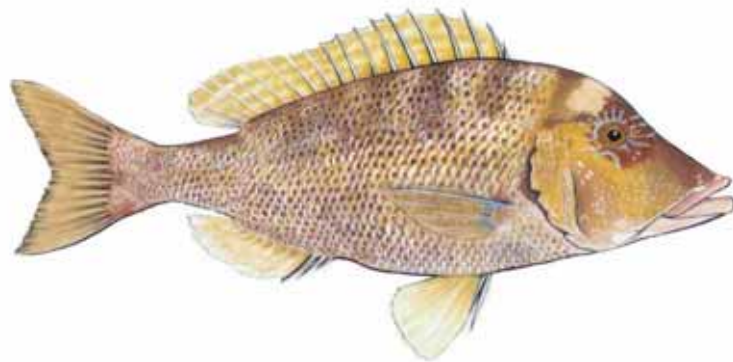


NT Coastal Reef Fish Population and Biology of the Tricky Snapper

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INTRODUCTION

Tricky snappers (*Lethrinus laticaudis*) are from the Lethrinid family, and are often called emperors or sweetlips. Whilst there are a number of Australian species locally called tricky snappers, in the NT the name refers to *L. laticaudis*. The tricky snapper is tan to yellow in colour and can be recognised by the bright blue lines, which radiate out from the eye and connect across the forehead. There are also small blue dots (as distinct from wide bars) on the cheek. Generally, trickies are considered excellent eating fish, a favourite of recreational fishermen.

Trickies are distributed throughout northern Australia and southern Indonesia, including Papua New Guinea and the Solomon Islands. Juveniles are often found in seagrass beds or in mangroves, but adults are more common on coral reefs.

Tricky snappers are regularly targeted by recreational fishers around the NT coast using handlines or boat rods. They can be easily targeted in rubble reef areas in depths of up to 80 m. Fresh squid, pilchards or oily fish can be used as bait with a patanoster reef fishing rig to catch trickies. As tricky snappers are most commonly caught at around 30-40 cm in length, smaller hooks are needed when targeting them. There is no size limit for trickies, but you may not possess more than 30 per person, under the general personal possession limit in the Northern Territory.

RESEARCH

In general, there is very little biological information available on Lethrinids and even less on this particular species. However, DPIFM Fisheries has conducted some basic biological studies on this species.

Information on the length, weight, sex, stage of maturity and otoliths (ear bones) of *L. laticaudis* was collected from research trips around Darwin and by sampling the catches of commercial fishermen from around the NT coast.

The fish ranged from 16 to 46 cm fork length (FL) and weighed from 0.1 to 2.2 kg. Fish longer than 50 cm FL have been reported. The relationship between length and weight is illustrated in Figure 1.

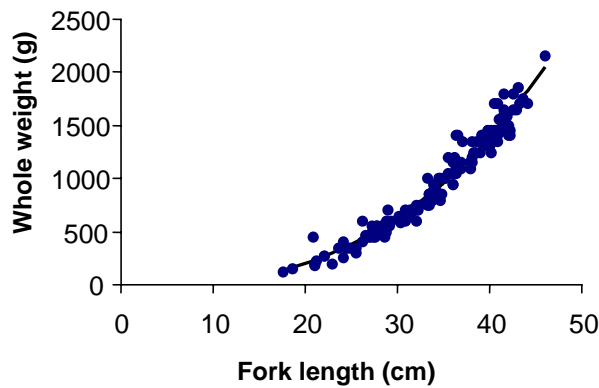


Figure 1. Length-weight relationship of *L. laticaudis*

The length frequency of male and female *L. laticaudis* (Figure 2) shows that all fish under 32 cm FL were female with progressively more males occurring at larger sizes. This suggests that they may be sequential protogynous hermaphrodites, that is, they mature as females and later change to males. Apparently this mode of sexuality is common amongst Lethrinids. This aspect of the life history of *L. laticaudis* may be important when considering the potential impact of fishing pressure on the population dynamics of the species.

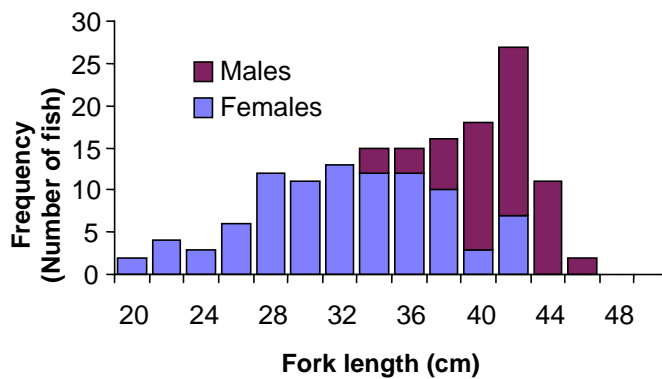


Figure 2. Length frequency of male and female *L. laticaudis*

Based on the length frequencies of males and females, the size at which 50% of the fish were male was estimated to be about 38 cm (Figure 3). Preliminary indications are that the females mature at around 30 cm.

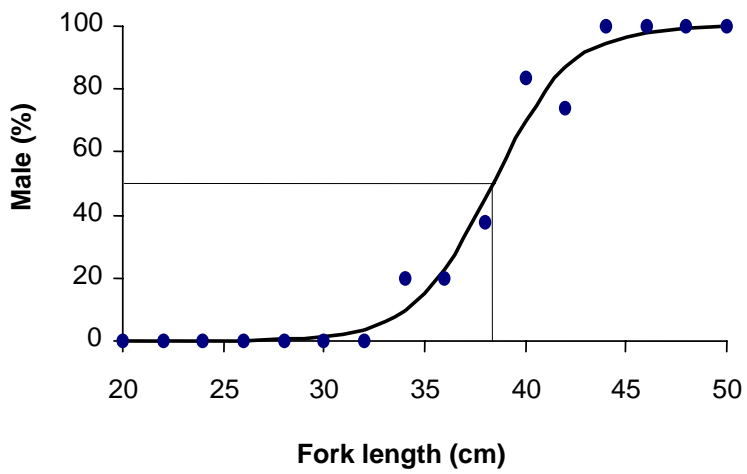


Figure 3. Relationship between length and the percentage of *L. laticaudis* which are male

Although we were able to observe the stage of maturity of the gonads of female and male *L. laticaudis*, there is insufficient data to determine their spawning period.

A small number of fish have been aged by counting the yearly rings on their otoliths. However, before we can be confident of results, more fish need to be sampled, especially those in smaller size classes. Furthermore, we have yet to conduct validation procedures to ensure that the rings are indeed annual. Our preliminary results indicate *L. laticaudis* may live for over 10 years and may reach around 50 cm FL (Figure 4).

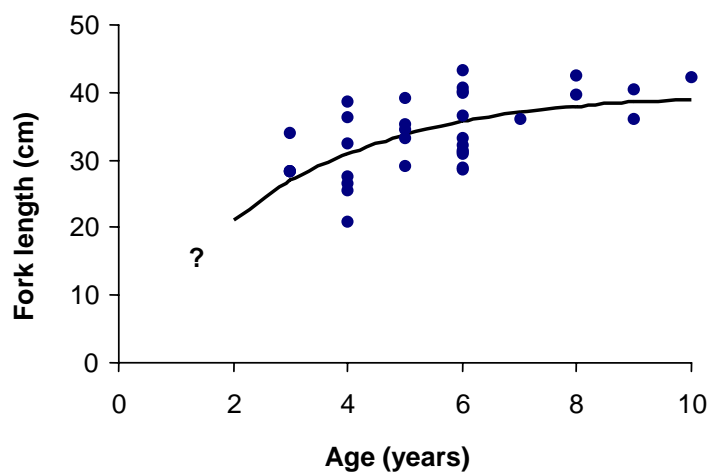


Figure 4. Preliminary age-length key for *L. laticaudis*

It is important to remember that the information summarised in this Fishnote is of a preliminary nature and was derived from fish collected from a relatively small area over a limited time period. Therefore, use of this data to construct wider temporal and spatial scales warrants caution.

The Coastal Research Unit will continue to collect relevant information on trickies and other common coastal reef species, so we can better understand and manage the impact of fishing on their population dynamics and long-term sustainability. Please help us by practising responsible fishing. In this way, we can ensure that this important NT resource can be enjoyed by future generations of Territorians.

ACKNOWLEDGEMENTS

None of this research could have taken place without the assistance and patience of the NT coastal line fishermen. Thanks to you all, in particular to Tony and Paul Franklin.

RECOMMENDED READING

Baddar, M. K. (1987). A preliminary study of the population dynamics of a sheiry, the starry pigface bream, *Lethrinus nebulosus*. *Kuwait Bulletin of Marine Science* 9:215-220.

Carpenter, K. E. and Allen, G. R. (1989). Emperor fishes and large eye breams of the world (Family Lethrinidae). An annotated and illustrated catalogue of lethrinid species known to date. FAO Fisheries Synopsis. No. 125, Volume 9. Rome FAO. 118 pp.

Grant, E. M. (1985). Guide to fishes. The Department of Harbours and Marine, Brisbane, Queensland. 895pp.

Johnson, M. S., Hebert D. R. and Moran M. J. (1993). Genetic analysis of populations of north-western Australian fish species. *Australian Journal of Marine and Freshwater Research*. 44: 673-85.

Kuo, C. and Lee S. (1990). Maturation and spawning of common porgy *Lethrinus nebulosus* (Forsskal) in the northwestern shelf of Australia. *Journal of the Marine Biological Association of India* 32:201-207.

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