested the policy objectives should be broadened to be consistent with the principles of ecologically sustainable development, including better integration of socioeconomic considerations.

The Department of Agriculture, Fisheries and Forestry Queensland would like to see consideration given to broadening the scope of the policy beyond the current economic and ecological objectives, to enable the development of harvest strategies that deliver on the full requirement of the Fisheries Management Act (fisheries exploitation is required to be managed in a manner consistent with the principles of ecologically sustainable development).

In relation to ecologically sustainable development WWF-Australia, TRAFFIC, the Australian Marine Conservation Society and Humane Society International wrote that the objectives across the bycatch and harvest strategy policies must be complementary and together reflect all of the legislative objectives, particularly those relating to ecologically sustainable development and economic efficiency in relation to all species. They further noted that the circumstances under which additional weighting can be given to ecologically sustainable development objectives should be clarified.

The Australian Recreational Fishing Foundation and Australian Fishing Trade Association recommended:

... that the assessment of the potential socioeconomic impacts on recreational fisheries be a core consideration whenever it becomes apparent that Commonwealth managed commercial fisheries are switching to targeting a new species. Including the socioeconomic contribution of recreational fishing into calculations of MEY [maximum economic yield] for Commonwealth managed fisheries may assist with this process by identifying potential conflicts that may arise between the two sectors in the earliest stages of transitions, so they can be managed appropriately with a view to continuing to maximise the net socioeconomic benefits of a fishery to the Australian Community...

The discussion paper for the review (DAFF 2012) identified that the policy promoted a number of classical harvest strategy approaches, but was largely silent on (although does not preclude) ‘constant escapement’ approaches (the discussion paper describes the different approaches in more detail). There was broad agreement among stakeholders that the harvest strategy policy and guidelines should clearly accommodate a broad range of approaches, including constant escapement strategies.

Some members of the review's advisory committee were of the view that, while there are areas for improvement, this should not be seen to suggest that the policy has not been successful in achieving its stated objectives.

Harvest strategy implementation

Stakeholders were invited to comment on the implementation of the policy and guidelines across applicable fisheries.

The guidelines 'recommend' that amendments to harvest strategies should occur infrequently, every three to five years for most stocks. WWF-Australia, TRAFFIC, the Australian Marine Conservation Society and Humane Society International suggested the guidelines should require harvest strategies to be reviewed every three to five years, however, this should not imply they need to be amended every three to five years.

There was disagreement between the views of different stakeholders about the requirements for transparency and documentation of decisions made under the policy.

WWF-Australia, TRAFFIC, the Australian Marine Conservation Society and Humane Society International indicated that appropriate accountability and transparency is required around decisions made under the policy, especially where some level of discretion is available in the application of the policy. They noted that the policy currently allows AFMA to determine 'alternate reference points' and consideration should be given to the degree of latitude that this provides to AFMA. They suggested that there should be appropriate oversight accompanying this, such as a transparent process for justifying such alternatives. WWF-Australia, TRAFFIC, the Australian Marine Conservation Society and Humane Society International suggested a comprehensive, transparent and inclusive process should be established for monitoring and reporting on harvest strategy development, implementation and performance.

The Commonwealth Fisheries Association does not want the policy to be prescriptive about minimum documentation requirements to support harvest strategies for reasons that include the wide variety of species and fisheries involved:

What is required is for the RAGs [resource assessment groups] and MACs [management advisory committees] to be regularly reviewing data requirements and possible transitions between categories. Each RAG needs to document its processes.

Management advisory committees and resource assessment groups highlighted that there is a danger of being too prescriptive at the expense of giving individual fisheries the flexibility to address unique situations. Management advisory committees and resource assessment groups also thought it would be informative to conduct an analysis of the proportion of total allowable catches set that followed recommended biological catch advice from resource assessment groups and how frequently the recommended biological catch advice itself was consistent with the harvest strategy framework.

CSIRO highlighted a need to provide general guidance on formulating control rules that link empirical indicators with suitable management responses and for:

... pragmatic harvest strategies that meet the intent of the policy but with clear statements as to how these conform to the policy [and] commitments written in to the harvest strategies to collect and store data as required to allow the fishery to defensibly establish its stock status. It is argued that it is appropriate for this to be specified in the guidelines rather than in the HSP [harvest strategy policy] itself.

Several submissions received identified a need for performance indicators and supported their use to underpin the policy.

The HSP [harvest strategy policy] is now such an important part of fisheries management that performance indicators are worth the extra work. There should be effective integration of those performance indicators (and consistent language/terminology) with the ABARES status reports for Commonwealth fisheries, as well as the national status reports for fisheries. *Commonwealth Fisheries Association*

WWF-Australia, TRAFFIC, the Australian Marine Conservation Society and Humane Society International noted that the effects of the harvest strategy policy cannot be separated from those of other fisheries management measures:

We acknowledge the difficulty but believe that this has arisen as a result of the failure of the initial HSP [harvest strategy policy] to establish clear performance indicators that are linked explicitly to actions taken under the Policy. It is imperative that this is addressed in the revised HSP.

We believe that the lack of monitoring and reporting of implementation of harvest strategies against the specific requirements of the HSP has been a significant failing. We propose that the implementation of the revised HSP be overseen by a small group charged with developing a framework for assessing the consistency of harvest strategies and their operation with the requirements of the HSP.

A number of stakeholders involved in harvest strategy implementation commented on resource assessment group processes. Some comments noted that the policy had led to increased scrutiny of the science behind the decision-making processes, and that harvest strategy control rules were occasionally set aside where there was uncertainty over assessments.

Management advisory committees and resource assessment groups noted that the process for advising on recommended biological catches has been more straightforward since the implementation of the policy. However, it has put 'much greater scrutiny from industry on the assessments themselves, and at times expressions of no confidence in the science underlying the assessments'. Both the Australian Southern Bluefin Tuna Industry Association and the Commonwealth Fisheries Association believe the high quality of governance, including the scientific and stakeholder input to the resource assessment groups has contributed to the success of the policy and that this quality should be maintained:

It is essential that the quality of advice from the RAGs [resource assessment groups] is maintained at a high level, and well-documented. It is also essential that there is regular contact between the RAGs on concepts and implementation. *Commonwealth Fisheries Association*

There was disagreement between different stakeholders on the establishment of control rules to address exceptional circumstances. WWF-Australia, TRAFFIC, the Australian Marine Conservation Society and Humane Society International support the establishment of such rules:

We believe...that the “exceptional circumstances” provision should be incorporated into the Policy proper rather than restricted to the Guidelines. In addition, we believe that the HSP [harvest strategy policy] should prescribe a process that ensures adequate transparency and justification where the “exceptional circumstances” provision is proposed to be used. *WWF-Australia, TRAFFIC, Australian Marine Conservation Society and Humane Society International*

Whereas, industry does not:

Our experience with meta-rules for exceptional circumstances is that they are difficult to formulate for the variety of circumstances that may occur. There is a real risk of unintended consequences. We would prefer to rely on the existing expertise in the current decision structure, and on the current legislative responsibilities. *Commonwealth Fisheries Association*

Rebuilding overfished stocks

Stakeholder views were sought on whether and how the guidelines should be amended to provide further direction on the recovery objective. This included whether rebuilding timeframes could be determined in a more species-specific manner that considers productivity and other factors that might affect the stock’s ability to recover (for example, from climate change, stochastic events or when the stock is fished by other fisheries). Comment was also sought on whether and how the advice in the guidelines on formulating rebuilding strategies (and particularly estimating incidental catch allowances) should be expanded or strengthened, and whether and how the policy should be made more prescriptive in this matter.

WWF-Australia, TRAFFIC, the Australian Marine Conservation Society and Humane Society International noted:

Footnote 4 of the Discussion paper notes that there has been some debate about whether stocks of some gulper shark species which were depleted by targeted and incidental fishing prior to the introduction of the HSP [harvest strategy policy] should be rebuilt according to the approach set out in the Policy. We support the application of the Policy to such species and believe that the Policy should be amended to remove any ambiguity on this matter

They also noted that the fact that the overfished stock of eastern gemfish has become subject to overfishing, even under a rebuilding strategy suggests that either the policy had not been applied as intended or the settings of the policy were inadequate for rebuilding stocks. However, the management advisory committees and resource assessment groups, Commonwealth Fisheries Association and the Australian Southern Bluefin Tuna Industry Association are of the view that the status of some stocks should not be viewed as a flaw of the policy. Industry and the combined submission from the management advisory committees and resource assessment groups suggested that it was too early to assess whether rebuilding strategies had been successful or not.

CSIRO wrote that the harvest strategy policy is ‘not clear on how far above B_{LIM} [biomass limit reference point] species must be before it has effectively recovered’.

WWF-Australia, TRAFFIC, the Australian Marine Conservation Society and Humane Society International submission also raised questions about the transparency of rebuilding strategies, posing the questions such as 'did targeted fishing cease from 1 January as required?' and do rebuilding strategies have in place 'the research and management actions necessary to stop the decline of, and support the recovery of, the species concerned', 'targets for rebuilding and maximum timelines' that reflect typical timelines and 'meet the requirements specified ... of the guidelines'. Particular concern was given to the use of 'incidental catch allowances'.

The Commonwealth Fisheries Association and the Australian Southern Bluefin Tuna Industry Association submissions consider it unnecessary to be more prescriptive about stock rebuilding timeframes:

Rebuilding has been difficult for some species – but we do not see how being more prescriptive on generation times would solve that problem.

WWF-Australia, TRAFFIC, the Australian Marine Conservation Society and Humane Society International called for the policy to be more prescriptive about the requirements for stock rebuilding strategies—in the policy itself, rather than the guidelines.

The management advisory committee and resource assessment group submission suggested that 'providing greater clarity about rebuilding targets for species would be helpful'.

If the policy was to be more prescriptive, the Australian Southern Bluefin Tuna Industry Association suggested:

... if there is a decision to be more prescriptive, then the guideline used in the NZ [New Zealand] Standard is one way of achieving that. In NZ's case, fisheries breaching their hard limit ... would not be reopened until it can be demonstrated that there is at least a 70% probability that the stock has rebuilt to or above the soft limit ...

Discarding of commercial species

Stakeholders were invited to comment on whether discarding commercial species is a significant issue; whether mechanisms in the policy are adequate and represent best practice for reducing discarding; and, if not, how this might be achieved in a practical and cost-effective manner.

Stakeholder views about discarding of commercial species varied. There was broad agreement that discards need to be reliably quantified and that estimates should be appropriately factored into stock assessments and total allowable catch settings. A number of the submissions commented on the need for estimates of discards to be as accurate as possible.

The Commonwealth Fisheries Association noted that:

The important thing is that the management and reporting of discards is verified as accurate and sufficient to ensure that discards are taken into account in harvest control rules and risk assessments.

The Southern and Eastern Scalefish and Shark Fishery Resource Assessment Group noted that if the levels of discards are well estimated when accounted for in harvest control rules and risk assessments, they should not create sustainability issues for target and bycatch species.

WWF-Australia, TRAFFIC, the Australian Marine Conservation Society and Humane Society International indicated that:

... the HSP [harvest strategy policy] does not include as an objective the minimisation of discards of commercial species nor does it include any mechanism to encourage such minimisation or to facilitate estimation of the extent of such discards. The current policy environment does not ... deal comprehensively with discards of commercial species and is far from what might be considered best practice.

The Southern and Eastern Scalefish and Shark Fishery Resource Assessment Group noted:

The wastage aspect of discarding ... may impact on profitability of the fishery and is a potential problem for public perception and acceptability of fishing practices.

Conversely, the Commonwealth Fisheries Association does not see the review of the harvest strategy policy as the place to assess any problem that discarding may create for public perception and the wider acceptability of certain fishing techniques.

Some stakeholders were of the view that discarding should be minimised or prohibited.

WWF-Australia, TRAFFIC, the Australian Marine Conservation Society and Humane Society International suggested that with respect to managing discards:

Discarding of dead specimens of quota species and species subject to rebuilding plans should be prohibited.

Discards of other commercial species, and of live specimens of quota species and species subject to rebuilding plans, be subject to recording of discards by species, estimated weight/number and condition (life status) and e-monitoring.

Management measures to reduce interactions with species/specimens likely to be discarded should be introduced, for example, closed areas where there are high levels of interactions with under/oversize species.

WWF-Australia, TRAFFIC, the Australian Marine Conservation Society and Humane Society International also suggested that the review of the harvest strategy policy should consider a ban on discards and recommended that the review look at experiences internationally with discard bans to inform consideration of this approach.

A number of submissions identified links between fisheries management settings and discarding.

The Commonwealth Fisheries Association observed that output controls in a multi-species fishery, such as the Southern and Eastern Scalefish and Shark Fishery, will lead to greater discarding of some non-target and even lower value target species, so that fishing of uncaught quota of other species can continue. The Tropical Tuna Management Advisory Committee noted that in the Eastern Tuna and Billfish Fishery the species are high value and there is 'limited incentive for discarding'.

The Department of Agriculture, Fisheries and Forestry Queensland had concerns that discarding of those species for which bycatch limits are established through the offshore constitutional settlement agreement are not adequately recognised by the harvest strategy policy or the bycatch policy. The

department indicated it would support the development of a consistent approach to address the issue of regulatory driven bycatch with the Commonwealth and state and territory governments.

CSIRO suggested that the harvest strategy policy adequately accounts for discarding, as a result of the size and marketability of a fish, as it takes into account all forms of fishing mortality. For example, total allowable catches for the Southern and Eastern Scalefish and Shark Fishery species are based on the recommended biological catch, minus discards and state catches. However, CSIRO reiterated the point made by the Commonwealth Fisheries Association and the Queensland state Department of Agriculture, Fisheries and Forestry that for some species discarding may be a result of 'incompatible total allowable catches in quota managed fisheries' and, in these cases, consideration of the potential impact on discards needs to be taken when setting individual species quotas (Klaer & Smith 2012).

Shared stocks

Stakeholders were asked to comment on whether and how the policy may benefit from greater clarity about its application to international fisheries, including:

... a description of the circumstances under which 'catch level decisions' made by regional fishery management organisations should be applied, including the basis and considerations for setting the TAC [total allowable catch] when international decisions are not applied and the type of fisheries issues to be decided by DAFF [the Department of Agriculture, Fisheries and Forestry] and AFMA.

Most submissions sought more clarity in the approach to internationally shared fish stocks. WWF-Australia, TRAFFIC, the Australian Marine Conservation Society and Humane Society International indicated that the relationship between internationally managed fisheries and the harvest strategy policy was ambiguous and were unconvinced about exempting internationally shared stocks from the policy's application. They considered that as a minimum:

... harvest strategies consistent with the HSP [harvest strategy policy] should be developed for the stocks fished by these fisheries and the resultant TAC [total allowable catch] published so the implications of the different standards being applied to domestic and 'international fisheries' are clear to the Australian public and so that RFMOs [regional fisheries management organisations] are aware of what is required in order to manage these stocks sustainably. *WWF-Australia, TRAFFIC, Australian Marine Conservation Society and Humane Society International*

The Australian Southern Bluefin Tuna Industry Association called for the Australian Government to distinguish between issues that are the remit of the international body and the Commonwealth and to provide an improved and more consistent approach to the issues that are not under a regional fisheries management organisation or where a decision has not been made in a regional fisheries management organisation.

An anonymous submission indicated the harvest strategy policy should clearly distinguish between wholly domestic and highly migratory internationally shared stocks.

WWF-Australia, TRAFFIC, the Australian Marine Conservation Society and Humane Society International were of the view that the government has not demonstrated its advocacy of the policy

and guidelines at international fisheries body meetings and that the process of developing positions for Australia's engagement at meetings is not appropriately transparent. They proposed that there is no information that substantially demonstrates that Australia's involvement in international fisheries has been in accordance with the approach outlined in the harvest strategy policy.

There was also particular concern from industry organisations on the meaning of the term 'whole of government position' and how a 'whole of government' decision is made if the international management organisation fails to make a decision. In particular, they suggested that the policy be amended to clarify:

... that the 'whole of government position' means a decision made post the RFMO [regional fisheries management organisations] meeting that failed to decide a quota. *Commonwealth Fisheries Association and Australian Southern Bluefin Tuna Industry Association.*

Another concern raised by the combined management advisory committees and resource assessment groups' submission was whether and how the impact on Commonwealth fisheries was considered where the domestic catch is a small proportion of the total fishing mortality on internationally shared stocks. They also raised the issue of the effectiveness of the policy to achieve its objectives where international fishery objectives for a shared stock differ from that held by Australia. They suggested that the policy could benefit from the inclusion of a strategy that deals with risk versus cost trade-offs in fisheries with an international component.

Finally WWF-Australia, TRAFFIC, the Australian Marine Conservation Society and Humane Society International considered that the policy should recognise that the Australian Government can take stronger action than that agreed at international government body, if appropriate and warranted.

Reference points

Stakeholders were invited to comment on the development of reference points, the direction provided in the guidelines on how to develop and choose reference points and on how both the policy and the guidelines could be improved.

Stakeholders expressed varied views in relation to the use of proxies in harvest strategies and rebuilding strategies but seemed to agree that providing enough flexibility to allow for adjustments to proxies according to known information on species biology and ecological role would be an improvement to the policy.

The Commonwealth Fisheries Association noted that it appears better to be flexible about the default proxy and base it on the maximum sustainable yield of a comparable species, rather than using B_{40} [40 per cent of unfished biomass] or B_{48} [48 per cent of unfished biomass] when the maximum sustainable or economical yield cannot be accurately measured. The Australian Southern Bluefin Tuna Industry Association, along with the Commonwealth Fisheries Association supported allowing fluctuations around the reference points and having both a hard and soft limit such as those in place in New Zealand (where a hard limit, below which closure of the fishery should be considered, is established at half the level of the B_{20} [20 per cent of unfished biomass] 'soft limit').

The Southern and Eastern Scalefish and Shark Fishery Resource Assessment Group noted:

There is danger in making the details of the policy much more prescriptive than it currently is as this could risk setting processes or benchmarks that may not be suitable across all fisheries. Even with the SESSF [Southern and Eastern Scalefish and Shark Fishery] the implementation of the HSF [harvest strategy framework] has required flexibility and adaptability.

However stakeholders were largely of the view that the policy should provide guidance on how this flexibility should be applied to ensure that it was not misused or used as an alternative to obtaining the data required to establish stock-specific reference points.

WWF-Australia, TRAFFIC, the Australian Marine Conservation Society and Humane Society International suggested that the policy should be strengthened to clarify the level of confidence required in the estimate of maximum sustainable yield when using a proxy for maximum economic yield based on MSY. WWF-Australia, TRAFFIC, the Australian Marine Conservation Society and Humane Society International also recommended that, where the harvest strategy policy provides AFMA with scope on the adoption of alternative reference points, it should prescribe a process whereby such alternatives are clearly and publicly justified against the objective of the policy.

Other environmental factors such as climate change and its potential impacts on marine ecosystems and commercial fisheries were considered as part of the review. Some stakeholders were of the view that the policy should not try to incorporate non-fishing impacts into reference points.

WWF-Australia, TRAFFIC, the Australian Marine Conservation Society and Humane Society International noted:

Our understanding regarding the existing and potential impacts on the marine environment of factors such as climate change, ocean acidification and pollution is that they are not yet well understood especially at the level required for the by the HSP [harvest strategy policy].

The reality of climate change, together with the uncertainty about the nature and the extent of its impact on individual marine species/stocks, dictates the application of a precautionary approach. It would be appropriate for the review of the HSP to consider whether the current settings are sufficiently precautionary to account for climate change. Options include:

- adjusting the default settings to acknowledge the potential impact on climate change; or
- specifying the extent of the adjustment to default settings to be adopted where the level of susceptibility to climate change of a species is considered to be of concern.

CSIRO recommended that the guidelines could include discussion of non-fishing impacts on harvest strategies, possibly in an expanded section on exceptional circumstances. Similarly, the Commonwealth Fisheries Association does not support trying to predict the impact of non-fishing activities in reference points as there is little known about the possible impacts on individual species.

Optimising economic yield in multi-species fisheries

Industry submissions indicated that AFMA had not implemented the option of setting targets below maximum economic yield, resulting in total allowable catches being set at levels that were incompatible with relative catch compositions. The Commonwealth Fisheries Association

recommended that the harvest strategy policy needed increased flexibility in setting target points across multi-species fisheries. It stated that:

...it is not practical to set all individual species in a multi-species fishery at B_{48} [48 per cent of unfished biomass] or even B_{40} [40 per cent of unfished biomass] or B_{Lim} [the biomass reference point].

The policy should be explicit that it is often not possible in all fishing years to maintain all species in a fishery at B_{MSY} [the biomass that supports maximum sustainable yield].

It should be the responsibility of each RAG [resource assessment group] to define acceptable risk levels, because these will vary considerably between species.

The Commonwealth Fisheries Association further suggested that an approach to manage risk to individual species may be to allow the TAC [total allowable catch] to fluctuate around the biomass that supports maximum sustainable yield point but achieve the biomass that supports maximum sustainable yield over an average of three to five years.

However, WWF-Australia, TRAFFIC, the Australian Marine Conservation Society and Humane Society International suggested that enabling species within a multi-species fishery to be managed at levels below the biomass that supports maximum sustainable yield allows such species to be placed at greater risk than the more commercially valuable species that are managed at the biomass that supports maximum economic yield. They objected to this in their submission, requesting that the:

HSP [harvest strategy policy] should be amended so as to remove the provision that allows for some species in multi-species fisheries to be maintained below B_{MSY} [the biomass that supports maximum sustainable yield] under the pretext of maximising net economic returns.
WWF-Australia, TRAFFIC, Australian Marine Conservation Society and Humane Society International

In addition, they suggested that this approach was:

... inconsistent with fisheries legislation, policy and the ministerial direction to AFMA. *WWF-Australia, TRAFFIC, Australian Marine Conservation Society and Humane Society International*

The CSIRO submission indicated that allowing some species to be managed below the biomass that supports maximum sustainable yield to achieve fishery wide maximum economic yield is appropriate in theory, provided risk to stock and ecosystem effects are appropriately accounted for. CSIRO also suggested that the sections of the guidelines dealing with multi-species fisheries could be expanded and the issues and potential responses more thoroughly discussed:

In light of recent studies, it is clear that the guidelines require considerable updating to reflect current understanding.

The revised harvest strategy policy should consider tradeoffs between species when considering targets for individual species in multi-species fisheries. The management advisory committee and resource assessment group submission noted that the optimal position in the risk-cost-catch triangle will vary among fisheries and the species and the trade-offs involved are not easy to characterise let alone resolve.

While the policy requires that all species in multi-species fisheries are maintained above the limit reference point, a number of submissions noted that many byproduct species do not have defined limits. This issue was also raised by stakeholders during the development of the discussion paper. The Commonwealth Fisheries Association noted that resources were often not available to do full stock assessments on all species and it is therefore justified that these stocks 'be managed by empirical performance and the resulting control rules'. However, the combined resource assessment group and management advisory committee submission suggested that care is needed as these methods may not always give sufficiently accurate results to provide useful signals and even if they are accurate, then their results can be ambiguous indicators about changes in quantities of importance. The submission from WWF-Australia, TRAFFIC, the Australian Marine Conservation Society and Humane Society International supported the current approach of the policy and guidelines for data poor, low value species as providing adequate guidance on the approach that should be adopted.

The public submission from WWF-Australia, TRAFFIC, the Australian Marine Conservation Society and Humane Society International also raised concerns on the use of consistent terminology between the policy and guidelines:

The Policy (p. 6) refers to maintaining some species below B_{MSY} [the biomass that supports maximum sustainable yield], while the Guidelines (p. 25) refer to maintaining these species below B_{MEY} [the biomass that supports maximum economic yield]. *WWF-Australia, TRAFFIC, Australian Marine Conservation Society and Humane Society International*

The environmental non-government organisations additionally noted:

The findings of the AFMA Expert Panel (AFMA, 2011) leave no doubt that operationalising the MEY [maximum economic yield] target of the HSP [harvest strategy policy] has been difficult. The Panel identified the need to.... consider the use of proxies for B_{MEY} in other fisheries for which bio-economic models are not feasible [and] identify what economic information is required to be collected in fisheries where proxies for B_{MEY} [the biomass that supports maximum economic yield] are to be used... Given that AFMA has not implemented the Panel's recommended approach to addressing this issue the revised HSP could usefully provide further advice... *WWF-Australia, TRAFFIC, Australian Marine Conservation Society and Humane Society International*

The use of stock-specific proxies received some attention in public comments and it was generally agreed that, in cases where there is a particular case of low or high productivity, reference points should reflect that productivity information in setting target and limits for those species. Flexibility should also only be allowed where there is conclusive scientific evidence of this being the case. This flexibility should also be guided by other factors affecting productivity, such as environmental factors and trophic roles. Guidance should be provided about the level of any adjustments necessary to ensure that species continue to be fished sustainably in the long term.

In this regard, CSIRO stated:

The HSP [harvest strategy policy] refers to ecosystem interactions and the relationship a species may have with others in the food web or community and thus biomass reference points may be increased to take this into account, but gives no explicit advice. Recent research on low-trophic level (LTL) species (Smith et al. 2011; Pikitch et al. 2012) provide a

basis for setting reference points for these species. It is suggested that the HSP could be explicit and set a target reference for these species at B_{75} [75 per cent of unfished biomass] as recommended by Smith et al. (2011). Other species with particular life history characteristics, such as low productivity sharks, could be dealt with in the guidelines.

Other environmental factors such as climate change and its potential impacts on marine ecosystems and commercial fisheries were considered as part of the review. Some stakeholders were of the view that the policy should not try to incorporate non-fishing impacts into reference points.

WWF-Australia, TRAFFIC, the Australian Marine Conservation Society and Humane Society International noted:

Our understanding regarding the existing and potential impacts on the marine environment of factors such as climate change, ocean acidification and pollution is that they are not yet well understood especially at the level required for the by the HSP [harvest strategy policy].

The reality of climate change, together with the uncertainty about the nature and the extent of its impact on individual marine species/stocks, dictates the application of a precautionary approach. It would be appropriate for the review of the HSP to consider whether the current settings are sufficiently precautionary to account for climate change. Options include:

- adjusting the default settings to acknowledge the potential impact on climate change; or
- specifying the extent of the adjustment to default settings to be adopted where the level of susceptibility to climate change of a species is considered to be of concern.

CSIRO recommended that the guidelines could include discussion of non-fishing impacts on harvest strategies, possibly in an expanded section on exceptional circumstances. Similarly, the Commonwealth Fisheries Association does not support trying to predict the impact of non-fishing activities in reference points as there is little known about the possible impacts on individual species.

Managing byproduct and data-poor commercial fish stocks

Stakeholders were asked to comment on whether the scope of the policy should explicitly cover all commercial species and how best to manage all commercial species, including byproduct species in a manner consistent both with relevant legislative requirements and efficient and cost-effective fisheries management.

There was unanimous support from the public submissions that, regardless of the structure of the policies, all species in Commonwealth fisheries should be managed.

The public submissions expressed a variety of views on which policy individual species or stocks should be managed under. Suggestions ranged from applying the harvest strategy policy to only 'key commercial species' to broadening the term 'key commercial species' to include the main target species and the major byproduct species.

If all commercial species are to be included under the HSP [harvest strategy policy] as suggested, it will require substantial modifications to account for the uncertainty and lack of information associated with the many data-poor commercial species, to the extent that ... the current objectives and value of the HSP will be significantly undermined. *Ian Knuckey*

Several stakeholders suggested that byproduct (or at least the remaining byproduct species) and bycatch species be managed under the one bycatch policy. Other alternatives included:

... consideration should be given to incorporating the management of target, by-product (retained) and by-catch (non-retained) species under the one policy through a comprehensive approach to harvest strategy implementation. *Department of Primary Industry and Fisheries, Northern Territory*

Consultation also identified the need for flexibility for species to move between the two policies (harvest strategy and bycatch).

It is important that there is the flexibility to move species between policies, particularly from the bycatch policy to the HSP [harvest strategy policy], if species become more commercially important. In addition, byproduct/bycatch species identified as high risk by the Ecological Risk Assessment (ERA) (Hobday et al. 2011) should have the same limit reference points as outlined in the HSP - noting that the high risk is attributable to fishing. *CSIRO*

However, there was also a view that an individual species should not be subject to both policies at the same time.

There is support for clarifying the application of each policy to various types of species, so that one species is not subject to both policies at the same time. However, there is concern about how proposals that species transit between the policies will be cost effectively implemented. *AFMA management advisory committees and resource assessment groups*

There were some concerns around discarding and the sustainability of byproduct species.

... if the HSP [harvest strategy policy] objectives are extended to byproduct species, to include minimisation of discards of the species it applies to and to ensure that estimates of cryptic mortality are included in assessments of these species, this will address our concerns. *WWF-Australia, TRAFFIC, the Australian Marine Conservation Society and Humane Society International*

Stakeholders were also asked to comment on tiers and indicators, discount factors and data requirements, including whether the current tier system is able to address the management of all byproduct species. There was considerable support for the use of a tiered approach to harvest strategy implementation:

We support the use of a tiered approach to harvest strategy implementation and acknowledge the intention of the use of 'discount factors' to reflect different levels of uncertainty ... We believe the HSP [harvest strategy policy] should provide guidance on how the discount factor should be determined and how the precautionary approach should be applied in these circumstances. *WWF-Australia, TRAFFIC, the Australian Marine Conservation Society and Humane Society International*

Data poor and low value species are not normally target species. Investing in the data collection and full stock assessment is rarely cost-effective. Therefore these species are best covered by risk-based approach, including the discount factor which is part of the tier system for target species and the ERA/ERM [ecological risk assessment/ecological risk management] approach for byproduct and bycatch species. *Commonwealth Fisheries Association*

... the next CHSP [Commonwealth harvest strategy policy] should specify the need for a risk based approach to fisheries management where risk-catch-costs are linked explicitly with each Harvest Strategy. A good example of how this can be done in practice is through the tiered approach ... This approach is recommended because it provides industry with the capacity to make commercial decisions about levels of investment in research and monitoring ... *AFMA management advisory committees and resource assessment groups*

CSIRO identified the 'need to provide general guidance on formulating control rules that link empirical indicators with suitable management responses'.

Spatial management

Stakeholders were invited to comment on whether and how the guidelines could take into account closed areas and spatial management approaches when designing harvest strategies that are consistent with the policy objectives.

CSIRO support the use of closed areas and spatial management being incorporated into the guidelines, while the submission from Ms Carolina Garcia proposed the use of permanent spatial closures as a management tool in the policy. Ms Garcia suggested reserves could be established and used to:

- 1) have a baseline of how biological communities and populations should be with no fishing mortality, especially with climate change affecting so many marine regions, and
- 2) have a "savings account" for that species, that could later on serve to repopulate fished areas.

However, WWF-Australia, TRAFFIC, the Australian Marine Conservation Society and Humane Society International had the view:

We do not believe that there is a need for the Guidelines to specifically address closed areas and spatial management approaches. These are management measures that will be relevant to management of specific species. As a result we believe that their use is best considered in the context of the fisheries involved rather than through generic guidelines. *WWF-Australia, TRAFFIC, the Australian Marine Conservation Society and Humane Society International*