WCRL TAC ISSUES REQUIRING FINALISATION

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Constraints per Sector on interannual TAC changes

Table 1 summarises two options for future TAC sector splits. Table 2 sets out the process for annual computations of TAC allocations per sector each year, indicating how these are carried out to respect the buffering mechanism set up to avoid over-frequent changes to the allocations to the recreational, subsistence/IR and nearshore commercial sectors (note that this is slightly simplified compared to previous practice).

Table 3 sets out the division of the current (2010/11) TAC amongst sectors in terms of the "current" and "alternative" sector splits put forward in Table 1, which are to provide the sector specific TAC_y^s inputs to the calculations in Table 2 that will provide TAC_{y+1}^s recommendations for TACs by sector for the 2011/12 season.

Table 4 provides an illustration of the results that follow from the set of computations set out in Table 2 under the "current" sector split. The illustration is "pessimistic" in terms of future OMP outputs to assist illustrate the points to follow, and makes specific assumptions about control parameters *X* and *Y* concerning the maximum extent of TAC change allowed (setting each to 10%).

Table 5 continues the illustration for the "alternative" sector splits, but an ambiguity arises in this case. This concerns the constraint on the maximum change (decrease in this example) on the offshore commercial sector from the 2010/11 to 2011/12 seasons. Does this constraint apply to this "allocation" following the revised sector split to the 2010/11 TAC (Table 5a) or to the actual allocation for 2010/11 (Table 5b)? Note that in the example this makes the difference between a TAC reduction of 267 tons (18.5%) or 153 tons (10%) to this sector. A decision is needed for the further OMP analyses of whether the approach of Table 5a or of 5b is to be taken forward.

In the three examples shown, the cumulative TACs over four years total 7644, 7674 and 8150 for Tables 4, 5a and 5b respectively. The differences here should not be a concern. Whatever option is chosen, the control parameters of the OMP for each option will be set to achieve the same resource recovery target after 10 years. In the illustrations the TAC^G (init) values emanating from the OMP were kept the same in all three examples to aid in explaining the differences amongst the approaches. Once tuned to achieve the same recovery levels, these values would be lower for the Table 5b situation so that the effects of initially higher TACs are balanced by later lower values (across all sectors).

Rules for over/under catches

As a revised opener following initial discussion in the last WCRL SWG meeting, the following is put forward to facilitate further discussions:

i. Undercatch – no adjustment, used to benefit resource recovery.
ii. Overcatch – subtracted from allocation (to sector or participant in sector, as appropriate, two years after the overcatch occurred (as the information to make immediate adjustments would not be available sufficiently early).
iii. In cases of overcatch by sector, option ii) might be implemented on a cumulative basis, e.g. effected only once the cumulative overcatch reaches 10%, so as to avoid frequent small adjustments in season length.
iv. The relationship between overcatch responses as above and legal action need clarification.

TABLE 1: Alternative sector splits of global TAC

a) "Current"

Sector	Baseline % of Global TAC	Range of global TAC allowed before revert to baseline	Maximum allowed
Recreational	5%	3% - 6%	250 MT
Subsistence/IR	8.8%	7% - 11%	500 MT
Nearshore commercial	19.7%	16% - 24%	800 MT
Offshore commercial	66.5%	Currently max 10% pa *	-

b) "Alternate" put forward by Resource Management

Sector	Baseline % of Global TAC	Range of global TAC allowed before revert to baseline +	Maximum allowed +
Recreational	8%	6% - 10%	400 MT
Subsistence/IR	11%	8% - 14%	600 MT
Nearshore commercial	19.7%	16% - 24%	800 MT
Offshore commercial	61.3%	Currently max 10% pa *	-

* Subject to revision in the light of OMP trial results
+ Scaled roughly in relation to alternative baseline figures suggested by Resource Management

TABLE 2: Application of TAC change constraints by sector

Definitions	TAC_y^S = TAC to sector *s* in year *y* where *S* = 1 for recreational *S* = 2 for subsistence/IR *S* = 3 for nearshore commercial *S* = 4 for offshore commercial $TAC_y^G = \sum_{s=1}^{4} TAC_y^S$ = global TAC TAC_{y+1}^S, TAC_{y+1}^G = TACs for year y+1 *X* = maximum proportional change to global TAC^G *Y* = maximum proportional change to offshore commercial TAC^4
Step 1	OMP formulae yield $TAC_{y+1}^G(init)$
Step 2	If $TAC_{y+1}^G(init)$ is outside the range TAG_y^G (1±*X*), it is modified to the pertinent boundary of that range, to yield $TAC_{y+1}^G(init*)$
Step 3	$TAC_y^S / TAG_{y+1}^G(init*)$ is compared to the allowed range for each of sectors *S*=1, 2 and 3. If outside that range: $TAC_{y+1}^S(init)$ (Baseline % for sector *S*) * $TAG_{y+1}^G(init*)$ otherwise $TAC_{y+1}^S(init*) = TAC_y^S$.
Step 4	If $TAC_{y+1}^S(init*)$ > TAC^S *(maximum)* then TAC_{y+1}^S = TAC^S *(maximum)*, otherwise TAC_{y+1}^S = $TAC_{y+1}^S(init*)$ for *S*=1, 2, 3
Step 5	$TAC_{y+1}^4(init*)$ = TAC_y^4 * $TAC_{y+1}^G(init*)/TAC_y^G$
Step 6	$TAC_{y+1}^G = \sum_{S=1}^{4} TAC_{y+1}^S$

TABLE 3: "Current" and "Alternative" division of the 2010/11 TAC (in MT) by sector

TAC	"Current"	"Alternative"
TAC^G: global	2286.22	
TAC^S: *S*=1 recreational	107	182.90
S=2 subsistence/IR	200	251.48
S=3 nearshore commercial	451	451.00
S=4 offshore commercial	1528.22	1401.44

TABLE 4: Illustration of application of Table 2 approach for "current" sector split, assuming *X*=*Y*=10%. Figures in parentheses are percentages of TAC^G(init*) or otherwise changes from the previous year. Results are quoted to the nearest MT.

Season	TAC^G	TAC^S			
		S=1 Recreational	*S*=2 Subsistence/IR	*S*=3 Nearshore commercial	*S*=4 Offshore commercial
2010/11	2286	107	200	451	1528
2011/12 init	1700	107 (5.2%)	200 (9.7%)	451 (21.9%)	
init*	2057 (-10%)	107	200	451	1375
final	2133 (-6.7%)	107	200		1375 (-10%)
2012/13 init	1750	107 (5.6%)	200 (10.4%)	451 (23.5%)	
init*	1920 (-10%)	107	200	451	1238
final	1996 (-6.4%)	107	200	451	1238 (-10%)
2013/14 init	1830	107 (5.8%)	200 (10.9%)	451 (24.6%)	
init*	1830 (-8.3%)	107	200	361 (19.7%)	1135
final	1803 (-9.7%)	107	200	361 (-20%)	1135 (-8.3%)
2014/15 init	1760	107 (6.1%)	200 (11.4%)	361 (20.5%)	
init*	1760 (-2.4%)	88 (5%)	155 (8.8%)	361	1108
final	1712 (-5.0%)	88 (-17.8%)	155 (-22.5%)	361	1108 (-2.4%)

TABLE 5: As for Table 4, but here for the "alternative" sector split

a) Standard application

Season	TAC^G	TAC^S			
		S=1 Recreational	*S*=2 Subsistence/IR	*S*=3 Nearshore commercial	*S*=4 Offshore commercial
"2010/11"	2286	189	251	451	**1401** (1528)
2011/12 init	1700	189 (9.1%)	251 (12.2%)	451 (21.9%)	
init*	2057 (-10%)	189	251	451	1261
final	2152 (-5.9%)	189	251	451	1261 (-18.5%)
2012/13 init	1750	189 (9.8%)	251 (13.0%)	451 (23.3%)	
init*	1937 (-10%)	189	251	451	1135
final	2026 (-5.9%)	189	251	451	1135 (-10%)
2013/14 init	1830	189 (10.3%)	251 (13.7%)	451 (24.6%)	
init*	1830 (-9.7%)	146 (8%)	251	361 (19.7%)	1025
final	1783 (-8.8%)	146	251	361	1025 (-9.7%)
2014/15 init	1760	146 (8.3%)	251 (14.3%)	361 (20.5%)	
init*	1760 (-1.3%)	146	194 (11%)	361	1012
final	1713 (-3.9%)	146	194	361	1012 (-1.3%)

b) Modified application respecting TAC change constraint on 2010/11 TAC to offshore commercial.

Season	TAC^G	TAC^S			
		S=1 Recreational	*S*=2 Subsistence/IR	*S*=3 Nearshore commercial	*S*=4 Offshore commercial
"2010/11"	2286	189	251	451	**1528** (1401)
2011/12 init	1700	189 (9.1%)	251 (12.2%)	451 (21.9%)	
init*	2057 (-10%)	189	251	451	1375
final	2266 (-0.9%)	189	251	451	1375 (-10%)
2012/13 init	1750	189 (9.3%)	251 (12.3%)	451 (22.1%)	
init*	2039 (-10%)	189	251	451	1237
final	2128 (-6.1%)	189	251	451	1237 (-10%)
2013/14 init	1830	189 (9.9%)	251 (13.1%)	451 (23.6%)	
init*	1915 (-10%)	189	251	451	1113
final	2004 (-5.8%)	189	251	451	1113 (-10%)
2014/15 init	1760	189 (10.5%)	251 (13.9%)	451 (25.0%)	
init*	1804 (-10%)	144 (8%)	251	355 (19.7%)	1002
final	1752 (-12.6%)	144	251	355	1002 (-10%)