

Plots created using the 'r4ss' package in R

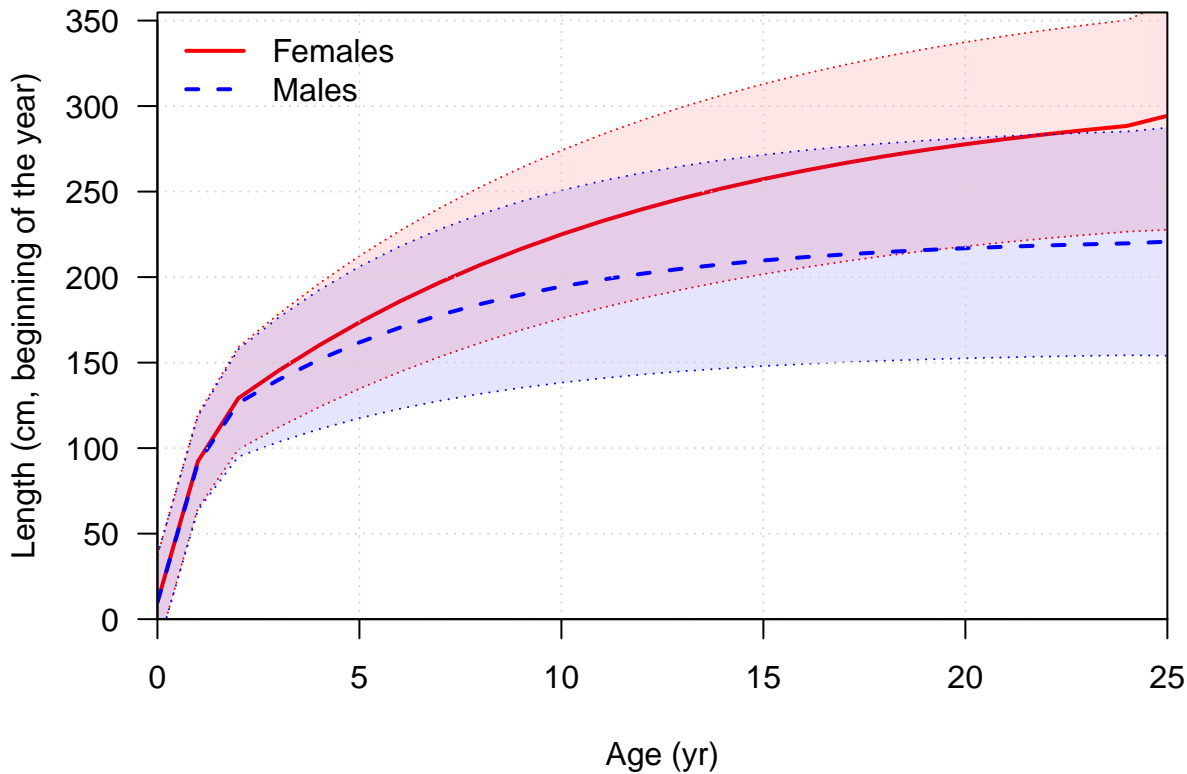
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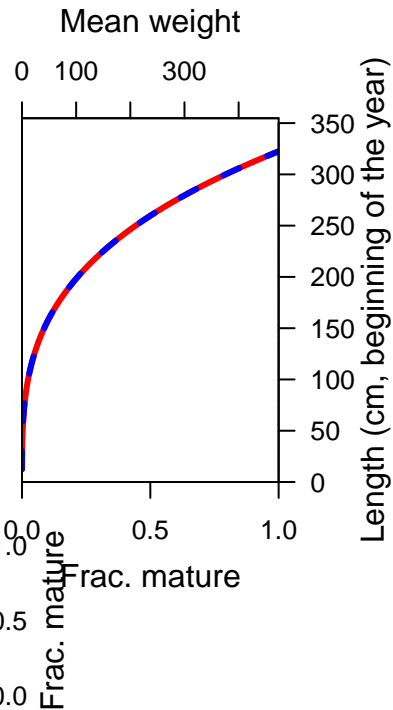
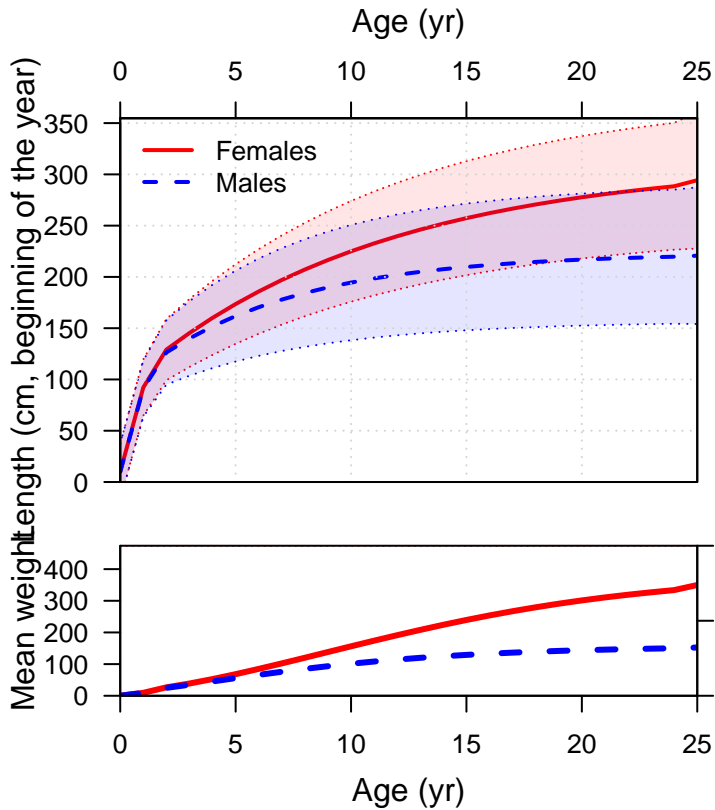
StartTime: Thu Jul 06 04:34:28 2017

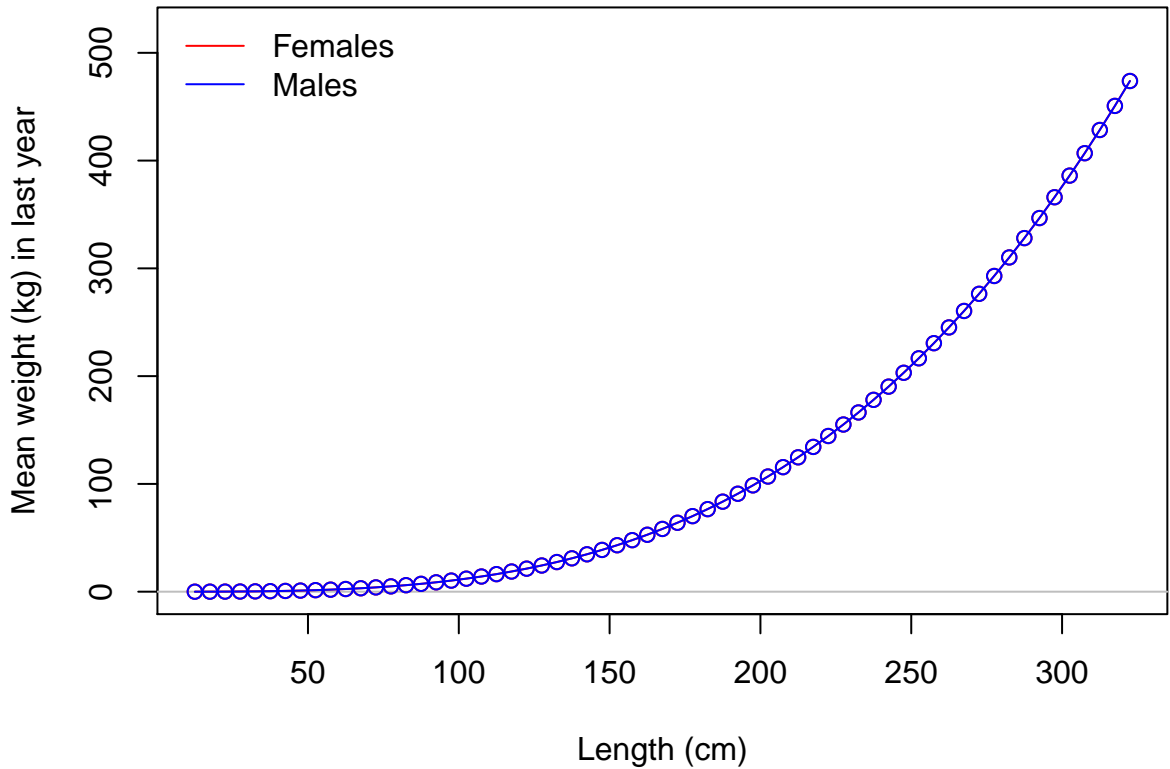
Data_File: _SWO_DATA.dat

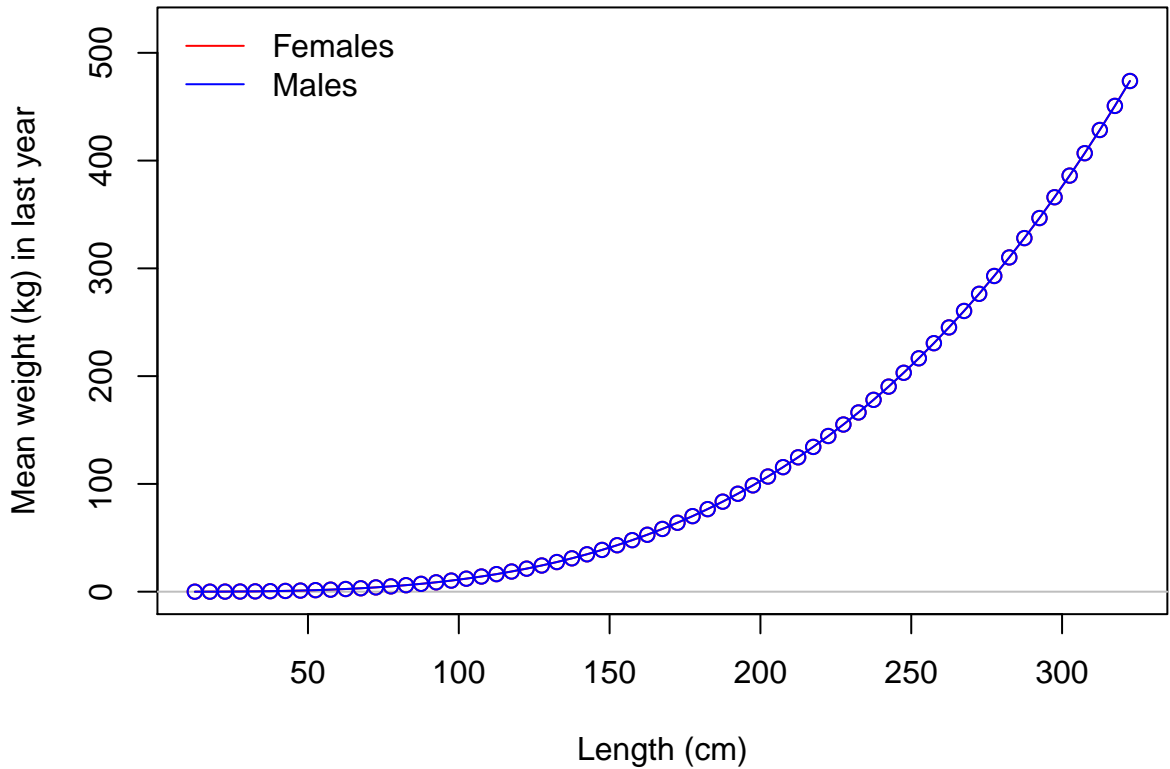
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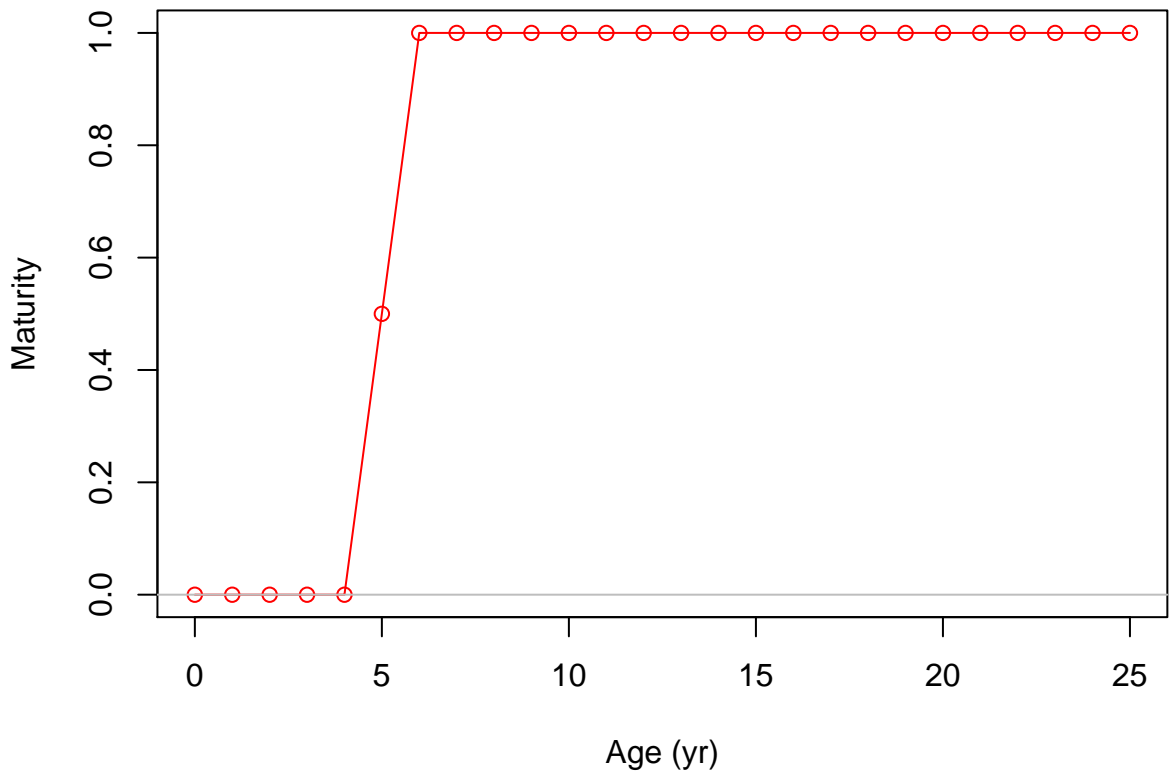
Ending year expected growth (with 95% intervals)

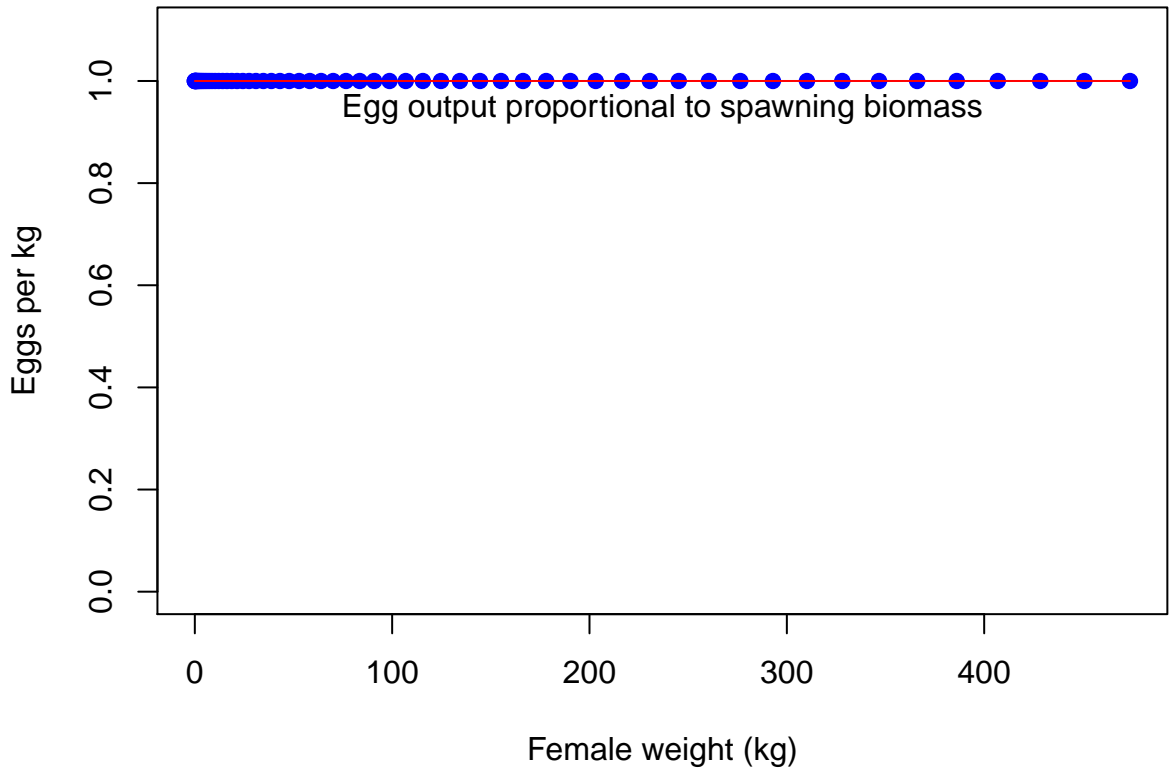


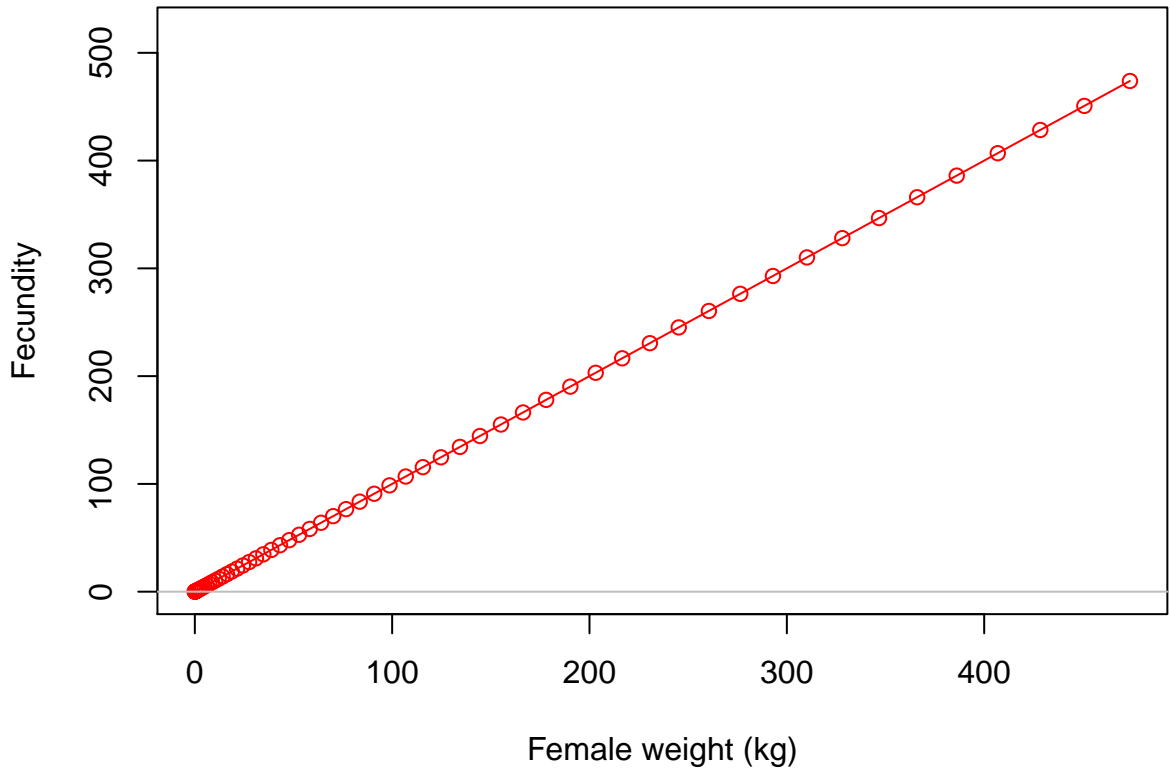


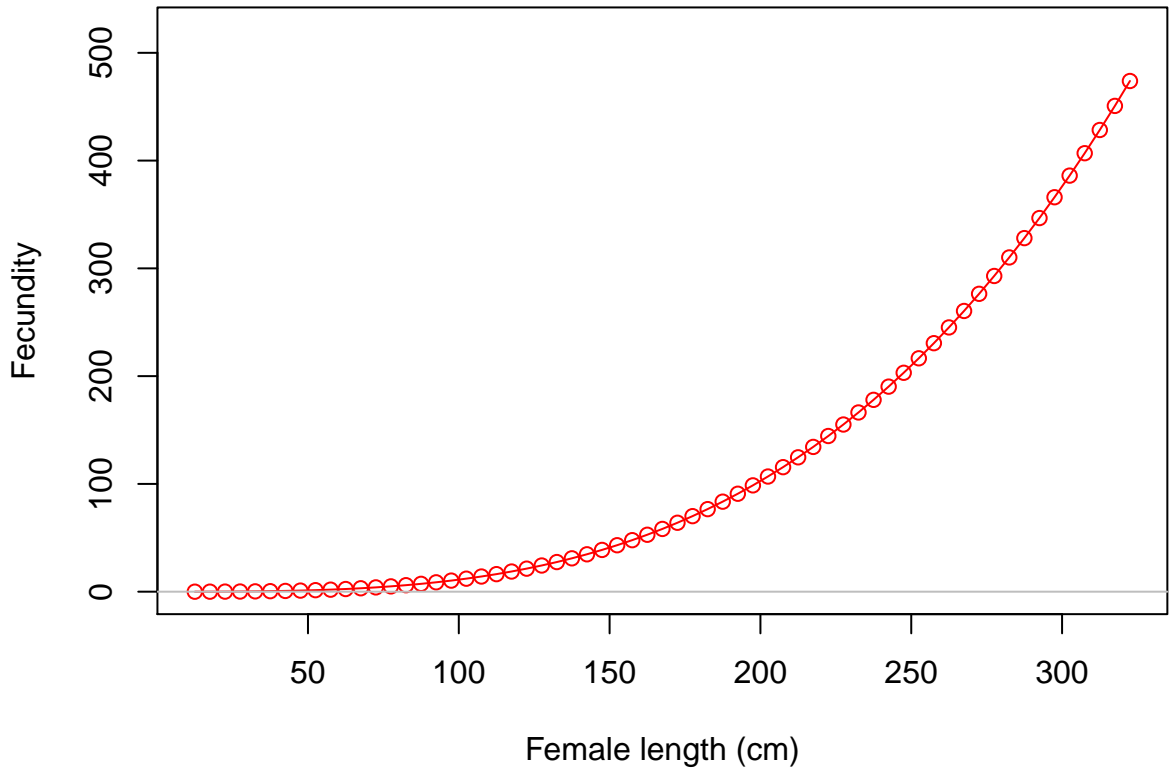


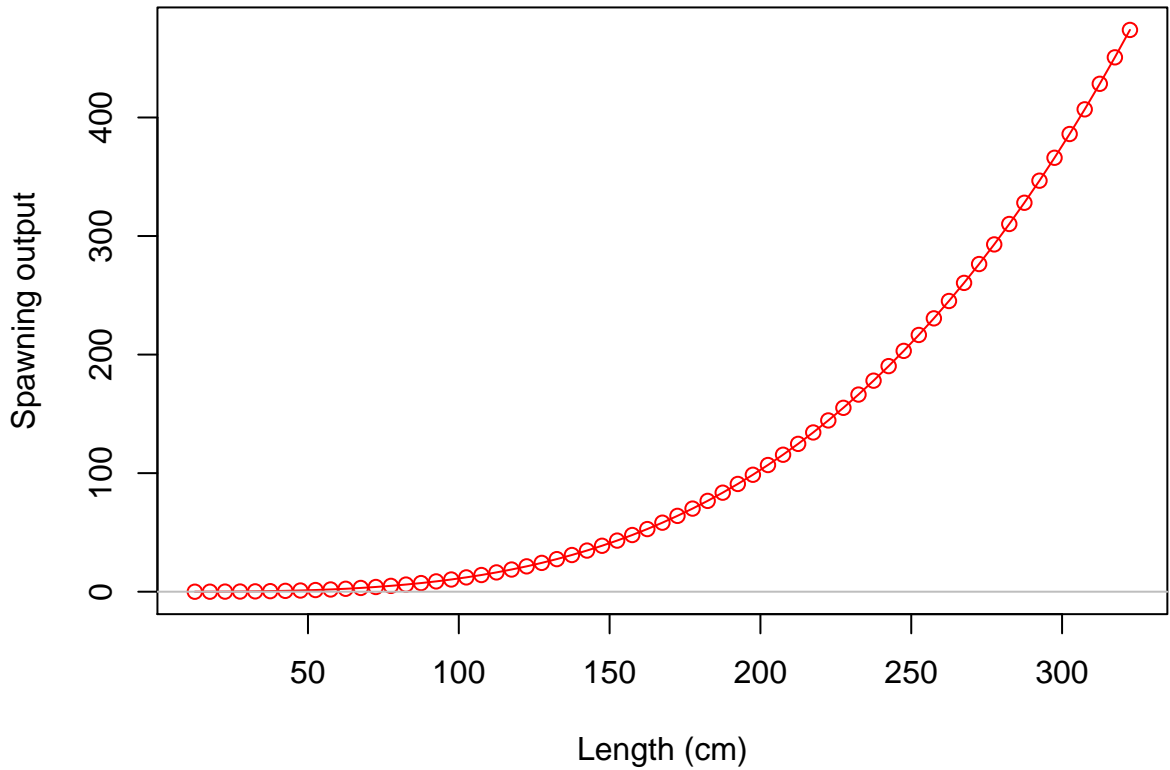




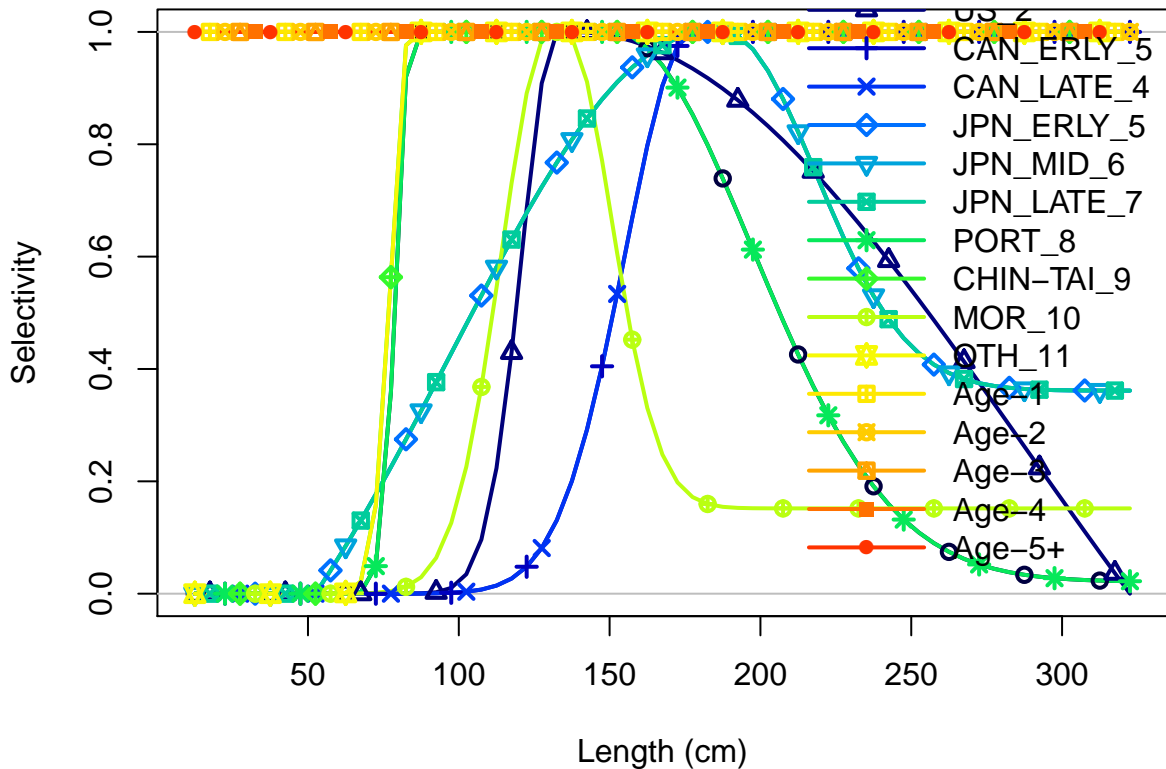




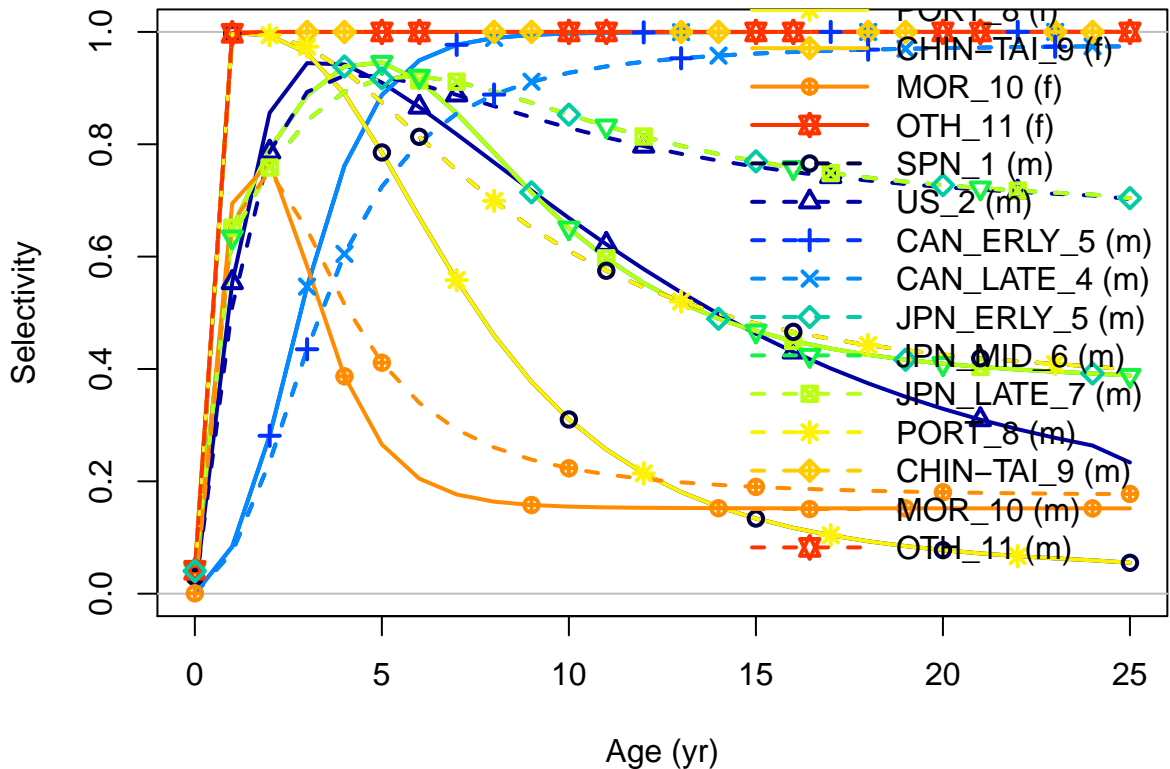




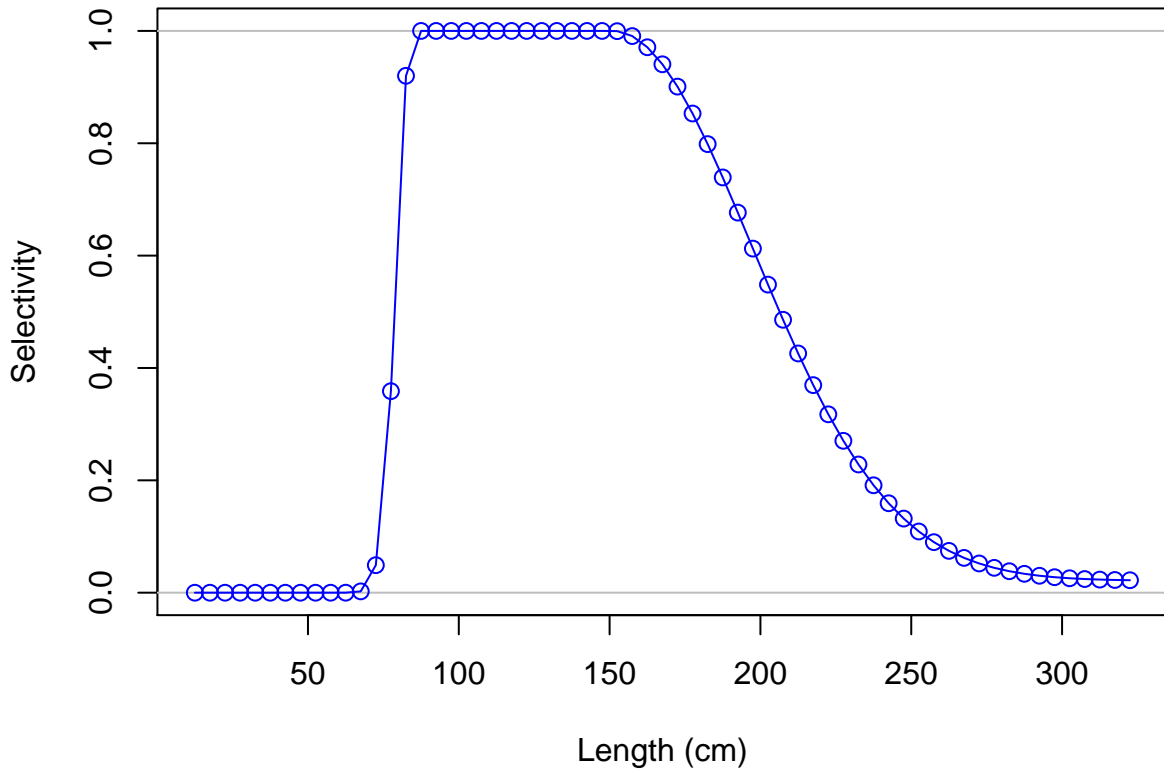
Length-based selectivity by fleet in 2017



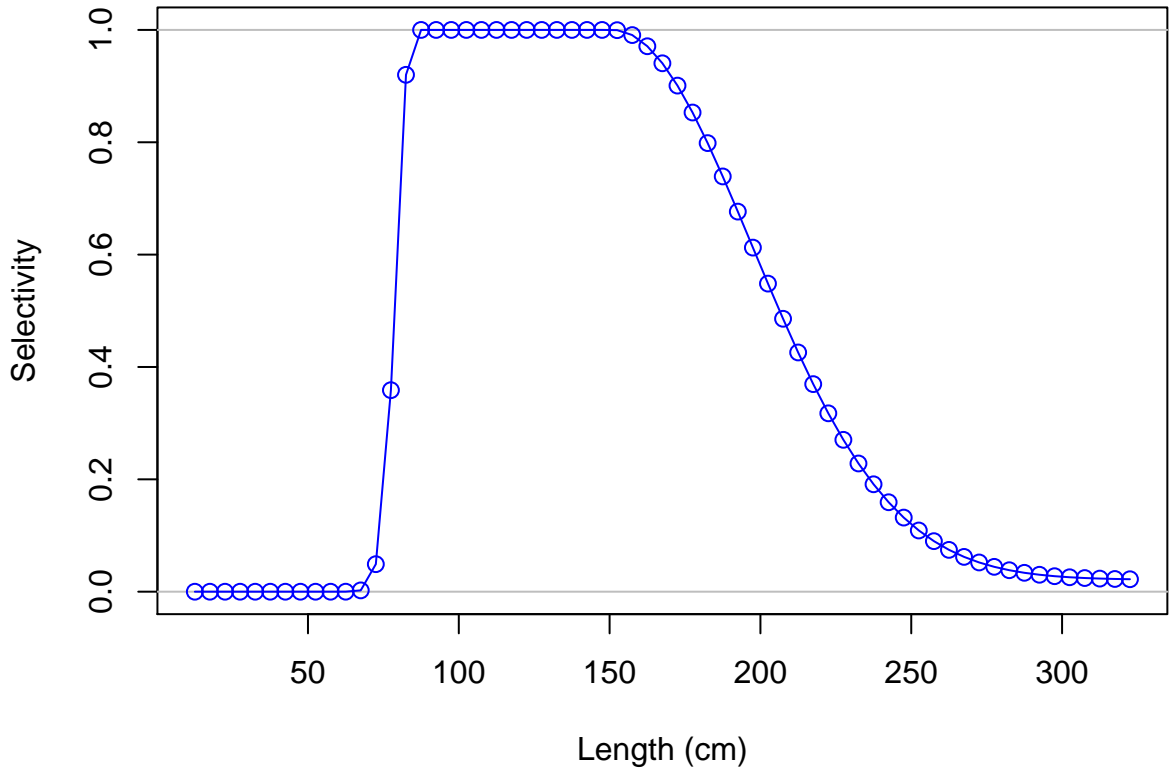
Derived age-based from length-based selectivity by fleet in 2017



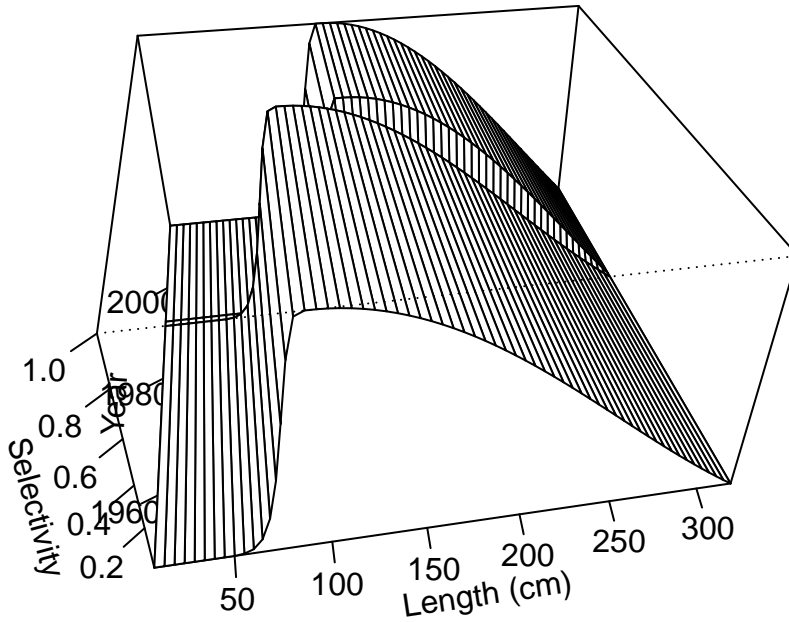
Female ending year selectivity for SPN_1



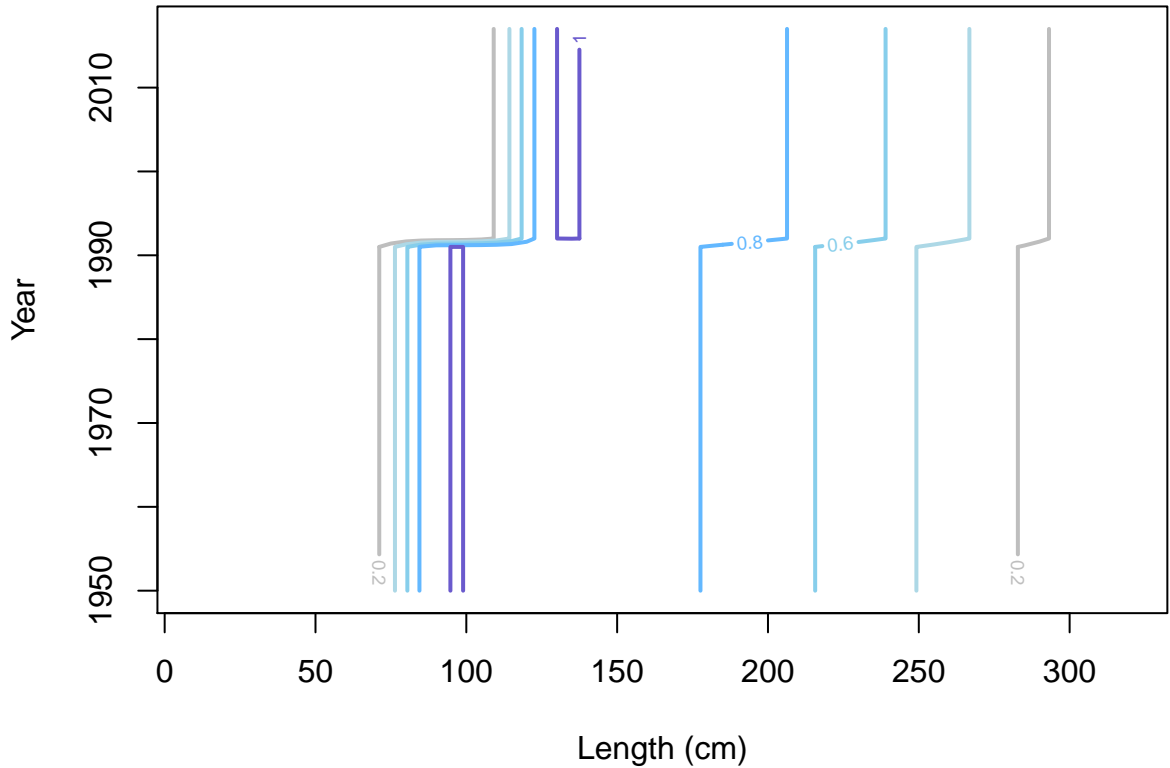
Male ending year selectivity for SPN_1



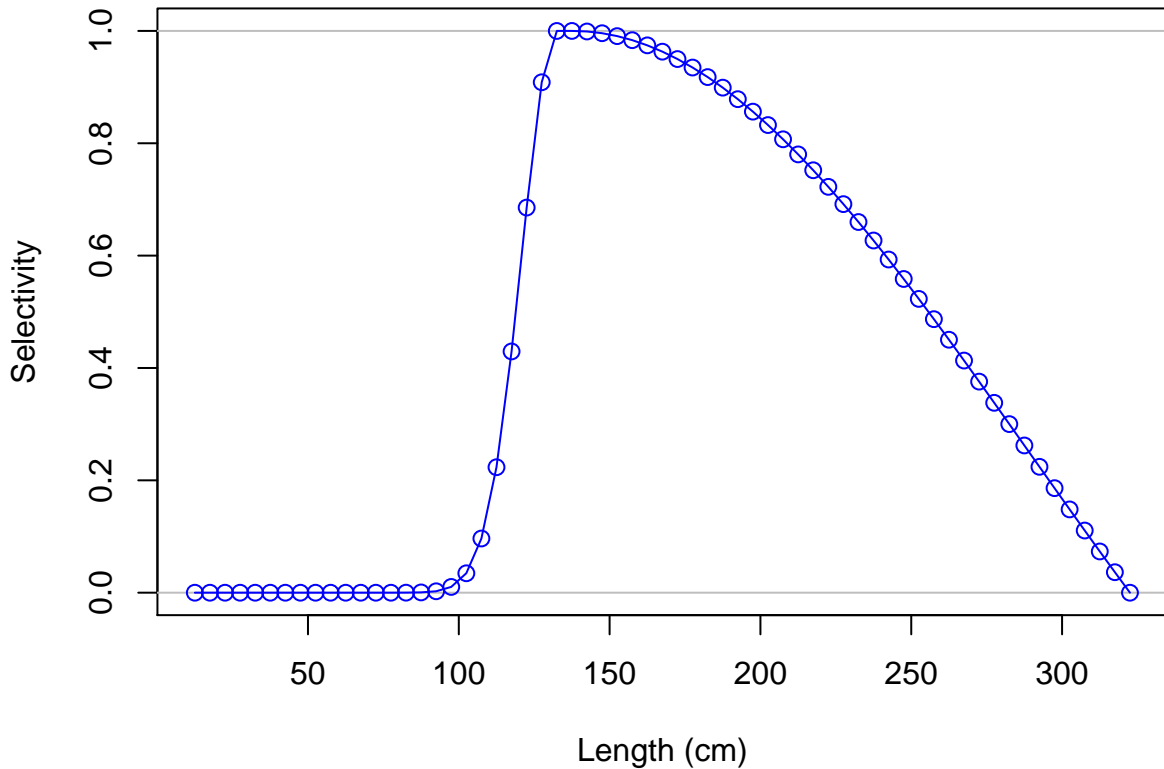
Female time-varying selectivity for US_2



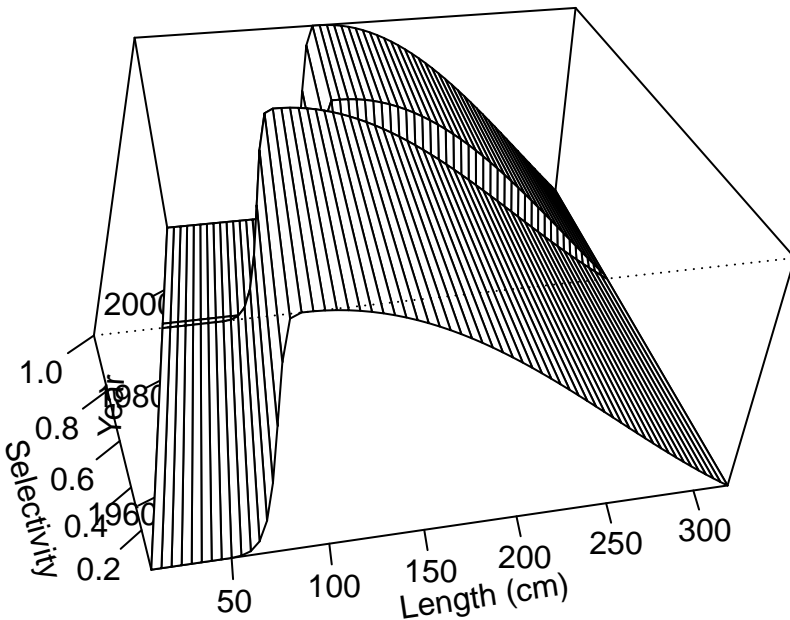
Female time-varying selectivity for US_2



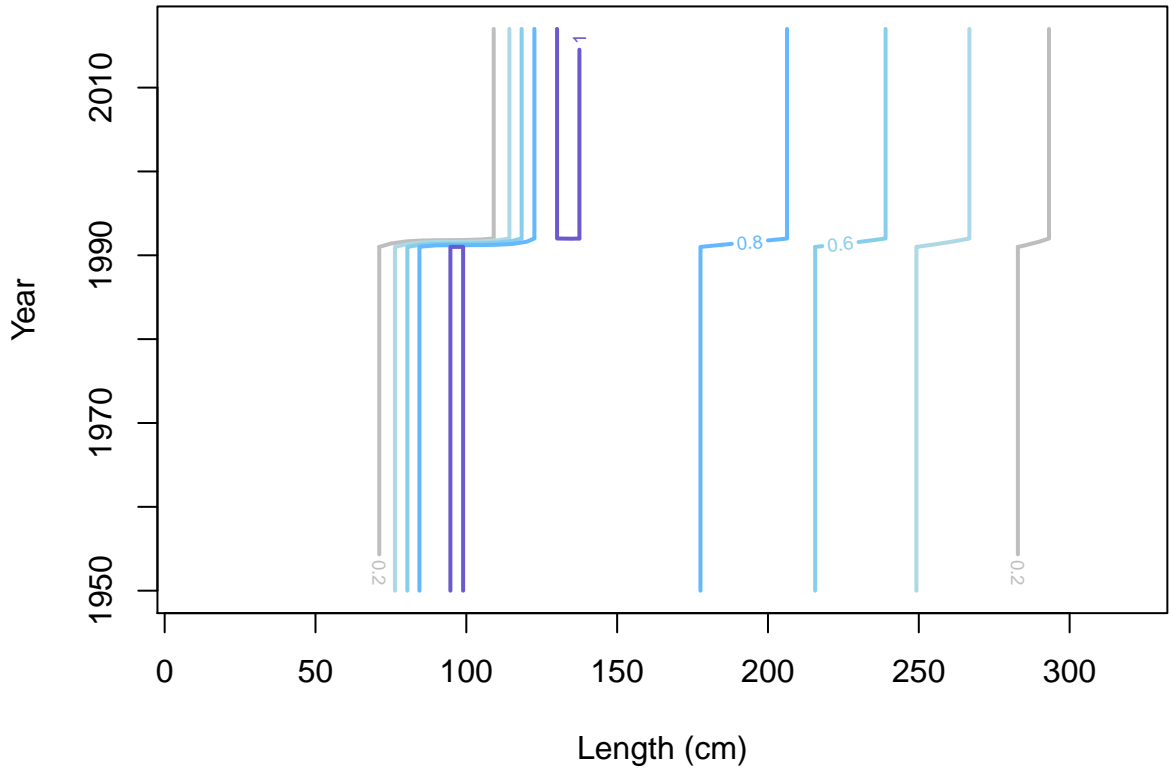
Female ending year selectivity for US_2



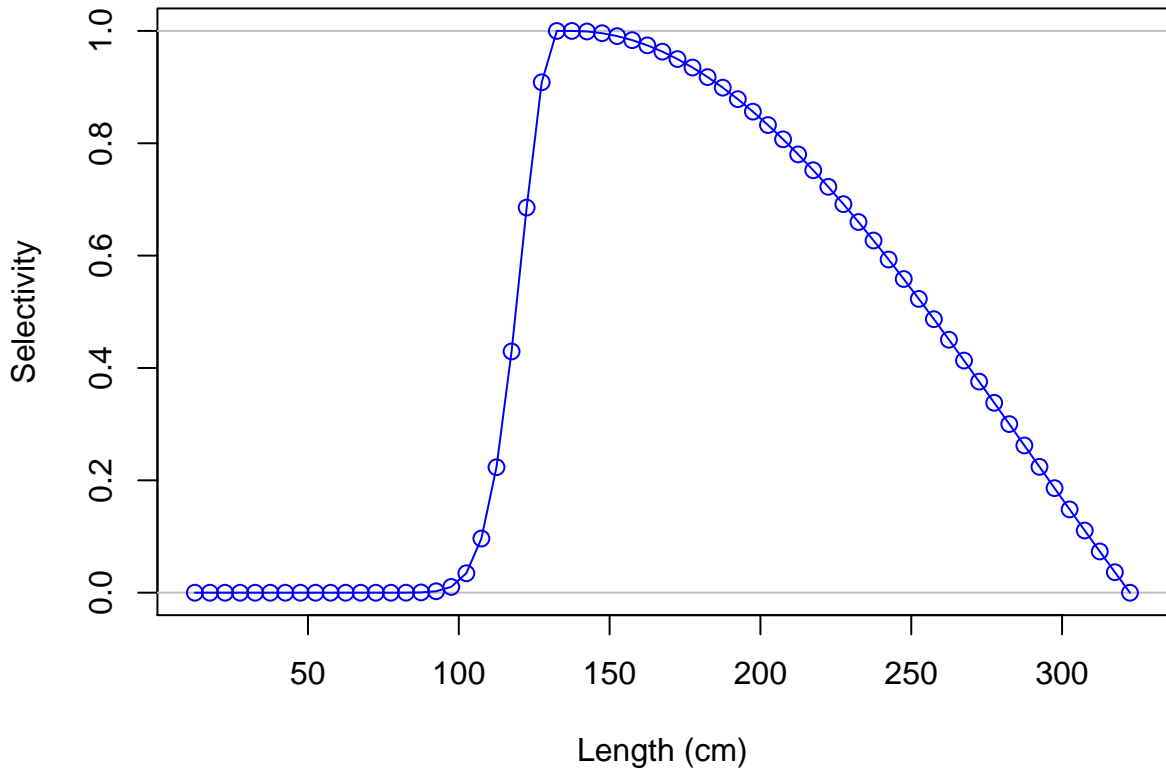
Male time-varying selectivity for US_2



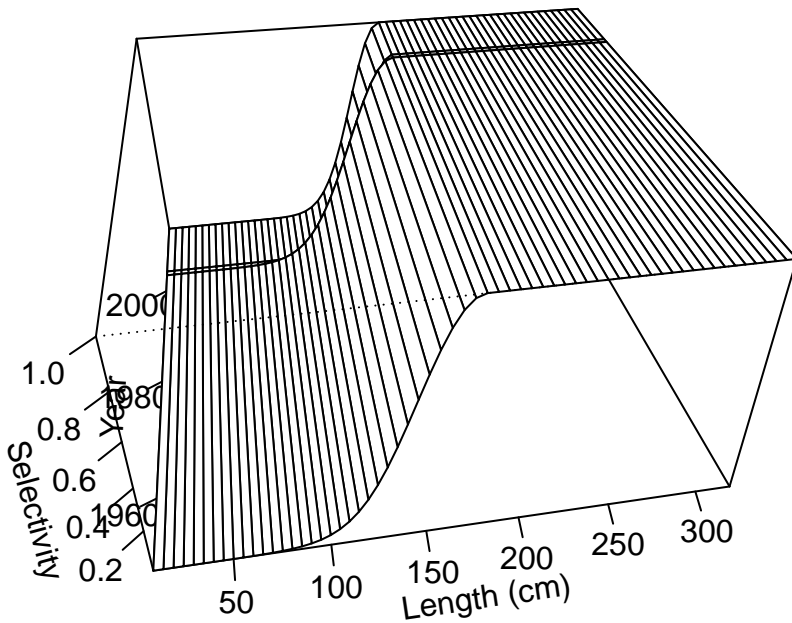
Male time-varying selectivity for US_2



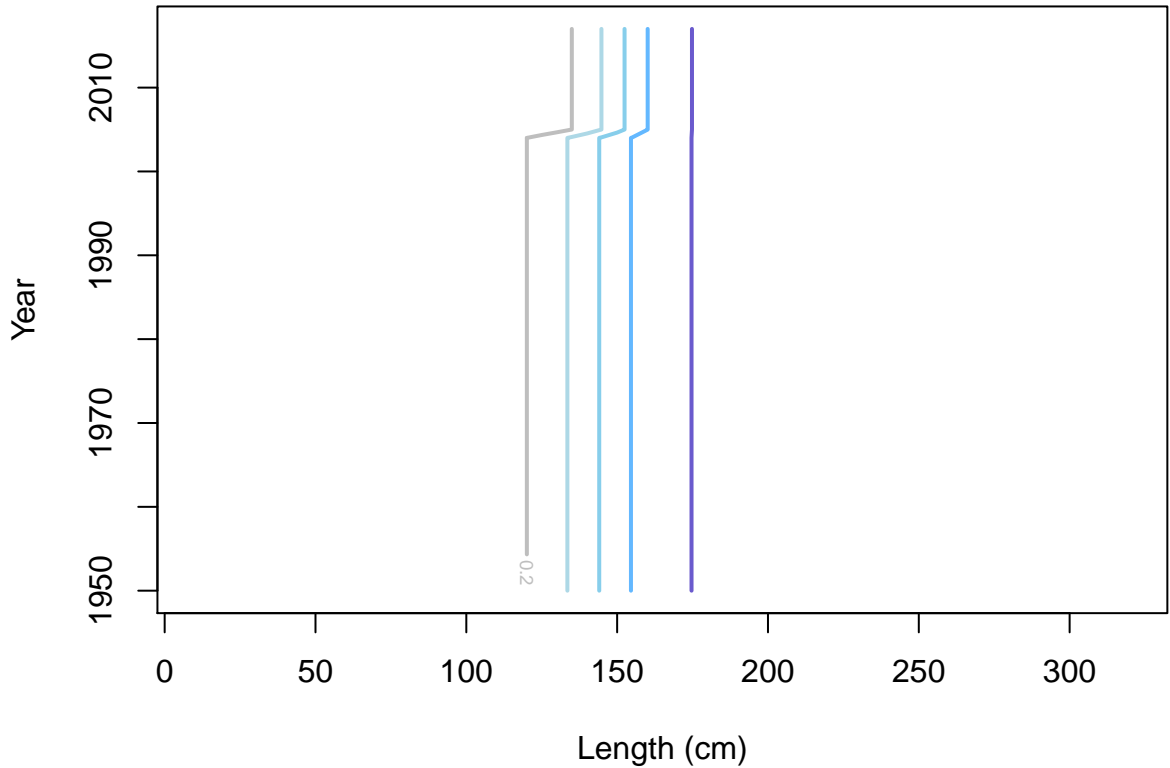
Male ending year selectivity for US_2



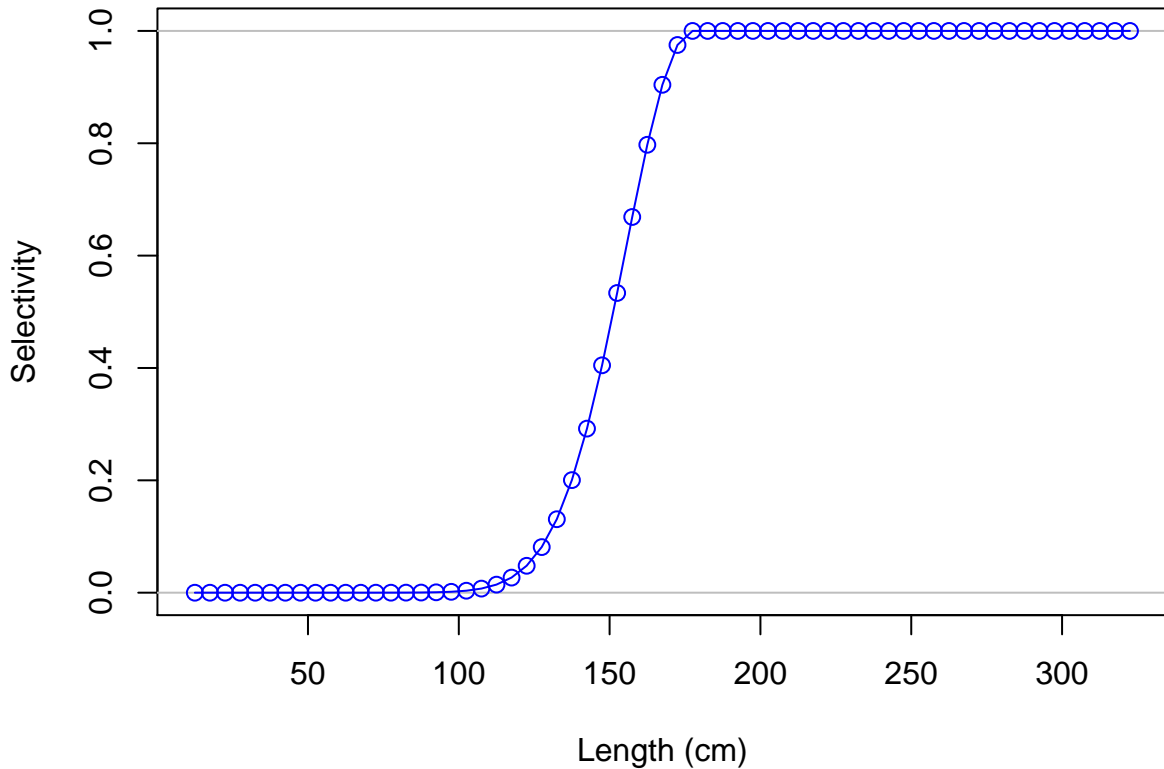
Female time-varying selectivity for CAN_ERLY_5



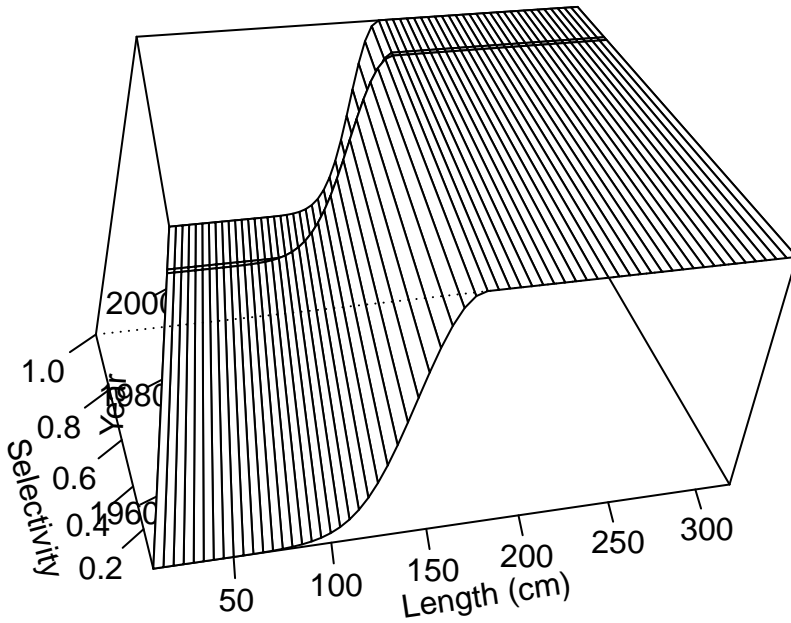
Female time-varying selectivity for CAN_ERLY_5



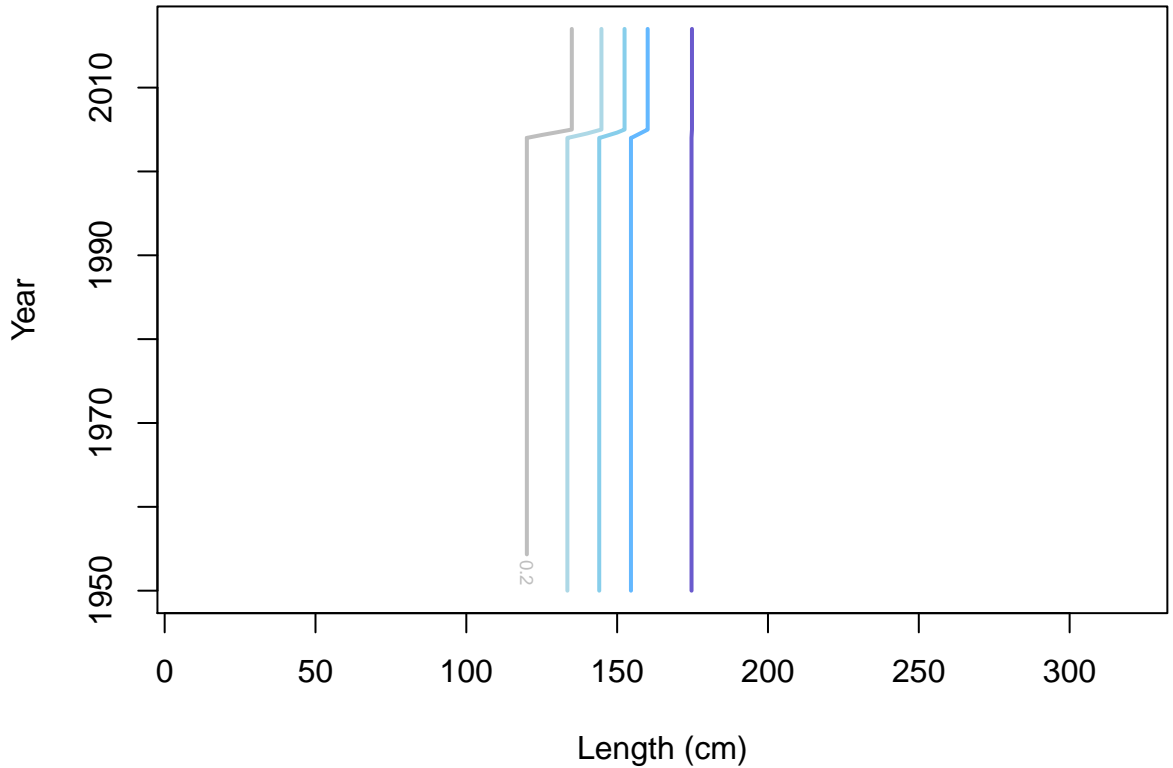
Female ending year selectivity for CAN_ERLY_5



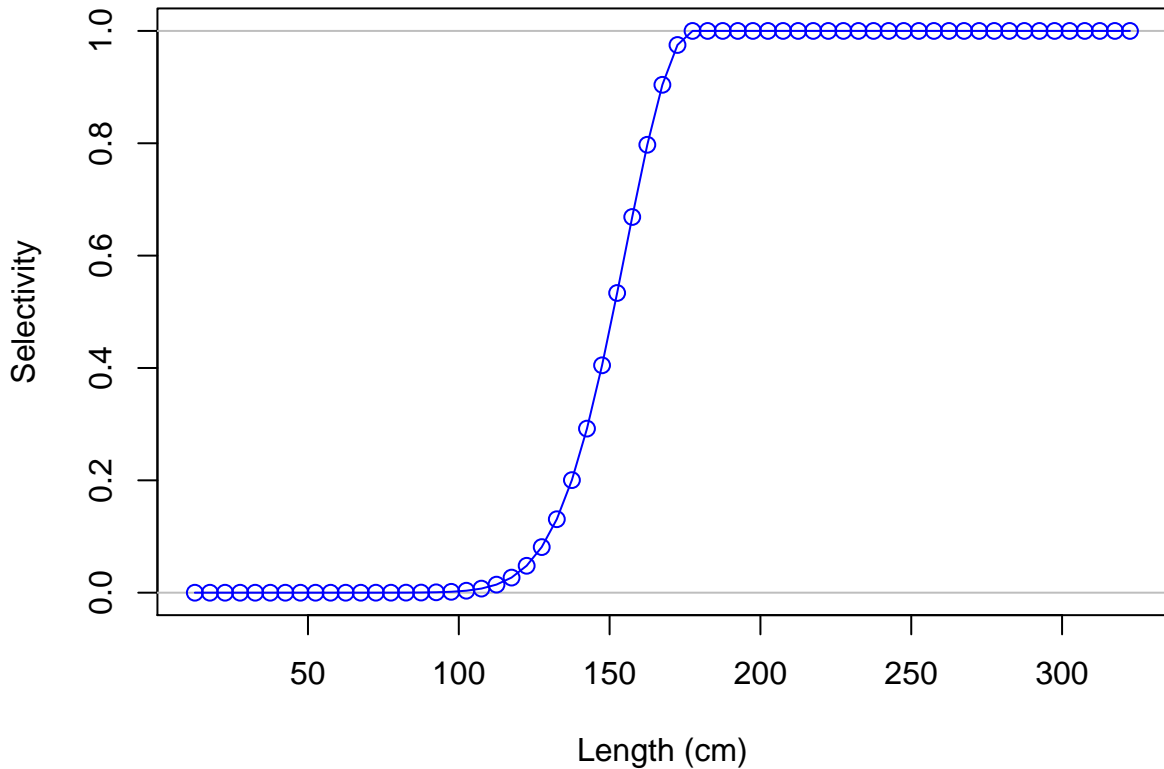
Male time-varying selectivity for CAN_ERLY_5



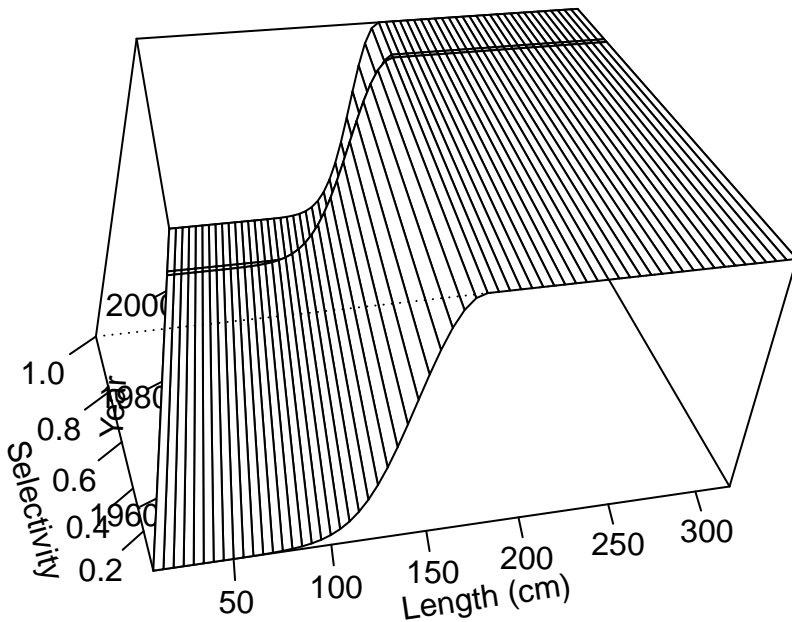
Male time-varying selectivity for CAN_ERLY_5



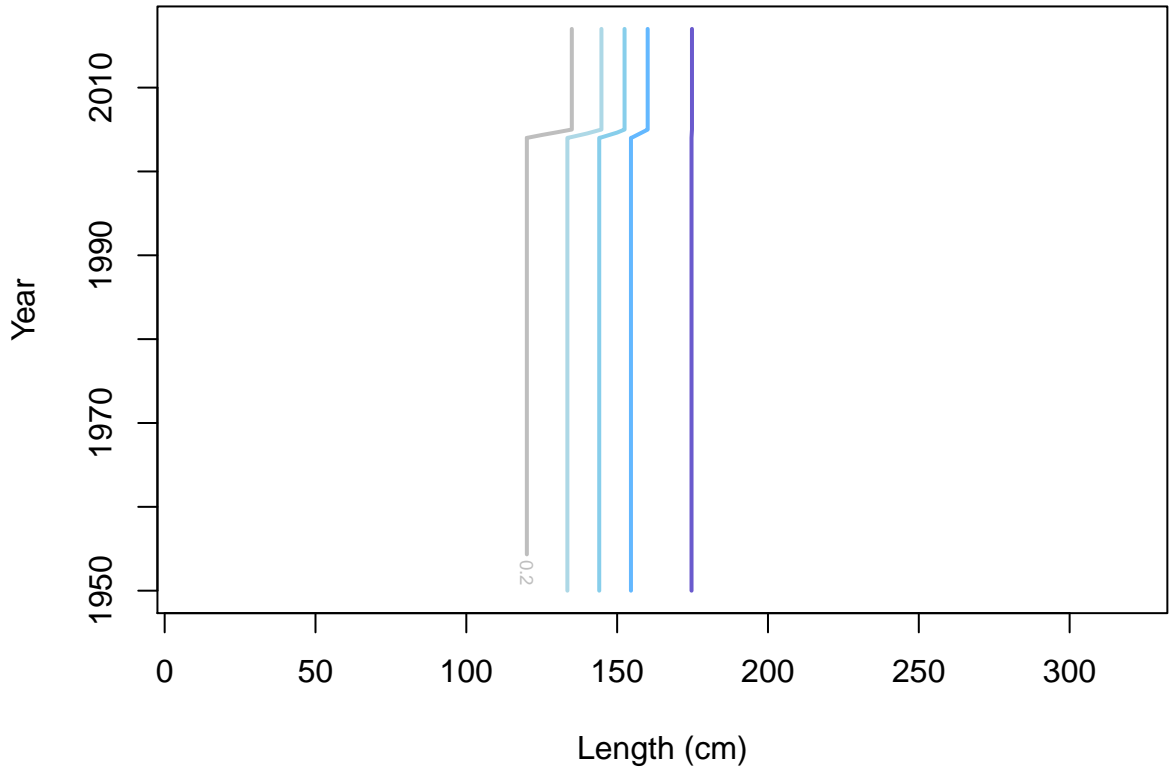
Male ending year selectivity for CAN_ERLY_5



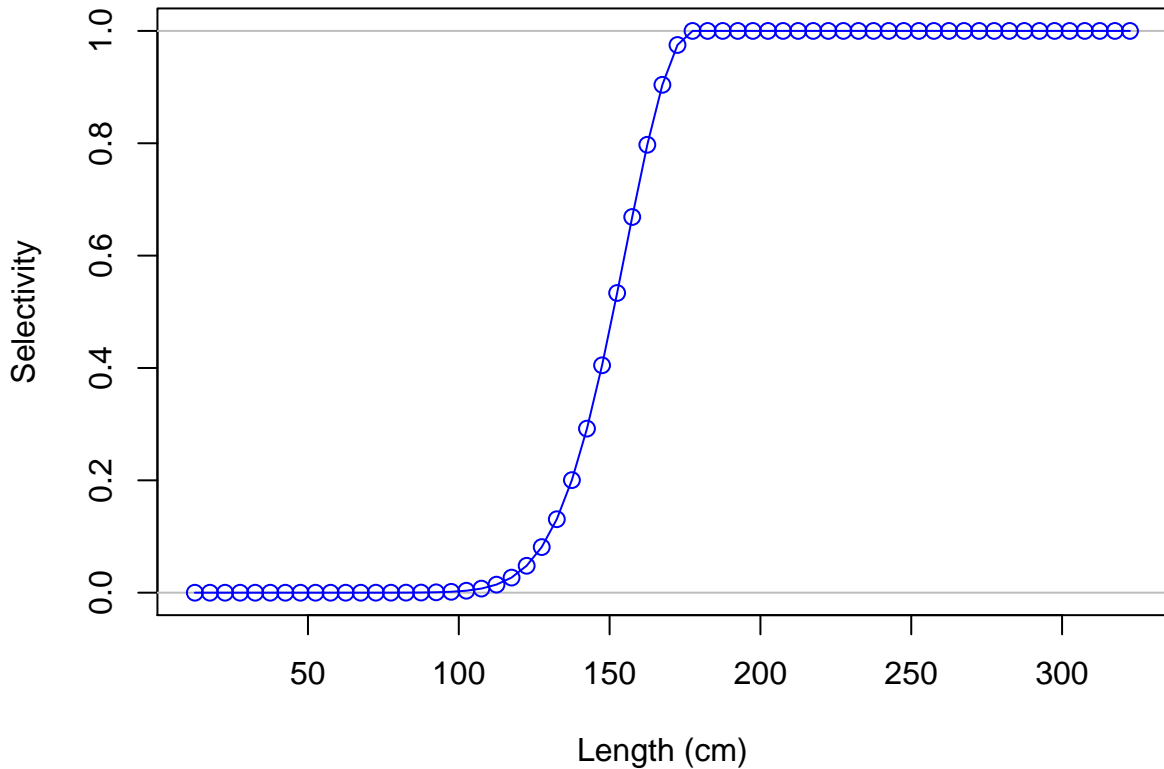
Female time-varying selectivity for CAN_LATE_4



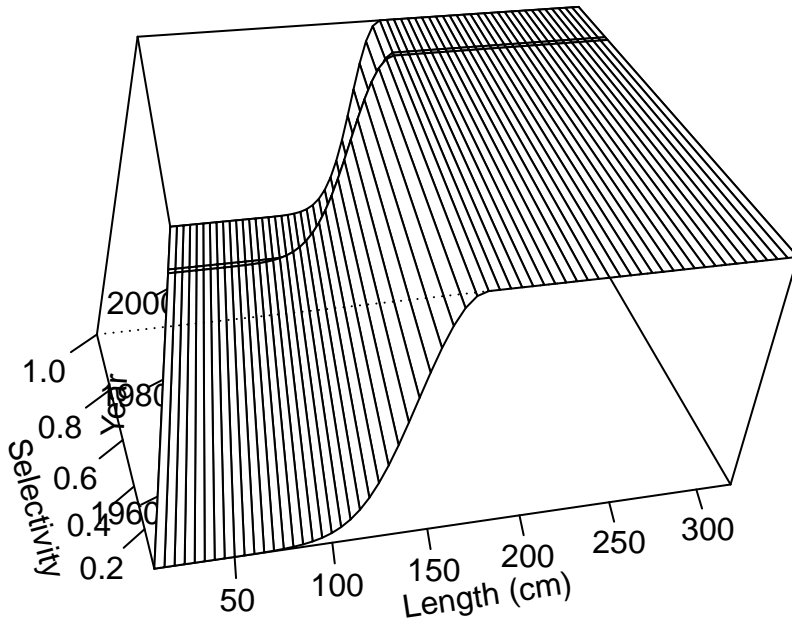
Female time-varying selectivity for CAN_LATE_4



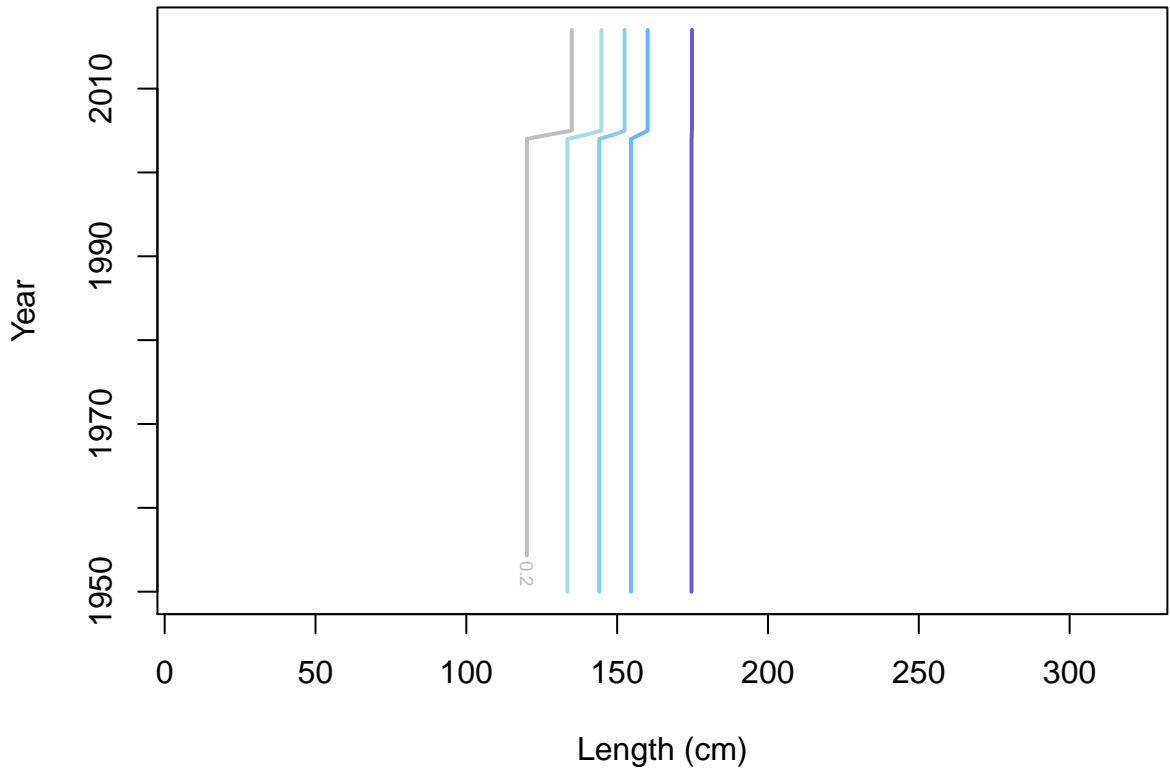
Female ending year selectivity for CAN_LATE_4



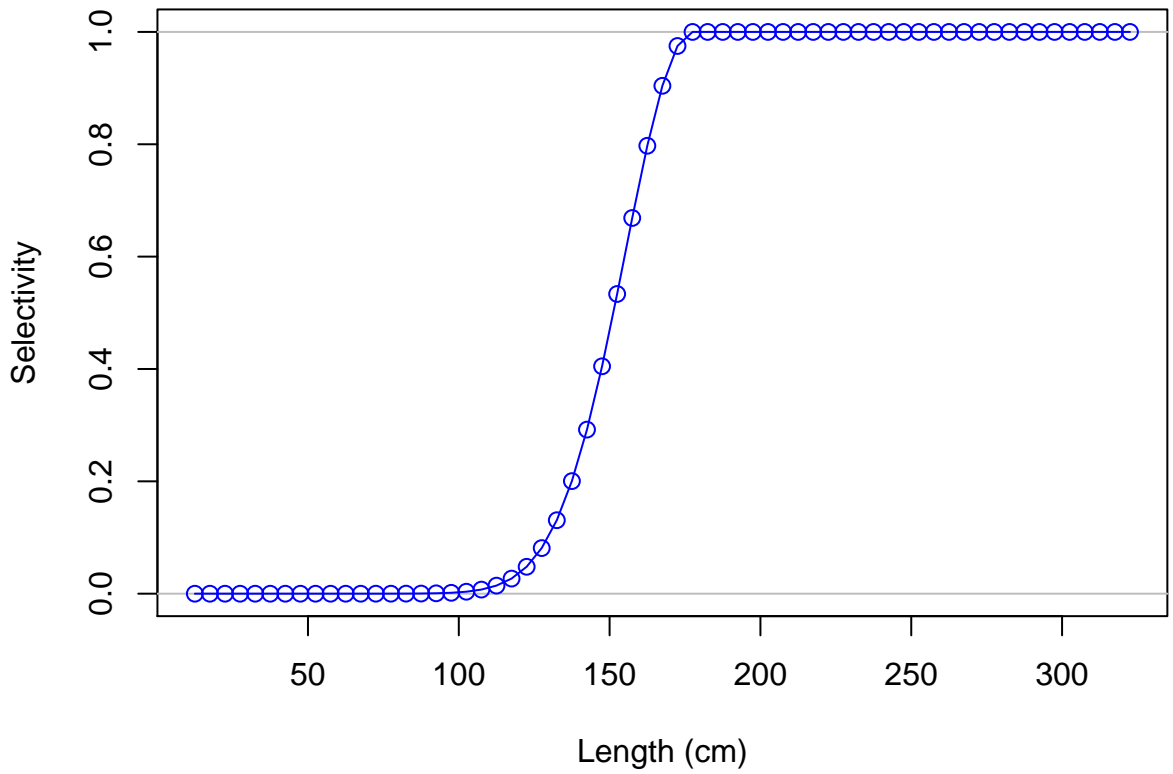
Male time-varying selectivity for CAN_LATE_4



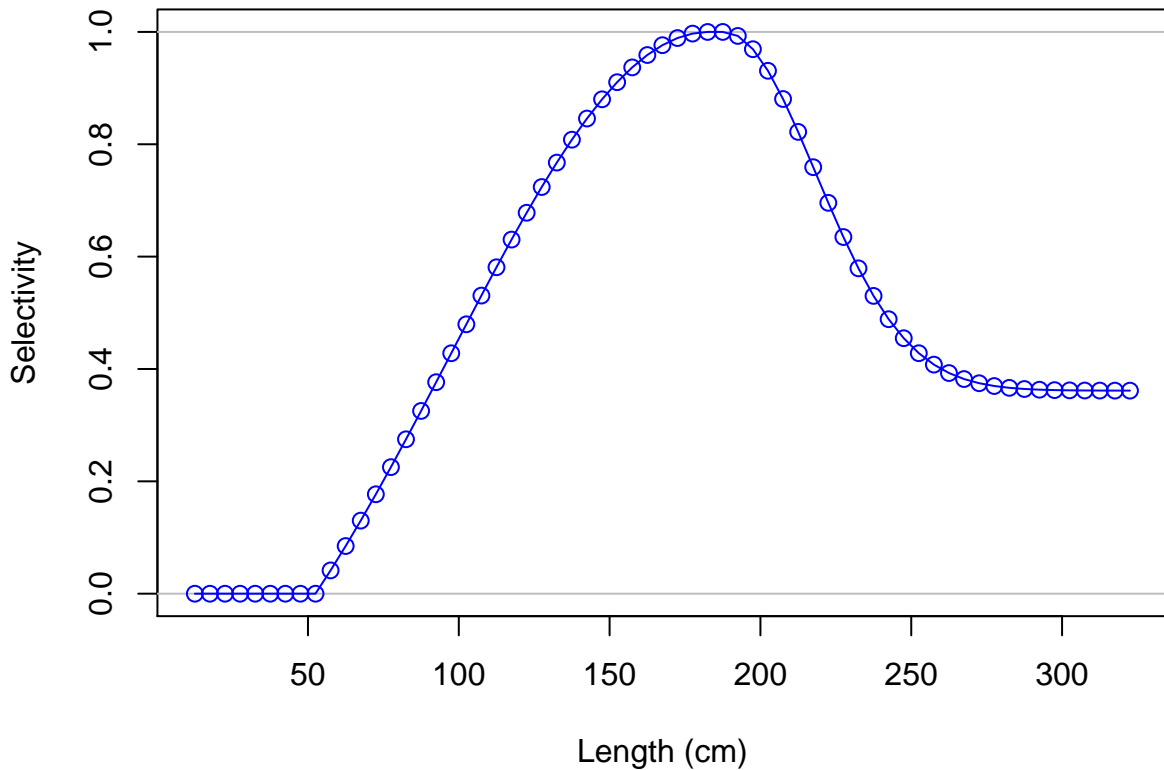
Male time-varying selectivity for CAN_LATE_4



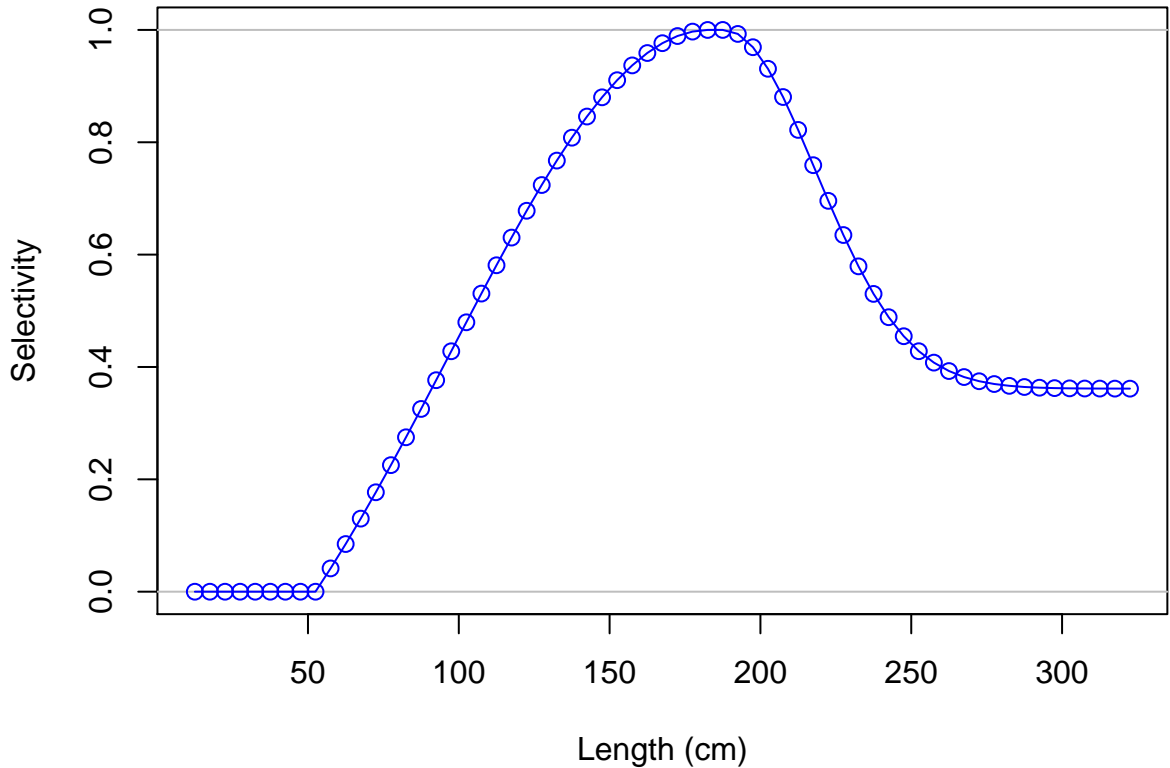
Male ending year selectivity for CAN_LATE_4



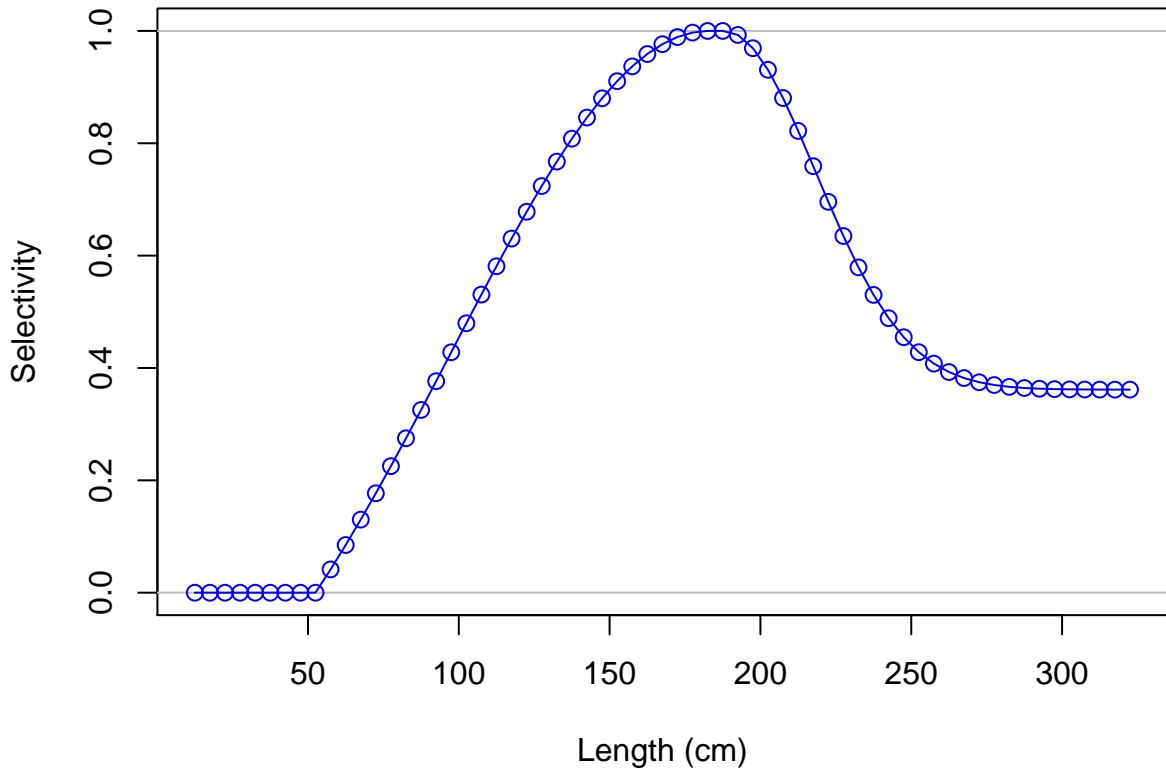
Female ending year selectivity for JPN_ERLY_5



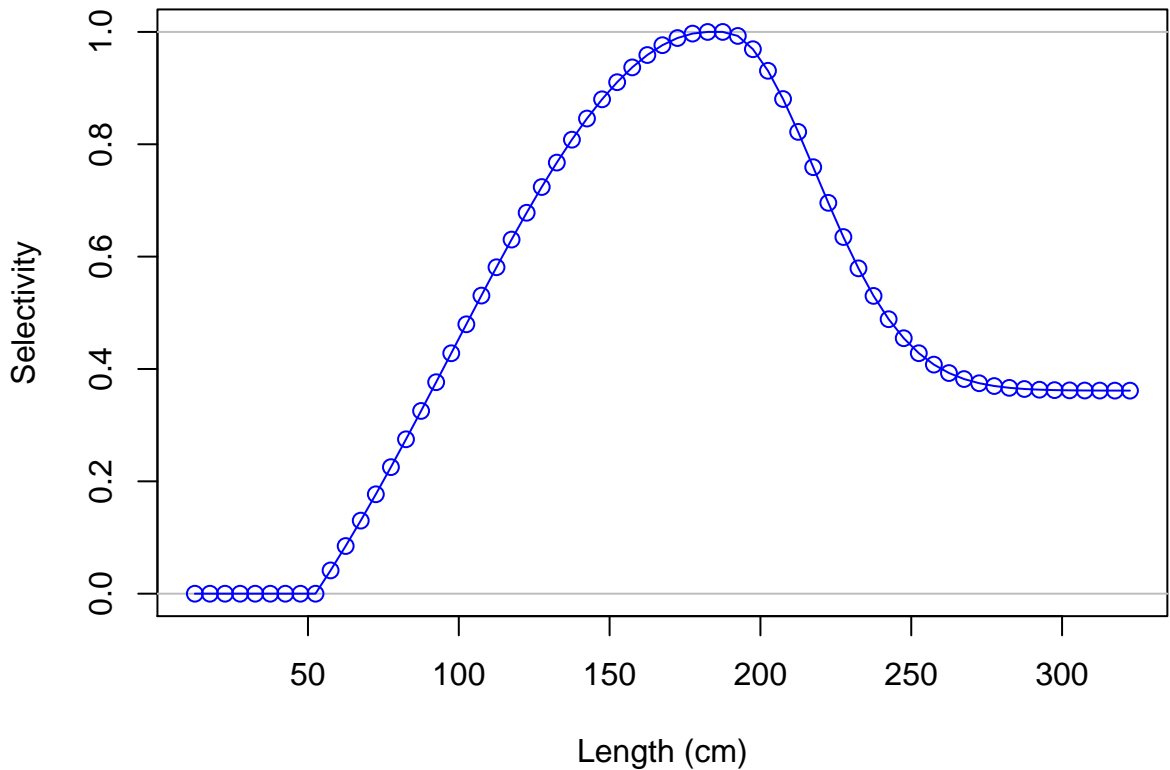
Male ending year selectivity for JPN_ERLY_5



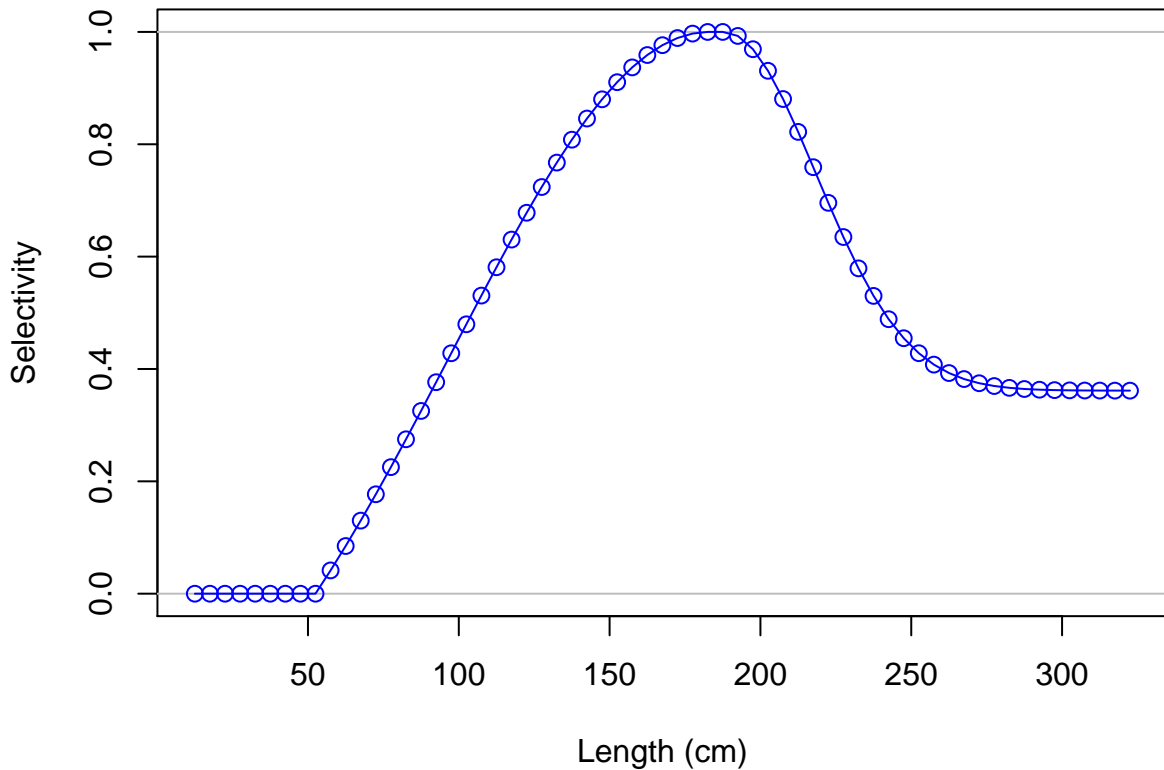
Female ending year selectivity for JPN_MID_6



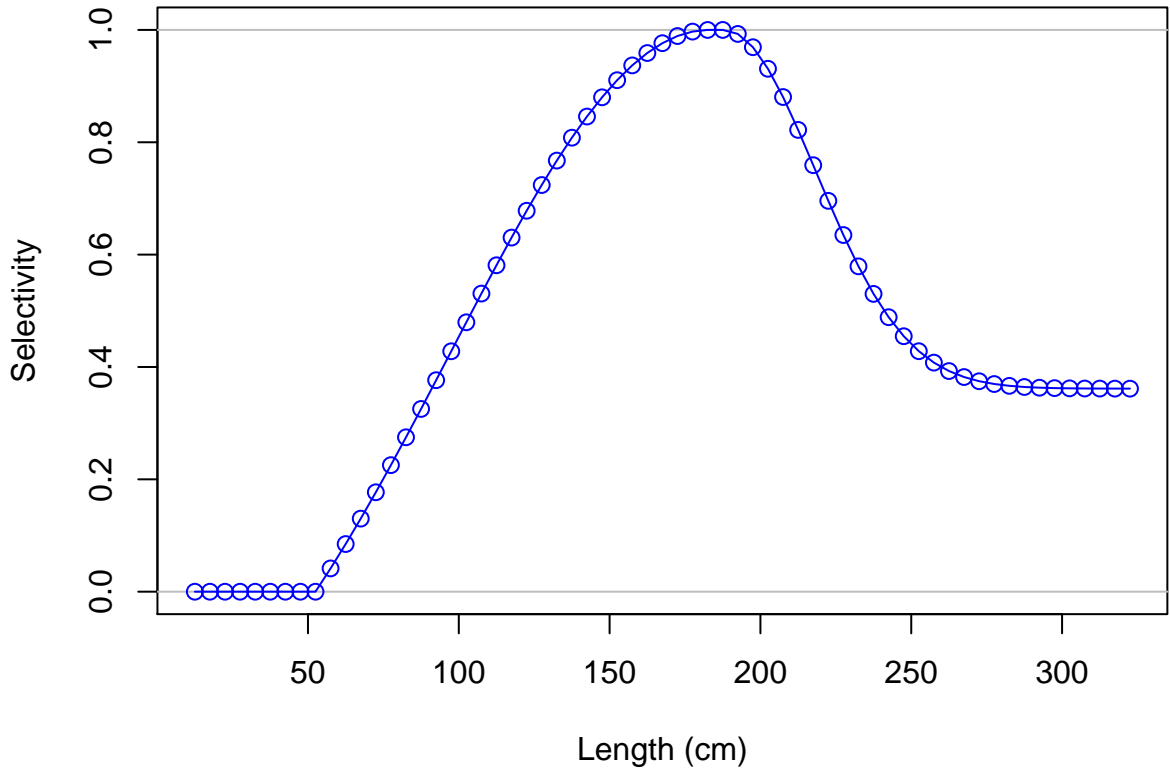
Male ending year selectivity for JPN_MID_6



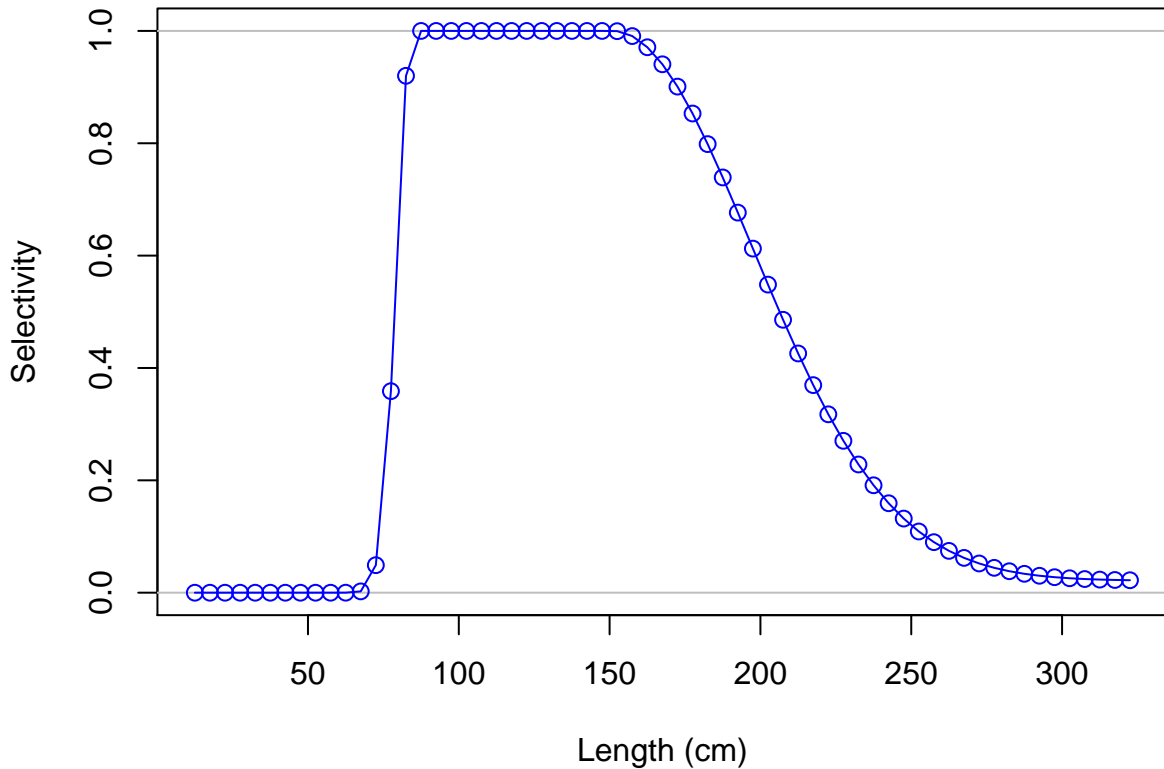
Female ending year selectivity for JPN_LATE_7



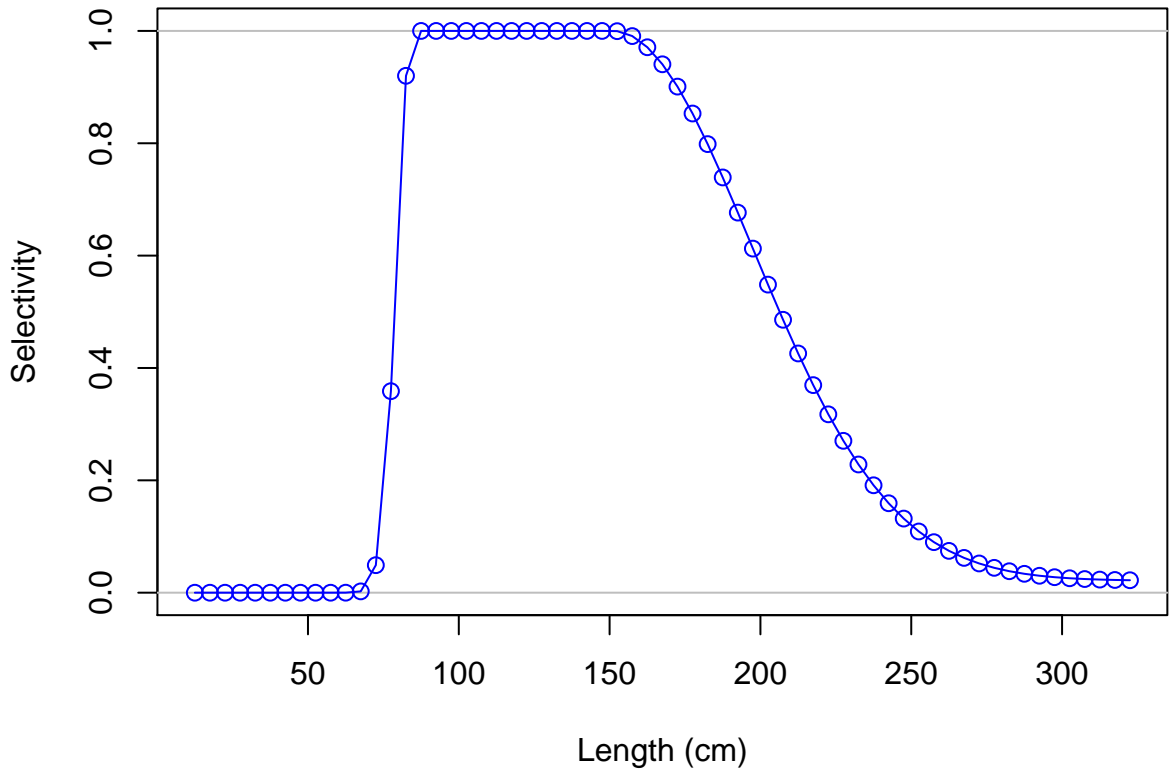
Male ending year selectivity for JPN_LATE_7



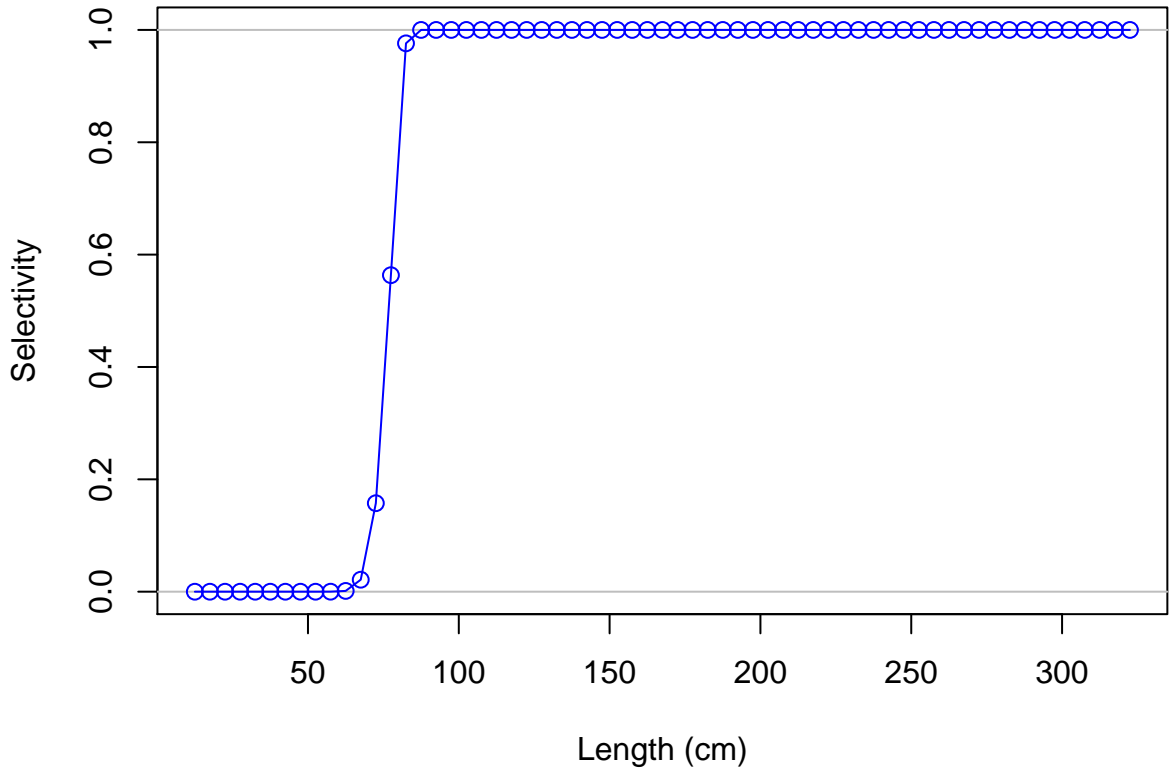
Female ending year selectivity for PORT_8



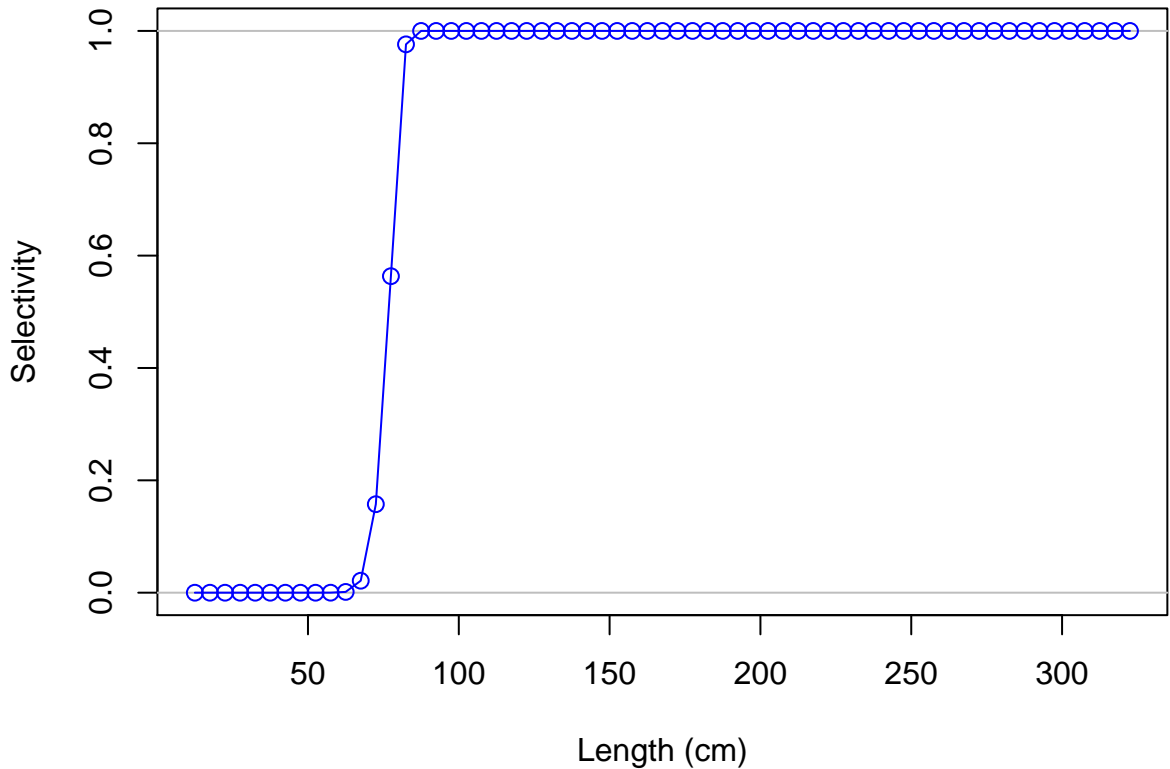
Male ending year selectivity for PORT_8



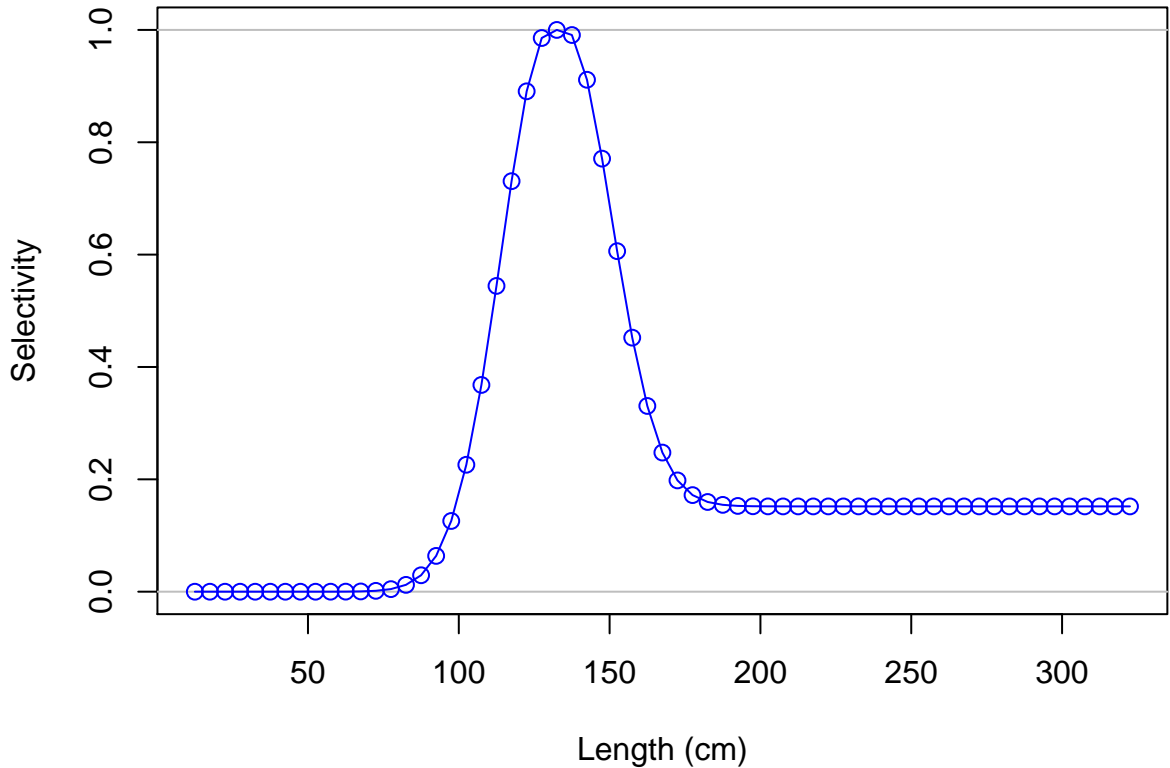
Female ending year selectivity for CHIN-TAI_9



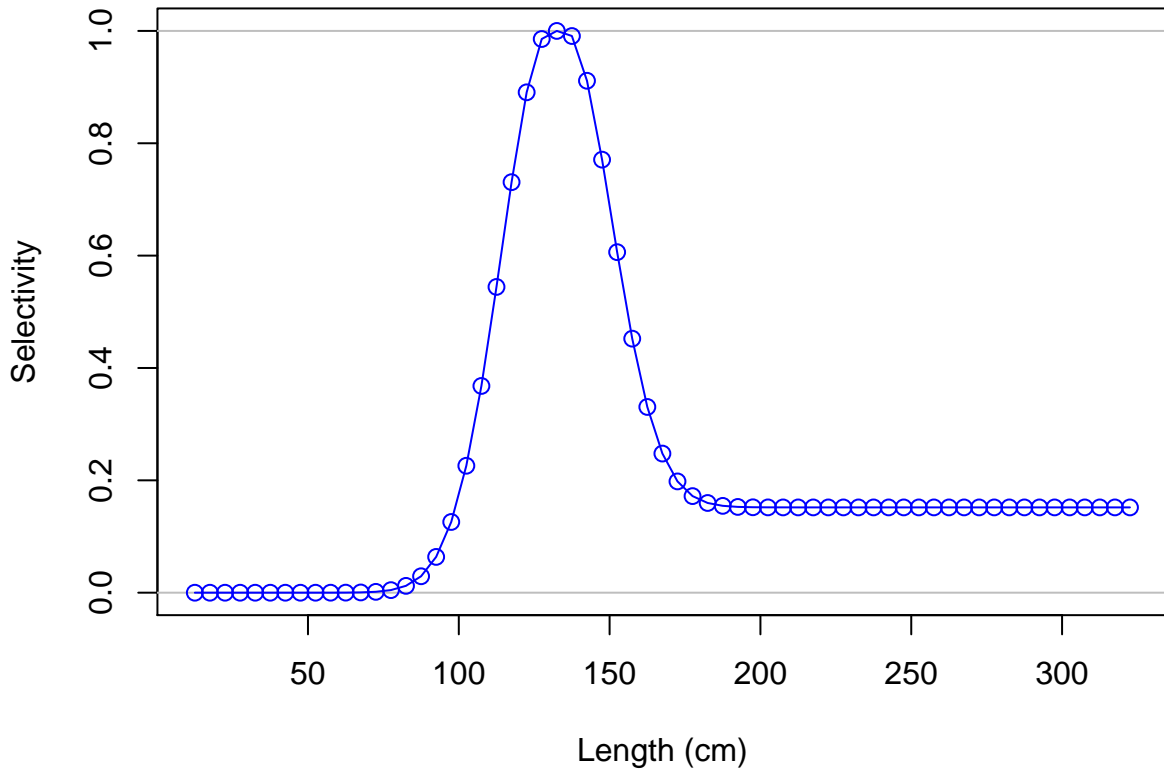
Male ending year selectivity for CHIN-TAI_9



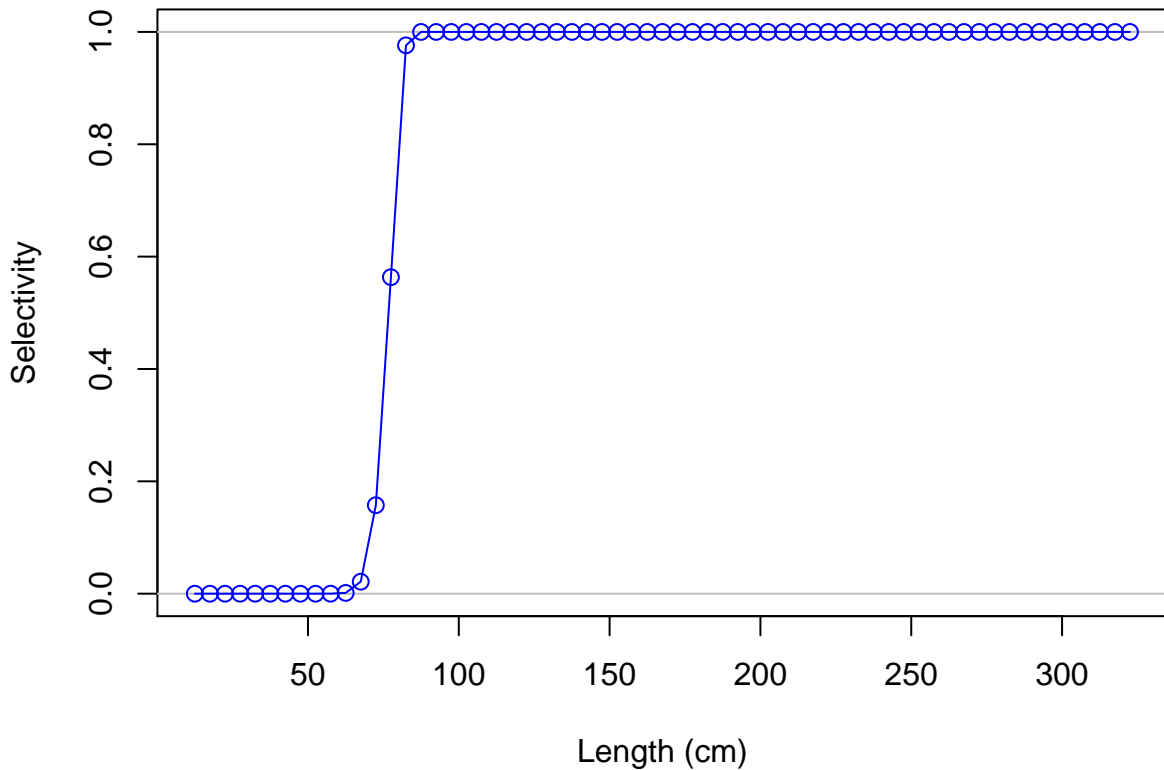
Female ending year selectivity for MOR_10



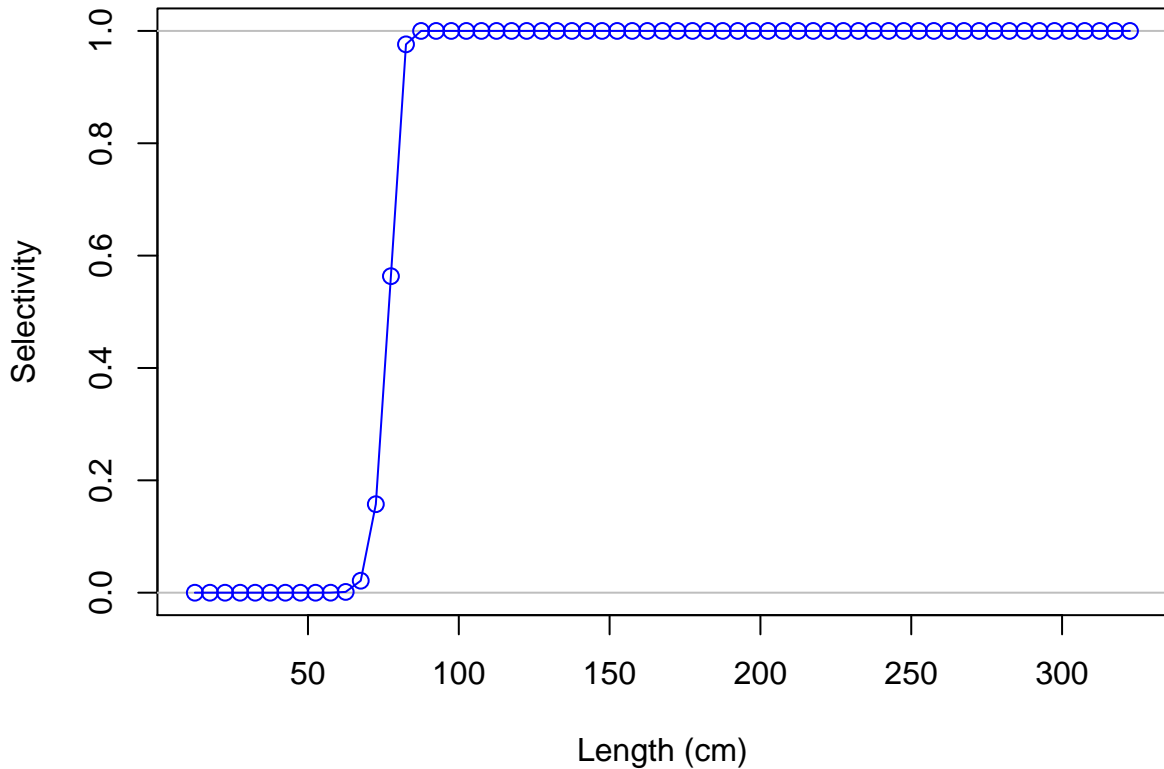
Male ending year selectivity for MOR_10



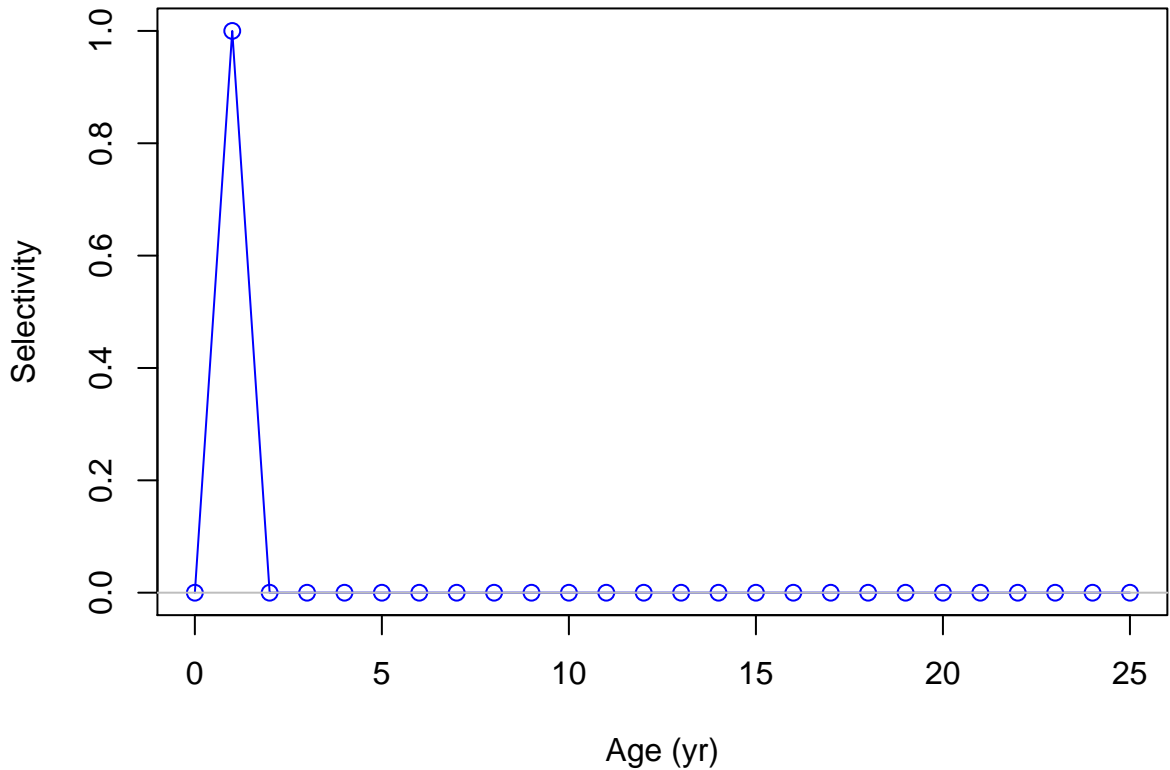
Female ending year selectivity for OTH_11



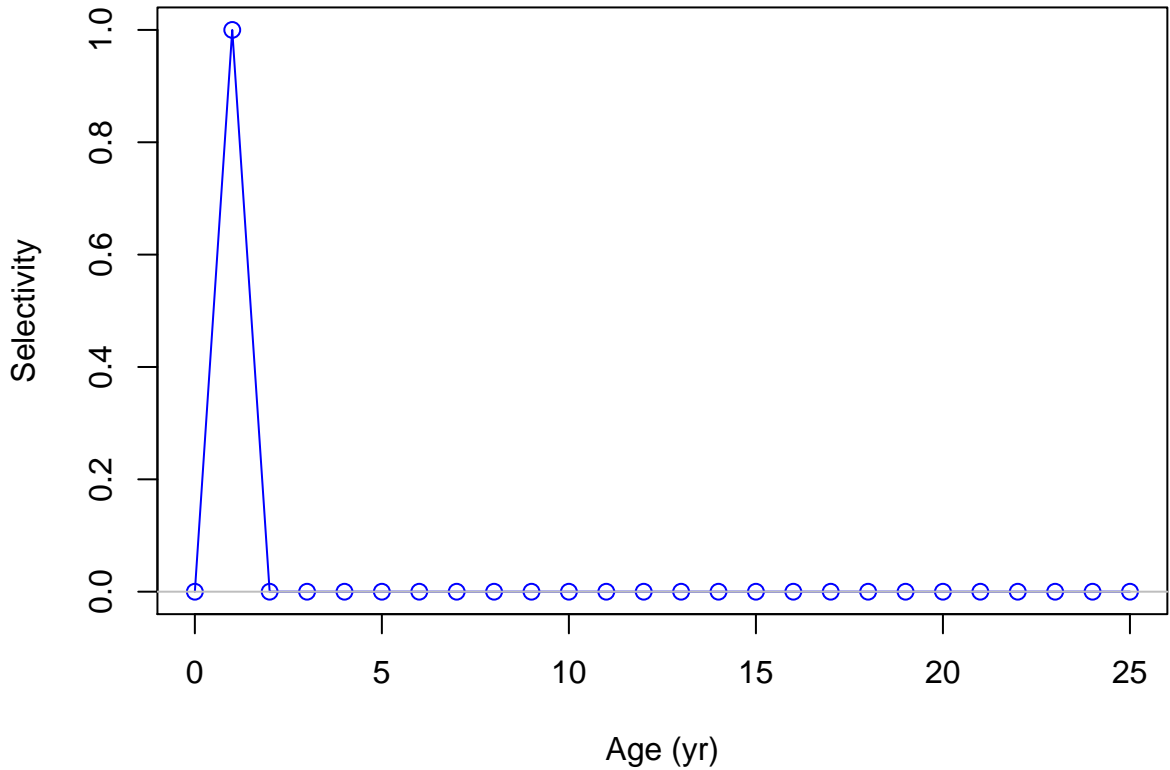
Male ending year selectivity for OTH_11



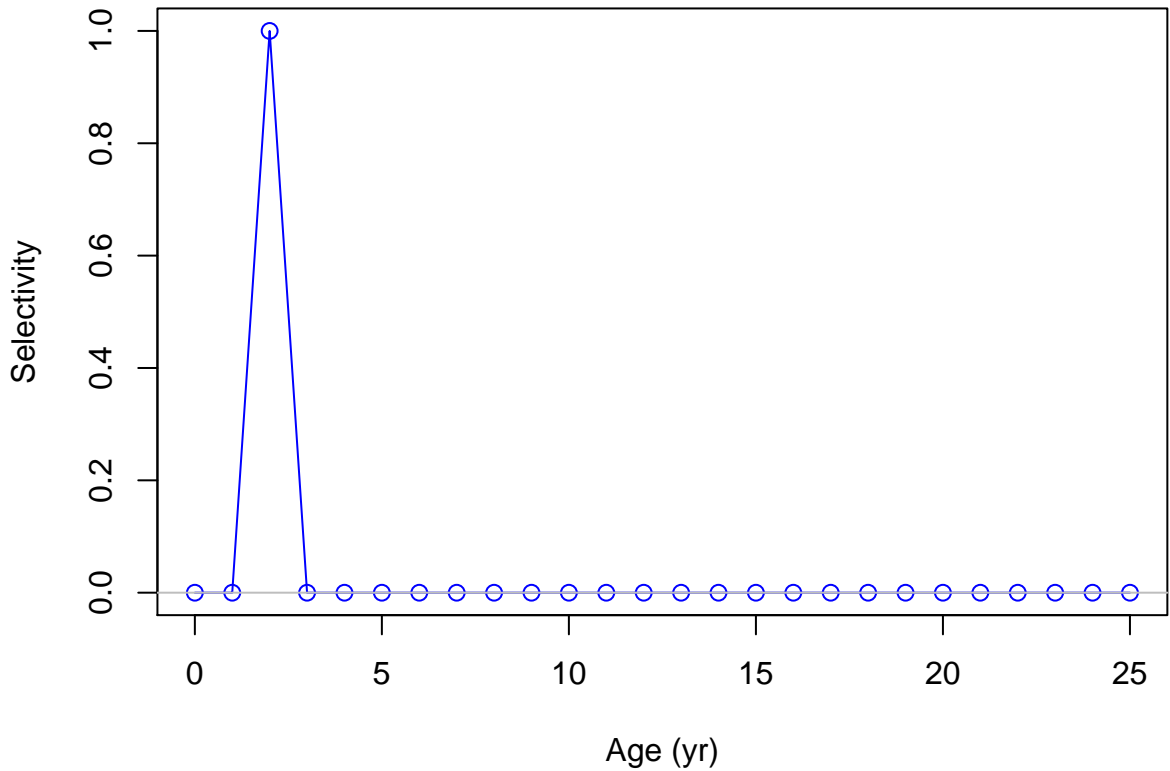
Female ending year selectivity for Age-1



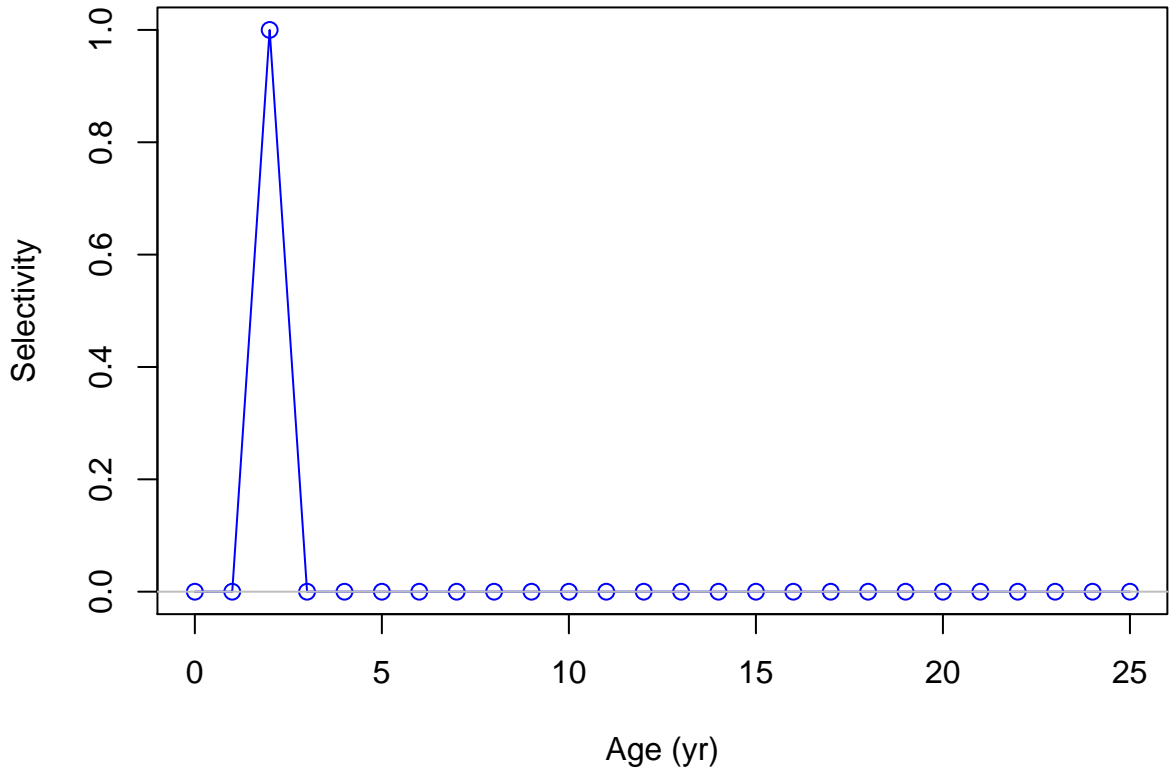
Male ending year selectivity for Age-1



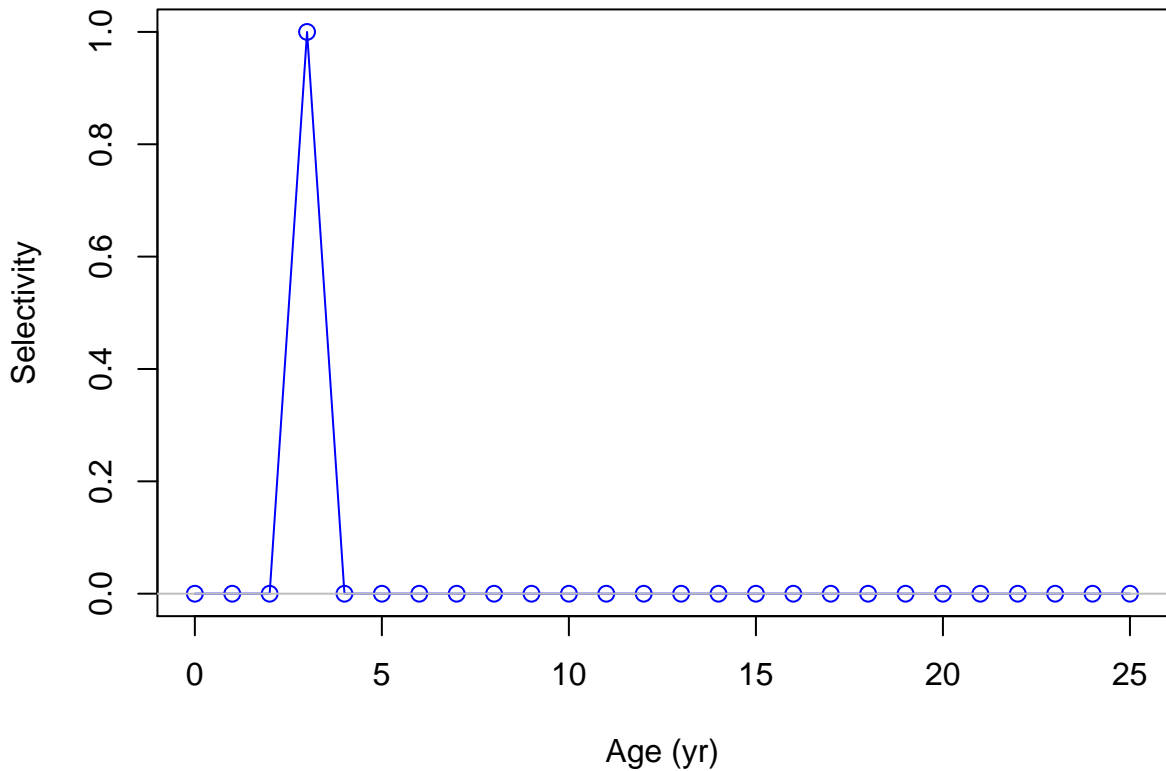
Female ending year selectivity for Age-2



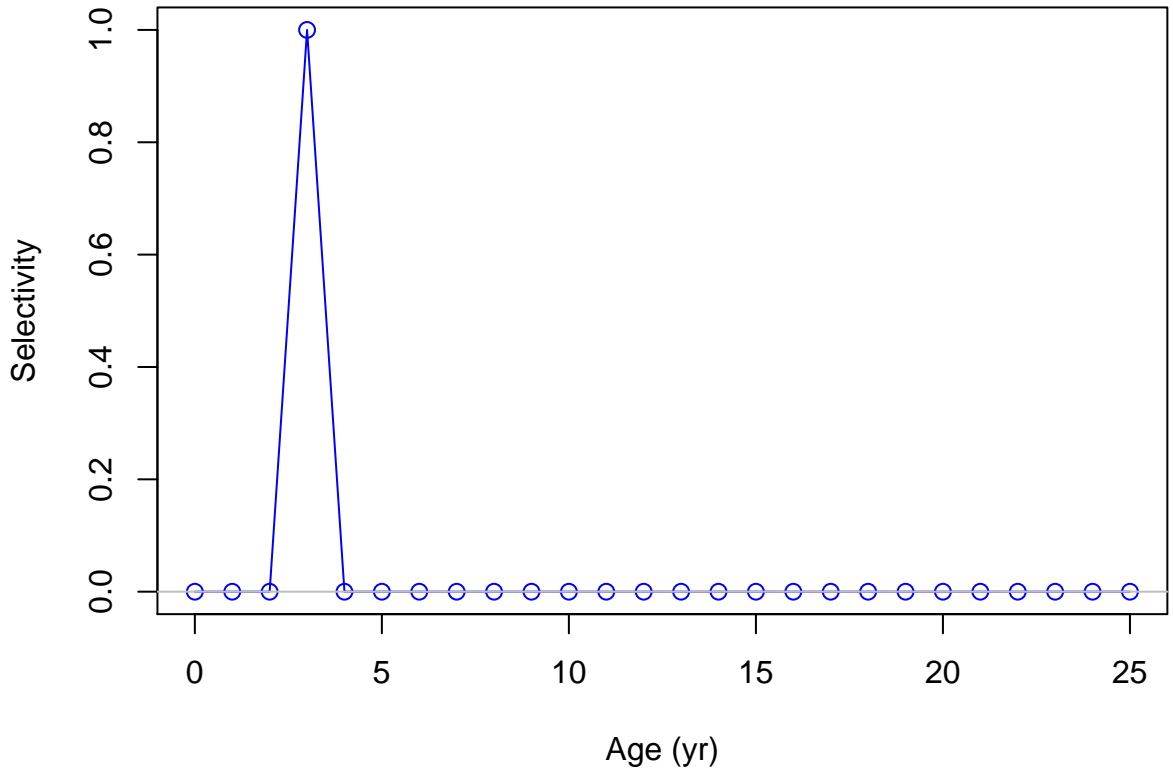
Male ending year selectivity for Age-2



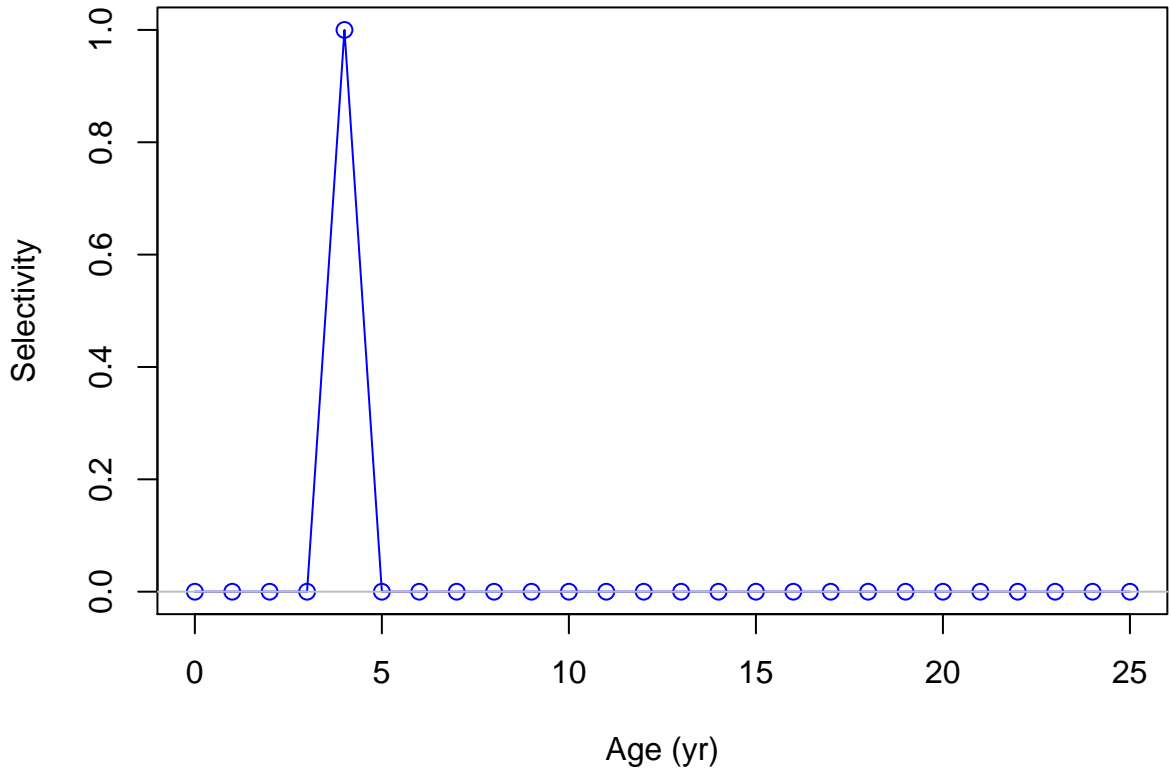
Female ending year selectivity for Age-3



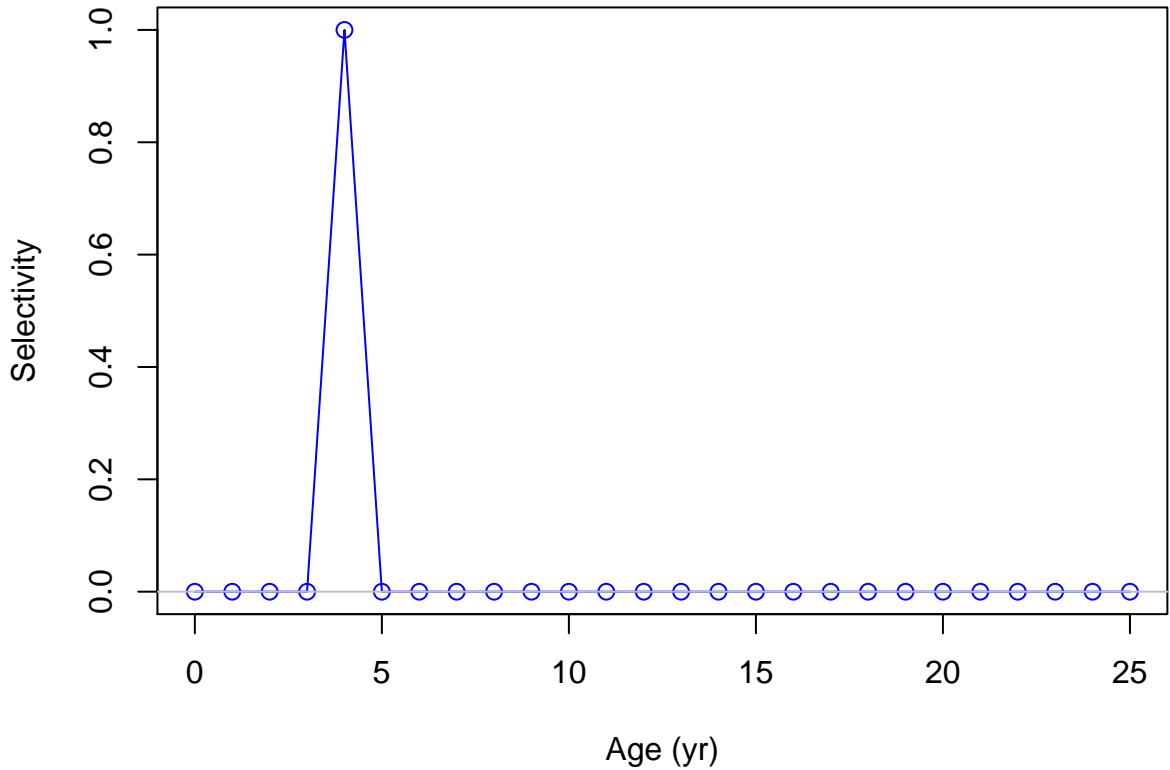
Male ending year selectivity for Age-3



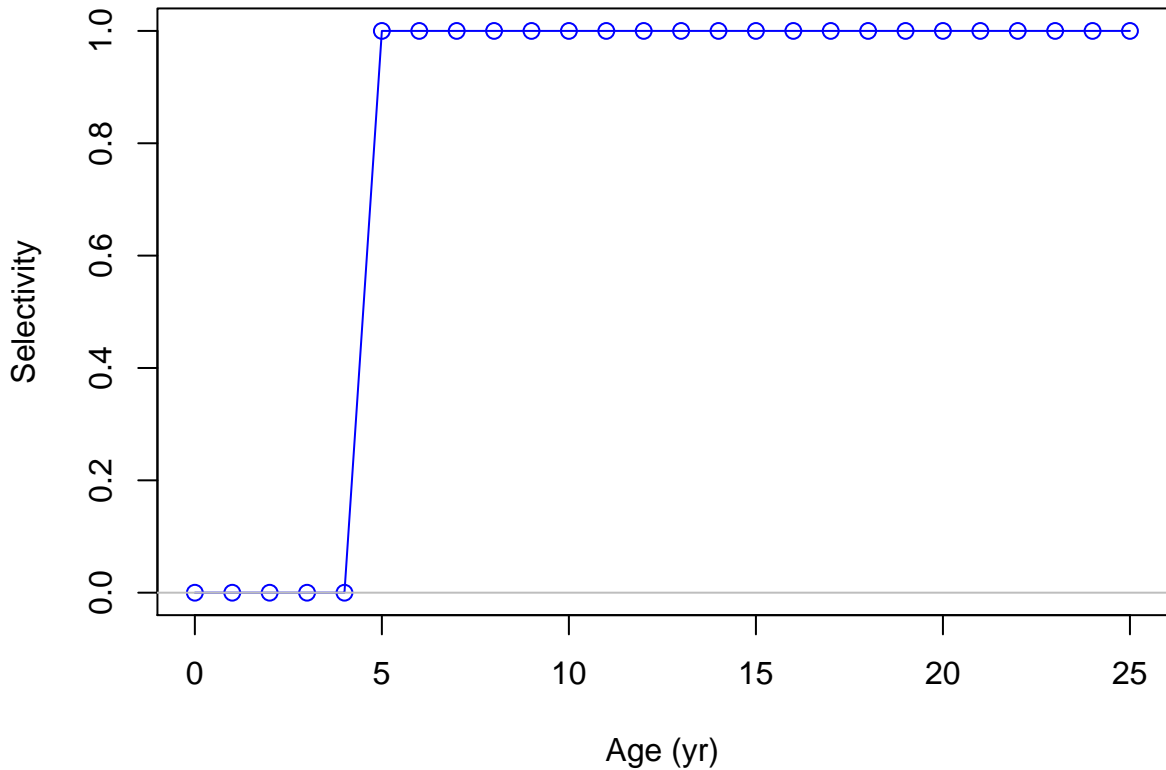
Female ending year selectivity for Age-4



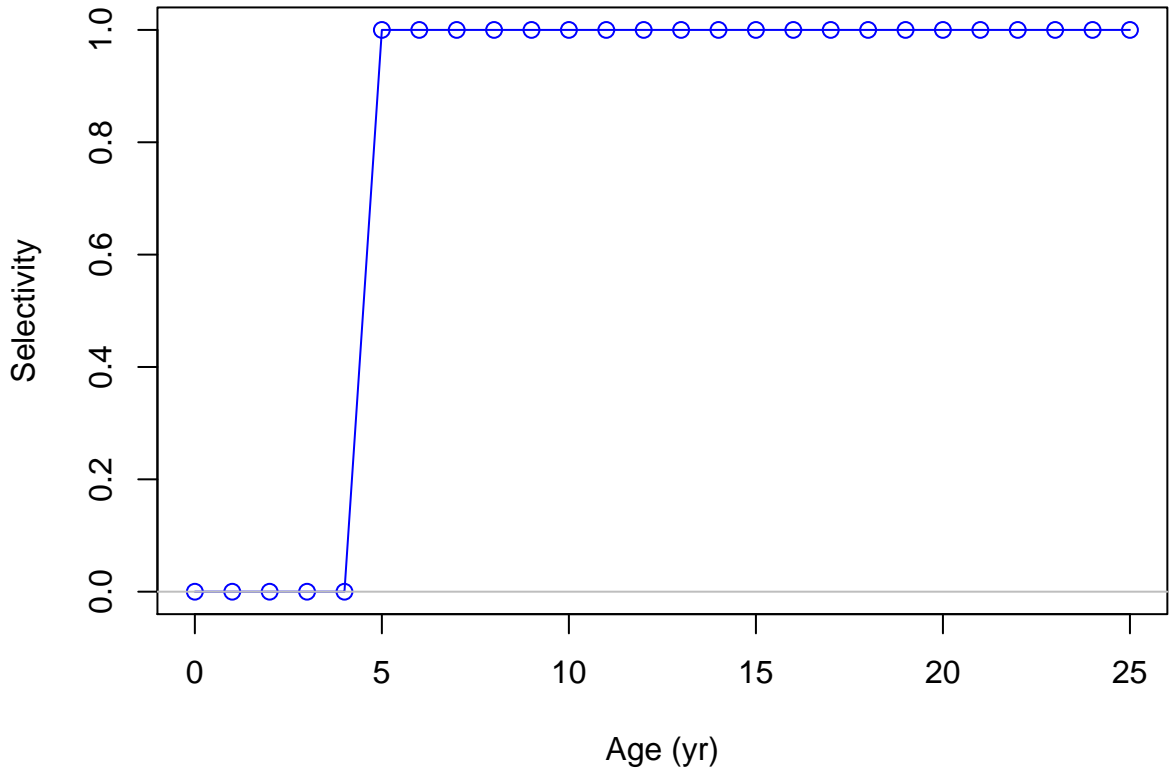
Male ending year selectivity for Age-4



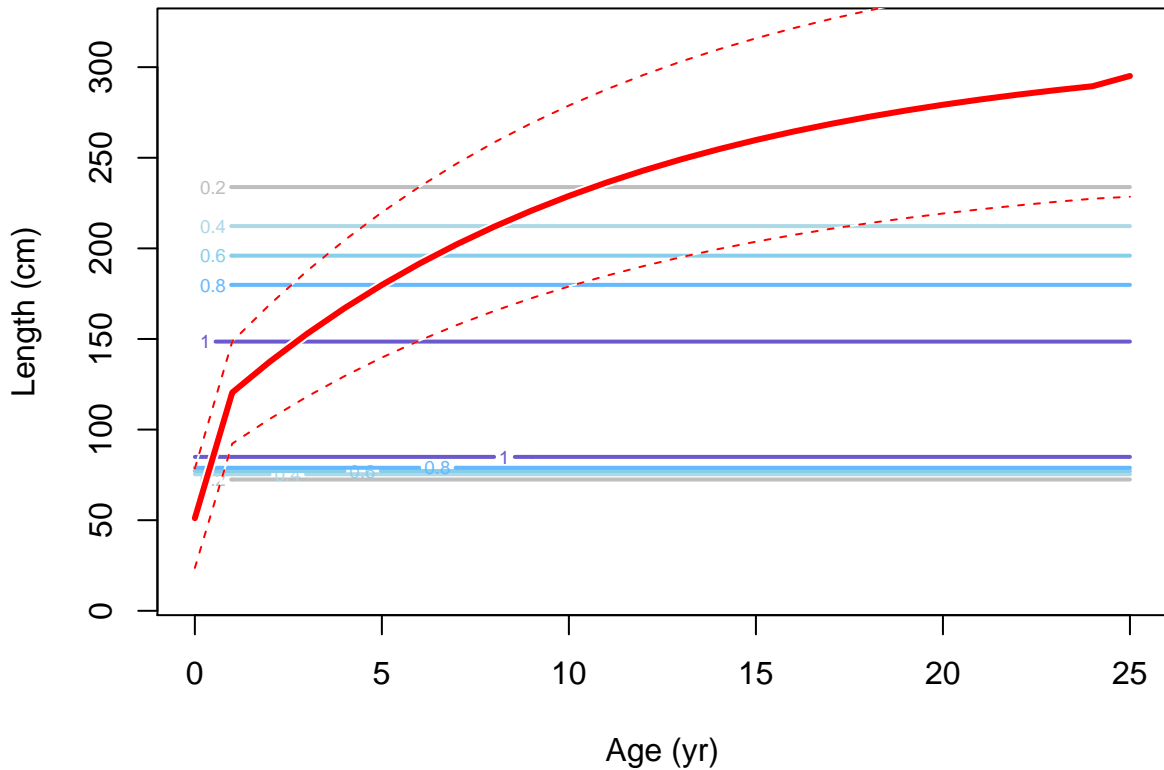
Female ending year selectivity for Age-5+



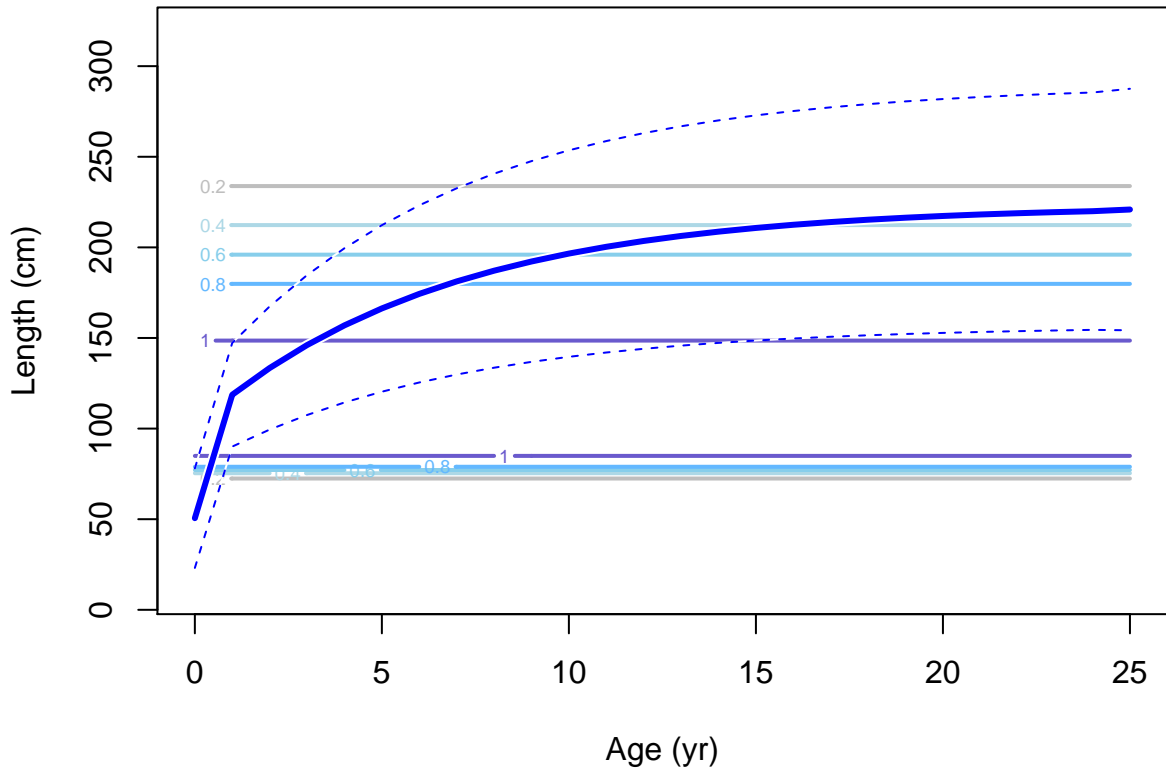
Male ending year selectivity for Age-5+



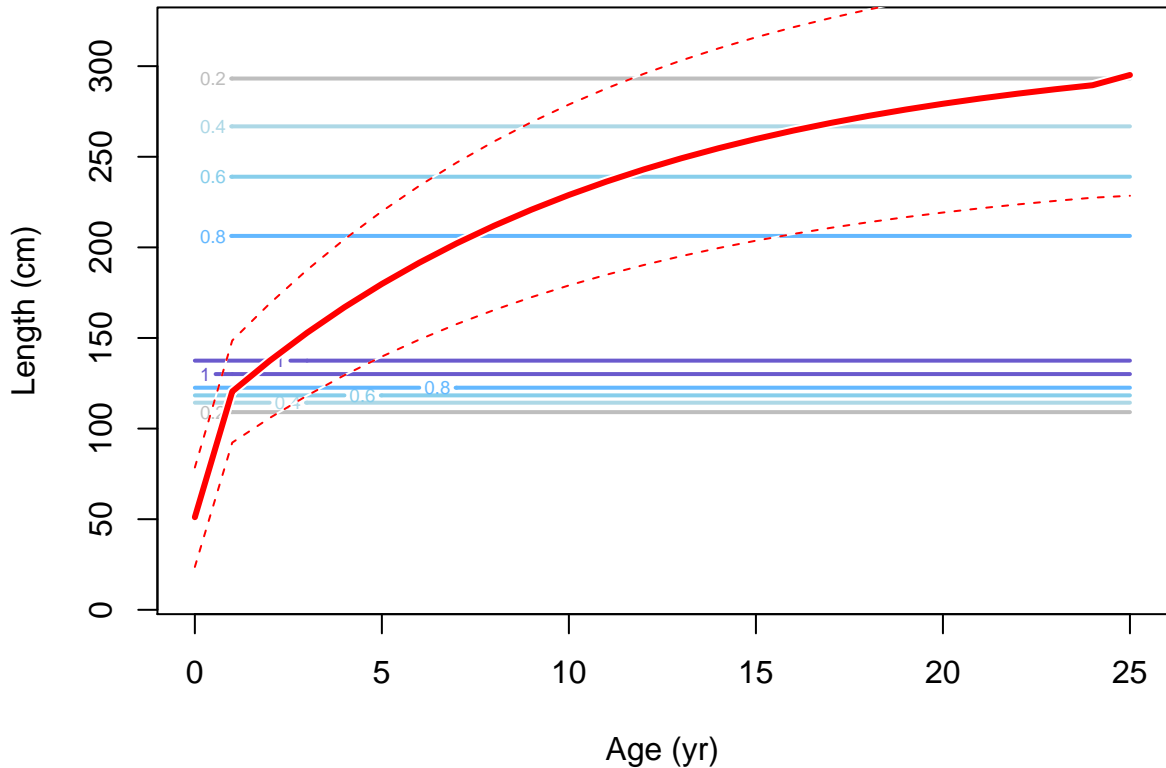
Female ending year selectivity and growth for SPN_1



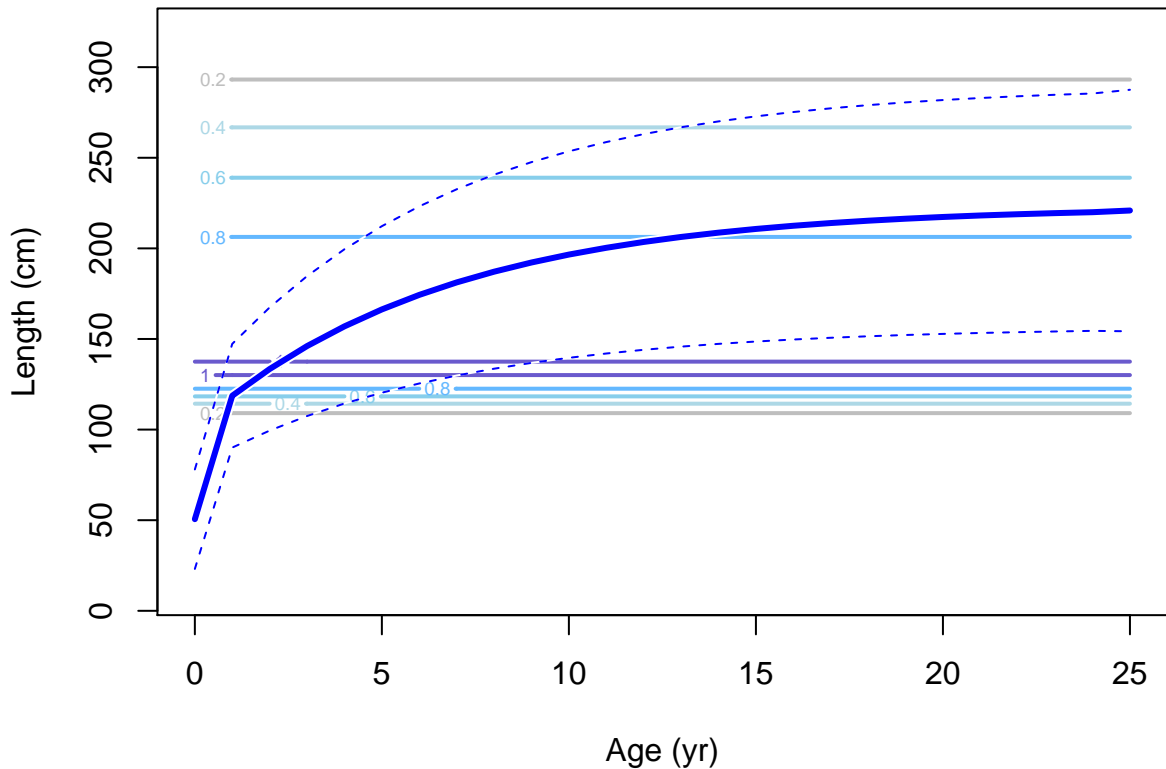
Male ending year selectivity and growth for SPN_1



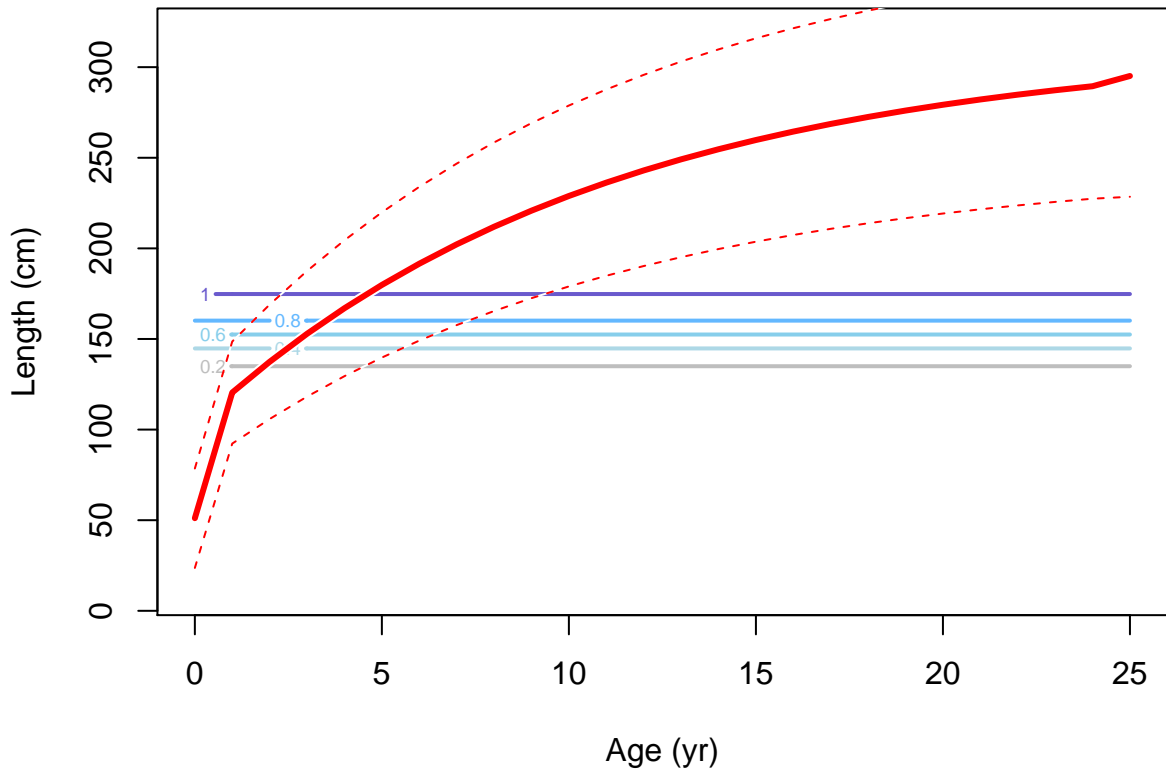
Female ending year selectivity and growth for US_2



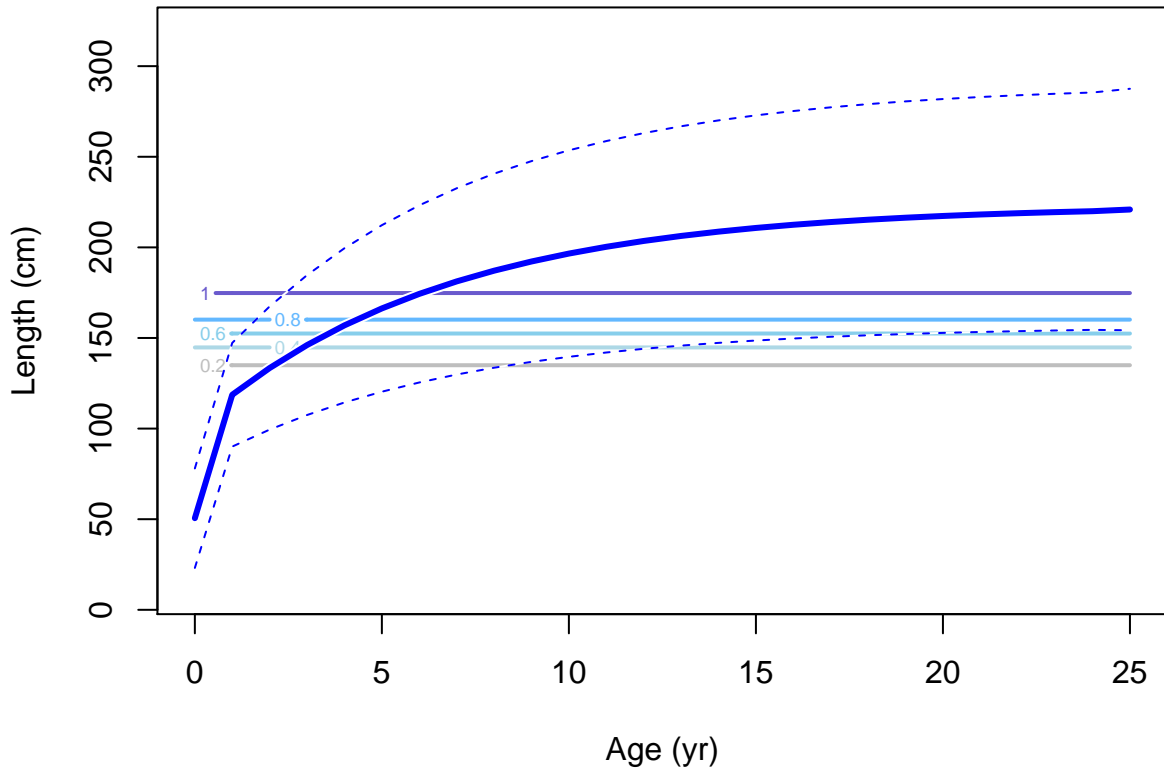
Male ending year selectivity and growth for US_2



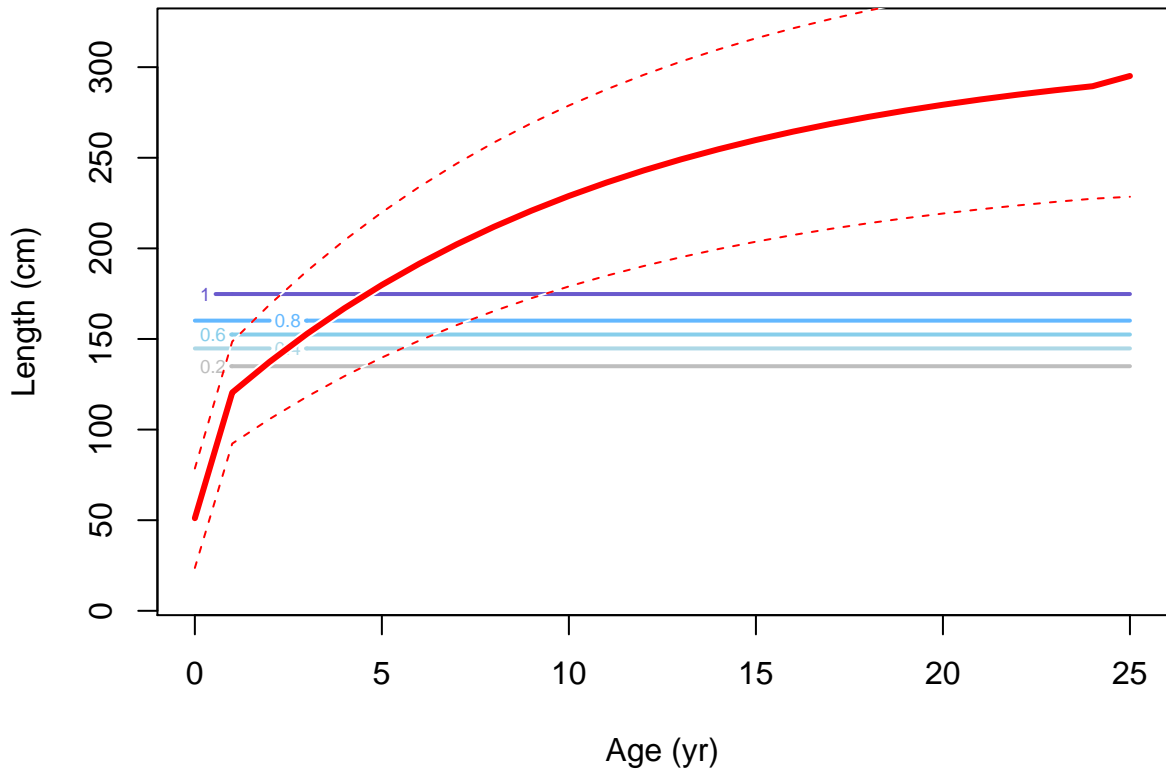
Female ending year selectivity and growth for CAN_ERLY_5



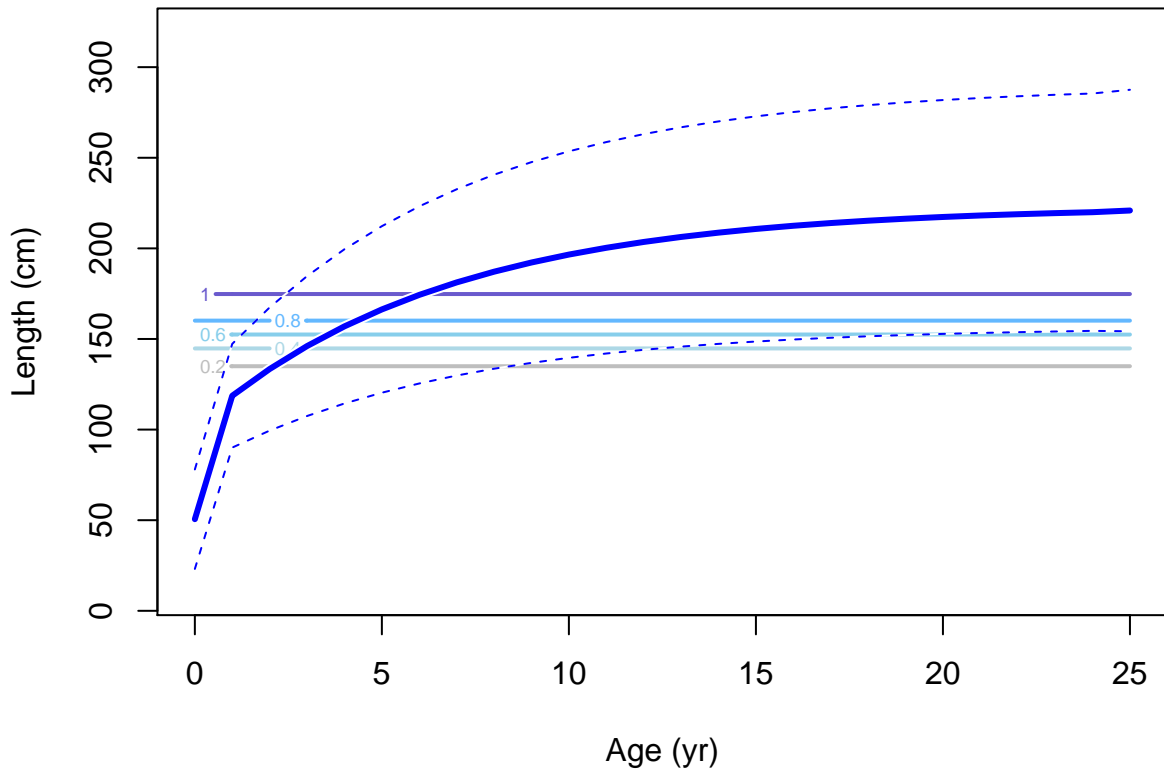
Male ending year selectivity and growth for CAN_ERLY_5



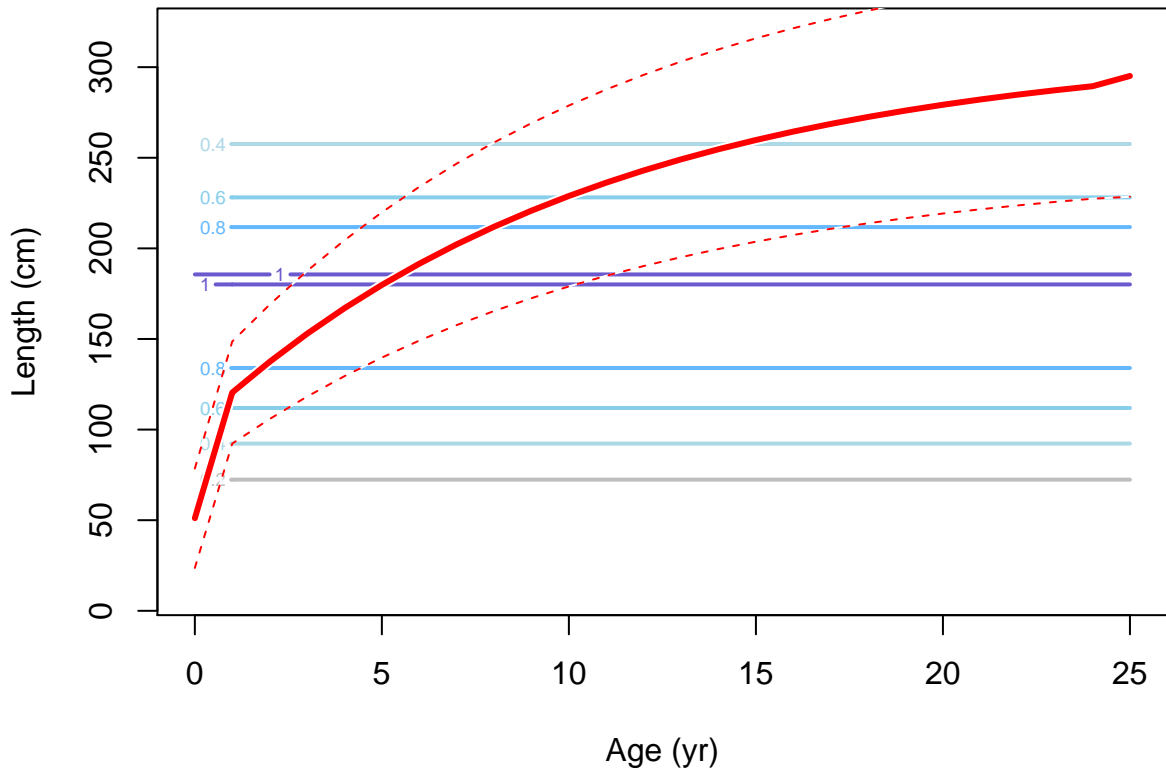
Female ending year selectivity and growth for CAN_LATE_4



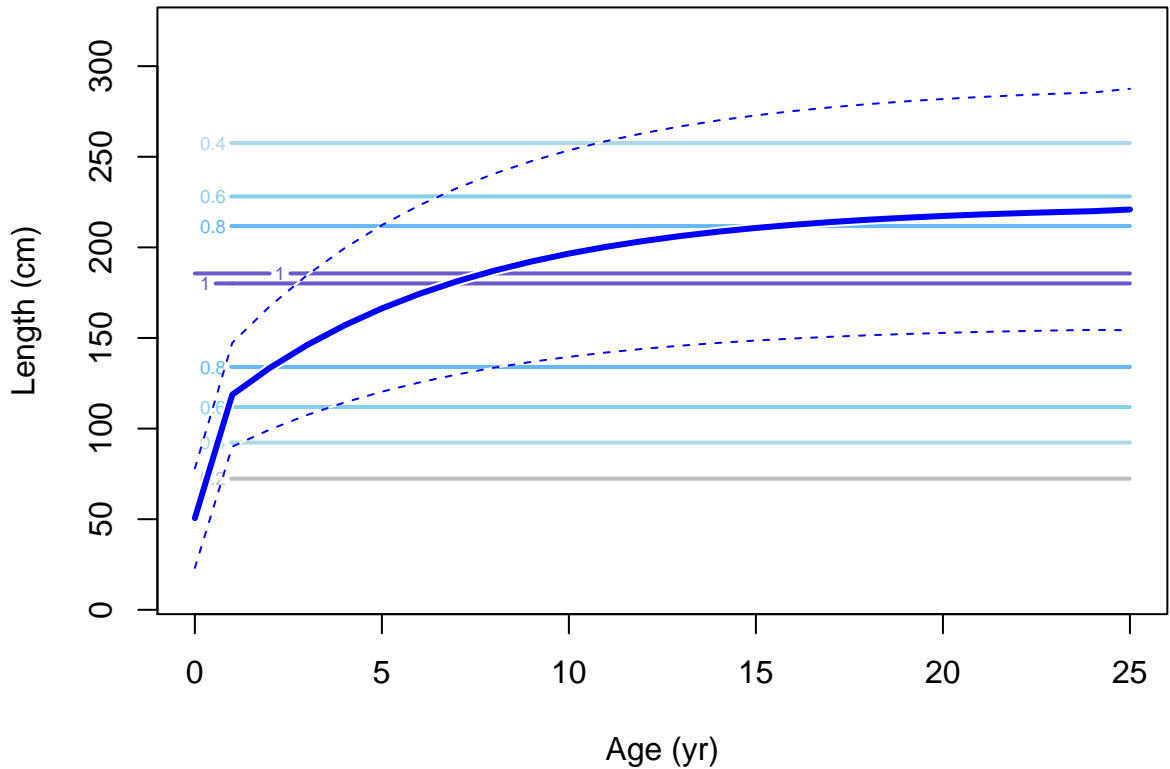
Male ending year selectivity and growth for CAN_LATE_4



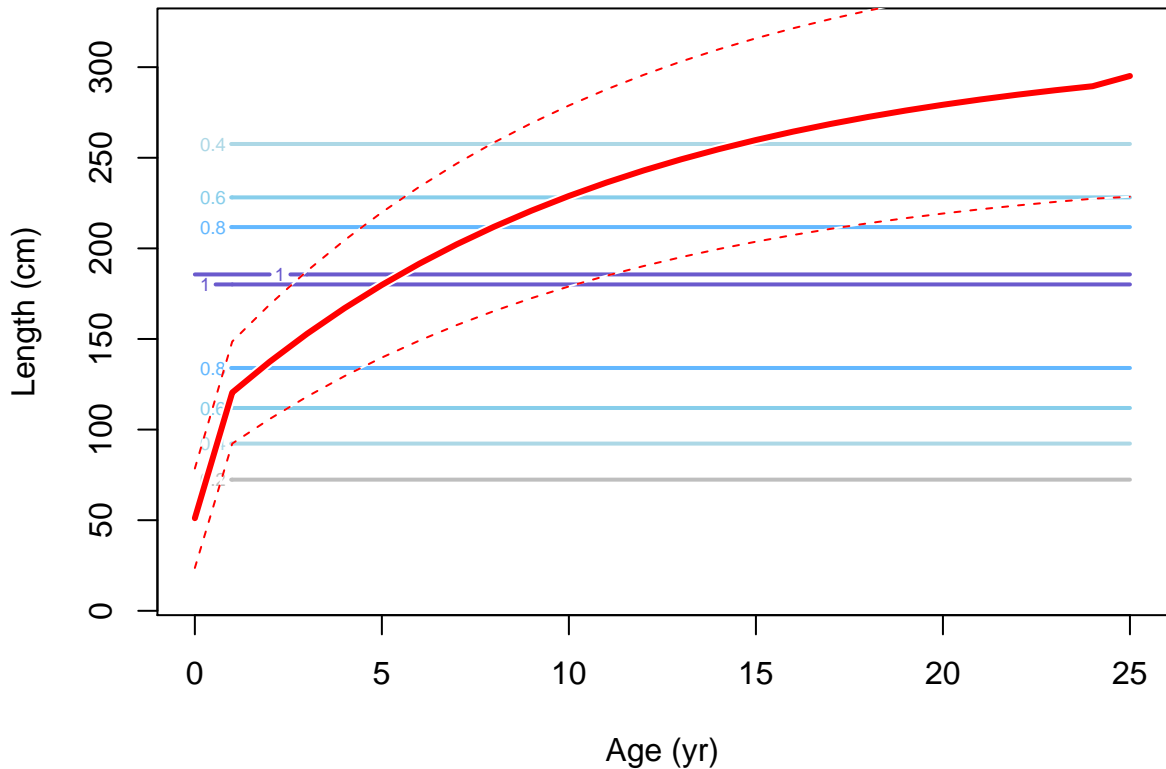
Female ending year selectivity and growth for JPN_ERLY_5



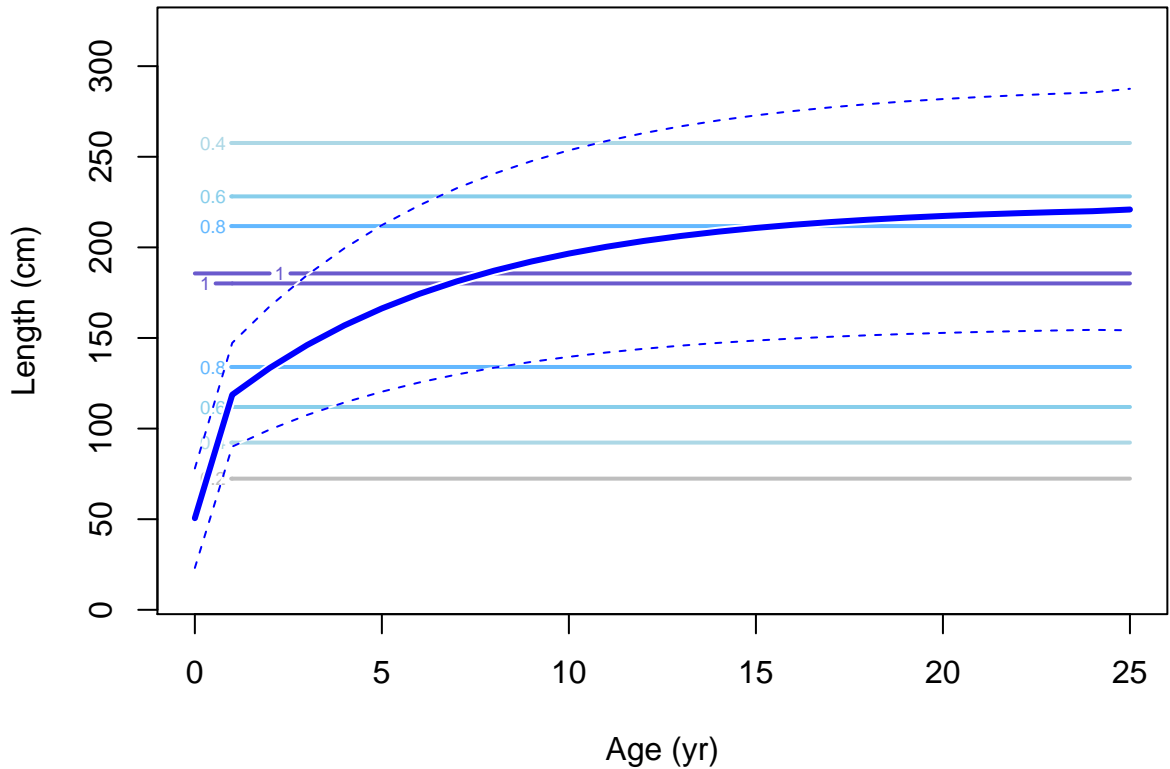
Male ending year selectivity and growth for JPN_ERLY_5



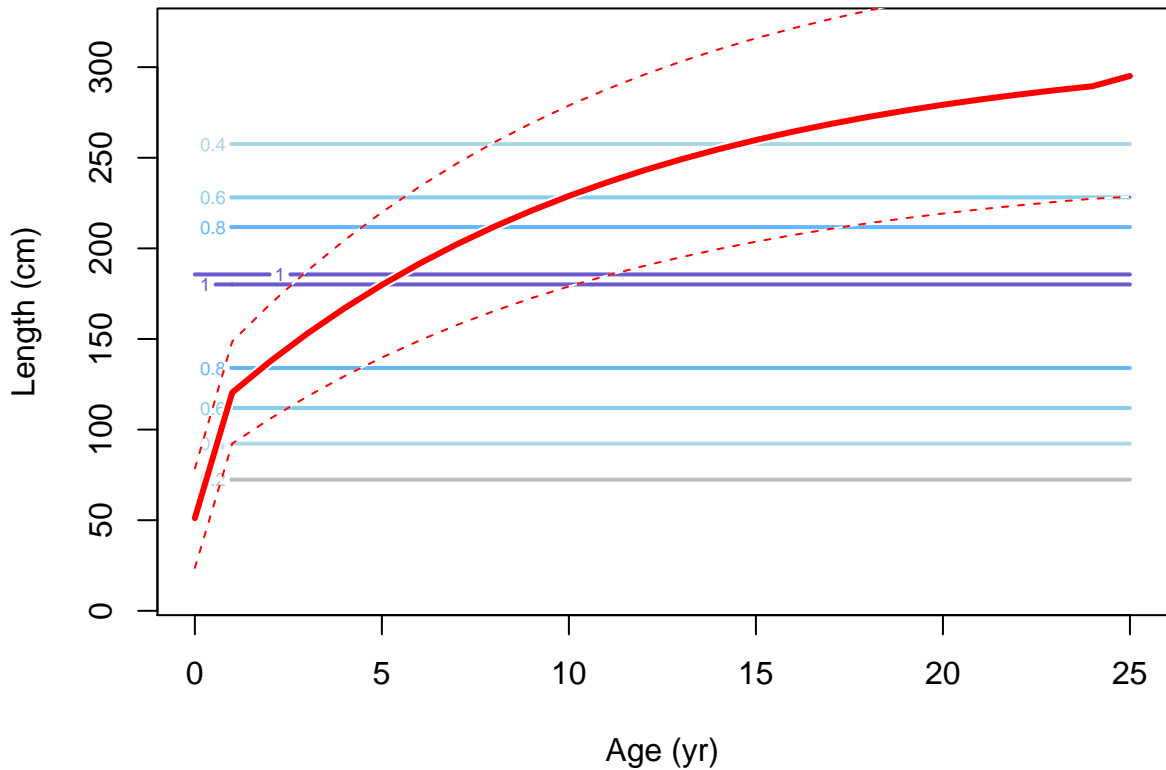
Female ending year selectivity and growth for JPN_MID_6



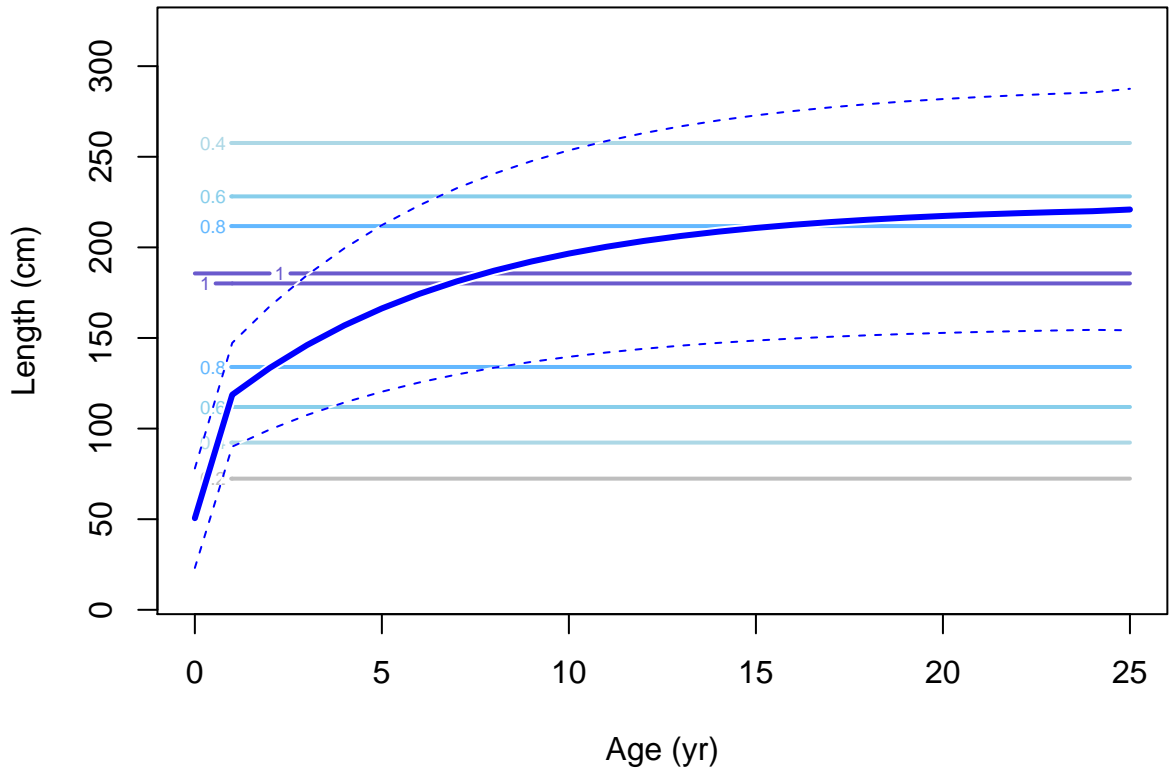
Male ending year selectivity and growth for JPN_MID_6



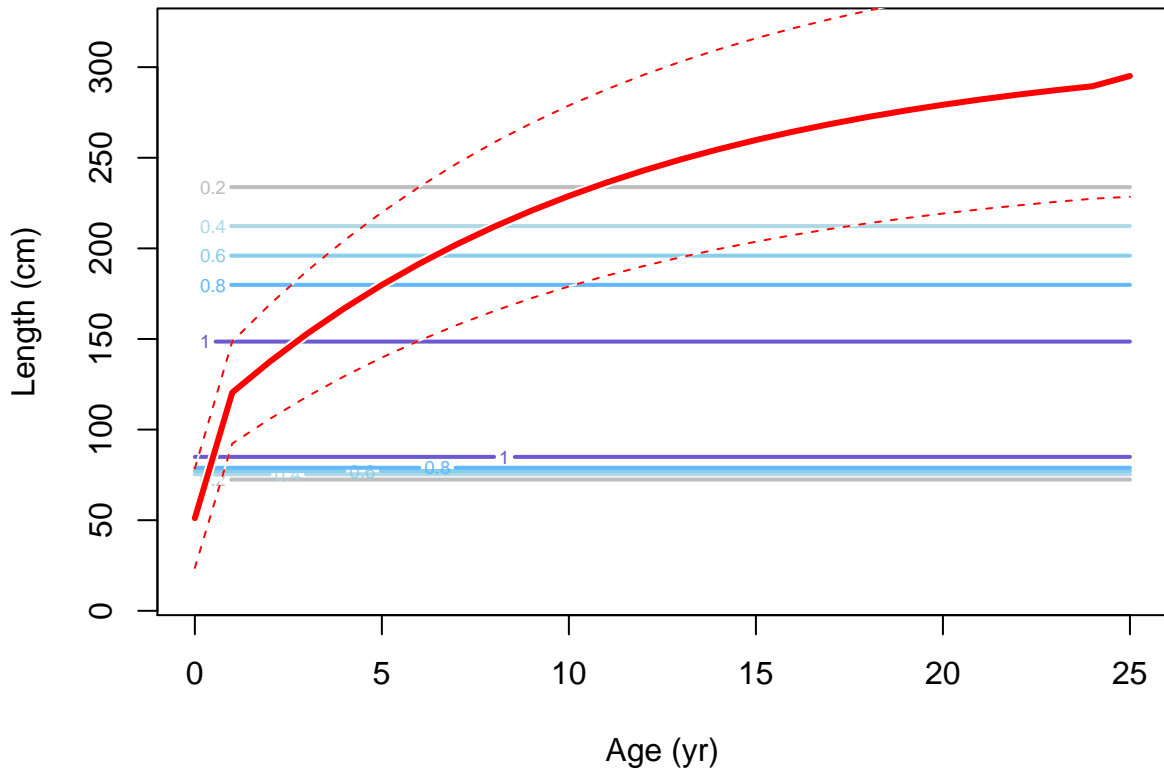
Female ending year selectivity and growth for JPN_LATE_7



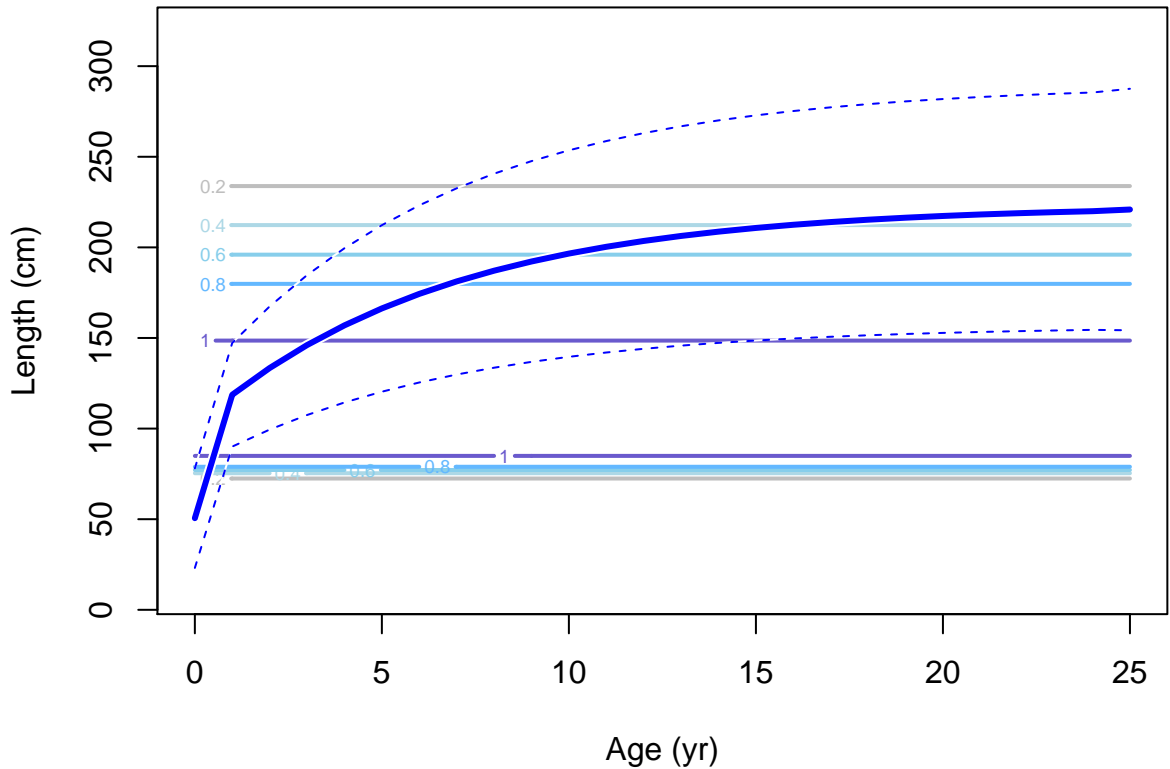
Male ending year selectivity and growth for JPN_LATE_7



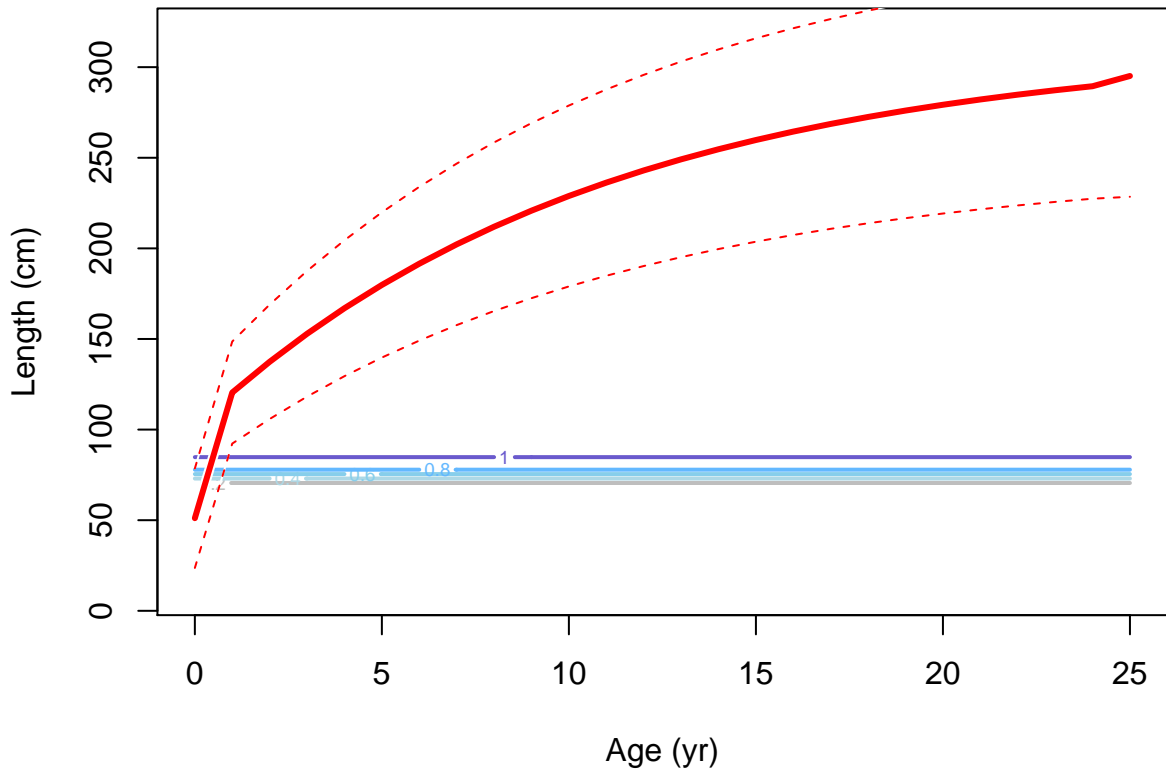
Female ending year selectivity and growth for PORT_8



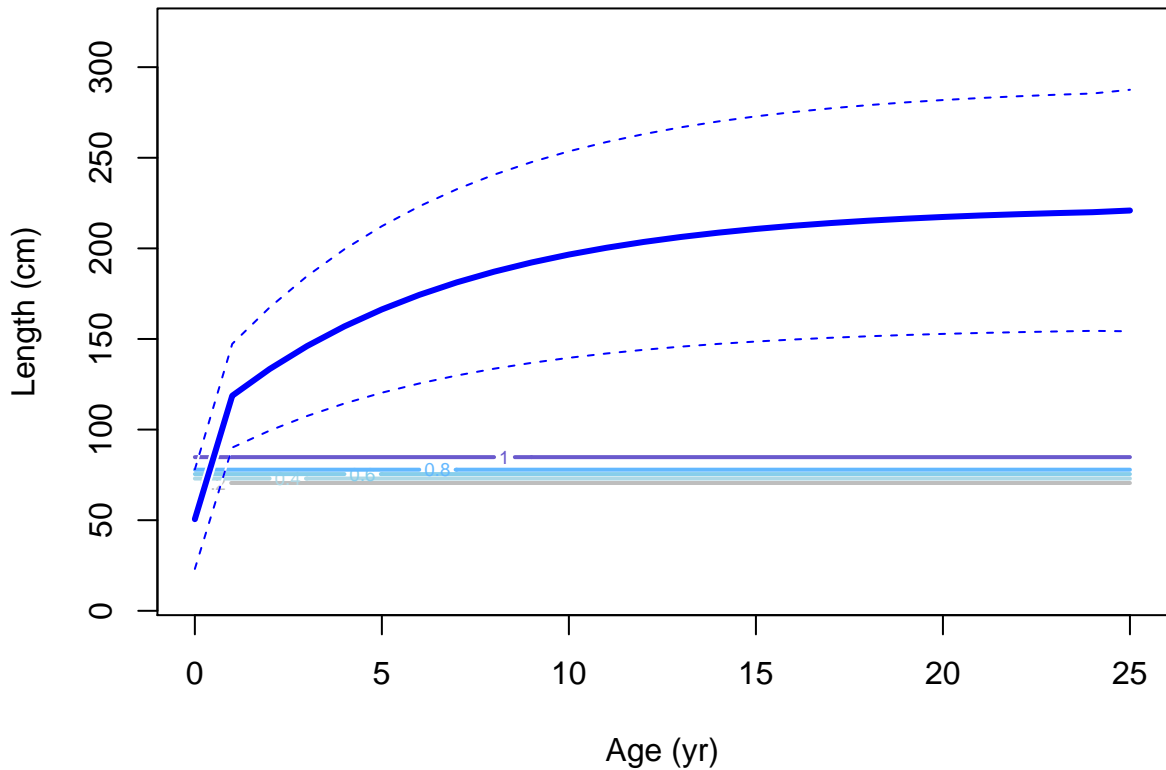
Male ending year selectivity and growth for PORT_8



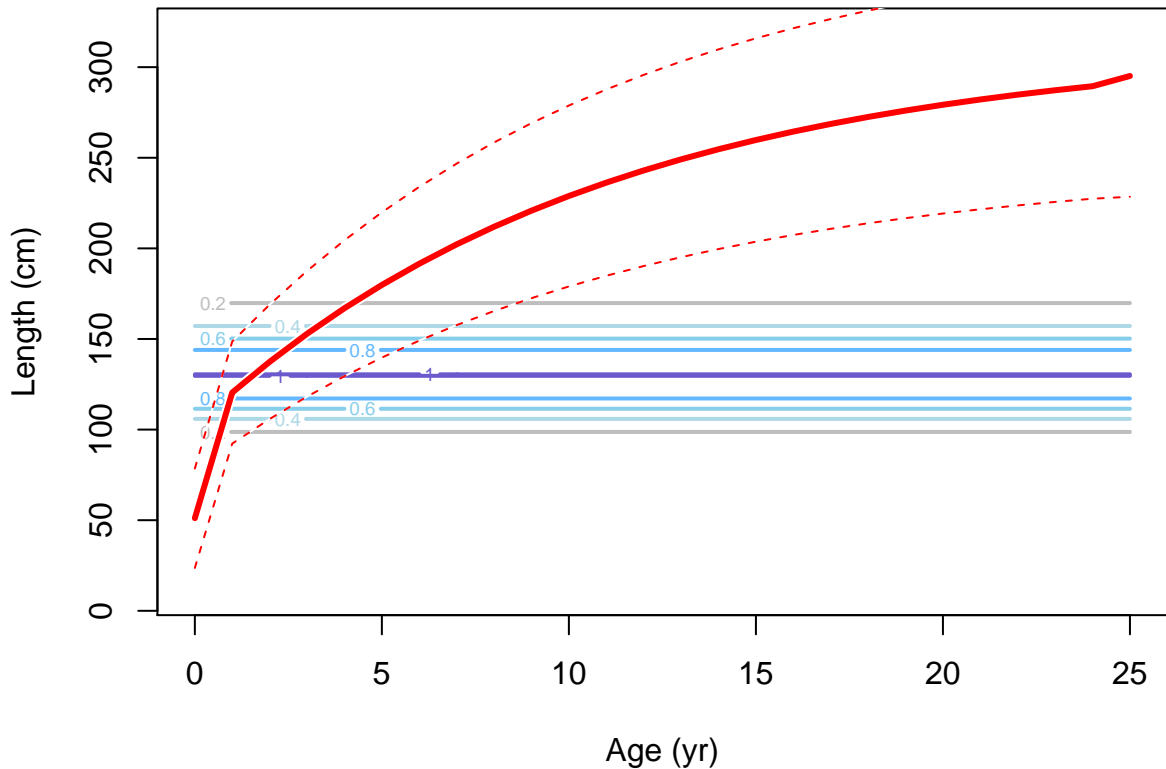
Female ending year selectivity and growth for CHIN-TAI_9



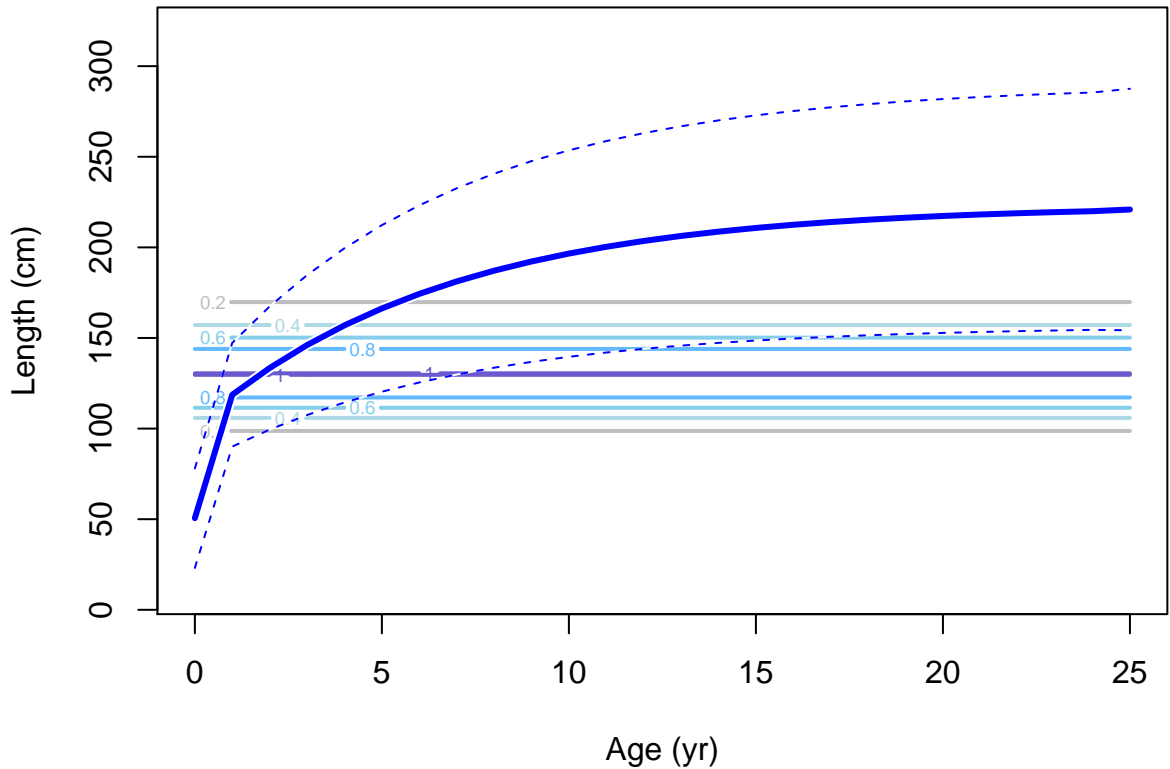
Male ending year selectivity and growth for CHIN-TAI_9



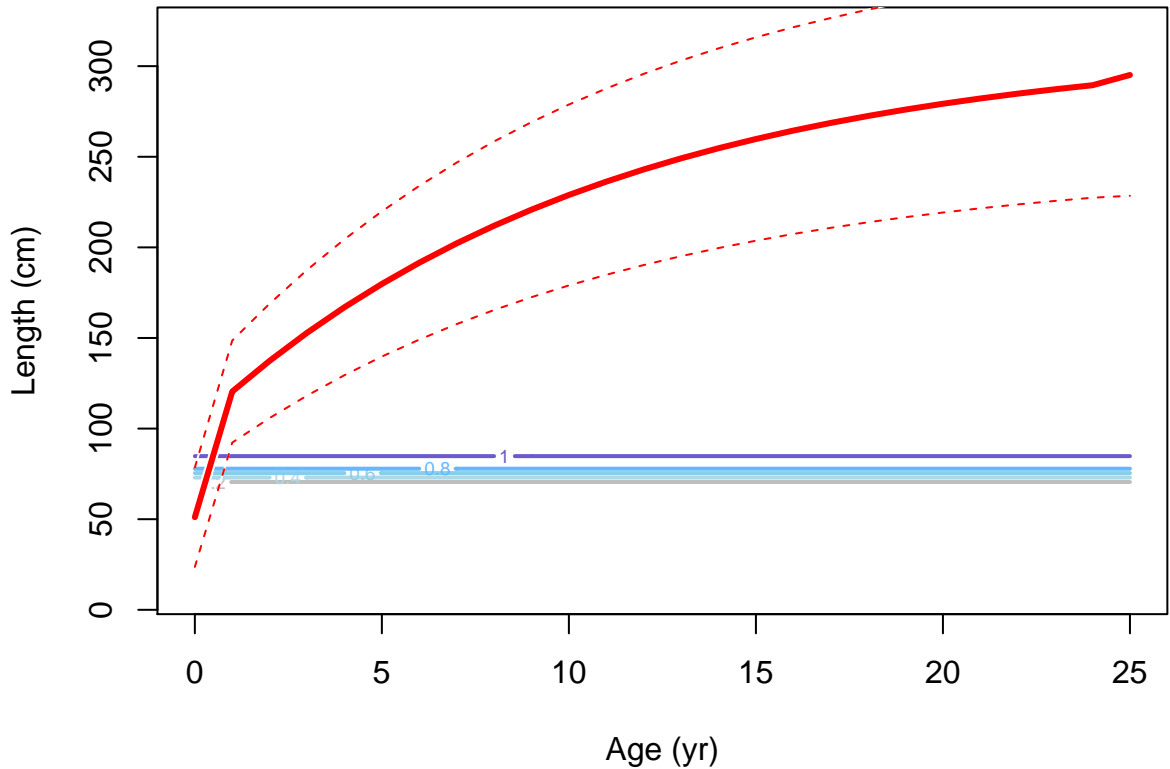
Female ending year selectivity and growth for MOR_10



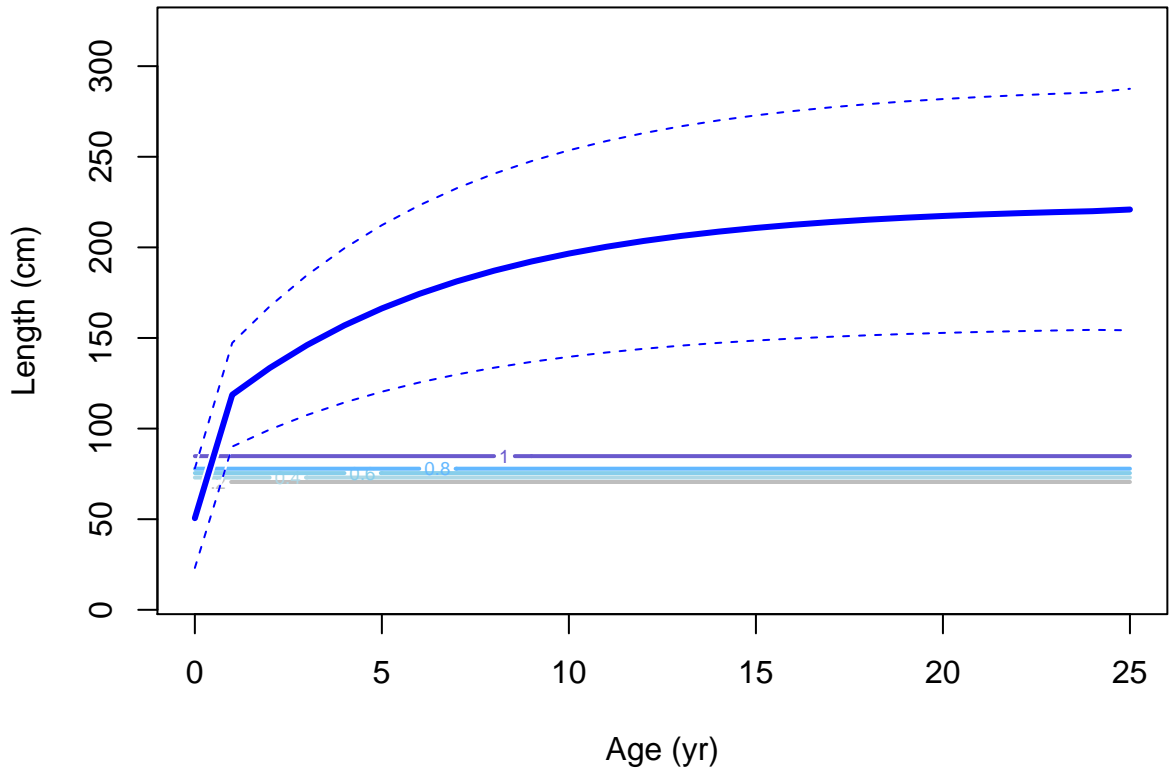
Male ending year selectivity and growth for MOR_10



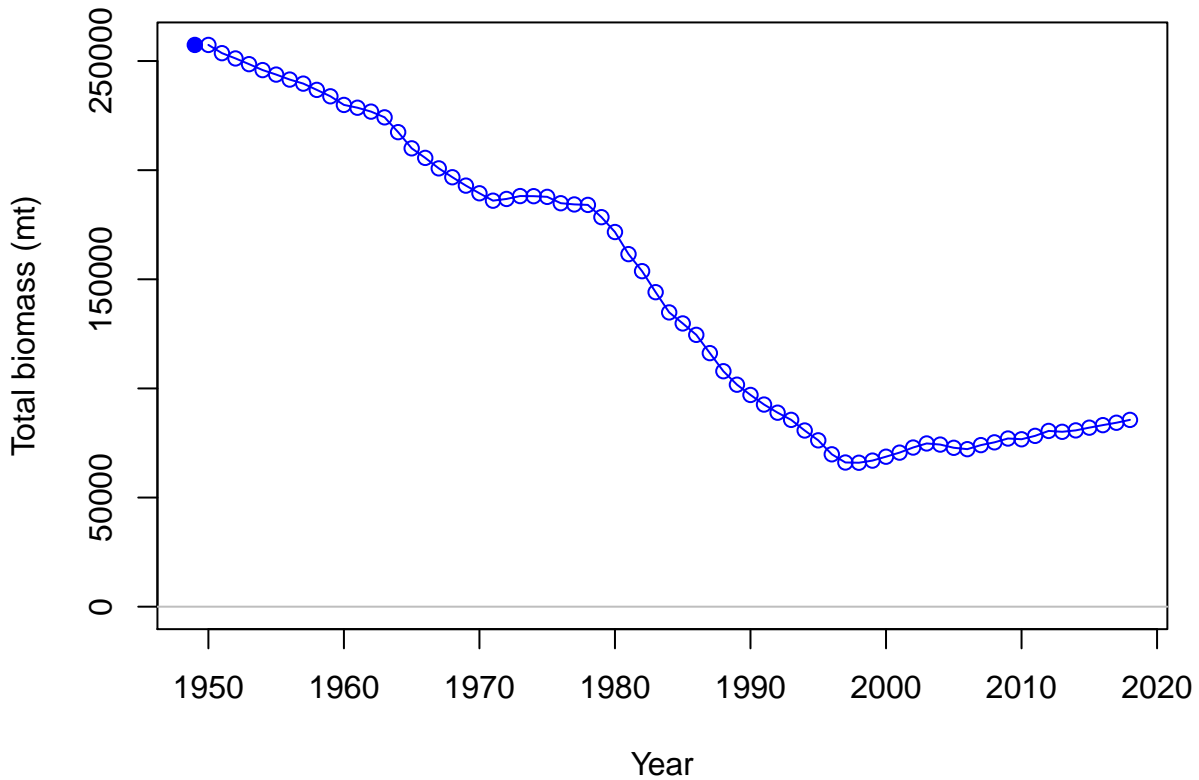
Female ending year selectivity and growth for OTH_11



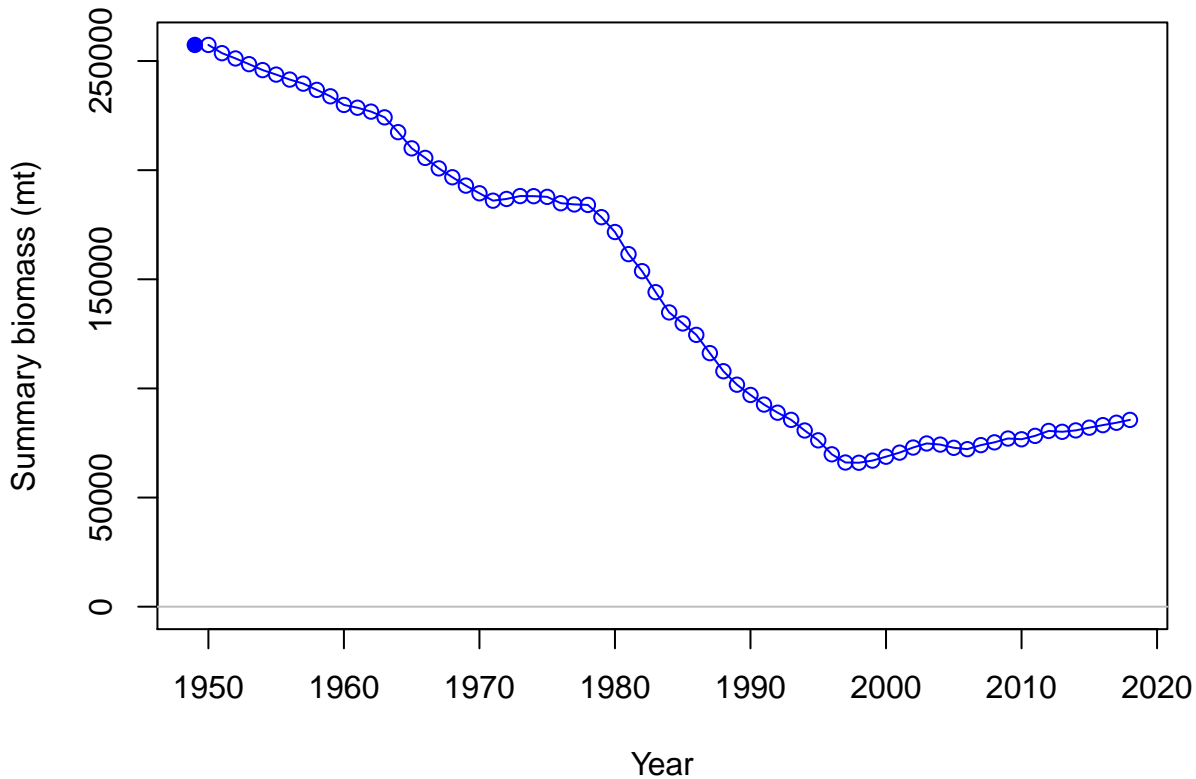
Male ending year selectivity and growth for OTH_11



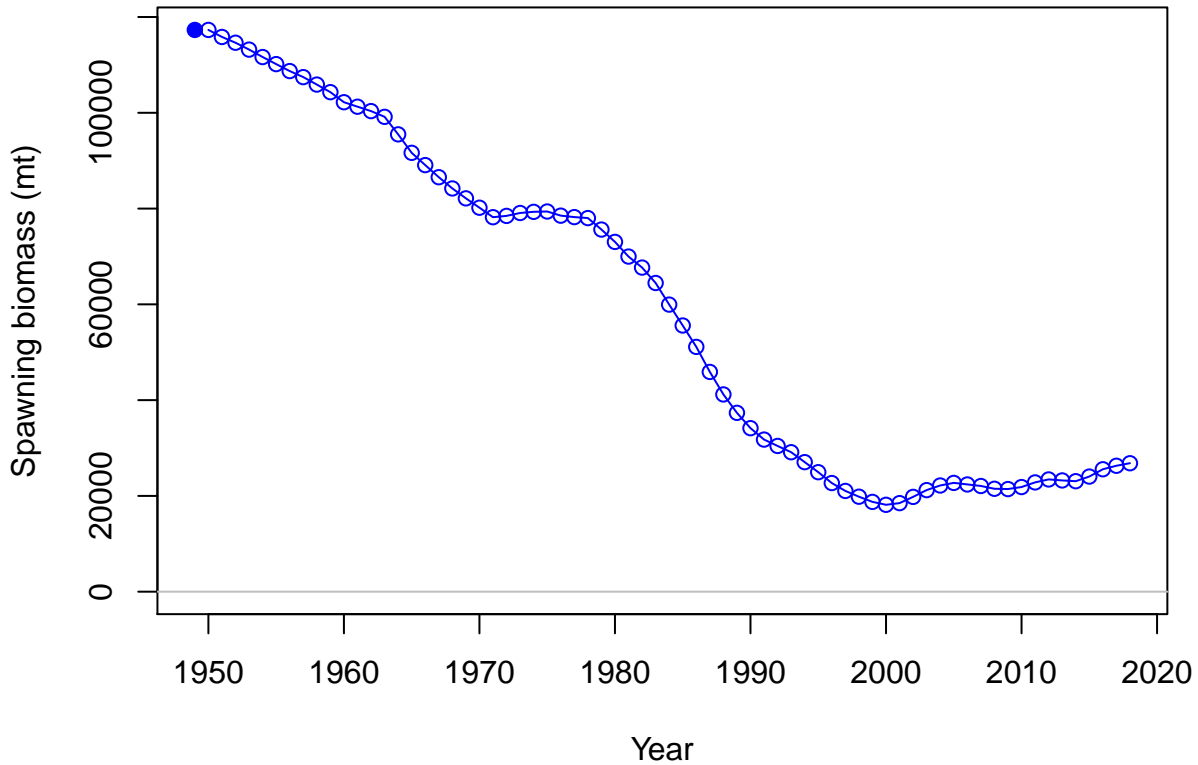
Total biomass (mt)



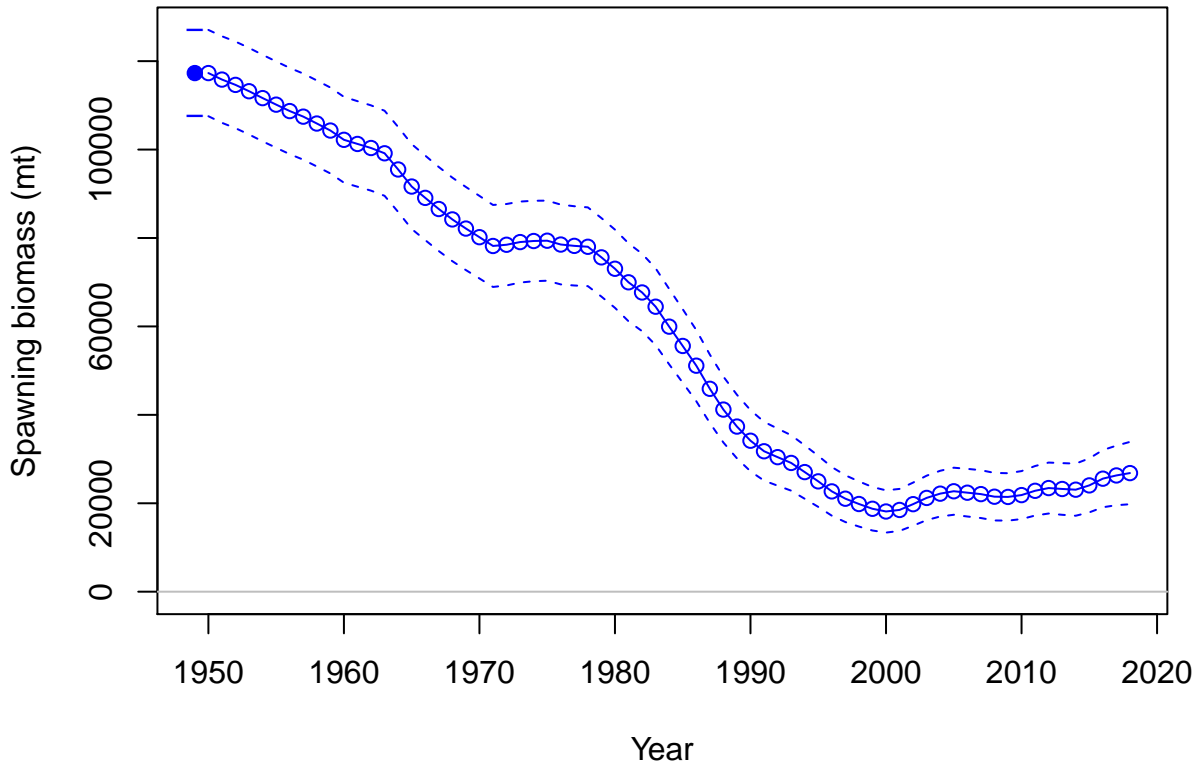
Summary biomass (mt)



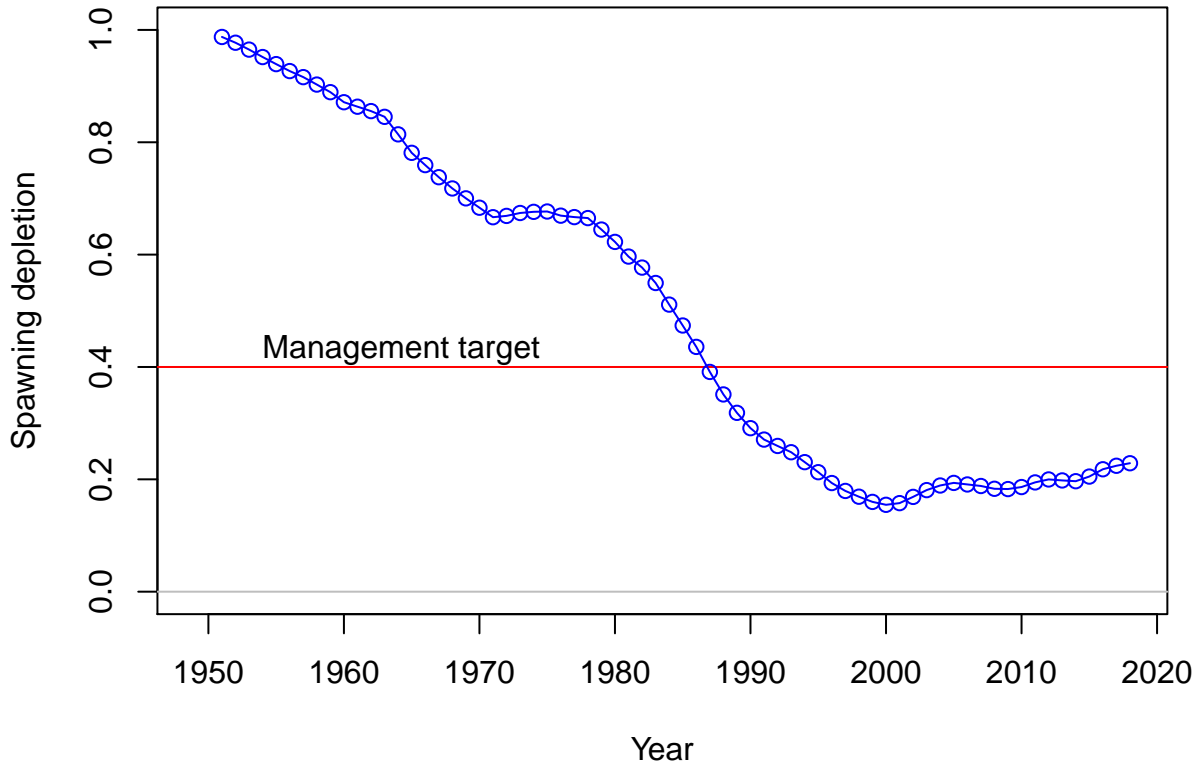
Spawning biomass (mt)



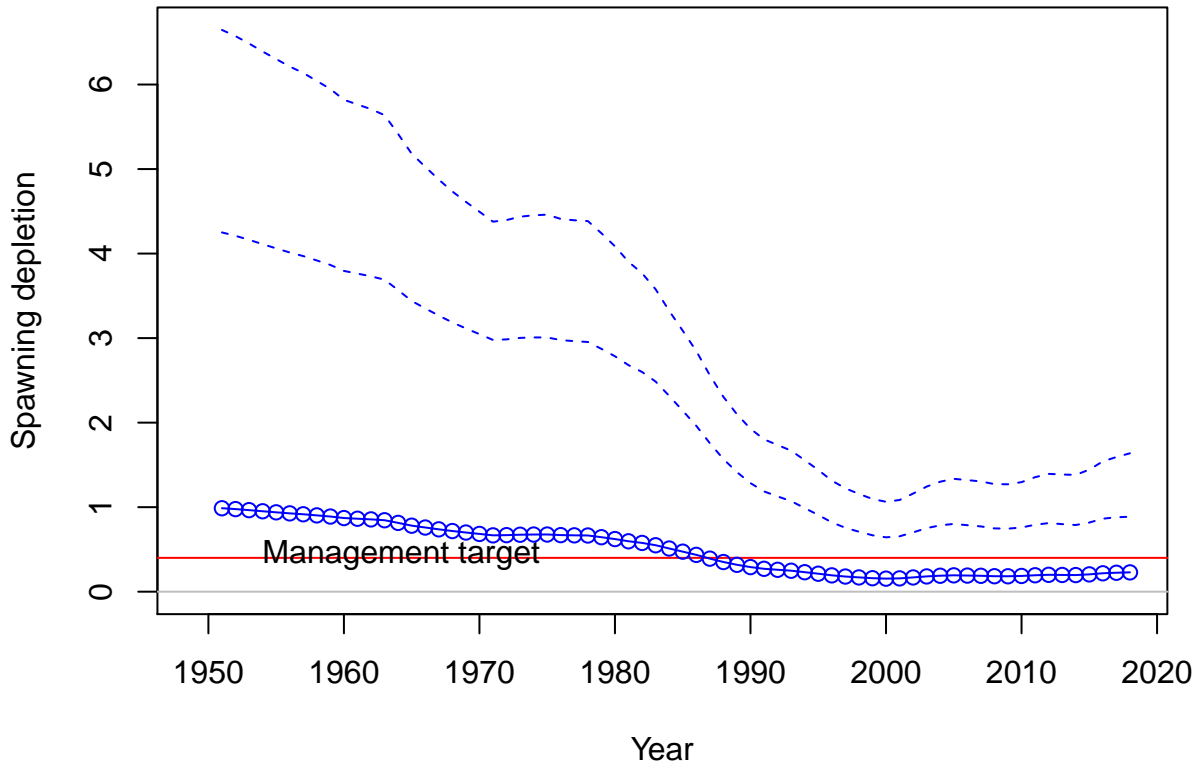
Spawning biomass (mt) with ~95% asymptotic intervals



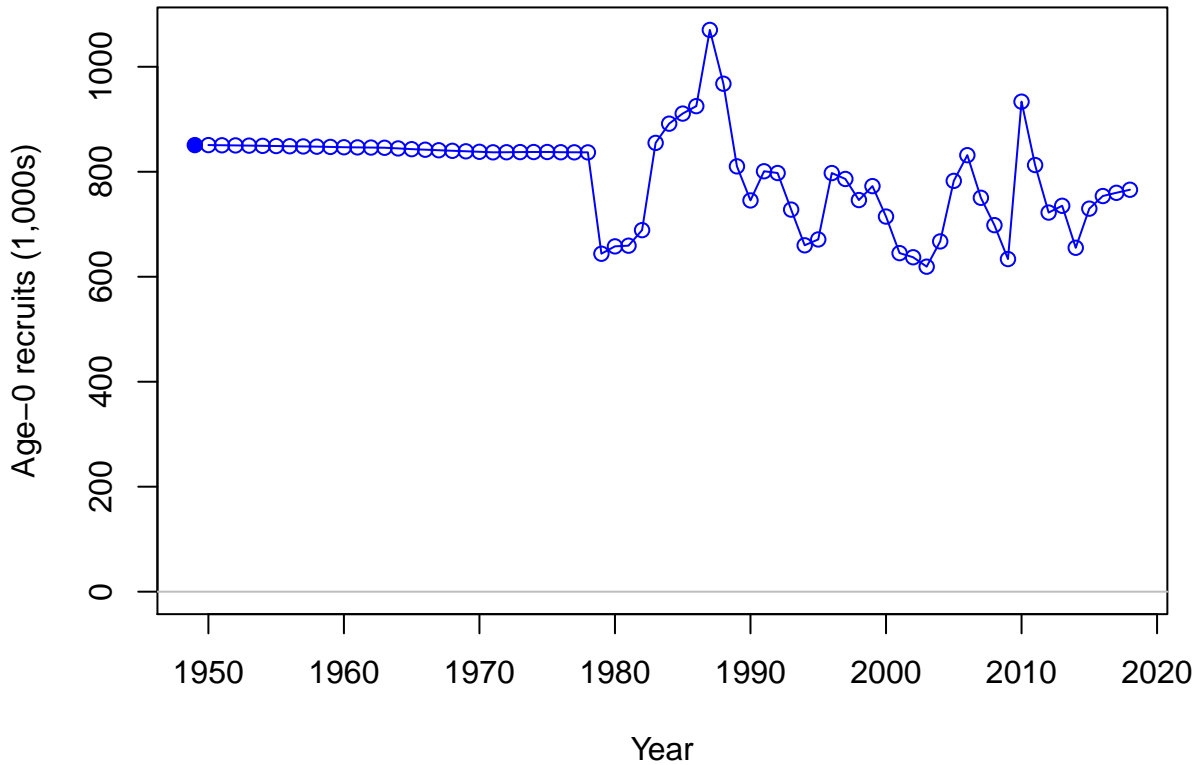
Spawning depletion



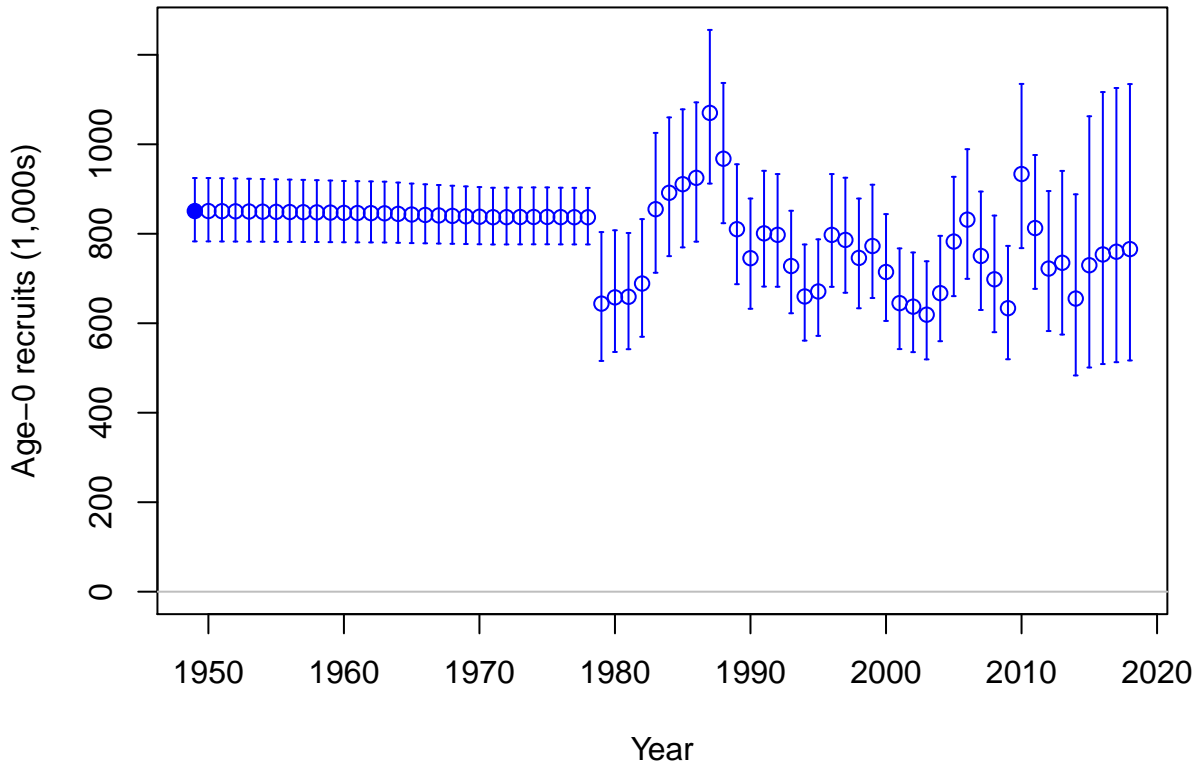
Spawning depletion with ~95% asymptotic intervals



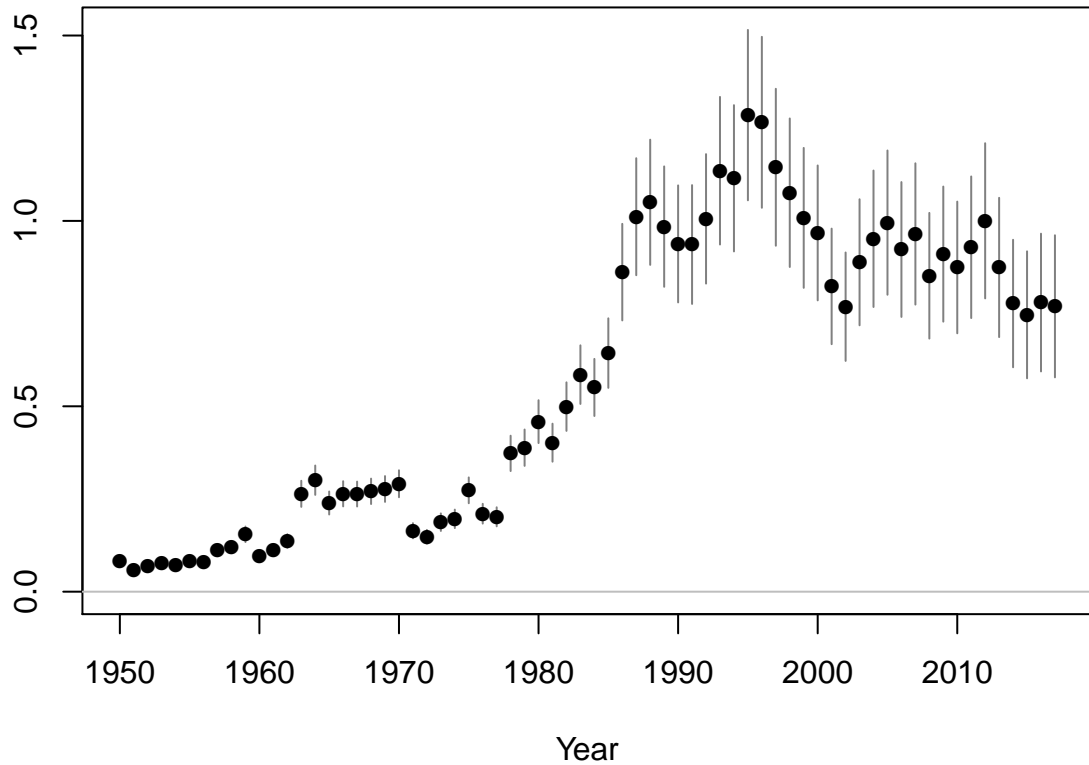
Age-0 recruits (1,000s)

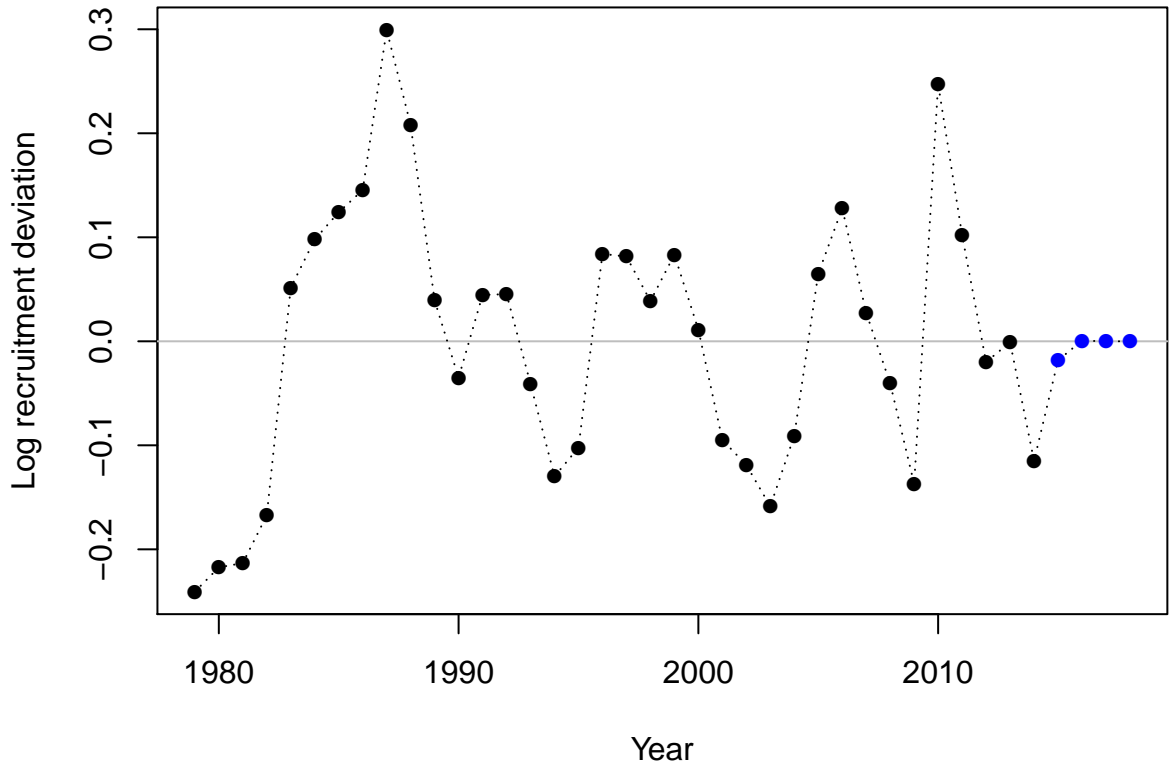


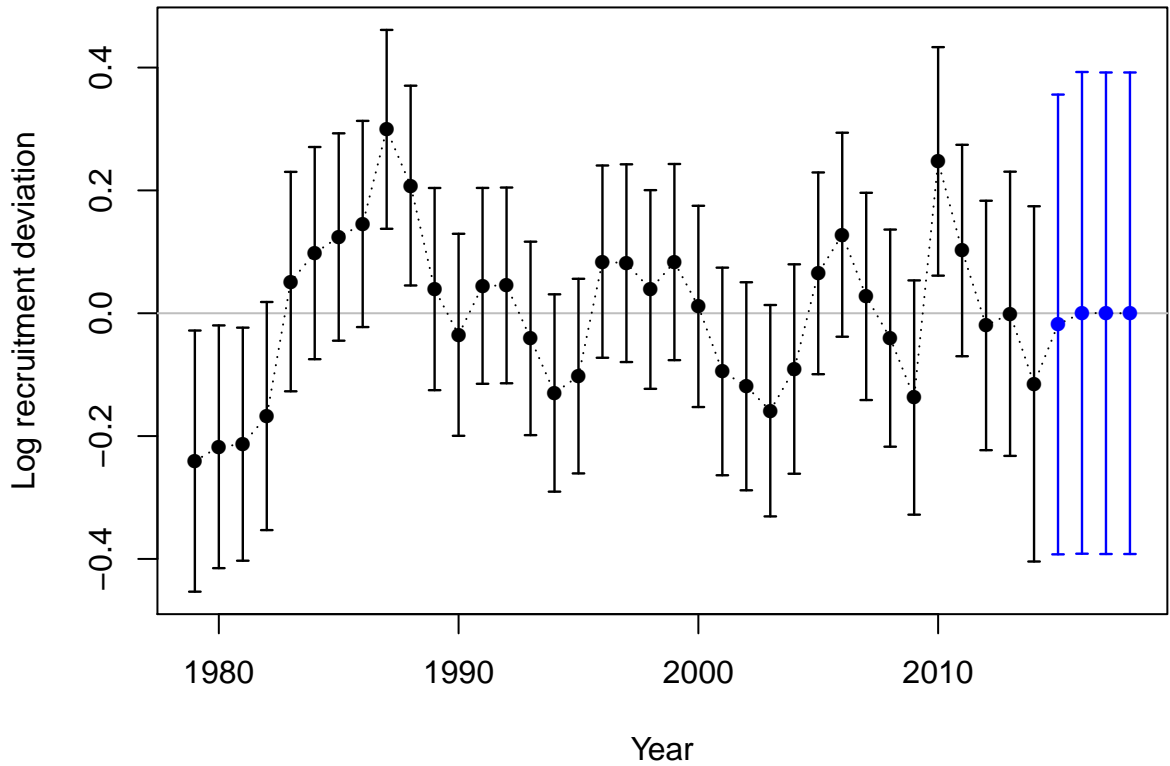
Age-0 recruits (1,000s) with ~95% asymptotic intervals



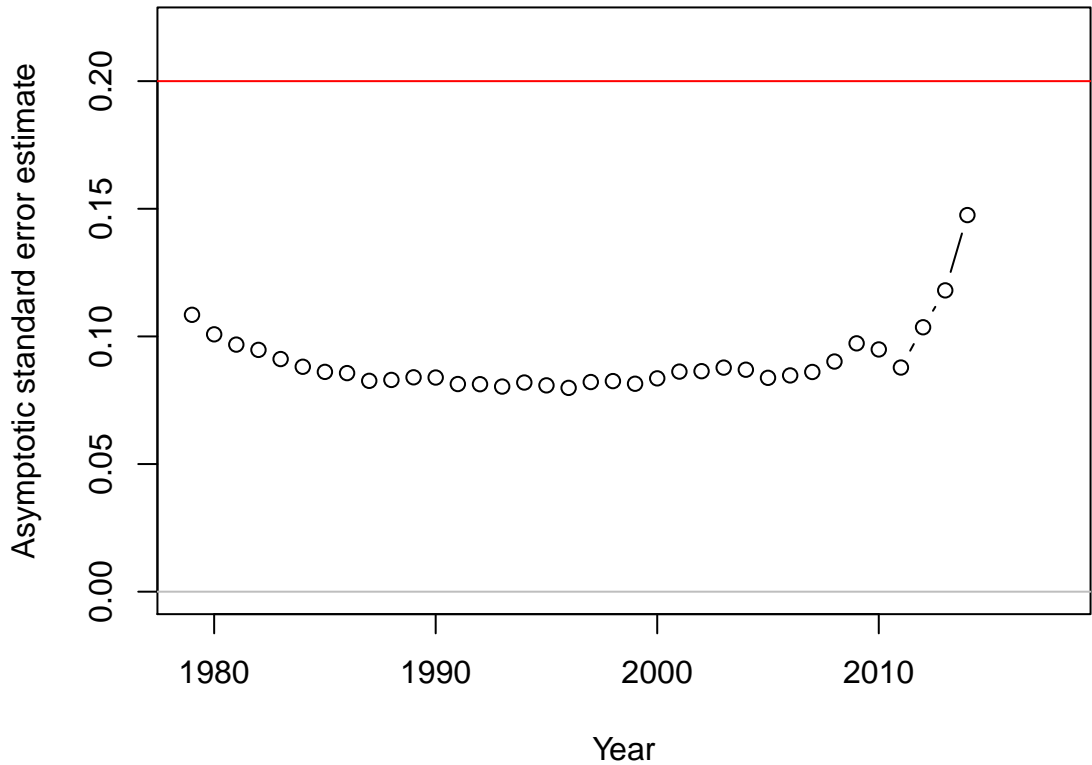
Summary Fishing Mortality

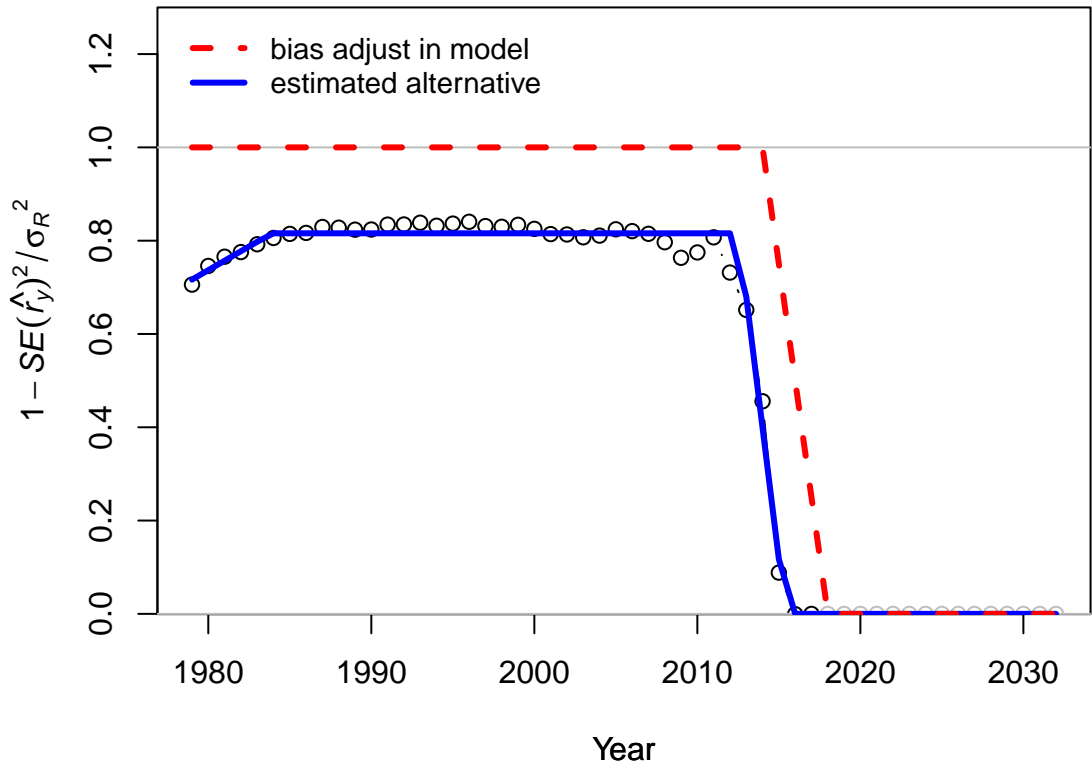


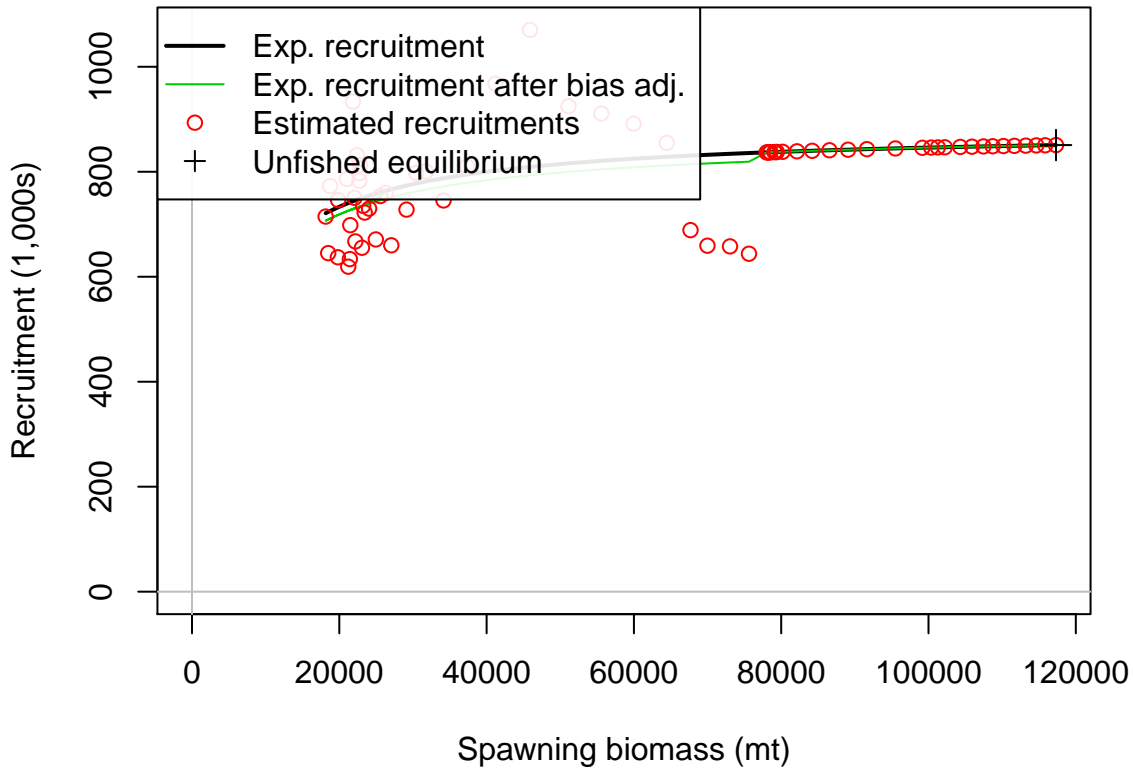


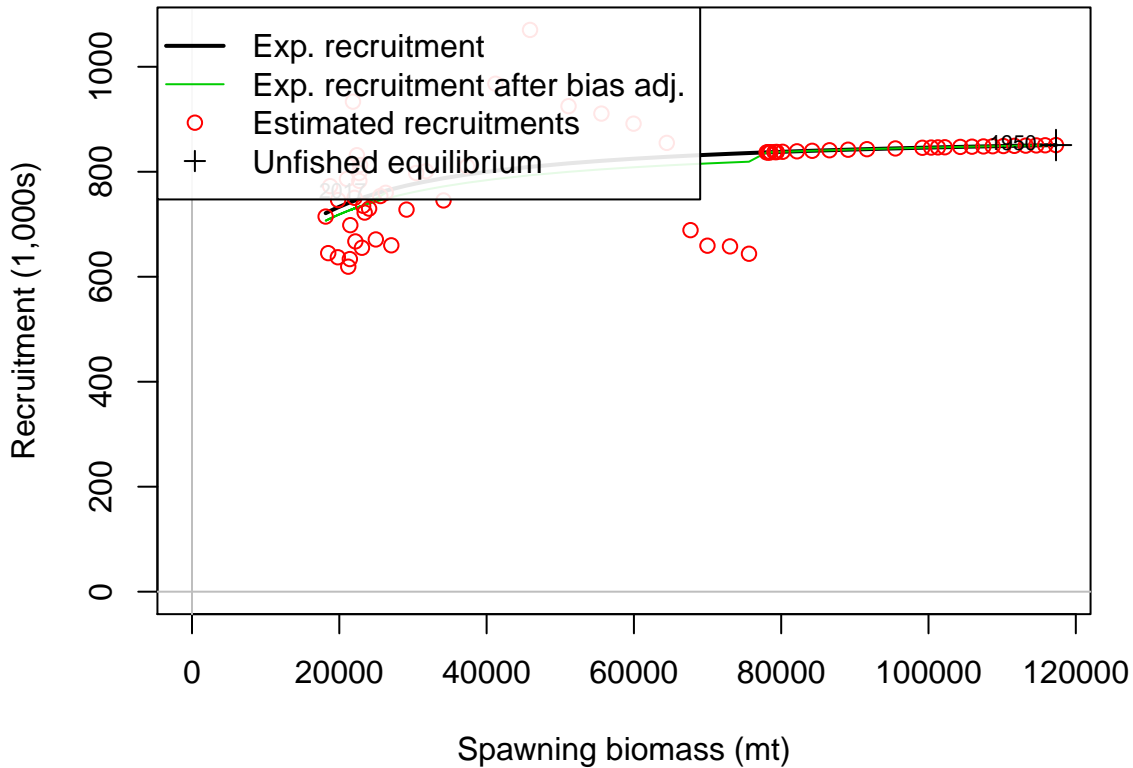


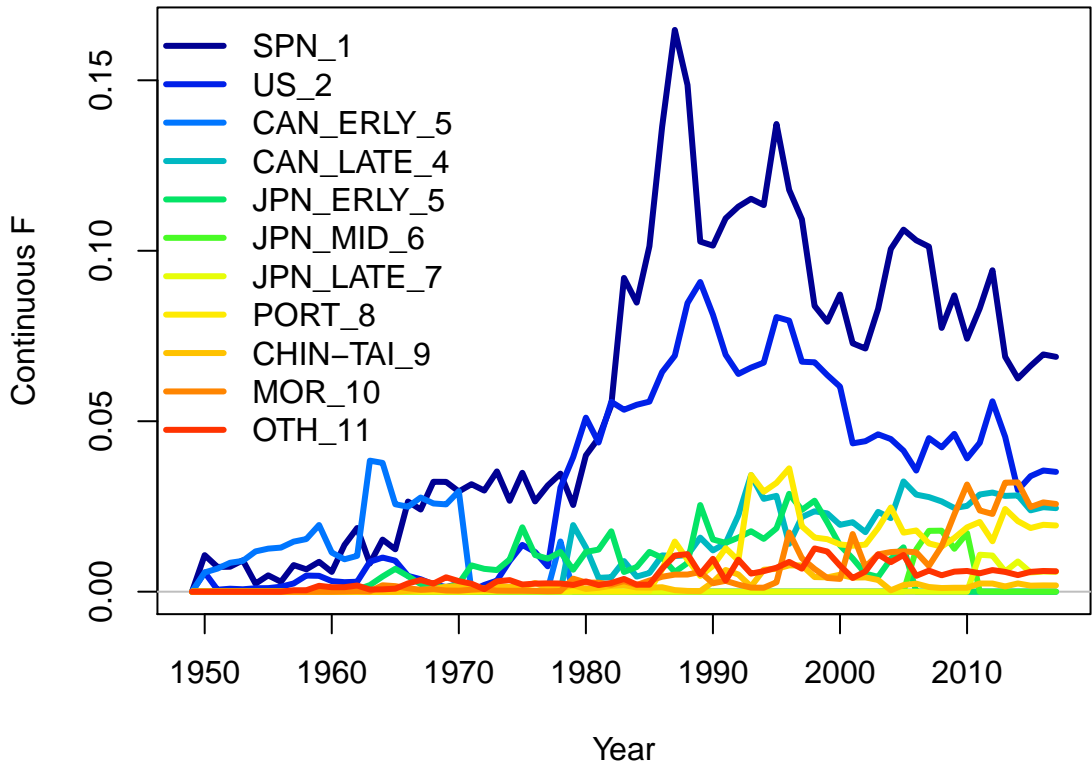
Recruitment deviation variance

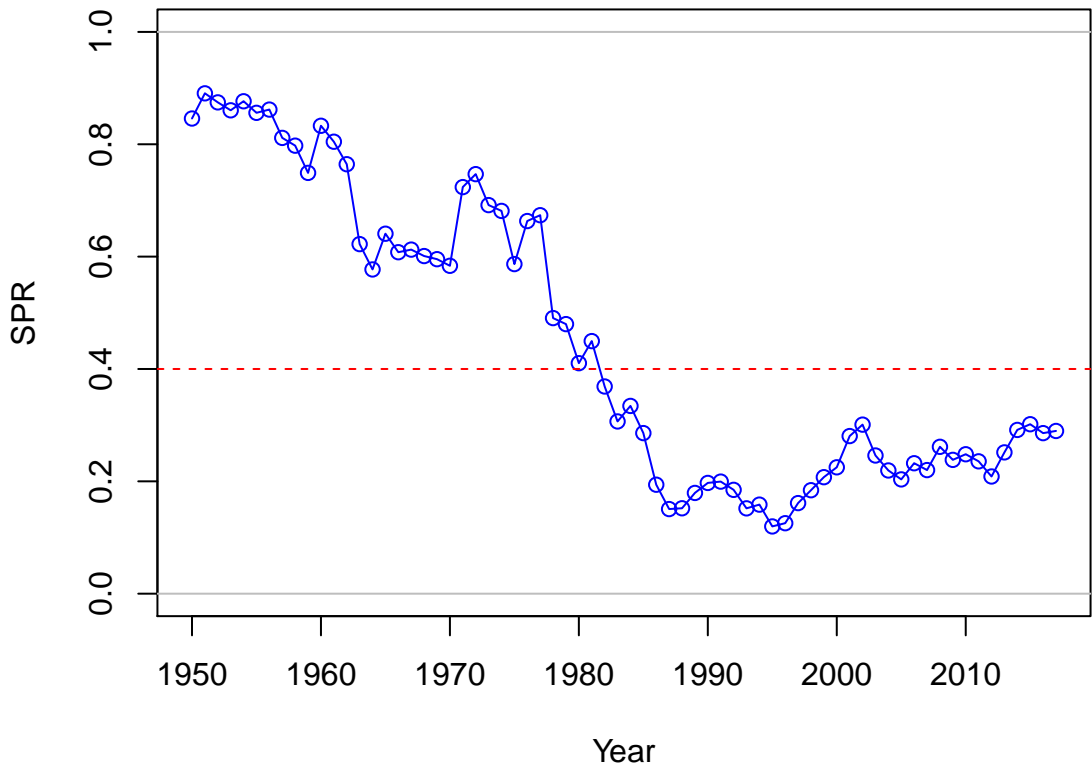


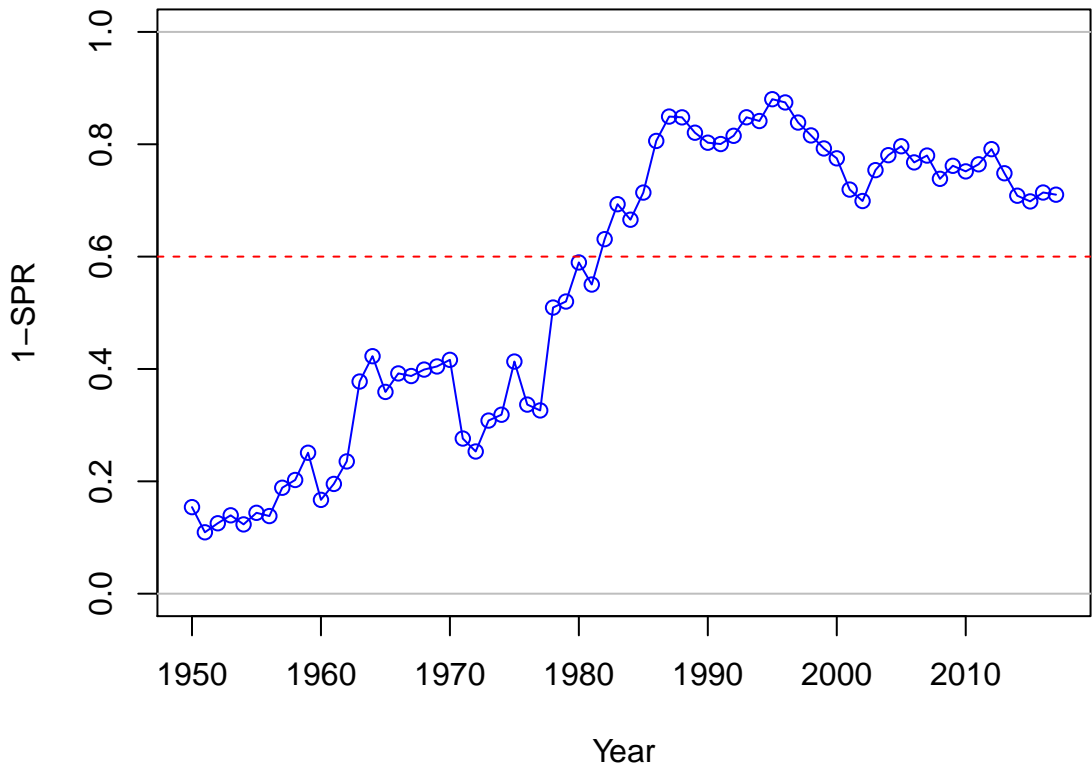


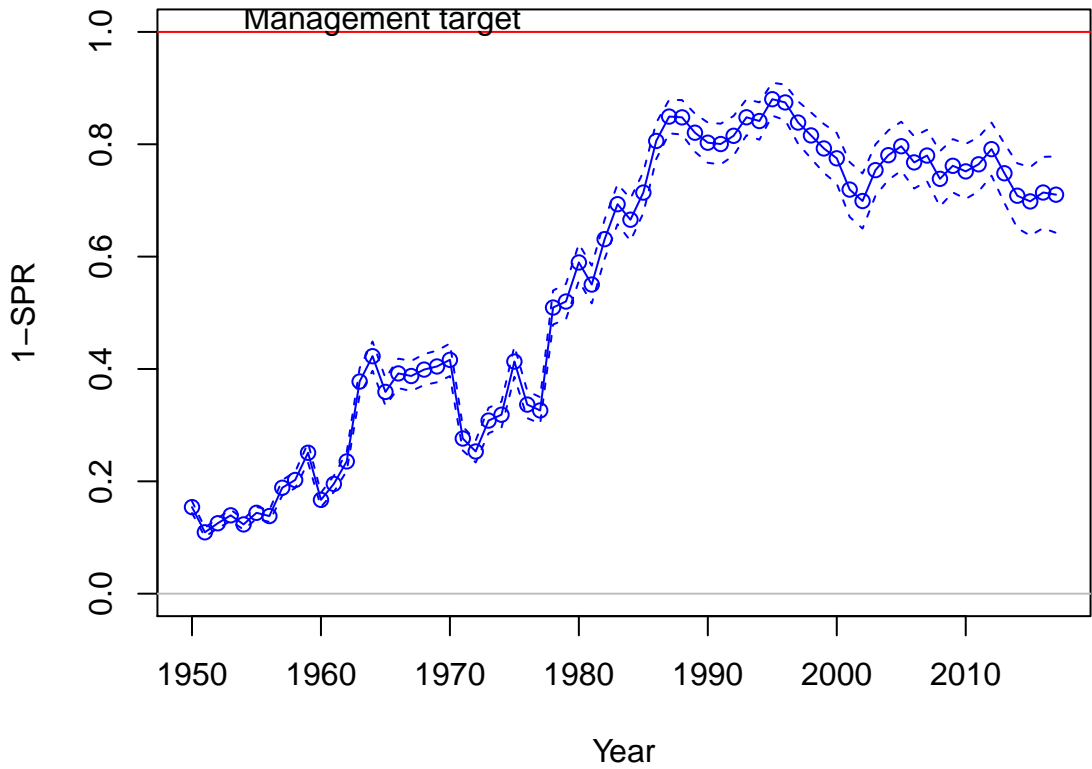


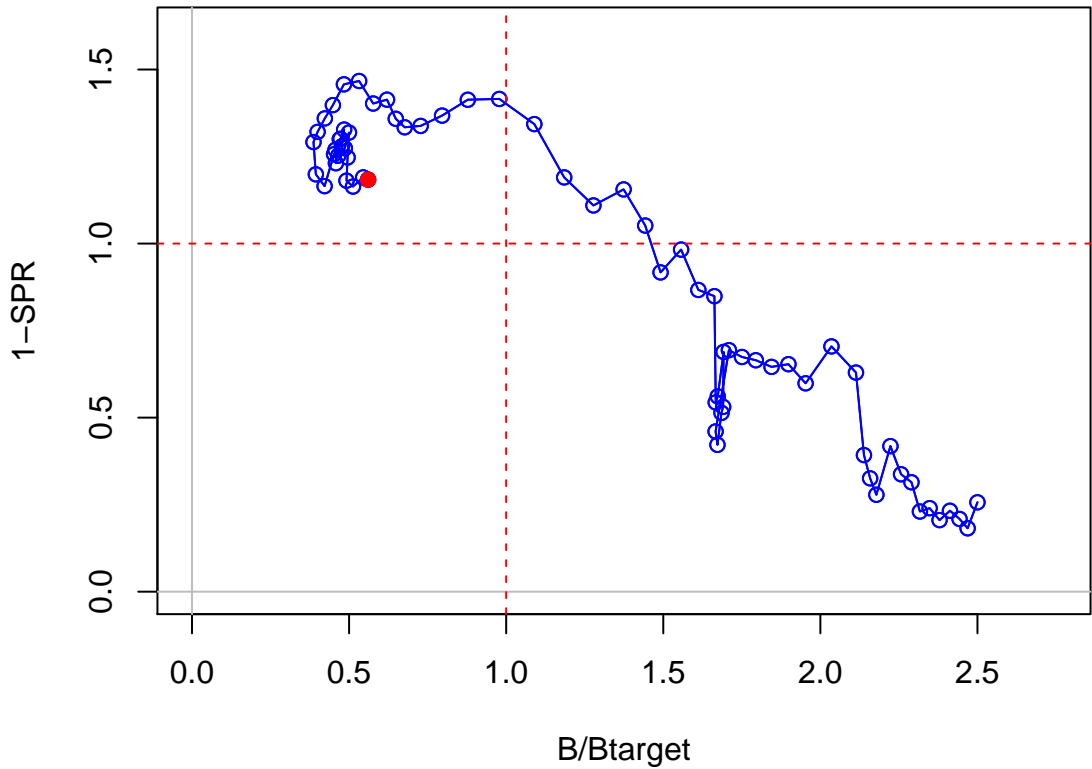




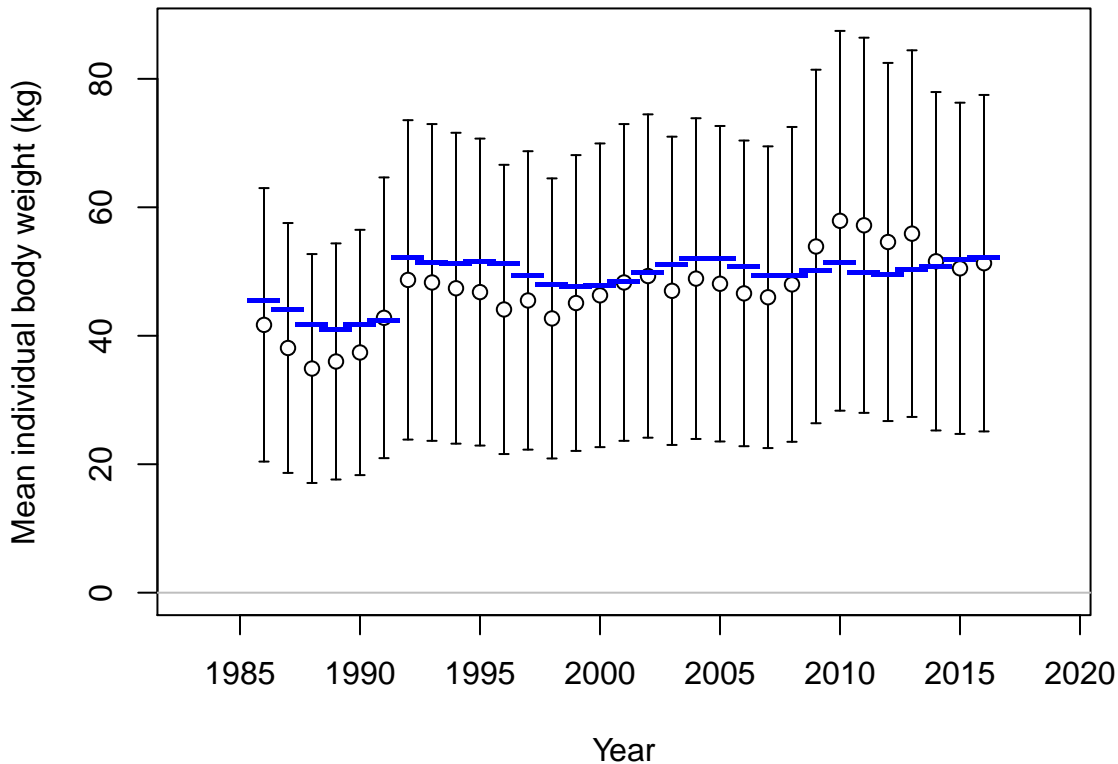




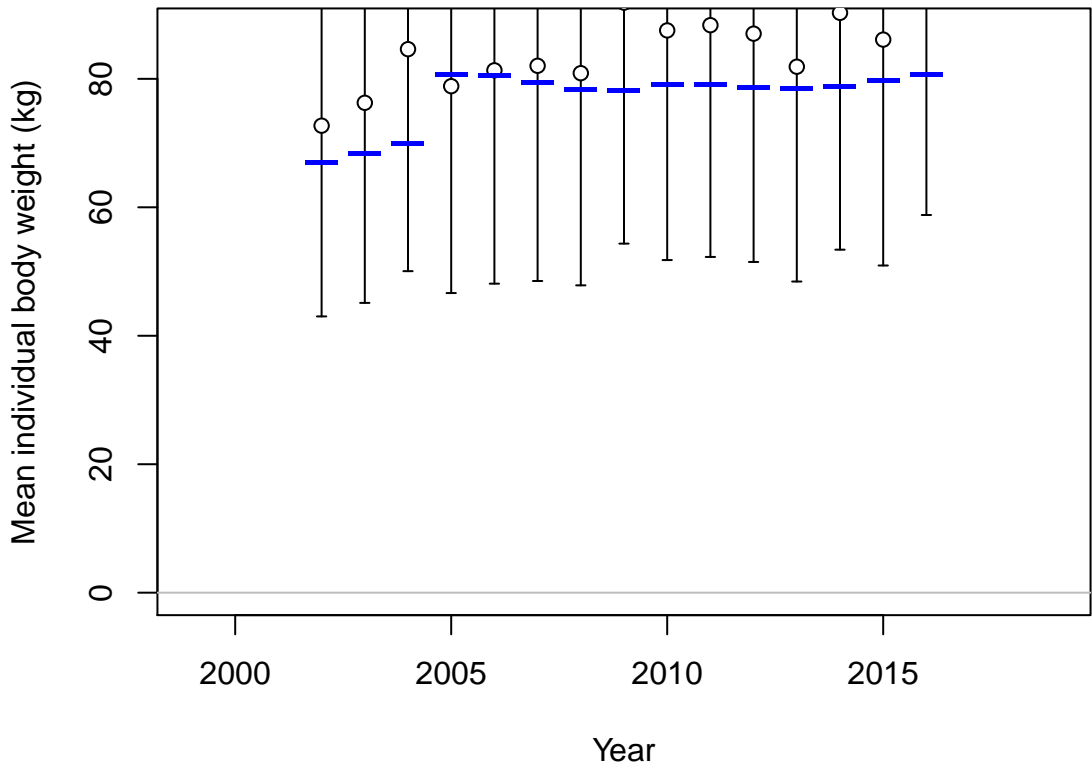




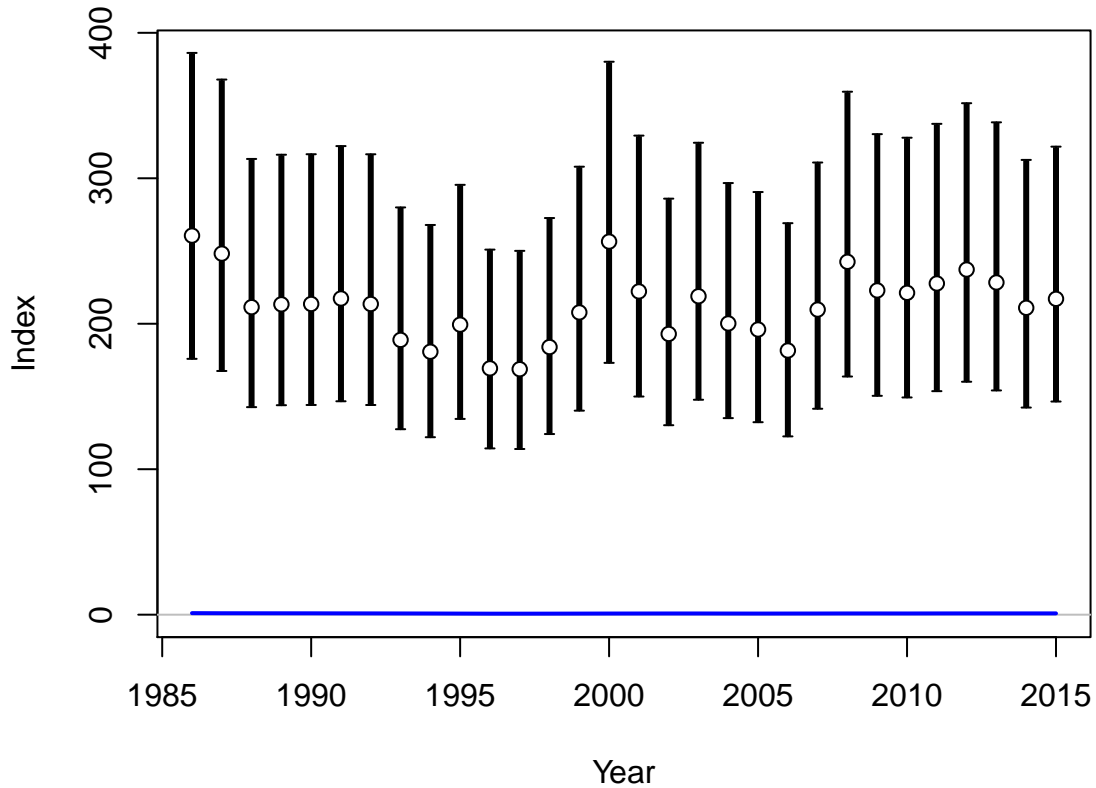
Mean weight in retained catch for US_2



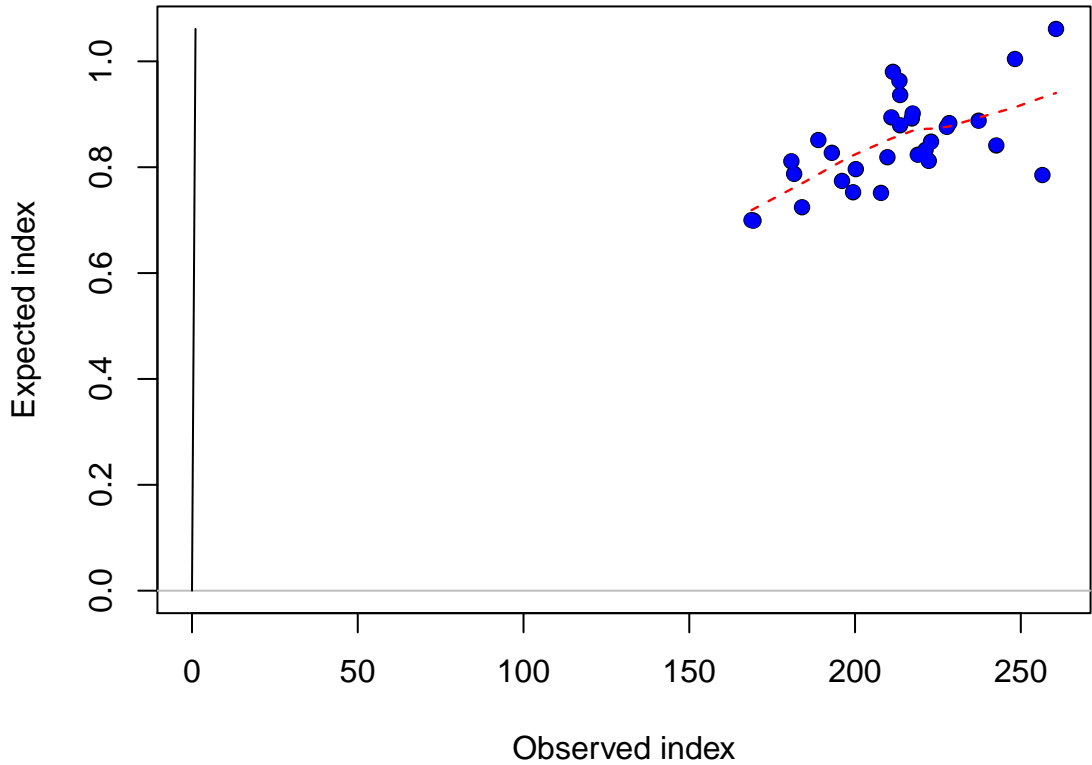
Mean weight in retained catch for CAN_LATE_4



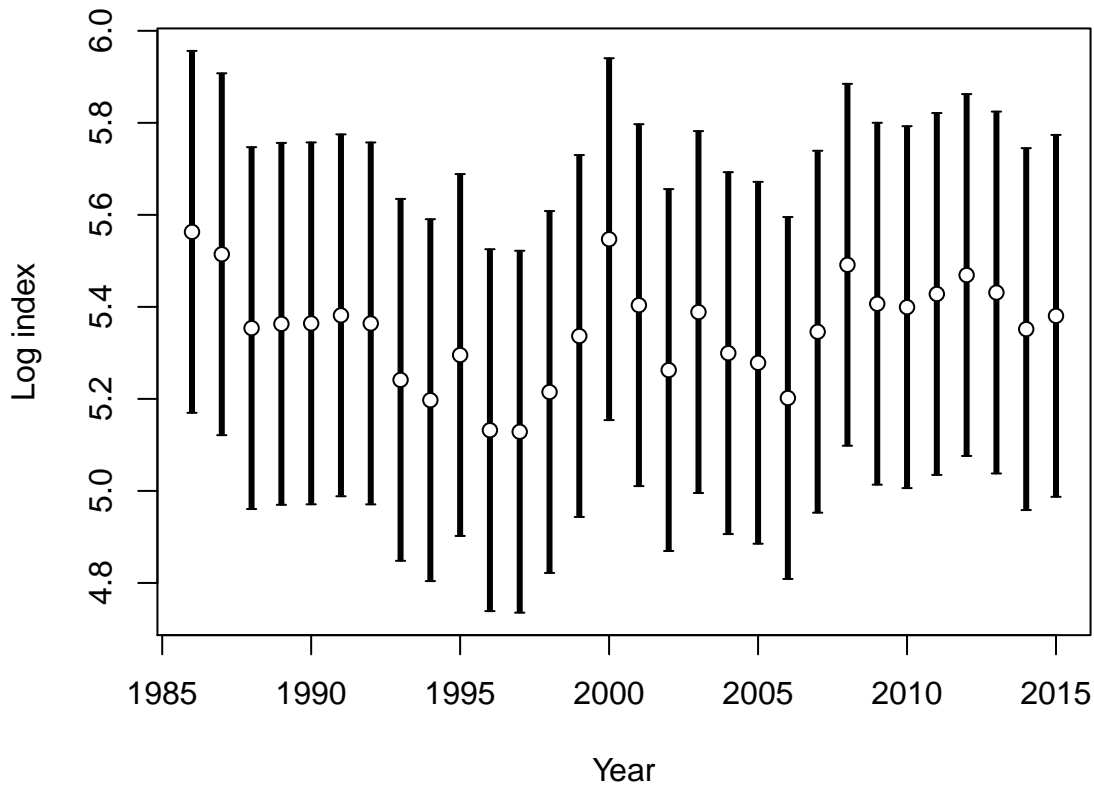
Index SPN_1



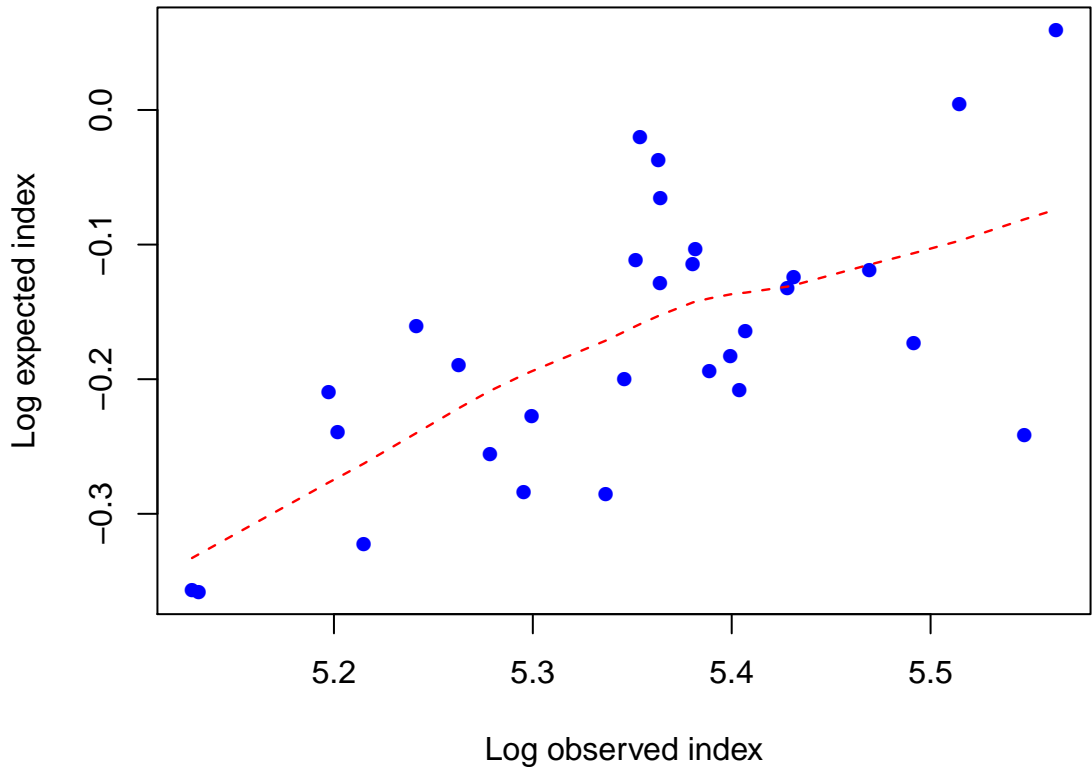
Index SPN_1



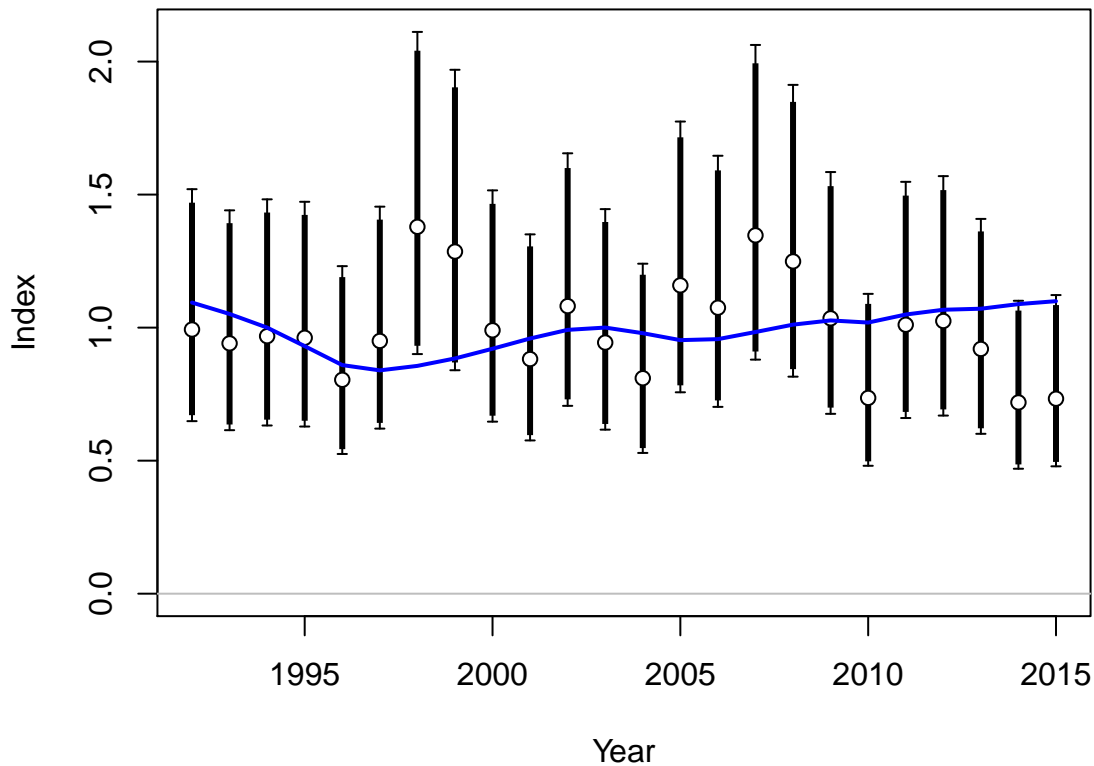
Log index SPN_1



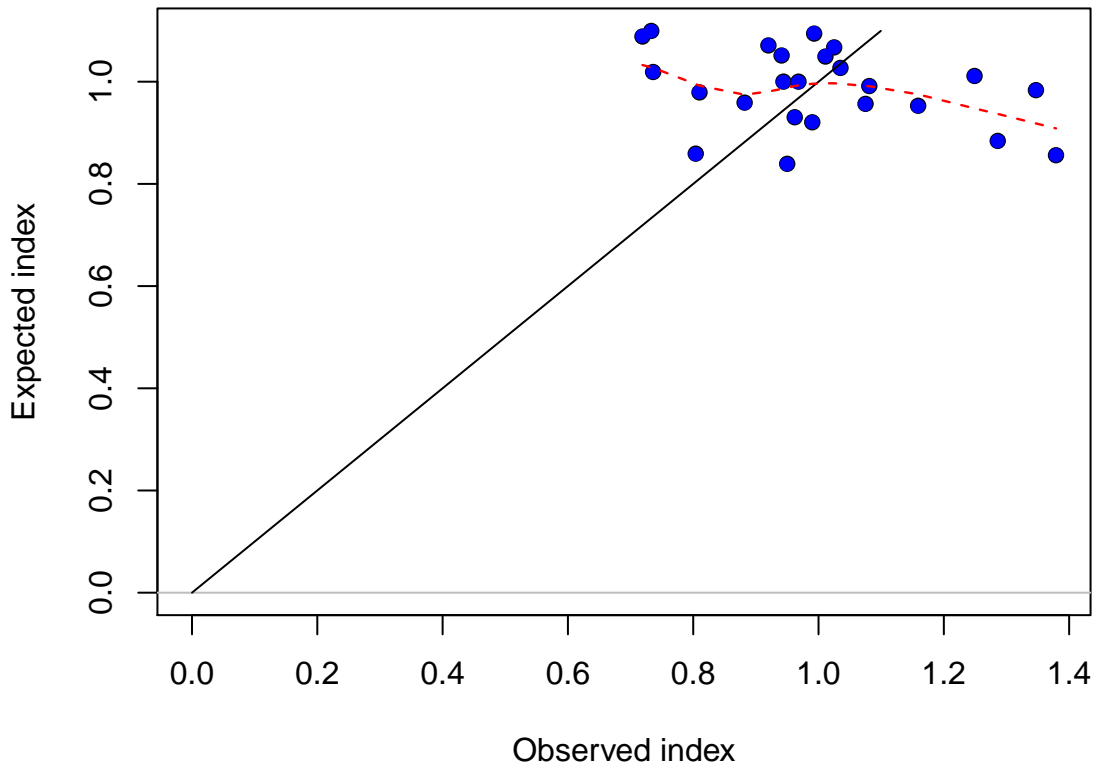
Log index SPN_1



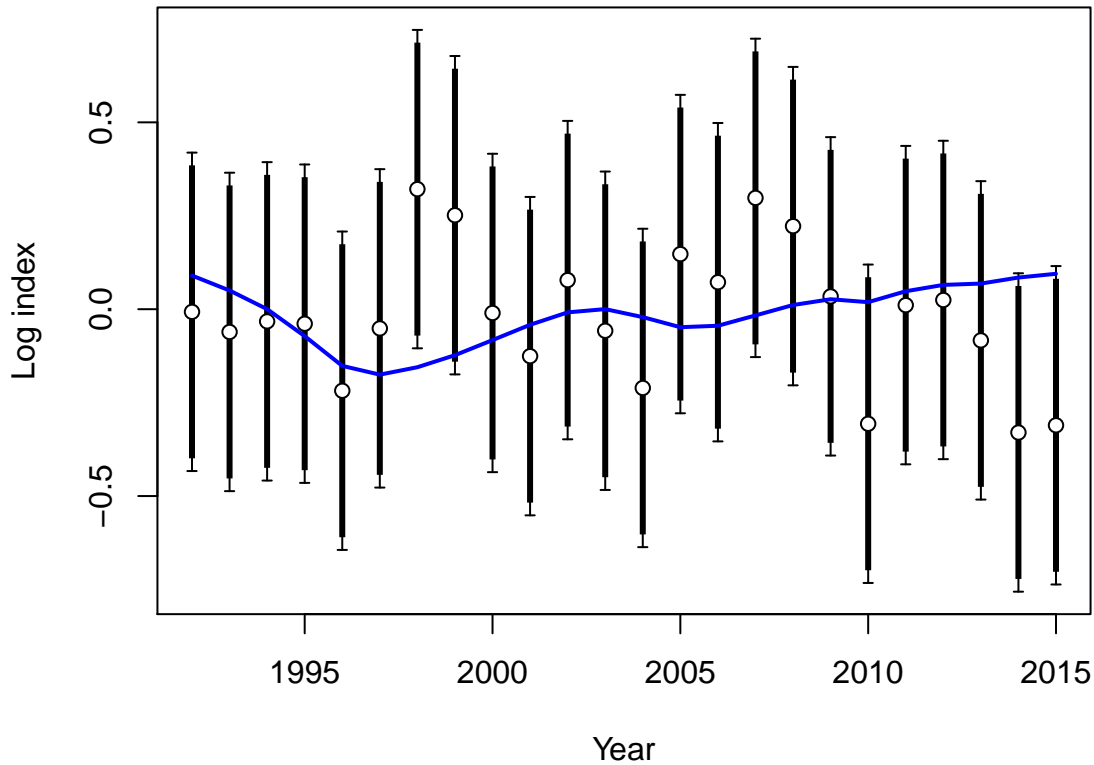
Index US_2



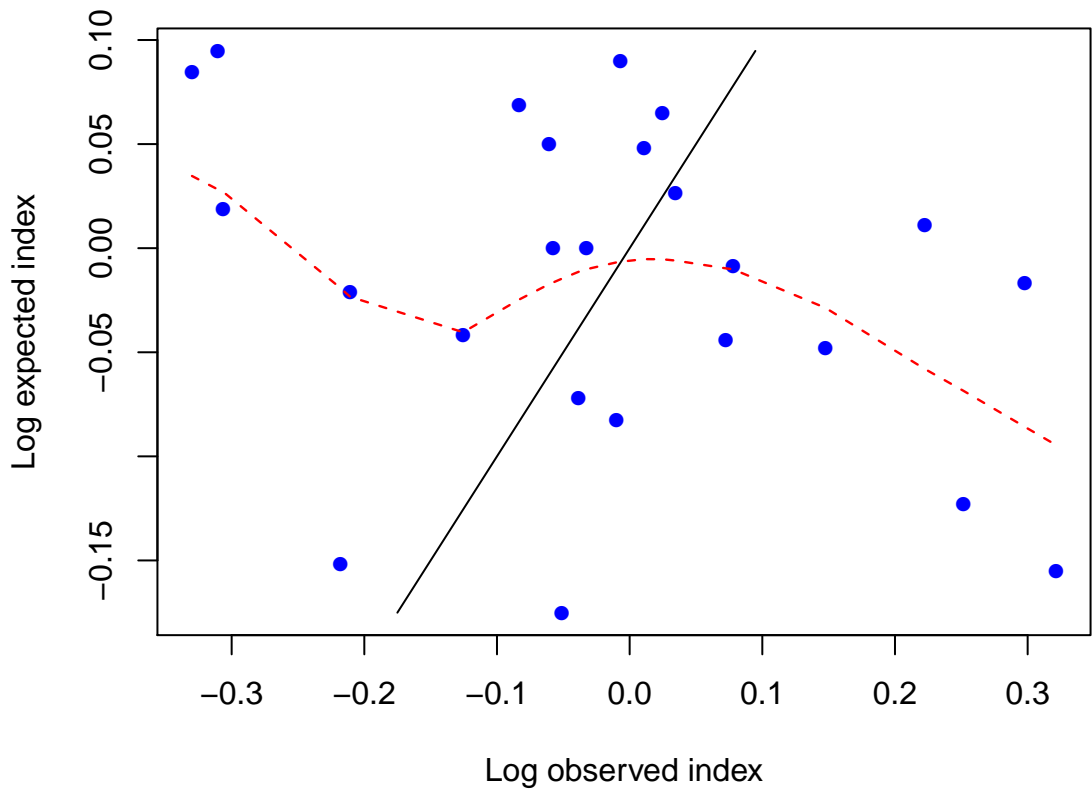
Index US_2



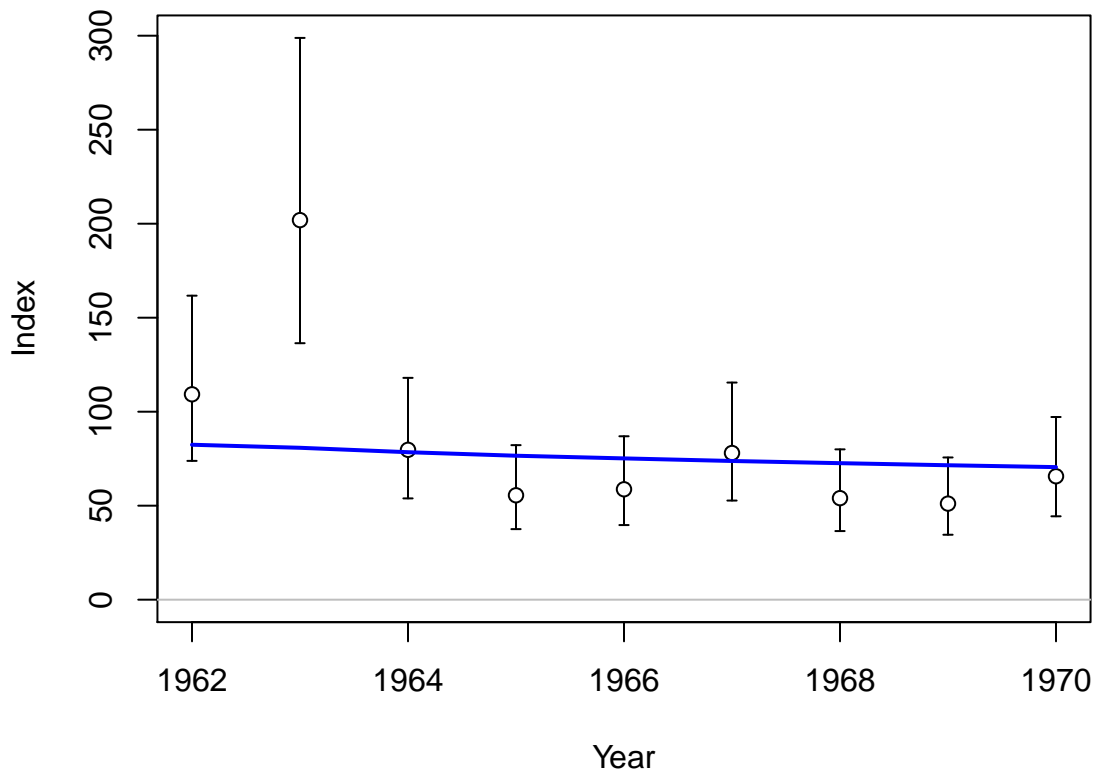
Log index US_2



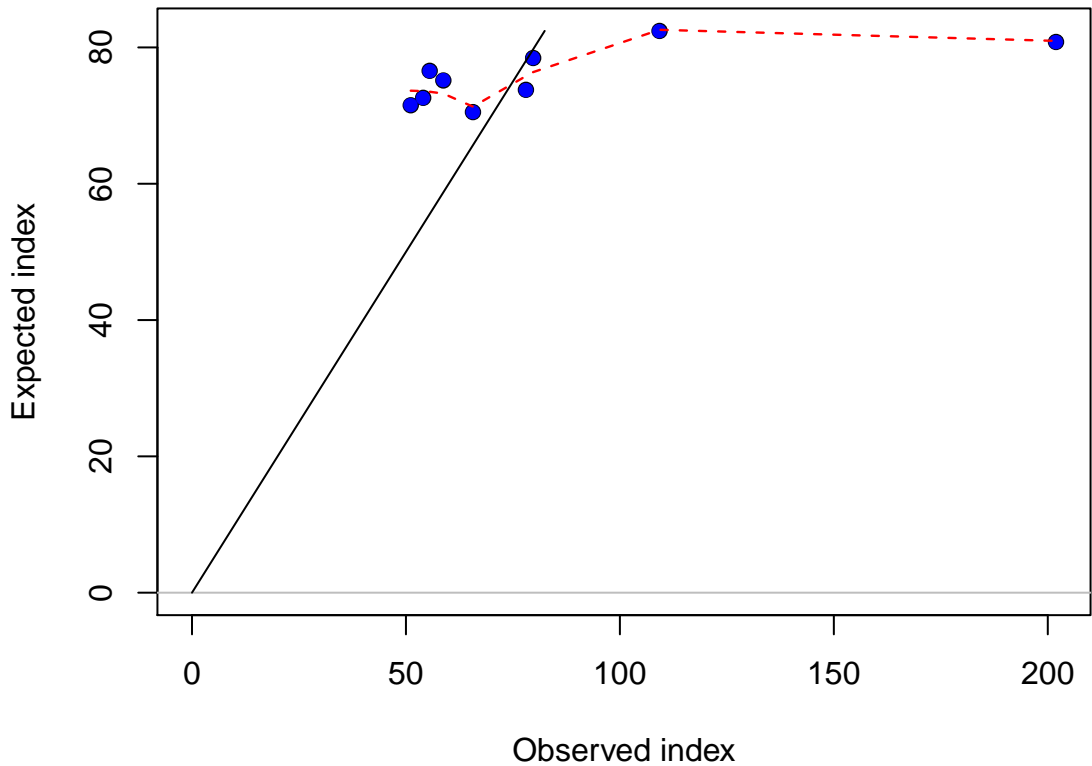
Log index US_2



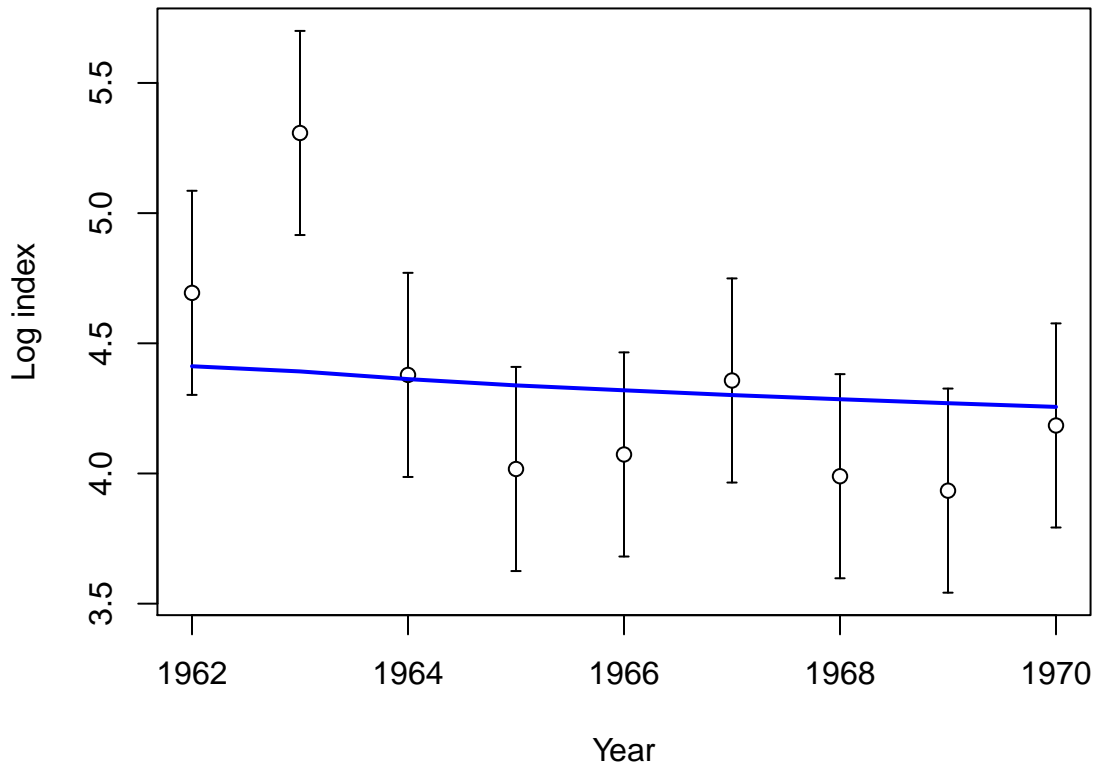
Index CAN_ERLY_5



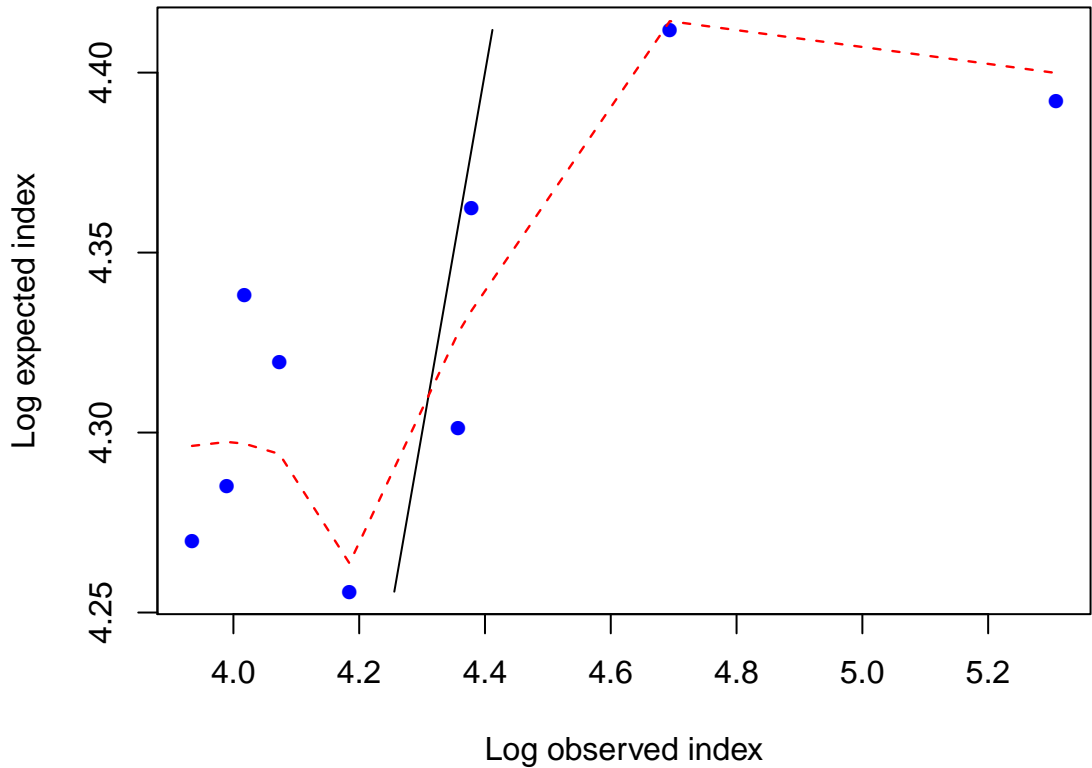
Index CAN_ERLY_5



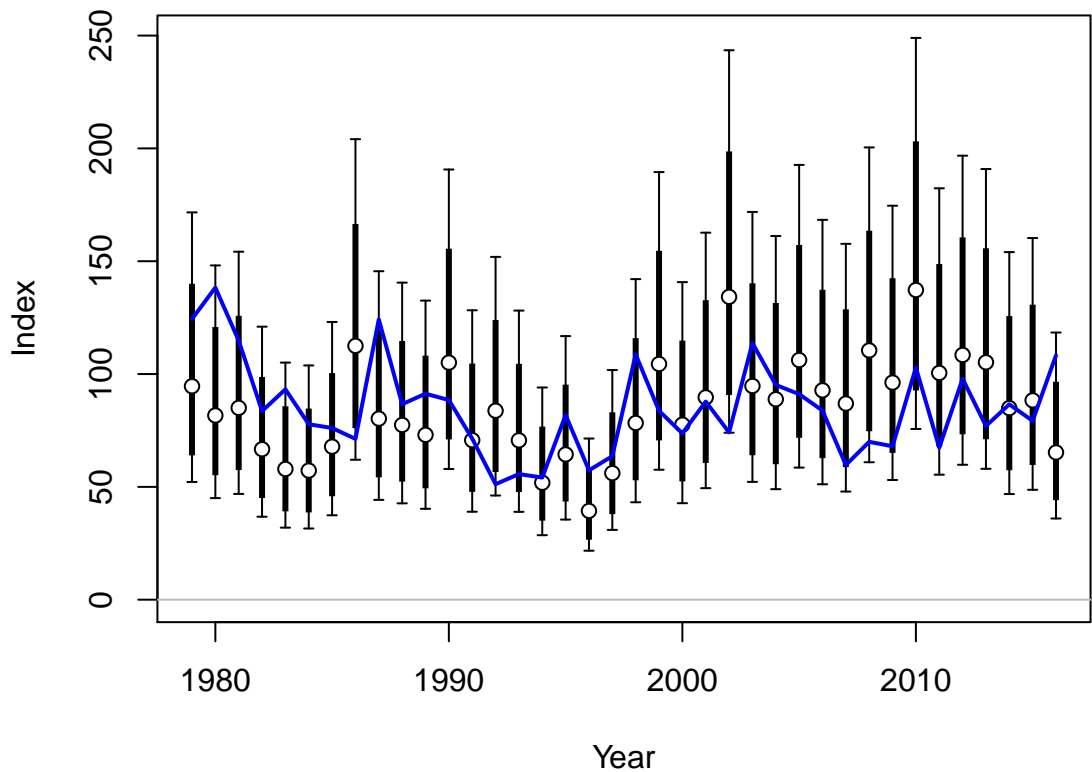
Log index CAN_ERLY_5



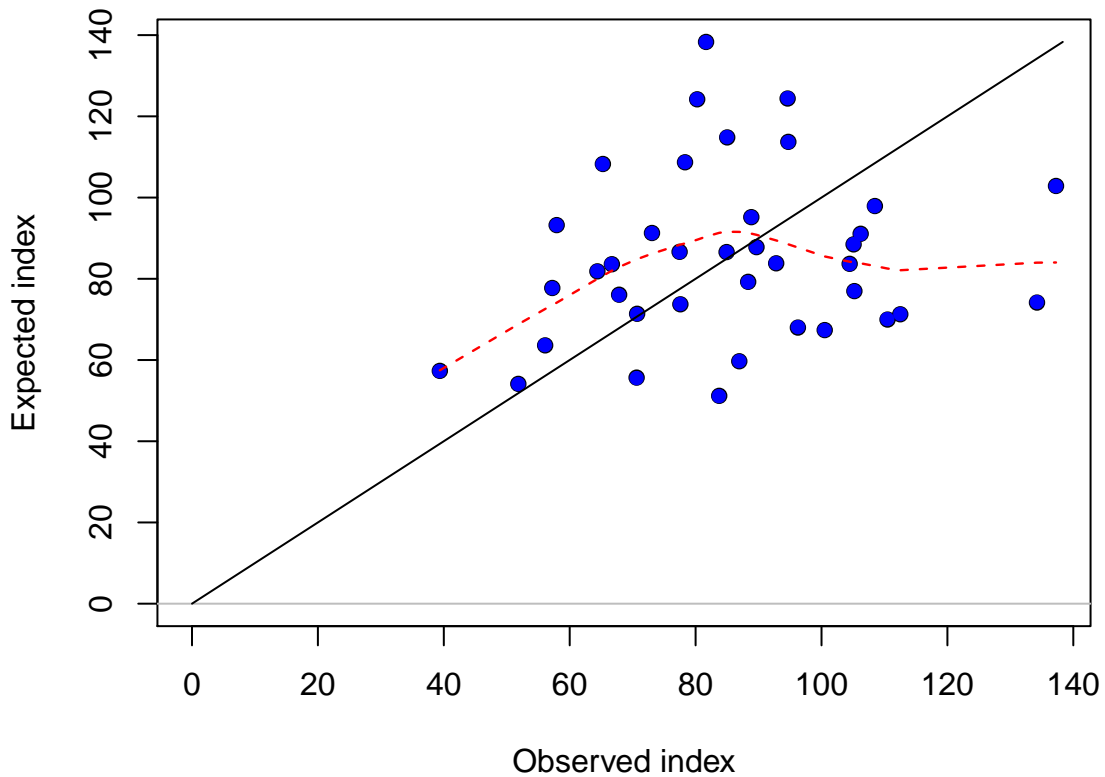
Log index CAN_ERLY_5



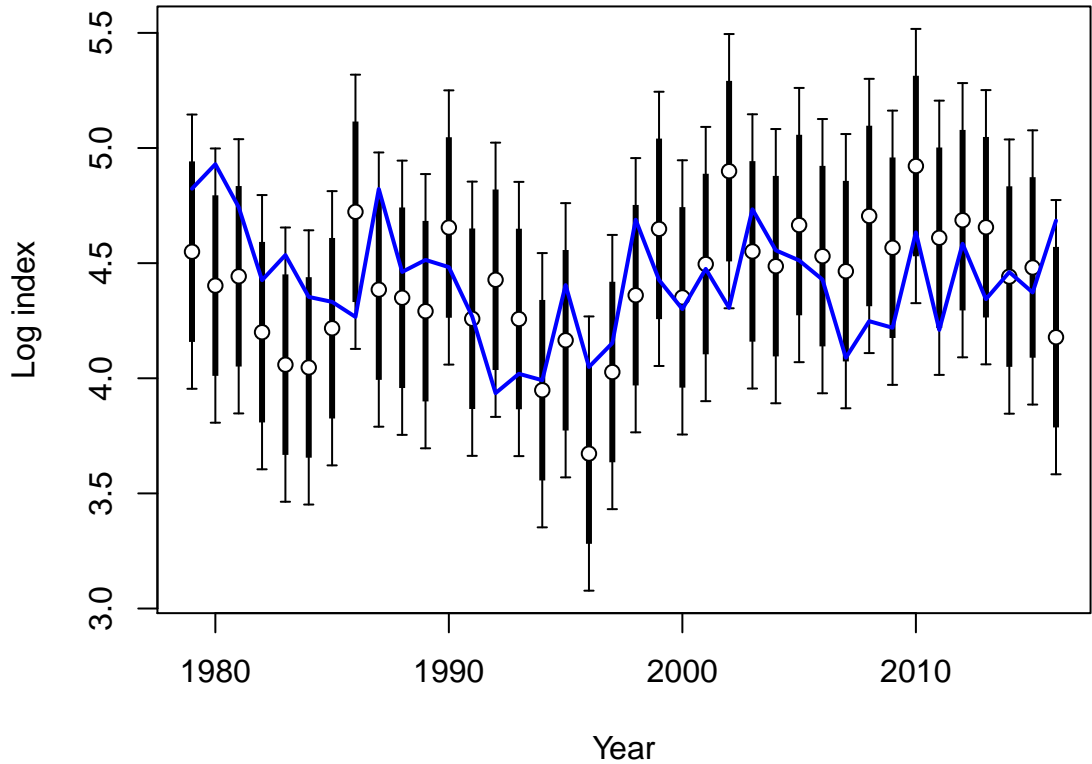
Index CAN_LATE_4



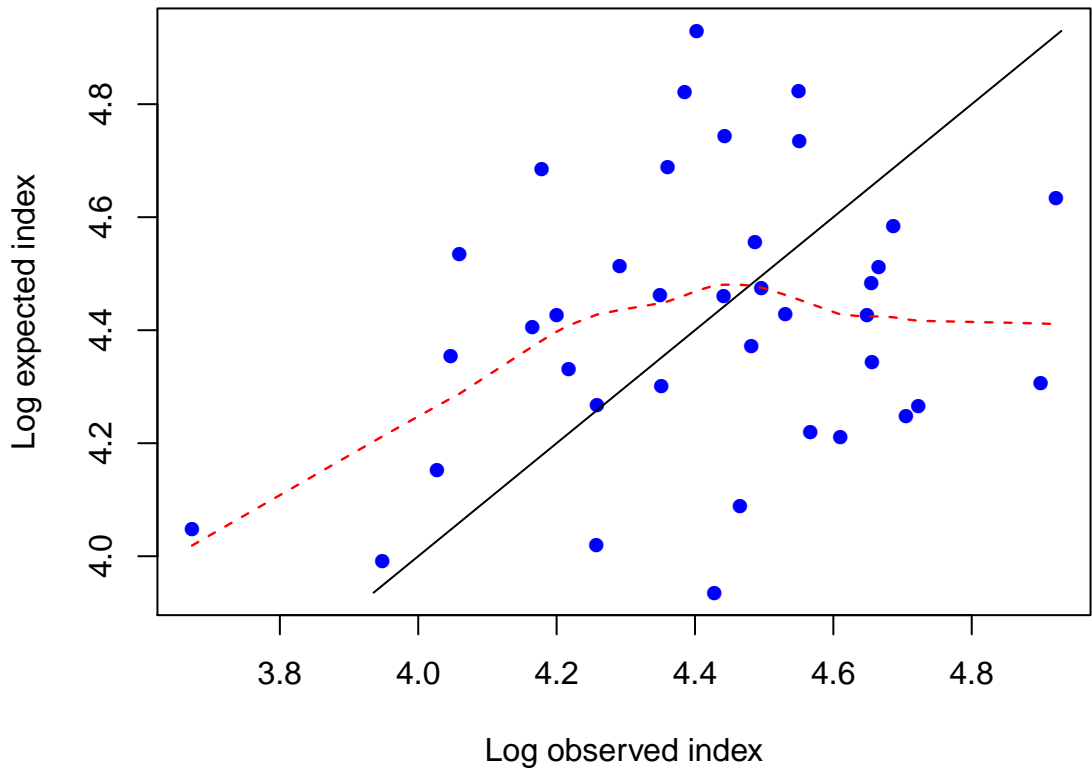
Index CAN_LATE_4



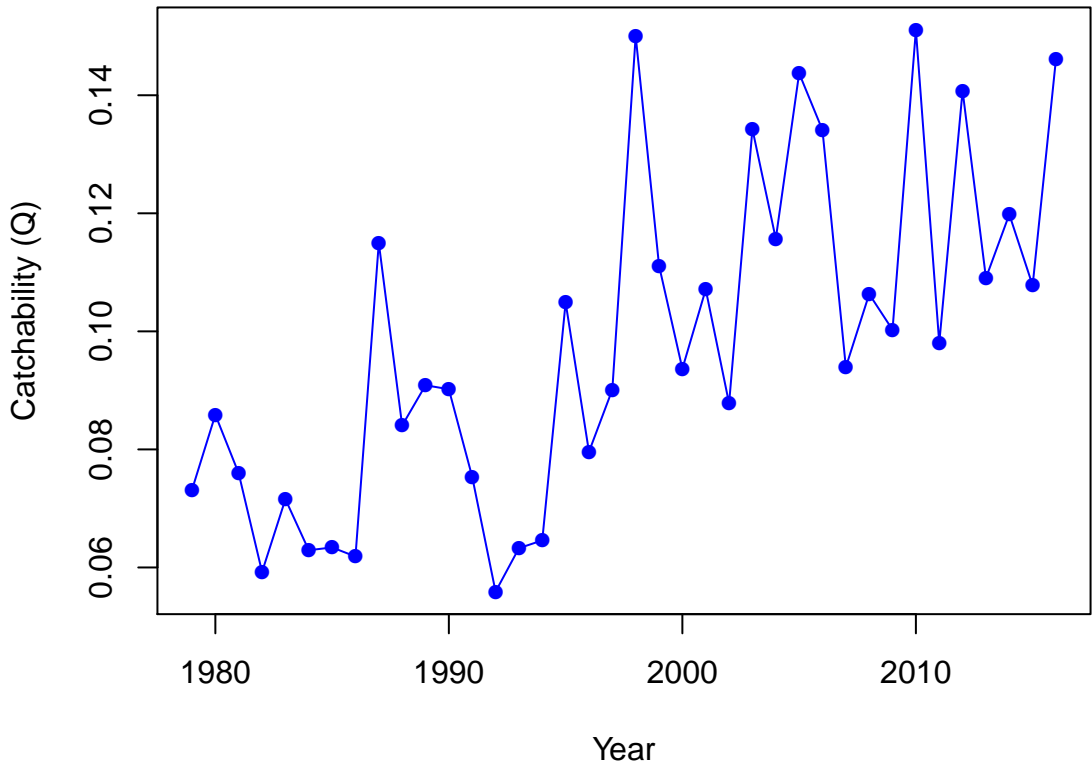
Log index CAN_LATE_4



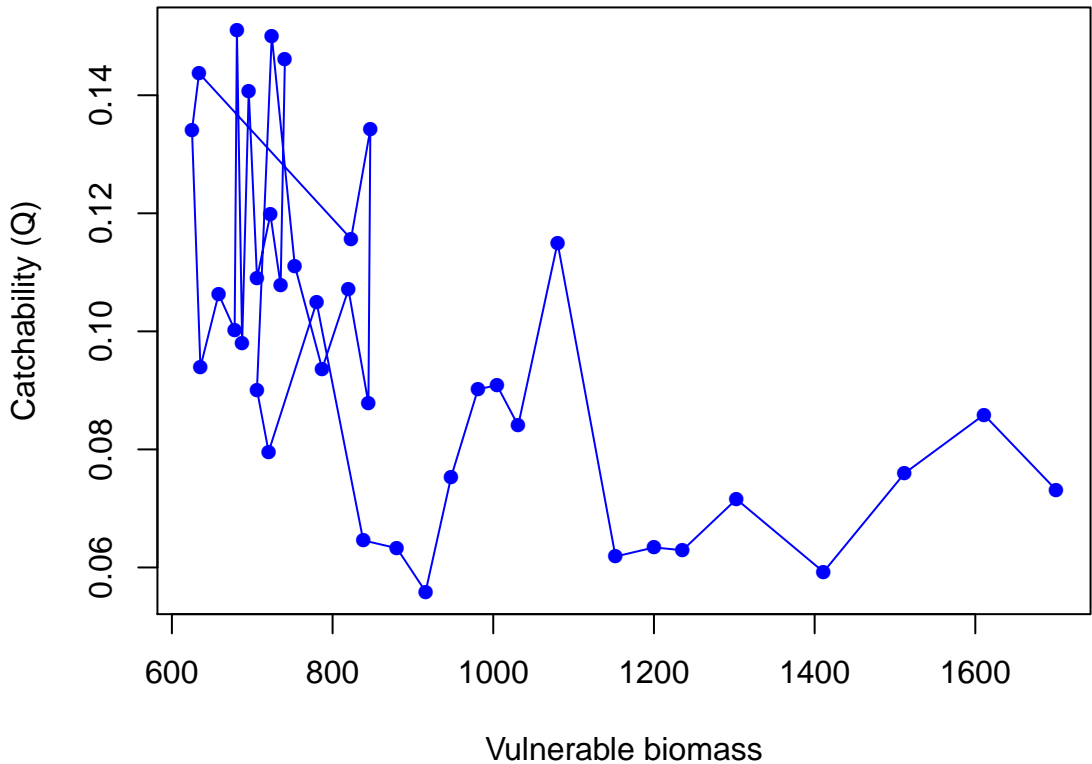
Log index CAN_LATE_4



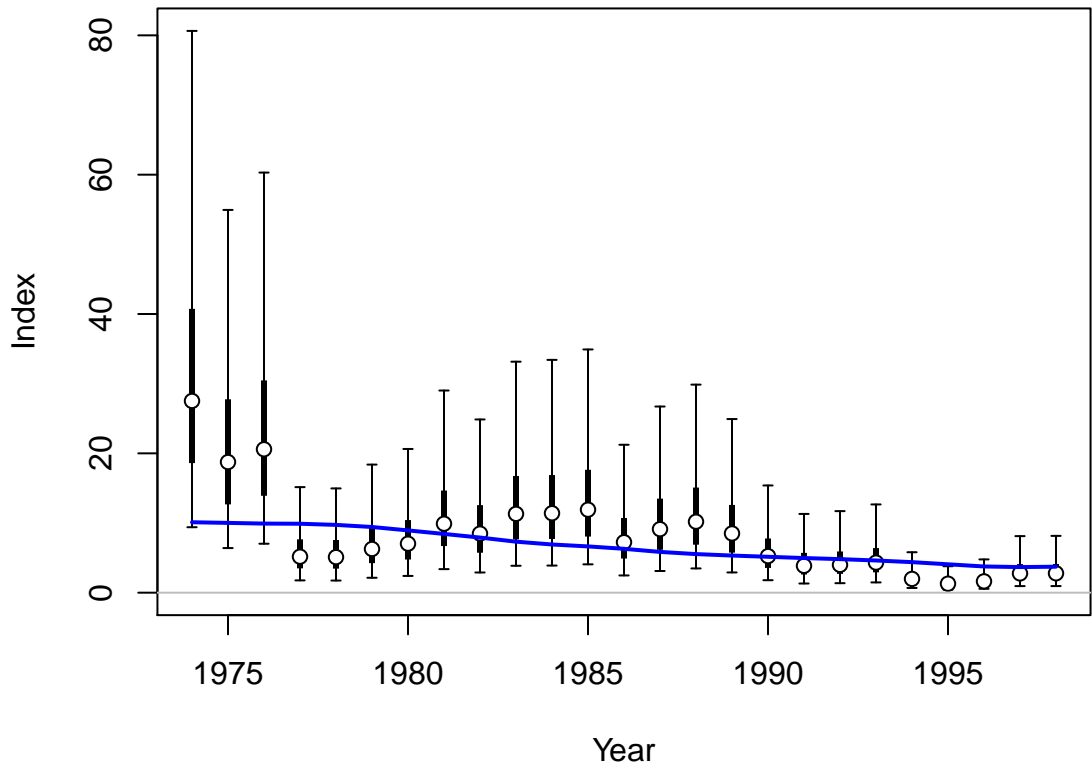
Time-varying catchability CAN_LATE_4



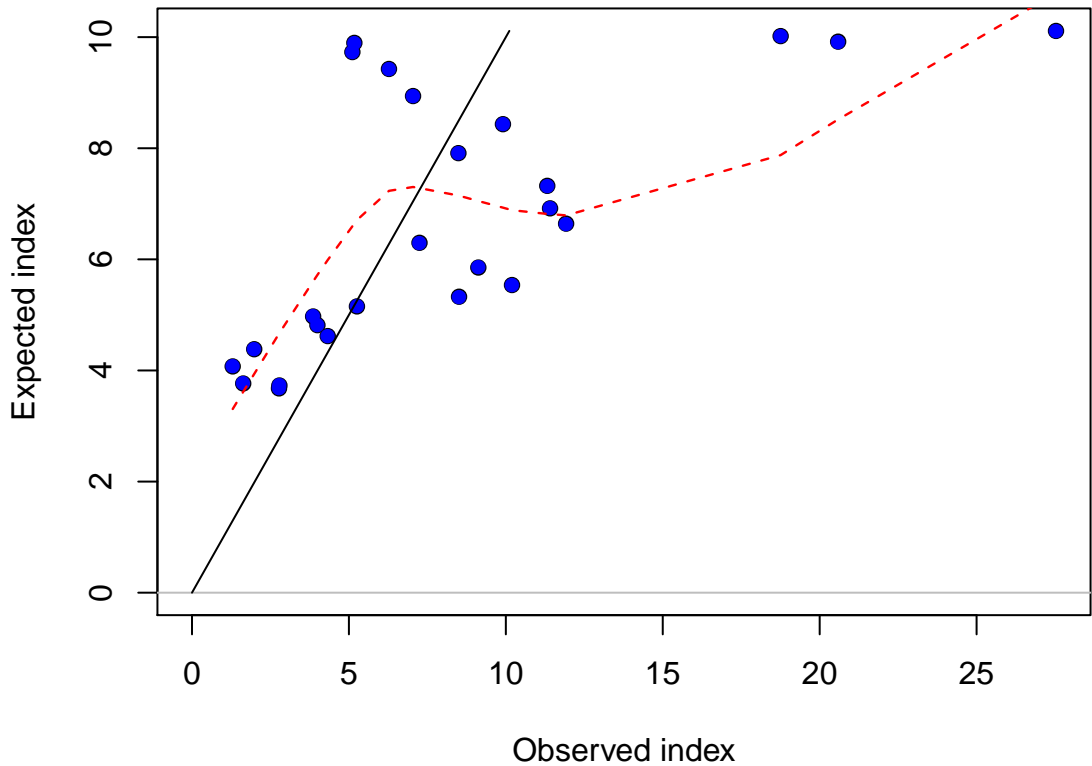
Catchability vs. vulnerable biomass CAN_LATE_4



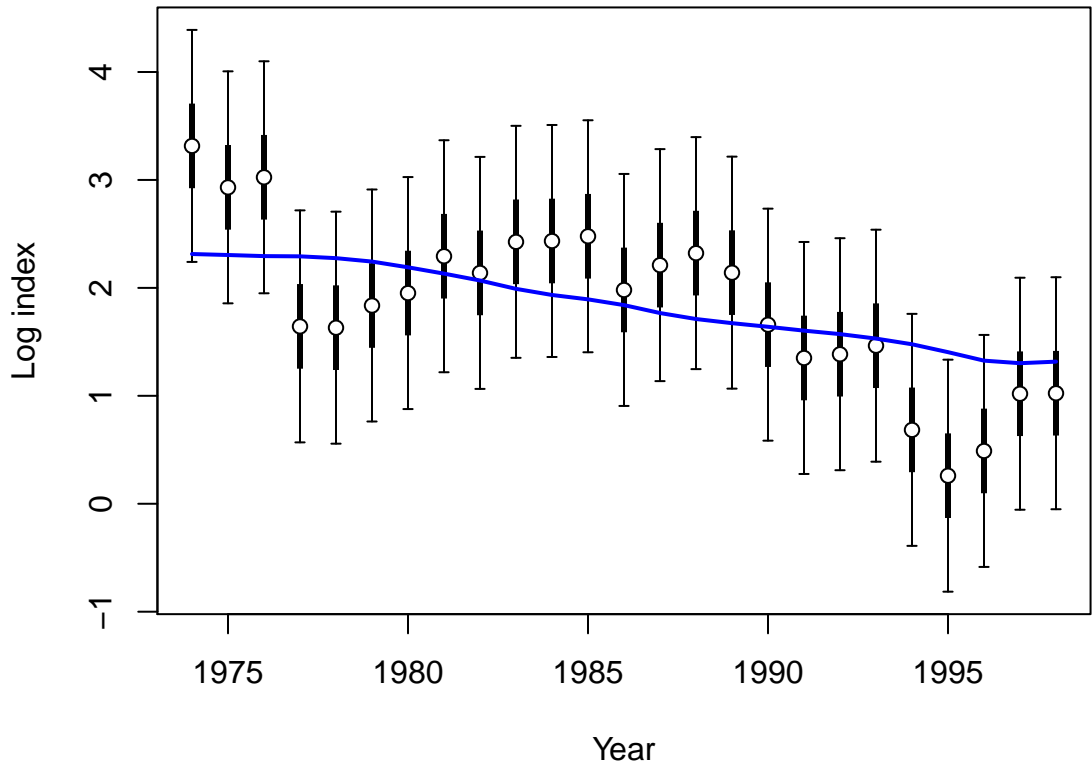
Index JPN_ERLY_5



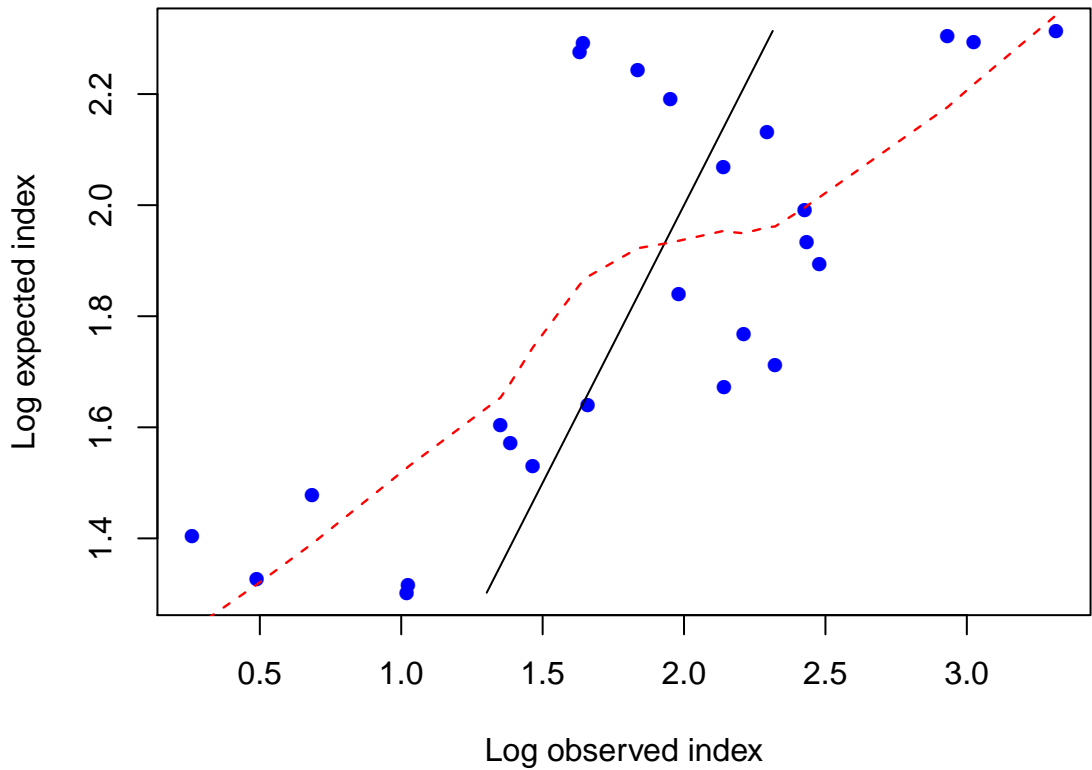
Index JPN_ERLY_5



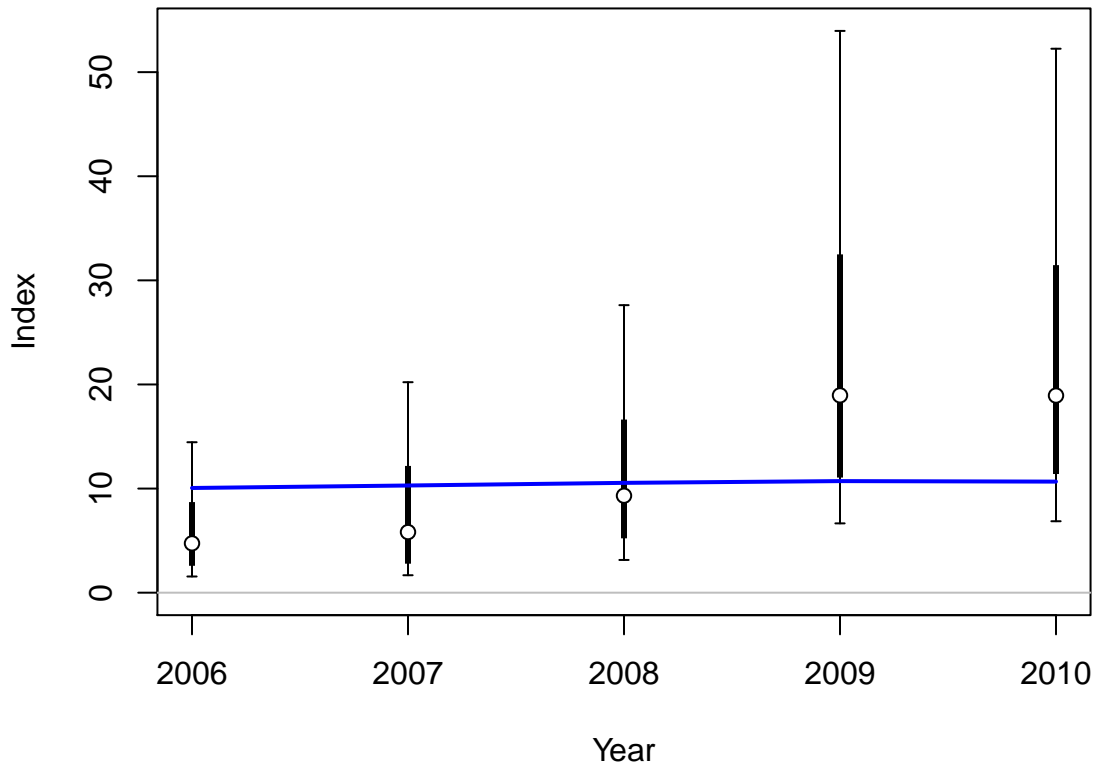
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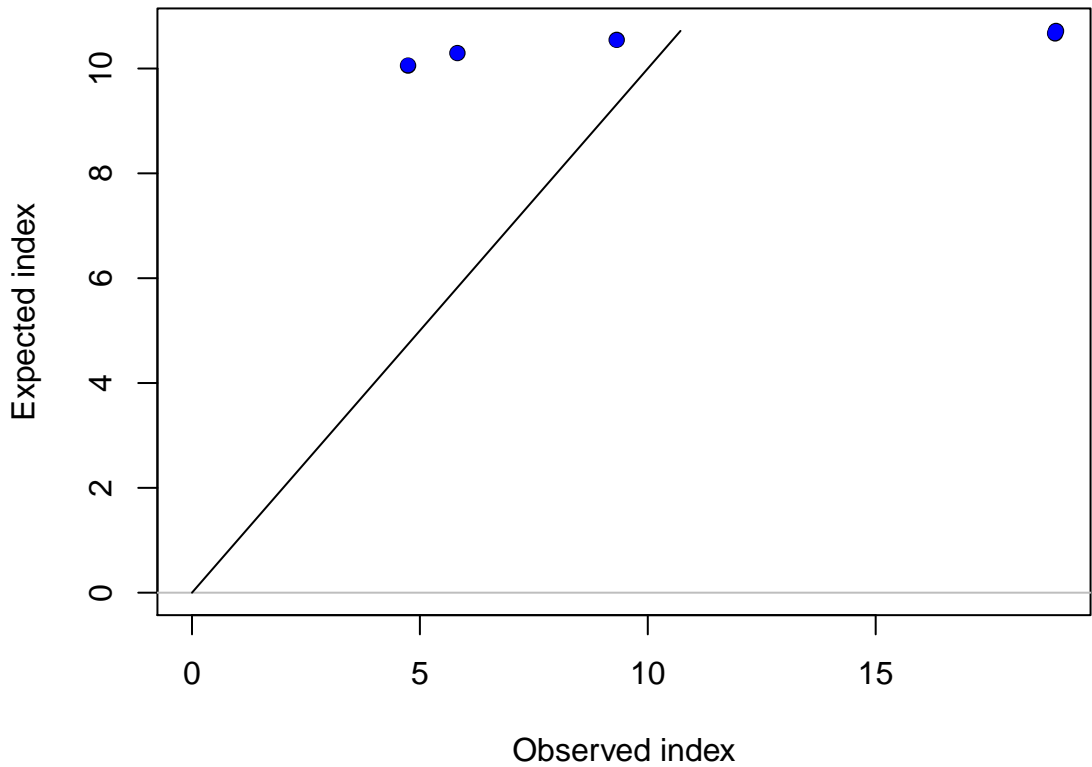
Log index JPN_ERLY_5



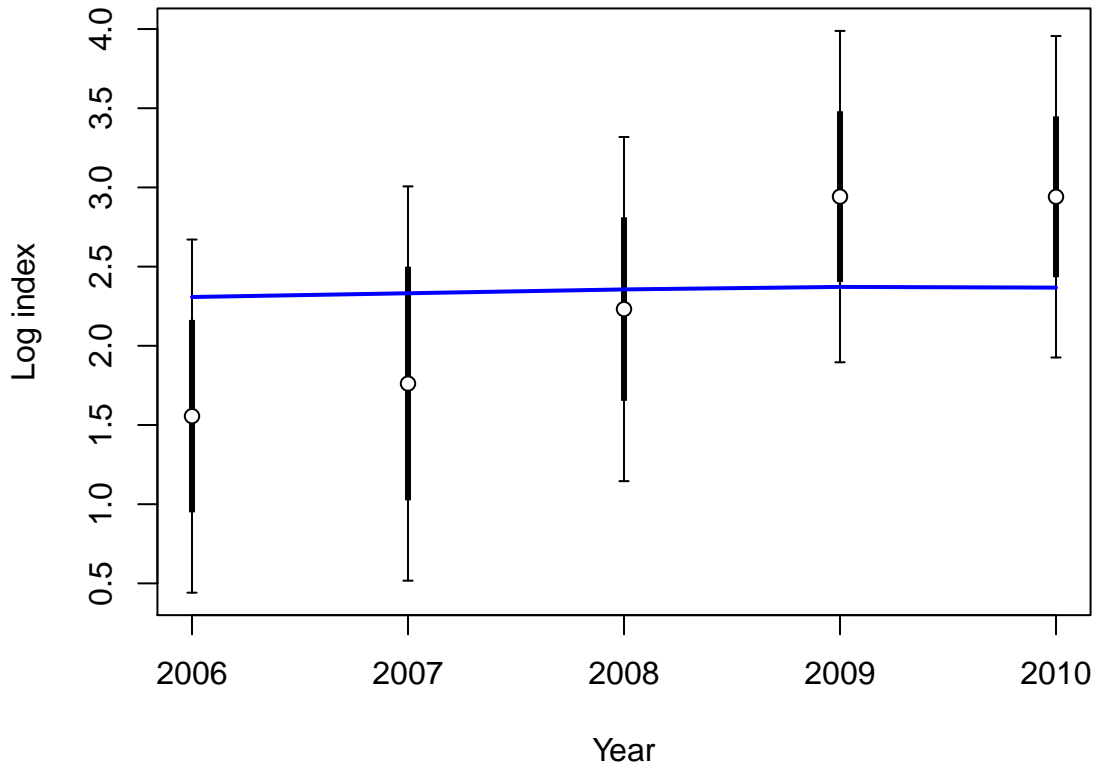
Index JPN_MID_6



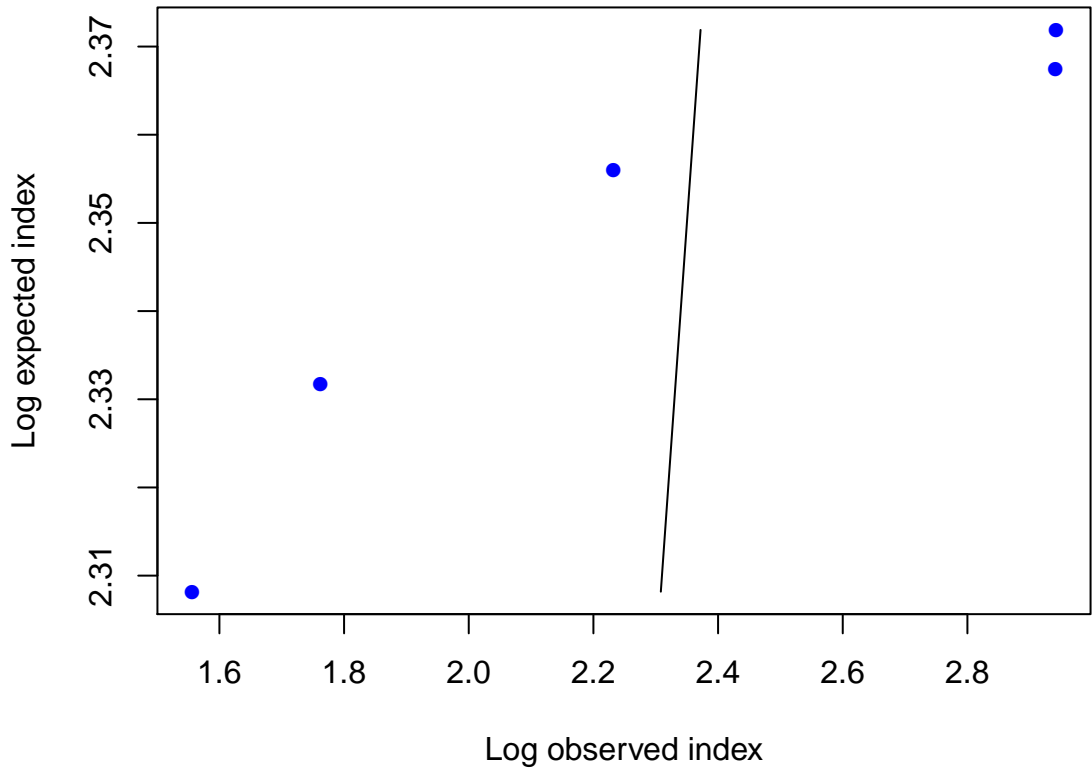
Index JPN_MID_6



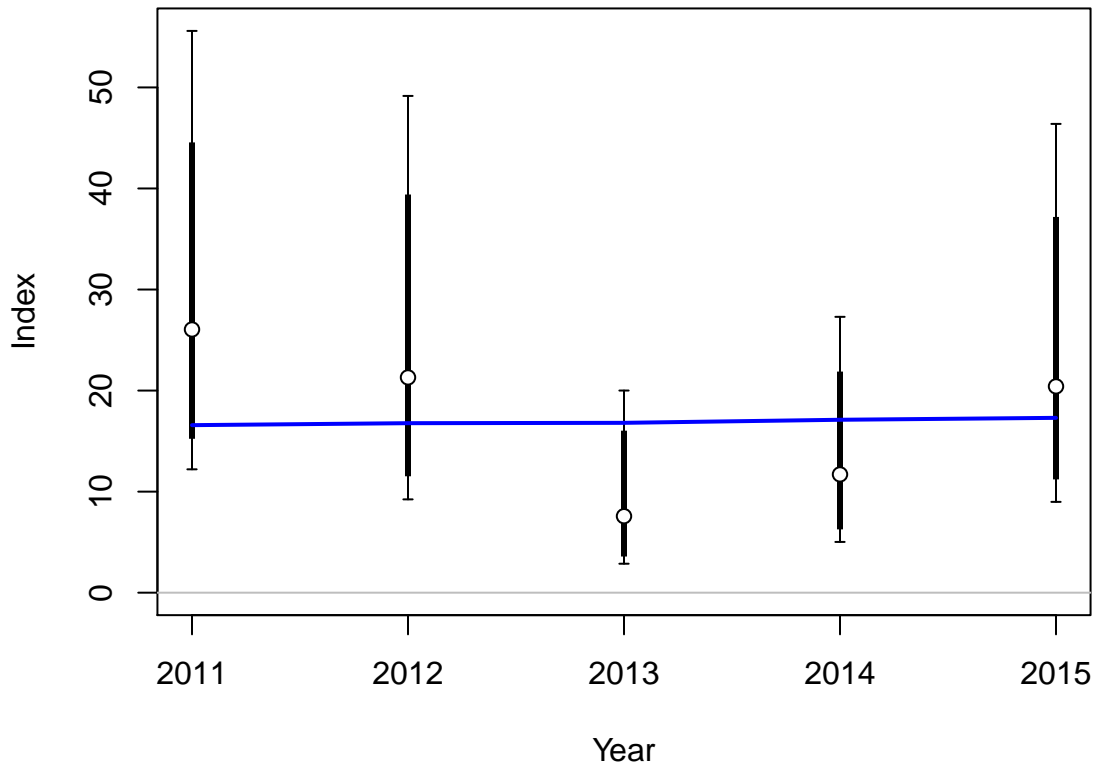
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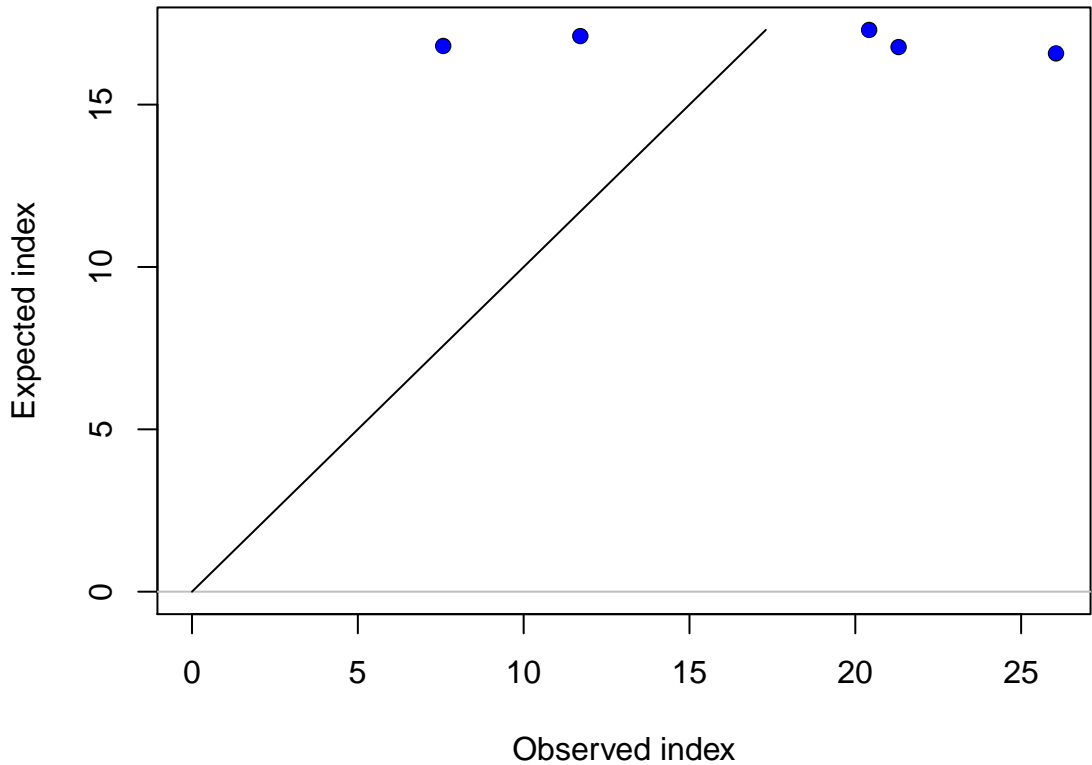
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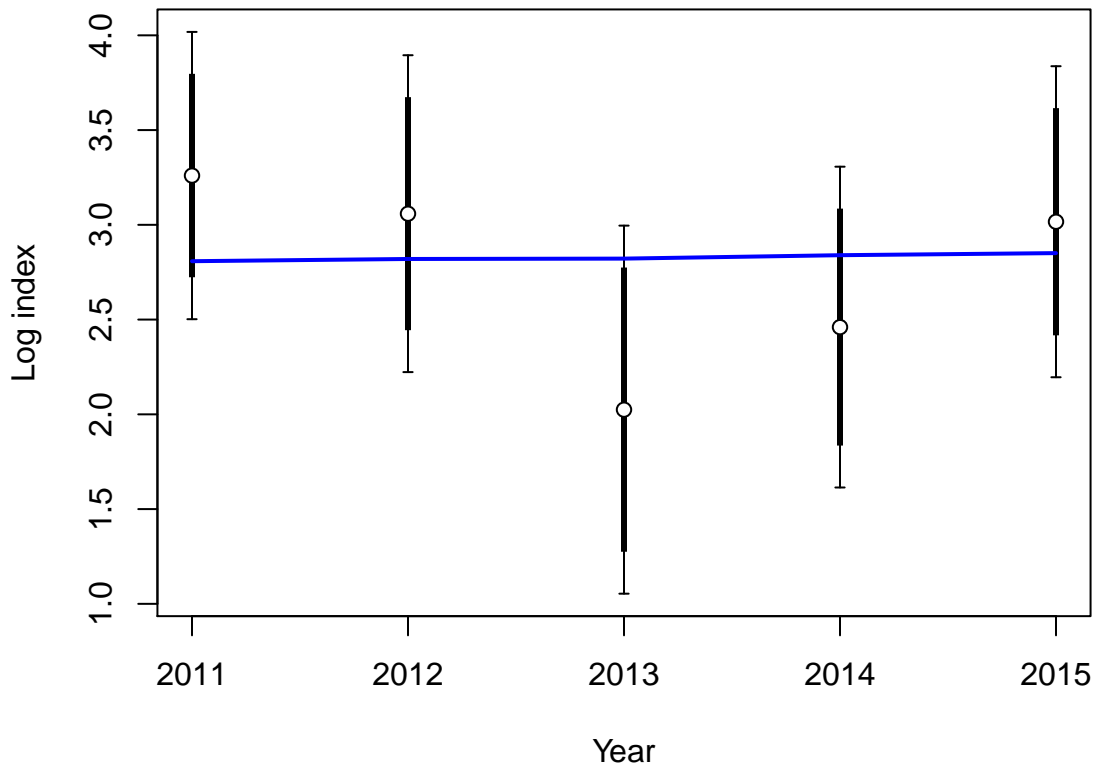
Index JPN_LATE_7



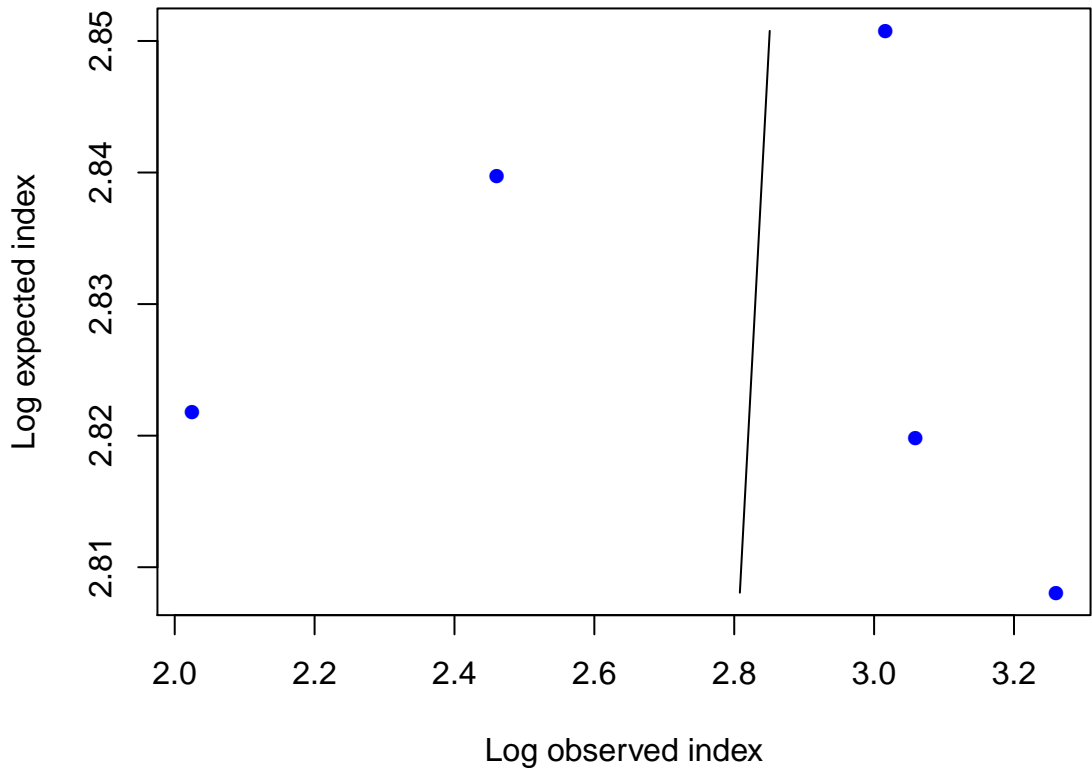
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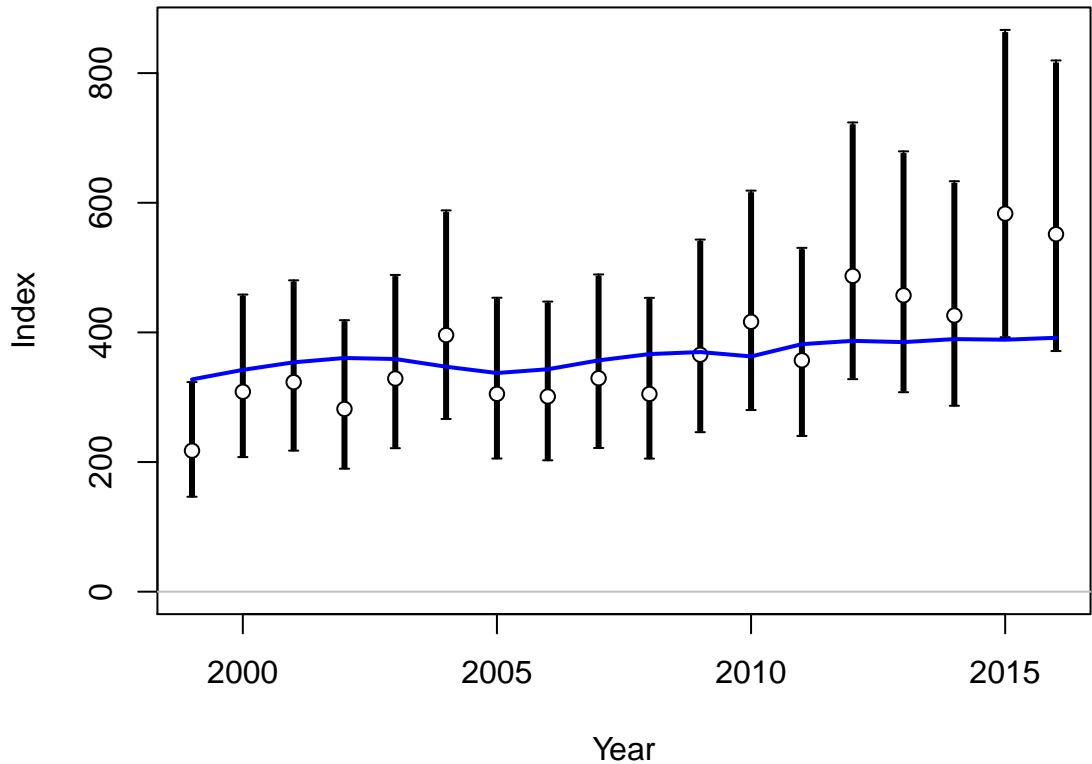
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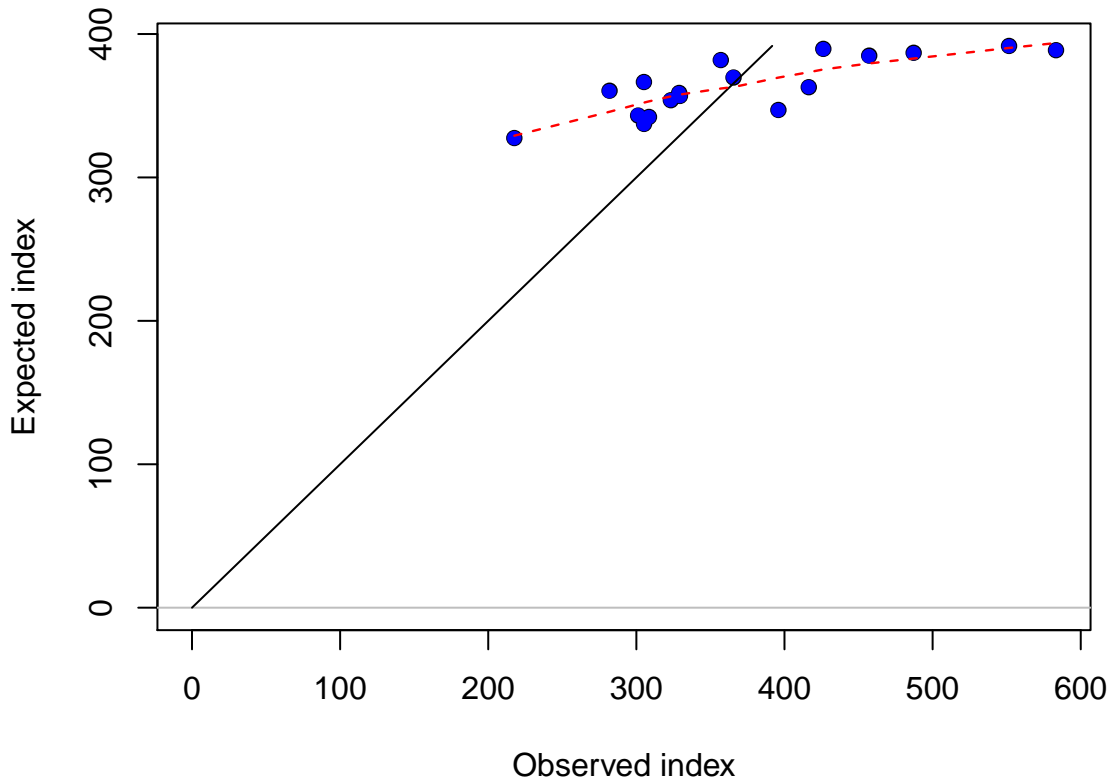
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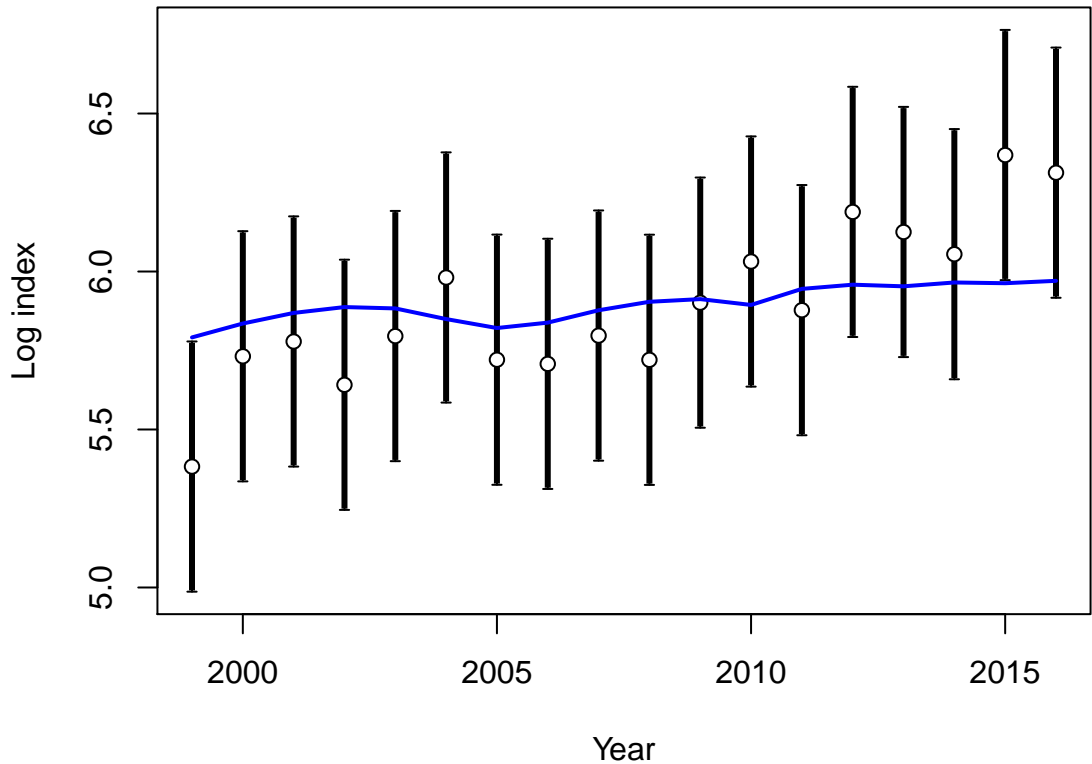
Index PORT_8



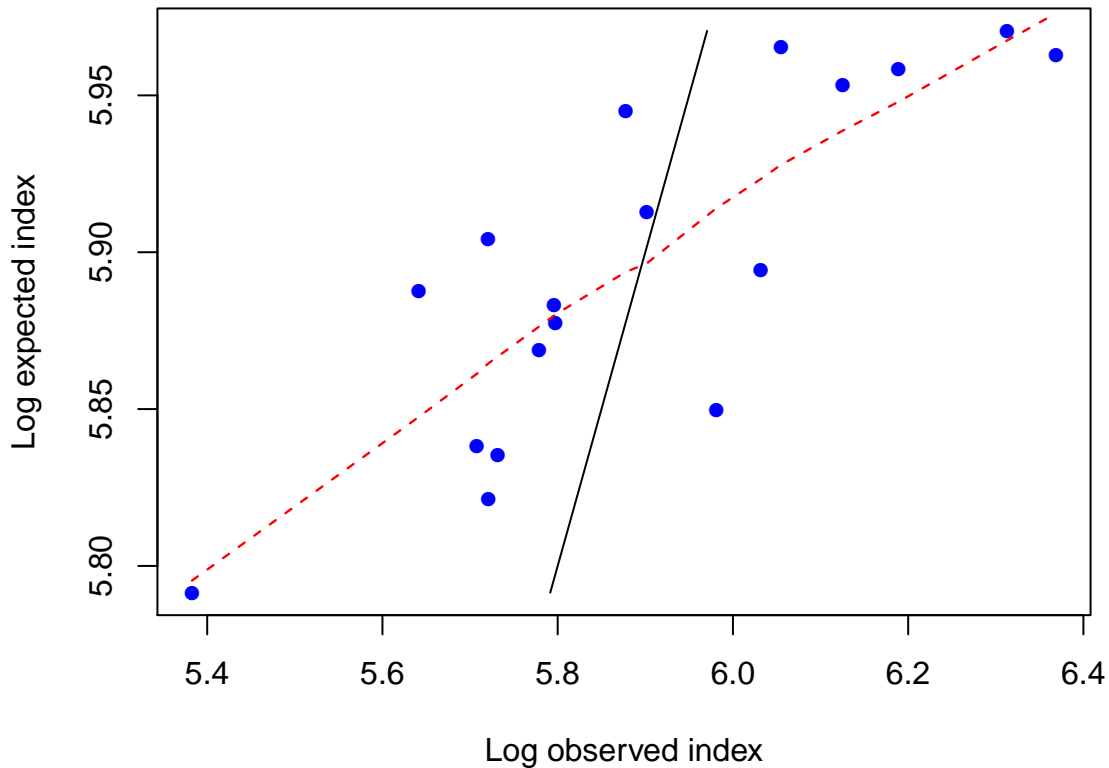
Index PORT_8



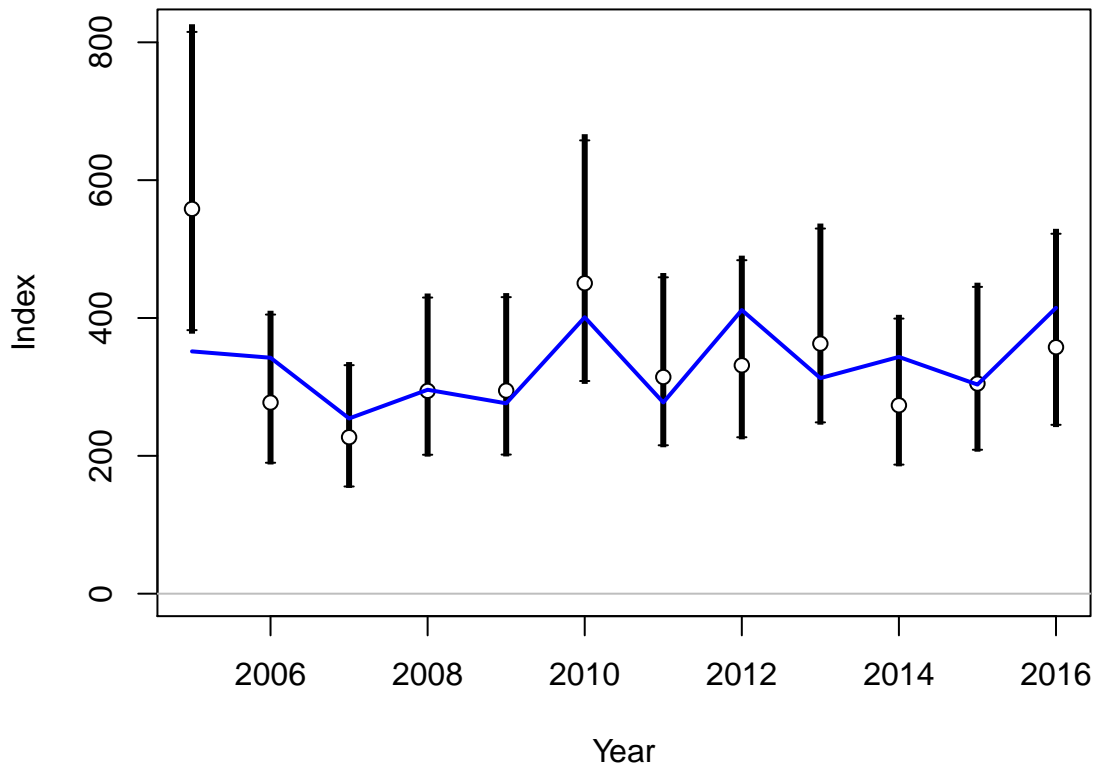
Log index PORT_8



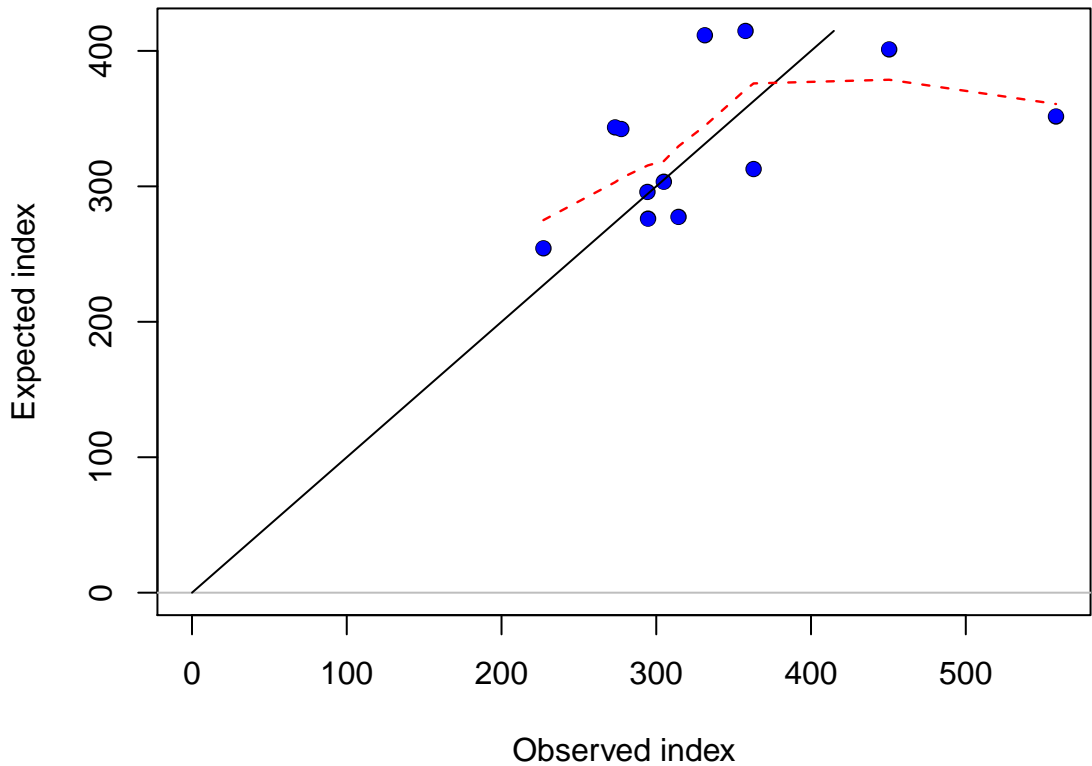
Log index PORT_8



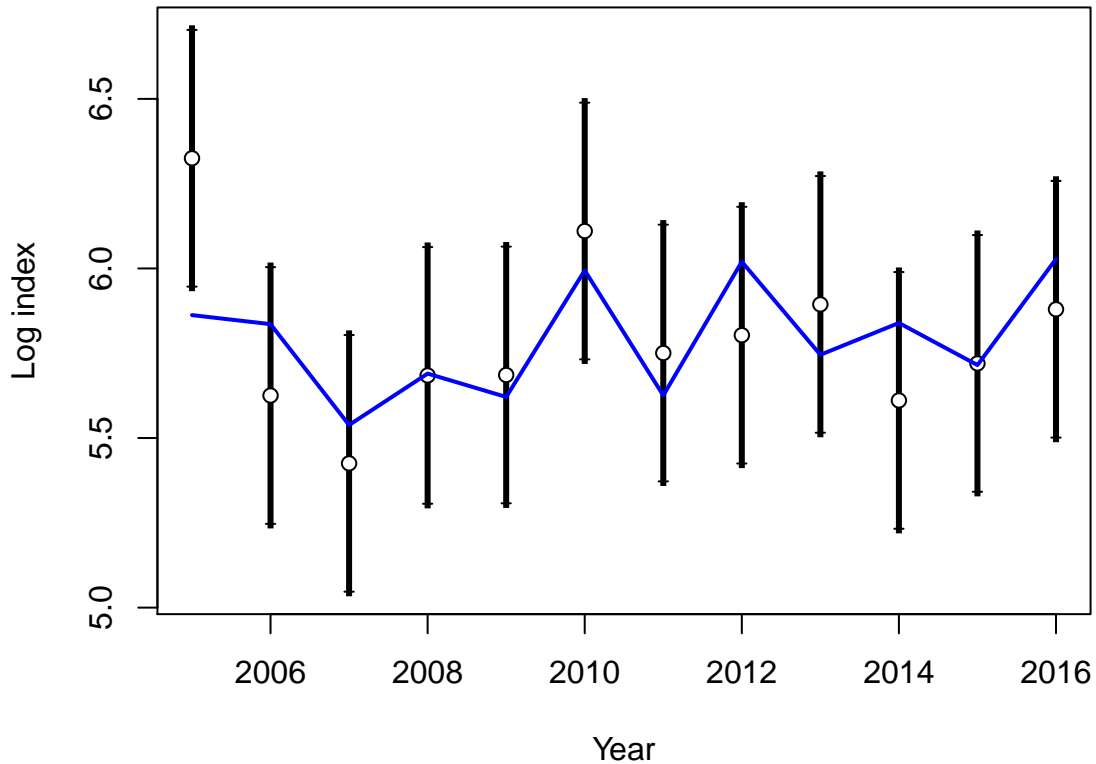
Index MOR_10



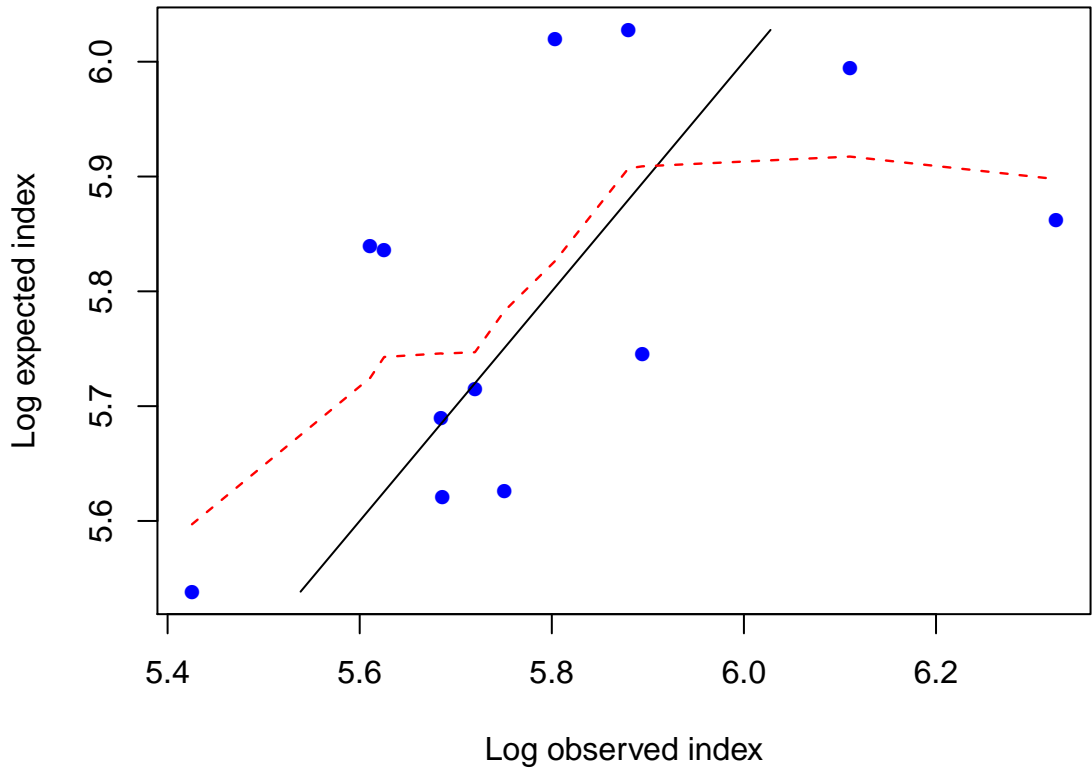
Index MOR_10



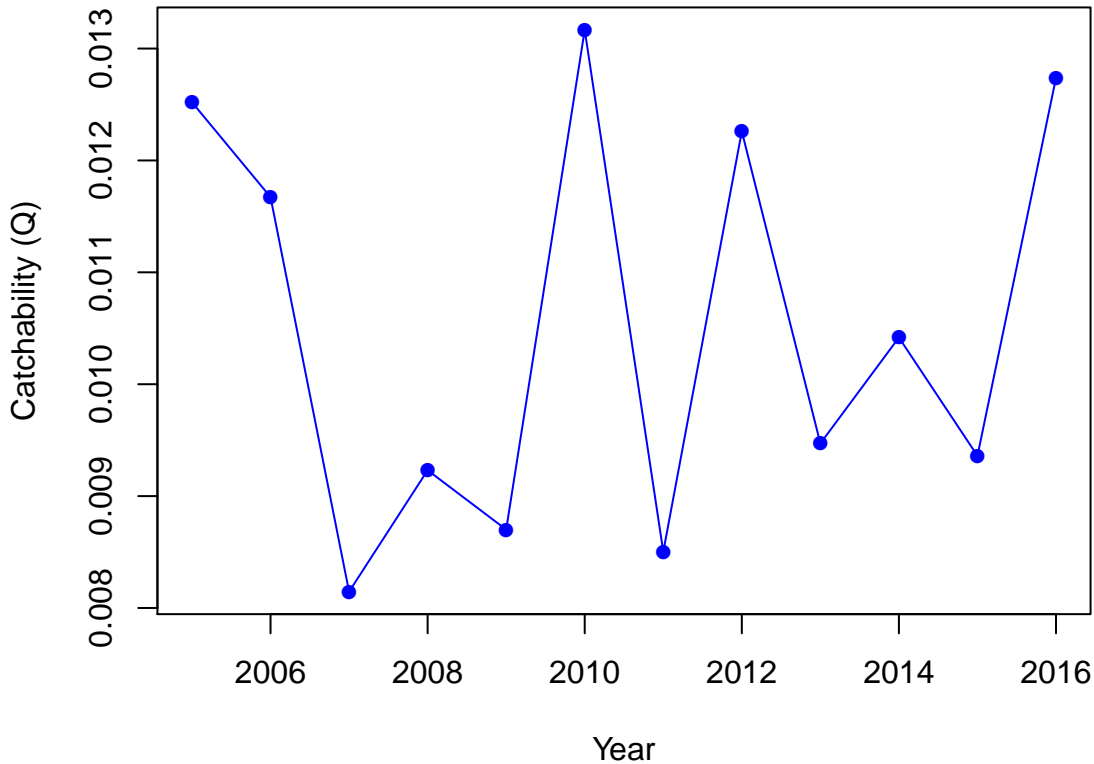
Log index MOR_10



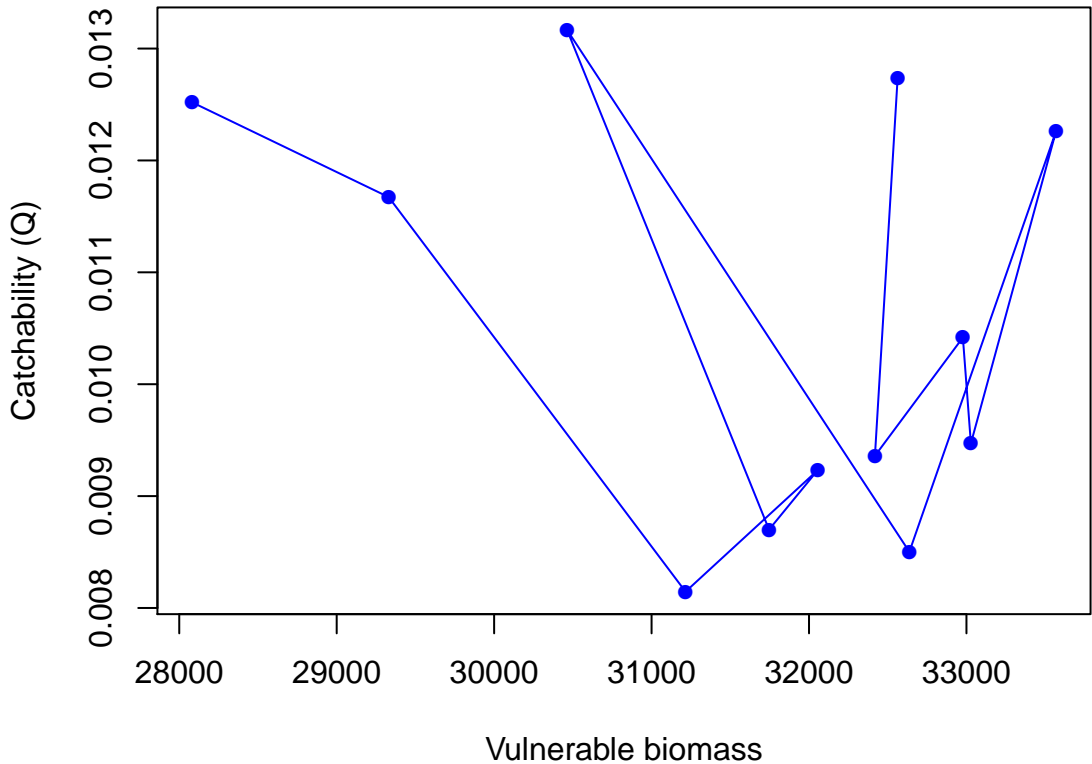
Log index MOR_10



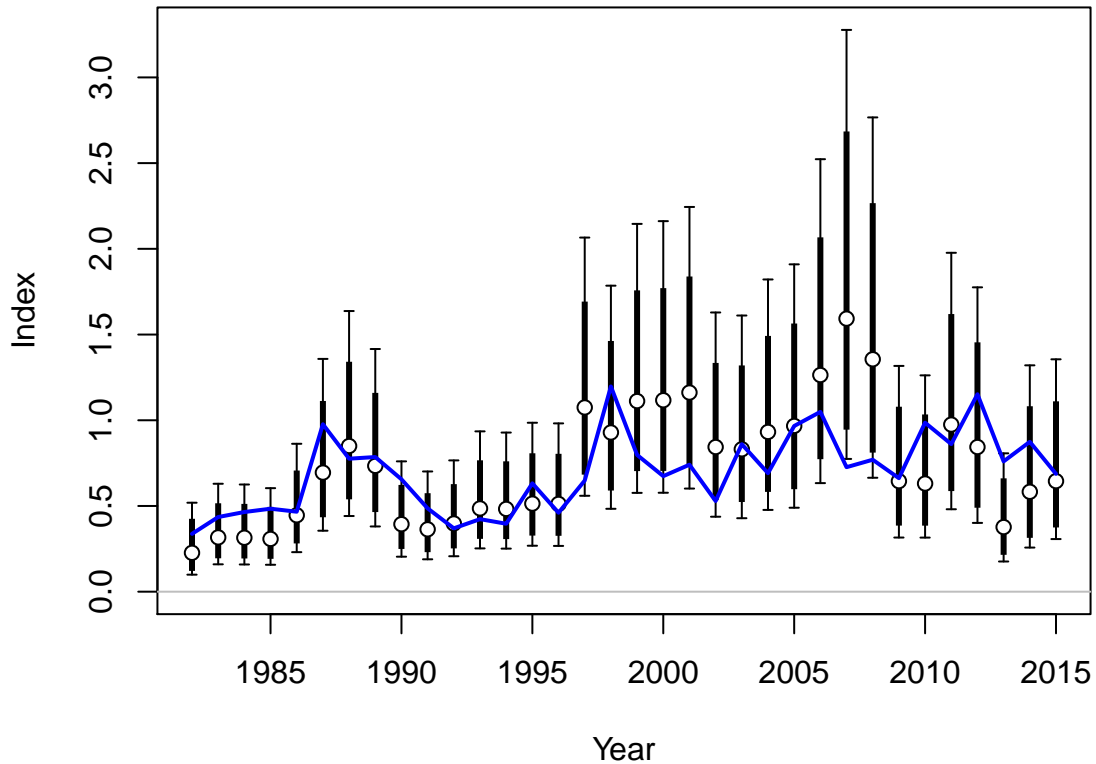
Time-varying catchability MOR_10



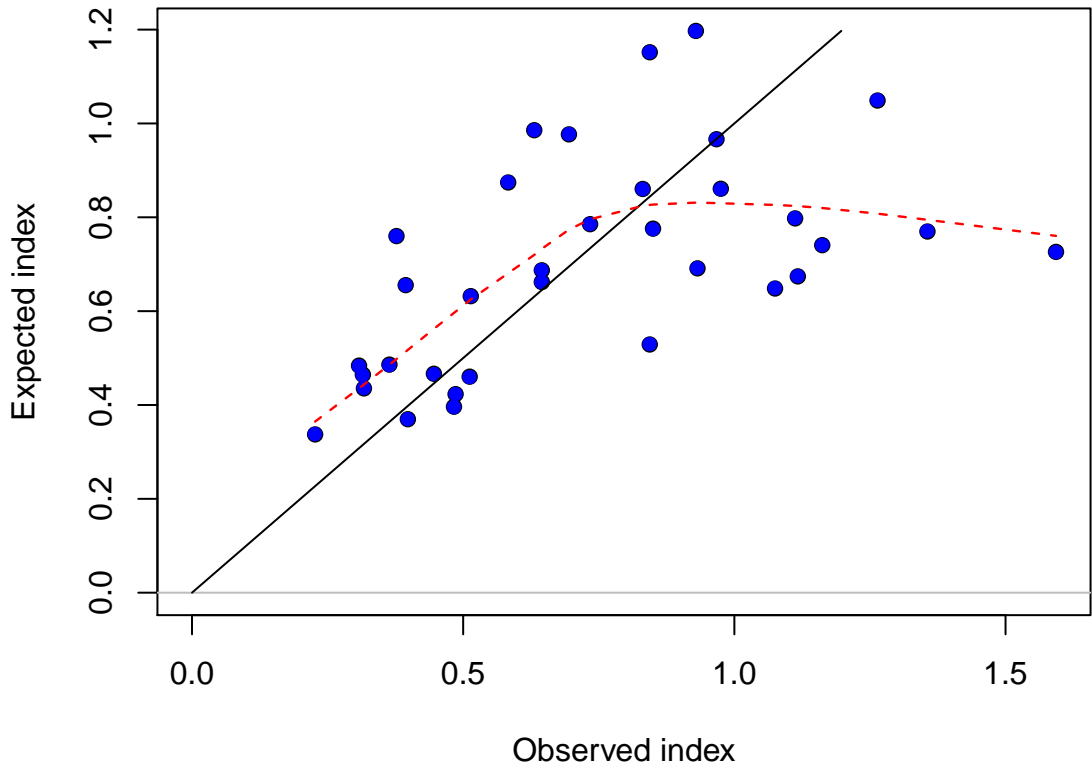
Catchability vs. vulnerable biomass MOR_10



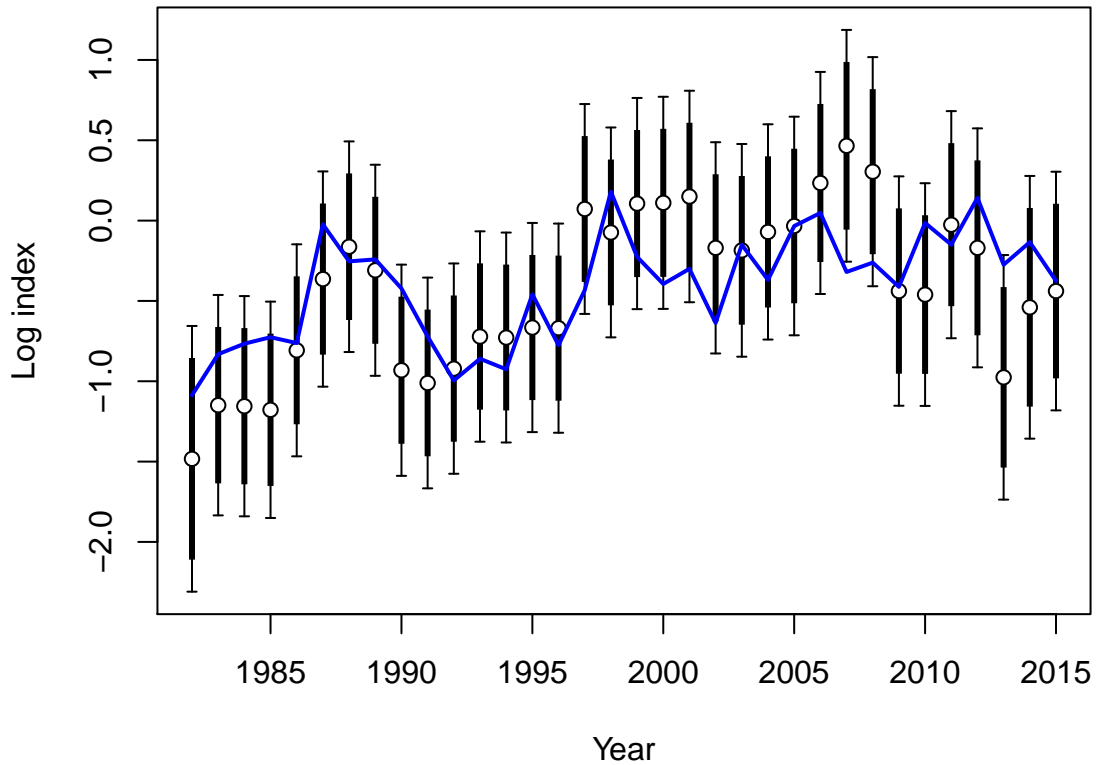
Index Age-1



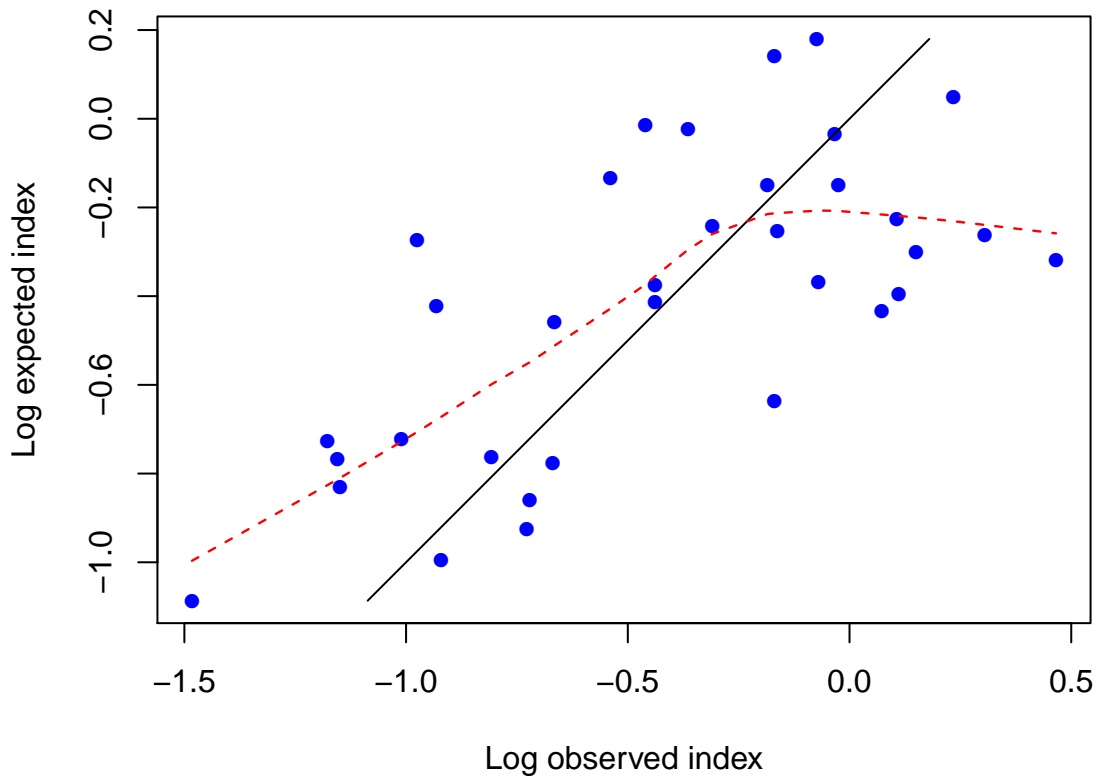
Index Age-1



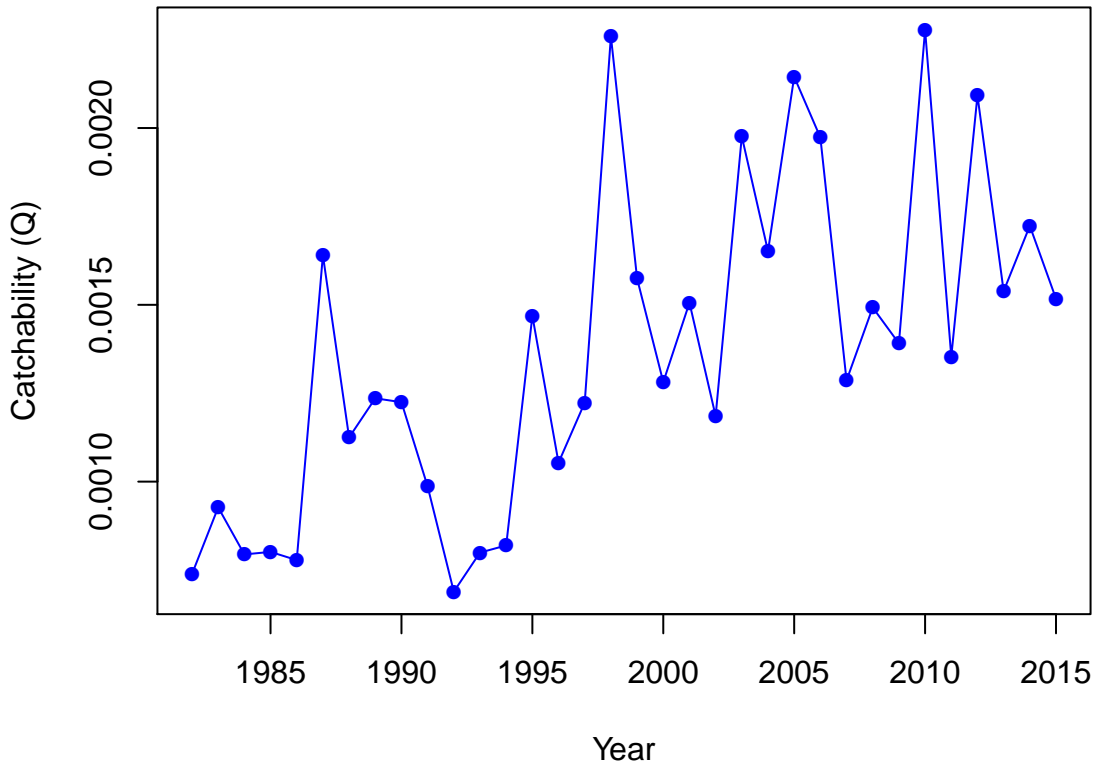
Log index Age-1



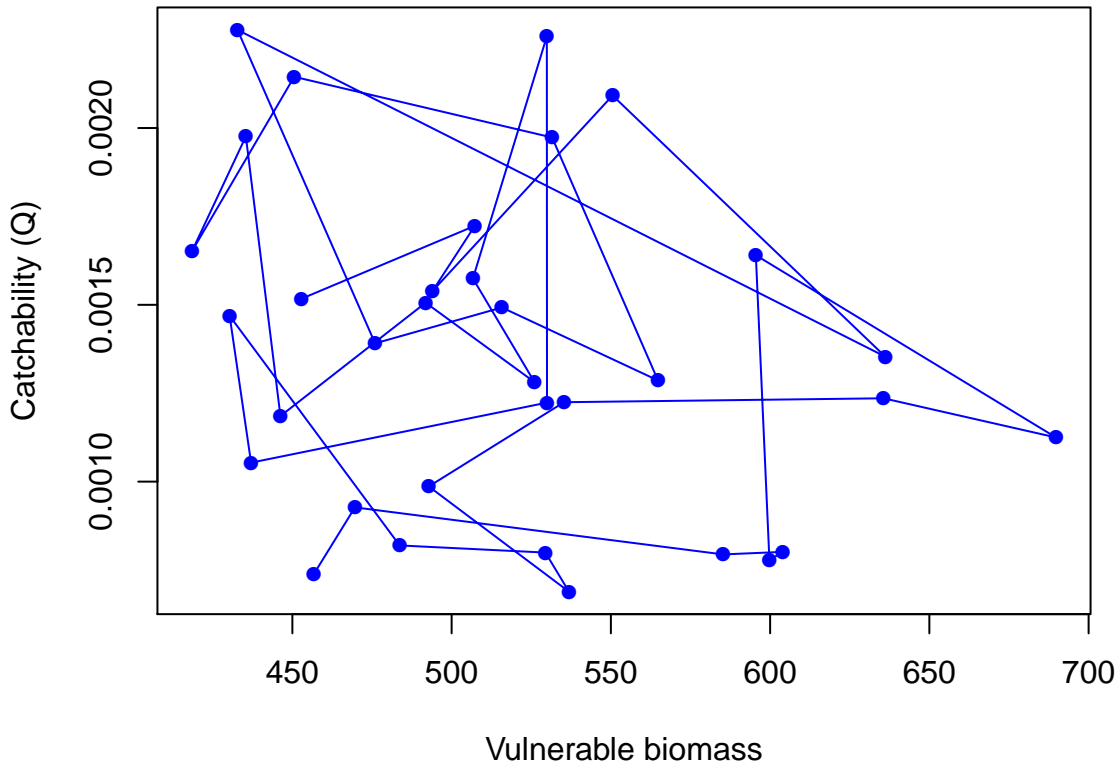
Log index Age-1



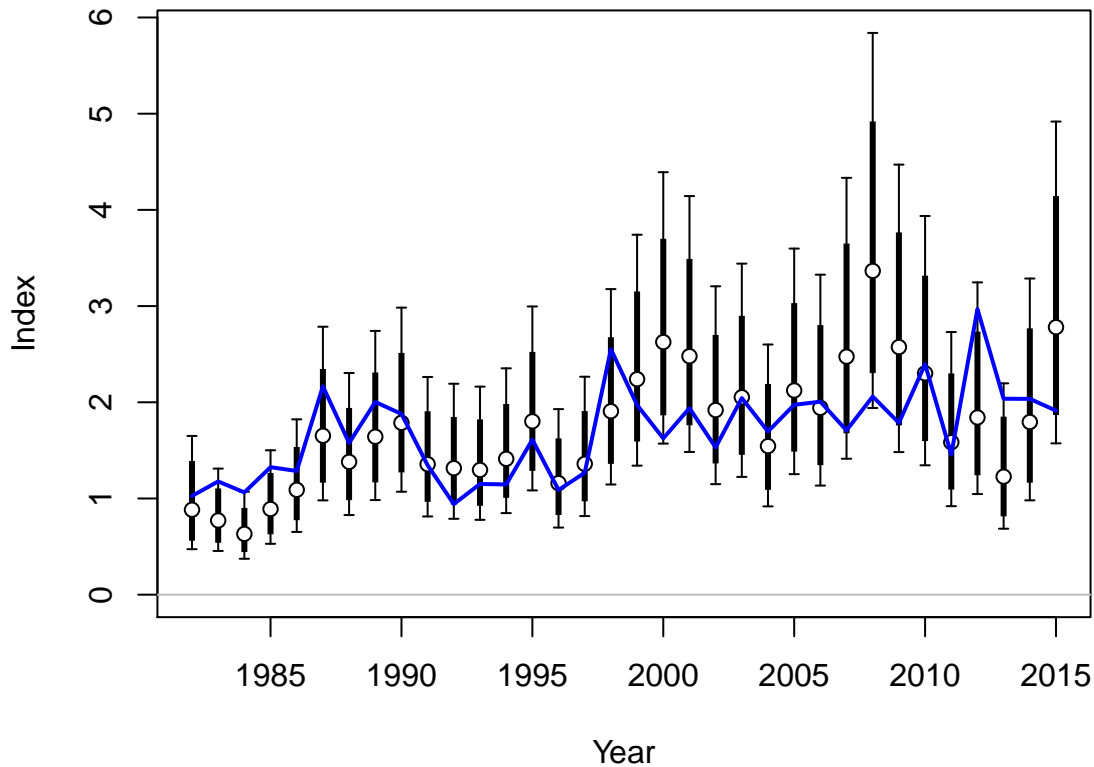
Time-varying catchability Age-1



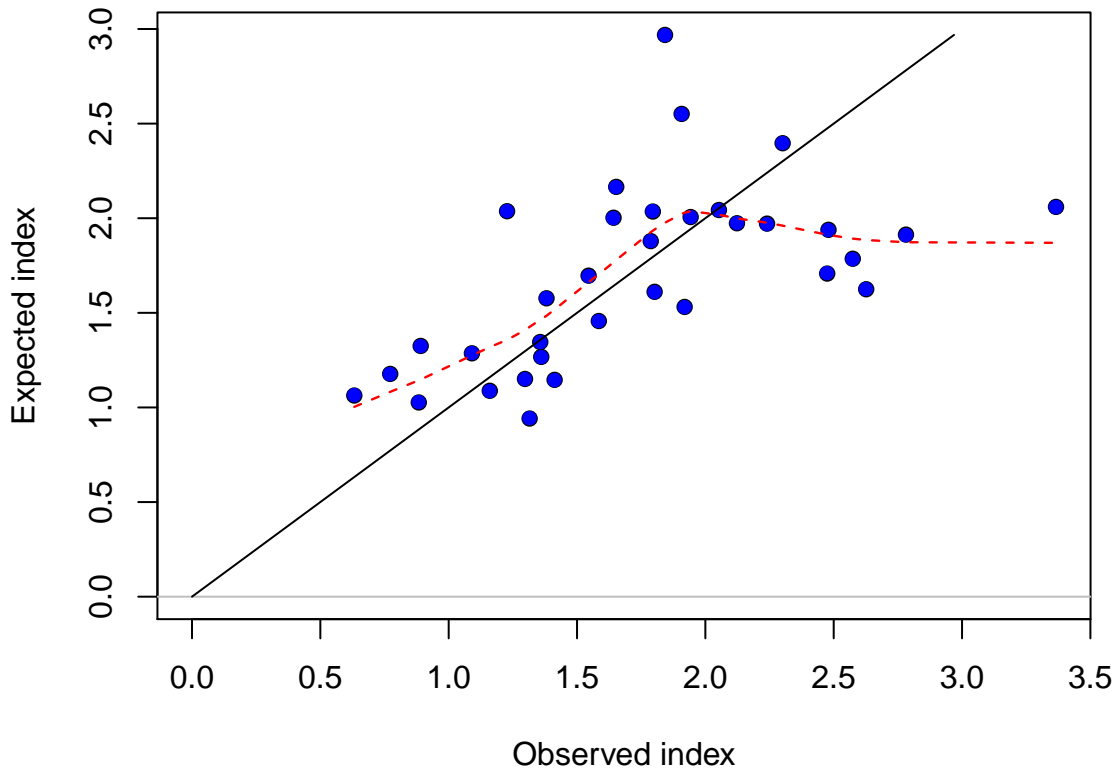
Catchability vs. vulnerable biomass Age-1



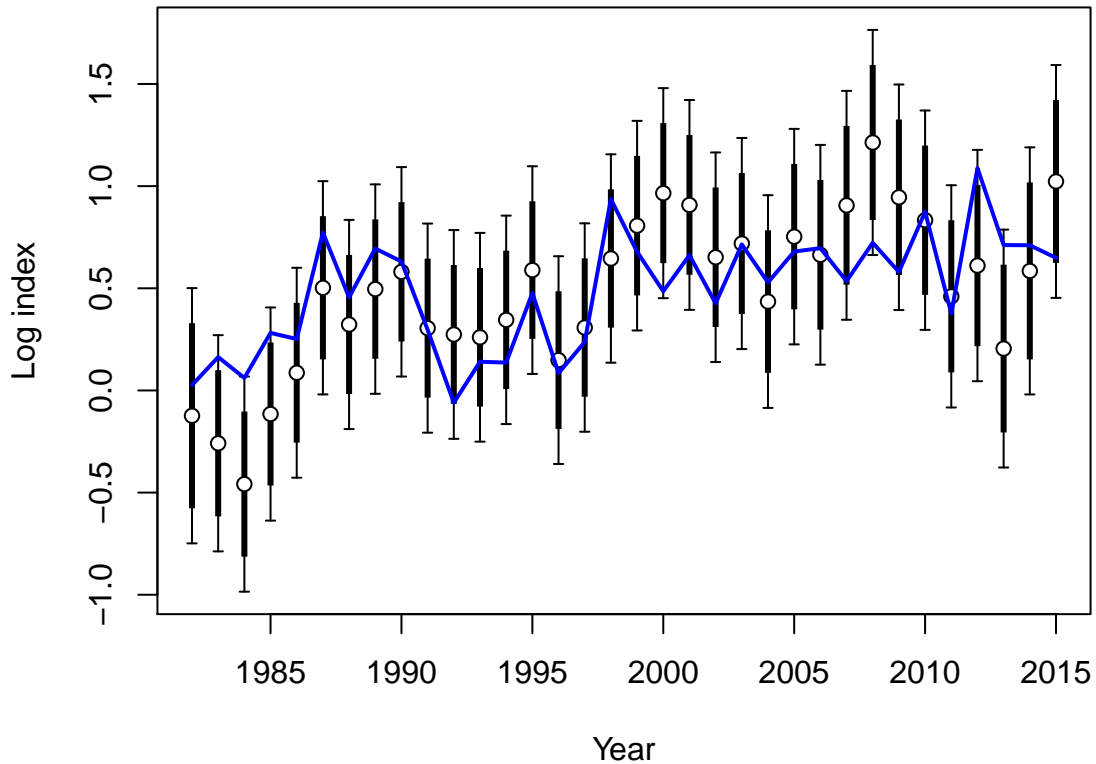
Index Age-2



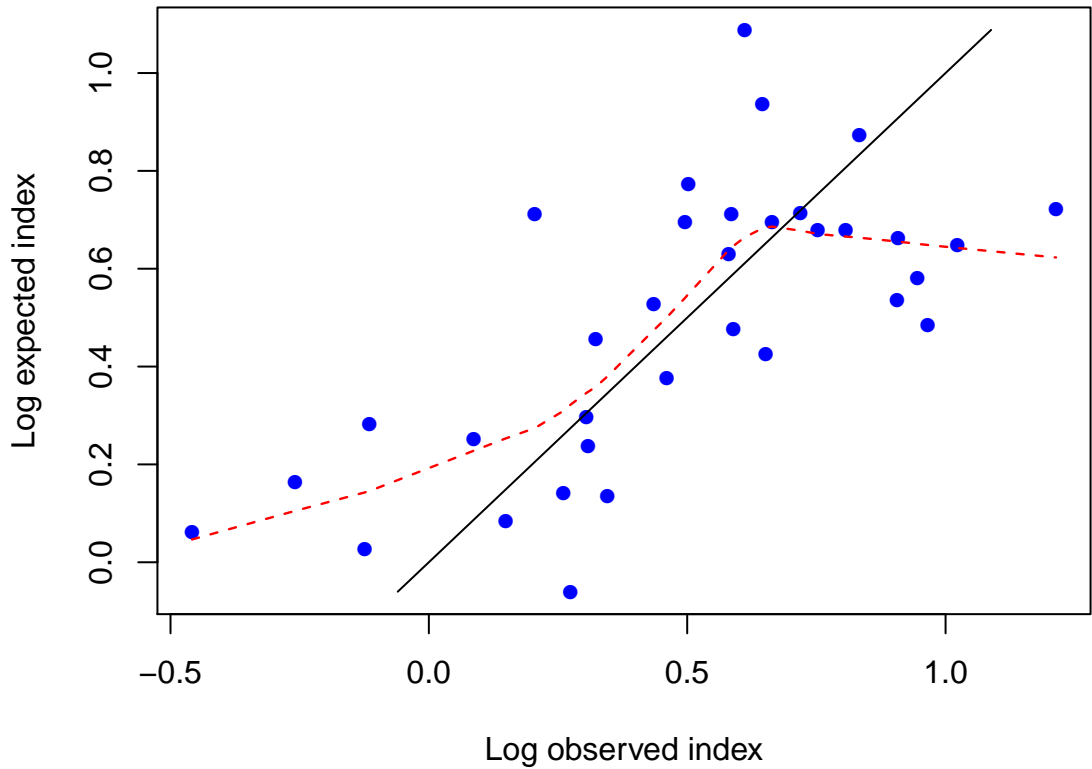
Index Age-2



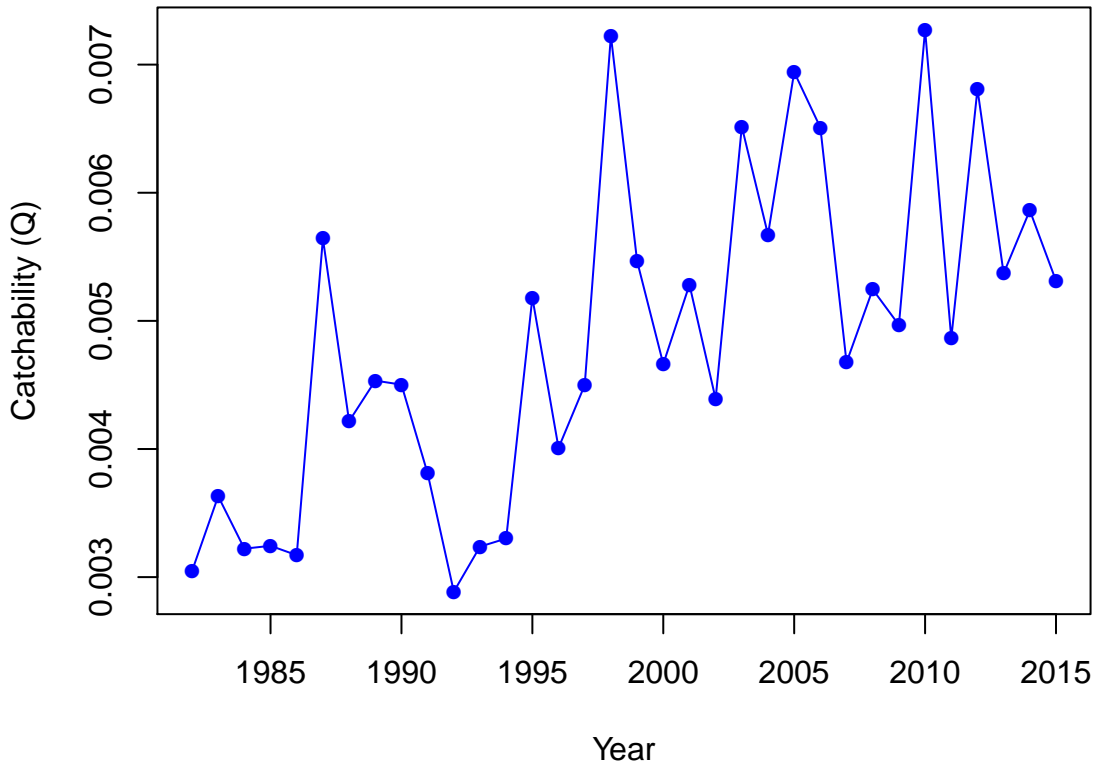
Log index Age-2



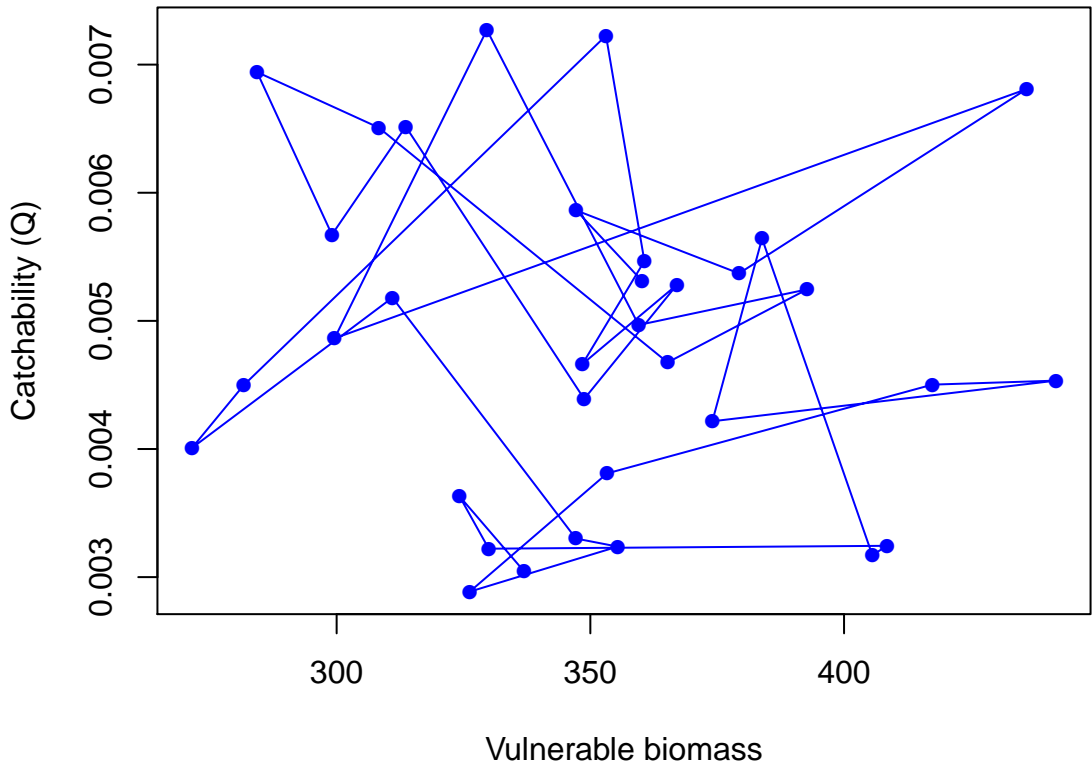
Log index Age-2



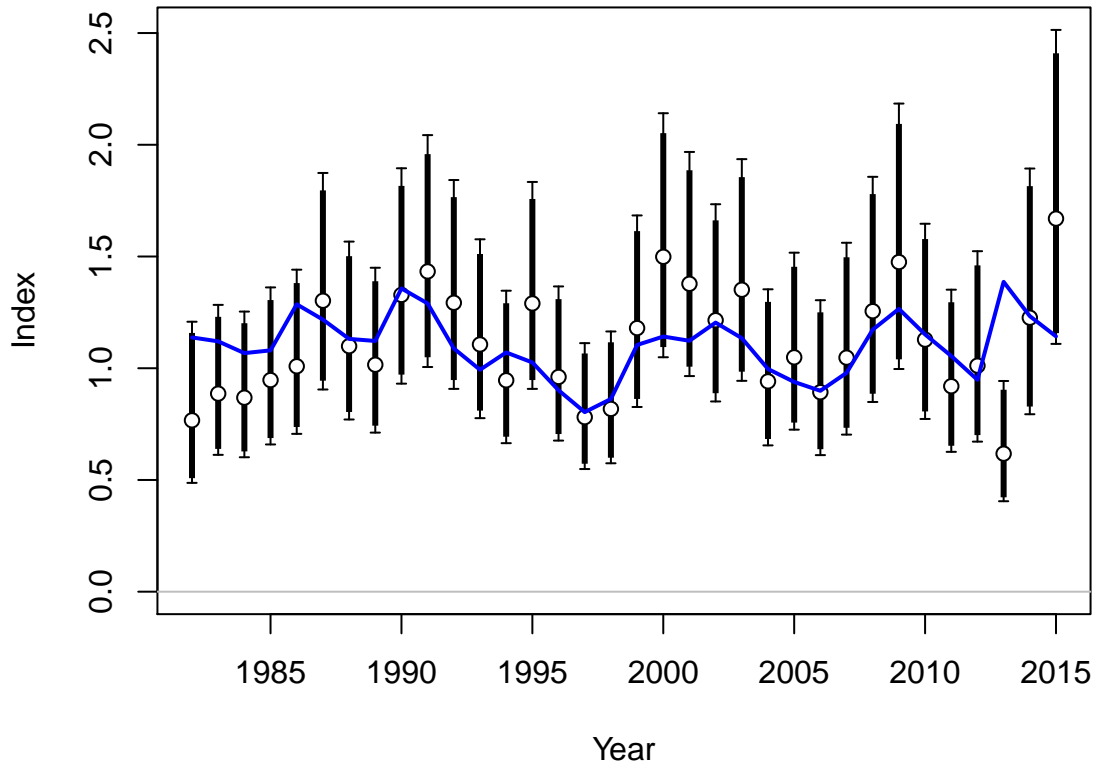
Time-varying catchability Age-2



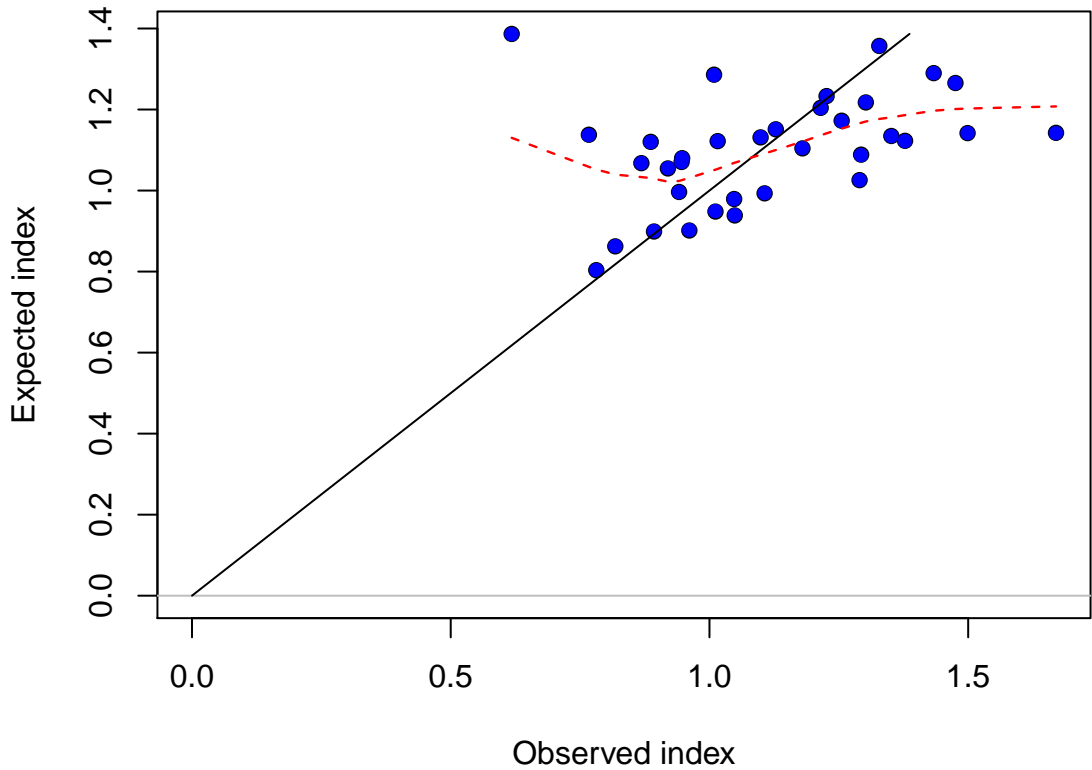
Catchability vs. vulnerable biomass Age-2



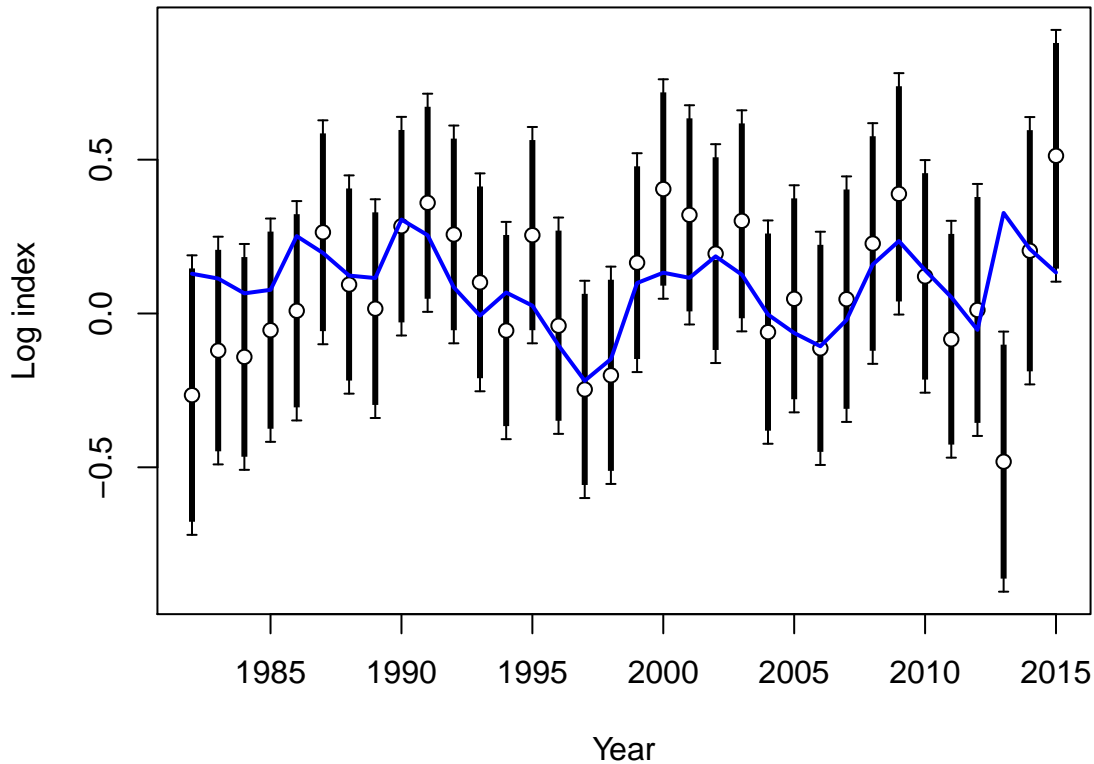
Index Age-3



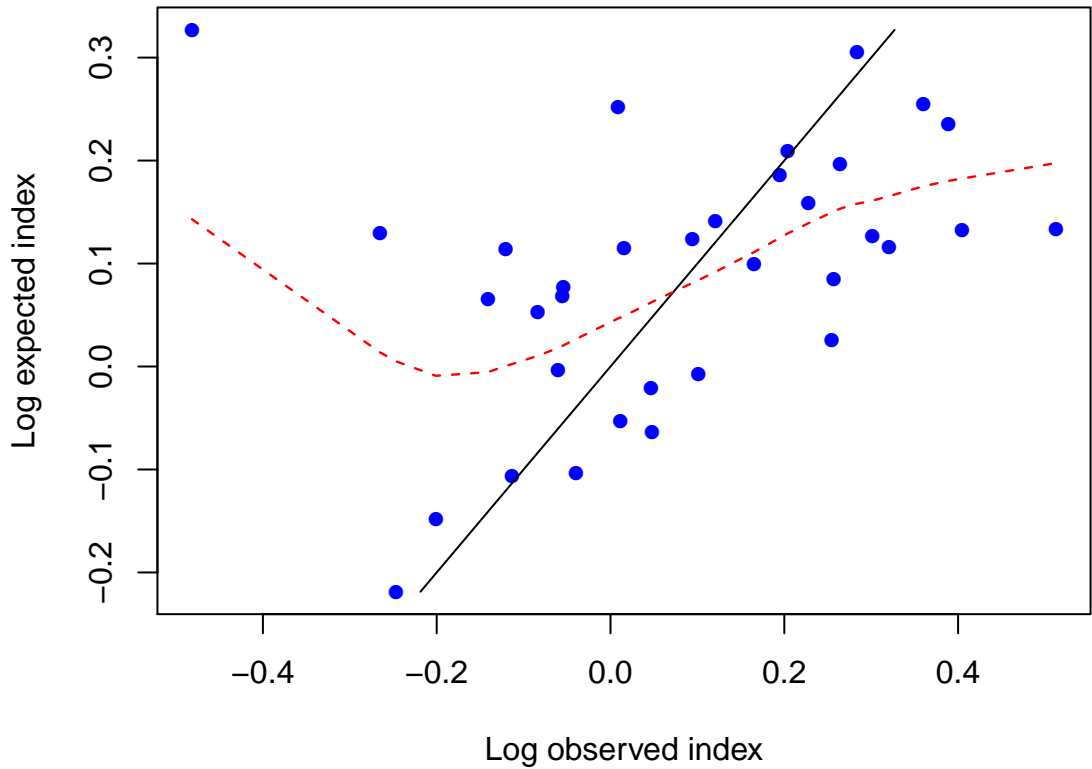
Index Age-3



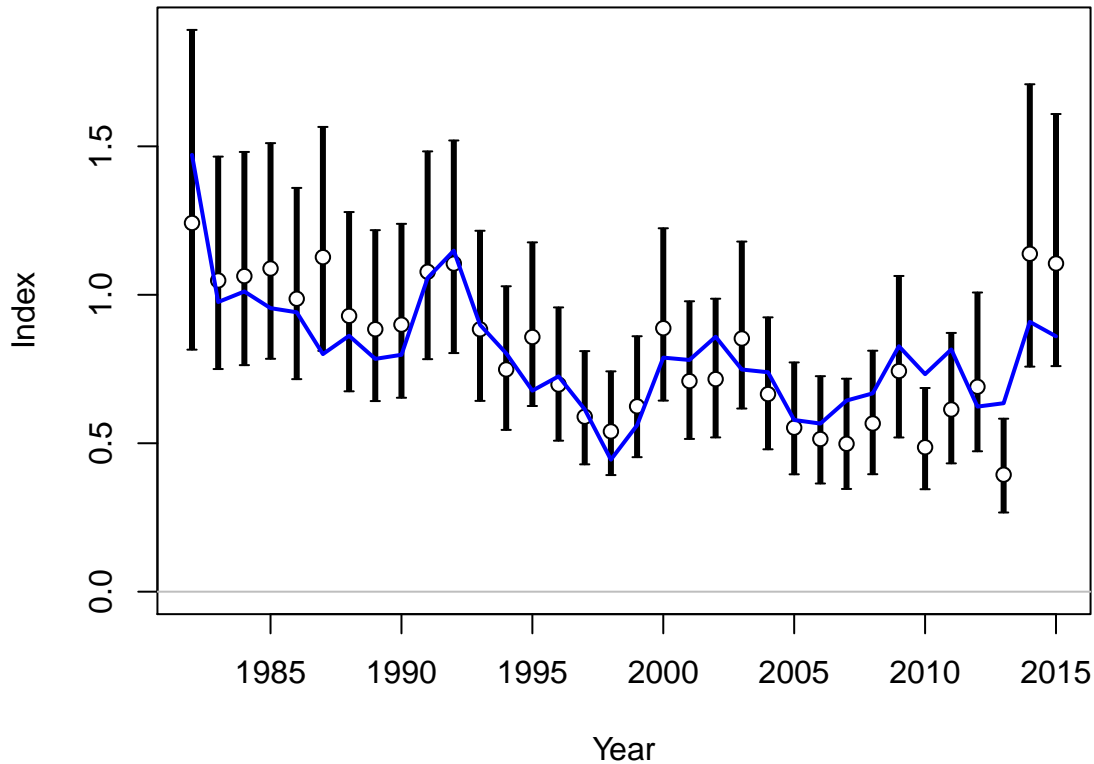
Log index Age-3



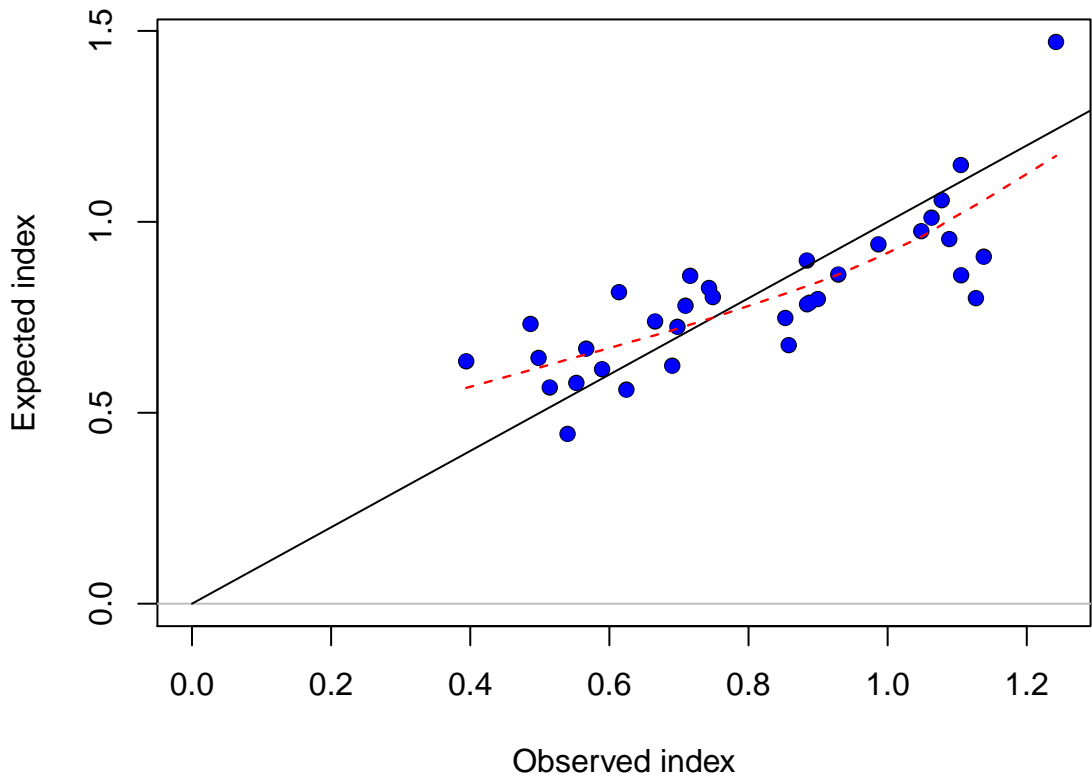
Log index Age-3



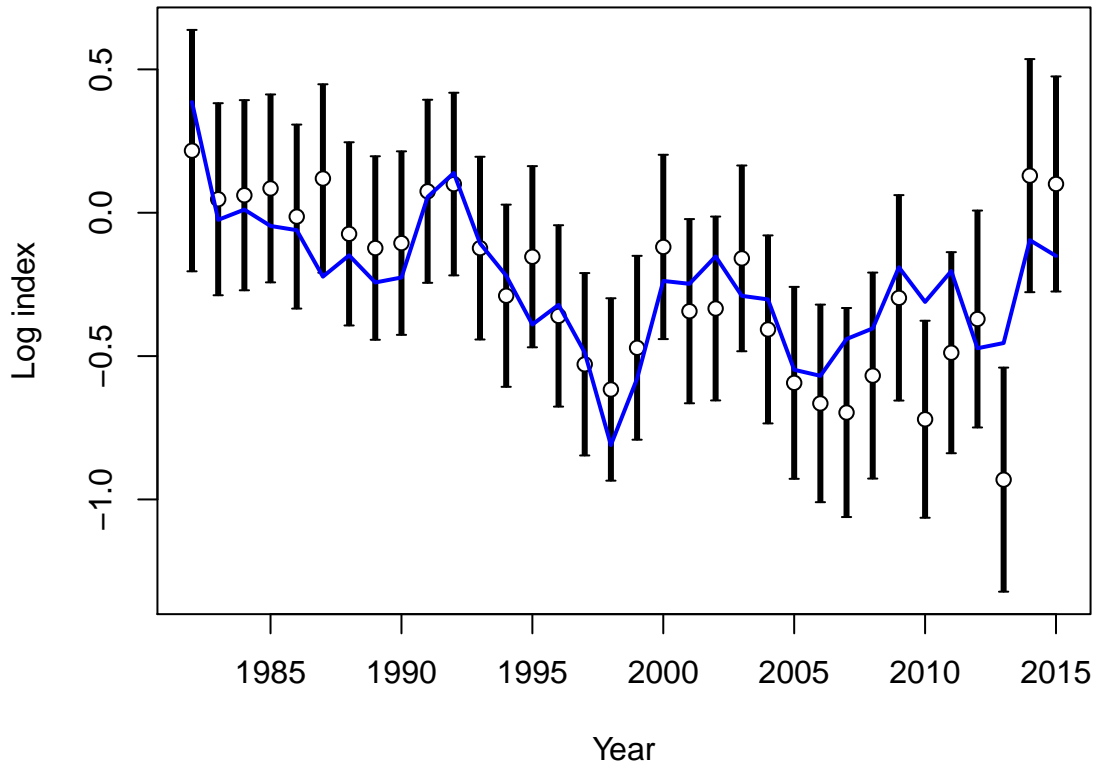
Index Age-4



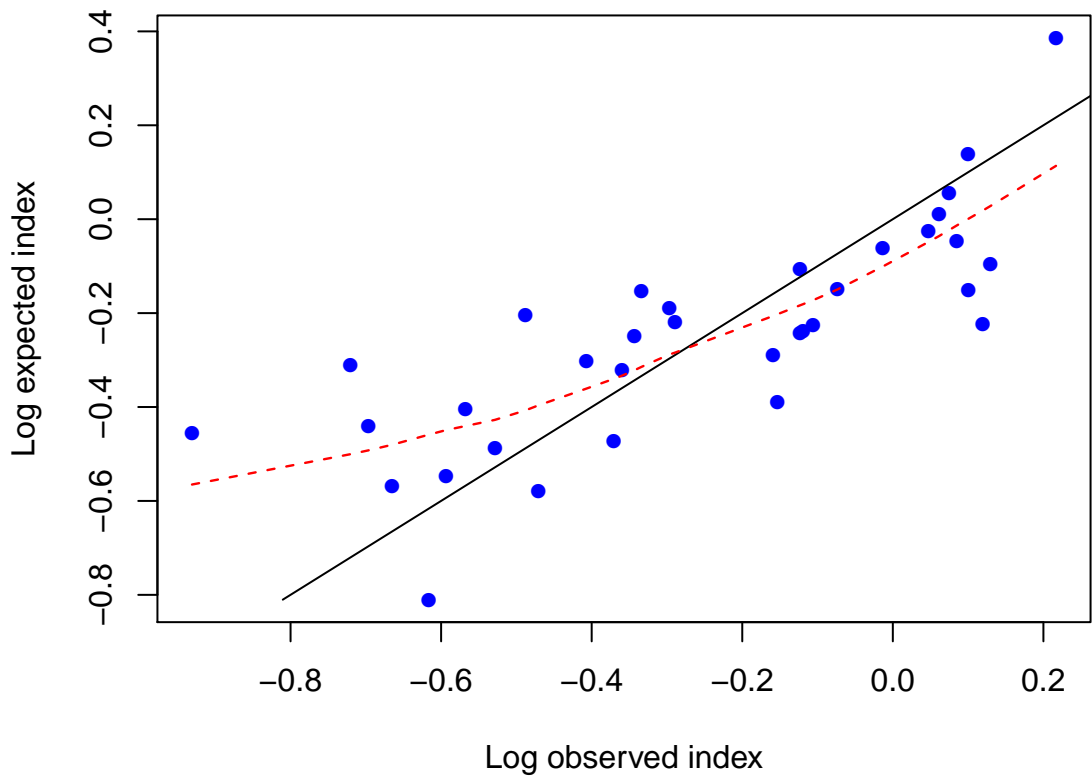
Index Age-4



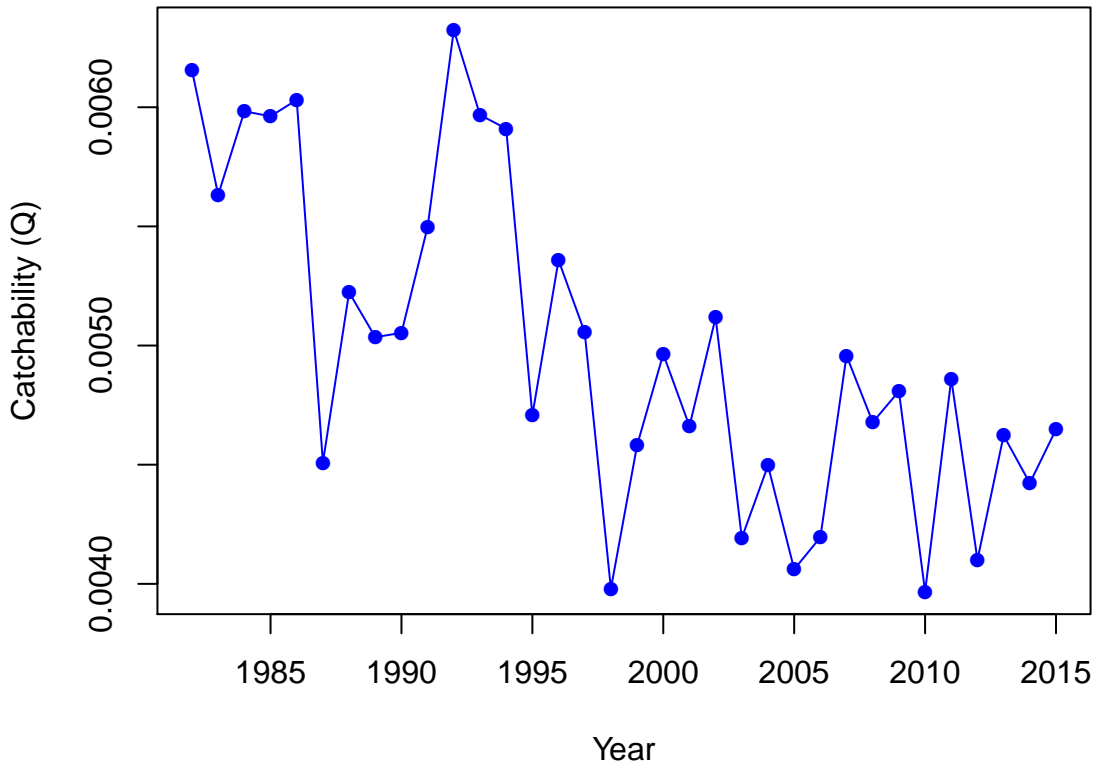
Log index Age-4



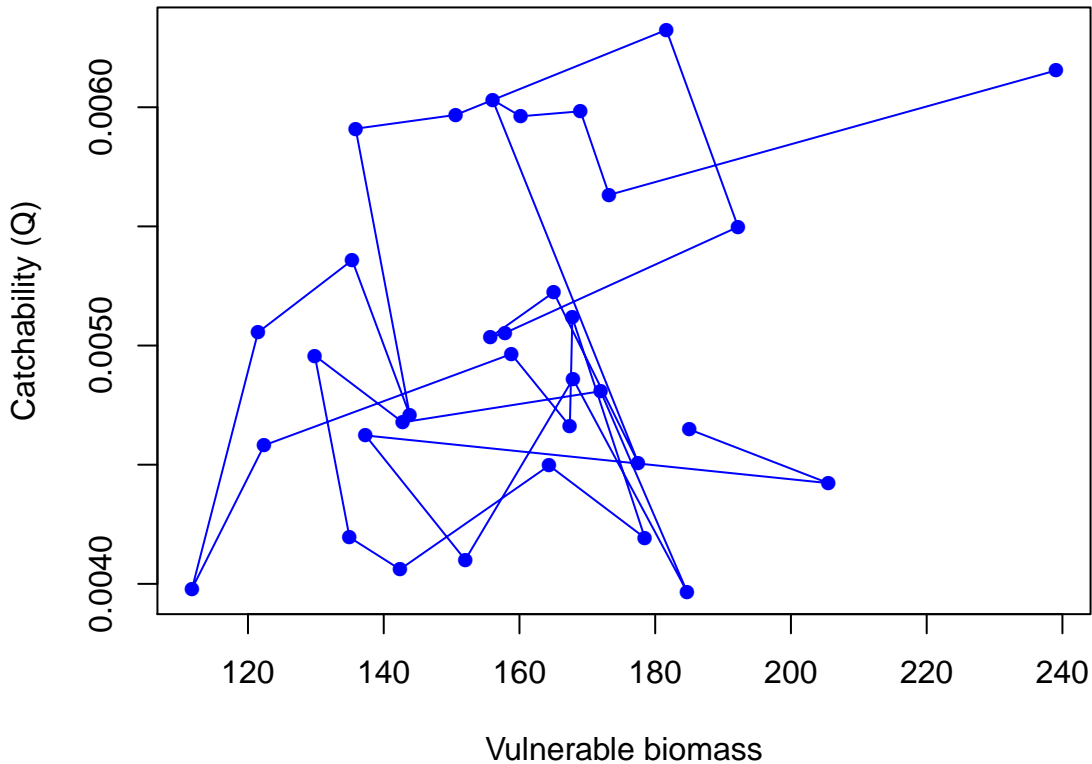
Log index Age-4



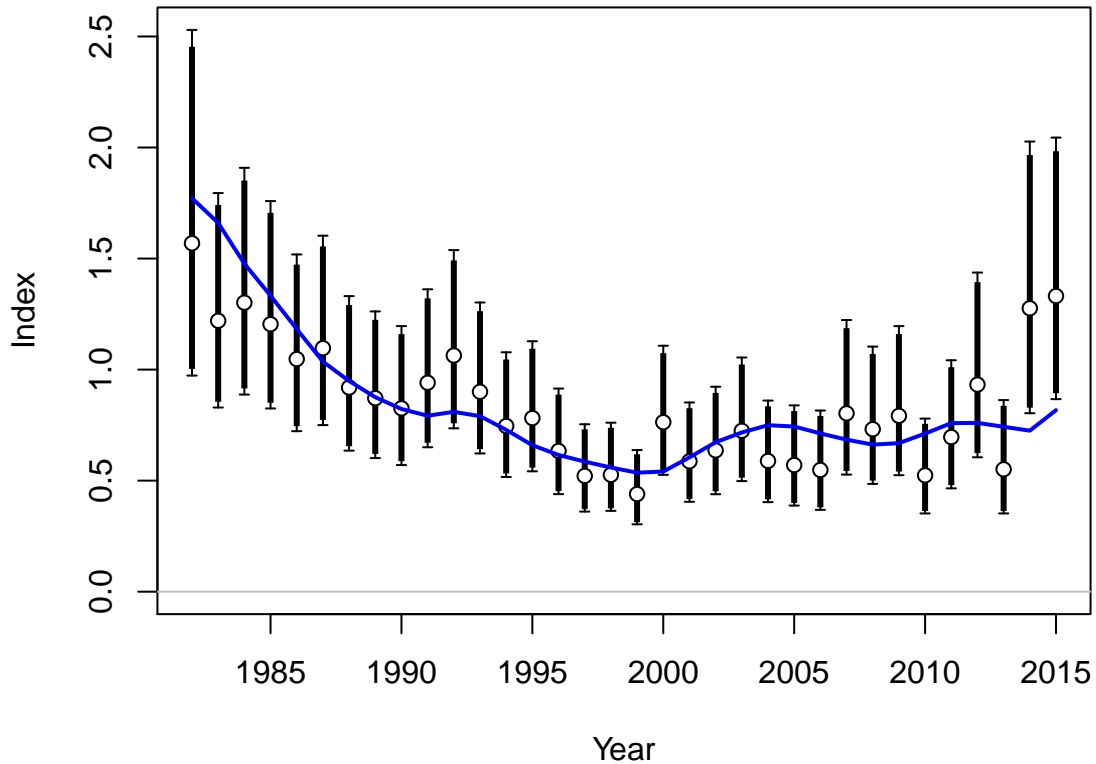
Time-varying catchability Age-4



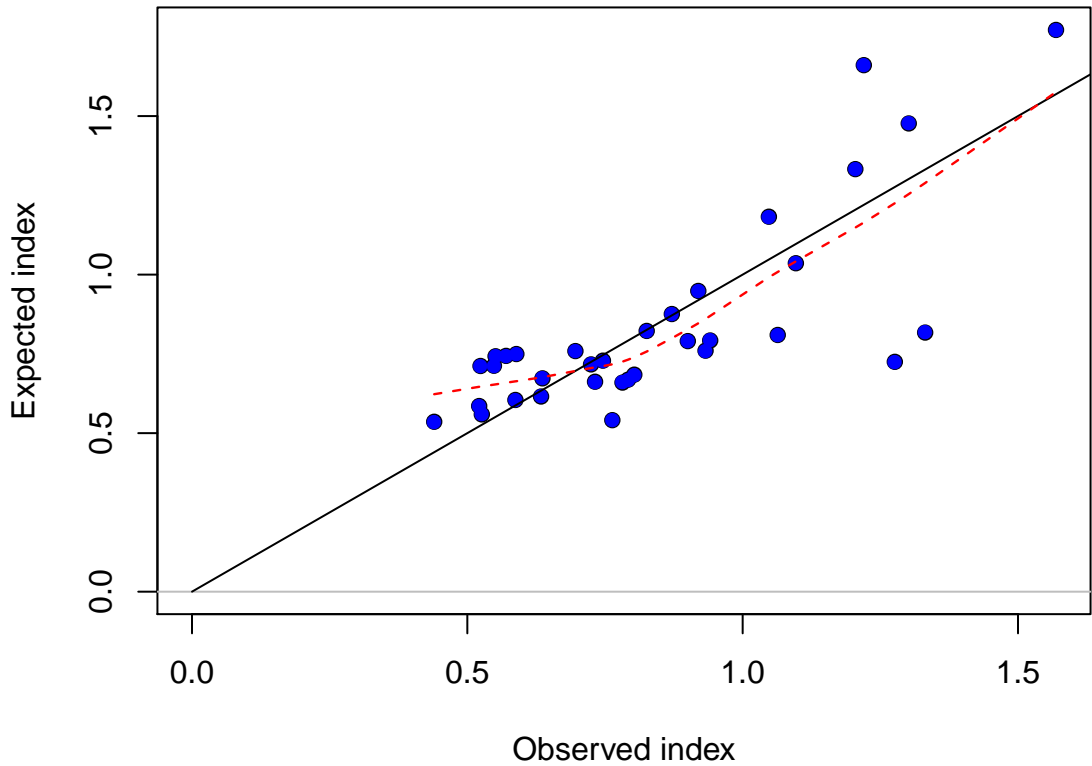
Catchability vs. vulnerable biomass Age-4



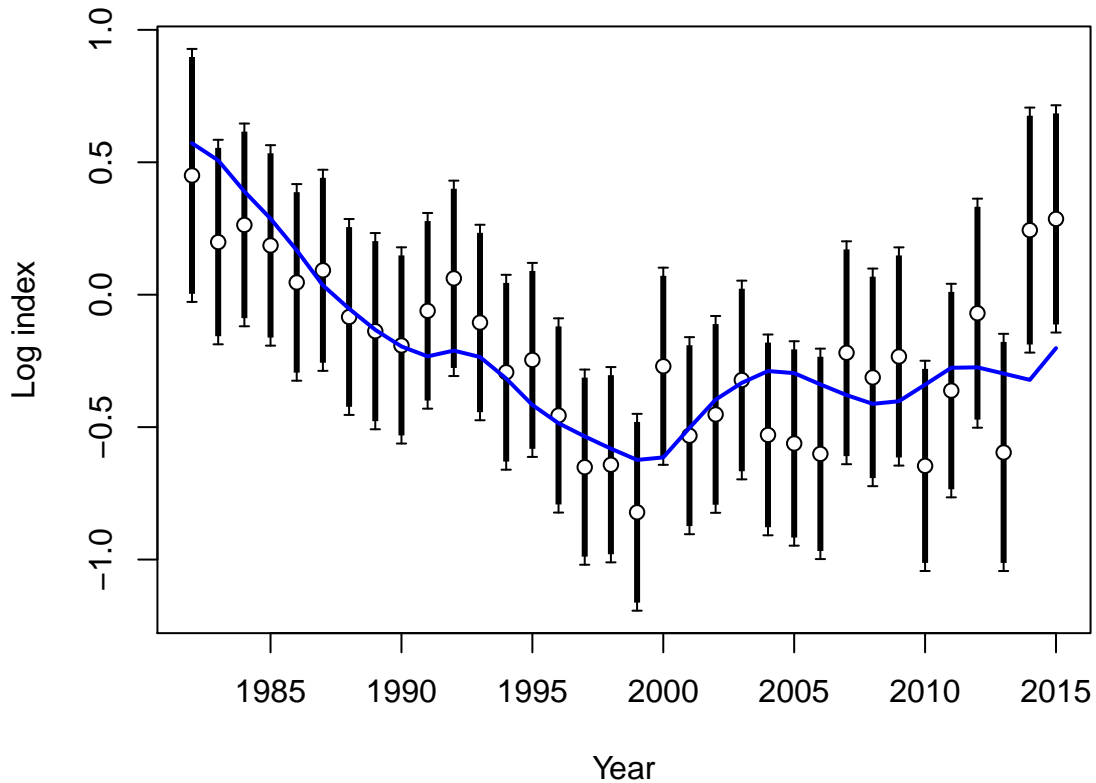
Index Age-5+



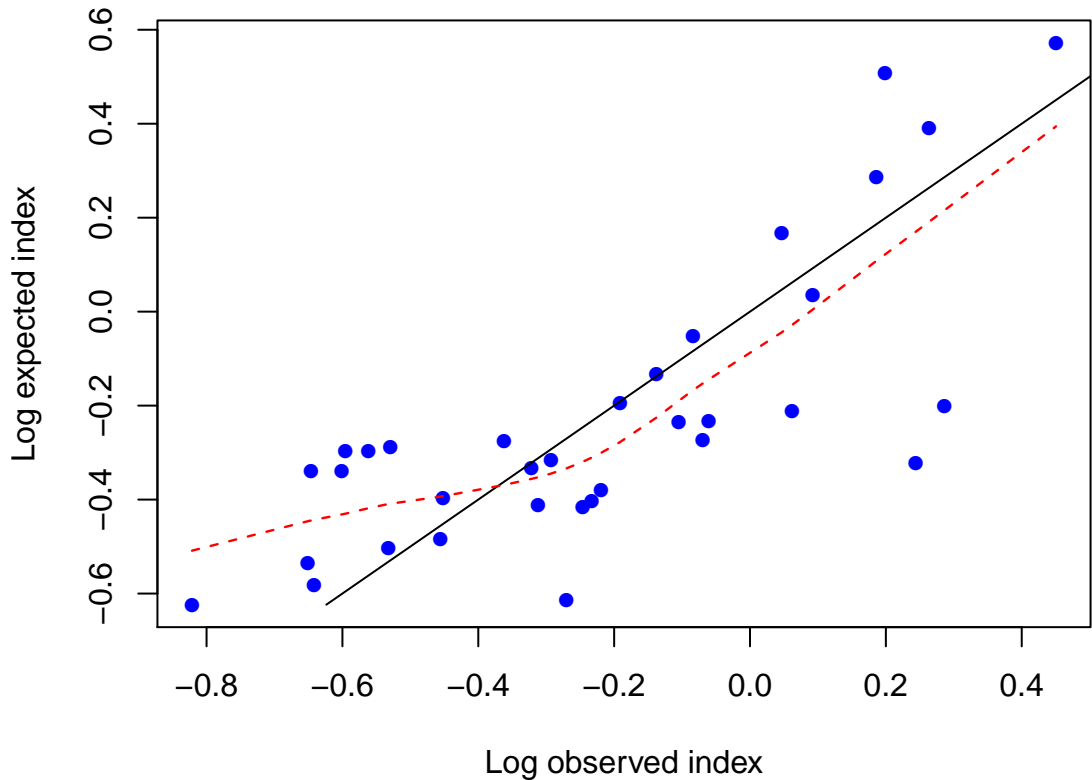
Index Age-5+



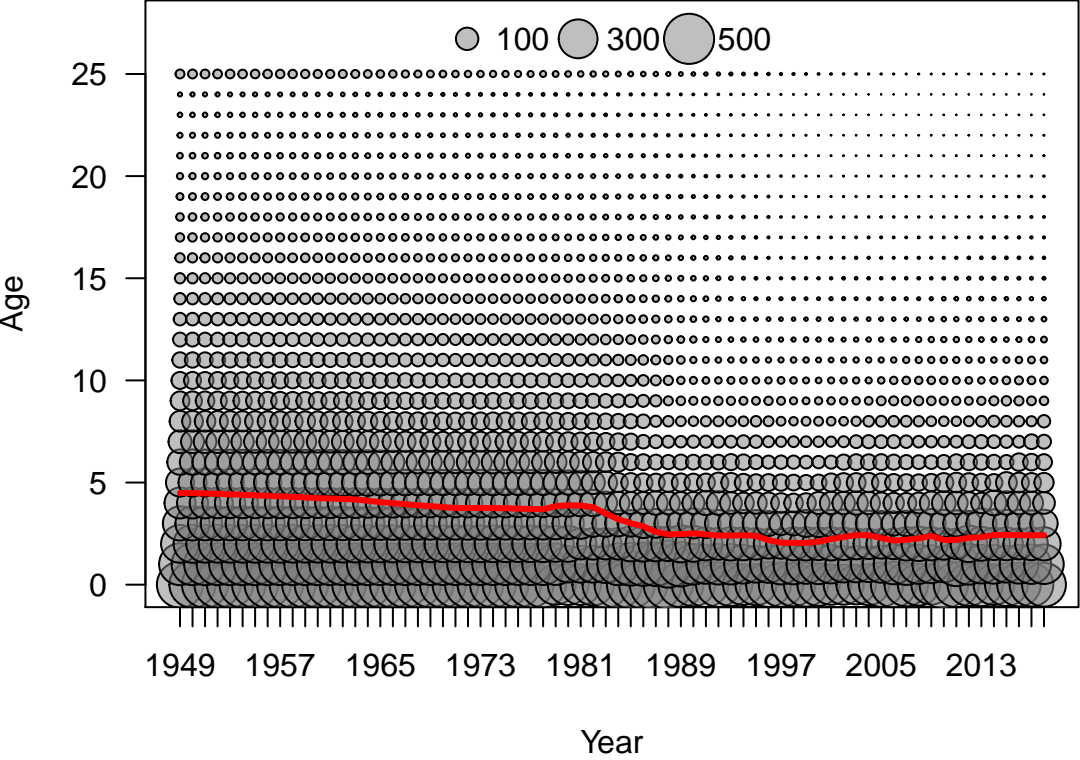
Log index Age-5+



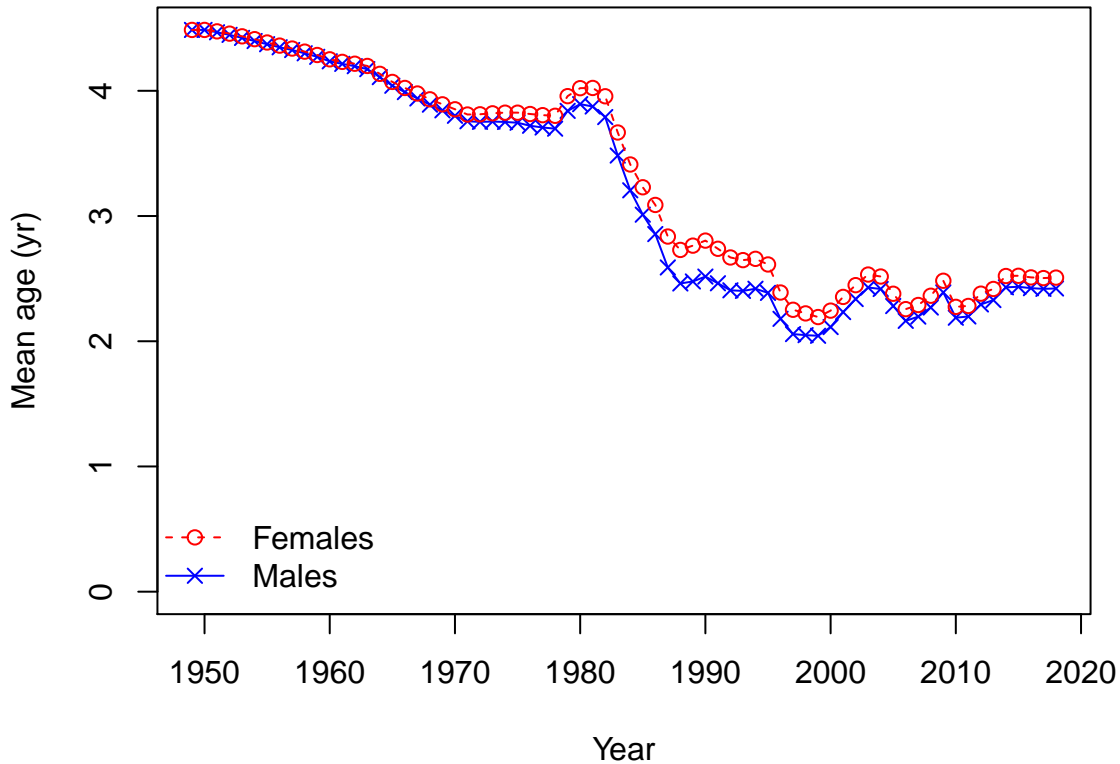
Log index Age-5+



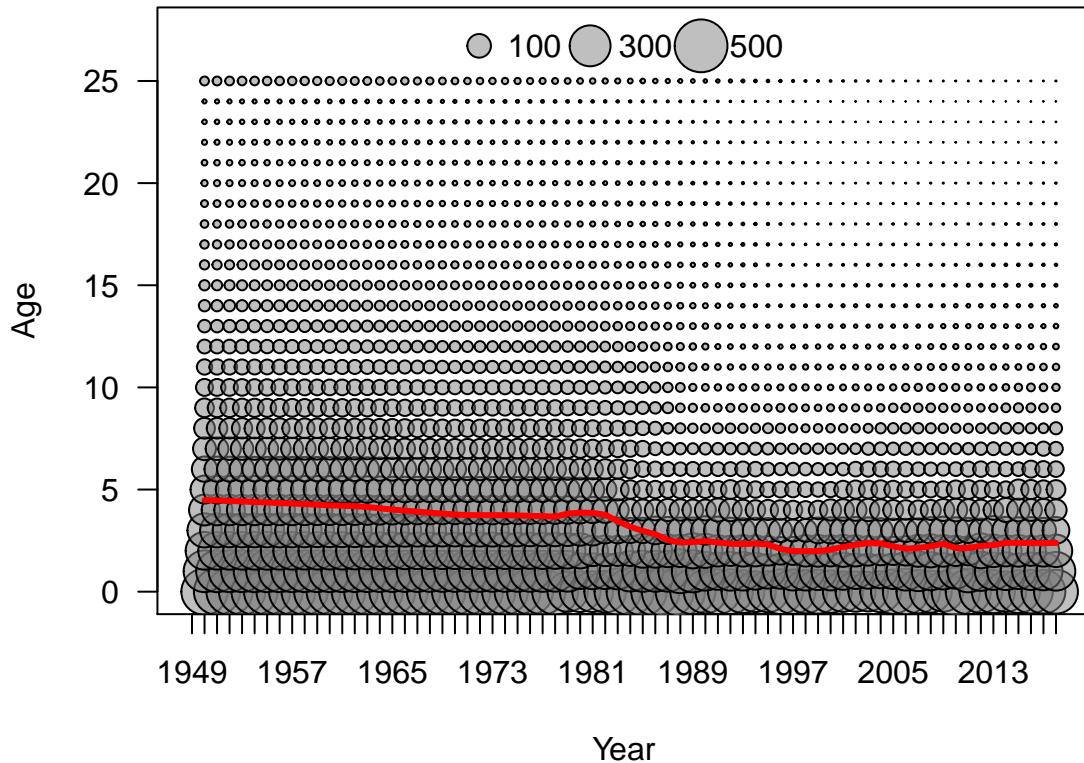
Beginning of year expected numbers at age of males in (max ~ 535.1 thousand)



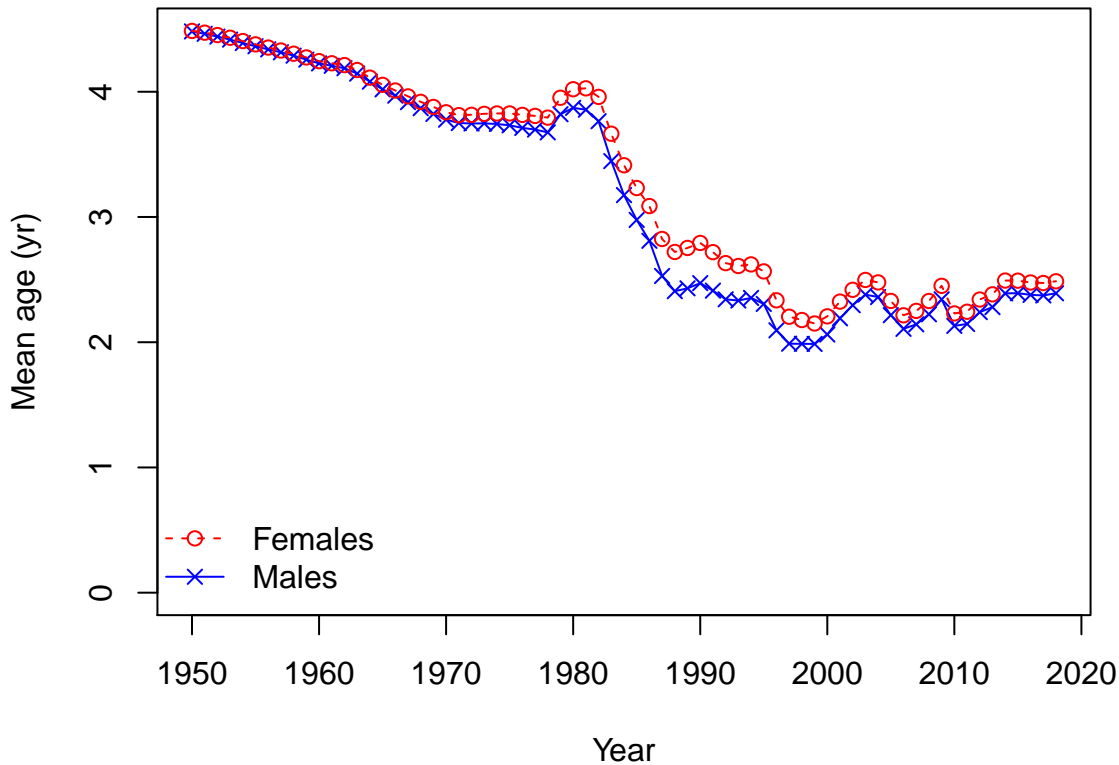
Beginning of year mean age in the population



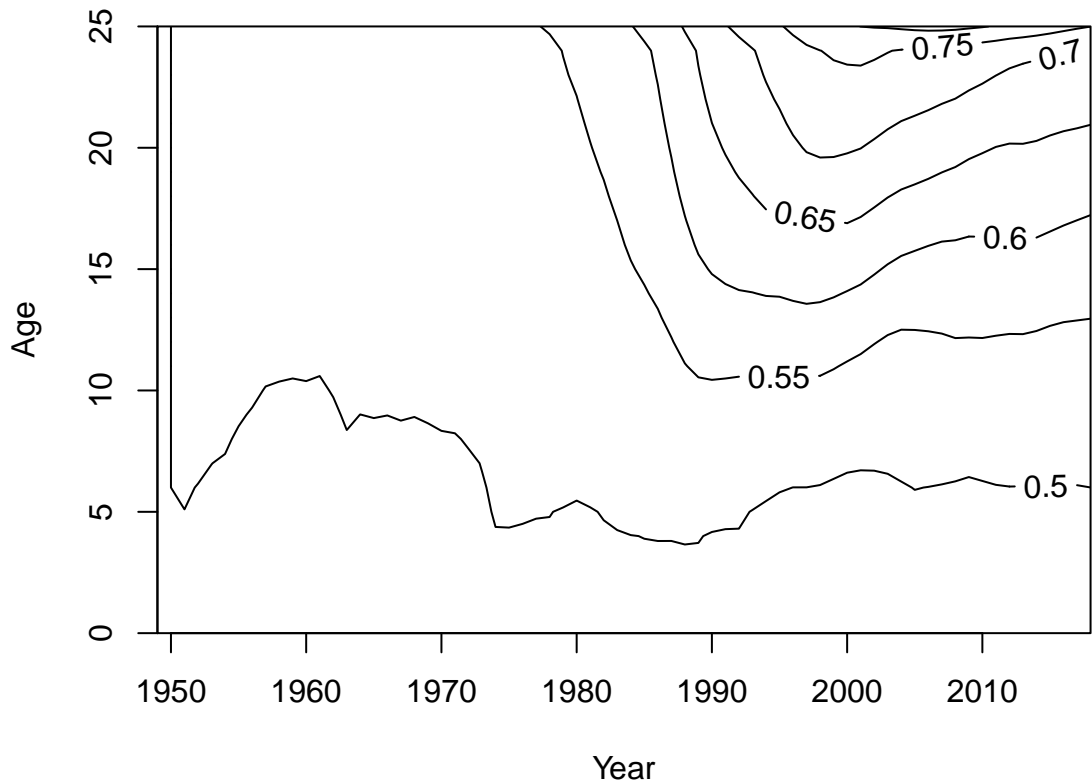
Middle of year expected numbers at age of males in (max ~ 482.3 thousand)



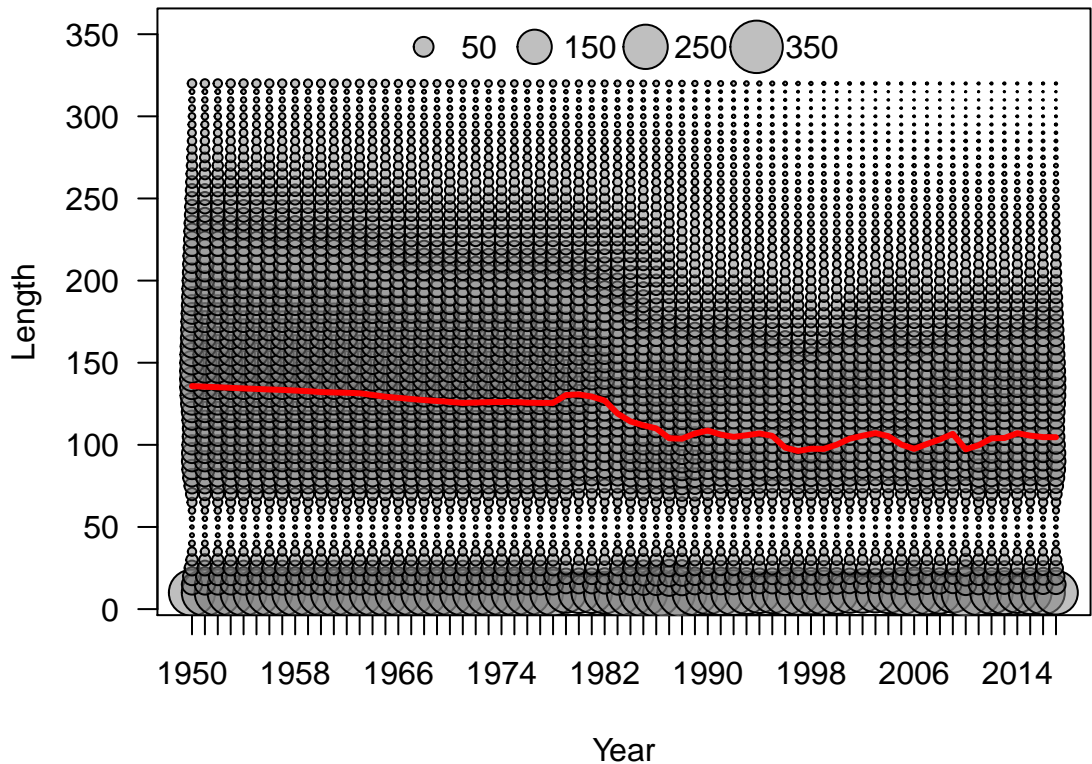
Middle of year mean age in the population



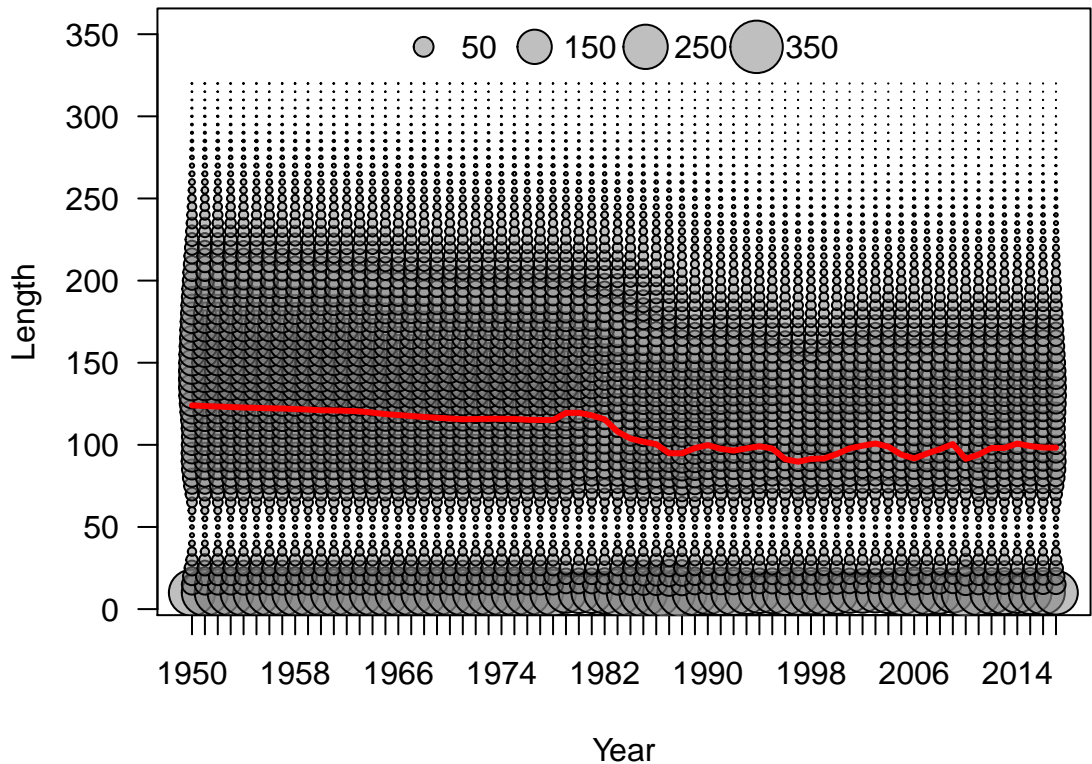
Fraction female in numbers at age



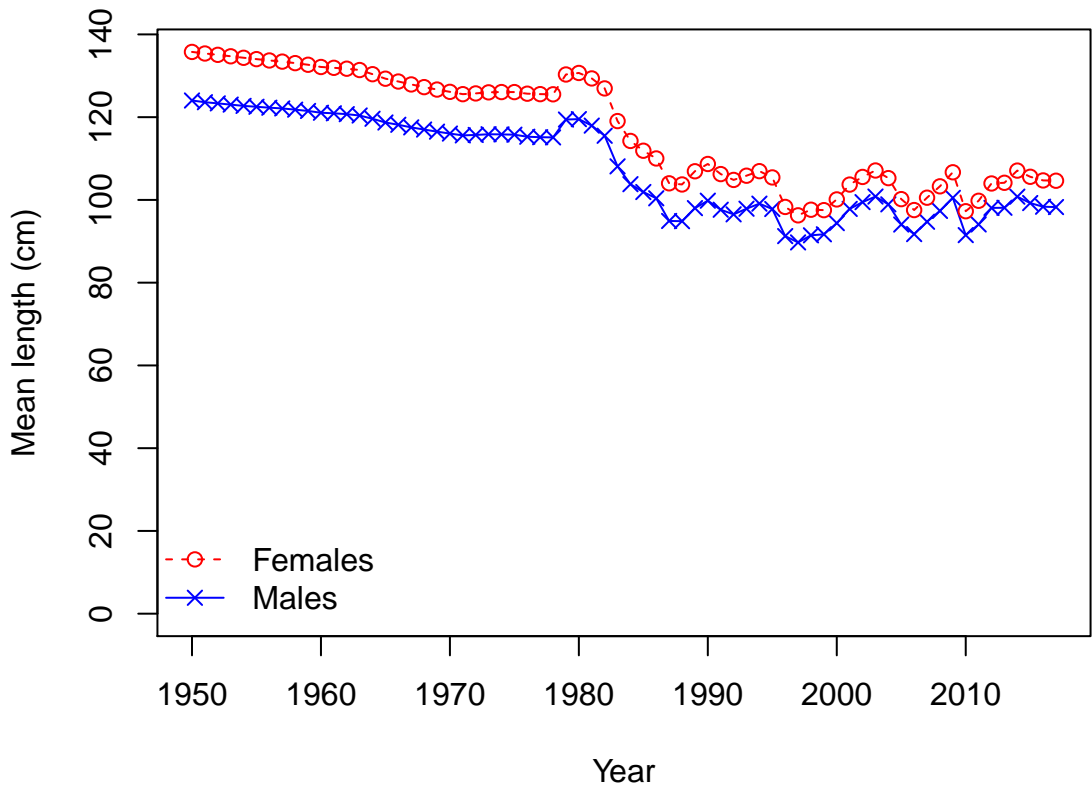
Beginning of year expected numbers at length of females in (max ~ 342.2 thousand



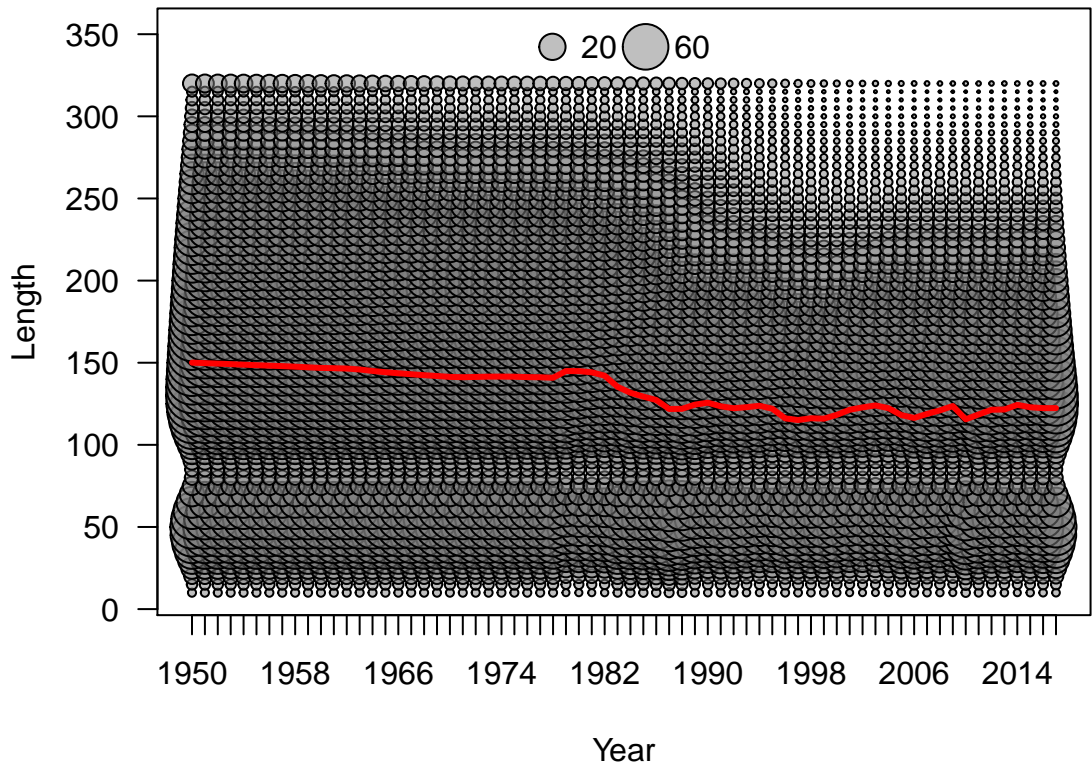
Beginning of year expected numbers at length of males in (max ~ 342.2 thousand)



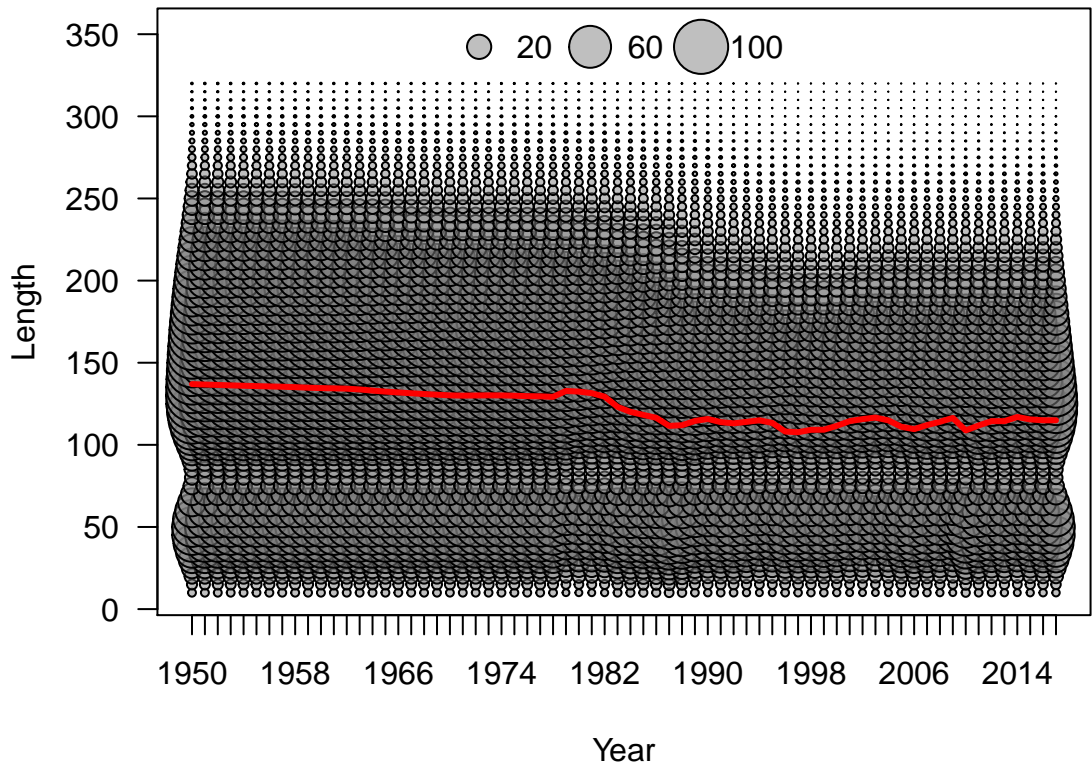
Beginning of year mean length (cm) in the population



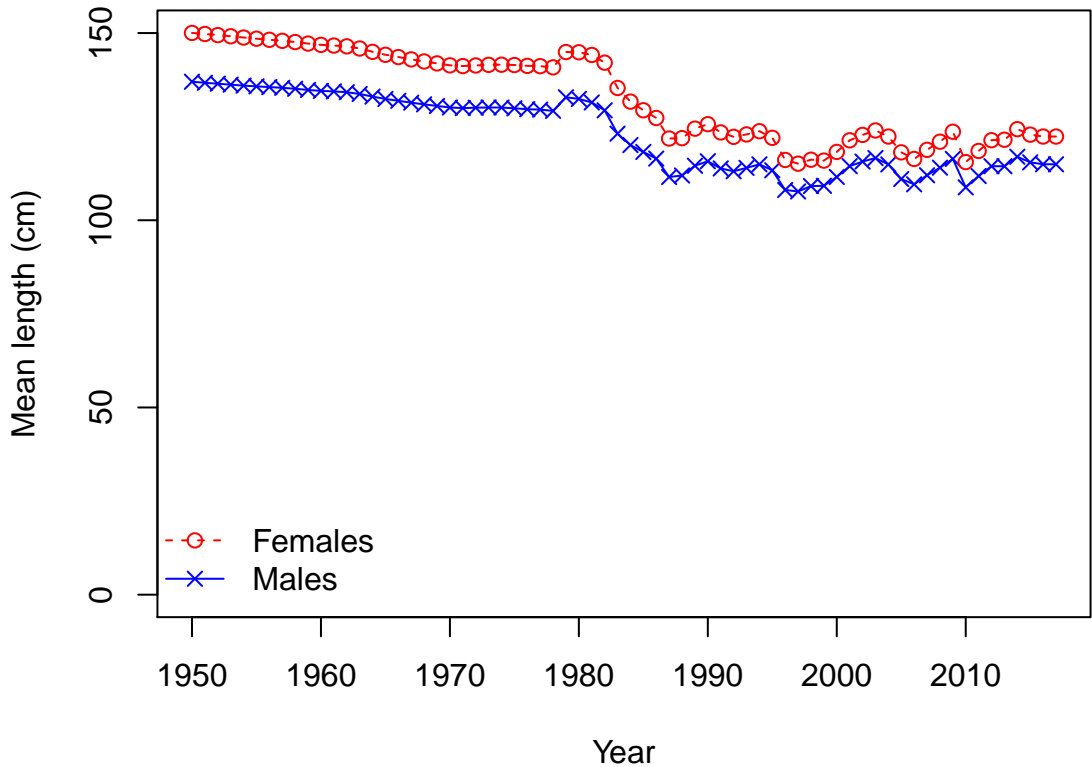
Middle of year expected numbers at length of females in (max ~ 77.6 thousand)



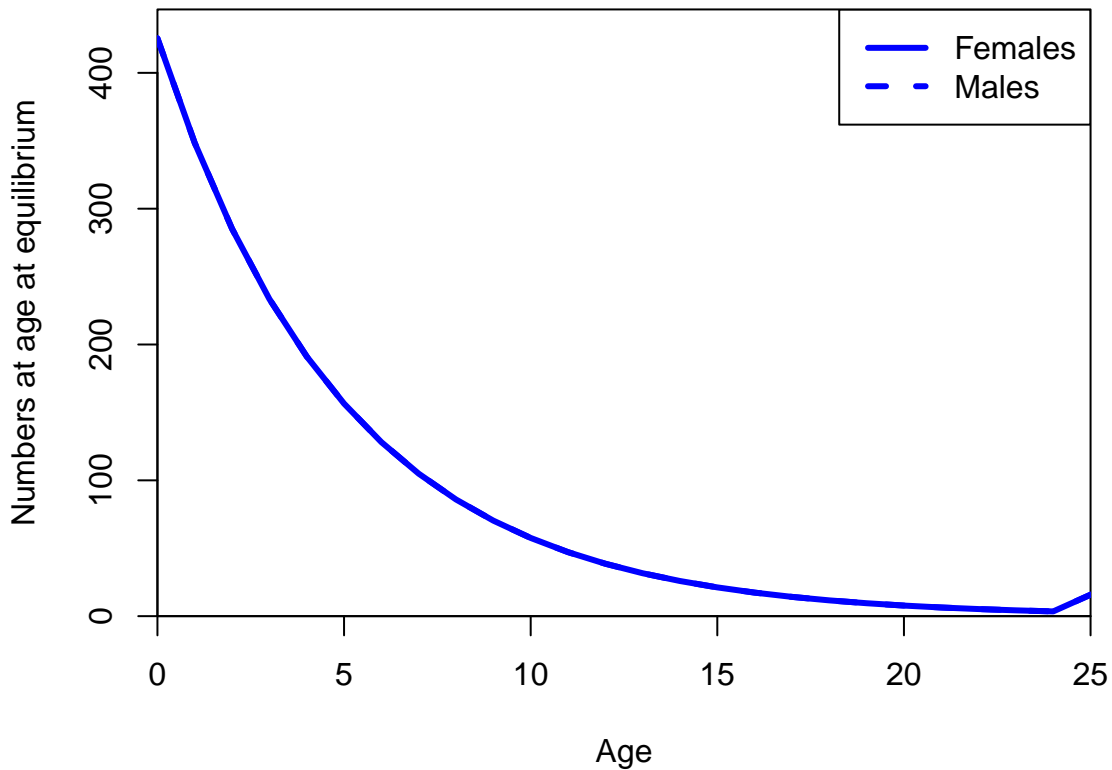
Middle of year expected numbers at length of males in (max ~ 91.7 thousand)



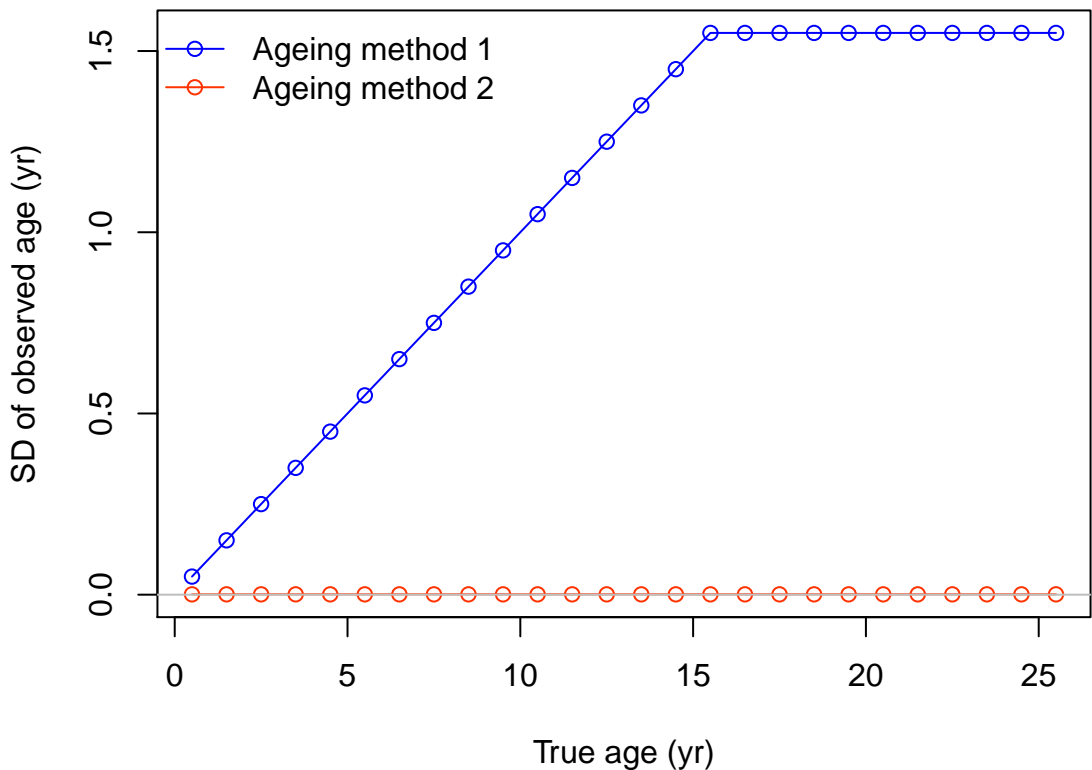
Middle of year mean length (cm) in the population



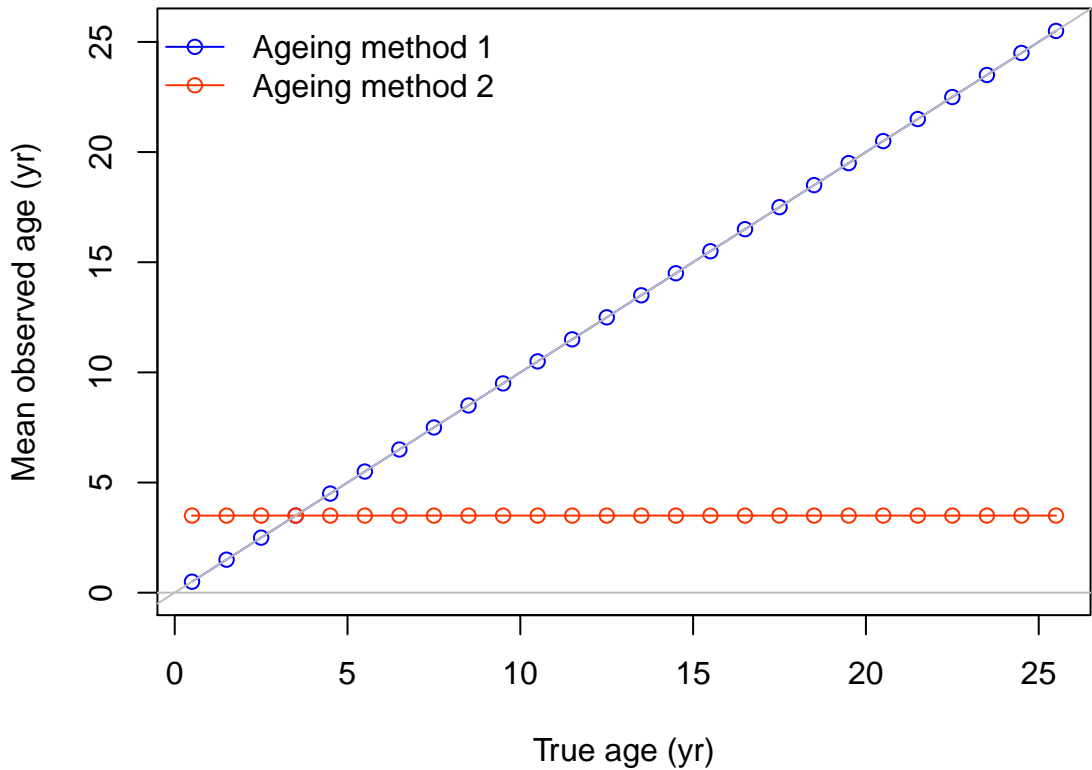
Equilibrium age distribution



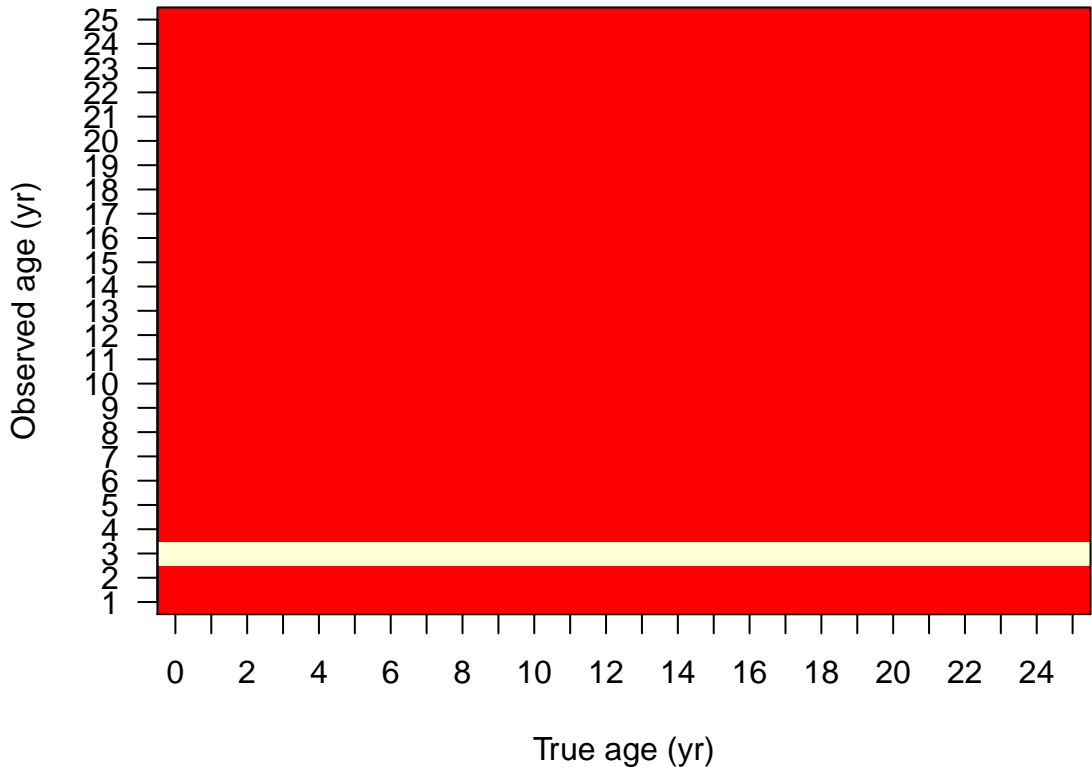
Ageing imprecision



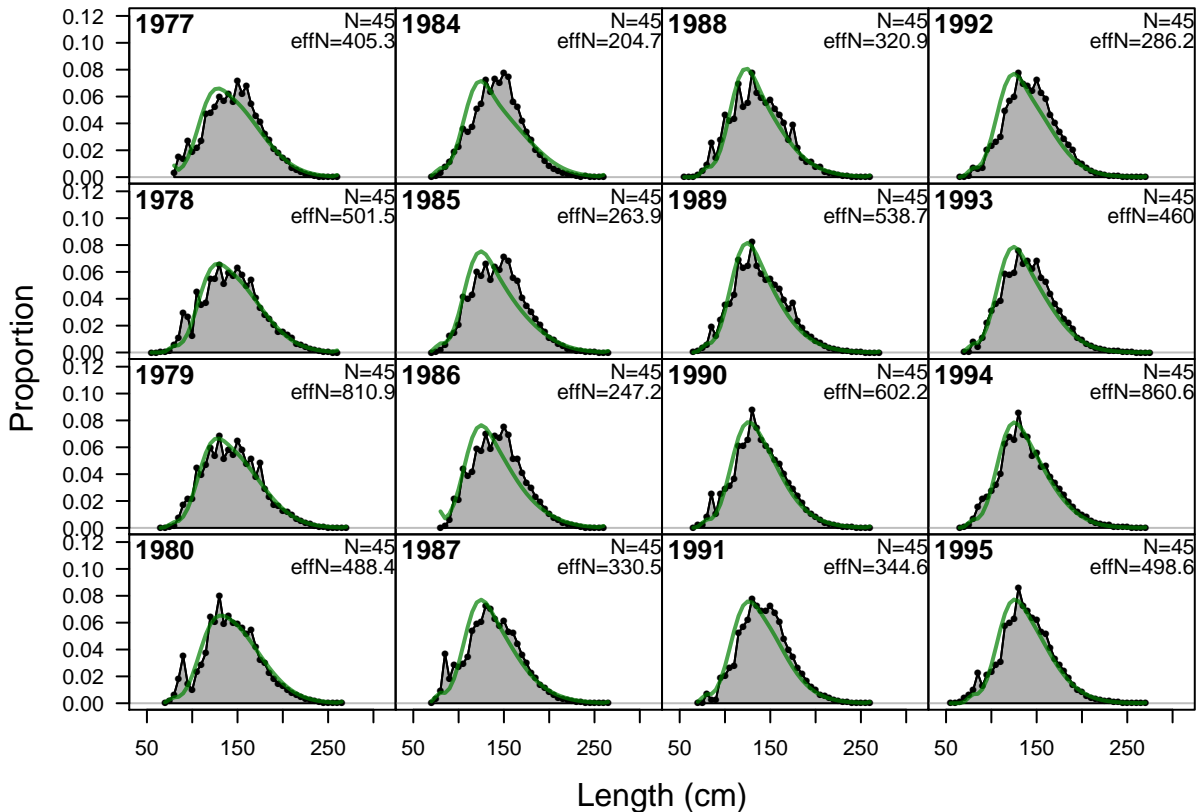
Ageing imprecision



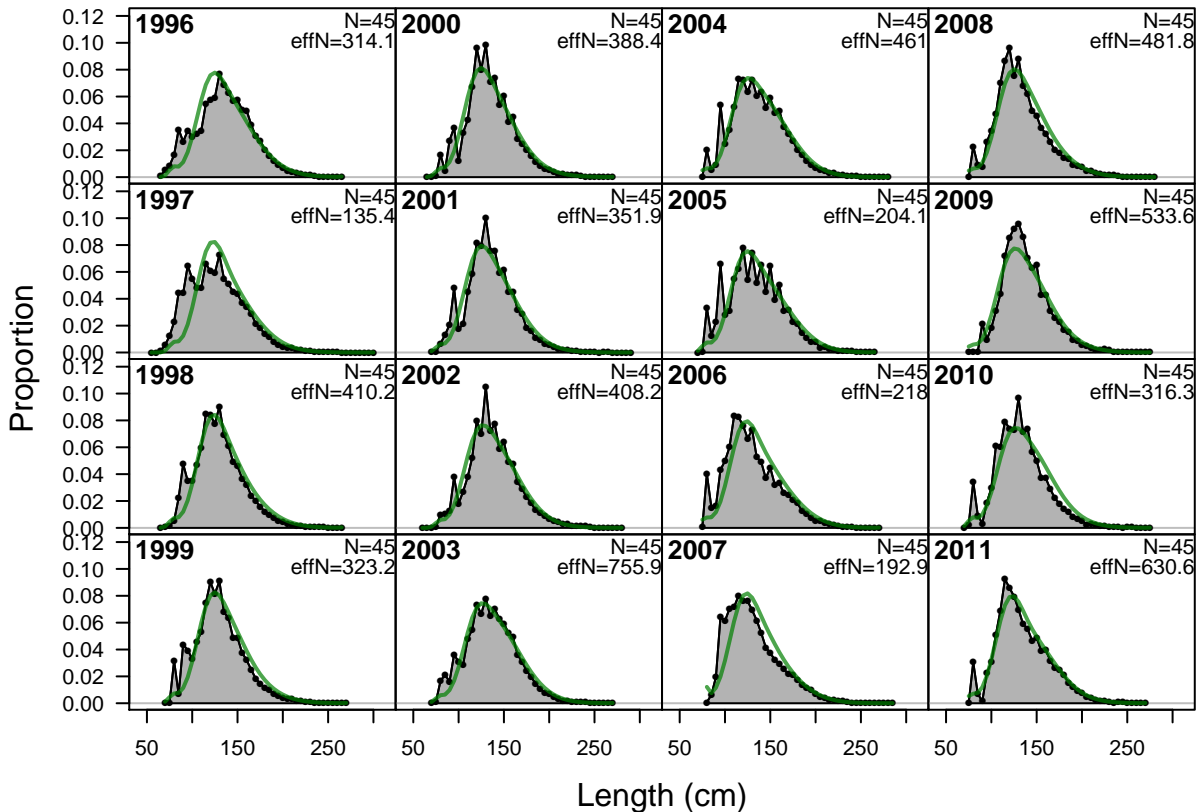
Ageing imprecision: matrix for method 2



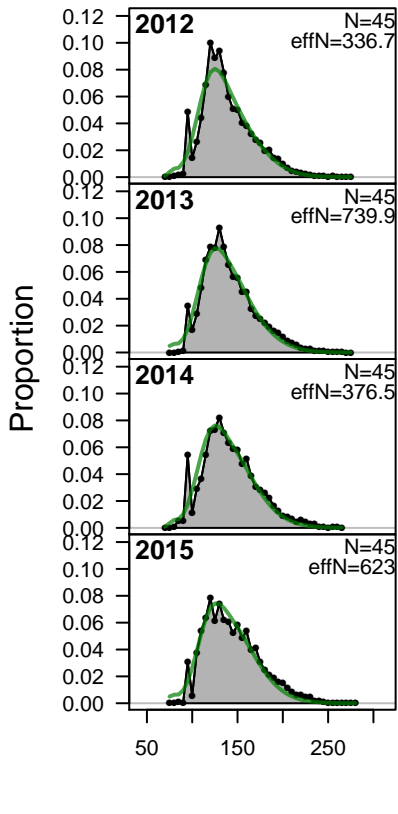
Length comps, retained, SPN_1



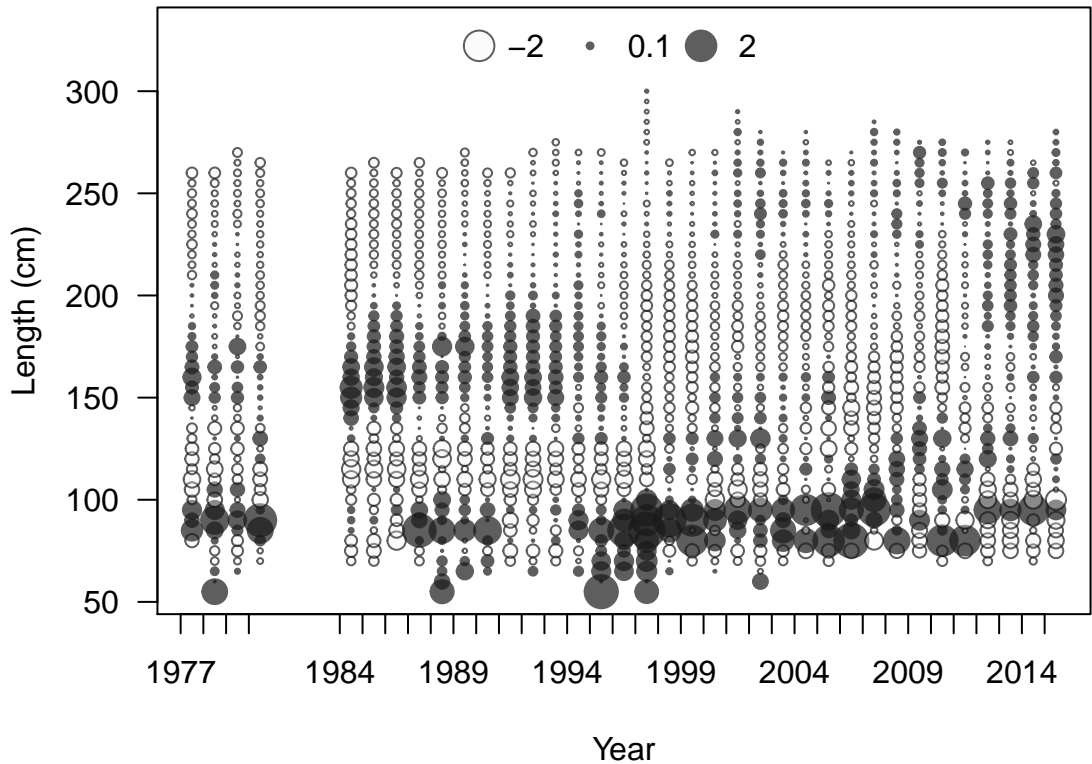
Length comps, retained, SPN_1



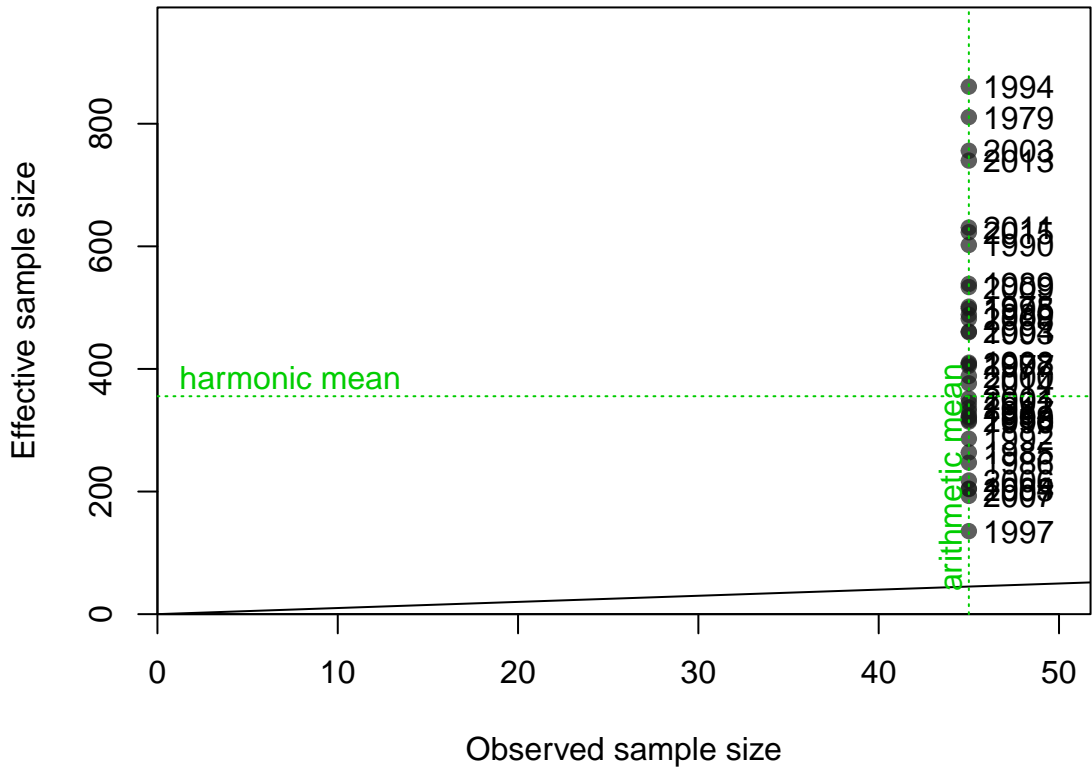
Length comps, retained, SPN_1



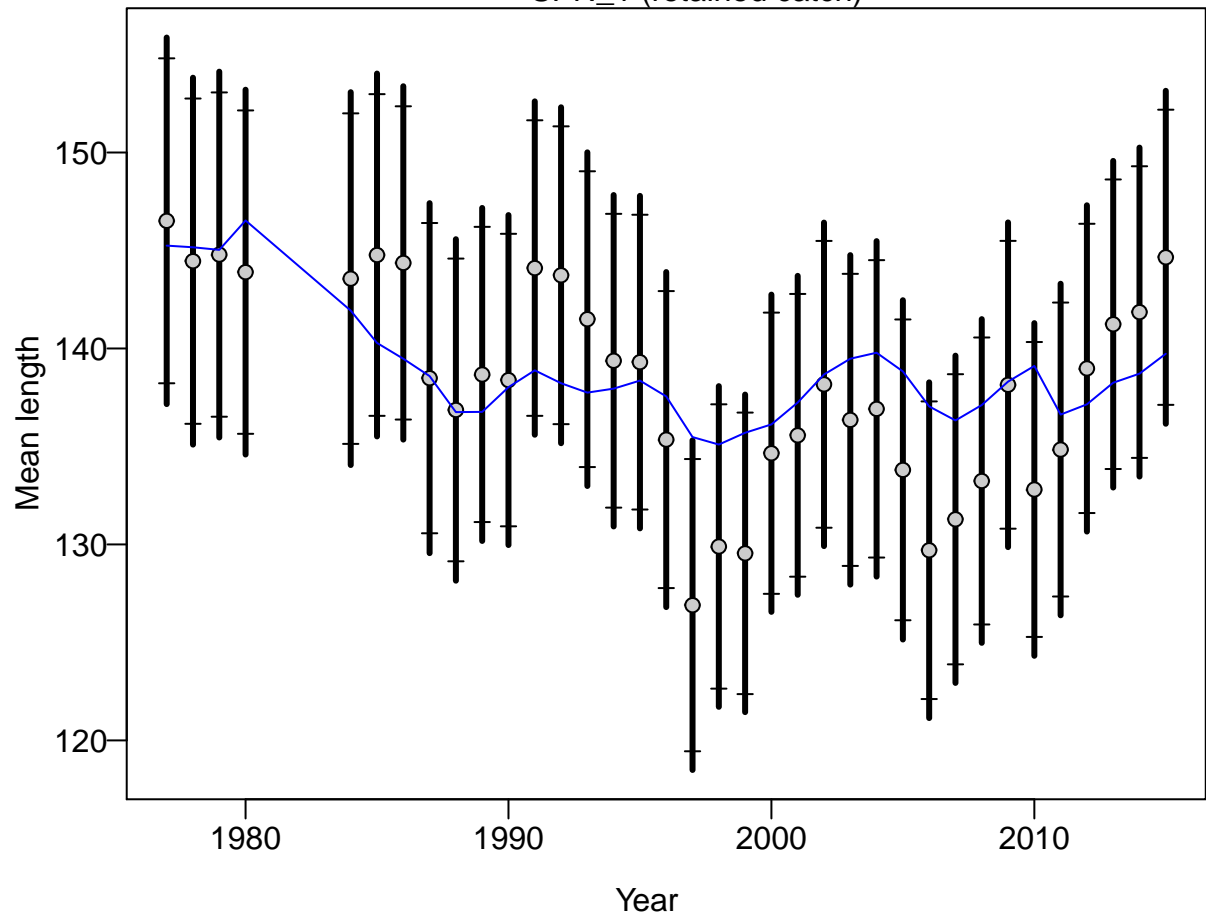
Pearson residuals, retained, SPN_1 (max=2.69)



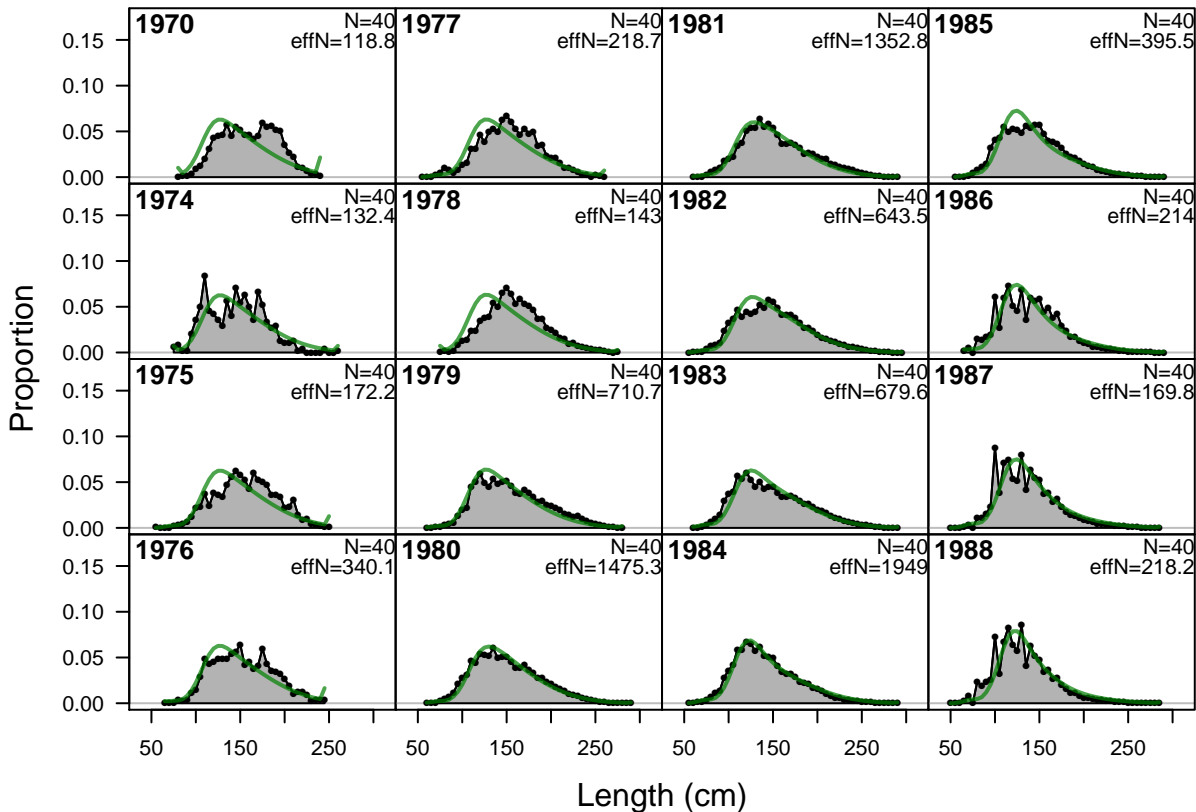
N-EffN comparison, Length comps, retained, SPN_1



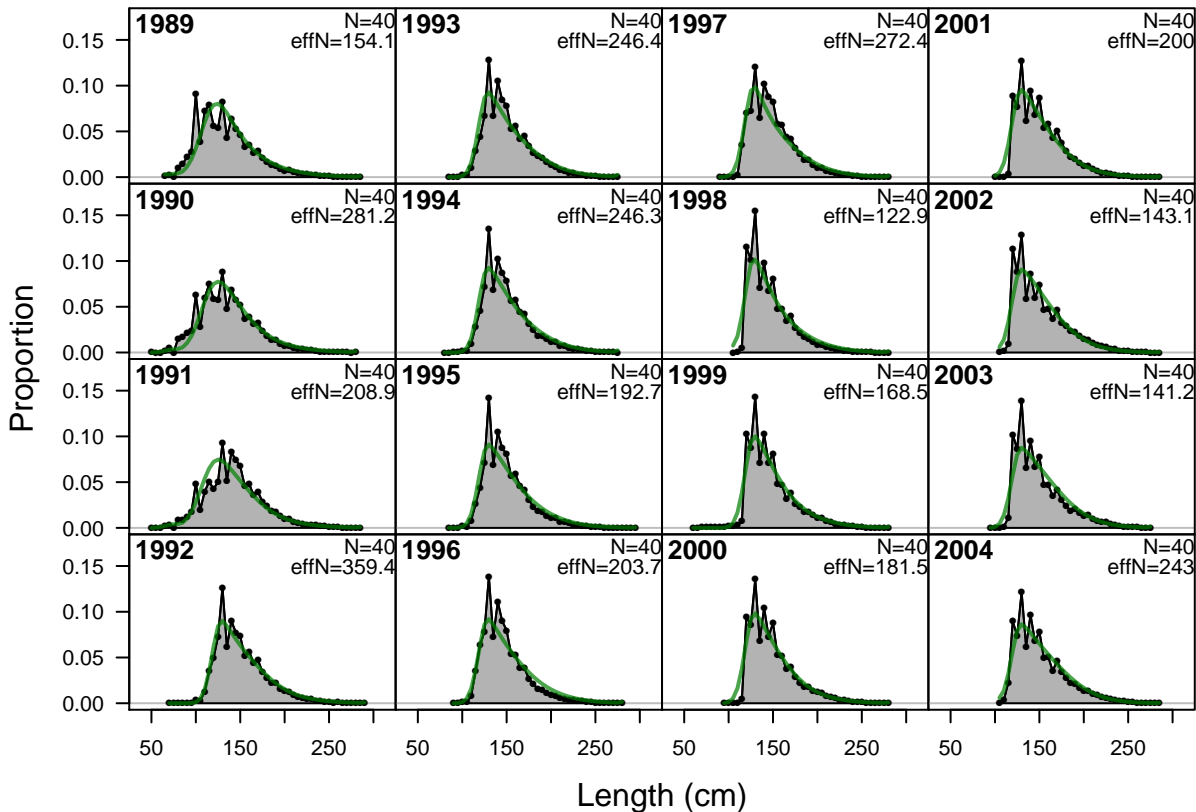
SPN_1 (retained catch)



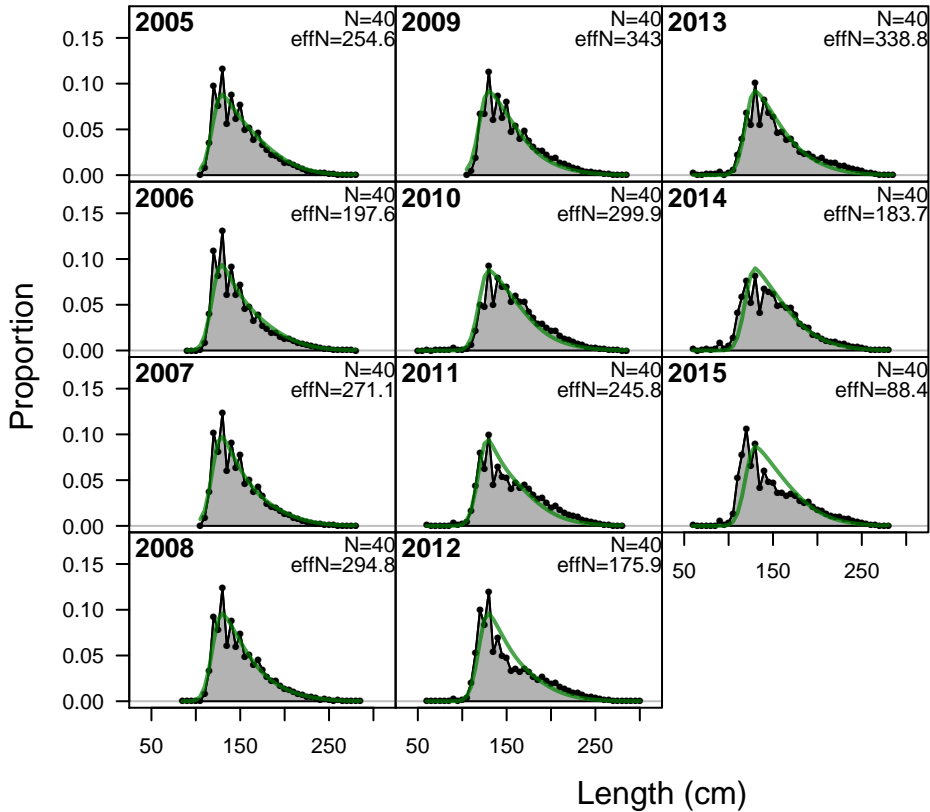
Length comps, retained, US_2



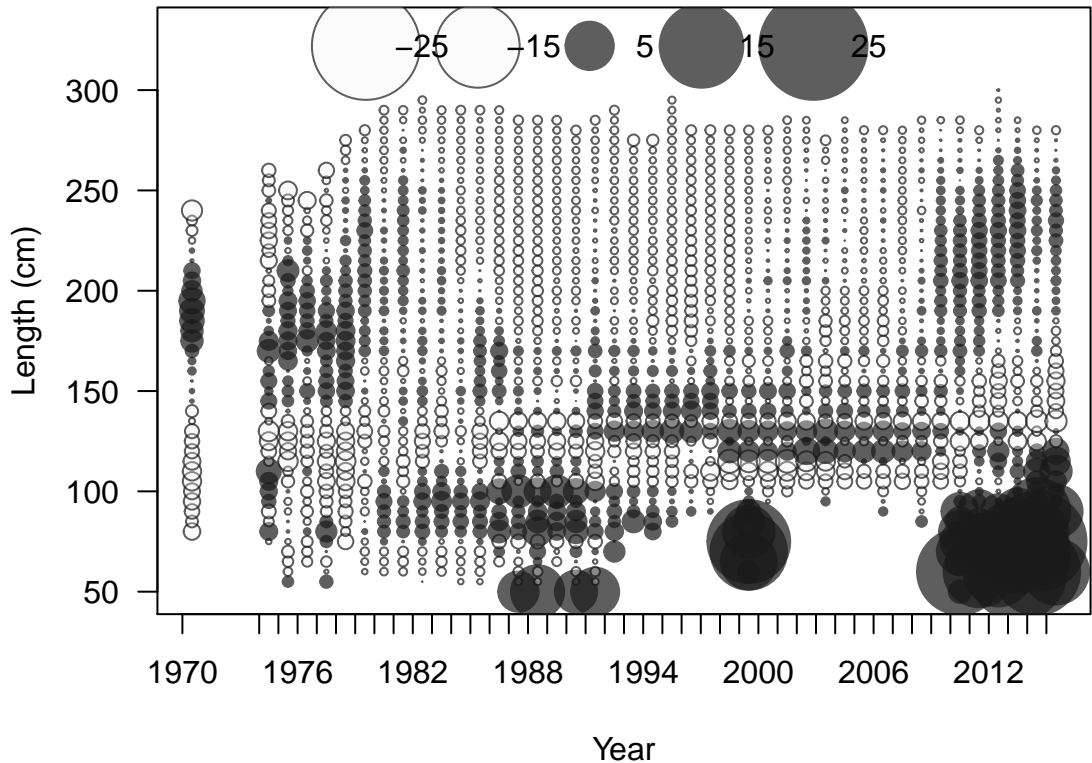
Length comps, retained, US_2



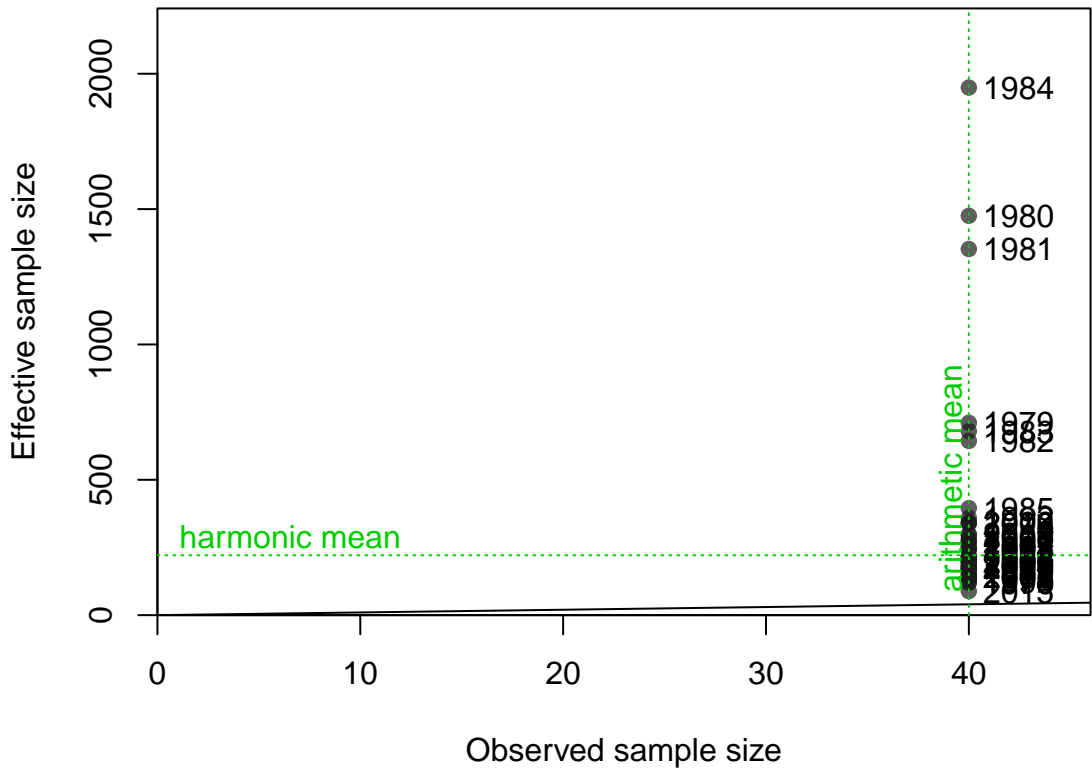
Length comps, retained, US_2



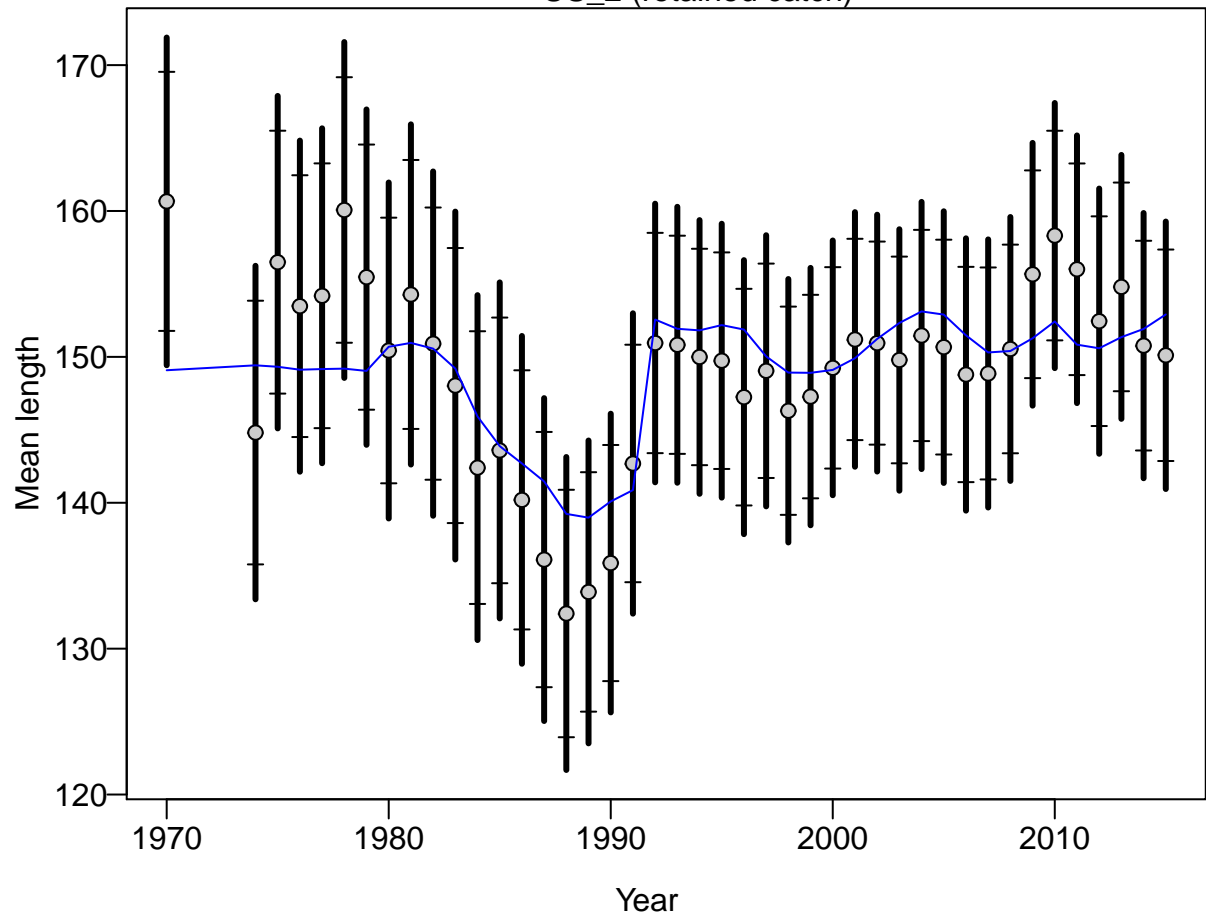
Pearson residuals, retained, US_2 (max=21.13)



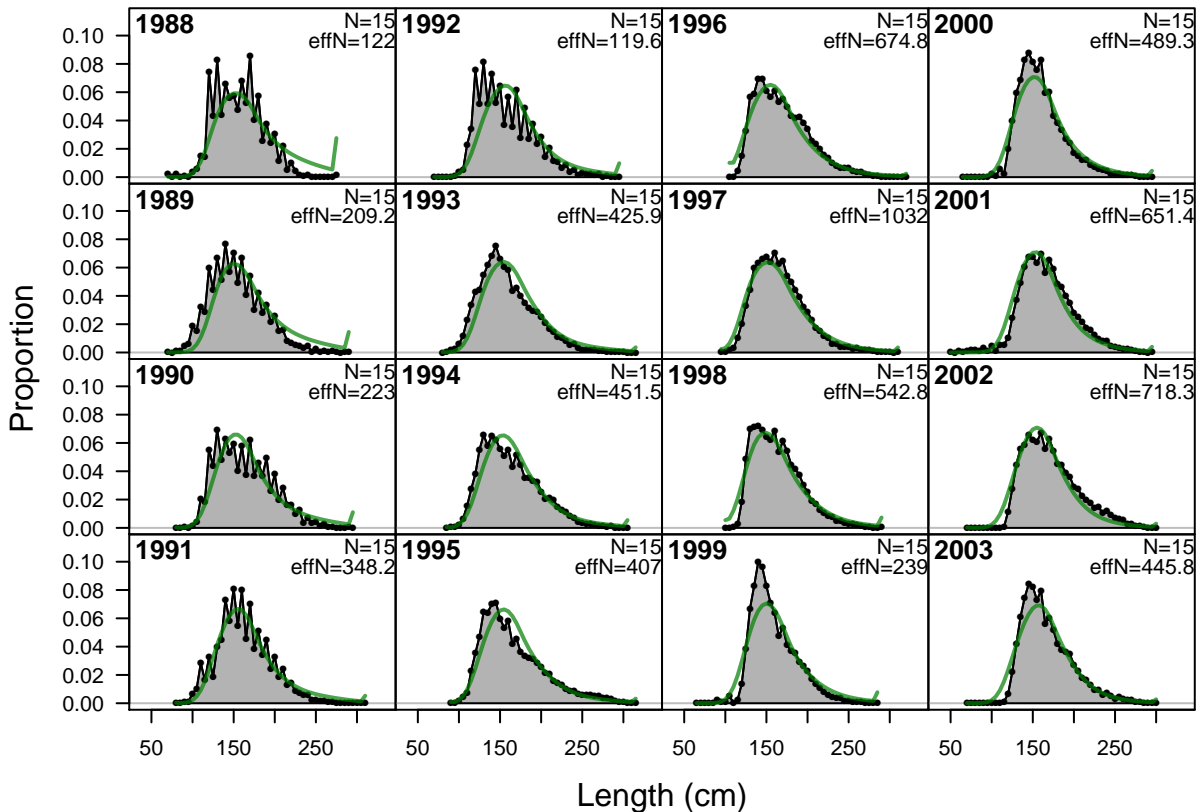
N-EffN comparison, Length comps, retained, US_2



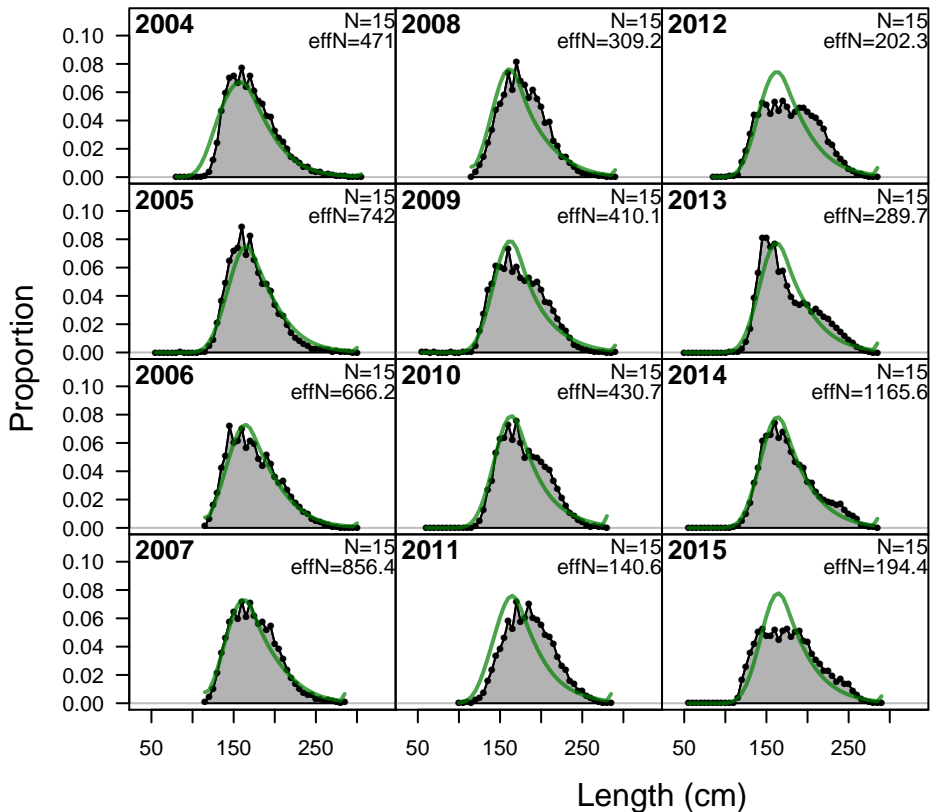
US_2 (retained catch)



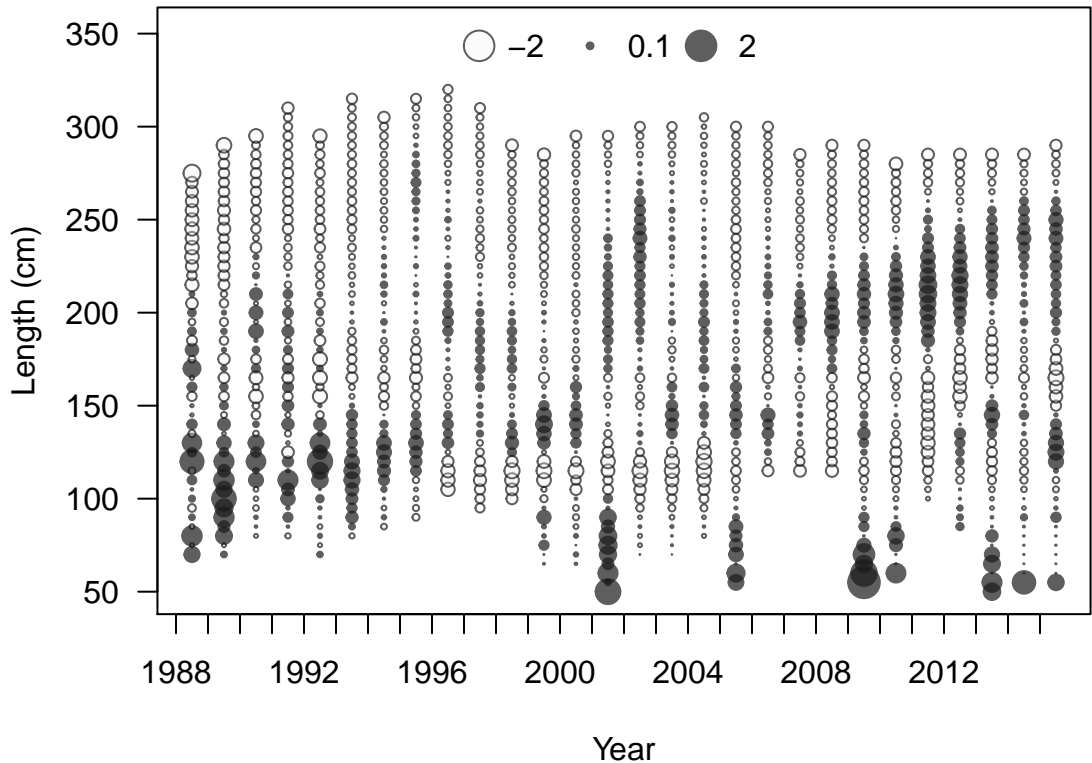
Length comps, retained, CAN_LATE_4



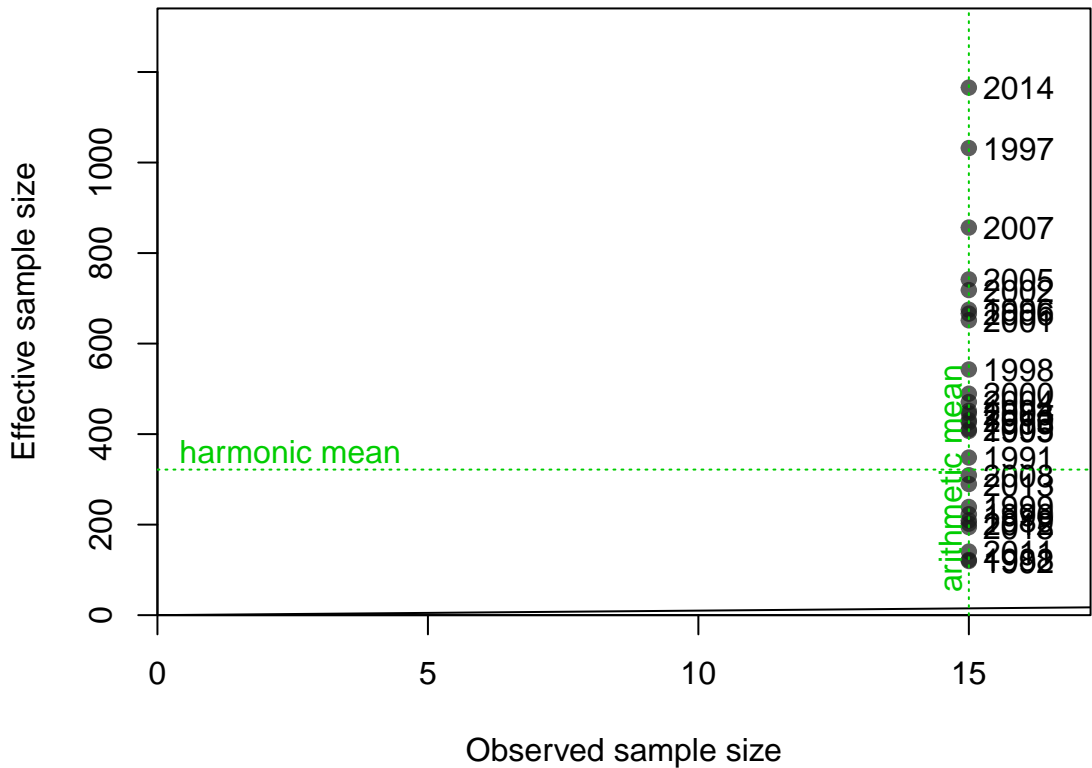
Length comps, retained, CAN_LATE_4



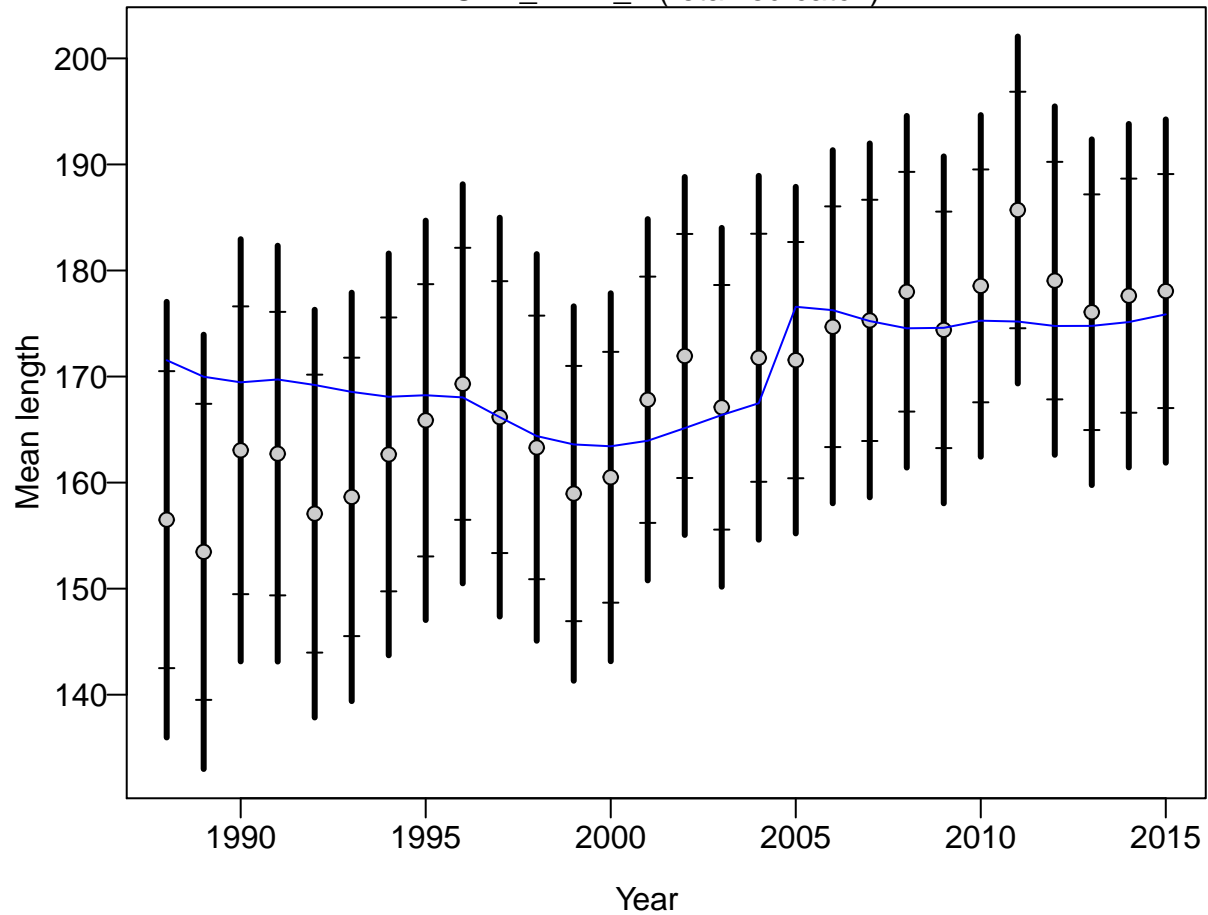
Pearson residuals, retained, CAN_LATE_4 (max=2.14)



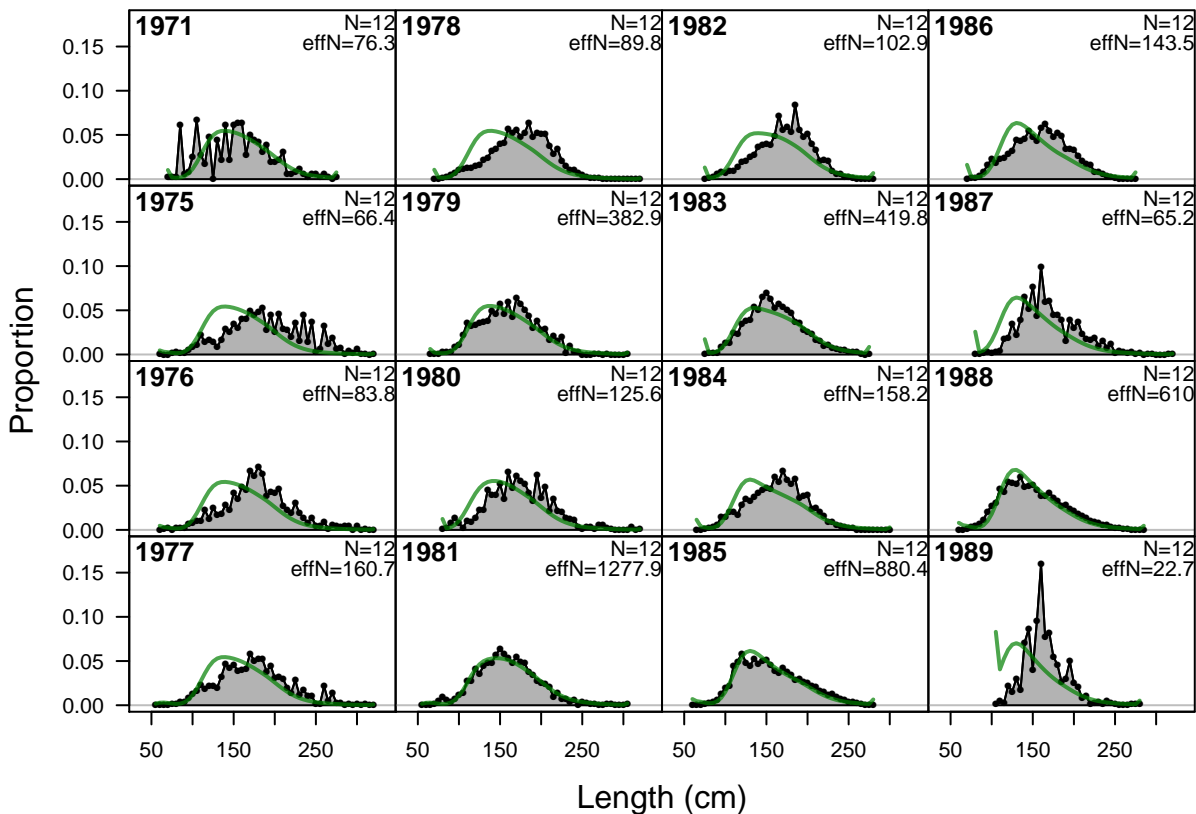
N-EffN comparison, Length comps, retained, CAN_LATE_4



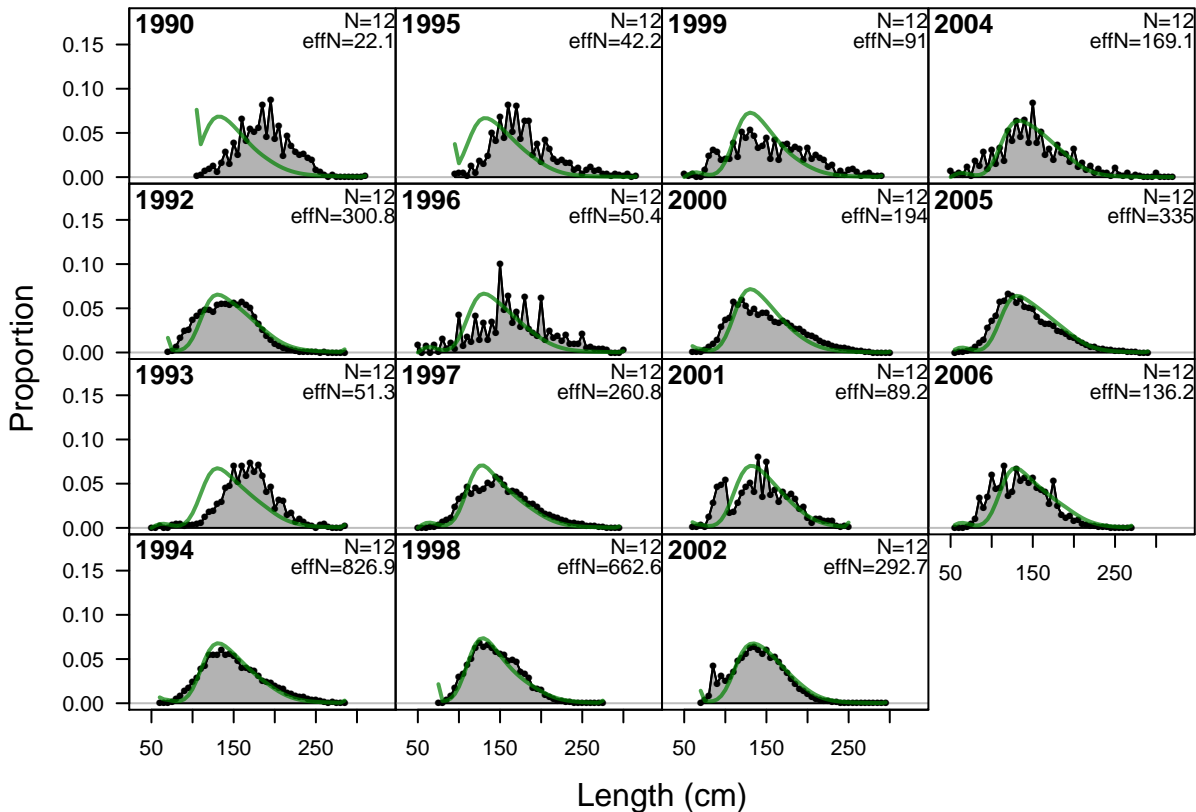
CAN_LATE_4 (retained catch)



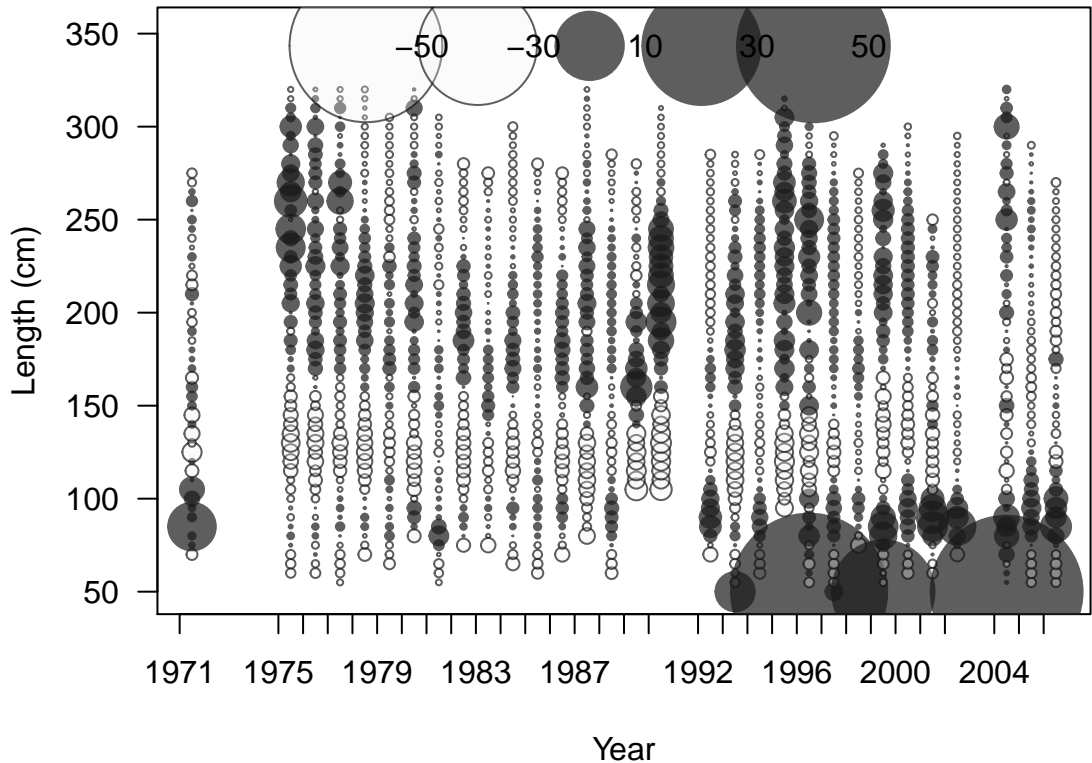
Length comps, retained, JPN_ERLY_5



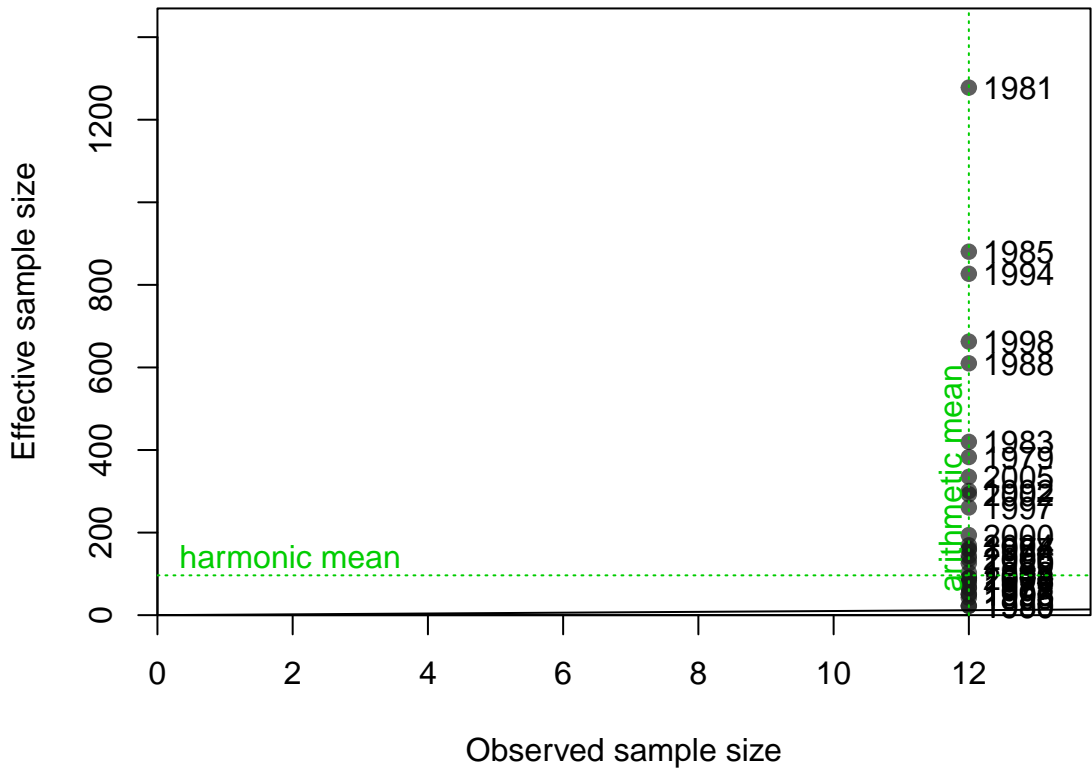
Length comps, retained, JPN_ERLY_5



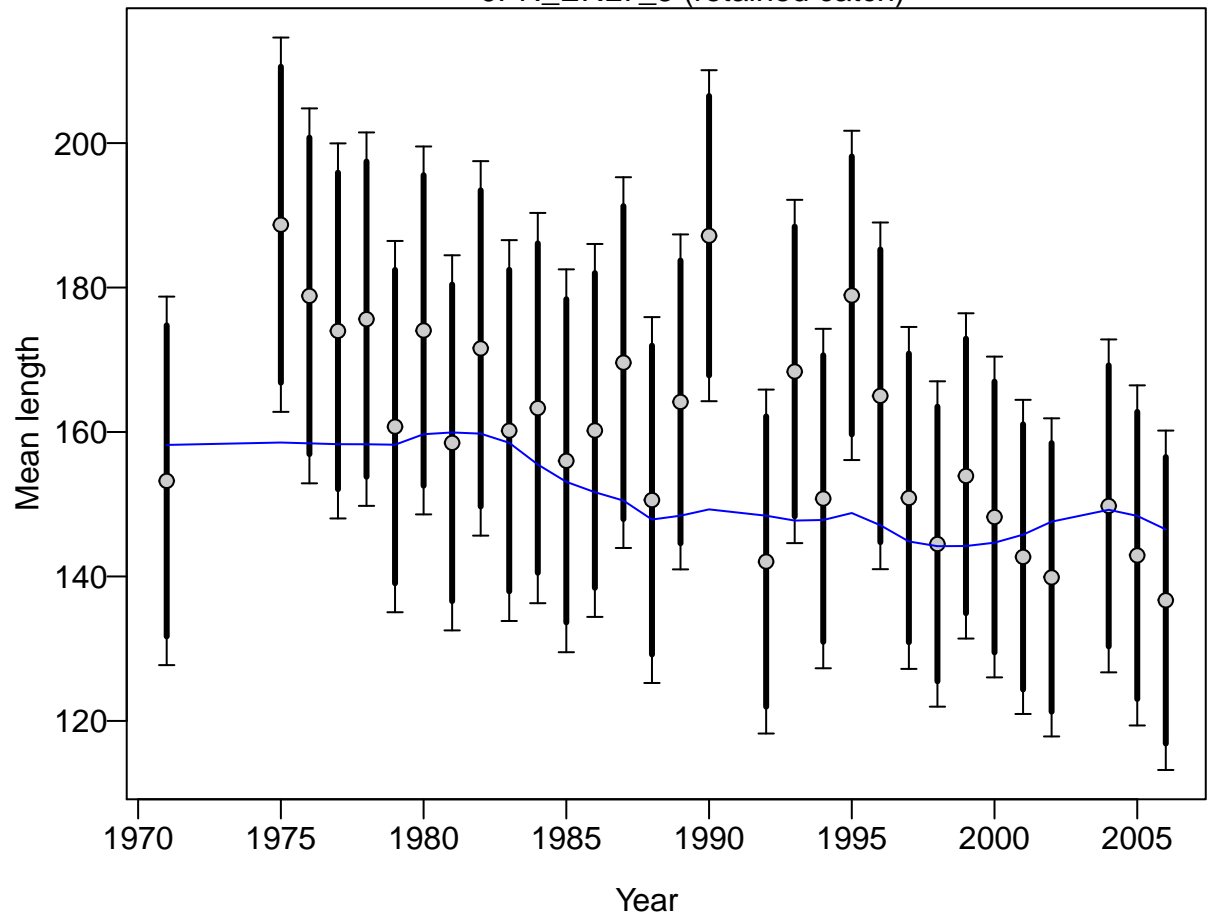
Pearson residuals, retained, JPN_ERLY_5 (max=52.2)



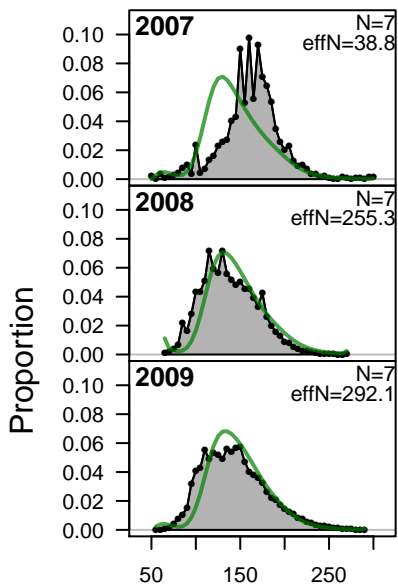
N-EffN comparison, Length comps, retained, JPN_ERLY_5



JPN_ERLY_5 (retained catch)

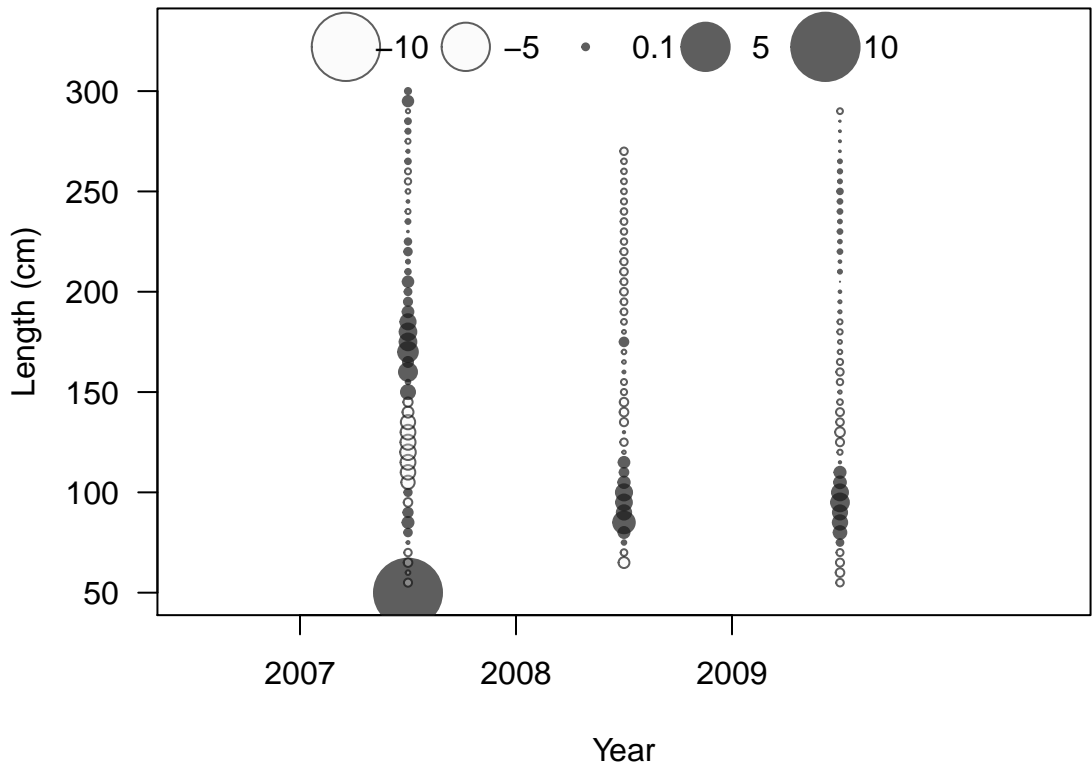


Length comps, retained, JPN_MID_6

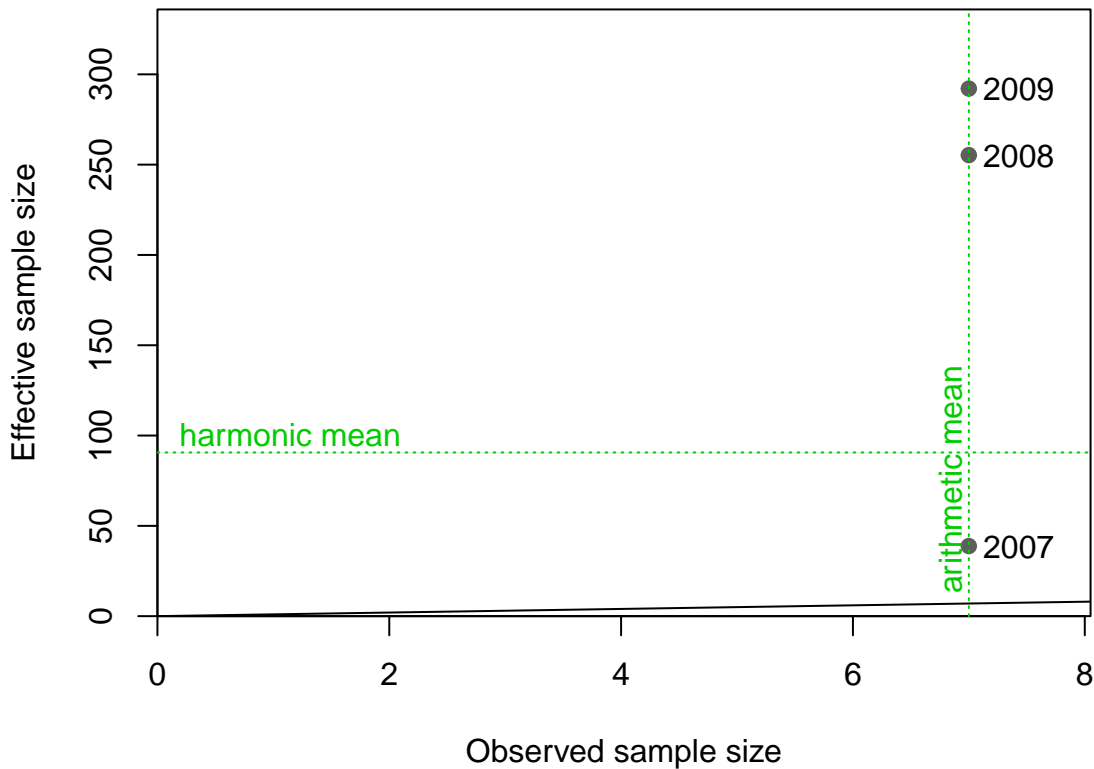


Length (cm)

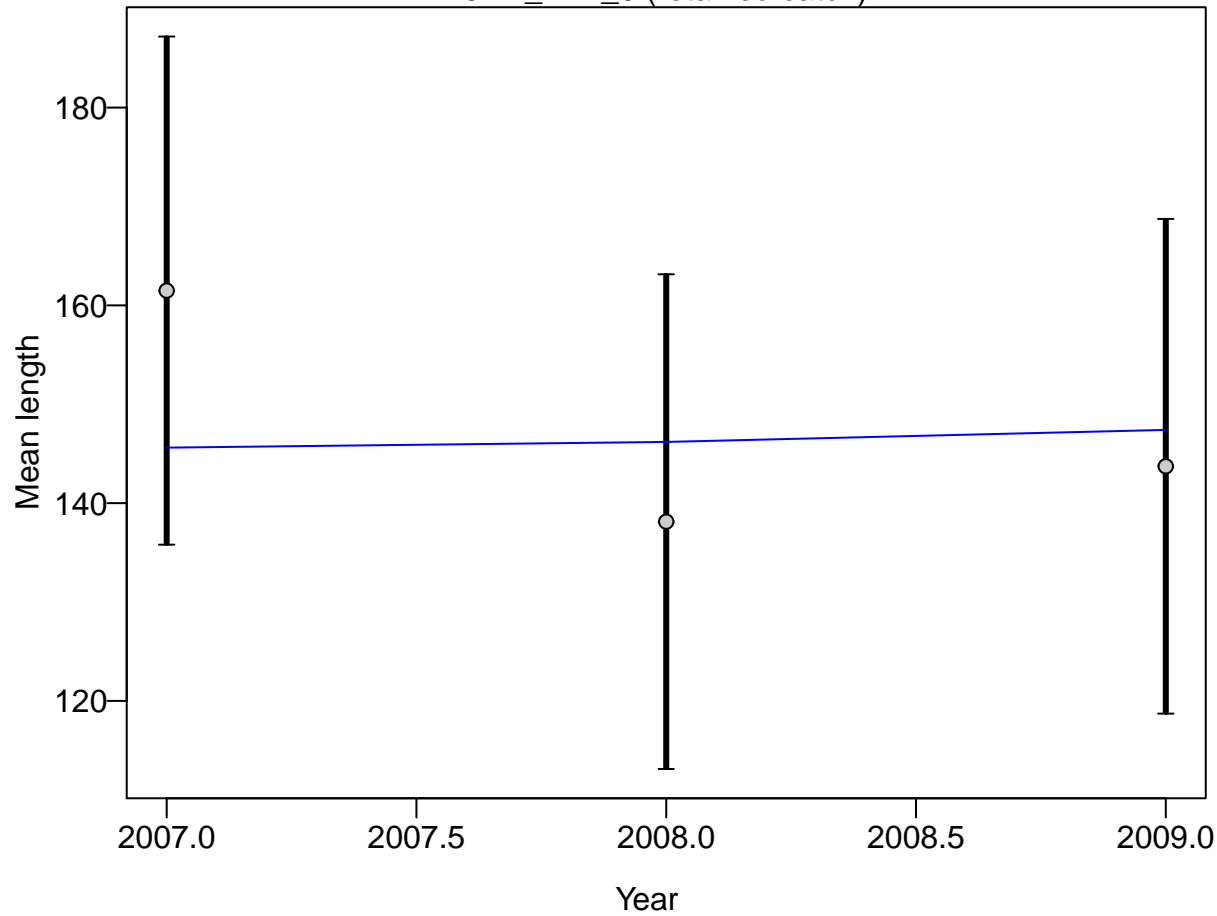
Pearson residuals, retained, JPN_MID_6 (max=9.9)



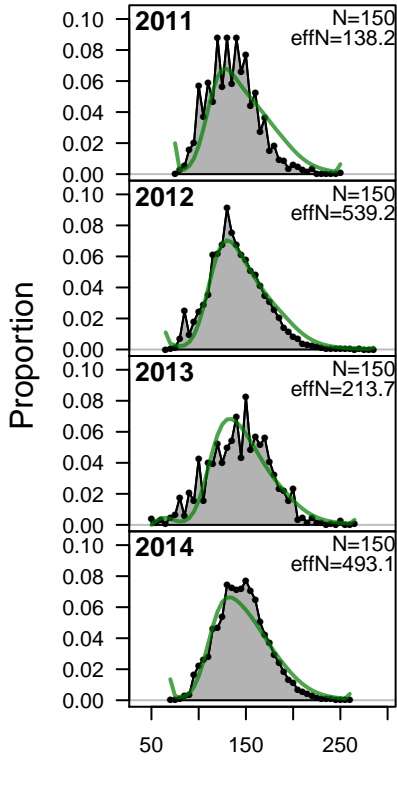
N-EffN comparison, Length comps, retained, JPN_MID_6



JPN_MID_6 (retained catch)

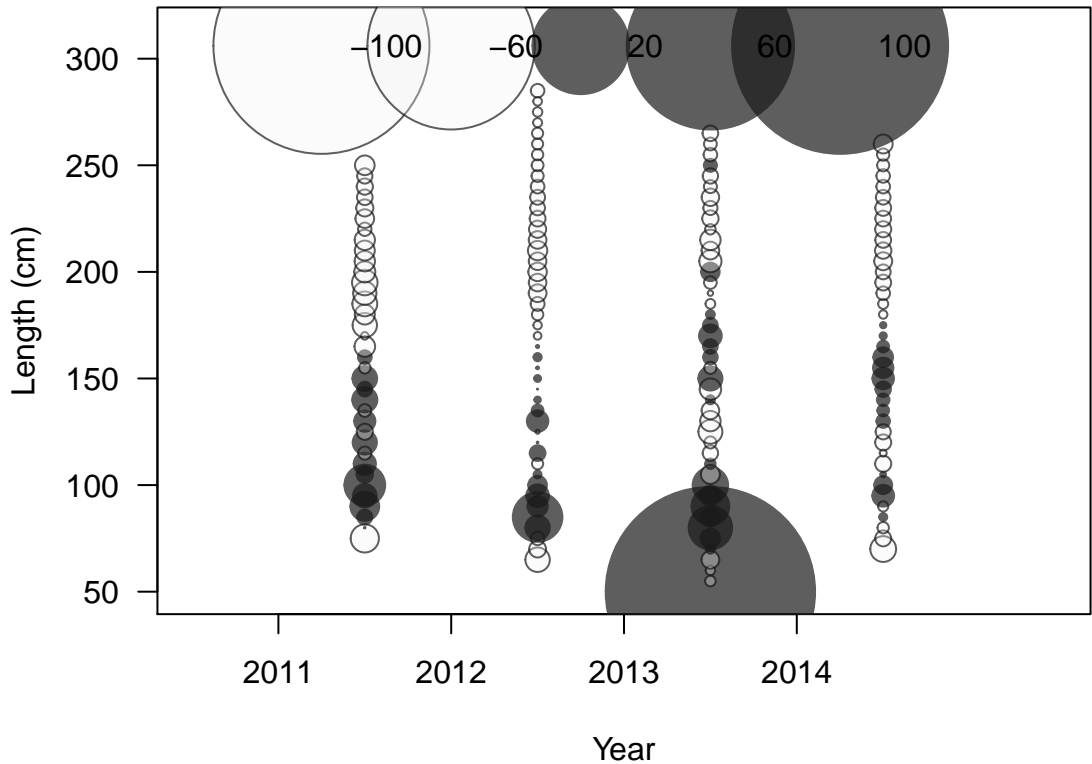


Length comps, retained, JPN_LATE_7

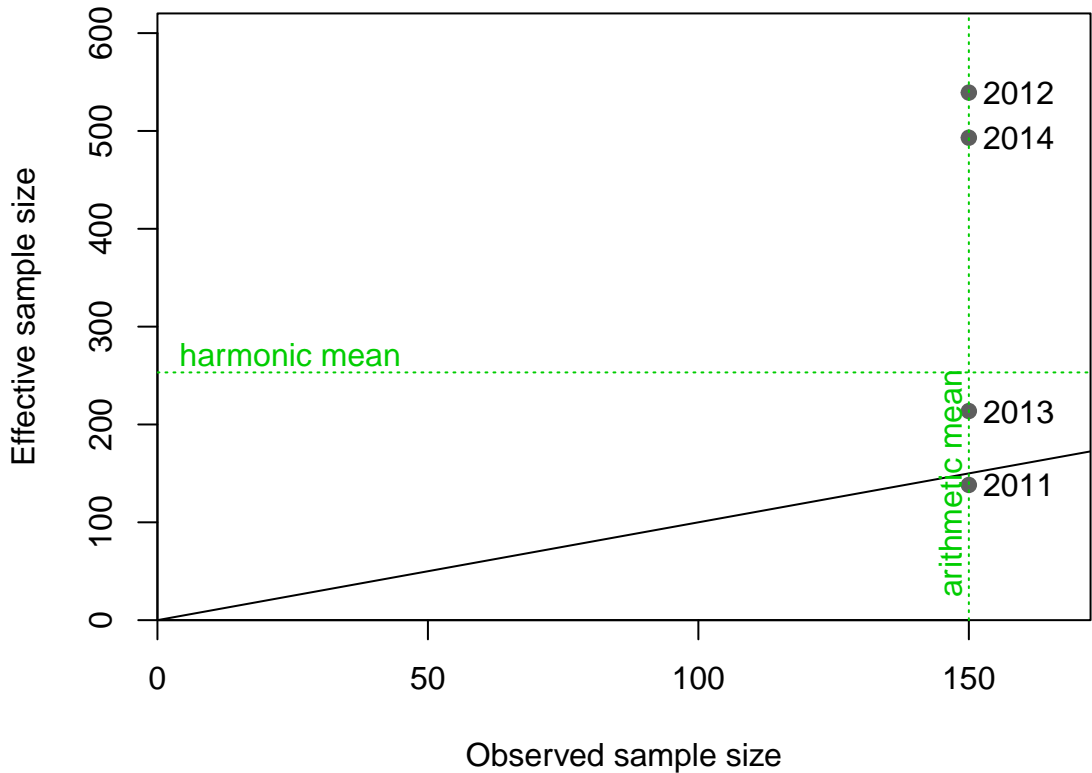


Length (cm)

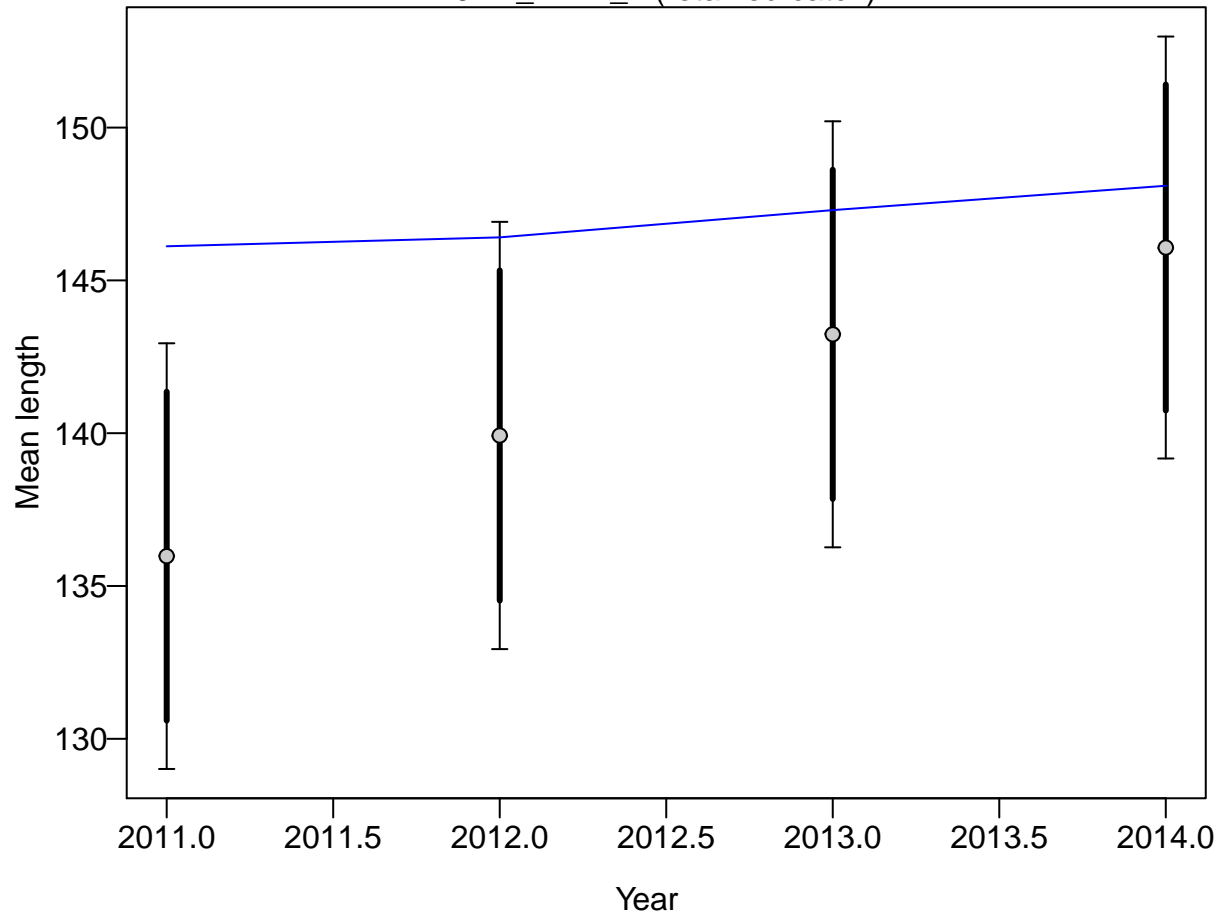
Pearson residuals, retained, JPN_LATE_7 (max=93.94)



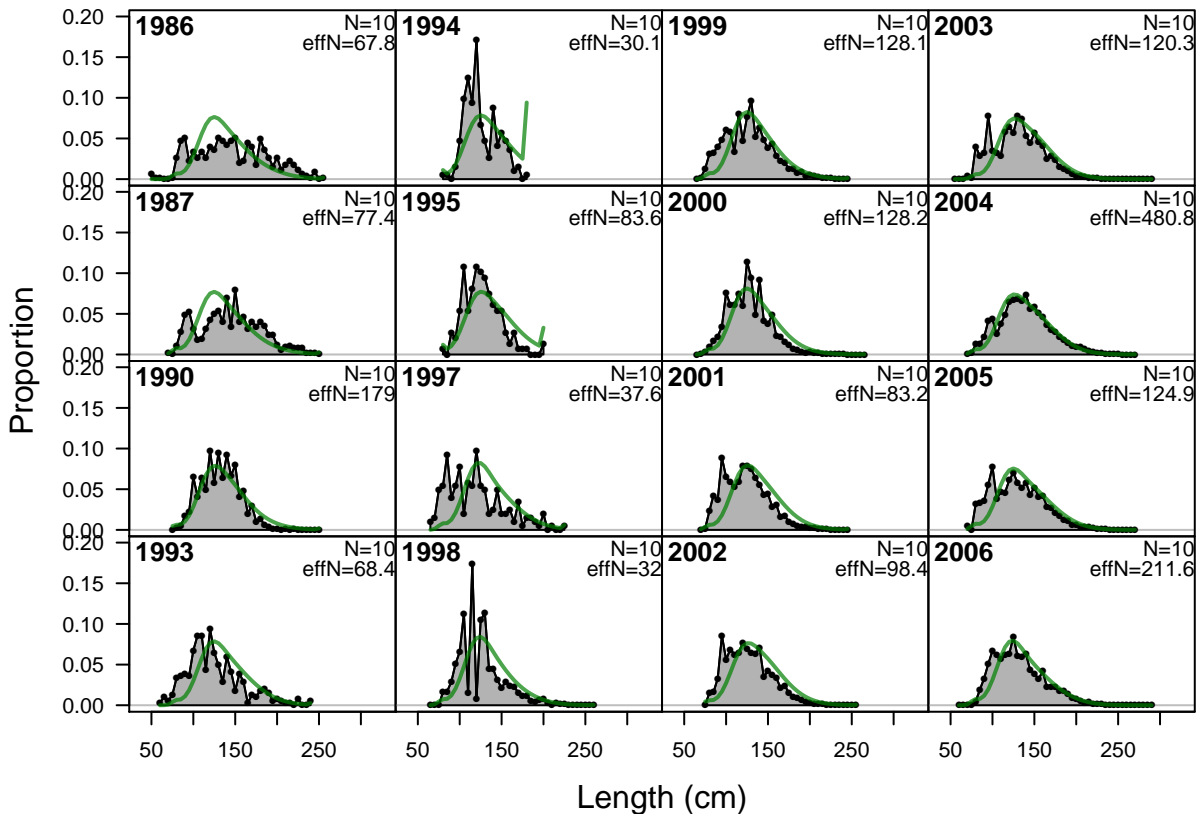
N-EffN comparison, Length comps, retained, JPN_LATE_7



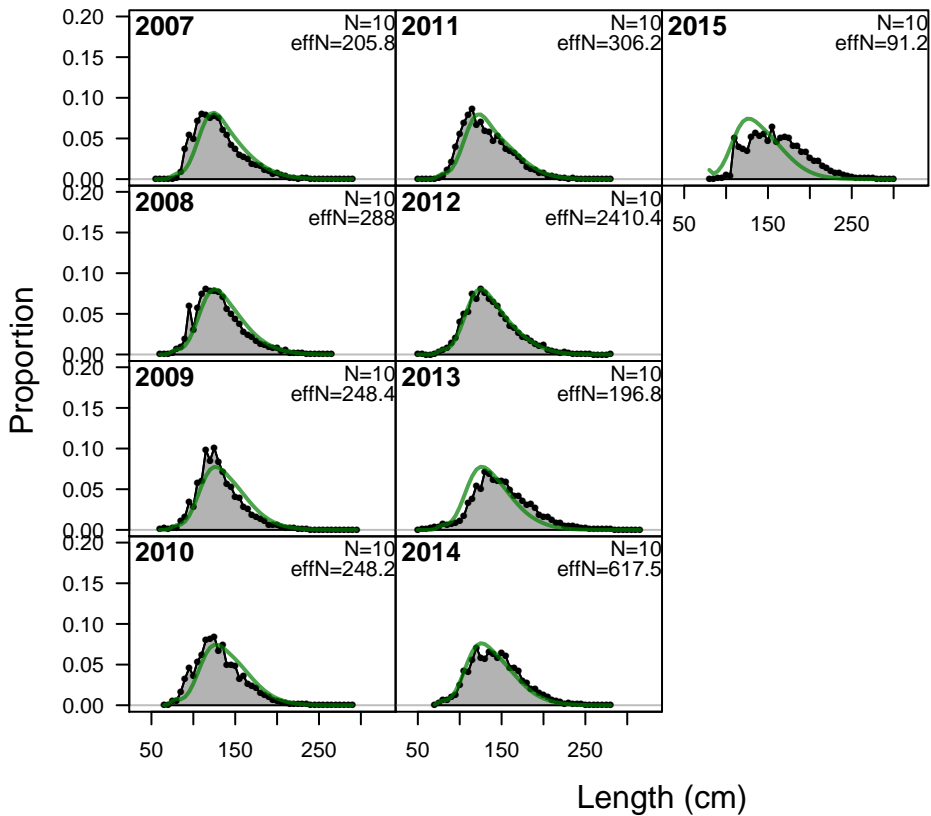
JPN_LATE_7 (retained catch)



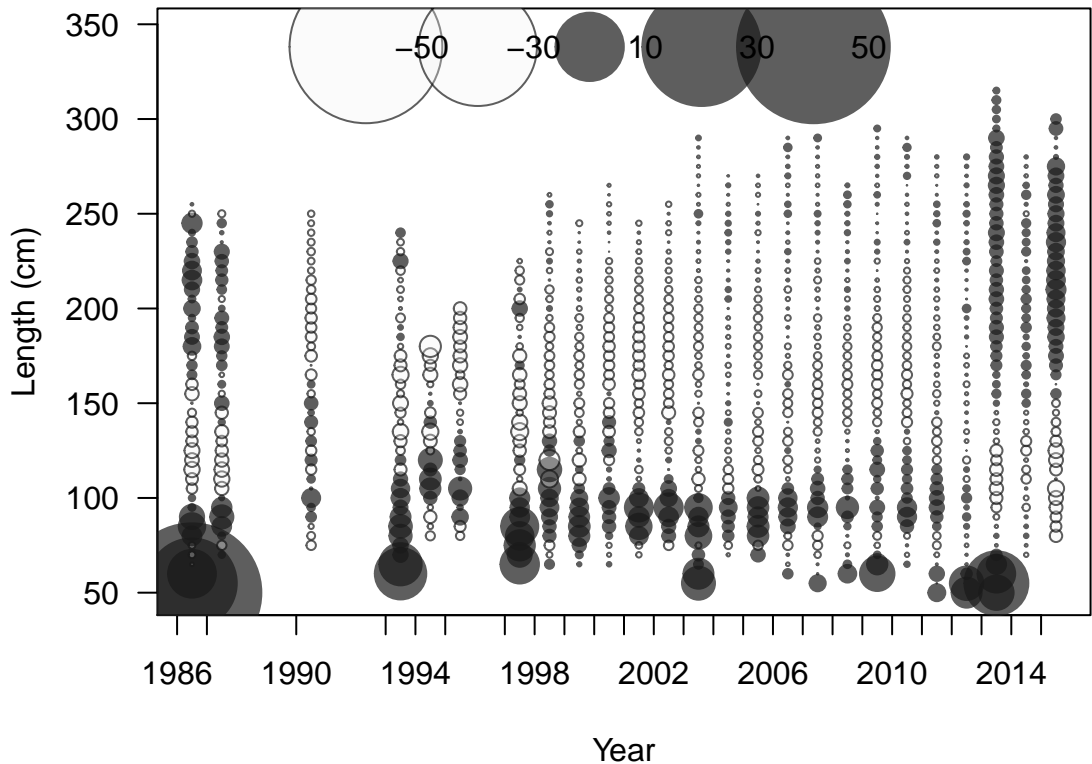
Length comps, retained, PORT_8



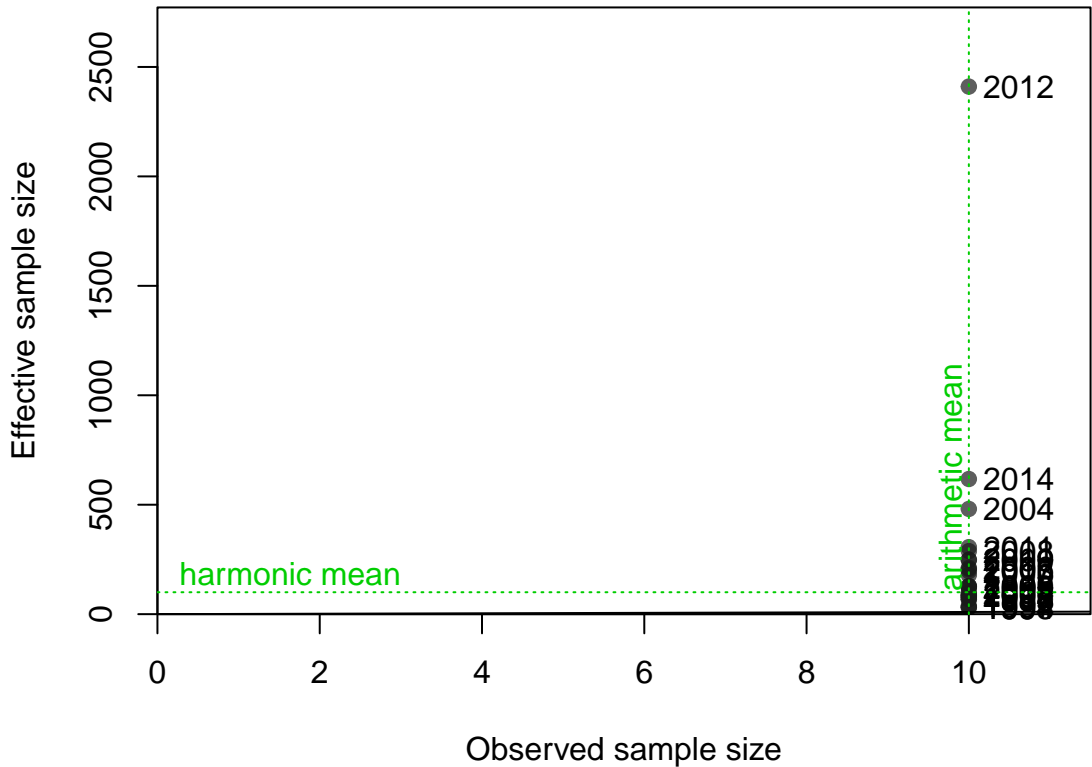
Length comps, retained, PORT_8



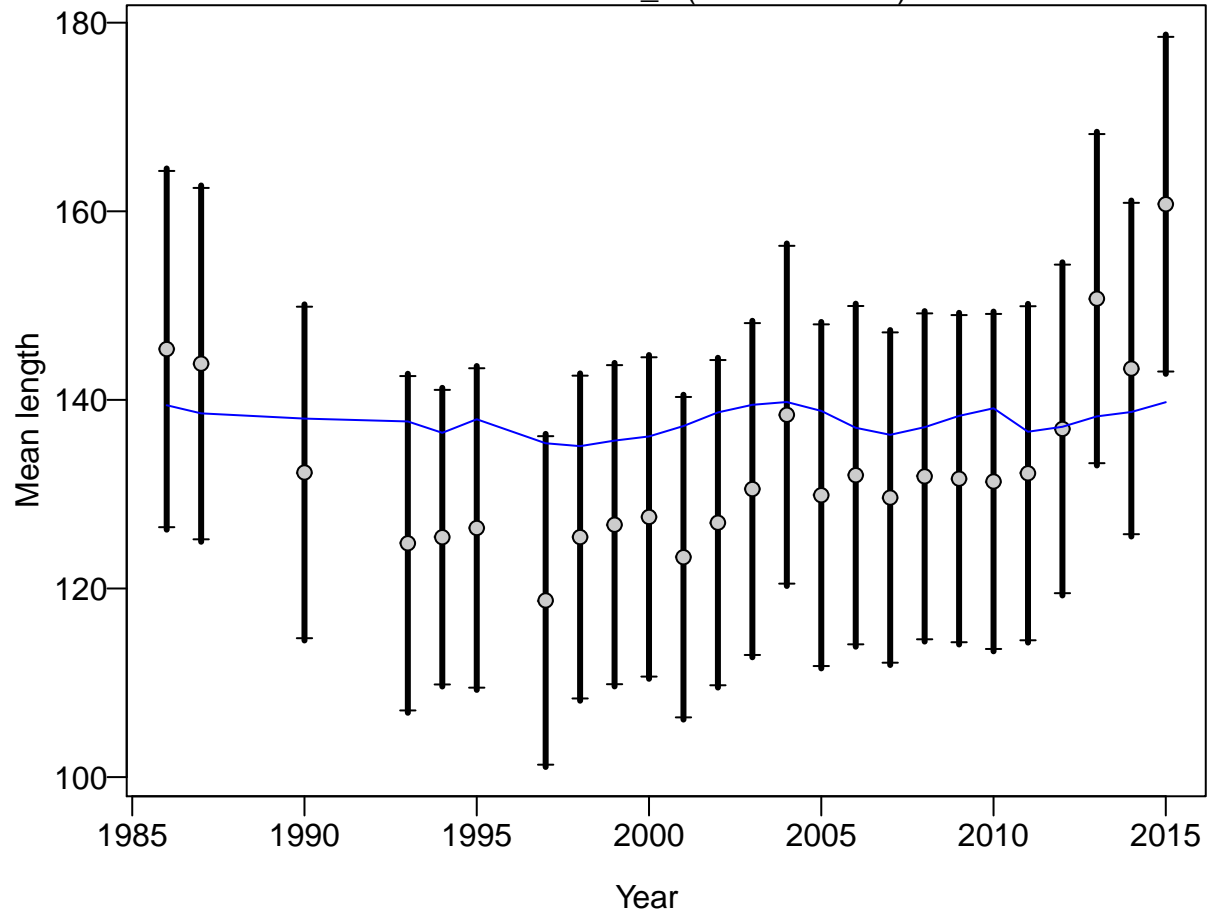
Pearson residuals, retained, PORT_8 (max=41.21)



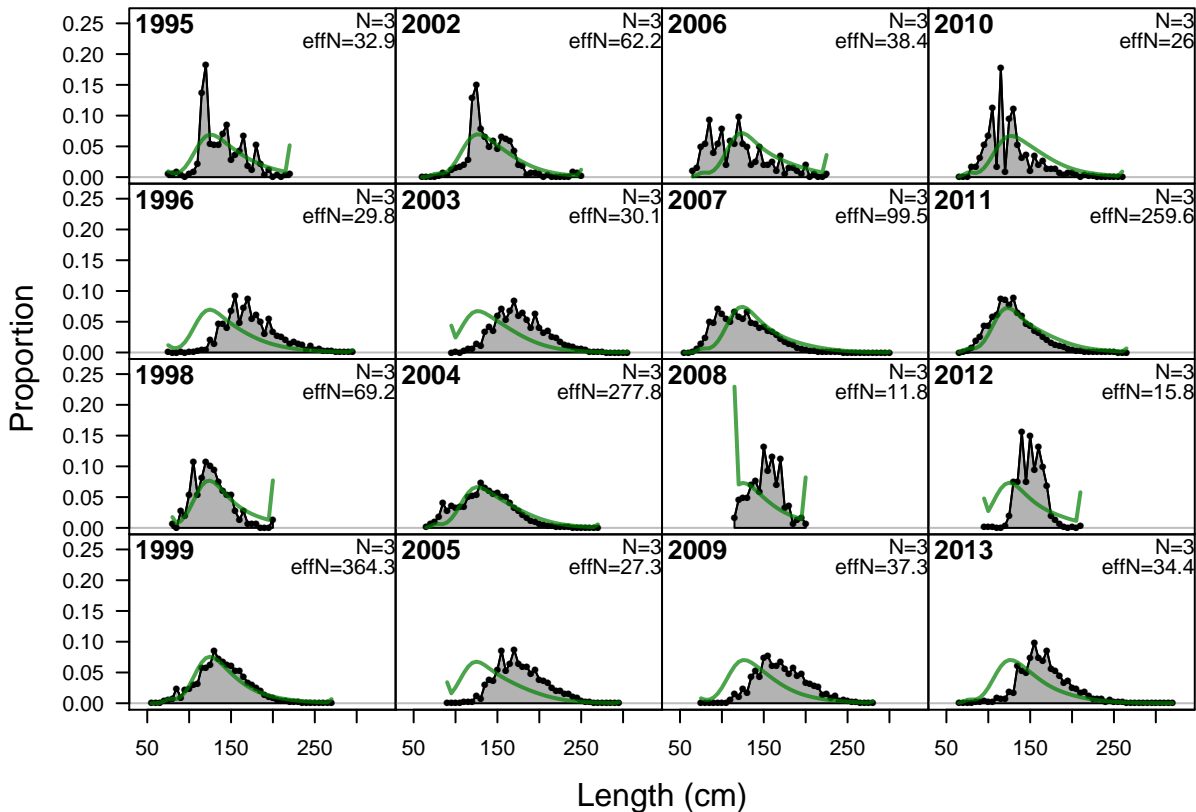
N-EffN comparison, Length comps, retained, PORT_8



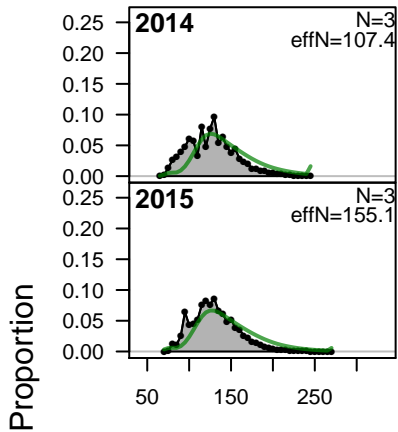
PORT_8 (retained catch)



Length comps, retained, CHIN-TAI_9

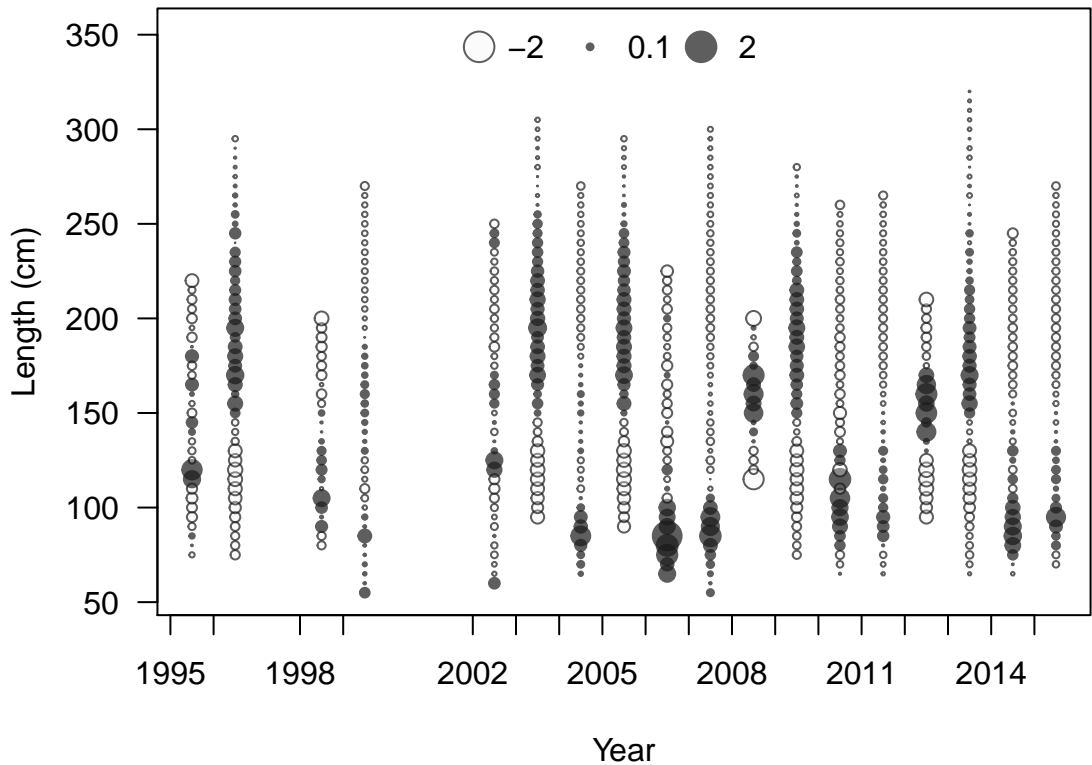


Length comps, retained, CHIN-TAI_9

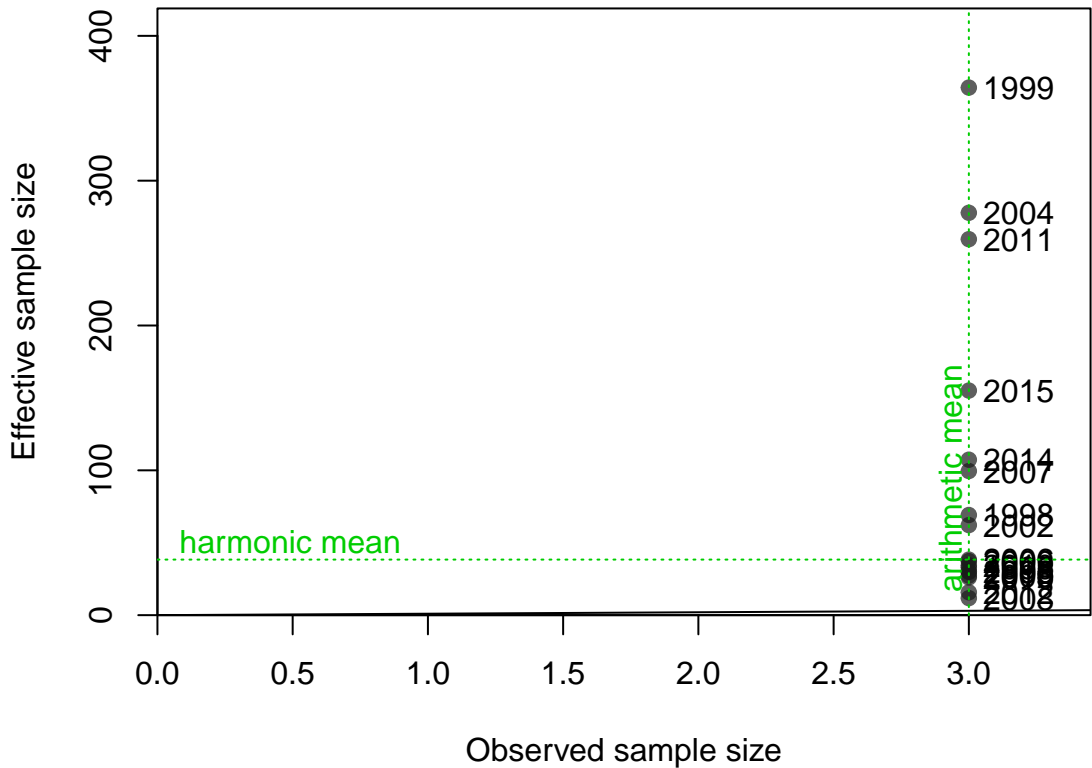


Length (cm)

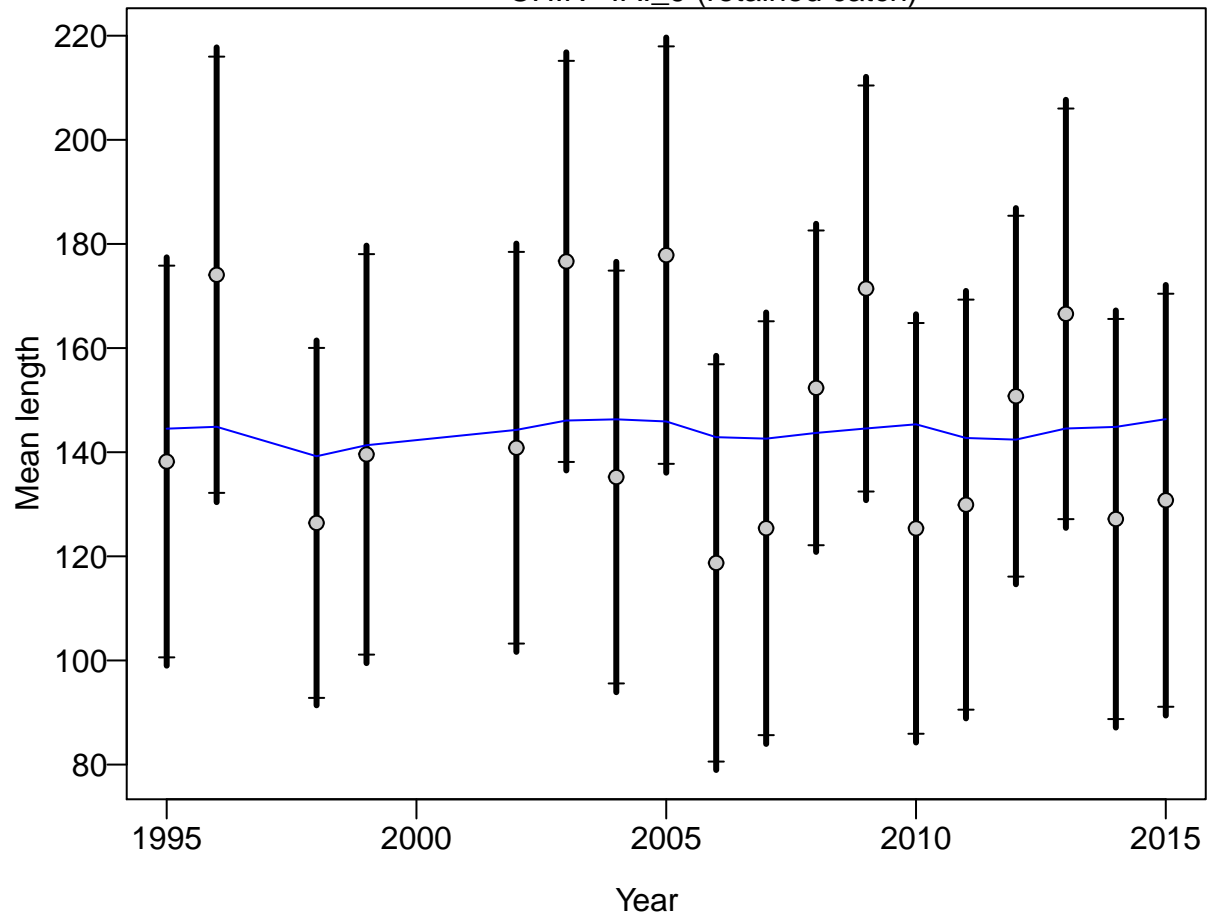
Pearson residuals, retained, CHIN-TAI_9 (max=1.77)



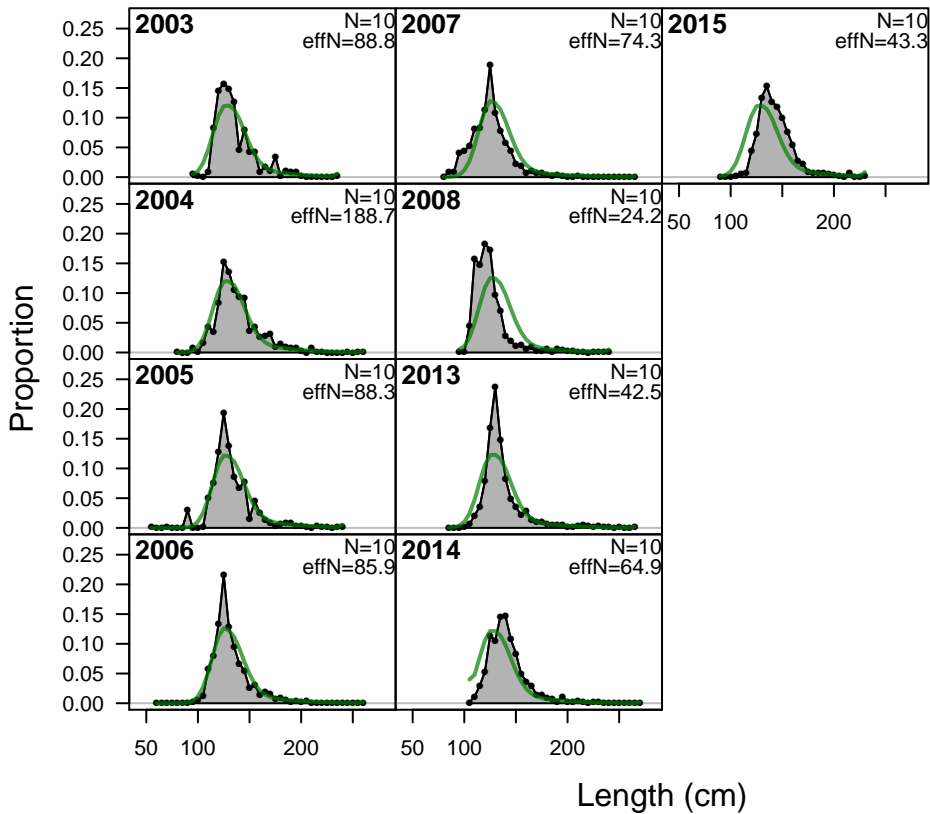
N-EffN comparison, Length comps, retained, CHIN-TAI_9



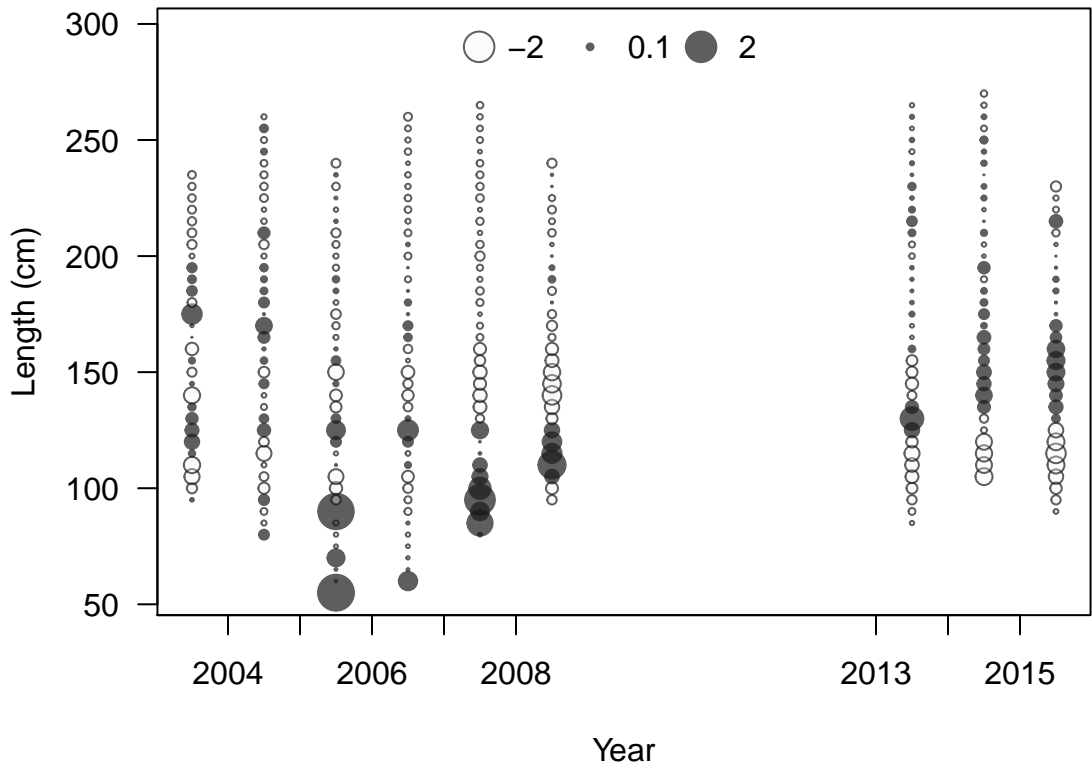
CHIN-TAI_9 (retained catch)



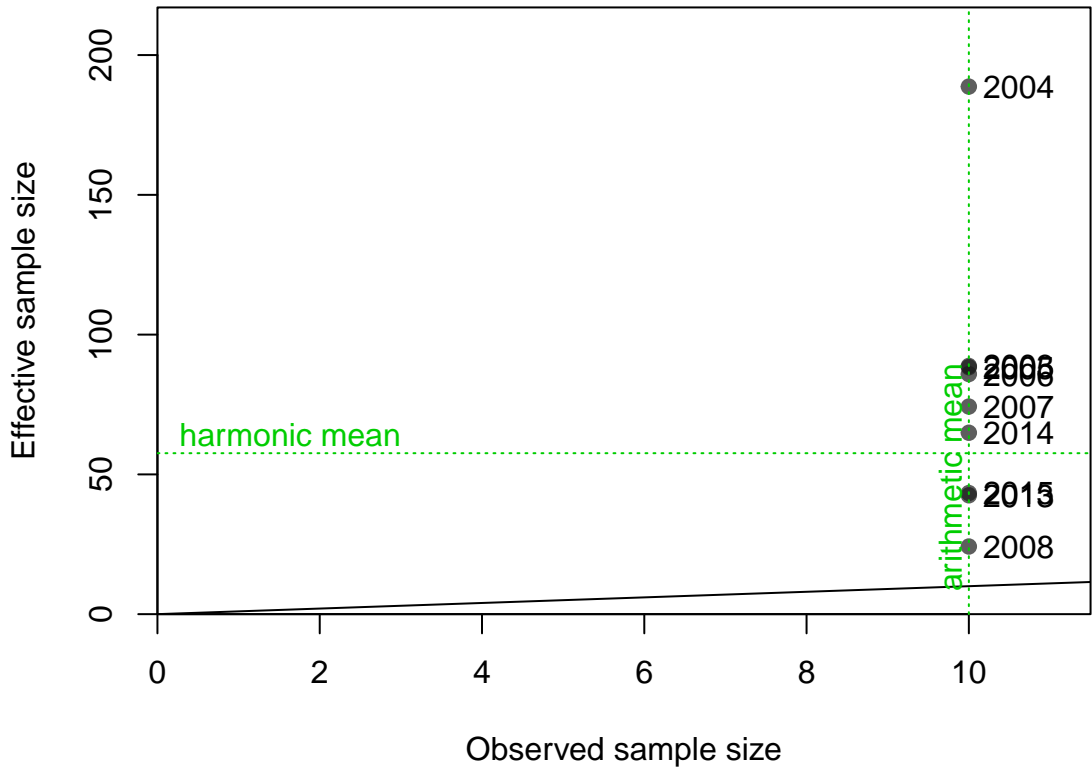
Length comps, retained, MOR_10



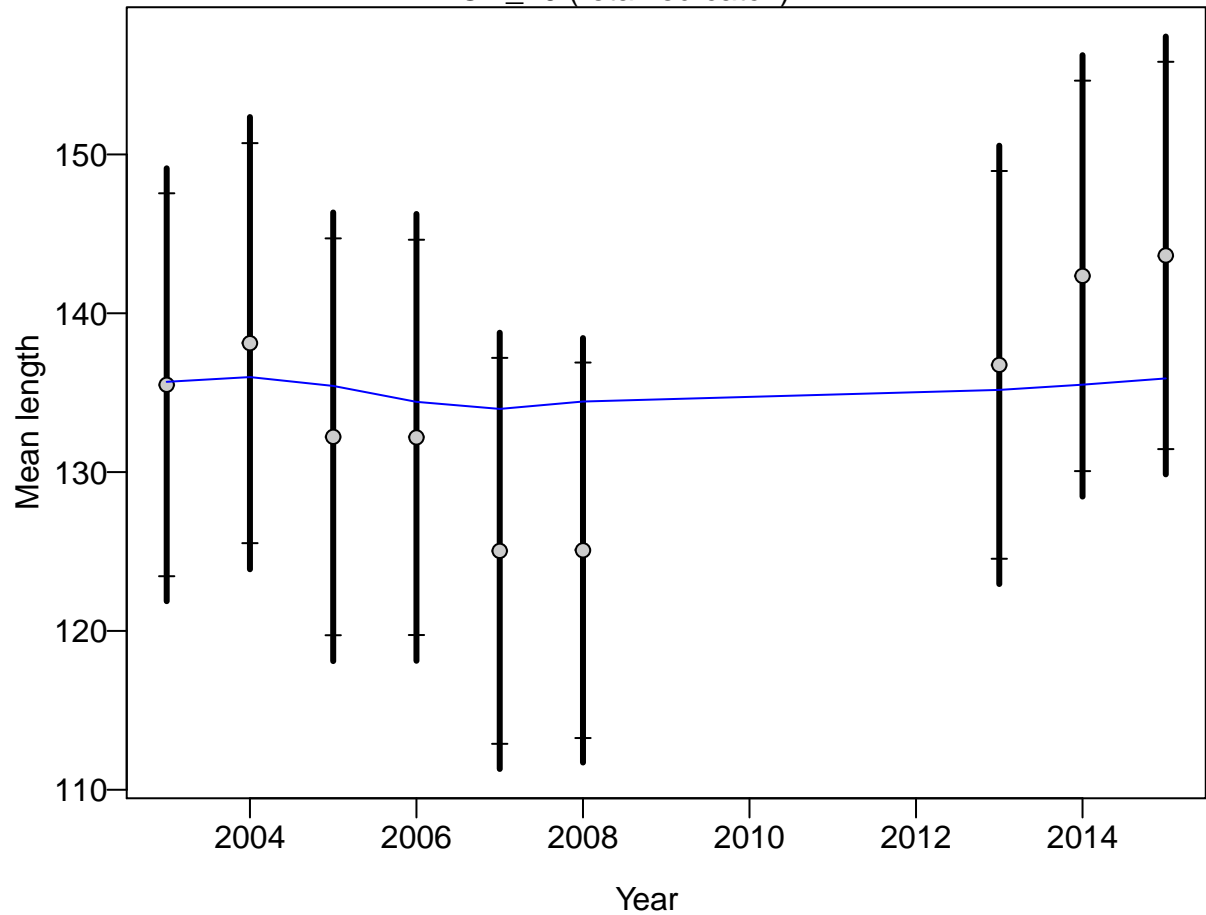
Pearson residuals, retained, MOR_10 (max=2.77)



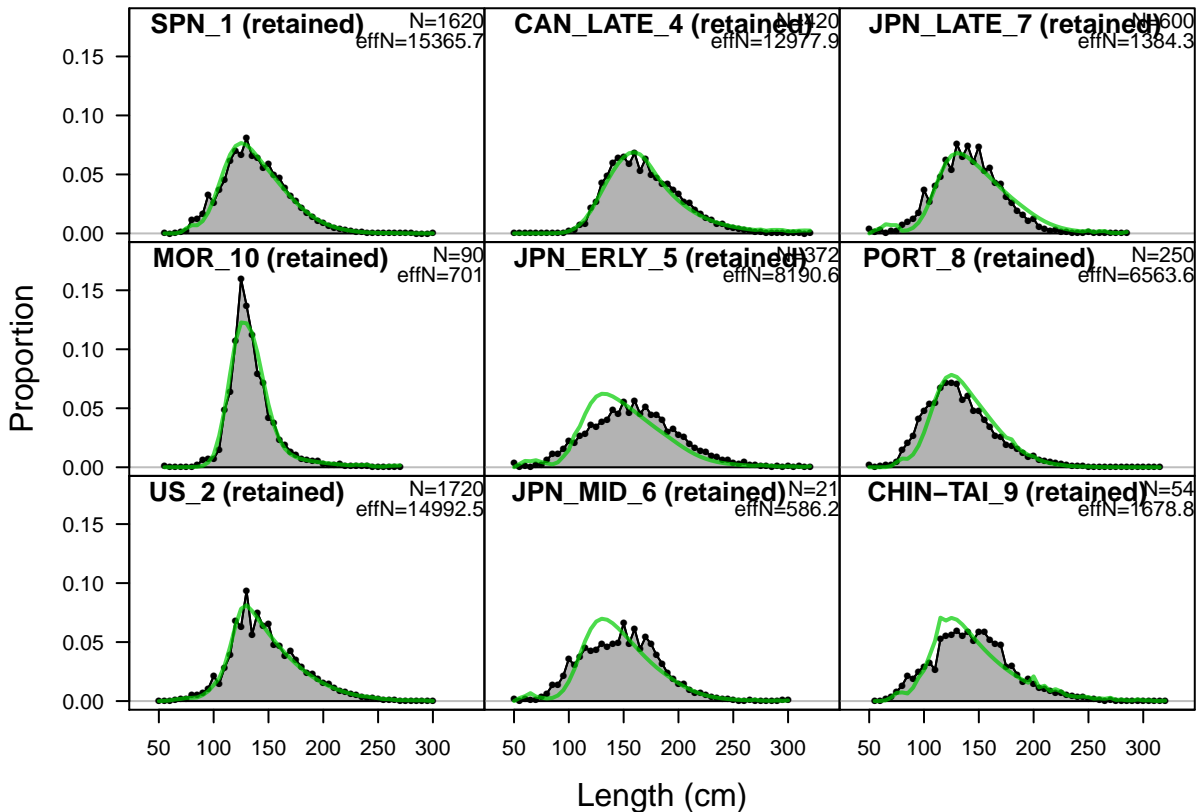
N-EffN comparison, Length comps, retained, MOR_10

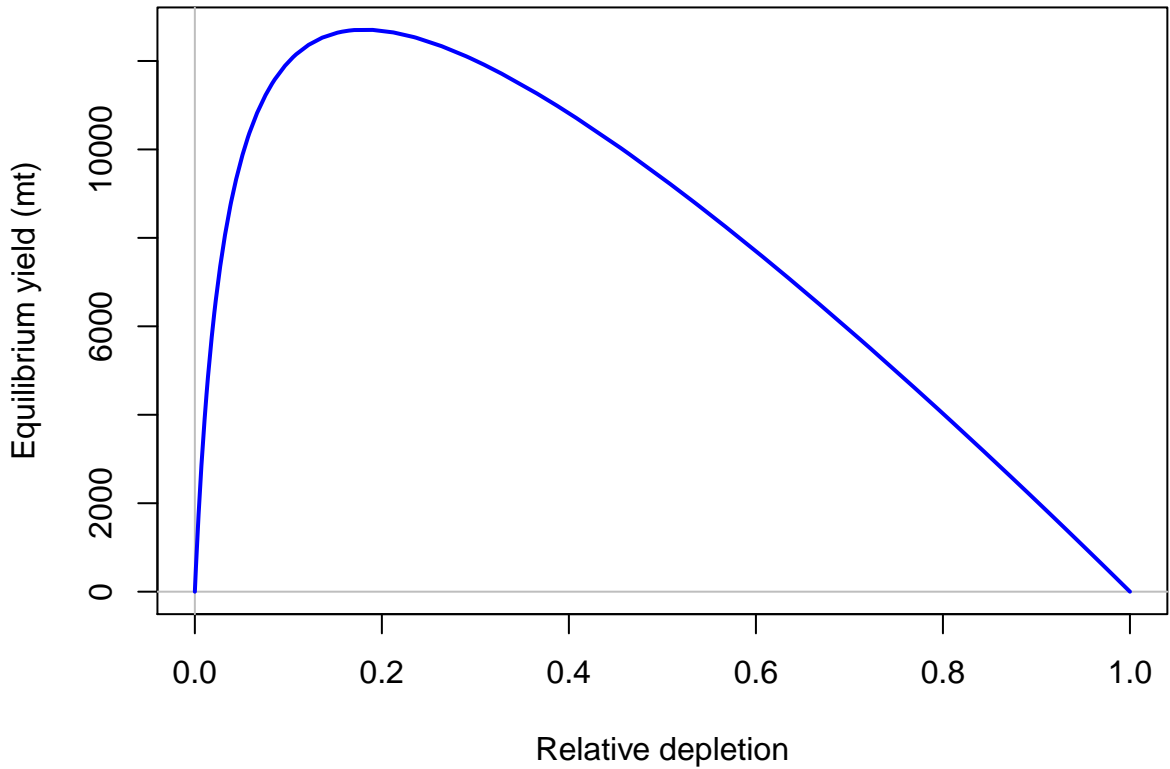


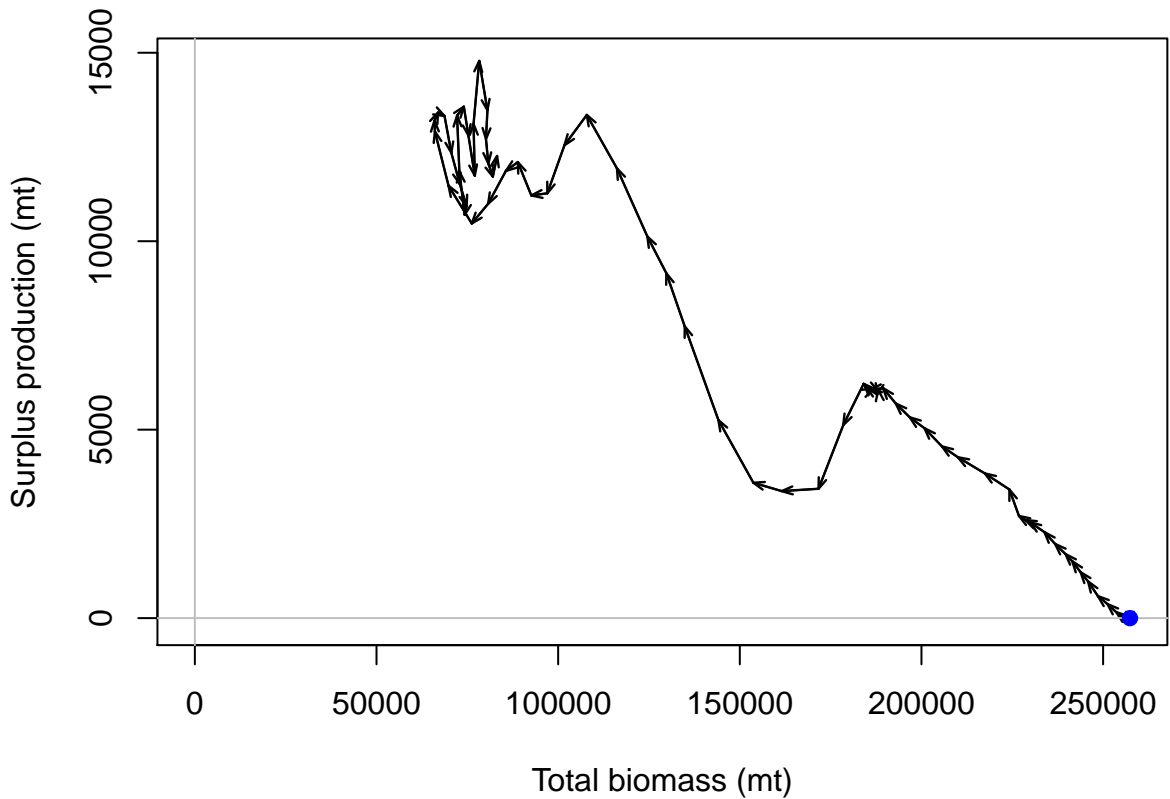
MOR_10 (retained catch)



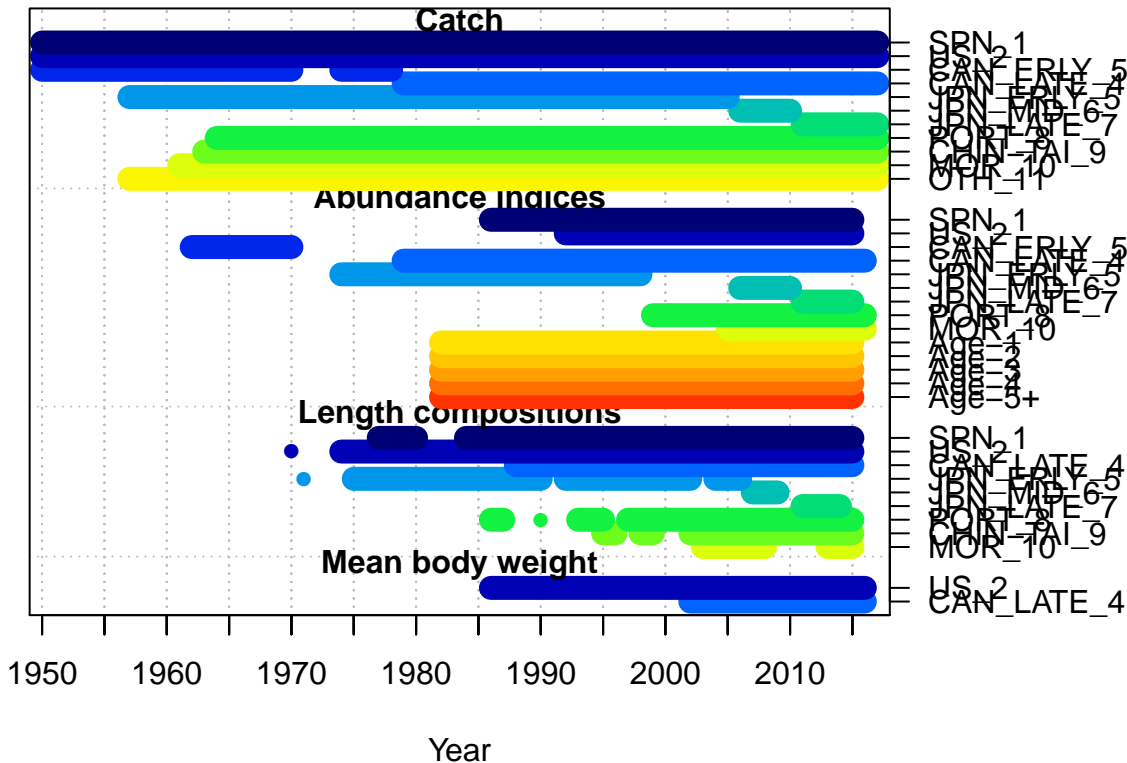
Length comps, aggregated across time by fleet







Data by type and year



ta by type and year, circle area is relative to precision within data type

