Rebuilding analysis for canary rockfish based on the 2011 updated stock assessment

John R. Wallace
National Marine Fisheries Service
Northwest Fisheries Science Center
2725 Montlake Blvd. E.
Seattle WA, 98112
206-860-3456 (phone)
206-860-6792 (fax)
John.Wallace@noaa.gov

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Summary

Based on the 2011 stock assessment, this rebuilding analysis compares the results of applying a suite of potential future management actions to the U.S. canary rockfish stock. The base case model for the 2011 assessment estimated that the canary rockfish resource is at 23.2% of the unexploited equilibrium spawning biomass at the beginning of 2011. This represents a slight reduction from the 2009 assessment which estimated depletion in 2009 to be 23.7%; the change is largely due to a revised historical catch time-series for Oregon. As in 2007 and 2009, uncertainty about the base case results is included through integration or rebuilding trajectories over two alternate (and less likely) states of nature corresponding to lower and higher stock-recruitment steepness (h), the parameter largely governing productivity and recent rebuilding trajectory. Based on the 2009 rebuilding analysis the 2011 ACL was set at 102 and 2012 is pending but probably will be set at 107 (John DeVore, personal communication).

Because there was only a slight reduction in estimated relative depletion in the 2011 stock assessment compared to the 2009 assessment, the only management alternatives presented are the 2011-2012 ACL's set at 102 and 107 mt respectively. Starting from these values for the 2011-2012 ACL's, various management options for 2013 and subsequent years are considered ranging from zero fishing mortality to the largest removal that could occur without overfishing (ABC catches). In the absence of any future fishing mortality (beginning in 2013 and assuming 2011, 2012 ACL's of 102 and 107 mt) the canary rockfish stock is projected to have a 50% probability of recovery to the rebuilding target ($SB_{40\%}$) by 2028. In contrast, the stock is not projected to reach this level until 2174 if the ABC catches are removed. The current rebuilding harvest rate (SPR = 88.7%) would produce an ACL of 115.7 mt in 2013 and has a 50% probability of rebuilding by 2030. The harvest rate that is consistent with the current 2011, 2012 ACL's (102 and 107 mt) is SPR = 89.5%, and if continued, results in an ACL of 106.9 mt in 2013 and a 50% probability of recovery also by 2030. That is slightly less fishing mortality than the target rebuilding SPR rate of 88.7%. These levels of harvest are estimated to be far below those which would result in overfishing based on the 2011 assessment. A range of additional management approaches to recovery based on historical and recalculated reference points as well as harvest rates corresponding to short-term ACL's are presented.

Introduction

The stock assessments conducted in 1999 for canary rockfish documented that the stock had declined below the overfished level in the northern (Columbia and U.S. Vancouver INPFC areas) and southern regions (Conception, Monterey and Eureka areas; Crone et al. 1999, Williams et al. 1999). Canary rockfish was determined to be in an "overfished" state on Jan. 1, 2000 and development of a rebuilding plan was initiated while preliminary rebuilding estimates were implemented through adjustments of annual management measures. The first rebuilding analysis for canary rockfish was conducted in 2000 based on the 1999 stock assessment (Methot 2000). This analysis has subsequently been updated on the basis of the 2002 (Methot and Piner), 2005 (Methot and Stewart), 2007 (Stewart, 2008b) and now the 2009 updated stock assessment results.

The first rebuilding analysis used results from the northern area assessment to project rates of potential stock recovery (Methot 2000). The stock was found to have long recovery times based on extremely low productivity. The initial rebuilding OY for 2001 and 2002 was set at 93 mt based upon a 50% probability of rebuilding by the year 2057 and maintaining a constant catch throughout the rebuilding period.

The rebuilding analysis was updated in 2002 (Methot and Piner, 2002) to incorporate the coast-wide assessment results. This analysis was the basis of a change from a constant catch to a constant harvest rate rebuilding strategy, as was done for other west coast groundfish rebuilding plans. The results of the 2002 assessment and rebuilding analysis indicated that the relative spawning biomass had reached a low of 6.6% in 2000 (compared to the unfished equilibrium level), the year of the overfished declaration. By 2002 it had increased to 7.9%. The rate of rebuilding was based on the model-estimated stock-recruitment relationship with a steepness of 0.33 and stochastic projections sampling lognormal deviations about this relationship. The time to rebuild from the year of declaration with no fishing, T_{MIN}, was estimated to be year 2057. The mean generation time was calculated to be 19 years. The maximum allowable time to rebuild, T_{MAX}, was therefore calculated to be the year 2076 (2057 plus one mean generation time). The year with a 50% probability of recovery, T_{TARGET}, was 2074 on the basis of a harvest rate that would achieve a 60% probability of rebuilding by 2076 (T_{MAX}). This rebuilding harvest rate produced an OY in 2003 of 41 mt. The 2002 analysis demonstrated the sensitivity of the target harvest rate (and short-term OYs) to the commercial vs. recreational allocation, because of the difference in selectivity between the two gear groups. Final calculations were based upon a 50:50 division of rebuilding OYs.

The 2005 rebuilding analysis (Methot 2005) recalculated all rebuilding reference points on the basis of two alternate models for selectivity (sex-specific or not) and a profile of values for stock-recruitment steepness for each model. Rebuilding projections therefore included uncertainty in selectivity, steepness and future recruitment strength. The stock was estimated to be at 9.4% of unexploited spawning biomass in 2005. The time to rebuild from the year of declaration (2000) with no fishing, T_{MIN}, was estimated to be year 2048. Mean generation time was estimated to be 23 years. The maximum allowable time to rebuild, T_{MAX}, was therefore calculated to be the year 2071 (2048 plus one mean generation time). The year with a 50% probability of recovery, T_{TARGET}, was 2063 on the basis of the same harvest rate selected in 2002 (SPR= 88.7%). This harvest rate was projected to achieve a 55.4% probability of rebuilding by 2071 (T_{MAX}). Because of slightly below-average recruitments since the stock had been declared overfished, the projected year with a 50% probability of rebuilding to target stock size if fishing

mortality were zero beginning in 2007 ($T_{F=0}$) was 2053. A list of reference points from the 2005 rebuilding analysis is presented in Table 1. The 2005 rebuilding analysis projected OYs based on three fishing fleets (trawl, non-trawl and recreational) maintaining a 50:50 split between commercial and recreation sectors, although this had not been realized in the actual removals during the intervening years since 2002.

The 2009 assessment revised both the estimated reference points and rebuilding trajectories (Stewart 2009b). That analysis estimated that the canary rockfish resource was at 23.7% of the unexploited equilibrium spawning biomass at the beginning of 2009. Uncertainty in that result was included through the integration over two alternate (and less likely) states of nature corresponding to lower and higher stock-recruitment steepness (h), the parameter largely governing productivity and recent rebuilding trajectory. Conditioned on the 2007-2008 OYs of 44 mt (based on the rebuilding SPR rate of 88.7% used in the 2002 and 2005 rebuilding analyses), various management options were presented. In the absence of any future fishing mortality, the canary rockfish stock was projected to have a 50% probability of recovery to the rebuilding target ($SB_{40\%}$) by 2024. In contrast, the stock was not projected to reach this level until 2180 if the ABC catches are removed. Application of the previous rebuilding harvest rate (SPR = 88.7%) was estimated to produce an OY of 101.5 mt in 2011 and had a 50% probability of rebuilding by 2027. The council set the 2011 ACL at 102 and 2012 is pending but probably will be set at 107 (John DeVore, personal communication), these values corresponding to an SPR of 89.5%, resulting in an estimated median year to rebuild of 2030.

2011 Assessment summary

The 2011 canary rockfish stock assessment estimated the unexploited spawning biomass (SB_0) to be 27,846 mt, somewhat higher than the estimate from the 2009 assessment of 25, 993 mt for the base case model (Stewart 2009a). The stock was estimated to be at 23.2% of this level at the beginning of 2011 (Wallace 2011). The steepness of the spawner-recruitment relationship, which largely determines the rate of increase in recruitment as the stock rebuilds, was 0.511 in the base model (as in 2007 and 2009), with the degree of recruitment variability (σ_r) set at 0.50. Two alternative states of nature were presented, representing lower stock-recruitment steepness (0.345) and higher steepness (0.72); each of these states was assigned a probability equal to half that of the base case model (0.5), based on a meta-analysis of West Coast rockfish (M. Dorn, Alaska Fisheries Science Center, personal communication). These alternate models estimated the stock to be at a much lower (5%) or higher (58%) relative stock size.

Updates in the 2011 assessment included:

- Addition of the revised Oregon historical catch history which produced a 36.5% increase in estimated cumulative catch over the period 1916-1981 as compared to the 2009 assessment.
- Addition of recent NWFSC trawl survey data (2009-2010).
- Addition of recent fishery port and observer sampling (2009-2010).

Changes in the results of the 2011 assessment compared to those in 2009 were due primarily to the revised Oregon historical catch history.

Management performance under rebuilding

Following the 1999 declaration that the canary rockfish stock was overfished the canary OY was reduced by over 70% in 2000 and by the same margin again over the next three years. Managers employed several tools in an effort to constrain catches to these dramatically lower targets. These included: reductions in trip/bag limits for canary and co-occurring species, the institution of spatial closures, and new gear restrictions intended to reduce trawling in rocky shelf habitats and the coincident catch of rockfish in shelf flatfish trawls. Table 1 summarizes the coast-wide ABC's and catch in recent years. In recent years, the total mortality has been slightly above the OY (higher in retrospect based on current methods used for total mortality estimates), but well below the ABC.

Rebuilding calculations

This rebuilding analysis was conducted using software developed by A. Punt (version 3.12b, January 2010). The steps followed were:

1. Define how virgin biomass (SB_0) will be calculated.
2. Define how future recruitment will be generated.
3. Define the fishery selectivity and allocation to be applied during rebuilding.
4. Decide how to include uncertainty in input parameters from the stock assessment in the rebuilding analysis.
5. Recalculate rebuilding reference points from the most current assessment results
   a) Calculate the projected year in which the stock would rebuild with a 50% probability if all future fishing mortality was eliminated ($T_{F=0}$).
   b) Calculate the projected year for a 50% probability of rebuilding from the year in which the stock was first declared overfished (T_{MIN}).
   c) Calculate the mean generation time.
   d) Calculate the maximum allowable rebuilding time ($T_{MAX} = T_{MIN}$ + one mean generation time).
6. Identification and analysis of alternative harvest strategies for rebuilding.

1. Definition of SB_0

The equilibrium spawning biomass level (SB_0) used in this rebuilding analysis is calculated via the stock-recruitment relationship in order to be consistent with assessment model results. This level is estimated to be 27,846 mt in the base case assessment model, which dictates that the rebuilding target ($SB_{40\%}$) is 11,138 mt (Table 2).

2. Generation of future recruitment

The parameters of the stock recruitment relationship (unexploited equilibrium recruitment [natural log of R_0], steepness [h], and the degree of recruitment variability [σ_r]) from the 2011 stock assessment are used to generate future recruitments in the rebuilding analysis. These values are provided in Table 3.

3. Fishery selectivity and allocation

In order to project the effect of fishing on the canary rockfish rebuilding trajectory, it is necessary to specify the fishery selectivity and relative allocation among fleets. Unlike the method employed in 2007 and 2009, this analysis projects forward using selectivity based on

council allocation to major sectors such as trawl and fixed gear. When necessary, catch averaged over the three most recent years (2008-2010) was used to split the major sectors into the fisheries used in the stock assessment. For most rebuilding species, differences in sector allocations and harvest shares are less of a factor, than for canary, and do not have a comparable impact on the specification of OFLs. The Council allocation percentages for canary provide the best measure of the distribution of future catches, if ACLs are assumed to be fully caught. In recent fisheries, ACLs/OYs have not been fully harvested, but the sector percentages from these recent years would only be appropriately applied to amounts of catch below those obtained using the rebuilding SPR, which is not consistent with how rebuilding analyses have been conducted. Additionally, even those recent fishery shares do not reflect a trawl fishery managed under individual quotas. The resulting selectivity and weight at age are included in the basic input data files (Appendices A and B).

4. Inclusion of uncertainty

Uncertainty is included in this rebuilding analysis via integration of the three states of nature for stock-recruitment steepness reported in the 2011 assessment as well as stochastic future recruitment strengths. Specifically, the model using a low value for steepness is given a probability of 25%, the base case 50% and the model using a high value for steepness 25%. This is achieved through the use of multiple parameter vectors in the rebuilding input files. Because these three states are discrete levels from a continuous probability distribution, it is expected that there will be a reasonably high degree of 'stair-stepping' (Figures 1 and 2) in reported probabilities. This means that interpretation of the relative difference between 60% and 70% probabilities are probably not as meaningful as those between 70% and 80% where the upper tail is actually informing the difference. A similar pattern should exist in the lower tail as well. Addition of more parameter vectors would tend to smooth this pattern in the results, but is unlikely to substantially change the median values upon which decisions are generally made.

5. Recalculate reference points

The median year of recovery in the absence of fishing ($T_{F=0}$) was calculated by setting fishing mortality to zero in 2013. This value for $T_{F=0}$ (starting in 2013) is equal to 2028. The value for T_{MIN}, the median year for rebuilding to the target level in the absence of fishing since the year of declaration (2000) is 2027 (revised upward from 2024 in the 2009 analysis). That T_{MIN} is one year less than $T_{F=0}$ indicates that harvest rates during this ten-year period have delayed the stock trajectory by one year.

The estimated generation time of 23 years has increased by one year from the 2007 and 2009 analyses value of 22 years. In conjunction with T_{MIN}, the mean generation time dictates the revised estimate of T_{MAX}, 2050 (increased from 2046 in the 2009 analysis). Applying the same harvest rate (SPR_{TARGET} = 88.7%) used to find T_{TARGET} in the 2007 rebuilding analysis leads to a $T_{REBUILD}$ of 2030. This harvest rate generates a P_{MAX} (probability of recovery by T_{MAX}) of 75%.

All reference points from the 2009 rebuilding analysis and those recalculated here are summarized in Table 2.

6. Alternate rebuilding strategies

Assuming that a constant rate of harvest will be applied throughout a rebuilding period, the basis for rebuilding alternatives can be divided into two approaches: 1) strategies based on selection of a harvest rate, and 2) strategies based selection of a T_{TARGET} (year for 50%

probability of recovery). The result of each of these strategies is contingent on the actual ACL's removed in 2011 and 2012. This rebuilding analysis therefore presents 18 alternate strategies. Specifically, the alternatives are:

Based on the current OY for 2011 and 2012 (102 and107 mt, respectively), calculate the results of the following strategies (in decreasing SPR order for easier interpretation).

1. Eliminate all harvest beginning in 2013 (F=0).
2. Apply the harvest rate that would currently generate 102 mt taken in 2011 and 107 mt in 2012. (SPR=89.5%)
3. Apply the current rebuilding harvest rate target (SPR_{TARGET}=88.7%).
4. Apply the 2009 harvest rate (SPR=87.2%) starting in 2013.
5. Apply the harvest rate that estimated to generate a 50% probability of recovery by the T_{MAX} from 2007 (2041, SPR=67.9%)
6. Apply the harvest rate that estimated to generate a 50% probability of recovery by the T_{MAX} from 2011 (2050, SPR=62.8%)
7. Apply a 40:10 harvest policy.
8. Apply the ABC harvest rate ($SPR_{50\%}$).

Apply the harvest rate that achieves a 50% probability of recovery for years near the current T_{TARGET} (2027) and $T_{F=0}$ from 2013 (2028) (in decreasing SPR order for easier interpretation):

9) 2028
10) 2029
11) 2030
12) 2031
13) 2032

Apply the harvest rate that achieves a 50% probability of recovery for years distributed between $T_{F=0}$ (2028) and the current T_{MAX} of 2050 (in decreasing SPR order for easier interpretation):

14) 2030
15) 2035
16) 2040
17) 2045
18) 2050

Results

Summary results from alternatives 1-18 are presented in Table 4. Detailed results are presented in Tables 5 and 6 and Figures 1 and 2. In the absence of any future fishing mortality, the canary rockfish stock is projected to have a 50% probability of recovery to the rebuilding target ($SB_{40\%}$) by 2028 (alternative 1). In contrast, the stock is not projected to reach this level until 2174 if the ABC catches are removed (alternative 8). These two scenarios bound the range

of fishing mortality between none and the overfishing level; all other scenarios lie within this range.

Fishing at the current SPR target (alternative 3) results in a modest increase from the 107 mt ACL in 2012 to 115.7 mt in 2013. This current rebuilding harvest rate (SPR = 88.7%) results in a median year to rebuild (T_{TARGET}) of 2030. The harvest rate that is consistent with the 2011 and 2012 ACL (102 and 107 mt) is SPR = 89.5% (alternate 2), and if continued, also results in a 50% probability of recovery achieved by 2030. Because the estimate of the year with 50% probability of recovery under no fishing is 2028, it is not possible to rebuild by the 2009 T_{TARGET} of 2027. This suggests the need to consider 'resetting' the reference points from the 2009 rebuilding analysis in light of the changes to the stock assessment results and estimated current status.

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Tables

Table 1. Canary rockfish management performance under rebuilding.

Year	ABC (mt)[2]	OY (mt)[2]	Commercial landings (mt)[1]	Total Catch (mt)	NWFSC Total Mortality Reports (mt)
2000	287	200	55.7	199.8	
2001	228	93	42.6	133.0	
2002	228	93	69.9	120.5	
2003	272	44	75.8	127.5	
2004	256	47.3	49.3	85.0	47.3
2005	270	46.8	10.9	59.0	48.7
2006	279	47	7.7	60.0	57.0
2007	172	44	12.1	46.2	45.8
2008	179	44	8.2	41.9	41.2
2009	937	105	11.7	38.0	38.1
2010	940	105	14.3	81.8	

[1] Excludes all at-sea whiting, recreational and research catches.
[2] The terms ABC and OY from this period have been replaced by OFL and ACL, respectively.

Table 2. Summary of rebuilding reference points for canary rockfish from Amendment 16-4 (for comparison), the 2009 rebuilding analysis, and recalculated values based on the 2011 assessment results.

	Source		
Parameter	Amendment 16-4	2009 Rebuilding analysis	2011 Rebuilding analysis
SB_0	34,155	25,993	27,846
Rebuilding target ($SB_{40\%}$)	13,662	10,397	11,138
SB_{2011}	-	6,548	6,459
T_{MIN}	2048	2024	2027
Mean generation time	23	22	23
T_{MAX}	2071	2046	2050
$T_{F=0}$ (begin in 2007)	2053	-	-
$T_{F=0}$ (begin in 2011, 105 mt removed in 2010)	-	2024	-
$T_{F=0}$ (begin in 2013, 102 mt removed in 2011)	-	-	2028
P_{MAX}	55.4%	-	-
P_{MAX} (105 mt removed in 2010)	-	75%	-
P_{MAX} (102 mt removed in 2011)	-	-	75%
T_{TARGET}	2063	-	-

T_{TARGET} (105 mt removed in 2010)	-	2027	-
$T_{REBUILD}$ (102 mt removed in 2011)	-	-	2029
SPR_{TARGET}	88.7%	88.7%	88.7%

Table 3. Stock-recruitment parameters for the three states of nature included in this rebuilding analysis.

	State of nature		
Parameter	Low steepness	Base case	High steepness
R_0 (1000s)	3,459	3,350	3,222
Steepness (h)	0.345	0.511	0.72
σ_r	0.50	0.50	0.50

Table 4. Results of rebuilding alternatives based on selection of an SPR target or year for 50% probability of recovery and 2011, 2012 ACL's of 102 and 107 mt, respectively.

Run	1	2	3	4	5	6	7	8
Basis	F=0 after 2011: 102 & 2012: 107mt	SPR from 2011: 102 & 2012: 107mt	SPR = 0.887 after 2011: 102 & 2012: 107mt	2009 SPR after 2011: 102 & 2012: 107mt	SPR that achieves 50% prob. recovery by 2007 T_{MAX}	SPR that achieves 50% prob. recovery by 2011 T_{MAX}	40:10 Harvest policy	ABC harvest rate SPR = 0.50
2013 ACL (mt)	0.0	106.9	115.7	132.6	394.7	493.4	586.6	751.7
2013 OFL (mt)	751.7	751.8	751.7	751.7	751.7	751.7	751.7	751.7
2014 ACL (mt)	0.0	109.5	118.5	135.7	397.7	494.2	578.0	741.3
2014 OFL (mt)	775.3	770.6	770.1	769.3	757.4	753.0	748.7	741.3
50% prob. recovery by:	2028	2030	2030	2030	2041	2050	2115	2174
SPR_{TARGET}	1.000	0.895	0.887	0.872	0.679	0.622	≥ 0.500	0.500
Probability of recovery by reference points based on the 2009 rebuilding analysis:								
2024 (T_{MIN} and $T_{F=0}$ from 2011)	27.2%	25.6%	25.5%	25.4%	25.0%	25.0%	25.0%	25.0%
2027 (T_{TARGET})	48.2%	35.5%	34.4%	32.7%	25.0%	25.0%	25.0%	25.0%
2046 (T_{MAX})	75.0%	75.0%	75.0%	75.0%	61.3%	43.0%	27.0%	25.4%
Probability of recovery by recalculated 2011 reference points:								
2027(T_{TARGET}; and T_{MIN} from 2013)	48.2%	35.5%	34.4%	32.7%	25.0%	25.0%	25.0%	25.0%
2028($T_{F=0}$ from 2013)	56.8%	41.0%	40.3%	39.2%	25.6%	25.0%	25.0%	25.0%
2050 (T_{MAX})	75.0%	75.0%	75.0%	75.0%	66.3%	50.0%	27.5%	25.6%

Table 4 (cont). Results of rebuilding alternatives based on a year for 50% probability of recovery and 2011, 2012 ACL's of 102 and 107 mt, respectively.

Run	9	10	11	12	13
Basis	SPR that achieves 50% prob. recovery by 2028	SPR that achieves 50% prob. recovery by 2029	SPR that achieves 50% prob. recovery by 2030	SPR that achieves 50% prob. recovery by 2031	SPR that achieves 50% prob. recovery by 2032
2013 ACL (mt)	47.5	100.9	147.2	183.6	216.1
2013 OFL (mt)	751.7	751.7	751.7	751.7	751.7
2014 ACL (mt)	48.9	103.5	150.5	187.3	220.1
2014 OFL (mt)	773.2	770.7	768.6	767.0	765.5
50% prob. recovery by:	2028	2029	2030	2031	2032
SPR_{TARGET}	0.951	0.900	0.859	0.829	0.803
Probability of recovery by reference points based on the 2007 rebuilding analysis:					
2024 (T_{MIN} and $T_{F=0}$ from 2011)	26.0%	25.6%	25.3%	25.1%	25.0%
2027 (T_{TARGET})	41.2%	36.4%	31.7%	29.9%	27.9%
2046 (T_{MAX})	75.0%	75.0%	75.0%	74.8%	74.5%
Probability of recovery by recalculated 2009 reference points:					
2027(T_{TARGET}; and T_{MIN} from 2013)	41.2%	36.4%	31.7%	29.9%	27.9%
2028($T_{F=0}$ from 2013)	50.0%	41.7%	37.4%	33.4%	31.1%
2050 (T_{MAX})	75.0%	75.0%	75.0%	75.0%	74.9%

Table 4 (cont). Results of rebuilding alternatives based on a year for 50% probability of recovery and 2011, 2012 ACL's of 102 and 107 mt, respectively.

Run	14	15	16	17	18
Basis	SPR that achieves 50% prob. recovery by 2030	SPR that achieves 50% prob. recovery by 2035	SPR that achieves 50% prob. recovery by 2040	SPR that achieves 50% prob. recovery by 2045	SPR that achieves 50% prob. recovery by 2050
2013 ACL (mt)	147.2	301.8	394.2	449.0	493.4
2013 OFL (mt)	751.7	751.7	751.7	751.7	751.7
2014 ACL (mt)	150.5	305.8	397.2	451.0	494.2
2014 OFL (mt)	768.6	761.6	757.5	755.0	753.0
50% prob. recovery by:	2030	2035	2040	2045	2050
SPR_{TARGET}	0.859	0.740	0.679	0.647	0.622
Probability of recovery by reference points based on the 2007 rebuilding analysis:					
2024 (T_{MIN} and $T_{F=0}$ from 2011)	25.3%	25.0%	25.0%	25.0%	25.0%
2027 (T_{TARGET})	31.7%	26.1%	25.1%	25.0%	25.0%
2046 (T_{MAX})	75.0%	71.9%	61.5%	52.7%	43.0%
Probability of recovery by recalculated 2009 reference points:					
2027(T_{TARGET}; and T_{MIN} from 2013)	31.7%	26.1%	25.1%	25.0%	25.0%
2028($T_{F=0}$ from 2013)	37.4%	27.4%	25.6%	25.0%	25.0%
2050 (T_{MAX})	75.0%	73.6%	66.3%	59.4%	50.0%

Table 5. Median spawning biomass (mt) for rebuilding alternatives based on selection of an SPR target or year for 50% probability of recovery and 2011, 2012 ACL's of 102 and 107 mt, respectively. Note that after 25 years the table is compressed.

Run	1	2	3	4	5	6	7	8
Basis	F=0 after 2011: 102 & 2012: 107mt	SPR from 2011: 102 & 2012: 107mt	SPR = 0.887 after 2011: 102 & 2012: 107mt	2009 SPR after 2011: 102 & 2012: 107mt	SPR that achieves 50% prob. recovery by 2007 T_{MAX}	SPR that achieves 50% prob. recovery by 2011 T_{MAX}	40:10 Harvest policy	ABC harvest rate SPR = 0.50
2011	6,458	6,458	6,458	6,458	6,458	6,458	6,458	6,458
2012	6,603	6,603	6,603	6,603	6,603	6,603	6,603	6,603
2013	6,714	6,715	6,714	6,714	6,714	6,714	6,714	6,714
2014	6,860	6,816	6,811	6,804	6,694	6,653	6,614	6,545
2015	7,020	6,930	6,922	6,907	6,688	6,607	6,533	6,395
2016	7,207	7,071	7,058	7,037	6,709	6,588	6,483	6,279
2017	7,427	7,243	7,227	7,198	6,762	6,603	6,469	6,201
2018	7,682	7,449	7,429	7,393	6,849	6,652	6,490	6,161
2019	7,972	7,689	7,665	7,621	6,968	6,736	6,547	6,158
2020	8,293	7,960	7,932	7,880	7,119	6,850	6,632	6,188
2021	8,643	8,257	8,224	8,165	7,295	6,989	6,743	6,247
2022	9,004	8,566	8,530	8,462	7,479	7,138	6,858	6,314
2023	9,389	8,895	8,854	8,778	7,683	7,305	6,988	6,397
2024	9,787	9,237	9,191	9,107	7,893	7,478	7,122	6,490
2025	10,202	9,591	9,542	9,449	8,112	7,651	7,241	6,577
2026	10,610	9,935	9,880	9,777	8,319	7,824	7,361	6,662
2027	11,039	10,302	10,241	10,130	8,543	8,003	7,510	6,760
2028	11,485	10,690	10,626	10,507	8,772	8,203	7,656	6,881
2029	11,969	11,090	11,018	10,883	9,010	8,391	7,776	6,969
2030	12,427	11,477	11,401	11,258	9,252	8,586	7,883	7,068
2031	12,852	11,818	11,738	11,586	9,431	8,720	7,971	7,119
2032	13,276	12,172	12,082	11,915	9,632	8,888	8,069	7,222
2033	13,710	12,533	12,442	12,272	9,877	9,089	8,185	7,320
2034	14,173	12,934	12,835	12,651	10,060	9,219	8,276	7,369
2035	14,559	13,239	13,134	12,933	10,246	9,389	8,357	7,457
2040	16,566	14,865	14,738	14,483	11,117	10,054	8,678	7,709
2045	18,200	16,170	16,010	15,707	11,743	10,524	8,896	7,884
2050	19,762	17,420	17,237	16,896	12,396	11,054	9,089	8,100
2055	21,104	18,527	18,355	17,972	13,041	11,522	9,276	8,301
2060	22,383	19,573	19,353	18,941	13,578	11,950	9,444	8,495
2065	23,236	20,239	20,024	19,601	13,919	12,219	9,507	8,600
2070	23,988	20,862	20,634	20,209	14,322	12,547	9,615	8,755

Table 5 (cont.). Median spawning biomass (mt) for rebuilding alternatives based on selection of a year for 50% probability of recovery and 2011, 2012 ACL's of 102 and 107 mt, respectively. Note that after 25 years the table is compressed.

Run	9	10	11	12	13
Basis	SPR that achieves 50% prob. recovery by 2028	SPR that achieves 50% prob. recovery by 2029	SPR that achieves 50% prob. recovery by 2030	SPR that achieves 50% prob. recovery by 2031	SPR that achieves 50% prob. recovery by 2032
2011	6,458	6,458	6,458	6,458	6,458
2012	6,603	6,603	6,603	6,603	6,603
2013	6,714	6,714	6,714	6,714	6,714
2014	6,840	6,817	6,798	6,783	6,769
2015	6,979	6,934	6,895	6,864	6,837
2016	7,145	7,077	7,018	6,972	6,931
2017	7,344	7,252	7,173	7,112	7,057
2018	7,577	7,461	7,362	7,284	7,216
2019	7,845	7,704	7,584	7,490	7,408
2020	8,143	7,977	7,836	7,727	7,630
2021	8,468	8,277	8,114	7,989	7,878
2022	8,806	8,589	8,405	8,262	8,137
2023	9,166	8,921	8,713	8,553	8,413
2024	9,537	9,265	9,035	8,857	8,702
2025	9,923	9,623	9,370	9,176	9,005
2026	10,304	9,970	9,690	9,474	9,287
2027	10,705	10,341	10,034	9,798	9,593
2028	11,121	10,732	10,404	10,146	9,922
2029	11,574	11,137	10,768	10,487	10,242
2030	11,995	11,527	11,136	10,838	10,578
2031	12,381	11,872	11,454	11,136	10,856
2032	12,771	12,228	11,774	11,433	11,138
2033	13,172	12,593	12,128	11,764	11,448
2034	13,607	12,999	12,492	12,095	11,753
2035	13,956	13,308	12,763	12,363	12,011
2040	15,781	14,965	14,267	13,757	13,311
2045	17,256	16,274	15,451	14,830	14,311
2050	18,688	17,541	16,609	15,918	15,325
2055	19,929	18,654	17,652	16,899	16,239
2060	21,083	19,720	18,600	17,771	17,049
2065	21,856	20,396	19,231	18,346	17,567
2070	22,538	21,022	19,819	18,871	18,100

Table 5 (cont.). Median spawning biomass (mt) for rebuilding alternatives based on selection of a year for 50% probability of recovery and 2011, 2012 ACL's of 102 and 107 mt, respectively. Note that after 25 years the table is compressed.

Run	14	15	16	17	18
Basis	SPR that achieves 50% prob. recovery by 2030	SPR that achieves 50% prob. recovery by 2035	SPR that achieves 50% prob. recovery by 2040	SPR that achieves 50% prob. recovery by 2045	SPR that achieves 50% prob. recovery by 2050
2011	6,458	6,458	6,458	6,458	6,458
2012	6,603	6,603	6,603	6,603	6,603
2013	6,714	6,714	6,714	6,714	6,714
2014	6,798	6,733	6,694	6,671	6,653
2015	6,895	6,765	6,689	6,643	6,607
2016	7,018	6,824	6,709	6,642	6,588
2017	7,173	6,914	6,763	6,674	6,603
2018	7,362	7,038	6,850	6,740	6,652
2019	7,584	7,194	6,970	6,839	6,736
2020	7,836	7,381	7,121	6,970	6,850
2021	8,114	7,593	7,296	7,125	6,989
2022	8,405	7,815	7,481	7,289	7,138
2023	8,713	8,055	7,685	7,473	7,305
2024	9,035	8,304	7,895	7,662	7,478
2025	9,370	8,566	8,114	7,855	7,651
2026	9,690	8,811	8,322	8,043	7,824
2027	10,034	9,073	8,545	8,241	8,003
2028	10,404	9,352	8,775	8,453	8,203
2029	10,768	9,633	9,013	8,664	8,391
2030	11,136	9,919	9,255	8,879	8,586
2031	11,454	10,143	9,434	9,032	8,720
2032	11,774	10,388	9,635	9,215	8,888
2033	12,128	10,668	9,881	9,435	9,089
2034	12,492	10,922	10,064	9,588	9,219
2035	12,763	11,129	10,250	9,765	9,389
2040	14,267	12,214	11,122	10,519	10,054
2045	15,451	13,020	11,749	11,052	10,524
2050	16,609	13,861	12,403	11,637	11,054
2055	17,652	14,634	13,048	12,182	11,522
2060	18,600	15,287	13,587	12,660	11,950
2065	19,231	15,730	13,928	12,961	12,219
2070	19,819	16,168	14,331	13,326	12,547

Table 6. Median catches (mt) for rebuilding alternatives based on selection of an SPR target or year for 50% probability of recovery and 2011, 2012 ACL's of 102 and 107 mt, respectively. Note that after 25 years the table is compressed.

Run	1	2	3	4	5	6	7	8
Basis	F=0 after 2011: 102 & 2012: 107mt	SPR from 2011: 102 & 2012: 107mt	SPR = 0.887 after 2011: 102 & 2012: 107mt	2009 SPR after 2011: 102 & 2012: 107mt	SPR that achieves 50% prob. recovery by 2007 T_{MAX}	SPR that achieves 50% prob. recovery by 2011 T_{MAX}	40:10 Harvest policy	ABC harvest rate SPR = 0.50
2011	102	102	102	102	102	102	102	102
2012	107	104	107	107	107	107	107	107
2013	0	107	116	133	395	493	587	752
2014	0	110	119	136	398	494	578	741
2015	0	112	122	139	402	496	572	733
2016	0	116	125	143	407	500	571	729
2017	0	119	129	147	414	506	575	728
2018	0	124	134	153	423	515	584	732
2019	0	128	138	158	433	524	597	737
2020	0	133	143	163	443	535	613	743
2021	0	138	149	169	454	546	631	752
2022	0	143	155	176	468	560	652	763
2023	0	149	160	182	480	573	671	773
2024	0	154	166	189	492	586	692	782
2025	0	160	173	196	506	599	711	794
2026	0	166	179	203	520	614	735	807
2027	0	172	185	210	533	627	757	817
2028	0	178	192	217	547	641	775	829
2029	0	184	198	224	559	653	793	837
2030	0	189	204	231	571	666	808	847
2031	0	195	210	238	584	679	827	857
2032	0	201	216	245	596	691	838	865
2033	0	207	222	251	606	700	854	869
2034	0	211	227	257	617	711	866	876
2035	0	217	233	263	627	721	873	882
2040	0	242	260	293	675	767	922	911
2045	0	262	281	317	717	808	960	938
2050	0	283	304	341	757	847	986	957
2055	0	302	323	363	792	881	1,022	986
2060	0	315	338	379	823	911	1,040	1,005
2065	0	327	350	393	845	934	1,058	1,021
2070	0	337	361	405	862	948	1,062	1,030

Table 6 (cont.). Median catches (mt) for rebuilding alternatives based on selection of a year for 50% probability of recovery and 2011, 2012 ACL's of 102 and 107 mt, respectively. Note that after 25 years the table is compressed.

Run	9	10	11	12	13
Basis	SPR that achieves 50% prob. recovery by 2028	SPR that achieves 50% prob. recovery by 2029	SPR that achieves 50% prob. recovery by 2030	SPR that achieves 50% prob. recovery by 2031	SPR that achieves 50% prob. recovery by 2032
2011	102	102	102	102	102
2012	107	107	107	107	107
2013	48	101	147	184	216
2014	49	103	150	187	220
2015	50	106	154	191	224
2016	52	109	158	196	230
2017	54	113	163	202	236
2018	56	117	169	208	243
2019	58	121	174	215	251
2020	60	126	180	222	259
2021	63	131	187	230	267
2022	65	136	194	238	277
2023	68	141	201	246	286
2024	71	146	208	255	295
2025	74	152	216	264	305
2026	76	157	224	273	315
2027	79	163	231	282	326
2028	82	169	239	291	336
2029	85	174	247	300	346
2030	88	180	254	308	355
2031	91	185	261	317	365
2032	94	191	269	326	374
2033	96	196	275	334	383
2034	99	200	281	341	391
2035	101	206	288	349	399
2040	114	230	320	386	440
2045	124	249	346	416	473
2050	135	269	373	446	506
2055	144	287	396	473	536
2060	151	300	413	493	560
2065	157	312	429	511	578
2070	161	321	441	526	594

Table 6 (cont.). Median catches (mt) for rebuilding alternatives based on selection of a year for 50% probability of recovery and 2011, 2012 ACL's of 102 and 107 mt, respectively. Note that after 25 years the table is compressed.

Run	14	15	16	17	18
Basis	SPR that achieves 50% prob. recovery by 2030	SPR that achieves 50% prob. recovery by 2035	SPR that achieves 50% prob. recovery by 2040	SPR that achieves 50% prob. recovery by 2045	SPR that achieves 50% prob. recovery by 2050
2011	102	102	102	102	102
2012	107	107	107	107	107
2013	147	302	394	449	493
2014	150	306	397	451	494
2015	154	310	401	454	496
2016	158	316	407	459	500
2017	163	323	414	466	506
2018	169	332	423	474	515
2019	174	341	432	484	524
2020	180	350	443	495	535
2021	187	361	454	506	546
2022	194	372	467	520	560
2023	201	383	479	532	573
2024	208	395	492	545	586
2025	216	407	505	559	599
2026	224	419	520	574	614
2027	231	432	533	587	627
2028	239	444	546	601	641
2029	247	456	559	613	653
2030	254	466	571	626	666
2031	261	478	584	638	679
2032	269	490	596	651	691
2033	275	499	606	660	700
2034	281	509	616	671	711
2035	288	519	626	681	721
2040	320	565	675	729	767
2045	346	604	716	770	808
2050	373	641	756	810	847
2055	396	677	792	845	881
2060	413	706	823	877	911
2065	429	727	845	899	934
2070	441	743	862	914	948

Figures

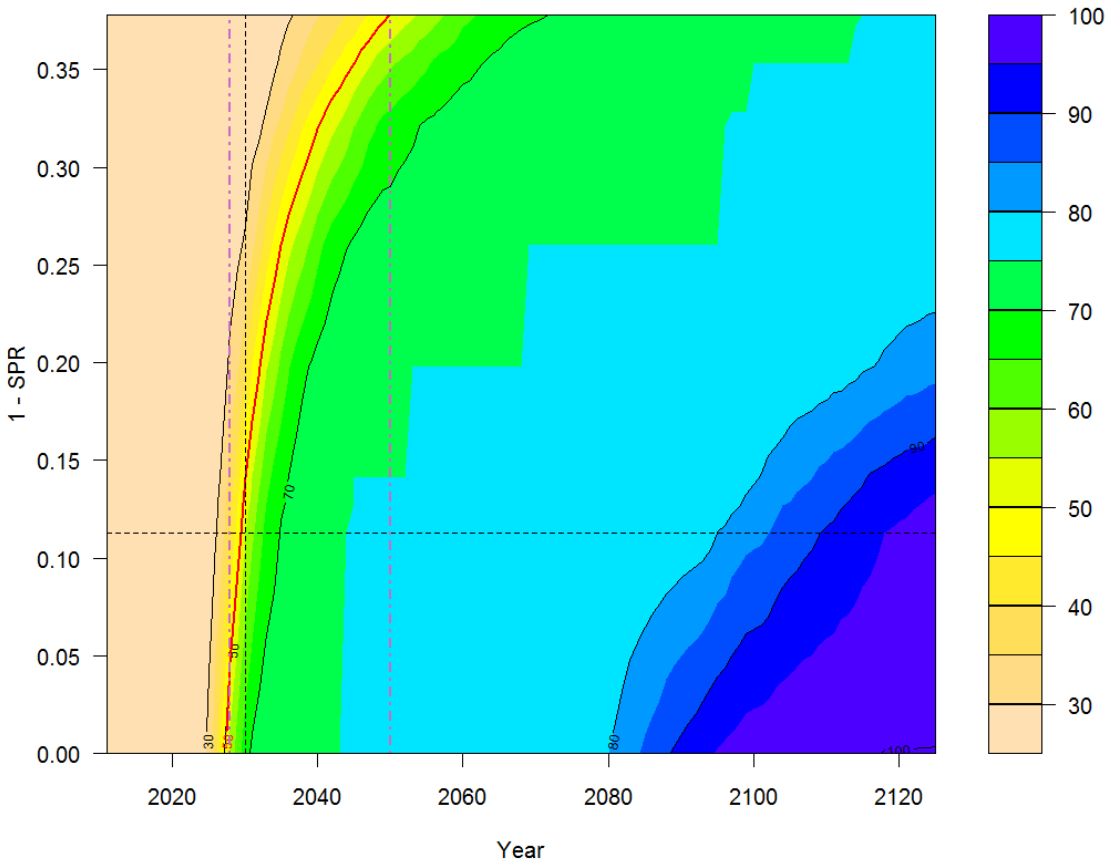

Figure 1. Estimated percent probability of rebuilding for canary by year and 1 – SPR. Fishing increases as 1 – SPR increases. The black dashed lines show a (one minus) SPR of 0.887 intersecting with the 50% median year to rebuild of 2030. The violet dashed–dotted lines show the current assessment's F = 0 (2028) and the new T_{MAX} of 2050.

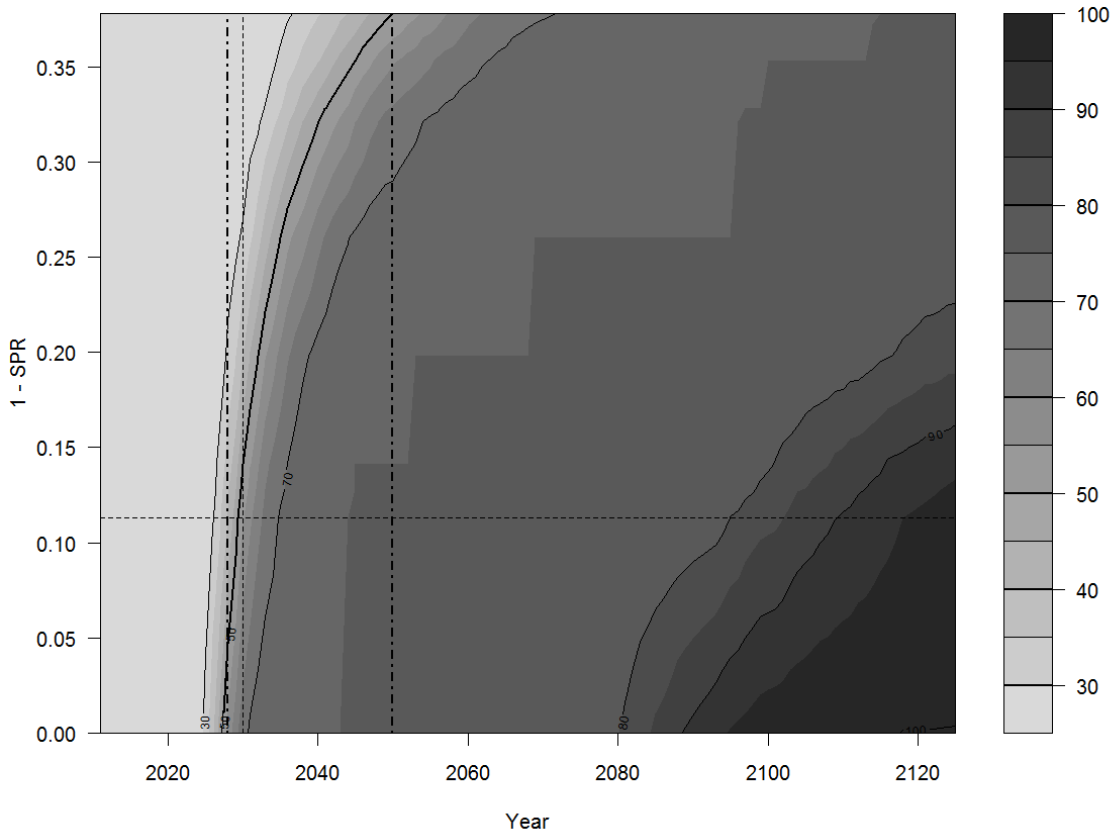

Figure 2. (Same as Figure 1 in grey scale.) Estimated percent probability of rebuilding for canary by year and 1 – SPR. Fishing increases as 1 – SPR increases. The dashed lines show a (one minus) SPR of 0.887 intersecting with the 50% median year to rebuild of 2030. The dashed–dotted lines show the current assessment's F = 0 (2028) and the new T_{MAX} of 2050.

Appendix A. Basic input file for rebuilding analyses

#Title, #runnumber: 52 Canary_data.SS Canary_control.SS 6256.15 27840.3 6415.64 StartTime: Tue Aug 23 14:02:45 2011
SSv3_default_rebuild.dat
Number of sexes
2
Age range to consider (minimum age; maximum age)
0 40
Number of fleets
12
First year of projection (Yinit)
2011
First Year of rebuilding period (Ydecl)
2000
Number of simulations
1000
Maximum number of years
300
Conduct projections with multiple starting values (0=No;else yes)
1
Number of parameter vectors
4
Is the maximum age a plus-group (1=Yes;2=No)
1
Generate future recruitments using historical recruitments (1) historical recruits/spawner (2) or a stock-recruitment (3)
3
Constant fishing mortality (1) or constant Catch (2) projections
1
Fishing mortality based on SPR (1) or actual rate (2)
1
Pre-specify the year of recovery (or -1) to ignore
-1
Fecundity-at-age
0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 #runnumber: 54
Canary_data.SS Canary_control.SS 6256.28 27846.4 6458.11
0 0 8.74216e-005 0.000949417 0.00618432 0.027655 0.0896757 0.219323 0.424625 0.686754 0.974452 1.26108 1.53104 1.7779 2.00058
2.20032 2.37917 2.53923 2.68245 2.81056 2.9251 3.02744 3.1188 3.2003 3.27293 3.3376 3.39515 3.44631 3.49175 3.5321 3.5679 3.59965
3.62779 3.65272 3.6748 3.69434 3.71164 3.72694 3.74048 3.75245 3.77163 #female fecundity; weighted by N in year Y_init across morphs and
areas
Age specific selectivity and weight adjusted for discard and discard mortality
#wt and selex for gender,fleet: 1 1
0.01241 0.0267992 0.110833 0.272076 0.434135 0.603395 0.77442 0.94592 1.11621 1.28229 1.45333 1.64563 1.85831 2.06981 2.26216
2.43205 2.58288 2.7182 2.8403 2.95061 3.05016 3.13983 3.22043 3.29271 3.35742 3.41525 3.46685 3.51285 3.55379 3.5902 3.62255 3.65128
3.67676 3.69936 3.71939 3.73713 3.75284 3.76675 3.77905 3.78994 3.80729
0 9.26815e-005 0.000244509 0.00538603 0.0556411 0.231821 0.522906 0.784469 0.901086 0.86457 0.740046 0.61029 0.520519 0.472411
0.45071 0.441979 0.438705 0.437522 0.437099 0.436947 0.43689 0.436868 0.43686 0.436856 0.436855 0.436854 0.436853 0.436853 0.436853
0.436853 0.436853 0.436853 0.436853 0.436853 0.436853 0.436853 0.436853 0.436853 0.436853 0.436853 0.436853
#wt and selex for gender,fleet: 1 2
0.01241 0.0267695 0.0884437 0.271896 0.463873 0.648375 0.832668 1.01394 1.19222 1.37076 1.55227 1.73552 1.91709 2.09394 2.26357
2.42368 2.57244 2.70892 2.83301 2.94519 3.04622 3.13697 3.21834 3.29116 3.35625 3.41435 3.46615 3.51229 3.55333 3.58982 3.62224 3.651
3.67653 3.69915 3.7192 3.73696 3.75269 3.7666 3.77892 3.78981 3.80719
0 9.25937e-005 0.000129452 0.00063021 0.00936405 0.0617611 0.208757 0.443953 0.686147 0.857583 0.941507 0.963201 0.952558
0.929825 0.906126 0.886377 0.871776 0.861737 0.855127 0.850875 0.848165 0.846435 0.845321 0.844594 0.844112 0.843785 0.843561
0.843403 0.84329 0.843207 0.843146 0.843099 0.843064 0.843036 0.843014 0.842997 0.842983 0.842971 0.842962 0.842954 0.842935
#wt and selex for gender,fleet: 1 3
0.01241 0.03395 0.109974 0.228196 0.382871 0.560942 0.752651 0.950839 1.15059 1.34918 1.54469 1.73426 1.91482 2.0849 2.24454 2.39429
2.53446 2.66506 2.78599 2.8972 2.99881 3.09111 3.17453 3.24964 3.31702 3.37731 3.43115 3.47913 3.52183 3.55979 3.5935 3.62341 3.64994
3.67344 3.69426 3.71269 3.72901 3.74344 3.75621 3.7675 3.7862
0 0.000120953 0.00639141 0.0384194 0.124085 0.274789 0.467722 0.659734 0.813424 0.912682 0.961912 0.97425 0.961575 0.93264
0.894549 0.853222 0.812982 0.776395 0.744572 0.717664 0.695304 0.676903 0.661829 0.649495 0.639389 0.631084 0.624232 0.618556
0.61383 0.609876 0.606554 0.603749 0.601372 0.599348 0.59762 0.596138 0.594864 0.593765 0.592816 0.591993 0.590376
#wt and selex for gender,fleet: 1 4
0.01241 0.026774 0.0958475 0.277065 0.449708 0.626111 0.803383 0.979494 1.15815 1.34537 1.54115 1.73867 1.93061 2.11266 2.28296
2.44083 2.58617 2.71922 2.84043 2.95042 3.04986 3.13951 3.2201 3.2924 3.35712 3.41497 3.46659 3.5126 3.55355 3.58998 3.62234 3.65107
3.67656 3.69917 3.7192 3.73695 3.75266 3.76657 3.77888 3.78977 3.80713
0 9.26069e-005 0.000151419 0.0018301 0.0240073 0.126739 0.350738 0.626193 0.837962 0.946629 0.985983 0.996438 0.998271 0.998083
0.997518 0.996937 0.996416 0.995971 0.995599 0.995292 0.995039 0.994833 0.994663 0.994524 0.994409 0.994314 0.994235 0.994168
0.994113 0.994066 0.994026 0.993992 0.993963 0.993938 0.993917 0.993898 0.993883 0.993869 0.993857 0.993846 0.993827

#wt and selex for gender,fleet: 1 5
0.01241 0.0276725 0.141155 0.233606 0.34064 0.480329 0.631914 0.787058 0.945132 1.10734 1.27798 1.4648 1.67431 1.90177 2.12889 2.33726 2.51942 2.67664 2.81301 2.93238 3.03768 3.13105 3.21406 3.28796 3.35377 3.41238 3.46454 3.51094 3.55219 3.58883 3.62136 3.65022 3.67582 3.6985 3.7186 3.7364 3.75216 3.76611 3.77845 3.78936 3.80679
0 9.51379e-005 0.0166977 0.399156 0.889314 0.884074 0.653023 0.401793 0.22084 0.114818 0.0593918 0.0321309 0.019081 0.0128602 0.00986041 0.00838128 0.00763026 0.00723587 0.00702115 0.00689986 0.00682878 0.00678563 0.00675852 0.00674093 0.00672917 0.00672109 0.00671539 0.00671127 0.00670824 0.00670596 0.00670422 0.00670286 0.00670179 0.00670094 0.00670025 0.00669969 0.00669923 0.00669885 0.00669853 0.00669826 0.00669764
#wt and selex for gender,fleet: 1 6
0.01241 0.0292629 0.12616 0.246108 0.380797 0.526008 0.687967 0.856324 1.02235 1.18941 1.36389 1.55172 1.75459 1.96572 2.17216 2.36293 2.53343 2.68397 2.81677 2.9343 3.03866 3.13154 3.2143 3.28807 3.35381 3.41238 3.46453 3.51091 3.55216 3.5888 3.62133 3.65019 3.67579 3.69847 3.71857 3.73638 3.75213 3.76608 3.77842 3.78934 3.80677
0 0.00010063 0.00626296 0.108781 0.460696 0.826541 0.939173 0.844947 0.650275 0.45115 0.298853 0.199818 0.141143 0.108104 0.0899271 0.0799726 0.0744752 0.0713872 0.0696126 0.0685657 0.0679304 0.0675336 0.0672787 0.0671102 0.0669959 0.0669164 0.0668598 0.0668187 0.0667881 0.066765 0.0667473 0.0667334 0.0667225 0.0667138 0.0667067 0.0667009 0.0666962 0.0666922 0.0666889 0.0666861 0.0666797
#wt and selex for gender,fleet: 1 7
0.01241 0.0267747 0.0882909 0.232774 0.431347 0.636063 0.847601 1.06137 1.27271 1.47824 1.67563 1.8633 2.04026 2.20598 2.36026 2.50317 2.63491 2.75574 2.86598 2.96599 3.05621 3.1372 3.20959 3.27408 3.33137 3.38219 3.42719 3.46701 3.50223 3.53336 3.56087 3.58518 3.60665 3.62562 3.64237 3.65717 3.67024 3.68178 3.69197 3.70097 3.71788
0 9.26089e-005 0.000132384 0.000310907 0.00183127 0.0088944 0.0297813 0.0738666 0.146073 0.243621 0.357284 0.475324 0.587241 0.685836 0.767576 0.831913 0.880232 0.914859 0.938341 0.953031 0.960923 0.963636 0.962466 0.958445 0.952404 0.945002 0.936766 0.928104 0.919332 0.910682 0.902322 0.894366 0.886887 0.879925 0.873497 0.8676 0.862221 0.857337 0.852919 0.848935 0.84399
#wt and selex for gender,fleet: 1 8
0.01241 0.0289001 0.131414 0.244304 0.365564 0.502801 0.64917 0.789221 0.924959 1.06314 1.21575 1.4056 1.65246 1.93103 2.18541 2.39345 2.56383 2.70864 2.83534 2.94794 3.04866 3.13896 3.21989 3.29237 3.35719 3.41509 3.46674 3.51276 3.55373 3.59015 3.62251 3.65125 3.67674 3.69934 3.71937 3.73711 3.75283 3.76673 3.77904 3.78993 3.80728
0 9.92788e-005 0.00902077 0.187405 0.661946 0.918129 0.815393 0.54012 0.287818 0.133782 0.0589486 0.0271135 0.0145284 0.00971708 0.00788801 0.00718268 0.00690288 0.00678761 0.00673798 0.00671557 0.00670493 0.00669963 0.00669686 0.00669534 0.00669447 0.00669395 0.00669363 0.00669342 0.00669329 0.00669319 0.00669313 0.00669308 0.00669304 0.00669302 0.006693 0.00669298 0.00669297 0.00669296 0.00669295 0.00669295 0.00669293
#wt and selex for gender,fleet: 1 9
0.01241 0.0276778 0.135927 0.249455 0.368605 0.506713 0.666413 0.832988 1.00645 1.19356 1.39934 1.62032 1.8432 2.054 2.24578 2.41784 2.572 2.7104 2.83486 2.94682 3.04749 3.13792 3.21901 3.29164 3.35659 3.41459 3.46632 3.51241 3.55342 3.58988 3.62228 3.65103 3.67654 3.69916 3.71921 3.73696 3.75268 3.7666 3.77891 3.7898 3.80718
0 9.52967e-005 0.00591211 0.163556 0.641962 0.924601 0.883359 0.69257 0.484005 0.325202 0.22517 0.168539 0.13829 0.122562 0.114431 0.110191 0.107938 0.106711 0.106022 0.105624 0.105386 0.105239 0.105145 0.105084 0.105042 0.105014 0.104993 0.104979 0.104968 0.10496 0.104953 0.104948 0.104944 0.104941 0.104939 0.104937 0.104935 0.104934 0.104932 0.104931 0.104929
#wt and selex for gender,fleet: 1 10
0.01241 0.0283955 0.127999 0.249344 0.384122 0.527923 0.683117 0.835478 0.980801 1.13307 1.31433 1.54116 1.79641 2.03848 2.24665 2.42399 2.57851 2.71578 2.83894 2.94984 3.04972 3.13957 3.22026 3.2926 3.35735 3.4152 3.46682 3.51282 3.55377 3.59019 3.62254 3.65127 3.67676 3.69936 3.71938 3.73713 3.75284 3.76674 3.77905 3.78994 3.80729
0 9.76642e-005 0.00471284 0.0944871 0.434006 0.809689 0.917903 0.773572 0.521213 0.303756 0.170705 0.104249 0.0748306 0.0626549 0.0577675 0.0558148 0.0550238 0.0546945 0.0545525 0.0544887 0.0544586 0.0544438 0.0544362 0.054432 0.0544297 0.0544283 0.0544275 0.054427 0.0544266 0.0544264 0.0544262 0.0544261 0.054426 0.054426 0.0544259 0.0544259 0.0544258 0.0544258 0.0544258 0.0544258 0.0544257
#wt and selex for gender,fleet: 1 11
0.01241 0.0267686 0.0856624 0.194113 0.467528 0.721876 0.926252 1.11971 1.30442 1.48068 1.64998 1.81493 1.97778 2.13882 2.29617 2.447 2.58886 2.72029 2.84076 2.95041 3.04968 3.13924 3.21979 3.29206 3.35677 3.4146 3.46622 3.51223 3.55319 3.58961 3.62198 3.65072 3.67621 3.69882 3.71886 3.73661 3.75233 3.76624 3.77855 3.78944 3.80682
0 9.25907e-005 0.000123287 0.000128689 0.000414276 0.00461417 0.0294734 0.106207 0.253075 0.448633 0.644033 0.798313 0.898437 0.953665 0.980313 0.991799 0.996236 0.997696 0.997987 0.99785 0.997575 0.99727 0.996978 0.996712 0.996476 0.996268 0.996087 0.99593 0.995794 0.995676 0.995573 0.995484 0.995407 0.99534 0.995282 0.995231 0.995187 0.995148 0.995114 0.995085 0.995031
#wt and selex for gender,fleet: 1 12
0.01241 0.0267696 0.0857813 0.189442 0.334108 0.513866 0.717813 0.933455 1.15122 1.3652 1.57188 1.76922 1.95604 2.13184 2.29645 2.44984 2.59198 2.7229 2.84278 2.95195 3.05091 3.14025 3.22067 3.29285 3.3575 3.41529 3.46687 3.51285 3.55378 3.59018 3.62252 3.65124 3.67671 3.6993 3.71932 3.73706 3.75276 3.76666 3.77896 3.78984 3.80719
0 0.22148 0.296419 0.304582 0.32716 0.372751 0.443363 0.532813 0.629896 0.723189 0.804363 0.869212 0.917152 0.950099 0.971251 0.984025 0.991352 0.99539 0.997556 0.998698 0.999298 0.999614 0.999781 0.999872 0.999921 0.999948 0.999962 0.999969 0.999971 0.99997 0.999968 0.999965 0.999961 0.999956 0.999951 0.999946 0.999942 0.999937 0.999932 0.999928 0.99993
#wt and selex for gender,fleet: 2 1
0.0129428 0.0302637 0.15626 0.332128 0.494352 0.650929 0.800961 0.945473 1.08391 1.21437 1.33772 1.4583 1.57969 1.7009 1.81699 1.92273 2.01535 2.09465 2.16189 2.21878 2.26696 2.30782 2.34255 2.37209 2.39725 2.41868 2.43694 2.4525 2.46576 2.47705 2.48668 2.49488 2.50186 2.50781 2.51287 2.51718 2.52085 2.52398 2.52664 2.5289 2.53199
0 9.67166e-005 0.00045483 0.0111137 0.0849782 0.279114 0.545127 0.769353 0.885225 0.894176 0.831567 0.739085 0.64879 0.576783 0.526032 0.492892 0.472169 0.459461 0.451686 0.446883 0.443865 0.441926 0.440649 0.439787 0.439191 0.438768 0.438462 0.438236 0.438066 0.437936 0.437835 0.437756 0.437693 0.437642 0.437601 0.437568 0.437541 0.437518 0.4375 0.437484 0.437446
#wt and selex for gender,fleet: 2 2

0.0129428 0.0300909 0.111515 0.349579 0.537576 0.708546 0.868986 1.01968 1.16205 1.2978 1.42784 1.55169 1.66788 1.77491 1.87196 1.95892 2.03613 2.1042 2.16385 2.21586 2.26101 2.30006 2.33373 2.3627 2.38757 2.40888 2.42713 2.44274 2.45607 2.46745 2.47717 2.48545 2.49251 2.49853 2.50366 2.50803 2.51175 2.51492 2.51762 2.51992 2.52311
0 9.62501e-005 0.000144216 0.00144782 0.0170845 0.0842477 0.231682 0.436269 0.640149 0.797753 0.896517 0.947059 0.966317 0.968131 0.961346 0.951002 0.939806 0.92912 0.919551 0.91129 0.904309 0.898485 0.893658 0.889671 0.886381 0.883662 0.881413 0.879548 0.877998 0.876706 0.875627 0.874724 0.873967 0.873331 0.872795 0.872344 0.871963 0.871641 0.871368 0.871138 0.870732
#wt and selex for gender,fleet: 2 3
0.012944 0.0476593 0.135179 0.270508 0.432622 0.605547 0.780071 0.950672 1.11404 1.2683 1.41237 1.54537 1.66654 1.77549 1.87239 1.95788 2.03288 2.09841 2.15549 2.20507 2.24804 2.28518 2.31722 2.34481 2.36853 2.38888 2.40634 2.42128 2.43407 2.44499 2.45433 2.4623 2.4691 2.4749 2.47984 2.48406 2.48765 2.4907 2.49331 2.49553 2.49878
0 0.000222775 0.00928941 0.0513573 0.150869 0.305237 0.484035 0.651723 0.785366 0.878285 0.935151 0.965188 0.977297 0.978125 0.972096 0.962086 0.950005 0.937147 0.924371 0.912218 0.900996 0.89085 0.881814 0.873857 0.866905 0.86087 0.855654 0.851162 0.847303 0.843995 0.841163 0.838742 0.836674 0.834909 0.833404 0.83212 0.831027 0.830095 0.829301 0.828625 0.827704
#wt and selex for gender,fleet: 2 4
0.0129428 0.0301182 0.133825 0.344224 0.516471 0.679803 0.834629 0.982344 1.12592 1.26773 1.40731 1.54154 1.6668 1.78072 1.88252 1.97245 2.05132 2.1201 2.17985 2.23157 2.27622 2.31468 2.34775 2.37613 2.40046 2.42129 2.43911 2.45434 2.46735 2.47846 2.48793 2.49601 2.50289 2.50876 2.51377 2.51803 2.52165 2.52474 2.52737 2.52961 2.53264
0 9.63221e-005 0.000209529 0.00411692 0.0401023 0.162148 0.376447 0.613989 0.800688 0.912597 0.9665 0.98826 0.995854 0.998137 0.998639 0.998588 0.998384 0.998151 0.997929 0.997729 0.997553 0.997401 0.99727 0.997157 0.997062 0.99698 0.996911 0.996852 0.996801 0.996759 0.996722 0.996691 0.996665 0.996643 0.996624 0.996608 0.996594 0.996583 0.996573 0.996564 0.996552
#wt and selex for gender,fleet: 2 5
0.0129429 0.0378032 0.17075 0.261219 0.368848 0.499818 0.636484 0.772399 0.906648 1.03879 1.16879 1.29701 1.42365 1.54798 1.66793 1.78062 1.88342 1.97479 2.0544 2.12283 2.18119 2.23074 2.27271 2.30825 2.33834 2.36383 2.38542 2.40373 2.41925 2.43243 2.44362 2.45312 2.46119 2.46805 2.47387 2.47883 2.48304 2.48662 2.48966 2.49225 2.49624
0 0.000116252 0.0446532 0.508252 0.888695 0.844053 0.630568 0.413296 0.252842 0.151044 0.0911087 0.0568875 0.0374216 0.0262041 0.019589 0.0155745 0.0130613 0.0114374 0.0103555 0.00961366 0.00909127 0.00871442 0.00843662 0.00822786 0.0080683 0.00794452 0.00784725 0.00776994 0.0077079 0.0076577 0.00761677 0.0075832 0.00755552 0.00753258 0.00751351 0.0074976 0.00748428 0.00747311 0.00746372 0.00745581 0.00744019
#wt and selex for gender,fleet: 2 6
0.0129432 0.0402986 0.159238 0.288197 0.419625 0.556411 0.701959 0.847259 0.986215 1.11962 1.24946 1.37663 1.5008 1.62055 1.73371 1.83813 1.93227 2.01552 2.08809 2.15074 2.20448 2.2504 2.28955 2.32288 2.35124 2.37536 2.39588 2.41332 2.42816 2.44078 2.45151 2.46063 2.4684 2.475 2.48062 2.48539 2.48946 2.49292 2.49586 2.49836 2.50211
0 0.000136863 0.0129498 0.164877 0.53568 0.842566 0.924265 0.844143 0.6907 0.529018 0.393672 0.293416 0.223834 0.176997 0.145761 0.124846 0.110673 0.100909 0.0940547 0.08915 0.085573 0.082917 0.0809117 0.0793746 0.0781802 0.0772409 0.0764941 0.0758949 0.0754101 0.075015 0.0746911 0.0744242 0.0742032 0.0740194 0.0738662 0.0737379 0.0736304 0.0735401 0.073464 0.0733999 0.0732767
#wt and selex for gender,fleet: 2 7
0.0129428 0.0301146 0.105912 0.294994 0.505372 0.703323 0.893252 1.07311 1.24108 1.39616 1.53798 1.66653 1.78215 1.8854 1.97703 2.05787 2.12884 2.19087 2.24488 2.29175 2.33231 2.36733 2.39749 2.42343 2.4457 2.46479 2.48114 2.49513 2.50709 2.5173 2.52602 2.53347 2.53981 2.54523 2.54984 2.55377 2.55712 2.55997 2.5624 2.56447 2.56698
0 9.63214e-005 0.000141678 0.000480142 0.00289056 0.0119734 0.0340599 0.0736315 0.130722 0.201196 0.278852 0.357596 0.432719 0.50126 0.561807 0.614069 0.658455 0.695743 0.726847 0.752685 0.774105 0.791854 0.806568 0.818781 0.828936 0.837394 0.844454 0.850359 0.855306 0.859458 0.86295 0.86589 0.868368 0.870461 0.872229 0.873724 0.87499 0.876063 0.876972 0.877743 0.879006
#wt and selex for gender,fleet: 2 8
0.0129431 0.0401676 0.164552 0.281075 0.398535 0.526229 0.655195 0.776441 0.891592 1.00428 1.1179 1.2367 1.36521 1.5046 1.64905 1.78761 1.91095 2.01527 2.10134 2.17189 2.22985 2.27777 2.31762 2.35095 2.37894 2.40253 2.42245 2.43931 2.45359 2.46571 2.47599 2.48473 2.49214 2.49845 2.50381 2.50837 2.51224 2.51553 2.51834 2.52072 2.52412
0 0.000132907 0.0206139 0.272318 0.71833 0.89838 0.785281 0.55095 0.333788 0.185853 0.100431 0.0552116 0.0321605 0.0204783 0.0144692 0.0112909 0.00954939 0.00855709 0.00796861 0.00760567 0.00737335 0.00721943 0.00711418 0.00704015 0.00698674 0.00694734 0.0069177 0.00689501 0.00687739 0.00686352 0.00685248 0.00684362 0.00683643 0.00683057 0.00682576 0.00682178 0.00681849 0.00681575 0.00681346 0.00681155 0.00680732
#wt and selex for gender,fleet: 2 9
0.0129429 0.0355551 0.171001 0.28672 0.402025 0.533163 0.676865 0.822009 0.967061 1.1139 1.26283 1.41136 1.55475 1.68797 1.80767 1.91269 2.00352 2.0815 2.1482 2.20516 2.25378 2.29527 2.33067 2.36087 2.38662 2.40858 2.4273 2.44326 2.45685 2.46844 2.47831 2.48671 2.49387 2.49997 2.50516 2.50957 2.51333 2.51654 2.51926 2.52158 2.52482
0 0.000112208 0.0150839 0.247812 0.703155 0.913955 0.861799 0.698562 0.523822 0.383191 0.284924 0.221062 0.180888 0.155819 0.140064 0.129999 0.123431 0.119041 0.116034 0.113925 0.112412 0.111303 0.110475 0.109846 0.109362 0.108983 0.108683 0.108444 0.108251 0.108094 0.107966 0.10786 0.107773 0.107701 0.10764 0.10759 0.107548 0.107513 0.107483 0.107458 0.107409
#wt and selex for gender,fleet: 2 10
0.012943 0.037553 0.162324 0.292389 0.423395 0.557511 0.694803 0.825543 0.947633 1.06752 1.19327 1.33055 1.47861 1.62852 1.76835 1.89047 1.9933 2.07879 2.14988 2.20928 2.25918 2.30128 2.33692 2.36716 2.39286 2.41471 2.43331 2.44914 2.46261 2.47409 2.48386 2.49217 2.49926 2.50528 2.51042 2.51478 2.5185 2.52167 2.52436 2.52665 2.52981
0 0.00012239 0.0102217 0.147553 0.510962 0.825874 0.897145 0.774253 0.572075 0.383801 0.248476 0.164459 0.116296 0.0896706 0.075063 0.0669592 0.0623597 0.0596705 0.0580455 0.0570296 0.0563729 0.0559349 0.0556338 0.0554214 0.0552678 0.0551543 0.0550688 0.0550033 0.0549525 0.0549124 0.0548806 0.0548549 0.0548342 0.0548173 0.0548034 0.0547919 0.0547824 0.0547745 0.0547679 0.0547624 0.0547501
#wt and selex for gender,fleet: 2 11
0.0129428 0.0300849 0.0978443 0.245219 0.586591 0.80395 0.978091 1.13508 1.27873 1.41061 1.53183 1.6433 1.74578 1.83979 1.92566 2.00359 2.07373 2.13632 2.19172 2.24041 2.28293 2.31989 2.35189 2.3795 2.40326 2.42367 2.44117 2.45615 2.46897 2.47992 2.48928 2.49726 2.50407 2.50988 2.51483 2.51905 2.52264 2.5257 2.52831 2.53053 2.53351

0 9.62344e-005 0.000123208 0.000146707 0.000908744 0.00798131 0.0371024 0.106774 0.221355 0.365649 0.515121 0.648959 0.75636 0.835785 0.891146 0.928206 0.952404 0.968014 0.978061 0.984563 0.988817 0.99164 0.993545 0.994854 0.99577 0.996422 0.996895 0.997243 0.997504 0.997701 0.997854 0.997972 0.998065 0.998139 0.998198 0.998246 0.998285 0.998316 0.998343 0.998364 0.998425
#wt and selex for gender,fleet: 2 12
0.0129428 0.0300892 0.0980359 0.214029 0.368745 0.549702 0.741332 0.93092 1.11113 1.27855 1.43183 1.57067 1.69535 1.80648 1.90493 1.99166 2.0677 2.13411 2.19188 2.242 2.28535 2.32276 2.35498 2.38267 2.40644 2.42682 2.44427 2.45919 2.47195 2.48285 2.49215 2.50009 2.50685 2.51262 2.51754 2.52173 2.5253 2.52834 2.53093 2.53313 2.53607
0 0.23022 0.296755 0.307896 0.335039 0.383735 0.45145 0.53018 0.610755 0.685969 0.751633 0.806216 0.849991 0.884196 0.910435 0.930318 0.945276 0.956494 0.964912 0.97125 0.976047 0.979706 0.982518 0.984698 0.986403 0.987749 0.98882 0.989678 0.990372 0.990935 0.991396 0.991775 0.992088 0.992347 0.992563 0.992743 0.992894 0.99302 0.993127 0.993216 0.993397
M and current age-structure in year Yinit: 2011
gender = 1
0.06 0.06 0.06 0.06 0.06 0.06 0.06 0.0639724 0.0679448 0.0719172 0.0758896 0.079862 0.0838344 0.0878068 0.0917792
934.412 487.766 992.187 274.048 863.528 300.233 121.79 150.097 403.955 276.86 474.42 226.287 278.299 233.421 146.787 206.303 167.668 194.128 140.866 116.262 150.405 112.658 106.095 75.5903 53.1511 30.3501 19.5422 46.3559 9.64158 9.84551 14.1162 4.36269 3.59728 5.94163 4.15107 1.6603 3.52871 1.49113 1.55704 1.5167 7.89958
gender = 2
0.06 0.06 0.06 0.06 0.06 0.06 0.06 0.06 0.06 0.06 0.06 0.06 0.06 0.06 0.06 0.06 0.06 0.06 0.06 0.06 0.06 0.06 0.06 0.06 0.06 0.06 0.06 0.06 0.06 0.06 0.06 0.06 0.06 0.06 0.06 0.06 0.06 0.06 0.06 0.06 0.06
934.412 487.766 992.186 274.007 862.377 299.711 121.697 150.043 405.137 279.713 484.867 234.85 294.554 252.803 163.146 236.397 198.261 236.346 176.515 150.161 201.266 157.473 155.869 116.801 85.8277 50.789 33.7971 83.4855 18.2947 19.7769 29.8652 9.59625 8.08362 13.4693 9.4163 3.74692 7.90557 3.31921 3.45029 3.34836 17.432
Age-structure at Ydeclare= 2000
470.913 594.076 514.783 338.462 502.837 427.953 512.018 381.161 320.897 422.345 321.216 306.417 220.474 156.022 89.3369 57.4667 136.206 28.3108 28.8937 41.4084 12.7927 10.545 17.4127 12.1626 4.86378 10.3356 4.36692 4.55943 4.44086 3.13699 1.82362 1.41383 1.51109 2.97952 1.18511 0.883247 0.765479 0.753858 0.843861 0.976072 6.84925
470.913 594.076 514.783 338.363 501.255 425.326 507.324 376.964 318.585 424.552 330.74 326.385 244.074 179.093 105.868 70.3935 173.778 38.0621 41.1288 62.0877 19.9443 16.7965 27.9814 19.5583 7.7815 16.4161 6.89171 7.16326 6.95111 4.88082 2.80698 2.14262 2.24823 4.34925 1.70023 1.24921 1.07088 1.04704 1.16856 1.35391 12.1618
Year for Tmin Age-structure (set to Ydecl by SS)
2000
recruitment and biomass
Number of historical assessment years
97
Historical data
year recruitment spawner in B0 in R project in R/S project
1915 1916 1917 1918 1919 1920 1921 1922 1923 1924 1925 1926 1927 1928 1929 1930 1931 1932 1933 1934 1935 1936 1937 1938 1939 1940 1941 1942 1943 1944 1945 1946 1947 1948 1949 1950 1951 1952 1953 1954 1955 1956 1957 1958 1959 1960 1961 1962 1963 1964 1965 1966 1967 1968 1969 1970 1971 1972 1973 1974 1975 1976 1977 1978 1979 1980 1981 1982 1983 1984 1985 1986 1987 1988 1989 1990 1991 1992 1993 1994 1995 1996 1997 1998 1999 2000 2001 2002 2003 2004 2005 2006 2007 2008 2009 2010 2011 #years (with first value representing R0)
3349.5 3349.5 3349.04 3348.34 3347.61 3347.16 3346.71 3346.34 3346.02 3345.65 3345.28 3344.85 3344.25 3343.75 3343.15 3342.36 3341.57 3340.74 3340.35 3340.04 3339.74 3339.32 3338.99 3338.59 3338.2 3337.74 3336.03 3333.77 3329.36 3313.28 3287.98 3235.06 3203.6 3189.43 3178.32 3168.91 3159.98 3151.82 3145.01 3141.36 3133.89 3126.47 3111.67 3096.31 3087.4 3167.57 3873.35 3042.54 2468.73 2270.65 2360.34 2831.41 6306.5 2802.23 2261.24 2466.01 3509.33 4029.95 3311.2 2520 4714.53 1739.62 3366.1 3662.62 1658.09 1481.25 3441.54 1681.87 1144.7 3875.95 1188.98 1391.3 1868.06 2041.43 2207.66 1835.54 1975.22 1270.74 1314.76 1569.7 1187.72 1285.59 810.663 1160.85 1261.62 941.826 1825.4 990.078 1347.53 468.716 356.383 819.685 2201.4 656.299 2237.45 1035.86 1868.82 #recruits; first value is R0 (virgin)
27846.4 27846.4 27830.5 27806 27780.9 27765.4 27749.6 27736.8 27725.9 27713.1 27700.3 27685.5 27665 27647.8 27627 27600 27572.8 27544.5 27531.3 27520.5 27510.3 27496.1 27485 27471 27458 27442.2 27384.2 27307.8 27159.5 26629.8 25826.5 24259.4 23393.2 23017.7 22729.3 22489.3 22264.6 22062.3 21895.5 21806.8 21626.9 21450.4 21104 20753 20553.1 20331.1 20057.5 19835 19504 19429.7 19243.2 19034.1 18704.5 18867.5 18590.6 18554.8 18366.2 18023.5 17767.5 17373.7 17100.6 16909.3 16832.1 16387.9 15208.2 14475.8 13138.1 12368.1 10768.7 9338.03 8928.69 8413.31 8004.6 7297.56 6588.28 5739.7 5103.36 4272.31 3588.71 3157.26 3167.83 3246.35 3181.32 3129.71 3026.42 3124.5 3482.63 3848.53 4196.35 4520.21 4833.89 5138.43 5431.38 5719.56 5996.58 6253.78 6458.11 #spbio; first value is SPB_virgin (virgin)
1 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 # in Bzero
0 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 0 0 0 # in R project
0 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 0 0 0 # in R/S project
Number of years with pre-specified catches
2
catches for years with pre-specified catches go next
2011 102
2012 107
Number of future recruitments to override
11
Process for overiding (-1 for average otherwise index in data list)

2001 1 2001
2002 1 2002
2003 1 2003
2004 1 2004
2005 1 2005
2006 1 2006
2007 1 2007
2008 1 2008
2009 1 2009
2010 1 2010
2011 1 2011
Which probability to product detailed results for (1=0.5; 2=0.6; etc.)
1
Steepness sigma-R Auto-correlation
0.511 0.5 0
Target SPR rate (FMSY Proxy); manually change to SPR_MSY if not using SPR_target
0.5
Discount rate (for cumulative catch)
0.1
Truncate the series when 0.4B0 is reached (1=Yes)
0
Set F to FMSY once 0.4B0 is reached (1=Yes)
0
Maximum possible F for projection (-1 to set to FMSY)
-1
Defintion of recovery (1=now only;2=now or before)
2
Projection type
11
Definition of the 40-10 rule
10 40
Calculate coefficients of variation (1=Yes)
0
Number of replicates to use
10
Random number seed
-99004
File with multiple parameter vectors
blend.dat
User-specific projection (1=Yes); Output replaced (1->9)
0 5
Catches and Fs (Year; 1/2/3 (F or C or SPR); value); Final row is -1
2013 1 3
-1 -1 -1
Fixed catch project (1=Yes); Output replaced (1->9); Approach (-1=Read in else 1-9)
0 2 -1
Split of Fs
2011 0.018660 0.044578 0.180326 0.115599 0.000177 0.000163 0.107902 0.056306 0.122046 0.110701 0.154982 0.088561
-1 1 1 1 1 1 1 1 1 1 1 1
SPR to define T_target for projection type 11 (a.k.a. 5 pre-specified inputs)
0.887 0.872 0.802 0.679 0.628
Year for probability of recovery
2024 2027 2046 2027 2028 2029 2050 2026
Time varying weight-at-age (1=Yes;0=No)
0
File with time series of weight-at-age data
none
Use bisection (0) or linear interpolation (1)
0
Target Depletion
0.4
CV of implementation error
0

Appendix B. Parameter vector input file for rebuilding analyses

```
# base steepness vector 1
 0 0 8.74216e-005 0.000949417 0.00618432 0.027655 0.0896757 0.219323 0.424625 0.686754 0.974452 1.26108 1.53104 1.7779 2.00058
        2.20032 2.37917 2.53923 2.68245 2.81056 2.9251 3.02744 3.1188 3.2003 3.27293 3.3376 3.39515 3.44631 3.49175 3.5321 3.5679
        3.59965 3.62779 3.65272 3.6748 3.69434 3.71164 3.72694 3.74048 3.75245 3.77163 #female fecundity; weighted by N in year Y_init
        across morphs and areas
 0.01241 0.0267992 0.110833 0.272076 0.434135 0.603395 0.77442 0.94592 1.11621 1.28229 1.45333 1.64563 1.85831 2.06981 2.26216
        2.43205 2.58288 2.7182 2.8403 2.95061 3.05016 3.13983 3.22043 3.29271 3.35742 3.41525 3.46685 3.51285 3.55379 3.5902
        3.62255 3.65128 3.67676 3.69936 3.71939 3.73713 3.75284 3.76675 3.77905 3.78994 3.80729 #bodywt for gender,fleet: 1 / 1
 0 9.26815e-005 0.000244509 0.00538603 0.0556411 0.231821 0.522906 0.784469 0.901086 0.86457 0.740046 0.61029 0.520519 0.472411
        0.45071 0.441979 0.438705 0.437522 0.437099 0.436947 0.43689 0.436868 0.43686 0.436856 0.436855 0.436854 0.436853
        0.436853 0.436853 0.436853 0.436853 0.436853 0.436853 0.436853 0.436853 0.436853 0.436853 0.436853 0.436853 0.436853
        0.436853 #selex for gender,fleet: 1 / 1
 0.01241 0.0267695 0.0884437 0.271896 0.463873 0.648375 0.832668 1.01394 1.19222 1.37076 1.55227 1.73552 1.91709 2.09394 2.26357
        2.42368 2.57244 2.70892 2.83301 2.94519 3.04622 3.13697 3.21834 3.29116 3.35625 3.41435 3.46615 3.51229 3.55333 3.58982
        3.62224 3.651 3.67653 3.69915 3.7192 3.73696 3.75269 3.7666 3.77892 3.78981 3.80719 #bodywt for gender,fleet: 1 / 2
 0 9.25937e-005 0.000129452 0.00063021 0.00936405 0.0617611 0.208757 0.443953 0.686147 0.857583 0.941507 0.963201 0.952558
        0.929825 0.906126 0.886377 0.871776 0.861737 0.855127 0.850875 0.848165 0.846435 0.845321 0.844594 0.844112 0.843785
        0.843561 0.843403 0.84329 0.843207 0.843146 0.843099 0.843064 0.843036 0.843014 0.842997 0.842983 0.842971 0.842962
        0.842954 0.842935 #selex for gender,fleet: 1 / 2
 0.01241 0.03395 0.109974 0.228196 0.382871 0.560942 0.752651 0.950839 1.15059 1.34918 1.54469 1.73426 1.91482 2.0849 2.24454 2.39429
        2.53446 2.66506 2.78599 2.8972 2.99881 3.09111 3.17453 3.24964 3.31702 3.37731 3.43115 3.47913 3.52183 3.55979 3.5935
        3.62341 3.64994 3.67344 3.69426 3.71269 3.72901 3.74344 3.75621 3.7675 3.7862 #bodywt for gender,fleet: 1 / 3
 0 0.000120953 0.00639141 0.0384194 0.124085 0.274789 0.467722 0.659734 0.813424 0.912682 0.961912 0.97425 0.961575 0.93264
        0.894549 0.853222 0.812982 0.776395 0.744572 0.717664 0.695304 0.676903 0.661829 0.649495 0.639389 0.631084 0.624232
        0.618556 0.61383 0.609876 0.606554 0.603749 0.601372 0.599348 0.59762 0.596138 0.594864 0.593765 0.592816 0.591993
        0.590376 #selex for gender,fleet: 1 / 3
 0.01241 0.026774 0.0958475 0.277065 0.449708 0.626111 0.803383 0.979494 1.15815 1.34537 1.54115 1.73867 1.93061 2.11266 2.28296
        2.44083 2.58617 2.71922 2.84043 2.95042 3.04986 3.13951 3.2201 3.2924 3.35712 3.41497 3.46659 3.5126 3.55355 3.58998
        3.62234 3.65107 3.67656 3.69917 3.7192 3.73695 3.75266 3.76657 3.77888 3.78977 3.80713 #bodywt for gender,fleet: 1 / 4
 0 9.26069e-005 0.000151419 0.0018301 0.0240073 0.126739 0.350738 0.626193 0.837962 0.946629 0.985983 0.996438 0.998271 0.998083
        0.997518 0.996937 0.996416 0.995971 0.995599 0.995292 0.995039 0.994833 0.994663 0.994524 0.994409 0.994314 0.994235
        0.994168 0.994113 0.994066 0.994026 0.993992 0.993963 0.993938 0.993917 0.993898 0.993883 0.993869 0.993857 0.993846
        0.993827 #selex for gender,fleet: 1 / 4
 0.01241 0.0276725 0.141155 0.233606 0.34064 0.480329 0.631914 0.787058 0.945132 1.10734 1.27798 1.4648 1.67431 1.90177 2.12889
        2.33726 2.51942 2.67664 2.81301 2.93238 3.03768 3.13105 3.21406 3.28796 3.35377 3.41238 3.46454 3.51094 3.55219 3.58883
        3.62136 3.65022 3.67582 3.6985 3.7186 3.7364 3.75216 3.76611 3.77845 3.78936 3.80679 #bodywt for gender,fleet: 1 / 5
 0 9.51379e-005 0.0166977 0.399156 0.889314 0.884074 0.653023 0.401793 0.22084 0.114818 0.0593918 0.0321309 0.019081 0.0128602
        0.00986041 0.00838128 0.00763026 0.00723587 0.00702115 0.00689986 0.00682878 0.00678563 0.00675852 0.00674093
        0.00672917 0.00672109 0.00671539 0.00671127 0.00670824 0.00670596 0.00670422 0.00670286 0.00670179 0.00670094
        0.00670025 0.00669969 0.00669923 0.00669885 0.00669853 0.00669826 0.00669764 #selex for gender,fleet: 1 / 5
 0.01241 0.0292629 0.12616 0.246108 0.380797 0.526008 0.687967 0.856324 1.02235 1.18941 1.36389 1.55172 1.75459 1.96572 2.17216
        2.36293 2.53343 2.68397 2.81677 2.9343 3.03866 3.13154 3.2143 3.28807 3.35381 3.41238 3.46453 3.51091 3.55216 3.5888
        3.62133 3.65019 3.67579 3.69847 3.71857 3.73638 3.75213 3.76608 3.77842 3.78934 3.80677 #bodywt for gender,fleet: 1 / 6
 0 0.00010063 0.00626296 0.108781 0.460696 0.826541 0.939173 0.844947 0.650275 0.45115 0.298853 0.199818 0.141143 0.108104
        0.0899271 0.0799726 0.0744752 0.0713872 0.0696126 0.0685657 0.0679304 0.0675336 0.0672787 0.0671102 0.0669959 0.0669164
        0.0668598 0.0668187 0.0667881 0.066765 0.0667473 0.0667334 0.0667225 0.0667138 0.0667067 0.0667009 0.0666962 0.0666922
        0.0666889 0.0666861 0.0666797 #selex for gender,fleet: 1 / 6
 0.01241 0.0267747 0.0882909 0.232774 0.431347 0.636063 0.847601 1.06137 1.27271 1.47824 1.67563 1.8633 2.04026 2.20598 2.36026
        2.50317 2.63491 2.75574 2.86598 2.96599 3.05621 3.1372 3.20959 3.27408 3.33137 3.38219 3.42719 3.46701 3.50223 3.53336
        3.56087 3.58518 3.60665 3.62562 3.64237 3.65717 3.67024 3.68178 3.69197 3.70097 3.71788 #bodywt for gender,fleet: 1 / 7
 0 9.26089e-005 0.000132384 0.000310907 0.00183127 0.0088944 0.0297813 0.0738666 0.146073 0.243621 0.357284 0.475324 0.587241
        0.685836 0.767576 0.831913 0.880232 0.914859 0.938341 0.953031 0.960923 0.963636 0.962466 0.958445 0.952404 0.945002
        0.936766 0.928104 0.919332 0.910682 0.902322 0.894366 0.886887 0.879925 0.873497 0.8676 0.862221 0.857337 0.852919
        0.848935 0.84399 #selex for gender,fleet: 1 / 7
 0.01241 0.0289001 0.131414 0.244304 0.365564 0.502801 0.64917 0.789221 0.924959 1.06314 1.21575 1.4056 1.65246 1.93103 2.18541
        2.39345 2.56383 2.70864 2.83534 2.94794 3.04866 3.13896 3.21989 3.29237 3.35719 3.41509 3.46674 3.51276 3.55373 3.59015
        3.62251 3.65125 3.67674 3.69934 3.71937 3.73711 3.75283 3.76673 3.77904 3.78993 3.80728 #bodywt for gender,fleet: 1 / 8
 0 9.92788e-005 0.00902077 0.187405 0.661946 0.918129 0.815393 0.54012 0.287818 0.133782 0.0589486 0.0271135 0.0145284 0.00971708
        0.00788801 0.00718268 0.00690288 0.00678761 0.00673798 0.00671557 0.00670493 0.00669963 0.00669686 0.00669534
        0.00669447 0.00669395 0.00669363 0.00669342 0.00669329 0.00669319 0.00669313 0.00669308 0.00669304 0.00669302 0.006693
        0.00669298 0.00669297 0.00669296 0.00669295 0.00669295 0.00669293 #selex for gender,fleet: 1 / 8
 0.01241 0.0276778 0.135927 0.249455 0.368605 0.506713 0.666413 0.832988 1.00645 1.19356 1.39934 1.62032 1.8432 2.054 2.24578 2.41784
        2.572 2.7104 2.83486 2.94682 3.04749 3.13792 3.21901 3.29164 3.35659 3.41459 3.46632 3.51241 3.55342 3.58988 3.62228
        3.65103 3.67654 3.69916 3.71921 3.73696 3.75268 3.7666 3.77891 3.7898 3.80718 #bodywt for gender,fleet: 1 / 9
```

0 9.52967e-005 0.00591211 0.163556 0.641962 0.924601 0.883359 0.69257 0.484005 0.325202 0.22517 0.168539 0.13829 0.122562 0.114431 0.110191 0.107938 0.106711 0.106022 0.105624 0.105386 0.105239 0.105145 0.105084 0.105042 0.105014 0.104993 0.104979 0.104968 0.10496 0.104953 0.104948 0.104944 0.104941 0.104939 0.104937 0.104935 0.104934 0.104932 0.104931 0.104929 #selex for gender,fleet: 1 / 9
0.01241 0.0283955 0.127999 0.249344 0.384122 0.527923 0.683117 0.835478 0.980801 1.13307 1.31433 1.54116 1.79641 2.03848 2.24665 2.42399 2.57851 2.71578 2.83894 2.94984 3.04972 3.13957 3.22026 3.2926 3.35735 3.4152 3.46682 3.51282 3.55377 3.59019 3.62254 3.65127 3.67676 3.69936 3.71938 3.73713 3.75284 3.76674 3.77905 3.78994 3.80729 #bodywt for gender,fleet: 1 / 10
0 9.76642e-005 0.00471284 0.0944871 0.434006 0.809689 0.917903 0.773572 0.521213 0.303756 0.170705 0.104249 0.0748306 0.0626549 0.0577675 0.0558148 0.0550238 0.0546945 0.0545525 0.0544887 0.0544586 0.0544438 0.0544362 0.054432 0.0544297 0.0544283 0.0544275 0.054427 0.0544266 0.0544264 0.0544262 0.0544261 0.054426 0.054426 0.0544259 0.0544259 0.0544258 0.0544258 0.0544258 0.0544258 0.0544257 #selex for gender,fleet: 1 / 10
0.01241 0.0267686 0.0856624 0.194113 0.467528 0.721876 0.926252 1.11971 1.30442 1.48068 1.64998 1.81493 1.97778 2.13882 2.29617 2.447 2.58886 2.72029 2.84076 2.95041 3.04968 3.13924 3.21979 3.29206 3.35677 3.4146 3.46622 3.51223 3.55319 3.58961 3.62198 3.65072 3.67621 3.69882 3.71886 3.73661 3.75233 3.76624 3.77855 3.78944 3.80682 #bodywt for gender,fleet: 1 / 11
0 9.25907e-005 0.000123287 0.000128689 0.000414276 0.00461417 0.0294734 0.106207 0.253075 0.448633 0.644033 0.798313 0.898437 0.953665 0.980313 0.991799 0.996236 0.997696 0.997987 0.99785 0.997575 0.99727 0.996978 0.996712 0.996476 0.996268 0.996087 0.99593 0.995794 0.995676 0.995573 0.995484 0.995407 0.99534 0.995282 0.995231 0.995187 0.995148 0.995114 0.995085 0.995031 #selex for gender,fleet: 1 / 11
0.01241 0.0267696 0.0857813 0.189442 0.334108 0.513866 0.717813 0.933455 1.15122 1.3652 1.57188 1.76922 1.95604 2.13184 2.29645 2.44984 2.59198 2.7229 2.84278 2.95195 3.05091 3.14025 3.22067 3.29285 3.3575 3.41529 3.46687 3.51285 3.55378 3.59018 3.62252 3.65124 3.67671 3.6993 3.71932 3.73706 3.75276 3.76666 3.77896 3.78984 3.80719 #bodywt for gender,fleet: 1 / 12
0 0.22148 0.296419 0.304582 0.32716 0.372751 0.443363 0.532813 0.629896 0.723189 0.804363 0.869212 0.917152 0.950099 0.971251 0.984025 0.991352 0.99539 0.997556 0.998698 0.999298 0.999614 0.999781 0.999872 0.999921 0.999948 0.999962 0.999969 0.999971 0.99997 0.999968 0.999965 0.999961 0.999956 0.999951 0.999946 0.999942 0.999937 0.999932 0.999928 0.99993 #selex for gender,fleet: 1 / 12
0.0129428 0.0302637 0.15626 0.332128 0.494352 0.650929 0.800961 0.945473 1.08391 1.21437 1.33772 1.4583 1.57969 1.7009 1.81699 1.92273 2.01535 2.09465 2.16189 2.21878 2.26696 2.30782 2.34255 2.37209 2.39725 2.41868 2.43694 2.4525 2.46576 2.47705 2.48668 2.49488 2.50186 2.50781 2.51287 2.51718 2.52085 2.52398 2.52664 2.5289 2.53199 #bodywt for gender,fleet: 2 / 1
0 9.67166e-005 0.00045483 0.0111137 0.0849782 0.279114 0.545127 0.769353 0.885225 0.894176 0.831567 0.739085 0.64879 0.576783 0.526032 0.492892 0.472169 0.459461 0.451686 0.446883 0.443865 0.441926 0.440649 0.439787 0.439191 0.438768 0.438462 0.438236 0.438066 0.437936 0.437835 0.437756 0.437693 0.437642 0.437601 0.437568 0.437541 0.437518 0.4375 0.437484 0.437446 #selex for gender,fleet: 2 / 1
0.0129428 0.0300909 0.111515 0.349579 0.537576 0.708546 0.868986 1.01968 1.16205 1.2978 1.42784 1.55169 1.66788 1.77491 1.87196 1.95892 2.03613 2.1042 2.16385 2.21586 2.26101 2.30006 2.33373 2.3627 2.38757 2.40888 2.42713 2.44274 2.45607 2.46745 2.47717 2.48545 2.49251 2.49853 2.50366 2.50803 2.51175 2.51492 2.51762 2.51992 2.52311 #bodywt for gender,fleet: 2 / 2
0 9.62501e-005 0.000144216 0.00144782 0.0170845 0.0842477 0.231682 0.436269 0.640149 0.797753 0.896517 0.947059 0.966317 0.968131 0.961346 0.951002 0.939806 0.92912 0.919551 0.91129 0.904309 0.898485 0.893658 0.889671 0.886381 0.883662 0.881413 0.879548 0.877998 0.876706 0.875627 0.874724 0.873967 0.873331 0.872795 0.872344 0.871963 0.871641 0.871368 0.871138 0.870732 #selex for gender,fleet: 2 / 2
0.012944 0.0476593 0.135179 0.270508 0.432622 0.605547 0.780071 0.950672 1.11404 1.2683 1.41237 1.54537 1.66654 1.77549 1.87239 1.95788 2.03288 2.09841 2.15549 2.20507 2.24804 2.28518 2.31722 2.34481 2.36853 2.38888 2.40634 2.42128 2.43407 2.44499 2.45433 2.4623 2.4691 2.4749 2.47984 2.48406 2.48765 2.4907 2.49331 2.49553 2.49878 #bodywt for gender,fleet: 2 / 3
0 0.000222775 0.00928941 0.0513573 0.150869 0.305237 0.484035 0.651723 0.785366 0.878285 0.935151 0.965188 0.977297 0.978125 0.972096 0.962086 0.950005 0.937147 0.924371 0.912218 0.900996 0.89085 0.881814 0.873857 0.866905 0.86087 0.855654 0.851162 0.847303 0.843995 0.841163 0.838742 0.836674 0.834909 0.833404 0.83212 0.831027 0.830095 0.829301 0.828625 0.827704 #selex for gender,fleet: 2 / 3
0.0129428 0.0301182 0.133825 0.344224 0.516471 0.679803 0.834629 0.982344 1.12592 1.26773 1.40731 1.54154 1.6668 1.78072 1.88252 1.97245 2.05132 2.1201 2.17985 2.23157 2.27622 2.31468 2.34775 2.37613 2.40046 2.42129 2.43911 2.45434 2.46735 2.47846 2.48793 2.49601 2.50289 2.50876 2.51377 2.51803 2.52165 2.52474 2.52737 2.52961 2.53264 #bodywt for gender,fleet: 2 / 4
0 9.63221e-005 0.000209529 0.00411692 0.0401023 0.162148 0.376447 0.613989 0.800688 0.912597 0.9665 0.98826 0.995854 0.998137 0.998639 0.998588 0.998384 0.998151 0.997929 0.997729 0.997553 0.997401 0.99727 0.997157 0.997062 0.99698 0.996911 0.996852 0.996801 0.996759 0.996722 0.996691 0.996665 0.996643 0.996624 0.996608 0.996594 0.996583 0.996573 0.996564 0.996552 #selex for gender,fleet: 2 / 4
0.0129429 0.0378032 0.17075 0.261219 0.368848 0.499818 0.636484 0.772399 0.906648 1.03879 1.16879 1.29701 1.42365 1.54798 1.66793 1.78062 1.88342 1.97479 2.0544 2.12283 2.18119 2.23074 2.27271 2.30825 2.33834 2.36383 2.38542 2.40373 2.41925 2.43243 2.44362 2.45312 2.46119 2.46805 2.47387 2.47883 2.48304 2.48662 2.48966 2.49225 2.49624 #bodywt for gender,fleet: 2 / 5
0 0.000116252 0.0446532 0.508252 0.888695 0.844053 0.630568 0.413296 0.252842 0.151044 0.0911087 0.0568875 0.0374216 0.0262041 0.019589 0.0155745 0.0130613 0.0114374 0.0103555 0.00961366 0.00909127 0.00871442 0.00843662 0.00822786 0.0080683 0.00794452 0.00784725 0.00776994 0.0077079 0.0076577 0.00761677 0.0075832 0.00755552 0.00753258 0.00751351 0.0074976 0.00748428 0.00747311 0.00746372 0.00745581 0.00744019 #selex for gender,fleet: 2 / 5
0.0129432 0.0402986 0.159238 0.288197 0.419625 0.556411 0.701959 0.847259 0.986215 1.11962 1.24946 1.37663 1.5008 1.62055 1.73371 1.83813 1.93227 2.01552 2.08809 2.15074 2.20448 2.2504 2.28955 2.32288 2.35124 2.37536 2.39588 2.41332 2.42816 2.44078 2.45151 2.46063 2.4684 2.475 2.48062 2.48539 2.48946 2.49292 2.49586 2.49836 2.50211 #bodywt for gender,fleet: 2 / 6
0 0.000136863 0.0129498 0.164877 0.53568 0.842566 0.924265 0.844143 0.6907 0.529018 0.393672 0.293416 0.223834 0.176997 0.145761 0.124846 0.110673 0.100909 0.0940547 0.08915 0.085573 0.082917 0.0809117 0.0793746 0.0781802 0.0772409 0.0764941 0.0758949 0.0754101 0.075015 0.0746911 0.0744242 0.0742032 0.0740194 0.0738662 0.0737379 0.0736304 0.0735401 0.073464 0.0733999 0.0732767 #selex for gender,fleet: 2 / 6
0.0129428 0.0301146 0.105912 0.294994 0.505372 0.703323 0.893252 1.07311 1.24108 1.39616 1.53798 1.66653 1.78215 1.8854 1.97703 2.05787 2.12884 2.19087 2.24488 2.29175 2.33231 2.36733 2.39749 2.42343 2.4457 2.46479 2.48114 2.49513 2.50709 2.5173 2.52602 2.53347 2.53981 2.54523 2.54984 2.55377 2.55712 2.55997 2.5624 2.56447 2.56698 #bodywt for gender,fleet: 2 / 7

0 9.63214e-005 0.000141678 0.000480142 0.00289056 0.0119734 0.0340599 0.0736315 0.130722 0.201196 0.278852 0.357596 0.432719
0.50126 0.561807 0.614069 0.658455 0.695743 0.726847 0.752685 0.774105 0.791854 0.806568 0.818781 0.828936 0.837394
0.844454 0.850359 0.855306 0.859458 0.86295 0.86589 0.868368 0.870461 0.872229 0.873724 0.87499 0.876063 0.876972
0.877743 0.879006 #selex for gender,fleet: 2 / 7

0.0129431 0.0401676 0.164552 0.281075 0.398535 0.526229 0.655195 0.776441 0.891592 1.00428 1.1179 1.2367 1.36521 1.5046 1.64905
1.78761 1.91095 2.01527 2.10134 2.17189 2.22985 2.27777 2.31762 2.35095 2.37894 2.40253 2.42245 2.43931 2.45359 2.46571
2.47599 2.48473 2.49214 2.49845 2.50381 2.50837 2.51224 2.51553 2.51834 2.52072 2.52412 #bodywt for gender,fleet: 2 / 8

0 0.000132907 0.0206139 0.272318 0.71833 0.89838 0.785281 0.55095 0.333788 0.185853 0.100431 0.0552116 0.0321605 0.0204783
0.0144692 0.0112909 0.00954939 0.00855709 0.00796861 0.00760567 0.00737335 0.00721943 0.00711418 0.00704015 0.00698674
0.00694734 0.0069177 0.00689501 0.00687739 0.00686352 0.00685248 0.00684362 0.00683643 0.00683057 0.00682576
0.00682178 0.00681849 0.00681575 0.00681346 0.00681155 0.00680732 #selex for gender,fleet: 2 / 8

0.0129429 0.0355551 0.171001 0.28672 0.402025 0.533163 0.676865 0.822009 0.967061 1.1139 1.26283 1.41136 1.55475 1.68797 1.80767
1.91269 2.00352 2.0815 2.1482 2.20516 2.25378 2.29527 2.33067 2.36087 2.38662 2.40858 2.4273 2.44326 2.45685 2.46844
2.47831 2.48671 2.49387 2.49997 2.50516 2.50957 2.51333 2.51654 2.51926 2.52158 2.52482 #bodywt for gender,fleet: 2 / 9

0 0.000112208 0.0150839 0.247812 0.703155 0.913955 0.861799 0.698562 0.523822 0.383191 0.284924 0.221062 0.180888 0.155819
0.140064 0.129999 0.123431 0.119041 0.116034 0.113925 0.112412 0.111303 0.110475 0.109846 0.109362 0.108983 0.108683
0.108444 0.108251 0.108094 0.107966 0.10786 0.107773 0.107701 0.10764 0.10759 0.107548 0.107513 0.107483 0.107458
0.107409 #selex for gender,fleet: 2 / 9

0.012943 0.037553 0.162324 0.292389 0.423395 0.557511 0.694803 0.825543 0.947633 1.06752 1.19327 1.33055 1.47861 1.62852 1.76835
1.89047 1.9933 2.07879 2.14988 2.20928 2.25918 2.30128 2.33692 2.36716 2.39286 2.41471 2.43331 2.44914 2.46261 2.47409
2.48386 2.49217 2.49926 2.50528 2.51042 2.51478 2.5185 2.52167 2.52436 2.52665 2.52981 #bodywt for gender,fleet: 2 / 10

0 0.00012239 0.0102217 0.147553 0.510962 0.825874 0.897145 0.774253 0.572075 0.383801 0.248476 0.164459 0.116296 0.0896706
0.075063 0.0669592 0.0623597 0.0596705 0.0580455 0.0570296 0.0563729 0.0559349 0.0556338 0.0554214 0.0552678 0.0551543
0.0550688 0.0550033 0.0549525 0.0549124 0.0548806 0.0548549 0.0548342 0.0548173 0.0548034 0.0547919 0.0547824 0.0547745
0.0547679 0.0547624 0.0547501 #selex for gender,fleet: 2 / 10

0.0129428 0.0300849 0.0978443 0.245219 0.586591 0.80395 0.978091 1.13508 1.27873 1.41061 1.53183 1.6433 1.74578 1.83979 1.92566
2.00359 2.07373 2.13632 2.19172 2.24041 2.28293 2.31989 2.35189 2.3795 2.40326 2.42367 2.44117 2.45615 2.46897 2.47992
2.48928 2.49726 2.50407 2.50988 2.51483 2.51905 2.52264 2.5257 2.52831 2.53053 2.53351 #bodywt for gender,fleet: 2 / 11

0 9.62344e-005 0.000123208 0.000146707 0.000908744 0.00798131 0.0371024 0.106774 0.221355 0.365649 0.515121 0.648959 0.75636
0.835785 0.891146 0.928206 0.952404 0.968014 0.978061 0.984563 0.988817 0.99164 0.993545 0.994854 0.99577 0.996422
0.996895 0.997243 0.997504 0.997701 0.997854 0.997972 0.998065 0.998139 0.998198 0.998246 0.998285 0.998316 0.998343
0.998364 0.998425 #selex for gender,fleet: 2 / 11

0.0129428 0.0300892 0.0980359 0.214029 0.368745 0.549702 0.741332 0.93092 1.11113 1.27855 1.43183 1.57067 1.69535 1.80648 1.90493
1.99166 2.0677 2.13411 2.19188 2.242 2.28535 2.32276 2.35498 2.38267 2.40644 2.42682 2.44427 2.45919 2.47195 2.48285
2.49215 2.50009 2.50685 2.51262 2.51754 2.52173 2.5253 2.52834 2.53093 2.53313 2.53607 #bodywt for gender,fleet: 2 / 12

0 0.23022 0.296755 0.307896 0.335039 0.383735 0.45145 0.53018 0.610755 0.685969 0.751633 0.806216 0.849991 0.884196 0.910435
0.930318 0.945276 0.956494 0.964912 0.97125 0.976047 0.979706 0.982518 0.984698 0.986403 0.987749 0.98882 0.989678
0.990372 0.990935 0.991396 0.991775 0.992088 0.992347 0.992563 0.992743 0.992894 0.99302 0.993127 0.993216 0.993397
#selex for gender,fleet: 2 / 12

0.06 0.06 0.06 0.06 0.06 0.06 0.06 0.0639724 0.0679448 0.0719172 0.0758896 0.079862 0.0838344 0.0878068 0.0917792 0.0917792 0.0917792
0.0917792 0.0917792 0.0917792 0.0917792 0.0917792 0.0917792 0.0917792 0.0917792 0.0917792 0.0917792 0.0917792 0.0917792
0.0917792 0.0917792 0.0917792 0.0917792 0.0917792 0.0917792 0.0917792 0.0917792 0.0917792 0.0917792 0.0917792 0.0917792
#mean M for year Yinit: 2011 sex: 1

934.412 487.766 992.187 274.048 863.528 300.233 121.79 150.097 403.955 276.86 474.42 226.287 278.299 233.421 146.787 206.303 167.668
194.128 140.866 116.262 150.405 112.658 106.095 75.5903 53.1511 30.3501 19.5422 46.3559 9.64158 9.84551 14.1162 4.36269
3.59728 5.94163 4.15107 1.6603 3.52871 1.49113 1.55704 1.5167 7.89958 #numbers for year Yinit: 2011 sex: 1

0.06 0.06 0.06 0.06 0.06 0.06 0.06 0.06 0.06 0.06 0.06 0.06 0.06 0.06 0.06 0.06 0.06 0.06 0.06 0.06 0.06 0.06 0.06 0.06 0.06 0.06 0.06 0.06
0.06 0.06 0.06 0.06 0.06 0.06 0.06 0.06 0.06 0.06 0.06 0.06 #mean M for year Yinit: 2011 sex: 2

934.412 487.766 992.186 274.007 862.377 299.711 121.697 150.043 405.137 279.713 484.867 234.85 294.554 252.803 163.146 236.397
198.261 236.346 176.515 150.161 201.266 157.473 155.869 116.801 85.8277 50.789 33.7971 83.4855 18.2947 19.7769 29.8652
9.59625 8.08362 13.4693 9.4163 3.74692 7.90557 3.31921 3.45029 3.34836 17.432 #numbers for year Yinit: 2011 sex: 2

470.913 594.076 514.783 338.462 502.837 427.953 512.018 381.161 320.897 422.345 321.216 306.417 220.474 156.022 89.3369 57.4667
136.206 28.3108 28.8937 41.4084 12.7927 10.545 17.4127 12.1626 4.86378 10.3356 4.36692 4.55943 4.44086 3.13699 1.82362
1.41383 1.51109 2.97952 1.18511 0.883247 0.765479 0.753858 0.843861 0.976072 6.84925 #numbers for year Ydeclare: 2000 sex: 1

470.913 594.076 514.783 338.363 501.255 425.326 507.324 376.964 318.585 424.552 330.74 326.385 244.074 179.093 105.868 70.3935
173.778 38.0621 41.1288 62.0877 19.9443 16.7965 27.9814 19.5583 7.7815 16.4161 6.89171 7.16326 6.95111 4.88082 2.80698
2.14262 2.24823 4.34925 1.70023 1.24921 1.07088 1.04704 1.16856 1.35391 12.1618 #numbers for year Ydeclare: 2000 sex: 2

#R0 1916 1917 1918 1919 1920 1921 1922 1923 1924 1925 1926 1927 1928 1929 1930 1931 1932 1933 1934 1935 1936 1937 1938 1939 1940
1941 1942 1943 1944 1945 1946 1947 1948 1949 1950 1951 1952 1953 1954 1955 1956 1957 1958 1959 1960 1961 1962 1963 1964
1965 1966 1967 1968 1969 1970 1971 1972 1973 1974 1975 1976 1977 1978 1979 1980 1981 1982 1983 1984 1985 1986 1987 1988
1989 1990 1991 1992 1993 1994 1995 1996 1997 1998 1999 2000 2001 2002 2003 2004 2005 2006 2007 2008 2009 2010 #years

3349.5 3349.5 3349.04 3348.34 3347.61 3347.16 3346.71 3346.34 3346.02 3345.65 3345.28 3344.85 3344.25 3343.75 3343.15 3342.36 3341.57
3340.74 3340.35 3340.04 3339.74 3339.32 3338.99 3338.59 3338.2 3337.74 3336.03 3333.77 3329.36 3313.28 3287.98 3235.06
3203.6 3189.43 3178.32 3168.91 3159.98 3151.82 3145.01 3141.36 3133.89 3126.47 3111.67 3096.31 3087.4 3167.57 3873.35
3042.54 2468.73 2270.65 2360.34 2831.41 6306.5 2802.23 2261.24 2466.01 3509.33 4029.95 3311.2 2520 4714.53 1739.62 3366.1
3662.62 1658.09 1481.25 3441.54 1681.87 1144.7 3875.95 1188.98 1391.3 1868.06 2041.43 2207.66 1835.54 1975.22 1270.74
1314.76 1569.7 1187.72 1285.59 810.663 1160.85 1261.62 941.826 1825.4 990.078 1347.53 468.716 356.383 819.685 2201.4
656.299 2237.45 1035.86 1868.82 #Recruits

27846.4 27846.4 27830.5 27806 27780.9 27765.4 27749.6 27736.8 27725.9 27713.1 27700.3 27685.5 27665 27647.8 27627 27600 27572.8
27544.5 27531.3 27520.5 27510.3 27496.1 27485 27471 27458 27442.2 27384.2 27307.8 27159.5 26629.8 25826.5 24259.4 23393.2

23017.7 22729.3 22489.3 22264.6 22062.3 21895.5 21806.8 21626.9 21450.4 21104 20753 20553.1 20331.1 20057.5 19835 19504 19429.7 19243.2 19034.1 18704.5 18867.5 18590.6 18554.8 18366.2 18023.5 17767.5 17373.7 17100.6 16909.3 16832.1 16387.9 15208.2 14475.8 13138.1 12368.1 10768.7 9338.03 8928.69 8413.31 8004.6 7297.56 6588.28 5739.7 5103.36 4272.31 3588.71 3157.26 3167.83 3246.35 3181.32 3129.71 3026.42 3124.5 3482.63 3848.53 4196.35 4520.21 4833.89 5138.43 5431.38 5719.56 5996.58 6253.78 6458.11 #SpawnBio
0.511 0.5 0 # spawn-recr steepness, sigmaR, autocorr
base steepness vector 2
0 0 8.74216e-005 0.000949417 0.00618432 0.027655 0.0896757 0.219323 0.424625 0.686754 0.974452 1.26108 1.53104 1.7779 2.00058 2.20032 2.37917 2.53923 2.68245 2.81056 2.9251 3.02744 3.1188 3.2003 3.27293 3.3376 3.39515 3.44631 3.49175 3.5321 3.5679 3.59965 3.62779 3.65272 3.6748 3.69434 3.71164 3.72694 3.74048 3.75245 3.77163 #female fecundity; weighted by N in year Y_init across morphs and areas
0.01241 0.0267992 0.110833 0.272076 0.434135 0.603395 0.77442 0.94592 1.11621 1.28229 1.45333 1.64563 1.85831 2.06981 2.26216 2.43205 2.58288 2.7182 2.8403 2.95061 3.05016 3.13983 3.22043 3.29271 3.35742 3.41525 3.46685 3.51285 3.55379 3.5902 3.62255 3.65128 3.67676 3.69936 3.71939 3.73713 3.75284 3.76675 3.77905 3.78994 3.80729 #bodywt for gender,fleet: 1 / 1
0 9.26815e-005 0.000244509 0.00538603 0.0556411 0.231821 0.522906 0.784469 0.901086 0.86457 0.740046 0.61029 0.520519 0.472411 0.45071 0.441979 0.438705 0.437522 0.437099 0.436947 0.43689 0.436868 0.43686 0.436856 0.436855 0.436854 0.436853 0.436853 0.436853 0.436853 0.436853 0.436853 0.436853 0.436853 0.436853 0.436853 0.436853 0.436853 0.436853 #selex for gender,fleet: 1 / 1
0.01241 0.0267695 0.0884437 0.271896 0.463873 0.648375 0.832668 1.01394 1.19222 1.37076 1.55227 1.73552 1.91709 2.09394 2.26357 2.42368 2.57244 2.70892 2.83301 2.94519 3.04622 3.13697 3.21834 3.29116 3.35625 3.41435 3.46615 3.51229 3.55333 3.58982 3.62224 3.651 3.67653 3.69915 3.7192 3.73696 3.75269 3.7666 3.77892 3.78981 3.80719 #bodywt for gender,fleet: 1 / 2
0 9.25937e-005 0.000129452 0.00063021 0.00936405 0.0617611 0.208757 0.443953 0.686147 0.857583 0.941507 0.963201 0.952558 0.929825 0.906126 0.886377 0.871776 0.861737 0.855127 0.850875 0.848165 0.846435 0.845321 0.844594 0.844112 0.843785 0.843561 0.843403 0.84329 0.843207 0.843146 0.843099 0.843064 0.843036 0.843014 0.842997 0.842983 0.842971 0.842962 0.842954 0.842935 #selex for gender,fleet: 1 / 2
0.01241 0.03395 0.109974 0.228196 0.382871 0.560942 0.752651 0.950839 1.15059 1.34918 1.54469 1.73426 1.91482 2.0849 2.24454 2.39429 2.53446 2.66506 2.78599 2.8972 2.99881 3.09111 3.17453 3.24964 3.31702 3.37731 3.43115 3.47913 3.52183 3.55979 3.5935 3.62341 3.64994 3.67344 3.69426 3.71269 3.72901 3.74344 3.75621 3.7675 3.7862 #bodywt for gender,fleet: 1 / 3
0 0.000120953 0.00639141 0.0384194 0.124085 0.274789 0.467722 0.659734 0.813424 0.912682 0.961912 0.97425 0.961575 0.93264 0.894549 0.853222 0.812982 0.776395 0.744572 0.717664 0.695304 0.676903 0.661829 0.649495 0.639389 0.631084 0.624232 0.618556 0.61383 0.609876 0.606554 0.603749 0.601372 0.599348 0.59762 0.596138 0.594864 0.593765 0.592816 0.591993 0.590376 #selex for gender,fleet: 1 / 3
0.01241 0.026774 0.0958475 0.277065 0.449708 0.626111 0.803383 0.979494 1.15815 1.34537 1.54115 1.73867 1.93061 2.11266 2.28296 2.44083 2.58617 2.71922 2.84043 2.95042 3.04986 3.13951 3.2201 3.2924 3.35712 3.41497 3.46659 3.5126 3.55355 3.58998 3.62234 3.65107 3.67656 3.69917 3.7192 3.73695 3.75266 3.76657 3.77888 3.78977 3.80713 #bodywt for gender,fleet: 1 / 4
0 9.26069e-005 0.000151419 0.0018301 0.0240073 0.126739 0.350738 0.626193 0.837962 0.946629 0.985983 0.996438 0.998271 0.998083 0.997518 0.996937 0.996416 0.995971 0.995599 0.995292 0.995039 0.994833 0.994663 0.994524 0.994409 0.994314 0.994235 0.994168 0.994113 0.994066 0.994026 0.993992 0.993963 0.993938 0.993917 0.993898 0.993883 0.993869 0.993857 0.993846 0.993827 #selex for gender,fleet: 1 / 4
0.01241 0.0276725 0.141155 0.233606 0.34064 0.480329 0.631914 0.787058 0.945132 1.10734 1.27798 1.4648 1.67431 1.90177 2.12889 2.33726 2.51942 2.67664 2.81301 2.93238 3.03768 3.13105 3.21406 3.28796 3.35377 3.41238 3.46454 3.51094 3.55219 3.58883 3.62136 3.65022 3.67582 3.6985 3.7186 3.7364 3.75216 3.76611 3.77845 3.78936 3.80679 #bodywt for gender,fleet: 1 / 5
0 9.51379e-005 0.0166977 0.399156 0.889314 0.884074 0.653023 0.401793 0.22084 0.114818 0.0593918 0.0321309 0.019081 0.0128602 0.00986041 0.00838128 0.00763026 0.00723587 0.00702115 0.00689986 0.00682878 0.00678563 0.00675852 0.00674093 0.00672917 0.00672109 0.00671539 0.00671127 0.00670824 0.00670596 0.00670422 0.00670286 0.00670179 0.00670094 0.00670025 0.00669969 0.00669923 0.00669885 0.00669853 0.00669826 0.00669764 #selex for gender,fleet: 1 / 5
0.01241 0.0292629 0.12616 0.246108 0.380797 0.526008 0.687967 0.856324 1.02235 1.18941 1.36389 1.55172 1.75459 1.96572 2.17216 2.36293 2.53343 2.68397 2.81677 2.9343 3.03866 3.13154 3.2143 3.28807 3.35381 3.41238 3.46453 3.51091 3.55216 3.5888 3.62133 3.65019 3.67579 3.69847 3.71857 3.73638 3.75213 3.76608 3.77842 3.78934 3.80677 #bodywt for gender,fleet: 1 / 6
0 0.00010063 0.00626296 0.108781 0.460696 0.826541 0.939173 0.844947 0.650275 0.45115 0.298853 0.199818 0.141143 0.108104 0.0899271 0.0799726 0.0744752 0.0713872 0.0696126 0.0685657 0.0679304 0.0675336 0.0672787 0.0671102 0.0669959 0.0669164 0.0668598 0.0668187 0.0667881 0.066765 0.0667473 0.0667334 0.0667225 0.0667138 0.0667067 0.0667009 0.0666962 0.0666922 0.0666889 0.0666861 0.0666797 #selex for gender,fleet: 1 / 6
0.01241 0.0267747 0.0882909 0.232774 0.431347 0.636063 0.847601 1.06137 1.27271 1.47824 1.67563 1.8633 2.04026 2.20598 2.36026 2.50317 2.63491 2.75574 2.86598 2.96599 3.05621 3.1372 3.20959 3.27408 3.33137 3.38219 3.42719 3.46701 3.50223 3.53336 3.56087 3.58518 3.60665 3.62562 3.64237 3.65717 3.67024 3.68178 3.69197 3.70097 3.71788 #bodywt for gender,fleet: 1 / 7
0 9.26089e-005 0.000132384 0.000310907 0.00183127 0.0088944 0.0297813 0.0738666 0.146073 0.243621 0.357284 0.475324 0.587241 0.685836 0.767576 0.831913 0.880232 0.914859 0.938341 0.953031 0.960923 0.963636 0.962466 0.958445 0.952404 0.945002 0.936766 0.928104 0.919332 0.910682 0.902322 0.894366 0.886887 0.879925 0.873497 0.8676 0.862221 0.857337 0.852919 0.848935 0.84399 #selex for gender,fleet: 1 / 7
0.01241 0.0289001 0.131414 0.244304 0.365564 0.502801 0.64917 0.789221 0.924959 1.06314 1.21575 1.4056 1.65246 1.93103 2.18541 2.39345 2.56383 2.70864 2.83534 2.94794 3.04866 3.13896 3.21989 3.29237 3.35719 3.41509 3.46674 3.51276 3.55373 3.59015 3.62251 3.65125 3.67674 3.69934 3.71937 3.73711 3.75283 3.76673 3.77904 3.78993 3.80728 #bodywt for gender,fleet: 1 / 8
0 9.92788e-005 0.00902077 0.187405 0.661946 0.918129 0.815393 0.54012 0.287818 0.133782 0.0589486 0.0271135 0.0145284 0.00971708 0.00788801 0.00718268 0.00690288 0.00678761 0.00673798 0.00671557 0.00670493 0.00669963 0.00669686 0.00669534 0.00669447 0.00669395 0.00669363 0.00669342 0.00669329 0.00669319 0.00669313 0.00669308 0.00669304 0.00669302 0.006693 0.00669298 0.00669297 0.00669296 0.00669295 0.00669295 0.00669293 #selex for gender,fleet: 1 / 8
0.01241 0.0276778 0.135927 0.249455 0.368605 0.506713 0.666413 0.832988 1.00645 1.19356 1.39934 1.62032 1.8432 2.054 2.24578 2.41784 2.572 2.7104 2.83486 2.94682 3.04749 3.13792 3.21901 3.29164 3.35659 3.41459 3.46632 3.51241 3.55342 3.58988 3.62228 3.65103 3.67654 3.69916 3.71921 3.73696 3.75268 3.7666 3.77891 3.7898 3.80718 #bodywt for gender,fleet: 1 / 9

0 9.52967e-005 0.00591211 0.163556 0.641962 0.924601 0.883359 0.69257 0.484005 0.325202 0.22517 0.168539 0.13829 0.122562 0.114431 0.110191 0.107938 0.106711 0.106022 0.105624 0.105386 0.105239 0.105145 0.105084 0.105042 0.105014 0.104993 0.104979 0.104968 0.10496 0.104953 0.104948 0.104944 0.104941 0.104939 0.104937 0.104935 0.104934 0.104932 0.104931 0.104929 #selex for gender,fleet: 1 / 9
0.01241 0.0283955 0.127999 0.249344 0.384122 0.527923 0.683117 0.835478 0.980801 1.13307 1.31433 1.54116 1.79641 2.03848 2.24665 2.42399 2.57851 2.71578 2.83894 2.94984 3.04972 3.13957 3.22026 3.2926 3.35735 3.4152 3.46682 3.51282 3.55377 3.59019 3.62254 3.65127 3.67676 3.69936 3.71938 3.73713 3.75284 3.76674 3.77905 3.78994 3.80729 #bodywt for gender,fleet: 1 / 10
0 9.76642e-005 0.00471284 0.0944871 0.434006 0.809689 0.917903 0.773572 0.521213 0.303756 0.170705 0.104249 0.0748306 0.0626549 0.0577675 0.0558148 0.0550238 0.0546945 0.0545525 0.0544887 0.0544586 0.0544438 0.0544362 0.054432 0.0544297 0.0544283 0.0544275 0.054427 0.0544266 0.0544264 0.0544262 0.0544261 0.054426 0.054426 0.0544259 0.0544259 0.0544258 0.0544258 0.0544258 0.0544258 0.0544257 #selex for gender,fleet: 1 / 10
0.01241 0.0267686 0.0856624 0.194113 0.467528 0.721876 0.926252 1.11971 1.30442 1.48068 1.64998 1.81493 1.97778 2.13882 2.29617 2.447 2.58886 2.72029 2.84076 2.95041 3.04968 3.13924 3.21979 3.29206 3.35677 3.4146 3.46622 3.51223 3.55319 3.58961 3.62198 3.65072 3.67621 3.69882 3.71886 3.73661 3.75233 3.76624 3.77855 3.78944 3.80682 #bodywt for gender,fleet: 1 / 11
0 9.25907e-005 0.000123287 0.000128689 0.000414276 0.00461417 0.0294734 0.106207 0.253075 0.448633 0.644033 0.798313 0.898437 0.953665 0.980313 0.991799 0.996236 0.997696 0.997987 0.99785 0.997575 0.99727 0.996978 0.996712 0.996476 0.996268 0.996087 0.99593 0.995794 0.995676 0.995573 0.995484 0.995407 0.99534 0.995282 0.995231 0.995187 0.995148 0.995114 0.995085 0.995031 #selex for gender,fleet: 1 / 11
0.01241 0.0267696 0.0857813 0.189442 0.334108 0.513866 0.717813 0.933455 1.15122 1.3652 1.57188 1.76922 1.95604 2.13184 2.29645 2.44984 2.59198 2.7229 2.84278 2.95195 3.05091 3.14025 3.22067 3.29285 3.3575 3.41529 3.46687 3.51285 3.55378 3.59018 3.62252 3.65124 3.67671 3.6993 3.71932 3.73706 3.75276 3.76666 3.77896 3.78984 3.80719 #bodywt for gender,fleet: 1 / 12
0 0.22148 0.296419 0.304582 0.32716 0.372751 0.443363 0.532813 0.629896 0.723189 0.804363 0.869212 0.917152 0.950099 0.971251 0.984025 0.991352 0.99539 0.997556 0.998698 0.999298 0.999614 0.999781 0.999872 0.999921 0.999948 0.999962 0.999969 0.999971 0.99997 0.999968 0.999965 0.999961 0.999956 0.999951 0.999946 0.999942 0.999937 0.999932 0.999928 0.99993 #selex for gender,fleet: 1 / 12
0.0129428 0.0302637 0.15626 0.332128 0.494352 0.650929 0.800961 0.945473 1.08391 1.21437 1.33772 1.4583 1.57969 1.7009 1.81699 1.92273 2.01535 2.09465 2.16189 2.21878 2.26696 2.30782 2.34255 2.37209 2.39725 2.41868 2.43694 2.4525 2.46576 2.47705 2.48668 2.49488 2.50186 2.50781 2.51287 2.51718 2.52085 2.52398 2.52664 2.5289 2.53199 #bodywt for gender,fleet: 2 / 1
0 9.67166e-005 0.00045483 0.0111137 0.0849782 0.279114 0.545127 0.769353 0.885225 0.894176 0.831567 0.739085 0.64879 0.576783 0.526032 0.492892 0.472169 0.459461 0.451686 0.446883 0.443865 0.441926 0.440649 0.439787 0.439191 0.438768 0.438462 0.438236 0.438066 0.437936 0.437835 0.437756 0.437693 0.437642 0.437601 0.437568 0.437541 0.437518 0.4375 0.437484 0.437446 #selex for gender,fleet: 2 / 1
0.0129428 0.0300909 0.111515 0.349579 0.537576 0.708546 0.868986 1.01968 1.16205 1.2978 1.42784 1.55169 1.66788 1.77491 1.87196 1.95892 2.03613 2.1042 2.16385 2.21586 2.26101 2.30006 2.33373 2.3627 2.38757 2.40888 2.42713 2.44274 2.45607 2.46745 2.47717 2.48545 2.49251 2.49853 2.50366 2.50803 2.51175 2.51492 2.51762 2.51992 2.52311 #bodywt for gender,fleet: 2 / 2
0 9.62501e-005 0.000144216 0.00144782 0.0170845 0.0842477 0.231682 0.436269 0.640149 0.797753 0.896517 0.947059 0.966317 0.968131 0.961346 0.951002 0.939806 0.92912 0.919551 0.91129 0.904309 0.898485 0.893658 0.889671 0.886381 0.883662 0.881413 0.879548 0.877998 0.876706 0.875627 0.874724 0.873967 0.873331 0.872795 0.872344 0.871963 0.871641 0.871368 0.871138 0.870732 #selex for gender,fleet: 2 / 2
0.012944 0.0476593 0.135179 0.270508 0.432622 0.605547 0.780071 0.950672 1.11404 1.2683 1.41237 1.54537 1.66654 1.77549 1.87239 1.95788 2.03288 2.09841 2.15549 2.20507 2.24804 2.28518 2.31722 2.34481 2.36853 2.38888 2.40634 2.42128 2.43407 2.44499 2.45433 2.4623 2.4691 2.4749 2.47984 2.48406 2.48765 2.4907 2.49331 2.49553 2.49878 #bodywt for gender,fleet: 2 / 3
0 0.000222775 0.00928941 0.0513573 0.150869 0.305237 0.484035 0.651723 0.785366 0.878285 0.935151 0.965188 0.977297 0.978125 0.972096 0.962086 0.950005 0.937147 0.924371 0.912218 0.900996 0.89085 0.881814 0.873857 0.866905 0.86087 0.855654 0.851162 0.847303 0.843995 0.841163 0.838742 0.836674 0.834909 0.833404 0.83212 0.831027 0.830095 0.829301 0.828625 0.827704 #selex for gender,fleet: 2 / 3
0.0129428 0.0301182 0.133825 0.344224 0.516471 0.679803 0.834629 0.982344 1.12592 1.26773 1.40731 1.54154 1.6668 1.78072 1.88252 1.97245 2.05132 2.1201 2.17985 2.23157 2.27622 2.31468 2.34775 2.37613 2.40046 2.42129 2.43911 2.45434 2.46735 2.47846 2.48793 2.49601 2.50289 2.50876 2.51377 2.51803 2.52165 2.52474 2.52737 2.52961 2.53264 #bodywt for gender,fleet: 2 / 4
0 9.63221e-005 0.000209529 0.00411692 0.0401023 0.162148 0.376447 0.613989 0.800688 0.912597 0.9665 0.98826 0.995854 0.998137 0.998639 0.998588 0.998384 0.998151 0.997929 0.997729 0.997553 0.997401 0.99727 0.997157 0.997062 0.99698 0.996911 0.996852 0.996801 0.996759 0.996722 0.996691 0.996665 0.996643 0.996624 0.996608 0.996594 0.996583 0.996573 0.996564 0.996552 #selex for gender,fleet: 2 / 4
0.0129429 0.0378032 0.17075 0.261219 0.368848 0.499818 0.636484 0.772399 0.906648 1.03879 1.16879 1.29701 1.42365 1.54798 1.66793 1.78062 1.88342 1.97479 2.0544 2.12283 2.18119 2.23074 2.27271 2.30825 2.33834 2.36383 2.38542 2.40373 2.41925 2.43243 2.44362 2.45312 2.46119 2.46805 2.47387 2.47883 2.48304 2.48662 2.48966 2.49225 2.49624 #bodywt for gender,fleet: 2 / 5
0 0.000116252 0.0446532 0.508252 0.888695 0.844053 0.630568 0.413296 0.252842 0.151044 0.0911087 0.0568875 0.0374216 0.0262041 0.019589 0.0155745 0.0130613 0.0114374 0.0103555 0.00961366 0.00909127 0.00871442 0.00843662 0.00822786 0.0080683 0.00794452 0.00784725 0.00776994 0.0077079 0.0076577 0.00761677 0.0075832 0.00755552 0.00753258 0.00751351 0.0074976 0.00748428 0.00747311 0.00746372 0.00745581 0.00744019 #selex for gender,fleet: 2 / 5
0.0129432 0.0402986 0.159238 0.288197 0.419625 0.556411 0.701959 0.847259 0.986215 1.11962 1.24946 1.37663 1.5008 1.62055 1.73371 1.83813 1.93227 2.01552 2.08809 2.15074 2.20448 2.2504 2.28955 2.32288 2.35124 2.37536 2.39588 2.41332 2.42816 2.44078 2.45151 2.46063 2.4684 2.475 2.48062 2.48539 2.48946 2.49292 2.49586 2.49836 2.50211 #bodywt for gender,fleet: 2 / 6
0 0.000136863 0.0129498 0.164877 0.53568 0.842566 0.924265 0.844143 0.6907 0.529018 0.393672 0.293416 0.223834 0.176997 0.145761 0.124846 0.110673 0.100909 0.0940547 0.08915 0.085573 0.082917 0.0809117 0.0793746 0.0781802 0.0772409 0.0764941 0.0758949 0.0754101 0.075015 0.0746911 0.0744242 0.0742032 0.0740194 0.0738662 0.0737379 0.0736304 0.0735401 0.073464 0.0733999 0.0732767 #selex for gender,fleet: 2 / 6
0.0129428 0.0301146 0.105912 0.294994 0.505372 0.703323 0.893252 1.07311 1.24108 1.39616 1.53798 1.66653 1.78215 1.8854 1.97703 2.05787 2.12884 2.19087 2.24488 2.29175 2.33231 2.36733 2.39749 2.42343 2.4457 2.46479 2.48114 2.49513 2.50709 2.5173 2.52602 2.53347 2.53981 2.54523 2.54984 2.55377 2.55712 2.55997 2.5624 2.56447 2.56698 #bodywt for gender,fleet: 2 / 7

0 9.63214e-005 0.000141678 0.000480142 0.00289056 0.0119734 0.0340599 0.0736315 0.130722 0.201196 0.278852 0.357596 0.432719 0.50126 0.561807 0.614069 0.658455 0.695743 0.726847 0.752685 0.774105 0.791854 0.806568 0.818781 0.828936 0.837394 0.844454 0.850359 0.855306 0.859458 0.86295 0.86589 0.868368 0.870461 0.872229 0.873724 0.87499 0.876063 0.876972 0.877743 0.879006 #selex for gender,fleet: 2 / 7
0.0129431 0.0401676 0.164552 0.281075 0.398535 0.526229 0.655195 0.776441 0.891592 1.00428 1.1179 1.2367 1.36521 1.5046 1.64905 1.78761 1.91095 2.01527 2.10134 2.17189 2.22985 2.27777 2.31762 2.35095 2.37894 2.40253 2.42245 2.43931 2.45359 2.46571 2.47599 2.48473 2.49214 2.49845 2.50381 2.50837 2.51224 2.51553 2.51834 2.52072 2.52412 #bodywt for gender,fleet: 2 / 8
0 0.000132907 0.0206139 0.272318 0.71833 0.89838 0.785281 0.55095 0.333788 0.185853 0.100431 0.0552116 0.0321605 0.0204783 0.0144692 0.0112909 0.00954939 0.00855709 0.00796861 0.00760567 0.00737335 0.00721943 0.00711418 0.00704015 0.00698674 0.00694734 0.0069177 0.00689501 0.00687739 0.00686352 0.00685248 0.00684362 0.00683643 0.00683057 0.00682576 0.00682178 0.00681849 0.00681575 0.00681346 0.00681155 0.00680732 #selex for gender,fleet: 2 / 8
0.0129429 0.0355551 0.171001 0.28672 0.402025 0.533163 0.676865 0.822009 0.967061 1.1139 1.26283 1.41136 1.55475 1.68797 1.80767 1.91269 2.00352 2.0815 2.1482 2.20516 2.25378 2.29527 2.33067 2.36087 2.38662 2.40858 2.4273 2.44326 2.45685 2.46844 2.47831 2.48671 2.49387 2.49997 2.50516 2.50957 2.51333 2.51654 2.51926 2.52158 2.52482 #bodywt for gender,fleet: 2 / 9
0 0.000112208 0.0150839 0.247812 0.703155 0.913955 0.861799 0.698562 0.523822 0.383191 0.284924 0.221062 0.180888 0.155819 0.140064 0.129999 0.123431 0.119041 0.116034 0.113925 0.112412 0.111303 0.110475 0.109846 0.109362 0.108983 0.108683 0.108444 0.108251 0.108094 0.107966 0.10786 0.107773 0.107701 0.10764 0.10759 0.107548 0.107513 0.107483 0.107458 0.107409 #selex for gender,fleet: 2 / 9
0.012943 0.037553 0.162324 0.292389 0.423395 0.557511 0.694803 0.825543 0.947633 1.06752 1.19327 1.33055 1.47861 1.62852 1.76835 1.89047 1.9933 2.07879 2.14988 2.20928 2.25918 2.30128 2.33692 2.36716 2.39286 2.41471 2.43331 2.44914 2.46261 2.47409 2.48386 2.49217 2.49926 2.50528 2.51042 2.51478 2.5185 2.52167 2.52436 2.52665 2.52981 #bodywt for gender,fleet: 2 / 10
0 0.00012239 0.0102217 0.147553 0.510962 0.825874 0.897145 0.774253 0.572075 0.383801 0.248476 0.164459 0.116296 0.0896706 0.075063 0.0669592 0.0623597 0.0596705 0.0580455 0.0570296 0.0563729 0.0559349 0.0556338 0.0554214 0.0552678 0.0551543 0.0550688 0.0550033 0.0549525 0.0549124 0.0548806 0.0548549 0.0548342 0.0548173 0.0548034 0.0547919 0.0547824 0.0547745 0.0547679 0.0547624 0.0547501 #selex for gender,fleet: 2 / 10
0.0129428 0.0300849 0.0978443 0.245219 0.586591 0.80395 0.978091 1.13508 1.27873 1.41061 1.53183 1.6433 1.74578 1.83979 1.92566 2.00359 2.07373 2.13632 2.19172 2.24041 2.28293 2.31989 2.35189 2.3795 2.40326 2.42367 2.44117 2.45615 2.46897 2.47992 2.48928 2.49726 2.50407 2.50988 2.51483 2.51905 2.52264 2.5257 2.52831 2.53053 2.53351 #bodywt for gender,fleet: 2 / 11
0 9.62344e-005 0.000123208 0.000146707 0.000908744 0.00798131 0.0371024 0.106774 0.221355 0.365649 0.515121 0.648959 0.75636 0.835785 0.891146 0.928206 0.952404 0.968014 0.978061 0.984563 0.988817 0.99164 0.993545 0.994854 0.99577 0.996422 0.996895 0.997243 0.997504 0.997701 0.997854 0.997972 0.998065 0.998139 0.998198 0.998246 0.998285 0.998316 0.998343 0.998364 0.998425 #selex for gender,fleet: 2 / 11
0.0129428 0.0300892 0.0980359 0.214029 0.368745 0.549702 0.741332 0.93092 1.11113 1.27855 1.43183 1.57067 1.69535 1.80648 1.90493 1.99166 2.0677 2.13411 2.19188 2.242 2.28535 2.32276 2.35498 2.38267 2.40644 2.42682 2.44427 2.45919 2.47195 2.48285 2.49215 2.50009 2.50685 2.51262 2.51754 2.52173 2.5253 2.52834 2.53093 2.53313 2.53607 #bodywt for gender,fleet: 2 / 12
0 0.23022 0.296755 0.307896 0.335039 0.383735 0.45145 0.53018 0.610755 0.685969 0.751633 0.806216 0.849991 0.884196 0.910435 0.930318 0.945276 0.956494 0.964912 0.97125 0.976047 0.979706 0.982518 0.984698 0.986403 0.987749 0.98882 0.989678 0.990372 0.990935 0.991396 0.991775 0.992088 0.992347 0.992563 0.992743 0.992894 0.99302 0.993127 0.993216 0.993397 #selex for gender,fleet: 2 / 12
0.06 0.06 0.06 0.06 0.06 0.06 0.06 0.0639724 0.0679448 0.0719172 0.0758896 0.079862 0.0838344 0.0878068 0.0917792 #mean M for year Yinit: 2011 sex: 1
934.412 487.766 992.187 274.048 863.528 300.233 121.79 150.097 403.955 276.86 474.42 226.287 278.299 233.421 146.787 206.303 167.668 194.128 140.866 116.262 150.405 112.658 106.095 75.5903 53.1511 30.3501 19.5422 46.3559 9.64158 9.84551 14.1162 4.36269 3.59728 5.94163 4.15107 1.6603 3.52871 1.49113 1.55704 1.5167 7.89958 #numbers for year Yinit: 2011 sex: 1
0.06 0.06 0.06 0.06 0.06 0.06 0.06 0.06 0.06 0.06 0.06 0.06 0.06 0.06 0.06 0.06 0.06 0.06 0.06 0.06 0.06 0.06 0.06 0.06 0.06 0.06 0.06 0.06 0.06 0.06 0.06 0.06 0.06 0.06 0.06 0.06 0.06 0.06 0.06 0.06 0.06 #mean M for year Yinit: 2011 sex: 2
934.412 487.766 992.186 274.007 862.377 299.711 121.697 150.043 405.137 279.713 484.867 234.85 294.554 252.803 163.146 236.397 198.261 236.346 176.515 150.161 201.266 157.473 155.869 116.801 85.8277 50.789 33.7971 83.4855 18.2947 19.7769 29.8652 9.59625 8.08362 13.4693 9.4163 3.74692 7.90557 3.31921 3.45029 3.34836 17.432 #numbers for year Yinit: 2011 sex: 2
470.913 594.076 514.783 338.462 502.837 427.953 512.018 381.161 320.897 422.345 321.216 306.417 220.474 156.022 89.3369 57.4667 136.206 28.3108 28.8937 41.4084 12.7927 10.545 17.4127 12.1626 4.86378 10.3356 4.36692 4.55943 4.44086 3.13699 1.82362 1.41383 1.51109 2.97952 1.18511 0.883247 0.765479 0.753858 0.843861 0.976072 6.84925 #numbers for year Ydeclare: 2000 sex: 1
470.913 594.076 514.783 338.363 501.255 425.326 507.324 376.964 318.585 424.552 330.74 326.385 244.074 179.093 105.868 70.3935 173.778 38.0621 41.1288 62.0877 19.9443 16.7965 27.9814 19.5583 7.7815 16.4161 6.89171 7.16326 6.95111 4.88082 2.80698 2.14262 2.24823 4.34925 1.70023 1.24921 1.07088 1.04704 1.16856 1.35391 12.1618 #numbers for year Ydeclare: 2000 sex: 2
#R0 1916 1917 1918 1919 1920 1921 1922 1923 1924 1925 1926 1927 1928 1929 1930 1931 1932 1933 1934 1935 1936 1937 1938 1939 1940 1941 1942 1943 1944 1945 1946 1947 1948 1949 1950 1951 1952 1953 1954 1955 1956 1957 1958 1959 1960 1961 1962 1963 1964 1965 1966 1967 1968 1969 1970 1971 1972 1973 1974 1975 1976 1977 1978 1979 1980 1981 1982 1983 1984 1985 1986 1987 1988 1989 1990 1991 1992 1993 1994 1995 1996 1997 1998 1999 2000 2001 2002 2003 2004 2005 2006 2007 2008 2009 2010 #years
3349.5 3349.5 3349.04 3348.34 3347.61 3347.16 3346.71 3346.34 3346.02 3345.65 3345.28 3344.85 3344.25 3343.75 3343.15 3342.36 3341.57 3340.74 3340.35 3340.04 3339.74 3339.32 3338.99 3338.59 3338.2 3337.74 3336.03 3333.77 3329.36 3313.28 3287.98 3235.06 3203.6 3189.43 3178.32 3168.91 3159.98 3151.82 3145.01 3141.36 3133.89 3126.47 3111.67 3096.31 3087.4 3167.57 3873.35 3042.54 2468.73 2270.65 2360.34 2831.41 6306.5 2802.23 2261.24 2466.01 3509.33 4029.95 3311.2 2520 4714.53 1739.62 3366.1 3662.62 1658.09 1481.25 3441.54 1681.87 1144.7 3875.95 1188.98 1391.3 1868.06 2041.43 2207.66 1835.54 1975.22 1270.74 1314.76 1569.7 1187.72 1285.59 810.663 1160.85 1261.62 941.826 1825.4 990.078 1347.53 468.716 356.383 819.685 2201.4 656.299 2237.45 1035.86 1868.82 #Recruits
27846.4 27846.4 27830.5 27806 27780.9 27765.4 27749.6 27736.8 27725.9 27713.1 27700.3 27685.5 27665 27647.8 27627 27600 27572.8 27544.5 27531.3 27520.5 27510.3 27496.1 27485 27471 27458 27442.2 27384.2 27307.8 27159.5 26629.8 25826.5 24259.4 23393.2

23017.7 22729.3 22489.3 22264.6 22062.3 21895.5 21806.8 21626.9 21450.4 21104 20753 20553.1 20331.1 20057.5 19835 19504 19429.7 19243.2 19034.1 18704.5 18867.5 18590.6 18554.8 18366.2 18023.5 17767.5 17373.7 17100.6 16909.3 16832.1 16387.9 15208.2 14475.8 13138.1 12368.1 10768.7 9338.03 8928.69 8413.31 8004.6 7297.56 6588.28 5739.7 5103.36 4272.31 3588.71 3157.26 3167.83 3246.35 3181.32 3129.71 3026.42 3124.5 3482.63 3848.53 4196.35 4520.21 4833.89 5138.43 5431.38 5719.56 5996.58 6253.78 6458.11 #SpawnBio
0.511 0.5 0 # spawn-recr steepness, sigmaR, autocorr
high steepness vector 1
0 0 8.88153e-005 0.000951584 0.00615204 0.0274148 0.0888558 0.217606 0.422093 0.683843 0.971645 1.25873 1.52934 1.77699 2.00053 2.2012 2.38102 2.54208 2.68631 2.81544 2.931 3.03434 3.12668 3.20912 3.28266 3.34819 3.40656 3.45849 3.50466 3.54569 3.58212 3.61445 3.64313 3.66856 3.6911 3.71107 3.72876 3.74442 3.75829 3.77055 3.79029 #female fecundity; weighted by N in year Y_init across morphs and areas
0.0124266 0.02714 0.109796 0.271105 0.433064 0.602575 0.774118 0.946145 1.11709 1.28382 1.45531 1.64797 1.8608 2.07204 2.26412 2.43405 2.58531 2.72133 2.84429 2.95554 3.05606 3.1467 3.22824 3.30144 3.36702 3.42569 3.47809 3.52483 3.56647 3.60353 3.63649 3.66578 3.69179 3.71487 3.73534 3.75348 3.76956 3.78381 3.79643 3.8076 3.82548 #bodywt for gender,fleet: 1 / 1
0 9.35613e-005 0.000233986 0.00496253 0.0520787 0.221252 0.508213 0.774013 0.899792 0.87165 0.751643 0.623506 0.534511 0.487114 0.466018 0.457689 0.454639 0.453566 0.453193 0.453063 0.453016 0.452999 0.452992 0.452989 0.452988 0.452988 0.452987 0.452987 0.452987 0.452987 0.452987 0.452987 0.452987 0.452987 0.452987 0.452987 0.452987 0.452987 0.452987 0.452987 0.452987 #selex for gender,fleet: 1 / 1
0.0124266 0.0271122 0.0887316 0.269552 0.461255 0.645724 0.830438 1.01241 1.19132 1.37026 1.55221 1.73623 1.91881 2.09661 2.26695 2.42755 2.57674 2.71368 2.83832 2.95115 3.0529 3.14443 3.2266 3.30024 3.36613 3.42501 3.47757 3.52441 3.56614 3.60326 3.63626 3.66559 3.69162 3.71472 3.7352 3.75336 3.76946 3.78371 3.79633 3.80751 3.82541 #bodywt for gender,fleet: 1 / 2
0 9.34774e-005 0.000129266 0.000603099 0.00886453 0.058907 0.201301 0.432923 0.675793 0.851232 0.93988 0.965995 0.959522 0.940659 0.920295 0.903192 0.890555 0.881907 0.876255 0.872652 0.870378 0.868942 0.868028 0.867438 0.867051 0.866792 0.866615 0.866492 0.866405 0.866341 0.866295 0.86626 0.866233 0.866213 0.866196 0.866184 0.866173 0.866165 0.866158 0.866152 0.866139 #selex for gender,fleet: 1 / 2
0.0124266 0.0342652 0.10995 0.227722 0.381905 0.559693 0.751397 0.949832 1.14996 1.34888 1.54475 1.73501 1.91663 2.08786 2.24851 2.39907 2.53991 2.67111 2.79261 2.90441 3.00665 3.09961 3.18372 3.25953 3.32762 3.38861 3.44312 3.49176 3.53509 3.57365 3.60792 3.63836 3.66537 3.68933 3.71058 3.7294 3.74607 3.76084 3.77391 3.78548 3.80468 #bodywt for gender,fleet: 1 / 3
0 0.000122393 0.00614282 0.0366739 0.118681 0.264322 0.453215 0.644317 0.800542 0.90439 0.958519 0.975377 0.96695 0.941976 0.907283 0.868571 0.830145 0.794699 0.763517 0.736914 0.714644 0.696207 0.681029 0.668558 0.658304 0.649853 0.642863 0.637059 0.632218 0.628162 0.624748 0.621863 0.619414 0.617327 0.615543 0.614012 0.612695 0.611558 0.610575 0.609722 0.608051 #selex for gender,fleet: 1 / 3
0.0124266 0.0271221 0.0987451 0.271574 0.442325 0.62001 0.800182 0.979578 1.16006 1.3469 1.5413 1.7379 1.92972 2.1122 2.28318 2.44186 2.5881 2.7221 2.8443 2.95528 3.05572 3.14634 3.22789 3.30111 3.36672 3.4254 3.47782 3.52457 3.56623 3.6033 3.63627 3.66557 3.69158 3.71467 3.73514 3.75329 3.76938 3.78363 3.79625 3.80742 3.82531 #bodywt for gender,fleet: 1 / 4
0 9.35074e-005 0.000164568 0.00207845 0.0243029 0.121689 0.332372 0.598599 0.814685 0.934051 0.981255 0.995177 0.998107 0.998192 0.997677 0.997091 0.996553 0.996088 0.995697 0.995373 0.995107 0.994888 0.994709 0.994561 0.99444 0.994339 0.994256 0.994186 0.994127 0.994078 0.994036 0.994 0.99397 0.993944 0.993921 0.993902 0.993885 0.993871 0.993858 0.993848 0.993827 #selex for gender,fleet: 1 / 4
0.0124266 0.0283787 0.139032 0.233386 0.341369 0.480892 0.631874 0.785971 0.942841 1.104 1.27436 1.46272 1.67623 1.90866 2.13898 2.348 2.52942 2.68569 2.82144 2.9406 3.04603 3.13976 3.22329 3.2978 3.36427 3.42355 3.47638 3.52344 3.56531 3.60255 3.63564 3.66504 3.69112 3.71427 3.73479 3.75298 3.7691 3.78337 3.79601 3.8072 3.82514 #bodywt for gender,fleet: 1 / 5
0 9.72199e-005 0.0171965 0.388032 0.882682 0.890899 0.66182 0.405907 0.220859 0.113184 0.0576297 0.0307674 0.0181563 0.0122689 0.00949047 0.00814996 0.00748376 0.00714113 0.0069583 0.00685697 0.00679865 0.00676383 0.00674229 0.00672852 0.00671943 0.00671326 0.00670896 0.00670589 0.00670364 0.00670197 0.0067007 0.00669971 0.00669895 0.00669834 0.00669785 0.00669745 0.00669712 0.00669685 0.00669663 0.00669644 0.006696 #selex for gender,fleet: 1 / 5
0.0124266 0.0296327 0.125952 0.24555 0.380273 0.525525 0.687634 0.856636 1.02345 1.19133 1.36667 1.55529 1.7587 1.96996 2.17626 2.36688 2.53745 2.68832 2.82167 2.93991 3.04507 3.13879 3.22241 3.29703 3.36361 3.42298 3.4759 3.52301 3.56494 3.60222 3.63535 3.66477 3.69088 3.71404 3.73458 3.75278 3.76891 3.78319 3.79584 3.80704 3.82499 #bodywt for gender,fleet: 1 / 6
0 0.000101788 0.00612238 0.106186 0.454089 0.822651 0.940705 0.8513 0.659081 0.459816 0.306223 0.205849 0.146186 0.112519 0.0939752 0.0838141 0.078203 0.0750526 0.0732438 0.0721779 0.071532 0.0711292 0.0708708 0.0707003 0.0705849 0.0705047 0.0704478 0.0704064 0.0703757 0.0703526 0.0703348 0.070321 0.0703101 0.0703013 0.0702943 0.0702885 0.0702838 0.0702799 0.0702766 0.0702738 0.0702675 #selex for gender,fleet: 1 / 6
0.0124266 0.0271169 0.0884597 0.230703 0.429135 0.633572 0.844849 1.0586 1.27017 1.47614 1.67411 1.86249 2.04025 2.20682 2.362 2.50582 2.63849 2.76029 2.87152 2.97254 3.06377 3.14574 3.21908 3.28447 3.34261 3.3942 3.43993 3.48041 3.51623 3.54791 3.57592 3.60069 3.62258 3.64193 3.65903 3.67414 3.68749 3.69929 3.70972 3.71893 3.73629 #bodywt for gender,fleet: 1 / 7
0 9.34916e-005 0.000131558 0.000294088 0.00169211 0.008267 0.0279595 0.0700366 0.139742 0.234894 0.346819 0.464067 0.576135 0.675627 0.75873 0.824636 0.874534 0.910635 0.935432 0.951266 0.960137 0.963674 0.963186 0.959718 0.954111 0.947039 0.939042 0.930542 0.921867 0.913263 0.904907 0.896924 0.889395 0.882365 0.875858 0.869876 0.864408 0.859433 0.854925 0.850855 0.845782 #selex for gender,fleet: 1 / 7
0.0124266 0.0294084 0.130781 0.24354 0.36521 0.502729 0.649587 0.789961 0.925789 1.06388 1.21626 1.40611 1.65373 1.93334 2.18812 2.39621 2.56683 2.71216 2.83959 2.95304 3.05467 3.14589 3.22775 3.30113 3.36682 3.42555 3.47799 3.52476 3.56642 3.60349 3.63646 3.66575 3.69176 3.71485 3.73532 3.75347 3.76955 3.7838 3.79642 3.80759 3.82547 #bodywt for gender,fleet: 1 / 8
0 0.000100889 0.00908913 0.184953 0.657036 0.918781 0.821637 0.546685 0.291493 0.135111 0.0592269 0.0270804 0.0144511 0.00965968 0.00785372 0.0071637 0.00689261 0.00678201 0.00673486 0.00671378 0.00670387 0.00669898 0.00669644 0.00669506 0.00669428 0.00669381 0.00669353 0.00669335 0.00669323 0.00669314 0.00669309 0.00669305 0.00669302 0.00669299 0.00669298 0.00669296 0.00669295 0.00669294 0.00669294 0.00669293 0.00669292 #selex for gender,fleet: 1 / 8
0.0124266 0.0280879 0.135152 0.248856 0.368739 0.506949 0.667041 0.834233 1.00827 1.19588 1.40194 1.62283 1.84534 2.05582 2.24757 2.41992 2.57463 2.71376 2.83906 2.95192 3.05353 3.14489 3.22691 3.30044 3.36626 3.42508 3.4776 3.52442 3.56613 3.60324 3.63624 3.66556 3.69159 3.71468 3.73517 3.75333 3.76942 3.78368 3.7963 3.80747 3.82537 #bodywt for gender,fleet: 1 / 9

0 9.64541e-005 0.00582808 0.158317 0.631278 0.922973 0.89102 0.705229 0.497016 0.33644 0.234529 0.176582 0.145558 0.129413 0.121068 0.116721 0.114416 0.113163 0.112462 0.112057 0.111816 0.111667 0.111573 0.111512 0.11147 0.111442 0.111422 0.111407 0.111396 0.111388 0.111382 0.111377 0.111373 0.11137 0.111368 0.111366 0.111364 0.111363 0.111361 0.11136 0.111358 #selex for gender,fleet: 1 / 9
0.0124266 0.0288055 0.127611 0.248523 0.383397 0.527404 0.682963 0.835924 0.981694 1.13461 1.3173 1.54599 1.80175 2.04273 2.24972 2.4266 2.58129 2.71913 2.84307 2.95486 3.05567 3.14647 3.2281 3.30135 3.36696 3.42565 3.47806 3.52481 3.56646 3.60352 3.63649 3.66577 3.69178 3.71486 3.73533 3.75348 3.76956 3.78381 3.79642 3.80759 3.82548 #bodywt for gender,fleet: 1 / 10
0 9.88867e-005 0.00468431 0.0927746 0.428345 0.806003 0.919928 0.779751 0.527302 0.307843 0.173438 0.106558 0.0771534 0.0650899 0.0602966 0.0584026 0.0576443 0.0573324 0.0571995 0.0571404 0.057113 0.0570996 0.0570928 0.0570891 0.0570871 0.0570859 0.0570851 0.0570847 0.0570844 0.0570842 0.0570841 0.057084 0.0570839 0.0570838 0.0570838 0.0570838 0.0570838 0.0570837 0.0570837 0.0570837 0.0570837 #selex for gender,fleet: 1 / 10
0.0124266 0.0271112 0.0860904 0.193603 0.460593 0.717876 0.923021 1.11726 1.30293 1.48017 1.65025 1.81562 1.97859 2.13965 2.29718 2.44845 2.59099 2.72327 2.84469 2.95531 3.05557 3.1461 3.22759 3.30078 3.36637 3.42505 3.47746 3.52421 3.56587 3.60294 3.63592 3.66522 3.69123 3.71432 3.7348 3.75296 3.76904 3.7833 3.79592 3.80709 3.825 #bodywt for gender,fleet: 1 / 11
0 9.34743e-005 0.000123302 0.000128097 0.000383975 0.0042134 0.0273396 0.100172 0.242277 0.435006 0.631042 0.788513 0.892378 0.950503 0.978891 0.991247 0.996065 0.997676 0.998023 0.997905 0.997635 0.99733 0.997035 0.996766 0.996526 0.996315 0.996131 0.99597 0.995831 0.99571 0.995605 0.995514 0.995435 0.995366 0.995306 0.995254 0.995209 0.995169 0.995134 0.995103 0.995048 #selex for gender,fleet: 1 / 11
0.0124266 0.0271123 0.0862126 0.189673 0.33394 0.513303 0.717052 0.932756 1.15081 1.36525 1.57253 1.77052 1.95797 2.1343 2.29933 2.45307 2.59559 2.727 2.84748 2.95737 3.05712 3.14732 3.22861 3.30166 3.36716 3.42578 3.47814 3.52486 3.56649 3.60354 3.63649 3.66577 3.69178 3.71485 3.73531 3.75346 3.76954 3.78378 3.79639 3.80756 3.82544 #bodywt for gender,fleet: 1 / 12
0 0.207494 0.27517 0.282894 0.304376 0.34803 0.416369 0.50412 0.600873 0.695533 0.779613 0.848427 0.900783 0.938005 0.962844 0.978494 0.987881 0.993291 0.996318 0.99798 0.998884 0.999374 0.999642 0.99979 0.999873 0.99992 0.999947 0.999963 0.999972 0.999977 0.999979 0.99998 0.99998 0.999979 0.999978 0.999977 0.999975 0.999974 0.999972 0.999971 0.999972 #selex for gender,fleet: 1 / 12
0.0129957 0.0306134 0.155364 0.332174 0.494386 0.650993 0.800996 0.945339 1.0836 1.21395 1.33718 1.45754 1.57864 1.69957 1.81549 1.9212 2.0139 2.09337 2.16084 2.21798 2.26643 2.30757 2.34257 2.37239 2.3978 2.41947 2.43796 2.45373 2.46718 2.47865 2.48843 2.49677 2.50388 2.50994 2.51511 2.51951 2.52326 2.52645 2.52917 2.53149 2.53466 #bodywt for gender,fleet: 2 / 1
0 9.73914e-005 0.000429089 0.010319 0.0799763 0.266858 0.529027 0.756433 0.879995 0.897228 0.841052 0.752429 0.663895 0.592442 0.541754 0.508565 0.487815 0.47512 0.467386 0.462635 0.459668 0.457775 0.456537 0.455707 0.455137 0.454735 0.454446 0.454233 0.454073 0.453952 0.453858 0.453785 0.453726 0.45368 0.453642 0.453612 0.453586 0.453566 0.453549 0.453535 0.453499 #selex for gender,fleet: 2 / 1
0.0129957 0.0304488 0.111409 0.348107 0.536178 0.707119 0.86765 1.01844 1.16079 1.29634 1.42613 1.54983 1.66608 1.77338 1.87084 1.95824 2.03588 2.10435 2.16437 2.21671 2.26217 2.3015 2.33544 2.36466 2.38976 2.41129 2.42974 2.44553 2.45903 2.47056 2.48042 2.48883 2.496 2.50213 2.50735 2.5118 2.51559 2.51882 2.52158 2.52393 2.52718 #bodywt for gender,fleet: 2 / 2
0 9.69436e-005 0.000143603 0.00138269 0.016228 0.0804625 0.223095 0.423795 0.627018 0.787026 0.88962 0.944043 0.966697 0.971402 0.967111 0.958938 0.949617 0.940527 0.932296 0.925143 0.919074 0.913996 0.90978 0.906293 0.903412 0.90103 0.899059 0.897423 0.896063 0.89493 0.893982 0.893189 0.892524 0.891965 0.891494 0.891097 0.890761 0.890478 0.890238 0.890035 0.889674 #selex for gender,fleet: 2 / 2
0.012997 0.0479612 0.135353 0.270222 0.431852 0.604409 0.778688 0.949137 1.11238 1.2665 1.4104 1.54331 1.66458 1.77383 1.87117 1.95717 2.03269 2.09871 2.15623 2.20622 2.24955 2.28702 2.31937 2.34724 2.37121 2.39181 2.40947 2.42461 2.43757 2.44866 2.45814 2.46624 2.47316 2.47906 2.4841 2.48839 2.49206 2.49518 2.49784 2.50011 2.50343 #bodywt for gender,fleet: 2 / 3
0 0.000225493 0.00890587 0.0489669 0.14419 0.293332 0.468283 0.63491 0.770212 0.866502 0.927275 0.960972 0.976237 0.979772 0.976121 0.968228 0.958021 0.94679 0.935399 0.924402 0.914132 0.904762 0.896355 0.888905 0.882363 0.876657 0.871708 0.86743 0.863745 0.860578 0.857861 0.855533 0.853541 0.851838 0.850383 0.849141 0.848081 0.847176 0.846405 0.845747 0.844862 #selex for gender,fleet: 2 / 3
0.0129957 0.0305067 0.137787 0.33723 0.509326 0.674692 0.832283 0.9824 1.12709 1.26849 1.40673 1.53957 1.6639 1.77743 1.87924 1.9694 2.0486 2.11777 2.17791 2.23003 2.27507 2.31391 2.34733 2.37604 2.40067 2.42178 2.43986 2.45532 2.46854 2.47983 2.48947 2.4977 2.50472 2.51071 2.51582 2.52017 2.52388 2.52705 2.52974 2.53204 2.53516 #bodywt for gender,fleet: 2 / 4
0 9.71018e-005 0.000239327 0.00446154 0.0396245 0.154417 0.355922 0.5851 0.773573 0.893633 0.955899 0.983288 0.993844 0.997455 0.998495 0.998652 0.998526 0.998322 0.99811 0.997913 0.997736 0.997581 0.997447 0.997332 0.997233 0.997148 0.997076 0.997014 0.996962 0.996917 0.996879 0.996847 0.996819 0.996796 0.996776 0.996759 0.996744 0.996732 0.996722 0.996713 0.9967 #selex for gender,fleet: 2 / 4
0.0129959 0.0400245 0.169314 0.261704 0.369527 0.499568 0.634846 0.769046 0.901529 1.03209 1.16092 1.28865 1.4157 1.54138 1.66338 1.77838 1.88333 1.97644 2.05735 2.12671 2.18571 2.2357 2.27801 2.31379 2.34407 2.36972 2.39145 2.40988 2.42552 2.4388 2.45008 2.45967 2.46782 2.47475 2.48064 2.48565 2.48992 2.49355 2.49664 2.49926 2.50328 #bodywt for gender,fleet: 2 / 5
0 0.000124544 0.0446521 0.495087 0.883136 0.851197 0.640282 0.419818 0.255627 0.151462 0.0904392 0.0558756 0.0364069 0.0253079 0.0188348 0.0149493 0.0125422 0.0110023 0.00998564 0.00929431 0.00881112 0.00846487 0.00821112 0.00802141 0.00787706 0.00776551 0.00767813 0.00760888 0.00755344 0.00750865 0.00747221 0.00744235 0.00741775 0.00739739 0.00738047 0.00736635 0.00735454 0.00734463 0.0073363 0.00732929 0.00731527 #selex for gender,fleet: 2 / 5
0.0129961 0.0408278 0.159456 0.288131 0.419349 0.555681 0.700804 0.846012 0.984993 1.11839 1.2482 1.37536 1.49954 1.6193 1.73251 1.83701 1.93129 2.01473 2.08754 2.15045 2.20447 2.25068 2.29011 2.32372 2.35234 2.37671 2.39745 2.41511 2.43014 2.44293 2.45382 2.46309 2.47099 2.4777 2.48342 2.48829 2.49244 2.49597 2.49897 2.50153 2.50537 #bodywt for gender,fleet: 2 / 6
0 0.000139018 0.0126864 0.161151 0.527765 0.837455 0.925223 0.850613 0.700691 0.54017 0.404345 0.302913 0.232066 0.184138 0.152049 0.130495 0.115854 0.105748 0.0986446 0.0935555 0.089841 0.087081 0.0849961 0.0833973 0.0821546 0.0811768 0.0803992 0.079775 0.0792698 0.078858 0.0785203 0.0782418 0.0780111 0.0778192 0.0776591 0.077525 0.0774126 0.077318 0.0772383 0.0771711 0.0770418 #selex for gender,fleet: 2 / 6
0.0129957 0.0304706 0.105611 0.292932 0.504114 0.701946 0.891593 1.07122 1.23905 1.39409 1.53593 1.66459 1.78038 1.88387 1.97577 2.05692 2.12822 2.19059 2.24495 2.29216 2.33306 2.36839 2.39886 2.42507 2.4476 2.46693 2.48351 2.4977 2.50984 2.52022 2.52909 2.53666 2.54313 2.54865 2.55335 2.55737 2.56079 2.56371 2.5662 2.56832 2.57089 #bodywt for gender,fleet: 2 / 7

0 9.70101e-005 0.000140059 0.000449828 0.00267502 0.0111464 0.0319611 0.069624 0.12446 0.192719 0.268513 0.345903 0.420203 0.488385 0.548931 0.601443 0.646236 0.684013 0.715639 0.741997 0.763913 0.782121 0.797254 0.809842 0.820329 0.829081 0.836398 0.842527 0.847669 0.851992 0.85563 0.858698 0.861287 0.863475 0.865326 0.866893 0.868221 0.869347 0.870303 0.871113 0.872437 #selex for gender,fleet: 2 / 7
0.012996 0.0411719 0.164262 0.280792 0.398287 0.525718 0.654414 0.775239 0.889737 1.0016 1.11427 1.23202 1.35951 1.49823 1.64269 1.78193 1.9063 2.01167 2.09867 2.16998 2.22857 2.27701 2.31732 2.35103 2.37937 2.40326 2.42345 2.44055 2.45505 2.46736 2.47781 2.4867 2.49425 2.50068 2.50615 2.5108 2.51476 2.51812 2.52099 2.52343 2.52692 #bodywt for gender,fleet: 2 / 8
0 0.000137539 0.0206636 0.268423 0.712183 0.898567 0.791944 0.559619 0.340854 0.190377 0.102959 0.0565217 0.0328137 0.0207982 0.0146243 0.0113651 0.00958355 0.00857132 0.00797281 0.00760479 0.00736992 0.00721474 0.00710892 0.00703465 0.0069812 0.00694184 0.00691228 0.00688968 0.00687216 0.00685837 0.00684742 0.00683862 0.00683149 0.00682568 0.00682091 0.00681697 0.00681371 0.00681099 0.00680872 0.00680682 0.00680261 #selex for gender,fleet: 2 / 8
0.0129958 0.0362957 0.170695 0.28685 0.402393 0.533098 0.676508 0.821519 0.96636 1.11291 1.26149 1.40968 1.55276 1.6858 1.80544 1.91054 2.00157 2.07981 2.14682 2.20412 2.25308 2.2949 2.33062 2.36112 2.38716 2.40939 2.42835 2.44453 2.45833 2.4701 2.48013 2.48869 2.49598 2.50219 2.50748 2.51199 2.51584 2.51911 2.5219 2.52427 2.5276 #bodywt for gender,fleet: 2 / 9
0 0.000114479 0.014802 0.240383 0.691973 0.912287 0.869885 0.712247 0.538967 0.397349 0.297319 0.231798 0.190341 0.16436 0.147981 0.137495 0.130641 0.126057 0.122915 0.12071 0.119128 0.117969 0.117104 0.116447 0.11594 0.115544 0.115231 0.11498 0.114779 0.114615 0.114481 0.114371 0.114279 0.114204 0.114141 0.114088 0.114044 0.114007 0.113975 0.113949 0.113898 #selex for gender,fleet: 2 / 9
0.012996 0.0382274 0.162297 0.292053 0.422957 0.556789 0.693793 0.824361 0.946185 1.06574 1.19131 1.32871 1.47714 1.62742 1.76746 1.88965 1.9925 2.07806 2.14927 2.20885 2.25896 2.3013 2.33719 2.36768 2.39362 2.4157 2.43451 2.45054 2.4642 2.47585 2.48577 2.49423 2.50143 2.50757 2.5128 2.51726 2.52105 2.52429 2.52704 2.52939 2.53263 #bodywt for gender,fleet: 2 / 10
0 0.000124851 0.0101491 0.144838 0.503852 0.820927 0.898486 0.780865 0.580637 0.391588 0.254572 0.16909 0.119976 0.0928154 0.0779304 0.0696902 0.0650264 0.0623085 0.0606718 0.0596522 0.0589955 0.0585588 0.0582597 0.0580492 0.0578973 0.0577854 0.0577013 0.057637 0.057587 0.0575478 0.0575166 0.0574916 0.0574713 0.0574548 0.0574412 0.05743 0.0574207 0.057413 0.0574065 0.0574011 0.0573891 #selex for gender,fleet: 2 / 10
0.0129957 0.0304426 0.0981526 0.242244 0.582453 0.802377 0.976953 1.13419 1.27805 1.4101 1.53144 1.64295 1.74537 1.83927 1.92501 2.00282 2.0729 2.13551 2.191 2.23983 2.28255 2.31974 2.35197 2.37982 2.40382 2.42446 2.44217 2.45736 2.47036 2.48148 2.49099 2.49912 2.50605 2.51197 2.51702 2.52133 2.525 2.52813 2.5308 2.53308 2.53613 #bodywt for gender,fleet: 2 / 11
0 9.69271e-005 0.000123213 0.000144482 0.000837549 0.0073475 0.0345322 0.100521 0.210617 0.351244 0.498993 0.633181 0.742413 0.82435 0.882266 0.921559 0.947538 0.964487 0.975507 0.9827 0.987441 0.990608 0.992757 0.994241 0.995283 0.996028 0.996571 0.996971 0.997272 0.997501 0.997677 0.997815 0.997923 0.998009 0.998079 0.998135 0.998181 0.998218 0.998249 0.998274 0.998345 #selex for gender,fleet: 2 / 11
0.0129957 0.0304473 0.0983607 0.21394 0.368071 0.54854 0.739887 0.929353 1.10955 1.27701 1.4304 1.5694 1.69429 1.80566 1.90437 1.99137 2.0677 2.13438 2.19243 2.24282 2.28643 2.32409 2.35655 2.38447 2.40846 2.42903 2.44667 2.46177 2.47468 2.48572 2.49515 2.50321 2.51008 2.51595 2.52096 2.52522 2.52886 2.53196 2.5346 2.53686 2.53986 #bodywt for gender,fleet: 2 / 12
0 0.215184 0.27549 0.286029 0.311828 0.358432 0.423906 0.500966 0.580902 0.656599 0.723691 0.780357 0.826565 0.863309 0.892013 0.914174 0.931166 0.944153 0.954082 0.961693 0.967554 0.972095 0.975637 0.978421 0.980626 0.982384 0.983797 0.98494 0.985869 0.98663 0.987256 0.987774 0.988203 0.98856 0.988858 0.989108 0.989317 0.989494 0.989642 0.989768 0.990013 #selex for gender,fleet: 2 / 12
0.06 0.06 0.06 0.06 0.06 0.06 0.06 0.0637326 0.0674652 0.0711978 0.0749305 0.0786631 0.0823957 0.0861283 0.0898609 #mean M for year Yinit: 2011 sex: 1
1418.5 832.009 1776.58 482.297 1592.36 561.801 228.144 281.617 746.717 514.292 863.748 415.025 500.61 420.704 263.574 364.235 302.881 343.425 246.593 202.58 259.667 196.377 185.43 134.382 95.6913 53.6516 35.6987 78.8009 17.0381 16.8619 23.7074 7.36299 5.91203 9.52529 6.5082 2.71114 5.2414 2.32907 2.26432 2.21023 10.9126 #numbers for year Yinit: 2011 sex: 1
0.06 0.06 0.06 0.06 0.06 0.06 0.06 0.06 0.06 0.06 0.06 0.06 0.06 0.06 0.06 0.06 0.06 0.06 0.06 0.06 0.06 0.06 0.06 0.06 0.06 0.06 0.06 0.06 0.06 0.06 0.06 0.06 0.06 0.06 0.06 0.06 0.06 0.06 0.06 0.06 0.06 #mean M for year Yinit: 2011 sex: 2
1418.5 832.009 1776.58 482.258 1591.24 561.285 228.053 281.563 749.079 519.603 882.302 430.192 528.612 454.087 291.698 414.995 355.443 414.509 306.058 258.755 342.404 268.775 264.688 200.431 148.753 86.6105 59.8926 138.66 31.8404 33.6785 50.4655 16.526 13.7672 22.7207 15.7526 6.6081 12.8129 5.70599 5.56347 5.44597 27.1796 #numbers for year Yinit: 2011 sex: 2
849.033 1046.83 904.263 587.189 847.768 732.729 856.906 631.887 530.513 692.835 532.455 509.466 372.935 267.32 150.338 99.9758 220.583 47.6755 47.1676 66.2988 20.5864 16.5266 26.623 18.188 7.57577 14.6447 6.507 6.32567 6.17418 4.24522 2.52362 2.0027 2.2591 3.3801 1.74434 1.22766 1.03858 1.00815 1.09502 1.1838 8.76947 #numbers for year Ydeclare: 2000 sex: 1
849.033 1046.83 904.262 587.085 846.186 729.992 851.965 627.419 528.555 697.18 545.932 536.716 405.947 301.036 175.174 121.082 280.228 64.3305 68.0287 101.918 33.3702 27.7957 45.8676 31.7977 13.3378 25.8599 11.5156 11.2274 10.9898 7.55552 4.46639 3.50468 3.8936 5.72722 2.90758 2.01758 1.68762 1.62534 1.75883 1.90321 17.7926 #numbers for year Ydeclare: 2000 sex: 2
#R0 1916 1917 1918 1919 1920 1921 1922 1923 1924 1925 1926 1927 1928 1929 1930 1931 1932 1933 1934 1935 1936 1937 1938 1939 1940 1941 1942 1943 1944 1945 1946 1947 1948 1949 1950 1951 1952 1953 1954 1955 1956 1957 1958 1959 1960 1961 1962 1963 1964 1965 1966 1967 1968 1969 1970 1971 1972 1973 1974 1975 1976 1977 1978 1979 1980 1981 1982 1983 1984 1985 1986 1987 1988 1989 1990 1991 1992 1993 1994 1995 1996 1997 1998 1999 2000 2001 2002 2003 2004 2005 2006 2007 2008 2009 2010 #years
3222.52 3222.52 3222.33 3222.05 3221.75 3221.57 3221.39 3221.24 3221.11 3220.96 3220.81 3220.64 3220.4 3220.2 3219.96 3219.64 3219.33 3219 3218.85 3218.74 3218.63 3218.47 3218.35 3218.2 3218.05 3217.88 3217.21 3216.3 3214.52 3207.93 3197.52 3175.25 3161.79 3155.66 3150.8 3146.65 3142.71 3139.16 3136.26 3134.86 3131.86 3128.98 3122.93 3116.69 3113.37 3207.84 3616.49 3031.83 2527.86 2350.63 2492.73 3150.26 5373.66 3121.89 2364.93 2494.25 3435.1 4011.04 3255.68 2634.51 4638.99 1862 3422.85 3770.6 1735.4 1583.16 3658.2 1834.33 1304.78 4328.39 1459.01 1696.32 2397.91 2698.22 3010.59 2620.28 2912.42 1953.37 2080.03 2559.68 2011.27 2162.62 1406.25 2039.13 2223.12 1698.07 3273.62 1813.73 2459.21 869.153 661.265 1525.78 4054.31 1154.93 4006.25 1766.92 2836.99 #Recruits
27500.1 27500.1 27483.8 27458.7 27433.1 27417.3 27401.2 27388.1 27376.9 27363.9 27350.9 27335.9 27315.3 27298 27277.1 27249.8 27222.5 27194.2 27181.8 27171.6 27162.2 27148.8 27138.4 27125.2 27113.1 27098.6 27040.7 26964 26813.4 26270.8 25453.1

23848.6 22963.2 22579.5 22282.8 22035.2 21804.8 21600.3 21435.7 21357.2 21190.6 21032.9 20707.6 20381.5 20211.7 20021.5 19780.6 19592.1 19293.2 19256 19105.7 18928.7 18623.8 18816 18555.2 18539.2 18373.5 18055.2 17825.3 17447.6 17181.2 16995.1 16926.2 16481.6 15288.3 14555.5 13213.5 12449.2 10846.7 9420.08 9035.41 8550.7 8180.59 7518.63 6865.85 6079.7 5516.04 4768.67 4180.48 3866.64 4022.13 4274.75 4415.09 4597.78 4750.87 5126.01 5777.06 6440.11 7083 7694.44 8286.2 8861.31 9421.87 9978.07 10521.4 11033.8 11469.1 #SpawnBio
0.72 0.5 0 # spawn-recr steepness, sigmaR, autocorr
low steepness vector 1
0 0 8.51608e-005 0.000942789 0.00620469 0.0278612 0.090319 0.220384 0.425662 0.687296 0.974308 1.26029 1.52966 1.77598 1.99809 2.19723 2.37542 2.53477 2.67725 2.80461 2.91838 3.01996 3.11057 3.19135 3.26328 3.32729 3.38419 3.43475 3.47964 3.51946 3.55476 3.58605 3.61377 3.63831 3.66002 3.67923 3.69623 3.71125 3.72453 3.73627 3.755 #female fecundity; weighted by N in year Y_init across morphs and areas
0.0124106 0.0262798 0.113829 0.273754 0.435472 0.603753 0.773434 0.943657 1.11262 1.2778 1.44841 1.64015 1.85249 2.06445 2.25761 2.42795 2.57874 2.71365 2.83514 2.94474 3.04354 3.13246 3.21231 3.28387 3.34789 3.40506 3.45604 3.50145 3.54184 3.57774 3.60962 3.6379 3.66298 3.6852 3.70488 3.72231 3.73773 3.75137 3.76343 3.77409 3.79102 #bodywt for gender,fleet: 1 / 1
0 9.11692e-005 0.000277404 0.0063944 0.0625203 0.248857 0.542898 0.796205 0.900847 0.85571 0.727949 0.5974 0.506701 0.457348 0.434605 0.425224 0.421612 0.42027 0.419777 0.419594 0.419524 0.419497 0.419486 0.419481 0.419479 0.419478 0.419477 0.419477 0.419477 0.419477 0.419477 0.419476 0.419476 0.419476 0.419476 0.419476 0.419476 0.419476 0.419476 #selex for gender,fleet: 1 / 1
0.0124106 0.0262388 0.087734 0.276885 0.47 0.65394 0.836569 1.01569 1.19206 1.36924 1.54951 1.73134 1.91155 2.08747 2.25673 2.41684 2.56573 2.70225 2.82623 2.93812 3.03873 3.12896 3.20975 3.28198 3.34646 3.40396 3.45518 3.50076 3.54128 3.57728 3.60923 3.63757 3.66269 3.68494 3.70465 3.7221 3.73753 3.75119 3.76326 3.77394 3.79089 #bodywt for gender,fleet: 1 / 2
0 9.10526e-005 0.000129539 0.000664423 0.0100242 0.065446 0.217976 0.456906 0.697606 0.863943 0.941911 0.957563 0.940848 0.912416 0.883894 0.860436 0.843189 0.831355 0.823566 0.818552 0.815352 0.813306 0.811986 0.811122 0.810548 0.810159 0.809891 0.809702 0.809566 0.809466 0.809392 0.809336 0.809294 0.80926 0.809234 0.809212 0.809195 0.809182 0.80917 0.809161 0.809137 #selex for gender,fleet: 1 / 2
0.0124106 0.0336446 0.110165 0.228925 0.3843 0.562844 0.754724 0.952837 1.15235 1.35048 1.54512 1.73332 1.91201 2.07981 2.23694 2.38417 2.52203 2.65066 2.77 2.87999 2.98068 3.0723 3.15523 3.22995 3.29703 3.35707 3.41068 3.45846 3.50096 3.53874 3.57226 3.60199 3.62834 3.65168 3.67234 3.69062 3.70679 3.72108 3.73372 3.74489 3.76354 #bodywt for gender,fleet: 1 / 3
0 0.000119342 0.00648177 0.038826 0.124452 0.274023 0.464888 0.655036 0.808168 0.908318 0.958907 0.97184 0.958306 0.926935 0.88508 0.839123 0.793908 0.752426 0.716069 0.685128 0.659274 0.637897 0.620315 0.605878 0.594011 0.584235 0.576151 0.569439 0.563842 0.559154 0.555208 0.551874 0.549045 0.546635 0.544575 0.542808 0.541289 0.539978 0.538845 0.537863 0.535931 #selex for gender,fleet: 1 / 3
0.0124106 0.0262426 0.0949521 0.28181 0.455887 0.631747 0.807388 0.981631 1.15899 1.34553 1.54094 1.73813 1.92967 2.11122 2.28092 2.43811 2.58272 2.71499 2.83542 2.9446 3.04325 3.13212 3.21196 3.28353 3.34756 3.40474 3.45574 3.50116 3.54156 3.57747 3.60936 3.63765 3.66273 3.68496 3.70465 3.72207 3.7375 3.75114 3.7632 3.77387 3.79081 #bodywt for gender,fleet: 1 / 4
0 9.10633e-005 0.000149329 0.0018146 0.024302 0.128665 0.354711 0.630014 0.839919 0.947245 0.986164 0.996567 0.998454 0.998346 0.997859 0.997337 0.996858 0.996437 0.996075 0.995768 0.99551 0.995293 0.995111 0.994958 0.99483 0.994722 0.99463 0.994552 0.994486 0.994429 0.994381 0.994339 0.994303 0.994272 0.994245 0.994222 0.994202 0.994184 0.994169 0.994156 0.994131 #selex for gender,fleet: 1 / 4
0.0124106 0.0268251 0.145195 0.233789 0.338718 0.477603 0.629276 0.785253 0.944583 1.10805 1.27907 1.46389 1.66811 1.88885 2.11154 2.31921 2.50296 2.6623 2.80041 2.92095 3.02689 3.1205 3.20348 3.27718 3.34268 3.40091 3.45266 3.49863 3.53945 3.57568 3.60781 3.63629 3.66152 3.68387 3.70366 3.72117 3.73666 3.75036 3.76247 3.77317 3.79022 #bodywt for gender,fleet: 1 / 5
0 9.25665e-005 0.0165321 0.414971 0.894565 0.873621 0.642997 0.399416 0.223671 0.119054 0.0630652 0.0347584 0.0208006 0.0139418 0.0105329 0.00880179 0.00789758 0.00740978 0.0071374 0.00697986 0.00688549 0.00682701 0.00678959 0.00676489 0.00674812 0.00673643 0.00672808 0.00672198 0.00671744 0.00671399 0.00671134 0.00670926 0.0067076 0.00670628 0.0067052 0.00670432 0.0067036 0.00670299 0.00670248 0.00670206 0.00670107 #selex for gender,fleet: 1 / 5
0.0124106 0.0289383 0.126947 0.24728 0.381486 0.525972 0.686786 0.853634 1.01829 1.18418 1.35779 1.54514 1.74803 1.95963 2.16672 2.35797 2.52861 2.67894 2.8113 2.92825 3.03194 3.12411 3.20615 3.27921 3.34428 3.4022 3.45372 3.49952 3.54022 3.57635 3.6084 3.63682 3.66201 3.68432 3.70407 3.72156 3.73702 3.7507 3.7628 3.77349 3.7905 #bodywt for gender,fleet: 1 / 6
0 9.9467e-005 0.00658919 0.112183 0.465388 0.82619 0.935542 0.839344 0.644604 0.446549 0.29527 0.196884 0.138573 0.105734 0.0876715 0.0777854 0.0723307 0.06927 0.0675132 0.0664781 0.0658508 0.0654594 0.0652083 0.0650425 0.0649301 0.064852 0.0647964 0.064756 0.064726 0.0647034 0.064686 0.0646724 0.0646617 0.0646532 0.0646463 0.0646406 0.064636 0.0646321 0.0646289 0.0646262 0.0646198 #selex for gender,fleet: 1 / 6
0.0124106 0.0262406 0.0863643 0.230714 0.442679 0.651715 0.863626 1.07581 1.28437 1.48642 1.68002 1.86387 2.0372 2.19962 2.35107 2.49161 2.62135 2.74038 2.84887 2.94709 3.03549 3.11466 3.1853 3.24815 3.30396 3.35345 3.3973 3.43613 3.4705 3.50091 3.5278 3.55158 3.57261 3.59119 3.60762 3.62213 3.63496 3.64628 3.65629 3.66513 3.68219 #bodywt for gender,fleet: 1 / 7
0 9.10574e-005 0.000128084 0.00025419 0.00154252 0.00826079 0.0295905 0.0765016 0.154931 0.261495 0.384982 0.511343 0.628419 0.728398 0.808064 0.867723 0.909731 0.937213 0.953255 0.960525 0.961197 0.957004 0.949325 0.939259 0.927679 0.915268 0.902553 0.889925 0.877668 0.865977 0.854975 0.844733 0.83528 0.826618 0.818725 0.811568 0.805105 0.799286 0.794064 0.789387 0.783056 #selex for gender,fleet: 1 / 7
0.0124106 0.028294 0.133211 0.245789 0.365481 0.501267 0.646182 0.785595 0.92132 1.0598 1.21231 1.40015 1.64266 1.91865 2.17448 2.38512 2.5572 2.70266 2.82936 2.94159 3.04175 3.1314 3.21165 3.28345 3.3476 3.40486 3.4559 3.50135 3.54176 3.57768 3.60957 3.63786 3.66294 3.68517 3.70486 3.72228 3.73771 3.75135 3.76341 3.77408 3.791 #bodywt for gender,fleet: 1 / 8
0 9.72087e-005 0.00908575 0.191889 0.667203 0.914828 0.807208 0.535337 0.287997 0.135834 0.0607857 0.0282574 0.0151368 0.0100176 0.00803234 0.00725201 0.00693681 0.00680473 0.00674696 0.00672048 0.00670774 0.00670131 0.00669791 0.00669603 0.00669494 0.00669428 0.00669387 0.0066936 0.00669343 0.0066933 0.00669322 0.00669316 0.00669311 0.00669307 0.00669305 0.00669303 0.00669301 0.006693 0.00669299 0.00669298 0.00669296 #selex for gender,fleet: 1 / 8
0.0124106 0.0271098 0.138186 0.250721 0.367624 0.504563 0.662671 0.827772 1.00021 1.18674 1.39247 1.61398 1.8378 2.04948 2.24176 2.41389 2.56778 2.7057 2.82954 2.94082 3.04077 3.13046 3.21083 3.28276 3.34702 3.40438 3.45549 3.50099 3.54146 3.57741 3.60933 3.63764 3.66275 3.68499 3.70469 3.72213 3.73756 3.75121 3.76328 3.77395 3.79089 #bodywt for gender,fleet: 1 / 9

0 9.35252e-005 0.00617393 0.173301 0.657366 0.924366 0.870038 0.673801 0.466465 0.311007 0.213802 0.158955 0.129692 0.114475 0.106601 0.10249 0.100303 0.0991098 0.0984392 0.0980505 0.0978178 0.0976739 0.0975822 0.097522 0.0974813 0.097453 0.097433 0.0974184 0.0974076 0.0973995 0.0973932 0.0973883 0.0973845 0.0973814 0.0973789 0.0973769 0.0973752 0.0973738 0.0973726 0.0973716 0.0973694 #selex for gender,fleet: 1 / 9
0.0124106 0.0279113 0.12923 0.251064 0.38509 0.527784 0.681649 0.83307 0.978268 1.13039 1.31019 1.53392 1.78715 2.03006 2.24008 2.41868 2.57365 2.7108 2.83352 2.9438 3.04299 3.13212 3.2121 3.28374 3.3478 3.405 3.456 3.50142 3.54182 3.57772 3.6096 3.63789 3.66297 3.68519 3.70488 3.7223 3.73772 3.75136 3.76342 3.77409 3.79101 #bodywt for gender,fleet: 1 / 10
0 9.60672e-005 0.00483341 0.0970005 0.439202 0.810441 0.914194 0.770077 0.522199 0.307746 0.174601 0.106755 0.0760427 0.0630354 0.0576941 0.0555128 0.0546106 0.0542277 0.0540595 0.0539826 0.0539458 0.0539274 0.0539178 0.0539125 0.0539095 0.0539077 0.0539066 0.0539059 0.0539055 0.0539052 0.0539049 0.0539048 0.0539047 0.0539046 0.0539045 0.0539044 0.0539044 0.0539044 0.0539044 0.0539043 0.0539043 #selex for gender,fleet: 1 / 10
0.0124106 0.0262379 0.0847134 0.193839 0.477322 0.732006 0.935259 1.12684 1.30933 1.48344 1.65096 1.81464 1.97665 2.13708 2.29387 2.4441 2.58529 2.716 2.83572 2.94459 3.04309 3.13188 3.21168 3.28323 3.34725 3.40443 3.45543 3.50085 3.54126 3.57717 3.60906 3.63736 3.66244 3.68468 3.70437 3.7218 3.73723 3.75087 3.76294 3.77361 3.79055 #bodywt for gender,fleet: 1 / 11
0 9.10498e-005 0.000123231 0.00012909 0.00043737 0.00491102 0.0309308 0.109926 0.259013 0.455283 0.649654 0.80211 0.900591 0.954734 0.98079 0.991989 0.996297 0.997701 0.997968 0.997822 0.997543 0.997238 0.996947 0.996682 0.996447 0.996242 0.996063 0.995907 0.995772 0.995656 0.995555 0.995467 0.995391 0.995325 0.995268 0.995218 0.995174 0.995136 0.995103 0.995074 0.995021 #selex for gender,fleet: 1 / 11
0.0124106 0.0262386 0.0847986 0.188149 0.332552 0.512319 0.716737 0.932952 1.15094 1.36464 1.57067 1.76716 1.95317 2.12833 2.29248 2.44551 2.58729 2.7178 2.83717 2.94575 3.04406 3.13272 3.21243 3.28392 3.34788 3.405 3.45594 3.5013 3.54164 3.57748 3.6093 3.63753 3.66254 3.68471 3.70433 3.72169 3.73706 3.75065 3.76266 3.77328 3.79024 #bodywt for gender,fleet: 1 / 12
0 0.240489 0.326612 0.333671 0.354027 0.397101 0.465702 0.553877 0.650029 0.742135 0.821458 0.883744 0.928689 0.958642 0.977181 0.987917 0.993794 0.996871 0.998434 0.999212 0.999596 0.999785 0.999877 0.999919 0.999933 0.999932 0.999919 0.999899 0.999872 0.999841 0.999805 0.999767 0.999728 0.999687 0.999647 0.999607 0.999567 0.99953 0.999494 0.999461 0.999479 #selex for gender,fleet: 1 / 12
0.0128709 0.0297637 0.158382 0.331426 0.493707 0.650486 0.800935 0.94611 1.08521 1.21622 1.3402 1.46158 1.58375 1.70547 1.82163 1.92707 2.01917 2.09786 2.16447 2.22073 2.2683 2.30859 2.34277 2.3718 2.39649 2.41748 2.43534 2.45053 2.46346 2.47446 2.48381 2.49177 2.49854 2.50429 2.50919 2.51335 2.51688 2.51989 2.52244 2.52461 2.52757 #bodywt for gender,fleet: 2 / 1
0 9.57109e-005 0.000532054 0.0130032 0.0952061 0.301516 0.572028 0.789308 0.892507 0.889281 0.818162 0.721333 0.629719 0.557906 0.507782 0.475201 0.454842 0.442325 0.434629 0.429844 0.426813 0.42485 0.423546 0.422658 0.422039 0.421597 0.421274 0.421034 0.420853 0.420714 0.420605 0.420519 0.420451 0.420396 0.420352 0.420316 0.420286 0.420261 0.420241 0.420224 0.420183 #selex for gender,fleet: 2 / 1
0.0128709 0.0295472 0.111612 0.353113 0.54132 0.7122 0.872253 1.02255 1.16479 1.30072 1.43107 1.55507 1.67108 1.77765 1.87408 1.96037 2.03694 2.10442 2.16353 2.21503 2.2597 2.29829 2.33152 2.36008 2.38456 2.40551 2.42342 2.43871 2.45176 2.46288 2.47236 2.48043 2.4873 2.49315 2.49813 2.50236 2.50596 2.50902 2.51162 2.51384 2.51691 #bodywt for gender,fleet: 2 / 2
0 9.51329e-005 0.000144654 0.00154046 0.0184145 0.0902529 0.245322 0.455931 0.660567 0.814087 0.90659 0.950833 0.96457 0.961682 0.950881 0.937116 0.923045 0.909986 0.898487 0.888672 0.880448 0.87363 0.868009 0.863385 0.859581 0.856447 0.85386 0.85172 0.849944 0.848466 0.847234 0.846205 0.845342 0.844619 0.844011 0.843499 0.843067 0.842703 0.842396 0.842136 0.841678 #selex for gender,fleet: 2 / 2
0.0128719 0.0470097 0.134896 0.271172 0.434607 0.608876 0.784629 0.95628 1.12047 1.27528 1.41956 1.55241 1.67308 1.78128 1.87723 1.96165 2.03554 2.09995 2.15594 2.20449 2.2465 2.28275 2.31398 2.34084 2.3639 2.38366 2.40058 2.41505 2.42741 2.43796 2.44696 2.45463 2.46117 2.46674 2.47148 2.47552 2.47895 2.48187 2.48436 2.48647 2.48959 #bodywt for gender,fleet: 2 / 3
0 0.000215244 0.00948714 0.0523268 0.152824 0.307634 0.486025 0.652803 0.785568 0.877949 0.934598 0.964517 0.976386 0.976728 0.969941 0.958944 0.945722 0.931645 0.917641 0.904303 0.891974 0.880817 0.870875 0.862117 0.854466 0.847824 0.842085 0.837144 0.832902 0.829269 0.826161 0.823506 0.821241 0.819309 0.817663 0.816261 0.815068 0.814053 0.813189 0.812454 0.811467 #selex for gender,fleet: 2 / 3
0.0128709 0.0295686 0.132955 0.347838 0.521036 0.684457 0.839036 0.986621 1.13049 1.27297 1.4133 1.54804 1.67341 1.78712 1.88847 1.97782 2.05603 2.12412 2.18316 2.23418 2.27817 2.31599 2.34846 2.37629 2.40011 2.42047 2.43786 2.4527 2.46536 2.47614 2.48533 2.49316 2.49982 2.50549 2.51032 2.51442 2.51791 2.52088 2.5234 2.52555 2.52843 #bodywt for gender,fleet: 2 / 4
0 9.5188e-005 0.000204176 0.00413305 0.0411768 0.167147 0.386541 0.62617 0.810894 0.919101 0.96987 0.989771 0.996494 0.998443 0.998848 0.998791 0.998609 0.998407 0.998214 0.99804 0.997887 0.997755 0.99764 0.997541 0.997457 0.997385 0.997323 0.997271 0.997227 0.997189 0.997156 0.997129 0.997106 0.997086 0.997069 0.997055 0.997043 0.997032 0.997024 0.997016 0.997006 #selex for gender,fleet: 2 / 4
0.0128709 0.0350788 0.172927 0.260383 0.368011 0.500574 0.639483 0.778104 0.915143 1.04981 1.18171 1.31085 1.43712 1.55968 1.67678 1.78613 1.88568 1.97425 2.05164 2.11838 2.17547 2.22406 2.2653 2.30026 2.32988 2.35497 2.37622 2.39424 2.4095 2.42245 2.43343 2.44275 2.45065 2.45736 2.46306 2.46789 2.47199 2.47548 2.47844 2.48095 2.48487 #bodywt for gender,fleet: 2 / 5
0 0.000107595 0.0457729 0.531291 0.89611 0.831709 0.615147 0.403163 0.248485 0.150309 0.0920623 0.0584041 0.038978 0.0276049 0.0207882 0.0165847 0.0139124 0.0121608 0.0109783 0.0101576 0.00957336 0.00914786 0.00883154 0.00859208 0.00840788 0.00826421 0.00815078 0.00806029 0.00798743 0.00792831 0.00788001 0.00784033 0.00780757 0.00778041 0.0077578 0.00773893 0.00772314 0.00770989 0.00769876 0.00768939 0.00767121 #selex for gender,fleet: 2 / 5
0.0128712 0.0397969 0.158945 0.288535 0.420578 0.558294 0.704666 0.850375 0.989654 1.1235 1.25388 1.38162 1.50632 1.62642 1.73971 1.84398 1.93773 2.02041 2.09231 2.15423 2.20723 2.25243 2.2909 2.3236 2.35138 2.37497 2.395 2.41201 2.42645 2.43872 2.44914 2.45798 2.4655 2.47188 2.4773 2.48191 2.48582 2.48915 2.49197 2.49437 2.49795 #bodywt for gender,fleet: 2 / 6
0 0.00013518 0.0135605 0.170981 0.546708 0.848888 0.922719 0.83609 0.67893 0.516456 0.38219 0.283706 0.215878 0.170499 0.140379 0.120285 0.106706 0.097371 0.0908287 0.0861523 0.0827447 0.080216 0.0783077 0.0768456 0.0757099 0.074817 0.0741075 0.0735383 0.0730781 0.0727033 0.0723961 0.0721432 0.0719339 0.07176 0.0716151 0.071494 0.0713926 0.0713074 0.0712358 0.0711754 0.0710599 #selex for gender,fleet: 2 / 6
0.0128709 0.0295543 0.102837 0.296477 0.518937 0.719553 0.909395 1.08801 1.25418 1.40727 1.54705 1.67366 1.78745 1.88901 1.97909 2.05851 2.1282 2.18907 2.24203 2.28795 2.32766 2.36191 2.39139 2.41671 2.43842 2.45702 2.47293 2.48653 2.49814 2.50804 2.51649 2.52369 2.52982 2.53504 2.53948 2.54326 2.54648 2.54922 2.55154 2.55352 2.55596 #bodywt for gender,fleet: 2 / 7

0 9.51542e-005 0.000133861 0.000391761 0.00255388 0.0115379 0.0346795 0.077505 0.140284 0.218165 0.303763 0.389886 0.471112 0.544195 0.607754 0.661713 0.706767 0.743972 0.77449 0.799434 0.819795 0.836423 0.850023 0.861171 0.870335 0.877891 0.884138 0.889319 0.893627 0.897218 0.90022 0.902734 0.904842 0.906615 0.908107 0.909364 0.910425 0.911321 0.912078 0.912719 0.913823 #selex for gender,fleet: 2 / 7

0.0128711 0.0388498 0.165327 0.281619 0.398913 0.527132 0.656844 0.779306 0.896159 1.0108 1.12638 1.24686 1.3763 1.51536 1.6582 1.7945 1.91565 2.01824 2.10304 2.17264 2.22988 2.27719 2.31652 2.34938 2.37694 2.40014 2.4197 2.43623 2.45022 2.46206 2.4721 2.48061 2.48783 2.49396 2.49916 2.50357 2.50732 2.51051 2.51321 2.5155 2.51878 #bodywt for gender,fleet: 2 / 8

0 0.000127103 0.0209465 0.281543 0.730526 0.897839 0.774043 0.537761 0.324143 0.180416 0.0978562 0.0541636 0.0318184 0.020429 0.014527 0.0113789 0.00963826 0.00863739 0.00803847 0.00766589 0.00742546 0.00726496 0.00715447 0.00707628 0.00701956 0.00697752 0.00694576 0.00692137 0.00690237 0.00688737 0.00687542 0.00686579 0.00685799 0.00685161 0.00684637 0.00684205 0.00683846 0.00683548 0.00683299 0.00683091 0.00682635 #selex for gender,fleet: 2 / 8

0.0128709 0.0345178 0.171961 0.286532 0.40125 0.533179 0.677475 0.823149 0.969063 1.11701 1.2671 1.41661 1.56062 1.69402 1.81351 1.91805 2.00825 2.08552 2.15149 2.20773 2.25566 2.29649 2.33127 2.36089 2.38611 2.40759 2.42588 2.44144 2.45468 2.46595 2.47553 2.48368 2.49061 2.4965 2.50151 2.50577 2.50939 2.51247 2.51509 2.51731 2.5204 #bodywt for gender,fleet: 2 / 9

0 0.000109011 0.015886 0.263647 0.724202 0.915675 0.846166 0.674395 0.498724 0.361037 0.266547 0.205917 0.168123 0.144688 0.130024 0.120684 0.114599 0.110535 0.107753 0.105801 0.1044 0.103373 0.102606 0.102023 0.101573 0.101221 0.100943 0.100721 0.100542 0.100396 0.100277 0.100179 0.100099 0.100032 0.0999758 0.0999292 0.0998902 0.0998575 0.09983 0.0998069 0.0997621 #selex for gender,fleet: 2 / 9

0.012871 0.0367348 0.162561 0.293187 0.424445 0.559161 0.697243 0.828919 0.952376 1.07395 1.20123 1.33929 1.48701 1.63566 1.77395 1.89474 1.99656 2.08127 2.15171 2.21053 2.25988 2.30146 2.33661 2.36638 2.39163 2.41307 2.43129 2.44677 2.45993 2.47112 2.48063 2.48871 2.49559 2.50143 2.50639 2.51061 2.5142 2.51725 2.51984 2.52204 2.52507 #bodywt for gender,fleet: 2 / 10

0 0.000119528 0.0104977 0.152707 0.52265 0.83336 0.895615 0.766832 0.563922 0.377952 0.245255 0.163008 0.115748 0.089485 0.0749715 0.0668512 0.0621997 0.0594543 0.0577796 0.0567231 0.0560344 0.0555712 0.0552506 0.0550229 0.0548573 0.0547343 0.0546412 0.0545697 0.0545139 0.0544699 0.0544348 0.0544065 0.0543836 0.0543649 0.0543495 0.0543368 0.0543262 0.0543175 0.0543101 0.054304 0.0542906 #selex for gender,fleet: 2 / 10

0.0128709 0.0295418 0.0974216 0.247819 0.593575 0.809982 0.983828 1.14045 1.28368 1.41517 1.53607 1.64729 1.74958 1.84345 1.92917 2.00688 2.07674 2.13897 2.19395 2.24217 2.2842 2.32066 2.35215 2.37928 2.40258 2.42257 2.43967 2.45429 2.46678 2.47744 2.48652 2.49427 2.50086 2.50648 2.51126 2.51532 2.51878 2.52173 2.52423 2.52636 2.5292 #bodywt for gender,fleet: 2 / 11

0 9.51191e-005 0.000123183 0.000148024 0.000964394 0.00852164 0.0393621 0.112322 0.23088 0.378354 0.529223 0.662616 0.768306 0.845477 0.8986 0.933737 0.956425 0.970911 0.98015 0.986082 0.989935 0.992477 0.994184 0.995352 0.996165 0.996743 0.99716 0.997466 0.997695 0.997868 0.998001 0.998104 0.998184 0.998249 0.9983 0.998341 0.998375 0.998402 0.998424 0.998443 0.998496 #selex for gender,fleet: 2 / 11

0.0128709 0.0295445 0.0975373 0.213984 0.369322 0.551256 0.744192 0.935002 1.11605 1.28387 1.43719 1.5758 1.70007 1.8107 1.90857 1.9947 2.07014 2.13594 2.19313 2.24268 2.28548 2.32237 2.35409 2.38133 2.40467 2.42464 2.44172 2.45631 2.46876 2.47938 2.48844 2.49615 2.50272 2.50831 2.51306 2.51711 2.52056 2.52349 2.52598 2.52809 2.53091 #bodywt for gender,fleet: 2 / 12

0 0.251253 0.326867 0.336725 0.36186 0.408793 0.475491 0.553805 0.634095 0.708742 0.773368 0.826458 0.868419 0.900657 0.924929 0.942959 0.956246 0.966007 0.973183 0.97848 0.982415 0.985364 0.987594 0.989298 0.990612 0.991637 0.992443 0.993083 0.993596 0.994009 0.994345 0.994619 0.994845 0.995031 0.995185 0.995313 0.995419 0.995509 0.995584 0.995646 0.995778 #selex for gender,fleet: 2 / 12

0.06 0.06 0.06 0.06 0.06 0.06 0.06 0.0642201 0.0684402 0.0726604 0.0768805 0.0811006 0.0853207 0.0895408 0.093761 #mean M for year Yinit: 2011 sex: 1

184.305 92.6808 200.884 57.4331 179.113 60.4673 24.1383 30.2753 85.8837 58.8341 105.49 49.6802 64.0719 52.8631 35.1391 48.0973 37.8943 44.6715 34.6229 28.3519 36.3618 26.3274 23.5333 15.918 11.0667 6.62819 4.18589 11.521 2.34267 2.56769 3.91666 1.21563 1.05942 1.83345 1.31775 0.497332 1.21775 0.485508 0.565923 0.530745 2.95005 #numbers for year Yinit: 2011 sex: 1

0.06 0.06 0.06 0.06 0.06 0.06 0.06 0.06 0.06 0.06 0.06 0.06 0.06 0.06 0.06 0.06 0.06 0.06 0.06 0.06 0.06 0.06 0.06 0.06 0.06 0.06 0.06 0.06 0.06 0.06 0.06 0.06 0.06 0.06 0.06 0.06 0.06 0.06 0.06 0.06 0.06 #mean M for year Yinit: 2011 sex: 2

184.305 92.6808 200.883 57.3924 177.953 59.94 24.0411 30.2247 85.865 59.1691 107.275 51.2677 67.4647 56.9116 38.698 54.5927 44.5509 54.1002 43.0511 36.3617 48.8277 37.6627 36.0181 25.7179 18.3848 11.0463 6.92881 19.1116 3.9605 4.4665 6.99816 2.20725 1.92376 3.29489 2.33102 0.863372 2.07542 0.814827 0.939017 0.87311 4.91747 #numbers for year Yinit: 2011 sex: 2

115.405 155.127 135.54 98.5705 151.67 129.736 158.369 123.956 101.544 130.409 94.829 85.2324 57.9148 40.3539 24.1492 15.187 41.6537 8.44513 9.2339 14.0567 4.35553 3.79052 6.55222 4.70457 1.77406 4.34082 1.72959 2.01501 1.8889 1.41362 0.788767 0.590098 0.582442 1.58762 0.464482 0.372496 0.330688 0.325475 0.363404 0.551123 3.11281 #numbers for year Ydeclare: 2000 sex: 1

115.405 155.127 135.539 98.479 150.155 127.349 154.478 120.448 99.2842 130.578 99.1843 93.8445 66.5143 47.3002 28.3095 17.7038 48.7146 10.0752 11.3438 17.749 5.59162 4.86871 8.33189 5.89039 2.18041 5.23875 2.05591 2.3684 2.2015 1.63306 0.900417 0.663432 0.643853 1.72618 0.497949 0.39507 0.348129 0.341279 0.381008 0.580239 4.27578 #numbers for year Ydeclare: 2000 sex: 2

#R0 1916 1917 1918 1919 1920 1921 1922 1923 1924 1925 1926 1927 1928 1929 1930 1931 1932 1933 1934 1935 1936 1937 1938 1939 1940 1941 1942 1943 1944 1945 1946 1947 1948 1949 1950 1951 1952 1953 1954 1955 1956 1957 1958 1959 1960 1961 1962 1963 1964 1965 1966 1967 1968 1969 1970 1971 1972 1973 1974 1975 1976 1977 1978 1979 1980 1981 1982 1983 1984 1985 1986 1987 1988 1989 1990 1991 1992 1993 1994 1995 1996 1997 1998 1999 2000 2001 2002 2003 2004 2005 2006 2007 2008 2009 2010 #years

3476.98 3476.98 3476.08 3474.68 3473.24 3472.34 3471.43 3470.68 3470.05 3469.3 3468.55 3467.68 3466.48 3465.45 3464.2 3462.59 3460.95 3459.24 3458.39 3457.66 3456.96 3456.03 3455.26 3454.32 3453.42 3452.34 3448.81 3444.2 3435.41 3404.06 3355.27 3256.15 3198.53 3172.83 3152.86 3136.05 3120 3105.09 3092.21 3084.28 3069.12 3053.5 3024.52 2994.25 2974.82 3221.26 4781.46 2866.97 2334.77 2151.79 2187.78 2445.44 7434.5 2403.87 2117.66 2417.57 3626.88 3984 3452.29 2393.91 4834.7 1578.43 3300.69 3560.59 1569.34 1353.71 3193.65 1493.22 962.215 3379.42 901.576 1070.68 1323.11 1347.19 1346.76 1006.26 960.292 551.531 527.426 549.75 380.883 392.402 236.223 305.653 329.44 230.811 449.835 232.565 315.568 103.595 76.1297 172.066 461.193 137.625 453.058 196.824 368.61 #Recruits

28137.4 28137.4 28121.8 28097.9 28073.2 28057.9 28042.4 28029.7 28018.8 28006.1 27993.3 27978.6 27958 27940.5 27919.3 27892 27864.2 27835.2 27820.7 27808.4 27796.7 27780.9 27767.9 27752 27736.8 27718.6 27659.2 27581.7 27434.7 26917 26131.3 24605.8 23760 23391.9 23109.8 22874.7 22652.4 22447.8 22272.4 22165.1 21961.2 21753 21371.4 20979.5 20731.5 20458.9 20133.7 19857.5 19475 19343 19102.6 18849.4 18496.1 18644.4 18381.2 18357.8 18177 17834.6 17570.4 17174.8 16904.2 16714.1 16633 16192.9 15031.7 14297 12965 12192.7 10599.9 9167.04 8733.24 8185.78 7735.18 6979.75 6211.31 5296.36 4581.84 3661.58 2876.55 2322.37 2182.45 2081.68 1802.99 1503.84 1131.24 942.832 1002.89 1070.94 1128.24 1174.74 1226.28 1281.77 1333.86 1385.98 1433.57 1476.35 1492.97 #SpawnBio
0.346 0.5 0 # spawn-recr steepness, sigmaR, autocorr