

# Formato Archivo Control.ss

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# 1 Contexto

## 1.1 Identificamos los directorio de trabajo

```
dirname.base <- here("10a_anchcadiz")
```

## 1.2 Leer los archivos de Stock Synthesis con la función SS\_read()

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

## 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] "F_ballpark"      "F_ballpark_year"
## [55] "F_Method"        "maxF"
## [57] "F_iter"          "Q_options"
```

```

## [59] "Q_parms" "size_selex_types"
## [61] "age_selex_types" "size_selex_parms"
## [63] "age_selex_parms" "Use_2D_AR1_selectivity"
## [65] "TG_custom" "DoVar_adjust"
## [67] "Variance_adjustment_list" "maxlambdaphase"
## [69] "sd_offset" "N_lambdas"
## [71] "more_stddev_reporting"

```

## 1.6 Especificaciones iniciales

```
#inputs$ctl[3]
inputs$ctl$nseas
## [1] 4

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

#inputs$ctl[5]
inputs$ctl$Nages
## [1] 4

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

#inputs$ctl[7]
inputs$ctl$Npopbins
## [1] 44

#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" "PELAGO" "ECOCADIZ"

#inputs$ctl[11]
inputs$ctl$sourcefile
## [1] "/Users/mariajosezunigabasualto/Modelos_SS3/SS3_ane27.9a/10a_anchcadiz/monthanch.ctl"

#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] 3

#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] 1989 1989
```

## 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
## 1 1
## time_vary_auto_generation_3 time_vary_auto_generation_4
## 1 1
## time_vary_auto_generation_5
## 1

#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] 0.1

#inputs$ctl[31]
inputs$ctl$Growth_Age_for_L2
## [1] 4

#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
```

```
#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 PR_type
## NatM_p_1_Fem_GP_1      5e-02  1.600000  0.700000 -1.60944  0.1      0
## L_at_Amin_Fem_GP_1      0e+00 10.000000  6.000000 32.000000 99.0      0
## L_at_Amax_Fem_GP_1      5e+00 22.000000 18.000000 50.000000 99.0      0
## VonBert_K_Fem_GP_1      1e-01  2.000000  0.500000  0.300000 99.0      0
## CV_young_Fem_GP_1       3e-02  0.150000  0.066000  0.100000 99.0      0
## CV_old_Fem_GP_1        3e-02  0.150000  0.066000  0.100000 99.0      0
## Wtlen_1_Fem_GP_1       -3e+00  3.000000  0.00563  0.00563 99.0      0
## Wtlen_2_Fem_GP_1       -3e+00  3.000000  3.15910  3.15910 99.0      0
## Mat50%_Fem_GP_1        -3e+00 15.000000 12.000000  0.000000 99.0      0
## Mat_slope_Fem_GP_1     -3e+00  3.000000 -0.450000 -0.450000 99.0      0
## Eggs/kg_inter_Fem_GP_1 -3e+00  3.000000  1.000000  1.000000 99.0      0
## Eggs/kg_slope_wt_Fem_GP_1 -3e+00  3.000000  0.000000  0.000000 99.0      0
## RecrDist_GP_1_area_1_month_1 0e+00 10.000000  1.000000  1.000000 99.0      0
## CohortGrowDev          1e+00  1.000000  1.000000  1.000000  1.0      0
## FracFemale_GP_1        1e-06  0.999999  0.500000  0.500000  0.5      0
##          PHASE env_var&link dev_link dev_minyr dev_maxyr
## NatM_p_1_Fem_GP_1      -4          0          0          0          0
## L_at_Amin_Fem_GP_1       5          0          0          0          0
## L_at_Amax_Fem_GP_1       5          0          0          0          0
## VonBert_K_Fem_GP_1       3          0          0          0          0
## CV_young_Fem_GP_1        5          0          0          0          0
## CV_old_Fem_GP_1          5          0          0          0          0
## Wtlen_1_Fem_GP_1       -50          0          0          0          0
## Wtlen_2_Fem_GP_1       -50          0          0          0          0
## Mat50%_Fem_GP_1        -50          0          0          0          0
## Mat_slope_Fem_GP_1     -50          0          0          0          0
## Eggs/kg_inter_Fem_GP_1 -50          0          0          0          0
## Eggs/kg_slope_wt_Fem_GP_1 -50          0          0          0          0
## RecrDist_GP_1_area_1_month_1 -3          0          0          0          0
## CohortGrowDev           -1          0          0          0          0
## FracFemale_GP_1       -99          0          0          0          0
##          dev_PH Block Block_Fxn PType
## NatM_p_1_Fem_GP_1        0      0      0      1
## L_at_Amin_Fem_GP_1        0      0      0      2
## L_at_Amax_Fem_GP_1        0      0      0      2
## VonBert_K_Fem_GP_1        0      0      0      2
## CV_young_Fem_GP_1         0      0      0      2
## CV_old_Fem_GP_1           0      0      0      2
## Wtlen_1_Fem_GP_1           0      0      0      3
## Wtlen_2_Fem_GP_1           0      0      0      3
## Mat50%_Fem_GP_1           0      0      0      4
## Mat_slope_Fem_GP_1         0      0      0      4
## Eggs/kg_inter_Fem_GP_1     0      0      0      5
## Eggs/kg_slope_wt_Fem_GP_1  0      0      0      5
## RecrDist_GP_1_area_1_month_1 0      0      0     10
## CohortGrowDev              0      0      0     11
## FracFemale_GP_1            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] "RecrDist_GP_1_area_1_month_1" "CohortGrowDev"
## [15] "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 1.6 0.7 -1.60944 0.1 0 -4 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 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 dev_link
## L_at_Amin_Fem_GP_1 0 10 6 32 99 0 5 0 0
##          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 dev_link
## L_at_Amax_Fem_GP_1 5 22 18 50 99 0 5 0 0
##          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 dev_link
## VonBert_K_Fem_GP_1 0.1 2 0.5 0.3 99 0 3 0 0
##          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 0.03 0.15 0.066 0.1 99 0 5 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 0.03 0.15 0.066 0.1   99      0    5      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 dev_link
## Wtlen_1_Fem_GP_1 -3  3 0.00563 0.00563 99      0   -50      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 dev_link
## Wtlen_2_Fem_GP_1 -3  3 3.1591 3.1591 99      0   -50      0      0
##              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 -3 15 12      0 99      0   -50      0      0
##              dev_minyr dev_maxyr dev_PH Block Block_Fxn PType
## Mat50%_Fem_GP_1      0      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 -0.45 -0.45 99      0   -50      0      0
##              dev_minyr dev_maxyr dev_PH Block Block_Fxn PType
## Mat_slope_Fem_GP_1      0      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 99      0   -50      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 99      0   -50      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
## RecrDist_GP_1_area_1_month_1  0 10   1   1   99   0   -3   0
##          dev_link dev_minyr dev_maxyr dev_PH Block
## RecrDist_GP_1_area_1_month_1    0    0    0    0    0
##          Block_Fxn PType
## RecrDist_GP_1_area_1_month_1    0   10
```

#### 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
## CohortGrowDev  1  1   1   1   1   0   -1   0   0
##          dev_minyr dev_maxyr dev_PH Block Block_Fxn PType
## CohortGrowDev    0    0    0    0    0   11
inputs$ctl$MG_parms[15,]
##          LO          HI INIT PRIOR PR_SD PR_type PHASE env_var&link
## FracFemale_GP_1 1e-06 0.999999 0.5  0.5  0.5   0  -99   0
##          dev_link dev_minyr dev_maxyr dev_PH Block Block_Fxn PType
## FracFemale_GP_1    0    0    0    0    0    0   14
```

#### 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 dev_link dev_minyr
## NA NA NA   NA   NA   NA   NA   NA   NA   NA   NA   NA
##          dev_maxyr dev_PH Block Block_Fxn PType
## NA   NA   NA   NA   NA   NA
```

#### 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 dev_link dev_minyr
## NA NA NA   NA   NA   NA   NA   NA   NA   NA   NA
##          dev_maxyr dev_PH Block Block_Fxn PType
## NA   NA   NA   NA   NA   NA
inputs$ctl$MG_parms[18,]
##          LO HI INIT PRIOR PR_SD PR_type PHASE env_var&link dev_link dev_minyr
## NA NA NA   NA   NA   NA   NA   NA   NA   NA   NA
##          dev_maxyr dev_PH Block Block_Fxn PType
## NA   NA   NA   NA   NA   NA
```

#### 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 dev_link dev_minyr
## NA NA NA   NA   NA   NA   NA   NA   NA   NA   NA
##          dev_maxyr dev_PH Block Block_Fxn PType
```

```
## NA      NA      NA      NA      NA      NA
inputs$ctl$MG_parms[20,]
##      LO HI INIT PRIOR PR_SD PR_type PHASE env_var&link dev_link dev_minyr
## NA NA NA      NA      NA      NA      NA      NA      NA      NA
##      dev_maxyr dev_PH Block Block_Fxn PType
## NA      NA      NA      NA      NA      NA
```

#### 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 -3 15 12 0 99 0 -50 0 0
##      dev_minyr dev_maxyr dev_PH Block Block_Fxn PType
## Mat50%_Fem_GP_1 0 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 -0.45 -0.45 99 0 -50 0 0
##      dev_minyr dev_maxyr dev_PH Block Block_Fxn PType
## Mat_slope_Fem_GP_1 0 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 99 0 -50 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 99 0 -50 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] 4

#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(RO)	5.0	20.0	13.00	0.000	0.000	0	1		0	0
## SR_SCAA_null	0.2	1.0	0.88	0.777	0.113	2	-4		0	0
## SR_sigmaR	0.3	1.6	0.60	1.100	99.000	0	-6		0	0
## SR_regime	-5.0	5.0	0.00	0.000	99.000	0	-50		0	0
## SR_autocorr	0.0	2.0	0.00	1.000	99.000	0	-50		0	0

```
##
## dev_minyr dev_maxyr dev_PH Block Block_Fxn PType
## SR_LN(RO) 0 0 0 0 0 0 17
## SR_SCAA_null 0 0 0 0 0 0 17
## SR_sigmaR 0 0 0 0 0 0 17
## SR_regime 0 0 0 0 0 0 17
## SR_autocorr 0 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] 1989

#inputs$ctl[50]
inputs$ctl$MainRdevYrLast
## [1] 2021

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

#inputs$ctl[52]
inputs$ctl$recdev_adv
## [1] 0

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

```

## NULL

#inputs$ctl[54]
inputs$ctl$recdev_early_phase
## NULL

#inputs$ctl[55]
inputs$ctl$Fcast_recr_phase
## NULL

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

#inputs$ctl[57]
inputs$ctl$last_early_yr_nobias_adj
## NULL

#inputs$ctl[58]
inputs$ctl$first_yr_fullbias_adj
## NULL

#inputs$ctl[59]
inputs$ctl$last_yr_fullbias_adj
## NULL

#inputs$ctl[60]
inputs$ctl$first_recent_yr_nobias_adj
## NULL

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

#inputs$ctl[62]
inputs$ctl$period_of_cycles_in_recr
## NULL

#inputs$ctl[63]
inputs$ctl$min_rec_dev
## NULL

#inputs$ctl[64]
inputs$ctl$max_rec_dev
## NULL

#inputs$ctl[65]
inputs$ctl$N_Read_recdevs
## NULL

```

## 1.15 Mortalidad por pesca

```
#inputs$ctl[66]
inputs$ctl$F_ballpark
## [1] 0.1

#inputs$ctl[67]
inputs$ctl$F_ballpark_year
## [1] -1989

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

#inputs$ctl[69]
inputs$ctl$maxF
## [1] 4

#inputs$ctl[70]
inputs$ctl$F_iter
## [1] 3
```

## 1.16 Capturabilidad

### 1.16.1 Opciones de capturabilidad

```
#inputs$ctl[71]
inputs$ctl$Q_options
##      fleet link link_info extra_se biasadj float
## PELAGO      2      1          0          0          0          0
## ECOCADIZ     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_PELAGO(2) -30 15 -0.158817      0      1          0      1          0
## LnQ_base_ECOCADIZ(3) -30 15  0.089180      0      1          0      1          0
##      dev_link dev_minyr dev_maxyr dev_PH Block Block_Fxn
## LnQ_base_PELAGO(2)      0          0          0          0          0          0
## LnQ_base_ECOCADIZ(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
## PELAGO       1         0    0         0
## ECOCADIZ     1         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     12         0    0         0
## PELAGO      12         0    0         0
## ECOCADIZ    12         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) -1 20.0  12    0    0    0    2    0
## SizeSel_P_2_Fishery(1) -1 20.5  18    0    0    0    2    0
## SizeSel_P_1_PELAGO(2) -3  8.0   6    0    0    0    3    0
## SizeSel_P_2_PELAGO(2) -3 16.0  10    0    0    0    3    0
## SizeSel_P_1_ECOCADIZ(3) -1 10.0   8    0    0    0    3    0
## SizeSel_P_2_ECOCADIZ(3) -1 20.5  15    0    0    0    3    0
##           dev_link dev_minyr dev_maxyr dev_PH Block Block_Fxn
## SizeSel_P_1_Fishery(1)      0      0      0    0.5    0      0
## SizeSel_P_2_Fishery(1)      0      0      0    0.5    0      0
## SizeSel_P_1_PELAGO(2)      0      0      0    0.5    0      0
## SizeSel_P_2_PELAGO(2)      0      0      0    0.5    0      0
## SizeSel_P_1_ECOCADIZ(3)     0      0      0    0.5    0      0
## SizeSel_P_2_ECOCADIZ(3)     0      0      0    0.5    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) -2  5.5  0.1    0  0.01    0   -1    0
## AgeSel_P_2_Fishery(1) -1  5.5  5.0    0  0.01    0   -1    0
## AgeSel_P_1_PELAGO(2) -2  5.5  0.1    0  0.01    0   -1    0
## AgeSel_P_2_PELAGO(2) -1  5.5  5.0    0  0.01    0   -1    0
## AgeSel_P_1_ECOCADIZ(3) -2  5.5  0.1    0  0.01    0   -1    0
## AgeSel_P_2_ECOCADIZ(3) -1  5.5  5.0    0  0.01    0   -1    0
##           dev_link dev_minyr dev_maxyr dev_PH Block Block_Fxn
## AgeSel_P_1_Fishery(1)      0      0      0    0.5    0      0
## AgeSel_P_2_Fishery(1)      0      0      0    0.5    0      0
```

## AgeSel_P_1_PELAGO(2)	0	0	0	0.5	0	0
## AgeSel_P_2_PELAGO(2)	0	0	0	0.5	0	0
## AgeSel_P_1_ECOCADIZ(3)	0	0	0	0.5	0	0
## AgeSel_P_2_ECOCADIZ(3)	0	0	0	0.5	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] 1

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

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

## 1.18 Lambdas

```
#inputs$ctl[82]  
inputs$ctl$lambdas  
## NULL
```

```
#inputs$ctl[83]  
inputs$ctl$N_lambdas  
## [1] 0
```

## 1.19 more stddev reporting ?? Revisar!!!

```
#inputs$ctl[84]  
inputs$ctl$more_stddev_reporting  
## [1] 0
```

### 1.19.1 epecs ?? revisar!!!

```
#inputs$ctl[85]  
inputs$ctl$stddev_reporting_specs  
## NULL
```

### 1.19.2 selectividad

```
#inputs$ctl[86]  
inputs$ctl$stddev_reporting_selex  
## NULL
```

### 1.19.3 crecimiento

```
#inputs$ctl[87]  
inputs$ctl$stddev_reporting_growth  
## NULL
```

### 1.19.4 abundancia a la edad

```
#inputs$ctl[88]  
inputs$ctl$stddev_reporting_N_at_A  
## NULL
```