



## Review of Sustainability Controls for the 2017 Fishing Year

Proposals to Alter Total Allowable Catch, Allowances, Total Allowable  
Commercial Catch and Deemed Value Rates for Selected Fishstocks

Decision Paper

Prepared by the Ministry for Primary Industries

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# PART 1: INTRODUCTION AND PURPOSE

1. This document seeks your decisions on:
  - a. replacing the current closure you implemented for earthquake-affected shellfish and seaweed fisheries along the Kaikōura/Cape Campbell coastline with a closure under section 11 of the Fisheries Act 1996 (the Act); and
  - b. setting the total allowable catch (TAC), allowances for Māori customary non-commercial fishing, recreational fishing, all other sources of mortality from fishing, total allowable commercial catch (TACC), and deemed values for the stocks discussed in this paper.
2. Your decisions will generally have effect from 1 October 2017.
3. The Ministry for Primary Industries (MPI) has consulted and provided for the input and participation of tangata whenua, having particular regard to kaitiakitanga, on proposals to:
  - a. replace the current emergency closure of earthquake-affected shellfish (excluding scampi and rock lobster) and seaweed fisheries along the Kaikōura/Cape Campbell coastline; and
  - b. amend the Total Allowable Catch (TAC), allowances, and Total Allowable Commercial Catch (TACC) for 11 stocks (BNS 1, 2, 3, 7 & 8, GUR 7, HAK 7, PAU 3, 4 & 7, and ORH 3B); the TAC, allowances, TACC and deemed values for one stock (RCO 2); and the deemed values for six stocks (GLM 9, SCH 3, RSK 8, SSK 8, TAR 8, and TRE 2).
4. This document provides you with MPI's final advice on these proposals. The paper is divided into separate parts. Your general statutory considerations are set out in Part 2. Part 3, 4, 5 and 6 contain the review aspects of each stock, including the initial proposals and rationale, relevant background information, specific legal considerations, a summary of submissions and MPI's responses, analysis of management options, and MPI's recommendations.
5. Part 3 contains the review of measures for earthquake-affected fisheries, including the new closure under section 11 of the Act, and the sustainability measures and other management controls for the PAU 3 and PAU 7 puaa fisheries, which have been affected by the earthquakes and the current emergency closure. The emergency closure and the new proposed closure both cover the upper part of PAU 3 and the lower south-eastern part of PAU 7.
6. Part 4 contains the review of the remaining inshore fishstocks, and Part 5 provides the analysis and advice on deepwater stocks. Part 6 provides the analysis and advice on deemed value rates.
7. The Deemed Value Guidelines are contained in Appendix 1.
8. The full submissions that MPI received on the relevant initial proposals are contained in Appendix 2.

## PART 2: STATUTORY CONSIDERATIONS

### Introduction

9. This section provides an overview of your legal obligations under the Fisheries Act 1996 (the **Act** or the **Fisheries Act**) when setting or varying TACs, TACCs and deemed values for New Zealand fish stocks.
10. Where relevant, stock-specific details relating to these obligations are set out in the section of the discussion paper relating to each stock.

### SECTION 5(a) – INTERNATIONAL OBLIGATIONS

11. Section 5(a) says the Act is to be interpreted, and all persons exercising or performing functions, duties, or powers under it are required to act, in a manner consistent with New Zealand’s international obligations relating to fishing. As a general principle, where there is a choice in the interpretation of the Act or the exercise of discretion, the decision maker must choose the option that is consistent with New Zealand’s international obligations relating to fishing.
12. The two key pieces of international law relating to fishing, and to which New Zealand is a party, are the United Nations Convention on the Law of the Sea, 1982 (**UNCLOS**) and the United Nations Convention on Biological Diversity 1992 (the **CBD**). International obligations also derive from New Zealand being a signatory to a number of international conventions. Of particular relevance are regional fisheries management organisations, Convention on International Trade in Endangered Species of Wild Fauna and Flora (**CITES**) and the Convention on Migratory Species (**CMS**).

### SECTION 5(b) – TREATY OF WAITANGI (FISHERIES CLAIMS) SETTLEMENT ACT 1992

13. Section 5(b) says the Act is to be interpreted, and all persons exercising or performing functions, duties, or powers under it are required to act, in a manner consistent with the provisions of the Treaty of Waitangi (Fisheries Claims) Settlement Act 1992 (the **Settlement Act**). This obligation furthers the agreements expressed in the Deed of Settlement referred to in the Preamble to the Settlement Act.
14. The development of customary regulations, Iwi Fisheries Forums, and providing for the input and participation of iwi in fisheries decisions, discussed elsewhere in this paper, are some of the ways in which the obligations in the Settlement Act are given effect to.

### SECTION 8 – PURPOSE OF THE FISHERIES ACT 1996

15. Section 8 says the purpose of the Act is to provide for the utilisation of fisheries resources while ensuring sustainability.
16. “Ensuring sustainability” is defined as: “maintaining the potential of fisheries resources to meet the reasonably foreseeable needs of future generations; and avoiding, remedying,

or mitigating any adverse effects of fishing on the aquatic environment”. “Utilisation” of fisheries resources is defined as “conserving, using, enhancing, and developing fisheries resources to enable people to provide for their social, economic, and cultural wellbeing.”

17. The Supreme Court has stated that the purpose statement incorporates “the two competing social policies reflected in the Act” and that “both policies are to be accommodated as far as is practicable in the administration of fisheries under the quota management system...[I]n the attribution of due weight to each policy that given to utilisation must not be such as to jeopardise sustainability”.<sup>1</sup>

## SECTION 9 – ENVIRONMENTAL PRINCIPLES

18. Section 9 prescribes three environmental principles that you must take into account when exercising powers in relation to the utilising of fisheries resources or ensuring sustainability.

**Principle 1: Associated or dependent species should be maintained above a level that ensures their long-term viability.**

19. The Act defines “associated and dependent species” as any non-harvested species taken or otherwise affected by the taking of a harvested species. “Harvested species” is defined to mean any fish, aquatic life or seaweed that may for the time being be taken with lawful authority. So this principle is focussed on species (such as protected species) for which a permission to target commercially cannot be given.
20. The term “long-term viability” (in relation to a biomass level of a stock or species) is defined in the Act as a low risk of collapse of the stock or species, and the stock or species has the potential to recover to a higher biomass level. This principle therefore requires the continuing existence of species by maintaining populations in a condition that ensures a particular level of reproductive success.
21. Where fishing is affecting the viability of associated and dependent species, appropriate measures such as method restrictions, area closures, and potentially adjustments to the TAC of the target stock should be considered.

**Principle 2: Biological diversity of the aquatic environment should be maintained.**

22. “Biological diversity” is defined in the Act as ‘the variability among living organisms, including diversity within species, between species, and of ecosystems’. Determining the level of fishing or the impacts of fishing that can occur requires an assessment of the risk that fishing might cause catastrophic decline in species abundance or cause biodiversity to be reduced to an unacceptable level.

**Principle 3: Habitat of particular significance for fisheries management should be protected.**

23. Habitat is defined in the Oxford Dictionary of English to mean the natural home or environment of an animal, plant or species. In MPI’s view, in the fisheries context, this means those waters and substrates necessary for fish to spawn, breed, feed or grow to

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<sup>1</sup> Recreational Fishing Council Inc v Sanford Limited and Ors [2009] NZSC 54 at [39].

maturity. These should be protected and adverse effects on them avoided, remedied, or mitigated.

## SECTION 10 – INFORMATION PRINCIPLES

24. Section 10 prescribes four information principles that you must take into account when exercising powers in relation to the utilising of fisheries resources or ensuring sustainability:
- a) Decisions should be based on the best available information;
  - b) Decision makers should take into account any uncertainty in the available information;
  - c) Decision makers should be cautious when information is uncertain, unreliable, or inadequate; and
  - d) The absence of, or any uncertainty in, any information should not be used as a reason for postponing or failing to take any measure to achieve the purpose of the Act.
25. Less than full information suggests caution in decision-making, not deferral of a decision completely. “The fact that a dispute exists as to the basic material upon which the decision must rest, does not mean that necessarily the most conservative approach must be adopted. The obligation is to consider the material and decide upon the weight which can be given it with such care as the situation requires.”<sup>2</sup>
26. Both scientific and anecdotal information need to be considered and weighed accordingly when making management decisions. The weighting assigned to particular information is subject to the certainty, reliability, and adequacy of that information.
27. As a general principle, information outlined in the MPI Fishery Assessment Plenary Report is considered the best available information on stock status and should be given significant weighting. The information presented in the Plenary Report is subject to a robust process of scientific peer review and is assessed against the Research and Science Information Standard for New Zealand Fisheries.<sup>3</sup> Corroborated anecdotal information also has a useful role to play in the stock assessment process and in the management process.

## SECTION 11 – SUSTAINABILITY MEASURES

28. Section 11(1) allows sustainability measures (such as a TAC) to be set or varied after the following factors are taken into account:
- (a) Any effects of fishing on the stock and the aquatic environment
  - (b) Any existing controls that apply to the stock or area concerned
  - (c) The natural variability of the stock concerned.
29. These factors are discussed in the section of the decision document relating to each stock.
30. Section 11 (2) says that before any sustainability measure is set or varied you must have regard to any provision of:

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<sup>2</sup> *Greenpeace NZ Inc v Minister of Fisheries* (HC, Wellington CP 492/93, 27/11/95, Gallen J) p 32.

<sup>3</sup> A non-binding MPI Policy Document.

- (a) Any regional policy statement, regional plan, or proposed regional plan under the Resource Management Act 1991.
  - (b) Any management strategy or management plan under the Conservation Act 1987 that apply to the coastal marine area and which you consider to be relevant
  - (c) Sections 7 and 8 of the Hauraki Gulf Marine Park Act 2000
  - (ca) regulations made under the Exclusive Economic Zone and Continental Shelf (Environmental Effects) Act 2012; and
  - (d) a planning document lodged with you by a customary marine title group under section 91 of the Marine and Coastal Area (Takutai Moana) Act 2011 that apply to the coastal marine area and are considered to be relevant.
31. Section 11 (2A) requires you to take into account:
- (a) Any conservation services or fisheries services
  - (b) Any relevant fisheries plan approved under this Part-see discussion of section 11A below
  - (c) Any decisions not to require conservation services or fisheries services.
32. Services of particular relevance to the decisions in this paper relate to programmed research used to monitor stock abundance. To date national fisheries plans have been approved only for deepwater and highly migratory species.

## SECTION 12 – CONSULTATION AND INPUT AND PARTICIPATION OF TANGATA WHENUA

33. Section 12(1) says that before setting or varying any sustainability measure under the Act you are required to:
- consult with those classes of persons having an interest in the stock or the effects of fishing on the aquatic environment in the area concerned, including, but not limited to, Māori, environmental, commercial and recreational interests; and
  - provide for the input and participation of tangata whenua having a non-commercial interest in the stock concerned or an interest in the effects of fishing on the aquatic environment in the area concerned; and have particular regard to kaitiakitanga.
34. The Act defines Kaitiakitanga to mean “the exercise of guardianship; and, in relation to any fisheries resources, includes the ethic of stewardship based on the nature of the resources, as exercised by the appropriate tangata whenua in accordance with tikanga Māori”, where tikanga Māori refers to Māori customary values and practices.
35. Iwi Fisheries Forums and Forum Fisheries Plans are the main ways in which input and participation of tangata whenua is provided for. Information provided by Forums and iwi views on the management of fisheries resources and fish stocks set out in Iwi Fisheries Plans express how tangata whenua exercise kaitiakitanga in respect of the stocks and areas in this sustainability round.
36. Section 12 (2) says that as soon as practicable after setting or varying any sustainability measure, you shall give the persons consulted under 12(1), the reasons in writing for your decisions.

## SECTIONS 13 & 14 - SETTING AND VARIATION OF THE TOTAL ALLOWABLE CATCH (TAC)

### Section 13 – Total Allowable Catch

37. The TAC for most stocks in the Quota Management System (QMS) is set under section 13 of the Act.
38. Under s 13 the general premise is to set a TAC that maintains the biomass of a fishstock at or above a level that can produce the maximum sustainable yield (MSY). That biomass level is abbreviated as  $B_{MSY}$ .
39. MSY is defined, in relation to any fish stock, as being the greatest yield that can be achieved over time while maintaining the stock's productive capacity, having regard to the population dynamics of the stock and any environmental factors that influence the stock.
40. Section 13(2) of the Act requires a TAC to be set that maintains a stock at or above MSY or that moves or restores it to or above that level, having regard to the interdependence of stocks.
41. Section 13(2A) says that if you consider that the current level of a stock or the level of a stock that can produce the MSY is not able to be estimated reliably using the best available information, you must:
  - not use this lack of information as a reason for postponing, or failing to set a TAC for the stock, and
  - have regard to the interdependence of stocks, the biological characteristics of the stock and any environmental conditions affecting the stock, and
  - set a TAC using the best available information that is not inconsistent with the objective of maintaining the stock at or above, or moving the stock towards or above, a level which can produce the MSY.
42. You may set the TAC to achieve the objective in a way and rate which has regard to the interdependence of stocks and within a period appropriate to the stock.
43. In considering the way in which and rate at which a stock is moved towards or above a level that can produce maximum sustainable yield (s13(3)) you may have regard to such social, cultural, and economic factors as you consider relevant. This provision applies to TACs set under s13(2) or s13(2A) (if applicable).
44. The obligation to have regard to the interdependence of stocks when setting a TAC requires consideration of the effects of fishing on associated stocks harvested with the target stock. Examples include other non-target fish species (bycatch) or benthic species that are incidentally impacted by trawl gear. The role of the target stock in the food chain should also be considered. In particular, interdependence involves a direct trophic (i.e. one stock is likely to be directly affected through a predator or prey relationship by the abundance of another stock) relationship between stocks.



## Section 14 – Alternative total allowable catch for stock specified in Schedule 3

45. Section 14 says that notwithstanding anything in section 13, if satisfied, in the case of any quota management stock listed in Schedule 3, that the purpose of this Act would be better achieved by setting or varying a TAC otherwise than in accordance with section 13(2) you may at any time, set or vary a TAC for that stock that you consider appropriate to achieve the purpose of this Act. In other words section 14 allows a TAC to be set or varied for the limited number of stocks listed on Schedule 3 otherwise than by reference to  $B_{MSY}$ .
46. Schedule 3 stocks are ones where:
- it is not possible because of the biological characteristics of the stock to estimate  $B_{MSY}$ ;
  - a national allocation for New Zealand has been determined as part of an international agreement;
  - the stock is managed on a rotational or enhanced basis; or
  - the stock comprises one or more highly migratory species.
47. Section 14(8) of the Act allows for stocks to be added to or deleted from Schedule 3.

## SECTIONS 20 & 21 - SETTING AND VARIATION OF THE TOTAL ALLOWABLE CATCH (TACC)

48. After setting or varying the TAC, a separate decision arises in respect of allocating the TAC, i.e., deciding what portion of the TAC is to be available for commercial and other purposes.
49. Section 20 requires a TACC to be set for each QMS stock and allows it to be varied from time to time. A TACC can be set at zero. This would occur in situations where the TAC was set at zero for sustainability reasons (i.e. the fishery was closed).
50. Section 21 of the Act says that in setting or varying the TACC you must have regard to the TAC and allow for:
- a) Māori customary non-commercial fishing interests;
  - b) Recreational interests; and
  - c) All other mortality to that stock caused by fishing.
51. The Courts have in a number of cases considered what is involved in allowing for non-commercial interests. In *Snapper 1*<sup>4</sup> the Court of Appeal said that the recreational allowance is simply the best estimate of what recreational fishers will catch while being subject to the controls which you decide to impose upon them e.g. bag limits and minimum lawful sizes. Having set the TAC you in effect apportion it between the relevant interests.<sup>5</sup>
52. The Supreme Court in *Kahawai*<sup>6</sup> endorsed this approach and said that the words “allow for” require you both to take into account the interests and make provision for them in the

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<sup>4</sup> *New Zealand Fishing Industry Association (Inc) v Minister of Fisheries* CA 82/97, 22 July 1997 (“Snapper 1”).

<sup>5</sup> *Snapper 1*, p 17.

<sup>6</sup> *New Zealand Recreational Fishing Council Inc v Sanford Limited* [2009] NZSC 54 (“Kahawai”).

calculation of the TACC.<sup>7</sup> The Supreme Court went on to say that ss 20 and 21 prescribe a framework within which you must operate when setting the TACC. The framework requires apportionment of the TAC by you among the various interests and other mortality. The sequential nature of the method of allocation provided for in s 21 does not indicate that non-commercial fishing interests are to be given any substantive priority over commercial interests. In particular the allowance for recreational interests is to be made keeping commercial interests in mind.<sup>8</sup>

53. The Supreme Court further said that in the end, within the limits provided for by the Act, you make a policy decision as to what allocations are appropriate for non-commercial interests and other mortality and what is to be the TACC. These decisions are interdependent. The Act does not confer priority for any interests over the other. It leaves that to your judgment.<sup>9</sup>
54. Under the customary fishing regulations [Fisheries (South Island Customary Fishing) Regulations 1999 and the Fisheries (Kaimoana Customary Fishing) Regulations 1998], customary take is regulated through the authorisation system which requires that all customary fishing is to be undertaken in accordance with tikanga and the overall sustainability of the fishery. This framework was put in place to give effect to legal obligations in the Settlement Act.<sup>10</sup>
55. When allowing for Māori customary non-commercial interests, you must take into account:
  - a) Any mātaihai reserve in the relevant quota management area; and
  - b) Any temporary area closure or temporary fishing method restriction or prohibition imposed in the area for the purposes of improving the availability or size of a species for customary fishing purposes or recognising a customary fishing practice in the area.
56. The intent is that the purposes of measures enacted to provide for customary fishing are not adversely affected or reasons for limited customary take are ignored when setting the customary allowance.
57. An allowance is to be made for all other mortality to a stock that results from fishing. This includes illegal catch, discards, and incidental mortality from fishing gear.

## HAURAKI GULF MARINE PARK ACT 2000

58. Section 11(2) of the Fisheries Act requires you to have regard to sections 7 and 8 of the Hauraki Gulf Marine Park Act 2000 (HGMPA) when setting or varying a sustainability measure (such as a TAC).
59. Section 13 of the HGMPA says all persons exercising powers or carrying out functions for the Hauraki Gulf under various specified Acts, including the Fisheries Act, must, in addition to any other requirement specified in those Acts, have particular regard to

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<sup>7</sup> Kahawai [55]

<sup>8</sup> Kahawai [61]

<sup>9</sup> Kahawai [65]

<sup>10</sup> Where the customary regulations don't apply customary fishing is regulated under regulations 50-52 of the Fisheries (Amateur Fishing) Regulations 2013 and a similar authorisation system applies.

sections 7 and 8 of the HGMPA. This would apply to the setting or varying of TACCs, and deemed values.

60. Section 7(1) of the HGMPA says the interrelationship between the Hauraki Gulf, its islands, and catchments and the ability of that interrelationship to sustain the life-supporting capacity of the environment of the Hauraki Gulf and its islands are matters of national significance.
61. Section 7(2) says the life-supporting capacity of the environment of the Gulf and its islands includes the capacity—
  - (a) to provide for—
    - (i) the historic, traditional, cultural, and spiritual relationship of the tangata whenua of the Gulf with the Gulf and its islands; and
    - (ii) the social, economic, recreational, and cultural well-being of people and communities:
  - (b) to use the resources of the Gulf by the people and communities of the Gulf and New Zealand for economic activities and recreation:
  - (c) to maintain the soil, air, water, and ecosystems of the Gulf.
62. Section 8 says that to recognise the national significance of the Hauraki Gulf, its islands, and catchments, the objectives of management are:
  - (a) the protection and, where appropriate, the enhancement of the life-supporting capacity of the environment of the Hauraki Gulf, its islands, and catchments:
  - (b) the protection and, where appropriate, the enhancement of the natural, historic, and physical resources of the Hauraki Gulf, its islands, and catchments:
  - (c) the protection and, where appropriate, the enhancement of those natural, historic, and physical resources (including kaimoana) of the Hauraki Gulf, its islands, and catchments with which tangata whenua have an historic, traditional, cultural, and spiritual relationship:
  - (d) the protection of the cultural and historic associations of people and communities in and around the Hauraki Gulf with its natural, historic, and physical resources:
  - (e) the maintenance and, where appropriate, the enhancement of the contribution of the natural, historic, and physical resources of the Hauraki Gulf, its islands, and catchments to the social and economic well-being of the people and communities of the Hauraki Gulf and New Zealand:
  - (f) the maintenance and, where appropriate, the enhancement of the natural, historic, and physical resources of the Hauraki Gulf, its islands, and catchments, which contribute to the recreation and enjoyment of the Hauraki Gulf for the people and communities of the Hauraki Gulf and New Zealand.
63. There is one stock in this sustainability round where the quota management area boundaries are within or partly within the boundaries of the Hauraki Gulf Marine Park, namely bluenose (BNS 1).

## SECTION 75 – DEEMED VALUE RATES

64. Deemed values are charges commercial fishers must pay for every kilogram of QMS fish stocks landed in excess of their ACE holdings. The purpose of the deemed value framework is to encourage commercial fishers to balance their catch with ACE while not discouraging them from landing and accurately reporting catch.
65. Under section 75 you must set annual and interim deemed value rates for all stocks managed under the QMS and you may vary such rates. Any deemed value rate set or varied takes effect from the first day of the next fishing year for the stock concerned. The annual deemed value rate must be greater than the interim deemed value rate.
66. When setting deemed value rates you must not have regard to the personal circumstances of any individual or class of persons liable to pay deemed values or set separate deemed values in individual cases.
67. You may set differential deemed value rates for specific stocks. These are an escalating scale of rates as the percentage by which catch exceeds ACE increases. You may also set different deemed value rates for fish landed in the Chatham Islands, reflecting the unique marketing conditions of those landings.
68. When setting deemed value rates, you are required under section 75(2)(a) to take into account the need to provide an incentive for every commercial fisher to acquire or maintain sufficient ACE each fishing year that is not less than the total catch of the stock taken by that commercial fisher.
69. Section 75(2)(b) specifies additional matters that you may have regard to when setting deemed value rates for a stock. These are:
  - the desirability of commercial fishers landing catch for which they do not have ACE;
  - the market value of ACE for the stock;
  - the market value of the stock;
  - the economic benefits obtained by the most efficient commercial fisher, licensed fish receiver, retailer, or any other person from the taking, processing, or sale of fish, aquatic life or seaweed;
  - the extent to which catch of that stock has exceeded or is likely to exceed the TACC for the stock in any year; and
  - any other matters that you consider relevant.
70. Under section 75A you must, if practicable, consult with stakeholders and tangata whenua that have an interest in the stock before setting or varying any deemed value rates.

## DEEMED VALUE GUIDELINES

71. In order to aid the application of the statutory criteria discussed above, a set of Deemed Value Guidelines has been developed. These Guidelines are attached as Appendix 1 and are summarised as follows:
  - deemed value rates must generally be set between the ACE price and the port price;
  - deemed value rates must generally exceed the ACE price by transaction costs;
  - deemed value rates must avoid creating incentives to misreport;

- deemed value rates for constraining bycatch species may be higher than for target species;
- deemed value rates must generally be set at twice the landed or port price for high value single species fisheries and species subject to international catch limits;
- deemed value rates for Chatham Island landings may be lower;
- interim deemed value rates must generally be set at 90% of the annual deemed value rate; and
- differential deemed value rates must generally be set.

72. The Guidelines do not bind you. They serve only as a guide and do not preclude you from taking into account relevant information on a case by case basis.

## Other Matters

### HARVEST STRATEGY STANDARD (HSS)

73. The Harvest Strategy Standard (HSS) is a policy statement of best practice in relation to the setting of fishery and stock targets and limits for fishstocks in New Zealand's Quota Management System (QMS). It is intended to provide guidance on how fisheries law will be applied in practice, by establishing a consistent and transparent framework for decision-making to achieve the objective of providing for utilisation of New Zealand's QMS species while ensuring sustainability.
74. The HSS outlines the Ministry's approach to relevant sections of the Act and, as such, forms a core input to the Ministry's advice to you on the management of fisheries, particularly the setting of TACs under sections 13 and 14.
75. The HSS is not however legally binding and you are not obliged to choose options based upon it.



# PART 3: EARTHQUAKE-AFFECTED FISHERIES Kaikōura and Cape Campbell Fisheries Closure

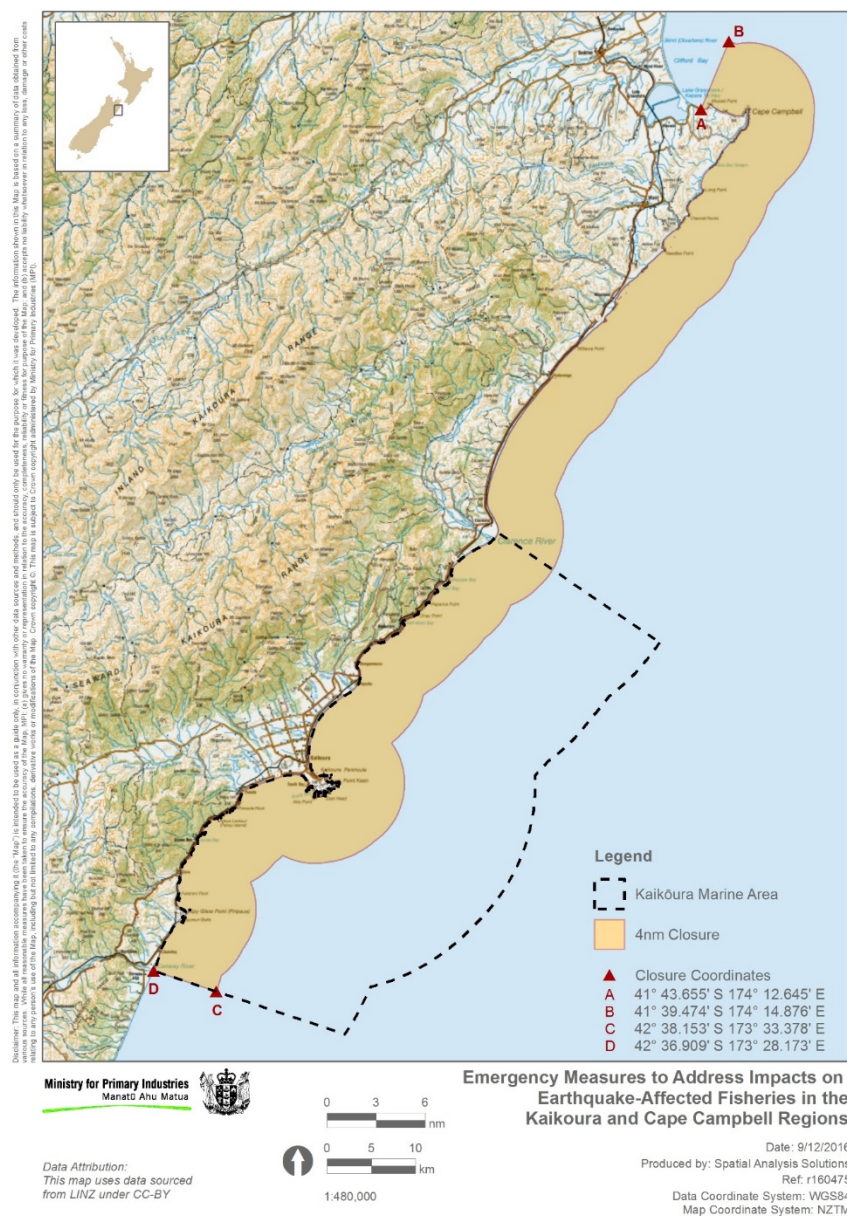


Figure 1: Earthquake-affected area closed to fishing for shellfish (excluding rock lobster and scampi) and seaweed.

## Summary

76. This chapter sets out information regarding your decisions on the setting of a closure under section 11 of the Fisheries Act 1996 for earthquake-affected fisheries (including paua) in Kaikōura and Cape Campbell (Figure 1). The section 11 closure would replace the current emergency closure, which is due to expire in November, 2017. The following chapter sets out information regarding your decisions on the review of TACs, TACCs,

and associated allowances for the PAU 3 and PAU 7 fisheries, both of which are partially closed under the closure for earthquake-affected fisheries.

77. The Ministry for Primary Industries (MPI) has consulted on your behalf on the proposed closure. The proposals in the consultation document are presented in Table 1, along with a revised option, Option 2A, which takes into account the submissions and information provided during consultation.

**Table 1: Proposed options for the earthquake-affected fisheries closure in Kaikōura and Cape Campbell**

	Management action
Option 1	Take no action. The current emergency closure will expire at 5pm 20 November 2017 and the affected shellfish and seaweed fisheries will be reopened.
Option 2 (MPI preferred)	Replace the emergency closure with a closure under section 11 of the Fisheries Act 1996.
Option 2A	Replace the emergency closure with a closure under section 11 of the Fisheries Act 1996, and allow the collection of beach cast seaweed.

78. Most submitters, as well as tangata whenua, support a closure (Option 2) for all shellfish (excluding rock lobster and scampi) and seaweed. However, some submitters proposed various amendments and exclusions. The new option (Option 2A) responds to one of these proposals: to allow for harvest of beach cast seaweed. MPI does not consider the other amendments and exclusions proposed would achieve the purpose of the Act.
79. Following the analysis of submissions, and additional discussions with tangata whenua and the Kaikōura Marine Guardians, MPI recommends Option 2: retaining a closure for all shellfish (excluding scampi and rock lobster) and seaweed.

## Need for review

80. The emergency closure put in place for earthquake-affected fisheries in Kaikōura and Cape Campbell will expire on 20 November and cannot be extended. The fisheries will not have recovered from the impacts of the earthquakes, and allowing them to reopen will risk the sustainability of these fisheries.

## CONTEXT

81. Earthquakes in November 2016 caused considerable damage to the coastline in Kaikōura and Cape Campbell. Some sections of coastline were uplifted by 5.7 metres. In areas of uplift, there was substantial mortality of shellfish and seaweeds.
82. In response to the earthquakes, you implemented an emergency closure for all shellfish (excluding scampi) and seaweed. The rock lobster fishery reopened after one month following research that determined that sustainability of the fishery was not compromised. You chose to extend the closure for shellfish (excluding rock lobster and scampi) and seaweed to the maximum length legally possible for this type of closure. This closure is due to expire on 20 November, 2017.
83. Information on the impacts of the earthquakes is limited. A report commissioned following the earthquakes estimates that up to 50% of the habitat fished by commercial



fishers in the northern statistical areas of the PAU 3 quota management area (the southern part of the closure) was lost due to uplift.<sup>11</sup>

84. Paua larvae recruit to coralline algae on rocks. With large sections of habitat destroyed or altered, there is likely to be a gap in recruitment of new paua until the habitat has first recovered. As many juvenile and adult paua were also killed during uplift, it is likely that a number of year classes are depleted, and as these depleted year classes move through the fishery, there will be gaps in abundance. The story is likely to be similar for other intertidal and shallow subtidal species. MPI expects recovery to take 5 – 10 years.
85. MPI has commissioned research to assess the impacts of, and recovery from, the earthquakes for habitats, fisheries, and iconic marine species in more detail. Surveys have started for paua, rock lobster and rocky reef communities, as well as for sperm whales. Other projects due to get underway will build on data collected before the earthquakes. This information will be constructive to inform future reviews and will become available from June 2018.
86. MPI considers it necessary to put in place a new closure with an indeterminate end to allow results from the research to guide future management decisions.

## Statutory Considerations

87. It is implicit that options provided in this document (with the exception of Option 1) comply with the purpose and principles of the Act. In formulating this final advice, MPI has also complied, on your behalf, with the legal requirements with regard to consultation, providing for tangata whenua input and participation and kaitiakitanga. Further detail with respect to these provisions and specific to the proposals for extending the closure under section 11 of the Act is found in the Addendum at the end of this chapter.

## SECTION 11 – SUSTAINABILITY MEASURES

88. Section 11(1) allows sustainability measures to be set or varied after the following factors are taken into account:
  - (a) Any effects of fishing on any stock and the aquatic environment; and
  - (b) Any existing controls under this Act that apply to the stock or area concerned; and
  - (c) The natural variability of the stock concerned.
89. MPI has taken into account the potential effects of fishing on the fisheries impacted by the closure, as well as existing controls and the natural variability of stocks. MPI is concurrently providing you with advice on options to reduce the TAC, TACC and associated allowances for PAU 3 and PAU 7 due to the impact of the closed area on those fisheries and potential effort displacement. MPI has also commenced pre-consultation on options for managing recreational paua fisheries due to the impacts of the closure on those fisheries and potential effort displacement.
90. Under Option 1, the fishery will be reopened to fishing pressure on 20 November 2017 with fishing regulations and rules that assume no impact by earthquakes. MPI does not

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<sup>11</sup> Neubauer, Philipp (2017). Area lost to the pāua fishery from the November 2016 Kaikōura earthquake, 7 pages. Report to the Ministry for Primary Industries (MPI)

consider that the fisheries in the closed area will be able to sustain fishing pressure under those rules.

91. Natural variability of stocks means that stocks will naturally increase and decrease over time. Given mortality following the earthquakes, it is important to provide protection for earthquake-affected fisheries as they may be less apt to bounce back from a natural decrease if there is also fishing pressure. The closure applies to multiple species and not all of these are stocks; however, given the purpose of the Act, the same logic applies for all fisheries species.
92. Section 11 (2) says that before any sustainability measure is set or varied you must have regard to any provision of:
  - (a) Any regional policy statement, regional plan, or proposed regional plan under the Resource Management Act 1991; and
  - (b) Any management strategy or management plan under the Conservation Act 1987; and
  - (c) Sections 7 and 8 of the Hauraki Gulf Marine Park Act 2000 (for the Hauraki Gulf as defined in that Act); and
  - (ca) Regulations made under the Exclusive Economic Zone and Continental Shelf (Environmental Effects) Act 2012; and
  - (d) A planning document lodged with the Minister of Fisheries by a customary marine title group under section 91 of the Marine and Coastal Area (Takutai Moana) Act 2011— that apply to the coastal marine area and are considered by the Minister to be relevant.
93. MPI is not aware of any matters in 11(2)(a) to (d) above that impact on the proposals in this paper.
94. Section 11 (2A) requires you to take into account:
  - (a) Any conservation services or fisheries services; and
  - (b) Any relevant fisheries plan approved under this Part; and
  - (c) Any decisions not to require conservation services or fisheries services.
95. Conservation services are administered by the Department of Conservation. MPI is not aware of any existing conservation services concerning these fisheries. There are no relevant fisheries plans approved under subsection (2A). There is a draft National Fisheries Plan for Inshore Shellfish, and MPI has considered this draft plan in the development of these proposals. MPI is unaware of any decisions under subsection (c).
96. Under subsection 11(3), sustainability measures can include closures, and these can be done by regulation or Gazette notice. MPI proposes that the Gazette notice process be used to ensure that the new closure be in place by the time the current emergency closure expires.
97. The proposed closure would not apply to customary take, which is regulated by the authorisation system under the Fisheries (South Island Customary Fishing) Regulations 1999.<sup>12</sup> See further discussion in the *Evaluation of Options* section below.

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<sup>12</sup> A small section of the closed area around Cape Campbell to the mouth of the Clarence River is not subject to the Customary Regulations; however, there are plans to incorporate management of this area into the Customary Regulations in 2018.

## Submissions received

98. MPI consulted on your behalf on the options set out in Table 1 above. MPI followed its standard consultation process.
99. Submissions on the proposals were received from the following 32 individuals, iwi, and organisations:
- a) Ainsley Calcutt
  - b) Barbara Burkhart
  - c) Bill Hartley
  - d) Brian Davis
  - e) Burkhart Fisheries Limited
  - f) Deane Gregg
  - g) Elizabeth Keys
  - h) Gerald O'Rourke
  - i) Jason Baker
  - j) Jason Burkhart
  - k) Jeremy Phipps
  - l) John Scheerhoorn
  - m) Lanfar Holdings (No4) Ltd
  - n) Larnce Wichman
  - o) Lester Gregg
  - p) Puaa Industry Council
  - q) PuaaMAC3
  - r) PuaaMAC7
  - s) Martina MacDonald
  - t) Ngāi Tahu
  - u) Nic Coll
  - v) Phill Russ
  - w) Rangitane o Wairau
  - x) Robert Ellis
  - y) Saavid Diving
  - z) Sally and Rob Peter
  - aa) New Zealand Sport Fishing Council (NZSFC)
  - bb) Stephen Young
  - cc) Te Korowai
  - dd) Tidesong Family Trust
  - ee) Thomas Peter
  - ff) Wayne Wiffen

100. Full submissions are attached in Appendix 2.

## Evaluation of Options

101. Following analysis of submissions, MPI has proposed a third option, Option 2A, which amends Option 2 in response to requests and submissions received during consultation.

## OPTION 1 – TAKE NO ACTION; FISHERIES WILL REOPEN

102. Under Option 1, no further action will be taken. The current emergency closure will expire on 20 November 2017 and the shellfish and seaweed harvesting currently prohibited by the closure will recommence.
103. MPI does not consider that Option 1 will meet the purpose of the Act. The observed scale of habitat loss following the earthquakes was, and continues to be, sufficient to raise concerns about potentially significant loss of abundance and future productivity from existing fisheries. This is a particular concern for paua because they rely on the presence of coralline algae to live in when they recruit to the reef as juveniles. Uplift has caused major areas of coralline algae to be destroyed, reducing the habitat available for recruiting paua, and therefore potentially reducing recruitment of new paua to the reef.<sup>13</sup>
104. Further research is needed to determine impacts on fisheries species, and how mortalities and alterations to habitat may impact on recovery of the fisheries. MPI expects that habitat recovery will take some time, and this is likely to impede the recovery of other species, such that recovery of some species (including paua) may take up to 5 – 10 years.
105. Two submitters considered that an amended Option 1 was preferable to Option 2. One submitter proposed that the fishery be reopened with a reduced recreational bag limit. Another submitter considered that it could be reopened with the support of rahui closures in highly impacted locations and new recreational regulations, including allowing paua fishing one weekend a month with a reduced bag limit and annual take licenses.
106. There is insufficient time to review recreational regulations before the current emergency closure expires. As outlined in “Other Matters”, MPI is proposing to review non-commercial regulations such as bag limits that apply to earthquake-affected fisheries later this year. However, any changes will not come into effect in time for the expiration of the current emergency closure. It is also relevant that changes to recreational paua regulations alone will not be comprehensive enough to adequately manage all of the affected species for sustainability and future utilisation.

## OPTION 2 – IMPLEMENT A NEW CLOSURE UNDER S11 OF THE FISHERIES ACT 1996 (MPI Preferred)

107. Under Option 2, MPI proposes that the current emergency closure be replaced with a new closure that applies to the same area (Figure 1) under section 11 of the Fisheries Act 1996. MPI proposes that you implement this closure through a Gazette notice to ensure that changes are in place by the time the current emergency closure expires.
108. Twenty-nine submitters supported retaining the closure, citing considerable damage to the nearshore environment and a need to allow for recovery of the ecosystem. Four submitters requested amendments to the closure.
109. One submitter felt it critical that rock lobster be retained in the closure. Considerable research on rock lobster has been undertaken since the earthquakes. The results of this work indicate that there has not been a serious decline in the abundance or reproductive

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<sup>13</sup> Neubauer, Philipp (2017). Area lost to the pāua fishery from the November 2016 Kaikoura earthquake, 7 pages. Report to the Ministry for Primary Industries (MPI)

potential of rock lobster in the affected area. This fishery continues to be monitored to ensure that the current management framework is ensuring sustainability. The closure can be reviewed to include rock lobster if at any point the regular monitoring indicates concerns that warrant such action. MPI does not expect harvest of rock lobster to impede recovery of the earthquake-affected ecosystem.

110. One submitter requested that collection of *Porphyra* spp. be permitted under the closure. This submitter is a commercial seaweed harvester and has been unable to harvest due to the closure. The submission outlines the unique life-history of *Porphyra*, and indicates that due to a life-history stage that occurs in deeper water, the reproductive potential for these species has not been negatively impacted. The submitter regularly surveys new growth in July, and suggests that regrowth of *Porphyra* spp. is occurring in the areas harvested last year and the previous year.
111. MPI considers that it would be inappropriate to permit commercial seaweed harvesting for *Porphyra* spp. in the earthquake-affected area without research to indicate that the removal of *Porphyra* at these levels can be sustained following the impacts of the earthquake. The submitter has provided useful context with which to understand the life-history and potential recovery of the species, but MPI considers it prudent to await scientific results, expected mid-2018, to assess the status of *Porphyra* before fishing is permitted to recommence.
112. The submitter's permit allows for fishing between July and October, and they will miss this fishing season regardless of whether it is opened to *Porphyra* harvest from November. MPI will provide advice on the harvest of *Porphyra* spp. when results from the research come available, and if they support allowing harvest, then MPI may be able to review this facet of the closure before the end of the fisher's permit season in 2018.
113. One submitter felt it inappropriate to include kina. They suggested that as kina are voracious algal grazers and compete with paua, they should not be included in the closure. MPI has no evidence to suggest that kina are overgrazing algae, or that they are outcompeting paua, and therefore does not recommend removing kina from the closure at this time. Kina are an integral component of the near-shore ecosystem that MPI considers requires protection as part of the closure.
114. One submitter requested that they be able to collect beach cast seaweed for use in their garden as fertiliser. MPI is also aware of considerable on-the-ground support for allowing collection of this from its discussions with the Kaikōura community; however, there is also some opposition. This is discussed further under Option 2A.
115. A closure under section 11 would not apply to customary fisheries. Te Runanga o Kaikōura are concerned for the wellbeing of the fisheries and have discussed limiting customary take to the purposes of tangi only. Their entire rohe has been affected by the earthquakes. Ngāi Tahu endorse the voluntary measure put forward by the Kaikōura Tangata Tiaki/Kaitiaki to restrict the customary fishing authorisations issued to tangihanga only. Te Taihū iwi have indicated that they intend to continue a voluntary hold on issuing permits for the earthquake affected areas in their rohe until science becomes available to help inform their management decisions.
116. MPI considers that a further closure under section 11 is necessary to ensure the sustainable utilisation of fisheries resources in the future. The long-term impacts of the significant mortality suffered by affected species and the damage and alterations to habitat

are not yet clearly understood. It is unclear how long it will take the environment to recover from the impacts of the earthquakes. A further closure will ensure that these fisheries are provided time to recover, and that further management action can be informed by research.

117. A new closure under section 11 would remain in place until results from the science become available and are able to help inform fisheries management decisions. The length of time the closure is in place may vary among species and, under section 11, MPI will be able to review management controls for different species separately as the results from research become available.

## **OPTION 2A – IMPLEMENT A NEW CLOSURE UNDER S11 OF THE FISHERIES ACT 1996, BUT ALLOW FOR COLLECTION OF BEACH CAST SEAWEED**

118. Under Option 2A, the current emergency closure would be replaced with a new closure that applies to the same area, but that excludes beach cast seaweed in addition to scampi and rock lobster.
119. This option was requested by a submitter so that the community could continue to collect beach cast as fertiliser for their gardens. The submitter noted that there is confusion around where the mean high water mark is, above which beach cast can be collected. As this option was not included in its original consultation document, MPI has discussed the requested new Option 2A with the Kaikōura Marine Guardians, Ngati Toa, and Te Runanga O Kaikōura.
120. The Kaikōura Marine Guardians have indicated support for allowing harvest of beach cast seaweed. The Guardians do not expect collection of beach cast to have a negative impact at the harvest levels anticipated, and acknowledge that many people in Kaikōura use beach cast seaweed in their gardens. Given the stress on the community following the earthquakes, they feel allowing collection of beach cast seaweed would show support for the community's needs.
121. Te Runanga O Kaikōura also support the collection of beach cast seaweed. At the marae, they collect beach cast seaweed to fertilise the garden. They feel there is no negative impact on the recovery of the ecosystem and fisheries as the amount collected is minimal.
122. Ngati Toa Rangatira do not support allowing harvest of beach cast seaweed. Ngati Toa note that there is substantial sacrifice by all sectors for the recovery of the earthquake-affected ecosystem, and consider it is too early to reopen the closure to harvest of beach cast seaweed.
123. MPI considers that allowing collection of beach cast seaweed could simplify compliance by removing uncertainty around the mean high water mark, above which individuals are currently allowed to collect beach cast seaweed. MPI acknowledges that this could lead to unintentional non-compliance, and is aware through public information sessions and other engagement that there is some support from the community for this approach.
124. MPI notes that beachcast seaweed is likely to be a food source for intertidal and shallow subtidal species, including juvenile paua. It also contributes nutrients back to the water as it breaks down, though large volumes of beach cast seaweed can have a detrimental effect, as was observed immediately following the earthquakes. While most of the area is closed

to commercial harvest of beachcast seaweed under regulation, commercial collection of beach cast seaweed is allowed south of Kaikoura (between Haumuri Bluffs and Waipara River), and north of Kaikoura (between French Pass and the Clarence River). MPI is not aware of any strong commercial interest in collecting beach cast seaweed in these areas and anticipates that, overall, there would be only limited harvest of beach cast seaweed, with only limited effect on the nearshore ecosystems.

125. Overall, given the conflicting points of view expressed on the collection of beach cast seaweed, MPI recommends beachcast seaweed remain included in the closure in the interim (i.e. Option 2) until scientific information becomes available to inform further reviews of the closure.

## OTHER MATTERS

126. Some submitters raised issues that were outside the scope of this review. Common issues raised are outlined here. Further issues have not been explicitly commented on in this paper, but have been noted by MPI officials.

### Displaced recreational effort

127. Many submitters had concerns regarding displaced recreational fishing effort and the negative impact this was having north and south of the fisheries closure. Effort, particularly for recreational paua, is being displaced because of the fisheries closure, but also because of road closures. Submitters are particularly concerned about the coming summer months when recreational paua harvest is expected to increase.
128. Many of these submitters provided views on how recreational regulations should be changed. MPI notes this is outside the scope of this review, but that it is an important concern. There is not time to review recreational regulations prior to summer 2017/18. MPI has commenced pre-consultation on a review of recreational regulations for paua and will carry out formal consultation from October this year, with any changes implemented in the first half of 2018. In the interim, MPI considers it appropriate to retain the current closure.

### Reopening plan

129. A number of submitters felt that it was necessary to develop a plan for how the earthquake-affected fisheries will be reopened, and consider that any plan should rely on science indicating that sustainable utilisation can be ensured.
130. Research commissioned under the \$2 million recovery package that you announced following the earthquakes will begin to become available in mid-2018. Reopening of the affected fisheries will be guided by the results of this research. MPI will provide for iwi input and participation, and consult with stakeholders, before any decisions to reopen any portion of the closure are made.
131. PauaMAC3 and PauaMAC7 have indicated their intentions to develop fisheries management plans for PAU 3 and PAU 7 respectively. They state this will provide a framework for managing these important shared fisheries, including the reopening of the

closed portions of these fisheries when information supports such action, and to work collaboratively across stakeholder groups to achieve buy-in for the plan. MPI is supportive of this approach, and will engage with stakeholders as the plans develop.

### **Fisher education and social responsibility**

132. There was support in submissions for increased education targeted at recreational and commercial fishers. A number of fishers supported MPI encouraging stakeholders to contribute to the long-term sustainability of the affected fisheries. MPI agrees that it is important to encourage social responsibility and stewardship of the affected fisheries, and will make this a theme of media communications over the coming summer.



## Addendum: Assessment against statutory obligations

133. Your statutory considerations for setting sustainability measures under the Fisheries Act 1996 are outlined in this section.

### SECTION 8 – PURPOSE OF THE ACT

134. Section 8 says the purpose of the Act is to provide for the utilisation of fisheries resources while ensuring sustainability.
135. “Ensuring sustainability” is defined as: “maintaining the potential of fisheries resources to meet the reasonably foreseeable needs of future generations; and avoiding, remedying, or mitigating any adverse effects of fishing on the aquatic environment”. “Utilisation” of fisheries resources is defined as “conserving, using, enhancing, and developing fisheries resources to enable people to provide for their social, economic, and cultural wellbeing.”
136. The Supreme Court has stated that the purpose statement incorporates “the two competing social policies reflected in the Act” and that “both policies are to be accommodated as far as is practicable in the administration of fisheries under the quota management system...[I]n the attribution of due weight to each policy that given to utilisation must not be such as to jeopardise sustainability”.<sup>14</sup>
137. MPI has concerns that Option 1 – allowing the current fishery emergency closure to expire – will not achieve the purpose of the Act as significant sustainability risks will arise that cannot be addressed by other means (for example, by fisheries regulations). MPI considers that Options 2 and 2A in this paper, to replace the current emergency closure with a new closure under section 11 of the Act implemented through a gazette notice, align with the purpose of the Act. Options 2 and 2A do not provide for short term utilisation; however, MPI considers these options will provide best for utilisation over the medium to long-term as they will ensure recovery of the ecosystem, therefore reducing the risk of further closures or strict management measures in the future.

### SECTION 9 – ENVIRONMENTAL PRINCIPLES

138. Section 9 prescribes three environmental principles that you must take into account when exercising powers in relation to the utilising of fisheries resources or ensuring sustainability.

**Principle 1: Associated or dependent species should be maintained above a level that ensures their long-term viability**

139. The Act defines “associated and dependent species” as any non-harvested species taken or otherwise affected by the taking of a harvested species. “Harvested species” is defined to mean any fish, aquatic life or seaweed that may for the time being be taken with lawful authority. So this principle is focussed on species (such as protected species) for which a permission to target commercially cannot be given.

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<sup>14</sup> Recreational Fishing Council Inc v Sanford Limited and Ors [2009] NZSC 54 at [39].

140. The term “long-term viability” (in relation to a biomass level of a stock or species) is defined in the Act as a low risk of collapse of the stock or species, and the stock or species has the potential to recover to a higher biomass level. This principle therefore requires the continuing existence of species by maintaining populations in a condition that ensures a particular level of reproductive success.
141. Where fishing is affecting the viability of associated and dependent species, appropriate measures such as method restrictions, area closures, and potentially adjustments to the TAC of the target stock should be considered.
142. Under Option 1, allowing the fishery to reopen means that harvest to all sectors will recommence in the earthquake-affected area. Paua is a particularly important fishery in the area. There is limited information to provide an assessment of the effects of the paua fishery on either biological diversity or associated and dependent species. There is evidence of an interdependent relationship between paua, kina, and seaweeds. The continued loss of large paua from reefs by fishing may have a localised displacement effect on kina and seaweeds. The effects of this displacement on the inshore benthic community structure are unknown. There are also unknown effects for other fisheries in the earthquake-affected area, such as seaweeds and other small shellfish including cat’s eye.
143. Under Option 2 and Option 2A, the proposal to continue a closure under section 11 of the Act implicitly ensures that all associated or dependent species will also be maintained at or above a level that ensures their long-term viability, and that biodiversity of the aquatic environment will be maintained.

**Principle 2: Biological diversity of the aquatic environment should be maintained.**

144. “Biological diversity” is defined in the Act as ‘the variability among living organisms, including diversity within species, between species, and of ecosystems’. Determining the level of fishing or the impacts of fishing that can occur requires an assessment of the risk that fishing might cause catastrophic decline in species abundance or cause biodiversity to be reduced to an unacceptable level.
145. The impacts of reopening the earthquake-affected area to fishing pressure are uncertain for biodiversity. As the intertidal and shallow subtidal have been considerably impacted in many locations, allowing harvesting during this time may impact on the biodiversity of the aquatic environment.

**Principle 3: Habitat of particular significance for fisheries management should be protected.**

146. Habitat is defined in the Oxford Dictionary of English to mean the natural home or environment of an animal, plant or species. In MPI’s view, in the fisheries context, this means those waters and substrates necessary for fish to spawn, breed, feed or grow to maturity. These should be protected and adverse effects on them avoided, remedied, or mitigated.
147. No habitat of particular significance has been identified within the earthquake-affected area. Regardless, under Option 2, continuing the closure ensures that any such habitats would be protected. Allowing the earthquake-affected area to reopen to fishing pressure primarily will result in hand-gathering of fisheries species. It is considered unlikely that the method of hand-gathering would have a demonstrable adverse effect on habitat;

however, there are some important seaweed fisheries within the Kaikōura Marine Area, and these provide habitat and may be impacted by allowing the fishery to reopen.

## SECTION 10 – INFORMATION PRINCIPLES

148. Section 10 prescribes four information principles that you must take into account when exercising powers in relation to the utilising of fisheries resources or ensuring sustainability:
- (a) Decisions should be based on the best available information;
  - (b) Decision makers should consider any uncertainty in the information available in any case;
  - (c) Decision makers should be cautious when information is uncertain, unreliable, or inadequate;
  - (d) The absence of, or any uncertainty in, any information should not be used as a reason for postponing or failing to take any measure to achieve the purpose of this Act.
149. Given the unexpected nature of the earthquake and the need to act quickly following the earthquakes, there is limited information available to inform management decisions, and there is uncertainty within the available information. MPI has used the best available information in developing and evaluating the options in this paper, and has outlined uncertainty where it exists.

## SECTION 12 – CONSULTATION AND INPUT AND PARTICIPATION

150. Section 12(1) says that before setting or varying any sustainability measure under the Act you are required to:
- a) consult with those classes of persons having an interest in the stock or the effects of fishing on the aquatic environment in the area concerned, including, but not limited to, Māori, environmental, commercial and recreational interests; and
  - b) provide for the input and participation of tangata whenua having a non-commercial interest in the stock concerned or an interest in the effects of fishing on the aquatic environment in the area concerned; and have particular regard to kaitiakitanga.
151. MPI met with the Te Tau Ihu Iwi Forum in April 2017 to discuss options for management of the earthquake-affected fisheries. This forum represents iwi at the top of the South Island. MPI also met with the Te Waka a Māui me Ōna Toka Iwi Forum in March 2017, and again on 22 June during the period of statutory consultation. This forum represents all South Island iwi. MPI has directly liaised with Te Runanga O Kaikōura, and attended a Te Runanga o Kaikōura meeting to discuss options for management of the earthquake-affected fisheries.
152. Input received during these discussions was incorporated into the consultation document. Overall, iwi were supportive of a continued closure under section 11 of the Act for earthquake-affected fisheries.

153. The Te Waipounamu Iwi Forum Fisheries Plan covers PAU 7 and identifies paua as a taonga species. MPI considers that the management options presented in this advice paper are consistent with the objectives of this Plan.
154. MPI formally consulted on options for the earthquake-affected fisheries on your behalf from 7 June to 7 July 2017. The feedback from submitters is outlined in this decision document.

## Conclusion and Recommendations

155. Earthquakes in November, 2016, had a significant impact on the intertidal and shallow subtidal communities along the Kaikōura/Cape Campbell coastline. There is currently an emergency closure in place for all shellfish (excluding scampi and rock lobster) and seaweed, which is due to expire on 20 November. MPI considers that a longer closure is necessary to ensure recovery of the nearshore ecosystem.
156. Research commissioned by MPI to understand impacts and recovery following the earthquakes will begin to yield results in mid-2018. A closure under section 11 can be reviewed as and when scientific information indicates reopening will ensure sustainable utilisation.
157. You have broad discretion in exercising your powers of decision making, and you may make your own independent assessment of the information presented to you in making your decision. You are not bound to choose the option recommended by MPI.

### *Option 1*

**Agree** to take no action. The emergency closure will expire on 20 November, 2017.

**Agreed / Not Agreed**

OR

### *Option 2 (MPI's preferred option)*

**Agree** to put in place a new closure by Gazette notice under section 11 of the Act for all shellfish (excluding rock lobster and scampi) and seaweed in the earthquake-affected area from Marfells Beach to Conway River and 4nm offshore.

**Agreed / Not Agreed**

OR

### *Option 2A*

**Agree** to put in place a new closure by Gazette notice under section 11 of the Act for all shellfish (excluding rock lobster and scampi) and seaweed (excluding beach cast seaweed) in the earthquake-affected area from Marfells Beach to Conway River and 4nm offshore.

**Agreed / Not Agreed**

  
Hon Nathan Guy  
Minister for Primary Industries

24 / 8 / 2017



## Earthquake-affected Paua (PAU 3 and PAU 7)

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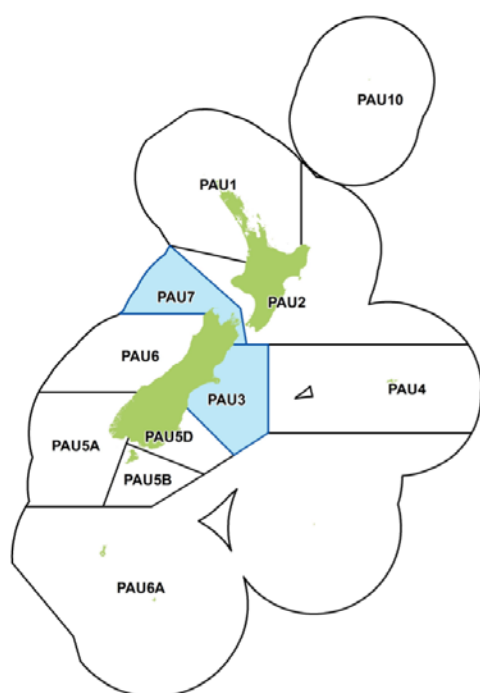


Figure 1: Quota management areas (QMAs) for paua with PAU 3 and PAU 7 highlighted in blue.

### Summary

158. Following your decision on the closure of earthquake-affected fisheries recommended in the previous chapter, this chapter reviews the total allowable catches (TACs) for paua in quota management areas 3 and 7 (PAU 3 and PAU 7, refer Figure 1). This chapter covers proposals for both of these stocks in a single paper because of the similarity of the sustainability risks to these fisheries.
159. Paua in PAU 3 and PAU 7 were adversely impacted by earthquakes in November 2016 and by the closure you announced following the earthquakes for all shellfish (excluding shellfish and scampi) and seaweed in the earthquake-affected area around Kaikōura and Cape Campbell (Figures 2 and 3).
160. As a result, the paua biomass available to fishers in PAU 3 and PAU 7 is reduced, but the TACs set for these fisheries have not changed. There is a risk that if these TACs are not also reduced, the fishing effort displaced from the closed areas will exceed sustainable levels of fishing in the open areas, and compromise sustainability of the stocks.
161. MPI has consulted on your behalf on a review of catch limits for PAU 3 and PAU 7. The options consulted on are presented in Table 1, along with an additional option for PAU 7 (Option 4), which MPI has proposed as a consequence of feedback provided by submitters.

Table 1: Proposed management settings in tonnes (t) for PAU 3 and PAU 7 from 1 October 2017

Stock	Option	Total Allowable Catch	Total Allowable Commercial Catch	TACC tonnage decrease and % change	Allowances		
					Customary Māori	Recreational	All other mortality caused by fishing
	Current settings	-	91.615	-	-	-	-
PAU 3	Option 1 (MPI preferred)	79.3	45.8 ↓	45.8 t ↓ (50%)	15	8.5	10
	Option 2	57.6	27.5 ↓	64.1 t ↓ (70%)	15	5.1	10
PAU 7	Option 1 (Status quo)	133.6	93.6	-	15	15	10
	Option 2 (MPI preferred)	121.8 ↓	84.2 ↓	9.4 t ↓ (10%)	15	12.6 ↓	10
	Option 3	116.5 ↓	79.6 ↓	14 t ↓ (15%)	15	11.9 ↓	10
	Option 4	130.5 ↓	93.6	No change	15	11.9 ↓	10

162. Following the analysis of submissions and feedback received, MPI recommends Option 1 for PAU 3. The biomass of paua available to fishers is significantly reduced as a result of the earthquakes and closure. Option 1 sets a TAC for the first time, and reduces the TACC by 50% to 45.8 tonnes. MPI estimates Option 1 to equate to a loss in revenue of \$1,098,644 annually for commercial fishers. Recreational and other allowances are also being set of the first time for PAU 3 and are based on best available information. The recreational allowance is based on the most recent harvest estimate, reduced by 50% to 8.5 tonnes, which is the same proportional reduction as for the TACC.
163. MPI recommends Option 2 for PAU 7. Option 2 reduces the TAC from 133.6 to 121.8 tonnes, and the TACC from 93.6 to 84.2 tonnes (a 10% reduction). The recreational allowance is reduced from 15 to 12.6 tonnes, which is based on the most recent harvest estimate, reduced by 10% (the same proportion as the TACC). It takes into account that some commercial and recreational harvest has been displaced as a result of the earthquakes in PAU 7, though substantially less than in PAU 3. MPI estimates Option 2 to equate to a loss in revenue of \$225,412 annually for commercial fishers.
164. MPI's options for PAU 3 and PAU 7 represent a range of potential responses that it considers are consistent with best available information and your statutory obligations. MPI notes your discretion to choose intermediate options (for example a reduction for PAU 7 between the status quo and Option 2).
165. MPI also intends to carry out a full review of recreational paua regulations for PAU 3 and PAU 7 in October this year to ensure that recreational harvest is within the allowances that are set, and that displaced recreational fishing effort does not risk the sustainability of the fisheries.
166. Deemed value rates were reviewed for PAU 3 and PAU 7. As the current interim and annual deemed value rates for PAU 3 and PAU 7 are consistent with the Guidelines (Appendix 1), no changes to the deemed value rates are proposed.

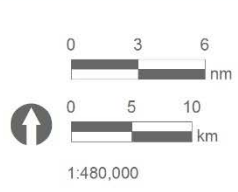


Disclaimer: This map and all information accompanying it (the "Map") is intended to be used as a guide only, in conjunction with other data sources and methods, and should only be used for the purposes for which it was developed. The information shown in this Map is based on a summary of data obtained from the Department of Conservation, the Department of the Environment, and other relevant agencies. The Department of the Environment is not responsible for any errors, omissions, or inaccuracies in the data, and does not warrant the accuracy, completeness, or reliability of the information. The information is provided "as is" without any liability. This map is subject to Crown copyright administered by the Ministry for Primary Industries (MPI).



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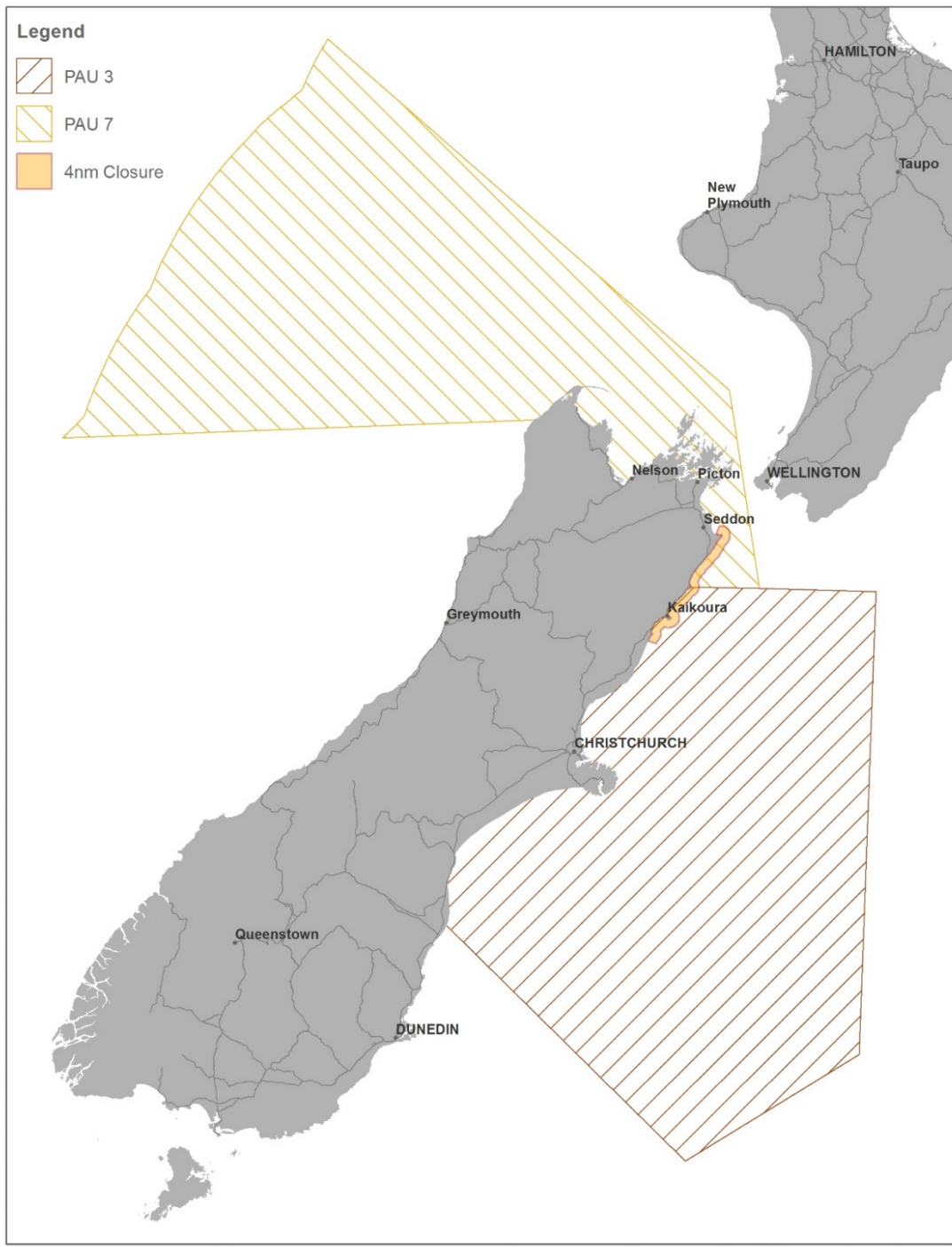


### Emergency Measures to Address Impacts on Earthquake-Affected Fisheries in the Kaikōura and Cape Campbell Regions

Date: 9/12/2016  
Produced by: Spatial Analysis Solutions  
Ref: r160475  
Data Coordinate System: WGS84  
Map Coordinate System: NZTM

Figure 2: Map of the earthquake-affected area that was closed under section 16 of the Fisheries Act 1996.

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### Emergency Measures to Address Impacts on Earthquake-Affected Fisheries in the Kaikoura and Cape Campbell Regions



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Date: 13/12/2016  
Produced by: Spatial Analysis Solutions  
Ref: r160475  
Data Coordinate System: WGS84  
Map Coordinate System: NZTM

Figure 3: Locations of the PAU 3 and PAU 7 fisheries in relation to the emergency closure area.

## Need for review

167. PAU 3 and PAU 7 have both been impacted by the November 2016 earthquakes. Permanent uplift of large areas of seabed, as well as land slips falling into the sea, resulted in loss of marine habitat and mortality of a substantial number of paua.
168. Following the earthquakes, you announced an emergency closure in the earthquake-affected area (Figure 3). Areas of PAU 3 and PAU 7 are now closed under the emergency closure. Given the mortality of paua following the earthquakes, and the potential for displaced fishing effort to impact on the open parts of the two fisheries, MPI considers the current management settings are insufficient to ensure sustainability of the remaining paua population in areas open to harvest.

## CONTEXT FOR PAU 3

### Biological information

169. Studies to date suggest that juvenile and adult paua tend to move small distances, several to tens of metres, throughout their life. They are considered to be a sedentary species, are found predominantly in depths less than 5 - 10 metres, and are known to be broadcast spawners, releasing gametes into the water column, which then fertilise and develop into larvae.
170. Juvenile paua tend to settle from the water column onto reef encrusted with red coralline algae. Generally, they settle in cryptic habitat in the lower intertidal/upper subtidal zone. As they grow, most paua tend to move into the lower subtidal zone.
171. Paua live in aggregations. Population density is believed to be strongly correlated with spawning success. At low densities, reproductive success can be compromised due to the lower probability of gametes meeting and successfully fertilising. The aggregation behaviour of paua populations makes paua vulnerable to localised depletion from fishing activities.
172. In the context of your decision, these factors are relevant because:
  - Uplift and land slips caused short-term mortality of a substantial number of juvenile and adult paua.
  - Fewer paua and reduced density of surviving populations lowers the probability that reproductive success will be at levels high enough to ensure recruitment adequate to sustain current populations.
  - Uplift and land slips adversely impacted large areas of paua habitat, much of which is now permanently above the new high tide mark.
  - MPI expects the earthquake-affected paua populations to take 5 – 10 years before showing significant signs of recovering to pre-earthquake conditions.
  - Overfishing in open areas of the fishery may result in localised depletion and decreased spawning success.

## Fishery characterisation

### Commercial

173. Commercial fishers in PAU 3 gather paua by hand while free-diving. PauaMAC3 is the industry management committee that oversees the commercial management of PAU 3 fishing. In 2001, PauaMAC3 initiated a fine-scale reporting program alongside efforts to spread catch evenly between the northern and southern areas of PAU 3 (now the closed and open areas). Since that time, catch spread has fluctuated from 50/50 to 70/30 between the north and south of PAU 3. The TACC is fully caught in PAU 3 each year (Figure 4).

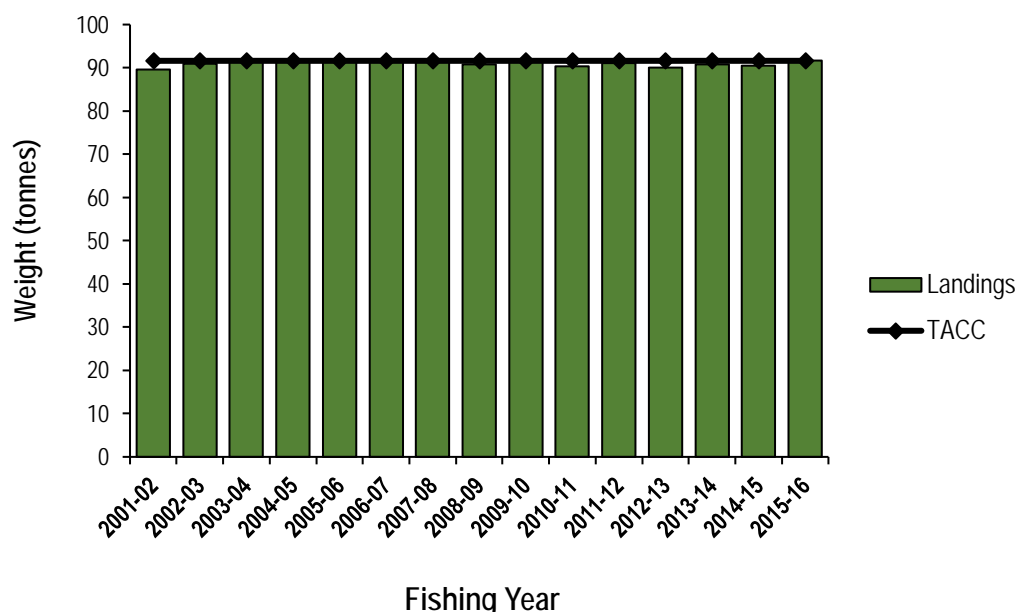


Figure 4: Annual catches vs TACC for PAU 3 from 2000/01 to 2015/16.

### Māori customary interests

174. There is no customary allowance set for PAU 3. Paua is a taonga to Māori and is identified in the Te Waipounamu Iwi Forum Fisheries Plan. Estimates of customary harvest range from 7 – 13 tonnes over recent years. MPI does not hold fine-scale customary catch information showing where within PAU 3 customary catch is taken.

### Recreational

175. You need to set a recreational allowance for PAU 3 for the first time. The 2011/12 National Panel Survey<sup>15</sup> of Marine Recreational Fishers estimates recreational harvest in PAU 3 to be 16.98 tonnes. The MPI science working group responsible for paua assumes that this is likely to be an underestimate as shore-based diving/gathering was not well captured in the survey methodology.

176. MPI does not have an estimate of recreational paua harvest for the area of PAU 3 now closed to fishing. Anecdotal information indicates that the coastline around Kaikōura has long been a popular location for recreational paua fishers, and it is likely that a considerable portion of recreational take has frequently come from the area now closed to fishing.

<sup>15</sup> Gray, A., Heinemann, A., Hill, L., Wynne-Jones, J. 2014. National Panel Survey of Marine Recreational Fishers 2011-12: Harvest Estimates. Accessible at: <http://fs.fish.govt.nz/Page.aspx?pk=113&dk=23718>

### *All other mortality to the stock caused by fishing*

177. You need to set an allowance for all other mortality caused by fishing in PAU 3 for the first time. This allowance includes illegal catch and incidental mortality.
178. Illegal catch is considered to be relatively high for paua in this area. For the last stock assessment, illegal catch was assumed to be 15 tonnes.
179. Incidental mortality may occur if paua are removed from the substrate to be measured. Paua can die from wounds caused by removal, desiccation or osmotic and temperature stress at the surface, or indirectly from being returned to unsuitable habitat or by being lost to predators or bacterial infection. MPI does not have an overall quantitative estimate of incidental mortality for PAU 3. In PAU 7, it was estimated to be 0.3% of landed catch within the commercial fishery. An estimate is not available for the recreational fishery, but is likely to be a higher percentage of catch as the ability of recreational fishers to estimate minimum legal size of paua underwater, on average, is likely to be less than that of professional paua divers.

### **Current stock status**

180. The last stock assessment was completed in 2014 and indicated that the stock was very likely to be at or above the target (40%  $B_0$ ). There has been an overall declining trend in spawning stock biomass since 2001-02, but the trend has become much slower in recent years. There is no estimate yet available for stock status following the earthquakes. A new stock assessment was scheduled for 2017, but has been delayed until information on the impacts of the earthquakes can be incorporated. Results from research being conducted on the impacts of the earthquakes will become available in mid-2018.

### **Current management approach**

181. The draft National Fisheries Plan for Inshore Shellfish categorises PAU 3 (and PAU 7) as a Group 1 fishery, meaning it is one of New Zealand's most valuable and sought after shellfish fisheries. Given the high level of benefits from paua and their susceptibility to overfishing and depletion, there is a strong management focus on ensuring paua fisheries remain healthy, and are managed at high levels of abundance.
182. Regular stock assessments are undertaken. The status of the stock in PAU 3 would have been assessed in 2017 and only reviewed if the results had suggested a review was appropriate. Due to the impacts of the earthquake, it was deemed most appropriate to postpone the assessment while more data was collected, but to undertake a review of the TACC given the substantial area of the fishery that is closed and affected by the earthquakes.

## CONTEXT FOR PAU 7

### Biological information

183. Biological information relevant to both PAU 7 and PAU 3 is outlined above; see *Context for PAU 3*.

### Fishery characterisation

#### Commercial

184. Commercial fishers in PAU 7 gather paua by hand while free-diving. Industry has voluntarily shelved ACE on numerous occasions over the last 15 years in response to declines in biomass and catch-per-unit-effort. This means the TACC has not been fully caught (Figure 5). In an effort to leave more paua in the water to spawn (on the basis that the same catch weight can be achieved by removing less fish that are larger), industry has also implemented minimum harvest sizes that are larger than the minimum legal size (125 mm) in a number of different locations in PAU 7.

185. Fine scale reporting information confirms that the level of commercial catch that has come from the area of PAU 7 now closed to fishing has ranged from 4.4% to 11.2% annually (average of 7.4%). This is a lower than thought when the options for consultation were developed.

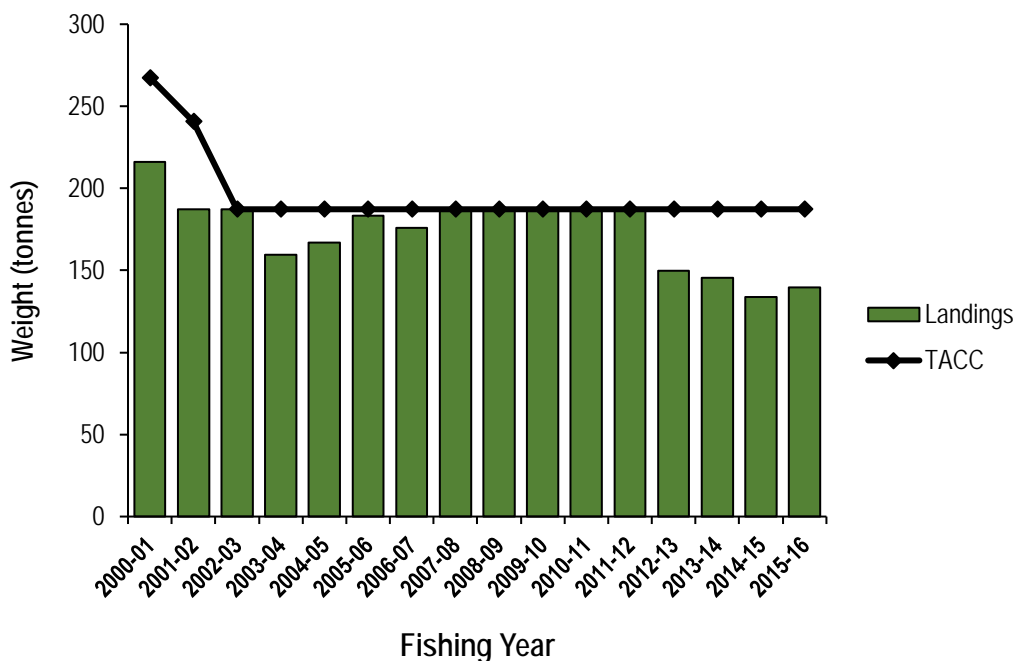


Figure 5: Annual catches vs TACC for PAU 7 from 2000/01 to 2015/16.

### *Māori customary interests*

186. Paua is a taonga to Māori. There are 9 iwi with interests in PAU 7: Rangitane o Wairau, Ngāti Apa, Ngāti Rārua, Ngāti Tama, Ngāti Kuia, Te Atiawa, Ngāti Kōata, Ngāti Toa, and Ngāi Tahu. Eight belong to the Te Tau Ihu Forum, and all to the broader Te Waka a Māui me Ōna Toka (TWAM) Forum. There are no complete estimates of customary take available for PAU 7 as there are large areas of PAU 7 where customary harvest is managed under regulations 50-52 of the Fisheries (Amateur Fishing) Regulations 2013. Reporting of customary take is not required under those regulations. Based on the best available information, estimates of customary harvest are likely to be within the current allowance of 15 tonnes.

### *Recreational*

187. The 2011/12 National Panel Survey<sup>16</sup> of Marine Recreational Fishers estimates recreational harvest in PAU 7 to be 14.13 tonnes. The MPI science working group responsible for paua assumes that this is likely to be an underestimate as shore-based diving/gathering was not well captured in the survey methodology.

188. MPI does not have an estimate of recreational paua harvest for the area of PAU 7 now closed to fishing. Anecdotal information from MPI Compliance and local communities is that some areas of PAU 7 are under intense recreational fishing pressure. Concerns have been raised that the level of take is not sustainable in some areas. The recreational paua fishery is particularly important in the Marlborough Sounds and the east coast (much of which is now closed following the earthquakes).

### *All other mortality to the stock caused by fishing*

189. Illegal catch may be relatively high for PAU 7. For the last stock assessment, illegal catch was assumed to be 7.5 tonnes. Incidental mortality is also an important component of the allowance for all other mortality to the stock caused by fishing.

### **Current stock status**

190. The last stock assessment was completed in 2015 and estimated the PAU 7 stock biomass to be somewhere between 16-21%  $B_0$  with 95% confidence, with the greatest chance of being at 18%  $B_0$ . This abundance level sits below 20%  $B_0$ , the soft limit for the fishery. The soft limit represents the level of stock biomass where the requirement for a formal time-constrained rebuilding programme for the fishery is triggered (guided by the MPI Harvest Strategy Standard)<sup>17</sup>.

### **Current management approach**

191. The draft National Fisheries Plan for Inshore Shellfish categorises PAU 7 as a Group 1 fishery (see section 2.1.4).

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<sup>16</sup> Gray, A., Heinemann, A., Hill, L., Wynne-Jones, J. 2014. National Panel Survey of Marine Recreational Fishers 2011-12: Harvest Estimates. Accessible at: <http://fs.fish.govt.nz/Page.aspx?pk=113&dk=23718>

<sup>17</sup> <http://fs.fish.govt.nz/Page.aspx?pk=104>

192. In 2016, the TAC in PAU 7 was reduced by 40% and the TACC was reduced by 50% in response to declining biomass. Voluntary industry-led initiatives to stop the decline and rebuild the fishery by shelving ACE had been unsuccessful. No change was made at that time to the recreational allowance, however, MPI had commenced pre-consultation on reviewing recreational limits when the earthquakes struck. The fishery is now under a rebuilding plan.

## Statutory Considerations specific to PAU 3 and PAU 7

193. It is implicit that options provided in this document comply with the purpose and principles of the Act. In formulating this final advice, MPI has complied, on your behalf, with the legal requirements with regard to consultation, providing for tangata whenua input and participation and kaitiakitanga. Further detail with respect to these provisions and specific to the proposals for PAU 3 and PAU 7 is found in section 7.5 (Addendum), and section 5 (Evaluation of Options) of this document.

194. With respect to specific considerations when setting a TAC, allowances, and a TACC for the stock in question, sections 11, 13, 20 and 21 of the Act apply. Relevant matters for your consideration are outlined in more detail above, as well as the Addendum to this chapter.

195. In summary, all proposed options are considered to be not inconsistent with the objective (under s 13) to maintain the stock at or above the level that will produce MSY and to pose limited risk to associated species or the environment. The options differ in terms of the economic and social considerations of each option balanced against the sustainability risk, and these matters are outlined in the section evaluating options.

### SECTION 13 – SETTING THE TAC

196. In cases such as PAU 3 and PAU 7, where there is some uncertainty around the estimates of  $B_{MSY}$  or associated proxy, section 13(2A) of the Act provides for you to use the best available information to set a TAC that is not inconsistent with the objective of maintaining the stock at or above, or moving the stock towards or above, the  $B_{MSY}$  level.

197. MPI considers the options presented in this paper are not inconsistent with the requirements under section 13(2A) that the stock should be managed at or above  $B_{MSY}$ , or moving the stock towards or above  $B_{MSY}$ .

### SECTIONS 20 AND 21 – ALLOCATING THE TAC FOR PAU 3

198. The TAC must be apportioned among the relevant sectors and interests as required under sections 20 and 21 of the Act. Section 21 prescribes that you shall make allowances for Maori customary non-commercial interests, recreational fishing interests, and for any other sources of fishing-related mortality, before setting the TACC.



## Allowances

### *Customary Māori allowance*

199. Best available information including estimates (where available) for harvest associated with the allowances for PAU 3 is outlined in section 2.1.
200. Under both options for PAU 3 (Table 1), MPI proposes a customary allowance of 15 tonnes to allow for customary harvest. Actual customary harvest in PAU 3 is expected to be lower than in the past due to a voluntary rahui in place and decreased fishing opportunities.

### *Recreational allowance*

201. MPI does not have an estimate of how much of the recreational harvest came from the area that is now inaccessible to fishers under the emergency closure, but expects it to be similar (50 – 70%) to commercial given anecdotal information that suggests the Kaikōura coast is a very popular recreational paua area. MPI proposes to set an allowance for recreational fishing that is based on this most recent harvest estimate, but that is reduced by 50% (Option 1) to 70% (Option 2) because of the impacts of the earthquake.

### *All other mortality caused by fishing*

202. There is high uncertainty regarding all other mortality due to fishing. MPI proposes an allowance of 10 tonnes, which matches that set for PAU 7 and accounts for the high uncertainty in the assumed illegal take.

## TACC

203. The TACC is fully caught in PAU 3 every year (Figure 4). Fine scale reporting information indicates that, in the past 15 years, 50% to 70% of landed catch has come from the area now closed to fishing (the northern part of the fishery). Industry has made efforts over the last 10 years to spread catch effort so that only 50% of the catch is taken from the northern part of the fishery each year. However, this has not always been successful due to accessibility and weather (see section 5.1.1).
204. MPI proposes to set a TACC that accounts for this lost biomass. Under Option 1, MPI proposes to allocate 45.8 tonnes to the TACC, which is a 50% reduction from the current TACC. Under Option 2, MPI proposes to set a TACC of 27.5 tonnes, which is a 70% reduction from the current TACC.

## SECTIONS 20 AND 21 – ALLOCATING THE TAC FOR PAU 7

205. Your statutory responsibilities are summarised above.

### PAU 7 Allowances

206. Best available information including estimates (where available) for harvest associated with the allowances for PAU 7 is outlined in section 2.2.

### *Customary Māori allowance*

207. The current allowance for customary Māori non-commercial take is considered to be appropriate, and MPI proposes no change under either option to this allocation. Actual customary harvest may be lower than in the past due to a voluntary rahui in place and decreased opportunities.

### *Recreational allowance*

208. MPI does not have a quantitative estimate for how much of the recreational harvest came from the area that is now inaccessible to fishers under the emergency closure. The area around the Marlborough Sounds and on the east coast (much of which is now closed following the earthquakes) is believed to be a particularly important recreational paua fishery.

209. MPI consulted on three options for the recreational allowance for PAU 7. Option 1 retains the recreational allowance at 15 tonnes. Under Options 2 and 3, the recreational allowance would be set at a level equal to a reduction in the harvest estimate of 10% or 15%, resulting in a reduction of the allowance from 15 to 12.9 tonnes (Option 2), or from 15 to 11.9 tonnes (Option 3). The reductions in Options 2 and 3 were chosen as they were thought to represent the harvest lost to commercial fishers in the closed area, which was the best available information to use as a proxy for lost recreational harvest.

210. Following consultation, MPI also proposes an amended option, Option 4, which has been requested by tangata whenua and some stakeholders. Option 4 retains the status quo TACC, but reduces the recreational allowance from 15 tonnes to 11.9 tonnes (corresponding to a 15% reduction of the harvest estimate). MPI includes this option as it achieves a reduction in the TAC, and reflects that the recreational allowance was not reduced during the 2016 review despite that the recreational sector has a responsibility to share in the rebuild of the fishery. MPI will follow up any reduction in the recreational allowance with a review of regulations later this year to ensure the allowance is not being exceeded, and that overall harvest is reduced.

### *All other mortality caused by fishing*

211. MPI does not have information to suggest that other mortality caused by fishing has changed substantially since the review last year, and under all options proposes to retain the current allocation of 10 tonnes.

### **PAU 7 TACC**

212. Industry efforts to shelve ACE to help rebuild the PAU 7 fishery have meant that the TACC has not been fully caught in many years (Figure 5). Despite this, the estimated biomass of the PAU 7 fishery has been steadily decreasing, and the TACC was reduced last year by 50%. Given the biology and growth characteristics of paua, there has been insufficient time to assess the effects of this reduction in TACC on the biomass of the fishery.

213. Under Options 1 and 4, MPI proposes no change to the TACC, which takes into account the significant reduction that occurred last year and assumes that there is currently little additional risk to sustainability because of the relatively small proportion of the fishery affected by the earthquakes. Under Option 2 MPI proposes to allocate 84.2 tonnes to the

TACC, which is a 10% reduction from the current TACC. Under Option 3, MPI proposes to set a TACC of 79.6 tonnes, which is a 15% reduction from the current TACC.

## SECTION 75 – DEEMED VAUE RATES

214. This review of the TAC for PAU 3 and PAU 7 has triggered a review of the deemed value rates for the stock. No other deemed value criterion is triggered and no deemed value rates adjustments for this stock are proposed in the 2017 Deemed Values section of this advice.

## Submissions Received

215. Full submissions are attached in Appendix 2.

216. Submissions on the PAU 3 proposals were received from nine individuals, iwi, and organisations:

- a) N and L Boyd Family Trust
- b) Bill Hartley
- c) Ngāi Tahu
- d) Tūhoe Te Uru Taumatua
- e) Spearfishing New Zealand (SNZ)
- f) Paua Industry Council (PIC)
- g) PauaMAC3
- h) New Zealand Sportfishing Council (NZSFC)
- i) Te Ohu Kaimoana (TOKM)

217. Submissions on the PAU 7 proposals were received from 13 individuals, iwi, and organisations:

- a) Saavid Diving Ltd
- b) Bill Hartley
- c) Tūhoe Te Uru Taumatua
- d) Spearfishing New Zealand (SNZ)
- e) Paua Industry Council (PIC)
- f) PauaMAC7
- g) Tidesong Family Trust
- h) John Scheerhoorn
- i) Te Runanga o Toa Rangatira Incorporated
- j) Iwi Collective Partnership
- k) Rangitane o Wairau
- l) New Zealand Sport Fishing Council (NZSFC)
- m) Te Ohu Kaimoana (TOKM)

## Evaluation of Options

218. The final options for setting the TAC, allowances, and TACC for PAU 3 and PAU 7 are set out in Table 1.

## PAU 3

219. The estimated effects on revenue of the proposed options for PAU 3 are outlined in Table 2.

Table 2: Predicted changes to commercial annual revenue of the proposed options, based on port price of \$23.98/kg for PAU 3 in 2016/17

	TACC (t)	Change from status quo (t)	Predicted revenue change (\$ p.a.)
<i>Status quo</i>	91.615		
Option 1	45.8	45.8 ↓ (50%)	1,098,644 ↓
Option 2	27.5	64.1 ↓ (70%)	1,537,478 ↓

### Option 1 (*MPI preferred*)

220. Option 1 proposes to set a TAC of 79.3 tonnes, and
- reduce the TACC 50% from 91.615 tonnes to 45.8 tonnes
  - set an allowance for customary Maori of 15 tonnes
  - set a recreational allowance of 8.5 tonnes
  - set an allowance for all other mortality caused by fishing of 10 tonnes.
221. PauaMAC3 and PIC support a reduction in the TACC of 50% (Option 1). They agree that there is a sustainability risk to the fishery if the current TACC of 91.615 tonnes were caught entirely in the open area of the fishery (the southern portion). They support a reduction of 50% in the TACC as this allows for the utilisation potential of the southern portion of the fishery to be realised. These industry submissions note the capital loss that entities will suffer on their asset following a TACC reduction and the impacts of the earthquakes. The expected effect on revenue of the proposed options is outlined in Table 2.
222. Ngāi Tahu and TOKM also support Option 1. Ngāi Tahu note that the setting of a reduced recreational allowance is arbitrary without regulations that will ensure recreational take does not exceed the allowance. MPI notes that it intends to initiate a review of recreational regulations relating to paua in PAU 3 and PAU 7 in October this year.
223. NZSFC support Option 1. They acknowledge that industry initiated a catch effort spreading program in 2001 to reduce catch in the northern part of the fishery.
224. N & L Boyd Family Trust did not explicitly comment on options in the discussion paper. Their submission outlined a set of potential opportunities that would allow industry to continue to utilise the PAU 3 fishery in parts of the earthquake-affected area that were minimally impacted, and to explore new opportunities such as utilising stunted stock around Banks Peninsula.
225. Over the last 10 – 15 years, 50% – 70% of annual commercial catch has come from the area of PAU 3 that is now closed to fishing. PauaMAC3 outline in their submission that industry has made efforts over the past 10 – 15 years to spread catch 50/50 between the northern and southern parts of PAU 3 in response to industry concerns that the northern part of PAU 3 was being fished too heavily. PauaMAC3 acknowledge that efforts to spread catch 50/50 have not been successful every year. The reasons they give include:

- Effort spread is voluntary and there has not always been 100% buy-in from commercial stakeholders, nor any means to enforce it
- The number of diveable days are less in the southern part of the fishery than in the north due to weather and poor water visibility
- Utilising the southern part of the fishery requires many fishers to travel further than they would to access the northern part of the fishery.

PauaMAC3 conclude that the inability to achieve a 50/50 catch spread is not an indicator of sustainability or paua abundance concerns in the south. They also note that fishers are coming to better understand weather patterns and better utilise conditions and opportunities in the southern part of the fishery.

226. MPI considers that Option 1 best provides for utilisation while ensuring sustainability. Any reduction higher than this may unnecessarily restrict utilisation. There is no information that specifically assesses the status of paua biomass in the southern portion of the fishery; however, MPI considers that PAU 3 has been well managed. The risk to the fishery now is that a considerable area of the fishery has been affected by the earthquakes and closed. MPI considers that the open part of the fishery can sustain removals of 79.3 tonnes per year under Option 1.
227. MPI agrees that high annual catches in the northern part of PAU 3 do not reflect an inability for the southern part of the fishery to sustain fishing effort equivalent to 50% of the TACC, but rather that it reflects a historic unwillingness for fishers to utilise the southern area of PAU 3 as described by PauaMAC3.

## Option 2

228. Option 2 proposes to set a TAC of 57.6 tonnes, and
- reduce the TACC by 70% from 91.615 to 27.5 tonnes
  - set an allowance for customary Maori of 15 tonnes
  - set a recreational allowance of 5.1 tonnes
  - set an allowance for all other mortality caused by fishing of 10 tonnes.
229. Bill Hartley, Tuhoe Te Uru Taumatua, and SNZ support Option 2 (though it is not explicitly clear if Bill Hartley is referring to PAU 3 or PAU 7 in his submission). Bill Hartley considers that a cautious approach is required following the earthquakes. MPI considers that a TACC equivalent to 50% of the current TACC (i.e. Option 1) is a cautious approach for managing the southern part of the PAU 3 fishery. Tuhoe Te Uru Taumatua do not provide any supporting rationale in their submission.
230. SNZ submit that by not reducing the TACC by the maximum amount that has come out of the now closed northern part of PAU 3, the fishery is sure to decline. MPI considers that, for the reasons described under Option 1 this presents a misunderstanding of the catch information and that low levels of catch in the southern part of the fishery reflect fisher behaviour rather than the level of catch that is sustainable for this area.
231. MPI considers that, while Option 2 is a valid option, it is likely to unnecessarily restrict utilisation of PAU 3, and consequently does not best achieve the purpose of the Act.

## PAU 7

232. The estimated effects on revenue of the proposed options for PAU 7 are outlined in Table 3.

Table 3: Predicted changes to commercial annual revenue of the proposed options, based on port price of \$23.98/kg for PAU 7 in 2016/17

	TACC (t)	Change from status quo (t)	Predicted revenue change (\$ p.a.)
Option 1 ( <i>Status quo</i> )	93.6		
Option 2 (MPI preferred)	84.2	9.4 ↓ (10%)	225,412 ↓
Option 3	79.6	14 ↓ (15%)	335,720 ↓
Option 4	<i>Same as for Option 1</i>		

### Option 1 (*Status quo*)

233. Option 1 is to retain the TAC at 133.6 tonnes, and

- retain the TACC of 93.6 tonnes
- retain the allowance for customary Maori of 15 tonnes
- retain the allowance for recreational of 15 tonnes
- retain the allowance for all other mortality caused by fishing of 10 tonnes.

234. Submissions do not clearly support Options 1, 2, or 3, but rather comment on changes to sectors individually. PauaMAC7 supports retaining the status quo for the TACC. They consider that industry has already received a substantial reduction in the TACC last year, and there has not been enough time to observe the effects of this reduction. PauaMAC7 also submit that they are willing to reduce commercial catch in response to the earthquake, but their preference is for catch reduction to be achieved through shelving of ACE with an independent organisation (see section 5.3).

235. PIC supports PauaMAC7's submission and supports retaining the status quo for the TACC. Saavid Diving, Tidesong Family Trust, John Scheerhoorn, Te Runanga O Toa Rangatira Incorporated, and TOKM all support retaining the status quo TACC.

236. Rangitane o Wairau support a full commercial closure of PAU 7 for two to three years, as well as a reduction in customary take (to be advised by iwi), and changes to recreational regulations (see section 5.3).

237. MPI does not consider a full-closure of the commercial fishery to be necessary, and that it would unnecessarily restrict utilisation. MPI supports Rangitane o Wairau in their desire to reduce customary take, and acknowledges that this would be achieved by iwi through the issuing of permits.

238. MPI considers, however, that the best available information suggests there have been additional impacts on PAU 7 as a result of the earthquakes. Although information is uncertain, both recreational and commercial fishing effort has been displaced by the earthquakes reducing the likelihood that last year's significant TAC and TACC reduction will achieve its purpose of rebuilding the stock.

239. Research investigating the impacts of the earthquakes in PAU 7 is underway. Preliminary results will be available in mid-2018. A further full stock assessment of PAU 7 is also scheduled for 2020. This will provide further information on long term impacts on the

fishery. In the interim, MPI considers that it is appropriate to adjust the TAC to take this into account to reduce harvest, and does not support Option 1.

### Option 2 (*MPI preferred*)

240. Option 2 is to reduce the TAC from 133.6 to 121.8 tonnes, and
- reduce the TACC by 10% from 93.6 to 84.2 tonnes
  - reduce the recreational allowance from 15 to 12.6 tonnes (a 10% reduction to the harvest estimate)
  - retain the allowance for customary Maori at 15 tonnes
  - retain the allowance for all other mortality caused by fishing at 10 tonnes.
241. SNZ support Option 2. They consider that the TACC was substantially reduced last year, and there has not been time to see the effects of this reduction on biomass; therefore, they support the smaller of the two reductions proposed in the consultation document.
242. It is not clear from their submission if SNZ support Option 2 for the recreational allowance. SNZ note that under Option 2, rather than reducing the allowance by 10% as for the TACC, the proposal is to reduce the allowance by an amount equal to 10% of estimated recreational harvest based on the last National Panel Survey. SNZ consider that, as the recreational estimate is likely to be underestimated, a higher estimate should have been used to calculate the proposed reduction in the allowance. MPI acknowledges that there is high uncertainty in the estimate of recreational take available for PAU 7, but this estimate is the best available information.
243. The Iwi Collective Partnership supports either Option 2 or 3, but does not support Option 1. They provide no supporting rationale.
244. NZSFC support Option 2 for the TACC. They urge caution for the fishery given the results of the last stock assessment. They do not comment on options for the recreational allowance, but acknowledge that there will be some effort displacement. However, they consider that there will also be a significant decrease in recreational fishing effort and harvest due to the closure.
245. MPI considers that Option 2 best provides for utilisation while ensuring sustainability. The best available information is that there have been additional impacts on PAU 7 as a result of the earthquakes. MPI considers that it is appropriate to adjust the TAC to take this into account.
246. MPI has limited information to inform the level of TAC that will ensure sustainable utilisation in PAU 7. Using the best available information, MPI proposes to reduce the TAC by an amount approximately equal to the effort that has been displaced.
247. Fine-scale reporting information suggests that the proportion of commercial catch in the closed area has ranged from 4.4% to 11.2% annually in the ten years preceding the earthquakes, with an average of 7.4%. Option 2 reduces the TACC by 10%, which is more than the minimum and average commercial catches in the area, and therefore is likely to reduce overall catch by a sufficient amount so as to offset the risks to sustainability from displaced effort.

248. MPI does not have fine-scale information to estimate recreational take in the closed area. Assuming that the proportion of recreational harvest in the now closed area was approximately equal to commercial harvest, MPI proposes to reduce the recreational allowance by the same proportion (10% of the recreational harvest estimate). MPI acknowledges that estimates of recreational harvest are highly uncertain and some information and submitters suggest the proportion of affected catch may be higher for recreational fishers (see Option 4).
249. You have discretion to reduce the TAC by less than proposed by Option 2. For example, you could follow a similar approach to PAU 3 and set a TACC and recreational allowance that reflects the minimum level of paua that has been taken in the closed area in the years preceding the earthquake. For PAU 7, this would result in a reduction to the TACC and recreational allowance of approximately 4.4%.
250. The expected effect on revenue of Options 2 and 3 is outlined in Table 3.

### Option 3

251. Option 3 is to reduce the TAC from 133.6 to 116.5 tonnes, and
- reduce the TACC by 15% from 93.6 to 79.6 tonnes
  - reduce the recreational allowance from 15 to 11.9 tonnes (a 15% reduction to the harvest estimate)
  - retain the allowance for customary Maori at 15 tonnes
  - retain the allowance for all other mortality caused by fishing at 10 tonnes
252. In their submission, PauaMAC7 request that the recreational allowance be reduced by 50% to match the reduction that industry received last year, or in lieu of that outcome, Option 3 for the recreational allowance.
253. PIC, Saavid Diving, Tidesong Family Trust, John Scheerhoorn, and Te Runanga O Toa Rangatira Incorporated all request that the recreational allowance is reduced by 50%, or by the maximum consulted on in the consultation document (Option 3). TOKM supports Option 3 for the recreational allowance, and note that this requires follow-up with regulations to ensure recreational catch is limited to the allowance.
254. Tuhoe Te Uru Taumatua supports Option 3, but provide no supporting rationale. The Iwi Collective Partnership supports either Option 2 or 3, but does not support Option 1. They provide no supporting rationale.
255. MPI notes that reducing the recreational allowance by more than 15% of the harvest estimate, as requested by some submitters, would require further consultation as it was not included in the consultation document. However, a new option (Option 4) that takes these submissions into account is included for your consideration.
256. Overall, MPI does not support Option 3 because it would reduce the TACC by more than the maximum that industry has taken from the closed area in the recent past. MPI considers that this option would unnecessarily restrict utilisation in the fishery.



#### Option 4 (*new option requested by submitters*)

257. Option 4 is to reduce the TAC from 133.6 to 130.5 tonnes, and
- retain the TACC at 93.6 tonnes
  - reduce the recreational allowance from 15 to 11.9 tonnes (a 15% reduction to the harvest estimate)
  - retain the allowance for customary Maori at 15 tonnes
  - retain the allowance for all other mortality caused by fishing at 10 tonnes.
258. This new option reflects requests from commercial stakeholders and tangata whenua during consultation. They note the recreational allowance was not altered during last year's review of PAU 7.
259. Submissions and information received during consultation suggest that recreational harvest may be impacted more strongly by the earthquake closure than thought. They consider the east coast to be particularly important for recreational paua harvesters due to its accessibility by road, and note much of the east coast is now closed following the earthquakes (see Figure 2). In addition, as recreational fishers are not restricted to fish within a QMA, there may be fishers in PAU 7 that would have previously fished in PAU 3 that now only fish in PAU 7 (recreational fishing effort displacement from PAU 3 to PAU7).
260. MPI notes there is limited information and high uncertainty regarding recreational harvest. Reducing the recreational allowance from 15 tonnes to 11.9 tonnes (a 15% reduction of the harvest estimate) could be an appropriate option for PAU 7, that also reflects that recreational fishers share responsibility for rebuilding the PAU 7 fishery.
261. Option 4 would result in a reduction of only 2.3% to the TAC. This is the smallest reduction proposed in the range of options in this paper (other than the status quo, which proposes no reduction). Given the considerable reductions in the TAC and TACC implemented last year, MPI considers that a reduction of 2.3% could be an appropriate response in the short term, pending the results of the earthquake research later next year. At that point, MPI could reassess the need for further review if the new information raises concerns. However, reducing the TAC by an amount approximately equal to the effort that has been displaced by the earthquakes (10%), as proposed under Option 2, better addresses the risks to sustainability from displaced effort from both recreational and commercial sectors.
262. As noted, MPI intends to review recreational regulations relating to paua in PAU 3 and PAU 7 later this year to address concerns that displaced recreational fishing effort across PAU 3 and PAU 7 is occurring and resulting in localised overfishing of paua (refer Section 5.3). This provides an opportunity to ensure that recreational catch is not exceeding the allowance.

#### OTHER MATTERS

263. This section outlines other matters raised in submissions that were beyond the scope of this review.

## Recreational regulations

264. A majority of submissions highlighted concerns regarding increasing recreational fishing effort, and in particular, the risk of localised depletion in popular parts of PAU 7 as a result of displaced recreational fishing effort. Submitters are particularly concerned for the coming summer months for areas such as east Marlborough, including Port Underwood, that will become a target for fishers that would have typically travelled to fish along the earthquake-affected coastline. Many submitters consider that recreational regulations should be urgently reviewed, and some submissions suggested reductions to the bag limit and increases in the minimum legal size.
265. Saavid Diving Ltd, Bill Hartley, PIC, Tidesong Family Trust, John Scheerhorn, and Te Runanga O Toa Rangatira Incorporated consider it critical that increasing and displaced recreational harvest be addressed in PAU 7 before summer. Rangitane state it is almost impossible to find a legal sized recreational paua. Some submitters also discussed the application of a recreational paua tagging system like that used in Australia.
266. Bill Hartley, Ngai Tahu, PIC, and PauaMAC3 consider that recreational regulations need to be addressed in PAU 3 before the summer. Ngāi Tahu note that setting a recreational allowance for PAU 3 is arbitrary without following up with regulations that will ensure recreational take does not exceed the allowance.
267. MPI acknowledges that the last recreational harvest estimate for PAU 7 is from 2011/12, and that the science working group responsible for paua considered this to be an underestimate at that time. It is also possible that recreational effort has increased since that estimate was calculated, and that recreational harvest was already exceeding the allowance prior to the earthquake.
268. To address the risk that recreational harvest was exceeding the allowance, MPI had commenced pre consultation on a review of recreational regulations immediately after the 2016 review of PAU 7. However, this review was paused as a result of the unexpected impacts of the earthquakes and the need to put in place immediate management responses (such as the closure).
269. While there is likely to be a reduction in paua recreational catch due to reduced fishing opportunities following the closure, MPI remains concerned that recreational harvest in PAU 7 could create sustainability risks, that catches may exceed the recreational allowance and that there is a potential for displaced recreational effort to result in localised overfishing in some parts of both PAU 3 and PAU 7. MPI does not have a quantitative estimate of the level of recreational harvest that came from the area affected by the earthquakes. Anecdotal information suggests that fishers may travel some distance to fish for paua, however, they are unlikely to travel to the same extent as fishers for blue cod or rock lobster.
270. Consequently, MPI has recommenced pre-consultation on reviewing recreational regulations that apply across PAU 3 and PAU 7, and intends to formally consult on changes from October this year. The process to amend recreational regulations has more statutory steps than that for reviewing the TAC, and changes will not be able to be implemented until at least March 2018.

## Future allocation

271. PauaMAC3 have concerns that, in the future, when the earthquake-affected fisheries are recovered and biomass able to support utilisation, utilisation opportunities will be reallocated to other sectors and away from industry, despite the stewardship industry has shown for this fishery. They note that they have invested considerably in the future of the PAU 3 fishery through the development of fine-scale reporting and area management, annual operating plans that unify fishers to agree on effort spread, monetary investment into reseedling and investigating other opportunities for supporting higher biomass, and implementing minimum harvest sizes that are larger than the minimum legal size. They would see any future reallocation of utilisation rights away from industry as unjust and unappreciative of the work they do to care for this shared natural resource.
272. PauaMAC3 further note that PAU 3 is a well-managed fishery, and this is evidenced by the substantial number of paua visible after uplift during the earthquakes.
273. PauaMAC7 consider that the recreational allowance should be reduced by 50% to restore proportionality as it was before the 2016 review of PAU 7.
274. SNZ consider it essential that the stock is managed equitably between sectors and proportionality maintained.
275. MPI acknowledges these concerns. Though decisions regarding future allocation of the TAC are beyond the scope of this review, MPI has noted these comments and will continue to work closely with commercial stakeholders on these matters.

## Management plan and memorandum of understanding

276. PauaMAC3 submit that their support of a TACC reduction is contingent on the development of a memorandum of understanding between MPI and the PauaMAC that assures industry that a reduction in the TACC now will not be used as an excuse to allocate catch away from the commercial sector in the future. PauaMAC3 is concerned that when an increase in the TACC is supported by science in the future, there is no guarantee proportionality of the TAC will be maintained. MPI will discuss this concern directly with industry but does not consider a memorandum to be necessary. It notes that under the Act Ministers have broad discretion about how the TAC is allocated.
277. PauaMAC3 intends to develop and obtain community support to develop a formal fisheries plan to be approved by you under section 11A of the Fisheries Act. They consider that a fisheries plan will improve certainty over catch allocation. They also plan to propose that the PAU 3 QMA be subdivided into two QMAs along the line of the closure, such that there is a northern and a southern PAU 3 QMA.
278. PIC supports this initiative to develop a Fisheries Plan for PAU 3. They consider that a formal management plan will offer a range of benefits, including certainty over future management of the fishery, a more secure basis for implementing industry management measures (such as catch spreading), a mechanism for operationalising decision rules, better integration of Fisheries Act 1996 and Resource Management Act 1991 matters; and a platform for the paua industry to work together with MPI and other stakeholders.

279. MPI is supportive of this initiative, and will work directly with PauaMAC3 on the development of a plan, however, it notes such a plan would rely on multi-sector buy-in and that many components of recommendations are likely to be non-binding.

### ACE Shelving

280. The PAU 7 industry have voluntarily reduced catch by shelving up to 28% of ACE over the past 16 years in response to falling biomass. These efforts appear to have failed to rebuild the fishery, and as a result the TACC was reduced by 50% reduction in 2016.
281. Industry has again proposed shelving as an alternative to reducing the TACC for PAU 7. Seven submitters support shelving of ACE as a means of reducing commercial catch. TOKM support industry shelving, for a minimum period of three years. They consider that trigger-points must be developed that outline when it is prudent to un-shelve ACE.
282. MPI notes that while a smaller portion of PAU 7 has been affected than for PAU 3, the impact may be substantial enough to compromise the steps taken last year to rebuild the stock towards its target level. If catch from the closed area is displaced this creates a further sustainability risk given PAU 7's poor stock status.
283. Where a sustainability concern is evident (the stock is below the target level) the setting of an appropriate TAC is the primary tool to ensure sustainability, and to rebuild the stock at a way and rate you consider appropriate. However, MPI also acknowledges that industry are free to choose to rebuild or increase abundance in a stock faster by shelving additional quota if they wish. MPI supports the use of shelving of additional ACE by fishers as a useful adjunct to any TAC/TACC reductions to improve the probability or speed of a rebuild or to increase abundance in a fishery.

### Preferential allocation (28N) rights

284. Preferential allocation (28N) rights originated under sections 28N and 28OE of the Fisheries Act 1983. In preparation for commencement of the quota system, the Crown offered to purchase provisional maximum individual transferable quota (PMITQ) from fishers to reduce TACCs to sustainable levels. Those fishers who did not sell had their PMITQ reduced without compensation, but became entitled to have those reductions restored in full in the future as quota, should the TACC for that relevant stock be increased. When a TACC for a stock is increased, any outstanding 28N rights must be honoured first before other quota holders receive an increased catch allocation.
285. Under the Fisheries Act 1996, these rights are carried forward and clarified under section 23. The implementation of the adjustments to holdings under the quota share system means that 28N right holders get preferential access when a TACC increase happens until all those rights are discharged. Therefore, if the TACC for PAU 7 is increased in the future, the increase will first go to the fishers with 28N rights. Fishers hold 28N rights equivalent to 8.83 tonnes in PAU 7. There are very few 28N rights in PAU 3.
286. Some submitters oppose further reductions to the TACC because of the existence of 28N rights in the PAU 7 fishery. PIC submits that the effect of 28N rights on any future increase in the TACC is a relevant consideration in this review because of the social, economic, and cultural impacts of those rights if they are allocated under a future TACC increase. PIC also submit that ratifying 28N rights will permanently reduce settlement

quota, which may be inconsistent with the requirements of section 5 of the Fisheries Act (which requires consistency with the provisions of the Treaty of Waitangi (Fisheries Claims) Settlement Act 1992).

287. TOKM state that they oppose any reallocation of settlement quota shares to meet the Crown's obligations to those who hold 28N rights in PAU 7.
288. While the TACC reductions proposed in this paper will not directly result in any reallocation of quota shares, any future increase to the TACC will trigger 28N rights in the PAU 3 and 7 fisheries. The implication for settlement quota is that the proportional share is reduced – the degree to which shares are affected will depend on the level of the TACC increase.
289. 28N rights will impact on quota holders of PAU 3 and PAU 7 (including holders of settlement quota) when there is a future TACC increase in the fishery. It will happen as a direct result of the application of section 23 of the Fisheries Act 1996. It is not in itself a reason for not setting a TAC and TACC in the fishery in accordance with the relevant principles and sustainability requirements of the Act.
290. MPI notes that the concerns of fishers regarding 28N rights cannot be addressed through the TAC and TACC setting process. As they are outside the scope of this paper, separate advice can be provided to you on this issue.

## Addendum: Assessment against statutory obligations

291. The following section provides information specific to the application of the generic considerations (see section 3) to PAU 3 and PAU 7.

### SECTION 8 – PURPOSE OF THE ACT

292. MPI considers that all options presented in this paper satisfy the purpose of the Act on the basis that they provide for the utilisation of the PAU 3 and PAU 7 while ensuring sustainability. (The status quo for PAU 3 is not an option as a TAC has not been set for this stock and is required to be, under the Act.)

### SECTION 9 – ENVIRONMENTAL PRINCIPLES

#### Maintaining viability of associated or dependent species (s 9(a))

293. The method for commercial harvest of paua in PAU 3 and 7 is hand-gathering while free-diving. Consequently, there is no bycatch of any associated or dependent species in this fishery.

#### Biological diversity of the aquatic environment (s 9(b))

294. There is limited information to provide an assessment of the effects of the paua fishery on biological diversity. There is evidence of an interdependence relationship between paua, kina, and seaweeds. The continued loss of large paua from reefs by fishing may have a localised displacement effect on kina and seaweeds. The effects of this displacement on the inshore benthic community structure are unknown. Paua are also prey for a number of predators; however, there are no known predators that prey exclusively on paua. The impact on biological diversity of removing paua from the aquatic environment is unknown, but is not expected to be large given the ability of predator species to eat other prey.

#### Habitats of particular significance for fisheries management (s 9(c))

295. No habitats of particular significance have been identified within PAU 3 and 7. It is considered unlikely that the method of hand-gathering would have an adverse effect on habitat.

### SECTION 10 – INFORMATION PRINCIPLES

296. There is limited scientific analysis available on the potential impacts of the earthquake on paua sustainability. Further research is underway, and will be available from next year. The best available information includes anecdotal information regarding high paua mortality, a report commissioned by MPI<sup>18</sup> that estimates commercial habitat lost to

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<sup>18</sup> Neubauer, Philipp (2017). Area lost to the pāua fishery from the November 2016 Kaikoura earthquake, 7 pages. Report to the Ministry for Primary Industries (MPI).

uplift, and fine-scale commercial reporting information. This allows estimates of commercial catch in previous years from the closed area to be calculated. MPI considers that the advice provided in this paper is based on the best available information and that uncertainty or lack of information has been taken into account in the recommended options.

## SECTION 11 – SUSTAINABILITY MEASURES

297. General considerations under s 11 are set out in the generic section on Statutory Considerations and Policy Guidelines in Part 1 of this document. Specific considerations that relate to PAU 3 and PAU 7 are described below.

### Section 11(1)(a)

298. Commercial paua fishing is by hand-gathering and has no bycatch; therefore, it is unlikely to impact on any other stocks, nor on the aquatic environment.

### Section 11(1)(b)

299. For PAU 7, the measures that apply currently are a TAC, TACC, and allowances for customary harvest, recreational harvest, and other sources of fishing-related mortality. Other standard management controls (e.g. commercial and recreational regulations) apply to the PAU 7 fishery, for example recreational bag limits. For PAU 3, only a TACC has currently been set, along with other various regulatory controls. A TAC and allowances will be set for the first time as a result of your decisions on this review.

300. These existing controls have been taken into account in the formulation of the advice and proposals in this document.

### Section 11(2)(a) and (b)

301. MPI is not aware of any policy statements, plans or strategies that should be taken into account for PAU 3 or PAU 7.

## SECTION 12 – CONSULTATION AND INPUT AND PARTICIPATION

### Input and Participation

302. Section 12 (1)(b) requires that before you make decisions under sections 11 to 15 of the Act you must provide for the input and participation of tangata whenua into those processes. MPI has provided for input and participation of tangata whenua by establishing regional Iwi Fisheries Forums, assisting iwi in those Forums to develop iwi fisheries plans. MPI meets with all Forums three times a year.

303. The Forums have the opportunity to consider proposals at an early stage to contribute to the refinement of proposals. They have also been consulted on the final options. In respect of the PAU 3 and PAU 7 Fisheries MPI meets with all nine South Island iwi either

directly or through their forums, Te Taihū Iwi Forum and Te Waka a Māui me Ōna Toka Iwi Forum.

## Kaitiakitanga

304. Under Section 12(1)(b) you must also have particular regard to kaitiakitanga before setting or varying a TAC. Under the Fisheries Act 1996 kaitiakitanga is the exercise of guardianship, and in relation to any fisheries resources, includes the ethic of stewardship based on the nature of the resources, as exercised by the appropriate tangata whenua in accordance with tikanga Māori.
305. Relevant Iwi or Forum Fish Plans provide a view of the objectives and outcomes iwi seek from the management of the fishery and can provide an indication of how iwi exercise kaitiakitanga over fisheries resources. Iwi views from Forum meetings and submissions received from iwi can also provide an indication.
306. Paua are listed as a taonga species in the Te Waipounamu Iwi Forum Fisheries Plan. That plan contains three objectives which are relevant to the management options proposed for PAU 3 and PAU 7:
- a) Management objective 1: to create thriving customary non-commercial fisheries that support the cultural wellbeing of South Island iwi and our whānau;
  - b) Management objective 3: to develop environmentally responsible, productive, sustainable and culturally appropriate commercial fisheries that create long-term commercial benefits and economic development opportunities for South Island iwi; and
  - c) Management objective 5: to restore, maintain and enhance the mauri and wairua of fisheries throughout the South Island.
307. MPI considers that the management options presented in this advice paper will contribute towards the achievement of these three management objectives in ensuring that appropriate allowances are made for customary non-commercial fishing, the fishery remains sustainable and that environmental impacts are minimised.
308. Proposals to review PAU 3 have also been presented to Te Runanga o Kaikoura and Ngāi Tahu. Proposals to review PAU 7 have been presented to the Te Waka a Māui me Ōna Toka iwi forum, and the Te Tau Ihu Iwi forum. Support for review of these fisheries was expressed during these discussions. Iwi indicated support for a considerable reduction in the TAC and TACC for PAU 3 (50%). There were different ideas for how recovery from the earthquake might best be supported in PAU 7, with most iwi supporting the *status quo* option (but with industry shelving as an option for reducing catch).



## Conclusion and Recommendations

309. Earthquakes in November 2016 had a considerable impact on the Kaikōura and Cape Campbell coastlines, resulting in a closure of all shellfish (excluding rock lobster and scampi) and seaweed in an earthquake-affected area from Marfells Beach to the Conway River. Areas within both PAU 3 and PAU 7 have been closed under the closure for earthquake-affected fisheries, displacing commercial and recreational fishing effort.
310. PAU 3 has been most seriously affected. In reviewing PAU 3 a TAC needs to be set for the first time. MPI supports setting a TAC of 79.3 tonnes, including an allowance for Maori customary of 15 tonnes, a recreational allowance of 8.5 tonnes, an allowance for all other mortality caused by fishing of 10 tonnes, and a TACC of 45.8 tonnes (Option 1).
311. A smaller portion of PAU 7 has been affected; however, the impact may be substantial enough to compromise the steps taken last year to rebuild the fishery (if catch from the closed area is displaced). Based on fine-scale reporting information, MPI supports setting a TAC of 121.8 tonnes, including an allowance for Maori customary of 15 tonnes, a recreational allowance of 12.6 tonnes, an allowance for all other mortality caused by fishing of 10 tonnes, and a TACC of 84.2 tonnes (Option 2).
312. You have broad discretion in exercising your powers of decision making, and may make your own independent assessment of the information presented to you in making your decision. You are not bound to choose the option recommended by MPI.
313. MPI notes, in relation to concerns raised by submitters regarding the sustainability of recreational paua fishing following the earthquakes that it intends to review recreational regulations in PAU 3 and PAU 7 from October this year.

### PAU 3 RECOMMENDATIONS

#### *Option 1 (MPI preferred)*

**Agree** to set a PAU 3 TAC of 79.3 tonnes and within the TAC:

- i. set an allowance of 15 tonnes for Māori customary non-commercial fishing interests;
- ii. set an allowance of 8.5 tonnes for recreational fishing interests;
- iii. set an allowance of 10 tonnes for other sources of fishing-related mortality;
- iv. decrease the TACC from 91.615 tonnes to 45.8 tonnes.

Agreed  Not Agreed

OR

*Option 2*

**Agree** to set a PAU 3 TAC of 57.6 tonnes and within the TAC:

- i. set an allowance of 15 tonnes for Māori customary non-commercial fishing interests;
- ii. set an allowance of 5.1 tonnes for recreational fishing interests;
- iii. set an allowance of 10 tonnes for other sources of fishing-related mortality;
- iv. decrease the PAU 3 TACC from 91.615 to 27.5 tonnes.

**Agreed / Not Agreed**

## **PAU 7 RECOMMENDATIONS**

*Option 1 (status quo)*

**Agree** to maintain the PAU 7 TAC at 133.6 tonnes and within the TAC:

- i. maintain the allowance of 15 tonnes for Māori customary non-commercial fishing interests;
- ii. maintain the allowance of 15 tonnes for recreational fishing interests;
- iii. maintain the allowance of 10 tonnes for other sources of fishing-related mortality;
- iv. maintain the TACC of 93.6 tonnes.

**Agreed / Not Agreed**

OR

*Option 2 (MPI preferred)*

**Agree** to decrease the PAU 7 TAC from 133.6 tonnes to 121.8 tonnes and within the TAC:

- i. maintain the allowance of 15 tonnes for Māori customary non-commercial fishing interests;
- ii. set an allowance of 12.6 tonnes for recreational fishing interests;
- iii. maintain the allowance of 10 tonnes for other sources of fishing-related mortality;
- iv. decrease the TACC from 93.6 tonnes to 84.2 tonnes.

**Agreed / Not Agreed**

OR

*Option 3*

**Agree** to decrease the PAU 7 TAC from 133.6 tonnes to 116.5 tonnes and within the TAC:

- i. maintain the allowance of 15 tonnes for Māori customary non-commercial fishing interests;
- ii. set an allowance of 11.9 tonnes for recreational fishing interests;
- iii. maintain the allowance of 10 tonnes for other sources of fishing-related mortality;
- iv. decrease the TACC from 93.6 tonnes to 79.6 tonnes.

Agreed / Not Agreed

OR

*Option 4*

**Agree** to decrease the PAU 7 TAC from 133.6 tonnes to 130.5 tonnes and within the TAC:

- i. maintain the allowance of 15 tonnes for Māori customary non-commercial fishing interests;
- ii. set an allowance of 11.9 tonnes for recreational fishing interests;
- iii. maintain the allowance of 10 tonnes for other sources of fishing-related mortality;
- iv. maintain the TACC of 93.6 tonnes.

Agreed / Not Agreed

  
Hon Nathan Guy  
Minister for Primary Industries

21 / 8 / 2017



## PART 4: INSHORE STOCKS

### Bluenose (BNS 1, 2, 3, 7 & 8)

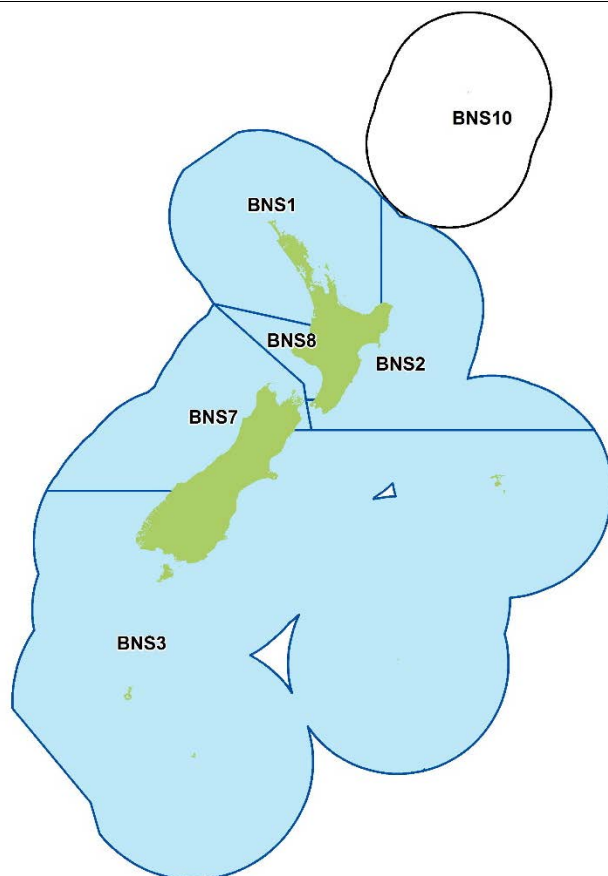


Figure 1: Quota management areas (QMAs) for bluenose stocks, with BNS 1, 2, 3, 7 & 8 highlighted in blue.

### Summary

314. The Ministry for Primary Industries (MPI) consulted and sought input from tangata whenua on three options for management settings for bluenose (*Hyperoglyphe antarctica; matiri*) in quota management areas (QMAs) BNS 1, 2, 3, 7 & 8 (Figure 1). These options are set out in Table 1:

Table 1: Proposed management settings in tonnes (t) for the combined stocks of BNS 1, 2, 3, 7 & 8 from 1 October 2017

Option	Total Allowable Catch	Total Allowable Commercial Catch	TACC tonnage decrease and % change	Allowances		
				Customary Māori	Recreational	All other mortality caused by fishing
Option 1 ( <i>Status quo</i> )	990	900	-	9	63	18
Option 2	888 ↓	800 ↓	100 t ↓ (11%)	9	63	16 ↓
Option 3 (MPI preferred)	704 ↓	620 ↓	280 t ↓ (31%)	9	63	12 ↓

315. The best available information suggests that there is a single biological stock of bluenose in New Zealand waters, and bluenose is managed as such across the five main QMAs.<sup>19</sup> Table 2 sets out how the proposed reductions could be spread across the QMAs. The proposed spread of the TACs, TACCs, and allowances is based on the established percentages of the total limits for each QMA.

**Table 2: Proposed TACs, TACCs, and allowances in tonnes for BNS 1, 2, 3, 7 and 8 (by stock) from 1 October 2017**

Stock	Option	TAC (t)	TACC (t)	Recreational allowance (t)	Māori customary allowance (t)	All other mortality caused by fishing (t)
BNS 1	1 ( <i>Status quo</i> )	351	327	15	2	7
	2	314	291	15	2	6
	3	251	230	15	2	4
BNS 2	1 ( <i>Status quo</i> )	392	358	25	2	7
	2	349	316	25	2	6
	3	279	247	25	2	5
BNS 3	1 ( <i>Status quo</i> )	162	140	18	2	2
	2	147	125	18	2	2
	3	114	93	18	2	1
BNS 7	1 ( <i>Status quo</i> )	57	51	3	2	1
	2	52	46	3	2	1
	3	40	34	3	2	1
BNS 8	1 ( <i>Status quo</i> )	28	24	2	1	1
	2	26	22	2	1	1
	3	20	16	2	1	1

316. After considering the submissions and input received, MPI recommends Option 3 for all stocks in order to give greater certainty that the rebuild target set in 2011 will be met. MPI is keen to continue working closely with industry to agree the wider management strategy for BNS stocks, including agreeing a Management Procedure and the best timing for a new stock assessment to be completed.

317. Deemed value rates were reviewed for BNS 1, 2, 3, 7 and 8. As the current interim and annual deemed value rates for bluenose stocks are consistent with the Guidelines (Appendix 1), no changes to the deemed value rates are proposed.

## Need for review

318. The best available information suggests that there is a sustainability risk associated with current catch levels of bluenose. The 2016 assessment indicated that the combined bluenose stock is below the default target of 40% of the unfished biomass<sup>20</sup> and likely between 17 and 27% of the unfished level. The latest CPUE data for 2015/16 suggests that biomass continued to decline for the fourth consecutive year. This evidence suggests

<sup>19</sup> BNS 10 has a TACC of 10 tonnes.

<sup>20</sup> The Harvest Strategy Standard (HSS) is a policy document that provides guidance for determining target stock levels and rebuild timeframes based on the biological characteristics of stocks and international best practice. Bluenose is classified as a low-productivity stock under the HSS, and the default management target is 40% of the unfished biomass. The HSS also recommends that stocks should be rebuilt to the target within a period no longer than twice the time it would take if there was no fishing ( $2 \times T_{MIN}$ ).

a catch reduction is needed to ensure that the stock rebuilds to the target biomass within the previously set timeframe, as appropriate for the biological characteristics of bluenose.

319. Management action was taken in 2016 to help ensure the stock would meet the rebuild target. A reduction of 200 tonnes to the TACC was implemented for the 2016/17 fishing year. This was characterised as an interim measure with a view to agreeing a Management Procedure to guide more responsive bluenose management into the future. As a Management Procedure has not been agreed upon, further management action is proposed, as was indicated in the previous review, to help ensure the stock reaches the agreed target within the timeframe.

## CONTEXT

### Biological information

320. Bluenose is a long-lived, low-productivity stock which means it is less responsive to management changes than some other species. Males and females are thought to mature at 15 to 17 years of age and at lengths between 60 and 65cm. Spawning probably peaks from February to April each year. No distinct spawning grounds have been identified for bluenose in New Zealand waters.

### Fishery characterisation

#### *Commercial*

321. The commercial fishing sector harvests the greatest amount of bluenose, followed by substantially smaller amounts taken by recreational and customary fishers. Total annual commercial catches of bluenose and the combined TACC are shown below in Figure 2.

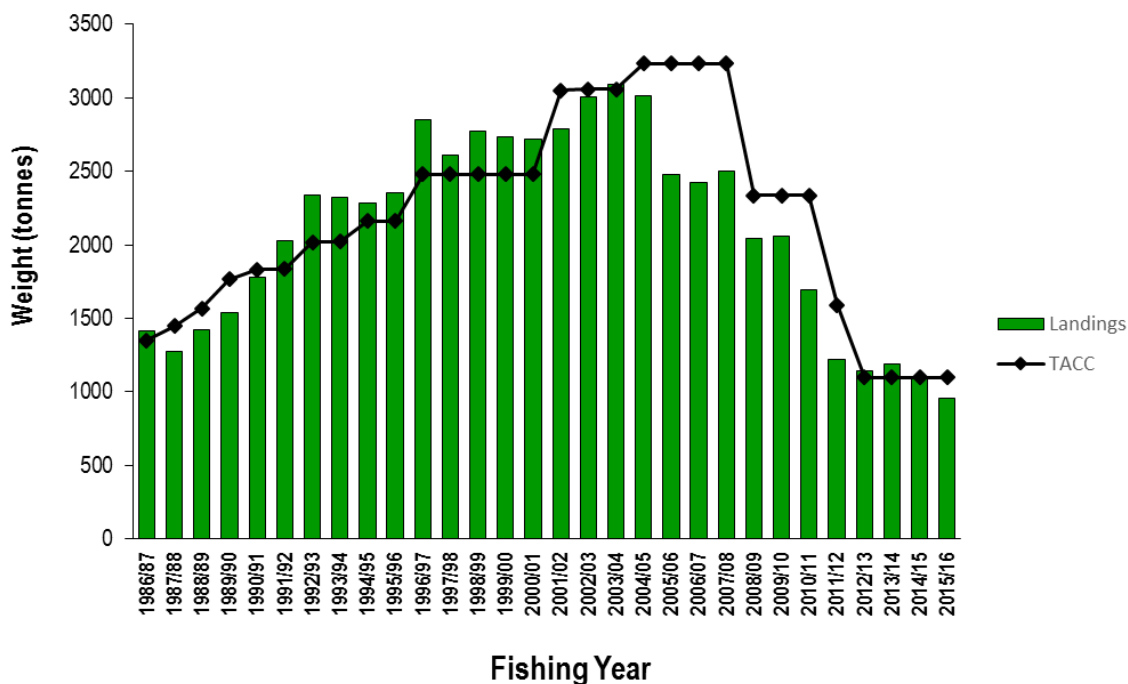


Figure 2: Annual catches vs TACC for BNS 1, 2, 3, 7 and 8 between 1986/87 and 2015/16.

322. The largest bluenose fisheries occur in BNS 1 and 2. Historically, catches in BNS 2 were predominantly taken in the target alfonsino and bluenose trawl fisheries, but in recent years have been primarily taken by target bottom longline fishing. There is a target line fishery for bluenose in the Bay of Plenty and off the east coast of Northland (BNS 1). A small amount of target setnet fishing for bluenose occurred in the Bay of Plenty until 1999 and has occurred again since 2012. Target bluenose setnet fishing also occurs sporadically in the Wairarapa region of BNS 2.
323. Target line fisheries for bluenose also exist off the west coast of the South Island (BNS 7) and the central west coast of the North Island (BNS 8). Bluenose in BNS 7 are also taken as bycatch in the hoki trawl and ling line fisheries.
324. The BNS 3 fishery is focussed on the eastern Chatham Rise where bottom longline bluenose catches were historically a bycatch of ling and hāpuku/bass target fisheries. Target bluenose lining has predominated since 2003-04. There has been a consistent bycatch of bluenose in the alfonsino target bottom trawl fishery and bluenose have been targeted sporadically in a mid-water trawl fishery in BNS 3 since the early 2000s. The bottom trawl fishery in BNS 3 has diminished. Setnet catches off the east coast of the South Island have been a mix of target and bycatch in ling and hāpuku/bass target sets and off the east coast of the South Island have been a mix of target and bycatch in ling and hāpuku/bass target sets.

#### *Māori customary interests*

325. Bluenose is an important kaimoana species for tangata whenua. Bluenose is classed as taonga by some tangata whenua.<sup>21</sup>
326. Information currently held by MPI on Māori customary catch of bluenose in many areas is limited. For those tangata whenua groups operating under the customary fishing regulations<sup>22</sup>, there is a requirement for Tangata Kaitiaki/Tiaki to provide MPI with information on Māori customary harvest of fish. However, some tangata whenua are still operating under regulations 50-52 of the Fisheries (Amateur Fishing) Regulations 2013, and it is not mandatory to report permits that are issued.
327. MPI notes that the proposals in this paper will not significantly impact on, or be impacted by, any of the taiāpure and mātaītai reserves within the BNS 1, 2, 3, 7 & 8 QMAs.

#### *Recreational*

328. Bluenose is primarily targeted by recreational fishers around deep inshore reefs, in association with hapuku, bass and kingfish. Regulations<sup>23</sup> governing the recreational harvest of bluenose include a daily bag limit of 5 per person, within a mixed finfish bag limit of 20, for all areas. This was implemented as part of the 2011 rebuilding plan and has been in place since 2012.
329. The total combined recreational allowance for all bluenose QMAs is 63 tonnes. The best available information on current recreational catch is provided from the 2011/12 National Panel Survey (NPS) which estimated the total recreational catch in BNS 1, 2, 3, 7 and 8

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<sup>21</sup> Chatham Islands Fisheries Forum Plan @ 44° 2011/2016.

<sup>22</sup> Fisheries (Kaimoana Customary Fishing) Regulations 1998 and Fisheries (South Island Customary Fishing) Regulations 1999.

<sup>23</sup> Fisheries (Amateur Fishing) Regulations 2013



was 34.8 tonnes.<sup>24</sup> However, the NPS did not take into account recreational harvest that was taken by fishers aboard amateur charter vessels. The best available information is that around 1000 bluenose were retained by charter vessels from all areas for each of the past three fishing years (2013-16). This equates to approximately 10 tonnes per year from all QMAAs.<sup>25</sup>

330. The NPS estimate also does not include bluenose taken using recreational methods on commercial vessels with authorisation from MPI under s 111 of the Fisheries Act 1996 (the Act). Any catch taken in this manner must be reported. Approximately 1 tonne per year has been reported over the last five years, for all areas.
331. An estimate based on the 2011/12 NPS, plus the average amateur charter vessel and s 111 catches (from the last few years) is around 46 tonnes. This is within the 63 tonne combined recreational allowance. MPI notes that there is uncertainty in using the estimate from 2011/12 to estimate or predict current catches. A new NPS is due to begin in 2017 which will provide updated estimates of recreational bluenose catches.

#### *All other mortality to the stock caused by fishing*

332. There are various potential other sources of fishing-related mortality of bluenose, but MPI is not able to quantify these precisely. Sources may include the under-reporting of landings, predation from longlines, discarding to avoid deemed value payments and unseen mortality caused by particular fishing methods. The allowance for other sources of fishing-related mortality is currently set at 23t, or approximately 2% of the TACC. For options 2 and 3, the allowance is varied accordingly, at 16 and 12 tonnes respectively.

#### **Management approach**

333. A management target for bluenose has been determined as 40% of the unfished biomass (40%  $B_0$ ) as a proxy for  $B_{MSY}$ . Since 2011, bluenose has been under a rebuilding plan, to reach 40%  $B_0$  by 2031-37. This target and timeframe is based on the HSS and associated guidelines. MPI sees no reason to deviate from the target and timeframe of the rebuilding plan which the Minister agreed in 2011.
334. The Operational Guidelines for New Zealand's Harvest Strategy Standard (the HSS Guidelines) explain the productivity of stocks according to their biological features. Low productivity stocks are those with high age at maturity, high longevity and slow growth or low fecundity. Stocks such as these tend to be less resilient to fishing and take longer to recover from being depleted. Given that bluenose is long-lived and late maturing, 40%  $B_0$  is considered to be an appropriate proxy for  $B_{MSY}$ . Since the HSS was approved in 2008, a level of 40%  $B_0$  has become increasingly widespread as a proxy for  $B_{MSY}$  in many parts of the world. Recent work contracted by MPI that incorporates the natural variability of stocks, as well as uncertainty, underlines that  $B_{MSY}$  for a species like bluenose should be of the order of 40%  $B_0$ .
335. The HSS also details appropriate timeframes for rebuilding stocks that have fallen below 20%  $B_0$  (the soft limit). The HSS suggests that stocks be rebuilt within a default period of twice the time it would take to rebuild without fishing ( $2 \times T_{MIN}$ ). This default balances

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<sup>24</sup> The estimates for bluenose are based on a relatively small number of events and fishers, and as a result are subject to a relatively high uncertainty. They also do not include amateur catch taken on charter vessels or by commercial fishers under s111 approvals.

<sup>25</sup> Assuming an average weight of 10kgs per fish.

maintaining a viable fishery during the rebuild with making meaningful progress towards rebuilding the stock. Experience elsewhere in the world suggests that timeframes much longer than one human generation (~25 years) tend to increase the incentive to delay immediate action towards initiating a rebuild.

336. It should be noted that the current assessment approach relies strongly upon catch per unit of effort (CPUE) data from the commercial fishery to provide an index of bluenose relative abundance, to support monitoring of the effectiveness of the rebuild measures. Further catch reductions may result in changes to fishing practices, such as the withdrawal of vessels from the fishery and changes in the spatial and temporal distribution of fishing effort. This may disrupt the continuity of the CPUE series and affect the ability to monitor the fishery effectively using this method.
337. MPI has been working with industry for a number of years on agreeing a Management Procedure to help guide the bluenose stock to the target and timeframe. MPI recognises the benefits of a Management Procedure as a modern, responsive approach to fisheries management. In 2016, industry presented a Management Procedure to an MPI Science Working Group. The procedure proposed a lower biomass target (35%  $B_0$ ) and longer timeframe (35 years) than those recommended (40%  $B_0$  in 30 years) by the HSS Operational Guidelines and adopted by the Minister in 2011. As discussed above, MPI considers that the HSS recommended targets and timeframes are appropriate for bluenose as a low productivity stock, which has been below target for several years. As the industry's Management Procedure was not designed to meet the target and timeframe set by the Minister in 2011, the procedure was not accepted by MPI as a basis for management.
338. MPI considers that there would be benefits in continuing work to determine the best way to manage and monitor bluenose over the longer term, regardless of decisions on management settings for the 2017/18 fishing year.

### Current stock status

339. The 2016 stock assessment provides the best available information on stock status and how future stock size is expected to change under different catch levels. The assessment shows that current biomass is likely below the target at between 17 and 27%  $B_0$ . The 2016 assessment confirms the results of the 2011 assessment and suggests that the combined bluenose stocks are “About As Likely as Not” (40 to 60%) to be below the soft limit of 20%  $B_0$ .
340. Given that the bluenose stock has been under the target (40%  $B_0$ ) for as long as 17 years, MPI considers it important to take action in the short term to ensure the rebuild progresses towards the HSS defaults.
341. To help guide TAC/TACC setting, projections forward from 2015 were completed to explore biomass trajectories under different future commercial catch levels for the three main TACC options presented in this paper (900, 800 and 620 t). The projections under these three options are shown in Figures 3, 4 and 5. The aim of the projections was to explore rebuilding trajectories and times for the three main TACC options. Uncertainty was incorporated using alternative values for stock recruitment steepness ( $h$ ), natural mortality ( $M$ ) and catch history. The projections were tested against the previously agreed rebuilding strategy which was based on the stock biomass attaining 40%  $B_0$  (the target

biomass) within  $2xT_{MIN}$ , starting in 2011. This gives the range of 2031-2037, indicated by dotted lines in Figures 3, 4 and 5. As the projections were relatively insensitive to catch history, the medium catch history was used for these projections. No combination of parameters is considered more plausible than the others. As demonstrated, there is a spread of uncertainty associated with each of the catch levels proposed in these options.

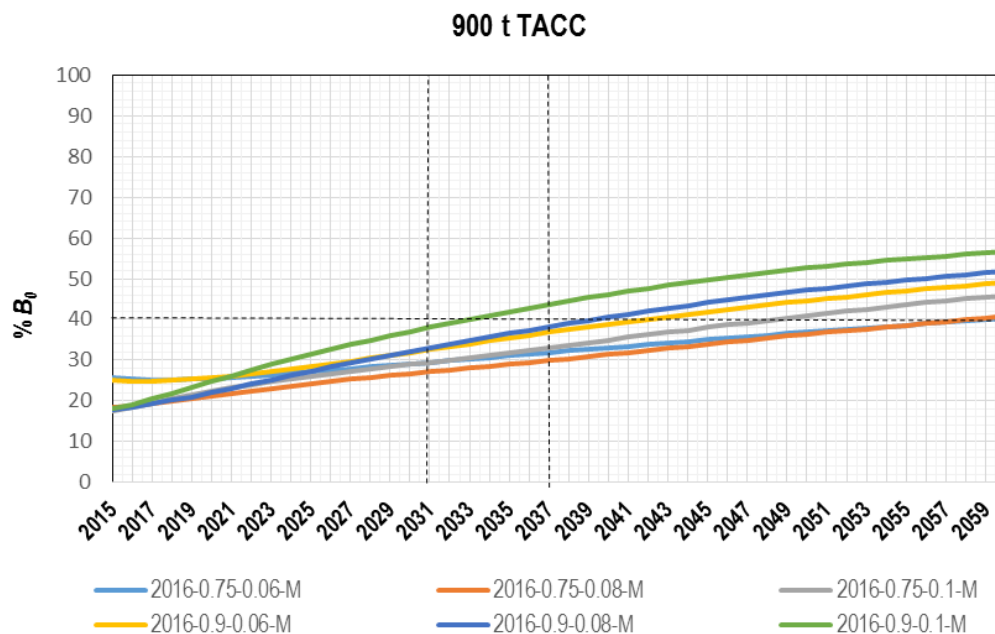


Figure 3: Stock status ( $\% B_0$ ) trajectories for 900 tonne TACC (Option 1), under each of 6 combinations of stock-recruitment steepness (0.75-0.9) and natural mortality (0.06-0.1), using mid-level catch histories. Target biomass is indicated by the horizontal dashed line. Target time frame falls within the two vertical dashed lines.

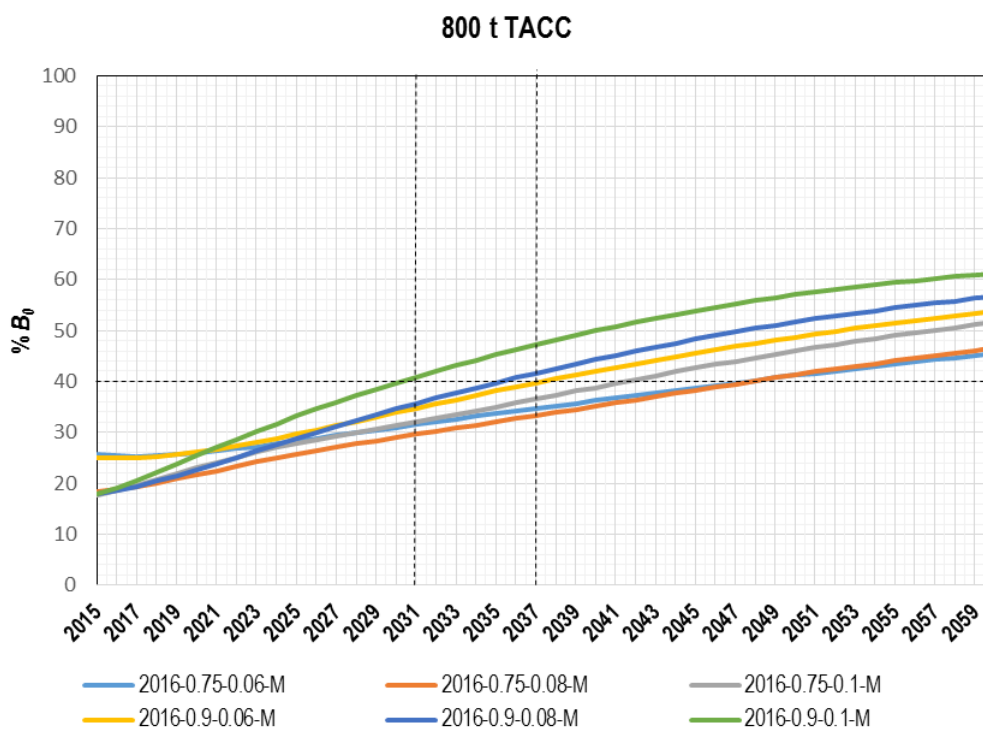


Figure 4: Stock status ( $\% B_0$ ) trajectories for 800 tonne TACC (Option 2), under each of 6 combinations of stock-recruitment steepness 0.75-0.9) and natural mortality (0.06-0.1), using mid-level catch histories. Target biomass is indicated by the horizontal dashed line. Target time frame falls within the two vertical dashed lines.

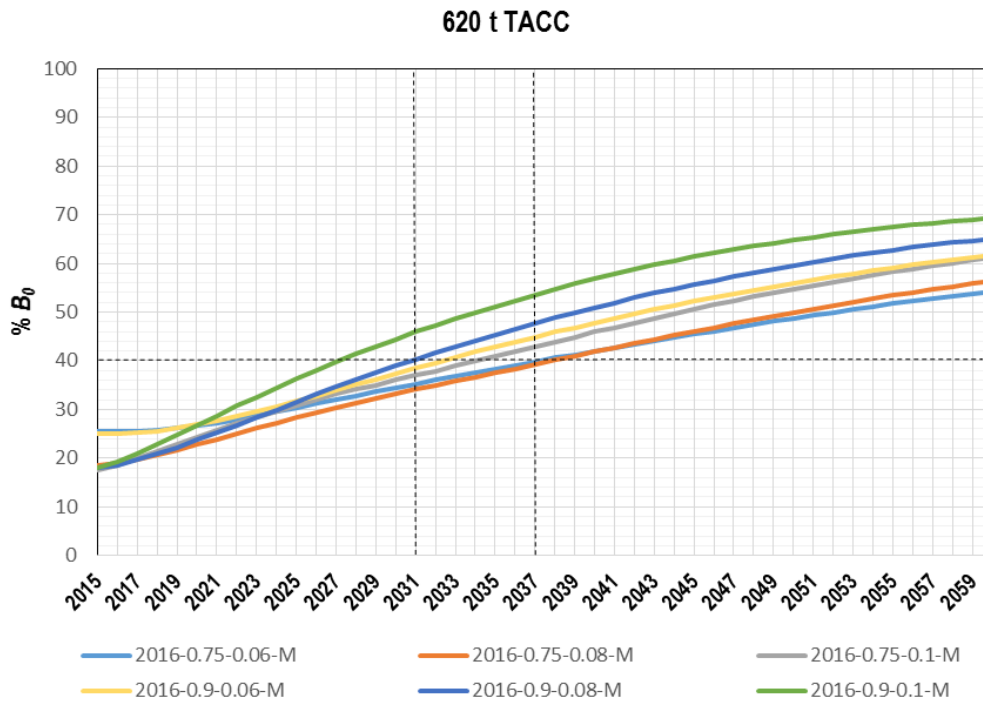


Figure 5: Stock status (%  $B_0$ ) trajectories for 620 tonne TACC (Option 3), under each of 6 combinations of stock-recruitment steepness (0.75-0.9) and natural mortality (0.06-0.1), using mid-level catch histories. Target biomass is indicated by the horizontal dashed line. Target time frame falls within the two vertical dashed lines.

342. As shown, Options 1 and 2 are unlikely to meet the rebuild target. Only one scenario achieved the target under the *status quo* (Option 1), while two scenarios were projected to meet the target under Option 2. Option 3 gives the greatest certainty that the rebuild target will be met within the timeframe. These figures are discussed further in the Evaluation of Options section below.

## Statutory Considerations specific to BNS 1, 2, 3, 7 & 8

343. It is implicit that options provided in this document comply with the purpose and principles of the Act. In formulating this final advice, MPI has complied, on your behalf, with the legal requirements with regard to consultation, providing for tangata whenua input and participation and kaitiakitanga. Further detail with respect to these provisions and specific to the proposals for bluenose stocks is found in the Addendum below.

344. With respect to specific considerations when setting a TAC, allowances, and a TACC for the stocks in question, sections 11, 13, 20 and 21 of the Act apply. Relevant matters for your consideration are outlined in more detail in the Addendum below.

345. In summary, all proposed options are considered to be not inconsistent with the objective (under s 13) to move or maintain the stock at or above the level that will produce MSY and to pose limited risk to associated species or the environment. The options differ in terms of the economic and social considerations of each option balanced against the sustainability risk and these matters are outlined in the Evaluation of Options section below.

## SECTION 13 – SETTING THE TAC

346. In cases such as bluenose, where the biomass level that can produce the maximum sustainable yield ( $B_{MSY}$ ) is not known, s 13(2A) of the Act provides for you to use the best available information to set a TAC that is not inconsistent with the objective of maintaining the stock at or above, or moving the stock towards or above, the  $B_{MSY}$  level.
347. A target for bluenose has been determined as 40%  $B_0$  as a proxy for  $B_{MSY}$ . The biomass estimated from the most recent assessment (2016) shows that current biomass is likely below the target at between 17 and 27%  $B_0$ . The options presented are therefore not inconsistent with s 13 requirements.
348. Section 13 (2A) also requires you to consider the interdependence of stocks and environmental conditions in setting or varying a TAC. These are set out in Appendix 1.
349. Section 13 (3) requires you to consider social, cultural, and economic factors that may be relevant to the way and rate a stock is moved towards or above  $B_{MSY}$ . There are no proposals to change Māori-customary or recreational allowances. The impact on the commercial fishery is described below.

## SECTIONS 20 AND 21 – ALLOWANCES AND THE TACC

### Allowances

#### *Customary Māori allowance*

350. Bluenose is utilised by tangata whenua and is an important taonga species for some iwi. The best available information gained through reporting indicates that customary harvesting under the regulatory regimes is within the current allowance. Allowances do not limit customary catch and if new information suggests a change to the level of customary harvesting, this will be considered in future reviews of the stocks. MPI is working to improve the reporting of information on customary harvest, but at this time there is no new information to suggest customary allowances should be changed

#### *Recreational allowance*

351. Bluenose is an important species for recreational fishers. The best estimate for the current recreational catch is from the 2011/12 National Panel Survey (NPS)<sup>26</sup> which estimated the total recreational catch in the 5 bluenose QMAs was 34.8 t.<sup>27</sup> The current allowance of 63 tonnes sufficiently provides for this. The recreational daily bag limit for bluenose was set at 5 per person from May 2012. The effective limit previously was 20 per person. Given this reduction since the NPS, MPI considers it is unlikely that the current allowance is being exceeded. A new NPS is due to begin this year which will provide updated estimates of recreational bluenose catches. MPI considers that at this time there is no new information to suggest recreational allowances should be changed.

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<sup>26</sup> Wynne-Jones, J., et al., (2014) National Panel Survey of Marine Recreational Fishers 2011–12: Harvest Estimates

<https://www.mpi.govt.nz/document-vault/4719>

<sup>27</sup> The estimates for bluenose are based on a relatively small number of events and fishers, and as a result are subject to a relatively high uncertainty. They also do not include amateur catch taken on charter vessels or by commercial fishers under s111 approvals.

### *All other mortality caused by fishing*

352. There are various potential other sources of mortality caused by fishing, but MPI is not able to quantify these precisely. The allowance for other mortality caused by fishing is currently set at 18 t, approximately 2% of the combined TACC for all stocks. MPI considers that this is an appropriate allowance for a fishery which is mostly caught by longline. For Options 2 and 3 the allowance is varied accordingly, at 16 tonnes and 12 tonnes respectively.

### TACC

353. The commercial fishing sector harvests the greatest amount of bluenose. With the commercial fishery being substantially larger than other sectors, and with no information to suggest that other allowances need to be changed, any catch reductions are proposed to come from the TACC (the commercial fishery). In the commercial fishery, the TACC has mostly been fully caught in recent years, apart from BNS 8 where approximately 25% of the TACC was caught last year.

## SECTION 75 – DEEMED VALUE RATES

354. This review of the TAC for ORH 3B has triggered a review of the deemed value rates for the stock. No other deemed value criterion is triggered and no deemed value rates adjustments for this stock is proposed in the 2017 Deemed Values section of this advice (Part 6).

## Submissions received

355. Submissions on the BNS 1, 2, 3, 7 and 8 proposals were received from the following two individuals, one iwi, and seven organisations:

- a) Fisheries Inshore New Zealand (FINZ)
- b) Bill Hartley
- c) Iwi Collective Partnership
- d) Moana New Zealand
- e) New Zealand Sports Fishing Council (NZSFC)
- f) Russ Hawkins
- g) Sanford Ltd
- h) Southern Inshore Fisheries (SIF)
- i) Tasman and Sounds Recreational Fishers Association (TASFISH)
- j) Tūhoe Te Uru Taumatua

358. Feedback was also received from iwi forums as part of input and participation before and during the public consultation process, detailed in the Addendum below.

359. Full submissions are attached in Appendix 2.

## OTHER MATTERS

360. FINZ, in a submission supported by 4 other industry organisations, suggested that you should consider changes to recreational and customary Māori allowances in this review. They submit that for a shared fishery, reductions should be spread proportionally across the three sectors.
361. A submission from Mr Hawkins also suggested changes to the recreational limits, by recommending the combined daily bag limit for bluenose be reduced from 5 to 3.
362. MPI considers that the recreational take is a small proportion of the TAC and that the existing allowance and recreational management controls remain appropriate to support the rebuild begun in 2011.

## Evaluation of Options

### OPTION 1 (*Status quo*)

363. Option 1 (*status quo*) presents the greatest sustainability risk to the stock and is unlikely to meet the rebuilding target and timeframe, with only a single modelled scenario achieving the rebuilding targets (see Figure 3). It should be noted that CPUE data which reflect the effects of the 2016 TAC and TACC reductions on CPUE are not yet available. This option could act as an interim measure to allow for a new assessment to reveal the effect of the 2016 reduction, however, information to support an improved assessment is unlikely to be available in the near future. Option 1 would have no short-term negative economic effects on the industry, but could have impacts on non-commercial fishers if biomass declines further.
364. Option 1 is not supported by MPI and no submissions were received in favour of Option 1.

### OPTION 2

365. Option 2 recommends a 102 tonne reduction to the TAC and a 100 tonne reduction to the TACC (11%) to provide an interim measure as part of a phased reduction in catch. The benefit of Option 2 is that it would be associated with a lesser impact on industry than Option 3 and less likelihood of fishing effort being reduced to the level that makes fishery monitoring unreliable. However, since Option 2 is unlikely to achieve the rebuilding targets (see Figure 4), choosing this option will likely require further catch reductions in the near future. Choosing Option 2 would also require that a new stock assessment and biomass projections be undertaken as soon as sufficient new data becomes available, so that the nature and extent of further catch reductions might be evaluated.
366. Option 2 will have an impact on the commercial fishery (see Tables 3 and 4 of the Addendum to this chapter). A potential reduction of around \$776,000 in export value is expected under this option and it could result in some fishing operations becoming uneconomic. MPI is unable to quantify the effect on individual fishing vessels and operators, but notes that FINZ and the other industry submitters support this option despite these expected effects.

367. The Te Taihaua uru Fisheries Forum supported this option, but with no rationale given. The FINZ submission, supported by all four industry submitters, favoured Option 2, “pursuant to a MP being agreed with MPI”. In addition to pursuing a Management Procedure, FINZ also submits that the next stock assessment should be brought forward from 2021 to 2017/18.
368. MPI notes that to date industry has not presented a Management Procedure which meets the rebuilding target and timeframe which was set in 2011 or is consistent with the HSS defaults. In the absence of such a Management Procedure, MPI considers that action is required to reverse the decline of the stock and place greater certainty on meeting the rebuilding target and timeframe. Therefore, MPI does not support Option 2.
369. MPI is open to the idea of bringing forward the stock assessment, however, MPI considers that 2017 would not be feasible. The earliest MPI could begin a stock assessment would be 2018/19. MPI notes that a new stock assessment, as opposed to an updated one, would take at least two years. Stock relationships would need to be reviewed, as would the otoliths (ear bones used to determine fish ages) and length frequencies which industry has been collecting. MPI considers delaying action in order to wait for a new stock assessment would increase the sustainability risk to the bluenose stock.
370. MPI is keen to discuss and agree with industry the wider management strategy for bluenose, including the design and timing of a new stock assessment.

### OPTION 3 (*MPI Preferred*)

371. Option 3 recommends a 286 tonne reduction in the TAC and a 280 tonne (31%) decrease in the TACC to provide the highest certainty (among the options) of rebuilding the stock to the target within the timeframe (see Figure 5, which shows that most modelled scenarios achieve the targets). An additional benefit would be that the need for another management review in the short term would be unlikely. High certainty that bluenose stocks will reach target abundance by 2037 will benefit all sectors.
372. A 280 tonne (31%) decrease in the TACC will have a substantial economic impact on the commercial fishery (see Table 4). A potential reduction of \$2.1 million in export value is expected. As stated above, the exact impact on individual vessels and fishing operations cannot be quantified by MPI.
373. Four submissions and one iwi forum supported Option 3. Rationale included the opinion that “half-measures” had not been effective to date (NZSFC), and that the time had now come for decisive measures (TASFISH).
374. FINZ submits that the reductions under Option 3 would have economic implications which should not be underestimated and would have significant implications for maintaining a bluenose target fishery, however, no details to support this assertion were provided by industry in its submissions. TASFISH submits that industry has already had the economic benefit of fishing the stock down to this level.
375. MPI notes that bluenose is monitored primarily using CPUE data from the commercial fishery. Commercial fishers have raised concerns that a substantial TACC reduction and associated fishing effort reduction may impact the ability to monitor the fishery. The exact effects of any catch reductions on monitoring the fishery are unknown and MPI believes



that reversing the decline in the stock and mitigating risks to sustainability are of primary importance.

376. MPI considers that there is strong justification for Option 3, given that bluenose is characterised as a low productivity species under the HSS and hence relatively slow to rebuild. MPI notes that bluenose stocks have been assessed as being below the management target for as long as 17 years and that the most recent CPUE data suggests that bluenose abundance has continued to decline under recent catch levels.

## ECONOMIC ANALYSIS OF OPTIONS

377. To frame the options set out above, the nature of the economic impact to each bluenose fishery is discussed in Tables 3 and 4 of the Addendum that follows.

## Addendum: Assessment against statutory obligations

378. The following section provides information specific to the application of the generic statutory considerations to BNS 1, 2, 3, 7 and 8.

### SECTION 9 – ENVIRONMENTAL PRINCIPLES

379. A summary of the interactions between the bluenose fishery and the aquatic environment, and how these are likely to be affected by the proposals, is provided below.

#### Maintaining viability of associated or dependent species (s 9(a))

##### *Seabirds*

380. Bluenose is taken by target bottom longline fisheries throughout the New Zealand Exclusive Economic Zone (EEZ). Incidental captures of seabirds occur in the bottom longline and setnet fisheries, including black petrel in FMA 1 and 2, that are ranked as at very high risk in the Seabird Risk Assessment.<sup>28</sup> The bluenose bottom long line fishery is responsible for 16% of species-level risk to black petrels. All other things remaining equal, reduced effort in the bluenose bottom long line fishery will result in a proportional reduction in risk to black petrels for Options 2 and 3:

- a) Option 2: 11% TAC reduction. Median species-level risk for black petrel will be reduced from **1.15 to 1.13**
- b) Option 3: 31% TAC reduction. Median species-level risk for black petrel will be reduced from **1.15 to 1.09**

##### *Marine mammals*

384. According to bluenose longline fishermen, depredation of hooked bluenose by orca has increased recently. Future analysis of observer data would inform management responses to this matter. MPI is not aware of any adverse interaction between orca and longline gear targeting bluenose.

#### Biological diversity of the aquatic environment (s 9(b))

385. Bottom long-lining has a relatively benign form of bottom impact compared to trawling and any decrease in fishing is likely to result in a decrease in the spatial extent of impact.

386. Bluenose is preyed upon by other fish species, such as broadbill swordfish. The significant decline in bluenose biomass may be having an impact on predator species like broadbill swordfish, subject to the availability of alternative food sources. A decline in abundance may also affect other complex interactions within the ecosystem. For example, bluenose is likely to be an important predator, feeding on tunicates, fish, squid and crustaceans. A change in predation pressure may alter competitive interactions between

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<sup>28</sup> Richard, Y.; Abraham, E.R. (2015). Assessment of the risk of commercial fisheries to New Zealand seabirds, 2006–07 to 2012–13. *New Zealand Aquatic Environment and Biodiversity Report* 162. 85 p.

these species. MPI cannot quantify the scale of the impact of low abundance of bluenose on species interactions, but rebuilding bluenose stocks should improve any existing imbalance.

#### Habitats of particular significance for fisheries management (s 9(c))

387. Bluenose is taken in conjunction with alfonsino in target midwater trawl fisheries directed at the latter species and in target bluenose bottom trawl fisheries. These fisheries are frequently associated with undersea features. MPI has no information to suggest bluenose fisheries have an impact on benthic habitats.

### SECTION 10 – INFORMATION PRINCIPLES

388. MPI considers that the advice provided is based on the best available information and that uncertainty, inadequacy, or lack of information has been taken into account in the recommended options.

### SECTION 11 – SUSTAINABILITY MEASURES

389. The general considerations under s 11 are provided in the section above on Statutory Considerations (Part 2).

390. Under section 11 of the Act, before setting or varying any sustainability measure for any stock, you must:

- a) Section 11(1)(a): take into account any effects of fishing on any stock and the aquatic environment. All information relevant to your decision is discussed above under '*Section 9 - Environmental Principles*'.
- b) Section 11(1)(b): take into account any existing controls under the Act that apply to the stock or area concerned.
- c) Section 11(1)(c): take into account the natural variability of the stock. The available biological information is discussed above. As a long-lived species, bluenose is not known to have high natural variability.
- d) Sections 11(2)(a) and (b): have regard to any provisions of any regional policy statement, regional plan, or proposed regional plan under the Resource Management Act 1991 and any management strategy or management plan under the Conservation Act 1987 that apply to the coastal marine area and that you consider relevant. MPI is not aware of any other policy statements, plans or strategies that should be taken into account for the bluenose fishery.
- e) Section 11(2)(c): have regard to sections 7 and 8 of the Hauraki Gulf Marine Park Act 2000 (HGMPA) when setting or varying the TAC relating to stocks with boundaries intersecting with the Park. Sections 7 and 8 of the HGMPA are discussed in the Statutory Considerations in the Statutory Considerations section of this paper (Part 2).

- i. Section 7 recognises the national significance of the Hauraki Gulf, including its capacity to provide for the relationship of tangata whenua with the Gulf and the social, economic, recreational and cultural well-being of people and communities.
  - ii. Section 8 sets out objectives for the management of the Gulf. Objectives of relevance include the protection and enhancement of the natural, historic, and physical resources of the Gulf; the protection and enhancement of those resources with which tangata whenua have an historic, traditional, cultural, and spiritual relationship; and the maintenance and enhancement of the contribution of the Gulf's resources to the social and economic well-being of the people and communities of the Gulf and New Zealand.
  - iii. Some inshore parts of the BNS1 stock boundaries intersect with the Park boundaries, however, there is little fishing for bluenose in these areas. Nevertheless, the resources of the Gulf include bluenose and rebuilding the bluenose stock is consistent with the above objectives.
- f) Section 11(2)(d): have regard to any planning document lodged by a customary marine title group under section 91 of the Marine and Coastal Area (Takutai Moana) Act 2011. No planning documents applicable to the bluenose fishery have been lodged.
  - g) Section 11(2A)(b): take into account any relevant fisheries plan approved under section 11A. No plans have been approved under section 11A that you need to take into account.
  - h) Sections 11(2A)(a) and (c): take into account any conservation or fisheries services, or any decision not to require such services. Industry has implemented a monitoring and data collection programme. MPI is still open to incorporating this data into a Management Procedure to help guide the management of bluenose in the longer term. The timing of a new stock assessment still needs to be decided. In the interim your decisions should take into account that no research services are confirmed in this fishery for the upcoming fishing year.

## SECTION 12- CONSULTATION AND INPUT AND PARTICIPATION

### Input and Participation

391. Section 12 (1)(b) requires that before you make decisions under sections 11 to 15 of the Act you must provide for the input and participation of tangata whenua into those processes. The Ministry has provided for input and participation of tangata whenua by establishing regional Iwi Fisheries Forums, and assisting iwi in those Forums to develop iwi fisheries plans. MPI meets with all Forums three times a year.
392. The Forums have the opportunity to consider proposals at an early stage to contribute to the refinement of proposals. They have also been consulted on the final options.

## Kaitiakitanga

393. Under Section 12(1)(b) you must also have particular regard to kaitiakitanga before setting or varying a TAC. The Fisheries Act 1996 provides an interpretation of kaitiakitanga.<sup>29</sup>
394. Relevant Iwi or Forum Fish Plans provide the objectives and outcomes iwi seek from the management of the fishery and can provide an indication of how iwi exercise kaitiakitanga over fisheries resources. Iwi views from Forum meetings and submissions received from iwi can also provide an indication of how kaitiakitanga is achieved.
395. There are a number of Forum Fisheries Plans relevant to the bluenose stock. For example, the Te Waka a Māui me Ōna Toka Iwi Forum (TWAM) has produced the Te Waipounamu Iwi Forum Fisheries Plan, and the Rēkohu/Wharekauri iwi have produced the Chatham Islands Fisheries Forum Plan. Bluenose are also mentioned amongst taonga species in Treaty settlement protocols with a number of iwi.
396. MPI considers that the management options presented in this Decision Paper are consistent with the Management Objectives of these plans, in that they are aimed at ensuring that the fishery remains sustainable and that environmental impacts are minimised.
397. MPI's intention to review bluenose catch limits was discussed at two Chatham Island iwi forums this year and with the following iwi forums - TWAM, Mai I Nga Kuri a Whareiki Tihirau and Te Hiku o Te Ika. The rebuilding plan has been discussed previously at iwi forums operating around New Zealand as part of the implementation of the 2011 plan.
398. Two iwi forums provided feedback as part of the official consultation. TWAM supported Option 3 in the interests of sustainability and reaching targets quicker. The feedback received from Te Tai Hauāuru Regional Fisheries Forum was that they supported Option 2. This is an indicator of their preferred management goal as kaitiaki of the resource.

## ECONOMIC ANALYSIS OF OPTIONS

399. To frame the options set out above, the nature of the economic impact to each bluenose fishery is suggested by looking at the current indicators of the value of the fishery. Table 3 shows the port<sup>30</sup>, export, ACE<sup>31</sup> and quota prices<sup>32</sup> for 2015/16, while Table 4 demonstrates the projected potential changes in landings revenue in 2017/18. These assume the total TACC is being caught in each QMA.

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<sup>29</sup> Kaitiakitanga is the exercise of guardianship, and in relation to any fisheries resource, includes the ethic of stewardship, based on the nature of the resource as exercised by the appropriate tangata whenua in accordance with tikanga Māori.

<sup>30</sup> Port price is the surveyed average price paid by licensed fish receivers ('LFRs') to independent fishers for fish landed to those LFRs.

<sup>31</sup> ACE price is willingness to pay for annual harvest rights.

<sup>32</sup> Quota price is the net present value quota owners can make into the future or after selling ACE or using themselves.

Table 3: Current indicators of the economic value of the BNS fisheries

	2015/16	2015	2015/16	2015/16
QMA	Port Price	Export Price	ACE Price	Quota Price
	(\$/kg)	(\$/kg)*	(\$/kg)**	(\$/kg)***
BNS 1	6.62	7.76	1.88	25.54
BNS 2	6.49	7.76	2.28	34.04
BNS 3	6.23	7.76	1.43	28.27
BNS 7	5.48	7.76	1.25	15.93
BNS 8	6.53	7.76	1.21	14.02

\* Meatweight export price for H & G, whole and other form, both chilled and frozen BNS for 2015 calendar year.

\*\* Average price for 2015 calendar year.

\*\*\* Average price from 2006/07 fishing year to 2015/16 fishing year.

Table 4: Summary of potential changes to landings revenue in 2017/18

QMA	Option 1		Option 2		Option 3	
	Port Price (\$)	Export Price (\$)	Port Price (\$)	Export Price (\$)	Port Price (\$)	Export Price (\$)
BNS 1	0	0	238,332	279,360	642,173	752,720
BNS 2	0	0	272,659	325,920	720,599	861,360
BNS 3	0	0	93,524	116,400	293,042	364,720
BNS 7	0	0	27,378	38,800	93,086	131,920
BNS 8	0	0	13,050	15,520	52,201	62,080
<b>TOTAL</b>	<b>0</b>	<b>0</b>	<b>644,944</b>	<b>776,000</b>	<b>1,801,100</b>	<b>2,172,800</b>

## Conclusion and Recommendation

400. The best available information suggests that there is a sustainability risk associated with current catch levels for bluenose. The 2016 assessment indicated that the combined bluenose stock is below the target biomass, and the latest CPUE data for 2015/16 suggests that biomass continued to decline for the fourth consecutive year. This evidence suggests a catch reduction is needed to ensure the stock rebuilds to the target biomass within the timeframe.
401. After considering the best available information and the submissions, MPI recommends Option 3 in order to give greater certainty that the rebuild target set in 2011 will be met. MPI is keen to continue working closely with industry to agree the wider management strategy, including agreeing a Management Procedure and the optimal time for a new stock assessment.
402. MPI notes that you have broad discretion in exercising your powers of decision making, and you may make your own independent assessment of the information presented to you in making your decision. You are not bound to choose the option recommended by MPI.

### *Option 1 (Status quo)*

- a) **Agree** to retain the combined bluenose (BNS 1, 2, 3, 7 and 8) TAC at 990 tonnes and:

**Agree** to retain the current BNS 1 TAC at 351 tonnes and within the TAC:

- i. Retain the current TACC of 327 tonnes;
- ii. Retain the 2 tonne allowance for Māori customary non-commercial fishing interests;
- iii. Retain the 15 tonne allowance for recreational interests;
- iv. Retain the 7 tonne allowance for other sources of fishing related mortality.

**Agree** to retain the BNS 2 TAC at 392 tonnes and within the TAC:

- i. Retain the TACC of 358 tonnes;
- ii. Retain the 2 tonne allowance for Māori customary non-commercial fishing interests;
- iii. Retain the 25 tonne allowance for recreational interests;
- iv. Retain the 7 tonne allowance for other sources of fishing related mortality.

**Agree** to retain the BNS 3 TAC at 162 tonnes and within the TAC:

- i. Retain the TACC of 140 tonnes;
- ii. Retain the 2 tonne allowance for Māori customary non-commercial fishing interests;
- iii. Retain the 18 tonne allowance for recreational interests;
- iv. Retain the 2 tonne allowance for other sources of fishing related mortality at 2 tonnes.

**Agree** to retain the BNS 7 TAC at 57 tonnes and within the TAC:

- i. Retain the TACC of 51 tonnes;
- ii. Retain the 2 tonne allowance for Māori customary non-commercial fishing interests;
- iii. Retain the 3 tonne allowance for recreational interests;
- iv. Retain the 1 tonne allowance for other sources of fishing related mortality.

**Agree** to retain the BNS 8 TAC at 28 tonnes and within the TAC:

- i. retain the TACC of 24 tonnes;
- ii. Retain the 1 tonne allowance for Māori customary non-commercial fishing interests;

- iii. Retain the 2 tonne allowance for recreational interests;
- iv. Retain the 1 tonne allowance for other sources of fishing related mortality.

**Agreed / Not Agreed**

OR

*Option 2*

- c) **Agree** to decrease the combined bluenose (BNS 1, 2, 3, 7 and 8) TAC from 990 tonnes to 888 tonnes and:

**Agree** to decrease the current BNS 1 TAC from 351 tonnes to 314 tonnes and within the TAC:

- i. Decrease the TACC from 327 tonnes to 230 tonnes;
- ii. Retain the 2 tonne allowance for Māori customary non-commercial fishing interests;
- iii. Retain the 15 tonne allowance for recreational interests;
- iv. Decrease the allowance for other sources of fishing related mortality from 7 tonnes to 6 tonnes.

**Agree** to decrease the BNS 2 TAC from 392 tonnes to 349 tonnes and within the TAC:

- i. Decrease the TACC from 358 tonnes to 316 tonnes;
- ii. Retain the 2 tonne allowance for Māori customary non-commercial fishing interests;
- iii. Retain the 25 tonne allowance for recreational interests;
- iv. Decrease the allowance for other sources of fishing related mortality from 7 tonnes to 6 tonnes.

**Agree** to decrease the BNS 3 TAC from 162 tonnes to 147 tonnes and within the TAC:

- i. Decrease the TACC from 140 tonnes to 125 tonnes;
- ii. Retain the 2 tonne allowance for Māori customary non-commercial fishing interests;
- iii. Retain the 18 tonne allowance for recreational interests;
- iv. Decrease the allowance for other sources of fishing related mortality from 2 tonnes to 1 tonne.

**Agree** to decrease the BNS 7 TAC from 57 tonnes to 52 tonnes and within the TAC:

- i. Decrease the TACC from 51 tonnes to 46 tonnes;
- ii. Retain the 2 tonne allowance for Māori customary non-commercial fishing interests;
- iii. Retain the 3 tonne allowance for recreational interests;
- iv. Retain the 1 tonne allowance for other sources of fishing related mortality.

**Agree** to decrease the BNS 8 TAC from 28 tonnes to 26 tonnes and within the TAC:

- i. Decrease the TACC from 24 tonnes to 22 tonnes;
- ii. Retain the 1 tonne allowance for Māori customary non-commercial fishing interests;
- iii. Retain the 2 tonne allowance for recreational interests;
- iv. Retain the 1 tonne allowance for other sources of fishing related mortality.

**Agreed / Not Agreed**

OR



Option 3 (MPI Preferred)

- c) **Agree** to decrease the combined bluenose (BNS 1, 2, 3, 7 and 8) TAC from 990 tonnes to 704 tonnes and:

**Agree** to decrease the current BNS 1 TAC from 351 tonnes to 251 tonnes and within the TAC:

- i. Decrease the TACC from 327 tonnes 230 tonnes;
- ii. Retain the 2 tonne allowance for Māori customary non-commercial fishing interests;
- iii. Retain the 15 tonne allowance for recreational interests;
- iv. Decrease the allowance for other sources of fishing related mortality from 7 tonnes to 4 tonnes.

**Agree** to decrease the BNS 2 TAC from 392 tonnes to 279 tonnes and within the TAC:

- i. Decrease the TACC from 358 tonnes 247 tonnes;
- ii. Retain the 2 tonne allowance for Māori customary non-commercial fishing interests;
- iii. Retain the 25 tonne allowance for recreational interests;
- iv. Decrease the allowance for other sources of fishing related mortality from 7 tonnes to 5 tonnes.

**Agree** to decrease the BNS 3 TAC from 162 tonnes to 114 tonnes and within the TAC:

- i. Decrease the TACC from 140 tonnes to 93 tonnes;
- ii. Retain the 2 tonne allowance for Māori customary non-commercial fishing interests;
- iii. Retain the 18 tonne allowance for recreational interests;
- iv. Decrease the allowance for other sources of fishing related mortality from 2 tonnes to 1 tonnes.

**Agree** to decrease the BNS 7 TAC from 57 tonnes to 40 tonnes and within the TAC:

- i. Decrease the TACC from 51 tonnes to 34 tonnes;
- ii. Retain the 2 tonne allowance for Māori customary non-commercial fishing interests;
- iii. Retain the 3 tonne allowance for recreational interests;
- iv. Retain the 1 tonne allowance for other sources of fishing related mortality.

**Agree** to decrease the BNS 8 TAC from 28 tonnes to 20 tonnes and within the TAC:

- i. Decrease the TACC from 24 tonnes to 16 tonnes;
- ii. Retain the 1 tonne allowance for Māori customary non-commercial fishing interests;
- iii. Retain the 2 tonne allowance for recreational interests;
- iv. Retain the 1 tonne allowance for other sources of fishing related mortality.

**Agreed** Not Agreed

  
Hon Nathan Guy  
Minister for Primary Industries

21 / 8 / 2017



## Paua (PAU 4)

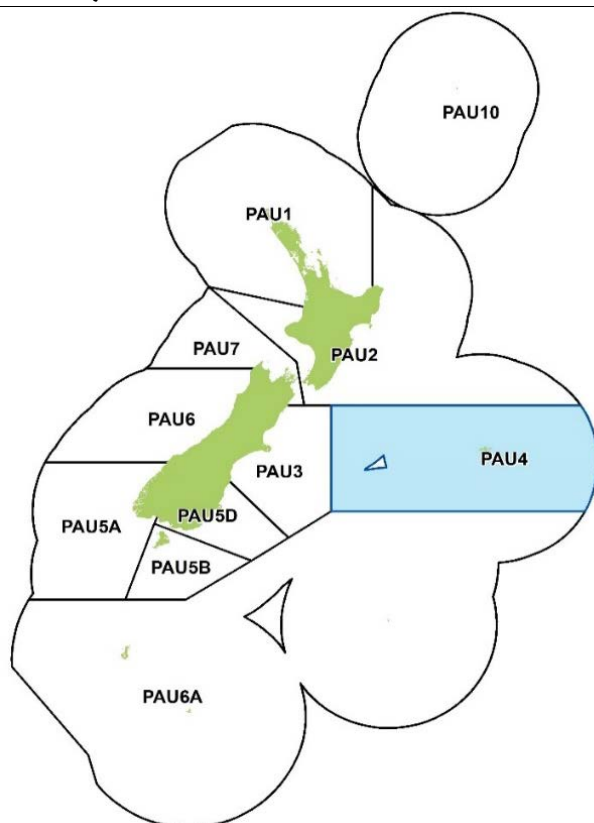


Figure 1: Quota management areas (QMAs) for paua, with PAU 4 highlighted in blue.

### Summary

403. The Ministry for Primary Industries (MPI), tangata whenua and stakeholders are concerned that the biomass of PAU 4 (Figure 1) is declining. The available information suggests the total allowable commercial catch (TACC) for PAU 4 may have been set too high as a result of Quota Appeal Authority decisions when the fishery was first introduced into the quota management system.

404. MPI has consulted on your behalf on a review of catch limits for PAU 4, seeking input from tangata whenua, and the commercial and recreational sectors, on two options for PAU 4. These are set out in Table 1.

Table 1. Proposed TACs, TACCs, and allowances for PAU 4 from 1 October 2017 (all values in tonnes)

Option	Total Allowable Catch	Total Allowable Commercial Catch	TACC tonnage decrease and % change	Allowances		
				Customary Māori	Recreational	All other mortality caused by fishing
Current settings	-	326	-	-	-	-
Option 1	236	228 ↓	98 t ↓ (30%)	3	3	2
Option 2 (MPI preferred)	204	196 ↓	130 t ↓ (40%)	3	3	2

405. Deemed value rates were also reviewed for PAU 4. As the current interim and annual deemed value rates for PAU 4 are consistent with the Guidelines (Appendix 1), no changes to the deemed value rates are proposed.
406. After considering the submissions and feedback received, MPI recommends Option 2. This option would set a PAU 4 TAC for the first time at 204 tonnes. As part of this option the TACC for PAU 4 would be reduced by 130 tonnes to 196 tonnes. In addition, as this is the first time a TAC is set for PAU 4, MPI proposes to set three tonne allocations for both the recreational and customary sectors, and a two tonne allocation for all other mortality caused by fishing. Taking into account the available scientific information, the high level of uncertainty regarding the status of the fishery, and the sustainability concerns raised by fishers and tangata whenua, Option 2 is the most likely option to ensure the sustainability of the PAU 4 fishery.

## Need for review

407. The best available information suggests the biomass of PAU 4 is declining. The results from a new catch and effort analysis suggest a marked decline in abundance in the fishery since at least the 2001–02 fishing year to present. However, there is a degree of uncertainty in these results, due to variability in the quality of the best available data used in the analysis. During structured interviews, commercial fishers in PAU 4 have also expressed sustainability concerns based on their observations while fishing for paua. They report a decline in the abundance of paua in the fishery since the early 2000s, and consider the TACC was set too high as a result of decisions made by appeals to the Quota Appeal Authority when the fishery was brought into the QMS<sup>33</sup>.
408. In response to their sustainability concerns, commercial fishers have, since 2010, implemented voluntary shelving of ACE in PAU 4. However, many fishers have expressed concern about the effectiveness of this approach, and it does not appear to have been sufficient to stop the biomass decline in the fishery. Tangata whenua have also raised (anecdotal) concerns about a decrease of paua abundance in traditional harvesting areas.

## CONTEXT

### Biological information

409. Paua inhabit reefs in shallow subtidal coastal habitats. They are considered relatively sedentary forming large, localised, aggregations. They are thought to broadcast spawn on an annual basis. Habitat-related factors such as wave exposure, habitat structure, availability of food and population density, influence the growth, shape, and recruitment of paua.
410. Due to their sedentary nature, high levels of fishing pressure in localised areas make paua populations susceptible to overfishing and depletion. Overfishing of a localised population can also affect spawning success, in turn hindering overall productivity of the fishery.

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<sup>33</sup> The TACC for PAU 4 was initially set at 261 t in 1986 when PAU 4 entered the QMS. Between 1986 and 1995 the TACC was increased four times following Quota Authority Appeals resulting in the current TACC of 326 t, which has remained unchanged since.

## Fishery characterisation

### Commercial

411. Commercial fishers gather paua by hand while either free-diving or with the use of an underwater breathing apparatus. PAU 4 was introduced into the Quota Management System in 1986 with a TACC of 261 tonnes. Between 1986 and 1996 the TACC was increased by an additional 65 tonnes to 326 tonnes following Quota Appeal Authority decisions, and has remained unchanged to date.
412. From the 2010/11 fishing year to the present, industry voluntarily shelved between 10% and 20% of PAU 4 ACE in response to sustainability concerns<sup>34</sup> (Figure 2). As a result, the TACC has not been fully caught since the 2009/10 fishing year.

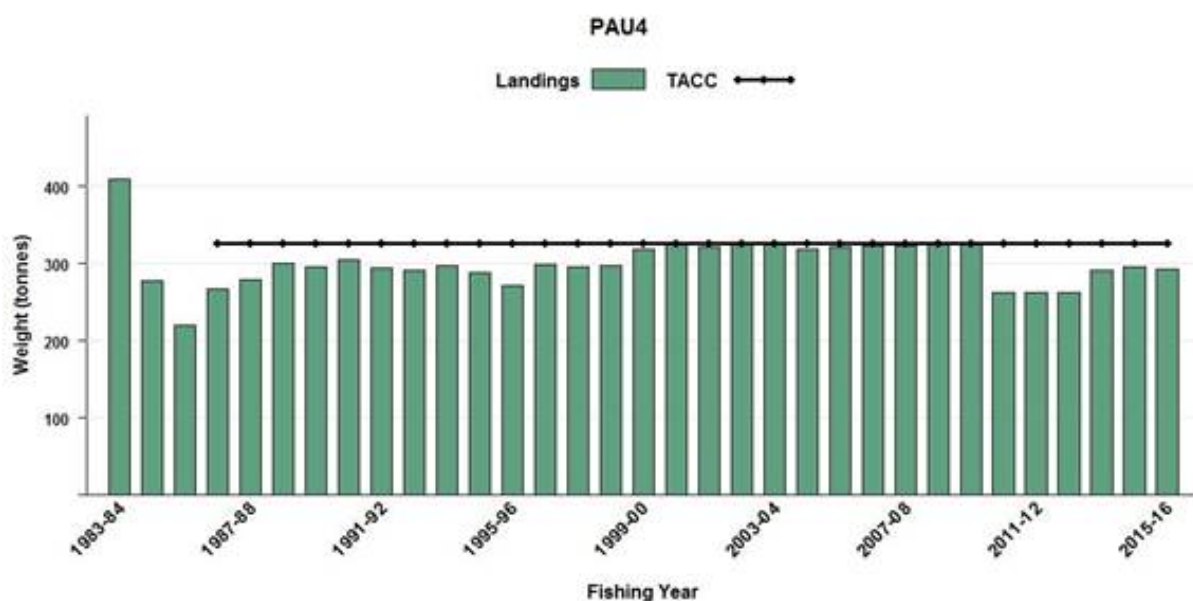


Figure 2. Landings and TACC for PAU 4 from 1983/84 to 2015/16.

### Māori customary interests

413. Paua is considered a taonga species by both Ngāti Mutunga o Wharekauri and Moriori that represent customary fishing in PAU 4. Reported customary catch numbers fluctuated between 1000 and 4300 (number of paua) between 2010 and 2013.

### Recreational

414. There is no recreational catch estimate for PAU 4. Due to the limited population on the Chatham Islands and its isolation, it is likely that recreational catch is relatively small.

### All other mortality to the stock caused by fishing

415. There are various other potential sources of paua mortality caused by fishing, including mortality caused by fishing and illegal catch.

<sup>34</sup> 20% of ACE was shelved for 2010/11 to 2012/13, and 10% for 2013/14 to present.

416. Such sources are difficult to quantify, however research from other paua stocks suggests that overall incidental mortality of paua from commercial fishing could be approximately 0.3% of the landed catch.

## Management approach and stock status

417. The draft National Fisheries Plan for Inshore Shellfish<sup>35</sup> categorises PAU 4 as a Group 1 fishery, meaning it is one of New Zealand's most valuable and sought after shellfish species. Given the high level of benefits from paua and their susceptibility to overfishing and depletion, there is a strong management focus on ensuring paua fisheries remain healthy, and are managed at high levels of abundance.
418. Uncertainty in the current status of PAU 4 is due to inaccurate reporting of commercial catch per unit of effort (CPUE), changes to fishing methods, changes to the management of the fishery over time, and the logistic difficulties of collecting quality fishery data from such a remote location. One such change to both fishing method and management of the fishery includes a regulatory change that, since 2013, has allowed commercial paua divers in PAU 4 to use underwater breathing apparatus. It is expected that this has resulted in improved diver efficiency which adds variability to the current CPUE data series and reduces its reliability as a proxy for abundance.
419. A previous scientific stock assessment for PAU 4, conducted in 2004, was rejected by MPI's Shellfish Working Group (SFWG) due to the lack of robust data causing unacceptable levels of uncertainty in the results. Currently the best available information for PAU 4 is anecdotal observations of declines in paua abundance from customary and commercial fishers, length frequency profile data and highly variable CPUE data.
420. In early 2017, the CPUE and length frequency data were re-analysed to evaluate any changes in CPUE trends and determine if any changes observed in the current data could be deemed as a reliable proxy for change in paua abundance. A more sophisticated CPUE standardisation modelling approach (compared to previous analyses) was undertaken, using all available catch and effort data including data from data loggers, new commercial length-frequency data, as well as diver questionnaires and structured interviews. The analysis suggested depletion of the resource has occurred since the 2001–02 fishing year to present. The standardisation was accepted by the SFWG however, the SFWG noted the unreliability and uncertainty associated with the catch and effort data used in the analysis.
421. The target biomass for PAU 4 is 40%  $B_0$  (40% of the unfished biomass), used as a proxy for  $B_{MSY}$ . Additionally, a soft limit of 20%  $B_0$  and a hard limit of 10%  $B_0$  apply to the fishery in accordance with the Harvest Strategy Standard for New Zealand Fisheries<sup>36</sup>.
422. Currently, there is insufficient data to quantify the biomass of PAU 4 and its relation to the target biomass, and the soft and hard limits. As described above the best available information on the status of the fishery is the new CPUE assessment, and the concerns and information regarding the abundance of paua provided by stakeholders and tangata whenua. From these it can be inferred that the fishery has been in a state of decline since

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<sup>35</sup> National Fisheries Plan for Inshore Shellfish is a draft management plan for inshore shellfish. It is accessible here: [https://fs.fish.govt.nz/NR/rdonlyres/B2AE6016-729C-4DCF-B698-CAA6FAFAFC7D/0/draft\\_fisheries\\_plan\\_shellfish.pdf](https://fs.fish.govt.nz/NR/rdonlyres/B2AE6016-729C-4DCF-B698-CAA6FAFAFC7D/0/draft_fisheries_plan_shellfish.pdf)

<sup>36</sup> The Harvest Strategy Standard is a policy statement of best practice in relation to the setting of targets and limits for New Zealand fishstocks managed under the quota management system. It is accessible at: <http://fs.fish.govt.nz/Page.aspx?pk=104>

2001/02 and that the fishery is likely to be below the target biomass (the level that will produce *MSY*).

## Statutory Considerations specific to PAU 4

423. It is implicit that options provided in this document comply with the purpose and principles of the Act. In formulating this final advice, MPI has complied, on your behalf, with the legal requirements with regard to consultation, providing for tangata whenua input and participation and kaitiakitanga. Further information on these provisions and specific considerations for PAU 4 is found in the Addendum below.
424. With respect to specific considerations when setting a TAC, allowances, and a TACC for PAU 4, sections 11, 13, 20 and 21 of the Act apply. Relevant matters for your consideration are outlined in more detail in the Addendum below.
425. In summary, all proposed options are considered to be not inconsistent with the objective (under s 13) to maintain the stock at or above the level that will produce *MSY*, and pose limited risk to associated species or the environment. The options differ in terms of the economic and social considerations of each option balanced against the sustainability risk.

## SECTION 13 – SETTING THE TAC

426. As current biomass ( $B_{CURRENT}$ ) and  $B_{MSY}$  are unknown for PAU 4, section 13(2A) of the Act provides for you to use the best available information to set a TAC that is not inconsistent with the objective of maintaining the stock at or above, or moving the stock towards or above, the  $B_{MSY}$  level. The options presented in this paper take into account the requirements listed in s 13(2A) and 13(3) of the Act, as discussed in the Statutory Considerations section in Part 2 of this paper.
427. MPI considers the latest 2017 stock analysis (refer section 2.1.2), coupled with anecdotal concerns and information provided by fishers and tangata whenua to be the best available information to determining the status of the PAU 4 stock. This information, although uncertain, suggests that the PAU 4 fishery has been in a state of decline since the 2001/02 fishing year, and is likely to be below the target biomass (the level that will produce *MSY*). The options within this paper provide you with a choice on how you can fulfil your obligations under this section.
428. Section 13(2A)(b) of the Act requires you to have regard to the interdependence of stocks, the biological characteristics of the stock, and any environmental conditions affecting the stock when setting a TAC for PAU 4. These aspects are identified in section 2.1.1 and 3.2 of this document.

## SECTIONS 20 AND 21 – ALLOWANCES AND THE TACC

### Allowances

#### *Customary Māori allowance*

429. No allowance for Māori customary non-commercial interests is currently set for PAU 4. Reported customary catch numbers fluctuated between 1000 and 4300 (unit not reported, but believed to be number of paua) between 2010 and 2013. Considering an average paua weight is 280g<sup>37</sup>, the maximum reported customary number equates to approximately 1.2 tonnes. Given the variability in customary harvest quantities, MPI proposes a three tonne customary allowance is appropriate for customary harvest.

#### *Recreational allowance*

430. There is no allowance for recreational interests and no recreational catch estimate for PAU 4. Due to the limited population on the Chatham Islands and its isolation, it is likely that recreational catch is small. MPI considers a three tonne allowance is appropriate to allow for current recreational harvest amounts, taking into account recreational effort from fishers that visit the island and the needs of the local community.

#### *All other mortality caused by fishing*

431. Research from other paua stocks suggests that overall incidental mortality of paua from commercial fishing could be approximately 0.3% of the landed catch (less than 1 tonne under each proposed option). However this does not include incidental mortality from non-commercial fishing. Taking this, and the potential for illegal fishing into account, MPI proposes to set the allowance at two tonnes to include all likely sources of other mortality.

### TACC

432. From the 2010/11 fishing year to the present, industry voluntarily shelved between 10% and 20% of PAU 4 ACE in response to sustainability concerns<sup>38</sup> (Figure 3). As a result, the TACC has not been fully caught since the 2009/10 fishing year.

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<sup>37</sup> Hartel, B & Davey, N (2015) Mean weight estimates for recreational fisheries in 2011-12. *New Zealand Fisheries Assessment Report 2015/25*. Ministry for Primary Industries, Wellington, New Zealand. pg 18.

<sup>38</sup> 20% of ACE was shelved for 2010/11 to 2012/13, and 10% for 2013/14 to present.



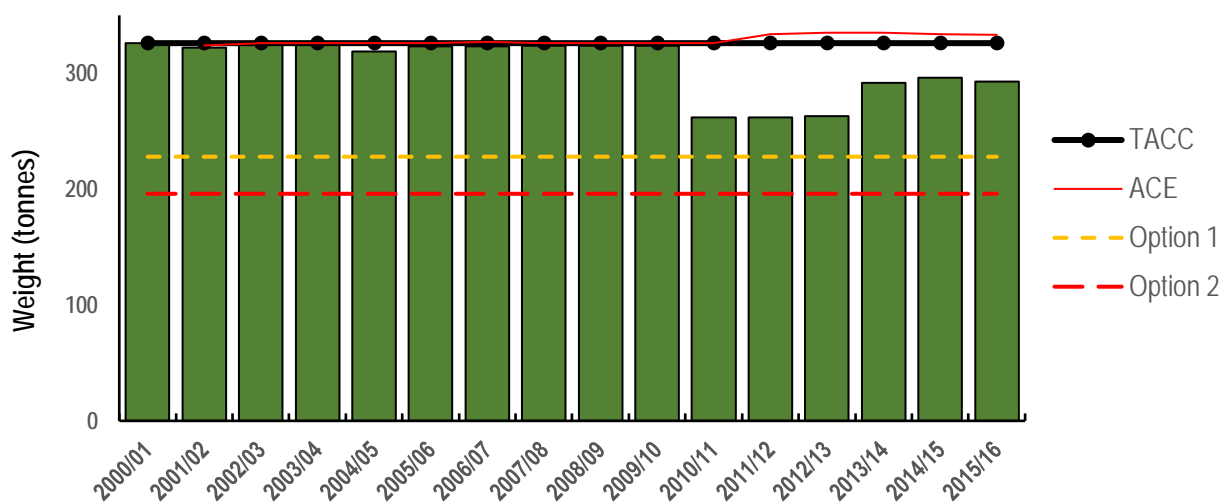


Figure 3. Annual landings vs TACC and available ACE for PAU 4 between 2000/01 and 2015/16 fishing years (as at April 2017), including TACC levels proposed for Options 1 and 2.

433. Shelving of ACE has, however, not addressed concerns that the biomass of the fishery is declining. MPI proposes greater reductions than these are required to address the sustainability concerns for the fishery and to maintain PAU 4 at a level that is consistent with your obligations under the Act.

## SECTION 75 – DEEMED VALUE RATES

434. The review of the TAC for PAU 4 has triggered a review of the deemed value rates for the stock. No other deemed value criterion is triggered and no deemed value rates adjustments for this stock is proposed in the 2017 Deemed Values section of this advice (Part 6).

## Submissions received

435. Eight submissions on the PAU 4 proposals were received from the following organisations:

- a) Chatham Islands Harvesters Forum
- b) Paua Industry Council Limited (PIC)
- c) Tūhoe Te Uru Taumatua
- d) PauaMac4 Industry Association Incorporated (PAUMAC4)
- e) Ngati Mutunga O Wharekauri Asset Holding Company Limited (NMOW AHC)
- f) Hokotehi Moriori Trust (HMT)
- g) Te Ohu Kai Moana Trustee Limited (TOKM)
- h) Iwi Collective Partnership (ICP)

## OTHER MATTERS

### ACE shelving

436. The submissions from industry supported shelving of between 30 to 40% of ACE in order to rebuild the fishery, while avoiding a reduction to the TACC. MPI notes this strong preference by submitters, however, under the Fisheries Act 1996, TAC setting is the primary tool to ensure sustainability of a stock and to rebuild the stock at a way and rate that you consider appropriate. This does not mean that shelving does not have a place in managing a stock. MPI notes that industry are free to choose to rebuild or increase abundance in a stock faster by shelving additional quota if they wish. However, where a sustainability concern is evident, action is required to ensure sustainability through an appropriately set TAC, TACC and allowances.
437. Given the current information on the stock status of PAU 4 and the uncertainty associated with this information, and the concerns raised by both customary and commercial fishers regarding a significant observed decline in the fishery despite ACE shelving efforts, MPI considers that a TAC that reduces the current TACC is required. In addition, industry may choose to consider additional shelving to increase the rate of rebuild.

### PAU 4 Industry management plan

438. Seven of the eight submissions received stated an Industry Management Plan should be developed and implemented in the near future to enable PAU 4 to be managed at a fine scale with endorsement from the local community. PAUMAC4 included in their submission a draft PAU 4 Industry Plan.
439. The draft plan outlines key objectives and strategies that will promote a productive, sustainable PAU 4 fishery. The plan also outlines a suite of measures, including the development of harvest control rules, management targets and reporting requirements at a fine spatial scale, and also spawning closures and additional research to benefit the fishery. Additionally, the plan outlines community engagement as a key objective in order to work with iwi/imi and the local community to establish a forum that will actively work towards developing the plan into a community endorsed Fisheries Plan that can be approved by you under section 11A of the Fisheries Act.
440. PAUMAC4 propose to begin implementation of measures set out in the draft plan in October 2017, with full implementation of a community endorsed Fisheries Plan achieved by the end of 2019.
441. MPI supports this initiative and will provide a briefing to you once the status of the draft plan has been confirmed, and once MPI has further reviewed and discussed the plan with industry.

### Research and monitoring

442. Several submitters note the importance of improved monitoring and scientific assessment of PAU 4. During 2017 and 2018 MPI will be implementing digital reporting and monitoring in PAU 4 under the Future of our Fisheries programme. This will progressively provide more accurate fine scale reporting of catch and effort data

than is currently available over the next three years. This information, together with the recently implemented research programme, and better quality growth, length at maturity, and length frequency data will over time, allow a more comprehensive and accurate assessment of the status of the PAU 4 fishery. The better quality data will improve our knowledge of how productive the fishery is, and how best the fishery can be managed in the future to ensure continued sustainable utilisation.

### Preferential allocation (28N) rights

443. Several submitters have raised concerns about a reduction to the TACC in PAU 4, as an increase in the future will activate the remaining “28N rights”.
444. 28N rights originated under sections 28N and 28OE of the Fisheries Act 1983. In preparation for commencement of the quota system the Crown offered to purchase provisional maximum individual transferable quota (PMITQ) from fishers to reduce TACCs to sustainable levels. Those fishers who did not sell had their PMITQ reduced without compensation, but became entitled to have those reductions restored in full in the future as quota, should the TACC for that relevant stock be increased. 28N rights continue to be provided for under section 23 of the Fisheries Act 1996 (the Act).
445. The Act requires that the 28N rights are recorded against each fisher as a tonnage, and when a TACC for a stock is increased, any outstanding 28N rights are honoured first in tonnes, before other quota holders receive an increased catch allocation. This must be done until all of the 28N rights associated with that stock are settled. 28N rights are non-transferable and can only be redeemed by the original quota holder who has continuously held quota in that stock.
446. In PAU 4 there are six fishers who currently hold 28N rights equivalent to 19.7 tonnes. This means that should there be a TACC increase for PAU 4 in the future, 19.7 tonnes of catch allocation will go to these six fishers before other quota holders receive an increased catch allocation, provided that those quota holders still hold quota shares in PAU4 when a TACC increase occurs.
447. In their submission, HMT stated concern regarding a TACC reduction as, in the event of a future increase, this would result in the allocation of an additional 19.7 tonne of quota to 28N right holders, which in turn would decrease the value of the commercial sea fisheries settlement for Moriori.
448. PIC and NMOW AHC stated in their submission that should the TACC be reduced and subsequently increased, it will permanently reduce the amount of settlement quota shares in the fishery. In their view, that is likely to be inconsistent with the requirements set out in section 5 of the Act. TOKM oppose any reallocation of settlement quota shares should 28N rights be activated in PAU 4, and any other quota management area, or fishery.
449. PIC stated the activation of 28N rights would erode the voluntary efforts of the quota owners that have implemented fine scale initiatives, as the “fruits of their efforts” would be permanently allocated to other quota owners at their expense.
450. While the TACC reductions proposed in this paper will not directly result in any reallocation of quota shares, any future increase to the TACC will trigger 28N rights in the PAU 4 fishery. The implication for settlement quota is that the proportional share is

reduced – the degree to which shares are affected will depend on the level of the TACC increase.

451. 28N rights will impact on quota holders of PAU 4 (including holders of settlement quota) when there is a future TACC increase in the fishery. It will happen as a direct result of the application of section 23 of the Fisheries Act 1996. It is not in itself a reason for not setting a TAC and TACC in the fishery in accordance with the relevant principles and sustainability requirements of the Act.
452. MPI notes that the concerns of fishers regarding 28N rights cannot be addressed through the TAC and TACC setting process. As they are outside the scope of this paper, separate advice can be provided to you on this issue.

## Evaluation of Options

453. A TAC has not previously been set for PAU 4. The two proposed TAC options comprise a reduced TACC (by either 30% or 40%), and three tonne allowances for the Māori customary and recreational sectors, and a two tonne allowance for all other mortality caused by fishing.
454. Best available information, although uncertain, suggests that the PAU 4 fishery has been in a state of decline since the 2001/02 fishing year, and is likely to be below the target biomass (the level that will produce *MSY*).
455. The options proposed within this paper provide you with a choice on how you can fulfil your obligations under this section. They take into account that the fishery does not appear to have responded to voluntary shelving of 10-20% of ACE, and that a more substantial reduction is required to address the sustainability concerns for the fishery and to maintain PAU 4 at a level that is consistent with the requirements of the Act. MPI notes the options proposed would result in a TACC below the 261 tonnes originally set for PAU 4 when it entered the QMS in the 1980s, which many stakeholders consider was an appropriate level, prior to subsequent increases as a result of Quota Appeal Authority decisions.
456. All submissions received stated a significant reduction of at least 30% to the annual commercial harvest in PAU 4 was required to ensure the sustainability of the fishery. No opposition was received during consultation to the proposed allowances for customary, recreational, and all other mortality caused by fishing for each option.

### OPTION 1

457. Under Option 1, the TAC would be set at 236 tonnes, with a 30% reduction to the current TACC (from 326 to 228 tonnes) and the appropriate allowances set.
458. PAUMAC4 do not support a TACC reduction, instead they propose a minimum of 30% of ACE be shelved for at least three years. Additionally, they state that any shelving effort should be accompanied by the implementation of fine scale management under an Industry Management Plan (refer section 4.1.2). PIC and NMOW AHC support PAUMAC4's submission in its entirety.

459. HMT stated concern about the state of PAU 4 and fully support the submissions of both PAUMAC4 and the NMOW AHC. TOKM also support industry's proposal to reduce the commercial catch by at least 30% using a three-year shelving arrangement. Additionally, TOKM support industry's initiative to develop a community endorsed fisheries plan, and to seek legislative change to provide authorised management.
460. ICP support Option 1.
461. The economic impact to the commercial sector under Option 1 is estimated to be \$2,350,040 per year, based on an average port price of \$23.98/kg for PAU 4 in 2016/17. However, it is important to note that the estimate of reduced revenue does not take into account that between 10 and 20% of ACE has been shelved by industry since 2010/11. If this is included, the impact on revenue of Option 1 is reduced to between \$786,544 and \$1,568,292 per annum.
462. The Chatham Island fisheries are extremely important to the local economy, providing and supporting a large proportion of the local trade and business. The PAU 4 fishery is one of the most important fisheries on the Chatham Islands and it is anticipated that a cut to the PAU 4 TAC will have a noticeable socio-economic impact. Option 1 will reduce the volume of paua and processed on the island by between 10 and 20% (taking previous ACE shelving into account). The impact on the wider Chatham Island community under this option is difficult to quantify. However, MPI notes that if no action is taken and the fishery continues to decline, or a collapse of the stock is triggered, the socio-economic implications are likely to be more severe and long-lasting.
463. The best available information suggests depletion of the resource has occurred since 2001 and that shelving of ACE at levels of between 10 and 20% has not addressed this decline. Taking this into account, and that all of the submissions received during consultation stated the need for a significantly reduced commercial take in PAU 4, MPI considers a 30% TACC reduction is the minimum reduction required.

## OPTION 2 (*MPI Preferred*)

464. Under Option 2, the TAC would be set at 204 tonnes, with a 40% reduction to the current TACC (from 326 to 196 tonnes) and the appropriate allowances set.
465. The Chatham Islands Harvesters Forum, which represents the majority of commercial paua harvesters of the Chatham Islands fishery, submit that they have performed their own calculations on the status of PAU 4. They conclude that a reduction of at least 40% to the commercial take is required in order to stabilise and support a rebuild of the fishery. Therefore, the forum support a 40% reduction in commercial catch. However, they prefer that this is achieved through voluntary shelving of ACE, rather than a TACC reduction. They also express concern regarding the uncertain information regarding the stock status.
466. Additionally, the Chatham Islands Harvesters forum also support the immediate development and implementation of an Industry Management Plan as a first step in progressing authorised management of the fishery through a community-endorsed Fisheries Plan.
467. Tūhoe Te Uru Taumatua support Option 2.

468. MPI agrees that a 40% TACC reduction is an appropriate response, as it would provide a greater likelihood that the abundance of paua is maintained or rebuilt, and that this would occur over a shorter timeframe compared to Option 1. Given the high level of uncertainty in information regarding the current stock status of the fishery, and the on-going concern raised by both customary and commercial fishers, a TAC set at this level would have a greater chance of reducing the risk of the abundance of paua declining further. Additionally, it would have the greatest likelihood of allowing the fishery to stabilise or rebuild while a more robust assessment of stock status and an Industry Management Plan are developed.
469. As described for Option , the PAU 4 fishery is one of the most important fisheries on the Chatham Islands and it is anticipated that a cut to the PAU 4 TAC will have a noticeable socio-economic impact. A TAC and TACC set under Option 2 would result in a greater direct economic impact to the commercial sector in the short term compared to Option 1, with an estimated reduced revenue of \$3,117,400 per annum. Taking into account the voluntary shelving efforts of between 10 and 20% ACE, the impact on revenue under this option is reduced to between \$1,553,904 and \$2,335,652 per annum.
470. Under this option, the socio-economic impact will be greater compared to Option 1, and will reduce the volume of paua and processed on the island by between 20 and 30% (taking previous ACE shelving into account). However, the greater reduction to the TACC under Option 2 will increase the probability that the fishery will stabilise and rebuild in a shorter timeframe, which will enable utilisation benefits to be realised quicker in the long term.
471. Overall, MPI considers Option 2 is the most consistent with the objective of maintaining the PAU 4 stock at or above, or moving it towards or above, a level that can produce the maximum sustainable yield.

## Addendum: Assessment against statutory obligations

472. The following section provides a specific assessment of statutory considerations in relation to the review of PAU 4.

### SECTION 8 – PURPOSE OF THE ACT

473. Based on the best available information, MPI considers that all options presented in this paper satisfy the purpose of the Act in that they provide for the utilisation of PAU 4 while ensuring sustainability.

### SECTION 9 – ENVIRONMENTAL PRINCIPLES

474. A summary of the interactions between the PAU 4 fishery and the aquatic environment, and how these are likely to be affected by the proposals, is provided below.

#### Maintaining viability of associated or dependent species (s 9(a)) and biological diversity of the aquatic environment (s 9(b))

475. There is limited information to provide an assessment of the effects of the paua fishery on either associated or dependent species, and the biodiversity of the aquatic environment. The method for commercial harvest of paua is hand-gathering while either freediving or using UBA. Consequently, there is no bycatch of any associated or dependent species in this fishery. However, there is evidence of an interdependence relationship between paua, kina, and seaweeds. The continued loss of large paua from reefs by fishing may have a localised displacement effect on kina and seaweeds. The effects of this displacement on the inshore benthic community structure are uncertain.

#### Habitats of particular significance for fisheries management (s 9(c))

476. No habitats of particular significance have been identified in PAU 4, and it is considered unlikely that the method of hand-gathering would have a demonstrable adverse effect on habitat.

### SECTION 10 – INFORMATION PRINCIPLES

477. MPI considers that the advice provided is based on the best available information and that uncertainty, inadequacy, or lack of information has been taken into account.

### SECTION 11 – SUSTAINABILITY MEASURES

478. General considerations under s 11 are set out in the generic section on Statutory Considerations and Policy Guidelines in Part 2 of this document. Specific considerations that relate to PAU 4 are described below.

### Section 11(1)(a)

479. Commercial paua fishing is by hand gathering and has no bycatch. Therefore it is unlikely to impact on any other stocks, or on the aquatic environment.

### Section 11(1)(b)

480. For PAU 4, no TAC has yet been set (only the TACC). Other management controls (e.g. commercial and recreational regulations) apply to the PAU4 fishery, for example recreational daily bag limits. These controls are taken into consideration during this review.

### Section 11(2)(a) and (b)

481. MPI is not aware of any policy statements, regional plans or proposed regional plans that should be taken into account for PAU 4. Additionally, MPI is not aware of any conservation strategies or conservation plans that should be considered for PAU 4.

### Section 11(2A)(b)

482. PauaMac4 Industry Association Incorporated has developed a draft Industry Management Plan, however it needs to be reviewed, discussed and further developed, before it is presented to you for approval.

## SECTION 12 - CONSULTATION

483. Section 12(1)(b) requires that you provide for the input and participation of tangata whenua and have particular regard to kaitiakitanga before setting or varying a TAC.

484. Both Ngāti Mutunga o Wharekauri and Moriori, who represent tangata whenua of the Chatham Islands were approached to discuss their view on PAU 4. Collectively, both iwi/imi agreed that the TACC for PAU 4 needed to be decreased by at least 30% due to concerns about a decrease of paua abundance in traditional harvesting areas. However, both iwi/imi stated that voluntary shelving should be used together with the development of a PAU 4 management plan to avoid section 28N rights<sup>39</sup> being activated should a reduced TACC be increased in the future. The activation of section 28N rights in PAU 4 would 'reallocate' 19 tonne of additional quota to those quota holders that retained the right during the establishment of the quota management system. This may have an effect on both Ngāti Mutunga o Wharekauri and Moriori settlement quota holdings, should it occur in the future.

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<sup>39</sup> See discussion of Preferential Allocation (28N) Rights in section 4.1.



## Conclusion and Recommendations

485. MPI proposes that a TAC be set for PAU 4 for the first time; that appropriate allowances for Māori customary, recreational, and all other mortality caused by fishing be made, and that the TACC be reduced.
486. Best available information suggests the PAU 4 fishery has been in a state of decline for over a decade, and that Quota Appeal Authority decisions when the fishery was first introduced into the quota management system resulted in a TACC that was unsustainable in the long term. A TACC reduction is required to support a rebuild and ensure the long term sustainability of the fishery.
487. Two options are proposed for 1 October 2017 that MPI considers are consistent with your statutory obligations. These options recognise the high level of uncertainty in the current stock status of PAU 4, and the concerns raised by both customary and commercial fishers regarding an observed decline in the fishery. They also take into account that previous ACE shelving efforts of between 10 and 20% do not appear to have addressed sustainability concerns, and the socio-economic importance of the PAU 4 fishery to the Chatham Islands.
488. MPI's preferred option is Option 2, which sets a TAC of 204 tonnes with a TACC of 196 tonnes, recreational and customary allowances of three tonnes each, and an allowance of two tonnes for all other mortality caused by fishing. MPI considers a 40% reduction to the TACC provides a greater likelihood of ensuring the sustainability of PAU 4, while a more robust stock assessment is developed and an Industry Management Plan to be developed and implemented. The predicted short-term economic impact to the commercial sector under this option is expected to lie between \$1,553,904 and \$2,335,652 per annum, taking into account current and previous ACE shelving efforts.
489. MPI notes that you have broad discretion in exercising your powers of decision making, and you may make your own independent assessment of the information presented to you in making your decision. You are not bound to choose the option recommended by MPI.

### *Option 1*

**Agree** to set the PAU 4 TAC at 236 tonnes and within the TAC:

- i. Set an allowance of three tonnes for Māori customary non-commercial fishing interests;
- ii. Set an allowance of three tonnes for recreational fishing interests;
- iii. Set an allowance of two tonnes for other sources of fishing-related mortality;
- iv. Decrease the PAU 4 TACC from 326 to 228 tonnes.

**Agreed / Not Agreed**

OR

### *Option 2 (MPI's preferred option)*

**Agree** to set the PAU 4 TAC at 204 tonnes and within the TAC:

- i. Set an allowance of three tonnes for Māori customary non-commercial fishing interests;
- ii. Set an allowance of three tonnes for recreational fishing interests;
- iii. Set an allowance of two tonnes for other sources of fishing-related mortality;
- iv. Decrease the PAU 4 TACC from 326 to 196 tonnes.

**Agreed / Not Agreed**

  
Hon Nathan Guy  
Minister for Primary Industries

21 / 8 / 2017

## Red Cod 2 (RCO 2)

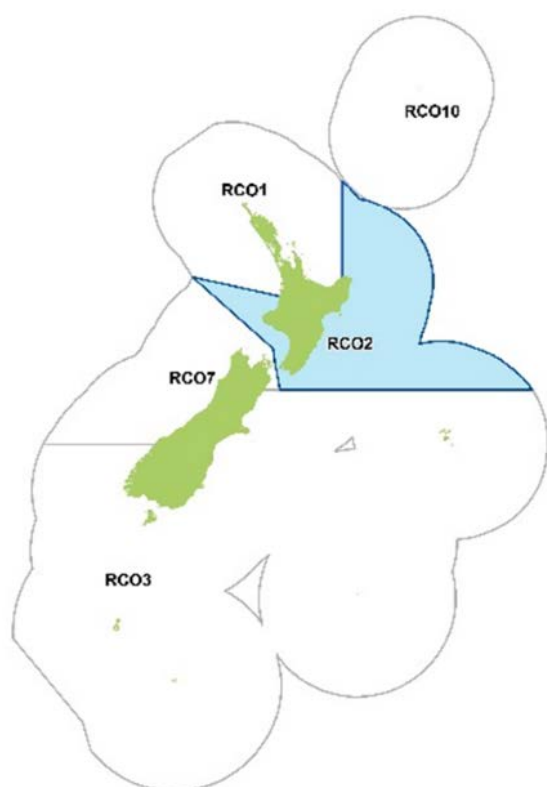


Figure 1: Quota management areas (QMA) for red cod, with RCO 2 highlighted in blue.

### Summary

490. The TAC for RCO 2 has been set, but non-commercial allowances have not. The Ministry for Primary Industries (MPI) considers the current TAC is not reflective of the catch and mortality of RCO 2 across all fishing sectors. This review provides the opportunity to set RCO 2 catch allowances for Māori customary fishers, recreational fishers and all other mortality caused by fishing, for the first time.
491. MPI has consulted on two options for adjusting the total allowable catch (TAC) and setting non-commercial catch allowances for red cod (*Pseudophycis bachus*, hoka) in quota management area (QMA) 2 (RCO 2; Figure 1). RCO 2 is listed on Schedule 2 of the Fisheries Act 1996 (the Act) which allows a TAC to be increased within a fishing year. The settings consulted on are referred to as baseline settings, as they are intended to stay in place over the medium-term, while an increase to the TAC and associated allowances may occur in fishing years where high abundance is detected.

Table 1: Proposed baseline management settings in tonnes (t) for RCO 2 from 1 October 2017

Option	Total Allowable Catch	Total Allowable Commercial Catch	Allowances		
			Customary Māori	Recreational	All other mortality caused by fishing
Current (baseline) settings	500	500	-	-	-
Option 1 (MPI preferred)	554 ↑	500	5	24	25
Option 2	561 ↑	500	5	31	25

492. After considering the submissions received, MPI recommends Option 1. This option is based on the best available information and proposes to increase the TAC by 54 tonnes. As part of this option MPI recommends setting the TACC for RCO 2 at the current amount of 500 tonnes, setting the recreational allowance at 24 tonnes, the Māori customary allowance at 5 tonnes and the allowance for other sources of fishing-related mortality at 25 tonnes. There are currently no known sustainability concerns for RCO 2 and MPI believes this option allows for commercial and non-commercial catch utilisation given the best available information.

## Need for review

493. Section 13(7) of the Fisheries Act 1996 allows that for RCO 2 (a species listed in Schedule 2), the Total Annual Catch (TAC) can be increased within a fishing year, reverting to the original level at the end of each season. Although a baseline TAC and TACC for RCO 2 has been set, baseline allowances for non-commercial sectors have not been set. This review provides the opportunity to set non-commercial allowances for the first time.

## CONTEXT

### Biological information

494. Red cod are a fast growing, short lived species with highly variable recruitment. These factors result in variable stock abundance and a large variation in availability between years.

### Fishery characterisation

#### *Commercial*

495. The significant majority of the commercial red cod catch in RCO 2 is caught as bycatch in the inshore bottom trawl fishery (approximately 97% of the RCO 2 catch reported between 2013/14 and 2015/16).

#### *Māori customary interests*

496. There is currently no Māori customary catch allowance for RCO 2. MPI notes that red cod are an important Māori customary species but information on customary catch is uncertain. MPI has no information to indicate that customary catch has changed significantly over the last few years with anecdotal information suggesting that customary catch is occurring within the recreational daily bag limit of 20 red cod. In meeting obligations to Māori, MPI is working together with relevant local iwi forums to improve customary reporting at all levels.
497. The taiāpure of Porangahau, Palliser Bay and the mātaimai reserves of Hakihea, Horokaka, Toke Tamure, Te Hoe, Moremore (a) and (b), and Marokopa are all within or partially within the RCO 2 QMA MPI notes that proposals in this paper will not significantly impact on, or be impacted by, these taiāpure and mātaimai reserves. As the RCO 2 QMA is not in South Island waters, it does not encompass any areas covered by section 186B of the Act.

## *Recreational*

498. There is a medium amount of recreational interest in RCO 2. Most red cod in RCO 2 is caught by rod and line with occasional set-net catch. Regulations<sup>40</sup> governing the recreational harvest of red cod in RCO 2 include a minimum legal size of 25 cm and a combined maximum daily bag limit of 20. There is a minimum mesh size of 100 mm for nets used to catch red cod.
499. There is currently no recreational catch allowance for RCO 2 set. The best available information is from the most recent National Panel Survey of recreational fisheries, which estimated that 23.7 tonnes of red cod were caught by recreational fishers in the RCO 2 management area in the 2011/12 fishing year.<sup>41</sup> The best estimate of recreational catch is low compared to the commercial catch.
500. An updated estimate of recreational catch is expected to be conducted in 2017-18, and could inform any setting of the RCO 2 recreational allowance in the future.

## *All other mortality to the stock caused by fishing*

501. There is currently no specific allowance set for other sources of RCO 2 mortality caused by fishing. There are various potential other sources of mortality caused by fishing of RCO 2 but MPI is not able to quantify these precisely. In addition to any red cod below the minimum legal size that do not survive return to the sea, sources may include commercial discarding to avoid deemed value payments and unseen mortality caused by particular fishing methods.

## **Management approach**

502. The RCO 2 stock is managed to recognise its high inter-annual variability in abundance. The stock's inclusion on Schedule 2 of the Fisheries Act 1996 (the Act) allows for additional utilisation in years of high abundance by increasing the TAC within the fishing year through the provision of additional ACE to the commercial sector and increasing catch allowance for non-commercial sectors.
503. The TAC for RCO 2 was last reviewed in 2013 when the in-season review management approach was implemented. A TAC of 500 tonnes was set, with the ability for the TAC to be increased in years of high red cod abundance. No non-commercial allowances were set at that time.

## **Current stock status**

504. There is no recent estimate of the stock status of RCO 2. RCO 2 is primarily taken as commercial bycatch with minimal targeted fishing. Catch estimates from commercial fishing reports do not indicate any sustainability concerns to the stock status.

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<sup>40</sup> Fisheries (Amateur Fishing) Regulations (2013)

<sup>41</sup> Wynne-Jones J, Gray A, Hill L, Heinmann A (2014) National Panel Survey of Marine Recreational Fishers 2011-2012: Harvest Estimates. New Zealand Fisheries Assessment Report 2014/67. 139p.

<sup>3</sup> Hartill B, Davey N (2015) Mean weight estimates for recreational fisheries in 2011-2012. New Zealand Fisheries Assessment Report 2015/25. 37p.

505. The RCO 2 fishery is characterised by large variations in catches between years. Research indicates that this variation in catch is due to varied recruitment success from year to year causing biomass fluctuations, rather than changes in catchability.

## Statutory Considerations specific to RCO 2

506. It is implicit that options provided in this document comply with the purpose and principles of the Act. In formulating this final advice, MPI has complied, on your behalf, with the legal requirements with regard to consultation, providing for tangata whenua input and participation and kaitiakitanga. Further detail with respect to these provisions and specific to the proposals for RCO 2 is found in the Addendum below
507. With respect to specific considerations when setting a TAC, allowances, and a TACC for the stocks in question, sections 11, 13, 20 and 21 of the Act apply. Relevant matters for your consideration are outlined in more detail in the Addendum below.
508. In summary, both options are considered to be not inconsistent with the objective (under s 13) to move or maintain the stock at or above the level that will produce MSY and to pose limited risk to associated species or the environment. The options differ in terms of making allowances for recreational fishing, for which the information is uncertain, but unlikely to pose a sustainability risk to the stock. These matters are outlined in the section below on evaluating options.

### SECTION 13 – SETTING THE TAC

509. In cases such as red cod in RCO 2, where estimates for current biomass ( $B_{CURRENT}$ ) and  $B_{MSY}$  are not known, the TAC must be set under section 13(2A). The options presented in this paper take into account the requirements listed in s 13(2A) and 13(3) of the Act, as discussed in the Statutory Considerations section in Part 2 of this paper.
510. No target stock level has yet been determined for RCO 2, however, MPI considers that the proposed increase of the TAC for RCO 2 is not inconsistent with the s 13 objective of maintaining the stock at or above, or moving towards or above, a level that can produce the maximum sustainable yield. (MSY). The options within this paper provide you with a choice on how you fulfil your obligations under this section.
511. When making a decision concerning the TAC for a stock under s 13(2A), you must have regard to the interdependence of stocks, the biological characteristics of the stock and any environmental conditions affecting the stock. While RCO 2 is caught in association with several other species, there is uncertainty about whether or not the current level of commercial RCO 2 catch is affecting the sustainability or productivity of other stocks or species in areas where red cod also occur. It is unlikely that the proposed increase to the TAC will increase impacts on other stocks as the setting of the RCO 2 TAC is a consequence of setting non-commercial allowances, rather than an increase in the commercial catch allowance.
512. MPI considers that both options proposed (see Table 1) for setting the baseline TAC could provide for an appropriate baseline allowance for the non-commercial harvest and all other mortality caused by fishing of red cod in RCO 2. MPI has considered both the past and the potential future catch of RCO 2 and provides two options (see Table 1) with

differing degrees of caution. Option 1 proposes a TAC based on the best available information of estimated recreational catch of red cod in RCO 2 from the 2011/12 National Panel Survey. Option 2 proposes a greater TAC to provide for the possibility that current recreational catch is higher.

## SECTIONS 20 AND 21 – ALLOWANCES AND THE TACC

### Allowances

513. In setting the TACC you must have regard to the TAC and make allowances for Māori customary non-commercial fishing interests, recreational fishing interests and all other mortality to the stock caused by fishing (s 20 and 21 of the Act).

#### *Customary Māori allowance*

514. There is no information to indicate that customary catch is occurring in excess of the current recreational limits. MPI considers the customary allowance of 5 tonnes for both options to be appropriate to provide for customary harvest in the foreseeable future.

#### *Recreational allowance*

515. The 2011/12 National Panel Survey provided an estimate that 23.7 tonnes of red cod was harvested recreationally in RCO 2 during the 2011/12 fishing year. Given uncertainty in using this estimate to predict current or future catches and the indications of variable stock biomass, MPI considers it reasonable to provide two options for setting the recreational allowance for RCO 2. These two options are evaluated below.

#### *All other mortality caused by fishing*

516. The allowance for other sources mortality caused by fishing is proposed to be set at 25 tonnes, or 5% of the TACC. MPI has no information to suggest this proportion should be changed.

### TACC

517. Under both options presented MPI proposes to set the TACC at the current level of 500 tonnes.

## SECTION 75 – DEEMED VALUE RATES

518. The review of deemed value rates for RCO 2 has not been triggered by landings in excess of TACC or a significant change in port prices. MPI does not propose increasing the annual deemed value rate for RCO 2.

519. Consistent with the deemed value guidelines, MPI proposes to increase the interim deemed value rates of RCO 2 from 50% of the annual deemed value rate to 90%, to incentivise fishers to balance their ACE throughout the year. Further details are provided in the Deemed Value Rates section of this document (Part 6).

## Submissions received

520. Six submissions on the RCO 2 proposals were received from the following organisations:
- a) Fisheries Inshore New Zealand Limited (FINZ)
  - b) Iwi Collective Partnership (ICP)
  - c) New Zealand Sport Fishing Council (NZSFC)
  - d) Sanford Limited (Sanford)
  - e) Spearfishing New Zealand (SNZ)
  - f) Tūhoe Te Uru Taumatua

## OTHER MATTERS

521. Three submissions representing commercial industry interests, from FINZ, ICP and Sanford did not express a preference for either Option 1 or Option 2.
522. As only non-commercial allowances were proposed to be set, FINZ and Sanford submit that reviewing the current commercial allowance has not been given due consideration in the wider RCO 2 TAC review process.
523. FINZ submits that the performance of the management procedure significantly compromises the in-season decision-making process and does not meet the intent of the management approach in a timely manner. ICP also support FINZ's submission on this issue. MPI accepts that the in-season process needs improving in order to deliver more effectively the benefits to fishers that the process intends and will consider how to address this for future reviews.
524. FINZ submit that due to inefficiencies of the in-season process and issues concerning deemed value rate adjustments, the overall management approach for the RCO 2 stock needs to be reviewed. Sanford supports the submission of FINZ on this issue and further submits that in-season reviews need to concurrently consider the appropriateness of the TAC and TACC for purposes of sustainable utilisation.
525. FINZ's submission on the proposed deemed value rates for RCO 2 are addressed in the Deemed Value Rates section of the document.



## Evaluation of Options

526. MPI is not recommending any changes to the commercial catch allowance and notes that an in-season review can provide for an increased commercial catch allowance within a given fishing year.
527. The baseline TAC has been set for RCO 2, but non-commercial allowances have not. MPI considers the current TAC is not reflective of the catch and mortality of RCO 2 across all fishing sectors. This review provides the opportunity to set baseline allowances for Māori customary fishers, recreational fishers and all other mortality caused by fishing, for the first time. MPI proposes that the baseline TACC be set at the current level of 500 tonnes in both options. Two alternative recreational allowances are proposed and are reflected in different TAC options.
528. Following input and participation with customary groups prior to consultation, MPI proposes a Māori customary catch allowance of 5 tonnes for both options presented, a level consistent with the Māori customary catch allowance for RCO 3.
529. MPI proposes to set the baseline allowance for other sources of mortality caused by fishing at 25 tonnes, of 5% of the baseline TACC, for both options presented. This level is consistent with the proportional level that is set for RCO 3, a similar trawl fishery to RCO 2.

### OPTION 1 (*MPI Preferred*)

530. MPI proposes a recreational allowance of 24 tonnes under Option 1, based on the best available information from the National Panel Survey from 2011/12. MPI notes that there is uncertainty in using the estimate from 2011/12 to estimate or predict current recreational catches, but without further information, considers this estimate best reflects the current recreational harvest of red cod in RCO 2. In addition, the reported commercial catches in 2011/12 were high relative to other years, suggesting that the recreational estimate may have been made in a year of relatively high abundance.
531. Tūhoe Te Uru Taumatua support Option 1.

### OPTION 2

532. Option 2 takes into account the uncertainty using the estimate from 2011/12 to estimate or predict current recreational catches. Given that there may have been an increase in recreational fishing effort since 2011/12, and to allow for the possibility that red cod recreational catch was underestimated, MPI proposes a higher recreational allowance of 31 tonnes under Option 2 (Table 1).
533. NZSFC and SNZ support Option 2.
534. NZSFC acknowledges that you have an obligation to allow for non-commercial fisheries and submits that setting allowances for RCO 2 under Option 2 would best provide for this. SNZ also support the proposal under Option 2.

# Addendum: Assessment against statutory obligations

## SECTION 8 – PURPOSE OF THE ACT

535. MPI considers that both options presented in this paper satisfy the purpose of the Act on the basis that they provide for the utilisation of the RCO 2 while ensuring sustainability.

## SECTION 9 – ENVIRONMENTAL PRINCIPLES

536. The proposals are not expected to significantly change the environmental impact or interactions of the RCO 2 fishery. The increased TAC and the allowances proposed reflect best information, and are not expected to result in increased fishing effort by any sectors. A summary of the interactions between the RCO 2 fishery and the aquatic environment, and how these are likely to be affected by the proposals, is provided below. You are required to take into account the environmental principles set out below when exercising powers under the Fisheries Act 1996.

### Maintaining viability of associated or dependent species (s 9(a))

#### *Seabirds, mammals and protected fish*

537. The current interactions between the target RCO 2 fishery and protected species are unknown, but likely to be relatively minor given the relatively small amount of targeting that occurs.
538. However, the RCO 2 QMA overlaps with part of the known range of the Maui's dolphin. Due to their low abundance around the Northern Taranaki coast in the North Island the endemic Maui's dolphin is declared as a threatened species under the Marine Mammals Protection Act 1978. The set net and bottom trawl fisheries in this area have been subject to a range of measures designed to reduce interactions with Maui's dolphins under the Maui's Dolphin Threat Management Plan.<sup>42</sup>
539. MPI considers there will be no additional effects on protected species from commercial fishing given that no increases to the RCO 2 TACC are proposed and the setting of non-commercial allowances reflects the current levels of harvest and mortality in the fishery.

### Biological diversity of the aquatic environment (s 9(b))

540. MPI notes that these proposals to vary the TAC, set the TACC at the current level set non-commercial allowances and are unlikely to give rise to adverse effects on the biological diversity of the aquatic environment as there is no anticipated increase to fishing effort from any sectors.

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<sup>42</sup> For more information, see <http://fs.fish.govt.nz/Page.aspx?pk=168&tk=531>

## Habitats of particular significance for fisheries management (s 9(c))

### *Benthic impacts*

541. MPI notes specific local area concerns that are being discussed in Hawke Bay, where approximately two-thirds of commercially caught RCO 2 has been taken in recent years. Red cod is primarily taken by the commercial bottom trawl fishery.
542. All of these proposed changes are unlikely to result in a change in effort, they aim to better reflect current practice. Therefore no change to benthic impacts from these proposed changes are anticipated.

## SECTION 10 – INFORMATION PRINCIPLES

543. MPI considers that the advice provided is based on the best available information from the National Panel Survey of recreational harvest of red cod in RCO 2 and that uncertainty, inadequacy, or lack of information has been taken into account.

## SECTION 11 – SUSTAINABILITY MEASURES

544. The general considerations under s 11 are provided in the section above on Statutory Considerations and Policy Guidelines. This section sets out any specific considerations that relate to RCO 2.
  - a) Section 11(1)(b): take into account any existing controls under the Act that apply to the stock or area concerned. For this stock the measures that apply currently are a TAC, TACC, and allowances for customary take, recreational take, and other sources of fishing-related mortality. Other standard management controls apply to the RCO 2 fishery, for example deemed values, amateur bag limits, and fishing method constraints. The proposed options do not affect these measures.
  - b) Sections 11(2)(a) and (b): have regard to any provisions of any regional policy statement, regional plan, or proposed regional plan under the Resource Management Act 1991 and any management strategy or management plan under the Conservation Act 1987 that apply to the coastal marine area and that you consider relevant. MPI considers that both options proposed are consistent with the Maui's Dolphin Threat Management Plan. MPI is not aware of any other policy statements, plans or strategies that should be taken into account for RCO 2.

## SECTION 12- CONSULTATION AND INPUT AND PARTICIPATION

### Input and Participation

545. Section 12 (1)(b) requires that before you make decisions under sections 11 to 15 of the Act you must provide for the input and participation of tangata whenua by establishing regional Iwi Fisheries Forums and assisting iwi in those Forums to develop iwi fisheries plans. MPI meets with all Forums three times a year.

546. The Forums have the opportunity to consider proposals at an early stage to contribute to refinement of the proposals. They have also been consulted on the final options. In respect of the RCO 2 fishery, MPI meets with the Te Tai Hauāuru Regional Fisheries Forum and Nga Hapu o Te Uru Fisheries Forum.

### Kaitiakitanga

547. Section 12(1)(b) requires that you provide for the input and participation of tangata whenua and have particular regard to kaitiakitanga before setting or varying a TAC. The Fisheries Act 1996 provides an interpretation of kaitiakitanga.<sup>43</sup>

548. Relevant Iwi or Forum Fish Plans provide a view of the objectives and outcomes iwi seek from the management of the fishery and can provide an indication of how iwi exercise kaitiakitanga over fisheries resources. Iwi views from Forum meetings and submissions received from iwi can also provide an indication.

549. Prior to formal consultation, relevant iwi forum in the RCO 2 QMA were approached for their view on a nominal 1 tonne Māori customary catch allowance. In considering feedback following this, MPI proposed an allowance of 5 tonnes for Māori customary fishers for formal consultation in both of the RCO 2 options presented.

550. During the consultation period Te Tai Hauāuru Regional Fisheries Forum expressed support for Option 2. The Forum commented that Māori customary fishers often exercise their customary fishing rights by fishing for red cod within recreational limits.

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<sup>43</sup> Kaitiakitanga is the exercise of guardianship, and in relation to fisheries resources, as exercised by the appropriate tangata whenua in accordance with tikanga Māori

## Conclusion and Recommendations

553. MPI recommends that you implement Option 1. MPI considers that this option best reflects the recreational and Māori customary harvest based on the most recent survey of recreational harvest of RCO 2 in 2011/12. MPI has no information to indicate non-commercial catch allowances should be set at a higher level than proposed under Option 1.
554. MPI notes that you have broad discretion in exercising your powers of decision making, and may make your own independent assessment of the information presented to you in making your decision. You are not bound to choose the option recommended by MPI. MPI considers both options are consistent with your statutory obligations.

### *Option 1*

**Agree** to increase the RCO 2 TAC from 500 tonnes to 554 tonnes and within the TAC:

- v. Set the allowance for Māori customary non-commercial fishing interests at 5 tonnes;
- vi. Set the allowance for recreational fishing interests at 24 tonnes;
- vii. Set the allowance for other sources of mortality caused by fishing at 25 tonnes;
- viii. Set the TACC at 500 tonnes.

**Agreed / Not Agreed**

OR

### *Option 2*

**Agree** to increase the RCO 2 TAC from 500 tonnes to 561 tonnes and within the TAC:

- i. Set the allowance for Māori customary non-commercial fishing interests at 5 tonnes;
- ii. Set the allowance for recreational fishing interests at 31 tonnes;
- iii. Set the allowance for other sources of mortality caused by fishing at 25 tonnes;
- iv. Set the TACC at 500 tonnes

**Agreed / Not Agreed**

*arg*  
Hon Nathan Guy  
Minister for Primary Industries

*21/8* / 2017



## Red Gurnard (GUR 7)

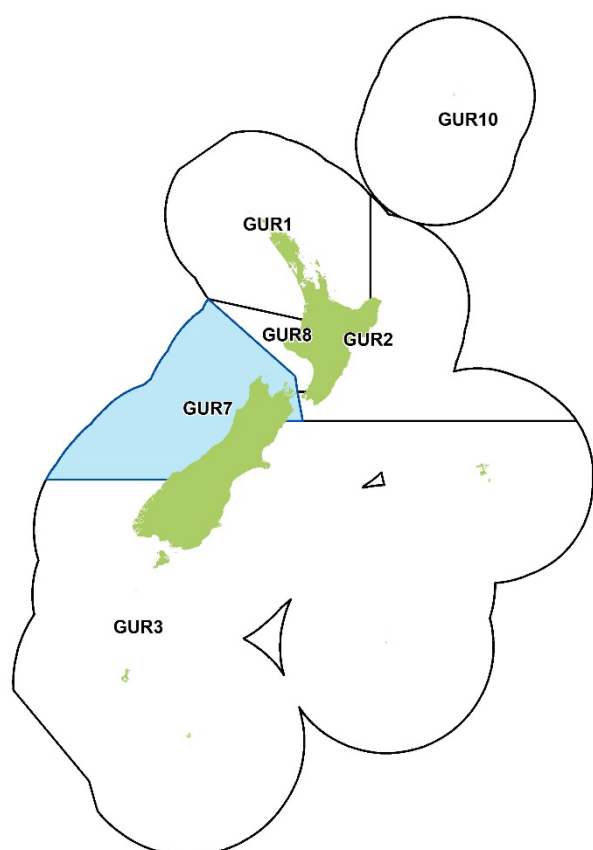


Figure 1: Quota management areas (QMAs) for red gurnard, with GUR 7 highlighted in blue.

### Summary

553. The Ministry for Primary Industries (MPI) consulted and sought input from tangata whenua on three options for management settings for red gurnard (*Chelidonichthys kumu*; kumukumu) in GUR 7 (see Figure 1) following new science information that indicates increased abundance. These options, including a new option (Option 3A) that includes a slightly higher customary allowance, are set out in Table 1:

Table 1: Proposed management settings in tonnes (t) for GUR 7 from 1 October 2017

Option	Total Allowable Catch	Total Allowable Commercial Catch	TACC tonnage increase and % change	Allowances		
				Customary Māori	Recreational	All other mortality caused by fishing
Option 1 ( <i>Status quo</i> )	919	845	-	10	22	42
Option 2	984 ↑	905 ↑	60 t ↑ (7%)	11 ↑	24 ↑	44 ↑
Option 3	1062 ↑	975 ↑	130 t ↑ (15%)	12 ↑	25 ↑	50 ↑
Option 3A (new; MPI preferred)	1065 ↑	975 ↑	130 t ↑ (15%)	15 ↑	25 ↑	50 ↑

554. Deemed value rates were reviewed for GUR 7. As the current interim and annual deemed value rates for GUR 7 are consistent with the Guidelines (Appendix 1), no changes to the deemed value rates are proposed.

555. After considering the submissions and feedback received, MPI recommends Option 3A, which is Option 3 amended to include a slightly higher customary allowance. This option increases the TAC by 146 tonnes. As part of this option the TACC for GUR 7 is increased by 130 tonnes, the customary Māori allowance is increased by five tonnes, the recreational allowance is increased by three tonnes and the allowance for all other mortality caused by fishing is increased by eight tonnes. MPI believes this option best utilises the increase in biomass whilst ensuring sustainability.

## Need for review

556. The best available information suggests that there is a utilisation opportunity for GUR 7. The 2017 West Coast South Island (WCSI) research trawl survey biomass estimate suggests that the red gurnard biomass in GUR 7 is currently three times the target reference point. Therefore there is an opportunity to increase utilisation (increase the TAC) while ensuring sustainability of red gurnard within GUR 7.
557. Increasing the TAC and TACC during periods of red gurnard abundance better reflects increased abundance of red gurnard in mixed fisheries and creates opportunities for greater benefits to be obtained from the fishery.

## CONTEXT

### Biological information

558. Red gurnard have a fast growth rate and relatively short lifespan, and fluctuations in recruitment tend to result in large fluctuations in stock biomass. GUR 7 appears to be experiencing a recruitment pulse (consecutive years of good recruitment) as both 2015 and 2017 WCSI trawl survey biomass indices have been high, with 2015 being the highest level recorded for the series.

### Fishery characterisation

#### *Commercial*

559. Red gurnard in GUR 7 is a major bycatch of inshore trawl fisheries alongside flatfish, red cod, stargazer, barracouta and tarakihi. Some target fishing for red gurnard occurs off the west coast of the South Island and a little occurs in Tasman and Golden Bays.
560. Red gurnard was introduced into the Quota Management System (QMS) in 1986 and the TACC for GUR 7 was based on the 1983 landings. Landings for the GUR 7 fishery have exhibited peaks and troughs characteristic of fluctuating changes in red gurnard abundance (Figure 2).



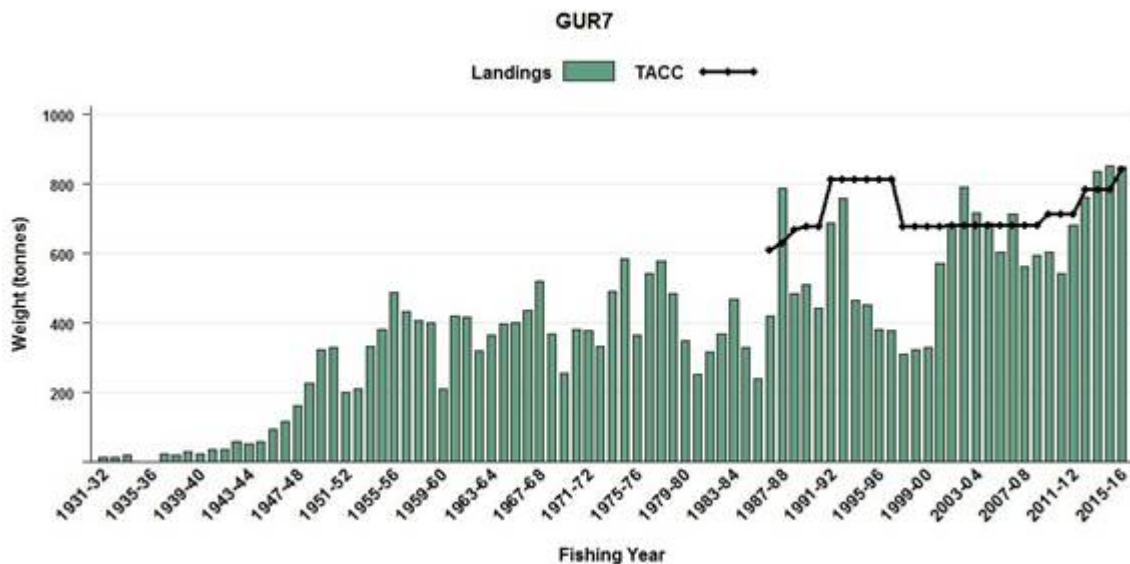


Figure 2: Reported commercial landings and TACCs for GUR 7 from 1931/32 to 2015/16.

### *Māori customary interests*

561. Red gurnard (kumukumu) is an important species for customary fishers, as it is widely distributed in shallow, easily accessible coastal waters. Kumukumu is identified as a taonga species in the Te Waipounamu Iwi Fisheries Plan. This plan contains objectives to support and provide for the interests of South Island iwi. Consistent with the objectives of this plan, MPI is supporting and providing for the interests of South Island iwi by providing allowances that adequately allow for the utilisation of customary resources.
562. While there is no recorded customary catch of red gurnard in GUR 7, this likely reflects that tangata whenua in the Marlborough Sounds and Tasman/Golden Bay area are still operating under regulation 50 of the Fisheries (Amateur Fishing) Regulations 2013 (the Amateur Regulations), which do not require that customary permits or catches be reported. MPI has been working with Iwi to roll out the adoption of the Fisheries (South Island Customary Fishing) Regulations 1999. MPI and stakeholders have agreed to changes to these regulations which will be put to Cabinet before the end of the year. This means that the iwi in the area are likely to adopt the new regulations progressively over the next two years. The new regulations require all customary catch to be reported, and will provide accurate information on customary harvest for this and other fish stocks in the area.
563. The taiāpure of Whakapuaka (Delaware Bay), and the mātaimai reserves of Okuru/Mussel Point, Tauperikaka, Mahitahi/Bruce Bay, Manakaiaua/Hunts Beach, Okarito Lagoon, Te Tai Tapu (Anatori), Te Tai Tapu (Kaihoka) are all within the GUR 7 QMA. MPI notes that the proposals in this paper will not significantly impact on, or be impacted by, these taiāpure and mātaimai reserves.

## *Recreational*

564. Red gurnard is an important recreational species across New Zealand. Recreational catches of gurnard are relatively low in GUR 7 compared to commercial gurnard catches.
565. The main methods used to manage recreational harvest of red gurnard are minimum legal size limits (MLS), method restrictions, and daily bag limits. Regulations<sup>44</sup> governing the recreational harvest of red gurnard from GUR 7 include a combined maximum daily bag limit of 20 fish, and the MLS is 25cm. There is no information to suggest a change to recreational controls would be needed and no changes to the recreational daily bag limit are proposed.

## *All other mortality to the stock caused by fishing*

566. The allowance for other sources of fishing-related mortality is currently set at 5% of the TACC. MPI has no information to suggest this proportion should be changed.

## **Management approach**

567. The trawl surveys on the West Coast of the South Island have been accepted as providing an index of abundance and were used to determine a  $B_{MSY}$  proxy biomass target (the mean total biomass from the surveys between 1992 and 2013) for GUR 7.
568. The  $B_{MSY}$  proxy biomass target provides a reference point and provides guidance on how to best respond to new information on GUR 7.
569. The management strategy for red gurnard in GUR 7 is to align management measures with changes in biomass. In a recruitment pulse, strong year classes are created which can then support increased utilisation. However, management must also respond to reductions in stock biomass during periods of low recruitment by reducing catch limits to ensure the sustainability of the fishery.
570. The catch limits for red gurnard in GUR 7 were last reviewed in 2014/15 when, based on the evidence of an increasing index of abundance from the 2015 WCSI trawl survey, the TAC was increased from 855 to 919 tonnes and the TACC was increased from 785 to 845 tonnes. Settings for the customary non-commercial allowance (10 tonnes) remained unchanged, the recreational allowance was increased from 20 to 22 tonnes, and the allowance for other sources of mortality was increased from 40 to 42 tonnes. The biomass of red gurnard in GUR 7 appears to have steadily increased since this review, and a greater opportunity for sustainable utilisation now exists.
571. The options proposed for the upcoming fishing year reflect the best available information. While a review can occur at any time, it is most likely that a review would next be considered for GUR 7 in 2019/20. This is when information from the 2019 trawl survey is scheduled to become available.

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<sup>44</sup> Fisheries (Amateur Fishing) Regulation (2013)

## Current stock status

572. Updated information in 2017 shows that the WCSI trawl survey relative biomass is well above the target level (see Figure 3). The 2017 Fisheries Assessment Working Group concluded that the current abundance of GUR 7 is very likely (> 90%) to be at or above the target, and that overfishing is unlikely (< 40%) to be occurring.
573. The 2017 WCSI Relative Index (trawl survey biomass) for GUR 7 (Figure 3, blue squares, left axis) is three times the target reference point of 436 tonnes. This corroborates the 2015 trawl survey biomass, which was the highest ever recorded in the series for both WCSI and Tasman/Golden Bays.

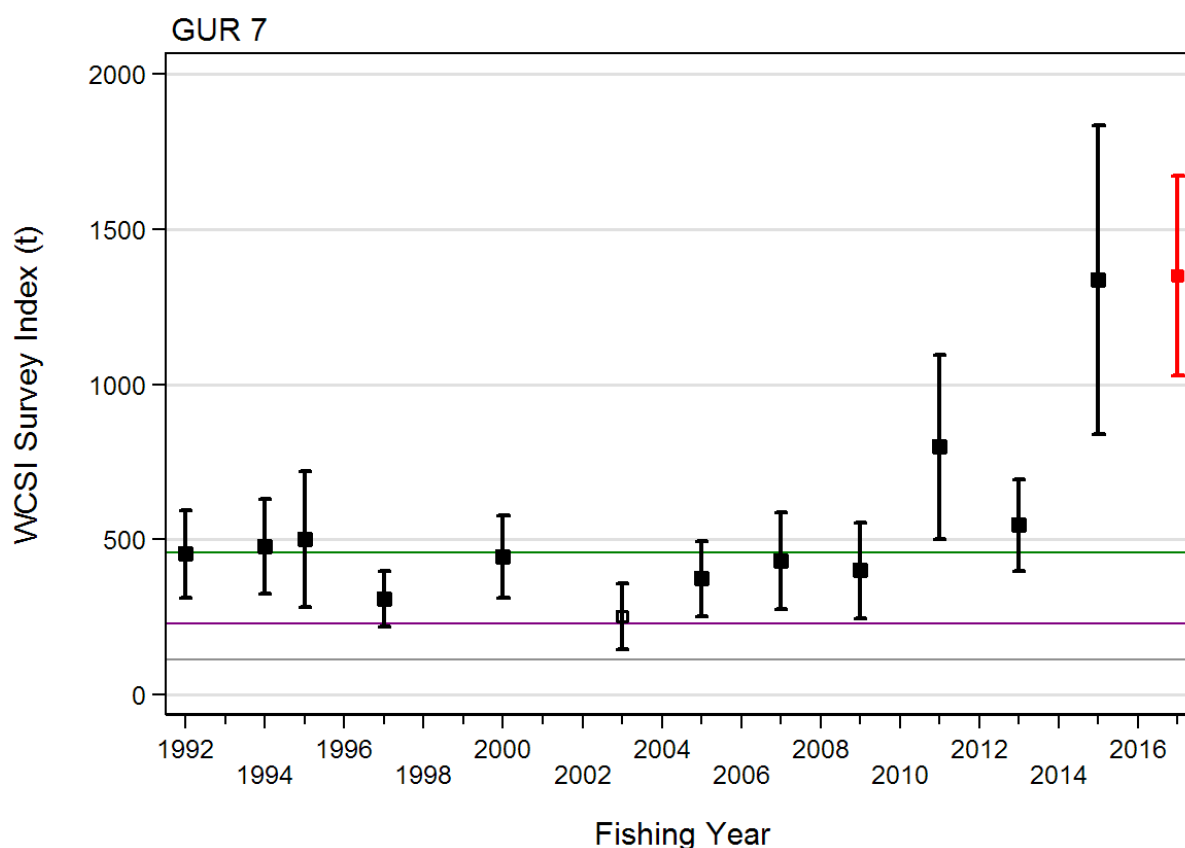


Figure 3: Plot of WCSI trawl survey indices for red gurnard, 1992–2017. The agreed  $B_{MSY}$  proxy (geometric average: 1992–2013 (excluding 2003) WCSI survey biomass estimates=460 t) is shown as a green line; the calculated Soft Limit ( $=0.5 \times B_{MSY}$  proxy) is shown as a purple line; the calculated Hard Limit ( $=0.25 \times B_{MSY}$  proxy) is shown as a grey line. The provisional 2017 WCSI biomass estimate is shown in red and the excluded 2003 survey is shown as a hollow marker.

574. The WCSI (mixed species and flatfish target) catch per unit effort (CPUE) of GUR 7 has increased considerably since 2009/10, staying stable since 2013/14. CPUE is currently 60% higher than the reference level, indicating current abundance is high and corroborating the WCSI trawl survey biomass estimates.

## Statutory Considerations specific to GUR 7

575. It is implicit that options provided in this document comply with the purpose and principles of the Act. In formulating this final advice, MPI has complied, on your behalf, with the legal requirements with regard to consultation, providing for tangata whenua

input and participation and kaitiakitanga. Further detail with respect to these provisions and specific to the proposals for GUR 7 is found in the Addendum below.

576. With respect to specific considerations when setting a TAC, allowances, and a TACC for the stock in question, sections 11, 13, 20 and 21 of the Act apply. Relevant matters for your consideration are outlined in more detail in the Addendum below.
577. In summary, all proposed options are considered to be not inconsistent with the objective (under s 13) to maintain the stock at or above the level that will produce MSY and to pose limited risk to associated species or the environment. The options differ in terms of the economic and social considerations of each option balanced against the sustainability risk and these matters are outlined in the section evaluating options.

## SECTION 13 – SETTING THE TAC

578. In cases such as GUR 7, where the level of biomass that can produce the maximum sustainable yield ( $B_{MSY}$ ) is not known, s 13(2A) of the Act provides for you to use the best available information<sup>45</sup> to set a TAC that is not inconsistent with the objective of maintaining the stock at or above, or moving the stock towards or above, the  $B_{MSY}$  level.<sup>46</sup> The options presented in this paper take into account the requirements listed in s 13(2A) and 13(3) of the Act, as discussed in the Statutory Considerations section in Part 2 of this paper.
579. The best available information is that the biomass levels of red gurnard in GUR 7 is currently well above the management target and likely to remain so in the short term as a result of good recruitment predicted by the 2017 WCSI survey. Consequently, there is an opportunity to increase utilisation (increase the TAC) while ensuring sustainability in a manner that is not inconsistent with the objectives of s 13.
580. The s 13(2A)(b) requirement to have regard to the interdependence of stocks when setting a TAC requires consideration of the effects of fishing on associated stocks harvested with the target stock. Red gurnard in GUR 7 is caught both as target (26% of red gurnard catch by weight) and as bycatch in fisheries that target flatfish (44%), red cod (9%), warehou (7%), tarakihi (5%) and other mixed inshore trawl species (8%) . Options 2, 3 and 3A in this paper would all result in an increase in GUR 7 TACC, with the potential to increase the amount of fishing effort in the red gurnard target fishery by up to 75% under Options 3 and 3A, and in the flatfish commercial fishery. It is unlikely an increase in the GUR 7 TAC will lead to an increase in the flatfish fishery as FLA 7 catch is currently undercaught. However any increase in FLA 7 would likely be minor in the context of existing fishing effort. MPI does not consider that increasing GUR 7 ACE poses a sustainability risk to the key species that are caught in conjunction with gurnard. Fish bycatch levels in these fisheries will continue to be monitored.

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<sup>45</sup> The WCSI trawl survey biomass data series has been accepted by the Fisheries Assessment Working Group as a reliable index of relative abundance for GUR 7. The reference period for the GUR 7 WCSI trawl series is the average estimated biomass from 1992 to 2013.

<sup>46</sup> The reference period for the GUR 7 WCSI trawl series is used as the management target for the stock, and considered to be a proxy for  $B_{MSY}$ , the level of biomass that can produce the maximum sustainable yield. The Harvest Strategy Standard defaults are used for the stock, where the soft limit is 50% of the target biomass, and the hard limit is 25% of the target biomass. The Harvest Strategy Standard is a policy statement of best practice in relation to the setting of targets and limits for New Zealand fishstocks managed under the Quota Management System. It is accessible at: <http://fs.fish.govt.nz/Page.aspx?pk=104>

## SECTIONS 20 AND 21 – ALLOWANCES AND THE TACC

581. Having set the TAC, you must set the TACC and in setting or varying the TACC must make allowances for Māori customary non-commercial fishing interests, recreational fishing interests, and all other mortality to the stock caused by fishing (sections 20 and 21 of the Act). You have considerable discretion under section 21 of the Act to allocate the catch as you consider reasonable to achieve the purpose of the Act.
582. MPI is proposing an increase of 7% (Option 2) or 15% (Options 3 and 3A) for all allowances and the TACC. The proposed increases to allowances are intended to better allow for the utilisation opportunity presented by the relatively high abundance of red gurnard in GUR 7. The commercial sector is the most constrained by the current settings. Recreational and customary harvests are relatively low compared to the commercial catch, but may be increasing with availability due to the increased biomass of the stock. Option 3A also takes into account the information and views of the relevant iwi forums that customary catch will increase over the next few years, by increasing the allowance by a further 3 tonnes.

### Allowances

#### *Customary Māori allowance*

583. You are required to set an allowance that represents the estimated customary non-commercial harvest.
584. The current level of Māori customary catch of red gurnard is uncertain. There is no recorded customary catch of red gurnard in GUR 7. Most iwi whose rohe includes GUR 7 are still operating under regulation 50 of the Fisheries (Amateur Fishing) Regulations 2013 (the Amateur Regulations), which do not require that customary permits or catches be reported. Amendments to the Fisheries (South Island Customary Fishing) Regulations 1999 mean that the iwi will adopt the new regulations and report actual customary catch in the next two years.
585. Te Waka a Māui me Ōna Toka Iwi Forum (TWAM) have requested an increase in the customary allowance for GUR 7 from the current allowance of 10 tonnes to 25 tonnes to accommodate any future pātaka, and the roll out of the amendment to the Fisheries (South Island Customary Fishing) Regulations 1999. Pātaka is a customary practice whereby commercial vessels will be engaged to catch species (which can already occur under a Customary Authorisation) and store the processed fish at a licenced fish receiver premises (the ‘Pātaka’). Pātaka must be authorised by the Director of Fisheries under section 192(7)(c) of the Fisheries Act 1996.
586. MPI agrees that customary take should be properly accounted for in a TAC setting. Fishing for pātaka is dependent on reaching agreements with appropriate fishing vessel operators to take fish during their normal fishing voyages. At this stage, it is difficult to estimate whether any red gurnard from GUR 7 would be included in a pātaka until such fishing agreements are developed. Once a pātaka is established and information received on the level of customary use, consideration of an appropriate allowance can be included in a future review of the fishery.

587. MPI further notes that in the meantime, the ability to take fisheries resources for a pātaka is already provided under the Fisheries (South Island Customary Fishing Regulations) 1999. Consequently, iwi utilisation opportunities are not constrained by the fact that there is currently no customary allowance for this purpose. The short-term risk of not having a customary allowance to specifically provide for pātaka is considered to be minor because the rate of extraction is likely to be relatively low, and in any case can be mitigated by further developing TAC allocation policy in the future.
588. With the further roll out of amendments to the Fisheries (South Island Customary Fishing) Regulations 1999 across the top of the South Island, it can be expected that reported customary catch will increase in future. Red gurnard are also likely to become increasingly available in the current recruitment pulse. Under these circumstances it is reasonable to provide an increase in the customary share to cover this situation as proposed in Option 3A. MPI considers that the proposed increase in customary allowances to 15 tonnes will allow for the estimated customary harvest of GUR 7.

#### *Recreational allowance*

589. The National Panel Survey of Marine Recreational Fishers 2011/12<sup>47</sup> (“National Panel Survey”) provides the best available information on recreational harvest in GUR 7. This survey estimated 12 tonnes of red gurnard were caught in GUR 7 in the 2011/12 fishing year. MPI acknowledges that recreational harvest can fluctuate hugely from year to year due to weather and economic factors. While this estimate is subject to uncertainty due to the relatively small numbers of events and fishers it was derived from, it is well within the current recreational allowance of 22 tonnes. MPI considers that the recreational allowances proposed adequately provide for recreational fishing.
590. MPI proposes to apply the same percentage increase to the TAC (a 7% increase for Option 2, and a 15% increase for Options 3 and 3A) to the allowance for recreational fishing, to reflect that red gurnard are likely becoming increasingly available in the current recruitment pulse. For Option 2 this results in a two-tonne increase to 24 tonnes, and for Options 3 and 3A this results in a three-tonne increase to 25 tonnes. MPI considers that the proposed allowance will allow for recreational take considering the likely increased availability of red gurnard given recent increases in abundance.
591. A repeat of the 2011/12 National Panel Survey will occur for 2017/18, and updated estimates of recreational catch in GUR 7 will be used to inform future management.

#### *All other mortality caused by fishing*

592. An allowance for all other mortality caused by fishing of 5% of the TACC is proposed for all options. While there is no information available to quantify all other mortality caused by fishing, the available evidence suggests that an allowance of 5% of the TACC is appropriate given the biological characteristics of the stock and mortality caused by trawling and commercial fishing.
593. For Option 1 (retaining the *status quo*) the allowance remains unchanged at 42 tonnes. For Option 2 (increasing the TACC by 60 tonnes, a 7% increase), a two-tonne increase to 44 tonnes is proposed, and for both Options 3 and 3A (increasing the TACC by 130 tonnes, a 15% increase) an eight-tonne increase to 50 tonnes is proposed.

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<sup>47</sup> Wynne-Jones J, Gray A, Hill L, Heinmann A (2014) National Panel Survey of Marine Recreational Fishers 2011-2012: Harvest Estimates. New Zealand Fisheries Assessment Report 2014/67. 139p

## TACC

594. The intention of the proposed increase is to reflect current catch levels and that provides greatest overall economic, social and cultural benefits to commercial users. The current TACC has been fully caught in the most recent years. Without allocating this increase to the commercial sector there is a likelihood, if the current level of catch is unavoidable, that fishers will continue to catch in excess of the TACC and pay deemed values.
595. The three options proposed for GUR 7 TACC (Table 1), a 7% increase (Option 2) and a 15% increase (Options 3 and 3A), are intended to provide an opportunity for increased sustainable utilisation of red gurnard in GUR 7. The options are higher than the TACC, or levels of landings, in GUR 7 over the past 15 years (Figure 4). This increase is proposed because of the strong signal from the WCSI trawl survey that the fishery is experiencing a pulse of increased abundance. MPI anticipates that the increase in TACC will cover the increased bycatch of gurnard as a result of its increased availability and abundance in GUR 7, rather than to provide for additional fishing effort.

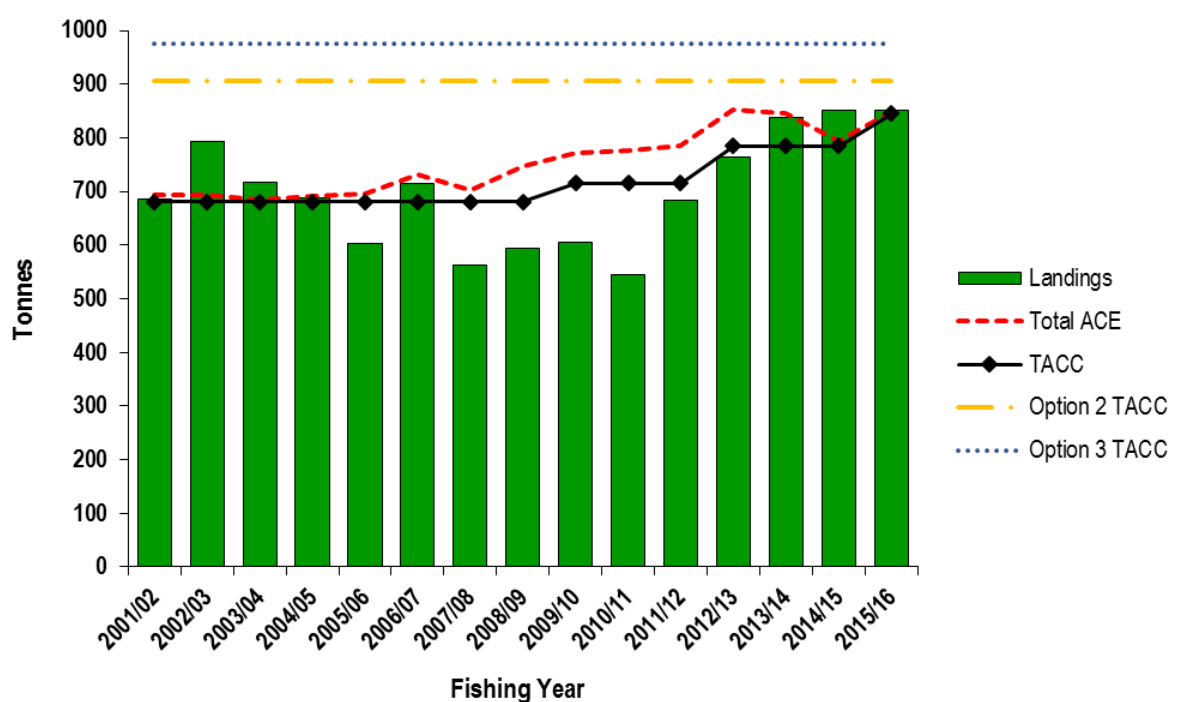


Figure 4: Annual catches vs TACC and available ACE for GUR 7 between 2001/02 and 2015/16, including TACC levels proposed for Options 2 and 3 (the TACC proposed for Option 3A is the same as Option 3).

## SECTION 75 – DEEMED VALUE RATES

596. The TAC for GUR 7 is being reviewed in 2017, which may have consequential implications for deemed value rates. However, no criterion apart from the TAC review is triggered and no deemed value rates adjustments for this stock are proposed in the 2017 Deemed Values section (Part 6).

## Submissions received

597. Submissions on the GUR 7 proposals were received from the following six organisations:
- Fisheries Inshore New Zealand (FINZ)
  - New Zealand Sport Fishing Council (NZSFC)
  - Our Fishing Future (OFF)
  - Southern Inshore Fisheries Management Company Limited (Southern Inshore)
  - Tasman and Sounds Recreational Fishers' Association Inc (TASFISH)
  - Tūhoe Te Uru Taumatua
598. Feedback was also received from TWAM as part of input and participation before and during the public consultation process.
599. Full submissions are attached in Appendix 2.

## Evaluation of Options

600. The final options for the setting the TAC, allowances, and TACC for GUR 7 are similar to those consulted on (Table 1). A revised Option 3A is proposed based on feedback received from tangata whenua.
601. The increases to catch limits and allowances proposed in Options 2, 3, and 3A are all considered to be sustainable, and supported by the best available information which suggests that red gurnard abundance in GUR 7 is at an all-time high. The current recruitment pulse is expected to stay in the fishery for the next 5-7 years, and it is expected that GUR 7 biomass will vary thereafter as recruitment fluctuates. MPI will continue to monitor the state of the GUR 7 fishery via the biennial WCSI inshore trawl survey to determine the need and timing of a future review of the TAC.
602. Increasing the TACC and allowances will allow fishers to take advantage of increased abundance of red gurnard. Predicted changes to commercial revenue based on the proposed options are outlined in Table 2. An additional benefit for commercial fishers is that an increased TACC would reduce the amount spent on deemed values, provided they constrain their catch within the commercial catch limit. Retaining the current TAC and TACC (Option 1, *status quo*) might result in opportunity loss through unnecessarily restrained catch.

Table 2: Predicted changes to commercial revenue of the proposed options, based on port price of \$1.73/kg for GUR 7 in 2016/17<sup>48</sup>

	TACC (t)	Change from status quo (t)	Predicted revenue change (\$ p.a.)
Option 1 ( <i>Status quo</i> )	845		
Option 2	905	60 ↑ (7%)	103,800 ↑
Option 3	975	130 ↑ (15%)	219,700 ↑
Option 3A	975	130 ↑ (15%)	219,700 ↑

<sup>48</sup> The economic impact of the proposals estimated here is a guide only as it does not take into account conversion factors for different product states, export figures, or ACE price of the stock. Conversion factors and export figures were not used as GUR is largely domestically sold and almost entirely landed green (GRE).



603. In 2015, 11% of red gurnard caught by commercial operators was exported. This is a similar level to previous years. Red gurnard is an important fish on the domestic market and increasing the TACC will increase the availability of this fish for New Zealand consumers.
604. Available information suggests recreational and customary Māori take is within current allowances. However, non-commercial take may be increasing considering the current recruitment pulse and increased stock abundance in the fishery.

### OPTION 1 (*Status quo*)

605. Option 1 is the *status quo* and proposes no changes to the TAC, TACC or allowances for customary Māori fishing, recreational fishing, or other sources of mortality for GUR 7.
606. The Tasman and Sounds Recreational Fishers' Association (TASFISH) and Our Fishing Future (OFF) support Option 1. TASFISH considers that GUR 7 is unfairly allocated between commercial and recreational users, and that the recreational allowance is too small, which is constraining recreational fishing for red gurnard in GUR 7. TASFISH proposes an alternative option with an increased recreational allowance (discussed below). OFF supports TASFISH's submission on all counts.
607. TASFISH submits that the recreational allowance should be increased to provide for increased recreational catch and to acknowledge the importance of red gurnard to recreational fishers in GUR 7. MPI notes, however, that when compared to best available information (the 2011/12 National Panel Survey estimate<sup>49</sup>), TASFISH's submission overestimates the number of recreational fishers in GUR 7 and overestimates the average size of red gurnard, thereby inflating the allowance they consider necessary to provide for recreational use of red gurnard.
608. MPI acknowledges that red gurnard is an important species for recreational fishers, but considers that the proposed recreational allowance and daily bag limit (20) amply provide for recreational use of the resource. MPI notes that you have broad discretion in making allocation decisions, and that it may be reasonable not to fully satisfy a sector's aspirations. In addition, MPI notes that commercially caught red gurnard is largely sold domestically, and that the commercial allowance provides red gurnard for New Zealand consumers.
609. TASFISH proposed that an alternative option with a larger recreational allowance be submitted to you.<sup>50</sup> This is not supported by MPI because the best available information suggests the recreational allowance proposed by the existing options reflects and provides for current recreational catch and is a reasonable share of the total catch. The recreational allowance proposed in all options, including the *status quo*, is considerably larger than the estimated catch of red gurnard in GUR 7 (the 2011/12 National Panel Survey estimate was 12 tonnes<sup>51</sup>; Options 2, 3 and 3A are at least two times that

<sup>49</sup> Wynne-Jones J, Gray A, Hill L, Heinmann A (2014) National Panel Survey of Marine Recreational Fishers 2011-2012: Harvest Estimates. New Zealand Fisheries Assessment Report 2014/67. 139p

<sup>50</sup> The "Option 4" proposed by TASFISH is a TAC of 984 tonnes, a recreational allowance of 48 tonnes, a customary Māori allowance of 24 tonnes, and a TACC of 868 tonnes.

<sup>51</sup> Wynne-Jones J, Gray A, Hill L, Heinmann A (2014) National Panel Survey of Marine Recreational Fishers 2011-2012: Harvest Estimates. New Zealand Fisheries Assessment Report 2014/67. 139p

amount). As the recreational allowance is not constraining recreational take of red gurnard in GUR 7, MPI does not consider that a larger recreational allowance is necessary at this stage, but will reassess the recreational allowance when updated information on recreational catch becomes available from the 2017/18 repeat of the National Panel Survey.

610. Option 1 takes a very cautious approach and proposes not to respond to the indication of increased relative abundance given uncertainty about the level of the stock in relation to the target level, which is a proxy for  $B_{MSY}$ . This cautious approach may be preferred if there were not plans to monitor the stock and review the management settings regularly. However, considering that the WCSI trawl survey regularly assesses the relative biomass of red gurnard in GUR 7, and this information can be used to monitor the relative abundance of the stock, MPI does not support this option.

## OPTION 2

611. A 60 tonne (7%) increase in the TACC (Option 2) is likely to be a modest response to the increased GUR 7 biomass. The expected effect on revenue of Option 2 is shown in Table 2.
612. Under Option 2, MPI is proposing to increase the non-commercial allowances by 7% (increasing the Māori customary allowance by one tonne to 11 tonnes, and increasing the recreational allowance by two tonnes to 24 tonnes). The increase allows for a likely increase in the availability and catch of gurnard given the increase in abundance.
613. Two submissions were received in support of Option 2. Tūhoe Te Uru Taumatua support Option 2. Tūhoe Te Uru Taumatua represents the interests of the Tūhoe iwi.
614. The New Zealand Sport Fishing Council (NZSFC) also support Option 2. The NZSFC support a more precautionary increase since it considers that the WCSI Relative Index (trawl survey biomass) does not provide sufficient evidence of a substantial enough increase over a long enough timeframe to support a larger increase in the TAC. NZSFC submit that data from fishery independent surveys will become increasingly important with changes in technology, and support precaution until these data become available.
615. MPI notes, however, that the signal from the WCSI Relative Index (trawl survey biomass) is a strong signal that has persisted at historically high levels for the past two surveys. MPI is confident that not only is this a genuine signal of increased relative abundance, but that should relative abundance of red gurnard in GUR 7 decrease in the future as can be expected with the cyclical characteristic of this species, management action will occur to ensure the sustainability of the stock.
616. No information has been provided that justifies Option 2 as a better option than others in this paper. MPI recommends that you do not implement Option 2.

## OPTIONS 3 AND 3A (MPI Preferred)

617. A 130 tonne (15%) increase in the TACC (Option 3) places greater weight on the information showing increased abundance and further opportunities for sustainable utilisation. The expected effect on revenue of these options is shown in Table 2.

618. Under Option 3, MPI proposes increasing the non-commercial allowances (increasing the Māori customary allowance by 15%, a two-tonne increase to 12 tonnes, and increasing the recreational allowance by 15%, a three-tonne increase to 25 tonnes). These increases allow for a likely greater harvest of red gurnard given the increase in stock abundance and availability.
619. The new Option 3A responds to TWAM's proposal to increase the customary allowance for GUR 7 with a modest increase in customary allowance (refer paragraphs 99 – 102 of the Addendum for a discussion of this new revised option) to better reflect their customary fishing objectives. MPI notes that there is no available data on the amount of GUR 7 taken for customary purposes.
620. Two submissions were received in support of Option 3. Both Southern Inshore Fisheries Management Company Limited (Southern Inshore) and Fisheries Inshore New Zealand (FINZ) support Option 3. Southern Inshore considers that the trawl survey biomass confirms the increased abundance of red gurnard in GUR 7 and that the survey and CPUE information enable continued monitoring of the fishery. Southern Inshore note that the TACC increase proposed does not compromise the sustainability of the GUR 7 fishery as the biomass of this fishery is currently significantly higher than the target level. FINZ supports Southern Inshore's submission and notes that the increase proposed is relatively low and will not affect the sustainability of the healthy stock.
621. MPI notes that under this option ongoing biennial monitoring through the WCSI trawl survey is essential. The TAC will need to be reviewed again if there are any significant changes in abundance. The GUR 7 fishery will next be surveyed in 2019 so the sustainability risk of both Option 3 and 3A is low.
622. If the 2019 WCSI trawl survey shows a significant decline in red gurnard relative biomass in GUR 7, then MPI may need to review the TAC again in 2019. This could result in a reduction of the TACC and a lack of financial certainty for the commercial sector.
623. MPI recommends you implement Option 3A. This option provides for a level of utilisation that is sustainable given the current signal of relative abundance provided by regular biennial monitoring of the stock. The increase proposed is modest and poses no sustainability risk to the stock. Increasing the TAC by the amount proposed in Option 3A is not considered to be inconsistent with the objective of maintaining the stock at or above, or moving the stock towards or above, a level that can produce the maximum sustainable yield.

## Addendum: Assessment against statutory obligations

624. The following section provides information specific to the application of the generic considerations (see Part 2) to GUR 7.

### SECTION 8 – PURPOSE OF THE ACT

625. MPI considers that all options presented in this paper satisfy the purpose of the Act on the basis that they provide for the utilisation of red gurnard in GUR 7 while ensuring sustainability.

### SECTION 9 – ENVIRONMENTAL PRINCIPLES

626. A summary of the interactions between the GUR 7 fishery and the aquatic environment, and how these are likely to be affected by the proposals, is provided below.

#### Maintaining viability of associated or dependent species (s 9(a))

627. Options 2 and 3 could result in an increase of interactions with protected species in these fisheries, although MPI does not expect this to be significant.
628. Considering that red gurnard is primarily a bycatch species but with 26% of the catch by weight coming from tows targeting red gurnard, the proposed increase to the GUR 7 TAC could increase the actual number of inshore trawls that are completed in the fishery under Option 2 and 3 (and 3A).
629. If the increase to the TACC was solely caught by tows targeting red gurnard, then red gurnard catch in red gurnard target tows could increase by as much as 75% under Option 3. Because risk is proportional to effort, GUR 7 TAC changes may affect protected species risk, but to a limited extent, as any additional tows would be expected to occur in areas that are already fished and be minor in the context of existing fishing effort.

#### *Seabirds*

630. Management of seabird interactions with New Zealand's commercial fishers is driven through the 2013 National Plan of Action to Reduce the Incidental Captures of Seabirds in New Zealand (NPOA Seabirds). The NPOA Seabirds has established a risk-based approach to managing fishing interactions with seabirds, targeting management actions at the species most at risk as a priority, but also aiming to minimise captures of all species to the extent practicable.
631. Inshore trawl fisheries in Fisheries Management Area 3 (the same boundaries as GUR 7) were assessed as having very low levels of risk of mortality to a small number of seabird species. MPI does not anticipate any increased risk of mortality to seabird species as a result of any of the proposals outlined in this paper, as the increases to catch limits proposed are modest and will likely cover existing levels of bycatch only.

## Marine mammals

632. Depending on the area of the country, inshore trawls have resulted in captures of common dolphin, bottlenose dolphin, and New Zealand fur seal in the past six years (occurring in 2011, 2014, and 2016 respectively). Hector's dolphins, New Zealand fur seals and New Zealand sea lions occur on the west coast of the South Island and consideration needs to be given to potential implications of an increase of the TAC for GUR 7.
633. The west coast South Island population of Hector's dolphins overlaps with the GUR 7 trawl fishery. There is limited information on the interaction between Hector's dolphins and trawl fisheries, however, Hector's dolphins have been captured in trawls, with the most recent reported trawl capture occurring on the east coast of the South Island in November 2016. MPI considers that all options proposed are consistent with the Hector's Dolphin Threat Management Plan.<sup>52</sup>
634. As discussed in relation to seabirds, red gurnard is predominately caught as a bycatch to trawling. MPI does not anticipate any increased risk of mortality to marine mammal species as a result of any of the proposals outlined in this paper, as the proposed increases to catch levels are modest and will likely cover existing levels of bycatch only, and overall fishing effort is not expected to increase. MPI will continue to monitor marine mammal interactions with the commercial fishery.

## Biological diversity of the aquatic environment (s 9(b))

635. Populations of many invertebrates generally decline with trawling. The degree of decline differs depending on a number of factors, including the seafloor substrate, the invertebrate assemblage present, the trawl gear used, and the intensity of trawling. A study of Golden Bay and Tasman Bay showed 10-19% of the variability in seafloor invertebrate community composition was explained by the impacts of trawling.<sup>53</sup> Therefore conceptually an increase in trawling is likely to result in increased benthic impact.
636. An increase in the quota in the years 2008-12 also saw an increase in the trawl footprint of tows targeting red gurnard,<sup>54</sup> therefore benthic footprint from trawling is likely to increase with a quota increase. However this impact is likely to be to areas already impacted by trawling, so species most susceptible to disturbance may already have been impacted and red gurnard is only one of many species targeted or caught in GUR 7. Prediction of actual impacts within this setting is therefore difficult, but likely to be less than if new grounds were to be trawled or if this fishery was operating in isolation.
637. MPI does not anticipate any increased risk to the biological diversity of the aquatic environment as a result of any of the proposals outlined in this paper, as the proposed increases to catch levels are modest and will likely cover existing levels of bycatch only, and overall fishing effort is not expected to increase.

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<sup>52</sup> For more information, see <http://fs.fish.govt.nz/Page.aspx?pk=168&tk=531>

<sup>53</sup> Tuck, I., J. Hewitt, S. Handley and C. Lundquist (2017). Assessing the effects of fishing on soft sediment habitat, fauna and process. *New Zealand Aquatic Environment and Biodiversity Report No. 178*. 143 p. Accessible at: <https://www.mpi.govt.nz/document-vault/16006>

<sup>54</sup> Baird, S.J.; Hewitt, J.E.; Wood, B.A. (2015). Benthic habitat classes and trawl fishing disturbance in New Zealand waters shallower than 250 m. *New Zealand Aquatic Environment and Biodiversity Report No. 144*. 184 p. Accessible at: <https://www.mpi.govt.nz/document-vault/5287>

## Habitats of particular significance for fisheries management (s 9(c))

### *Benthic impacts*

638. Red gurnard is largely caught as a bycatch in mixed bottom trawl fisheries where trawl gear is on the seabed, as this is where the target species aggregate. The gear is generally fished hard down on the seabed, impacting benthic habitats.
639. As red gurnard are largely a bycatch species, MPI does not anticipate any significant increase in trawling activity nor significant increase of benthic impacts arising from the TACC increases proposed under Options 2, 3 or 3A.

## SECTION 10 – INFORMATION PRINCIPLES

640. MPI considers that the advice provided is based on the best available information and that uncertainty, inadequacy, or lack of information has been taken into account in the recommended options.
641. Three different options are proposed to allow for consideration of the uncertainty in the available information and the management of sustainability risk. This requires that caution be applied in decisions (see the information principles under s 10 of the Act).
642. Option 2 (a 7% increase to the TAC of 65 tonnes) would provide for a modest increase in catch and a low risk to sustainability. Options 3 and 3A (a 16% increase to the TAC of 143 and 146 tonnes respectively) provides for a higher level of catch, with a comparatively greater (but still low) risk to sustainability. Both options are likely to move the stock biomass towards the target level, but at different rates.
643. In either case, ongoing monitoring of the stock using trawl surveys (the next is in 2019) will enable responsive management and appropriate adjustments to address risk and possible opportunity.

## SECTION 11 – SUSTAINABILITY MEASURES

644. The general considerations under s 11 are provided in the section above on Statutory Considerations (Part 2).
645. Under section 11 of the Act, before setting or varying any sustainability measure for any stock, you must:
- a) Section 11(1)(a): take into account any effects of fishing on any stock and the aquatic environment. All information relevant to your decision is discussed above under ‘Section 9 - Environmental Principles’.
  - b) Section 11(1)(b): take into account any existing controls under the Act that apply to the stock or area concerned.
  - c) Section 11(1)(c): take into account the natural variability of the stock. The available biological information is discussed above.

- d) Sections 11(2)(a) and (b): have regard to any provisions of any regional policy statement, regional plan, or proposed regional plan under the Resource Management Act 1991 and any management strategy or management plan under the Conservation Act 1987 that apply to the coastal marine area and that you consider relevant. MPI is not aware of any other policy statements, plans or strategies that should be taken into account for the red gurnard fishery.
- e) Section 11(2)(d): have regard to any planning document lodged by a customary marine title group under section 91 of the Marine and Coastal Area (Takutai Moana) Act 2011. No planning documents applicable to the red gurnard fishery have been lodged.
- f) Section 11(2A)(b): take into account any relevant fisheries plan approved under section 11A. No plans have been approved under section 11A that you need to take into account.
- g) Sections 11(2A)(a) and (c): take into account any conservation or fisheries services, or any decision not to require such services. The results for the next WCSI trawl survey will be available in 2019. MPI is not aware of any other conservation or fisheries services, or any decision not to require such services, that you need to be aware of.

## SECTION 12- CONSULTATION AND INPUT AND PARTICIPATION

### Input and Participation

- 646. Section 12 (1)(b) requires that before you make decisions under sections 11 to 15 of the Act you must provide for the input and participation of tangata whenua into those processes. The Ministry has provided for input and participation of tangata whenua by establishing regional Iwi Fisheries Forums, assisting iwi in those Forums to develop iwi fisheries plans. MPI meets with all Forums three times a year.
- 647. The Forums have the opportunity to consider proposals at an early stage to contribute to the refinement of proposals. They have also been consulted on the final options. In respect of the GUR 7 fishery, MPI meets with all nine South Island iwi through their representative body, Te Waka a Māui me Ōna Toka Iwi Forum (TWAM).

### Kaitiakitanga

- 648. Under Section 12(1)(b) you must also have particular regard to kaitiakitanga before setting or varying a TAC. Under the Act, kaitiakitanga is the exercise of guardianship, and in relation to any fisheries resources, includes the ethic of stewardship based on the nature of the resources, as exercised by the appropriate tangata whenua in accordance with tikanga Māori.
- 649. Relevant Iwi or Forum Fish Plans provide a view of the objectives and outcomes iwi seek from the management of the fishery and can provide an indication of how iwi exercise kaitiakitanga over fisheries resources. Iwi views from Forum meetings and submissions received from iwi can also provide an indication.

650. Red gurnard is listed as a taonga species in the Te Waipounamu Iwi Forum Fisheries Plan. That Forum Fisheries Plan contains three objectives which are relevant to the management options proposed for GUR 7:

- d) Management objective 1: to create thriving customary non-commercial fisheries that support the cultural wellbeing of South Island iwi and our whānau;
- e) Management objective 3: to develop environmentally responsible, productive, sustainable and culturally appropriate commercial fisheries that create long-term commercial benefits and economic development opportunities for South Island iwi; and
- f) Management objective 5: to restore, maintain and enhance the mauri and wairua of fisheries throughout the South Island.

MPI considers that the management options presented in this advice paper will contribute towards the achievement of these three management objectives in ensuring that appropriate allowances are made for customary non-commercial fishing, the fishery remains sustainable, and that environmental impacts are minimised.

651. TWAM was approached for their collective view on the GUR 7 proposals consulted on.<sup>55</sup> TWAM was comfortable with the options proposed and supported Option 3, requesting that an additional 13 tonnes be added to the customary Māori allowance.

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<sup>55</sup> The Te Waka a Māui me Ōna Toka Iwi Forum (TWAM) met in June 2017.



## Conclusion and Recommendations

654. Best available information on the status of GUR 7 at this time suggests that the stock is experiencing a period of elevated biomass and has been assessed as being very likely (>90%) to be above the target level. The biological characteristics of this stock show that red gurnard are relatively fast growing and that stock biomass is highly variable and fluctuates in response to strong or weak year classes. Increasing the TAC and TACC during periods of high abundance increases the social economic and cultural benefits that can be obtained from the fishery.
655. MPI recommends that you implement Option 3A. MPI considers that this option best responds to the new information from the 2017 WCSI trawl survey, better provides for increased abundance of red gurnard within mixed commercial fisheries, and creates opportunities as well as an expected increase in recreational and customary Māori harvest.
656. MPI notes that you have broad discretion in exercising your powers of decision making, and may make your own independent assessment of the information presented to you in making your decision. You are not bound to choose the option recommended by MPI. MPI considers all three options are consistent with your statutory obligations.

### *Option 1 – status quo*

**Agree** to retain the GUR 7 TAC at 919 tonnes and within the TAC:

- ix. Retain the allowance of 10 tonnes for Māori customary non-commercial fishing interests;
- x. Retain the allowance of 22 tonnes for recreational fishing interests;
- xi. Retain the allowance of 42 tonnes for other sources of fishing-related mortality;
- xii. Retain the GUR 7 TACC at 845 tonnes.

**Agreed / Not Agreed**

OR

### *Option 2*

**Agree** to increase the GUR 7 TAC from 919 to 984 tonnes and within the TAC:

- v. Increase the allowance for Māori customary non-commercial fishing interests from 10 to 11 tonnes;
- vi. Increase the allowance for recreational fishing interests from 22 to 24 tonnes;
- vii. Increase the allowance for other sources of fishing-related mortality from 42 to 44 tonnes;
- viii. Increase the GUR 7 TACC from 845 to 905 tonnes.

**Agreed / Not Agreed**

OR

### *Option 3*

**Agree** to increase the GUR 7 TAC from 919 to 1062 tonnes and within the TAC:

- i. Increase the allowance for Māori customary non-commercial fishing interests from 10 to 12 tonnes;
- ii. Increase the allowance for recreational fishing interests from 22 to 25 tonnes;
- iii. Increase the allowance for other sources of fishing-related mortality from 42 to 50 tonnes;
- iv. Increase the GUR 7 TACC from 845 to 975 tonnes.

**Agreed / Not Agreed**

OR

Option 3A (MPI's preferred option)

**Agree** to increase the GUR 7 TAC from 919 to 1065 tonnes and within the TAC:

- i. Increase the allowance for Māori customary non-commercial fishing interests from 10 to 15 tonnes;
- ii. Increase the allowance for recreational fishing interests from 22 to 25 tonnes;
- iii. Increase the allowance for other sources of fishing-related mortality from 42 to 50 tonnes;
- iv. Increase the GUR 7 TACC from 845 to 975 tonnes.

**Agreed / Not Agreed**

  
Hon Nathan Guy  
Minister for Primary Industries

21 / 8 / 2017

## PART 5: DEEPWATER STOCKS

### Hake 7 (HAK 7)

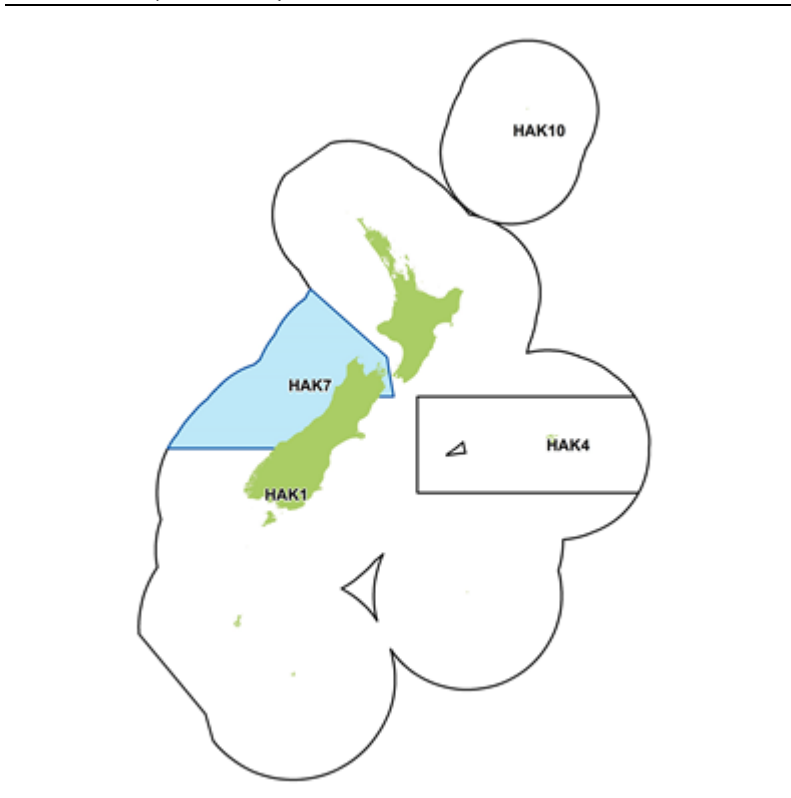


Figure 1: Quota management areas (QMA) for hake, with HAK 7 highlighted in blue.

### Summary

655. The Ministry for Primary Industries (MPI) consulted and sought input from tangata whenua on two options for management settings for hake (*Merluccius australis*, tiikati) in quota management area HAK 7 (Figure 1). These options were slightly modified post-consultation to allow for the addition of customary allowance for HAK 7 and are set out in Table 1:

Table 1: Proposed modified management settings in tonnes (t) for HAK 7 from 1 October 2017<sup>56</sup>

Option	Total Allowable Catch	Total Allowable Commercial Catch	TACC tonnage decrease and % change	Allowances		
				Customary Māori	Recreational	All other mortality caused by fishing
<i>Status quo</i>	7,777	7,700	-	0	0	77
Option 1	4,570 ↓	4,519 ↓	3,181 t ↓ (42%)	5 ↑	0	46 ↓
Option 2 (MPI preferred)	5,120 ↓	5,064 ↓	2,636 t ↓ (34%)	5 ↑	0	51 ↓

<sup>56</sup> TACC reductions proposed in the consultation document were 4,524 (Option 1) and 5069 (Option 2) tonnes. The variations to those TACCs presented in this table reflect the addition of a customary allowance in HAK 7 of five tonnes

656. Deemed value rates were reviewed for HAK 7. As the current interim and annual deemed value rates for HAK 7 are consistent with the Guidelines (Appendix 1), no changes to the deemed value rates are proposed.
657. After considering the submissions, MPI recommends you agree to approve Option 2, which would decrease the TAC and TACC by 34%. The decrease provides a cautious approach accounting for the uncertainty in the stock assessment and reduces the possibility of stock status falling below the soft limit in the short term.
658. Following feedback from Te Waka a Māui me Ōna Toka Iwi Forum (TWAM), MPI recommends that the customary allowance be increased from 0 to five tonnes for HAK 7. MPI agrees that customary take should be properly accounted for in TAC setting.
659. Future decisions regarding the HAK 7 fishery will be informed by (i) upcoming analysis of fleet wide catch per unit effort (CPUE) data and modelling expected in the 2017/18 fishing year; (ii) a trawl survey in mid-2018; and (iii) a full stock assessment in 2018/19 (brought forward from 2019/20). These initiatives should assist in reducing the level of uncertainty. Additional management action is likely to be taken based on updated information. Options presented here are proposed to ensure that the stock is not depleted while additional information is being collected.

## Need for review

660. The best available information on HAK 7 indicates a potential sustainability risk for the stock. For the 2017 stock assessment, two equally plausible abundance indices showed conflicting trends - the fisheries-independent trawl survey series indicates a continuing decrease in abundance, while the catch per unit of effort (CPUE) index indicates a steady level of abundance. Taking into account this uncertainty, and the possibility that the stock is below the management target of 40%  $B_0$ , MPI proposes that the TAC is reduced under section 13(2) of the Act to maintain HAK 7 at or above a level that can produce the maximum sustainable yield. The proposed change is intended to minimise the risk of the stock declining in the short term while additional investigation is completed, after which the TAC may be reviewed.

## CONTEXT

### Biological information

661. Hake (*Merluccius australis*) is widely distributed throughout the middle depths of the New Zealand EEZ, mostly south of 40°S. Adults are predominantly distributed from 250-800m, and juveniles are found in inshore regions shallower than 250m. New Zealand hake reach a maximum age of at least 25 years, with females being larger than males and growing up to 120 cm in length or more. Both sexes reach sexual maturity between about 6 and 10 years of age at lengths of 67-75 cm (males) and 75-85 cm (females).

662. It is believed that there are at least three main spawning areas for hake, the eastern Chatham Rise, south of Stewart-Snares shelf, and West Coast South Island (WCSI). WCSI spawning occurs from June to October, with a peak in September. HAK 7 (WCSI) hake reach 50% maturity at 5.5 years for males and 7 years for females. Juvenile hake reach a length of about 15–20 cm at one year old, and about 35 cm total length at 2 years. Estimates of natural mortality ( $M$ ) are  $0.18 \text{ y}^{-1}$  for females and  $0.20 \text{ y}^{-1}$  for males.

## Fishery characterisation

### Commercial

663. Hake are taken mainly by large trawlers and are assessed as three independent stocks, based on the three main spawning grounds and some differences in biological parameters between these areas. HAK 7 is the largest fishery and catches of up to 17,000 tonnes were recorded by foreign fishing vessels in the late 1970s before the establishment of the EEZ. Hake was introduced into the QMS in 1986 with a TACC for HAK 7 of 3,000 tonnes, which rose to 6,855 tonnes in 1994 due to quota appeals and to 7,770 tonnes in 2005 based on average catches over the previous 12 years.

664. The TACC was regularly over-caught throughout the 1990s, but from 2007, catches in HAK 7 have been lower than the TACC and more variable (Figure 2). Catches over the past five fishing years have averaged 4,524 tonnes, with peak landings of 6,219 tonnes and minimum landings of 2,620 tonnes over this period.

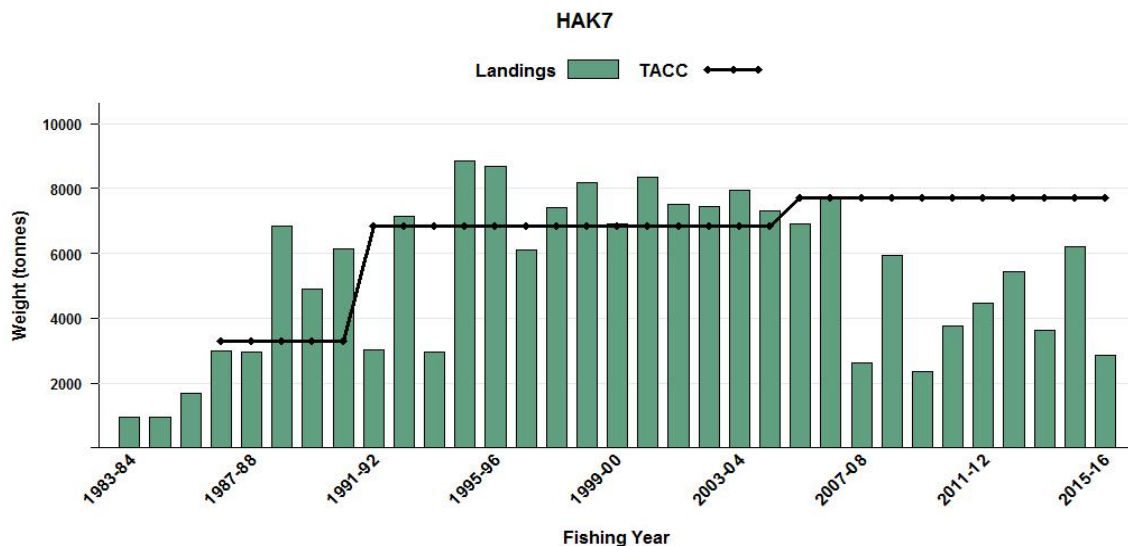


Figure 2: Landings and TACC for HAK 7 from 1983/84 to 2015/16

665. The decline in hake catch in HAK7 from 2007/08 is attributed in part to the departure of the Japanese hake fleet after 2007/08. The 2015/16 decrease can be partly explained by the introduction of legislative changes introduced on the 1<sup>st</sup> May 2016, requiring that all vessels fishing in the New Zealand EEZ must be flagged to New Zealand; a number of vessels which regularly targeted hake exited the fishery at the end of the 2014/15 fishing year. There are currently no indications of a significant return to target hake fishing in HAK 7 in the short term.

666. The proportion of catch attributed to hake targeting has been relatively high, peaking in the 2008/09 fishing year at 96% (Figure 3). Since 2010/11, the proportion of hake taken from the West Coast hoki target fishery as bycatch has increased, with around 47% of HAK 7 caught in hoki target fishing in 2015/16.
667. The main bycatch species in hake target fisheries include hoki, ling, ribaldo, silver warehou and spiny dogfish.

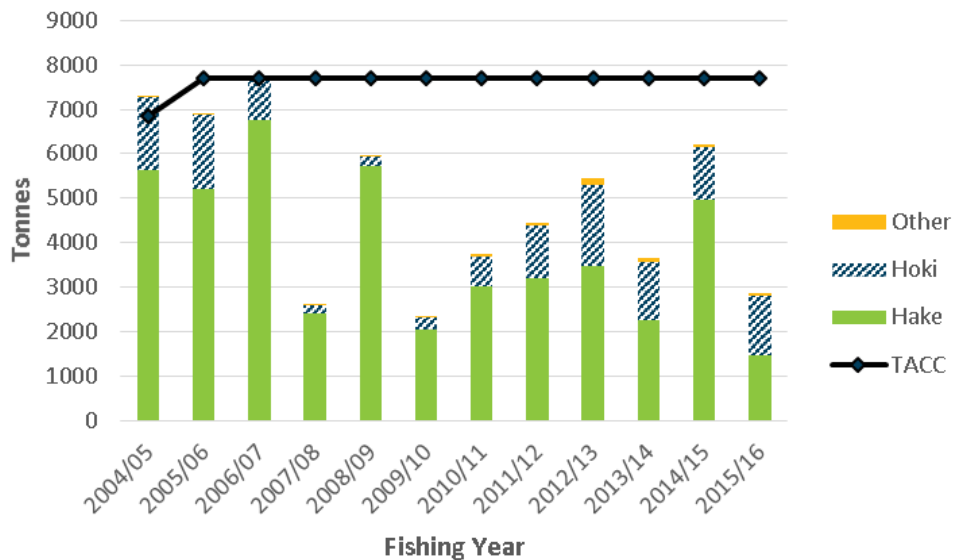


Figure 3: Landings of hake by target species and TACC for HAK 7.

*Māori customary interests*

668. The amount of hake caught by customary Māori is not known but is believed to be negligible.

*Recreational*

669. The recreational fishery for hake is negligible due to the depths at which it is typically caught (250 to 800m).

*Illegal catch and misreporting*

670. There is a history of area misreporting in the hake fishery, in which catches were over-reported from the Chatham Rise and under-reported from HAK 7. However, there is no evidence of area misreporting since 2001/02. There is also evidence that hake catches have not always been fully reported, particularly in 1988/89 and 1990/1991, although the current level of misreporting is unknown. The 2017 stock assessment incorporated an adjusted catch history from 1974/75 to 2014/15 to account for misreported catch.

*All other mortality to the stock caused by fishing*

671. There is likely to be some mortality associated with escapement from trawl nets, but the level is not known and is assumed to be negligible. The allowance for other sources of fishing-related mortality is currently set at 1% of the TAC. MPI has no information to suggest this proportion should be changed.

## Management approach

672. The National Deepwater Plan<sup>57</sup> sets out a series of Management Objectives you are required to take into account when making a decision on the management options presented for HAK 7, the most relevant of those being:
- a) Management Objective 1.1: Enable economically viable deepwater and middle-depth fisheries in New Zealand over the long-term
  - b) Management Objective 1.3: Ensure the deepwater and middle-depths fisheries resources are managed so as to provide for the reasonably foreseeable needs of future generations
  - c) Management Objective 2.5: Manage deepwater and middle-depth fisheries to avoid or minimise adverse effects on the long-term viability of endangered, threatened and protected species.
- MPI considers that the management Options presented in this Decision Document will contribute towards the achievement of these three Management Objectives.
673. Relevant Iwi or Forum Fish Plans provide the objectives and outcomes iwi seek from the management of the fishery and can provide an indication of how iwi exercise kaitiakitanga over fisheries resources. For a discussion on the Forum Fish Plan relevant to HAK 7, please see Section 7.5 – Consultation and Input and Participation, in the Addendum of this chapter.
674. Section 11(2A) of the Act requires decision makers to take into account any conservation services or fisheries services and any decisions not to require these services, and any relevant fisheries plan approved under this part before setting or varying any sustainability measure or making any decision or recommendation.
675. Hake was introduced into the QMS in 1986 with four quota management areas (QMAs) that have not changed (Figure 1). QMAs 1, 4 and 7 reflect the three main spawning areas, biological stocks, and fishing grounds. QMA 10 represents an administrative fish stock with no recorded catches, which is currently closed to demersal trawling.
676. The management approach for HAK 7 utilises the regular West Coast South Island trawl survey series, and assessment of CPUE data to provide estimates of stock status. The TAC and TACC are set based on the status of the stock in relation to the reference points for hake described in Table 2 which are based on the default reference points set in the Harvest Strategy<sup>58</sup>.

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<sup>57</sup> Accessible at: <http://fs.fish.govt.nz/Page.aspx?pk=79&tk=493>

<sup>58</sup> The Harvest Strategy Standard is a policy statement of best practice in relation to the setting of targets and limits for New Zealand fishstocks managed under the quota management system. It is accessible at: <http://fs.fish.govt.nz/Page.aspx?pk=104>

Table 2: Harvest Strategy for hake- reference points and associated management responses

Reference point	Management response
Management target 40% $B_0$	Stock permitted to fluctuate around this management target. TAC/TACC changes will be employed to keep the stock around the target (with a 50% probability of being at the target)
Soft limit of 20% $B_0$	A formal time constrained rebuilding plan will be implemented if this limit is reached
Hard limit of 10% $B_0$	The limit below which fisheries will be considered for closure
Rebuild strategy	To be determined
Harvest control rule	Management actions focussed on adjusting fishing mortality determined following consideration of the results of stock assessments and in some cases, forward projections under a range of catch assumptions, guided by biological reference points.

### Current stock status

677. A stock assessment was completed in 2017 for HAK 7<sup>59</sup>. Estimates of biomass were produced from two models: a ‘survey’ model (which included research survey biomass estimates and catch-at-age data) and a ‘CPUE’ model (which included a CPUE series but excluded all survey data). Recruitment into HAK 7 is uncertain, with evidence that an overall decline has occurred between 2000-2009 relative to the average long-term recruitment between 1973 and 2009. Therefore, projections of biomass were calculated to account for both scenarios (i.e., average long-term recruitment and more recent levels of recruitment) for each model.
678. The two models showed conflicting biomass trends in the most recent five years, with contrasting stock status estimates and biomass projections, but both were considered to be equally plausible by MPIs Deepwater Fisheries Assessment Working Group. The current stock status estimate is below management targets for the trawl survey model, contrary to the CPUE model (Table 3). The projected biomass of HAK 7 is expected to remain constant under recent recruitment and recent catch and to increase under long-term average recruitment and recent catch for both the CPUE and the survey model<sup>60</sup>. Recent catch has averaged 4,524 tonnes over the past five years, which is below the TACC of 7,770 tonnes. If the current TACC is fully caught, the biomass is predicted to decline for the two recruitment scenarios for both the CPUE and the survey models.

Table 3: Summary of current stock status estimates based upon Trawl Survey and CPUE models.

Method	$B_{2016}$ (of $B_0$ )	Likelihood of being at 40% $B_0$	Likelihood of being below 20% $B_0$	Likelihood of being below 10% $B_0$
Trawl Survey	26%	Very Unlikely (<10%)	As Likely as Not (<40-60%)	Very Unlikely (< 10%)
CPUE	50%	Very Likely (>90%)	Very Unlikely (< 10%)	Exceptionally Unlikely (< 1%)

<sup>59</sup> Ministry for Primary Industries (2017) Fisheries Assessment Plenary May 2017: Stock Assessments and Stock Status

<sup>60</sup> Five-year biomass projections were made assuming future WCSI catches of 4,100 t annually (the mean annual catch from the last six years) and 7,700 t annually (the TACC). For each catch scenario, estimated future recruitment variability was set from actual estimates from 1973 to 2009 (a period including both high and low recruitment success), and from 2000 to 2009 (the last 10 estimates of year class strength comprising a period of relatively low recruitment success). Source: Ministry for Primary Industries (2017) Fisheries Assessment Plenary May 2017: Stock Assessments and Stock Status.



679. The proposed options are intended to account for the uncertainty in the modelling and minimise the risk of the stock declining in the interim while additional investigation is completed. The TAC may be adjusted next year based on any new information that becomes available in the 2017/18 fishing year.

## Statutory Considerations specific to HAK 7

680. It is implicit that options provided in this document comply with the purpose and principles of the Act. In formulating this final advice, MPI has complied, on your behalf, with the legal requirements with regard to consultation, providing for tangata whenua input and participation and kaitiakitanga. Further detail with respect to these provisions and specific to the proposals for HAK 7 is found in the Addendum below.
681. With respect to specific considerations when setting a TAC, allowances, and a TACC for the stock in question, sections 11, 13, 20 and 21 of the Act apply. Relevant matters for your consideration are outlined in more detail in the Addendum below.
682. In summary, all proposed options are considered to be not inconsistent with the objective (under s 13) to maintain the stock at or above the level that will produce MSY and to pose limited risk to associated species or the environment. The options differ in terms of the economic and social considerations of each option balanced against the sustainability risk and these matters are outlined in the section evaluating options.

## SECTION 13 – SETTING THE TAC

683. It is proposed that the TAC is reduced under section 13 of the Act to maintain HAK 7 at or above a level that can produce the maximum sustainable yield, having regard to the interdependence of stocks. The two proposed options reflect a cautious approach, and are intended to set a TAC and TACC which minimise the probability of the stock dropping below the Soft Limit of 20%  $B_0$  in the short term.
684. The s13(2)(a) requirement to have regard to the interdependence of stocks when setting a TAC requires consideration of the effects of fishing on associated stocks harvested with the target stock. Hake is often caught as bycatch in fisheries that target hoki. Since 2010/11, the proportion of hake taken from the West Coast hoki target fishery as bycatch has increased, with around 47% of HAK 7 catch taken in hoki target fishing in 2015/16. Therefore, a significant decrease in the HAK 7 TACC could potentially impact the ability of hoki fishers to source ACE to cover their bycatch of hake. However, MPI considers both options to be unlikely to affect the ability of hoki fishers to source ACE. Fewer vessels are targeting hake in HAK 7 leaving more ACE available. Furthermore, recent catches have been well below the recommended TACC in Option 2, MPI's preferred option (2,864 tonnes in 2015/16 and 4,524 tonnes on average over the last five years).

## SECTIONS 20 AND 21 – ALLOWANCES AND THE TACC

### Allowances

685. In determining the TACC, you must make allowances for Māori customary non-commercial fishing interests, recreational fishing interests, and all other mortality to the stock caused by fishing (sections 20 and 21 of the Act).

#### *Customary Māori allowance*

686. There is currently no known Māori customary catch of hake in HAK 7. Te Waka a Māui me Ōna Toka (TWAM), the Iwi Forum that represents South Island iwi in fisheries sustainability discussions with MPI, have requested an increase in the customary allowance for HAK 7 from zero to five tonnes. South Island customary fishing regulations provide for fish to be taken by commercial vessels for customary purposes. MPI agrees that customary take should be properly accounted for in a TAC setting and has modified both options to include the allowance.

687. The options now maintain the current settings for recreational allowances and increase Māori customary allowance from zero to five tonnes. While customary harvest is not constrained, the reporting framework of customary regulations will allow for monitoring customary catch against this allowance. Both MPI and South Island iwi recognise customary reporting is key to supporting an increase in customary allowances in the future.

#### *Recreational allowance*

688. There is currently no known recreational catch of hake in HAK 7. No allowance is proposed noting that this does not preclude any recreational take.

#### *All other mortality caused by fishing*

689. MPI proposes to retain the current allowance for other sources of fishing-related mortality, set at 1% of the TAC. This allowance accounts for unreported hake mortality, such as loss due to burst nets.

### TACC

690. Given the latest information from the 2017 stock assessment showing a possible sustainability risk for HAK 7, and given uncertain current stock status and biomass trajectories, it is considered reasonable to decrease the TAC and TACC as a precaution until further information becomes available under Options 1 and 2.

## SECTION 75 – DEEMED VALUE RATES

691. This review of the TAC for HAK 7 has triggered a review of the deemed value rates for the stock. No other deemed value criterion is triggered and no deemed value rates adjustments for this stock is proposed in the 2017 Deemed Values section of this advice (Part 6).

## Submissions received

692. Submissions on the HAK 7 proposals were received from the following six organisations:
- a) Deepwater Group (DWG)
  - b) Independent Fisheries Ltd. (IFL)
  - c) Iwi Collective Partnership (ICP)
  - d) Sanford Ltd.
  - e) Te Ohu Kaimoana Māori Fisheries Trust (TOKM)
  - f) Tūhoe Te Uru Taumatua
692. Feedback was also received from TWAM as part of input and participation before and during the public consultation process.
693. Full submissions are attached in Appendix 2.
694. The Deepwater Group (DWG) does not support either proposed option and quota owners disagree with a TACC reduction at this time, on the premise that the 2017 stock assessment and current levels of recruitment are uncertain. However, DWG agree that the 2017/18 and 2018/19 catch should be maintained at a level that will stabilise the stock size or will allow it to increase. DWG propose that quota owners will collectively and voluntarily manage their fishing operations to ensure that the total annual catch does not exceed 4,525 [sic] tonnes during the next two years, pending the acquisition and analysis of further information. They also propose that:
- a) information is obtained from the 2017 and 2018 commercial catches to establish recruitment levels
  - b) survey data from 2012 be modified and optimised to explore and utilise information on a wider depth range of hake habitat which can then be incorporated into the next HAK 7 stock assessment
  - c) the trawl survey design should be reviewed prior to the next survey
  - d) the next WCSI trawl survey be undertaken in 2018, and the next stock assessment in 2019 including assessing options for a stock-specific management strategy
  - e) after establishing the management target, the medium-term management goals be set and the TACC adjusted if needed prior to the 2019-20 fishing year.
695. MPI does not support a voluntary catch reduction as suggested by DWG, as indications that there is a sustainability risk for HAK 7 require a TAC reduction under section 13 of the Act. However, MPI agrees that the next stock assessment should be brought forward to 2018/19.
696. Independent Fisheries Ltd (IFL) accept that the TACC should be reduced but do not support either proposed option and propose a TACC of approximately 6,000 tonnes (a reduction of 22%). They believe that the science underpinning the proposed options is minimal and that a reduction should be less than those proposed until completion of additional fleet-wide CPUE data and modelling expected in the 2017/18 fishing year. IFL also assert that while targeting HOK 1, their HAK 7 bycatch has been higher so far in 2017 than in previous years. As such, IFL are concerned that the proposed options would impose financial penalties if acquiring ACE or paying deemed values was necessary. IFL suggest that the TACC be reduced more gradually as more information becomes

available, and believe that such an approach carries little risk given that fewer vessels are targeting HAK 7.

697. MPI does not support IFL’s proposal that the TACC is reduced by 22%, as the origin of this figure and the effect of such a cut on stock biomass projections are unknown. Although MPI acknowledges that there is uncertainty surrounding the contrasting model outputs in the 2017 stock assessment, MPI recommends that a more cautious approach is taken whilst more information is obtained. Option 2 represents a higher TACC (34%) reduction than that proposed by IFL (22%) and retains a high possibility that the stock remains above the soft limit in the short term (80%); furthermore, when comparing Option 1 to Option 2, Option 2 reduces the likelihood that IFL will be financially penalised if their bycatch rates of hake in HAK 7 were at a level requiring acquisition of ACE or the payment of deemed values.
698. A revised submission was received by DWG on the 19<sup>th</sup> July 2017, proposing a TACC of approximately 6,000 tonnes (a TACC reduction of 22%). MPI is not including this proposal in the suite of options included in the 2017 sustainability round advice paper for your consideration. The revised submission was received after the consultation period closed and there was insufficient time to fully analyse it. Furthermore, since TOKM and Sanford Ltd explicitly support the earlier DWG submission, in which DWG propose a voluntary catch limit of 4,525 tonnes during the next two years, it is unclear to what extent industry support DWG’s revised submission.

## Evaluation of Options

699. The *status quo* is not presented as an option, as a fully-caught TAC of 7,770 tonnes would lead to a stock decline in HAK 7 according to both models in the 2017 stock assessment and is therefore considered to not meet the requirements of the Fisheries Act.
700. The two options proposed to decrease the TAC, TACC, and allowances for HAK 7 are discussed below. Predicted changes to potential export revenue based on the proposed options are outlined in Table 4. Decreased revenue calculations are based upon a fully caught TACC, which has not occurred since 2006/2007. Therefore, these revenue changes represent a worst-case scenario and are higher than the actual likely loss following implementation of either option.

Table 4: Potential changes to export revenue of the proposed options, based upon a fully caught TACC and on an estimated free on board (FOB) export value of \$3.16/kilogram greenweight<sup>61</sup> for HAK 7 in 2016/17

	TACC (t)	Change from <i>status quo</i> (t)	Predicted revenue change (\$ p.a.)
Option 1	4,519	3,171 t ↓ (42%)	10,000,000 ↓
Option 2	5,064	2,626 t ↓ (34%)	8,300,000 ↓

<sup>61</sup> Free on board (FOB): The value of export goods, including raw material, processing, packaging, storage and transportation up to the point where the goods are about to leave the country as exports. FOB does not include storage, export transport, or insurance cost to get the goods to the export market. Calculated based on an estimated value from the 2016 calendar year of \$3.16 per kilogram, which was derived from all exported states and their respective conversion factors (1.5-2.85). Source: Statistics New Zealand

## OPTION 1

701. Option 1 has been developed based on the five year average catch, which would result in a TACC reduction of 42% from 7,777 tonnes to 4,570 tonnes. The TACC would be decreased from 7,700 tonnes to 4,519 tonnes<sup>62</sup>.
702. This option gives the stock a probability of 83% of being above the soft limit in 2019 when using the trawl survey model in conjunction with optimistic recruitment.
703. Hake is often caught as bycatch in the hoki fishery in WCSI, therefore a significant decrease in the HAK 7 TACC could potentially impact the ability of hoki fishers to source ACE to cover their hake bycatch. However, MPI considers this to be an unlikely scenario as an overall reduction in vessels targeting hake leaves more ACE available.
704. The expected effect on potential export revenue of Option 1 is shown in Table 4, although MPI notes that the TACC and potential full export value from HAK 7 have not been fully realised since 2006/07, so revenue loss would be lower than indicated.
705. Option 1 is supported by Tūhoe Te Uru Taumatua and TOKM.
706. Tūhoe Te Uru Taumatua support Option 1 but did not provide rationale.
707. TOKM's initial view is to support Option 1 on the basis of preliminary analysis by DWG and from the assertion that average catch has not exceeded 4,524 tonnes in the last five years. TOKM would also support a voluntary catch reduction to a catch limit of 4,525 [sic] tonnes, which is effectively Option 1 but without the TACC adjustment, while further information is obtained.
708. Option 1 takes a very cautious approach and proposes the highest reduction in TACC (42%). This cautious approach may be preferred if both stock assessment models agreed that there is a high sustainability risk or if there were no plans to monitor the stock and review the management settings regularly. However, pending analysis of fleet wide CPUE data and modelling expected in the 2017/18 fishing year, a trawl survey in mid-2018 and a 2018/2019 full stock assessment (brought forward from 2019/2020) will provide more robust information upon and more certain stock projections, after which the TACC will be re-assessed. MPI does not recommend this option.

## OPTION 2 (*MPI Preferred*)

709. Option 2 proposes a TACC reduction of 34%, decreasing the TACC from 7,777 tonnes to 5,120 tonnes. The TACC would be reduced from 7,700 tonnes to 5,064<sup>63</sup> tonnes.
710. Option 2 proposes a TACC which is based on an 80% probability that the stock remains above the soft limit in 2019 with optimistic recruitment. This means it is at a level which

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<sup>62</sup> TACC reductions proposed in the consultation period were 4,524 (Option 1) and 5069 (Option 2) tonnes. The variations to those TACCs presented here reflect an additional reduction of five tonnes to allow customary allowance in HAK 7.

<sup>63</sup> TACC reductions proposed in the consultation period were 4,524 (Option 1) and 5069 (Option 2) tonnes. The variations to those TACCs presented here reflect an additional reduction of five tonnes to allow customary allowance in HAK 7.

is very unlikely to lead to the stock moving to or below the 20% soft limit, while further analysis is carried out in the next two years.

711. This option represents an initial measure to address a possible sustainability risk to HAK 7, whilst limiting the effects that a larger TACC reduction may have on related fisheries. This option is also less likely to impact on the ability of fishers in the WCSI hoki fishery to source ACE.
712. The expected effect on potential export revenue of Option 2 is shown in Table 4, although MPI notes that the TACC and potential full export value from HAK 7 have not been fully realised since 2006/07, so the revenue loss would be lower than indicated.
713. Option 2 is supported by the Iwi Collective Partnership (ICP) and Sanford Ltd.
714. ICP support Option 2 with a TACC review on completion of the next stock assessment. They would also support a voluntary catch reduction to a catch limit of 4,525 [sic] tonnes which is effectively Option 1 but without the TACC adjustment.
715. Sanford Ltd have a preference for Option 2, but also support the DWG submission. They also agree with suggestions 3, 4 and 5 put forward by DWG (Section 4.1) and propose that an independent review of the hake catch data from the research trawl surveys (included in the current stock assessment) is undertaken.
716. MPI recommends that you implement Option 2. This option retains a high probability that the stock will exceed the soft limit in the short term (80% probability for Option 2 vs. 83% probability for Option 1) whilst allowing for some fluctuation around the five year average catch limit suggested in Option 1. This option also alleviates concerns from fishers that acquisition of ACE may be difficult if the TACC was considerably reduced and represents a first step towards ensuring sustainability of the stock whilst more robust information is obtained.

## Addendum: Assessment against statutory obligations

717. The following section provides information specific to the application of the statutory considerations (see Part 2) to HAK 7.

### SECTION 8 – PURPOSE OF THE ACT

718. MPI considers that all options presented in this paper satisfy the purpose of the Act on the basis that they provide for the utilisation of HAK 7 while ensuring sustainability.

### SECTION 9 – ENVIRONMENTAL PRINCIPLES

719. A summary of the interactions between the HAK 7 fishery and the aquatic environment, and how these are likely to be affected by the proposals, is provided below.

#### Maintaining viability of associated or dependent species (s 9(a))

720. As Options 1 and 2 reduce the TAC in HAK 7, an increase in interactions with protected species is unlikely.

##### *Seabirds, mammals and protected fish*

721. Hake trawlers are responsible for negligible levels of seabird and marine mammal risk; MPI considers there will be no significant change to this level of interaction from the options proposed.

#### Biological diversity of the aquatic environment (s 9(b)) and habitats of particular significance for fisheries management (s 9(c))

722. In hake fisheries, the main QMS bycatch species are hoki, ling and ribaldo which comprised, on average, 20%, 6% and 2% respectively of the 2000 to 2012 catch<sup>64</sup>. Incidental bycatch species are primarily javelinfish and rattails. As both options propose to reduce the TAC, an increase in the level of bycatch is unanticipated.

##### *Benthic impacts*

723. Hake is fished with both mid-water and bottom trawl gear. Although contact with the seafloor by trawl gear results in the capture of benthic invertebrates and impacts physical and biological components of the benthic habitat, MPI acknowledges that the nature and extent of benthic interactions from hake fishing activity is poorly understood. During the last ten fishing years, observers have reported a total of less than 70 kgs of protected hard corals being taken in hake fisheries, although sponge bycatch is substantially higher in the same period (>1000kg)<sup>9</sup>. BPA closures cover 10.8 % of the full reported range of hake, although trawl footprint information suggests only 30 km<sup>2</sup> of this has ever been trawled. MPI does not anticipate any significant increase in trawling activity nor

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<sup>64</sup> Ministry for Primary Industries (2013) National Fisheries Plan for Deepwater and Middle-depth Fisheries. Hake Fisheries Plan Chapter

significant increase of benthic impacts arising from the TACC decreases proposed under Option 1 or 2.

## SECTION 10 – INFORMATION PRINCIPLES

724. MPI considers that the advice provided is based on the best available information derived from the 2017 Plenary report, the 2017 stock assessment, input and participation from tangata whenua and feedback from consultation. Uncertainty or lack of information has been taken into account.

## SECTION 11 – SUSTAINABILITY MEASURES

725. Section 11(1) allows sustainability measures (such as a TAC) to be set or varied after the following factors are taken into account:

- a) Any effects of fishing on the stock and the aquatic environment
- b) Any existing controls that apply to the stock or area concerned
- c) The natural variability of the stock concerned.

726. For HAK 7, the measures that apply currently are a TAC, TACC, and allowances for customary take, recreational take, and other sources of fishing-related mortality. Other standard management controls apply to the HAK 7 fishery, for example deemed values. There is no proposal to alter deemed values at this time.

727. Section 11(2) requires you to have regard to any provisions of regional policy statements, regional plans and strategies under various Acts that you consider relevant. MPI is not aware of any other policy statements, plans or strategies that should be taken into account for HAK 7.

728. Section 11(2A) requires you to take into account any conservation or fisheries services and any decisions not to require such services and any relevant fisheries plans approved under the Act. A National Fisheries Plan for Deepwater and Middle-depth Fisheries (the National Deepwater Plan) was given Ministerial approval in 2010. MPI considers that Option 2 will meet the management objectives set out under the National Deepwater Plan (outlined in section 2.1.3).

## SECTION 12- CONSULTATION AND INPUT AND PARTICIPATION

### Input and Participation

729. Section 12 (1)(b) requires that before you make decisions under sections 11 to 15 of the Act, you must provide for the input and participation of tangata whenua into those processes. MPI has provided for input and participation of tangata whenua by establishing regional Iwi Fisheries Forums, and assisting iwi in those Forums to develop iwi fisheries plans. MPI meets with all Forums three times a year.



730. The Forums have the opportunity to consider proposals at an early stage to contribute to the refinement of proposals. They have also been consulted on the final options. In respect of the HAK 7 fishery, MPI meets with all nine South Island iwi through their representative body, Te Waka a Māui me Ōna Toka Iwi Forum (TWAM).

## Kaitiakitanga

731. Under Section 12(1)(b) you must also have particular regard to kaitiakitanga before setting or varying a TAC. The Fisheries Act 1996 provides an interpretation of kaitiakitanga<sup>65</sup>

732. Relevant Iwi or Forum Fish Plans provide the objectives and outcomes iwi seek from the management of the fishery and can provide an indication of how iwi exercise kaitiakitanga over fisheries resources. Iwi views from Forum meetings and submissions received from iwi can also provide an indication of how kaitiakitanga is achieved.

733. Te Waipounamu Iwi Forum Fisheries Plan contains two objectives which are relevant to the management options proposed for HAK 7:

- a) Management objective 3: to develop environmentally responsible, productive, sustainable and culturally appropriate commercial fisheries that create long-term commercial benefits and economic development opportunities for South Island iwi; and
- b) Management objective 5: to restore, maintain and enhance the mauri and wairua of fisheries throughout the South Island.

MPI considers that the management options presented in this advice paper will contribute towards the achievement of these two management objectives in ensuring that the fishery remains sustainable and that environmental impacts are minimised. Hake is not identified as a taonga species in the Te Waipounamu Iwi Forum Fisheries Plan.

734. TWAM was also approached for their collective view on the HAK 7 proposals consulted on<sup>66</sup>. TWAM was comfortable with the options proposed and supported Option 1, requesting that five tonnes be added to the customary Māori allowance.

## Public Consultation

735. A public consultation was also held between 7th June and 7th July 2017<sup>67</sup>. No submissions were received from environmental or recreational persons, or organisations.

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<sup>65</sup> Kaitiakitanga is the exercise of guardianship, and in relation to any fisheries resource, includes the ethic of stewardship, based on the nature of the resource as exercised by the appropriate tangata whenua in accordance with tikanga Māori.

<sup>66</sup> The Te Waka a Māui me Ōna Toka Iwi Forum (TWAM) met in June 2017.

<sup>67</sup> Accessible at: <https://www.mpi.govt.nz/news-and-resources/consultations/review-of-fisheries-sustainability-measures-for-1-october-2017/>

## Conclusion and Recommendations

736. Available information on the current status of HAK 7 derived from two models is contradictory and suggests that the stock is either in decline or stable at current catch levels. Modelled projections indicate that if the TACC is fully caught, HAK 7 biomass will decline.
737. MPI does not recommend maintaining the *status quo* as catches equal to the TACC of 7,700 tonnes will lead to a decline in biomass according to both models used in the 2017 stock assessment.
738. MPI recommends that you implement Option 2. This option was calculated based on projections using the trawl survey model requiring an 80% probability that the stock remain above the Soft Limit of 20%  $B_0$  for the next three years (to 2019). There is agreement from submitters that there is a sustainability concern (albeit with uncertainty) and that catches need to be reduced for HAK 7. Option 2 reduces the TAC to a level that maintains a high chance of the stock staying above the soft limit, whilst alleviating concerns regarding acquisition of ACE in the WCSI hoki fishery.
739. Upcoming analysis of fleet wide CPUE data and modelling expected in the 2017/18 fishing year should further inform decisions regarding the HAK 7 fishery and in doing so reduce the uncertainty. Additional management action is likely to be taken based on updated information. The reduction in TAC and TACC is proposed to ensure that the stock is not depleted before this information becomes available.
740. MPI notes that you have broad discretion in exercising your powers of decision making, and may make your own independent assessment of the information presented to you in making your decision. You are not bound to choose the option recommended by MPI. MPI considers both options to be consistent with your statutory obligations.

### *Option 1*

**Agree** to reduce the HAK 7 TAC from 7,777 to 4,570 tonnes and within the TAC:

- i. Increase the allowance of 0 to five tonnes for Māori customary non-commercial fishing interests;
- ii. Retain the allowance of 0 tonnes for recreational fishing interests;
- iii. Reduce the allowance for other sources of fishing-related mortality from 77 tonnes to 46 tonnes;
- iv. Reduce the HAK 7 TACC from 7,700 to 4,519 tonnes.

**Agreed / ~~Not Agreed~~**

OR

### *Option 2 (MPI's preferred option)*

**Agree** to reduce the HAK 7 TAC from 7,777 to 5,120 tonnes and within the TAC:

- i. Increase the allowance of 0 to five tonnes for Māori customary non-commercial fishing interests;
- ii. Retain the allowance of 0 tonnes for recreational fishing interests;
- iii. Reduce the allowance for other sources of fishing-related mortality from 77 tonnes to 51 tonnes;
- iv. Reduce the HAK 7 TACC from 7,700 to 5,064 tonnes.

Agreed / ~~Not Agreed~~

  
Hon Nathan Guy  
Minister for Primary Industries

21/8 / 2017



# Orange Roughy 3B (ORH3B)

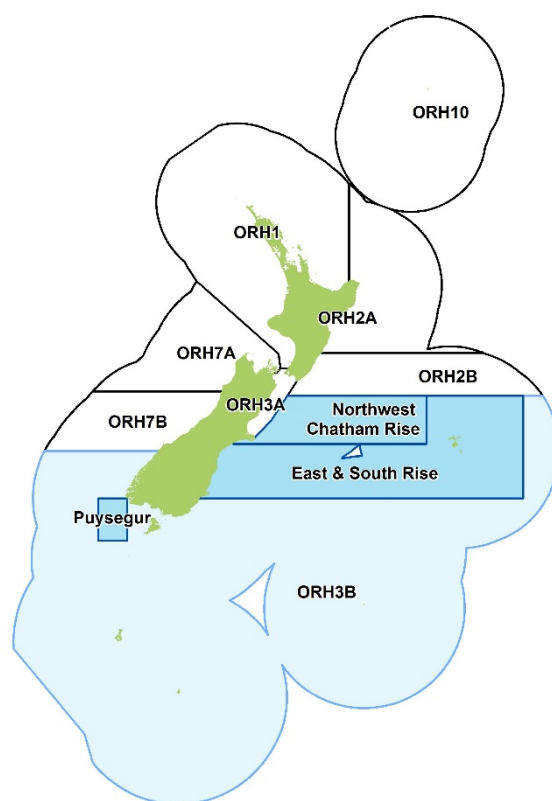


Figure 1: Quota management areas (QMAs) for orange roughy, with ORH 3B and sub areas highlighted in blue.

## Summary

741. The Ministry for Primary Industries (MPI) consulted and sought input from tangata whenua on two options for management settings for orange roughy (*Hoplostethus atlanticus*) in quota management area (QMA) ORH 3B (Figure 1).

Table 1: Proposed management settings in tonnes (t) for ORH 3B from 1 October 2017

Option	Total Allowable Catch	Total Allowable Commercial Catch	TACC tonnage increase and % change	Allowances		
				Customary Māori	Recreational	All other mortality caused by fishing
Option 1 ( <i>Status quo</i> )	5,250	5,000	-	0	0	250
Option 2 (MPI preferred)	5,470 ↑	5,197 ↑	197 t ↑ (4%)	5 ↑	0	268 ↑

742. Option 1 was to retain the *status quo* and Option 2 was to increase the total allowable catch (TAC) as well as the total allowable commercial catch (TACC). Following consultation MPI recommends that you agree to Option 2 with one modification, that is that an allowance for customary Māori fishing of five tonnes is set within the TAC with a consequential five tonne reduction in the TACC increase proposed.

743. The ORH 3B TAC, TACC and other allowances for mortality for both options are set out in Table 1 as modified. Table 2 shows the proposed sub-QMA catch limits for both options:

**Table 2: Proposed sub-QMA catch limits in tonnes (t) within proposed ORH 3B TAC and TACC**

	Option 1 ( <i>Status quo</i> )	Option 2 ( <i>MPI preferred</i> )
Northwest Chatham Rise catch limit	1,250	1,250
East and South Chatham Rise catch limit	3,100	3,100
Puysegur	150	347 ↑
Arrow Plateau (protected by BPA <sup>68</sup> )	0	0
Sub-Antarctic	500	500
<b>TACC</b>	<b>5,000</b>	<b>5,197 ↑</b>
All other mortality caused by fishing (5% of TAC)	250	268 ↑
Customary Allowance	0	5 ↑
<b>TAC</b>	<b>5,250</b>	<b>5,470 ↑</b>

744. Deemed value rates were reviewed for ORH 3B and MPI does not propose deemed value rates adjustments for this stock.

## Need for review

745. Recent stock assessment information suggests that there is a utilisation opportunity for the Puysegur sub-area of ORH 3B. The 2016 acoustic survey biomass estimate for the Puysegur sub-stock was incorporated into a new stock assessment in 2017. It is estimated that the sub-stock is at 49% of  $B_0$ , placing the sub-stock near the top of the management target range of 30-50% of  $B_0$ .

746. The Puysegur sub-stock is considered to be fully rebuilt, with a greater than 70% probability that it is above the lower end of the ORH 3B management target range. Consequently, there is an opportunity for increased sustainable utilisation and associated economic benefits from the fishery.

## CONTEXT

### Biological information

747. Orange roughy inhabit depths between 700 m and at least 1,500 m within the New Zealand EEZ. They are most abundant between about 800 m and 1,200 m. Their maximum depth range is unknown. Orange roughy are slow-growing, long-lived fish. On the basis of otolith ring counts and radiometric isotope studies, it is estimated orange roughy may live up to 120–130 years. Natural mortality ( $M$ ) has been estimated to be 0.045 yr<sup>-1</sup>.

748. Spawning occurs each year between June and early August in several areas within the New Zealand EEZ, from the Bay of Plenty in the north, to the Auckland Islands in the south. Spawning occurs in dense aggregations at depths of 700–1,000 m and is often associated with bottom features such as pinnacles and canyons. Spawning fish are also

<sup>68</sup> Fisheries (Benthic Protection Areas) Regulations 2007, accessible at: <http://legislation.govt.nz/regulation/public/2007/0308/latest/DLM973968.html?src=qs>

found outside the EEZ on the Challenger Plateau, Lord Howe Rise, and Norfolk Ridge to the west, and the Louisville Ridge to the east.

## Fishery characterisation

### *Commercial*

749. Historically, the main fishery has been concentrated on the Chatham Rise. Annual reported orange roughy catches in ORH 3B ranged between 24,000–33,000 tonnes in the 1980s and progressively decreased from 1989–90 to 1995–96 because of a series of TACC reductions. Catches were stable over the mid-1990s to mid-2000s and decreased further from 2005–2006 as TACCs were further reduced (Figure 2).
750. There have been major changes in the distribution of catch and effort over the history of this fishery (Figure 2). Initially, it was confined to the Chatham Rise. Until 1982, most of the catch was taken from areas of relatively flat bottom on the northern slopes of the Chatham Rise (in the Spawning Box) during spawning seasons (Figure 1).
751. The first fishery to be developed south of the Chatham Rise was on Puysegur Bank, where spawning aggregations of orange roughy were found. Catches in the Puysegur fishery peaked in the early 1990s with catches of up to 6,950 tonnes. Catch declined rapidly in the late 1990s, and a sub-area catch limit of zero tonnes was set in 1997-98. In 2010, as part of a review of a number of sub-area catch limits in ORH 3B, the catch limit was increased to 150 tonnes, specifically to allow the status of the stock to be monitored. The 150 tonne sub-area catch limit was not commercially fished until 2016-17 as the result of an agreement amongst quota owners.

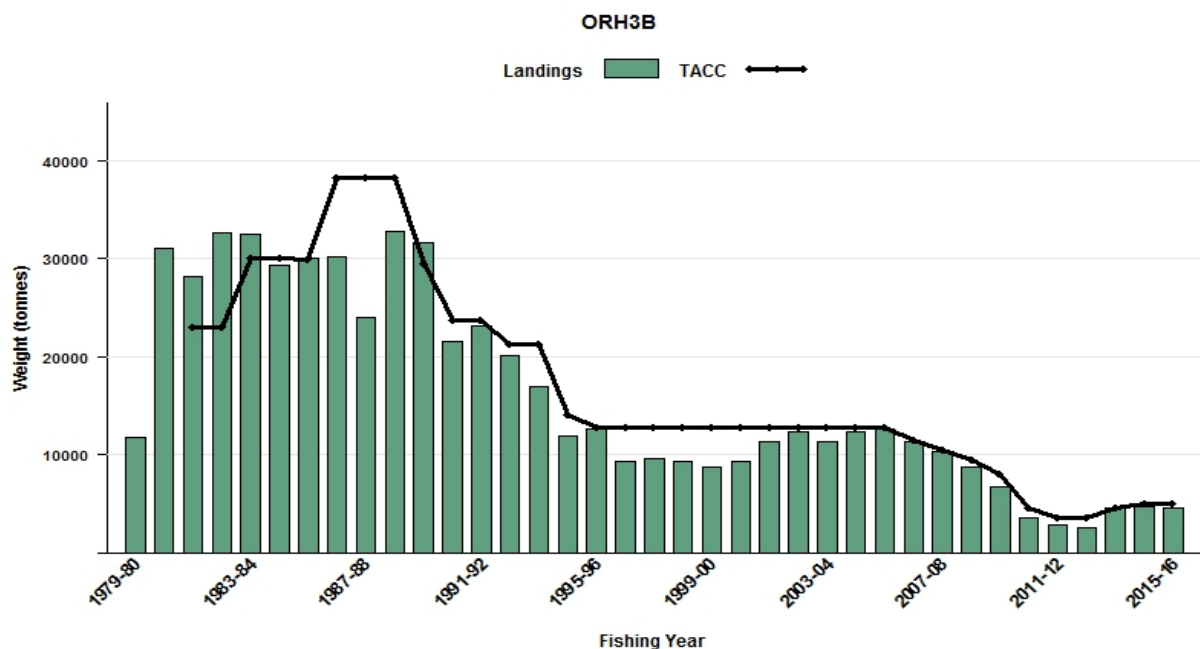


Figure 2: Reported commercial landings and TACCs for ORH 3B from 1979/80 to 2015/16.

### *Māori customary interests*

752. Māori customary fishers operating under the Fisheries (South Island Customary Fishing) Regulations 1999 do not currently report catch of orange roughy. No allowance is currently made for customary fishing for this stock.

### *Recreational*

753. Recreational fishers do not target or catch orange roughy due to the depths it is found. No allowance is currently made for recreational fishing for this stock.

### *All other mortality to the stock caused by fishing*

754. The allowance for other sources of fishing-related mortality is currently set at 5% of the TAC. MPI has no information to suggest this proportion should be changed.

## Management approach

### *Orange roughy general*

755. ORH 3B is a large and spatially complex area that comprises at least four individual sub-stocks (Figure 1). The TAC is set for the ORH 3B stock as a whole. Deepwater Group Ltd (DWG), which represents approximately 98% of the ORH 3B quota owners, agrees each year to adhere to non-regulatory catch limits at a sub-QMA level for the individual sub-stocks (sub-area catch limits). Adherence to these sub-area catch limits is monitored by MPI and reported each year in the MPI Annual Review Report for Deepwater Fisheries.
756. To facilitate monitoring against sub-area catch limits DWG agrees to:
- a) Submit monthly monitoring reports to MPI regarding catch levels in all ORH 3B sub-stocks; and
  - b) Notify MPI when catch reaches 80% of the catch limit for any sub-stock, and also notify MPI when any limit has been reached.
757. MPI will ensure that, through joint MPI-DWG communications, operators are fully informed as to the progress of catch taken against sub-stock limits.

### *Fisheries Plans*

758. The National Deepwater Plan sets out a series of Management Objectives, the most relevant of those being:
- a) Management Objective 1.1: Enable economically viable deepwater and middle-depth fisheries in New Zealand over the long-term;
  - b) Management Objective 1.3: Ensure the deepwater and middle-depths fisheries resources are managed so as to provide for the reasonably foreseeable needs of future generations; and
  - c) Management Objective 2.5: Manage deepwater and middle-depth fisheries to avoid or minimise adverse effects on the long-term viability of endangered, threatened and protected species.



759. Iwi or forum fisheries plans provide a view of the objectives and outcomes iwi seek from the management of the fishery and can provide an indication of how iwi exercise kaitiakitanga over fisheries resources. In respect to ORH 3B, the input and participation of tangata whenua is effected through MPI's relationship with Te Waka a Māui me Ōna Toka Iwi Forum (TWAM) and CIFF@44 (Chatham Islands) Forum. Orange roughy is identified as a tāonga species in both forums' fisheries plans.

### Management Strategy Evaluation

760. A Management Strategy Evaluation (MSE)<sup>69</sup> was conducted on behalf of the DWG in 2014 which defined a harvest strategy including limit reference points, target biomass range, and a harvest control rule. The MSE has been reviewed by the MPI stock assessment working group, which accepted its application to orange roughy stocks as a basis for setting the TAC and TACC on a case by case basis.

### Research

761. Orange roughy stocks are generally monitored using acoustic surveys and stock assessments completed every four years as recommended by the MSE.

### Harvest Control Rule

762. The 2014 MSE defined a harvest control rule (HCR) optimised for the characteristics of orange roughy. The objective of the HCR is to maintain the stock within the management target range (30-50%  $B_0$ ) whilst ensuring there is very low probability of the stock falling below the soft limit (20%  $B_0$ ).

763. Under the HCR, catch limits are recommended dependent on the estimated stock status in relation to the management target range (Figure 3). Where a stock is estimated to be below the midpoint of the target range, recommended catch limits are lower than for a stock near the top of the target range.

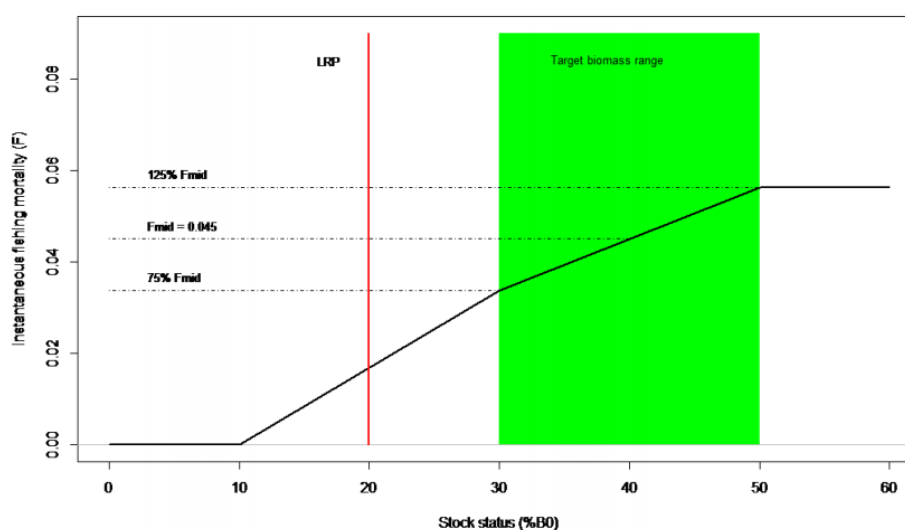


Figure 3: Orange roughy harvest control rule (HCR)

<sup>69</sup> Accessible at: <http://deepwatergroup.org/wp-content/uploads/2014/08/Cordue-2014-A-Management-Strategy-Evaluation-for-Orange-Roughy.-ISL-Re....pdf>

764. The HCR was applied to three orange roughy stocks in 2014 (Northwest Chatham Rise, East & South Chatham Rise, and ORH 7A), but was not explicitly agreed to for implementation in any other orange roughy stock.

### Current stock status

765. Acoustic surveys in 2016 underpinned stock assessments in 2017 for three key sub-stocks in ORH 3B: Puysegur, Northwest Chatham Rise, and East and South Chatham Rise. Preliminary outputs from Northwest Chatham Rise and East and South Chatham Rise stock assessments suggest that stocks are healthy but there is no information to suggest that an increase for these sub-areas is justified at this time.

766. Information from the 2017 stock assessment estimates the Puysegur sub-stock to be at 49%  $B_0$ . Figure 4 shows that the estimated biomass trajectory for the Puysegur sub-stock has increased since its closure to fishing in 1998. The median biomass estimate for 2017 lies just under the upper bound of the target range (50%), and the lower bound of the 95% confidence interval is above the lower limit of the target range (30%).

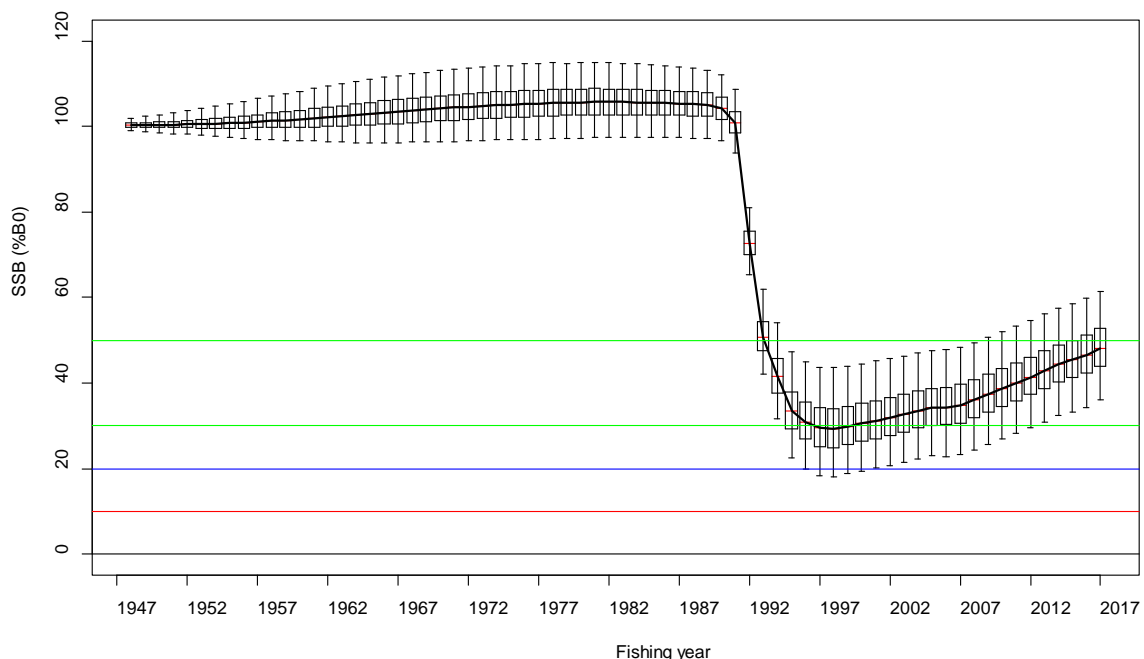


Figure 4: Puysegur base, MCMC estimated spawning-stock biomass trajectory. The box in each year covers 50% of the distribution and the whiskers extend to 95% of the distribution. The hard limit (red), soft limit (blue), and biomass target range (green) are marked by horizontal lines.

### Chatham Rise

767. Updated stock assessments are underway for Northwest Chatham Rise and East and South Chatham Rise. Preliminary results from those assessments indicate the stocks remain healthy and the sub-area catch limits do not require review at this time. As mentioned above, the HCR is currently applied to these sub-areas, and the catch limits may be reviewed in 2018 depending on the final outcome of the stock assessments.

## Statutory Considerations specific to ORH 3B

768. It is implicit that options provided in this document comply with the purpose and principles of the Act. In formulating this final advice MPI has complied on your behalf with the legal requirements with regard to consultation, providing for tangata whenua input and participation and kaitiakitanga. Further detail with respect to these provisions is found in the Addendum below.
769. With respect to specific considerations when setting a TAC, allowances and TACC for the stock in question sections 11, 13, 20 and 21 of the Act apply. Relevant matters for your consideration are outlined in more detail in the Addendum below.
770. In summary, all options are considered to maintain the stock at or above the level that will produce MSY and to pose limited risk to associated species or the environment. They differ in terms of the economic and social considerations of each option balanced against sustainability risk and these matters are outlined in the section evaluating options.

### SECTION 13 – SETTING THE TAC

773. The TAC for ORH 3B is set under s 13(2) of the Act and specifically s 13 (2) (a) applies as the stock is currently considered to be at or above the level that can produce MSY. You may choose to retain the *status quo* or agree to a modest increase to take account of the improvement in stock status of the Puysegur orange roughy fishery.
774. MPI considers that the 2017 Puysegur stock assessment is the best available information to determine the status of the stock. While there remains uncertainty in the assessment it indicates an increase in stock abundance and the potential for increased utilisation in the fishery. A single option for increasing the TAC to realise this potential is presented for your consideration.
775. The s 13(2)(a) requirement to have regard to the interdependence of stocks when setting a TAC requires consideration of the effects of fishing on associated stocks harvested with the target stock. The orange roughy fishery in ORH 3B is relatively selective; data from the years 2002 and 2015 indicates that 85% of catch in the target fishery was orange roughy; 7% smooth oreo, and 1.6% black oreo. All other QMS and non-QMS species made up less than 0.5% each of the total catch. Assuming that catch proportions are similar for the Puysegur area, MPI does not consider that increasing the ORH 3B TAC and TACC (to allow for an increase in the sub-area limit for Puysegur) poses a sustainability risk to the key species that are caught in conjunction with orange roughy. Fish bycatch levels in these fisheries will continue to be monitored to ensure that this assumption is correct.

## SECTIONS 20 AND 21 – ALLOWANCES AND THE TACC

### Allowances

776. When varying the TACC, under s 20 & 21 of the Act, you must make allowances for Māori customary non-commercial fishing interests, recreational fishing interests, and all other mortality to the stock caused by fishing.
777. Recreational and customary fishers traditionally do not catch orange roughy due to the depths it is found. There is currently no allowance within the TAC for recreational and Māori customary fishing.
778. TWAM, that represents South Island iwi in fisheries sustainability discussions with MPI, have requested an increase in the customary allowance for ORH 3B to 10 tonnes to accommodate future use of this deepwater resource for customary purposes. The South Island customary fishing regulations currently provide for customary harvest from commercial vessels.
779. Iwi utilisation opportunities are not constrained within an allowance but MPI considers that customary take should be properly accounted for in TACC setting. Given that no catch has been reported to date and that there are routine reporting requirements for customary harvest MPI considers that an allowance of five tonnes is sufficient in the short term.
780. MPI is proposing to continue to make no allowance for recreational fishing, increase the customary Māori allowance to five tonnes, and increase the allowance for other sources of fishing related mortality to 268 tonnes if you elect Option 2. No change is proposed to *status quo* allowances.

## SECTION 75 – DEEMED VALUE RATES

781. This review of the TAC for ORH 3B has triggered a review of the deemed value rates for the stock. No other deemed value criterion is triggered and no deemed value rates adjustments for this stock is proposed in the 2017 Deemed Values section of this advice (Part 6).
782. The interim deemed value rate for ORH 3B is currently set at 50% of the annual deemed value rate. As the current interim and annual deemed value rates are consistent with the Deemed Value Guidelines (2012)<sup>70</sup>, no changes are proposed to the deemed value rates for ORH 3B for the 2017/18 fishing year.

## Submissions received

783. Submissions on the ORH 3B proposals were received from the following:
- a) Tuhoe Tue Uru Taumatua
  - b) Iwi Collective Partnership (ICP)

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<sup>70</sup> See Appendix 1.

- c) Te Ohu Kaimoana (TOKM)
  - d) Sanford Ltd
  - e) Deepwater Group Ltd (DWG)
784. Feedback was also received from Te Waka a Māui me Ōna Toka Iwi Forum (TWAM) as part of input and participation before and during the public consultation process.
785. Tuhoe Te Uru Taumatua support Option 2, but no rationale was provided. Deepwater Group Limited (DWG), Te Ohu Kaimoana (TOKM) and Sanford Ltd. DWG did not favour either Option 1 or Option 2, but proposed that the harvest control rule applied to other orange roughy stocks be implemented for Puysegur. Sanford Ltd and TOKM supported the DWG proposal, although TOKM's support was conditional on the implementation of the provisos in the industry submission providing for a voluntary reduction in catch within the alternate TAC/TACC proposed.
786. Feedback from TWAM requested an increase in the customary allowance for ORH 3B to 10 tonnes from the current allowance of zero tonnes. ICP support a minimum increase of 152 tonnes to the Puysegur sub area, so the inference is they support Option 2, but not Option 1.
787. Full submissions are attached in Appendix 2.

## Evaluation of Options

788. DWG submit that the HCR that is applied in two other ORH 3B fisheries (Northwest Chatham Rise and East & South Chatham Rise), as well as in ORH 7A should now be applied in the ORH 3B Puysegur fishery. This would result in a TAC higher than that proposed by MPI.
789. DWG say that for Puysegur, there are considered to be two fisheries with characteristics that result in different recommended catch limits from the HCR. If it is assumed that the fishery will take place during orange roughy spawning, the recommended catch limit would be 460 tonnes. If the fishery is assumed not to focus on spawning, the recommended catch limit would be 910 tonnes. The difference is the result of the assumption that a fishery that does not focus on spawning fish will catch younger fish, and therefore more fish are available to take.
790. In their submission, DWG recognise that there remain gaps in the information available for the stock assessment, and propose an alternative TACC of 5,535 tonnes, with the catch limit for ORH 3B Puysegur set at 685 tonnes. DWG expressed a commitment from quota owners to limit actual catch in the Puysegur fishery to no more than 350 tonnes until the stock assessment can be updated with new information on the age structure of the population.
791. On balance, MPI considers that the uncertainty in the stock assessment precludes the application the orange roughy harvest strategy, including the HCR to ORH 3B Puysegur at this time, particularly noting the view of DWG that a conservative approach is required in the short term. The short term limit proposed by DWG (350 tonnes) is effectively the limit proposed in MPIs' Option 2.

792. Table 3 compares the predicted changes to commercial revenue under both of the options based on export price. The current catch limit for Puysegur of 150 tonnes has an estimated free on board (FOB)<sup>71</sup> export value of around \$946,000 if it were caught. Both options are discussed further below.

Table 3: Predicted changes to commercial revenue of the proposed options, based on an estimated free on board (FOB) export price of \$NZ 6.31/kg greenweight for orange roughy for 2016/17<sup>72</sup>

	TACC (t)	Change from <i>status quo</i> (t)	Predicted revenue change (\$ p.a.)
Option 1 ( <i>Status quo</i> )	5,000		
Option 2	5,202	197 ↑ (4%)	1,243,000 ↑

### OPTION 1 (*Status quo*)

793. Under Option 1, the existing TAC, TACC and allowances would be retained (*status quo*), including a sub-area catch limit for Puysegur of 150 tonnes. This option reflects a cautious approach to change given that industry has voluntarily restricted its catch in this sub-area to that required for research until the current year. In effect fully fishing the 150 tonne sub-area limit on a commercial rather than research basis provides for increased utilisation of the area.

794. Catch and effort would not increase to the same extent as for Option 2 with lesser potential for impact on bycatch of other QMS species as well as non-QMS species. Any adverse effects of fishing such as benthic impacts or incidental capture of seabirds and mammals would also be reduced.

795. The disadvantage of this option is that increased utilisation opportunities would be foregone. There were no submissions in favour of this option.

### OPTION 2 (*MPI Preferred*)

796. Under Option 2, the TAC for ORH 3B would be increased by 4.2% from 5,250 tonnes to 5,470 tonnes. This option is based on the application of a fishing mortality rate of 4.5% to the current biomass estimate from the 2017 Puysegur stock assessment. It is estimated that the abundance of the sub-stock would continue to increase with catches at this level.

797. This increase in catch limit would provide for orange roughy target fishing and also for a return of the oreo fishery which has been excluded from the area as a result of the previous agreement not to take orange roughy commercially in the Puysegur area.

798. The expected effect on revenue of the proposed options are outlined in Table 3. MPI notes that there will also be some additional economic benefit from oreo target fishing in the area which is likely to take place. The TAC for OEO 1, the relevant oreo stock, has been significantly undercaught in recent years.

<sup>71</sup>The value of export goods, including raw material, processing, packaging, storage and transportation up to the point where the goods are about to leave the country as exports. FOB does not include storage, export transport, or insurance cost to get the goods to the export market.

<sup>72</sup> Source: Statistics New Zealand. Estimated value assumes that all orange roughy is exported, and that the product state proportions and price remain constant.

799. Increasing the TACC will allow commercial fishers to take advantage of increased abundance of orange roughy. Based on the 2017 year-to-date export price of \$6.31 per kilogram, an additional commercial catch of 197 tonnes would be worth approximately \$1.243 M in export receipts annually.
800. Increasing the TAC by the amount proposed in Option 2 is consistent with the objective of maintaining the stock at or above, or moving the stock towards or above, a level that can produce the maximum sustainable yield and the relevant objectives of the fisheries plan for deepwater fisheries.
801. While a 197 tonne (4%) increase in the TACC appears modest response it is in effect a significant increase in the sub-area limit that applies to Puysegur. MPI considers that this increase is supported by current science but a cautious approach is still required in relation to this sub-stock. The stock assessment for the Puysegur sub-area is based on a single acoustic survey in 2016 and limited age data.

## Addendum: Assessment against statutory obligations

802. The following section provides information specific to the application of the generic considerations (see Part 2) to ORH 3B.

### SECTION 8 – PURPOSE OF THE ACT

803. MPI considers that all options presented in this paper satisfy the purpose of the Fisheries Act 1996 on the basis that they provide for the utilisation of ORH 3B while ensuring sustainability. Option 1 is the most cautious with respect to sustainability, while Option 2 is less cautious with respect to sustainability, but provides for increased utilisation.

### SECTION 9 – ENVIRONMENTAL PRINCIPLES

804. A summary of the interactions between the ORH 3B fishery and the aquatic environment, and how these are likely to be affected by the proposals, is provided below.

#### Maintaining viability of associated or dependent species (s 9(a))

805. The proposed TAC and TACC increase applies to ORH 3B generally, and the Puysegur sub-QMS specifically. Since no fishing targeting orange roughy has occurred in Puysegur since 1998, Option 2 will result in increased effort therefore an increase of interactions with protected species in the fishery may be anticipated. MPI does not expect the increase in interactions with protected species to be significant given the scale of increase proposed.

806. The increase in fishing is likely to increase catch of some associated species. The main species associated with orange roughy fishing, based on MPI observer-collected information from other areas, are oreos and deepwater sharks. It is not expected that the increase in the TACC will have any adverse impacts on oreo stocks. This is because the OEO 1 fishstock is currently undercaught. Since 2007-08 the TAC for OEO 1 has been 2,500 tonnes whereas landings over the same period have not exceeded 1,000 tonnes. Oreos historically make up around 10% of catch in the orange roughy target fishery. Therefore the relatively modest increase in orange roughy target fishing following a TACC increase, combined with the high TACC for oreo (relative to oreo landings) and relatively low oreo bycatch, imply that the risk to oreo sustainability is low.

#### *Seabirds, mammals and protected fish*

807. Orange roughy and oreo target fishing is considered to pose low risk to seabirds and marine mammals. The 2017 Plenary report<sup>73</sup> states that observed interactions between the ORH 3B fishery and protected species are relatively low. Between 2002-03 and 2014-15, observed fur seal and seabird capture rates were one to two orders of magnitude lower than other trawl fisheries. MPI considers there will be no significant change to this level of interaction under either no change to the TAC (Option 1) or a modest increase to the TAC (Option 2).

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<sup>73</sup> Ministry for Primary Industries (2017) Fisheries Assessment Plenary May 2017: Stock Assessments and Stock Status <http://fs.fish.govt.nz/Page.aspx?pk=113&dk=24334>



## Biological diversity of the aquatic environment (s 9(b))

808. Trawling for orange roughy is likely to have effects on benthic community structure and function and there may be consequences for benthic productivity. The main prey species of orange roughy include mesopelagic and benthopelagic prawns, fish and squid. Smaller fish (up to 20 cm) feed on crustaceans, and larger fish (31 cm and above) feed on teleosts (fish) and cephalopods (squid). Juveniles feed more on the benthos compared with the benthopelagic foraging of adults.
809. For orange roughy trawls since 2005–06, orange roughy accounted for about 84% of the total observed catch and the remainder comprised mainly oreos (10%), hoki (0.4%), and cardinalfish (0.3%). Total annual bycatch in the orange roughy fishery has been as high as 27,000 tonnes but has declined with reductions in the TACC and was less than 4,000 tonnes between 2005–06 and 2008–09, with non-commercial species comprising only 5–10% of the total.
810. Invertebrate species are caught in low numbers in the orange roughy fishery (Anderson 2011). Squid (mostly warty squid) were the largest component of invertebrate catch, followed by various groups of coral, echinoderms (mainly starfish), and crustaceans (mainly king crabs). Analysis of observed trawl effort data from 2007–08 to 2009–10 for the orange roughy target fishery suggests that about 10% of observed tows in FMA 4 and FMA 6 included coral bycatch. Coral presence is very spatially variable, therefore MPI will continue to monitor coral bycatch.

## Habitats of particular significance for fisheries management (s 9(c))

811. Bottom trawling can affect fragile benthic invertebrate communities but any adverse effects may be reduced if vessels repeatedly trawl along the same towlines in a fishery. A return to targeting orange roughy and potentially oreos in the Puysegur area will result in increased potential for benthic impact.
812. Management measures to address the effects of deepwater trawl activity have focused on ‘avoiding’ these effects. This has been achieved through regulations closing areas to bottom trawling; first with seamount closures in 2001<sup>74</sup> (ten of these closures are within ORH 3B) and then with Benthic Protection Areas<sup>75</sup> (12 of these are within ORH 3B). Seamount closures and BPAs combined result in the closure of 15% of the recognised depth range of ORH in ORH 3B to bottom trawling. A monitoring regime is in place to ensure these closures are adhered to.
813. MPI does not anticipate any significant increase in trawling activity or benthic impacts arising from the TACC increases proposed under Option 2. Nevertheless, the bottom trawl footprint of orange roughy fisheries will continue to be monitored annually.

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<sup>74</sup> Through section 73 of Fisheries (Commercial Fishing) Regulations 2001, accessible at <http://legislation.govt.nz/regulation/public/2001/0253/46.0/DLM76407.html#DLM78041>

<sup>75</sup> Accessible at <http://legislation.govt.nz/regulation/public/2007/0308/latest/DLM973968.html?src=qs>

## SECTION 10 – INFORMATION PRINCIPLES

814. The advice provided in this paper is based on the best available information, namely:

- a) Input and participation from tangata whenua
- b) Feedback from consultation

## SECTION 11 – SUSTAINABILITY MEASURES

815. This section sets out the considerations that section 11 requires you to take into account relating to ORH 3B.

- a) Section 11(1)(a): take into account any effect of fishing on any stock and the aquatic environment. Refer paragraphs 33 for the interactions of the target fishery with other stocks and 65-74 for aquatic environment considerations.
- b) Section 11(1)(b): take into account any existing controls under the Act that apply to the stock or area concerned. For this stock the measures that apply currently are a TAC, TACC, and allowances for customary take, recreational take, and other sources of fishing-related mortality. Other standard management controls apply to the ORH 3B fishery, for example deemed values and fishing method constraints. The proposed options do not affect these measures.
- c) Section 11(1)(c): take into account the natural variability of the stock concerned. Orange roughy is a slow growing species with a slow recovery time and little natural variability in the stock. This biological characteristic suggests the need for a cautious approach to its management
- d) Sections 11(2)(a) and (b): have regard to any provisions of any regional policy statement, regional plan, or proposed regional plan under the Resource Management Act 1991 and any management strategy or management plan under the Conservation Act 1987 that apply to the coastal marine area and that you consider relevant. MPI is not aware of any other policy statements, plans or strategies that should be taken into account for ORH 3B.
- e) Sections 11(2A)(b): you must take into account any relevant fisheries plan approved under Part 3 of the Act, before setting or varying any sustainability measure. As discussed above, a National Fisheries Plan for Deepwater and Middle-depth Fisheries (the National Deepwater Plan) was given Ministerial approval in 2010. MPI considers that Option 3 will meet the management objectives set out under the National Deepwater Plan that are discussed in section 2.1.3 – *Management approach*.

## SECTION 12 – CONSULTATION AND INPUT AND PARTICIPATION

816. Section 12(1)(a) requires that you consult with such persons or organisations you consider are representative of those classes of persons having an interest in the stock or the effects of fishing on the aquatic environment, including Māori, environmental, commercial and recreational interests. Following public consultation, no submissions were received from

individuals or groups representing sectors other than tangata whenua or industry. Submissions from tangata whenua and industry are in the *Submissions Received* section above.

## Input and Participation

817. Section 12 (1)(b) requires that before you make decisions under sections 11 to 15 of the Act you must provide for the input and participation of tangata whenua into those processes. The Ministry has provided for input and participation of tangata whenua by establishing regional iwi fisheries forums, assisting iwi in those forums to develop iwi fisheries plans. MPI meets with all forums three times a year.
818. The forum(s) have the opportunity to consider proposals at an early stage contribute to the refinement of proposals. They have also been consulted on the final options. Where forums are yet to be established, iwi were sent all relevant material to enable them to make an informed decision on the effect of options on their rights and interests.

## Kaitiakitanga

819. Under Section 12(1)(b) you must have particular regard to kaitiakitanga before setting or varying a TAC. Under the Fisheries Act 1996, provides an interpretation of kaitiakitanga.<sup>76</sup> Relevant iwi or forum fish plans provide a view of the objectives and outcomes iwi seek from the management of the fishery and can provide an indication of how iwi exercise kaitiakitanga over fisheries resources. Iwi views from forum meetings and submissions received from iwi can also provide an indication of how kaitiakitanga is achieved.
820. The proposal on ORH 3B was presented to iwi fisheries forums relating to South Island iwi, TWAM and the Te Tau Ihu Iwi Forum (TTI). These two forums represent the nine iwi of the South Island, each holding mana moana and significant interests (both commercial and non-commercial) in South Island fisheries. TTI represents the eight iwi at the top of the South Island, and TWAM represents those eight iwi plus Ngai Tahu.
821. No objections were raised at their hui in Nelson on 22 June 2017, although they did comment on customary allowances. No submissions were made on the proposal from relevant tangata whenua. The proposals represent a conservative increase in the TAC and a TACC for the stock. The proposal appears consistent with the objectives of the relevant iwi fisheries plans.

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<sup>76</sup> Kaitiakitanga is interpreted to mean the exercise of guardianship, and in relation to any fisheries resource, includes the ethic of stewardship, based on the nature of the resource as exercised by the appropriate tangata whenua in accordance with tikanga Māori.

## Conclusion and Recommendations

822. Available information on the status of the Puysegur sub-stock of ORH 3B at this time suggests that the stock is healthy, and has recovered from the historical heavy fishing pressure that led to its closure. Increasing the TAC and TACC at this point creates opportunities for the fishing industry to increase the economic benefits that can be obtained from the fishery.
823. MPI recommends that you implement Option 2. MPI considers that this option best responds to the 2017 Puysegur stock assessment providing for a relatively conservative increase in utilisation in the fishery. This option is consistent with that proposed by industry albeit the DWG proposal was a combination of a larger increase in TAC/TACC than that proposed by MPI combined with a voluntary agreement to fish to a lesser amount.
824. MPI notes that you have broad discretion in exercising your powers of decision making, and may make your own independent assessment of the information presented to you in making your decision. You are not bound to choose the option recommended by MPI. MPI considers both options are consistent with your statutory obligations.

### *Option 1 – status quo*

**Agree** to retain the ORH 3B TAC at 5,250 tonnes and within the TAC:

- i. Retain the allowance of 0 tonne for Māori customary non-commercial fishing interests;
- ii. Retain the allowance of 0 tonnes for recreational fishing interests;
- iii. Retain the allowance of 250 tonnes for other sources of fishing-related mortality;
- iv. Retain the ORH 3B TACC at 5,000 tonnes.

**Agreed / Not Agreed**

OR

### *Option 2 (MPI's preferred option)*

**Agree** to increase the ORH 3B TAC from 5,250 to 5,470 tonnes and within the TAC:

- i. Increase the allowance for Māori customary non-commercial fishing from 0 to five tonnes;
- ii. Retain the allowance of 0 tonne for recreational fishing interests;
- iii. Increase the allowance for other sources of fishing-related mortality from 250 to 268 tonnes;

- iv. Increase the ORH 3B TACC from 5,000 to 5,197 tonnes.

**Agreed** / Not Agreed

  
Hon Nathan Guy  
Minister for Primary Industries

21 / 8 / 2017



## PART 6: DEEMED VALUE RATES

### Summary

825. The Ministry for Primary Industries (MPI) recommends that you consider the deemed value rates for the fish stocks identified below. Your decisions will be effective from 1 October 2017.
826. Eighteen stocks were identified for deemed value rate review. Proposals for these deemed value rates review were developed based on statutory requirements, the Deemed Values Guidelines (the Guidelines; see Appendix 1)<sup>77</sup>, and key information. This work was undertaken because:
- a) the TAC for the relevant stock is being reviewed in 2017, which may have consequential implications for deemed value rates;
  - b) the relevant stock is new and has yet to have a deemed value rate set; or
  - c) the TACC has been over-caught for a period.
827. All bluenose stocks (BNS 1, BNS 2, BNS 3, BNS 7 and BNS 8), red gurnard (GUR 7), hake (HAK 7), orange roughy (ORH 3B) and paua (PAU 3, PAU 4 and PAU 7) are the subject of TAC reviews in 2017. However, apart from the TAC review, under the Guidelines no criterion for review of the deemed value rates for these stocks were triggered, and no reviews were proposed. No alternative deemed value rate settings for these stocks are recommended in this paper.
828. Red cod (RCO 2) is proposed for a sustainability measures review for the 2017/18 fishing year and qualifies for deemed value rate adjustments since deemed value rate review criteria identified above are also triggered. For the majority of the remaining stocks for deemed value rate review, recommendations concern stocks that have been overfished in recent years only.
829. The recommended approach concerning all stocks for deemed value rate review in this paper is to increase interim deemed value rates from 50% to 90% of the annual deemed value rate. Increasing the interim deemed value, but not raising the annual deemed value, is a first response to over-catch. The response works by signalling more explicitly to fishers the advantage of more regular catch balancing throughout the year.
830. The recommendations in this paper have been developed in line with the relevant statutory requirements, the best available information, and tangata whenua and stakeholder input.

### Purpose

831. Deemed value rates are prescribed by Gazette Notice under section 75 of the Fisheries Act 1996. Commercial fishers who do not balance catch with annual catch entitlement (ACE) monthly are invoiced for deemed value payments. The deemed value regime is intended to constrain commercial catch to respective catch limits by encouraging fishers

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<sup>77</sup> Deemed Value Guidelines. MPI Technical Paper 2012/08. 14p. ([link](#))

to balance their catch with ACE, while not discouraging them from landing and accurately reporting catch.

## Background Information

### IDENTIFYING STOCKS FOR DEEMED VALUE REVIEW

832. Before determining which stocks to review deemed value rates for, MPI:

- a) invited the fishing industry to nominate stocks for deemed value rate reviews, in the context of discussions as part of the annual fisheries planning process;
- b) considered stocks where total allowable catch levels were being reviewed for 1 October 2017;
- c) assessed October fishing year stocks against the Performance Measures outlined in the Guidelines for the deemed value framework -
  - i. Catch in excess of the TACC<sup>78</sup>
  - ii. The percentage of catch for each stock not balanced with Annual Catch Entitlement (ACE).
- d) considered whether deemed value rates were consistent with the Guidelines (i.e., interim deemed value rates 90% of annual DV rate and how annual DV rates relate to ACE and port price); and
- e) compared the ratio of the total deemed value payments to the value of quota (at a general and stock level) – the target in relation to this indicator is less than 0.1% of the value of quota in any fishing year.

833. Table 1 sets out the prioritised stocks and their assessment against performance measures listed above.

**Table 1: Rationale for fish stocks prioritised for review (DV = deemed value)**

Stock	Rationale for review
RCO 2	- Subject of a sustainability review in 2017 - Schedule 2 stock with agreed management procedure for 'in-season' TAC review
GLM 9	- 110% caught in 2015/16 - Schedule 6 stock, highly selective catch - Ratio DV to QV <sup>79</sup> is 0.010 or 1.0%
SCH 3	- 103% caught in 2015/16 - Schedule 6 stock - Ratio of DV to QV is 0.017 or 1.7%
RSK 8	- 148% caught in 2015/16 - Schedule 6 stock - Ratio of DV to QV is 0.086 or 8.6%
SSK 8	- 148% caught in 2015/16 - Schedule 6 stock - Ratio of DV to QV is 0.082 or 8.2%
TAR 8	- 102% caught in 2015/16 - Ratio of DV to QV is 0.006 or 0.6%
TRE 2	- 108% caught in 2015/16 - Ratio of DV to QV is 0.01 or 1%

<sup>78</sup> Catch in excess of ACE as an alternative to catch in excess of the TACC because a small amount of ACE can be carried over from the previous fishing year.

<sup>79</sup> QV = Quota value.



## Consultation

834. MPI has consulted and sought input from tangata whenua on the proposed changes, following MPI's standard consultation process.

835. Initial proposals are outlined in Table 2 below.

**Table 2: Current and proposed deemed value rates (\$/kg) for selected stocks from 1 October 2017**

Species	Stock	Current				Proposed			
		Interim \$/kg	Annual \$/kg	Annual at maximum excess \$/kg	Differential	Interim \$/kg	Annual \$/kg	Annual at maximum excess \$/kg	Differential
Green-lipped mussel	GLM 9	5.40	6.00	12.00	Standard	9.00	10.00	20.00	Special
Red cod	RCO 2	0.14	0.28	0.56	Standard	0.25	0.28	0.56	Standard
School shark	SCH 3	0.90	1.80	3.60	Standard	3.20	3.60	7.20	Standard
Skates	RSK 8	0.32	0.35	0.70	Standard	0.24	0.26	0.52	Standard
	SSK 8	0.32	0.35	0.70	Standard	0.24	0.26	0.52	Standard
Tarakihi	TAR 8	1.25	2.50	5.50	Special	2.48	2.75	5.50	Special
Trevally	TRE 2	0.70	1.25	5.00	Special	1.13	1.25	5.00	Special

836. During the consultation period, MPI received input on deemed value rates from the Iwi Fisheries Forums of Te Tai Hauāuru Regional Fisheries Forum and Te Hiku o te Ika Fisheries Forum.

837. Te Tai Hauāuru Regional Fisheries Forum expressed support for the proposed deemed value rates for RCO 2, RSK 8, SSK 8 and TAR 8.

838. Te Hiku o te Ika Fisheries Forum expressed support for the proposed deemed value rates for GLM 9 and opposes any measures that could lead to increased GLM 9 fishing activity. The Forum raised concerns about the GLM 9 fishing activity on Ninety Mile Beach, including impacts on the environment, and would like these to be addressed as a priority.

839. The Forum considers that the current deemed value rates for GLM 9 are not providing enough incentive for fishers to harvest GLM 9 within available ACE and notes that, given it is a selective target fishery, the deemed value rates should be set relatively high.

840. The Forum is cautious of adjusting the spat to seaweed ratio as the Forum considers that spat ratio is being promoted as a means to reduce the constraints of sourcing GLM 9 ACE, and could lead to increased GLM 9 fishing activity in the future.

841. Considerations on the management of GLM 9 that are outside of the scope of the deemed value rate review are outlined and responded to in section 4.5.1 of this paper.

## SUBMISSIONS RECEIVED

842. MPI received 16 submissions relating to the proposed changes. Submissions were received from:

- a) Aquaculture New Zealand (AQNZ)
- b) Coromandel Marine Farmers Association (CoroMFA)
- c) Mr. Denis Lander (representing Aston Trawling Limited)
- d) Fisheries Inshore New Zealand (FINZ)
- e) MacLab New Zealand Limited
- f) Marine Farming Association (MFA)
- g) Mr. Kirk Denison
- h) Mr. Robbie Denison
- i) Mr. Allen Tester
- j) Mr. Jonathan Tester
- k) Pare Hauraki Kaimoana
- l) Rough Waters Limited
- m) Sanford Limited (Sanford)
- n) Southern Inshore Fisheries New Zealand (SIFNZ)
- o) Talley's Group Limited (Talley's)
- p) Tūhoe Te Uru Taumatua

843. Submitter's comments on the proposed deemed value rate changes for specific stocks are addressed in the analysis of each species or stock below. Full copies of the submissions are available in Appendix 2.

## Deemed Value Rate Options

### ANALYSIS OF OPTIONS

844. MPI recommends that you approve changes to deemed value rates for selected stocks as outlined in Table 2. No input or feedback through consultation suggests that MPI's initial proposals should change, hence these recommendations are the same as those consulted on and are discussed below.

845. MPI considers all recommend deemed value rates presented as being consistent with your statutory obligations under section 75(2)(a) and 75(2)(b) of the Act.

### STOCKS TO BE CONSIDERED IN CONJUNCTION WITH CURRENT TACC DECISIONS

846. All bluenose stocks (BNS 1, BNS 2, BNS 3, BNS 7 and BNS 8), red gurnard (GUR 7), hake (HAK 7), orange roughy (ORH 3B) and paua (PAU 3, PAU 4 and PAU 7) are the subject of TAC reviews in 2017. However, apart from the TAC review, under the Guidelines no criterion for review of the stocks' respective deemed value rates were triggered or proposed for review. No alternative deemed value rate settings for these stocks are recommended in this paper.

## Red cod (RCO 2)

847. Red cod in RCO 2 are primarily taken as bycatch in a mixed trawl fishery. RCO 2 is included on Schedule 2 of the Act, which enables the RCO 2 TAC to be increased within a fishing year under section 13(7) and, additional ACE to be generated for that fishing year in accordance with section 68.
848. Following a proposal to increase the RCO 2 TAC within the 2016/17 fishing year, MPI also put forward a proposal to review the “baseline” TAC (the settings that are reverted to at the start of the next fishing year) to set allowances for customary Maori fishing, recreational fishing and other sources of fishing–related mortality for the first time.
849. Within the 2017 review MPI is not proposing to alter the TACC, which has not been over-caught in recent years, but does propose to increase the interim deemed value rates for RCO 2 from 50% of the annual deemed value rate to 90%. Guidelines state that interim deemed value rates must generally be set at 90% of the annual deemed value rate, in order to encourage fishers to balance catch with ACE throughout the year. MPI notes that there may be a tendency for fishers to wait to balance catch with ACE in this fishery as they wait to see whether additional ACE will be provided within the fishing year.

### *Submissions*

850. MPI received one submission opposing the proposed deemed value rates for RCO 2 from FINZ, representing commercial interests.
851. FINZ submits on behalf of the Area 2 Regional Committee (the Committee) that the Committee opposes the setting of a higher interim deemed value rate for RCO 2 and notes there is no incentive to over-catch RCO 2 ACE as the current ‘in-season’ management approach can mitigate this risk.
852. The Committee submits that while they would support the proposed raising of the interim deemed value for RCO 2 under general fisheries management circumstances, the committee cannot support the proposal until the process for the RCO 2 in-season review is expedited to provide a timely utilisation opportunity to fishers.
853. MPI received one submission supporting the proposed deemed value rates for RCO 2 from Tūhoe Te Uru Taumatua, representing Māori customary interests.

### *MPI Response*

854. MPI agrees that an ‘in-season’ review can mitigate the risk of over-catching RCO 2 ACE as additional ACE can be generated within fishing years if a high RCO 2 abundance is evident.
855. However, there is no guarantee that an ‘in-season review’ will occur annually since it is evaluated on the stock’s abundance within that current fishing year. Hence there is no certainty on whether an additional allowance of ACE within the fishing year will be provided. This is important for fishers to realise, because otherwise speculation of ACE provision later in the fishing year will influence ACE balancing practices of fishers throughout the year.

## Recommendation

**Table 3: Current and recommended deemed value rates (\$/kg) for RCO 2**

Stock	Option	Interim deemed value rate	Annual deemed value rate	Annual Differential Rates for excess catch (% of ACE)				
				>120%	>140%	>160%	>180%	>200%
RCO 2	Current	0.14	0.28	0.34	0.39	0.45	0.50	0.56
	Recommended	0.25	0.28	0.34	0.39	0.45	0.50	0.56

856. In MPI's view this change should encourage fishers to balance catch with ACE throughout the year and to reduce speculation that catches earlier in the year could be balanced with additional ACE later in the year should an in-season increase be provided.

857. MPI recommends that the interim deemed value rate for RCO 2 be adjusted as recommended in the shaded part of Table 3, namely from \$0.14/kg to \$0.25/kg. This is:

- 90% of the annual deemed value rate (up from 50%), and
- above the ACE price (\$0.09/kg).

858. MPI is not recommending a change to the RCO 2 annual deemed value rate.

## STOCKS TO BE CONSIDERED DUE TO OVER-CATCH

859. Six stocks, GLM 9, SCH 3, RSK 8, SSK 8, TAR 8 and TRE 2 were identified for review given over-catch in 2015/16 and in some instances high deemed value payments were made in comparison to quota value. The fisheries that the stocks are taken in vary, and are described further below.

### Green-lipped mussel (GLM 9)

860. Commercial harvesting occurs primarily on green-lipped mussel spat attached to beach-cast seaweed in GLM 9 and is a highly selective target fishery. Spat collected from GLM 9 is the principal source for the New Zealand Green-Lipped Mussel aquaculture industry, at around 80-90% of the total supply.

861. The GLM 9 stock is recognised for its strategic place in contributing to mussel aquaculture viability and value, and aquaculture development into the future. Due to progressive growth of green-lipped mussel aquaculture, the demand for GLM 9 spat to supply this industry has accelerated in recent years.

862. Historically, landings have been variable, but harvests have exceeded the GLM 9 TACC in recent years and some fishers have incurred significant deemed value payments. It is likely that some fishers are harvesting above available GLM 9 ACE despite the known deemed value charges incurred for doing so. This suggests that the current deemed value settings, in relation to the reported port price, do not accurately reflect the value of the green-lipped mussel spat fishery to industry.

### Submissions

863. Submissions opposing the proposed GLM 9 deemed value rates were provided by:

- a) Aquaculture New Zealand (AQNZ)

- b) Coromandel Marine Farmers Association (CoroMFA)
- c) Fisheries Inshore New Zealand (FINZ)
- d) MacLab New Zealand Limited
- e) Marine Farming Association (MFA)
- f) Mr. Kirk Denison
- g) Mr. Robbie Denison
- h) Mr. Allen Roy Tester
- i) Mr. Jonathan Blair Allen Tester
- j) Pare Hauraki Kaimoana
- k) Rough Waters Limited
- l) Sanford Limited (Sanford)

864. Submissions opposing MPI's proposals to alter the deemed value rates for GLM 9 have all come from commercial fishing or aquaculture and aquaculture product interests.
865. The majority of these submissions have stated that there are no known sustainability issues with the GLM 9 stock and that other management measures should be considered before increasing deemed value rates. These submissions highlight the importance of enabling the continued harvest of green-lipped mussel spat from GLM 9 to supply, and not limit, the growth of burgeoning green-lipped mussel aquaculture industries in regions such as the Marlborough Sounds, Stewart Island and the Firth of Thames.
866. Submissions opposing the proposed increases to the GLM 9 deemed value rates note that the TACC for GLM 9 was initially set in 2004 at a level that was considered by industry to meet foreseeable future needs for five years beyond 2004, rather than due to sustainability concerns. However, as the TACC has not been reviewed since 2004, these submissions assert that the current GLM 9 TACC level is now outdated in its ability to meet the present utilisation opportunities.
867. Submissions opposing deemed value rate proposals assert that the fishery for GLM 9 should be considered as a special case for the application of deemed value rates under the Deemed Value Guidelines. These submissions reason that the initial GLM 9 deemed value settings were intentionally set at a relatively low level to enable non-quota holders access to the fishery, reduce potential for quota aggregation, and provide effective incentives for collaboration among quota holders for improved utilisation of the fishery.
868. FINZ submits that the current value of GLM 9 spat is near, but below, the proposed deemed value rates after taking into account the spat to seaweed ratio, but regardless, submits that setting a deemed value figure higher than the port price would be an inappropriate management approach in consideration of the Deemed Value Guidelines.
869. FINZ acknowledges that deemed values are fundamental to protecting the TACC and, as fishers have no incentive to harvest GLM 9 above the commercial catch allowance other than for reasons of financial profitability, submits that an increase to deemed value rates may be warranted because of this.
870. Mr. R Denison and Rough Waters Limited supports the submission of Mr. K Denison and both submitters further note that larger entities are continuing to aggregate GLM 9 quota and are limiting the availability of quota and ACE in the market. Mr. R Denison and Rough Waters Limited submit that any increase to the GLM 9 deemed values will further marginalise independent ACE fishers from the fishery as larger entities only provide ACE to preferred clients.

871. Mr. K Denison, Mr. A Tester and Mr. J Tester propose that the deemed values rates should be returned to their initial 2004 settings when GLM 9 was first introduced to the QMS.
872. MPI received two submissions supporting the proposed deemed value rates for GLM 9, one from Talley's Group Limited (Talley's), representing commercial interests, and the other from Tūhoe Te Uru Taumatua.
873. Talley's submits that over-fishing in the GLM 9 fishery is entirely preventable and the deemed value rates for GLM 9 must be set punitively to constrain fishers' behaviour.

#### *MPI Response*

874. MPI acknowledges that an increased deemed value could impact on commercial fishers and mussel farmers who have been relying on deemed values to source spat for aquaculture. Some may need to adjust their business models as a result of the recommended increase in deemed values. Deemed value rates are set to incentivise the behaviour of fishers to balance catch with ACE and to constrain catch within the commercial allowance, and all commercial parties are subject to the same deemed value rates. MPI notes GLM 9 is a high value stock and a highly selective fishery.
875. The concerns and proposals from submitters relating to wider management of the fishery (particularly adjustment of the spat to seaweed ratio set for GLM 9, and the TACC for the fishery) are not within the scope of this deemed value review. As described in section 4.5.1 of this paper, MPI is considering a wider review of management measures for GLM 9. This would include reviewing the spat to seaweed ratio and the TACC for GLM 9 to ensure they are providing for sustainable utilisation of the fishery.

#### *Recommendation*

**Table 4: Current and recommended deemed value rates (\$/kg) for GLM 9**

Stock	Option	Interim deemed value rate	Annual deemed value rate	Annual Differential Rates for excess catch (% of ACE)				
				>120%	>140%	>160%	>180%	>200%
GLM 9	Current	5.40	6.00	7.20	8.40	9.60	10.80	12.00
	Proposed	9.00	10.00	20.00	>105%			

876. MPI recommends that the setting of the GLM 9 interim and annual deemed rates be guided by Principle 5 of the Guidelines. Principle 5 suggests that deemed value rates should generally be set at twice the landed price for high value single species fisheries. For high value single species fisheries (that is, with no or minimal bycatch) MPI considers it appropriate to apply very strong incentives for fishers to catch only the amount for which they have ACE.
877. MPI recommends that the interim and annual deemed value rates for GLM 9 be adjusted as recommended in the shaded part of Table 4, namely from \$5.40/kg and \$6.00/kg, respectively, to \$9.00/kg and \$10.00/kg, respectively. These are:
- approximately twice the reported port price at landing (\$5.23/kg) of the combined greenweight of spat and seaweed, and
  - more reflective of the true market value for GLM 9 spat, in consideration of the 50:50 spat to seaweed ratio.

878. MPI is recommending the GLM 9 interim deemed value rate to be set at 90% of the annual deemed value rate, as it is currently, to incentivise fishers to source ACE during the year instead of leaving catch balancing until the end of the year.
879. MPI recommends that the setting of the GLM 9 differential deemed value rates be guided by Principle 8 of the Guidelines, where stringent schedules are applied to a stock where utilisation and sustainability objectives are best met by providing very strong incentives for catch not to exceed ACE.
880. In the case of GLM 9 it is not possible to estimate the sustainable level of harvest. Regardless, due to the high value of the stock and the highly selective nature of the fishery, MPI recommends changing the current standard deemed value differential schedule for GLM 9 to a special differential schedule. MPI recommends setting the differential schedule at an elevated rate, and at a low threshold of annual overcatch (catch in excess of 105% of ACE).

### School shark (SCH 3)

881. School shark in SCH 3 is predominantly caught as a target species in the West Coast South Island set net fishery and mixed species trawl fisheries. School shark catches are usually constrained at about the level of the TACC, but have exceeded the TACC in 3 of the last 12 years since the TACC was raised for the 2004/05 fishing year.
882. Under Schedule 6 of the Act, school shark in SCH 3 can be returned to the water given that they have a high likelihood of survival.

### *Submissions*

883. MPI received two submissions opposing the proposed deemed value rates for SCH 3 from SIFNZ and FINZ, both representing commercial fishing interests.
884. SIFNZ acknowledges MPI's statement that SCH 3 landings have occasionally, but not regularly, exceeded the TACC since the TACC was last increased 12 years ago. However, both FINZ and SIFNZ disagree that market conditions particular to SCH 3 have influenced increased targeting of this stock above ACE availability, or have incentivised fishers to land in excess of available ACE.
885. SIFNZ acknowledges that there is likely to be a niche market for school shark fins, but submits that this adds market value to the fishery which is not passed back to fishers. Further, SIFNZ asserts that deemed value rate increases are not warranted as there are no sustainability concerns relating to the stock.
886. FINZ supports the submission of SIFNZ in opposing the proposed increase in deemed values for SCH 3. SIFNZ submits that basing the valuation of a stock on an index other than the port price is inappropriate, and FINZ also submits that setting deemed values in excess of the port price is an unreasonable fisheries management practice under the Deemed Value Guidelines. Both SIFNZ and FINZ similarly oppose MPI's views that the port price index for SCH 3 does not accurately reflect the true value of the fishery.

887. MPI received one submission supporting the proposed deemed value rates for SCH 3 from Tūhoe Te Uru Taumatua.

#### *MPI Response*

888. The reported port price for SCH 3 has declined in recent years. Taking into account that the landings of school shark have not significantly changed over recent years, the fact that fishers have landed SCH 3 in excess of ACE holdings suggests that the port price for both the meat and fins of SCH 3 may not accurately reflect the full value of SCH 3 to industry.

889. An alternative basis for setting deemed value between the ACE and port price is provided in the guidelines: Deemed value rates must generally be set at twice the port price for high value single species fisheries. For a target species such as school shark this option has the advantage that the setting of an effective deemed value is less sensitive to fluctuations in the SCH 3 port price.

#### *Recommendation*

**Table 5: Current and recommended deemed value rates (\$/kg) for SCH 3**

Stock	Option	Interim deemed value rate	Annual deemed value rate	Annual Differential Rates for excess catch (% of ACE)				
				>120%	>140%	>160%	>180%	>200%
SCH 3	Current	0.90	1.80	2.16	2.52	2.88	3.24	3.60
	Recommended	3.20	3.60	4.32	5.04	5.76	6.48	7.20

890. MPI recommends that the setting of the SCH 3 interim and annual deemed rates be guided by Principle 5 of the Guidelines. Principle 5 suggests that for high value target fisheries it is appropriate to provide strong incentives to catch only the amount for which fishers have ACE.

891. MPI recommends that interim and annual deemed value rates for SCH 3 be adjusted as recommended in the shaded part of Table 5, namely \$0.90/kg and \$1.80/kg, respectively, to \$3.20/kg and \$3.60/kg, respectively. These rates are set above the reported port price (\$2.37/kg).

892. MPI recommends setting the interim deemed value rate at 90% of the annual deemed value rate to incentivise fishers to source ACE during the year instead of leaving catch balancing until the end of the year

#### **Skates (RSK 8 and SSK 8)**

893. Rough skate (RSK 8) and smooth skate (SSK 8) are mainly taken as bycatch in trawl fisheries targeting a range of inshore species. Due to the strong biological and market similarities between rough and smooth skates, MPI's approach is to review the deemed value rates for both species at the same time.

894. The TACCs for both stocks are relatively small compared to other skate stocks. Skates were included in the review of deemed value rates due to the TACC for both stocks being consistently over-caught since their introduction to the QMS.



## Submissions

895. MPI received two submissions supporting the proposed deemed value rates for RSK 8 and SSK 8 from FINZ, and Tūhoe Te Uru Taumatua.
896. FINZ supports lowering the deemed value rates for RSK 8 and SSK 8 but proposes an improved management approach for these two stocks given the nature of these stocks as principally being taken as bycatch is associated inshore fisheries. FINZ notes that fishers in the RSK 8 and SSK 8 QMAs who are trying to avoid catch of species such as snapper have moved into areas where they are unintentionally encountering greater bycatch of skates.
897. FINZ notes further that while Schedule 6 of the Act allows the return of live skates to the sea, given their low likelihood of survival post capture, not all skates can be returned to sea voluntarily. As such, fishers are required to land skates and incur deemed values payments as a consequence.
898. FINZ submits that both skate stocks for deemed value rate review are managed as low value and low information stocks, and, rather than investing in stock assessments or adjusting deemed value rates, suggests that an increase to the TACC is warranted due the consistency of high catch levels and deemed value payments incurred since the introduction of the two stocks into the QMS.
899. No submissions opposing the proposed deemed value rates for RSK 8 and SSK 8 were received.

## MPI Response

900. MPI acknowledges the support from FINZ to review the deemed values for this stock. The setting of deemed value rates is a separate process from setting TACCs, even though the primary purpose of the deemed value framework is to provide incentives for all catch to be covered by ACE, and consequently for catches to not exceed TACCs.
901. Your decision to set a deemed value rate should not be influenced by whether or not submitters consider the TACC for a stock to be set correctly.

## Recommendation

**Table 6: Current and recommended deemed value rates (\$/kg) for RSK 8 and SSK 8**

Stock	Option	Interim deemed value rate	Annual deemed value rate	Annual Differential Rates for excess catch (% of ACE)				
				>120%	>140%	>160%	>180%	>200%
RSK 8	Current	0.32	0.35	0.42	0.49	0.56	0.63	0.70
	Recommended	0.24	0.26	0.31	0.36	0.42	0.47	0.52
SSK 8	Current	0.32	0.35	0.42	0.49	0.56	0.63	0.70
	Recommended	0.24	0.26	0.31	0.36	0.42	0.47	0.52

902. MPI recommends that annual deemed value rate for RSK 8 and SSK 8 be adjusted as recommended in the shaded part of Table 6, namely from \$0.32/kg and \$0.35/kg, respectively, to \$0.24/kg and \$0.26/kg, respectively.
903. MPI recommends the setting of RSK 8 and SSK 8 be guided by Principle 1 of the Guidelines. Principle 1 suggests that when deemed value rates are above the landed (port)

price to decrease deemed value rates to a level between ACE price and landed price to provide an incentive not to discard illegally.

904. MPI recommends that the setting of the annual deemed value rates for RSK 8 and SSK 8 be guided by Principle 2 of the Guidelines. Principle 2 of the Guidelines suggests setting annual deemed value rates at \$0.10/kg above the 90<sup>th</sup> percentile of the ACE price for RSK 8 and SSK 8. These are:
- below the reported port price for RSK 8 and SSK 8 (\$0.25/kg and \$0.33/kg, respectively), and
  - above the RSK 8 and SSK 8 ACE price (\$0.18/kg for both stocks).
905. These changes are aimed at encouraging the landing of skates caught in RSK 8 and SSK 8, obtaining better information on catch levels of skates from landing data and providing better incentives for fishers to identify species correctly.
906. MPI acknowledges additional risk of overcatch in this approach, due to the low RSK 8 and SSK 8 TACCs relative to other skate stocks, but the trade-off is more accurate catch reporting.
907. MPI recommends setting the interim deemed value rates at 90% of the annual deemed value rates, with the differential annual deemed value rates at a standard rate, as are current.

#### Tarakihi (TAR 8)

908. Tarakihi in TAR 8 is mainly taken as both a target and trawl bycatch species. Tarakihi catches are at about the level of the TACC but have exceeded the TACC in 6 of the last 10 years. The key trigger for review of TAR 8 deemed values is over-catch.

#### *Submissions*

909. MPI received three submissions opposing the proposed deemed value rates for TAR 8 from SIFNZ, FINZ and Sanford, all representing commercial interests.
910. SIFNZ notes that in recent years, fishers of inshore trevally and John dory in the Taranaki region have been experiencing increasing bycatch of snapper and have progressively moved into deeper waters where they are encountering unintentional bycatches of tarakihi.
911. SIFNZ further submits that a deemed value rate review of TAR 8 due to changes in fishing dynamics is unreasonable given that a lack of scientific information on the stock status has prevented a review of the TAR 8 TACC.
912. SIFNZ acknowledges the investment in a stock assessment may not be warranted given the current low TACC and value of the fishery. However, similarly to FINZ's submission on TRE 2, SIFNZ and Sanford propose a review of the TAR 8 TACC using trends in the annual commercial landings of TAR 8 as a basis for review.
913. Due to the developing nature of the fishery, SIFNZ proposes that the TAR 8 stock could sustain a 20% increase (additional 45 tonnes) to the TACC, provided there is increased monitoring of catch reporting over the next few years.

914. FINZ and Sanford support the submission of SIFNZ in opposing the proposal to increase deemed value rates for TAR 8, and support other TAR 8 issues raised in the SIFNZ submission.
915. MPI received one submission supporting the proposed deemed value rates for TAR 8 from Tūhoe Te Uru Taumatua.

#### *MPI Response*

916. The Guidelines state that the interim deemed value rates must generally be set at 90% of the annual deemed value rates and MPI has a policy of aligning stocks with this guideline when overfishing occurs.
917. MPI prefers making frequent small changes, including changes to the interim deemed value rates, as a first response to incentivising the behaviour of fishers to balance catch with ACE. To do otherwise risks waiting for major problems to arise and then make very large changes which can have significant impacts on industry.
918. The Guidelines also state that deemed value rates must avoid creating incentives to misreport and when two QMAs for the same species have different deemed value rates, there may be an incentive to misreport the QMA in which the fish was taken in order to benefit from a lower deemed value rate.

#### *Recommendation*

**Table 7: Current and recommended deemed value rates (\$/kg) for TAR 8**

Stock	Option	Interim deemed value rate	Annual deemed value rate	Annual Differential Rates for excess catch (% of ACE)	
				>110%	>120%
TAR 8	Current	1.25	2.50	4.00	5.50
	Recommended	2.48	2.75	4.00	5.50

919. MPI recommends that annual deemed value rate for TAR 8 be adjusted as recommended in the shaded part of Table 7, namely from \$2.50/kg to \$2.75/kg. This is above the ACE price and below the reported port price.
920. MPI recommends that the setting of the annual deemed value rate for TAR 8 be guided by Principle 3 of the Guidelines. Principle 3 suggests that deemed value rates for neighbouring stocks, namely TAR 2, be set at consistent levels to avoid creating incentives to misreport between the two stock areas.
921. MPI recommends that the interim deemed value rate for TAR 8 be adjusted as recommended in the shaded part of Table 7, namely from \$1.25/kg to \$2.48/kg. This is:
- 90% of the annual deemed value rate (up from 50%), and
  - above the ACE price (\$1.13/kg).
922. This increase addresses the risk that if the interim deemed value rate is below the ACE price, then fishers have an incentive to delay acquiring ACE. The result can be to delay the balancing of catch until the end of the fishing year. Permit holders may arrive the end of year expecting to buy ACE, only to find that all ACE has been used. Therefore a low interim deemed value rate interferes with signalling functions of ACE markets.

923. The interim deemed value rate for TAR 8 is currently set at 50% of the annual deemed value rate. The Guidelines suggest that higher interim deemed value rates may be more appropriate for these stocks since they state that interim deemed value rates must generally be set at 90% of the annual deemed value rate.

### Trevally (TRE 2)

924. Trevally in TRE 2 are mainly taken in the inshore mixed trawl fishery, mostly in conjunction with red gurnard and tarakihi. Landings have exceeded the TACC in 14 of the last 20 fishing years. The key trigger for the review of TRE 2 deemed value rates is the frequent over-catch of the stock, with high deemed value payments incurred compared to quota value.
925. The current annual deemed value rates for TRE 2 are set above the ACE price and approximate to the reported port price. The current interim deemed value rate is set at 50% of the annual deemed value rate.

### *Submissions*

926. MPI received two submissions opposing the proposed deemed value rates for TRE 2 from FINZ and Sanford.
927. FINZ (on behalf of the Area 2 Regional Committee) opposes the setting of a higher interim deemed value rate for TRE 2, noting that deemed value rates should not be adjusted in lieu of an appropriately set TACC. Similarly to SIFNZ's submission on TAR 8, FINZ proposes a review of the TRE 2 TACC using trends in the annual landings of TRE 2 as a basis for review.
928. Sanford supports the submission of FINZ on deemed value rate adjustments, but regardless of the appropriateness of the TACC, notes that the port price used in deemed value considerations may be underestimated.
929. MPI received one submission supporting the proposed deemed value rates for TRE 2 from Tūhoe Te Uru Taumatua.

### *MPI Response*

930. The Guidelines state that the interim deemed value rates must generally be set at 90% of the annual deemed value rate and MPI has a policy of aligning stocks with this guideline when overfishing occurs.
931. MPI prefers making frequent small changes, including changes to the interim deemed value rates, as a first response to incentivising the behaviour of fishers to balance catch with ACE. To do otherwise risks waiting for major problems to arise and then make very large changes which can have significant impacts on industry.

## Recommendation

**Table 8: Current and recommended deemed value rates (\$/kg) for TRE 2**

Stock	Option	Interim deemed value rate	Annual deemed value rate	Annual Differential Rates for excess catch (% of ACE)	
				>110%	>120%
TRE 2	Current	0.70	1.25	3.50	5.00
	Recommended	1.13	1.25	3.50	5.00

932. MPI recommends increasing the interim deemed value rates for TRE 2 from 50% of the annual deemed value rate to 90%. Guidelines state that interim deemed value rates must generally be set at 90% of the annual deemed value rate, in order to encourage fishers to balance catch with ACE throughout the year.
933. MPI recommends that the interim deemed value rate for TRE 2 be adjusted as recommended in the shaded part of Table 8, namely from \$0.70/kg to \$1.13/kg. This is:
- 90% of the annual deemed value rate (up from 50%), and
  - above the ACE price (\$0.67/kg).
934. This increase addresses the risk that if the interim deemed value rate is below the ACE price, then fishers have an incentive to delay acquiring ACE. The result can be to delay the balancing of catch until the end of the fishing year. Permit holders may arrive the end of year expecting to purchase ACE, only to find that all ACE has been used. Therefore a low interim deemed value rate interferes with signalling functions of ACE markets.
935. The interim deemed value rate for TRE 2 is currently set at 50% of the annual deemed value rate. The Guidelines suggest that higher interim deemed value rates may be more appropriate for these stocks since they state that interim deemed value rates must generally be set at 90% of the annual deemed value rate.
936. MPI is not recommending a change to the TRE 2 annual deemed value rate.

## OTHER MATTERS

937. Other issues raised in submissions centre around the deemed value framework, the process of the review undertaken and wider management of GLM 9 (particularly adjustment of the spat to seaweed ratio set for that fishery). Though not within the scope of this deemed value review for individual stocks, these views are summarised below for your information, and MPI responses are provided.
938. A recurrent issue raised by FINZ and SIFNZ is that adjustments to the deemed value rates should not be used as a fisheries management measure in lieu of a correctly set TACC.
939. FINZ submits that setting deemed value rates is not an independent process from setting management measures and that a wider review of the circumstances giving rise to over-catch, evaluation of other management options, and collaboration with industry should be considered before adjusting deemed value rates.
940. SIFNZ similarly submits that causal effects of over-catch need to be considered in deemed value rate reviews and a more responsive management approach needs to be adopted to allow for more stock TACC reviews rather than dedicating resources to adjusting settings in a deemed value regime that is otherwise operating effectively and efficiently.

941. MPI views the setting of deemed value rates as a separate process from setting TACCs. Therefore, your decision to set deemed value rates should not be influenced by whether or not submitters consider the TACC for a stock is set correctly. MPI's view is reinforced by case law<sup>80</sup>, which indicates that the appropriateness of the TACC is not a relevant consideration when setting deemed value rates.
942. FINZ submits that where TACCs are significantly out of balance with stock abundance, deemed values cannot operate effectively and are incapable of constraining catches to a stock's respective TACC. FINZ also submits that inappropriately set TACCs will engender poor fisheries management practices and impede the performance of the fisheries management framework.
943. Every year MPI reviews TACCs, prioritising stocks based on available information and stakeholder input. Regardless of the outcome of these reviews, the deemed value rates recommended in this paper are aimed at encouraging fishers to cover all catch with ACE and maintaining the integrity of either the current or recommended TACCs to ensure sustainability.
944. A review of the performance of the deemed value framework over the years 2008 to 2011, and formal consultation in 2011, resulted in the adoption of the current Guidelines which clarify the reasons given for advice on deemed value rate adjustments. The Guidelines are a statement of how MPI will use the criteria in the Fisheries Act 1996 to develop its advice to you on deemed value rates
945. As noted in submissions on deemed value rate reviews in previous years, SIFNZ advocates for the setting of deemed values on a regional basis to reflect the landed price index in the regions, rather than the average index that can be influenced by the North Island or export prices.
946. Sanford acknowledges MPI's approach to reviewing deemed value rates is still developing, and SIFNZ and Sanford assert that both industry representatives and MPI are doing the commercial fishing industry a major disservice by not collaboratively developing a deemed value regime that best meets the appropriate objectives of both parties.
947. Mr. Denis Lander (representing Aston Trawling Limited) submits that historic deemed value rate settings forced the organisation to withdraw from the commercial fishing industry. Mr. Lander also submits that the deemed value rate schedule discourages commercial fishers working with MPI to improve the fisheries management system.
948. Engagement with Commercial Stakeholder Entities and Organisations are now conducted mainly through the fisheries planning process for inshore, deepwater, and highly migratory species.
949. MPI has received feedback from industry on the effectiveness of these discussions, but acknowledges work is required to improve the process through which deemed value rates are reviewed in the future.

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<sup>80</sup> Pacific Trawling Limited and Independent Fisheries Limited V The Minister of Fisheries HC NAP CIV 2007-441-1016 29 August 2008 ([link](#))

950. MPI accepts that greater industry engagement prior to formal consultation on proposed deemed value rates would be constructive to support understanding deemed value rate proposals, and to inform submissions from industry.

### Green-lipped mussel (GLM 9) fishery

951. 16 submissions were received relating to the GLM 9 deemed value rate review. The majority opposed the proposed change and advocated for a wider review of the fishery, in particular of the GLM 9 TACC and the spat to seaweed ratio. This is set at a 50:50 ratio and has not been reviewed since the introduction of GLM 9 to the QMS in 2004. Submissions note that as the GLM 9 landing weight is based on a combination of spat and seaweed, due to the current low spat to seaweed ratio there is potential that the proportional GLM 9 spat weight is being over-reported and the commercial allowance for GLM 9 spat is being under-caught.
952. Mr. K Denison, Mr. A Tester, and Mr. J Tester submit that the current management approach using an agreed spat to seaweed ratio has been disadvantageous to the GLM 9 harvesters in recent years due a spat ratio lower than 50%, but acknowledge that due to annual variability, any consideration to change this ratio may be contentious as the spat ratio may increase above 50% in the future.
953. Given the uncertainty in the spat to seaweed ratio, AQNZ, CoroMFA, MFA and Pare Hauraki Kaimoana advocate delaying a GLM 9 deemed value rate review until after a review of the spat to seaweed ratio has been undertaken. FINZ notes that any future change to the spat to seaweed ratio will likely have an impact on the effective TACC for GLM 9 and both should be considered in association.
954. Some submissions also referred to GLM 9 as being a Schedule 3 stock, which can allow for in-season TAC adjustments. This was supported by submissions noting the episodic and variable nature of the fishery as harvesters cannot plan for opportunities to utilise the GLM 9 resource. FINZ also submitted that in-season TAC reviews of GLM 9 could be possible, but acknowledge that this may not be practical due to the seasonal nature of the fishery.
955. The majority of submissions opposing the proposed deemed value rate adjustments noted that the current GLM 9 TACC, set at 180 tonnes in 2004, is no longer suitable for present utilisation needs, and warrants consideration for review.
956. Submissions specifically advocating for an increase to the TACC came from Mr. K Denison, Mr. A Tester, and Mr. J Tester and propose that the TACC for the GLM 9 stock should be increased to 11% above the current setting, this being the level that the TACC was over-caught in the most recent fishing year.
957. FINZ does not specify a level of TACC increase but submits that an increase to the TACC would be beneficial in returning revenue from harvests back to quota holders, and should be considered before increasing deemed value rates which instead direct potential revenue from utilisation to the Crown.
958. Given the number of submissions relating to GLM 9, wider issues regarding the fishery that have been raised by iwi and commercial stakeholders, as well as new information from research that MPI has commissioned regarding relative amounts of spat and

seaweed, MPI is considering reviewing other management measures for GLM 9. This includes reviewing the spat to seaweed ratio and the TACC for GLM 9. The purpose of such a review would be to ensure the ratio is set appropriately and that the fishery is being managed effectively for sustainable utilisation.

959. In particular, MPI notes the demand for spat has increased recently, however, neither the spat to seaweed ratio nor the TACC have been adjusted since the introduction of GLM 9 to the QMS in 2004. If, as a result of such a review, the ratio of spat to seaweed is altered from the current 50% proportion, the practical effect would be a change to the landings associated with this fishery that can occur within catch limits. Under these circumstances MPI would continue to closely monitor the fishery and consider what other changes to the fishery may be appropriate to ensure the fishery is being managed effectively.



# Addendum: The Deemed Value Framework and Assessment against statutory obligations

## OUTLINE

960. The Quota Management System (QMS) is the backbone of the New Zealand fisheries management regime which covers a total of 642 fishstocks representing 98 species. Balancing catch against catching rights is known as the catch balancing regime and it is one of the keys to ensuring the integrity of the QMS.
961. On the first day of the fishing year all quota owners are provided with ACE based on their quota share and the current TACC. Under the catch balancing regime, fishers are required to balance their catch with ACE or pay a deemed value on catch in excess of ACE they hold.
962. Deemed values are charges that commercial fishers must pay for every unprocessed kilogram of QMS fish stocks landed in excess of their ACE holdings (\$/kg). The purpose of the deemed value framework is to encourage commercial fishers to balance their catch with ACE while not discouraging them from landing and accurately reporting catch. The intent is to protect the long-term value of stocks and to support kaitiakitanga by providing incentives for the overall commercial catch for each QMS stock to remain within the total available ACE and/or the Total Allowable Commercial Catch (TACC). The effectiveness of this incentive is dependent on individual fishers' compliance with landing and reporting requirements, their responses to the incentives provided and on the impact of other incentives such as those created by market conditions.
963. Effective deemed value rates contribute to both sustainability and utilisation objectives (which represent the purpose of section 8 of the Act). Sustainability objectives are achieved as appropriate deemed value rates encourage fishers to balance catch with ACE and, in doing so, encourage harvesting to remain within the TACC. Utilisation objectives relate not only to the long-term benefits from managing catches within limits, but the deemed value framework also provides flexibility for commercial operators to manage small, unexpected amounts of catch by balancing unintentional catches in excess of ACE.
964. Incorrectly set deemed value rates may lead to catches in excess of the TACC (i.e., if set too low), which may have negative implications for sustainability and the long-term value of the resource. Likewise, incorrectly set deemed value rates may also discourage landing and accurate reporting (i.e., if set too high) which can compromise fisheries management.
965. The deemed value system does not create a standard deemed value rate, but a set of rates that apply under different circumstances. The base rate is the annual deemed value which is charged at the end of the fishing year on catch in excess of ACE. Interim deemed value rates are charged each month to commercial fishers for every kilogram of fish landed in excess of ACE (\$/kg). Annual deemed value rates must be set higher than the interim rate for a particular stock, and interim rates have historically been set at 50% of the lowest annual rate. If the fisher sources enough ACE to cover his or her catch, the interim rates paid are remitted. If the fisher does not source enough ACE by the end of the fishing year, the difference between the interim and annual deemed value rates is charged for all catch

in excess of ACE. As mentioned the annual rate applies at the end of the fishing year only.

966. In reviewing deemed value settings, and being consistent with the MPI Deemed Value Guidelines, MPI recommends that interim deemed value rates for the majority of fish stocks be transitioned from the historic 50% of annual rate to 90%. This is to incentivise fishers to cover deemed value payments on a regular basis should targeted or bycatch landings change throughout the fishing year.
967. Differential annual deemed value rates in respect of the same stock, if applicable, are also charged at the end of the fishing year if the fisher harvested well in excess of their ACE holdings. This is permitted under section 75(4) of the Act. This results in an escalated schedule of rates as the percentage by which catch exceeds ACE increases. The standard approach increases in 20% increments up to a maximum of 200% of the annual deemed value. Differential rates reflect the increasingly detrimental impact on sustainability of higher levels of over catch and on the long-term value of the resource, providing stronger incentives to avoid over-catch.
968. For vulnerable or rebuilding stocks, a more stringent non-standard differential or special<sup>81</sup> annual deemed value schedule (e.g., applying from 5% or 10% over catch) may be more appropriate than the standard schedule.
969. For targeted stocks with high selectivity and low vulnerability to bycatch a more stringent non-standard differential or special annual deemed value schedule may also be more appropriate than the standard schedule.
970. The deemed value rate changes recommended in this paper are aimed at protecting the TACC, regardless of the level at which it is set, by encouraging balancing of landings with ACE while avoiding creating incentives to discard and misreport.
971. Increases are recommended for the interim and the annual deemed value rates for stocks that report persistent over-catches or the nature of the fishery is highly selective.

## THE ACT AND THE DEEMED VALUES GUIDELINES

972. Section 75(1) of the Act requires you to set deemed value rates for all stocks managed under the QMS. Section 75(2)(a) requires you, when setting deemed value rates, to take into account the need to provide an incentive for every commercial fisher to acquire or maintain ACE that is not less than the fisher's total catch of each stock taken.
973. Section 75(2)(b) allows you, when setting deemed value rates, to have regard to:
- the desirability of commercial fishers to land catch for which they do not have ACE,
  - the market value of ACE,
  - the market value of the stock,

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<sup>81</sup> See the Fisheries (Total Allowable Catch, Total Allowable Commercial Catch, and Deemed Value Rates) Notice 2015 ([link](#)) for descriptions of "standard" and "special" differential deemed value rates for specific stocks.

- the economic benefits obtained by the most efficient fisher, licensed fish receiver, retailer or any other person from the taking, processing or sale of the fish or associated with the fish,
- the extent to which the catch of that stock has exceeded or is likely to exceed the TACC for the stock in any year; and
- any other matters that you consider relevant.

974. The practical application of these statutory criteria is set out in the Guidelines, which are summarised below:

- deemed value rates must generally be set between the ACE price and the reported port price,<sup>82</sup>
- deemed value rates must generally exceed the ACE price by transaction costs,
- deemed value rates must avoid creating incentives to misreport,
- deemed value rates for constraining bycatch species may be higher,
- deemed value rates must generally be set at twice the port price for high value single species fisheries and species subject to international catch limits,
- deemed value rates for Chatham Island landings may be lower,
- interim deemed value rates must generally be set at 90% of the annual deemed value rate; and
- differential deemed value rates must generally be set.

975. The Guidelines do not bind you. They serve only as a guide and do not preclude you from taking into account relevant information on a case by case basis.

976. MPI notes that you have broad discretion in exercising your powers of decision making, and may make your own independent assessment of the information presented to you in making your decision. You are not bound to choose the option recommended by MPI. MPI considers all options presented are consistent with your statutory obligations under section 75 of the Act and have been consulted on in regard to your obligations under section 75A of the Act.

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<sup>82</sup> Reported port prices are the average price for green weight fish of each stock reported to be paid to independent fishers by licensed fish receivers (LFRs). These values ignore differences in size, quality and state of fish landed (i.e. fishing method), location of landings, seasonal price variations, deductions that fishers may pay to LFRs from time to time and price differentials for vertically integrated fishing companies. Reported port prices are therefore an indicator of limited reliability. In general, real port prices for average size and quality fish landed in the main ports by independent fishers would tend to be higher than the average prices reported by LFRs.

## Recommendations

Deemed value rates									
Current						Recommended			
Species	Stock	Interim \$/kg	Annual \$/kg	Annual at maximum excess \$/kg	Differential	Interim \$/kg	Annual \$/kg	Annual at maximum excess \$/kg	Differential
Green-lipped mussel	GLM 9	5.40	6.00	12.00	Standard	9.00	10.00	20.00	Special
Red cod	RCO 2	0.14	0.28	0.56	Standard	0.25	0.28	0.56	Standard
School shark	SCH 3	0.90	1.80	3.60	Standard	3.20	3.60	7.20	Standard
Skates	RSK 8	0.32	0.35	0.70	Standard	0.24	0.26	0.52	Standard
	SSK 8	0.32	0.35	0.70	Standard	0.24	0.26	0.52	Standard
Tarakihi	TAR 8	1.25	2.50	5.50	Special	2.48	2.75	5.50	Special
Trevally	TRE 2	0.70	1.25	5.00	Special	1.13	1.25	5.00	Special

- a) **Agree** to change the deemed value rates for green-lipped mussel (GLM 9) as outlined in the Table above and in this chapter of this Decision Document.

**Agreed / Not Agreed**

- b) **Agree** to change the deemed value rates for red cod (RCO 2) as outlined in the Table above and in this chapter of this Decision Document.

**Agreed / Not Agreed**

- c) **Agree** to change the deemed value rates for school shark (SCH 3) as outlined in the Table above and in this chapter of this Decision Document.

**Agreed / Not Agreed**

- d) **Agree** to change the deemed value rates for rough skates (RSK 8) as outlined in the Table above and in this chapter of this Decision Document.

**Agreed / Not Agreed**

- e) **Agree** to change the deemed value rates for smooth skates (SSK 8) as outlined in the Table above and in this chapter of this Decision Document.

**Agreed / Not Agreed**

- f) **Agree** to change the deemed value rates for tarakihi (TAR 8) as outlined in the Table above and in this chapter of this Decision Document.

**Agreed / Not Agreed**

g) **Agree** to change the deemed value rates for trevally (TRE 2) as outlined in the Table above and in this chapter of this Decision Document.

**Agreed / Not Agreed**

  
Hon Nathan Guy  
Minister for Primary Industries

21 / 8 / 2017

# APPENDIX 1: DEEMED VALUE GUIDELINES

## Summary

### 1.1 GOAL

977. To set deemed value rates that create an effective incentive for individual commercial fishers to balance catch with Annual Catch Entitlement and for the overall catch to remain at or below the total available Annual Catch Entitlement in any one year.

#### Performance measures

- The number of stocks over-caught and the level of over-catch per stock per fishing year.
- The percentage of catch for each stock for which catch is not balanced with Annual Catch Entitlement (ACE).
- The ratio of the total deemed value payments to the value of quota (at a general and stock level) – the target in relation to this indicator is less than 0.1% of the value of quota in any fishing year.

#### Principle 1

978. Deemed value rates must generally be set between the ACE price and the landed price:

- a) when deemed value rates are below the ACE price: increase deemed value rates to a level above the ACE price and below landed price to provide an incentive to balance catch with ACE; and
- b) when deemed value rates are above the landed price: decrease deemed value rates to a level between ACE price and landed price to provide an incentive not to discard illegally.

#### Principle 2

979. Deemed value rates must generally exceed the ACE price by transactions costs. Deemed value rates must be generally set at least at the greater of:

- a) 20% above the 90th percentile ACE price; or
- b) \$0.10 per kg above the 90th percentile ACE price.

#### Principle 3

980. Deemed value rates must avoid creating incentives to misreport.

## Principle 4

981. Deemed value rates for constraining bycatch species may be higher.

## Principle 5

982. Deemed value rates must generally be set at twice the landed price for high value single species fisheries and species subject to international catch limits.

## Principle 6

983. Deemed value rates for Chatham Island landings may be lower.

## Principle 7

984. Interim deemed value rates must generally be set at 90% of the annual deemed value rate.

## Principle 8

985. Differential deemed value rates must generally be set:

a) Standard differential deemed value rate schedule for most stocks

Catch in excess of ACE holdings	Differential deemed value rate as a percentage of the annual deemed value rate
0–20%	100%
> 20%	120%
> 40%	140%
> 60%	160%
> 80%	180%
> 100%	200%

b) Differential deemed value rate schedule for low value, low TACC stocks

Catch in excess of ACE holdings	Differential deemed value rate as a percentage of the annual deemed value rate
0-100%	100%
>100%	150%
>200%	200%

c) Stringent differential deemed value rate schedules for highly vulnerable stocks or rebuilding stocks.

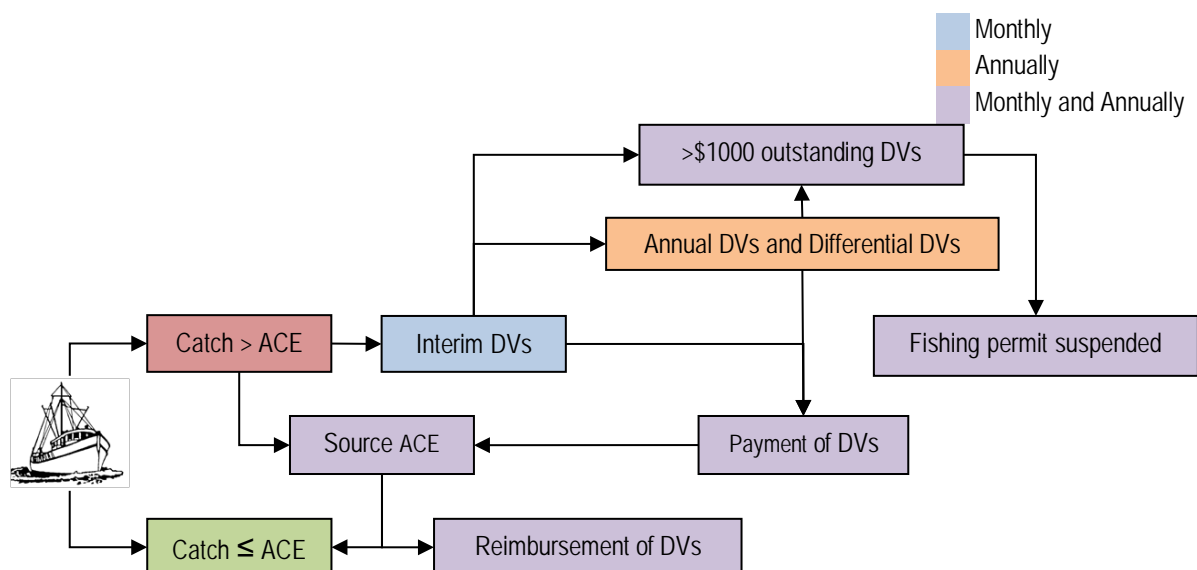


# Introduction

## THE DEEMED VALUE FRAMEWORK AND THE ROLE OF THESE *GUIDELINES*

986. The catch-balancing regime and deemed value framework are key fisheries management tools contributing to both sustainability and utilisation objectives, for stocks managed under the Quota Management System (QMS). The deemed value framework is a key mechanism to protect the integrity of the QMS, providing incentives for commercial catch to not exceed catch limits. Deemed values are supposed to encourage commercial fishers to balance their catch with Annual Catch Entitlement (ACE), while not discouraging them from landing and accurately reporting catch.

987. Sustainability objectives are achieved when deemed value rates encourage fishers to balance catch with available ACE and in doing so, seek to constrain harvesting to the Total Allowable Commercial Catch (TACC), or, where applicable, the total available ACE. Catches in excess of TACCs/total available ACE may affect the sustainability of stocks and may undermine the long-term value of the resource and kaitiakitanga. The deemed value framework is illustrated in the figure below.<sup>83</sup>



988. Utilisation objectives are achieved by providing flexibility for commercial operators to manage unexpected and small overruns in ACE holdings by allowing periodic catch-balancing. In the long-term, over-catching of a TACC could result in TACC reductions, if it leads to a reduction in stock size, and to impacts on resource use by others sectors. This undermines utilisation objectives.

989. The *Deemed Value Guidelines* set out an operational policy to inform the advice that the Ministry for Primary Industries (MPI) provides to the Minister for Primary Industries (you) on setting deemed value rates.

<sup>83</sup> Interim deemed value rates are charged each month to fishers for every kilogram of fish landed in excess of their ACE holdings. If the fisher sources enough ACE to cover his or her catch by the end of the fishing year, the interim rates paid are reimbursed. If the fisher does not source enough ACE by the end of the fishing year, the difference between the interim and annual deemed value rates is charged for all catch in excess of ACE; the annual rate applies at the end of the fishing year. Differential deemed value rates, if applicable, are also charged at the end of the fishing year if the fisher harvested well in excess of his or her ACE holdings. For example, differential deemed value rates are charged for catch more than 20% in excess of ACE, when the standard differential deemed value rate schedule applies. Differential rates reflect the increasingly detrimental impact of higher levels of over-catch on sustainability and utilisation objectives.

## THE LEGAL CONTEXT

990. Section 75 of the Fisheries Act 1996 (the Act), provides the statutory framework for setting deemed values. That section requires you to set deemed value rates for QMS stocks and sets out the matters you must consider when doing so.
991. Within the statutory framework, you have considerable discretion when setting deemed value rates. The *Guidelines* are a statement of how MPI will use the criteria in the statute to develop its advice to you on deemed value rates. The *Guidelines* do not bind you. When making decisions on deemed value rates, you use the statutory criteria in making decisions and can act within the bounds of the statute, notwithstanding the *Guidelines*.
992. Under section 75(2)(a), you must consider whether deemed value rates are set at levels that provide an incentive to balance catch with ACE. Once you have considered the issues that arise as mandatory considerations, you may also consider the discretionary criteria under section 75(2)(b):
- a) the desirability of commercial fishers landing catch for which they do not have ACE;
  - b) the market value of ACE for the stock;
  - c) the market value of the stock;
  - d) the economic benefits obtained by the most efficient commercial fisher, licensed fish receiver, retailer, or any other person from the taking, processing, or sale of fish, aquatic life or seaweed;
  - e) the extent to which catch of that stock has exceeded or is likely to exceed the TACC for the stock in any year; and
  - f) any other matters that you consider relevant.

## GOAL AND MEASURES OF PERFORMANCE

### Goal

993. The goal of the *Guidelines* is to outline principles to *set deemed value rates that create an effective incentive for individual fishers to balance catch with Annual Catch Entitlement and for the overall catch to remain at or below the total Annual Catch Entitlement available in any one year.*<sup>84</sup>

### Measuring performance

994. In light of this goal, the performance of the deemed value framework will be measured using the following indicators:
- a) the number of stocks over-caught and the level of over-catch per stock per fishing year;

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<sup>84</sup> For the majority of stocks, the total available Annual Catch Entitlement (ACE) may exceed the Total Allowable Commercial Catch (TACC) in any one year due to under-fishing entitlements, where 10% of the un-fished ACE from one year is carried forward to the following year. Furthermore, for some stocks, in-season increases to the catch limit generate additional ACE in a particular year while the TACC remains unchanged. This is why the goal is for landed catch to remain within the total available ACE rather than within the TACC.

- b) percentage of catch for each stock for which catch is not balanced with ACE; and
- c) the ratio of the total deemed value payments to the value of quota (at a general and stock level) – the target in relation to this indicator is less than 0.1% of the value of quota in any fishing year.

995. MPI will also use these performance indicators where applicable, in addition to other relevant information such as landed price changes, to identify stocks for which a deemed value rate review may be necessary. Which stocks to review deemed value rates for will be determined in discussion with tangata whenua, industry representatives and other stakeholders within the fisheries planning processes for inshore, deepwater and highly migratory species fisheries.

## PRINCIPLES FOR SETTING DEEMED VALUE RATES

996. Deemed values are economic tools; they provide economic incentives and disincentives which are directly related to other economic variables such as operating costs, ACE prices, transaction costs of acquiring ACE, and landed fish prices. When any of these factors change the incentives created by deemed values also change. Accordingly, deemed value rate changes will generally be small, relatively frequent adjustments consistent with economic changes rather than significant occasional changes. The effectiveness of deemed values is dependent on individual commercial fishers' compliance with landing and reporting requirements, their responses to the incentives provided and on the impact of other incentives such as those created by market conditions.

997. MPI will use the following principles to assess stocks for which to review deemed value rates and to guide the development of its advice to you on deemed value rates. These principles recognise the various economic incentives that commercial fishers face and give effect to your obligations under section 75 of the Act.

### Principle 1: Deemed value rates must generally be set between the ACE price and the landed price

998. A deemed value rate above the ACE price and below landed price generally provides the correct incentives. The following actions will create the correct incentives for commercial fishers to acquire ACE to cover their catch:

999.

- a) when deemed value rates are below the ACE price: increase deemed value rates to a level above the ACE price and below landed price to provide an incentive to balance catch with ACE; and
- b) when deemed value rates are above the landed price: decrease deemed value rates to a level between ACE price and landed price to provide an incentive not to discard illegally.

1000. Because ACE for some stocks is traded infrequently, the available information on ACE price may be inadequate. When there is evidence of intentional fishing on deemed values, MPI will assume that the fisher could not acquire ACE at less than the deemed value rate and that the price of ACE should be assumed to be above the deemed value rate. MPI will generally recommend increases in the deemed value rate in this circumstance.

1001. In certain circumstances (including some described below) it may be appropriate to depart from this principle. MPI will outline this to you on a case-by-case basis.

## Principle 2: Deemed value rates must generally exceed the ACE price by transaction costs

1002. If ACE price is close to the deemed value rate there may be an incentive for fishers to pay the deemed value instead of acquiring ACE to balance their catch to avoid the transaction costs involved in making an ACE trade (for example, transfer registration fee, time, brokerage fees).

1003. ACE prices vary as other economic factors, such as the price of fish, exchange rates, and fuel prices, vary. Deemed value rates should generally be set at least 20 percent above the 90th percentile ACE price. This is to ensure that the ACE price used is representative of the majority of market trades and that the difference between the deemed value rate and the ACE price is sufficient to create an effective incentive. This reference point should be used for setting deemed value rates for most stocks.

1004. However, for relatively low value species (for example, where the ACE price is less than \$0.15 per kilogram) 20 percent above the ACE price will not cover transaction costs for most trades. A second reference point that is a minimum amount per kilogram above the ACE price should be used. It is assumed that total transaction costs are approximately \$100.00 per ACE transaction and that fishers would source ACE instead of paying deemed values for landings greater than 1 tonne. Therefore, the transaction cost would be \$0.10 per kg, if the \$100.00 transaction costs are spread over 1 tonne.

1005. Therefore, deemed value rates should be generally set at least at the greater of:

- a) 20 percent above the 90th percentile ACE price; or
- b) \$0.10 per kg above the 90th percentile ACE price.

1006. In certain circumstances it may be appropriate to depart from this principle. MPI will outline this to you on a case-by-case basis.

## Principle 3: Deemed value rates must avoid creating incentives to misreport

1007. When two adjacent Quota Management Areas (QMAs) for the same species have substantially different deemed value rates, there may be an incentive to misreport the QMA in which the fish was taken in order to benefit from a lower deemed value rate. The impact of differences in deemed value rates across QMAs are important considerations. For most species, prices across adjacent QMAs are likely to be similar, because arbitrage in markets will result in movements of fish to equalise prices. Because the upper bound on deemed value rates in most circumstances is landed price, the upper bound for adjacent QMAs will often be similar. Thus, setting the same or very similar deemed value rates across different QMAs is often likely to be feasible.

1008. There are reasons to consider more uniform deemed value rates across QMAs, but these reasons must be weighed against other considerations on a case-by-case basis. There are regional differences in the prices of some species and these differences must also be considered when setting deemed value rates.

1009. For the avoidance of doubt, in the case of the Kermadec Fishery Management Area (FMA10), deemed value rates should be set at the highest annual deemed value rate applicable in the Auckland and Central Fishery Management Areas (FMA1 or FMA2) for the relevant species.

1010. Likewise, for very similar yet different species, it may be appropriate to consider setting the same or very similar deemed value rates to avoid creating any incentives for species misreporting.

#### **Principle 4: Deemed value rates for constraining bycatch species may be higher**

1011. An important exception to Principle 1 occurs in some cases when a relatively low value species is taken as bycatch in a multi-species fishery. In such cases, the catch of that bycatch species may constrain the ability to catch the target species

1012. In this case, the bycatch species is said to have a “shadow value” greater than landed price, reflecting its value in allowing greater catches of target species in the overall fisheries complex. When the shadow value is high, the deemed value rate that will encourage catch to remain within the total available ACE/TACC may exceed the landed price.

1013. When the ACE price and the deemed value rate are above the landed price, incentives to illegally discard are created. This may be an inevitable result of providing appropriate incentives under section 75(2)(a) for fishers to acquire ACE to cover their catches. It may be necessary to rely on compliance and enforcement tools to prevent illegal discarding when this occurs. The application of this principle will be considered on a case-by-case basis.

#### **Principle 5: Deemed value rates must generally be set at twice the landed price for high value single species fisheries and for species subject to international catch limits**

1014. The appropriate incentive for high value single species fisheries (that is, with no or minimal bycatch) is to provide a very strong incentive to catch only the amount for which fishers have ACE. This has been accomplished by setting the annual deemed value rate at approximately twice the landed price. This principle has also been applied to southern bluefin tuna, which is subject to an international catch allocation.

1015. Under such a deemed value rate, a fisher would suffer a large loss on any catches in excess of ACE. By setting the deemed value rate at twice the landed price, it is very unlikely that any incentive would arise to land catch in excess of ACE, even if landed prices increase significantly during a fishing year. This is consistent with section 75(2)(a) as it provides a strong disincentive against catches in excess of ACE. In addition to southern bluefin tuna, this setting has been applied to all rock lobster stocks, to all paua stocks and to all deepwater clam stocks. The application of this principle to other stocks needs to be considered on a case-by-case basis.

## Principle 6: Deemed value rates for Chatham Island landings may be lower

1016. Under section 75(5), you may set deemed value rates for Chatham Islands-based commercial fishers for fish landed to a licensed fish receiver in the Chatham Islands that are different from deemed value rates applicable to fish from the same stock landed elsewhere. The price for fish landed in the Chatham Islands is generally lower than the price for the same species landed elsewhere because of the higher cost of transporting fish to markets. Therefore, there may be reasons to set different deemed value rates for the Chatham Islands.

1017. For many stocks, the deemed value rates for the Chatham Islands has been set at about 50 percent of the deemed value rate applicable elsewhere in the same QMA. No strict procedures are appropriate. Instead deemed value rates applicable to Chatham Islands-based fishers need to be considered on a case by case basis, in light of the relevant economic conditions of each fishery.

## Principle 7: Interim deemed value rates must generally be set at 90% of the annual deemed value rate

1018. Interim deemed value rates should usually be set at 90 percent of the annual rate. If the interim deemed value is below the ACE price, fishers have an incentive to delay acquiring ACE. The result can be to delay the balancing of catch until the end of the fishing year. This may lead to a race for ACE and insufficient ACE to cover all catch and thereby potentially contribute to the TACC/total available ACE being exceeded.

1019. There may be stock-specific reasons to set interim deemed value rates at some percentage other than 90 percent of the annual rate in some cases. These will be considered when appropriate.

## Principle 8: Differential deemed value rates must generally be set

1020. Differential deemed value rates reflect the increasingly detrimental impact of higher levels of over-catch on sustainability and utilisation objectives. Therefore, differential deemed value rates should generally apply to all stocks, although exceptions to this principle will be considered on a case by case basis. In developing its advice, MPI will propose to use differential deemed value rates flexibly to achieve the management goals for different fisheries.

1021. Different differential deemed value rate settings are appropriate for different fisheries. This will be considered on a case by case basis, but for most stocks MPI will advise you to set differential deemed value rates according to the following schedules:

### *Standard differential deemed value rate schedule for most stocks*

1022. For most stocks, MPI will recommend the use of a standard differential deemed value rate schedule (standard schedule), as set out in Table 1.

**Table 1: Standard differential deemed value rate schedule**

Catch in excess of ACE holdings	Differential deemed value rate as a percentage of the annual deemed value rate
0 - 20 %	100 %
> 20 %	120 %
> 40 %	140 %
> 60 %	160 %
> 80 %	180 %
> 100 %	200 %

*Differential deemed value rates for low value, low TACC stocks*

1023. The QMS provides for a number of stocks for which targeted fishing does not occur and low TACCs are set to account for occasional, small unintended bycatch. The standard differential deemed value schedule is not appropriate for these stocks. However, deliberate over-catching of these stocks on deemed values is not appropriate either.

1024. The general principle for these stocks is unchanged: differential deemed values should reflect a qualitative assessment of the sustainability risk of over-catching. Higher levels of over-catch may be less of a concern for these stocks than similar levels of over-catch for larger and more valuable stocks. The low TACC and relatively high variability mean that high levels of over-catch will frequently occur as a matter of chance. As a starting point, MPI will consider recommending the following differential deemed value structure for these stocks:

**Table 2: Differential deemed value rate schedule for low value, low TACC stocks**

Catch in excess of ACE holdings	Differential deemed value rate as a percentage of the annual deemed value rate
0-100%	100%
>100%	150%
>200%	200%

1025. MPI may recommend alternative schedules for low value, low TACC stocks in some circumstances.

*Stringent differential deemed value rate schedules for highly vulnerable or rebuilding stocks*

1026. Stringent differential deemed value rate schedules are applied to some stocks where utilisation and sustainability objectives are best met by providing very strong incentives for catch to not exceed ACE. This may be the case when the TACC is set very close to the sustainable limit or for highly vulnerable or rebuilding stocks. The exact structure of the schedule will be tailored to the stock in question. For example, the first differential

step may reflect an assessment of how much a fisher acting with ordinary care might exceed his or her ACE holdings in their last tow of the season.