**Atlantic Bluefin Tuna Management Strategy Evaluation Framework**

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**Purpose of this release**

This version of the ABT-MSE framework is the first to include all 36 reference operating models and the 4 primary operating models. This package is intended to explore preliminary MP testing and receive early feedback on necessary packaged features and upgrades.

**Installation of the R package**

1. Download and install [R for Windows](https://cran.r-project.org/bin/windows/)
2. Download and install [RStudio](https://www.rstudio.com/products/rstudio/download/)
3. Download the [ABT-MSE file structure](https://drive.google.com/open?id=0B0TXcs-MLRl3c0w4VF9QbkJYOU0) (all data, models, code etc)
4. Install ABTMSE package dependencies by opening R studio and (using the right address of the ABT-MSE file structure on your machine) by entering the following code at the console:

source(“C:/ABT-MSE/Depends.r”)

1. Install the ABTMSE R package from RStudio by enter the following code at the console:

install.packages(“C:/ABT-MSE/ABTMSE\_2.3.0.tar.gz”)

1. Check the package has installed correctly by loading the library and checking the help file:

library(ABTMSE)

?ABTMSE

**Quick Start R code (type this in, don’t copy-paste from word):**

library(ABTMSE)

loadABT()

sfInit(parallel=T,cpus=detectCores())

myMSE<-new(‘MSE’,OM=OM\_1,Obs=Good\_Obs,MPs=list(c(“MeanC”,”MeanC”)),interval=3,IE=”Overage\_10”)

plot(myMSE)

getperf(myMSE)

**MP testing:** See section 7.4 of the user guide and 7.4.5 in particular.

**Help**

Email: [t.carruthers@oceans.ubc.ca](mailto:t.carruthers@oceans.ubc.ca)

R-help: ?OM\_1 ?getperf

User guide: ABT-MSE User Guide v2\_3.html

**Known Issues**

**Memory constraints:** you may require a computer with 16 Gb of RAM to calculate the necessary F matrices. If there are problems contact [t.carruthers@oceans.ubc.ca](mailto:t.carruthers@oceans.ubc.ca) and I will implement an F calculation by year to sidestep this problem.

**Limited simulation numbers:** for memory reasons and speed of MP testing each OM (36 reference OMs and 4 robustness OMs) have only 48 simulations each. This can be extended for a final analysis but current 48 is typically enough to reliably rank MPs (although not determine absolute performance precisely).