

Table 1: Indices used for staging reproductive condition and a description of the criteria for classifying mature and immature condition

Organ	Index	Description	Maturity assumption
Female Uterus	U = 1	Uniformly thin tubular structure	Immature
	U = 2	Thin, tubular structure, partly enlarged posteriorly	Immature
	U = 3	Uniformly enlarged tubular structure	Mature
	U = 4	In utero eggs present without macroscopically visible embryos present	Mature
	U = 5	In utero embryos macroscopically visible	Mature
	U = 6	Enlarged tubular structure distended	Mature
Male Clasper	C = 1	Pliable with no calcification	Immature
	C = 2	Partly calcified	Immature
	C = 3	Rigid and fully calcified	Mature

Table 2: Estimated life history parameters and standard errors for *C. limbatus* from the present study compared with those of *C. tilstoni* from previous studies in Queensland (Harry *et al.* 2013) and the Northern Territory (Stevens and Wiley 1986; Davenport and Stevens 1988) \* approximate values not statistically derived

Process	Parameter	Description	<i>C. limbatus</i>			<i>C. tilstoni</i> (QLD)			<i>C. tilstoni</i> (NT)		
			Female	Both	Male	Female	Both	Male	Female	Both	Male
Growth		Model type	Von Bertalanffy			Logistic			Von Bertalanffy		
	$L_{\infty}$	Asymptotic length (cm)	263.3 (6.4)			241.9 (3.6)			181.4		
	$K$	Growth coefficient ( $\text{yr}^{-1}$ )	0.1418 (0.012)			0.1565 (0.0088)			0.19		
	$L_0$	Length at birth (cm)	72.77 (0.3)						62.91		
	$CV_L$	CV length at age	0.0487 (0.0024)						59.68		
Weight	$\log(\beta_1)$	Weight length coefficient	-12.34 (0.082)						-12.26		
	$\beta_2$	Weight length exponent	3.061 (0.017)						3.06		
	$\sigma_W$	Variance	0.1363			0.09209					
	$L_{50}$	50 % maturity (cm)	200.2 (1.5)			124.7			120*		
Maturity	$L_{95}$	95 % maturity (cm)	216.2 (3)			125			130*		
	$A_{50}$	50 % maturity (yrs)	8.334 (0.26)			6.065			4*		
	$A_{95}$	95 % maturity (yrs)	9.738 (0.66)			7.534			5*		
	$L_{50}'$	50 % maternity (cm)				137			130*		
	$L_{95}'$	95 % maternity (cm)				137			140*		
	$A_{50}'$	50 % maternity (yrs)				7.102			5*		
	$A_{95}'$	95 % maternity (yrs)				9.293			6*		
	$\beta_5$	Intercept / Mean	6.6 (2.7)			-5.408			3		
Fecundity	$\beta_6$	Slope				0.05725					
	$P_{Max}$	Annual prop. pregnant	0.33 - 0.5			0.833 - 1			1		
	$R$	Sex ratio	1:1			1:1			1:0.924		

Table 3: Details of five pregnant female *C. limbatus* captured from northern New South Wales waters

Date	Maternal TL (cm)	No. embryos	Mean embryo TL (cm)	Comments
11 April 2010	217	7	44	3M 4F
21 April 2010	202	2	32	1M and 1 undeveloped egg
21 April 2010	246	8	48	2M 6F
21 April 2010	228	7	42	2M 5F
28 June 2009	264	9	55	4M 5F

Table 4: Comparative demographic analysis of *C. limbatus* and *C. tilstoni*.  $\Lambda$  is the intrinsic rate of population decrease with age (gross productivity),  $M$  is the instantaneous rate of natural mortality,  $r$  is the intrinsic rate of population increase with time (net productivity),  $r_0$  is lifetime female reproductive output of female offspring,  $\mu$  and  $\sigma^2$  are the mean and variance of ages in the population in numbers,  $N$ , and biomass,  $B$ . Values presented are the mean and standard errors derived from 1000 Monte Carlo simulations.

	Sex	$\Lambda(yr^{-1})$	$M(yr^{-1})$	$r(yr^{-1})$	$r_0$	$\mu_N$	$\sigma_N^2$	$\mu_B$	$\sigma_B^2$
<i>C. tilstoni</i> (NT)	Female	-0.31 (0.023)	0.1 (0.021)	0.2 (0.031)	8.6 (3.3)	3.3 (0.25)	11 (1.7)	6 (0.44)	18 (2.3)
	Male	-0.33 (0.042)	0.13 (0.027)			3 (0.39)	9.4 (2.5)	5.2 (0.61)	14 (3.2)
<i>C. tilstoni</i> (QLD)	Female	-0.26 (0.012)	0.09 (0.018)	0.17 (0.021)	12 (5.2)	3.9 (0.17)	15 (1.4)	7.4 (0.39)	26 (1.9)
	Male	-0.29 (0.032)	0.12 (0.024)			3.5 (0.42)	13 (3.1)	6.1 (0.64)	19 (3.7)
<i>C. limbatus</i>	Female	-0.19 (0.014)	0.074 (0.016)	0.11 (0.021)	9.4 (4.5)	5.4 (0.37)	29 (3.9)	10 (0.63)	45 (5.2)
	Male	-0.2 (0.026)	0.082 (0.016)			5.2 (0.72)	28 (7.9)	9.5 (1.1)	42 (9.9)