



Ministry of  
**Fisheries**  
Te Tautiaki i nga tini a Tangaroa

**Review of Sustainability Measures and Other Management Controls for Blue Cod 8**  
**Initial Position Paper June 2011**





## Introduction

1 This Initial Position Paper (IPP) provides the Ministry of Fisheries (the Ministry's) initial views on proposals relating to sustainability measures for the blue cod 8 fish stock for the 2011/12 fishing year, commencing on 1 October.

2 The Ministry developed this Initial Position Paper (IPP) for the purpose of consultation as required under the Fisheries Act 1996 (the Act). The Ministry emphasises the views and recommendations outlined in the paper are preliminary and are provided as a basis for consultation with stakeholders.

3 In August 2011, the Ministry will compile the Final Advice Paper (FAP) for the attached proposal. This document will summarise the Ministry's and stakeholder views on the issues being reviewed, and provide final advice and recommendations to the Minister of Fisheries and Aquaculture. A copy of the FAP and subsequently the Minister's letter setting out his final decisions will be posted on the Ministry's website as soon as it becomes available with hard copies available on request.

### *Deadline for Submissions*

4 The Ministry welcomes written submissions on the proposals contained in the IPP. All written submissions on this consultation document must be received by the Ministry no later than 4pm on Friday, 29 July 2011.

Written submissions should be sent directly to:

Trudie Macfarlane  
Ministry of Fisheries  
P O Box 1020  
Wellington

or emailed to [Trudie.Macfarlane@fish.govt.nz](mailto:Trudie.Macfarlane@fish.govt.nz)

5 All submissions are subject to the Official Information Act and can be released, if requested, under the Act. If you have specific reasons for wanting to have your submission withheld, please set out your reasons in the submission. The Ministry will consider those reasons when making any assessment for the release of submissions if requested under the Official Information Act.

## Blue Cod 8 (BCO 8)



Figure 1: Quota Management Areas for Blue Cod

### Introduction

6 The Ministry of Fisheries (the Ministry) is seeking tangata whenua and stakeholder views on proposals to change the Total Allowable Catch (TAC) level, sector allowances and recreational bag limits for BCO 8. BCO 8 is the blue cod fishery in the Central (Egmont) Quota Management Area (QMA) (refer Figure 1).

7 For BCO 8 it is proposed that the Minister of Fisheries (the Minister) consider the following options:

Option	TAC (t)	TACC (t)	Māori customary allowance (t)	Other sources of mortality (t)	Recreational	
					Allowance (t)	Bag limit
<b>Current Settings</b>	N/A	74.4	N/A	N/A	N/A	20 blue cod
<b>1</b>	269.4	74.4	2	5	188	20 blue cod
<b>2</b>	188	34	2	2	150	10 blue cod
<b>3</b>	160	25	2	2	131	5 blue cod

8 The Ministry has also looked at interim and annual deemed value rates for BCO 8, which apply to commercial fishers that over-catch their annual catch entitlement (ACE). No changes to these rates are proposed (refer to the *Deemed Value* Initial Position Paper).

## Context

### *Need to Act*

9 Limited information exists to monitor and assess fish abundance in the BCO 8 stock. However, available catch and anecdotal information suggest current limits on catch may pose a sustainability risk.

10 Commercial BCO 8 landings have been below 50% of the TACC in most years since introduction into the Quota Management System in 1986. Recently, some recreational-fishery participants have expressed concern about catch levels and sustainability of the BCO 8 stock, noting that recreational fisher participation rates have increased in the BCO 8 fishery, fishers are now better at targeting and catching blue cod, and there has been a decline in the size and abundance of fish in the fishery. They suggest the TACC and recreational daily bag limit should both be reduced for BCO 8 to manage sustainability risks.

### *BCO 8 Stock Status*

11 Limited stock status information is available for BCO 8. A maximum constant yield (MCY)<sup>1</sup> for BCO 8 was estimated at 50 tonnes in 1992. The MCY estimate was based on commercial catches for blue cod only and is considered highly uncertain.

### *Biological Characteristics of Blue Cod*

12 The following biological characteristics of blue cod make them susceptible to the effects of fishing and to localised depletion, which means populations may take a long time to recover once depleted:

- blue cod are relatively slow growing and long lived, reaching a maximum age of 32 years
- blue cod tend to be territorial; they generally move less than 1 km
- blue cod populations may be isolated from each other and there may be several distinct populations within a management area, and
- blue cod are protogynous hermaphrodites<sup>2</sup> with some (but not all) females changing into males as they grow.

### *The BCO 8 Fishery*

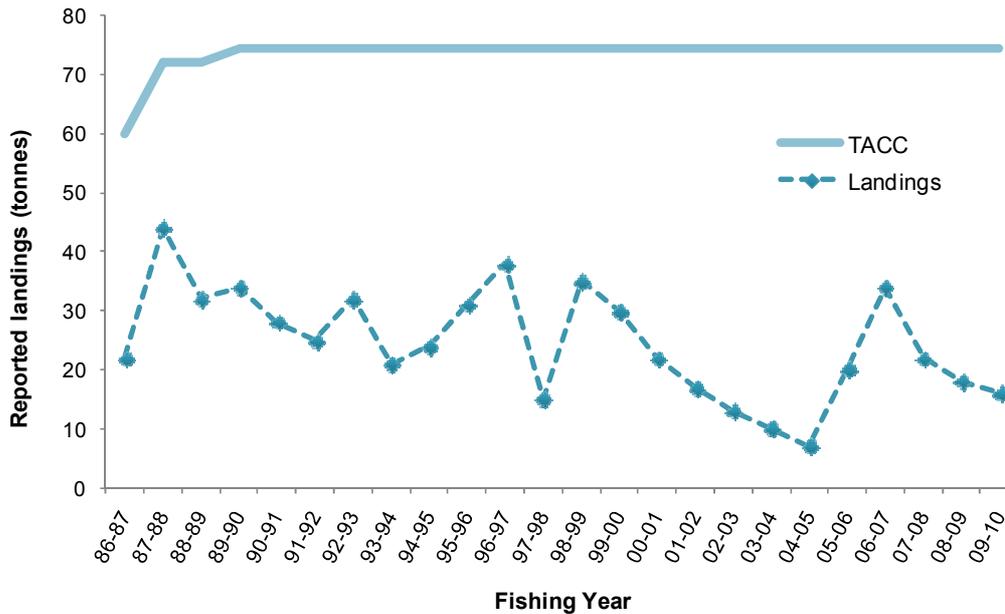
#### Commercial

13 BCO 8 commercial catches have been well below the TACC since 1986 (Figure 2). From 1986-87 to 2009-10, average reported landings were 25 tonnes. They were highest in 1987-88 (44 tonnes) and were lowest in 2004-05 (7 tonnes).

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<sup>1</sup> MCY is the maximum sustainable yield that can be produced over the long term by taking the same catch year after year, with little risk of stock collapse.

<sup>2</sup> This means that blue cod can start life as either male or female, but the females can change into males.



**Figure 2: BCO 8 reported commercial landings and the TACC from 1986-87 to 2009-10.**

14 Within BCO 8, there is a regionally-significant blue cod fishery off Whanganui. In the last three fishing years, 70-90% of estimated commercial blue cod catches have come from inshore statistical area 40 (which extends from Whanganui to Port Taranaki).

15 The commercial catch from BCO 8 is taken in a combination of target and bycatch fisheries using several different fishing methods. Approximately 50% of BCO 8 commercial catch came from the target cod pot fishery in the 2009/10 fishing year.

### Recreational

16 Blue cod is a popular target species for recreational fishers and is mainly taken by line fishing. The most popular locations within the QMA are from Whanganui to Taranaki in the north, and from Kapiti Island to Mana Island in the south. BCO 8 is included in a combined daily bag limit of 20 finfish (ie, a maximum of 20 blue cod can be taken daily per person if no other specified finfish species are taken).

17 Recreational fishers are not required to report their catches and reliable estimates of recreational BCO 8 catch are not available. Estimates of BCO 8 recreational catch are available from telephone and diary surveys but are considered unreliable (Table 2). The 2011 Ministry Plenary advises that the 1996 and earlier surveys contain a methodological error and the 1999-2000 estimates should be evaluated with reference to the coefficients of variations (CVs)<sup>3</sup>.

<sup>3</sup> CV's are a measure of data variability e.g., the higher the CV the more variability in the data.

Year	Estimated Number caught	Coefficient of Variation <sup>4</sup> (%)	Estimated harvest range (t)	Point estimate (t)
1992-93	124 000	35	50-110	N/A
1996	159 000	12	70-90	79
1999-00	232 000	32	127-249	188

**Table 2: Recreational catch estimates for BCO 8**

18 In 2006-07, a recreational research project for snapper along the West Coast of the North Island included analysis of the broader mix of species landed in different areas. Snapper was the most commonly landed species in all areas except on the southern open coast (eg, Kapiti to Whanganui). Blue cod made up the highest proportion of recreational landings in this southern open coast area.

19 The project also provided recreational daily catch per fisher data for BCO 8 (Figure 3). This data indicates the majority (over 90%) of surveyed fishers landed less than 10 blue cod each per trip. The survey results did not record those fishers who caught no blue cod in their catch.

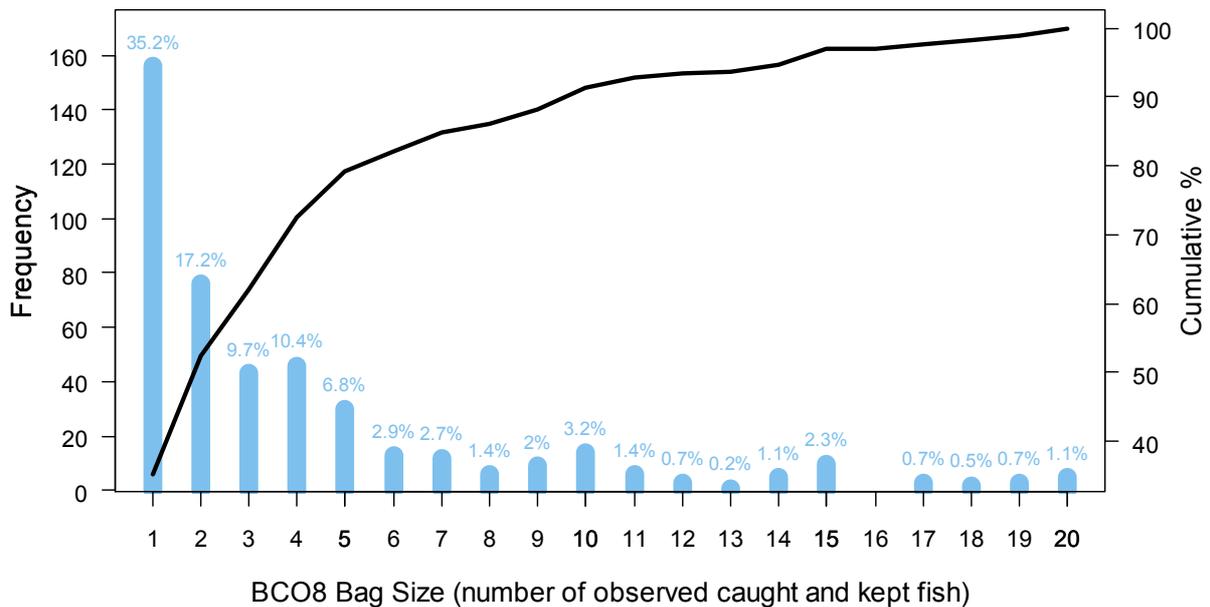
20 The Ministry notes that while this is the best available data, there are some limitations to it, including:

- The age of the data (four years old)
- The data presented is a subset of all the data collected for the project as the project was primarily focussed on catches of snapper
- As the results are solely observed landings of blue cod, they do not take account of released fish, zero catches, or the composition of the fishers combined species bag. Therefore, nothing can be inferred about BCO 8 catchability
- The data presented is a small portion of the total blue cod bag frequency as not all days throughout the year were sampled and only trailer boat fishers were surveyed on those days (ino marina based launches, charter boats or kayaks were surveyed)
- There are value and/or catchability reasons why blue cod may not have been caught and kept by the surveyed fishers. For example, a fisher may prefer tarakihi over blue cod or may have caught 19 snapper and could only catch one blue cod to bring their catch to the maximum daily bag limit.

21 The Minister will need to take account of these limitations when making his final decision.

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<sup>4</sup> Is a measure of data variability e.g. the higher the coefficient of variation the more variability in the data.



**Figure 3: Frequency of different numbers of BCO 8 caught per observed fisher during 2006/07 survey**

22 Commercial fishers that take blue cod for non commercial (ie, recreational) purposes require an approval under section 111 of the Fisheries Act 1996 (the Act) and must report their catch. In the 2009/10 fishing year, very little blue cod was taken under section 111 approvals from BCO 8 (approximately 180 individual fish).

Māori customary

23 Blue cod is an important kaimoana species for tangata whenua. Some customary harvest information is available from reporting of customary harvest authorisations. The information is uncertain and relates to only a portion (less than half) of the QMA as iwi in many parts of the QMA are operating under regulation 27 and 27A of the Fisheries (Recreational Fishing) Regulations 1986, in which reporting was non-mandatory for reported customary landings. Reported customary Maori catch is low, with only one customary authorisation issued in the last two years. This suggests tangata whenua use of customary Maori harvesting rights (as opposed to commercial or recreational) may be low at this time.

Other sources of fisheries related mortality

24 Other sources of fishing-related mortality include unseen, method related mortality, mortality of fish that is returned to sea because it is undersize, and illegal take.

25 The target commercial blue cod fishery is chiefly a pot fishery, which is considered to have relatively low levels of incidental mortality. Some blue cod is taken in commercial trawls, bottom longlines or set nets, however.

26 Non-commercial line fishing methods often results in the harvest of undersized blue cod. The survival of these fish on return to sea has been shown to be related to hook size. Larger hook sizes (ie, circle hooks with a minimum size of 6/0) has been shown to lead to better survival rates. The level of usage of large hook sizes is unknown in BCO 8.

27 Reliable estimates of illegal take of blue cod in BCO 8 are not available.

### Proposed Response

28 BCO 8 entered the Quota Management System (QMS) in 1986 with a TACC of 60 tonnes. Quota Appeal Authority decisions resulted in a TACC increase to the current level of 74.4 tonnes. No TAC or allowances for Māori customary non-commercial interests, recreational interests or other sources of fishing-related mortality have been set for this fishery.

29 In addition to the TACC, the fishery is managed by way of recreational daily bag limits, a minimum legal size of 33cm for both recreational and commercial fishers, and fishing gear restrictions on pot design and pot mesh size. These controls are all open to be adjusted in response to the concerns raised.

30 Of the measures available under the Act, the Ministry considers the most appropriate response to the stock status concerns is to consider a range of TAC, sector allowance, and recreational bag limit options. This is because the concerns relate to the overall sustainability of current catch limits in the fishery as reflected in a TAC, and explicitly controlled by the TACC and recreational bag limits. There is no indication that the minimum legal size, or gear restrictions are not optimally set.

31 The Ministry proposes the following management options for BCO 8 (Table 2).

Option	TAC (t)	TACC (t)	Māori customary allowance (t)	Other sources of mortality (t)	Recreational	
					Allowance (t)	Bag limit
Current Settings	N/A	74.4	N/A	N/A	N/A	20 blue cod
1	269.4	74.4	2	5	188	20 blue cod
2	188	34	2	2	150	10 blue cod
3	160	25	2	2	131	5 blue cod

**Table 3: Proposed Management Options for BCO 8**

32 The current status of BCO 8 in relation to the level of the stock that can produce the maximum sustainable yield ( $B_{MSY}$ ) is unknown. In such circumstances, the Minister must set a TAC that is “not inconsistent” with the objective of maintaining the stock at or above, or moving the stock to a level at or above  $B_{MSY}$ , in a way and rate considered appropriate for the stock (section 13(2A) of the Act). No new information to assess stock status is expected to become available in the next few years. Under the Fisheries Act there is a requirement to act on the best available information and not postpone the decision due to the absence of, or uncertainty in, information.

33 The TAC options presented in this IPP take into account this requirement, and offer differing approaches to managing the potential risk to sustainability of the fishery that reflect the uncertainty in available information. In general, the lower TAC options (Options 2 and 3) are more likely to see stock abundance increase, but create opportunity costs for the recreational and commercial sectors.

34 The lower TACs under Options 2 and 3 are combined with reductions to the recreational bag limit. The recreational sector takes the bulk of the catch in BCO 8. It is anticipated that changes to the bag limit will have an effect on total recreational catch; however, the relationship between bag limit reductions and the recreational allowance is uncertain. This is, in part, because blue cod is part of a mixed finfish bag limit in BCO 8 and most recreational fishers do not catch the maximum number of blue cod able to be taken in a day (refer figure 3). Consequently, a 50% reduction in bag limits, for example, is unlikely to translate to a 50% reduction in total recreational catch.

35 TACC options are the status quo, a reduction to 34 tonnes or a reduction to 25 tonnes. The lower TACC options reflect the highest and average catch, respectively, in recent years. Further reductions in the TACC are not proposed at this time, as commercial catch is a relatively small component of the fishery.

36 All options also set allowances for customary Māori and other sources of fishing related mortality. These allowances are set at a level intended to reflect current catch levels however available information to inform these allowances is uncertain.

#### *Option 1 - Status Quo TACC and New Allowances*

37 Under Option 1, a TAC of 269.4 tonnes is proposed. This TAC reflects the “status quo” in that it retains the current TACC and sets allowances for customary Māori, recreational and other sources of fishing related mortality at the level of current estimates of catch and mortality. The current maximum amount of blue cod able to be taken daily by a recreational fisher in BCO 8 would remain at 20 blue cod (as part of the Central Fishery Management Area combined daily bag limit of 20 finfish<sup>5</sup>) under this option.

38 Information on BCO 8 stock status is highly uncertain and it is unknown if current catch levels are maintaining the stock at or above, or moving the stock to a level at or above BMSY. There is no new biological evidence or stock assessment information to support the need to act in the BCO 8 fishery. This suggests that current management settings could be retained. Option 1 is the least likely of the three options to any sustainability issue by increasing stock size, and could result in reduced benefits for all fishery participants over the long-term.

#### Setting of new allowances

39 Under Option 1, the allowance for recreational interests would be set at 188 tonnes. This allowance is based on the 188 tonne point estimate from the 1999/2000 national diary survey of recreational fishers. This survey estimate is highly uncertain. Anecdotal information suggests BCO 8 recreational catches could have either increased or decreased since the 1999/2000 survey, due to increased participation levels and decreased fish availability respectively. The Ministry does not have quantitative information to confirm any change.

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<sup>5</sup> <http://www.fish.govt.nz/en-nz/Recreational/Fishery+Management+Areas/Central/Finfish.htm?WBCMODE=PresentationUnpublished>

40 Given the lack of reliable information for BCO 8, the Ministry proposes an allowance for Māori customary non-commercial fishing interests of 2 tonnes. The Ministry is seeking further information from tangata whenua to ensure an allowance is set that appropriately reflects Māori customary fishing under the customary regulations.

41 Option 1 proposes a customary Māori allowance of 2 tonnes, which reflects available information on customary harvest that suggests use of customary authorisations to take blue cod is low in BCO 8 is low. However, the Ministry recognises that information on customary harvest is uncertain and invites iwi, Tangata Tiaki/Kaitiaki, and customary permit issuers to submit any additional information they hold on customary Maori catch levels in BCO 8. The Ministry notes also that the allowance does not constrain customary catch as harvest is authorised by Tangata Tiaki/Kaitiaki.

42 The Ministry proposes an allowance for other sources of fishing related mortality of 5 tonnes, approximately 2% of the proposed TAC. This is similar to that set for kahawai and other comparable fisheries.

*Option 2 – TAC of 188 tonnes, including a TACC of 34 tonnes and bag limit of 10*

43 Under Option 2, a TAC of 188 tonnes would be established. This TAC reduces risks to BCO 8 sustainability by removing actual and potential catch “headroom” (ie, ability to grow catches) from the fishery. It is based on:

- setting a recreational allowance of 150 tonnes, which reflects a potential reduction in catch due to reduced blue cod availability since the 1999/00 survey and a proposed maximum daily bag limit set at a level that reflects the take of an estimated 90% of fishers.
- reducing the TACC to 34 tonnes, which is the highest commercial catch level landed in recent years; and
- Setting allowances for Māori customary and for other sources of fishing related mortality at 2 tonnes each respectively based on estimated catch/mortality levels.

44 The maximum amount of blue cod that would be able to be taken daily by a recreational fisher in BCO 8 under this option would be 10 blue cod (within the Central Fishery Management Area combined daily bag limit of 20 finfish).

45 The recreational allowance of 150 tonnes is a 20% reduction to the 188 tonne point estimate from the 1999/2000 national diary survey of recreational fishers. The relationship between abundance and recreational catch levels and between bag limit reductions and the recreational allowance are uncertain. This is because of an absence of robust information on total and individual recreational catches through time, and because of the range of factors that influence catch of an individual species when part of a mixed species daily bag limit.

46 The Ministry proposes a 20% reduction in the recreational allowance under this option, but seeks further information from stakeholders on the impact of the perceived reduction in fish availability and the proposed reduction in bag limit.

47 A TACC of 34 tonnes does not reduce current utilisation by the commercial sector. This 54% reduction results in a potential lost opportunity cost of \$165,000 (based on a 2010/11 port price of \$4.08 per kg) for the commercial sector, however, the industry has not been catching the TACC in recent years, so the majority of these “losses” are already being

realised. The TACC change may affect quota value and the availability of annual catch entitlement, but the extent of this impact is difficult to predict. The Ministry invites further information from stakeholders on potential impacts.

48 Information on BCO 8 stock status is highly uncertain and it is unknown if current catch levels are maintaining the stock at or above, or moving the stock to a level at or above  $B_{MSY}$ . Compared to Option 1, this option places greater weight on potential sustainability concerns. However, this option places more weight than Option 3 on maintaining current utilisation benefits.

*Option 3 – TAC of 160 tonnes, including a TACC of 25 tonnes and a bag limit of 5*

49 Under Option 3, a TAC of 160 tonnes would be established. This TAC reduces risks to BCO 8 sustainability by reducing current catch levels. It is based on:

- setting a recreational allowance of 131 tonnes, which reflects a potential reduction in catch due to reduced blue cod availability since the 1999/00 survey and a proposed maximum daily bag limit set at a level that reflects the current daily take of an estimated 80% of fishers.
- reducing the TACC to 25 tonnes, which is the average catch level since introduction into the QMS; and
- Setting allowances for Māori customary and for other sources of fishing related mortality at 2 tonnes each respectively based on estimated catch/mortality levels.

50 The maximum amount of blue cod that would be able to be taken daily by a recreational fisher in BCO 8 under this option would be 5 blue cod (within the Central Fishery Management Area combined daily bag limit of 20 finfish).

51 The recreational allowance of 131 tonnes is a 30% reduction to the 188 tonne point estimate from the 1999/2000 national diary survey of recreational fishers. The relationship between abundance and recreational catch levels and between bag limit reductions and the recreational allowance are uncertain. This is because of an absence of robust information on total and individual recreational catches through time, and because of the range of factors that influence catch of an individual species when part of a mixed species daily bag limit.

52 The Ministry proposes a 30% reduction in the recreational allowance under this option, but seeks further information from stakeholders on the impact of the perceived reduction in fish availability and the proposed reduction in bag limit.

53 A TACC of 25 tonnes reflects average commercial landings since introduction to the QMS. This 66% reduction results in a potential lost opportunity cost of \$200,000 (based on a 2010/11 port price of \$4.08 per kg) for the commercial sector, however, the industry has not been catching the TACC in recent years, so the majority of these “losses” are already being realised. The TACC change may affect quota value and the availability of annual catch entitlement, but the extent of this impact is difficult to predict. The Ministry invites further information from stakeholders on potential impacts.

54 Compared to Option 2, this option could reduce utilisation opportunities for recreational fishers. However, they may benefit from improved stock abundance and reduced risk of localised depletion in popular recreational fishing areas.

## **Other Management Measures**

### *Recreational Daily Bag Limit*

55 Under Options 2 and 3, it is proposed that the BCO 8 recreational daily bag limit would reduce from 20 to 10 or 5 blue cod, respectively.

56 The bag limit proposals would require a regulatory change. If adopted, a bag limit change would not come into effect from 1 October 2011. A separate implementation process would need to occur. There will be some cost involved in implementing any changes made to recreational bag limits, including gazette notices, new signage and updates to recreational rule handbooks.

57 Some BCO 8 recreational fishery participants have indicated the 20 bag limit is too high for blue cod and should be reduced in conjunction with, and relative to, any TACC reduction. There appears to be no agreement on the appropriate level of the bag limit. The Ministry welcomes information from fishery participants to inform the setting of the BCO 8 bag limit. (It should be noted that changes to the bag limit will impact on the options for the proposed TAC and recreational allowances).

58 The Ministry acknowledges the potential compliance risk of a differing blue cod daily bag limit between BCO8 and BCO2 for those recreational fishers returning to locations close to the QMA boundaries (such as Pukerua Bay, Plimmerton, Mana, Porirua, Titahi Bay and to a lesser extent, Makara). The Ministry has reviewed this risk and considers it to be manageable within existing Ministry compliance systems and practices.

59 The Ministry also notes that a constraint on the number of blue cod able to be taken within the mixed finfish bag limit may result in some transfer of effort to other species included in the mixed bag (such as tarakihi and gurnard) where fishers seek to take their full daily bag allowance.

### *BCO 8 Deemed Value Rates*

60 The Ministry has reviewed the deemed value rates criteria for BCO 8 and is not proposing any changes to the current settings. For further information, please refer to the Deemed Value IPP.

## **Conclusions**

61 Available information on the status of BCO 8 is highly uncertain. Some available information suggests current catch limits may represent a sustainability risk to the BCO 8 stock.

62 The biological characteristics of blue cod make them susceptible to the effects of fishing and to localised depletion. Should the stock be over-fished, recovery could be slow. This would adversely impact the utilisation benefit able to be derived from the fishery.

63 The Ministry is seeking information and views from tangata whenua, fishery stakeholders and other interested parties to inform the review of catch limits in BCO 8.

64 It is important to note that the Minister has broad discretion in exercising his powers of decision-making. He will make his own independent assessment of the information presented to him by both the Ministry and stakeholders before making a final decision.