Output from the South African Hake OMP-2006 for the 2009 TAC recommendation

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Abstract

The TAC output from the South African hake OMP-2006 for 2009 is **118 578 t**.

The 2009 TAC recommendation for the South African hake resource is computed in terms of the 2006 OMP (Rademeyer and Glazer, 2007) as follows:

$$C_y^{spp} = C_{y-1}^{*spp}\left[1+\lambda_y\left(s_y^{spp} - target^{spp}\right)\right] \quad (1)$$

The computations input a TAC of 130 500 thousand tons for 2008. As specified in the OMP, this is disaggregated by species assuming the 2007 species-split of the catches, i.e. 80.98% (105 672 t) *M. paradoxus* and 19.02% (24 826 t) *M. capensis* to provide the C_{y-1}^{*spp} values for equation (1).

The GLM-standardised CPUE series (Glazer, 2008) and survey biomass abundance estimates (Leslie, 2008) used as inputs to the OMP are shown in Table 1 and the resulting trends in Fig. 1. Note that the results from surveys carried out with the *Africana* with new gear have been rescaled to take the calibration factor into account (this involves dividing new gear estimates by 0.95 for *M. paradoxus* and 0.80 for *M. capensis*), as specified in the OMP (Rademeyer and Glazer, 2007); the 'true' estimates are shown in parenthesis in Table 1.

The recent annual trend, s_y, computed from a specified weighted average of the CPUE and survey slopes (0.5 for CPUE and 0.25 for each survey), is -0.96% for *M. paradoxus* and -13.44% for *M. capensis*.

From equation 4 ($\lambda_y = \begin{cases} 0.06(y-2006)+0.5 & \text{if } s_y > 0 \\ -0.09(y-2006)+2.0 & \text{if } s_y \le 0 \end{cases}$) of Rademeyer and Glazer (2007):

$$\lambda_{2009} = \begin{cases} 0.68 & \text{if } s_y > 0 \\ 1.73 & \text{if } s_y \le 0 \end{cases}$$

Thus the *M. paradoxus* contribution to the TAC is:

$$C_{2009}^{para} = 105672t\left[1+1.73(-0.96\%-2.4\%)\right] = 99526t$$

and the *M. capensis* contribution:

$$C_{2009}^{cap} = 24826t\left[1+1.73(-13.44\%-0\%)\right] = 19052t$$

The total 2009 TAC output from the OMP is therefore **118 578 t**. This is 9.14% less than the 2008 TAC of 130 500 t, and so is not impacted by the OMP constraint that TACs not change by more than 10% per year.

References

Glazer J.P. 2008. Offshore M. capensis and M. paradoxus CPUE indices and catches for input to the OMP for setting the 2009 TAC. Unpublished report, MCM, South Africa. MCM/2008/NOV/SWG-DEM/ . 6pp.

Leslie R.W and Fairweather T. 2008. Hake survey abundance estimates for the period 1986-2008. Densities extrapolated to the whole shelf and to trawlable grids only. Unpublished report, MCM, South Africa. MCM/2008/AUG/SWG-DEM/40. 8pp.

Rademeyer R.A. and Glazer J.P. 2007. The 2006 Operational Management Procedure for the South African *Merluccius paradoxus* and *M. capensis resources*. Unpublished report, MCM, South Africa. 2007:WG-Dem:H:1. 18pp.

Table 1: GLM-standardised CPUE series and west coast summer and south coast autumn survey abundance estimates used as input in the 2009 TAC computation. Note that the abundance estimates in bold incorporate the calibration factors agreed for OMP application as they are for surveys in which the new gear was used on the *Africana*. The values in parentheses are the actual estimates obtained from the surveys.

	M. paradoxus					*M. capensis*				
	GLM-standardised CPUE	West coast summer		South coast autumn		GLM-standardised CPUE	West coast summer		South coast autumn	
2002	4.902					4.904				
2003	5.778	405.457		108.845		4.717	74.771		128.152	
2004	5.626	**273.694**	(259.57)	**58.888**	(55.85)	4.024	**257.433**	(205.98)	**128.838**	(103.09)
2005	5.438	**297.339**	(281.99)	**27.240**	(25.83)	3.234	**89.077**	(71.27)	**96.267**	(77.03)
2006	5.388	313.456		35.038		2.983	88.357		132.202	
2007	5.766	**421.675**	(399.91)	**156.955**	(148.85)	1.557	**102.473**	(81.99)	**87.680**	(70.15)
2008		**260.022**	(246.60)	**41.639**	(39.49)		**63.597**	(50.89)	**134.922**	(107.95)

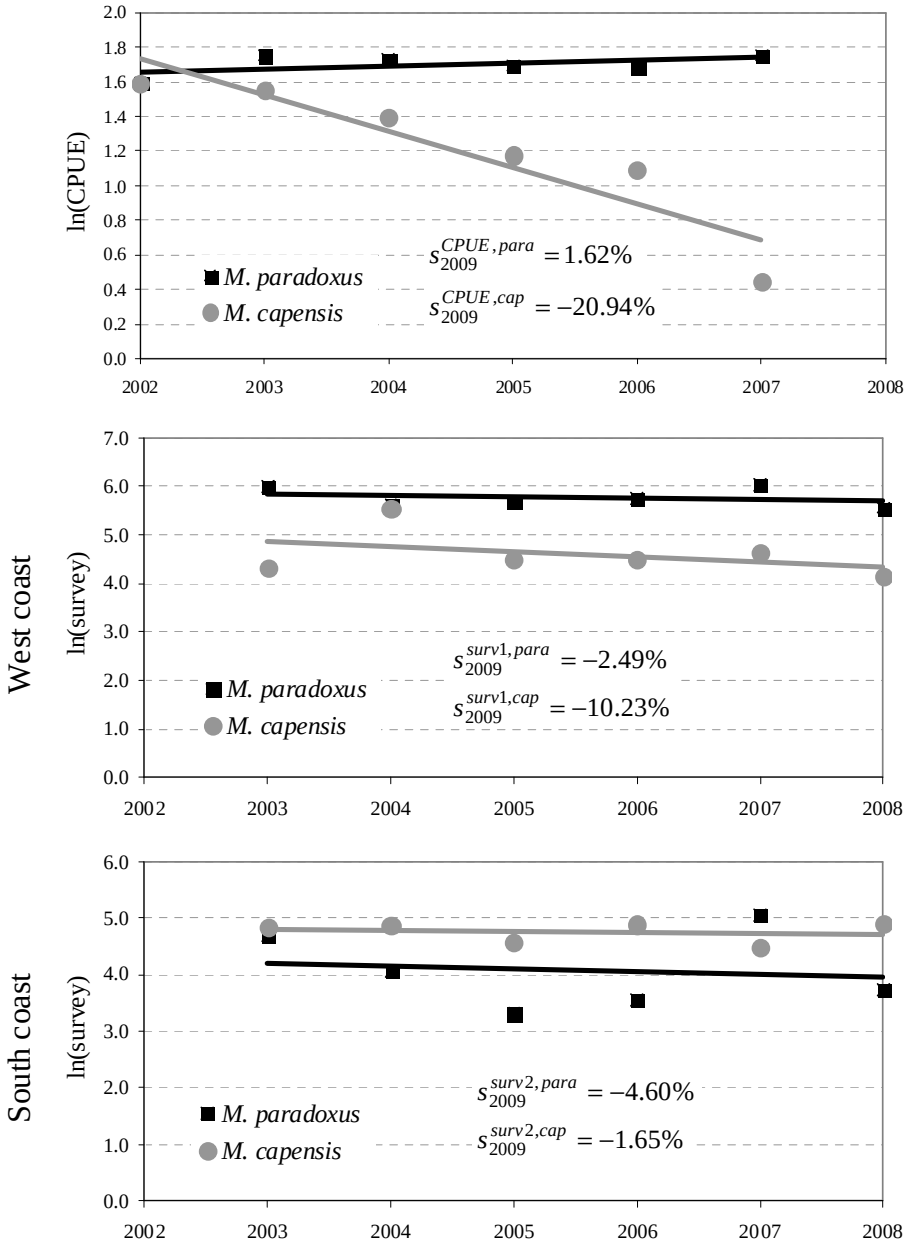

Fig. 1: Recent trends in the GLM-standardised CPUE and survey abundance indices for *M. paradoxus* and *M. capensis* which are used in the TAC computation. The survey abundance estimates shown incorporates the calibration factors specified in the OMP for the years in which the new gear was used on the *Africana*.