Formato Archivo Control.ss

March, 15, 2023

Contents

1 Contexto

1.1 Identificamos los directorio de trabajo

```
dirname.base <- here("simple")
dirname.simple_base <- here("simple_base")
dirname.simple_mod <- here("simple_modificado")
```

1.2 Leer los archivos de Stock Synthesis con la función `SS_read()`

```
inputs <- r4ss::SS_read(dir = dirname.simple_mod)
```

1.3 Investigar el modelo

Cada uno de los archivos de entrada se lee en R como una lista.

Use `names()` para ver todos los componentes de la lista

1.4 Revisamos los elementos de la lista

```
names(inputs)
## [1] "dir"     "path"    "dat"     "ctl"     "start"   "fore"    "wtatage"
```

1.5 Revisamos los nombres de los componentes de la lista del archivo control

```
names(inputs$ctl)
##  [1] "warnings"                 "Comments"
##  [3] "nseas"                    "N_areas"
##  [5] "Nages"                    "Nsexes"
##  [7] "Npopbins"                 "Nfleets"
##  [9] "Do_AgeKey"                "fleetnames"
## [11] "sourcefile"               "type"
## [13] "ReadVersion"              "eof"
## [15] "EmpiricalWAA"             "N_GP"
## [17] "N_platoon"                "recr_dist_method"
## [19] "recr_global_area"        "recr_dist_read"
## [21] "recr_dist_inx"            "recr_dist_pattern"
## [23] "N_Block_Designs"          "blocks_per_pattern"
## [25] "Block_Design"             "time_vary_adjust_method"
## [27] "time_vary_auto_generation" "natM_type"
## [29] "GrowthModel"              "Growth_Age_for_L1"
## [31] "Growth_Age_for_L2"        "Exp_Decay"
## [33] "Growth_Placeholder"       "N_natMparms"
## [35] "SD_add_to_LAA"            "CV_Growth_Pattern"
## [37] "maturity_option"          "First_Mature_Age"
## [39] "fecundity_option"         "hermaphroditism_option"
## [41] "parameter_offset_approach" "MG_parms"
## [43] "MGparm_seas_effects"      "SR_function"
## [45] "Use_steep_init_equi"      "Sigma_R_FofCurvature"
## [47] "SR_parms"                 "do_recdev"
## [49] "MainRdevYrFirst"          "MainRdevYrLast"
## [51] "recdev_phase"             "recdev_adv"
## [53] "recdev_early_start"       "recdev_early_phase"
```

```
## [55] "Fcast_recr_phase"        "lambda4Fcast_recr_like"
## [57] "last_early_yr_nobias_adj" "first_yr_fullbias_adj"
## [59] "last_yr_fullbias_adj"     "first_recent_yr_nobias_adj"
## [61] "max_bias_adj"             "period_of_cycles_in_recr"
## [63] "min_rec_dev"              "max_rec_dev"
## [65] "N_Read_recdevs"           "F_ballpark"
## [67] "F_ballpark_year"          "F_Method"
## [69] "maxF"                     "F_iter"
## [71] "Q_options"                "Q_parms"
## [73] "size_selex_types"         "age_selex_types"
## [75] "size_selex_parms"         "age_selex_parms"
## [77] "Use_2D_AR1_selectivity"   "TG_custom"
## [79] "DoVar_adjust"             "maxlambdaphase"
## [81] "sd_offset"                "lambdas"
## [83] "N_lambdas"                "more_stddev_reporting"
## [85] "stddev_reporting_specs"   "stddev_reporting_selex"
## [87] "stddev_reporting_growth"  "stddev_reporting_N_at_A"
```

1.6 Especificaciones iniciales

```
#inputs$ctl[3]
inputs$ctl$nseas
## [1] 1

#inputs$ctl[4]
inputs$ctl$N_areas
## [1] 1

#inputs$ctl[5]
inputs$ctl$Nages
## [1] 40

#inputs$ctl[6]
inputs$ctl$Nsexes
## [1] 2

#inputs$ctl[7]
inputs$ctl$Npopbins
## [1] 43

#inputs$ctl[8]
inputs$ctl$Nfleets
## [1] 3

#inputs$ctl[9]
inputs$ctl$Do_AgeKey
## [1] 0
```

1.7 Datos de los archivos

```
#inputs$ctl[10]
inputs$ctl$fleetnames
## [1] "FISHERY" "SURVEY1" "SURVEY2"

#inputs$ctl[11]
inputs$ctl$sourcefile
## [1] "/Users/mariajosezunigabasualto/Modelos_SS3/SS3_GSA/simple_modificado/control.ss"

#inputs$ctl[12]
inputs$ctl$type
## [1] "Stock_Synthesis_control_file"

#inputs$ctl[13]
inputs$ctl$ReadVersion
## [1] "3.30"

#inputs$ctl[14]
inputs$ctl$eof
## [1] TRUE
```

1.8 especificaciones del crecimiento para REVISAR!!

```
#inputs$ctl[15]
inputs$ctl$EmpiricalWAA
## [1] 0

#inputs$ctl[16]
inputs$ctl$N_GP
## [1] 1

#inputs$ctl[17]
inputs$ctl$N_platoon
## [1] 1
```

1.9 Distribución del reclutamiento

```
#inputs$ctl[18]
inputs$ctl$recr_dist_method
## [1] 2

#inputs$ctl[19]
inputs$ctl$recr_global_area
## [1] 1

#inputs$ctl[20]
inputs$ctl$recr_dist_read
## [1] 1

#inputs$ctl[21]
inputs$ctl$recr_dist_inx
## [1] 0

#inputs$ctl[22]
inputs$ctl$recr_dist_pattern
##                      GPattern month area age
## recr_dist_pattern1         1     1    1   0
```

1.10 bloques

```
#inputs$ctl[23]
inputs$ctl$N_Block_Designs
## [1] 1

#inputs$ctl[24]
inputs$ctl$blocks_per_pattern
## blocks_per_pattern_1
##                    1

#inputs$ctl[25]
inputs$ctl$Block_Design
## [[1]]
## [1] 1970 1970
```

1.11 tiempo variable

```
#inputs$ctl[26]
inputs$ctl$time_vary_adjust_method
## [1] 1

#inputs$ctl[27]
inputs$ctl$time_vary_auto_generation
## time_vary_auto_generation_1 time_vary_auto_generation_2
##                           0                           0
## time_vary_auto_generation_3 time_vary_auto_generation_4
##                           0                           0
## time_vary_auto_generation_5
##                           0
```

```
#inputs$ctl[28]
inputs$ctl$natM_type
## [1] 0

#inputs$ctl[29]
inputs$ctl$GrowthModel
## [1] 1

#inputs$ctl[30]
inputs$ctl$Growth_Age_for_L1
## [1] 0

#inputs$ctl[31]
inputs$ctl$Growth_Age_for_L2
## [1] 25

#inputs$ctl[32]
inputs$ctl$Exp_Decay
## [1] -999

#inputs$ctl[33]
inputs$ctl$Growth_Placeholder
## [1] 0

#inputs$ctl[34]
inputs$ctl$N_natMparms
## [1] 1

#inputs$ctl[35]
inputs$ctl$SD_add_to_LAA
## [1] 0

#inputs$ctl[36]
inputs$ctl$CV_Growth_Pattern
## [1] 0

#inputs$ctl[37]
inputs$ctl$maturity_option
## [1] 1
```

```r
#inputs$ctl[38]
inputs$ctl$First_Mature_Age
## [1] 1

#inputs$ctl[39]
inputs$ctl$fecundity_option
## [1] 1

#inputs$ctl[40]
inputs$ctl$hermaphroditism_option
## [1] 0

#inputs$ctl[41]
inputs$ctl$parameter_offset_approach
## [1] 1
```

1.12   Parámetros biológicos

```
#inputs$ctl[42]
inputs$ctl$MG_parms
##                              LO        HI        INIT        PRIOR PR_SD
## NatM_p_1_Fem_GP_1          5e-02  0.150000  0.10000000  0.10000000   0.8
## L_at_Amin_Fem_GP_1        -1e+01 45.000000 21.65350000 36.00000000  10.0
## L_at_Amax_Fem_GP_1         4e+01 90.000000 71.64930000 70.00000000  10.0
## VonBert_K_Fem_GP_1         5e-02  0.250000  0.14729700  0.15000000   0.8
## CV_young_Fem_GP_1          5e-02  0.250000  0.10000000  0.10000000   0.8
## CV_old_Fem_GP_1            5e-02  0.250000  0.10000000  0.10000000   0.8
## Wtlen_1_Fem_GP_1          -3e+00  3.000000  0.00000244  0.00000244   0.8
## Wtlen_2_Fem_GP_1          -3e+00  4.000000  3.34694000  3.34694000   0.8
## Mat50%_Fem_GP_1            5e+01 60.000000 55.00000000 55.00000000   0.8
## Mat_slope_Fem_GP_1        -3e+00  3.000000 -0.25000000 -0.25000000   0.8
## Eggs/kg_inter_Fem_GP_1    -3e+00  3.000000  1.00000000  1.00000000   0.8
## Eggs/kg_slope_wt_Fem_GP_1 -3e+00  3.000000  0.00000000  0.00000000   0.8
## NatM_p_1_Mal_GP_1          5e-02  0.150000  0.10000000  0.10000000   0.8
## L_at_Amin_Mal_GP_1         0e+00 45.000000  0.00000000 36.00000000  10.0
## L_at_Amax_Mal_GP_1         4e+01 90.000000 69.53620000 70.00000000  10.0
## VonBert_K_Mal_GP_1         5e-02  0.250000  0.16353300  0.15000000   0.8
## CV_young_Mal_GP_1          5e-02  0.250000  0.10000000  0.10000000   0.8
## CV_old_Mal_GP_1            5e-02  0.250000  0.10000000  0.10000000   0.8
## Wtlen_1_Mal_GP_1          -3e+00  3.000000  0.00000244  0.00000244   0.8
## Wtlen_2_Mal_GP_1          -3e+00  4.000000  3.34694000  3.34694000   0.8
## RecrDist_GP_1              0e+00  0.000000  0.00000000  0.00000000   0.0
## RecrDist_Area_1            0e+00  0.000000  0.00000000  0.00000000   0.0
## RecrDist_month_1           0e+00  0.000000  0.00000000  0.00000000   0.0
## CohortGrowDev              1e-01 10.000000  1.00000000  1.00000000   1.0
## FracFemale_GP_1            1e-06  0.999999  0.50000000  0.50000000   0.5
##                            PR_type PHASE env_var&link dev_link dev_minyr
## NatM_p_1_Fem_GP_1               0    -3            0        0         0
## L_at_Amin_Fem_GP_1              6     2            0        0         0
## L_at_Amax_Fem_GP_1              6     4            0        0         0
## VonBert_K_Fem_GP_1              6     4            0        0         0
## CV_young_Fem_GP_1               0    -3            0        0         0
## CV_old_Fem_GP_1                 0    -3            0        0         0
## Wtlen_1_Fem_GP_1                0    -3            0        0         0
## Wtlen_2_Fem_GP_1                0    -3            0        0         0
## Mat50%_Fem_GP_1                 0    -3            0        0         0
## Mat_slope_Fem_GP_1              0    -3            0        0         0
## Eggs/kg_inter_Fem_GP_1          0    -3            0        0         0
## Eggs/kg_slope_wt_Fem_GP_1       0    -3            0        0         0
## NatM_p_1_Mal_GP_1               0    -3            0        0         0
## L_at_Amin_Mal_GP_1              0    -3            0        0         0
## L_at_Amax_Mal_GP_1              6     4            0        0         0
## VonBert_K_Mal_GP_1              6     4            0        0         0
## CV_young_Mal_GP_1               0    -3            0        0         0
## CV_old_Mal_GP_1                 0    -3            0        0         0
## Wtlen_1_Mal_GP_1                0    -3            0        0         0
## Wtlen_2_Mal_GP_1                0    -3            0        0         0
## RecrDist_GP_1                   0    -4            0        0         0
## RecrDist_Area_1                 0    -4            0        0         0
## RecrDist_month_1                0    -4            0        0         0
```

```
## CohortGrowDev                    0    -1            0         0          0
## FracFemale_GP_1                  0   -99            0         0          0
##                          dev_maxyr dev_PH Block Block_Fxn PType
## NatM_p_1_Fem_GP_1                0     0     0         0     1
## L_at_Amin_Fem_GP_1              0     0     0         0     2
## L_at_Amax_Fem_GP_1              0     0     0         0     2
## VonBert_K_Fem_GP_1             0     0     0         0     2
## CV_young_Fem_GP_1             0     0     0         0     2
## CV_old_Fem_GP_1               0     0     0         0     2
## Wtlen_1_Fem_GP_1              0     0     0         0     3
## Wtlen_2_Fem_GP_1              0     0     0         0     3
## Mat50%_Fem_GP_1               0     0     0         0     4
## Mat_slope_Fem_GP_1            0     0     0         0     4
## Eggs/kg_inter_Fem_GP_1        0     0     0         0     5
## Eggs/kg_slope_wt_Fem_GP_1     0     0     0         0     5
## NatM_p_1_Mal_GP_1             0     0     0         0     1
## L_at_Amin_Mal_GP_1            0     0     0         0     2
## L_at_Amax_Mal_GP_1            0     0     0         0     2
## VonBert_K_Mal_GP_1            0     0     0         0     2
## CV_young_Mal_GP_1             0     0     0         0     2
## CV_old_Mal_GP_1               0     0     0         0     2
## Wtlen_1_Mal_GP_1              0     0     0         0     3
## Wtlen_2_Mal_GP_1              0     0     0         0     3
## RecrDist_GP_1                 0     0     0         0     7
## RecrDist_Area_1               0     0     0         0     8
## RecrDist_month_1              0     0     0         0     9
## CohortGrowDev                 0     0     0         0    11
## FracFemale_GP_1               0     0     0         0    14
```

```
row.names(inputs$ctl$MG_parms)
##  [1] "NatM_p_1_Fem_GP_1"        "L_at_Amin_Fem_GP_1"
##  [3] "L_at_Amax_Fem_GP_1"       "VonBert_K_Fem_GP_1"
##  [5] "CV_young_Fem_GP_1"        "CV_old_Fem_GP_1"
##  [7] "Wtlen_1_Fem_GP_1"         "Wtlen_2_Fem_GP_1"
##  [9] "Mat50%_Fem_GP_1"          "Mat_slope_Fem_GP_1"
## [11] "Eggs/kg_inter_Fem_GP_1"   "Eggs/kg_slope_wt_Fem_GP_1"
## [13] "NatM_p_1_Mal_GP_1"        "L_at_Amin_Mal_GP_1"
## [15] "L_at_Amax_Mal_GP_1"       "VonBert_K_Mal_GP_1"
## [17] "CV_young_Mal_GP_1"        "CV_old_Mal_GP_1"
## [19] "Wtlen_1_Mal_GP_1"         "Wtlen_2_Mal_GP_1"
## [21] "RecrDist_GP_1"            "RecrDist_Area_1"
## [23] "RecrDist_month_1"         "CohortGrowDev"
## [25] "FracFemale_GP_1"
```

```
names(inputs$ctl$MG_parms)
##  [1] "LO"         "HI"         "INIT"        "PRIOR"      "PR_SD"
##  [6] "PR_type"    "PHASE"      "env_var&link" "dev_link"   "dev_minyr"
## [11] "dev_maxyr"  "dev_PH"     "Block"       "Block_Fxn"  "PType"
```

1.12.1 Parámetros hembras

```
inputs$ctl$MG_parms[1,]
##                   LO   HI INIT PRIOR PR_SD PR_type PHASE env_var&link
```

```
## NatM_p_1_Fem_GP_1 0.05 0.15   0.1    0.1    0.8        0    -3             0
##                    dev_link dev_minyr dev_maxyr dev_PH Block Block_Fxn PType
## NatM_p_1_Fem_GP_1         0         0         0      0     0         0     1
```

1.12.1.1   Mortalidad natural Fem GP_1

```
inputs$ctl$MG_parms[2,]
##                     LO HI    INIT PRIOR PR_SD PR_type PHASE env_var&link
## L_at_Amin_Fem_GP_1 -10 45 21.6535    36    10       6     2            0
##                     dev_link dev_minyr dev_maxyr dev_PH Block Block_Fxn PType
## L_at_Amin_Fem_GP_1         0         0         0      0     0         0     2
inputs$ctl$MG_parms[3,]
##                    LO HI    INIT PRIOR PR_SD PR_type PHASE env_var&link
## L_at_Amax_Fem_GP_1 40 90 71.6493    70    10       6     4            0
##                     dev_link dev_minyr dev_maxyr dev_PH Block Block_Fxn PType
## L_at_Amax_Fem_GP_1         0         0         0      0     0         0     2
```

1.12.1.2   longitud a la edad Fem GP_1

```
inputs$ctl$MG_parms[4,]
##                      LO   HI     INIT PRIOR PR_SD PR_type PHASE env_var&link
## VonBert_K_Fem_GP_1 0.05 0.25 0.147297  0.15   0.8       6     4            0
##                     dev_link dev_minyr dev_maxyr dev_PH Block Block_Fxn PType
## VonBert_K_Fem_GP_1         0         0         0      0     0         0     2
```

1.12.1.3   Tasa de crecimiento Fem GP_1

```
inputs$ctl$MG_parms[5,]
##                      LO   HI INIT PRIOR PR_SD PR_type PHASE env_var&link
## CV_young_Fem_GP_1 0.05 0.25  0.1   0.1   0.8       0    -3            0
##                     dev_link dev_minyr dev_maxyr dev_PH Block Block_Fxn PType
## CV_young_Fem_GP_1         0         0         0      0     0         0     2
inputs$ctl$MG_parms[6,]
##                    LO   HI INIT PRIOR PR_SD PR_type PHASE env_var&link dev_link
## CV_old_Fem_GP_1 0.05 0.25  0.1   0.1   0.8       0    -3            0        0
##                 dev_minyr dev_maxyr dev_PH Block Block_Fxn PType
## CV_old_Fem_GP_1         0         0      0     0         0     2
```

1.12.1.4   CV crecimiento Fem GP_1

```
inputs$ctl$MG_parms[7,]
##                  LO HI     INIT    PRIOR PR_SD PR_type PHASE env_var&link
## Wtlen_1_Fem_GP_1 -3  3 2.44e-06 2.44e-06   0.8       0    -3            0
##                   dev_link dev_minyr dev_maxyr dev_PH Block Block_Fxn PType
## Wtlen_1_Fem_GP_1         0         0         0      0     0         0     3
inputs$ctl$MG_parms[8,]
##                  LO HI    INIT   PRIOR PR_SD PR_type PHASE env_var&link
## Wtlen_2_Fem_GP_1 -3  4 3.34694 3.34694   0.8       0    -3            0
##                   dev_link dev_minyr dev_maxyr dev_PH Block Block_Fxn PType
## Wtlen_2_Fem_GP_1         0         0         0      0     0         0     3
```

1.12.1.5   Relación longitud-peso Fem GP_1

```
inputs$ctl$MG_parms[9,]
##                   LO HI INIT PRIOR PR_SD PR_type PHASE env_var&link dev_link
## Mat50%_Fem_GP_1 50 60   55    55   0.8        0    -3            0        0
##                 dev_minyr dev_maxyr dev_PH Block Block_Fxn PType
## Mat50%_Fem_GP_1         0         0      0     0         0     4
inputs$ctl$MG_parms[10,]
##                     LO HI  INIT PRIOR PR_SD PR_type PHASE env_var&link dev_link
## Mat_slope_Fem_GP_1 -3  3 -0.25 -0.25   0.8        0    -3            0        0
##                    dev_minyr dev_maxyr dev_PH Block Block_Fxn PType
## Mat_slope_Fem_GP_1         0         0      0     0         0     4
```

1.12.1.6   Relación Madurez Fem GP_1

```
inputs$ctl$MG_parms[11,]
##                        LO HI INIT PRIOR PR_SD PR_type PHASE env_var&link
## Eggs/kg_inter_Fem_GP_1 -3  3    1     1   0.8        0    -3            0
##                        dev_link dev_minyr dev_maxyr dev_PH Block Block_Fxn
## Eggs/kg_inter_Fem_GP_1        0         0         0      0     0         0
##                        PType
## Eggs/kg_inter_Fem_GP_1     5
inputs$ctl$MG_parms[12,]
##                          LO HI INIT PRIOR PR_SD PR_type PHASE env_var&link
## Eggs/kg_slope_wt_Fem_GP_1 -3  3    0     0   0.8        0    -3            0
##                          dev_link dev_minyr dev_maxyr dev_PH Block Block_Fxn
## Eggs/kg_slope_wt_Fem_GP_1        0         0         0      0     0         0
##                            PType
## Eggs/kg_slope_wt_Fem_GP_1      5
```

1.12.1.7   Eggs/kg Fem GP_1

1.12.2   Parámetros Machos

```
inputs$ctl$MG_parms[13,]
##                    LO   HI INIT PRIOR PR_SD PR_type PHASE env_var&link
## NatM_p_1_Mal_GP_1 0.05 0.15  0.1   0.1   0.8        0    -3            0
##                 dev_link dev_minyr dev_maxyr dev_PH Block Block_Fxn PType
## NatM_p_1_Mal_GP_1        0         0         0      0     0         0     1
```

1.12.2.1   Mortalidad natural Mal GP_1

```
inputs$ctl$MG_parms[14,]
##                   LO HI INIT PRIOR PR_SD PR_type PHASE env_var&link dev_link
## L_at_Amin_Mal_GP_1  0 45    0    36    10        0    -3            0        0
##                  dev_minyr dev_maxyr dev_PH Block Block_Fxn PType
## L_at_Amin_Mal_GP_1        0         0      0     0         0     2
inputs$ctl$MG_parms[15,]
##                   LO HI     INIT PRIOR PR_SD PR_type PHASE env_var&link
## L_at_Amax_Mal_GP_1 40 90 69.5362    70    10        6     4            0
```

```
##                     dev_link dev_minyr dev_maxyr dev_PH Block Block_Fxn PType
## L_at_Amax_Mal_GP_1         0         0         0      0     0         0     2
```

1.12.2.2 longitud a la edad Mal GP_1

```
inputs$ctl$MG_parms[16,]
##                    LO   HI     INIT PRIOR PR_SD PR_type PHASE env_var&link
## VonBert_K_Mal_GP_1 0.05 0.25 0.163533  0.15   0.8       6     4            0
##                    dev_link dev_minyr dev_maxyr dev_PH Block Block_Fxn PType
## VonBert_K_Mal_GP_1        0         0         0      0     0         0     2
```

1.12.2.3 Tasa de crecimiento Mal GP_1

```
inputs$ctl$MG_parms[17,]
##                     LO   HI INIT PRIOR PR_SD PR_type PHASE env_var&link
## CV_young_Mal_GP_1 0.05 0.25  0.1   0.1   0.8       0    -3            0
##                    dev_link dev_minyr dev_maxyr dev_PH Block Block_Fxn PType
## CV_young_Mal_GP_1         0         0         0      0     0         0     2
inputs$ctl$MG_parms[18,]
##                   LO    HI INIT PRIOR PR_SD PR_type PHASE env_var&link dev_link
## CV_old_Mal_GP_1 0.05 0.25  0.1   0.1   0.8       0    -3            0        0
##                 dev_minyr dev_maxyr dev_PH Block Block_Fxn PType
## CV_old_Mal_GP_1         0         0      0     0         0     2
```

1.12.2.4 CV crecimiento Mal GP_1

```
inputs$ctl$MG_parms[19,]
##                  LO HI     INIT    PRIOR PR_SD PR_type PHASE env_var&link
## Wtlen_1_Mal_GP_1 -3  3 2.44e-06 2.44e-06   0.8       0    -3            0
##                  dev_link dev_minyr dev_maxyr dev_PH Block Block_Fxn PType
## Wtlen_1_Mal_GP_1        0         0         0      0     0         0     3
inputs$ctl$MG_parms[20,]
##                  LO HI    INIT   PRIOR PR_SD PR_type PHASE env_var&link
## Wtlen_2_Mal_GP_1 -3  4 3.34694 3.34694   0.8       0    -3            0
##                  dev_link dev_minyr dev_maxyr dev_PH Block Block_Fxn PType
## Wtlen_2_Mal_GP_1        0         0         0      0     0         0     3
```

1.12.2.5 Relación longitud-peso Mal GP_1

```
inputs$ctl$MG_parms[9,]
##                LO HI INIT PRIOR PR_SD PR_type PHASE env_var&link dev_link
## Mat50%_Fem_GP_1 50 60   55    55   0.8       0    -3            0        0
##                dev_minyr dev_maxyr dev_PH Block Block_Fxn PType
## Mat50%_Fem_GP_1         0         0      0     0         0     4
inputs$ctl$MG_parms[10,]
##                    LO HI  INIT PRIOR PR_SD PR_type PHASE env_var&link dev_link
## Mat_slope_Fem_GP_1 -3  3 -0.25 -0.25   0.8       0    -3            0        0
##                    dev_minyr dev_maxyr dev_PH Block Block_Fxn PType
## Mat_slope_Fem_GP_1         0         0      0     0         0     4
```

1.12.2.6 Relación Madurez Mal GP_1

```
inputs$ctl$MG_parms[11,]
##                          LO HI INIT PRIOR PR_SD PR_type PHASE env_var&link
## Eggs/kg_inter_Fem_GP_1 -3  3    1      1   0.8       0    -3             0
##                          dev_link dev_minyr dev_maxyr dev_PH Block Block_Fxn
## Eggs/kg_inter_Fem_GP_1          0         0         0      0     0         0
##                          PType
## Eggs/kg_inter_Fem_GP_1       5
inputs$ctl$MG_parms[12,]
##                            LO HI INIT PRIOR PR_SD PR_type PHASE env_var&link
## Eggs/kg_slope_wt_Fem_GP_1 -3  3    0      0   0.8       0    -3             0
##                            dev_link dev_minyr dev_maxyr dev_PH Block Block_Fxn
## Eggs/kg_slope_wt_Fem_GP_1         0         0         0      0     0         0
##                            PType
## Eggs/kg_slope_wt_Fem_GP_1      5
```

```
#inputs$ctl[43]
inputs$ctl$MGparm_seas_effects
##   MGparm_seas_effects_1  MGparm_seas_effects_2  MGparm_seas_effects_3
##                       0                      0                      0
##   MGparm_seas_effects_4  MGparm_seas_effects_5  MGparm_seas_effects_6
##                       0                      0                      0
##   MGparm_seas_effects_7  MGparm_seas_effects_8  MGparm_seas_effects_9
##                       0                      0                      0
## MGparm_seas_effects_10
##                      0
```

1.12.2.7 Eggs/kg Mal GP_1

1.13 Relación stock recluta

```
#inputs$ctl[44]
inputs$ctl$SR_function
## [1] 3

#inputs$ctl[45]
inputs$ctl$Use_steep_init_equi
## [1] 0

#inputs$ctl[46]
inputs$ctl$Sigma_R_FofCurvature
## [1] 0

#inputs$ctl[47]
inputs$ctl$SR_parms
##                LO HI     INIT PRIOR PR_SD PR_type PHASE env_var&link dev_link
## SR_LN(R0)     3.0 31 8.815050  10.3 10.00       0     1            0        0
## SR_BH_steep   0.2  1 0.614248   0.7  0.05       1     4            0        0
## SR_sigmaR     0.0  2 0.600000   0.8  0.80       0    -4            0        0
## SR_regime    -5.0  5 0.000000   0.0  1.00       0    -4            0        0
## SR_autocorr   0.0  0 0.000000   0.0  0.00       0   -99            0        0
##            dev_minyr dev_maxyr dev_PH Block Block_Fxn PType
## SR_LN(R0)          0         0      0     0         0    17
## SR_BH_steep        0         0      0     0         0    17
## SR_sigmaR          0         0      0     0         0    17
## SR_regime          0         0      0     0         0    17
## SR_autocorr        0         0      0     0         0    17
```

1.14 Desvíos de los reclutamientos

```
#inputs$ctl[48]
inputs$ctl$do_recdev
## [1] 1

#inputs$ctl[49]
inputs$ctl$MainRdevYrFirst
## [1] 1971

#inputs$ctl[50]
inputs$ctl$MainRdevYrLast
## [1] 2001

#inputs$ctl[51]
inputs$ctl$recdev_phase
## [1] 2

#inputs$ctl[52]
inputs$ctl$recdev_adv
## [1] 1

#inputs$ctl[53]
inputs$ctl$recdev_early_start
```

```
## [1] 0

#inputs$ctl[54]
inputs$ctl$recdev_early_phase
## [1] -4

#inputs$ctl[55]
inputs$ctl$Fcast_recr_phase
## [1] 0

#inputs$ctl[56]
inputs$ctl$lambda4Fcast_recr_like
## [1] 1

#inputs$ctl[57]
inputs$ctl$last_early_yr_nobias_adj
## [1] 1900

#inputs$ctl[58]
inputs$ctl$first_yr_fullbias_adj
## [1] 1900

#inputs$ctl[59]
inputs$ctl$last_yr_fullbias_adj
## [1] 2001

#inputs$ctl[60]
inputs$ctl$first_recent_yr_nobias_adj
## [1] 2002

#inputs$ctl[61]
inputs$ctl$max_bias_adj
## [1] 1

#inputs$ctl[62]
inputs$ctl$period_of_cycles_in_recr
## [1] 0

#inputs$ctl[63]
inputs$ctl$min_rec_dev
## [1] -5

#inputs$ctl[64]
inputs$ctl$max_rec_dev
## [1] 5

#inputs$ctl[65]
inputs$ctl$N_Read_recdevs
## [1] 0
```

1.15 Mortalidad por pesca

```r
#inputs$ctl[66]
inputs$ctl$F_ballpark
## [1] 0.3

#inputs$ctl[67]
inputs$ctl$F_ballpark_year
## [1] -2001

#inputs$ctl[68]
inputs$ctl$F_Method
## [1] 3

#inputs$ctl[69]
inputs$ctl$maxF
## [1] 2.95

#inputs$ctl[70]
inputs$ctl$F_iter
## [1] 4
```

1.16 Capturabilidad

1.16.1 Opciones de capturabilidad

```
#inputs$ctl[71]
inputs$ctl$Q_options
##         fleet link link_info extra_se biasadj float
## SURVEY1     2    1         0        1       0     0
## SURVEY2     3    1         0        0       0     0
```

1.16.2 Parámetros

```
#inputs$ctl[72]
inputs$ctl$Q_parms
##                     LO   HI      INIT PRIOR PR_SD PR_type PHASE env_var&link
## LnQ_base_SURVEY1(2) -7 5.0  0.516018  0.00     1       0     1            0
## Q_extraSD_SURVEY1(2) 0 0.5  0.000000  0.05     1       0    -4            0
## LnQ_base_SURVEY2(3) -7 5.0 -6.628100  0.00     1       0     1            0
##                     dev_link dev_minyr dev_maxyr dev_PH Block Block_Fxn
## LnQ_base_SURVEY1(2)        0         0         0      0     0         0
## Q_extraSD_SURVEY1(2)       0         0         0      0     0         0
## LnQ_base_SURVEY2(3)        0         0         0      0     0         0
```

1.17 Selectividad

1.17.1 tipos de selectividad a la talla

```
#inputs$ctl[73]
inputs$ctl$size_selex_types
##           Pattern Discard Male Special
## FISHERY         1       0    0       0
## SURVEY1         1       0    0       0
## SURVEY2         0       0    0       0
```

1.17.2 tipos de selectividad a la edad

```
#inputs$ctl[74]
inputs$ctl$age_selex_types
##           Pattern Discard Male Special
## FISHERY        11       0    0       0
## SURVEY1        11       0    0       0
## SURVEY2        11       0    0       0
```

1.17.3 parametros de selectividad a la talla

```
#inputs$ctl[75]
inputs$ctl$size_selex_parms
##                        LO HI       INIT PRIOR PR_SD PR_type PHASE env_var&link
## SizeSel_P_1_FISHERY(1) 19.00 80 53.64110    50  0.01       1     2            0
## SizeSel_P_2_FISHERY(1)  0.01 60 18.92320    15  0.01       1     3            0
## SizeSel_P_1_SURVEY1(2) 19.00 70 36.65300    30  0.01       1     2            0
## SizeSel_P_2_SURVEY1(2)  0.01 60  6.59179    10  0.01       1     3            0
##                        dev_link dev_minyr dev_maxyr dev_PH Block Block_Fxn
## SizeSel_P_1_FISHERY(1)        0         0         0      0     0         0
## SizeSel_P_2_FISHERY(1)        0         0         0      0     0         0
## SizeSel_P_1_SURVEY1(2)        0         0         0      0     0         0
## SizeSel_P_2_SURVEY1(2)        0         0         0      0     0         0
```

1.17.4 parametros de selectividad a la edad

```
#inputs$ctl[76]
inputs$ctl$age_selex_parms
##                        LO HI INIT PRIOR PR_SD PR_type PHASE env_var&link
## AgeSel_P_1_FISHERY(1)  0 40    0     5    99       0   -99            0
## AgeSel_P_2_FISHERY(1)  0 40   40     6    99       0   -99            0
## AgeSel_P_1_SURVEY1(2)  0 40    0     5    99       0   -99            0
## AgeSel_P_2_SURVEY1(2)  0 40   40     6    99       0   -99            0
## AgeSel_P_1_SURVEY2(3)  0 40    0     5    99       0   -99            0
## AgeSel_P_2_SURVEY2(3)  0 40    0     6    99       0   -99            0
##                        dev_link dev_minyr dev_maxyr dev_PH Block Block_Fxn
## AgeSel_P_1_FISHERY(1)         0         0         0      0     0         0
## AgeSel_P_2_FISHERY(1)         0         0         0      0     0         0
## AgeSel_P_1_SURVEY1(2)         0         0         0      0     0         0
## AgeSel_P_2_SURVEY1(2)         0         0         0      0     0         0
## AgeSel_P_1_SURVEY2(3)         0         0         0      0     0         0
## AgeSel_P_2_SURVEY2(3)         0         0         0      0     0         0
```

1.17.5 otros parámetros ??? REVISAR

```
#inputs$ctl[77]
inputs$ctl$Use_2D_AR1_selectivity
## [1] 0

#inputs$ctl[78]
inputs$ctl$TG_custom
## [1] 0

#inputs$ctl[79]
inputs$ctl$DoVar_adjust
## [1] 0

#inputs$ctl[80]
inputs$ctl$maxlambdaphase
## [1] 4

#inputs$ctl[81]
inputs$ctl$sd_offset
## [1] 1
```

1.18 Lambdas

```
#inputs$ctl[82]
inputs$ctl$lambdas
##                                  like_comp fleet phase value
## Surv_SURVEY1_Phz2                        1     2     2     1
## length_SURVEY1_sizefreq_method_1_Phz2    4     2     2     1
## length_SURVEY1_sizefreq_method_1_Phz3    4     2     3     1
##                                  sizefreq_method
## Surv_SURVEY1_Phz2                              1
## length_SURVEY1_sizefreq_method_1_Phz2          1
## length_SURVEY1_sizefreq_method_1_Phz3          1
```

```
#inputs$ctl[83]
inputs$ctl$N_lambdas
## [1] 3
```

1.19 more stddev reporting ?? Revisar!!!

```
#inputs$ctl[84]
inputs$ctl$more_stddev_reporting
## [1] 1
```

1.19.1 epecs ?? revisar!!!

```
#inputs$ctl[85]
inputs$ctl$stddev_reporting_specs
## stddev_reporting_specs_1 stddev_reporting_specs_2 stddev_reporting_specs_3
##                        1                        1                       -1
## stddev_reporting_specs_4 stddev_reporting_specs_5 stddev_reporting_specs_6
##                        5                        1                        5
## stddev_reporting_specs_7 stddev_reporting_specs_8 stddev_reporting_specs_9
##                        1                       -1                        5
```

1.19.2 selectividad

```
#inputs$ctl[86]
inputs$ctl$stddev_reporting_selex
## stddev_reporting_selex_1 stddev_reporting_selex_2 stddev_reporting_selex_3
##                        5                       15                       25
## stddev_reporting_selex_4 stddev_reporting_selex_5
##                       35                       43
```

1.19.3 crecimiento

```
#inputs$ctl[87]
inputs$ctl$stddev_reporting_growth
## stddev_reporting_growth_1 stddev_reporting_growth_2 stddev_reporting_growth_3
##                         1                         2                        14
## stddev_reporting_growth_4 stddev_reporting_growth_5
##                        26                        40
```

1.19.4 abundancia a la edad

```
#inputs$ctl[88]
inputs$ctl$stddev_reporting_N_at_A
## stddev_reporting_N_at_A_1 stddev_reporting_N_at_A_2 stddev_reporting_N_at_A_3
##                         1                         2                        14
## stddev_reporting_N_at_A_4 stddev_reporting_N_at_A_5
##                        26                        40
```