

CLAM HARVESTING IMPACT EXPERIMENT in OTAGO HARBOUR

COC3

PROGRESS REPORT on “Investigations into the Ecosystems Effects of Commercial Harvest of Clams (*Austrovenus stutchburyi*) in Otago Harbour” phase II. Roger Belton, Southern Clams Ltd,
JANUARY 2012

OVERVIEW

This report on progress in the five year experiment on impacts of commercial harvesting of clams is intended as a record of milestones reached to date, and constraining factors, limiting attaining the objectives set in the experimental design. As such it is a discussion document.

Southern Clams Ltd, under its ‘Special Permit’ (no. 400, granted by MFish under section 97(1)(a) July 2009) is now effectively nearing the mid-point of Phase II of the experimental program. In general most of the objectives have been met, reporting delivered as planned, and harvesting of treatment undertaken systematically, as proposed. Harvest volume targets have however been less than proposed for reasons which are explained below.

COC landings from Otago Harbour 1804, 1805.

Total landings of COC harvested ‘product’ (excluding all dead-shell, seaweed, <28mm I COC etc.)

Fishing Year	Area		Total
	1804	1805	tonnes GW.
2009	2.076	21.335	23.411
2010	187.618	253.237	440.855
2011	566.305	29.942	596.305
2012	152.965	284.040	437.005
2013	117.801	294.582	472.383
Totals	1026.765	883.136	1909.901

As at 31/12/2011 the phases I and II should be virtually 78% completed (8 months left to run of a 36 month program). Therefore theoretically if the harvest treatment target of 650t/year were to have been completed as planned 1,521 t. should have been landed. Actually 1149 t has been landed, so about 75% of the experimental design treatment target has been achieved.

Harvest treatment has been rigorously managed in a systematic hectare by hectare block program. While several blocks are worked on each bed simultaneously to accommodate tidal height and size

grade constraints, each new harvest is contiguous with the previous. (see aerial photos with harvest record overlays).

CONSTRAINTS

Best laid plans are subject to unforeseeable constraints, be they acts of God or man. In this experimental program two factors such as these have been sewerage spills, and markets.

Shellfish Sanitation

Commercial harvesting of shellfish for sale can only be undertaken when 'growing areas' meet regulatory standards. While the Harbour growing areas 1804 and 1805 were considered to be rarely likely to be subject to closure, following the first four years monitoring (from Aug. 2006 to late 2010), significant problems have effected harvesting since then.

In 2011 there was not only a significant increase in 'rainfall closures' where beds are closed for generally only a few days, but three 'sewerage spill' events. While rainfall/flood events usually close the outer bed (1804) once a year, and for only four days, sewerage spills have a far greater impact.

Sewerage spills occur in the Harbour when there is pump outage for more than several hours. This usually results from storm effects (rainfall and/or wind) which result in systems overload from storm water ingress, or power outages. Growing areas are immediately closed for 28 days by NZFSA.

This occurred on four occasions in 2011 (two of which were 'back to back'). The 28 day closure may be reviewed if sufficient bacteriological testing evidence and data on the spill volume and evidence of appropriate incident management are available. Every effort was made to Southern Clams to implement bacteriological testing of shellfish and growing waters following these events, to determine if there had been any contamination of the beds. On two of these occasions harvesting was prohibited by NZFSA for only a couple of weeks.

Altogether the beds were closed for 56 days due to sewerage spills in 2011. This made meeting the Harbour harvest target of 650 t impossible.

Southern Clams has met with the DCC 'Waste Water Department', in an effort to achieve being subject to fewer accidental sewerage spills. The DCC is upgrading its alarm systems, which should result in faster responses, and fewer spill events.

SHELLFISH QUALITY.

This experiment has been designed specifically to measure the impact of 'normal' commercial harvesting on the biota and habitat. By definition commercial harvest meets market demand. This it does by supplying what the market wants. The live clam markets being services require 'good' quality shellfish. The markets we service specifically require long shelf-life and desirable organoleptic/culinary characteristics. If the shellfish do not have these demand will evaporate.

Over the past two years most of our markets have expressed a strong and growing preference for Blueskin Bay clams (harvest area 1802), which has been their main source for over twenty years.

There have been complaints over the shorter shelf life, poor visual appearance, and eating quality of Harbour clams.

Shelf-life has become an issue of concern over the hotter months, especially this 2011-12 summer. Shellfish harvested from the Harbour in late December have resulted in a number of claims from North American clients. Blueskin product has had to be used until we can be sure the live product will survive in good condition.

It is salient that Otago Harbour clams from virgin beds are similar in appearance to Blueskin clams 25 years ago. Where systematic rotational harvesting has been practiced since 2003, older stock (7-20 years old shellfish) is no longer present in the harvested. The removal of older 'geriatric' stock has significantly improved productivity, growth, meat yield and market appeal, as well as shelf-life.

PROGRAM INITIATIVES LOOKING FORWARD

SCL is addressing the constraints on meeting the experimental treatment targets in the following ways.

- 1 It is undertaking further consultation with the DCC, to better manage the risk of further closures due to sewerage spills.
- 2 It is undertaking a full investigation of alternative clam product forms, focussed on using older stock from Otago Harbour. These include shucked meat and stock products as well as 'ready to eat' products such as chowders. There are challenges emerging. The first full year's results show that meat yield from Otago Harbour's virgin beds are on average 70% of those from Blueskin Bay's long harvested areas.

The realistic expectation of achievable harvest in the 2011-12 fishing year is probably about 5-600t. It should be noted the Special Permit for this Phase II expires 31/8/12, and thus allows only 11 months in that period. An extension of this permit, in view of the time lost due to awaiting approval for phase II, and closures due to sewerage spills, would enable the original experimental program targets to be better met. Ideally the Special Permit would be extended two months to at least 31/11/2012, to allow closer to 36 months harvesting as originally intended.

Calls for tenders for the 'Resource and Habitat Survey' programmed for summer of 2012-13 will be made in the third quarter of this year. The second 'Bank Morphology' survey will as planned be let to the same service supplier as the first, to be completed before the end of 2012. The ornithological monitoring and reporting is on track.

In broad terms targets have been largely met, but it may be prudent to consider excluding some of the areas originally planned for harvest treatment, as they are unlikely to be required. SCL will however endeavour to best meet the harvest treatment targets, by working on the impediments.

Finally, harvested areas appear to be responding with increased growth evident in the residual population, and no signs of habitat impact on either infauna or avifauna.

At this stage it appears the Port Otago Ltd's 'Next Generation' dredging program is unlikely to impact significantly on this experimental program. The Resource Consent is still under appeal by Southern

Clams and other parties, and in any event POL has indicated it is unlikely to dredge significant volumes of silts and clays within the next 3-5 years.