

**DISMANTLING THE BATTLE LINES –
REDUCING COMMERCIAL AND RECREATIONAL FISHERIES CONFLICT IN NEW ZEALAND**

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ABSTRACT

Conflict between the recreational and commercial sectors in New Zealand is largely limited to the fishery within the Territorial Sea. Although most of New Zealand's fisheries' value comes from mid to deep water stocks outside the Territorial Sea, there are a number of commercially valuable inshore fisheries.

Traditionally, conflict between the two sectors has been resolved through spatial management tools. However since the introduction of individual transferable quotas in the commercial sector (1986), conflict between the sectors has increasingly shifted towards disputes over allocation of the Total Allowable Catch.

The Fisheries Act 1996 current allocation process is discussed along with several cases where the High Court has provided advice on the allocation process. The contrasting positions of the two sectors towards such an allocation process are discussed. Allocations would be difficult to define because the precision of recreational catch estimates is low, and secondly because there is no common basis for determining the relative value of the two fisheries.

To provide a framework for understanding the nature of the New Zealand recreational and commercial fishery, the two sectors are compared using three characteristics; governance, institutions, and rights.

The paper concludes with some principles which may provide guidance on reducing conflict between the two sectors.

Keywords: New Zealand, spatial controls, governance, rights, institutions.

INTRODUCTION

This paper discusses the relationship between two of the three fishing sectors in New Zealand in the inshore coastal zone of shared fisheries in the northern fishing area (Fisheries Management Areas 1 and 9).

Fishing and fishery characteristics vary within New Zealand. The fishing area FMA 1 & 9 was chosen for this study because the Northern half of the North Island is an important inshore fishery for both the commercial and recreational sectors. More than two thirds of the recreational fishers are domiciled within Fisheries Management Areas FMA 1 and FMA 9 (Figure 1).

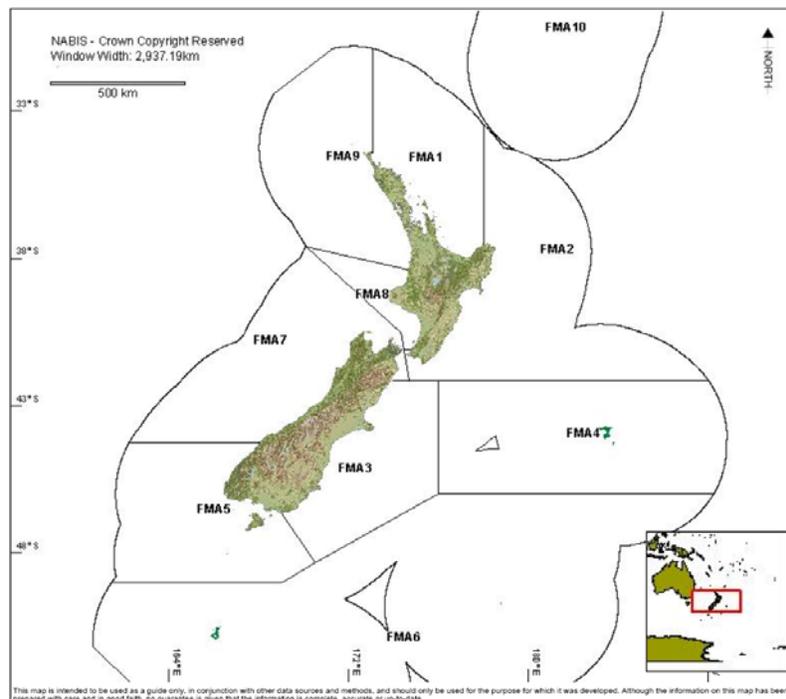


Figure 1. Commercial Fisheries Management Areas

Whereas estimates of total catch in the commercial fishery fishers are likely to have a high level of precision (since there are several checks and balances to ensure accuracy of landing information) the same cannot be said for the recreational catch. Surveys of recreational catch within a half decade of each other have shown very significant differences in estimates of catch. Table 1 summarises the relative harvesting levels by sector in 2000 (at the time of the most recent national survey of recreational catch). Although the recreational catch for six of the 22 species may exceed the commercial catch, the conflict between the sectors over the respective sector allowances has been limited to two finfish species kahawai (*Arripis trutta*) and snapper (*Pagrus auratus*).

Table 1. Recreational and commercial catch estimates (tonnes) 1999 – 2000 [1]

Species	Fishstock	Commercial	Recreational	% Recreational
Paua	PAU1	1.88	59.10	96.9%
Yellow eyed mullet	YEM1	8.59	16.60	65.9%
Red cod	RCO1	4.41	8.30	65.3%
Blue cod	BCO1	14.36	22.50	61.0%
Snapper	SNA1	4,550.82	6,242.10	57.8%
Rock lobster	CRA2	235.00	235.90	50.1%
Hapuku Bass	HPB1	385.90	342.30	47.0%
Rock lobster	CRA1	126.00	102.30	44.8%
Trevelly	TRE1	1,444.70	677.40	31.9%
Tarakihi	TAR1	1,420.09	635.60	30.9%
John Dory	JDO1	536.14	227.20	29.8%
Snapper	SNA8	1,608.76	597.50	27.1%
Flatfish	FLA1	787.89	269.60	25.5%
Yellow eyed mullet	YEM9	25.14	6.20	19.8%
Gurnard	GUR1	988.76	222.80	18.4%
Grey mullet	GMU1	819.14	102.00	11.1%
School shark	SCH1	821.24	65.90	7.4%
Jack mackerel	JMA1	2,918.52	125.40	4.1%
Trevally	TRE7	2,288.66	80.70	3.4%
Barracouta	BAR1	10,004.66	279.30	2.7%
Rig	SPO1	628.92	17.40	2.7%
English Mackerel	EMA1	3,602.07	64.00	1.7%
	Total	33,221.66	10,400.10	23.8%

Conflict between the sectors over the respective sector allowances has been limited to two finfish species kahawai (*Arripis trutta*) and snapper (*Pagrus auratus*).

Current assessment of kahawai stocks suggest that the species is being fished at around its target biomass. The kahawai commercial allocation is currently some 1,100 tonnes and the recreational catch allowance is around 1700 tonnes. The difference between these allocations and the Total Allowable Catch (of 3,315 tonnes) is the allocation to New Zealand's indigenous race (Maori) customary use, and an allowance for other forms of fishing related mortality.

Snapper is the primary target species for hand lining (the dominant recreational fishing method). In FMA 1 the commercial catch allowance is 7,550 tonnes and the non-commercial (recreational and customary Maori) allowance is 2,600 tonnes recreational allowance with 450 tonnes allocated for other forms of fishing mortality.

Spatial closures

Traditionally, conflict between commercial and recreational fisheries has generally arisen over the impact of the much larger and more efficient commercial fishing units in areas where recreational fishers operate. For example, commercial fishing may be blamed for the perceived lower catch rates of recreational fishers in a localised area or harbour. In New Zealand the conflict was often resolved by spatial separation, or more correctly the exclusion of commercial fishing from important recreational fishing areas.

The following tables summarise the changes in spatial controls for the recreational and commercial fisheries the management areas FMA1 and FMA9. The data used is for finfish and crustacean species. Information was analysed from the Fisheries regulations for the period 1970 to 2002 – 16 years before and after 1986 (the year the quota management system was implemented in the commercial fishery).

The data does not include closed areas for mammal protection or fish protection purposes (such as protection of juveniles or species of special conservation interest). However in cases where the closure was introduced for juvenile protection and to manage recreational/commercial conflict, the closure has been included in the tables. Closures for marine protected areas (e.g. marine reserves) are not included; the purpose of such controls was not to resolve conflict between fishing sectors.

In most cases, records of the reasons for the closures prior to 1970 are not available. The data since 1970 was developed from published reports supplemented by the author's knowledge of the fishery over the last 35 years.

Closures introduced to the recreational fishery 1970 - 2002

The recreational fishery has remained largely unconstrained by spatial controls. In 1970 spatial closures were limited to a few harbours and seasonal controls for biological protection (such as spawning scallops and soft shell lobster).

From 1970 to 1986 few additional area or seasonal controls were introduced to the recreational sector (Table 2). Only one of the closures was introduced to manage recreational catch; although other controls were introduced for marine protected areas, biological protection and non-fishing reasons (eg airport security).

From 1986 to 2002 only one closure to manage recreational fishing was introduced.

Table 2: Recreational fisheries closed areas 1970 - 2002

Fishing years	All finfish methods	Set net	Hand or long line	Drag net
1970	0	0	0	2
1971 - 1978	0	0	0	0
1979 - 1986	0	0	0	0
1987 - 1994	1	0	0	0
1995 - 2002	0	0	0	0

Closures introduced to the commercial fishery 1970 to 2002

Prior to 1970 spatial closures were primarily targeted on the power fishing methods (trawling and danish seining). Table 3 summarises the closed areas as at 1970. Drag netting was also restricted because the method mainly operated within sheltered harbours (and therefore created conflict with recreational fishers).

Table 3: Closed areas/seasons by fishing method – in place in 1970

Fishing year	All finfish methods	Trawl and danish seine	Set net	Longline	Drag net
1970	0	47	1	0	6

From 1970 to 1986 (Table 4) the historical pattern of area control management continued through increased area controls on power fishing. Since the introduction of the QMS the number of new power fishing spatial controls has reduced (Table 5), but several area closures have been introduced for other commercial fishing methods traditionally not restricted by closed areas.

Table 4: New closed areas/seasons by fishing method – 1971 to 1986

Fishing years	All finfish methods	Trawl and danish seine	Set net	Longline	Drag net
1971 - 1978	0	12	0	0	0
1979 - 1986	0	20	0	0	0

Table 5: New closed areas/seasons by fishing method –1986 to 2002

Fishing years	All finfish methods	Trawl and danish seine	Set net	Longline	Drag net
1987 - 1994 ^a	2	8	0	0	0
1995 - 2002	0	2	2	1	2

The history of closures demonstrates a number of characteristics.

- Where recreational and commercial fishery conflict has occurred, the commercial sector has borne most of the closure impact.
- Closures have been targeted to power fishing methods (danish seining and trawling).
- Since the introduction of the QMS, the number of new closures for power fishing methods has decreased, however closures appear to remain a prominent response to conflict resolution between sectors.
- Closures for both power and non-power fishing methods have been used infrequently, but have become a tool of the new QMS regime.
- There are now extensive area closures to commercial fishing and in particular to power fishing in the inshore waters where recreational fishers operate. The need and value of these closures have not been reviewed since the introduction of the QMS.
- Most of the disputes which led to the closures were local area/harbour conflicts. The frequency and geographical location of disputes are unpredictable and 'wild cat' in nature. Under the current 'command and control' management regime they are likely to be a recurring problem for management.

The use of input controls (in a commercial fishery which is supposed to be output control driven) may undermine commercial confidence in the QMS. There is concern within the New Zealand commercial sector about the level of constraint on the commercial sector compared with that in the recreational sector, and the potential for this trend to escalate.

One factor which may mitigate against the local area conflicts is the decline of the smaller commercial fishing units (less than 15 metres in length) in what appears to be a response to consolidation of quota holdings since the implementation of the QMS. Particularly in the Hauraki Gulf and Northland regions the number of commercial fishing units operating within harbours and close inshore has declined dramatically [2; 3]. Probably the most extreme example, the commercial longlining in the Bay of Islands has decreased in the last two decades from over 40 fishing units to only one unit – and that unit (because of fisheries regulations) can only operate seasonally in the Bay. Although there were numerous personal reasons for commercial fishers exiting, two generic causes were the selling of quota to medium to large fishing companies, and fishing units not being able to lease or buy sufficient or suitably priced quota to enter the industry. The second factor (particularly relevant in Northland) is the reduction in fish receivers and processors over time as industry consolidation occurred and consolidated quota into fewer hands.

Conflict over the TAC and TACC

Since the introduction of the QMS another conflict forum has developed between the recreational and commercial sector; the setting of total allowable catch (TAC) and the total allowable commercial catch (TACC). Where QMS fisheries are shared between commercial and non-commercial sectors seek to maximise their access to the fishery and effectively are in competition with each other over access. This competition is now starting to be 'played out' in the TAC/TACC setting process.

The process for determining the commercial allocation in QMS fisheries, as defined in several sections of the Fisheries Act 1996, is as follows:

- S 8 of the Fisheries Act provides for the utilisation of the fisheries resource while ensuring sustainability. Although utilisation is the primary focus, sustainability of the resource must be considered concurrently.
- S 9 requires that decisions take into account a number of environmental principles. For example associated or dependent species should be maintained above a level that ensures their long term sustainability.
- S 10 requires that decisions shall take into account certain information principles. For example the best available information should be used and the level of uncertainty in the information needs to be considered.
- S 11 requires the effects of fishing on the stock in question and the aquatic environment to be considered, and the level of existing controls and conservation measures or relevant legislation but not part of the Fisheries Act.
- S 13 requires the TAC to be set at a level that maintains the stock at or above the maximum sustainable yield (MSY) or in a way that moves the stock to this level. As part of this process the Minister must consider any relevant social, economic and cultural factors.
- S 21 requires the Minister in setting or varying the total allowable commercial catch (TACC) shall allow for Maori customary non-commercial fishing interests, recreational fishing interests and all other mortality to the stock caused by fishing. In setting these allowances the Minister must take into account any non-commercial fishing controls (such as Maori reserves).

The Fisheries Act provides the Minister with discretion (within the constraints of the Act) to determine the TAC and the allocation/TACC allowance process. The approach required by successive Ministers is to weight a range of factors (set out in s 8 – 21 of the Fisheries Act) on a case by case basis. With such a process each TAC and TACC is not predictable from the fisheries data, and so uncertainty arises about how decisions will be made.

This uncertainty and the expectation of how the Minister should decide various allocation/allowances have led to challenges to his decisions being brought in the High and Appeal Court. The most recent of these cases (2007 and 2008) related to the Minister's decision processes around the introduction of kahawai (*Arripis trutta*) to the QMS and provides insight into the different points of view between the sectors.

In the kahawai case the key concerns of the recreational sector were *inter alia* that:

- Inadequate consideration of the social economic and cultural interests by the Minister
- The Minister in setting the recreational allocation relied solely on recreational catch history information (from the Ministry's national fishing when this information is uncertain. The recreational sector and the High Court had supported a 'utility' approach (an assessment of the social, economic and cultural wellbeing) as being more appropriate for allowance decisions.
- Failing to consider the management by national as well as regional stock, especially where there was evidence of some regions being more heavily fished than others. In particular the Minister should have given special consideration to one area (the Hauraki Gulf) where special legislation required the Minister to take particular interest.

Key concerns from the commercial sector were *inter alia* that:

- The Ministry's estimates of recreational catch for the species in question (kahawai) was uncertain, unreliable or inaccurate, and that these factors should have been reflected clearly in the setting of the sustainable limit (the TAC).
- The level of the recreational catch is not accurately monitored or assessed. The industry thus preferred a catch history (qualitative approach) to a utility approach in setting the recreational allowance.
- Minister did not constrain the recreational sector catch (by reducing the recreational bag limit or setting a minimum legal size for kahawai. In spite of this lack the TACC was reduced in two successive years (by 15% and 10% respectively).
- Lack of constraint on recreational sector could result in the benefit of the commercial reduction being lost.

In relation to these concerns the Appeal Court determined that:

- The Minister in setting the TAC and TACC did not give adequate regard to the ‘social, economic and cultural well being of the people’.
- The Acts purposes of sustainability and utilisation must be considered in unison when setting the TAC and TACC. An earlier High Court decision had interpreted the setting of the TAC as being a sustainability issue and the allowance/allocation mechanism as being a utilisation issue.
- That considerations about the “social, economic and cultural well being of the people” did not favour any sector, or interest and must be applied to all.
- That the Minister could use catch history information (quantitative factors) to determine the allowance to recreational fishers provided he/she was well briefed on the qualitative factors (such as the anecdotal information).
- ‘Particular regard’ imposes a greater obligation than does ‘regard’ but that this requirement depends on the circumstances.
- The Act does not impose a duty on the Minister to achieve sustainability at all cost, and thus there was no obligation to determine a theoretical limit on the recreational catch. [4]

The process to date suggests that conflict between the sectors over the TAC/TACC setting process may intensify.

Current management of recreational fisheries does not set an effective upper limit to the recreational catch. Thus at present there may seem to be little incentive for the recreational fishers to challenge the allocation process.

However if recreational catch increases or the sustainable yield decreases (possibly due to environmental or other non-fishing causes), incentives to compete will increase. Recreational catch may increase for no other reason than a general population increase which creates greater pressure on the sustainability of the resource.

Since the mid 1990s the Courts have recognised that the Minister could increase the allowance to the recreational sector because of the general population growth and patterns; in fact it would be ‘... strange if the Minister was precluded by some proportional rule from giving some extra allowance’ [5] provided all relevant considerations had been made.

The commercial sector has sought to bind the recreational catch to a fixed proportion of the TAC. One advantage of such an approach would be to address a potential recreational fisher population increase by capping the recreational catch.

However the recreational sector have opposed this allocation approach and claimed a priority right to access over the commercial sector. This position has not been upheld by the Courts, although it has been recognised that the allowance for the non-commercial sectors occurs before an allowance can be made to the commercial sector (the TACC). Further the Courts have recognised that in the unlikely scenario that the non-commercial sector allowance could take all of the TAC leaving the TACC set at zero.

COMPARISON OF RIGHTS, GOVERNANCE AND INSTITUTIONS BETWEEN SECTORS

Rights

The recreational sector rights are derived from the common law which provides an unfettered right to fish using whatever gear, wherever and whenever the fisher chooses, provided the activity is not constrained by the Amateur Regulations.

Prior to the 1980s, Amateur Regulations to manage the recreational sector were based on effort controls (limitations on dimension of fishing gear) and biological controls (such as minimum fish and mesh sizes).

Bag limit constraints for most finfish species were introduced in 1986. Prior to that only two finfish bag limits were regulated. The first applied to all fishers and limited marlin catches to five fish per vessel per day. However this control was removed in the mid 1970s (following the introduction of the extended economic zone - EEZ) to allow for commercial fishers to take a marlin bycatch. The second bag limit was introduced for a range of finfish species in a sub-area of FMA1. The control again applied to all fishers and was introduced, not as a recreational control, but as a measure to restrict illegal fishing during the restrictive licensing regime for commercial fishers prior to the QMS introduction.

However since 1986, regulations have progressively decreased the recreational fisher's bag limits. These controls do not have a strong conservation basis since the limits are not linked to the sustainable yield or changed to reflect changes in the TAC.

The recreational fishery is an open access one; all New Zealanders and overseas visitors have equal rights of access and harvest. Although freedom of access is a valuable right, it is now widely held that ease of access (or more correctly inability to exclude) lowers the value of the right. The inability to exclude fishers will likely lead to overfishing, free riding within the recreational fishery and result in spill-over and externality effects on other sectors.

The commercial fishery rights are largely statute-based, particularly since the introduction of the quota management system (QMS) legislation in 1986. Commercial fishers also have common law rights [6] Commercial fishers fishing under the QMS have harvest rights issued as individual transferable quota. In contrast to the collective nature of the open access fishery, the QMS commercial fishery rights are centred on a bundle of individual rights. Commercial fishers consider the ITQ to have a high quality of title. In particular the individual nature of the right, the indivisibility of the right and the ability to trade quota, and the ability to determine when in the fishing year the right will be exercised.

Although statute-based rights are generally considered to be more secure than common law rights, the history of ITQ rights demonstrate that the rights are not immutable and can be changed significantly in spite of strong opposition from rights' holders. Two examples of such 'radical changes' were the change from fixed tonnage to proportional quota (and more critically the removal of the right for quota holders to be compensated for quota reductions if the TAC was reduced), and the allocation of a fixed percentage of any new quota to Maori.

Many quota holders now believe the allocation of quota to Maori has strengthened all quota holders rights; the decision to allocate quota to Maori was part of the Deed of Settlement to Maori providing full and final settlement to Maori commercial fishers for breaches of the Treaty of Waitangi.^b They argue that the Crown would not (for example) reallocate quota to the recreational sector because this action would create fresh grievances under the Treaty of Waitangi. However legal decisions (particularly Decision Snapper)[7] appear to dismiss that claim, stating that Maori quota holders have no rights or protection above those of other quota holders.

A fishing right comprises a bundle of authorisations and relationships to undertake specific actions in a fishery [8]. The overall quality of the property right can be characterised by the quality of four authorisations [9]

1. Access. Both commercial and recreational rights have a generic authorisation to access the marine environment. However the commercial right also requires a permit to fish. Issuing of permits may be conditional (for example, be tied to the fisher having access to a minimum quantity of quota).
2. Withdrawal. Both rights have a generic authorisation to take fish from the sea.
3. Alienation. Only the commercial right has an authorisation to buy or sell fishing rights, which can be exchanged as either a current year harvesting authorisation (lease) or a sale of the right in perpetuity (sale). The commercial right is an individual right (not a collective right) to harvest a specified level of fish within a prescribed area.
4. Exclusion. Neither the commercial nor the recreational right has authorisation to exclude fishers. In the commercial fishery there are exclusion rights but these are held by the Crown and not the harvest rights holder. A rights holder may purchase the entire quota from a fisher and thus exclude him/her from fishing at the point of sale; but the 'retired' fisher may then lease/purchase quota and re-enter the fishery. Exclusion occurs in a commercial fishery where new entrants cannot acquire quota or are excluded by some permitting constraint. Thus quota holders fish in a fishery with an exclusion authorisation but the Crown (and not the quota holder) exercises the exclusion.

Unlike the commercial QMS fishery, recreational fisheries are open access. Neither the recreational fishery rights holder nor the Crown have exclusion authorisation.

5. Management. Acting as individuals, both the commercial and recreational have wide ranging authority to determine their own fishing patterns (such as location, season and gear). This authorisation is limited by rules set in the fisheries regulations. Regulations for the commercial sector are more restrictive than those on the recreational sector in some respects (e.g. areas fished) but other factors are less restrictive (e.g. size of gear which can be used)

In contrast to the individual situation, collective management authorisation (to determine management rules for the fleet) is weak. Never-the-less some de facto rules apply (usually as voluntary agreements, or processor rules). One example is processor limits on the amount of fish a vessel can land on a given day. Given the common pool resource nature of fishing, the lack of authorisation for rights holders to condition the fishing activity of the fleet reduces the quality of the fishing right. Added to this the power of the fisheries agency to

unilaterally set constraints on the sectors (two examples in the QMS regime were discussed above) further reduces the fishing rights quality. It would seem that the QMS has been built on a strong business model (individual harvest rights with the authority to buy and sell/lease these rights) but a poor self determination and self management model.

GOVERNANCE AND INSTITUTIONS

Mandate and governance structure

The commercial sector has more than 30 Commercial Stakeholder Organisations (CSOs). These are usually based around a quota management fishery. The structure for the CSO is defined in the Fisheries Act and provides a strong mandate to represent their sector.

At a national level, the industry is represented by the New Zealand Seafood Industry Council Board which is elected by the CSOs. The Council has a cadre of professional staff providing advice to the Government and to its members on a range of topics, including policy and research and growth of the industry.

By comparison the recreational sector has two bodies claiming to represent recreational fishers (the New Zealand Recreational Fishing Council and Option4). At times the two bodies give divergent advice to the Ministry on fisheries policy. Both of these bodies have limited membership (in comparison to the total marine fisher public) and cannot claim a clear mandate at either local regional or national level. Effective consultation (both downward and upward) with the wider body of recreational fishers is unlikely to be achieved with the current structures.

One recreational fishing body does however appear to have an effective mandate and communication decision making with its constituents, a focused group of recreational fishers. This is the New Zealand Big Game Fishing Council (NZRFC) which represents some 30,000 game fishers. Through a process of clubs, regional bodies and a national council, the game fishers can effectively communicate, make decisions, and advocate with a strong mandate. This group's cohesion is probably due to the nature of the fishery (generally offshore vessel fishing limited to a small number of species), the requirement to be a club member to register the catch (for competitions and national/international records), and a strong local club/competition structure.

Consultation and rule setting

CSO consultation and decision making among members is usually undertaken using standard processes which are defined by legislation and commercial practice. Voting on rules is usually made by consensus, but significant decisions affecting the fishing right require a formal notice of meeting, the use of a legislated voting process, and a minimum percentage of approval (larger than a majority) by rights holders. Usually the voting power of a quota holder is determined by his/her proportion of the total quota held.

Voluntary constraints are also widely used. For example, there are at least 60 voluntary closed area controls in place as a result of individual agreements or codes of practice [10].

For the recreational sector much of the decision-making is ad hoc, although consultation with executive and other members occurs for more significant issues. Option4 on the other hand does not have an executive and consults with its members through email and informal meetings. Major submissions from the three recreational groups are all developed by an iterative process of several consultation and review rounds until a common position evolves.

Rule setting in the recreational sector is usually done at a local club level mostly as a voluntary constraint. These constraints are often promoted to the wider fishing public through the recreational fishing magazines. The NZRFC has a number of rules which apply to all clubs and others implemented by individual clubs. Breach of these rules may in some cases lead to expulsion of a member from a club and a bar to membership of any other NZRFC club.

Conflict management

Since most decision making is by consensus, conflict is usually managed by negotiation between the parties. Where a member does not agree with the view of the majority there are few sanctions other than moral pressure to gain compliance. However at least one CSO requires their members (or the vessels that are fishing quota) to sign commercial contracts, thus opening the way for remedies through the civil courts if breaches occur.

There are no formalised conflict management processes in the recreational sector. The two main recreational groups have had strong differences of position about fishing policy in particular. These public divisions undermine the credibility of the recreational mandate and are a matter of concern to the Ministry and other fishing sectors.

Policy development and advocacy

Although individual CSOs are likely to propose and advocate for management and policy change, most of this role is taken by the SeaFIC as the national association. SeaFIC has a cadre of scientists and policy advisors who regularly advocate for the industry on issues. There are also a number of standing committees or institutionalised forums provided in the Fisheries Act, or developed by the Ministry of Fisheries, to allow input and feedback from the commercial sector.

The recreational sector has permanent staff providing a advocacy or policy development role, however a number of recreational fishers with policy or fisheries science backgrounds assist the recreational fishers with their submissions. Because recreational fishers do not pay access or management fees for their fishery, funding recreational sector involvement in the Ministry's policy or management initiatives is unlikely in the foreseeable future. Lack of involvement in these processes mean the recreational sector neither participates in the management to the extent it should, nor feels an obligation to support the Ministry's initiative. Consequently the recreational sector's response is often reactive and at times destructive to policy and management processes.

Governance and Institutions between sectors

Given the factors discussed above (particularly in relation to the recreational sector) it is not surprising that governance institutions between the sectors are almost negligible. What attempts at joint governance that have been attempted have been ad hoc, poorly planned and resources and consequently defunct within five years.

How might conflict between the sectors be reduced?

Seven principles are suggested as a framework for reducing the conflict. These are:

Build accurate/timely information systems available to all sectors

In particular greater precision on recreational catch estimate is required. Given the cost of such recreational surveys, point estimates of catch should be determined every decade or half decade for the most important species, and less costly surveys to monitor trends should be used in the intervening years. Determining the most important species to monitor should be made by a joint Ministry tri-sector process.

Develop a mechanism for managing the level of the recreational catch.

Once mechanisms to accurately monitor recreational catch are in place, managing the catch within allowance limits becomes possible. How this could be done will require negotiation between the Ministry and the recreational sector, but also require the approval of the Customary Maori and commercial sectors. Two options might be:

- Hard recreational TACs managed by bag limits, minimum fish sizes or seasons.
- Purchase of quota from the commercial sector to balance expanding catch. However this approach would require quota to be available at an acceptable price, and there is the issue of who would pay for the quota.

Clarify the legal rights of the sectors.

Although the option of integrating the recreational sector into the QMS has been a suggested approach, to do this would founder under the current (lack of) recreational institutions and structures. However harmonising institutions between the two rights could reduce conflict. Examples of such harmonisation are determining a process for allocations between sectors when the TAC changes, and making transparent the approach for managing increases in the recreational fisher population. Such a mechanism is likely to have wider use in adjusting catch allowances between sectors without the uncertainty surrounding the Minister's TAC and TACC setting process.

Build management institutions and rights within and between sectors

Currently the management of New Zealand's inshore fisheries is by central "Command and Control". Ministry and industry initiatives at co-management and increasing the rights-holder role in management planning, begun in the late 1990s, founded in early 2000. Conflict should reduce if sectors have authorisation in their rights to self-manage and therefore resolve internal disputes and disputes between sectors without recourse to Ministry/Ministerial arbitration processes. However if the history of inter-sector negotiations are not to be repeated institutions to assist inter-sector negotiation are needed. For example, the issue of mandate within the recreational sector must be resolved and resourcing needs to be developed to ensure the sector plays its part in developing and supporting fisheries management initiatives.

Build social capital structures between sectors

At present the Ministry's approach appears to be focused on processes to build social capital *within* the non-commercial sectors but not *across* the sectors. Forums and institutions that promote trust and co-operation between sectors are likely to reduce conflict. Since the recreational sector is poorly resourced the Ministry has a role in facilitating the social capital development.

Promote rights holder solutions - not issue top down autocratic fiats.

It should be obvious that the parties to the conflict are better able to find optimal solutions (compared to an arbitration process by the Courts or Ministry/Minister) because the parties are best able to weigh up the negotiation options. Secondly inter-sector agreements are likely to be more enduring than solutions handed down by a third party. However to date such inter-sector voluntary agreements have had a short life. This issue can be addressed by Ministry/Minister providing a supporting role for such agreements. For example, although the commercial sector can monitor compliance and enforce its own constraints the recreational sector will need assistance for these functions. Assistance could also be provided in building negotiation capacity in all sectors but particularly in the non-commercial sectors. Past voluntary agreements were characterised by a focus on the agreement terms rather than the post-agreement monitoring and feedback standards.

More flexible and adaptive management regimes

Current New Zealand fisheries management appears to be unresponsive to rights holder's calls for alternative management tools (for example local area management). The Fisheries Act appears to be interpreted by the Ministry of Fisheries in a very prescriptive and limited way. Advice from the Minister of Fisheries who developed and managed the passage of the current Act, (a lawyer by profession), is that the statute can provide a flexible and innovative fisheries management regime. (For example the implementation of local area management.) There is inter-sector support for much greater flexibility and responsiveness in fisheries management processes to match the highly dynamic biological and fishing environment.

Perhaps the most striking example of inflexible management is in the recreational sector where the output control (bag limits) remain fixed in spite of changing TACs and the limits having no linkage to recreational catch allowances set by the Minister.

Of most concern about these principles is that all of them will require medium to long lead times to reach maturity. These principles (or similar) have been obvious since the early reviews of inshore fisheries in the 1990s. But as yet, no action has been taken.

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ENDNOTES

^a A series of 27 prohibited areas to set netting are not included in the data since the closures excluded both the amateur and commercial fisheries

^b The Treaty of Waitangi (generally considered the founding document for New Zealand as a nation) was signed between the British Crown and various chiefs of the indigenous people of New Zealand. Part of the Treaty guaranteed protection of Maori fisheries.