

## Re-tuning of OMP-2011 using updated 2013 Operating Models for the South Coast Rock Lobster Resource to provide OMP-2013

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FISHERIES/2013/AUG/SWG\_SCRL/06 provided results of the 2013 updated assessment of South Coast rock lobster. This document also outlined the assumptions to be made in retuning the current OMP to take into account both the new operating models (the new assessments) and assumptions for projecting the resource into the future.

The current OMP has a 5% maximum inter-annual TAC constraint rule. Here we examine options which retain the form of that OMP (aside from varying the tuning parameter  $\delta$  to achieve the target recovery level), which allow for either:

- a 5% maximum inter-annual TAC constraint rule, or
- a 10% up and 5% down maximum inter-annual TAC constraint.

For a reason clarified below, the TAC for the coming 2013/14 season, denoted TAC(2013), is constrained to be at least 326 MT (i.e. no TAC reduction for the first year of OMP application).

The target biomass recovery remains at the agreed 1.20 for  $B_{sp}(25/06)$ , i.e. a 20% increase above the 2006 level by 2025..

Note that the OMP takes into account the actual CPUE value for 2011, and assumes that the TAC of 326 MT for 2012 has been fully taken.

### Results

Table 1 and Figure 1 report results of the two candidate OMPs.

The TAC candidate with the 5% maximum inter-annual TAC constraint rule is unable to achieve a median  $B(25/06)$  value of 1.20. The reason is that for simulations that are relatively optimistic, it is not possible to increase the TAC sufficiently fast to prevent an overshoot.

The OMP candidate with a maximum 10% increase and maximum 5% decrease constraint is able to achieve a median  $B(25/06)$  value of 1.20. Had the constraint of a minimum TAC of 326 tons for 2013 not been imposed on this candidate, a slight TAC decrease would have resulted for this first year. This seems undesirable given the high likelihood that the TAC would increase thereafter, which was the motivation for introducing this constraint.

## **Proposal**

We offer two ways forward at this time. The first is to make the OMP choice now between the two candidates in Table 1. The TAC recommendation for each for the 2013/14 season is evident from that Table.

The second is motivated by the fact that time pressures created by the urgent requirements for analyses that arose suddenly for west coast rock lobster have meant that the last part of this SCRL OMP review has been rather rushed. Some improvements could follow over the next few months if analyses were to continue, to then be incorporated in the version to be applied starting with the 2014/15 season. In such circumstances, the longer-term decision made at this stage would only be the choice between the two inter-annual constraint options offered. The TAC recommendation for 2013/14 would again be as then indicated in Table 1.

Table 1: Summary performance statistics for two OMP-2013 candidates. Medians with 5<sup>th</sup> and 95<sup>th</sup> percentiles are reported. The first column reports results for OMP-2011 as evaluated using Model 3 in 2011.

	OMP 2011 (Model 3) 5% up and down maximum inter- annual TAC constraint	OMP 2013 RC1 5% up and down maximum inter- annual TAC constraint	OMP 2013 RC1 10% up and 5% down maximum inter-annual TAC constraint
		All2.res/cat2.res	All1.res/cat1.res
Tuning parameter		$\delta = -0.2$	$\delta = -0.074$
$C_{ave}^{10}$ (2006-2015) t	365 [342; 370]	343 [349; 349]	343 [339; 350]
$C_{ave}^{20}$ (2006-2025) t	394 [322; 344]	424 [417; 424]	445 [366; 509]
$V^{10}$ (2006-2015) %	4 [3; 4]	6 [6; 6]	6 [5; 6]
$V^{20}$ (2006-2025) %	4 [4; 5]	5 [5; 5]	7 [6; 8]
TAC(2011) t	323	323	323
TAC(2012) t	326	326	326
TAC(2013) t	-	342	326
$B^{sp}$ (2015/2006)	1.25 [1.06; 1.62]	1.41 [1.20; 1.91]	1.42 [1.21; 1.92]
<b><math>B^{sp}</math> (2025/2006)</b>	<b>1.20 [0.81; 1.77]</b>	<b>1.32 [0.54; 2.75]</b>	<b>1.20 [0.60; 2.62]</b>
$B^{sp}$ (2006/ <i>K</i> )	0.28	0.27	0.27
$B^{sp}$ (2015/ <i>K</i> )	0.35 [0.29; 0.45]	0.38 [0.33; 0.52]	0.39 [0.33; 0.52]
$B^{sp}$ (2025/ <i>K</i> )	0.33 [0.22; 0.49]	0.36 [0.15; 0.75]	0.33 [0.16; 0.71]

Figure 1: Median annual TAC and  $B_{sp}$  series with the 5<sup>th</sup> and 95<sup>th</sup> percentile envelopes for the two OMP 2013 candidates.

