



Commercial Landing Exception: Foveaux Strait (Bluff) Oyster

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Foveaux Strait Oyster – OYU 5

Ostrea chilensis, Foveaux Strait oyster, Bluff oyster, Tio para

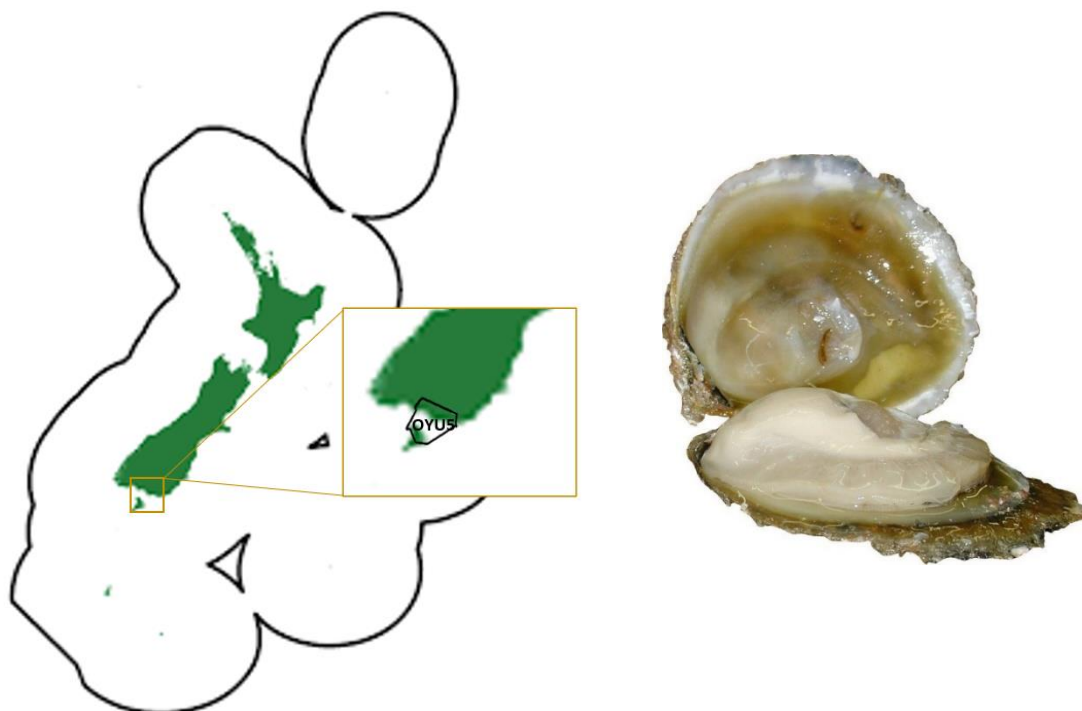


Figure 1. Quota Management Area (QMA) for Foveaux Strait Oyster (OYU 5).

1 Purpose

1. Fisheries New Zealand (**FNZ**) is assessing a request for a commercial landing exception that would allow commercial fishers to return live legal-size Foveaux Strait dredge oyster (hereafter referred to as “Bluff oyster”) to the sea.
2. FNZ welcomes feedback and submissions on this review, including survivability of legal-size Bluff oyster in different conditions and specific handling practices that support the safe return of Bluff oyster.
3. FNZ invites you to make a submission on the proposal set out in this discussion document. Consultation closes at 5pm on 12 February 2025. 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

4. 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.
5. Currently, commercial fishers are required to return all Bluff oyster below the Minimum Legal Size (**MLS**) of 58 mm. However, they must land all legal-size oyster, and balance the numbers caught with Annual Catch Entitlement (**ACE**) or pay deemed values.
6. All commercially harvested Bluff oysters are caught by dredging, which occurs over localised areas with high-density oyster beds. All dredge catch is brought onto the vessel deck to be sorted, with sub-MLS oysters and bycatch generally returned within ten minutes.
7. When brought onto the vessel, sub-MLS oysters are often found attached to legal-sized oysters. As the fishers must return the sub-MLS oysters, but are required to retain legal-sized

ones, they must separate sub-MLS and legal-size oysters that are attached together, which may impact the post-release survival of returned oyster.

8. The requirement to land legal-size Bluff oysters in OYU 5 is inconsistent with other dredge oyster stocks (with commercial catches), which already have a commercial landing exception allowing commercial fishers to return legal-size oysters.
9. To resolve inconsistencies in the landing and discard rules between oyster stocks, FNZ received a request to assess a commercial landing exception to allow commercial fishers to return legal-sized Bluff oysters to the sea.
10. There is limited information on post-release survival of Bluff oysters. However, based on the physiological characteristics of oyster (e.g. their ability to survive prolonged air exposure) and international research, oysters are considered a robust species and, when handled appropriately, are thought to have a high likelihood of post-release survival when caught by dredging.
11. Consequently, FNZ proposes that a landing exception is provided for under section 72A(2)(a) of the Act, to allow commercial fishers to return legal-sized Bluff oyster 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 the proposed exception as it is unlikely to significantly change catches or mortality of the stock.

3 Problem statement

13. Commercial fishers are required to return all sub-MLS Bluff oysters but must land all that are of a legal size. This is inconsistent with other oyster stocks, where a landing exception already exists that allows commercial fishers to return legal-size oysters.
14. In addition, the requirement to return all sub-MLS oysters but land all legal-sized oysters means sub-MLS oysters that are attached to legal-sized oysters must be separated, which could cause injuries and lower the likelihood of post-release survival of the sub-MLS oysters that are returned.
15. As a result, FNZ has received a request to consider a commercial landing exception to allow commercial fishers to return legal-sized Bluff oysters.

4 Policy context and legal framework

16. Section 72 of the 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 legal-size Bluff oyster caught, and balance the numbers caught with ACE or pay deemed values.
18. 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)(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 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 Bluff oyster fishery information

20. Bluff oysters are marine invertebrates that can form dense beds in a variety of substrates in inshore waters (Fisheries New Zealand, 2017).
21. To assess the proposed exception to allow commercial fishers to return live legal-size Bluff oysters to the sea, it is important to understand the volume of catches and the method the stock is taken by.

5.1 Commercial fisheries

22. The Bluff oyster fishery has been fished for over 150 years, with oysters harvested by dredging over a six-month season (from 1 March to 31 August), after the main spawning season.
23. Since the stock was introduced into the QMS in 1998, the Total Allowable Commercial Catch (TACC) has been set at 14.95 million oysters. However, the commercial Bluff oyster industry has undertaken voluntary quota shelving (voluntary catch limit reductions) of 7.5 million oysters since the 2020/21 fishing year (Fisheries New Zealand, 2024)¹.
24. Over the last three complete fishing years (2021/21 to 2023/24), commercial catches have averaged around 7.02 million oysters (Table 1). Commercial fishers are not required to report on sub-MLS Bluff oysters returned to the sea. Instead, information on population size distribution is gathered through an annual research survey. The 2021 survey estimated that sub-MLS oysters made up 2.7% of the total oyster population (all sizes) in the survey area. However, commercial fishers target areas with larger individuals (due to market preferences), and therefore, the actual return of commercially caught sub-MLS oysters is likely to be lower than the survey estimate (Michael, 2023).

Table 1: TACC, commercial reported landings of Bluff oysters in the last three complete October fishing years (millions of oysters).

October fishing year	TACC	Catch limit with voluntary shelving	Landings
2021/22	14.95	7.5	7.7
2022/23			7.5
2023/24			5.9

5.2 Non-commercial interests

Māori customary non-commercial fisheries

25. Tio para (Bluff oyster) are of special significance to the customary sector and are listed as a taonga species in the Te Taihū and Te Waka a Māui me Ōna Toka Fisheries Forum Plans.
26. There is limited quantitative information available on the level of customary take of Bluff oyster and it is likely that many tangata whenua harvest oysters under the recreational allowance. Reported customary harvest in OYU 5 has ranged between 4500 to 228,972 (average 125,364) oysters per year.

Recreational fisheries

27. Recreational take is set at 50 oysters per person per day during the open season (between March and August).
28. Recreational catch taken by commercial fishers on oyster vessels is a major component of recreation catch of Bluff oysters, with an average of 552,229 oysters taken over the last three complete fishing years.
29. For recreational catches of Bluff oysters that are not taken by commercial vessels, the latest National Panel Survey of Marine Recreational Fishers estimates that 50,222 oysters were taken from within OYU 5 in the 2022/23 October fishing year (Heinemann & Gray, 2024).

¹ Shelving describes voluntary industry cuts to catch limits. This is achieved by quota owners transferring ACE to a non-fishing entity to hold for every year that shelving is in place.

6 Do Bluff oysters have an acceptable likelihood of survival when returned to or abandoned in the sea?

30. To provide an exception for Bluff oysters (under the first provision), they must have an acceptable likelihood of survival when returned or abandoned in the sea. FNZ's working definition of "acceptable likelihood of survival" is *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 is influenced by the purpose of the return and the overarching management strategy for the species.

6.1 Acceptable likelihood of survival

Biological characteristics of Bluff oyster influencing post-release survival

31. Oysters have adaptations that allow them to survive out of water for significant periods of time, such as the ability to close their shells to reduce water loss and repress certain bodily processes to conserve energy thus improving tolerance against the stress of aerial exposure (Chen, 2021). It is estimated that some species of oysters, in favourable conditions, can survive being out of the water in excess of 24 hours, which well exceeds the average catch sorting time onboard Bluff oyster dredge vessels (less than ten minutes) (Clements et al, 2018; Kawabe et al, 2010).
32. Based on the physiological characteristics of Bluff oysters, they are considered a robust species and (when handled appropriately) are thought to have a high probability of surviving catch and return by fishers.

Estimating post-release survival

33. There is only one New Zealand study of post-release survival of oysters. The study, undertaken in 1997, estimated the post-release survival of juvenile Bluff oysters caught and returned by commercial dredge to be high (approximately 93%), with even higher post-release survival estimated for legal-sized oysters (98-99%) (Cranfield et al, 1997).
34. International studies investigating the impacts of air exposure and temperature on survival of similar oyster species indicate a high likelihood of post-release survival when oysters are exposed to air for a short period of time, which is negatively impacted by an increased difference between air and seawater temperature and time spent out of water (Kawabe et al, 2010; Clements et al, 2018; Heo et al, 2023).
35. Most international studies test survival of oysters under different conditions than what Bluff oysters are likely exposed to. This includes longer air exposure times than the average time it takes to sort dredge-caught Bluff oysters, and in many cases, greater differences between air and seawater temperature than what Bluff oysters are exposed to (based on average temperatures in Bluff during the oyster season).
36. Research on mortality of Eastern oysters (*Crassostrea virginica*) found that oysters exposed to air for 72-96 hours in June, where average daily air temperature ranged from 9.8 to 16.8 °C, experienced low mortality rates (4-11%) (Clements et al, 2018). Another study on the survival of Pacific oysters (*Crassostrea gigas*) reported survival rates of 97 and 92% when exposure to air for six hours at 30 and 35°C, respectively (Heo et al, 2023).
37. These studies were both undertaken under different conditions (higher air temperatures and longer air exposure times) than what Bluff oysters are normally exposed to, with mean temperatures during the Bluff oyster season ranging from 5.4 to 12.7°C and air exposure of returned oyster generally less than ten minutes. Based on the estimated high survival of oysters in these studies, and considering the different environmental conditions Bluff oysters are exposed to, FNZ considers the post-release survival of Bluff oysters likely to be high.

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

Sustainability of the stock or species

38. Bluff oyster stock assessments are conducted every five years, based on abundance, with the most recent assessment undertaken in 2023 found that the stock is unlikely (less than a 40% chance) to be at or above the target biomass, but unlikely (less than a 40% chance) to be below the soft limit and very unlikely (less than 10% chance) to be below the hard limit (Fisheries New Zealand, 2024).
39. Contemporary decreases in Bluff oyster biomass are thought to be a result of mortality caused by *Bonamia exitiosa*, which is a parasite that infects several flat oyster species globally (Jefferies & Hickman, 2000).
40. The TACC is not expected to have a significant negative impact on the stock size, which is more likely to be determined by the levels of disease mortality and to a lesser extent recruitment (Fisheries New Zealand, 2024). Voluntary catch limits within the TACC take the effects of disease mortality and biomass decreases into account to manage harvest within sustainable levels.
41. Given the high likelihood of post-release survival, enabling the return of legal-size Bluff oysters is unlikely to impact stock sustainability.

Method by which the stock or species is taken

42. To maintain a vessels' position over dense oyster beds, dredging for Bluff oysters differs considerably from other commercial bottom contact operations (dredges and trawls) (Michael, 2023). Some incidental oyster mortality occurs while dredges are in operation. Research suggests that legal-size oysters appear to be quite robust (1–2% mortality), with smaller oysters (10–57 mm in length) slightly less robust (6–8% mortality) (Cranfield et al., 1997).
43. Since 2010, to satisfy market requirements, fishing practices have changed from fishing for the highest catch rate to fishing for high meat quality and larger oyster size at much lower catch rates (Michael, 2023). Enabling the return of legal-size Bluff oysters is unlikely to change the current harvest method and associated mortality levels given the focus on targeting dense beds of larger oysters.

Handling practices for the stock or species taken

44. All commercially dredged oysters are brought onto the deck of the vessel and sorted to remove sub-MLS oysters and any bycatch, which is generally returned to sea within ten minutes of being brought onboard the vessel.
45. Juvenile oysters are commonly attached to adult oysters with relatively few found on other surfaces. Enabling the return of sub-MLS juveniles attached to legal-size oysters without separating them and risking increased mortality would support the continued sustainable management of the stock.

Social, cultural, and economic factors

46. Given the estimated high likelihood of post-release survival of Bluff oysters caught by dredge, FNZ considers there to be economic benefits to enabling fishers to return live Bluff oysters as it provides them with a tool to manage their catches within available ACE while maximising the value of the catch.
47. FNZ considers that in scenarios where Bluff oysters 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 Bluff oysters to other sectors.

6.3 Preliminary conclusion – FNZ considers Bluff oysters have an acceptable likelihood of survival when caught with dredge

48. FNZ considers that based on the best available information, legal-size Bluff oysters have a high likelihood of post-release survival when caught by dredge.
49. The current requirement for returning sub-MLS Bluff oysters lacks clarity around instances where sub-MLS oysters are attached to legal size oysters, as legal-sized Bluff oysters cannot currently be returned, and separating the oysters may cause injuries that impact post-release survival of sub-MLS oysters.
50. In addition, there are inconsistencies in approaches between dredge oyster QMAs, as legal-size dredge oysters can be returned in all QMAs except for OYU 5 and OYS 10 (the Kermadec Islands, which is a Benthic Protection Area). Providing for an exception to allow for the return of legal-size Bluff oysters would resolve inconsistencies across QMAs where commercial harvest is allowed.
51. Based on the above considerations, FNZ proposes that an exception is provided for under the first exception provision of the Act, allowing commercial fishers to return live legal-size Bluff oysters.
52. 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

53. To maximise the likelihood of post-release survival, FNZ proposes that the exception for the permitted return of Bluff oysters be contingent on a condition that aims to reduce physiological stress of returned Bluff oysters, outlined in Table 2.

Table 2: Proposed conditions for the permitted return of live Bluff oysters.

Condition		Rationale
1	A Bluff oyster 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.

7 Fisheries Management implications

7.1 Reporting

54. FNZ proposes that if fishers are permitted to return live legal-size Bluff oysters, those returns would be reported under a specific disposal code. However, we welcome feedback on the practicalities of such reporting. As most oyster returned are expected to survive, fishers would not be required to cover the returns with ACE or pay deemed values.

7.2 Sustainability measures

55. Even though Bluff oysters have a high likelihood of post-release survival when commercially caught and returned, there would be a level of incidental mortality associated with this type of return.
56. This type of post-release mortality is usually accounted for in the allowance for other sources of mortality from fishing, along with any other unrecorded mortality of fish associated with fishing activity, including misreporting, predation, accidental unseen loss. However, this allowance has not been set for the Bluff oyster stock.
57. As there is no information available to estimate the potential volume of legal-size Bluff oyster returns, FNZ would, if the exception is provided for, monitor the volume of legal-sized Bluff oysters returned to ensure the TAC remains appropriately set going forward, and assess the need to set an allowance for other sources of mortality from fishing.

58. Providing for the live return of Bluff oyster is unlikely to change the value of ACE as there is sufficient ACE availability but will enable fishers to maximise the value of their catch.

8 Engagement to date

59. In advance of this public consultation, FNZ provided a summary of the proposed exception for Bluff oyster to the Te Waka a Māui me Ōna Toka Iwi Forum, that represents iwi (Kāi Tahu) with an interest in the stock and offered an opportunity to discuss the proposal. FNZ sought input on the ability of commercial fishers to return legal-size Bluff oysters 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 on these factors prior to the publication of this paper.

9 Questions for submitters

60. FNZ welcomes feedback on the assessment of Bluff oysters 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 Bluff oysters?
- Do you have additional information on post-release survivability of Bluff oysters 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 legal-size Bluff oysters affect your fishing practices and operation?
- How would the ability to return live legal-size Bluff oysters impact your fishing practices and operation?
- What further information do you have that might inform the Minister's decision?

Reporting

- Do you agree with the proposed requirement to report all legal-size Bluff oyster returns? Why or why not?

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Appendix One: Statutory considerations

Purpose of the Act

61. Due to the estimated high likelihood of post-release survival, providing for the return of legal-size Bluff oysters caught by dredge is likely to have a positive impact on the overall sustainability of the stock as oysters are likely to survive and be able to support recruitment in the population. Furthermore, it will have utilisation benefits as commercial fishers will be able to better respond to market requirements for oysters with high meat quality and of larger size and provide them with an additional tool to limit their commercial catches within the available ACE.
62. FNZ considers that the proposed exception will likely support Māori customary and recreational access to Bluff oyster, as returning commercially caught Bluff oysters that are alive and have 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.

International obligations

63. FNZ considers that the proposals in this paper are consistent with our international obligations and reflect a precautionary approach to the management of the Bluff oyster stock and maintaining a healthy marine ecosystem.

Treaty of Waitangi (Fisheries Claims) Settlement 1992

64. The proposals in this paper do not impose restrictions on non-commercial customary fishing rights, which are authorised by kaitiaki.
65. Māori have commercial interests and own Settlement quota in the Bluff oyster stock. FNZ considers that providing for a commercial landing exception for the return of legal-size Bluff oysters will support the rebuild the sustainable management of the stock and enable further benefits to be gained from the utilisation of the stock.
66. FNZ's initial assessment is that the proposed exception to allow commercial fishers to return legal-sized Bluff oysters would support the long-term value of the 1992 Settlement and Māori interests.

Environmental principles

Associated or dependent species

67. There are limited records of known or suspected predators of Bluff oysters, but they are likely a prey for a wide range of invertebrate and fish species. However, there is no evidence indicating a dependence on Bluff oysters as a key prey species.
68. There is no known incidental catch of seabirds, mammals, or protected fish species from the Bluff oyster dredge fishery. FNZ does not consider that the proposal will have impacts on protected species interactions.
69. FNZ considers that providing prey to associated and dependent species and maintaining food chain relationships is better addressed by maintaining the overall abundance of Bluff oysters in the sea by setting sustainable catch limits rather than by providing an exception.

Biological diversity

70. Oysters play important roles in the ecosystem and are considered to be ecosystem engineers as the shells of live and dead oysters provide habitat for other bottom dwelling species. Providing for the return of legal-size Bluff oysters would likely support these biological diversity benefits to be realised.

Habitats of particular significance

71. One potential habitat of particular significance has been identified for Bluff oysters (Table A1).

Table A1: Potential habitat of particular significance for Bluff oyster in OYU 5.

Bluff oyster (OYU 5)	
Habitat of particular significance	Shell, sand and gravel dominated substrates in the Foveaux Strait (Michael 2021, Michael et al. 2014)
Attributes of habitat	Oyster larvae readily settled on the shells of live and dead oysters, and the gastropod <i>Astraea heliotropium</i> , which together accounted for most (> 90%) of all post-settlement survivors.
Reasons for particular significance	Area of high shellfish density, source of juvenile shellfish, substrate for juveniles
Risks/potential impacts from fishing	High degree of dredging conducted over oyster beds. Oyster beds can be damaged by bottom contact fishing.

72. The proposal in this paper is unlikely to result in fishers adjusting their harvesting practises as a result. This is because fishing effort is already constrained to areas of dense oyster abundance and high meat quality. While it allows fishers the ability to manage their catches within the catch limits by returning less marketable legal-size oysters, FNZ does not expect these changes to be significant and unlikely to adversely affect or undermine the function of a habitat of particular significance that provides for a fisheries resource.

Information principles

73. There is limited information available on post-release survival of commercially caught Bluff oysters. However, the best available information indicates that post-release survival of Bluff oysters is high when caught by dredge, which is the only form of capture within the QMA. The proposal to provide a landing exception for legal-size Bluff oysters, supports a precautionary approach to the management of the 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.