



Commercial Landing Exception: Pacific bluefin tuna

Fisheries NZ Discussion Paper No: 2023/24

ISBN No: 978-1-991120-39-7 (online)
ISSN No: 2624-0165 (online)

December 2023

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Pacific bluefin tuna (TOR1) – all quota management areas

Thunnus orientalis, Pacific bluefin tuna

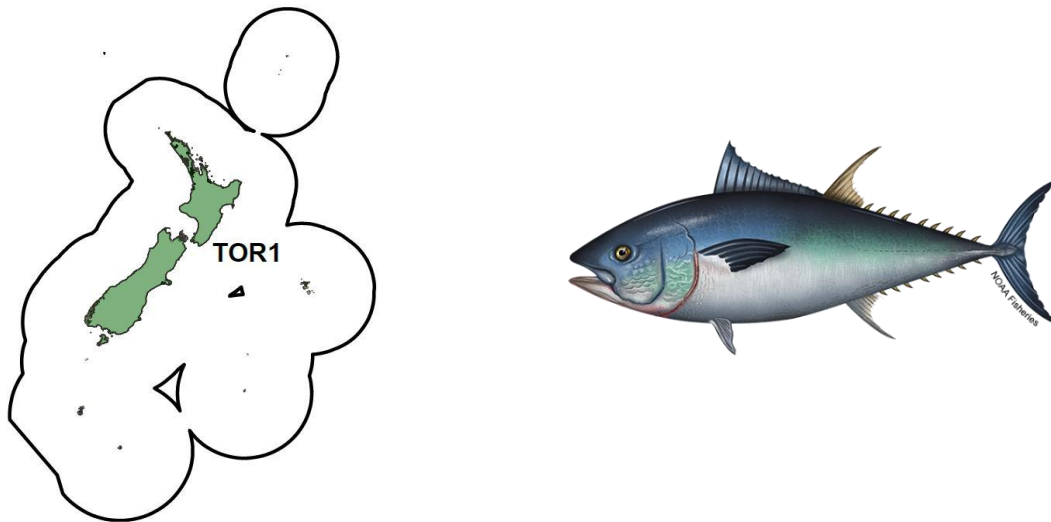


Figure 1: Quota Management Areas (QMAs) for Pacific bluefin tuna (TOR).

1 Purpose

1. Fisheries New Zealand (FNZ) is assessing a request for a commercial landing exception that would allow fishers to return Pacific bluefin tuna to the sea if likely to survive.
2. In advance of public consultation, FNZ sent out a summary of the proposed exception for the live return of Pacific bluefin tuna to Iwi Fisheries Forums and sought input. Engagement to date is discussed in section 8 of this paper.
3. FNZ welcomes feedback and submissions on this review, including survivability of Pacific bluefin tuna caught and returned by different methods and in different conditions, and specific handling practices that support the safe return of Pacific bluefin tuna.
4. FNZ invites you to make a submission on the proposal set out in this discussion document. Consultation closes at 5pm on 9 February 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 **Fisheries 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.
6. Currently, commercial fishers are required to land all Pacific bluefin tuna caught, and balance the weight caught with Annual Catch Entitlement (**ACE**) or pay deemed values.
7. In New Zealand, Pacific bluefin tuna are almost exclusively taken as bycatch by surface longline vessels targeting other species of tuna or swordfish. Catches of Pacific bluefin tuna have historically been relatively low, but a significant increase in catches was seen in the 2022/23 October fishing year. The increased catches are considered to be the result of an increased abundance of the stock, which has been under a rebuild since the 1980s, noting that changing oceanographic conditions may also play a role.

8. To support the ongoing rebuild of the stock and enable fishers to manage their catches, FNZ received a request to assess a commercial landing exception, against section 72A(2)(a) of the Fisheries Act, to allow fishers to return live Pacific bluefin tuna.
9. Pacific bluefin tuna are considered a relatively hardy species and able to heal fairly quickly. Research commissioned by FNZ concluded that Pacific bluefin tuna caught by surface longline have a 'high' likelihood of post release survival, if they don't have any major injuries.
10. Although there have not been troll catches of Pacific bluefin tuna in the last three fishing years, there has been a recent increase in southern bluefin tuna catches by troll. Given Pacific bluefin tuna is caught in close association with other large tuna species, such as southern bluefin, FNZ considers troll catches of Pacific bluefin tuna may increase in the future given increasing abundance. Based on international research of post-release survival of similar species, and the similarities of troll methods with surface longline, FNZ considers that post-release survival of Pacific bluefin tuna caught by troll is likely to be high.
11. Consequently, FNZ proposes that an exception is provided under section 72A(2)(a) of the Fisheries Act, to allow commercial fishers to return live Pacific bluefin tuna caught by surface longline and troll to the sea.
12. FNZ does not consider that a review of current sustainability measures (i.e., catch limits and deemed value rates) is required because of this exception, as the proposed exception is unlikely to significantly change catches of Pacific bluefin tuna and returning live Pacific bluefin tuna to the sea means overall mortality for the stock is likely to reduce given the estimated high likelihood of post-release survival. However, as fishers are not currently allowed to return live Pacific bluefin tuna, FNZ is unable to accurately estimate potential volumes of returns that might be made under the proposed exception. To ensure incidental mortality associated with live returns are appropriately accounted for, FNZ will monitor the volume of Pacific bluefin tuna returned to the sea under the proposed exception.
13. FNZ is planning to review the domestic catch settings as a part of the October 2024 sustainability round to align it with New Zealand's national limit set by the Western and Central Pacific Fisheries Commission (**WCPFC**) (see section 6.2 of this paper).

3 Problem statement

14. The Pacific bluefin tuna stock has been gradually increasing over the last decade, with a significant increase in catches in the 2022/2023 October fishing year¹. The increased catches are likely the result of an increased abundance of the stock, which has been under a rebuild since the 1980s, and it is likely that commercial fishers will continue to catch increasing volume of Pacific bluefin tuna.
15. To support the ongoing rebuild of the stock and enable fishers to manage their catches of Pacific bluefin tuna, FNZ received a request to assess whether the live return of Pacific bluefin tuna meets the new relevant provision under s72A of the Fisheries Act (s72A(2)(a)).

4 Policy context and legal framework

16. Section 72 of the Fisheries Act establishes the general obligation on commercial fishers to not return or abandon QMS species to sea or waters from which they are taken unless there is an exception.
17. Currently, commercial fishers are required to report and land all Pacific bluefin tuna caught, and balance the weight caught with ACE or pay deemed values.

¹A significant increase in catches has also been observed in the Australian surface longline fishery.

18. Under section 72A, the Minister may require or permit fish or other animals that are aquatic life to be returned or abandoned and may make instruments for the purposes of section 72(2) or 72(3). An instrument made under section 72A(2)(a) 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 exception provision'**).
19. 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](#)".

5 Pacific bluefin tuna fishery information

20. Pacific bluefin tuna are highly migratory species, meaning they swim long distances and move between different countries' jurisdictions and the high seas (Shimose & Farly, 2015). Pacific bluefin tuna are managed as a singular stock throughout the Pacific Ocean, with the management of the species overseen jointly between the WCPFC and the Inter-American Tropical Tuna Commission (**IATTC**). Pacific bluefin tuna commonly school with other species of tuna in the upper layers of the water column (Kitagawa et al., 2017).
21. To assess the proposed exception to allow commercial fishers to return live Pacific bluefin tuna to the sea, it is important to understand the volume of catches and the method(s) the species is taken by.

5.1 Commercial fisheries

22. In the last three complete October fishing years (2020/21 to 2022/23), 99% of Pacific bluefin tuna was taken as bycatch by surface longline vessels targeting other species of tuna and swordfish, with minor bycatches (1%) reported from midwater trawl and set net.
23. In the last decade, commercial catches of Pacific bluefin tuna have significantly increased, from a low of 12 tonnes in 2013/14 to a high of 103 tonnes in 2022/23 (Figure 2).

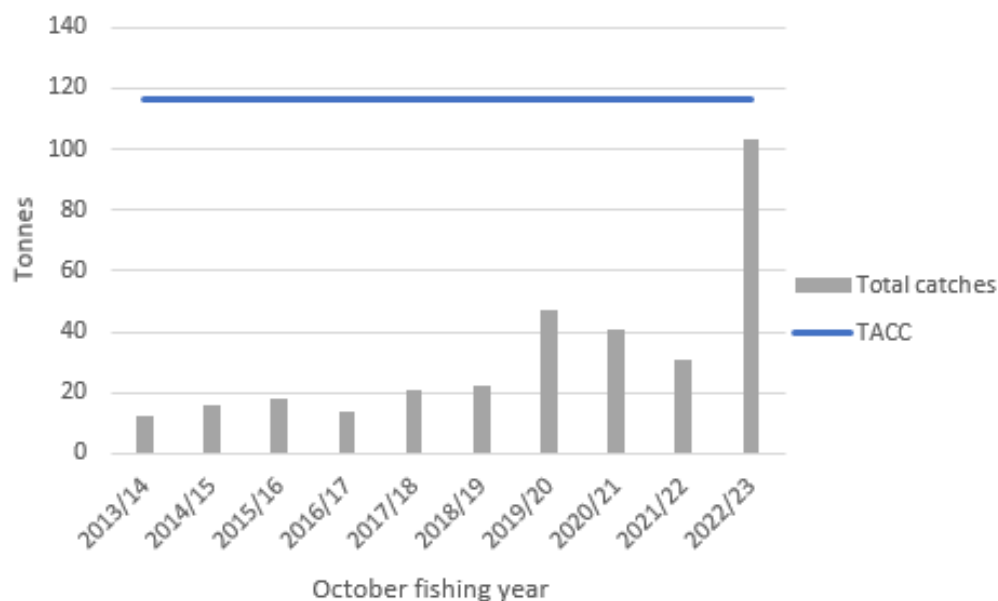


Figure 2: TACC and total catches of Pacific bluefin tuna in the last ten complete October fishing years.

5.2 Non-commercial interests

Recreational fisheries

24. As with other tuna species, Pacific bluefin tuna are a valued game species for recreational fishers. There are no estimates available on the total estimated recreational harvest of Pacific bluefin tuna.

Customary non-commercial fisheries

25. There are no records held by FNZ of Pacific bluefin tuna being taken under customary authorisation. However, given that there is no recreational bag limit for Pacific bluefin tuna, it is plausible that customary catch may be taken under amateur fishing regulations.

6 Providing an exception under the first provision: should commercial fishers be allowed to return Pacific bluefin tuna because of an acceptable likelihood of survival?

26. FNZ's working definition of "acceptable likelihood of survival" 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 Pacific bluefin tuna influencing post-release survival

27. Pacific 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 & Dickson, 2004). These fish have large hearts and high blood flow, traits which assist them in recovering quickly from exhaustive exercise (Brill, 1996).
28. Based on the physiological characteristics of Pacific bluefin tuna, they are considered a relatively robust species and, when handled appropriately, likely to survive catch and release by fishers, although rate of survivability is likely 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, which can influence the results.
30. There is currently no empirical research on post-release survival rates of Pacific bluefin tuna caught by commercial vessels.
31. Research commissioned from the National Institute of Water and Atmospheric Research (NIWA) concluded that Pacific bluefin tuna caught by surface longline in New Zealand waters have a 'high' likelihood of post-release survival when returned to the sea. The analysis showed that Pacific bluefin tuna that have been hooked in the gut or that had visible major injuries had 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 (Moore and Finucci, in press 2024).
32. These results are aligned with international studies on post-release survival of other tuna species caught and released by commercial surface longline vessels, reflecting the relative

robustness of large tuna species (Harley et al., 2008; Sakai & Itoh, 2013; Patterson & Hansen, 2016).

33. Minor bycatches (1%) of Pacific bluefin tuna are reported from midwater trawl and set net. However, the NIWA analysis was unable to assess post-release survival of Pacific bluefin tuna caught by methods other than surface longline due to low volume of catches. Based on the physiology of the species, especially the need for these fish to swim continuously to get a constant supply of water over their gills to breathe, FNZ considers that post-release survivability of Pacific bluefin tuna caught and returned by trawl and set net is likely to be lower than for surface longline, as their ability to swim will be restricted when caught by these methods.
34. FNZ notes that although there have been no reported catches of Pacific bluefin tuna by troll in the last three fishing years, that may change in the future as abundance of the species continues to increase, as has been the case through the southern bluefin tuna rebuild. There are no studies available on post-release survival of Pacific bluefin tuna caught by troll, but 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 & Graves, 2014).

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

35. Pacific bluefin tuna in New Zealand belong to a single pacific-wide stock managed by WCPFC.
36. The Pacific bluefin tuna stock has been under a rebuild since the 1980s, with biomass gradually increasing over the last decade, accelerating over time. Biomass increases are a result of a decline in fishing mortality, particularly for juvenile fish (aged 0 to 3). However, the stock only sits at 10.2% of the estimated unfished biomass for the species and is considered overfished by WCPFC (WCPFC, 2023).
37. Given the status of the stock, WCPFC recommends members take a precautionary approach to stock management for Pacific bluefin tuna.
38. Currently, the TACC for Pacific bluefin tuna (116 t) is set above New Zealand's national limit set by the WCPFC (63.23 t). However, FNZ is planning to review the domestic catch settings as part of the October 2024 sustainability round to address alignment with the WCPFC limit.
39. The WCPFC stock assessment for Pacific bluefin tuna is due in 2024 and is likely to confirm that rebuilding of the stock is on target. In this context, it is expected that the current measure for Pacific bluefin tuna will be renegotiated, with New Zealand advocating for an increase in its current limit.

Method by which the stock or species is taken

40. Based on observer data, NIWA's assessment concluded that the most important factor impacting Pacific bluefin tuna post-release survivability when caught by surface longline was injury status and hooking location (lower survival if fish are hooked in the gut). However, FNZ notes that surface longliners have been legally required to use circle hooks since August 2023, which reduces the likelihood of gut hooking. While 97% of Pacific bluefin tuna caught by surface longline was caught in events with a duration of 18 hours or more in the 2022/23 October fishing year, the NIWA assessment concluded that soak time (fishing duration) had negligible impacts on post-release survival.
41. As Pacific bluefin tuna need to swim continuously to be able to breathe, post-release survival is likely negatively impacted by total trawl catch weight and haul or set net soak time. In 2022/23, all Pacific bluefin tuna caught by midwater trawl was caught in events with a total catch volume

greater than 30 tonnes, which could suggest that tuna caught in those events are subject to more crushing trauma and therefore, could have lower likelihood of survival. All Pacific bluefin tuna caught by set net was caught in events with a soak time of 8 hours or more, which is likely to negatively impact survival as the tuna will have restricted movement for an extended period (depending on when in the event they were caught).

Handling practices for the stock or species taken

42. 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 pre-release, infection and predation can also become significant factors against survival upon return to sea.
43. Anecdotal information from observers indicates that gaffs and picks are commonly used to get larger fish on board surface longline vessels whereas smaller tuna (less than 20kg) can be pulled up by hand or hooked through the corner of the mouth (using a gaff) to retrieve fishing gear. This is a quick and safe process on surface longline vessels when sea doors are used. For vessels without sea doors, or that don't often have their sea door open while fishing (i.e., troll vessels) observers have indicated that it is more common for fishers to try to remove fishing gear while the fish is still in the water. However, if this is not possible, they may use a gaff to bring the fish on board.
44. While the degree to which poor handling practices reduces survival has not been quantified, there is generally a strong consensus supporting the use of best practice handling to 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 longline hooks from jaws and mouth. FNZ will monitor the use of best-practice handling practices for the return of Pacific bluefin tuna to assess whether there is a need for developing specific guidelines.

Social, cultural, and economic factors

45. Pacific bluefin tuna is taken as bycatch by surface longline vessels targeting other, often high-value, tuna species. The increasing abundance of Pacific bluefin tuna, and subsequent likely increase in catch, coupled with the relatively low TACC set for the stock as it's under a rebuild, may constrain the ability for fishers' to continue catching their main target species, both through the cost of having to pay deemed values for catches of Pacific bluefin tuna in excess of available ACE, as well having reduced storage capacity on vessels for target species due to Pacific bluefin tuna catches.
46. Given the estimated high likelihood of post-release survival of Pacific bluefin tuna caught by surface longline and troll, FNZ considers there to be economic benefits to enabling fishers to return live Pacific bluefin tuna as it provides them with a tool to manage their catches within available ACE. Furthermore, providing for live returns from surface longline will support the continued rebuild of the stock and support New Zealand to manage the fishery within our national allocation.
47. FNZ considers that in scenarios where Pacific bluefin tuna have a high likelihood of survival, providing for its live return by commercial fishers is likely to be of benefit to customary and recreational fishers as it increases the availability of Pacific bluefin tuna to other sectors.

6.3 Preliminary conclusion – FNZ considers Pacific bluefin tuna have an acceptable likelihood of survival when caught with surface longline and troll

48. FNZ considers that NIWA's assessment currently offers the best available information on post-release survival of Pacific bluefin tuna caught and returned by surface longline. The analysis concluded that Pacific bluefin tuna have a high likelihood of post-release survival when caught by surface longline and returned alive.
49. Although no Pacific bluefin tuna have been reported as caught by troll in the last three fishing years, FNZ considers troll catches may increase in the future, given Pacific bluefin tuna are

caught in close association with other large tuna species, and abundance is increasing. Based on international research of post-release survival of similar species, and the similarities of troll methods with surface longline, FNZ considers that post-release survival of Pacific bluefin tuna caught by troll is also likely to be high.

50. WCPFC considers that Pacific bluefin tuna is overfished and recommends members take a precautionary approach to management of the stock. FNZ considers that providing for the live return of Pacific bluefin tuna caught by surface longline, which is estimated to have a high likelihood of post-release survival, supports a precautionary approach to the management of the species, and provides fishers with a tool to manage their catches within available ACE.
51. Based on the above, FNZ proposes that an exception is provided for under the first provision, allowing commercial fishers to return live Pacific bluefin tuna caught by surface longline and troll.
52. 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 Pacific bluefin tuna being taken with other methods.
53. 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

54. To maximise the likelihood of post-release survival, FNZ proposes that the exception for the permitted return of Pacific bluefin tuna be contingent on conditions that aim to reduce stress and injury of Pacific bluefin tuna, outlined in Table 1.

Table 1: Proposed conditions for the permitted return of live Pacific bluefin tuna caught by surface longline and troll.

Conditions		Rationale
1	Fishers must determine that the Pacific bluefin tuna is 'alive' and without obvious major external injuries immediately prior to return to the water from which it was taken.	Pacific bluefin tuna initially assessed as alive, but not returned to the water immediately, may subsequently decline in vitality. Pacific bluefin tuna displaying major external injuries (large open wounds, major bleeding, internal organs visible) must not be returned.
2	Pacific 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.

55. Due to the large size of Pacific 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). FNZ's initial thoughts are that it would not be practicable to condition the use of gaffs and puncturing tools. However, given these tools can impact the likelihood of post-release survival, there may be benefits associated with either having best-practice handling guidelines for these tools or including a condition to the exception that describes how puncturing tools should be used (e.g., what location of the tuna should be punctured to reduce injuries) or restricting their use on smaller fish.
56. FNZ is seeking feedback on the use of gaffs, picks and other puncturing tools, the impacts of these tools on Pacific bluefin tuna being returned to the sea, and whether the use of these tools should be restricted under a condition for the purpose of this exception.
57. NIWA's assessment concluded that Pacific bluefin tuna that have been hooked in areas other than the mouth or jaw (e.g., gill, gut and foul hooked) have a lower likelihood of post-release survival. However, the assessment noted that for southern bluefin tuna, a similar species, hooking in any other location other than the mouth/jaw was rare (<1% of observed southern

bluefin tuna). FNZ is seeking feedback on whether hooking location should be a condition of the exception (e.g., only allowing return of live tuna that has been hooked in the mouth or jaw).

7 Fisheries Management implications

7.1 Reporting

58. Should the ability to return Pacific bluefin tuna to the water be provided for, FNZ proposes that fishers would be required to report these returns under a specific disposal code. As most of the fish returned are expected to survive, surface longline and troll fishers would not be required to cover the returns with ACE or pay deemed values.
59. FNZ notes that due to the physical similarities between Pacific bluefin tuna and southern bluefin tuna, it can be hard to distinguish between the two species. As FNZ is also consulting on whether fishers' ability to return southern bluefin tuna should continue, 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 Pacific and southern 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

60. Under the current rules, fishers are required to land and balance all Pacific bluefin tuna catches.
61. Even though Pacific bluefin tuna has a high likelihood of post-release survival when caught and returned by surface longline and troll, there would be a level of incidental mortality associated with these types of returns. The allowance for other sources of mortality from fishing accounts for unrecorded mortality of fish associated with fishing activity, including misreporting, predation, and incidental mortality of returned fish. For Pacific bluefin tuna, this allowance is currently set at 3.5 tonnes, which equates to approximately 3% of the TACC.
62. FNZ considers that the current allowance for other sources of mortality from fishing is likely to appropriately account for potential incidental mortality associated with the returns. However, given uncertainties in the level of returns if the exception is provided for, FNZ will monitor the volume of returned Pacific bluefin tuna to ensure the TAC and allowances are appropriately set going forward.
63. Providing for the live return of Pacific bluefin tuna caught by surface longline and troll is unlikely to change the value of ACE as it will provide fishers with the ability to constrain their catches to available ACE.
64. Irrespective of this exception review, FNZ will continue to monitor changes in Pacific bluefin tuna abundance, catch, returns and adherence to exception conditions, landings, and ACE prices, and undertake reviews of stock sustainability measures, including deemed values, where appropriate. As noted in section 6.2 of this paper, FNZ is planning to review the domestic catch settings as a part of the October 2024 sustainability round to align it with New Zealand's national limit set by WCPFC.

8 Engagement to date

65. In advance of this public consultation, FNZ sent out a summary of the proposed exception for Pacific bluefin tuna to Iwi Fisheries Forums and offered an opportunity to discuss the proposal. FNZ sought input on the ability of commercial fishers to return Pacific 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

66. Fisheries New Zealand welcomes feedback on the assessment of Pacific bluefin tuna against the exception provision. Please provide detailed information and sources to support your views where possible.

Survivability

- Do you agree with the characterisation of post-release survivability of Pacific bluefin tuna?
- Do you have additional information on post-release survivability of Pacific 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 does the requirement to land all Pacific bluefin tuna affect your fishing practices and operation?
- How would the ability to return live Pacific bluefin tuna impact your fishing practices and operation?
- What further information do you have that might inform the Minister's decision?

Conditions

- Do you agree with the proposed conditions for the permitted return of live Pacific bluefin tuna caught by surface longline and troll?
- Do you think gaffs, picks and other puncturing tools should be allowed to be used when lifting or moving Pacific bluefin tuna that will be returned to sea?
 - Should it be managed through a condition on the exception or through encouraging the use of best-handling practices?
- Do you have any additional information relevant to the consideration of conditional use of gaffs, picks and other puncturing tools for Pacific bluefin tuna?
- Do you think hooking location should be a condition of the exception (e.g., only allowing return of live tuna that has been hooked in the mouth or jaw) to improve likelihood of survival.

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Appendix One: Statutory considerations

67. 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

68. Due to the estimated high likelihood of post-release survival, providing for the return of live Pacific 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 catch within available ACE.
69. FNZ considers that the proposed exception will likely support Māori customary and recreational access to Pacific bluefin tuna, as returning commercially caught live Pacific bluefin tuna with 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.
70. The provision is unlikely to have a negative impact on the overall sustainability of the Pacific 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 Pacific 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

71. Pacific bluefin tuna is internationally managed by two regional fisheries management organisations, the WCPFC, and the IATTC. They cooperate on the management of the Pacific bluefin tuna stock throughout the Pacific Ocean.
72. Under the WCPFC Convention, New Zealand is responsible for ensuring that the management measures applied within New Zealand fisheries waters are compatible with those of the Commission and catches are managed within its allocation. Given the high likelihood of post-release survival, FNZ considers that the proposal to provide for the live return of Pacific bluefin tuna caught by surface longline and troll, in conjunction with the setting of sustainable catch limits, supports New Zealand’s obligation of managing Pacific bluefin tuna harvest, aiding the rebuild of the stock.

Treaty of Waitangi (Fisheries Claims) Settlement 1992

73. The proposals in this paper do not impose restrictions on non-commercial customary fishing rights, which are authorised by kaitiaki.
74. Māori have commercial interests and own Settlement quota in the Pacific bluefin tuna stock. FNZ considers that providing for a commercial landing exception for the return of live Pacific bluefin tuna, caught by surface longline and troll, will support the rebuild of the stock. Furthermore, Māori have commercial interests and own Settlement quota in the other tuna stocks targeted by surface longline and troll vessels that catch Pacific bluefin tuna as a bycatch. Allowing for live returns from surface longline and troll will enable fishers to manage their catches of Pacific bluefin tuna and enable better utilisation of target species.
75. FNZ’s initial assessment is that the proposed exception to allow commercial fishers to return live Pacific 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

76. The attraction of seabirds to vessels when fish are returned to the sea can result in their injury or death following interactions with fishing gear. Providing for the live return of Pacific bluefin tuna caught by surface longline vessels may increase the risk of seabird interactions. However, surface longline vessels are subject to mitigation standards to reduce the incidental captures of seabirds.
77. Pacific bluefin tuna are an apex predator their presence has a top-down effect on the food chain in the waters they pass through. Pacific bluefin tuna are likely preyed on by a range of active predators, including toothed whales and certain shark species at different life history stages. However, there is no evidence indicating a dependence on Pacific bluefin tuna as a key prey species.
78. FNZ considers that providing prey to associated and dependent species and maintaining food chain relationships is better addressed by maintaining the overall abundance of Pacific bluefin tuna in the sea by setting sustainable catch limits rather than by providing an exception.

Biological diversity

79. It has been suggested that the decline of large pelagic predatory fish such as tuna has led to mesopredator² releases in the pelagic ecosystem (Kitchell et al. 2002, Ferretti et al. 2010). This is a phenomenon where medium size predator populations rapidly increase in ecosystems due to the removal of apex or large predators, which can result in sudden changes in the structure of ecosystems including the reductions in prey species. Providing for the return of live Pacific bluefin tuna would likely support the rebuild of the global population, benefit biological diversity in pelagic ecosystems, and enable an increase in genetic diversity as Pacific bluefin tuna have a further opportunity to reproduce.

Habitats of particular significance

80. Pacific bluefin tuna are highly migratory species, that traverse between the high seas and countries' exclusive economic zones throughout the southern hemisphere. There are no known habitats of particular significance for Pacific bluefin tuna in New Zealand waters.
81. The proposal outlined in this paper is not expected to result in an increase in fishing activity (for any method) or changes to where that fishing activity occurs as Pacific bluefin tuna is taken as bycatch by surface longline vessels targeting other tuna species. Furthermore, surface longline gear, which is the method by which the majority of Pacific 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.
82. 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

83. The best available information on status of the stock comes from the 2022 stock assessment of Pacific bluefin tuna in the Pacific Ocean. After reaching a low point, the stock has been under a rebuild since the 1980s, with biomass gradually increasing over the last decade, at an accelerating rate over that time. However, the stock only sits at 10.2% of the estimated unfishable biomass for the species and is considered overfished by WCPFC, and it

² Mesopredators are medium-sized predators that are preyed upon by larger carnivores (apex predators) that sit at the top of food web.

recommended that members take a precautionary approach to stock management (WCPFC, 2023).

84. The best available information on post-release survival of Pacific bluefin tuna indicates that fish caught by surface longline and troll have a high likelihood of survival when returned to the sea after being caught. However, this likelihood of survival has been assessed to be negatively affected if the fish has a severe injury (Moore and Finucci, in press 2024).
85. We consider the proposal to provide for an exception to allow commercial fishers to return live Pacific bluefin tuna caught by surface longline and troll supports a precautionary approach to the management of the stock, by enabling a reduction in mortality caused by fishing.