

EFFECT OF MISSING SURVEYS ON THE PERFORMANCE OF THE ADOPTED NABT BFT MP

D.S. Butterworth and R.A. Rademeyer¹

SUMMARY

Simulation tests show minimal change in the performance of the NABT bluefin MP adopted if results from two surveys (selected at random) are missing each year.

RÉSUMÉ

Les tests des simulations indiquent un changement minimal dans la performance de la MP du thon rouge de l'Atlantique Nord adoptée si les résultats de deux prospections (sélectionnées aléatoirement) sont manquants chaque année.

RESUMEN

Las pruebas de simulación muestran un cambio mínimo en el desempeño del MP de atún rojo del Atlántico norte adoptado si faltan los resultados de dos estudios (seleccionados al azar) cada año.

KEYWORDS

Bluefin tuna, management procedure, missing surveys, performance

Introduction

This document reports on the effect of missing future surveys on the performance of the adopted MP. To simulate these circumstances, each year from 2023 two surveys (out of the 10 used by the MP) are randomly set as missing. As specified, the average index used in the MP is computed by ignoring these missing surveys, i.e., giving them a weight (w_i) of zero in the following equation:

$$J_y^{E/W} = \frac{\sum_i^n w_i \times I_y^{i*}}{\sum_i^n w_i} \quad (1)$$

Results

The stochastic Br30, PKG, LD*15%, LD*10%, AvC30 and VarC results for the MP with and without these missing surveys are given in **Table 1**.

SSB and TAC projections (medians) are shown in **Figure 1** for the original base case trials and for this sensitivity test with missing surveys.

Discussion

The results show minimal change in performance for the circumstance of missing surveys investigated.

¹ Marine Resource Assessment and Management Group (MARAM), Department of Mathematics and Applied Mathematics, University of Cape Town, Rondebosch 7701, South Africa

Table 1. Stochastic Br30, AvC30, and VarC values (weighted medians and 90%iles for the OM grid across all simulations) for all OMs in the grid for the adopted MP under the scenarios without (original base case) and with missing surveys. AvC30 values are in ‘000 mt.

	PKG	Br30	LD*15%	LD*10%	AvC30	VarC
EAST						
No missing surveys	0.60	1.17 (0.32; 2.20)	0.41	0.33	41.28 (12.38; 72.23)	19.23 (10.26; 30.30)
Missing surveys	0.59	1.17 (0.33; 2.22)	0.40	0.33	41.42 (12.55; 72.02)	19.26 (10.85; 30.32)
WEST						
No missing surveys	0.60	1.25 (0.43; 2.37)	0.40	0.27	2.46 (0.86; 3.60)	11.07 (4.89; 32.07)
Missing surveys	0.59	1.25 (0.42; 2.38)	0.39	0.27	2.44 (0.90; 3.64)	11.66 (6.15; 26.43)

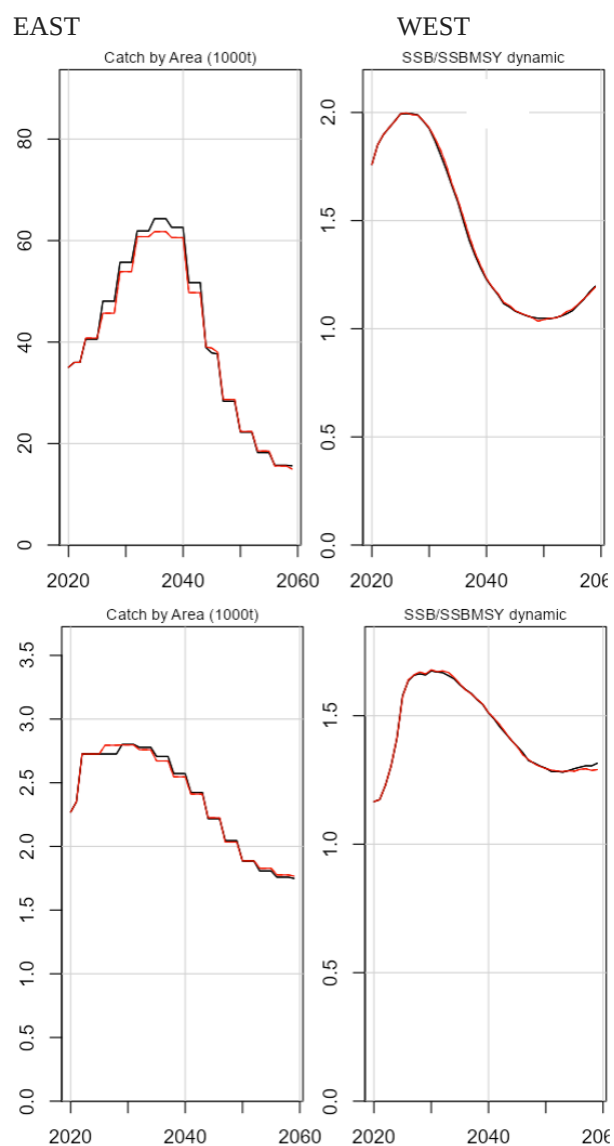


Figure 1. Median catch (by area) and SSB (by stock) projections averaged over all OMs in the grid and the replicate simulations for the adopted MP under no missing future surveys (original base case in black) and with missing future surveys (in red).