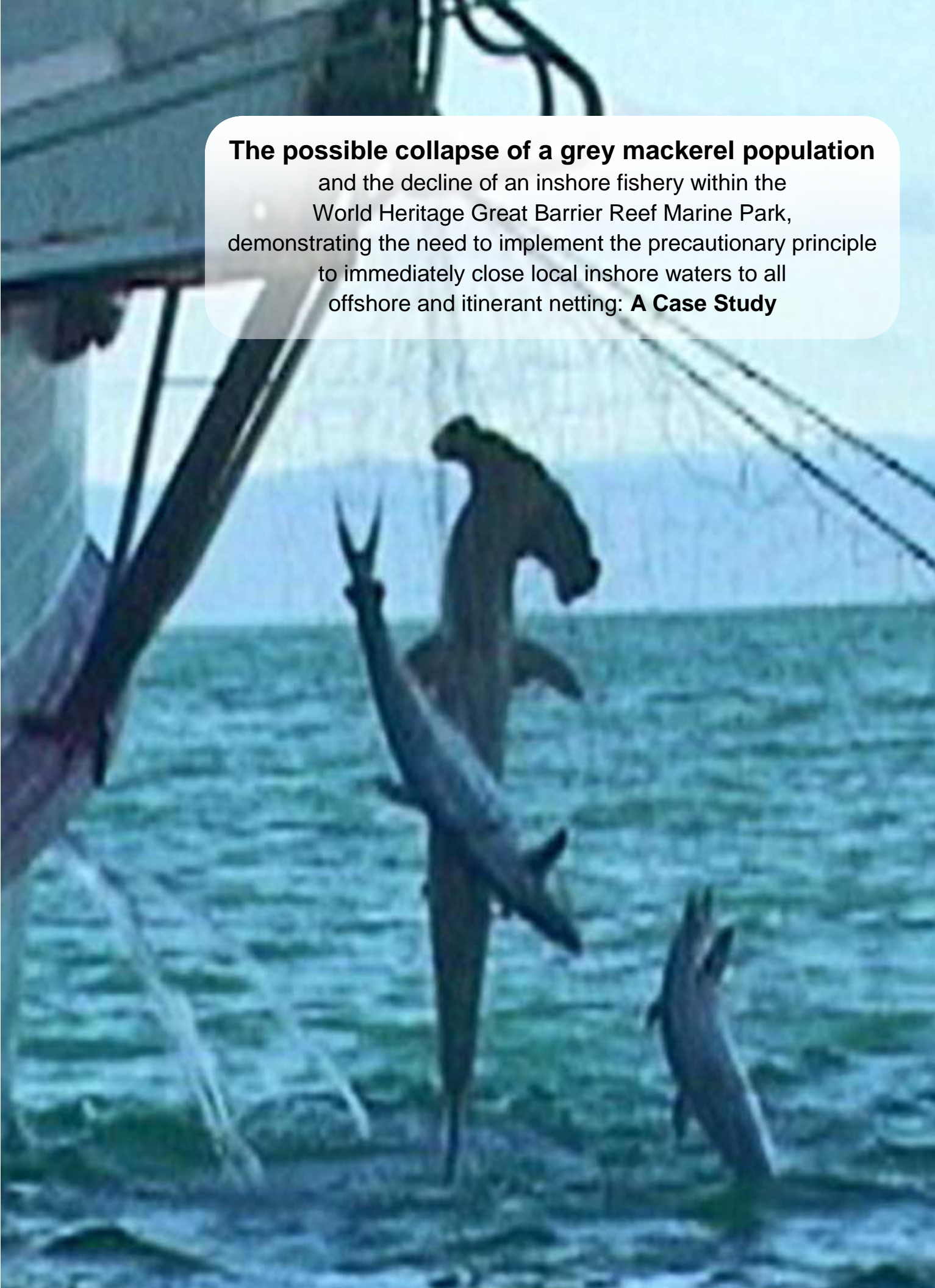


The possible collapse of a grey mackerel population
and the decline of an inshore fishery within the
World Heritage Great Barrier Reef Marine Park,
demonstrating the need to implement the precautionary principle
to immediately close local inshore waters to all
offshore and itinerant netting: **A Case Study**



PREFACE

An earlier draft of this study was presented to Premier Anna Bligh and the Hon. Jason O'Brien, MP by hand by the author upon their visit to Mossman, October 2008 and also to the Independent Review of the Proposed New Management Arrangements for Queensland's East Coast Inshore Fin Fish Fishery, commissioned by Environment Minister, Mr. Peter Garrett, to assist in his assessment of the fishery under the Environment Protection and Biodiversity Conservation Act 1999 (EPBC Act).

The main differences are the addition of more material to section 1.9 the '*History of the Call to have Netting of Grey Mackerel banned in Local Waters*' and the Appendix, this being the addition of the full minutes of the meeting of senior community members of the former Douglas Shire with DPI&F in February 2008. The purpose of this meeting was to attempt to convince the DPI&F that the inshore waters of the former Douglas Shire were returning catches of inshore predatory fish species that were a fraction of what they used to be and that the community considered the waters overfished and demanded that local inshore waters be closed to all offshore and itinerant netting by 1 June 2008.

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FOREWORD

After 25 years working in international Indo-pacific fisheries research, management and extension, the author moved to the former Douglas Shire in 2000. From the beach, just 150m from his house, he can see Snapper Island lying only one nautical mile off Cape Kimberley, opposite the Daintree River Estuary. The sheltered waters around Snapper Island, a national park lying within the World Heritage Great Barrier Reef Marine Park, are where grey mackerel aggregate from June to mid September, prior to spawning.

During these months, in 2001 to 2003, early on calm mornings and when inclined, the author would scan the waters off the beach next to his house, using binoculars, to search for signs of feeding mackerel. If numbers of terns were spotted plunging into the sea, he would haul his 5 m canoe down to the beach and would often catch one or two mackerel within a couple of hours using less than a litre of petrol.

After joining the Douglas Local Marine Advisory Committee (LMAC) in 2006, he learnt from the LMAC of community concerns that local catches had fallen off markedly over the previous few years. This matched his own observations. Having failed to find schools of mackerel from his canoe following 2003, he had upgraded to a 5.5 m fibreglass dinghy powered by a 25 hp outboard to search waters further afield.

Because of his background in fisheries, the author was asked by the LMAC in 2006 to draft a letter to send to the QDPI&F to express concerns that an increase in netting by “out-of-towners” was suspected of being at least partly responsible for falling inshore fish stocks in the World Heritage Waters between Port Douglas and Cape Tribulation, including Snapper Island and the Daintree Estuary.

This started something the author has vowed to remain with until the logical outcome is achieved. The author chose to settle in an area where there were, at that time, good fish stocks. These supported a small local commercial fishery, a flourishing charter tourism fishing industry and a recreational fishing sector all living in harmony with each other. The community has grown up accustomed to a level of fish stocks that were the envy of those in the South where stocks have long since declined to a fraction of their original levels (*unsubstantiated statement but almost certainly true*).

Now the local inshore fish stocks of the former Douglas Shire have been reduced, in the space of a few years, to a fraction of their former abundance. This has resulted in serious discord developing amongst the fishing community and also anger that authorities seem to be denying there is a problem. The author, having post graduate qualifications in tropical fish management, 12 years fisheries working experience in lightly fished areas of the Indo-pacific islands and 9 years working experience in the overfished waters of Asia, is well qualified to complete the present case study. He has worked on fisheries issues for overseas governments as well as for the Sea Food Industry Authority of the UK (as master fisherman in Indonesia), the FAO, the ADB, the United Nations and a number of private fisheries consulting companies.

This study been undertaken not as a scientific exercise, rather it has used the best available information based on community experience, knowledge, observations and concern and also personal experience fishing for mackerel, to document the decline of an inshore fishery, apparently as a result of overfishing. The legal requirement to use the Precautionary Principle to ensure ecologically sustainable development has finally dispelled the myth that authorities must wait for scientific proof before amending fishery management regulations.

The aim of this study is to ensure new fishery management arrangements are introduced in time to allow local inshore fin fish stocks to recover before irreparable damage is done.

KEY DOT POINTS

- The local fishery is conducted in a World Heritage Area;
- the local community has over 35 years knowledge of seasonal line fishing for grey mackerel;
- grey mackerel are endemic to N. Australia & S. New Guinea,
- they are a great sports fish and excellent eating, reaching a length of over one metre;
- the fishery is based on pre-spawning and spawning inshore aggregations;
- the greys gather at the same few spots in inshore sheltered waters, Jun - Sep;
- the community has a gentleman's agreement not to net schools to avoid overfishing;
- offshore netters from elsewhere commenced netting the general inshore area around 2003 and targeting the main local pre-spawning aggregation in 2006;
- the same applies for local spawning aggregations of fingermark and queenfish;
- there are no seasonal closures, area or effort restrictions on netting in the local area;
- schools of greys have shrunk from the size of football pitches in 2002, first to tennis courts then to table tennis tables; no schools were located in 2008 for the first time ever;
- catches of other inshore species have also fallen markedly, affecting a range of sectors;
- line fishers are being forced out of business, a marketer of local seafood shut down, caravan park owners lost business and there is thought to be less recreational fishing;
- the offshore net fishery has significant by-catches of Spanish mackerel, a species which is most important to the local line fishery but which may not be legally landed by netters;
- netting poses risks to turtles, dolphin, dugong and whales, all of which occur on the local fishing grounds during the grey mackerel season;
- a 2002 DPI&F publications states that mackerel researchers identified during the 1990's, the need for management of mackerel stocks "with utmost caution";
- managers have insufficient knowledge to confidently manage the fishery;
- researchers have recently revealed more than one stock of greys on the east coast;
- this year the netters did not return and line fishers had their worst year ever, failing to find any schools of grey mackerel;
- netters have apparently moved North and may be repeating the same process of serial overfishing which has occurred in local waters;
- DPI&F have managed the fishery on the assumption there was only one stock of greys;
- under current management of the fishery, there is no means of limiting number and size of licensed boats that may fish given areas, or the season they may fish;
- DPI&F have failed to ensure ecologically sustainable development as is required by law;
- DPI&F are obliged by law to implement common sense and the precautionary principle and immediately significantly reduce fishing effort on greys;
- offshore netting of pre-spawning aggregations clearly does the most damage to stocks, whilst bringing no returns to the local community and the minimum value for the catch, it is therefore clear that the offshore netting of grey mackerel, queenfish and fingermark should be closed down;
- a qualitative study of community information on inshore fish catches over the previous 25 - 30 years is required to establish a baseline for the inshore resource and avoid distorted baseline perception;
- authorities need to recognize a level of significant overfishing of local inshore stocks;
- common sense measures need to be implemented to help rebuild fish stocks to at least a level approaching that of the 1990's.

SUMMARY

Since the early 1970's and until recently, locals and visiting holiday makers have built up a considerable informal knowledge base whilst fishing large schools of grey mackerel (greys) at certain specific localities within the inshore waters of the former Douglas Shire. The season lasted from June to mid September.

Every year large schools of greys would be found at the same localities. Some fishers have noted that the greys caught often contained roe from as early as June in the 1970s-80s. More recently the roe have been found to be largest from mid August through to mid September. Some experienced grey mackerel line fishers consider the greys spawn in the area and then move on. The author is unaware of any records of large numbers of greys being caught in Far North Queensland later in the year. A few are often caught around Christmas after the first floods.

Experienced grey mackerel fishers can sometimes tell when grey mackerel are feeding by visual observations of schools breaking the surface (usually accompanied by feeding terns, often used to pin point school location). As the greys chase baitfish, they may leap from the water. The number of greys breaking the surface as a school feeds, the size of the school that shows up on the echo sounder and the period over which the schools are present, give local fishers an indicator of annual stock abundance. This, combined with the annual catches of commercial line fishers is considered to be sufficiently accurate to determine whether the stock is relatively large or small for any given year.

Locals are not aware of exactly when offshore (i.e. in waters deeper than two metres) gill netting for grey mackerel commenced in neighbouring waters but consider it was around 2003. In 2006 two large (15-20 m) net boats commenced day and night netting of the local grey mackerel inshore line fishing grounds and took 11 tonnes of greys from the local area shortly before they were due to spawn (as indicated by line caught fish caught in late August and early September that year showing almost ripe roe). Experienced local line fishers consider the net boats, operating without any quota or season to restrict catches, caught most of the breeding stock *prior* to spawning in 2006.

The offshore net boats returned in 2007 and while they commenced catching later in the season, claimed to have caught 17 tonnes in the local fishing squares, i.e. between 16° and 16.5° South. The line fishers, who worked the same grounds as the netters and observed their operations and also the numbers of fish on the grounds, do not accept this figure. Many locals consider it is a false claim, made in an attempt to secure a larger share of any compensation that may be forthcoming if the area is closed to nets. Liners request that DPI&F check the claim of 17 tonnes against the netters invoices to confirm whether that quantity of fish was landed and scrutinise their log books to check declared positions at the time.

Since 2003, the local line fishery for grey mackerel has collapsed with each year fewer fish being caught by line than the previous year. Line catches in 2006, 2007 and 2008 have been negligible. Two commercial line fishers who each used to catch hundreds of grey mackerel

every season caught only 55 and 43 greys respectively in 2008 for a similar expenditure of effort, despite the net boats not returning this year.

There is also concern about the rapid decline in other large inshore finfish numbers in waters off the former Douglas Shire. In 2006 the Douglas LMAC reported the findings of their sub-committee on netting, namely that there is widespread community concern over declining stocks of all the main inshore species in local waters, to both GBRMPA and DPI&F. The public largely attributes this decline to the recent heavy increase in large scale netting by persons who live outside the local area and who have done very little of their fishing in local waters.

Since presenting their local MP with a petition, in August 2006, calling for a ban on grey mackerel netting in local waters, the community has liaised with DPI&F and run an active media campaign to have the netting stopped. DPI&F following their Inshore Fin Fish Fishery Consultations have frustrated the local community by presenting proposals in late 2007 which actually favour netters.

Gill netting is a relatively non-selective method and, when targeting grey mackerel, may have a by-catch of turtles, dugongs, dolphins, large shark, Spanish, school and spotted mackerel, northern bluefin tuna and, possibly, humpback whales depending on the abundance of these species, which all occur in the area netted at the time when the greys are aggregating.

Whilst it is illegal to keep Spanish and spotted mackerel caught in nets, it is very hard to distinguish between mackerel species as frozen fillets. As a 15kg Spanish mackerel has a wholesale value of well over \$100, the temptation to keep and illegally mix Spanish and spotted with the catch of greys is probably irresistible to some fishers. Some netters also hold line licences for Spanish and spotted so the illegal transfer of net caught Spanish and spotted mackerel to licensed line boats at sea is a possibility. Moreover netters are allowed to keep a number of Spanish mackerel if they caught these on lines. This presents a temptation to keep large Spanish mackerel caught in their nets on board and declare them as being caught on handlines in order to “prevent wastage” and obtain their market value.

The gill netters also quite legally target schooling aggregations of queenfish and fingermark which, since they are not considered reef fish, although possibly every bit as vulnerable, do not have a closed spawning season. The “Queenies” were previously common at 1 m length in local inshore and estuary waters and valued as a great fighting fish when hooked by anglers. Fingermark are large snapper which inhabit both estuaries and inshore waters and a valued table fish. The observed recent rapid decline in local inshore fish catches, including these two species, in local waters, has had a marked effect on tourism with caravan park managers complaining that many regular visitors, who used to return every year for the fishing, have stopped coming back since 2006 because of poor catches.

An offshore gill netter has claimed a loss of up to 75% of their netting grounds as a result of the GBRMPA RAP. A close examination of the Cairns regional GBRMP zoning map reveals that this is a gross overstatement if it refers to inshore waters such as the grey mackerel fishing grounds as very little of this area in the Cairns Area zoning map has been closed to netting.

A paper by Cameron & Begg summarises the published scientific information known about grey mackerel up to 2002 and concludes that there is insufficient knowledge of the species to manage its stocks other than by rough guesswork. The authorities have not followed the recommendations of their own researchers, namely that:

- *Small mackerel species* (i.e. incl. Greys, author) *should be managed with utmost caution until detailed stock assessments are undertaken*;
- *There is a need to develop “a reliable indicator of stock abundance for each ‘small’ mackerel species*;
- *The respective stock structures (of the three mackerel species) ... should be integral in considering management arrangements for each species*;
- *research should be undertaken to determine breeding grounds.*

As the authorities have no means of estimating stock size or the proportion of the stock that is taken each year by the fishery, they have an inadequate knowledge base on which to manage the grey mackerel fishery to ensure the ecological sustainability of the fishery.

Despite claims to the contrary, there is no evidence that Grey mackerel travel long distances while there is documented evidence from a retired commercial gill netter that the Bowen grey mackerel seasonal fishing ground for greys was fished out by netters (including him) in 1971 and by 2004 had never recovered. Research results released in October 2008 reveal that the grey mackerel landed in Mackay are from a different stock to those landed in Townsville, less than 400 km distant. Bowen lies halfway between Mackay and Townsville and may well have had its own local stocks prior to their being fished out in 1971.

Given that the local fishery is more than 400km north of Townsville, it is quite possible that this area has its own local stock of greys that does not travel large distances as was previously assumed by the fisheries administration.

The study presents information and discussion about the collapse of local grey mackerel stocks and the decline in other inshore species in local waters and notes factors contributing to this decline. It concludes the current level of inshore fishing under present day environmental conditions has led to depleted inshore fish catches. This has led to a serious conflict between a handful of large scale netters and hundreds of individuals in the recreational, charter and commercial line fishing and tourism sectors in the Port Douglas to Daintree/Cape Tribulation area.

The current management of Queensland East Coast gill netting provides an opportunity for serial overfishing and serial depletion of vulnerable inshore breeding aggregations of a number of inshore fin fish species without any regard to breeding season. Pre-breeding aggregations of a number of species have apparently been depleted prior to spawning. The potential for by-catch and its implications for the management of a World Heritage Area and the Precautionary Principle are also discussed.

An earlier draft of this paper has been widely distributed and discussed. Richard Banks, fisheries economist and director of Poseidon Aquatic Resource Management was commissioned by the Network for Sustainable Fishing in Far North Queensland, working with the Mossman Boat & Fishing Club, to make an independent assessment of whether the

Precautionary Principle should be applied to close down the area to net fishing. Briefly, the resulting Poseidon ARM report finds that the management authorities are required by law to apply the Precautionary Principle, or at the very least undertake a participatory risk analysis evaluation in the event of any doubt as to the state of stocks. The Poseidon ARM report should be read in conjunction with this study.

The present report recommends that the authorities take a common sense approach and formally recognize (but not advertise) that local stocks are overfished to the extent that production is now a fraction of what it could be if stocks were allowed to rebuild. Common sense dictates that netting gives least return to the community and that the Precautionary Approach should be applied immediately to close local waters to all offshore and itinerant set gill netting. The community recommends the buy back, by 2012, of all local netting licences held by residents who have a history of netting the area prior to 2003. Furthermore authorities need to implement common sense strategies to allow fish stocks to rebuild to levels that would sustain a considerably higher level of production under sound management.

GBRMPA are tasked with ensuring that management of the WHA of the GBR is up to world class standards. In response to community observations, knowledge and concerns, they should commission an independent review of the grey mackerel fishery and the offshore gill net fishery as a whole, within the entire WHA waters, as serial overfishing may be an on-going phenomenon as netters move north. This should be carried out by a suitably qualified and independent fisheries management specialist.

In order not to lose the opportunity of recording some level of knowledge of what catches and inshore fish stocks were like in the period 1975 - 2000 and to avoid the trap of distorted baseline perception, GBRMPA should commission a short local community study to interview fishers with extensive long-term experience of fishing in the local area and formally document the reported abundance and size of different species in their catches during past years.

This report records that some locals are discussing a certain level of vigilante action to protect any remaining greys from being netted in 2009, if authorities continue to ignore what, to them, is the obvious.

INTRODUCTION & OBSERVATIONS

1.1. The Local Area

This report refers to "local" waters which are taken to mean the area of inshore waters of the former Douglas Shire, Far North Queensland being mostly the fishing grids H15 & G15, namely latitude 16° to 16.5° South and longitude 145° to 146° East covering the coast between Port Douglas, to Cape Tribulation, including the Daintree Estuary, plus the area from Port Douglas to just south of Yule Point. The main grey mackerel fishing grounds are around Snapper Island, about 2 km off the Daintree Estuary and 100 km north of Cairns although other lesser grounds were known to exist prior to 2007.

1.2. A Summary of the Known History of Grey mackerel in local waters

Until 2002 large schools of grey mackerel (*Scomberomorus semifasciatus*) referred to here as “greys”, were known as early as the late 1960’s, to return to the same local areas of the inshore waters off the Douglas Shire every year in early June. Between June and early September, prior to 2003, experienced grey mackerel line fishers, fishing at specific localities on days when the wind was less than 15 knots, were likely (estimated at around 9 times out of 10) to make good catches of greys¹.

Past and present commercial grey mackerel line fishers² state that they would regularly catch 30 to 40 in a morning’s fishing (see Plates 1 & 2) whilst recreational fishers often made their bag limit of 10 fish. In the late 1990’s to 2002, commercial line fisher Col Patterson reports he would catch between 500 and 800 grey mackerel annually during these three months providing him with a major source of income for the year.



Plate 1: Commercial line fisher Col Patterson with part of a day’s catch of 58 greys taken in the 1990’s.



Plate 2: Commercial line fisher Mark Harris with a morning’s catch of 43 greys taken in the 1990’s.

Those local residents and many visiting holiday makers to the two Wonga Beach/Pinnacle Village caravan parks³ who were skilled grey mackerel fishers⁴ would make several bag limit

¹ Written statements provided by: Jamie Beitzel, Mark Harris, George Pitt (all three are sons of three now deceased Wonga Beach /Rocky Point commercial grey mackerel line fishers) also long term residents Brian Cornell, Ron Savage, annual visitor Martin Tenni, and personal communications with ex-commercial fisher Lee Lafferty, on-video interviews with Owen Suffolk (annual visiting rec fisher for over 40 years) and commercial line fisher Col Patterson (9 years continuous commercial line fishing for grey mackerel) and *pers.comm.* with several others.

² Beitzel family, Mark Harris, Pitt family, Lee Lafferty, Evan Kingston, Col Patterson *pers. comm.*

³ ref: caravan park managers Kathy Hargrave and manager of Wonga Beach Esplanade Van Park

⁴ See Appendix 1 for a list of over 40 names and telephone numbers of fishers willing to confirm the decline

catches, amounting to around 35 to 45 kg of fish at a time, in any one season. It was common practice to give away fish to old age pensioners and non fishing friends and relatives and keep some in the freezer for summer months. Since 2003 local recreational catches have fallen off markedly with people unable to ever reach their bag limit, Catches of just a few greys have become exceptional rather than virtually guaranteed during the season in calmer weather (see Plates 3 & 4).



Plate 3: Author with his catch of five greys and two spotted mackerel taken from the greys' traditional aggregating grounds near Snapper Island.



Plate 4: Author's son and canoe in 2002, following a catch of three greys and one school mackerel made from the canoe; Snapper Island in the background.

Especially on calm weekends in the early mornings during the mackerel season and prior to 2003, it would be common to see over 10 dinghies fishing those locally well-known and highly localised spots at the one time. Most boats would each land a number of fish. Note however that the operations of all line boats are limited to reasonably calm conditions of winds less than about 15 knots. As the SE trade winds blow at over 15 knots for much of the three months of the grey mackerel season, normal weather considerably limits the amount of fishing effort that would otherwise be expended by all grey mackerel line fishers.

A number of much bigger Cairns-based drum net boats of around 15 - 20 m use 600 m of monofilament set gill nets over the grey mackerel breeding grounds throughout the year regardless of spawning season. These nets can be set at any depth, either at the surface, midwater or next to the sea bed. The net boats can readily operate their nets in weather much too rough for the much smaller line boats. Locals consider these boats apparently commenced targeting grey mackerel in the general area around 2003⁵ and since then, grey mackerel numbers in local waters appear to have collapsed.

A number of fishers⁶ report that fish with ripening roe could be caught in all three months from June to September and are convinced that the reason the fish came to feed in the area was both to build up to spawning condition and then to spawn. One fisher⁷ who consistently, over many years, used his echo sounder to track the movements of the greys reports finding marks

⁵ This information could be obtained from DPI&F records

⁶ Lee Lafferty, Owen Suffolk, Evan Kingston, pers.comm.

⁷ Owen Suffolk *pers.comm.*

on his echo sounders near or virtually on the bottom when the greys were not biting. He considers, based on his experience of what the schools looked like when they were biting, that these marks were grey mackerel “in a tight group”. He considers this is likely to be when they were actually spawning or immediately leading up to spawning (greys are also known to remain on the bottom over night on dark nights).



Plate 5: Shark boat targetting grey mackerel showing five greys in this section of 600 gill net, note the fish hanging by its tail does not present a full side profile.



Plate 6: A grey in full lateral profile showing typically proportionally larger tail and fins and proportionally deeper more tapered body than Spanish mackerel

On a few such occasions he observed a cloud of weaker signals around those marks on the echo sounder indicating the presence of tight schools of greys. He⁸ suggests that these weaker signals may be either spawn being released and /or possibly smaller fish either feeding on the spawn or waiting for spawn to be released. Whereas these observations are inconclusive and could be dismissed as “merely anecdotal” they should not be ignored.

The author and others have caught greys in ripening or near ripe condition in late August and early September in 2006, 2007 & 2008, (Plates 7 and 8 below) within a few hundred metres of an operating net boat. Other fishers have reported that they have noticed that those fish caught in the months of June and July “in recent years” no were longer carrying noticeably ripening roe but are adamant they were in the past.

Since there is no closed season for netting of greys it is a simple deduction that the netting boats have the option of catching greys right through the spawning season. However it is the observation of local line fishers that the net boats fished out the schools before they had the chance to spawn.

Under current management regulations the majority of offshore Queensland east coast net licences could all target spawning grey mackerel in these local waters at the same time with obvious disastrous consequences.

⁸ Owen Suffolk *pers.comm.*



Plate 7: Author with grey mackerel showing ripening roe, caught near net boat, 9 Sep. 2006



Plate 8: Greys showing fairly advanced state of roe, caught near net boat 8 Sep. 2007

Until recently the fishery has been operating without a quota. A proposed quota on grey mackerel has apparently been discussed by the authorities with reference only to previous annual catches and without any knowledge of stock size or relative abundance (see later). As this endemic species apparently spawns only in easily assessable large schools fairly close inshore, *the current regulation of the offshore net fishery along the east coast of Queensland fails to fulfil one of the most basic principles of good fisheries management, namely to protect vulnerable spawning aggregations.*

1.3. Indicators of Grey Mackerel Stock Abundance

By the end of a given season, experienced grey mackerel line fishers who have fished their local waters for many years are capable of making a rough assessment of grey mackerel stock abundance in local waters for that year in relation to previous years. The presence of feeding greys on the fishing grounds is often indicated by many individual fishes breaking the surface to feed on bait fish which they have chased to the surface. The location of feeding schools can often be spotted from a distance by searching for Crested, Lesser-crested and other terns and Brown Boobies circling over the schools and diving in to catch the baitfish⁹.

At such times an indication of the size of the school can be rapidly assessed by the area of breaking water if the area of breaking water is large. The size of the school can also be roughly assessed using an echo sounder.

The presence or absence of greys in an area can usually be determined by their breaking the surface during the early morning, striking trolled lures and/or showing up on the echo sounder. This is considered to be sufficiently reliable that an experienced grey mackerel fisher on the fishing grounds and effectively using an echo sounder (not all experienced grey mackerel

⁹ If there are no big predatory fish present to chase the baitfish into breaking the surface, presumably the terns have a much harder time locating their prey so the possibility that overfishing of pelagic fish may reduce seabird survival needs to be considered.

fishers use echo sounders) can usually assess within an hour or so whether grey mackerel are present and feeding at their known localities and whether any school present is large or small. The author has laboured this point as at least one netter has claimed at a public meeting that we don't know how to catch grey mackerel.

Frequently an experienced fisher moves from one known favoured spot to another if no greys are located until all known "usual" spots have been checked. Sometimes they are present but not feeding but can still be located by the effective use of an echo sounder (see above).

The consensus in the local area, amongst experienced local grey mackerel line fishers, is that the frequency of occurrence and the size of schools has fallen off since the late 1990's and most rapidly since 2002, from frequent and very large schools to almost absent and very small schools. 2008 has been the worst year ever even without any offshore netters targeting local stocks.

1.4. Offshore Gill Netting for Grey mackerel in Local Waters

It should be noted that in Queensland fishery terminology "offshore netting" refers to netting even in inshore smooth and partially smooth waters deeper than 2 metres, i.e. literally "*off the shore*". The very efficient offshore net boats of 15 - 20 m overall length use hydraulically operated drum net haulers with 600 m of monofilament nets, allowing very large catches of mackerel by just a crew of between one and four. These boats are based in Cairns or further afield.

When commercial line fishing of greys commenced in the early 1970's, a commercial mackerel fisher from Bowen, Lenny Kite, advised locals never to net grey mackerel as this was believed by residents of Bowen to have caused the collapse of the Reyard's Reef grey mackerel fishery off Bowen from 1972, as recorded by De Lacy (2005)¹⁰. This persuaded the local line fishers of the Mossman to Daintree area to form a ***gentleman's agreement*** never to net the grey mackerel in local waters. This is an agreement locals have maintained to the present day.

Locals learned that declining line catches of grey mackerel in 2003 and 2004 coincided with a significant level of commercial offshore netting of grey mackerel in the inshore waters north of Cairns by large, non-local offshore net boats. It is possible that there may have also been some night netting of the schools in local waters by a net boat during these years but as far as is known, no day time netting in local waters occurred until 2006.

In 2006, after observing six dinghies trolling on the main inshore grey mackerel local fishing grounds one weekend in July, a large white offshore gill netter of over 15 m length with red trims, apparently then based in Cairns, steamed right into this group of small boat (4 – 5 m length) fishers and set 600 m of monofilament gill net amongst and along the track that the line fishers were working. This is the first time that this particular vessel is known to have fished that particular locality.

¹⁰ De Lacy, Ralph 2005. The North Queensland Fishing Eldorado, Memoirs of a Gulf Fisherman. Sid Harta Publishers, Hartwell, Victoria. pp372

This boat stayed on the location for two nights filling her ice box, according to the skipper¹¹ with three tonnes of grey mackerel before departing. Another net boat arrived shortly after the first's departure and this made a similar catch of fish as observed by local commercial line fishers. These two boats continued to fish the locality throughout the remainder of the 2006 grey mackerel season.



Plate 9: Two “offshore” drum net boats, sometimes called shark boats, targeting grey mackerel at Snapper Island, 23 August, 2007. The net hauling hydraulic drum of the black barge is not visible from the outside.

The recorded commercial net catch for the Port Douglas area in 2006 was 11 tonnes of grey mackerel, apparently much higher than ever recorded for the area. Based on catch rates for the net boats observed by local fishers while line fishing the same area, this figure is considered possible.

Alarmed at the sudden unrestricted netting of the vulnerable stocks of pre-breeding grey mackerel in inshore, partially smooth waters, the local community greatly increased their efforts to have the netting of grey mackerel banned in local waters by 1 June 2007 (see 1.9 below). They have always considered netting the tight pre-spawning schools has the potential to wipe out all the stock prior to spawning. All adult greys are considered to aggregate in tight schools in only a few areas for several weeks prior to spawning and so are especially vulnerable to being overfished by netting¹² of these areas. In 2007 both boats returned at the beginning of the season and on a few days were observed to make some catches but these are considered to be significantly less than in 2006.¹³ The Douglas ILMAC applied to DPI&F to release the commercial net catch of grey mackerel for the local area, namely grids H15 & G15. DPI&F provided the figures given in the Figure 1, below.

¹¹ The author went alongside the boat in his dinghy and questioned the skipper just before the boat left with a full hold. The skipper said he was leaving because his hold was full and that the hold contained 3 tonnes of fish.

¹² Local opinion of experienced local grey mackerel line fishers

¹³ personal observations and pers. comm. Jamie Beitzel, Col Patterson, Mark Harris (DPI&F fisheries inspectors would also have a fair idea, although they are not at liberty to divulge such information to the public)

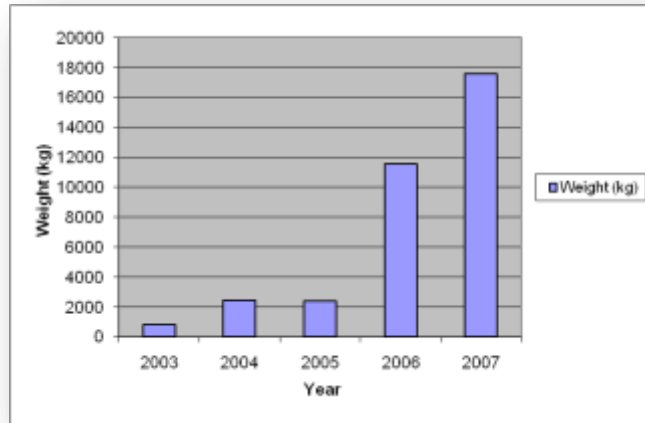


Figure 1: The reported net catches of grey mackerel in Grids H15 & G15, covering about 30 nautical miles of coastline, 2003 - 2007.

Based on their own observations, local commercial line fishers do not believe that over 17 tonnes of greys were caught by net boats in this area in 2007. One commercial line fisher fished throughout the season for greys in 2007 and caught only 27 individual fish as opposed to his usual 500 to 800 prior to 2003 leaving him seriously out-of-pocket for the season. This year and without the competition of netters who did not return he caught only 55 fish.

1.5. The Collapse of Line Catches of Grey Mackerel post 2002

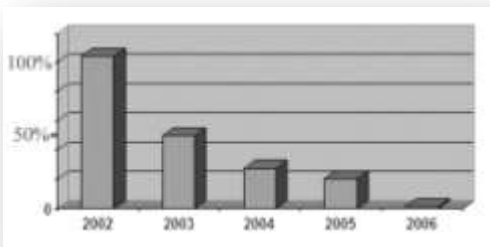


Figure 2: In percentage terms, catches of grey mackerel caught under one local commercial line fisher's licence covering two fishers fishing for grey mackerel from 2002 to 2006 with relatively consistent effort; catches in 2007 and 2008 have been less than 2006. (Note 2006 lacks a few fish caught at the end of the season, but effectively making little difference to the trend.)

Figure 2 records the drop in catches between 2002 and 2006, for relatively consistent effort, for one commercial line fishing licence used in local waters. Conclusions from the figure have been challenged by authorities on the grounds that:

- one can't make deductions on a whole fishery on the basis of one fisher's figures,
- that the 2006 column should actually have a distinct spike in it, and
- that the units of catch are not shown.

This writer maintains that the trend shown in the Figure 2 is a fair indication of the trend of all catches of regular grey mackerel line fishers in local inshore waters. The sample size is valid because it reflects the catches of two very skilled commercial grey mackerel line fishers who expended similar effort in each year in the same areas. This represents a good sample and the

observed decline is considered a good indication of stock levels available to line fishers **operating in local waters** over the period indicated. It also reflects the trend experienced by all local recreational grey mackerel fishers over recent years.

Furthermore, despite criticism by the authorities, the units used in Figure 2 are irrelevant. Percentages of the 2002 catch, which was of a significant size, are used as a viable alternative to avoid the release of an individual's confidential catch data.

DPI&F have been requested by NSF to explain how, as they claimed at a meeting at Wonga Beach on 7 June, 2007, the 2006 total in Figure 2 should be any significant level higher than indicated. They have not provided any evidence of this, rather quoting net catches which are not relevant to the point the figure is making.

The commercial line fisher who provided the data for Figure 2 reports he has been informed by the authorities that other commercial line fishers have reported to DPI&F considerably larger catches of line-caught grey mackerel than he did for 2006. The validity of such figures is strongly challenged as these fishers were never seen on the fishing grounds during the period they claim to have caught their fish. Local opinion is that any such reports are actually a serious case of misreporting in order to keep their commercial licence valid. If those who lodged these returns were required to substantiate their figures with receipts for their sales and tax returns, the validity of their claims would be determined.

The trend displayed by Figure 2 is supported by a significant amount of anecdotal information. Appendix 1 lists the names of over 40 fishers who have caught grey mackerel over the years and who are prepared to vouch for much lower catches in recent years, if contacted. It would be remiss of any management authority to ignore this resource of information. One recreational fisher¹⁴ who trolled for grey mackerel consistently during the grey mackerel seasons of the 1990's until the present day would regularly catch 3 or 4 fish per trip in the early 1990's and as his skills improved was sometimes catching his bag limit by the late 1990's. Since 2003, despite relatively consistent effort fishing over six years, he has been unable to land a single grey mackerel, despite having caught a number of Spanish mackerel during the normal grey mackerel season.

A veteran visiting grey mackerel fisher¹⁵ has spent his winter vacation at Wonga Beach for over 40 years until 2007 and, for many years, has used an echo sounder to help locate and remain with schools of greys as he trolled for them. Previously he considered he had at least a 90% chance of making a good catch of greys during the season if he went out in early morning in calm weather.

He notes that throughout his 40 years fishing from Wonga, the SE winds in July and August usually greatly reduced the number of days he could otherwise have fished for grey mackerel. Others do consider that more windy weather in recent years has reduced the amount of fishing

¹⁴ Ron Savage, local resident, retired army officer and past president of Mossman RSL.

¹⁵ Owen Suffolk

for greys they have been able to do by a limited extent. An important point to appreciate is that when there was a break in the weather, the greys, prior to 2003, were usually to be found on their usual grounds in good numbers during the season. In 2007, this same fisher made 22 trips searching for grey mackerel and caught only 5 fish. Previously, he estimates, he would have caught greys on at least nine trips out of ten. Like the net boats, did not return in 2008.

Many local recreational fishers and other regular visiting fishers who have previously returned for years to fish the greys, have very similar experiences and have all but given up looking for grey mackerel. **All consider mismanagement of the fishery has lead to grey mackerel stocks being heavily overfished.**

The catches of Grey mackerel line fishers in these waters in 2007 were even less than in 2006 and catches in the 2008 season were lower than 2007 for those who still attempted to catch the greys. Many locals have now given up targeting grey mackerel because of having wasted petrol on many trips in recent years when they failed to catch any greys.

1.6. Decline of other Target and non-target Species and Netting of Spanish Mackerel

A number of fishers have expressed considerable concern to the author that our campaign to have our local inshore waters closed to offshore and out-of-town set gill netting has failed to put enough emphasis on the corresponding decline in numbers of other inshore species such as barramundi, queenfish, trevally and fingermark. These species are now widely considered by locals with long term familiarity with local fish stocks to be heavily reduced in number in local waters in comparison to numbers present several years ago.

A brief community survey undertaken by the Douglas LMAC Netting Sub-committee on fishing in 2006 found that fishers in the community considered all local inshore fish stocks are now at much lower levels than they were just 10 years ago such. The sub-committee found that local fishers considered that numbers and sizes of breeding fish to have been greatly reduced.

There is anecdotal information of the offshore gillnetters having targeted spawning aggregations of both queenfish and fingermark near the Daintree estuary and having made large catches of these. As these species are most vulnerable at spawning times, **it is a sign of poor fisheries management that their netting is permitted on such a relatively large scale during spawning periods.** Local fishers believe large scale netting on top of other fishing pressures, in what is essentially a relatively small inshore marine ecosystem fed by only two small estuaries with very little mangrove area, has caused a very significant reduction in both numbers and sizes of these species in comparison to their earlier abundance.

Three other species of mackerel, namely Spanish (*Scomberomorus commerson*), spotted (*S. monroi*) and Queensland school (*S. queenslandicus*) are also approaching spawning condition in around Snapper Is. at the same time. Snapper Is. has a reputation amongst the recreational and charter fishery for large Spanish mackerel during the months of August and September. Tourists come from all over Australia and indeed, the world to try for the big Spanish. The possibility that these fish come to breed here is indicated by the fish in Plates 10 & 11, below, caught by clients fishing with charter fishers Jamie Beitzel and David Patterson in early Sept., 2007 a few hundred metres from where a net boat had been operating a few days previously.



Plate 10: Spanish mackerel caught on a Jamie Beitzel trip at Snapper Island. Spanish have proportionally longer, less tapering body with smaller fins and tail than greys and lack the slightly concave profile to the head.



Plate 11: The same fish cut and cleaned to show almost ripe ovaries. This fish would probably have spawned within a few days if it had not been caught on 14 September, 2007.



Plate 12: Spanish mackerel frame showing ripe roe, fish caught by a client of charter fisher David Patterson, off Snapper Island, 8 September, 2007.

The photographs of two large Spanish mackerel being caught by an offshore gillnetter in the same haul (Plates 13 & 14) whilst targeting grey mackerel at Snapper Island, would suggest

that over the season, very significant numbers of Spanish mackerel must be taken by the netters even though it is illegal to keep this species when caught in the nets. While it is illegal to net this species, they aggregate prior to spawning in the same areas and season as the Greys so their capture by grey mackerel netters in substantial numbers is unavoidable. For the author to have recorded the capture, in one haul, of two very large Spanish mackerel on video **the chances are that significant numbers of Spanish mackerel in breeding condition are taken as by-catch when the net boats are targeting aggregations of pre-spawning greys. Over time this may defeat the purpose of the legislation aimed at halting the netting of Spanish mackerel.**



Plate 13: Large Spanish mackerel being landed (dead), distinguished from the grey mackerel by its relatively longer, less tapering body shape, smaller dorsal and ventral fins and slightly convex head.



Plate 14: A second large dead Spanish in the same haul. The relatively smaller, less concave tail than the grey mackerel is also a distinguishing feature of the Spanish.

Fishers team up to drive out bad behaviour

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A RECREATIONAL fisherman outraged by the presence of net fishermen in local mackerel waters will form a lobby group in an effort to strengthen netting legislation.

David Simpson wants nets kept out of popular recreational fishing grounds and is seeking support from fellow fishos.

"There's two shark fishermen that I know of that have been using nets this year," Mr Simpson said.

"I like taking my grandkids fishing every year in the September school holidays we get a unit at Kurrimine Beach and the grandkids come down. There's usually heaps of mackerel but not this year."

Mr Simpson said net fishermen had scared away the fish that



FISHERS: David Simpson and John Dearlove are starting a new group.

usually come into local waters to spawn and feed.

"There's got to be more pressure on Fisheries to keep an eye on these guys," he said. "I want to form some sort of committee to put pressure on the politicians and I



Innisfail Advocate, November 13

think there's a lot of people who would get behind it." A Department of Primary Industries and Fisheries spokesman said it was illegal to target spanish or spotted mackerel with nets.

"Sometimes when targeting permitted species with nets, other fish can be caught incidentally," he said. "In the case of spanish

mackerel, these have to be discarded. In the case of spotted mackerel, commercial netters can retain up to 15 fish taken incidentally to minimise wastage."

Mr Simpson said he had seen net fishermen catch and keep spanish mackerel and would call on authorities to enforce the laws.

"Fisheries have got to start prosecuting these people," he said.

Babinda's John Dearlove, another keen angler, said he wanted to ensure local fisheries were sustainable for future generations.

"If you can't go out and catch a fish or two, there's no future in it for our kids," he said. "It's not going to be sustainable if it keeps going like this."

Anyone interested in joining the proposed action group can contact David Simpson on 4081 5025 or John Dearlove on 4083 3914.

Innisfail Advocate 15/11/07

Plate 15: Innisfail Advocate in 15.11.07; one of three articles (note inset, front page, 13.11.07) raising concerns that certain shark net boats may be catching significant quantities of Spanish mackerel at night on their breeding grounds to the extent that local line catches of Spanish mackerel have declined noticeably.

Whilst the local community has known it for years, photographic evidence was obtained by the author during two fishing trips in August and September 2008 that not only are spotted and school mackerel caught on the same grounds at the same time as grey mackerel, they too are also approaching spawning condition, see Plates 16 to 19.



Plate 16: Grey (top) and spotted mackerel (TL 80 cm) caught within 15 mins. of each other by the author on the greys' aggregating grounds at Snapper Island, 7.09.08. Photo taken on board by D C Cook.



Plate 17: Spotted (top) and two school mackerel caught within one hour of each other by the author on the greys' aggregating grounds at Snapper Island, 6.09.08. Photo taken on board by D C Cook.



Plate 18: Grey, spotted and school mackerel all caught by the author on same fishing trip in same place, showing ripening gonads on 7.09.08.



Plate 19: Two grey and one spotted mackerel all caught by the author on same fishing trip in same place, showing ripening gonads on 7.09.08.

Detractors may wish to claim that if the author can catch these fish on the usual grey mackerel fishing grounds over just a few trips, then there can hardly be a problem with the stocks? This is certainly not a fair assumption. The success of the fishing trips is largely a result of information received from commercial line fisher, Mark Harris who called to inform the author when he located a few mackerel on the grounds. Mark had been going out on almost every occasion the weather permitted throughout June, July and August 2008, to see if “the mackerel had come in yet”. Prior to September he had failed to locate any number of greys in the area and kept the author advised of this fact. For the entire 2008 season he landed only 43 greys, almost all at the very end of the season, a number that he sometimes caught within a single day prior to 2003.

Northern bluefin tuna used to be observed in large schools in the same area and during the same months as the grey mackerel were line fished in local waters. A relatively unselective method such as netting would also be bound to catch the tuna when they were present. As with grey mackerel, the numbers and size of the schools of northern bluefin tuna have dropped off markedly. Indeed if they were still present, it would be difficult for the netters to avoid catching large quantities. Plate 20 (right) shows a male northern bluefin tuna caught at Snapper Island by the author in September 2008 when searching for grey mackerel. The gut content of this one tuna contained the remains of the 11 herring as shown, each around 15 cm in length. Note that the gonads are also approaching spawning condition.



Plate 20 (above right): Male northern bluefin tuna caught at Snapper Island by the author in September 2008 when searching for grey mackerel



Plate 21: Scalloped hammerhead shark, grey mackerel and smaller shark in net set for greys. Photos by D C Cook.



Plate 22: Smaller Scalloped hammerhead and grey mackerel in net set for greys at Snapper Island, a national park (shown in the background).



Plate 23: Unidentified shark caught by a drum netter targeting greys at Snapper Island.



Plate 24: Black tip reef shark in net set by a drum netter targeting greys at Snapper Island.

Large sharks such as whalers and hammerheads are often associated with schools of large scombrids such as grey mackerel in the areas these fish frequent. They are therefore an inevitable part of the offshore gill netting catch as is shown in Plates 21 - 24. Because of the high price of shark fin they are likely make up a significant proportion of the value of the annual offshore gill netters catch, depending on their abundance. Continually removing large numbers of shark from an area where diving is such an important revenue earner needs to be viewed in relation to the very high tourism value of shark to the local dive industry. Many divers are disappointed if they leave the GBR without having experienced good views of shark.

1.7. By-catch possibilities: Turtles, Dugongs, Dolphins and Humpback Whales

By its very nature, offshore set gillnetting using 600 m of monofilament gillnets, especially in inshore smooth waters and around inshore reefs, is likely to have a significant by-catch of turtles and dugongs proportional to the number of individuals in the area. Significant numbers of turtles have washed up either dead or in a very weak condition along the local coastline in recent years without any positive identification of the cause of death or illness.



Plate 25: Large turtle seeking refuge in Daintree Estuary with severed flipper. Photo: D C Cook.



Plate 26: Turtle stranded at Wonga Beach close to death. Photo: D C Cook.



Plate 27: Turtle stranded, Daintree area. Photo: D C Cook.



Plate 28: Turtle stranded Pinnacle beach near Daintree. Photo: D C Cook.

The possibility should not be over looked that a proportion of those turtles which have washed up have either been drowned in the nets or have been heavily stressed whilst caught in nets and have possibly swallowed or inhaled sea water during their struggle to break free. A press report that the majority of turtles dying are a result of eating plastic bags is incorrect. Dr Jennie

Gilbert, Veterinarian at Marlin Coast Veterinary Clinic who has done autopsies on over 100 dead turtles washed up along the North Queensland coastline; she found none had ingested plastic bags (pers. com. in letter).

Photographic proof that the grey mackerel aggregation grounds just north of Snapper Island are also used by mating turtles was obtained on 9.09.08 by the author when trolling for greys. He came across a pair of Green turtles mating (see Plates 29 & 30, below) over a depth of 17m.



Plate 29: Pair of mating Green turtles¹⁶ photographed by author whilst trolling for greys one kilometer N. of Snapper Is., 9.09.08.

Plate 30: Same pair of turtles showing head profile, Cape Kimberly in the background. The white line is one of the author's trolling lines.

The author has personal experience of set gillnetting in PNG in the 1970's when he accidentally drowned two dugongs on separate occasions when using just 100 m of net. Offshore gillnetting in inshore, partially smooth and smooth waters may well be a risk to dugongs proportional to the amount of netting done, the nature of the sites netted and the numbers of dugongs in the general area. Dugongs are said to have been once common but are now practically extinct in the local area, though at least four local dugong strandings suspected to be the result of netting, are known to have occurred locally in recent years¹⁷ (see also Plate 31, below, left & Plate 32).



Local indigenous elders of the local Kuku Yalangi people, including the Mossman Elders Justice Network, David & Christine Solomon and Bennett Walker have written to the authorities and have gone to the press on at least three occasions between 2006-08, over their concerns that, under present netting conditions, it was only a matter of time before the few last remaining dugong are “wiped out”, (see Plates 31 & 32).

Plate 31 (left): Press Cutting, Elders fear for Dugongs

¹⁶ ID from these photographs by Col Limpus, EPA, turtle specialist

¹⁷ Reported to a 2006 Douglas LMAC meeting by EPA

OCTOBER 28-29, 2006 • \$1.60

Increased protection needed

Cairns Weekend Post 28-29.10.06



Worked: Kuku Yalanji traditional custodian Bennett Walker (front), former commercial fisherman Mark Harris and Mr Walker's sons Brandon and Linc want Inshore waters protected to ensure dugong safety.

Photo: NARELLE HINE

Shire may lose treasured gem

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DUGONG could be wiped out of Douglas Shire waters within a decade if this year's deaths surge continues, indigenous leaders say.

Eastern Kuku Yalanji elder Bennett Walker has called for waters from the Mowbray River near Port Douglas north to the Annan River near Cooktown to be legally declared a Dugong Protection Area to bolster a 15-year-old self-imposed indigenous hunting ban.

Mr Walker attributed recent increased large-scale gill netting, non-local indigenous hunters and an insufficient fisheries management system to this year's rise in dugong and marine turtle deaths.

At least four dead dugong have been found at Cape Kimberley, Rocky Point, Muddy Creek and Dickson Inlet since January.



Endangered: Dugongs should be protected.

One was shot with a firearm while another's tail was cut off and belly slit open — a tell-tale sign someone was trying to dispose of the evidence by sinking the protected mammal.

Mr Walker also found the remains of a dugong at Cooya Beach just three weeks ago and said it would not have come from local indigenous hunters because they would have left nothing to waste.

"If this keeps going I'd say in 10 years' time we'll have nothing left," Mr Walker said.

His sons Linc and Brandon, who regularly comb the habitat for their eco-tourism venture, said fisheries management enforcement needed strengthening to keep non-Douglas Shire indigenous hunters out of the region's waters.

Autopsies could help identify why deaths were up, they said.

Rocky Point's Mark "Scrubber" Harris, a former second-generation commercial fisherman, said he was shocked at the number of dead turtles washing up recently.

"I've lived here all my life and this is the worst year I have come across for seeing dead marine life," Mr Harris said.

"They're washing up everywhere. We need the Department of Primary Industries and Fisheries to intervene."

Public consultation for a review of the East Coast Inshore Fin Fish Fishery — Queensland's largest — started in Port Douglas on Monday.

Plate 32: Press Cutting, Elders express concerns about dugong deaths blaming "recent increased large-scale gill netting, non-local indigenous hunters and an insufficient fisheries management system."

Humpback whales have been commonly seen on the grey mackerel fishing rounds during July and August in local waters. The author, on two occasions in 2007 when taking video of the net boats at Snapper Island, was able to take video footage of humpback whales within 300 m the net boat's set gillnet. One of these occasions was witnessed by DPI&F inspection officers, including Port Douglas Fisheries Inspector, Stephen Pollard. On the other occasion a calf accompanied two adults. Again, the chances of a whale becoming caught in the offshore gillnets will be proportional to the amount of netting done and the length of nets used. If, as is proposed by DPI&F, net boats are allowed to use 1.2 km nets in the area it is just a matter of time before a whale is entangled. Note that the white humpback, Migaloo, has been seen in the locality¹⁸.



Plate 33: Humpback, 300 m from a grey mackerel netting boat 27 July, 2007; From video, D C Cook.



Plate 34: Humpback whales, Snapper Island, in Aug 2007, netting boat nearby. From video, D C Cook.

Dolphins are also present in the area and vulnerable to offshore netting. Between 2000 and about 2004 the author used to look out for, and usually spotted a pod of the readily identifiable Indo-Pacific Humpback Dolphin (*Sousa chinensis*) when he took his boat past the mouth of the Daintree River en route to Snapper Island. Since about 2005 he has looked for, but not found this pod which he had become to regard as residents. Whether they are victims of netting or have just moved on will remain unknown but their suspected absence may well be significant.

1.8. Effects on Tourism of declining Fish Catches



Charter fishers such as Jamie Beitzel and caravan park managers such as Kathy Hargrave have spoken to the press on a number of occasions and also to their MP to voice concerns about loss of patrons as a result of declining fish stocks.

Plate 35: Example of press article regarding falling fish stocks affecting tourism.

¹⁸ <http://www.migaloo-whale.org>;

1.9. History of the call to have Netting of Greys banned in Local Waters



Plate 36: Some of the media attention given during 2006 to the apparent overfishing of inshore waters of the former Douglas Shire

In late 2004, following two years of poor catches of grey mackerel and after receiving information about heavy netting of greys further south, local computer store owner, Lester McDonald, the now deceased Bill Dwyer and commercial line fisher, Mark Harris commenced a petition to have netting of greys banned in local waters. This petition was finally given to local member of state parliament, Jason O'Brien in late August 2006, with over 600 signatures.

Meanwhile in early 2006 the Douglas LMAC responded to the findings by their sub-committee on netting (see earlier) by informing the GBRMPA and by writing to DPI&F to express community concerns about the effects of what the community considered to be over-netting in local inshore waters.

Since 2006 a considerable amount of media attention, apparently sympathetic to the cause for having netting closed down in local waters, has been generated as shown in Plates 36, above and Plate 37, below. These two collages are by no means a complete record of all the coverage received, they do not include, e.g. somewhat lengthy and detailed articles in *Line Burner*, the Port Douglas published fishing magazine in June, July and October 2007 and February 2008.



Plates 37: Some of the media attention given during 2007 to early 2008 to the apparent overfishing of inshore waters of the former Douglas Shire

After receiving the petition with 658 signatures, mentioned above, towards the end of, until then, the worst ever grey mackerel season (2006) our local MP Jason O'Brien visited Douglas Shire to talk to both residents and visiting recreational fishers about their claims. He spent a day talking with: groups of recreational fishers at two caravan parks and the caravan park managers, two Daintree charter fishers, traditional leaders and a commercial line fisher. Mr. O'Brien appeared to become convinced, from what he heard, that catches of all large inshore

fish species had fallen off in recent years to the extent it was impinging on the local economy, the income of local commercial line fishers and the lifestyle of local recreational fishers.

Mr. O'Brien's attempts to secure a useful response from the Minister for Primary Industry to effect an emergency closure of the offshore net fishery in local waters have not met with success, despite apparently, concerted attempts. This has given rise to considerable dissatisfaction amongst his electorate as Mr. O'Brien was clearly convinced by the genuine requests of his electorate but has been rebutted by the Minister for DPI&F, leaving doubts in the minds of many of his electorate.



Plate 38: MP Jason O'Brien at a meeting with the remaining "grey nomads" in 2006 who used to visit Wonga Beach caravan park for extended periods each winter to target the inshore fish especially the grey mackerel.



Plate 39: MP Jason O'Brien at a meeting with traditional owners David & Christine Solomon and charter fishers Jamie Beitzel and Dave Patterson showing local Gazette journalist taking notes, September 2006.

The overfishing issue has also been discussed at some length on three interviews on ABC Far North, between the author and journalist Kier Shorey. The story has featured prominently on two lots of Win News and on a Channel 9 documentary aired on 23 December 2007.

A meeting between senior Community members and the DPI&F was held at the Northern Fisheries Centre in Cairns on 11 February, 2008. Each community member presented his account of how he has noticed a significant drop off in catch rates in local waters, especially since around 2002. A table of the numbers of various species caught, tagged and released by Mr Balog over the years was given in a report presented on behalf of Dario Balog. A full account of this meeting is contained in Appendix 2.

1.10. Doubts on the Claim by Netters of Loss of Netting Grounds

A quick glance at the GBRMP RAP zoning map from Port Douglas past Cairns to Dunk Island, as shown in Figure 3, below, will reveal an *insignificant* amount of inshore waters within 7 km of the coastline has been closed to offshore netting by the RAP in this area. However an offshore netter has declared he has lost over 75% of their fishing grounds as a result of RAPs¹⁹. As the so-called offshore netting for grey mackerel is apparently usually conducted within only one or two nautical miles from the shore, often less, the claim by this netter does not appear to be supported by fact with regards to grey mackerel grounds.

PUBLISHED KNOWLEDGE OF GREY MACKEREL

The grey mackerel is endemic (i.e. found nowhere else in the world) to the waters of northern Australia and parts of the south coast of the island of New Guinea²⁰. There is a dearth of scientific literature recording any knowledge of the biology or stock distribution of the species. Prior to recent work being carried out by a DPI&F research team attempting to determine whether different stocks exist, the results of all previous scientific studies published are summarised by Cameron & Begg (2002)²¹ whilst a summary of landings is given by DPI (2002)²² and on-line, by CRC Reef Research Centre for catches up until 2005.

The 210 page Cameron & Begg report covers their research on three species of what they term “small mackerel” namely grey, school and spotted mackerel. (The author queries the relevance of the collective term “small mackerel” when at least two species reach over one metre in maximum total length.) Their grey mackerel material has been summarised in an unpublished

¹⁹ Bruce Batch, joint Douglas-Cairns LMAC, 13 Aug. 2008

²⁰ www.fishbase.org the online world fish database

²¹ Cameron, Darren & Gavin Begg, 2002. Fisheries biology and interaction in the northern Australian small mackerel fishery. Final report to the Fisheries Research and Development Corporation Projects 92/144 & 92/144.02. Fisheries Research & Development Corporation, NT DPI&F, Q DPI&F. 210 pages excl. appendices.

²² DPI, 2002. ed. L.E. Williams. Queensland Fisheries Resources: Current conditions and recent trends 1988 - 2000. Grey Mackerel,

review (2007)²³ widely circulated to members of the Network for Sustainable Fishing in Far North Queensland (NSF) and senior fisheries staff in Brisbane and Cairns offices.



Figure 3: The Cairns area GBRMPA zoning map showing minimal closures of waters within 7 km of the shore south of the former Douglas Shire (note: netting is permitted in the light blue zones).

The more important findings by Cameron & Begg with regard to grey mackerel are as follows:

- *there are no published reports of any research being conducted on grey mackerel and prior to the Cameron & Begg 2002 report;*

²³ Cook, David C., 2007. A Review of 'Fisheries biology and interaction in the northern Australian small mackerel fishery' (Cameron & Begg, 2002) in relation to sustainability concerns for the grey mackerel fishery in Far North Queensland. Unpublished report circulated to Network for Sustainable Fisheries members and DPI&F, available from davecook@bigpond.com.

- from tagging of a total of 313 grey mackerel there was only one recapture and this was in the same local area as it was tagged, **no evidence was detected to indicate grey mackerel travel long distances;**
- female grey mackerel reach **sexual maturity at 75-80cm total length;**

The main recommendations of the report are as follows:

- **“Small mackerel species (i.e. incl. Greys, author) should be managed with utmost caution until detailed stock assessments are undertaken”;**
- **There is a need to develop “a reliable indicator of stock abundance** for each ‘small’ mackerel species (i.e. a means of estimating independently of total annual landings, whether annual stock numbers are relatively steady, declining or increasing);
- *The respective stock structures (of the three mackerel species) ... should be integral in considering management arrangements for each species.*

The authors identified a need to:

- *more definitively describe the stock structure of grey mackerel throughout the eastern Qld coast ...*
- *investigate and describe the localised spawning grounds, nursery areas and preferred habitat of each small mackerel species, and*
- *expend greater tagging effort north of Mackay for all 3 species.*

The authors state that the spawning season for greys is considered to be September to January but appear to rely on data from the Gulf of Carpentaria as their figures show no greys were caught by them on the east coast after October. It is clear to the reader of their appendices that Cameron & Begg did not examine sufficient greys throughout the year on the east coast to make any clear pronouncement about the breeding season of greys in the area covered by this paper. As indicated above, a number of local commercial fishers report it used to be common to catch greys with large roe in the months of July, August and early September.

The Cameron & Begg report states that *“the low number of grey mackerel tagged is believed to be indicative of the infrequency and difficulty in capturing this species by hook and line compared to school and spotted mackerel”*²⁴ This certainly is not the experience of fishers in the Port Douglas to Daintree area who find that when grey mackerel schools are located and the fish are feeding, they can be caught very readily by trolling certain lures. This has proven to be the case even in 2008 when, for the first time on 30 years, no schools of greys were detected by fishers using echo sounders, although individual fish were still caught “here and there”.

²⁴ Cameron & Begg (2002) p. 110. Fisheries biology and interaction in the northern Australian small mackerel fishery. Final report to the Fisheries Research and Development Corporation Projects 92/144 & 92/144.02. Fisheries Research & Development Corporation, NT DPI&F, QDPI&F. 210 pages excl. appendices.

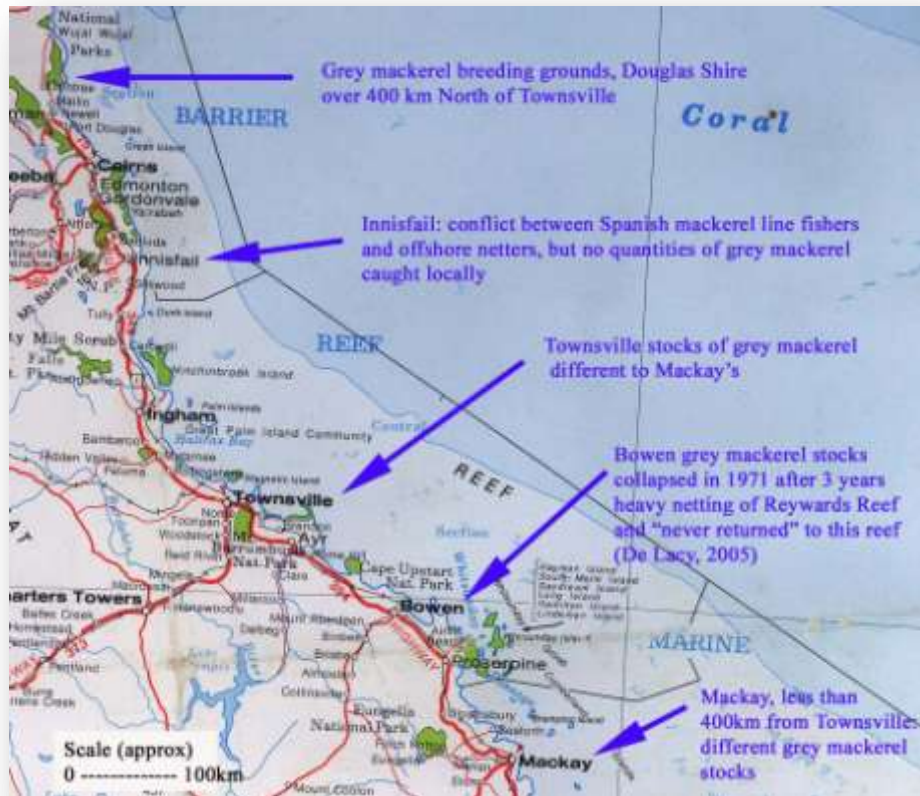


Figure 4: Road map of coastline between Cooktown and Mackay with notes on stocks of grey mackerel

There is also a myth which the author has heard mention by academics that greys have “soft” mouths and hence most are lost when hooked. This is also wrong; the preferred lures appear to hold as firmly in the mouths of greys as they do in the mouths of spotted and Spanish mackerel. During the season, line catches of greys in local waters always used to be greater than catches of school, spotted or Spanish mackerel. In 2007 this was not the case as so few greys have been caught by line that one commercial line fisher caught more Spanish than greys. Numbers of Spanish in 2008 however were so low that even though it was the worst year ever for greys fewer Spanish than greys were caught.

Grey Mackerel researcher, David Welch reported to the Douglas LMAC meeting on 14 October 2008 that his research team had just shown that the grey mackerel landed at Mackay are from different stock from those landed in Townsville, **less** than 400 km along the coast (See Plate 33, above). However they were still unable to find any indication of the fish caught off Snapper Island being different from those landed in Townsville, **over** 400 km from local waters. This of course does not mean that local stocks mix with Townsville stocks, rather that so far researchers have been unable to isolate any factors which indicate they may be from different stocks.

DISCUSSION

3.1. Collapse of local Grey Mackerel Stocks

Because local line fishers have learned, through years of practical experience with grey mackerel, to be able to roughly assess their annual relative abundance in local waters we are aware that numbers over the last three years are at an all time low, with 2008 being the worst year ever. 2008 was the first year that a commercial line fisher who has fished the stocks consistently over the three month season for the last 9 years using an echo sounder, failed to find any signs of schooling greys on his echo sounder²⁵.

The author agrees with most experienced local line fishers of greys that this year, we have almost certainly **witnessed the collapse of the grey mackerel fishery in local waters due to over-netting of pre-spawning aggregations in 2006 & 2007s**. If it transpires we have a population of mackerel having a localised stock structure, global experience suggests **catches may be low or negligible for years to come and may never recover**.

Cameron & Begg (2002) were astute enough to warn that ... **“mackerel species should be managed with utmost caution until detailed stock assessments are undertaken and that there is a need to develop a reliable indicator of stock abundance”** for each species. Regrettably the authorities have been unable to follow the recommendations of their own research as they have not developed any such practical and reliable, if fairly rough and ready means of indicating stock abundance as have local line fishers.

For management decisions, such as the state of the fishery and allowable quotas, DPI&F would appear to rely on whether annual reported catches by the net boats are remaining relatively stable. This is particularly alarming as relatively stable net catches are **not** a reliable indicator of stock abundance in situations where fishing is based on easily accessible spawning aggregations (such as our grey mackerel fishery). The phenomenon of hyperstability²⁶ explains the reason for this (see 3.6).

3.2. The Claims of Loss of 75% of Netting Area disputed

The claims that 75% of netting grounds have been lost to the offshore netters need much closer examination and could well be an attempted cover for localised overfishing of their existing inshore fishing grounds and a guise to win the sympathy of the public, DPI&F and politicians. The netter responsible for this statement certainly knows how to present the “facts” in his favour as at the joint Cairns-Douglas LMAC, August 2008, he declared to the meeting that the author was the only fisher in Douglas Shire who could not catch greys and also stated to the author at that meeting that grey mackerel could not be detected using echo sounders; a claim which we know to be wrong.

²⁵ Col Patterson, pers. comm.

²⁶ Hilborn, Ray and Carl J. Walters, 1992. Quantitative Fish Stock Assessment, Choice Dynamics & Uncertainty. Chapman & Hall. New York & London. 570 pp.

It is widely claimed that there used to be a lot of mackerel netting in the Cairns area whilst only the waters immediately next to Cairns have been closed to netting. The possibility that the Cairns area has succumbed to serial overfishing, and as a result, netters have to seek alternative fishing grounds needs to be explored. The alternative explanation is that offshore netters may be responsible for a phenomenon, known in fisheries management circles as serial overfishing, i.e. they fish in one area until stocks are exhausted and then move on to the adjacent stocks. The netters should be required to substantiate their claims of the loss of the major share of their fishing grounds and any such attempt be carefully checked against historical log book tallies.

3.3. Low Inshore Fish Stock Levels and Overfishing

Any fisher²⁷ with over 10 years fishing experience in local waters will confirm that catch rates and sizes of all *inshore* fish species including barramundi, trevally, queenfish and fingermark have dropped significantly and to levels many consider cannot sustain current levels of fishing in the last 10 years. This was identified by the Douglas LMAC netting sub-committee in 2006. Many factors will be responsible for lower levels of fish in given areas including high rates of recreational fishing combined with pollution, e.g. Dixon's Inlet²⁸, loss of nursery areas and other environmental changes. As far as most recreational fishers, caravan park owners²⁹ and charter fishers³⁰ in the local area are concerned, the most obvious cause of fishing mortality is high fishing pressure, especially from large scale offshore netting of inshore waters.

Whilst the killing of any inshore fish caught by any method is now probably contributing to ongoing overfishing, the **least value** to the local community from fish caught is from the offshore and out-of-town netters. The offshore gillnetters with large boats are considered by many to have had the greatest impact per person on local stocks. Itinerant net fishers from "out-of-town" also contribute almost nothing to the local community.

Whereas previously the local commercial fishers of the former Douglas Shire were well like and respected members of the community, the potential for conflict in local waters between commercial fishers and recreational, including the charter fishers, is high for the simple reason there is insufficient fish production to go round as a result of the standing stock of fish having been seriously reduced. **This potential for conflict has been created by inadequate fisheries management.**

The value to the Australian economy and especially to the local economy of fish caught by recreational fishers, especially overseas visitors and fish that is caught and released unharmed is many times more than that caught by net boats. A local fish marketer developed a valuable if small overseas market in Japan for fresh chilled, brain-spiked grey mackerel based on the

²⁷ See Appendix 1 for names and phone numbers of over 40 fishers prepared to testify to this statement

²⁸ Dario Balog, retired charter fisher, Dixon's Inlet. Unpubl. report

²⁹ E.g. Kathy Hargrave of Pinnacle Village Caravan Park

³⁰ E.g. Jamie Beitzel, Daintree charter fisher, son of the now deceased grey mackerel line fisher, Brent Beitzel

catches of local commercial line fishers³¹. Net caught grey mackerel, because they can remain dead in the net for a few hours before landing and are handled in bulk, are of too low a quality to meet the Japanese fresh chilled market and command a much lower price.

Where there is serious competition between sectors for a given limited resource as there is here, the local economy will benefit far more from fish being caught by recreational, charter and local commercial line fishers than by netters.

In a small community such as the Port Douglas, Mossman to Daintree area that is dependent on tourism for its prosperity and where there are all the signs of an advanced stage of overfishing, then effort by itinerant netters should be removed permanently from local inshore waters and a strategy developed to rebuild fish stocks.

3.4. Size of Freshwater Systems feeding the East Coast of Queensland

It is well established fact that our river systems are one of the major sources of nutrients upon which our inshore fisheries rely. Fisheries managers need to be mindful that the watershed of the Great Dividing Range is around 5 to 10 km from the coast in much of the local area and this will greatly reduce the potential for nutrient transport to the sea in comparison with the much larger river systems and the much more extensive coastal plains further south. The major proportion of the land north of Cairns drains into the Gulf of Carpentaria.

We can therefore expect our inshore local fisheries, if significantly dependent on nutrients derived from river outflow, to be much less productive than those further south. These further south are fed by rivers such as the Burdekin and Fitzroy having catchments several orders of magnitude larger than the Daintree (length 120 km) and the smaller Mossman, (see Figure 5).

Fisheries management authorities need to demonstrate their management measures, e.g. arrangements for distribution of fishing effort, take production considerations into account. At present, this clearly is not the case; offshore gill netters with east coast licences may fish anywhere along the east coast outside of green and yellow zones and other specially protected areas. All net boats could legally come and fish local waters of the former Douglas Shire at the same time. It is not sufficient for DPI&F to state, as they have in the past “*but this is unlikely to happen*”. Such total failure to attempt to match fishing effort to the productivity of different areas is a clear recipe for the type of serial overfishing that has just occurred in local waters.

³¹ Steve Grainger, previously Port Douglas Seafoods, per Col Patterson, pers. comm.

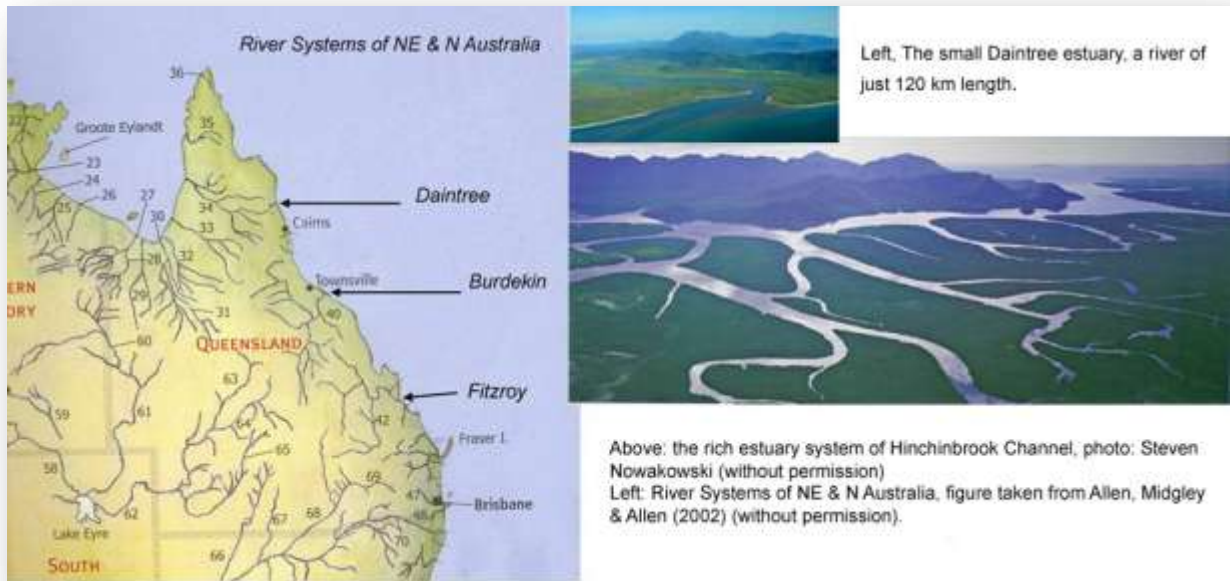


Figure 5: Showing the comparatively tiny size of the Daintree (120 km in length) in comparison to e.g. Burdekin and Fitzroy Rivers.

3.5. Environmental Factors

Questions remain as to what reduced the northern bluefin tuna numbers in local waters? Was the reduction caused by other environmental factors or by the offshore netters? Large schools of northern bluefin tuna were common in the same area and during the same season as grey mackerel in local waters as recently as 2002. The species was of a similar size and fed in a similar manner to greys and the author has observed schools of northern bluefin in the same local area as grey mackerel, at times within a few hundred metres of each other and has caught tuna whilst fishing for greys at Snapper Island (see Plate 20).

When a feeding school of large pelagic fish is located by a fisherman, the identification of the species in the school can be confirmed when a good view is obtained of a fish at the surface when feeding, e.g. when it leaps clear of the water, or when they are visible in the water on a flat calm day, or when one is caught.

Because of the relatively unselective nature of their method, it is most likely that gill netters would, at times, have been unable to avoid catching northern bluefin tuna in large numbers when greys were being targeted in local waters. As netters state they do not have a good market for the species, large quantities may have been discarded at sea as unwanted by-catch. Could the unselective nature of gill netting have contributed to the lack of the northern bluefin tuna in local waters in comparison to their previous abundance?

The answer to the previous question is likely to remain in doubt as environmental factors may also be contributing to the decline of stocks of both northern bluefin and grey mackerel. Some line fishers report³² that the abundance of baitfish in local waters is not what it used to be. More effort needs to be made to record from those fishers with knowledge of which species of baitfish were present in local waters and in what levels of abundance, before this opportunity is lost forever. It is also possible that numbers of baitfish may be lower as a result of the lower number of floods experienced in recent years (this claim still needs to be checked out).

In local waters when grey mackerel and bluefin tuna are feeding and are seen breaking the water having chased the baitfish to the surface, they are almost always accompanied by feeding terns. Experienced fishers who fail to locate mackerel on the usual grounds will scan the horizon to look for feeding seabirds and invariably when they are approached, the seabirds will be found to be feeding over a school of breaking mackerel, tuna, trevally, or queenfish.

Seabird researchers working in the GBR area have reported (need reference) seabirds having much lower chick survival rates than previously and linked this to the adults having greater difficulty locating food. This may indicate that the baitfish upon which the seabirds feed are simply less available in recent times to the seabirds, rather than being absent from the area, because they are not being chased to the surface by their piscine predators.

Certainly in recent years, the numbers of crested, lesser crested and other terns resting on the beach around the Daintree estuary and patrolling the waters around Wonga Beach appear, from the author's casual observation, to be far fewer, coinciding with fewer, smaller schools of mackerel and other larger pelagic to chase their prey to the surface for them.

If overfishing and/or other environmental factors have reduced the numbers and size of schools of larger predatory fish then this is likely to have a knock-on effect by making it far more difficult for seabirds to locate their food. If the research is not already ongoing in the GBR region, there is a need to conduct acoustic surveys of baitfish numbers and distribution of the type done by Biosonics³³ of the US to determine whether baitfish abundance and composition is continuing to change over the years.

Certainly if environmental factors are reducing the quantity of baitfish in the region and this in turn is reducing the numbers of larger predators such as grey mackerel, **this is an additional reason to manage the fishery with "utmost caution"**.

3.6. Apparent Overfishing of Grey Mackerel

Authorities have stated they have no evidence that local stocks of grey mackerel are overfished. This is because they have not made the necessary studies to identify whether or not overfishing by netters is occurring. They have no idea of the actual size of the grey mackerel stocks or of

³² e.g. Col Patterson, Dario Balog

³³ The author worked on just such a survey with Biosonics with the Dept. Ag. Fish & Conservation in Hong Kong in the late 1990's and in addition to being a fisher is also a keen bird watcher so has always paid attention to seabird behaviour and numbers

their annual production. They do not know where they spawn and when, and have no sound means of assessing their relative stock size from year to year, unlike local fishers.

With on-going research on stock structures of grey mackerel discovering only in the last few months that there are distinct stocks of grey mackerel on the east coast of Queensland, the stand taken by the Network for Sustainable Fishing in Far North Queensland regarding the possibility of local grey mackerel belonging to a local stock of restricted range is completely vindicated.

Figure 5 shows the small distance between Mackay and Townsville, less than 400 km, each centre having its own distinct populations of grey mackerel. Approximately halfway between the two lies Bowen, where the Reywards Reef seasonal fishery for grey mackerel was netted out in 1971 and “*the greys never returned*”³⁴. The circumstances relating to the “failure” of the grey mackerel fishery at Bowen, subsequent to 1971 suggest that a local stock may well have been removed permanently.

Current management regulations therefore need to be changed following the discovery of separate stocks of greys on the east coast of Queensland as the previous assumption was that there was only one, widely migrating stock.

Currently it appears the only means used by the authorities to assess the state of the grey mackerel fishery is by comparing total net catches from year to year. This is a tempting option for those unfamiliar with the subtleties of fisheries management. Competent students of fisheries management principles will advise that steady annual catch rates over a number of years is a useless and indeed dangerous indicator of the condition of stocks which aggregate in large easily fished schools in limited areas. As mentioned previously, this is because of a condition known as hyperstability³⁵.

Hyperstability is a condition particularly relevant to a fishery based on spawning aggregations fished by highly efficient fishing gear. Catches remain stable whilst stocks are being heavily depleted and can even remain stable until irreparable damage is done to stocks. This is because all the adult fish of a given population are gathered together in just a few areas. It is therefore easy to continue to make large catches from these schools while stock size is being dramatically reduced.

Whilst a few offshore boats are filling up every year with relatively large catches, local observations by line fishers in local waters indicate this level of fishing is reducing the size of the stock. This is only apparent to those locals who already have an established means of estimating relative stock abundance from year to year, as described earlier. The fact that the net boats made no attempt to return this year may suggest they have already worked out how much fishing a stock can withstand before its numbers collapse.

³⁴ De Lacy (2005) *Loc. cit.*

³⁵ Hilborn, Ray and Carl J. Walters, 1992. *Quantitative Fish Stock Assessment, Choice Dynamics & Uncertainty*. Chapman & Hall. New York & London. 570 pp.

What happens in a fishery affected by hyperstability can be likened to taking more money out of your saving account every year than the interest you are earning. Sooner or later, depending on the size of your account, at the beginning, and the size of your withdrawals, you are left with almost nothing. Locals fear this has already happened to the local grey mackerel fishery over the previous three years. Certainly authorities have been unable to develop “***an indicator of stock abundance***” or “***manage stocks with utmost caution***” as recommended by Cameron & Begg, 2002.

Many in the community feel DPI&F are being negligent in failing to attach sufficient weight to the experience and claims of the local fishing community.

3.7. Need for a Revision of Gill Netting Regulations

From the points raised in this study so far, common sense indicates that management regulations covering offshore netting in Far North Queensland are in dire need of an overhaul. The current regulations allow any and all of the licensed large offshore gillnetters of high fishing capacity to target any inshore resource outside of green and yellow zones or other specially protected local areas at any time of the year. This allows the targeting of spawning aggregations of grey mackerel, queenfish, trevally and fingermark and high by-catches of Spanish, spotted mackerel and possibly barramundi, and the temptation to sell these illegally.

As the nets may be bottom set or set just off the bottom on rougher ground, they may also be used, in theory at least, to target spawning aggregations of red emperor and nannygai. Proposed new regulations would allow netters the opportunity of keeping a significant by-catch of these “reef fish” (which may be readily netted at night over flat or rough bottom near reefs). This in turn will introduce the opportunity for the level of creative book keeping and marketing that may well be going on at the moment in some sectors with regard to marketing of Spanish and spotted mackerel “by-catch”. The effectiveness of certain regulations introduced to reduce the capture of Barramundi in spawning condition is unclear.

As we suspect from the experience in the Port Douglas to Cape Tribulation area, netters can overfish an area and then move on without this fact being realised by the authorities until netters start to report a shift in their fishing grounds. The authorities do not have a means of checking the position of offshore gillnetters, such as the Vessel Monitoring System (VMS) and rely on the net fishers to report catches and the locations those catches were made *without* the authorities having the ability to check on the accuracy of such reports. This system is wide open to abuse and the concealment of any serial overfishing of any target species or even non-target by-catch that may be occurring.

As an example, DPI&F reported to the Douglas LMAC that 17 tonnes of grey mackerel were caught by net boats in local waters, namely the fishing grids G & H15 in 2007. This represents a stretch of water only 30 nautical miles from N to S. The author and others cannot believe that in 2007, 17 tonnes of greys were caught in these by the net boats until proven. This is because our local fishing grounds were well covered by two local line fishers and a number of recreational fishers at the time and from their fishing experience, considered the numbers of greys present in 2007 were well down on 2006 levels.

These fishers are satisfied that 11 tonnes may have been caught by the netters in the local area in 2006. They consider that this catch seriously depleted local stocks to the extent that there was insufficient left to spawn normally that year. Because they experienced much lower stocks of greys on days in 2007 when weather permitted fishing, the commercial line fishers consider that the netters would have almost certainly have caught less in these waters in 2007 than the previous year.

The possible advantages of overstating catches in any area that is about to be closed to netting relate to a possibility of netters being paid compensation when “locked out” of the area. The authorities have no means of checking if the claim of 17 tonnes is valid or not because they have no means of checking where boats are fishing; they rely solely on the reports from the net boats (but, strangely do not seem to accept from charter fishers and caravan park owners, as well as local fishers that local stocks are overfished).

The author is not aware of any procedures to check catch composition and quantity when the fish are landed so cannot comment on whether landings declared as grey mackerel fillets may also contain a significant proportion of very similar looking school, spotted and Spanish mackerel fillets. These species, as discussed above, are inevitably caught in significant quantities when netting greys in local waters but may not be legally taken by nets. A gaping loophole is presented as it would be a simple operation **to tranship significant catches of netted Spanish or spotted mackerel to line fishing boats as some offshore netters hold both licences.**

3.8. Management Obligations in relation to a World Heritage Area

Australia’s obligations with regards the management of World Heritage Areas such as the Great Barrier Reef are well documented. Allowing widespread and relatively large scale operations of such a relatively non selective fishing method as the so-called, offshore gillnetting of spawning aggregations of such a large, charismatic and locally important but vulnerable endemic predatory species as the grey mackerel is **clearly a breach of these obligations.** This breach is even more apparent when the risk to dugong, turtle and large shark is taken into account and also the not insignificant risk to whales and dolphins.

3.9. The Precautionary Principle³⁶

Australia has adopted ecologically sustainable development (ESD) as a guiding principle of environmental management. The *National Strategy for Ecologically Sustainable Development* (1992)³⁷ adopts the precautionary principle as a “core element” of ESD as does the Inter-Governmental Agreement on the Environment, which is the basis for the current distribution of governmental responsibility for environmental management in Australia.

The precautionary principle in the context of environmental protection is essentially about the management of scientific risk. It is a fundamental component of the concept of ecologically

³⁶ Cole, David 2005. The precautionary principle - its origins and role in environmental law. EDO Adelaide; <http://www.edo.org.au/edosa/research>.

³⁷ Commonwealth of Australia. 1992. *National Strategy for Ecologically Sustainable Development*.

sustainable development (ESD) and has been defined in Principle 15 of the *Rio Declaration (1992)*³⁸ as:

“Where there are threats of serious or irreversible environmental damage, lack of full scientific certainty should not be used as a reason for postponing measures to prevent environmental degradation.”

It is apparent from this report that DPI&F, and ultimately the GBRMPA, are failing to ensure the offshore netting sector is operating under **ecologically sustainable development principles**. This study provides circumstantial evidence that offshore netting has resulted in the collapse of the grey mackerel fishery in local waters whilst researchers have urged the fishery be managed with **“utmost caution”** and recently discovered separate stocks of grey mackerel on the east coast within 400 km of each other. Common sense indicates that the authorities are required to implement the Precautionary Principle to avoid further stock depletion and the possible loss of locally distinct stocks of fish. The Network for Sustainable Fishing in Far North Queensland, working through the Mossman Boat & Fishing Club therefore commissioned Poseidon Aquatic Resource Management³⁹ to undertake a review of both an earlier draft of this paper and public information regarding offshore netting catches and management as well as the responsibilities for managing a WHA such as the GMRMP.

3.10. The Poseidon ARM Report⁴⁰

The resulting Poseidon ARM Report is based on a review undertaken by Richard Banks and should be read in conjunction with this case study. Briefly, the report finds that the management authorities are required by law to apply the Precautionary Principle, or at the very least undertake a participatory risk analysis evaluation in the event of any doubt as to the state of stocks and his report indicates that clear doubts prevail. The current study presents a solid case for the implementation of the Precautionary Principle.

CONCLUSIONS

4.1 Overfishing

The evidence indicates our local inshore fish stocks cannot support the level of fishing to which they are currently subjected. All evidence points to a continuing decline in fish stocks; there is no evidence to indicate otherwise. If bait fish stocks have fallen to levels that are failing to support the level of fish stocks of the past, then all the more reason to halt the netting of the remaining spawning aggregations.

³⁸ United Nations Conference on Environment and Development, Rio, 1992 (the *“Rio Declaration”*).

³⁹ www.consult-poseidon.com;

⁴⁰ Poseidon ARM, 2008. Evaluation of prospective management arrangements and control actions that could be applied to the grey mackerel (*Scomberomorus semifasciatus*) fishery in the Daintree (N. Queensland). Private report available from NSF/MB&FC: davecook@bigpond.com

Even an immediate ban on netting of greys may already be too late to save the greatly reduced numbers of grey mackerel that aggregated at Snapper Island this year. Grey mackerel are likely to be communal species requiring a certain level of social stimulation to trigger spawning. Whether there were sufficient numbers left at the end of the season to trigger a successful spawning is unknown. It is imperative that no offshore netting be allowed fishing squares G15 & H15 as from 2009.

Current low levels of fish stocks have brought the commercial net fishery into sharp conflict over access to depleted resources; however there is still no conflict with commercial mackerel line fishers. Line fishing is considered to have been sustainable prior to the commencement of netting of greys. All local recreational and charter fishers, caravan park owners etc are adamant that offshore and out-of-town netting is not sustainable. This has reached the stage that most rec and charter fishers are against most forms of netting on grounds of sustainability.

Based on the case presented here there is a clear requirement for the authorities to implement the Precautionary Principle to close our inshore waters to all offshore and out-of-town gill netting. To fail to do so would be to fail in their duty of ensuring ESD.

4.2 Proposed New Fisheries Management Measures Inadequate to ensure ESD

Whilst the community is aware that East Coast Fin Fish Fishery review is currently underway it is seriously worried that any new measures will be insufficient to mitigate the damage already done to stocks and to ensure ESD. This is because the proposals that have been presented to date actually favour more netting, including the increase in length of offshore nets from 600 m to 1.2 km in length with no mention of effectively limiting their use in local waters and the doubling of numbers of nets a commercial fisher may use in rivers and estuaries.

Given that:

- a significant level of overfishing has already occurred in this World Heritage Area of the Great Barrier Reef and is attributed largely to netting,
- authorities have clearly failed to achieve ESD and
- the community concerns have not been addressed adequately,

the community should take its demands first to the managers of the WHA and if this fails, into the legal, political and international arenas.

RECOMMENDATIONS

5.1 Authorities need to recognize that local waters are overfished

Until there is official recognition that our inshore fish stocks show all the signs of being significantly overfished in the face of worsening environmental conditions, we cannot make any progress. Many local businesses request that the depleted state of our inshore fishery should be addressed but not unduly advertised.

5.2 Use the Precautionary Principle to close local waters to most forms of Netting

Common sense indicates that on grounds of **concerns for sustainability**, government should immediately close local waters to all offshore gillnetting (other than bait and mullet netting by licensed locals) and all inshore set-gill netting by those who either do not have an established history of netting in local waters or do not live in the local area. This is a minimal call.

Furthermore government should offer the few remaining local inshore set gillnetters the opportunity of government buyback of their licences because recent increases in fishing effort by outsiders have made their livelihoods unsustainable. Inshore fin fish resources have dropped to such a low level in local waters that making a living from netting is likely to prevent any significant level of resource recovery.

To fail to stop the netting will result in considerable community anger directed towards DPI&F and the netters.

5.3 Develop Strategies and implement Programmes to rebuild Inshore Fish Stocks

We need to set our target at rebuilding inshore fish stocks to levels approaching those of the recent past, say pre-1990's. This will be of significant benefit in the medium term to the local economy. Such strategies should incorporate the concepts of:

- community participation in local area fisheries management incl. allocation of effort;
- maximum value to local communities from resources;
- assumption of local fish populations/stock until proven otherwise for all species;
- protection of pre-spawning aggregations of inshore species c.f. reef fish management.

5.4 GBRMPA commission a local study to collect and collate historical information on catch levels made by fishers during the period 1975-2000 in local waters.

Without a baseline reference as to what catches used to be like, there is nothing to compare present day catches and any study focussing only on present day catches inevitably alters baseline perceptions whilst concealing our recent past mistakes when there may still be the opportunity to rebuild stocks.

5.5 GBRMPA or Environment Minister commission a short study by an independent Fisheries Management Specialist to review Grey Mackerel and other offshore and itinerant netting in the WHA of the GBR

A common sense approach recognizes a certain potential danger in relation to:

- the conclusions based on community experience and expressed in this study,
- recent DPI&F research showing there are at least two stocks of grey mackerel in an 400 km stretch of the east coast of Queensland, and
- the documented account of a grey mackerel net fishery collapsing at Bowen as a result of heavy netting pressure,

Along the east coast of Queensland there is a danger that there may well be a number of other populations of grey mackerel. It is also quite possible that other species in the "non-reef fish" category (for management purposes) that aggregate to spawn, such as queenfish and

fingermark, may also have their own discrete populations. If so, these may readily fall victims to serial overfishing as the large scale offshore netters work their way through the inshore waters north of the present study area. This may result in the continuing loss of discrete local populations (local stocks) of these inshore fish species that aggregate to spawn but do not yet have closed seasons to protect their pre-spawning and spawning aggregations.

Acknowledgments

Local commercial, charter and recreational fishers, including visiting holiday makers provided me with a great deal of information, however I take full responsibility should there be any cases of misinterpretation. Commercial fisher, Mark Harris, gave me regular updates on his attempts to locate the school(s) of greys and both he and Col Patterson were helpful in pointing me towards the right areas, on the day, for finding greys when fishing. Richard Banks of Poseidon ARM and others who know who they are, discussed an earlier draft of this paper. Richard Banks reviewed the need to implement the Precautionary Principle. Our local MP, the Honourable Jason O'Brien spent a day in his electorate meeting with his voters and confirming for himself our feelings regarding our depleted inshore resources. Col Patterson, Mark Harris and Jamie Beitzel provided photographs of their catches, the shot of the Hinchinbrook Channel is by Stephen Nowakowski, remaining photographs, other than in press cuttings, are by the author.

David C. Cook,
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Tel: 07 4098 7933

23 October, 2008

Appendix 1: A list of fishers from either the local commercial line, charter or recreational fisheries (incl. a few regular visitors) who have targeted grey mackerel in the past and noticed a big decline in numbers and who are prepared to be questioned about falls in catches of grey mackerel (and usually other species as well) & feel strongly there is a need to close the local inshore waters to offshore netters. The list also includes two caravan parks whose managers, though a non fisher, have access to lots of other fishers who used to come for their holidays to fish but have given up because of poor catches in recent years). *Apologies to those omitted.*
 Note: QLD telephone numbers need the prefix 07 for out-of-state calls.

<u>Name</u>	<u>Tel</u>			
		Baird	L.	0429 917 285
Allan	John	check		
		Beitzel		
Assman	Warren	check		
⁴¹	Jamie	4090 7638	Harris	Mark 4098 7526
Bowling	P.	4098 1105	Healey	Warrick 4098 3306
Bunyip	Ned	4098 6028	Hollier	A. & D. 4098 1157
Bysterveld	Freddy	4090 7201	Ives	Keith 4098 7657
Caltabiano	Tano	check	Kingston	Evan 4098 8292
<i>Caravan Pk., Pinnacle</i>		<i>4098 7566</i>	Lafferty	Lee 4098 6115
<i>Caravan Pk., Wonga</i>		<i>4098 7514</i>	Marano	Angelo 4098 8222
Casey	Mick	4090 7762	Millar	Rod 0427 781 105
<i>check</i>	Patrick	Wonga Van Park	Patterson	David 4090 7776
Cook	David	4098 7933	Patterson	Col 4098 6236
Cornell	Brian	4098 7675	Petrus	Vic 4098 8185
Crimmins	Mick	4098 7840/ 7219	Pilat	Carlo 4098 7206
Dunne	Peter	4098 7803	Pitt	George 4098 2798
Evans	Norm	check	Pitt	T. & R. 4098 7553
Favier	Alan	4098 7830	Powell	G. 4098 7529
Green	P.	0439 849 162	Purt	Ron 4098 6111/ 7898
Green	A.	0408 062 807	Savage	Ron 4098 7857
Green	L.	0439 849 162	Solomon	D & C 4098 6231
Gulliver	James	check	Suffolk	Owen 0428 863 105
Gwynne	Mick	check	Sutcliffe	Gordon Wonga VP.
			Tait	J. 0428 722 712
			Tenni	Martin 4034 1756
			Walker	Bennet 4098 1119

⁴¹ Will provide contacts of his regular clients who have similar observations.

APPENDIX 2: Mossman Boat & Fishing Club's Record of a Meeting between a Delegation from Douglas Shire Community and Fisheries Officers from Dept. Primary Industry & Fisheries at their Cairns office regarding locally depleted Inshore Fish Stocks

Date: 11th February 2008
Time: 10 - 12.40hr
Venue: Northern Fisheries Centre Conference Room, Cairns
Attendees:
DPI&F

(Chair) QF1⁴² Acting GM – Resource Management
QF2 Manager - Resource Management Brisbane Office)
QF3 Principal Scientist
QF4 Fisheries Biologist
QF5 Fisheries Biologist
QF6 Fisheries Biologist (Grey Mackerel)
QF7 Fisheries Biologist
QF8 Administration Officer NFC

Douglas Shire Community Delegation

Brian Roberts	President Mossman Boat & Fishing Club
Jamie Beitzel	Charter Fisher Daintree
Ron Savage	Community Member, past president of Mossman RSL
Mark Harris	Commercial Fisher
David Cook	Conservation Liaison Officer, MB&FC

Welcome.

Apologies: Dario Balog (until recently Charter fisher – Port Douglas area)

Objective of the meeting: To ensure that members of the Mossman Community are satisfied that their views on the state of their inshore fishery resources and effects of current levels of net fishing within their region are adequately expressed to relevant officers of the Department of Primary Industries & Fisheries and that those views will be appropriately considered.

Agenda

In summary:

- 1 Share information on how inshore fin fish stocks are perceived to have declined over the years, including grey mackerel. Each community delegate to give an account from his perspective. A statement from Dario Balog to be read out and a 12-minute DVD message to DG & Deputy DG of DPI&F, prepared specially for the meeting, to be viewed
- 2 Discuss the issues raised (recorded in left column Table 1)
- 3 Discuss proposals outlined in RIS as relate to item 2
- 4 Identify a way forward to address issues (recorded in right column Table 1)

⁴² Names not revealed to maintain anonymity and reduce the potential for personal diiferneces

Record of Meeting

A round the table introduction started the meeting with everyone present giving a brief overview of their position. 3 statements were tabled from Dario Balog, Ron Savage and David Cook (those from Mr Balog and Mr Savage are appended, whilst Mr Cook's summary of the community presentation is included in full, below)

Brian Roberts placed on record the fact that he has noticed a huge drop in fish abundance during his life time. Being born in Mossman and having a father who was both a keen fisher and diver he learnt to dive and fish at an early age. He noted that it is now difficult to make a good catch in the Daintree and along the coast whereas previously it was easy. To make a good catch nowadays it was usually necessary to go out to the distant barrier reef as the inshore areas have nothing like their previous numbers of fish.

Mr Roberts said that the MB&FC has more strict minimum sizes than DPI&F because they are a conservation-orientated club and want to ensure there are fish for their children to catch. He noted that last year they had a great turn out for "Take a Kid Fishing Day" but catches were very poor. He said that the inshore waters of the Douglas Shire cannot support both current levels of recreational fishing as well as commercial netting.

Both Mr Beitzel and Mr Harris noted they have seen a great decline in inshore fin fish numbers through the years and more so since 2002. Both their fathers made a living from commercial line fishing for grey mackerel during the season from June to early September during the 1970-80's. Mr Harris is still a commercial line fisher of grey mackerel whilst Mr Beitzel is a charter fisher on the Daintree and neighbouring coastal waters using only light tackle.

Both stated that they have noted the greatest decline in size and frequency of schools since about 2002. Both consider that the drum netters targeting pre-spawning and spawning grey mackerel schools are fishing unsustainably and have already seriously depleted both the grey mackerel stock and other inshore species.

This last season (June-Sept, 2007) Mr Harris collected 60 grey mackerel frames from his own catches and the catches of others to prove to DPI that the fish were coming into spawning condition. The vast majority were carrying ripening roe or milt.

Mr Beitzel noted that other larger inshore species have also declined markedly during the same period. This is most noticeable for the big queenfish which were once so common as to be almost a nuisance and if you wanted to catch some and went to the right place you were guaranteed of good sport. Now they are relatively uncommon; this is also true for other species such as big trevally and fingermark.

Main Points from Ron Savage's Statement (Attachment 1)

Areas of concern

- No tonnage controls on professional take, yet severe bag limits on recreational take = no management
- Netting of fish totally wrong in this day and age = uncontrollable by-catch/ wastage & loss of major breeding stock congregations
- Live fish trade/ catch – with the **now** heavy concentration on local reefs by professional fishermen = considerable community anger (political and becoming personal!!); not seen as justified as this catch is for overseas markets as opposed to local fresh fish for Australian consumption;
- in our Shire most people realize that Tourist dollars are far more valuable to the local/ regional and National economy than that generated by the live fish export trade.

Main Observation by Mr. Savage:

- stocks of popularly targeted fish are **rapidly diminishing** within the fishing areas reasonably reachable by recreational fishermen, I have caught no grey mackerel for the past five years, previously I used to make good catches of greys during the season.

Recommendations by Mr. Savage:

- ‘partially smooth waters’ zone of Douglas Shire **trialled** as a **no netting** zone – (all netting other than small bait and cast nets).
- DPI Fisheries should collate local community verbal history & give it the weight it deserves in management recommendations.
- We need to see sustainable management of popular recreational catch species given **the urgency it now requires**.

Report by Dario Balog, Charter Fisher, Port Douglas

Table 1: Observations on Fish Numbers in Packers Creek, changes over time

Species	Numbers caught per year 1994 - 2002	Changes in Abundance since 2002
SEASONALLY VISTING FISH		
Croaker (small)	very seasonal, Aug-Oct, around 200/yr	sudden drop from 2002, last yr caught ⁴³ only 5
Mulloway	half a dozen per year, juveniles to 7 lb, say 60-65cm	Nothing for 4 years
Hairtail	say 50/yr winter/spring months as for croaker	same sudden drop off as Mulloway about 6 last season
Wolf herring	similar to Hairtail	similar to Hairtail
Tarpon	say 100/yr, 1.5 kg average, around 50 cm	sudden drop off as for small croakers
juvenile trevally	150/season winter & early spring	small ones no longer caught in mid to upper Packers, still around the mouth
medium trevally (1kg)	say 25 / season	more or less the same numbers as previously
large trevally >30 lb	about 6/yr usually early spring	now none
Queenfish >20 lb juvenile (Pomadasys kaakan)	about 6/yr usually late Nov-Dec say 200/season, again seasonal, winter early spring, as above. At times caught faster than they could be tagged so just thrown back	now none into Packers but schools of small immatures seen around mouth
Spotted grunter, TL 27cm		
Small-spotted grunter, av. size TL 24 cm	say 50/season, as above	now none into Packers, small ones also seen around mouth
BAITFISH, examples only		
Long-nosed and Snub-nosed garfish	previously abundant, often stretches of 50 x 10m x 30cm deep, thousands of fish congregating ripe	much less than 1% for over four years

⁴³ Remember, all caught and released

	with spawn, feeding and avoiding strong winds, to halfway into Packers	
Hardyheads	huge numbers entered right into to upper reaches especially in SE winds over 20 knots, size used to be 10cm	virtually no adult Hardyheads now
Spotted herring	used to be huge numbers (see text)	almost non existent
RESIDENTS		
Barramundi	about 50 /yr	Sudden drop off about 5 - 6 years ago, accompanied by drop in average size 75 to 60 cm in one year. Only 4 caught this year all around 60 cm
Mangrove Jack	say 100/yr originally average size of around 40 cm	Av. size went from 40 to 31 in space of about one year
Pikey Bream	hardly caught any	Dominant, say 80% of catch at the back of the creek, during winter early spring, say 150 /yr
Cods	catch of 30 to 80 cm, 150/yr	now hardly ever, say less than 10 / year
Fingermark	adult (>2 kg) say 20 /yr as visitors	now say 2/yr

Mr Cook presented a report by Dario Balog, until recently an independent charter fisher having tagged fish in Packers Creek for several years taking take around 600 fee-paying fishers annually. Mr Balog's report outlines his findings to date using tag & release methods, his full account being presented in Attachment 2, a summary of his main findings with regards to observed changes in abundance of different species is presented in Table 1, above. Because of the recent reduced catch rates Mr. Balog has recently left the charter fishery, although he would have preferred to have remained within the fishery as his first career choice, provided there were sufficient fishery resources to permit this.

Mr Balog asks the following questions:

- What caused the sudden drop in baitfish numbers, can this be linked to any environmental changes or simply local pollution from run-off from construction works?
- Is it only poor water quality that is keeping baitfish out of Packers?
- How extensive have any other drops in baitfish numbers been up and down the coast, i.e. is the drop purely local or regional?
- While there are still good numbers of some baitfish in and around the Daintree area, are they the same species as stopped coming to Packers?
- Can we agree that we need to work on water quality improvement in order to get the bait and other larger fish species back into Packers?
- What are the prospects of enforcing a 'catch and release' policy for areas like Packers, presumably this could be done under the proposed local management areas' policy - when will this be introduced?
- Is it only baitfish absence and pollution that is keeping the larger species out or are other forces such as high fishing levels, including netting and recreational fishing, preventing the fish from ever reaching Packers?
- What are the chances of a full scale effort to restore Packers Creek to its former good health and former fish numbers so that I can get my old job back?

DVD about the local drop in Grey Mackerel Catches

Mr Cook presented a 12minute DVD shot in late August 2007 to early September, 2007 outlining the decrease in numbers of Grey Mackerel. A number of interviewed fishers give their views that this decrease is caused by offshore netters operating in local inshore waters.

The first part of the DVD is recorded from a Channel Nine broadcast on 23 Dec 2007 in which producer Lyn Sutherland interviews Jamie Beitzel on the Daintree. Mr Beitzel discusses the depleted state of the Daintree River and inshore waters of Douglas Shire attributing this partly to the relatively high level of netting. Several shots are shown of press cuttings stating the concern of residents and also about visitors no longer returning to local caravan park because of their declining fish catches.

Sequences of a large net boat catching grey mackerel and Spanish mackerel just off Snapper Island are shown. A grey mackerel and also a large Spanish mackerel, both caught near where the net boat was fishing are shown cut open to display ripe roe, proving that the boats are catching mackerel as they are about to spawn.

Interviewed on the DVD, Douglas Shire Commercial grey mackerel Line fisher, Col Patterson, states he used to catch between 500 - 800 grey mackerel per season, explained the frustrations of watching net fishers operating in the Port Douglas/Mossman area and having one operator come in and set his nets right along the track he and some recreational fishers were trolling.

Interviewees said that up until approx 5 years ago stocks of mackerel were good but had fallen off steadily since then until 2007 when they were the worst ever. The second interviewee, Owen Suffolk of Ballina, NSW, has travelled north to Wonga Beach almost every year for 45 years to stay at a local caravan park. Most years he has fished for grey mackerel and used to find that 90-95% of the trips he made for grey mackerel were successful. This year (2007) he has made 20 trips for grey mackerel and caught only 5 fish over two trips.

Mr. Suffolk noted that many regular visitors to the caravan park either had already stopped coming or were not coming back next year because of the poor fishing. A press cutting was shown that documented the concerns of the caravan park owner that guests were not returning stating depleted fish stocks as the reason.

The DVD finishes with a plea to Minister Mulherin to think of future generations which would miss out if the current level of netting is allowed to continue. The Minister is advised to listen to retired netters and other non-netter to learn the true impact of netting. Copies of the DVD have been provided for DPI&F to pass on to Jim Varghese and Grant Hall.

Summing Up

Mr Cook summed up the delegation's presentation with the following statement:

*"The most important thing the Mossman Boat & Fishing Club hopes to achieve in the meeting is to reach agreement with DPI&F that **our local inshore fish stocks have declined sharply in recent years, most noticeably since 2002 to the extent that most are now overfished. We have fallen far short of our goal of managing a sustainable fishery.***

I hope we can agree that a whole host of factors will each have contributed to the observed decline in inshore stocks in comparison to the early days. This will include for example: the loss of much of our wetlands, relatively poor water quality in some of our estuaries and inshore waterways, loss of habitat for juvenile fish and in some cases, baitfish, and unnecessary mortality by non selective fishing gear (including

amateur bait netting where the public is targeting prawns for the table not bait) and of course direct fishing pressure, both recreational and commercial.

I hope we can agree that we need to develop a community plan co-operating with government **to take positive action to rebuild our fish stocks**. And by this I do not mean restocking, I mean improving fish habitats, including nursery areas, and water quality, reducing unnecessary mortality of juveniles and allowing more fish to reach full size and maturity such that they can breed over a number of years and not just once before they are removed.

We need to remember a full sized fish can lay up to 200 times more eggs than it did when it first reached sexual maturity. That is why the green zones are so valuable to our fisheries - in theory they can allow any species of resident fish which remain in the green zones to reach full size and produce huge numbers of eggs over many years.

This however does not help those species which move or migrate significant distances as these species can still be removed at bottlenecks along their migratory paths. In a local context one species which the community has witnessed severely drop in numbers in local waters since 2002, is the grey mackerel. Current offshore netting is targeting our inshore breeding stocks of greys, apparently with devastating results. This goes against all principles of sound fishery management.

To rebuild our fish stocks we need to allow more fish to reach full size to increase our brood stock over the next few years. That means we are faced with having to take less fish from the system. This requires some **hard management decisions** in order to ensure we are **gaining maximum economic and social benefit from those fish we are taking**. So, in fishing terms how do we do this?

Quite simply we need to **reduce** the effect of those methods of catching fish which are giving **least value to the community** in terms of both social and economic return as well as any other unnecessary causes of fish death (mortality). The most obvious fishing method that returns **nil benefit to the community is all offshore and out-of-town gillnetting**. The levels of these types of netting have increased greatly since 2002 and are considered by many shire residents to contribute significantly to current levels of overfishing.

The current practice of allowing any commercial net fisher with a QLD East Coast licence to operate anywhere along the QLD east coast is out-dated and a recipe for overfishing one area and then simply moving on to the next.

Fish caught by out-of-town netters return nil social and economic benefit to our community and therefore these operators need to be excluded from areas of high population density which are considered to be overfished.

Before recreational fishers should accept any major changes to their bag limits, a regional approach needs to be built into fisheries management, State-wide, each commercial licence needs to be tied to a given region or locality and those commercial fishers encouraged to share responsibility for sustainable fishing in their local region.

When this is done, the recreational fishery will need to accept smaller bag limits **and also maximum size limits for several species** as well as minimum size limits. In addition we need to appreciate the value of catch and release, and better still, catch,

tag and release - that way the fish taggers are helping build knowledge of our local fish stocks.

Until local inshore waters are closed to all out-of-town netting, few recreational fishers are going to accept smaller bag limits if the fish are just going to swim off and be caught in some out-of-town commercial fisher's net.

In FNQ, we have to consider the tiny size of our rivers in comparison to say the Burdekin & Fitzroy and those in the Gulf of Carpentaria. We have far smaller nursery areas, relatively small areas of mangroves and tiny estuaries in comparison. One can assume we may have a fraction of the zooplankton flowing out from our estuaries and feeding our fisheries. The number of commercial netting licences issued for given regions of FNQ, east coast, must take these factors into account and should be far lower per 100 km of coastline, than further south.

From any perspective, allowing commercial netters to deplete a community's fish stocks is irresponsible fisheries management resulting in a huge loss of commercial opportunity for that community. This has already happened in Douglas Shire, this is why the community is angry and this is why the Mossman Boat & Fishing Club is leading this delegation today to take our conclusions to you.

Hopefully we can come up with something constructive. This has to include a ban on all offshore set gillnetting and ban on all out-of-town netting by 1 June this year. We also need to see the local gill net licences eventually extinguished and bought back by government in the medium term, say over the next five years."

Mr. Cook then called on members of the DPI&F team to challenge any statement the delegation had made to them that they did not think was true or any conclusion that had been unfairly or, in their opinion incorrectly made. No such challenge was forthcoming.

QF2 advised the delegation that the Government had the responsibility of managing Queensland's fisheries for the good of the community. He advised that, while sustainability was the key objective for managing the fisheries resources other important issues also needed consideration. Those issues include economic benefit and fair access. As an example fair access applies to not only commercial and recreational fishers but also to fish consumers.

QF6 provided an update on his Grey Mackerel stock structure research. He advised that there had been delays in obtaining results of the microchemistry which was undertaken in the UK. He advised, however, that the East coast results are scheduled to be available in March 2008.

David Cook and Brian Roberts expressed frustration with the delays and stated that a moratorium on net fishing should be placed in the waters adjacent to Port Douglas/Mossman until both the research was complete and a stock assessment undertaken for grey mackerel to avoid the risk of long term damage to fish stocks.

The meeting was advised that unless a netting moratorium was implemented as suggested then members of the Douglas Shire community would organise a "No Nets Day of Protest"⁴⁴ rally in Port Douglas probably during May which would be aimed at making national news similar to Greenpeace-type activities.

⁴⁴ The date to hold such a protest was later postponed for personal reasons (DC)

QF2 explained that at the meetings held in October 2007 on the Inshore Fishery a great number of netting closures were proposed throughout Queensland for a whole range of issues. To deal with these local issues it is proposed to address them in stage two of the Inshore Fishery process.

Mr Cook suggested DPI&F was putting the “cart before the horse” and should first introduce regional regulation through a spatial management approach.

Mr Cook reminded the meeting that a petition with 658 signatures requesting a ban on netting of mackerel in local waters had been given to the local MP, Jason O’Brien, on 28 Aug. 2006 and a demand had been made for closure by 1 June 2007. Mr Cook requested on behalf of the delegation, the closure, from 1 June, 2008, of net fishing in the Mossman partially smooth waters area, designated as being from Cape Tribulation to Low Isles to Port Douglas. He stated that the Douglas Shire fishing community is now not prepared to wait any longer for the risk assessment process before taking action.

QF2 said that there were two Inshore RIS meetings scheduled, one in Port Douglas on 19 February⁴⁵ and a second at the Newell Beach MB&F Clubhouse on 5 March⁴⁶. The views expressed at those meetings would be recorded and considered by Working Groups and the Inshore Management Advisory Committee (MAC) before final recommendations are put to the Minister.

Mr Cook again stated that moratorium on netting was required by 1 June 2008 to protect the spawning schools of grey mackerel and to prevent serious damage to grey mackerel stocks. It was suggested to distinguish the Douglas Shire claim from others further South that it would be worth demonstrating the fisheries nursery areas, including rivers and estuaries north of Cairns, are much smaller than those southern areas which have larger breeding grounds (see map in Mr Balog’s report, Appendix 2.)

It was also noted that World Heritage Area Status obligated DPI&F to follow the requirements of the Precautionary Principle for Responsible Fishing and implement an immediate ban on netting of grey mackerel because of the fact that offshore netting catches of inshore aggregations of pre-spawning grey mackerel had soared in recent years whilst line catches of grey mackerel had plummeted, the season becoming much later and schools becoming much smaller and much less frequent. This is further supported by the fact that it is very poor fishery management practice to allow unrestricted netting of easily accessible spawning aggregations.

QF2 then gave two commitments to the meeting:

- 1) That the RIS submission process Grey Mackerel will be treated as a “stand alone” issue and will include the record of this meeting
- 2) That the Minister will be briefed on the meeting including the delegations proposal to apply a netting moratorium in the Port Douglas & Mossman region.

The following issues were identified by QF1 as meeting chair and ways to move the issues forward were recorded in the right column during the course of the meeting.

Table 2: Issues & Way Forward

⁴⁵ The Mossman to Cape Tribulation fishers were advised to attend the MBFC meeting

⁴⁶ This meeting was cancelled by DPI&F because of flooding and, according to DPI&F, could not be rescheduled

ISSUES

Conservation ->fish to future→ recognition of economic / social values

Maximizing benefit to the local area

Community benefits of sustainable fisheries

Community concerns being addressed

Bait netting

Cameron / Begg grey mackerel report (2002) – Mr Cook's Review

Queenfish catches

Grey Mackerel catches

Timely action

Netting regulation – by-catch

Net fishing schooling

Spatial Management.

Suggested components:

No netting

Co-management

Rec Fishing restrictions

Environmental impacts on baitfish

WAY FORWARD

- Fisheries Strategic Plan heightens importance of socio economic factors as part of Fisheries management
- Grey mackerel stock structure – research project to confirm extent of stock (i.e. regional or EC)
- Stock assessment – project designed –waiting approval from DDG
- Long term sustainability concerns to be addressed through stock assessment project (row above)
- Fisheries managers acknowledge and support the value placed by communities on fishing. Reflected in Fisheries Strategic Plan
- Mr Cook's DVD on grey mackerel fishing to be forwarded to Jim Varghese & Grant Hall
- Dario Balog's tagging data (Suntag) from Dickson Inlet to be used to assist assessment

Clearly articulate issue for RIS submission

Response to Mr Cook's review will be provided⁴⁷

Clearly articulate issue for RIS submission

Clearly articulate issue for RIS submission

*****URGENT*****

Clearly articulate issue for RIS

Clearly articulate issue for RIS

Proposed STAGE 2 RIS Process. The delegation said they were not prepared to wait for a lengthy Stage 2 process to implement what was obviously required under the "Precautionary Principle". If a "no out-of-town-net ban" was not implemented by 1 June there would a large protest in May likely to be followed by clashes with the offshore net boats⁴⁸.

Biologist assistance required

Meeting wrap up

A round table final statement from each attendee was generally positive, although frustrations were again expressed by the delegation as to the time taken to process data and make decisions.

Agreed actions under Item 4 of agenda

4. Identify a way forward to address issues

⁴⁷ as of 25 Nov. 2008 this has not been done

⁴⁸ see earlier footnote, protest had to be postponed; subsequently no significant fishing by net boats of grey mackerel in Douglas inshore waters in 2008 and for first time ever, no schools of grey mackerel detected in these waters during the 'normal' 2008 grey mackerel season.

- DPI&F staff to ensure information flow through to Grant Hall and responses provided back the Mossman Boat & Fishing Club, through their Conservation & Liaison Officer, David Cook (e-mail preferred means of communication).
- Draft minutes for distribution back to participants including copies of tabled submissions
- List of all submissions by delegation to go into Inshore RIS process

Meeting closed 12:40pm.

Post Meeting Note

At 12.15 hr Mr Cook left the meeting temporarily for an interview with Win News, their journalist crew having been waiting since 12 noon when the meeting was scheduled to finish. Mr Cook then passed on to the meeting the request from the journalists to interview a Fisheries representative and QF2 duly left the meeting for the interview. Following the end of the meeting, QF1 & QF2 questioned Mr Cook as to what he had said during his interview. Mr Cook noted that he has said on camera that DPI&F had listened attentively to the concerns voiced by the delegation and finally he was pleased to say that DPI&F accepted the delegation's conclusions that the inshore waters along the Douglas Shire coast were overfished and that action needed to be taken to rebuild fish stocks ensuring maximum social and economic value was obtained from the stocks.

QF2 then made the point that in no way did DPI&F accept that the waters were overfished and that this was only the view of the delegation. Mr Cook replied that at the end of his presentation he specifically asked the floor whether there were any conclusions the delegation had arrived at that DPI&F wished to contest. Since there had been no response, he had made the assumption that the meeting agreed that the area under discussion was overfished. QF1 stated that no such question had been made and that Mr Cook's assumption was unwarranted.

Mr Cook noted that QF1&2's response can only be made from a political angle and that if DPI&F cannot accept the findings of 8 senior community members from a number of different sectors, there was really very little point in continuing dialogue and the issue would need to be made a political one.

Minutes compiled by David Cook in conjunction with DPI&F but not accepted in above form by QDPI&F because of last previous two paragraphs. There has been no further communication between the Cairns or Brisbane offices of QDPI&F and Mossman Boat & Fishing Club since failure to reach agreement on the content of the previous two paragraphs.

ATTACHMENTS/over page

ATTACHMENT 1: Statement by Ron Savage

NOTES FOR COMMUNITY MEETING WITH DPI FISHERIES CAIRNS – 11/2/08

Background – I represent myself and a voice for individual recreational fishermen and I'm not affiliated to any business/ professional associations assoc with this meeting. I am present as a recreational fisherman who is very concerned with the fairly recent and rapid drop off in take home to eat fish catches. E.g. I have not landed a grey mackerel in past 5 years - - a fish I like to target as fishing is a combination of recreational sport & relaxation - I've always enjoyed trolling and observing marine life.

Main profession – military officer - retired for past 19 years

Active field naturalist since childhood – have mainly concentrated on Tropical Northern Australia since early 60's – these days my primary aim is Species Preservation in areas of interest.

Fished and dived all round Australian mainland and Torres Str. Islands + PNG, Malaysia and some other SE Asian locations.

Did comparative research of most major River estuaries across Northern Australia 1989 - 92.(a private activity with my wife – a marine Biologist and Zoologist). Other more recent local part time and voluntary activities – tourist guide Daintree River 4.5 years and Douglas Shire catchment's coordinator, 5 years.

Main local experience(s) commenced in 1980, e.g. snorkelled and dived right around Low Is and Snapper Is. In 1980 you could still view and photograph a wonderful variety of tropical reef fishes and marine life, however the water was already starting to cloud up depending on tides and weather. Fishing was still accessible with all popular reef species around Snapper Is and coastal reefs and shoals, in fact I only went to the GBR to photograph marine life with my wife

Now to present day –

Areas of concern

- No apparent tonnage controls on professional take, yet severe bag limits on recreational take = no management
- Netting of fish totally wrong in this day and age = uncontrollable by-catch/ wastage & loss of major breeding stock congregations
- Live fish trade/ catch – with the **now** heavy concentration on local reefs by professional fishermen = considerable community anger (political and becoming personal!!); not seen as justified as catch is for overseas markets as opposed to local fresh fish for Australian consumption;
- in our Shire most people realize that Tourist dollars are far more valuable to the local/ regional and National economy than that generated by the live fish export trade.

Comment – whilst I don't personally like what the tourist trade has done to our Shire, I accept the current desirability of the tourist trade spin offs to the economy, jobs etc

I can only presume that DPI Fisheries primary objective is to maintain a “sustainable fishery” in Qld / Australia. = **my recreational fishing experience is that stocks of popularly targeted fish are rapidly diminishing within the fishing areas reasonably reachable by recreational fishermen.** I can find no reasonable evidence to suggest that the apparent diminishing fish catch numbers is due to the impact of recreational fishing. I will concede that bait netting in some cases leaves something to be desired (by not conforming to the rules)

Recommendation – I would support the 'partially smooth waters' zone of Douglas Shire being **trialled** as a **no netting** zone – I include **all** netting other than small bait and cast nets. The live fish trade will have to be a politico/ resource management resolve. (community support to stop this fishing/ or relocate it, is present in my opinion).

Hope(s)

- although considered not scientific by some, I hope DPI Fisheries has the foresight to collate local community verbal history (both cultural and personal experience) on this subject and give such information the weight it deserves in your management recommendations.
- To see sustainable management of popular recreational catch species given **the urgency it now requires**.

ATTACHMENT 2: Letter to MB&FC by Dario Balog

From: Dario Balog, Mossman, 4873, Tel: 4098 8054

10 February, 2008

David Cook

Conservation & Liaison Officer

Mosman Boat & Fishing Club

Dear David,

Thank you for the invitation to attend the Club's meeting with DPI&F at the Northern Fisheries Centre, Cairns on 11 Feb. 2008. Unfortunately I have to offer my apologies as this is the day I start my new job. However I would very much like you to present this letter on my behalf to the meeting.

I have drawn up a very brief summary of what I have observed happen to fish stocks over the last 14 years in Packer's Creek, Dickson's Inlet, right next to Port Douglas.

Tagging

Since 1997 I commenced some tagging and release and very soon, from the high number of recaptures suddenly realised how small the local fish population was in the Inlet. From 1999 I started a strict policy of catch and release only. I have handled about 7,000 tagged fish in Packers creek of which I tagged about 2,000 individuals, the rest being my own recaptures.

My rate of capture of tagged fish has risen steadily and by last year had reached 61%. By this I mean for every 100 fish I caught last year, 61 were already tagged.

Recent history of bait in Packer's Creek

A small herring, similar in overall general appearance to what the book calls the Australian spotted herring (*Herklotichthys lippa*) and another species something similar to *H. quadrimaculatus* but with spots, used to come in to Packers Creek at start of consistent trade winds. You will recall that Packers is a saltwater inlet, not a freshwater creek. This would usually be from around May until early spring (Sept. /Oct) when calmer weather commenced. We thought it probable that they came in to the sheltered inlet of Packers Creek to avoid disturbed, silty water in the more exposed areas. They would remain in the lower part of the inlet, never travelling up the back of the creek.

When the strong S'y trade winds started they would come into Packer's Creek in massive numbers. At the Sugar Wharf the school of herring would be like a great black cloud. It would stretch the whole length of the wharf for a distance out from the wharf of around 6 m and occupy about half the water column, say 2-3 m deep.

Once the calm weather came they would move to deeper water. I learnt from daily cast netting to able be to recognize the species by the characteristics of the 'footprint' of the school on the surface when the herring were feeding.

In 2003 the herring did not come back in big schools and have never returned in significant numbers since. This makes it hard to get good live bait by cast netting (I would never use drag netting to get bait as it is far too destructive a method for daily use).

The fish that followed the bait

At least three species of mackerel: Spanish, Spotted and School used to feed on the schools of bait when they were at the mouth of Packer's Creek. There may have been Grey mackerel as well, but as I used to tag them whilst still in the water, I never identified Greys for certain. It is possible I caught some and may have assumed they were Spanish. The biggest Spanish mackerel we caught at the mouth of Packers Creek was 65 lb. Big trevally and big queenfish along with reef shark also hunted the herring schools in lower Packers Creek.

Whilst fishing when the herring were schooling, during the SE season, you could be likely to catch mackerel, the question would be which species would dominate on the day and how many. Prior to 2002 we used to catch (and release) up to about 20 mackerel per boat per morning fishing when we had three anglers on board. This would be only 200m from Packers Creek around what I refer to as Horseshoe Reef. The mackerel were mostly Schoolies never over 3 kg or 50 cm. We would also catch these even 5 km up Packers Creek (remember it is a saltwater inlet with almost no freshwater run off in winter). In a season (June thro' early Sept) we would catch about a dozen Spanish in same area.

As mentioned before, in 2003 the herring suddenly stopped coming back in any numbers, just a few stragglers came, much less than 1% of previous numbers returning. The first year this happened I thought it was just an exceptional event, but they have never returned in anything like the numbers over the previous 9 years.

From 2003 the mackerel just have not been there, and over the last five years I have caught only about half a dozen Spanish (see my table attached for further details).

Size of our FNQ Rivers

Most fishers who come expect to take home a feed of a spectacular fish. To put things into perspective I would like to pause for a moment and consider one often overlooked fact - the size of the rivers on the east coast of FNQ. The attached map taken from Jerry Allen's Freshwater Fishes of Australia, shows how tiny these are north of Townsville.

Recreational fishers and perhaps even fisheries managers tend to overlook the fact that numbers of species like barramundi and mangrove jack depend on the size of rivers and creek estuaries for their juvenile stages. Small rivers such as the Daintree and mangrove inlets such as Packers Creek have only a fraction of the area of suitable nursery habitat present on say the Burdekin and Fitzroy. Presumably their potential production of fish and prawns is also a fraction of the larger rivers.

Even if there was no commercial netting in the surrounding area, it would still be totally unrealistic for 15,000 anglers to expect to take home a feed every year from an area the size of Packer's Creek.

Environmental Conditions

Although I have had no means of measuring water quality changes in Packers, there appears to me to have been a marked drop in water quality in recent years. It would be worth checking to see if any major construction works, developments or runoff occurred in 2002 which may have affected water quality to a level which kept out some species. Certainly there has been loss of an extensive area of sea grass just outside the mouth of Packers and changes to the appearance of the water in Packers over the years.

Dugongs have apparently disappeared from the area as it has been years since I have seen one. Crocodiles and mud crabs are now a fraction of their previous numbers.

Recently I took out a water quality tester from the EPA to Packer's Creek. He said he was shocked by the readings he obtained, saying the water quality was much worse than he had expected.

Examples of Recaptures

The reason for the exceptionally high capture rate of 61% previously tagged fish can be deduced by a quick glance of the attached map showing relative sizes of river systems in Australia, as examples:

- Fingermark: one individual captured first at 24 cm and eventually recaptured over **40 times**, last time TL of 41 cm, 18 months later;
- Mangrove jack: most common recapture, not many individuals left in the inlet, those that are, have been caught many times over.

Questions arising

- What caused the sudden drop in baitfish numbers, can this be linked to any environmental changes or run-off from construction works?⁴⁹
- Is it only poor water quality that is keeping baitfish out of Packers?
- How extensive have any other drops in baitfish numbers been up and down the coast, i.e. is the drop purely local or regional?
- While there are still good numbers of some baitfish in and around the Daintree area, are they the same species as stopped coming to Packers?
- Can we agree that we need to work on water quality improvement in order to get the bait and other larger fish species back into Packers?
- What are the prospects of enforcing a 'catch and release' policy for areas like Packers, presumably this could be done under the proposed local management areas' policy - when will this be introduced?
- Is it only baitfish absence and pollution that is keeping the larger species out or are other forces such as high fishing levels, including netting and recreational fishing, preventing the fish from ever reaching Packers?
- What are the chances of a full scale effort to restore Packers Creek to its former good health and former fish numbers so that I can get my old job back?

I should be most grateful if you would present this letter on my behalf to DPI&F at the meeting on 11 February.

Yours sincerely, Dario Balog

cc Doug Baird, Chair, Douglas LMAC
 Doon McColl, Public Liaison Officer, GBRMP, Cairns
 Anne Clarke, Manager, Northern Fisheries Centre, Cairns
 Grant Hall, Deputy Director General, Fisheries, DPI&F, Brisbane

Attachments: Map & Table

Table: Observations on Fish Numbers in Packers Creek, changes over time - refer to main text
Map of relative river sizes - same as figure in main Case Study.

⁴⁹ Post meeting note: Packer's Creek has since been identified by the EPA as being a very much more polluted and degraded waterway than others in the local area, presumably because of its proximity to Port Douglas developments. (note by D. Cook)