



Review of the recreational blue cod fishery in Doubtful, Thompson, and Bradshaw Sounds, Fiordland

Decision Document

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by the Ministry for Primary Industries

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1 Executive Summary

The recreational blue cod fishery in Doubtful Sound, Fiordland, has been closed since 2005 (Figure 1). Science conducted since the closure was implemented suggests that the population is unlikely to rebuild to larger numbers due to habitat limitation. Anecdotal information and accounts from MPI Compliance suggests that fishing effort displaced from Doubtful Sound into two connected fiords, Thompson and Bradshaw Sounds, is leading to depletion in these areas. The Fiordland Marine Guardians have recommended that Doubtful Sound be reopened and that the daily bag limit that applies to Doubtful, Thompson, and Bradshaw Sounds be reviewed and set at 1. This is expected to:

- Reduce take in Thompson and Bradshaw Sounds in response to depletion concerns
- Spread fishing effort across a greater area
- Provide for utilisation in Doubtful Sound
- Provide for consistent rules and sustainable utilisation across these connected fiords
- Promote incentives for fishers to utilise the open coast fishery where blue cod are more abundant.

MPI supports the recommendation of the Fiordland Marine Guardians.

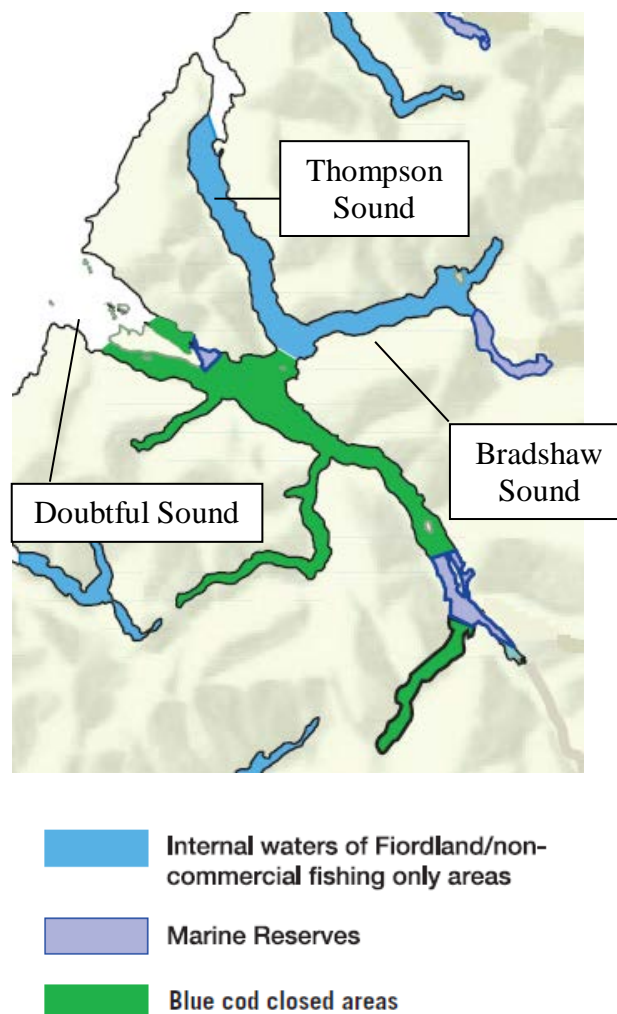


Figure 1: Doubtful, Thompson, and Bradshaw Sounds. The blue cod closure in the internal waters of Doubtful Sound is shown in green, while the internal waters open to recreational blue cod fishing are shown in blue. Marine reserves are also shown (purple).

2 Purpose

This decision document outlines recommendations on the future management of the recreational blue cod fishery in Doubtful, Thompson, and Bradshaw Sounds. It provides you with a summary of the submissions received regarding the proposals and asks you to make a decision on whether Doubtful Sound should be reopened to recreational blue cod fishing and, if so, what the daily bag limit should be for Doubtful, Thompson, and Bradshaw Sounds.

2.1 BACKGROUND

Blue cod are vulnerable to localised depletion. They are relatively slow growing and long-lived, they take bait easily, and they form highly localised populations. Additionally, blue cod can change sex from female to male.

Concerns regarding localised depletion and a need for localised management in Fiordland led to the establishment of the Fiordland Marine Guardians in 1995, and the implementation of a management framework targeted at a range of species, ecosystems, and fisheries including blue cod, in 2005. This framework included a total ban on commercial fishing in the internal waters of Fiordland (which is still in place today).

Specifically, the rules for blue cod were changed to a bag limit of 3 in the internal waters of Fiordland (Figure 2),¹ and a prohibition on possessing, on any day, more than the daily limit of blue cod (no “accumulation”). Additionally, the internal waters of Doubtful Sound and Milford Sound were closed to recreational blue cod take, as they were identified as being more depleted than other areas (they are the most easily accessed fiords).

The Guardians intended that these closures be lifted eventually. The closures were viewed as an interim measure to allow the blue cod populations to recover, as well as provide an opportunity to research the populations in the absence of fishing pressure.

Scientific surveys conducted since the closures were implemented indicate that blue cod numbers have remained low in the inner fiord habitats of Doubtful and Milford Sound, regardless of the closures (or marine reserves). This is because blue cod habitat is limited within these locations. Blue cod in these areas appear to originate from the open coast, and there is very little reproduction in these steep inner fiord environments. Given the results of the surveys, it is unlikely that the fisheries in Doubtful and Milford Sounds will ever be able to sustain high recreational fishing pressure.

Information from compliance records and anecdotal information suggests that as a result of the closure in Doubtful Sound, recreational fishing effort for blue cod has been displaced to Thompson and Bradshaw Sounds. Thompson and Bradshaw Sounds are connected by internal waters to Doubtful Sound (Figure 1),² and are therefore more accessible than other fiords, particularly for fishers with small boats that cannot access the open coast. There are no other fiords or arms connected by internal waters to Milford Sound.

Anecdotal information from fishers suggests that displaced fishing effort is having an adverse impact on the blue cod populations in Thompson and Bradshaw Sounds. If the closure in

¹ The ‘internal waters of Fiordland’ differ from the outer coast. The internal waters of Fiordland are defined in Schedule 18 of the Fisheries (Amateur Fishing) Regulations 2013 and are also shown in Figure 2 of this decision document. There are different regulations to manage most species in the internal waters of Fiordland when compared to the outer coast, given the fundamental differences in ecology between these two areas. Commercial fishing is banned in the internal waters, and species bag limits are typically more restricted to account for the vulnerability of fisheries in the internal waters to localised depletion.

² Doubtful, Thompson, and Bradshaw Sounds are connected by internal waters, meaning that each of these sounds is accessible from the other without having to pass by the open coast.

Doubtful Sound continues, these blue cod populations may become depleted, which could ultimately lead to the closure of the blue cod fishery in Thompson and Bradshaw Sounds.

While the number of fishers involved in this fishery may be lower than more populated areas in New Zealand, for the fishers involved, closing Thompson and Bradshaw Sounds would have a considerable impact given that these are the only blue cod fishing locations accessible from Doubtful Sound without navigating the open coast. The effect on charter vessels may be small, as most charter vessels take clients to fish for blue cod on the outer coast, weather permitting, where the daily bag limit is higher.

While the impact on Thompson and Bradshaw Sounds from fishing effort displaced from Doubtful Sound is uncertain, there is enough concern for it to have become a key issue for the Guardians.

Additionally, MPI compliance records indicate that there is some confusion currently around the boundaries of the closure in Doubtful Sound, and where it is legal to take fish in Thompson and Bradshaw Sounds, although this appears to be a minor issue.

Management on a fiord by fiord basis is problematic due to unintended consequences such as displaced fishing effort that can lead to higher impacts on nearby areas, and the confusion it creates when rules are inconsistent and change across small areas. Therefore, a revised management framework for Doubtful, Thompson, and Bradshaw Sounds will be most effective if it looks at management for all these areas collectively.



Figure 2: the Fiordland Marine Area (black line), showing the internal waters of Fiordland (blue), blue cod recreational fisheries closures (red), and marine reserves (orange).

2.2 OBJECTIVES

These fisheries fall within the Fiordland (Te Moana o Atawhenua) Marine Area, defined in the Fiordland (Te Moana o Atawhenua) Marine Management Act 2005 (the Act). The Act provides for the establishment of the Fiordland Marine Guardians, whose functions include providing advice and recommendations in regard to the effectiveness of management measures within the Fiordland Marine Area.

When exercising functions, such as making decisions about fishing rules for the Fiordland Marine Area, Ministers and agencies must take the advice and recommendations of the Guardians into account (s 26 of the Act). The objectives and options in this paper take into account the advice and recommendations provided by the Guardians.

MPI is committed to fisheries management regimes that achieve the purpose of the Fisheries Act 1996: to provide for utilisation while ensuring sustainability. Additionally, MPI recognises the special role the Guardians play in providing important local knowledge and advice on fisheries management in Fiordland. The objectives of the recommendations in this review are to:

1. Ensure the sustainability of the blue cod fisheries in the internal waters of Doubtful, Thompson, and Bradshaw Sounds
2. Maximise the overall social, economic, and cultural benefit obtained from the recreational blue cod fishery in Doubtful, Thompson, and Bradshaw Sounds, while removing any unnecessary regulatory utilisation constraints.

3 Consultation

MPI released a consultation document on 22 April 2015 for four weeks of public consultation. The document was published on MPI external websites, and persons and organisations with an interest in and/or affected by the proposals were notified of the consultation and directed to the consultation web page.

The proposals in the consultation paper were developed and supported by all members of the Guardians. The Guardians include customary, recreational, commercial, and science representatives.

Ngai Tahu are represented on the Fiordland Marine Guardians and support the proposals outlined in the consultation document. Additionally, the proposals were raised with the Te Waka a Maui Fisheries forum prior to public consultation being undertaken.

During public consultation, submitters were encouraged to provide feedback on the options proposed and any other additional information that could be helpful to inform the review.

3.1 SUBMISSIONS RECEIVED

Fourteen submission were received:

- Clint Tauri
- John Steffens
- Paul Gay
- Faye O'Rourke
- Gary Weir
- Logan Wallace
- Ross Wallace
- Mike McMillan
- Warren Iggo
- Bradley
- Deep Cove Charters
- Real Journeys
- Marine Science University of Otago
- Southland Conservation Board

3.2 SUMMARY OF SUBMISSIONS

3.2.1 Submissions supporting reopening

Eleven submissions supported reopening Doubtful Sound. These were split as to what bag limit was supported:

- One submitter did not comment specifically on the bag limit
- One submitter supports Option 2 (daily bag limit of *I* across the internal waters of Doubtful, Thompson, and Bradshaw Sounds)

- One submitter appears to support Option 3 (daily bag limit of 2 across the internal waters of Doubtful, Thompson, and Bradshaw Sounds); however, it is not clear if the submitter intended to support Option 4 as the submission lacked sufficient detail, and a number of other submitters wrote that they supported Option 3, but then described Option 4.
- Five submitters support Option 4 (the bag limit would be captured by the current regulation of 3 for the internal waters of Fiordland)
- One submitter supports reopening Doubtful Sound with a bag limit of 3, but leaving the arms that come off the main Doubtful Sound fiord closed (this was not consulted on)
- Two submissions request that the daily bag limit be increased to 5 (this was not consulted on).

Of the 11 submissions that support reopening, four provided more detailed feedback on the proposals or other information that could be helpful to the review. Deep Cove Charters indicated that they are very optimistic that a bag limit of 1 would be sustainable and would also ease pressure on Thompson and Bradshaw Sounds, while noting that fishers should be encouraged to fish the outer coast whenever possible.

Clint Tauri commented that consideration should be given to the potential effect that increased boat activity could have on the resident bottlenose dolphin population. Mr Tauri also suggested that the arms of Doubtful Sound should remain closed if the main passage were reopened (this option was not consulted on).

John Steffens indicated that the role of the previous closure was to allow research to be done and assess the impact that recreational fishing was having on the blue cod population within Doubtful Sound. Given that the research has been completed and indicates that the fiord habitat rather than fishing pressure is limiting the population, Mr Steffens feels the fishery should be reopened, and the bag limit captured by the current regulation of 3 for simplicity.

The other submitter, who supports reopening but did not comment on the bag limit, suggested that reopening Doubtful Sound would be great news for the school camps that utilised the area, and further indicated that they have observed an increase in the size of blue cod that are caught accidentally in Doubtful Sound during school camps, but not an increase in the number of fish.

Additionally, Deep Cove Charters submitted that a boat limit be set for Doubtful, Thompson, and Bradshaw Sounds (boat limits were not consulted on).

3.2.2 Submissions supporting status quo

Three submissions supported retaining the closure in Doubtful Sound (Marine Science University of Otago, Real Journeys, and Southern Conservation Board). Each of these submissions highlighted that blue cod stocks in Doubtful Sound have not recovered. Real Journeys also commented that blue cod are an important prey species for the Doubtful Sound bottlenose dolphin population, which is also low and is not recovering. Therefore they do not recommend increasing competition for their food source by reopening the blue cod fishery.

The Southland Conservation Board noted that there has been no significant increase in blue cod numbers, and their concern is that the outcome of proposed changes should be a viable blue cod population.

Marine Science University of Otago noted that the goal of the original closure in Doubtful Sound was to rebuild the blue cod stocks to “healthy levels” by removing fishing mortality. Specifically, they note that:

- Given that Doubtful Sound was not closed to all fishing, there is likely to still be incidental fishing mortality of blue cod.
- A number of biological and ecological characteristics make blue cod slow to recover in Doubtful Sound.
- The blue cod population in Doubtful Sound has not recovered to “healthy levels”.
- There is no evidence of displaced fishing effort into Thompson and Bradshaw Sounds.
- The fishery should not be reopened given low population levels.

3.2.3 Response

The Guardians consider that the original closure came about because of localised depletion, the need for research to be undertaken in the absence of fishing pressure, and the need for development of a long term management plan for the area. The results of the research have consistently suggested that there are depletion concerns for Doubtful Sound if it is reopened to recreational blue cod fishing. Given the biological and ecological constraints on the blue cod fishery in Doubtful Sound, it is unlikely that the fishery will ever grow to large numbers capable of sustaining a substantial recreational fishery. This fishery is an example of an area that relies on fishers to responsibly “fish for a feed, but not for the freezer”.

The Guardians have received a number of anecdotal reports from fishers that the blue cod fishery in Thompson and Bradshaw Sounds is declining. Additionally, the number of fishers involved in recreational fisheries in Fiordland appears to be increasing considerably over time. Given this information, the Guardians consider it particularly important to be conservative and look after the fishery in Thompson and Bradshaw Sounds.

Overall, the Guardians consider that reopening Doubtful Sound to recreational blue cod fishing, and lowering the daily bag limit that can be taken in Doubtful, Thompson, and Bradshaw Sounds to 1, achieves the best balance between utilisation and sustainability concerns for the area. The Guardians recognise that there are still unknowns, as well as a strong need for the development of a future management framework including a consistent and well-designed approach to monitoring for the recreational blue cod fishery.

Given the vulnerability of blue cod fisheries in the internal waters of Fiordland (Figure 2), it is important to set bag limits that reflect the size of the fishery and aim to prevent localised depletion. Doing so is important for preventing further sustainability concerns, and for providing incentives for fishers to target areas of higher productivity, such as the open coast, for blue cod.

MPI recognises that a majority of the submitters support reopening Doubtful Sound with a bag limit of three. However, only one of these submitters provided rationale for this bag limit, and none commented on sustainability concerns for the areas in question. John Steffens suggests that recreational fishing is not limiting the blue cod population. MPI notes, however, that given the limited habitat for blue cod, the population is unlikely to ever be high enough to sustain significant recreational fishing pressure and will always be subject to localised depletion.

MPI notes that the status quo does not address concerns in Thompson and Bradshaw Sounds. Setting a bag limit of 3 does not reduce overall take in Thompson and Bradshaw Sounds, and therefore it is not clear that concerns regarding depletion will be addressed by this approach. Marine Sciences University of Otago suggest that there is no evidence of Thompson and

Bradshaw Sounds being subject to displaced fishing effort. MPI considers that given anecdotal information of potential depletion, the concerns of the Fiordland Marine Guardians, and accounts from MPI Compliance, a cautious approach to managing Thompson and Bradshaw Sounds is warranted so as to avoid a situation where full fishery closure is necessary.

MPI recognises that concerns remain for the viability of the blue cod population in Doubtful Sound if it is reopened to recreational blue cod fishing; however, any risks to sustainability are likely to be managed by setting a low bag limit and continuing to monitor the fishery. By allowing for a low level of take in Doubtful Sound, fishers will be able to keep any blue cod caught accidentally while targeting other species, but there will be strong incentives to move to the outer coast to fish for blue cod where the bag limit is higher.

4 Legal Considerations

4.1 SECTION 8 – PURPOSE OF THE ACT

The purpose of the Fisheries Act 1996 (the Fisheries Act) is to provide for the utilisation of fisheries resources while ensuring sustainability. The regulatory options proposed are consistent with this purpose. The Fiordland Marine Guardians and MPI consider that Option 2 best achieves the purpose of the Fisheries Act.

4.2 SECTION 9 – ENVIRONMENTAL PRINCIPLES

Section 9 of the Fisheries Act requires that you take the following environmental principles into account when exercising or performing functions, duties, or powers in relation to the utilisation of fisheries resources or ensuring sustainability:

- a) associated or dependent species should be maintained above a level that ensures their long-term viability;
- b) biological diversity of the aquatic environment should be maintained; and
- c) habitat of particular of significance for fisheries management should be protected.

MPI considers that all options presented in this paper satisfy your obligations under section 9 of the Fisheries Act. There is no information to suggest that the abundance of associated or dependent species or biodiversity would be modified. MPI has no information to determine the impact of each option in terms of the bottlenose dolphin population in Doubtful Sound, but expects any risks to the bottlenose dolphin population will be managed by taking a cautious approach to blue cod management. There are no designated habitats of particular significance within the areas being reviewed, and the proposals are unlikely to affect habitat given the method used to fish for blue cod (line fishing).

4.3 SECTION 10 – INFORMATION PRINCIPLES

Section 10 of the Fisheries Act requires that you take the following information principles into account:

- a) decisions should be based on the best available information;
- b) decision makers should take into account any uncertainty in the available information;
- c) decision makers should be cautious when information is uncertain, unreliable, or inadequate; and
- d) the absence of, or any uncertainty in, any information should not be used as a reason for postponing or failing to take any measure to achieve the purpose of the Act.

MPI considers that the best available information has been used as the basis for the recommendations herein. MPI notes that information principles direct that caution be taken when information is uncertain. Given the uncertainty surrounding potential depletion in Thompson and Bradshaw Sounds, a cautious approach to managing this fishery is warranted, as proposed in this decision document. MPI has taken into account the uncertainty surrounding the level of take that may be sustainable in Doubtful Sound, and therefore proposes a cautious option for this location also.

5 Management Options

The following options were released for consultation in the consultation document.

5.1 OPTION 1 – STATUS QUO

Option 1 is the status quo. Option 1 would retain the current closure and make no amendments to bag limits.

5.1.1 Impacts

Three submitters supported retaining status quo. This option is not supported by the Fiordland Marine Guardians. While retaining the status *quo* may preserve the blue cod population in Doubtful Sound, it takes no action to address potential sustainability concerns in Thompson and Bradshaw Sounds or provide for utilisation in Doubtful Sound. Given the evidence that suggests there is low reproduction in Doubtful Sound, and individuals in this population appear to originate from the open coast, it is unlikely that the population in Doubtful Sound provides a source of recruitment for blue cod populations elsewhere. It is therefore unlikely that retaining the closure will positively impact on the population in Thompson and Bradshaw Sounds.

5.2 OPTION 2 – REMOVE THE DOUBTFUL SOUND CLOSURE AND SET A BAG LIMIT OF 1 FOR DOUBTFUL, THOMPSON, AND BRADSHAW SOUNDS (FIORDLAND MARINE GUARDIANS AND MPI PREFERRED OPTION)

Option 2 is to reopen Doubtful Sound to recreational blue cod fishing, and set a maximum daily bag limit of 1 blue cod for Doubtful, Thompson, and Bradshaw Sounds. This means that fishers fishing in the internal waters of Fiordland (Figure 3) will be able to take 3 blue cod for their daily bag limit, but only 1 blue cod may come from the internal waters of Doubtful, Thompson, and Bradshaw Sounds (Figure 4).



Figure 3: the Fiordland Marine Area (black line), showing the internal waters of Fiordland (blue), blue cod recreational fisheries closures (red), and marine reserves (orange).

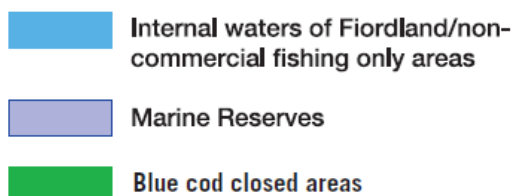
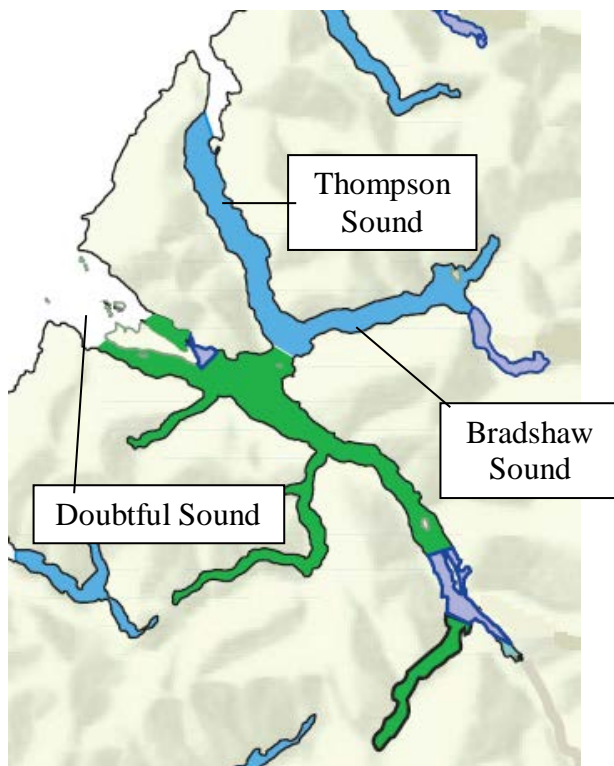


Figure 4: Doubtful, Thompson, and Bradshaw Sounds. The blue cod closure in the internal waters of Doubtful Sound is shown in green, while the internal waters open to recreational blue cod fishing are shown in blue. Marine reserves are also shown (purple).

5.2.1 Impacts

Option 2 is recommended by the Fiordland Marine Guardians, and is also MPI’s preferred option. One submitter supported Option 2. Option 2 restricts recreational take to a very low level, but provides for utilisation in an area that is currently closed to recreational fishing. By allowing for a low level of take, it is possible for fishers to take a blue cod caught accidentally, while providing strong incentives for fishers to move to the outer coast to target blue cod where the bag limit is higher.

Option 2 allows fishing effort to spread across a greater area, and reduces fishing pressure in Thompson and Bradshaw Sounds by setting a bag limit of 1. MPI considers that any risks associated with allowing fishers to take blue cod in Doubtful Sound are addressed by setting a low bag limit of 1 and continuing to monitor the fishery.

5.3 OPTION 3 – REMOVE THE DOUBTFUL SOUND CLOSURE AND SET A BAG LIMIT OF 2 FOR DOUBTFUL, THOMPSON, AND BRADSHAW SOUNDS

Option 3 is to reopen Doubtful Sound to recreational blue cod fishing, and set a bag limit of 2 for Doubtful, Thompson, and Bradshaw Sounds. This means that fishers fishing in the internal waters of Fiordland (Figure 2) will be able to take 3 blue cod for their daily bag limit, but only

2 blue cod may come from the internal waters of Doubtful, Thompson, and Bradshaw Sounds (Figure 1).

5.3.1 Impacts

One submitter appeared to support Option 3, but their submission lacked sufficient detail to clarify what they supported (a number of other submissions wrote that they supported Option 3, but then described Option 4). Option 3 is not supported by the Fiordland Marine Guardians.

Option 3 has similar benefits to Option 2 in providing for utilisation and spreading fishing effort, but it creates a higher risk to sustainability. There is uncertainty as to whether a bag limit of 2 can be sustained in Doubtful Sound. This uncertainty and the biological and ecological characteristics that make blue cod particularly susceptible to overfishing in Doubtful Sound, mean there is a higher risk of depletion under this option than under Option 2.

5.4 OPTION 4 – REMOVE THE DOUBTFUL SOUND CLOSURE WITH NO CONCURRENT CHANGES TO BAG LIMITS (BAG LIMIT WOULD BE CAPTURED BY CURRENT REGULATIONS - 3 FOR THE INTERNAL WATERS OF FIORDLAND)

Option 4 is to reopen Doubtful Sound with no concurrent review of the daily bag limit. This means that Doubtful Sound (as well as Thompson and Bradshaw Sounds) would be managed with a maximum daily bag limit of 3.

5.4.1 Impacts

Five submitters supported Option 4 and one submitter supported reopening Doubtful Sound with a bag limit of 3 but keeping the arms that come off Doubtful Sound closed. An additional 2 submitters supported having a bag limit higher than 3. Option 4 is not supported by the Fiordland Marine Guardians.

Option 4 creates higher risks to sustainability than any other option. Fishing effort may be spread over a larger area than under the status quo, but overall take will not be reduced in Thompson and Bradshaw Sounds. Additionally, given that Doubtful Sound is recognised as being more vulnerable to overfishing than other fiords, it is likely that a bag limit of 3 would promote rapid localised depletion.

6 Other Matters

The Guardians have not requested that the blue cod fishery in Milford Sound be considered for reopening at this time. The survey results indicate, as for Doubtful Sound, that abundance has not increased in this location despite being closed. Unlike Doubtful Sound, however, there are no other sounds connected by internal waters to Milford Sound, and therefore no other easily accessible areas for blue cod fishing. As a result, if the fishery were reopened fishing effort would occur solely in Milford Sound. As roughly half of Milford Sound is a marine reserve, fishing effort would be concentrated in a small area. For these reasons, the Guardians consider it is unlikely that Milford Sound could sustain even low recreational fishing pressure.

7 Conclusion

The preferred option for both MPI and the Fiordland Marine Guardians is Option 2 - Reopen Doubtful Sound to recreational blue cod fishing, and set a maximum daily bag limit of 1 blue cod for Doubtful, Thompson, and Bradshaw Sounds. Option 2 allows fishing effort to spread

across a greater area, and reduces fishing pressure in Thompson and Bradshaw Sounds by setting a bag limit of 1. MPI considers that any risks associated with allowing fishers to take blue cod in Doubtful Sound are addressed by setting a low bag limit of 1 and continuing to monitor the fishery.

8 Appendix 1 Submissions

- 1) Clint Tauri
- 2) John Steffens
- 3) Paul Gay
- 4) Faye O'Rourke
- 5) Gary Weir
- 6) Logan Wallace
- 7) Ross Wallace
- 8) Mike McMillan
- 9) Warren Iggo
- 10) Bradley (no second name given)
- 11) Deep Cove Charters
- 12) Real Journeys
- 13) Marine Science University of Otago
- 14) Southland Conservation Board

1) Clint Tauri:

From: clint@teanauholidaypark.co.nz [<mailto:clint@teanauholidaypark.co.nz>]
Sent: Thursday, 23 April 2015 4:40 p.m.
To: FMSubmissions
Subject: Blue cod-Doubtful Sound

As an overnight cruise operator in Doubtful Sound another consideration is the effect more vessels on the internal Fiords will have on the resident Dolphin population with increased vessel activity.

We feel that the main Fiord of Doubtful Sound be opened up for Blue Cod and up to 3 fish per day but keep the other Fiords closed to cod fishing. These include Hall Arm, Crooked Arm and First Arm.

Most fisherman have Lobster pots on-board and prefer to head out toward the entrance anyway to set their pots and to fish for Cod whilst they are there.

Other fish species are taken from the internal fiords anyway however Groper is a more likely target with the setting of long lines before going out to the entrance.

As an aside we would like to see a speed restriction of 11 knots from Rolla Island to Deep Cove, Hall Arm, Crooked Arm and First Arm.

Kind reagrds,

Clint Tauri
Fiordland Cruises.
0274572088

2) John Steffens:

From: John Steffens [<mailto:jsteffens@woosh.co.nz>]
Sent: Thursday, 23 April 2015 8:50 a.m.
To: FMSubmissions
Subject: Doubtful Sound

To Whom This May Concern

I support option 3 in the consultation document on recreational blue cod limits in Doubtful Sound. As previous chairman of the Guardians of Fiordlands Fisheries that developed the plan for Doubtful Sound I am well aware of the reasons for a special bag limit in the Sound in the first place. It was to allow research that has been done, and to assess the actual impact that recreational fishing was having on blue cod populations within Doubtful Sound.

As we assumed at the time, the natural population of blue cod within Doubtful Sound is low due to the productivity of the habitat. It is similar in most closed Fiord habitats, and not the result of over fishing. For ease of understanding I support the removal of special bag limits for Doubtful Sound and that the Sound as it is largely an inner Fiord habitat, just becomes like all other inner Fiord areas, a bag limit of 3 blue cod.

Yours

John Steffens

3) Paul Gay:

Hi Jenny

This would be great news for the children on Deep Cove camps. Some groups catch a blue cod or two and are disappointed to have to return them.

Over the last ten years or so we have not observed much change in the number of blue cod caught at Deep Cove except that they are getting larger.
The regulations have however been a good conservation exercise.

Thanks for keeping us posted

Paul Gay

4) Faye O'Rourke:

From: Faye O'Rourke [<mailto:fayza.orurke@compassnet.co.nz>]

Sent: Saturday, 2 May 2015 3:13 p.m.

To: FMSubmissions

Subject: Review of the blue cod Fiordland

(No3) While I agree with lifting the closure for the Doubful Sound and other internal waters of Fiordland, I would like to see the daily bag limit increased to 5 as its not possible on some days to be on the water because of rough weather. Gerald O'Rourke 43 Luxmoore Road, Timaru.

5) Gary Weir:

Lift the closure but do not amend the daily bag limit. The daily bag limit for Doubtful Sound would be captured by the current regulation, which sets a daily bag limit of 3 blue cod for the internal waters of Fiordland.

Regards

Gary Weir

6) Logan Wallace:

From: logan wallace [<mailto:loganwallace@windowslive.com>]

Sent: Thursday, 7 May 2015 10:39 a.m.

To: FMSubmissions

Subject: Dubtful Sound blue cod fishery

To whom it may concern

I would like to see option 3 taken up for the furture management of doubtful sounds blue cod fishery

option 3;Lift the closure but do not amend the daily bag limit. The daily bag limit for Doubtful Sound would be captured by the current regulation, which sets a daily bag limit of 3 blue cod for the internal waters of Fiordland.

thank you
logan wallace
182 beacon hill road
RD1 gore 9771
ph. 0272136360

7) Ross Wallace:

From: Alexa Wallace [<mailto:ra.aawallace@gmail.com>]

Sent: Thursday, 7 May 2015 10:46 a.m.

To: FMSubmissions
Subject: blue cod management

To whom it may concern

I would like to see the following option taken up for the management of the waters of doubtful sound. option 3: Lift the closure but do not amend the daily bag limit. The daily bag limit for Doubtful Sound would be captured by the current regulation, which sets a daily bag limit of 3 blue cod for the internal waters of Fiordland.

thank you
Ross Wallace
182 beacon hill road
RD1 gore 9771

8) Mike McMillan:

From: Mike [<mailto:mike@jetboat.com>]
Sent: Friday, 8 May 2015 12:26 p.m.
To: FMSubmissions
Subject: Fiordland Fishery

Hi

I am a recreational fisher who regularly fishes in the Fiordland area and would like to make a submission in support of Option 4 in the review of the recreational Blue Cod fishery to amend Sch18 of the Amateur Regulations. Thanks

Kind Regards
Mike McMillan
General Manager
Avon Engineering(Gore)Ltd
KeelowCraft Boats

+64 32089995
+64 27 3553630
mike@jetboat.com
www.keelowcraft.com

9) Warren Iggo:

From: walriggo@clear.net.nz [<mailto:walriggo@clear.net.nz>]
Sent: Saturday, 16 May 2015 2:00 p.m.
To: FMSubmissions
Subject: Review of blue cod in Fiordland

Lift the closure in Doubtful Sound and amend the daily bag limit to five fish, with a close surveillance of catch results for the first year.

Warren Iggo

12 Wilson Street , Seaview Timaru 7910.

10) Bradley (no second name given):

From: Bradley [mailto:b_inder@windowslive.com]
Sent: Tuesday, 19 May 2015 7:28 a.m.
To: FMSubmissions
Subject: Blue cod closure

I would like to vote for idea 3 please

Sent from my iPhone

11) Deep Cove Charters:

From: Diane Lemin [<mailto:deepco@xtra.co.nz>]

Sent: Thursday, 14 May 2015 8:15 p.m.

To: FMSubmissions

Subject: Review fisheries in Fiordland

Dear Sir/Madam

I am very optimistic that Doubtful Sound can sustain the reopening of the Blue Cod fishery. If it is opened up again I think the allocation of one Blue Cod per person per day and three Blue Cod per boat per day with five or more fishers on any one vessel over the whole of Doubtful Sound including Thompson and Bradshaw Sounds. I do believe also that if the Doubtful Sound Blue Cod fishery is opened up again it will take the pressure off the Blue Cod fishery in Thompson and Bradshaw Sounds but MPI should be encouraging fishers to fish the outer fiord and the coastal area more than the inner fiord has this would also take the pressure off the Thompson and Bradshaw Sound Blue Cod fishery also Doubtful Sound if it is reopened for Blue Cod fishing.

CHRIS LEMIN

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12) Real Journeys:

15 May 2015
Inshore Fisheries Management
Ministry for Primary Industries
PO Box 2526
Wellington 6140
To whom it may concern

Re: Review of the recreational blue cod fishery closure in Doubtful Sound, Fiordland.

Real Journeys Background:

In 1954 Les and Olive Hutchins began operating the Manapouri-Doubtful Sound Tourist Company, running four day excursions to and from Doubtful Sound. In 1966 Les and Olive acquired Fiordland Travel Ltd., with its Te Anau Glow-worm Caves and Milford Track Lake Transport operation and began trading as Fiordland Travel Limited. Continued expansion followed with the purchase of the vintage steamship “TSS Earnslaw” in Queenstown in 1969 and with the establishment of cruises in Milford Sound in 1970.

Since 2002 Fiordland Travel Ltd has operated all its tourism excursions under the ‘Real Journeys’ brand and in 2006 changed its company name to Real Journeys Limited. Real Journeys is now the largest tourism operator in the region with operational bases in Milford Sound, Te Anau, Manapouri, Queenstown, and Stewart Island. The company offers a range of quality tourism excursions including: day time and overnight cruises on Milford and Doubtful Sounds (with daily coach connections from Te Anau and coach / flight connections from Queenstown); trips to Te Anau Glow-worm Caves; guided Milford Track day walks and in Queenstown, cruises on Lake Wakatipu aboard the “TSS Earnslaw”, combined with Walter Peak High Country excursions and dining options at the Colonel’s Walter Peak Homestead.

Our Submission:

Real Journeys Limited supports Option 1 the status quo as outlined in the Review of the recreational blue cod fishery closure in Doubtful Sound, Fiordland; because the Blue Cod stocks in the inner fiord habitats Doubtful Sound have not recovered notwithstanding the closures and marine reserves. In particular we support the status quo because the inner fiord fishery is an important food source for the Doubtful Sound Bottlenose Dolphins. This Doubtful Sound dolphin population has not recovered to the levels observed in the 1990s and requires every assistance they can given; including not generating extra competition for their food source through fishing.

Yours Faithfully,

Fiona Black

Manager Concessions and Consents

13) Marine Science University of Otago:

Inshore Fisheries Management May 18, 2015
Ministry for Primary Industries
PO Box 2526
Wellington, New Zealand 6140
To whom it may concern,

I read with interest the Review of the recreational blue cod fishery closure in Doubtful Sound, Fiordland: Consultation Document (MPI Discussion Paper No:2015/12), and the changes to the management strategy proposed. In addition I reviewed the most recent baited underwater video survey report prepared by Willis and Handley (2012), and previous reports produced by

Willis et al. (2009). Accordingly I contribute this submission on behalf of the Marine Science Department, University of Otago who have had a longterm interest in the ecology and effective management of the Fiordland region. We trust that decisions regarding the continued management of the region and Doubtful Sound in particular will be made using an evidence-based approach, that the principles of precautionary management be followed, and that the needs for extractive and nonextractive uses of the region be balanced.

Limitations to effectiveness of blue cod closure in Doubtful Sound

Being a member of the original Guardians for Fiordland Fisheries and the Marine Environment (2000-2005) I'm familiar with the process that led up to the blue cod closure in Doubtful Sound and note that the goal of this management decision was to rebuild blue cod stocks in Doubtful Sound to "healthy levels" by removing fishing mortality from the local population. A benchmark for "healthy levels" was suggested based on populations in similar habitats within Dusky-Breaksea Sounds, based on aforementioned scientific reports. There is no evidence that this has occurred to date, despite (partial) removal of fishing mortality from the population. There were two basic flaws to the way the Doubtful Sound closure was carried out. The first was that fishing was not closed in the inner waters of Doubtful Sound, only the take of blue cod was. In this case blue cod have been likely subject to some incidental mortality from fishing for other species (Hapuku, sea perch, terakihi) within Doubtful Sound. Evidence from similar fisheries in the Marlborough Sounds where a slot limit has been put in place, and larger fish are caught and released, suggests that a high percentage of released fish suffer incidental mortality, particularly where small hooks are used (Carbines pers com). The second flaw is that compliance with a single species closure is problematic at best. Regardless of these management related issues, and based on the biology of the species we would expect recovery of a local population of blue cod in the fjords and particularly in Doubtful Sound, to be slow (i.e. perhaps 15-20 yrs). Blue cod have relatively low rates of migration within the fjords and high site fidelity (Rodgers and Wing 2008, Beer et al. 2011). Growth can be relatively slow and the largest animals obtain an age of >25 years (Beer and Wing 2013). The inner regions of the fjords are marginal habitat for this species where population growth and recovery rates are at a minimum, especially once the population is depressed (Wing et al. 2012). Additionally, reproduction in the species is size dependent and high egg production is only achieved by larger females (Beer et al. 2013). While the discussion document points out that blue cod may change from female to male in later life, evidence suggests that this sex change is not determined by size alone and some healthy populations of blue cod have a high percentage of large (fecund) females (Beer 2011).

Evidence from blue cod population surveys in Doubtful Sound

Results from the baited underwater video survey by Willis and Handley (2012) are consistent with these conclusions. Their 2012 survey provides no evidence that there has been significant recovery of blue cod in Doubtful Sound since the closure (based on an area comparison rather than a before and after comparison). Additionally the survey provides no evidence that areas outside of Doubtful Sound are receiving increased fishing pressure from displacement of effort as evidenced by declining populations of blue cod (one of the motivations for considering alternative management in Doubtful Sound). Here I'll note that the survey has several basic limitations. Most importantly the low power of the survey to detect differences in population density among regions (zones) means that one can only detect differences if populations are 5 to 6 times larger in one zone as another. This low power is because the survey was not replicated and no effort to stratify sites by habitat type was taken (sand patches and rock wall habitat were considered in the same grouping). The previous survey by Key (2010) had similar power constraints but a different method to quantify relative abundance, so unfortunately no direct comparisons can be made through time. The

result is no strong evidence upon which to base the idea that displacement of fishing effort into Thompsons-Bradshaw Sounds is having an adverse effect on the blue cod populations.

Changes to environmental conditions in Doubtful Sound

One additional unanticipated complication to the blue cod fisheries closure in Doubtful Sound 2005, is that subsequent to the fisheries closure there were increases in the allowed release of freshwater into Doubtful Sound from the Manapouri Power Plant. This change resulted in further changes to the environmental conditions of the inner fjord, and likely flow on effects to the benthic foodweb which blue cod are a member (e.g. Jack et al. 2009). Though the direct effects of the increased freshwater in Doubtful Sound on blue cod population recovery are not known we can infer that the effect would likely be to decrease recovery rates. This conclusion is based on observations that blue cod rely on a different, and lower productivity food base in the inner fjords and in the fjords with the most persistent freshwater inputs (Wing et al. 2012), and that the blue cod population within the Elisabeth Island Marine Reserve showed no evidence for recovery between 2002 and 2010 (Jack and Wing 2013). These studies suggest that the inner fjord population of blue cod in Doubtful Sound would have a very slow recovery rate, even if fishing were completely removed.

In summary 1) there were several basic flaws in the execution of the blue cod fishery closure in Doubtful Sound - 2005, 2) there is no evidence to suggest that the population in Doubtful Sound has recovered to “healthy levels” or that the population in Thompson-Bradshaw Sounds is subject to displaced fishery effort 3) the biology of the species in the inner fjords results in very low growth and population recovery rates and 4) environmental changes in Doubtful Sound due to the Manapouri Power Station likely influence recovery rates. Based on these lines of evidence I recommend that the blue cod fishery within Doubtful Sound remain closed and that an additional closure be extended to the other fisheries within the fjord to limit incidental mortality. This is based on the general precautionary principle in fisheries management that if a population has declined to very low levels and there is no evidence that it is recovering then it is a bad idea to increase fishing mortality on that population.

Sincerely,
Stephen Wing PhD, on behalf of the
Department of Marine Science, University of
Otago

Professor Stephen Wing, Director, Ecology Degree Programme
Department of Marine Science, University of Otago, 310 Castle St., Dunedin, New Zealand
Tel + 64 – 3 479 9038; Fax + 64 – 3 479-8336; Email steve.wing@otago.ac.nz

References

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- Beer, N., and S. Wing. 2013. Trophic ecology drives spatial variability in growth among subpopulations of an exploited temperate reef fish. *New Zealand Journal of Marine and Freshwater Research* 47:73-89.
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Rodgers, K., and S. Wing. 2008. Spatial structure and movement of blue cod (*Parapercis colias*) in Doubtful Sound, New Zealand, inferred from $\delta^{13}\text{C}$ and $\delta^{15}\text{N}$. Marine Ecology Progress Series 359:239-248.

Wing, S., N. Beer, and J. Jack. 2012. The resource base of blue cod (*Parapercis colias*) subpopulations in marginal fjordic habitats is linked to chemoautotrophic production Marine Ecology Progress Series 466:205-214.

14) Southland Conservation Board:

Dear Jenny

Submission – future management of the recreational blue cod fishery in Doubtful, Thompson and Bradshaw Sounds

The Southland Conservation Board is a statutory body appointed by the Minister of Conservation and established by the Conservation Act 1987. Its function is set out in section 6 of that Act and in the National Parks Act 1980. The Board's jurisdiction is the Southland Conservancy including the Fiordland National Park. Its functions include advocacy in regard to all conservation related matters at any public forum or in any statutory planning process.

The Southland Conservation Board (hereafter 'the Board') wishes to submit on the future management of the recreational blue cod fishery in Doubtful, Thompson and Bradshaw Sounds.

The board has considered the three options provided by MPI, and consider option 1 'Retain the status quo' the preferred option due largely to the fact it appears there has not been a significant increase in blue cod numbers within this area. The board's concern is that the outcome of the proposed changes to the recreational regulations is a viable blue cod population.

Yours sincerely



Andrew Bowmar
Chairman of the Concessions Committee

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