

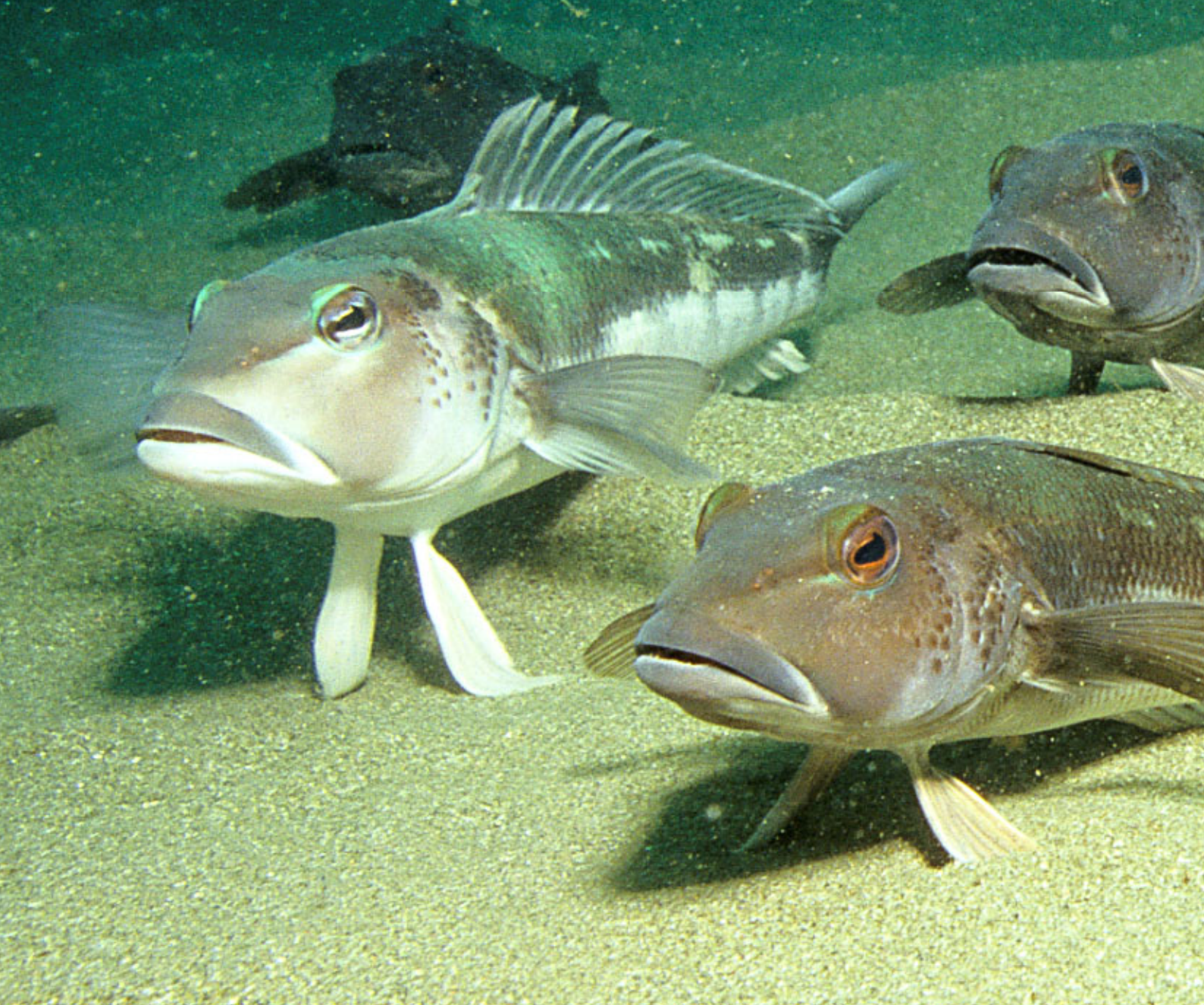


Fisheries New Zealand

Tini a Tangaroa

Marlborough Sounds Blue Cod Review

Potential measures to reduce fishing pressure
and improve the health of the fishery



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Summary

- 1 Marlborough Sounds/ Te Taiuhu (**the Sounds**) blue cod/ rāwaru are a taonga which play an important ecosystem role and support an iconic local fishery for tangata whenua, recreational, and commercial fishers.
- 2 Over the years, pressure on the fishery has been significant, with high fishing effort and additional stressors such as sedimentation, seafloor disturbance, and marine heatwaves.
- 3 Independent monitoring and observations from fishers show the fishery remains in poor health, despite management changes to reduce fishing pressure of blue cod in the Sounds.
- 4 In 2021 a [NIWA potting survey](#) indicated significant overfishing of blue cod is very likely occurring in the Sounds. While it generally appears stable, the fishery is at a very low level (especially the inner Sounds).
- 5 In response, the Minister for Oceans and Fisheries (**the Minister**) at the time [decided](#) to cut the BCO 7 commercial catch limit (**TACC**) by nearly 20% and form a multi-sector advisory group to identify solutions to further reduce fishing pressure.
- 6 The Marlborough Sounds Blue Cod Technical Group (**the Group**) was convened in 2023. They identified that fishing pressure could be reduced in the short term by extending the current seasonal closure, followed by a wider package of potential further measures to improve the health of the fishery.
- 7 FNZ is now consulting on four seasonal closure options while also seeking input on these potential wider measures. Any changes, if approved, would apply from the end of 2025 (to provide ample time for implementation and awareness).

Proposal	Option	Description
Extend the Marlborough Sounds Area seasonal closure (from December 2025 onwards)	1	Status quo (1 September to 19 December annually)
	2	Extend the seasonal closure to 31 December
	3	Extend the seasonal closure to 5 January
	4	Extend the seasonal closure to 15 January
Potential measures for a wider package (identified by the Group)		
Spawning recovery areas		Discrete closed areas to enhance spawning capacity
Combined daily bag limit		Reduce the combined daily bag limit in the Marlborough Sounds Area
Refreshed educational campaign		Promote a shift in attitudes towards fishing in the Sounds
Improving recreational fishing information		Possible options to improve fine-scale recreational fishing information.
Tools to reduce release mortality		Regulatory or voluntary tools to reduce predation and release mortality

How to have your say

- 8 We welcome your views on the topics below and encourage you to use the submission template provided with your rationale and supporting information. Keep in mind the range of issues and key themes for change.
 - i **The state of the fishery:** Do you agree with this assessment of the blue cod stock's health? If not, why?
 - ii **Proposal to extend the seasonal closure:** Which, if any, of the options do you think are appropriate to reduce fishing pressure? What might the social, economic, and environmental impacts be?
 - iii **What a wider package of measures should look like:** Which, if any, of the wider measures do you think should be progressed? Are there alternative or complementary options that should be considered?
- 9 The consultation closing date is 1 December 2024. If you require any assistance, please get in touch.

Email submissions (preferred):

FMSubmissions@mpi.govt.nz

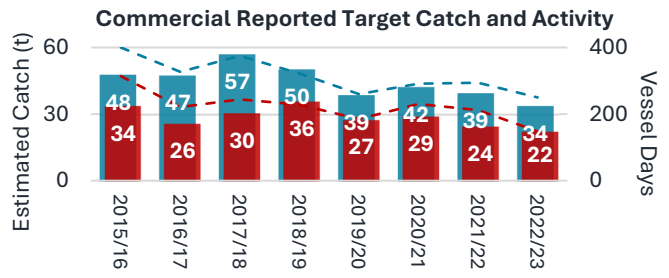
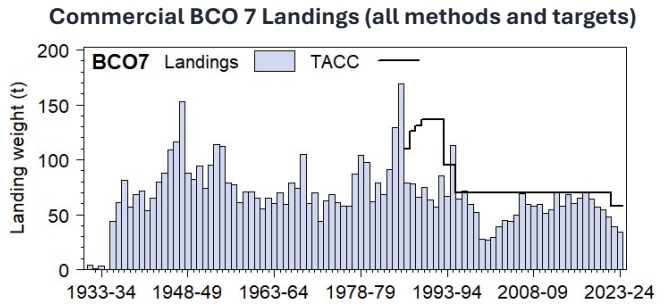
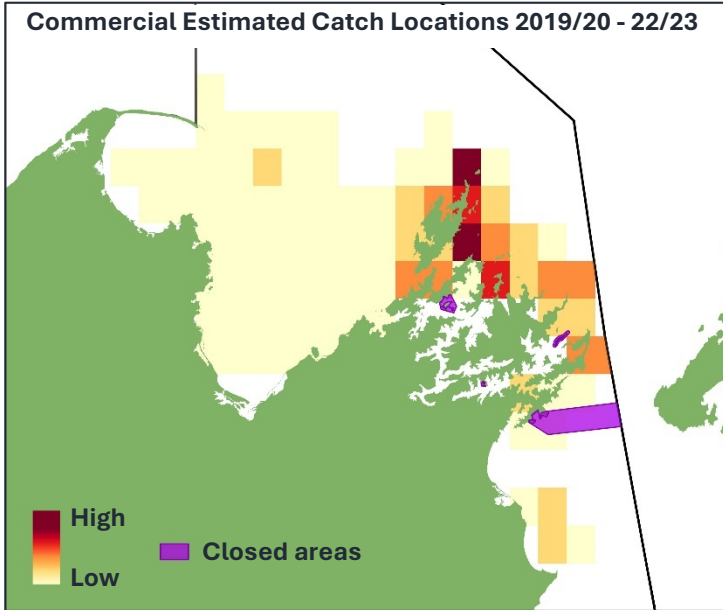
Subject – Marlborough Sounds Blue Cod Review

Paper submissions:

Marlborough Sounds Blue Cod Review
Fisheries New Zealand - Private Bag 14
Nelson 7042

- 10 Public drop-in sessions are also being held across the top of the South, where you can seek information, ask questions, or get help with submitting. Details can be found on the MPI consultation webpage.

Marlborough Sounds blue cod



Commercial (see characterisation):

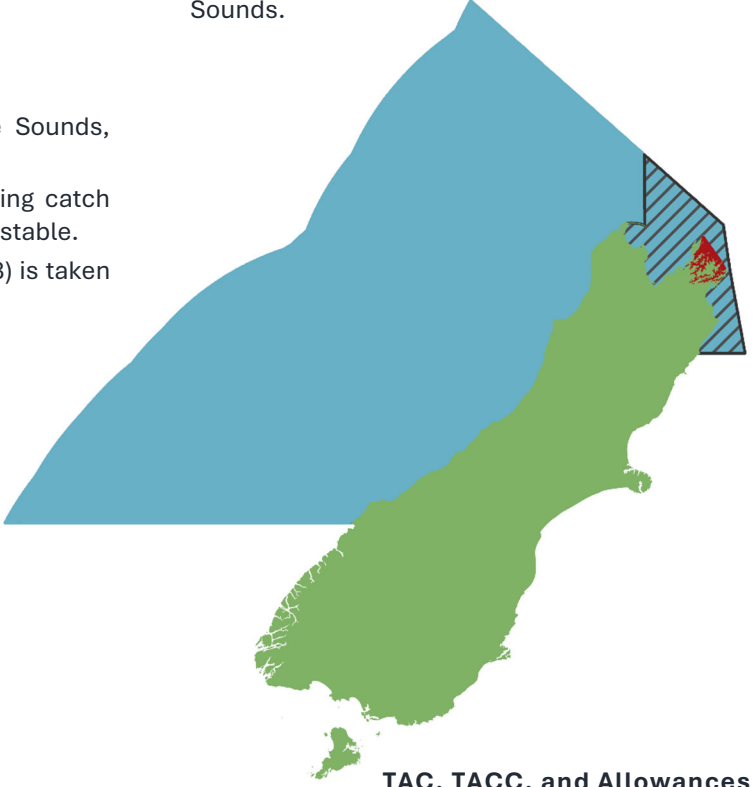
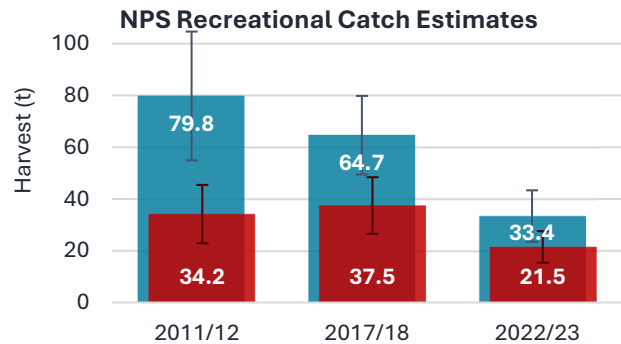
- Most BCO 7 catch is taken by pot or line around the outer Sounds (almost 90% in 2022/23).
- Some is trawl bycatch in Tasman Bay (<5%).
- Catches and fleet size have declined.

Customary:

- Harvest managed by tangata kaitiaki through customary permits, but information is limited.
- Currently no customary management areas in the Sounds.

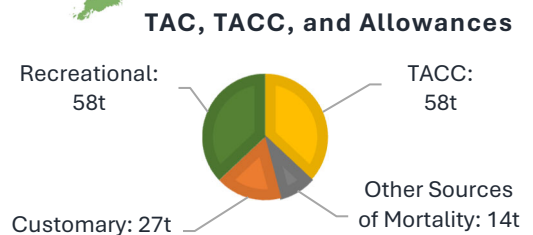
Recreational:

- The most popular recreational species in the Sounds, almost exclusively taken by line fishing.
- The [National Panel Survey](#) (NPS) shows declining catch over the last decade. Waikawa ramp surveys are stable.
- Most catch (60% in 2017/18 and 45% in 2022/23) is taken in December and January upon reopening.



Current Rules:

- Minimum legal size (MLS) of 33 cm.
- Red traffic light with seasonal closure (1 Sep–19 Dec), a recreational daily limit of two fish per person and accumulation limit of four.
- Minimum 54mm mesh pots and two hooks max. per line.
- Maud Island, Double Cove, Long Island Marine Reserve, and Cook Strait Cable Zone closed to fishing.



LEGEND: ■ BCO 7 Quota Management Area (QMA) ■ Marlborough Sounds Area (MSA)
 I 95% Confidence Interval ■ Challenger East Area
 --- Number of vessel days

NOTE: Catch heatmap based on reported start positions of all events catching blue cod in Challenger East (r240157).

Why the need for change?

11 A summary of key issues facing Sounds blue cod is presented below. Further information can be found in the [Fisheries Assessment Plenary](#) and [2021 Potting Survey Report](#).

High levels of fishing pressure

12 The health of the fishery is monitored using independent potting surveys conducted by NIWA across the Sounds every three to four years since 1995. These randomly sample blue cod and provide data on their abundance and population structure in the form of age and length frequencies, and sex ratios. From this data, fisheries scientists can then estimate a fishing mortality rate and compare it to an agreed management target¹ which takes into account the unique biological characteristics of blue cod.

13 High fishing pressure has been a consistent issue identified through potting surveys over the last decade, with a number of measures put in place to try to address this including catch limit reductions. The most recent survey was conducted in 2021 and indicated that fishing mortality was still exceeding the sustainable management target by more than three times. The assessment concluded that overfishing was very likely to continue under settings at the time (following this the BCO 7 commercial catch limit was reduced and the multi-sector advisory group formed).

Blue cod biology

- An endemic bottom dwelling species, most common south of Cook Strait.
- Found around reef edges, gravel, biogenic reef, and sandy bottoms close to rocky outcrops, to 150 metres in depth.
- Maximum age of 32 years, maturing at 3-6 years (21-26cm) in the Sounds.
- A protogynous hermaphrodite, which means females can become male in response to removal or absence of large males.
- Territorial with a limited adult home range. Spawning is thought to occur in late winter to spring, across inshore and continental shelf waters.
- Considered a low productivity species given its longevity, site fidelity, and sex change dynamics.



Cumulative non-fishing stressors

14 A range of human-induced stressors are simultaneously impacting the wider marine environment. Research in the South Island has found that [changes in land use, climate, and fishing were significantly correlated with indicators of blue cod stock status](#).

15 Sedimentation is consistently identified as an issue, especially in Pelorus Sound where accumulation rates have [increased tenfold over the past century](#) with changing land-use practices. An increase in fine sediment degrades important habitats, alters substrate composition, and leads to continual resuspension.

16 Marine heatwaves have also become [a more regular occurrence in the Sounds](#), with a number of severe heatwaves in the last decade and projected increases in frequency and persistence into the future. There are likely implications for species such as blue cod with limited tolerance to temperature fluctuations, through recruitment success, food availability, and impacting habitat-forming species such as bryozoans, bivalves, and macroalgae (seaweeds).

Low abundance and localised depletion

17 High fishing pressure, in combination with wider stressors, has led to stable, but low, levels of abundance in many areas. Since, 2017, potting survey catch rates have increased slightly in Queen Charlotte Sound/ Tōtaranui, declined slightly in Pelorus Sound/ Te Hoiere, and remained stable in the outer Sounds, D'Urville Island/ Rangitoto ki te Tonga and Cook Strait/ Raukawa.

¹ The management target is a fishing mortality rate not exceeding 87% of the natural mortality rate (17%).

18 However, comparing catch rates from Long Island Marine Reserve/ Kokomohua to surrounding areas (even after considering habitat conditions) demonstrates how depleted the levels of abundance are elsewhere (see Figure 1), especially in Pelorus and inner Queen Charlotte Sounds.

19 There has also been a pattern of declining abundance from the outer to inner Sounds, which has led to concerns that fishing effort will shift over time, depleting remaining areas which currently may hold reasonable numbers of fish.

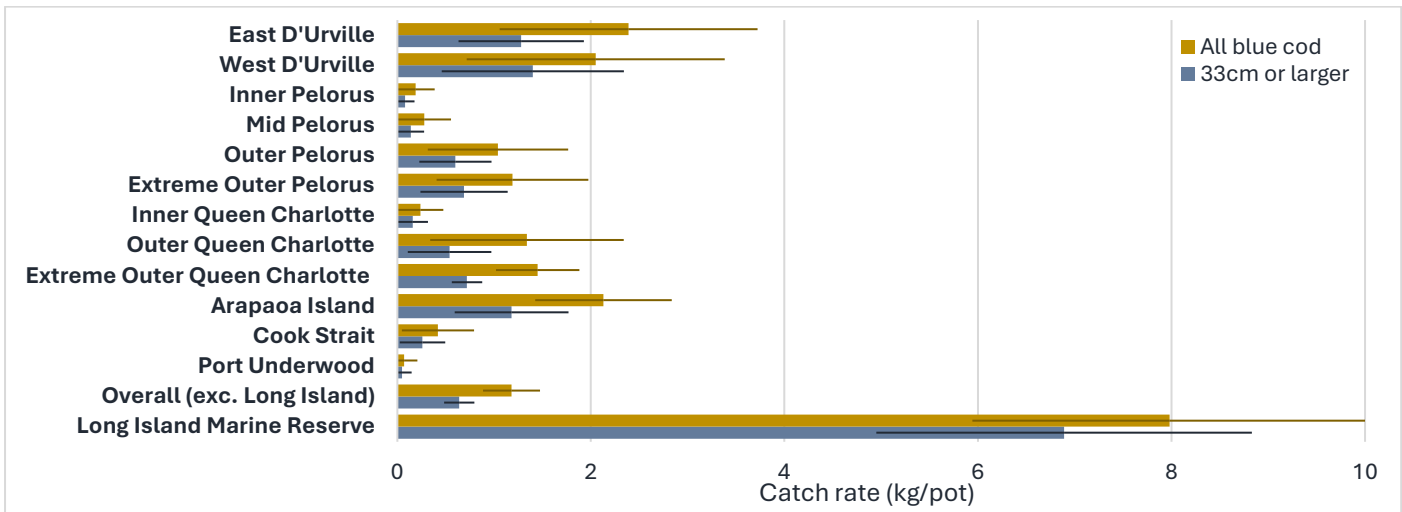
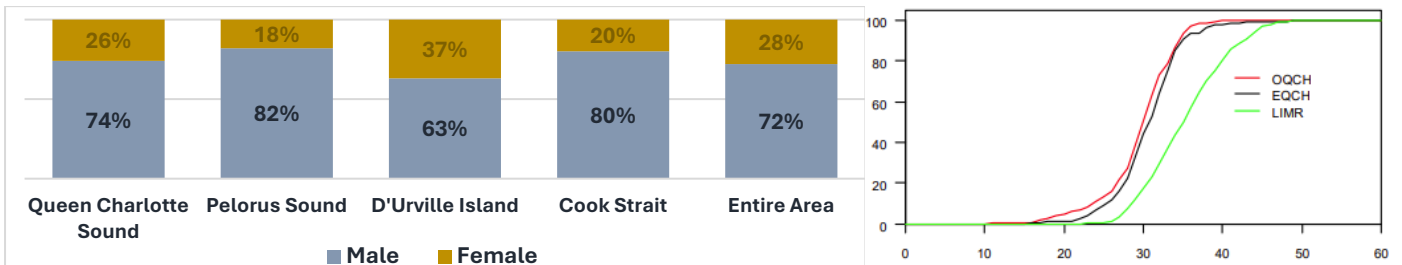


Figure 1: 2021 Potting Survey catch rates by strata for all fish and those 33cm or larger, with 95% confidence intervals.

Unbalanced population structure and reduced spawning capacity

20 Because of the high level of fishing mortality, there are relatively few larger, older, and female fish. The effects of fishing can be seen through truncated length frequencies and imbalanced sex ratios. Comparing results from fished areas to those in the Long Island Marine Reserve once again reinforces this conclusion, with a much higher proportion of larger fish in the reserve (see Figure 3).



Figures 2 & 3: 2021 Potting survey sex ratios by strata (left), and cumulative length frequencies for Long Island Marine Reserve (LMR), outer (OQCH), and extreme outer (EQCH) Queen Charlotte Sound (right).

21 Male dominated populations are considered to reflect high fishing pressure. Potting survey data shows 72% of cod (up to 82% in some areas) are male. Further, with high fishing pressure there are very few fish over 10 years in the Sounds (noting they can live past 30 years). The fishery is largely based on six- to seven-year-old fish and only 6% of cod larger than the MLS are female. Without the large breeding females, this creates a spawning bottle neck meaning fish may be caught faster than they can be replaced. Compromised spawning capacity was considered by the Group to present the greatest impediment to a rebuild of the fishery.

22 For comparison, total egg production is estimated to be [three times higher](#) for the blue cod population in Fiordland/ Te Rua o te Moko, even after controlling for the much larger population size. This becomes 14.8 times after adjusting for the significant sex ratio imbalances in the Sounds. This difference is attributed to the significantly higher proportion of large female blue cod in the Fiordland population.

Fish released are not making it back alive

23 High fishing pressure within the Sounds means that many fish are caught before or as soon as they reach the MLS. Given the small average size, data from charter vessels reporting shows four out of every five cod caught are returned on average. Poor handling, slow return, small hook size, predation by shags and barracouta, and high grading mean the mortality of returned, undersize cod is thought to be very high. These cod should be next season's fishery.

Key themes for change

Rules should be consistent, complementary, and easy to follow

- 24** With persistent sustainability concerns, various measures have been tested for blue cod in the Sounds based on advice from FNZ, scientists, and local working groups. With the area-specific approach and regular changes, concerns have been raised at times about the consistency and interpretability of fishing rules. Two strategic documents now guide management; the [National Blue Cod Strategy \(the Strategy\)](#) and the [National Inshore Finfish Fisheries Plan \(the Plan\)](#). Any new measures should seek to complement these.
- 25** The Strategy was introduced in 2018 to ensure a consistent but regionally appropriate framework for addressing concerns about depletion of blue cod around the South Island. It introduced a nationwide minimum size, prioritised an educational focus to encourage responsible fishing practices, and defined a Traffic Light System (TLS) with three levels of recreational and commercial controls based on stock health.
- 26** The Finfish Plan, approved under *section 11A* of the Fisheries Act in 2022, sets out five focus areas for management of inshore finfish stocks through to 2028. Four of these are directly relevant to BCO 7:
- individual stock sustainability:** BCO 7 is in Group 2, with moderate levels of use and information.
 - stakeholder benefits:** management should enable kaitiakitanga and enhanced recreational benefit.
 - improving local fisheries:** community stewardship should be enabled through collaborative approaches.
 - environmental performance:** Protecting habitats of significance (HPSFM) and progressing EBFM.

A staged approach is needed to address the range of issues

- 27** Some issues can be addressed relatively simply with short-term measures (e.g. fishing pressure), while others (e.g. reduced spawning capacity) require research and a carefully thought-out longer-term approach.

Stage One (Now – End of 2024)	Stage Two (Mid to late 2025)	Final Package (2025/26)
<i>Consult on an initial measure and develop a full package proposal</i>	<i>Return to consult on wider package and implement non-regulatory actions.</i>	<i>Implement remaining regulatory measures.</i>
<p>Proposed initial measure: Extend the recreational and commercial seasonal closure</p> <p>Input sought: Spawning recovery areas. Combined daily bag limit. Refreshed educational campaign. Recreational catch reporting trial. Tools to reduce release mortality. Any other identified measures.</p>	<p>Regulatory measures:</p> <ul style="list-style-type: none"> • Spawning recovery area site proposals • Reduced combined daily bag limit in the MSA. • Any identified tools to reduce release mortality. <p>Non-regulatory actions:</p> <ul style="list-style-type: none"> • Refreshed educational campaign on best practice and fishery health. • Local recreational catch reporting trial. • Support any tools to reduce release mortality. • Additional recreational ramp survey coverage. 	<p>Outcome: Final package in place to address all identified issues.</p> <p>Next potting survey scheduled for October 2025.</p>

Perceptions and attitudes towards the fishery need to shift

- 28** The Group felt that there is limited public understanding of the current state of the fishery and the impacts of fishing. Therefore, a refreshed educational campaign and any new measures need to reflect the finite capacity of the Sounds, plainly communicate the issues confronting the fishery, and encourage responsible fishing practices based on clear evidence, for the benefit of those who may fish in or visit the region.

Wider action needs to occur for long-term success

- 29** Many issues, such as land-based sedimentation, require broad collaborative actions across the community, which is being progressed through restoration projects and land-to-sea initiatives such as Kotahitanga mō te Taiao Alliance. In the short-term, we can work to ensure the stock is maintained at a level that ensures resiliency to these cumulative stressors. At the same time, the Group felt we need to continue improving our understanding of these issues and building consensus on tangible actions to address them.

Extending the seasonal closure

30 Since 2011, a seasonal closure has been in force prohibiting the recreational take of blue cod in the MSA (see page 2) between 1 September and 19 December (fishing for other species remains permitted). This was extended to include commercial take in 2015. The aim of the closure is primarily to improve spawning success by protecting cod during their peak spawning period. It was noted at that time that a longer closure into January would also reduce fishing pressure.

31 After much discussion, the Group concluded that extending this closure would help reduce fishing pressure while other long-term measures could be put in place to improve the health of the fishery. FNZ is seeking feedback on four options:

Measure	Option	Description
Seasonal closure of the Marlborough Sounds Area to blue cod take from 1 September 2025 onwards (recreational and commercial)	1	Status quo (1 September to 19 December annually)
	2	Extend the seasonal closure to 31 December
	3	Extend the seasonal closure to 5 January
	4	Extend the seasonal closure to 15 January

Option 1 – Status quo

- + Maintains recreational access to blue cod fishing for holiday makers during the summer holiday period, which has cultural and economic benefits for the region. It also provides flexibility for commercial fishers.
- + Avoids risks of shifting effort to areas outside of the MSA, such as the Cook Strait, Tasman Bay/ Te Tai o Aorere, and Port Underwood/ Te Whanganui during the closure.
- Overfishing is very likely to continue without other measures to reduce fishing pressure.
- Alternatives to reduce fishing pressure are likely to be less effective (reduced combined daily limit) or greater impacts on access (a temporary total closure to blue cod take as in 2008-2011).

Option 2 – Extend to 31 December

- + Could reduce recreational fishing pressure on blue cod in the Sounds by 10-25%, based on recreational survey results, particularly in the inner Sounds which have the most severe release mortality and population structure issues. Many reefs are reported to get fished hundreds of times a week in this period.
- Effectiveness might be lessened if opening ‘rush’ shifts later, or if fishers don’t move away from blue cod habitat when targeting other species (with associated release mortality).
- Reduced fishery access could have some economic impacts (noting fishing for blue cod is not the only attraction for bach owners and holiday makers visiting over the Christmas period).

Option 3 – Extend to 5 January

- + This option would provide greater confidence in reducing recreational fishing pressure by covering the rest of the public holiday period, meaning a larger reduction could be expected (20-40%).
- + Because of this, it is less likely to lead to a shift in ‘opening rush’ effort than Option 2.
- Some risk remains that effectiveness is reduced if people delay fishing until later in January, or if fishers don’t move away from blue cod habitat when fishing, with associated release mortality.
- There could be impacts for regional businesses and tourism operators if visitor numbers reduce.

Option 4 – Extend to 15 January

- + This option could lower fishing pressure to a degree that wider measures to improve fishery health may be less necessary. It could reduce recreational catch by 45-50% as well as commercial catch to some degree.
- + It, therefore, provides the most confidence of reducing pressure on areas of the inner Sounds.
- May have substantial impacts on regional businesses and tourism operators by restricting access in a key visiting period (noting visitors could still target other species).
- Could restrict commercial activity during a key period of market demand, which does not enable fishers to maximise efficiency and value derived (noting that the TACC is the best tool to manage catches).

Potential wider measures on which feedback is sought

Spawning recovery areas

32 Consecutive potting surveys have shown a skewed sex ratio and lack of larger spawning females in the Sounds; in 2021 only 6% of the population were females larger than 33 cm. This has negative effects on fecundity and subsequently recruitment, most obviously in the internal Sounds where productivity appears to be most compromised.

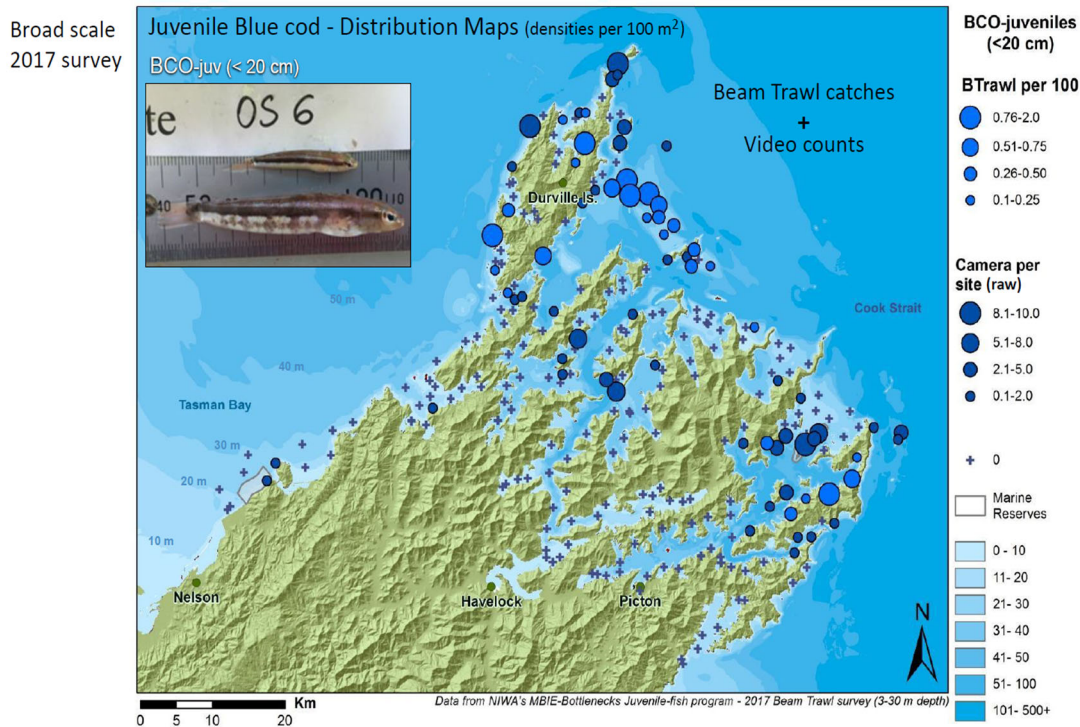


Figure 4: 2017 beam trawl and underwater video survey of juvenile blue cod (Morrison, unpublished NIWA/MBIE data).

33 The Group was supportive of a small number of discrete area closures to fishing under the Fisheries Act, as ‘spawning areas’ similar to Maud Island/ Te Pākeka. FNZ has commissioned research to identify potential areas that might best achieve this outcome, with results available next year.

- + This should improve egg production, recruitment, and fishing across the wider Sounds, by rebuilding balanced resident breeding populations. The areas could also become attractive for diving experiences, as seen in Double Cove.
- + If this approach were successful, it could enable relaxation of other fishery controls in the long-term. If a particular area proved to be unsuccessful, the closure could be rescinded under fisheries legislation.
- + Because all fishing would be prohibited, there would be no release mortality in these areas.
- Would impact on fishing for other species beyond blue cod.
- Some areas identified as optimal for supporting spawning populations could also be someone’s favourite fishing spot. Extensive consultation around final site selection would be undertaken.
- In some areas habitat functionality may be significantly degraded, or source populations may not be nearby currently. In these cases, restoration or translocation of fish might need to be considered.

Reduced combined daily bag limit in the Marlborough Sounds Area

34 Given the concerns facing blue cod and other fish species in the Sounds, many in the Group considered that a combined daily limit (CDL) of 20 fish was inappropriate and did not encourage sustainable fishing attitudes. Some suggested a lower CDL of 5-10 fish could reduce extended periods of fishing and, therefore, the release mortality of undersize cod, but there was a mixed response from the Group.

35 Ramp surveys and the National Panel Survey suggest that the impacts and effectiveness of such a change may be limited noting that 95% of fishers land five finfish or less in a given trip. To meaningfully reduce overall

effort with the intention of reducing release mortality, a more significant reduction to the CDL may be needed.

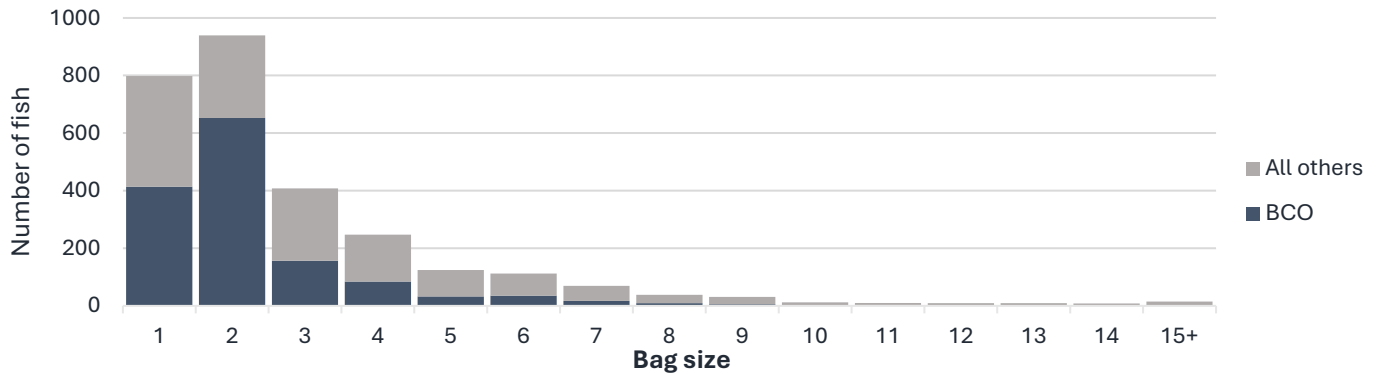


Figure 13: Sampled catch composition by combined daily bag size in the Sounds (derived from FNZ-held ramp survey data).

- + Could reduce overall effort and therefore return mortality of undersize cod, depending on the limit and fishing behaviours affected.
- + Would signal that restraint is required when fishing inside the MSA, and that the area is not an infinite resource. This could lead to longer-term benefits in improved fishing practices.
- Those in the Group who opposed this measure considered that a 50% or more reduction would seriously impact access, especially when, in their view, the benefits were unclear or uncertain.
- Access to species which are more plentiful than blue cod (e.g. gurnard and kahawai) could be impacted.

A refreshed education campaign on best practices and fishery issues

36 Fishing for blue cod in the Sounds is iconic and can be the main reason many visit. However, this emphasis on fishing, instead of other experiences, is causing high fishing pressure on the finite blue cod population of the Sounds. Getting this message out was considered important by the Group. Spreading awareness of best fishing practices was also considered important for survival of released undersize cod.

- + Clear information on the fishery’s state, through a wide range of channels, should result in an up-to-date appreciation of the individual action needed to ensure sustainability.
- + Updated evidence-based information on best fishing practices would equip fishers to minimise impacts.
- Those who need this information to improve fishing practices can often be the hardest to reach or convince with an educational approach.

Potential approaches to enhance fine-scale recreational fishing data

37 Information on recreational harvest of blue cod in the Marlborough Sounds is currently derived from the National Panel Survey every five to six years, which provides robust estimates of overall harvest levels for BCO 7 and the MSA. This is supplemented by annual ramp surveys in Waikawa. However, fine scale data on the location of fishing is limited, which makes addressing localised depletion and shifting effort difficult.

38 Several members of the Group advocated for mandatory catch reporting to address this. The Government is not considering this at this time, but FNZ is interested in the public’s view on approaches such as (but not limited to):

- a voluntary catch reporting trial to test uptake and provide non-quantitative insights;
- a voluntary registry of recreational fishers to participate in catch surveys;
- other research avenues such as additional ramp or local surveys etc.

- + Participatory approaches align well with encouraging a stewardship attitude for fishing in the Sounds.
- + If considered to be representative (difficult to assess), voluntary reporting or a registry to sample may offer some insights to better understand and manage recreational fishing.
- Voluntary approaches can create a self-selected sample of fishers, which mean that results are difficult to scale up to reflect wider fishery trends. The Group noted this as an issue.

Tools to mitigate release mortality

39 Charter vessel reporting in the Sounds suggests that about five cod are caught for every cod retained. Returned cod face a range of hazards before they reach safety on the sea floor:

- Small hooks can fit into a mouth and be swallowed, meaning retrieving the hook can kill the cod. Research has shown that use of [larger circle hooks reduces gut hooking and release mortality](#).
- Rough handling, exposure to the sun, and length of time out of water may compromise survival.
- Returned fish are vulnerable to predation by shags and barracouta, which was noted as a major issue by several members of the Group. Some fishers have trialled the use of return tube and weights to avoid this, but the most proven method seems to be moving on as soon as the shags turn up.

40 In the past, educational material has encouraged the use of larger hooks, better handling practices, return tubes, moving on when catching small cod, and releasing fish out of sight of shags. We welcome your insights on the scale of these issues, and your experience with any potential mitigations. We are looking for measures that will improve the survivorship of these returned cod that could be progressed through education and voluntary uptake, or even regulation if proven to be effective and practical.

Next steps

41 Following consultation, the Minister will be provided with advice and your submissions. Should the Minister agree to any changes to the seasonal closure dates, these would occur by amending the relevant fisheries regulations, and come into effect for the 2025/26 seasonal closure. This would allow time for implementation and building awareness.

42 Wider measures to improve the health of the fishery would be progressed through further consultation and advice to the Minister later in 2025, depending on the results of upcoming research on potential spawning areas, and your input and feedback.

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