

RECREATIONAL FISHING STATUS REPORT 2009

INTRODUCTION

Recreational fishing is an important part of the lifestyle of the people of the Northern Territory (NT), which has the highest level of recreational fishing participation per capita than any other part of Australia. Fishing tourism is important for the NT economy. Its success and growth largely depend on the number and size of barramundi available in the NT. Approximately half of all barramundi caught recreationally in Australia come from NT waters (Henry and Lyle 2003).

There are many extensive inland tidal river systems that provide world class sport fishing for barramundi. Peak barramundi season occurs from March to June when wet season flood waters recede from the floodplains to the sea. However, barramundi are available throughout the year and can be caught in a range of fresh and saltwater habitats, including Manton Dam near Darwin. The months preceding the Top End's wet season are also highly productive and barramundi are caught during that time in coastal saltwater environments and freshwater billabongs.

Although barramundi are a famous table fish, nearly half (47%) of those caught by NT and visiting anglers are released. Fishing Tour Operators (FTOs) release nearly 90% of the barramundi they catch.

Part of the attraction to barramundi fishing is the diversity of fish species, habitats and fishing methods that anglers experience. Other species caught during targeted barramundi fishing include saratoga, sooty grunter, king threadfin, golden snapper and mangrove jack. During the cooler dry season, many anglers target inshore migrations of mackerel and tuna. Sailfish and black marlin are also often caught. Mud crabs are best targeted in the dry season when they are more abundant and easily caught.

Reef and bottom fishing is the most popular targeted fishing method after barramundi fishing.

This is largely due to the high eating quality of many of the reef species. Black jewfish, red emperor, coral trout and a range of tropical snappers are targeted more often each year. Increasing bottom fishing effort and catch of these and other key reef species require close monitoring, especially in more populated areas. It is important that anglers become more aware of low post-release survival rates of fish taken from water deeper than 10 metres.

Size and possession limits are the primary catch controls for recreational fishing in the NT. However, seasonal area closures also apply to the lower Mary and Daly rivers during barramundi spawning periods.

One of the most important requirements for successful fishing in the NT is a boat. Although some landbased fishing opportunities exist, large tidal movements and the presence of saltwater crocodiles make boat fishing a safer and more productive option.

Some areas around the NT are closed to commercial barramundi netting to benefit recreational fishing and tourism. All waters within Kakadu National Park are also closed to commercial fishing.

The NT Government continues to expand artificial reef sites close to Darwin and farther offshore at Fenton Patches. These structures are for the specific benefit of recreational anglers and divers. Commercial fishing near artificial reefs is not permitted.

There are several fishing clubs throughout the NT and various major annual fishing tournaments are conducted. Most tournaments are barramundi-specific with rules that promote catch and release fishing. There are also various saltwater fishing competitions that focus on other sport, game and reef fish.

PROFILE OF THE FISHERY

Recreational fishing surveys conducted in 1995 and 2000-01 indicated that the recreational fishing participation rate among NT residents remained stable at around 32% (Coleman 1998; Coleman 2004). The National Recreational Fishing Survey: the Northern Territory (NRFSNT) (Coleman 2004) provides a comprehensive overview of the recreational fishery in the NT. The survey report is available from the Department of Resources (DoR).

Area

NRFSNT determined that over 25% of all recreational fishing in NT waters took place in Darwin Harbour, Shoal Bay and the offshore area adjacent to Darwin. About 40% of recreational fishing activity occurred in estuaries and 30% in rivers. A further 22% is focused within 5 km of the coast, 6% occurs farther from the coast and 2% took place in impounded waters. The Mary River accounted for 11% of all hours fished, while all other survey areas individually accounted for less than 10% of hours fished.

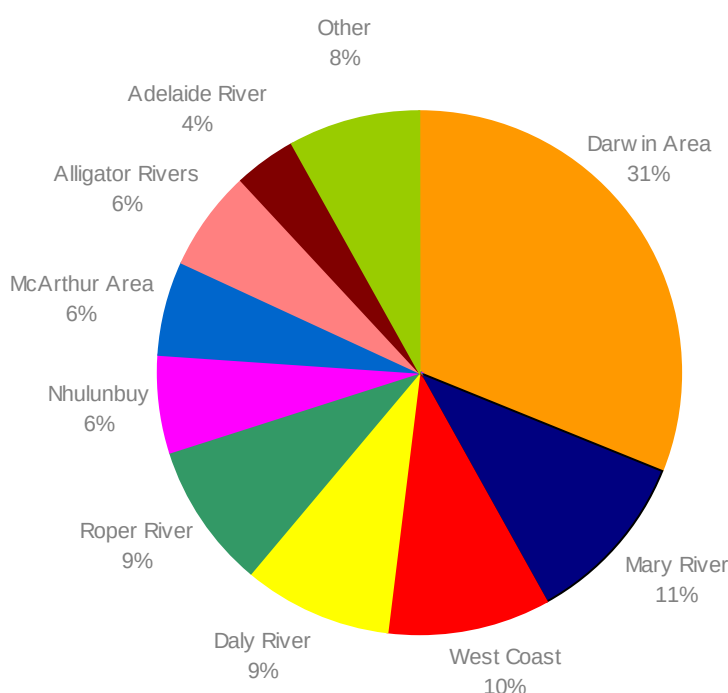


Figure 1. Recreational fishing linehours (time spent with lines in the water) by residents and visitors by area from the 2000-01 National Recreational Fishing Survey of the NT

Fishing Method

More than 75% of all recreational fishing in NT waters is conducted from boats, with 84% of fishers using lines. Artificial lures are used during half of all the time spent line-fishing and bait is used during 41% of the time. A combination of lures and bait is used during 10% of all time spent line fishing. Fifteen percent of fishing effort

involves the use of pots and traps. NRFSNT recorded very little use of cast nets, drag nets or other gear.

Catch

Of the 1.83 million aquatic organisms reported during the NRFSNT, 1.6 million (89%) were fish, while fewer than 0.2 million were crabs, molluscs and other types of aquatic life.

Barramundi is the most predominantly targeted species by recreational anglers in the NT. About half of the barramundi caught by recreational fishers are released. Saratoga, sooty grunTERS, king threadfin, golden snapper and mangrove jack are often caught on the same lures, baits and flies used by anglers to target barramundi. Many other popular saltwater species can be caught throughout the year, including red emperor, coral trout, black jewfish, blue tusk fish, saddletail snapper, blue lined emperor, queenfish and trevally.

Effort

NRFSNT reported that people in the NT spent 314 272 days (or 1.9 million hours) recreational fishing in 2000-01. Residents fished an average of five days in that year, a decline from the average of eight days per year recorded during Fishcount 95. However, the number of hours spent fishing by visitors to the NT increased from 23% in 1995 to 37% in 2001.

Queensland visitors accounted for 33% of this increased effort, while New South Wales and Victorian visitors accounted for 26% and 16%, respectively. Recreational fishing visitor numbers are highest in the dry season, when they account for 40% of all fishing effort. Visitor numbers are lowest in the wet season when they account for 15% of the overall effort.

Non-retained Species

Fifty-five percent of all aquatic animals recorded during NRFSNT were released. This was an increase over the 43% released in 1995. An increasing number of anglers release some or all of their catch. There is a particularly strong trend toward releasing larger barramundi in recognition of their increased spawning potential.

DoR supports the Released Fish Survival Program, which advocates methods that enhance the survival of released line-caught fish. Similar agencies are present in other parts of Australia. Recommended methods include the use of fish-friendly tackle such as enviro-nets and circle hooks.

Studies by DoR revealed that at least 90% of lure-caught barramundi survive after release (de Lestang et al. 2004). However, studies on the effects of barotrauma on released black jewfish indicate that almost half of the fish caught from depths of 10-15 m sustained life-threatening injuries and were considered unlikely to survive after release (Phelan 2008). Interim results from work with golden snapper indicate that they too are susceptible to barotrauma. Educational material has been produced to make recreational fishers aware of the effects of barotrauma on various fish species when fishing in water of this depth.

Ecosystem Impact

Although no significant studies have been conducted on the effects of recreational fishing on natural NT ecosystems, no major detriment has been identified. The National Policy for Recreational Fishing and The National Code of Practice for Recreational and Sport Fishing promote the importance of ecological awareness. The River Watch Program also promotes environmental awareness in the fishing community.

Social Impact

Each year about 40 000 (32%) non-Indigenous NT residents fish for recreation. NRFSNT found that 32% of anglers fish to be outdoors, 28% fish to relax and unwind and 11% fish to be with family. Other reasons to go fishing were to be with friends, to catch fish for the table, to participate in fishing competitions and for sport.

As mentioned earlier, recreational fishing is a significant lifestyle activity in the NT, where participation rates and boat ownership are proportionately higher than elsewhere in Australia and fishing for consumption is not always the primary motivator.

Economic Impact

NRFSNT indicated that nearly \$35 million is spent in the NT each year on recreational fishing. Most of this expenditure is for the purchase of boats, vehicles and associated running costs. The purchase of fishing gear is another

significant expenditure. Visitors to the NT contribute 25% of this amount.

The guided fishing tourism industry's annual contribution to the NT economy has never been formally assessed but is considered significant.

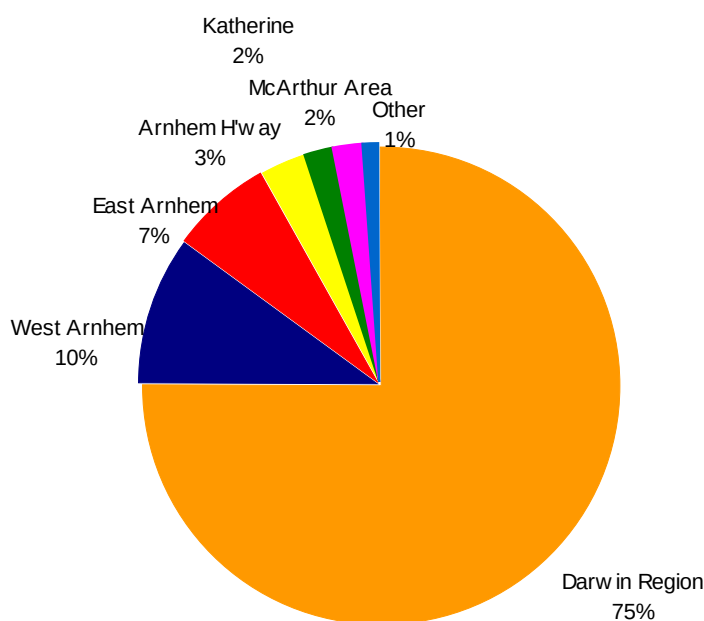


Figure 2. Annual expenditure by survey zones in the 2000-01 National Recreational Fishing Survey of the NT

STOCK ASSESSMENT

Monitoring

Broadscale recreational fishing surveys were conducted in 1986, 1995 and 2000-01. A fourth recreational fishing survey commenced in 2009 and will conclude in 2010.

Many research programs by DoR focus on the species that are important to recreational, commercial and Indigenous stakeholders. Current research on snappers, Spanish mackerel, sharks, barramundi and mud crabs is particularly important to recreational fishing. Outcomes of this research will influence future

management decisions. More specific information on research programs relevant to recreational fishing is provided in individual Status Reports in this publication.

Some recreational fishing tournaments provide DoR with catch and effort information, which assists in the understanding of barramundi populations in specific rivers in which fishing occurs. For example, all fish caught in the annual NT *Barra Classic* held on the Daly River are tagged and measured prior to release.

Data from recreational fishing surveys is used in conjunction with logbook returns data provided by FTOs. The combined results from research,

surveys and FTO data are supplemented with catch, size and effort information from annual fishing tournaments.

Stock Assessment Methods and Reliability

Research, survey, FTO and commercial fishing data is used for fishery stock assessment purposes. Details are included in other Fishery Status Reports.

Current Exploitation Status

The same data is used to monitor current exploitation levels. Generally, the fish stocks targeted by recreational fishers are considered sustainable across the NT. However, in some heavily utilised areas, the total harvest of many reef species may be approaching the maximum sustainable yield.

Future Assessment Needs

There is a need to obtain a better understanding of catch and effort in the recreational fishing sector. A recreational fishing survey began in 2009 to help realise this objective.

RESEARCH

Summary

The first broadscale survey of recreational fishing in the NT occurred in 1986 (Cam Rungie and Touche Ross 1986). Fishcount 95 provided a valuable database which was updated by NRFSNT in 2000-01 (Coleman 1998; Coleman 2004).

Fisheries research is generally species or area-specific. Many species currently researched are important to recreational, commercial and traditional fishers. The current relevant research programs focus on golden and other snappers, black jewfish, barramundi, sharks, Spanish mackerel and mud crabs. Specific details on researched species are provided in individual Fishery Status Reports in this publication.

Incorporation into Management

Survey, monitoring and FTO data was considered before the closure of areas to commercial barramundi gillnetting, such as the McArthur and Adelaide rivers. In 2009, the data provided background information for a proposal to close the Finnis River to barramundi gillnetting and reallocate the resource in the area to the recreational, Indigenous and FTO sectors.

Current Research

Currently, the most significant research for recreational fishers relates to tropical snappers, black jewfish, barramundi, sharks, Spanish mackerel and mud crabs.

The susceptibility of snapper and jewfish populations to over fishing and barotrauma is being investigated. The study of barramundi numbers, size and recruitment continues annually on the Mary River. Spanish mackerel migration is being investigated through genetagging research. Monitoring of adult mud crab size frequency, sex ratio and mating success continues and a two-year collaborative juvenile mud crab monitoring program began in 2008. Results from a study on the effects of suspending barramundi using jaw gripping devices showed that larger barramundi lifted by these devices without any additional support received significant spinal injuries. Educational material promotes correct handling procedures to support the fish in a way to minimise injuries.

A comprehensive 12 month survey of recreational fishing in the NT commenced in 2009 and will provide up-to-date recreational catch estimates. The results are expected in 2011 and will be incorporated in future fishery assessments.

MANAGEMENT/GOVERNANCE

Management

Recreational fishing in the NT is managed by DoR through the NT *Fisheries Act 1988* and supporting Regulations and various fishery management plans.

Management controls include species-specific personal possession limits and a general personal possession limit. Minimum size limits apply to barramundi (55 cm) and mud crabs (male 13 cm, female 14 cm) and a maximum size limit of 1.2 m applies to cod and groper. Seasonal area closures apply on the lower Daly and Mary Rivers from 30 September to 1 February. Specific fishing controls apply at the East Point Aquatic Life Reserve and access restrictions apply at Stokes Hill Wharf. No fishing is allowed at the Doctors Gully Aquatic Life Reserve. In addition, a number of commercial fishing closures apply in popular areas to enhance the recreational fishing experience.

Recreational fishers intending to enter waters within or abutting Aboriginal land must obtain a permit from the Northern Land Council to do so. Amateur Fishermen's Association of the NT (AFANT) issues permits for access to specific camping sites on the Tiwi Islands.

More information in relation to recreational fishing controls in the NT can be found in the Recreational Fishing Controls booklet from DoR or from its website.

History

Prior to 1991, recreational fishers in the NT were required to observe a daily barramundi bag limit of five per person and a limit of ten for extended trips. In 1991, the concept of daily bag limits was abolished in favour of personal possession limits. A five-per-person barramundi possession limit was introduced in that year, together with limits of ten mud crabs per person and 30 mud crabs per vessel when three or more people are on board.

Possession limits of five Spanish mackerel and five black jewfish were introduced in 1993 and

1997, respectively. In 1997, the general possession limit of 30 fish per person was introduced, but this did not include the specific possession limits for managed finfish until 2002.

To enhance recreational fishing and tourism, the Mary River was closed to commercial barramundi gillnetting in 1988. This was followed by a similar closure of the Daly River in 1989, the Roper River in 1991, the partial closure of the Victoria River in 1993, the closure of Darwin Harbour and Shoal Bay in 1998, the McArthur River in 2002 and the Adelaide River in 2004. In 2009, it was agreed that the Finniss River will be closed to commercial barramundi fishing in 2010. These closures have been implemented together with commercial fishing licence buy-backs.

Barramundi Stocking

To provide alternative recreational fishing opportunities, DoR continued stocking Manton Dam in 2009 with the release of approximately 2000 barramundi fingerlings.

Current Issues

Access rights with respect to pastoral land and Aboriginal land and waters is the primary current issue for recreational fishers in the NT.

Future Plans

The compilation of a development plan for recreational fishing commenced in 2009, with a focus on future sustainable management and data collection, catch controls, access and infrastructure requirements, industry development, resource sharing issues and improving community stewardship of fishery resources. The draft development plan is being compiled by a community-based working group and will be made available for public comment in 2010. One of its key objectives is to ensure that recreational fishers adopt greater responsibility for the management of aquatic resources and the development of recreational fishing as the NT's increasing population places greater pressure on fish stocks, especially those near the major fishing ports. In addition, a discussion paper proposing specific controls for barramundi and freshwater crustacean fishing on the Daly River

was compiled and will be released for public comment in 2010.

DoR and the NT Guided Fishing Industry Association (NTGFIA) released a discussion paper in 2009 seeking public comments on various management and development proposals to enhance standards and viability of the guided fishing industry.

Compliance

The Water Police Section of the NT Police Fire and Emergency Services is primarily responsible for fisheries compliance and enforcement in the NT.

Recreational fishing controls are displayed on signage at boat ramps, launching sites, tourist establishments and River Watch Centres throughout the Top End of the NT.

Consultation, Communication and Education

DoR consults primarily with AFANT and NTGFIA on recreational fishing issues and future management and development. Public consultation is conducted when broader matters require community input.

AFANT is the peak representative association for recreational fishing in the NT. The guided fishing tourism industry is represented by NTGFIA. The NT Government provides funding to AFANT and NTGFIA annually to assist them in their roles.

Signage depicting fishery regulations and other advice is erected at boat ramps, launch sites and fishing tourism establishments throughout the NT. Information on recreational fishing in the NT is also available from DoR. Literature on recreational fishing is also provided on the DoR website and at various shows and exhibits throughout the NT.

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REFERENCES

Cam Rungie and Touche Ross (1986). Recreational Fishing Survey – Final Report. Consultants report to the Northern Territory Department of Ports and Fisheries.

Coleman, A. P. M. (1998). Fishcount: A Survey of Recreational Fishing in the Northern Territory. Department of Primary Industry and Fisheries *Fishery Report* 43.

Coleman, A. P. M. (2004). The National Recreational Fishing Survey: The Northern Territory. Department of Business, Industry and Resource Development *Fishery Report* 72.

de Lestang, P., Griffin, R. K., and Allsop, Q. A. (2004). Assessment of the Post-release Survival and Stress Physiology of Barramundi (*Lates calcarifer*). Department of Primary Industry and Fisheries *Fishery Report* 73.

Henry, G. W. and Lyle, J. M. (2003). The National Recreational and Indigenous Fishing Survey. FRDC Project 99/158. NSW Fisheries Final Report Series No 48.

Phelan, M. J. (2008). Assessment of the Implications of Target Fishing on Black Jewfish (*Protonibea diacanthus*) Aggregations in the Northern Territory. FRDC Project 2004/004. Department of Primary Industry, Fisheries and Mines *Fishery Report* 91.