



Review of Sustainability Measures for Bounty Platform Southern Blue Whiting (SBW 6B) for 2018/19

Proposal to Alter Total Allowable Catch, Allowances,
and Total Allowable Commercial Catch

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1 Submission Information

1. The Ministry for Primary Industries (MPI) welcomes written submissions on any or all of the proposals contained in this Discussion Paper. All written submissions must be received by MPI no later than **Friday 9 February 2018**.
2. Written submissions can be emailed to: FMsubmissions@mpi.govt.nz

or sent directly to:
Sustainability Review 2018
Fisheries Management
Ministry for Primary Industries
P O Box 2526
Wellington 6011.

1.1 OFFICIAL INFORMATION ACT 1982

3. All submissions are subject to the Official Information Act and can be released (along with 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.

2 Statutory Considerations

4. This section provides an overview of the Minister's legal obligations under the Fisheries Act 1996 (the **Act** or the **Fisheries Act**) when setting or varying Total Allowable Catches (TACs), Total Allowable Commercial Catches (TACCs) and deemed values for New Zealand fishstocks.
5. Where relevant, stock-specific details relating to these obligations are set out in the section of the discussion paper relating to each stock.

2.1 SECTION 5(A) – INTERNATIONAL OBLIGATIONS

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

2.2 SECTION 5(B) – TREATY OF WAITANGI (FISHERIES CLAIMS) SETTLEMENT ACT 1992

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

2.3 SECTION 8 – PURPOSE OF THE FISHERIES ACT 1996

10. Section 8 says the purpose of the Act is to provide for the utilisation of fisheries resources while ensuring sustainability.
11. "Ensuring sustainability" is defined as: "maintaining the potential of fisheries resources to meet the reasonably foreseeable needs of future generations; and avoiding, remedying, or mitigating any adverse effects of fishing on the aquatic environment". "Utilisation" of fisheries resources is defined as "conserving, using, enhancing, and

developing fisheries resources to enable people to provide for their social, economic, and cultural wellbeing.”

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

2.4 SECTION 9 – ENVIRONMENTAL PRINCIPLES

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

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

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

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

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

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

18. Habitat is defined in the Oxford Dictionary of English to mean the natural home or environment of an animal, plant or species. MPI considers habitat to mean those waters and substrates necessary for fish to spawn, breed, feed or grow to maturity. These should be protected and adverse effects on them avoided, remedied, or mitigated.

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

2.5 SECTION 10 – INFORMATION PRINCIPLES

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

2.6 SECTION 11 – SUSTAINABILITY MEASURES

23. Section 11(1) allows sustainability measures (such as a TAC) to be set or varied after the following factors are taken into account:
 - a) Any effects of fishing on the stock and the aquatic environment;
 - b) Any existing controls that apply to the stock or area concerned; and
 - c) The natural variability of the stock concerned.
24. Section 11 (2) says that before any sustainability measure is set or varied the Minister must have regard to any provision of–
 - a) Any regional policy statement, regional plan, or proposed regional plan under the Resource Management Act 1991;
 - b) Any management strategy or management plan under the Conservation Act 1987 that apply to the coastal marine area and which the Minister considers to be relevant;
 - c) Sections 7 and 8 of the Hauraki Gulf Marine Park Act 2000;

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

³ A non-binding MPI Policy Document.

- ca) Regulations made under the Exclusive Economic Zone and Continental Shelf (Environmental Effects) Act 2012; and
- d) A planning document lodged with the Minister of Fisheries by a customary marine title group under section 91 of the Marine and Coastal Area (Takutai Moana) Act 2011–

that apply to the coastal marine area and are considered to be relevant.

25. Section 11 (2A) requires the Minister to take into account:
 - a) Any conservation services or fisheries services;
 - b) Any relevant fisheries plan approved under this Part-see discussion of section 11A below; and
 - c) Any decisions not to require conservation services or fisheries services.
26. Services of particular relevance to this paper relate to programmed research used to monitor stock abundance. To date national fisheries plans have been approved only for deepwater and highly migratory species.

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

27. Section 12(1) says that before setting or varying any sustainability measure under the Act the Minister is required to:
 - Consult with those classes of persons having an interest in the stock or the effects of fishing on the aquatic environment in the area concerned, including, but not limited to, Māori, environmental, commercial and recreational interests; and
 - Provide for the input and participation of tangata whenua having a non-commercial interest in the stock concerned or an interest in the effects of fishing on the aquatic environment in the area concerned; and have particular regard to kaitiakitanga.
28. The Act defines Kaitiakitanga to mean “the exercise of guardianship; and, in relation to any fisheries resources, includes the ethic of stewardship based on the nature of the resources, as exercised by the appropriate tangata whenua in accordance with tikanga Māori”, where tikanga Māori refers to Māori customary values and practices.
29. Iwi Fisheries Forums and Forum Fisheries Plans are the main ways in which input and participation of tangata whenua is provided for. Information provided by Forums and iwi views on the management of fisheries resources and fish stocks set out in Iwi Fisheries Plans express how tangata whenua exercise kaitiakitanga in respect of the stocks and areas in this sustainability round.
30. The review of SBW 6B subject to the results of the acoustic survey was presented to Te Waka a Māui me Ōna Toka Iwi Forum on 14 November 2017, one of the two Iwi Fisheries Forums relating to South Island iwi. The Te Waka a Māui me Ōna Toka Iwi Forum represents all nine iwi of the South Island, each holding mana moana and significant interests (both commercial and non-commercial) in South Island fisheries. They agreed with the approach and their input has been incorporated into this proposal.
31. Section 12 (2) says that as soon as practicable after setting or varying any sustainability measure, the Minister shall give the persons consulted under 12(1), the reasons in writing for his or her decisions.

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

Section 13 – Total Allowable Catch

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

2.9 SECTIONS 20 & 21 - SETTING AND VARIATION OF THE TOTAL ALLOWABLE CATCH (TAC)

40. After setting or varying the TAC, a separate decision arises in respect of allocating the TAC, i.e., deciding what portion of the TAC is to be available for commercial and other purposes.
41. Section 20 requires a TACC to be set for each QMS stock and allows it to be varied from time to time. A TACC can be set at zero. This would occur in situations where the TAC was set at zero for sustainability reasons (i.e. the fishery was closed).
42. Section 21 of the Act says that, in setting or varying the TACC, the Minister must have regard to the TAC and allow for:
 - a) Māori customary non-commercial fishing interests;
 - b) Recreational interests; and
 - c) All other mortality to that stock caused by fishing.
43. The Courts have in a number of cases considered what is involved in allowing for non-commercial interests. In *Snapper 1*,⁴ the Court of Appeal said that the recreational allowance is simply the best estimate of what recreational fishers will catch while being subject to the controls which the Minister decides to impose upon them, e.g. bag limits and minimum lawful sizes. Having set the TAC, the Minister in effect apportions it between the relevant interests.⁵
44. The Supreme Court in *Kahawai*⁶ endorsed this approach and said that the words “allow for” require the Minister both to take into account the interests and make provision for them in the calculation of the TACC.⁷ The Supreme Court went on to say that sections 20 and 21 prescribe a framework within which the Minister must operate when setting the TACC. The framework requires apportionment of the TAC by the Minister among the various interests and other mortality. The sequential nature of the method of allocation provided for in s 21 does not indicate that non-commercial fishing interests are to be given any substantive priority over commercial interests. In particular, the allowance for recreational interests is to be made keeping commercial interests in mind.⁸
45. The Supreme Court further said that in the end, within the limits provided for by the Act, the Minister makes a policy decision as to what allocations are appropriate for non-commercial interests and other mortality and what is to be the TACC. These decisions are interdependent. The Act does not confer priority for any interests over the other. It leaves that to the judgment of the Minister.⁹
46. Under the customary fishing regulations [Fisheries (South Island Customary Fishing) Regulations 1999 and the Fisheries (Kaimoana Customary Fishing) Regulations 1998], customary take is regulated through the authorisation system which requires that all customary fishing is to be undertaken in accordance with tikanga and the overall

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

⁵ *Snapper 1*, p 17.

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

⁷ *Kahawai* [55]

⁸ *Kahawai* [61]

⁹ *Kahawai* [65]

sustainability of the fishery. This framework was put in place to give effect to legal obligations in the Settlement Act.¹⁰

47. When allowing for Māori customary non-commercial interests, the Minister must take into account:
 - a) Any mātaihau reserve in the relevant quota management area; and
 - b) Any temporary area closure or temporary fishing method restriction or prohibition imposed in the area for the purposes of improving the availability or size of a species for customary fishing purposes or recognising a customary fishing practice in the area.
48. The intent is that the purposes of measures enacted to provide for customary fishing are not adversely affected, or reasons for limited customary take are ignored, when setting the customary allowance.
49. An allowance is to be made for all other mortality to a stock that results from fishing. This includes illegal catch, discards, and incidental mortality from fishing gear.

3 Other Matters

3.1 HARVEST STRATEGY STANDARD (HSS)

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

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

Southern Blue Whiting – Bounty Platform (SBW 6B)

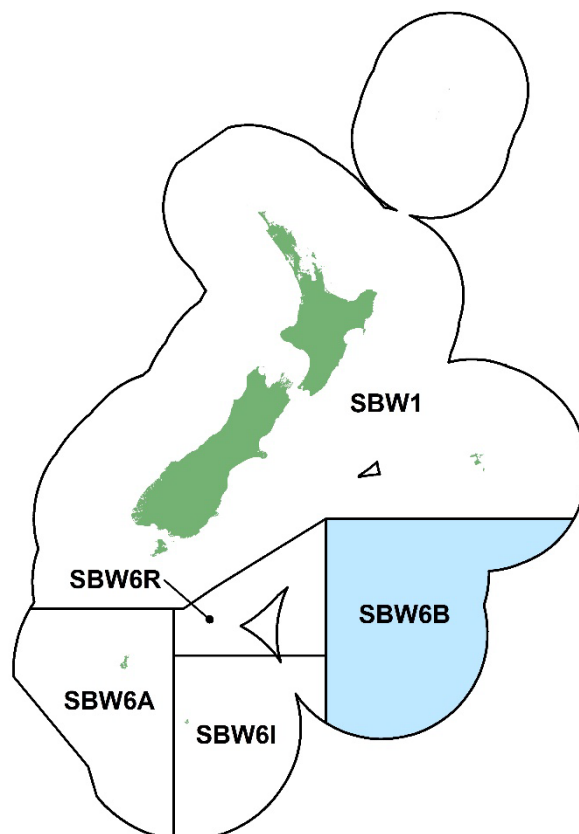


Figure 1: Quota Management Areas for southern blue whiting, with SBW 6B highlighted in blue.

4 What is proposed?

53. The Ministry for Primary Industries (MPI) proposes to review the Total Allowable Catch (TAC), allowances for all other mortality caused by fishing, and the Total Allowable Commercial Catch (TACC) for southern blue whiting (*Micromesistius australis*) in SBW 6B (see Figure 1). MPI proposes the following options and seeks information and views from tangata whenua and stakeholders (Table 1):

Table 1: Proposed management settings (in tonnes) for SBW 6B from 1 April 2018.

Option	TAC	TACC	Allowances		
			Customary Māori	Recreational	All other mortality to the stock caused by fishing
Option 1 (<i>Status quo</i>)	2,426	2,377	0	0	49
Option 2	3,209 ↑	3,145 ↑	0	0	64 ↑

54. There is no known customary Māori or recreational take of southern blue whiting in SBW 6B and it is proposed to retain zero allowances for these sectors. In addition, MPI proposes to maintain the allocation for other sources of fishing related mortality at 2% of the TACC.

55. As the current interim and annual deemed value rates are consistent with the Guidelines applied by MPI¹¹, no changes are proposed to the deemed value rates for SBW 6B, as outlined in Table 2.

Table 2: Deemed Value Rates for SBW 6B (\$/kg).

	Interim deemed value rate	Annual deemed value rate	Differential deemed value rate
<i>Status quo</i>	0.41	0.46	Not set

5 Why the need for change?

56. Southern blue whiting is managed within the National Fisheries Plan for Deepwater and Middle-depth Fisheries – Part 1A¹² (National Deepwater Plan) as a Tier 1 stock. A fisheries-specific southern blue whiting Fisheries Chapter for the National Deepwater Plan was finalised in 2011¹³. The chapter sets the operational objectives and performance criteria for all southern blue whiting fisheries. It also addresses the management of environmental effects caused by fishing for southern blue whiting.
57. The TAC and TACC are set at a level to recover or maintain the stock at the management target as described in Table 3. Reference points for southern blue whiting are based on the default reference points set in the Harvest Strategy¹⁴. The management target of 40% B_0 ¹⁵ is considered to be a conservative proxy for B_{MSY} for a species with the life history characteristics of southern blue whiting.

Table 3: 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

58. A management strategy evaluation was completed for SBW 6B in 2016, which used simulation modelling to test the fishing mortality level that would be most appropriate to maintain (or recover) the stock to the management target of 40% B_0 and to maintain the stock above 20% B_0 for 90% of the time. The simulations tested a range of assumptions about the biology of the stock, including natural mortality and recruitment fluctuations. The management strategy evaluation indicated that application of a harvest strategy using a fishing mortality of 0.24 is appropriate to manage the SBW 6B stock.

¹¹ Accessible at: www.mpi.govt.nz/document-vault/3663

¹² Accessible at: <https://fs.fish.govt.nz/Page.aspx?pk=79&tk=493>

¹³ Accessible at: <http://www.mpi.govt.nz/dmsdocument/3976-national-fisheries-plan-for-deepwater-and-middle-depth-fisheries-part-1b-southern-blue-whiting-chapter>

¹⁴ Accessible at: <http://fs.fish.govt.nz/Page.aspx?pk=113&dk=16543>

¹⁵ Virgin biomass, unfished biomass.

59. Acoustic surveys to monitor spawning stock abundance are conducted between August and September each year. The 2017 acoustic survey indicated that biomass has increased since 2016. The application of the harvest strategy to the biomass estimate from the 2017 acoustic survey demonstrates that the current catch limit can sustainably be increased by 17%.

6 Why are these options proposed?

6.1 SETTING THE TAC

60. MPI is seeking to amend the TAC for the fishery under section 13 (1) of the Fisheries Act 1996 (the Act); and is also recommending maintaining the stock at or above BMSY (maximum sustainable yield) under section 13(2)(a). The TAC for SBW 6B is regularly reviewed based on annual acoustic surveys. TACs for southern blue whiting can fluctuate significantly to take advantage of periods of high recruitment, or respond when aggregations of the fish have disappeared, the reasons for which are unclear.
61. Acoustic surveys to monitor spawning stock abundance are conducted between August and September each year in SBW 6B. The most recent survey (September 2017) indicates that biomass has increased since 2016. The 2017 mid-season spawning stock biomass was estimated to be 7,719 tonnes. Biological sampling carried out during the fishery and the survey indicated that a relatively strong year class (2012) may be recruiting to the fishery.
62. The harvest strategy for the SBW 6B stock is based on the management strategy evaluation completed in 2016 which indicates that a fishing mortality of 0.24 will maintain the stock above the soft limit (20% B₀) 90% of the time, and allow the stock to return to the biomass which can produce the maximum sustainable yield. The application of this harvest strategy to the biomass estimate from the 2017 survey indicates that the current catch limit can be increased, and a 17% increase to the TAC is proposed.

6.2 SETTING ALLOWANCES AND THE TACC

63. Having set the TAC, the Minister must make allowances for Māori customary non-commercial fishing interests, recreational fishing interests, and all other mortality to the stock caused by fishing (sections 20 and 21 of the Act).

Allowance for Māori customary fishing

64. Best available information indicates that there is no customary harvest of southern blue whiting in SBW 6B. There is no documented information on the level of Māori customary non-commercial harvest of this species, nor its importance to customary fishers. Therefore no change is proposed to the current customary Māori fishing allowance.

Allowance for recreational fishing

65. Best available information indicates that there is no recreational harvest of southern blue whiting in SBW 6B. This is likely because of the distance of the fishing grounds from the South Island. Recreational fishing surveys indicate that southern blue whiting

are not caught by recreational fishers. No change is proposed to the current recreational fishing allowance.

Allowance for all other mortality to the stock caused by fishing

66. MPI proposes to proportionally increase the allowance for all other sources of mortality to the stock caused by fishing for SBW 6B, maintaining it at 2% of the TAC. This approach is consistent with other trawl bycatch fisheries of this type.

TACC

67. The southern blue whiting fishery at the Bounty Platform is focused on spawning aggregations which form during late August and September. The Bounty fishery began in earnest in the late 1980s, with catches reaching a peak of nearly 59,000 tonnes in 1991/92. The fishery has been variable over time. Occasional large recruitment events and subsequent decreases in biomass have occurred, leading to fluctuating catches over time. Catches varied around 2,000-5,000 tonnes until a very large year class recruited to the fishery in 2008/09. The total catch subsequently increased to 15,468 tonnes in 2009/10 and 13,913 tonnes in 2010/11, reducing to 6,660 tonnes in 2011/12 (Figure 2). Since that peak, the biomass has declined, and subsequently the TACC and catches have also declined. In 2015/16 and 2016/17, only one or two vessels participated in the fishery because of the low TACC.
68. Based on the proportion of southern blue whiting landings taken in SBW 6B in 2016, and a total estimated free on board export value of NZ \$16.1 million for all southern blue whiting in the 2016 calendar year, SBW 6B had an estimated export value of NZ \$1.44M in 2016.
69. The southern blue whiting fishery, including fish harvested from SBW 6B, has been certified as sustainable by the Marine Stewardship Council¹⁶ since April 2012.

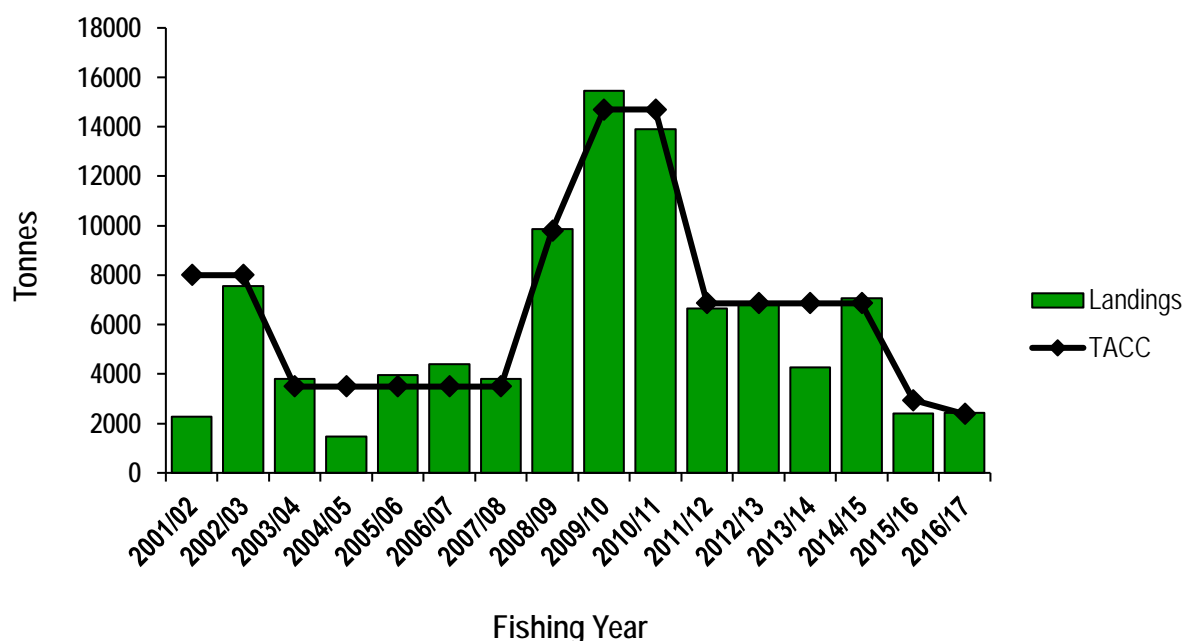


Figure 2: Landings vs TACC for SBW 6B from 2001/02 to 2016/17.

¹⁶ For more information about the Marine Stewardship Council and its certification processes, refer to <https://www.msc.org/>

6.3 EVALUATION OF OPTIONS

Option 1 – *Status quo*

70. Option 1 (the *status quo*) is the most conservative option, and is based on the application of the harvest strategy to the biomass estimate from the 2016 acoustic survey. This option may allow the stock to grow quicker than Option 2. However it also has the most significant impact on commercial fishers, and would likely impede the completion of the planned acoustic survey in 2018 without additional investment from stakeholders.

Option 2

71. Option 2 is the result of the application of the harvest strategy of a fishing mortality of 0.24 to the biomass estimate from the 2017 acoustic survey. A TAC set at this level would allow the stock to fluctuate around the management target level. The economic implications of the proposed options are outlined in Table 4.

Table 4: Predicted changes to commercial export revenue of the proposed options, based on the Free On Board export figures of \$1.54/kg¹⁷ in 2016.

	TACC	Change from status quo (t)	Predicted revenue change (\$ p.a.)
Option 1 (<i>Status quo</i>)	2,377 t		
Option 2	3,145 t	768 ↑	1,182,720 ↑

7 Other Relevant Matters

72. Section 9 also requires the Minister to take into account the following environmental principles:
- Associated or dependent species be maintained at or above a level that ensures their long-term viability;
 - Biological diversity of the aquatic environment should be maintained; and
 - Habitat of particular significance for fisheries management should be protected.
73. The key environmental interactions associated with SBW 6B are discussed below with reference to the likely impacts of the proposed management options.

7.1 MARINE MAMMALS

74. The Department of Conservation classify the fur seal population as ‘Not Threatened – least concern’ and note that the New Zealand population has been increasing in recent years and is estimated at being over 200,000 fur seals¹⁸. The Bounty Islands are one of the main colonies for the New Zealand fur seal in the subantarctic. In 1992 the population was growing and was estimated at approximately 21,500 fur seals.¹⁹ There are no recent specific population estimates for the Bounty Islands.

¹⁷ This is an estimated green weight price per kg across all the product forms exported during January to December 2016 of \$1.54/kg for SBW surimi and SBW frozen. Precise revenue gain is difficult to estimate and will be influenced by factors such as commodity prices, exchange rate, catching costs and export state.

¹⁸ <http://www.doc.govt.nz/nature/native-animals/marine-mammals/seals/nz-fur-seal/>

¹⁹ Taylor, R.H. (1996). Distribution, abundance and pup production of the New Zealand fur seal (*Arctocephalus forsteri* Lesson) at the Bounty Islands. Science for Conservation No. 32. 14 p.

75. The SBW 6B fishery overlaps with the foraging range of New Zealand fur seals which live on the Bounty Islands. Interactions between the SBW 6B fishery and fur seals are known to occur, with the fishery being responsible for one of the highest rates of fur seal captures in New Zealand. Despite this high capture rate, it is considered that current estimated capture levels in southern blue whiting fisheries (ranging from 27-97 captures/year over the last five years) are not having an adverse effect on the population.
76. MPI works closely with the fishing industry to increase awareness amongst the fishing fleet of how to minimise interactions, and emphasises the importance of adherence to the current marine mammal operational procedures. These procedures aim to reduce the risk of interactions with marine mammals by requiring that vessels:
- Minimise the length of time the fishing gear is on the surface;
 - Remove all pieces of dead fish from the net before shooting the gear;
 - Steam away from any congregations of marine mammals before shooting the gear; and
 - Appoint a crew member to watch for marine mammal interactions every time the gear is shot or hauled.
77. Performance in relation to these procedures is audited by MPI and reported in the Deepwater Annual Review Report.

7.2 FISH BYCATCH

78. Total fish bycatch in the southern blue whiting fisheries is estimated to be <1% of the total catch from the fishery²⁰. The target fishery focuses on schools of southern blue whiting and as a result takes minimal bycatch. MPI considers that the options proposed will not result in adverse effects on fish bycatch.

7.3 SEABIRDS

79. Management of seabird interactions with New Zealand's commercial fisheries is managed under the framework of the '2013 National Plan of Action to Reduce the Incidental Captures of Seabirds in New Zealand Fisheries' (NPOA-Seabirds). The NPOA-Seabirds established a risk-based approach to managing fishing interactions with seabirds. As a priority, management actions are targeted at the seabird species most at risk, but also aim to minimise captures of all seabird species to the extent practicable.
80. The level of risk from commercial fishing to individual seabird species has been identified through a comprehensive hierarchical risk assessment²¹ that underpins the NPOA-Seabirds. Seabird interactions with vessels in the SBW 6B fishery generally occur at very low rates, although interactions with a small number of seabird species are known to occur. Regulatory and non-regulatory management measures are in place to mitigate and manage interactions with seabirds. Mandatory measures include the requirement that all trawl vessels over 28 m in length deploy specified bird mitigation devices such as bird bafflers or tori lines during fishing. Non-regulatory management measures include specific vessel management plans (VMPs). The VMPs describe on-

²⁰ Anderson, O.F. (2008). Fish and invertebrate bycatch and discards in southern blue whiting fisheries, 2002–07. New Zealand Aquatic Environment and Biodiversity Report No. 43. 42 p.

²¹ Accessible at: <http://www.mpi.govt.nz/Default.aspx?TabId=126&id=1758>

board practices that vessels must follow to reduce the risk of a seabird capture, including offal management and good factory cleanliness. MPI Observers monitor vessel performance against VMPs and MPI works with the industry via the Deepwater Group Limited (DWG) to rectify any issues that arise during the fishing season.

81. MPI considers that the regulatory and non-regulatory measures in place are sufficient to minimise the impact on seabirds under either option.

7.4 BENTHIC IMPACTS

82. No habitat of particular significance for fisheries management has been determined for SBW 6B. 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 and does not use heavy rollers or bobbins on the nets, which reduces the severity of any benthic impact. SBW 6B also operates over a relatively restricted area which changes little from year to year.
83. Management measures to address the effects of deepwater trawl activity have focused on ‘avoiding’ these benthic effects. This has been achieved through closing areas to bottom trawling; first with seamount closures in 2001 and then with Benthic Protection Areas (BPAs) in 2007²². The implementation of BPAs effectively closed approximately 30% of the New Zealand Exclusive Economic Zone to bottom trawling. A monitoring regime to ensure these closures are adhered to was also implemented.
84. One of the proposed options for SBW 6B will result in increased fishing effort, so will result in an increased benthic impact. However it is highly likely based on past fishing effort that any future fishing effort will occur over ground that has been trawled previously. MPI will continue to monitor the trawl footprint of the southern blue whiting and other deepwater fisheries annually. The proposals are also considered to adequately address the requirements of section 11 of the Act (there are no relevant RMA regional policy statements, plans or proposed plans).

8 Further Information

85. Should you require further information, please see:

Fisheries Act (1996):

<http://www.legislation.govt.nz/act/public/1996/0088/latest/DLM394192.html>

²² Benthic Protection Areas are regulated by the Fisheries (Benthic Protection Areas) Regulations 2007.