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PROCESSES FOR THE ALLOCATION, REALLOCATION AND GOVERNANCE OF RESOURCE ACCESS IN CONNECTION WITH A FRAMEWORK FOR THE FUTURE MANAGEMENT OF FISHERIES IN WESTERN AUSTRALIA

A scoping paper developed for consideration and use by the Integrated Fisheries Management Review Committee

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Processes for the allocation, reallocation and governance of resource access in connection with a framework for the future management of fisheries in Western Australia

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Compiled by W. Fletcher and I. Curnow

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CUSTOMER FOCUS
WESTERN AUSTRALIA

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FOREWORD

The Western Australian Government is committed to developing a new management approach for our fisheries that incorporates economic, social and environmental considerations. Within this broad context of 'ecologically sustainable development', or ESD, the issue of how fish resources can be best shared between competing users requires consideration.

The Government believes an integrated management approach is essential to meet the growing pressures on our fish resources. This approach requires the determination of sustainable catch levels and the allocation of access shares to the various user groups.

An Independent Review Committee, chaired by former high court judge Justice Toohey, has been established to provide an expertise-based report on an integrated management framework for fisheries. The Integrated Fisheries Management Review Committee is due to report to the Minister for Fisheries in July 2002.

The following is a **scoping paper** that was developed to provide further information for consideration and use by that Committee. Its purpose is to outline the key issues that surround the shift from the current sectoral fisheries management approach in WA to a more integrated framework incorporating explicit allocation models. This includes detailing the justification for such an initiative, the historical background of previous allocation mechanisms within each sector and a review of the range of options that could be used to progress the situation.

The paper was prepared by the Department of Fisheries with significant input from key representatives from the commercial, recreational and conservation sectors. The information provided in the paper, unless specified explicitly, does not purport to represent the preferred option(s) of either the Department or any of the representatives/sectors involved in the drafting. Instead, this paper tries to ensure that options that could be used to progress this issue in WA are canvassed and can therefore be further explored by the committee.

1.0 INTRODUCTION

1.1 Background

This paper outlines the issues associated with developing a framework to deal explicitly with the allocation, reallocation and the governance of access to the fisheries resources of Western Australia. Such a framework will provide one of the main elements needed to begin the implementation of integrated management of coastal fisheries of Western Australia as outlined in *Protecting and Sharing Western Australia's coastal fish resources: the path to integrated management (Fisheries WA, 2000a)*. Moreover, having processes to deal effectively with allocation and integrated management are fundamental requirements of the Department's ESD initiative as outlined in the *Policy for the Implementation of Ecological Sustainable Development for Fisheries and Aquaculture within Western Australia* (Fletcher, 2002). The tools required to give effect to this ESD policy, including this allocation framework, will be developed over the next five to ten years which will affect all elements of the Department's operations and ultimately enable the completion of effective regional marine planning.

It is paramount to have a clear policy framework upon which to base decisions related to the allocation of access to our fisheries resources, particularly within coastal regions. Many coastal stocks have been subject to exploitation for decades by a relatively unrestricted commercial fishery and an ever-increasing number of recreational fishers, both of whom continue to have access to better technology. The competition for these resources, and the attendant conflict about the relative levels of access available to each sector, has been escalating since the turn of the 20th century, but has escalated greatly over the past 20 years.

With excessive fishing capacity remaining in some commercial fisheries, the growing influence and effort from recreational fishing along with widening concerns for the environment, the protection of biodiversity and needs of other sectors (e.g. indigenous interests, marine planning), it is clear that more sophisticated management is required. Both the Department and the Government have recognised that a more comprehensive approach (involving explicit allocation decisions) needs to be initiated; otherwise the long-term sustainability of some of the more vulnerable stocks may be at risk in an environment where technology and population pressures continue to expand. Even in situations where stock sustainability is not at risk, the lack of an explicit allocation mechanism has significant implications for long-term resource security and/or quality of experience of the various sectors involved. Community confidence that these resources are managed appropriately may also be affected.

1.2 What Sectors need to be considered?

The traditional participants in disputes over the allocation of access to fisheries resources have been the commercial and recreational catching sectors. Restricting future debates to such a narrow assembly is, however, no longer appropriate with many other sectors now expecting to, and needing to, be included in any deliberations. There is a wide range of sectors that have direct or indirect interests in the allocation of fisheries resources, including the general public. Understanding and incorporating their needs within a management framework will be a major element in the effective implementation of ESD.

One emerging sector is the indigenous fisher, whose expectations and requirements in relation to fishing are currently being identified as part of the development of the Aboriginal Fishing Strategy. It is appropriate that the outcomes of this strategy are taken into account during any relevant allocation debates. Moreover, it is possible that Native Title determinations (or Land Use Agreements) may have elements that could affect the suitability of other allocation decisions within some regions (eg marine refuge areas).

The aquaculture sector requires access to wildstock fisheries as a source of broodstock. Potentially, they may also require access to stock for farming purposes, although this could be acquired through the commercial sector. More commonly, conflict between aquaculture and other user groups will take the form of competition for space arising from this sector's requirement of access to high quality, relatively sheltered waters.

Other sectors not generally recognised in previous allocation debates include those that wish to protect specified areas from any form of exploitation, such as eco-tourism operators and sports divers who want direct access to such areas, plus various conservation groups who may not need direct access but wish to have "no-take" areas developed to meet other objectives. Despite these groups not wishing to catch any of these resources, these "no-take" areas still require a specific allocation of access, just as each of the catching sectors (i.e. commercial, recreational and, where relevant, the charter boat and indigenous sectors) need specific allocations for capture. Taking such an inclusive approach will be necessary for implementing integrated management.

In addition to these primary sectors, there are a number of secondary stakeholders who may need to be considered in some of the allocation debates. These include the seafood consumer, which for some fisheries comprises recreational and non-recreational fishers, tourists, locals and other purchasers of commercially caught product. Other secondary sectors that may have an interest in decisions include those providing the infrastructure for the primary sectors (commercial, recreational or no-take sectors) to operate. These secondary sectors are important in determining the impact on issues, such as regional development.

The degree to which any, or all, of these sectors have an interest in the allocation arrangements will vary greatly among fisheries and regions. Nonetheless, to be effective, the framework for the allocation of resource access must be capable of incorporating and appropriately meeting the needs of all relevant sectors. Excluding the ability of one or more of these groups from the process would be as deficient as was the disassociation of management of the recreational and commercial sectors prior to 1990.

1.3 What are the objectives for this paper?

During the past 20 years a comprehensive set of arrangements for commercial (*Management Directions for Western Australia's Coastal Commercial Finfish Fisheries;* FWA, 2000b) and recreational fisheries *(Management Directions for WA's Recreational Fisheries;* FWA, 2000c) in Western Australia has been developed along with the legislation to enable the establishment of marine protected areas (FWA, 2000a).

The framework outlined in this paper builds upon these successful initiatives by providing a collective viewpoint on the major issues associated with the allocation and reallocation of access to the State's fisheries resources and outlines the various mechanisms that may provide the way forward. Given that there have been a number of previous publications on the general issues, these will not be presented in detail here[1].

Based upon the overarching requirements of the *ESD Policy* in general, and the *Integrated Fisheries Management* initiative more specifically, the objectives of this proposed allocation framework are to:

- Maximise the level of resource security across all sectors.
- Increase the transparency of decision-making processes related to resource allocations.
- Maximise acceptance by each major sector and the general community of allocation decisions (which should minimise the need for future political intervention).
- Minimise the difficulties associated with longer-term adjustments and reallocations amongst sectors by devising a system capable of dealing with future developments.

To achieve these objectives, the remainder of the paper will:

- outline the history of fisheries management arrangements in WA related to resource allocation;
- present the various types of criteria which may assist in making allocation decisions;
- scope a series of options as to how the decision making process could occur and the implications of each of these;
- describe how the Department could administer these arrangements and ensure adequate compliance with the allocations; and finally
- discuss the costs and benefits of various systems that could be used to enable ongoing shifts in allocation amongst sectors.

[1] The reader is directed to publications cited above if required.

2.0 FISHERIES RESOURCE MANAGEMENT ARRANGEMENTS

2.1 Background

The issues discussed in this paper are highly emotive in nature. It is important, therefore, to recognise that the major driver for the management of fisheries resources is human behaviour. Thus, while the objectives of fisheries management are directed towards sustaining stocks of fish, what is actually managed is the behaviour of individuals undertaking fishing[2] activities[3]. This has major implications because to effect a significant change in human behaviour, differential levels of rewards, punishment and costs of maintenance are required, depending upon the sector involved[4]. Consequently, very different regimes of management have developed for fisheries during the past 40 years. The suitability of these systems to the more sophisticated processes now required varies accordingly.

2.2 Historical Patterns of Participation

The different fish stocks in Western Australia are not equally 'important' to all sectors. The initial background paper on recreational fisheries management "*The future for recreational fishing: issues for community discussion"* (RFAC, 1990) identified four major groups of fisheries (Box 1 – Group A - D).

While some of the percentages may have changed in the past 10 years, few species would have moved categories. What this suggests is that most of the debate and urgency relating to resource allocation, at least between the commercial and recreational groups, will be concentrated within the group C species.

The allocation issues for the no-take sector are, however, probably not so easily categorised and would need to cover a wider spectrum species and issues. These probably form a fifth category (See Box 1).

[2] Whilst this does not specifically mention the non-capture sectors, the premise is the same.
[3] Noting that most fishing activities capture more than one species and each species is usually captured by more than one fishing activity
[4] There are additional influences on management approaches resulting from the biological differences amongst the species affected.

BOX 1: Major Groups of Fisheries

Group A
Fish stocks taken totally by commercial fisheries – scallops, oceanic prawns, scampi, deep water demersal fish, small baitfish (less than 1% taken by recreational fishers)
Group B
Fish stocks taken mainly by commercial fishers but of particular interest to recreational fishers – abalone (excluding the metropolitan fishery), rock lobster (less than 10% catch by recreational fishers), mullet, tuna and possibly some bait species.
Group C
Fish stocks targeted by commercial and recreational fishers – Australian salmon, Australian herring, dhufish, pink snapper, river prawns, crabs, barramundi, whiting, and inshore reef fish, and Roe's abalone in Perth (greater than 10% catch taken by recreational fishers).
Group D
Fish stocks targeted almost exclusively by recreational fishers – mulloway, tailor, marron and trout (more than 99% of the catch taken by recreational fishers).
Group E
Non-targeted fish stocks of particular conservation value

Adapted from: *The future for recreational fishing: issues for community discussion* (RFAC, 1990)

2.3 Management Plans and Arrangements

The *Fisheries Resources Management Act 1994* (FRMA) provides the essential "box of tools" to enable fisheries to be managed in a legislative framework[5]. The legislation itself defines the types of rules that can be used for a fishery, covering aspects, such as access criteria, grants of licences, controls around setting of catches, access entitlements, licensing rules on transferability, area and timing of closures, rules around gear usage, timing of seasons and nursery closures. They are supported by a series of regulations covering protected fish and undersize fish, along with other biologically based controls.

Operationally, the rules governing individual fisheries may be formulated into arrangements specified within a defined Management Plan, or an interim management plan. These plans provide the legal mechanisms to give effect to the fisheries management arrangements and are tailored to accommodate the nature of the species being exploited, the fishing technology involved and the historic structure of the industry. In most cases they use a combination of limited entry, specific gear, time and spatial restrictions and, in certain circumstances, actual catch limits to achieve the sustainability of the target species (see FWA 2000a for more details).

These legislated plans may, on occasion, be supported by Ministerial policy statements, Ministerial guidelines and administrative arrangements around the Management Plan. The operational objectives related to each of the issues identified within each fishery will initially be articulated within the ESD reports that are being completed for each fishery (see later for details). These may also be compiled within Ministerial Guidelines or other related documents.

[5] As did the previous Act

For fisheries that do not have formal management plans, some have specific management arrangements that function through a series of notices, licence restrictions and/or exemptions. Finally, for the remaining fisheries, no specific arrangements have been developed with management relying upon the general conditions as specified in the FRMA and the FRMR.

The nature of the management regime will affect how successfully an allocation framework can work. Unless the management arrangements can limit each sector to its allocation, any decision may be meaningless in the longer term. It is likely, therefore, that the process of implementing this allocation framework will require simultaneous alterations to the management arrangements for other sectors to give effect to any allocation decisions.

2.4 Commercial Fisheries

The history of commercial fisheries management are summarised elsewhere (see FWA, 2000b). Briefly, the introduction of limited entry management approaches in 1963 for the Shark Bay Prawn Fishery and the Western Rock lobster Fishery, replaced the open access arrangements previously in place and commenced modern commercial fisheries management in Western Australia. Subsequently, the number of all commercial fishing boat licences (FBLs) was frozen in 1983. Since then, there has been a planned approach to bring all commercial fisheries under specific management arrangements. There are now 33 managed fisheries in WA representing 98 per cent of the commercial production value (Crowe et al., 1999).

BOX 2 Previous Methods of Allocation of Access within the Commercial Sector

The method of allocating access to the licensees in each of the 33 commercial managed fisheries has relied heavily on (but not always) the relative level of historical participation. In most cases, a level of access has been granted if licensees could demonstrate that they met the relevant entry criteria. The requirements for access for successful applicants have generally fallen into five main categories.

1) They had sufficient history (catch or effort) to gain one of a limited number of licences, with all licences then granted the same level of access arrangements (eg South Coast Abalone).
2) Assigned access was proportional to their historical level of participation (e.g. Demersal Gillnet and Long line Fishery)
3) A combination of the first two (e.g. Albany Purse Seine Fishery)
4) On application (i.e. not based on history – eg Zone 1 Pearl Oysters)
5) Based on commitment (based on capital investment – not catch – e.g. Shark Bay Scallops)

In some cases, due to a variety of pressures such as reductions in real prices against costs, increasing efficiency of fishing vessels or equipment and political pressure exerted by the recreational sector, fisheries management has resulted in the exit of licensed vessels from these managed fisheries as part of restructuring packages. Consequently, most of the latent effort within these managed fisheries has been removed. The effectiveness of management is now assessed through the annual review of the percentage of fisheries where the catches (or effort levels in quota fisheries) remain within an acceptable range. This performance indicator is reported annually in the Department's State of Fisheries Report and Annual Report.

The systematic declaration of managed fisheries has concentrated the remaining commercial fleet onto stocks and areas where fishing access has remained unrestricted. This has been ameliorated to some extent through the removal of a significant number of FBLs from the general buy-back schemes that have been implemented since 1986. There are, however, still approximately 150 FBLs that do not have access to fish stocks subject to a specific management plan. These licences only have access to the so-called "wetline" fishery, which largely comprises the demersal finfish resources of the West Coast, mackerel, whitebait and a few unmanaged herring stocks (FWA, 2000c). Under current management arrangements, the "wetline" fleet can potentially include every FBL[6] in WA but only about half (720) of the State's total fishing vessels conduct some level of wet-line fishing (FWA, 2000b).

Analyses of the fishing returns for the "wetline" fleet during the late '90s showed that there were significant levels of latent effort in this fishery, even for those FBLs without access to a managed fishery, indicating that it is a major issue requiring attention (Crowe et al., 1999). Moreover, many of the stocks targeted and the areas of operation overlap significantly with the recreational sector, particularly in the lower West Coast region. This situation has already been identified (Crowe et al, 1999; FWA 2000a, 2000b) with November 1997 designated as the benchmark date to assign access[7]. A process to cap effort and assign appropriate levels of levels will need to be undertaken for this fleet as has occurred for other managed fisheries.

While most of Western Australia's commercial stocks are at or near full exploitation, there are a few exceptions with some stocks unexploited or only at the commencement phase of serious commercial fisheries development. In 1999, the Department implemented a "Developing fisheries policy" to allow new and under-exploited fisheries to develop within an orderly framework (Fisheries Management Paper 130). This policy formally recognises pioneer rights in the development of new fisheries, while enabling data to be collected providing for future stock assessments and the development of new fisheries management arrangements to control take and exploitation.

The majority of these development fisheries are managed by a combination of granting a limited number of exemptions, licence conditions or notices providing protective biological controls to control commercial exploitation. The conclusion of the development phase may include the formulation of management plans with secure access rights in the form of managed fishery licences.

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[6] All boats with an FBL, even if they have one or more managed fishery licences attached, are currently allowed full access to the 'wetline' fishery.

[7] This date relates to the assignation of access WITHIN the commercial sector. It is not necessarily the date to be used for assigning access AMONGST sectors.

2.5 Recreational Plans

For recreational fisheries, there has not been an integration of recreational rules for fishing into the legislative structure of a gazetted fisheries management plan equivalent to a commercial fisheries management plan. In some cases, where a recreational licence is required (eg for rock lobster, abalone) a collated set of management arrangements is available in the form of a brochure, but there are no limits on the numbers of recreational fishers who can participate in the fishery. Similarly, there are few examples where the total size of the take by any recreational sector is explicitly restricted to a specific target level, with the possible exceptions of marron and the metropolitan abalone fisheries.

The management of recreational fishing is largely based on size limits, bag limits, gear controls and area/time closures, many of which are as much about sharing the catch within the sector or to assist with the compliance of black market activities, as they are about assisting with sustainability. For some species/areas, the combination of bag limits, but no specific limits on access, may be insufficient to achieve future sustainability targets. In these circumstances, alternative management mechanisms that either limit access by participants, area, or time may be required.

Such a change in approach will need to be based upon reasonable levels of information and it is only in the last five years that we have started to collect sufficiently reliable information on the levels of catch and effort by the recreational sector on a regional basis. Indeed, the first national survey of recreational fishing to provide estimates of the total catch and effort on a regional basis around the country has only just been completed. These data will prove crucial in determining the current allocation levels amongst sectors.

2.6 Aquatic Charter and Fishing Tours

Aquatic charter operators provide a service to fee paying customers to take them fishing. They offer a quality experience to customers (recreational fishers) by enabling fishers to obtain relative high catch rates of quality fish or access to valued but generally inaccessible fishing grounds. While specific legislation relating to the licensing of these charter operators has been enacted (changes were made to the FRMA and a series of new regulations were legislated), it is still open to debate whether the allocation issues related to this group should be incorporated within the general recreational fishery, or if they require separate treatment.

2.7 Aboriginal Fishing Strategy

The development of an Aboriginal Fishing Strategy is being progressed through a committee chaired by Justice Franklyn. The aim is to involve peak Aboriginal interest groups, the community, and industry in the development of recommendations to Government about the inclusion of the traditional, cultural and economic aspirations of Aboriginal people within a sustainable fisheries management framework. From this consultation, it is expected that there will be recommendations for regional specific strategies in recognition of the unique sustainability requirements arising from the variety of demographic and bio-geographic features of Western Australia.

The strategy will include any recommendations for implementation of statewide policy and legislation in respect to Aboriginal fishing issues. The other legislative issue of relevance is the possible implications from Native Title decisions.

For example, both the *Croker Island* and *Wik* decisions found that native title rights co-exist with other rights conferred by legislation, but must yield to those statutory rights to the extent of any inconsistency.

2.8 The 'No-Take' Sectors – Fish Habitat and Conservation Reserves

There is a variety of legislation in WA that can result in the protection of marine areas to varying degrees (see FWA, 2000a for more details). Briefly, these may be implemented under the Marine Reserves Act (as one of four types of zones within marine parks) or within the FRMA (as Fish Habitat Protection Areas). While debate over the general value and effectiveness of zones, and particularly 'no-take' areas for overall fisheries management purposes continues,[8] there is wide agreement that such areas are appropriate to achieve more specific outcomes – for example, creating areas of relatively high local abundance of fish for use by research/ the eco-tourism sector, or biodiversity issues.

Currently, there are large numbers of area that are not part of any Marine Park and where some or all forms of fishing are prohibited.. These restrictions have in some cases been implemented as part of the management arrangements of one or more managed fisheries for species-specific reasons. Alternatively, Fish Habitat Protection zones have been declared to protect areas in a more general sense.

In addition to these fishery-based spatial mechanisms, there are six marine parks[9] and one marine reserve declared in WA. Planning is underway for marine parks in other areas of the State,[10] which involves expensive consultation processes and management costs once implemented. The number, size and location of future marine parks, and especially the protected zones within these parks, needs to be assessed within the integrated management framework (FWA, 2000a). This may include examining alternative ways (such as the use of Fish Habitat Protection Area) of achieving the desired outcomes and, most importantly, should define more precise and measurable objectives for the creation of these regions.

General conservation concerns relating to the impacts of harvesting on the general ecosystem may need to specify how allocations to other trophic levels are being affected.

[8] It also needs to be acknowledged that there are a variety of closures under the FRMA related to specific sustainability objectives within most management plans, and even within the regulations, that are often not recognised as no-take closures but are more targeted and not usually blanket closures to all fishing.
[9] Ningaloo, Shark Bay, Marmion, Swan River, Shoalwater Bay and Rowley Shoals
[10] Jurien Bay, Montebello Islands, and the Dampier Archipelago

2.9 Inter-Jurisdictional Arrangements

In addition to the issues related to allocating resources to sectors within WA, in a few circumstances resources are shared with other jurisdictions, although these are relatively few in number. Following the Offshore Constitutional Settlement arrangements that were developed over the past 10 years (FWA, 1998, 1995), most commercial fisheries in Western Australia are now fully managed under the FRMA. For these fisheries, the jurisdiction of WA management extends beyond the normal three-mile limit out to the edge of the AFZ.

However, there are some fisheries where management, both inside and outside of the three-mile limit, has been passed to the Commonwealth. Similarly, some are managed as a Joint Authority between WA and the Commonwealth. In these situations, difficulties may arise, such as the West Coast Tuna and Billfish fishery, which is managed by the Commonwealth, but the species captured overlap with the recreational gamefish fishery and the WA managed, commercial gillnet and long line fisheries.

In the north of the State, other types of jurisdictional issues occur. Thus, there are a number of shared stocks (e.g. Spanish mackerel) between WA and the Northern Territory, and also with Indonesia (many demersal finfish stocks). Joint arrangements with NT are being developed to minimise difficulties of the former while the latter problem is likely to become more significant over time.

Jurisdictional issues could also occur in marine park planning, such as in circumstances where the Commonwealth may declare a marine park within its waters off the WA coast without adequate consultation with the WA government agencies, relevant stakeholder groups and the community.

2.10 Future

Among the various sectors, there are significant differences in the degree to which current management arrangements can ensure effective governance. Thus, most commercial fisheries already have systems in place that allow catch levels to be manipulated. This is not the case within nearly all recreational fisheries and for some of the commercial fisheries with which they interact. Finally, while the legislative mechanisms for implementing no-take areas has been established, the contextual framework for precisely why and how requires further thought.

The implementation of ESD for fisheries will involve a comprehensive assessment of fisheries, including the governance arrangements of each fishery, of which effective allocation is a major component. It is likely that many WA fisheries in which resources are shared would not pass an objective test on this aspect because there is no explicit specification of access shares among the sectors. Such a deficiency may have long-term implications for the overall performance of these fisheries.

3.0 PERFORMANCE ASSESSMENT OF FISHERIES

3.1 ESD and Performance Reporting (Determination of Yields)

Since the early 1990s, fisheries management agencies throughout Australia have increasingly adopted, through legislation and practice, the principles of Ecological Sustainable Development[11]. These principles include the requirement to consider the target species, the broader ecosystem, the social and economic issues of the fishery and the system of governance used to achieve these objectives.

Much of the work by the Department through the 1960s to the 1990s was focused on the sustainable use of exploited fish. This situation is changing following initiatives at both the national and State level to develop frameworks and policies for the implementation and reporting on ESD for fisheries (Fletcher et al., 2001, 2002, Fletcher, 2002). These initiatives recognise and examine all elements of sustainable fisheries resource management, going beyond the sustainability of the target stocks and the fishery itself, to examine the direct and indirect impact on the environment, including the broader ecosystem. Moreover, it also extends the evaluation of acceptable performance of the social and economic impacts of the industry sectors along with the governance of all the parties involved in its management.

Despite a half-century of fisheries management, there are few explicit definitions of acceptable levels of catch/effort, other than those which seek to sustain and provide ongoing economic development to the State. Some stakeholder interests are actively involved in the management of individual fisheries through the Management Advisory Committee (MAC) process, with the management agency in a role as custodian for the community in the use of fish stocks. Management may effectively control the levels of exploitation though the use of either input controls (which limit effort), or by explicit output controls (that limit catch), such as quotas. The most appropriate combination of these management approaches depends upon the fishing methods used along with the behaviour and dynamics of the stocks and fisheries involved. These outcomes are usually determined iteratively. In situations where there is substantial overlap in access, there may be a need to shift towards having integrated MACs[12], at least until specific allocations have been made.

Management is supported by stock assessment and other research aimed at providing appropriate levels of information, including if there is sufficient spawning stock to maintain relative rates of recruitment, and whether the fishery is targeting sizes that maximise economic value. Despite the levels of uncertainty in these estimates, and noting that there are often large interannual variations in stock abundance , this approach has proved to be relatively successful over the past 40 years. Where stock failures have occurred due to excessive fishing pressure, or events driven by environmental perturbations, corrective management measures have facilitated industry adjustments and allowed the stocks, and therefore the fisheries, to recover in the majority of cases.

[11] See the WA ESD policy for details

[12] such as suggested in the Recfishwest submission to the Integrated Fisheries Management Review Committee – i.e. including commercial, recreation, conservation groups etc.

Explicit statements of the acceptable range of catch or effort for species/fisheries and other indicators of the health of the State's fishery have been presented in the *State of the Fisheries Report,* which the Department has submitted to Parliament annually for a number of years. Whether the basis for these statements is related to the concepts of maximum economic yield or maximum sustainable yield is not generally explicit or appropriate where the environment, (including the social and economic environments) is constantly changing. The utility of input controls to manage exploitation rates is often the most appropriate under such uncertain circumstances. The final determination of the appropriate exploitation rate attempts to optimise the use of fish stocks by user groups in an implicit way, with the overriding stipulation being that future recruitment of the target species, and the broader ecosystem, should not be significantly impacted.

The framework developed to report on ESD has been tested through a number of case study fisheries across Australia. Within WA, the Department has completed this work on the six major fisheries. Due to the priority to meet the environmental assessment requirements of Environment Australia and others (see below), only the environmental and governance aspects of ESD are being examined (see Fletcher, 2002 for details) during the first phase of implementing ESD over the next two years,. Ultimately, reports will be generated for each of the commercial fisheries, each of the recreational fisheries and other sectors covering all aspects of ESD, but this is likely to take five years or more to complete.

3.2 Role of Environment Australia

The recent changes to Commonwealth legislation through the *Environment Protection and Biodiversity Conservation Act* 1999 (EPBC), legislation and changes to the *Wildlife Protection (Regulation of Export and Imports) Act 1982*[13]*,* specifically those related to Schedule 4, have had considerable impact on the Department. These changes effectively require all Australian fisheries agencies to submit applications to Environment Australia on their current fisheries management arrangements for their export-based, commercial fisheries. The agency is required to report specifically on resource sustainability and impacts of that exploitation on associated biological resources and the surrounding ecosystem. Whilst these changes will not come into effect until December 2003, States and Territories are under pressure to report earlier and confirm ongoing approval for continuing exports of fish products before this date.

From the Department's perspective, the approach adopted by Environment Australia is partly flawed and open to risks of interpretation, materiality and inconsistency. Given that the Commonwealth is seeking to apply its administrative rule to the range of fisheries under State management, these agencies must address their guidelines as they can ill-afford failure in compliance. Fisheries agencies will be held accountable by their respective political masters and direct stakeholders if individual fisheries become closed to export, as a consequence of non-compliance.

[13] Even more recently, (July 2001), the WPA has been "rolled into" the EPBC Act so the term Schedule 4 will soon be redundant – replaced by section 303DB

3.3 Audit by the Environmental Protection Authority (WA)

It has been stated that a major driver for these changes to Commonwealth legislation, and the major challenge for fisheries jurisdictions, relates to the level of confidence of the general public in the appropriateness of fisheries management practices. It is incumbent upon all natural resource management agencies to demonstrate clearly that they are achieving the principles and objectives of ESD. This will require a level of independent scrutiny of their performance against the levels of exploitation chosen, and the mechanisms and processes that were employed to determine the levels themselves. This audit process should extend to all sectors within the control of the agency, not just those that require assessment by other agencies (eg export fisheries by EA).

Engendering confidence requires a transparent decision-making process for the setting of sustainable yields and acceptable levels of ecosystem impacts for each of the State's fisheries. There should also be a robust and efficient framework for resource allocation and reallocation of these resources among sectors to assist in achieving adequate performance[14]. This requirement is essential to meet changing intergenerational community needs in the exploitive and non-exploitive use of fisheries and fish. If done correctly, such reports (by default) will have met the needs of EA and other third parties.

The Auditor-General's Office annually audits the performance of the agency, including a number of indicators relating to the sustainability of stocks (see Annual Report for details). In the longer term, the Environmental Protection Authority in Western Australia and the Department of Environment, Water and Catchment Protection may be capable of providing broad support as independent authorities in the audit of environmental management performance by natural resource agencies including Fisheries. In the case of fisheries management, this audit role needs to extend to:

- the level of total yield or effort targets for exploited fisheries and the rationale for their determination;
- the impacts of fisheries exploitation on the environment and ensuring integrity of accompanying ecosystems within an ESD environment and assessment process;
- providing confidence and independent reporting advice to Environment Australia and the respective Parliaments on the performance of the State's fisheries agency. (This could facilitate administrative efficiency in meeting accountability requirements of EA, enabling export fisheries to continue);.
- The specifics of who would audit the social and economic components are not yet developed.

For administrative efficiency, the Department may need to further develop the role of the *State of the Fisheries Report* beyond Parliament to include the EPA. This should be supported by independent audit advice from the EPA to Parliament on annual performance of our fisheries. Every five years or so, possibly dependent upon the timeframe required by Environment Australia, a more extended audit report on selected fisheries would also be warranted.

[14] until now this has occurred by default (see more on this below)

Clearly, the role of the Department as the responsible natural resource agency, in partnership with stakeholders is to undertake or coordinate research and the provision of technical advice. This includes the justification for total yield parameters and the preparation of reports on the assessment and processes encompassing ESD principles to be submitted for EPA approval. In addition, the Department needs to closely manage the processes that clarify the allocation and use of fish stocks between the major stakeholder groups, and their administration and compliance to ensure that adequate performance against ESD objectives is occurring. In the absence of more sophisticated techniques to allocate access to resources, continual administrative and, more likely, political interventions will be necessary.

4.0 THE ALLOCATION PROBLEM

4.1 General

Despite, or perhaps because of, the intensely emotive nature of debates related to the sharing of access to fisheries resources, public policy prescriptions have rarely attempted to explicitly manage the relative level of access of each of the sectors. Instead, they have simply dealt with public perception and made adjustments to the rules as combined fishing pressure (or lobbying pressure) of all groups has continued to grow. Consequently, these decisions have tended to be politically influenced, and generally not based upon any ideological platform.

To date within Western Australia, and even Australia, there have been few explicit decisions to allocate resources in a systematic fashion among the various stakeholders. This is the primary objective of Integrated Management. Where this has occurred, it has usually been done on a spatial basis, by allocating an area to one sector or the other (eg Perth metropolitan abalone). Where commercial fisheries take place alongside recreational fishing. there has generally been minimal recognition of the other sector within their respective management arrangements. Consequently, the current 'share' of access to these resources has evolved implicitly through the historical patterns of exploitation exerted by each group of users. These levels have resulted from a combination of factors including:

- the relative market value of the resource;
- the relative effectiveness of fishing gear;
- the relative extent and ease of access to the resource;
- differential levels of controls placed on each group; and
- the numbers of individuals participating.

Changes to any one of these factors, most of which are currently not subject to effective management controls, could substantially alter these 'shares'. Moreover, the other sectors, such as the 'non-take' sectors, have been effectively excluded from this process except for where the creation of protected areas has coincided with areas of interest to them. The deficiency of this approach to allocations has manifested in different ways amongst the sectors.

For managed commercial fisheries, the sustainability of the target species is paramount and is achieved by constraining fishing activity, limiting licence numbers, and ongoing adjustments to their management arrangements. In circumstances where the catch by other sectors has increased to a point where the stocks are being put at risk, the commercial sector may, under current arrangements, be required to reduce its catch levels and hence its access 'share', to ensure sustainability. Some industry members are, therefore, becoming increasingly nervous about the future of their long-term investments in major fisheries. This concern about resource security and security of access has been heightened by the Government's active program to reduce conflict between user groups through ongoing reductions in commercial fishing licence numbers. For some fisheries (e.g. the State's estuarine fisheries), this has reached a point where further licence reductions, at least in the West Coast estuarine fisheries, threaten to permanently close down the waters to commercial fishing activity. This has implications for consumers (many of whom are recreational fishers), wishing to purchase local fresh fish in these regions and researchers who utilise the data extensively to monitor the state of both recreational and commercial stocks.

Current government policy allows recreational fishing participation to grow as the state's population expands and the numbers of fishers increase. Furthermore, the infrastructure and technology available to recreational fishers to increase their effective effort has also been increasing (e.g. more boat ramps, GPS etc.). In a small number of circumstances, this growth in population pressure/infrastructure/technology has resulted in fish stocks being over-exploited, and has lead to stock failure (e.g. Shark Bay Recreational Snapper Fishery[15]). Elsewhere, there is uncertainty in current stock assessments of many species targeted by recreational fishers. Specifically, what level of increase will be too much? Even in the absence of commercial fishing, recreational fishing catch cannot be allowed to expand indefinitely as the population grows. Obviously, the precautionary principle needs to be applied, such that additional, effective measures to constrain catches within the acceptable levels are likely to be needed. Where the introduction of explicit controls on recreational catch levels is required, substantial changes to policy and current management arrangements and methods will be needed.

To maintain community values around the use of our fisheries resources, there is a strong case for historical practices to be discontinued and a move to a more explicit framework for the allocation of the sustainable catch as defined resource access shares. The Department, in partnership with the various stakeholder groups, should then be tasked with managing the achievement of these shares accordingly.

4.2 Managed Commercial Fisheries

For the major state fisheries, such as rock lobster, abalone and Shark Bay snapper, the current yield and take by each sector are already known. The challenge becomes one of developing an explicit allocation framework through which agreement on the take can be attained and managed in the future.

[15] which is now recovering following strong management intervention.

The fisheries allocation issues are simpler for those fisheries not open to, or subject to recreational fishing (e.g. the pearl oyster fishery, the Shark Bay and Exmouth Gulf prawn fisheries–the Group A fisheries mentioned above),. It largely becomes a question as to whether any consideration for future recreational access is needed or not.

There is a third group of managed fisheries, which includes the demersal gillnet fishery. These fisheries have a significant overlap with both the wetline fleet and the recreational sector each of which would have a keen interest in ensuring there is a more definitive allocation among sectors.

4.3 Commercial Fisheries with Limited Controls

The majority of inshore fisheries, including the commercial wetline fishery and the inshore recreational line fishery on the West Coast, are multi species, with neither subject to effective management. Consequently, a great deal of work is required to complete this process. This will include defining what these fisheries are and bringing both the management of the commercial and recreational fisheries sectors within an integrated management framework, including setting of broad catch limits and appropriate shares for each of the relevant sectors (both take and non-take).

Plans for the management of these commercial sectors are needed that restrict the level of future participation within each region and use appropriate mechanisms to control the level of effort/exploitation on these stocks. Of relevance in this process would be the previously announced November 1997 benchmark date that provided warnings about future investment in these fisheries. Both the previous and current Ministers for Fisheries have reiterated this benchmark date on subsequent occasions.

4.4 New and Developing Fisheries

While it is unlikely that WA will have many more new or significant fisheries that are yet to be developed (refer 2.3), it is important when setting final fishing management arrangements for these fisheries to determine notional allocations for recreational fishing harvesting even if the shares set are low. In a practical sense, this would provide the appropriate level of pioneering rights and resource access security for those undertaking the development, but formally acknowledge the potential for future participating rights of other users.

4.5 Indigenous Fisheries

The form and nature of these fisheries are not yet known, including whether this will relate to only customary use, or be more general covering recreational activity or even commercial utilisation. This should become clearer over the next two years as the Aboriginal Fishing Strategy is developed and the Working Group submits its report. Similarly, the types of outcomes flowing from Native Title decisions may also be available within the next few years.

The access required is likely to be spatially based and possibly targeted at some key species rather than general levels of access, none of which are impossible to incorporate within the current tools available.

4.6 'No-Take' Fisheries

There has been no specific allocation to this sector within previous management arrangements. Spatially based allocations are, however, the most likely to achieve the objectives of this sector.

5.0 PROPERTY/ACCESS RIGHTS

5.1 General

A prerequisite for any process of allocation among sectors is to have an appropriate legal framework upon which these allocations can be 'attached' Such a framework is only likely to operate effectively where there is some system of 'rights' associated with these allocations. The concept of property/access rights in fisheries has been an issue of concern in Western Australia for the past decade. This issue not only poses the question "What is this right?", but also "how does this vary among and within sectors?".

Within the commercial sector, for fisheries where open access arrangements have been replaced with some form of limited entry, the result is generally a form of tradeable right being assigned to successful applicants. These rights have provided an advantage to these groups because they are viewed as collateral by banks for loans. Furthermore, they decrease the uncertainty associated with ongoing access and, in many cases, increase in value through time - often as a result of the process of further restricting access.

Commercial fishers, under pressure from the community in general and the recreational sector in particular, also see the attainment of more secure 'right' as a cornerstone to their continued existence. The common comparison made is with the supposed security that 'freehold' title gives to land – which is why the term'"property rights' is often used by the commercial sector. Fishers have tried to persuade policy makers that similar types of rights are necessary in fisheries.

Excerpt from 'WAFIC Submission on National Competition Policy Review, 30 August 1999 p.12

"The future for the industry and the State is to confirm private property rights in and access to fish resources while imposing responsibilities for developing them in the hands of these holders (recreational, commercial or passive) and relying to a great extent on market mechanisms and discipline. Principal elements of these rights must be the right to hold property, transfer property, have those rights protected as against third parties and relief from forfeiture except through due legal process. It is fully recognised as essential that the special nature of fishing access rights will have to be addressed to ensure that the form these rights take is consistent with the management of the fishery and any relevant externalities."

" *Due to the'common property' nature of fish resources a fishing right will never be property in exactly the same manner as freehold property but it should convey a similar level of certainty whilst explicitly defining the circumstances (eg. Sustainability, reallocation, shifting government policy) which may trigger government intervention and, it should explicitly, in so far as possible, define the consequences (compensation, expropriation, encumbrance etc). These attributes also characterise government dealing with freehold property. The argument for the recognition of property rights does not deny a role for government as having overall public responsibility to oversee that resource management is responsible and sustainable it simply places an obligation on government to clarify the framework in which the market will operate and thus allows economic forces to operate efficiently and effectively. It will also result in the clarification of the respective roles of government and industry".*

"Unless these matters are adequately addressed it is clear that the argument that has been put repeatedly by the agency that due to the common property nature of marine resources and the risk of market failure that the agency must preserve maximum flexibility (unfettered discretionary powers) in decision making will prevail. Consistency, transparency, certainty, fairness and, an efficient and effective economy delivering market based outcomes will always be secondary considerations to a policy of maximum flexibility in decision making within a framework of broad and conflicting legislative objectives".

At times, this debate has sometimes 'idealised' the nature of freehold title and has often not taken into account constraints, such as the possibility for land resumption by government for roads, the Minerals Act, Council By-laws, and State Government regulations. There is also likely to be a fundamental difference between the ownership of a right to undertake an activity (fishing) within a 'public area' from the ownership of a definable area of freehold land.

The arguments put by the commercial fishing industry for greater certainty, on the terms and conditions for the industry's access to the resource, has seen the recreational sector also beginning to question the nature of any corresponding recreational 'right'. Kearney (2001) in his paper "Fisheries Property rights and recreational/commercial conflict" noted that:

"*Allocation between competing user groups will be influenced by arguments over the nature of the right. This, in turn, will be affected by rationale for the right."*

While it could be argued that it is the characteristics of the 'right' that are of primary concern, (particularly with regard to security and permanence in the WA context), some clarification over the form and nature of any 'rights' is important given the disparate views of various stakeholders.

5.2 The concept of a property right

In recent times, perhaps the most useful initiative to explore the concept of property rights in fisheries was an international conference hosted by Fisheries WA in November 1999 called "***Fishrights99****: The use of property rights in fisheries management*". This gave rise to the FAO 2001 publication, which was released recently. The conference was useful in that several shorthand methods of explaining property rights were developed, which makes the issue easier to discuss.

The participants at the Conference were introduced to the concept that property rights had four basic characteristics:

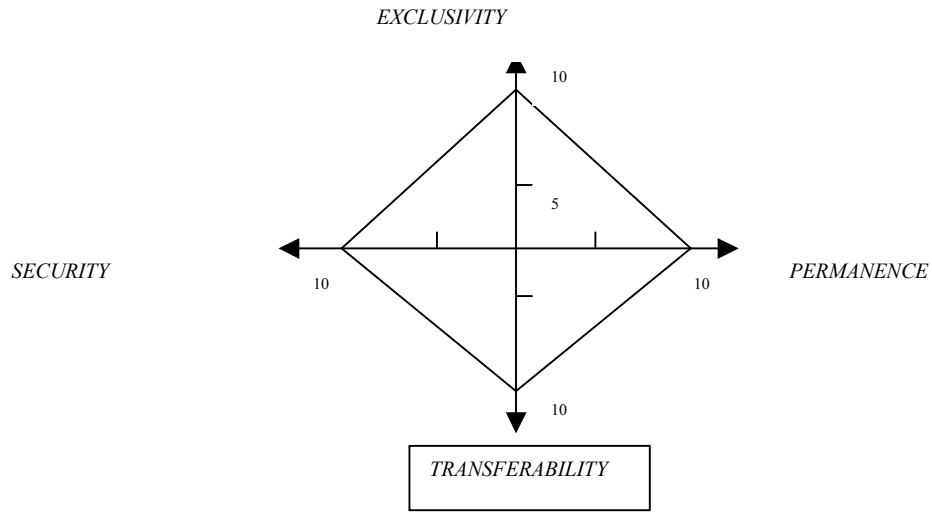
- Exclusivity
- Security
- Permanence (durability)
- Transferability.

The 'complete' property right has all four elements to the maximum extent. Constraining any one of the elements reduces the nature of the property right.

The concept of a 'complete' property right can be illustrated as follows (adapted from Arnason 2000):

In this illustration, a 'complete' property right would have (say) a 'value' of 10 against all four characteristics. To the extent that each characteristic is not 'perfect' the value is reduced (ultimately) to zero.

Figure 1



Security (or quality of title)

This refers to the ability of the owner of the *right* to withstand a challenge or challenges to that "property right" from other individuals or government. A strong *right* would mean that the titleholder has almost complete certainty of withstanding the challenge, compared with a weak *right* where the holder is almost certain to lose the property.

In the Western Australian fisheries context, there is a statutory right of renewal of the access authorisation within fisheries legislation, subject to payment of the fee in the prescribed time and the applicant being "fit and proper". Thus there is some degree of security, although far from perfect. However, although secure, the extent of the right may be circumscribed. For example, South Coast Purse Seine Managed Fishery licensees have a reasonably secure access authorisation to a fishery where currently the quotas are zero.

In comparison with freehold title to land, it should be noted that if council/shire rates are not paid for some years the land could be resumed or sold to recover the debt (although the process is typically more drawn out than would be the case for non-payment of a fishery authorisation).

Exclusivity

This refers to the ability of the *right* holder to use and manage his 'property' without outside interference and 'enjoy' it to the exclusion of others. For example, an Individual Transferable Quota (ITQ) holder theoretically should have almost exclusive rights to the quota. However, the ability of other fishers to influence his ability to fish (including recreational fishers), or the range of associated input controls associated with any ITQ fishery (size limits, gear controls etc), would act against this exclusivity.

Note that *enforceability* is an important aspect of exclusivity - which in fisheries is a right and responsibility of the Crown. This is an important function of the Crown, given the 'non-ownership' status of fish. The licence is an 'access right' and does not confer ownership of the fish, and the fish are shared with other users as a resource for the benefit of the whole community. Therefore, it is important that the Crown takes an active role in the operation of the 'access right', to ensure the rules of access are followed.

This enforcement responsibility of the Crown has implications for the concept of collective 'self-managemen'" by commercial fisherman, for example. This would then only be exclusive to the extent that the Crown conferred and maintained this (temporary) privilege – not *right* - for what is essentially parallel and overlapping access with other uses.

Permanence (Duration)

Permanence refers to the time span of the *right*. By convention, the label 'ownership' refers to a property right held in perpetuity, or for as long as the owner wants (there is, however, the possibility that this property may be resumed by the government for a number of reasons). There is an important difference between an indefinite duration, in which the duration of the property right is not stipulated and a property right in perpetuity, which explicitly states that the *right* lasts forever. Conceptually, the characteristics of duration and security are quite different. Thus, a rental agreement may provide a perfectly *secure* property right for a limited *duration* (provided the rent = fee, is paid).

In the fisheries context, there is a degree of permanence in that the access right is of 12 months duration with an expectation of renewal for an indefinite period (see 'security' above).

To abolish a management plan, for example, requires a subsidiary legislation subject to disallowance by Parliament, thus permitting disaffected parties an ability to lobby their case.

Transferability

This refers to the ability to transfer the *right* to someone else. For any scarce or valuable resource, this characteristic is economically important, as it facilitates the optimal allocation of the resource between competing users as well as uses. An important feature of transferability is divisibility; the ability to subdivide the property right into smaller parts for the purpose of transfer.

A holder of a freehold title can similarly transfer the title. However, subject to Council/Shire or other zoning policies, the property may or may not be divisible 'minimum quota' or pot holding).

In Western Australia, most managed fishery licences can be transferred. In many, there is a degree of divisibility (rock lobster pots; abalone quota) although for public policy reasons (e.g. compliance) there may be a minimum holding requirement.

In many respects, the nature of a commercial fishing authorisation is more akin to a franchise. The franchise typically has good security but limited permanence (the duration of a franchise agreement and the potential demise of the entire business); moderate exclusivity (can only market its franchised products in ways, dictated by the franchiser, others may market similar products), and moderate transferability (as this is commonly subject to the franchiser's approval of the incoming franchisee - see Penn et al., 1996 for full details of this comparison).

Conclusion

A commercial fishery access authority has the nature of a *right*. However, it can only exist, and its extent is determined, by Statute law. The Crown may determine the extent of that *right* and its characteristics (security, exclusivity, permanence and

transferability). The Crown also quite clearly has the right to impose a fee for the access it grants.

The Department has obligations that need to be specified in addition to the obligations of the fisher whose obligations are spelt out in the various rules in the management plans and regulations.

However, full self-management is not possible without exclusivity and even then not fully as previously indicated (e.g. even with freehold land councils still have a say in what happens on that land).

With the conferring of the right, however, comes a range of responsibilities on the rights holder – to obey the rules, act responsibly. The Crown may encourage this behaviour by the conferring of a degree of "self management" and statutory consultation, but it cannot abrogate its underlying responsibilities to the broader community.

5.2.1 Nature of Commercial Fishery 'Right'" in WA

In Western Australia, this debate has taken several forms. There is recognition that many other interventions by Government also confer "rights" of various degrees (e.g. taxi licences, pastoral leases, spectrum licences, potato quotas, milk quotas). Do these property rights have a different nature to that which is, or can be, attainable in fisheries?

The underlying premise for fisheries is different from freehold title. Briefly, within Western Australia (but not all States) no one **owns** the fish in the sea – they are '*animus ferrae'* (wild animals) in legal terminology. In contrast, the Crown owns land ("*Crown Land*") subject of course to Native Title. However, the Crown does assert its right to control **access** to the fish stock – initially through Crown grants and more latterly through licensing regimes –, which have been in place since the 1890s in Western Australia. Once caught, the fish are deemed to be the property of the catcher – but not before then.

Western Australia has taken a line similar to most other States and the Commonwealth whereby it licenses an '**access right'** under the generic term 'fishery authorisation'.

During the discussions leading to the *Fish Resources Management Act 1994 (FRMA)*, the Western Australian fishing industry successfully argued that licensees should have an "*expectation of renewal*" for their access authorisations, provided that fees are paid on time and the applicant is "*fit and proper*". This was accompanied by the creation of a Licence Registry, whereby security interests could be registered against fishery authorisations, thus giving greater comfort to lenders about the collateral they had against the access right.

The commercial fishing industry also highlighted the need for a proper process if resource shares of the commercial sector were to be altered – leading to the "*Guidelines*" mediation process component of the Resource Sharing Initiative.

The Department of Fisheries also explored the possibility of sale by tender, ballot and auction of fish access rights through a discussion paper (Economic Consulting Services

1998) which, although it did not progress in policy, outlined in some detail the concept of a property right in the WA fisheries context.

The nature of a fishery licence within Australia has been the subject of both High Court and full Federal Court Review within the past 15 years.

In Harper, the Tasmanian Government imposed a considerable licence fee on each abalone diver for a licence to fish. The Government argued that its right to impose the fee depended "*not on the proprietary rights in the seabed but upon the exercise of legislative power over the abalone fishery…*" – an argument, which was upheld. It was further upheld that the fee *"is a charge for the acquisition of a right akin to property*" (page 15).

This was distinguished in Harper from "*a fee exacted for a licence merely to do some act which is otherwise prohibited (for example, a fee for a licence to sell liquor) where there is no resource to which a right of access is obtained by payment of the fee*" (page 15).

In Fitti, the Commonwealth proposed to reduce the number of access units to the Northern Prawn Fishery uniformly across licenses to which those units attached by about one third. The effect of this was to reduce the number of participants by one third. The Full Federal Court found that the units "*were property for the purposes of the Constitutional guarantee*" [S 51(xxxi)]. However, the amendment to the plan *"did not constitute in either form or substance an acquisition of property*". Also, "*whilst the units may be transferred, leased or otherwise dealt with as articles of commerce they can confer only a defeasible interest subject to the NPF Management Plan under which they are issued.*"

A general conclusion can be drawn that while fishing access under its many guises has a nature of property, it only has this form subject to the Plan or licensing arrangements that create it.

Thus, the Crown has altered the scope/extent of this proprietorial right, but, due to the underlying common property nature of the resource and the tenants of common law, the right must rest on the statutory provision. To that extent, it can be neither 'perfect' nor attain a nature akin to a freehold title. However, due to the privileged aspects enabling limited access to such common property, the right is distinguishable from rights conferred to allow what is otherwise prohibited by law (e.g. liquor licences, milk quotas).

In the past decade in WA, three explicit fisheries adjustment processes have been used to target reductions in the commercial fishing fleet. These processes are based on the principle of providing some recompense related to current market values to licensed operators for the voluntary surrender of commercial fishing licences.

These are the general Fisheries Adjustment Scheme (FAS), introduced in 1987, and two processes introduced under the 1996 Resource Sharing Initiative - the Voluntary Re-allocation and Buy-out Fisheries Adjustment Process (VBFAP-1996) and the Guidelines for Voluntary Resource Sharing (VRS) process adopted in 1997. These processes are detailed in *Fisheries Management Paper 135*.

The impact of marine protected area planning on the historic use of aquatic resources by the commercial sector has been recognised by government in the *Fishing and Related Industries Compensation (Marine Reserves) Act*, which was passed in 1997 to complement the amendments to the *Conservation and Land Management Act* and the *Fish Resources Management Act* under the *Acts Amendment (Marine Reserves) Act*. These amendments provide for the payment of compensation if commercial fishing, fish processing, pearling or aquaculture is displaced or significantly affected by the creation of marine reserves or zones within marine parks.

The approach adopted in these processes has given weight to expectations of the commercial fishing industry that any future loss of access should be compensable.

5.2.2 Nature of Recreational Fishery Rights

The major property right relating to recreational fishing comes from the original Magna Carta decision of the public's right to fish in tidal waters. This decision, which has subsequently been transferred into Common Law, provides the basis for "potential" access by all people (as has been upheld by the recent "*Croker Island*" High Court Appeal) to fish in tidal areas unless there are specific regulations, which prohibit the activity. There may also be analogies to the issue of "*Riparian Rights*".

Recreational groups argue that, regardless of a legal definition, fish stocks belong to all of the community and recreational fishers have a right to choose to harvest their share. However clearly this 'right' is impacted upon by legislation and the WA government controls the level of recreational fishing through a range of measures, including bag and size limits, temporal and spatial closures and in some fisheries, licensing. They are also impacted by whatever level of access has been previously granted to other sectors. The widely held tenet that "*possession is nine-tenths of the law*" may also be relevant here.

Further, at what stage any recreational 'right' is diminished is unclear – is it when the total recreational share changes or when an individual's catch is altered?

Alternatively, does the Crown's responsibility to achieve the 'optimum economic and social and other benefits from the use of fish resources' override the 'rights' of any single sector or individual?

6.0 OPTIONS FOR ALLOCATION AMONG SECTORS

6.1 Initial Allocation Methods

If specific allocations are to be made, these need to be in a form that can be quantified and monitored and be a proportion of the total allowable take/effort levels. The total level of access granted (either expressed in terms of a relative catch level, or relative effort level, or areal extent) must be consistent with ensuring that the resultant impacts on the stock(s) are sustainable. The processes to determine this are outlined above in Section 3.

In most cases, due to the natural variations in stocks, this is unlikely to be fixed at an actual catch level, but needs to be a percentage of what can be taken annually.

Once the total level of access has been determined, the initial allocation to each sector can occur using one of four models – Ascendency, Historical; Historical plus re-allocation; Start Again. These differ in their complexity, the implications (including the costs and consequences) from their application, and the robustness of the outcomes depending upon the type of fishery being examined. Consequently, it is likely that no one model will suit every situation and that each of them may be applicable under some circumstances.

6.1.1 Ascendency Model

The ascendency model for allocation involves prioritising the order in which competing sectors are considered in the allocation process. This involves giving a priority allocation to the environment by determining the sustainable yield that can be taken. The first allocation of the available yield is to the indigenous/customary take, illegal take, then the recreational catch with whatever is left over being available for the commercial sector (this is similar to the models currently used in some Canadian and New Zealand fisheries). In situations where the recreational take (or the illegal take) increases, the commercial sector must decline by a similar amount to stay within the overall yield limits.

Implications

Compensation – In situations where the commercial sector has to be 'wound back', they would expect this to be completed by the use of 'buy-backs' or some other form of compensation for the removal of their current level of access.

Initial Data Requirements – Data on total catch by each sector would need to be estimated along with an assessment of the total allowable yield.

Ongoing Data Requirements – Data on the catch levels of each sector would need to be collected at a reasonably high level of accuracy to gauge the relative changes in take by the sectors in addition to the natural variations in abundance of the target species over the years.

Robustness: This is largely a 'non–allocation method', because there is no decision to provide sectors with an explicit allocation. This would create issues related to the lack of certainty this model provides, particularly for the commercial sector. It would not progress the debate substantially except to recognise that if the recreational take increases, the commercial take would have to be reduced by a similar amount or over-fishing may result. It may also mean that only the commercial sector needs to be regulated heavily.

Costs: There should be minimal initial set-up costs using this model, as no formal consultation to determine allocations would be required.

Additional costs may be incurred in monitoring and validating level of take by each sector. The direct costs of managing the recreational sector may be relatively low as they may not need to be restricted until their catch approaches the environmentally-

based limit. There may be significant costs in situations where the commercial allocation needs to be reduced frequently.

6.1.2 Historical Model

The historical method of initial allocation would use some point in time, presumably a period when the relative shares of the take/access were known, and fix the future ongoing access levels of each sector to these percentages. The main point of contention would be the time period chosen to calculate the proportions - that is, what are the current shares, or what were the relative proportions at some previous or future survey time.

Implications

Compensation – This would, in theory, result in no, or at least few, compensation issues as the level of current access is not being altered, but this may depend upon the date from which the allocation shares are generated.

Robustness - This method should result in a relatively robust outcome with clear shares being generated for each sector from which a higher degree of certainty would result. The exception would be in situations where it is known that significant changes to participation are likely to be occurring (within say five years). The other problem is that sectors that have no history would receive no allocation. This would be particularly the case for the conservation sector, as they could not generate a catch history for no-take uses.

Initial Data Requirements - Initial data needs would be largely restricted to the relative levels of access of each sector at some agreed date.

Ongoing Data Requirements - There would be a need to collect data to assess whether each sector was maintaining their level of take/access to their allocation (or at least within an acceptable range of variation). This data would need to fit into a system of management that used trigger points to determine when extra actions were required.

Cost – The initial costs for implementing this model, while more than the Ascendancy Model, should still be relatively small as the consultation would be restricted to agreement on the appropriate set of data that could be used to generate the historical levels.

This may be the smallest cost option, especially if potential compensation payments are included in the analysis. There may be a need for additional expenditure above current levels in situations where current monitoring and validation of the take by each sector is unsatisfactory. There may be some increased expenditure associated with the level of management needed for the sectors to remain within their allocation.

BOX 3 - BENCHMARK DATES FOR USE IN ALLOCATION DECISIONS BETWEEN SECTORS

There are four main options for the determination of the benchmark date that could be used for any historically based allocation decision.

1. Year of release of the Toohey Committee Report (probably mid 2002 – but data for 2002 would not be available for a further 18 months – 2004).
2. The period during which the National Survey was done (2000/2001).
3. The year in each bioregion when recreational catch information was/will be available (varies between 1997/98 – 2002/03 depending upon region).
4. Year of release of Integrated Management Report (1999/2000)
5. Wetline Benchmark Date (1997)

6.1.3 "Futures" Model (Historic plus explicit initial reallocation)

This is a variation on the Historical model. It would again involve determining the current/historical proportions of access among the sectors, which are then used as a starting point for negotiations about what the future allocation shares should be. This is likely to be of most relevance in regions/fisheries where the level of recreational activity is expected to increase substantially over the coming years, or where the current access levels of one sector are 'known' to be already too small. A likely scenario under this model would be an explicit reallocation to the indigenous sector in specific fisheries or regions.

Implications

Compensation – If there were a shift in allocation from historic levels from the commercial sector to other sectors, then the issue of compensation would be raised. The level of any compensation and the form it would take would need to be determined.

Initial Data Requirements – The background data would need to at least include the current level of take by each group, plus reasonably detailed information justifying why a shift away from the historical levels is required immediately. In particular, the data should include the impact of any change on the secondary stakeholders – consumers, infrastructure from the shift in allocation.

Ongoing Data Requirements - There would be a need to collect data to assess whether each sector was re-positioned to the altered level of take/access to their allocation (or at least within an acceptable range of variation). There should probably be an additional assessment to determine if the goals of reallocation were actually being met.

Robustness - This would depend upon the level of information available to justify any reallocation at this initial phase, and the general satisfaction of all groups that appropriate levels of compensation have been made.

Cost - The initial set-up costs for this model are likely to be significant. This model includes a fair amount of consultation and negotiation, and this would result in whatever committee/council in charge of the process having to meet a number of times and the input from each of the stakeholder groups requiring resources.

Additional costs may be incurred in monitoring and validating level of take by each sector. In addition, funds would be required if removal of commercial effort was deemed compensable.

6.1.4 "'Start Again' (Socio-economic Assessment)

This model would begin the whole process of allocating resources from scratch, that is, not assuming that current levels have any special importance. Instead, this approach could start from first principles about assessing the optimal community benefits of various combinations for allocating access amongst the sectors. The outcomes of the current levels would be only one factor used in the scenario development.

Implications

Compensation – It is highly likely that this approach would lead to changes in the proportional allocation and hence raise the issue of compensation.

Initial Data Requirements: The informational requirements would be extremely high. They would extend well beyond the need for catch information of each sector but also require substantial information on the economic and social implications of shifts in allocation.

Ongoing Data requirements: Continued high levels of information covering catch, social and economic data would be needed to monitor whether the expected community outcomes were being generated or not.

Robustness - This would depend entirely on the levels of information available. If there were few social and economic data on which to base a decision, such an approach would not be robust and would be likely to cause more dissent and conflict. In fact, legal challenges to this approach are almost certain to occur if implemented, hence there would need to be a very strong case made to use this model.

Cost – This would be the most expensive of the options presented, with high information requirements across the full range of ESD criteria. Furthermore, the costs of running the committee/council that would make the recommendations would also be the largest because of the breadth of information that would have to be included and the likelihood of significant debate among stakeholder groups that would need to be examined and managed.

6.2 Summaries of submissions from Sector Groups

6.2.1 WAFIC

The submission by WAFIC proposed that the method for assigning allocation of access among the sectors should be largely based on the 'historical model' and include the following steps:

1. Assess the sustainability status of each fishery and:
   - if fully utilised go to step 2,
   - if under-utilised (i.e. developmental fishery) – spell out terms and conditions of access,
   - if over-utilised, implement proportional reductions to all sectors.
2. Estimate current catch shares by each sector (considered a purely technical exercise).
3. Establish formal Total Allowable Catch (TAC) targets for each of the sectors (expressed as a percentage of the TAC) based on current catch shares.
4. Within sectors, ensure the adoption of effective mechanisms that constrain shares to that allocated.

6.2.2 Recfishwest

The Recfishwest submission is most closely associated with the 'Futures (Historical plus initial reallocation) Model'. The suggested model involves an allocation council that would review the submissions from all interested parties to determine the allocations. These procedures, along with their suggestions for ongoing reallocation processes, are outlined in more detail later.

6.2.3 Conservation Council of WA

The Conservation Council largely supports the 'Start Again' type of approach with a primary focus on ensuring ecological requirements are accounted for prior to any allocations being made to other sectors. Subsequent allocations should be based on a full ESD assessment of optimum community use of the resource across each fishery.

6.3 Possible Management Processes for Allocation models

Depending upon which initial allocation model is chosen, the processes that would need to be undertaken vary in complexity. The following steps outlines the total range of processes that may be needed, with the text providing an overview of what would be required in each and for which of the allocation models they would be relevant (see also Figure 3).

For example, if the 'Historical' model was to be used, following the simple discovery phase, the process could move directly to Step 8 to complete the process (Fig 3). However, if the 'Start Again' model were used, all steps would be needed.

Step 1 - Fishery Reports

A suitable report on the relevant fishery, including each sector, needs to be identified or completed. The complexity of this report, in the initial instance, may not need to be too detailed. However, there would at least need to be sufficient information to identify what species are relevant, what the relevant catches/requirements are among the sectors and estimates of what 'yields' are sustainable. If ESD reports were available, these would be suitable recognising that in the first phase, these reports will be largely restricted to the environmental criteria (Fletcher 2002). In the longer term (next five years) these may include reports on the economic and social performance.

Step 2 - Risk Assessment

Determine the need to complete a formal allocation process. For fisheries that are largely restricted to a single sector {the Group A Fisheries in Box 1}, there would be no further need to consider the allocation framework – if this was the case then the process could stop here.

Step 3 - Identify Parties

If the risk assessment indicates that a formal allocation process is required then the parties who need to be involved should be registered and the issue to be determined need to be outlined (refer comments under 6.4).

Step 4 - Discovery

Eliciting the general information over the issue; reaching agreement on the process and ground rules to be applied and establishment of common principles for reaching resolution – that is, which model for allocation will be used.

If it were decided to not allocate access based purely upon historic levels, the approach taken would then involve a sliding scale of input of additional information. The rule of thumb being that the more you are likely to move away from current access levels, the more information is needed to justify this.

The 'Historical' plus reallocation and 'Start Again' models would involve the additional inputs from each sector (see Fig. 3). Specifically this would require eliciting other facts, drawing upon available experience and knowledge, data and relevant technical material; identifying areas of agreement in relation to understandings, and appreciating the full worth of available information, particularly in areas where participation will change significantly.

Step 5 - Model Different Scenarios

The 'Start Again' model would not only require additional data but also examination of likely impacts across all ESD components for requested/ambit claims of a shift in allocation being assessed (see Fig. 3). Such assessments would examine the likely social, economic, environmental and governance costs and benefits associated with either a different allocation than is current, and also against NOT having a different allocation - that is, similar allocation rates when expected population increases will be large. This would provide a series of 'what if?' scenarios from the range of possible allocation decisions for submission to the Evaluating Committee[16] The following section (Section 6.4) expands on how these comparisons could be completed.

Step 6 - Committee Evaluation (Resolving Conflict)

The evaluation committee needs to identify clearly the needs of each party, the underlying specific concrete issues and move towards resolution based on a mutual sense of fairness. The clear understandings around consequences of each option need to be implicit and clear differences between each party determined. Areas of collaborative agreement need to be determined in line with principles established for resource sharing and collaboration.

Step 7 - Reaching Agreement

If tentative agreements are reached, solutions can be explored based on implications for all parties. In the case of mediation, the role is largely due to facilitation of common agreement. Conciliators play a stronger role in bringing their own knowledge and using their power of persuasion for particular viewpoints to the table.
However, if arbitration is required, the arbitrator (evaluation committee) is able to reach its own conclusions independently on the matters brought in front of it, with often a more formal evidentiary gathering process.

The precise steps that would be involved in the conciliation/arbitration process are detailed below (Section 6.5)

Step 8 - Initial Allocation Recommendation

This is the formal process of drafting the agreement in the case of mediators and conciliators, clearing any other unresolved issues and reaching formal agreements. Arbitrators, on the other hand, determine the outcome in line with the evidence and formalise their own judgements into a binding decision.

The allocations to each sector would be a percentage of either a notional TAC/TAE or whatever form was deemed appropriate for this fishery. It should not be in the form of straight tonnage of catch as this can vary with the natural dynamics of species and potentially lead to overfishing in many circumstances.

[16] The possible structure and relationship of this committee is discussed later (Section 7)

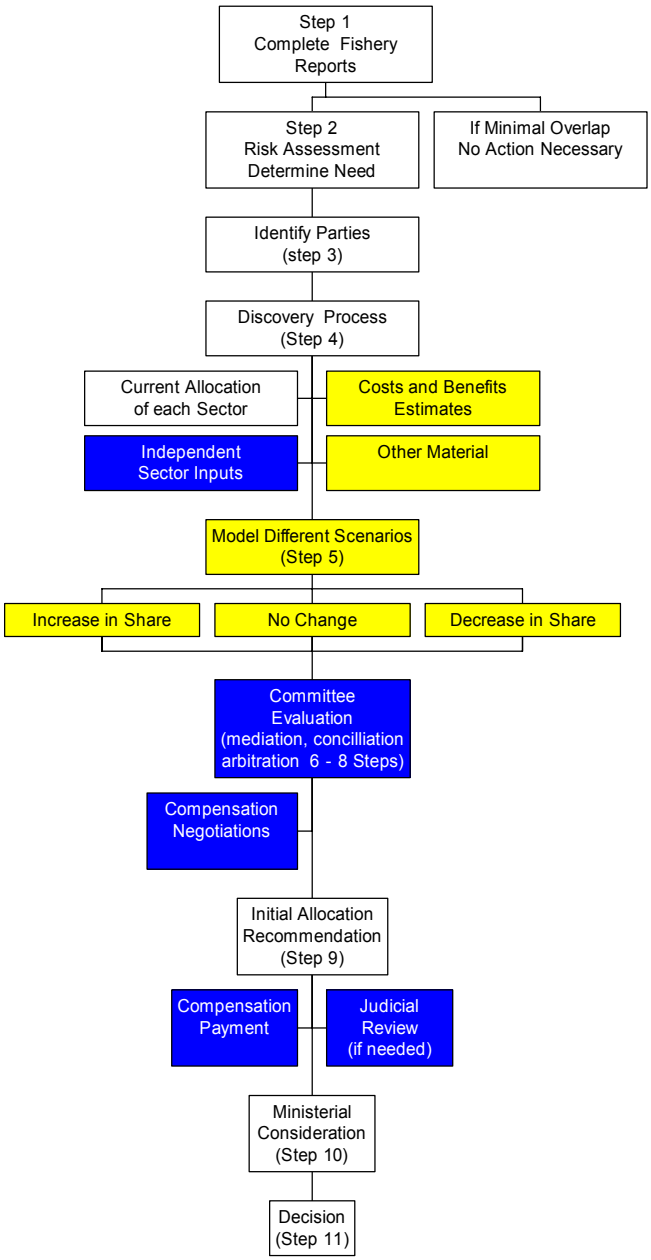


Figure 3 Processes needed for Models 2-4. For Model 2 ('Historical') only the White boxes are needed. Model 3 ('Futures') requires both the white and blue (dark) boxes whilst Model 4, the 'Start Again' model, requires all steps (white, blue and yellow boxes).

Step 8a - (if needed) Compensation Negotiations

If either Models 3 or 4 is chosen as the mechanism to determine initial allocations, then a body or process will need to be instigated to determine the issue of compensation to the affected sector.

Step 9 - (if needed) Judicial Review

In some cases, sectors may dispute the fairness of any initial allocations. A Judicial Review Panel, which would comprise experts in the area of procedural fairness and process, would be available to review how the allocations are made. This panel would not open up the debate on the information used, but would only address how it is obtained and used.

If a party is still unhappy with the final allocations, they may still pursue variation through the reallocation processes.

Step 10 - Registering the Agreement

This requires any agreement reached to be formally registered for public scrutiny and action by the relevant parties. In the case of arbitration, it is the registering of the formal determination for public viewing following consideration by the relevant Minister.

Step 11 - Determination of the Allocations by Minister

The final step for all models is to have the Minister consider the proposed agreements and determine the final allocations.

6.4 How to make comparisons among sectors?

If the "Start Again" model and, to a lesser extent, the "Futures" model are to be used in the initial allocation process (or for future reallocations – see section 9), determining the most appropriate levels among the various sectors may require objective assessments that use criteria based on the costs and benefits related to social, economic and environmental components of ESD. As stated above, as the difference between the current levels of allocation and the proposed optimal allocation levels increases, so does the requirement to quantify the justification for this change.

The data needed to enable these assessments should be available following completion of full ESD assessments for each fishery and when all elements of ESD are covered (but this won't occur routinely for approximately five years). In fact, the collection of detailed social and economic data for fisheries makes more sense in a situation where it will be used for comparisons among sectors.

There is substantial disagreement about how to make comparisons of the relative benefits of resources allocation among sectors. Previously, debates often compared the dollars spent by recreational fishers compared to the dollars generated by the commercial sector. Despite, the spurious nature of this comparison – which is often described as "*comparing apples with oranges*" - such data are still cited as justification for shifting allocation from one group to the other (mostly from commercial to recreational).

More appropriate economic analytical techniques are now available which generate values of sufficient equivalence to compare the economic benefits of the sectors directly (for details, see Hundloe 2001 and the report produced as part of FRDC project 2001/065). These methods usually involve determining the "*willingness to pay*" levels for each sector. In most cases, unless very good data are available (which is rare[17]) there can still be ongoing arguments about the assumptions used in making these calculations. Thus, there is currently no agreed method for making such comparisons[18].

In the WA study currently underway (FRDC 2001/065), the usefulness of these techniques to estimate the value of the crab fishery in Cockburn Sound for both commercial and recreational use is being examined (two other fisheries will also be used as case studies). It is hoped that this study will determine whether the efficacy of these techniques is sufficient to assist with this issue.

Given that debate about the methods of using a single figure for comparisons across sectors is likely to continue relatively unabated, there is reasonable justification to examine the effectiveness of other techniques. One alternative approach is for the assessment to examine the relative impacts of any potential shift in allocation among sectors on all across a variety of ESD components and model the relative costs and benefits of these scenarios within a sector. Because these assessments are mostly completed within a sector, there are fewer assumptions to generate conflict.

Hypothetical Example 1 This scenario involves examining the impact of moving 20% of the herring allocation from the commercial fishery to the recreational fishery. If the analysis showed that the impact of this 20 per cent reduction resulted in the entire commercial fishery being commercially unviable (too little product to justify processing establishment) while the increase in overall benefits to the recreational fishers was marginal, this result would not support a shift in allocation. This assessment would be true irrespective of the current relative economic values of each sector.

Hypothetical Example 2 An assessment of the effect of moving commercial fishers 2nm out of an area close to a major marina indicated that the total value of their catch should only be reduced by one per cent[19] but that such a shift was expected to double the chances of each recreational boat in the area catching a dhufish. This increase in the probability of capturing a dhufish would substantially increase the enjoyment value, and hence social benefit, attained from this resource. Hence, the analysis of this scenario would support such a shift.

Hypothetical Example 3 Examining the impacts of having a small area closed to all forms of fishing in the Abrolhos Islands may indicate that the reduction in total catch to both commercial and recreational sectors of less than two per cent. However, having such an area would enable the creation of a whole new eco-tourism industry catering for divers wanting to see high densities of coral trout. Again the analysis of this scenario would support such a shift.

[17] Which raises the issues about the level of work or dollars required to collect these data, which are generally not available at the moment.
[18] Even if it is available it generally puts a dollar value on the allocations which may not be the most appropriate currency (see later).
[19] Whether compensation would need to be paid for any decrease in value would have to be determined separately see above for details.

Thus with the costs and benefits measured within the sector, taking this approach could reduce the level of disagreement that has plagued such debates over the years and enable a more acceptable process for determining optimal allocations progress.

It needs to be recognised that these simplified examples do not cover all the issues that would need to be included in such assessments. For example, who (and how much) would cover the marginal costs associated with the management of each of the scenarios would need to be determined.

6.5 Processes of Conciliation, Mediation and Arbitration - techniques for progressing the debate

Agreements on allocation can only come from processes that facilitate solutions accepted by the broader community and Government. Previously, the WA Department of Fisheries has used resource sharing mediation processes (referred to as the Voluntary Resource Sharing Guidelines) as a means of facilitating agreement between sectors in the use of fish.

To more efficiently and effectively achieve explicit allocation arrangements between sectors in the use of fish stocks, it is proposed to build on the mediation arrangements to achieve cost effective, enforceable arrangements supported by legislation, monitoring and compliance. Consequently, the processes within the framework proposed to address fisheries allocation (at least in the first instance) may include mediation or conciliation and, in some cases, arbitration. Consequently, it is appropriate that a reasonably detailed explanation of these processes and their differences is explained.

Within the commercial world, the differences between mediation and conciliation are often blurred. In both cases, the parties subject to negotiation retain control over the process and may choose a mediator or conciliator. With mediation, the whole process depends on the expertise of the mediator in bringing the parties to resolution. The mediator does not have to be concerned with reaching a legally binding resolution, but only to help parties reach their own resolution. This can then be mutually formed into an agreement, which is usually contractual between the parties.

Conciliation is similar to mediation, but varies during the negotiation process by the conciliator periodically ‘banging’ the parties’ heads together, to assist in achieving a resolution instead of just encouraging and guiding the parties, like in mediation.. With conciliation, where the conciliator hands down a binding decision, this will only occur if there has been agreement reached between the parties. This may be reached with or without significant input by the conciliator.

The process of arbitration, however, is one designed to reach a resolution based on a *modus operandi* that defines the issues by both parties, then bringing the parties together for an evidentiary hearing following which the arbitrator (which could be a committee in the framework outlined above) will hand down a judgement and binding result without the need to gain agreement from all or any of the other parties.

The difference to 'at law' or 'litigation' is because the arbitrator is experienced within the industry, with qualifications and/or experience in arbitration and contract law and particularly has the knowledge, experience and qualifications within the area of dispute itself.

For a system of mediation, conciliation or arbitration to be effective in resource arbitration issues, including those of future resource re allocation, there are a number of key elements to be considered. These include:

(i) The role and purpose of any legislation in giving effect to resource allocation solutions to sectoral groups within a fishery or fisheries.

(ii) The appointment of mediators, conciliators and arbitrators (in the plural and singular) to a resource allocation process and the registration of commencement of proceedings.

(iii) The replacement of a mediator, conciliator or arbitrator or the filling of a vacancy during the resource allocation process, should this be required.

(iv) The conduct of proceedings by the mediator, conciliator or arbitrator.

In the case of mediator/conciliators, matters of discovery and disagreements around the factual description of the fishery and its use need to be documented. Those involving aspects of discussion should not be placed on the public record. Any agreement reached between the parties should be available for registration.

Should arbitration proceed, then the specific rules for allowing the arbitrator to conduct hearings, issue subpoenas requiring a person to attend for examination, or to produce documents and, if a person defaults, allow the arbitrator to apply to the court directing the defaulting person to attend the hearing process, all require specification.

Evidence provisions need to cover that provided orally, or in writing or affirmation or by affidavit or as directed by the arbitrator. The arbitrator should not be bound by the rules of evidence (being those rules which apply in litigation in the courts). To the contrary, the arbitrator ought to be allowed to look and take into account any documentation, which may be technical/legal or relevant to the issues at hand, and to research the available literature or data on a particular fishery or fisheries. This includes meeting such specialists outside the proceedings and bringing their own expertise to bear.

The arbitrator should be required to form a determination and issue a statement of decision within a period of 60 days of finishing hearings..

(vi) That once an arbitrator has concluded a determination covering the various aspects of resource arbitration, the decision be referred to the Minister for Fisheries for registration.

(vii) Similarly any concluded negotiation agreement from arbitration, conciliation or mediation is also referred to the Minister for Fisheries for registration.

The Minister for Fisheries on receiving a lawful agreement or determination is required to determine whether to accept or reject the agreements or determinations and duly register it. If not registered he/she should advise all parties affected, setting down the reasons for the adverse decision.

(ix) Nothing would prevent the arbitrator attempting to get the parties to reach a negotiated contract of agreement during the process of proceedings, prior to making a final determination.

(x) The Minister should, within the limits of funds available and having regard to law, provide effect to agreements that are reached on resource allocation, when duly registered.

The Minister should be able to refer any issues requiring clarification on any agreement or determination concerning resource sharing and allocation to the respective conciliator, mediator, arbitrator or any other group (e.g. the Department) for further advice.

7.0 STRUCTURE FOR THE ALLOCATION PROCESS

7.1 Who should determine recommendations on allocations?

Responsibility for the role of determining the recommendations to the Minister for Fisheries can be undertaken directly by the Minister or his delegate, or by an evaluation committee or independent tribunal. If the latter options are chosen, this group could be responsible for all the primary administration and perhaps be the arbitrage (determinant) body itself. The matter of funding for this group, and other parts of the process, is a key element to both choices, however the more independent the body the more expensive the process would be.

Recfishwest has proposed that an Independent Allocation Council (IAC) should be established to consider and determine the initial resource allocations for each fishery or fishery resource. They suggest that this IAC should comprise approximately five independent persons with a spread of expertise. This group would:

- call for submissions from interested parties to document their case,
- gather its own information on aspects of the fish and fishery,
- prepare a draft interim determination,
- consider comments by stakeholders to the interim determination,
- make a final determination, and
- then disband.

Because sector groups may dispute the initial shares that are allocated in specific fisheries, Recfishwest believes there should be a Judicial Review Panel comprising experts in procedural fairness and process. This group would review the mechanisms used to arrive at the decision, not open up the debate on the relative merit of the issues presented.

Other structures could be established for each fishery to assist in these negotiations. Such groups could operate similarly to the current MAC process, but include recreational and commercial sectors along with other interested parties, such as the conservation sector. It was thought these groups might be able to jointly negotiate a better allocation arrangement than the IAC through mediation. Any negotiated agreements should have timelines after which they must be reviewed.

7.2 Costs

The costs of the processes of determining allocations can be expensive, particularly if a committee is needed as an arbitrator. These costs could be further exacerbated depending upon the model for allocation that is chosen – the more consultation and negotiation required the more expensive it will be – these committee costs would increase from Model 2 (Historical) being the cheapest up to Model 4 (Start Again) which would be the most expensive[20]. Given that the process (whichever model of allocation is chosen), will consume resources, it should only be used to deal with fishery-wide issues and on a case-by-case basis. Consequently, it is suggested there should be a process for determining the priority of which fisheries/stocks are subjected to this allocation process.

Funds need to be available if this process is to proceed. If parties are able to proceed from their own purse, and agreement is reached around sharing of total costs, then the determining body should allow the process to proceed.

7.3 Who ought to be registered as major parties?

How do you identify the major parties and, more importantly, how do you achieve adequate representation? Clearly commercial and recreational fishing interests are the major parties, but there are also other parties, such as the Charter Boat sector, Eco-Tourism and those who wish to look and not touch, or merely want to'know' that there are areas not being fished. Who represents each of these parties, particularly the latter groups, will be a key issue. Public acceptance of any agreements or determined decisions is strongly dependent upon the 'fairness' of representation around the negotiation.

For reasons of consistency and professionalism, peak bodies such as WAFIC and Recfishwest would play a major role, as would RFAC (as an advisory body to the Minister). Those from the affected fisheries must be present and include active participant fishers.

Aboriginal interests are also important, but for many fisheries negotiations they may not need to be represented depending on the nature and location of the fishery. This would be especially the case if, in setting activities, sufficient attention is given to matters of customary use of those fisheries. The level of involvement required for each fishery should be determined following the outcomes of consultation that are being conducted as part of the AFS and the work by Justice Franklyn on Aboriginal fishing.

The general interests of the conservation movement related to sustainability of the resources are expected to be covered through the ESD assessment and reporting processes, which will be audited by Environment Australia and the EPA in WA. Issues related to 'no-take' areas would, however, require their direct input along with other parties that potentially have an interest including fishing tour and eco-tour operators, shire councils, CALM and other government agencies. The need, and level of involvement, would again vary depending upon the specific fishery and region being assessed.

[20] The Ascendancy model has been excluded because it would involve no committee based negotiation.

The Department (and other groups – eg Universities) would have a major advisory role in providing technical information and advice around the possible alternatives. This should include the potential flow on impacts of any change in allocation, particularly those related to ecosystem impacts because these will vary among the different methods that are often used by the sectors and interactions with other fisheries.

Whichever evaluation model is chosen, the committee (whether it is a "Fisheries Resource Council" or an "Initial Allocation Committee") that has the task to 'hear and determine' as an arbitrator must conduct a short hearing to determine the principal parties to the negotiative/arbitrative processes as one of the initiating steps for registration.

7.4 What information is needed?

A knowledge of current fisheries management practices, historical levels of catch taken by each sector, information on the fishery itself, the species biology, yield status, and as much localised/regional catch and other data as relevant is required, including important regional employment, economic and social/lifestyle issues. Also necessary are future trend information on population, coastal development and data on social and economic issues around the cases for any shift in future resource use patterns.

The provision of this information will be the responsibility of the Department and, to a lesser or greater degree, each of the relevant sectors (especially for the social and economic information). Much of this will be collected as part of the requirement to complete ESD reports on each of the fisheries. Clearly much of the data requirements for effective decision-making will take time to evolve and will become more sophisticated in the future.

7.5 Timeframe for the Allocation Process

Ensuring adequate progress could be helped by imposing a time constraint (say one year) from the date of registration to lodgement of agreement, with arbitration, as a principle not being applied until mediation or conciliation has been shown not to succeed. Failure of mediation or conciliation is deemed as having occurred where parties or a party seek to disband the process and require arbitration, or alternatively the 12-month period since registration has elapsed.

This arrangement could enforce a discipline of performance on all parties, with an expectation of reaching resolutions over a maximum 15 to 18-month period, unless an extended length of time enables more information to be collected that assists the process and acceptance of the outcome.

8.0 HOW TO MANAGE SECTOR ALLOCATIONS

8.1 General

Once agreements have been reached on the setting of appropriate yield or effort levels (based on ESD principles), and the initial allocations have been made to each sector, how is management of each sector to proceed?

The setting of target 'shares' or allocations should be treated as management objectives, with the outcomes to be achieved by the Department built around iterative steps. These should be built on practical fisheries management techniques. The specific targets should focus on outcomes to be effected over the term of the agreements reached (five years), and within the management parameters established by the parties.. For reasons of practicality, the outcomes cannot be knife-edge in their year-to-year effect, given there is about a two-year time lag in determining the catch achieved by each sector. Furthermore, variations may arise from natural shifts in abundances of fish or their relative distribution along the coast which may differentially affect sectors and therefore distort the relative shares at the margin.

Whether there can be the facility to be "under and overs" (such as the "Fish Banks" proposed in the Recfishwest submission to the Integrated Fisheries Management Review Committee, the IFMRC) needs to be addressed. A variation on the second scenario in the Recfishwest paper, in which the 'carry-forwards' between years only need to be reconciled within a five-year period (which is the likely time period between major recreational surveys) is both the simplest and most likely to be accepted format because it recognises that it may take some years before the agreed shares are actually achieved. The system of TAEs minimises this problem by allowing the catches of all sectors to respond proportionally to changes in abundance.

There is no universal model or answer that can be readily applied to the competing interests seeking access to fish stocks. Depending upon the fishery, solutions are likely to be broad allocations within a specified time span that address resource share allocations within a mix of parameters (See Box 4). These parameters could take the form of explicit catch or effort shares, as well as temporal and spatial concessions around access to fish, gear, areas, bag limits and the like, built upon historical practices, values and catches. For practical reasons, with coastal stocks generally having variable recruitment among years, a system of effort allocation is likely to be the most practical.

BOX 4 EXAMPLE OF RESOURCE SHARING - COCKBURN SOUND CRAB FISHERY

The resource allocation in this fishery occurred through an independently mediated process where key parties to the issues (i.e. commercial crab fishers, recreational crab fishers and the WA Department of Fisheries) worked together in a forum which was confidential and without prejudice. Confidentiality arrangements were documented in the *Agreement to Mediate,* which was signed by all parties to the mediation. The genuine desire to resolve the issues of concern and reach agreement was the catalyst for mediation success. The strength of the process was that it was voluntary and non-statutory.

After nine months of mediated negotiations, the participants signed off the package of Agreed Arrangements for the Fishery. Key feature of the package were:

- a reduction of the 1600 pot fishery to either a 800 pot commercial fishery, or one where there was an explicit proportional catch share of 3/8ths recreational and 5/8ths commercial take of blue swimmer crabs within three years from the date of an immediate 20% pot reduction:
- increase of the minium legal size from 127mm to 130mm for commercial fishers;
- introduction of transferable pot holdings and a minimum (fishable) pot holding of 40 pots;and
- assessment of the agreed arrangements package at the end of three years.

At the present time, there are 840 pots in the fishery.

The method of allocation should recognise the difference in objectives for the different sectors. Thus, net profit from the catch is the most important element for the commercial fishery, food and fun for the recreational sector, and for other sectors the elements required are even more diverse. Management of these non-commercial sectors has to produce the right experiences[21] and the split between the sectors has to reflect that it is still (and always will be) an '*apple and oranges'* issue. Consequently, the mere allocation of catch shares is unlikely to be sufficient to address the issues of each of the sectors adequately.

8.2 Bioregions

To be effective, integrated fisheries management must be conducted using an appropriate spatial framework. It would be both impractical and unsuitable to set resource shares/access on a statewide basis, so some smaller units must be used.

There are a number of State and Commonwealth initiatives that have recognised the need to utilise spatial arrangements and that enabled ecosystem management to be incorporated, with generally agreed units being the IMCRA bioregions (see IMCRA, 1997 for details).

[21] some fishers want to catch a few large fish, others want to catch large numbers of smaller fish

These bioregions, which were established to progress the development of a series of Marine Protected Areas around the country, are now used in reporting on the commercial fisheries management, within the State of the Fisheries Reports. Environmental Management reviews are now starting to be developed (eg the Gascoyne review – Shaw, 2000), and they are already being used in the development of recreational management plans. Finally, these bioregions will be the basis for any multi-sector marine planning exercises when they occur. Consequently, it is sensible that the creation of new management within the wetline sector for the commercial fleet, and allocation decisions with other sectors, utilise these bioregions as major boundaries. Smaller scale, spatial arrangements within these bioregions are, however, likely to be needed, given that spatially-based management arrangements need to feature in the allocation of access among the sectors.

8.3 Within Bioregion Allocations

Within a bioregion, the allocation of access to sectors can be made using a variety of management tools. These can be divided into three main categories, which are not mutually exclusive and can be used in combination.

SPACE – restricting the areas of operation of one or more sectors to provide a greater or lesser level of access to other sectors. This can be achieved by allowing activities to only occur in a designated area, or by allowing activities everywhere except in designated areas.

TIME – restricting the time when access is allowed, by restricting access to some periods, such as months, total days, avoiding weekends, or holidays. These can be designed to achieve both total effort levels and/or minimise interactions among the sectors.

QUANTITY – this can:

- restrict how many participants are allowed, by restricting 'licence' numbers;
- restrict the amount of gear that can be used. (These together can form a Total Allowable Effort (TAE) level, based on the combination of the gear and time used and the numbers using it);
- restrict the catch that can be taken per day, per boat, per licence, per year. (This can, in some circumstances, take the form of a Total Allowable Catch (TAC) where the actual catch level is prescribed);
- In the recreational sector catch allocations can involve bag limits – however it should be noted that bag limits are not generally expected to be a direct constraint on catch.

Each of these methods has strengths and weaknesses, but whatever allocation methods are determined, they must be appropriate to the sector, (e.g. a TAC is unlikely to be useful for the recreational sector). Furthermore, the method of allocation doesn't need to be exactly the same for each sector just so long as in combination they achieve the outcome wanted. By its very nature, it will be an evolving process, or 'adaptive management' that with time and development should eventually enable explicit sharing of the available resource in a sustainable way.

8.4 Allocation to No-Take Sectors

For the 'no-take' sectors, the only sensible method of allocation is to have areas set aside within which there are no extractive activities. The size of these areas would be related to the need to achieve biodiversity objectives, not stock sustainability. Consequently, their size would need to be relevant to the habitats in which they were to be generated and should be seen as part of the system of multiple use within each bioregion. Hence, a small number of no-take areas within each bioregion could serve a number of purposes such as dive viewing and scientific purposes. These will not be needed for each fishery, as they are more likely to be associated with habitat types, not fish stocks.

The exact location and dimensions would have to be determined in consultation with the other sectors, particularly in terms of the likelihood of having sufficient compliance with any no-take rules. The loss of access to resources in these areas needs to factored in to what level of access should be allowed by the other sectors outside these regions. For some species (e.g. highly mobile species, such as mackerel), the closures may have little impact on the total level of take that can be caught by the other sectors. For other more sedentary species (eg abalone), the impact on the appropriate level of catch by the other sectors will be directly related to the percentage loss of relevant abalone habitat.

8.5 Allocations within Single Species Fisheries

For many of the State's single species fisheries, or fisheries initially not exploited by other than the commercial fishing sector, the management of the individual sectors should be readily achievable. Using the rock lobster fishery as a practical example, if the target is set at say five per cent for the recreational catch share and 95 per cent for the commercial catch share, the following approaches may apply.

The dynamics of the commercial rock lobster fishery are fairly well understood. The levels of inputs into this fishery are essentially fixed, with largely just year-to-year variations in recruitment impacting on total catches. Annual variations in recreational fishing inputs are not significant, which is demonstrated by it taking nearly three decades to see catch shares by the recreational sector grow from three to five per cent.

Long-term maintenance of the commercial fishery, including their catch share is largely focused on managing changes in fleet efficiency and making adjustments to the management plan to maintain a consistent rate of exploitation using an ITE management framework. A range of measures to achieve this have been applied, including adjustments to the length of fishing seasons, the number of pots allowed to be pulled, measures of protection applied to breeding stocks and the like. The effects on total effort from these manipulations are reasonably well understood and form part of the management tools applied over the past four decades. The overall effectiveness of management can be gauged by how close the actual catch is to the predicted catch given our excellent understanding of the recruitment levels into this fishery. If the catch begins to deviate from this relationship, it probably indicates further increases in fleet efficiency, which should result in more restrictions being imposed.

In the case of the recreational lobster fishery, the same set of principles will need to apply. When the target share of the recreational effort units has been reached, the

philosophy will need to become one of catch-sharing to maintain a consistent ratio of exploitation with the commercial sector as year-to-year rock lobster catches vary with abundance. Unlike the commercial sector, the recreational sector has had few controls imposed to constrain exploitation within set boundaries. Measures must therefore be developed to keep the total level of catch by this sector within any agreed limits. The currently available predictive model for the recreational catch is based on licence numbers, puerulus settlement and effort that will assist this process.

8.6 How to Allocate within the Recreational Sector

If it is accepted that there needs to be a method of restricting the catch/effort of both sectors, but how should this be done for the recreational sector? Clearly, there exists a range of policy choices, including manipulation of licence fees (to manage growth in numbers), restricting access to a fixed number of licensees, manipulating bag limits, or a change to the nature of the licensing right. In the latter case, this could result in limiting licensing rights to say shorter periods of time, allowing more recreational fishermen to be licensed over time, but constraining their access so that total levels of recreational fishing effort remain in steady.

A difficulty in the use of monetary-based mechanisms to manipulate effort is the difference between *willingness to pay* and the *ability to pay*. The larger entry costs that may result from such a system are likely to restrict the level of access to these resources and benefit only the affluent component of the recreational sector. One possible mechanism to achieve a level of equity within the recreational sector is to use a multi-tiered system of access fees, similar to the Rock Lobster fishery in SA where the licence for the first pot costs relatively little, but the fee for an additional pot is substantially more. If this is not appropriate, or does not achieve the desired level of participation, an alternative is to use a lottery system for some/all of the allocation and continue to allow access to all the public, not just those who can afford high fees (see below for more possible techniques).

Similar approaches could also be extended to other single species and single gear fisheries, such as abalone and, crabs.

8.7 Multispecies Fisheries

For fisheries, such as the wetline (finfish) sector the issues are substantially more complex than for the rock lobster example. In the initial stages, it is unlikely target shares for multispecies fisheries can be easily determined or managed. Expressions of resource sharing may need to be set in broad aggregates (%) across a range of species groups with perhaps some specific targets for key species within specific bioregions. As outlined in section 3.1, a great deal needs to be done to place this group of fisheries within a sustainable management framework with neither effective commercial management nor recreational control around total exploitation yet applied.

Work must proceed to set boundaries around the potential level of access to these fisheries. The commercial fisheries must be moved from their present largely open access state, where there are high levels of latent effort, to a situation where a maximum level of units has been issued using some formula from which negotiations can begin on relative levels of access among the sectors.

The current levels of effort and catch by the recreational sector, along with expected trends over the next 5-10 years, needs to be estimated. Research should be directed to determining the levels of effort by each sector that could be sustained by the stocks within each region, and for some species, areas within regions. The total levels of effort by each sector then need to be constrained within both the total allowable levels of effort and the agreed access share being managed, using a combination of the techniques listed above. This may require calibration indices to be generated that can accurately measure the total effort levels of the different sectors. More sophisticated approaches along the lines outlined for the key single species fisheries can be developed as resources and new knowledge become available.

Within the finfish sector, the Kimberley demersal finfish fishery, the Barramundi fishery and the State's estuarine and marine embayment fisheries are likely to be good starting models for resource sustainability targets being set, allocations being determined and approaches being applied.

The matter of what time period would be appropriate for any agreement or determination is a critical element of any decision. Realistically, time frames of more than five years for simple decisions of allocation and resolution of resource sharing issues would appear to be cost effective in terms of effort and resources brought to bear to reach resolutions. For the more complex planning and resource allocations, a period of 10 years may be more appropriate, but periods beyond 10 years are difficult to predict and not likely to be accepted by the parties. There will be, however, the need to have triggers to enable earlier intervention if the stocks are becoming affected prior to any scheduled reassessment.

This leaves subsequent, longer-term shifts in resource allocation within the proposals outlined (i.e. increase in share of total catch) being negotiated within the proposed allocation decision-making framework, or by a market mechanism if such an approach is finally adopted (see section 3.4.3).

8.8 Who Would Own the Allocations?

A significant amount has been written on the subject of access ownership and this is covered in detail within Section 5. In summary, for the commercial sector access arrangements with the "access right"[22], have been developing over the past 40 years, particularly in regard to the ability to buying and selling "shares" of the total commercial access level. Thus, individual licence holders now have the expectation that this right will be ongoing in some form.

[22] See discussion in above papers regarding the difference between access and property rights

For the recreational sectors, it may be inappropriate for any individual to *own* a set amount of any access, rather it may be more appropriate that they should only be able to 'lease' this access annually from the 'pool' of access allocated to this sector. The total level of access granted to the recreational or other sectors would still be owned by the Crown (Minister) on behalf of the community. Other groups may advise on these issues, but the ultimate responsibility remains with this office.

It is unclear whether, in the longer term, the charter boat sector would need, or want to own their own shares, in a similar fashion to the commercial sector, or if they would continue to operate within the overall recreational allocation. This may develop through time and circumstances.

The 'no-take' areas, where no extractions occur, are again owned by the Crown on behalf of these sectors. The appropriate level of access is likely to vary among areas, and may require permits and access fees (particularly if it is in a marine park) but these arrangements are likely to be spelled out in regulations.

9.0 PROCESSES FOR RE-ALLOCATION OF ACCESS RIGHTS TO FISH

9.1 Historical Context

Once the initial allocation of access to the various sectors has been determined and assigned, rearrangement of entitlements or catch shares can be achieved by two principal processes – one of continued administrative intervention at regular intervals; and the other by the creation of a market for allocated access rights, which achieves trading across sectors as well as within sectors.

Within Western Australia, where access rights have been issued to the commercial fishing industry, together with transferability of entitlements, markets have become established. These arrangements have allowed adjustments to take place within the sector, (i.e. between the commercial licence holders of the one fishery, but not for a species between fisheries), facilitating a market price for the entry and exit of licence holders. These arrangements occur within the private sector and are economically efficient with all costs met by the private sector, including the cost of registration for transactions.

As detailed above, there are currently no rights allocated for recreational fishing (or the commercial wetline sector beyond the overall limit on and annual renewal of FBL) other than one of a common law right supported by rules that limit catch and provide for equitable sharing of the catch. Licensing regimes currently imposed for specific recreational fisheries do not impose any limits on the numbers that may be licensed (or participate where no licence is needed) and do not carry any further entitlements, other than an ability to fish in the licensing period using prescribed gear and other controls as specified in the regulations. Obviously, part of the initial allocation decisions would have to generate a system that enables access levels managed and therefore likely to be tradeable, in theory at least.

9.2 Administrative Methods

To effect resource shifts from one sector to another (or even within the one sector) in an explicit way has been achieved through administrative intervention in the market place for the acquisition of commercial licences. This has been undertaken through licence buy-back schemes under the *Fisheries Adjustments Schemes Act 1986*. These arrangements have worked efficiently in the absence of a market structure across sectors. The schemes applied have been used to reduce actual and potential commercial fishing effort through both industry restructuring programs, with financed costs being met by industry, or alternatively to achieve resource share shifts in favour of recreational fishing by applying community funding arrangements.

To date, there has been no specific scheme targeted to reduce recreational access shares in favour of commercial fishing. Where this has occurred (eg crabs), it has largely resulted from an increase in effective fishing effort by the commercial sector as a result of technology change or greater use of latent fishing capacity, and has been driven by increases in product market value, not an explicit decision.

Where specific allocation of access to sectors occurs, there is no reason why administrative market interventions, of the nature previously applied, cannot continue to occur to facilitate adjustments. Buy-backs of industry licences can be used to achieve the agreed level of commercial access both now and in the future.

Within the scope of the current *Fisheries Adjustment Schemes Act 1987*, there is no restriction on the source of funds that can be applied to a scheme. It can come from the Consolidated Fund, licensing revenue (including recreational licence funds), local government, the tourist industry, coastal developers or other sources.

Where recreational catch shares are deliberately targeted to shift from the recreational sector to the commercial sector, the same administrative approach could be applied by the creation of a new commercial right within the commercial licensed fishery, and the sale of that right by tender, auction or some other arrangement (so long as a concurrent decrease in the total recreational effort is achieved by other means).

The application of principles around the granting of access to a managed fishery derived from an auction or sale of a new right is likely to be viewed with suspicion by the fishing industry. New legislation will possibly be required under the *Fisheries Adjustment Schemes Act 1987* to allow for the granting of new authorisations in a scheme established to facilitate a resource share shift from the commercial to the recreational sector[23]. This would provide stronger protection to the value of access entitlements that flow from transferred access entitlements within a managed fishery.

The need to continue to have administrative intervention only applies where markets between sectors covering rights of access to fish themselves cannot function (which may be the majority of fisheries). For those where markets can operate effectively in resource allocation between sectors, the critical intervention of initial allocation only needs to establish the correct starting point – and the boundaries within this market can operate.

[23] The legislation to allow the shift of access from the commercial to recreational is already available in the FAS Act 1987.

9.3 Market Driven Reallocation

The other possible mechanism for ongoing management of sectors, once the level of allocations of catch shares between sectors have been determined, is through the use of market-based mechanisms.

For single species fisheries, such as abalone and rock lobster, it is theoretically possible to establish a market-driven reallocation mechanism that facilitates adjustments across sectors, as well as within sectors. This notion can be achieved by creating rights with the recreational fishery that are tradeable[24]. Theoretically, a market-based system should lead to the most economically efficient outcomes in the use of available fish resources for the Western Australian community. It should remove the need for periodic interventions by governments and other stakeholders in order to address long-term shifts sought by the communities and stakeholders in the use of fish, as population pressures and requirements for access changes are sought over time.

One attraction of allocating 'access rights' for recreational fisheries that are transferable, would be the ability to tax through licensing, the costs of management and administration in a clear and transparent way. In other words, the fisher bears the costs as well as receiving the benefits. Both the benefits and costs of applying such a system needs to be examined and, like most areas of fisheries management, the answers are rarely straightforward.

9.3.1 Hypothetical Examples

The key issues in determining the appropriateness of a market-based system include the initial allocation to recreational fishermen, the level of disaggregation of the unit entitlements (and their expression) and whether a conversion coefficient is possible to establish equivalents between the fishing dynamics of the commercial and recreational sectors. For abalone, the expression of quota as units of catch could extend to one daily bag limit of abalone by a recreational fisherman. If these rights established by licence were tradeable, they would need to be expressed in the same terms to work efficiently across sectors. The Western Australian recreational abalone catch is currently managed on the basis of daily bag limits expressed by numbers. The commercial fishery is expressed as units of quota tied to an expression in weight of abalone meat. For trading to be efficient without creating biases in favour of one sector or the other, entitlements may need to be expressed in the same units. Should bias exist in the meat weight conversion value to allow numbers of abalone to be expressed as commercial quota in kilograms of quota, it can distort the market in favour of one sector to another, depending upon the accuracy of conversion.

[24] It is arguable whether such a scheme could be introduced for more complex fisheries such as the wet line fishery

In applying the same principles to the Western Rock Lobster fishery, for the market to work, it needs to be understood that a commercial pot entitlement is fished quite differently to an average recreational pot. An equivalence coefficient for numbers of pots in the recreational fishery against one commercial rock lobster pot would be needed. For example, approximately 70,000 licensed recreational pots take about five per cent of the total rock lobster catch. An equivalent number of pots licensed in the commercial fishery harvests 95 per cent of the total catch. This conversion is further complicated by recreational divers also taking rock lobsters, as well as regional differences and inshore-offshore differences in fishing efficiencies between recreational and commercial pots. It is still conceivable that an equivalence coefficient, to achieve an expression of parity between the effectiveness of fishing effort, could be developed for the recreational and commercial rock lobster sectors. This would allow a market to work.

An example of how it could operate is presented using the relative efficiencies of the two sectors and the current lease rate for commercial pots[25]. Using these assumptions, the cost of a recreational pot licence should cost about $150/pot/year. This is the true market-based cost assuming that individuals do not 'own' pots – but that they lease them from the pool each year. The number leased, which should remain within prescribed limits, can be controlled by raising or lowering the costs to match demand of the recreational sector with supply (the number in the pool). As the recreational sector's *willingness to pay* increases to more than it is worth the commercial sector to commercially lease pots (i.e. the recreational sector will pay more than $150 per pot per year), then more commercial effort units should be purchased to increase the supply available to the recreational sector until a parity in price is reached – or visa versa. (See below for the likely outcome of such a process and the issues related to "*ability to pay*" discussed above.)

9.3.2 Issues With Using Market Based Mechanisms

There is little doubt that in a fishery, such as rock lobster, a market-based system could be introduced. Whether the operation of such a system by itself will achieve the desired outcomes across all elements of ESD is, however, questionable[26].

One of the most important decisions is whether the market would be allowed to operate without constraints to the extent that one or more sectors could be completely excluded. In a purely market-based system, this would be possible and, in some cases, highly likely. In a fully open market for high commercial value species, such as abalone and rock lobster, the commercial sector would probably buy all the quota or effort units. This would be in their interest, because it should significantly reduce compliance costs and possibly other aggravations. While this may be viewed as an effective economic outcome, it would almost certainly be unacceptable to the general community on social grounds, unless a resource rent was payable, and probably not even then.

The corollary would be that if all the wet fish effort allocation on the southwest coast were purchased by the recreational sector, people who want to buy local fish would be

[25] Based on five per cent efficiency of a recreational pot and a commercial lease fee of $3000/year

[26] A market valued pot licence of $150 is about the same as the value of lobsters that would be caught by a single recreational pot over the season

left out. It is equally unlikely that this would be acceptable to a large section of the population.

Consequently, a fully open market-based reallocation mechanism is unlikely to be acceptable to the community because it does not adequately consider social issues. This doesn't mean that market forces could play no role in the process of reallocation, but such a scheme would, most likely be required to operate within socially acceptable boundaries. Hypothetically, a modified market scheme could operate such that the recreational lobster share should not be allowed to fall below say, three per cent, or alternatively it could be combined with a series of spatial-based management options that ensure an ongoing level of recreational participation. Full market forces could operate outside such recreational-only precincts.

Similarly, the level of wetline access could be altered by either sector purchasing units from the other sector within limits, such that the commercial allocation could not go below say 20% nor could it go higher than say 70 per cent. Again, this would not preclude the ability to limit access of the commercial sector from particular hot spots (e.g. within one mile of the shore of a marina), which would not impact on their ability to service the local markets but would keep them away from the region where the highest recreational activity would be occurring.[27] Furthermore, as stated above, this use of smaller spatial mechanisms within a larger scheme of total allowable effort units is likely to be required to meet the needs of the no-take sector. The area of no-take could be converted to a specific level of effort and purchased as such.

Further research and analysis for determination of equivalence coefficients among sectors will be necessary under both approaches for resource reallocation, for acceptance by all.

10.0 HOW TO MOVE FORWARD

10.1 Proposals for Moving Forward

It has taken approximately 40 years to bring the majority of the commercial fisheries within Western Australia under effective arrangements to manage their exploitation. Much of this work has occurred in an environment of continuous change, using adaptive management approaches based on experience and new knowledge. Consequently, it is not going to be a trivial exercise to implement integrated management, and all it entails, across all sectors within the timeframe anticipated by the community. Importantly, this process should begin as soon as possible and recognise that it will develop iteratively as experience is gained. Consequently, it is not appropriate to wait until there is certainty that the processes are perfect before initiating action, such perfection will never be attained.

10.1.1 Agreements with Stakeholders

One of the first steps needed is to reach agreement on the motives to progress the principles and frameworks to be adopted and to commence the task. The acceptance of

[27] taking this into account during the overall allocation of resources- some areas of access is more valuable to recreational groups than others

the need to change the allocation of fisheries resource management has, to a large extent, already been presented in detail by the series of papers covering integrated coastal fisheries management that were released during late 1999 and 2000. The concept of integrated management is now embedded into the political policy agendas of both the Coalition and Australian Labour Party at the State level. At the Commonwealth level, the reporting requirements recently instigated by the Federal Minister for the Environment have substantially added to the time pressures for the delivery of more effective systems of management. Recognition and acceptance by the wider stakeholder group and broader community will need to be addressed. This acceptance is similar in concept to the change in attitude that was needed to accept that limited entry was necessary for the commercial fishery 20 years ago.

10.1.2 Property Rights

A major hurdle is getting more clarification of property rights, particularly in relation to explicitly allocating access to sectors. What is needed is an assessment of what is currently possible (given the FRMA in its present form), what is possible/practical if the Act was changed, and what is not possible to effect either because the Act could not be framed in that way or it would be 'illegal' with respect to some other 'higher level' legislation.

10.1.3 ESD

A level of pragmatism will be needed to deal with the future adoption of all ESD principles, including setting yield limits and implementing new audit requirements. The setting of specific allocations for each sector and finding new approaches to manage the competing needs of each sector will not be without its challenges and difficulties. New evaluation tools and techniques are yet to be developed, data to be collected, processes to be implemented and resources to be established.

The Department's adoption of an ESD framework as the tool for fisheries assessment is a process for setting sustainable yields, and will ultimately include the full costs and benefits of assessing whether the allocation decisions are appropriate. This will also meet the reporting requirements for both Environment Australia and the WA Environment Protection Authority. Ultimately this will cover the full context of ecological, economic, social and governance decision-making.

10.1.4 Evaluation Committee/Fisheries Resources Council

The process is likely to require the creation of an Evaluation Committee, Fisheries Resource Council (or the like) to manage these allocation processes on behalf of the Minister for Fisheries. This group may have a wide range of powers to appoint persons to facilitate activities of fisheries or to undertake their own inquiries, and to set strategic directions for the management of the fishery or group of fisheries within a bioregion.

Advice around the final composition of such a group could minimally, include the appointment of a prominent lawyer, a businessperson or economist and a fisheries manager or scientist, none of whom are members of the Department. Other suggestions raised in the papers submitted need to be further considered following the release of the

Integrated Fisheries Management paper (FWA, 2000a), such as the Recfishwest paper and public submissions. Further work will be required on the matter of the roles and functions of this proposed Council, including the appropriate checks and balances between the role of the Ministers and Government and that of the Council.

10.1.5 Legislative Changes

The development of appropriate legislation to ensure that the Department (and the Minister) manages the exploitation undertaken by each stakeholder sector within the explicit targets determined by the final allocation process, appears essential. This will involve further amendment of the *Fisheries Resources Management Act 1994* and the *Fisheries Adjustment Schemes Act 1987* to facilitate a scheme of arrangement for a particular fishery or groups of fisheries, and allowing reallocation adjustments to take place between sectors.

The changes proposed need to accommodate arrangements which cover administrative interventions as well as market- based mechanisms. These must also extend to the possibility of providing for formal access rights to the wider community for recreational fishing or customary entitlements; an ability for rights to be traded, taxed, administered; and for a statutory form of fixed or variable duration. That is, the creation of a broad set of tools so that a range of alternatives can be applied to meet the specific needs of particular fisheries or groups of fisheries, in achieving resource reallocation within an adequate compensatory framework.

These will need to be accompanied by an appropriate level of discretion for the Minister for Fisheries to seek advice from the Executive Director of Fisheries on proposals submitted by any external committee, such as a Fisheries Resource Council, in their administration of resource allocation processes.

10.1.6 General

To gain recognition from Government, stakeholders and the wider community, that the processes around the management of allocations, reallocations and the setting of future directions for fisheries management will take considerable time and resources to evolve - at least 10 years for all fisheries. There is no quick fix. Pre-eminence needs to be given to the application of these principles and directions to the abalone and rock lobster fisheries, 'road testing' the processes required and outcomes to be achieved.

There is an acknowledgment that further detailed work will be required, but little will be achieved unless the broader principles and framework have been embraced. Matters of legislative detail also need to be further examined at the point of draft bills.

10.2 Funding and Resourcing Issues

The Department is already committed to fisheries assessment around ESD processes and building upon these to meet the reporting requirements of both the EPA (WA) and Environment Australia (Fletcher, 2002). This work is essential to provide certainty for exports and to further build community confidence in fisheries management priorities and outcomes. For the most part, these costs can be absorbed by changing the way

business is undertaken, shifting work priorities and through external funding from cost recovery or Fisheries Research and Development Fund projects.

Priorities and projected timelines for other regional fisheries, environmental related planning and investigations, as well as recreational regional planning are being deferred until these commitments are met.

However, new resources will be required to deal with audit needs as these costs are imposed on the agency by accrediting bodies. These costs will become more significant in future years.

The principles around integrated resource management, covering allocation and the management of allocation, are not funded. Without new funding, the rate of progress can be expected to be slow and if not addressed in the medium term, undermine existing resource sustainability.

The cost to the community can be expected to be significant as tensions between sectors increase and become excessive if uncontrolled growth in exploitation results in stock collapse.

Under the current approach to fisheries management, larger commercial fisheries (subject to cost recovery) are able to deal with these funding requirements. This is not the case for minor commercial fisheries, the recreational sectors, or other parties to any resource allocation processes.

Management of the specific sectors will impose new disciplines on fisheries management, new data requirements and research needs, as well as shifts in the way fisheries rules are enforced. The processes of resource allocation and setting up catch shares through mediation, conciliation and arbitration, and the costs of the proposed Marine Resources Council and its administration will add significantly to costs.

In the case of resource allocation, unless funds are set aside by Government to address recreational fishing demands as they increase with population growth, reallocation cannot occur. Cuts in Government expenditure through normal budgeting processes expose the recreational and minor parties to any negotiation. Their response will be one of little change and, without the flexibility for shifting resource allocations, one that does not optimise the benefits, economic and social, to the community with changing needs and demands.

The empowering of recreational fishers to raise revenue for the management of their sectoral interests is an important issue in the future management of the State's fish stocks. This particularly includes the State finfish resources where recreational fishermen are significantly involved and provide the backbone to the State's important coastal recreational activity.

New funding must be provided by Government to address these emerging needs. Greater contribution by recreational fishermen in the form of licensing or some other mechanism places an onus of opportunity, responsibility and empowerment in the debate that recreational fishermen currently do not have.

Initial estimates have put the implementation costs at a minimum of $1 million extra per year for the processes of completing the resource allocation negotiation processes.

The extra research required to generate the long time series of fisheries monitoring data needed to manage the allocations is estimated to be approximately $1.5 million per year.

The level of compliance and education needed to make this system operate effectively requires a substantial increase in these services. It is likely that each of the competing sectors will need to be assured that the other sectors are operating within the limits imposed. This could be $4 million per annum and is likely to be higher as more fisheries become managed in the new frameworks in the longer term.

There will also need to be increasing the community representation and facility enhancement to increase the visible benefits to the community that would require approximately $1 million per year.

Without this commitment, the risks around longer-term resource sustainability remain for the State's fisheries where exploitation is shared. It is certainly sufficient to make a real start for the future.

Experience has shown that where stocks have failed the consequences on communities, economic activity in related business and costs in management and to Government, are indeed high.

The issue of future funding must be addressed to enable fisheries resource managers to deal with future pressures for change. Without it, resource security for fisheries stocks will be without foundation for all sectors.

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