

Regulatory Impact Statement

Proposal to open Otago Harbour to commercial cockle harvesting

Agency Disclosure Statement

This Regulatory Impact Statement (RIS) has been prepared by Fisheries New Zealand. It provides analysis of the proposal to open two cockle beds in the Otago Harbour to commercial harvesting.

The information used to inform the analysis and the proposal comes from extensive research surveys carried out between 2009 and 2017 in accordance with special permit requirements¹. All of the information from the research surveys was reviewed by Fisheries New Zealand's Shellfish Working Group to ensure it was robust and reliable for informing management decisions.

The Fisheries Act 1996 (the Act) states that decisions should be based on the best available information; that decision makers should consider any uncertainty in the information; that decision makers should be cautious when information is uncertain, unreliable, or inadequate; and that the absence of, or 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.

The analysis in this RIS relies on the best available information, however, there is some uncertainty in some of that information including:

- the economic figures, specifically the estimated annual value of the fishery, as it is highly variable and largely dependent on market factors, particularly exchange rates;
- the expected annual revenue reduction to industry if the two beds are not opened for commercial harvesting;
- the customary harvest records due to reporting inconsistencies (namely use of different measurement units);
- the recreational diary survey² in 2000, as it is not a robust representation of recreational catch; and
- the total biomass of cockles in Otago harbour, as the last effective total abundance survey was conducted in 1999³.

¹ Research surveys were conducted by industry over the course of the special permit (2009-2016) to determine the effects of commercial cockle harvesting on two beds in Otago Harbour and the wider ecosystem. All aspects of the research surveys were reviewed by Fisheries New Zealand's Shellfish Working Group.

² Fisheries New Zealand-led recreational diary surveys are used to estimate the national recreational take of finfish and shellfish.

³ Abundance surveys are used to quantify the total biomass of cockles in a defined area.

The analysis considers this uncertainty and it has been taken into account during the development of the proposed recommendation.

Fisheries New Zealand has relied on research surveys conducted under special permit and consultation with tangata whenua and stakeholders, to assess the impact that the proposed regulatory change may have.

Fisheries New Zealand has developed a proposal based on the best available information and considers that, should it be implemented, sustainability and/or environmental impacts are likely to be minor and manageable.

Dan Bolger
Head of Fisheries New Zealand
[17 August 2018]

Executive summary

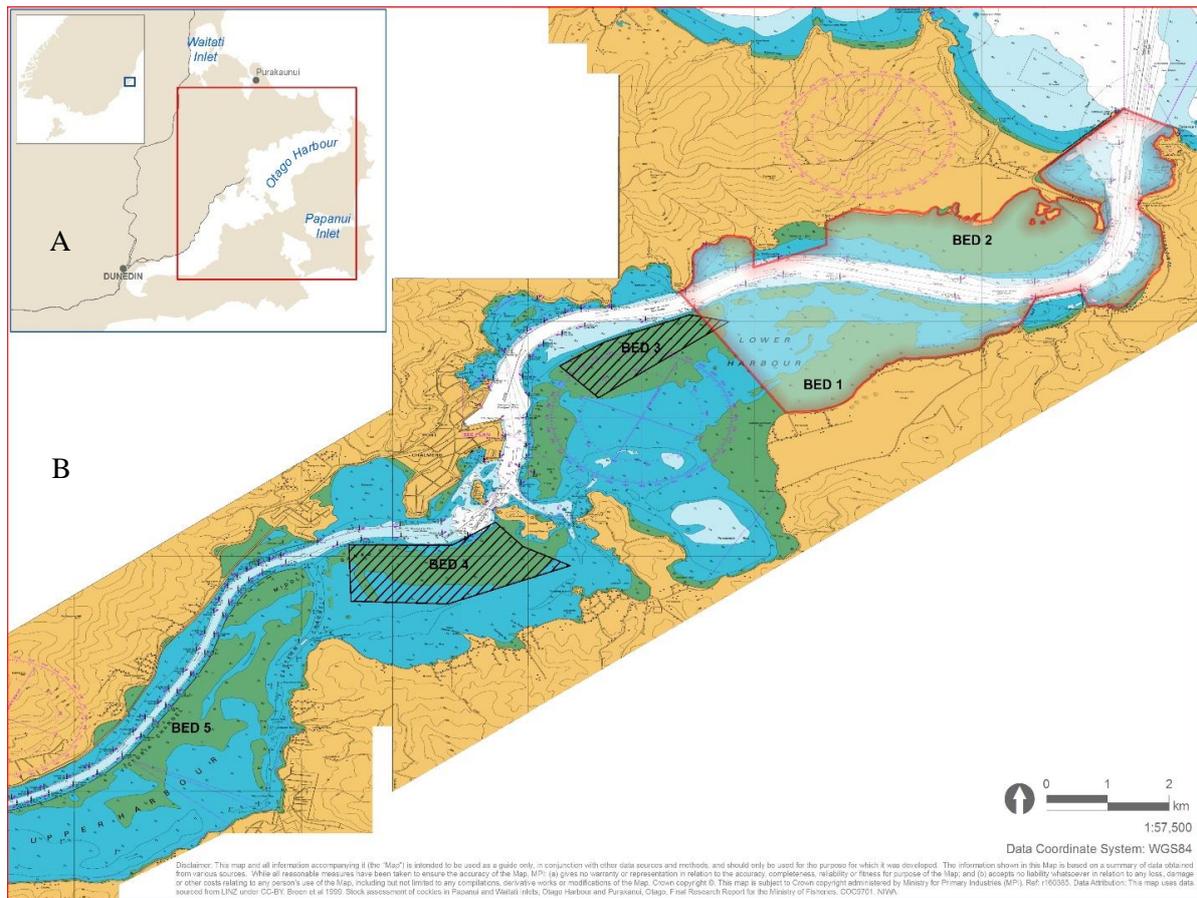


Figure 1: Major cockle beds in Otago Harbour. A: Key cockle beds within the Otago cockle fishery (COC3) as written in blue. B: Commercial cockle harvesting occurred in beds 3 and 4 (marked by black diagonal shading) under special permit, which expired January 2017. The red outline highlights the Otākou Mātaitai Reserve.

Fisheries New Zealand is seeking an amendment to Regulation 10 of the Fisheries (South-East Area Commercial Fishing) Regulations 1986, to end prohibition of commercial cockle harvesting at two sites in the Otago Harbour.

Otago Harbour which is part of the COC3 quota management area (QMA), is believed to hold the largest biomass of cockles in New Zealand, with an estimated total biomass of greater than 30,000 tonnes. Commercial harvesting of cockles in COC3 currently takes place in Waitati Inlet (north of the Otago Harbour). However, harvesting from this site is regularly interrupted due to poor water quality. Therefore, COC3 quota holders have requested two areas (beds 3 and 4, refer Figure 1B) in Otago Harbour be made available as alternative harvest areas to ensure they are able to maintain consistent supply to export markets and to grow their business. Industry have estimated that without access to the two beds, which have until recently been commercially harvested under special permit, that a 160 tonne reduction in annual production will occur, equating to an annual revenue loss of \$900,000.

The original rationale for the regulation prohibiting commercial harvest was related to a combination of water quality and food safety issues. These issues are now considered resolved after the harbour was shown to contain high quality water following surveys beginning in 2009. The Shellfish Quality Assurance Programme for bivalve shellfish is now

responsible for monitoring water quality in the harbour on an ongoing basis – a programme run by the Ministry for Primary Industries in collaboration with the Southern District Health Board and the shellfish industry.

The two proposed areas (beds 3 and 4, refer Figure 1B) to be opened to commercial cockle harvesting in Otago Harbour are not believed to be important harvest areas for non-commercial sectors, as they are only accessible by boat.

Commercial harvest of cockles in two areas of the Otago Harbour occurred under a special permit between 2009 and January 2017, allowing extensive research into the ecological effects of commercial scale harvesting. This research concluded that the sustainability and environmental impacts of commercial cockle harvesting are likely to be minor in the two proposed areas. Following the expiration of the special permit in January 2017, commercial harvesting of cockles in Otago Harbour ceased.

Fisheries New Zealand undertook consultation between 17 January 2017 and 15 February 2017 on a proposal to open two areas of the Otago Harbour to commercial cockle harvesting. Te Rūnanga o Ōtākou requested a delay in decision making so that further analysis could be conducted. Fisheries New Zealand agreed to the request and, following this analysis, concluded that commercial harvesting would be sustainable with low environmental impact.

Fisheries New Zealand will continue to monitor the fishery through regular abundance surveys and ensure that commercial harvesting of cockles in the harbour remains sustainable. Southern Clams Limited also advise they will continue environmental monitoring procedures that formed aspects of the harvest arrangements under the special permit.

Taking into account the best available information and the content of submissions received, Fisheries New Zealand recommends that regulations be amended to allow commercial cockle harvesting in two areas of Otago Harbour (i.e. instead of the *status quo*). If the regulation is amended to allow commercial cockle harvesting in the two areas, fishing would be subject to all the requirements in place for the COC3 fishery under the Quota Management System (QMS). These include total allowable catch (TAC), gear restrictions, reporting requirements and annual catch entitlement.

Cockles Otago 3

The Fishery

The Otago cockle fishery (COC3) includes cockle beds located in the Otago Harbour that are important to customary, commercial and recreational fishers. Otago Harbour is believed to hold the largest biomass of cockles in New Zealand, estimated to exceed 30,000 tonnes in total biomass. The Fisheries (South-East Area Commercial Fishing) Regulations 1986 originally closed the harbour to the commercial harvest of cockles due to water quality/food safety reasons that are no longer relevant, and are dealt with by other legislation such as the shellfish quality assurance programme for bivalve shellfish.

Recreational and customary harvest

Most recreational and customary harvest is performed by hand and is believed to occur at Ōtākou and Aramoana in Otago Harbour (Beds 1 and 2 respectively, refer Figure 1B), North

of the Otago Harbour at Waitati Inlet, Papanui Inlet, and Purakaunui Inlet. The Ōtākou Mātaitai Reserve introduced by Te Rūnanga o Ōtākou over the outer part of the harbour demonstrates the commitment of local iwi in their role as kaitiaki (guardians) of the tuaki (cockles).

Recreational catch of cockles is not well estimated. A diary survey in 2000, which was used to estimate national recreational take of finfish and shellfish, suggests up to 36 tonnes of cockles could be harvested annually from the wider Otago-Canterbury area (Fisheries Management Area 3). However, to date, there is some uncertainty around the accuracy of information collected during diary surveys, and therefore interpretation of estimates of recreational take need to take this into account.

Customary harvest amounts in COC3 have fluctuated between 2,100 and 23,565 cockles (0.05 tonne and 0.59 tonne respectively) per year between 2007 and 2016. Recreational and customary allowances were set at 10 tonnes each when the fishery entered the QMS in 2002, and have remained unchanged.

Commercial harvest

The Total Allowable Commercial Catch (TACC) was set at 1,470 tonnes when the fishery entered the QMS in 2002, and has remained unchanged. The COC3 stock is currently considered to be likely at or above sustainability target biomass levels. Cockles have been commercially harvested since 1983 from Waitati Inlet and Papanui Inlet (until its closure for water quality reasons in 2006), and from the two proposed areas (beds 3 and 4, refer Figure 1B) in Otago Harbour between 2009 and January 2017 as part of a special permit. Regular abundance surveys of Waitati Inlet show cockle biomass is now higher than when commercial fishing commenced, indicating COC3 cockle beds can be productive and robust to the current level of commercial fishing pressure.

COC3 commercial fishers sell approximately 90% of their catch live, primarily to distributors in Europe and North America where they are known as *Littleneck Clams*. This export fishery is currently worth approximately \$5 million annually in overseas earnings. A smaller, but growing volume of COC3 catch is also sold domestically. Approximately 24 people are currently employed within the COC3 fishery in harvesting, processing and marketing the catch which creates additional indirect downstream economic benefits in the local area.

Unpredictable water quality at Waitati Inlet has meant the commercial supply of cockles to export markets has been repeatedly interrupted. Furthermore, commercial harvesting of cockles has not been able to occur at Papanui Inlet since 2006, because of water quality issues. Therefore, COC3 quota holders have expressed interest in securing an alternative harvest area in Otago Harbour (beds 3 and 4, Figure 1B) to ensure they are able to provide consistent supply to export markets, allowing them to grow the value of their business.

Research

In 2008, quota holders applied for a special permit for investigative research into impacts of commercial cockle harvesting in two areas of Otago Harbour (beds 3 and 4, refer Figure 1B). The special permit was approved in 2009 and expired in 2017. Four research surveys were conducted in 2008, 2010, 2013 and 2016.

Over the course of the special permit, an average of approximately 500 tonnes was taken annually from the two areas. Approximately half of each bed was open to harvest throughout this time, in order to assess changes in biomass in harvested and non-harvested areas. As expected, the biomass decreased in harvested areas compared to non-harvested areas, however juvenile cockles appeared to increase their growth in harvested areas as old cockles were removed. Increased growth has also been observed and documented in harvested areas within Waitati Inlet. Additionally, new spat (juvenile cockles) settled in the harvested areas throughout the research, suggesting recruitment was unaffected by harvesting. The research concluded that continued cockle harvesting in the two areas is sustainable.

The research also monitored changes to flora, fauna and the wider ecosystem in the two areas. Change was found to occur to aspects of the ecosystem throughout the duration of the permit, however the majority of the change occurred in both harvested and non-harvested areas. Therefore, the research concluded that any observed effects on the flora, fauna and the wider ecosystem are unlikely to be attributable to commercial harvesting, and that any direct effects from commercial harvesting to the ecosystem are transitory and minor in nature.

Fisheries New Zealand's Shellfish Working Group (including Fisheries New Zealand and independent scientists, and representatives and scientists from Te Rūnanga o Ngāi Tahu, Southern Clams Limited and the Department of Conservation) met on 27 March 2017 and again in August 2017 to review the survey report, and additional analyses that were requested. The Chair of the Working Group considers that the results show that the environmental impacts of harvesting cockles in these two beds in Otago Harbour are likely to be minor and manageable.

Problem definition

Otago Harbour holds the largest biomass of cockles in New Zealand but commercial utilisation of the stock is prohibited due to historic water quality issues that are no longer considered relevant and are dealt with by separate legislation. Additionally, research conducted throughout the duration of the special permit, has concluded that any impacts associated with commercial cockle harvesting in the two areas (beds 3 and 4, refer Figure 1B) in Otago Harbour are minor and manageable, and continued harvesting is sustainable.

Currently, commercial cockle harvesters operating in COC3 are only able to harvest cockles from Waitati Inlet, which is closed for up to 56 days of the year due to water quality issues. As a result, commercial cockle supply to export markets is regularly interrupted, which limits COC3 industry growth, trust and expansion into additional markets. Additionally, following the expiration of the special permit, industry are no longer allowed access to the two beds and expect an \$850,000 to \$900,000 annual loss in revenue. This is likely to have led on effects to employment stability for the 24 personnel involved.

Fisheries New Zealand considers a regulatory amendment necessary to allow for the commercial harvesting of cockles in the two areas (beds 3 and 4, refer Figure 1) of Otago Harbour. This would enable COC3 industry to maintain a consistent commercial cockle supply to export markets, and also allow a significant cockle resource to be sustainably utilised to provide for economic growth.

Objectives

Fisheries New Zealand has analysed both options against the following objectives:

- Objective 1: provide for utilisation while ensuring sustainability of the COC3 stock.
- Objective 2: develop fisheries resources to enable people to provide for their social, economic and cultural well-being.
- Objective 3: minimise the impact of commercial cockle harvesting on the abundance of associated or dependent species, biodiversity or habitat of particular significance in Otago Harbour.

Objectives 1 and 2 are consistent with the purpose of the Fisheries Act 1996 (the Act) in providing utilisation while ensuring sustainability. Utilisation in this case is defined as conserving and enhancing the COC3 stock to enable people to provide for their economic and social well-being. Sustainability is defined as maintaining the potential of fisheries resources to meet the reasonably foreseeable needs of future generations and remedying any adverse effects of fishing on the aquatic environment. Objective 3 is consistent with the environmental principles as stated under Part 2 of the Act.

Table 1: Analysis of options against objectives for opening two areas (beds 3 and 4, refer Figure 1) in Otago Harbour to commercial cockle harvesting.

Objectives	Option 1: Amend the regulation to allow commercial harvesting of cockles in two areas in Otago Harbour (<i>Recommended option</i>)	Option 2: <i>Status quo</i>
Objective 1: Provide for utilisation while ensuring sustainability of the two cockle beds in the harbour (and the whole of COC3).	✓ Sustainable utilisation provided to all sectors. The COC3 stock is enhanced to provide for economic and social well-being. Any commercial impacts on the two cockle beds in the harbour are considered sustainable.	X Commercial utilisation is not provided for in the harbour, inhibiting potential economic growth and likely causing instability to export markets. The two cockle beds in the harbour will remain off limits to commercial harvest.
Objective 2: Develop fisheries resources to enable people to provide for their social, economic and cultural well-being.	✓ Supports the development of the COC3 resource to provide economic well-being, while ensuring social and cultural well-being are provided for.	X Does not support the development of the COC3 resource to provide for economic well-being.
Objective 3: Minimise the impact of commercial cockle harvesting on the abundance of associated or dependent species, biodiversity or habitat of particular significance in Otago Harbour.	✓ Research surveys (2009 – 2016) suggest the impacts to associated species, biodiversity and habitat by commercial cockle harvesting, are minor, manageable and sustainable.	✓ There is low recreational and customary harvest in the two areas and commercial harvesting will not occur under this option. The sustainability of the two areas will be ensured.

Proposal and impact analysis

Option 1 (recommended proposal): amend regulations to allow commercial harvest in two areas of the Otago Harbour

Under Option 1 the regulation would be amended to enable commercial cockle harvesting in the two parts of the Otago Harbour that were previously commercially harvested under a special permit. Regulation 10 of the Fisheries (South-East Area Commercial Fishing) Regulations 1986 states that:

10 Restrictions on taking shellfish from parts of Otago coast

No commercial fisher shall take from, or have in possession, any shellfish (except rock lobsters, oysters, or crabs) taken from the following waters:

(c) *Otago Harbour*—all the waters of Otago Harbour enclosed by a straight line drawn from Heywards Point (at 45°45.4'S and 170°41.4'E) to Tairaroa Head (at 45°46.5'S and 170°43.6'E)

This regulation would be amended to add cockles in beds 3 and 4 (refer Figure 1B) to the current list of exemptions which presently contains rock lobster, oysters and crabs. Cockles could then be commercially harvested subject to the management requirements in place for the wider COC3 fishery under the QMS.

Benefits

Allowing commercial harvesting of cockles in Otago Harbour would provide COC3 quota holders with an alternative harvest site. Currently all harvesting occurs in a single area - Waitati Inlet - which is subject to significant closure events due to water quality constraints. It is expected that enabling commercial cockle harvesting within two areas of the Otago Harbour will reduce the average closure period of 56 days annually currently experienced by industry to approximately 7-8 days annually.

This predicted reduction in closure time would allow industry to maintain a more consistent supply for export markets, providing the opportunity for the fishery to increase productivity (within the confines of the TACC), while continuing to ensure sustainability. Additionally, opening Otago Harbour to commercial cockle harvesting in the two proposed areas (beds 3 and 4, refer Figure 1B) is likely to spread commercial fishing effort across COC3, reducing harvesting pressure on Waitati Inlet.

Costs

Availability of cockles to non-commercial fishers (i.e. recreational and customary) in the two areas is unlikely to be impacted as a result of commercial harvest, because cockle density is expected to remain relatively high. In addition, the two areas proposed are not believed to be key areas for non-commercial fishing, primarily because they are only accessible by boat.

Cockles are a food source for birds, fish and other invertebrates. Removal of cockles and the activity associated with commercial harvesting could impact the species associated with the

two areas, or affect sediment composition in the areas. However, the results of associated birdlife and wider ecosystem research suggest that, given the low exploitation rate (less than 4% of the biomass of cockles on these banks greater than 30 mm size has been harvested in any year) and the small spatial scale of harvesting relative to the harbour, any impacts are likely to be transitory and minor in nature.

Objectives

Option 1, to allow commercial harvesting of cockles within two areas of Otago Harbour meets the requirements of all three objectives (refer Table 1). It would provide for utilisation of a resource that can be sustainably harvested, would provide social and economic benefits to the wider Otago area, and impacts to the wider ecosystem are likely to be minor and manageable.

Option 2 (*status quo*): retain current regulation prohibiting commercial harvest

Under Option 2 the current regulation that prohibits the commercial harvest of some shellfish (including cockles) from the harbour would be retained.

Benefits

Under this option the potential for negative impacts in terms of reduced biomass, and impacts on associated species or non-commercial fishing would not arise.

Costs

The economic benefits and growth that are expected to occur from allowing commercial harvest in the Otago Harbour would not be realised under this option. Quota holders have advised they expect continued losses in export earnings of between \$850,000 and \$900,000 annually if they are unable to source cockles from a secondary location. Leaving this unresolved is likely to affect employment security for some involved in the industry.

Objectives

Option 2 would mean no change to the current prohibition of commercial cockle harvesting in Otago harbour and would not address the objectives listed in Table 1. Further, it does not fully provide for utilisation under the Act, which would be unreasonable given the minimal impact that commercial harvesting is expected to have on the environment.

Consultation

Fisheries New Zealand (and its predecessor agencies) has held on-going discussions with COC3 quota holders (Southern Clams, Westhaven Shellfish Limited and Ngāi Tahu Seafoods) the local community, tangata whenua and recreational fishers, regarding commercial cockle harvesting within Otago Harbour since the special permit was issued in 2009.

Fisheries New Zealand also specifically sought input on the proposal to review the regulation that prohibits commercial harvesting of cockles in Otago Harbour from Te Rūnanga o Ngāi Tahu through the Te Waka a Maui Forum and by meetings with Te Rūnanga o Ōtākou in months prior to a discussion document being released for statutory consultation.

Fisheries New Zealand released a discussion document on 17 January 2017 for four weeks of public consultation. The document was released on Fisheries New Zealand's external website, and persons or organisations with an interest in and/or affected by the proposals were notified of the consultation by email or letter and directed to the consultation webpage.

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

Submissions received

Fisheries New Zealand received a total of 13 submissions from Te Rūnanga o Ōtākou (for Ngāi Tahu), Otago Chamber of Commerce, Westhaven Shellfish Limited, Southern Clams Limited and eight individuals.

Fisheries New Zealand also provided an opportunity for additional comment from Te Rūnanga o Ngāi Tahu and Southern Clams Limited following further scientific analysis of special permit research results that occurred following consultation (refer to Additional engagement below).

Summary of submissions

All of the submissions, with the exception of Te Rūnanga o Ōtākou and Ngāi Tahu, supported Option 1 to allow the commercial harvesting of cockles in the two areas of Otago Harbour (beds 3 and 4, refer Figure 1B). Of the 11 submissions in support, seven were submitted by industry representatives (including quota holders, company executives, and employees), three from local residents (their connection to the industry unclear), and one from the Otago Chamber of Commerce.

Submitters that supported Option 1 stated that the proposed amount of commercial cockle harvesting on the two beds within the harbour would have minor and manageable impacts to the cockle beds and the wider harbour ecosystem. Additionally, opening the two beds to commercial cockle harvesting would provide an alternative harvest site from Waitati Inlet, which is currently the only harvest site in COC3, and is closed for up to 56 days per year due to water quality. Several submissions stated that enabling cockle harvesting within the harbour would aid in maintaining a consistent supply of cockles to overseas markets, which in turn would grow the fishery, leading to increased employment opportunities in the Dunedin area.

Te Rūnanga o Ōtākou's submissions initially requested a delay in making a decision on the regulation, to allow further time to analyse and discuss the information from the latest 2016 research survey regarding the impacts of commercial harvesting on the two cockle beds in Otago Harbour. Fisheries New Zealand agreed to this request. A finalised submission was received in March 2018 and stated that "the quality of information we have is insufficient to provide us with full confidence that the fishery can be sustainably commercially harvested even though the conclusions reached by MPI are probably reasonable".

Conclusions and recommendations

COC3 quota holders have requested the regulation prohibiting commercial cockle harvesting in Otago Harbour be amended to allow them to harvest from two areas (beds 3 and 4, refer Figure 1B) within the harbour that have, until recently, been commercially harvested under special permit.

Fisheries New Zealand's assessment is that there are economic benefits from amending the regulation that outweigh any negative impacts from commercial harvesting in these two areas. The sustainability and environmental impacts of commercial harvesting are likely to be minor, and can be managed through the requirements already in place for COC3 under the QMS. The two areas are not believed to be key areas for recreational or customary cockle harvest, and there is expected to be little impact on non-commercial harvesting. The water quality in the two areas over the course of the special permit was proven to be high, and the original reasons for the regulation appear to be no longer relevant and are dealt with by other legislation.

Te Rūnanga o Ōtākou requested a delay in decision making so that further analysis could be conducted. Fisheries New Zealand agreed to this request, but this further analysis returned the same conclusion as the 2016 report (i.e. that commercial harvesting would be sustainable with low environmental impact). The final position of Te Rūnanga o Ōtākou was received in March 2018, outlining that whilst allowing commercial harvesting is "probably reasonable", they strongly encourage ongoing monitoring and scientific research to ensure the practice is sustainable. It should be noted that ongoing monitoring will occur as for all QMAs under the QMS, and that Southern Bay Clams will continue environmental monitoring.

Therefore, Fisheries New Zealand's preferred proposal is Option 1, which is to amend the regulation to enable commercial cockle harvesting in two areas of Otago Harbour.

Implementation plan

Subject to the Minister's approval, any changes to commercial harvesting of cockles in Otago Harbour would take effect in December 2018 following amendment to the Fisheries (South-East Area Commercial Fishing) Regulations 1986.

Stakeholders would be made aware of any changes through publication of the Decision Document and the Decision Letter on the Fisheries New Zealand website in late November 2018. Additionally, all submitters and those persons with an interest that were contacted during the consultation period will be notified by email or letter from the Minister of Fisheries of his decision. Fisheries New Zealand officials will also meet with Te Rūnanga o Ōtākou representatives.

Monitoring, evaluation and review

Regular abundance surveys, typically every three to four years, will be conducted on all cockle beds subjected to commercial harvesting in COC3 to ensure fishing remains at sustainable levels over time, and that the COC3 stock size remains at or above the target biomass level.

As noted, Southern Clams Limited advise they intend to also continue aspects of the environmental monitoring programme that were required under the special permit, including retaining control (non-harvested) areas in the two Otago Harbour beds. This will enable on-

going impact assessments of commercial scale harvesting on the two cockle beds and the wider Otago Harbour ecosystem.