



Review of Management Controls for Hoki 1 (HOK 1)

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INTRODUCTION

1 This Initial Position Paper provides the Ministry for Primary Industries (the Ministry's) initial proposals relating to catch limits and allowances for HOK 1, to apply from 1 October 2013.

2 The Ministry has developed this IPP for the purpose of consultation as required under the Fisheries Act 1996 (the Act). The proposals outlined in the paper are preliminary and are provided as the basis for consultation with stakeholders.

3 In August 2013, the Ministry will provide a Final Advice Paper to the Minister for Primary Industries. The FAP will summarise the Ministry's and stakeholder's views on the proposed deemed value rate changes and make recommendations to the Minister. A copy of the FAP and the Minister's letter setting out his final decisions will be posted on the MPI website as soon as these become available.

DEADLINE FOR SUBMISSIONS

4 The Ministry welcomes written submissions on the proposals contained in the IPP. All written submissions must be received by the Ministry no later than 5pm on **Friday, 9 August 2013**.

Written submissions should be sent directly to:

Deepwater Fisheries Management
Ministry for Primary Industries
P O Box 2526
Wellington 6011

or emailed to fmsubmissions@mpi.govt.nz

Official Information Act 1982

5 All submissions are subject to the Official Information Act and can be released (along with the personal details of the submitter) under the Act. If you have specific reasons for wanting to have your submission or personal details withheld, please set out your reasons in the submission. MPI will consider those reasons when making any assessment for the release of submissions if requested under the Official Information Act.

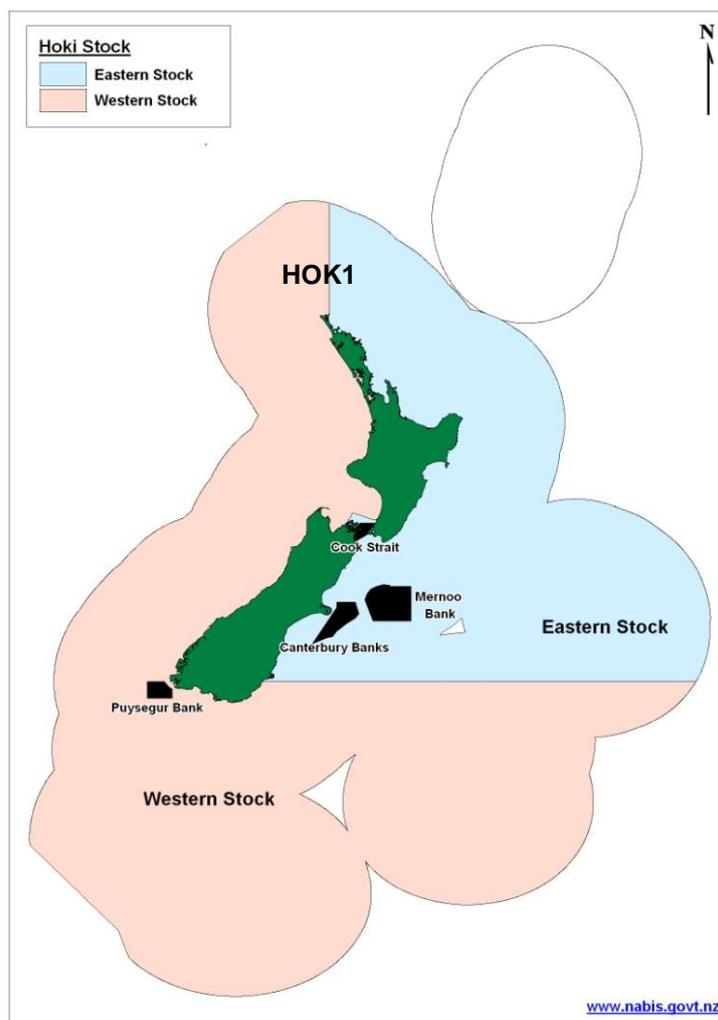


Figure 1: Map of the hoki fishery detailing the boundaries between the eastern and western biological stocks and the hoki management areas in black (HMAs)

EXECUTIVE SUMMARY

6 The Ministry for Primary Industries (MPI) is seeking tangata whenua and stakeholder input to inform a review of the catch limits and other management controls for New Zealand hoki.

7 New Zealand hoki is managed under section 13(2) of the Fisheries Act 1996 (the Act) as two separate biological sub-stocks within one quota management area – HOK 1 (Figure 1). A single total allowable catch (TAC) and total allowable commercial catch (TACC) is set for HOK 1, which is then divided between the two sub-stocks through a non-regulatory catch split arrangement.

Figure 1:

8 All final models in the 2013 hoki stock assessment estimate the stock status of both biological stocks is above the biomass that will produce the maximum sustainable yield (B_{MSY}) and within, or above, the hoki management target range.¹

¹ B_{MSY} for hoki is estimated to be 24-26% of the unfished hoki biomass (B_0), and the management target has been set at 35-50% B_0 .

9 These stock biomass estimates indicate that a TAC increase is likely to be sustainable. To test the stock's response to increased catch levels, a series of five year projections were run from the 2013 stock assessment. Projections indicate the expected biomass trajectory of each stock under different catch levels and recruitment scenarios.

10 The two different recruitment scenarios had contrasting impacts on the biomass trajectories of both stocks over the next five years. The two scenarios either include or exclude the 2011 year class of hoki, which is estimated to be very strong, but has only been observed once. This initial estimate of year class strength will be revised once further observations have occurred. A further survey is planned for January 2014.

11 Recruitment of the strong 2011 year class will cause hoki biomass in both stocks to increase substantially over the next five years. Projections under all catch levels which include this year class estimate the stock status of both stocks will be greater than 50% of the un-fished hoki biomass (B_0) in 2018. When the 2011 year class is excluded from the projections, both stocks remain stable under the current catch level and decline by a small amount if catches are increased.

12 However, current stock status (B_{2013}) is estimated to be above the estimated B_{MSY} for hoki, and above the lower bound of the management target range, within which the stock should fluctuate. Under the most conservative scenario in the 2013 assessment, both stocks are projected to remain within the management target range, with catch increases of up to 30,000 tonnes. In response, MPI proposes the following options for the 2013/14 fishing year (Table 1).

Table 1: Proposed TACs, TACCs and allowances for HOK1 in 2013/14

Option	Mon-regulatory catch split arrangement				Allowances (tonnes)		
	TAC	TACC	Eastern stock limit	Western stock limit	Customary Māori	Recreational	Other sources of fishing related mortality
Option 1 (status quo)	131,340	130,000	60,000	70,000	20	20	1,300
Option 2	141,440	140,000	60,000	80,000	20	20	1,400
Option 3	151,540	150,000	60,000	90,000	20	20	1,500

13 MPI is confident that the options proposed are consistent with the purpose of the Act and will ensure the stock remains above B_{MSY} . The proposed catch increases will not negatively affect the long term sustainability of the hoki stocks and will also provide an appropriate utilisation opportunity for the fishing industry.

CONTEXT

14 The 2013 hoki stock assessment estimated the current status of the hoki stocks via three final model runs. The status of the western stock is estimated to be 45-65% B_0 and the eastern stock 50-57% B_0 (Table 2). Both stocks are currently above B_{MSY} and are either within or above the hoki management target range of 35-50% B_0 , depending on the model run.

15 Of the three model runs, even the most conservative shows that both stocks are above 35% B_0 and are likely able to support increased catch. A utilisation opportunity is therefore available for industry, and hoki quota holders have indicated during initial consultation that there is interest in increasing the HOK1 total allowable commercial catch for the 2013/14 fishing year.

16 MPI has investigated the likely impacts of a range of different catch levels. This paper presents these details and seeks stakeholder and tangata whenua input on MPI's proposed management response.

Biological Characteristics of Hoki

17 Hoki is a relatively fast growing productive species that is widely distributed throughout New Zealand waters at depths of 300 to 800 m. Hoki are thought to mature between the ages of two and four and to reach a maximum age of 20 to 25 years old.

18 Two biological stocks of hoki exist within New Zealand's Exclusive Economic Zone (EEZ), referred to as the "eastern" and "western" stocks (Figure 1.1). The un-fished biomass (B_0) of the western stock is estimated to have been significantly larger than the eastern stock.²

19 For the majority of the year, fish from both stocks are found on their feeding grounds: the Chatham Rise for the eastern stock and the sub-Antarctic for the western stock. Juvenile fish from both stocks mix on the western Chatham Rise and are thought to migrate to the eastern or western stock before recruiting to the spawning grounds.

20 Mature hoki from both stocks migrate to spawn between late June and early September. The west coast of the South Island (WCSI) is the main spawning ground for the western stock, as is the Cook Strait for the eastern stock. Smaller spawning events occur on the east coast of the South Island (eastern stock) and at Puysegur Bank (western stock).

The Hoki Fisheries

21 New Zealand's hoki fisheries have been managed within the quota management system (QMS) since 1986. Both stocks are managed within a single QMA, HOK1, which covers fishery management areas (FMAs) 1-9 (Figure 1). The TAC for HOK 1 is set under section 13(2)(a) of the Act.

22 To manage fishing effort across the two stocks, the HOK 1 TAC is set by the Minister for Primary Industries (the Minister)³ and is then divided between the stocks each year via a non-regulatory catch split arrangement that has been agreed between MPI and quota holders. Each catch limit is varied in response to the current estimate of stock status. This was first

² Median estimates of B_0 for the western stock = 945,000-1,105,000 tonnes; and for the eastern stock = 518,000-553,000 tonnes. These median estimates are taken from the final model runs in the 2013 hoki stock assessment.

³ The Minister for Primary Industries now exercises the powers and responsibilities of the Minister of Fisheries under the Fisheries Act 1996.

implemented by industry in 2001 and is now formally administered through FishServe and endorsed by the Minister.

23 The hoki stocks are predominantly fished across four main fishing grounds. Less than 1% of the 2011/12 catch was caught outside these four areas:

- a) The Cook Strait fishery: The fishery operates at a low level year-round, with a peak in late-June to September. Approximately 14% of the HOK 1 catch was caught here in 2011/12.
- b) The WCSI fishery: The fishery on the WCSI operates from June-August, approximately 43% of the HOK1 catch was caught here during 2011/12.
- c) The Chatham Rise fishery: The fishery on the Chatham Rise operates year round and during 2011/12 harvested approximately 31% of the catch.
- d) The sub-Antarctic fishery: This fishery also operates year round and during 2011/12 harvested approximately 12% of the catch.

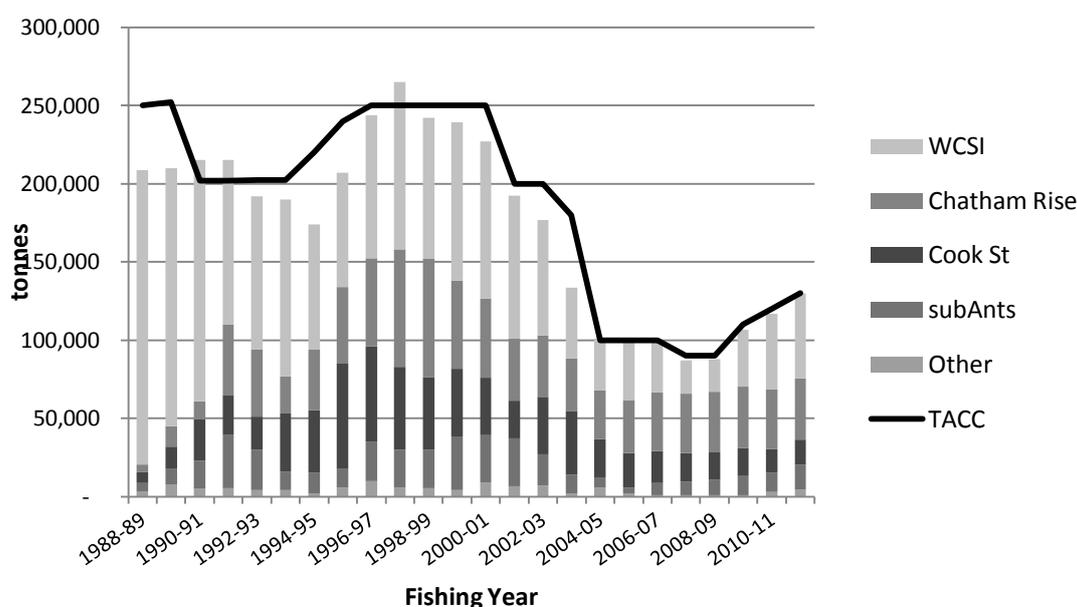


Figure 2: Estimated catch reported from the main hoki fishing grounds, and the HOK1 TACC (t) from 1988/89 to 2011/12

24 To protect juvenile hoki, the industry has closed four areas to target hoki fishing where juvenile hoki are known to be most abundant. These hoki management areas (HMAs – shown in Figure 1) aim to ensure that the mortality of juvenile fish does not adversely affect recruitment to the spawning stock.

Recreational and Māori Customary

25 Recreational and customary fishers do not generally target hoki, as it is predominantly available offshore in deep water. Recent data on the level of customary and recreational hoki catch is negligible, although references of customary catches in the past do exist. Hoki has been identified as a taonga species, however there are no specific references to hoki in Forum

Fisheries Plans. It is also likely that a small amount of hoki is caught by recreational fishers while targeting other species.

26 A small allowance of 20 tonnes each for both the recreational and customary fishers is provided for within the current HOK 1 TAC. MPI considers that these allowances should be retained under all proposed options.

Other Sources of Fishing Related Mortality

27 MPI proposes to retain the current allowance for other sources of fishing-related mortality, set at 1% of the TACC. This nominal allowance accounts for unreported hoki mortality, such as loss due to burst nets, or dumping of damaged hoki.

Previous Review

28 The hoki stocks are assessed every year, providing new estimates of the stock status. Management settings were previously reviewed ahead of 1 October 2011, when the TAC was increased from 121,240 tonnes to 131,340 tonnes. Prior to that the TAC was increased from 110,000 tonnes to 120,000 tonnes for the 2010/11 fishing year.

29 These increases followed a period of significant TAC reductions in response to low biomass levels in the western stock due to an extended period of poor recruitment. The recent TAC reviews have generally taken a conservative approach to increasing catches since 2010. As a result, the western stock successfully rebuilt to the management target in 2010.

Hoki Stock Assessment

30 The 2013 Fisheries Assessment Plenary (the Plenary) agreed that the 2013 hoki stock assessment was of high quality and substantially met New Zealand's Science and Research Information Standard.⁴ The results from the assessment can therefore confidently be accorded a high weight in fisheries management decisions.

31 A range of data inputs were used to assess the status of the hoki stocks. Proportion at age data from the commercial fishery and research surveys are combined with estimates of biological parameters and five indices of hoki abundance. Each abundance index is derived from research surveys across the four key hoki fishing grounds.

32 Three of these indices include a new data point, from surveys completed during 2012/13 on the Chatham Rise, in the sub-Antarctic and on the WCSI. All three surveys detected increased hoki biomass since the last survey in the time series. The trawl surveys also detected what appears to be a very strong year class of one year old hoki. The influence of this year class is discussed in more detail in relation to the five year projections.

33 The 2013 Plenary agreed to accept three final assessment models, which each estimate current stock status (Table 2). All model runs estimate that both hoki stocks are at or above

⁴ Available on the Ministry's website at: <http://www.fish.govt.nz/en-nz/Publications/Research+and+Science+Information+Standard.htm>

the management target range, which is above the estimated B_{MSY} for hoki. A healthy stock status estimate indicates that higher yields could be investigated.

34 Neither the Hoki Working Group nor the Plenary were able to agree on the most likely reason for these biomass changes, so instead agreed on three final model runs that are intended to show the range of possible scenarios. As such, the Plenary considers that each of these model runs presents an equally plausible estimate of stock status, despite the considerable differences in the resulting estimates.

Table 2: Results of the 2013 hoki stock assessment⁵

Model run	Stock status (with 95% confidence intervals in parentheses)		
	Eastern stock (% B_0)	Western stock (% B_0)	East and west stocks (% B_0)
a	50 (36-69)	56 (41-77)	54 (44-70)
b	57 (40-76)	65 (48-84)	62 (50-76)
c	55 (39-74)	45 (31-63)	49 (37-62)

35 The differences in stock status estimates from each model run stem from each model differing in its treatment of the abundance index from the sub-Antarctic trawl survey. This was considered necessary because of the observed biomass changes between years that cannot be explained by recruitment and fishing mortality.

36 The four surveys of the sub-Antarctic between 2004 and 2007 estimated that the western stock biomass had declined significantly since the previous survey in 2003 (biomass was estimated to be 14-21,000 tonnes, compared to an estimate of 40,000 tonnes in 2003). However, the subsequent survey in 2008 estimated that biomass had increased by a factor of three, to 46,000 tonnes, a level that has now been sustained in each of the three surveys since.

37 Possible explanations for the changes that were considered included a change in the “catchability” of the sub-Antarctic survey,⁶ or a change in the “availability” of the fish to the survey. As such, model run ‘a’ assumes that the sub-Antarctic trawl survey has maintained the same catchability throughout the time-series, whereas model runs ‘b’ and ‘c’ assume that the observed changes in biomass in the sub-Antarctic were the product of variations in survey catchability.

38 Model ‘b’ provides a more optimistic estimate of stock status as it assumes the low biomass estimates from 2004-2007 were caused because the survey catchability had dropped, rather than the abundance of hoki. Model ‘c’ assumes the opposite – the reduction in hoki abundance was real, and the increase after 2008 is the result of the survey catchability increasing rather than the abundance of hoki.

⁵ In the Plenary Report, model ‘a’ equates to model 1.7, model ‘b’ is 1.16, and model ‘c’ is 1.19.

⁶ “Catchability” is defined as the proportion of fish that are caught by a defined unit of fishing effort. Research trawl surveys where the unit of fishing effort is kept constant generally assume a constant catchability.

Management Approach

39 The hoki stocks are managed under section 13(2) of the Act, with TAC setting also guided by the hoki harvest strategy, which requires both stocks to fluctuate within the target range of 35-50% B_0 . This target was set above B_{MSY} (23-25% B_0) to provide greater certainty that the hoki stocks will remain at or above B_{MSY} and can sustain the fishery in the long term. The soft and hard limit reference points in the harvest strategy are set at 20% and 10% B_0 , respectively.

40 Management actions are guided by a series of five year projections that provide estimates of future stock status in relation to B_0 and to the target and limit reference points. The projections use the agreed assessment models to estimate the likely stock status trajectory under different catch and recruitment assumptions.

41 To inform the 2013 review of management settings, projections have been produced assuming three different commercial catch assumptions:

1. the status quo of 130,000 tonnes, with 60,000 tonnes allocated to the eastern stock, and 70,000 tonnes allocated to the western stock
2. an increase of 10,000 tonnes to the western stock catch limit, and
3. an increase of 20,000 tonnes, also to the western stock catch limit.

42 The increased catch has been allocated to the western stock to account for the fact that juvenile hoki from both stocks exist on the Chatham Rise, where the majority of hoki from the eastern stock are harvested. Even though the eastern stock is currently estimated to be above the management target range ($B_{2013}=50-57\% B_0$), taking a more conservative approach to increasing catches from the eastern fishing grounds aims to limit fishing pressure on juvenile fish.

43 The projections were also run under two recruitment scenarios, either including or excluding the 2011 year class. From data collected during research surveys in 2012/13, this year class is estimated to be very strong. By reducing the strength of this cohort in some projections and assuming it is of average strength it is possible to illustrate the cohort's potential influence on future stock status.

44 Some hoki year class strengths have in the past been overestimated when they are first observed as one year olds. It is impossible to determine the proportion of the year class that will recruit to each hoki stock, given that juveniles from both stocks are found on the Chatham Rise. For this reason, more conservative projections were also considered where the 2011 year class strength was set to the long term average.

45 All the projections, under both recruitment scenarios and all catch levels, result in both hoki stocks remaining above the lower bound of the management target (35% B_0) through to 2018 (Table 3). The projections that include the strong 2011 year class show that both stocks will increase considerably over the next five years under all the tested catch assumptions.

Table 3: Expected median status of the hoki stocks in 2018, including the estimated 2011 year class strength

TACC	Eastern limit (t)	Western limit (t)	Eastern stock (% B ₀)			Western stock (% B ₀)		
			Model run: a	b	c	a	b	c
130,000	60,000	70,000	76.2	65.1	77.0	83.5	82.6	60.4
140,000	60,000	80,000	76.2	65.1	77.0	81.4	80	57.9
150,000	60,000	90,000	76.2	65.1	77.0	79.3	77.6	55.5

46 The projections that include an average year class instead of the strong 2011 cohort show the stocks remaining stable under current catch levels and declining slowly over the next five years as the catches are increased (Table 4). However, despite this slight decline, none of the projections result in stock status falling below 35% B₀.

Table 4: Expected status of the hoki stocks in 2018, if the 2011 year class is assumed to be average

TACC	Eastern limit (t)	Western limit (t)	Eastern stock (% B ₀)			Western stock (% B ₀)		
			Model run: a	b	c	a	b	c
130,000	60,000	70,000	55.2	47.8	53.9	61.3	58.2	42.6
140,000	60,000	80,000	55.2	47.8	53.9	59.1	55.8	40.1
150,000	60,000	90,000	55.2	47.8	53.9	57.2	53.4	37.7

47 As discussed above, MPI consider caution is warranted due to the uncertainty over the influence that the strong 2011 year class will have on the fishery. That notwithstanding, MPI also tested the effect of an additional 10,000 tonne increase to the western stock catch limit (i.e. a 30,000 tonne increase to 160,000 tonnes). Although it is not included as an option in this IPP, this projection also resulted in the western stock remaining slightly above 35% B₀ through to 2018. MPI therefore has confidence that the stock could support a greater increase than is being proposed under the options in this IPP without any significant risks to the sustainability of the stocks.

PROPOSED RESPONSE

48 MPI is consulting on the following management options for setting TACs, TACCs and allowances for HOK 1 (Table 5).

Table 5: Proposed TACs, TACCs, and allowances for HOK1

Option	Voluntary catch split				Allowances		
	TAC (t)	TACC (t)	Eastern stock limit	Western stock limit	Customary Māori (t)	Recreational (t)	Other sources of fishing related mortality (t)
Option 1 (Status Quo)	131,340	130,000	60,000	70,000	20	20	1,300
Option 2	141,440	140,000	60,000	80,000	20	20	1,400
Option 3	151,540	150,000	60,000	90,000	20	20	1,500

49 Based on the results of the 2013 hoki stock assessment, and the projections that assume a range of catch levels, MPI considers all the options proposed are consistent with the objective of maintaining the hoki stocks at or above B_{MSY} .

Option 1 (Status Quo)

50 Under this option the TAC would remain at 131,340 tonnes and the TACC would remain at 130,000 tonnes. The current catch split arrangement would also remain unchanged under this option.

51 This option will result in lost utilisation opportunities as both stocks combined are likely to be able to support a harvest level greater than 130,000 tonnes. It is not the intention of the hoki harvest strategy to manage the stocks above the agreed management target range.

Option 2

52 Option 2 proposes:

- To increase the TAC from 131,340 tonnes to 141,440 tonnes
- To increase the TACC from 130,000 tonnes to 140,000 tonnes
- To allocate the additional 10,000 tonnes to the western stock catch limit
- The allowance for other sources of fishing related mortality be increased from 1300 tonnes to 1400 tonnes (1% of the TACC)
- No changes to customary or recreational allowances.

53 The five year management projections indicate that the status of both stocks would remain above the lower end of the target range for the next five years with a catch increase of 10,000 tonnes. Even under the most conservative model run and projection scenario, the lowest estimate of the 2018 status of the western stock is at 40% B_0 , while the eastern stock status is higher (48-55%).

54 The projections show that the stocks could likely support a larger catch increase without falling below the lower end of the management target range. This option also represents a conservative approach.

55 Taking a conservative approach to the current harvesting opportunity, by waiting until the 2011 fish grow to a larger size, may provide greater benefit to the industry in the medium term. MPI considers that this option does not take advantage of the full opportunity for utilisation. The current stock status estimates show that the western stock can sustain a catch increase greater than 10,000 tonnes.

56 Based on export figures from 2012 of \$1.69/kg greenweight, a 10,000 tonne increase in the TACC may result in an additional \$16.9 m in revenue.⁷

⁷ Based export figures for 2012 calendar year of \$1.69 / kg greenweight. This uses frozen fillets (TSK) to estimate the greenweight export price as this form accounted for 36.2% of export earnings and 24.5% of export volume for hoki in the 2012 calendar year. Precise revenue loss is difficult to estimate and will be influenced by factors such as commodity prices, exchange rate, catching costs and export state.

Option 3

57 Option 3 proposes:

- To increase the TAC from 131,340 tonnes to 151,540 tonnes
- To increase the TACC from 130,000 tonnes to 150,000 tonnes
- To allocate the additional 20,000 tonnes to the western stock catch limit
- To increase the allowance for other sources of fishing related mortality from 1300 tonnes to 1500 tonnes (1% of the TACC)
- No change to customary or recreational allowances.

58 Implementing this option would also be unlikely to cause a sustainability risk for either hoki stock. The projections show that an increase of 30,000 tonnes would still allow the stocks to remain within the management target range, which gives MPI confidence that this option will not affect the sustainability of the stocks. The status of the western stock in 2018 is projected to be 38% B_0 under the most pessimistic scenario, while the eastern stock would be at 48-55% B_0 . As these management settings will be reviewed before 2018, MPI considers it unlikely that the stock would be at risk with the increased catch.

59 Based on export figures from 2012 of \$1.69/kg greenweight, a 20,000 tonne increase in the TACC may result in an additional \$33.6 m in revenue.

Other Key Considerations

60 When making a decision concerning the TAC for a stock, the Minister for Primary Industries⁸ (the Minister) must have regard to interdependence of stocks. Interdependent stocks and key environmental issues associated with the HOK 1 fishery and how they will be affected by the proposal to increase the TAC are discussed below.

Interdependence of stocks

61 The main commercial bycatch species in the hoki fisheries are hake, ling and silver warehou. Options 2 and 3 in this IPP would result in increased fishing effort on the western stock, which could also result in increased catch of these non-target species.

62 The TAC for LIN 7 is also being reviewed as part of this sustainability round, as it has been shown that the LIN 7 stock can sustain increased catch levels.

63 The silver warehou TAC from this area (SWA 1) continues to be under caught, so any increase in SWA 1 bycatch as a result of increased hoki fishing effort should not cause catches to exceed the existing SWA 1 TACC.

64 The hake stock on the WCSI (HAK 7) has been assessed in 2013 and the stock is estimated to be at 57% B_0 , which is very likely (>90% probability) to be at or above the

⁸ The Minister for Primary Industries now exercises the powers and responsibilities of the Minister of Fisheries under the Fisheries Act 1996.

management target. The TAC is also under-caught so any increased catch as a result of additional hoki fishing effort should not cause catches to exceed the existing TACC.

65 For these reasons, MPI is satisfied that any increase to the hoki TAC is unlikely to have an unacceptable impact on the sustainability of the key species that are caught in conjunction with hoki. Fish by-catch levels in the fishery will continue to be monitored.

Protected species interactions

66 Both proposed Options 2 and 3 would result in increased hoki fishing effort on the fishing grounds of the western stock. This could result in increases to the known interactions with protected species, which are outlined below. However, MPI is comfortable that current management processes will ensure that the long-term viability of these affected protected species populations is not negatively impacted.

67 The hoki trawl fishery is known to interact with a range of protected seabird species; in 2010/11 an estimated 305 seabird captures occurred in the hoki fishery. These estimated captures were calculated from modelling the level of effort and the number of observed seabird captures across the different hoki fishing grounds. During 2010/11, 53 seabird captures were observed from 1724 observed hoki target tows.

68 Management of seabird interactions with New Zealand's commercial fisheries is now being driven through the National Plan of Action to reduce the incidental catch of seabirds in New Zealand fisheries (NPOA-Seabirds). The NPOA-Seabirds establishes a risk-based approach to managing fishing interactions with seabirds, targeting management actions at the species most at risk.

69 The level of risk from commercial fishing to individual seabird species has been identified through a comprehensive hierarchical risk assessment and risk screening approach that underpins the NPOA-Seabirds. Of the 53 observed seabird captures that occurred during 2010/11, 30% of the observed captures were of species found to be at high or very high risk.⁹ Conversely, 43% of the observed captures were of species at negligible risk.

70 Hoki fishing effort generally contributes a relatively low proportion of the total risk score for those seabird species that have been found to be at high or very high risk (e.g. Salvin's albatross). A species of concern for the middle-depth fisheries is the Southern Buller's albatross. This species is estimated to be at high risk, and hoki fishing effort contributes approximately one third of the total risk to this species.

71 MPI will continue to work with industry stakeholders to reduce the risk to key seabird species. A range of measures are currently in place or are under development. Mandatory seabird mitigation measures include the requirement that all trawlers over 28 m in length

⁹ For definitions of these risk categories, see: http://data.dragonfly.co.nz/psc/v20121101/about.html#risk_categories

deploy bird mitigation devices during fishing. Research projects are currently underway that aim to improve the efficacy of these mitigation devices.¹⁰

72 Non-regulatory measures are also used to reduce the risk of seabird interactions with the hoki fleet. Every vessel over 28m in length has developed a specific vessel management plan (VMP) that sets out the onboard practices vessels must follow to reduce the risk to seabirds, including offal management procedures and good factory cleanliness. MPI monitors each vessel's performance against its VMP and works with the Deepwater Group Ltd. (DWG) to rectify any non-adherence and also to assist the fleet improving their offal management capacity. These practices will continue during 2013/14.

73 The hoki fisheries are also responsible for some fur seal mortalities, particularly the fisheries in WCSI and Cook Strait. During the 2010/11 fishing year it is estimated that 159 fur seal mortalities occurred in the hoki fisheries. This estimate continues the declining trend in fur seal mortalities occurring in the hoki fisheries.

74 The rate of fur seal captures has continued to decline, despite previous increases in hoki fishing effort. It is unclear therefore whether further TACC increases will result in additional fur seal mortalities, although this is a possibility. However, MPI notes that the New Zealand fur seal population is believed to be increasing and it is unlikely that the current level of mortalities is affecting the long term viability of the national population.

Benthic impacts

75 Although hoki is a mid-water species, it is often caught by bottom trawl or midwater trawl fished on or near the bottom which can have an impact on the benthic habitat.

76 In recent years, management measures to address the effects of deepwater trawl activity have focused on 'avoiding' these effects. This has been achieved through closing areas to bottom trawling; first with seamount closures in 2001 and then with Benthic Protection Areas (BPAs). The implementation of BPAs in 2007 effectively closed approximately 30% of the New Zealand EEZ to bottom trawling. It also implemented a monitoring regime to ensure these closures are adhered to.

77 The proposals to increase the TACC for hoki will result in an increase in fishing effort, but this effort will be focused on the western fishing grounds. The risk of benthic interactions may be less in these fisheries, as most of the fishing activity on the west coast of the South Island is carried out using mid-water gear which has little contact with the seabed.

78 The trawl footprint of the hoki fishery will continue to be mapped and monitored annually.

¹⁰ More information on these projects can be found at the Department of Conservation's Conservation Services Programme website: www.doc.govt.nz/csp

Other Management Measures

79 MPI is not proposing to make any changes to the deemed values for hoki, or any other management measures.

FUTURE CONSIDERATIONS

80 An important consideration for the projections of stock status was the strength of the 2011 year class. Industry is supportive of a proposal by MPI to bring forward the trawl survey of the Chatham Rise which was scheduled for 2015, to January 2014. This will provide a further observation of juvenile fish from the 2011 year class and will provide a more certain estimate of the strength of this year class.

CONCLUSION

81 MPI is comfortable that a utilisation opportunity exists in the New Zealand hoki fisheries. Estimates of current stock status from the 2013 assessment model indicate that catch increases of up to 30,000 tonnes could be sustained, while still retaining the stocks within the management target range.

82 In order to take a conservative approach, MPI has proposed catch increases of either 10,000 or 20,000 tonnes. For the 2013/14 fishing year, the increases will all be allocated to the western stock, to limit pressure on juvenile fish on the Chatham Rise. The proposals will result in a larger proportion of the HOK1 TAC being allocated to the western stock. This is appropriate given the stock has rebuilt successfully to healthy levels, as it is estimated to be considerably larger than the eastern stock.