

**Addendum to:
Further OMP results for the South Coast Rock Lobster Resource
OMP**

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Readers may be puzzled that results reported in the main text (see Table 1a) for candidate OMPs and for maintaining the TAC at its current level seem to show little benefit from the OMP application. After allowing for the different final median recoveries, the distributions about those recoveries show little of the narrowing sought as a result of application of the OMPs' feedback rule.

The reason is that the scenarios examined are Reference cases where nothing goes "too badly wrong", so that there is little scope for the feedback mechanisms to play much role. To better illustrate that role, results have been computed for a scenario (potential robustness test) which assumes that recruitment halves from what would normally follow from the stock-recruitment relationship for the years 2007-2011 (5 year period). These results are reported in Table 1f below for a CC=382 (constant catch approach) as well as for the default Model 3 OMP. In this "bad" situation, does the OMP make some correction in a way that keeping the catch constant fails to do?

The results in their present form are somewhat difficult to interpret, because the constant catch and OMP candidate compared reflect different "tunings", i.e. they have different median recovery levels even in the absence of the poor recruitment. Furthermore up to 2015 the results remain virtually identical with those for the normal recruitment case that are shown in Table 1a, because the poorer recruitment cohorts have hardly reached maturity by 2015 and hence hardly impacted the spawning biomasses. Ten years later however, in 2025, differences are evident.

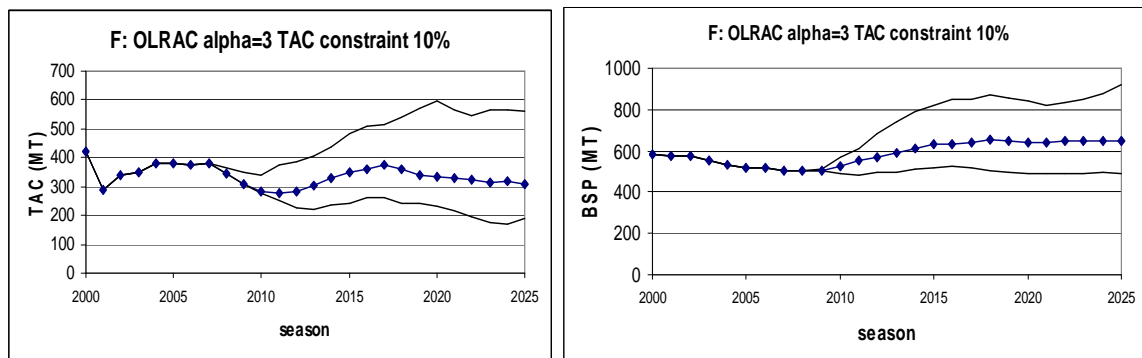
The appropriate comparison of the Table 1f results is with those in Table 1a for the normal recruitment case. For constant catch management, the median of the ratio of the 2025 to 2006 spawning biomasses drops from 1.07 to 0.80 (a difference of 0.27) under poor recruitment, whereas for the OMP the drop is from 1.22 to 1.03 (a difference of 0.19). The lesser difference for the OMP is a reflection of the benefits forthcoming from application of its feedback control law.

Two other sets of results are appended. First Fig. 1c, which is to be compared with Fig. 1a, shows the consequences that result from substituting the MARAM operating model (Model 3) by the OLRAC model (Model 4). Secondly, Fig. 2 corrects the Fig. 2 of the original document which showed duplicate results for C(2008) instead of also showing those for C(2009) as intended.

Table 1f: Summary performance statistics for a future constant catch scenario of 382 MT, and the default OMP for a scenario where recruitment halves for a five year period from 2007-2011. Medians with 5th and 95th percentiles are reported.

	CC=382	B
	Model 3 (MARAM TVS)	Model 3 (MARAM TVS)
δ	-	0
α	-	3
# yrs in CPUE average	-	5
TAC constraint (%)	-	10
C_{ave}^7 (2006-2012)	382 [382; 382]	319 [309; 343]
C_{ave}^{10} (2006-2015)	382 [382; 382]	322 [287; 359]
C_{ave}^{20} (2006-2025)	382 [382; 382]	307 [250; 376]
C (2008)	382 [382; 382]	344 [344; 356]
C (2009)	382 [382; 382]	309 [309; 329]
C (2010)	382 [382; 382]	278 [278; 316]
V^7 (2006-2012)	0 [0; 0]	7 [5; 8]
V^{10} (2006-2015)	0 [0; 0]	7 [6; 8]
V^{20} (2006-2025)	0 [0; 0]	7 [7; 9]
B^{sp} (2015/2006) 90% range	1.15 [0.84; 1.58] 0.74	1.27 [1.03; 1.76] 0.73
B^{sp} (2025/2006) 90% range	0.80 [0.48; 1.19] 0.71	1.03 [0.74; 1.43] 0.69
B^{sp} (2006/K)	0.34	0.34
B^{sp} (2015/K)	0.39 [0.29; 0.53]	0.43 [0.35; 0.60]
B^{sp} (2025/K)	0.27 [0.16; 0.40]	0.35 [0.25; 0.49]

Figure 1c: Median TAC (left panel) and B_{sp} (right panel) trajectories with the 5th and 95th percentile, for Scenario F (OLRAC, $\alpha = 3$, TAC change constraint =10%)



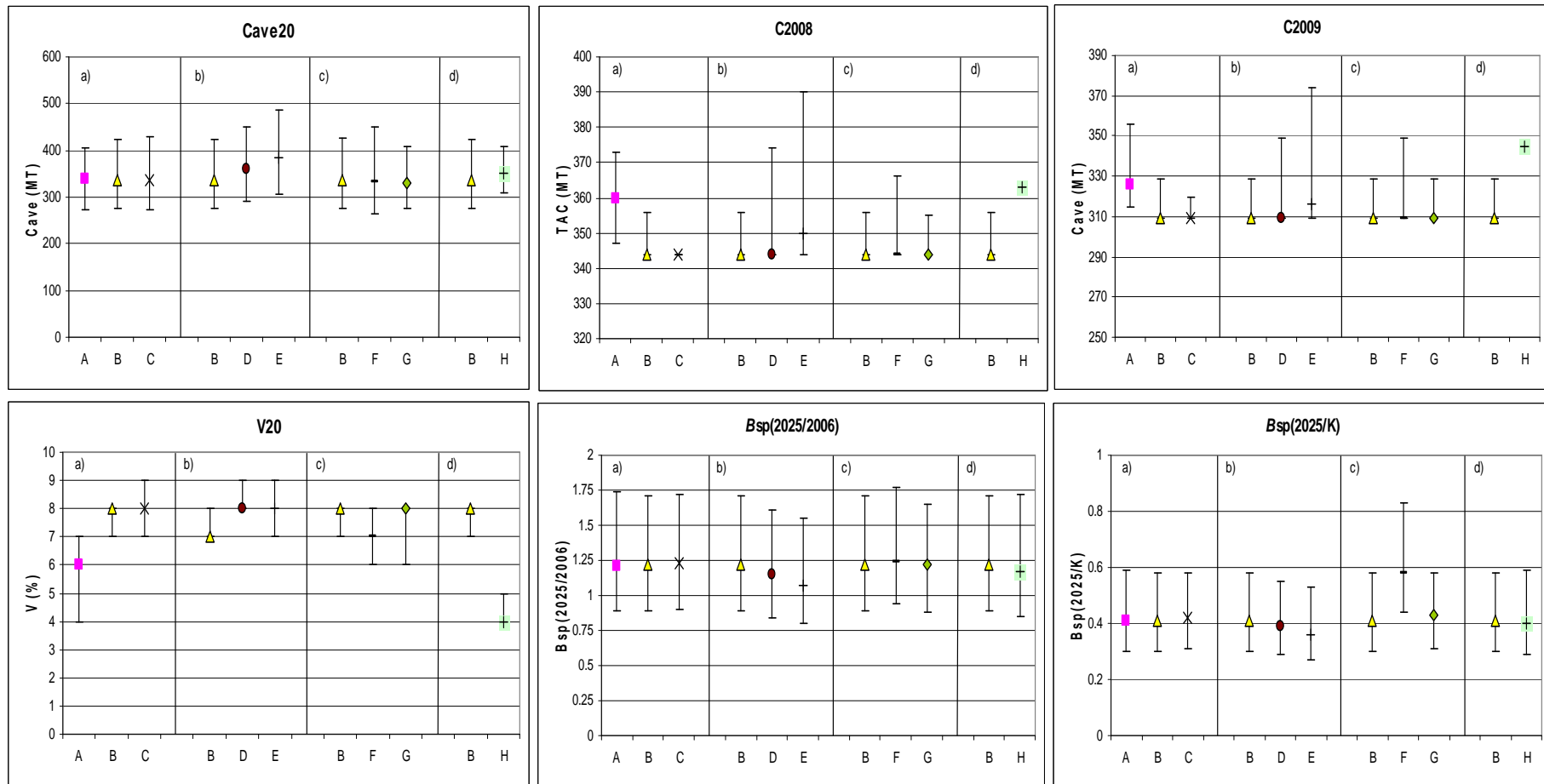


Figure 2: Six comparative plots of median (and 5th and 95 percentiles) values of various summary statistics for four different comparisons: a) Model 3: $\alpha = 1, 3$ and 5; b) Model 3: $\delta = 0, -0.015$ and -0.03 ; c) Default: Model 3, 4 and 5 and d) Model 3: TAC constraint %: 10 and 5.