Ministry for Primary Industries
Manatū Ahu Matua

Review of sustainability and other management controls for Chatham Island dredge oyster (OYS 4)

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by the Inshore Fisheries Management Team

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Requests for further copies should be directed to:

Publications Logistics Officer
Ministry for Primary Industries
PO Box 2526
WELLINGTON 6140

Email: brand@mpi.govt.nz

Telephone: 0800 00 83 33

Facsimile: 04-894 0300

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SUSTAINABILITY REVIEW OF FISH STOCKS 2013

This Initial Position Paper (IPP) provides the Ministry for Primary Industries' (MPI's) initial views on proposals for inshore fish stock sustainability measures and other management controls for the 01 October 2013/14 fishing year.

MPI has developed this IPP for the purpose of consultation as required under the Fisheries Act 1996 (the Act). MPI emphasises the views and recommendations outlined in the paper are preliminary and are provided as a basis for consultation with stakeholders.

In August 2013, MPI will compile the Final Advice Paper (FAP) for the attached proposal. This document will summarise MPI's and stakeholder's views on the issues being reviewed, and provide final advice and recommendations to the Minister for Primary Industries. A copy of the FAP and the Minister's letter setting out his final decisions will be posted on the MPI website as soon as these become available. Hard copies will be available on request.

DEADLINE FOR SUBMISSIONS

MPI welcomes written submissions on the proposals contained in the IPP. All written submissions must be received by MPI no later than 4pm on Friday, 9 August 2013.

Written submissions should be sent directly to:

Inshore Fisheries Management
Ministry for Primary Industries
P O Box 2526
Wellington 6011

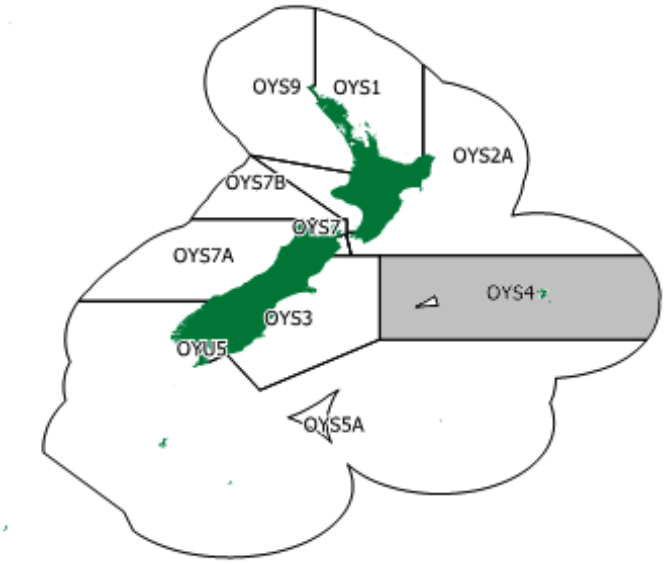
or emailed to FMsubmissions@mpi.govt.nz

OFFICIAL INFORMATION ACT 1982

All submissions are subject to the Official Information Act and can be released (along with the personal details of the submitter) under the Act. If you have specific reasons for wanting to have your submission or personal details withheld, please set out your reasons in the submission. MPI will consider those reasons when making any assessment under the Act.

REVIEW OF SUSTAINABILITY AND OTHER MANAGEMENT CONTROLS FOR CHATHAM ISLAND DREDGE OYSTER (OYS 4)

Figure 1: Quota Management Areas (QMAs) for dredge oyster showing OYS 4 in grey



INTRODUCTION

1. The Ministry for Primary Industries (MPI) is seeking tangata whenua and stakeholder information and views to inform a review of catch limits and other management measures for dredge oyster *(Ostrea chilensis)* in QMA 4 (OYS 4, Figure 1).

2. MPI proposes the following options for the total allowable catch (TAC), total allowable commercial catch (TACC) and associated allowances (Table 1):

Table 1: Proposed TACs, TACCs and allowances for OYS 4

Option	Allowances				
	TAC (t)	Customary Māori (t)	Recreational (t)	Other sources of fishing-related mortality (t)	TACC (t)
Option 1 (*Status quo*)	20	2	2	1	15
Option 2	50	2	2	2.5	43.5

3. Recent estimates of biomass suggest that an increase in TAC is possible, while ensuring catch is at a level that is sustainable.

Context

4. Chatham Islands dredge oysters were introduced into the Quota Management System (QMS) on 1 October 2005. No commercial catch has been reported since the 2002/03 fishing year. MPI understands that this is primarily due to ongoing costs associated with shellfish sanitation and biotoxin requirements, which have dampened interest in investing in this fishery at the level of the current TAC and TACC.

5. The TAC for OYS 4 is set under section 13 of the Fisheries Act 1996 (the Act). Section 13 (2) requires the Minister for Primary Industries[1] (the Minister) to set a TAC for OYS 4 that enables the stock to be maintained at, or move towards, a biomass at or above the level that will produce the maximum sustainable yield[2] (B_{MSY}).

6. Where there is insufficient information to enable reliable estimates of B_{MSY}, s 13 (2A) of the Act requires the Minister to use best available information to set a TAC that is not inconsistent with the objective of maintaining the stock at or above, or moving the stock towards or above, a level that can produce the maximum sustainable yield (MSY).

7. The available information on OYS 4 is insufficient to enable reliable estimates of B_{MSY}. However, a recent biomass survey conducted by NIWA scientists indicates that the current level of biomass could sustain an increase to the TAC, contingent upon a credible harvest strategy (including future biomass surveys and potential biological studies).

8. An increase in the TAC and TACC would offset the ongoing cost of sanitation requirements and provide incentive for quota owners to invest in this fishery. This would enable utilisation of the fishery while ensuring catch remains at a level that is sustainable.

Management Approach

9. Dredge oyster stocks are managed under the Draft National Fisheries Plan for Inshore Shellfish (the Shellfish Plan). The Shellfish Plan is an MPI policy document that came into operation from July 2011.[3] Within the Shellfish Plan, stocks are grouped and management approaches and objectives are tailored for each group.

10. OYS 4 is in Group 4 in the Shellfish Plan. Specific management objectives for Group 4 stocks are:

    - enable utilisation of each stock; and
    - ensure catch is at a level that is sustainable.

11. Group 4 contains many shellfish stocks with developing fisheries. The management approach for this group is focused on providing for the development of a resource for customary, recreational,

[1] The Minister for Primary Industries now exercises the powers and responsibilities of the Minister of Fisheries under the Fisheries Act 1996.

[2] Maximum sustainable yield is defined in section 2 of the Act as: "... the greatest yield that can be achieved over time while maintaining the stock's productive capacity, having regard to the population dynamics of the stock and any environmental factors that influence the stock."

[3] The Fisheries Plan has not been formally approved under the Act.

and commercial use. Additional information, as it becomes available, can provide opportunities for greater utilisation of stocks in Group 4.

12. Opportunities for the development of fisheries in Group 4 are guided by the biological vulnerability of the species or stock. A cautious approach is recommended for stocks for which there is little information regarding biological vulnerability, such as OYS 4.

Biological Characteristics of OYS 4

13. Dredge oyster are widespread from the intertidal zone to depths up to 100 metres in New Zealand coastal waters and the Chatham Islands.

14. Estimates of growth and age are difficult to obtain for this species. There are no available data on the growth and age characteristics of dredge oysters in the Chatham Islands. The available habitat in the Chatham Islands, and oyster shell morphology, suggest growth may be fast in this area.

15. Information on the same species is available from Foveaux Strait and suggests that growth can differ considerably between areas, seasons, and years. Oyster spat in Foveaux Strait generally recruit to the legal-sized population between 4 and 8 years of age. Mortality is also variable. It is thought that 2% of oyster spat will survive the first winter in Foveaux Strait, but that natural mortality may be low for adult individuals.

16. There is evidence to suggest that recruitment of dredge oysters is variable in the Chatham Islands. As a result, an increase in TAC might not be sustainable over the long term. Given this uncertainty, it may be appropriate to adopt a cautious approach to setting the TAC and any possible increase in the TAC should be accompanied by a credible harvest strategy. This will involve monitoring of catch trends, further biomass surveys in the next 3 – 5 years depending on level of catch, and potential for biological studies to be conducted.

Stock Status

17. The best available information on current stock status for OYS 4 comes from a survey conducted in March 2013, as no catch has been reported for OYS 4 in recent years.

18. The biomass survey in March 2013 was conducted by NIWA scientists and funded through a NIWA research program aimed at developing fisheries. This survey produced an estimate for current recruited biomass of 427 tonne green-weight for dredge oysters within an area approved for sanitation clearance.

19. This biomass estimate assumes 100% dredge efficiency; dredge efficiency is not known in practice. Specifically, this assumes that 100% of oysters in an area subjected to a dredge tow are captured by the dredge. For comparison, dredge efficiency is assumed to be 17% with equipment used in Foveaux Strait (indicating that only 17% of oysters in a dredged area are thought to be captured).

20. As a result, the biomass estimate presented by NIWA for Chatham Islands dredge oyster is likely to be conservative, and reflects a population subjected to very little fishing pressure in recent years.

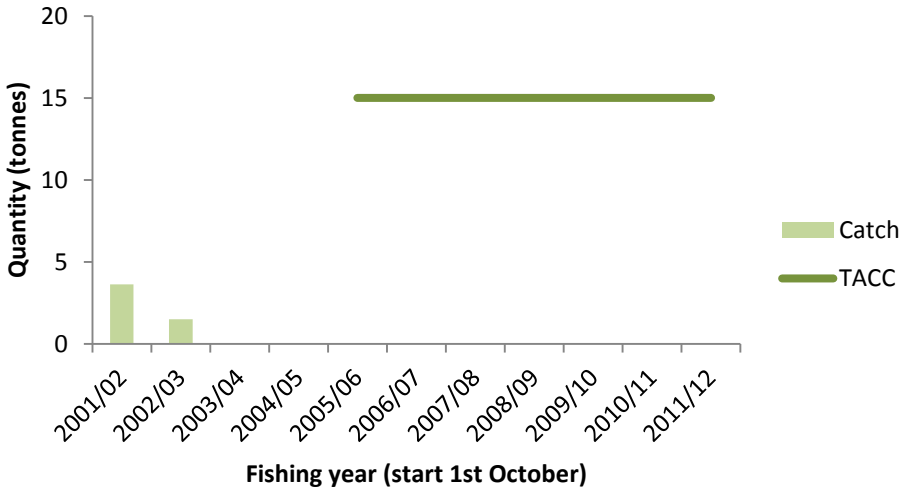
OYS 4 Fishery

21. Dredge oysters are currently unexploited as a commercial fishery in the Chatham Islands. Small levels of catch were reported in the 2001/02 and 2002/03 fishing years (3.6 and 1.5 tonne respectively), with no catch reported since then (Figure 2).

22. Shellfish fisheries are subject to sanitation and biotoxin requirements overseen by MPI Verification Services. Before harvesting can begin, each harvest area must meet specific sanitation requirements. Applications further require ongoing monthly and annual testing, as well as annual reporting.

23. MPI understands that two areas have had sanitation clearance confirmed in the Chatham Islands; however, that ongoing costs of sanitation requirements are the primary limitation in developing utilisation of this fishery at the level of the current TAC and TACC.

Figure 2: Reported Catch Landings and TACC (tonnes) for OYS 4 from 2001/02 to the 2011/12 fishing year (no TACC set before the 2005/06 fishing year)



Recreational and Māori Customary Allowances

24. There are no available estimates of recreational or Māori customary use, or records of harvest, for Chatham Island dredge oysters. Māori customary fisheries on the Chatham Islands are currently managed under Fisheries (Kaimoana Customary Fishing) Regulations 1998. MPI invites Māori customary and recreational interest groups to submit any additional information they hold on their current catch levels and catch aspirations for Chatham Islands dredge oyster.

Other Sources of Fishing-Related Mortality

25. Dredge oysters are a high value species and some degree of illegal take is expected. Additionally, the use of dredge as the main harvest method will likely contribute to mortality for this stock. Larval oysters frequently recruit to the shells of adult oysters, and thus recruitment to the population will also be depressed by the loss of new recruits ("wings") on the harvested adult

oysters. For these reasons, 1 tonne of TAC was allocated to other sources of fishing-related mortality when the TAC was set for OYS 4 in October 2005.

26. One option is to set an allowance for other sources of fishing-related mortality that is equivalent to approximately 5% of the proposed TAC for OYS 4, in the absence of research-based estimates. MPI seeks any further information stakeholders may have on other sources of fishing-related mortality.

Other Key Considerations

27. When making a decision concerning the TAC for a stock, the Minister must have regard to the interdependence of stocks, the biological characteristics (discussed above) and any environmental conditions affecting the stock. MPI is unaware of any relevant environmental conditions affecting OYS 4 and invites comments from submitters with any additional information.

28. MPI recognises that oysters can influence a number of important ecosystem functions including water filtration, nutrient cycling, sediment stabilisation, and habitat availability, which may be altered with the removal of oysters from this system. However, any impacts on the ecosystem are expected to be minimal as they will only be realised locally and across a specific and limited scale where oyster dredging has received sanitation clearance.

29. As a further management tool, Schedule 6 of the Act permits the return of live dredge oysters of legal size to the water from which they were taken provided they are likely to survive. Oyster fishing is also subject to a minimum legal size. For dredge oysters, commercial fishers may not take or possess any oysters for which the shell, whether entire, clipped, or broken, may be passed through a rigid circular metal ring with clear inside and diameter of 58 mm.

PROPOSED RESPONSE

30. MPI is consulting on the following management options for setting TACs, TACCs and allowances for OYS 4 (Table 2):

Table 2: Proposed TACs, TACCs, and allowances for OYS 4

Option	Allowances				
	TAC (t)	Customary Māori (t)	Recreational (t)	Other sources of fishing-related mortality (t)	TACC (t)
Option 1 (*Status quo*)	20	2	2	1	15
Option 2	50	2	2	2.5	43.5

31. The best available information to inform TAC setting for OYS 4 is the recent NIWA survey in March 2013. The survey and results have been reviewed by the MPI Shellfish Working Group, which consequently concluded that a TAC of 40 to 60 tonnes green-weight may be sustainable in the short term, and recommended a repeat survey within the next 3 to 5 years accompanied by biological studies.

32. Based on this survey data, MPI considers both options proposed are consistent with the objective of maintaining the OYS 4 stock at or above B_{MSY} in the short term. Option 2 carries more risk than Option 1; however, any such risk should be largely mitigated following monitoring of annual catch and TACC and a recommended follow-up biomass survey.

Option 1 (*Status quo*)

33. Option 1 proposes to retain the current management settings for OYS 4. This option does not provide sufficiently for utilisation given the costs associated with the expense of sanitation and biotoxin requirements coupled with working from a remote location (Chatham Islands). Under the *status quo*, this is not likely to change, and no revenue is expected to be generated.

Option 2

34. Option 2 proposes:

    - the TAC be increased from 20 tonnes to 50 tonnes;
    - no changes to Māori customary or recreational allowances (maintaining their levels at 2 tonnes each);
    - the allowance for other sources of fishing-related mortality be increased from 1 tonne to 2.5 tonnes (maintaining its level at 5% of the TAC); and
    - the TACC be increased from 15 tonnes to 43.5 tonnes.

35. Option 2 will have the advantage of potentially generating revenue of at least $500 000 in the OYS 4 fishery. Correspondence with quota owners indicates that this is more than enough to offset the costs of ongoing sanitation requirements and sufficiently allow for utilisation of this fishery.

36. Option 2 is based on a conservative biomass estimate. This TAC will fulfil the management objectives of enhancing utilisation and ensuring sustainable management of this fishery in the short term. Option 2 poses a greater sustainability risk than Option 1, particularly over the medium and long term.

37. MPI is aware of evidence that suggests recruitment of dredge oyster can be variable. Limited biological information on Chatham Island dredge oysters further adds to the sustainability concern of this stock. In addition, dredging can negatively impact settlement and recruitment of oysters by removing settlement surfaces (including live adult oysters) and suspending silt that causes high mortality in newly settled oyster spat. In order to ensure that the stock is managed sustainably, the MPI Shellfish Working Group meeting proposes that an increase in the TAC be accompanied by a credible harvest strategy.

38. A credible harvest strategy for OYS 4 will involve ongoing monitoring of catch trends accompanied by further biomass surveys in 3 – 5 years, depending on annual levels of catch. Biological studies may be proposed in order to develop our understanding of growth and productivity of Chatham Island dredge oysters. These actions will mitigate sustainability concerns

and ensure the long term utilisation of this stock. MPI expects that costs associated with a credible harvest strategy, including a further biomass survey, will be borne by the industry.

39. MPI recognises that some scientific and anecdotal information suggests that oyster dredging can impact other fishery species, such as blue cod, but is unaware of any sufficient long term research that supports this claim. Impacts from dredging are expected to be minimal as they will be limited to areas with sanitation clearance. Furthermore, impacts will depend on the magnitude of fishing effort, which will be constrained by the cautious level proposed for the TAC and TACC.

40. Overall, Option 2 will have the advantage of enhancing utilisation and increasing the potential economic value derived from this stock, while allowing for continued monitoring to improve current information.

FUTURE CONSIDERATIONS

41. The OYS 4 fishery will need to be monitored if changes to the TAC and TACC are made. Depending on the level of commercial catch, MPI proposes future biomass surveys on a time frame deemed appropriate based on catch trends, as well as biological studies, as recommended by the Shellfish Working Group. MPI will also welcome feedback from fishers on the status of the stock, with the aim of preventing sustainability from being compromised by fluctuating recruitment levels or adverse effects of dredging.

INITIAL CONSULTATION

42. Prior to the release of this consultation paper, MPI supplied the opportunity for tangata whenua to provide input into the options proposed through the Chatham Island's fisheries forum (CIFF@44). Plans to revise the TAC and TACC were discussed as part of the National Fisheries Plan key discussion point engagements with stakeholders, which occur regularly as part of the annual planning process.

43. This initiative was supported during initial consultations. The Chatham Islands Enterprise Trust (CEIT) expressed clear support for an increase in the TAC to 50 tonnes.

CONCLUSION

44. OYS 4 was introduced into the QMS in 1 October 2005, and since then, no commercial catch has been taken. Biomass estimates, based on a recent survey, suggest that this stock could sustain an increase in the TAC over the short term. An increase in the TAC would assist the development of this fishery and better provide for a return on the investment needed than the status quo.

45. Option 2 allows the fishery to develop by increasing the TAC, contingent upon future biomass surveys and potential biological studies. The TAC increase to 50 tonnes reflects an appropriate approach given a paucity of biological information available for this stock.