

TORRES STRAIT PRAWN MANAGEMENT ADVISORY COMMITTEE	Meeting No. 16 23 June 2015
REPORTS Data Report – final 2014 and 2015 season to date catch and effort trends	Agenda Item No. 3.5 For Noting

RECOMMENDATION

3.5.1 That the TSPMAC **NOTES** the final catch statistics for the 2014 fishing season and the monthly trends in the catch and effort for the start of the 2015 fishing season.

BACKGROUND

A download of the TSPF logbook data for 2014 -15 was obtained from the AFMA logbook section on 25 May 2015 and the VMS data was downloaded on the 2nd June. This data was analysed and the results are detailed below and will be presented at TSPMAC 16. The analysis provides final catch and effort statistics for the 2014 season and a first look at the monthly trends in catch and effort for the start of the 2015 fishing season.

DISCUSSION

Figure 1 shows that during 2012-14 fishing effort stabilised at around 2,000 nights following a general downward trend between 2001 and 2011. The 2011 fishing season was the year of lowest fishing effort and catches since 1989. Although the 2014 fishing effort was slightly lower than the two preceding years (2012-13), possibly as a result of lower tiger prawn catch rates, the 2014 tiger prawn catch (313 t) was close to the average of 343 tonne for the preceding five year (2009-13). The 2014 endeavour prawn catch (76 t) was slightly higher than the lowest endeavour prawn catch of 74 tonnes that occurred in 2011.

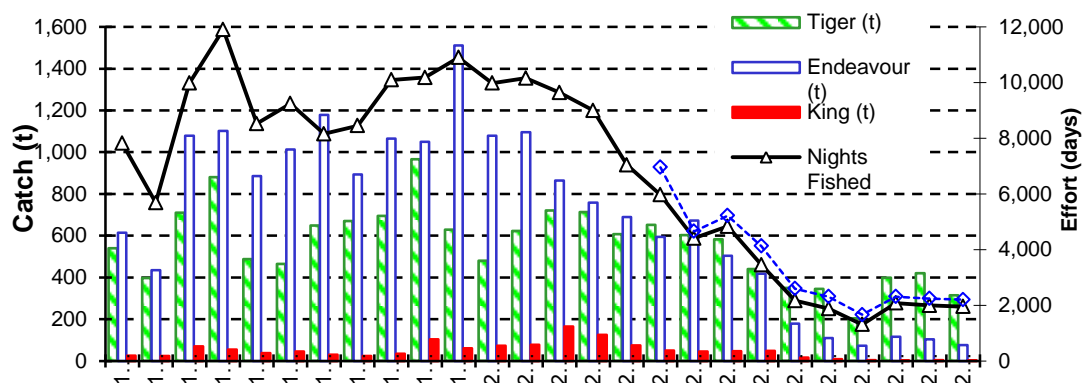


Figure 1 Prawn catches by species (columns) and effort (lines).

The final harvest estimates for 2014 are: 314(t) tiger prawn, 76(t) endeavour prawn and 3(t) of king prawn. The 2014 estimates of fishing effort are 1,954 days based on the logbook data and 2,203 from the VMS data. The 2014 fishing effort was higher

than in 2011, however it is still only 20% of the average for the years 1991-01 (9,781 days) and the Emsy limit reference point (9,200 days).

Table 1 Effort in days based on logbook records for the TSPF. The table compares the effort in days since 2009 with the historic average for the years 1991-2001. The VMS effort estimate is shown in brackets.

Average effort 1991-2001	2009 effort	2010 effort	2011 effort	2012 effort	2013 effort	2014 effort
9781	2165 (2599)	1879 (2309)	1309 (1663)	2081 (2310)	1993 (2240)	1954(2203)

Table 2 Catch of the three prawn species categories caught in the TSPF since 2009 compared with the historic average for 1991-2001 and the estimates of MSY.

Species	Average catch 1991-2001	MSY	2009 catch	2010 catch	2011 catch	2012 catch	2013 catch	2014 catch
Tiger prawn	659	676	348	344	240	398	418	314
Endeavour prawn	1087	1105	178	110	74	115	103	76
King prawn	56	NA	17	9	4	3	4	3

As a result of the very low levels of effort since 2009 (Table 1 and Figure 1) the catches (Table 2) were below both the historic catch levels during the years 1991-2001 and the estimated Maximum Sustainable Yield (MSY) for tiger and endeavour prawns. Tiger prawn catch rates (CPUE), was lower than 2012-13 which would explain the lower tiger prawn catch for the 2014 season (Figure 2). The 2014 CPUE was however, still much high than the long term average and the preliminary results for 2015 indicate that the 2015 tiger prawn CPUE will be higher than for 2014. The relatively high catch rates for tiger prawns in recent years combined with the low harvest of tiger prawns suggests that the tiger prawn stock is currently well above the sustainability reference point of Bmsy (the biomass that supports Maximum Sustainable Yield (MSY)).

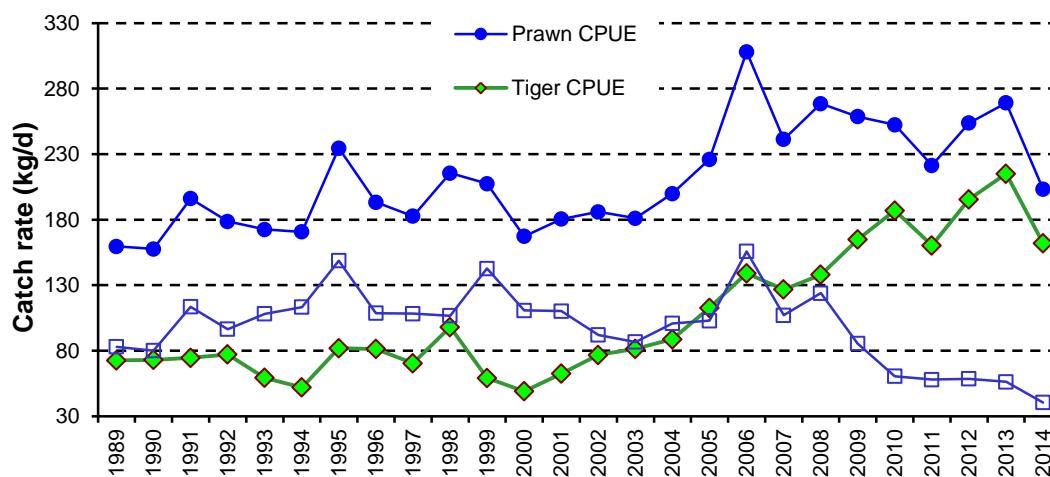


Figure 2 Yearly catch rate (CPUE) indices for tiger, endeavour and total prawn catch.

Although endeavour prawn catch rates (Figure 2) are below average this most likely is due to fishers focusing on the higher value tiger prawns. The harvest of endeavour prawns is well below historic levels and the estimate of MSY. Therefore the effect of fishing (fishing mortality) on the endeavour prawn stock has been very low in recent years compared with the 1990's when fishing mortality on the endeavour prawn stock was higher due to fishers targeting endeavour prawns, more vessels and higher fishing effort.

Preliminary analysis of the 2015 fishing season

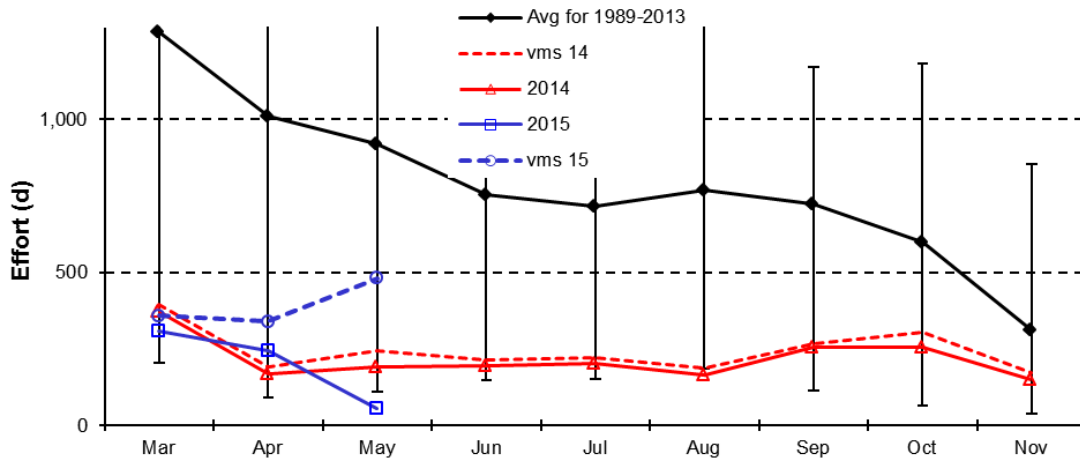
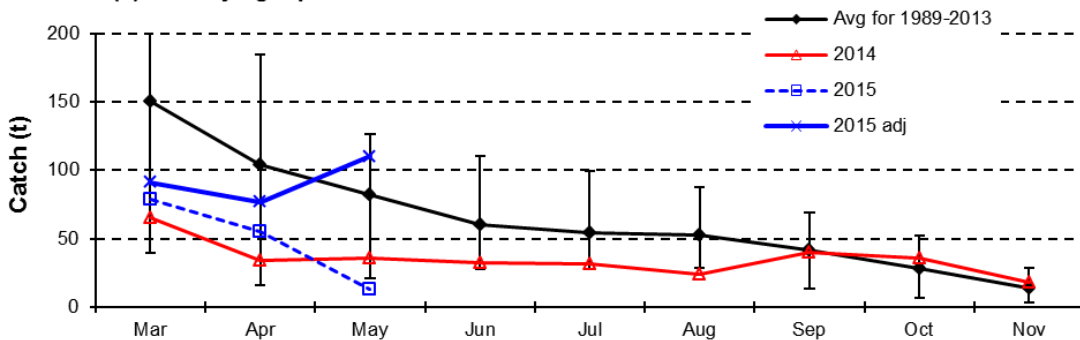


Figure 3 Monthly fishing effort in days.

Compared with 2014, the 2015 fishing effort (VMS data) was slightly lower in March but higher for April and much higher for May (Figure 3). The VMS and logbook estimates of effort for 2015 indicate that available logbook data provides the following monthly coverage of fishing effort; March 87%, April 72% and May 12%. In Figures 4(a) & 5(a) the coverage was used to estimate the full fleet catch for those months. The range markers on the 1989-2013 average line in figures 3, 4 and 5 indicate the minimum and maximum values that occurred over the years 1989 to 2013.

(a) Monthly tiger prawn catch



(b) Monthly tiger prawn CPUE

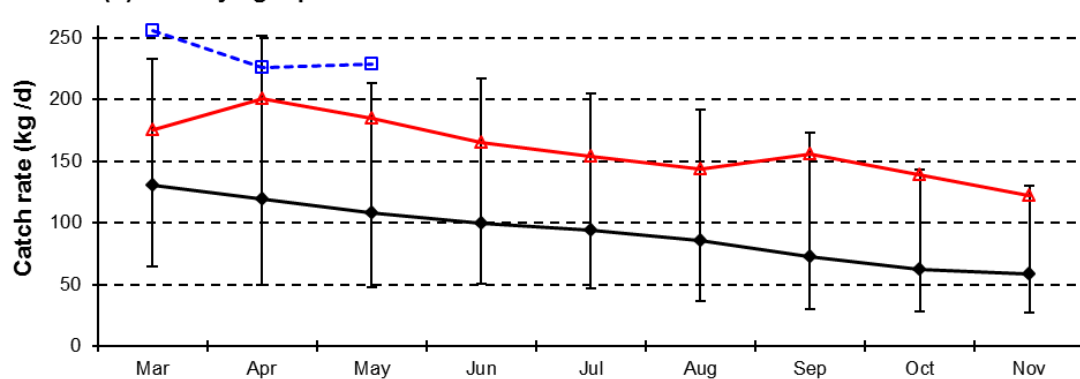


Figure 4 Monthly tiger prawn catch (a) and catch rates (b).

Compared with 2014, the 2015 tiger prawn catches (Figures 4a) for March and April are higher and the adjusted catches are considerably higher. The higher catches in

2015 reflect the higher effort (Figure 3) and higher tiger prawn CPUE (Figure 4b). The very high adjusted estimate for May could be an overestimate as it is based on only 12% of the potential data for that month.

The trend in endeavour prawn catch is similar to that for tiger prawn. Compared with 2014, the 2015 endeavour prawn catches (Figure 5a) for March and April are higher and the adjusted catches are higher for all three months. The higher catches are due to higher effort (Figure 3) and higher endeavour prawn CPUE (Figure 5b).

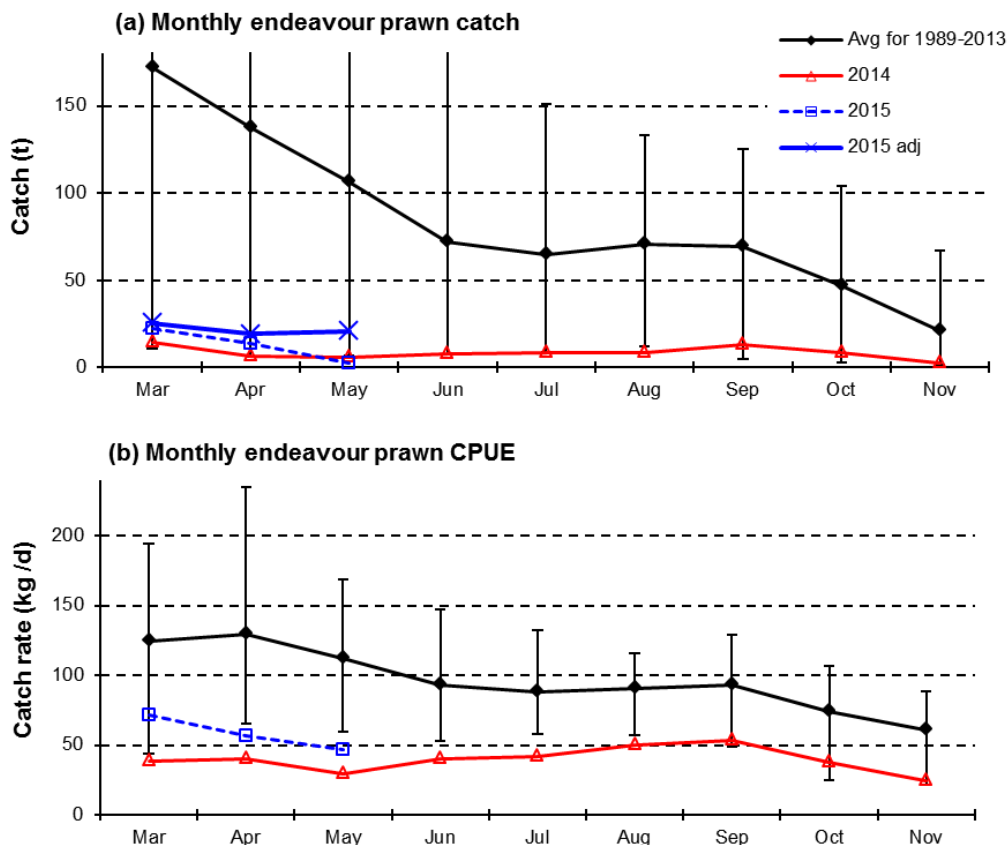


Figure 5 Monthly endeavour prawn catch (a) and catch rates (b).

Summary

- 1) Although the 2014 fishing effort was slightly lower than the two preceding years, possibly as a result of lower tiger prawn catch rates, the 2014 tiger prawn catch was close to the average for the preceding five year.
- 2) The current data for 2015 suggests that the annual fishing effort, tiger prawn catch, endeavour prawn catch and catch rates (CPUE's) for 2015 will be higher than 2014 and probably similar to 2012 and 2013.