



Review of sustainability measures for southern scallops (SCA 7) for 1 April 2014

Final Advice Paper

MPI Information Paper No: 2014/04

ISBN No: 978-0-478-42385-3 (online)
ISSN No: 2253-394X (online)

March 2014

Contents

Page

1	Executive summary	1
2	Summary of recommendations	6
3	Key considerations	8
3.1	Need to Act	8
3.2	Context	9
3.3	Management Approach	11
3.4	Stock Status	12
4	Consultation and submissions	13
5	Final Proposals	14
5.1	Analysis of final proposals	14
6	Other considerations	25
7	Conclusions	27
8	Appendix 1: Assessment against statutory obligations	28
8.1	Purpose of the Act	28
8.2	General Obligations	28
8.3	Information Principles	28
8.4	Setting the TAC	29
8.5	Environmental Principles	30
8.6	Section 11 Considerations	31
8.7	TACC and Allowances	32
8.8	Southern scallop enhancement programmes	33
8.9	Closure of southern scallop fishery	35
9	Appendix 2: Memorandum of understanding between the Ministry of Fisheries and the Challenger Scallop Enhancement Company Limited	36
10	Appendix 3: Submissions received	37

REVIEW OF SUSTAINABILITY MEASURES AND OTHER MANAGEMENT CONTROLS FOR SOUTHERN SCALLOP (SCA 7)

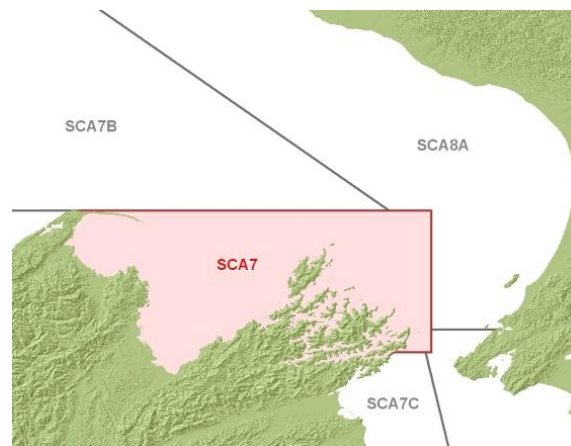


Figure 1: Quota Management Area for SCA 7

1 Executive summary

1. You are being asked to make decisions on sustainability measures for the southern scallop fishery (SCA 7) for the fishing year beginning 1 April 2014 under the Fisheries Act 1996 (the Act). Your decisions relate to the setting of the total allowable catch (TAC), total allowable commercial catch (TACC) and allowances for non-commercial Maori customary, recreational harvest and other sources of fishing related mortality.
2. The Ministry for Primary Industries (MPI) proposes three options (refer to Table 1) for your consideration. You may, however, choose to set an alternative TAC (and allocate it among non-commercial Maori customary fishing interests, recreational fishing interests, other sources of fishing-related mortality and the TACC) based on your assessment of best available information, in accordance with your statutory obligations.

Table 1: Summary of final TAC, allowance and TACC proposals for SCA 7

Option	Allowances				
	TAC (t)	TACC (t)	Customary Māori (t)	Recreational (t)	Other sources of fishing-related mortality (t)
Option A	901	747	40	40	74
Option B	520	400	40	40	40
Option C	130	46	40	40	4

3. SCA 7 is managed on an enhanced and rotational basis. As such, it is listed on Schedule Three of the Act, which allows for an alternative TAC to be set under section 14 of the Act. Section 14 of the Act allows you to set a TAC to better achieve the purpose of the Act¹. The purpose of the Act is to provide for the utilisation of fisheries resources while ensuring sustainability.²
4. The SCA 7 fishery comprises three distinct areas; Golden Bay, Tasman Bay and the Marlborough Sounds. All commercial catch currently comes only from the Marlborough Sounds. Golden Bay and Tasman Bay, the enhanced and rotationally fished sections of the fishery, are voluntarily closed by commercial fishers to commercial fishing to protect the residual scallop beds. Tasman Bay has not been fished commercially since 2006-07. Golden Bay has not fished for the last two years. The Marlborough Sounds has been sustaining most of the fishery in recent years.
5. MPI has assessed stock status against sustainability limits and fishery targets. For Marlborough Sounds, it is likely (> 60%) to be below the fishing mortality target, and unlikely (< 40%) to be below the soft and hard limits³. For Golden Bay or Tasman Bay, it is very unlikely (< 10%) the areas are at or above the biomass target, very likely (> 90%) to be below the soft limit, and likely (> 60%) to be below the hard limit.
6. The average commercial landings over the previous five years have been less than 10% of the 747 tonne TACC and as such catching the TAC or TACC, as it currently stands, is simply not feasible. Given this situation, MPI considers a review of the TAC to be appropriate to ensure the SCA 7 spawning stock biomass is protected and maintained within sustainability limits and fishery targets
7. Under the current management framework of SCA 7 the following arrangements also apply:
 - An enhancement harvest programme approved in 1998 by the then Minister under section 310 of the Act. The programme includes certain reporting requirements, but does not specify target enhancement levels or minimum enhancement investment.
 - A Memorandum of Understanding between MPI and the Challenger Scallop Enhancement Company regarding the provision of information to enable you and MPI to make decisions on sustainability and other management measures. This information includes annual biomass surveys prior to any fishing occurring and recommendations based on yield assessments on proposed sub-area catch limits. They are also required to supply a rotational fishing plan showing the areas proposed to be fished in any year.
8. In the last 8-10 years the performance of the fishery has declined, despite these arrangements. It appears the suitability of benthic habitat in Golden and Tasman Bays for scallops is lower now than in the past (partially due to environmental factors). There has also been a decline in the level of enhancement activity by industry, which may partially be due to financial constraints and/or reduced investment given the poor survival of juvenile scallops.

¹ Section 14 does not require you to set a TAC that moves the stock to, or maintains the stock at, a size at or above a level that can produce the maximum sustainable yield (MSY) or at a level that is not inconsistent with this objective as does your obligations under s13.

² Section 8 of the Act.

³ The soft limit is the level at which a time-bound rebuild should be considered being adopted. The hard limit is the level at which a closure of the fishery should be considered to ensure future sustainability.

9. Under the MOU while the information provisions have largely been adhered to there are concerns that the target fishing mortality used to calculate harvest biomass from areas like the Marlborough Sounds may be too high. There are also indications that commercial exploitation rates in some areas of the Sounds for the previous seasons were excessive and potentially unsustainable over the long term.
10. MPI also notes that under the current management regime, the last fishing season was the first where Challenger Scallop Enhancement Company and recreational fishers were unable to agree on a fishing plan for the Marlborough Sounds. MPI considers these tensions have arisen primarily due to low biomass levels.
11. The management of the SCA 7 fishery is at a cusp. Those with an interest in the fishery can either renew support for management of the fishery on an enhanced and rotational basis or the fishery can be managed on the basis of a TAC set in reference to that biomass of the wild fishery that can produce the maximum sustainable yield or to ensure sustainability of spawning stock biomass. As such, MPI has put forward three options for your consideration.
12. Option A proposes to increase the current TAC by 74 tonnes to 901 tonnes, by taking into account for the first time other sources of fishing-related mortality. No changes are proposed to the current Maori customary, recreational and TACC allowances. The TACC under Option A was strongly supported in industry submissions. MPI is unsupportive of Option A for the following reasons:
 - MPI considers that a TAC should reflect the status and management of the fishery.
 - There is no suggestion that a TAC of 901 tonnes could be taken on a sustainable basis.
 - While this option provides incentive for commercial fishers to undertake enhancement in this fishery, there is some uncertainty about the future status of SCA 7 as a rotational or enhanced fishery or the responsiveness of the fishery to enhancement efforts.
13. Option B reduces the current TAC from 827 tonnes to 520 tonnes, retains current Maori customary and recreational allowances, sets an allowance for other sources of fishing-related mortality, and reduces the TACC by 347 tonnes. MPI notes that this Option will require:
 - A concerted investment by industry to revive enhancement, and rotational harvest. Such a plan will either result in future enhancement of the fishery or in a staged reduction to catch limits if enhancement activity (biologically and/or economically) is unsuccessful.
 - A strengthening of the relationship between MPI and the Challenger Scallop Enhancement Company and a renewed commitment to management on the basis of the MOU to ensure timely provision of information with which to make decisions on annual harvest plans in the fishery, including fine-scale voluntary harvest agreements on an annual basis.
 - A significant improvement against fishery performance targets if the TAC is to stay at this level.

14. MPI recommends the additional information requirements including fine-scale exploitation estimates are provided to ensure harvest in sub-areas within the Marlborough Sounds does not exceed recommended fishing mortality targets. MPI considers these improvements can be made to ensure sustainable utilisation of individual areas.
15. MPI considers Option B appropriate if you consider:
- The need to balance the sustainability risk with the utilisation opportunity by retaining incentive for enhancement activity, by providing sufficient headroom within the TAC.
 - A graduated reduction in the TAC is required if there is not sufficient action taken to strengthen the enhancement programme and improve current monitoring tools.
 - The submissions received from industry renewing their support and commitment to rebuild the fishery through a concerted enhancement and rotational harvesting programme are sufficient to respond to sustainability concerns.
 - The provision of information through the existing Memorandum of Understanding with industry will provide sufficient security to ensure the spawning stock in local scallop populations can be protected through fine-scale management under voluntary agreements.
16. Option C recognises that the fishery currently operates primarily in the Marlborough Sounds and proposes a TAC based on a conservative 20% exploitation rate of the recent scallop biomass within the Marlborough Sounds. This option retains current Maori customary and recreational allowances, sets an allowance for other sources of fishing-related mortality, and reduces the TACC by 701 tonnes. Option C was strongly supported by recreational submissions. MPI notes that under this option the financial feasibility for commercial fishers to undertake enhancement activity is significantly more difficult with a TACC of around 40-50 tonnes. MPI considers Option C appropriate if you consider:
- The purpose of the Act would be better met by setting a TAC at a level that could be taken on a sustainable basis in the absence of enhancement, despite the stock being listed on Schedule 3 of the Act.
 - The likelihood of rebuilding the fishery in the short to medium term through enhancement efforts to be low, given:
 - Potential changes in habitat suitability and other environmental factors affecting the survival of scallops.
 - The lack of information in recent years on enhancement activity and the success of that activity as required to be provided to the Ministry under the enhancement programme.
 - The available provisions in the Act to allow for in-season increases to the TACC in the future as a better mechanism to respond to new biomass information from Golden and Tasman Bays, should it become available, any rebuild in the fishery through natural recruitment, and/or future enhancement activities.

17. Based on stakeholder submissions, there is:

- a) Strong industry and iwi support for Options A or B. Industry submissions noted their commitment to rebuilding the fishery through enhancement activities, and most signalled a willingness to work collaboratively towards the recovery of SCA 7. Conversely, recreational submissions strongly oppose Options A or B.
- b) Recreational submissions, in particular those from the Marlborough Sounds, strongly support Option C. However, many also note that reducing the TAC is only one step in the rebuild of SCA 7 and considerable more work should be done to strengthen the current management framework in collaboration and consultation with all stakeholders.

18. Some submissions proposed that a closure of the SCA 7 fishery, or at least the commercial component, is required. MPI did not consult on this option, and its consideration would require further consultation. MPI is unsupportive of a closure at this time for the following reasons:

- The fishery has been shown to be responsive to intensive enhancement activities historically and rebuilt successfully in the 1990s.
- Fisheries are cyclical and MPI consider the SCA fishery is going through a low point at the moment. It has yet to be established whether or not this is long-term.
- Assessment of the fishery is ongoing, which provides the basis to set a TAC which meets the purpose of the Act.
- Existing provisions under the MOU and the Enhancement Programme require the Challenger Scallop Enhancement Company to provide you with a fishing plan for your agreement before each season fishing commences.

2 Summary of recommendations

19. MPI recommends that, for the southern scallop (SCA 7) fishery, you choose either:

Option A

AGREED / NOT AGREED

- a) **Agree to** vary the TAC, TACC, and allowances for SCA 7 as follows:
- (i) **set** the TAC at 901 tonnes,
 - (ii) **retain** the Māori customary fishing allowance at 40 tonnes,
 - (iii) **retain** the recreational fishing allowance at 40 tonnes,
 - (iv) **set** the other sources of fishing-related mortality allowance at 74 tonnes,
 - (v) **retain** the existing TACC at 747 tonnes.

OR

Option B

AGREED / NOT AGREED

(MPI Preferred Option)

- b) **Agree to** vary the TAC, TACC, and allowances for SCA 7 as follows:
- (i) **set** the TAC at 520 tonnes,
 - (ii) **retain** the Māori customary fishing allowance at 40 tonnes,
 - (iii) **retain** the recreational fishing allowance at 40 tonnes,
 - (iv) **set** the other sources of fishing-related mortality allowance at 40 tonnes,
 - (v) **set** the TACC at 400 tonnes.

OR

Option C

AGREED / NOT AGREED

c) **Agree to** vary the TAC, TACC, and allowances for SCA 7 as follows:

- (i) **set** the TAC at 130 tonnes,
- (ii) **retain** the Māori customary fishing allowance at 40 tonnes,
- (iii) **retain** the recreational fishing allowance at 40 tonnes,
- (iv) **set** the other sources of fishing-related mortality allowance at 4 tonnes,
- (v) **set** the TACC at 46 tonnes.

Scott Gallacher
Deputy Director-General
Resource Management and Programmes /
Standards
for Director-General

Hon Nathan Guy
Minister for Primary Industries

/ / 2014

3 Key considerations

3.1 NEED TO ACT

20. The SCA 7 TAC was most recently reviewed in 2002 and the current TACC set when the fishery was operating as a successfully enhanced fishery. Commercial landings in the 2001-02 fishing season were 717 tonnes meatweight (refer to Figure 2). Nevertheless the current TACC has not been caught as fishery landings began to decline shortly after it was established. Since that time, fishery landings have reduced to less than 6% of the TACC; all caught from the Marlborough Sounds in the 2012-13 fishing season. Commercial landings have not exceeded 25% of the TACC in the last 10 years and have been around 5% or 6% for the last two years.

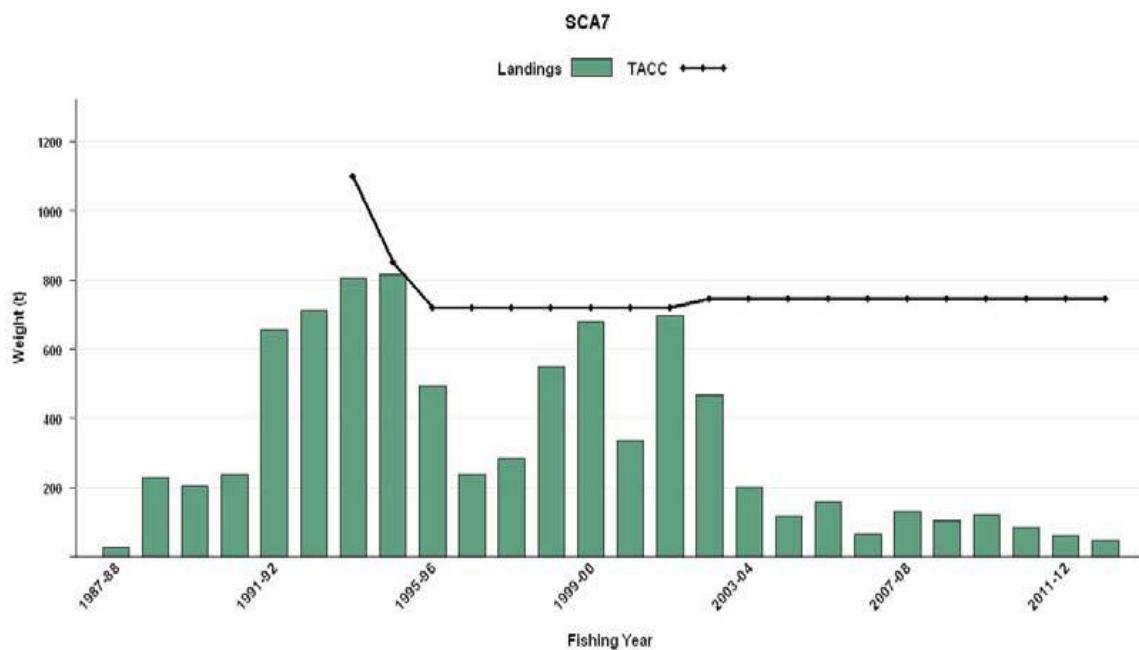


Figure 2: Historical landings and TACC for SCA7 from 1987-88 to 2012-13.

21. Māori customary and recreational allowances were set at 40 tonnes meatweight each, with a daily bag limit for recreational fishers (per person) of 50 scallops. In the absence of specific data, no allowance was provided for other sources of fishing-related mortality at that time.
22. All commercial catch currently comes only from the Marlborough Sounds. Golden Bay and Tasman Bay, the enhanced and rotationally fished sections of the fishery, are voluntarily closed to commercial fishing by commercial fishers to protect the residual scallop beds. The last fishing season was the first where commercial and recreational fishers were not able to agree on a harvest strategy for the Marlborough Sounds.
23. In 1980, when the SCA 7 fishery was at a similar level, it was closed (in its entirety) for two years. However, MPI notes that the management framework in place at that time did not include many of the provisions available now to manage the fishery in periods of low abundance as discuss in the next section (refer to p. 24-37).

3.2 CONTEXT

3.2.1 Enhancement programme

24. Since the 1980s the southern scallop fishery has been managed on an enhanced and rotational-fishing basis. In 1998 a rotational and enhancement harvest programme was approved by the then Minister of Fisheries under section 310 of the Act (refer to Appendix 1 for your statutory considerations and the conditions of this enhancement programme).
25. The enhancement programme is controlled (via a series of civil contracts) by the Challenger Scallop Enhancement Company, which is wholly owned by the SCA 7 quota owners. The goal of the enhancement programme is to enhance the southern scallop fishery to optimum levels. Within the programme are the following objectives:
 - a) To enhance all sea-floor area in the southern scallop fishery suitable for scallop enhancement.
 - b) To produce the necessary quantity of high quality spat for seeding areas suitable for scallop enhancement.
 - c) To harvest and seed spat to optimise future spat survival and growth.
 - d) Implement and maintain monitoring programmes to assess and facilitate the ongoing success of the scallop enhancement programme.
26. Enhancement practices were initially based on scallop spat settling into fine mesh bags deployed on lines (defined as spat harvest), and supplemented by those spat that settled onto the outside of the bags, fell to the seabed before harvesting of the bags, and later collected by dredging through the spat collection sites (defined as spat transfer). The release of scallop spat collected via harvest is defined as primary enhancement, while the release of spat collected through the transfer process is defined as secondary enhancement.
27. MPI notes there has been no enhancement activity in Tasman Bay since 2005, and the level of enhancement in Golden Bay has markedly decreased since its peak in the early/mid-1990s.
 - a) In Golden Bay, the highest levels of primary enhancement were achieved in 1992 and 1993 (an average 605 million spat harvested and released).
 - b) In Tasman Bay, primary enhancement was particularly high in 1993 (760 million spat harvested and released) and 1995 (625 million).
 - c) Between 1998 and 2006, 50 – 100 million spat were harvested in most years (focussed in Tasman Bay until 2001, and Golden Bay after this), but spat harvest has been at very low levels in the most recent years. Combined spat harvest between 2005 and 2011 equalled only 90.6 million.

28. Except for some monitoring of spat enhancement in the 1980s there have been no formally designed scientific studies to examine factors affecting the effectiveness of spat enhancement. It appears that the suitability of benthic habitat in Golden and Tasman Bays for scallops is lower now than in the past. Survival of spat released for enhancement has been poor which suggests that settlement success and /or inadequate habitat suitability may be more responsible for the fishery down turn than failure of larval supply.
29. Over the last few years enhancement activity has declined. The relationship between MPI and Challenger Scallop Enhancement Company has also weakened, resulting in the information on enhancement activity as required by the reporting conditions of the enhancement programme not being provided. Under section 310(4) if you consider the Challenger Scallop Enhancement Company has failed to implement the approved enhancement programme in accordance with any conditions specified or where, in your opinion, the enhancement programme, fails to enhance the fishery, you may cancel the enhancement programme, in whole or in part, and, upon cancellation in whole you may recommend the removal of the stock from Schedule Three of the Act in accordance with section 14. Alternatively, under section 310(3) of the Act the enhancement programme may be reviewed by you and varied, from time to time, with your further approval.
30. MPI notes, however, a review of the enhancement programme is a process separate to the review of sustainability measures in this paper, and would require further consultation with tangata whenua, recreational and commercial interests.

3.2.2 Rotational fishing

31. In conjunction with the enhancement programme a system of rotational fishing in Golden and Tasman Bay was implemented in SCA 7 in 1989-90. Under the intended three yearly rotational enhancement management framework, sectors (sub-areas) were to be enhanced with spat, closed to fishing for two years and then opened to fishing in the third year. After which, the cycle would repeat again.
32. This practice was generally carried out in the early 1990s as initially intended, but this rotation broke down from about 1996 onwards. MPI understands that given the success of enhancement at that time, there were concerns that available biomass would not be harvested and instead lost through natural mortality. Fishing of enhancement plots has been rotated to a certain degree, although not strictly on a three yearly rotation, while other parts of sectors in Golden and Tasman Bays were fished consistently from year to year.
33. Unfortunately, the success of the programme and extent of enhancement has greatly reduced in the last eight years, partially driven by the decline in productivity and recruitment failure in the fishery.

3.2.3 Memorandum of Understanding

34. The Challenger Scallop Enhancement Company has a memorandum of understanding (MOU) with MPI regarding the provision of information to enable you and MPI to make decisions on sustainability and other management measures (refer to Appendix 2 for a copy of the MOU).

35. The MOU allows Challenger Scallop Enhancement Company to exercise a degree of self-management of the fishery. Under the MOU, the following information must be provided to you and the Ministry each year:

- a) A proposed design for a biomass survey in the southern scallop fishery and a report detailing the results of this biomass survey.
- b) An annual summary of the previous season's biomass survey results.
- c) A rotational fishing plan showing the areas proposed to be fished in any year.
- d) Recommendations on season start and finish dates.
- e) A plan outlining the provision that is proposed to be made for non-commercial access to the fishery.
- f) Recommendations on the TAC and TACC.
 - i. In relation to the Tasman and Golden Bay sectors, these recommendations should be supported by biomass and yield assessment of scallops available in these areas.
 - ii. Proposed sustainable sub-catch limits for the Marlborough Sounds, together with a plan outlining the proposed methods of monitoring and enforcing such a limit. This recommendation is to be supported by biomass information and yield assessments regarding the densities of scallops available.

36. The Challenger Scallop Enhancement Company undertakes the biomass surveys each year according to specified standards. That survey provides information upon which annual management decisions are made, including estimates of available harvest.

37. These reporting requirements have largely been adhered to; however, MPI considers improvements could be made to the MOU to better reflect international best practice in determining biomass information and yield estimates in SCA 7.

3.3 MANAGEMENT APPROACH

38. Under MPI's draft National Fisheries Plan for Inshore Shellfish⁴ stocks are grouped according to management approach and specific objectives.

39. SCA 7 is a 'Group 2' stock within the draft National Fisheries Plan for Inshore Shellfish. Stocks in this group are valuable commercial fisheries and are an important food source for Māori customary and amateur fishers. Group 2 stocks are fast-growing and have highly variable abundance. Objectives for Group 2 stocks include enabling annual yield from the fishery to be maximised, while maintaining the stock size at or above the level required to ensure sustainability and the spawning stock biomass.

40. Reviewing the SCA 7 TAC is consistent with this management approach as it seeks to ensure the SCA 7 spawning stock biomass is protected and within maintained within sustainability limits and fishery targets.

⁴ Link Inshore Shellfish Fisheries Plan: <http://www.fish.govt.nz/en-nz/Fisheries+Planning>

3.4 STOCK STATUS

41. The best available information MPI has on SCA 7 is the 2013 annual biomass survey undertaken by Challenger Scallop Enhancement Company. This survey informed their 2013 annual harvest plan and current annual yield (CAY) estimates for the Marlborough Sounds fishery.
42. The SCA 7 stock is currently at its lowest level since surveys began in 1998 (refer to Figure 3). In all three regions of SCA 7, recruited scallop biomass generally increased from the late 1990s to reach peak levels around 2001–02. Since then there has been a substantial biomass decline in both Golden Bay and Tasman Bay, and current biomass in both regions is at historically low levels. Biomass in the Marlborough Sounds has remained relatively stable over the same period, although there is some decline since 2009.

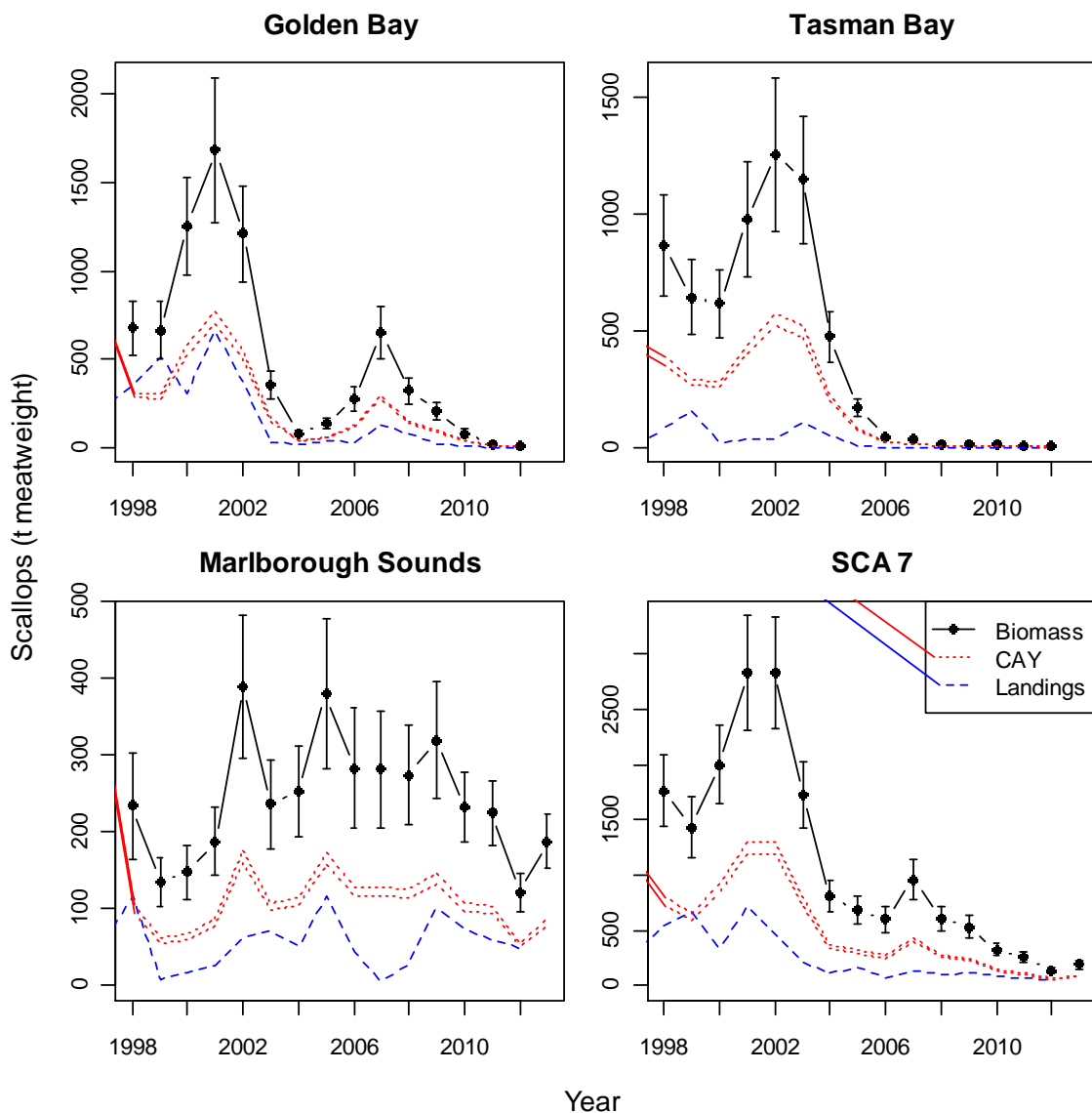


Figure 3: Trends in the SCA 7 stock since 1998–2013. Plots show start of season recruited scallop biomass, CAY (estimated retrospectively for Golden Bay and Tasman Bay), and reported landings by region and for the overall SCA 7 stock. All values in t meatweight. Golden Bay and Tasman Bay were not surveyed in 2013. Scale differs between plots.

43. MPI's 2013 fishery assessment document⁵ describes the relationship of the fishery to sustainability limits and fishery targets separately for the enhanced fishery (i.e. no specific targets set for Golden or Tasman Bay, but B_{MSY} is assumed) and the Marlborough Sounds (i.e. fishing mortality at or below 10%, $F_{0.1}$).
44. For Marlborough Sounds, fishing mortality is likely (> 60%) to be below the fishing mortality target, but unlikely (< 40%) to be below the soft and hard limits. For Golden Bay or Tasman Bay, it is very unlikely (< 10%) the areas are at or above the biomass target (B_{MSY}), very likely (> 90%) to be below the soft limit, and likely (> 60%) to be below the hard limit. The soft limit is the level at which a time-bound rebuild should be considered being adopted. The hard limit is the level at which a closure of the fishery should be considered in order to ensure future sustainability.
45. Reasons for the decline in Golden and Tasman Bays are being investigated by NIWA as part of a broader review of information of drivers of shellfish fisheries production in Golden and Tasman Bays. Other shellfish stocks in this area have also declined and it appears that the suitability of benthic habitats for scallops and other shellfish species might be lower now than in the past.

4 Consultation and submissions

46. On 24 January 2014 MPI released an initial position paper (IPP) consulting on two options on the following management controls for the southern scallop fishery:
- The TAC;
 - The allocation of the TACC – the allowances for non-commercial customary Maori fishing interests, recreational fishing interests, other sources of mortality caused by fishing, and determination of the TACC.
47. A third option was released for consultation on 20 February 2014 and the consultation period extended to 3 March 2014. The third option, which proposed a more modest reduction to the TAC, was released to encourage tangata whenua and stakeholder information and views across the full range of potential options and to promote effective consultation. MPI consulted with tangata whenua and stakeholders on the following options:

Table 2: Consultation Options – TAC, allowance and TACC proposals for SCA 7

Option	Allowances				Other sources of fishing-related mortality (t)
	TAC (t)	TACC (t)	Customary Māori (t)	Recreational (t)	
Option 1 (Status Quo)	827	747	40	40	0
Option 2	130	46	40	40	4
Option 3	500	416	40	40	4

48. MPI received 31 submissions on the consultation paper. Full copies of all submissions are provided in Appendix 3. Comments received on the proposals or alternative proposals are discussed below where relevant in the analysis of final proposals. Five submissions did not state a preferred option.

⁵ SCA 7 Fisheries Assessment Plenary November 2013: http://fs.fish.govt.nz/Doc/23459/015/_sca7_November2013.pdf.ashx

49. MPI notes that some submissions expressed their serious concern at the consultation process. MPI considers the five-week consultation period to be reasonable.

Support for Option 1

50. Six submissions supported retaining the current TAC, TACC and allowances (Option 1 in Table 2; refer to p. 75-80); however, four of those submissions would also support the intermediate reduction to the TAC and TACC (refer to Option 3 in Table 2; refer to p. 90-95).

Support for Option 2

51. Twelve submissions supported the substantial reduction to the TAC and TACC as outlined in Option 2 (Table 2; refer to p. 81-89).

Support for Option 3

52. Three submissions supported the more moderate decrease to the TAC and TACC as outlined in Option 3 (Table 2; refer to p. 90-95).

Support for Alternative Catch Limit Options

53. Four submitters supported an alternative TAC and allowance option proposed by the New Zealand Sport Fishing Council (refer to p. 130-132).

5 Final Proposals

54. MPI's advice considers each of these management controls (i.e. TAC and sector allowances) in order. This reflects you having to first set a TAC you consider appropriate in terms of your statutory obligations. You must then determine how the TAC is to be allocated between the respective interests.

55. Based on submission and option analyses the options consulted on have been reordered to better represent the different impact of each (refer to Table 3 below). Option 3 (the mid-point proposal) now becomes Option B.

Table 3: Final TAC, sector allowance and TACC proposals for SCA 7

Option	Allowances				Other sources of fishing-related mortality (t)
	TAC (t)	TACC (t)	Customary Māori (t)	Recreational (t)	
Option A	901	747	40	40	74
Option B	520	400	40	40	40
Option C	130	46	40	40	4

5.1 ANALYSIS OF FINAL PROPOSALS

5.1.1 Statutory considerations

56. Your central statutory considerations for TAC setting are discussed below. Additional statutory considerations are discussed in Appendix 1.

57. SCA 7 is managed on an enhanced and rotational basis. As such, it is therefore listed on Schedule 3 of the Act, which allows for an alternative TAC to be set under section 14 of the Act. Because SCA 7 is managed under section 14 you may set or vary the TAC for SCA 7 in such a way that you consider appropriate to better achieve the purpose of the Act.
58. Section 8 of the Act states: The purpose of this Act is to provide for the utilisation of fisheries resources while ensuring sustainability.
- a) Ensuring sustainability means –
 - i. maintaining the potential of fisheries resources to meet the reasonably foreseeable needs of future generations; and
 - ii. avoiding, remedying, or mitigating any adverse effects of fishing on the aquatic environment.
 - b) Utilisation means conserving, using, enhancing, and developing fisheries resources to enable people to provide for their social, economic, and cultural well-being.
59. While any TAC must be set in a way that provides for the utilisation of the resource while ensuring sustainability, there is no requirement to take into account or be guided by the need to manage in accordance with maximum sustainable yield. In contrast to section 13 of the Act, section 14 provides significant flexibility as to the target abundance level set for a stock to ensure sustainability.
60. In setting the TAC you should take into consideration the willingness and ability of fishers to enhance or rotationally fish (as discussed in p. 24-33). In SCA 7 these activities have been undertaken by commercial fishers. Enhancement is designed to increase the level of abundance. While enhancement of the stock may not need to be consistently maintained, the ability to intervene to increase abundance means that the sustainability of the stock can be ensured. Under the SCA 7 enhancement programme there are no specific targets or level of enhancement activity that is required to be maintained each year. Rather depending on the success of any enhancement activity (determined by both the level of investment and survival rate of scallops) the available yield will change over time.
61. Rotational harvesting involves selective harvesting of a portion of the stock. Rotational harvesting is well suited to scallops with established fishing grounds. The yield taken in any one year may not be the maximum sustainable yield available for the stock overall. The initial intention of the rotational fishing regime in Golden and Tasman Bays broke down in the late 1990s. While some rotational fishing still occurred, the approach differed to the approach to rotational fishing that was assessed through research modelling evaluations of fishing strategies for SCA 7.
62. A combination of rotational harvesting and enhancement may result in greater flexibility in setting a TAC that will ensure the sustainability of the stock. Enhancement may enable rotationally harvested areas to be restocked at a level and rate above that which could be naturally produced. Enhancement may also provide an ability to maximise catch from each area as it is rotationally fished. Areas closed to fishing allow both enhanced and wild stocks to contribute to the spawning biomass and reach harvestable size before being subjected to commercial fishing. Area closures may protect sufficient adult stocks to ensure adequate recruitment to the fishery.

63. At this time there is minimal enhancement activity occurring in SCA 7 and rotational fishing practices are largely *ad hoc* given commercial harvest has concentrated in the Marlborough Sounds where no enhancement activities occur.
64. In light of the intended management framework and current management actions you could determine that:
- the purpose of the Act would not be better met by setting a TAC other than reference to the biomass level that can produce the maximum sustainable level (B_{MSY}) because the fishery is not being managed on a rotational or enhanced basis; or
 - Irrespective of rotational or enhanced management of the fishery, the fishery would be better managed by setting a TAC with reference to B_{MSY} .
65. The setting of a TAC for SCA 7 is further complicated by the fact that only Golden and Tasman Bays have historically been enhanced, while Marlborough Sounds is not an enhanced fishery but has a degree of rotational commercial fishing. This does not, however, preclude you from considering that the TAC for the fishery overall would better achieve the purpose of the Act other than by reference to the biomass level that can produce B_{MSY} .

5.1.2 Other management tools

66. Under the MOU (as discussed in p. 34-37) the Challenger Scallop Enhancement Company is required to make recommendations to you on proposed sustainable sub-catch limit for the Marlborough Sounds, and catch limits for Tasman and Golden Bays, which is supported by the biomass information and yield estimates determined each year from the biomass survey. However, there is some uncertainty in the adequacy of the current methods used to ensure available yield estimates of individual beds are sustainable.
67. For example, it has been recognised that the estimates of the target fishing mortality used to calculate annual harvestable biomass in the Marlborough Sounds may be too high. There are also concerns that commercial exploitation rates in the Marlborough Sounds for the previous seasons were excessive (approaching 39-47% when international best practice suggests these should be closer to 20%) and potentially unsustainable over the long term.
68. Under the MOU the Challenger Scallop Enhancement Company can be required to cover such issues as the managing of fishing effort in the Sounds to as to address any additional sustainability issues as directed by you. MPI recommends additional information requirements including fine-scale exploitation estimates are provided to ensure harvest in sub-areas within the Marlborough Sounds does not exceed recommended fishing mortality targets. This work may include in-season biomass surveys, the results of which would be considered by MPI's science working group.
69. This information would be used to reach voluntary agreement on fine-scale management of the fishery. MPI considers these improvements can be made to ensure sustainable utilisation of individual areas.

70. Outside of TAC setting, the MOU and enhancement programme there is a range of other tools available under the Act that may be used to manage the risk of overexploitation of the available biomass. However, any proposal to adopt such measures would require consultation over the coming year with tangata whenua and recreational stakeholders and the Challenger Scallop Enhancement Company. For example:

- a) Under section 313 of the Act the Director-General can close off any part, or parts of, the commercial fishery for the purpose of enhancing the southern scallop fishery or ensuring that scallop stocks are harvested efficiently (refer to Appendix 1, section 8.9).
- b) Under section 11 of the Act (refer to Appendix 1, section 8.6) you may set or vary any sustainability measures for a stock, which may relate to:
 - i. the catch limit (including a commercial catch limit) for any stock or, in the case of a quota management stock that is subject to section 13 or section 14, any total allowable catch for that stock;
 - ii. the size, sex, or biological state of any fish, aquatic life, or seaweed of any stock that may be taken;
 - iii. the areas from which any fish, aquatic life, or seaweed of any stock may be taken;
 - iv. the fishing methods by which any fish, aquatic life, or seaweed of any stock may be taken or that may be used in any area;
 - v. the fishing season for any stock, area, fishing method, or fishing vessels.

5.1.3 Total Allowable Catch Setting

71. Three TAC options are put forward for your consideration:

- Option A – amend the current TAC of 827 tonnes to 901 tonnes;
- Option B – a decrease to the TAC from 827 to 520 tonnes; and
- Option C – a decrease to the TAC from 827 to 130 tonnes.

72. MPI would like to investigate the use of finer-scale management and exploitation ratios for this fishery. MPI considers these management considerations apply to all TAC options in this paper.

73. There has been a period of poor recruitment in Golden and Tasman Bays. There is an emerging consensus, although as yet unconfirmed from a science perspective, that this is a result of environmental factors (including flood events impacting on sediment) in combination with fishing pressure. NIWA is undertaking a study of the area.

74. Little information has been forthcoming about the enhancement programme undertaken in recent years (as discussed in p. 29); but MPI understands it has been minimal due to financial constraints. This suggests that the fishery is not being enhanced at previous levels or that environmental factors may not be conducive to enhancement being successful in the immediate term that would necessitate the provision of headroom in the TAC.

Option A – Amend the current TAC of 827 tonnes to 901 tonnes

75. Under Option A, the TAC would be increased to 901 tonnes. Option A differs from the current TAC setting, which was consulted on, because MPI considers that you should account for other sources of fishing-related mortality (e.g. direct and indirect mortality from dredge contact and illegal fishing) that occur in this fishery. The rationale for this is further discussed below in para 113-117 (section 5.1.4). This option is largely notional, as it simply takes account of the estimated harvest that could occur if the TAC was fully fished.
76. Commercial fishers, including the Challenger Scallop Enhancement Company, Te Ohu Kaimoana and Seafood New Zealand support this option. They submit that as the fishery is effectively managed and sustainability protected by the annual biomass survey, any head room is nominal.
77. Option A provides an incentive for commercial fishers to undertake enhancement in this fishery. MPI accepts the MOU outlines the government's information requirements in relation to the harvesting of adult scallops in the SCA 7 fishery, which requires that a biomass survey is undertaken prior to calculate catch limits prior to fishing.
78. However, MPI considers that a TAC should reflect the status and management of the fishery. There is no suggestion that a TAC of 901 tonnes could be taken on a sustainable basis. Given the lack of information received to date there is some uncertainty about the future status of SCA 7 as a rotational or enhanced fishery.
79. The catch taken in SCA 7 is estimated to have exceeded the current TAC level only once in the last 20 years (and not since the current TAC was set), when 825 tonnes of commercial catch was harvested in 1994-95 and enhancement activity was at its peak. The majority of submissions from recreational fishers strongly oppose retaining the current TAC (827 tonnes).
80. Over the last ten years less than 25% of this TAC has been caught in any one year. If future enhancement activity is successful it is possible that abundance in the fishery could reach this level in the future. However, MPI considers there is little prospect that the fishery will rebuild to enable a catch level of 827 or 901 tonnes in the short to medium term, even with enhancement. It is possible, due to external environmental factors, that the fishery may not reach this level of catch in the foreseeable future. For example, in recent years two successive 100-year flood events occurred in the Golden Bay area that may have contributed to years of poor recruitment due to sedimentation.

Option B – Set a TAC of 520 tonnes

81. Under Option B, the TAC would be reduced by 307 tonnes to 520 tonnes. Option B takes the future enhancement potential of the fishery into consideration, balancing the sustainability risk with the utilisation opportunity.
82. A TAC of 520 tonnes does not reflect the current biomass level in the fishery but, in providing an incentive for continued enhancement, may be considered to better meet the purpose of the Act than the other TAC options. The reduction in the TAC (and consequently the TACC) will be significant. This option better provides for a stepped reduction to the TAC (i.e. the way and rate), if this is required, based on the level and success of enhancement.

83. Option B recognises that there may be socio-economic impacts on the industry from the proposed reductions to the TAC under Option C, some of which may relate to maintaining incentives for enhancement.
84. The proposed TAC provides reduced but adequate headroom for enhancement in the short to medium term. Scallop fisheries can be cyclical in nature and at present the fishery is at a low level, but with successful settlement of spat both the enhanced and wild portion of the fishery can rebuild. Significant investment will be required to enhance the fishery to previous levels. The success of that investment will depend on whether environmental conditions are now suitable to support recruitment, and the level of enhancement activity that occurs. If successful MPI would expect to see a response in scallop abundance from time of reseeded within 2-3 years.
85. There is a risk that a TAC of 520 tonnes if taken would lead to significant overexploitation of existing scallop beds. Under Option B, MPI would expect renewed commitment to management on the basis of the MOU and the provision of additional information as outlined in p. 68-69 (section 5.1.2) to put in place fine-scale voluntary harvest agreements on an annual basis.
86. Both the Challenger Scallop Enhancement Company and the New Zealand Recreational Fishing Council submit that they are aware of improving scallop stocks in Tasman and Golden Bays, which while encouraging in its own right, is also a positive indication for the improved performance of enhancement. This view has yet to be confirmed by new biomass surveys.
87. Importantly, Talley's Group Ltd (a major quota owner in SCA 7, owning approximately 40% of quota shares) noted their support for a 500 tonne TAC. Talley's Group submit that although Tasman and Golden Bays are voluntarily closed to commercial fishing, following recruitment failure caused by adverse environmental conditions over recent years, it is imperative they do everything they can to bring both those areas back into the fishery.
88. Under Option B, MPI would expect a submission of an updated enhancement plan or proposed activity over the next several years. In the absence of this commitment by industry then a further reduction in the TAC could be signalled.
89. While likely preferring Option A, the NZ Scallop Company, the Challenger Scallop Enhancement Company, Ngati Tama, Ngati Kuia and Seafood New Zealand also acknowledged their support for a TAC of 500 tonnes.

Option C – Set a TAC of 130 tonnes

90. Option C represents a significant reduction in the TAC from 827 to 130 tonnes. This option focuses on managing the fishery based on its current biomass level. The proposed TAC under Option C reflects current information about the Marlborough Sounds fishery, which has been the only area commercially fished since 2010.
91. The Marlborough Sounds is a naturally recruiting part of SCA 7, with no enhancement activity and, therefore, some caution in its management is appropriate. Option C does not make any allowance for the ability to manage the broader SCA 7 fishery (including Golden and Tasman Bays) as an enhanced and rotational fishery.

92. MPI recognises the potential for decline within the Marlborough Sounds fishery. Commercial landings from the Marlborough Sounds since 2009-10 have steadily declined upon each subsequent year; 101, 74, 60, 48, 43 tonnes. MPI is not aware of any research data that suggests this trend will be different for the next fishing year in the Marlborough Sounds.
93. Recreational fishers strongly support this option as they perceive the Sounds are showing a marked decline after the last three years of commercial activity and are concerned for the future of the fishery. SWM Consortium, which represents aquaculture interests in Tasman and Golden Bay also strongly support this option. The Challenger Scallop Enhancement Company, Seafood New Zealand, other commercial fishers, including Iwi, strongly oppose this option.
94. MPI agrees with Seafood New Zealand's submission that the biomass survey plan should be reviewed to ensure higher levels of confidence in the biomass estimates for the Marlborough Sounds area to ensure the sustainability of that fishery.
95. The limitations of Option C are that a TAC of 130 tonnes does not adequately take account of:
- a) the potential biomass in Golden and Tasman Bays (submitters suggest that there are signs that scallop levels in Golden and Tasman Bays are improving),
 - b) the enhancement potential of the fishery (and the TAC would not provide adequate incentive to invest in the future), and
 - c) the available biomass in unfished areas – some of which are closed to commercial fishing by way of voluntary agreement of the Challenger Scallop Enhancement Company⁶.

5.1.4 Setting of non-commercial allowances and the TACC

96. When setting a TACC for a stock under section 20 of the Act, section 21 requires you to have regard to the TAC for that stock and allow for Maori customary non-commercial fishing interests, recreational interests, and all other sources of fishing-related mortality to that stock.
97. The Act does not provide an explicit statutory mechanism to apportion available catch between sector groups either in terms of a quantitative measure or prioritisation of allocation. Accordingly, you have the discretion to make allowances for various sectors based on best available information.
98. You are free to choose to allocate the TAC different than proposed below. However, if you do decide to take an alternative approach there is benefit in providing clear rationale to stakeholders around the decision and implications for future management to provide certainty in approach which helps to maintain long term management incentives, particularly for the commercial sector.

Allowances for Maori customary, recreational interests and other mortality

99. Table 4 provides you with information on current non-commercial allowances for SCA 7 and best available information of non-commercial catch.

⁶ These areas include both Golden and Tasman Bays, which were not surveyed in 2013, and those areas in the Marlborough Sounds voluntarily closed to commercial harvest through voluntary agreements with the recreational sector.

Table 4: Current SCA 7 allowances and assumption of non-commercial catches

	Customary Māori (t)	Recreational (t)	Other sources of fishing-related mortality (t)
Current allowances	40	40	0
Non-commercial catch assumptions	2	11	10% of total allowable commercial catch

Customary allowance:

100. Scallops (tupa/tipa) are an important kaimoana species for tangata whenua. They are identified by Te Waka a Māui me Ōna Toka iwi forum⁷ as a taonga species in the Te Waipounamu Iwi Fisheries Plan.

101. Best available information suggests existing Maori customary catch is within the allowances allocated for this interest at this time. Information on Maori customary catch of SCA 7 is uncertain. For those tangata whenua groups operating under the customary fishing regulations,⁸ there is a requirement for Tangata tiaki/ Kaitiaki to provide MPI with information on Māori customary harvest of fish. MPI estimates that less than 30% of SCA 7 is managed under the South Island Customary Regulations. For those tangata whenua groups still operating under regulations 50 and 52 of the Fisheries (Amateur Fishing) Regulations 2013, it is not mandatory to report permits that are issued.

102. There have been limited numbers of customary authorisations for SCA 7 reported to MPI at this time. This may be a reflection that tangata whenua in the Tasman/Golden Bay and Marlborough Sounds area are still operating under the Amateur Regulations and/or it may suggest that tangata whenua use of the customary fishing regulations to harvest SCA 7 is low at this time, given the current status of SCA 7.

103. Some commercial representatives submitted that they did not consider the Maori customary take to be significant and much less than the 40 tonnes currently allowed. Kenepuru and Central Sounds Residents Association and Ngati Kuia requested the current levels be retained while the New Zealand Sport Fishing Council suggested the allowance could be reduced to 30 tonnes as part of a TAC package aimed at rebuilding the fishery, but only if the TACC was reduced to zero.

104. The customary allowance is not a cap on catch. It should reflect the best available information about the level of customary catch. MPI consider that no new information has been provided upon which to justify changing the current allowance for Maori customary.

⁷ The Te Waka a Māui me ōna toka iwi forum represents the nine iwi of the South Island, each holding mana moana and significant interests (both commercial and non-commercial) in South Island fisheries.

⁸ Fisheries (South Island Customary Fishing) Regulations 1999.

Recreational allowance:

105. Best available information on recreational catch suggests that current recreational removals are within the allowance allocated for this interest at this time. Interim estimates from the large-scale multi-species survey (LSMS) estimated SCA 7 recreational catch at 11 tonnes (meatweight), mostly from the Marlborough Sounds. This does not include amateur catch taken on charter vessels or by commercial fishers under s 111 approvals (catch taken on commercial vessels for personal use).
106. Importantly, the LSMS also suggests that for those fishers who land scallops, around 45% land the 50 bag limit and the rest land 40 or more. This indicates that there is little difficulty in accessing recreational scallops and the success for recreational scallop fishers is good.
107. Ngati Kuia, New Zealand Recreational Fishing Council, Kenepuru and Central Sounds Residents Association and the Marlborough Recreational Fishers Association submit in favour of no change as does K Mead who also submits that the size limit be increased from 90 to 100 mm.
108. Seafood New Zealand submits that the LSMS estimate is probably quite accurate and after allowing for charter boat catch and catch taken under section 111 of the Act, the recreational catch is still probably less than 20 tonnes. Consequently, Seafood New Zealand suggests an allowance of 25 tonnes would be appropriate.
109. W Rountree and Ngati Tama support lowering the daily bag limit. New Zealand Sport Fishing Council supported by H Shields submit in favour of a 30 tonne allowance as part of a package aimed at facilitating a natural rebuild of the fishery, but only if the TACC was reduced to zero.
110. MPI advises that SCA 7 is a shared fishery – all interests derive benefit from the harvest of this fishery. Recreational fishers have benefited from the enhancement activity undertaken by commercial fishers. The recreational fishery in the Marlborough Sounds shares some beds with industry and there are some areas that are open to recreational fishers only⁹. Recreational catch levels are likely to be proportional to the abundance of scallops.
111. Given current low abundance levels there is the option of reducing the recreational allowance to contribute towards the rebuild of the fishery – a shared pain, shared gain approach. Under this option an allowance in the range of 25-30 tonnes would be appropriate (as reflected in a several submissions). An allowance of this nature would be consistent with a TAC of around 130 tonnes.
112. Alternatively, there is the option of retaining the current recreational allowance. MPI considers no new information has been supplied upon which to justify a change to the current allowance for recreational interests. The recreational fishery is in part separated from the commercial fishery. The cyclical nature of the fishery means that the recreational catch is likely to fluctuate over time. Retaining the current recreational allowance would be consistent with TAC Options A and B.

⁹ Refer to regulation 12A of the Fisheries (Challenger Area Commercial Fishing) Regulations 1986

Other mortality allowance:

113. Incidental damage to uncaught or undersize scallops can occur during commercial dredging. The level of incidental mortality expected in the commercial dredge fishery has been previously estimated to be up to 34%. Recent studies indicate incidental mortality from commercial dredging may have been overestimated in the past.
114. MPI proposes that you set an allowance for other sources of fishing-related mortality (e.g. direct and indirect mortality from dredge contact and illegal fishing) of 10% of the TACC rounded down. MPI considers 10% to be a conservative estimate of the likely level of other sources of fishing-related mortality, and may be revised in future as better information becomes available. No such allowance has been set to date for the fishery.
115. No submissions were received either for or against this proposal. Therefore, MPI proposes to use this estimate for setting an allowance for other sources of fishing-related mortality in all options.
116. MPI notes that within the original consultation options to retain the *status quo* or set a TAC at 500 tonnes, the proposed allowance for other sources of fishing-related mortality did not reflect 10% of the TACC. To rectify, MPI proposes to account for this allowance by adjusting the original TAC options. The 847 tonne TAC is increased to 901 tonnes (Option A). The 500 tonne TAC is increased to 520 tonnes, and the TACC lowered from 416 to 400 tonnes (Option B).
117. The allowance is set on the assumption that the TACC is fully taken. No allowance is made for fishing-related mortality as a result of recreational and customary fishing practices. Dredges used by recreational and customary fishers are much smaller in size than commercial dredges. They are used for tows of much shorter duration. While there may be some mortality caused from the use of such dredges it is likely to be at nominal levels.

Setting the Total Allowable Commercial Catch

118. MPI proposes to either:

- a) retain the current TACC of 747 tonnes in Option A,
- b) reduce the TACC by 247 tonnes to 400 tonnes under Option B, or
- c) reduce the TACC by 701 tonnes to 46 tonnes under Option C.

Option A – Retain the current TACC of 747 tonnes

119. Seafood New Zealand and Te Ohu Kaimoana submit that because of the management system that is in place (annual biomass survey defining actual catch) and because of the commitment of industry to enhance the fishery, there is no reason to change the TACC. However, MPI does not have sufficient information to determine the level of enhancement activity that has taken place in the fishery since 2007-08. Despite the reporting conditions required under the enhancement programme, Challenge Scallop Enhancement Company has not provided MPI with details on the amount and location of spat harvesting and reseeded activity. MPI does note that the Talley's Group and Challenge Scallop Enhancement Company submissions restate their commitment to enhancement of the fishery.

120. There are economic implications for commercial fishers with each TACC option. Quota owners are subject to fisheries services levies. The levies are set upon the level of the TACC. Under Option A fisheries services levies will remain excessive (approximately \$200k) in relation to the revenue derived from catch landed (estimated to be \$600-800k per annum in the last few years). However, by supporting this option commercial fishers have in effect accepted that this situation will continue to apply.

121. The New Zealand Sport Fishing Council and other recreational submitters object strongly to retaining the current TACC. The New Zealand Sport Fishing Council instead recommends a TACC of zero as a component of implementing a natural rebuild of the fishery in the Marlborough Sounds.

Option B – Set a TACC of 400 tonnes

122. Option B proposes to set a TACC of 400 tonnes¹⁰, and places a greater weight on use of tools other than the TACC to ensure sustainable utilisation of the fishery in the interim while a plan for the fishery is developed. That plan will either result in future enhancement of the fishery or in a staged reduction to catch limits if enhancement activity (biologically and/or economically) is unsuccessful.

123. A TACC of 400 tonnes was supported by Talley's Group. The 247 tonne reduction in the TACC will not affect current catch levels. The effect of a TACC reduction on the ability to fund an enhancement programme is unclear.

124. The Challenger Scallop Enhancement Company is charged by its shareholders to implement an enhancement and management programme for SCA 7. Under the enhancement programme, funding of enhancement activities "is provided by the quota owners via a levy established under the Commodity Levies Act 1990. This process determines the nature and extent of funding and commitment made to enhance the fishery on an annual basis."

125. Talley's Group submit that scallop fishers contribute, on average, 20% of their gross catch value to the spat enhancement operation.

126. As previously discussed, MPI would also expect a submission of an updated enhancement plan or proposed activity over the next several years. In the absence of this commitment by industry then a further reduction in the TAC and TACC could be considered.

Option C – Set a TACC of 46 tonnes

127. Option C would set a TACC that reflects the most recent biomass assessment of the Marlborough Sounds portion of the fishery only. The majority of submissions received, representing the recreational sector, the Marlborough Sounds community and SWM Consortium, supported this option.

¹⁰ MPI notes that within the original consultation the proposed TACC allowance was 416 tonnes (within a 500 tonne TAC). This option failed to account for other sources of fishing-related mortality, which MPI proposes to account for this by adjusting the original TAC option from 500 tonnes to 520 tonnes and reducing the TACC from 416 to 400 tonnes.

128. Under this option, should there be a sudden significant improvement in the fishery (through enhancement or new biomass survey information from Golden and Tasman Bays) there is the ability for an in-season increase in the TACC as SCA 7 is listed on both Schedules Two and Three of the Act. Given the SCA 7 fishery is seasonal, any increase revealed by the biomass survey could be made available to fishers prior to the beginning of the fishing season. Under this mechanism, the TACC would revert at the end of that fishing year.
129. However, an in-season increase may not provide sufficient incentive for industry to fully fund an enhancement programme. The current management of the fishery and maintenance of the costs of running the Challenger Scallop Enhancement Company, and its activities are interlinked with the level of the TACC. This reflects the costs associated with fishing, including the biomass assessments and food safety sanitation requirements. MPI is aware that the financial feasibility for commercial fishers undertaking such activity is significantly more difficult with a TACC of around 40-50 tonnes.

Proposed Alternative TACC Options

130. The New Zealand Sport Fishing Council submits (and supported by others) that the TAC should be set at 64 tonnes, comprising allowances and a TACC of zero.
131. No current information suggests the commercial fishery needs to be closed for any period of time. The fishery has been shown to be responsive to intensive enhancement activities historically and was rebuilt successfully in the 1990s. Fisheries are cyclical and MPI consider SCA 6 is going through a low period at the moment. It has yet to be established whether or not this is long-term. Assessment of the fishery is ongoing.
132. The SCA 7 fishery is a shared fishery; there is no proposal to create a non-commercial fishery. There are also a number of areas already closed to scallop commercial fishing and available to recreational fisheries¹¹. MPI also note that recreational fishers have benefited from the commercial enhancement activities, which has enabled a higher recreational daily bag limit than would otherwise be the case. In most other scallop areas, the recreational daily bag limit is 20 scallops per day, but in SCA 7 it is 50 scallops per day.

6 Other considerations

133. Te Ohu Kaimoana submits that rather than change the TAC, a cross-sector Working Group should be established to resolve issues and plan the way forward for the fishery. The establishment of a “scallop working group” was also suggested in other submissions, while many more requested input into the future management of the fishery.
134. MPI considers that the establishment of such a group is dependent upon the extent of a review of the fishery. The management of the fishery as a whole needs to be reviewed. MPI will continue to engage with stakeholders over the coming months to decide the way forward for the fishery including the enhancement plan, MOU, and other management controls.

¹¹ Refer to regulation 12A of the Fisheries (Challenger Area Commercial Fishing) Regulations 1986

6.1.1 Other submission comments

135. MPI notes that a number of other considerations or proposals were proposed in submissions, and while important, they are considered beyond the scope of this paper could form part of a wider management review of the fishery. No relevant proposals were consulted on as part of this process.

Recreational only areas

136. Five submissions requested recreational only areas or protection for those areas currently operating as non-commercial fishing areas.

137. MPI notes there has been commercial scallop dredging in the Marlborough Sounds since 1959 and the sectors have amicably co-existed, sharing the resource for many years. There is also some spatial separation between the recreational and commercial fisheries. Some areas are closed to commercial fishing by regulation¹² (Inner Queen Charlotte Sound, Abel Tasman National Park); other areas are not fished by commercial fishers through voluntary agreements (Croisilles Harbour). These agreements are negotiated between Challenger Scallop Enhancement Company and recreational stakeholders prior to the season.

138. The last fishing season was the first where Challenger Scallop Enhancement Company and recreational fishers were unable to agree on a fishing plan for the Marlborough Sounds. MPI considers these tensions have arisen primarily due to low biomass levels.

139. Scallop fisheries are cyclical and the MOU provides for a degree of rotational fishing in the Sounds by commercial fishers. This spells various beds and provides opportunities for recreational fishers. MPI will work with the Challenger Scallop Enhancement Company to ensure that the current voluntary arrangements about spatial measures continue to be adhered to. It is beneficial to all parties that past agreements are maintained; the regulatory tools available to Government would be quite blunt in comparison (including sub-area catch limits or subdivision of the QMA).

Environmental concerns

140. R S Sellers submits that competition for food (phytoplankton) and changes in the habitat/environment from high densities of mussel farming is forcing natural scallop populations from within the Sounds to the outer margins.

141. MPI has no information to determine whether aquaculture activities have impacted on scallop populations within the Marlborough Sounds.

Effects of dredging

142. A number of recreational submitters requested investigation into the causes of habitat change and the impact of dredging, not only on the environment but on the state of the scallop fishery itself.

¹² Ibid, no 9.

143. Similarly other submitters requested mitigation from the effects of dredging and/or on behalf of recreational fishing in the Marlborough Sounds. Some considered the removal of commercial dredging (or all dredging whether commercial or recreational) necessary to protect sensitive habitats and reduce scallop mortality.
144. The commercial scallop fishery is a dredge fishery. Dredging is a non-selective fishing method and is known to reduce habitat and biological diversity. Although such effects cannot be avoided, commercial fishers tend to fish the same areas (although rotational fishing can spell beds) and use a small proportion of each habitat type. These two factors minimise the impacts of the fishery on these matters. Scallop fishery substrate tends to be mobile sand, and therefore, naturally disturbed. However, MPI notes that wider consideration of sensitive habitats could form part of a wider management review of the fishery.

Changes to other management controls

145. The following management controls apply in the commercial and recreational fishery:
- a) The commercial fishery regulatory constraints include maximum dredge size and number, number of days fished, fishing only in day light hours.
 - b) The recreational and commercial minimum legal size is 90 mm.
 - c) The recreational and commercial season runs from 15 July to 14 February.
 - d) The recreational daily bag limit is 50 scallops per person per day.
146. Two submitters requested an increase in the minimum legal size from 90 mm up to 100 mm as this would facilitate greater spawning biomass.
147. Some submitters suggest that while the recreational bag limit should remain at 50, there should be a boat limit of 200 or 240 scallops per day.
148. One submission also noted that the scallops early in the season (July) are often very small and it would be more logical to shift the season opening date to mid-August.
149. MPI does not propose to change these other management controls at this stage, however, this does not preclude future refinements in the management of the fishery. MPI considers there may be merit in reviewing some of the current measures as part of any broader review of the southern scallop management framework.

7 Conclusions

The SCA 7 fishery is managed under section 14 of the Act which allows you to set a TAC that better achieves the purpose of the Act. The best available information that MPI currently has on SCA 7 shows the fishery to be at a very low level of abundance. However, the information also indicates that the future of the fishery may best be secured by a renewed enhancement for Golden Bay especially. Improved communication and higher levels of confidence in management of the Marlborough Sounds component of the fishery are also required.

8 Appendix 1: Assessment against statutory obligations

8.1 PURPOSE OF THE ACT

150. As noted in the body of this paper section 8 of the Act says that the purpose of the Act is to provide for the utilisation of fisheries resources while ensuring sustainability.

151. MPI considers that Options B and C presented in this paper better satisfy the purpose of the Act in that they provide for utilisation in the SCA 7 fishery while ensuring sustainability.

8.2 GENERAL OBLIGATIONS

152. In setting or varying sustainability measures, you must also act in a manner consistent with New Zealand's international obligations to fishing and the provisions of the Treaty of Waitangi (Fisheries Claims) Settlement Act 1992.

153. A wide range of international obligations relate to fishing, including use and sustainability of fishstocks; and maintaining biodiversity (s 5(a)). MPI considers that the management options for SCA 7 meet these obligations.

154. MPI also considers the proposed management options to be consistent with the provisions of the Treaty of Waitangi (Fisheries Claims) Settlement Act 1992 (s 5 (b)). Ongoing work is being done within the area covered by SCA 7 to promote policies that help to recognise customary use and management practices. Some iwi note that the review and proposed reduction to the TAC and TACC will have a major effect on the devaluation of Treaty Settlement Assets. MPI note that iwi held quota is treated the same as all other quota in TAC reductions.

155. Section 12(1)(b) requires that you provide for the input and participation of tangata whenua and have particular regard to kaitiakitanga before setting or varying a TAC. Te Waka a Māui me Ōna Toka iwi forum was approached for their collective view on SCA 7. No specific view on an appropriate level for the SCA 7 TAC was provided by Te Waka a Māui me Ōna Toka.

8.3 INFORMATION PRINCIPLES

156. Under section 10 of the Act, you must take into account the information principles of the Act, these being that:

- decisions should be based on the best available information,
- decision makers should take into account any uncertainty in the available information,
- decision makers should be cautious when information is uncertain, unreliable, or inadequate, and
- 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.

157. While management under section 14 does not require referencing to maximum sustainable yield, this does not release you from your obligations to ensure sustainability. Trends in stock status for SCA 7 were assessed through annual biomass survey data and estimated exploitation rates. This calculation is considered to offer a stable fishery for the Marlborough Sounds while Tasman and Golden Bays remain not fished.

158. The best available information on stock status for SCA 7 is the annual biomass surveys and the recent mid-season biomass survey of Ketu Bay undertaken by Challenger Scallop Enhancement Company. Trends in stock status for SCA 7 have been assessed through annual landings as a ratio of the estimates of biomass.

159. While both Golden and Tasman Bays have not been fished recently (since 2010 and 2005 respectively) they were still surveyed up until 2013. Biomass in both regions in 2012 was at historically low levels. A review of the southern scallop fishery (2014)¹³ describes the history and the current status of the fishery.

8.4 SETTING THE TAC

160. Southern scallops are listed on Schedule 3 of the Act. This means that the TAC for SCA 7 may be set under section 14 of the Act.

161. Section 14 says that, if satisfied that the purpose of the Act would be better achieved by setting the TAC for any stock listed on Schedule 3 otherwise than in accordance with section 13(2), you may set a TAC that you consider appropriate to achieve the purpose of the Act.

162. Since 1997, the SCA 7 harvest for each fishing year has been determined by an annual biomass survey which has been used to identify both where and how much fishing occurred. However, for several years, based on anecdotal information, attempts at enhancement have not been successful and habitat changes have significantly reduced the productivity of the fishery.

163. When setting a TAC for SCA 7, you must have regard to the interdependence of stocks, the biological characteristics of the stock, and any environmental conditions affecting the stock, and set a TAC using the best available information. You must not use the absence of, or uncertainty in, the best available information as a reason for postponing or failing to set a TAC. With respect to the SCA 7 stock:

- While the SCA 7 commercial fishery is targeted, by-catch can include dredge oysters, green-lipped mussels, starfish, and a range of other benthic invertebrates. The by-catch of the fishery is likely to be similar to the biomass surveys, but in greater volume depending on the level of harvest. Preliminary analyses of bycatch from survey data from 1998-2013 suggest that the most predominant level of bycatch:
 - In Golden Bay included coral (0-10 million litres per year based on mid-point estimates), horse mussel (0-6 million litres per year based on mid-point estimates) and starfish (0-3 million litres per year based on mid-point estimates).

¹³ Williams et al. 2014. Review of the Southern scallop fishery (SCA 7). New Zealand Fisheries Assessment Report 2014/07. 71p.

- In Tasman Bay included horse mussel (0-15 million litres per year based on mid-point estimates), coral (0-13 million litres per year based on mid-point estimates), and hermit crabs (0-6 million litres per year based on mid-point estimates)
- In Marlborough Sounds included coral (0-2 million litres per year based on mid-point estimates), starfish (0-3 million litres per year based on mid-point estimates), and horse mussel (0-2 million litres per year based on mid-point estimates).
- Scallops are a fast-growing species and individuals may live up to 4 to 6 years. Scallops reach maturity from 2-3 years of age. Scallops are serial spawners, releasing many batches of eggs from July until February.
- Fluctuations in environmental conditions, food availability, predation and other causes of mortality lead to high variation in scallop abundance. This feature of scallop fisheries is reflected in SCA 7 being listed on Schedule 2 of the Act.

164. In an attempt to even out the high variability around scallop fisheries, enhancement and rotational fishing were developed for this fishery and, accordingly, SCA 7 was listed on Schedule 3 of the Act.

8.5 ENVIRONMENTAL PRINCIPLES

165. Section 9 requires you to take into account the following environmental principles:

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

166. The commercial scallop fishery is a dredge fishery. Dredging is a non-selective fishing method and will catch species of no commercial interest to the fishers. Dredging is also known to reduce habitat heterogeneity and biological diversity. Although such effects cannot be avoided, commercial fishers tend to fish the same areas, between periods where beds are spelled, and only use a small proportion of each habitat type. These two factors minimise the impacts of the fishery on these matters.

167. A larger TAC will most likely result in increased dredging activity; however, the relationship between TAC and area dredged is unlikely to be linear as during years of high scallop population biomass, scallop densities will also be higher. MPI also notes that the fishery substrate tends to be mobile sands or mud and, therefore, open to natural disturbance.

168. Maori customary and recreational fishers catch scallops by diving or by using a small lightweight dredge. These harvest techniques have few impacts.

169. Limited information exists on the nature and location of habitats of particular significance to fisheries management, however, given the above and the localised nature of the fishery, it is considered that the fishery is unlikely to be having any significant effect on such habitats. Accordingly, fishing at the level of either of the TAC options proposed is considered to be consistent with the environmental principles of the Act.

8.6 SECTION 11 CONSIDERATIONS

170. Section 11(1)(a): Before setting or varying any sustainability measure for this stock, you must take into account any effects of fishing on any stock and the aquatic environment.

- a) The majority of SCA 7 commercial take is as a targeted dredge fishery, however, dredging is a non-selective fishing method that can catch species of no commercial interest to the fishers (associated and dependent species) and reduce habitat heterogeneity and biological diversity. The way in which these are taken into account is discussed in the previous part of this paper.

171. Section 11(1)(b): Before setting or varying any sustainability measure for this stock, you must take into account any existing controls under the Act that apply to the stock or area concerned.

- a) Standard management controls apply to the SCA 7 fishery, for example deemed values, amateur bag limits, minimum size limits, and fishing method constraints. The proposed changes to the TAC do not affect these measures.

172. Section 11(1)(c): Before setting or varying any sustainability measure for this stock, you must take into account the natural variability of the stock.

- a) Scallops (*Pecten novaezelandiae*) are highly productive, believed to be relatively short-lived (four to seven years of age) and able to move short distances. These characteristics, along with their clumped distribution, make identifying appropriate biomass targets or minimum reference biomass levels problematic.
- b) The relatively high fecundity and likely variability in the mortality of larvae and pre-recruits, leads to high variability in natural annual recruitment. This variability is a characteristic of scallop populations worldwide.
- c) Studies suggest that average natural mortality in the SCA 7 fishery is quite high. Incidences of large-scale die-off in localised areas have been observed (e.g. mortality associated with storms in 1998). This natural variability in survival is explicitly recognised in the TAC options.

173. Sections 11(2)(a) and (b): Before setting or varying any sustainability measure for this stock, you must have regard to any provisions of any regional policy statement, regional plan, or proposed regional plan under the Resource Management Act 1991 (RMA) and any management strategy or management plan under the Conservation Act 1987 that apply to the coastal marine area and you consider relevant.

- a) Under the Marlborough Sounds Resource Management Plan, the Council acknowledges that management and allocation of fisheries resources is to be determined under the provisions of the Act as oppose to the RMA. However, Council can control the effects created by fishing as long as those controls are not imposed for a fisheries purposes, for example controls imposed for the protection of vulnerable, unique coastal substrate. MPI is unaware of any action or rules the Marlborough Council has put in place that impact on the SCA 7 fishery.

- b) For the SCA 7 enhancement programme consent is required under the RMA to authorise the placement of structures in the water to collect scallop spat.

174. Section 11(2)(c): Before setting or varying any sustainability measure for this stock, you must have regard to sections 7 and 8 of the Hauraki Gulf Marine Park Act 2000 that apply to the coastal marine area and you consider relevant. The boundaries of the quota management area for the SCA 7 stock do not intersect with the Hauraki Gulf; therefore this criterion is not relevant to your assessment.

175. Section 11(2)(d): Before setting or varying any sustainability measure for this stock you must have regard to any planning documents lodged with the Minister of Fisheries (now the Minister for Primary Industries) by a customary marine title group under section 91 of the Marine and Coastal Area (Takutai Moana) Act 2011. There are no such planning documents that relate to SCA 7.

176. Section 11(2A)(b): Before setting or varying any sustainability measure for any stock, you must take account of any relevant and approved fisheries plans. A draft national inshore shellfish plan that sets objectives has been developed but is yet to be approved.

177. Sections 11(2A)(a) and (c): Before setting or varying any sustainability measure for any stock, you must take into account any conservation or fisheries services, or any decision not to require such services. The Ministry does not consider that existing or proposed services materially affect the proposals for this stock. No decision has been made to not require a service in this fishery at this time.

8.7 TACC AND ALLOWANCES

178. When setting or varying a TACC for a stock under section 20 of the Act, you must, under section 21 of the Act, have regard to the TAC for that stock and allow for Māori customary non-commercial fishing interests, recreational fishing interests, and for any other sources of fishing-related mortality.

179. When allowing for Māori customary fishing interests, you must take into account any mātaihai reserve or closures/restrictions under s 186A in the relevant quota management area (s21(4)).

- a) The Whakapuaka (Delaware Bay) Taiapure is within the SCA 7 quota management area. MPI notes that the proposals in this paper will not impact on, or be impacted by, the taiapure.
- b) The boundaries of the quota management area for the SCA 7 stock do not intersect with the fisheries waters covered by s 186A of the Act; therefore this criterion is not relevant to your assessment.

180. When allowing for recreational interests, you must take into account any regulations in place following a recommendation made by you the Minister under s 311 of the Act that prohibit or restrict fishing (s21(5)).

- a) There are no areas closed to commercial fishing methods made under s 311 of the Act in place in the SCA 7 quota management area; therefore this criterion is not relevant to your assessment when allowing for recreational interests.

181. The Act does not provide an explicit statutory mechanism to apportion available catch between sector groups either in terms of a quantitative measure or prioritisation of allocation. Accordingly, you have the discretion to make allowances for various sectors based on the best available information. In the event of imperfect information, you are entitled to be cautious.

8.8 SOUTHERN SCALLOP ENHANCEMENT PROGRAMMES

182. Under section 310(1), any person or organisation may develop an enhancement programme for the southern scallop fishery, after consultation with you and such other persons or organisations as you consider to be representative of the classes of persons having an interest in the southern scallop fishery, including Maori, environmental, commercial and recreational interests.

183. Section 310(2) states that no enhancement programme developed under subsection (1) shall be implemented in the southern scallop fishery, or varied, without the prior written approval of the Minister of Fisheries, which approval may be given subject to such conditions as you may specify, and the payment of such fee (if any) as you may impose for the purpose of approving the enhancement programme, and shall specify the person or organisation who shall be responsible for the implementation of the enhancement programme.

184. An enhancement programme of the southern scallop fishery was approved in 1998 by the then Minister of Fisheries and included certain conditions on this approval, to ensure adequate information regarding the operation of the enhancement programme in the southern scallop fishery. These conditions included:

- a) Supplied to the Ministry, within the timeframes specified below:
 - i. A report detailing:
 - 1. The sites utilised for spat-catching activities in each calendar year;
 - 2. the selection of sites that were identified as being suitable for re-seeding activities during the upcoming calendar year, and an explanation of how the criteria for site selection outlined in the enhancement plan were applied to each site;
 - 3. is to be provided to the Ministry by 30 June each year.
- b) In relation to the Tasman and Golden Bay sectors of the fishery,
 - i. a report detailing the harvesting from longlines and reseeded onto the seabed of Primary spat should be supplied to the Ministry by 30 May each year. This report should detail the number of spat available for reseeded activities, estimated reseeded densities and the specified locations where reseeded activities took place.

- ii. a report detailing the harvesting and reseedling of Secondary spat including the numbers of spat available for reseedling activities, estimated reseedling densities and the specified locations where reseedling activities took place is to be provided to the Ministry within 30 days of the completion of harvesting and reseedling of Secondary Spat each year.
- c) In relation to the Marlborough Sounds sector of the fishery, a report advising the Ministry of any sites that are proposed to be reseeded with either Primary or Secondary spat is to be provided 30 days prior to intended re-seeding activities being undertaken in each year. Approval of these proposed sites by the Ministry is required prior to reseedling activities being undertaken.
- d) A report detailing the results of all research undertaken into the impacts of enhancement and any measures taken to mitigate such impacts should be provided to the Ministry on 30 June each year.
- e) A report providing an indication of post-release survival of scallops in all areas of the fishery, including the densities of scallops existing in each zone is to be provided to the Ministry within 30 days of the completion of the survey.
- f) An annual summary of the activities undertaken pursuant to the enhancement plan, including those areas listed above, should be supplied to the Ministry by 30 June of each year. This summary should also take into account how the needs of the stakeholders who were consulted in the development of this plan have been met. This summary can be used in assessing the operation of the plan and determining whether the programme (or the conditions of my approval of this programme) requires review or variation.

185. Your approval pursuant to section 310 is not the only authority needed to implement this plan, the Challenger Scallop Enhancement Company is also required to obtain resource consents for the placement of structures, spat catching permits to allow for the harvesting of spat, and a special permit to authorise the implementation of this plan.

186. Any enhancement programme approved under section 310 may be reviewed by you and varied, from time to time, with your further approval granted under subsection (2).

187. Where the person or organisation responsible for implementation of the enhancement programme fails to implement the approved enhancement programme in accordance with any conditions you specify in giving his or her approval under subsection (2), or where, in your opinion, the enhancement programme, once implemented, fails to enhance the fishery, you may cancel the enhancement programme, in whole or in part, and, upon cancellation in whole you may recommend the removal of the stock from Schedule 3 in accordance with section 14.

188. Nothing in any enhancement programme prevents you from taking any sustainability measure under Part 3 of the Act in respect of the southern scallop fishery.

8.9 CLOSURE OF SOUTHERN SCALLOP FISHERY

189. Under section 313(1) of the Act if the chief executive [director-general] is satisfied that, for the purpose of enhancing the southern scallop fishery or ensuring that scallop stocks are harvested efficiently, any part or parts of the fishery ought to be closed to commercial fishing, he or she may from time to time, by notice in the *Gazette*, prohibit commercial fishers from taking scallops from such part or parts of the fishery as may be specified in the notice.

190. Every prohibition under subsection (1) shall have effect for the remainder of the southern scallop season to which it applies.

9 Appendix 2: Memorandum of understanding between the Ministry of Fisheries and the Challenger Scallop Enhancement Company Limited

10 Appendix 3: Submissions received

- 1) Iain Storrie
- 2) Rex Sellers - Commercial fisher
- 3) Kenepuru & Central Sounds Residents Association Inc
- 4) Tennyson Inlet Boat Club Inc
- 5) Christine Simpson – Recreational fisher
- 6) Pelorus Boating Club Inc
- 7) Kevin Mead - Recreational fisher
- 8) Marlborough Angling & Surfcasting Club Inc.
- 9) Soundfish – Recreational Club
- 10) SMW Consortium
- 11) Joanne & Winston Rountree – Quota holder
- 12) Tasman and Sounds Recreational Fishers' Association (Inc)
- 13) Talley's Group Ltd – Quota holder
- 14) New Zealand Recreational Fishing Council
- 15) New Zealand Sport Fishing Council
- 16) Kaikoura Boating Club
- 17) R Cox - Takaka Resident
- 18) New Zealand Scallop Company limited - Quota holders
- 19) R Paulin - Recreational fisher
- 20) Marlborough Recreation Fishers Association Inc
- 21) H Shields - Recreational fisher
- 22) Challenger Scallop Enhancement Company Limited
- 23) Ngati Tama ki Te Tau Ihu Trust
- 24) Te Rununga o Ngati Kuia Charitable Trust
- 25) Cissy Bay Community Association
- 26) Seafood New Zealand
- 27) Te Ohu Kaimoana
- 28) Matt Watson - Recreational fisher
- 29) Jennie Smeaton on behalf of Te Rununga o Toa Rangatira
- 30) C Pinder
- 31) W Walbran