**Priority** –Medium

**Security Level** – In Confidence

| Distribution |
|---|
| Minister |
| Minister's Advisor |
| Minister's Office |

**Ministry for Primary Industries**
Manatū Ahu Matua

**12 March 2014**

**Document Number:** **B13-622**

# Final Advice – Southern blue whiting at Campbell Island (SBW6I) sustainability measures for 1 April 2014

**Purpose:**

This briefing provides you with an overview of the Final Advice Paper on a review of Campbell Island's southern blue whiting sustainability measures for 1 April 2014.

| Minister | Action Required: | Minister's Deadline |
|---|---|---|
| **Minister for Primary Industries** | **Note** the contents of this briefing.<br><br>**Agree** to consider the recommendations outlined in the Final Advice Paper and express your decision for the SBW6I stock. | To make your decisions on catch limits by **Monday 17 March** to enable communication of any decisions prior to 1 April. |
| **CC Associate Minister for Primary Industries** | | |

**Comments:**

There has been some recent media attention on New Zealand sea lions. Therefore there may be some media interest in your decision on whether to increase the total allowable catch for southern blue whiting at Campbell Island.

**Contact for telephone discussion** (if required)

| | Name | Position | Work | After Hours |
|---|---|---|---|---|
| Responsible DDG | Scott Gallacher | Deputy Director-General Resource Management and Programmes/Standards | 04 894 0593 | 021 955 069 |
| Responsible Manager | Vicky Reeve | Acting Manager Deepwater Fisheries | 04 819 4606 | 021 498 841 |

## Key Messages

1. The Ministry for Primary Industries (the Ministry) has consulted on an Initial Position Paper detailing the review of sustainability controls for the southern blue whiting fishery at Campbell Island (SBW6I). The final advice paper (FAP) on this review for the SBW6I stock is attached to this briefing.

2. The FAP outlines the submissions received, the Ministry's recommended option, and seeks your decision on the catch limits for SBW6I for the 1 April 2014 fishing year. Your decision is sought by Monday 17 March to enable Gazetting and communication of any changes to catch limits.

3. Results from the 2014 SBW6I stock assessment (approved by the Ministry's Deepwater Fisheries Assessment Working Group) indicate that the SBW6I biomass is approximately 58% of un-fished biomass ($B_0$). This is above the level that will produce the maximum sustainable yield ($B_{MSY}$), and above the default management target of 40% $B_0$. Consequently, the Ministry consulted on three options (Table 1); one to retain the total allowable catch (TAC) and two options for increasing the TAC.

4. Four submissions were received on the SBW6I IPP. Commercial stakeholders support Option 3, to increase the TAC from 30,000 to 40,000 tonnes. Environmental stakeholders support Option 1 to keep catch levels at the status quo.

5. The Ministry recommends Option 3, in that it enables fishers to utilise an increase in stock biomass whilst maintaining the stock within sustainable limits. Based on export figures from 2012 of $0.80/kg greenweight, Option 3 could result in approximately $7.8 M in additional export revenue.

6. Since the 2013 SBW6I season concluded, MPI has been working with stakeholders to develop fishery specific operational procedures that will reduce the risk of interactions between the SBW6I fishery and sea lions. These measures will be finalised and provided to you before the start of the next season in April 2014.

7. Along with the development of operational procedures, work is underway to better estimate the impact that captures by fishing vessels are having on the sea lion population at Campbell Island. This work includes a semi-quantitative marine mammal risk assessment and a Deepwater Group funded project to determine the potential biological removal (PBR) for sea lions from the Campbell Island population.[1]

[1] The term 'potential biological removal' means the number of animals that can be removed from the population without impacting the long term survivability of the population

8. The Ministry is also working with industry to increase the fleet's adherence to the existing marine mammal operational procedures (MMOP). The MMOP requires vessels to minimise the time that fishing gear is at the surface, to remove stickers from the net which can act as an attractant, to steam away from any congregations of sea lions before shooting the gear, and to appoint a crew member to watch for marine mammals every time the gear is shot or hauled.

9. The World Wildlife Fund (WWF) submitted that it cannot support a proposal to increase the TAC for SBW6I until industry commit to making the use of Sea Lion Exclusion Devices (SLEDs) on commercial vessels fishing in SBW6I mandatory from the beginning of the season. The Ministry notes that the Deepwater Group have submitted a commitment to use SLEDs throughout the season. The Ministry is confident that it is unnecessary at this time to require mandatory use of SLEDs given the current level of support from industry on this measure.

10. Given the research and operational procedures mentioned above, and the industries support of these projects, the Ministry is confident that the options within the FAP will not increase the potential risk to marine mammals.

## Recommendations

11. MPI recommends that you:

a) **Note** the contents of this briefing

**Noted**

b) **Agree** to express your catch limit decisions for the SBW6I stock on page 15 of the enclosed Final Advice Paper.

**Agreed / Not Agreed**

Scott Gallacher
Deputy Director-General
Resource Management and
Programmes/Standards
On behalf of the Director-General

Hon Nathan Guy
Minister for Primary Industries

/ / 2014

Ministry for Primary Industries
Manatū Ahu Matua

# Review of Sustainability measures for southern blue whiting at Campbell Island (SBW6I) April 1 2014

**Final Advice Paper**

MPI Information Paper No:

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New Zealand Government

*Growing and Protecting New Zealand*

# Contents

# Southern blue whiting at Campbell Island (SBW6I) – FINAL ADVICE PAPER

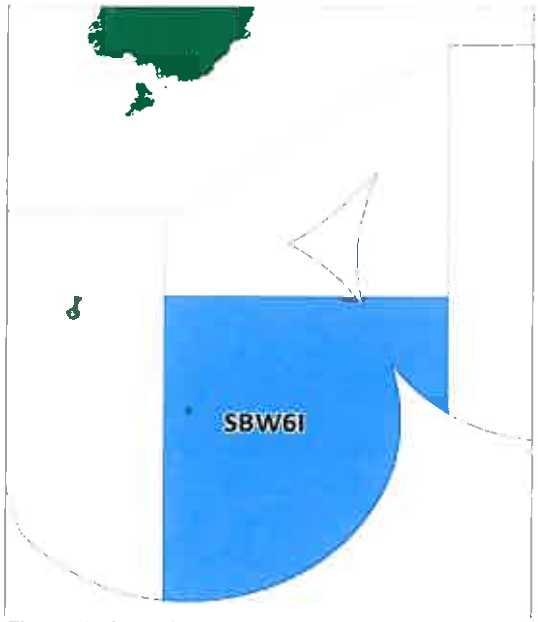


**Figure 1:** Quota Management Area (QMA) for SBW6I

## EXECUTIVE SUMMARY

1 The SBW6I fishery is the largest of four southern blue whiting fisheries and is located around Campbell Island in the sub-Antarctic (Figure 1). Results from the 2014 stock assessment indicated that the SBW6I biomass is approximately 58% of un-fished biomass ($B_0$) which is above the biomass that will produce the maximum sustainable yield ($B_{MSY}$), and above the default management target of 40% $B_0$. Consequently, the Ministry consulted on three options; one to retain the total allowable catch (TAC) and two options for increasing the TAC.

2 Four submissions, two from commercial stakeholders and two from environmental stakeholders, were received on the SBW6I Initial Position Paper (IPP). The commercial fishing industry supports increasing the total allowable catch (TAC) to 40,000 tonnes (Option 3). The environmental conservation groups do not support any increase and support keeping catch levels at the status quo (Option 1).

3 After considering the submissions received, the Ministry recommends Option 3, which would increase the SBW6I TAC from 30,000 tonnes to 40,000 tonnes. This increase would enable industry to utilise, within sustainable limits, the high biomass of southern blue whiting currently present in the SBW6I stock. All three options presented in this paper will bring stock biomass down towards the management target of 40%$B_0$. Option 3 will achieve this at a faster rate than Option 1 or Option2.

4 The Ministry proposes that a 2% allowance be made within the TAC for other sources of fishing related mortality. There is no known customary Maori or recreational take of southern blue whiting and it is proposed to retain zero allowance for these sectors. The Ministry does not propose any changes to the current deemed values rates for SBW6I.

### Summary of Options

5 The three options that were consulted on are summarised below. Option 3, which increases the TAC by 10,000 tonnes, is the Ministry's recommended option (Table 1).

**Table 1:** Proposed TAC, TACC and allowance options for SBW6I

| Option | | Allowances | | | |
|---|---|---|---|---|---|
| | TAC (t) | TACC (t) | Māori Customary (t) | Recreational (t) | Other sources of fishing-related mortality (t) |
| **Option 1 (Status Quo)** | 30,000 | 29,400 | 0 | 0 | 600 |
| **Option 2** | 35,000 | 34,300 | 0 | 0 | 700 |
| **Option 3 (Preferred Option)** | 40,000 | 39,200 | 0 | 0 | 800 |

## BACKGROUND INFORMATION

### Biological Characteristics of Southern Blue Whiting

6 Adult southern blue whiting (*Micromesistius australis*) form dense spawning aggregations at four known locations across the sub-Antarctic, at depths of 250-600 metres during July to September. Scientific information shows that these four spawning locations represent four distinct stocks.

7 The stocks are characterised by highly variable recruitment. Years of very strong recruitment are infrequent and are separated by longer periods of average and below-average recruitment.

8 Southern blue whiting exhibits fast growth especially during the juvenile life stage. The species generally matures between the ages of 2 and 4, when they recruit to the spawning grounds (and the commercial fishery) for the first time. The age of first spawning is observed to increase in strong year classes, which is thought to be a density dependent response to high abundance through slower growth and a higher age at maturity.

### SBW6I Fishery

9 Southern blue whiting was introduced to the quota management system (QMS) in 1999. Before this, harvests were managed via sub-area catch limits from 1992.

10 The fishery operates when the SBW6I stock aggregates to spawn during late August and September. The fishery is purely a commercial fishery, in which between 10 and 14 trawl vessels participate each year.

11 Since 1997/98 the SBW6I fishery has supported a catch limit in excess of 20,000 tonnes. Harvest levels, and the TACC, have fluctuated over the course of the fishery in response to biomass fluctuations that result from variation in recruitment (Figure 2).

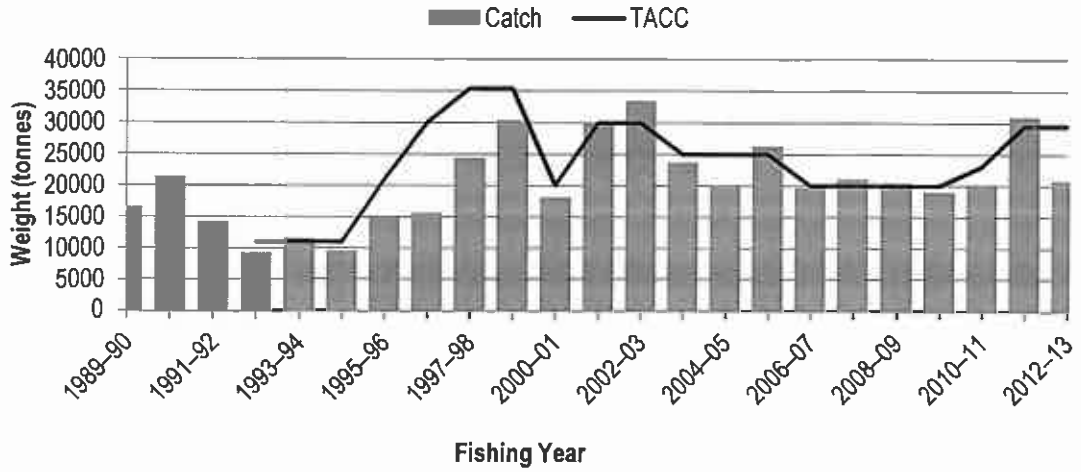


**Figure 2:** Reported landings and TACC (t) for SBW6I from fishing year 1989/90 to the 2012/13 fishing year.

## Consultation

12 Your decision to adjust the TAC for SBW6I is made under section 13(4) of the Fisheries Act 1996 (the Act) and therefore the consultation requirements of section 12 apply. Also, in respect of your decision whether or not to adjust the TACC for SBW6I under section 20(1) of the Act the consultation requirements set out in section 21(2) of the Act apply.

13 Consultation on the Initial Position Paper (IPP) was undertaken with such persons or organisations representative of those having an interest in the stock or the effects of fishing on the aquatic environment in the area concerned. This includes Māori, environmental, and commercial interests.

14 The Ministry followed its standard consultation process for IPPs in the April 2014 sustainability round. This involved posting all IPPs on the Ministry's website and alerting stakeholders to this through a letter sent to approximately 140 companies, organisations, and individuals.

15 There is also an obligation to provide for input and participation of tangata whenua and have particular regard to kaitiakitanga. The Ministry recognises that information on customary harvest is uncertain and invited iwi, Tangata Tiaki/Kaitaiki, and customary permit holders to submit information. However, no additional information was submitted during the consultation process.

### Submissions Received

16 Submissions were received from the following:

a) Environment and Conservation Organisations of NZ Inc. (ECO)

b) Sanford Ltd

c) The Deepwater Group Ltd (DWG)

d) World Wildlife Fund (WWF)

17 All submissions are attached to this paper for your reference.

### Summary of Submissions

18 A brief summary of each submission is outlined below. The Ministry's responses to issues raised in the submissions can be found within the relevant later sections of this advice paper.

19 The DWG, which represents 89% of SBW6I quota holders, supports increasing the TAC to 40,000 tonnes (Option 3). Support for this option is contingent on the DWG and the Ministry continuing to work together to achieve the following:

a) Implement an effective mitigation plan to minimise the incidental interactions with New Zealand sea lions

b) Undertake an update of the previous Management Strategy Evaluation (MSE)[1]

c) Use the MSE results to determine the timing of the next biomass survey, as quota owners were keen to see the possibility of the next survey being delayed beyond the current plan of 2015

d) Review the Harvest Strategy and Management Target for this stock

e) Include the results of the above work in the Fishery Plan for SBW6I

f) Based on results from the above, review management measures for SBW6I prior to 2015-16

20 Sanford is represented by DWG, but also chose to make its own submission. Sanford owns approximately 11% of the SBW6I quota and supports DWG's submission, including the provisos, for an increase to the TAC (Option 3).

21 ECO supports Option 1 (status quo), submitting that any increase in catch is likely to result in the increased bycatch of sea lions, as well as the deaths of fur seals and sea birds. ECO also notes that any increase in effort within the fishery will impact the monitoring and gathering of scientific information around sea lion interactions.

22 WWF also submits support for Option 1 (status quo) until the Ministry implements the mandatory use of sea lion exclusion devices (SLEDs). WWF advocates for the use of SLEDs by every vessel from the start of the fishery, a period within which the majority of captures have occurred. WWF also highlights the need to address recommendations made by the Marine Stewardship Council (MSC) auditors, given the fishery's MSC Certification.

23 The Ministry has been working with industry to develop operational procedures for vessels operating in this fishery, to reduce the risk of incidental sea lion interactions. DWG highlights within their submission that quota owners have agreed to use SLEDs in the SBW6I fishery for the 2014 season. They also support full independent observer coverage and will continue to work with the Ministry to enable real-time monitoring and management responses as required.

## RATIONALE FOR MANAGEMENT INTERVENTION

### Management Approach

24 SBW6I is managed within the National Deepwater Plan as a Tier 1 stock. A fisheries-specific southern blue whiting chapter of the National Deepwater Plan was finalised in 2011 and details the management approach and operational objectives for the fishery.

25 At present, the management approach for SBW6I is based on regular stock assessments, which lead to regular TAC and TACC reviews. Stock assessments incorporate all available data from the commercial catch history, from a stock specific research time series of acoustic surveys and from biological sampling of both the commercial and research catch. The biological sampling provides the proportion-at-age data that is used to determine year class strength.

[1] A MSE is a simulation modelling approach for testing the effectiveness of proposed management options and their robustness in meeting management objectives under a range of uncertainties.

**Table 2:** Southern blue whiting default reference points, and the associated management response.

| Reference point | Management response |
|---|---|
| Management target of 40% $B_0$ | Stock permitted to fluctuate around this management target. TAC changes will be employed to move stock toward or above 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. |
| Harvest control rule | Management actions determined by the results of a series of forward projections under a range of catch assumptions, guided by the biological reference points |

26 The TAC reviews are guided primarily by the stock's status in relation to the current management reference points for southern blue whiting. The reference points specified in the southern blue whiting fisheries plan chapter are the default targets and limits set out within the Harvest Strategy Standard for New Zealand Fisheries,[2] listed in Table 2. The management target of 40%$B_0$ is understood to be a conservative proxy for $B_{MSY}$ for a species with the life history characteristics of southern blue whiting.

27 The submission from DWG noted that quota holders wish to review the harvest strategy and management targets for this stock. Although the default targets and limits are currently used, development of a stock specific harvest strategy for SBW6I is an objective within the southern blue whiting chapter of the National Deepwater Plan. The appropriateness of the default target and limits will therefore be assessed as part of this process, which the Ministry will progress through the Fisheries Planning process.

### Previous Assessments

28 The SBW6I stock assessment was previously updated in 2012 following a research survey in 2011. That assessment provided evidence that a strong year class in 2009 had started to recruit to the fishery (adult stock). This was in addition to the strong 2006 year class, which had supported increases to the TAC in 2010 and 2011.

29 Despite the considerable strength of the 2009 year class, and the 2012 estimate of stock status (at 50% $B_0$) being above the management target of 40% $B_0$, quota holders preferred to retain the TAC for 2012/13 and 2013/14. This decision was influenced by the relatively small size of fish within the 2009 year class at that time. Also, this year class had only been observed once, during the 2009 survey, so it was uncertain whether the year class would prove to be as strong as estimated in the assessment model.

### Current Stock status

30 The SBW6I stock assessment was updated in 2014 with new information from a survey in late 2013 and catch information from the 2013 fishing season. The 2014 assessment was accepted by the Ministry's Deepwater Fisheries Assessment Working Group on 30 January 2014, and indicates the SBW6I stock biomass has continued to increase and the stock status was estimated to be 58% $B_0$.

31 The survey indicates that this increase in stock biomass is a result of fish from the 2009 year class continuing to recruit into the fishery. This is consistent with the projections made using the 2012 stock assessment and confirms that the 2009 year class is very strong.

[2] http://fs.fish.govt.nz/Page.aspx?pk=104

32 The 2009 year class is now expected to be near-fully recruited to the fishery and has grown to a good harvest size (>35 cm). Stock biomass is therefore unlikely to increase far beyond the current level unless a further strong year class enters the fishery. However, as a significant proportion of this year class was left in the water in 2012/13 and 2013/14, the year class has fully matured and has contributed to the adult spawning stock over this time. The Ministry is of the view that an opportunity now exists to begin to sustainably utilise more of this very strong year class.

## MANAGEMENT MEASURES PROPOSED

33 Given the results of the 2014 SBW6I stock assessment, the Ministry considers all three options described below are consistent with the objective of moving the SBW6I towards or above the management target. Each of the proposed options would achieve this objective at different rates.

### Option 1 (Status Quo)

34 Under Option 1, the existing TAC, TACC and allowances set in 2011 would be retained for the 2014/15 fishing year. Five year projections using the 2014 assessment model show that if this Option were implemented, stock biomass would be expected to decline gradually from its current peak above the management target, moving the stock towards the target.

35 However, the stock is projected to remain above the management target over the next five years, with only a 37% probability of dropping below the management target in 2018. This indicates that additional utilisation could be provided for, whilst still ensuring the sustainability of the stock.

36 ECO and WWF both support Option 1. Their main concern with any increase to the TAC is the potential for increases in protected species bycatch, particularly New Zealand sea lions. Further detail is provided later in this paper regarding the measures that will be taken to reduce the risk of sea lion interactions in the fishery in 2014. The Ministry is of the view that these measures should minimise the risk of sea lion captures, regardless of the level at which the TAC is set.

### Option 2

37 Option 2 proposes:

a) To increase the TAC from 30 000 tonnes to 35 000 tonnes;
b) To increase the TACC from 29 400 tonnes to 34 300 tonnes;
c) To increase the allowance for other sources of fishing-related mortality to 700 tonnes (2% of the proposed TAC)
d) To retain the Maori customary and recreational allowance at zero tonnes.

38 The stock assessment shows the SBW6I stock is highly likely to sustain a higher level of utilisation over the short to medium term. Implementing Option 2 would allow for further utilisation and would move the stock towards the management target at a faster rate than under Option 1.

39 The stock is expected to remain at or above the target for at least the next five years even with this increased level of utilisation. Stock status in 2018 is projected to be 41%$B_0$ under this catch scenario, with a 48% probability of falling below the management target.

40 Based on export figures from 2012 of $0.80/kg greenweight, A TACC increase of 4 900 tonnes may result in approximately $3.8 M in additional export revenue. [3]

41 No submissions were received in favour of Option 2.

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[3] This estimate is based on export figure of $0.80 / kg greenweight, from the 2012 calendar year. This uses frozen headed and gutted and frozen other form data to estimate the greenweight export price. These forms accounted for 90% of the total export volume of southern blue whiting during 2012. Precise revenue gain is difficult to estimate and will be influenced by factors such as commodity prices, exchange rate, catching costs and export state.

**Option 3 (Preferred Option)**

42 Option 3 proposes:

a) To increase the TAC from 30 000 tonnes to 40 000 tonnes
b) To increase the TACC from 29 400 tonnes to 39 200 tonnes
c) To increase the allowance for other sources of fishing related mortality to 800 tonnes (2% of the proposed TAC)
d) To retain the Maori customary and recreational allowance at 0 tonnes.

43 Option 3 would move the stock back towards the management target at the fastest rate. Projections indicate that stock status would remain above the management target, at 42%$B_0$ in 2017, but would have fallen to 35%$B_0$ by 2018.

44 The southern blue whiting harvest strategy intends for the stock status to fluctuate around the management target. Although Option 3 is the most aggressive of the three approaches to harvesting the available biomass presented in this paper, it is also unlikely to present a sustainability risk to the stock in the short term, given the current high level of stock biomass. A further research survey and stock assessment will take place before 2018, and the harvest level can then be adjusted to ensure stock size is maintained at about 40%$B_0$.

45 This option has been given unanimous support from the SBW6I quota holders that are represented by DWG. This support was given with the proviso that MPI and DWG progress a Management Strategy Evaluation to determine the most appropriate timing for the next acoustic biomass survey in SBW6I. Research surveys have previously been carried out every two to three years in this stock. In the SBW6I IPP the Ministry stipulated that if Option 3 were to be implemented, a survey would be required in 2015 given the increased risk of the stock dropping below the management target.

46 The Ministry supports the use of a MSE to better inform the appropriate timing of research surveys and is interested in developing this work with DWG. Should the outcomes of a MSE indicate that it is appropriate to increase the time between surveys at this level of catch, the Ministry would consider alternative dates for the SBW6I survey. This would however, be contingent on both the methodology and results of any MSE being afforded appropriate peer review within the Ministry's Science Working Group process and also meeting the requirements of the Ministry's Research and Science Information Standard for New Zealand Fisheries.

47 Based on export figures from 2012 of $0.80/kg greenweight, A TACC increase of 9,800 tonnes could result in approximately $7.8 M in additional export revenue. [3]

48 This is also the Ministry's preferred Option, in that it enables fishers to utilise the 2009 year class at a good harvest size, whilst maintaining the stock biomass within sustainable limits. For the last two years the SBW6I stock biomass has been at a level that could sustainably support an increase to the TAC. This is therefore an appropriate and effective time to increase the TAC and enable fishers to further utilise the strong year classes before they naturally die out of the stock.

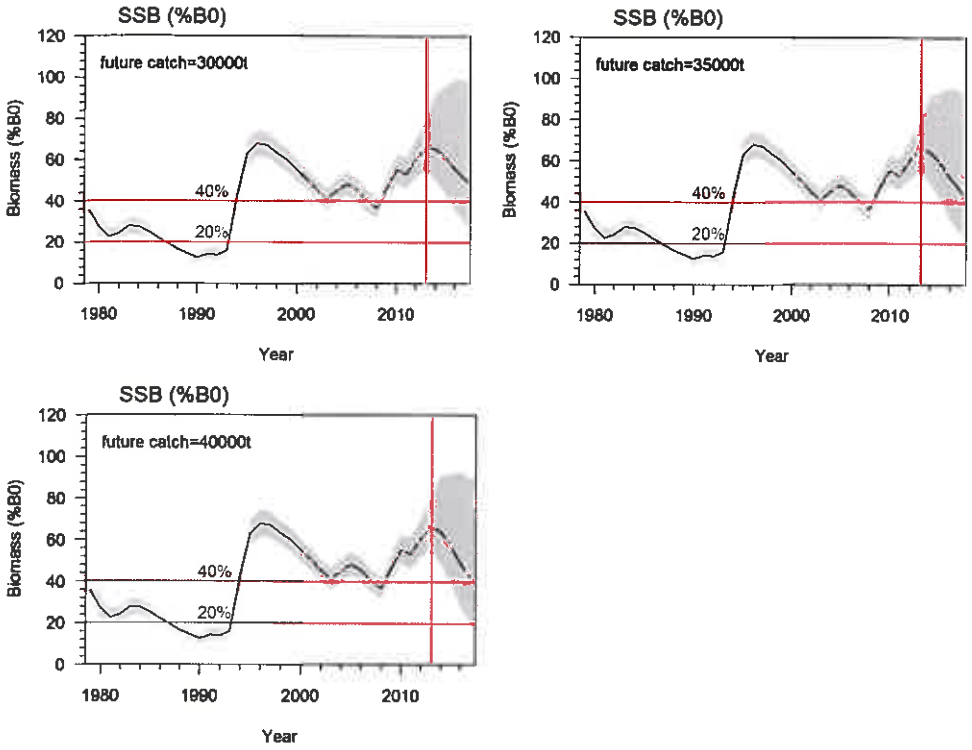


**Figure 3:** Projected SBW6I spawning stock biomass (SSB) under a range of possible catch limits out to 2018 from the current status (vertical red line). Horizontal red lines represent the management target (40%$B_0$) and the soft limit (20%$B_0$).

**Table 3:** Probabilities that the spawning stock biomass (SSB) will be below the management target of 40%$B_0$ under the three projected catch levels for the next five years

| Proposed Catch (t) | Probability (%) SSB will be below the management target | | | |
|---|---|---|---|---|
| | 2015 | 2016 | 2017 | 2018 |
| **30,000** | 2 | 11 | 24 | 37 |
| **35,000** | 4 | 18 | 34 | 48 |
| **40,000** | 6 | 25 | 46 | 60 |

## ASSESSMENT OF MANAGEMENT OPTIONS

49 This section describes the management options proposed by the Ministry in terms of how they meet the legislative obligations within the Act. The Ministry considers that all management options proposed here satisfy the purpose of the Act, in that they provide for utilisation of the SBW6I fishery while ensuring sustainability.

### Section 13(2) - Setting the TAC

50 Section 13(2) of the Act requires you to set a TAC that:

a) Maintains the stock at or above a level that can produce a maximum sustainable yield, having regard to the interdependence of stocks;

b) Enables the level of a stock whose current level is below that which can produce the maximum sustainable yield to be altered

i. in a way and at a rate that will result in the stock being restored to at or above a level that can produce the maximum sustainable yield, having regard to the interdependence of stocks; and

ii. within a period appropriate to the stock having regard to the biological characteristics of the stock and any environmental conditions affecting the stock; or

c) Enables the level of any stock whose current level is above that which can produce the maximum sustainable yield to be altered in a way and at a rate that will result in the stock moving towards or above a level that can produce the maximum sustainable yield, having regard to the interdependence of stocks.

51 The 2014 stock assessment for SBW6I has estimated stock status at approximately 58% $B_0$. This is highly likely to be above $B_{MSY}$ and the Ministry therefore recommends you set the SBW6I TAC under section 13(2)(c) of the Act.

52 Section 13(2)(c) enables you to set the TAC at a level that will move the stock towards or above a level that can produce the maximum sustainable yield (MSY). You are permitted to choose the 'way and rate' at which the stock is moved towards the desired level but you must have regard to the interdependence of stocks. All options presented maintain the stock above $B_{MSY}$ in the short to medium term.

53 The SBW6I fishery catches very low volumes of by-catch - 99% of the total catch is southern blue whiting. There is no information therefore to suggest that increasing the TAC for SBW6I will impact the interdependence of stocks. The Ministry has commenced the development of a risk assessment framework for non-QMS species caught within deepwater fisheries to increase our understanding of non-QMS species and the interdependence stocks.

**Section 13(3) – Rate of change**

54 Section 13(3) requires that, in considering the way and the rate that the stock may be moved towards a level that can produce the MSY, you shall have regard to such social, cultural and economic factors as you consider relevant.

55 There is no statutory guidance on what an appropriate 'way and rate' might be in any given case for the purposes of applying section 13(2); it is a matter for you to determine having regard to social, cultural and economic factors that you consider relevant. The expected rate of change in SBW6I biomass is presented in Table 3 and Figure 3, and is discussed above with reference to each of the proposed Options.

56 The Ministry considers that the proposals to increase the SBW6I TAC are justified given the stock is highly likely to be above $B_{MSY}$. Both submissions received from the commercial sector stated support for increasing the TAC under Option 3 and realising the accompanying economic benefits.

57 Given the lack of recreational and customary catch from SBW6I and the retention of the current nil allowances, the Ministry considers increasing the TAC under any of the proposed options will not have an adverse impact on non-commercial fishers.

**Sections 20 and 21 – Allocating the TAC**

58 The TAC must be apportioned between the relevant sectors and interests set out under the provisions of sections 20 and 21 of the Act. Section 21 requires that allowances be made for Maori customary non-commercial interests, recreational fishing interests and for any other sources of fishing related mortality, before a TACC is set.

59 There are no known Maori customary or recreational fisheries for southern blue whiting and the Ministry proposes to retain nil allowances for these sectors.

60 An existing allowance for other sources of fishing related mortality is set at 2% of the TAC. There is no additional information at this time that would warrant the Ministry recommending that you change the allowance for other sources of fishing related mortality. The Ministry recommends you retain the current allowance of 2% of the TAC.

### Section 10 – Information Principles

61 Under section 10 of the Act, you must take into account the following information principles:

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.

62 The Ministry considers that the best available information has been used as the basis for the recommendations herein. All science information upon which the management options are based has been peer reviewed by one of the Ministry's Fisheries Assessment Working Groups and meets the Research and Science Information Standard for New Zealand Fisheries.

### Section 11 Considerations

63 Under section 11 of the Act, before varying any sustainability measure for the SBW6I stock, you must:

a) Section 11(1)(a): take into account any effects of fishing on any stock and the aquatic environment. No information about any effects of fishing on any stock or on the aquatic environment, additional to that discussed elsewhere in this paper, is considered relevant to the review of sustainability measures for SBW6I at this time.

b) Section 11(1)(b): take into account any existing controls under the Act that apply to the stock or area concerned. For SBW6I, the measures that apply currently are a TAC, TACC and an allowance for other sources of fishing related mortality. No other controls under the Act specifically apply to SBW6I.

c) Section 11(1)(c): take into account the natural variability of the stock. The SBW6I stock assessment model incorporates all available information on the biological characteristics of southern blue whiting and therefore takes into account the factors that drive the natural variability of the stock.

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 you consider relevant. A proposed regional coastal plan exists for the Kermadec and Subantarctic Islands. The Ministry is satisfied that no provisions within this plan are relevant to your decision.

e) Section 11(2)(c): have regard to sections 7 and 8 of the Hauraki Gulf Marine Park Act 2000 that apply to the coastal marine area and are considered relevant by you. The boundaries of the SBW6I QMA do not overlap with the Hauraki Gulf. Therefore, the Ministry considers there are no relevant considerations under the Hauraki Gulf Marine Park Act 2000.

f) Section 11(2)(ca): have regard to regulations made under the Exclusive Economic Zone and Continental Shelf (Environmental Effects) Act 2012. These regulations do not affect the lawful taking of wild fish under the Fisheries Act.

g) 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 that apply to the coastal marine area and are considered by you to be relevant. The Ministry is not aware of any planning documents under the Marine and Coastal Area (Takutai Moana) Act 2011 that are relevant to the setting of the SBW6I TAC.

h) Section 11(2A)(b): take into account any relevant and approved fisheries plans. The application of the National Deepwater Plan is discussed in the following section.

i) Section 11(2A)(a) and (c): take into account any conservation or fisheries services, or any decision not to require such services. The Ministry does not consider that existing or proposed services materially affect the proposals for SBW6I. No decision has been made to not require a service in this fishery at this time.

### Section 11A – Fisheries Plans

64 The Ministry, in collaboration with industry and environmental organisations, has developed a National Fisheries Plan for Deepwater and Middle-depth Fisheries (the National Deepwater Plan) which was given Ministerial approval in 2010. National Deepwater Plan sets out the long-term goals and objectives for deepwater fisheries. Fishery-specific chapters set specific Operational Objectives that will be delivered annually for each key deepwater species, and establish performance indicators to assess if the management objectives have been delivered.

65 The fishery-specific chapter of the National Deepwater Plan for southern blue whiting was completed in 2011. You are required to take the National Deepwater Plan into account when making a decision on the management options presented for SBW6I. The management options proposed in this FAP are consistent with the dual Outcomes of the National Deepwater Plan:

a) The Use Outcome: Fisheries resources are used in a manner that provides greatest overall economic, social and cultural benefit

b) The Environment Outcome: The capacity and integrity of the aquatic environment, habitats and species are sustained at levels that provide for current and future use.

66 These dual Outcomes are given effect to by 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 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.

67 The Ministry considers that the management options proposed in this paper will contribute to and not impede the Ministry from achieving these two Management Options.

### Section 9 – Environmental Considerations

68 Section 9 of the Act sets out the following environmental principles. These principles must be taken into account when implementing management measures under the Act.

a) Sections 9(a) and (b) require all persons exercising or performing functions, duties, or powers under the Act to take into account that associated or dependent species be maintained at or above a level that ensures their long-term viability, and that the biological diversity of the aquatic environment should be maintained.

b) Section 9(c) requires all persons exercising or performing functions, duties, or powers under the Act to take into account the principle that habitat of particular significance for fisheries management should be protected.

69 The Ministry is confident that the proposed options are consistent with the requirements of section 9. The key environmental interactions associated with the SBW6I fishery are discussed below with reference to the likely impacts of the proposed management options.

***Marine Mammals***

70 One of the two stronghold breeding populations of New Zealand sea lions is located on Campbell Island. Data collected during sea lion pup counts at Campbell Island in 2003, 2007 and 2009 indicates that pup production in this population could be increasing.

71 The SBW6I fishery operates approximately 60 to 100 nautical miles offshore from Campbell Island, and overlaps somewhat with the foraging range of the larger male New Zealand sea lions. Interactions between the SBW6I fishery and New Zealand sea lions are known to occur, and these interactions have shown an increasing trend in recent years. During the most recent year a total of 21 incidental sea lion captures occurred.[4] All vessels that operated in SBW6I during 2013 had at least one Ministry observer on board.

72 Work is ongoing to determine whether these interactions are occurring at a frequency that would cause the New Zealand sea lion population at Campbell Island to decline below the level that ensures their long-term viability. This includes the ongoing development of a semi-quantitative marine mammal risk assessment, and an additional DWG funded project to determine the potential biological removals (PBR) from the Campbell Island population.[5] The PBR project is progressing well and has recently been initially peer reviewed by the Ministry's Aquatic Environment Working Group.

73 Regardless of the outcome of this work, the increasing number of incidental sea lion captures has highlighted that further management measures are required to achieve the Ministry and DWGs objectives related to sea lion interactions in SBW6I. It is the Ministry's intention that incidental sea lion interactions are minimised to the extent practicable, in accordance with Operational Objective 2.2 in the southern blue whiting chapter of the National Deepwater Plan. [6] DWG has also signalled its objective that sea lion captures in SBW6I be reduced to zero.

74 Following the high number of captures during 2013 you and the Minister of Conservation requested that sea lion exclusion devices (SLEDs) be deployed in the fishery for the first time. Research has shown that SLEDs are an effective mitigation tool and have reduced the risk of sea lion mortalities resulting from interactions with trawl gear in the southern squid fishery. The trials in SBW6I were deemed to be generally successful, in that the majority of the fleet was able to deploy SLEDs successfully without significant operational problems.

75 Since the 2013 season concluded the Ministry has been working with stakeholders to develop fishery specific operational procedures that will reduce the risk of future sea lion interactions. These measures will be finalised and provided to you well in advance of the 2014 SBW6I fishing season, following further stakeholder engagement.

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[4] These capture figures have not yet been officially collated and reported back to the Ministry's Aquatic Environment Working Group; captures include animals that were killed and released alive

[5] The term 'potential biological removal' means the number of animals that can be removed from the population without impacting the long term survivability of the population

[6] Objective 2.2 of the southern blue whiting chapter states that the Ministry will work to ensure that incidental sea lion mortalities do not impact the long term viability of the sea lion population and that captures are minimised through good operational practices.

76 The submission from DWG, quota owners have committed to continuing to work closely with the Ministry to finalise these operational procedures. Quota owners have shown support for the use of SLEDs by every vessel from the start of the fishery, that at least one Ministry observer will be on board each vessel in the fishery, allowing for real-time in season management responses as required between the Ministry, the DWG, and the fleet. The Ministry also intends to work with a group of technical experts over the coming months to develop an agreed, standardised observation and sampling protocol specifically geared to collecting information that can assist with the future management of interactions with the fishery.

77 WWF submitted that it cannot support the proposal to increase the TAC for SBW6I until the industry commit to making the use of SLEDs on board commercial trawlers in the SBW6I fishery mandatory from the beginning of the season. The Ministry notes that DWG have now made a commitment to use SLEDs. The Ministry is confident that it is unnecessary at this time to require mandatory use of SLEDs given the current level of support for this measure.

78 The Ministry has also been working in conjunction with the industry to increase awareness amongst the fleet of the increased risk of interactions, and re-emphasising the importance of adherence to the existing marine mammal operational procedures (MMOP). The MMOP requires that vessels minimise the length of time the fishing gear is on the surface, remove all stickers from the net before shooting the gear, steam away from any congregations of marine mammals before shooting the gear and to appoint a crew member to watch for marine mammal interactions every time the gear is shot or hauled.

79 Given the breadth of work that is underway to ensure interactions with all marine mammals are reduced and the collaborative method with which procedures are being developed, the Ministry is confident that the options within this paper will not increase the potential risk to marine mammals.

***Seabirds***

80 Seabird interactions with SBW6I generally occurred at low rates, although a small number of interactions are known to occur. The population implications of these seabird interactions have recently been elucidated through the Ministry's comprehensive seabird risk assessment. [7] The risk to 70 seabird species from all New Zealand's commercial fisheries was assessed. The southern blue whiting fisheries overall were assessed to contribute only very low levels of risk to a small number of seabird species.

81 Mandatory measures are in place across the deepwater fleet to address seabird captures, including the requirement that all trawlers deploy bird mitigation devices when fishing gear is in use. In addition, non-regulatory management includes vessel-specific measures known as vessel management plans (VMPs), which set out the onboard practices that vessels must follow to avoid seabird interactions, including offal management and good factory cleanliness. The Ministry currently monitors vessel performance against VMPs and works in collaboration with DWG to rectify any issues that arise during the fishing season. This practice will continue during the 2014-15 fishing year.

***Fish by-catch***

82 Total fish bycatch in the southern blue whiting fisheries is estimated to be <1% of the total catch from the fishery. The fishery targets single species schools of southern blue whiting and as a result takes minimal bycatch.

[7] http://www.mpi.govt.nz/Default.aspx?TabId=126&id=1758

### *Benthic impacts*

83 Southern blue whiting are generally fished using mid-water trawl gear near or on the seabed, as this is where the fish aggregate. The gear is generally not fished hard down on the seabed, which will reduce the severity of any benthic impact. SBW6I also operates over a relatively short temporal scale, and the fished area is relatively restricted and changes very little from year to year.

84 Research has been reported to characterise both New Zealand's benthic environment and the level of benthic impact from fisheries activity. [8] This work, which produced a benthic-optimised marine environmental classification (BOMEC) of New Zealand's exclusive economic zone (EEZ), is not specific to SBW6I but identifies that all SBW6I fishing activity occurs over one of the 15 BOMEC habitat classes - BOMEC class L. The total area of the SBW6I footprint is 11,485km$^2$,[9] which equates to 6% of the total area of BOMEC class L. MPI acknowledges that the total trawl footprint on BOMEC class L is estimated at 24% of the total area. This includes trawl effort from all deepwater and middle-depth fisheries, not solely SBW6I.

85 Although the options proposed may result in increased fishing effort within SBW6I, the spawning aggregations generally occur in the same area, so any additional effort will likely occur over ground that has been trawled previously.

### Deemed values

86 Section 75 of the Act requires you to set deemed value rates for every stock in the QMS. This is to ensure there are appropriate incentives for fishers to acquire or maintain sufficient annual catch entitlement (ACE) so that fishing effort does not result in catch limits being exceeded.

87 The Ministry is not proposing any changes to the SBW6I deemed value rates. Current economic factors indicate that the current deemed value rates are likely to provide the appropriate financial incentives to encourage fishers to remain within their ACE.

88 The current deemed value rates for SBW6I are as follows:

a) The annual deemed value rate is $0.46 per kg
b) The interim deemed value rate is $0.41 per kg
c) The differential deemed value rates are increased according to the proportion by which ACE holdings have been exceeded (Table 4)

**Table 4:** Current differential deemed value rates for SBW6I

| Catch in excess of ACE Holdings (%) | Deemed Value rate |
|---|---|
| 100-102% | $0.46 |
| 102-105% | $0.60 |
| 105% + | $0.92 |

[8] Leathwick, J.R., Rowden, A., Nodder, S., Gorman, R., Bardsley, S., Pinkerton, M., Baird, S.J., Hadfield, M., Currie, K., Goh, A., 2010. Benthic-Optimised Marine Environment Classification (BOMEC) for New Zealand waters. Final Research Report for BEN2006-01 Objective 5. 52pp.

[9] Black, J. & Wood, R. (2010) Analysis of New Zealand's Trawl Grounds for Key Middle Depths and Deepwater Tier 1 Fisheries. GNS Science Consultancy Report 2010/67

## RECOMMENDATIONS

89 The Ministry recommends that you:

**EITHER**

**Option 1 (Status quo)**

a) **Agree** to retain the SBW6I TAC at 30 000 tonnes, and within the TAC:

i. retain a nil allowance for Māori customary non-commercial fishing interests;

ii. retain a nil allowance for recreational interests;

iii. retain the allowance for other sources of fishing- related mortality at 600 tonnes;

iv. retain the TACC of 29 400 tonnes.

**Yes / No**

**OR**

**Option 2**

b) **Agree** to increase the SBW6I TAC from 30 000 tonnes to 35 000 tonnes, and within the TAC:

i. retain a nil allowance for Māori customary non-commercial fishing interests;

ii. retain a nil allowance for recreational interests;

iii. increase the allowance for other sources of fishing-related mortality to 700 tonnes;

iv. increase the TACC from 29 400 tonnes to 34 300 tonnes.

**Yes / No**

**OR**

**Option 3 (Ministry's preferred option)**

c) **Agree** to increase the SBW6I TAC from 30 000 tonnes to 40 000 tonnes and within the TAC:

i. retain a nil allowance for Māori customary non-commercial fishing interests;

ii. retain a nil allowance for recreational interests;

iii. increase the allowance for other sources of fishing-related mortality to 800 tonnes;

iv. increase the TACC from 29 400 tonnes to 39 200 tonnes.

**Yes / No**

**AGREED / AGREED AS AMENDED / NOT AGREED**

Scott Gallacher
Deputy Director-General
Resource Management and Programmes /Standards
On behalf of Director-General

Hon Nathan Guy
Minister for Primary Industries
17 /3 / 2014

## APPENDIX 1: SUBMISSIONS

Attached below are submissions received on the Initial Position Paper review of sustainability measures for southern blue whiting at Campbell Island document.

deepwater group

COMMITTED TO SUSTAINABLE OCEANS SUSTAINABLE FISHERIES

25 February 2014

Deepwater Fisheries Management
Ministry for Primary Industries
PO Box 2526
Wellington 6011

To James Stevenson-Wallace,

## Submission: Review of Sustainability Measures for Southern Blue Whiting

Deepwater Group Ltd (DWG) appreciates the opportunity to make a submission on the *2014 Review of Sustainability Control for Southern Blue Whiting*.

DWG is mandated by SBW6I quota owners to make this submission to MPI on their behalf (89% of SBW6I quota is owned by Shareholders of DWG).

## Background

In addition to advising the Ministry for Primary Industries (MPI) of DWG Shareholders' positions with respect to southern blue whiting, DWG would like to take this opportunity to iterate our commitment to the sustainable utilisation of New Zealand's deepwater fisheries, and our partnership with the Ministry.

DWG was formed in November 2005, to represent participants in New Zealand's major deepwater fisheries, including those for squid, hoki, hake, orange roughy, oreo and southern blue whiting.

DWG's vision is for these fisheries to be recognised as the best managed deepwater fisheries in the world. To realise this vision, DWG undertakes a number of activities, including:

- Representing the interests of quota holders with Government and government departments;
- Undertaking fisheries research and stock assessment programs;
- Implementing and monitoring fisheries management programs;
- Working on multiple fronts to manage and minimise any adverse environmental affects;
- Ensuring integrity at all levels of process and engagement, and
- Maintaining fisheries management standards that meet or exceed those required for MSC Certification.

One of the mechanisms by which DWG's vision is being realised is through our structured collaborative partnership with the MPI. Benefits of this partnership include:

- Incorporating commercial expertise and operational knowhow with government resources,
- Ensuring Industry support and commitment to management approaches through the processes of consultation, engagement and co-operation;
- Enabling MPI to base decisions on consistent and agreed advice from the Industry, as well as set clear and agreed objectives for deepwater fisheries, implementing and supporting management measures to support these objectives, and assurances that these objectives will be efficiently delivered

The culture of collaboration goes both ways Not only does DWG actively support MPI's measures that are founded on the collaborative relationship, MPI also actively provides support to DWG for the effective implementation and monitoring of non-regulatory management initiatives.

## Proposed Sustainability Measures for Southern Blue Whiting, SBW6I

DWG has considered and supports the situation analysis, the proposals and the rationale in MPI's Initial Position Paper (IPP):

- The updated stock assessment has been accepted by the Deepwater Fisheries Assessment Working Group (DFAWG)
- The acoustic estimates have been improved over those reported in 2013,
- The stock status of SBW6I is estimated to be 58% $B_0$,
- The current biomass and the five year projections are strongly driven by the very large 2006 and 2009 year classes,
- Large year classes have been observed to grow more slowly and the individual fish reach smaller maximum sizes than small year classes,
- Modelling these lower growth parameters reduces the biomass in future projections.

In the IPP, MPI proposes the following TAC and TACC options for the 2014-15 fishing year for SBW6I:

| Option | TAC (t) | TACC (t) |
|---|---|---|
| Option 1: (Status Quo) | 30,000 | 29,400 |
| Option 2: | 35,000 | 34,300 |
| Option 3: | 40,000 | 39,200 |

DWG advises that there is unanimous support from Shareholders who own\ SBW6I quota for Option 3, an increase in the TACC from 29,400 to 39,200 t, with the following provisos that DWG and MPI:

- Implement an effect mitigation plan to minimise the incidental interactions with New Zealand sea lions,
- Undertake an update of the previous Management Strategy Evaluation (MSE),
- Use the MSE results to determine the timing of the next biomass survey, as quota owners were keen to see the possibility of the next survey being delayed beyond the current plan of 2015, if possible,
- Review the Harvest Strategy and Management Target for this stock,
- Include the results of the above work in the Fishery Plan for SBW6I.
- Based on the results from the above, review management measures for SBW6I prior to 2015-16.

deepwater group

## Sea Lion Exclusion Devices in SBW6I

SBW6I quota owners remain committed to reducing the incidental interactions with sea lions to as close to zero as is achievable.

To give effect to this, quota owners have agreed to continue to work closely with MPI to implement Operational Procedures with the following proposed components for 2014-15:

- Deployment of Sea Lion Exclusion Devices (SLEDs) in SBW6I fishery during the 2014 season,
- Full independent observer coverage,
- Real-time monitoring of events to enable real-time in season management responses by MPI and DWG as may be required, and as implemented during the 2013 season, and
- Review the outcomes at the end of the 2014 season

In addition, DWG has contracted NIWA to undertake an assessment of the PBR level for sea lions from the Campbell Island population. The provisional results, presented to AEWG this month, estimate that the current levels of mortalities due to the SBW6I fishery are below these sustainable limits. The revisions suggested by members of the AEWG are presently being incorporated by NIWA and will be available in their final report, due next week. When it is completed, we offer to provide this final assessment to you as part of our submission on the sustainable management of SBW6I fishery and on the impacts it has on sea lions.

Yours sincerely

George Clement

*Chief Executive*

**Deepwater Group Ltd.** Private Bag 24901, Wellington 6142, New Zealand **P** +64 3 545 7020 **E** admin@deepwatergroup.org www.deepwatergroup.org

ENVIRONMENT AND CONSERVATION ORGANISATIONS OF NZ INC.
Level 2, 126 Vivian St, Wellington, New Zealand
PO Box 11-057, Wellington
Email: eco@eco.org.nz Website: www.eco.org.nz

Phone/Fax 64-4-385-7545

Ministry for Primary industries
PO Box 2526
Wellington 6140
New Zealand
Email FMSubmissions@mpi.govt.nz

27 February 2014

# Submission on the Review of Deepwater Sustainability Measures for 1 April 2014

The Environment and Conservation Organisations of NZ (ECO) is the national alliance of 55 groups with a concern for the environment. ECO has been concerned at the state of marine management and the impacts of fishing on threatened species for over 20 years.

Thank you for the opportunity to comment on this proposal.

**SUMMARY Southern Blue Whiting (SBW6I)**

1. ECO supports option 1 (status quo) for the southern blue whiting fishery for Campbell Island.

2. While the current stock status is 58%Bo, Southern Blue Whiting is known to have highly variable recruitment. This is consistent with the goal to maintain stocks at or above Bmsy.

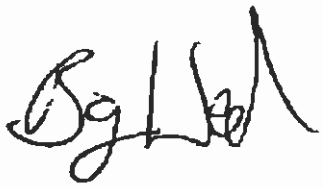
3. The stock status is predicted to decline by around 20% even with the same TACC over the next four years.

4. Stable TACC and catches over several years with the similar vessel numbers is preferred to increase catches and effort.

5. Any increase in catch is likely to result in the increase ~~in~~ by-catch of the threatened sea lions. It will also increase in the deaths of fur seals and sea birds.

6. Sea lion deaths in the fishery and monitoring them and getting more scientific information on the interaction will be affected if there is an increase in effort or vessels.

Yours sincerely,



Barry Weeber
Co-Chairperson

# 1. INTRODUCTION

Thank you for this opportunity to comment on the Review of Deepwater Sustainability Measures for 1 April 2014.

## B. GENERAL PRINCIPLES

Our main submissions on the Ministry's IPP are:

1. The proposals do not consider all the obligations on a decision-maker under sections 5, 8 to 10, and 11 to 14 of the Fisheries Act 1996.

2. Some of the considerations are a backward step over last year - there is little consideration of international obligations (section 5) and section 9 obligations, especially marine biodiversity and habitat of particular significance to fisheries management.

3. The Ministry needs to consider how environmental considerations are better integrated with pure single stock assessment considerations. Every year the inclusion of by-catch, adverse effects of fishing, maintenance of biodiversity, etc, tend to be after-thought considerations rather than central issues to setting catch limits. The Ministry could learn from the approaches taken by CCAMLR in this regard.

4. The Ministry needs to consider the obligations on future generations and the need to avoid, remedy or mitigate the effects of fishing on the marine environment.

5. International agreements and measures have further articulated the precautionary approach. Section 5 of the Fisheries Act requires decision makers to act in a manner consistent with "New Zealand's international obligations relating to fishing". Amongst these obligations is the United Nations Food and Agriculture Organisation (FAO) Code of Conduct on Responsible Fisheries (1995) which states that:

   *"6.5 States and subregional and regional fisheries management organizations should apply a precautionary approach widely to conservation, management and exploitation of living aquatic resources in order to protect them and preserve the aquatic environment, taking account of the best scientific evidence available. The absence of adequate scientific information should not be used as a reason for postponing or failing to take measures to conserve target species, associated or dependent species and non-target species and their environment."*

   Article 7.5 of the Code of Conduct further set out what constitutes precautionary management in fisheries.[1]

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[1] **7.5 Precautionary approach**

7.5.1 States should apply the precautionary approach widely to conservation, management and exploitation of living aquatic resources in order to protect them and preserve the aquatic environment. The absence of adequate scientific information should not be used as a reason for postponing or failing to take conservation and management measures.

The United Nations Implementing Agreement on High Seas Fisheries and Straddling Stocks[2] includes a requirement on "*coastal States and States fishing on the high seas [to] apply the precautionary approach in accordance with article 6.*" Article 6 includes requirements for:

"*1. States shall apply the precautionary approach widely to conservation, management and exploitation of straddling fishstocks and highly migratory fishstocks in order to protect the living marine resources and preserve the marine environment.*

*2. States shall be more cautious when information is uncertain, unreliable or inadequate. The absence of adequate scientific information shall not be used as a reason for postponing or failing to take conservation and management measures.*"

Therefore, where information is uncertain or unknown about the state of a stock or biological information, the decision should favour lower catch limits or more environmentally stringent regulations.

6. Six key issues regarding the management of fisheries-related impacts on the aquatic environment were identified through the Strategy on the Management of the Environmental Effects of Fishing consultation process undertaken by ECO and Forest and Bird in 2001. These issues describe problems relating primarily to the institutional, legal and policy frameworks under which fisheries-related impacts on the aquatic environment are managed. The key issues identified were:
    - Limited opportunities for public participation in fisheries management;
    - Gaps in information, monitoring and research capacity;

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7.5.2 In implementing the precautionary approach, States should take into account, inter alia, uncertainties relating to the size and productivity of the stocks, reference points, stock condition in relation to such reference points, levels and distribution of fishing mortality and the impact of fishing activities, including discards, on non-target and associated or dependent species, as well as environmental and socio-economic conditions.

7.5.3 States and subregional or regional fisheries management organizations and arrangements should, on the basis of the best scientific evidence available, inter alia, determine:
stock specific target reference points, and, at the same time, the action to be taken if they are exceeded; and
stock-specific limit reference points, and, at the same time, the action to be taken if they are exceeded; when a limit reference point is approached, measures should be taken to ensure that it will not be exceeded.

7.5.4 In the case of new or exploratory fisheries, States should adopt as soon as possible cautious conservation and management measures, including, inter alia, catch limits and effort limits. Such measures should remain in force until there are sufficient data to allow assessment of the impact of the fisheries on the long-term sustainability of the stocks, whereupon conservation and management measures based on that assessment should be implemented. The latter measures should, if appropriate, allow for the gradual development of the fisheries.

7.5.5 If a natural phenomenon has a significant adverse impact on the status of living aquatic resources, States should adopt conservation and management measures on an emergency basis to ensure that fishing activity does not exacerbate such adverse impact. States should also adopt such measures on an emergency basis where fishing activity presents a serious threat to the sustainability of such resources. Measures taken on an emergency basis should be temporary and should be based on the best scientific evidence available.

[2] The United Nations Agreement for the Implementation of the Provisions of the United Nations Convention on the Law of the Sea of 10 December 1982 relating to the Conservation and Management of Straddling Fish Stocks and Highly Migratory Fish Stocks (in force as from 11 December 2001).

- Lack of precaution and environmental assessment in decision-making;
- Lack of spatial and ecotype approach to policy and planning;
- Dominance of private property rights approach;
- Lack of recognition of non-extractive use values.

7. A recent review of application of the FAO Code of Practice[3] indicates that New Zealand needs to do a lot more to implement the code, particularly in the area of stock management, impacts of fishing, and bycatch and habitat effects.

### B.2. Research needs

We are concerned that the Ministry is not undertaking adequate research to manage most of the species under the Quota Management System. Less than 15 percent of the stocks in the quota management system have estimates of current biomass or yield estimates.

ECO notes that the Worm et al (2009)[1] paper only accepted 19 assessments which in total cover 18 quota stocks out of the 629 fish stocks quota management system. This indicates that the Ministry needs to know much more about our fisheries if that is all of our stock assessments the international fisheries science community will accept.

We note that this report also recommends that stocks be maintained above Bmsy:
*"In fisheries science, there is a growing consensus that the exploitation rate that achieves maximum sustainable yield should be reinterpreted as an upper limit rather than a management target. This requires overall reductions in exploitation rates, which can be achieved through a range of management tools."*

New Zealand is undertaking less trawl surveys and fisheries research than it was 15 years ago. ECO considers the comments made by McKoy (2006)[2] are still relevant and that New Zealand has a fisheries management regime which has:

- "Insufficient research resources, people, equipment and funding;
- Limitation of scientific method and theory to tackle many questions;
- An inadequate understanding of the dynamics of New Zealand marine ecosystems;
- A management system which provides very strong perverse incentive to keep research funding low;
- A management system which treats the QMS as the whole of the system and which has not been able to develop any coherent management objectives on which to base decisions about the effectiveness of management or the allocation of scarce resource such as research resources."

The long echoed comment in Antarctic fisheries management (CCAMLR) first echoed by the former UK representative, John Heap, of "no data, no fish", should be taken to heart in the New Zealand fisheries management regime.

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[1] Worm B, R Hilborn, J K. Baum, T A Branch, J S Collie, C Costello, M J Fogarty, E A Fulton, J A Hutchings, S Jennings, O P Jensen, H K Lotze, P M Mace, T R McClanahan, C Minto, S R Palumbi, A M Parma, D Ricard, A A Rosenberg, R Watson, D Zeller (2009) Rebuilding Global Fisheries *Science* 31 July 2009: Vol. 325. no. 5940, pp. 578 – 585 DOI: 10.1126/science.1173146

[2] McKoy J (2006) Fisheries resource knowledge, management, and opportunities: Has the Emperor got no clothes? p35-44. In New Zealand's ocean and its future: knowledge, opportunities and management. Proceedings of a conference organised by the Royal Society of New Zealand, 16 November 2006, Miscellaneous Series 70.

## B.3. Effects of Climate change

The effects of climate change on fisheries and the emissions of greenhouse gases from the fishing industry needs to be included in the considerations of the Ministry of Fisheries.

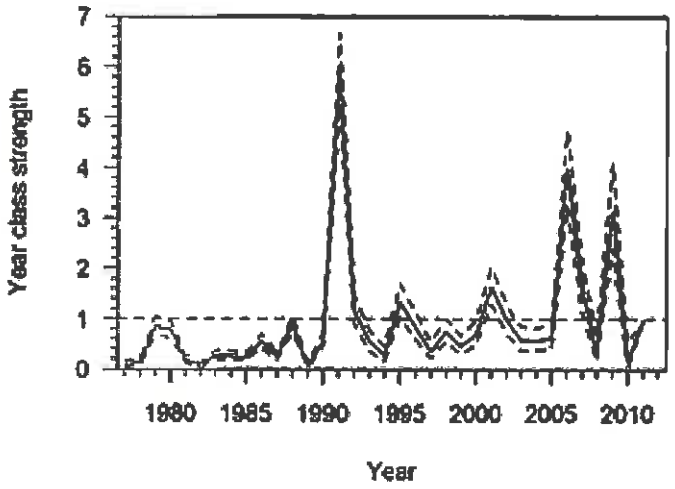
This includes the consideration of the impacts of ocean acidification of the marine environment on fisheries.

## 2. FISH STOCKS FOR REVIEW

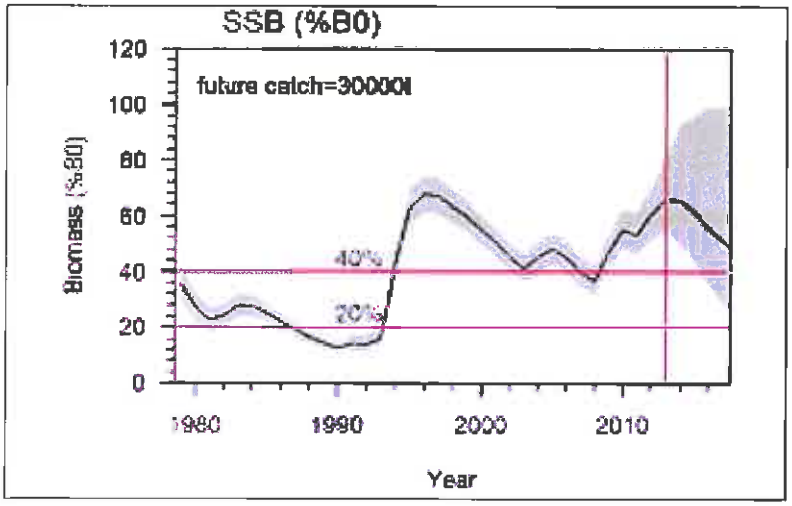
## C. Fish Stocks: Southern Blue Whiting (SBW6I)

Southern blue whiting is known to have highly variable year classes. The ecological implications of this variability or the environmental drivers are not well understood.

The current assessment relies on the very strong 2006 and 2009 year class which is slightly less than the record 1991 year class.




These two years classes are well above the average observed year's classes in the last 35 years.




The population is predicted to decline with no change in catches.

This change in population is consistent with the obligations in the Fisheries Act to maintain stocks at or above Bmsy.

The implications of southern blue whiting population in the Campbell Rise ecosystem needs to be considered.

Juvenile southern blue whiting [3] is an important part of the diet in several albatross species:

> *Dietary samples collected at Campbell Island in summer 1997 indicate that southern blue whiting (Micromesistius australis) formed the bulk of the food of black-browed albatrosses (Diomedea melanophrys impavida) during the chick-rearing period. Birds preyed upon a single size class of fish with a mode at 80-90 mm standard length; fish were 4-5 months old and belonged to the 0+ age group. Satellite tracking showed that, when performing trips of short duration, adult albatrosses foraged within the 1000 m depth contour in the sub-antarctic zone north of Campbell Island. The feeding ecology of albatrosses thus suggests that juvenile (0+) southern blue whiting are pelagic and occur in dense schools in the top 5 m of the water column over the Campbell Plateau during the summer months. The high reliance of birds on juvenile southern blue whiting during the chick-rearing period has implications for the management of the southern blue whiting fishery and the conservation of black-browed albatrosses and other marine predators occurring in the New Zealand sub-antarctic area.*

They went on to note that:

> *the high reliance of birds on southern blue whiting during chick rearing has implications for the management of the fish stocks. If the fishery significantly reduces the spawning biomass which in turns reduces the abundance of younger age-classes, birds may be forced to find alternative food sources, eventually resulting in lower breeding success and further declines in populations.*

On Campbell Island the populations of black-browed and grey-headed albatrosses have declined dramatically since the 1940s.

## Sea lions

Southern blue whiting fishing around Campbell Island is the second most important fishery capturing the threatened New Zealand sea lion.

The sea lions are listed as a vulnerable threatened species under the IUCN Red List and national critically under the Department of Conservation list of New Zealand threatened species. The population assessed on the basis of pup counts has declined by nearly 50 percent

The by-catch levels of sea lions that occurred last year was not unusual as shown by table 5 in the IPP

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[3] Cherel Y, S Waugh and S Hanchet (1999) Albatross predation of juvenile southern blue whiting (Micromesistius australis) on the Campbell Plateau, New Zealand Journal of Marine and Freshwater Research, 33:3, 437-441, DOI: 10.1080/00288330.1999.9516889

**Table 5: Effort, observed and estimated New Zealand sea lion captures in SBW 6I by fishing year •**

| Year | Total Tows | % tows Observed | Observed sea lion captures | Mean estimated sea lion captures |
|---|---|---|---|---|
| 2004 | 690 | 34 | 1 | 3 |
| 2005 | 726 | 37 | 2 | 5 |
| 2006 | 521 | 26 | 3 | 9 |
| 2007 | 344 | 32 | 6 | 15 |
| 2008 | 557 | 41 | 2 | 5 |
| 2009 | 627 | 20 | 0 | 1 |
| 2010 | 550 | 43 | 11 | 24 |
| 2011 | 815 | 40 | 6 | 14 |
| 2012 | 591 | 76 | 0 | 1 |

As ECO representatives advised MPI science representatives at last year's AEWG meeting – there was a number of failings in the process of managing the fishery last year which will delay progress in reducing sea lion deaths in future years. This includes:

- The failure to return sea lion carcases for autopsy or other genetic material so that the origin of the sea lions could be determined;

- The failure to take core temperature of the animals to better determine when they were drowned;

- The failure to take age data from the death animals, if carcases were not returned;

- The failure to acknowledge that this is an ongoing problem and not a one –off event.

- The failure to take a technical approach to the use of SLEDs in a new fishery which will further affect the usefulness of any future results.

## Other bycatch

Increase in fishing effort will increase the bycatch of both fur seals and seabirds.

Seabird captures from direct impacts are low compared to squid but range up to 1.34 birds per hundred tows. The level of cryptic mortality of seabirds in the southern blue whiting fishery is not known but is likely to be much higher the observed level of captures.

The problem is that trawl warp strikes is not include in the estimates for trawl fisheries – birds hitting warps behind the vessel and being injured or killed is order of magnitude greater impact.

> *"For every large bird that was reported by observers as being captured on the warps, there were an estimated 244 (95% ci: 190-330) large bird strikes. For every small bird reported by the observers as being captured on the warps, there was an estimated 6440 (95% bootstrap ci 3400 to 20000) small bird warp strikes."* (Abraham 2010)[4].

[4] Abraham, E R (2010) Warp Strikes in New Zealand trawl fisheries, 2004-05 to 2008-09. New Zealand Aquatic Environment and Biodiversity Report No. 60.

While mitigation (tori lines, bafflers etc) does reduce the potential for warp strikes it doesn't eliminate the problem.

**Summary:**

1. ECO supports option 1 (status quo) for the southern blue whiting fishery for Campbell Island.

2. While the current stock status is 58%Bo, Southern Blue Whiting is known to have highly variable recruitment. This is consistent with the goal to maintain stocks at or above Bmsy.

3. The stock status is predicted to decline by around 20% even with the same TACC over the next four years.

4. Stable TACC and catches over several years with the similar vessel numbers is preferred to increase catches and effort.

5. Any increase in catch is likely to result in the increase in by-catch of the threatened sea lions. It will also increase in the deaths of fur seals and sea birds.

6. Sea lion deaths in the fishery and monitoring them and getting more scientific information on the interaction will be affected if there is an increase in effort or vessels.

**SANFORD LIMITED**
**SUSTAINABLE SEAFOOD**

28 February, 2014

Deepwater Fisheries Management
Ministry for Primary Industries
PO Box 2526
Wellington 6011

To whom it may concern,

Review **of sustainability controls for** Southern **Blue Whiting - Campbell's Stock** (SBW6I)

And the absence of a
**Review of** sustainability **controls for** Southern **Blue Whiting – Bountles Stock (SBW6B)**

SBW6I
Sanford appreciates the opportunity to make a submission on your *2014 Review of sustainability control for southern blue whiting (SBW6I)* (IPP). Sanford owns approximately 11% of the SBW6I quota and has an interest in this fishery greater than that of the general public.

Sanford has read and supports the submission lodged by the Deepwater Group (DWG).

Sanford supports an increase in the TACC to 39,200t based on the provisions set out in the Deepwater Group's submission, which are:

- Update the Management Strategy Evaluation (MSE).
- Use the MSE results to determine the timing of the next biomass survey, and if not required in 2015 institute measures to delay this.
- Review the Harvest Strategy and the Management Target for this fishery.
- Update the management for this stock in the Deepwater Fish Plan accordingly.
- Review the management measures prior to the 2015-16 season.

In support of our position Sanford notes that this fishery is well understood, science has verified that the stock is robust (with a reasonable spread of year classes coming through), acoustic estimates have been revised (which provides for better accuracy) and there is good aging data across all years.

In addition and perhaps more importantly the fishery can be readily monitored and any changes can be detected quickly and reacted upon.

As there are no identified sustainability issues from increased utilisation, it therefore makes good economic sense to take the opportunity to increase fishing effort / extraction.

SBW6B

Sanford echoes the concern expressed by the Deepwater Group that the Ministry has not been able to put out an IPP for SBW6B. Sanford owns 11% of the TACC.

Sanford acknowledges that some of our colleagues are strongly in the view that the TACC should be increased. Sanford is neutral (at this point) as the required details for full consideration should have been available by the way of an IPP covering the sustainability measures for this individual fish stock.

Sanford supports the Ministry to making a firm commitment to review the TACC by February 2015 and issue an IPP within the expected timeframes.

Sincerely

Darryn Shaw
Deepwater Manager
Sanford Limited

WWF-New Zealand
PO Box 6237
Marion Square
Wellington 6141
New Zealand

P: 0800 4357 993
P: +64 (0)4 499 2930
F: +64 (0)4 499 2954
info@wwf.org.nz
wwf.org.nz

Deepwater Fisheries Management
Ministry for Primary Industries
PO Box 2526
Wellington 6011

By email: fmsubmissions@mpi.govt.nz

**28th February 2014**

# WWF-New Zealand submission:

# Review of sustainability controls for southern blue whiting (SBW 6I)

Contact:

Paul Crozier
Sustainable Fisheries Advocate
WWF-New Zealand
pcrozier@wwf.org.nz
(04) 815 8522

## Purpose

The Ministry of Primary Industries (MPI) is reviewing the sustainability measures and management controls for southern blue whiting stocks in the Campbell Island quota management area (SBW 6I).

This document provides WWF-New Zealand's submission on this Initial Position Paper (IPP).

## WWF-New Zealand

WWF-New Zealand (WWF) is part of a global network, using a science-based approach to encourage government, business and communities to conserve and manage our environment more sustainably. WWF's mission is to stop the degradation of the planet's natural environment and to build a future in which humans live in harmony with nature, by:

- Conserving the world's biological diversity;
- Ensuring that the use of renewable natural resources is sustainable;
- Promoting the reduction of pollution and wasteful consumption.

## Background

Southern blue whiting are almost entirely restricted in distribution to sub-Antarctic waters. They are dispersed throughout the Campbell Plateau and Bounty Platform for much of the year, but during August and September they aggregate to spawn near the Campbell Islands, on Pukaki Rise, on Bounty Platform, and near Auckland Islands over depths of 250-600 m. During most years, fish in the spawning fishery range between 35-50 cm fork length (FL), although occasionally a smaller size class of males (29-32 cm FL) is also present.

Landings were chiefly taken by the Soviet foreign licensed fleet during the 1970s and early 1980s, and the fishery fluctuated considerably peaking at almost 50 000 t in 1973 and again at almost 30 000 t in 1979. The Japanese surimi vessels first entered the fishery in 1986, and catches gradually increased to a peak of 76 000 t in 1991-92. A catch limit of 32 000 t, with area sub-limits, was introduced for the first time in the 1992-93 fishing year. The total catch limit increased to 58 000 t in 1996-97 for three years. The southern stocks of southern blue whiting were introduced to the Quota Management System on 1 Nov 1999. The fishing year was also changed to 1 April to 31 March to reflect the timing of the main fishing season.

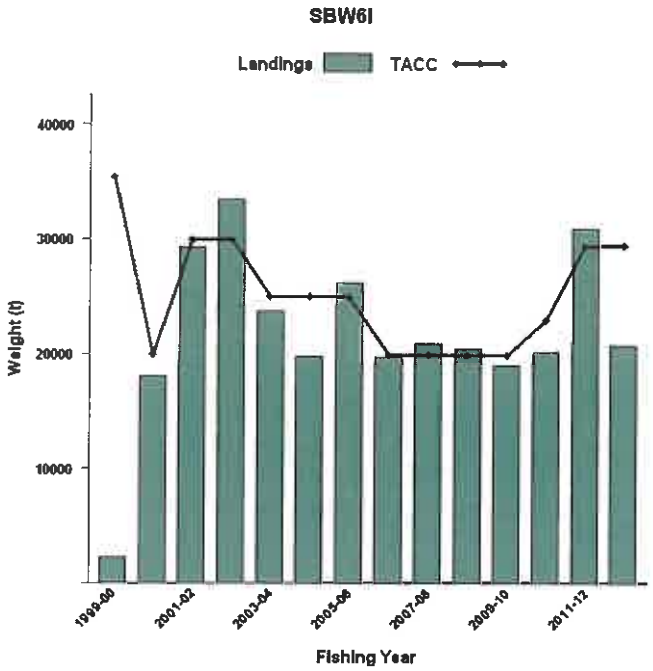


Figure 1: Historical landings and TACC for the SBW6I (Campbell Island Rise) stock

Landings have been between 25 000 t and 40 000 t since 2000, with the majority of the catch currently taken by foreign charter vessels (predominantly Ukrainian) producing headed and gutted or dressed product. On the Campbell Island Rise and the Bounty Platform the TACC has been almost fully caught in each year since 2005-06, except on the Campbell Island Rise in 2012–13 where the TACC was significantly under-caught (Figure 1). On the other grounds, the catch limits have generally been under-caught in most years since their introduction. This reflects the relatively low economic value of the fish and difficulties in both the timing and locating of aggregations experienced by operators. On the Pukaki Rise and Auckland Islands Shelf, operators have generally found it difficult to justify expending time to locate fishable aggregations, given the small allocation available in these areas, the relatively low value of the product, and the more certain option available to fish southern blue whiting at Campbell Island where aggregations are concurrent.

## Current Stock status

A recent stock assessment in 2014 was conducted using data from an acoustic research survey by the *R.V. Tangaroa* during late 2013. The SBW 6I stock status is now estimated to be 58%$B_0$ (Figure 2) which is above the management target for this species at 40%$B_0$, mainly due to the strong year class progressing through the fishery that was first observed in 2009.

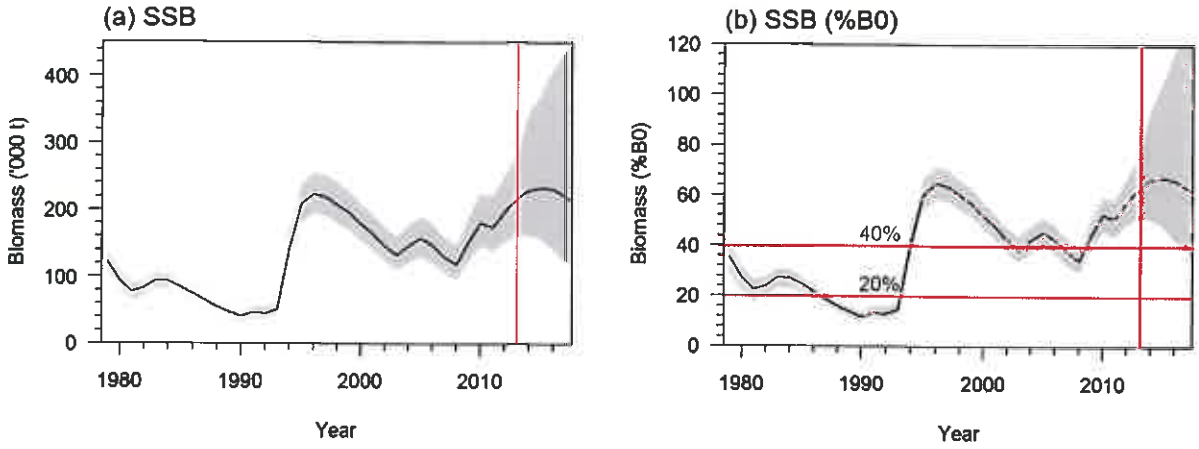


Figure 2. Spawning stock biomass (SSB) projections for the SBW6I fishery from 2014.

## Proposal

The ministry has proposed three options in the SBW 6I consultation document; to retain the TAC at the status quo of 30,000 tonnes, or to increase the TAC either by 5,000 tonnes to 35,000 tonnes under option 2 or by 10,000 tonnes under option 3.

## Comments

### Marine mammal interactions

NZ sea lion interactions

The New Zealand (or Hooker's) sea lion (Phocarctos hookeri) was classified in 2008 as "Vulnerable" by IUCN and in 2010 as "Nationally Critical" under the NZ Threat Classification System. Pup production at the main rookeries shows a steady decline since the late 1990s.

There has been a steady increase in the number of observed captures of NZ sea lion in the SBW trawl fishery from close to zero before year 2000 to 11 observed captures in 2009–10 to a total of 21 captures in 2013. The sea lion captures were all close to the Campbell Islands in SBW6I and were almost all males.

As a result of the significant number of New Zealand sea lion captures in 2013 the industry issued an expedited audit request on the 8th of September.

### Expedited Audit Request 2013

The number of sea lion interactions within the fishery is routinely modelled based upon observer information. The model used to estimate these numbers has been reviewed and accepted by the Aquatic Environment Working Group. The estimates show that considerable inter-annual variability in interactions occurs, and that historical levels of interaction, notably 2007, 2010 and 2011, have reached similar levels to those currently seen in 2013, while the confidence intervals in other years have also reached those levels. It is noted that in 2013 there was 100% observer coverage on the vessels, with those observers tasked to watch all haul events during the season.

Personal accounts from observers onboard these vessels indicated a high level of aggressive male sea lions feeding in the close proximity to nets during hauling. MPI stated that this "trend" of higher interactions at the beginning of the fishery was consistent with previous years (Figure 3).

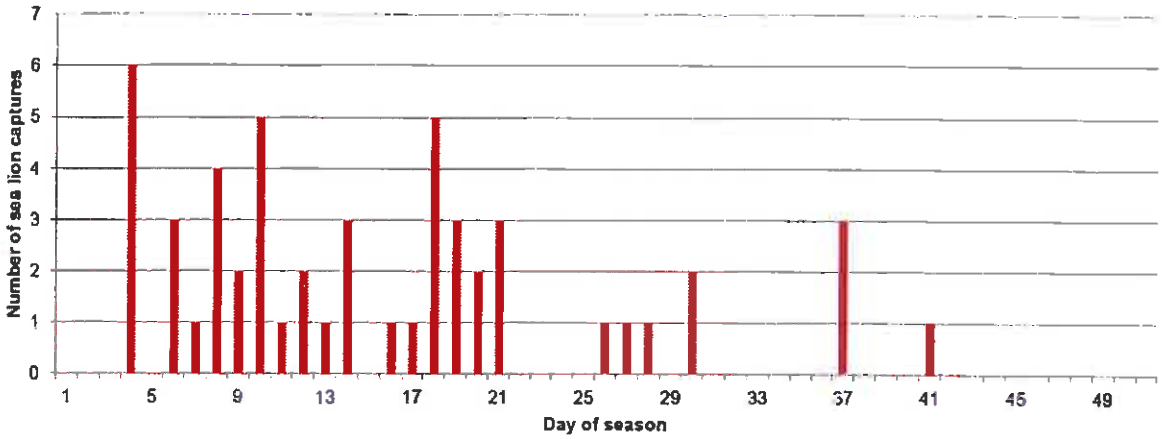


Figure 3. Timing of captures of New Zealand sea lions from the SBW6I fishery from 2004-2013

Comments from a vessel operators meeting on NZ sea lion interactions on the 10th of October 2013 concluded that "*that no place was safe from sea lion interaction risk in this fishery and that vessels that arrived on the grounds first felt they attracted all the attention, whereas later animals were both divided in their attention to vessels, perhaps satiated with food and their behaviour was less aggressive and risky*"

In the 4th week of the 2013 fishery Sea Lion Exclusion devices (SLEDs) were made mandatory on all vessels (except one acting as control), in a bid to reduce sea lion mortalities. After introduction of SLEDs there was only one further documented interaction with a sea lion, not resulting in a fatality.

Following a detailed examination by the Conformity Assessment Body (Interek Moody Marine) for this Marine Stewardship Council fishery, the following recommendations were made from the expedited audit request:

1. By the next scheduled audit, identify and document in collaboration with key stakeholders the potential causes of sea lion interactions within the SBW6I fishery during the 2013 fishing year. Where those identified causes are within the control of the fishery, or where reasonable measures by the fishery could mitigate those interactions, consult on appropriate mitigation approaches that will reduce the potential for interactions for the 2014 fishing season and beyond. In addition, identify contingency measures for forthcoming seasons that include pre-agreed actions by vessel operators in the event of the occurrence of unusual interactions.

2. SLEDs were trialled in the SBW6I fishery this year after a request from the Minister of Conservation and Minister for Primary Industries, as a mitigation measure in response to the sea lion interaction rates seen early in the 2013 season. Their implementation was subsequent to the vast majority of interaction events (there being one further interaction before the end of the season). If the potential causes of sea lion interactions within the SBW6I fishery during the 2013 fishing year (recommendation 1) suggest the use of SLEDs as a candidate mitigation tool, it is recommended that the effectiveness of SLEDs as an additional mitigation measure for NZSL in the SBW6I fishery should be investigated further, including their deployment, safety at sea, grid specifications, and any effect on catch quality and loss of catch.

As a result of this expedited audit request the Deepwater Group stated that it was their intention that "sea lion captures in SBW 6I be reduced to zero". The Ministry also recognized that "recent research has shown that SLEDs are an effective mitigation tool that reduces the risk of a sea lion moratlity resulting from an interaction with trawl gear".

With this in mind WWF NZ would expect that the industry would make the **use** of SLEDs on board SBW6I vessels for the 2014 season **mandatory**. However, in discussions with the DWG it was discovered that vessels will only be required to **carry** SLEDs on each vessel, and that they will **not** be required to use them from the beginning of the fishery.

This period has now been shown when the **highest** interactions occur between sea lions and vessels and WWF NZ is extremely concerned industry is not implementing the use of SLEDs from the start of the 2014 season. It is quite obvious to WWF NZ that SLEDs will only be given mandatory use on vessels **after** more fatalities of New Zealand sea lions and that this can be avoided with using SLEDs from the start of the fishery.

## Conclusion

WWF NZ can not support the proposal to increase the TAC for this fishery under option two or three until industry commit to making the use of SLEDs onboard commercial trawlers in the SBW 6I fishery **mandatory from the beginning of the season**.

It is our opinion that it is simply not enough to state that vessels in this fishery will "carry" SLEDs onboard, as this indicates they will only be used after interactions with more New Zealand sea lions which would result in more fatalities of this "protected" species in a Marine Stewardship Council fishery.

The mandatory use of these devices in this fishery should be a high priority for the fishing industry, especially with regards to recent news that pup production of New Zealand sea lions in the neighbouring Auckland Islands has been declining to a point where their population is under threat.

Furthermore, not making the use of SLEDs mandatory in this fishery contradicts the statement by the DWG that it is "their intention to reduce sea lion mortalities to zero".

WWF NZ would recommend that the fishery continues with option 1, the "Status quo" until it implements the mandatory use of appropriate mitigation devices that have shown to be effective in reducing New Zealand sea lion interactions in the SBW6I fishery.

Thank you for considering the matters raised in this submission.

Sincerely,

Paul Crozier
Sustainable Fisheries Advocate, WWF-New Zealand