

# Fisheries Management under ITQs: Innovations in New Zealand's Southern Scallop Fishery

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**Abstract.** The Challenger Scallop Enhancement Company is a fishery self-governing organisation based around Individual Transferable Quota (ITQ) property rights. The Company has direct responsibility for managing New Zealand's largest scallop (*Pecten novaezelandiae*) fishery known as the Southern Scallop Fishery and is contracted to manage several others. The management framework in the Southern Scallop Fishery has developed as a result of three principle innovations - a flexible legislative environment, a non-coercive governmental approach and the development of a collective and accountable management capacity. The high degree of self-governance and management agreement reached amongst industry participants and between sectors that utilise the resource, as well as various independent performance measures, attest to the success of these innovations.

**Keywords:** Fisheries Management, Innovations, Individual Transferable Quota, Self-governance, Performance

## 1. INTRODUCTION

The Challenger Scallop Enhancement Company (Challenger) was established in 1994. Challenger operates as a cost centre for the Southern Scallop Fishery and a range of other fisheries managed under the Quota Management System. The Southern Scallop Fishery is located at the top of the South Island of New Zealand.

Commercial and fisheries management responsibilities provided by Challenger include the development of policy and management plans for various fisheries and the implementation of those plans for statutory purposes and of statutory force and effect. Those plans are developed to integrate commercial rights between fisheries and with the interests of recreational and customary fishers. Challenger supports and services a number of advisory groups to facilitate this integration.

The plans are developed and implemented by ten permanent staff and up to fifty people employed on a casual basis under a number of management programmes and cost centres administered within Challenger. Challenger is responsible for developing annual budgets and business plans for three fishery management companies encompassing two shellfish and 20 inshore finfish stocks. Challenger's annual expenditure ranges between NZ\$1.6-2 million.

Challenger reports to the Minister of Fisheries and shareholders on an annual basis and administers the constitutional frameworks for the three companies. Levies are collected from payments made to fish harvesters and/or directly from the quota owners to fund management activities. Challenger maintains and operates capital equipment, valued at \$NZ2 million (and including an enhancement and research vessel purchased at a cost of NZ\$1 million), to support fisheries management activities.

Challenger's authorities to undertake fishery management responsibilities are devolved and delegated from government within a number of planning documents and permits. They include the Southern Scallop Fishery Enhancement Plan promulgated and approved under the Fisheries Act 1996; fishery management plans, including compliance plans, approved by the Minister of Fisheries on an annual basis; a Memorandum of Understanding agreed between Challenger and the Ministry of Fisheries; and various consent authorities and permits needed to effect these responsibilities.

These arrangements, the development of Challenger, and the successful establishment of a self-governing management regime in the Southern Scallop Fishery, are underpinned by three statutory and institutional innovations. The first innovation is a flexible legislative framework that exempts the Southern Scallop Fishery from the prescriptive management objective of Maximum Sustainable Yield. The second, is the adoption of a non-coercive, audit and information based, governmental approach. The third innovation is a combination of corporate and civil accountabilities established to enable and support collective action amongst fishery rights holders and other participants in the Southern Scallop Fishery.

## 2. FLEXIBILITY NOT PRESCRIPTION

The management of fisheries in New Zealand is presently governed under two Acts of Parliament. A new Fisheries Act, which incorporates revised provisions for administering the Quota Management System, was introduced in 1996. The new Act is ultimately designed to replace the old Fisheries Act 1983 and is being phased in as operational capacity (including new computer software applications) is being developed. This process

has become long and protracted as steps are being taken to devolve the responsibility for delivery of new quota registry systems to the fishing industry and some five years on most of the provisions of the new Act are not yet in force.

Provisions of the new Act that are, however, in effect include sections describing and legislating the Purpose and Principles for fisheries management and use. The stated Purpose of the Act is to “provide for the utilisation of fisheries resources while ensuring sustainability”. The Act also requires that certain environmental and information principles are observed when performing functions under the Act. These requirements include, *inter alia*, maintaining associated or dependent species, biological diversity and habitat of particular significance for fisheries management as well as ensuring that management decisions are based on the best available information.

A framework for establishing sustainability measures designed to meet the Purpose and Principles of the Act is also specified in the legislation. For most fisheries this involves setting a Total Allowable Catch (TAC) for each fish stock at a prescriptive target level defined in the Act as “at or above a level that can produce the maximum sustainable yield”. The Act, however, also provides for a more flexible regime which allows some fisheries to be exempt from this TAC setting prescription where the Minister is satisfied that the purpose of the Act would be better achieved by an alternate process. Fish stocks that are managed on a rotational or enhanced basis can, by Order of the New Zealand Parliamentary Council, be specified as able to qualify for this exemption.

The Southern Scallop Fishery is the only fishery in New Zealand that is designated as a fishery exempt from the normal TAC setting process based on the fact that it is managed on a rotational and enhanced basis. A scientific modeling study has shown that rotational fishing alone is highly stabilising as a management technique in this fishery and that enhancement adds further safety to management. The Minister of Fisheries has, correspondingly, approved a statutory Enhancement Plan for the fishery which seeks as its goal “to enhance the fishery to optimum levels” subject to various environmental constraints as to which areas can be enhanced and at what target densities. Arrangements developed to implement enhancement and fishing plans are detailed in the following sections of this paper.

### 3. EMPOWERMENT NOT COERCION

Consistent with its strategic direction, and as described in various Government-approved documents<sup>1</sup>, the Ministry of Fisheries entered into a Memorandum of Understanding (MoU) with Challenger to help “contribute to the ability of the Challenger Scallop Enhancement Company Ltd to continue to develop opportunities for responsible self management of the Southern Scallop Fishery”. The MoU importantly sets out to better define the role of the Ministry and the Company and in so doing establishes requirements for the provision of information by Challenger to the Minister in relation to the harvesting of scallops to “ensure that the Minister receives sufficient information, in a timely manner, on which to base decisions regarding the setting of sustainability and other management measures in the Southern Scallop Fishery”.

The success of this institutional framework towards delivering quality and appropriate advice has depended on two principle initiatives. The first was the creation of appropriate incentives and institutions to align government and industry objectives for fisheries management. Institutional frameworks that have evolved in the Southern Scallop Fishery as an assertion of the underlying quota rights, and that act to achieve this alignment, are discussed further in the following section.

The second initiative within the MoU was the establishment of certain checks and balances (standards, specifications and audit) to ensure quality and timely delivery of research and other advice. This second initiative could be viewed as the government’s insurance policy against abuse but more realistically it is present either due to political distrust and/or is required to the extent that the objectives of government and industry institutions remain, or become (due to political or legal change), conflicting. Further consideration is not given to this second initiative in this paper. It is not considered to be a key innovation but rather a transitional step as self-governance structures are developed.

### 4. ACCOUNTABILITY NOT CONTROL

Challenger is an unlisted public Company. By Constitutional constraint of the Company, shareholdings in Challenger can only be issued to owners of ITQ in the Southern Scallop Fishery. Each shareholder is entitled to a \$1 share. The 2000 Annual Report for Challenger lists 35 qualifying shareholders.

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<sup>1</sup> See, for example, Ministry of Fisheries 1996: Changing course – towards fisheries 2010 and Ministry of Fisheries 1998: Five year strategic plan 1998-2003.

Voting rights for appointment of Directors and for other Company business are based on the proportional share each quota owner has of the total quota owned by all shareholders in the Company. All scallop quota owners are shareholders in the Company and so voting rights are exercised in proportion to the Total Allowable Commercial Catch. A ten percent share of quota can automatically appoint one of the ten Company Directors provided for in the Constitution. In practice, elections for Directors are held each year based on nominations advanced at a General Meeting of the Company.

Quota owned by one Company represents 35 % of the voting rights in Challenger. All remaining shareholders individually exercise 4% or less of the vote. Twenty three percent of the voting power for conducting Company business is collectively held by eight indigenous tribal groups (or iwi). An annual business plan and levy is approved each year by majority vote of shareholders in General Meeting of the Company. The levy, once set, has force and effect under provisions of an Act of Parliament, the Commodity Levies Act. This Act was initially established to allow producer organisations to collect levies on commodities for use in such activities as generic marketing but was modified so that quota owners can also use it. The levy is set as a percentage of the landed value of the scallops and is collected by Challenger from processors.

In contrast to the business plan and commodity levy setting process, the annual management plan for governing commercial fishing is implemented by contract amongst all commercial participants, not just quota owners, and without statutory support. This difference in collective approach reflects, in the first instance (where business planning and levy expenditure is concerned), the need to place the responsibility with the owners of quota. This provides financial accountability in so far as the value of the quota will ultimately reflect the consequences of good (and bad) fishery management decisions. In the second instance, the involvement of all industry interests in a collective agreement is needed to maintain a line of management accountability between the fishery manager (Challenger) and the quota owners, lease-holders and ultimately the vessel skippers and processors.

The annual management plan governs rotational area closures implemented for sustainability purposes as well as area closures designed to manage quality and sectoral access conflicts (specifically recreational and customary access). Its development process involves a high level of industry involvement as well as participation of recreational and customary fishers. Over the last six years the process of developing the plan has been characterised by full agreement amongst customary, recreational and commercial interests and has included “negotiated closures” specifically designed to improve recreational

and customary access in localised areas. Full participation in the contract regime has also been achieved amongst industry participants in each of the last five years since its inception.

An individual (although structurally the same) fishery management contract is signed between Challenger and each combination of vessel operator (skipper), quota owner, leaseholder and processor. This framework involves the establishment of a suite of around 60 contracts (one for each vessel) incorporating management rules approved at General Meeting of the Company and ultimately endorsed, before implementation, by the Minister of Fisheries.

Agreed damages are specified in the contract for breach of catch landing limits, areas or other contract provisions, which include reporting obligations. Challenger administers the contract under budgets approved within the Annual Business Plan. The Ministry of Fisheries audits the efficacy of this contractual regime against the annual management plan provisions and ultimately the Purpose and Principles of the Fisheries Act 1996.

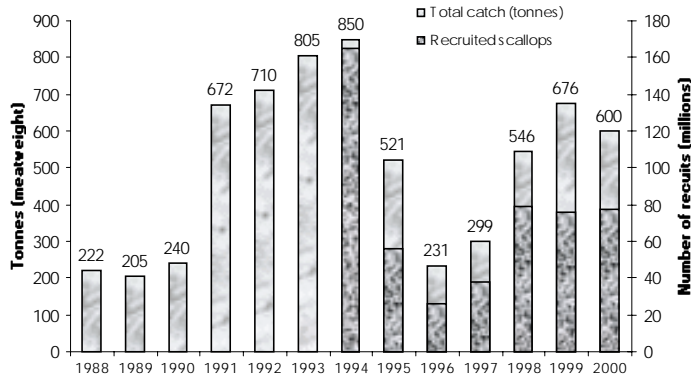
## 5. PERFORMANCE

Akroyd *et al.* (1999) identified a set of performance indicators to “monitor and evaluate the effectiveness and efficiency of commercial fisheries policy” for New Zealand ITQ fisheries. After reviewing asset and lease price data in five ITQ fisheries they concluded that that ITQ prices and derived statistics, such as implicit discount rates, are favoured as performance indicators of economic rent in such fisheries. Traditional measures such as stock biomass, recruitment index, catch age structure and Catch Per Unit Effort (CPUE) were identified as Total Allowable Catch setting indicators.

Their analysis of implicit discount rates in the Southern Scallop Fishery, estimated as the one year lease price divided by the ITQ asset price, showed these rates to decline over time to the point where they approximated the real interest rate (expressed as inflation adjusted government 90-day bill rates). This outcome can be viewed as an indication that management decisions implemented in the Southern Scallop Fishery have been successful in optimising harvest rates and stock biomass levels. It can be contrasted with other reviews done by Akroyd *et al.* (1999) which, for example, showed a decline in asset price and a divergence of the implicit discount rate from the 90-day bill rate in a poorly performing scallop fishery.

Importantly, the findings of Akroyd *et al.* (1999) are consistent with the stated business objectives of Challenger. These are described in its 2000 Business Plan

as “maximizing financial returns available from SCA 7 [Southern Scallop Fishery] quota”. The Plan further identifies aggregate quota value as the “overall indicator of financial performance of a fishery” which encompasses “the need to sustain the quantity and quality of scallops fished over time”.



Note that the year 2000 catch statistic of 600 tonnes is a pre-season estimate.

**Figure 1:** Scallop abundance and catch in the Southern Scallop Fishery

Adopting a more traditional approach, stock biomass indicators are expressed in Figure 1 as the number of scallops that have recruited into the commercial fishery (usually two year plus aged scallops) over the last seven years. These are compared to catch statistics provided for the last thirteen years. Scallop numbers show a positive and stabilising trend following low scallop abundances experienced in 1996. This trend corresponds with the time frame of the introduction of management innovations outlined in this paper (given that there is a three year scallop growth lag before management initiatives are realisable in harvest and biomass statistics).

Assessments of pre-recruit scallop numbers (zero to one and one to two year age class scallops) are only available for the last three years. Surveys conducted in 2000 show that there are about 659 million pre-recruit scallops, which is six times as many as surveyed in the previous two years. These survey results are a positive indicator that scallop abundance is continuing to improve.

## 6. CONCLUSIONS

The enactment of Purpose and Principles for fisheries management in the 1996 Fisheries Act was particularly important for the Southern Scallop Fishery as it provides a flexible framework for the development and empowerment of self-governing management systems in the fishery. It enabled the establishment of the Memorandum of Understanding and the movement away

from prescriptive fisheries management based objectives. By anyone’s standards these initiatives were particularly forward and outward thinking for a centrally funded and correspondingly incentivised bureaucracy. Within this process the clear and unambiguous, definition of respective government and industry roles is a positive and innovative step towards keeping government out of the business of business while ensuring that it can deliver to its legislative mandates.

Under this flexible regime annual enhancement commitments and harvest plans in the Southern Scallop Fishery are driven not by government, but by the scallop industry in consultation (and negotiation) with other users of the resource. Basing the management regime within a civil environment has placed much greater emphases on the need to engender high levels of ownership, agreement and responsibility for the management of the fishery. This contrasts with the alternative government based systems of relying on the industry’s obeisance with centrally driven laws. Rather than deliver management services and prescribe rules to govern fishing, the Minister of Fisheries ensures that his or her legislative obligations for the Southern Scallop Fishery are met by agreement and audit rather than coercion and control.

Overall, the high level of agreement reached amongst industry participants and between different sectors that utilise the resource is by far the best measure of performance of the innovations implemented in this fishery. Independent measures of performance, such as implicit discount rates and scallop abundance, provide further evidence that these innovations provide a framework that is appropriately incentivised and delivering to economic and sustainability objectives of both the government and the industry.

## **7. REFERENCES**

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