



3 July 2017

Mr Gordon Neil  
Assistant Secretary  
Fisheries Branch  
Sustainable Agriculture, Fisheries and Forestry Division  
Department of Agriculture and Water Resources  
GPO Box 858  
CANBERRA CITY ACT 2601

Dear Mr Neil

**Public comment on the Commonwealth Fisheries Harvest Strategy Policy**

On behalf of AFMA's Management Advisory Committees (MACs), Resource Assessment Groups (RAGs) and Protected Zone Joint Authority (PZJA), I would like to thank you for the opportunity to comment on the draft Commonwealth Fisheries Harvest Strategy Policy.

Comments have been received from Torres Strait Prawn Management Advisory Committee, Northern Prawn Fishery Resource Assessment Group, Southern and Eastern Scalefish and Shark Fishery South East Resource Assessment Group and PZJA consultative fora. Please note that some industry associations (e.g. Tuna Australia) represented on the MACs and RAGs may have chosen to provide comment directly to your department. I note that some of comments raised by MACs, RAGs and PZJA were discussed at the stakeholder workshop held at AFMA on 22 June 2017. The comments have several key themes, which have been summarised below. Detailed remarks are provided in Attachment 1.

**Comments from MACs, RAGs and PZJA fora:**

1. Clarification was requested for a number of points including:
  - the interplay between objectives and key principles
  - applying multispecies Maximum Economic Yield in Northern Prawn Fishery and elsewhere
  - consistency of definitions of Byproduct and Bycatch within and between Harvest Strategy Policy and Bycatch Policy
  - that a range of factors affect MEY and those don't appear to be recognised
  - definition of what a 'significant' fishery is
  - use of proxies for species with unknown or highly variable biomass
  - definition of 'overfished' given that it is permissible to be below the target reference point up to 10% of the time

- definition of 'Trigger points'.

2. There was concern regarding:

- no mention of fishing mortality when it is used in many assessments
- no mention of input controlled fisheries (e.g. Northern Prawn Fishery)
- what happens regarding rebuilding stocks in multi-jurisdiction areas
- what happens if stocks dip below  $B_{lim}$  naturally
- the perceived need for setting of harvest strategies and targets for byproduct species (although AFMA understands this is not being proposed)
- no mention of risk equivalency in the Harvest Strategy Policy
- no acknowledgement of progress already made towards sustainability of fisheries.

We look forward to continuing work with the Department in the development of the Harvest Strategy Policy, including taking into account the issues raised at the stakeholder workshop on 22 June 2017 and issues raised by the MACs and RAGs.

Please note that the AFMA Commission has requested that the draft policy is made available to it after all submissions have been addressed. The Commission also has a strong preference that the Policies and Guidelines be released together given that both are required for AFMA to implement them, and they need to work together.

Should you wish to discuss this matter further please contact me on (02) 6225 5526.

Yours sincerely



George Day  
Acting Executive Manager Fisheries

Attachment 1 - Comments on the draft Commonwealth Harvest Strategy Policy from:

1. Northern Prawn Fishery Resource Assessment Group (NPRAG)
2. Protected Zone Joint Authority for (PZJA)
3. Torres Strait Prawn Management Advisory Committee (TSPMAC)
4. Sarah Jennings - SESS Fishery South East Resource Assessment Group (SERAG)
5. Sandy Morison - SESS Fishery South East Resource Assessment Group (SERAG)

## NPFRAG comments

### Commonwealth Harvest Strategy policy

- The current Harvest Strategy Policy has been in effect for 10 years. During that time the condition of many Commonwealth Fisheries has improved greatly, yet the draft HSP continues to emphasise reducing risk. The NPRAG are of the opinion that the improvements that have been made should be recognised. This could be done by including words or phrases such as “continue to reduce overfishing” etc.
- The switch to managing multi-species fisheries by managing to achieve fishery wide maximum economic yield (MEY) is seen as an improvement. However it was noted that within the NPF, different stocks are not managed to different target reference points. The NPF is managed to fishery wide MEY, rather than each species being managed to an individual stock MEY. The individual species are at a level as a consequence of this, rather than maintaining a set species target reference point.
- The similarities between the definitions of Byproduct and Bycatch is somewhat problematic. The current definitions allow for overlap between what is considered to be byproduct or bycatch. This could be improved by clarifying the definitions (see below for suggestions). Generally, there should be greater consistency between the definitions within the HSP and between the HSP and the Bycatch Policy.
- The definition of Byproduct (Table 1) could be improved as the current definition “ranging from rarely encountered and usually retained, to frequently encountered and rarely retained” implies that the majority of byproduct is discarded. Changing the definition to “to frequently encountered and sometimes retained”. This change would then align the definition in Table 1 with the first sentence of the section which states “byproduct species make a minor contribution to the value of the catch”.
- The definition of Bycatch could be changed from “no contribution to the economic value of the fishery” to “trivial contribution to the value of the fishery”. Under the current definition, selling a single sardine would result in sardines being listed as Byproduct.
- MEY is influenced by external factors that are not well captured in the HSP draft. While stock size is an important factor, MEY is influenced just as rapidly by external economic forces such as: changing exchange rates, changing fuel prices, opening and closing of markets. These factors can influence MEY much faster than changes in stock size. The NPRAG think that it would be an improvement if these factors were mentioned and discussed in the HSP.
- The change in the definition to the Limit Reference Point in Table 1 to “risk to the stock is regarded as unacceptable at least 90 per cent of the time” is considered to be a positive )
- The term “significant Commonwealth fisheries” needs to be defined. The ambiguity of the current phrase will have implications on which fisheries, stocks etc require a harvest strategy.
- Non-biomass proxies are currently not captured within the HSP. E.g. Table 2 states “0.48 of unfished biomass or 1.2 of biomass at maximum sustainable yield (MSY)”. This is problematic for species that are annual, and therefore have a fluctuating biomass, or for stocks where the biomass is unknown.
- Fishing mortality (f) is not mentioned within the HSP. This is seen as odd considering that ABARES reports of fishing mortality. It was suggested that fMSY could just as easily be included as bMSY.

- Section 3.7. Spatial and temporal management are mentioned, but not effort. The NPF is managed through effort as part of temporal management. Not including effort would make it difficult to create a Harvest Strategy for the NPF that is consistent with the HSP.
- There is an issue in achieving the objectives of the HSP in regards to overfishing. "Overfished" is defined as "A fish stock with a biomass below the biomass limit reference point". Under Section 3.11 Rebuilding overfished stocks states that immediate action is required when a stock is identified as being overfished, e.g. falls below the limit reference point. This is in direct conflict with the draft "Objectives and Key Principles" that allows a stock to be below the limit reference point 10% of the time. As it stands, a fishery could be classified as being overfished but still be consistent with the Harvest Strategy Policy.
- Section 3.12 Relationship between the HSP and the EPBC Act mentions trigger points. This is the first mention of trigger points and they are not defined anywhere in the policy.
- It is unclear how "species baskets" will be dealt with under the HSP. E.g. Squid in the NPF are a byproduct, but are not identified to species level. As a byproduct species they are required to be managed to a target MSY. Creating targets for each species of squid that is potentially caught within the fishery will be an extremely costly and time intensive exercise. Requiring each individual species to have its own target, without MSY, and requiring that each fishery have a compliant harvest strategy in place within three years is concerning and potentially sets up each fishery for failure.



**Protected Zone Joint Authority (PZJA) consultative forum<sup>1</sup> submission: Consultation on the revised Commonwealth Fisheries Harvest Strategy Policy and the Commonwealth Fisheries Bycatch Policy.**

*General Comment*

The time provided to comment on the draft policies under the public consultation period was not sufficient to engage key Torres Strait fisheries stakeholders and compile a comprehensive account of the views from PZJA consultative fora. AFMA has made its best efforts to engage PZJA consultative forum members and facilitate meaningful feedback in the limited time available, however the comments provided in this submission have not included a full representation from PZJA forums or of key stakeholders.

*Commonwealth Fisheries Harvest Strategy Policy*

1. Clarification was sought on how the policy applies to Torres Strait fisheries noting the different arrangements to Commonwealth fisheries (i.e. Under *Torres Strait Fisheries Act 1985* and *Torres Strait Treaty 1985*, and native title implications). It was explained that that the policy is widely regarded as best practice and while not directly applying to the Torres Strait fisheries its guiding principles are to be used for developing harvest strategies. Furthermore, it was noted that the policy states “Where overlap between domestic jurisdictional management exists (e.g. fisheries that are managed jointly by the Commonwealth and other Australian jurisdictions) the Commonwealth will seek to apply and encourage the adoption of this policy in negotiating and implementing joint or cooperative management arrangements”, and that the PZJA supports this approach.
2. MEY and  $B_{MEY}$ :
  - that the proxy target reference points of “0.48 of unfished biomass or 1.2 of biomass at maximum sustainable yield” may not, on average, be appropriate in achieving a target biomass equal to the stock size required to produce maximum economic yield (MEY) for a number of key fish stocks (see specific comments/questions in **Attachment 1**);
  - the policy deals inadequately with highly variable stocks (For example, for these (highly variable) stocks the concept of trying to maintain the stock on average at the  $B_{MEY}$  level may not be achievable or desirable); and
  - the policy doesn’t capture the complexities of MEY as being a moving target and the influence of factors other than stock size. MEY calculations take into account many fast changing factors including fuel prices, stock prices, exchange rates etc., but the policy seems to mainly focus on stock size. It would be useful to provide more detail around this.
3. MEY and socio-cultural factors:
  - while MEY is important, in the context of Torres Strait fisheries other cultural and social factors may be just as, if not more, important than maximising economic yield; and
  - there is no mention of the need to consider socio-cultural factors and these are important in terms of advancing a true ecosystem approach to fisheries which also considers fishers, plus they may be levers necessary to achieve buy-in, compliance and/or capacity for optimal utilisation. Hence the objective to maintain key commercial fish stocks at the  $B_{MEY}$  level could be modified to allow for other important social and cultural considerations.

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<sup>1</sup> PZJA (Torres Strait Fisheries) consultative forums include Finfish, Hand Collectables and Tropical Rock Lobster working groups, Finfish and Tropical Rock Lobster resource assessment groups, Torres Strait Prawn Management Advisory Committee and Torres Strait Scientific Advisory Committee.

4. Under section 3.2, it is unclear if “*known sources of fishing mortality*” means that if there is some data or information on likely levels of catch by sectors such as recreational or indigenous fishers, or if it is known that other groups access the resource, then this is considered ‘known’ and needs to be included in a harvest strategy even when there is no data to inform on estimates or the estimates are considered small relative to other sources of mortality.
5. While cryptic mortality is not common within Torres Strait fisheries it may occur, however current management resources/tools are not adequate to account for such parameters as prescribed under the policy.
6. The introduction of the risk, cost, catch provision is a positive inclusion. Many small fisheries sometimes base decisions around the current effort levels in the fishery and reduced risks associated with that. The policy may however want to consider an endpoint to this. Will there be a maximum number of years a fishery would go without more stringent management rules (such as a harvest strategy for more species) before the risk becomes too high? How would this be established?
7. Clarification is required around which species will require a harvest strategy in the ‘byproduct’ category. What level of catch would be required to necessitate a harvest strategy? What about basket species?
8. The policy does not provide advice on dealing with stocks that overlap with fisheries of adjacent countries and where there are international obligations such as in the Torres Strait where PNG fishers can access the resource (it was noted that this is out of scope for this policy and such arrangements are dealt with in other international policies).

#### *Commonwealth Fisheries Bycatch Policy*

1. Overall the PZIA forums supported the revised Commonwealth Fisheries Bycatch Policy in its current form and view it as a well-regarded and best practice guide for managing bycatch.
2. It was noted that for most Torres Strait fisheries (i.e. tropical rock lobster, finfish, Beche-de-mer, pearl shell and trochus that are individually harvested either by hand or line methods) levels of bycatch are generally perceived to be negligible.
3. The Torres Strait Prawn Management Advisory Committee (TSPMAC) made the following comments in relation to the policy’s application to the Torres Strait Prawn Fishery (TSPF) where bycatch is more relevant than other Torres Strait fisheries:
  - including species of interest (for traditional purposes) to indigenous communities as another grouping should be considered. The TSPF industry collect data on a small number of species of interest to the indigenous sector through its scientific observer program. If catches of these species is significant it is discussed with indigenous stakeholders through the TSPMAC. This is an initiative by the TSPMAC, however It may be worthwhile introducing this more broadly for other Australian fisheries through the bycatch policy;
  - bycatch definition:
    - the current definition of bycatch (in Table 1) stating “*no contribution to the economic value of the fishery*” is too rigid. Providing some flexibility (i.e. minimal value), will improve the definition otherwise bycatch that provides a trivial financial return will fall in the category of byproduct and require a harvest strategy;
    - the definition of bycatch that includes the term “*physical interaction*” is very restrictive. A requirement to report and minimise any contact with a species would be virtually impossible and may not provide the benefit the policy is seeking; and
  - the discussion around addressing cumulative impacts is good, however it would be very difficult to consider the impacts of recreational or traditional fishers where there are no reporting requirements for these stakeholders, and thus little or no data available.



## PZJA consultative forum submission: specific questions and comments

### Re: Proxy $B_{MEY}$

**Question:** What is the 'best practise' for the default ratio?

**Notes:** Current application target biomass =  $0.48B_0$  may not achieve for a number of key fish stocks, on average, a target biomass equal to the stock size required to produce maximum economic yield; How many AFMA fisheries have high cost share ratios? Should the target  $B_{MEY}$  be set appropriately for each category of fishery (low cost, medium cost, high cost)?

For the Torres Strait, the social aspect of ensuring healthy fish stocks and catch rates for islanders is not discussed. Comment on the triple bottom line and indigenous/local needs is required.

For  $B_{LIM}$ , Sainsbury 2008 suggest a safer  $B_{LIM} = 0.3B_0$ .

It should be noted that  $F_{MSY}$  is actually recommended as a limit reference point (FAO).

**Current proxy:** 0.48 of unfished biomass or 1.2 times the biomass at maximum sustainable yield (review and update if necessary:  $B_{MEY}/B_{MSY}$ ).

### **From Pascoe et al 2014:**

More appropriate "default" proxy values for  $B_{MEY}$  may be 1.3–1.4 times  $B_{MSY}$ . Similarly, it might be expected that optimal effort levels are most likely to fall between 55% and 65% of those at  $MSY$ .

These values were likely based on the symmetric surplus production theory of  $B_{MSY} \approx 0.5B_0$  (Zhou et al., 2013; Pascoe et al., 2014).

For non-symmetric dynamics where  $B_{MSY} \sim 0.35\text{--}0.4 B_0$ , what are the appropriate proxy values for  $B_{MEY}/B_{MSY}$ ? Are they higher? E.g.  $1.4\text{--}1.5 \times 0.4 = 0.56\text{--}0.6 B_0$ .

Depending on the cost share of revenue, this is in line with the symmetric 1.2–1.5 ratios suggested by Zhou et al. (2013) and Pascoe et al. (2014); where their model  $B_{MSY} = B_{50\%}$ .

### **Ramifications:**

Note that State jurisdictions and other agencies may follow the Australian Government reference points. It is critical to ensure they are up-to-date and sound. If incorrect and followed, the error may flow through to other fisheries. Correct guidance is sought.

### **References (enclosed):**

Pascoe, S., Thebaud, O., and Vieira, S. 2014. *Estimating Proxy Economic Target Reference Points in Data-Poor Single-Species Fisheries*. *Marine and Coastal Fisheries*, 6: 247-259.

Zhou, S., Pascoe, S., Dowling, N., Haddon, M., Klaer, N., Larcombe, J., Smith, A. D. M., et al. 2013. *Quantitatively defining biological and economic reference points in data poor fisheries*. Final report on FRDC project 2010/044. Canberra, Australia. 306 pp.





## **Comments from TSPMAC to Harvest Strategy Policy – 7 June 2017**

### **3 Harvest Strategy Policy**

- The policy doesn't capture the complexities of MEY as being a moving target and the influence of factors other than stock size. MEY calculations take into account many fast changing factors including fuel prices, stock prices, exchange rates etc., but the policy seems to mainly focus on stock size. It would be useful to provide more detail around this.
- The introduction of the risk, cost, catch provision is positive. Many small fisheries, such as the TSPF sometimes base decisions around the current effort levels in the fishery and reduced risks associated with that. The policy may want to consider an endpoint to this though. Will there be a maximum number of years a fishery would go without more stringent management rules (such as harvest strategy for more species) before the risk becomes too high? How would this be established?
- Clarification is required around which species will require a harvest strategy in the byproduct category. What level of catch would be required to necessitate a harvest strategy? What about basket species?



**Comments from:**

**Sarah Jennings - SESS Fishery South East Resource Assessment Group (SERAG)**





# Commonwealth Fisheries Harvest Strategy Policy

DRAFT for Consultation:  
March 2017

The Commonwealth Fisheries Harvest Strategy Policy provides the framework for applying a science-based approach to setting harvest levels in Commonwealth Fisheries.





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# 1 Introduction

The *Commonwealth Fisheries Harvest Strategy Policy* (the Harvest Strategy Policy) provides a framework for applying a science-based approach to setting harvest levels in Commonwealth Fisheries. It defines biological and economic objectives that apply to the development of harvest strategies for Commonwealth fisheries and identifies reference points for use in harvest strategies to achieve objectives. Attached to this policy are *Guidelines for Implementation of the Commonwealth Fisheries Harvest Strategy Policy* (the Guidelines) which provide practical assistance for the development and implementation of fishery-specific harvest strategies. This policy, together with the *Commonwealth Fisheries Bycatch Policy* (the Bycatch Policy), the *Guidelines for the Ecologically Sustainable Management of Fisheries* and the *Commonwealth Fisheries Policy Statement* provides the basis to manage the risk to all species impacted by the commercial harvest of Commonwealth fisheries resources.

Commented [51]: What is the rationale for changing from the previous evidence-based term?

Owing to the diverse nature of Commonwealth fisheries, the Harvest Strategy Policy provides for flexibility in the use of harvest strategies that meet the needs of each fishery, while still meeting the objectives of this policy. Harvest strategies developed under the policy will take available information about particular fish stocks and apply a science-based approach to setting catch levels. Harvest strategies consistent with this policy will provide industry and the Australian community with confidence that Commonwealth commercial fish stocks are being managed for long-term ecological sustainability and economic viability. The implementation of clearly specified harvest strategies also provide the fishing industry with a more certain operating environment.

The legislative framework that establishes the objectives, obligations and powers of the Commonwealth fisheries regulator, the Australian Fisheries Management Authority includes the *Fisheries Management Act 1991* and the *Fisheries Administration Act 1991*. The *Environment Protection and Biodiversity Conservation Act 1999* also imposes certain requirements on Commonwealth fisheries and their management.

Further, this policy reflects the formal direction given by the Australian Government fisheries minister to the Australian Fisheries Management Authority in 2005, which required them to take immediate action in all Commonwealth fisheries to, among other things:

- cease overfishing and recover overfished stocks to levels that will ensure long term sustainability and productivity
- avoid further species from becoming overfished in the short and long term
- manage the broader environmental impacts of fishing, including on threatened species or those otherwise protected under the *Environment Protection and Biodiversity Conservation Act 1999*.

In achieving these objectives harvest strategies will be developed consistent with the principles of ecosystem based fisheries management and ecologically sustainable development. This includes consideration of the relationship the species has with others in the food web and the marine environment. In some circumstances it may be necessary to manage a stock or group of stocks more conservatively to take account of its importance to maintaining the food web or ecological community.

An objective of the *Fisheries Management Act 1991* is the exploitation of fisheries resources in a manner consistent with the principles of ecological sustainable development. The principles include the effective integration of long term and short term economic, environmental, and social and equity considerations. A further objective is to pursue the maximisation of net economic returns to the Australian community from the management of fisheries. In addition, in circumstances where recreational or Indigenous catch is a significant part of a Commonwealth fishery, the harvest strategy must take into account the interests of these sectors.<sup>1</sup>

Implementing harvest strategies by themselves will not necessarily achieve ecologically sustainable or economically optimal fisheries. Other tools are available to Commonwealth fisheries managers, including the Commonwealth's ecological risk assessment and ecological risk management framework, and bycatch management under the Bycatch Policy. Harvest strategies, in combination with the other elements of the Commonwealth fisheries management system, constitute a comprehensive approach to ecosystem based fisheries management. In some cases cooperation will be required with other jurisdictions in the management of shared resources to ensure objectives can be met for Commonwealth fisheries.

Commented [S12]: This effectively says that these are objective of the policy yet the policy provides no guidance as to how most of them will be achieved. This seems to leave the gate open to ambiguity and lack of clarity

## 1.1 What is a harvest strategy?

A harvest strategy sets out a decision framework necessary to achieve defined biological and economic objectives for commercial fish stocks in a given fishery. Harvest strategies outline:

- Processes for monitoring and assessing the biological and economic conditions of commercial fish species within fisheries in relation to fishery specific reference levels (a reference point or points).
- Pre-determined rules that control fishing activity according to the biological and economic conditions of the fishery (as defined by monitoring or assessment). These rules are referred to as control rules or decision rules.

## 1.2 Scope

The Harvest Strategy Policy applies in Commonwealth fisheries managed by the Australian Fisheries Management Authority. Where overlap between domestic jurisdictional management exists (e.g. fisheries that are managed jointly by the Commonwealth and other Australian jurisdictions) the Commonwealth will seek to apply and encourage the adoption of this policy in negotiating and implementing joint or cooperative management arrangements. In the case of fisheries that are managed jointly by an international organisation or arrangement, the Harvest Strategy Policy does not prescribe management arrangements. However, it does articulate the government's preferred approach.

The Harvest Strategy Policy applies to the management of *key commercial, secondary commercial and byproduct species* in Commonwealth fisheries (see Table 1). *Bycatch* and *protected species* are managed under the Bycatch Policy.



## 2 Objectives and Key Principles

The objective of the Harvest Strategy Policy is the sustainable and profitable use of Australia's Commonwealth commercial fisheries resources through the implementation of harvest strategies that maintain commercial fish stocks at sustainable levels and maximise economic returns to the Australian community from the management of Australian fisheries.

To achieve this objective the Commonwealth will implement harvest strategies that pursue maximum net economic returns to the Australian community from fisheries and seek to:

- maintain key commercial fish stocks, on average, at a target biomass equal to the stock size required to produce maximum economic yield
- maintain all commercial fish stocks, including byproduct, above a biomass limit where the risk to the stock is regarded as unacceptable ( $B_{lim}$ ), at least 90 per cent of the time
- maintain secondary commercial fish stocks, on average, at a target biomass equal to, or greater than, the stock size required to produce maximum sustainable yield from the stock—or an alternative target aimed at achieving maximum economic yield from the fishery
- ensure that the exploitation of fisheries resources and related activities are conducted in a manner consistent with the principles of ecologically sustainable development.

Recognising that most Commonwealth fisheries are multi-species fisheries it may be necessary to manage individual stocks to different target reference points to achieve fishery level maximum economic yield and contribute to these policy objectives, while still ensuring sustainable harvesting of all stocks over the long term (that is avoiding approaching limit reference points).

Maximising the net economic return from a fishery to the Australian community may not always equate with maximising the economic yield or profitability of a commercial fishery. Economic activity may also arise from recreational and Indigenous fishing, and the need to share the resources appropriately will be considered where necessary.

Harvest strategies will ensure fishing is conducted in a manner that does not lead to overfishing. Overfishing is defined as where a stock is subject to a level of fishing that would move it to an overfished state, or prevent it from rebuilding to a not overfished state. Where it is identified that overfishing of a stock is occurring, action will be taken immediately to cease that overfishing and action taken to recover overfished stocks to levels that will ensure long term sustainability and productivity.

Harvest strategies will also ensure that for those stocks that are overfished, the fishery must be managed such that, with regard to fishing impacts, there is a high degree of probability the stock(s) will recover. For a stock that is assessed to be below the biomass limit reference point (i.e. overfished), a stock rebuilding strategy will be developed to rebuild the stock to the limit biomass level.

Related to these objectives is the need for fisheries to be managed so as to avoid fish species being listed as a threatened species under the *Environment Protection and Biodiversity*

Commented [S13]: This section needs to make clearer what the key principles are. One has to work hard to identify objectives and principles

Commented [S14]: What is the rationale for now ignoring all of the previously mentioned objectives and focusing solely on these?

Commented [S15]: Are these the principles?

Commented [S16]: Consider reordering these two. What about byproduct species?

Commented [S17]: The terms appropriately and where necessary are very vague. Is this a principle?

Commented [S18]: Productivity hasn't been mentioned previously. Should it be profitability?



*Conservation Act 1999*, or for existing listed species to be upgraded to a higher conservation level.

## 3 Applying the Harvest Strategy Policy

The following requirements provide the basis for a transparent and systematic approach for developing harvest strategies to assist in meeting the objectives of the Harvest Strategy Policy.

### 3.1 Species categorisation

All species landed and sold in Commonwealth fisheries are considered 'commercial species'. All commercial species in a fishery are to be categorised into one of three categories; *key commercial*, *secondary commercial* or *byproduct*.

The categorisation of each species (or group of species) in a fishery, along with the justification for that categorisation will be documented and made publicly available. Justification for any grouping of stocks or species will also form part of that documentation.

Factors such as consumer demand, changing cost structures, changes in regulation or changes in technology may require the transition of stocks in a fishery (based on definitions provided below) between categories. Guidance for species categorisation, including transitioning of species between categories will form part of the guidelines developed to support this policy.

While objectives of this policy apply generally at the fishery level, this policy sets out key principles that apply to each individual category of species. Table 1 provides a definition of each species category as well as a summary of policy objectives and management settings for each category.

#### 3.1.1 Key commercial

*Key commercial* species are almost always retained and landed and make a significant contribution to the value of the catch in a fishery. Because of their value, more resources are generally directed to the assessment, management and monitoring of these species, and there is often a relatively high level of data available for these stocks. Key commercial species also include those that have recently made a significant contribution to the value of the fishery.

#### 3.1.2 Secondary commercial

*Secondary commercial* stocks make some contribution to the value of the catch in a fishery, but are not the most valuable species caught in a fishery. They are usually retained and landed.

#### 3.1.3 Byproduct

*Byproduct* species make a minor contribution to the value of the catch in a fishery. They are occasionally landed and retained—ranging from rarely encountered and usually retained, to frequently encountered and rarely retained. There is often limited biological or economic information available for byproduct stocks or species.

### 3.2 Accounting for all sources of fishing mortality

Harvest strategies will account for all known sources of fishing mortality on a stock, including recreational and Indigenous fishing; and fishing under the management of another jurisdiction.

Commented [S19]: Both of the other category definitions include a comment on data / information. Why not this one?

Commented [S110]: Species?

### 3.3 Establishing and applying decision rules

Harvest strategies developed under this policy will specify any required management actions or considerations in a fishery for a species, at the stock or management unit level, necessary to achieve the ecological and economic management objectives for the fishery.

Commented [SJ11]: This section seems underdeveloped

### 3.4 Balancing risk, cost and catch

This policy establishes a risk-based management approach which provides for an increased level of caution when establishing control rules in association with increasing levels of uncertainty about stock status.

Commented [SJ12]: Should this be one of the principles?

In the context of this policy, the risk, cost, catch trade-off refers to a trade-off between the amount of resources invested in data collection, analysis and management of a species or stock, and the level of catch (or fishing mortality) applied to that species or stock. Fishing mortality should always be constrained to levels at which scientific assessment indicates the species is not exposed to an 'unacceptable ecological risk' (that is the risk that stocks will fall below the limit reference point).

Commented [SJ13]: Use the term decision rules above  
Better to be consistent

The management decision to be taken in the context of this policy is whether investment of more resources in data collection and analyses and/or additional management will increase the understanding of the risk to a species or stock from fishing and provide confidence in the sustainability of a higher level of fishing pressure or catch. In the absence of this additional information—and associated improved understanding of a stock—it may be necessary to reduce the fishing effort in order to manage the risk. Decisions about investment in managing risk versus the economic return of the catch taken will be transparently made, clearly documented and publicly available.

Commented [SJ14]: Or biological risk?

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Table 1: Species categorisation – policy and management settings

Category	Harvest Strategy Policy (Commercial)			Bycatch Policy (Non-commercial)	
	Key commercial	Secondary commercial	Byproduct	Bycatch	Protected
Definition	A species that is targeted and is usually retained <sup>1</sup>	A species that is usually retained	A species that is occasionally retained May include species that are rare and usually retained through to species that are frequently encountered but rarely retained.	A species that is not usually retained	A species listed under Part 13 of the EPBC Act (excluding listing as conservation dependent)
	Significant contribution to value of the fishery	Some contribution to the value of the fishery	Minor contribution to the value of the fishery	No contribution to the economic value of the fishery.	
Policy objective	Sustainable and profitable use of Australia's Commonwealth commercial fisheries resources through the implementation of harvest strategies that both maintain commercial fisheries at ecologically sustainable levels and maximise economic returns to the Australian community from the use of the resource.			Minimise fishing-related impacts on bycatch species—in a manner consistent with the principles of ecologically sustainable development and with regard to the structure, productivity, function and biological diversity of the ecosystem.	
Target	B <sub>MSY</sub>	B <sub>MSY</sub> , or an alternative target to achieve B <sub>MSY</sub> for the fishery	Not managed to a target as by definition byproduct species make a minor contribution to the fishery	Draw on best-practice approaches to avoid or minimise bycatch, and minimise the mortality of bycatch that cannot be avoided	Ensure fishing operations take all reasonable steps to avoid the mortality of, or injury to, protected species recognising that there may be a need to recover populations of species listed in these categories
Limit reference point	Remain above a biomass level where the risk to the stock is regarded as unacceptable at least 90 per cent of the time			Manage fishing-related impacts on bycatch species to ensure that populations (i.e. discrete biological stocks) are not depleted below a level where the risk of recruitment failure is regarded as unacceptably high.	Consistent with the requirements of the EPBC Act a limit reference point is not set
Discarding	minimise discarding	minimise discarding	minimise discarding	minimise discarding	na

Commented [S115]: The definition given above does not use the word targeted. Need to be consistent



### 3.5 Reference points and proxies

A reference point is a specified level of an indicator used as a basis for managing a stock or fishery. The reference point should reflect acceptable levels of biological impact on a stock and the desired economic outcomes from a fishery. A reference point will often be based on indicators of either the total or spawning stock size (biomass), the amount of harvest (fishing mortality), or on other factors such as economic return from the fishery.

Harvest strategies for stocks in Commonwealth fisheries will generally be based on 'target' reference points and 'limit' reference points. Target reference points are set at levels designed to achieve the policy objectives. Limit reference points are the indicator stock levels beyond which the risk to the long term health of the stock, as the basis of a commercial fishery, is considered unacceptable and which management should avoid. The limit reference point will not be the point below which the stock will risk extinction – however stocks fished below their limit reference point face a range of biological risks, including an unacceptable risk to recruitment and an increased risk that the stock will fail to maintain its ecological function.

It is important to ensure that the development of harvest strategies and reference points is practical and realistic in respect of the scale or nature of the fishery and the resources available to manage it. The cost of developing and implementing a harvest strategy should be considered against the likely value of the fishery.

Where the information required to estimate stock specific target and limit reference points are not available, or able to be collected in a cost effective way, the following proxy reference points are to be used:

Table 2: Proxy reference points

Reference point	Definition	Proxy
Key commercial and secondary commercial species or stock-target reference point	The biomass level at maximum economic yield (B <sub>MEY</sub> )	0.48 of unfished biomass or 1.2 of biomass at maximum sustainable yield.
Secondary commercial species in a multispecies fishery where necessary to maximise economic return from the entire fishery-target reference point	The biomass level at Maximum Sustainable Yield (B <sub>MSY</sub> ), or an alternative target to ensure long-term sustainable harvesting of the stock while achieving maximum economic yield at the fishery level.	0.4 of unfished biomass
Limit reference point-all stocks	The biomass level where the ecological risk to the population is regarded as unacceptable (at least 90 percent of the time) (B <sub>UL</sub> )	0.5 of the biomass at maximum sustainable yield or 0.2 of the unfished biomass

Commented [516]: Suggests that could opt to not have a strategy. Is this the case?

Commented [517]: What resources are referred to here?

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In designating reference points, it is important to ensure they are set at levels appropriate to the biology of the species and the particulars of the fishery, and based on reliable scientific and economic information. For example, some highly variable species may naturally—that is, in the absence of fishing—breach the default biomass limit reference point(s). In such circumstances, setting the limit reference point at the default (proxy) level described above may not be appropriate. In cases where information to identify a reference point is not available, and an alternative proxy reference point is proposed based on more general information that is not consistent with the level indicated above, the reasons for this must be based on reliable information, documented and made publicly available.

Commented [548]: This distinguishes between scientific and economic information which makes evidence-based management more appropriate term

Where stock-specific targets are set at levels different to those specified above, a justification for the approach, supported by a technical evaluation, must be documented and publicly available. This justification will include a demonstration of how the approach will contribute to the overall objectives of this policy.

For proxy limit reference points, where there is limited information about a stock, a limit reference point above 0.2 unfished biomass should generally be used. However, this policy does allow for the setting of a limit reference point of below 0.2 of the estimated unfished biomass (where  $B_{MSY}$  is estimated to be below 0.4 of the estimated unfished biomass). This would only occur where: the species biology is suitable; there is a high degree of confidence in the estimate of  $B_{MSY}$ ; and direct evidence has been established through a management strategy evaluation that a limit reference point below 0.2 of the estimated unfished biomass ( $0.5B_{MSY}$ ) would not pose an unacceptable risk to stock recruitment.

### 3.6 Discarding

Discarding of commercial species in order to retain higher value catch shall not be supported by management arrangements and fishers must minimise discarding of commercial species to the greatest extent possible. Where there is evidence of systematic and avoidable discarding, steps to halt it will be developed and implemented. The Australian Fisheries Management Authority will monitor and report on the ongoing level of discarding and processes in place to monitor and reduce discarding.

Estimates of fishing mortality from discarding must be taken into account in stock assessments and risk assessments, when implementing management measures, assessing quota usage and in the operation of harvest control rules to minimise the incentives for discarding.

### 3.7 Spatial and temporal management

Spatial management can be an effective tool to complement other management measures. Spatial management arrangements can be particularly useful in the protection of sedentary or spatially structured stocks such as scallops, aggregating stocks such as orange roughy, or key habitat areas. Temporal management can also be useful to address seasonal issues, such as preventing the catch of stocks during their spawning season.

Consistent with ecosystem based fisheries management and the need to consider a fish stock across its full distribution, the impact of any relevant Commonwealth or state marine reserve on the likely abundance and distribution of the stock should be considered when developing harvest strategies for fisheries.

### 3.8 Technical evaluation of harvest strategies

Harvest strategies should be formally tested to demonstrate that they are highly likely to meet the objective, and key principles of this policy. Outcomes of that testing should be made publicly available.

Methods such as management strategy evaluation—a procedure where alternative management strategies are tested and compared using simulations of stock and fishery dynamics—can be used to test harvest strategies. However, this form of evaluation may not be suitable for all Commonwealth species. Risk based assessment methods should be calibrated against more quantitative methods to provide greater confidence that they reflect the risk of fishing on the stock and that the stock remains above the limit reference point. Such testing is particularly important when information is incomplete or imprecise, and when the relationship between the control rule and fisheries specific objectives or management outcomes is complex.

### 3.9 Jointly-managed domestic stocks

The Commonwealth will pursue the sustainable use of shared domestic stocks. The Commonwealth will seek an equitable allocation for Commonwealth fishers in negotiations with other jurisdictions that share in the management of a stock. The government will use available mechanisms, including revisiting Offshore Constitutional Settlement agreements and Commonwealth fisheries legislation to ensure these objectives are met. The Commonwealth will also cooperate with state and territory jurisdictions in the rebuilding of overfished stocks that are harvested from Commonwealth fisheries.

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### 3.10 Jointly-managed international stocks

In the case of fisheries that are managed jointly by an international organisation or arrangement, the Harvest Strategy Policy does not prescribe management arrangements. This includes management arrangements for commercial and traditional fishing in the Torres Strait Protected Zone, which are governed by the provisions of the Torres Strait Treaty and the *Torres Strait Fisheries Act 1984*.

However, it does articulate the government's preferred approach.

In the case of highly migratory/straddling stocks, the government is bound by all international treaties and arrangements that Australia has ratified or acceded to. The government (including the Australian Fisheries Management Authority) must implement decisions taken by all relevant regional fisheries management organisations and other international arrangements that Australia is a party to, except where Australia has made a permissible reservation in relation to the decision. Through these forums, Australia will continue to pursue the adoption of measures that are consistent with this Policy and domestic management measures in order to achieve the long term sustainability of the stocks. All available information about the stock status, the impact of Australian fishing on that stock and any other relevant information such as catch and effort history will be taken into account in the Australian negotiating position.

The Australian Fisheries Management Authority will set Commonwealth fishery catch levels taking into account available science and evidence, the Australian negotiating position, and advice from the government and any relevant decisions of the applicable regional organisation. The Australian Fisheries Management Authority must determine a domestic catch level that is

the same or less than that permitted under the relevant international arrangement. The Australian Fisheries Management Authority may also impose additional constraints on fishing effort and/or biomass based recommendations or rebuilding targets.

In setting catch levels for Commonwealth fisheries the Australian Fisheries Management Authority's primary consideration will be the harvest strategies for the fishery. Where Australia is not a major harvester of the stock and no harvest strategy has been determined internationally, the key consideration will be Australia's negotiating position in bilateral, regional or international negotiations. If Australia is a major harvester of the stock, the Australian Fisheries Management Authority must develop and implement a harvest strategy consistent with the objectives of this policy.

### 3.11 Rebuilding overfished stocks

If a stock that is managed solely by the Australian Fisheries Management Authority is identified as overfished, immediate action is required to cease overfishing and rebuild overfished stocks to levels that will ensure long-term sustainability and productivity, while avoiding further stocks becoming overfished. For overfished stocks, the Australian Fisheries Management Authority must develop a rebuilding strategy to rebuild the stock to above its limit reference point, for agreement by relevant ministers. A rebuilding strategy will be required until the stock is above the limit reference point with a reasonable level of certainty. It must ensure adequate monitoring and data collection is in place to assess the status of the stock and rebuilding progress and satisfy requirements of the *Environment Protection and Biodiversity Conservation Act 1999*.

Commented [S118]: should this be profitability?

Incidental mortality on overfished stocks should be constrained as much as possible to levels that allow rebuilding to the limit reference point within the specified timeframe.

Once a stock has been rebuilt to above the limit reference point with a reasonable level of certainty, it may be appropriate to recommence targeted fishing in line with its harvest strategy, noting that the usual harvest strategy requirements regarding the risk of breaching the limit reference point will apply. If an overfished stock was previously considered to be a key commercial or secondary commercial stock, consideration should be given to whether it should be rebuilt to target levels designated for these stocks.

Rebuilding strategies should note where sources of mortality exist that cannot be managed or constrained by the Commonwealth, and must take this mortality into account. Where practical and appropriate, the Commonwealth will work with other jurisdictions to ensure other sources of mortality from fishing are reasonably constrained consistent with any catch sharing agreement.

To adequately constrain the level of fishing mortality applied to overfished stocks, by avoiding or minimising incidental catch, it may be necessary to reduce the total allowable catches for other stocks in that fishery. Reductions in the total allowable catches of other stocks should be considered when other strategies are unsuccessful or not considered viable.

Commented [S120]: is this implying "only when"

When a rebuilding strategy is being developed, it must include performance measures and detail on how and when these measures will be reported on. Where there is no evidence that a stock is rebuilding, or is going to rebuild in the required timeframe, the Australian Fisheries Management Authority will review the rebuilding strategy and make the result of the review

public. If changes to the rebuilding strategy are considered necessary, such changes should be made in a timely manner.

### 3.12 Rebuilding timeframes

Rebuilding timeframes are explicitly related to the minimum timeframe for rebuilding in the absence of Commonwealth commercial fishing. This will be further elaborated in the Guidelines to this policy. Rebuilding timeframes should take into account variations in species productivity and recruitment; the relationship between spawning biomass and recruitment; and the stock's current level of depletion.

### 3.13 Relationship between the Harvest Strategy Policy and the Environment Protection and Biodiversity Conservation Act 1999

The *Environment Protection and Biodiversity Conservation Act 1999* sets out Australia's environmental objectives for fisheries and outlines aspects of fisheries that require approval. Additionally, native species such as commercially harvested marine fish species can be listed as threatened species, including in the conservation dependent category, which may have implications for the fishing activities of these species.

In administering the legislation, the Department of the Environment and Energy conducts environmental assessments of fisheries for impacts on matters of national environmental significance; for interactions with species and ecological communities protected under the *Environment Protection and Biodiversity Conservation Act 1999* for fisheries operating in Commonwealth waters; and for fisheries seeking to trade their product internationally. These matters are considered through a single assessment process based on the *Guidelines for the Ecologically Sustainable Management of Fisheries*. It is expected that harvest strategies created in accordance with this policy will be key documents in demonstrating consistency with the above guidelines. Environmental approvals relating to protected species and international trade can be subject to conditions which are designed to encourage fishery managers to optimise management arrangements to meet environmental outcomes and objectives.

The Threatened Species Scientific Committee an independent scientific advisory committee that provides advice to the Environment Minister, undertakes assessments as to whether native species are eligible for listing as a threatened species. Assessments are informed by criteria that is closely aligned with those of the International Union for Conservation of Nature. The assessment is also informed, but not bound by, policy and management settings (including biological reference and trigger points) of the Harvest Strategy Policy. This includes that variations in the extent of acceptable decline depend on the biology of the individual species and for commercially harvested marine fish species, declines of up to 60 per cent from pre-fishing biomass levels are considered acceptable under the Harvest Strategy Policy where depletion is a management outcome.

A fish species can be listed in the conservation dependent category of the threatened species list if:

- it is the focus of a plan of management (i.e. a rebuilding strategy) that provides for management actions necessary to stop its decline and support its recovery,

- the plan of management is in force under law, and
- cessation of the plan of management would adversely affect the conservation status of the species.

When a species is listed in the conservation dependent category, it does not necessarily impose further restrictions or limitations on fishing beyond those provided in the plan of management (rebuilding strategy). Rebuilding strategies, as described above, must outline the actions to be taken to rebuild a conservation dependent stock to above the limit reference biomass. Generally, commercially harvested marine fish species are not assessed and listed in the conservation dependent category unless stock biomass is below the limit reference point, but the Threatened Species Scientific Committee reserves judgment on which species it will assess.

Where the stock biomass of a conservation dependent species has rebuilt above its limit reference, and is rebuilding strongly towards its biomass target reference, the Threatened Species Scientific Committee may consider removing the species from the category. If the stock biomass of a commercially harvested marine fish species falls more substantially below its limit reference point or if a rebuilding strategy is considered ineffective and there is an increased risk of irreversible impacts on the species, a species may be considered for listing in a higher threat category.

If a species were to be listed in any of the vulnerable, endangered or critically endangered categories, it is then considered a *protected* species under the Commonwealth fisheries framework and the Bycatch Policy applies to the management of that species in Commonwealth fisheries.

## 4 Implementation and Review

### 4.1 Guidelines

*The Guidelines for Implementation of the Commonwealth Fisheries Harvest Strategy Policy provide advice and guidance to assist in the interpretation and practical application of the Harvest Strategy Policy. The Guidelines will replace the extant guidelines, implemented in 2007.*

### 4.2 Harvest Strategies

*Harvest strategies for new fisheries, or commercial stocks that currently do not have a harvest strategy, will be developed by the Australian Fisheries Management Authority in consultation with relevant advisory groups and other relevant experts. Harvest strategies will be made publicly available and be regularly reviewed, in particular as fishing intensity changes or new knowledge of impacts on species emerges.*

*For fisheries that have a current harvest strategy, the requirements of this policy must be taken into account as these strategies are reviewed and updated. In any case harvest strategies consistent with this policy must be in place in all significant Commonwealth fisheries within three years of the commencement of this policy.*

*It is anticipated that major amendments to harvest strategies would occur infrequently. However, when it is necessary to significantly amend a harvest strategy or develop a new harvest strategy, this should be undertaken based on current scientific and/or economic analysis and involving appropriate stakeholder consultation.*

*In addition to regularly scheduled reviews, harvest strategies will include review triggers based on significant changes in fishery conditions, such as where a stock's biomass has declined below the limit reference point while subject to a harvest strategy. In such a situation, the settings of the harvest strategy should be reviewed and amended to ensure they are appropriate.*

### 4.3 Roles and responsibilities

*Ultimate responsibility for the management of Commonwealth fisheries rests with the Commonwealth minister responsible for fisheries legislation, in particular the *Fisheries Management Act 1991* and the *Fisheries Administration Act 1991*.*

*The key Commonwealth agencies involved in Commonwealth fisheries are the Department of Agriculture and Water Resources, the Australian Fisheries Management Authority and the Department of the Environment and Energy.*

*The Department of Agriculture and Water Resources oversees the implementation of the Harvest Strategy Policy. This includes ensuring the long-term environmental sustainability and economic productivity of Commonwealth fisheries and the implementation of harvest strategies in the context of the *Fisheries Management Act 1991*, and working with the Department of the Environment and Energy on meeting environmental requirements arising from legislation and policy.*



The Australian Fisheries Management Authority is the Commonwealth regulator responsible for implementing harvest strategies in Commonwealth fisheries. It is responsible for the development of fishery-specific harvest strategies consistent with this policy.

#### **4.4 Reporting and Review**

The Australian Fisheries Management Authority must report on the implementation of the *Commonwealth Fisheries Harvest Strategy Policy* in its Annual Reports and as requested by the minister. The Guidelines will provide options for reporting against performance indicators which should be considered in this context.

The implementation of this policy, through the implementation of fishery specific harvest strategies, will be reviewed by the Department of Agriculture and Water Resources within three years of the release of this policy. This policy will further be reviewed, including progress on achieving objectives and a report provided to ministers, five years after its commencement.

## 5 Glossary

Commented [5121]: There seem to be terms in here that are not used in the policy eg input control, precautionary management

<b>Australian Fisheries Management Authority (AFMA)</b>	The Australian Government agency responsible for regulating the efficient management and sustainable use of Commonwealth fish resources on behalf of the Australian community.
<b>B</b>	Biomass: total weight of a stock or of a component of a stock; for example, the weight of spawning stock biomass is the combined weight of mature animals.
<b>B<sub>LM</sub></b>	Biomass limit reference point: the point beyond which the risk to the stock is regarded as unacceptably high.
<b>B<sub>MEY</sub></b>	Biomass at maximum economic yield: average biomass corresponding to maximum economic yield as estimated from the assessment model applied.
<b>B<sub>MSY</sub></b>	Biomass at maximum sustainable yield: average biomass corresponding to maximum sustainable yield.
<b>B<sub>TARG</sub></b>	Target biomass: the desired biomass of the stock.
<b>B<sub>0</sub></b>	Mean equilibrium unfished biomass: average biomass level if fishing had not occurred. Sometimes the pre-exploitation level is used as a proxy.
<b>bycatch species</b>	Species that physically interact with fishing vessels and/or fishing gear which are not usually kept by commercial fishers and do not make a contribution to the economic value of the fishery.
<b>byproduct species</b>	Stocks that make a minor contribution to the value of the catch in a fishery. Byproduct species are occasionally retained and landed—ranging from rarely encountered and usually retained, to frequently encountered and rarely retained.
<b>control rules</b>	Agreed responses that management must make under pre-defined circumstances regarding stock status (also referred to as harvest control rules).
<b>discards</b>	any part of the catch which is returned to the sea, whether dead or alive

<b>ecologically sustainable development</b>	Using, conserving and enhancing the community's resources so that ecological processes, on which life depends, are maintained, and the total quality of life, now and in the future, can be increased.
<b><i>Environment Protection and Biodiversity Conservation Act 1999 (EPBC Act)</i></b>	Commonwealth Act that provides the legal framework for protecting the environment, including matters of national significance such as World Heritage sites, national heritage places, wetlands of international importance, nationally threatened species and ecological communities, migratory species, Commonwealth marine areas and nuclear actions. Parts 10, 13 and 13A relate specifically to aspects of fisheries.
<b><i>Fisheries Administration Act 1991 (FA Act)</i></b>	Commonwealth Act that establishes the Australian Fisheries Management Authority and its Commission.
<b><i>Fisheries Management Act 1991 (FM Act)</i></b>	Commonwealth Act that provides the legal framework for fisheries managed by the Australian Government. The Act sets out, among several things, fisheries management objectives and arrangements for regulating, permitting, and taking enforcement action with respect to, fishing operations.
<b><i>Guidelines for the Ecologically Sustainable Management of Fisheries</i></b>	Outlines the principles and objectives for evaluating the environmental performance of management arrangements for export fisheries and fisheries which operate in Commonwealth waters.
<b>harvest strategy</b>	A framework that specifies the pre-determined management actions in a fishery for a species (at the stock or management unit level) necessary to achieve the agreed ecological, economic and/or social management objectives.
<b>incidental catch</b>	see non-target
<b>input control</b>	Management measures that place restraints on who fishes (licence limitations), where they fish (closed areas), when they fish (closed seasons) or how they fish (gear restrictions).
<b>interaction</b>	Includes any physical contact with a species and includes all catches (for example, hooked, netted, entangled), discards and releases and collisions with these species

<b>key commercial species</b>	Stocks that make a significant contribution to the value of the catch in a fishery. They are almost always retained and landed.
<b>management strategy evaluation</b>	A procedure whereby alternative management strategies are tested and compared using simulations of stock and fishery dynamics.
<b>maximum economic yield (MEY)</b>	The sustainable catch or effort level for a commercial fishery that allows net economic returns to be maximised (the value of the largest positive difference between total revenues and total costs of fishing).
<b>maximum sustainable yield (MSY)</b>	The maximum average annual catch that can be removed from a stock over an indefinite period under prevailing environmental conditions.
<b>non-target species</b>	any part of the catch, except the target species, and including bycatch and byproduct
<b>not usually retained</b>	Species caught by fishers but usually discarded. This applies fishery-by-fishery, based on catch history and landing data.
<b>output control</b>	Management measures that place restrictions on what is caught, including total allowable catch, quota, size limits and species.
<b>overfished</b>	A fish stock with a biomass below the biomass limit reference point.
<b>overfishing</b>	A stock that is experiencing too much fishing, and the removal rate from the stock is unsustainable.
<b>precautionary principle</b>	Where there are threats of serious or irreversible environmental damage, lack of full scientific certainty should not be used as a reason for postponing measures to prevent environmental degradation. In the application of the precautionary principle, public and private decisions should be guided by: <ol style="list-style-type: none"> <li>1. careful evaluation to avoid, wherever practicable, serious or irreversible damage to the environment; and</li> <li>2. an assessment of the risk-weighted consequences of various options.</li> </ol>
<b>protected species</b>	species protected under Part 13 of the EPBC Act, including whales and other cetaceans and listed threatened, marine and migratory species

<b>reference point</b>	an indicator of the level of fishing, or size of a stock, used as a benchmark for interpreting the results of an assessment
<b>spawning biomass</b>	(also referred to as spawning stock biomass) The total weight of all adult fish in a population.
<b>species</b>	members of a species can breed with one another and produce fertile offspring
<b>secondary commercial species</b>	Stocks that make some contribution to the value of the catch in a fishery, but are not the most valuable species caught in a fishery. They are usually retained and landed.
<b>stock</b>	A functionally discrete biological population of a species that is largely distinct from other populations of the same species and may be regarded as a separate entity for management or assessment purposes.
<b>sustainable yield</b>	The average catch that can be removed from a stock over an indefinite period without causing a further reduction in the biomass of a stock. This could either be a constant yield from year to year, or a yield that fluctuates in response to changes in abundance.
<b>targeting</b>	fishing selectively for particular species or sizes of fish
<b>target species</b>	the most highly sought component of the catch taken by fishers
<b>total allowable catch</b>	For a fishery, a catch limit set as an output control on fishing.

**Comments from:**

**Sandy Morison - SESS Fishery South East Resource Assessment Group (SERAG)**





# Commonwealth Fisheries Harvest Strategy Policy

DRAFT for Consultation:  
March 2017

The Commonwealth Fisheries Harvest Strategy Policy provides the framework for applying a science-based approach to setting harvest levels in Commonwealth Fisheries.



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# 1 Introduction

The *Commonwealth Fisheries Harvest Strategy Policy* (the Harvest Strategy Policy) provides a framework for applying a science-based approach to setting harvest levels in Commonwealth Fisheries. It defines biological and economic objectives that apply to the development of harvest strategies for Commonwealth fisheries and identifies reference points for use in harvest strategies to achieve objectives. Attached to this policy are *Guidelines for Implementation of the Commonwealth Fisheries Harvest Strategy Policy* (the Guidelines) which provide practical assistance for the development and implementation of fishery-specific harvest strategies. This policy, together with the *Commonwealth Fisheries Bycatch Policy* (the Bycatch Policy), the *Guidelines for the Ecologically Sustainable Management of Fisheries* and the *Commonwealth Fisheries Policy Statement* provides the basis to manage the risk to all species impacted by the commercial harvest of Commonwealth fisheries resources.

Owing to the diverse nature of Commonwealth fisheries, the Harvest Strategy Policy provides for flexibility in the use of harvest strategies that meet the needs of each fishery, while still meeting the objectives of this policy. Harvest strategies developed under the policy will take available information about particular fish stocks and apply a science-based approach to setting catch levels. Harvest strategies consistent with this policy provide industry and the Australian community with confidence that Commonwealth commercial fish stocks are being managed for long-term ecological sustainability and economic viability. The implementation of clearly specified harvest strategies also provide the fishing industry with a more certain operating environment.

The legislative framework that establishes the objectives, obligations and powers of the Commonwealth fisheries regulator, the Australian Fisheries Management Authority includes the *Fisheries Management Act 1991* and the *Fisheries Administration Act 1991*. The *Environment Protection and Biodiversity Conservation Act 1999* also imposes certain requirements on Commonwealth fisheries and their management.

Further, this policy reflects the formal direction given by the Australian Government fisheries minister to the Australian Fisheries Management Authority in 2005, which required them to take immediate action in all Commonwealth fisheries to, among other things:

- cease overfishing and recover overfished stocks to levels that will ensure long term sustainability and productivity
- avoid further species from becoming overfished in the short and long term
- manage the broader environmental impacts of fishing, including on threatened species or those otherwise protected under the *Environment Protection and Biodiversity Conservation Act 1999*.

In achieving these objectives harvest strategies will be developed consistent with the principles of ecosystem based fisheries management and ecologically sustainable development. This includes consideration of the relationship the species has with others in the food web and the marine environment. In some circumstances it may be necessary to manage a stock or group of stocks more conservatively to take account of its importance to maintaining the food web or ecological community.



An objective of the *Fisheries Management Act 1991* is the exploitation of fisheries resources in a manner consistent with the principles of ecological sustainable development. The principles include the effective integration of long term and short term economic, environmental, and social and equity considerations. A further objective is to pursue the maximisation of net economic returns to the Australian community from the management of fisheries. In addition, in circumstances where recreational or Indigenous catch is a significant part of a Commonwealth fishery, the harvest strategy must take into account the interests of these sectors.

Implementing harvest strategies by themselves will not necessarily achieve ecologically sustainable or economically optimal fisheries. Other tools are available to Commonwealth fisheries managers, including the Commonwealth's ecological risk assessment and ecological risk management framework, and bycatch management under the Bycatch Policy. Harvest strategies, in combination with the other elements of the Commonwealth fisheries management system, constitute a comprehensive approach to ecosystem based fisheries management. In some cases cooperation will be required with other jurisdictions in the management of shared resources to ensure objectives can be met for Commonwealth fisheries.

## 1.1 What is a harvest strategy?

A harvest strategy sets out a decision framework necessary to achieve defined biological and economic objectives for commercial fish stocks in a given fishery. Harvest strategies outline:

- Processes for monitoring and assessing the biological and economic conditions of commercial fish species within fisheries in relation to fishery specific reference levels (a reference point or points).
- Pre-determined rules that control fishing activity according to the biological and economic conditions of the fishery (as defined by monitoring or assessment). These rules are referred to as control rules or decision rules.

## 1.2 Scope

The Harvest Strategy Policy applies in Commonwealth fisheries managed by the Australian Fisheries Management Authority. Where overlap between domestic jurisdictional management exists (e.g. fisheries that are managed jointly by the Commonwealth and other Australian jurisdictions) the Commonwealth will seek to apply and encourage the adoption of this policy in negotiating and implementing joint or cooperative management arrangements. In the case of fisheries that are managed jointly by an international organisation or arrangement, the Harvest Strategy Policy does not prescribe management arrangements. However, it does articulate the government's preferred approach.

The Harvest Strategy Policy applies to the management of *key commercial, secondary commercial* and *byproduct* species in Commonwealth fisheries (see Table 1). *Bycatch* and *protected* species are managed under the Bycatch Policy.

Commented [SM1]: Further elaboration of what this means is needed – if not here, then in the guidelines. How are these other interests to be taken into account? Is it just in the design of the harvest strategy or is it in other aspects of management? These are just a subset of situations in which there may be a significant catch by a sector outside a Commonwealth fishery. Why not also mention here a significant catch by a State-managed commercial sector? Is the process of dealing with that situation intended to be different to that for any recreational and indigenous catch. Also, what about the other SPFF-type of situations where the recreational take is insignificant but they claim an interest anyway?

Commented [SM2]: Why not place the above sentence about recreational and indigenous fisheries down here as an example of that cooperation?

Commented [SM3]: Mixing things here – you can assess the biological status of a fish species or the economic conditions of a fishery, but not the economic condition of a fish species. This dot point combines monitoring and assessment which are separate processes.

Commented [SM4]: May be clearer to say "pre-determined rules that prescribe the management actions that will be used to control fishing activity according to ...". But this dot point combines the harvest control rules and the management responses to their application. I may be biased by my MSC experience, but I think it is clearer to identify 4 independent components to the 'decision framework' of a harvest strategy

1. Monitoring
2. Stock (biological) or fishery (economic) assessments
3. Harvest control rules
4. Management actions

All of which are judged against the fishery's overall objectives.

Commented [SM5]: Are we talking about fisheries or stocks, or both here? There are lots of stocks that are jointly managed but few fisheries that are.

## 2 Objectives and Key Principles

The objective of the Harvest Strategy Policy is the sustainable and profitable use of Australia's Commonwealth commercial fisheries resources through the implementation of harvest strategies that maintain commercial fish stocks at sustainable levels and maximise economic returns to the Australian community from the management of Australian fisheries.

To achieve this objective the Commonwealth will implement harvest strategies that pursue maximum net economic returns from fisheries and seek to:

- maintain key commercial fish stocks, on average, at a target biomass equal to the stock size required to produce maximum economic yield
- maintain all commercial fish stocks, including byproduct, above a biomass limit where the risk to the stock is regarded as unacceptable ( $B_{lim}$ ), at least 90 per cent of the time
- maintain secondary commercial fish stocks, on average, at a target biomass equal to, or greater than, the stock size required to produce maximum sustainable yield from the stock—or an alternative target aimed at achieving maximum economic yield from the fishery.
- ensure that the exploitation of fisheries resources and related activities are conducted in a manner consistent with the principles of ecologically sustainable development.

Recognising that most Commonwealth fisheries are multi-species fisheries it may be necessary to manage individual stocks to different target reference points to achieve fishery level maximum economic yield and contribute to these policy objectives, while still ensuring sustainable harvesting of all stocks over the long term (that is avoiding approaching limit reference points).

Maximising the net economic return from a fishery to the Australian community may not always equate with maximising the profitability of a commercial fishery. Economic activity may also arise from recreational and Indigenous fishing, and the need to share the resources appropriately will be considered where necessary.

Harvest strategies will ensure fishing is conducted in a manner that does not lead to overfishing. Overfishing is defined as where a stock is subject to a level of fishing that would move it to an overfished state, or prevent it from rebuilding to a not overfished state. Where it is identified that overfishing of a stock is occurring, action will be taken immediately to cease that overfishing and action taken to recover overfished stocks to levels that will ensure long term sustainability and productivity.

Harvest strategies will also ensure that for those stocks that are overfished, the fishery must be managed such that, with regard to fishing impacts, there is a high degree of probability the stock(s) will recover. For a stock that is assessed to be below the biomass limit reference point (i.e. overfished), a stock rebuilding strategy will be developed to rebuild the stock to the limit biomass level.

Related to these objectives is the need for fisheries to be managed so as to avoid fish species being listed as a threatened species under the *Environment Protection and Biodiversity*

Commented [SM6]: Need to define as including byproduct species (which seems to be what is intended) as the other two categories listed above under scope (key commercial and secondary commercial) already include the descriptor 'commercial'

Commented [SM7]: "at or greater than"? e.g. for stocks such as small pelagic species where ecosystem considerations dictate a higher target than MEY

Commented [SM8]: Wording is a bit clumsy. How about just say that "the fishery must be managed so that it does not impede recovery"? As we have seen with several non-recovering stocks, that is all we can do and the probability of recovery may still be unexpectedly low.

Commented [SM9]: AFMA manages the fisheries but doesn't manage this process. What management can do is "avoid fish species reaching a status where they may qualify for being listed etc."

*Conservation Act 1999*, or for existing listed species to be upgraded to a higher conservation level.

## 3 Applying the Harvest Strategy Policy

The following requirements provide the basis for a transparent and systematic approach for developing harvest strategies to assist in meeting the objectives of the Harvest Strategy Policy.

### 3.1 Species categorisation

All species landed and sold in Commonwealth fisheries are considered 'commercial species'. All commercial species in a fishery are to be categorised into one of three categories; *key commercial*, *secondary commercial* or *byproduct*.

The categorisation of each species (or group of species) in a fishery, along with the justification for that categorisation will be documented and made publicly available. Justification for any grouping of stocks or species will also form part of that documentation.

Factors such as consumer demand, changing cost structures, changes in regulation or changes in technology may require the transition of stocks in a fishery (based on definitions provided below) between categories. Guidance for species categorisation, including transitioning of species between categories will form part of the guidelines developed to support this policy.

While objectives of this policy apply generally at the fishery level, this policy sets out key principles that apply to each individual category of species. Table 1 provides a definition of each species category as well as a summary of policy objectives and management settings for each category.

#### 3.1.1 Key commercial

*Key commercial species* are almost always retained and landed and make a significant contribution to the value of the catch in a fishery. Because of their value, more resources are generally directed to the assessment, management and monitoring of these species, and there is often a relatively high level of data available for these stocks. Key commercial species also include those that have recently made a significant contribution to the value of the fishery.

Commented [SM10]: Redundant words? Can't really land without retention or vice versa. And the definition doesn't mention 'landed'

#### 3.1.2 Secondary commercial

*Secondary commercial* stocks make some contribution to the value of the catch in a fishery, but are not the most valuable species caught in a fishery. They are usually retained and landed.

#### 3.1.3 Byproduct

*Byproduct species* make a minor contribution to the value of the catch in a fishery. They are occasionally landed and retained—ranging from rarely encountered and usually retained, to frequently encountered and rarely retained. There is often limited biological or economic information available for byproduct stocks or species.

### 3.2 Accounting for all sources of fishing mortality

Harvest strategies will account for all known sources of fishing mortality on a stock, including recreational and indigenous fishing; and fishing under the management of another jurisdiction.



### 3.3 Establishing and applying decision rules

Harvest strategies developed under this policy will specify any required management actions or considerations in a fishery for a species, at the stock or management unit level, necessary to achieve the ecological and economic management objectives for the fishery.

Commented [SM11]: This text doesn't match the heading very well and seems to be redundant given the text already in 1.1

### 3.4 Balancing risk, cost and catch

This policy establishes a risk-based management approach which provides for an increased level of caution when establishing control rules in association with increasing levels of uncertainty about stock status.

Commented [SM12]: There is no mention here of the concept of risk equivalency across different assessment approaches. Is that level of detail to be covered in the guidelines? There is a section in the Bycatch Policy on it.

In the context of this policy, the risk, cost, catch trade-off refers to a trade-off between the amount of resources invested in data collection, analysis and management of a species or stock, and the risk to the stock from the level of catch (or fishing mortality) applied to that species or stock. Fishing mortality should always be constrained to levels at which scientific assessment indicates the species is not exposed to an 'unacceptable ecological risk' (that is the risk that stocks will fall below the limit reference point).

Commented [SM13]: But the risk should evaluated more generally as the risk of not achieving any of the management objectives, which includes the risk of not achieving targets or affecting ecosystems more broadly as well as the risk of breaching limits.

The management decision to be taken in this context is whether investment of more (or fewer?) resources in data collection and analyses and/or additional (or reduced?) management will increase (or maintain sufficient?) the understanding of the risk to a species or stock from fishing and provide confidence in the sustainability of (the current or?) a higher level of fishing pressure or catch. In the absence of this additional information—and associated improved understanding of a stock—(or where such understanding may be considered to have become deficient) it may be necessary to reduce the fishing effort in order to manage the risk. Decisions about investment in managing risk versus the economic return of the catch taken will be transparently made, clearly documented and publicly available.

Commented [SM14]: The changes could work both ways here?

**Table 1: Species categorisation – policy and management settings**

Category	Harvest Strategy Policy (Commercial)			Bycatch Policy (Non-commercial)	
	Key commercial	Secondary commercial	Byproduct	Bycatch	Protected
<b>Definition</b>	A species that is targeted and is usually retained	A species that is usually retained	A species that is occasionally retained May include species that are rare and usually retained through to species that are frequently encountered but rarely retained	A species that is not usually retained	A species listed under Part 13 of the EPBC Act (excluding listing as conservation dependent)
	Significant contribution to value of the fishery.	Some contribution to the value of the fishery.	Minor contribution to the value of the fishery	No contribution to the economic value of the fishery.	
<b>Policy objective</b>	Sustainable and profitable use of Australia's Commonwealth commercial fisheries resources through the implementation of harvest strategies that both maintain commercial fisheries at ecologically sustainable levels and maximise economic returns to the Australian community from the use of the resource			Minimise fishing-related impacts on bycatch species—in a manner consistent with the principles of ecologically sustainable development and with regard to the structure, productivity, function and biological diversity of the ecosystem	
<b>Target</b>	B <sub>MSY</sub>	B <sub>MSY</sub> , or an alternative target to achieve B <sub>MSY</sub> for the fishery	Not managed to a target as by definition byproduct species make a minor contribution to the fishery	Draw on best-practice approaches to avoid or minimise bycatch, and minimise the mortality of bycatch that cannot be avoided	Ensure fishing operations take all reasonable steps to avoid the mortality, or injury to, protected species recognising that there may be a need to recover populations of species listed in these categories
					Commented [SM15]: Are there also species that are not allowed to be retained but aren't listed as Protected under the EPBC Act? e.g. under OCS arrangements with the states? Or are these all under limits that would put them in the Byproduct category?
<b>Limit reference point</b>	Remain above the limit reference point (a biomass level or fishing mortality level where the risk to the stock is regarded as unacceptable) at least 90 per cent of the time			Manage fishing-related impacts on bycatch species to ensure that populations (i.e. discrete biological stocks) are not depleted below a level where the risk of recruitment failure is regarded as unacceptably high.	Consistent with the requirements of the EPBC Act a limit reference point is not set.
<b>Discarding</b>	minimise discarding	minimise discarding	minimise discarding	minimise discarding	Na



### 3.5 Reference points and proxies

A reference point is a specified level of an indicator used as a basis for managing a stock or fishery. The reference point should reflect acceptable levels of biological impact on a stock and the desired economic outcomes from a fishery. A reference point will often be based on indicators of either the total or spawning stock size (biomass), the amount of harvest (fishing mortality), or on other factors such as economic return from the fishery.

Harvest strategies for stocks in Commonwealth fisheries will generally be based on 'target' reference points and 'limit' reference points. Target reference points are set at levels designed to achieve the policy objectives. Limit reference points are the indicator stock levels beyond which the risk to the long term health of the stock, as the basis of a commercial fishery, is considered unacceptable and which management should avoid. The limit reference point will not be the point below which the stock will risk extinction – however stocks fished below their limit reference point face a range of biological risks, including an unacceptable risk to recruitment and an increased risk that the stock will fail to maintain its ecological function.

It is important to ensure that the development of harvest strategies and reference points is practical and realistic in respect of the scale or nature of the fishery and the resources available to manage it. The cost of developing and implementing a harvest strategy should be considered against the likely value of the fishery.

Where the information or resources required to estimate stock specific target and limit reference points are not available, or able to be collected in a cost effective way, the following proxy reference points are to be used:

**Table 2: Proxy reference points**

Reference point	Definition	Proxy
Key commercial and secondary commercial species or stock-target reference point	The biomass level at maximum economic yield (B <sub>MEY</sub> )	0.48 of unfished biomass or 1.2 of biomass at maximum sustainable yield <sup>1</sup>
Secondary commercial species in a multispecies fishery where necessary to maximise economic return from the entire fishery-target reference point	The biomass level at Maximum Sustainable Yield (B <sub>MSY</sub> ), or an alternative target to ensure long-term sustainable harvesting of the stock while achieving maximum economic yield at the fishery level.	0.4 of unfished biomass
Limit reference point—all stocks	The biomass level where the ecological risk to the population is regarded as unacceptable (at least 90 percent of the time) (B <sub>LIM</sub> )	0.5 of the biomass at maximum sustainable yield or 0.2 of the unfished biomass <sup>2</sup>

Commented [SM17]: Could these words be replaced by the word "reflects"?

Commented [SM18]: This seems to be saying the same thing as the previous sentence

Commented [SM19]: Whichever is the higher? There are situations where we might estimate both and they will be different.

Commented [SM20]: Whichever is the higher?

In designating reference points, it is important to ensure they are set at levels appropriate to the biology of the species and the particulars of the fishery, and based on reliable scientific and economic information. For example, some highly variable species may naturally—that is, in the absence of fishing—breach the default biomass limit reference point(s). In such circumstances, setting the limit reference point at the default (proxy) level described above may not be appropriate. In cases where information to identify a reference point is not available, and an alternative proxy reference point is proposed based on more general information that is not consistent with the level indicated above, the reasons for this must be based on reliable information, documented and made publicly available.

Where stock-specific targets are set at levels different to those specified above, a justification for the approach, supported by a technical evaluation, must be documented and publicly available. This justification will include a demonstration of how the approach will contribute to the overall objectives of this policy.

For proxy limit reference points, where there is limited information about a stock, a limit reference point above 0.2 unfished biomass should generally be used. However, this policy does allow for the setting of a limit reference point of below 0.2 of the estimated unfished biomass (where  $B_{MSY}$  is estimated to be below 0.4 of the estimated unfished biomass). This would only occur where: the species' biology is suitable; there is a high degree of confidence in the estimate of  $B_{MSY}$ ; and direct evidence has been established through a management strategy evaluation that a limit reference point below 0.2 of the estimated unfished biomass ( $0.5B_{MSY}$ ) would not pose an unacceptable risk to stock recruitment.

### 3.6 Discarding

Discarding of commercial species in order to retain higher value catch shall not be supported by management arrangements and fishers must minimise discarding of commercial species to the greatest extent possible. Where there is evidence of systematic and avoidable discarding, steps to halt it will be developed and implemented. The Australian Fisheries Management Authority will monitor and report on the ongoing level of discarding and processes in place to monitor and reduce discarding.

Estimates of fishing mortality from discarding must be taken into account in stock assessments and risk assessments, when implementing management measures, assessing quota usage and in the operation of harvest control rules to minimise the incentives for discarding.

### 3.7 Spatial and temporal management

Spatial management can be an effective tool to complement other management measures. Spatial management arrangements can be particularly useful in the protection of sedentary or spatially structured stocks such as scallops, aggregating stocks such as orange roughy, or key habitat areas. Temporal management can also be useful to address seasonal issues, such as preventing the catch of stocks during their spawning season.

Consistent with ecosystem based fisheries management and the need to consider a fish stock across its full distribution, the impact of any relevant Commonwealth or state marine reserve on the likely abundance and distribution of the stock should be considered when developing harvest strategies for fisheries.

Commented [SM21]: Should probably reference Table 2 to make it clear that this is not referencing the situation described in the text immediately above

Commented [SM22]: Should probably reference Table 2 here also.

Commented [SM23]: Or just "be consistent with"

Commented [SM24]: What does this mean?

Commented [SM25]: Careful here. The implication is that this is always undesirable, which is not the case e.g. the blue grenadier and roughy fisheries.

Commented [SM26]: Or is this meant to mean "the protection afforded by"

Commented [SM27]: I can understand an MPA affecting abundance but not distribution



### 3.8 Technical evaluation of harvest strategies

Harvest strategies should be formally tested to demonstrate that they are highly likely to meet the objective and key principles of this policy. Outcomes of that testing should be made publicly available.

Methods such as management strategy evaluation—a procedure where alternative management strategies are tested and compared using simulations of stock and fishery dynamics—can be used to test harvest strategies. However, this form of evaluation may not be suitable for all Commonwealth species. Risk based assessment methods should be calibrated against more quantitative methods to provide greater confidence that they reflect the risk of fishing on the stock and that the stock remains above the limit reference point. Such testing is particularly important when information is incomplete or imprecise, and when the relationship between the control rule and fisheries specific objectives or management outcomes is complex.

### 3.9 Jointly-managed domestic stocks

Consistent with the 2005 Ministerial Direction, the Commonwealth will pursue the sustainable use of shared domestic stocks. The Commonwealth will seek an equitable allocation for Commonwealth fishers in negotiations with other jurisdictions that share in the management of a stock. The government will use available mechanisms, including revisiting Offshore Constitutional Settlement agreements and Commonwealth fisheries legislation to ensure these objectives are met. The Commonwealth will also cooperate with state and territory jurisdictions in the rebuilding of overfished stocks that are harvested from Commonwealth fisheries.

Commented [SM28]: Of both catch and the management costs, or just the catch, or of some other measure of the benefits, such as equity of access? Might help to be more specific here about the intentions.

### 3.10 Jointly-managed international stocks

In the case of fisheries that are managed jointly by an international organisation or arrangement, the Harvest Strategy Policy does not prescribe management arrangements. This includes management arrangements for commercial and traditional fishing in the Torres Strait Protected Zone, which are governed by the provisions of the Torres Strait Treaty and the Torres Strait Fisheries Act 1984.

However, it does articulate the government's preferred approach.

In the case of highly migratory/straddling stocks, the government is bound by all international treaties and arrangements that Australia has ratified or acceded to. The government (including the Australian Fisheries Management Authority) must implement decisions taken by all relevant regional fisheries management organisations and other international arrangements that Australia is a party to, except where Australia has made a permissible reservation in relation to the decision. Through these forums, Australia will continue to pursue the adoption of measures that are consistent with this Policy and domestic management measures in order to achieve the long term sustainability of the stocks. All available information about the stock status, the impact of Australian fishing on that stock and any other relevant information such as catch and effort history will be taken into account in the Australian negotiating position.

Commented [SM29]: I presume that this is described this way to include fishing that is not managed by AFMA (State managed commercial and rec fishing, indigenous fishing) but is it worth being specific about the intention?

The Australian Fisheries Management Authority will set Commonwealth fishery catch levels taking into account available science and evidence, the Australian negotiating position, and advice from the government and any relevant decisions of the applicable regional organisation. The Australian Fisheries Management Authority must determine a domestic catch level that is

the same or less than that permitted under the relevant international arrangement. The Australian Fisheries Management Authority may also impose additional constraints on fishing effort and/or biomass based recommendations or rebuilding targets.

In setting catch levels for Commonwealth fisheries the Australian Fisheries Management Authority's primary consideration will be the harvest strategies for the fishery. Where Australia is not a major harvester of the stock and no harvest strategy has been determined internationally, the key consideration will be Australia's negotiating position in bilateral, regional or international negotiations. If Australia is a major harvester of the stock, the Australian Fisheries Management Authority must develop and implement a harvest strategy consistent with the objectives of this policy.

### 3.11 Rebuilding overfished stocks

If a stock that is managed solely by the Australian Fisheries Management Authority is identified as overfished, immediate action is required to cease overfishing and rebuild overfished stocks to levels that will ensure long-term sustainability and productivity, while avoiding further stocks becoming overfished. For overfished stocks, the Australian Fisheries Management Authority must develop a rebuilding strategy to rebuild the stock to above its limit reference point, for agreement by relevant ministers. A rebuilding strategy will be required until the stock is above the limit reference point with a reasonable level of certainty. It must ensure adequate monitoring and data collection is in place to assess the status of the stock and rebuilding progress and satisfy requirements of the *Environment Protection and Biodiversity Conservation Act 1999*.

Incidental mortality on overfished stocks should be constrained as much as possible to levels that allow rebuilding to the limit reference point within the specified timeframe.

Once a stock has been rebuilt to above the limit reference point with a reasonable level of certainty, it may be appropriate to recommence targeted fishing in line with its harvest strategy, noting that the usual harvest strategy requirements regarding the risk of breaching the limit reference point will apply. If an overfished stock was previously considered to be a key commercial or secondary commercial stock, consideration should be given to whether it should be rebuilt to target levels designated for these stocks.

Rebuilding strategies should note where sources of mortality exist that cannot be managed or constrained by the Commonwealth, and must take this mortality into account. Where practical and appropriate, the Commonwealth will work with other jurisdictions to ensure other sources of mortality from fishing are reasonably constrained consistent with any catch sharing agreement.

To adequately constrain the level of fishing mortality applied to overfished stocks, by avoiding or minimising incidental catch, it may be necessary to reduce the total allowable catches for other stocks in that fishery. Reductions in the total allowable catches of other stocks should be considered when other strategies are unsuccessful or not considered viable.

When a rebuilding strategy is being developed, it must include performance measures and detail on how and when these measures will be reported on. Where there is no evidence that a stock is rebuilding, or is going to rebuild in the required timeframe, the Australian Fisheries Management Authority will review the rebuilding strategy and make the result of the review

Commented [SM30]: Only possible where it has the authority to do so. E.g. AFMA can't determine the domestic catch of SBT for the rec sector and it doesn't (as far as I know) deduct estimated rec catches from Australia's allowance. Maybe this should only say "must determine a domestic catch level for the fisheries under its jurisdiction."

Commented [SM31]: This seems to contradict the first sentence of this section. Does the SBT situation match this final phrase? Australia is a major harvester, but the current harvest strategy does not seem to fit with the objectives stated in Section 3.2 e.g. there does not seem to be any accounting for the increasing catch by the rec sector in the way that would be expected to happen for other fisheries.

Commented [SM32]: Is this a good condition to prescribe? Does it mean that as soon as there is some element of shared management that AFMA is off the hook entirely? It leaves unspecified what is required if AFMA is not the sole management authority, but where AFMA-managed fisheries were still a significant cause of a species decline (e.g. school shark, blue warehou).

On the other hand, what if fishing was not the cause of a species decline? Does AFMA still have the responsibility to put a monitoring and data collection system in place for such species? We know that such monitoring can be expensive, very problematic and that it can be difficult to track population status.

Commented [SM33]: This seems to imply that EPBC requirements kick in as soon as a species drops below Blim. That doesn't recognise that species may naturally drop below Blim, that there can be a lag between becoming overfished and any EPBC listing, or that (as outlined under 3.13) not all overfished species will become listed anyway.

Commented [SM34]: Before fishing is allowed? Would a better requirement be that the species' categorisation should be re-considered (key, secondary, byproduct) as this will then indicate the appropriate target?

public. If changes to the rebuilding strategy are considered necessary, such changes should be made in a timely manner.

### 3.12 Rebuilding timeframes

Rebuilding timeframes are explicitly related to the minimum timeframe for rebuilding in the absence of Commonwealth commercial fishing. This will be further elaborated in the Guidelines to this policy. Rebuilding timeframes should take into account variations in species productivity and recruitment; the relationship between spawning biomass and recruitment; and the stock's current level of depletion.

### 3.13 Relationship between the Harvest Strategy Policy and the Environment Protection and Biodiversity Conservation Act 1999

The *Environment Protection and Biodiversity Conservation Act 1999* sets out Australia's environmental objectives for fisheries and outlines aspects of fisheries that require approval. Additionally, native species such as commercially harvested marine fish species can be listed as threatened species, including in the conservation dependent category, which may have implications for the fishing activities of these species.

In administering the legislation, the Department of the Environment and Energy conducts environmental assessments of fisheries for impacts on matters of national environmental significance; for interactions with species and ecological communities protected under the *Environment Protection and Biodiversity Conservation Act 1999* for fisheries operating in Commonwealth waters; and for fisheries seeking to trade their product internationally. These matters are considered through a single assessment process based on the *Guidelines for the Ecologically Sustainable Management of Fisheries*. It is expected that harvest strategies created in accordance with this policy will be key documents in demonstrating consistency with the above guidelines. Environmental approvals relating to protected species and international trade can be subject to conditions which are designed to encourage fishery managers to optimise management arrangements to meet environmental outcomes and objectives.

The Threatened Species Scientific Committee is an independent scientific advisory committee that provides advice to the Environment Minister, and undertakes assessments as to whether native species are eligible for listing as a threatened species. Assessments are informed by criteria that are closely aligned with those of the International Union for Conservation of Nature. Assessments are also informed, but not bound, by policy and management settings (including biological reference and trigger points) of the Harvest Strategy Policy. This Policy indicates that variations in the extent of acceptable decline depend on the biology of the individual species and that, for commercially harvested marine fish species, declines of up to 60 per cent from pre-fishing biomass levels are considered acceptable under the Harvest Strategy Policy where depletion is an intended management outcome.

A fish species can be listed in the conservation dependent category of the threatened species list if:

- It is the focus of a plan of management (i.e. a rebuilding strategy) that provides for management actions necessary to stop its decline and support its recovery,

Deleted: is
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Commented [SM35]: Probably better to say with the language used earlier in this Policy of "commercial fishery resources"

Commented [SM36]: Does the rest of this section belong in this Policy or should there just be a cross-reference here to relevant EPBC Act provisions? Presumably they are consistent but you don't necessarily want to have to amend this Policy if EPBC requirements change.



- the plan of management is in force under law, and
- cessation of the plan of management would adversely affect the conservation status of the species.

When a species is listed in the conservation dependent category, it does not necessarily impose further restrictions or limitations on fishing beyond those provided in the plan of management (rebuilding strategy). Rebuilding strategies, as described above, must outline the actions to be taken to rebuild a conservation dependent stock to above the limit reference biomass. Generally, commercially harvested marine fish species are not assessed and listed in the conservation dependent category unless stock biomass is below the limit reference point, but the Threatened Species Scientific Committee reserves judgment on which species it will assess.

Where the stock biomass of a conservation dependent species has rebuilt above its limit reference, and is rebuilding strongly towards its biomass target reference, the Threatened Species Scientific Committee may consider removing the species from the category. If the stock biomass of a commercially harvested marine fish species falls more substantially below its limit reference point or if a rebuilding strategy is considered ineffective and there is an increased risk of irreversible impacts on the species, a species may be considered for listing in a higher threat category.

If a species were to be listed in any of the vulnerable, endangered or critically endangered categories, it is then considered a *protected* species under the Commonwealth fisheries framework and the Bycatch Policy applies to the management of that species in Commonwealth fisheries.



## 4 Implementation and Review

### 4.1 Guidelines

The *Guidelines for Implementation of the Commonwealth Fisheries Harvest Strategy Policy* provide advice and guidance to assist in the interpretation and practical application of the Harvest Strategy Policy. The Guidelines will replace the extant guidelines, implemented in 2007.

Commented [SM37]: Is the same comment needed up front about the Policy itself?

### 4.2 Harvest Strategies

Harvest strategies for new fisheries, or commercial stocks that currently do not have a harvest strategy, will be developed by the Australian Fisheries Management Authority in consultation with relevant advisory groups and other relevant experts. Harvest strategies will be made publicly available and be regularly reviewed, in particular as fishing intensity changes or new knowledge of impacts on species emerges.

For fisheries that have a current harvest strategy, the requirements of this policy must be taken into account as these strategies are reviewed and updated. In any case harvest strategies consistent with this policy must be in place in all significant Commonwealth fisheries within three years of the commencement of this policy.

It is anticipated that major amendments to harvest strategies would occur infrequently. However, when it is necessary to significantly amend a harvest strategy or develop a new harvest strategy, this should be undertaken based on current scientific and/or economic analysis and involving appropriate stakeholder consultation.

In addition to regularly scheduled reviews, harvest strategies will include review triggers based on significant changes in fishery conditions, such as where a stock's biomass has declined below the limit reference point while subject to a harvest strategy. In such a situation, the settings of the harvest strategy should be reviewed and amended, as necessary, to ensure they will deliver outcomes that are consistent with the Policy.

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### 4.3 Roles and responsibilities

Ultimate responsibility for the management of Commonwealth fisheries rests with the Commonwealth minister responsible for fisheries legislation, in particular the *Fisheries Management Act 1991* and the *Fisheries Administration Act 1991*.

The key Commonwealth agencies involved in Commonwealth fisheries are the Department of Agriculture and Water Resources, the Australian Fisheries Management Authority and the Department of the Environment and Energy.

The Department of Agriculture and Water Resources oversees the implementation of the Harvest Strategy Policy. This includes ensuring the long-term environmental sustainability and economic productivity of Commonwealth fisheries and the implementation of harvest strategies in the context of the *Fisheries Management Act 1991*, and working with the Department of the Environment and Energy on meeting environmental requirements arising from legislation and policy.

The Australian Fisheries Management Authority is the Commonwealth regulator responsible for implementing harvest strategies in Commonwealth fisheries. It is responsible for the development of fishery-specific harvest strategies consistent with this policy.

#### **4.4 Reporting and Review**

The Australian Fisheries Management Authority must report on the implementation of the *Commonwealth Fisheries Harvest Strategy Policy* in its Annual Reports and as requested by the minister. The Guidelines will provide options for reporting against performance indicators which should be considered in this context.

The implementation of this policy, through the implementation of fishery specific harvest strategies, will be reviewed by the Department of Agriculture and Water Resources within three years of the release of this policy. This policy will further be reviewed, including progress on achieving objectives and a report provided to ministers, five years after its commencement.

## 5 Glossary

<b>Australian Fisheries Management Authority (AFMA)</b>	The Australian Government agency responsible for regulating the efficient management and sustainable use of Commonwealth fish resources on behalf of the Australian community.
<b>B</b>	<b>Biomass:</b> total weight of a stock or of a component of a stock; for example, the weight of spawning stock biomass is the combined weight of mature animals.
<b>B<sub>LM</sub></b>	<b>Biomass limit reference point:</b> the point beyond which the risk to the stock is regarded as unacceptably high.
<b>B<sub>MEY</sub></b>	<b>Biomass at maximum economic yield:</b> average biomass corresponding to maximum economic yield as estimated from the assessment model applied.
<b>B<sub>MSY</sub></b>	<b>Biomass at maximum sustainable yield:</b> average biomass corresponding to maximum sustainable yield.
<b>B<sub>TARG</sub></b>	<b>Target biomass:</b> the desired biomass of the stock.
<b>B<sub>0</sub></b>	<b>Mean equilibrium unfished biomass:</b> average biomass level if fishing had not occurred. Sometimes the pre-exploitation level is used as a proxy.
<b>bycatch species</b>	<b>Species that physically interact with fishing vessels and/or fishing gear which are not usually kept by commercial fishers and do not make a contribution to the economic value of the fishery.</b>
<b>byproduct species</b>	<b>Stocks that make a minor contribution to the value of the catch in a fishery. Byproduct species are occasionally retained and landed—ranging from rarely encountered and usually retained, to frequently encountered and rarely retained.</b>
<b>control rules</b>	<b>Agreed responses that management must make under pre-defined circumstances regarding stock status (also referred to as harvest control rules).</b>
<b>discards</b>	<b>any part of the catch which is returned to the sea, whether dead or alive</b>

ecologically  
sustainable  
development

Using, conserving and enhancing the community's resources so that ecological processes, on which life depends, are maintained, and the total quality of life, now and in the future, can be increased.

*Environment  
Protection and  
Biodiversity  
Conservation Act 1999  
(EPBC Act)*

Commonwealth Act that provides the legal framework for protecting the environment, including matters of national significance such as World Heritage sites, national heritage places, wetlands of international importance, nationally threatened species and ecological communities, migratory species, Commonwealth marine areas and nuclear actions. Parts 10, 13 and 13A relate specifically to aspects of fisheries.

*Fisheries  
Administration Act  
1991 (FA Act)*

Commonwealth Act that establishes the Australian Fisheries Management Authority and its Commission.

*Fisheries Management  
Act 1991 (FM Act)*

Commonwealth Act that provides the legal framework for fisheries managed by the Australian Government. The Act sets out, among several things, fisheries management objectives and arrangements for regulating, permitting, and taking enforcement action with respect to, fishing operations.

*Guidelines for the  
Ecologically  
Sustainable  
Management of  
Fisheries*

Outlines the principles and objectives for evaluating the environmental performance of management arrangements for export fisheries and fisheries which operate in Commonwealth waters.

harvest strategy

A framework that specifies the pre-determined management actions in a fishery for a species (at the stock or management unit level) necessary to achieve the agreed ecological, economic and/or social management objectives.

Commented (SM38): This seems to be too abbreviated as it doesn't mention all the required components: monitoring, stock/fishery assessment and harvest control rules

incidental catch

see non-target

input control

Management measures that place restraints on who fishes (licence limitations), where they fish (closed areas), when they fish (closed seasons) or how they fish (gear restrictions).

interaction

includes any physical contact with a species and includes all catches (for example, hooked, netted, entangled), discards and releases and collisions with these species

key commercial species	Stocks that make a significant contribution to the value of the catch in a fishery. They are almost always retained and landed.
management strategy evaluation	A procedure whereby alternative management strategies are tested and compared using simulations of stock and fishery dynamics.
maximum economic yield (MEY)	The sustainable catch or effort level for a commercial fishery that allows net economic returns to be maximised (the value of the largest positive difference between total revenues and total costs of fishing).
maximum sustainable yield (MSY)	The maximum average annual catch that can be removed from a stock over an indefinite period under prevailing environmental conditions.
non-target species	any part of the catch, except the target species, and including bycatch and byproduct
not usually retained	Species caught by fishers but usually discarded. This applies fishery-by-fishery, based on catch history and landing data.
output control	Management measures that place restrictions on what is caught, including total allowable catch, quota, size limits and species.
overfished	A fish stock with a biomass below the biomass limit reference point.
overfishing	A stock that is experiencing too much fishing, and the removal rate from the stock is unsustainable.
precautionary principle	Where there are threats of serious or irreversible environmental damage, lack of full scientific certainty should not be used as a reason for postponing measures to prevent environmental degradation. In the application of the precautionary principle, public and private decisions should be guided by: <ol style="list-style-type: none"> <li>1. careful evaluation to avoid, wherever practicable, serious or irreversible damage to the environment; and</li> <li>2. an assessment of the risk-weighted consequences of various options.</li> </ol>
protected species	species protected under Part 13 of the EPBC Act, including whales and other cetaceans and listed threatened, marine and migratory species

Commented [SM39]: Better to say that the fishing would deplete the stock to levels below the target reference point. A fishery can be quite sustainable at low levels.

Commented [SM40]: Needed? This isn't mentioned elsewhere in the Policy. Should check all entries for relevance.

<b>reference point</b>	an indicator of the level of fishing, or size of a stock, used as a benchmark for interpreting the results of an assessment
<b>spawning biomass</b>	(also referred to as spawning stock biomass) The total weight of all adult fish in a population.
<b>species</b>	members of a species can breed with one another and produce fertile offspring
<b>secondary commercial species</b>	Stocks that make some contribution to the value of the catch in a fishery, but are not the most valuable species caught in a fishery. They are usually retained and landed.
<b>stock</b>	A functionally discrete biological population of a species that is largely distinct from other populations of the same species and may be regarded as a separate entity for management or assessment purposes.
<b>sustainable yield</b>	The average catch that can be removed from a stock over an indefinite period without causing a further reduction in the biomass of a stock. This could either be a constant yield from year to year, or a yield that fluctuates in response to changes in abundance.
<b>targeting</b>	fishing selectively for particular species or sizes of fish
<b>target species</b>	the most highly sought component of the catch taken by fishers
<b>total allowable catch</b>	For a fishery, a catch limit set as an output control on fishing.