|  |  |  |  |
| --- | --- | --- | --- |
| **SlotName** | **Type** | **Example** | **Description** |
| **Stock subclass** | | | |
| Name | character | "Tile fish" | Name of the Stock object |
| maxage | integer | 23 | Maximum age of individuals [positive integer] |
| R0 | numeric | 1000 | The magnitude of unfished recruitment (a scalar and usually not important in MSE) |
| M | numeric vector | c(0.12, 18) | Natural morality rate (bounds on) [positive real number] |
| Msd | numeric vector | c(0.02, 0.05) | Interannual variability in natural mortality rate (log-normal standard deviation)[positive real number] |
| Mgrad | numeric vector | c(-0.5, 0.5) | Mean slope in natural mortality rate (% per year) [real number] |
| h | numeric vector | c(0.3, 0.8) | Recruitment compensation (steepness) [real number bounded between 0.2 and 1) |
| SRrel | integer | 1 | Type of stock-recruitment relationship: (1) Beverton Holt (2) Ricker |
| Linf | numeric vector | c(187, 199) | Maximum length of individuals (von Bertalanffy *L∞*) [positive real number] |
| K | numeric vector | c(0.08, 0.14) | Maximum growth rate of individuals (von Bertalanffy κ) [positive real number] |
| t0 | numeric vector | c(-0.5, -0.1) | Theoretical length at age zero (von Bertalanffy *t0*) [positive real number] |
| Ksd | numeric vector | c(0.05, 0.15) | Interannual variability in K parameter (% per year) [positive real number] |
| Kgrad | numeric vector | c(-0.5, 0.5) | Mean slope in K parameter (% per year) [real number] |
| Linfsd | numeric vector | c(0.05, 0.15) | Interannual variability in Linf parameter (% per year) [positive real number] |
| Linfgrad | numeric vector | c(-0.5, 0.5) | Mean slope in Linf parameter (% per year) [real number] |
| recgrad | numeric vector | c(-0.5, 0.5) | Mean slope in recruitment deviations (% per year) [real number] |
| AC | numeric vector | c(0.5, 0.95) | Autocorrelation in recruitment deviations [real number] |
| a | numeric | 1.04E-06 | a parameter of the length-weight relationship *W=aLb* [positive real number] |
| b | numeric | 3.051 | b parameter of the length-weight relationship *W=aLb* [positive real number] |
| L50 | numeric vector | c(145,155) | Length at which individuals are 50% mature |
| L50\_95 | numeric vector | c(5,10) | Length increment from 50% to 95% maturity |
| D | numeric vector | c(0.05, 0.6) | Current level of stock depletion (biomass relative to unfished) [positive real number] |
| Perr | numeric vector | c(0.2, 0.4) | Process error, the standard deviation of log normal recruitment deviations [positive real number] |
| Size\_area\_1 | numeric vector | c(0.1,0.1) | Relative size of area 1 [fraction] |
| Frac\_area\_1 | numeric vector | c(0.05,0.2) | Fraction of the unfished biomass ('habitat') in area 1 [fraction] |
| Prob\_staying | numeric vector | c(0.9, 0.99) | Probability that individuals in area 1 stay in area 1 between years [fraction] |
| Source | character | "www.url.org" | Primary source of the inputs listed above |
| **Fleet subclass** | | | |
| Name | character | "Mostly seining" | Name of the Fleet object |
| Nyears | Integer | 50 | Number of years of historical exploitation (number of historical simulated years) |
| Spat\_targ | numeric vector | c(1, 1.5) | Fishing in relation to vulnerable biomass (proportional to *vulnerablebiomassSpat\_targ*) [positive real number] |
| LFS | numeric vector | c(0.75,1.1) | Length at full selectivity (expressed as a fraction of length at 50% maturity) |
| L5 | numeric vector | c(1.5, 2) | Length at 5% selectivity (expressed as a fraction of length at 50% maturity) |
| Vmaxlen | numeric vector | c(0.5, 1) | The selectivity of the longest length class (controls extent of dome-shaped double normal selectivity) [fraction] |
| Esd | numeric vector | c(0.1, 0.2) | Interannual variability in historical fishing mortality rate (log normal standard deviation) [positive real number] |
| Fgrad | numeric vector | c(-5, 5) | Final historical slope (last five years) in historical fishing mortality rate (% per year) [real number] |
| Qinc | numeric vector | c(-2, 2) | Mean percentage change in fishing efficiency ('catchability', forward projection and input controls) [real number] |
| Qcv | numeric vector | c(0.1, 0.2) | Interannual variability in fishing efficiency ('catchability', forward projection and input controls) [positive real number] |
| LR5 | numeric vector | c(NA,NA) | the smallest length at 5% retention |
| LFR | numeric vector | c(NA,NA) | the smallest length at full selection |
| Rmaxlen | numeric vector | c(NA,NA) | the retention of the largest size class (defined as expected length at maximum age Stock@maxage) |
| DR | numeric vector | c(NA,NA) | general discard rate (e.g., 0.1 = 10% discard for each age). |
| **Observation subclass** | | | |
| Name | Character | “Generic\_Obs" | Name of the observation object |
| Cobs | numeric vector | c(0.1, 0.3) | Log-normal catch observation error expressed as a coefficient of variation. Uniform distribution lower and upper bounds. Non-negative real numbers |
| Cbiascv | numeric | 0.1 | Log-normal coefficient of variation controlling the sampling of bias in catch observations for each simulation. Uniform distribution lower and upper bounds. Non-negative real numbers |
| CAA\_nsamp | integer vector | c(100, 200) | Number of catch-at-age observation per time step. Uniform distribution lower and upper bounds. Positive real numbers |
| CAA\_ESS | integer vector | c(25, 50) | Effective sample size (independent age draws) of the multinomial catch-at-age observation error model. Uniform distribution lower and upper bounds. Positive integers |
| CAL\_nsamp | integer vector | c(100, 200) | Number of catch-at-length observation per time step. Uniform distribution lower and upper bounds. Positive integers |
| CAL\_ESS | integer vector | c(25, 50) | Effective sample size (independent length draws) of the multinomial catch-at-length observation error model. Uniform distribution lower and upper bounds. Positive integers |
| Iobs | numeric vector | c(0.1, 0.4) | Observation error in the relative abundance indices expressed as a coefficient of variation. Uniform distribution lower and upper bounds. Positive real numbers |
| Ibiascv | Numeric | 0.2 | Log-normal coefficient of variation controlling error in observations of relative abundance index. Uniform distribution lower and upper bounds. Positive real numbers |
| Btobs | numeric vector | c(0.2, 5) | Log-normal coefficient of variation controlling error in observations of current stock biomass among years. Uniform distribution lower and upper bounds. Positive real numbers |
| Btbiascv | numeric vector | c(0.333, 3) | Uniform-log bounds for sampling persistent bias in current stock biomass. Uniform-log distribution lower and upper bounds. Positive real numbers |
| Beta | numeric vector | c(0.333, 3) | A parameter controlling hyperstability/hyperdepletion where values below 1 lead to hyperstability (an index that decreases slower than true abundance) and values above 1 lead to hyperdepletion (an index that decreases more rapidly than true abundance). Uniform distribution lower and upper bounds. Positive real numbers |
| LenMbiascv | numeric | 0.1 | Log-normal coefficient of variation for sampling persistent bias in length at 50 percent maturity. Uniform distribution lower and upper bounds. Positive real numbers |
| Mbiascv | numeric | 0.2 | Log-normal coefficient of variation for sampling persistent bias in observed natural mortality rate. Uniform distribution lower and upper bounds. Positive real numbers |
| Kbiascv | numeric | 0.1 | Log-normal coefficient of variation for sampling persistent bias in observed growth parameter K. Uniform distribution lower and upper bounds. Positive real numbers |
| t0biascv | numeric | 0.1 | Log-normal coefficient of variation for sampling persistent bias in observed t0. Uniform distribution lower and upper bounds. Positive real numbers |
| Linfbiascv | numeric | 0.05 | Log-normal coefficient of variation for sampling persistent bias in observed maximum length. Uniform distribution lower and upper bounds. Positive real numbers |
| LFCbiascv | numeric | 0.05 | Log-normal coefficient of variation for sampling persistent bias in observed length at first capture. Uniform distribution lower and upper bounds. Positive real numbers |
| LFSbiascv | numeric | 0.05 | Log-normal coefficient of variation for sampling persistent bias in length-at-full selection. Uniform distribution lower and upper bounds. Positive real numbers |
| FMSYbiascv | numeric | 0.2 | Log-normal coefficient of variation for sampling persistent bias in FMSY. Uniform distribution lower and upper bounds. Positive real numbers |
| FMSY\_Mbiascv | numeric | 0.2 | Log-normal coefficient of variation for sampling persistent bias in FMSY/M. Uniform distribution lower and upper bounds. Positive real numbers |
| BMSY\_B0biascv | numeric | 0.2 | Log-normal coefficient of variation for sampling persistent bias in BMSY relative to unfished. Uniform distribution lower and upper bounds. Positive real numbers |
| Irefbiascv | numeric | 0.2 | Log-normal coefficient of variation for sampling persistent bias in relative abundance index at BMSY. Uniform distribution lower and upper bounds. Positive real numbers |
| Crefbiascv | numeric | 0.2 | Log-normal coefficient of variation for sampling persistent bias in MSY. Uniform distribution lower and upper bounds. Positive real numbers |
| Brefbiascv | numeric | 0.5 | Log-normal coefficient of variation for sampling persistent bias in BMSY. Uniform distribution lower and upper bounds. Positive real numbers |
| Dbiascv | numeric | 0.5 | Log-normal coefficient of variation for sampling persistent bias in stock depletion. Uniform distribution lower and upper bounds. Positive real numbers |
| Dobs | numeric vector | c(0.5, 0.1) | Log-normal coefficient of variation controlling error in observations of stock depletion among years. Uniform distribution lower and upper bounds. Positive real numbers |
| Hcv | numeric | 0.2 | Log-normal coefficient of variation for sampling persistent bias in steepness. Uniform distribution lower and upper bounds. Positive real numbers |
| Recbiascv | numeric vector | c(0.1, 0.3) | Log-normal coefficient of variation for sampling persistent bias in recent recruitment strength. Uniform distribution lower and upper bounds. Positive real numbers |