

Moving from Input Controls to Output Controls Using the Partnership Approach in Australia's Southern Shark Fishery

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Abstract

The Australian Fisheries Management Authority (AFMA) maintains a firm commitment to managing Federal (Commonwealth) fisheries resources for the benefit of the community as a whole. The AFMA model centres around a partnership approach in which a wide range of stakeholders are actively involved in the process of developing and implementing fisheries management arrangements for Commonwealth fisheries. Central to AFMA's partnership approach is the establishment and operation of Management Advisory Committees and Fisheries Assessment Groups for each major fishery managed by AFMA.

AFMA successfully moved the Southern Shark Fishery (SSF) from input controls to output controls over a period of 5 years. AFMA achieved this by using the partnership approach with the Southern Shark Fishery Management Advisory Committee (SharkMAC) and the Southern Shark Fishery Assessment Group (SharkFAG). In the two year period since output controls were introduced on 1 January 2001 the industry has undergone considerable change. Some fishers are finding it difficult to operate in the current environment. Industry and AFMA must continue to work together under the partnership approach to ensure the school shark stocks are rebuilt and environmental standards are maintained and further improved to ensure the long-term sustainability of the fishery.

This paper presents an overview of the SSF and describes the management structure for the fishery focusing on the implementation of Individual Transferable Quota management.

Key words: Australia, controls, gummy shark, management, shark, school shark

Introduction

The Southern Shark Fishery (SSF) is located in waters adjacent to the States of Victoria, South Australia and Tasmania. Fig. 1 (AFMA, 2001)

The primary commercial species targeted in the SSF are school shark (*Galeorhinus galeus*) and gummy shark (*Mustelus antarcticus*), although the fishery does include all species of demersal shark taken commercially by demersal gillnet and hook fishing methods. Since 1970, school and gummy shark have comprised around 88% of the catch. Of the remaining 12%, saw shark and elephant fish account for at least 10% of the landings. Most of the catch in the SSF is taken by gillnets with approximately 7% of the school and gummy shark catch being taken by demersal longline. Gillnets are used in nearly all parts of the fishery year round, although fishing activity peaks in the week before the full moon. Gillnets are required to have a mesh size of 15–16.5 cm (6–6.5 inches). This mesh

size limit restricts the catch to primarily sub-adults, thus providing further protection to mature school sharks.

The fishery was managed under a system of non-transferable input controls until 31 December 2000. On 1 January 2001, Individual Transferable Quotas (ITQs) were introduced for school and gummy shark. ITQs were considered the most appropriate control in the light of having to reduce school shark catches. Sawshark and the "elephant fish family" (elephant fish, ghost shark and spook fish) were brought under the ITQ system in 2002.

The most recent scientific stock assessment for the school shark population in the SSF paints a pessimistic picture. In the 2001 assessment, productivity is estimated to be so low that under some scenarios, the agreed rebuilding of school shark stocks to the 1996 level by 2011 is impossible under any level of Total Allowable Catch (TAC). If productivity is actually as low as the model currently predicts and it remains so, it will take considerably

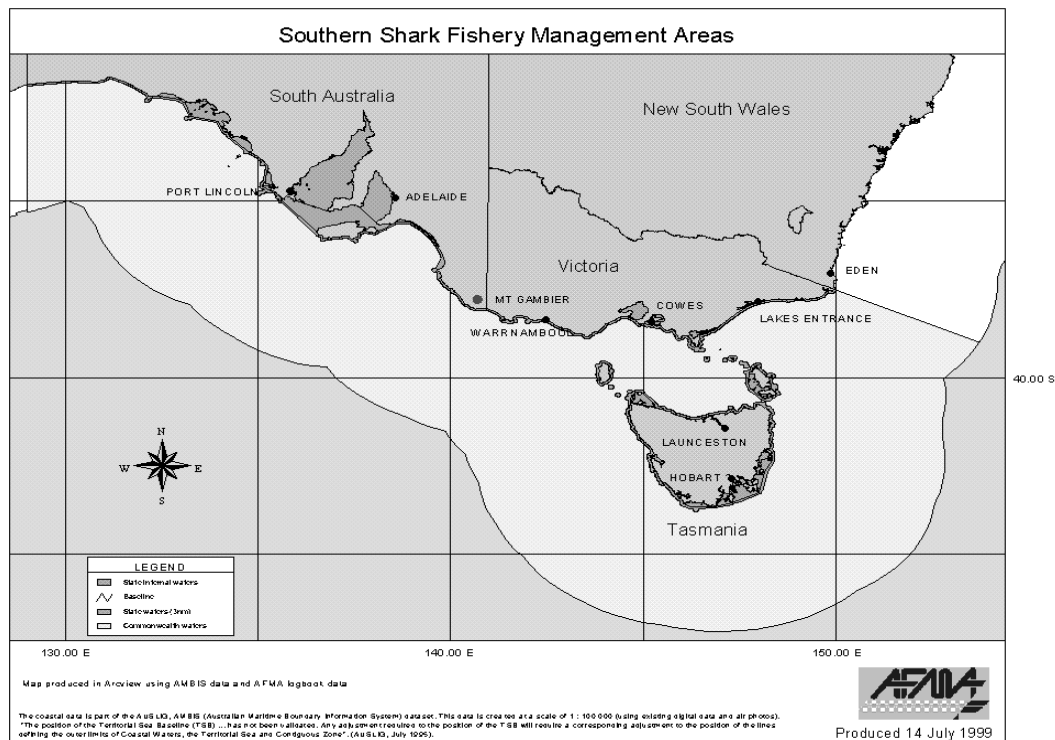


Fig. 1. Co-operative Management Framework for Commonwealth Fisheries.

longer than 15 years to rebuild the school shark stocks. However, as a result of changed management arrangements, there is concern that the most recent CPUE trends may not be indicative of the actual status and productivity of this stock, and that an increasing level of bias is entering the assessment.

The 2000 gummy shark stock assessment indicated gummy shark to be sustainable at current catch levels. Recruitment remains stable and is expected to remain stable as long as fishing pressure is not intensified and the gummy shark habitat is preserved intact.

The long-term management objective for the SSF is to rebuild school shark stocks to a mature biomass level in excess of 1996 level by the year 2011 and to maintain the gummy shark stocks at the 1994 level.

AFMA and Australian Fisheries

Australian fisheries are managed by the Federal government, whose jurisdiction usually extends from 3 nautical miles from the coastline out to 200 nautical miles and recently with the ratification of United Nations Fish Stocks Agreement onto the high seas for its flagged State vessels.

State government fisheries agencies manage inshore and offshore fisheries out to 3 nautical miles. In cases where single stock, area or fishing method management is required, the Federal and State governments generally reach agreement on a single jurisdiction having responsibility for a fishery through an Offshore Constitutional Settlement Arrangement.

The AFMA Model

The release of the 1989 Fisheries Policy Statement – New Directions for Commonwealth Fisheries, set the scene for fisheries economic theory and the emerging concept of ecologically sustainable development for Australian Fisheries. This approach stated the benefits of property rights and output controls for reducing (or preventing) over-capitalisation and over-exploitation (Grieve and Richardson, 2001). This policy statement set the foundations for the creation of the Australian Fisheries Management Authority (AFMA).

AFMA was established in February 1992 following the ascension of the *Fisheries Administration Act 1991* and the *Fisheries Management Act (Commonwealth) 1991* (FMA, 1991). Under this legislation, AFMA has responsibility for the day-to-day management of fisheries,

operating at arms length from the Minister for Fisheries and the department. A small group within the Department of Agriculture, Fisheries and Forestry – Australia, administers the broader fisheries policy, international negotiations and strategic issues (Parkinson, 1999).

AFMA's Legislative Objectives

AFMA's objectives are listed in the *Fisheries Administration Act 1991* and the *Fisheries Management Act (Commonwealth) 1991*, which cover all of AFMA's operations. The following objectives must be pursued by the Minister responsible for fisheries in the administration of the Acts and by AFMA in the performance of its functions:

- a) implementing efficient and cost-effective fisheries management on behalf of the Commonwealth; and
- b) ensuring that the exploitation of fisheries resources and the carrying on of any related activities are conducted in a manner consistent with the principles of ecologically sustainable development and the exercise of the precautionary principle, in particular the need to have regard to the impact of fishing activities on non-target species and the long term sustainability of the marine environment; and
- c) maximising economic efficiency in the exploitation of fisheries resources; and
- d) ensuring accountability to the fishing industry and to the Australian community in AFMA's management of fisheries resources; and
- e) achieving government targets in relation to the recovery of the costs of AFMA.

In addition to the objectives mentioned in subsection (1), or in section 78 of the FMA 1991, the Minister, AFMA and Joint Authorities are to have regard to the objectives of:

- a) ensuring, through proper conservation and management measures, that the living resources of the Australian Fishing Zone (AFZ) are not endangered by over-exploitation; and
- b) achieving the optimum utilization of the living resources of the AFZ; and
- c) ensuring that conservation and management measures in the AFZ and the high seas implement Australia's obligations under international agreements that deal with fish stocks.

Management Framework for Commonwealth Fisheries

AFMA maintains a firm commitment to managing Commonwealth fisheries resources for the benefit of the community as a whole. Therefore, co-operation

with the community, industry, government agencies and others with an interest in the sustainable management of Commonwealth's fisheries resources is essential to this approach.

The AFMA model centres around a partnership approach in which a wide range of stakeholders are actively involved in the process of developing and implementing fisheries management arrangements for Commonwealth fisheries. This approach is based on close consultation, raising awareness of fisheries resource management issues and providing opportunities for direct input into the fisheries management decision making process (McColl and Stevens, 1997).

Central to AFMA's partnership approach is the establishment and operation of Management Advisory Committees and Fisheries Assessment Groups for each major fishery managed by AFMA. An eight member Board of Directors oversees AFMA's operations. The AFMA Board seeks advice from the Management Advisory Committees and Fisheries Assessment Groups prior to making their decisions.

Another important component of the partnership approach is the close working relationship that AFMA has established with a number of other agencies (Parkinson, 1999).

Figure 2 sets out AFMA's key stakeholders and illustrates the co-operative framework within which AFMA performs its functions and pursues its legislative objectives (AFMA, 1998).

Management Framework and How it Applies to the SSF

The AFMA management framework for the SSF comprises the Southern Shark Management Advisory Committee (SharkMAC) that provides advice to the AFMA Board on the management of the fishery. It also facilitates the flow of information between stakeholders and AFMA and liaises with AFMA staff on operational matters that are necessary to implement management measures. SharkMAC also provides advice and recommendations on the development of the fishery budget for management costs, setting of research priorities and TACs for the fishery. SharkMAC has an independent Chair, five industry members, a scientific member, a conservation member, the AFMA fisheries manager, a State government representative and a non-AFMA executive officer. Importantly, these members are chosen for their expertise in a variety of different disciplines, and not as representatives of a given group or organisation.

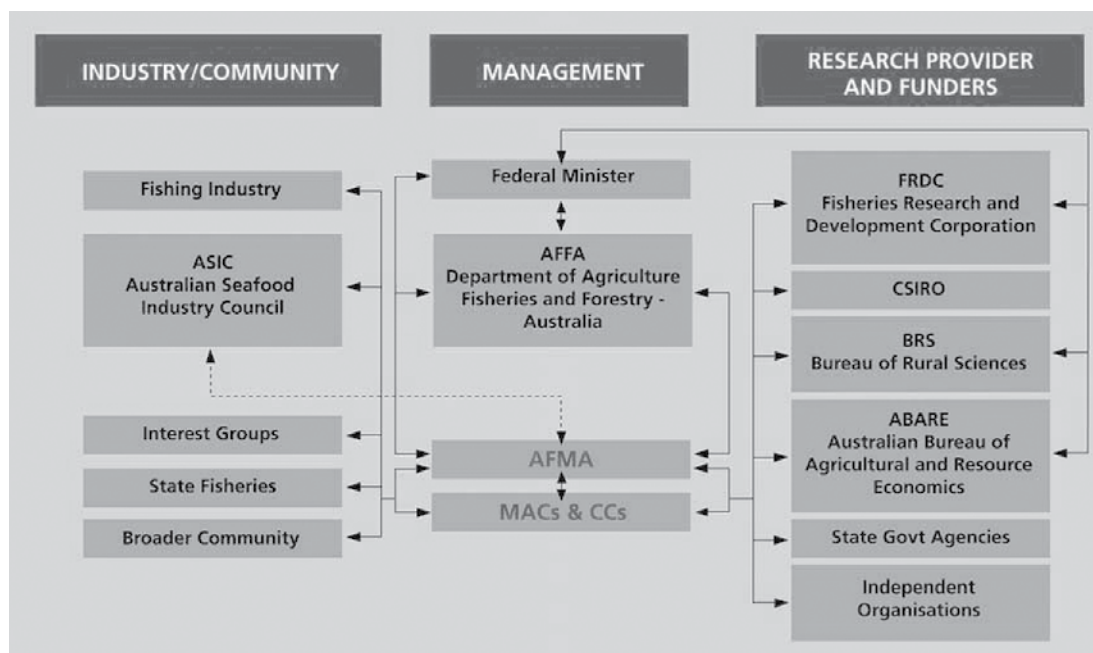


Fig. 2. The Southern Shark Fishery.

The Southern Shark Fishery Assessment Group (SharkFAG) is established by AFMA to produce an annual Fishery Assessment Report and an annual Stock Assessment Report for each major species in the fishery. Due to resource constraints the two major species, school and gummy shark are assessed each alternate year. The reports provide scientific and economic assessments for each species. These assessments are then sent to SharkMAC for consideration in recommending the appropriate level of TACs for the quota species. SharkFAG is made up of scientific, industry, management and economist members. The Chair of SharkFAG is also the scientific member on SharkMAC.

SharkFAG also provides advice directly to the AFMA Board. It is the AFMA Board, which is responsible for setting annual TACs for ITQ species, consistent with the objectives of the Act. The Board takes account of the recommendations from SharkMAC, and the fishery and stock assessment advice from SharkFAG.

The Southern Shark Industry Council (SSIC) is the peak industry voice in the Southern Shark Fishery. The Council provides operators with a forum to discuss issues that affect the SSF and an opportunity to have their say in the management of the fishery through the Council's interaction with SharkMAC. SSIC consists of three representatives per State from each of Tasmania, South Australia and Victoria whose role is to provide input on

State issues as well as the overall management of the fishery. The members of SSIC are voted representatives of their constituent industry groups.

Input Controls

Throughout the 1980s and 1990s, the SSF was managed by a variety of input controls. The intention was to restrict catches to sustainable levels by limiting gear in the fishery. In 1988, a management plan was developed for the gillnet sector creating a limited entry fishery and imposing restrictions on the type and amount of fishing gear that could be used in the SSF. Under this plan fishing permits were made non-transferable as part of the effort capping measures and concerns about increased capital investment in the fishery.

Under the management plan, a unit of gillnet fishing capacity was referred to as a 'net unit'. Net units in the fishery were issued to each operator on the basis of catch history and the number of gillnets used during the 5-year qualifying period from September 1979 to September 1984. Based on a vessel's catch history during the qualifying period, each shark gillnet endorsement was classed as either Category A endorsement or a Category B endorsement. Operators who had a total catch history of 45 tons or more taken during any 3 of the 5 years of the qualifying period were considered to be engaged in the fishery on a full-time basis and given a Category A

endorsement and 6 net units. These were referred to as A6 endorsements. The operators who did not qualify for a Category A endorsement were considered to be engaged part-time in the fishery and were given a Category B endorsement and either 5, 4, 3 or 2 net units, depending on the number of gillnets used during the qualifying period. These were referred to as B5, B4, B3 or B2 endorsements, respectively, and most operators with these endorsements were licensed to operate in other fisheries, notably rock lobster and scallop (Walker, 1999). A total of 1 234 net units were issued.

To reduce the number of full-time vessels engaged in the fishery, the management plan allowed for amalgamation of two A6 endorsements to provide for an A10 endorsement with 10 net units. An amalgamation involved the forfeiture of 2 of the 6 net units attached to the A6 endorsement on one license and the transfer of the remaining 4 net units to a second licence. This created 40 A10 endorsements and removed 80 net units from the fishery. Initially a net unit permitted an operator to use 600 m of net; in 1993, this was reduced to 420 m of net. However, the B3 and B2 operators were not altered. (Walker, 1999)

In 1992, the Southern Shark Fishery Management Plan 1988 (determined under the Fisheries Act 1952) was cancelled as a result of the introduction of the *Fisheries Management Act 1991*. With the creation of AFMA, SSF operators received fishing permits under the *Fisheries Management Act 1991*. However, permits continued to remain non-transferable.

The Australian Bureau of Agricultural and Resource Economics (ABARE) released the report of a study in 1991, "*Results of the ABARE survey of the southern shark fishery*". The paper showed very low average returns to capital, suggesting the fishery was overcapitalised. Later that year ABARE released a discussion paper on management options for the SSF. This paper reviewed the likely benefits and costs of a number of management options for the fishery. In particular, this paper suggested that the long-term profitability would be maximised if the fishery were closed for 8 to 12 years to allow stocks to recover (AFMA, 1999).

The combination of various input controls was an attempt to restrict catches to sustainable levels through indirect means. However, scientists subsequently advised that shark stocks were depleted and further effort controls beyond those provided by the management regime were required. Responding to these concerns AFMA introduced a number of measures to reduce effort in the fishery. These included gillnet length reductions, capping of effort in

the hook fishery (1994) and the closure of some nursery areas (1993).

The decision to move to ITQs was largely prompted by the finalisation, in April 1996, of an updated stock assessment for school shark by SharkFAG. The key findings of the assessment were:

- the mature biomass of the school shark resource at the start of 1995 was estimated to lie between 15% and 46% of the unfished level; and
- there is a high probability that current effort will lead to further reductions in population size. To achieve the objective that there be an 80% probability that mature biomass was above the 1996 level of mature biomass in 15 years time, a catch reduction of around 35% was required. SharkMAC and the AFMA Board agreed to this objective.

The AFMA Board sought independent advice on the 1996 school shark stock assessment. Dr. Rick Deriso of the Inter-American Tropical Tuna Commission reviewed and supported SharkFAG's conclusion, that a reduction in the catch of school shark was required and could be achieved by a phasing in of catch reductions (Deriso, 1996). The school shark harvest strategy was born.

In mid-1996, industry members expressed concern at a SharkMAC meeting on how the catch reductions were going to be introduced (as documented in the stock assessment). AFMA at the time were developing a management plan for the fishery centred on the use of input controls with the desire to move the fishery onto output controls sometime in the future. Industry had concerns on how this process would be implemented, particularly about the ITQ allocation process and the likelihood of moving to output controls under a management plan framework and that catch history would not be included in this process. This coincided with the replacement of three industry SharkMAC members and brought about a reconsideration of the future management options in the fishery – input controls verses output controls. As a result the AFMA Board commissioned a report into the options for future management of the fishery. The Australian fisheries consultants Fisheries Economic Resource Management (FERM) prepared the report "*Future management options for the southern shark fishery*" in early-1997.

The FERM report concluded that ITQs were the most appropriate management control in light of the need to reduce school shark catches. FERM noted that, under input controls, the school shark catch would become a competitive TAC and the whole fishery would have to be

closed once the catch targets are met. School shark would be discarded if operators were allowed to continue to fish for gummy shark. FERM noted that under an ITQ system the school shark TAC would be an integral part of the quota system (FERM, 1997).

As part of a precautionary measure, while AFMA and SharkMAC were deliberating on future management options for the fishery, SharkFAG recommended that gillnet size restrictions be introduced to restrict the targeting of certain size shark in the fishery. In January 1997, AFMA introduced a maximum mesh size of 16.5 cm (6.5 inches). Gillnet operators could only use a gill net with a mesh size of 15–16.5 cm. (6–6.5 inches). This net selectivity criterion is to ensure that gill net fishers target only juvenile fish and the larger adults (producing most of the pups) are not caught. This restriction provides additional protection to mature school sharks and, given the "gauntlet" nature of the fishery, reduces the period of their lives for which these sharks are vulnerable to capture. These restrictions have been continued.

By April 1997, SharkMAC was in a precarious position. The "world-leading" school shark stock assessment stated that school shark catch must be reduced significantly and the FERM report recommended that ITQs were the best approach. Industry SharkMAC members felt under pressure in this situation as a difficult decision had to be made. SharkMAC made an "in-principle" recommendation that a system of ITQs be introduced in the fishery subject to wider industry support.

SSIC then coordinated a series of port meetings throughout the fishery in May 1997 and recommended that the SSF be managed under a system of ITQs subject to a number of pre-conditions being met. Many of these preconditions were raised as issues in the FERM report.

The preconditions were:

- 1) Offshore Constitutional Settlement (OCS) Arrangements that are acceptable to Federal shark fishers be completed with specific reference to the establishment of a single jurisdiction, be it a single authority or a joint authority;
- 2) a Memorandum of Understanding (MOU) between the Federal and State governments which defines the actual mechanics of the OCS must be considered by SharkMAC and must be agreed to by SharkMAC before being finalized;
- 3) the option of continuing some input controls to enhance the harvesting of the school shark stock be retained;

- 4) all school shark catchers, who do not hold an entitlement to take school shark, be placed on by-catch limits to restrict their school shark catch (as soon as possible);
- 5) the ITQ system should not cost any more than the total cost industry currently pays for the management of the fishery (noting that catch monitoring system costs had not been included in the 1997/98 budget), and should be integrated with other ITQ fisheries to provide economies of scale; and
- 6) an independent allocation panel be appointed to complete the allocation process.

In June 1997, SharkMAC made the final recommendation to the AFMA Board that ITQs should be the future management arrangements for the SSF. ITQs were to be introduced on 1 July 1998, on the proviso that the fixed preconditions were met before the ITQ system was introduced.

The AFMA Board authorised AFMA Management to pursue ITQs as the basis for future management in the SSF, under single jurisdiction (Federal Law), subject to support from the Ministerial Council Meeting on 25 July 1997. The State and Federal Fisheries Ministers subsequently agreed that there should be single Federal jurisdiction for school and gummy shark.

Negotiations on fisheries jurisdictional issues are complex and time consuming. It took nearly two years from the July 1997 Ministerial Council meeting until the Memorandum of Understanding was signed paving the way for single jurisdiction for school and gummy shark. The Federal government and the State governments of South Australia, Tasmania and Victoria signed a Memorandum of Understanding to this effect on 30 April 1999. Under the Offshore Constitutional Settlement Arrangements that have now been negotiated, the SSF incorporates the coastal waters of Tasmania, South Australia and Victoria, and includes previous State licensed fishers who had access to school and gummy shark.

In line with the pre-conditions and AFMA policy, AFMA formed an independent Allocation Advisory Panel in early-1999. The purpose of the Panel was to provide advice to the AFMA Board on the most appropriate formula to apportion TACs between the different fisheries taking school and gummy shark. It was also to advise on the most appropriate formula to allocate these TACs as quota to individual fishers within each fishery. The Southern Shark Allocation Advisory Panel (SSAAP) consisted of a retired federal court judge the Honourable

Ken Jenkinson, a former fisher and current fishing industry organiser from New Zealand – Mr. Daryl Sykes and an economist – Mr. Neil Sturgess.

The AAP were given terms of reference which mandated that they consult and formulate their advice in such a way as to pursue an established AFMA policy on the reallocation of fishing concessions as outlined in AFMA Fisheries Management Paper No. 8 (FMP 8) "*Allocation of Fishing Concessions Where Management Arrangements Change*". FMP 8 states that AFMA, in introducing new management arrangements, will explicitly endeavour to minimise any adverse differential impacts on individual operators, unless there are reasons justifiable under the legislative objectives. FMP 8 notes that AFMA's legislation and objectives are of little apparent value themselves in re-allocating concessions. Rather, FMP 8 strongly advocates the principle of avoiding differential economic impact on operators by emphasising the link between equity and minimising wealth redistribution.

The SSAAP consulted with State and Federal shark fishers, including conducting a series of port visits. The SSAAP recommended that allocation of ITQs for school and gummy shark in the SSF should be proportional to each concession holder's three years of highest verified catch history in the four-year period 1994–97 (SSAAP, 1999).

The SSAAP noted that the catch history period chosen as the basis for allocating quota within the SSF should be as recent as reasonably possible to accurately reflect present relative economic positions of concession holders within the fishery. The panel members emphasised that the period be long enough to account for variation in catch from year to year, changes, in effort and environmental conditions affecting fishing performance, as well as from seasonal and spatial fluctuations in shark aggregations. In order to minimise these distortions in relative economic positions a formula was adopted which used the best three out of four years (SSAAP, 1999).

In the 15 years prior to the SSAAP report, there had been many warnings against increasing effort in the SSF and in State shark fisheries. In June 1997 AFMA published a media release, which warned that catches taken after 10 April 1997 would not be considered for inclusion in the ITQ allocation process. In light of these warnings the SSAAP considered it unlikely that there would be any substantial increase in fishing effort in the remaining six months of 1997. For this reason it was recommended that the whole of 1997 should be included, making the catch history period 1 January 1994 until 31 December 1997

(SSAAP, 1999). The AFMA Board accepted the recommendations contained in the AAP Report.

The SSAAP recommended that only verified catch history be used in the ITQ allocation process. AFMA conducted a process to verify catch history for every shark fisher in late-1999 and throughout the year 2000. This was a very labour intensive and expensive process. Operators paid Aus. \$530 to have their catch verified. The remaining costs of the exercise were government funded (30% of the total cost). The total cost of the verified catch history process was approximately Aus. \$212 000 (Lynch and Bland, 2001).

Catches were verified for the most part by AFMA staff visiting every shark fisher at their home, or some other nearby place agreeable to the fisher and sighting documentation which proved their levels of shark catch during the four qualifying years. The documentation able to be used by fishers was as follows:

- a) Primary verifiable documents were landing documents from fish cooperatives and relevant Fish Marketing Authorities, invoices, receipts, sales dockets or carrier consignment notes prepared at the time of transaction (generally the landing of the fish).
- b) Supporting documents were logbooks (catch returns to authorities or personal records) and financial records which showed that monies were received following the taking or sale of the fish referred to in the primary verifiable document.

Logbooks were not used as *prima facie* evidence of a catch of shark as they were completed by the operators themselves and were therefore no more than claims that certain catches had been made. In many cases, operators were required to fill in logbooks at sea, and therefore could not accurately complete the weight of fish caught. In some circumstances operators were not even required to fill in logbooks. Requiring verification of catch history by reference to evidence of catches other than logbooks minimized the chances of operators claiming catch history through the falsification of logbook records to the detriment of honest operators (Lynch and Bland, 2001).

Meanwhile in late-1998, SSIC members met with the Federal Minister for Fisheries to discuss government funding of a restructure proposal for the SSF. SSIC proposed that some form of structural adjustment would ease the pain for some operators during the move to ITQs noting that the industry was about to receive some major cuts as a result of the school shark harvest strategy.

As a result of the SSIC discussion, the Department of Agriculture, Fisheries and Forestry – Australia (AFFA) established a Working Group in June 1999 tasked with providing advice as to the most appropriate method to provide one-off structural adjustment assistance to holders of fishing permits granted for the SSF. The program was called the Industry Development Program (IDP). After conducting a series of port visits, the Chairman of the SSF IDP Working Group wrote to all SSF Permit holders in August 1999 outlining the "tentative recommendations" of the IDP Working Group and inviting them to provide a response. The tentative recommendations proposed a buy-out of SSF Permits and their associated net/hook units and were eventually accepted by the Minister and funded to the tune of Aus. \$2.6 m. The IDP subsequently removed 40 permits from the fishery and was completed in March 2001.

The introduction of ITQs was further delayed due to uncertainties regarding the OCS Arrangements, which had not yet been signed by the State governments. These delays were outside of AFMA's control. In late-2000, the AFMA Board decided to introduce ITQs for school and gummy shark in the SSF on 1 January 2001, by which time the OCS arrangements had commenced and all the other pre-conditions set by SharkMAC had been met.

The Introduction of ITQ Management

On 1 January 2001, AFMA introduced ITQs for school and gummy shark. These quota arrangements applied to catches of school and gummy shark in the South East Trawl and Great Australian Bight Trawl Fisheries. This coincided with OCS Arrangements with the governments of South Australia, Victoria and Tasmania, allowing AFMA to introduce quotas for school and gummy shark catches in coastal waters adjacent to those States simultaneously.

Since 1998, SharkMAC had endeavoured to discuss the issue of input controls following the implementation of ITQs, however, they could not reach consensus due to the contentious issues surrounding the introduction of ITQs. The AFMA Board decided that the issue of input controls would be addressed once ITQs were introduced. The AFMA Board agreed that no change would be made to gear restrictions in the SSF for the first six months of 2001 and that AFMA would undertake a comprehensive review of the nature of future input controls in the SSF. This review was to be presented to the AFMA Board for decision at its meeting of July 2001.

AFMA released a discussion paper in April 2001 on input controls in the SSF. This was distributed to SSF

stakeholders and provided much of the background for a series of port meetings held throughout the south-east of Australia in May 2001. AFMA sought stakeholder's views on the type of input controls, which should be retained in the SSF following the introduction of ITQs.

Following these meetings AFMA provided stakeholders with a summary of each port meeting and invited over 280 interested parties to attend a SSF workshop on input controls. That workshop was held in Melbourne in June 2001.

A SharkMAC meeting was held immediately after this stakeholder workshop, with the intention that the workshop outcomes would provide guidance for SharkMAC's consideration of the review of input controls issue. SharkMAC subsequently provided two input control options for consideration by the AFMA Board.

The AFMA Board decided that from 1 January 2002 there would be an equal upper limit of 4 200 m of gillnet for each permit irrespective of previous net holdings and to remove the restriction on the number of hooks in the SSF. The Board considered its legislative objectives of economic efficiency, cost effective management and ecologically sustainable development (ESD) outlined in the *Fisheries Management Act 1991* in making its decision on input controls, and determined that the revised gear restrictions would:

- a) not affect the ESD objective with reference to quota species in the SSF and South East Non-trawl Fishery, as TACs would directly limit catch;
- b) address the ESD objective with reference to non-quota species through introduction of ITQs for sawshark and elephant fish, and provision for implementation of trigger limits for other by-product and by-catch species;
- c) further address the ESD objective through monitoring kilometres of net lifts bi-annually to assess overall effort in the fishery and provide a mechanism to adjust effort if required;
- d) allow some degree of restructuring for gillnet operators and a high degree of restructuring for hook operators, and therefore allow AFMA to more adequately pursue the economic efficiency objective; and
- e) allow the pursuit of the cost effective and efficient management objective as a result of less complex administrative and compliance arrangements.

This decision aggrieved many of the larger gillnet permit holders. Some operators had bought out another

permit holder and the attached gear entitlement under the management plan in 1988. This allowed these operators to continue to use 4 200 m of net. Operators who previously held smaller net holdings were now able to use up to 4 200 m and the larger operators who already had 4 200 m did not receive an increase.

This decision created some confusion within the industry about the change from input controls to output controls. Fishers considered the value of their permit lay in the amount of net it had historically been entitled to use with no consideration of the amount of quota that was now allocated to the permit. However, operators who had used their larger net entitlements had accumulated significantly larger catch histories for shark, and this in turn resulted in them receiving larger quota allocations.

The fishing permit allows access to the fishery by a specific method and the quota entitles an operator to catch an amount of fish. In order to reduce the level of confusion, the relaxation of input controls should have been implemented at the same time as ITQs were introduced into the fishery.

2002 TAC Setting

In October 2001, SharkMAC recommended the TACs for 2002 to the AFMA Board. AFMA sets global TACs for school shark, gummy shark sawshark, and elephant fish for all State and Federal fishers who take these four species. AFMA set TACs for school shark in 2002 at 327 tons, with a view to rebuilding the school shark stock in accordance with the stated reference point for the species. This is in line with the agreed School Shark Harvesting Strategy of phasing in reductions in catches from 1997 until 2002. The 20% carryover¹ from the 2001 season was removed in December 2001 due its potential to greatly increase the catch over and above the TAC (set in accordance with the harvest strategy). This carryover amount of shark was not envisaged at the time the harvest strategy was agreed. There is no carryover for school shark in 2002.

The 2002 gummy shark TAC was reduced from 2 159 to 1 700 tons plus a carryover of 20% from the 2001 season. This reduction to the level of historic average catches was considered necessary in the light of the decision to relax input controls, in order to reduce the potential for the escalation of fishing pressure.

These decisions to reduce TACs in the second year of the quota system caused considerable contention with shark fishers. The gummy shark TAC was reduced by 23% after the first year of ITQs and the removal of carryover for school shark so late in 2001 caused some anguish with shark fishers who had structured their business to maximise their carryover for the following year.

One of the positives of introducing ITQs into the SSF is the ability to transfer permits for the first time since 1988, which will allow the structural adjustment desired by stakeholders to occur. However, restructuring of the fishery remains stalled, as 65 operators appealed their quota allocation and requested a review of their allocation. Many of the appellant's claimed exceptional circumstances, and requested a boost to their verified catch history as a result.

A group of operators have also challenged the school and gummy shark allocation formula. As a result of this challenge AFMA has placed a restriction on whole package transfers (permit and quota) as a precautionary measure to enable AFMA to conduct a complete re-allocation if necessary. This restriction remains in place pending a decision from the Administrative Appeals Tribunal.

SESS Plan and Strategic Assessment

It has been more than ten years since the Southern Shark Fishery Management Plan 1988 was revoked. Since August 2001, AFMA has worked closely with industry to develop the Southern and Eastern Scalefish and Shark Fishery Management Plan (SESS Plan). This plan will incorporate the management arrangements for the SSF, South East Trawl Fishery, Great Australian Bight Trawl Fishery and South East Non-trawl Fishery under a single management framework. The SESS Plan will provide the tools for AFMA to work towards a more ecosystem based management approach while providing operators with gear specific boat statutory fishing rights and quota statutory fishing rights, and the ability to continue to trade in quota between different gear sectors of the fishery. Without the overarching plan, cross sector leasing of quota would not be possible. AFMA is anticipating that the SESS plan will be determined in 2003 and statutory fishing rights will be granted to commence in January 2004.

This new plan will require accreditation from the Minister for Environment and Heritage. An assessment,

¹ Carryover is a percentage of individual quota holdings set by the AFMA Board. Each operator is permitted to undercatch their quota holding in one year, and then take that amount in addition to their quota holding in the following year. It is a mechanism that provides flexibility to take into account the variations in abundance and availability of individual species. It also provides relief to operators who encounter circumstances, within a fishing year, that prevent them from taking their quota for a species ie bad weather, breakdowns.

known as strategic assessment, will examine the impact of actions of the fisheries under the SESS Plan against guidelines for the ecologically sustainable management of fisheries. This strategic assessment (essentially an environmental impact assessment of the fishery) is required under the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act).

The SSF, like all of Australia's fisheries, are required to be more accountable to the community from an environmental perspective. Commonwealth policy requires the SSF to implement and review the Southern Shark and South East Non-trawl By-catch Action Plan (BAP). The BAP was developed by AFMA with industry to focus on discards in the fishery, interaction with protected species and impacts on the ecosystem as a whole. In response to the International Plan of Action for the Conservation and Management of Sharks, Australia has prepared and agreed to a National Plan of Action – Sharks (NPOA). The SSF industry has been part of the development of the NPOA.

Discussion

Industry considered ITQs "the most palatable of a series of unpalatable future management options" to address the reduction in school shark catch. However, some industry members who were strongly opposed to ITQs thought that the preconditions were unachievable and would lead to AFMA considering input controls of some form. Industry was somewhat disillusioned about the prospects of achieving substantial jurisdictional reform in the SSF. This jurisdictional reform had been talked about for years with little achievement. Furthermore, industry had been largely excluded from these discussions (FERM, 1997).

While the jurisdictional negotiations were progressing, AFMA staff and SharkMAC members held 13 port meetings in Victoria, Tasmania and South Australia in September 1998. The purpose of these meetings was to provide information to participants on the move to ITQs in the SSF and to get their feedback on the issues raised in OCS and ITQ Management Discussion Papers. These meetings were lengthy and at times very emotional for stakeholders. SSF permit holders had been locked into a fishery for 10 years as a result of the non-transferability policy and although the academic world had produced various theories about the state of the fishery during this time, operators had experienced very little change in management arrangements. This shift to ITQs was perturbing to many. The anti-ITQ lobby group was also actively campaigning against the proposed approach, questioning

the methodology of the school shark stock assessment and suggesting that input controls be re-considered.

AFMA by using the partnership approach with SharkMAC and SharkFAG and through numerous port meetings with stakeholders throughout the fishery successfully moved the SSF from input controls to output controls over a period of 5 years. However, along the way there were some casualties.

The Southern Shark Gillnetters Association (SSGA) is a smaller industry association that was formed in Victoria in the late-1980s. SSGA were a small but vocal group strongly against the introduction of ITQs. They lobbied the Fisheries Minister, the AFMA Board, AFMA Management and ran numerous media articles in the lead up to the introduction of ITQs. SSGA also threatened an injunction in the last week of 2000 prior to the introduction of ITQs to stop AFMA introducing ITQs into the fishery. The injunction did not eventuate. The SSGA still exists with a very small group of members.

In 1997 SSIC started to split into two distinct factions, pro-ITQ and anti-ITQ. By the end of 2000 (SSICs last meeting) membership had significantly reduced and SSIC was clearly not representing the majority of the SSF industry. The first casualty was the industry body SSIC. By 2001, SSIC was in limbo.

The second casualty was some of the SSF fishers themselves. After 13 years of minimal change in management arrangements (since the management plan was introduced in 1988) the move to ITQs was an enormous change. Many fishers had to make major business decisions, based on their quota allocation, on whether to sell their quota and permit or buy additional quota and continue operating in the fishery. To add to this, there was growing competition in the market place as a result of imported shark from New Zealand and South Africa, and this was impacting on the price fishers received for their fish.

AFMA assured industry that once ITQs were introduced that permits and quota would be transferable. However, due to legal challenge on the allocation formula transfers were (and remain) restricted to whole packages; that is a permit and all its associated quota must be sold and remain together. This restriction makes it almost impossible for fishers needing a small package of quota to actually purchase this amount and therefore allow the fishery to undergo the structural adjustment required and expected as a result of introducing ITQs.

Another casualty was the AFMA management section staff who were gradually worn down by the extended

process. Specifically, working on a daily basis with the strained relationships within some sectors of industry. This resulted in a 100% staff turn over in the section from early-1999 to January 2001.

After 15 years of minimal change in the fishery, 2001 and 2002 has seen a massive change in the management arrangements for the SSF. This has created great anxiety with some fishers and an appeal for stability in relation to changes in TACs and management arrangements as a whole. These management changes have allowed some operators to leave the fishery, and others that remain are getting Aus. \$2/kg more for their quota catch. The introduction of ITQs has changed fishers targeting behaviour. Fishers are now actively avoiding school shark and the school shark TAC now covers incidental by-catch.

It is expected that once all the legal appeals have been finalised, the restriction on whole package transfers will be removed therefore allowing the industry to restructure from within. The management plan will introduce stability and certainty and fishers will then be operating within a more secure access rights framework. The final part of the equation is for AFMA to develop TAC setting decision rules to provide more certainty for industry in the TAC for each year and thus allow fishers to develop long-term business plans. Industry and AFMA must continue to work together in a partnership to ensure the school shark stocks are rebuilt and that environmental standards are maintained and further improved to ensure the long-term sustainability of the fishery.

Postscript

Two operators challenged the quota allocation policy adopted by the AFMA Board in August 1999 primarily on the basis that it involved a gross redistribution of wealth between fishers as the wealth of the permit could not be measured by shark catches taken 4 to 7 years previously and gear entitlements had a value as they had been transferred in the past. These operators were successful in their appeal to the Administrative Appeals Tribunal (AAT). In its decision of 27 September 2002 the AAT found that the 2001 allocation policy tended to produce an unjust decision in that the policy was flawed and not sound. The Tribunal remitted the applications to AFMA for reconsideration.

AFMA appealed the AAT ruling to the Federal Court of Australia. Following these proceedings the court ordered on 24 March 2003 that the appeal be dismissed and the decision of the AAT be affirmed. Following this decision, AFMA formed the Independent Allocation Review Panel (IARP) to readdress the allocation of shark

quotas for the SSF. In October 2003, the IARP reported back to the AFMA Board. It concluded that the relative economic position of permit holders in the SSF prior to the introduction of ITQs was function of both the value of the permit held (as representing an entitlement to fish) and the catch history (as a representative measure of the value of the income stream derived from utilisation of the permit).

AFMA undertook a reallocation of school and gummy shark quota for the 2004 season. Currently there are 24 appeals to this reallocation and a real expectation of further AAT/Federal Court litigation thus exacerbating uncertainty in the fishery.

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