

STATUS OF TIGER PRAWN STOCKS AT THE END OF 2002

Northern Prawn Fisheries Assessment Group

1 NON-TECHNICAL SUMMARY

The Dichmont *et al.* (2003) model has been applied to logbook data from 1970 to 2002. The major change this year is the replacement of the constant 5% and NPFAG variable fishing power series with that from the AFMA and FRRF funded fishing power project¹.

The new fishing power series are remarkably different from past values used and are the biggest influence on any changes to the output of the model. Three power series are used to define an envelope of fishing power; the first two are from the same fishing power base model but with a more optimistic and pessimistic set of parameters values. The third is a sensitivity test and uses a different fishing power model which includes spatial aspects of the fishery.

Due to uncertainty in the estimate of catchability, model outputs were compared when catchability was fixed at previous values determined by Wang (1999) or double this value.

Brown tiger prawns are considered to be over-exploited. Both catchability values and fishing power series show that it is likely that the stock is below S_{MSY} . Projections show that, if future effort is set at 2002 levels, then recovery to the NORMAC target is within a couple of years for brown tiger prawns. Effort levels in 2002 are below that needed to achieve S_{MSY} , which should increase the likelihood of rebuilding in brown tiger prawns.

In most tests, grooved tiger prawn stocks are not considered to be over-exploited due to increased recruitment in recent years. Projections show that, at 2002 effort levels, the resource continues to increase. There remains uncertainty about whether the effort levels are below, at or above that needed to achieve S_{MSY} .

¹ Alphabetically: Bishop, J., Dichmont, C.M. Eayrs, S., Rawlinson, N, Sterling, D. and Venables, W. "A new approach to fishing power analyses and its application in the Northern Prawn Fishery". Funded by ARF and FRRF.