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Tini a Tangaroa

Commercial Landing Exception: Southern bluefin tuna

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Southern bluefin tuna (STN)

Thunnus maccoyii, Southern bluefin tuna, Tuna, Ika Tira iti

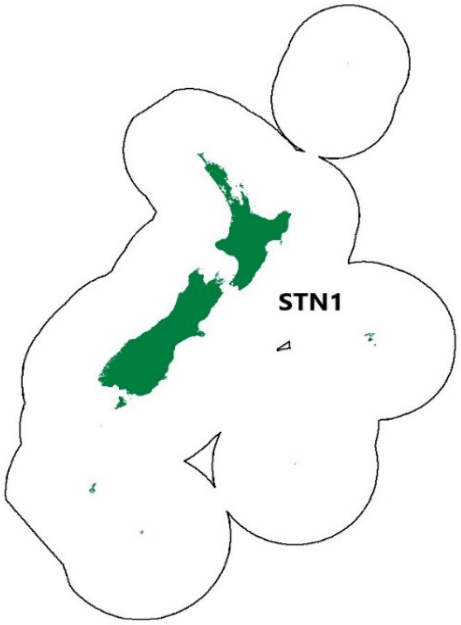

Figure 1: Quota Management Areas (QMAs) for southern bluefin tuna (STN).

1 Purpose

1. Fisheries New Zealand (**FNZ**) is reviewing the landing exception that allows commercial fishers to return southern bluefin tuna that are alive, and likely to survive, to the sea.
2. In late 2022, FNZ held discussions about the broader implementation of new landing and discard rules with operating Iwi Fisheries Forums, Te Ohu Kaimoana and representatives from environmental organisations, industry, commercial and recreational fishers. Prior to this public consultation on the southern bluefin tuna exception, a summary of the southern bluefin tuna review was sent to Iwi Fisheries Forums and input sought. Engagement to date is discussed in section 8 of this paper.
3. FNZ welcomes feedback and submissions on this review, including your understanding of survivability of southern bluefin tuna caught and released by different methods and under different conditions, specific handling practices that support their safe return, and the operational costs and challenges posed by catching and/or retaining southern bluefin tuna.
4. Consultation closes at 5pm on 1 March 2024. Please see the FNZ consultation webpage (https://www.mpi.govt.nz/consultations/) for related information 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.

2 Summary

5. Section 72 of the Fisheries Act 1996 (the **Act**) requires commercial fishers to not return or abandon Quota Management System (**QMS**) species to sea or waters from which they are taken unless there is an exception. The Fisheries Amendment Act 2022 ('**the Amendment Act**') came into effect on 1 November 2022 and changed the rules for how a QMS species or stock can or must be returned to the sea, based on a set of new landing exception provisions (the **exception provisions**).
6. Under the current exception for southern bluefin tuna, commercial fishers may return southern bluefin tuna, caught by any method, to the water from which it was taken, if it is likely to survive

and the return takes place as soon as practicable. To retain the current exception, it needs to meet the relevant provision in section 72A of the Act and has therefore been assessed against the first provision– permitting a stock or species to be returned or abandoned if it has an acceptable likelihood of survival.

7. Southern bluefin tuna are considered a relatively hardy species. Research commissioned by FNZ concluded that southern bluefin tuna, including smaller individuals, caught by surface longline have a 'high' likelihood of post-release survival. The research was unable to assess post-release survival from other methods. However, FNZ considers that post-release survival of southern bluefin tuna caught by troll is likely to be high given the similarities between troll and surface longline fishing methods, while survival is likely to be lower when caught in netting methods as these methods restrict movements of fish caught. Southern bluefin tuna are infrequently caught by bottom longline and the survivability for fish caught by this method is unknown but is thought to be lower than for surface longline given the gear is typically set at greater depths and for long periods.

8. Table 1 outlines the current and the proposed exception. Conditions associated with the proposed exception are discussed in sections 6.3 of this paper.

Table 1: Summary of the current exception for the return of southern bluefin tuna and the proposed exception in this review.

	Current exception	Proposed exception
Methods	All	Surface longline and troll only
Description	Southern bluefin tuna may be returned to the waters from which they were taken if they are likely to survive on return, and the return takes place as soon as practicable after it is taken.	Southern bluefin tuna may be returned to the waters from which they were taken if they are likely to survive on return, are without obvious major external injuries, and the return takes place as soon as practicable after it is taken.
Balancing requirements	Returns not balanced with ACE.	Returns not balanced with ACE.
Rationale	Not available.	Southern bluefin tuna are estimated to have high likelihood of post-release survival when caught and returned by surface longline and troll. As tuna need to swim continuously to breathe, post-release survival of these fish is likely to be low when caught by netting methods (e.g., trawl, set net) as those methods restrict movements of the fish caught.

9. FNZ does not consider that a review of current sustainability measures (i.e., catch limits and deemed value rates) is required because of the proposal in this paper, as it is unlikely to significantly change catches of southern bluefin tuna or the overall mortality to the stock. However, we note that catch limit settings are currently being reviewed as part of the April 2024 Sustainability Round following recent decisions by the Commission for the Conservation of Southern Bluefin Tuna (**CCSBT**), of which New Zealand is a member. New Zealand's national allocation was increased at the last CCSBT in October 2023, which FNZ is proposing to implement domestically.[1]

10. Ministerial decisions on whether to provide an exception for the live return of southern bluefin tuna would inform any further review of sustainability measures. If needed, sustainability reviews and associated consultation processes would be undertaken after this Commercial Landing Exception Review.

[1] Review of sustainability measures for fisheries – April 2024 round: https://www.mpi.govt.nz/consultations/review-of-sustainability-measures-for-fisheries-april-2024-round/

3 Policy context and legal framework

11. As per clause 11.3 of the Fisheries (Landing and Discard Exceptions) Notice, commercial fishers may currently return southern bluefin tuna if they are likely to survive on return, and the return takes place as soon as practicable after it is taken. Under the 2022 amendments to the Act, the current exception for southern bluefin tuna must be reviewed by September 2026 and assessed whether it meets the new relevant provision(s) and can continue, or whether it needs to be amended or removed.

12. Under section 72A, the Minister may require or permit a QMS species or stocks to be returned or abandoned in the sea and may make instruments for the purposes of section 72(2) or 72(3) of the Act. An instrument made under section 72A(2) may:

    a) permit a stock or species to be returned to or abandoned in the sea or other waters from which it was taken if the Minister is satisfied that the stock or species has an acceptable likelihood of survival if returned or abandoned in the manner specified by the instrument ('first provision'), or

    b) permit a stock or species to be returned to or abandoned in the sea or other waters from which it was taken if the Minister is satisfied that the stock or species:

        i. would damage other stocks or species taken by the commercial fisher if retained (for example, an ammoniating species); or

        ii. is damaged as a result of unavoidable circumstances (for example, diseased or predated fish), ('**second provisions**'), or

    c) require a stock or species to be returned to or abandoned in the sea or other waters from which it was taken if the Minister is satisfied that the return or abandonment is for a biological, a fisheries management, or an ecosystem purpose and the stock or species has an acceptable likelihood of survival if returned or abandoned in the manner specified by the instrument ('**third provision**').

13. A more detailed overview of the policy context and legal framework is provided in "Fisheries New Zealand review of commercial landing exceptions: overview of policy context and legislative requirements in relation to exception reviews".

4 Determining the relevant exception provision(s) for southern bluefin tuna

14. Each existing exception that requires review under the amended Act will generally have a close fit with at least one of the three new exception provisions. Our general approach to determining the most appropriate provision is outlined in FNZ's Commercial Landing Exception Reviews Operational Guidelines.

15. To retain the current exception that allows commercial fishers to return live southern bluefin tuna, we consider it would need to meet the first provision for authorised returns. As the current exception is discretionary, it has not been assessed against the third provision for mandatory returns.

16. This paper is not assessing southern bluefin tuna against the second provision (permitting a stock or species to be returned if keeping it would damage the rest of the catch or is damaged as a result of unavoidable circumstances (for example, diseased or predated fish). Predation of southern bluefin tuna, and other Highly Migratory QMS species damaged by unavoidable circumstances (i.e., predation) is being consulted on separately.[2]

[2] Commercial fishers landing exception: Fish predation in surface longline: https://www.mpi.govt.nz/consultations/commercial-fishers-landing-exception-fish-predation-in-surface-longline/

5 Southern bluefin tuna fishery information[3]

17. Southern bluefin tuna are highly migratory species[4] that traverse between the high seas and states' exclusive economic zones throughout the southern hemisphere. Southern bluefin tuna inhabit surface waters to depths less than 600m but are most commonly present in waters no deeper than 250m.

18. To assess the current exception, it is important to understand the volume of catches and returns of the southern bluefin tuna, and the methods it is taken by. The following sections provide an overview of the key fishery information, with more details provided in Appendix One.

5.1 Commercial fisheries

19. Southern bluefin tuna are seasonally present in New Zealand waters and are of high commercial value. Southern bluefin tuna are predominately caught commercially by surface longline (98% in the last three fishing years), with the remainder of the catch (2%) caught by, troll, trawl, set net and bottom longline targeting other species.

20. In the last three complete October fishing years, commercial landings and live returns of southern bluefin tuna have increased, with landings exceeding the available TACC in 2022/23 (Table 2). The increase in live returns in recent years is likely due to larger numbers of smaller fish being present in the fishery as it rebuilds (see section 6.2 of this paper).

Table 2: TACC, commercial reported landings and returns of southern bluefin tuna in the last three complete October fishing years (greenweight, rounded to the nearest tonne).

October fishing year	TACC	Landings	Returns
2020/21	1,046	786	19
2021/22		875	48
2022/23		1,097	57

21. As with commercial landings, most commercial returns are reported from surface longline, although an average 5% of returns have been from troll in the last three fishing years. Overall, live returns make up a small proportion (4% on average over the last three October fishing years) of total catch (catch reported as landed plus catch returned under disposal code 'X'), which means that most southern bluefin tuna are retained and subsequently landed.

5.2 Non-commercial interests

Māori customary interest

22. Southern bluefin tuna have a special significance to Māori with *Tuna* /*Ika Tira iti* listed as a taonga species in Te Waipounamu, the Chatham Islands, Mai I Nga Kuri a Wharei ki Tihirau, Ngā Hapu o Te Uru o Tainui, and Te Hiku o Te Ika Iwi Forum Fisheries Plans.

23. There are currently no records held by FNZ of southern bluefin tuna being taken under customary authorisation.

Recreational interests

24. Southern bluefin tuna are an important game species for recreational fishers and are primarily caught with trolling lures (hooks with artificial baits that mimic prey, towed behind a vessel).

25. Recreational estimates from a FNZ funded research project indicate that there has been a significant increase in recreational fishing activity and catch rates of southern bluefin tuna since 2017, with annual recreational catches exceeding the recreational allowance since 2019 and reaching an estimated 69.3 tonnes in 2023 (Holdsworth, in press). As part of the April 2024

[3] Information in this section references Attachment 8 of the Report of the Twenty-Eighth Meeting of the Scientific Committee and the FNZ November Fisheries Assessment Plenary (2023).
[4] Highly migratory species are fish stocks that straddle national fisheries management boundaries such as tunas, billfish and pelagic (near surface dwelling) sharks.

Sustainability Round, FNZ is proposing an increase to the recreational allowance so that it better reflects the new information available on recreational catch estimates.

6 Providing for an exception under the first provision: Do southern bluefin tuna have an acceptable likelihood of survival if returned to or abandoned in the sea?

26. FNZ's working definition of "acceptable likelihood of survival" is that *the expected result of a return is that the stock or species is more likely than not to survive when released.* However, acceptability may vary across species and be influenced by the purpose of the return and the overarching management strategy for the species.

6.1 Acceptable likelihood of survival

Biological characteristics of southern bluefin tuna influencing post-release survival

27. Southern bluefin tuna are obligate ram ventilators, meaning they need to swim continuously to get a constant supply of water over their gills to breathe (Graham and Dickson, 2004). These fish have large hearts and high blood flow, traits that assist them in recovering quickly from exhaustive exercise (Brill, 1996).

28. Based on the physiological characteristics of southern bluefin tuna, they are a relatively robust species and, when handled appropriately, likely to survive catch and release by fishers, although rate of survivability is dependent on capture method.

Estimating post-release survival

29. Estimating post-release survival of commercially caught species is challenging. Although there are multiple methods of assessing likelihood of survival following return to the sea from commercial capture, each study design introduces potential biases and logistical difficulties that can influence the results.

30. In New Zealand, southern bluefin tuna returned to the sea are mostly smaller fish (i.e., less than 90 cm in length), which have poorer muscle quality than larger fish and attract lower market prices that typically don't cover operational costs. Small tuna are also often encountered in large numbers and can take a significant amount of time and effort to process.

31. Research commissioned from the National Institute of Water and Atmospheric Research (**NIWA**) concluded that southern bluefin tuna caught by surface longline in New Zealand waters have a 'high' likelihood of post-release survival when returned to the sea (Moore and Finucci, in press). The analysis concluded that southern bluefin tuna that are hooked in the gut or have visible major injuries have a lower likelihood of post-release survival. Factors such as fishing duration (soak time) and fishing depth (depth at which the tuna is hooked) had negligible impacts.

32. These results are aligned with international studies on post-release survival of southern bluefin tuna and other large-bodied tuna species caught and released by commercial surface longline vessels, reflecting the relative robustness of large tuna species (Harley et al., 2008; Sakai and Itoh, 2013; Patterson and Hansen, 2016).

33. Minor catches of southern bluefin tuna are reported from midwater trawl, troll, set net and bottom longline. However, the NIWA analysis was unable to assess post-release survival of southern bluefin tuna caught by methods other than surface longline due to low volume of catches.

34. Based on the physiology of the species, especially the need for these fish to swim continuously to breathe, FNZ considers that post-release survivability from netting methods (e.g., trawl, set net) is likely to be low, as their ability to swim will be restricted when caught by these methods. Southern bluefin tuna are infrequently caught by bottom longline and the survivability for fish caught by this method is unknown. Based on the nature of the method, gear is typically set at

greater depths and for long periods than surface longline, which is likely to result in a lower post-release survivability of southern bluefin tuna.

35. Although there are limited studies available on post-release survival of southern bluefin tuna caught by troll, post-release mortality of juvenile Atlantic bluefin tuna, a closely related species, caught by U.S. recreational troll vessels was estimated using pop-up satellite tags in 2012. The estimated mortality rate was 0%, indicating that Atlantic bluefin tuna has a high post-release survival rate when caught by recreational troll (Marcek and Graves, 2014). This suggests that estimated post-release survival for southern bluefin tuna when taken by troll is also likely to be high, given its similar physiology.

6.2 Matters the Minister must have regard to in considering acceptable likelihood of survival under the first provision

Sustainability of the stock or species

36. The southern bluefin tuna stock has been under a rebuild since reaching a low point of 10% initial Total Reproductive Output[5] in 2009. The best available information on the global stock status of the stock comes from the 2023 stock assessment undertaken by the CCSBT (CCSBT-SC, 2023).

37. The 2023 stock assessment concluded that although the stock remains below the level that could produce maximum sustainable yield, the stock status has improved and continued to rebuild since the last assessment in 2020. The continued improvement in stock status indicates that the rebuilding plan is on track to achieve the objective of reaching 30% of unfished spawning stock biomass by 2035.

38. Given the improved status of the global stock, a TAC increase of 3000 tonnes was recommended for the 2024-2026 quota block, which was agreed to by the Extended Commission. This equates to an increase of 186 tonnes for New Zealand. FNZ is proposing to implement this change domestically as part of the April 2024 Sustainability Round.

Method by which the stock or species is taken

39. Based on observer data, NIWA's assessment concluded that the most important factor impacting post-release survival of surface longline caught southern bluefin tuna was injury status and hooking location (lower survival if fish are hooked in the gut). FNZ notes that surface longliners have been legally required to use circle hooks since August 2023, which reduces the likelihood of gut hooking.

40. In the 2022/23 October fishing year, the majority (95%) of southern bluefin tuna reported on surface longline catch effort forms[6] were caught in events with a soak time of 18 hours or more. Catch effort reports showed that 61% of troll caught southern bluefin tuna were caught in fishing events with a duration of 12 hours or less.[7] However, the NIWA assessment concluded that soak time had negligible impacts on post-release survival of southern bluefin tuna caught by surface longline, which is likely to apply to troll caught tuna as well.

41. Catch effort reports from the 2022/23 October fishing year, showed that 65% of trawl-caught southern bluefin tuna were caught in events with a total catch volume of ten tonnes or more, which could suggest that tuna caught in those events are subject to more crushing trauma which negatively impacts survival.

42. Most set net caught tuna were caught in events with a fishing duration (soak time) of 23 hours or more, which is likely to negatively impact survival as the tuna will have restricted movement for an extended period.

[5] Total reproductive output is the sum of reproductive output over all age classes weighted by their relative individual contribution to reproduction. Initial total reproductive output is a proxy measure for MSY (maximum sustainable yield) and is used to monitor stock size.
[6] Surface longline fishers are required to report all fish caught in each fishing event, regardless of end destination (whether it's landed or returned), on their catch effort form.
[7] Troll, trawl, set net and bottom longline fishers are only required to report the top five QMS species caught in each fishing event, and therefore, catch effort reports may not account for all southern bluefin tuna caught by these methods.

43. In the 2022/23 fishing year, there were only four bottom longline catch effort reports with southern bluefin tuna records. This southern bluefin tuna was taken in bottom longline events with a bottom depth recorded as 310 metres or more and over half (67%) in events with a fishing duration of 13 hours or more. Southern bluefin tuna are infrequently caught by bottom longline and the survivability for fish caught by this method is unknown. It is thought to be lower than for surface longline given the gear is typically set at greater depths and for long periods.

Handling practices for the stock or species taken

44. After a capture event, the time on deck, air exposure and handling methods can have a significant effect on post-release survival. If injuries are incurred, infection and predation can also become significant factors against survival upon return to sea.

45. For vessels without sea doors[8] or that don't often have their sea door open while fishing (i.e., troll vessels), observers say it is common for fishers to try to remove hooks from the tuna while it is still in the water prior to release. However, if this is not possible, gaffs, picks or other puncturing tools are commonly used to bring fish, particularly larger fish, on board first. This practice can injure the fish if done poorly (e.g., puncture vital organs), which can negatively impact post-release survival if the fish is then returned to the sea. Smaller tuna (less than 20kg) are sometimes pulled up by hand or hooked through the corner of the mouth (using a gaff), which lowers the risk of injury and is a quick and safe process when sea doors are used (where fish don't have to be lifted over the rail/side of the boat).

46. While the degree to which poor handling practices reduces survival has not been quantified, there is generally a strong consensus supporting the use of handling practices that increase post-release survival. FNZ considers this includes minimising aerial and sun exposure, avoiding the use of puncturing tools, and using de-hooking tools to remove hooks from jaws and mouth.

Social, cultural, and economic factors

47. Southern bluefin tuna are high-value target species for commercial fishers and kaimoana species for recreational and customary fishers.

48. Commercial fishers report that at times they encounter large numbers of small southern bluefin tuna that are not economically viable to process due to poor muscle quality. It is considered better to release these fish, which can be done quickly and safely, leaving the crew available and less fatigued for processing larger more profitable fish.

49. Due to the value of the southern bluefin tuna fishery, and New Zealand's obligations to manage the fishery to our CCSBT national allocation, deemed values[9] for the stock are high (Table 3). As a result, there is a significant financial impact associated with catching southern bluefin tuna without having ACE available to cover catch.

Table 3: Standard deemed value rates ($/kg) for southern bluefin tuna.

Stock	Interim rate ($/kg)	Annual differential rates ($/kg) for excess catch (% of ACE)					
		100-120%	120-140%	140-160%	160-180%	180-200%	>200%
STN 1	$42.2	$46.9	$56.3	$65.7	$75.1	$84.5	$93.8

50. Post-release survival of southern bluefin tuna caught by surface longline and troll is estimated to be high, and FNZ considers there to be economic benefits to enabling fishers to return live southern bluefin tuna.

[8] Sea doors are doors/gates on the railing of the vessel that provide easier access to fish being brought on board, and when in use, allow fishers to bring the fish to the deck of the vessel without having to lift/pull them over the railing.

[9] Deemed values are the price paid by fishers for each kilogram of unprocessed fish landed in excess of a fisher's Annual Catch Entitlement (**ACE**) holdings. The purpose of the deemed values regime is to provide incentives for individual fishers to acquire or maintain sufficient ACE to cover catch taken over the course of the year, while allowing flexibility in the timing of balancing, promoting efficiency, and encouraging accurate catch reporting.

51. FNZ considers methods other than surface longline and troll should be required to land all southern bluefin tuna, and note the financial implications mentioned above might impact fishers using those other methods. However, FNZ considers these impacts likely to be minor given the low volumes of southern bluefin tuna caught by methods other than surface longline and troll and that there have been no reported live returns of southern bluefin tuna by these methods over the last three fishing years.

52. FNZ considers that in scenarios where southern bluefin tuna have a high likelihood of survival, providing for its live return is likely to be of benefit to customary and recreational fishers as it increases the availability of southern bluefin tuna to those sectors.

6.3 Preliminary conclusion: FNZ considers southern bluefin tuna have an acceptable likelihood of survival when caught by surface longline and troll

53. FNZ considers that NIWA's 2023 assessment currently offers the best available information on post-release survival of southern bluefin tuna caught by surface longline. The assessment concluded that southern bluefin tuna have a high likelihood of post-release survival following capture by surface longline.

54. The NIWA assessment was unable to estimate the post-release survival of southern bluefin tuna caught by other methods due to the low volume of catches. Based on international research and the similarities of trolling and surface longline methods, FNZ considers that post-release survival of tuna caught by troll is also likely to be high.

55. FNZ considers that post-release survival of southern bluefin tuna caught by netting methods, such as trawl and set net, is likely to be low, as the species needs to maintain continuous swimming to breathe, and these methods restrict the ability of fish to swim. Southern bluefin tuna are very infrequently caught by bottom longline and post-release survivability is unknown.

56. FNZ proposes that an exception is provided for under the first exception provision, allowing commercial fishers to return live southern bluefin tuna caught by surface longline and troll.

57. FNZ is not proposing that an exception is provided for trawl or set net, based on low likelihood of survival, or any other method than surface longline and troll due to negligible or no catches of southern bluefin tuna being taken with other methods.

58. The Minister's decision whether to provide an exception or not must be made considering the purpose and principles of the Act. We assess this in Appendix One.

Conditions to the proposed exception

59. To maximise the likelihood of post-release survival, FNZ proposes that the exception for the permitted return of southern bluefin tuna is contingent on conditions that aim to reduce stress and injury of southern bluefin tuna, outlined in Table 4.

Table 4: Proposed conditions for the permitted return of live southern bluefin tuna caught by surface longline and troll.

Conditions		Rationale
1	Fishers must determine that a southern bluefin tuna is 'alive' and without obvious major external injuries immediately prior to return to the water from which it was taken.	Southern bluefin tuna initially assessed as alive, but not returned to the water immediately, may subsequently decline in vitality. Southern bluefin tuna displaying major external injuries (large open wounds, major bleeding, internal organs visible) must not be returned.
2	Southern bluefin tuna may be returned to the waters from which it was taken if the return occurs as soon as practicable after it was taken.	Excessive exposure to air, sunlight and temperature (time out of water) produces physiological stress that reduces post-release survival.

60. Due to the large size of southern bluefin tuna, gaffs, picks and other puncturing tools are commonly used on surface longline and troll vessels to bring these fish onboard the vessel and manoeuvre them (see section 6.2 of this paper). FNZs initial thoughts are that it would not be practicable to prevent the use of puncturing tools as it would require fishers to bring in and manoeuvre large fish (e.g., over 100 kg) by hand, which could cause risk to the health and

safety of the crew. However, given these tools can impact post-release survival, there may be benefits associated with either having best-practice guidelines for the use of these type of tools or including a condition to the exception that describes how puncturing tools should be used (e.g., what body part of the tuna should be punctured to reduce injuries) or restricting their use on smaller fish.

61. NIWA's assessment concluded that southern bluefin tuna that have been hooked in areas such as the gut, have a lower likelihood of post-release survival. However, the assessment noted that hooking in any other location other than the mouth/jaw was rare (<1% of observed southern bluefin tuna). The first condition relating to obvious major external injuries is proposed to manage this.

62. Given the two methods that the exception is proposed to apply to are methods where fish is brought on board one-by-one, fishers can remove the fish from the hook and return it immediately. Therefore, FNZ does not consider there to be any significant benefits in setting a specific timeframe for the returns (e.g., within 10-15 minutes of the fish being taken) and is instead proposing that the exception is contingent on the condition that fish is returned 'as soon as practicable'.

63. FNZ is seeking feedback on the proposed conditions, and on any additional conditions to increase likelihood of post-release survival, including whether the use of gaffs, picks and other puncturing tools should be restricted in addition to the proposed condition regarding major external injuries to improve likelihood of survival.

7 Fisheries Management implications

7.1 Reporting

64. FNZ proposes that if fishers are permitted to return live southern bluefin tuna caught by surface longline and troll, those returns should be reported under a specific disposal code. As most fish returned is expected to survive, surface longline and troll fishers would not be required to cover the returns with ACE or pay deemed values.

65. Commercial fishers using methods other than surface longline and troll (e.g., set net, trawl, bottom longline) would no longer be permitted to return southern bluefin tuna to the sea and the current disposal code ('X') would become invalid for these methods.

66. All dead southern bluefin tuna (including those caught by surface longline and troll) and all live southern bluefin tuna caught by methods other than surface longline and troll would be required to be landed and catches balanced with ACE or pay deemed values.

67. FNZ notes that due to the physical similarities between southern bluefin tuna and Pacific bluefin tuna, it can be hard to distinguish between the two species. As FNZ is also consulting on fishers' ability to return Pacific bluefin tuna[10], enabling the return of both species may result in some accidental misreporting of the species that are returned to the sea. If provided for, FNZ would monitor returns of southern and Pacific bluefin tuna to verify species identification to inform potential management implications (e.g., ensuring the allowance for other sources of mortality from fishing is appropriately set for both stocks).

7.2 Sustainability measures

68. Under the current sustainability measures, the authorised return of live southern bluefin tuna is not specifically accounted for within the TACC for the stock as these fish are alive at the time of return and have been considered likely to survive.

69. However, all live returns will have a certain level of incidental mortality, which is accounted for within the allowance for other sources of mortality caused by fishing. This allowance provides for unrecorded mortality of fish associated with fishing activity (e.g., misreporting, post-release mortality, predation). The current allowance is set at 20 tonnes, which equates to approximately 2% of the TACC (Table 5).

[10] https://www.mpi.govt.nz/consultations/commercial-fishers-landing-exception-pacific-bluefin-tuna/

Table 5: TACC, Allowance for other sources of mortality caused by fishing accounted for within the TAC and reported returns (all fishing methods) for STN 1 (from the 2022/23 October fishing year).

TACC (tonnes)	Other sources of mortality caused by fishing (tonnes)	Reported returns under code 'X' (tonnes)
1046	20	57

70. FNZ notes that, in the 2022/23 October fishing year, reported returns were significantly greater than the allowance for other sources of mortality caused by fishing. However, given the high likelihood of survival associated with the main catch methods, FNZ considers that the current allowance appropriately accounts for incidental mortality associated with the returns, as well as other unrecorded mortality associated with fishing (as listed above).

71. The proposed exception is unlikely to significantly impact the overall mortality of southern bluefin tuna associated with commercial fishing as fishers are currently allowed to return live fish, and incidental mortality is already accounted for within the TAC.

72. Fishers using methods other than surface longline and troll would be required to land all fish and balance it with ACE or pay deemed values. However, as other methods only account for a negligible proportion of the overall returns of southern bluefin tuna (1%), FNZ expects only a slight increase in southern bluefin tuna landings because of the proposal in this paper.

73. FNZ does not expect the value of ACE to increase because of the proposed exception, as it essentially retains the current status given surface longline and troll represent the majority of current returns. Fishers using methods other than surface longline and troll may need to acquire more ACE, or pay deemed values, to account for an increase in landings.

74. FNZ notes that as the stock is rebuilding, it is expected that fishers will continue to encounter larger volumes of smaller fish, and therefore landing and/or returns of southern bluefin tuna may increase in the future. FNZ will monitor the volume of returns going forward to ensure the allowance for other sources of mortality caused by fishing appropriately accounts for incidental mortality associated with live returns of southern bluefin tuna.

75. Irrespective of this exception review, FNZ will continue to monitor changes in southern bluefin tuna abundance, catch, returns (and adherence to any exception conditions), landings and ACE prices, and undertake reviews of stock sustainability measures, including deemed values, where appropriate. Ministerial decisions on whether to provide an exception for the live return of southern bluefin tuna would inform any review of sustainability measures. If needed, sustainability reviews and associated consultation processes would be undertaken separately to this Commercial Landing Exception Review.

8 Engagement to date

76. FNZ held discussions about the broader implementation programme of the new landing and discard rules with operating Iwi Fisheries Forums, Te Ohu Kaimoana and representatives from environmental organisations, industry, commercial and recreational fishers in late 2022.

77. A range of views and perspectives were heard from Te Ohu Kaimoana, individuals from the Iwi Fisheries Forums, Te Rūnanga o Ngāi Tahu, and individual Māori commercial and customary fishers on the overarching changes to the landing and discard rules (i.e., non-specific to southern bluefin tuna), including that:

a) tikanga should provide for commercial fishers to return fish to the sea that are likely to survive,

b) fish that will not be used when landed and could end up in landfill is contrary to tikanga,

c) fish caught are a gift from Tangaroa and should be fully used, and

d) returned fish should not be alienated from their whakapapa, that is, fish should be returned close to where they were caught.

78. Te Ohu Kaimoana have noted that:

"The tikanga of 'kaua e moumou' (do not be wasteful) is important and ensuring that there is best practice for ensuring minimal fish are required to be discarded is paramount. We believe this is met by current reporting requirements (including cameras on boats) that all fish caught must be recorded. This will in turn trigger existing mechanisms to minimise excess harvest.

In te ao Māori, this concept is captured by "mā Tangaroa āna uri e tiaki" (Tangaroa shall care for its descendants), which encapsulates the ocean ecosystem as the appropriate place for any unwanted catch to be returned rather than landed and alienated from its whakapapa."

79. This context is relevant in understanding and assessing the effect of the proposal on Māori rights and interests. FNZ also notes that as a part of the Treaty of Waitangi (Fisheries Claims) Settlement Act 1992, Māori agreed to endorse the QMS as the lawful and appropriate regime for the sustainable management of commercial fishing in New Zealand. Under the principles of the QMS and as set out in the Act, harvest controls are primarily focused on the volume of fish that can removed from the system and commercial fishers must land all QMS fish that are caught unless an exception is provided for. The general obligation for commercial fishers to land all QMS fish has not changed, but when an exception can be provided for has.

80. In advance of this public consultation, FNZ sent out a summary of the upcoming southern bluefin tuna exception review to Iwi Fisheries Forums and offered an opportunity to discuss the proposal. FNZ sought input on the ability of commercial fishers to return southern bluefin tuna to the sea, and welcomed any information on survivability, specific handling practices that support their safe return, and any social, cultural, and economic factors considered relevant. FNZ received no feedback prior to the publication of this paper.

9 Questions for submitters

81. FNZ welcomes feedback on the assessment of southern bluefin tuna against the new exception provisions. Please provide detailed information and sources to support your views where possible.

Survivability

- Do you agree with the characterisation of post-release survivability of southern bluefin tuna?
- Do you agree that the survivability of southern bluefin tuna caught by bottom longline is lower than surface longline?
- Do you have additional information on post-release survivability of southern bluefin tuna and the methods, conditions and practices that may improve survivability?
- Do you agree with the proposed exception conditions to improve likelihood of survival?

Impact

- How would requiring all southern bluefin tuna caught in methods other than surface longline and troll to be landed affect your fishing practices or operations?
- What further information do you have that might inform the Minister's decision?

Conditions

- Do you think the use of puncturing should be restricted given the proposed condition that southern bluefin tuna with obvious major external injuries cannot be returned?
    - If yes, then do you think it should be restricted through placing a condition on the exception or through encouraging the use of best-handling practices (e.g., avoiding use where possible, only puncturing certain location on the fish).
- Do you have any additional information relevant to the consideration of conditional use of gaffs, picks, and other puncturing tools for southern bluefin tuna?

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Appendix One: Fishery information

Commercial Fisheries[11]

82. Southern bluefin tuna are predominately caught by the commercial surface longline fishery (98% in the last three fishing years), either as a target species or bycatch in domestic surface longline fisheries targeting bigeye tuna/swordfish and yellowfin tuna. The remainder of the catch (2%) is caught by troll and midwater trawl (Table A1).

Table A1: Average percentage of catch by different fishing methods (the three-year average for the 2020/21 to 2022/23 October fishing years). Only methods accounting for >1% of catch are shown.

Fishing method	Average catch (%)
Surface longline	98
Troll	1
Midwater trawl	1

83. Live returns make up a small proportion (4% on average over the last three October fishing years) of total catch[12] (Table A2) and are primarily caught by surface longline gear (94%) and troll (5%). This means that most southern bluefin tuna are retained and subsequently landed by fishers. However, live returns have increased in recent years, which is likely attributed to larger numbers of smaller fish being present in the fishery as it rebuilds.

Table A2: Reported returns (under disposal code 'X') as a percentage of southern bluefin total catch* for the last three complete October fishing years.

October fishing year	Reported returns as a % of total catch*
2020/21	2%
2021/22	5%
2022/23	5%
Three-year average	4%
*Total catch is defined as catch reported as landed plus returned under disposal code 'X'.	

Recreational interests

84. Recreational interest in this fishery has continued to grow, with a significant increase in recreational fishing activity since 2017 (Figure A1). The increase in fishing effort and catch in recent years can largely be attributed to a higher number of fishers and increased availability of fish within range of vessels. This is likely due to favourable weather conditions and abundance of forage species, as well as exposure to the fishery on social media and the relative proximity of the fish to shore (Holdsworth, 2022).

85. The variability in estimated recreational catches reflects the highly migratory nature of these fish, and the fact that the recreational fishers have a relatively short window for targeting southern bluefin tuna that can be easily disrupted by unfavourable weather conditions.

[11] Information in this section references the FNZ November Fisheries Assessment Plenary (2023).
[12] Total catch is defined as catch reported as landed plus catch returned under disposal code 'X'.

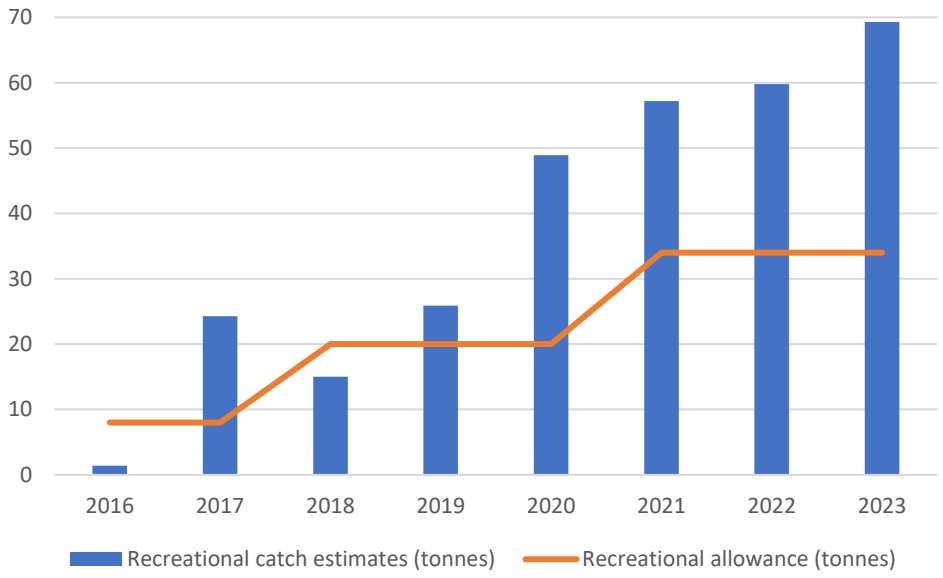

Figure A1: Recreational catch estimates vs recreational allowance, 2016 – 2023. All weights in tonnes.

Appendix Two: Statutory considerations

86. The Minister's decision whether to provide an exception or not must be made considering the purpose and principles of the Act. Our initial assessment of the proposal in relation to statutory considerations is discussed below. A more detailed description of these considerations is provided in: "Fisheries New Zealand review of commercial landing exceptions - Overview of policy context and legislative requirements in relation to exception reviews".

Purpose of the Act

87. Due to the estimated high likelihood of post-release survival, providing for the return of live southern bluefin tuna caught by surface longline and troll is likely to have a positive impact on the overall sustainability of the stock as it provides fishers with an additional tool to limit their commercial catches within the available ACE. Furthermore, it will have utilisation benefits as commercial fishers will be able to return small live fish (i.e., less than 90 cm in length) that have poorer muscle quality than larger fish and attract lower market prices that typically don't cover operational costs.

88. FNZ considers that the proposed exception will likely support Māori customary and recreational access to southern bluefin tuna, as returning commercially caught southern bluefin tuna that is alive and has a high likelihood of post-release survival is beneficial to the health of the stock and will increase availability of the species to the sectors.

89. The provision is unlikely to have a negative impact on the overall sustainability of the southern bluefin tuna stock as any fish returned must be alive, and incidental mortality will be accounted for within the allowances of the TAC of the stock. All southern bluefin tuna caught by methods other than surface longline and troll, and all dead Pacific bluefin tuna caught by any method (including surface longline and troll) must be landed and will be required to be balanced with ACE or incur deemed values.

International obligations

90. Southern bluefin tuna is internationally managed by the CCSBT, of which New Zealand is a founding member and a range state for this highly migratory species. The CCSBT sets the global TAC using a science-based Management Procedure that is designed to ensure that the southern bluefin tuna spawning stock biomass achieves the CCSBT's rebuilding target. Under the adopted Management Procedure, the TAC is set in three-year quota periods which is then allocated to individual member countries.

91. Under the CCSBT, all members have a binding obligation to manage their catch of southern bluefin tuna within their national allocation. Members must account for all sources of mortality of southern bluefin tuna, including those related to discards, customary, commercial, and recreational fishing. Providing for the conditional return of southern bluefin tuna from methods with high likelihood of post-release survival will support New Zealand's obligations of managing southern bluefin tuna harvest and the rebuild of the fishery.

Treaty of Waitangi (Fisheries Claims) Settlement 1992

92. The proposal in this paper do not impose restrictions on non-commercial customary fishing rights, which are authorised by kaitiaki.

93. Māori have commercial interests and own Settlement quota in the southern bluefin tuna stock. FNZ considers that providing for a commercial landing exception for the return of live southern bluefin tuna, caught by surface longline and troll, will allow for better commercial utilisation the stock as fishers will be able to return small, less valuable fish, if alive. Not providing for returns of southern bluefin tuna from methods other than surface longline and troll may affect some commercial fishers' operations. However, FNZ considers impacts likely to be negligible due to the small volume of southern bluefin tuna that is caught by these other methods.

94. As discussed in section 8 of this paper, FNZ acknowledges the views raised by Māori previously on the need to protect Māori rights and interests, during the development and

following the enactment of the Fisheries Amendment Act 2022. FNZ's initial assessment is that the proposed exception to allow commercial fishers to return live southern bluefin tuna caught by surface longline and troll, would support the long-term value of the 1992 Settlement and Māori interests.

Environmental principles

Associated or dependent species

95. The attraction of seabirds to vessels when fish are returned to the sea can result in their injury or death following interaction with fishing gear (e.g., entanglement, capture). FNZ does not consider that the proposal will result in changes to fishing behaviour or effort, or an increase in the volume of southern bluefin tuna returned to the sea, as it does not significantly change the status quo.

96. As Southern bluefin tuna are an apex predator and their presence has a top-down effect on the food chain in the waters they pass through. Southern bluefin tuna are likely predated on by a range of active predators, including toothed whales and certain shark species at different life history stages. There is no evidence indicating a dependence on southern bluefin tuna as a key prey species.

97. FNZ considers that providing prey to associated and dependent species, and maintaining food chain relationships, is better addressed by maintaining the overall abundance of southern bluefin tuna in the sea through the setting of sustainable catch limits rather than through the provision of an exception.

Biological diversity

98. It has been suggested that the decline of large pelagic predatory fish such as southern bluefin tuna, can result in rapid increase of medium size predator populations, which can cause sudden changes in the structure of ecosystems, including a reduction in prey species (Kitchell et al. 2002, Ferretti et al. 2010). Providing for the return of live southern bluefin tuna would likely support the rebuild of the global population and therefore could have benefits for biological diversity in the pelagic ecosystems. However, any impact in the New Zealand context might be limited given seasonal presence of southern bluefin tuna in New Zealand waters.

Habitats of particular significance

99. Southern bluefin tuna are highly migratory species that traverse between the high seas and states' exclusive economic zones throughout the southern hemisphere. There are no known habitats of particular significance for southern bluefin tuna in New Zealand waters.

100. The proposal outlined in this paper is not expected to result in an increase in fishing activity (for any method) or changes to where those methods occur, as live releases of southern bluefin tuna is already possible, and the proposed exception would continue to allow for these returns from the methods that account for majority of southern bluefin tuna returned currently. Furthermore, surface longline gear, which is the method by which the majority of southern bluefin tuna are caught, is set at relatively shallow depths and is therefore very unlikely to have an impact on any habitat of particular significance.

101. FNZ is working toward identifying habitats of particular significance as part of a separate process and impacts on these habitats will be more generally considered as part of that process.

Information principles

102. The best available information on stock status of the stock comes from the 2023 global stock assessment undertaken by (CCSBT Scientific Committee (CCSBT-SC, 2023). After reaching a low point in 2009, the stock has been rebuilding, with the 2023 assessment indicating continued improvement in stock status since the last assessment in 2020. The stock status appears to be on track to achieving the management procedure objective of 30% of the total reproductive output by 2035.

103. The best available information on post-release survival of southern bluefin tuna indicates that southern bluefin tuna caught by surface longline have a high likelihood of survival when returned to the sea alive. However, this likelihood of survival has been assessed to be negatively affected if the fish has a severe injury (Moore and Finucci, in press). No post-release survival estimates were provided for other methods due to the low volume of catches. However, given similarities between troll and surface longline, post-release survivability of southern tuna caught and returned by troll is expected to be high.

104. FNZ considers that the proposal to provide for an exception to allow commercial fishers to return live southern bluefin tuna caught by surface longline and troll supports a precautionary approach to the management of the southern bluefin tuna stock, by enabling a reduction in mortality caused by fishing, while more accurately reflecting and accounting for associated post-release survival rates under New Zealand harvest conditions.