New England groundfish MSE: Operating models (OMs)

The operating model (OM) represents the 'true' underlying dynamics of the fishery resource. The OM has enough complexity to simulate variability in population dynamics.

Documentation on model parameter files can be found in modelParameterFiles.md in the documentation folder.

OM Parameters can be found in the modelParameters folder:

1. set_om_parameters_global.R

Line 20- stockExclude: list stocks that you are *not* simulating

Line 25- histAssess: TRUE= use historical assessment data for historical portion of OM, FALSE= do not use historical assessment data for historical portion of OM

> If histAssess is TRUE, then historical trajectories are reconstructed by incorporating recruitment and fishing mortality time series from the most recent stock assessments and calculating SSB and catch as emergent properties. The purpose of this is to emulate reality, as it was perceived by groundfish stock assessments.

Line 30- nburn: the number of burn-in years before the historical period

Line 35- useTemp: TRUE= incorporate temperature in simulations

Lines 49 and 50- ref0: first year of reference period for temperature downscaling, ref1: last year of reference period for temperature downscaling

Lines 53 and 54- baseTempYear: reference year for anomaly calculation, anomFun: function for anomaly calculation

2. Scripts within stockParameters folder (Georges Bank cod, Gulf of Maine cod, Georges Bank haddock, pollock, and Georges Bank yellowtail flounder)

burnFmsyScalar: scalar to Fmsy for burn in F

burnFsd: SD for burn in F

fage: first age

page: plus age

laa_par: length at age parameters

laa_typ: type of length at age function

waa_par: weight at age parameters

waa_typ: type of weight at age function

> If weight at age changes overtime for haddock (type is 'dynamic') then the haddockdata.csv is used from the data/data_raw folder. This csv contains a matrix of weight at ages overtime.

mat_par: maturity parameters

mat_typ: type of maturity function

M: natural mortality

M_typ: type of natural mortality (constant or ramped)

init_M: initial natural mortality

initN_par: initial numbers at age parameters

initN_type: type of function for initial numbers at age

Rpar: recruitment parameters

R_typ: recruitment type (hockey-stick, Ricker, Beverton-Holt)