



Fisheries New Zealand

Tini a Tangaroa

Review of Sustainability Measures for Silver Warehou (SWA 3 and 4) for 2020/21

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1 Stocks being reviewed

Silver warehou (SWA 3 and SWA 4) *Seriolella punctata*, warehou

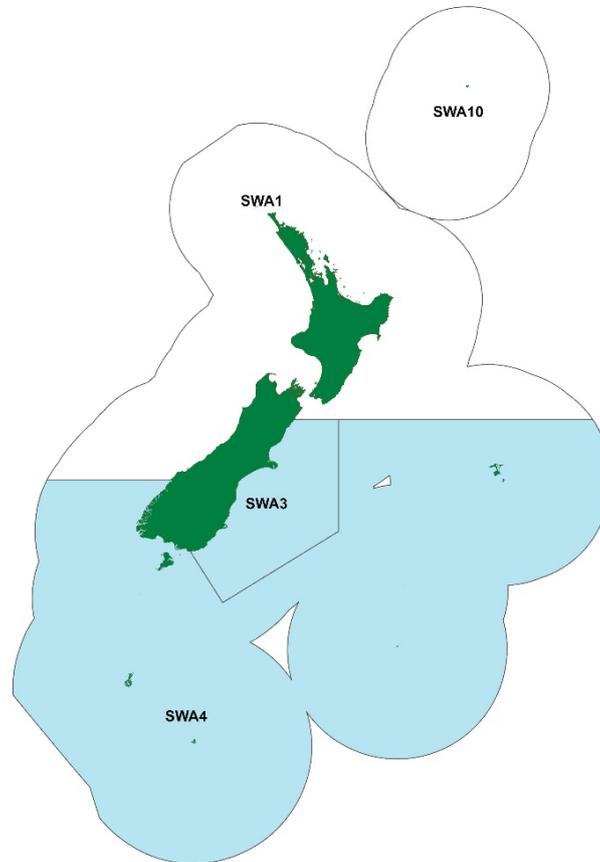


Figure 1: The Quota Management Areas (QMAs) for SWA 3 and SWA 4

2 Summary

1. Fisheries New Zealand is reviewing the sustainability measures for silver warehou in Quota Management Areas 3 and 4 (SWA 3 and SWA 4) for the 1 October 2020 fishing year.
2. Silver warehou is an important commercial species that is mostly taken by the deepwater trawl fleet around the South Island. The best available information indicates that the biomass of the SWA 3 and SWA 4 stocks has increased and that, consequently, there is an opportunity for utilisation.
3. Two options are proposed for each stock:

Option 1 is a modified *status quo*; a Total Allowable Catch (TAC) and allowances would be set for the first time while the current Total Allowable Commercial Catch (TACC) would be retained for both stocks.

Option 2 would involve the setting of a TAC and allowances for the first time and a 10% increase to the TACC of both stocks.

4. Fisheries New Zealand is seeking feedback and submissions on the proposals to set a TAC and allowances for SWA 3 and SWA 4 for the first time, and to increase the TACC for the two stocks.

3 Quota Management System

5. Silver warehou entered the QMS in 1986. The TACC for SWA 3 was initially set at 2,600 tonnes. Between 1988 and 1994, this was gradually increased to the current TACC of 3,280.3 tonnes as a result of administrative processes related to QMS introduction.
6. The TACC for SWA 4 was initially set at 3,600 tonnes. By 1994, the same administrative processes had resulted in it increasing to the current TACC of 4,089.9 tonnes.
7. The TACC for both stocks has not been reviewed since QMS introduction in 1986. Additionally, no TAC or allowances have ever been set for either stock.
8. For more information about the QMS go to <https://www.mpi.govt.nz/law-and-policy/legal-overviews/fisheries/quota-management-system/>.

4 Legal basis for managing fisheries in New Zealand

9. The Fisheries Act 1996 provides the legal basis for managing fisheries in New Zealand, including the Minister's responsibilities for setting and varying sustainability measures. See the separate document *Overview of legislative requirements and other considerations* at <https://www.fisheries.govt.nz/dmsdocument/40502> for more information.

5 Treaty of Waitangi obligations

5.1 Input and participation of tangata whenua

10. Input and participation into the sustainability decision-making process is provided through Iwi Fisheries Forums, which have been established for that purpose. Each Iwi Fisheries Forum has developed an Iwi Fisheries Forum Plan that described how the iwi in the Forum exercise kaitiakitanga over the fisheries of importance to them, and their objectives for the management of those fisheries. Particular regard will be given to kaitiakitanga when making sustainability decisions.
11. Iwi Fisheries Forums may also be used as entities to consult iwi with an interest in fisheries.
12. Due to COVID-19 travel restrictions, input and participation from Iwi Fisheries Forums was sought through remote mechanisms. Prior to consultation, information on the proposal to review the catch limits of the two silver warehou stocks was provided to the following Iwi Fisheries Forums, and input sought: Te Hiku o te Ika, Mid-North, Ngati Porou, Te Tau Ihu, and Te Waka a Māui me Ōna Toka. No specific input relating to the proposals for the SWA 3 and SWA 4 stocks was received.
13. Given the disruption to services, the opportunity for input from the Iwi Fisheries Forums has been impacted and any further input will be included in the final advice and recommendations provided to the Minister.

5.2 Kaitiakitanga

14. Silver warehou is listed as a taonga species in Te Waipounamu (all of South Island) Iwi Fisheries Plan as well as the Chatham Islands Fisheries Forum Plan. Te Waka a Māui me Ōna Toka Iwi Forum considers all fish species taonga. Te Waipounamu plan contains objectives to

support and provide for the interests of South Island iwi, and contains two objectives that are relevant to the management options proposed for SWA 3 and SWA 4:

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

15. The Chatham Islands Fisheries Forum Plan contains an objective that is to the management options proposed for SWA 4:

- **Management objective 5: Thriving Fisheries**
Thriving sustainable fisheries are enduring for present and future generations.

16. Fisheries New Zealand considers the proposals in this consultation document meet those objectives.

17. There are no customary fisheries management tools such as mātaimai, taiāpure or Section 186B temporary closures relevant to this review.

6 Relevant plans, strategies, statements and context

6.1 National Deepwater Plan

18. All silver warehou stocks are managed as Tier 2 stocks within the National Fisheries Plan for Deepwater and Middle-depth fisheries 2019 – Part 1A (National Deepwater Plan). Silver warehou is included within the hoki chapter of the National Deepwater Plan, completed in 2010.

19. The National Deepwater Plan sets out a series of Management Objectives for deepwater fisheries, the most relevant to the SWA 3 and SWA 4 stocks being:

- **Management Objective 1:** Ensure the deepwater and middle-depth fisheries resources are managed so as to provide for the needs of future generations.
- **Management Objective 4:** Ensure deepwater and middle-depth fish stocks and key bycatch fish stocks are managed to an agreed harvest strategy or reference points.

20. The National Deepwater Plan is a formally approved s11A plan, which the Minister must take into account when making sustainability decisions.

21. There are no other plans, strategies or statements particularly relevant to this review.

6.2 Management strategy

22. In the absence of a species-specific harvest strategy, the default reference points that are set out in the Harvest Strategy Standard (Table 1) are relevant to silver warehou stocks.

Table 1: Default reference points, and the associated management response

Reference point	Management response
Management target 40% unfished biomass (B_0)	Stock permitted to fluctuate around this management target. TAC/TACC changes will be employed to keep the stock around the target (with a 50% probability of being at the target)
Soft limit of 20% B_0	A formal time constrained rebuilding plan will be implemented if this limit is reached
Hard limit of 10% B_0	The limit below which fisheries will be considered for closure
Rebuild strategy	$2^* T_{min}$ (T_{min} is the number of years to rebuild a stock to the target, in the absence of fishing)

23. There is no accepted stock assessment for any silver warehou stock. However, the Deepwater Fisheries Stock Assessment Working group concluded in 2020 that the Western Chatham Rise stock (refer to section 7 below) was very unlikely to be below the hard limit.

7 Current state of the stocks

24. Although the stock structure of silver warehou is not well known, three regions within the SWA 3 and SWA 4 QMAs are considered to represent biological stocks on the basis of catch distribution and the location and timing of spawning. The three areas are shown in Figure 2 and described in Table 2 below.

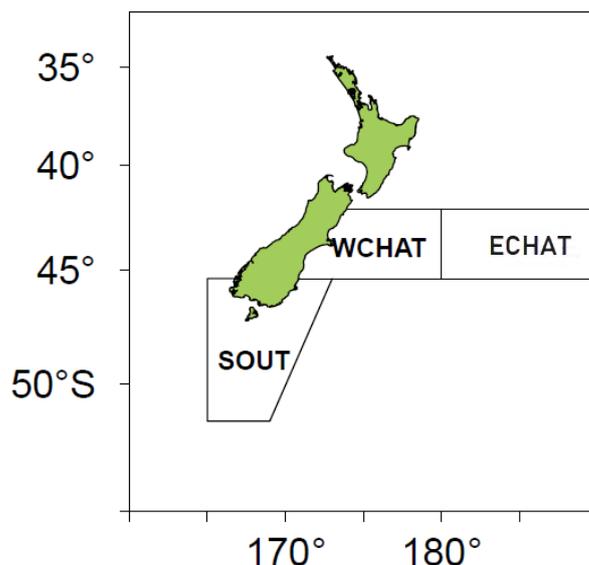


Figure 2: Regions within SWA 3 and SWA 4 considered as stocks

Table 2: Description of regions within SWA 3 and SWA 4 considered as stocks

Region	Description	Quota management area (refer Figure 1)
WCHAT	East coast South Island / western Chatham Rise out to 180° longitude	SWA 3 and part of SWA 4
ECHAT	Chatham Rise east of 180° longitude	SWA 4
SOUT	Stewart Snares Shelf to Otago Peninsula	SWA 4 and part of SWA 3

25. The current management areas (QMAs) are not therefore consistent with the distribution of the biological stocks.
26. Catch per unit effort (CPUE) analysis using data up to the 2015/16 fishing year looked at a variety of CPUE indices for the WCHAT and SOUT stocks. In both areas, CPUE trends were flat or increasing, while catches remained consistently high i.e. there was no signal of depletion. Age composition data suggested that the increase in catch rates and catches was consistent with the recruitment of some relatively large year classes.
27. A more recent partial stock assessment of the WCHAT area updated relative abundance indices for silver warehou in this area. While variable, most indices have a similar, generally increasing trend. As an example, one CPUE index is shown in Figure 3 below. This represents the CPUE index for domestic bottom trawl vessels greater than 28m long fishing in 400-800m water depth, which is the depth range within which the majority of silver warehou are caught by this component of the deepwater fleet. Two time periods are represented; a shorter 2005-2018 index and a longer 1992-2018 index.

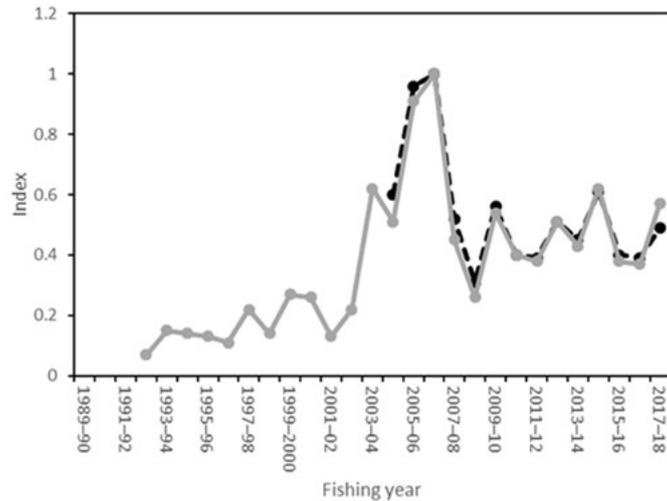


Figure 3: CPUE index for domestic bottom trawl vessels >28m in length fishing in 400-800m water depth in the WCHAT area. The black line represents data between 2005 and 2018, the grey line represents data between 1992 and 2018.

- 28. Based on the best available information for the three silver warehou stocks within SWA 3 and SWA 4, the Deepwater Fisheries Assessment Working Group concluded that the abundance of silver warehou throughout both QMAs appears to have been increasing over much of the last 30 years.

8 Recent catch levels and trends

- 29. Figures 4 and 5 show catch, TACC and available annual catch entitlement (ACE) for the SWA 3 and SWA 4 QMAs between the 2001/02 and 2018/19 fishing years.¹

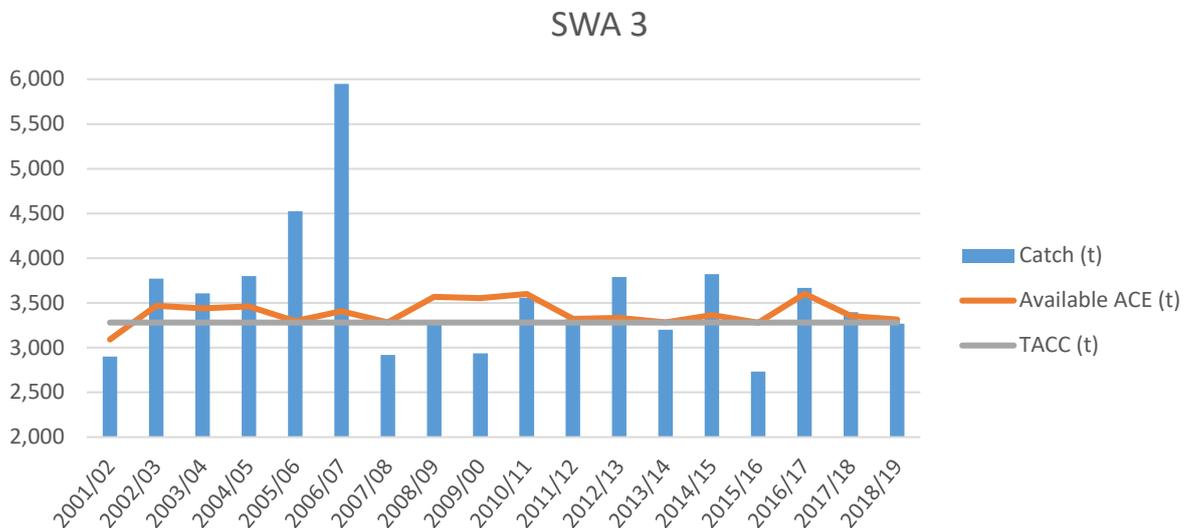


Figure 4. Graph showing catch, TACC, and available ACE (all in tonnes) for SWA 3

¹ The Fisheries Act 1996 provides for fishers to carry forward up to 10% of ACE that has not been balanced with catch. For this reason the sum of available ACE for a stock is usually greater than the TACC.

SWA 4

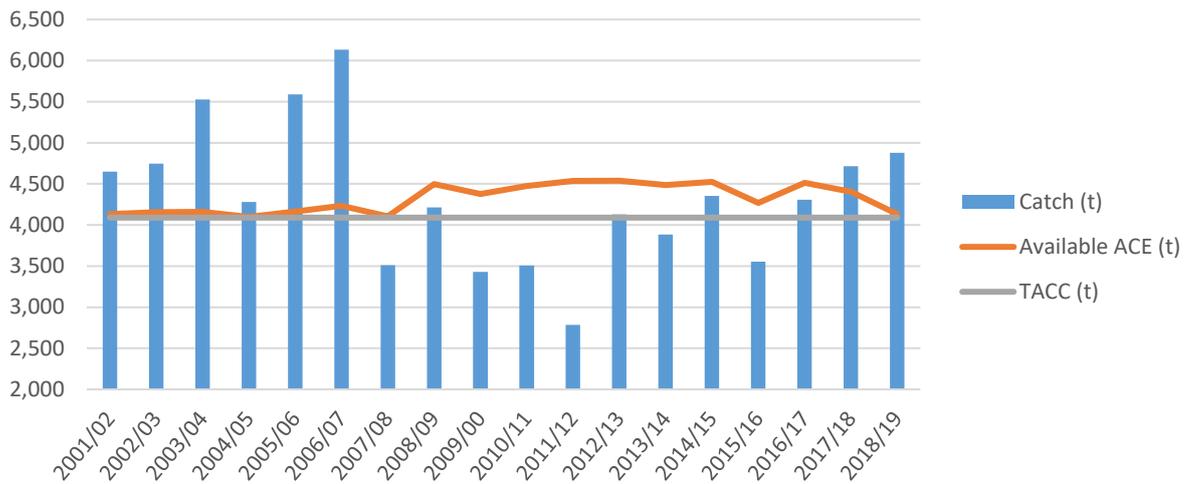


Figure 5. Graph showing catch, TACC, and available ACE (all in tonnes) for SWA 4

30. Figure 4 shows that catch of SWA 3 was considerably higher than the TACC during the 2005/06 and 2006/07 fishing years before dropping below the TACC in 2007/08. Some of the reduction in catch may be able to be attributed to an increase in deemed value rates for silver warehou stocks. However, a strong year class or classes present in the fishery prior to 2007/08 was not as evident in catches after 2006/07. Since 2010/11, catch has exceeded the TACC six times and has exceeded available ACE four times.
31. Figure 5 shows that catch of SWA 4 has followed a similar pattern to that of SWA 3; catch was considerably higher than the TACC in the early to mid-2000s before reducing. Since 2010/11, catch has exceeded the TACC five times and has exceeded available ACE twice (the two most recent completed fishing years).
32. Within SWA 3 and SWA 4, silver warehou is taken as both target species and non-target species. Figure 6 shows the percentage of estimated catch that was recorded as target species since the 2010/11 fishing year. For both stocks, more catch is generally recorded as non-target than target. The percentage recorded as target has been declining since 2014/15 although there are known issues around the recording of SWA as the target species.

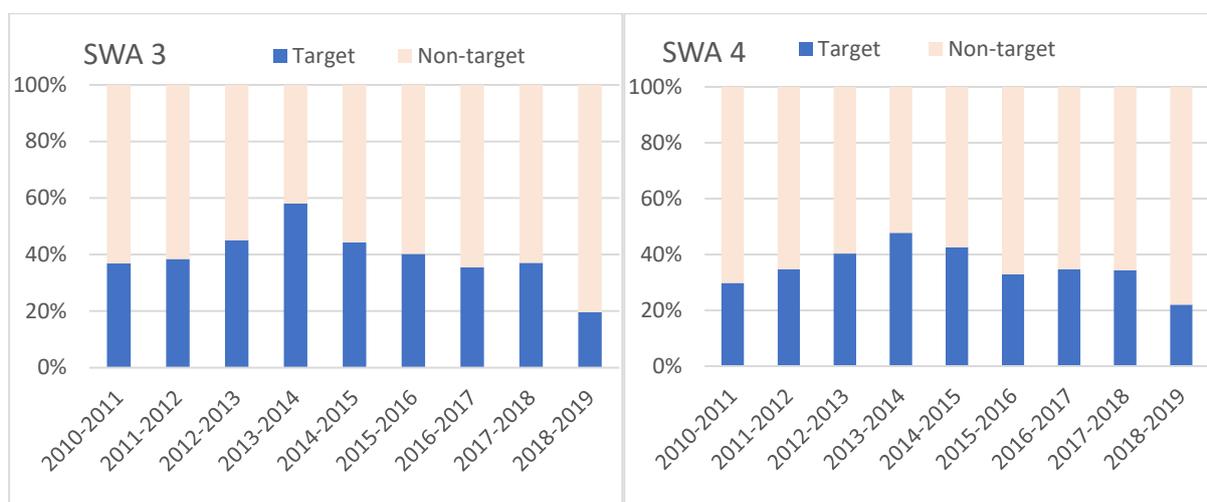


Figure 6. Percentage of estimated catch of silver warehou within SWA 3 (left) and SWA 4 (right) recorded as target species between 2010/11 and 2018/19 fishing years

33. As noted earlier, the silver warehou QMAs are not consistent with the likely biological stocks. Figure 7 shows the estimated catch taken from each of the three stocks within the SWA 3 and SWA 4 QMAs since the 2010/11 fishing year. This catch has not been scaled to the overall catch shown in Figures 2 and 3. In Figure 5, 'Other' refers to catch taken outside three regions but still within the SWA 4 QMA.
34. Figure 7 shows most catch comes from the WCHAT and SOUT areas with ECHAT comprising a relatively small component of the catch.

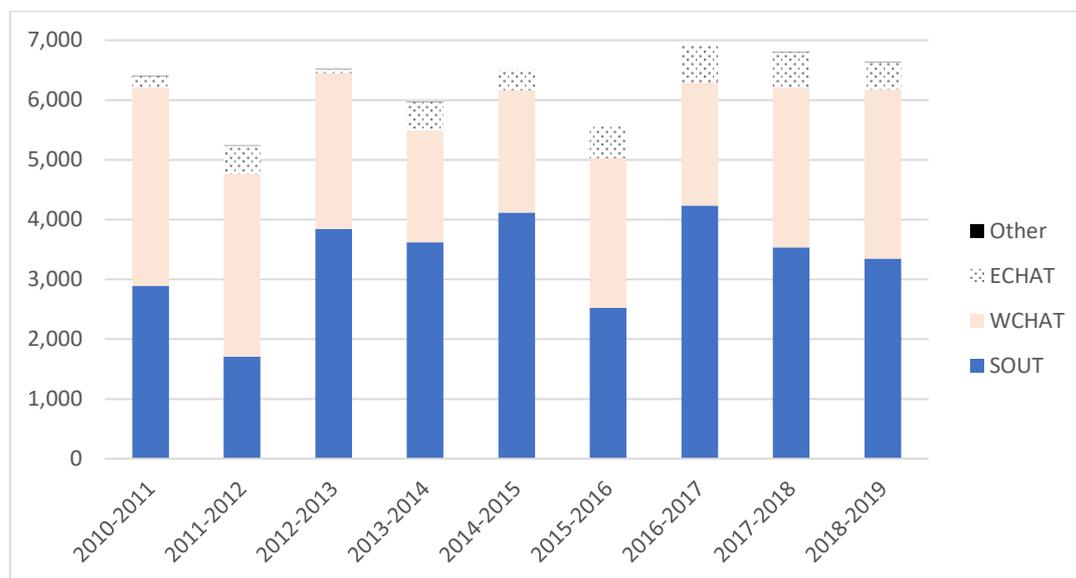


Figure 7. Estimated catch of silver warehou by region between the 2010/11 and 2018/19 fishing years (tonnes). The regions are those shown in Figure 2 and described in Table 1.

35. There is almost no information about customary and recreational catches. Silver warehou has not been recorded in the customary database, although it is possible some customary catch may have been recorded under the generic 'wettfish' code. The species was not recorded in National Panel Surveys of Marine Recreational Fishers undertaken in 2011/12 and 2017/18.
36. As noted above, silver warehou stocks were introduced into the QMS in 1986 and allowances for customary and recreational fishing have never been set for any silver warehou stock.

9 Current TAC, TACC and allowances

Table 3: Current TAC, TACC and allowances SWA 3 and SWA 4 (tonnes)

	Total Allowable Catch	Total Allowable Commercial Catch	Allowances		
			Customary Maori	Recreational	All other mortality to the stock caused by fishing
SWA 3	n/a	3,280.3	n/a	n/a	n/a
SWA 4	n/a	4,089.901	n/a	n/a	n/a

10 Options – varying the TAC and TACCs, and allowances

37. Two options are proposed for the TAC, TACC and allowances for each stock: Option 1 is a modified *status quo*, where TACs and allowances would be set for the first time for each stock but the TACCs would remain unchanged; Option 2 is to set TACs and allowances and increase the TACCs by 10%.

Table 4: Options for varying TAC, TACC and allowances SWA 3 and SWA 4 (tonnes)

Stock	Option	Total Allowable Catch	Total Allowable Commercial Catch	Allowances		
				Customary Māori	Recreational	All other mortality to the stock caused by fishing
SWA 3	Option 1 (<i>modified status quo</i>)	3,313	3,280	0	0	33
SWA 3	Option 2	3,646	3,610 ↑ (10%)	0	0	36
SWA 4	Option 1 (<i>modified status quo</i>)	4,131	4,090	0	0	41
SWA 4	Option 2	4,545	4,500 ↑ (10%)	0	0	45

10.1 Total Allowable Catch

38. Option 1 sets a TAC for the first time and retains the *status quo* TACC for both stocks. It carries the least sustainability risk but forgoes the utilisation opportunity that exists for both stocks.
39. Option 2 is based on the information indicating an increase in abundance, and the associated utilisation opportunity. It would see the existing TACCs of both stocks increased by 10%. The most recent research focused on the east coast South Island / western Chatham Rise stock. Earlier research looking at the eastern Chatham Rise and sub-Antarctic stocks (part of the SWA 4 QMA), showed the same general pattern of CPUE remaining flat or increasing slightly. For these reasons Fisheries New Zealand considers that the utilisation opportunity exists throughout the SWA 3 and SWA 4 QMAs and that it is appropriate to propose increasing the TACs for both stocks.

10.2 Allowances

40. In the absence of information indicating ongoing customary Māori and recreational catches of silver warehou, Fisheries New Zealand proposes to retain the customary Māori and recreational allowances at zero tonnes under all options.
41. Fisheries New Zealand welcomes information from iwi and stakeholders on alternatives to this proposal and notes that an allowance of zero tonnes does not preclude customary Māori and recreational catch.
42. The allowance for other sources of fishing related mortality is an allowance intended to provide for unrecorded mortality of fish associated with fishing activity. This includes fish that escape through trawl net mesh and subsequently die from injuries, accidental loss from lost or ripped trawl net cod-ends, predation, and misreporting.
43. In the absence of specific information, the approach that is often taken for deepwater stocks is to set the allowance at a specified percentage of the TACC. For other stocks taken by the deepwater trawl fleet, such as hoki, hake and ling, the allowance, where set, is set at one or two percent of the TACC. Given the morphology of silver warehou compared to these species, Fisheries New Zealand considers this species is unlikely to have significantly different mortality

resulting from fishing activity, and proposes to set the allowance for other sources of fishing related mortality for SWA 3 and SWA 4 at one percent of the TACC under both options. Stakeholder feedback on this proposal is welcomed.

10.3 Total Allowable Commercial Catch

44. Option 2 is a 10% increase to the TACCs for both stocks. Increasing the TACCs may provide for a modest increase in target fishing, but the primary outcome will be to support fishers' ability to balance non-target catch with ACE.

SWA 3

45. For SWA 3, a 10% increase equates to increasing the TACC by 330 tonnes. However, average catch for the last five completed fishing years has been 3,377 tonnes, meaning the TACC increase would only be 233 tonnes above the five year average. Based on export value data from 2019, 233 tonnes would equate to increase in revenue of around \$780,000 per year.²

SWA 4

46. For SWA 4, a 10% increase equates to the TACC increasing by 410 tonnes. However, average catch for the last five completed fishing years has been 4,363 tonnes, meaning the TACC increase would only be 137 tonnes above the five year average.
47. Using the same export value information as that used for SWA 3, 137 tonnes would equate to an increase in revenue of around \$460,000 per year.

Both stocks

48. A further benefit of increasing the TACC for both stocks is that the additional ACE generated enhances fishers' ability to balance catch with ACE. In the last five completed fishing years, fishers have been invoiced over \$1.3M in deemed values for SWA 3 and over \$2M for SWA 4.

11 Uncertainties and risks

49. The key uncertainty raised by the Deepwater Fisheries Assessment Working Group is that there is currently no single accepted index of abundance for any of the silver warehou biological stocks. Characteristics and behaviour of the fish and the fishing fleet means there is currently no reliable way of tracking abundance.

12 Environmental interactions

50. Silver warehou is predominantly taken by the deepwater trawl fleet. The proposed increase to the TAC and TACC for SWA 3 and SWA 4 is unlikely to result in any change the total amount of fishing effort. As noted, while there may be a small increase in the number of target tows, silver warehou is also taken as bycatch in a number of other target fisheries. This means little change to the current level of environmental interactions associated with the silver warehou fishery i.e. marine mammal and seabird interactions, fish bycatch, and benthic impacts.

² Value is based on an average product weight value of dressed silver warehou of \$5.56 per kg

13 Questions for submitters on options for varying TACs, TACCs and allowances

- Which option(s) do you support for revising the TACs and setting allowances? Why?
- If you do not support any of the options listed, what alternative(s) should be considered? Why?
- Are the allowances for customary fishing appropriate? Why?
 - We ask tangata whenua to provide any additional information you may have on customary catch.
- Are the allowances for recreational fishing appropriate? Why?
- Are the allowances for other sources of mortality appropriate? Why?

51. Please provide detailed, verifiable information and rationale to support your views.

14 Deemed values

52. Deemed values are an economic tool that incentivises commercial fishers not to catch in excess of their individual annual catch entitlement holdings. No changes to the deemed value rates of any silver warehou stock are proposed.

15 Referenced reports

Fisheries Assessment Plenary May 2020: <https://www.fisheries.govt.nz/news-and-resources/science-and-research/fisheries-research/>

Silver warehou (*Seriolella punctata*) preliminary western Chatham Rise stock assessment. Fisheries Assessment Report 2019/60: <https://www.mpi.govt.nz/dmsdocument/37347-far-201960-silver-warehou-seriolella-punctata-western-chatham-rise-preliminary-stock-assessment>

Fishery characterisation and standardised CPUE analyses for silver warehou (*Seriolella punctata*) in SWA 3 and 4, 1989-90 to 2015/16. Fisheries Assessment Report 2019/59: <https://www.mpi.govt.nz/dmsdocument/37344-far-201959-fishery-characterisation-and-standardised-cpue-analyses-for-silver-warehou-seriolella-punctata-in-swa-3-and-4-198990-to-201516>

Deepwater Fisheries Plan: <https://www.mpi.govt.nz/growing-and-harvesting/fisheries/fisheries-management/deepwater-fisheries/>

Aquatic Environment and Biodiversity Annual Review (AEBAR) 2018: A summary of environmental interactions between the seafood sector and the aquatic environment. <https://www.mpi.govt.nz/dmsdocument/34854-aquatic-environment-and-biodiversity-annual-review-aebar-2018-a-summary-of-environmental-interactions-between-the-seafood-sector-and-the-aquatic-environment>

16 How to get more information and have your say

53. Fisheries New Zealand invites you to make a submission on the proposals set out in this discussion document. Consultation closes at 5pm on 1 July 2020.
54. Fisheries New Zealand invites you to make a submission on the proposals set out in this discussion document. Please see the Fisheries New Zealand sustainability consultation

webpage (<https://www.fisheries.govt.nz/news-and-resources/consultations/review-of-sustainability-measures-for-1-october-2020/>) for related information, a helpful submissions template, and information on how to submit your feedback. If you cannot access to the webpage or require hard copies of documents or any other information, please email FMSubmissions@mpi.govt.nz.