Some aspects of the development of a new OMP for the West Coast Rock Lobster fishery for recommending TAC allocations for the 2015+ seasons

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SUMMARY

Conducting simulations for testing the revised West Coast Rock Lobster OMP first requires agreed adjustment to the previous values of the parameters controlling the extent of inter-annual changes to allocations to each sector, and to the split of these allocations amongst Super-Areas. Suggestions are put forward for these, and also for allocations of TAC adjustments following the anticipated removal of the Exceptional Circumstances for Super-Area 7 for the 2016 season.

INTRODUCTION

The most recently adopted OMP for west coast rock lobster - "OMP 2011-re-tuned" (Johnston *et al.* (2013)) - was planned to be used to set allocations for various sectors and Super-Areas for the 2013+ seasons for the West Coast rock lobster fishery. However, as a result of Exceptional Circumstances being declared in Super-Area 7, the TAC setting procedure had to deviate from TACs being set automatically as per the OMP-2011 re-tuned specifications. TACs have instead been set in a somewhat *ad hoc* manner, based on constant catch projections, for the 2013[1] and 2014 seasons.

At the previous SWG meeting, it was agreed that a revised OMP should be developed for setting allocations for the various sectors and Super-Areas for the 2015+ season along the lines of OMP-2011 re-tuned. It was also agreed that Exceptional Circumstances for Super-Area 7 (with an associated fixed experimental catch of 80 MT) would also be assumed to continue for the 2015 season, but that the OMP testing process would assume that the resource would recover sufficiently in Super-Area 7 for the revised OMP to be used to set the allocations in that Super-Area for the 2016+ seasons onwards.

The prospect of this change for Super-Area 7 only one year into the implementation of the revised OMP requires agreement on how the associated likely increase in TAC is to be

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[1] Note the convention that, e.g., 2013 refers to the 2013/14 season.

allocated by fishery sector and by Super-Area. This document first lists the manner in which the global TAC was split amongst areas and sectors under OMP-2011 re-tuned, and then proceeds to make suggestions for dealing with this and the additional TAC increase likely for Super-Area 7 for the 2016 season.

DESCRIPTION OF ALLOCATION PROCEDURES OF OMP 2011 RE-TUNED
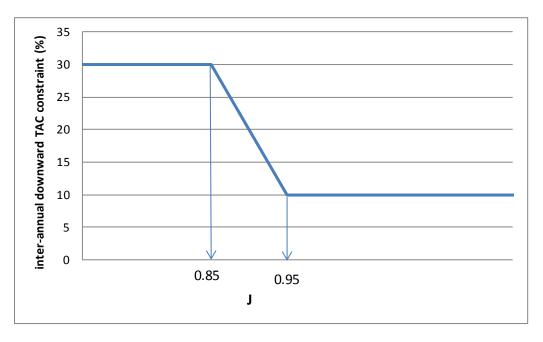
Inter-annual TAC constraints

Both the global TAC and total Offshore TAC values are constrained by the amount they can vary from the previous year's value. This amount has been set at 10%. However, a further rule, "RULE 1", allows for the TAC values to decrease by up to as much as 30% under certain conditions of poor resource performance, as indexed by $\bar{J}_y$ [2]. Figure 1 below shows how this TAC decrease constraint is set. The amount of TAC decrease permitted is dependent of the $\bar{J}_y$ value and is set equal to 10% for values of $\bar{J}_y > 0.95$ and to 30% for values of $\bar{J}_y < 0.85$, with linear interpolation for $\bar{J}_y$ values between 0.85 and 0.95.

Following implementation of these constraints, the global TAC calculated may change from that initially a\calculated, i.e.:

$$TAC_y^{G,2} \rightarrow TAC_y^{G,3}$$

(see Johnston *et al.* (2013) for details).

Figure 1: RULE 1 - inter-annual downward TAC constraint calculation based on value of $\bar{J}$ (shown below as **J**).

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[2] $\bar{J}$ is a running average combined index of abundance indices for the Super-Area in question.

Method for calculating the sector splits of the global TAC

The global TAC is split into allocations to the different sectors using what was termed during OMP development (Johnston and Butterworth 2011) the "alternative" method – see Table 1 below. This method was supposed to used to split the global TAC for the 2012+ seasons. For the 2011 season, the values shown in Table 1 were set. For the Offshore commercial sector, this value of 1540.65 MT is the amount that would have been allocated had the target recovery been 30% rather than 35%. From 2012, values associated with the 35% target were implemented.

Table 1: Sector splits of global TAC using the "alternative" method adopted.

Sector	Baseline % of global TAC $TAC_y^{G,3}$	Range of global TAC allowed before revert to baseline	Maximum allowed	2011 starting value
Recreational	8%	6% - 10%	400 MT	182.9 MT
Subsistence/IR	11%	8% - 14%	600 MT	251.48 MT
Nearshore commercial	19.7%	16% - 24%	800 MT	451 MT
Offshore commercial	61.3%	max increase 10% pa min decrease 10-30% pa (RULE 1)	-	1540.65 MT

Recreational Allocation

$$TAC_y^{REC} = TAC_{y-1}^{REC} \tag{1}$$

$$if \ \frac{TAC_y^{REC}}{TAC_y^{G,3}} < 0.06 \quad then \quad TAC_y^{REC} = 0.08 \, TAC_y^{G,3} \tag{2}$$

$$if \ \frac{TAC_y^{REC}}{TAC_y^{G,3}} > 0.10 \quad then \quad TAC_y^{REC} = 0.08 \, TAC_y^{G,3} \tag{3}$$

$$if \ TAC_y^{REC} > 400 \, MT \quad then \quad TAC_y^{REC} = 400 \, MT \tag{4}$$

Subsistence/IR allocation

$$TAC_y^{IR} = TAC_{y-1}^{IR} \tag{5}$$

$$if \quad \frac{TAC_y^{IR}}{TAC_y^{G,3}} < 0.08 \quad then \quad TAC_y^{REC} = 0.11 \, TAC_y^{G,3} \tag{6}$$

$$if \quad \frac{TAC_y^{IR}}{TAC_y^{G,3}} > 0.14 \quad then \quad TAC_y^{REC} = 0.11 \, TAC_y^{G,3} \tag{7}$$

$$if \quad TAC_y^{IR} > 600 \, MT \quad then \quad TAC_y^{IR} = 600 \, MT \tag{8}$$

Nearshore commercial allocation

$$TAC_y^{Nearshore} = TAC_{y-1}^{Nearshore} \tag{9}$$

$$if \quad \frac{TAC_y^{Nearshore}}{TAC_y^{G,3}} < 0.16 \quad then \quad TAC_y^{Nearshore} = 0.197 \, TAC_y^{G,3} \tag{10}$$

$$if \quad \frac{TAC_y^{Nearhsore}}{TAC_y^{G,3}} > 0.24 \quad then \quad TAC_y^{Nearshore} = 0.197 \, TAC_y^{G,3} \tag{11}$$

$$if \quad TAC_y^{Nearshore} > 800 \, MT \quad then \quad TAC_y^{Nearshore} = 800 \, MT \tag{12}$$

Offshore commercial allocation

$$TAC_y^{Offshore} = TAC_y^{G,3} - TAC_y^{REC} - TAC_y^{IR} - TAC_y^{Nearshore} \tag{13}$$

$$if \, TAC_y^{Offshore} > 1.10 \, TAC_{y-1}^{Offshore} \quad then \, TAC_y^{Offshore} = 1.10 \, TAC_{y-1}^{Offshore} \tag{14}$$

For the global TAC downward constraint "RULE 1" applies, i.e. "RULE 1", allows for the $TAC_y^{Offshore}$ value to decrease by as much as 30% under certain conditions of poor resource performance, as indexed by $\bar{J}_y$.

Final global TAC

$$TAC_y^{G,final} = TAC_y^{REC} + TAC_y^{IR} + TAC_y^{Nearshore} + TAC_y^{Offshore} \tag{15}$$

Note that this means that the final global TAC may change by more than 10% from the previous year's value.

In the event of a change to the allocation to the Subsistence/IR, Nearshore commercial or Offshore commercial sector, the quota to each rights holder in that sector will be adjusted by the same proportion as the allocation to that whole sector has been adjusted.

For the Recreational sector, the adjustment will be effected by changing the duration of the season by the same proportion as the allocation is changed, starting from a baseline of 80 days for the 2007-2009 allocations each of 257 tons. This will be kept under review in the light of telephone survey and permit sale records, and adjusted if necessary in proportion to changes in these.

Note that no upward adjustment will be considered to sector allocations should that sector under-catch its allocation for the preceding season. The under-catch will be considered as a desirable contribution to an improved recovery rate, and rights holders will in due course benefit through a consequent improvement in the $\bar{J}$ combined abundance index upon which the TAC depends. Should a sector allocation be over-caught by a non-trivial amount, the situation will be dealt with under general Exceptional Circumstances provisions.

Method for splitting the sector allocations amongst Super-Areas

For each sector, the catch allocation needs to be split amongst the five Super-Areas. Table 2 below provides the proportions to be used to achieve these splits (which correspond to the proportions agreed for the OMP testing). The splitting of the Offshore allocation is described in Johnston *et al.* (2013).

In practice, recreational permit allocation/usage cannot be restricted on a Super-Area basis, but ongoing annual telephone surveys will be used to monitor these proportions and how they change. If the change is substantial, implementation of general Exceptional Circumstances provisions will be considered.

Table 2: Super-Area splits of the Nearshore, Subsistence and Recreational allocations under OMP-2011 re-tuned.

	Nearshore	**Subsistence**	**Recreational**
A1+2	0.0536	0.0486	0.020
A3+4	0.1607	0.2072	0.125
A5+6	0.0714	0.2099	0.125
A7	0.000	0.000	0.040
A8+	0.7143	0.5343	0.690

PROPOSED SPLITTING PROCEDURES FOR REVISED OMPs

It is suggested that the splits per sector for the 2014 season be adopted as the new baseline for the revised OMP, and consequently Table 1 be adjusted as shown in Table 3, where the buffering ranges are roughly ± 20%, as in Table 1 for OMP-2011 re-tuned.

Table 3: Suggested sector splits of global TAC for the revised OMP.

Sector	2014/15 TAC	Baseline % of global TAC	Range of global TAC allowed before revert to baseline	Maximum allowed
Recreational	69.20	3.84%	3% - 5%	
Subsistence/IR	235.30	13.07%	10% - 16%	
Nearshore commercial	376.10	20.88%	17% - 25%	
Offshore commercial	1120.25	62.21%	max increase 10% pa min decrease 10-30% pa (RULE 1)	

For the 2016 season, with the presumed removal of Exceptional Circumstances provisions for Super-Area 7, the catch allowed there will likely increase above the 80 MT currently allowed. It is proposed that this increased catch be shared amongst sectors in accordance with the Baseline % splits in Table 3.

If one duplicates the 2014 season sector allocations amongst Super-Areas for the future, these splits would be as shown in Table 4. The re-allocation of the recreational catch from A8+ to A7 in 2016 compared to 215 is as per previous decision of the SWG.

Table 4: Suggested Super-Area splits of the Nearshore, Subsistence and Recreational allocations for the 2015+ seasons.

	Nearshore	Subsistence	Recreational	
			2015	2016
A1+2	0.064	0.057	0.024	0.024
A3+4	0.175	0.177	0.135	0.135
A5+6	0.077	0.192	0.135	0.135
A7	0.000	0.000	0.000	0.040
A8+	0.685	0.574	0.706	0.666

Rules for the dynamic split of the offshore commercial catch allocation amongst A3+4, A5+6, A7 and A8+ will be redeveloped during the process of finalising the revised OMP.

References

Johnston, S.J. and D.S. Butterworth. 2011. A new OMP for West Coast Rock Lobster: preliminary results. FISHERIES/2011/Sep/SWG-WCRL/56.

Johnston, S.J., Butterworth, D.S., Glazer, J.P and Brandão, A. 2013. OMP 2011 re-tuned to be used for setting TACs for the West Coast Rock Lobster fishery for the 2013+ seasons. FISHERIES/2013/FEB/SWG-WCRL/01.