

7. Catch Balancing

While ITQ based systems focus on individual species management, many species are caught simultaneously. Individual fishers can target multiple species at once while in other cases a different species may be captured unintentionally. So within this type of system, mechanisms must be established that allow fishers to deal with either excess catch of species for which they hold quota or the unintentional catch of species for which they do not hold quota. But these mechanisms need to be carefully designed so that they do not encourage over fishing and lead to the TACC being exceeded and, therefore, prevent sustainability goals from being achieved.¹ So a balance needs to be reached where fishers have access to mechanisms through which they can cover unintentional catch, but which do not encourage them to intentionally exceed their fishing entitlements. In the New Zealand system, a number of different catch balancing mechanisms have been used and at times fishers have had a number of options available to them. This chapter outlines the most common mechanisms and how the mechanisms available have changed over time.

This chapter chronologically outlines changes that have occurred in the catch balancing mechanisms available to fishers. A large number of mechanisms were available in the QMS initially, but then, in 2001, the system was simplified to using a deemed values system and allowing a small amount of quota to be transferred from one fishing year to the next. This chapter, therefore, discusses, the most significant and commonly used mechanisms found in the system prior to 2001 and the post-2001 bycatch mechanisms. Finally, the chapter concludes with a discussion of regulations that are used to reduce the risk of the TACC being exceeded.

7.1 Catch Balancing 1986-2001

Under the 1983 Fisheries Act, it was illegal to catch fish without holding the relevant quota first. There was, however, a defence available to commercial fishers under Section 105A of the amended 1983 Fisheries Act.² If fishers were able to prove that they did not intend to take the fish, that the fish were caught as an inevitable consequence of lawfully taking other fish and the said fish were returned to the sea or surrendered to the Crown, they were able to defend themselves against any proceedings lodged against them.³ However, in addition to proving that it was an inevitable consequence, the fisher had to balance the fish that they caught with one of a number of mechanisms. These mechanisms were needed to ensure that fishers had an incentive to retain any additional fish that they caught rather than dumping the extra fish into the ocean and not reporting this catch. However, these mechanisms also

¹ Another related issue is that of highgrading whereby fishers discard lower quality fish so that they do not contribute to their quota allocation. This ensures that they have the highest quality, most profitable fish to sell. Highgrading, is, however, illegal in the New Zealand system under Section 72 of the 1996 Fisheries Act (or previously Section 28ZB of the 1983 Fisheries Act).

² This amendment was introduced by Section 50 of the Fisheries Amendment Act 1990.

³ Some species were unable to be returned to the sea by Section 28ZB(1) of the amended 1983 Fisheries Act and, thus, needed to be surrendered to the Crown for this defence to be utilised.

had to ensure that there was little or no profit from catching additional fish so that the level of bycatch and overfishing would be reduced.

Five such mechanisms are discussed in detail in the following section.

7.1.1 Surrender Catch

The initial method that was set up to prevent overfishing involved fishers surrendering all fish that were caught without quota to the Government (Sissenwine and Mace 1992). Fishers could still potentially benefit financially from landing their extra fish (Falloon 1993). Those fishers who caught fish in addition to their quota were required to give their extra fish to a processor. The processor then had to pay the Government the pre-determined price for all surrendered fish. However, if the price set by the Government was below the market price for the species, the processor gave the difference to the fisher, providing some monetary benefit from landing.

7.1.2 Leasing or Buying Additional Quota

The simplest way of balancing what was caught with the quota held was to lease the extra quota required to equate the actual catch and entitlement once in port. With the ability to trade quota and lease it for the short term, fishers were able to increase their entitlement to catch certain species by leasing quota and were able to lease out quota that they did not catch.

In the early stages of the QMS, it was also possible to fish on behalf of another person who owned quota. This provided distinct benefits as the formal transfer of quota, either through leasing or through selling the quota, was not required. This was likely to have been popular amongst the smaller quota owners.

7.1.3 Borrowing and Banking

Within the QMS, there was provision to transfer a small amount of quota between fishing seasons. Under Section 28V of the amended 1983 Fisheries Act, quota holders could catch up to 10 percent more than the amount of fish that they were entitled to, given their quota holdings. However, when this occurred, the quota holder's catch entitlement in the following fishing season would be reduced by an equivalent value. In addition, when quota holders caught less than their entitlement, they could transfer the uncaught component to the following season, to a maximum of 10 percent of their quota holding entitlement.

7.1.4 Bycatch Trade-Off System

Under the Bycatch Trade-Off System, fishers could trade quota of one species for another according to specified ratios set by the Ministry of Fisheries (Falloon 1993). The trade-off ratios set were based on the relative values of the two species (Peacey 2002) and were limited to only a few species (Sanichirico et al. 2006). This system was mainly used by small fishing operations who had difficulty in acquiring the quota that they required (Peacey 2002).

However, this system was biologically unsound as it made it difficult to establish and enforce TACs. By allowing the trade of quota from one species to another it was not possible to control the total amount of fish caught within each species in the bycatch trade-off system. Consequently, the TACs of some species may have been exceeded while the TACs of other species may not have been reached. Since TAC levels are set to achieve the Maximum Sustainable Yield (MSY; See Chapter 2 for more details), any deviation from the TAC may threaten the sustainability of the fish stock or reduce the efficient use of the stock.

7.1.5 Deemed Values

Deemed values were a financial penalty that fishers had to pay for catching fish without the relevant quota holdings.⁴ The Fisheries Amendment Act 1990 required that all commercial fishers pay the deemed value on all excess or unauthorised quota fish. The deemed values rate for each fish stock was determined prior to the start of each fishing season by the Minister and was paid per kilogram of extra fish caught. In setting the deemed value rates, the Minister was required to consider the market value of the fish, any other benefits the fisher may receive from the fish, and ensure that the price would encourage the fishers to land the catch without encouraging further harvesting (Section 28ZE of the amended 1983 Fisheries Act).

Fishers were required to pay the deemed value amounts monthly for any excess fish caught (Peacey 2002). But they could have the money paid for the deemed values returned to them if they subsequently acquired the quota required to cover their excess catch through either leasing or buying the relevant quota.

7.2 Catch Balancing after 2001

Under the pre-2001 catch balancing system, fishers could choose the mechanism that gave them the best financial reward. While the five most notable catch balancing systems were outlined above, other mechanisms were also available. The system became more and more complex with around 20 different catch balancing mechanisms possible by 2001 (Peacey 2002). Not only was the system becoming complicated, but mechanisms such as bycatch trading and the surrendering of catch meant that there was potential for TACs to be exceeded.⁵

Substantial changes were made to simplify the catch balancing system when the Fisheries Amendment Act 2001 was passed. These changes coincided with the introduction of the ACE into the system.⁶

One of the most significant differences under the new system was that it was no longer illegal to catch species that were managed under the QMS without holding quota as long as you held a fishing permit (Newell 2004).⁷ However, an individual's

⁴ This system for managing bycatch is unique to New Zealand (Sanchirico et al. 2006).

⁵ This potential for exceeding TACCs was exasperated by the difficulty in successfully prosecuting individuals breaching their ITQ except when the offence was blatant (Peacey 2002).

⁶ See Section 3.2.3 for more information on ACE and its introduction into the QMS.

⁷ However, there are minimum holding levels applying in some species. See Section 3.6.2 for more information on minimum holding levels.

failure to balance their catch would lead to the loss of their fishing permit, making it illegal for them to continue fishing for any species (Section 79 of the 1996 Fisheries Act).

Under this new system, fishers have only two options to deal with their extra catch: they must either purchase the extra ACE required or pay the relevant deemed value. But this change was not just a simplification of the earlier system through the removal of other catch balancing mechanisms. With the passing of the Fisheries Amendment Act 2001, the deemed value system was also altered to include increasing penalties as fishers further exceed their quota levels. The administration of this system is handled by FishServe.⁸

7.2.1 Deemed Values

Previously, the Minister was required to set the deemed value rates at such a level to ensure that there was an incentive for fishers to land fish, but without providing any added incentive for them to take additional fish. This was difficult to judge especially because of the different cost structures of firms.⁹ Under the new system this joint requirement is removed stating that the Minister must

“... take into account the need to provide an incentive for every commercial fisher to acquire or maintain sufficient annual catch entitlement in respect of each fishing year that is not less than the total catch of that stock taken by that commercial fisher” (Section 75(2)(a))

The Minister is no longer *required* to set deemed values to ensure that there is no incentive for fishers to catch excess fish. Under Section 75(2), the Minister may have regard to the desirability of encouraging fishers to land catch for which they do not have ACE. The legal requirement to land all fish prevents, at least in theory, fishers dumping fish over the side rather than landing them (Section 72 of the 1996 Fisheries Act).¹⁰ So, under the new system, deemed values are used to encourage commercial fishers to cover their catch by holding the relevant ACE and deterring dumping of fish is provided for by criminal sanctions (Ministry of Fisheries 2004b).

The new deemed value system has two parts, a refundable interim deemed value which is paid at the end of every month and a non-refundable annual deemed value which is payable at the end of the fishing year (Peacey 2002). The monthly deemed value is set at a lower rate than the annual deemed value rate and is used as a reminder to fishers that they will have to settle their catch at the end of the year.

At the end of each fishing season, FishServe calculates the deemed values payments based on the annual deemed value rate for all individuals who either own ACE or have reported catch (FishServe 2006b). The amount that has been paid through the monthly deemed value will then be credited against an individual's annual deemed

⁸ For more details on FishServe see Section 3.2.3.

⁹ Due to the differing costs, some companies may be encouraged to undertake more fishing than their quota entitles them to, while others may not find it worthwhile landing their excess catch at a given deemed values rate.

¹⁰ But there are exceptions to this. Species that are listed on the Sixth Schedule can be legally returned to the sea and fish that do not meet minimum size requirements can also be returned.

values charges and all individuals will be notified of the remaining amount that they owe. If individuals have paid more in the monthly deemed values than they are required to pay in annual deemed values, the difference will be refunded to them.¹¹ Failure to pay the deemed values within 20 days of the demand leads to the suspension of the fisher's fishing permit which prevents them from legally continuing to fish (Section 79 of the 1996 Fisheries Act).¹²

Under the earlier deemed values system, all fishers were treated as if they valued excess catch or bycatch the same and that this level was linked directly to the market value. But while excess catch is likely to be closely related to the market value of the fish, the value of a species taken as bycatch to a fisher is only partially related to its market value. For bycatch fish, the value of the fish is more closely related to the added benefits of being able to catch the additional species. For example, mackerel fishers use the deemed values system to cover the kingfish that they catch as bycatch. Due to the low ratio of kingfish to mackerel within the catch, these fishers are willing to pay much more than the market value of kingfish to purchase kingfish ACE or to be able to cover their catch via the deemed values system as it allows them to capture mackerel more efficiently (pers. comm. David O'Dea).

This is a difficult problem to address but differential annual deemed values (sometimes referred to as 'ramping') are now being used in some species to address the issue of differential valuing of bycatch. Under the differential deemed value system, the deemed value rate that the fisher must pay depends on the percentage of their ACE by which they overfished (FishServe 2006b). Therefore, it provides a graduated disincentive to overcatch, a disincentive which increases the more a fisher harvests in excess of his ACE. In a fish stock where the differential deemed value system is applied in the standard fashion, fishers must pay the standard deemed value rate for the first 20% of catch taken in excess of their ACE; for the next 20% of their catch by which they overfish they must pay 120% of the standard deemed value rate, and so on. This continues until the fisher is paying 200% of the standard deemed values rate for all additional catch 100% greater than their ACE entitlement.¹³ There is flexibility in the legislation regarding the levels at which the deemed value amount increases so that the schedule can be adjusted to meet the needs of individual fisheries. But to date, this flexibility has never been used and in all species where the differential deemed values are used, the above thresholds apply (Newell 2004).

The differential deemed value system is only used in selected species based on the incentives that the Ministry wants to create for fishers (Ministry of Fisheries 2001). In high value, single species fisheries, there are strong incentives for people to catch more than their quota due to the profitable nature of the species. Thus, it is important to discourage taking of catch in excess of ACE holdings. In these situations, the graduated deemed values system is very useful as the larger the excess catch, in proportion to the ACE holdings, the higher the deemed value payments per unit will become, hence discouraging additional catch.

¹¹ This refund of the deemed value payments will only occur if an individual acquires ACE to cover some or all of their excess catch during the fishing season.

¹² This only applies if the outstanding deemed value payment is greater than \$1,000.

¹³ If a fisher holds no ACE for a species on which differential deemed values apply, then all deemed values are charged at the highest rate (usually 200% of the annual deemed value).

7.2.1.1 Chatham Island Deemed Value Rates

Prices that are received by fishermen who land their catch in the Chatham Islands are significantly lower than those received by fishermen who land their catch on the mainland. Thus, if fishermen were forced to pay the same deemed values irrelevant of where they landed their fish, Chatham Island fishers would be severely disadvantaged and this would restrict the development of Chatham Island fisheries. To prevent this from occurring, separate, lower deemed values are used for fishermen who land their catch in the Chatham Islands.

However, fishers do not automatically have Chatham Island deemed values applied (FishServe 2006b). To qualify for the lower rate, fishers must complete the relevant paperwork and get acceptance from FishServe prior to landing their fish. It is not possible to apply the Chatham Island deemed value rates to fish that are landed prior to gaining approval. Due to the potential financial benefits of landing fish on the mainland while paying Chatham Island deemed value rates, FishServe is required to check reported Chatham Island landings.

In 2003, a private company, FishTech, was set up to minimise the deemed values that its members were required to pay through the transfer of ACE between the members. For details on this system see Section 3.5.3.

7.2.2 Banking Quota

ACE that is not caught in the current fishing year may be transferred to the subsequent fishing year. Under Section 67A of the 1996 Fisheries Act, if FishServe identifies that an individual has caught less than their ACE holdings, up to 10% of the individual's ACE holdings may be transferred to the next fishing year. The ACE that is being transferred to the following season will be allocated as soon as is practical after the 15th day following the end of the first fishing year.

Allowing ACE to be transferred from one fishing season to another may enable TACCs to be exceeded by up to 10% in any fishing season. This makes planning difficult as a high catch in one season may reduce the population size in the subsequent fishing years. To avoid these fluctuations in vulnerable species, restrictions are put in place to prevent the transfer of ACE from one fishing year to another. ACE pertaining to fish stocks listed in Schedule 5A of the Fisheries Act 1996 cannot be transferred from year to year, thus protecting these species from large annual fluctuations and allowing for better management of the resource. In addition, ACE cannot be transferred when the TACC is reduced in the subsequent fishing year.

7.3 Over-Fishing Thresholds and Tolerance Limits¹⁴

While the deemed values system is in place to prevent over-fishing, it does not impose limits on how much fishing may occur as long as the individual is willing to pay the relevant deemed value. If deemed values are not imposing a sufficient economic disincentive, this could lead to fishing levels that significantly exceed the

¹⁴ These were introduced in the Fisheries Act 1996 Amendment Act 1999 creating Sections 77 and 78 of the 1996 Fisheries Act.

TACs. To prevent this from occurring, over-fishing thresholds have been put in place in some stocks to restrict the amount by which fishers can exceed their ACE holdings. Over-fishing thresholds identify a percentage of catch entitlement by which an ACE holder can exceed their ACE holdings. If this value is exceeded, then fishers will no longer be able to harvest any fish, aquatic life or seaweed in the QMA where the threshold was exceeded. This prohibition will remain in place until either the individual has obtained enough quota to cover their catch or the end of the fishing year.

However, this system causes problems for small quota holders who are at a much higher risk of exceeding their over-fishing threshold. To ensure that the individuals with small quota holdings are able to exceed their ACE by a small amount without suffering from permit prohibitions, threshold levels (or tolerance limits) are set by the Governor-General under advice from the Minister of Fisheries (Ministry of Fisheries 2004b). These threshold levels state a minimum amount by which ACE holders can exceed their ACE holdings without being subject to a prohibition.¹⁵ Thus, under this system the small ACE holders can exceed their over-fishing threshold by a small amount without suffering from permit prohibitions.

To date, these two mechanisms have only been applied in sedentary species.

¹⁵ The Chief Executive of the Ministry of Fisheries can also provide an exemption to fishers to have their prohibition removed, but when these exemptions are granted they may include conditions relating to the fishing method and location to avoid the catch of the species exceeding the limit (FishServe 2006b).