CIGALA FU2627 CON CATCH, EFFORT AND INDEX\_SURVEY

capture.output(summary(res))

[1] "Convergence: 0 MSG: relative convergence (4)"

[2] "Objective function at optimum: 65.7859118"

[3] "Euler time step (years): 1/16 or 0.0625"

[4] "Nobs C: 45, Nobs I1: 32, Nobs E: 26"

[5] ""

[6] "Priors"

[7] " logn ~ dnorm[log(2), 2^2]"

[8] " logalpha ~ dnorm[log(1), 2^2]"

[9] " logbeta ~ dnorm[log(1), 2^2]"

[10] ""

[11] "Model parameter estimates w 95% CI "

[12] " estimate cilow ciupp log.est "

[13] " alpha 3.3674348 1.8491037 6.132494e+00 1.2141513 "

[14] " beta 1.3055615 0.7595757 2.244004e+00 0.2666332 "

[15] " r 0.0049124 0.0000000 6.441334e+05 -5.3159887 "

[16] " rc 0.0033813 0.0000000 5.256235e+05 -5.6894952 "

[17] " rold 0.0025778 0.0000000 5.090010e+05 -5.9608066 "

[18] " m 5.1840498 0.0000000 3.978159e+12 1.6455866 "

[19] " K 5366.6764013 0.4959395 5.807405e+07 8.5879641 "

[20] " q 0.0413404 0.0070679 2.418025e-01 -3.1859145 "

[21] " qf 0.0000345 0.0000059 2.028000e-04 -10.2733947 "

[22] " n 2.9056400 0.2001896 4.217373e+01 1.0666537 "

[23] " sdb 0.2336296 0.1331353 4.099800e-01 -1.4540183 "

[24] " sdf 0.1843868 0.1256547 2.705709e-01 -1.6907194 "

[25] " sdi 0.7867325 0.6043492 1.024156e+00 -0.2398670 "

[26] " sde 0.0622924 0.0244928 1.584283e-01 -2.7759157 "

[27] " sdc 0.2407283 0.1653890 3.503868e-01 -1.4240862 "

[28] " "

[29] "Deterministic reference points (Drp)"

[30] " estimate cilow ciupp log.est "

[31] " Bmsyd 3066.3062369 0.2189736 4.293776e+07 8.028229 "

[32] " Fmsyd 0.0016906 0.0000000 2.628118e+05 -6.382642 "

[33] " MSYd 5.1840498 0.0000000 3.978159e+12 1.645587 "

[34] "Stochastic reference points (Srp)"

[35] " estimate cilow ciupp log.est rel.diff.Drp "

[36] " Bmsys NaN NaN NaN NaN NaN "

[37] " Fmsys NaN NaN NaN NaN NaN "

[38] " MSYs NaN NaN NaN NaN NaN "

[39] ""

[40] "States w 95% CI (inp$msytype: s)"

[41] " estimate cilow ciupp log.est "

[42] " B\_2019.81 337.8717910 50.436771 2263.3754165 5.822667 "

[43] " F\_2019.81 0.0135501 0.002284 0.0803872 -4.301359 "

[44] " B\_2019.81/Bmsy NaN NaN NaN NaN "

[45] " F\_2019.81/Fmsy NaN NaN NaN NaN "

[46] ""

[47] "Predictions w 95% CI (inp$msytype: s)"

[48] " prediction cilow ciupp log.est "

[49] " B\_2020.00 336.7358400 49.6986145 2281.5731813 5.819299 "

[50] " F\_2020.00 0.0135564 0.0022716 0.0809014 -4.300895 "

[51] " B\_2020.00/Bmsy NaN NaN NaN NaN "

[52] " F\_2020.00/Fmsy NaN NaN NaN NaN "

[53] " Catch\_2020.00 4.4840408 2.3684437 8.4893817 1.500525 "

[54] " E(B\_inf) NaN NA NA NaN "

> #Summary of the parameter estimates and their 95% CIs.

> round(sumspict.parest(res),2)

estimate cilow ciupp log.est

alpha 3.37 1.85 6.130000e+00 1.21

beta 1.31 0.76 2.240000e+00 0.27

r 0.00 0.00 6.441334e+05 -5.32

rc 0.00 0.00 5.256236e+05 -5.69

rold 0.00 0.00 5.090010e+05 -5.96

m 5.18 0.00 3.978159e+12 1.65

K 5366.68 0.50 5.807405e+07 8.59

q 0.04 0.01 2.400000e-01 -3.19

qf 0.00 0.00 0.000000e+00 -10.27

n 2.91 0.20 4.217000e+01 1.07

sdb 0.23 0.13 4.100000e-01 -1.45

sdf 0.18 0.13 2.700000e-01 -1.69

sdi 0.79 0.60 1.020000e+00 -0.24

sde 0.06 0.02 1.600000e-01 -2.78

sdc 0.24 0.17 3.500000e-01 -1.42

> #Reference points

> sumspict.drefpoints(res)#deterministic reference points

estimate cilow ciupp log.est

Bmsyd 3.066306e+03 0.2189735 4.293776e+07 8.028229

Fmsyd 1.690650e-03 0.0000000 2.628118e+05 -6.382642

MSYd 5.184050e+00 0.0000000 3.978159e+12 1.645587

> sumspict.srefpoints(res)#stochastic reference points

estimate cilow ciupp log.est rel.diff.Drp

Bmsys NaN NaN NaN NaN NaN

Fmsys NaN NaN NaN NaN NaN

MSYs NaN NaN NaN NaN NaN

> #The basic plotting of the results is done using the generic function

> plot(res)

Warning message:

In max(Ff[fininds]) : no non-missing arguments to max; returning -Inf

> ###############################################################################################################################################

> #1. The assessment converged equals 0

> ##############################################################################################################################################

> res$opt$convergence

[1] 0

> ###############################################################################################################################################

> #2. All variance parameters of the model parameters are finite should be TRUE

> ###############################################################################################################################################

> all(is.finite(res$sd))

[1] TRUE

> ##########################################################################################

> #3. No violation of model assumptions based on one-step-ahead residuals (bias, auto-correlation, normality).

> ##########################################################################################

> res <- calc.osa.resid(res)

> #tiff(filename = "Model\_results/Plots/Diagnostics.tiff")

> plotspict.diagnostic(res)#check correlation and normality

> rep=retro(res, nretroyear=3)# by the 1 to 5 last observations, change with nretroyear

> plotspict.retro(rep)

Error in plot.window(...) : need finite 'ylim' values

In addition: Warning messages:

1: In min(x) : no non-missing arguments to min; returning Inf

2: In max(x) : no non-missing arguments to max; returning -Inf

> ##########################################################################################

> #5. Realistic production curve.

> #The shape of the production curve should not be too skewed.

> # BMSY/K should be between 0.1 and 0.9

> #Low values of BMSY/K allow for an infinite population growth rate K

> ##########################################################################################

> calc.bmsyk(res)

[1] 0.5713604

> ############################################################################################################

> #6. High assessment uncertainty can indicate a lack of contrast in the input data or violation of

> #the ecological model assumptions. Confidence intervals for B/BMSY and F/BSMY should not span more

> #than 1 order of magnitude

> ##########################################################################################

> calc.om(fit)## correr despues del punto 7

Error in calc.om(fit) : object 'fit' not found

> ############################################################################################################

> #7. Initial values do not influence the parameter estimates

> ############################################################################################################

> fit <- check.ini(res)

Checking sensitivity of fit to initial parameter values...

Trial 1 ... model fitted!

Trial 2 ... convergence not obtained!

Trial 3 ... convergence not obtained!

Trial 4 ... model fitted!

Trial 5 ... model fitted!

Trial 6 ... model fitted!

Trial 7 ... model fitted!

Trial 8 ... model fitted!

Trial 9 ... model fitted!

Trial 10 ... model fitted!

$propchng

logm logK logq logqf logn logsdb logsdf logsdi logsde logsdc

Trial 1 3.03 0.00 0.20 -1.39 -0.17 -0.62 -0.02 0.30 -1.10 1.04

Trial 2 2.51 -0.11 -0.07 -0.27 -0.01 -1.02 0.17 1.12 0.99 0.94

Trial 3 -1.67 -0.02 0.12 1.21 -0.08 1.30 -0.60 -0.69 0.55 0.22

Trial 4 -3.16 -0.04 -0.14 -0.18 0.04 0.18 -1.12 0.27 0.22 0.68

Trial 5 -1.99 0.17 -0.28 0.14 0.19 -0.89 1.15 -1.35 -0.02 -0.69

Trial 6 0.32 -0.05 -0.29 -1.38 0.17 -1.17 1.14 -0.70 -0.88 0.75

Trial 7 1.22 0.12 -0.11 0.28 0.23 -0.31 -0.01 0.74 1.38 -0.34

Trial 8 2.70 0.04 -0.24 0.60 0.23 -1.15 -1.06 -1.39 0.59 -1.18

Trial 9 -2.08 0.20 0.21 0.00 0.03 0.06 0.05 -1.22 -1.34 0.99

Trial 10 2.90 0.02 0.24 1.36 0.02 0.37 0.68 -1.15 0.47 0.17

$inimat

Distance logn logK logm logq logqf logsdb logsdf logsdi logsdc

Basevec 0.00 0.69 8.10 5.84 -1.52 -9.09 -1.61 -1.61 -1.61 -1.61

Trial 1 4.44 2.79 8.13 7.01 0.59 -7.56 -0.62 -1.58 -2.10 0.16

Trial 2 3.88 2.43 7.18 5.46 -1.11 -8.98 0.04 -1.89 -3.41 -3.21

Trial 3 3.64 -0.47 7.97 6.54 -3.37 -8.36 -3.70 -0.64 -0.49 -2.49

Trial 4 3.27 -1.50 7.75 5.02 -1.25 -9.44 -1.91 0.19 -2.04 -1.97

Trial 5 4.58 -0.69 9.45 4.19 -1.73 -10.79 -0.17 -3.47 0.57 -1.58

Trial 6 4.63 0.92 7.71 4.16 0.58 -10.62 0.27 -3.44 -0.49 -0.20

Trial 7 3.67 1.54 9.07 5.21 -1.95 -11.17 -1.11 -1.59 -2.80 -3.83

Trial 8 5.17 2.57 8.43 4.43 -2.43 -11.19 0.25 0.09 0.63 -2.56

Trial 9 4.16 -0.75 9.70 7.09 -1.52 -9.38 -1.71 -1.69 0.36 0.55

Trial 10 3.99 2.70 8.24 7.25 -3.59 -9.24 -2.21 -2.70 0.24 -2.36

logsde

Basevec -1.61

Trial 1 -3.28

Trial 2 -3.12

Trial 3 -1.96

Trial 4 -2.71

Trial 5 -0.49

Trial 6 -2.82

Trial 7 -1.06

Trial 8 0.30

Trial 9 -3.20

Trial 10 -1.88

$resmat

Distance m K q qf n sdb sdf sdi sde sdc

Basevec 0.00 5.18 5366.68 0.04 0 2.91 0.23 0.18 0.79 0.06 0.24

Trial 1 0.13 5.18 5366.81 0.04 0 2.91 0.23 0.18 0.79 0.06 0.24

Trial 2 0.00 NA NA NA NA NA NA NA NA NA NA

Trial 3 0.00 NA NA NA NA NA NA NA NA NA NA

Trial 4 0.00 5.18 5366.68 0.04 0 2.91 0.23 0.18 0.79 0.06 0.24

Trial 5 15961.85 0.00 21328.52 0.04 0 2.00 0.23 0.18 0.79 0.06 0.24

Trial 6 0.10 5.18 5366.58 0.04 0 2.91 0.23 0.18 0.79 0.06 0.24

Trial 7 0.43 5.18 5366.25 0.04 0 2.91 0.23 0.18 0.79 0.06 0.24

Trial 8 0.02 5.18 5366.66 0.04 0 2.91 0.23 0.18 0.79 0.06 0.24

Trial 9 15960.12 0.00 21326.79 0.04 0 2.00 0.23 0.18 0.79 0.06 0.24

Trial 10 0.15 5.18 5366.52 0.04 0 2.91 0.23 0.18 0.79 0.06 0.24

There were 18 warnings (use warnings() to see them)

> ############################################################################################################

> #6. High assessment uncertainty can indicate a lack of contrast in the input data or violation of

> #the ecological model assumptions. Confidence intervals for B/BMSY and F/BSMY should not span more

> #than 1 order of magnitude

> ##########################################################################################

> calc.om(res)## correr despues del punto 7

lower est upper CI range order magnitude

B/Bmsy NaN NaN NaN NaN NaN

F/Fmsy NaN NaN NaN NaN NaN

> #The estimates should be the same for all initial values

> res$ckeck.ini$resmat

NULL