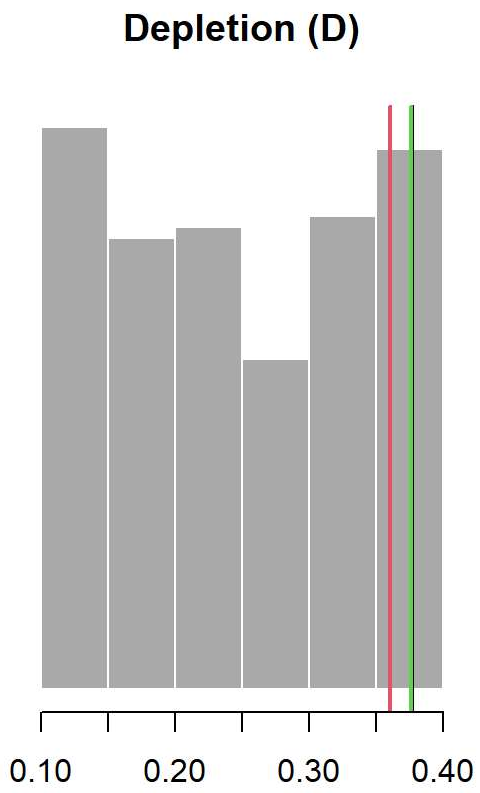
OM Object Plots

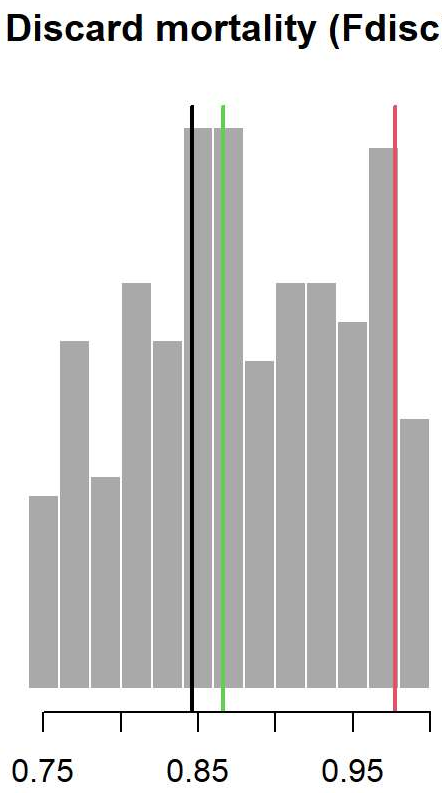
Stock Parameters

Depletion and Discard Mortality

Sampled Parameters

Histograms of simulations of depletion (spawning biomass in the last historical year over average unfished spawning biomass; `D`) and the fraction of discarded fish that are killed by fishing mortality (`Fdisc`), with vertical colored lines indicating 3 randomly drawn values.

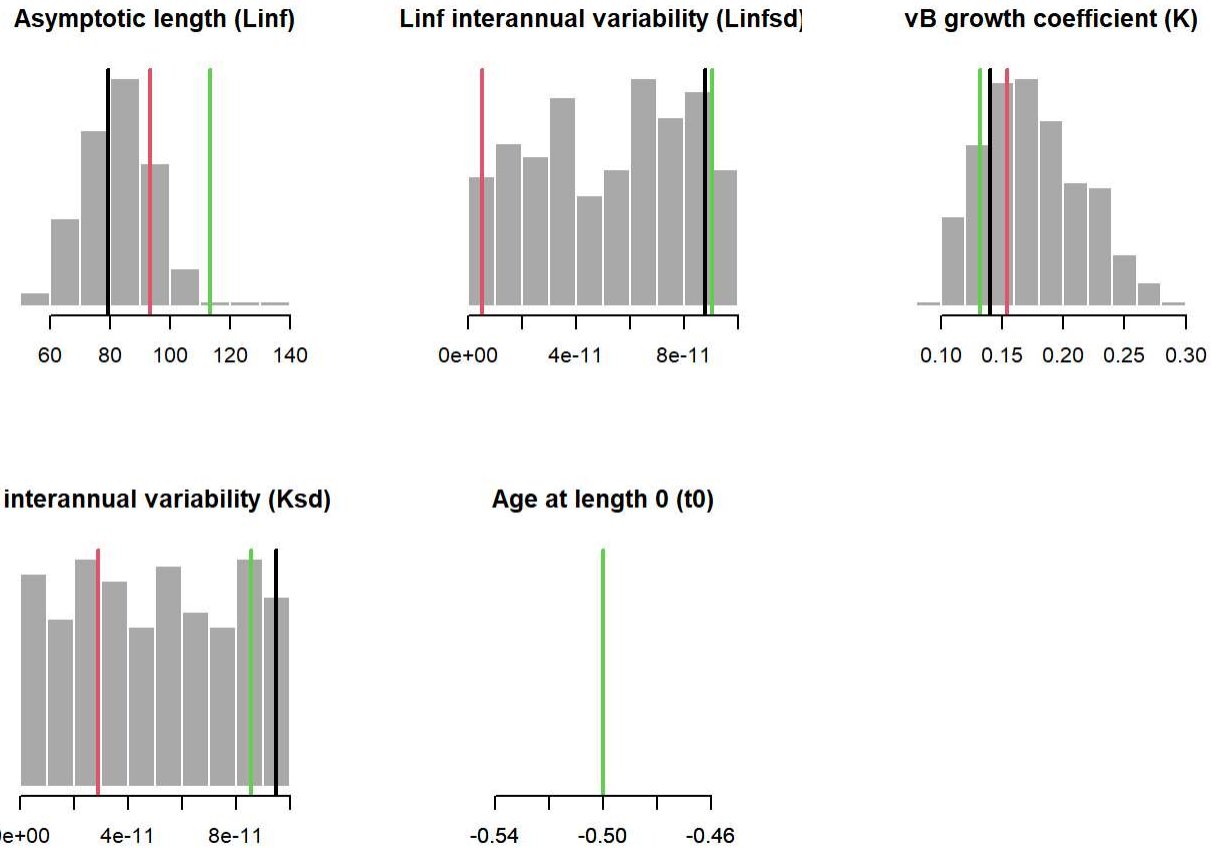




Growth Parameters

Sampled Parameters Time-Series Growth Curves

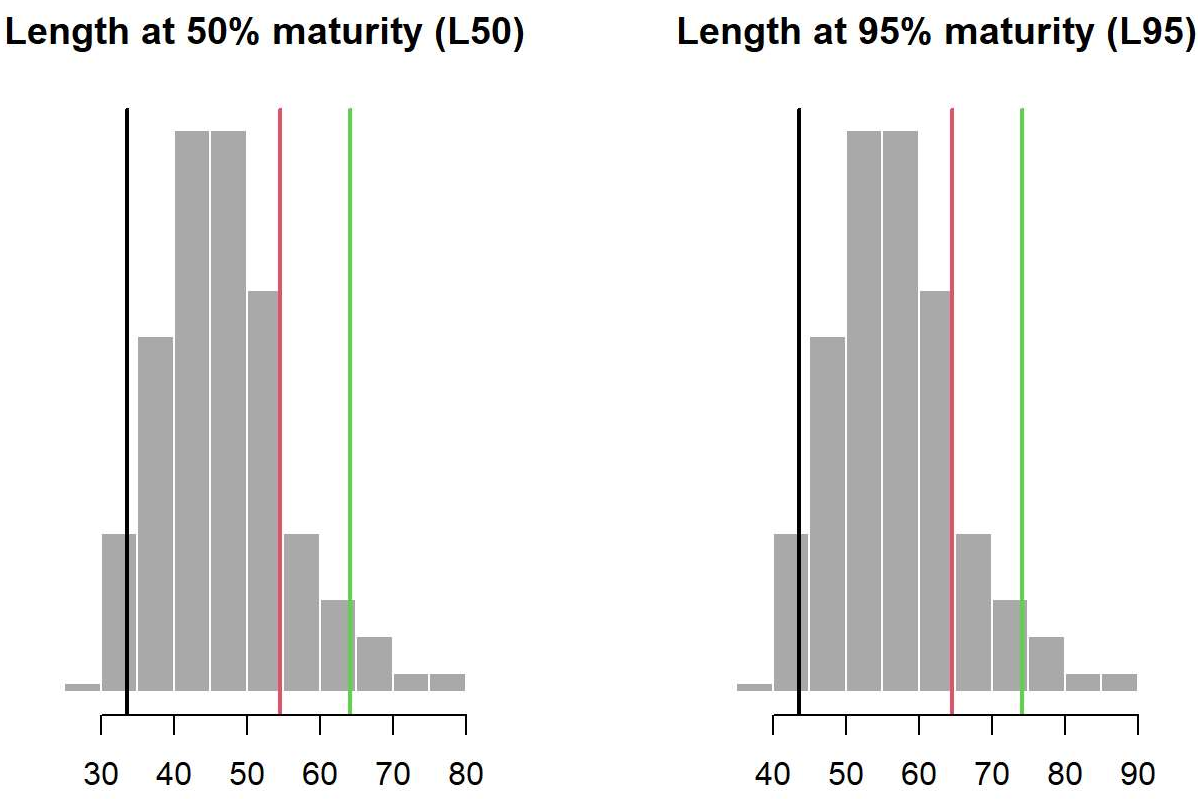
Histograms of simulations of von Bertalanffy growth parameters `Linf`, `K`, and `t0`, and inter-annual variability in Linf and K (`Linfsd` and `Ksd`), with vertical colored lines indicating 3 randomly drawn values used in other plots:



Maturity Parameters

Sampled Parameters Maturity at Age and Length

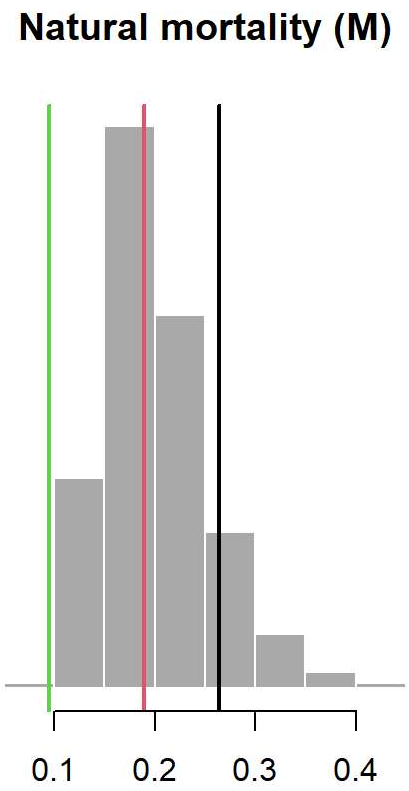
Histograms of simulations of `L50` (length at 50% maturity), and `L95` (length at 95% maturity), with vertical colored lines indicating 3 randomly drawn values used in other plots:

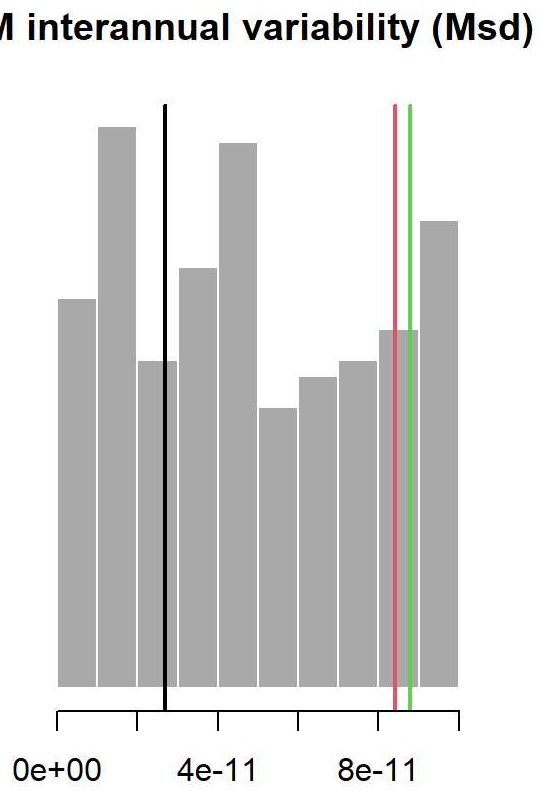


Natural Mortality Parameters

Sampled Parameters Time-Series M-at-Age M-at-Length

Histograms of simulations of `M`, and `Msd` parameters, with vertical colored lines indicating 3 randomly drawn values used in other plots:

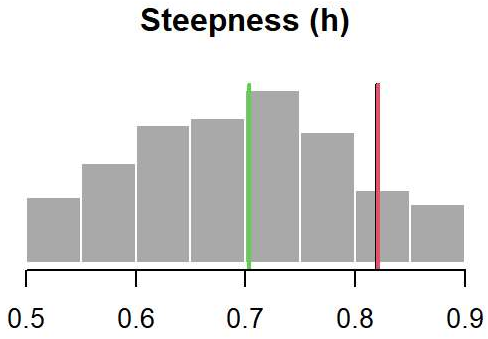


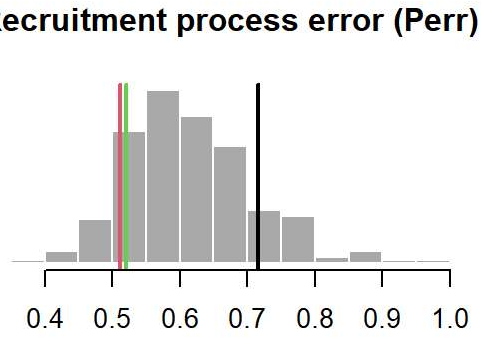


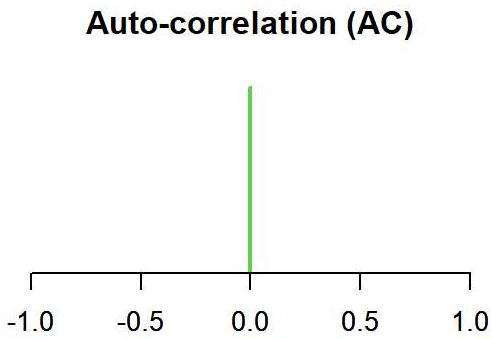
Recruitment Parameters

Sampled Parameters Time-Series

Histograms of 256 simulations of steepness (`h`), recruitment process error (`Perr`) and auto-correlation (`AC`) for the Beverton-Holt stock-recruitment relationship, with vertical colored lines indicating 3 randomly drawn values used in other plots:



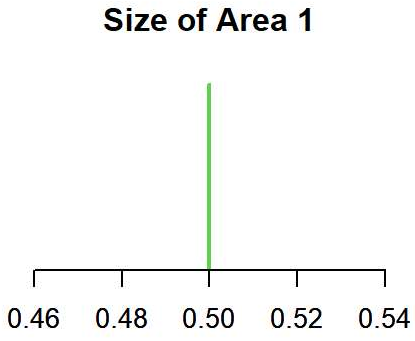


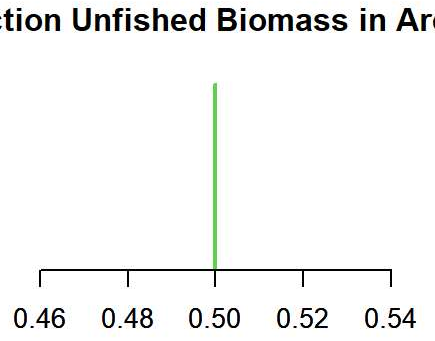


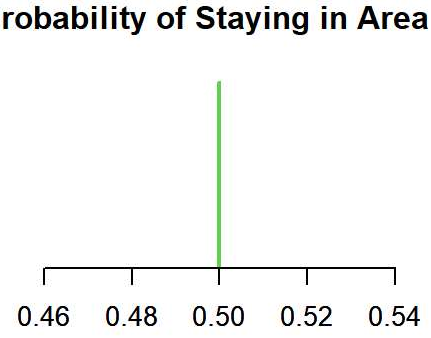
Spatial & Movement

Sampled Parameters

Histograms of 256 simulations of size of area 1 (`Size_area_1`), fraction of unfished biomass in area 1 (`Frac_area_1`), and the probability of staying in area 1 in a year (`Frac_area_1`), with vertical colored lines indicating 3 randomly drawn values used in other plots:





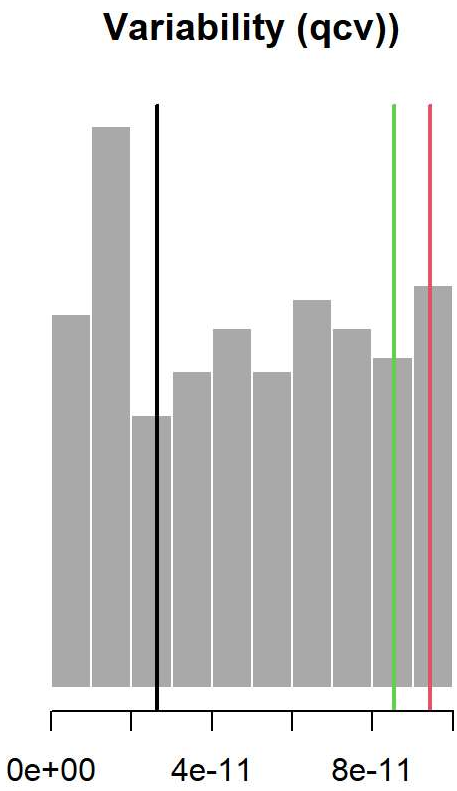


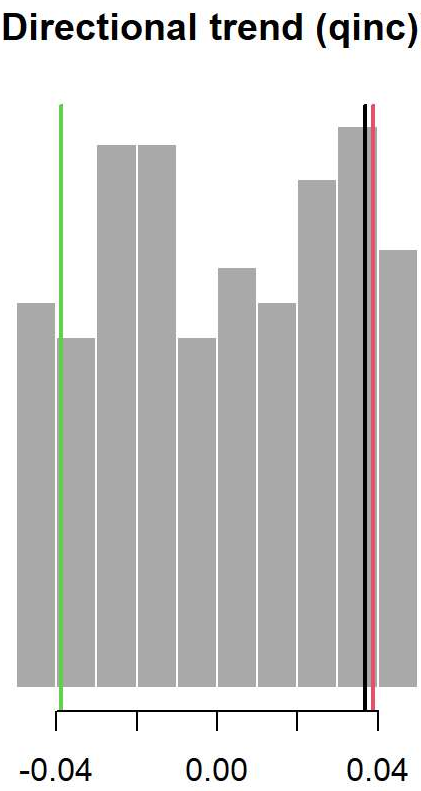
Fleet Parameters

Future Catchability

Sampled Parameters Time-Series

Histograms of 256 simulations of inter-annual variability in fishing efficiency (`qcv`) and average annual change in fishing efficiency (`qinc`), with vertical colored lines indicating 3 randomly drawn values used in the time-series plot:

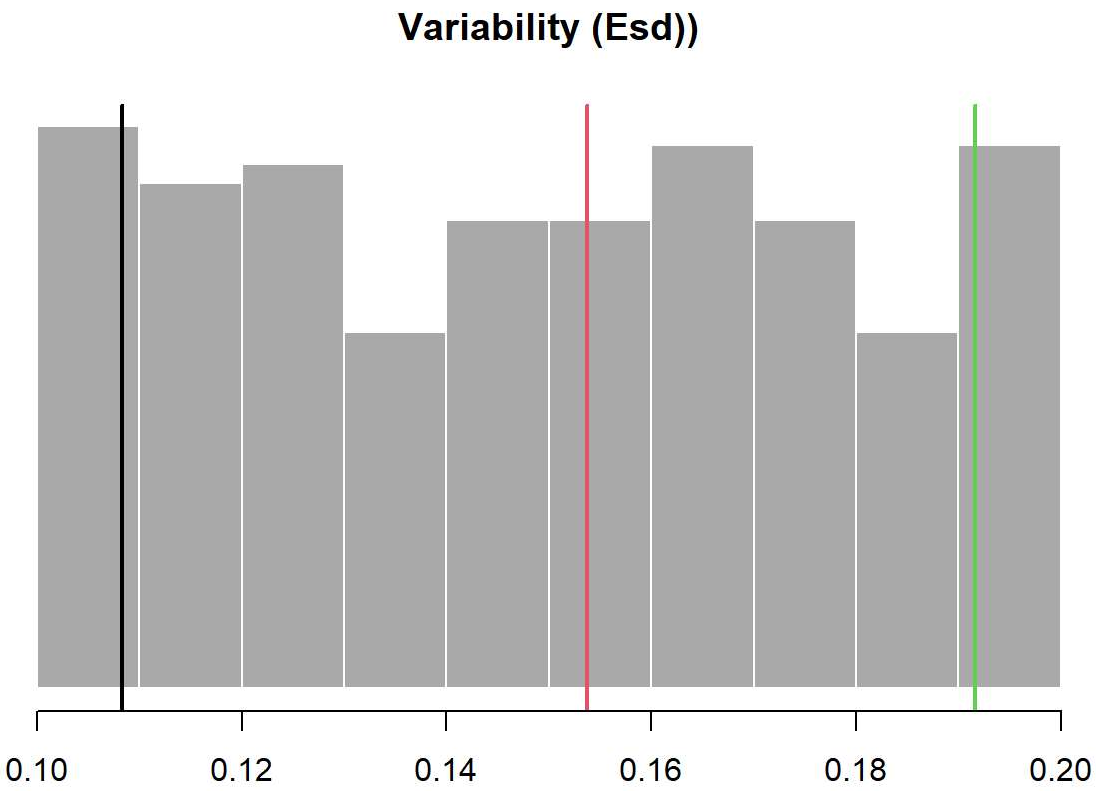




Historical Effort

Sampled Parameters Time-Series

Histograms of 256 simulations of inter-annual variability in historical fishing mortality (`Esd`), with vertical colored lines indicating 3 randomly drawn values used in the time-series plot:



Historical MPA & Spatial Targeting

Existing Spatial Closures Spatial Targeting

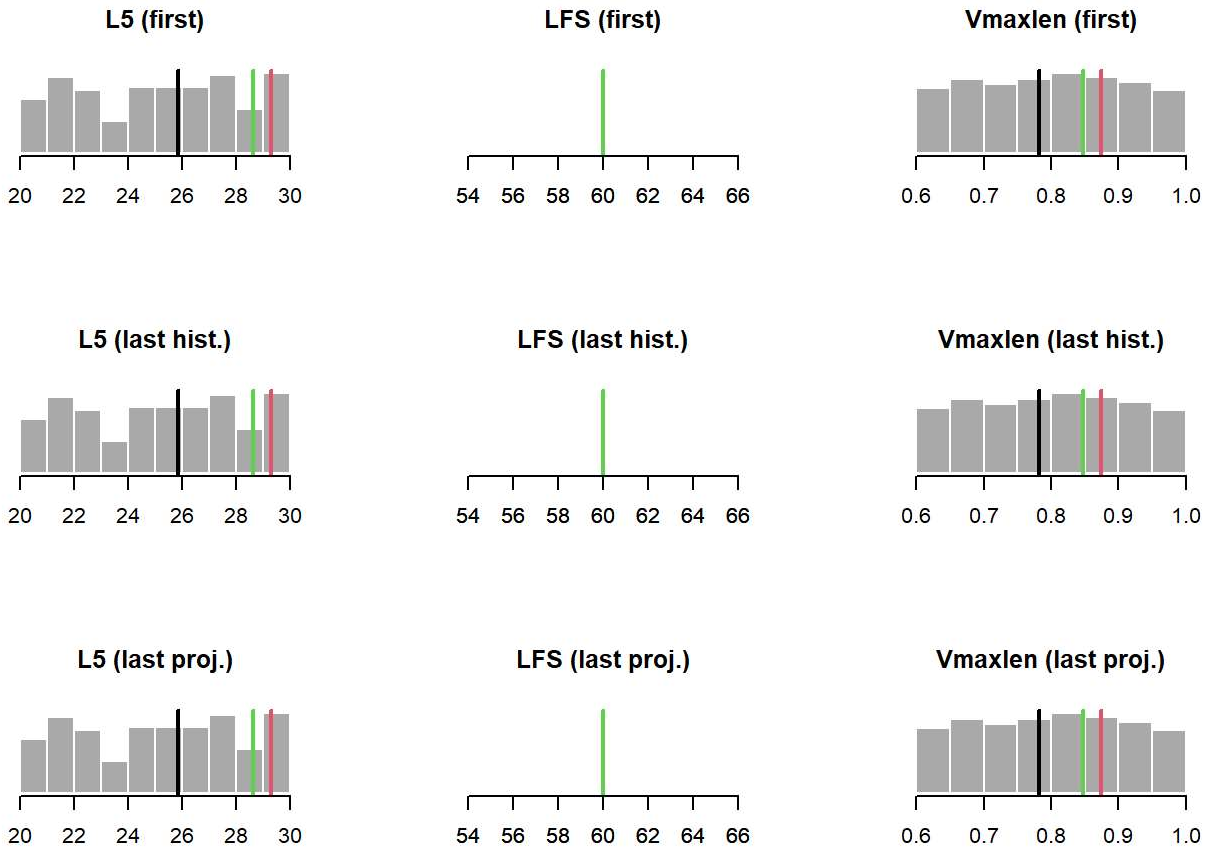
CURRENTLY NOT IMPLEMENTED !

Selectivity and Retention

Sampled Selectivity Parameters Sampled Retention Parameters

Selectivity & Retention at Length Selectivity & Retention at Age

Histograms of simulations of length at 5% selection (`L5`), first length at full selection (`LFS`), and vulnerability of animals at mean asymptotic length (`Vmaxlen`) for the first historical year, the last historical year, and the last projection year, wtih vertical colored lines indicating 3 randomly drawn values used in the other plots:

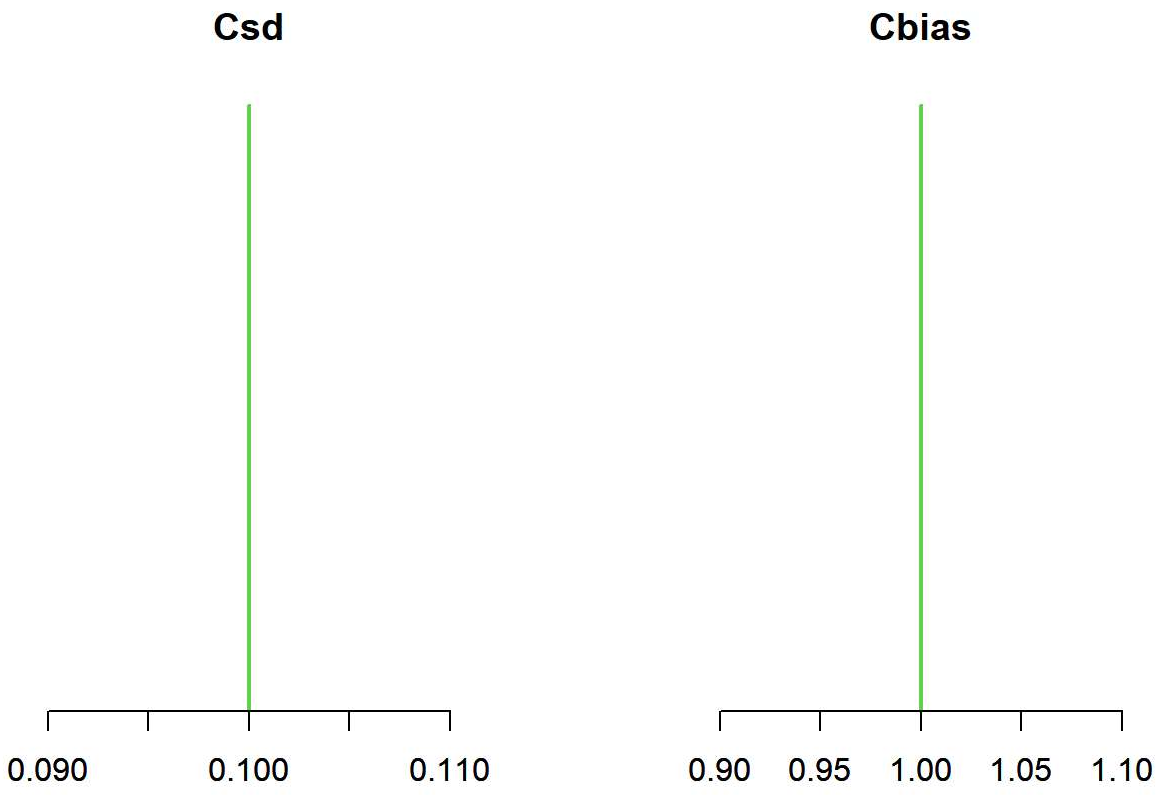


Observation Parameters

Catch Observations

Sampled Parameters Time-Series

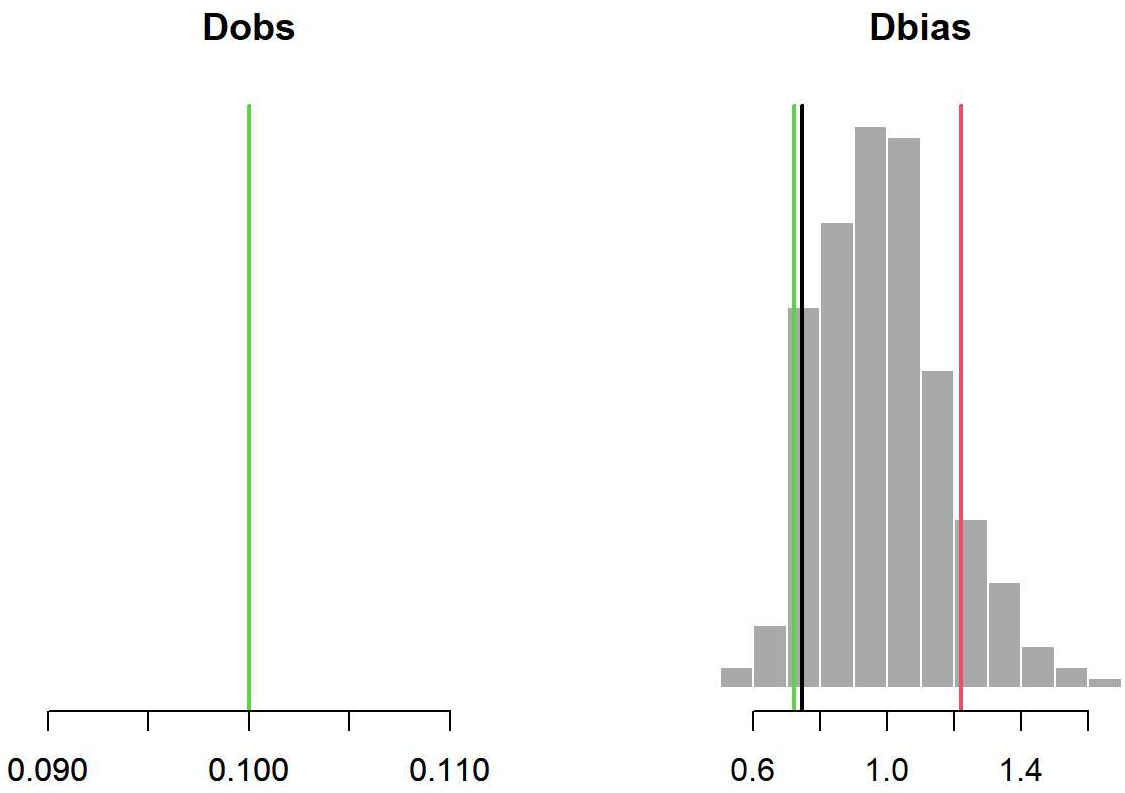
Histograms of 256 simulations of inter-annual variability in catch observations (`Csd`) and persistent bias in observed catch (`Cbias`), with vertical colored lines indicating 3 randomly drawn values used in other plots:



Depletion Observations

Sampled Parameters Time-Series

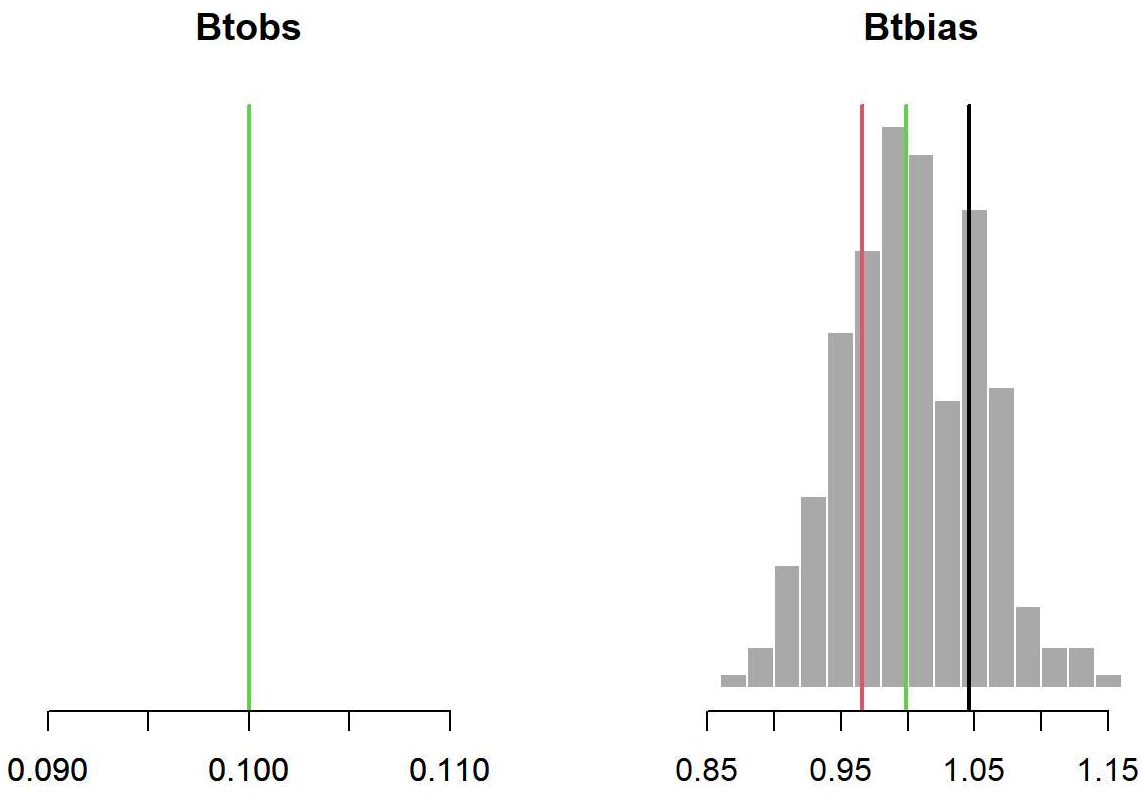
Histograms of 256 simulations of inter-annual variability in depletion observations (`Dobs`) and persistent bias in observed depletion (`Dbias`), with vertical colored lines indicating 3 randomly drawn values used in other plots:



Abundance Observations

Sampled Parameters Time-Series

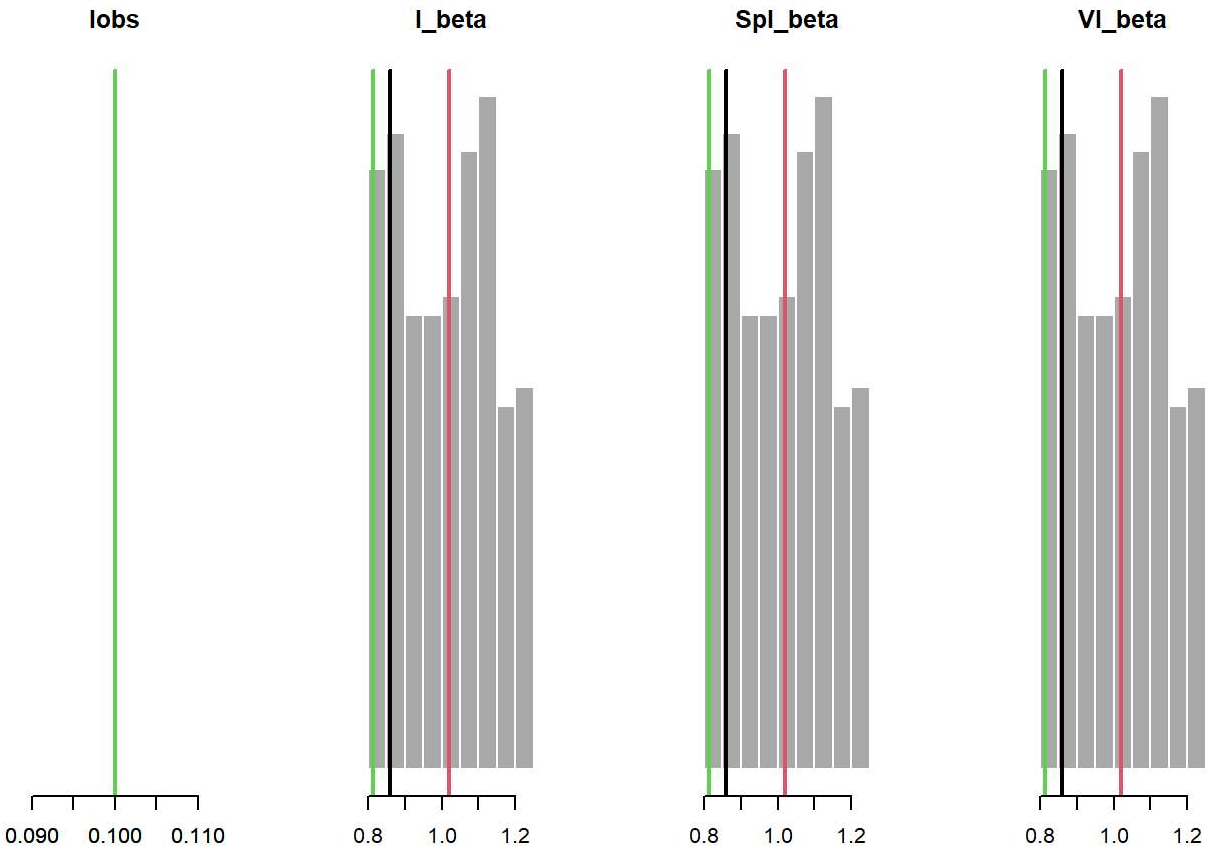
Histograms of 256 simulations of inter-annual variability in abundance observations (`Btobs`) and persistent bias in observed abundance (`Btbias`), with vertical colored lines indicating 3 randomly drawn values used in other plots:



Index Observations

Sampled Parameters Time-Series

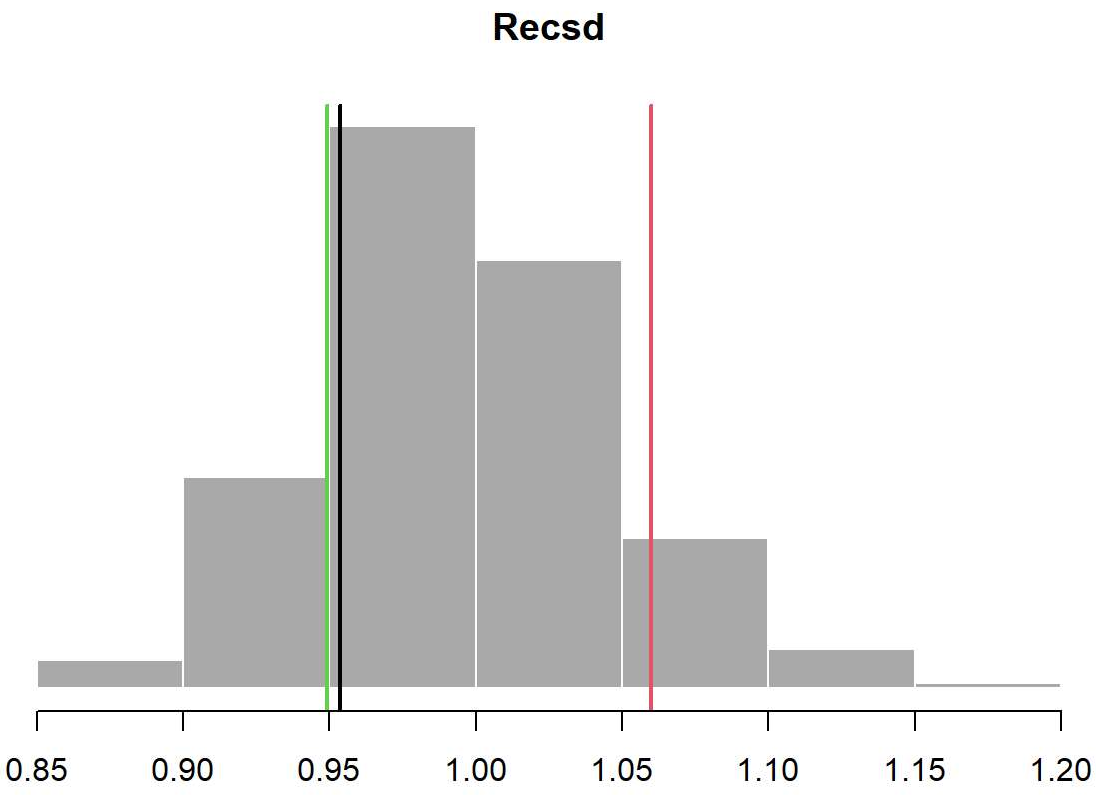
Histograms of 256 simulations of inter-annual variability in index observations (`Iobs`) and hyper-stability/depletion in observed index (`beta`), with vertical colored lines indicating 3 randomly drawn values used in other plots:



Recruitment Observations

Sampled Parameters Time-Series

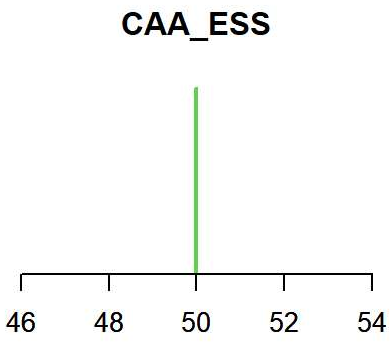
Histograms of 256 simulations of inter-annual variability in index observations (`Recsd`) , with vertical colored lines indicating 3 randomly drawn values used in other plots:

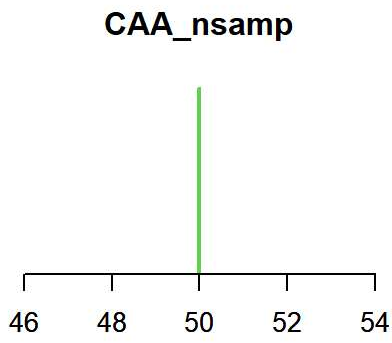


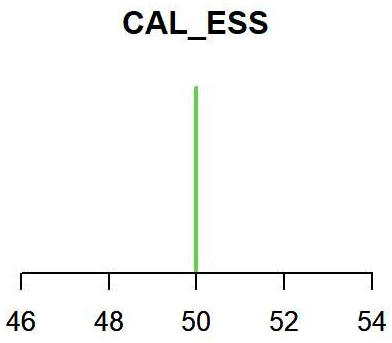
Composition Observations

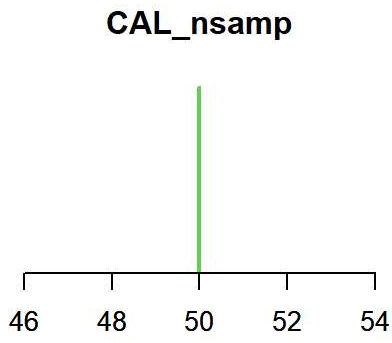
Sampled Parameters

Histograms of 256 simulations of catch-at-age effective sample size (`CAA_ESS`) and sample size (`CAA_nsamp`) and catch-at-length effective (`CAL_ESS`) and actual sample size (`CAL_nsamp`) with vertical colored lines indicating 3 randomly drawn values:





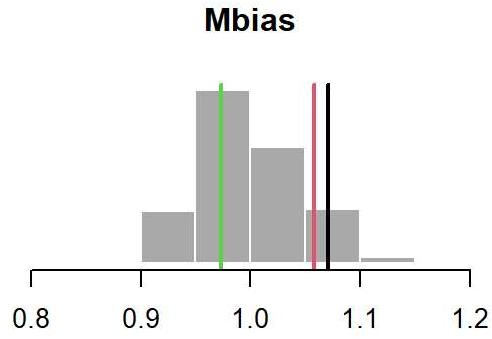


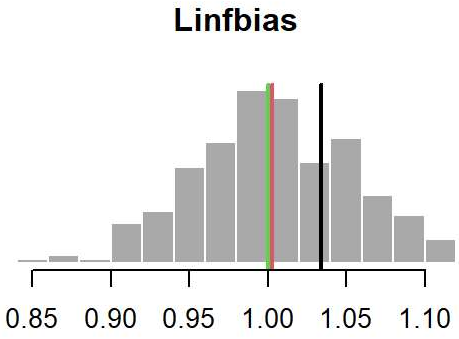


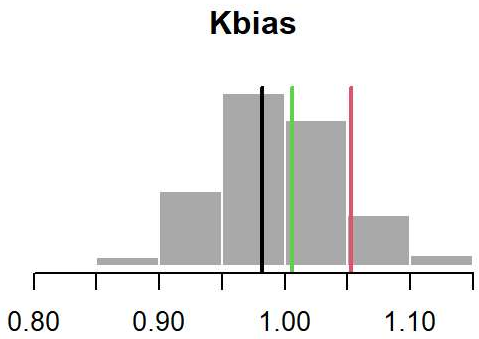
Parameter Observations

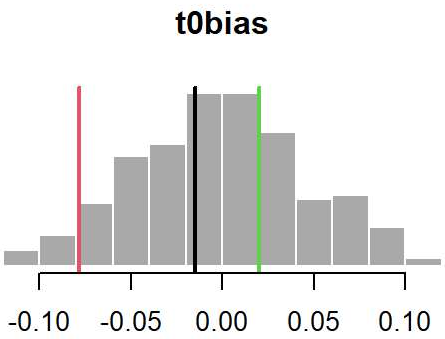
Sampled Parameters

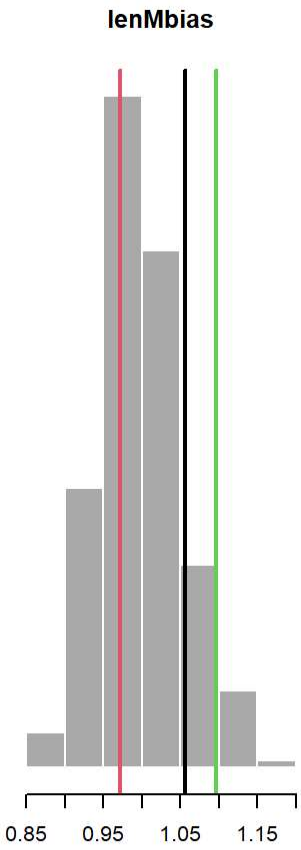
Histograms of 256 simulations of bias in observed natural mortality (`Mbias`), von Bertalanffy growth function parameters (`Linfbias` , `Kbias` , and `t0bias`), length-at-maturity (`lenMbias`), and bias in observed length at first capture (`LFCbias`) and first length at full capture (`LFSbias`) with vertical colored lines indicating 3 randomly drawn values:

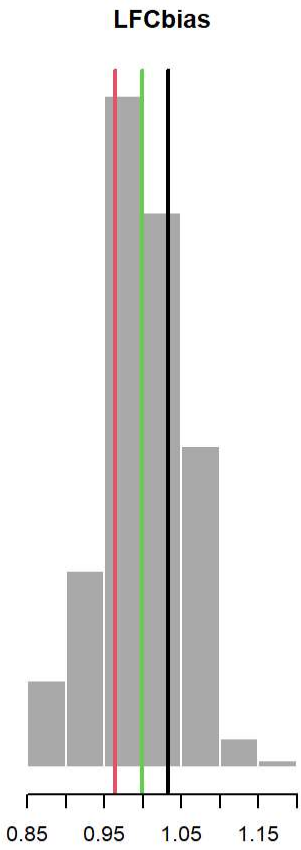

Mbias
0.8
0.9
1.0
1.1
1.2

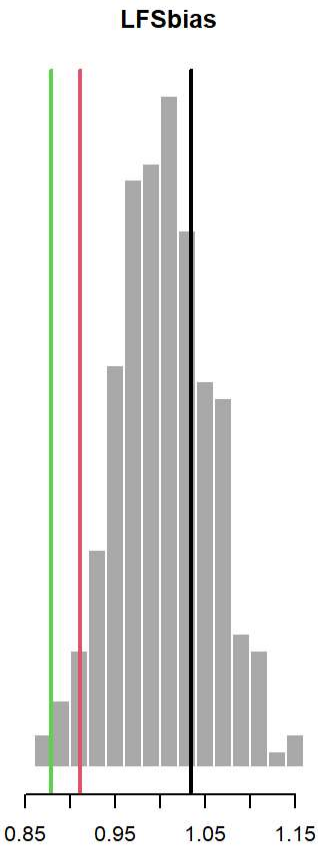

Linfbias
0.85
0.90
0.95
1.00
1.05
1.10


Kbias
0.80
0.90
1.00
1.10


t0bias
-0.10
-0.05
0.00
0.05
0.10


lenMbias
0.85
0.95
1.05
1.15

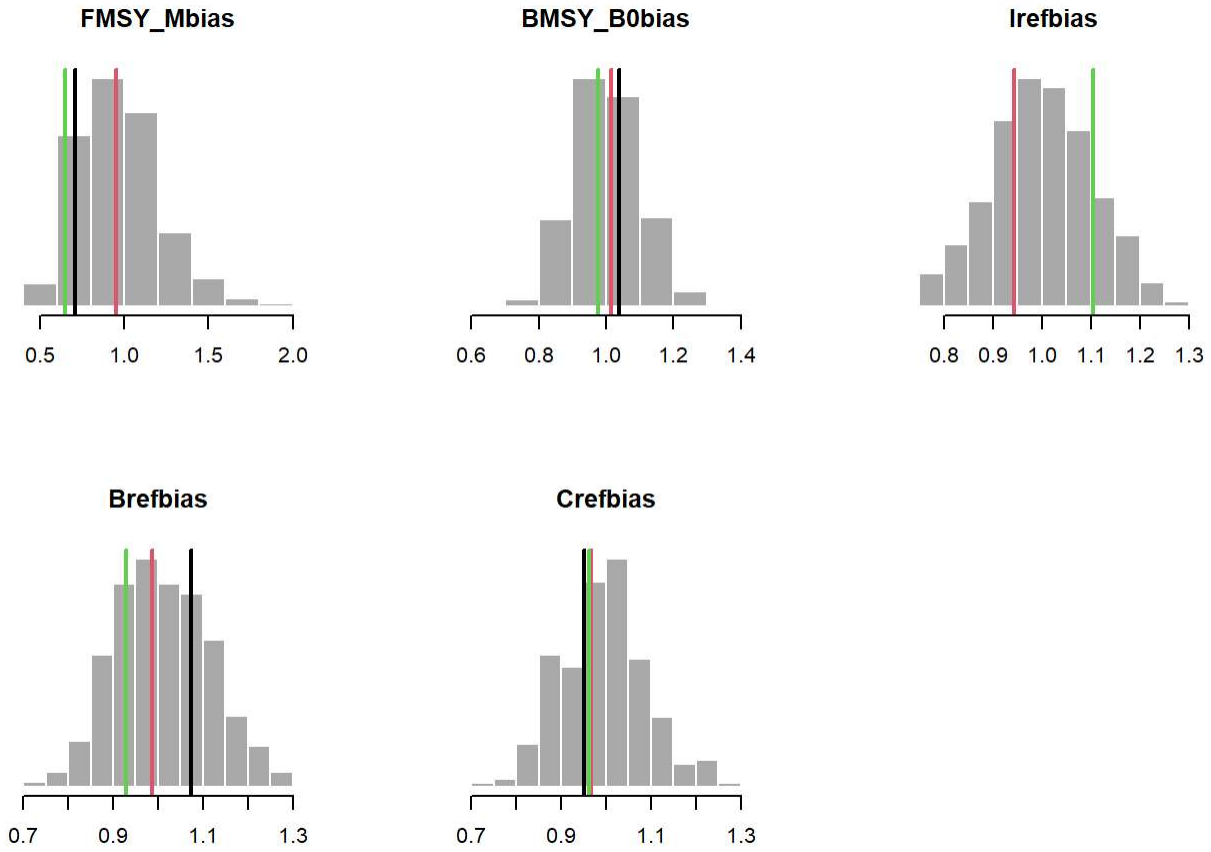

LFCbias
0.85
0.95
1.05
1.15


LFSbias
0.85
0.95
1.05
1.15

Reference Point Observations

Sampled Parameters

Histograms of 256 simulations of bias in observed FMSY/M (`FMSY_Mbias`), BMSY/B0 (`BMSY_B0bias`), reference index (`Irefbias`), reference abundance (`Brefbias`) and reference catch (`Crefbias`), with vertical colored lines indicating 3 randomly drawn values:

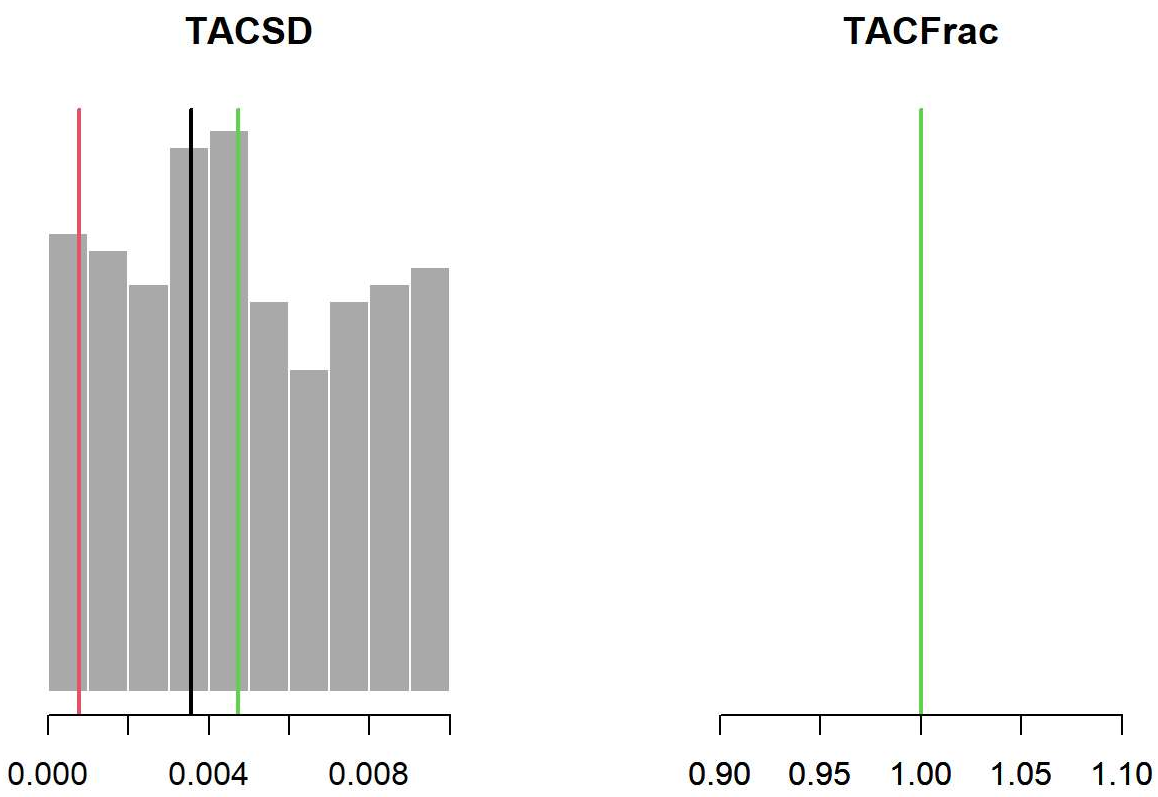


Implementation Parameters

TAC Implementation

Sampled Parameters Time-Series

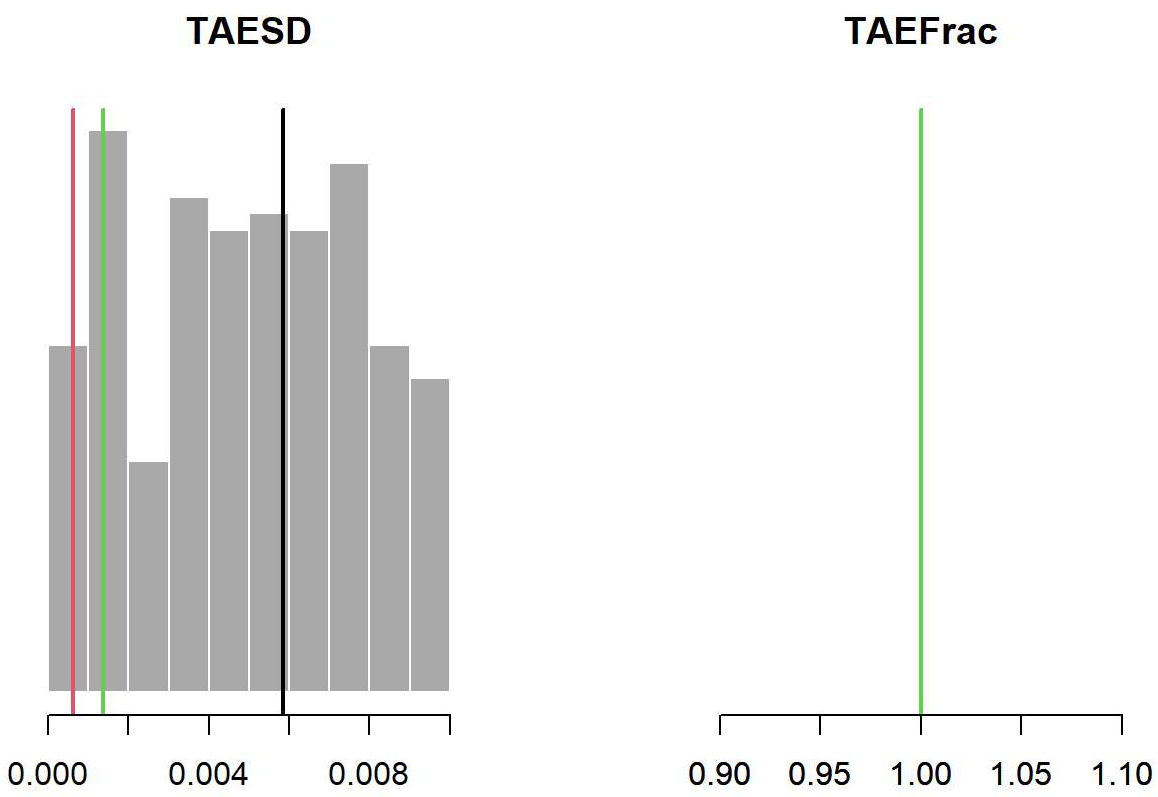
Histograms of 0 simulations of inter-annual variability in TAC implementation error (`TACSD`) and persistent bias in TAC implementation (`TACFrac`), with vertical colored lines indicating 3 randomly drawn values used in other plots:



TAE Implementation

Sampled Parameters Time-Series

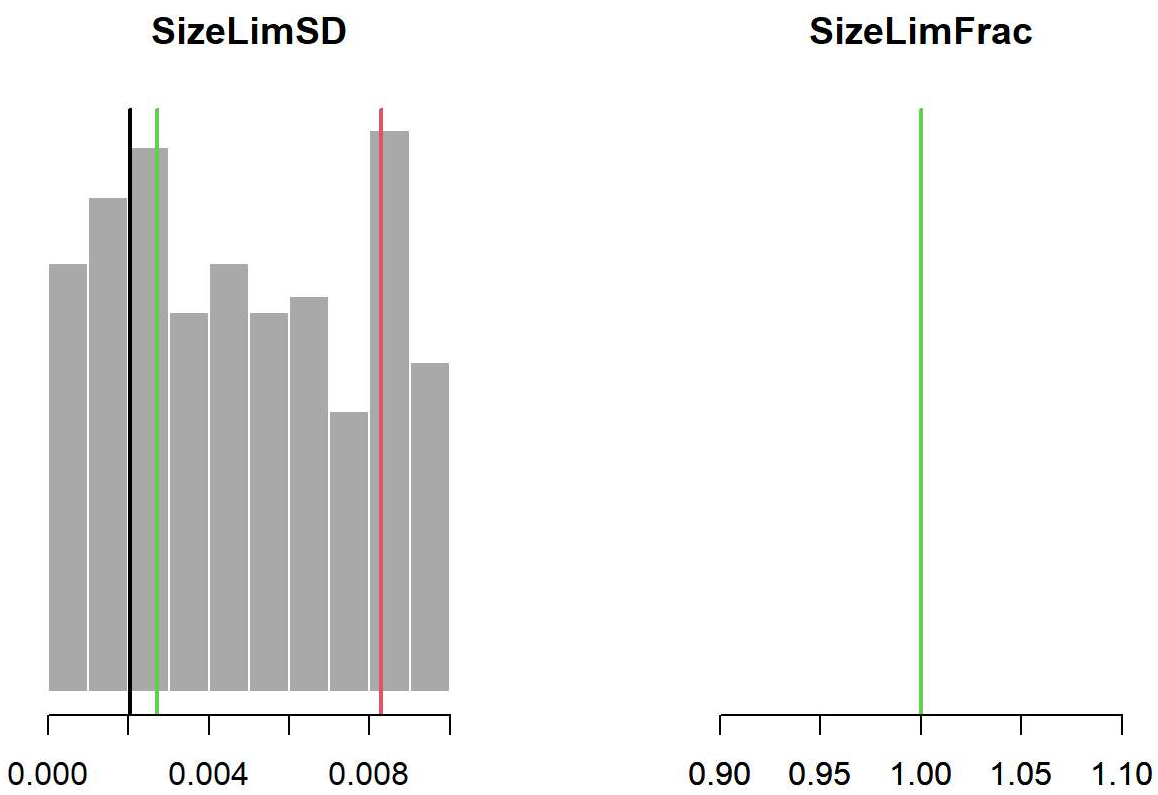
Histograms of 0 simulations of inter-annual variability in TAE implementation error (`TAESD`) and persistent bias in TAC implementation (`TAEFrac`), with vertical colored lines indicating 3 randomly drawn values used in other plots:



Size Limit Implementation

Sampled Parameters Time-Series

Histograms of 0 simulations of inter-annual variability in size limit implementation error (`SizeLimSD`) and persistent bias in size limit implementation (`SizeLimFrac`), with vertical colored lines indicating 3 randomly drawn values used in other plots:

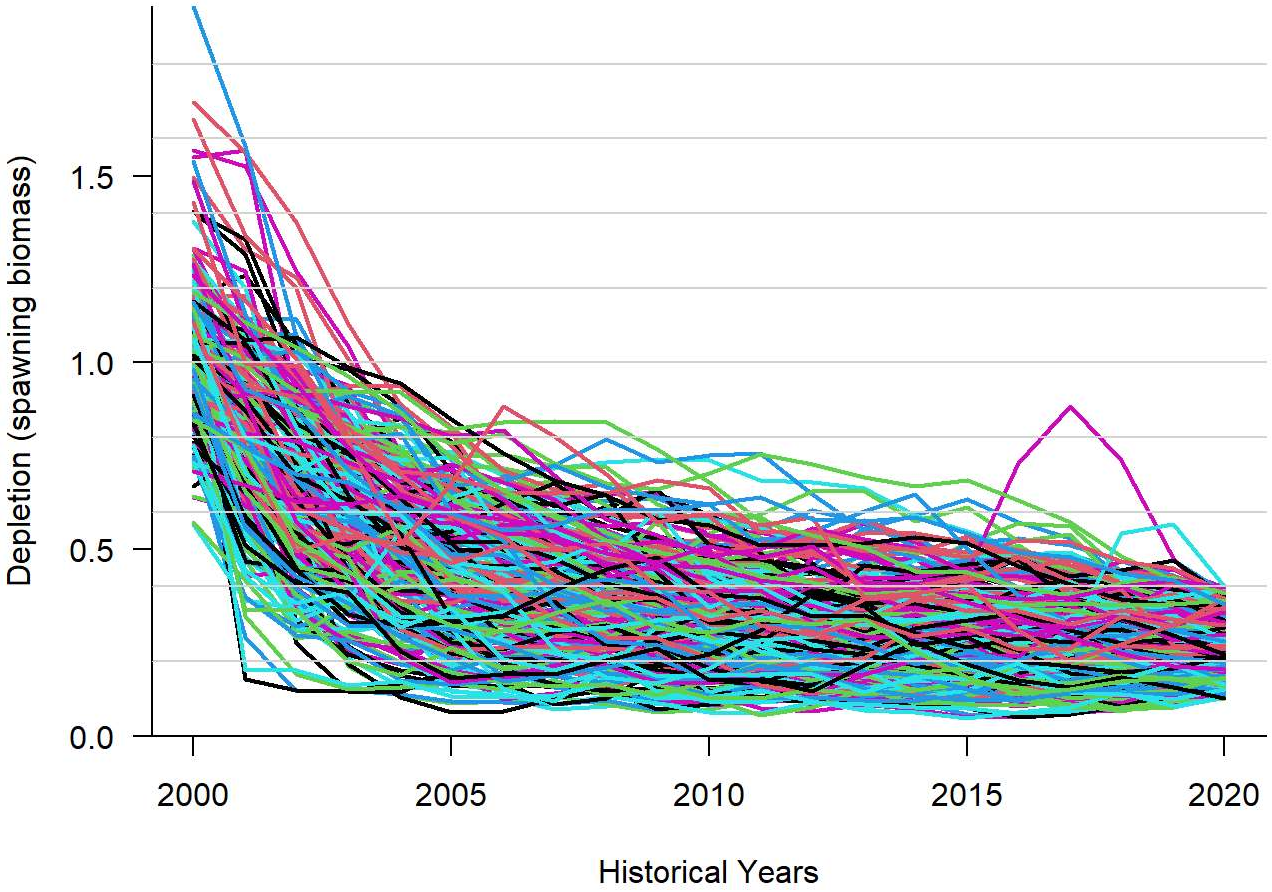


Historical Time-Series

Spawning Biomass

Depletion Absolute

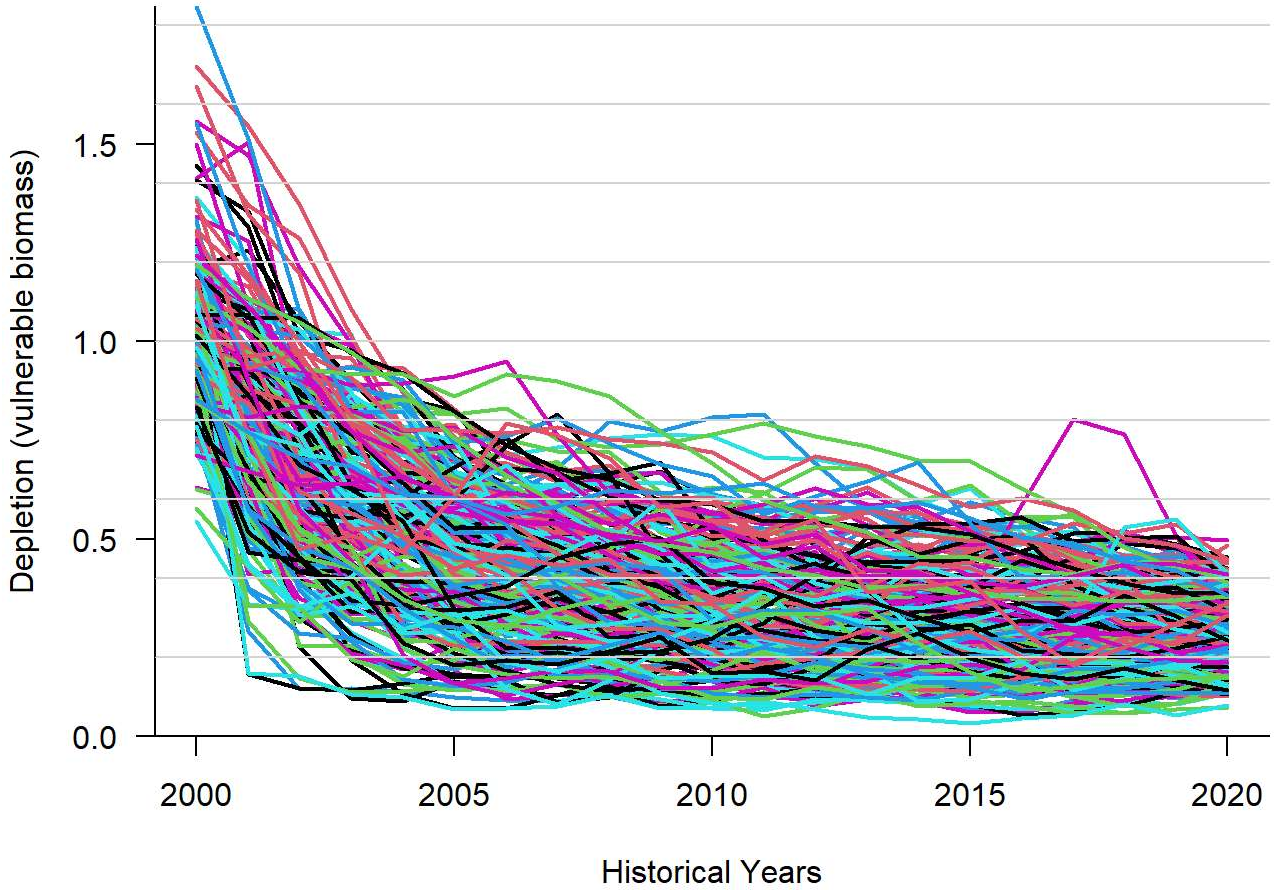
Time-series plots of SB/SB0:



Vulnerable Biomass

Depletion Absolute

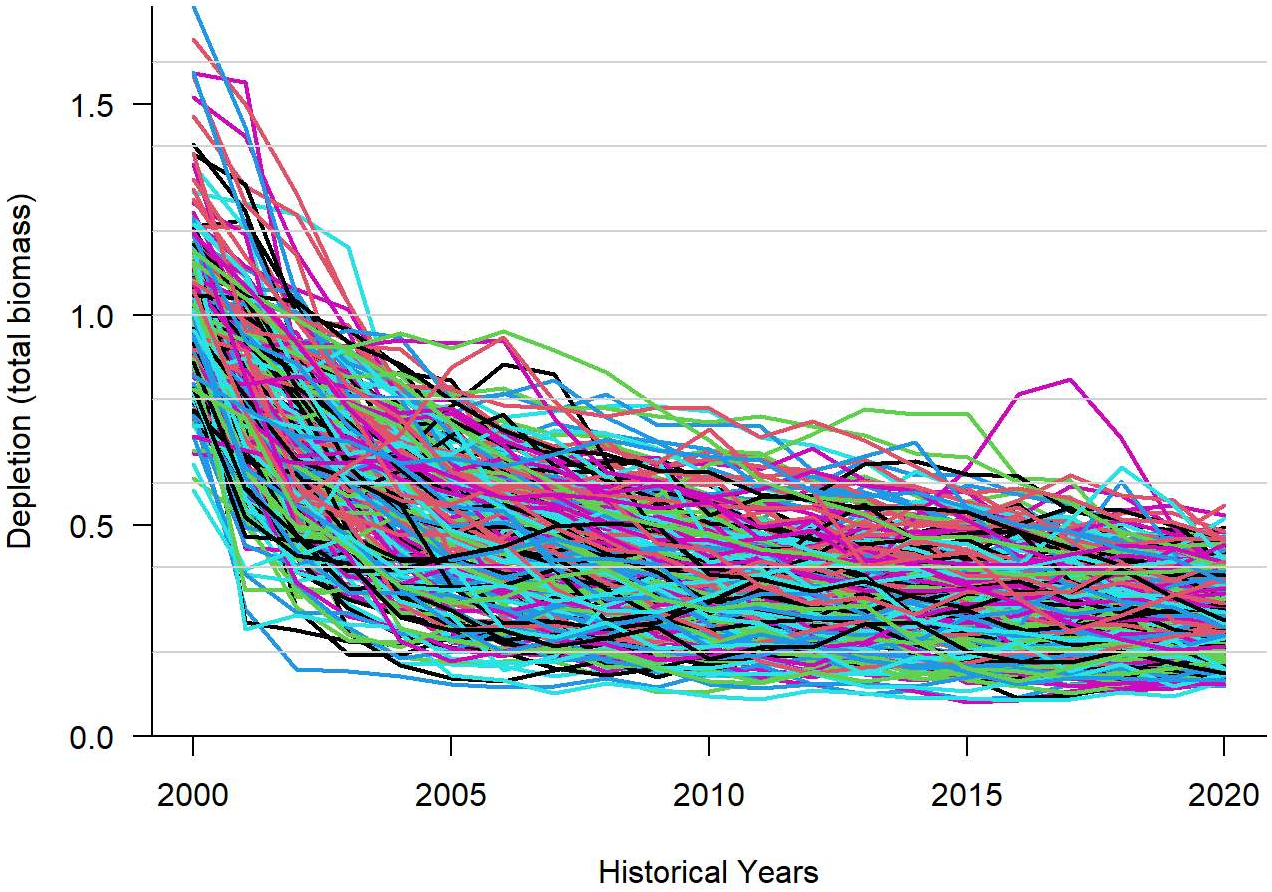
Time-series plots of VB/VB0:



Total Biomass

Depletion Absolute

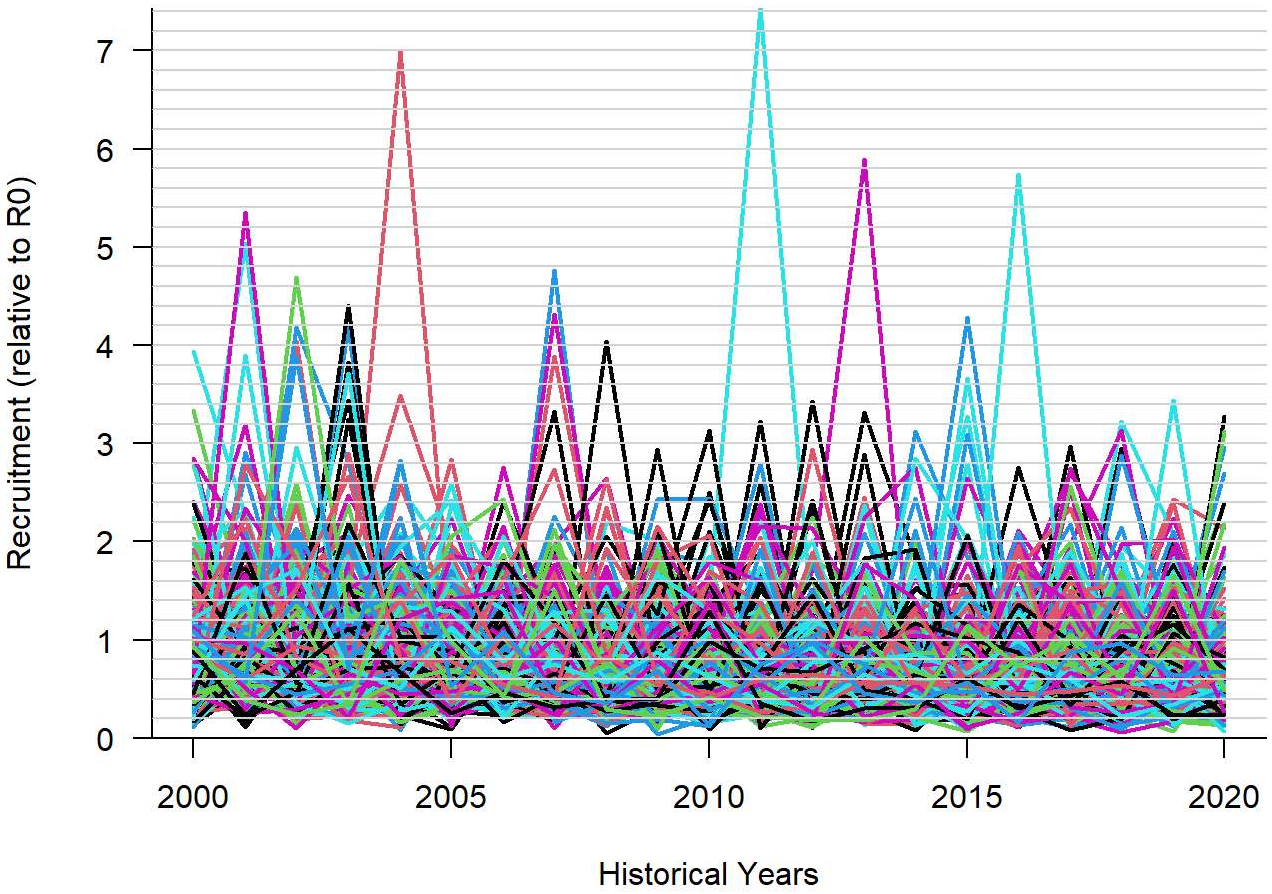
Time-series plots of B/B0:



Recruitment

Relative Absolute

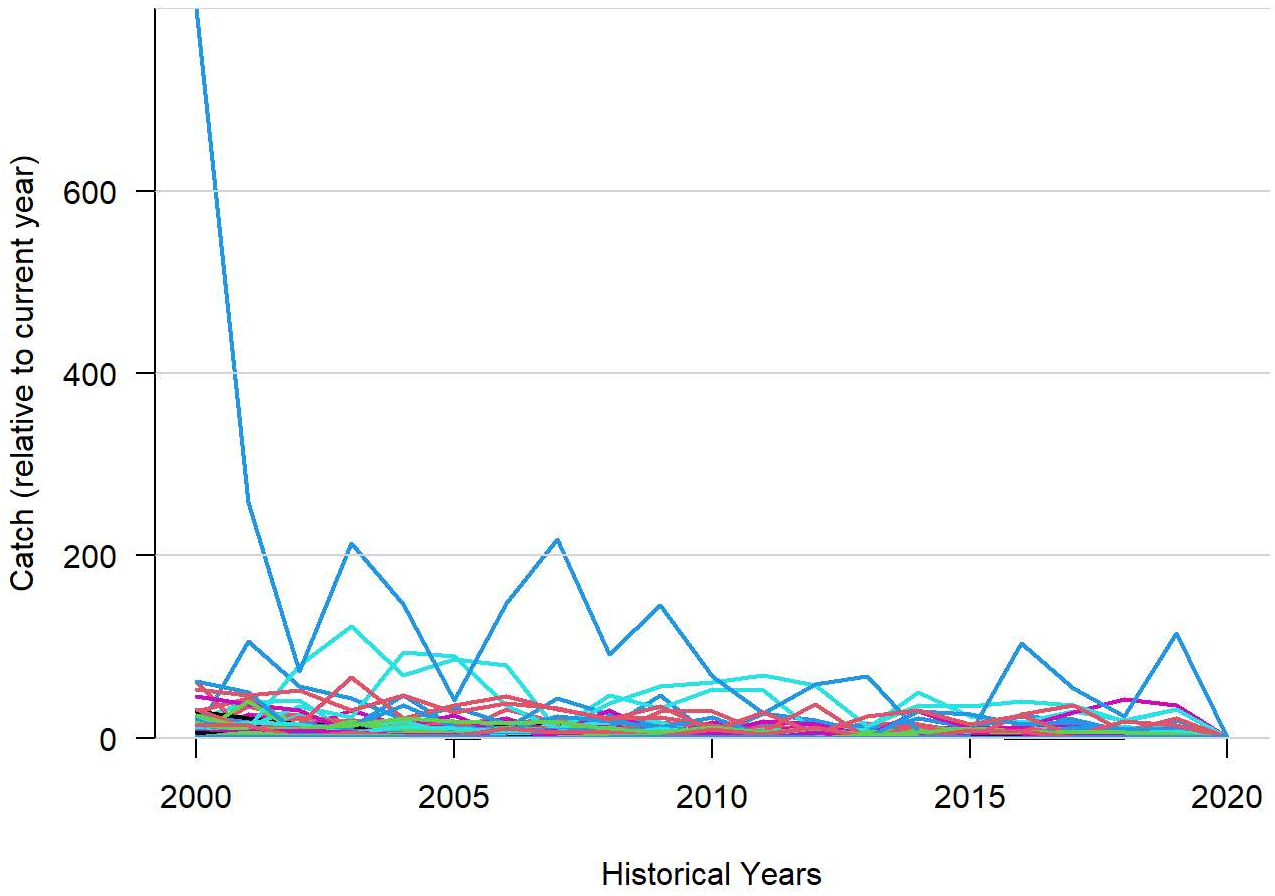
Time-series plot of recruitment relative to R0:



Catch

Relative Absolute

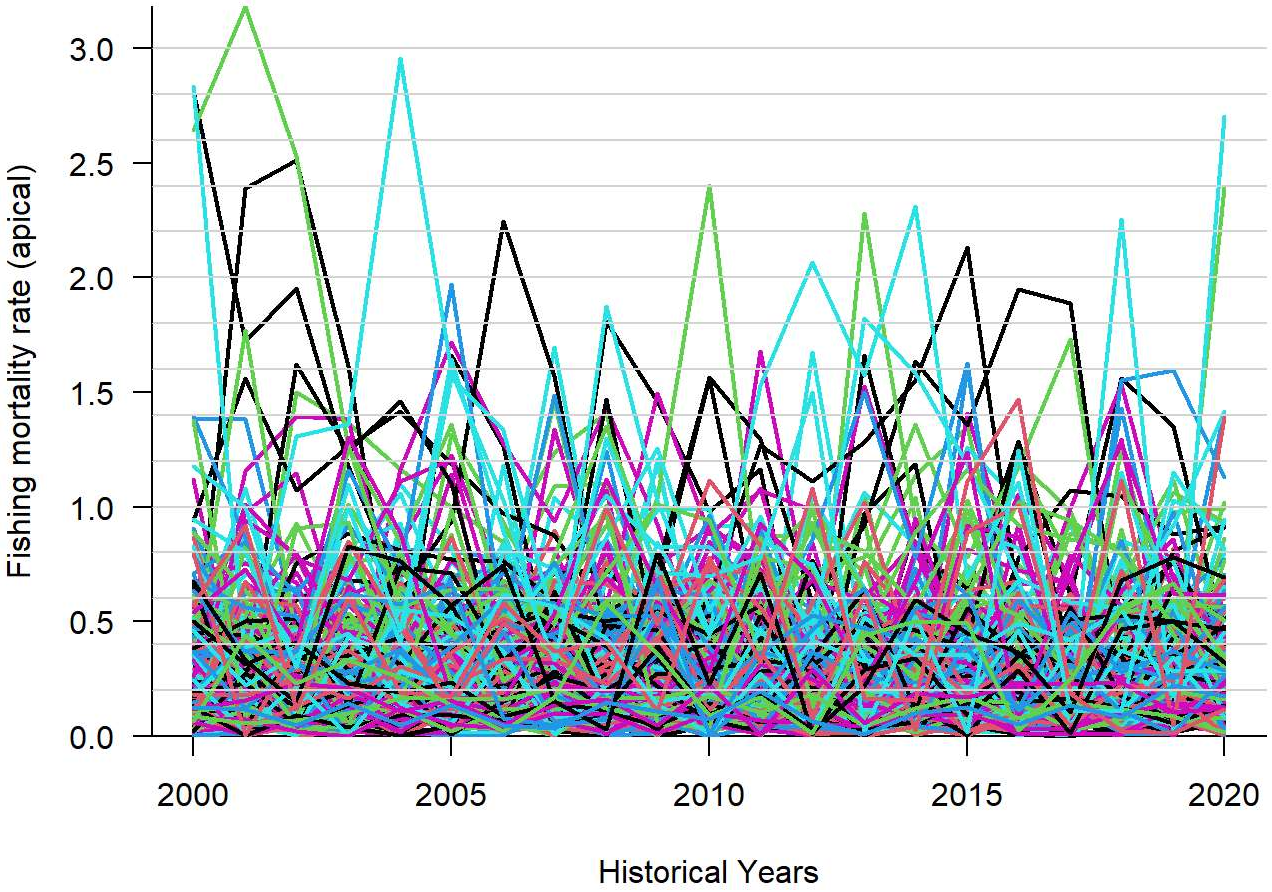
Time-series of catch relative to the current year:



Historical Fishing Mortality

Historical Time-Series

Time-series of historical fishing mortality:


Fishing mortality rate (apical)
3.0
2.5
2.0
1.5
1.0
0.5
0.0
2000
2005
2010
2015
2020
Historical Years