# PRELIMINARY RESULTS OF TESTING ON A CANDIDATE MANAGEMENT PROCEDURE FOR SOUTHERN BLUEFIN TUNA

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## Abstract

This report describes the initial trials conducted by Korean scientists for the second stage of MP development. The 18 revised operating models (reference cases) were explored to evaluate their performance under a tentative management procedure. A constant catch level of 16,000mt was considered as one of the management procedures, reflecting feedback from Korean industry. The procedure was used as an example for testing the code, and will be subject to changes based on future consultation with industry.

## Introduction

As decided in the second Management Procedure Workshop held in April 2003, CCSBT member scientists were supposed to explore operating models and management procedures during the inter-sessional period and were to present the results of their progress to the SAG meeting in August. In this report, we provide a short summary of the results tried with the 18 revised operating models for the second stage of MP development.

## Methods

The updated version of the operating models and management procedure evaluation code, sbtproj_v104, has been provided to member scientists for the second stage of the trial. A total of 18 operating model scenarios in the reference case were used to test under the uncertainty level 3, which incorporates processing and observation errors. In addition to the previous 8 performance statistics used for the first stage of testing, 3 more were used to evaluate the performance of the 18 operating model scenarios.

## Results and discussion

As shown in Fig. 1, if the fisheries maintain current TAC level at 16,000mt, the biomass trajectories indicated that the low productive models, assuming h=0.3 such as H30M05, H30M10, and H30M15, appeared to decrease, while the high productive models, assuming h=0.8 including H80M10 and H80M15, increased. In the catch trajectories, all scenarios except for H30M15, H80M05, and H30M10 were sustainable under the current catch level. However, in the case of H30M15, catch decreased rapidly after 10 years because of biomass collapse.

A total of 11 performance statistics were used to evaluate each operating model scenario under our proposed management procedure (Fig. 2). The probability of biomass recovery to the 1980 level by 2020 was plausible for only one high productive model, H80M15. It seemed that in nearly half of the models the current biomass level could be maintained for the 20 years, although none of the scenarios could maintain the current biomass for the first 5 years.

We presumed the current TAC of 16,000mt as one of the potential candidates of Korean MP, but it should be noted that not much feedback was collected from Korean fishermen. Although Korean SBT fishermen wish to maintain the current TAC level in the future, they are open to future changes in TACs according to biomass trends. Therefore, this candidate MP was used only for the testing performance measures of each OM scenario and various management procedures will be tested before the finalization of a CCSBT management procedure for southern bluefin tuna.
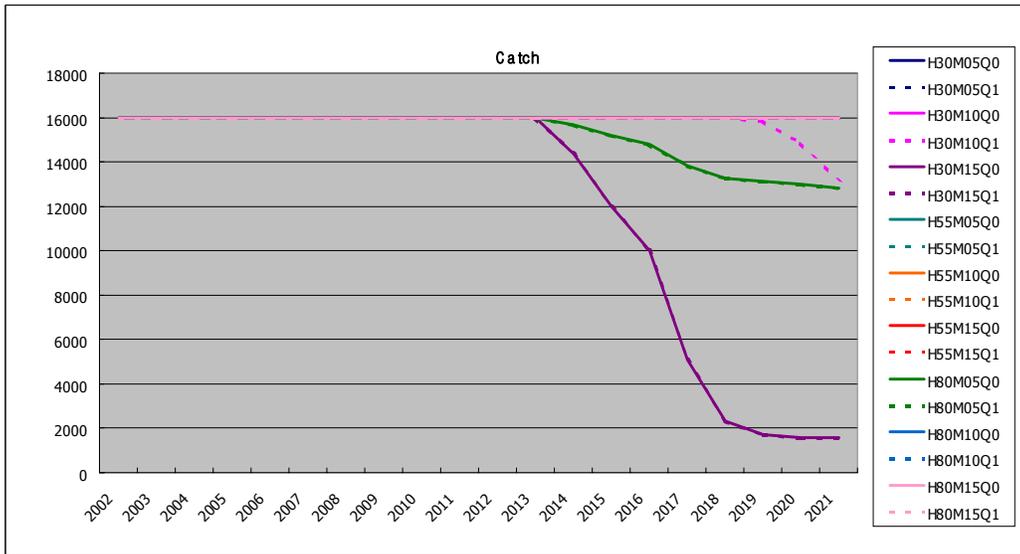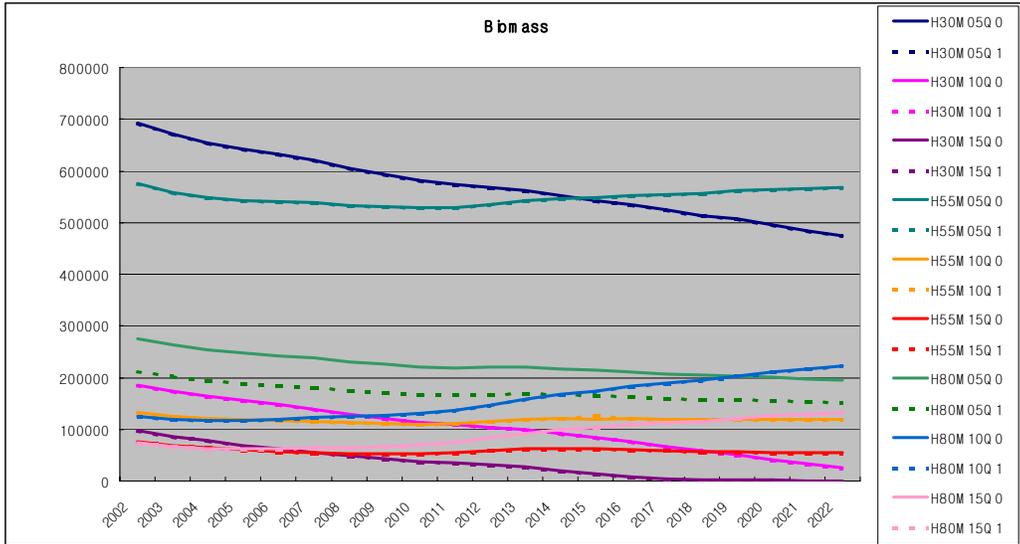
Fig. 1. Catch and biomass trajectories under 9 OM scenarios.
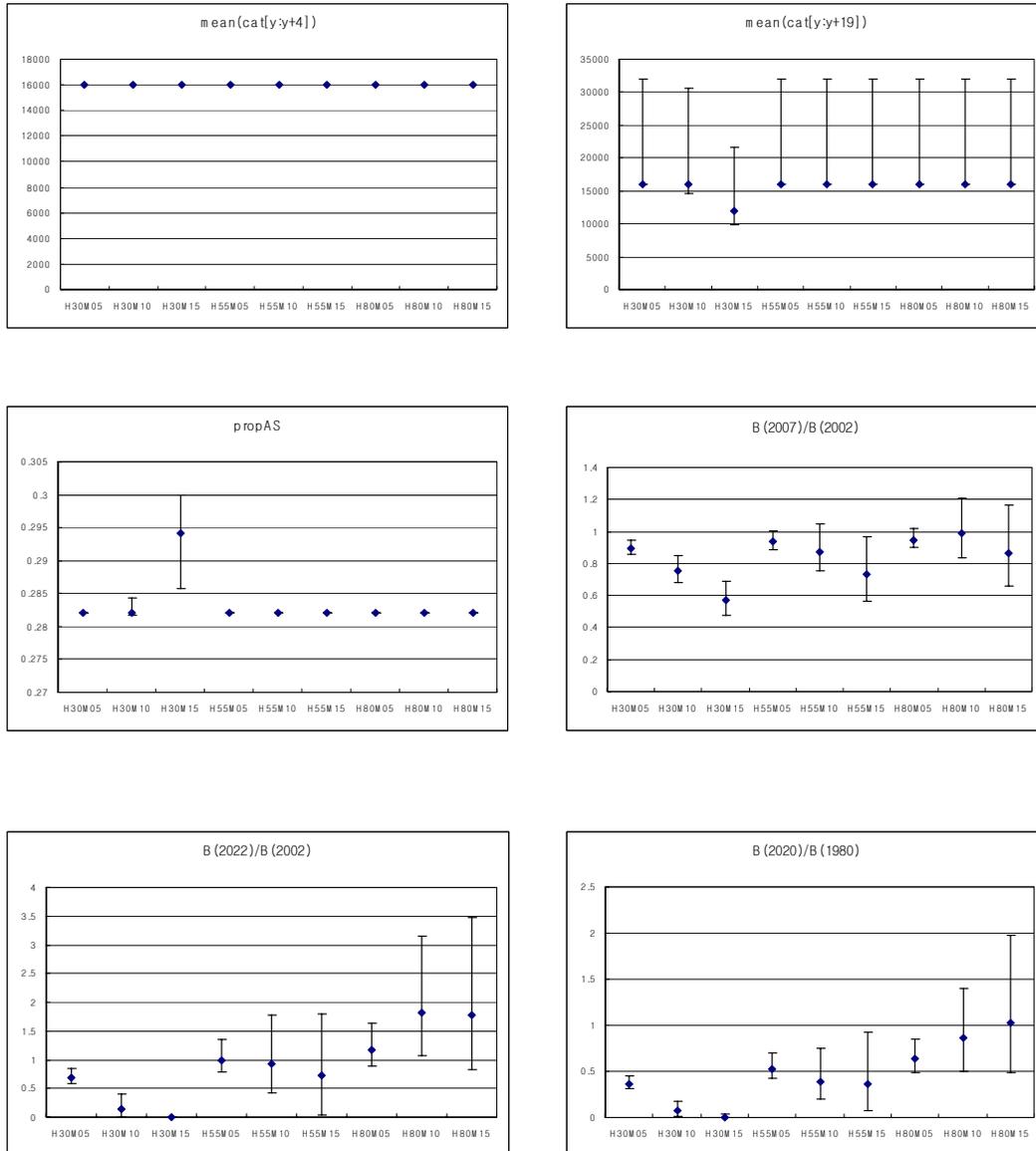
Constant catch of 16,000



Fig. 2. Performance statistics for each OM scenario for the constant catch of 16,000mt.
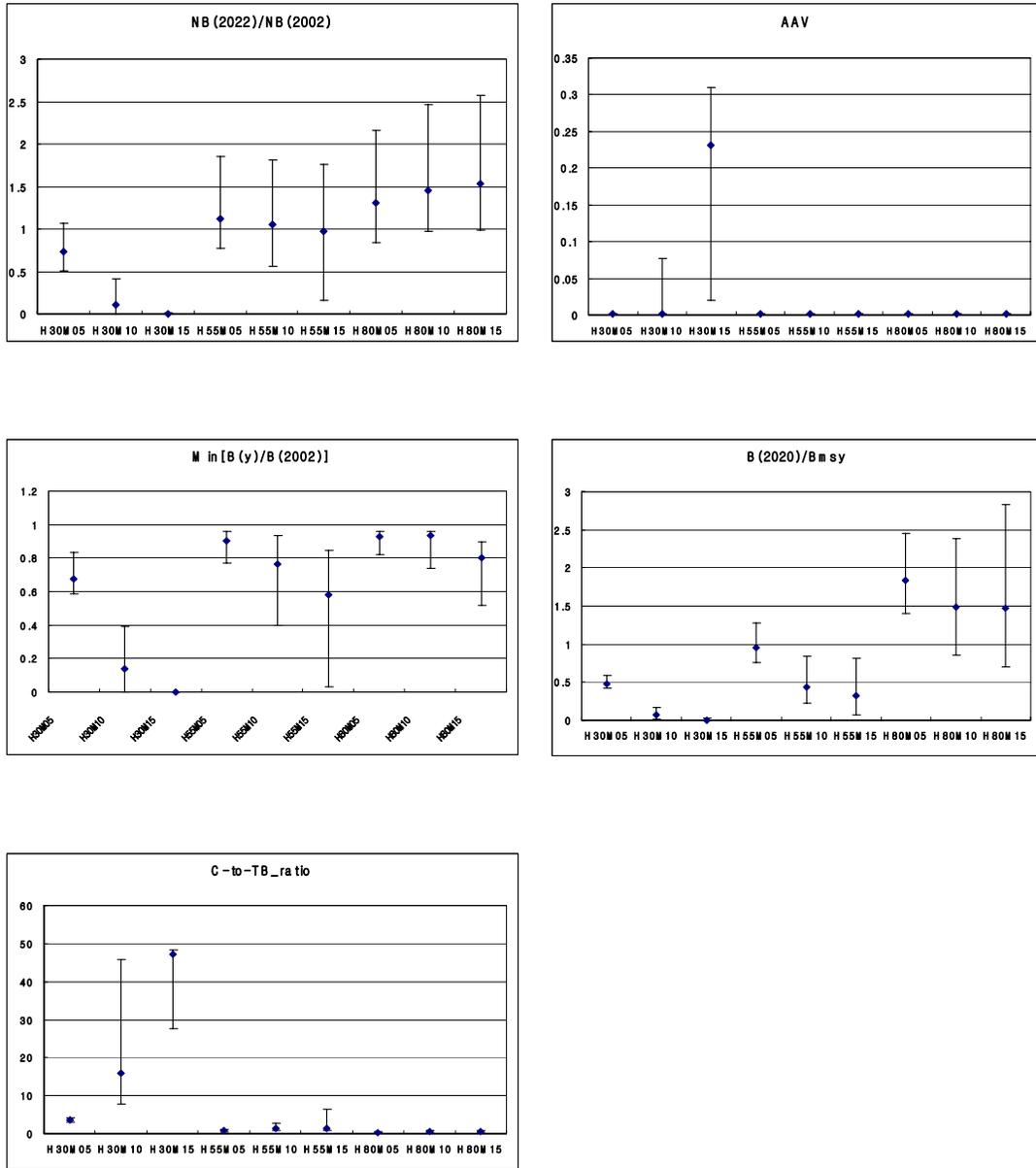
Fig. 2. Continued.