

Addendum to FISHERIES/2020/AUG/SWG-PEL/72

Update of the TAC estimates using consequence tables with one additional significant figure

The TAC calculations of FISHERIES/2020/AUG/SWG-PEL/72 are repeated with consequence table values that include one extra significant figure, as kindly provided by C. de Moor (*pers. comm.*). The motivation for this is that for the ranges of TAC options for which consequences have been evaluated, the values do not differ greatly; thus though interpolation using the “straightforward” Bayesian method of FISHERIES/2020/AUG/SWG-PEL/60 will still give results which are reasonably reliable numerically, extrapolations may well be subject to rather greater error. Additionally, a further regression option requested has been included here; hence results are reported for the same three regression options covered in FISHERIES/2020/AUG/SWG-PEL/73, namely:

- a) calibration based on all historical data, with *sig* based on 2005+ data only,
- b) calibration and *sig* based on 2005+ data only, and
- c) calibration based on all historical data, with *sig* based on 2010+ data only.

Table A1 gives the updated (total) TAC results, and Figure A.1 compares the TAC results across the three regression methods for the 20th percentile option.

Somewhat as expected, results hardly change when these reflect interpolated between 34.05 and 45.05 kt, but show greater stability given the extra input precision when extrapolation is required. Figure A1 shows that the results are not critically sensitive to the regression option considered.

Table A1: Update of Table 2 of FISHERIES/2020/AUG/SWG-PEL/72, but with an additional decimal place in the consequence matrices and the additional option (c) regression included. The Table lists the total sardine TACs for different consequence matrices for the three options. The values show the total TAC (in kt), i.e. are comparable to the original recommendation of 34.05. The consequence tables leading to these updated results assume a bycatch component of 10.4 kt. The first section (i) repeats the original results from Table 2 of FISHERIES/2020/AUG/SWG-PEL/72 for regression option (a) and (b) and further lists the results for regression option (c) for the original consequence matrices. Section (ii) of the Table lists updated results when additional precision is taken into account.

Note that the extra precision was not taken into account for the consequence values corresponding to a total TAC of 34.05 kt, which are used as a reference for the original TAC decision.

(i) original precision	(a) All data points, but <i>sig</i> for $y \geq 2005$			(b) Exclude $y < 2005$			(c) Regression (a) with <i>sig</i> for $y \geq 2010$		
Updated TAB	5%	20%	50%	5%	20%	50%	5%	20%	50%
Multiplicative delta in effSSB	50.1	61.0	58.5	48.4	55.9	54.9	48.4	55.9	54.7
Additive delta in effSSB	69.2	55.2	69.2	59.6	51.3	59.6	59.4	51.3	59.4
Additive delta in B	41.8	41.5	39.8	40.8	38.9	38.6	40.7	38.9	38.6
Relative Multiplicative delta	37.6	36.7	37.0	37.2	36.2	36.7	37.2	36.2	36.6

(ii) additional precision	(a) All data points, but <i>sig</i> for $y \geq 2005$			(b) Exclude $y < 2005$			(c) Regression (a) with <i>sig</i> for $y \geq 2010$		
Updated TAB	5%	20%	50%	5%	20%	50%	5%	20%	50%
Multiplicative delta in effSSB	53.8	56.6	55.9	51.1	53.4	52.9	51.0	53.3	52.8
Additive delta in effSSB	55.0	58.3	55.6	52.4	54.9	52.9	52.3	54.8	52.8
Additive delta in B	42.0	41.0	39.9	40.7	39.8	38.7	40.7	39.8	38.7
Relative Multiplicative delta	37.5	36.8	36.8	37.0	36.4	36.5	37.0	36.3	36.4

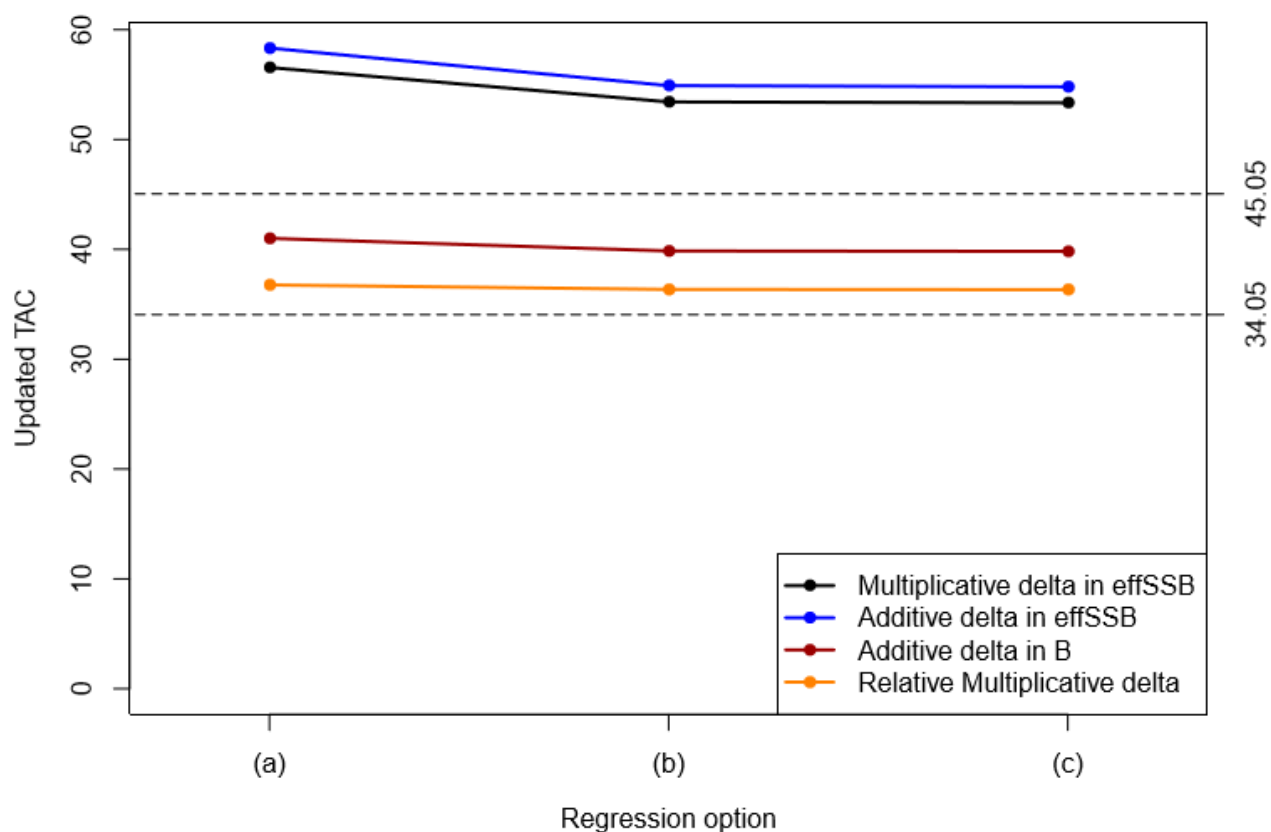


Figure A1: Comparison of the updated TAC (in kt) results from section (ii) of Table A1 (i.e. those results taking the additional precision of the consequences matrices values into account) across the three different regression methods, for each consequence matrix. The TACs are plotted here for the 20%iles results from Table A1. The two dashed lines correspond to the total TAC (for all fishery components) decided in May (34.05 kt), and the highest such total (45.05 kt) for while consequence measures were calculated.