

An Overview of **Fishing** Activities **in** the Great Barrier Reef Region:
Recreational & Commercial

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Introduction

This paper describes the **scope and** scale of reef fishing activity **and** looks at some of the management rules 'under which those **fisheries are** conducted. It makes the case that fisheries law is managing adequately. As a corollary it shows that other management regimes imposed in this area are too wide in scope and downgrade fisheries use of the reef area in ways which should be considered quite unacceptable.

In the description of reef fisheries and their management the whole basis of present fisheries controls recognizes the "**common** property" nature of the reef resource. - **we** all own it and we thus all have a responsibility to and for it. Further, the priorities for management seek to balance the needs of different users within **the** overriding constraint of Conservation. This way **the** overall benefit of the resource to society in general is maintained and the level to which exploitation of sustainable populations may be allowed is established.. It **will** be emphasised later how some current management regimes imposed on the reef area work to the detriment of fisheries, by leaning **far** too heavily towards the conservatism of the "**preservationist**".

This submission not only describes the fisheries but outlines management **programmes** already in place. In this process management and the nature and scale of fisheries will be **put** in focus and a **plan** for **more rational** management of the reef with **respect** to its fishery component presented. It highlights the fact that fisheries **law** is managing the fishery to, the maximum extent achievable - further" incursion is not only not desirable but counter productive.

The Management Function

The philosophy of management starts with the basic premise that fisheries populations are a **"common property resource"**, which by popular acceptance implies that access is open to the community at large, and acknowledgement that this resource must be conserved. This is the role of fisheries management. 'But with a **"common property resource"** such as fisheries, the priorities for management, should define a focus among issues such as maximisation of people's enjoyment of the area, economic yield and species and environment preservation. The function of fisheries management is a combination of these factors - to balance the needs of different users of the resource, within the overriding constraint of conservation, in maintaining and enhancing the overall benefit of the resource to society in general. Consequently, ~~exploitation of sustainable populations is acceptable for social and~~ economic reasons.

When considering fisheries management **in** relation to the reef region under the present overriding influence of Great Barrier Reef Marine Park Authority law, people exploiting the resource may be classified either as **"takers"** or "preservers". The following outline summarizes the sectors within the **"takers"** category and illustrates the measures adopted in management of each sector.

Fishing Activities

Trawling

The trawl sector which targets prawns and scallops with bugs and fish by-catch, is purely commercial and completely outside the reef

environment. Of 1 **300** trawlers licensed to operate in Queensland waters,, approximately four, **hundred**, worth over \$100 **million**, derive income solely from the reef region, and a reasonable **estimate**, using income and output **multiplier** analysis, can be made of the value **to** society of this sector, and this will be discussed later.

A typical **15-16m** vessel would tow **3** or 4 nets, carry **10-15 000** litres of diesel fuel, with a crew of two plus skipper, capable of working rough weather up to 30. knots. Snap freezing with dry refrigeration processes tiger, king and endeavour prawns to a very **high** quality standard for export and, local consumption and an estimated 20 tonnes would be landed in a good year worth approximately \$300 **000** at today's prices.

And **yet, trawling** is prohibited in all Marine Park Authority 'Zones except General Use A. Under fisheries law, this sector is strictly regulated 'under a tight management regime. The control measures adopted include limitation of vessel length to a maximum **20m**, gear restrictions, freeze on licenses, and limited entry. To **become** Master Fishermen, trainees are required to complete a 3 year apprenticeship and an accredited training course, an integral part of. which is principles of fisheries management. Minimum size regulations have been adopted in the **scallop** fishery, and nursery or **stock** replenishment areas have been declared closed **to all** trawling.

Thus it is evident that the framework exists to manage this **sector** without **the need** for wide-scale prohibitive zoning.

The reef line fishery targets a relatively small number of species including coral trout, emperor species (including sweetlip), and wrasse. Approximately 150 commercial fishermen work the reef as a major part of fishing activity. A typical **"reefie"** works 2-3 week trips, does **8-10** trips a year, refitting over December/January. He uses a dry freezer, and markets fillet packed in **2kg-10kg** boxes. To this we should add the small number of non licensed amateurs (**30-40**) who take substantial **amounts**, although it is estimated that a large number (approximately **200**) of non-licensed fishermen sell some catch. The total catch from this sector would probably have a value of \$15 million at the boat. At this stage there are no restrictions on recreational fishermen other than to control sale of fish caught which are excess to personal requirements. The facility does exist, by way of permit, to allow much sought-after product to reach the market through **commercial** channels. This provides a measure of quality control and a system for monitoring the extent of selling by amateurs.

The commercial sector is restricted by limiting vessel access to the fishery, and both sectors are subject to fishing gear restrictions and minimum size regulations.

The pelagic fishery targeting principally mackerel, ranges from Bramble Cay in the Torres Strait to the N.S.W. border, and the same management principles apply as in the demersal fishery. It is estimated that some **40** fishermen use this as their major fishery although most licensed fishermen will bait a line at one time or another. Recreational fishermen are restricted in sale of product and commercial fishermen are restricted by vessel entry into the fishery thus providing a sound flexible framework for monitoring the industry and amending regulations

as the situation demands. As with the line fishery, the pelagic sector is subject to gear **restrictions** and minimum size regulations..

The marine aquarium fish collecting industry

Until recently, this sector has not been **widely** exploited. However, domestic demand has increased dramatically and the marketing sector of this industry <believes this will be sustained. With **the recent** decline in the value of the dollar, exports of our native marine aquarium species are more attractive overseas, and imports from competitors such as the Philippines are more expensive.. This has led **to** a jump in commercial catching activity and applications for permits to batch professionally. Catching is usually in water to **10-12** metres and targets the **colourful** small specimens of the reef. The yield from this fishery could be of the order of **\$6** million annually. However, a few species are highly prized overseas and valued accordingly. The consequent pressure and targeting of these species in readily accessible areas may affect population distribution, and this aspect is under examination. Commercial operators are restricted by permit requirements and gear restrictions, and at this point, **56** permits have been issued.

The permit system **also gives** us records of catch. The major species targeted are: angelfish, chaetodonts, wrasse, damselfish, anemone fish, trigger fish, surgeonfish, and various small species of shark and ray.

Coral, shell grit and star-sand collecting

These activities are grouped together, for management purposes as the material involved is of biological origin. This **is** classified as a development industry. As such, commercial operators are subject to a permit arrangement and are strictly limited geographically and by volume.

Beche-de-mer

At present there have been five permits issued for the harvesting of beche-de-mer by allocation of one degree square areas in which to harvest. From a commercial point of view, the development of this sector is unlikely, and **Vicki Hariott's** report on feasibility would support this view. There is no appeal for recreational collectors **for** this animal.

Trochus

Trochus shell, likewise holds little attraction for recreational collectors. There is, however, a commercial market for this shell. Effort in this sector is controlled by minimum size legislation, minimum and maximum size permit restrictions, and geographic and volume limitations. At present, two permits for **trochus** harvesting have been issued and there is some enquiry for extension of this effort.' Effort in this and the Beche-de-mer fishery are strictly controlled in recognition of a wide concern that the species are under some threat.

shell Collecting

This activity, together with coral, shell-grit **and** marine aquarium fish **collection carries** no restrictions if the purpose of collection is **non-commercial**. Hobbyists, aquarists etc. are entitled to **collect** sufficient for personal requirements, unrestricted and unlicensed. However; commercial shell collecting does require a permit issued under the Fisheries Act.

Issues

1. Restrictive Zoning of Fishing Activities

It becomes evident, on examination of fishing activities in the reef region, that of the thousands of marine species identified as endemic to this region, very few, maybe 20 species, are exploited commercially. This must be borne in mind in the development of reef management regulations in relation to maintaining and enhancing the overall benefit of the resource to society in general. It makes no sense to prohibit the harvesting of a resource which does enhance the economic and social well-being of the overall community, when the level of harvesting does not demonstrably affect the regenerative capability of the target **species**. Further, current studies are tending to confirm the thesis that trawling in reef areas does not affect reef biota. A distinction must be drawn at this stage, from a fisheries perspective, between reefs and waters surrounding them. Within the former the Reef Marine Park Authority **has** a responsibility to oversee, management programmes since reef species 'are an integral part of the reef ecosystem. With the latter, it does not. The biota endemic to the sand and mud environment off the coastline and inside the Continental,

Shelf are not reef species, **and consequently** are the responsibility of State fisheries agencies. And yet we see vast tracts of such waters have been closed off to some or all forms of fishing activity, commercial and recreational, depending on classification. The cost to society of this **"zone"** philosophy is measured in terms of under-utilization of sustainable yields with consequent financial disadvantage in the commercial sector, and deprivation of the recreational sector of sport and enjoyment, which also carries a significant financial cost, when one considers the immense economic value of the recreational fishing sector, of which the following table is an indication.

STATISTICS **RELATING** TO SHALL BOAT **RECREATIONAL FISHING** 1985 PRICES

Estimated **Regional** Expenditure

<u>Region</u>	<u>\$M</u>
GBR	52
SEQ	54

Estimated Regional Income Generated

GBR	27
SEQ	14

Estimated **Regional Employment** Generated

GBR	1 400
SEQ	1 400

All that is achieved by such prohibition is to deprive the market of product and recreational fishermen of sport and/or concentrate pressure on areas 'adjacent to the prohibited zone. If there is perceived to be a conflict between commercial use and maintenance of the marine **environment in a relatively** undisturbed state: Reef Awareness Areas and Reef Research Areas would appear to satisfy the requirements of the latter.

2. Management Goals

Fisheries **management seeks** a **balance** 'between 'conflicting! needs. **It** seems' that this laudable aim 'does not carry over to current reef management practice. Management of the reef region under the present overriding influence of Great Barrier Reef Marine Park Authority law classifies people who use the reef as either **"takers"** or **"preservers"**, as mentioned earlier. It seems to us that the **"preservationist"** cause is allowed undue **weight** in zoning determinations. The above summary has demonstrated the degree to which the **"takers"** from, the reef are already subject to control. The **"preservers"** are not similarly constrained and this lack of constraint leads to an unacceptable level of exploitation. It may seem a contradiction in terms **to class** "preservers" as "exploiters" but this is not the case. **The** category of "preservers" is defined as the sector of society whose desire **it is** to observe, in unlimited numbers, the environment in its undisturbed state. This is a form of exploitation, which impacts on the region, albeit in a different way from the "takers", but impacts nevertheless in the **form** of uncontrolled trampling on the reef, uncontrolled and over heavy diving activity on some reef areas and alteration of behaviour patterns through the intrusion of man etc. In the role of balancing the needs of users, fisheries management acts as the interface between **"takers"** and **"preservers"**. In this context, the **"takers"** sector has become strictly regulated under State fisheries legislation. In some areas of' operation, restrictions have been severe, almost draconian, to ensure that the balance, of exploitation and sustainable yield is maintained. It would seem appropriate for these' concerns' to have more emphasis when' zones were being determined and **for** constraints **on** fishing activity to receive more balance in the allocation.

State fisheries agencies make use of a variety of control measures in the implementation of management programmes. These include a freeze on Master Fishermen's licences, a freeze on vessel licences, vessel size restrictions, fishing gear restrictions, minimum size regulations, protected species legislation, limited entry, and declaration of fisheries reserves and sanctuaries. This is the framework for sound, responsible fisheries management throughout Queensland, of which the reef region is an important sector and thus fringing **reefs** must be considered as 'an integral part of the overall reef for. management purposes. The measures available have provided the flexibility needed to develop programmes to manage the diversity of sectors within the umbrella of aquatic resources, whether they be barramundi or marine aquarium fish, otter trawling or reef line fishing.

The Commonwealth Government on the other hand, ~~whilst adopting a high~~ profile with regard to fisheries management in the reef region, has developed no such programmes to address the individual nature of each fishery within the region. Management policy consists of "close it, lock it up, zone it".

3. Inconsistencies in Permitted Use

In pursuit of our Fisheries Management goals, managers have frequently to defend constraints imposed by another agency e.g. Great Barrier Reef Marine Park Authority, and the inconsistencies in this law make this **defence** difficult. Fishermen are uncomplicated people, but they are astute at picking anomalies in application of a given set of laws and these inconsistencies reflect on the credibility of the whole process and are thus undesirable.

To cite an example, I refer to the classification of the Shelburne Bay region from the coastline to outside the outer reef limits as Marine National Park 'B' Zone which prohibits fishing in all forms, whilst permitting, amongst other activities, construction of mooring facilities or marinas, establishment of tourism facilities, harbour works, beach protection works, other works, and discharge of wastes, from fixed structures.' Zoning of this region would seem pointless, to prohibit fishing activities within the area when the objectives of the Zone have been compromised by permitting the above activities.

To illustrate the point further, I refer to this table.

Table: Examples of the impacts of State Marine Park Zoning on fishing and other activities in Far Northern Section

ACTIVITY	ZONES				
	GUA	GUB	MNPA	MNPB	PRES. ZONE
<u>1. Fishing</u>					
Trawling	/	X	X	X	X
Commercial Netting	/	/	X	X	X
Commercial Line					
Fishing	/	/	/	X	X
Spearfishing	/	/	X	X	X
Amateur bait nets	/	/	/	X	X
Recreational line					
fishing	/	/	/	X	X
Crabbing	/	/	/	X	X
<u>2. Selected Other Activities</u>					
Mariculture	/	/	/	X	X
Tourist					
Development	/	/	/	/	X
Educational					
Development	/	/	/	/	X
Harbour Works	/	/	/	/	X
Marinas (private)	/	/	/	/	X
Dredging(private)	/	/	/	/	X
Reclamation	/	/	/	/	X

/ - Approved activity or activity which can be permitted by a responsible authority.

x - Not permitted

Trawling, which constitutes the major economic commercial fishing activity in the reef region, is permitted only in General Use A Zone, and all forms of fishing are prohibited in Marine National Park B Zone. However, all other activities listed are permissible, many of which would affect the natural resources of the area far more than fishing. It would appear strange that the major activity in the reef region in terms of social and economic benefit derived from the resource, is prohibited in large tracts, but development of any tourist facilities, marinas, dredging, discharge of wastes etc. are permitted, with permission of the responsible agency.

By way of comparison, this table outlines State legislation in relation to fisheries management and protection.

Table: Examples of the impacts of State-declared Reserves and Sanctuaries on **Fishing and other activities**

ACTIVITY	WETLAND RESERVE	FISH HABITAT RESERVE	FISH SANCTUARY
<u>Fishing Activities</u>			
Otter Trawling	/	/	X
Commercial Netting	/	/	X
Commercial line fishing	/	/	X
Spearfishing	/	/	X
Amateur bait netting	/	/	X
Recreational line fishing	/	/	X
Crabbing	/	/	X
Marine Aquarium fish collection	/	/	X
<u>Selected Other Activities</u>			
Mariculture	X	X	X
Tourist developments	X	X	X
Educational developments	X	X	X
Harbour Works	X	X	X
Marinas (private)	X	X	X
Dredging (private)	X	X	X
Navigation Channel maintenance	/	/	/
Reclamation	X	X	X
Discharge of wastes	X	X	X

/ - permitted
 x - not permitted

It is evident from this table that, where environment; marine life, breeding grounds and **stock replenishment areas require** protection, this **is** achieved. No, commercial" development is allowed - no **tourist** developments, marinas, private dredging or airstrip **construction**, no discharge of wastes. Fishing activities are permitted where the objectives of the reserves are not compromised and the activities are controlled by minimum size regulations, gear restrictions etc. No activity of any description is permitted within fish 'sanctuaries. A permit may be issued by the Minister for some of the above **"not** , permitted" activities only if **it** is considered that the activity is necessary or desirable for the preservation and proper management **and** in an applicable case the public enjoyment of the area. An example would be construction of a public boat ramp or jetty. Private development requires revoking of the sanctuary or reserve by the Legislative Assembly, which is the most watertight control possible.

Responsibility for **Fisheries Management**

The community has accepted in' principle the concept of **"user pays"** in 'relation to the provision of Government services; This concept makes' the particular Government Agency more accountable to the section of the community which utilizes these services and pays for them through permit fees, **licence** fees, inspection fees etc. "Thus, the costs of implementation and enforcement of management **programmes** are offset by the" community making use of the 'resource. In the present situation **of** multi-Departmental responsibility for fisheries management, the **duplication** of costs to the community could be avoided, by the administration of all fisheries related matters by one fisheries management organization.

It is accepted that. an industry of such diversity, of such economic importance to Queensland and Australia, will have internal and external conflicts. However there exists within the State the management framework to address all issues as they arise, and these issues. are resolved in consultation with all interested parties, be they commercial or recreational, political, conservationist, developers or Government Departments. This resolution is achieved by democratic process, consultation and review, in keeping with the basic philosophy of balancing the needs of resource users in maintaining and enhancing the overall benefit of the resource to society in general.