Picking among the ruins—which way forward in managing the Bluff oyster fishery?

A working paper presented at the Workshop on the Workshop 3, University of Indiana, Bloomington, Workshop in Political Theory and Policy Analysis, June 2-6th 2004.

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"These two fundamental approaches to managing a natural resource have tended to dominate the debates about fisheries management in New Zealand. They can be seen as opposite points on a spectrum—from full central Government control, through to private ownership and management of the resource where individuals, local communities or private agencies have responsibility for its ongoing sustainability. The debate between these basic frameworks for marine environmental management has thus far been largely a matter of perception and ideology. More work is needed on the actual effectiveness of different management approaches, and the actual environmental outcomes that have been achieved, in order to assess more clearly and reliably their benefits and limitations. More importantly, more attention is needed to alternative approaches that recognize the complexities of managing resources, for which some property rights are held, within a complex ecosystem "commons". The various stakeholders in the marine environment have many goals, constraints and priorities in common. However the current adversarial positions taken by some of those stakeholders are both obscuring a clearer understanding of what those constraints and priorities are, and foreclosing on potential for working through the issues constructively."

Parliamentary Commissioner for the Environment, 1999.

Abstract-Introduction

"The town of Bluff on the Foveaux Strait in southern New Zealand is the centre of the world's richest and last remaining wild oyster fishery. For over 150 years many generation of oyster fishers have engaged in a vibrant economy that has sustained the town and established a unique relationship of people to land. But today the fishery is in ruins from overfishing and disease. Dredges have mined the seafloor of Foveaux Strait until very little remains of the original seafloor benthos from which the oyster beds developed. The oyster-killing disease bonamia is rampant, and the productivity of the fishery is only a small fraction of what it once was. The demise of the Bluff oysters is matched by a social breakdown of the oyster fishing culture of Bluff. The introduction of individual transferable quotas to the fishery resulted in the dispossession of many oyster fishers. A number of conservation-minded fishermen with long histories in managing the fishery are presently excluded from an official role, excluding with them an important diversity of opinion.

Management of the Bluff oyster fishery has historically taken place within a framework of interactions between the national and the local level. This framework changed dramatically in the mid-nineties with the introduction of the Quota Management System (QMS). Together with the institution of individual transferable quotas, the QMS has led to a perception in the community that the fishery has been captured by the quota-owners, who, operating under a commercial paradigm, fail to acknowledge the extent of the environmental crisis that has been caused by the history of exploitation in the fishery. The quota-owners are organized under the umbrella of an industrial consortium known as the Bluff Oyster Management Company (BOMC). The BOMC derives its power from the Ministry of Fisheries (MFish), whose policy it is to devolve management power to quota-owners." (Knight 2004)

The New Zealand Ministry of Fisheries acknowledges that a number of 'stakeholder' groups have rights in the country's fisheries. Working out an institutional structure at both national, and local levels that includes stakeholders in a meaningful way is crucial to the environmental and socio-economic sustainability of the fishery. This paper explores the current institutional framework and the location of various parties and powers within that structure with a view to creating space for the voices of customary fishers.

The Maori settlement

On May 4th 1998, the Southland Times reported an interview with Dick Ryan, an oyster fisher and spokesman for the Oyster Catchers and Bedhands section of the Seafarers' Union. Dick Ryan stated that:

> "More than 70 jobs have been lost since the introduction last year of individual transferable quotas." [Author's note: This was, in a later article, broken down into 40 fishing jobs, and 30 flow-on jobs.]
>
> "What hurt the most was people have lost their jobs without apology, counselling or redundancy payments … They've just been thrown on the scrap heap … There's a lot of anger in Bluff about this. People have been left in the cold with no help or advice … Some skippers with up to 30 years' experience have been told they were no longer needed, without so much as a thank you, never mind a gold watch."

The same newspaper article also carried news of the $6 million compensation package paid by the Government to oyster companies in order to secure a Maori share in the fishery. An inadvertent conflation of the introduction of the Quota Management System (QMS) with the settlement of Maori fishing rights is followed in the article by a stark contrast between the earlier description of the fortunes of the fishermen and those of the owners as a result of the settlement.

> The switch to the quota management system was prompted by the Government's need to allocate 20 percent of the allowable catch to Ngai Tahu. About $6 million was paid out in compensation to the boat owners for their share of the 20 percent.

In fact, it was the introduction of the QMS at a national level in the offshore fisheries earlier in the 1990s that led to affirmation by the Waitangi Tribunal of Maori fishing rights. And it was the desire of government to move to a quota management system that precipitated a settlement in 1992 between government and Maori. It was the application of the QMS, not the Maori settlement, that cost fishers their jobs.

The Settlement Act 1992 allotted Maori a 36% share of all offshore species quota, as well as a right to 20% of quota for all new species to be phased into the QMS in the future. When the government moved to introduce individual transferable quotas to the Bluff oyster fishery in 1996 (prior to the fishery's formal induction into the QMS system), the Treaty of Waitangi Fisheries Commission stepped in, threatening litigation to secure the 20% Maori right. With fears that an oyster season might be stopped by injunction if the Maori claims were not settled, the government reached an agreement with the Bluff oyster companies.[1] The owners would receive $6 million by relinquishing four boat licences which would pass to Maori. Thus the Ngai Tahu ki Awarua received, and fished their oyster quota in the 1997 season.[2] The payout to the boat owners raised eyebrows at the time, (e.g. Southland Times 26-2-97, 'Labour says cost too high'), but only as to the amount of the compensation. Why the money was awarded to the owners with no compensation to fishermen (particularly in light of the unemployment which was to follow) is a question that should be asked of the political process.

Maori involvement in the Bluff oyster fishery

In writing about the Maori side to the town of Bluff and its oyster fishery, one risks creating an impression of racial division that could be quite misleading. Bluff is different from many of the towns in the south of New Zealand that are dominated by the New Zealand European culture (New Zealanders use the Maori word 'Pakeha' to refer to New Zealanders of European descent). Bluff is approximately 50% Maori by population, and Pakeha and Maori are well integrated across social classes (Coote 1994). Some Maori, as with Pakeha, are relatively recent arrivals in Bluff, arriving to take advantage of the busy and independent economy that Bluff enjoyed for many years. Others are descended from the indigenous inhabitants of the coasts and islands of Foveaux Strait, and have been involved in sea fisheries and oystering from the origins of these industries in the area. Historically, Maori from Bluff may have made up a majority of the workers in the oyster fishery.

Maori in Bluff have a strong traditional presence, and maintain a traditional ethos, particularly

[1] The Bluff oyster companies are also referred to variously as the 'boat owners'; the 'owners', and most recently the 'quota-owners'.
[2] Ngai Tahu is the tribal name for all Maori of South Island, New Zealand; Awarua is the name of the local Bluff runanga, or tribal council.

in terms of their economic relationship to kai moana (food from the sea). The Te Rau Aroha Marae, which is the meeting hall and spiritual centre of the local iwi (tribal grouping) is a beautifully built and maintained complex in the heart of Bluff. The Marae displays an astonishing level of artistry and wealth of cultural meaning that can be deeply affecting to a visitor. The Bluff Maori runanga (local tribal council) have a particularly important role in contemporary fisheries management as customary fishers. Customary and recreational fishers are two of the officially recognized 'stakeholder' groups with whom the Ministry are obliged, under the Fisheries Act 1996, to consult on matters of fishery management.

When the Treaty of Waitangi Fisheries Commission (Te Ohu Kai Moana) passed its 20% interest in the fishery to Ngai Tahu Fisheries Ltd, a new element of Maori business was created in the Bluff oyster industry. Within two years Ngai Tahu Fisheries had become aligned with the Bluff oyster companies (e.g. Southland Times 6-5-98, 'Barnes strikes oyster deal with Ngai Tahu') and had become part of the group known as the owners. With no indication to the contrary, one presently assumes that Ngai Tahu Fisheries will align itself with the management directions of the owners. This will mean that Ngai Tahu will encompass a full spectrum of opinion on the fishery and may, or may not, place the new commercial interests in conflict with the more traditional views of the runanga (local Maori council).

Demise of the Bluff Oyster Planning Group

With the introduction into law of the Quota Management System (QMS) in 1998, the Bluff oyster fishery entered a markedly new phase in its history. Up to 1998, I have followed the history of management of the fishery through the records, kept by Murray Black (see Knight 2003). These consisted of meeting minutes, correspondence, and reports from: the Oystermen's union; the Foveaux Strait Oyster Advisory Committee (FSOAC), and the Bluff Oyster Planning Group (BOPG).[3] The BOPG had worked for two years, often meeting monthly during 1994 and 1995, and formulated a Draft Plan for the industry (BOPG 1995). However fundamental legal changes in the fishery—i.e. the introduction of the QMS—created uncertainty vis-à-vis future management of the fishery (BOPG 1996). The

[3] The Bluff Oyster Planning Group was formed in 1994 from the FSOAC. The idea was to develop a small think-tank that might more successfully address issues that had become unwieldy to discuss at FSOAC. The Foveaux Strait Oyster Advisory Group did not convene again after the formation of the BOPG. Formation of the BOPG may well have been a way for participants to bow out of FOSAC at which conflict between the conservation-minded and the commercial sides of the fishery had become too divisive for the committee's continued functioning. See (Fishing Industry Board 1994).

result was that the work of the BOPG (particularly the rules for collective action that resulted from this work) was never pursued by the industry. This squandering of social value (the expense of forming institutions for collective action is well documented in the literature) is a charge the QMS has yet to answer. The general lack of provisioning for management on introduction of the QMS was, in hindsight, extraordinary for an industry that boasted a long history of intensive management. Nevertheless, in 1996 the work of the BOPG came to an end. Allen Frazer of the Ministry of Fisheries (MFish) recounts that the BOPG was only ever a special purpose group, who, having accomplished their purpose with the drafting of the 1995 Plan for the Bluff Oyster Fishery, were no longer needed.[4]

A possible explanation for why the BOPG was not invited to continue its work by MFish, is that there was another group on the ground in Bluff that was vying for a greater role in management, and that the time was ripe for its political ascendancy.[5] Recall that the Bluff Oyster Planning Group was representative of two long-standing, often opposing, forces in the industry: the fishermen and the owners. But anti-union legislation had by this time broken the power of the oyster catchers union and the two fishermen's representatives in the Bluff Oyster Planning Group had, through a variety of circumstances—political and economic— lost their work as oyster boat skippers.

According to Union spokesperson Murray Black, the *Employment Contracts Act 1992* took away the bargaining power of the Union who were no longer able to either increase wages, or to negotiate redundancy (pers. comm.). The recent history of the Bluff oyster fishery has to be read against the background of the national/international political situation. This situation, known in New Zealand as 'the reforms' is profoundly anti-democratic in the sense that 'governance' involves many fewer people than previously in the political process (the demise of trade unionism is one side of this, the number of people employed by government is another). The viewpoints of those remaining in political power, are consequently also narrower in range.[6] Because the QMS is embedded in a larger political system it is likely that

[4] However Bluff Oyster Planning Group minutes reveal that the dissolution of the group was not generally anticipated (BOPG 1996). Allowing the group to terminate was suggested as an option, by Allen Fraser of the Ministry, but there was no consensus on this point. It was established practice in the historical management of the fishery for either the Fishing Industry Board or MFish itself to take responsibility for facilitating management meetings. If the Ministry stopped the facilitating process (for example, by simply ceasing to announce meetings) then the group would terminate. This is in fact what happened; there was no more call by the Ministry for the group to continue, and it did not meet again after the August 1996 meeting.

[5] This group is the Bluff Oyster Management Company which I examine in some detail below.

[6] The concentration of political power in New Zealand is meticulously documented in Jane Kelsy's 1993 book, *Rolling back the State : privatisation of power in Aotearoa/New Zealand*.

the system will affect the outcomes that we attribute to the QMS. Just how much the results are due to the QMS alone, and how much they are a consequence of the combined system needs to be worked out. With their feet knocked out from under them, the contribution toward conservation-minded management that the conservation-minded fishermen had cultivated and represented for at least the previous ten years (at the FSOAC and BOPG fora) was set to disappear. The ethos would continue in the private lives and individual efforts of the fishermen, but as a political force within the fishery Murray Black and the like-minded Bluff fishermen were finished.[7]

1995 Plan for the Foveaux Strait Oyster Fishery

At this point it is appropriate to review the 1995 Plan for the Foveaux Strait Oyster Fishery, which was the culmination of the work by the Bluff Oyster Planning Group. It is not just the form (organizational structure), but also the content of management which matters, and so I shall use the 1995 Plan contents as a guideline with which to assess management initiatives during the QMS period 1997—present.[8]

The 1995 Plan can be roughly divided into three categories of issues/measures. The first has to do with the setting of quota in the fishery, and relates very closely to the spatial distribution, and estimation of the oyster population.[9] The second has to do with impact of fishing methods on the marine environment, and is about dealing with the long-term effects of

[7]Included in the group of conservation-minded fishermen are: Ray Hardwick; Syd Ball; Bubba Thompson; Murray Black and a number of others. One of these has asked not to have his name publicized and others will remain unnamed because I have not sought permission to do so. I presume there are many more fishermen in the community who would identify with the position of the conservation-minded fishermen but who have not yet been discovered through this research. The Ministry of Fisheries, while continuing to recognize the ex-members of FSOAC and BOPG as individuals, have some difficulty accepting them as representatives of the community (Allen Frazer, pers.comm.). Murray Black's view is that the conservation minded fishermen fought a rear-guard action that has been largely ineffective.

[8] Although the 1995 Plan has been long ago shelved in practice by the industry it remains the only public management plan in existence, and therefore still the only remaining hope for a sustainably managed fishery. The Bluff Oyster Management Company has formulated a plan for the fishery, but it has not yet made the plan available to the public.

[9] Also included in this section are provisions for more accurate tallying of oyster catches—i.e. a switch from sack counts to individual counts. The conservation-minded fishermen fought hard for a switch from sacks to numbers because of uncertainty in sack sizes. The fishermen suspected the companies of increasing the physical size of the oyster sacks as a means of increasing quota. In a fishery in serious decline every oyster begins to take on importance, and though seemingly a minor issue, the issue of sack-count vs. counting individual oysters, was an important conservation issue in the fishery.

intensive dredging on the health of the fishery.[10] The third category of issues/measures was brought about through concern with 'communication within the industry'. It represented recognition in the plan that management is a social process which requires a special attention to communication.

Of the three categories of issues/measures, the first, that relating to population numbers, and the technique used for tallying oysters were rapidly brought into effect.[11] However, it is the second and third categories of issues/measures that I find most interesting for they involve long-term commitment in terms of research; discipline, and innovation, and are to my mind more integral to the concept of sustainability. Some of the measures proposed were, '… to prevent localised depletion of oyster beds'; 'reducing incidental mortality'; 'working the beds'; 'enhancement', and 'thinning the beds to avoid Bonamia'.[12] The 1995 Plan suggested management of the fishery at a scale never before accomplished (i.e. at the level of the beds themselves), and envisioned "… shifting the focus from a wild harvest approach towards 'farming' the fishery …", and was to allow, "a variety of proactive measures to be undertaken to enhance, protect and maximize yield from the beds (BOPG 1995)." These sustainability measures were discussed and endorsed at a meeting of the industry in Invercargill in January 1996 (Board 1996). After acceptance of the 1995 Plan by the industry, MFish incorporated many of its provisions into a Code of Practice for the 1996 oyster season (MFish 1996). However, as we shall see, the voluntary Code of Practice was not observed in the fishery in the years after the reopening of the fishery.[13]

Where the 1995 Plan did have a limited success was in influencing scientific research. A research programme that included experimentation with lighter dredges, and a study of incidental mortality due to dredging (i.e. a study of the damage done to the larger population

[10] These first two categories of measures might also be called the easier and the harder measures (John Cranfield, pers. comm.). I do not, by this, intend to convey that the population science is in any way trivial, only that the processes involved are far more certain of quantitative results than might be achieved with the more qualitative approach associated with ecosystems/habitat research.

[11] Advice to the Minister of Fisheries before re-opening of the fishery in 1996 contained provisions (accepted by the Minister) regarding the calculation of quota and the counting of oysters.

[12] The reader is referred to the Plan itself for more detail. Under the heading 'Measures to prevent localized depletion of oyster beds', there are two pages of suggestions. Note that some of these suggestions require modern hydrographic technology (i.e. vessel monitoring systems), and are eminently viable options for the industry.

[13] Though the 1995 Plan was officially endorsed by the industry at the January 1996 industry meeting in Invercargill, Murray Black feels there was anything but unanimity of acceptance of the Plan by the owners in reality. This was partially indicated by the difficulty in obtaining a response from the owners after the Plan had been circulated for comment prior to the industry meeting (Murray Black, pers. comm.). Months afterward the owners had still not responded.

of undersize oysters due to dredging) was carried out by fishermen and the National Institute of Water and Atmosphere (NIWA) in the years following the formulation of the plan. However, without a local structure with which to effect changes in fishing technology or behaviour, the effectiveness of the research is severely diminished.

Two levels of fishery management: central and local.

It is useful to develop the analysis of management measures, and to extend the categories defined in the previous paragraphs to describe two important foci of management, namely, the national and the local levels of activity. The first category of management measures and issues identified above is that of the science associated with population surveys and population models. This is the main focus of the scientific management establishment, i.e. the Ministry of Fisheries in conjunction with its science provider, the National Institute of Water and Atmosphere—NIWA. The second category, that of sustainability measures, is much more locally oriented. It takes into account the traditional ecological knowledge (TEK) of fishers and is developed from contributions across all social groupings in the fishery. Again, these groupings of management focus are heuristic rather than strictly categorical. Local fishermen take part in the population surveys directed by scientists from Wellington, and importantly, some scientists develop ideas that originate in the local culture. These latter ideas have been developed in publications at national and international levels.[14] Nevertheless there is a strong propensity for establishment science to concentrate on the oysters in isolation from their environment. If science can show the population to be at a certain level then it can also determine rates of exploitation to maintain or grow the parent population. It is this—not so simple—numbers game that has always formed the principal basis for the management of the fishery at the national level.

[14] The ecosystemic approach (i.e. insistence on the importance of oyster habitat), for example, is now gathering momentum in the establishment science associated with the fishery. Much of this development is due to John Cranfield who consistently listened to the Bluff oyster fishermen over a period of a generation, and allowed this influence to permeate his science. See Cranfield, J., B. Manighetti, et al. (2003). "Effects of oyster dredging on the distribution of bryozoan biogenic feefs and associated sediments in Foveaux Strait, southern New Zealand." Continental Shelf Research 23: 1337-1357. Also, Cranfield, J., K. Michael, et al. (1999). "Changes in the distribution of epifaunal reefs and oyster during 130 years of dredging for oysters in Foveaux Strait, southern New Zealand." Aquatic Conservation: Marine and Freshwater Ecosystems 9: 461-483.

National Level Management

When I initially set my sights on understanding management during the period 1998—present, I still had in mind the model of the Foveaux Strait Oyster Advisory Committee. Management to me meant a hammering out of issues between a diverse group of highly practical people, on location. Because I was used to focusing my attention on group dynamics at the local level I did not, at first, see the higher-level management, that had been present in the fishery all along. With the demise in local management, however, the central government apparatus becomes larger in presence.

The gap left in local management by the demise of the pre-QMS management structure (i.e. FSOAC and the BOPG), did not alter the general character of management *at the national level* in the years following introduction of the QMS. Consultation had changed dramatically but the fisheries science used to set quotas within the industry remained the same. The Ministry of Fisheries structure responsible for the Bluff oyster fishery consists of the Shellfish Working Group; a research planning group, and a position of Fisheries Policy Analyst. The groups are based in Wellington, and the post of Policy Analyst is filled by Allen Frazer in the Dunedin office of the Ministry of Fisheries. The combined efforts—reports of these elements of a management team are compiled, and tendered as advice to the Minister for Fisheries. The Minister is responsible under the Fisheries Acts of 1996 and 1999 for the sustainable management of the fishery, and is empowered to set the oyster quota for the year (and presumably to close the oyster season should this be required for conservation).

Management of the Bluff oyster fishery in the years following the introduction of the QMS becomes difficult to follow. Where I could once peruse documents carefully collected and willingly offered by the Seafarers' Union, I now find myself having to attempt to penetrate, not so much a physically Kafkaesque bureaucracy, as a mentally Kafkaesque one. At the local field level, I have found the Ministry representative, Allen Frazer, to be a determined public servant, and scrupulous in his assistance. Allen has explained to me just how things work, and has provided documents to support my enquiries.[15] The trouble is that after these various

[15] I did get the impression that the higher the level in the fisheries bureaucracy the greater the difficulty in obtaining information. In one case I found it necessary to make formal request under the Freedom of Information Act for minutes of a public meeting.

inquiries I am in almost as much of a quandary about the current management of the fishery as I was when I started. Something is missing that I can't quite put my finger on. Things are not unfolding in the manner to which I am accustomed for them to fall into place; some information is there and yet that information says very little. This is partially because beginning my study of the fishery at a local level, I came into contact with people with passionate interest in the Fishery and in their economy. I received personal and practical information delivered in concise and prosaic fashion. One discovery led to the next, informed sometimes by humour, sometimes by anger, all with rich personal meaning and all vitally interesting.

Contrast now the local story as told by the fishermen to the general approach, vision and mission statements published by the Ministry of Fisheries (Fisheries 1996; Fisheries 1998; Fisheries 2003). These latter are written in a high-sounding, bureaucratic jargon, and are intended, one supposes, principally for the Ministry itself. My impression of the Ministry is that it is somewhat beleaguered; its problems are not so much human as they are political; the fishery loses its character of men; women; boats; work, and smelly muck dredged from the depths, and becomes piles of uninteresting papers, names of bureaucrats in far-off inaccessible places.[16] If there is management of the fishery taking place, it is a management detached from the life of the fishery. And so I am having trouble moving from the local to the national, from the concrete to the abstract.

Management as it is practised today in the Bluff oyster fishery is not local management; all that ended with the introduction of the QMS. I have been looking for the vestiges of something that no longer exists. In its place are structures of legal control, and people fulfilling obligations. The QMS is a system conceived in abstract isolation and operating in bureau-space, it is not about oysters and people, it is about quota numbers and property rights. It is non-management at the highest level. What management there has been is either completely private (and therefore inscrutable), such as the meetings of the Bluff Oyster Management Company, or high-level Ministry/science meetings at which a particular agenda (related to the quota setting process) is strictly observed, and at which local-level traditional

[16] Ten years ago one would hardly have thought of challenging the Ministry to live up to its duties (within the oyster fishery), and yet the mood surrounding the Ministry today is somewhat mistrustful. "[In] Mid-2002 the Serious Fraud Office and the Solicitor-General examined allegations of corruption within MFish. Both found no merit in further investigation. Subsequently the Primary Products Select Committee and the State Services Commission began separate enquiries into allegations made regarding fisheries management, particularly in relation to the scampi fishery."— *Introduction of New Stocks into the Quota Management System on 1 October 2004, Ministry of Fisheries, Final Advice Paper 26 September 2003.*

ecological knowledge (TEK) concerns are not appropriate subjects for discussion. The Ministry allows that their Shellfish Working Group meetings are public, but they are not public in the sense of the public having reasonable and appropriate opportunity to voice their views in an environment in which they might feel comfortable.[17] The meetings are obviously not a place to criticize the establishment approach to the fishery, or to voice social and political concerns.

The role of NIWA

The National Institute of Water and Atmospheric Research (NIWA) have been noted previously as the principal science providers for the Bluff oyster fishery.[18] They are funded for this work through contract to the Ministry of Fisheries. NIWA also receive funding through the national Foundation for Science and Technology (FRST), and it is through this last source of funding that most of the ecosystemic research into the fishery (including anthropogenic factors) has been accomplished. NIWA go to some lengths to assert that they are not involved in the management of the fishery, an irony (considering the extent of the knowledge and information they possess) apparently not lost on those involved. Each research project and/or survey undertaken by NIWA is fully reported and these publications are generally available through MFish. MFish incorporates much of the information contained in the scientific reports in its own Shellfish Working Group reports which then become the main written basis for discussions on management of the fishery.[19]

Prior to 1996 much fisheries science was accomplished in-house by the Ministry (then the Ministry of Agriculture and Food—MAF). The creation of the new Ministry of Fisheries in 1996 created a 'funder/provider split', through which administrative technique, the science arm of the Ministry, was transferred to the National Institute for Water and Atmosphere—NIWA (with the non-practical, policy type work retained by the Ministry). The

[17] The Shellfish Working Group Meetings are held in Wellington, the most recent of these in the NIWA board room at Greta Point (many hundreds of miles from Bluff). The panel consists of high-level fisheries officials and NIWA scientists. Industry representatives are usually present, and occasionally a representative of Maori or environmental concerns. The meetings are an opportunity to review the scientific reports relating to the fishery that might have been published in the period since the last meeting, and that underpin the advice to the Minister concerning the total allowable catch for the season.

[18] Reports (unpublished) by the independent marine scientist Bob Street form a second important source of science in the fishery. The Bluff Oyster Management Company contracted independent surveys in 1992 and 1993 by marine scientist Dave Stead. Stead's unpublished report is treated by (Cranfield and Michael 1999).

[19] Here management is understood in the relatively narrow sense of calculating quota sizes.

idea behind the funder/provider split is to make government more efficient by imposing a business model on the provision of government services.[20] NIWA had already been reorganized, as a result of reforms in public administration earlier in the 1990s from a department of government into a crown research institution. However, the name crown ought not to be confused with government: NIWA has become a business corporation and is no longer an arm of government. This is important because one must consider the influence of commercial imperative and competitive research funding on the nature of the agency. Whether or not the commercialization of science in New Zealand has had an effect on management of the Bluff oyster fishery is a relevant question.

It is in this light that we should question the sidelining of the pre-eminent scientist Dr. John Cranfield, who has worked on the Bluff fishery since the 1960s, and until recently was employed by NIWA. Cranfield has been associated with the oyster fishery in Bluff for well over 30 years. During this time he has produced science associated with both the establishment, and the traditional environmental knowledge (TEK) aspects of the fishery. In very general terms the establishment fisheries science is concerned with assessing oyster populations; the TEK science has a focus on oyster habitat, and is inherently ecosystemic in approach. The oyster habitat studies of Cranfield and his colleagues at NIWA are published in prestigious international journals of marine science, but are marginalized in importance by MFish.[21] It is the oyster population information that the Ministry of Fisheries is mainly interested in promulgating. Cranfield, who has done more than any other scientist to demonstrate the extent of environmental modification caused by oyster dredging in Foveaux Strait, was seen as a threat by the oyster industry. In February 2004 Cranfield received notice of his redundancy. Nevertheless, he continues to make a valuable contribution to understanding the Foveaux Strait Fishery (with a number of articles in press).

The Ministry of Fisheries Shellfish Working Group

[20] See Hannah and Knight 1998 for a discussion of the impact of the reforms on the Royal New Zealand Navy's Hydrographic Office. The term funder/provider split was very common in the political dialogue of the 1990s with some also talking of 'funder-provider theology'. The 'reform' movement was still very much alive in the 1990s in New Zealand with continued privatizations, and the continuing divorce of government from its, once extensive, ability to provide services.

[21] Sometimes science can be its own worst enemy. I recently heard a Maori spokesperson expressing frustration at the fact that scientists may take many years to convince themselves of facts that form part of traditional common sense.

Once a year a large document, see for example: (Annala, Sullivan et al. 2002), is produced from information brought before the Fishery Assessment Plenary of the Ministry of Fisheries. This information comprises stock assessments and yield estimates for all fisheries in New Zealand. The part of the plenary proceedings in which the Bluff oyster fishery is considered is entitled: Dredge Oyster (OYU 5)–Foveaux Strait (Ostrea chilensis). This document, much of which is the same information reproduced each year (the background information), is updated from the Ministry of Fisheries Reports on stock assessment produced by NIWA under contract to the Ministry. See for example: (Michael, Dunn et al. 2001). The Ministry's OYU5 document runs to approximately 35 pages, is highly professional (and daunting for the non-expert), and completely avoids the issues of overfishing and the massive environmental impact of dredging that are the main concerns and interests of the locally based activists in the fishery.

The Ministry document has a focus on oyster disease and counting oysters so that a quota may be set for the year. At the level at which the Ministry is working (i.e. the national level) the whole of management seems to collapse into this narrow focus on population surveys and science. At the national level one has to credit the Ministry position as logical and rational. If, for example, the total oyster population in Foveaux Strait is calculated to be 300 million oysters and it is estimated that disease will kill 150 million of these oysters; the 15 million oyster quota for the year which the fishers will take becomes almost a minor consideration compared to how many oysters will be killed by disease.[22]

The establishment view of the fishery questioned

The Ministry of Fisheries, Shellfish Working Group analysis fails to capture the practical view of the fishery.[23] The locals know that the present state of the fishery is the result of the massive cumulative effect of decades of intensive dredging; they have a gut level, prescient knowledge that the fishery is in a state of ruin. However, not all of the Bluff community have the same awareness with respect to human impact on the state of the fishery. Denial of the

[22] The trouble with the population/disease reasoning is that it is abstract, I was interested when talking to an oyster skipper to hear him talking of the millions of oysters that had succumbed to disease in the Foveaux Strait. In my view, the purely abstract reasoning of the scientists was substituting for a more immediate, practical understanding of the fishery. There is political reason for the abstract approach as it takes the focus off the invasive, destructive reality of dredging at the micro-level.

[23] The term practical is used a lot by fishers like Murray Black in the place of what is referred to in the literature as traditional environmental knowledge, or fishers ecological knowledge.

destruction of the Foveaux Strait oyster beds permeates the industry from bottom (fishermen) to the top (scientists).[24] One's social and professional starting point influences the whole course of one's thinking on the issue. One way through this might be to tackle the the social and political issues head on. This might help reveal some of the contradictions, and hence reduce some of the confusion within the fishery.

If ever there was a stratagem to avoid discussing the wider management issues relevant to the Bluff oyster fishery it is the single-minded focus on the oyster disease caused by the parasite *bonamia* as the major cause of problems in the industry.[25]

The locals know that the problem with the Foveaux Strait Fishery is a human one; it might be helped by scientific information, but it is ultimately a question of human attitude and relationship with each other and with nature. In this case what matters is not what one thinks, but how one behaves in relation to other people and to the environment. What is needed is an institutional framework that recognizes this important aspect of the fishery. There has to be a social and political forum in addition to the scientific one.[26] While the fishery and industry establishment have indicated the necessity of including a wider community in fisheries management, one wonders if the involvement would be one that would allow for dealing with the social and political side of the fishery. I return to this issue below when considering the potential for community involvement via formally recognized stakeholder groups.

The Ministry of Fisheries

We have come to expect a kind of management in fisheries that includes local players in a

[24] There is actually a great amount of awareness in the Ministry and in NIWA concerning the extent of habitat destruction in Foveaux Strait. NIWA's long-range research plans are certainly mindful of an ecosystemic approach to fisheries science, and are concerned with sea-floor habitat. However, there is still a large gap or lag between the science, and the bringing into effect of environmental rules for the fishery based on that science.

[25] That *bonamia* should figure large is understandable; hundreds of millions of oysters died in the epizootic of the early 1990s, enough mortality to cause the oyster population to fall to critically low levels. Just as the fishery appeared to be recovering (aided by a three-year closure of the commercial fishery from 1993 to 1995), a new *bonamia* outbreak was identified in the year 2000. Located in the central western parts of the Strait (the locus of the previous infection, from where it spread in a wave throughout the straits), there is fear that the disease will reach the East Bed, upon which hope for the fishery has recently been resting (Willie Calder, pers comm.).

[26] At a fishery meeting organized by the National Institute of Water and Atmosphere and hosted by the Awarua Rūnanga in Bluff on March 27th 2004, NIWA representative Keith Michael stressed that he could not comment on the realm of politics. Unfortunately for the meeting, most of the people present desired a more holistic approach. It is acceptable to have strictly scientific meetings, but if the community need to deal with the social and political issues this fact will overwhelm any discussion of the science. We thought that we were discussing science, but we were actually engaged in politics—though this is was far from clear at the time. Because of this confusion, science suffers the fate of being perceived as a tool for fighting political battles rather than a means of communicating understanding.

meaningful way, and recognizes the need to provide increasing levels of responsibility to those involved in the industry. However, real power rests still with the Ministry of Fisheries whose decisions are based on long-standing traditions including particular ways of obtaining scientific advice. The difficulty here is that science is not purely objective. Politics influences science, just as science influences politics.[27] The point here is not to question the integrity of the Ministry, but to point out the inseparability of politics and science. Under political pressure the Ministry is much more likely to take a stand based on scientific convention (traditional scientific practice in the industry), even if it's the wrong stand, than to make decisions based on the traditional environmental knowledge of fishermen. This is particularly true if the fishers environmental knowledge contains information that might cost the industry in the short term.

Previous to the Quota Management period, the then Ministry of Agriculture and Fisheries had seemed a benign facilitator supplying its unique expertise as only one component in a community of participants. With the introduction of the QMS one senses a switch in the Ministry from facilitator to QMS activist. By introducing the QMS, the government made a power-play that placed the Ministry in new and unknown territory. Once again, it is impossible to consider the Ministry of Fisheries except in relation to the whole of government, and it is difficult to know which characteristics of the Ministry to attribute to the QMS, and which characteristics are common to the whole of the New Zealand public service as a result of the so-called reforms. The Quota Management System is more than a simple set of rules for organizing a fishery. The implicit side of the QMS is a political ideology resembling that of neo-liberalism. (It is natural for an administrative system to refer to a particular political vision, and ideology serves a necessary political function. However, we need to be explicit about these connections). Just as there is a need to separate politics from science—or at least recognize and honour both aspects in our discussion—so there is a need in New Zealand fisheries to be clear in our discussion about whether we are discussing institutions for management—the administrative tools, or whether we have entered a wider

[27] The BBC series 'One Planet', aired in New Zealand on National Radio early in 2004, provided a striking example of the link between science and politics. The case in point was the recent relationship between the US Environmental Proctection Agency, and the US executive of government, over the issue of global warming. Rather than science directing politics (which might happen if the EPA were allowed to comment freely on what is certainly a very serious environmental threat), the US executive has effectively silenced its own best scientific advice in favour of the situation and self-interest of its members. The Ministry of Fisheries could reasonably object to an analogy of this sort with NZ fisheries, and yet there must be something in the remark of politician Winston Peters on the appointment of a new Minister of Fisheries (David Benson-Pope—appointed March 2004), when he said that the new Minister would be, "… quickly gobbled up by the industry".—Otago Daily Times, Feb 25th 2004, "Reshuffle lands Benson-Pope in 'fish tank of sharks' ''.

political engagement. I sense that at the top levels of the fisheries bureaucracy the ideological side of the the QMS plays an important role, hence we hear of a 'culture change' over the past several years within the Ministry (Laurel Teirney, pers. comm.).

Perhaps some exploration of the ideological side of the QMS is necessary at this point. There is nothing new in the political and socio-economic discourse associated with neo-liberalism, and there is nothing really new about the Quota Management System. The Bluff oyster fishery had for many years been managed under a quota system. What is new, and important in the QMS is the way in which resources are shared—or not shared. A characteristic of neo-liberalism, together with its global expression (economic globalization) is a movement toward enclosure of what has traditionally been the public domain. At least one writer has described this process as the second great enclosure movement (Prashad 2003). The first great enclosure movement was the privatization of the pastoral commons of the European peasantry beginning in the 17th Century. The second great enclosure movement is not directed at land, but at what have been, until recently, public services, and common goods—e.g. systems of public health; provision and ownership of water; clean air; education; systems of communication. Agreements on services and trade established internationally by fora such as the World Trade Organization are concrete manifestations of this second great enclosure movement. The QMS needs to be seen as part of this enclosure movement, for it is from this international context that it derives a rationale. QMS activists need something underlying and sustaining to which their efforts might be referred and that is provided by the vision of growth and economic well-being associated with modern capitalism. Privatizing common goods and services creates private wealth from which society as a whole enjoys the trickle down effect. The ideology suffers from the basic flaw of all ideologies in that it represents one group more that others; in this case, those standing to benefit most from enclosure. So in cleaving to a particular ideology QMS activists inevitably associate themselves with the group benefiting most from that ideology. The Ministry of Fisheries is caught in the contradiction of having to represent all the people, but having to do so within an ideology that better represents only a small part of the people. The greater the contradiction the greater the effort necessary to avoid the admission of difficulty and the requirement of change. In these circumstances we might expect the Ministry to become increasingly consumed by the impossible task of demonstrating its impartiality.

In concrete terms we observe the Ministry less able to contribute to the management of

fisheries in New Zealand. In the case of the Fiordland fisheries the Ministry has found itself in the embarrassing position of having excluded itself from the formation of a comprehensive plan for the West Coast fishery—a multi- community effort in which it might have been rightly proud to participate. In the case of the Bluff oyster fishery, a hands-off approach by the Ministry will increase the power of the owners in the industry in the short term, but will contribute nothing to the long-term sustainability of the fishery which will require the participation of a wider community of interest. Again the Ministry will be caught in the impossible position of trying to resolve the contradiction between the ideology of the owners and its public role of stewardship. A way through the difficulty would be to acknowledge the ideological underpinnings of the QMS. If the Quota Management System could become only one of a number of administrative tools available to the Ministry instead of an ideal to which the entire Ministry must bend itself, then the Ministry might recover some freedom. Property rights, which are at the heart of the QMS need to be treated, not as the inviolable basis of a sacrosanct ideology and vision, but simply as institutions, human creations that can be changed or adjusted at any time. It is infinitely easier to deal with political fallout, and the difficulties of balancing various interests in the fishery, than to have to maintain a rigid adherence to any ideology.

Bluff Oyster Management Company

In April 2003 at the beginning of the oyster season in Bluff there was a meeting of oyster boat skippers at the New Eagle Hotel in Bluff. The oyster skippers met out of concern for what some felt was a 'disaster' occurring in the fishery. There is no record of exactly what was said, or what took place at the meeting, but a flurry of newspaper articles around the date of the meetings provide some idea (e.g. Southland Times, April 4th 2003). Many oystermen simply did not believe there were enough oysters left in the fishery to continue fishing, and a number chose this moment to end their involvement. David Skeggs, the then director of the Bluff Oyster Management Company (BOMC) under pressure of criticism for continuing to promote a business as usual attitude chose to deny the charges of the seriousness of the fishery slump (Southland Times, April 29th, 2003). This highly charged, crisis-management approach is a far cry from the orderly management under which the industry had operated in the past. It reflects a lack of management, and one can only suppose that whatever management meetings were taking place within the companies involved in the BOMC they

were not adequately addressing the fishermen's concerns.

The Bluff Oyster Management Company Limited (BOMCL) was formed in 1996-1997. The BOMCL had existed already for some years as the Bluff Oyster Enhancement Company (formed in 1992).[28] As the change in name from enhancement to management implies, the BOMCL must have envisioned a greater role for itself in the management of the fishery. The fact that a leadership role for the BOMCL was not discussed in the Bluff Oyster Planning Groups's (BOPG) Draft Plan, indicates that the company's management role stemmed from its own initiative rather than that of the larger community. This would not have been possible without acceptance, even encouragement, of the BOMCL by the Ministry of Fisheries (MFish). The Ministry must have been cognizant of the fact that the BOMCL was poised to take over the role of the local management group, and that the BOMCL would seek exclusivity in this respect. There is indication in the record that the BOMCL had penetrated the establishment (i.e. national) management structure through attendance at stock assessment meetings in Wellington, and had entered into the cost recovery initiative of MFish as early as July 1996.[29] The answer to the question of why the Ministry allowed this assumption of power by the BOMCL is central to any analysis of management of the fishery, and is treated in more detail below.[30]

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[28] Made up exclusively of the group known as the owners (the owners of the Bluff oyster companies, oyster boats and oyster licenses), the Bluff Oyster Enhancement Company had operated an out-of-season oyster fishery by special permit during the oyster closure from 1993-1995 inclusive. Oyster enhancement involved the capture of a million oysters each year during the spawning season. These oysters were captured to provide oyster spat to be used in enhancement experiments based in Bluff Harbour. "Spat are collected from brooding oyster during processing of oysters caught by the company and settled onto clean oyster shells for reseeding back into the fishery"—see Bluff Oyster Planning Group, 1995 Plan. The enhancement programme was a contentious point in Bluff because it removed 1 million oysters each season from the already endangered beds, and because the owners were generating revenue from the fishery when the fishery was officially closed (by on-selling the oysters caught for enhancement purposes). The enhancement programme continued until the year 2000 (a special permit was denied by the government in 1999) and ceased after it became clear that enhancement would have to be funded by the companies without the income generated by special permit oyster sales. Criticism of the enhancement programme by the larger Bluff community was not directed at oyster enhancement *per se* which is seen as necessary in the fishery, but was directed at the Company for its failure to include representatives of the larger community in the project, or to produce and communicate the results from its experiments.

[29] Although the Bluff oyster fishery did not officially enter the QMS until 1998 the change had been anticipated for several years. The slow but steady 'rationalization' of New Zealand fisheries (i.e. their inclusion in a QMS that is political as well as administrative) over the last 20 years is well established in the literature (Hersoug 2003; Yandle 2001). What this means is that the recent management of the Bluff oyster fishery is the result of directions taken at a national level. The imposition of the QMS is a switch from a kind of management with significant local input to a centralized or nationally managed fishery. In this sense the QMS is a reactionary fisheries policy. QMS adherents may deny this aspect and point to the increased powers within the system of local quota holder associations. But, why, if this is true, should not the local community be vibrant and growing? In conversation recently with a Bluff fisherman, when I referred to the possibility of the Bluff community constituting a political force, I was told, somewhat forcefully, that no such thing as the Bluff fishing community exists! "It's gone!", I was told.

[30] I think it fair to characterize the position of Mfish, with regard to fisheries management, as one adhering to a 'thin' analysis. In other words management depends upon a simple concept or idea from which good outcomes

When the oyster fishery reopened in 1996 it had many fewer participants than previously.[31] Some owners felt that smaller numbers meant more management control, and hence better results (FSOAC minutes 1996 Jan). It is tempting also to see here a connection with thin analysis. From an administrative perspective, involvement by fewer numbers would make it simpler to identify and empower the remaining. In a letter of July 1998, Allen Frazer of the Ministry talks about improvements in productivity by 'those involved in the oyster industry' (the phrase is emphasized in the original). I believe that MFish is making reference to a new management structure. The word 'involved' is left undefined, but one can't help making the association with the reduction in the fishery, and guessing that the involved are the winners in the game of musical chairs. With reduction in numbers came a contraction of opinion. According to Murray Black, " a lot were responsible [to environmental considerations in the fishery], a lot were not; it was the ones who were not responsible that have been kept on." The owners could choose which fishermen to retain and would obviously favour those who would agree with them on the crucial matter of the rate of exploitation of the oyster beds.

Management implies having a plan for the fishery, something that the Bluff Oyster Management Company has been repeatedly criticized for its failure to produce (Southland Times, April 27th 2003). A plan for the fishery had been laboriously formulated by 1995, but as has been described earlier the plan was not brought into effect by the BOMC once it came to enjoy almost total management powers (in the local sense of the term). In the nine years since the Bluff Oyster Planning Group ended and the 1995 plan for the fishery was shelved, the fishery has operated without a plan, and apparently without organized management (at least not a management that is open to public scrutiny or that consults with the wider community). The Bluff Oyster Management Company have formulated a plan for the fishery, or at least a fisheries consultant from Christchurch has provided a plan under contract to the BOMC, but that plan has yet to be brought into effect or made public. The reason for the delay, according to the BOMC Chairman, David Skeggs, is that the Ministry of Fisheries have

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might be expected without a great deal of interference from the Ministry. The simple concept is based on assignment of property rights, and a belief that the 'market' can resolve issues of efficiency and conservation. I contrast this with a 'thick' analysis, such as the one this thesis attempts, where I purposefully go looking for complexities that are the result of a long relationship with place; a long history of group dynamics, and a very difficult resource to manage.

[31] Contraction in the industry was the result of three years of closed seasons followed by a much reduced quota in 1996. The fishermen were the largest body to lose their jobs, but some consolidation of quota also took place among the owners. At least one owner left the industry after settling with the Government over Maori claims (see below—Maori involvement in the Bluff oyster fishery). There were 23 vessels in the fishery in 1996; 15 in 1997, and 12 in 2002.

failed to produce a firm statement on the form for fisheries plans (David Skeggs, pers. comm.). There is, of course, nothing stopping the BOMC from attempting to adopt various management measures (i.e. applying its plan) within its membership, independently of the Ministry. The fact that this has not yet happened is significant and would be a necessary starting point for future research into whatever institutional structure is eventually adopted in the fishery.

Stakeholder Groups

The intent of the New Zealand Ministry of Fisheries is to delegate the management of the country's fisheries to quota holders. In doing this, the Ministry must hold back certain key responsibilities with which it is tasked in the fisheries Acts of 1996 and 1999. The Ministry must set standards and oversee the management practices of the quota holders; it must also try to ensure sustainability of the fisheries through setting the level of exploitation (quota), and through ecosystem management and care for seafloor ecosystems. It is expected that the government and quota holders will cooperate to achieve these ends and that one way of accomplishing this will be through the formulation of fisheries plans.

This very simple model does not include all those with rights in New Zealand fisheries. Somehow the Government will need to find ways to allow fishers, and other New Zealand citizens that may not be quota holders, but to whom the fisheries nevertheless belong in many important ways, access to the system. This means involving persons other than quota holders or the Ministry staff in the management of fisheries. The Ministry calls these others 'stakeholder groups'. Because the stakeholder groups are something of an afterthought or add-on to the basic system, the system lacks rigour in defining the membership of these groups and in defining the extent of their powers in the system.

The Ministry has nevertheless identified three broad categories of stakeholder groups. These are: recreational; customary, and environmental groups. The recreational groups are represented by associations of recreational and sports fishers. The recreational groups should not be underestimated as the recreational fishing industry in New Zealand is large in monetary value, and is associated with a public right to fish that is jealously guarded in New Zealand as a 'birthright'. Recreational limits are generous enough that the recreational take could form an

important part of a family economy. Customary fishers are primarily Maori. In fact the term customary is synonymous with Maori in New Zealand fisheries. Maori rights to fisheries in New Zealand are well-established and much progress has been made in the past fifteen years in devising legal institutions that provide for Maori fisheries.[32] Whether non-Maori groups who have had a long customary involvement in a fishery might obtain customary status is an important question for future research.[33] The recognized environmental groups in New Zealand are:
The Royal Forest and Bird Protection Society of New Zealand; Greenpeace, and ECO. ECO is an umbrella group of environment and conservation organisations in New Zealand.

While the Ministry of Fisheries may be required by law to consult with stakeholder groups, it is unclear precisely how this takes place. In the case of the Bluff oyster fishery, letters are occasionally sent to various members of the Bluff community (e.g. the runanga, the oystercatchers' union) advising them of the Ministry's position with respect to the fishery and usually inviting comment. Often the context of these communications by the Ministry to the community precludes any real input from local people, who see the important Ministry decisions (i.e. on whether or not to open the oyster season) as more or less pre-ordained. And while the local fisheries Policy Advisor may understand the community well and be sympathetic to the views of its members, distance from the fishery and the requirements of working within the fisheries bureaucracy will filter out or water down the more strident local calls for closure of the fishery. Despite the failure of the consultation process (from the point of view of many Bluff locals), there is some indication that the Ministry is interested in working toward a truly inclusive system. I have been encouraged in my studies by the local policy advisor Allen Frazer, and when I asked what aspect of a study of the Bluff oyster fishery might be most useful to the Ministry, the reply had to do with ways in which stakeholders might be better represented.

Consultation among stakeholder groups in the formulation of Fisheries Plans is recognized as

[32] A significant role for Maori in commercial fisheries in New Zealand was established through the Fisheries Settlement Act 1992 which allowed Maori 50% of the country's offshore fishing capacity. On the traditional side, and in recognition of the close relationship between Maori and the smaller scale coastal economies, provision is made in law for the creation of Mataitai or traditional take areas that may be governed by councils of local Maori people.
[33] In recent Government statements surrounding the planned Sea-bed and Foreshore legislation (a pre-eminent issue in current New Zealand politics), customary groups are not limited to Maori, but might include other groups with long customary association with the sea-bed and foreshore. This could be an important precedent for the case of the Bluff oyster fishery and could offer the opportunity for fishermen to organize independently, if they wished, of the Maori customary stakeholder group.

a necessity by both the Bluff Oyster Management Company and the main science provider NIWA.[34] But what form will this consultation take? The word co-management has not yet surfaced in the discussions to date between the BOMC and the community, but co-management does appear to offer an opportunity to begin to resolve the many problems facing the Bluff oyster fishery. In a case study of co-management in the Paua (abalone) fishery in South Island New Zealand, Bathgate and Memon describe a number of problems in the consultation process. A working group consisting of Maori; the commercial fishing sector; the recreational sector, and environmental interests is described by by Bathgate and Memon. This co-management group initially achieved a number of important management successes for the Paua fishery in area 5 (e.g. development of a harvesting code of practice; opening communication channels between competing interests; providing a forum for sharing ideas and making policy recommendations). However, despite the several successes in the early years, the PAU 5 Working Group eventually went into hiatus, and so failed to deliver a long term management solution. The primary reason cited for the group's demise is that it did not receive legal management rights (Bathgate and Memon 2000). The wider social, economic and political context is also cited by Bathgate and Memon as reason for difficulties in co-management:

> The problems in ensuring adequate representation and community involvement in PAU 5 exemplify the difficulties facing any attempt to introduce cooperative resource management strategies into a highly individualistic and capitalist society such as New Zealand. Recent moves toward cooperative stakeholder strategies within fisheries management appear to be something of an enigma. Or rather, they reflect the inability of the purely commercial, individualistic approach of the market economy to sustainably manage marine ecoystems (Bathgate and Memon 2000, p 257)

Bathgate and Memon correctly emphasize the importance of the effect of political ideology on the resource management framework, but are wrong to locate this problem in the New Zealand society as a whole (i.e. 'highly individualistic and capitalist society'). The enigma Bathgate and Memon describe is located within the Ministry of Fisheries. It is the Ministry who have the power to advance co-management, and it is up to the Ministry to create the institutional framework that will allow this to occur.

[34] Meeting between the Bluff Oyster Management Company, the National Institute for Water and Atmosphere, and the Awarua runanga in Bluff on March 27th, 2004.

Assessing the QMS in terms of common property theory indicators

A central question, perhaps *the* research question of this study is whether common property management theory might contribute to the sustainable management of the Bluff oyster fishery. The Bluff fishery is both enticing and off-putting in this respect. It possesses several important features of a commons management system while presenting a history of conflict and exclusion that would seem incompatible with governing a commons. The 1995 Plan for the BOF notes, among several other problems: distrust between sectors; poor communication between sectors; not all sectors involved in decision making; blaming other parties; historic bad relationships, and misinformation or mistaken messages. Nevertheless, the fact that the 1995 Plan described these problems indicates a high level of potential for resolving them—awareness being the first step of the process of change. High levels of conflict must not be allowed to overshadow the co-operative achievements of the industry. There have been occasions throughout the recent history of the fishery when opposing sides have spoken with one voice. The 1995 Plan for the fishery is perhaps the best example of opposing forces combining to produce a superlative result. In the case of the BOF, this positive, sustainability-building result (i.e. the Plan for the fishery) was not produced through a simplification or a rationalization of the fishery, but was developed through a richness associated with conflict and complexity. The introduction of individual transferable quotas (ITQs) to the BOF represented a rationalization of the rights-holders in the fishery, and led to simplification (through elimination of opposing parties) in management. However the changes have cost sustainability (particularly when the social aspects of sustainability are considered—i.e. dispossession), and no indication has followed that the problems of commons management (e.g. avoiding the tragedy of the commons) have been successfully addressed.

The QMS (in the New Zealand version which includes individual transferable quotas—ITQs) is hailed as a 'property-rights system' of management. But property-rights are a universal cultural attribute, probably present in every system of goods-sharing on Earth. And so, we have to qualify the definition of a 'property-rights system', to more fully describe what this name means in the context of our particular QMS example. Also the way in which the particular 'property rights system' operates can only be understood within the broad political and economic context. It is a question of making the jump from the institutions available for resource management (the tools of the trade), to the political infrastructure of goodwill and the facilitation required to bring these institutions into effect. By themselves ITQs are a

legal/administrative concept; to make them work in fisheries management requires an explanation, a theory, some kind of structure around which the concept might be developed. But this is where things become difficult to assess. The idea that the assignment of permanent property rights will lead to good stewardship on the part of the owners of those rights might have merit (and might be incorporated into a fisheries plan), but is much too dubious a thesis on which to base the entire management of a fishery. To compensate for this weakness, QMS activists refer to the economic ideology of neo-liberalism (i.e. it fits in with the way government is headed these days). But to refer back to neo-liberal economic thinking, means to import all the contradictions of that thinking. Hence the contradiction between democratic ideals (i.e. sharing wealth and power), and the profit motive of neo-liberal capitalism (under which the rule is to grab what one can at the expense of everyone else). Government, caught within this contradiction, ends up doing nothing. Not one of the critical issues of social and environmental justice is satisfied.

Property rights have always played a role in the management of the Bluff oyster fishery. In this context we should see the historic licensing system together with the industrial contracts between employers and fishermen as institutions forming a set of property rights. These rights included formal and informal rights that included fishermen in the management of the resource. Whether the historic array of institutions for collective action under which the BOF operated was sustainable is unknown because it was changed precisely at the point in time in which it faced its greatest challenge[35]. Some institutional change may have been necessary in the management of the BOF, and individual transferable quotas may have been a necessary and appropriate institution to apply. However, ITQs do not, and cannot speak to the central management problem of the fishery. Sustainable management requires a common view of the fishery, independent of the justifications and rationalizations that are a result of self-interest and collective denial. These are problems of human understanding and communication which can be addressed only in an open fora (i.e. with outside help). ITQs have not resulted in changed management of the BOF because it was the thinking of the people involved, not the institutions that needed changing. The BOF was, and still is an open access fishery. ITQs have done nothing in the case of the BOF to avert the tragedy of the commons. Almost the unique remaining management technique is that of setting quota, and it is very difficult to avoid the cynical conclusion that each year the quota simply follows the population decline of the

[35] There is no doubt that historical management of the fishery could be classed as mis-management, in that the enormous environmental consequences of the fishery were never addressed. This was, however, not caused by institutions *per se*, as it was caused by the mindset (or the lack of mindfulness) of the participants in the fishery.

oyster.

The take home message from the experience of QMS-ITQ management in the Bluff oyster fishery is that fishery management cannot be based solely on propery-rights. Property rights have to be accompanied by other institutions that will ensure co-operation. The Bluff oyster fishery has had, through its entire 150 year history, clearly defined property rights. Rights to catch oysters had always been tightly limited and jealously guarded (Knight 2003). Hence the introduction of ITQs did nothing to aid in clarifying property-rights. The unfortunate effect of the QMS was that previously existing institutions for cooperation between rights-holders were eliminated in favour of a too-thin adherence to the idea that property-rights would automatically protect assests under the QMS. Future directions must now be concerned with trying to re-establish those institutions for co-operative behaviour that the fishery previously enjoyed.

Conclusions; and where to from here?

Though the Ministry is consulting the larger community, this consultation is somewhat ad hoc; the role of those consulted lacks an official cast, or a legally sanctioned and specified influence in the management of the fishery. MFish together with their industry partner the BOMC, and the main science provider, the National Institute for Water and Atmospheric research (NIWA), dominate the management and scientific approaches to the fishery respectively. The Bluff community is not organized, and individual voices, while compelling, tend to disappear from the record. Murray Black is one of the most outspoken of the oystermen and represents the thinking of an important group of conservation-minded fishermen. Black believes that the fishery is being dredged to the last oyster. His belief is based upon close observation of catch-rates which he believes are so low that there are no longer enough oysters left from which the fishery might recover in the future. “At the end of the day”, Black says, “the evidence is on the deck of the boat (Murray Black, pers. comm.)”. This practical assessment of the fishery, referring to the very low catch rates experienced in recent years, is at odds with the official position represented in reports from the Ministry of Fisheries (Annala, Sullivan et al. 2002), and with a recent press release by the Minister of Fisheries which states: "Fishing is believed to have relatively little influence on the beds given the losses to Bonamia … The reduced commercial catch limit will help ensure that the

fishery recovers as rapidly as possible once the disease has run its course (Benson-Pope 2004)."

The focus of the Ministry reports and of the science performed under contract to the Ministry is on oyster disease, and on the counting of oysters for the purpose of calculating yield for the fishery (Dunn 2004; Michael, Dunn et al. 2004). It is a narrow focus (i.e. top heavy science) which comes from a long history, solidly entrenched, and not without political support.[36] However for several years an eco-systemic approach with a focus on oyster habitat has been gaining momentum. It is becoming accepted by the scientific community that the issue of oyster disease cannot be addressed in isolation from the issue of habitat destruction. Fisheries Advisor Rose Grindley states, "The potential for adverse impacts on the seabed from dredging is widely recognised." Grindley goes on to state that the problem is one of determining, "… what level of dredging is appropriate … (Grindley 2004)." It is clear that dredging is much too destructive to be allowed to continue in an ad hoc manner. A soon to be released plan by the Bluff Oyster Management Company may address the critical issue of the intensity of disruption of seafloor ecosystems by repeated dredging. The trouble is that the plan has not been released in time to allow for adoption by the various fisheries stakeholders before the beginning of the 2004 oyster season (April—October). It appears that the industry (with approval of the Ministry of Fisheries) intends to continue oyster dredging without establishing formally sanctioned management measures that address the major social and environmental problems facing the fishery.

It is therefore up to the activist side of the fishing community to advance a sustainable approach to the fishery, one in which humans are included in the ecology of the fishery, and one in keeping with the precautionary principle embodied by NZ fisheries legislation. The following conditions will need to be met:

- The larger community of concern, not yet formally included in management of the fishery, must be identified and empowered.

- A management plan must receive general approval from the wider Bluff community of

[36] The BOMC find themselves reasonably well served under the Ministry/NIWA approach. They do not, for obvious reasons, support the more conservationist approaches of: the environmental movement; customary users; the Oystercatchers' Union, and a number of important members of the local community who are representative of conservation-minded fishermen and their families in Bluff.

interest identified above.

In order for a management plan to be satisfactory, it will need to resolve the differences between the Shellfish Working Group approach (i.e that of MFish and NIWA), and the practical approach in assessing the state of the fishery. In other words there needs to be a marriage between scientific approaches and fishers' ecological knowledge.

The Quota Management System is probably here to stay in New Zealand fisheries management, and so we need to find ways of working within and around the system to rebuild and reclaim the local inshore fishery economies. The QMS is partially responsible for the decline of much small scale, local fishing culture (Hargreaves 1998). Carrying on the traditions of the inshore fishers will henceforth contain as much struggle with politics and civic engagement as it will that of going to sea. Fishers will need to stand up to the bureaucrats and scientists, produce arguments and win powers in the system. They must attempt to change a management system (the QMS) that places quota holders closer to the centre of the system than they themselves. And they will have to pool their collective understanding and belonging to place wherever they have been cut off from traditional livelihoods. In order to find new ways to develop and to continue the fishing tradition, we might require a generation more in tune with information technology than with the rigours of fishing. In that case we might hope that when the political work is accomplished, the sea will take its people back.

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