

BEFORE THE OTAGO REGIONAL COUNCIL

IN THE MATTER of the Resource Management Act 1991

AND

IN THE MATTER of an application for resource consents for
Project Next Generation

BY PORT OTAGO LTD

Submitter.

**STATEMENT OF EVIDENCE BY ROGER JAMES BELTON, MANAGING DIRECTOR
OF SOUTHERN CLAMS LTD.**

INTRODUCTION

1. My name is Roger Belton, and I am the founder and Managing Director of Southern Clams Ltd. since its incorporation in 1983. I have a BA and PGD in Social Anthropology from the University of Otago, and nearly thirty years experience in research and development of alternative primary product industries, principally seafoods, but also horticultural and forestry. In 1985 I undertook a study of North American and European clam industries under a 'Winston Churchill Fellowship' in 1985.
2. From the early 1980s upon my return from working overseas, I investigated reasons behind the failure of New Zealanders to appreciate some of the potentially valuable resources they so took for granted. I became interested in the thesis that values and status given to foods are essentially culturally ascribed, rather than due to any specific innate qualities.
3. Thirty years on, I can assert that this is essentially a valid hypothesis. Indeed we would not be discussing the matter of this Consent in at all the same terms if we were in Italy, Spain, Japan, or even North America, where wild stock shellfisheries have very high status, and a correspondingly high economic value. Likewise, if traditional Maori values were applied, one would think much of what is being proposed by Port Otago would be seen as an unacceptable desecration of a 'toanga'. Our singularly short sighted attachment to the terrestrial based production agendas we largely inherited from our Anglo-Saxon forebears comes at a considerable cost. In this instance it is principally a cost to indigenous seafood species.
4. Most of the projects I have undertaken are export focussed. This involved investigation of the economic, social and regulatory context, as well as the technical, operational and marketing aspects of the business. To do this work I have visited many of the major shellfisheries in North America, Europe and Asia over the past 30 years.

SCOPE OF MY EVIDENCE

5. I will present Southern Clams' natural interest in this consent application, and call upon two expert witnesses; Dr Brian Stewart of Ryder Consulting Ltd, and Bryony Black, both marine biologists, to present a more detailed examination of key environmental aspects and consequences of the proposed Next Generation Project.
6. I will then present a summary of the facts as we see them, and a proposal for effective mitigation of the adverse effects we consider would arise if the project were to proceed under the terms of the proposed consent conditions.

The points below expand on the original submission from Southern Clams Ltd, of June 2010.

EXECUTIVE SUMMARY

7. Southern Clams has been commercially harvesting since 1982 in Papanui and Waitati Inlets and began commercially harvesting in Otago Harbour in 2009 under the regulations of a MFish 'Special Permit'. It harvests, processes and markets about 900-1000 tonnes/yr of clams and fish, 80% destined for export.

The short DVD presented explains the essential features of this activity.

8. POL has applied for consent under the RMA to deepen and widen the main shipping channel, the swinging basin and the berth areas to Port Chalmers. This is in response to the anticipated need to provide shipping services for larger container ships.

Southern Clams acknowledges the need for POL to respond to this shipping demand, and meet the increasing volumes efficiently. It recognises that it is the interest of the city, the Region and the Nation to be able to provide competitive port services. This need must however be weighed against the impact that such development has on other values. In this case the most adversely effected 'asset' or 'value' is the marine ecosystem.

[photo of OH shipping and clam barge]

Otago Harbour contains what is probably the biggest biomass of NZ littleneck clams in New Zealand, one which is significant by world standards. This comprises the biggest clam fishery potential in New Zealand, and has significant economic, social and customary value. Likewise the Blueskin Gyre is a very productive marine system, providing a key habitat for many marine species in Otago. It is incumbent on the applicant to "avoid, remedy and mitigate" adverse impacts on these resources under the terms of the RMA 1991.

9. Having viewed the Environmental Management Plan in my opinion the applicant has failed to demonstrate any substantive commitment to fulfilling its obligations under the Act, especially with regard to suspended sediment impacts resulting from the proposed capital dredging program. Southern Clams Ltd therefore opposes the approval of the consent with the conditions as proposed. It considers the EMP as tabled by POL to be essentially cosmetic and largely insubstantial. Furthermore, the application as it stands does not correspond to the three phase development plan proposed as being "probable" by POL, as it would actually allow major capital dredging to proceed at any time practicable.
10. Finally, SCL acknowledges the good working relationship it has enjoyed with POL, and its agents. SCL is prepared to work with POL and other stakeholders to find an acceptable mitigation strategy to address the major environmental impacts.

THE HABITATS CONCERNED.

OVERVIEW.

I wish to draw attention to three areas which merit closer examination:

- The history of habitat degradation on Otago Harbour. (Myself)
- The habitats and ecosystems review. (Dr Brian Stewart)
- Suspended sediments, and their Impacts (Bryony Black)

Southern Clams fishing interests include not only the Harbour but also the Blueskin Gyre . Blueskin Inlet (sometimes called Waitati Inlet) has been the main clam harvest area for over twenty years, and is a remarkably productive area. The company also holds fish and crab quota for species in the Blueskin Gyre. The Gyre is the principle algal feed source upon which these fisheries depend. It is effectively the paddock on which the clams feed grows.

THE HISTORICAL AND GEORGRAPHIC CONTEXT

11. Otago Harbour comprises an integrated ecological system, which extends well beyond the area of just the 'outer harbour' that the applicants 'expert witnesses' advice addresses. Impacts on the lower Harbour necessarily impact on the upper Harbour, with which its marine waters are exchanged and intermixed in a nearly twice daily cycle. Dredging will inevitably result in a significant change in the water quality, especially the suspended sediment loadings, in the upper, and lower Harbour, and Blueskin Gyre ecosystems.

12. The Otago Harbour having seen the dredging of about 34 million m³ since the 1850s has been radically impacted upon. The upper Harbour has been especially severely modified, with about 400 ha. of intertidal flats effectively erased. That constitutes the complete destruction of four km² of rare marine habitat, of a type which plays a crucial role in the life cycle of many inshore fish species.

[Jpeg of upper Harbour intertidal flats paintings 1862]

13. In the 19th century the Harbour supplied most of the city's fish, with over 30 fishing vessels. Today only Southern Clams Ltd's clam fishery exists as a viable fishery. Project Next Generation represents another chapter in the continuation of further environmental decline, which will only contribute to the impoverishment of Otago fisheries. Shipping interests, and the perceived need for reclamation have prevailed over fisheries considerations to date.

Photo of harvesters dwarfed by tanker on 1804

SOUTHERN CLAMS INTEREST IN OTAGO HARBOUR.

14. For Southern Clams Ltd continuity of supply of good quality shellfish to meet markets demand is paramount. Given that all shellfish growing waters (for clams) in Otago are subject to intermittent 'closure' due to exposure to possible contamination, the company has every interest in broadening its supply base. I covered this in greater detail in the company's original submission of June 2010.

Southern Clams has sought access to Otago Harbour since the 1990s, as a means of addressing this, and providing for future growth in demand.

15. To this end the company has responded to other stakeholder concerns over the possible impact of commercial harvesting of clams in the Harbour by committing to a major experimental harvest impact study. This program covers 180 ha of 'middle banks', 80 ha in the lower Harbour and 100 ha in the upper Harbour. This intensive study covers about 3.6% of the total Harbour area. Half this area is set aside as 'control' and the other half is assigned to 'harvest treatment', with each bed being divided into about 300m wide 'control' and 'treatment' strips.

Map/aerial photo showing 1804 and 1805 in the Harbour system.

16. The experimental design sets out the following requirements to be completed over six years: See appendix I.
- Baseline Surveys: 2008: Biomass survey, and enumeration of the clams, and infauna, sediment and macro-algal cover characterisation and avifaunal surveys. 2009: bank morphology survey.
 - Phase I 2009 Harvest treatment of and full resurvey of 10 trail plots. 2010: Peer review of results, recommendation to proceed to phase II.
 - Phase II 2010-2012 Commercial harvest of 10% pa of clam biomass, followed by a repeat resource survey, bank morphology survey, and avifaunal reporting. Peer review, and consent to continue on MFish scientist's recommendation.
 - Phase III 2012-2014: Commercial harvest of 10% pa of clam biomass, followed by a repeat resource survey, bank morphology survey, and avifaunal reporting. Peer review, and final reporting on outcome of commercial harvesting impact experiment.
17. This experimental program represents a considerable commitment by the company having taken over two years in the design and consultation with other stakeholders and MFish, and a budget of over \$580,000. Part of this cost is funded by 'Trade & Enterprise' through the 'International Growth Fund'. Trade and Enterprise's investment is recognition of the potential that the clam resource in the harbour represents in terms of export growth.

18. Thus, SCL has a substantial interest in the ecological health and conservation of the habitat of Otago Harbour. The 650 t pa. commercial harvest is principally for export. We are confident that once the sustainability of a commercial fishery in the Harbour has been demonstrated, it would become a significant part of the local economy.

I now call upon Dr Brian Stewart to present evidence on Otago Harbour.

[Brian Stewart's presentation]

19. Thus, the clam beds we have intensively studied are extraordinarily precious resources. They have on average between 73 and 76 tonnes/ha of standing biomass, (on 1805 and 1804 respectively). That is the equivalent biomass of about 3500 lambs/ha.
20. Sustainable clam harvest protocols developed in Blueskin Inlet illustrate the scope of a similar fishery in Otago Harbour. [graph of BB resource surveys, appendix II] The sustainable yields from the better clam beds in Waitati Inlet have been on average 50t/ha/year. Equivalent in biomass terms to about 2500 lambs. [graph of mean take/m² for BB, appendix III] The Blueskin Gyre is the main source of phytoplankton which sustains these highly productive clam beds. Understandably, having a 'neighbour' proposing to radically modify the 'farm' is not welcome.
21. A resource survey by NIWA in the 1990 estimated the sustainable annual yield (CAY) of all the major beds in Otago Harbour was conservatively estimated at over 3000t p.a. of clams (Breen et al, 1999, Final research report for the Ministry of Fisheries COC9710.NIWA). This represents something of lasting and distinctive value to the Region and the City.

I now call upon Bryony Black to describe aspects of suspended sediments on the marine ecology.

[Bryony Black's presentation]

THRESHOLDS AND CRITICAL LIMITS

22. The habitat each species area requires in order to settle, grow and reproduce, must meet a specific complex of conditions. Any change to those conditions will have an effect on the species. When certain critical limits or thresholds are exceeded the habitat no longer suits the species. This induces stress, effects the condition of the animals, which reduces productivity and recruitment, and ultimately can result in mortality.
23. Clams exposed to a significant increase in SSCs will lose condition, and become more fragile. This will result in reduced shelf life, and poorer eating condition. In addition, stocks which are stressed will have lower productivity, fecundity, and recruitment.

CONCLUSIONS

The Otago Harbour is of significant value, not only as a sheltered water port, but also as a precious habitat for numerous species, from avifauna to marine fauna and flora.

It is, I submit pertinent to interpret the information submitted in the light of the Resource Management Act, which states.

1. The purpose of this Act is to promote the sustainable management of natural and physical resources.
2. In this Act, **sustainable management** means managing the use, development, and protection of natural and physical resources in a way, or at a rate, which enables people and communities to provide for their social, economic, and cultural well-being and for their health and safety while -
 - a) sustaining the potential of natural and physical resources (excluding minerals) to meet the reasonably foreseeable needs of future generations; and
 - b) safeguarding the life-supporting capacity of air, water, soil, and ecosystems; and
 - c) avoiding, remedying, or mitigating any adverse effects of activities on the environment.

RMA 1991

Dr John Jillett's observations (cited by Dr Stewart) tell us of the real consequences of dredging 3.9 m³ in 1976. This raises serious questions as to the usefulness of the SSC modelling, and consequently the value of statements made by the Applicant, and its expert witnesses. These claim "effects would be

minor and short term”, and “Most of the effects will cease when the dredging program is complete” (6.5.2 in the original POL consent application document)

Contrast this with what Dr John Jillett observed: “...by far the greatest deleterious impact on Otago Harbour in my whole 45-year experience..” and “These effects were long-lasting and it took 10-12 years.....before the harbour ecology improved to the pre-dredging state.”

24. Given the inadequacies of the modelling of environmental impacts presented by the Applicant, we believe it would be reckless to disregard the concerns that we and many others have over the impact on the marine environment. The consequences of this could result in further degradation of our natural resources with subsequent loss to those who depend upon it for their livelihood, for their pleasure, and their sense of stewardship or belonging.
25. We therefore look to an effective mitigation plan, with substantive strategies to ensure environmental damage is minimal.

THE RESOURCE CONSENT CONDITIONS AND ENVIRONMENTAL MANAGEMENT PLAN.

26. SCL does not accept the proposed conditions and EMP are adequate in meeting the requirement under the RMA to avoid, prevent or mitigate adverse effects on the Otago Harbour and Blueskin Gyre systems.
27. It submits that the conditions set out below would be a minimum necessary to respect the terms of the RMA in the current context.
 - That no clay or sediments containing more than a (yet to be determined %) silt and/or clay should be allowed to be dumped at the proposed spoils disposal site A0.
 - That all suction dredging use ‘green pipe’ technology whereby most of the decant waters are discharged as near as practicable to the suction head, and thus ‘recycled’ throughout the dredging operation.
 - Where ‘back hoe’ dredging is necessary in finer silts and clays, ‘skirts’ to restrict current flow and confine high SSC waters are used. Dredging of predominantly clay substrates is undertaken on outgoing tides only.

- That NTU/SSC monitoring is undertaken on at least two additional sites in the upper Harbour. One on bed 1805, and another near MacAndrew Bay.
- That the NTU thresholds be set following a year's calibration with actual associated SSC (suspended sediment concentration) levels in Otago Harbour.
- That the proposed three phases of the dredging program be made part of, the conditions, such that phases II and III could not commence until at least three years after the granting of the consent. This to enable fuller baseline modelling using the NTU monitoring sites to provide baselines and calibration standards. It would also allow Port Otago Ltd time to investigate alternative dumping options for fine spoils to the proposed AO.

Roger Belton
April 2011.

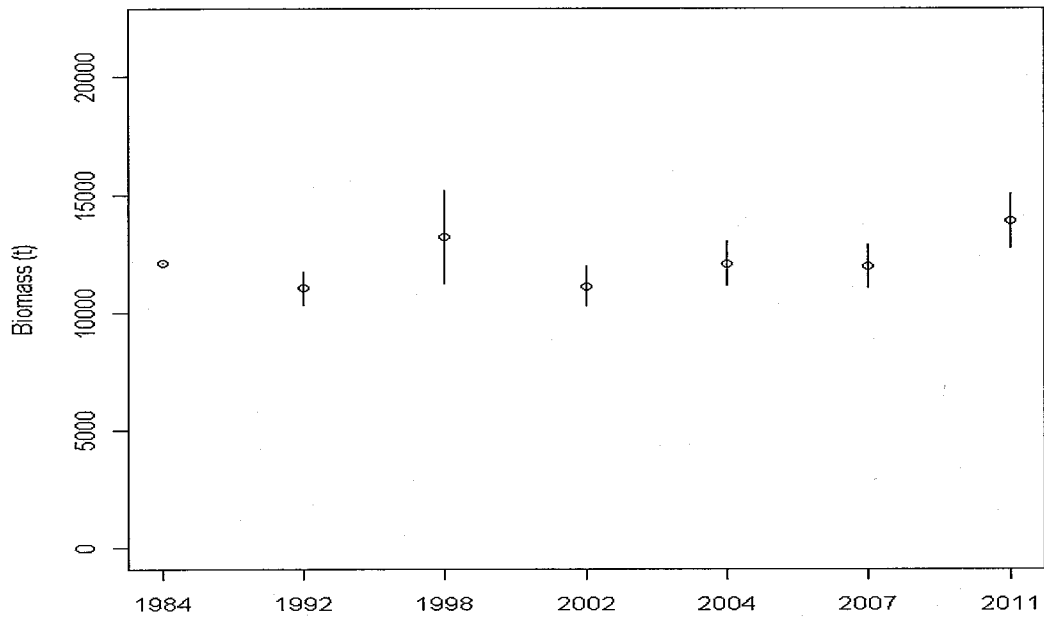
Appendix 1

SCL's OTAGO HARBOUR CLAM HARVESTING IMPACT RESEARCH

Project/Study	Provider	Completion Date
Baseline Resource and Infaunal Survey	Ryder Consulting	August 2008
Shellfish Sanitation GA Classification	NMDHB/ARC	July 2009
Baseline Shellfish Bank Morphology	Hunter Surveying Services	September 2009
Baseline Ornithological Report	Derek Onley	May 2009
Phase I Harvest	Southern Clams	November 2009
Phase I Harvest Impact Report	Ryder Consulting	February 2010
Research Program Phase II		
Full Resource and Infaunal Survey	Ryder Consulting	February 2012
Shellfish Bank Morphology	Hunter Surveying Services	September 2012
Ornithological Progress Report	Derek Onley	February 2012
Phase II Harvest	Southern Clams	November 2011
Phase II Harvest Impact Report	Ryder Consulting	February 2012
Phase III (contingent on the results from phase II)		
Shellfish Bank Morphology	Hunter Surveying Services	September 2015
Final Ornithological Report	Derek Onley	February 2015
Phase III Harvest	Southern Clams	November 2014
Phase III Harvest Impact Report	Ryder Consulting	February 2015
Phase III Infaunal and Macroalgal Report “ “	“ “	February 2015

Appendix II

Total Biomass estimates for Waitati Inlet 1984-2011.



Appendix III

Mean monthly harvest yield /m2 for Waitati Inlet, 1802 from 2004-Feb2011

