Bluff Oyster Fishery—Management in Review

By
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Introduction

The newspaper reports on the fine quality of this year's oysters fall a little flat; at over a dollar apiece I've stopped buying them. I've another interest in the Bluff oyster now. This paper is the result of research during the summer of 2002-2003 into the way the Bluff oyster fishery has historically been managed. My interest is in both the environmental struggle to conserve the resource, and the cultural struggle on the part of the fishermen to preserve a way of life, and a body of knowledge.[1] The sight of the oyster boat Monica hauled out the water at Bluff and parked outside Bluff's Maritime Museum sustains my interest. As I go aboard I sense the beam of the ship, the wide decks with room to move. I imagine the short and sturdy spars shuddering at the clang of a dredge being shipped, the crash of the oysters on the bench, the motion of the boat, the men working at sea. And, on the side of Bluff Hill the houses of the fishermen overlook the harbour as they have done for generations. There is in Bluff a combination of economy, culture and place that ought to be as productive for my research as the Foveaux Strait was for the oyster fishery.

The research has also been inspired by the burgeoning knowledge and literature associated with common pool resource systems.[2] The Bluff oyster fishery has many similarities to a common pool resource (CPR) system: it is a spatially limited, inshore fishery with an easily identifiable group of rights holders. It is usual in CPR studies that one seeks to understand, encourage or to protect the rights of a user group to self-govern and to perpetuate their economies. Often these groups are admired for their strong relationship to place and traditional environmental knowledge. In the Bluff oyster fishery it is currently owner/managers who are one step removed from the fishermen by way of wealth and occupation that are the dominant power in management. This dominance has been consolidated by the establishment, in the Bluff oyster fishery of property rights known as Individual Transferable Quotas (ITQs).

There are many in Bluff that feel that the knowledge and the voice of the traditional, conservation minded fishermen are now excluded from an effective role in the management of the fishery, and that the present commercial exploitation of the fishery is unsustainable; these views are opposed by many still operating in the industry.[3] The Minister for Fisheries, The Hon. Pete Hodgson takes a position based on, in his own words, 'comprehensive scientific evaluation of the fishery, and on extensive consultation with stakeholders', and is adamant that he, 'will not allow the

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[1] Throughout this paper I shall use the term fisherman and fishermen when referring to the Bluff oyster fishers. I use the gender specific form in order to avoid confusion. In the 1990s the Bluff Oyster Management Company began to refer to its own membership as oyster fishers. This was presumably an attempt by the company whose members were, by and large, not fishers, to assert its connection with the fishing side of the industry. Furthermore, fishermen is a term used by the Bluff oyster fishers when referring to themselves, and so I use it to acknowledge the history and culture that is part of the meaning of the word in the Bluff context.

[2] See Peter Knight (2002) 'Oceans Policy: The case for common pool resources', in the *New Zealand Surveyor,* April 200*0*, p.3-8, for an introduction to common pool resource theory and its relevance to sea resource management in New Zealand.

[3] See for example: Southland Times, *Oyster firm attacks critics*, 29 March, 2003; Southland Times, *Oyster beds in 'dire state'*, 4 April, 2003.

oyster fishery to be harvested unsustainably'.[4] Notwithstanding this, the status quo prevails; positions have become polarized on key issues and the community divided.[5]

Most of the literature on the Bluff oyster fishery is scientific, concentrating on the biology and pathology associated with the Bluff oyster. A kind of numerical science is also prevalent in which sampling surveys are analysed and a model of the Bluff oyster population is formed. This science is mainly directed toward estimating and projecting population size with a view to setting catch quota (Annala, Sullivan et al. 2002). John Cranfield of the National Institute of Water and Atmosphere (NIWA) has been involved in the Bluff oyster fishery since the 1960s and has studied the impact of fishing on the abundance of oysters in Foveaux Strait throughout the 20th century. In an important paper with Michael and Doonan, Cranfield considers the larger ecological system of which the Bluff oyster is part; the historical distribution of oyster habitat, and the relationship of these to the prevalence of the disease in Foveaux Strait oysters caused by the *Bonamia* parasite (Cranfield, Michael et al. 1999).

What is lacking, is a study of the management of the fishery. It is important to examine the biology of the oyster; the natural ecology of the oyster, and the impact of fishing/dredging, but management decisions, social relations and the political framework within which the fishery operates are also important. What are the historical patterns of fishery management that form the basis of today's management paradigm? What interests are at stake in the Bluff oyster fishery? How do the management approaches of the various groups involved in the fishery differ? What are the important relations of power on which the future of the fishery depends? Also, we need to recognize that management is a derivative activity in that it depends on those institutions, or property sharing rules, upon which management is based.

My initial research is based on interviews with Murray Black, an oyster boat skipper for twenty years and chairman of the Bluff Oyster Catchers Union from 1989-2000. My interviews and conversations with Murray are supported by documentary evidence from more than 30 years of record keeping. The story of the Bluff oyster fishery is political, and constantly challenges one to take sides (or not to take sides). 'They won't tell you the truth …', a law faculty member warned me as I announced my intention of going to Bluff to talk to fishermen. Yet, I have felt very strongly that I have been told the truth by the conservation minded fishermen. Their story is one that needs telling, and one that makes my heart rise in respect for these men.[6]

Since 1986 the Bluff oyster fishery has faced a continuous crisis brought on by both natural and anthrogenic factors. In a large measure, and to their great credit, the Bluff oyster fishermen have responded to the crisis with energy and wisdom. The conservation effort on the part of the fishermen (in consultation with other participants in the industry) culminated in a document entitled *A Plan for the Bluff*

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[4] Letters from The Hon Pete Hodgson to Murray Black, 2 November 2001, and 26 February 2003.

[5] Two of the key issues which are examined in more detail below are the effect of ecosystem destruction by the heavy oyster dredges, and the level of fishing (amount of oysters taken) which can currently be supported.

[6] During my first period of research in Bluff I also spoke on a number of occasions with former oyster boat skipper and practising fisherman Ray Hardwick, and currently operating oyster boat owner/skipper Willie Calder. I am grateful to these men for their help, and in the case of Ray for taking me to sea to experience the Foveaux Strait at first hand.

Oyster Fishery circulated in 1995 (Bluff Oyster Planning Group 1995). It is the height of irony that the plan, the formation of which was a superb exercise in co-management, came at the same time as the Quota Management System (QMS) was made the legal basis of the fishery. As a result, many oyster fishermen, including some of the most knowledgeable and conservation minded, were dispossessed of their livelihood and excluded from a continuing role in the fishery.

The setting of the Foveaux Strait oyster fishery

The Foveaux Strait

Foveaux Strait lies in an east-west direction at the southernmost tip of the country, and separates Stewart Island from the New Zealand mainland by a distance of about 20 kilometres. It is a broad strait of green water and white-capped waves, open in the west to the roaring forties then shelving and narrowing 80 km to the eastward. Toward the east the Strait is overlooked by Bluff Hill (Motupōhue) to the north, and is bordered on the south by a range of several peaks that climb westward from outlying islands along the northeastern shores of Stewart Island. In the shallower waters of the eastern approach lies Ruapuke (pronounced Roo-a-poo-kee) Island, owned by Maori; Bird Island, which is uninhabited, is a close neighbour of Ruapuke Island to the southeast.

Foveaux Strait gives an impression of wildness both in the ferocity of great winds and seas that often occur in the strait, and in its purity and abundant resources. The mollyhawk albatross, or Buller's albatross, is representative of these qualities. Dominant, immaculate and at home in these waters, the mollyhawk is best seen at the haul of a trawler's net jockeying for position among the host of gathering seabirds. It can run for short distances over the surface of the sea on its large webbed feet, supported by its sword-like wings. Lunging with a shrill cry it disperses its competitors, its characteristic curved bill open wide in both menace and necessity to swallow whole whatever fish might escape the fisher's net. The mollyhawk was precursor to the many generations of fishers that have built their lives around the abundance of the strait. First exploited were the whales. In the 19th century whales were hunted from the shore as well as from whaling ships. Whalers sighted their prey from Lookout Point which now forms one of the many resting places on the well-maintained walking tracks that are the main feature of the south side of Bluff Hill. When the whales and seals were killed off, fish and oysters became the mainstay of the Foveaux Strait fishing economy.

The town of Bluff

From the top of Bluff Hill one looks south to the wild waters of the Strait and to the indistinct mountains of Stewart Island beyond. To the north lies the town, the harbour, and the hinterland which are part of the Region of Southland. The town and harbour are protected from the prevailing cold southerlies by the imposing hill which also

provides a north-facing slope upon which most of the houses of the town are built. The town and the hill are part of a peninsula that forms the southern end of a horseshoe-shaped harbour. Most of this wide expanse of shallow water is not used by shipping which is restricted to the industrial wharves of Bluff Island Harbour, and the town wharf itself.[7] Oil storage tanks are a common sight and contribute to the bleak aspect that poor weather brings to the town.

The old wooden wharf that lies in an east-west direction at the foot of Bluff Hill forms the most accessible part of Bluff's waterfront; it is from the town wharf that the Stewart Island ferry sails, that people fish, and that the students at the Maritime Training Centre may see from their windows one of the deep sea trawlers on which their hopes of a bright future depend. Across the narrow harbour-mouth, opposite the town of Bluff, lies Tiwai Point aluminium smelter. A mile-long wharf servicing the smelter cuts the soft lines of the tidal flats to the north, and extends to the deeper water of the harbour channel. There was optimistic talk at one time about operating a ferry across the harbour to take workers to the smelter. But today one does not sense much connection between the town and the plant other than the physical proximity of the smelter's imposing sights and sounds; every picture window on the Bluff hillside looks out over the harbour, with the lights, buildings and chimney of the smelter beyond.

The sea-entrance to the harbour is opposite Stirling Point at the southeastern limit of the town. Here the tide flows rapidly past the rocks and beds of kelp; the beaches and rocks are clean and fresh and one looks up through the misty sea air to the extremity of Bluff Hill clothed in a mantle of native bush. Stirling Point Light is one of a series of navigational aids marking the narrow and difficult entrance to the ship channel. Navigating the channel requires at least two major course changes through the rocky entrance. Large ships are frequent visitors to the Port of Bluff, and two tugs and a pilot boat can regularly be seen escorting ships in and out of the harbour.

Bluff oysters

Oysters from Foveaux Strait are known throughout the country as Bluff oysters. They are a wild oyster caught by dredging, which involves lowering two heavy steel dredges (3.75 m wide) by cable to the seafloor where they are dragged across the bottom in ten-minute long elliptical tows. Oysters are scooped up by the dredges and hauled to the surface where they are washed (by repeatedly dunking the dredges), and deposited on benches on the decks to be culched. Culching is the oysterman's term for the process of hand-separating the oysters from the unwanted matter brought up by the dredge. Oysters have been fished from about 50 well-known oyster beds distributed the length and breadth of the strait. However, even at their maximum extent the oyster beds represented only a small percentage of the total area of Foveaux Strait.[8]

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[7] Bluff Island Harbour was reclaimed through a large construction project in the 1950s. The original oyster wharf was made inaccessible by the project and the Bluff oyster fleet moved to the town wharf, and later to wharves at the Bluff Island Harbour.

[8] Reduction of the extent of oyster bearing ground due to oyster dredging is covered in detail in (Cranfield, Michael, *et al*., 1999).

In the age of powerful machines and enabling technology we need to revise Sir Walter Scott's famous admonition that, 'It's more than fish you're buying, its men's lives!', and add that it's more than just men we're buying, it's the Earth herself! There are seaweeds, sponges, sea egg, starfish, octopuses, sea horses, cockles and much more involved in the story of the Bluff oyster. The oyster is only one of many creatures supported by a complex ecosystem on the floor of Foveaux Strait. Associated with this oyster-bearing bottom was a substance the fishermen called mulloch.[9] The mulloch was a nuisance to the oyster fishermen in that it interfered with the catching of the oysters; it was also something of a wonder. Ray Hardwick, a long-time oyster boat skipper told me of a treacle-like substance that would ooze out of the dredges as they were brought aboard. In Ray's words, ' … it was light yellow like that dishwashing liquid, and oily. If it got on your gloves you wouldn't be able to pick up an oyster. You'd look up at the dredges and it would blow into your eyes, and did it ever sting!'. Ray concluded his observations with the sobering remark, 'There's no mulloch anywhere in the Strait now that I know of. '

For many decades the Bluff oyster fishery prospered; as late as the 1980s children growing up in Bluff could recite the names of the oyster boats as they might a multiplication table: The *Waitangi*, the *Hirere*, the *Toiler* … . Not many years ago, should one have braved the cold, pre-dawn, winter morning at Bluff Harbour, one could have found twenty-three oyster boats starting their engines and warming their stoves alongside the fishermen's wharf. They were beamy, tug-like vessels; some built early in the century had seen generations of work. The boats were designed with plenty of deck space; culching benches were placed along the port side where the dredges were shipped, the starboard side remaining open for the load of full oyster sacks. The traditional oyster boats had a small wheelhouse just abaft the anchor winch. Below deck was a galley and fo'c'sle, which the crew accessed either from a companionway aft, or from stairs leading from the wheelhouse. In the early morning dark cooked breakfasts were prepared. The boats would wait for the decision to leave, which depended on the weather conditions. Then one boat would slip her lines and the whole fleet would take to the channel, making their way down the narrow path to the sea that the Pilot advises should be navigated only at slack water. Late in the afternoon the same boats would reappear, many with a noticeable starboard list from the weight of oyster sacks stacked on the deck. The record for a day's catch is attributed to Nobby Calder for returning with 208 sacks.[10] At 800 oysters a sack and today's price of $15 a dozen for Bluff oysters, Nobby's catch for the day would have been worth $208,000.

In order to rest the oysters during their spawning cycle, which occurs in the summer months, oyster fishermen in Foveaux Strait worked through the harsh and challenging winter months from February to August. The traditional working week was from Monday to Saturday with Sundays and holidays as rest days. In the days of sail,

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[9] " The word 'mulloch' is derived from an Australian mining term 'mull' meaning dirt… . Mulloch is a smelly matted up conglomeration of bryozoans (six species), hydroids (ferny material), nesting mussels, sponges (at least three varieties), sea egg, starfish, annelid worms, crabs, octopuses, chitons, sea-horses, pipe fish, cockles etc." Robjohns, H.C. (1979). *Bluff Oyster Industry*, Bluff Oyster boat Owners, Invercargill, p.10.

[10] The story of the biggest catch is told in different ways. The number of sacks of oysters ranges between 208 and 230. At that time the oysters were not bagged at sea and were unloaded into an underwater storage area under the oyster wharf at Bluff. The catch in question collapsed the underwater structure which made recovering and counting the oysters more difficult.

oyster vessels often could not make headway against the strong tidal flows or contrary winds in the entrance to Bluff harbour. Oyster fisherman Sonny Calder, who grew up in Bluff in the Depression years, recalls his father telling him how his boat might make it only as far as the pilot station. If the tide wasn't right they would have to stay there all night and go out fishing again in the morning. Sometimes, his father said, they would be away three days before they could get home.[11] Work on the boats was brisk and unremitting. Observers all agree that, while the wages for the fishermen were relatively high compared with other labouring work, the fishermen's money was well earned. The fishermen have always been entitled to take oysters from the catch in addition to their wages. This allowance, known as the 'oystermen's feed', and which for each boat might have amounted to as much as half a sack a day in earlier times, has become the subject of controversy as the oyster population has plummeted and the price of oysters has skyrocketed. In earlier times—perhaps as late as the 1960s and 1970s, oysters were often given away for the asking at the oyster wharf. Bluff has always had a reputation for hospitality and the oystermen's feed would often go to providing for visiting teams at the local rugby clubs, and for other civic events. Friends and neighbours of fishermen also received an occasional feast. Now the oystermen's feed has been reduced to 50 oysters a day making it equivalent to the amateur daily catch limit. Oyster fishermen see this regulation as a failure by the government to properly acknowledge their customary rights.

The early fishery and the origin of the 'stakeholder' groups

Bluff claims the honour of being the first town established in New Zealand. Its early settlers were involved in the whaling and sealing industries that developed at Bluff harbour around 1830. Not long after, the commercial oyster industry originated on Stewart Island. At that time the Rakiura (Maori) people gathered oysters from the foreshore at Oyster Cove, Port Adventure. The early Europeans worked with the aboriginal people and brought oysters from Stewart Island to markets on the mainland by sailing cutter. Certain families became prominent, owning vessels used in the trade, and when the industry moved, establishing itself in Bluff in the early 1900s, these families developed shore facilities for holding and processing oysters (Robjohns 1979). These were the beginnings of the group known today variously as: the owners; the boat owners; the merchants, and most recently, the quota holders. As time went on, the owners developed an oyster industry with oyster opening factories, often near the Bluff waterfront and close to the oyster boats and the harbour. Willie Calder recalls that his family's oyster factory employed thirty-one openers during the busy seasons of the 1960s. Sacks of unopened oysters were also sold to the public at large, and the owners developed relationships with retailers locally and nationally.

The original estuarine (shallow, inter-tidal) oyster beds on Stewart Island were exhausted as early as 1867, but exploration in the Foveaux Strait began to reveal new beds. These beds were farther away and in deeper water and so a specialized fleet of seaworthy vessels and skilled crews was formed. The present-day fishermen, also called oyster catchers, have their origin as a group in the sailors and fishermen that manned the oyster cutters of the 19th century. Their coherence as a group over the

[11] Nobby's and Sonny Calder's accounts are from a transcript of an undated taped interview. These stories also appear in Tracey Coote's 1994 book: From the Bluff: A Social History.

years has been aided by a division of labour enhanced by the stability and wealth of the fishery. Fishermen felt well recompensed for their labour, and often remained with the same boats and crews for many years, some for a lifetime. Concentrations of oysters may have varied from year to year, but skippers had their known 'patches' and fishing consisted of applying a hard physical effort in a familiar manner for a known reward. The Bluff fishermen therefore have something in common with industrial workers in their group solidarity and security of employment—as opposed to trawling, for example, where the labour force is more fluid. Deckhands had the task of emptying the dredges, separating the catch, and managing the deck cargo; engineers and cooks were needed; and the location of the oyster beds and the technique of dredging became the lore of the oyster skippers. Some of this lore has been passed down through generations of oyster fishermen, and old charts showing the 'tows' of the early skippers are treated with great respect today.

A striking characteristic of the Bluff oyster fishery is the division between fishermen and owners. While acknowledging this division helps explain the history and dynamic of the industry, it may also be a hindrance to a deeper understanding. The boundary between fishermen and owners is not rigid or impermeable. Both the owners and the fishermen have had a continuous and intimate relationship throughout the history of the fishery. There are owners that have come up through the industry, 'practical men' who have 'done the hard yards', and there are owners who still skipper oyster vessels. On the other hand, several of the owners are now second generation onshore managers and are chided by the fishermen as 'never having had salt water in their gum boots'. Because of the present management system based upon individual transferable quota, some owners are today even further removed from Bluff and from the sea; the fishermen often scorn these 'absentee landlords'. Divisions within the fishery are not limited to class differences. Within the ranks of the fishermen there are some who support the status quo, believing that fishing should continue, and there are others who believe that the oyster beds are being systematically overfished at the expense of any hope for the future of the fishery. These differences are deeply felt in the town of Bluff.

The oyster fishermen are employees of the oyster companies. The companies own and are responsible for maintaining the boats, while the oyster skippers manage the vessels and employment of the crews. The skipper also determines the location of his fishing effort, and the oyster catching technique. Skippers, engineers, deckhands and bed hands (those responsible for unloading the oysters from the boats) have for many years been organized under the Oyster Catchers Union, a branch of the New Zealand Seafarers' Union. The Union's primary activity was to negotiate with the owners over wages prior to the opening of the oyster season each year. Meetings of the Union were held at the rugby club, or the Returned Servicemen's Association, and the Union has always retained an executive and a secretary. Union correspondence forms an important contribution to this research, and while union influence has very much diminished in recent years, the form and the personnel of the organization continue to serve the Bluff fishermen (Murray Black, pers. comm.).

Relations between the owners and the fishermen were testy, but straightforward in the 1960s and 1970s. Boats were often tied to the wharf during the first week of the oyster season in industrial action as the Union negotiated a share of the profits for the fishermen (Willie Calder, pers. comm.). 'If words were spoken they were quickly

forgotten ', says Murray Black, an oyster boat skipper since 1972 and former chairman of the Oyster Catchers Union. Murray felt that, the older generation of owners understood the fishermen, that many were returned servicemen, and therefore honourable, practical men. Murray now feels that the traditional relationship between owners and fishermen is gone; owners are seen as protecting their own interests and as having betrayed the fishermen. Murray cites the *Southern Enterprise* dispute as an example. In 1969, there was an attempt to enter an additional fishing vessel, the *Southern Enterprise,*to the fishery. Fishermen halted work in protest at this incursion into what was clearly understood in Bluff as a limited fishery. In an approach that was officially denied, the boat owners informed the Union, *sotto voce,* that they were not able to take action, however, should the fishermen choose to do so the owners would 'See the fishermen right.' (Murray Black, pers. comm.). The *Southern Enterprise* was blacklisted in the port of Bluff and the government was forced to negotiate. Eventually a deal was struck whereby the *Southern Enterprise* would be allowed to enter the fishery as the 23rd licensed vessel, but the number of boats would henceforth be capped at 23. The owner's interests were thus secured with the concurrence and support of the fishermen. But in the 1990s a new legal regime relating to the Quota Management System, and the Employment Contracts Act, placed the fishermen in a vulnerable position with respect to the owners; many fishermen lost their livelihoods, and this was felt as a bitter betrayal by many fishermen (Murray Black, pers. comm.).

History of the Foveaux Strait oyster fishery management

The management of the oyster fishery has depended through the course of its history on a combination of three things: the traditional environmental knowledge of the Bluff fishermen; a significant scientific contribution in the form of surveys and biological investigation from the government's Marine Department (later the Ministry of Agriculture and Fisheries, and today the Ministry of Fisheries), and the power of government to regulate the fishery. Changes in legislation were the result of recommendations by the Chief Fisheries Officer (today the Minister of Fisheries), who was informed by: the fisheries scientific establishment; working groups within government, and through public dissemination of information including information from the fishermen themselves.[12] Oystering in Foveaux Strait was from very early on a controlled fishery in the legal sense of the word. The Oyster Fisheries Act 1866 established a licensing system and for almost a century oyster boat numbers were kept between five and twelve boats. The danger of overfishing (exhausting the oyster beds through over-exploitation) was understood through the experiences of the rapid destruction of the Stewart Island beds in the latter 19th century (Cranfield 1975; Cranfield, Michael et al. 1999). Conservation measures introduced in the early 20th century included the licensing system; a minimum size restriction for legally takable oysters of one and three quarter inches established in 1905, and an official survey of the fishing grounds in 1906 (Robjohns 1979).

M.W. Young, the biologist attached to the government's Marine Fisheries Investigation Station at Portobello, made a study of the fishery during the years 1927-

[12] Invercargill's newspaper the Southland Times has long covered the oyster fishery often with a sensitivity to the views of local fishermen.

1929 which resulted in several recommendations.[13] But adoption of the recommendations was slow; in1937 the Sea Fisheries Investigation Committee, of which Young was also a member, tabled another list of recommendations and some of these were implemented through gazetted regulation in succeeding years (Sorensen 1968). Young's 1937 recommendations included closing the East and Ruapuke beds (see figure 1). The East and Ruapuke beds were not closed, however, and apparently recovered to former levels of productivity by 1941 (Cranfield 1975). Nevertheless by 1963 the oyster population was so reduced in the eastern beds that they were finally closed. It was presumed that the oyster beds would recover during closure, but ten years later it was observed that the beds in question covered only a twentieth of their former area (Cranfield 1975).

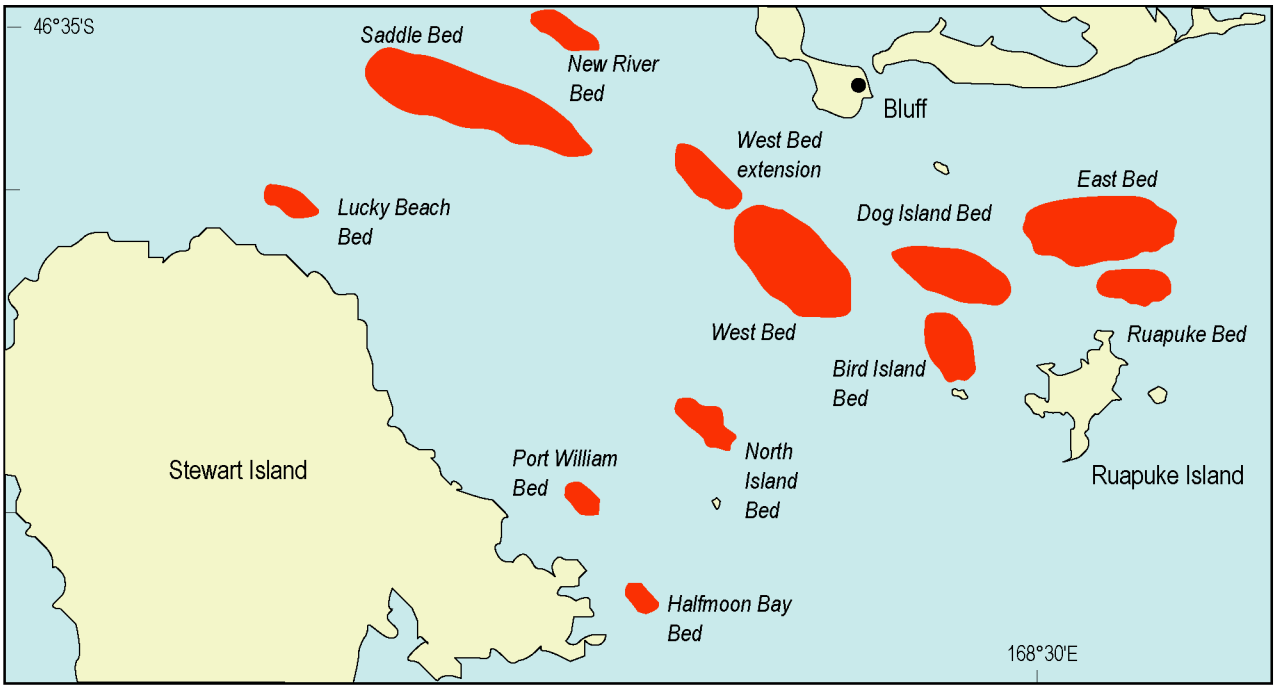
A newspaper record indicates that there was an early and continuing concern with conservation on the part of the fishermen, including pressure from the fishermen themselves to close oyster beds (NZ Truth 1938). Informal management of the oyster fishery by the fishermen took the form of self-regulation based on the economic return of an oyster bed expressed in sacks of oyster caught in one hour. If an oyster boat skipper dredged less than eight sacks of oysters in one hour, he would search for a more productive area (Murray Black, pers. comm.).[14] With some fifty productive beds to choose from and only two to four beds worked in a season by any one boat, the oyster skippers enjoyed something of a sustainable resource management system—the over-exploitation and eventual depletion of East and Ruapuke beds notwithstanding. However, de-licensing of the fishery in the 1960s, combined with a disease outbreak in 1962-1963, upset the already precarious balance between exploitation and conservation. From the 1960s to the end of the eighties the traditional environmental knowledge of the Bluff fishermen was augmented by twenty years of coping with decline.

The modern era—management post-1960

In 1963 the government de-licensed the oyster fishery. There is some indication that de-licensing stemmed from government concern with the monopoly on oysters held by the now rich companies. Political pressure from those wanting to enter the lucrative fishery may have also influenced the decision. Most probably, however, the Bluff oyster fishery was swept in with a general government policy of the day that aimed to stimulate the fishing industry through the lifting of previously restrictive policies (Riley 1980; Page 1994).[15] As a result of de-licensing the oyster fleet doubled over the ensuing several years reaching a high of 23 vessels (which number became the limit after the *Southern Enterprise* affair). The late Bill Robjohns, oyster boat owner and oyster historian, a man with immense local knowledge of the oyster industry called de-licensing the biggest mistake in the history of management of the fishery (Listener, 1990). What little conservation was being achieved in the fishery

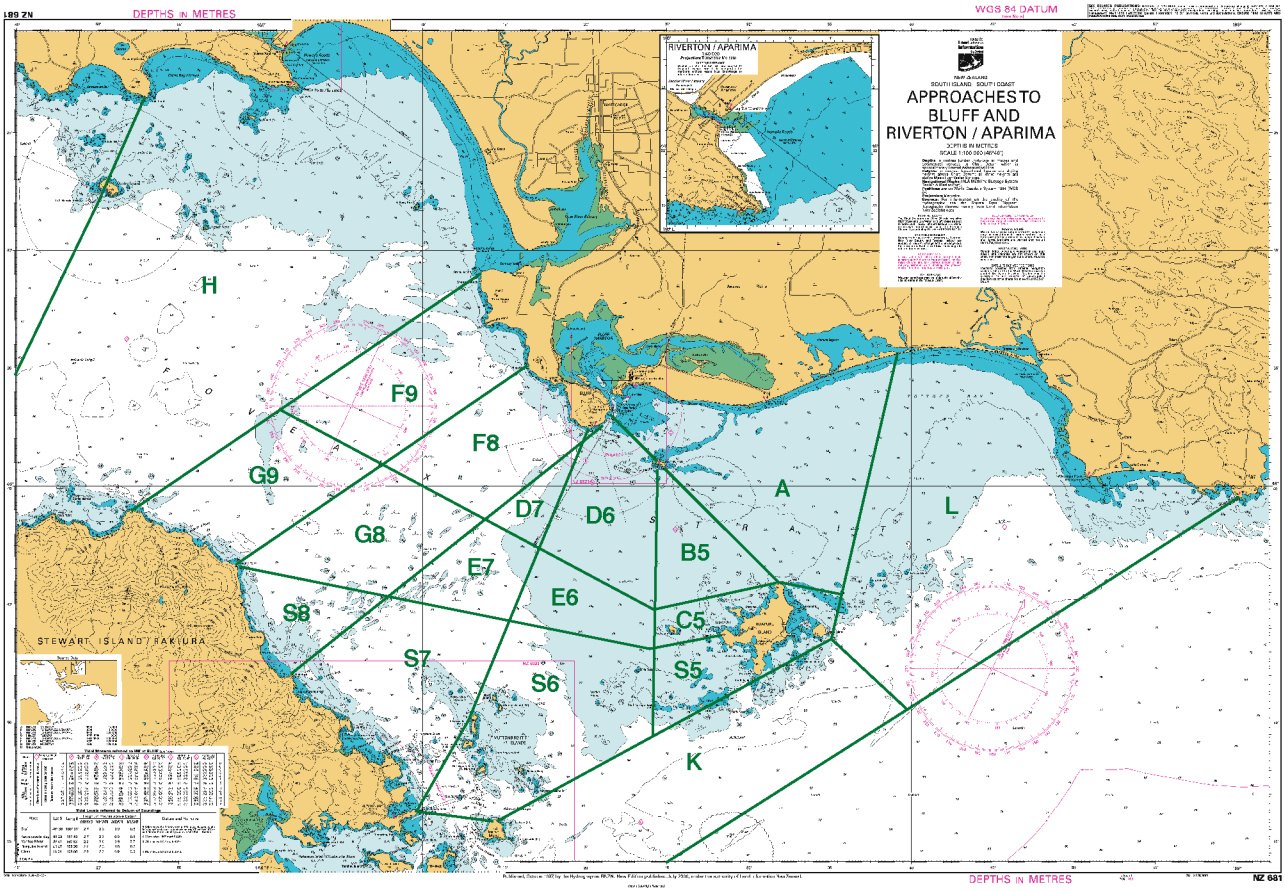
[13] That the size of the oyster permitted to be taken … be increased from 1-3/4 in. to 2-1/8 in.; … that beds be rested; … that catch returns be documented; … that the number of oyster vessels be carefully watched; …that oyster planting experiments be carried out; … that further studies be made, etc..
[14] See also (Cranfield, 1999) who cites the same figure of 8 sacks/hr based on fishers' data.
[15] This broad-brush application of a national policy without seeming regard for the particular circumstances faced by local economies occurred again in 1997 when the Foveaux Strait oyster fishery was brought into the quota management system.

Figure 1



Position of oyster beds in Foveaux Strait determined in a survey using a commercial oyster vessel in 1905 (Survey 1 redrawn from Hunter 1906) — *adapted from (Cranfield, 1999).*

Figure 2



The Foveaux Strait dredge oyster fishery boundaries and statistical reporting areas for catch and effort returns—*adapted from (Annala, 2002).*

through the licensing of vessels ceased to exist. A government imposed quota of 170,000 sacks a year prevailed during the 1960s, but in retrospect, many considered this figure too high; the fishing fleet never reached the quota. This meant that during the 1960s there was no effective limit on the number of oysters caught.

The early 1960s saw a renewal of scientific interest in the Bluff oyster fishery and the publication of a series of Fisheries Technical Reports of which those authored by D. H. Stead of the Marine Department are notable (Stead, 1971). Stead's reports were based on extensive surveys and provided a technical and scientific literature that served as a basis for government management (i.e. quota setting) in the fishery. Quota is set by the government based on estimates of the oyster population, and a model of the fishery that projects that population into the future. However, scientists are not always right and fishermen sometimes voice alternative views. In a counterpoint dialogue critical of Stead's reports, fishermen and owners made a lengthy submission to the 1970 Parliamentary Select Committee on Fishing (Merchants, 1970). The conservative (i.e. conservation minded) tone of this submission and the unity that allowed fishermen and owners to speak out together was obviously influential. Quota in the early seventies was reduced by at least a third of the annual take of the 1960s, and by the late seventies, with increasing scientific corroboration and justification, quota was set at 115,000 sacks a season. The 115,000-sack quota made for an even figure of 5000 sacks for each of the 23 oyster boats in the fishery.

During the 1970s the technology of oyster fishing was changing, allowing for higher catch rates for each unit of catch effort (Cranfield, Michael et al. 1996). Catch effort is a statistic used to compare productivity of the fishery over lengthy periods and to account for changing circumstances that might not be apparent if only the total catch is considered. The catch effort statistic has a corollary in the mean catch rate traditionally used by the fishermen to govern their fishing movements. Increasing catch rates were the result of the introduction of heavier, double-bit, dredges as well as more precise positioning technology (i.e. radar). The double-bit dredge (the bit is the bar on the lower side at the mouth of the dredge that is in contact with the bottom) meant that oyster skippers were no longer as constrained in dredging technique. The single-bit dredge, with a steel ring bottom on the bit side of the bag and a rope mesh on the upper, required a delicate and judicious skirting of the oyster bed in the direction dictated by the flow of the tide. Skippers needed skill to avoid capsizing the dredge which would cease fishing if overturned. The double-bit dredge with a steel ring mesh on both bottom and top of the dredge will catch oysters no matter which side is up and hence releases the skipper from the constraint of dredging with the tide. This ability to vary direction results in a more invasive dredging of the beds (Cranfield, Michael et al. 1999).

The oyster beds of Foveaux Strait were originally found in conjunction with epifaunal reefs—a principal component of which is accumulation of the invertebrate bryozoa (Cranfield, 1999). Epifaunal reef is the scientific term for what the fishermen knew as mulloch. The position and extent of a sample of these reefs, obtained from sidescan sonar survey, correspond with fishermen's traditional descriptions of clearly demarcated and dense oyster beds separated by large areas of barren (of oysters) ground. The oyster beds appear lenticular in shape and are elongated in the direction of the tidal flow, i.e. in an east-west direction (Cranfield, 1979). Traditional

knowledge put the most productive oystering locations adjacent to but not necessarily among the mulloch.

The heavy, double-bit dredges currently in use are seen by many to be very destructive of the oyster bearing eco-system. The older techniques of dredging (which were developed using lighter dredges) were a delicate play on the edges of the mulloch. However, with the advent of heavier, double-bit dredges, less skilled oyster boat skippers might tow any way they chose through the beds of bryozoa, a kind of exploitation that the conservation minded liken to strip mining or clear-cutting of forest. Research and experimentation aimed at a return to lighter dredges was accomplished during the 1990s (Lee 1994; Michael, Doonan et al. 1998) , and use of lighter dredges is advocated among the conservation minded fishermen.

Key points of the oyster fishery such as physical environment; type of equipment; effect of equipment on the physical environment; response of oyster population to the fishing effort, and the effects of disease, are subject to contrary views and opinions. Moreover, the views of those engaged in the industry with respect to such things as the effect of dredging on the oyster habitat are liable to change with time. Owner/operator Willie Calder discounts an emphasis on preservation of mulloch and the co-related systemic approach to conservation. He talks of having caught oysters since the 1970s in areas in which mulloch has not been present, but which nonetheless have produced oysters in commercial densities (Willie Calder, pers. comm.). Bill Robjohns, on the other hand, himself an owner/operator until his death in 1994, considered the use of heavy dredges as the second worst thing that had ever happened to the fishery (after de-licensing), and was among those deeply concerned about disappearance of the mulloch (Listener, 1990).

The damage done to oyster beds by the dredges is an issue that tends to polarize viewpoints between those that argue strongly for conservation through closure of beds, and the use of lighter, less damaging dredges, and those that insist that oyster beds have to be 'worked' in order to maximise their productive capacity. It appears that, in the short term, the breaking up of clumps of oysters and the removal of some mulloch may lead to higher catch rates. The difficulty with the argument is that it serves the proponents of higher quota levels without setting a limit on the amount of 'working' of the beds that is sustainable. Murray Black and Ray Hardwick reply wryly to the argument for working the beds by suggesting that the dredges be run over the bottom with the ring bags removed, or better still have the beds trawled with a cable rather than a net between the trawl doors. Also, in contrast to the contention that the beds need continual working, Murray Black asserts that his biggest catches came off beds that had not been fished for some years.

As catch rates decline and the selling price of oysters rises, fishermen come under increasing pressure to abandon previously held wisdom concerning the point at which an oyster bed should be left undisturbed. At one time it was considered uneconomical to continue fishing a bed that was producing less than eight sacks of oysters an hour. Today eight sacks might constitute the entire day's catch (Murray Black, pers. comm.).

Leaving aside a background awareness of decline in the eco-system, the seventies, together with the 5000-sack quota period of the late seventies and early eighties, were

generally happy ones for all those involved in the fishery. A lower oyster population was compensated by higher catch rates; oyster prices continued to rise; the fishermen made good money, and the owners were becoming millionaires. The 1970s were also a seminal period of scientific research in the fishery. J.H. Cranfield of the National Institute for Water and Atmosphere (NIWA) led the research. Cranfield carried out the most comprehensive surveys yet undertaken with sampling techniques that allowed for a much higher spatial resolution of the oyster producing areas than was obtained in previous surveys. His findings in the late 1970s may have overestimated oyster population (Doonan, Cranfield et al. 1994), but the surveys were of a quality that has allowed the older data to be combined with data from subsequent surveys in the 1990s to establish a 1970s baseline estimate of oyster populations. It has also been possible for Cranfield, in more recent years, to estimate the virgin biomass of the fishery and the surviving percentage of this population at various times. Scientists generally believe that fisheries populations will continue to reproduce (i.e. that there will be a sustainable fishery) as long as the fish population remains above 20% of the virgin biomass. Government figures showed an estimated oyster population of 1140 million in 1975 (Annala, Sullivan et al. 2002). A quota of approximately 88 million meant an exploitation rate of around 8%. On paper, in the mid-seventies, the fishery looked in good shape.

The Foveaux Strait Oyster Advisory Committee

To attain a vision of good fishery management, there must exist a forum for discussion at which all those involved in the fishery are represented. For many years the Bluff oyster fishery enjoyed just such a forum. The Foveaux Strait Oyster Advisory Committee (FSOAC) originated in discussions of the Fishing Industry Board in 1969/70. The idea was to form a committee that might '…keep the Board informed of conditions and problems at Bluff and to use the Fishing Industry Board as liaison between sectors of the industry, the industry and the Minister, and the Marine Department' (Merchants 1970). The owners (known also as the merchants) saw the special committee ' … as a non-voting forum at which any grievances of sections of the industry may be aired' (Merchants 1970). FSOAC was established as a subsidiary organ of the Fishing Industry Board; it drew two representatives from the owners; two from the fishermen; two from the oyster openers, and four from oyster retailers. Representatives of the then Marine Department, as well as several scientists, and representatives of the Fishing Industry Board also attended meetings of FSOAC. The forum was approved by the 1970/71 Select Committee inquiry into the fishing industry, and the report of the Select Committee urged the Department and the industry to use FSOAC to the full (Campbell 1979).

In 1979, after almost a decade of experience, the owners, in a submission to the Fisheries Policy Committee of the Fishing Industry Board, highly recommended FSOAC and held it to be a good example of co-operative fisheries management. The submission listed numerous advantages of co-operative fisheries management including, '… the preservation and increase of knowledge and experience in the industry through the more settled and generally more harmonious atmosphere within industry and between industry and Ministry'(Campbell 1979). While the management of the Bluff oyster fishery had always been a top down, government affair, the FSOAC displayed an important co-operative and inclusive side to this management.

Until the advent of the Nelson scallop management board in the late eighties, FSOAC enjoyed a reputation as the top fisheries management grouping in the country (Murray Black, pers.comm.).

The owners tended to dominate the written records of FSOAC during the period of the seventies; this was due, in part, to their retaining Jim Campbell, a fisheries consultant who was also Chairman of the Fishing Industry Board. In 1973, in frustration at the inability of FSOAC to reach a consensus, the owners formally submitted a document to the Minister that made a number of suggestions for management of the fishery (Merchants 1973). It was this submission that resulted in the failed rotational fishing experiments that inspired the verses of the fisheries officer, J. Clausen (see below). In 1979 the merchants made a second formal submission, this time to the Fisheries Policy Committee of the Fishing Industry Board (Campbell 1979). This latter submission came at a time when the government was once again reviewing whether additional licences ought to be allowed in the industry. The owners, of course, opposed any new intrusive issuing of licences. A change in tone is apparent in the 1979 submission; whereas the submission of 1970 to the Select Committee had a consistently conservationist tone, the later arguments tended to be more economic in nature; they were more protective of the industry than of the oysters. Despite sometimes working outside of FSOAC, ten years of meetings appeared not to have dulled the owners enthusiasm for the FSOAC forum, and they stated in their submission that there existed, ' … no better example of co-operative management of a fishery than that practised in the Foveaux Strait oyster industry' (Campbell 1979).

The 1970s—decline and signs of overfishing

The 1970s were overshadowed by slow decline in the Foveaux Strait oyster fishery. In 1971 the owners referred to fears that the total stock of oysters was being depleted (Merchants 1971, Appendix 1). Cranfield's work in the 1970s had confirmed what fishermen already knew, which was that oysters were found only in very localized areas of the Foveaux Strait. Out of the 300 square miles of area of the Strait that Stead supposed were oyster bearing, Cranfield's work concluded that oysters occurred in commercial densities only in approximately 50 known beds with a total area of only 6 to 7 square miles. Destruction of oyster beds through overfishing was thus a very real and present danger. In 1964 part of the East Bed, also known as A bed, had been closed.[16] Twelve years later it was found that the bed only contained from 5% to 10% of its original area (Robjohns, 1979). In the late 1970s, A bed was, nevertheless, reopened and sustained three years of concentrated fishing before ending up irreversibly overfished.

The management measures advocated by the owners, and acquiesced to by the fishermen, during the 1970s led to overfishing rather than conservation. The new regulations promoted a form of rotational fishing, but protected, and even increased, in some cases, the 115,000-sack quota. Attempts to spread the fishing effort had the

[16] In 1963 catch from area A was set at 46,000 sacks or 15% of the standing stock. According to Murray Black, the scientists were wrong in their estimates of the oyster population. After just one season Area A was closed.

adverse effect of concentrating effort in particular locations. An incentive to comply with the regulations took the form of allowing the fleet to catch oysters over and above the quota limits as long as they came from the boundary areas. What looked like a good idea on paper, that of forcing the fleet to prospect in the large boundary areas, outside the central or ‘designated’ beds (for boundary areas see areas H, K and L in Figure 2), ignored the fact that there were few oysters in these boundary areas. Those that did exist in commercial quantities were located in small, already discovered, beds. The viewpoint of the older fishermen—who were well aware of the limited beds in H area—was that oyster larvae from the patches in H area would drift down the Strait with the prevailing weather and current thereby seeding the central beds. They felt that the H area beds ought to be left alone; instead these beds took the full brunt of the fishing effort (Murray Black, pers. comm.).

Efforts to spread the fishing fleet—to keep the boats off the highly exploited beds—resulted in compliance problems, with fishermen breaking regulations. A fisheries officer named J. Clausen wrote the following verses to describe the problem circa 1973:

The oyster season has now past
Gone for a time the days of graft
When some poor guy sat up the mast
Watching 'or the Straits so vast

The patrol boat is upon his mind
For poaching was the act defined
With winches all set up to 'grind'
To get caught - that is the crime

You didn't know from whence we'd come
Out from the land, or down the sun
But come we did - to quote a pun
Just like the old proverbial 'Hun'

Those lines that are drawn upon the chart
Are not some mystic work of art
Each sector is there to play a part
To help the Beds and save the Heart

Across these lines the boats do creep
A richer harvest for to reap?
Or is it just they can't resist a peep
Where there's a line it must be breached

The boats they scatter far and wide
Slow ones say "we blame the tide "
Never to be said an oysterman lied
Such upright guys have naught to hide

But caught they are upon these Beds
Their excuse could have been guessed ahead
"I've lost a dredge " the skipper said
Not "hungry mouths that must be fed "

At night the boats return to port
With the fruit of labours they have sort
Some crews for sure have worked a raught
And hope like hell they won't be caught

There's no delight and that's for sure
As from emptied sacks the oyster pour
Onto the deck to be done once more
And reculched till the hands are raw

The season closes for six months
When its other fish the lads do hunt
Which gives the time which does not blunt
The edge to pull some other stunt

Now when the season opens up this year
And the boats do take aboard their gear
Lets make harsh words and reculches rare
So come on lads - LETS PLAY IT FAIR

Clausen's verses capture a character of the fishery quite different from the wise, harmonious, and co-operative nature of the FSOAC meetings that the merchants promoted. Clausen implies a dishonest and undisciplined fleet that made for considerable trouble in enforcing the rules. The fact that the oyster fishermen are addressed in the verses like naughty schoolboys could mean that the management system had the character of a rigid and essentially oppressive control from above (i.e. fishermen had no real responsibility and therefore did not act responsibly). It could also mean that the rules were too restrictive or misconceived, and hence were being intentionally violated. Or it could mean that the fishermen were selfishly breaking the rules to increase profits at the expense of the fishery. Whatever the truth or applicability of these observations, in a fishery in which the fishermen were routinely landing their 5000-sack seasonal quota (i.e. a prosperous fishery) there would not have been much time spent on self-examination, fundamental reassessment of fishing philosophy, or painful restraint.

The 1980s—conservation vs maximum exploitation

The 1980s were a time of increasing awareness of eco-systemic change in the Foveaux Strait oyster fishery. 'I used to bring my wife home beautifully coloured fan shells and sea horses, but by the mid-eighties these were no longer coming up in the tows ' (Anonymous, pers.comm.). In a letter to the Oyster Boat Owners Association in 1984, M.L. Newman, himself a boat owner, tried to draw attention to the declining catch rate. He advanced the argument that the Foveaux Strait oyster fishery had passed the limit of sustainable fishing and that an even sharper decline might be expected (Newman, 1984).

A meeting of a subcommittee of FSOAC on June 15th 1984 revealed an urgency which was a change from the expansive and generous mood of a decade earlier. The need for conservation was acknowledged, but the meeting criticised Newman's letter as a 'prediction of doom'. It is from this meeting that we can mark the beginning of a conflict that was to dominate FSOAC for the rest of the eighties—indeed it was probably this conflict that caused its demise in the mid-nineties. The conflict was between conservation on the one hand, and maximum exploitation on the other. Boundaries, once again, were not absolutely rigid, but in general, the fishermen were to take the side of conservation, and the owners the side of maximum exploitation

(Fishing Industry Board 1986). Why the fishermen should have been the ones to take the side of the longer-term interests (at the expense of what was, for many, their only source of income) is an interesting question. Murray Black has suggested that the owners had branched out (i.e. invested elsewhere) over the good years of the fishery and had interests outside of the oyster fishery that could sustain them. Some of the owners were by now representatives of fishing companies with many and diverse interests. Because the fishermen had only the oysters to support their way of life, Murray reckons they were more protective of them than were the owners. Furthermore, the fishery represented more than a financial interest to the fishermen; it was a unique way of life—one for which there could be no substitute. No doubt some of the owners, in particular the owner operators, also held to the fishermen's concerns.

The conflict between conservation and exploitation took place mainly around FSOAC's recommendations to the government on quota levels. It would take some years, spurred on by the outbreak of disease, for the conflict to reach its peak. Reduction in quota was not yet being mooted in 1984. However, hints of future changes in the fishery can be found in discussions regarding the economic desirability of transferring quota between vessels. Transferability would turn out to be an economic necessity in a scaled-down fishery; it would also turn out to be a means for the owners to prevail in the conflict between conservation and exploitation.

1986—outbreak of disease in the Foveaux Strait oyster beds

In 1986 ravages by a disease caused by the parasite *Bonamia sp*. changed the face of the fishery. Because the disease is not a problem for human health, oysters could continue to be landed, but where once there had been rich beds of mature oysters there were now only empty shells (called 'clocks' in the fishery)—the dead oysters having released their valves and perished. The disease was first discovered in the western part of Foveaux Strait and was observed to progress at a rate of three nautical miles a year from west to east. By 1990 the entire strait had been affected by the wave of disease. The government responded to the outbreak by closing the oyster season on July 26th 1986 (slightly early for the season) and committing resources to an ongoing survey to monitor the disease in succeeding years. Fisheries scientists J.H. Cranfield; P. Dianamani, and M. Hine, of the National Institute of Water and Atmosphere (NIWA) were to make a large contribution to the fishery through their investigations of the disease (Cranfield, Doonan et al. 1991). Quota was cut in 1987, 1988, and 1989 though it still ranged between 2800 and 4000 sacks a season for each vessel and the fleet still stood at 23 boats.

Management 1990-1993

The first three years of the last decade of the 20th century were the beginning of a highly stressful period in the management of the Bluff oyster fishery. Disease was continuing to run its course, and with an attrition rate up to 90 percent of oysters in some areas, the oyster population was in critical decline. Cranfield showed that by 1992 oyster stocks in the Foveaux Strait may have been below 10% of virgin biomass (Doonan, Cranfield et al. 1994). Fishermen were staunch advocates of conservation

measures during this period arguing for lower quotas at meetings of FSOAC in marked contrast to the perennially optimistic owners. The management of the fishery came to be characterised by conflicting views of quota limits communicated to the Minister for fisheries by the meetings of FSOAC. The Minister would take note of the FSOAC resolutions together with advice from the Chair of the Fishing Industry Board (FIB), consolidate them together with the recommendations of the Ministry working groups and set the quota. The fishermen were helped to some extent by the Chair of the FIB who attended meetings of FSOAC and who, according to Murray Black, was able also to inform the Minister about the nature of the conflicts at the meetings that did not always appear in the record (Murray Black, pers.comm.).

The years 1990-1993 were a favourable period for the fishermen who, as a group, could count on the support of the Minister for Fisheries The Hon. Doug Kidd. Because of the Minister's affinity with the fishermen, a balance could be maintained between the power of the owners and the interests of the fishermen. Murray Black considered Kidd the best fisheries minister the fishery had ever enjoyed. States Murray, 'Kidd was for the fishery first—no fish, no employment—and would stand up to the owners.' That the good relationship between the fishermen and the minister was used strictly toward the conservation of the fishery was probably one reason that the relationship was effective; time and again during this period we see the Minister coming down on the side of the fishermen, and opposing the owners who put forward arguments (occasionally successful) of increasing quota. However, the support the fishermen had enjoyed from Doug Kidd was lost with the change of Ministers, and those fishermen that lost their jobs in the latter 1990s would never see the long-range benefits of the self-imposed loss of income which was the consequence of the conservative position they held.

One contentious issue highlighted in the 1991 season was that of extra quota. The extra quota of 400 sacks for each vessel was to be taken only once the regular quota had been met, and was to be fished from a so-called firebreak area central to the oyster fishing grounds. The Ministry's theory of a firebreak reducing the spread of disease was ridiculed by the fishermen who believed the extra quota was an outright concession to political pressure by the owners for a larger quota. The fishermen believed that the disease had already passed the firebreak area, and were very concerned that any additional quota would only further reduce the already depleted and fragile central beds. The beginning of the season had been delayed for a month due to industrial action and the owners found themselves running out of time to catch the additional 400 sacks. In a move that was contested by the fishermen, the owners applied to the Minister for an extension of the season. The Minister denied the extension and the season closed without the extra quota having been taken.

The year 1992 was a particularly stressful season both for owners and fishermen as Kidd had travelled to Mexico in the middle of the oyster season and was unavailable to help sort out the mess the Ministry had created through the setting of unfortunate regulations for the season. The regulations forced the fleet back into area H (the same bad policy that Clausen had attempted to enforce in the 1970s) where boats were once again over-exploiting limited areas. In an attempt to save the small beds in H area and to distribute the fishing effort, fishermen appealed to the Ministry of Fisheries to allow them back into the central beds. With the Minister not responding, the fishermen refused to fish; they tied their boats to the wharves and waited. During the

lay-up by the fishermen, certain family run boats continued to fish, working every day they could. 'They were legally allowed to do so, but were morally wrong', Murray Black states, 'There are no oyster beds of significance in those areas [H area] now'.

The Bluff Oyster Enhancement Company; the Oyster Catchers Union, and the Bluff Oyster Planning Group—1994-1996

In 1993, after repeated surveys to monitor the progress of disease in the Foveaux Strait oysters, and fearing that as a result of disease the population of oysters had fallen below the critical minimum of virgin biomass, the government closed the Foveaux Strait oyster fishery. The fishery remained closed in 1994 and 1995 during which time surveys began to show that the disease caused by Bonamia had run its course, and that the oyster population had begun to increase. The Foveaux Strait Oyster Advisory Committee continued to meet during the period of the closure of the fishery, but with increasing dissatisfaction on the part of the owners who had begun to feel that they would be better served by dealing directly with the Minister.

The conflict between conservation and exploitation, as divisive as ever, had taken a new turn with the formation, by the owners, of the Bluff Oyster Enhancement Company. Intervention to enhance the breeding of oysters had been experimented with as early as 1970 when shell return experiments were carried out in the Foveaux Strait. The idea behind these first experiments was to try to harness some of the larvae and pinhead sized oysters that remained on the surfaces of the opened shell. The experiments were not successful due to the very high-energy environment in Foveaux Strait; the returned shell was quickly swept away or covered up.[17] However, interest in enhancement is ever present in the fishery mainly due to the work, over decades, of an independent marine scientist named Bob Street. He has led several experiments in oyster breeding, and oyster seeding and tagging in Bluff Harbour and the Foveaux Strait, and enjoys a well-earned reputation and respect in the Bluff oystering community. The Bluff Oyster Enhancement Company, formed by the owners as a response to season closures, made use of the experience of Bob Street to initiate an enhancement programme. Wild oyster spawn was collected and used in seeding experiments within Bluff Harbour. The oysters needed for the programme were taken by special permit during the oyster spawning season (the summer months), with the dual purpose of providing spawn, and providing a source of revenue for the programme. However, only a small fraction of the oysters caught for the programme contained spawn, the majority were on-sold by the owners.

The Oyster Catchers Union (representing the Bluff oyster fishermen) supported oyster enhancement, but were sceptical about the efforts of the Enhancement Company. The fact that the Company was set up without including any oyster fishermen, and that information on the progress of the programme was not forthcoming from the Company, frustrated the Union. Management of the fishery was undermined, it was felt, by exclusion of the Union from important planning information. The Company eventually obtained a special permit to catch 4000 sacks of oysters during each of the closed seasons. The conservation minded fishermen, left out of the process, and

[17] More recent return of shell experiments, notably an independent trial by Willie Calder, has met with some success in re-creating an oyster bed environment in the Strait.

beginning to suspect the Company of catching oysters for profit in addition to enhancement, took the position that the spawning oysters should remain undisturbed on the oyster beds of Foveaux Strait.

It is not surprising that the owners should have wanted to opt out of the Foveaux Strait Oyster Advisory Committee. They faced harsh criticism from the Union on the work of their Enhancement Company, and their arguments for limited openings of the fishing seasons were continually rebuked by the fishermen. At a FSOAC meeting in February 1994, a strategy was advanced of forming a small committee, or think tank that would concentrate on a plan for the future management of the fishery. The suggestion was eagerly taken up by the Ministry—perhaps as a way of avoiding the fractious roles that had hardened within FSOAC—and in April 1994 the Bluff Oyster Planning Group (BOPG) had its first meeting. The BOPG was formed by specific invitation and represented boat owners, the Enhancement Company, and the fishermen. The BOPG met frequently over the following two years; discussions at BOPG were wide-ranging, eclectic, and well-informed; ideas fell into place and by May 1995 a plan for the future of the fishery had been drafted (Bluff Oyster Planning Group 1995).

Under the heading, 'Measures to prevent depletion of the beds', the draft plan of the Bluff Oyster Planning Group put forward a number of thoughtful and advanced propositions. Accurately delineating and managing the beds through intimate knowledge of each was suggested. For example, it was thought that each bed might be individually assessed in terms of what it needed: e.g. return of shell; enhancement through deposit of spat; translocating; thinning or leaving fallow. Many other conservation strategies were tabled: such as the use of lighter dredges to protect the environment; daily catch limits; the use of mean catch rates to regulate exploitation of beds, and use of oyster numbers and green weight to avoid the uncertainties inherent in tallying by sacks. The draft plan also recognized the importance of group management dynamic in the health of the fishery. The plan promoted openness, communication, and community involvement. In a prescient statement the plan recognized that the ownership structure of the industry is inextricably linked to management, and yet it did not explore the issue through to any conclusions. Transferability of quota (i.e. the possibility of fishing more than one quota on a vessel and the ability to move quota between vessels) was approved.[18] The plan, or code of conduct as the fishermen sometimes referred it to, was widely discussed from 1994 to 1996 and appeared to receive industry acceptance and support. In 2003 when I asked fisherman/owner Willie Calder about the Bluff Oyster Group plan, he shook his head; the plan had by then become a dead issue. The principal movers of the plan were the first to lose their jobs in the fishery after the introduction of the Quota Management System (QMS), and those that remained tended not to be outspoken on conservation. It is possible that the owners never had any more than a token interest in the plan, for

[18] The Oyster Catchers Union had an opportunity to comment at length upon the draft plan put forward by the BOPG. Remarkably, the union stated that it was not opposed to transferability, suggesting only that quota ought not be on-sold (outside the present industry) and that workers be compensated for any redundancy that might result from implementation of the plan. Granted that transferability of licences was still a long way from instituting ITQs (which the union, in letters to the Ministry, did strongly oppose), and that the union might have been expected to shoulder some of the overall reduction in size of the fishery, it nevertheless seems overly generous on the part of the union who had been fighting for years over seemingly less contentious details such a sack sizes (so that quota could not be dishonestly exceeded) to have allowed in the very mechanism by which many were to lose their employ.

after they consolidated their power through the political changes that occurred in the fishery in 1996 the idea of a code of practise based on conservation was effectively scuttled.

Introduction of the Quota Management System—1998

Before the introduction of the Quota Management System (QMS) the Bluff oyster fishery was regulated by a balance of power that was linked to institutions that had developed over a lengthy period (such as the 23-boat licence limit), and slowly evolving socio-political relationships. This all changed abruptly in April 1998 when the government brought the Bluff oyster fishery into the Quota Management System.[19] The institutions, or rules on which the balance of power in the Bluff oyster fishery was based, were replaced with new rules. These new institutions had little, if any, connection with local conditions or the sociological history of the fishery. The new rules were supported by the owners, but opposed by many fishermen.

Ownership in the oyster industry has always meant ownership of boats, and shore facilities. The government issued licences or permits that allowed the owners to harvest oysters. As licences and boat quotas could not be transferred, all 23 vessels of the oyster fleet needed to be kept in service; the situation produced a stable workforce in which the Oyster Catchers Union could thrive. Licences to catch oysters were not transferable, even between vessels belonging to the same company. This non-transferability of licences gave the fishery a very special character. Owners could never be sure that, if a licence holder passed away or if an oyster boat was lost at sea, the licence would not also be lost. The fleet became something of an anachronism as the licences were tied to gradually aging vessels. Though the licences created a right to harvest oysters, the right was strictly limited, and lacked many of the attributes we associate with property. Also, the power to issue licences was held by the Minister who had statutory authority to allow socio-economic considerations to affect their renewal. The owners needed to be inclusive and conservation minded in their management of the fishery if only to put on a good face vis-à -vis the Minister.

The turning of oyster licences into property rights was accomplished by the government through the exchange of licences for individual transferable quotas (ITQs). The legal right to catch oysters, which had once been a privilege that the government was able to withdraw, has now become an exclusive right belonging to the owners, the loss of which the government will have to compensate. Conservation of the fishery under the new system would take place, so the theory went, through the self-discipline of owners protecting their property rights. The government would retain the power to set quota under the ITQ system (including the power to close the fishery by issuing a zero quota), but would negotiate quota levels with the quota

[19] This was accomplished by the Fisheries (Foveaux Strait) Dredge Oyster Fisher Amendment Act, 1998. The term QMS subsumes the institution of individual transferable quotas (ITQs). The Bluff oyster fishery had been managed for decades under a quota system (in fact the development of the QMS drew much from the Foveaux Strait example), and it was not quota management *per se* that so deeply affected the fishery. It was the creation of a new form of property right: the individual transferable quota that dispossessed the fishermen. The 1998 Amendment Act was also the instrument by which 20% of ITQ in the fishery were awarded to Maori interests.

holders. Other stakeholders may be admitted to these negotiations, but in practice the new system affords much less access to the Bluff oyster fishermen than they enjoyed during the years when the Foveaux Strait Oyster Advisory Committee met regularly in Invercargill (Murray Black, pers. comm.). Natural justice should have awarded the Bluff oyster fishermen, to whom the oyster fishery had belonged in political, social, and moral senses for well over a hundred years, a share in the legal ownership of the fishery. Yet they received nothing. The government argued that the QMS would bring conservation to fisheries, yet conservation of the lives of fishermen did not enter into the calculations. Even more ironically with the elimination of the fishermen, the government also eliminated the best plan for the conservation of the fishery (the Code of Practice or Plan formulated by the Bluff Oyster Planning Group).

I asked Murray Black former head of the Oystercatchers Union why the Union had not fought harder against the introduction of the QMS to the Foveaux Strait oyster fishery. He looked at me in disbelief at my naïveté, 'We weren't going to stop the QMS!' he asserts. The inevitability of introducing the Quota Management System casts a sobering light on the management of the Bluff oyster fishery. It was the single greatest change in fishery management coming at a time when the fishery was in its most precarious position ever, and the fishermen appear to have had no say in the matter. The consequences of entering the QMS system were, for many, the end of everything they had fought for over 30 years, and yet the record does not show any discussion foreboding the fate that awaited the industry. That the QMS was to radically alter the balance of power, which until 1997 had allowed a workable, if imperfect, system of co-management, was given no mention in the government's background paper on the QMS that was circulated for discussion among the different groups making up the industry (Ministry of Fisheries 1996).

How exactly did introduction of the QMS cause this changes in the management of the Bluff oyster fishery? A technical explanation can be found in examining the property rights that existed before and after the introduction of the QMS. Under the licensing system both owners and fishermen had *access* to the fishery, and both had *management* rights in the fishery. These rights were not necessarily *de jure* rights but they were *de facto* rights. They had been developed over many years into an informal, traditional system that resembled in some respects a common pool resource system. This whole system ceased to exist when the legislated system (the licensing system) that allowed it to develop was replaced by the QMS. Upon introduction of the full QMS system, including individual transferable quota, the owners obtained the right of *access*; the right to *manage*, and the right to *transfer* their interests. The new system allows the Bluff oyster fishermen much less *access* to the fishery than they have enjoyed at any time in the past.[20] What is more, many fishermen (among them key conservationists and members of the Bluff fishing community) that have volunteered a great deal of time throughout their working lives to fishery management now feel effectively excluded from a continuing role in the fishery (Murray Black, pers. comm.).

[20] The italicized words indicate certain rights associated with different forms of property. *Access*, for example means the right to participate in the fishery to some extent (depending on what other rights are held). For an explanation of the use of, and the background to this analytic terminology see: Peter Knight, *Oceans Policy and Property Rights: the Case for common Property Regimes*, New Zealand Surveyor, No. 292, April 2002.

The first action by the owners after the introduction of ITQs was to concentrate their quota on only half the number of vessels. With the fleet thus reduced, half of the Bluff oyster fishermen lost their jobs. There was an old joke around the oyster fleet that if and when you had to retire from oystering, the only other job that might be available to an old oysterman was making tea in an engineering workshop. But even in Bluff where engineering shops are like pubs on every corner, there weren't, of course, enough jobs around. Many fishermen became dependent on social welfare to provide the necessities of life. While the decision to reduce the workforce may have been difficult for owners who were sympathetic to the fishermen, the advantages to the owner group were complete. 'They must have had to pinch themselves every day to see if they were awake … ', Murray Black recalls. The owners were awarded millions of dollars by the government in oyster quota buy-outs needed to settle Maori claims, and they had property rights to the remaining fishery entrenched in perpetuity. Furthermore, they had, through the worker lay-offs, eliminated the group that had forced the issue of conservation—in opposition to owner interests—at management meetings for many years past. A token management role still existed for fishermen; they would be welcome at meetings of the new Bluff Oyster Management Company (the successor to the Enhancement Co.), but always under threat that their particular boat could be the next one to have its quota transferred. In other words any fisherman outspoken on matters of conservation might very well find himself without a boat and without a job.

The introduction of the QMS appears to have caught the fishermen off guard. Perhaps the fishermen felt that the government had for so long been their quiet ally in the constant struggle with the owners, that they had little to fear in that direction. Considering how hard the Union had fought for workers interests and conservation of the fishery, it is astonishing that their submission to the Select Committee that considered bringing the fishery into the QMS concerned only the way in which oysters should be counted! After the fact, after the establishment of the QMS, a letter from the Union to the new Minister for Fisheries John Luxton reflects awakening to the grim reality. The fishermen finally realized that they had lost their heritage, but it was absurdly late, and Luxton brushed off any suggestion of compensation to the fishermen with cruel ease (Luxton 1997). In effect the government had betrayed the many years of co-management, consultation and support the fishermen had enjoyed under the previous Minister Doug Kidd.

Conclusions

Today we accept that we must have rules that prevent us from destroying the goods that the Earth provides; less obvious, yet at least as important, are the rules by which we share these goods. Rules of sharing involve legally sanctioned institutions such as property rights, and also formal and informal management systems that have an important effect on the way that institutions work. At a high level the rules of sharing are discussed as theories of philosophy and economics, at an everyday level the rules are discussed as they affect fishing people in their daily work and activities. These people need to be listened to.

The reports of the Shellfish Working Group (the body tasked with setting quota for Foveaux Strait oysters under the QMS) of the Ministry of Fisheries make for very

unsatisfying reading as they completely avoid addressing the kind of controversies that are the concern of fishermen. Some of the information is there (such as damage to the ecosystem caused by heavy dredges) but there is no attempt to forthrightly discuss management options that acknowledge the rights of fishermen. Indeed since the introduction of the QMS it appears that fishermen have very few remaining rights. Their goodwill is depended on and exploited (to provide the much needed practical assessment of what is going on in the industry) without their being truly included in a formal legal sense. The patience of the fishermen in this regard is wearing thin. Murray Black states, 'We've tried to save the fishery for them once and we got kicked in the guts, we're not going to stand up again.'[21]

It is the fishermen who possess what is known in Bluff as practical knowledge. But it is the owners who over the long term prevail in the management of the resource. This has meant a steep decline in the fishery, and in the Bluff oyster fishing culture—a situation that can only be averted by restoring the participation of all those belonging to the Bluff fishing community. Ultimately, sustainability in the oyster fishery should include human as well as biological concerns. As Curtin points out, it is not enough to save the tigers if you have to destroy the culture of the forest people in order to do so (Curtin 1999). A premise of this work is that environmental and social justice ought to be considered inseparable. The oyster fishing culture is therefore as worthy of protection as the oyster beds themselves. The immediate effort is to study the way the fishery has been managed. The deeper project is to try to portray the contribution that the Bluff oyster fishing culture—as represented by the Bluff oyster fishermen—has had in the conservation of the fishery, and what role it might continue to play in the future. Perhaps the biological survival of the oyster is more closely tied to the cultural survival of the fishermen than we presently suspect. When fishermen struggle to conserve oysters they struggle at the same time to conserve their culture. There are many multi-generational fishing families living in Bluff. The combined environmental knowledge and relationship to place of the Bluff fishermen might be styled indigenous in its richness. Any management system that is for the Bluff oyster, must properly include the knowledge, ideas and work of these people.

[21] At the time of writing (May 2003) the Bluff fishermen are once again standing up for the fishery. Recent protests against overfishing have taken the form of fishermen speaking out at a meeting of skippers in Bluff, newspaper articles in the Southland Times, and communication between the fishermen and Pete Hodgsen, Minister for Fisheries.

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