

BRIEFING FOR

PRIMARY PRODUCTION SELECT COMMITTEE

Subject	Fisheries Act 1996 Amendment Bill (No.2)
Summary	This paper provides you with a response to the Committee's request for a briefing on the issues surrounding the management of orange roughy and the decisions taken in respect of the Orange Roughy 1 stock.
Action sought	Response to request for information during hearing of 7 August 2008
Submitted	13 August 2008
Contact	Terry Lynch 819 4638 or 027-244 4318 Ministry of Fisheries

ORANGE ROUGHY MANAGEMENT

1. In considering the Fisheries Act 1996 Amendment Bill (No2), the Committee has requested supplementary information on the management of orange roughy stocks in general, and some specific detail on the issues that led to the High Court review (Antons Trawling case).
2. This section provides:
 - (a) a brief background to the management of New Zealand's orange roughy (ORH) stocks. A table is provided of historical commercial catch limits in each ORH stock;
 - (b) specific detail about the management of ORH 1 and the rationale for proposed reductions of the ORH 1 TACC in the 2007 fishing year; and
 - (c) a response to the main points raised in Antons Trawling's oral submissions to the Committee.

Background

3. New Zealand's ORH fisheries are comprised of eight separate quota management areas (Figure 1).

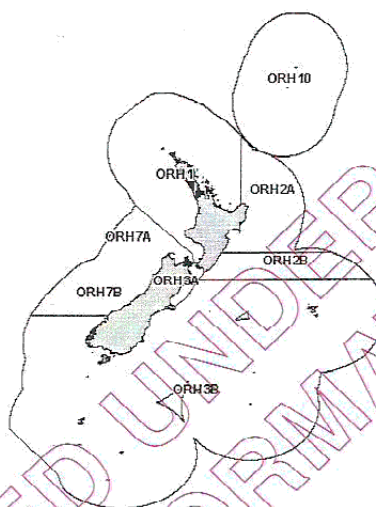


Figure 1: Boundaries of orange roughy quota management areas

4. Within some of these quota management areas, stocks are further separated for management purposes into sub-areas. The main ORH fisheries are listed below with sub-areas indicated by bullet points. Total allowable commercial catch (TACC) limits since 1990 are provided in Table 1:¹
 1. Northern North Island (ORH 1)
 - Mercury-Colville stock
 - Other stocks
 2. Cape Runaway to Banks Peninsula (ORH 2A, 2B, & 3A)
 - East Cape stock
 - Mid-East Coast stock
 3. Chatham Rise and Puysegur (ORH 3B)
 - Northwest Chatham Rise stock
 - East Chatham Rise stock
 - South Chatham Rise stock
 - Puysegur stock
 - Other minor stocks or sub-areas
 4. Challenger Plateau (ORH 7A)
 5. West coast South Island (ORH 7B)
5. Orange roughy management is complicated and detailed. Management measures for ORH are developed for each of the quota management areas and sub-areas. Separate measures may also be applied to individual topographic features

¹ ORH 10 has a nominal TAC of 10 t and has never been commercially fished.

(e.g. seamounts) around which orange roughy are known to aggregate. Historical summaries of management for all ORH stocks are not provided here, but further detail is given for ORH 1 below.

6. The management strategy in the early years of each fishery is to reduce the stock down to the most productive level, which is where the biomass can support the maximum sustainable yield (MSY). During this "fish-down" phase, catches are higher than are sustainable over the long term. Once the size of a stock has been reduced to the biomass that can support the maximum sustainable yield, the annual catch limit is reduced in order to maintain the stock size at that size. The challenge is to reduce the catch early enough so as not to reduce the stock to below this level.
7. The productivity of ORH stocks was overestimated in the early years of ORH fishing and management was not sufficiently conservative to avoid over-fishing of some stocks. ORH 7A and 7B are examples of depleted stocks and now have nominal TACs of 1 t (see Table 1). Other stocks such as ORH 3B and ORH 2A continue to support productive fisheries (Table 1). Careful management is required to ensure this continues.
8. The history of orange roughy management in New Zealand has several examples of high early catch rates, followed by a sharp decline in catch. Information on these stocks is expensive to gather and difficult to interpret. Because fishing is generally targeted at dense aggregations of fish, the normal indicators of stock depletion, such as gradually declining catch rates, are not reliable in these fisheries. Often, catch rates continue at high levels even though the stock biomass is being depleted.
9. A further complicating factor is that the aggregating points for spawning ORH are seamount type features rising from the ocean floor. Not all of this type of feature serves as ORH spawning grounds, so those that do are not all discovered at once. This, along with the above problem of not knowing when an aggregating population will run out, can lead to what is known as serial depletion, where features are discovered then depleted, without ever knowing the total size of the resource. This is why a cautious approach to management is required.

Table 1: Total Allowable Commercial Catches in orange roughy stocks

	ORH 1	ORH 2A	ORH 2B	ORH 3A	ORH 3B	ORH 7A	ORH 7B
1990-91	190	6 666	1 367	2 879	23 787	1 900	1708
1991-92	190	6 666	1 367	2 879	23 787	1 900	1708
1992-93	190	6 666	1 367	2 879	21 300	1 900	1708
1993-94	190	6 666	1 367	2 300	21 300	1 900	1708
1994-95	190	7 000	820	1 840	14 000	1 900	1708
1995-96	1190	4 261	259	580	12 700	1 900	430
1996-97	1190	4 261	259	580	12 700	1 900	430
1997-98	1190	4 261	259	580	12 700	1 900	430
1998-99	1190	3 761	259	580	12 700	1 425	430
1999-00	1190	3 761	259	580	12 700	1 425	430
2000-01	800	1 100	185	415	12 700	1	430
2001-02	1400	1 100	185	415	12 700	1	110
2002-03	1400	680	99	221	12 700	1	110
2003-04	1400	680	99	221	12 700	1	110
2004-05	1400	1 100	185	415	12 700	1	110
2005-06	1400	1 100	185	415	12 700	1	110
2006-07	1400	1 100	185	415	11 500	1	110
2007-08	1400	1 100	185	415	10 500	1	1

Orange Roughy One (ORH 1)

Background

10. The ORH 1 area extends northwards from west of Wellington around to Cape Runaway (Figure Two). Prior to 1993–94 there was no established fishery, and reported landings were generally small. A new fishery developed in winter 1994, when aggregations were fished on two hill complexes in the western Bay of Plenty.
11. A Total Allowable Commercial Catch (TACC) of 190 t was set from 1989–90. Prior to that there had been a 10 t TACC and various levels of exploratory quota. From 1995–96, ORH 1 became subject to a five year adaptive management programme (AMP), and the TACC was increased to 1190 t. The AMP was an experimental programme to collect information to confirm that the higher TACC was sustainable. A catch limit of 1000 t was applied to an area in the western Bay of Plenty called the Mercury-Colville 'box', with the former 190 t TACC applicable to the remainder of ORH 1.
12. Based on an evaluation of the results of the AMP for the Mercury-Colville box initiated in 1995, it was concluded that the Mercury-Colville box could not support a TACC of 1000 t. The catch in the Mercury-Colville box was reduced over time until it is now a 30 t by-catch only limit. The AMP was concluded and the TACC was reduced to 800 t for the 2000–01 fishing year. The reason the TAC did not revert to the pre-AMP figure of 190 t is that during the AMP new ORH fisheries had been discovered in ORH 1.
13. From 1 October 2001, ORH 1 was reintroduced into the AMP for a further five years, and the TACC was increased from 800 t to 1400 t. The purpose of the new AMP was to confirm the potential for ORH catches throughout the remainder of ORH 1. Catch limits of 200 t were established in areas A and D (excluding the Mercury-Colville box), and limits of 500 t in areas B and C (Figure 2), with an individual seamount feature limits in each area.

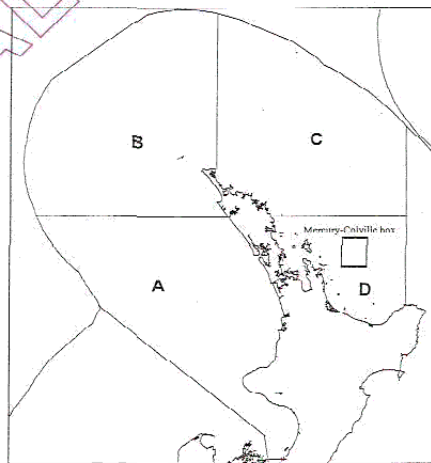


Figure 2: Four sub-management areas for the ORH 1 (labelled A-D). Solid lines enclose the Mercury Colville box in area D

Recent developments

14. The five year AMP that commenced in 2001 was concluded in 2006. The AMP did not generate information to indicate that the increased TACC of 1400 t was sustainable in the long term. The Minister sought to reduce the TACC to the pre-AMP level of 800 t. The Minister's decision to reduce the TACC from 1400 t to 800 t was challenged, and the Minister conceded that the Final Advice Paper (FAP), on which his decision was based, contained errors. He therefore consented to orders setting aside the decision. Accordingly, the TACC remained at 1400 t. The memorandum filed with the Court as part of conceding that the Ministers decision to set a TAC could be set aside recorded that:
- (a) "Available information about the effects of misreporting of locations of catches of Orange Roughy in area 1 was not provided for scientific assessment through the Adaptive Management Plan Working Group process; and
 - (b) "The decision reflects the precautionary approach favouring sustainability, rather than the approach required by the Fisheries Act, i.e. taking caution where there may be impacts on utilisation of the fishery as much as caution in relation to possible impacts on sustainability".
15. During the 2007 sustainability round, ORH 1 was again reviewed. The Minister reduced the TACC from 1400 t to 870 t, the rationale for this decision is outlined below. It was this decision that was the subject of the review by the High Court that resulted in Millers J's judgment of 22 February 2008. The result of the Courts decision was that setting of the TAC was found to be invalid and the TACC remained at 1400 t.

Rationale for 2007 ORH 1 Management Decisions

Biology and Fishery Characteristics

16. Orange roughy have a number of biological characteristics that make them susceptible to over-fishing. They are slow growing, long-lived (up to 120-130 years) and mature late (approximately 30 years). They do not have a high breeding rate and comparatively few young fish enter the fishery each year to replace those that are harvested or die of natural causes. This means when a stock is at MSY only a relatively small proportion of the stock can be taken in any one year. Orange roughy's aggregating behaviour means fishing is often conducted on relatively small aggregations that exist within large areas. Because most of the fish aggregate at one spot, high catch rates are able to be maintained even when the area or stock is being over fished. As a result stock decline will likely be evident only following a major decline in biomass.

Management Approach

17. The Minister's decisions regarding the TACC for ORH 1 were not based on information about the abundance of ORH 1 relative to the biomass that would support maximum sustainable yield (B_{MSY} – the target biomass in section 13 of the Act). This is because an assessment of stock size or sustainable yield was not available and therefore no assessment could be made about whether the current TACC was sustainable. Rather the Minister was advised based on the relative risk to the sustainability of the stock balanced against the social and economic costs of the

TACC reduction. Some support for this approach was garnered from submissions on the Fisheries Act 1996 Amendment Bill that dealt with the proposed amendment to section 10 of the Fisheries Act.

18. As SeaFIC has argued in a general context in a submission to the Primary Production Committee, the extent of precautionary measures must be commensurate with the potential risks.² As put by the Deepwater Group Limited (an industry organisation that represents the interests of most deepwater quota owners), there “must be a reasonable balance between the stringency of precautionary measures (with their associated financial or opportunity costs) and the seriousness and irreversibility of the potential threat”.³ Although not made with reference to ORH 1 specifically, MFish agreed with those comments, and their application to ORH 1. Information was provided in the advice to the Minister both on the potential threat to the sustainability of ORH 1, and on the likely effect on fishers. MFish invited the Minister to consider the information on both sustainability and financial impacts in this particular case, and to decide upon the weight given them.
19. Three options were then presented to the Minister, each of which reflected a different balance between sustainability and utilisation. Option 1 would have retained the 1400 t TACC; Option 2 would have reduced the TACC to 1150 t and Option 3 would have reduced the TACC to 870 t. The Minister chose Option 3 and reduced the TACC from 1400 t to 870 t. The rationale for his decision was outlined in his decision letter; the relevant excerpt is set out below.

“While I understand there appears to be no imminent threat, I am alarmed by the possibility that a serious and irreversible sustainability problem may not be detected before it is too late. The low productivity of ORH, its aggregating behaviour, and the litany of ORH management failures around the world have convinced me that caution in favour of sustainability is the responsible course of action. I believe that in this instance, the lack of information on stock levels requires me to take firm action. I have balanced my desire to reduce the sustainability risk with the very real and immediate economic consequences. My preference is to be as certain as I can that I have looked after the long term of the fish and the fishery. I am not willing to wait for evidence of decline before I take action – if I did, it may be too late to ensure the sustainability of this ORH stock.”

The 2008 High Court Decision

20. Antons Trawling Company challenged the Minister's decision to reduce the TACC from 1400 t to 870 t as outlined in Option 3 above. The High Court held that the Minister's decision to reduce the TACC was invalid principally because it was not based on an estimate of both the current biomass and the biomass that can produce the maximum sustainable yield as required by section 13. The Court also said that the failure to advise the Minister of the possibility of a topographical survey being done in the future was an error of law.
21. The Ministry acknowledged it could have advised on the potential for a topographical survey, what information that survey could have generated and its cost.

² The New Zealand Seafood Industry Council Ltd Submission to the Primary Production Select Committee on the Fisheries Act 1996 Amendment Bill. Submission dated 13 April 2007, paragraph 72.

³ Deepwater Group Ltd Submission to the Primary Production Select Committee on the Fisheries Act 1996 Amendment Bill. Submission dated 13 April 2007, paragraph 11.

22. Once the Ministry had studied the Judgement it was realised that the Court's interpretation of the need for an estimate of current biomass and B_{MSY} was one that was available on a literal reading of the Act and there was little point in an appeal. This was a surprising result considering the internationally-recognised practice of using a range of approaches that, while consistent with the concept of MSY, do not provide an estimate of the current biomass or B_{MSY} .
23. Estimates of the current biomass and the biomass that can produce the maximum sustainable yield remain unavailable for ORH 1; as such, the ORH 1 was not reviewed again this year as part of the Ministry's annual sustainability round.

Antons' Submissions

24. Antons Trawling's oral submission covered two points:
- The amendment was not necessary because section 13 and section 10 adequately provided for the Minister to make an estimate of current biomass and B_{MSY} , even where information was poor; and
 - The amendment risked enabling the Ministry being able to avoid its duty to conduct a proper process when developing advice to the Minister to set a TAC.

MFish Comment

25. The amendment responds to the High Court's decision that the Minister must have an estimate of current biomass and B_{MSY} before a TAC can be set. The principles contained in section 10 must be taken into account where information is poor, but section 10 is not available where the Minister has no estimate at all of current biomass and B_{MSY} . This is the circumstance with most stocks. The information to provide a viable estimate is not available without unreasonable cost, effort or time for many stocks.
26. The amendment does not protect the Ministry or Minister from the requirement to conduct a proper process when developing advice and making decisions on the setting or varying of a TAC, including proper consultation, and properly taking into account the provisions of sections 8, 9 and 10 of the Act. Failure to conduct a proper process will still leave decisions exposed to judicial review proceedings.

Recommendation

27. MFish recommends that you:
- Agree that the Bill should not be amended in response to the matters raised in the Antons Trawling oral submission.

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Ministry of Fisheries