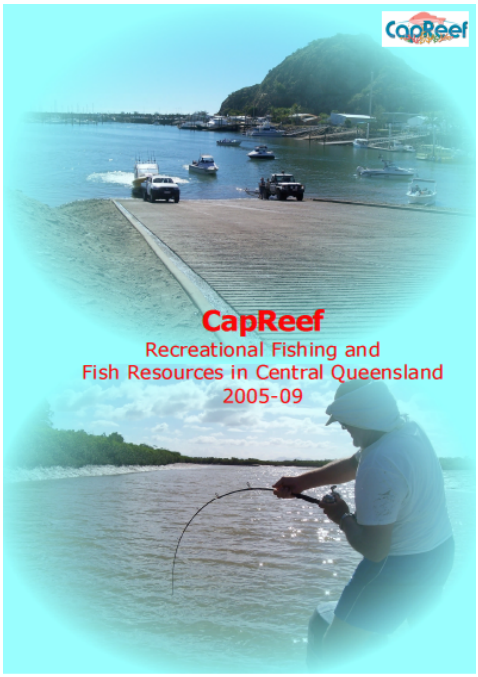

The following is the summary contained in the report

CapReef: Recreational Fishing and Fish Resources in Central Queensland 2005-09

September 2009

A copy of the full report is available from the Infofish Services website www.info-fish.net.

Summary

CapReef has collected data on recreational fishing and fish resources in Central Queensland from 2005-09. A series of 15 reports have been produced over that time on various aspects of the data collected.

This report aims to answer the questions that have been posed to CapReef in various forums over the that time. These questions were complied under the following headings. Specific questions were aggregated under those headings.

CapReef Questions

Question 1: What are the social, economic and ecological characteristics of fish and recreational fisheries in Central Queensland?

Question 2: What social, economic and institutional factors influence these characteristics and how can we use this understanding to maintain and enhance fish and recreational fishing?

Question 3: How can we develop and utilise the social capital and social networks of the local region in support of socially, economically and ecologically sustainable management of fish resources and the fisheries they support?

By attempting to answer those questions CapReef has been able to provide a comprehensive, if incomplete, picture of recreational fishing and fish resources in Central Queensland.

At the commencement of CapReef the area of data collection was from Stanage Bay in the north to Bustard Head in the south which is referred to as the Capricorn area. In 2007 the area from Bustard Head to Elliott Heads was added as the Burnett area.

The characteristics of recreational fishing in Central Queensland

The following characteristics are based on data obtained from over 13,000 fishing trips from 2005-09.

Overall 97% of fishing trips in the CapReef area were undertaken by local fishers that travelled less than 100km to go fishing. However in major fishing competitions 36.5% of fishers were visitors from other areas of Queensland that travelled over 100km to take part in the competition.

Vessel registrations and the number of trailers at key boat ramps suggest that the level of fishing effort has increased. Vessels from 3.0-8.0m are most used for fishing and registrations of boats in that size range rose by 13% from 2005 to 2009. At Rosslyn Bay the maximum number of trailers on a day has risen by 46% from 2005/06 to 2008/09.

Where people fished indicated that from 2007-09 in the Capricorn area 88.2% of offshore trips were to inshore and island locations while in autumn 2008 in the Burnett area 98.9% of offshore trips were to inshore and wide ground (inter-reef) location.

All estuaries from Stanage Bay to Bundaberg are regularly fished except those in Shoalwater Bay. Freshwater fishing mostly targets Barramundi and occurs in Lake Monduran, Lake Awoonga and lagoons and creeks associated with the Fitzroy River delta.

Wind strength was the major factor influencing fishing trips out of Rosslyn Bay with 77.2% of trips occurring when wind speeds were less than 15 knots at 9:00am. Of the trips from Rosslyn Bay 88.0% of trips occurred between 5:00am-5:00pm and 5.3% of trips were overnight. In autumn 2008 at Burnett Heads 76.5% of trips occurred when wind speeds were less than 15 knots at 9:00am. Of these trips 88.4% occurred between 5:00am-5:00pm and there were no overnight trips.

Fishing trips in estuaries were generally between 5:00am-5:00pm with 98% of trip from the Coorooman ramp were during those times. For both offshore and estuary fishing most fishing was from a boat.

A greater proportion of freshwater fishing is landbased except for fishing in impoundments which is mostly from a boat. For landbased freshwater fishing 98.5% of trips were during daylight hours from 5:00am-6:00pm.

A typical offshore fishing trip is from a boat with 2-3 fishers fishing for around 7 hours. A typical estuary fishing trip is from a boat with 2-3 fishers fishing for around 5.5 hours and a typical freshwater fishing trip is landbased with 1-2 fishers fishing around 3.5 hours.

Offshore fishing effort has increased by around 15% from 2005/06 to 2008/09.

Spearfishing occurs largely at offshore locations and constitutes around 1.3% of offshore fishing trips.

In examining the recreational catch over the past 3 years Longfin Rockcod was the most caught species (19%) while Coral Trout was the most likely species to be kept (85%) and Grass Emperor was the most numerous kept species.

School Mackerel was the most caught species inshore, Longfin Rockcod around the islands, Hussar at the Wide Grounds and Redthroat Emperor on the offshore reefs.

In estuaries in 2008/09 Mud Crab was the most caught species (25.9%) while Grass Emperor was the most likely to be kept species (47.1%) and Pikey Bream was the most common species kept. Barramundi was the sixth most common species caught however of those caught only 3.7% were kept.

In freshwater in 2008/09 Barramundi was the most common species caught (97.3%) however only 0.3% of those caught were kept.

Offshore catch rates for Capricorn for each adjusted trip have ranged from a low of 5.0 fish caught and 0.6 fish kept per trip in winter 2007 to 14.9 fish caught and 6.0 fish kept in autumn 2009. Offshore catch rates for Burnett were only available for autumn 2008 with an adjusted fishing trip having 12.8 fish caught and 2.3 fish kept.

Estuary catch rates for Capricorn for each adjusted trip have ranged from a low of 5.1 fish caught and 1.3 fish kept per trip in spring 2008 to a high of 23.3 fish caught and 5.5 fish kept in autumn 2009.

Estuary catch rates for an adjusted fishing trip for autumn 2008 in Capricorn were 16.0 fish caught and 4.0 fish while in Burnett for the same season was 6.7 fish caught and 0.1 fish kept.

Freshwater catch rates for Capricorn for each adjusted trip were only available for 3 seasons and have risen from 7.0 fish caught in spring 2008 to 18.8 fish trip in autumn 2009. Most fish caught on freshwater trips, primarily Barramundi, were released.

The estimated offshore kept catch from Rosslyn Bay increased by around 15% from 65,000 to 85,000 fish from 2005/06 to 2008/09. The estimated offshore kept catch for Auckland VMR at Gladstone increased by around 15% from 20,000 to 26,000 fish from 2005/06 to 2008/09.

The catch of charter boats was examined using the catch of the Yaralla Fishing Club. From 2000 to 2008 the number of Redthroat Emperor declined from 59.3% to 32.0% of the catch while the number of Venus Tuskfish increased from 12.9% to 25.9%. There has been a decline in catch rates from around 20-30 to 10-15 fish/person/day.

The spearfishing catch rate is not significantly different to linefishing by offshore trailer boats and over 60% of the catch is Coral Trout compared with only 4.2% of the offshore catch.

In examining habitats used by juvenile and adult reef species there was an increasing trend in the number of fish above legal size from estuary and inshore grounds to wide grounds and offshore reefs with the greatest proportion of larger fish occurring on the wide grounds.

Red Snapper (Crimson and Saddletail Snapper) use estuary habitats in creeks of Shoalwater Bay and are likely to migrate offshore when they reach 400-500mm in length.

Access of marine species to freshwater has been improved by the installation of fishways which have improved fish passage in Raglan Creek.

A comparison of fishing during competitions was made in relation to the Boyne Tannum Hookup which is the largest fishing competition in the CapReef area. Catch rates during the competition were not significantly different to CapReef catch rates in the same season.

Fishing effort in the Boyne Tannum Hookup was around 5 times higher than at other times at Bray Park (headquarters for the event) and around 60% higher than at comparable fishing times at Auckland VMR.

The other major competition examined was the Rocky Barra Bounty. This is a tag and release event in the Fitzroy River that targets Barramundi. Catch rates in the event were lower for total catch however catch rates were higher for Barramundi for the comparable season.

NEATFish provides a 1-5 star rating based on ecological, social, economic and risk management performance for fishing competitions and has been used to used to

assess the impact of local fishing competitions on fish stocks. The Rocky Barra Bounty has a 5 star rating and the Boyne Tannum Hookup received a 3.5 star rating in 2007.

A CQUA survey of expenditure on offshore fishing in the Capricorn area showed that the average amount spent for each trip on ice, tackle, bait, travel, food, boat fuel and other (excluding accommodation) was $182.

The influence of legislative and institutional changes on fisheries

Changes in zoning of the GBR marine park

As a result of the rezoning of the Marine Park most fishers lost at least 1 or more preferred fishing locations and compensated for the loss by fishing more at locations that were still open to fishing and finding new areas they had previously not exploited.

Historical records from fishing clubs, past fishing surveys and radio positions reported to the air sea rescue at Gladstone suggest that there has been a decrease in the proportion of fishing trips to offshore reefs and an increase in fishing inshore and around islands.

Historic records also suggest that less than 20% of fishing trips were to areas now zoned as no fishing (green) zones for most fishers however some groups such as the Yaralla Fishing Club were more affected.

Changes in catch related to bag and size limits

The effect of changes in fishing regulations were assessed in relation to bag and size limits. It was found that less than 1% of trips in the CapReef area achieved the individual or reef species combined bag limit.

Changes in size limits in 2004 have reduced the proportion of fish kept to less than 1% for Longfin Rockcod and 16% for Red Emperor while for Red Snapper and Redthroat Emperor over 55% are usually kept.

Prior to 2004 around 30% of the Yaralla Fishing Club trips achieved a catch rate of 20 fish/person/trip and since then no trips have achieved that catch rate.

Changes to bag and size limits appear to have reduced the catch of the Yaralla Fishing Club of Redthroat Emperor from around 54% in 2004 to 32% in 2008.

The change to the minimum size limit of Barred Javelin from 300mm to 400mm in March 2009 is likely to result in a shift in a significant drop in the number of legal fish caught in estuaries.

Assessment of fish stocks in zones open and closed to fishing

Baited Remote Underwater Video (BRUV) was used as a fishery independent method of obtaining data on fish stocks. Grass Emperor and Stripey Snapper were recorded more often in catches than in BRUV sets suggesting they may not be a prevalent as indicated by catches. Coral Trout and Red Snapper were more often observed in BRUV sets than in catches suggesting they may be more prevalent than indicated in catches.

Red Emperor and Starry Triggerfish were more common in open zones while Coral Trout, Stripey Snapper and Painted Sweetlips were more common in green zones.

Most species observed by BRUV were more likely to feed in green zones than in open zones.

Tagging of reef species in green zones around the Keppel Islands showed little evidence of "spillover" of adult fish.

For Longfin Rockcod there was no difference in size structure for fish in no fishing and fishing zones. For Stripey Snapper the average size in no fishing zones was 300-320mm while in fished zones it was 380-399mm.

Effect of river flow and rainfall on fish and fisheries

Barramundi recruitment in the Fitzroy River system is dependent on river flows and coastal rainfall with good recruitment occurring when river flows exceed 0.4GL in January-February, 1.5GL over the wet season and local rainfall of over 140mm in January-February.

There was a strong recruitment of Barramundi in both 2008 and 2009 when flows and rainfall were within the required parameters. The 2008 flood allowed juvenile Barramundi to access freshwater and brackish wetland lagoons on the Fitzroy River floodplain in significant numbers. Over 1,000 juvenile Barramundi have been tagged in both 12 Mile Creek and Frogmore Lagoon since the 2008 flood indicating the significance of these wetland lagoons.

The risk profile of water allocation to development in the Fitzroy River indicates that the value of a persistent population of Barramundi in 12 Mile Creek is potentially at higher risk under current and full development scenarios than under pre-development conditions.

Monitoring Barramundi stocks and recruitment will provide an early warning on the possible effects of climate change.

Coastal and offshore catch rates increase exponentially when the median or mean annual flow in adjacent rivers is exceeded however reach an upper limit where additional flow does not result in improved catch rates.

Extension of the CapReef concept

CapReef has been a catalyst for a number of research projects that have helped build relationships between researchers, government agencies and the community and improved understanding of the status of fish resources.

CapReef is assisting the QPIF Long Term Monitoring Program and other researchers by collecting fish frames.

In 2007 CapReef was extended to cover the Bundaberg area and MackReef has been established in the Mackay area, however funding is the greatest constraint in getting programs established elsewhere.

A Barramundi monitoring program along the lines of CapReef has been set up on the McArthur River in the Northern Territory in conjunction with the King Ash Bay Fishing Club and support from Northern Territory Fisheries.

CapReef and Suntag have been included in a national review by the Bureau of Rural Science of community involvement in recreational fisheries data collection and a report is expected before the end of 2009.

Status of fish resources in Central Queensland

The available information collected by CapReef suggests that there has been an overall increase in the numbers of offshore, estuary and freshwater species from 2005/06 to 2008/09. The improvement in fish stocks is likely to have been the result of good recruitment by a number of species as a result of the flooding in 2008.

While stocks have generally improved there are concerns in relation to a number of species.

There is a real question mark over the status of the 4 common Mackerel species with declines in catch rates of School and Spanish Mackerel and the near non-existence of Spotted and Grey Mackerel in catches in the past 2 years.

Longfin Rockcod are the most common reef species caught however they are almost a no take species because of legal minimum size of 380mm.

The percentage of Longfin Rockcod kept has fallen from around 1.7% in 2005/06 to 0.5% in 2008/09 while the catch rate has risen from around 2.2 to 3.2 fish/trip

There is considerable concern over the status of Barramundi stocks with loss of habitat, high fishing effort, low levels of adult stocks and climate predictions.

There is considerable concern over the catch share of commercial and recreational fishers, particularly as commercial fishers appear to have been the major beneficiary of Barramundi stocked by recreational fish stocking groups.