



Temporary Closure of the Southern Scallop (SCA 7) Fishery

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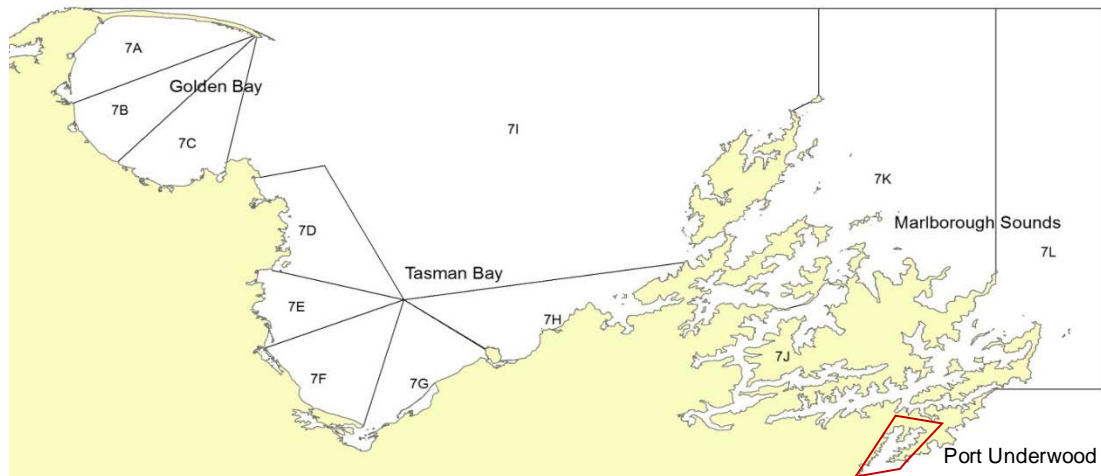


Figure 1: Map of the Southern Scallop fishery (SCA 7) showing reporting areas. Port Underwood is outlined in red.

1 Executive Summary

Surveys show SCA 7 (refer Figure 1) has been in decline since 2002 when the biomass of scallops was approximately 2,000 tonnes¹. This is despite measures including a reduced total allowable catch, reduced commercial catch limits for Marlborough Sounds, reseedling of juvenile scallops in Tasman Bay and a partial closure of the fishery over the 2016-17 season². This closure followed a survey in November 2015 showing SCA 7 biomass to be at its lowest recorded level at approximately 200 tonnes, with remaining dense beds of scallops limited to the Marlborough Sounds and part of Tasman Bay.

A new biomass survey carried out in January 2017 shows a further decrease in SCA 7 biomass to just over 100 tonnes. The fishery is likely to be below the 'hard limit', the point below which the fishery should be considered for closure under the Harvest Strategy Standard³. In particular there has been a decline in Tasman Bay and Golden Bay. Scallop biomass in the Marlborough Sounds has stabilised but remains close to its lowest recorded level. It is about a third of the 2003-2009 biomass; a target period when some stakeholders consider the Marlborough Sounds scallop beds were in a more healthy state.

Following preliminary discussions with tangata whenua and stakeholders, MPI publicly consulted from 10 to 31 May 2017 on a further temporary closure of SCA 7 for the coming scallop season, which commences on 15 July. MPI also consulted on whether Port Underwood⁴ should be included in any closure, given its proximity to SCA 7 and the potential for transfer of fishing effort. Specifically, MPI consulted on the following options:

1. Temporarily close all of SCA 7 to commercial and recreational scallop fishing for the 2017-18 scallop season.
2. Temporarily close all of SCA 7 and Port Underwood to commercial and recreational scallop fishing for the 2017-18 scallop season.
3. No temporary closure to SCA 7 (*status quo*).

Options 1 and 2 would allow remaining adult and juvenile scallops to grow and spawn for a further season without direct or indirect fishing mortality and disturbance. Commercial and

¹ All weights used in this paper refer to meat weight.

² The open season for both recreational and commercial fishers is 15 July to 14 February. The fishery operates on an April fishing year.

³ The Harvest Strategy Standard can be found at: <https://www.mpi.govt.nz/document-vault/728> and is discussed further at 4.7 below.

⁴ Port Underwood is not within SCA 7; it is in SCA 7C.

recreational fishers targeting scallops would be impacted under these options and wider benefits from harvesting the stock, including accommodation, charter boat income, and income associated with the sale of fishing gear and expertise. Prior to last season's closure 22 tonnes, with a port price value of approximately \$352k⁵ was taken commercially, and an estimated 11 tonnes⁶ was taken recreationally.

Under Option 3 (*status quo*), no further closure would be implemented and the fishery would be open this coming season. The sustainability of SCA 7 would rely on the current management settings. MPI is concerned that these settings have not, to date, reversed the decline of SCA 7 and that this option does not respond to the scientific information suggesting the stock is below the hard limit, with only a small remaining area of productive scallop beds. While this option allows utilisation in the short term, it does not provide for long term use, and a future recovery of SCA 7 could be compromised by fishing this season.

There is widespread support from recreational stakeholders and tangata whenua for a further closure, with most submitters willing to forgo immediate access to the fishery this season in the interests of the longer-term sustainability and improved future success. Most (76 of 84) submissions received during the period of public consultation supported a further closure given the poor status of the stock. These submissions were largely from recreational fishers and the community. Fifty-two⁷ submitters also considered Port Underwood needed protection from transfer of effort and should also be closed (Option 2). Around half of the 76 submissions were concerned that dredging, if re-introduced into the sounds, would have a negative impact on the fishery habitat. Tangata whenua, through the Te Waka a Māui me Ōna Toka Iwi Forum, have stated that they intend to implement a rahui on customary scallop take for the fishery as they did for the previous closed season.

Five submissions from the fishing industry or affected business owners considered the fishery should be open for the coming season (Option 3 - *status quo*). In addition, a further 41 'form' submissions were received after consultation had closed, all of which supported Option 3 and, more generally, the Challenger Scallop Enhancement Company's (the Enhancement Company's) submission.

The Enhancement Company considers MPI's proposals to be based on flawed information, preferring instead to have access to the five remaining scallop beds in the Marlborough Sounds during a shortened season, 1 September to 31 October. It has indicated it will commission a further survey of these beds later in June, and considers this survey may reveal substantial quantities of scallops. MPI notes, however, that under the MoU between the company and MPI any such survey should have been completed before now so that you can make sustainability decisions prior to the season. Deferring a decision would mean that a closure, if required, could not be implemented until well into the last half of the scallop season, compromising its effectiveness as significant targeting of the few remaining dense beds in the Marlborough Sounds could occur in the interim.

MPI has already commissioned NIWA to produce projections of the harvestable biomass for the remainder of the year, which estimates any increase in biomass over the remainder of the year will be modest. Importantly, the Enhancement Company's proposal fails to consider that these last few areas contain the majority of the spawning potential of the fishery and are the areas that need to be protected from fishing.

⁵ Based on the current port price of \$15.90 per kg.

⁶ There is uncertainty associated with this estimate.

⁷ Included was the Port Underwood Association representing 120 Port Underwood households.

Taking into account the information and views expressed during consultation, MPI's preferred option is to temporarily close all of SCA 7 and Port Underwood to commercial and recreational scallop fishing for the coming season (Option 2). This is the most likely of the options to protect the few remaining scallop beds while longer-term measures are developed to support a recovery of the fishery.

More broadly, there is consensus that the environment in many parts of SCA 7 has changed and no longer supports healthy scallop beds. There is evidence that the drivers of this change include fishing. There is some evidence that the drivers of this change include a range of anthropogenic impacts including fishing. In the immediate term, Options 1 and 2 presented for SCA 7, which propose a further closure of the SCA 7 fishery, are consistent with international best practice where partial or complete closures are routinely used as part of ongoing management strategies for scallops to rebuild depleted scallop biomass.

In the medium term, research and management should focus on the relationship between the SCA 7 environment, the fishing methods used, and the health of the scallop beds. Over the next year MPI will commission research to assess scallop survival and growth across a range of environmental gradients in SCA 7. This will determine what interventions, such as reseeded scallops, re-establishment of shell reefs or changes in fishing gear, are likely to be most successful at restoring the fishery. MPI will also be commissioning a new survey of scallop biomass this coming summer, implementing some of the recommendations of an independent panel of international scientists convened by MPI last year.

2 Introduction

MPI has consulted on proposals to temporarily close the SCA 7 fishery to commercial and recreational fishing for the coming 2017-18 scallop season commencing 15 July 2017. This decision document provides you with MPI's final advice on these proposals. It comprises relevant background information, legal considerations, summarises submissions and analyses proposed management options, and provides MPI's recommendations.

2.1 PROBLEM DEFINITION

A new biomass survey completed in January 2017 shows the biomass of adult⁸ scallops in SCA 7 remains very low. The biomass is considered likely to be below the hard limit⁹ and the area of productive, dense, scallop beds is confined to relatively few areas in the Marlborough Sounds. Modelling projections of the biomass in the Marlborough Sounds estimate following last season's closure the decline in parts of the Sounds may be reversing or levelling off.

Fishing is unlikely to be the only driver of the decline in biomass. However, MPI is concerned that any future recovery would be jeopardised by direct and indirect fishing mortality this coming season. MPI considers that action is required to protect these beds and ensure the sustainability of the fishery.

2.2 OBJECTIVE

SCA 7 is a "Group 2" fishery under MPI's Draft National Fisheries Plan for Inshore Shellfish¹⁰. Such fisheries are considered to be important to all sectors, as scallops are fast growing with

⁸ The minimum legal ('adult') size for SCA 7 is 90 mm.

⁹ MPI's 2016 Fisheries Assessment Plenary states that scallop (SCA 7) biomass is likely to be below the hard limit of 10% of the unfished biomass (B_0) for both Golden Bay and Tasman Bay. Given that the productive capacity of each of these areas is several fold greater than that for Marlborough Sounds, the Plenary also concludes that overfishing was occurring in the Marlborough Sounds, and that given the Marlborough Sounds component of the stock is at its lowest ever surveyed level, the stock as a whole is likely to be below the hard limit.

¹⁰ This is a non-binding MPI policy.

variable abundance. The management approach for this group enables responsiveness to changing abundance levels. The options proposed in this paper are consistent with this management approach as they respond to the low abundance of scallops in SCA 7. MPI's strategy is to ensure the sustainability of SCA 7 by resting parts or all of the fishery while developing other management measures and undertaking research to better understand the environmental and anthropogenic factors affecting scallop abundance in SCA 7.

2.3 BACKGROUND

2.3.1 Fishery information

Commercial catch dropped from 684 tonnes in 2002 to 22 tonnes when last fished in 2015 (valued at approximately \$352k based on the current port price for scallops in New Zealand of \$15.90 per kilogram). The fishery in Golden and Tasman Bays has collapsed, with almost all commercial fishing in recent years concentrated on the wild natural fishery in the Marlborough Sounds. This part of the fishery is not enhanced and, under the MoU, biomass and yield are estimated on an annual basis. The commercial fishery also operates under regulatory constraints including a 90 mm minimum legal size, maximum dredge size and number, number of days fished, fishing only in daylight hours, and a commercial season from 15 July to 14 February. However, the commercial season generally doesn't start until August due to scallop condition.

SCA 7 is an important shared fishery. Scallops are a popular target species for recreational fishers, taken by dredge or diving. SCA 7 can only be taken recreationally above a MLS of 90 mm. There is a daily bag limit of 50 scallops per person per day and the recreational season runs from 15 July to 14 February. Best available information suggests that recreational harvest was approximately 11 tonnes prior to its closure last season, but there is considerable uncertainty around this estimate.

Scallops (tupa/tipa) are an important kaimoana species for tangata whenua. They are identified by Te Waka a Māui me Ōna Toka Iwi Forum¹¹ as a taonga species in the Te Waipounamu Iwi Fisheries Plan. This plan includes objectives relating to supporting and providing for the customary and commercial interests of South Island iwi. The customary take of SCA 7 scallops appears to have been modest in recent years. Top of the South iwi implemented a rahui during last season's closure and have undertaken to repeat this for any closure this upcoming season.

2.3.2 Stock status

The results of a new survey of SCA 7 were presented to MPI in February 2017 and are summarised below in Figure 2. They show that SCA 7 biomass, overall, remains at its lowest recorded level, despite last season's closure and measures introduced in 2014 to help rebuild the fishery. These measures included reducing the total allowable catch (TAC), total allowable commercial catch (TACC), and significantly reducing commercial catch limits for Marlborough Sounds through implementation by the Enhancement Company of a maximum commercial harvest rate for the Marlborough Sounds of 22% of recruited biomass. In addition, the Enhancement Company has continued to reseed some areas (recently Tasman Bay), albeit at reduced levels and with few reseeded scallops surviving.

¹¹ This 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.

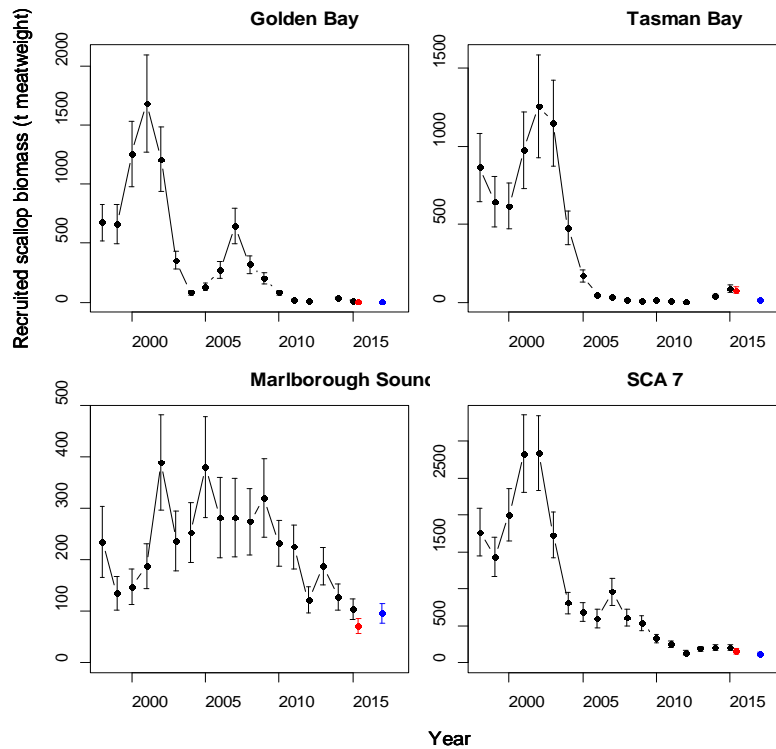


Figure 2. Graphs showing scallop biomass in SCA 7. Red dots show the estimates of scallop abundance (90mm or larger) in the November 2015 survey. Blue dots show the estimates of scallop abundance (90mm or larger) in the January 2017 survey.

There are unlikely to be any areas of significant scallop biomass in SCA 7 other than the few beds in the outer Marlborough Sounds. For comparison between the most recent three surveys, total SCA 7 biomass (90mm or above) has declined as follows:

- May 2015 - 203 tonnes
- November 2015 - 153 tonnes
- January 2017 - 109 tonnes.

This decline is largely driven by a loss of the biomass in Area 7H in Tasman Bay (refer Figure 1) and a small reduction in Golden Bay.

There has been a stabilisation in biomass in the Marlborough Sounds over the past three surveys as follows:

- September 2015 - 102 tonnes
- November 2015 - 69 tonnes
- January 2017 - 87 tonnes.

Statistically, there is no significant difference between these biomass estimates for Marlborough Sounds. Therefore, biomass remains close to its lowest recorded level and is only about a third of the 2003-2009 biomass (around 300 tonnes); a potential ‘target’ period when some stakeholders consider the Marlborough Sounds scallop beds were in a more ‘healthy’ state. Of particular concern is the decline in the number and extent of scallop beds of fishable density, especially in Pelorus Sound.

There are signs of what appear to be improving numbers of pre-recruit scallops coming through in some areas in the outer Marlborough Sounds, possibly as a result of measures implemented from 2014, but the number of pre-recruits that will actually recruit into the fishery is uncertain.

It is too soon to determine if the closure that was in place last season has resulted in increased numbers of juvenile scallops.

Overall, the estimates of recruited scallop abundance across SCA 7 are the lowest that have been observed since surveys began in 1998. Scallop biomass is very likely to be below the hard limit for both Golden Bay and Tasman Bay, and the stock as a whole (i.e. including the Marlborough Sounds) is likely to be below the hard limit.

3 Consultation

3.1 PRE-CONSULTATION

You must provide for the input and participation of tangata whenua having a non-commercial interest in the stock concerned or an interest in the effects of fishing on the aquatic environment in the area concerned. You must also have particular regard to kaitiakitanga. MPI has undertaken pre-consultation on your behalf (as discussed in section 4.5 of this paper).

Tangata whenua (through the Te Tau Ihu Iwi Forum) are concerned for the health and wellbeing of the fishery, but also want to ensure the integrity of their Treaty of Waitangi fishing rights. They have indicated that they will put in place a rahui on customary fishing for scallops for the coming season. Iwi supported the previous closure by choosing not to issue customary authorisations. However, iwi wish to see a further closure accompanied by a unified research programme into the causes of the decline in the stock. Te Atiawa o Te Waka-a-Māui Trust have asked for long term protection and active restorative fisheries management.

In response to this feedback, MPI hosted science workshops in April and May 2017, with regional researchers, iwi and stakeholders. The workshops focused on identifying the causes of decline in SCA 7 and on developing a coordinated research programme to better understand these causes and help rebuild the fishery (see section 6.2).

Throughout 2016 MPI also met with a multi-sector group including recreational and commercial scallop fishers and with the Enhancement Company and tangata whenua representatives to discuss issues and options for the fishery. MPI met again with these parties in February 2017 to discuss the results of the survey, and to seek initial views on whether a further temporary closure of the fishery should be considered for the coming season.

MPI has been in regular discussions with the Enhancement Company on management options for the fishery. These discussions include development of a package of measures in collaboration with a multisector group that includes representatives from the Enhancement Company as well as recreational fishers, and with input from tangata whenua through the Te Waka a Māui me Ōna Toka and Te Tau Ihu iwi forums.

Feedback from this engagement shows a range of views on temporary closures. Recreational fishers on the multisector group, as well as many recreational fishers who made submissions, support a further temporary closure for 2017-18 covering the whole of SCA 7. In their view, a one year closure was insufficient to protect the beds and stimulate any rebuild. They are also concerned that leaving Port Underwood (which is immediately adjacent to SCA 7) open to harvest, as occurred last season, will be exposed to excessive harvest effort and may be over-harvested as a result.

Commercial fishers, through the Enhancement Company, do not support a temporary closure. The Enhancement Company considers that the annual process it undertakes (typically a survey

the stock in May for use in the harvest plan submitted to you in July), will ensure sustainability and meet the needs of all sectors. The Enhancement Company does not agree that the most recent survey provides an accurate picture of the fishery, or with some of MPI's conclusions regarding the current status of the stock. In particular, the Enhancement Company considers a survey in January is not comparable to the historic time-series of surveys which usually occurs in May-July. The Enhancement Company is concerned that a biomass survey in January does not give an accurate assessment of the biomass seven months later in September, when the commercial fishery traditionally opens.

In response to this feedback, MPI commissioned NIWA to scientifically model likely future scallop biomass through to May and September 2017. Two methods were employed, growth tag and recapture data and length frequency data. The two different methods suggest a range of biomass levels for SCA 7 of between 134 tonnes and 139 tonnes and, for the Marlborough Sounds of between 115 tonnes and 120 tonnes. While bearing in mind the uncertainties with these estimates, both are within the biomass range in which the stock has previously declined. Therefore, at least in the short term, the sustainability concerns for SCA 7 remain.

3.2 PUBLIC CONSULTATION

On 10 May 2017, MPI released a discussion document proposing that SCA 7 be temporarily closed under s 11 of the Fisheries Act 1996 to both commercial and recreational fishing until 14 February 2018. MPI consulted on three options:

Option 1	Close all of SCA 7 to Scallop fishing for the 2017-18 season
Option 2	Close all of SCA 7 and Port Underwood to Scallop fishing for the 2017-18 season.
Option 3 (Status quo)	No scallop fishing closures are implemented for the 2017-18 scallop season.

3.3 SUMMARY OF SUBMISSIONS

Eighty-four written submissions were received on the proposals during the period of consultation. Copies of these submissions are attached (refer to Appendix 1).

Seventy-six¹² submissions supported closing the fishery, primarily on the grounds that the fishery is at a low point and the fishery needs more time to recover. Of these submissions, 52 explicitly considered Port Underwood would also need protection from transfer of effort and should also be closed (Option 2). Included was the Port Underwood Association representing 120 Port Underwood households. Many submitters supported excluding dredging from within the Marlborough Sounds. Eighteen also submitted that commercial dredging be permanently excluded from the Marlborough Sounds. Thirty-six submissions highlighted the negative impact of dredging in the Marlborough Sounds. Some submitters consider an exemption should be made to allow recreational diving for scallops this season in the Marlborough Sounds.

Tangata whenua, through the Te Waka a Māui me Ōna Toka Iwi Forum (with support from Te Ohu Kai Moana), also supported a closure (Option 2) and have stated that they will implement a rahui on customary scallop take for the entire fishery for the coming season. Te Atiawa o Te Waka-a-Māui Trust have submitted in support of Option 2 but ask for long term protection and active restorative fisheries management.

¹² Some submissions required interpretation to determine the preferred option.

Five submissions supported no closure (Option 3 - *status quo*). These submitters included the Enhancement Company, representing commercial fishers, dive or chartering operators who considered a temporary closure of the fishery would negatively impact on their business. There were 41 late submissions, all of which supported Option 3 and the Enhancement Company's submission.

Three submissions did not indicate a preferred option for this coming season, but instead provided additional information and views on management changes for the fishery beyond this coming season, or proposed options that were not consulted on. Many other submissions also provided additional management proposals including prohibiting commercial fishing (particularly in the Marlborough Sounds), reviewing catch limits (both commercial and recreational), restricting harvest methods (in particular prohibiting dredging), and changing season start dates.

Overall, written submissions indicate widespread support for a closure of the Southern Scallop fishery, including Port Underwood (Option 2). Most recreational stakeholders and tangata whenua appear willing to forgo immediate utilisation of the fishery over the coming season in the interests of the longer term sustainability and improved future access. The majority of submissions based their support for closure of the fishery on the poor state of the stock and consider that the previous one year season closure has not provided sufficient time for it to recover.

3.4 CHALLENGER SCALLOP ENHANCEMENT COMPANY

The Enhancement Company has a particular role in the fishery and operates annual management processes under an Enhancement Plan and MoU with MPI. The Enhancement Company's submission (refer to Appendix 1) considers MPI's proposals are based on flawed information and does not support a closure. Specifically, that the previous two biomass surveys were undertaken in November and January, but that traditionally, the best available information comes from the time series in May/June which goes back nearly twenty years. The Enhancement Company submits that scallop growth varies according to many factors and a survey nine months out from harvest is not a good indicator of scallops over 90 mm. Therefore, the Enhancement Company does not support a closure, preferring to have access to the five remaining scallop beds in the Marlborough Sounds during a shortened season.

The Enhancement Company states that it remains committed to developing a robust management proposal for the upcoming season through the process agreed under the MoU between the Enhancement Company and MPI. It has submitted it will commission a further survey of the beds later in June this year, and considers this survey may reveal substantial quantities of scallops.

4 Legal Considerations

This section provides an overview of relevant legal provisions under the Fisheries Act 1996 (the Act) plus the Harvest Strategy Standard.

4.1 SECTION 8 – PURPOSE OF THE FISHERIES ACT 1996

The purpose of the Act is to provide for the utilisation of fisheries resources while ensuring sustainability.

“Ensuring sustainability” is defined in section 8 as: “maintaining the potential of fisheries resources to meet the reasonably foreseeable needs of future generations; and avoiding, remedying, or mitigating any adverse effects of fishing on the aquatic environment”.

“Utilisation” of fisheries resources is defined as “conserving, using, enhancing, and developing fisheries resources to enable people to provide for their social, economic, and cultural wellbeing.”

The Supreme Court has stated that the purpose statement incorporates “the two competing social policies reflected in the Act” and that “both policies are to be accommodated as far as is practicable in the administration of fisheries under the quota management system ... [I]n the attribution of due weight to each policy that given to utilisation must not be such as to jeopardise sustainability”¹³.

Utilisation may be provided for at different levels, and the extent of such use should be considered on a case-by-case basis. Where there is a significant threat to the sustainability of a fish stock, the measures adopted to achieve sustainability are likely to be more stringent than where there is a lesser threat.

Your decision to temporarily close the Marlborough Sounds and part of Tasman Bay for the 2016-17 scallop season was based on survey information suggesting the fishery biomass was below the hard limit, a point below which it is MPI policy that the fishery should be considered for closure. The latest survey suggests the fishery remains at this low level, and MPI considers the measures proposed in this paper (to close the fishery for a further season), while stringent, are appropriate given the significant risk fishing poses to the sustainability of SCA 7.

4.2 SECTION 9 – ENVIRONMENTAL PRINCIPLES

The Act prescribes three environmental principles that you must take into account when exercising powers in relation to utilising fisheries resources and ensuring sustainability.

Principle 1: Associated or dependent species should be maintained above a level that ensures their long-term viability.

The Act defines “associated or dependent species” as any non-harvested species taken or otherwise affected by the taking of a harvested species. “Harvested species” means any fish, aquatic life, or seaweed that may for the time being be taken with lawful authority. Taken together, these definitions mean that only protected species constitute associated or dependent species. MPI considers that scallop fishing has little impact on associated or dependent species, and that the measures proposed in this discussion paper are likely to reduce any such impacts.

Principle 2: Biological diversity of the aquatic environment should be maintained.

“Biological diversity” means the variability among living organisms, including diversity within species, between species, and of ecosystems. There has been no formal assessment of the extent to which dredging for scallops reduces biological diversity as defined in the Act, although dredge and trawl fisheries in general are known to affect benthic communities, including often reducing some measures of species diversity. The proposed closures are likely to reduce impacts on biological diversity.

Principle 3: Habitat of particular significance for fisheries management should be protected.

“Habitat of particular significance for fisheries management” is not defined in the Act but MPI considers that the maintenance of healthy scallop stocks requires the mitigation of any major

¹³ New Zealand Recreational Fishing Council Inc v Sanford Limited and Ors (Supreme Court, [2009] NZSC 54 at [39]).

threats to habitat important for scallop spawning and recruitment. The activity of dredging could affect such habitats and could also exacerbate other impacts like sedimentation from a range of terrestrial activities. It is not known precisely what habitats are important for the recruitment of scallops within SCA 7, or the impacts of scallop dredging on such habitats, but the proposed closures are likely to reduce impacts on habitats important for scallops.

4.3 SECTION 10 – INFORMATION PRINCIPLES

The nature of data and assumptions used to generate fisheries assessments and the results produced contain inherent variation and uncertainty. Section 10 of the Act specifies the information principles that must be taken into account:

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

“Best available information” is defined in the Act to mean the best information that, in the particular circumstances, is available without unreasonable cost, effort or time.

Less than full information suggests caution in decision-making, not deferral of a decision completely if information standards are not met. “The fact that a dispute exists as to the basic material upon which the decision must rest, does not mean that necessarily the most conservative approach must be adopted. The obligation is to consider the material and decide upon the weight which can be given it with such care as the situation requires.”¹⁴

Both scientific and anecdotal information need to be considered and weighed accordingly when making management decisions. The weighting assigned to particular information is subject to the certainty, reliability, and adequacy of that information.

As a general principle, information on stock status outlined in the MPI Fishery Assessment Plenary Report is considered the best available information and should be given significant weighting. The information presented in the Plenary Report is subject to a robust process of scientific peer review and is assessed against the Research and Science Information Standard for New Zealand Fisheries. Corroborated anecdotal information also has a useful role to play in the stock assessment process and in the management process. Specifically, in this instance the biomass surveys completed in November 2015 and January 2017 are also very relevant.

4.4 SECTION 11- SUSTAINABILITY MEASURES

Section 11(1) of the Act allows you to set or vary any sustainability measure for one or more stocks or areas, after taking into account any effects of fishing on any stock and the aquatic environment, any existing controls that apply to the stock or area concerned (for example any controls under the Enhancement Plan for the fishery, referred to in this paper), and the natural variability of the stock concerned. Scallop populations are known to vary over time and in response to environmental changes, and can also be affected by fishing pressures. The proposals to close some scallop beds to harvesting seek to address the risk that fishing will further exacerbate conditions that have led to declining populations.

¹⁴ *Greenpeace NZ Inc v Minister of Fisheries* (HC, Wellington CP 492/93, 27/11/95, Gallen J) p 32.

Section 11(2) states that before setting or varying any sustainability measure, you shall have regard to any provisions of: any regional policy statements, regional plans, or proposed regional plans under the Resource Management Act 1991; any management strategy or plan under the Conservation Act 1987; sections 7 and 8 of the Hauraki Gulf Marine Park Act 2000; any regulations under the Exclusive Economic Zone and Continental Shelf (Environmental Effects) Act 2012; and any planning documents lodged with you (the Minister of Fisheries (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 specific matters under the above provisions that are relevant to this proposal. The Marlborough District Council is consulting on a provision within the Marlborough Sounds to close a number of areas identified as having high biodiversity values to bottom impacting fishing methods. MPI has seen the locations of the proposed areas and notes that these areas will not meaningfully impact on the scallop fishery.

Section 11 (2A) requires you to take into account:

- (a) Any conservation services or fisheries services
- (b) Any relevant fisheries plan approved under this Part-see discussion of section 11A below
- (c) Any decisions not to require conservation services or fisheries services.

Services of particular relevance to the decisions in this paper relate to programmed research used to monitor stock abundance. These are the regular biomass surveys of SCA 7, such as that previously carried out by the Enhancement Company, and the more extensive biomass surveys carried out in November 2015 and January 2017. To date national fisheries plans have been approved only for deepwater and highly migratory species and there are no relevant approved fisheries plans. The management of the SCA 7 fishery is guided by the non-binding policy objectives that are found in MPI's draft National Fisheries Plan for Inshore Shellfish and MPI's Harvest Strategy Standard.

Section 11(3) outlines a non-exhaustive list of sustainability measures that you may set for a stock. Sustainability measures may relate to the areas from which any fish, aquatic life, or seaweed of any stock may be taken. You may implement any sustainability measures by notice in the Gazette (as proposed in this paper) or by the making of regulations under section 298 of the Act. MPI is proposing temporary closures for the 2017-18 season to address the observed declines in the SCA 7 population.

Section 11(4) allows sustainability measures to be set or varied by Gazette Notice or by recommending the making of regulations. MPI proposes that the sustainability measures be set by notice in the Gazette.

4.5 SECTION 12- CONSULTATION

Before implementing any section 11 sustainability measure, section 12 of the Act specifies you shall consult with persons or organisations that you consider have an interest in the stock or the effects of fishing on the aquatic environment in the area concerned, including Māori, environmental, commercial, and recreational interests. MPI's consultation process is described in section 3 of this decision document.

You must also provide for the input and participation of tangata whenua having a non-commercial interest in the stock concerned or an interest in the effects of fishing on the aquatic environment in the area concerned. You must also have particular regard to kaitiakitanga. MPI

has consulted with and provided for the input and participation of tangata whenua for SCA 7 as described in section 3 of this decision document.

4.6 SECTION 310 - ENHANCEMENT PLAN

The Enhancement Company operates annual management processes for the fishery under an Enhancement Plan approved under section 310 of the Act in 1998, and an MoU with MPI. These documents set out timeframes, information requirements and the process for approval of an annual harvest plan. Section 310(5) says that nothing in any enhancement plan prevents you from taking any sustainability measures under Part 3 of the Act for the fishery and this power is reflected in the MoU.

The MoU was signed in 1998, at a time when SCA 7 was primarily an enhanced fishery operating in Golden and Tasman Bay. While the Enhancement Company still attempts enhancement, in recent years the scale of enhancement has been small and survival of reseeded scallops very poor. MPI has sought to review the MoU to ensure it remains appropriate given the reduced state of the fishery, discussions with the Enhancement Company on this review are continuing.

4.7 HARVEST STRATEGY STANDARD

The Harvest Strategy Standard (HSS¹⁵) is a policy statement of best practice in relation to the setting of fishery and stock targets and limits for fishstocks in New Zealand's Quota Management System (QMS). It is intended to provide guidance on how fisheries law will be applied in practice, by establishing a consistent and transparent framework for decision-making to achieve the objective of providing for utilisation of New Zealand's QMS species while ensuring sustainability.

The HSS outlines the Ministry's approach to relevant sections of the Act and forms a core input to the Ministry's advice to you on the management of fisheries. The HSS defines:

Hard Limit as a biomass limit below which fisheries should be considered for closure
Soft limit as a biomass limit below which the requirement for a formal time-constrained rebuilding plan is triggered.

It is not legally binding and you are not obliged to choose options based upon it.

5 Management Options

In addition to the MoU and Enhancement Plan frameworks, there are a range of other tools, as well as closures, available under the Act that may be used to manage the impacts of fishing pressure on scallop abundance. For example, under section 11 of the Act you may set or vary any sustainability measures for a stock, which may relate to:

- 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;
- the size, sex, or biological state of any fish, aquatic life, or seaweed of any stock that may be taken;
- the areas from which any fish, aquatic life, or seaweed of any stock may be taken;
- 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; and

¹⁵ The Harvest Strategy Standard can be found at: <https://www.mpi.govt.nz/document-vault/728>

- the fishing season for any stock, area, fishing method, or fishing vessels.

MPI has sought views on the use of some of these tools as part of the longer-term package of measures to manage the fishery in future. However, the adoption of such measures requires further analysis and consultation over the coming year with tangata whenua, recreational and commercial stakeholders including the Enhancement Company. For the coming season, MPI considers a temporary closure as proposed in this paper is the appropriate mechanism to protect remaining scallop beds over the coming season.

The temporary closure options for the season are outlined in the following table. The options do not differ from those consulted on.

Option 1	Close all of SCA 7 to Scallop fishing for the 2017-18 season
Option 2	Close all of SCA 7 and Port Underwood to Scallop fishing for the 2017-18 season.
Option 3 (Status quo)	No new scallop fishing closures are implemented for the 2017-18 scallop season.

5.1 OPTION 1 – CLOSE ALL OF SCA 7 TO SCALLOP FISHING FOR THE 2017-18 SEASON

Under Option 1 all of SCA 7 would be closed to scallop fishing until 15 February 2018. The closures would be implemented under section 11 of the Fisheries Act 1996.

5.1.1 Impacts and benefits

This option offers protection to the SCA 7 scallop biomass given the continued decline. The remaining spawning potential of the stock is safeguarded and small scallops are protected from incidental fishing mortality under this option. Relative to Option 3, Option 1 has less risk to the stock from fishing related mortality. The majority of submitters supported a temporary closure of the fishery based on the current state of the stock and considered closing all of SCA 7 would have a positive long term impact, providing an opportunity for scallops to spawn, settle and grow without fishing mortality and disturbance.

MPI considers this option is appropriate given scallop biomass is very likely to be below the hard limit for both Golden Bay and Tasman Bay. Biomass in the Marlborough Sounds appears to have stabilised, and is projected to remain stable or increase slightly between now and November. However, it will remain close to its lowest surveyed level and within the biomass range in which the stock has previously declined.

Overall, the SCA 7 stock is at its lowest recorded level and likely to be below the hard limit. The hard limit is defined in the HSS as the biological reference point at which closure should be considered. Although the policy is only a guide, MPI considers the low biomass level poses significant risk to ongoing sustainability of the resource. In addition, the area of productive scallop beds is very small relative to its historical extent.

Closing all or significant parts of a scallop fishery has proven to be a successful approach in rebuilding scallop numbers both in SCA 7, and overseas. The entire SCA 7 fishery was closed for two years in 1981-83 and recovered rapidly. Overseas examples, where large scale closures and/or substantial reductions in fishing mortality have been successful in rebuilding scallop biomass, include Georges Bank, several UK scallop fisheries, and Bass Strait, Australia.

Both commercial and recreational fishing would be significantly impacted under this option and it would prevent wider access to the benefits that could have been available from the fishery. This includes tourism benefits such as accommodation and charter boat income, and income associated with the sale of fishing gear and expertise.

In the Marlborough Sounds, the biomass of scallops at fishable density is limited to only a few areas; in particular Wynen's Bank, Guards Bank, and Ship's Cove. Biomass in the Sounds remains close to its lowest recorded level, and is about a third of the 2003-2009 biomass (around 300 tonnes), a 'target' period when some stakeholders consider the Marlborough Sounds scallop beds were in a more 'healthy' state.

Scallops in the inner parts of Pelorus Sound have been in poor condition over the past few years, with MPI testing showing the presence of a bacterial disease (*Rickettsia*) and the presence of a parasitic protozoan *Perkinsus olseni*. A closure would allow diseased scallops to recover without stress from disturbance arising from fishing activities.

Overall, Option 1 would have an immediate impact on fishing this season, but should have a positive effect on the long term sustainability and potential for rebuilding the SCA 7 stocks. While MPI's initial view is that this option could be appropriate, submitters, including the Port Underwood Association consider that it is necessary to also close Port Underwood to scallop fishing to protect its scallop fishery from a transfer of fishing effort.

5.2 OPTION 2 - CLOSE ALL OF SCA 7 AND PORT UNDERWOOD TO SCALLOP FISHING FOR THE 2017-18 SEASON.

Under Option 2 all of the Southern Scallop fishery, as well as Port Underwood, would be closed to scallop fishing until 15 February 2018. The closures would be implemented under section 11 of the Fisheries Act 1996.

5.2.1 Impacts and benefits

Port Underwood is in SCA 7C, immediately adjacent to, but not within SCA 7 (see Figure 1). Recreational fishers are concerned that this small recreational-only fishery will be subject to increased harvest pressure under Option 1. There is no quantitative information on the level of harvest or the status of the scallop beds in Port Underwood, or on the likely level of displaced harvest.

In addition to the impacts and benefits outlined for Option 1 above, Option 2 would impact on harvesting in the small recreational scallop fishery that exists within Port Underwood. The benefit of this option is that it protects scallops within Port Underwood from any increased harvesting effort that may be transferred as a consequence of the closure to the Marlborough Sounds.

Fifty two submitters, including the Port Underwood Association representing 120 households, considered that there was a risk of effort displacement negatively affecting the scallop beds in Port Underwood, and supported this option.

Given the information supplied in submissions, and the small size of the Port Underwood stock, which creates a risk of localised overharvesting, MPI considers Option 2 is the most appropriate option to ensure the sustainability of scallop stocks in the area.

5.3 OPTION 3 – STATUS QUO

Option 3 is the *status quo*. No temporary closures would be implemented under this option.

5.3.1 Impacts and benefits

Under this option, the fishery would be open and the sustainability of SCA 7 would rely on the regulatory management settings for the fishery. The scallop beds would be available for commercial and recreational fishing this season and there would be benefits for the tourism and retail operations associated with the fishery.

A set commercial harvest rate (22%) and minimum density of 1:25 m² that has been implemented by the Enhancement Company for the past two fished seasons, would also still apply. These measures act to set a maximum percentage of the biomass available to commercial harvest and ensure only dense beds are fished. However, MPI notes that these measures have not prevented the decline of the stock to its current low level.

Overall, this option has the least impact on fishing but provides the least protection to remaining scallop beds from fishing over the coming season. MPI's view is that the *status quo* option is not a responsive approach to the significant declines in scallop abundance. While it has the least impact on fishing in the short term, it presents a high risk that the remaining scallop beds will not recover and will continue to decline. It does not address the risk that long term use is compromised if no action is taken. MPI considers that the evidence supports an extension of a closure is the most likely option to reverse the decline in scallop biomass. MPI also believes that Option 3 will not adequately take account of scientific information suggesting the stock biomass is below the hard limit, with only a small remaining area of productive scallop beds.

Five submissions and a further 41 late 'form' submissions supported this option. These submitters considered that scallops are more abundant than suggested and that fishing is not the primary driver of decline in the fishery. In addition closing the fishery would have a negative impact on their business operations.

The Enhancement Company supports this option in relation to the commercial fishery. The Enhancement Company has provided a detailed submission which is attached to this decision document in Appendix 1. Key matters raised in the submission and by the Enhancement Company in its discussions with MPI during development of the closure options, along with MPI's response are set out below.

November 2015 and January 2017 surveys

The Enhancement Company does not consider either survey accurately portrays the state of the fishery and does not agree with MPI's conclusions regarding the state of the fishery, which are based on these surveys. The Enhancement Company notes the usual timing of annual surveys is May, and points to indications of significant numbers of juvenile scallops coming through as evidence the fishery is rebuilding.

MPI agrees that the surveys differ from the usual timing for previous surveys. However, the November survey was only one of three surveys carried out in 2015. All these surveys indicate the fishery is at its lowest point. And, while the January survey was timed to allow for any management changes required to be implemented before 15 July, it was conducted after 17 months of no fishing in the most productive parts of the fishery.

MPI agrees that increased numbers of juvenile scallops in some of the beds were noted in the surveys. The Plenary Report concluded there is no certainty that these juvenile scallops will

grow through into the fishery and this is reflected in the failure to thrive of the enhanced spat. Further, juvenile scallops are susceptible to incidental mortality during dredging. The increase in juveniles also does not indicate any substantial recovery in the fishery, as overall abundance is still considered low.

Further survey

The Enhancement Company has indicated it intends to commission a biomass survey of the five Marlborough Sounds beds considered to be in good health later in June. The Enhancement Company says it remains committed to developing robust management proposals for the upcoming season through the process agreed under the MoU. The Enhancement Company submits that management measures for the commercial sector should not be made until the results of their proposed biomass survey are available.

The MoU between the Enhancement Company and MPI specifies that, if the Enhancement Company intends to fish the Marlborough Sounds, then it is to report the results of a biomass survey to MPI by 30 June each year so that this information can be used in setting sustainability measures, and as a basis for the Enhancement Company's annual harvest plan. That harvest plan is normally provided to you by 15 July each year.

The Enhancement Company also recommends the following additions to Option 3:

- reducing the season length for this year, 1 September to 31 October;
- opening up the Marlborough Sounds to enhancement; and
- removing excessive cohorts in some identified areas.

You may choose to consider additional survey information and adjustment of the normal reporting dates. However, MPI notes the Enhancement Company would still be required to meet the following steps:

- submission of a proposed design for biomass survey to MPI at least one month prior to the undertaking of the survey;
- providing a report detailing the results of this survey to MPI; and
- consultation with sector groups you consider representative of having an interest in the stock or effects of fishing on the aquatic environment – noting they are required to provide MPI with a copy of the proposed consultative timetable at least two weeks prior to consultation being undertaken.

Following these steps, MPI is required to provide you with recommendations (including the final recommendations from the Enhancement Company) on the proposed harvest plan. Based on previous performance MPI considers there is a low likelihood that the Enhancement Company can meet the timeframes specified in the MoU, especially given that a proposed design for a survey (the first step) has not been provided to MPI. Deferring a decision until this process is completed means closures would not be implemented until well into the last half of the scallop season. Their effectiveness is likely to be compromised as a result, as targeting of the few remaining dense beds in the Marlborough Sounds recreational fishing will have been occurring in the interim.

MPI also notes that if the Enhancement Company does commission a survey then, this survey would only focus on the five remaining beds expected to be at an economically viable density for fishing in the Marlborough Sounds. Given these are last remaining dense beds in the fishery, they require protection to ensure the reproductive potential of the fishery is maintained (high scallop density is critical to scallop breeding success). The Enhancement Company's proposed survey, which would be a prelude to fishing these areas, fails to consider this.

MPI notes it has commissioned NIWA to undertake projections, based on the results of the January survey, of biomass for the remainder of year. Two methods were employed and these results are available to the Enhancement Company. This information remains the best available information, and projects only modest increases in biomass over the course of 2017. Nevertheless, should a further survey identify an unexpected biomass of scallops, then it may be possible to review the closure.

6 Other Matters

6.1 INTERNATIONAL BEST PRACTICE

In May 2017, MPI participated in a workshop on scallops in the United States to discuss and test management of the SCA 7 and New Zealand's other scallop fisheries against international best-practise. MPI outlined the situation regarding SCA 7 and sought input from workshop participants on management and research options. It was clear from the workshop that the issues of concern to SCA 7 are not unique. Many of the British, Southern United States and Australian scallop fisheries are also seeing the impact of habitat change, localised overfishing and other anthropogenic impacts.

MPI's conclusion is that, in the immediate term, Options 1 and 2 presented in this paper for SCA 7 (further temporary closures), are consistent with international best practise where partial or complete closures are routinely used as part of ongoing management strategies for scallops to protect and rebuild depleted scallop biomass. In the medium term, research and management should focus on the relationship between the SCA 7 environment, the fishing methods used in SCA 7, and the health of the scallop beds.

6.2 RESEARCH PLAN

In the last few months MPI has convened scientific workshops to develop a coordinated research plan for the fishery, including research on the factors affecting scallops in SCA 7. It appears likely that the environment in many parts of SCA 7 has changed over the last 15 years and no longer supports healthy scallop beds. There is some evidence that, as for many overseas scallop fisheries, the drivers of this change include a range of anthropogenic impacts including fishing. Therefore, during the proposed period of closure, MPI will be commissioning research to assess scallop survival and growth across a range of environmental gradients in Tasman and Golden Bay, and in the Marlborough Sounds. This will help determine what and where interventions such as reseedling of scallops and re-establishment of shell reefs are most likely to be successful, as well as determining whether changes in fishing gear are required, and what role disease and other factors may be having in suppressing the productivity of the scallop beds.

MPI will also be implementing some of the recommendations of an independent panel of international scientists convened last year by MPI, including dredge efficiency and fine scale catch modelling, through a new survey of scallop biomass this coming summer.

More broadly, a comprehensive study of the environment, fishing and other impacts on the marine environment at the top of the South Island has commenced under the Sustainable Seas Programme. This longer term programme coordinates work across research agencies and a range of disciplines.

6.3 WIDER MANAGEMENT MEASURES

Information and views on wider management changes for the fishery beyond this coming season have been provided by submitters during consultation. These include prohibiting

commercial fishing in the Marlborough Sounds, reviewing catch limits (both commercial and recreational) and harvest methods (in particular prohibiting dredging and/or including establishing dive-only areas), changing season start dates and reviewing minimum legal size.

There was support from stakeholder discussions for continuation of a multisector working group to develop longer-term proposals to reset the regulatory controls in line with the diminished state of the fishery. MPI proposes to continue to facilitate such a group, which will consider public feedback on the longer term measures submitted during consultation. The group's proposals would be subject to wider engagement and consultation to gauge stakeholder and public views before any decisions are made. MPI expects to provide a discussion document outlining further proposals for the fishery as the results of the research outlined in section 6.2 above become available, and so that any regulatory or other changes to management of the fishery are in place next year.

7 Conclusion

The SCA 7 fishery remains at its lowest recorded level, with few remaining beds at a viable density to fish. Overall, the fishery is likely to be below the hard limit set under MPI's Harvest Strategy Standard.

MPI's strategy is to prevent any further decline in the scallop abundance caused by fishing, noting that there are likely to be environmental factors affecting abundance in the SCA 7 fishery. Spatial closures are an effective management tool that have been used previously in SCA 7 and in other scallop fisheries to protect residual beds and support recruitment. Two closure options and the *status quo* were put forward for consultation by MPI.

Option 1, closing all of SCA 7 to Scallop fishing for the 2017-18 season, would safeguard both mature and juvenile scallops in the fishery from direct and incidental fishing. However there are concerns regarding a shift of effort and risk of overfishing of the small scallop beds in Port Underwood. Option 1 has a low level of sustainability risk. MPI's view is that this option could be appropriate, given the fishery is at its lowest recorded state with only a limited number of beds at fishable density.

Option 2, closing all of SCA 7 and Port Underwood for the 2017-18 season to commercial and recreational scallop fishing, has a similar impact as Option 1, but also protects Port Underwood from the impacts of transferred effort. The majority of submissions support the need to protect Port Underwood scallop stocks, as well as SCA 7. Option 2 is MPI's preferred option.

Option 3, the *status quo*, has the least impact on fishing but has the highest sustainability risk of the three options. MPI's view is that the *status quo* option is not a responsive approach to the poor status of the fishery.

Taking into account the information and views expressed during consultation and the results of the biomass surveys, MPI's recommended option is to close all of SCA 7 and Port Underwood to scallop fishing for the 2017-18 (Option 2). This is the most likely of the options to protect the remaining reproductive capacity of the fishery and ensure Port Underwood is not overfished. MPI understands that such a closure would also be supported by tangata whenua through a rahui on customary fishing for scallops for the coming season.

In relation to the proposal by the Enhancement Company that decisions be deferred until the results of a further survey are available. MPI notes that deferring a decision until later in the year to allow for such a survey means that a closure could not be implemented until well into

the last half of the scallop season, compromising its effectiveness. In addition, a survey by the Enhancement Company would be limited to the few remaining beds in the Marlborough Sounds. MPI has already commissioned NIWA to produce projections of the harvestable biomass for the remainder of the year. This information remains the best available information, and predicts that any increases in these areas will be only modest. Importantly, the Enhancement Company's proposal fails to consider that these last few areas contain the majority of the spawning potential of the fishery and are the areas that need to be protected from fishing.

MPI notes that you have broad discretion in exercising your powers of decision making, and may make your own independent assessment of the information presented to you in making your decision. You are not bound to choose the option recommended by MPI or any of the options proposed.