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Standalone MP software and data inputs in 2013

Ann Preece and Rich Hillary
CCSBT-OMMP/1307/4

Wealth from Oceans Flagship

CSIRO Marine and Atmospheric Research

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Important disclaimer

Acknowledgments

Abstract

As part of the SBT ESC work plan, a standalone version of the MP software was provided in January 2013 by CSIRO, using version control software on the CCSBT server. This paper documents the software and data inputs in 2013.

Introduction

As part of the SBT ESC work plan (Anon, 2012), a standalone version of the Management Procedure (MP) software was provided in January 2013 by CSIRO, using version control software (SVN) on the CCSBT server.

Software

The MP code has been modified slightly to reduce the input data to a simplified set that contains only values that need to be updated in 2013 or in a TAC setting year. All the input parameters that remain unchanged from year to year are now hard-wired into the code. This should help to avoid data entry mistakes. The output TAC is provided in a file – which also outputs a small amount of the input data as a way to check that the correct data has been used.

Data inputs

The package of files includes a "Readme.txt" file which explains the data changes that are required to run the MP in 2013.

The data required are:

1) The last year for which the TAC has already been set – e.g. for TAC calculations run in 2013 this year = 2014.

2) The amount of TAC in that last year - e.g. in 2013 the TAC for 2014 is already set at 12 499t.

3) The updated q-ratio value. See discussion below.

   It should be noted that it is very important that everyone uses the same q-ratio value – because different values will result in different TAC. A single value was provided on the 26th June 2013 for the 2013 calculations, and is: 849.843.

4) The updated Aerial Survey data for 2013 – the whole time series is updated with the new data.

5) The updated CPUE time series. See notes below.

Q-ratio value

When the Aerial Survey series is updated each year, all values in all years are updated and – unlike the CPUE series – the over-all scale of the survey can change quite substantially as a result of the additional years' data and the standardisation. This means that the q-ratio value in the MP needs to be re-calculated.

The new q-ratio value is calculated by a bootstrap estimation of the multiplier to apply to the "old" q-ratio value. Code to do this has been provided by CSIRO and is available on the CCSBT SVN (qratio.tpl, qratio.dat). Given this method uses a bootstrap approach to provide a robust estimate the multiplier, different computers will come up with slightly different estimates for the new value for the q-ratio. This would lead to slightly different TACs when running the MP. Hence, we recommend not incorporating this into the MP code. Instead, we suggest that it would be better to provide a single value for q-ratio when the Aerial

Survey data are provided. The old q-ratio value used in 2011 was 838.2094. The new q-ratio value provided 26th June 2013 is 849.843.

The q-ratio input file available on the CCSBT SVN server, contains the old q-ratio value (the value that was used in the 2011 TAC calculations) and the updated 2013 Aerial Survey time series and the original Aerial Survey time series used in 2011 (when the old q-ratio value was calculated). Only data in the years that overlap in the two Aerial survey series are used, therefore in 2013 Aerial Survey time series, the last 2 data points have not been used. If the next TAC calculations occur in 2016, these files will be updated with the 2013 q-ratio value, 2013 Aerial Survey time series and 2016 Aerial Survey time series.

CPUE time series

As a reminder, the CPUE time series used in the MP calculations is the mean of the Base w 0.5 and Base w 0.8 time series (as described in Anon 2012), multiplied by the case1 over-catch scenario for LL catch and CPUE effects (as described in Anon 2009). These multipliers affect the data in the middle of the time series. They don't have any effect on the values at the start or end of the time series and are therefore easily overlooked, so it's always important to check that these multipliers have been applied.

The version control files

The package of files provided in January 2013 includes:

1) ReadMe_BaliProc_jan2013.txt – information file on how to run the MP.

2) BaliProc.tpl – the MP stand alone software code.

3) BaliProc.dat – the input data file for calculating the TAC.

4) RunBaliProcedure.bat – a batch file for running the code that may be useful for some.

5) Qratio.tpl – for calculating a "single" q-ratio value that should only be calculated once and the same value should be used by all members.

6) The qratio.dat input file required.

Output

The BaliProc software produces an output file called: BaliProc_TAC.dat

The output file contains: the TAC and the q-ratio value used as well as the last 5 years of data from the Aerial Survey and CPUE time series that were used in the calculations.

```
SBT Bali Procedure.
The TAC calculated for the 3 years
commencing 2015 is XXXX.

Data input check:
Last 5 years of Aerial survey data used:
 102.102 200.394 352.944 101.216 255.694
Last 5 years of CPUE data used:
 0.5269 0.6387 0.8573 0.7421 0.7676
qratio value used: 849.843
```

References

Anon. 2012. Report of the Seventeenth Meeting of the Scientific Committee, Commission for the Conservation of Southern Bluefin Tuna, 27-31 August 2012, Tokyo, Japan.

Anon. 2009. Report of the Operating Model and Management Procedure Technical Meeting, 13-17July 2009, Seattle, USA.

CONTACT US

t 1300 363 400
   +61 3 9545 2176
e enquiries@csiro.au
w www.csiro.au

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Marine and Atmospheric Research
Ann Preece
t +61 3 6232 5336
e ann.preece@csiro.au
w www.csiro.au/wfo