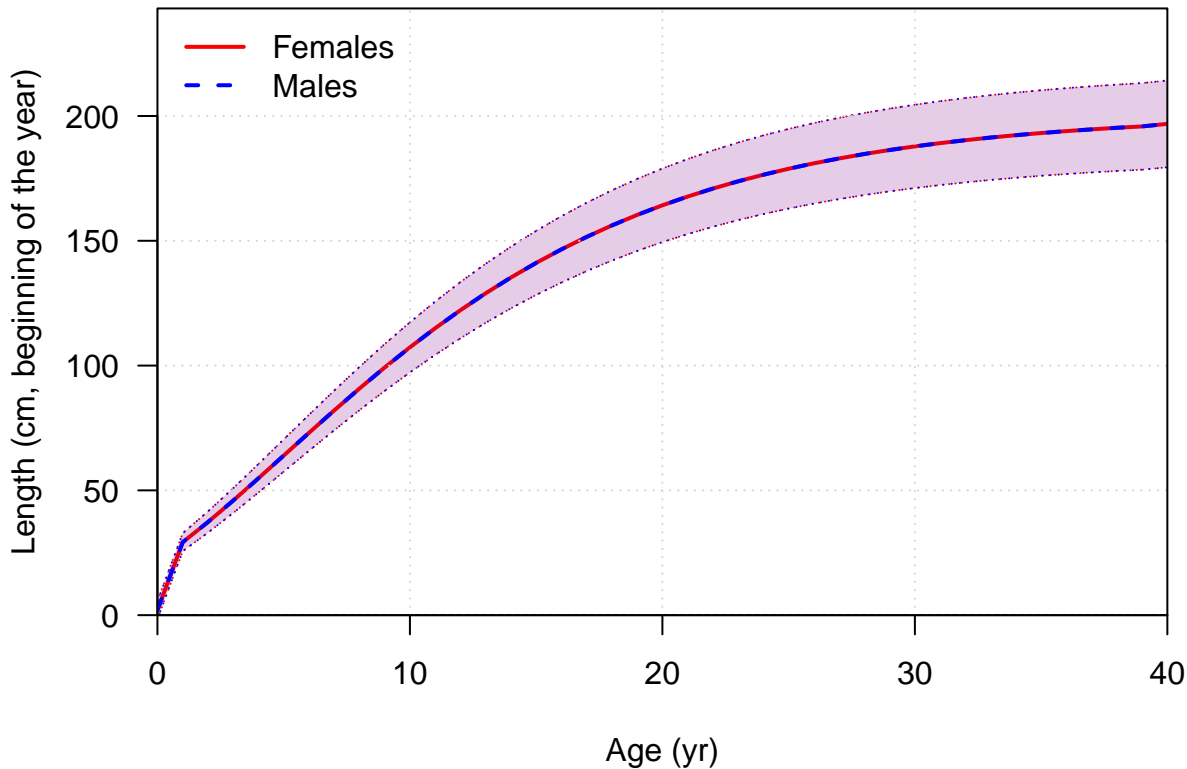


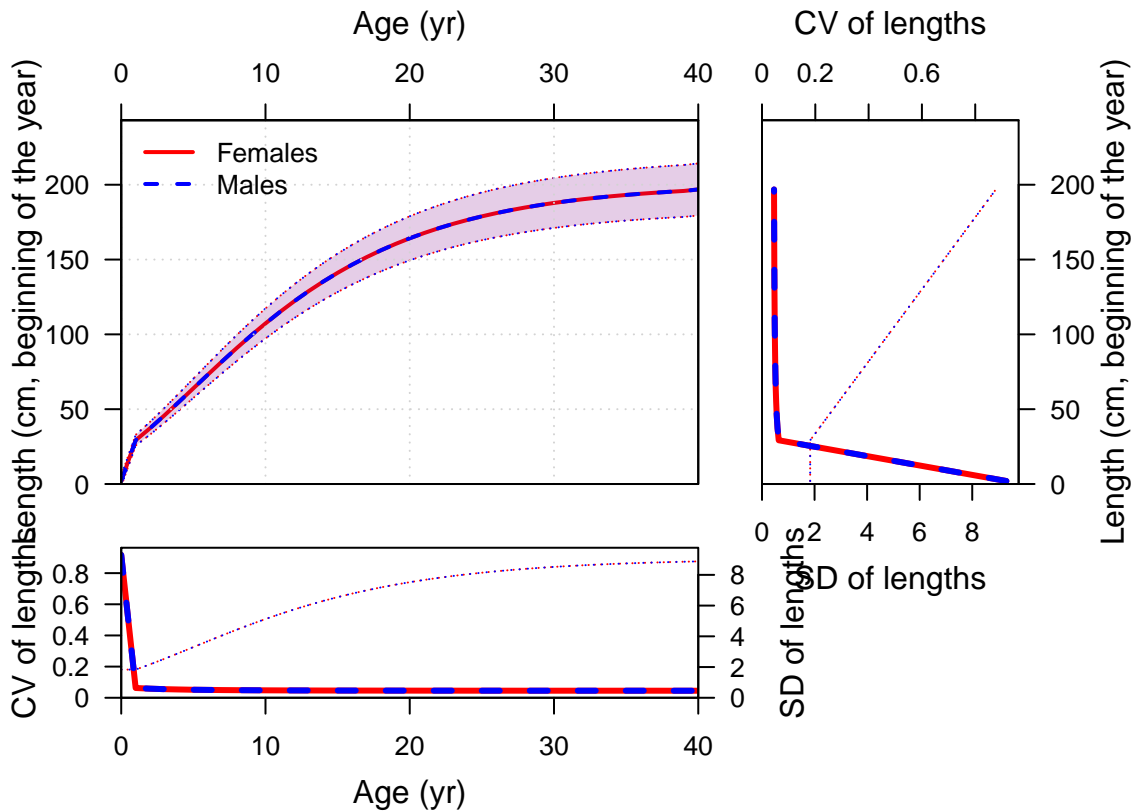
Plots created using the 'r4ss' package in R  
Stock Synthesis version: SS-V3.23b

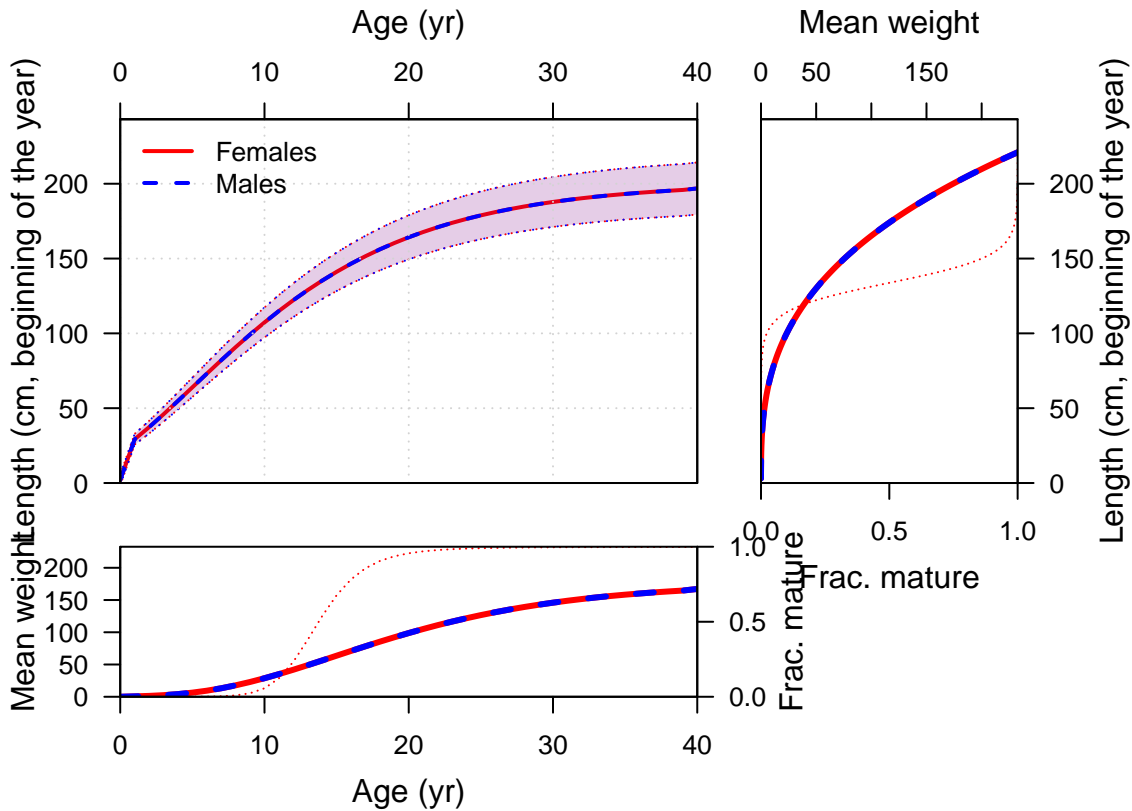
Data\_File: BET-EPO.dat

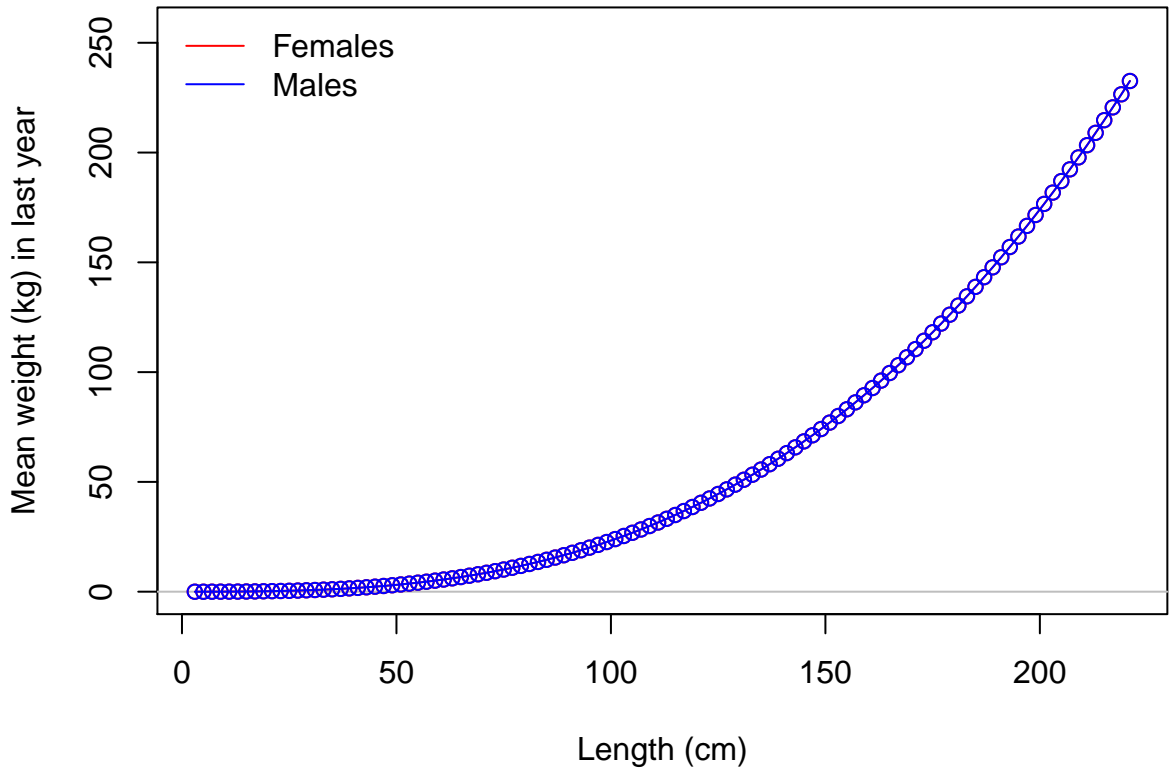
Control\_File: BET-EPO.ctl

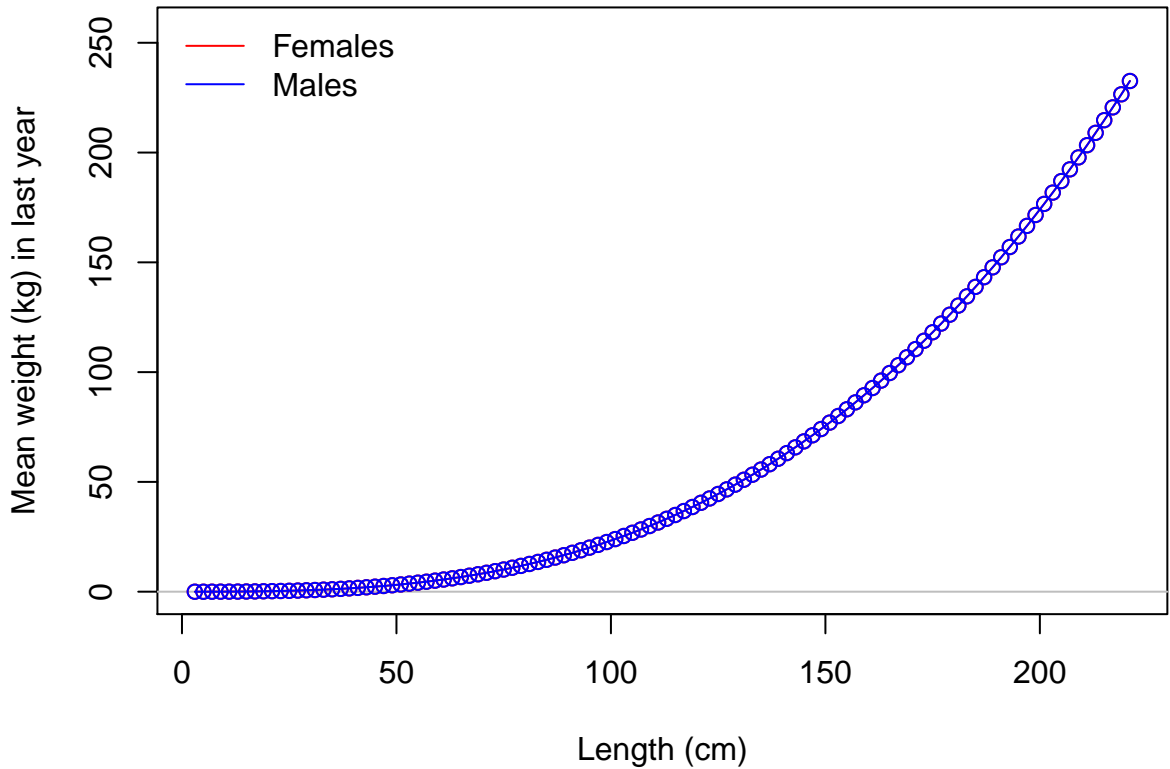
## Ending year expected growth (with 95% intervals)

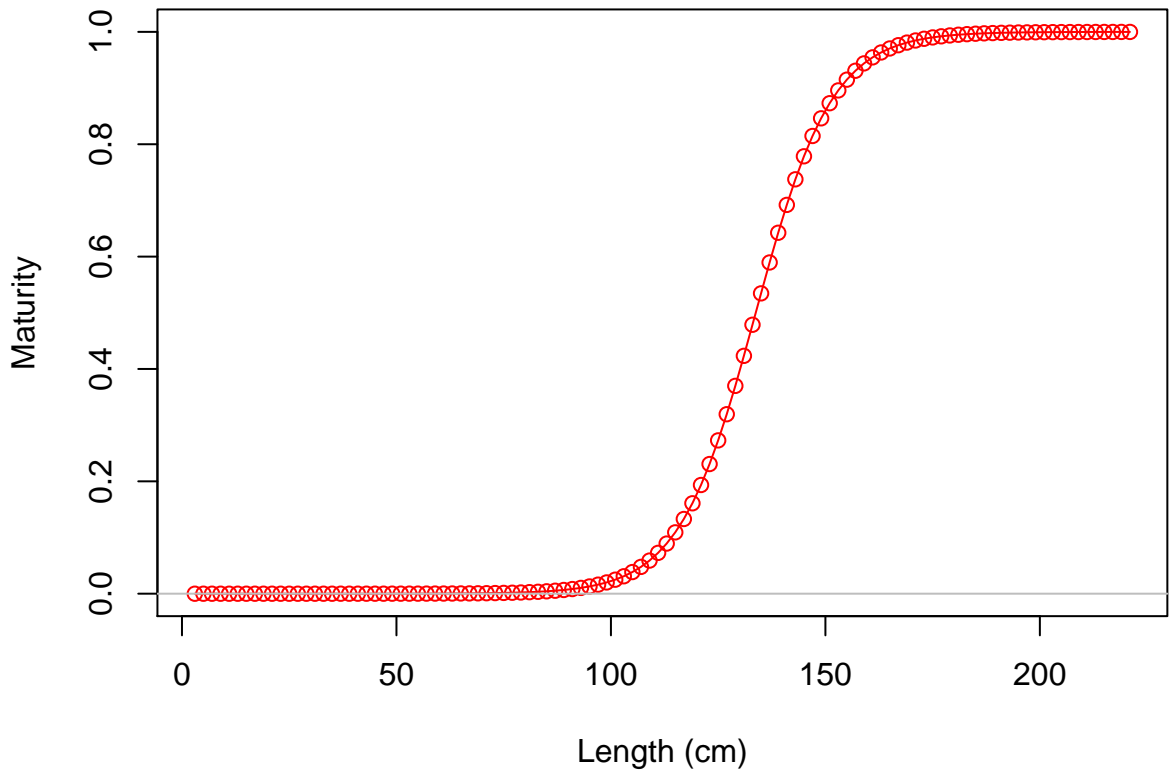


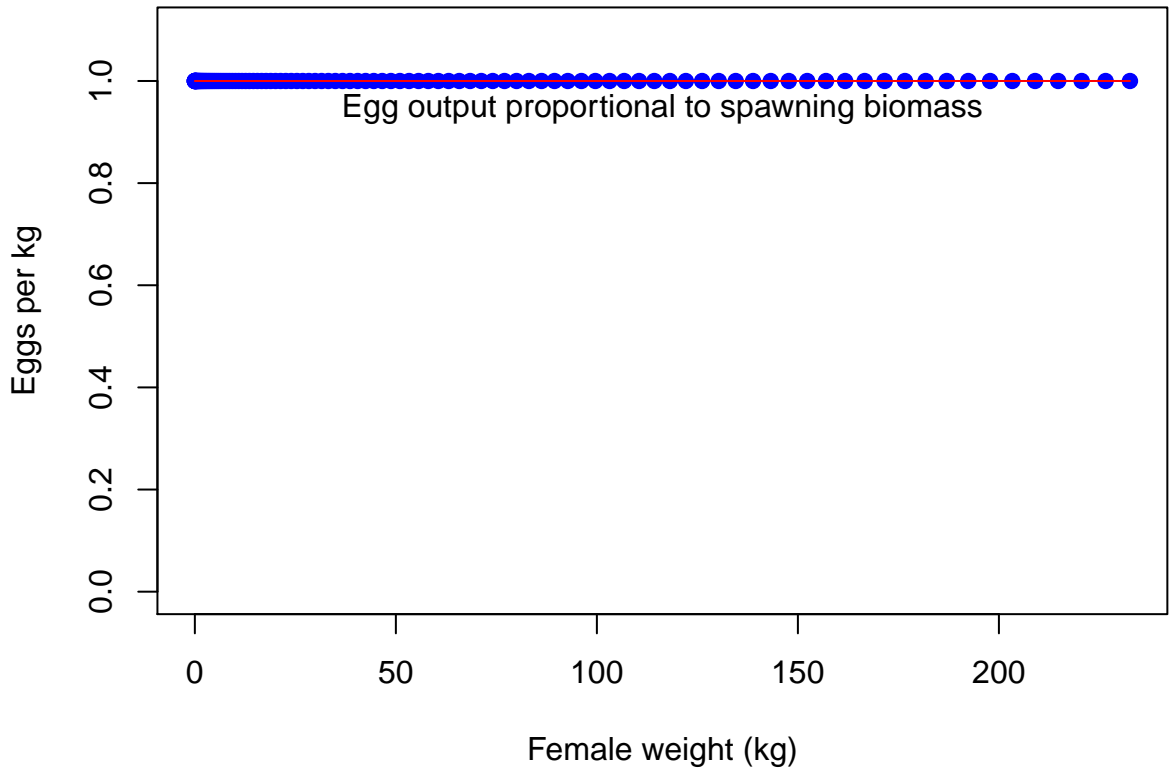




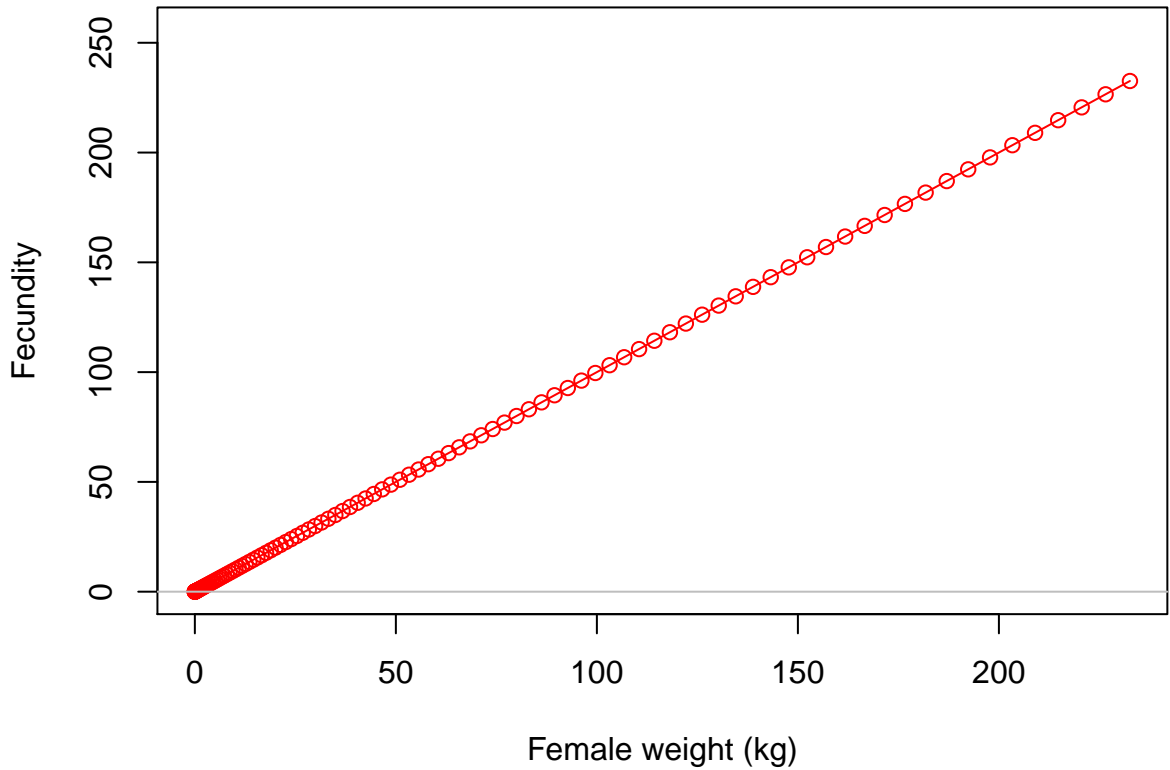


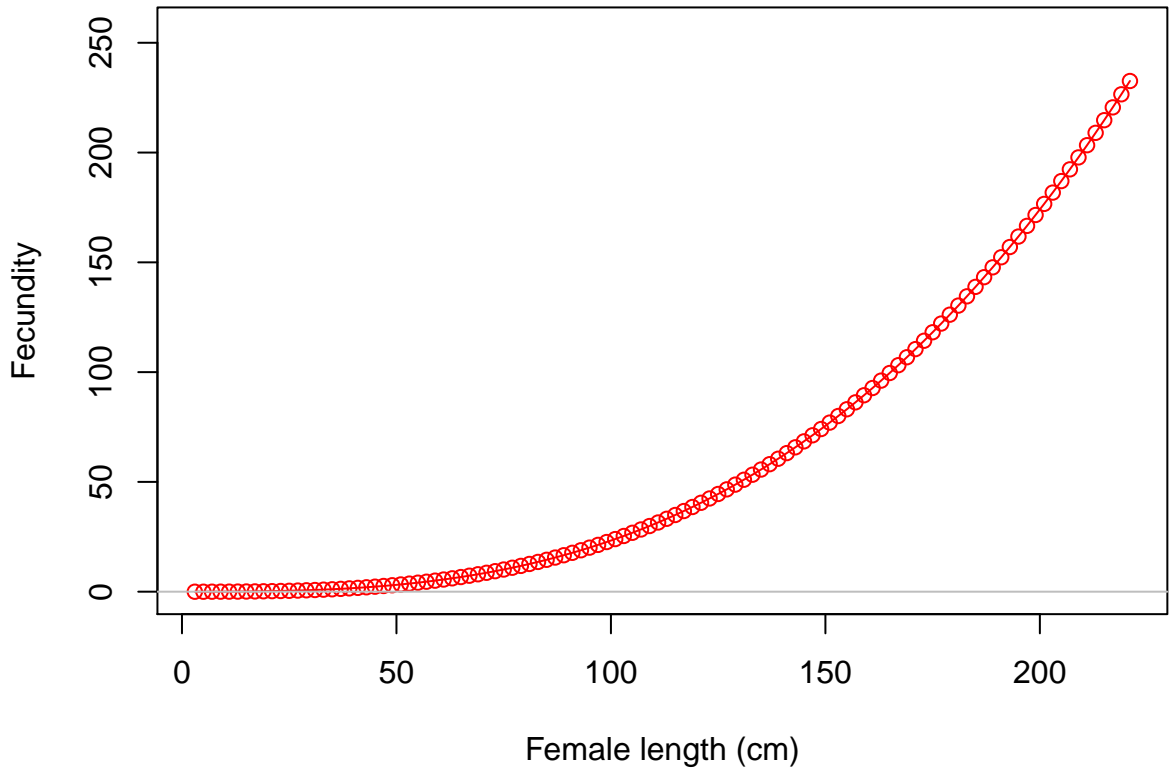


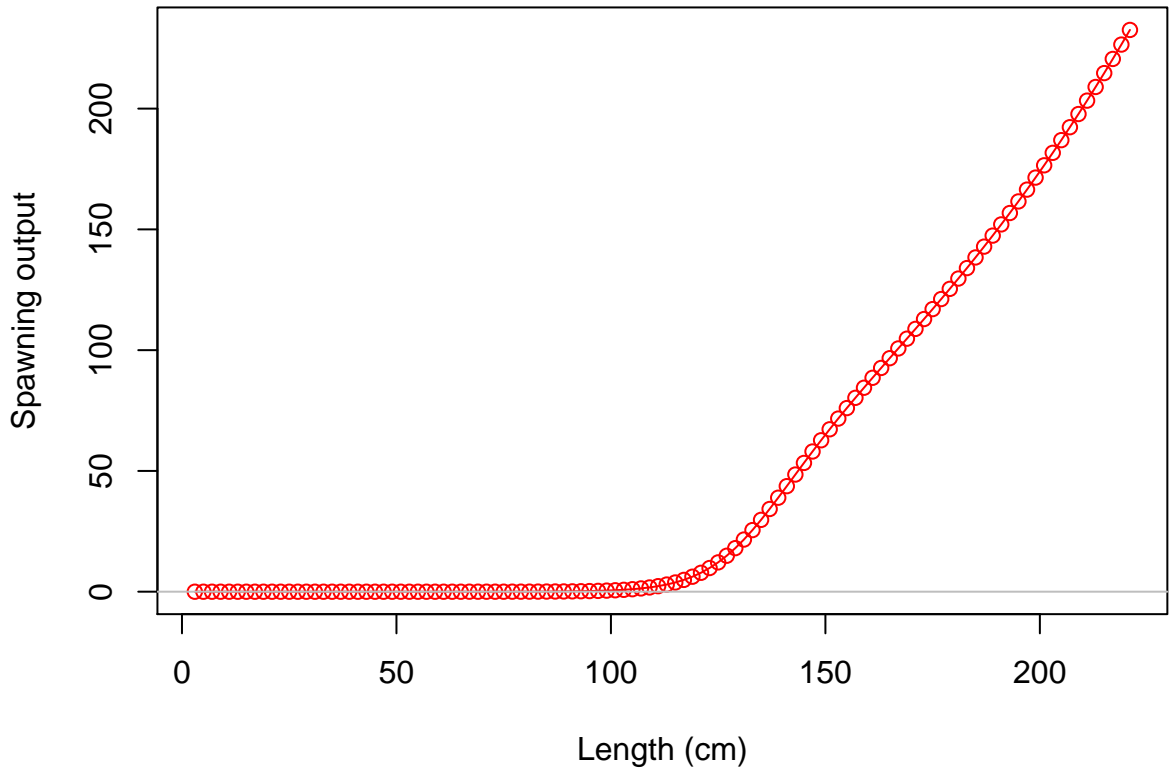




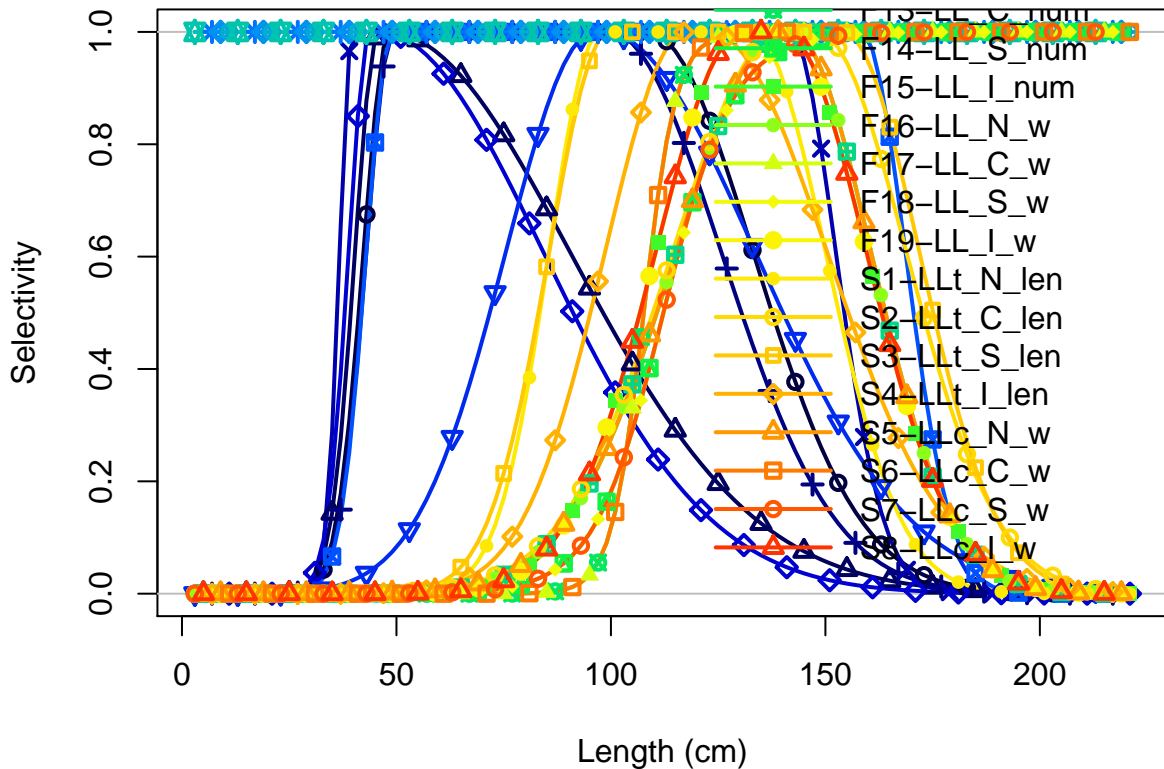




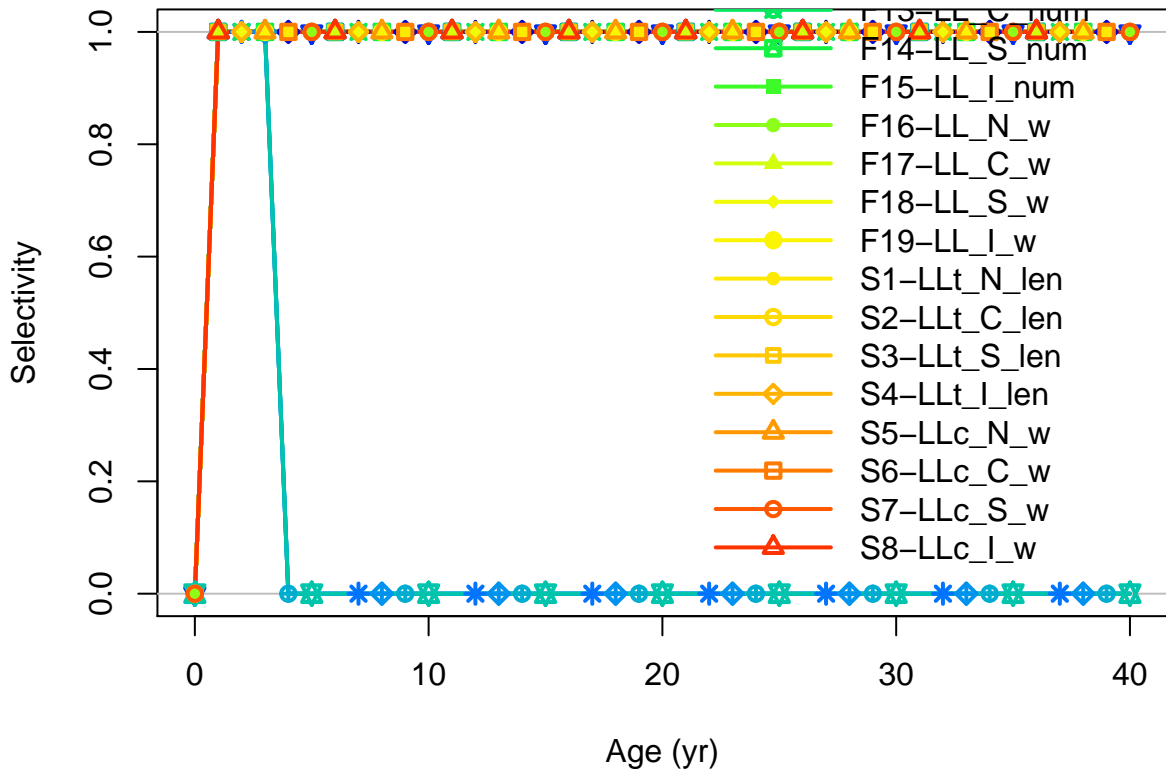




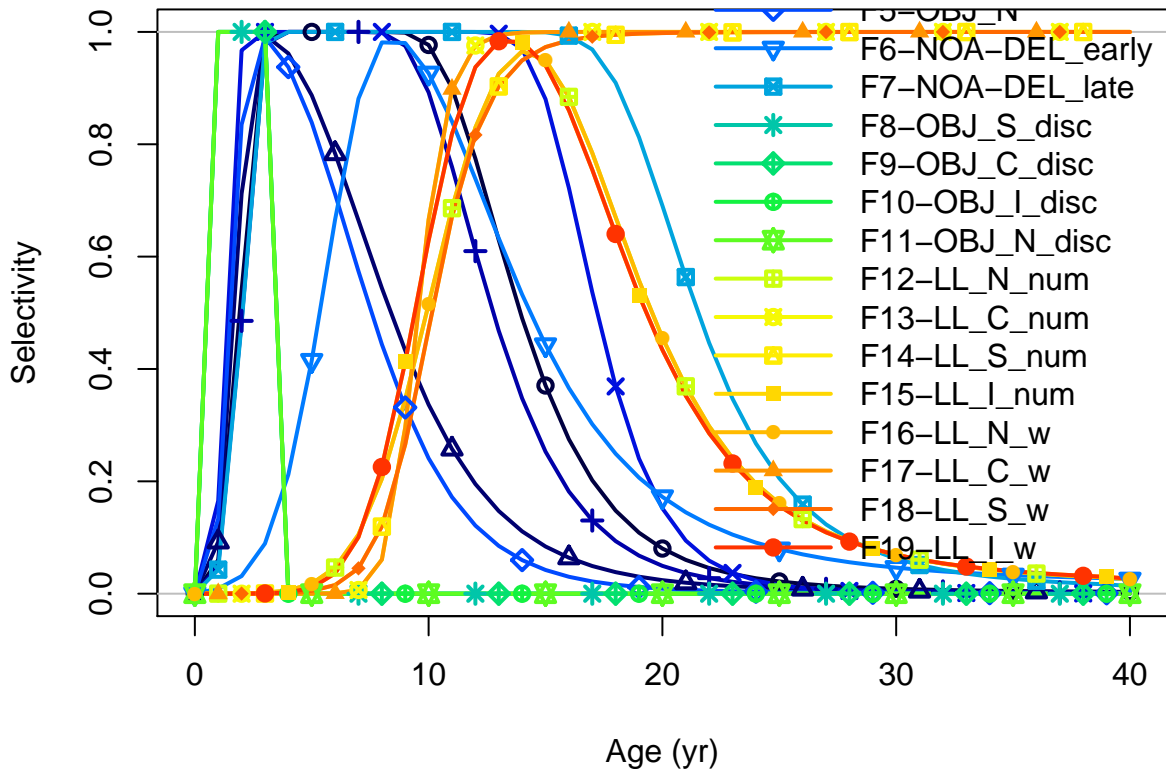
## Length-based selectivity by fleet in 168



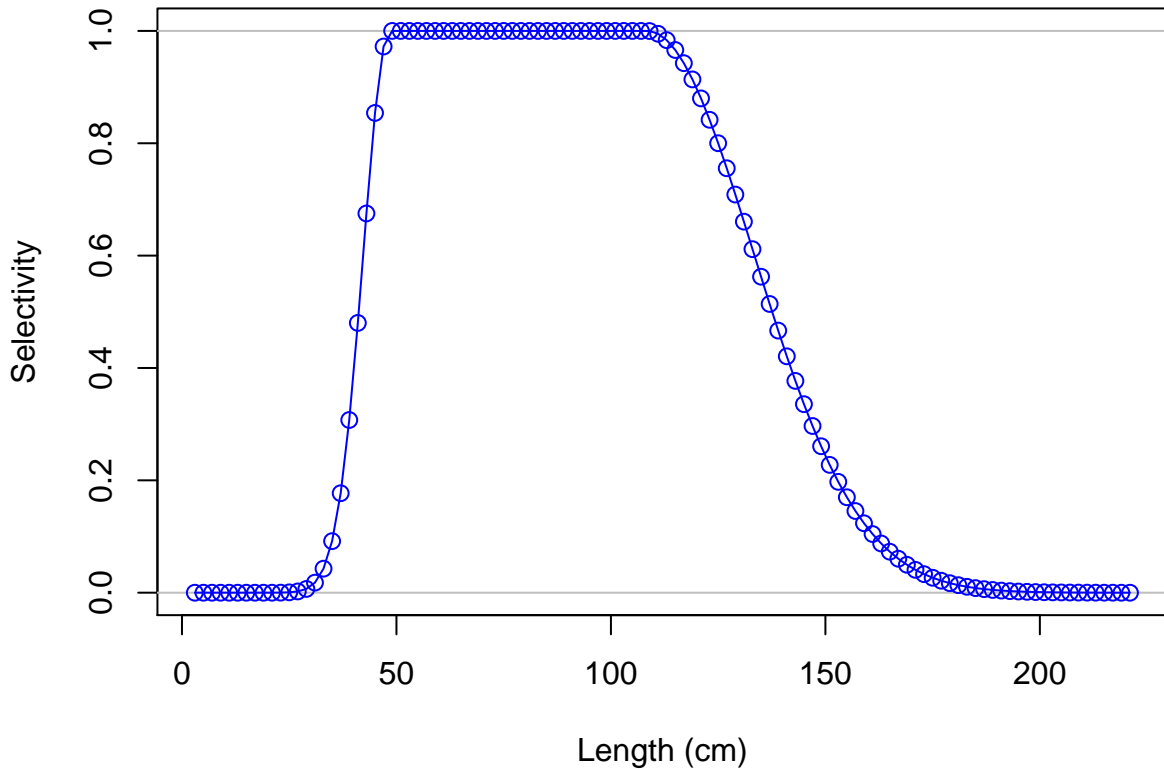
## Age-based selectivity by fleet in 168



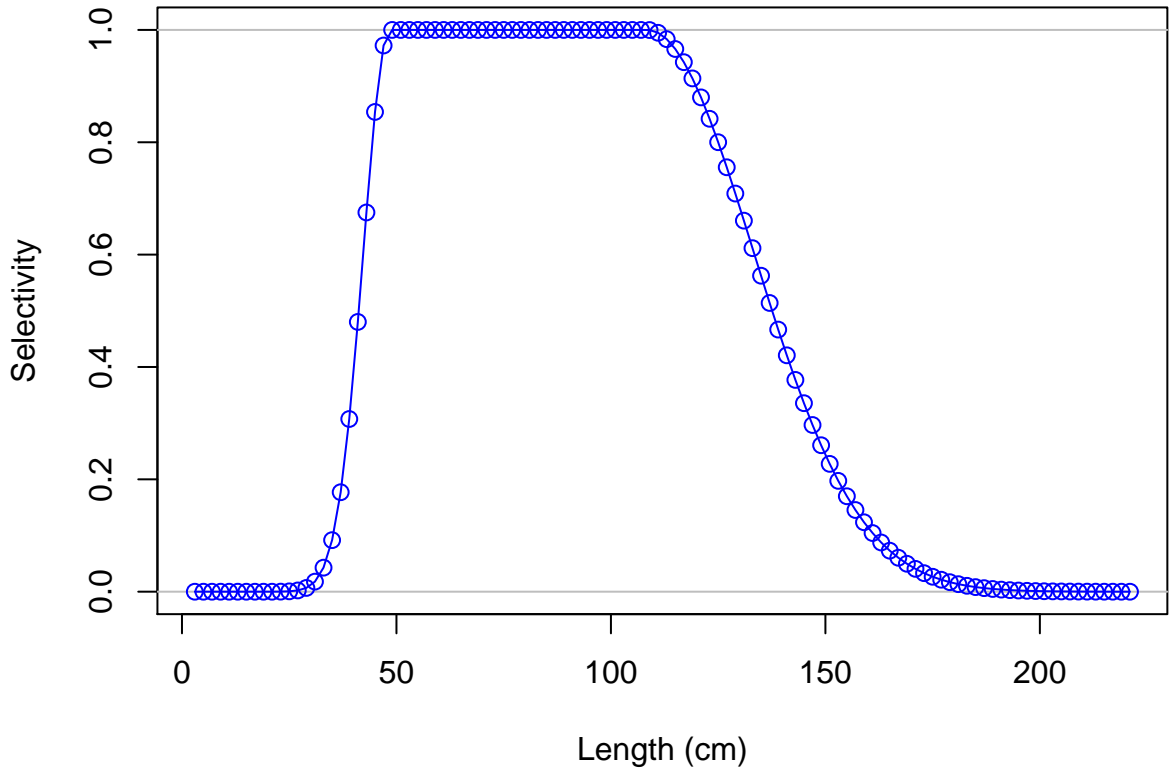
# Derived age-based from length-based selectivity by fleet in 168



## Female ending year selectivity for F1-OBJ\_early

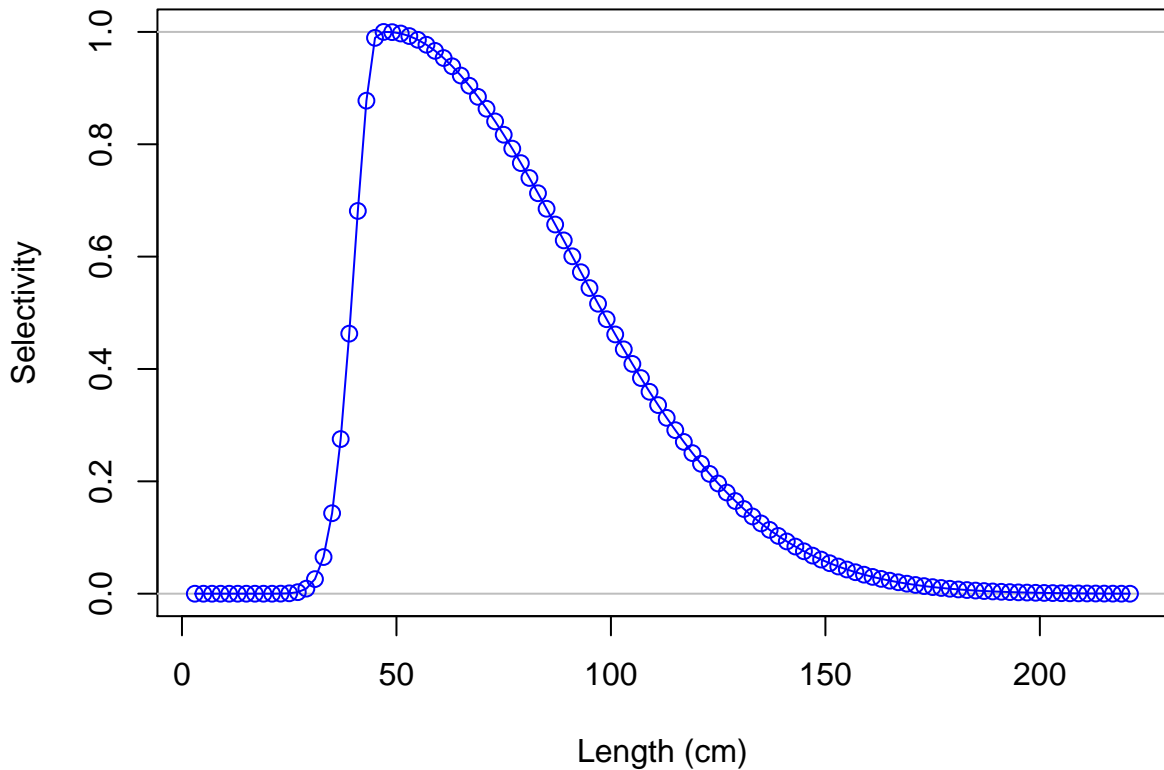


Male ending year selectivity for F1-Obj\_early

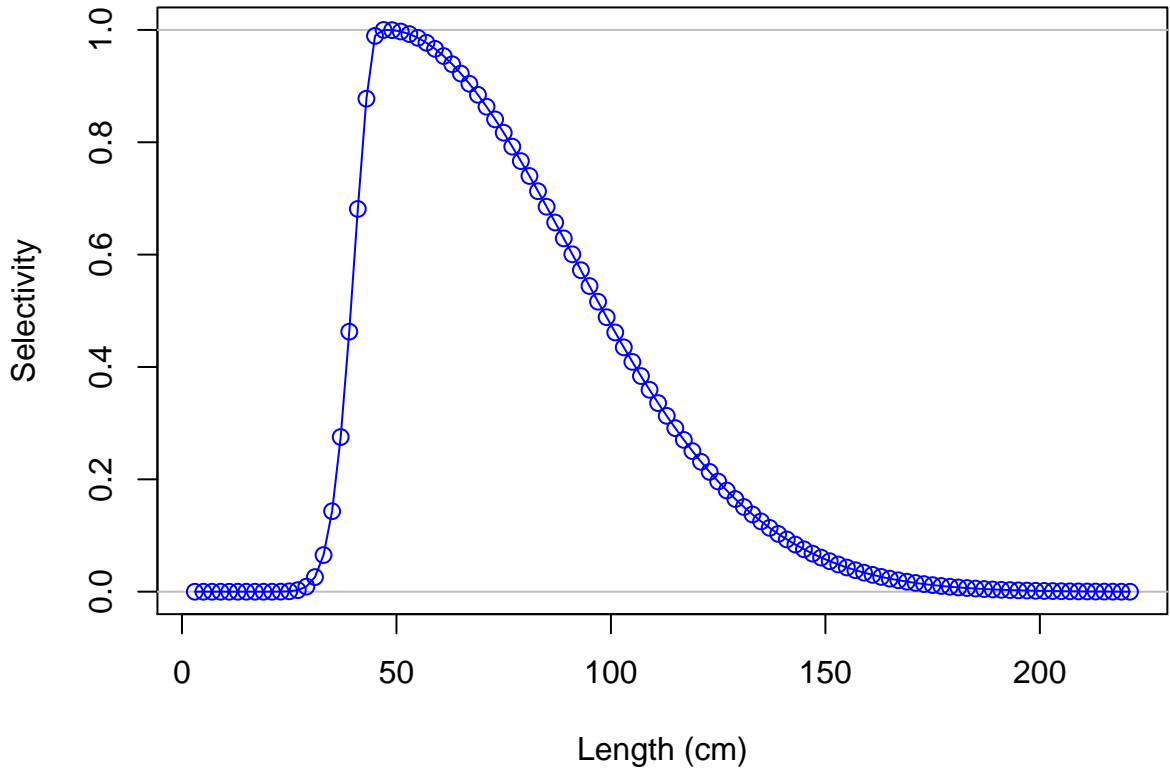




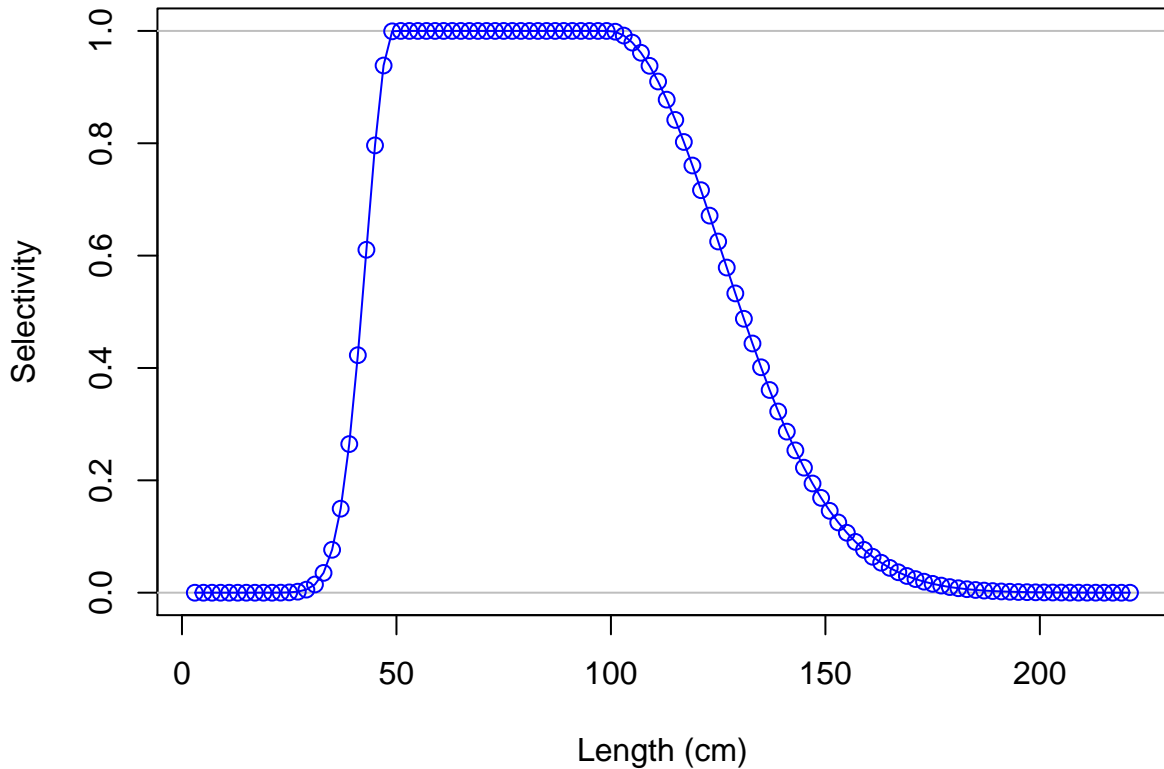
## Female ending year selectivity for F2-OBJ\_S



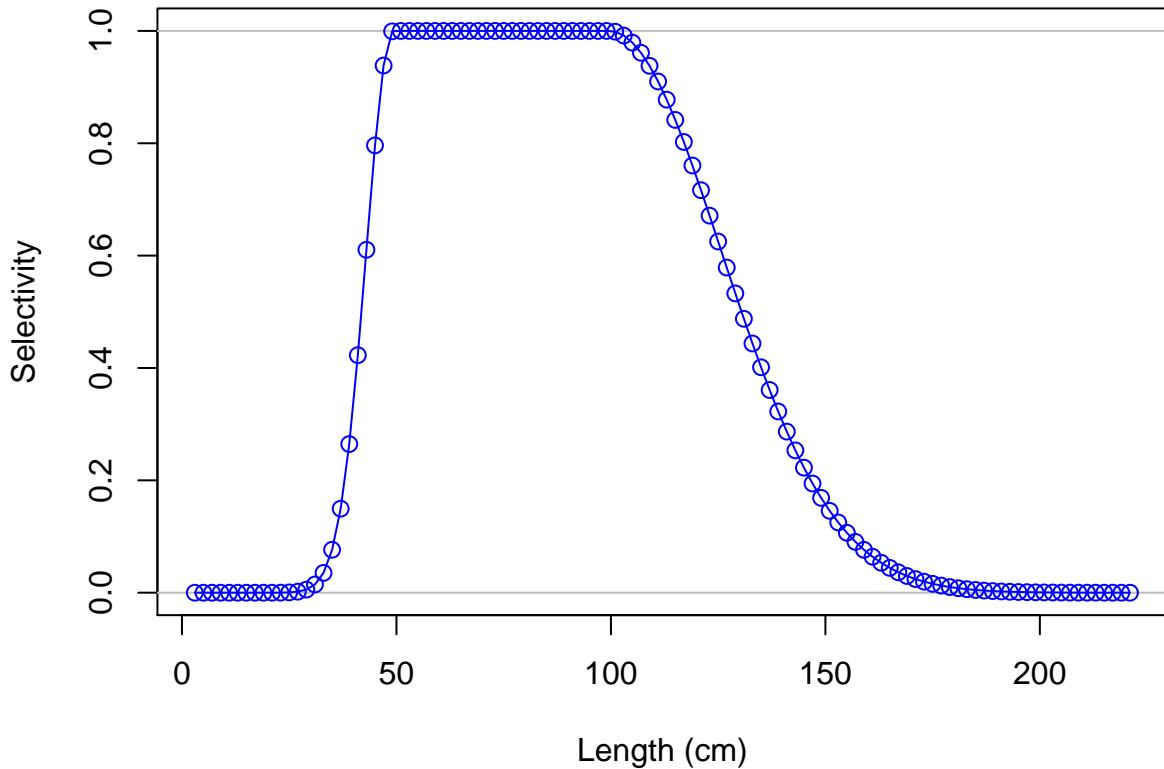
## Male ending year selectivity for F2-OBJ\_S



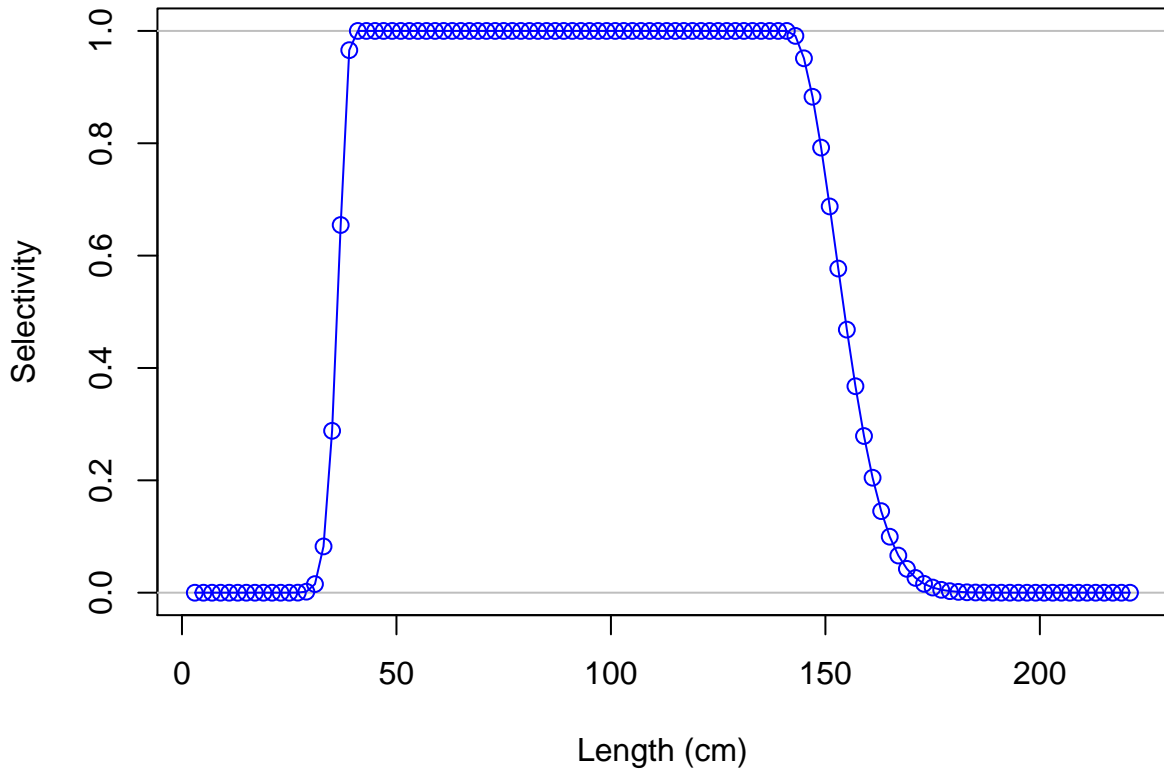
## Female ending year selectivity for F3-OBJ\_C



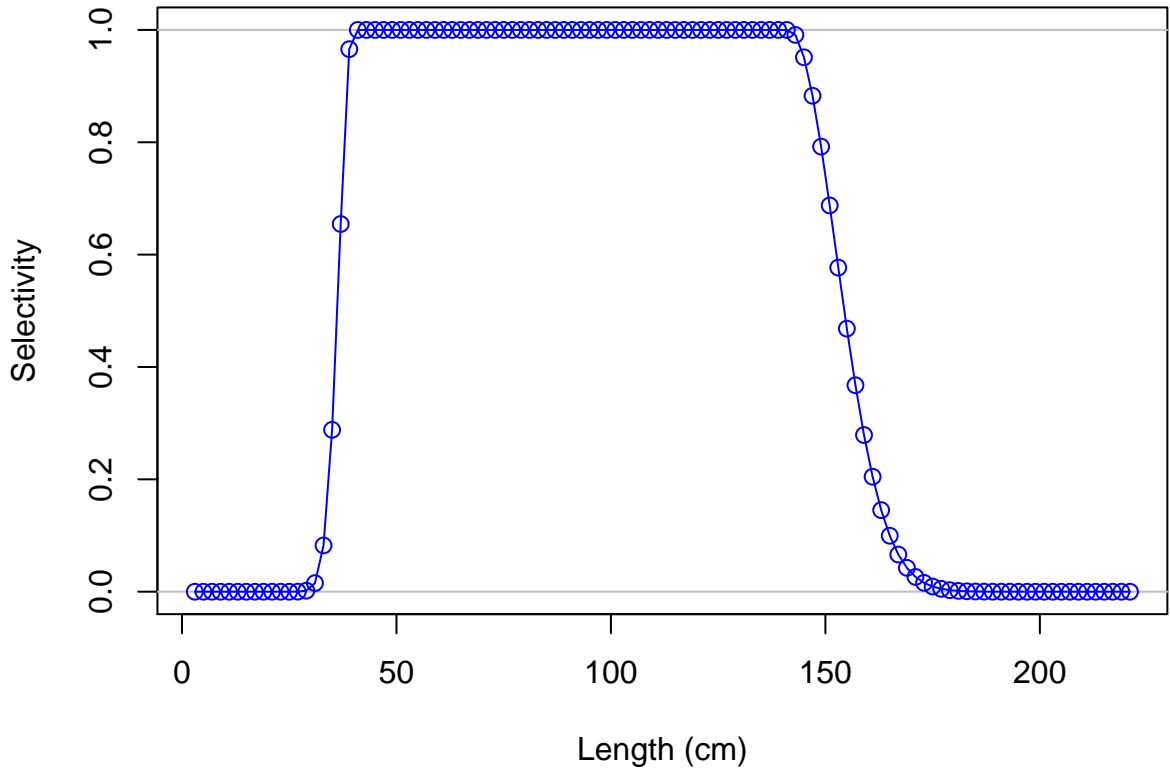
### Male ending year selectivity for F3-OBJ\_C



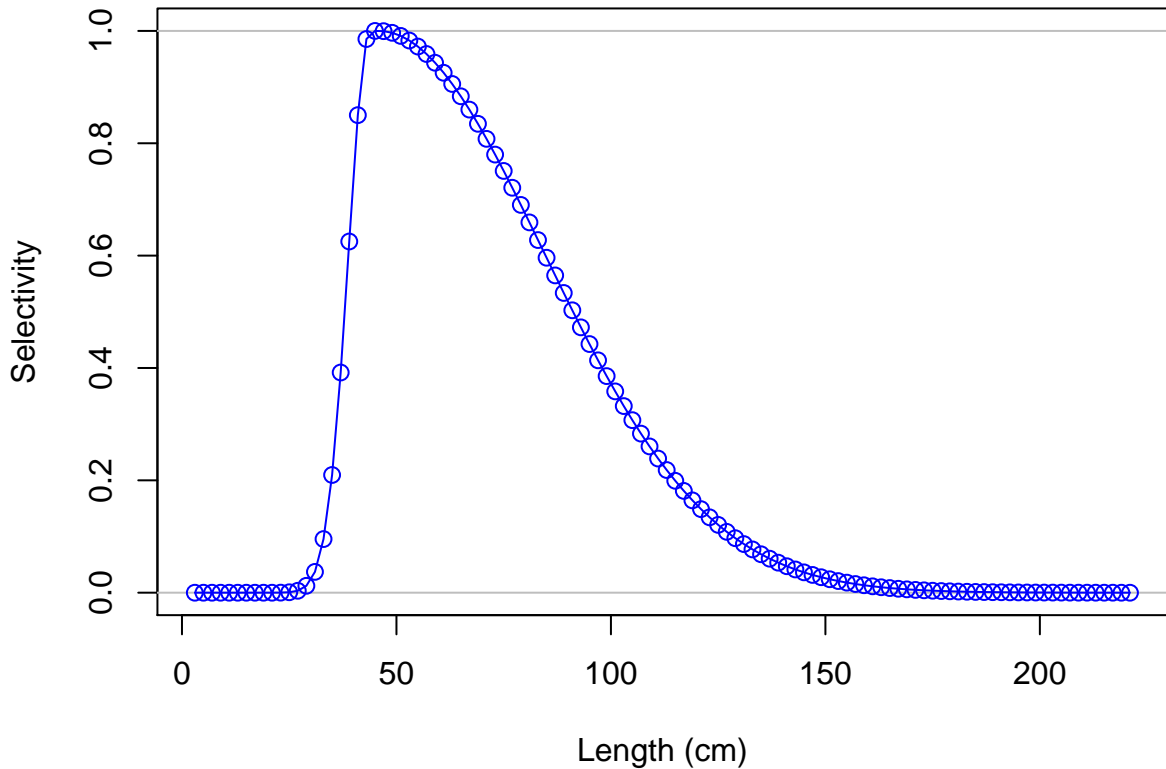
## Female ending year selectivity for F4-OBJ\_I



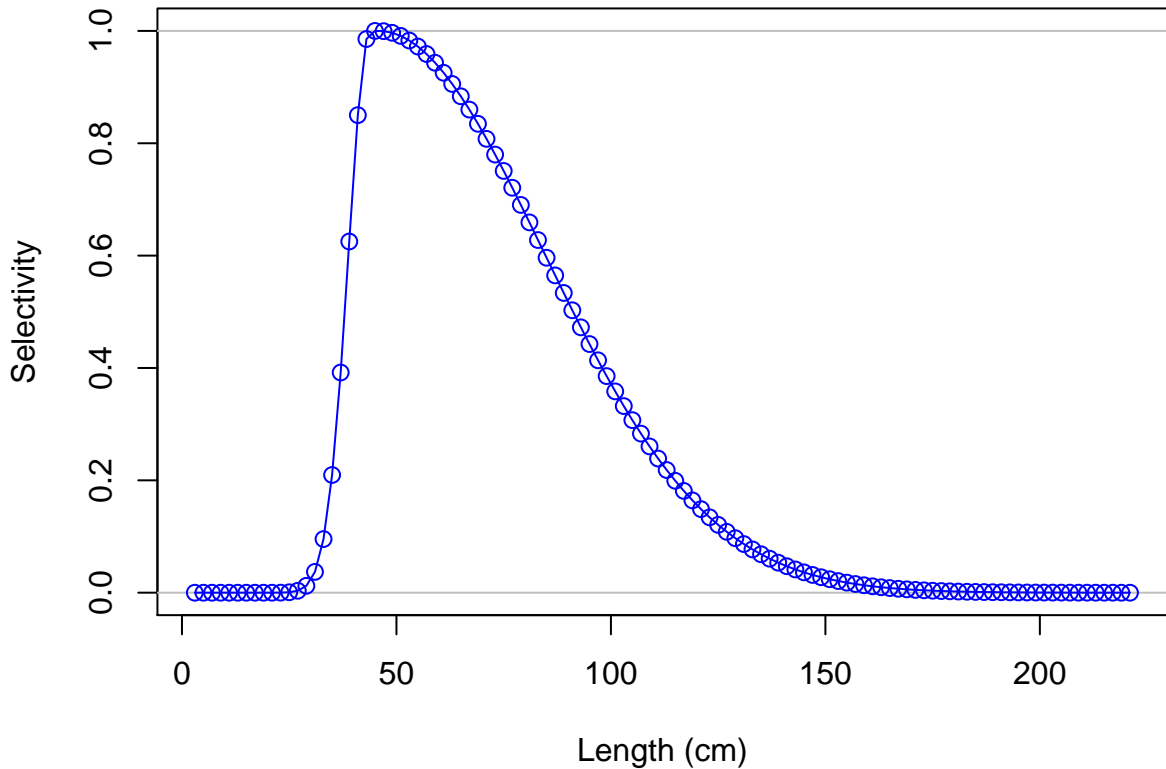
# Male ending year selectivity for F4-OBJ\_I



## Female ending year selectivity for F5-OBJ\_N

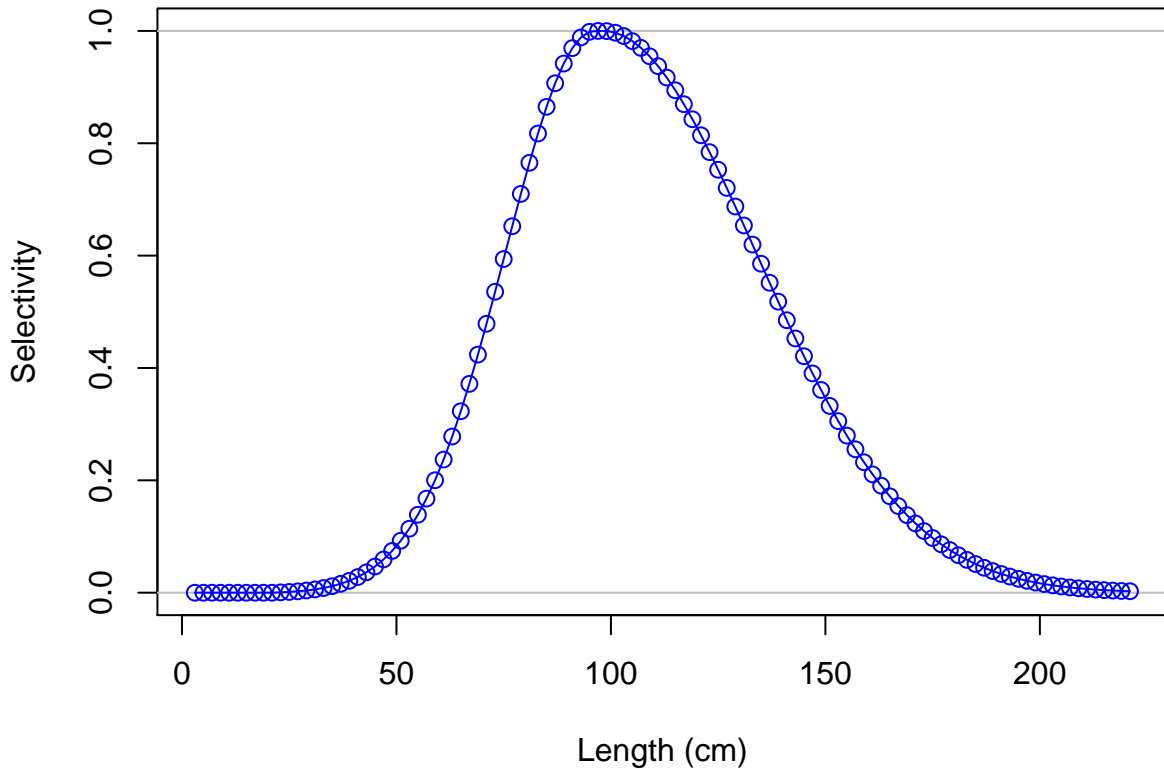


### Male ending year selectivity for F5-OBJ\_N

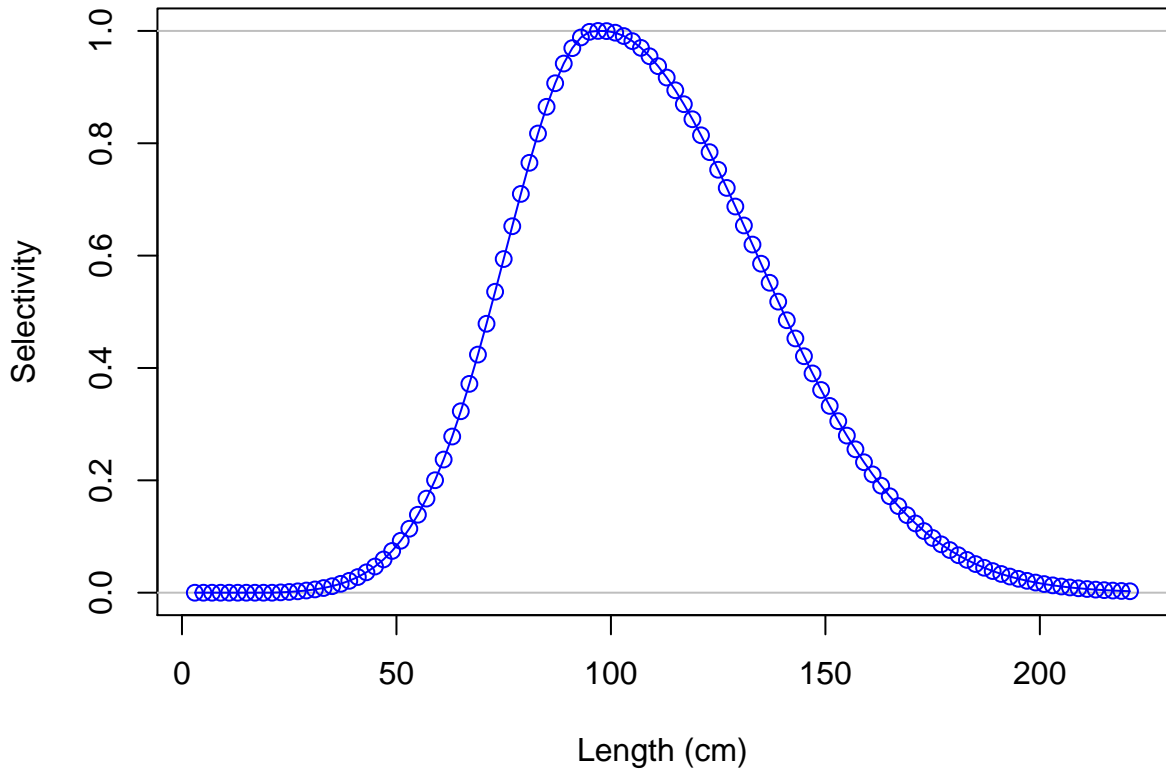




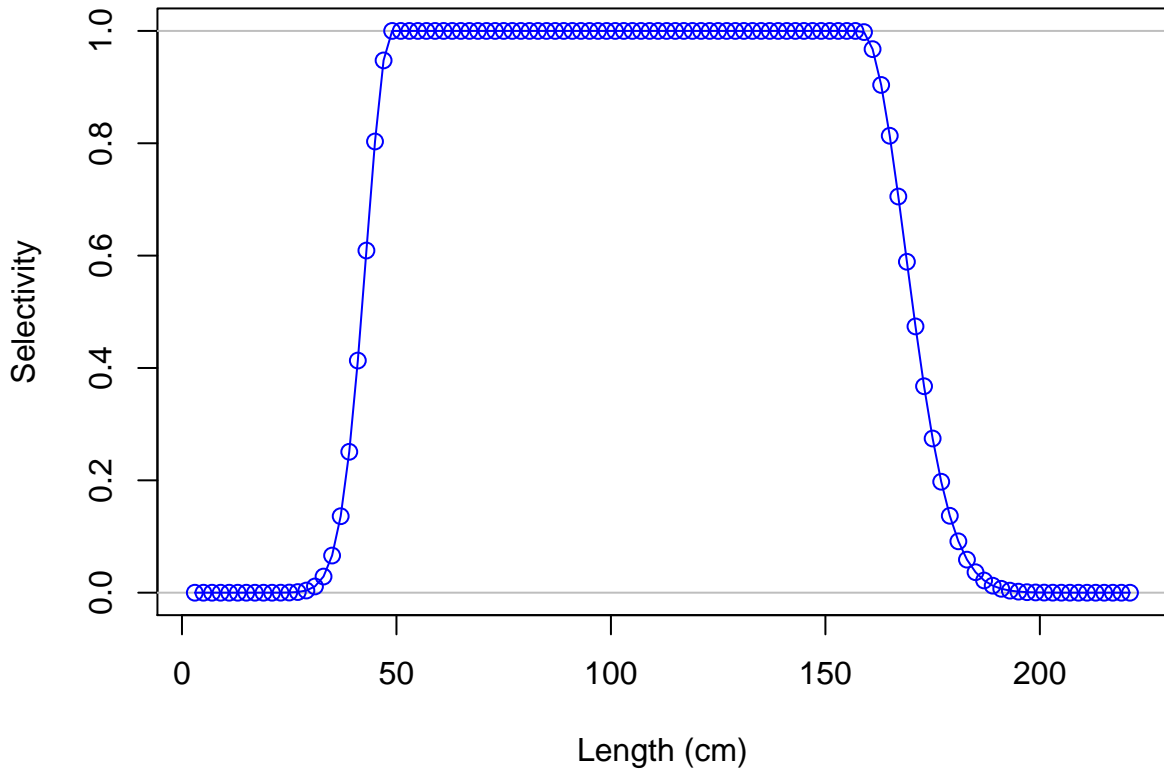
## Female ending year selectivity for F6-NOA-DEL\_early



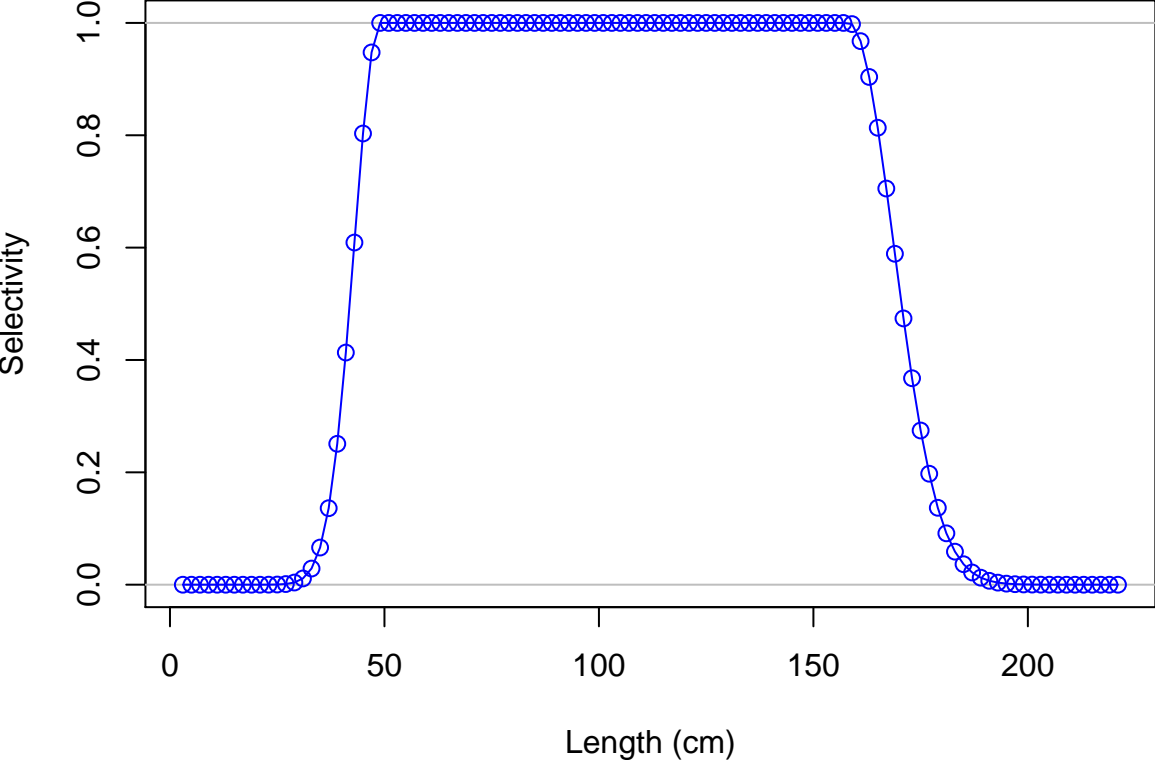
### Male ending year selectivity for F6-NOA-DEL\_early



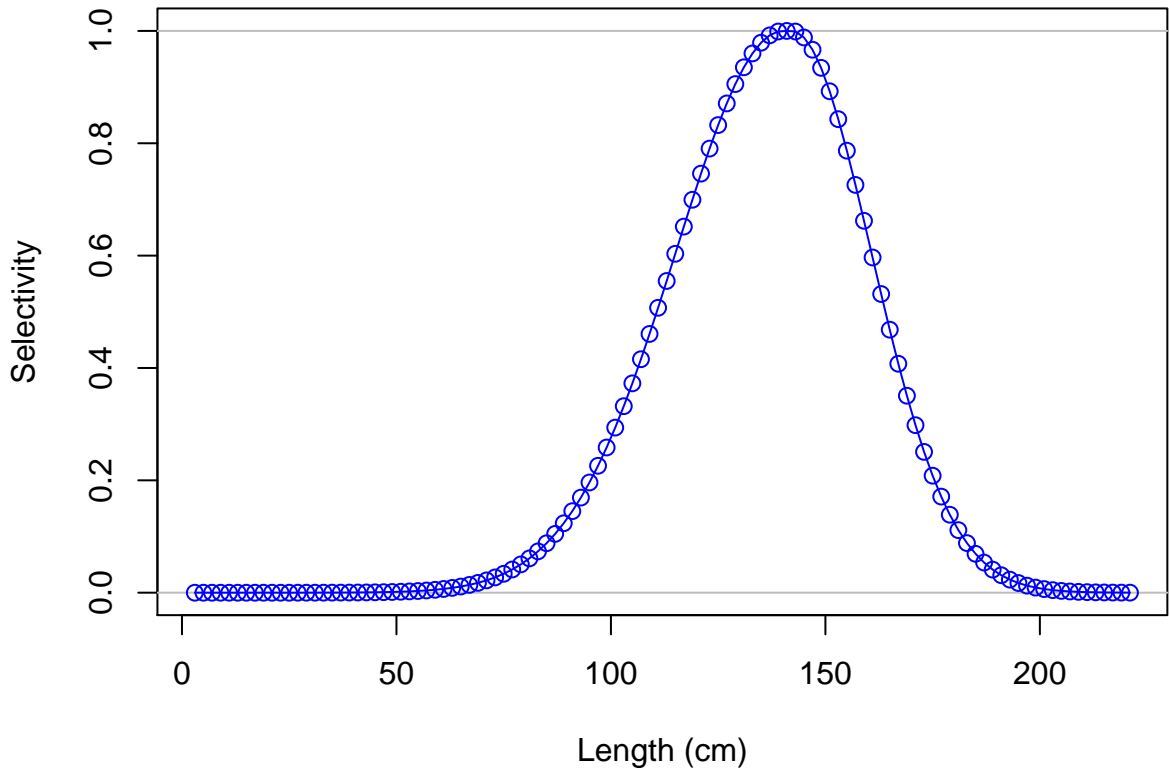
## Female ending year selectivity for F7-NOA-DEL\_late



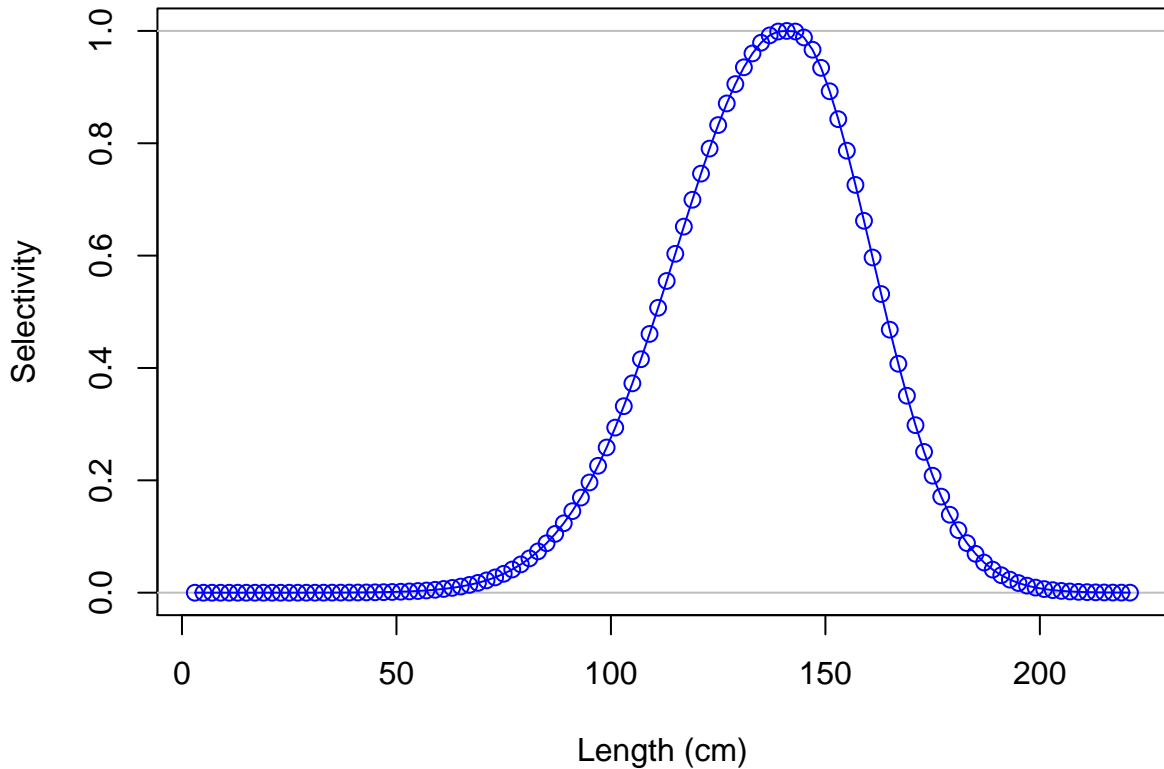
Male ending year selectivity for F7-NOA-DEL\_late



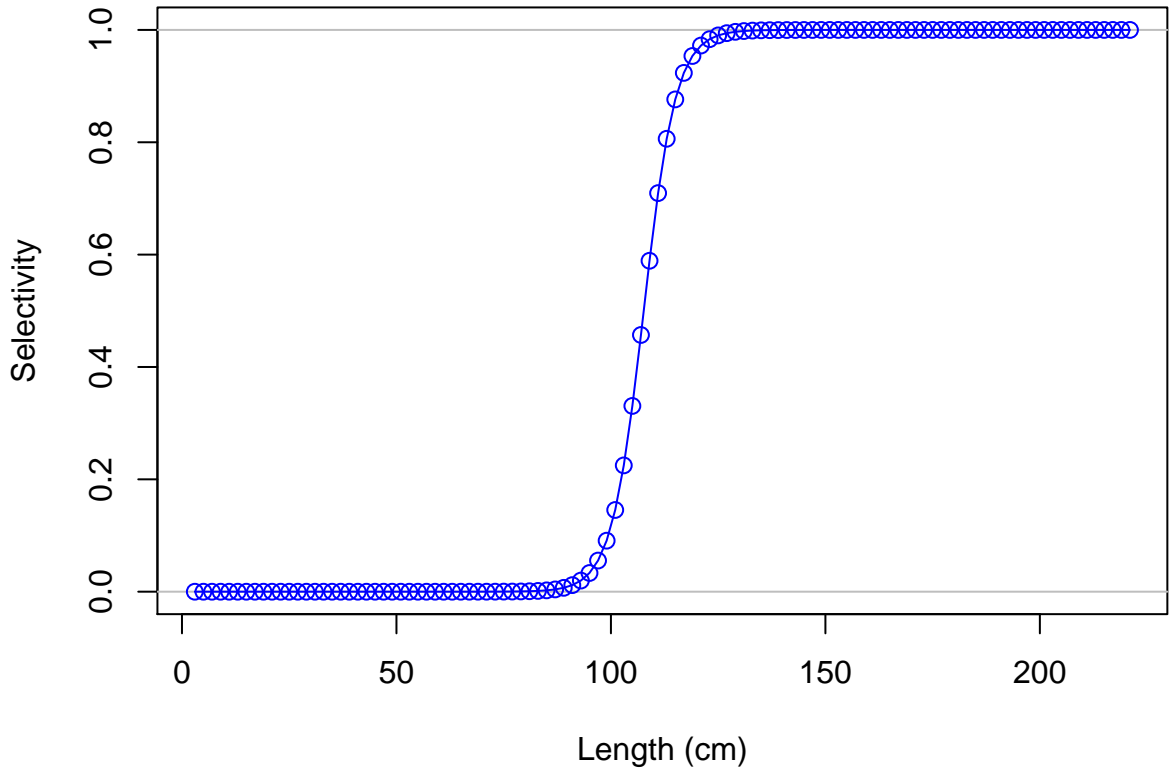
## Female ending year selectivity for F12-LL\_N\_num



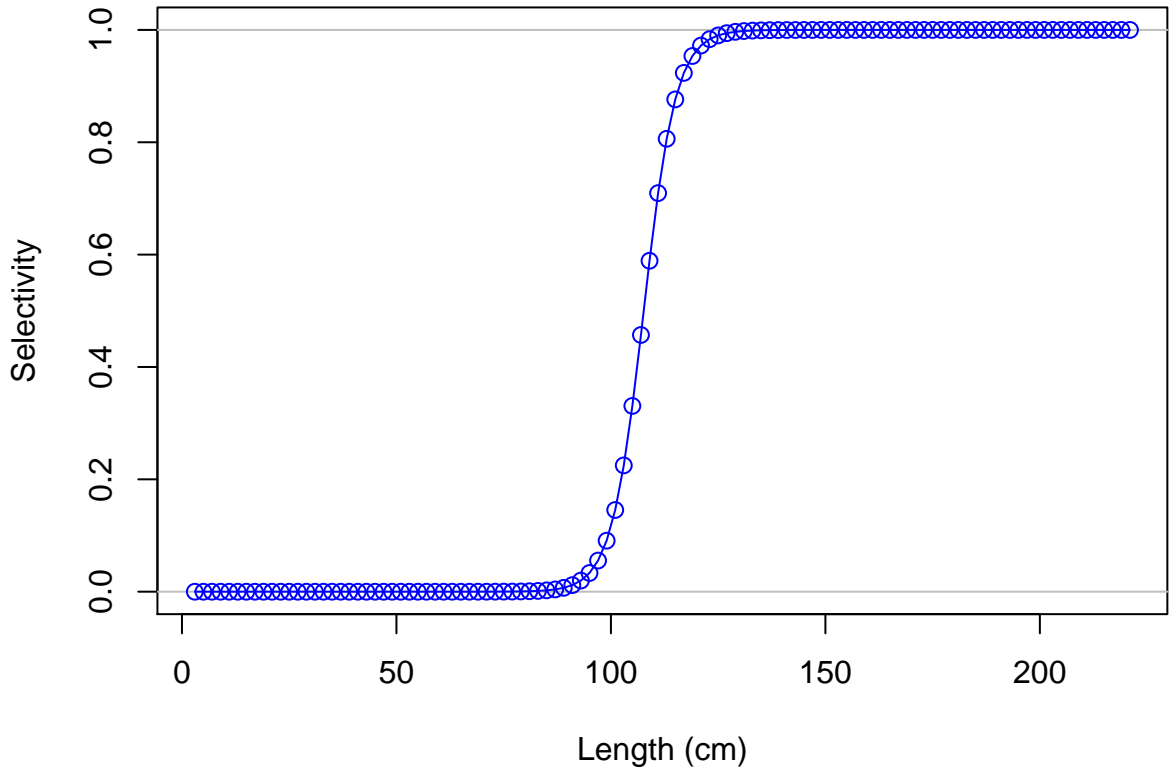
Male ending year selectivity for F12-LL\_N\_num



## Female ending year selectivity for F13-LL\_C\_num

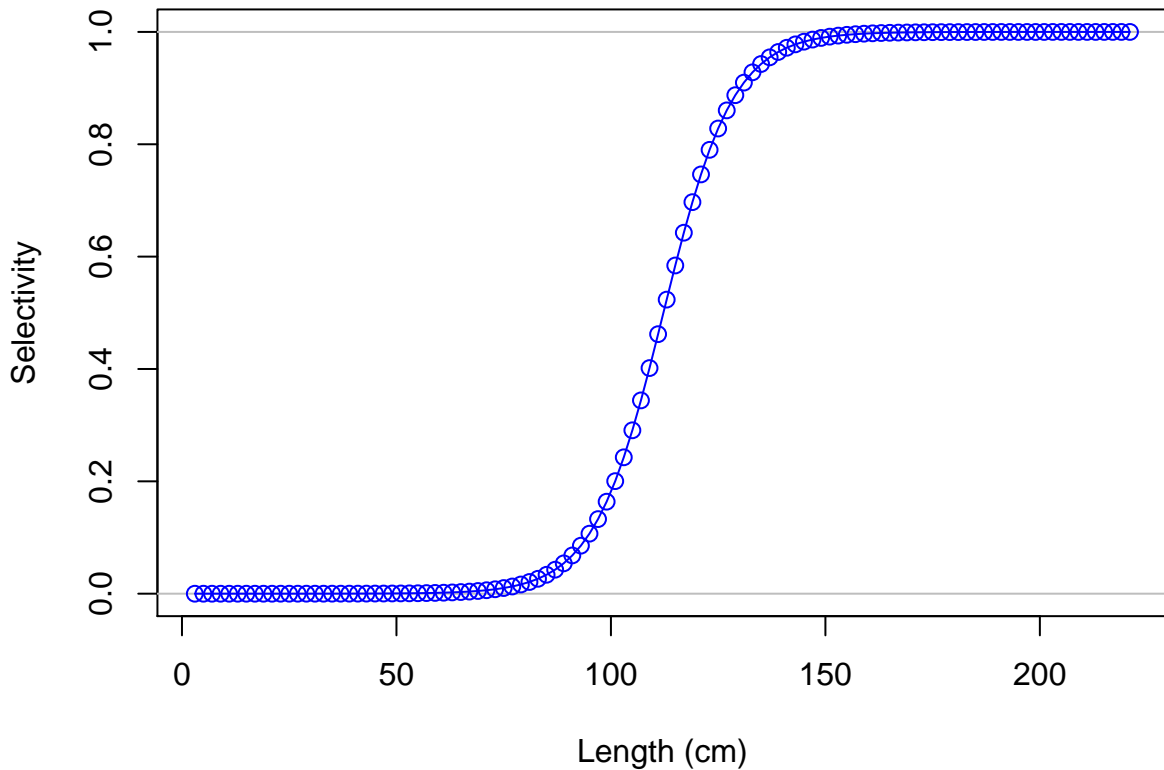


Male ending year selectivity for F13-LL\_C\_num

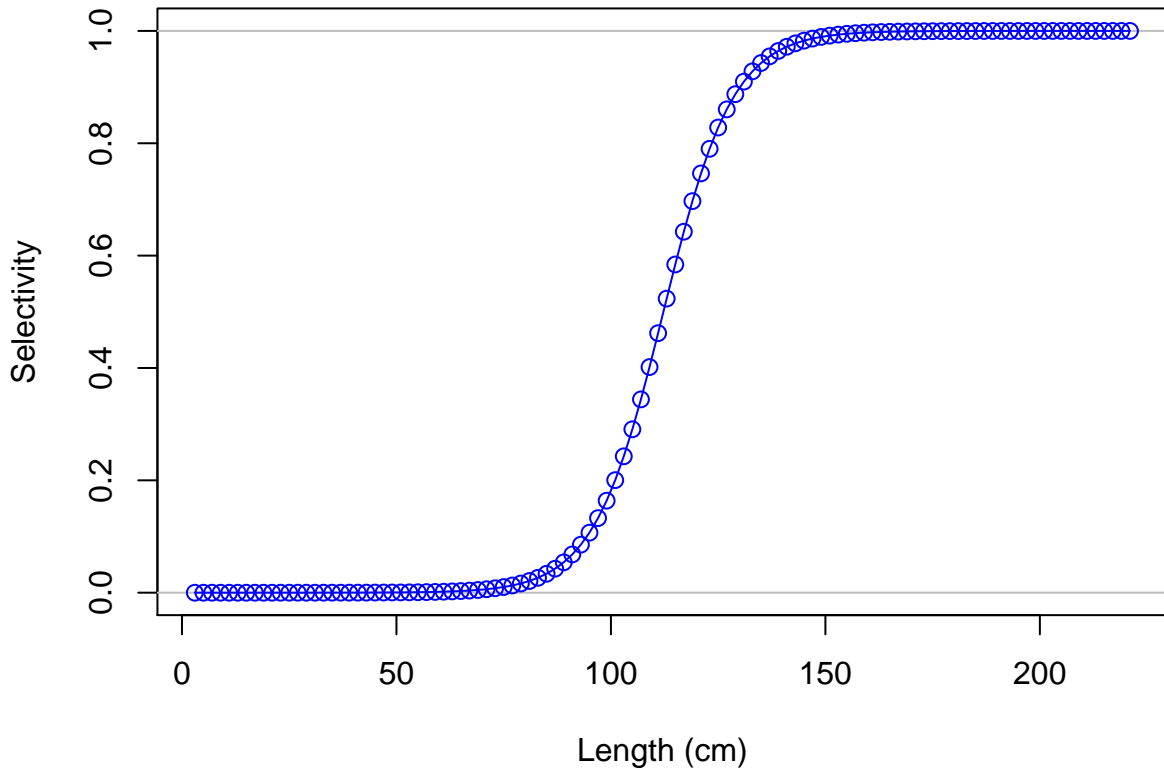




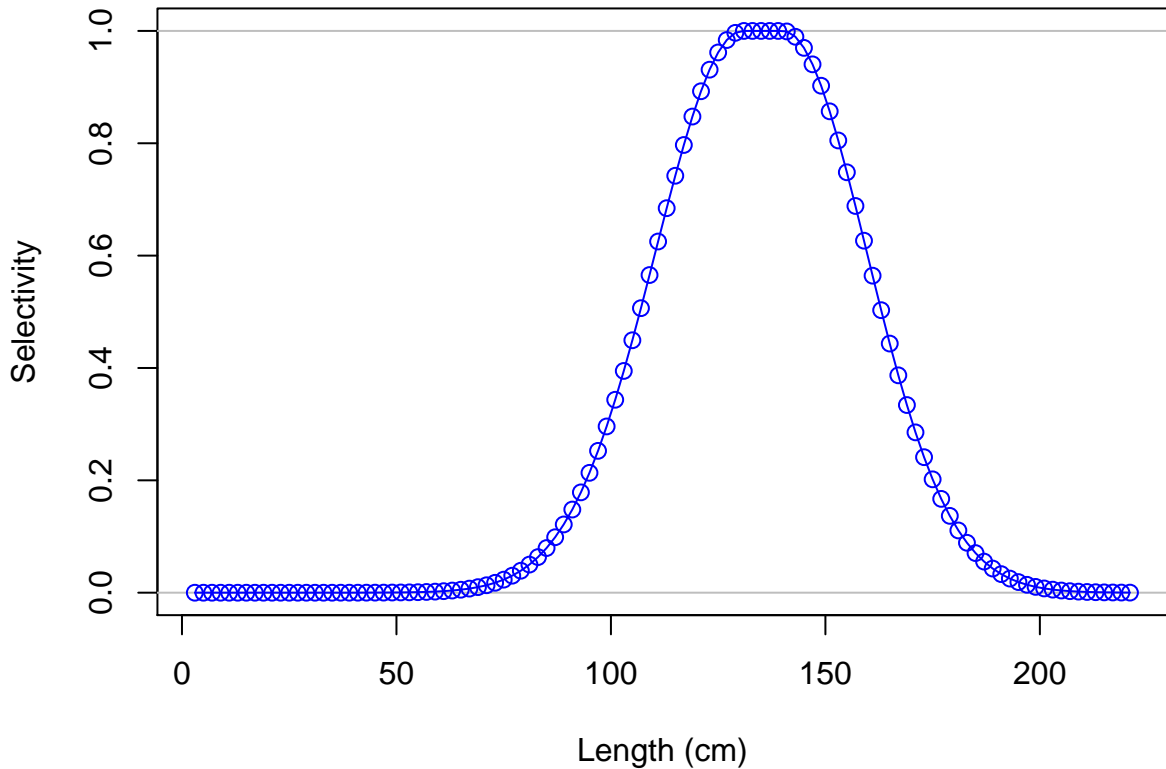
Female ending year selectivity for F14-LL\_S\_num



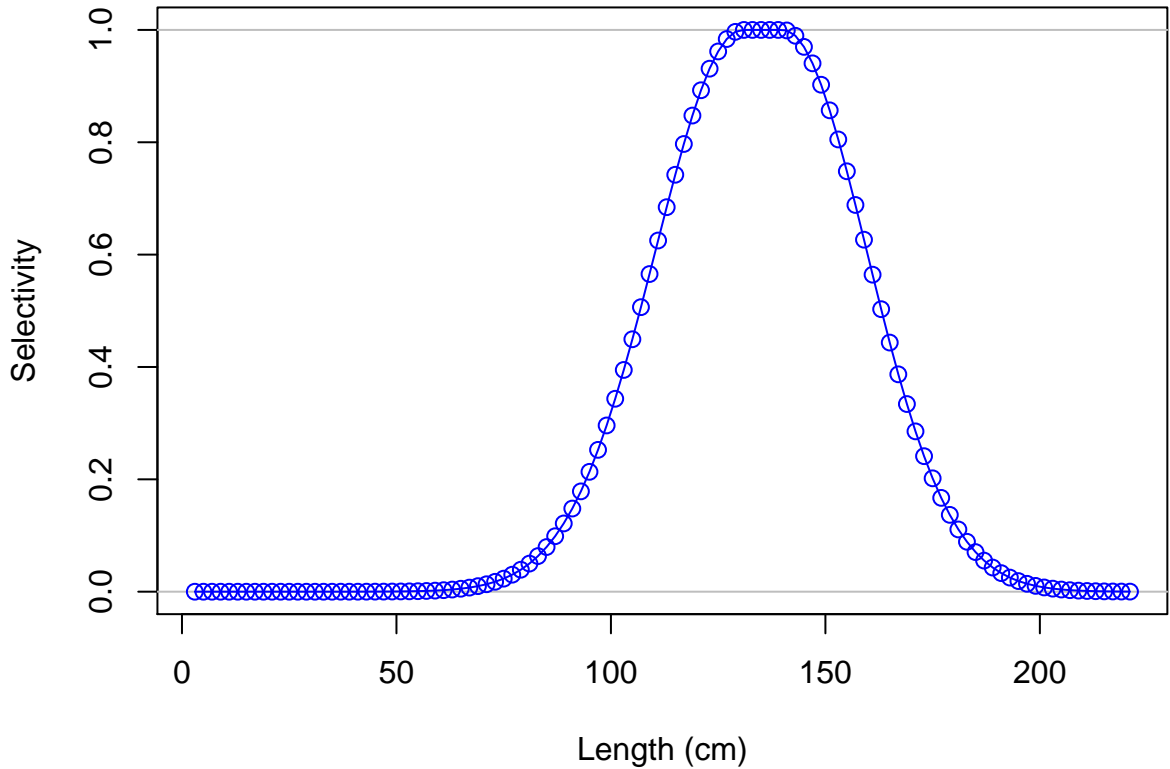
Male ending year selectivity for F14-LL\_S\_num



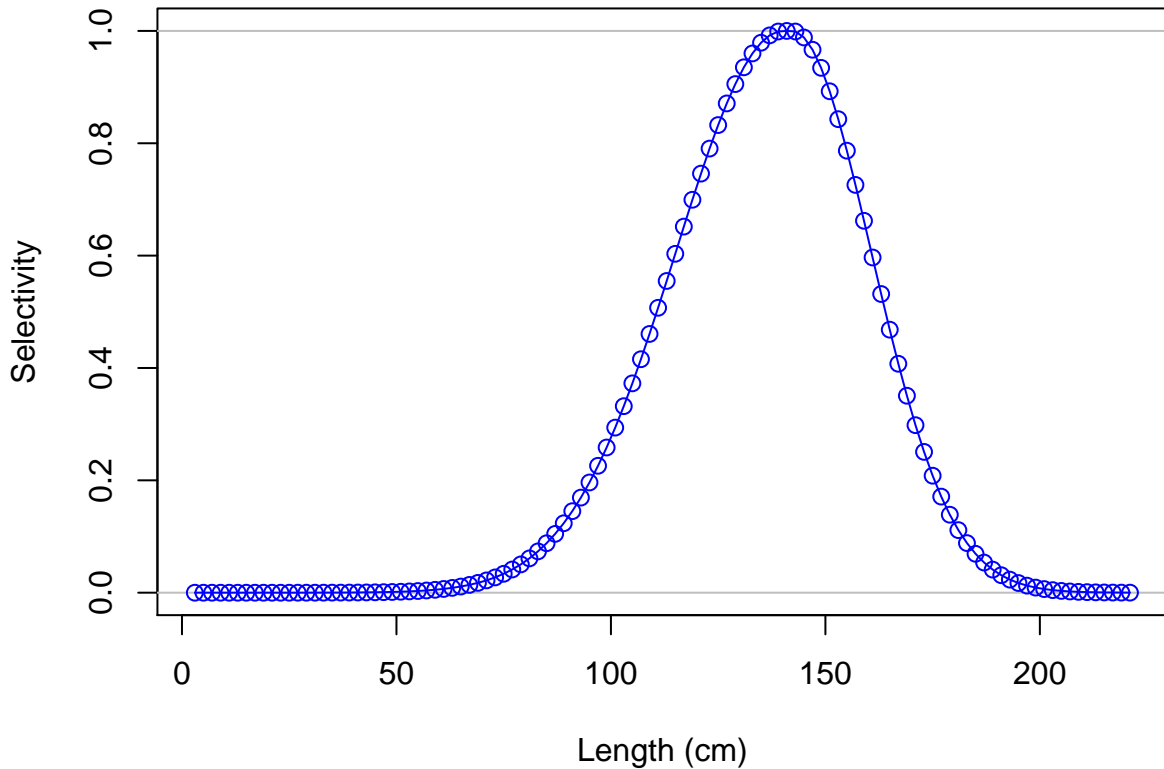
Female ending year selectivity for F15-LL\_I\_num



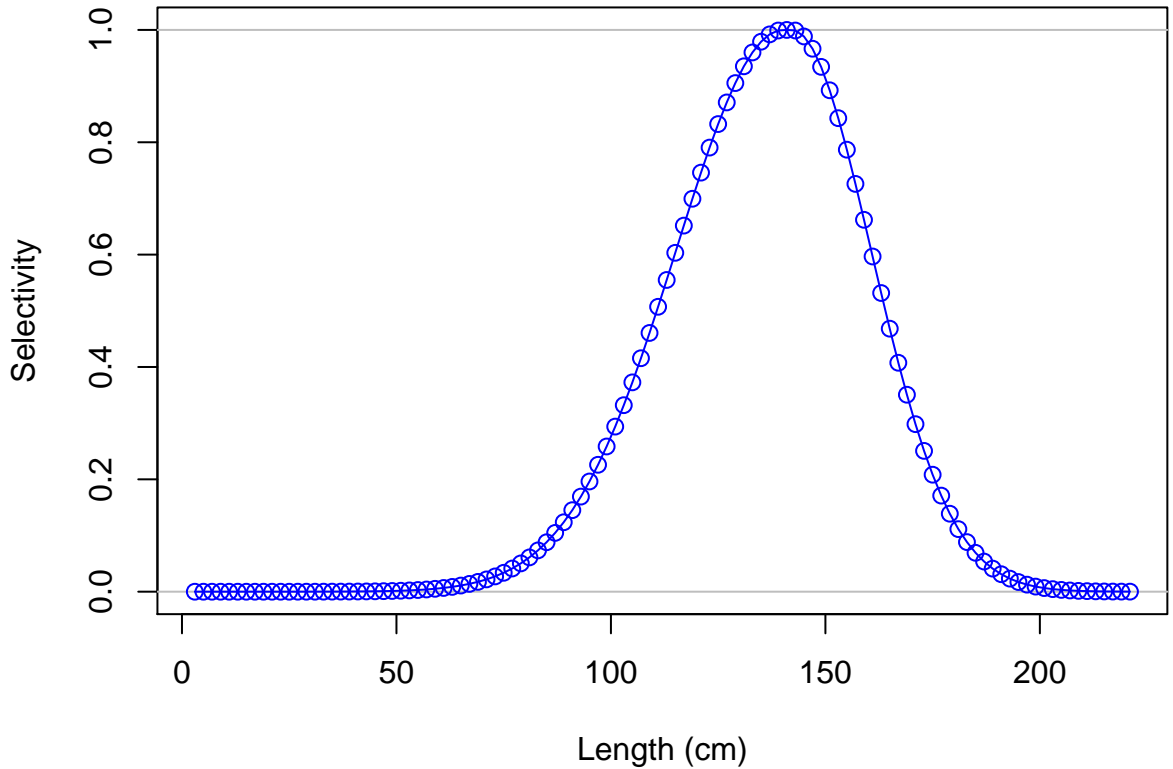
# Male ending year selectivity for F15-LL\_I\_num



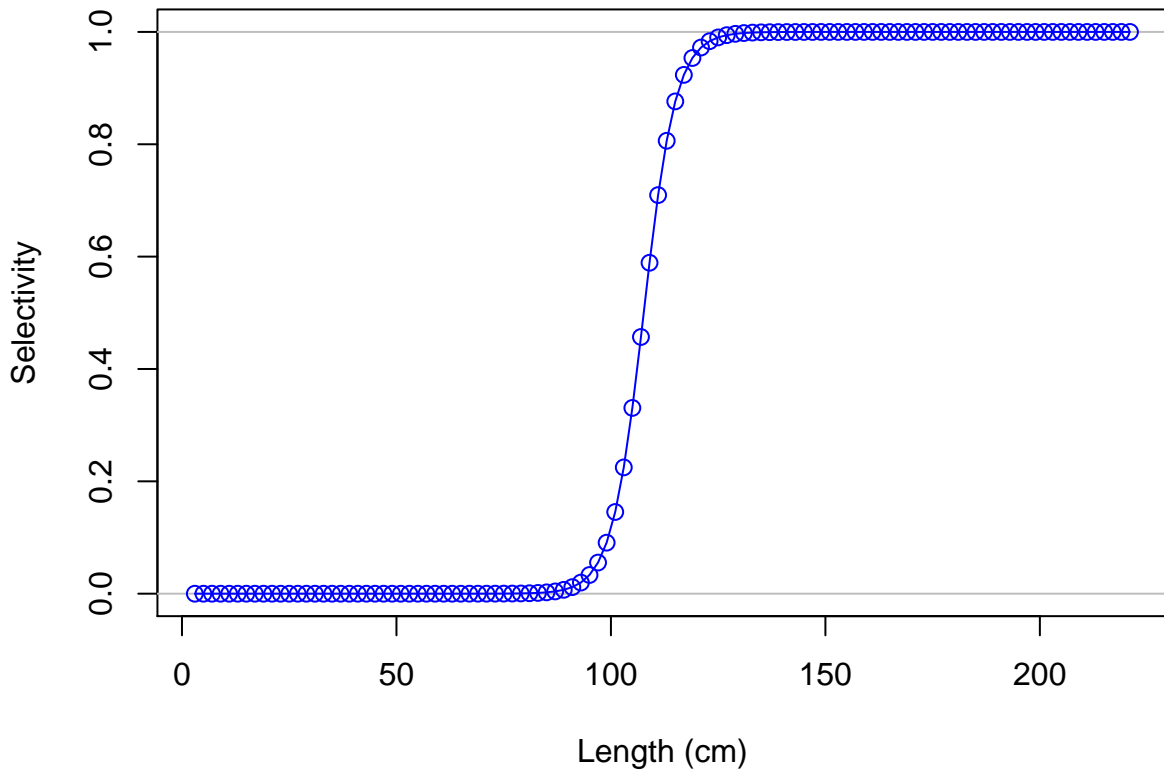
Female ending year selectivity for F16-LL\_N\_w



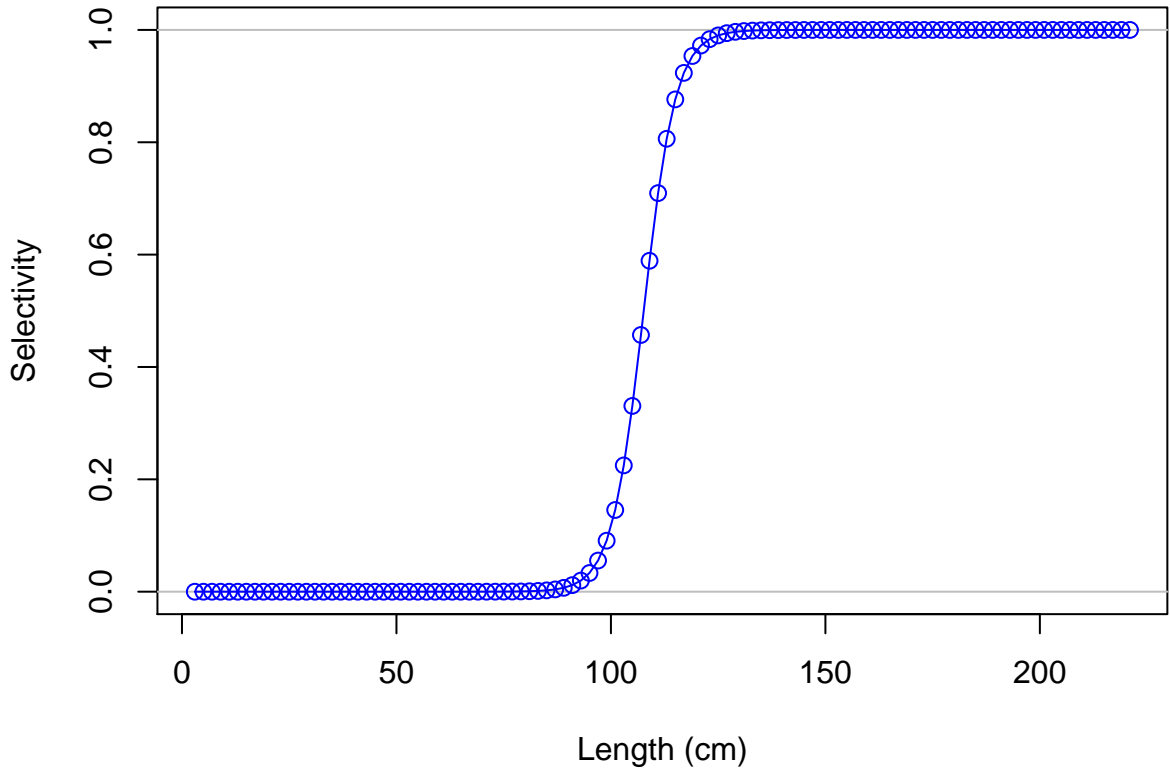
### Male ending year selectivity for F16-LL\_N\_w



Female ending year selectivity for F17-LL\_C\_w

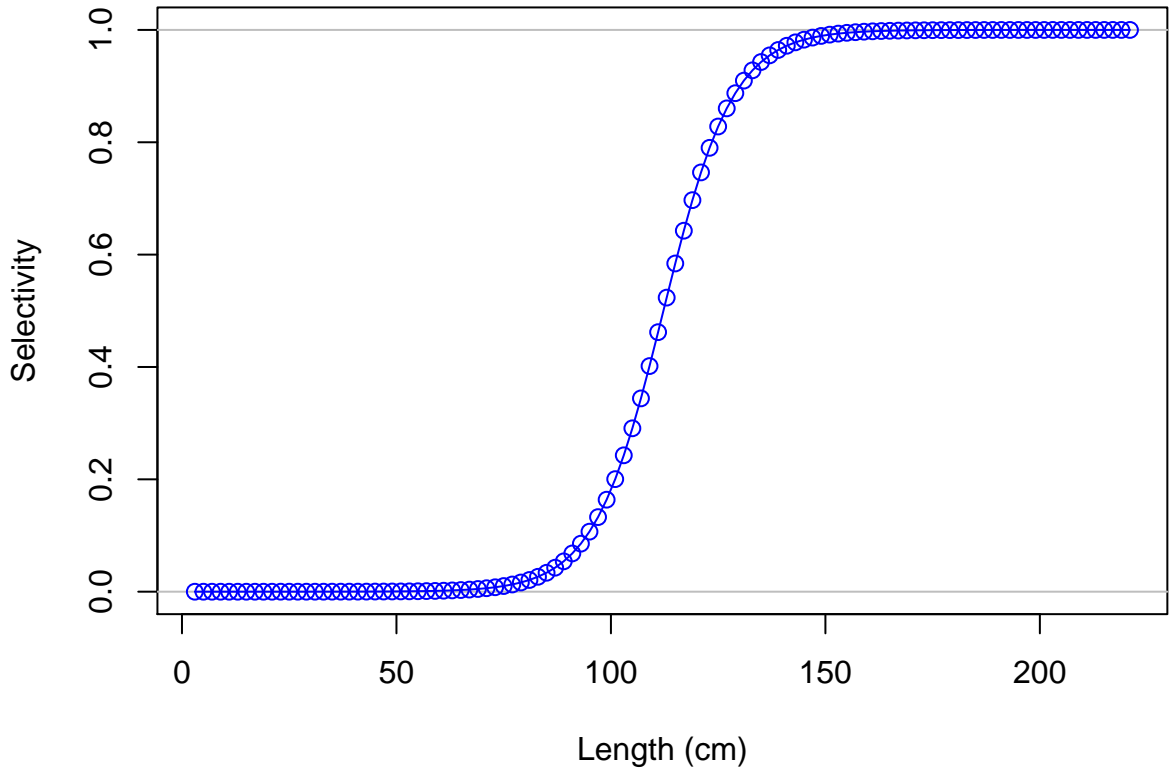


### Male ending year selectivity for F17-LL\_C\_w

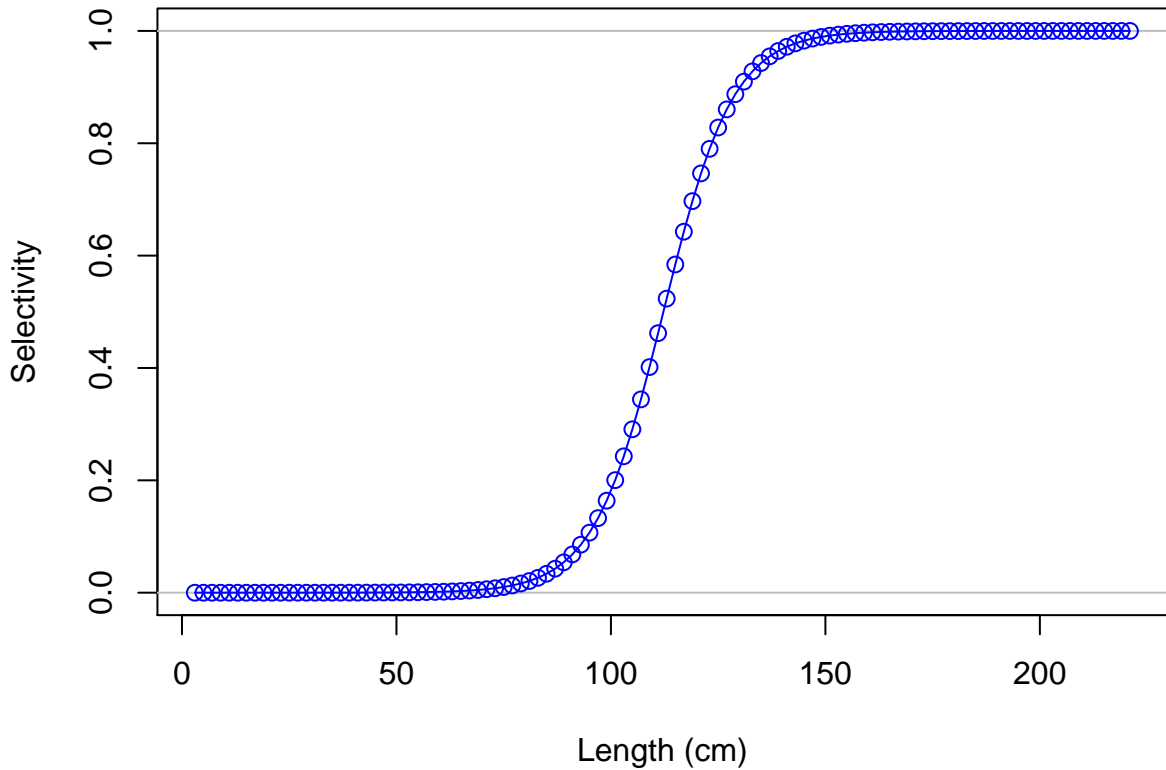




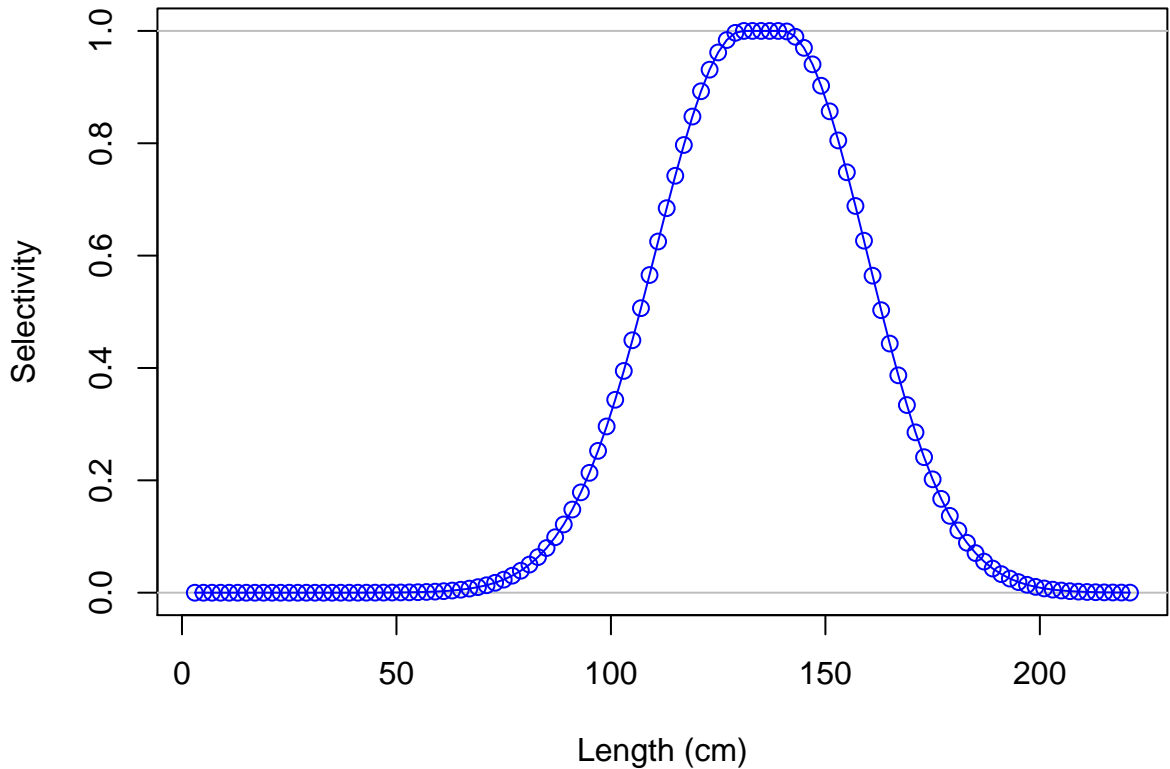
# Female ending year selectivity for F18-LL\_S\_w



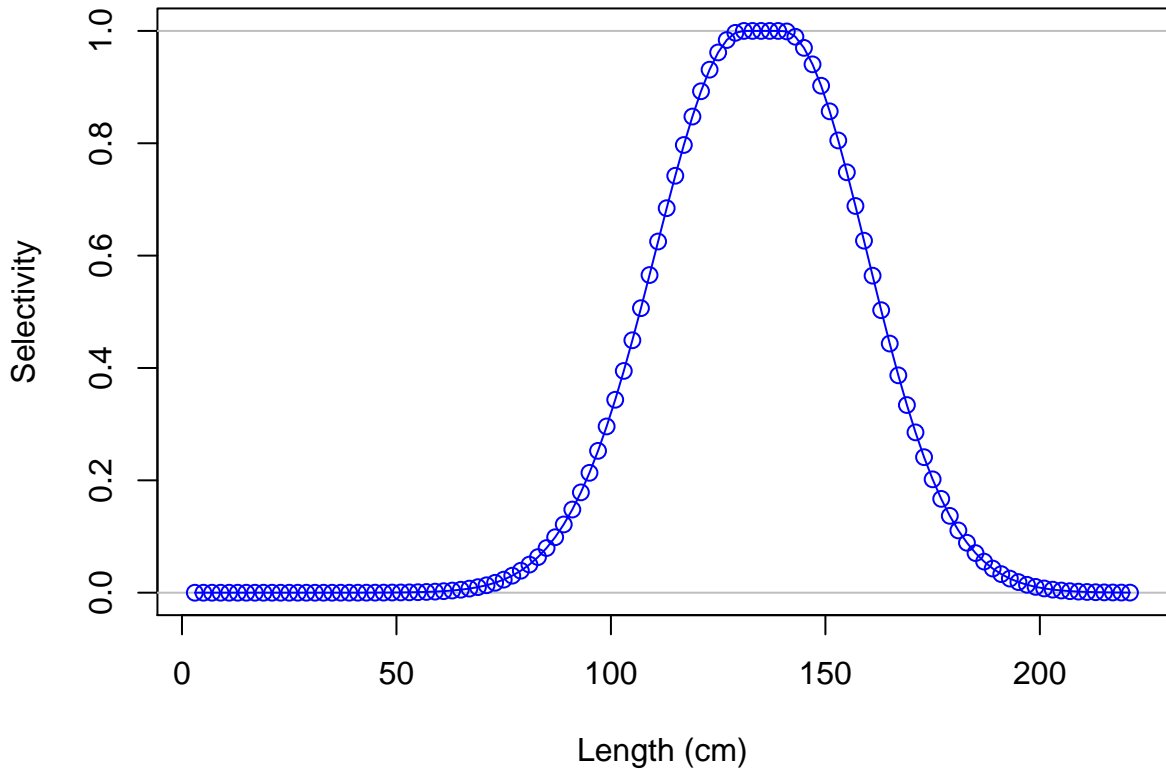
### Male ending year selectivity for F18-LL\_S\_w



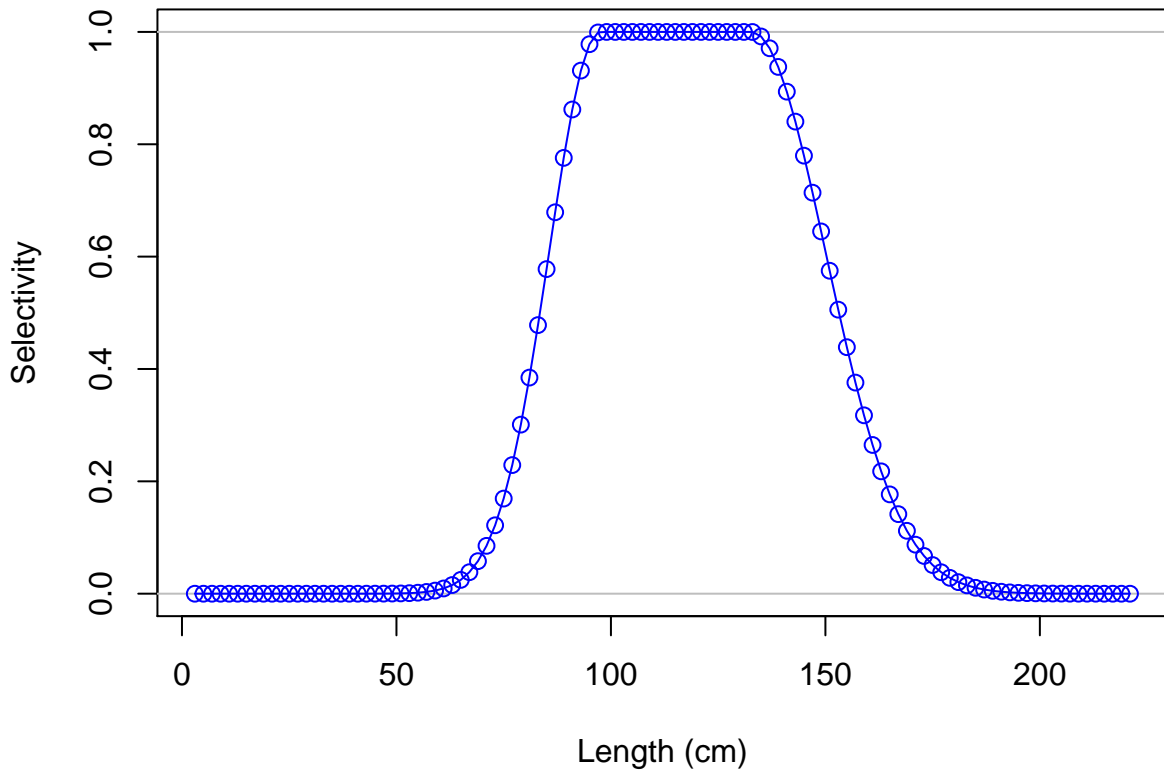
# Female ending year selectivity for F19-LL\_I\_w



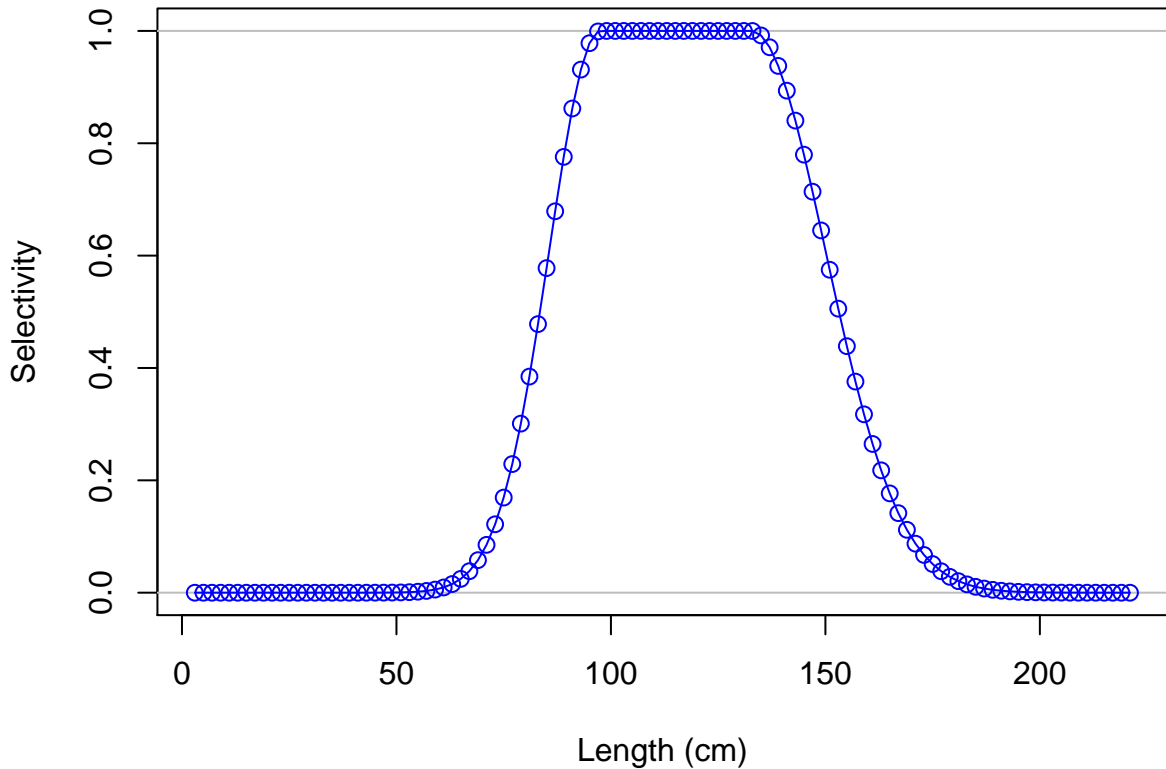
### Male ending year selectivity for F19-LL\_I\_w



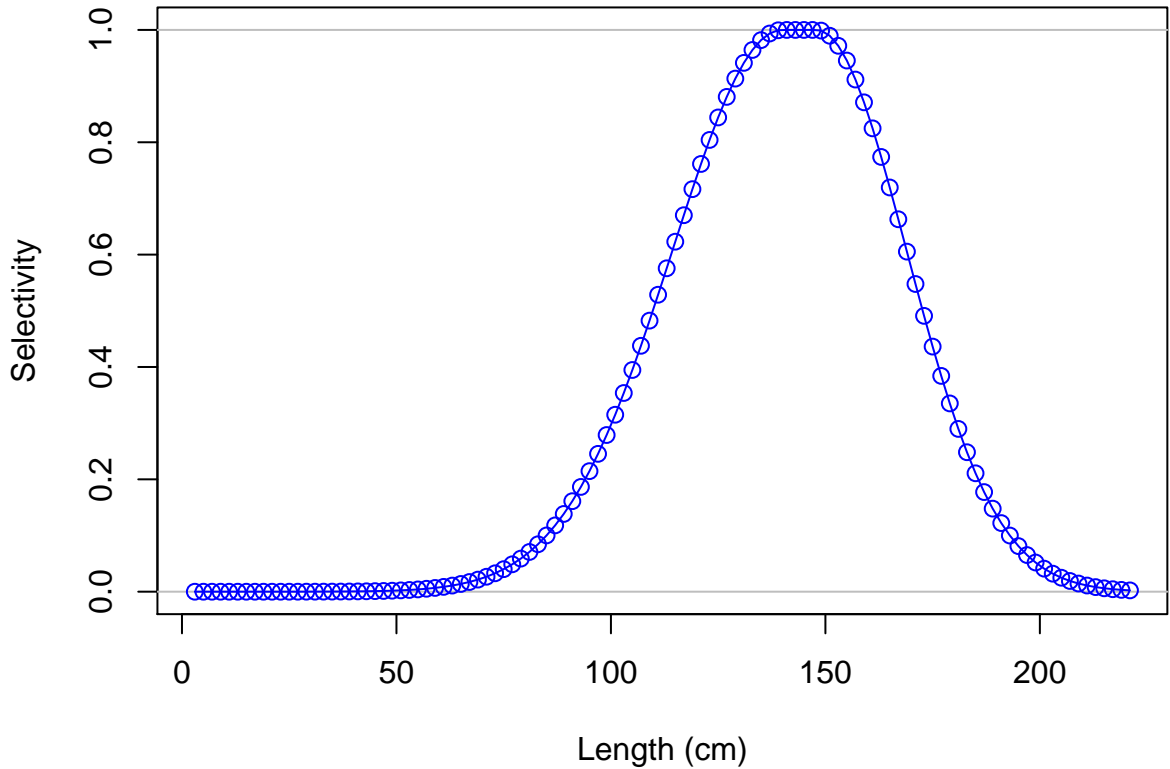
Female ending year selectivity for S1-LLt\_N\_len



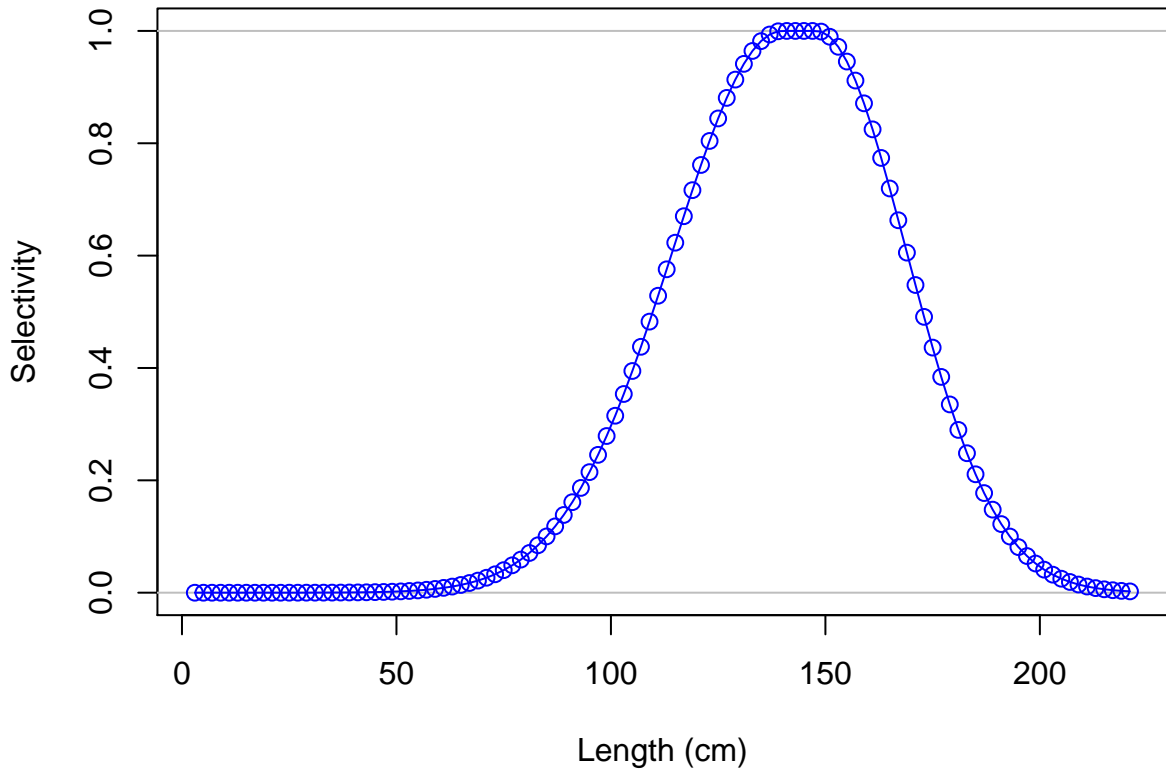
Male ending year selectivity for S1-LLt\_N\_len



Female ending year selectivity for S2-LLt\_C\_len

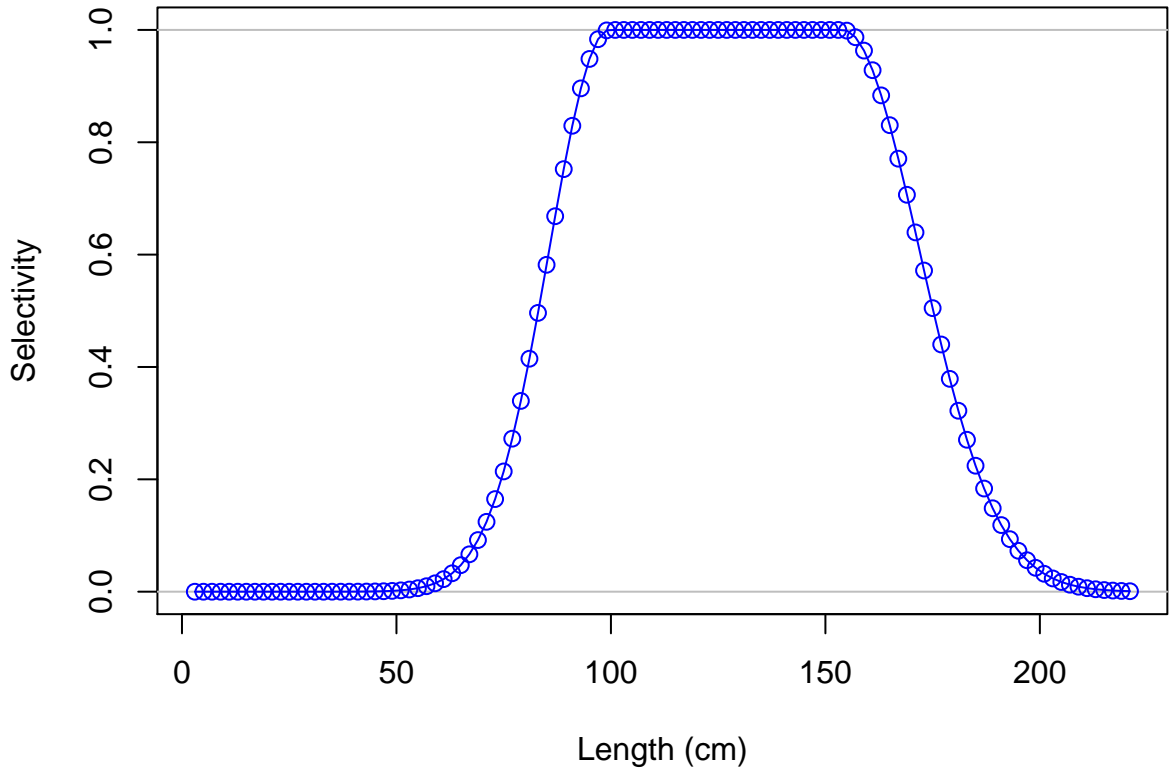


### Male ending year selectivity for S2-LLt\_C\_len

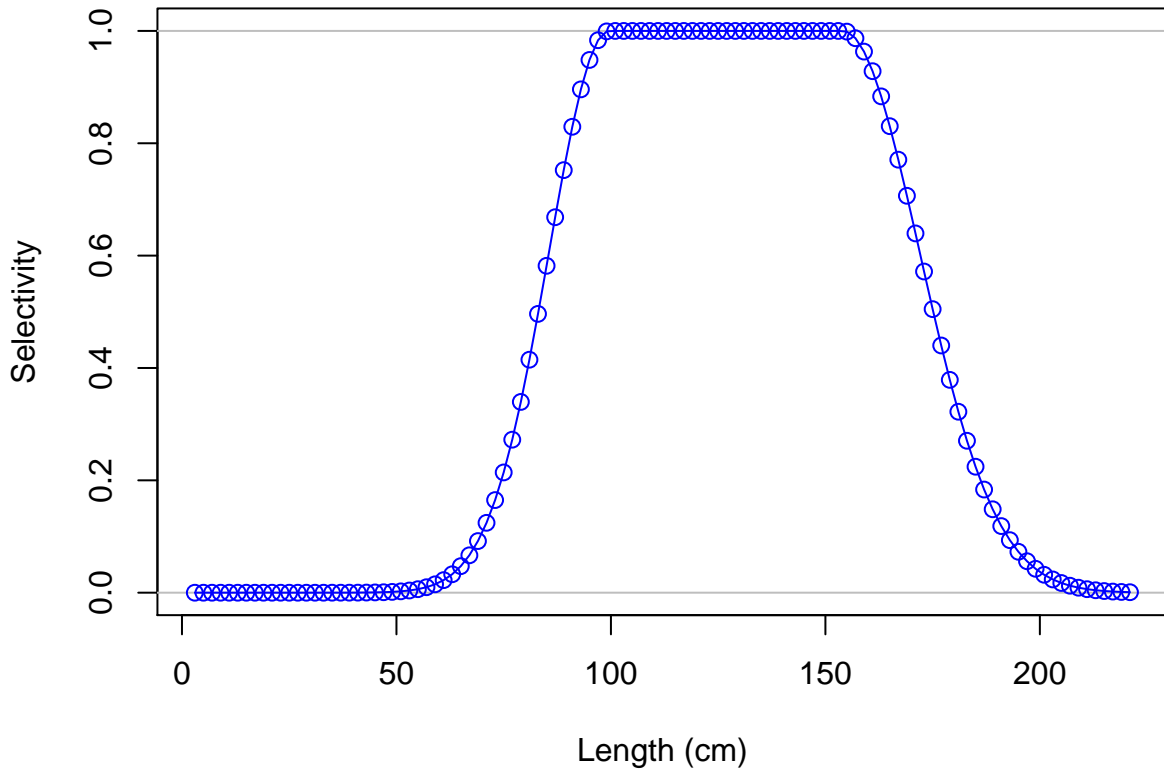




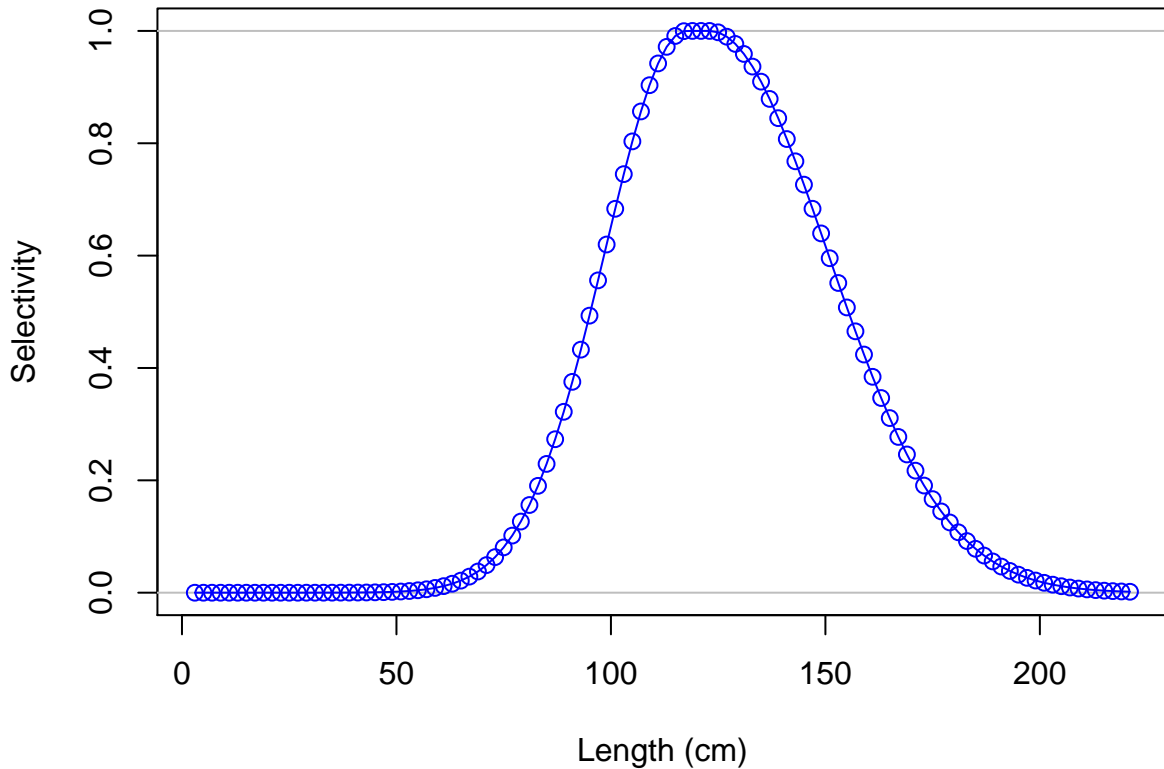
## Female ending year selectivity for S3-LLt\_S\_len



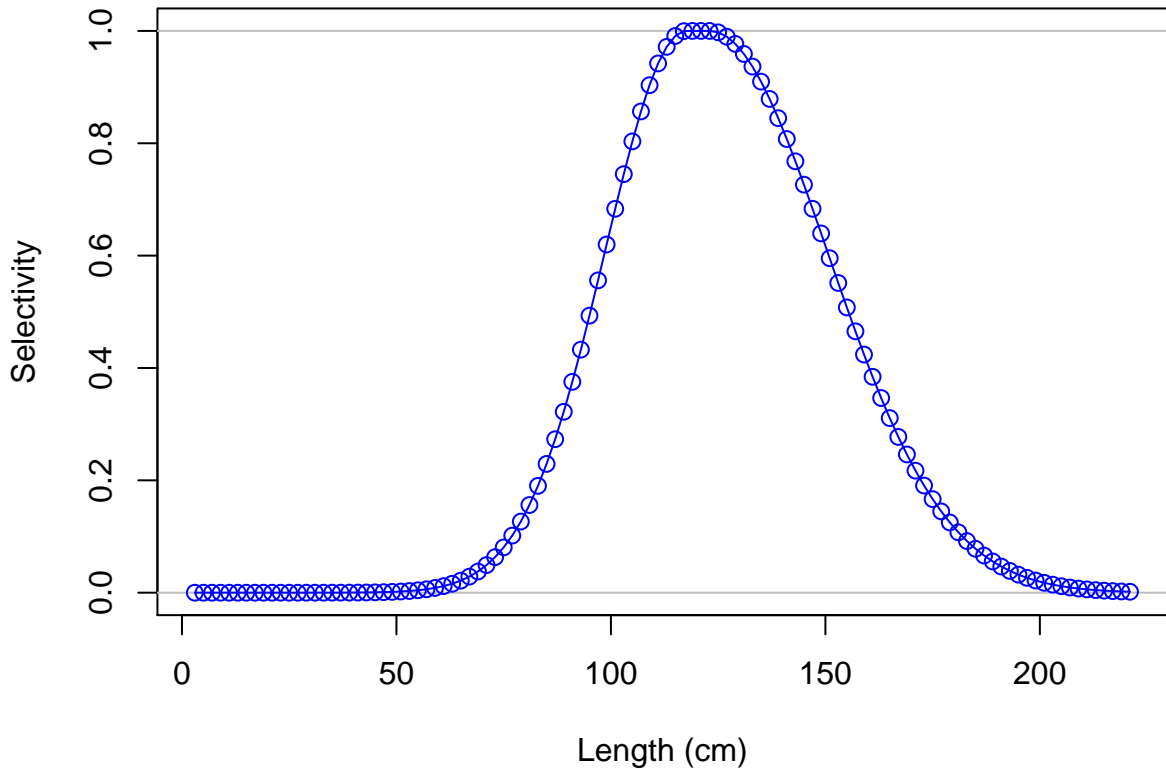
Male ending year selectivity for S3-LLt\_S\_len



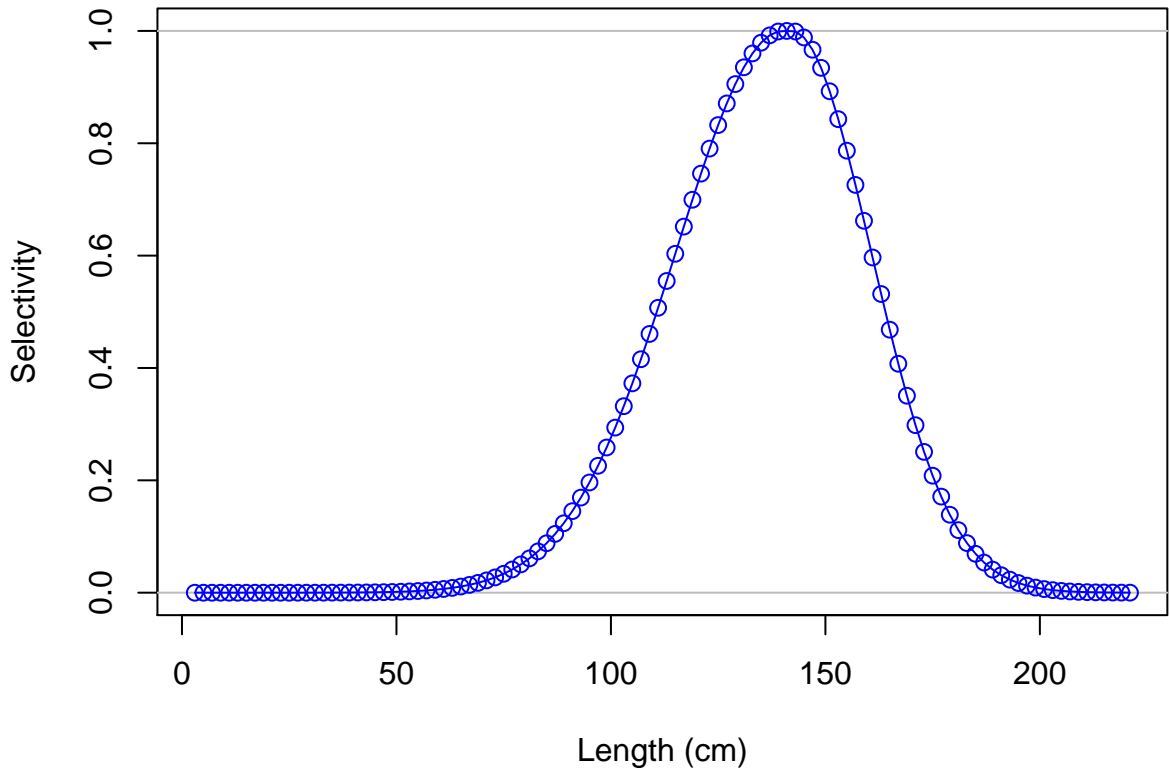
Female ending year selectivity for S4-LLt\_I\_len



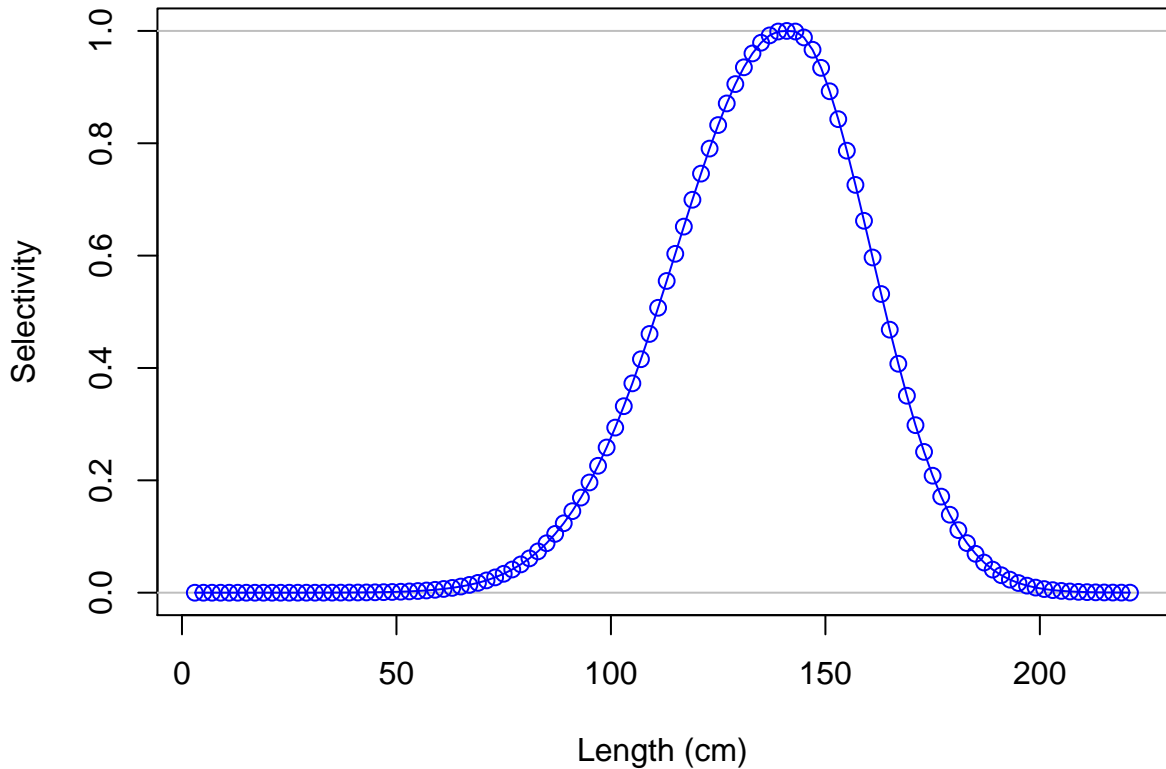
# Male ending year selectivity for S4-LLt\_I\_len



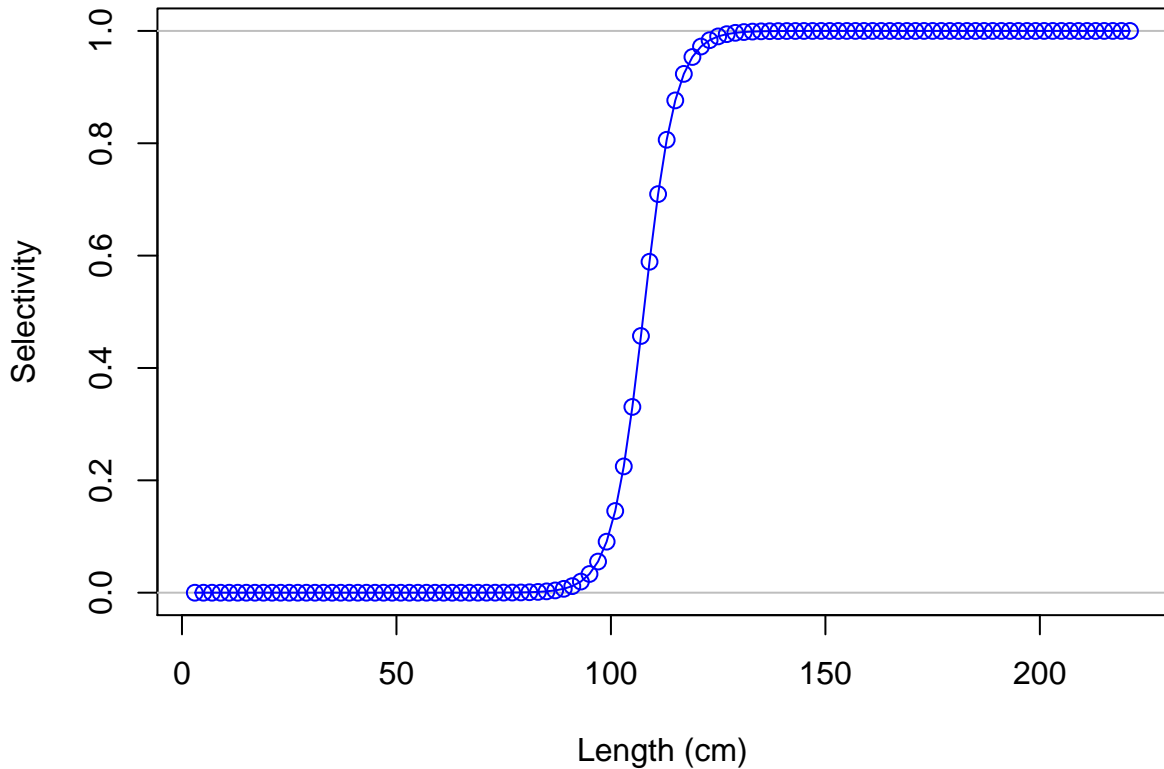
Female ending year selectivity for S5-LLc\_N\_w



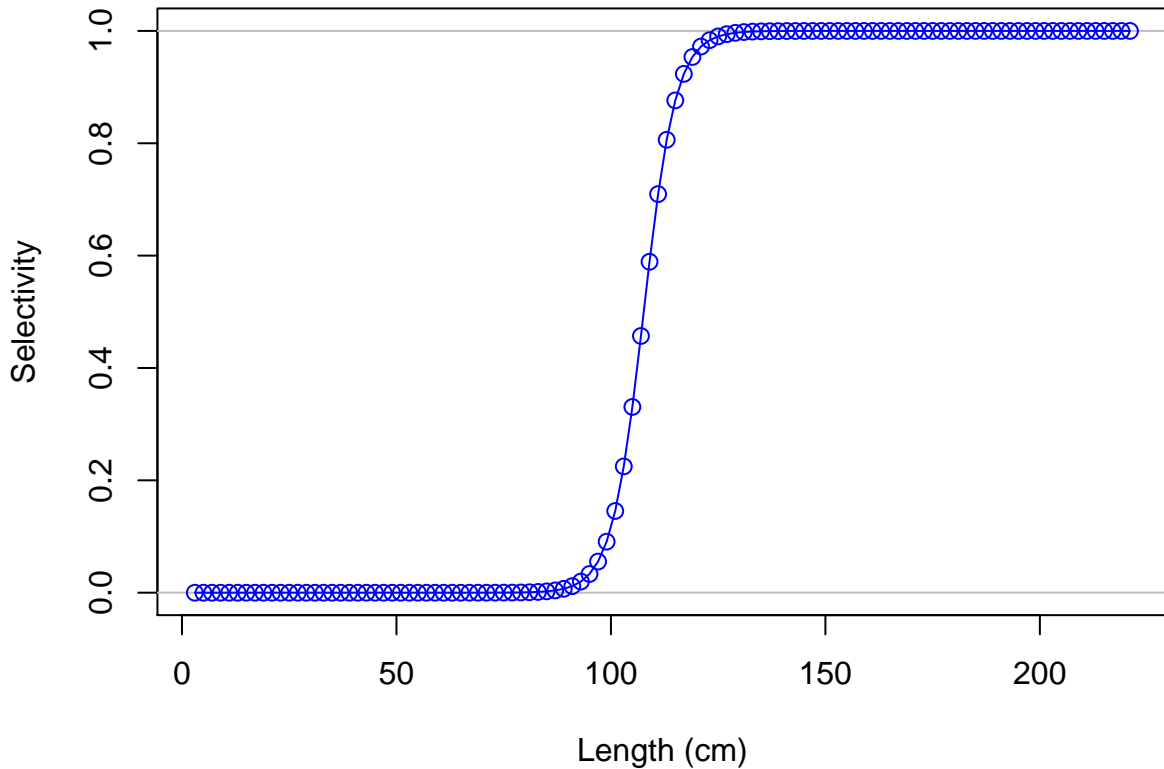
### Male ending year selectivity for S5-LLc\_N\_w



Female ending year selectivity for S6-LLc\_C\_w

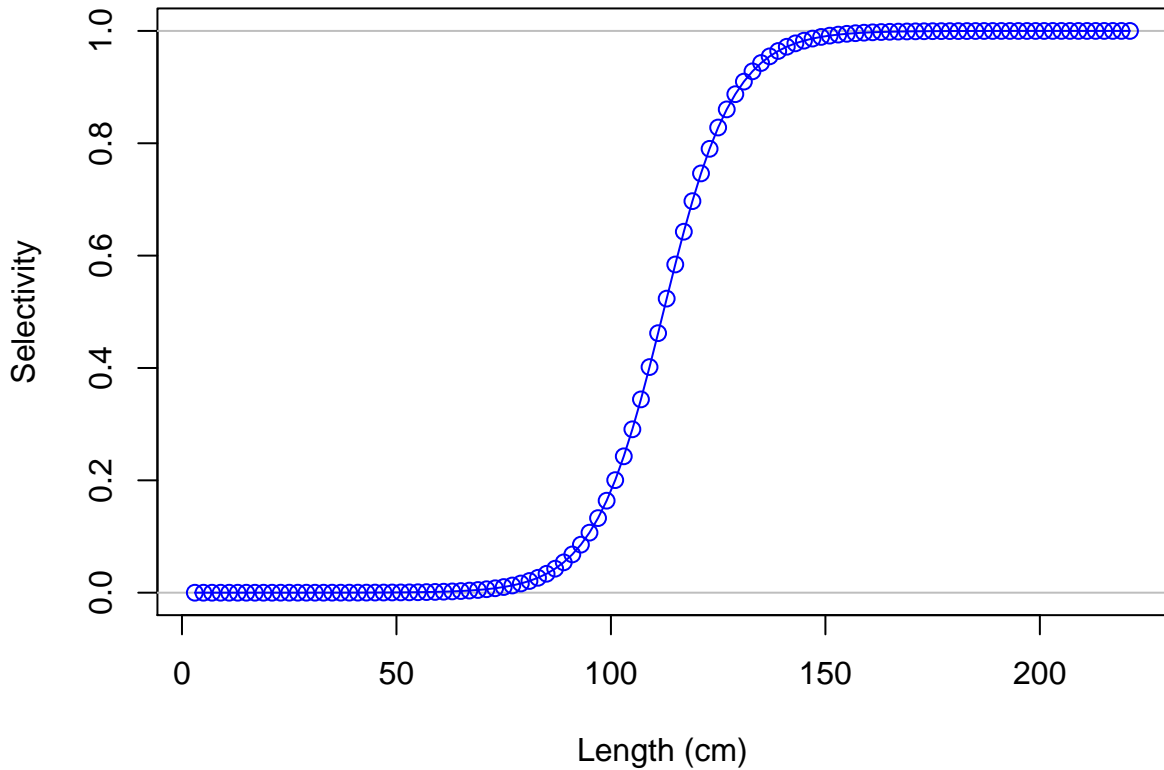


### Male ending year selectivity for S6-LLc\_C\_w

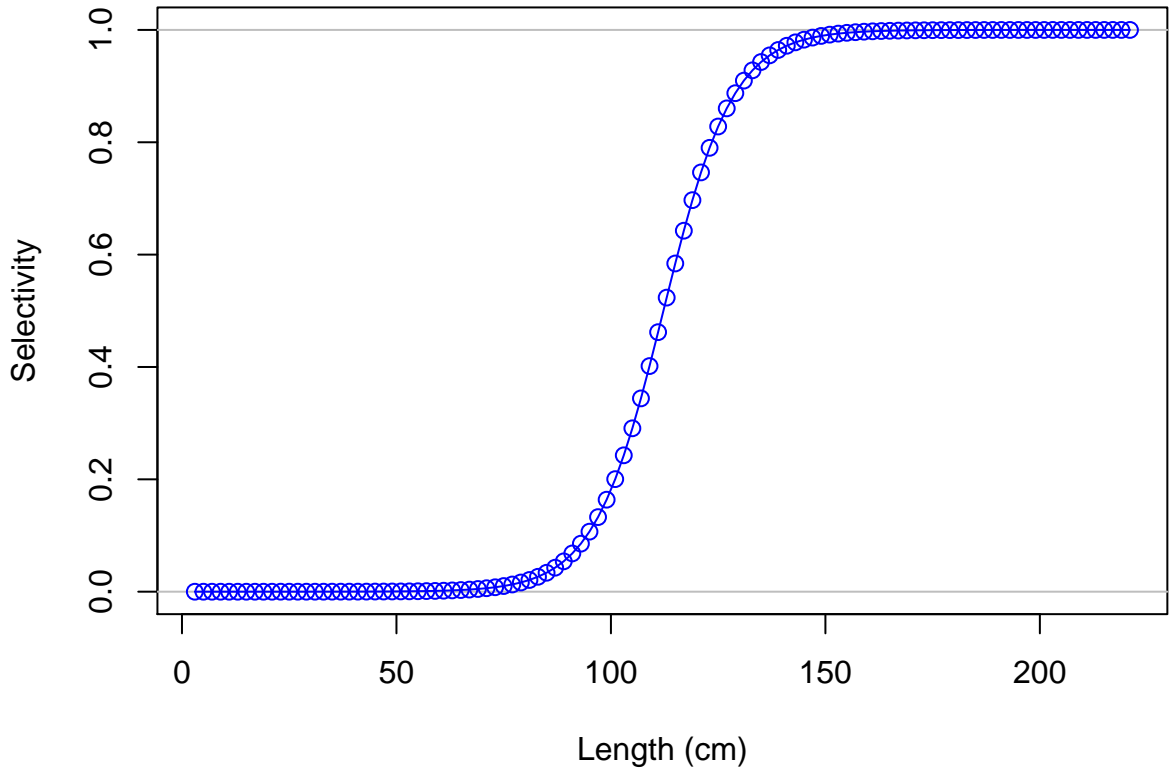




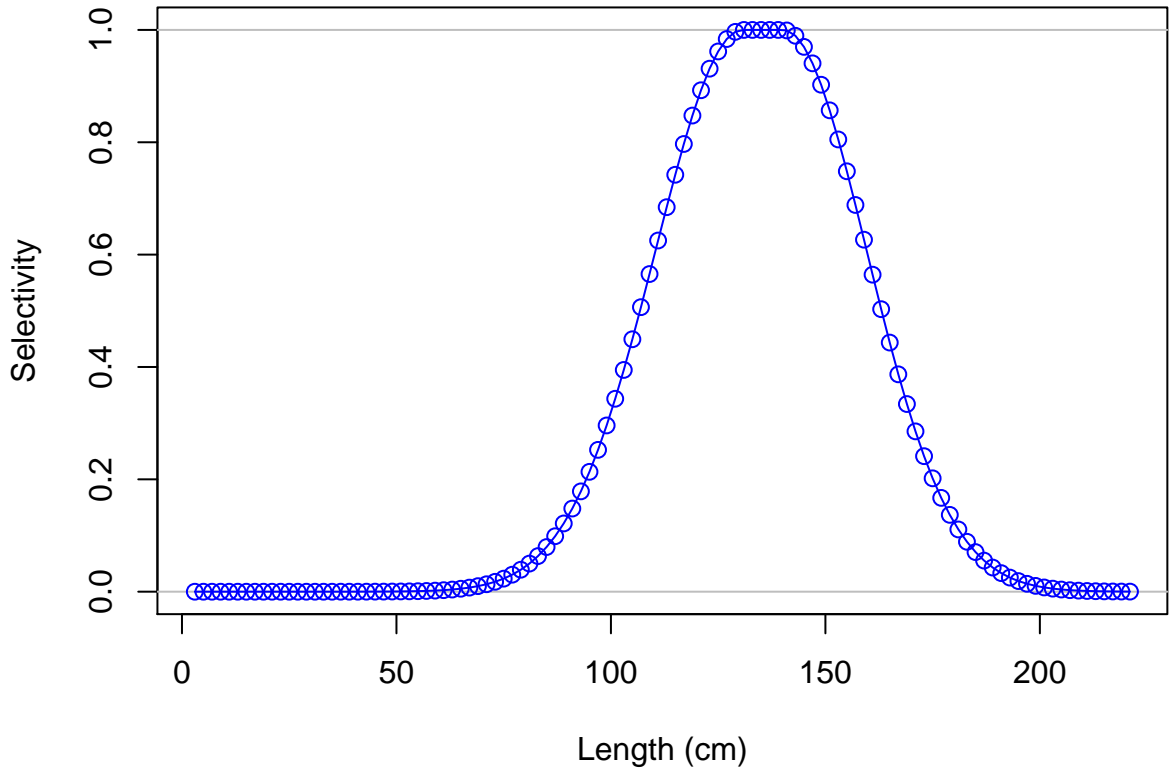
## Female ending year selectivity for S7-LLc\_S\_w



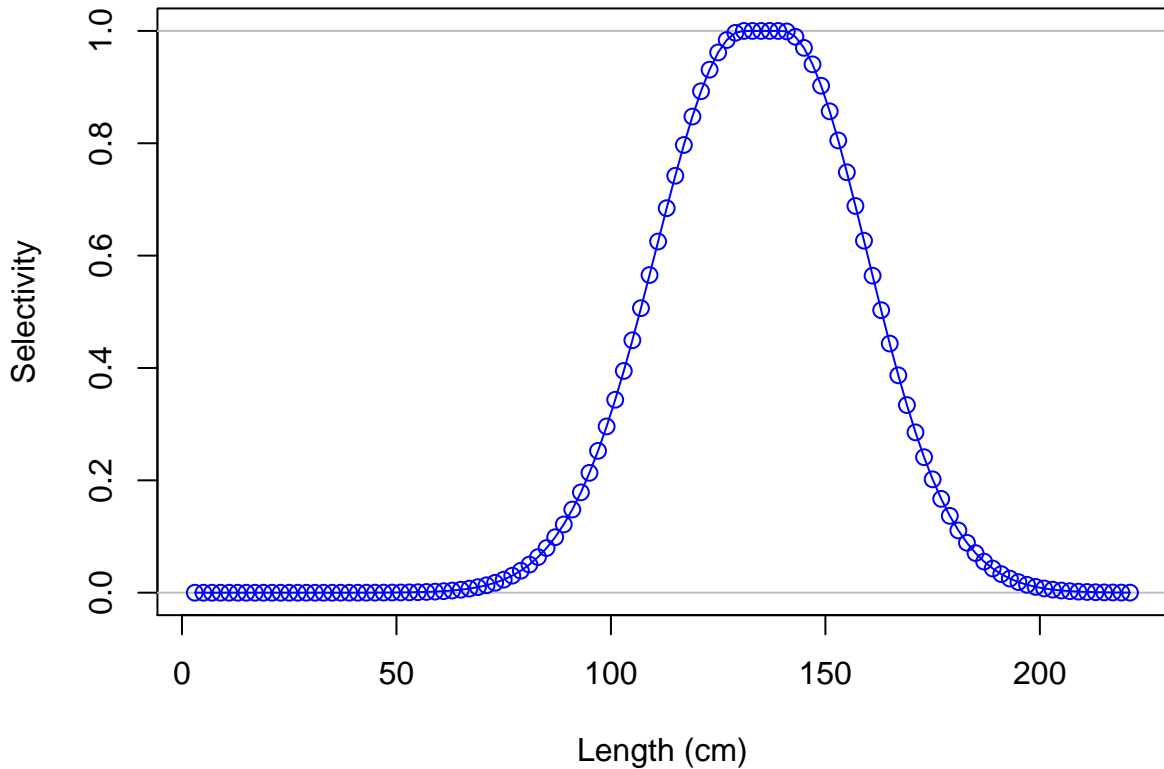
### Male ending year selectivity for S7-LLc\_S\_w



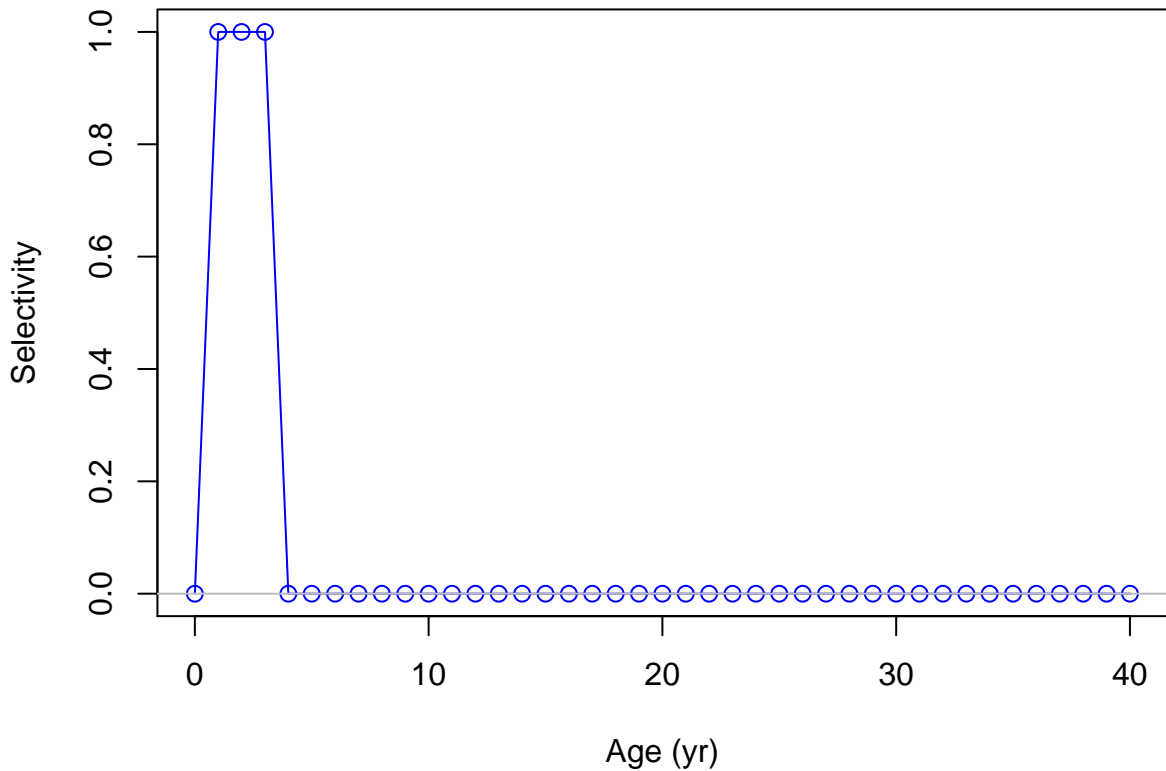
# Female ending year selectivity for S8-LLc\_I\_w



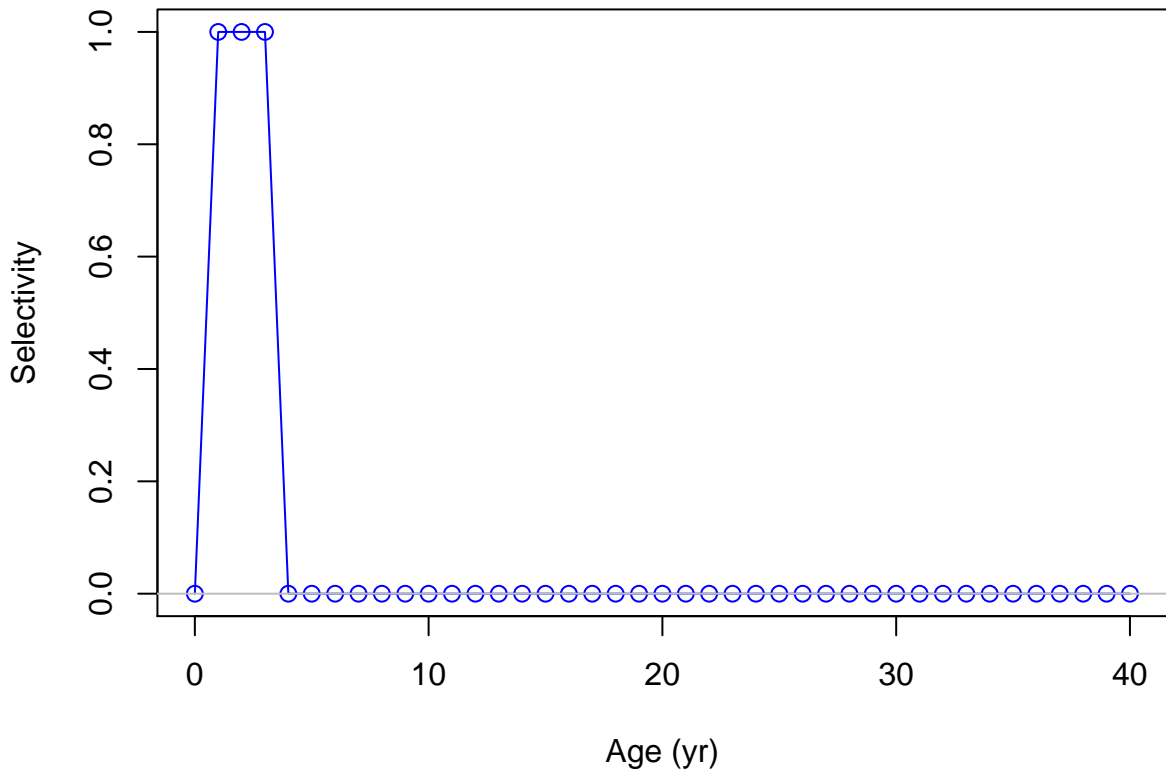
### Male ending year selectivity for S8-LLc\_I\_w



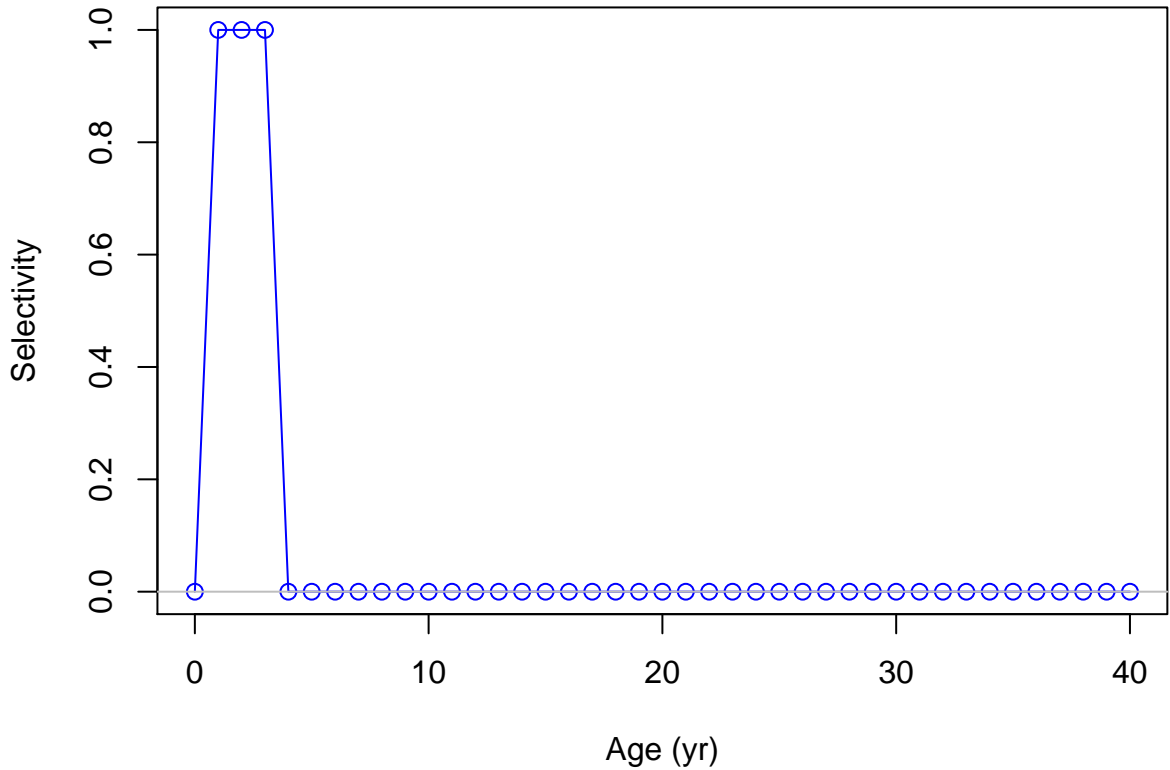
## Female ending year selectivity for F8-OBJ\_S\_disc



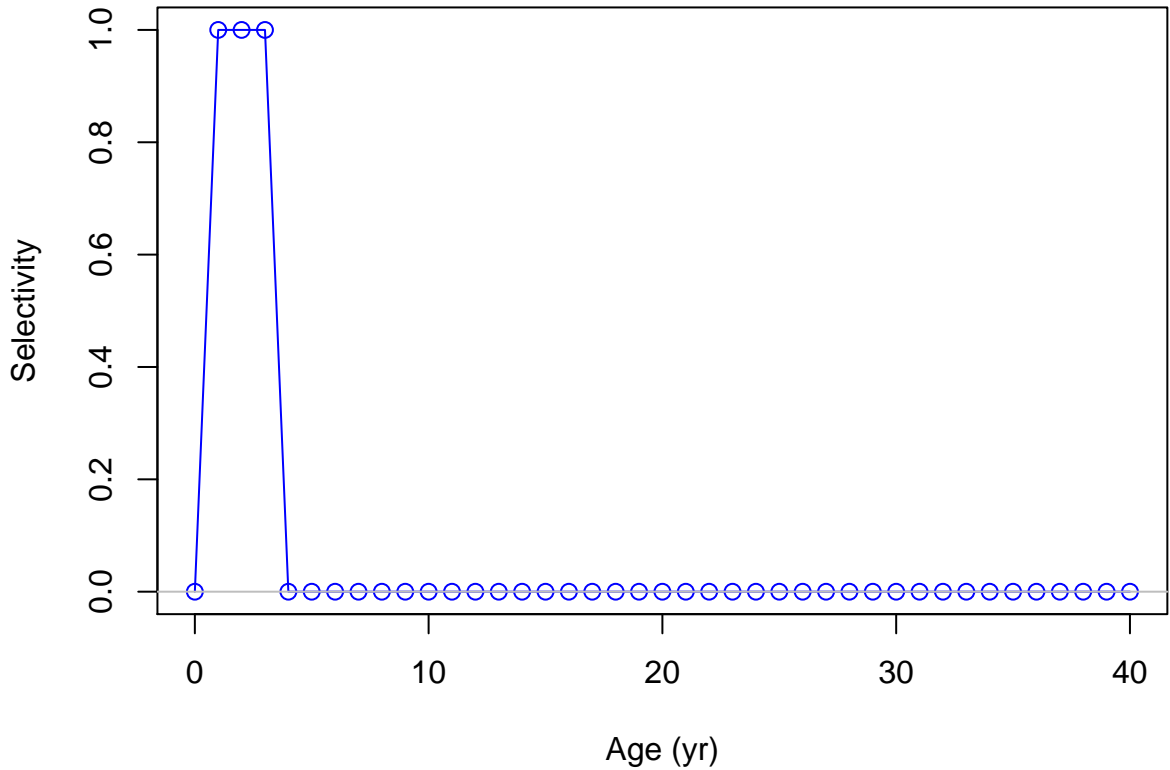
### Male ending year selectivity for F8-OBJ\_S\_disc



## Female ending year selectivity for F9-OBJ\_C\_disc

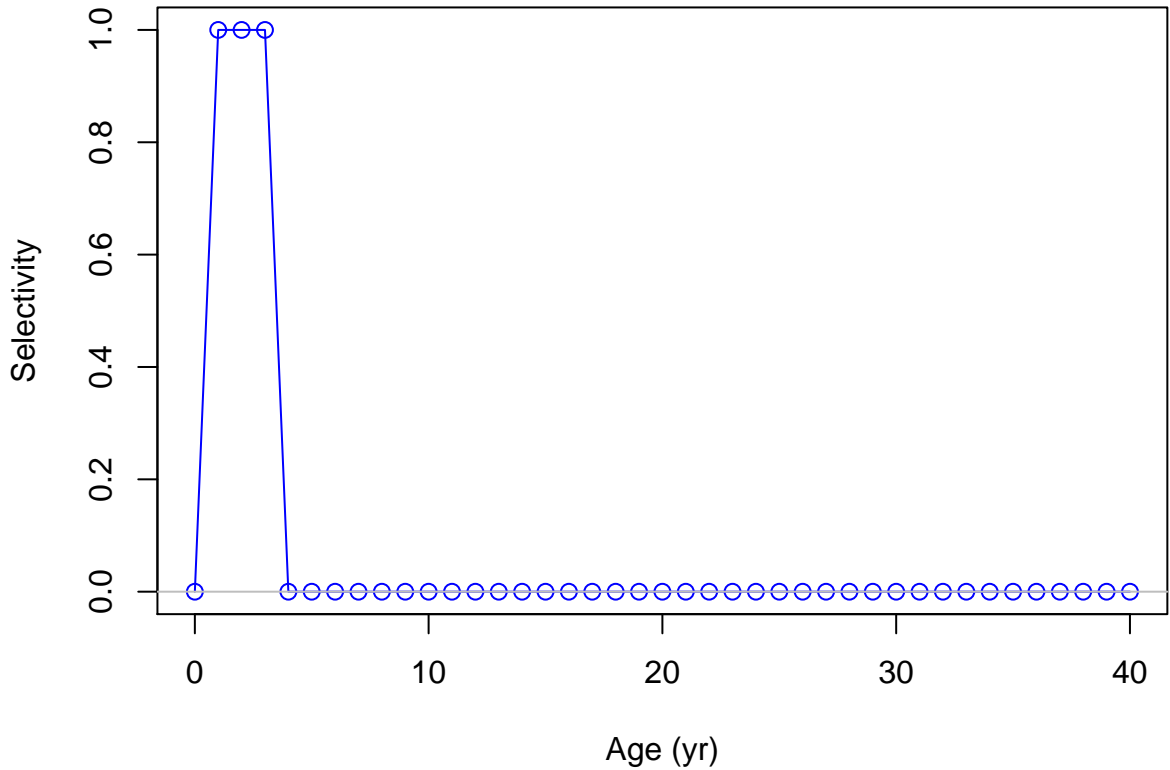


### Male ending year selectivity for F9-OBJ\_C\_disc

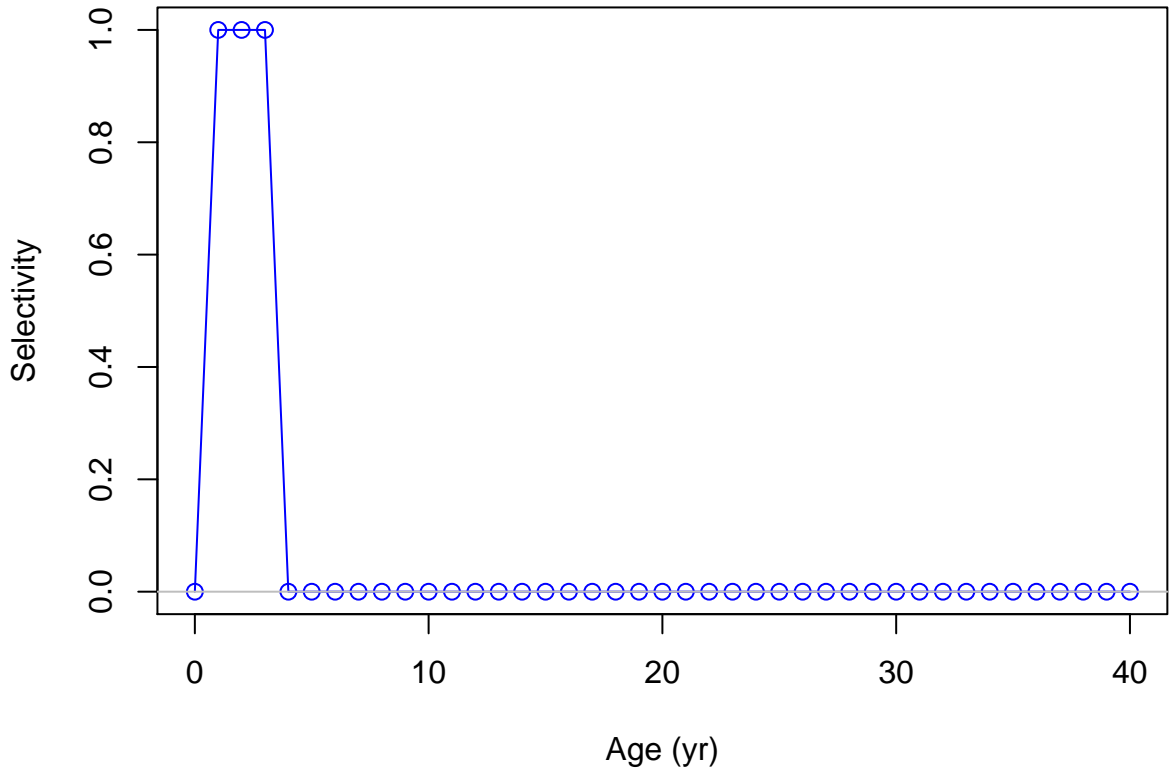




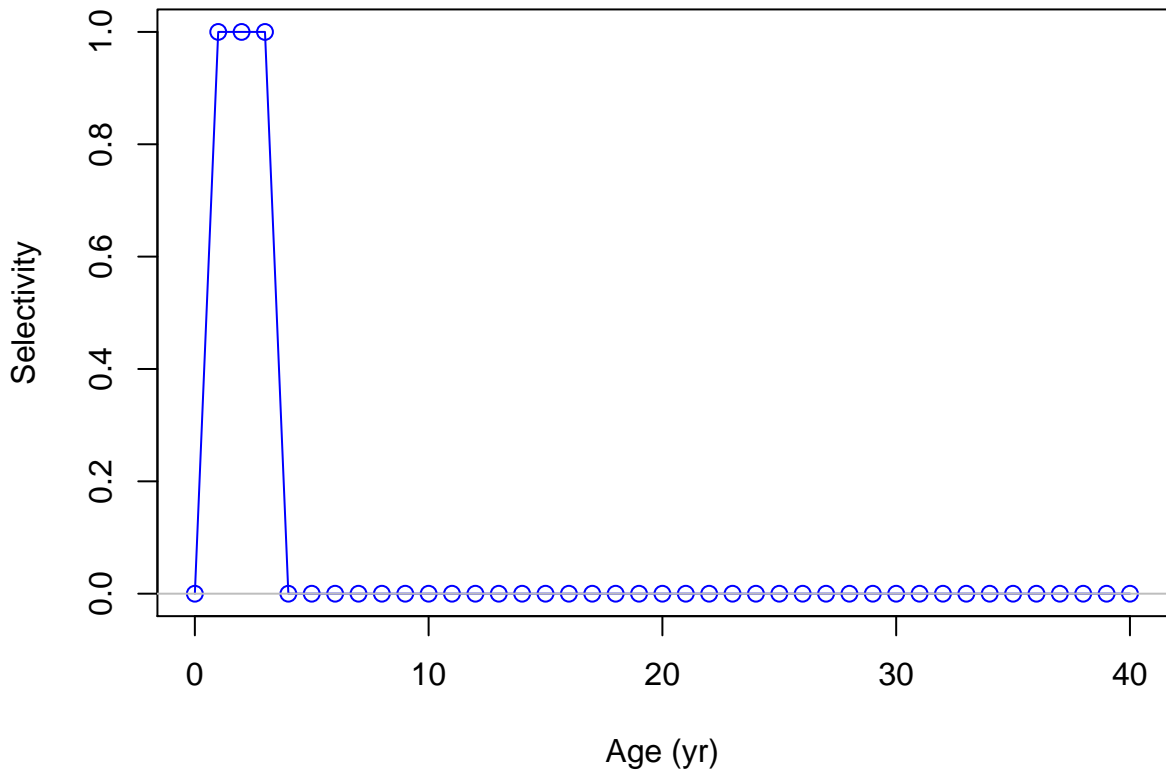
## Female ending year selectivity for F10-OBJ\_I\_disc



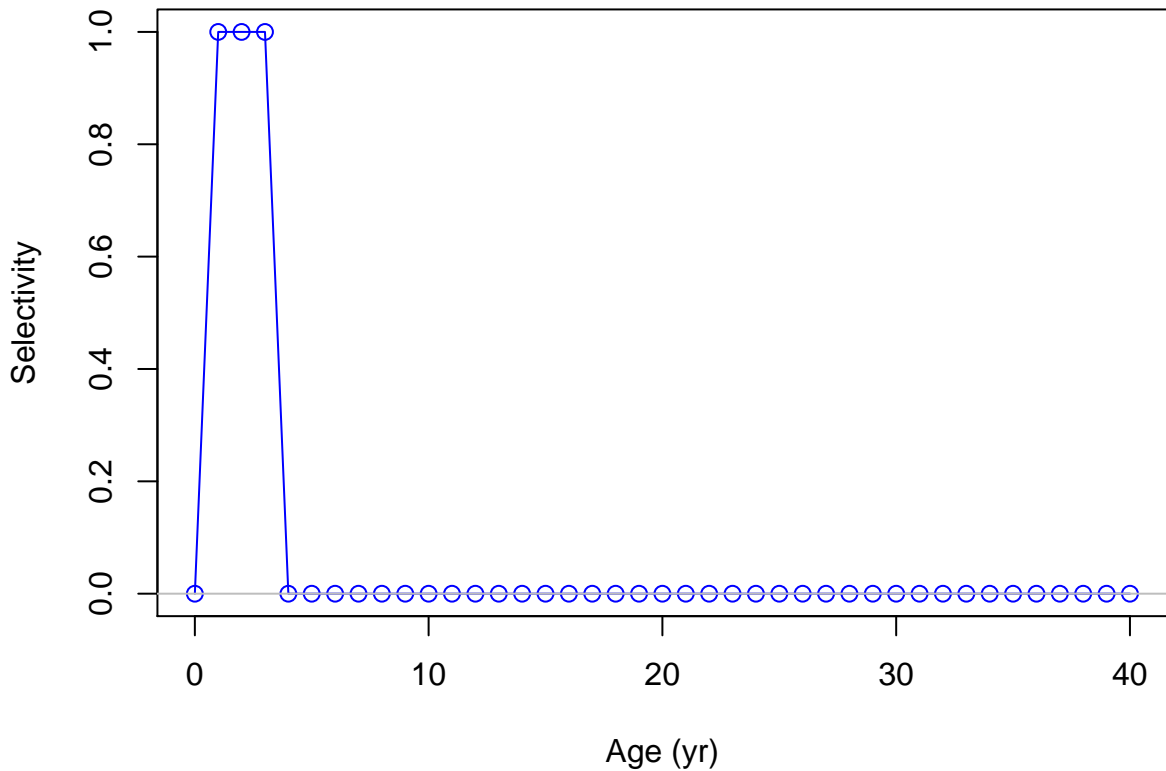
### Male ending year selectivity for F10-OBJ\_I\_disc



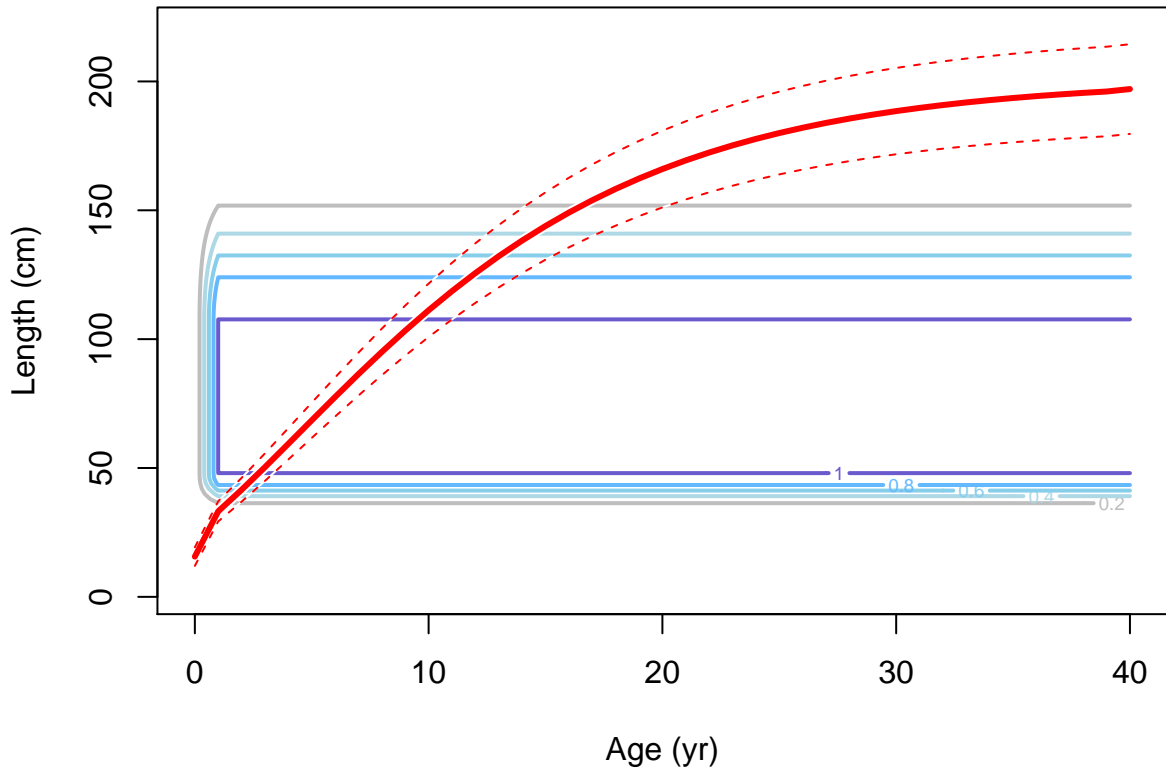
## Female ending year selectivity for F11-OBJ\_N\_disc



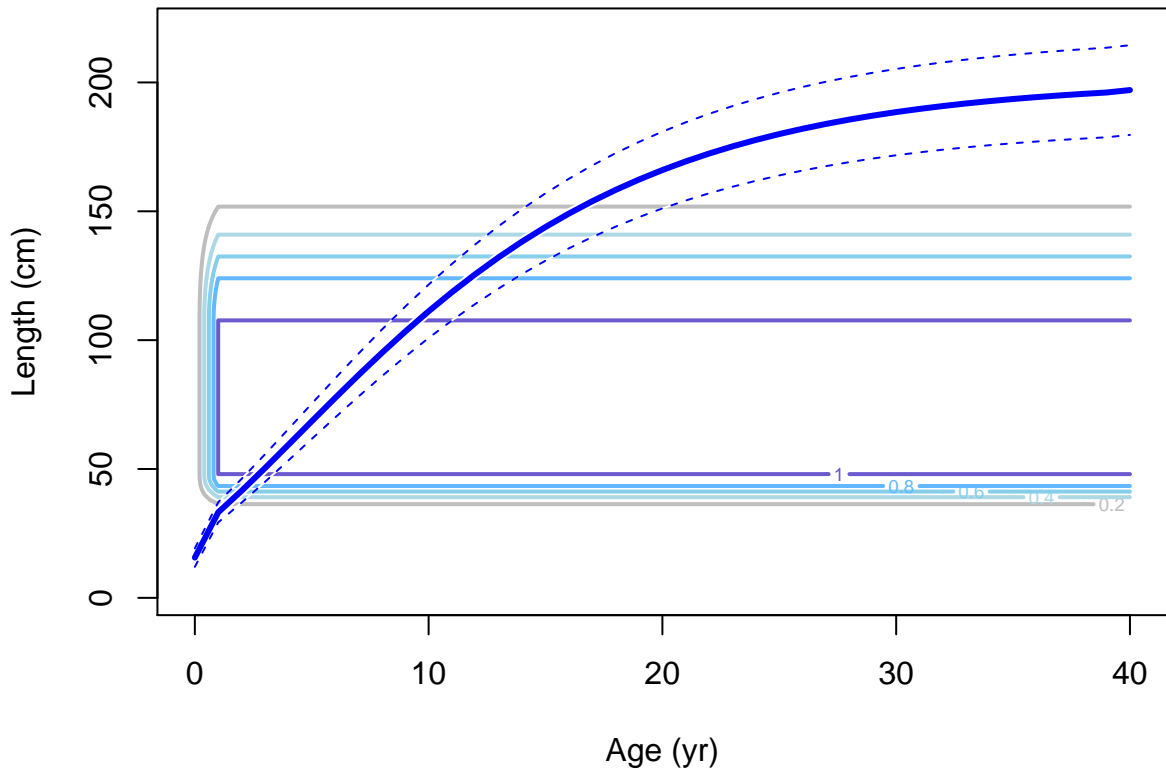
### Male ending year selectivity for F11-OBJ\_N\_disc



# Female ending year selectivity and growth for F1-OBJ\_early

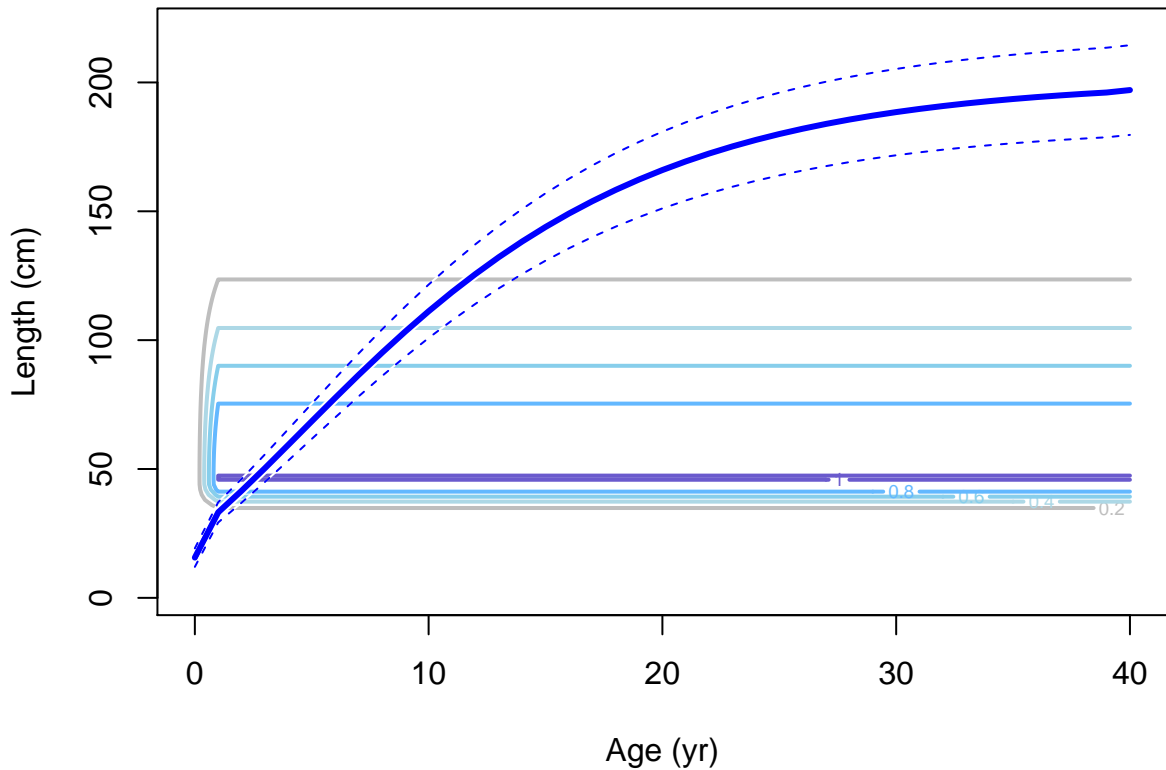


# Male ending year selectivity and growth for F1-OBJ\_early



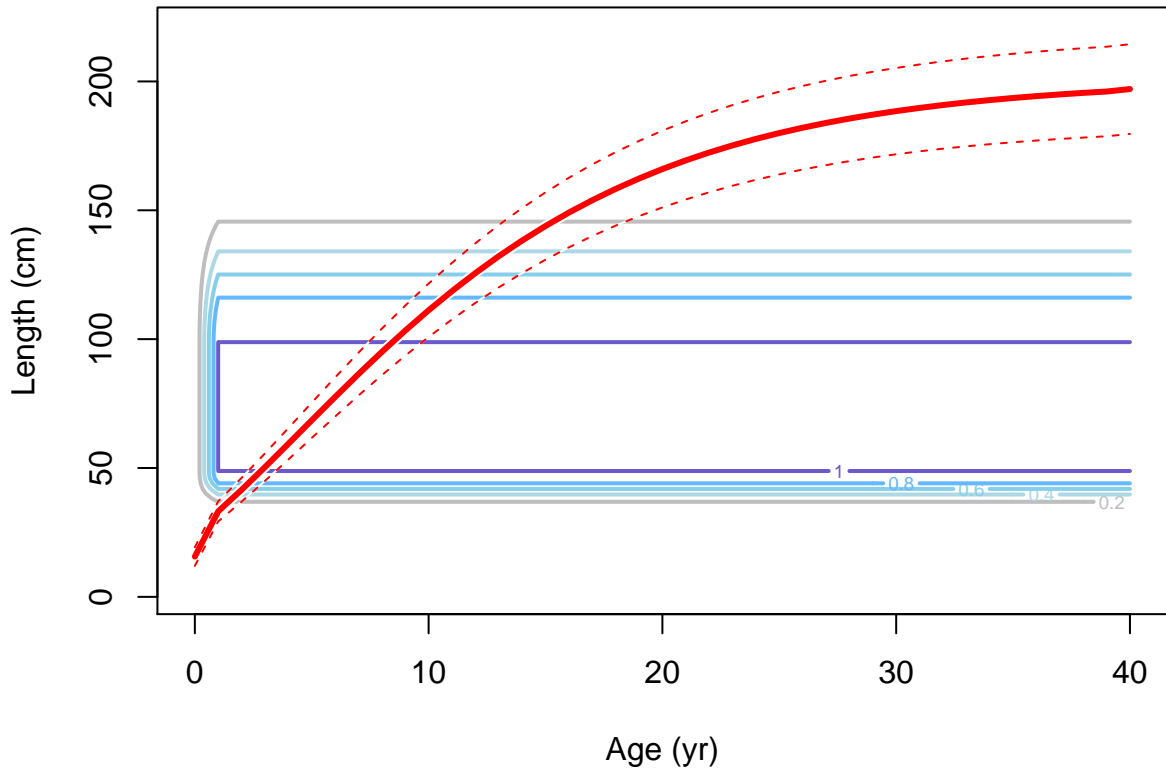


# Male ending year selectivity and growth for F2-OBJ\_S

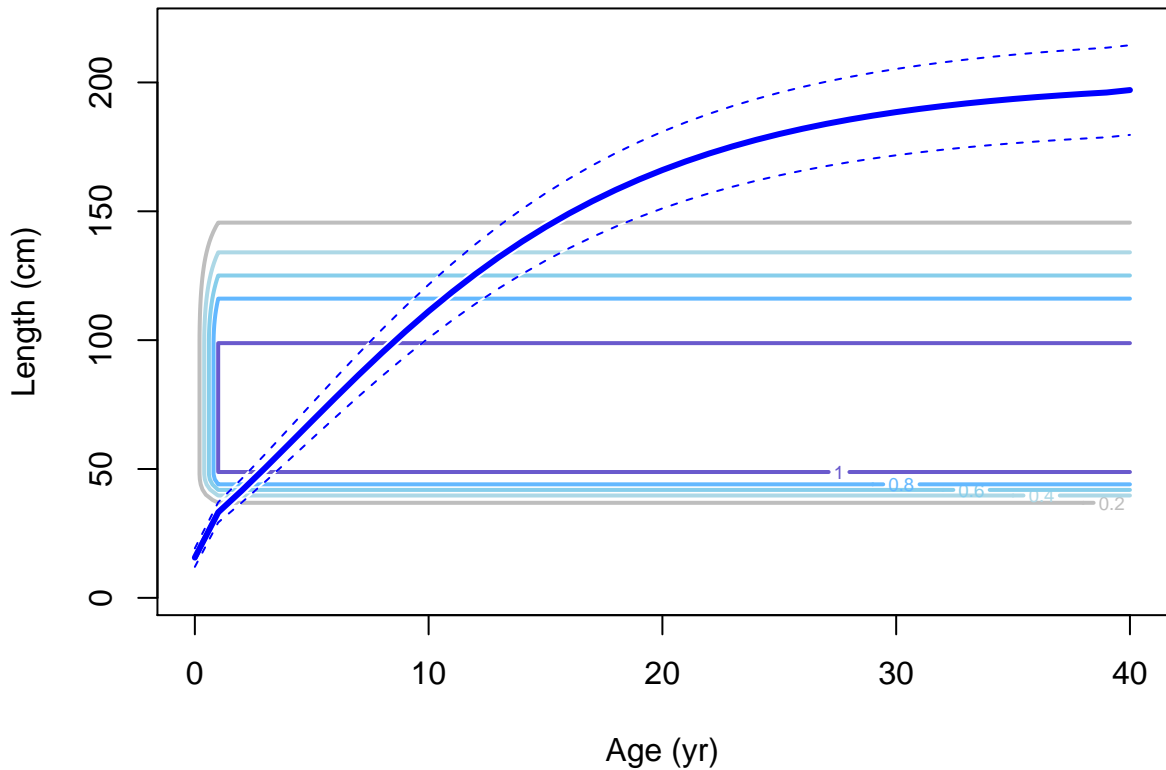




# Female ending year selectivity and growth for F3-OBJ\_C

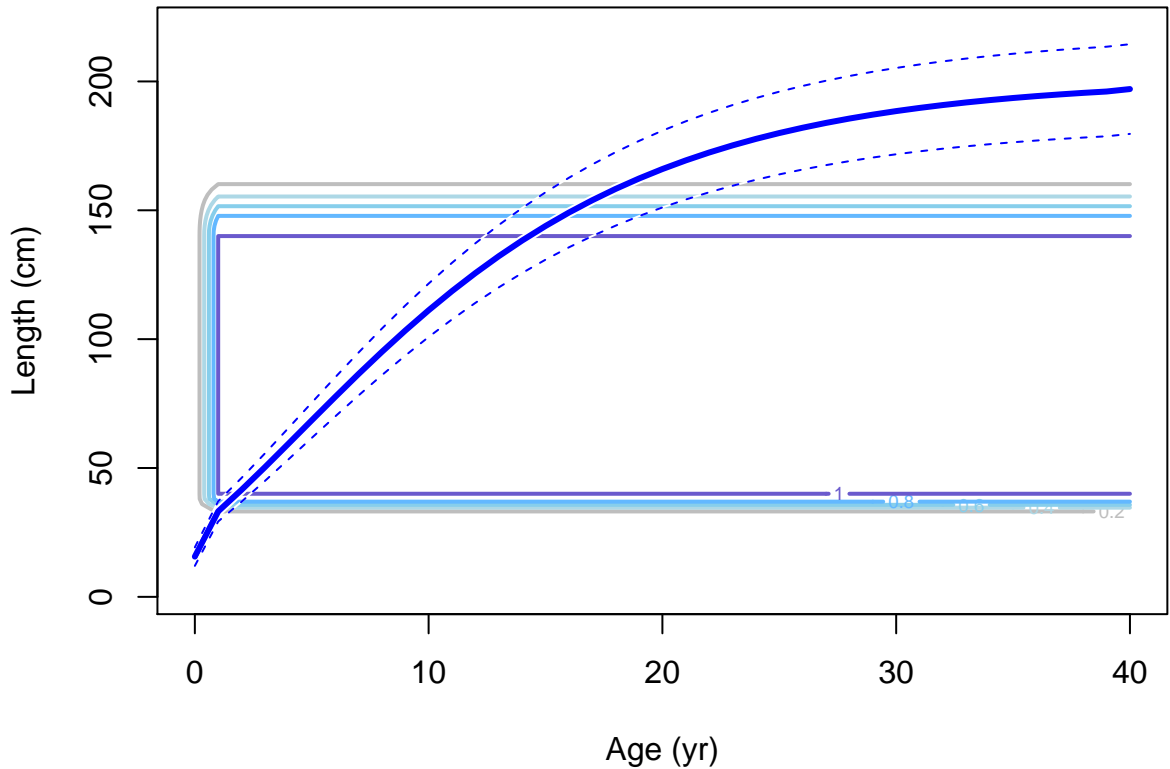


# Male ending year selectivity and growth for F3-OBJ\_C

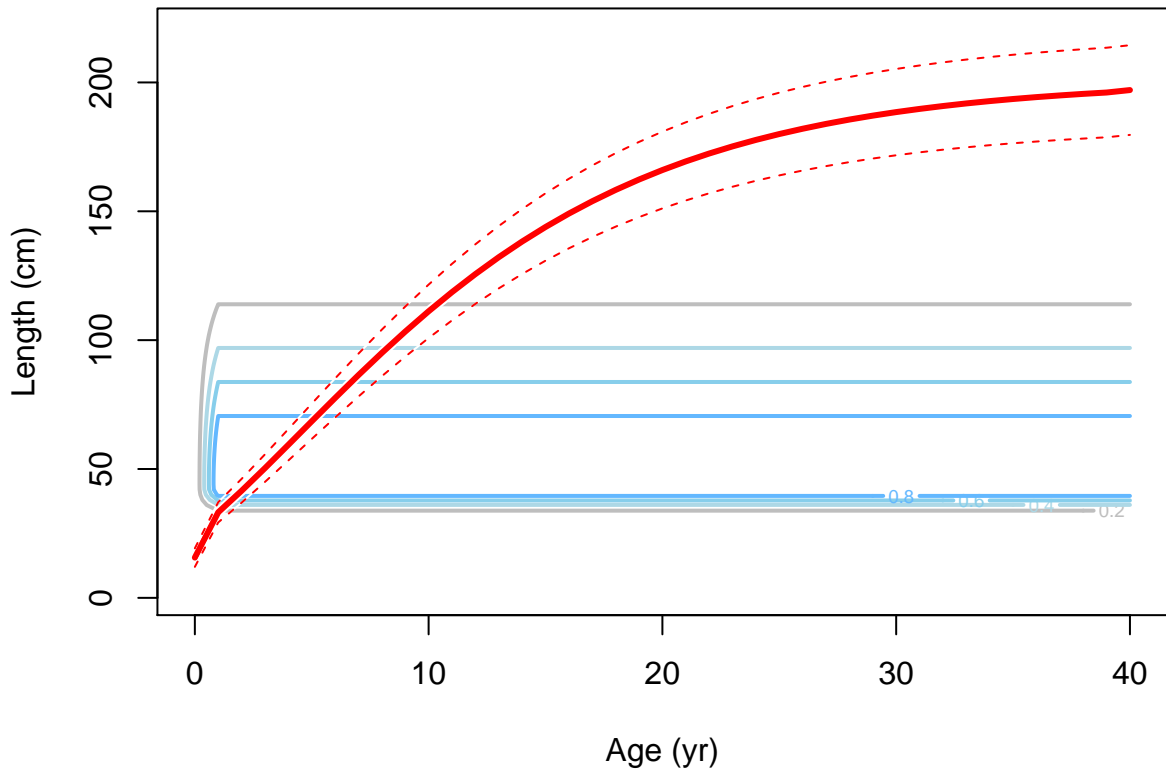




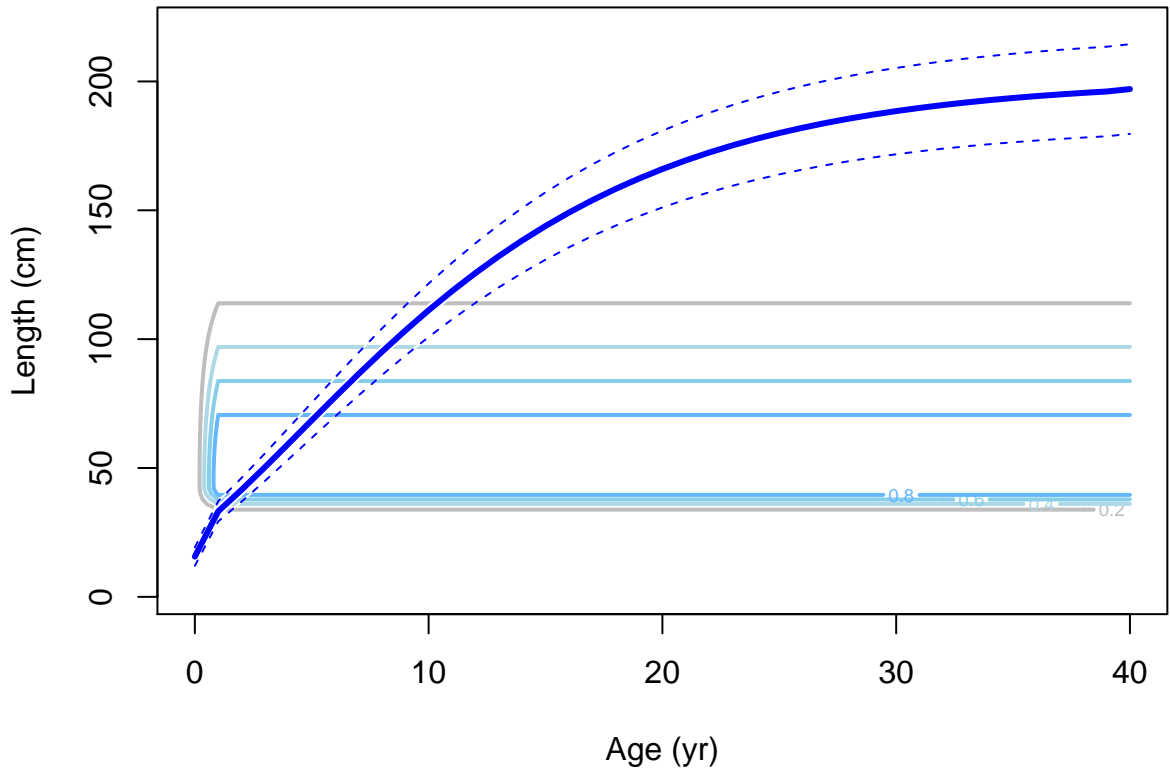
# Male ending year selectivity and growth for F4-OBJ\_I



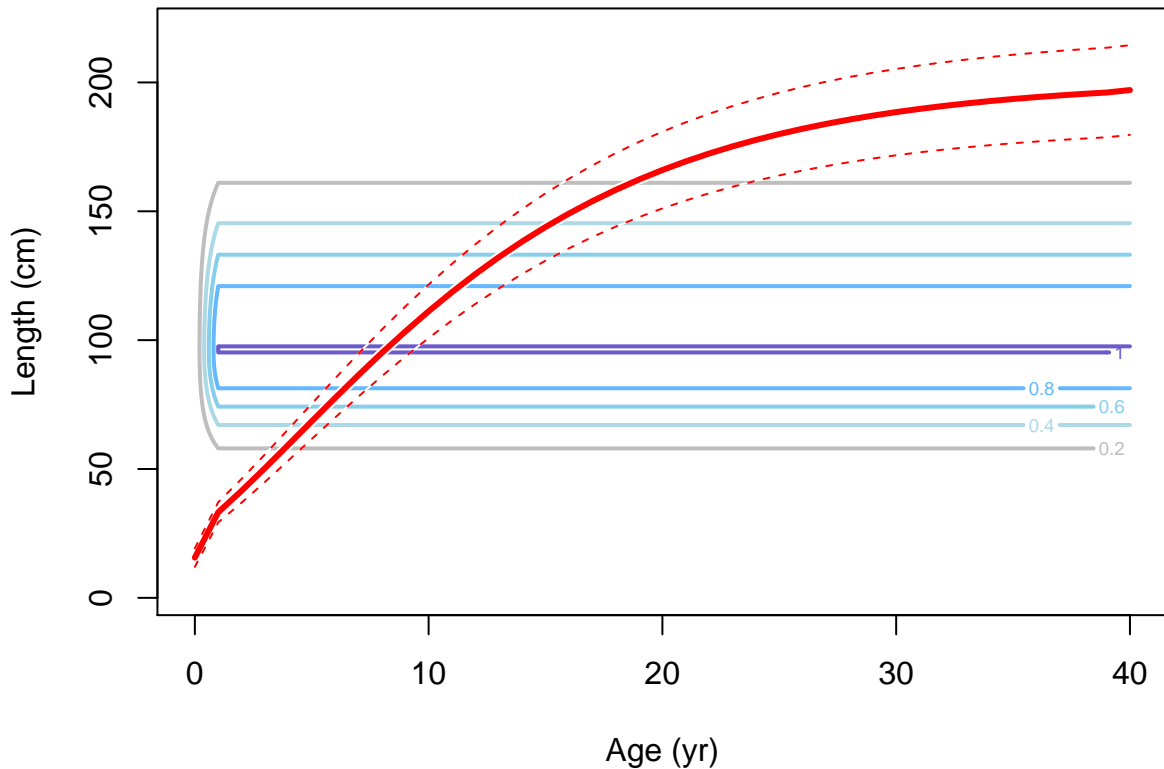
## Female ending year selectivity and growth for F5-OBJ\_N



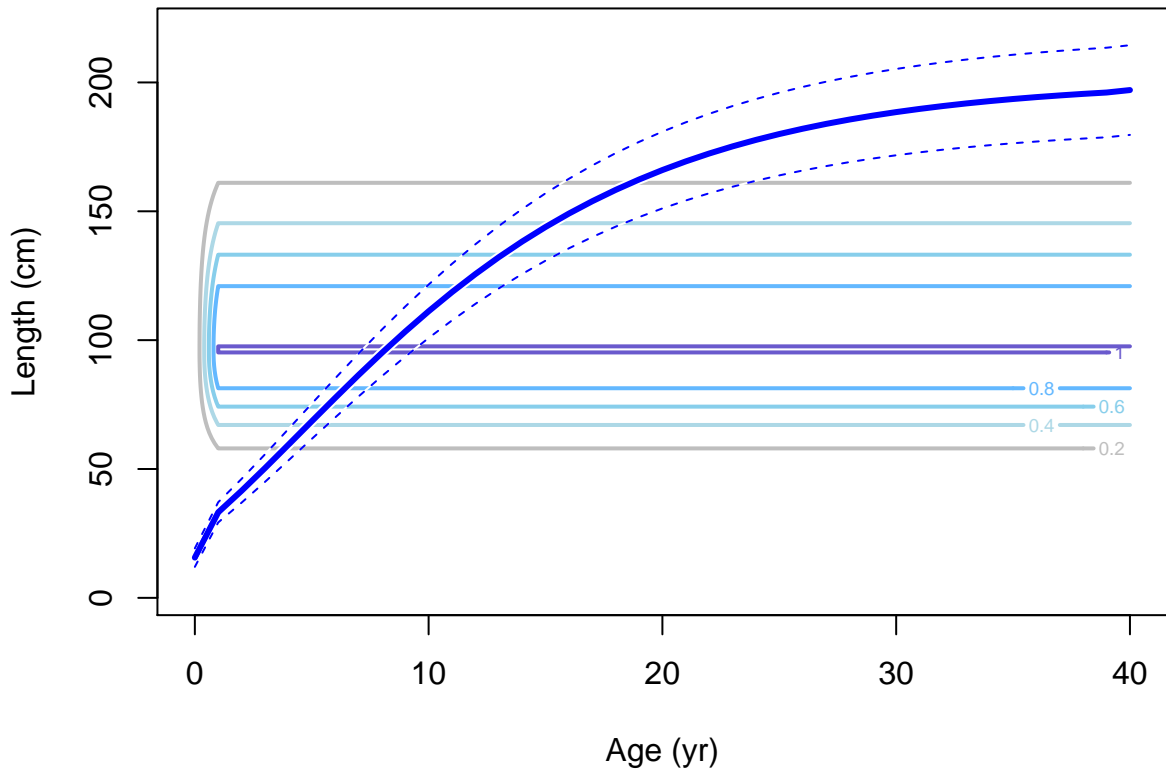
# Male ending year selectivity and growth for F5-OBJ\_N



# Female ending year selectivity and growth for F6-NOA-DEL\_early

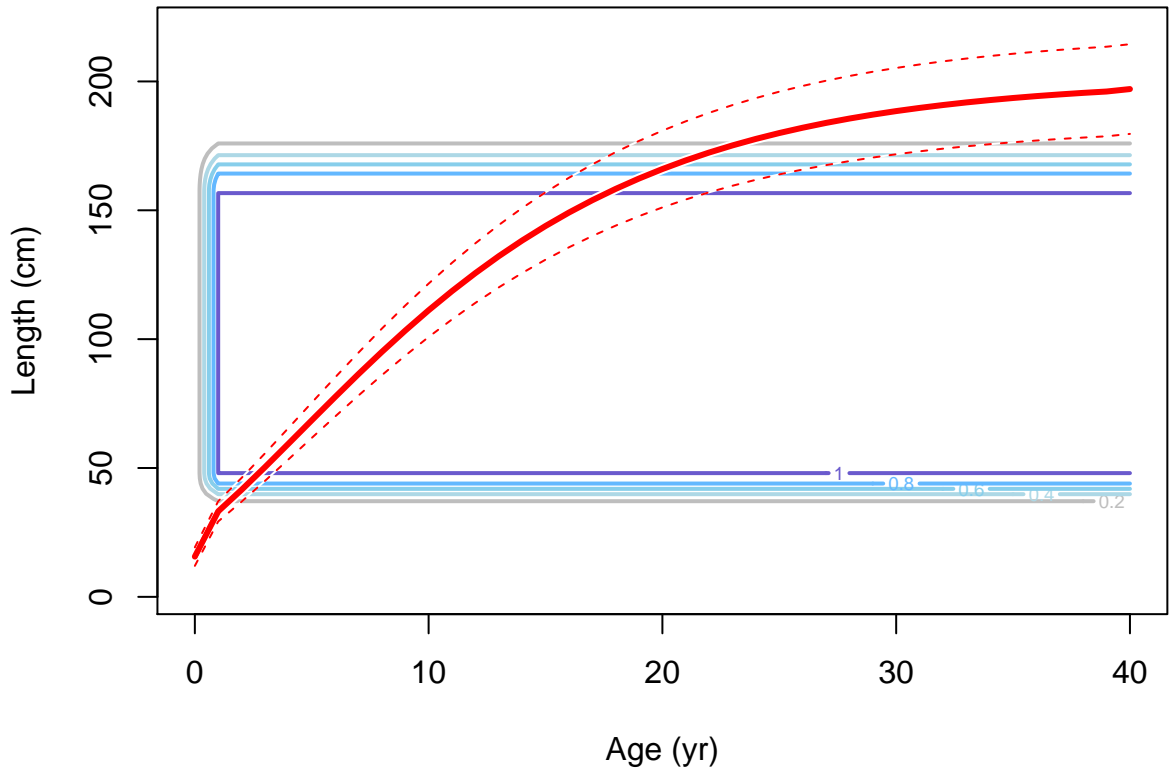


# Male ending year selectivity and growth for F6-NOA-DEL\_early



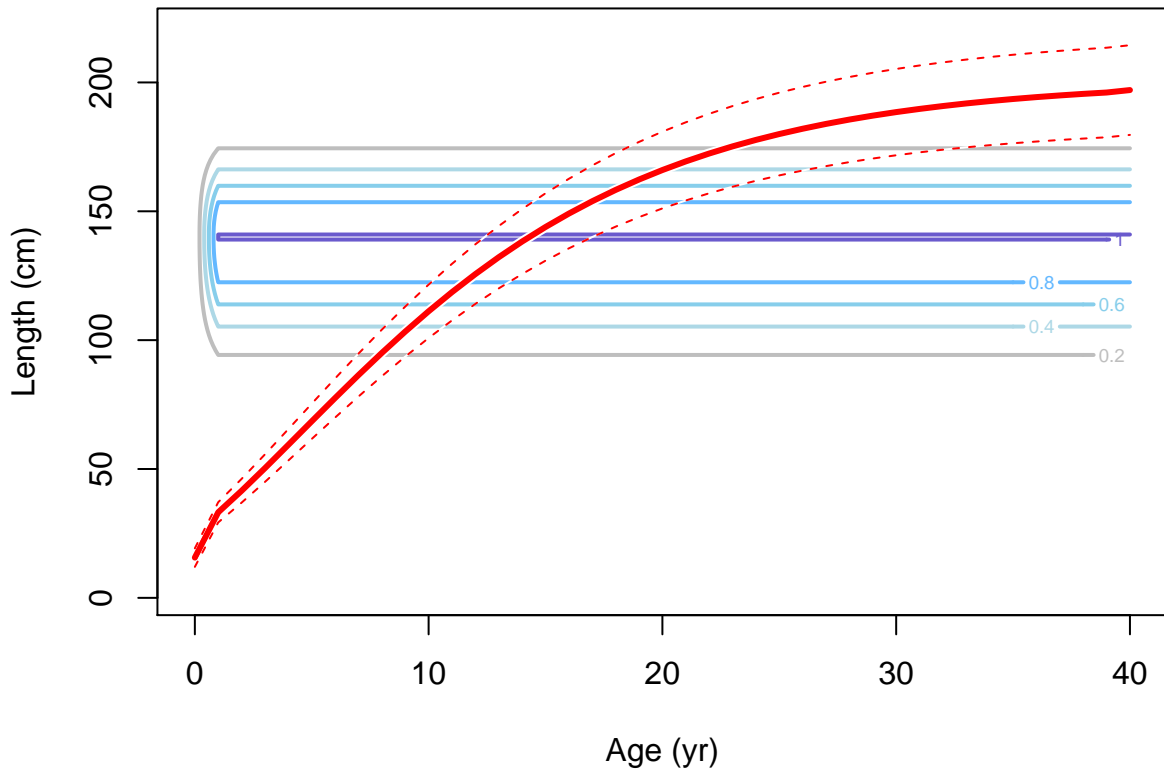


# Female ending year selectivity and growth for F7-NOA-DEL\_late

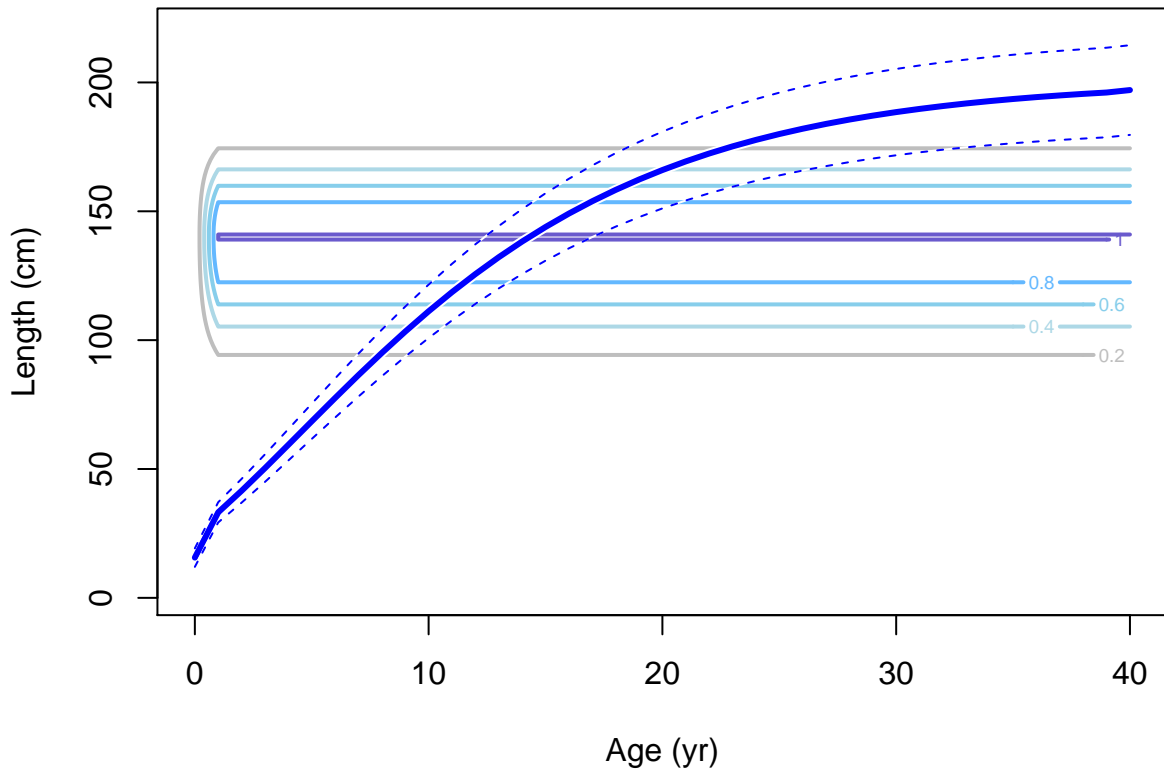




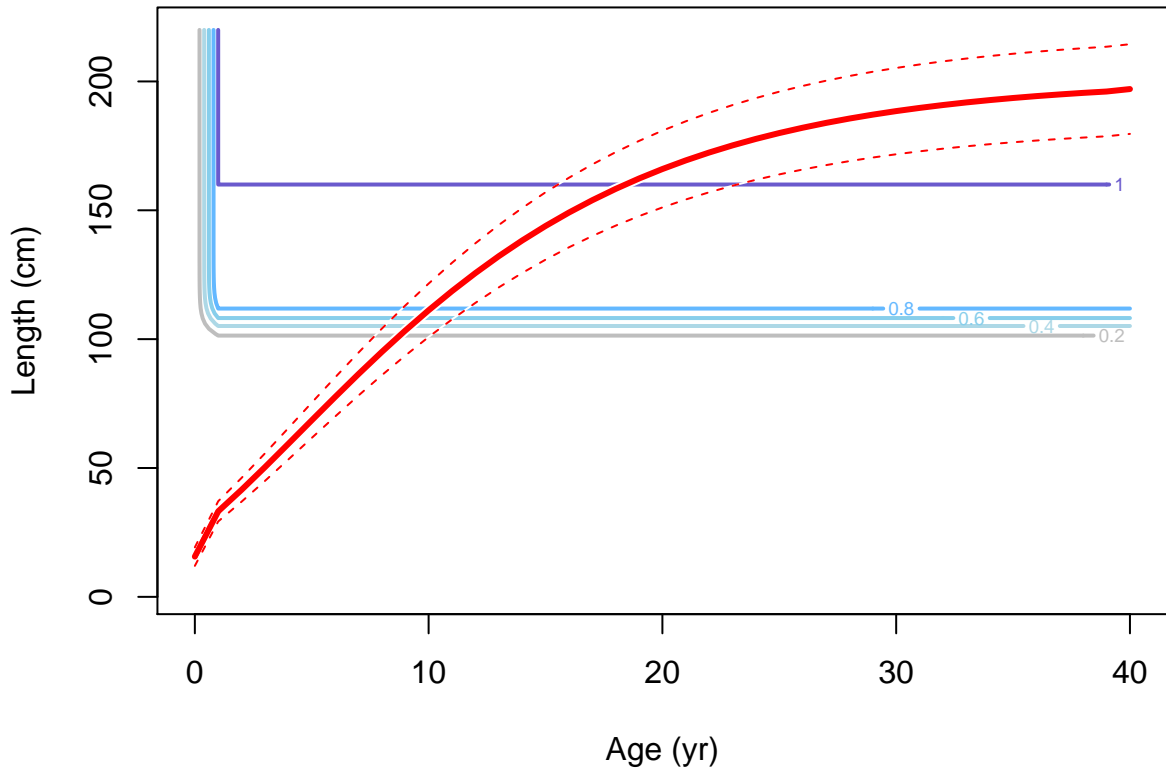
# Female ending year selectivity and growth for F12-LL\_N\_num



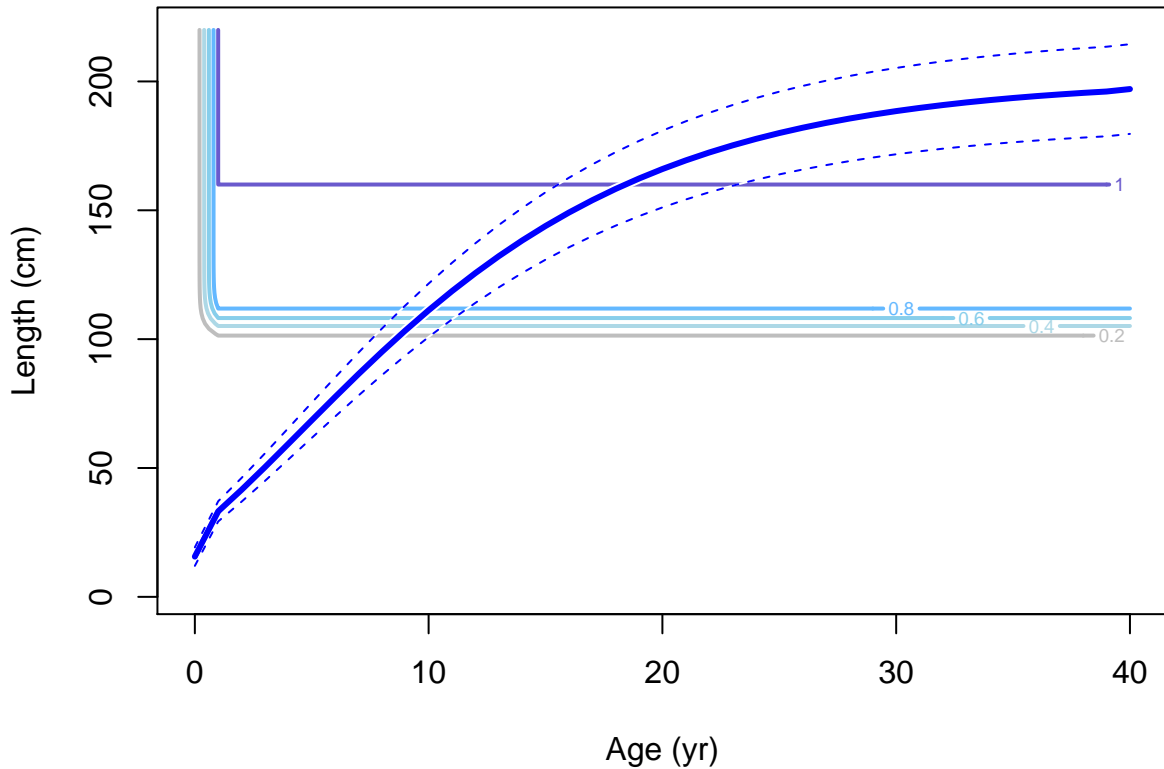
# Male ending year selectivity and growth for F12-LL\_N\_num



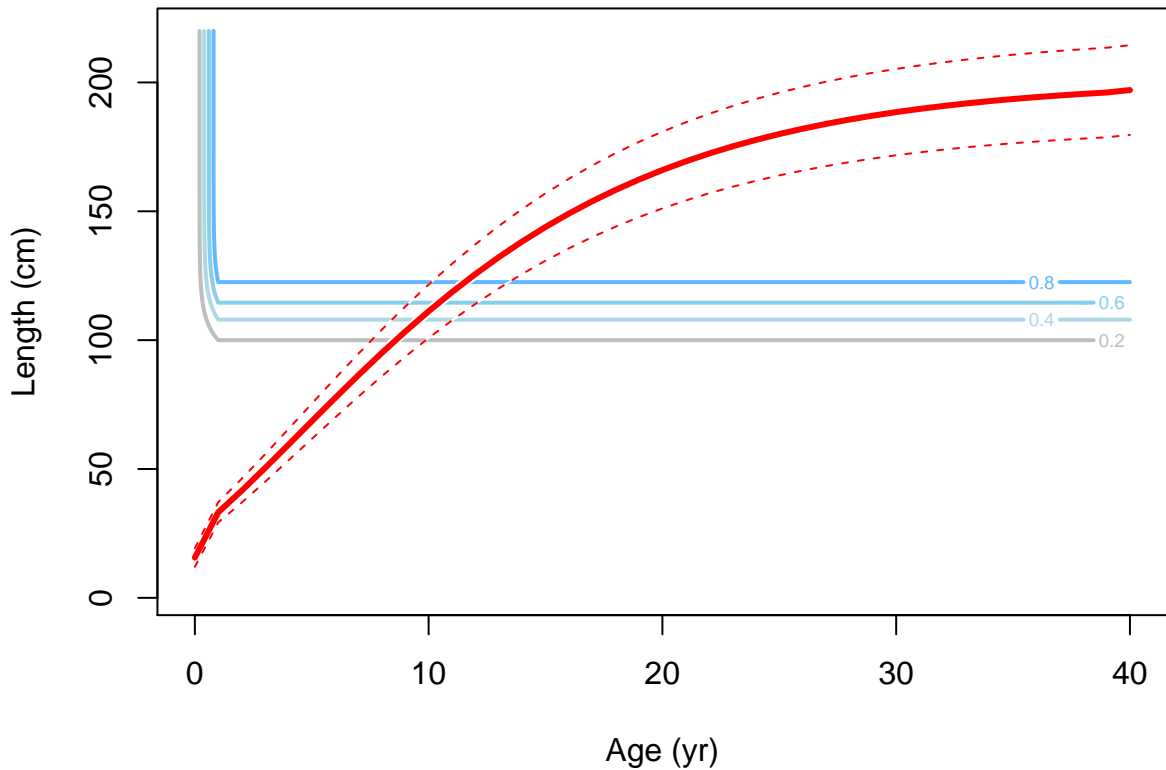
# Female ending year selectivity and growth for F13-LL\_C\_num



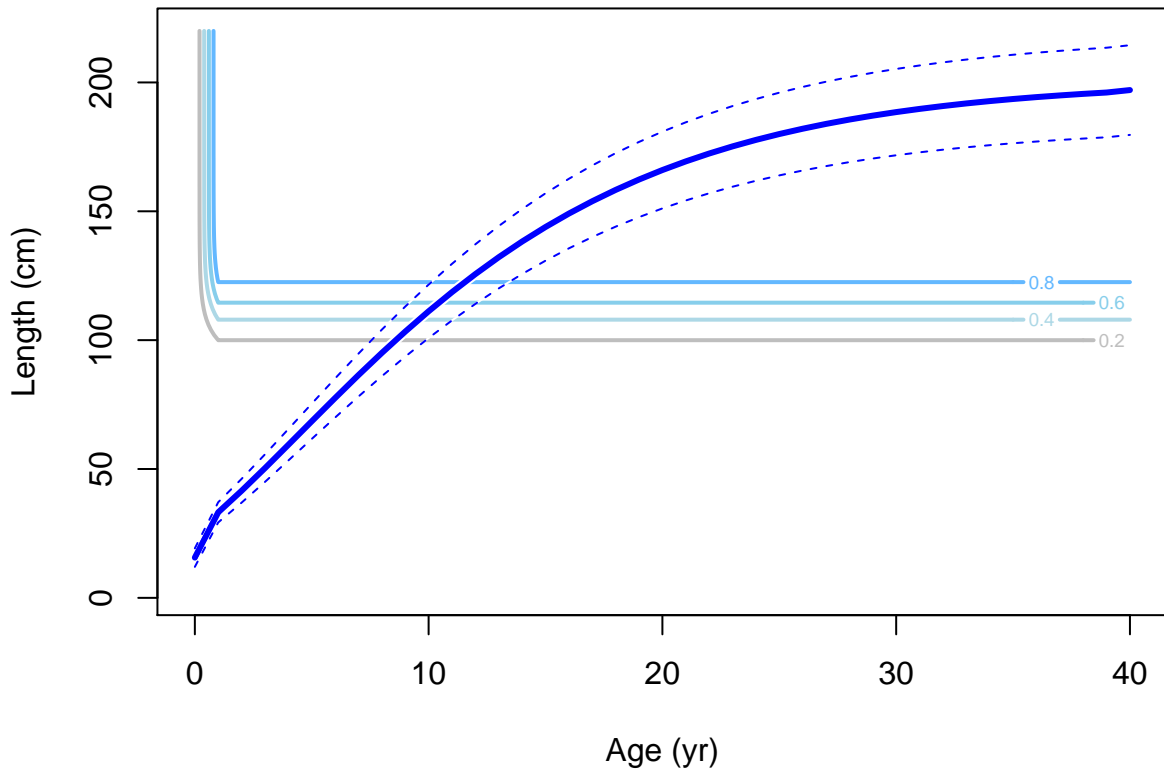
# Male ending year selectivity and growth for F13-LL\_C\_num



# Female ending year selectivity and growth for F14-LL\_S\_num

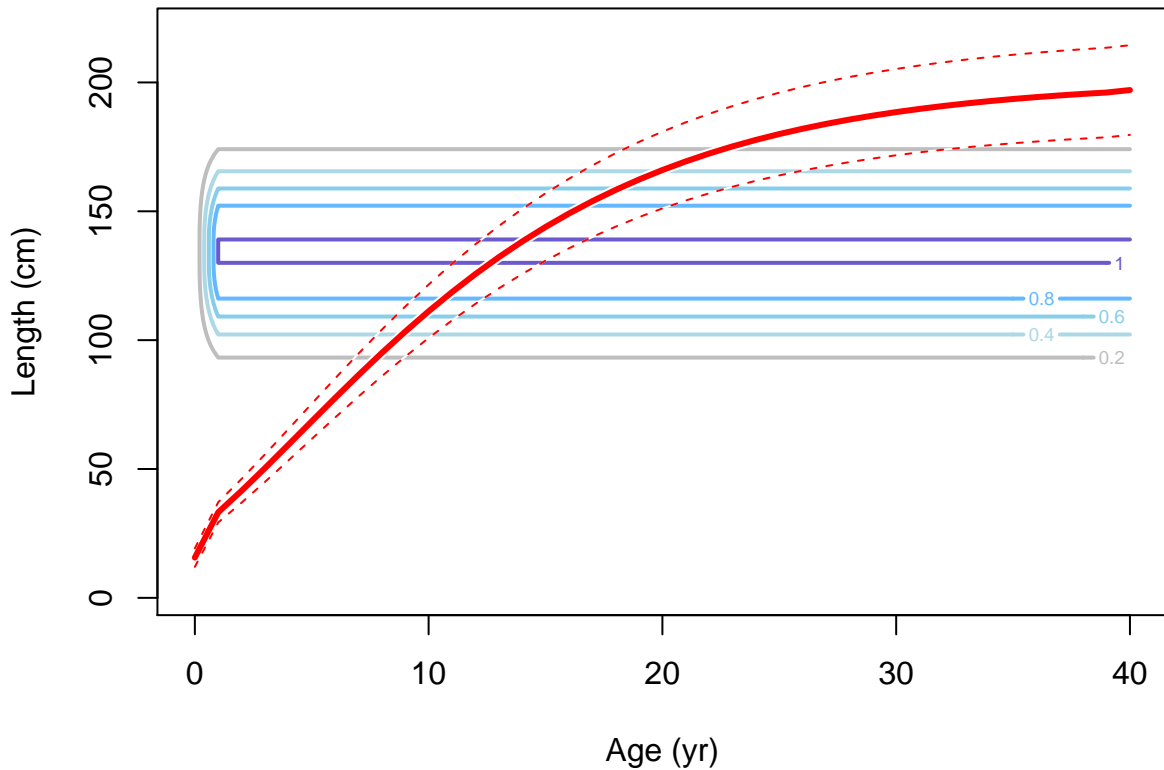


# Male ending year selectivity and growth for F14-LL\_S\_num

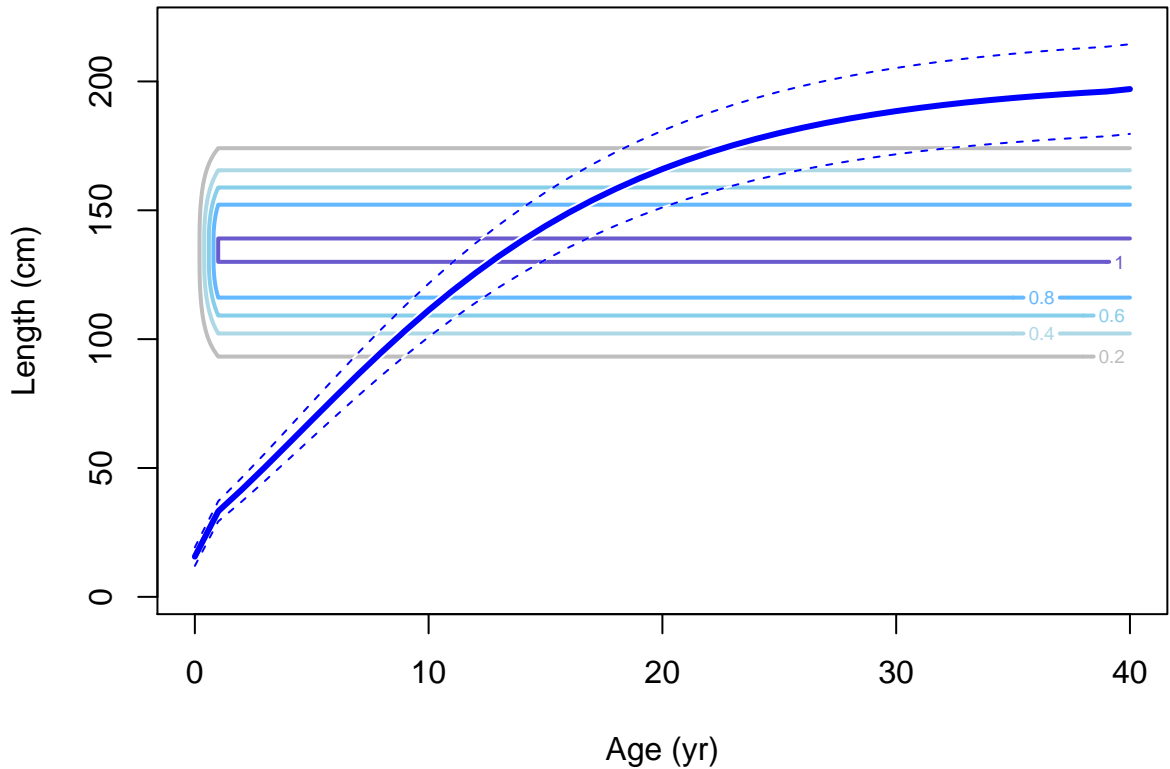




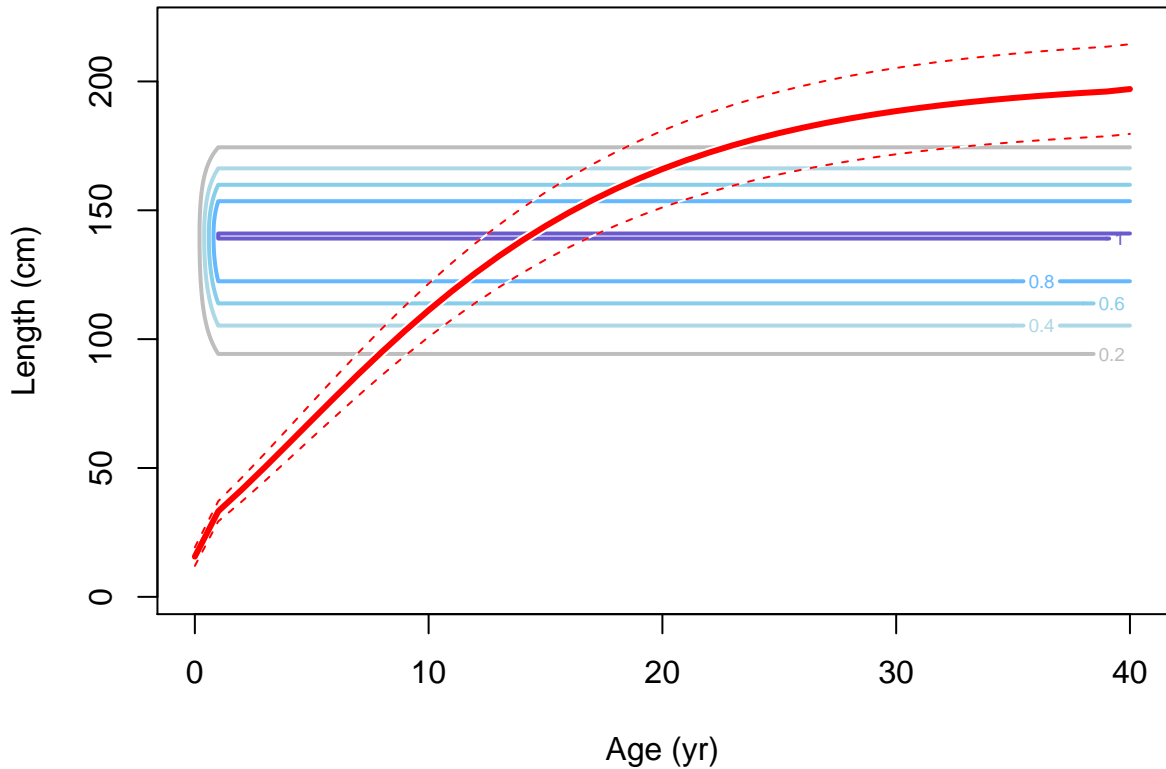
# Female ending year selectivity and growth for F15-LL\_I\_num



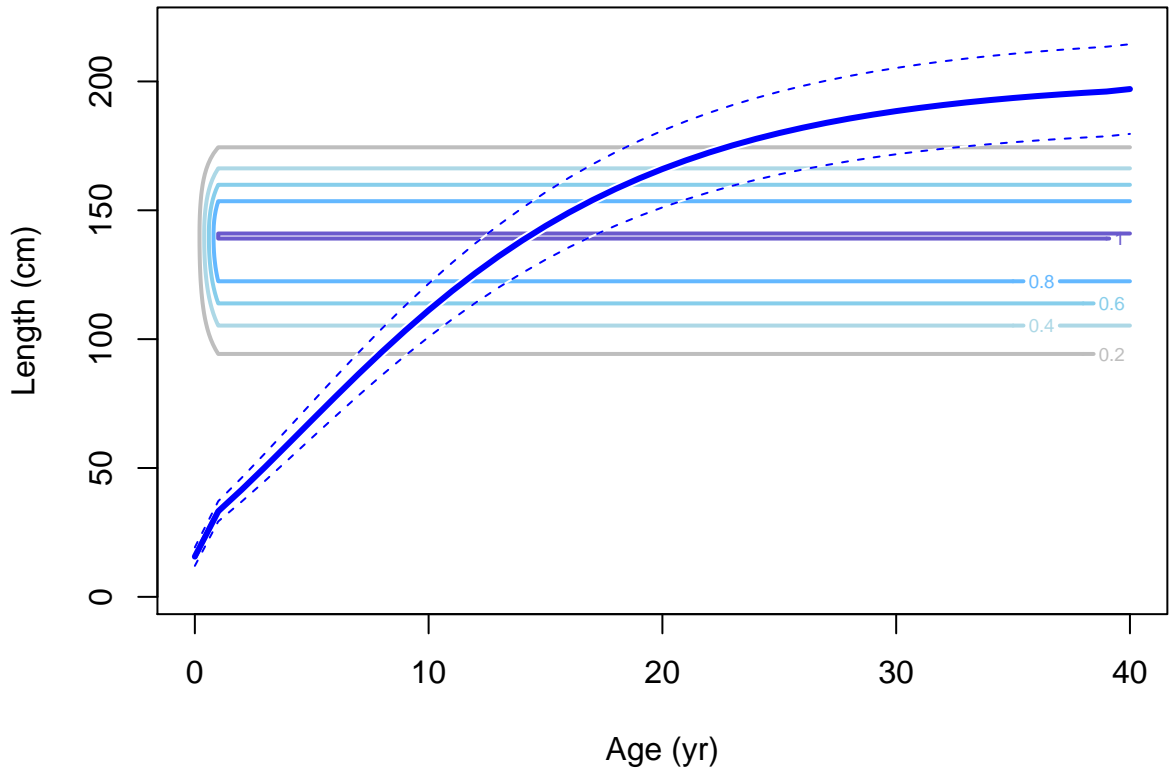
# Male ending year selectivity and growth for F15-LL\_I\_num



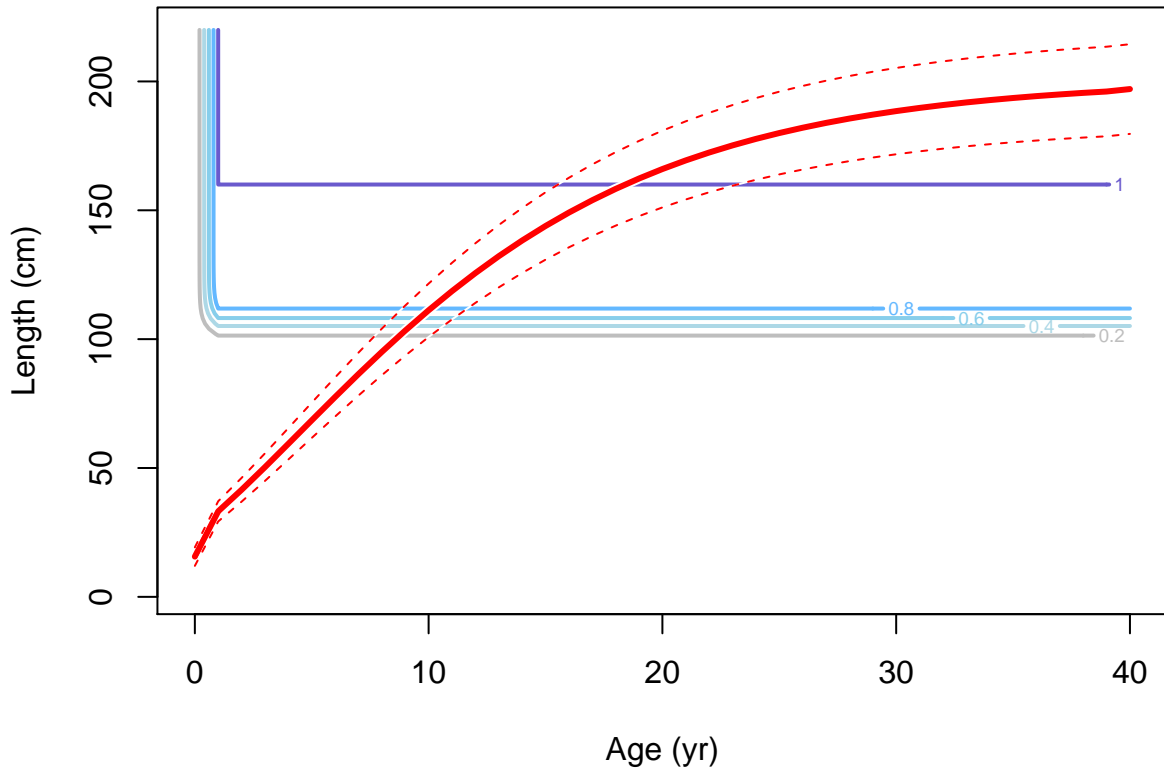
# Female ending year selectivity and growth for F16-LL\_N\_w



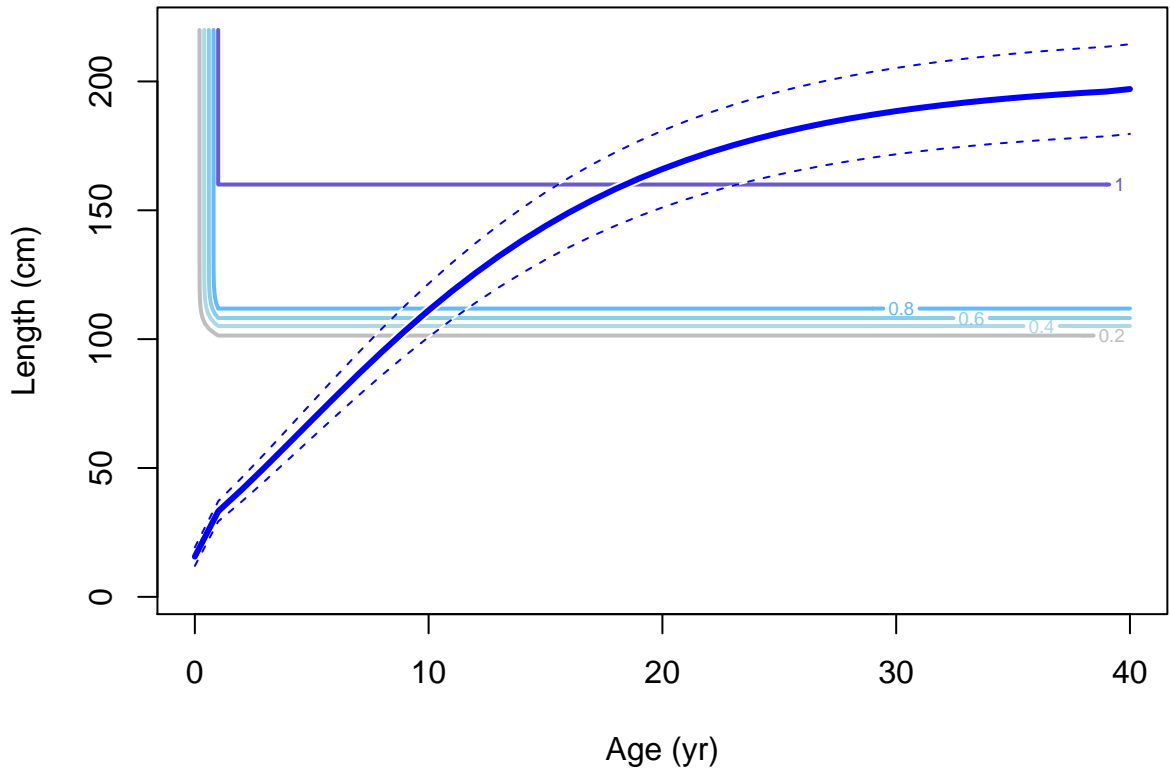
# Male ending year selectivity and growth for F16-LL\_N\_w



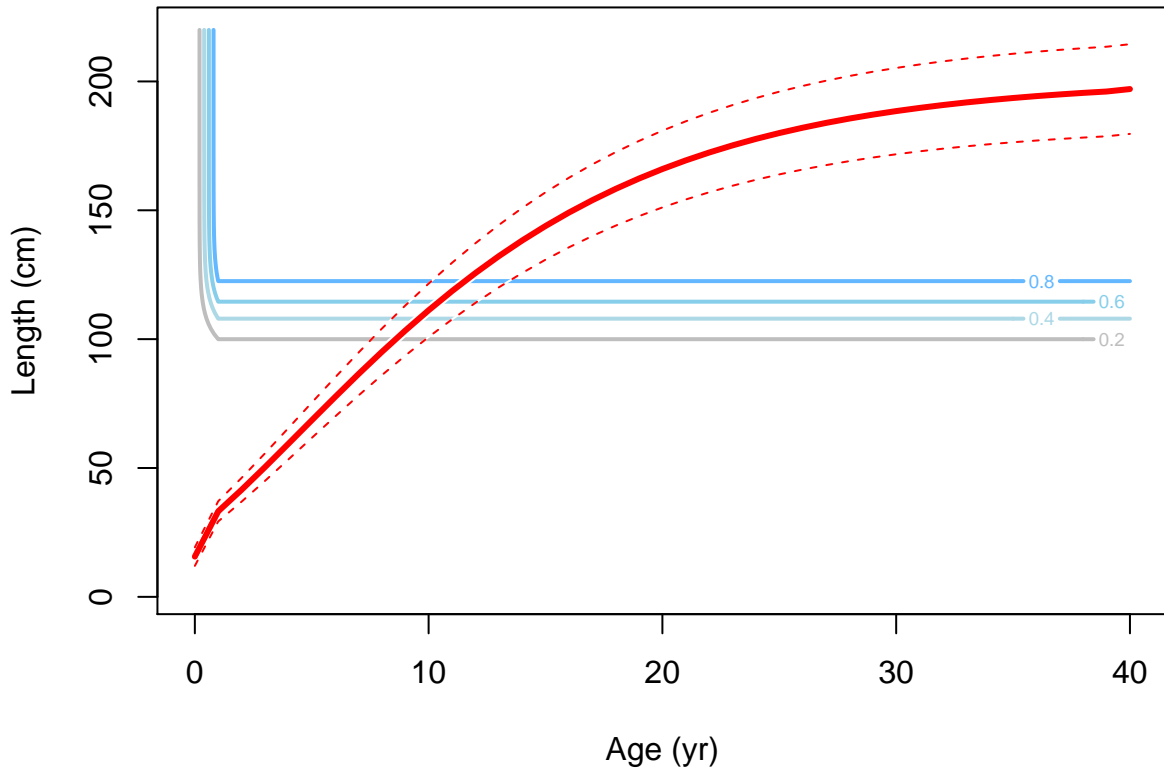
# Female ending year selectivity and growth for F17-LL\_C\_w



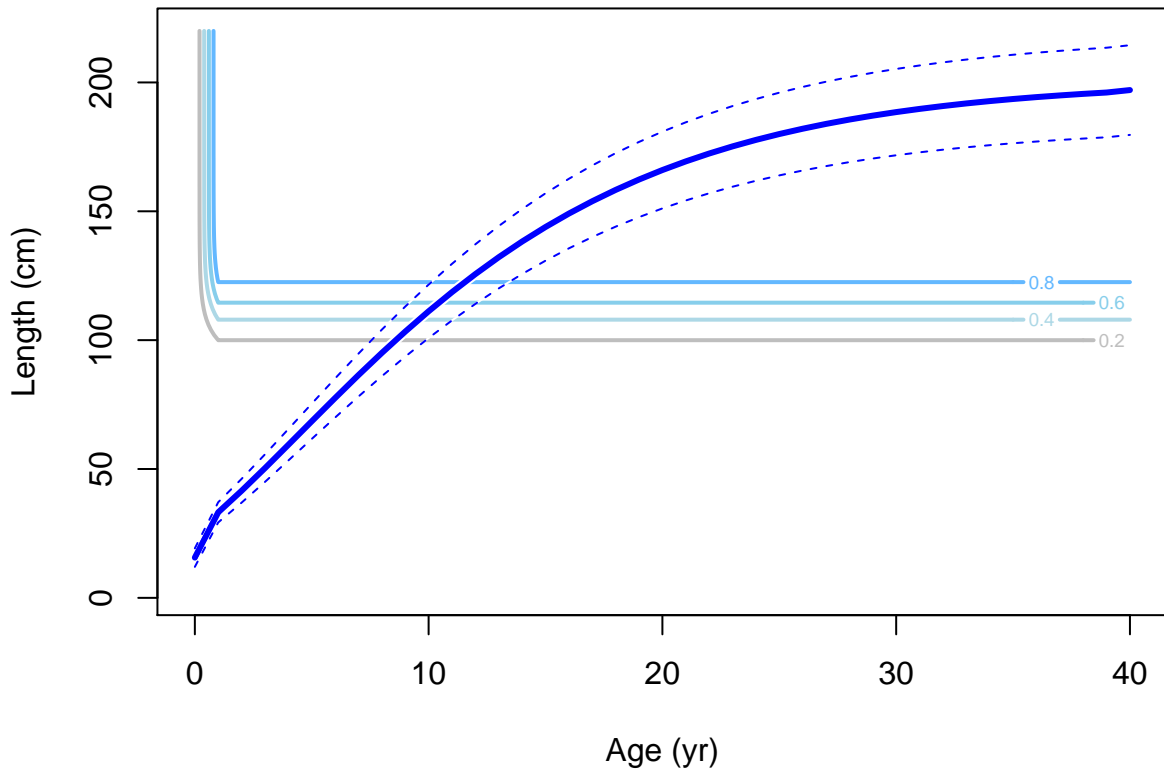
# Male ending year selectivity and growth for F17-LL\_C\_w



## Female ending year selectivity and growth for F18-LL\_S\_w

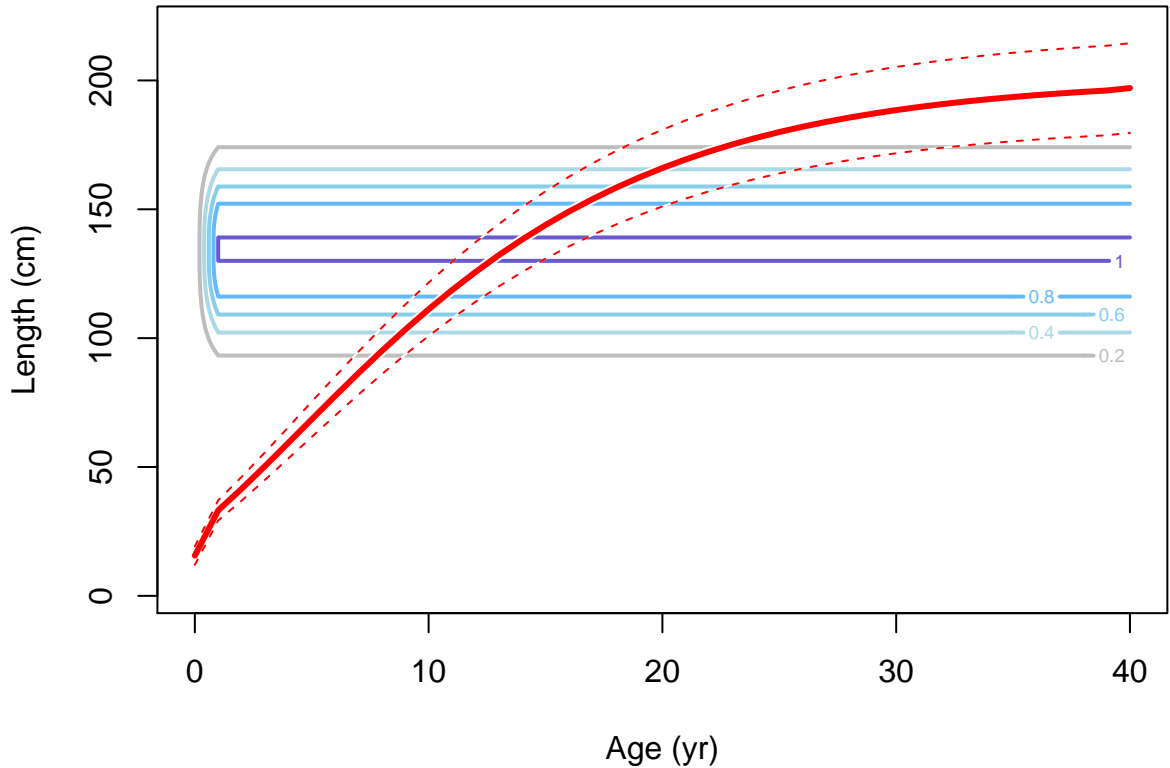


# Male ending year selectivity and growth for F18-LL\_S\_w

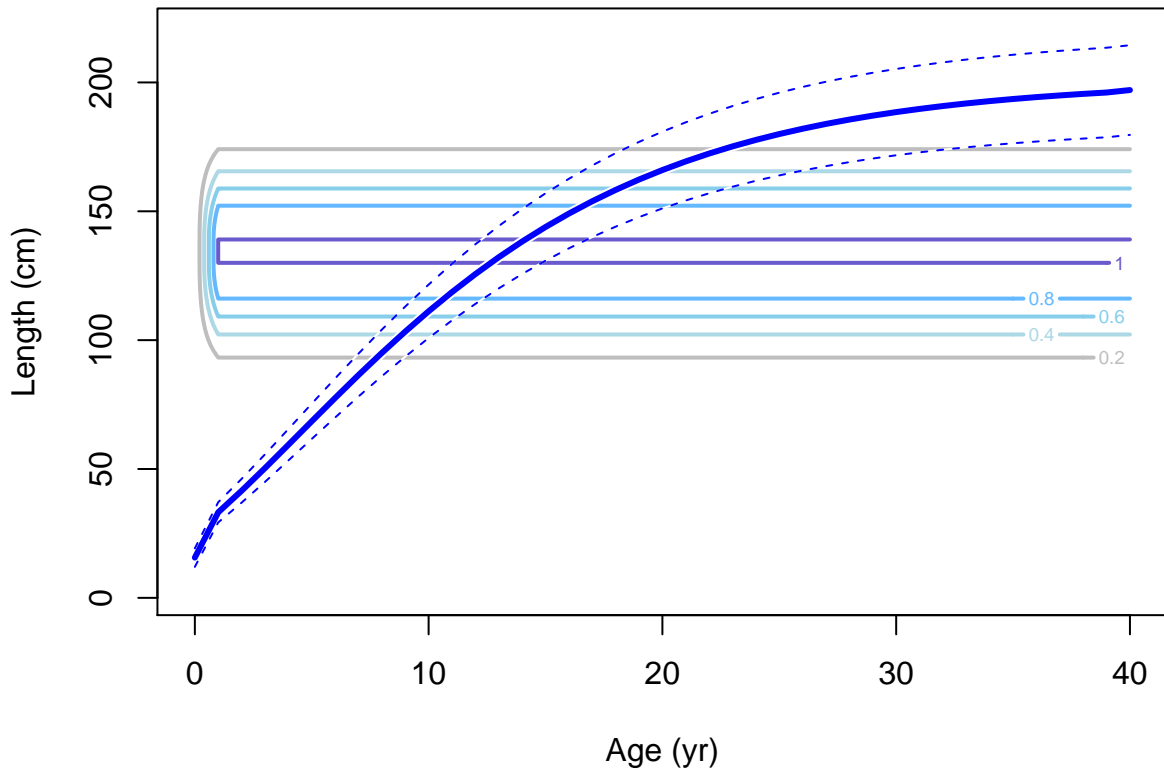




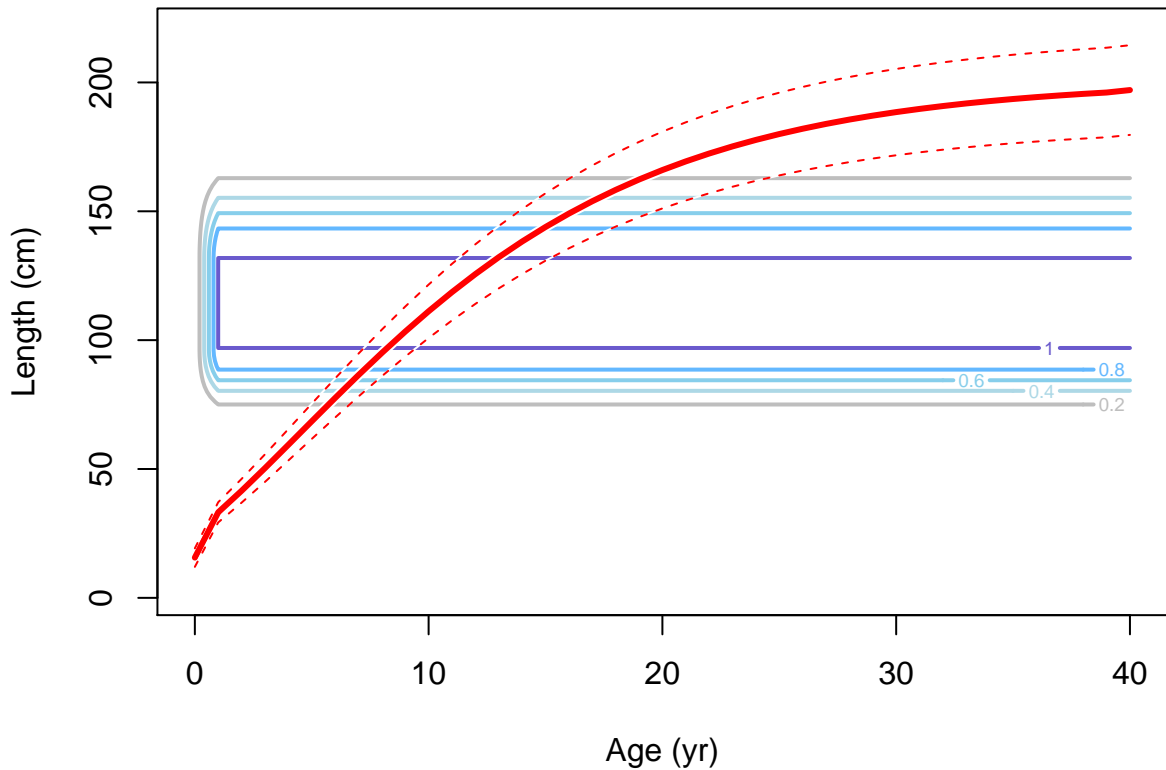
# Female ending year selectivity and growth for F19-LL\_I\_w



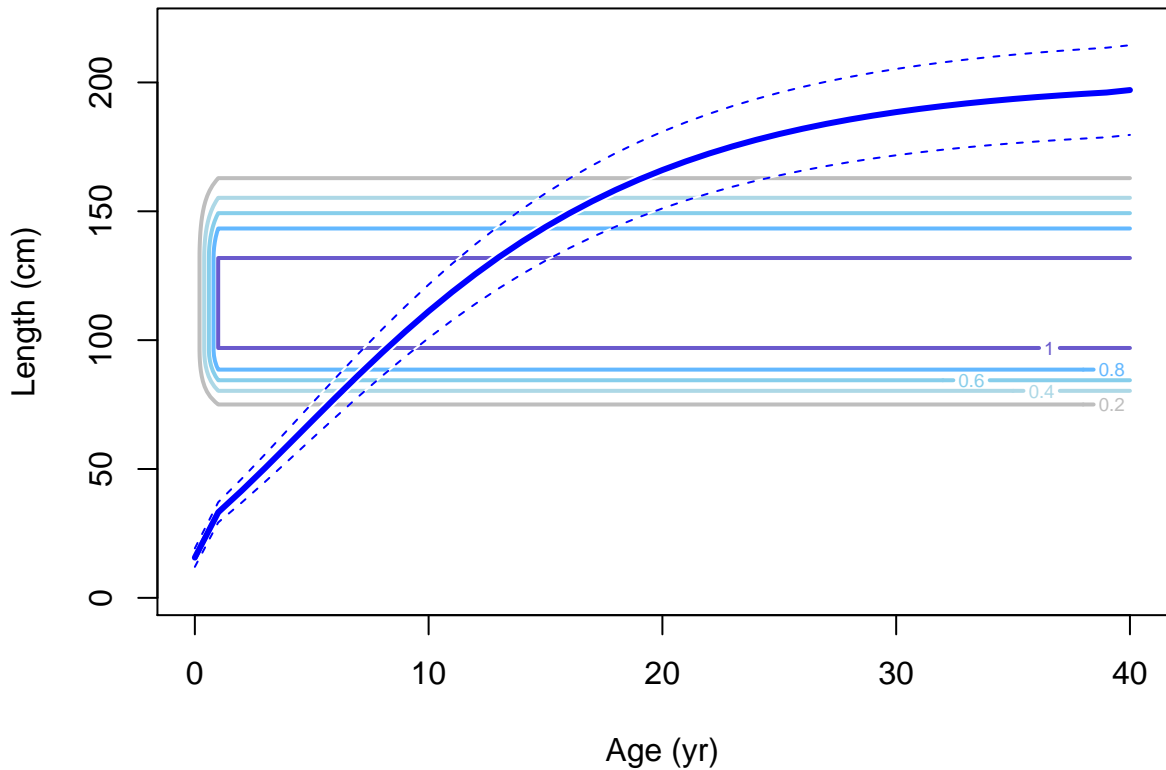
# Male ending year selectivity and growth for F19-LL\_I\_w



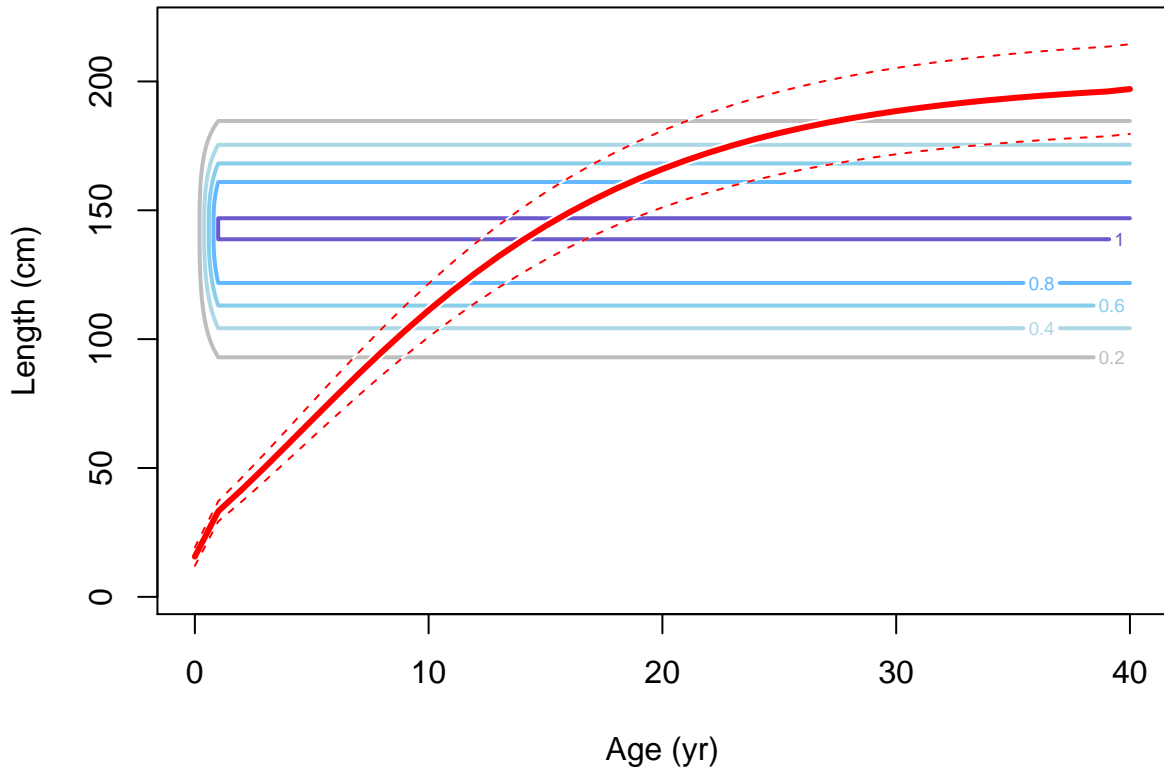
# Female ending year selectivity and growth for S1-LLt\_N\_len



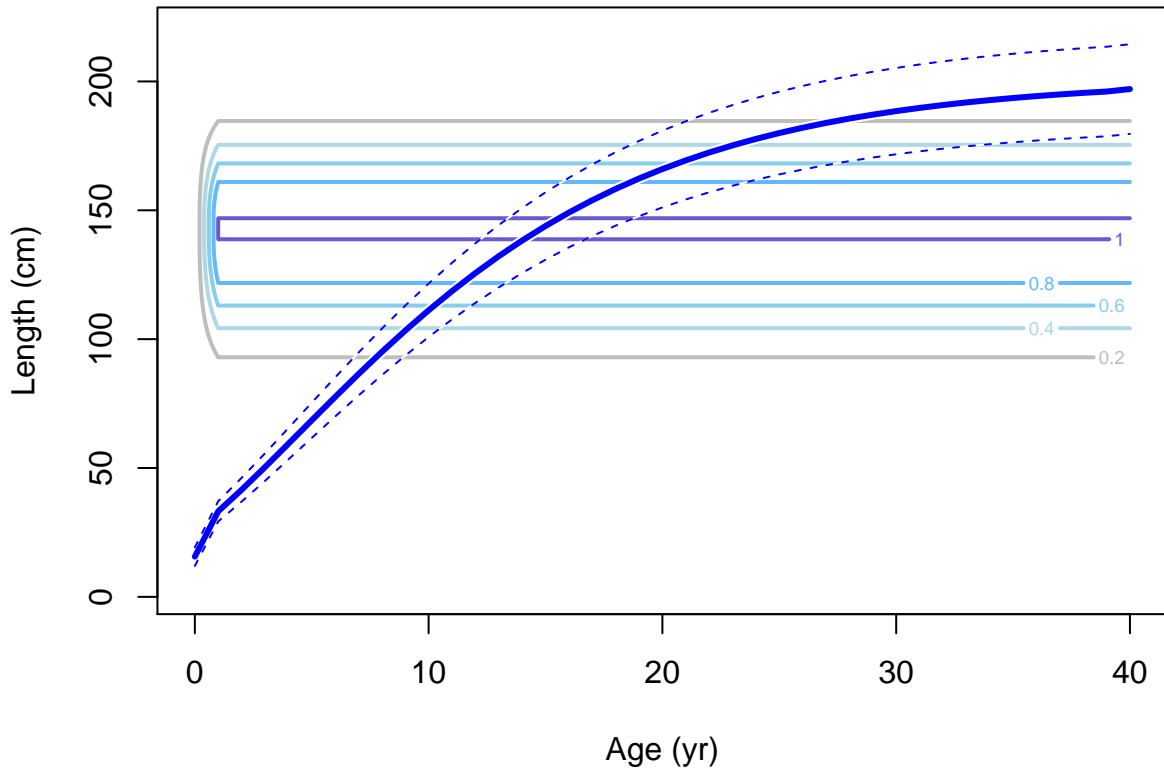
# Male ending year selectivity and growth for S1-LLt\_N\_len



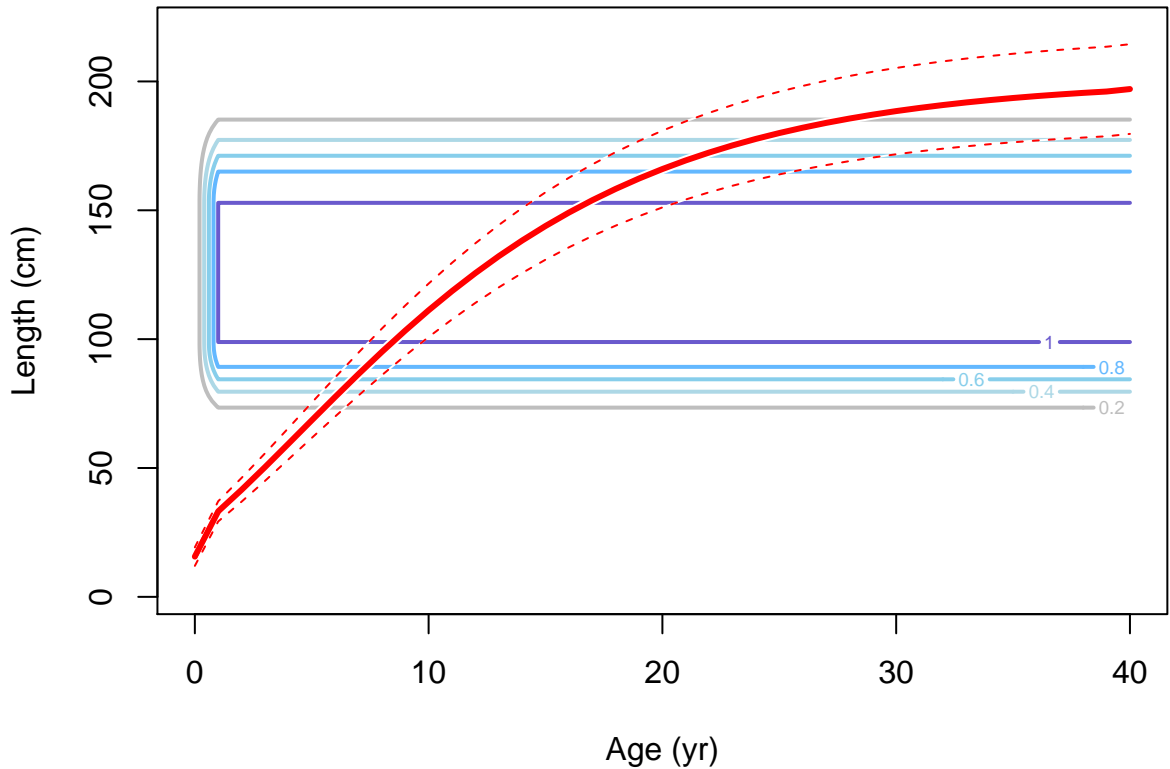
## Female ending year selectivity and growth for S2-LLt\_C\_len



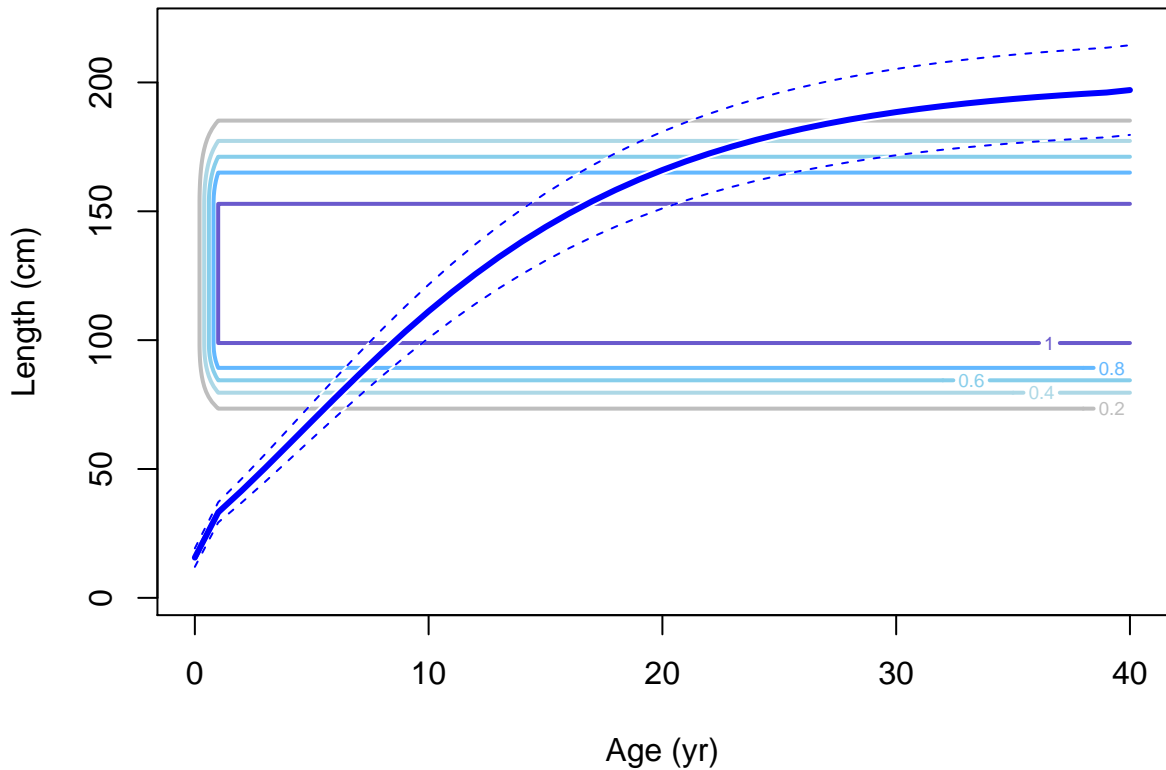
# Male ending year selectivity and growth for S2-LLt\_C\_len



# Female ending year selectivity and growth for S3-LLt\_S\_len

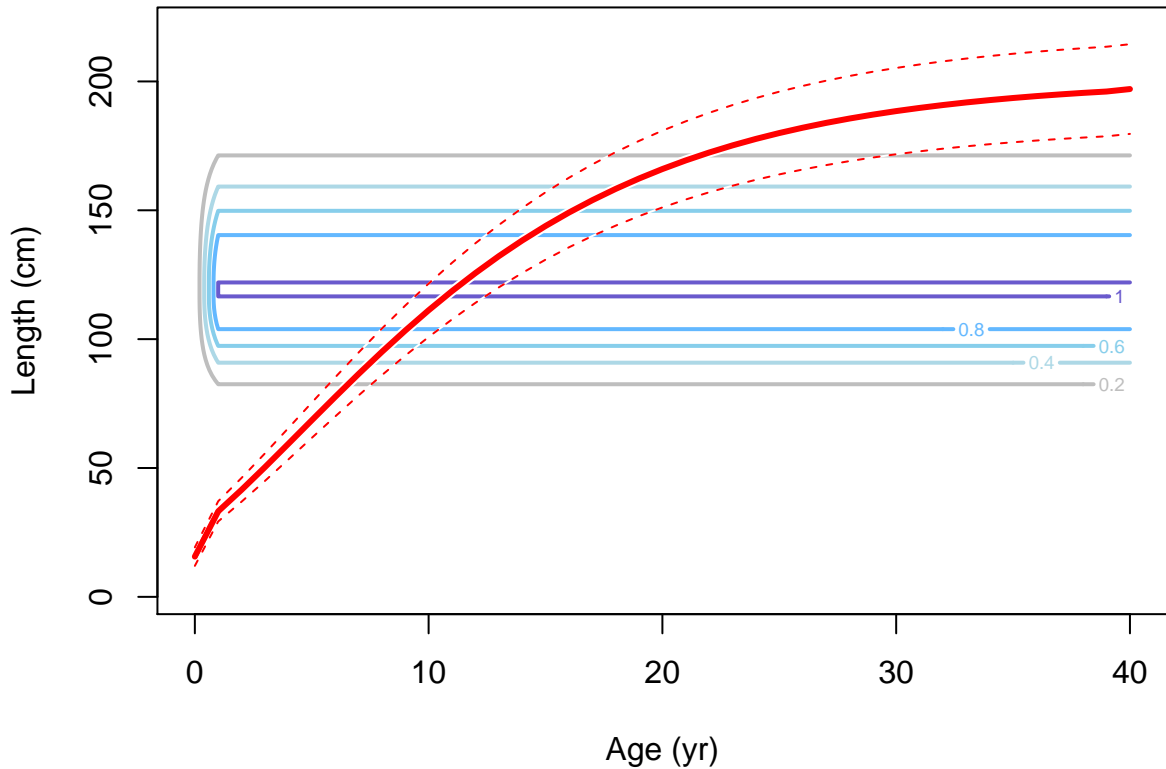


# Male ending year selectivity and growth for S3-LLt\_S\_len

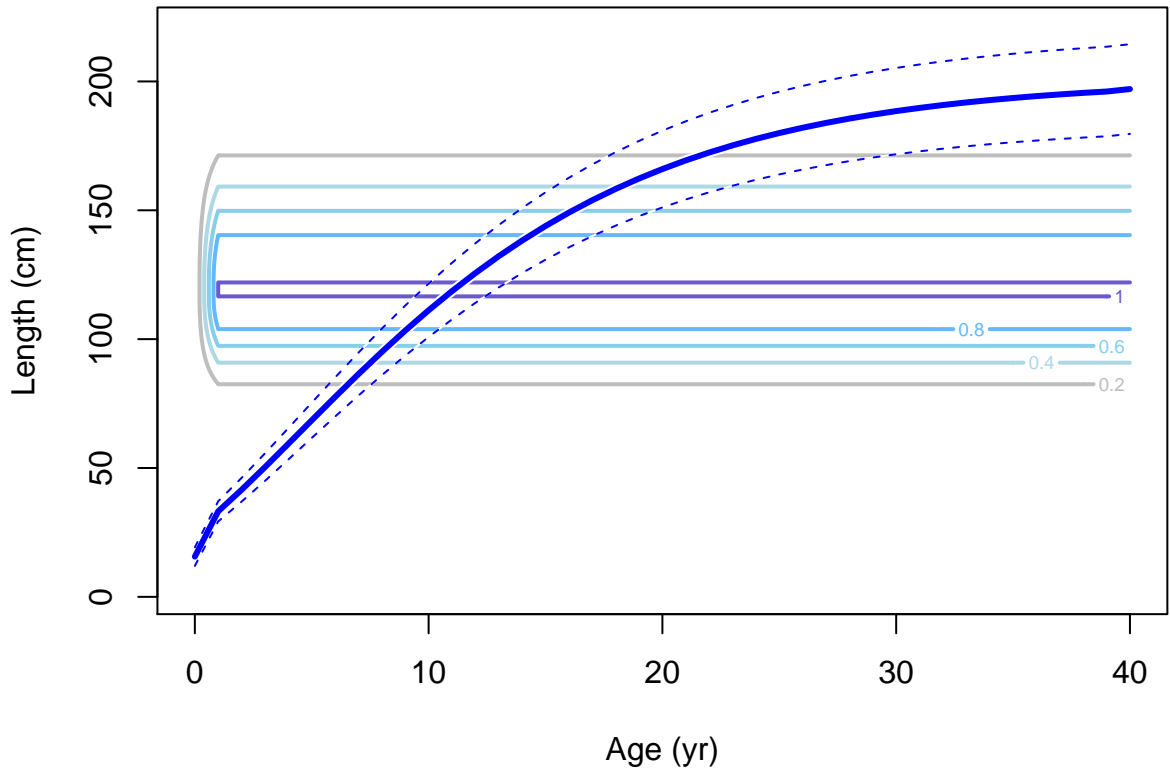




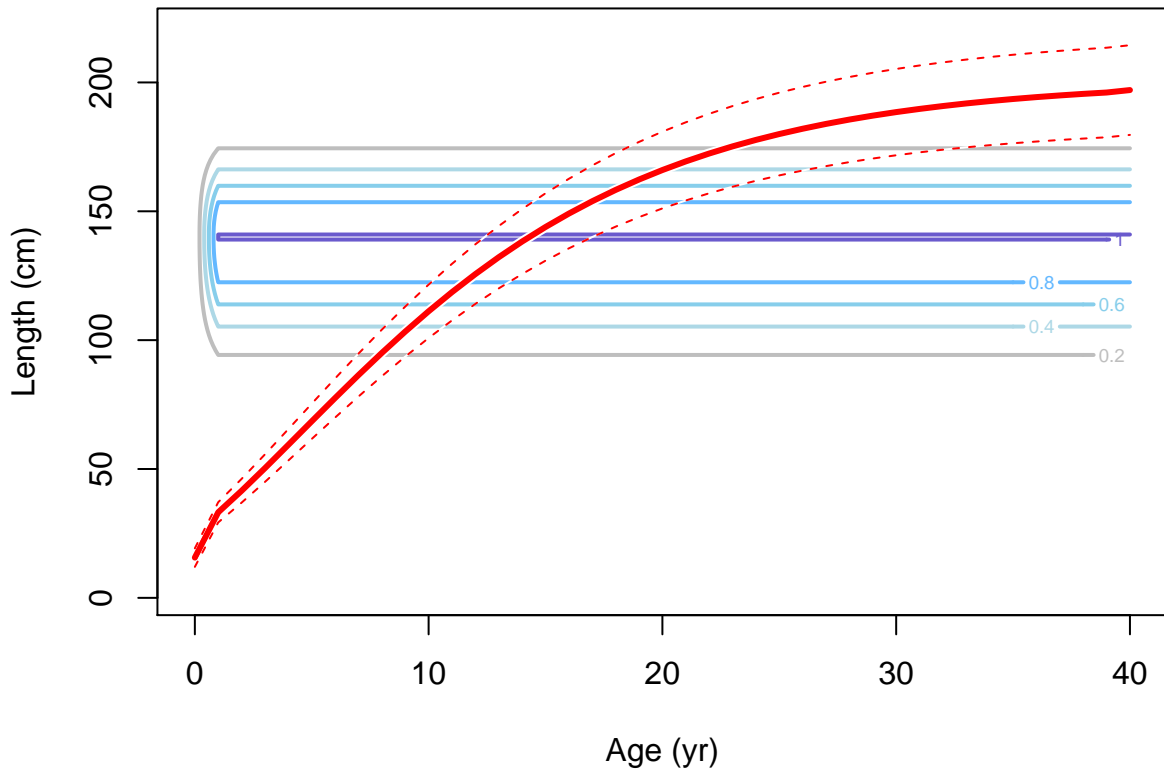
# Female ending year selectivity and growth for S4-LLt\_I\_len



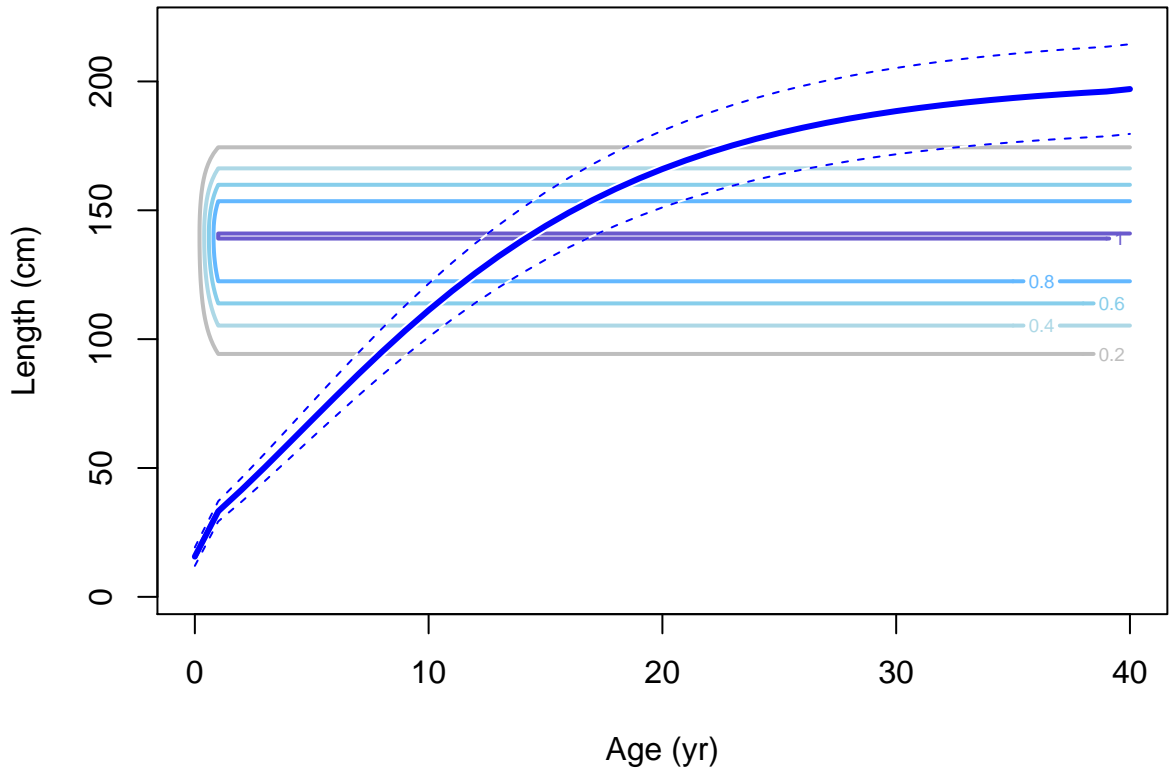
# Male ending year selectivity and growth for S4-LLt\_I\_len



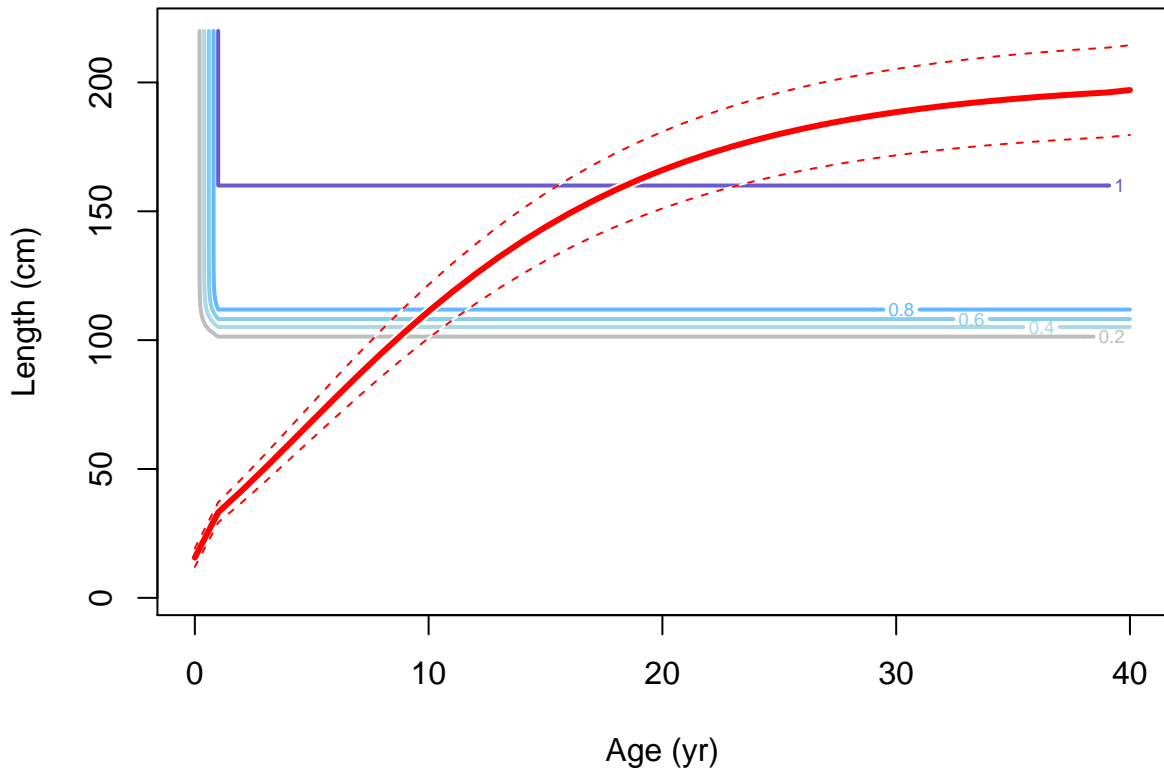
## Female ending year selectivity and growth for S5-LLc\_N\_w



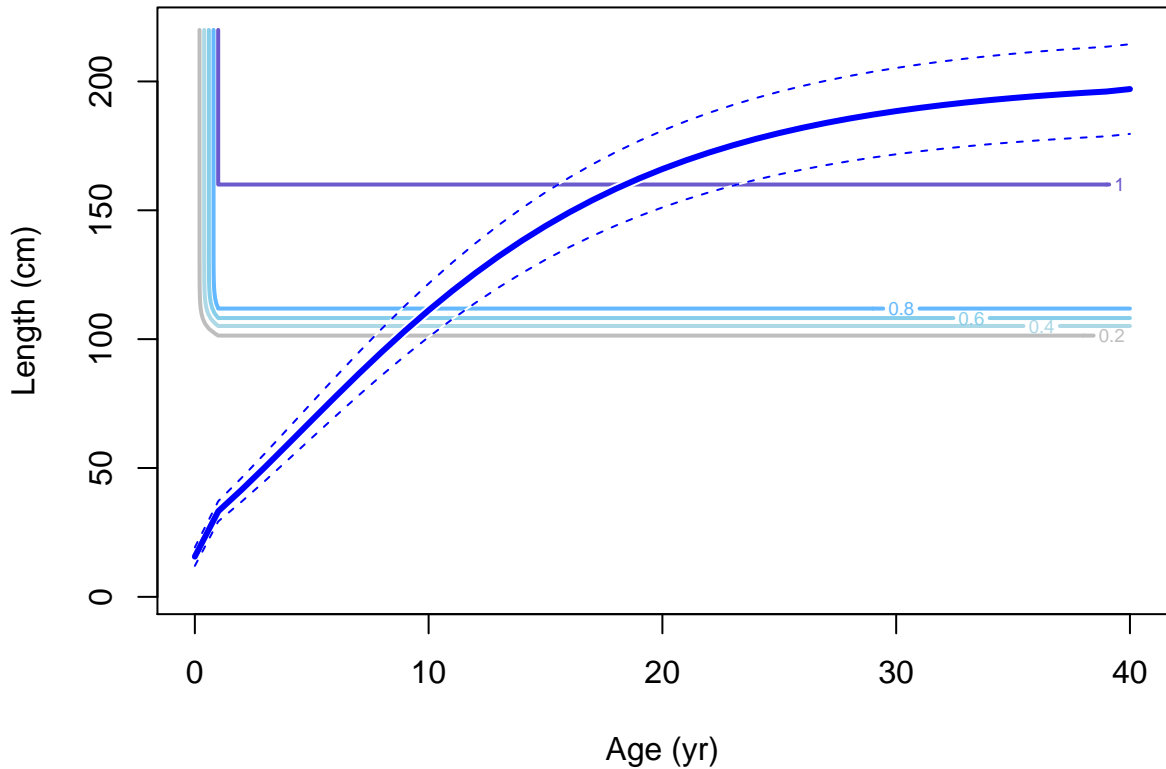
# Male ending year selectivity and growth for S5-LLc\_N\_w



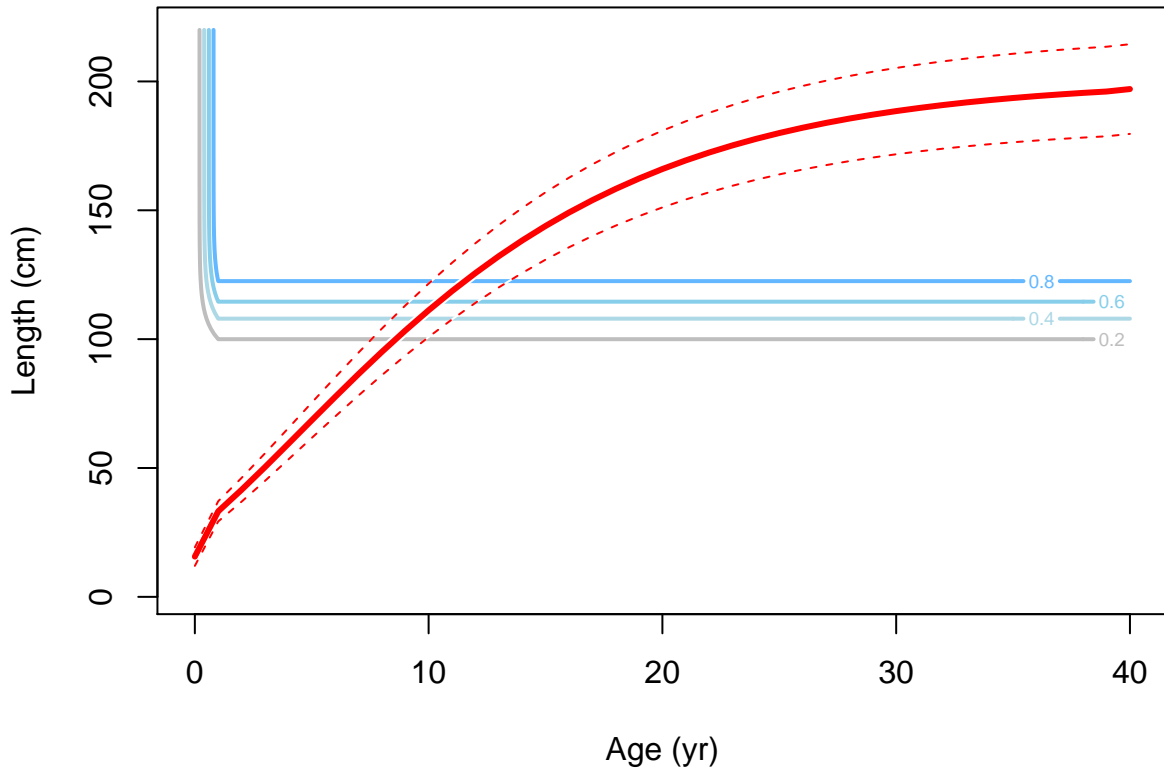
# Female ending year selectivity and growth for S6-LLc\_C\_w



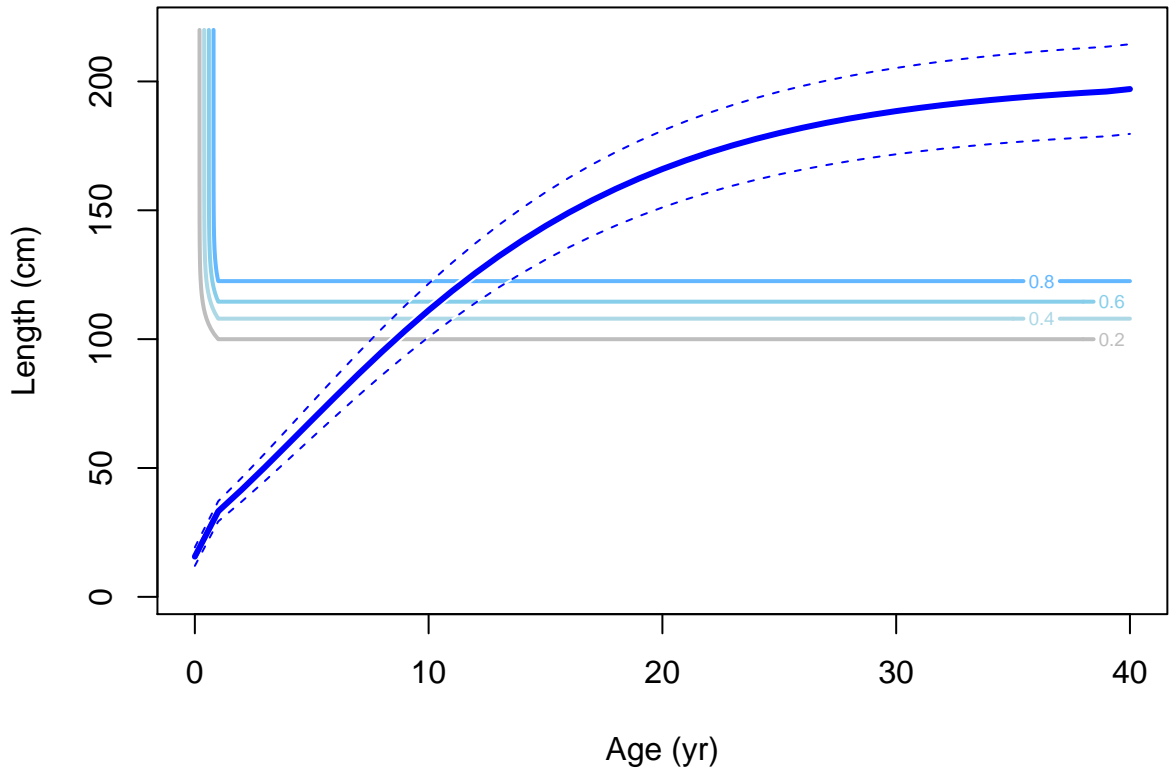
# Male ending year selectivity and growth for S6-LLc\_C\_w



# Female ending year selectivity and growth for S7-LLc\_S\_w

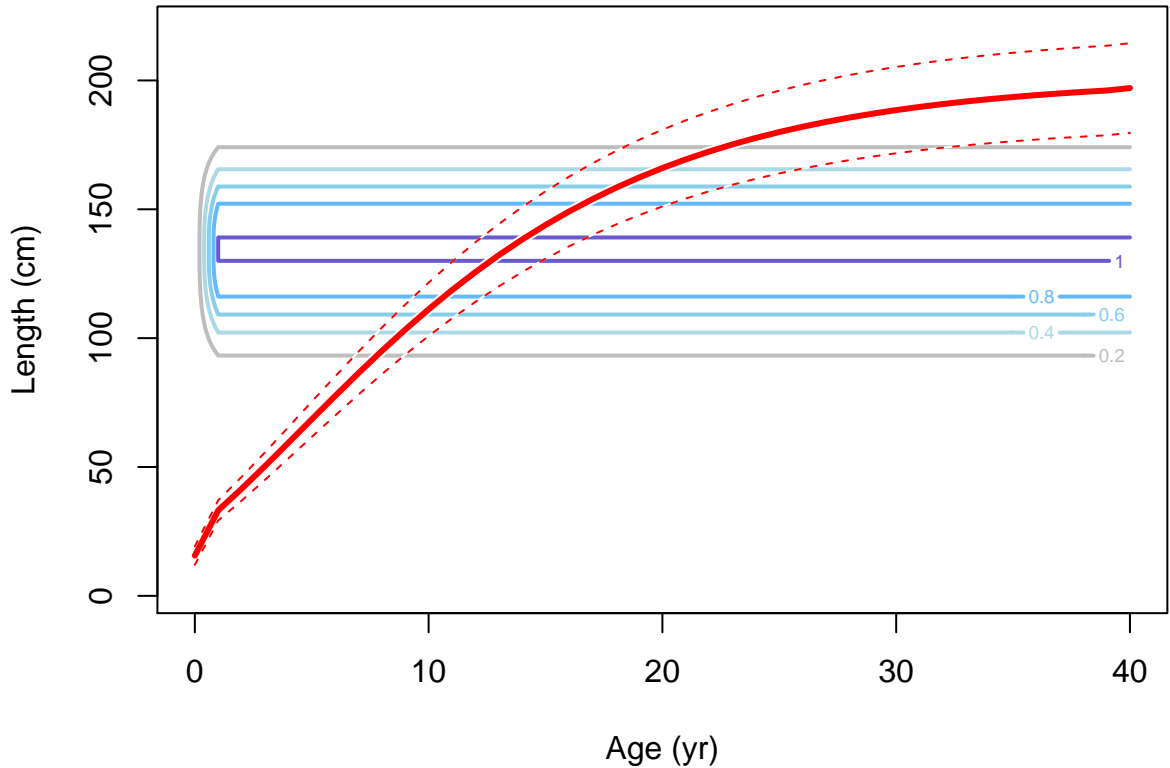


# Male ending year selectivity and growth for S7-LLc\_S\_w

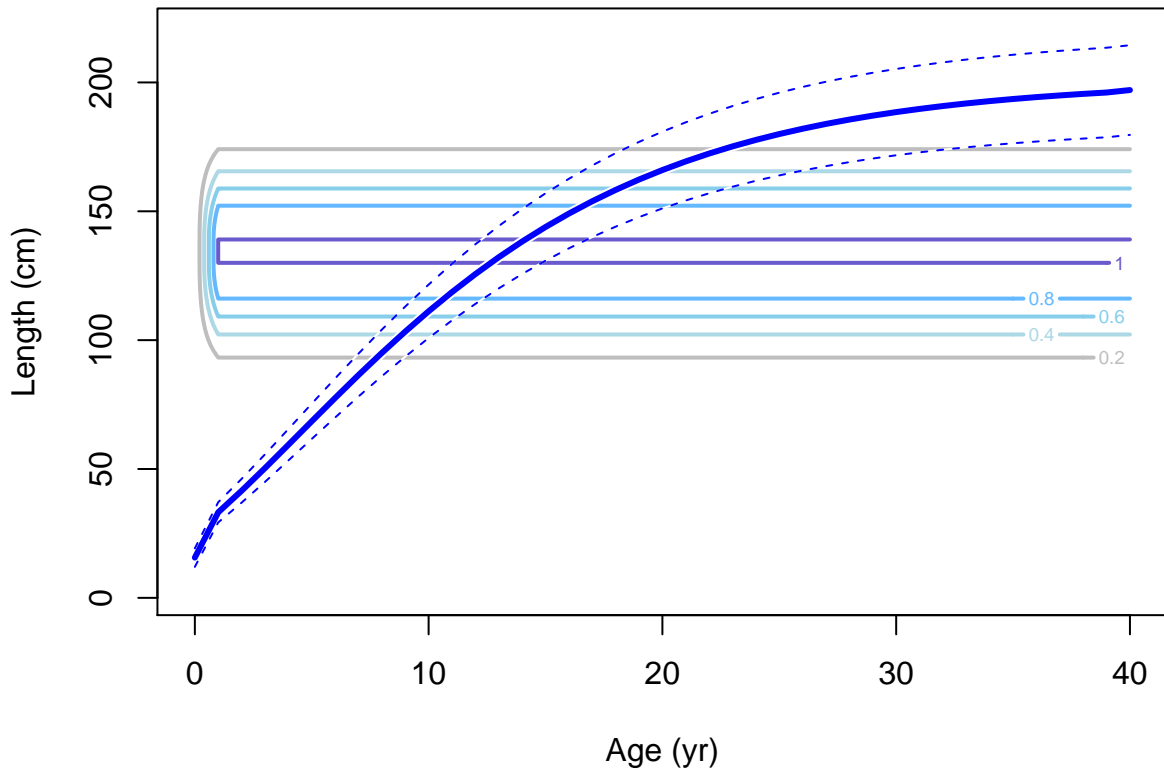




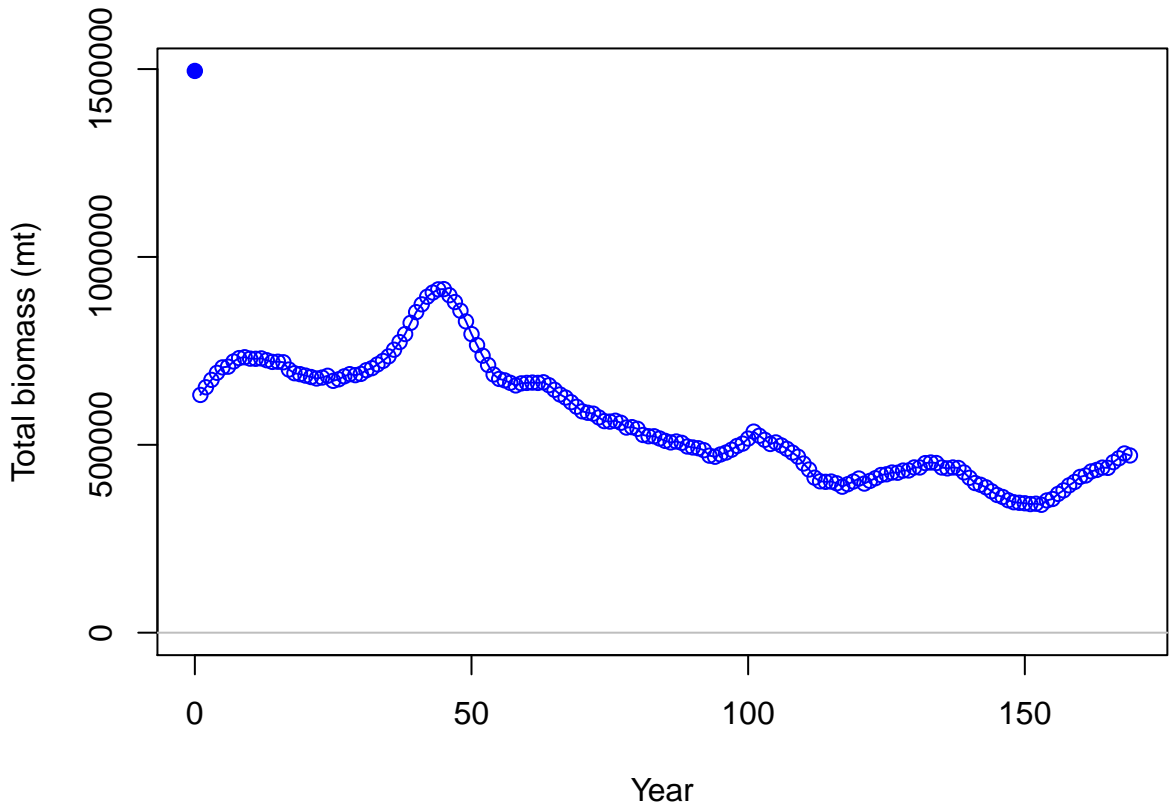
# Female ending year selectivity and growth for S8-LLc\_I\_w



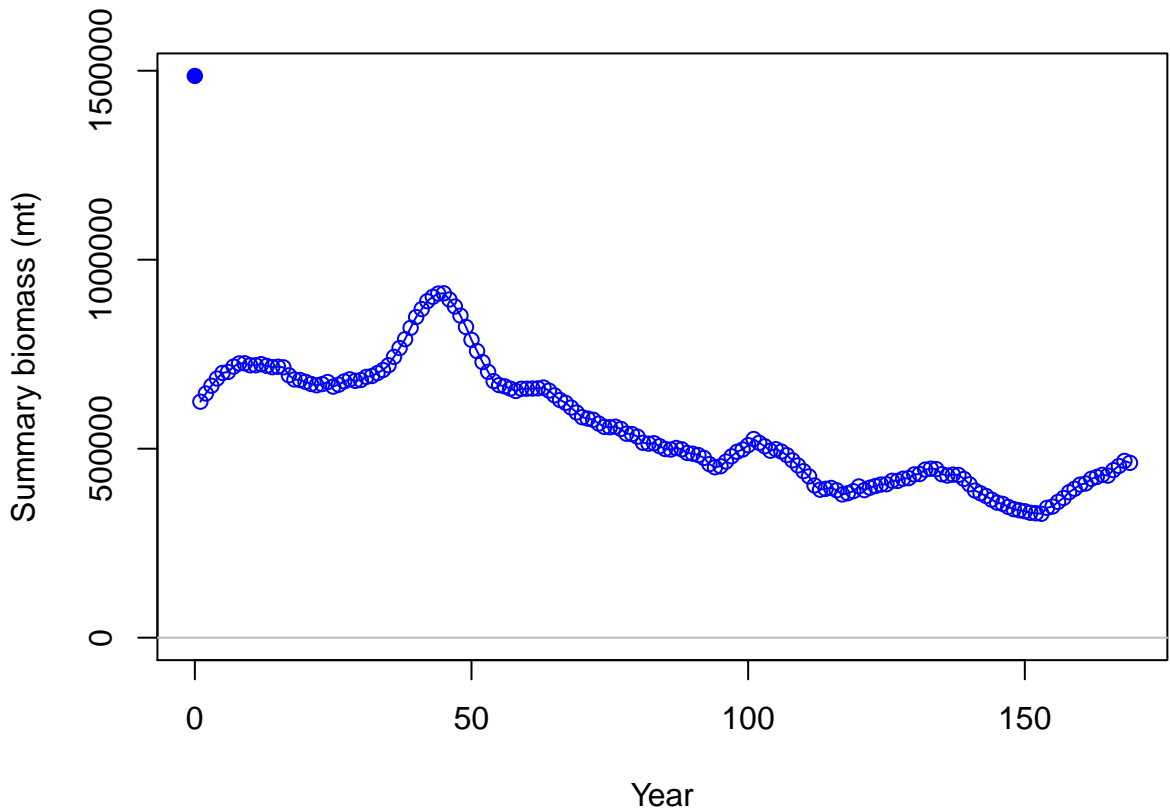
# Male ending year selectivity and growth for S8-LLc\_I\_w



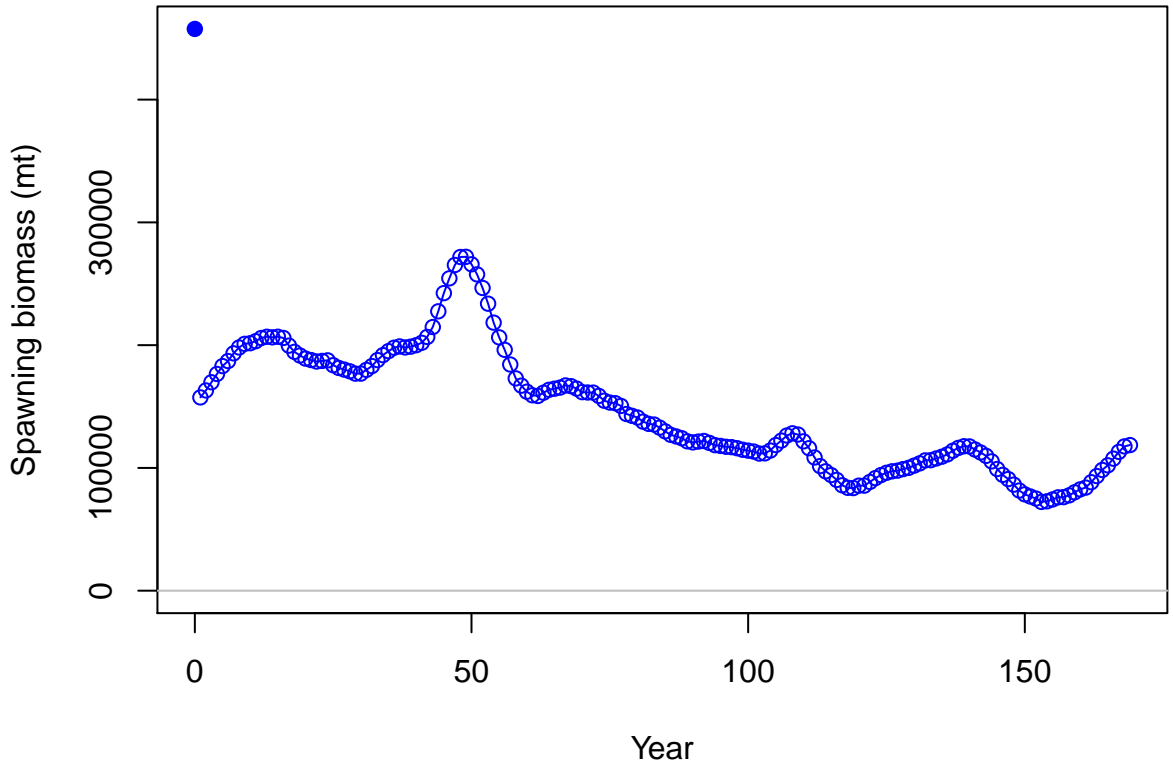
# Total biomass (mt)



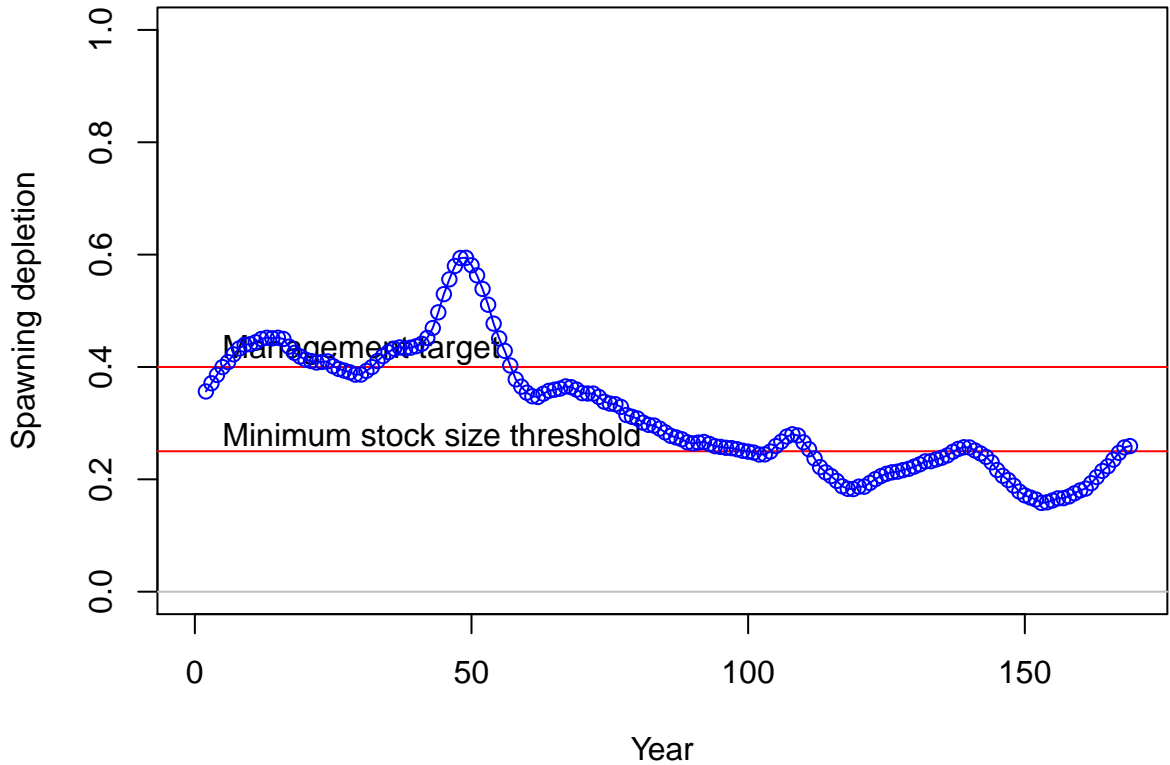
# Summary biomass (mt)



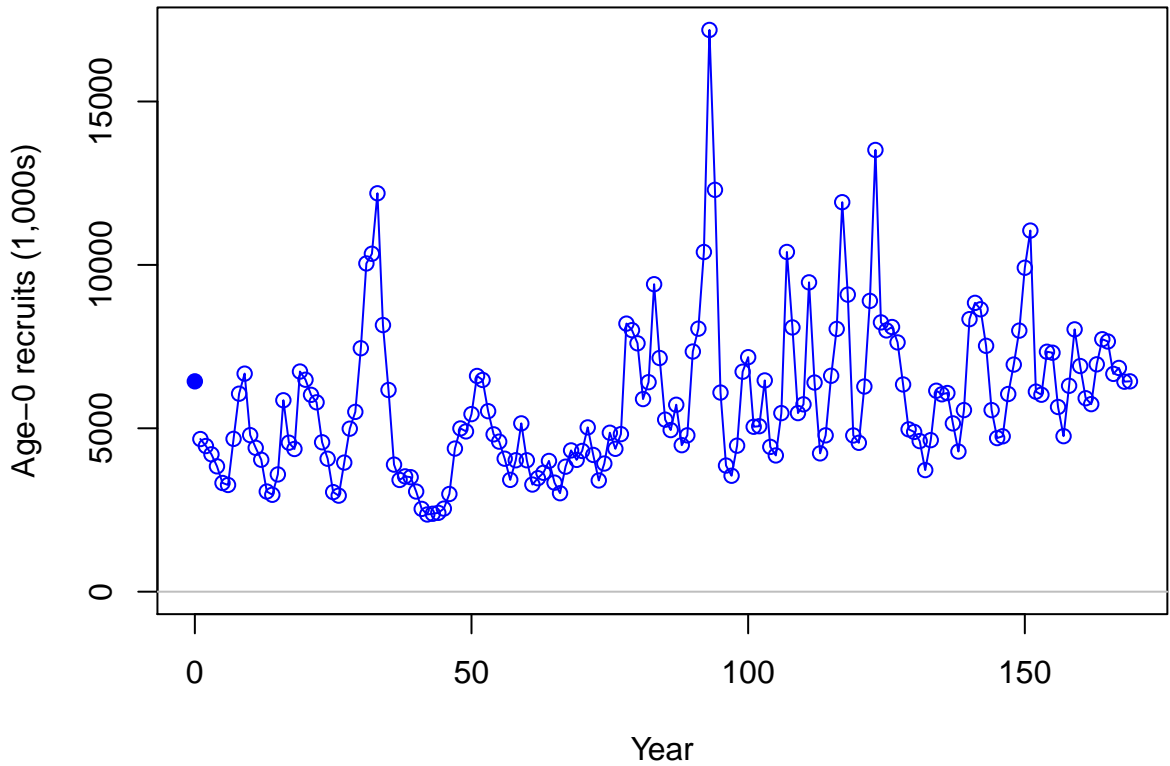
## Spawning biomass (mt)



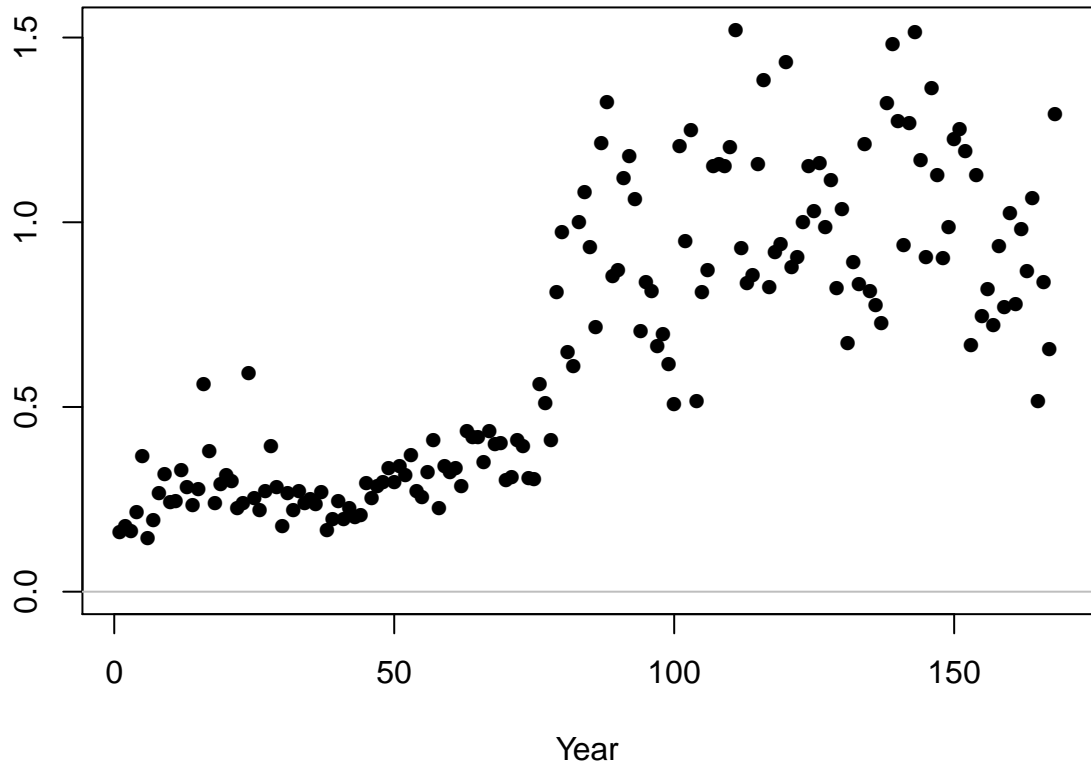
# Spawning depletion



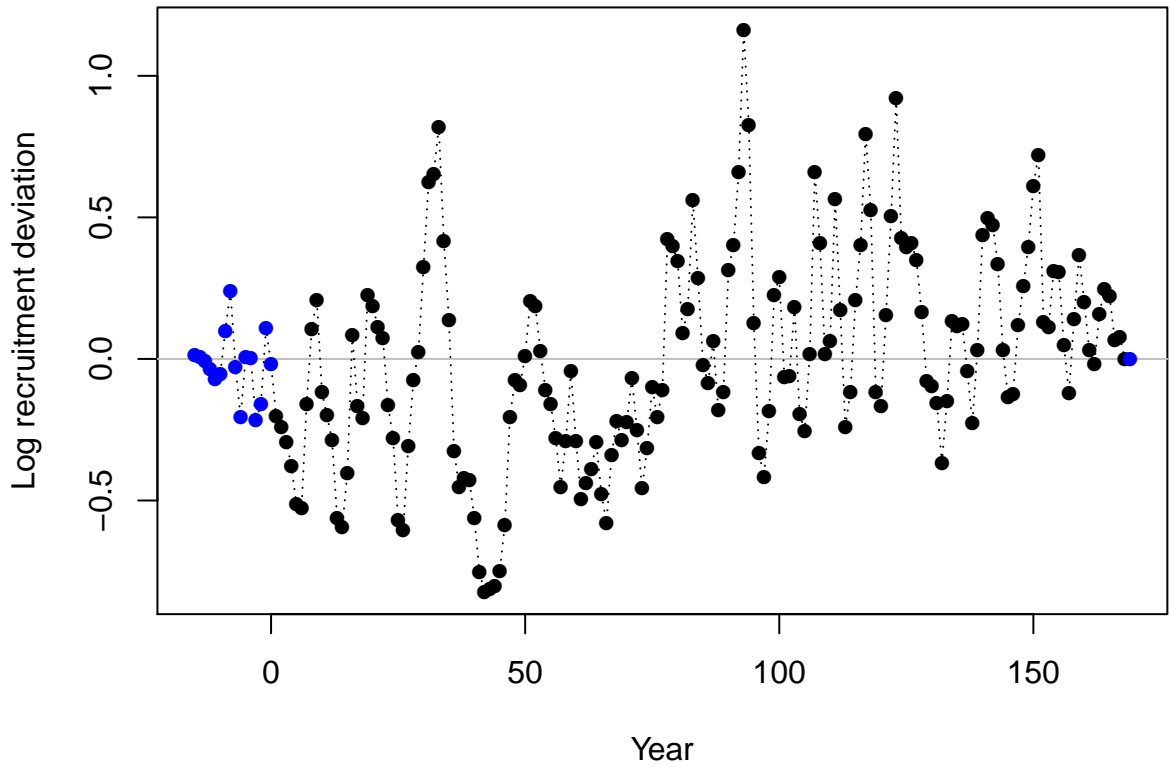
### Age-0 recruits (1,000s)

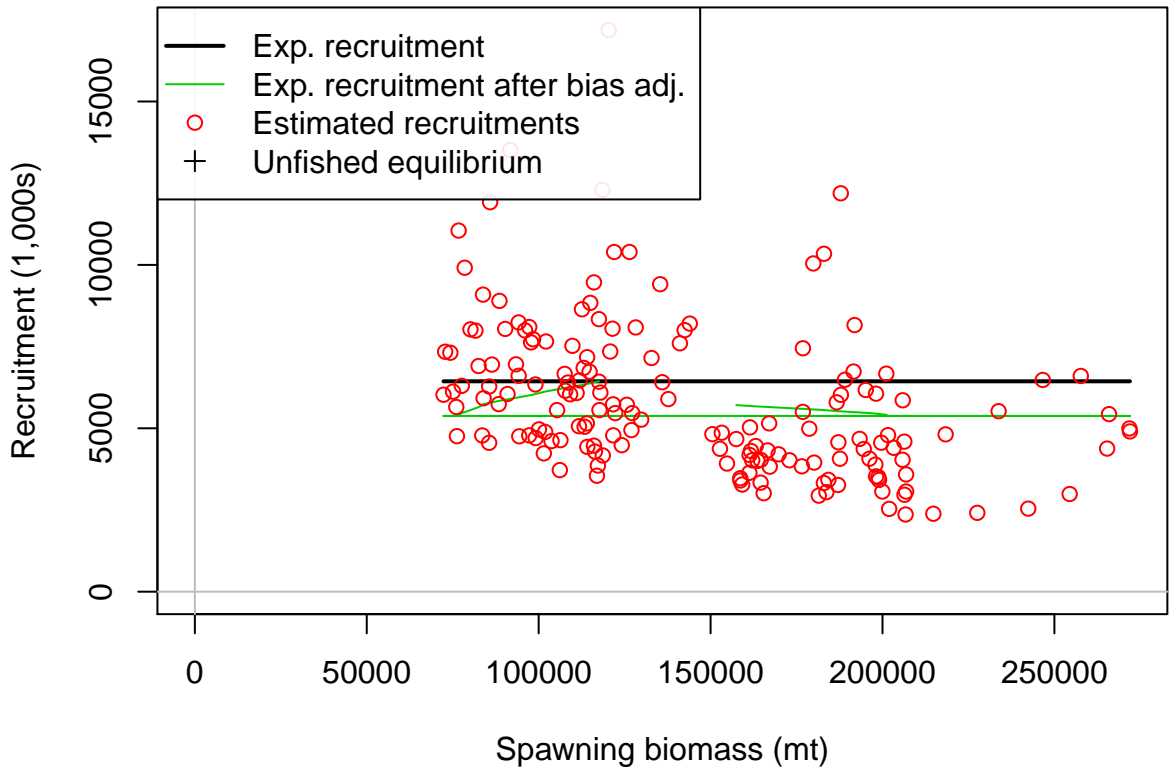


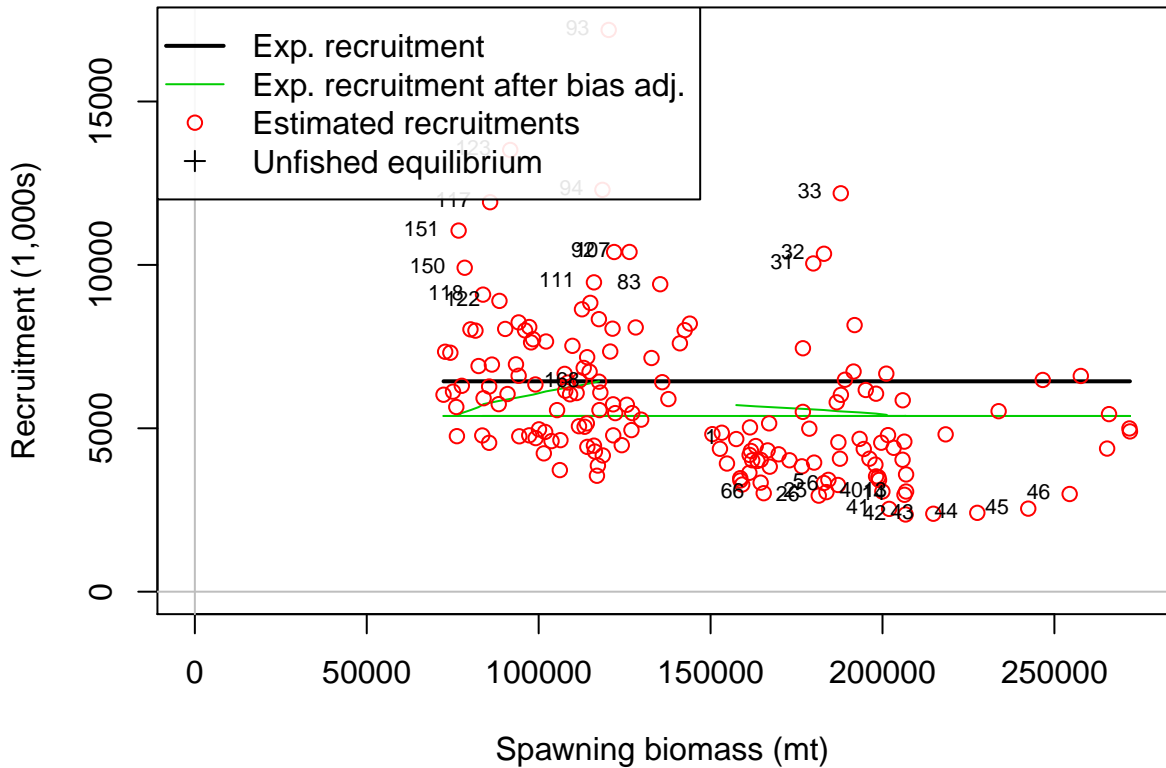
Summary Fishing Mortality







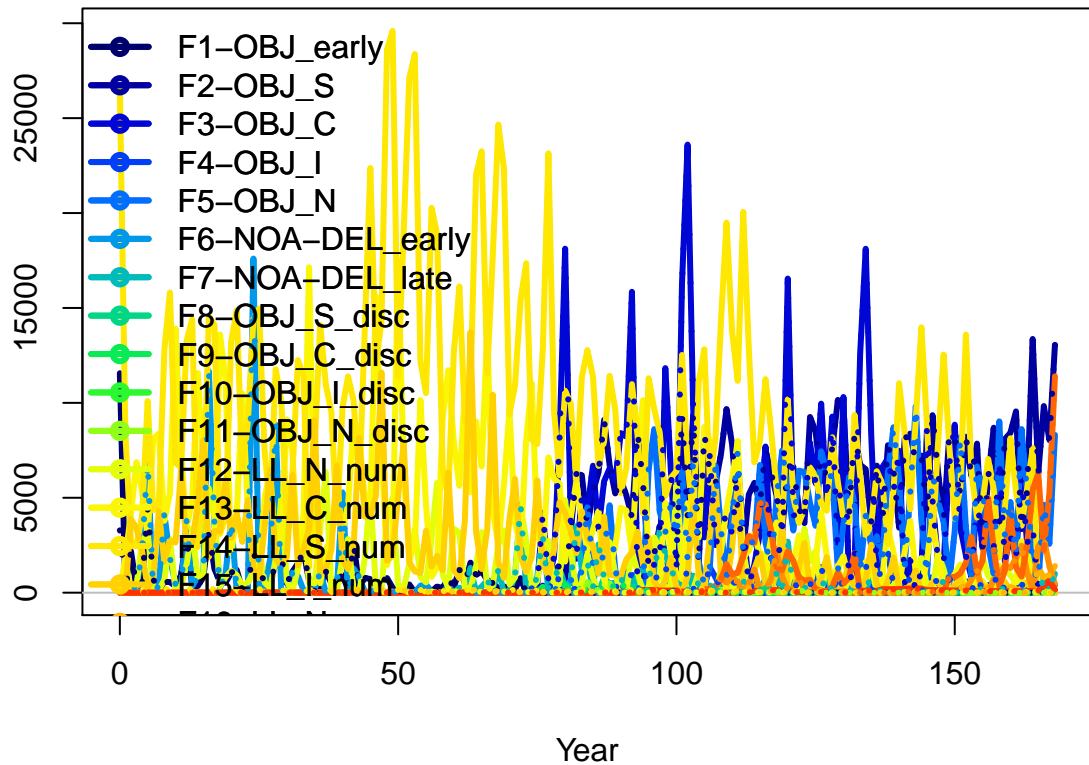


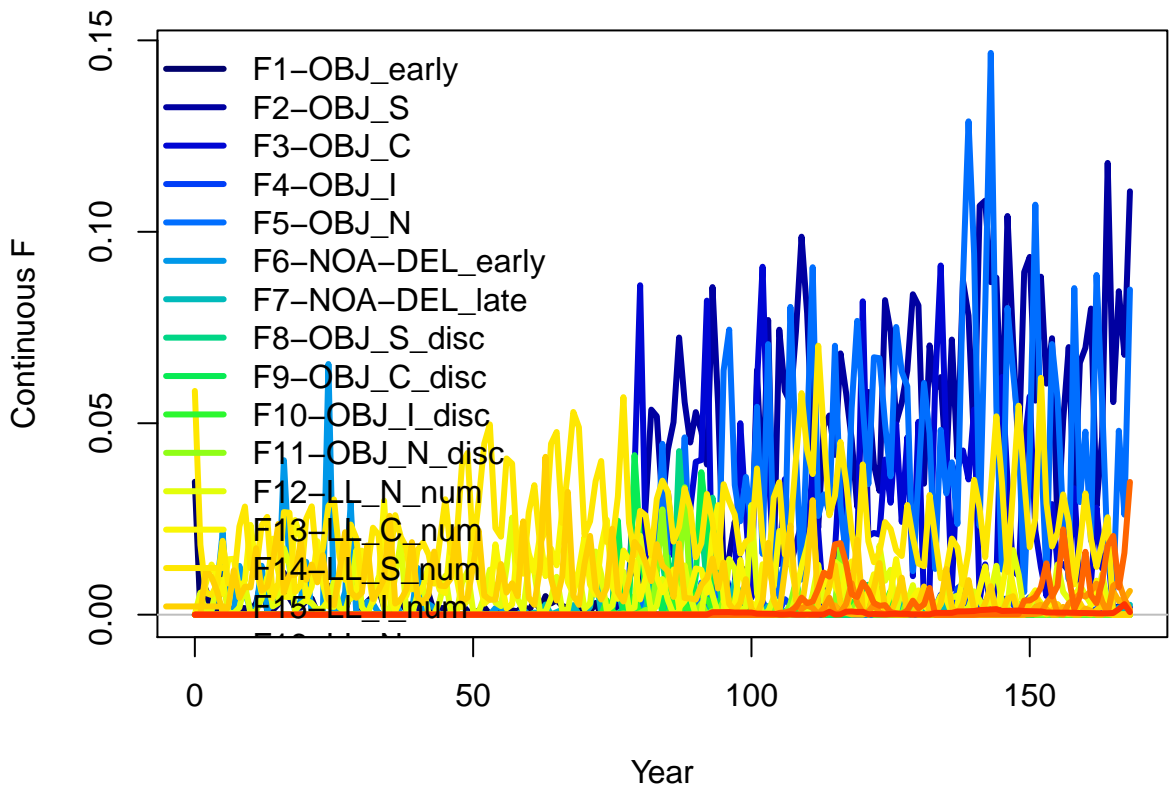


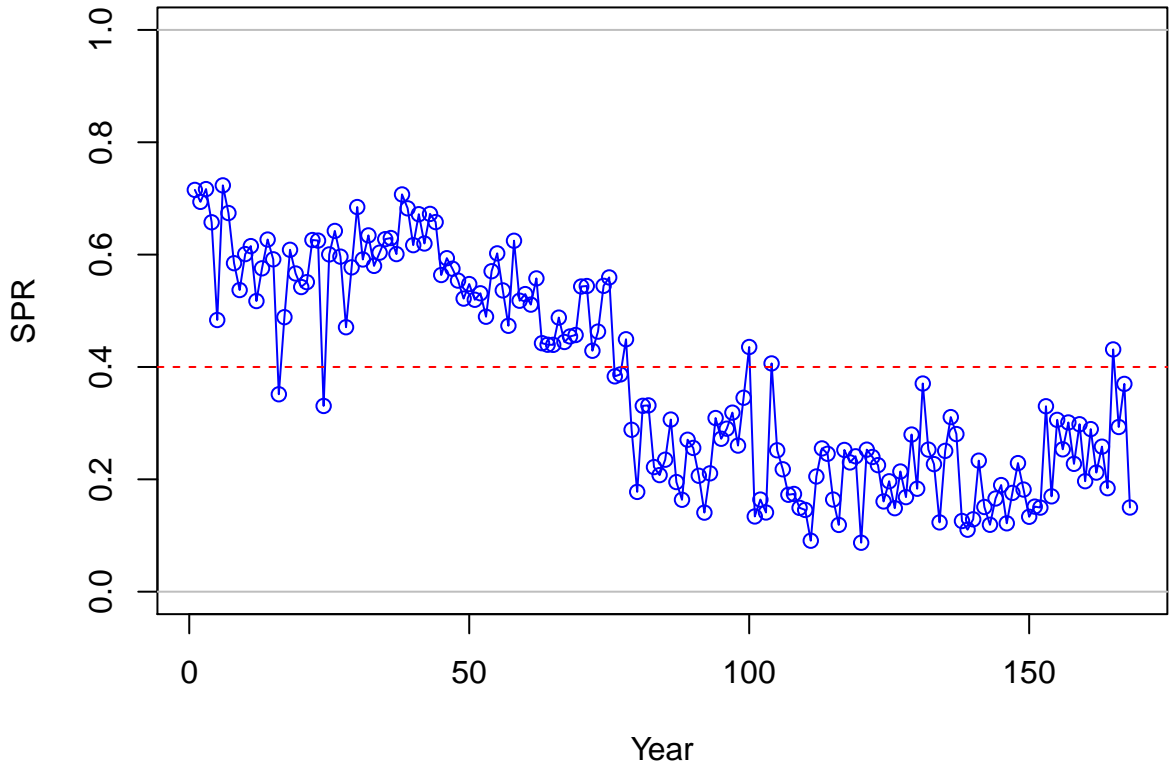




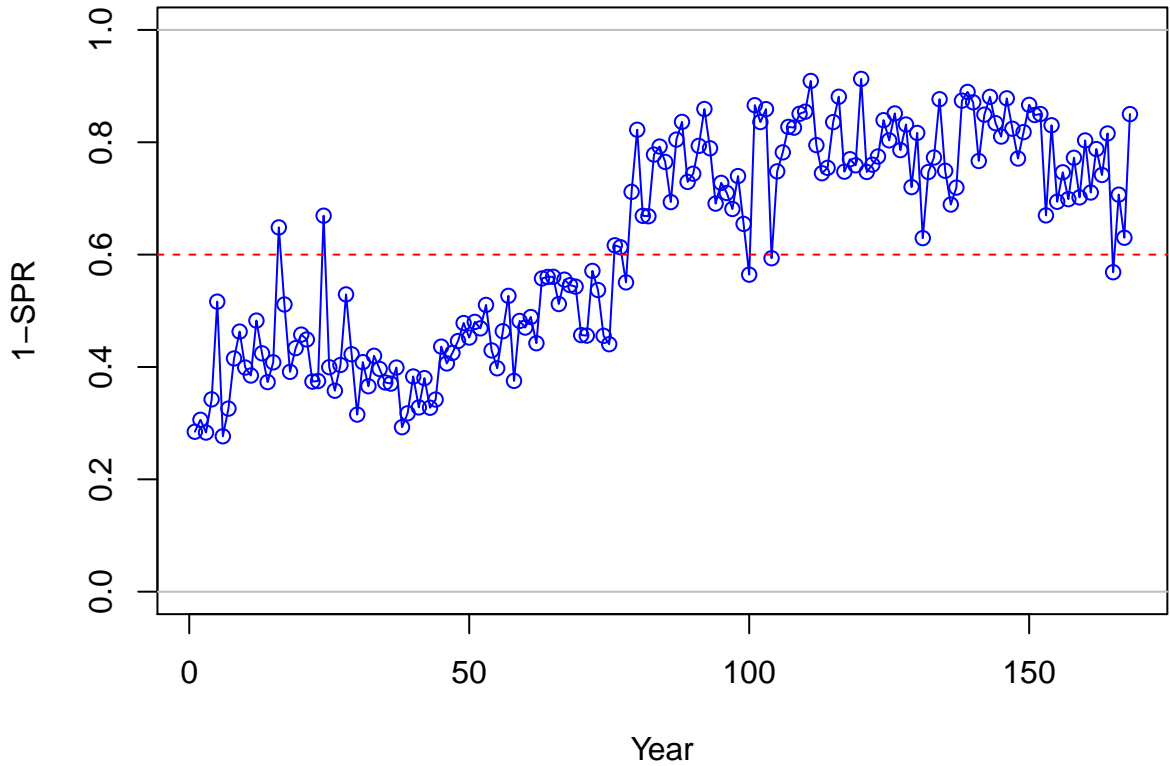
Observed and expected Landings (mt)

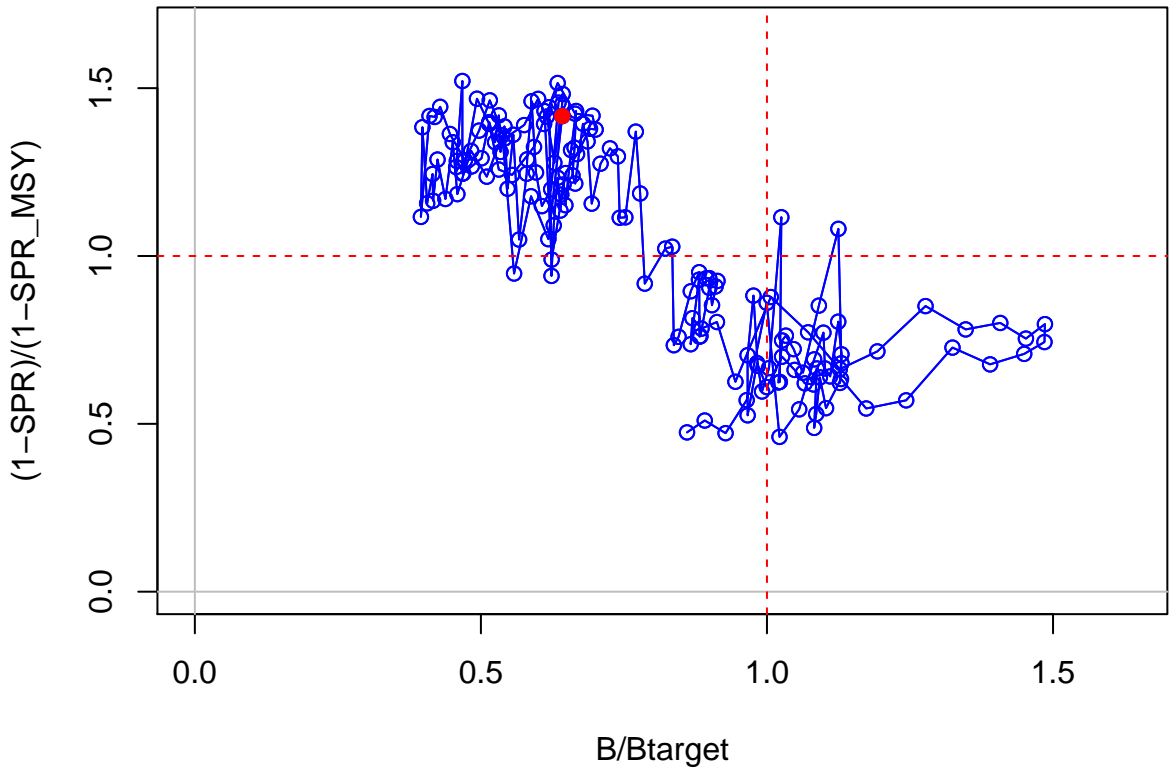




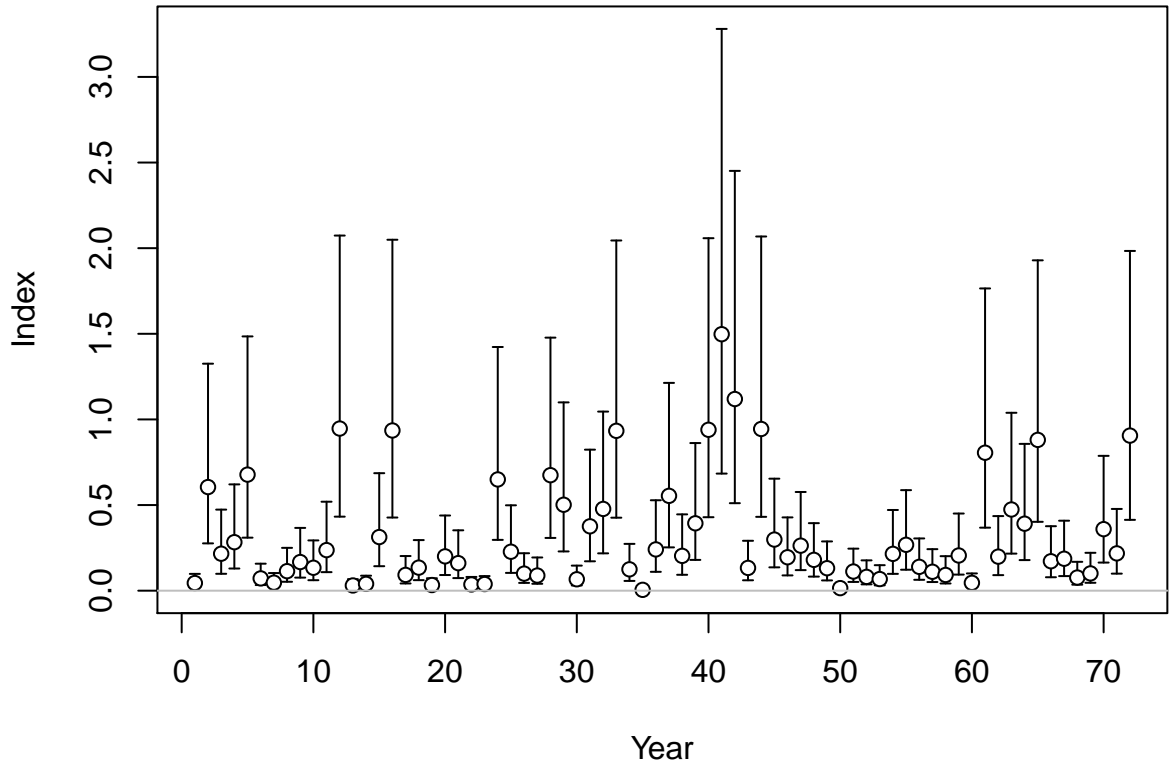




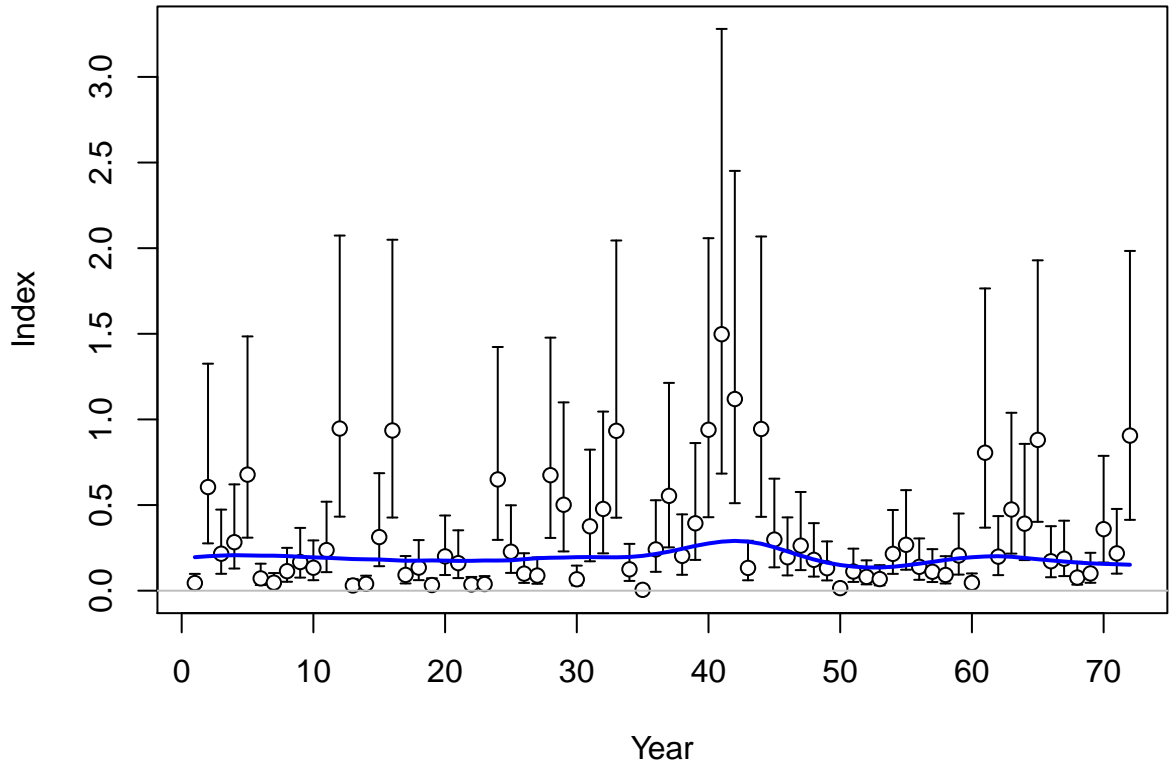




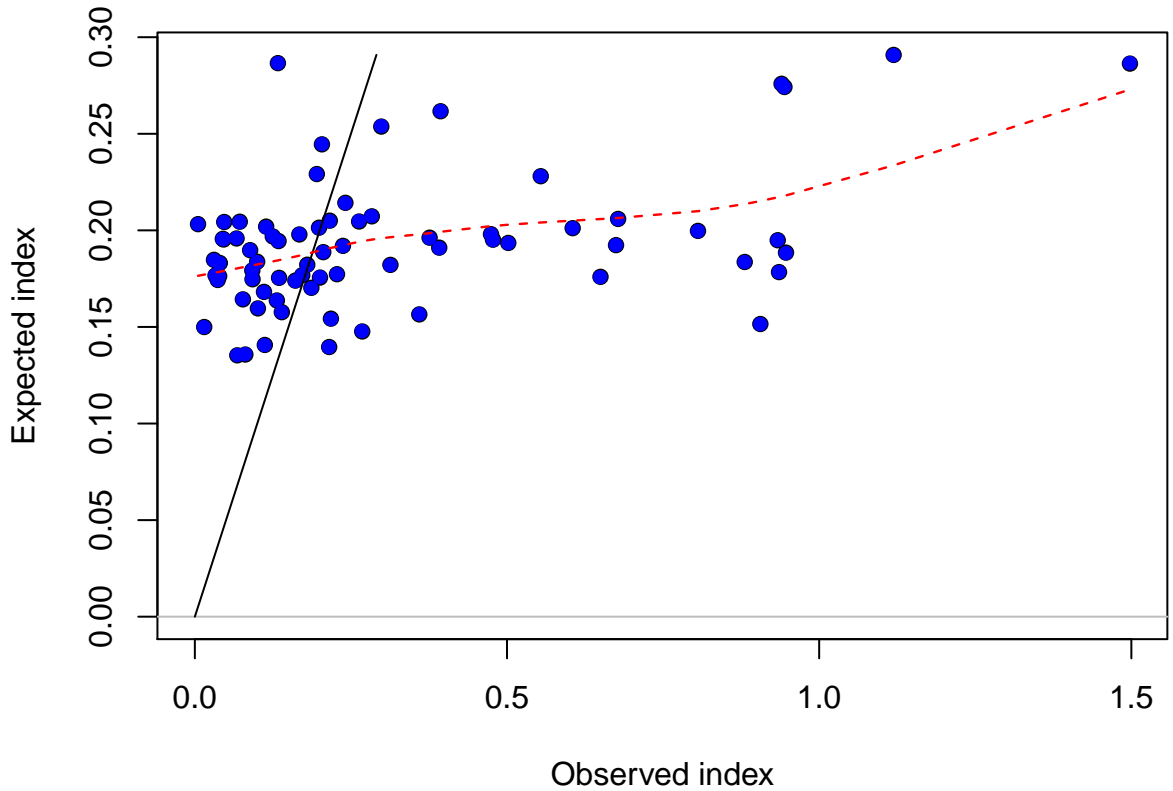
Index F1-Obj\_early



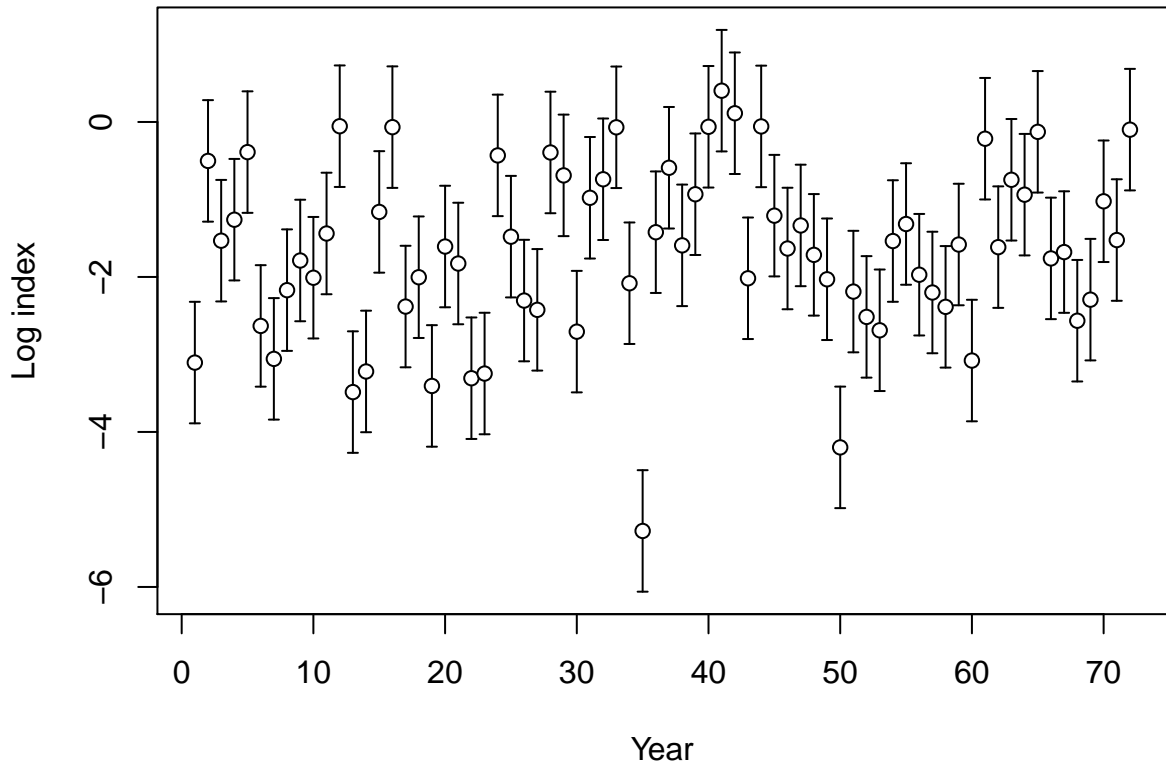
Index F1-OBJ\_early



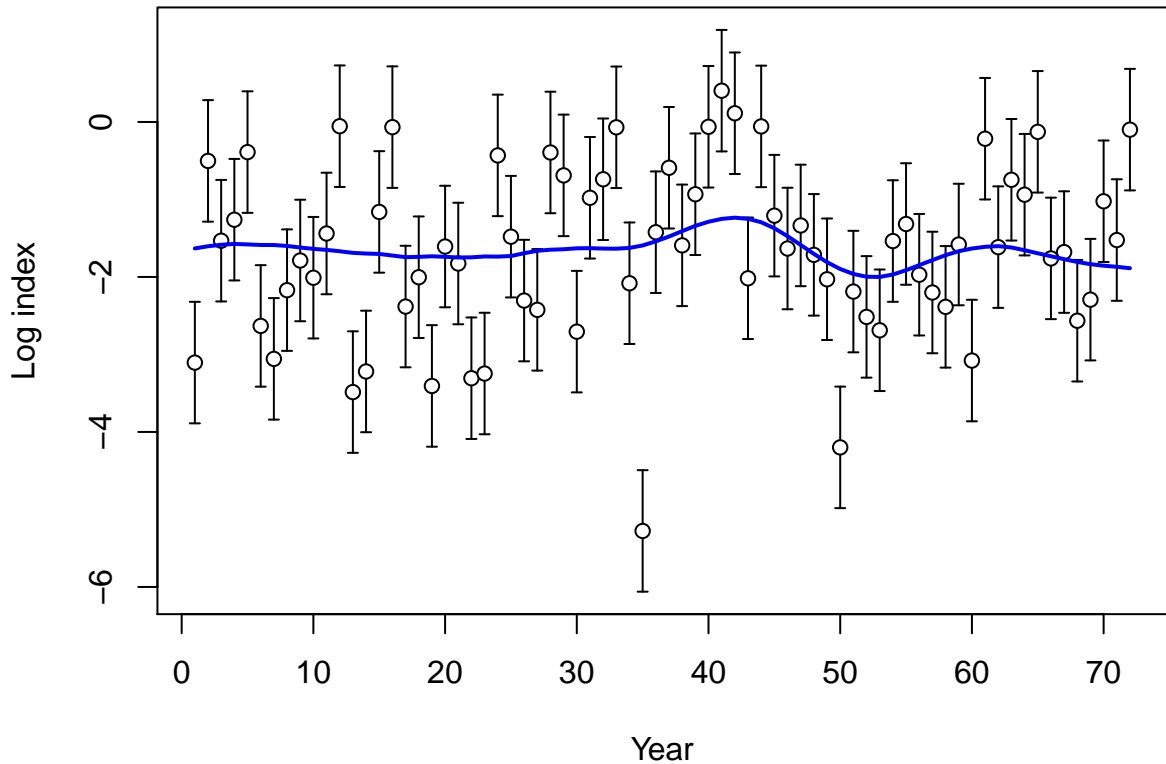
Index F1-Obj\_early



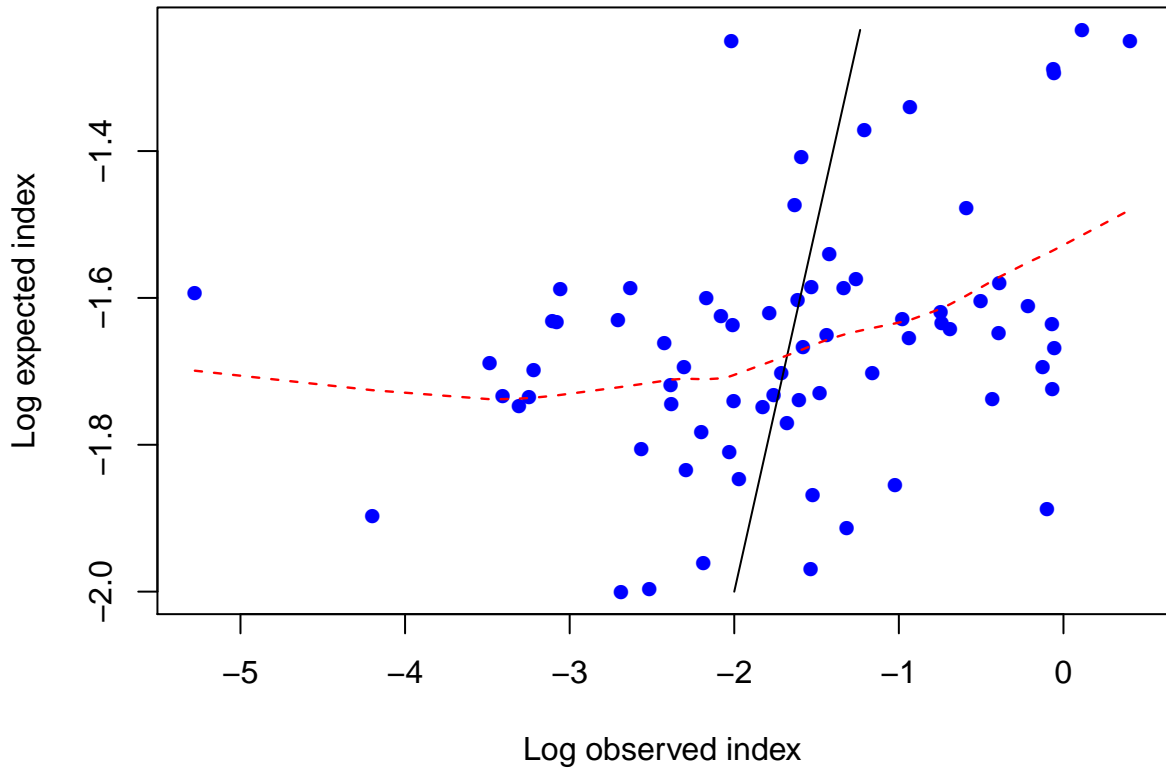
# Log index F1-OBJ\_early



# Log index F1-OBJ\_early

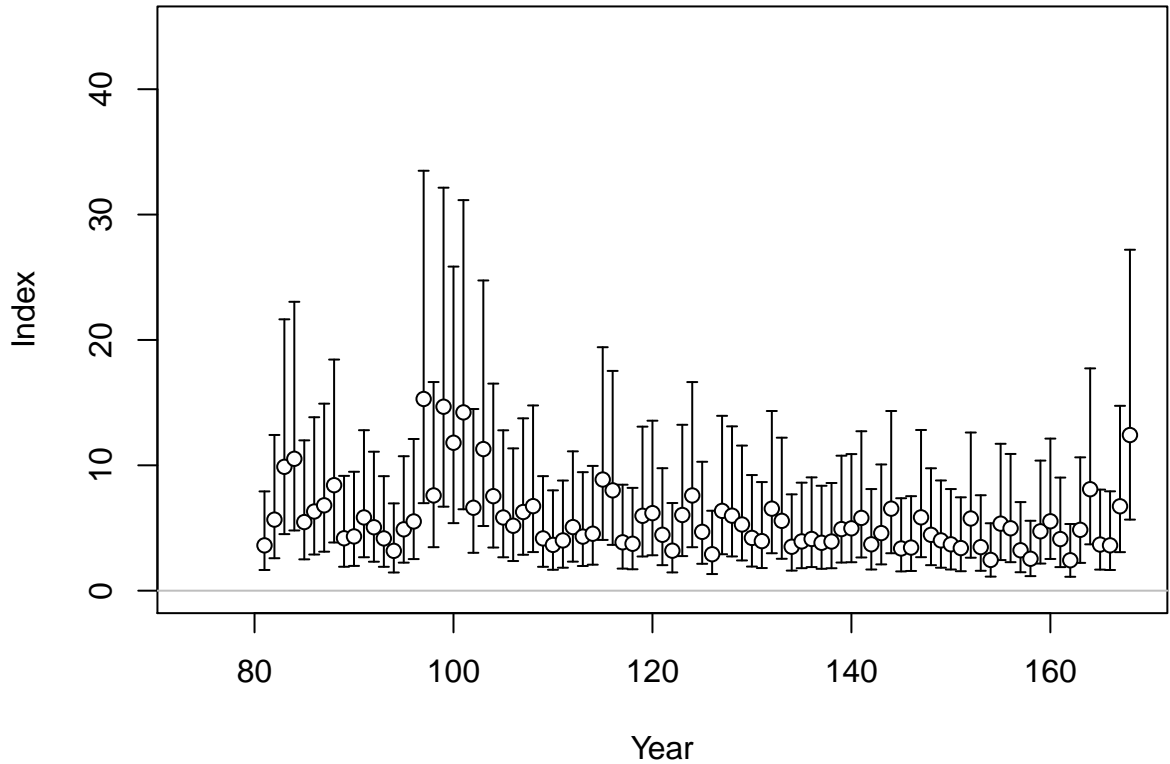


# Log index F1-Obj\_early

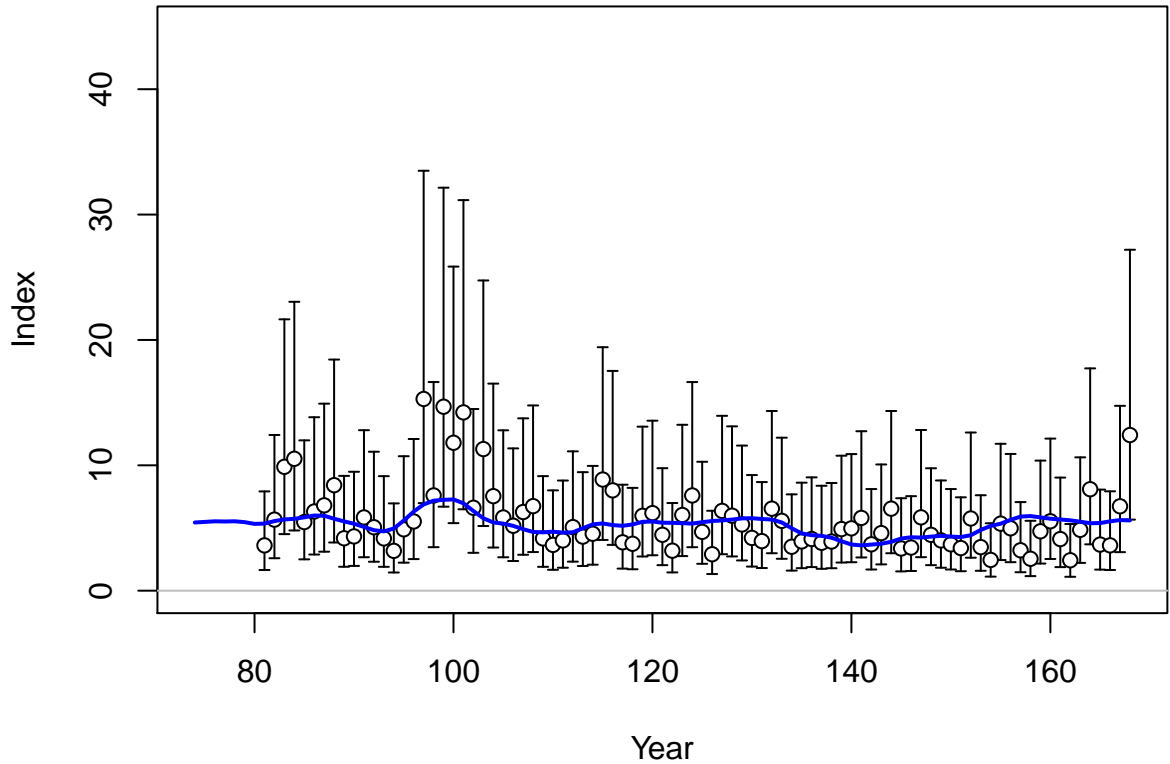




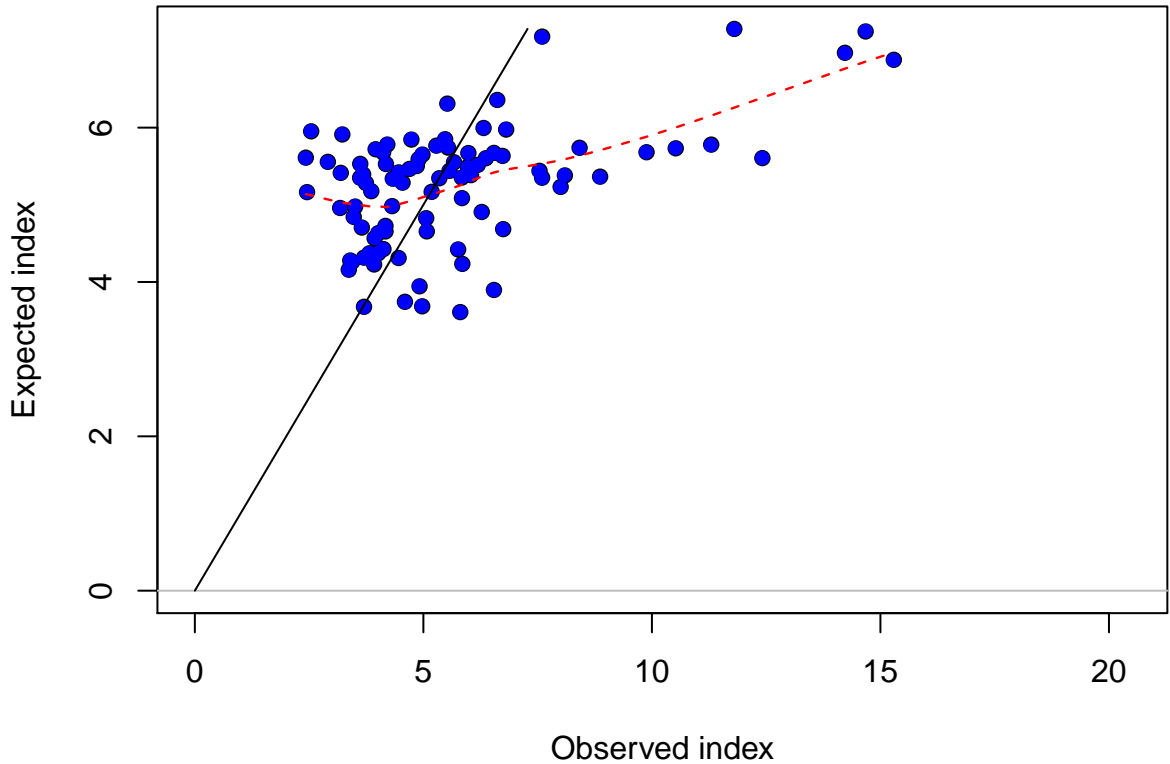
# Index F2-Obj\_S



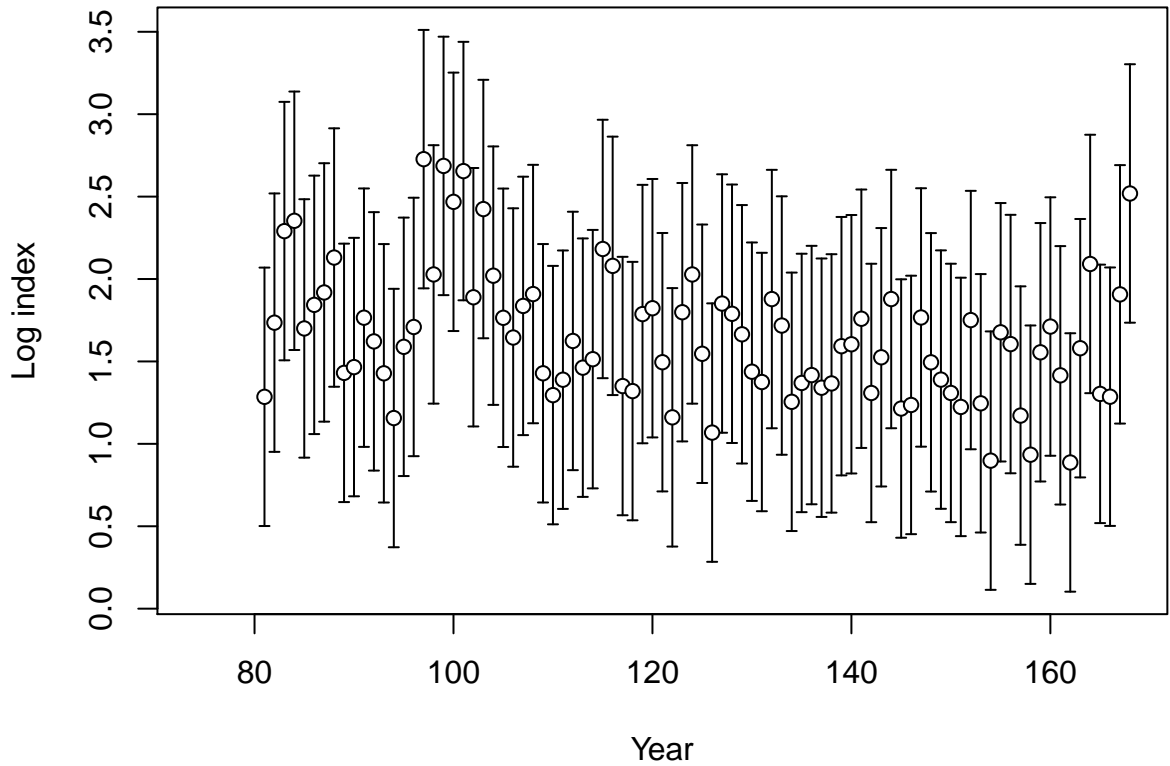
# Index F2-Obj\_S



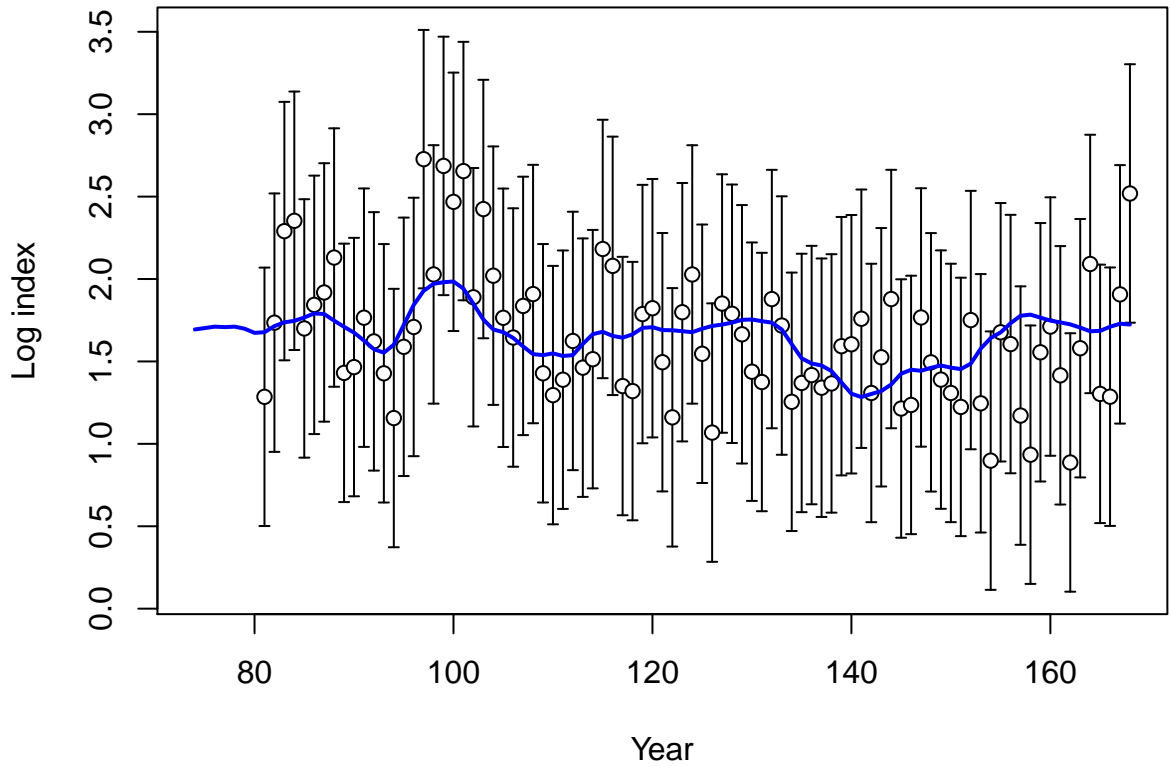
Index F2-OBJ\_S



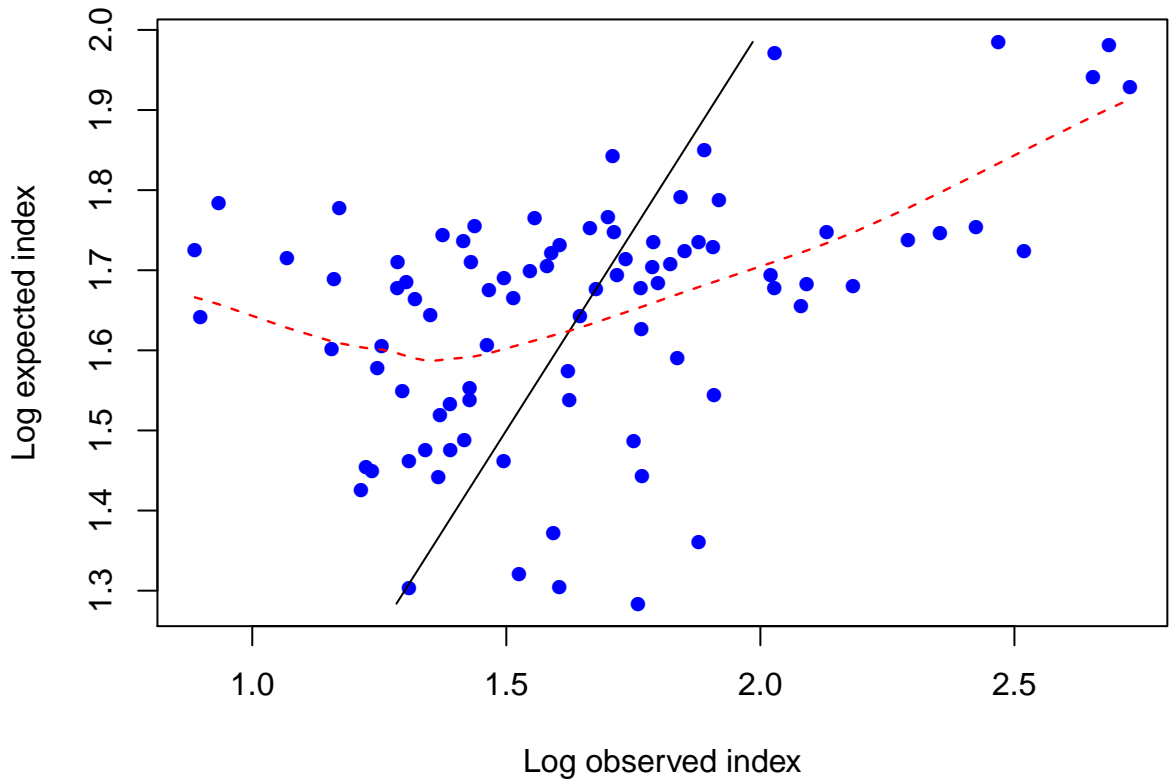
# Log index F2-OBJ\_S



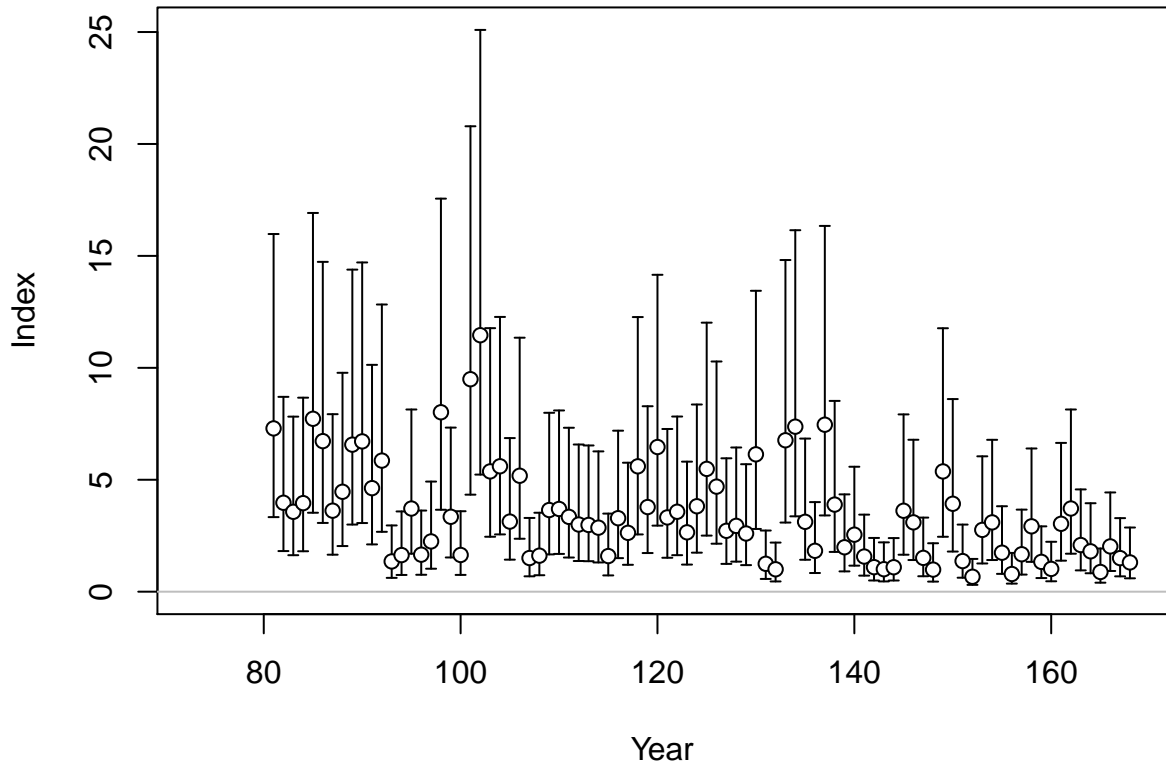
# Log index F2-OBJ\_S



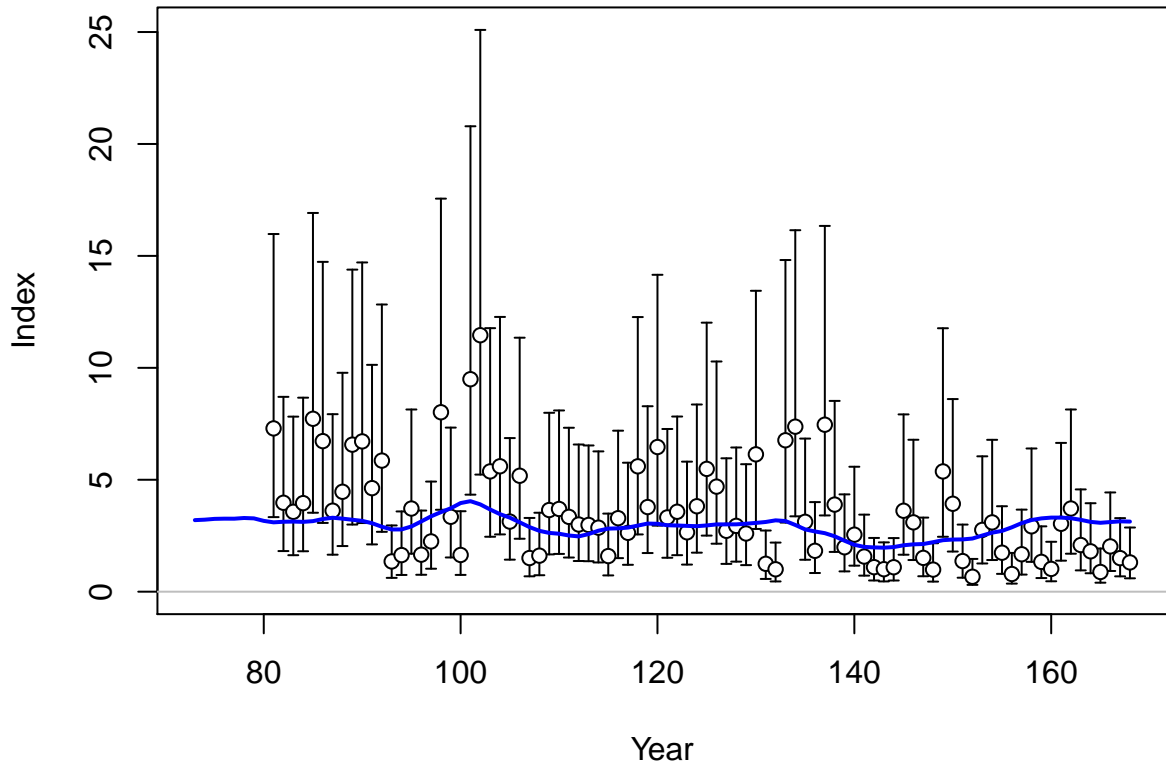
# Log index F2-OBJ\_S



# Index F3-Obj\_C

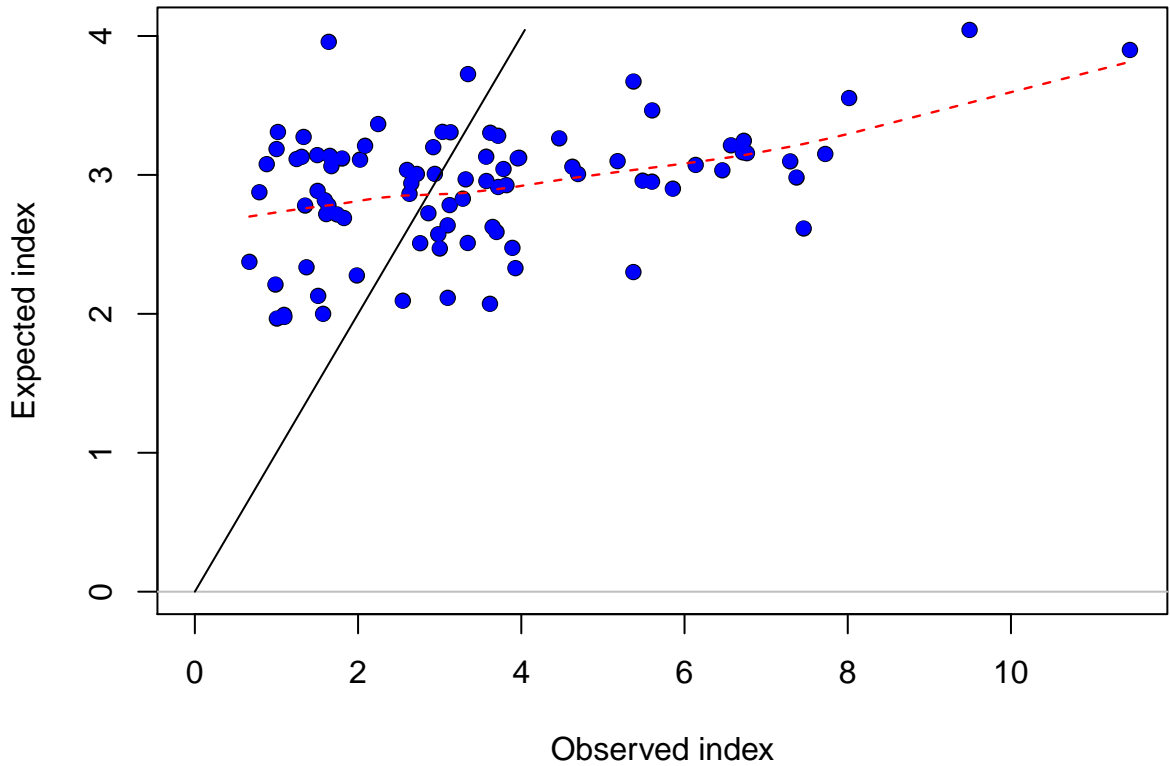


# Index F3-Obj\_C

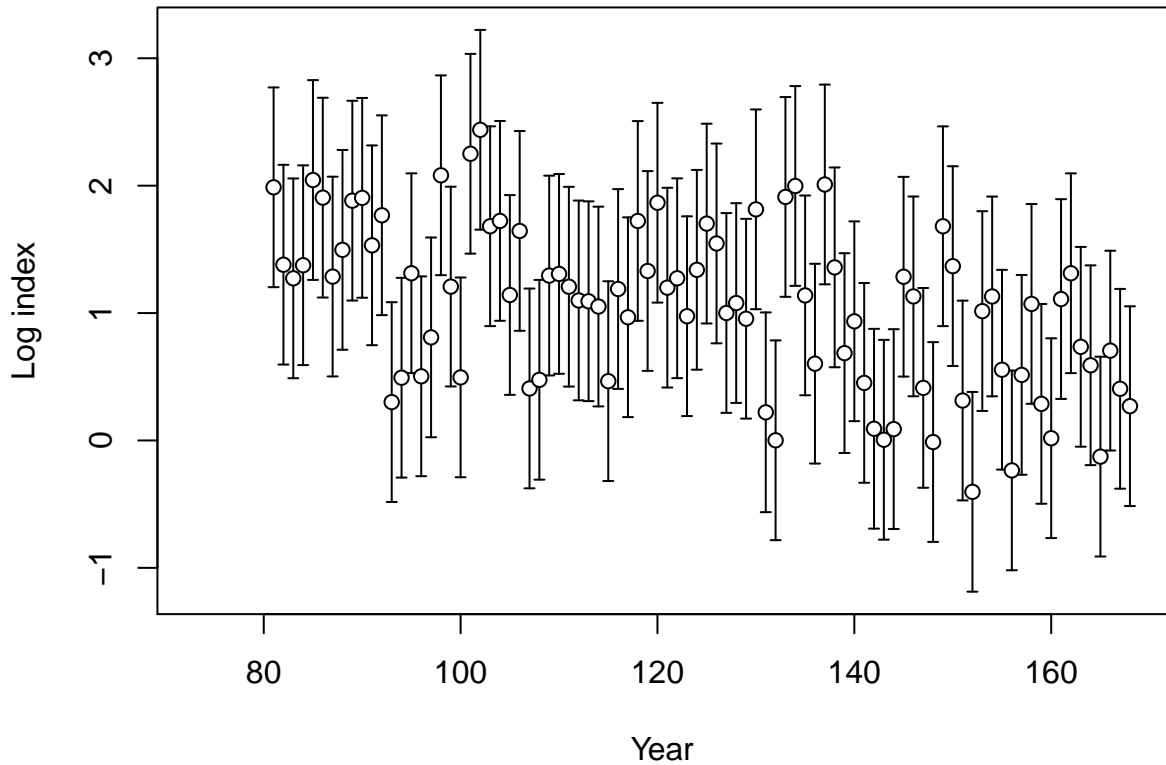




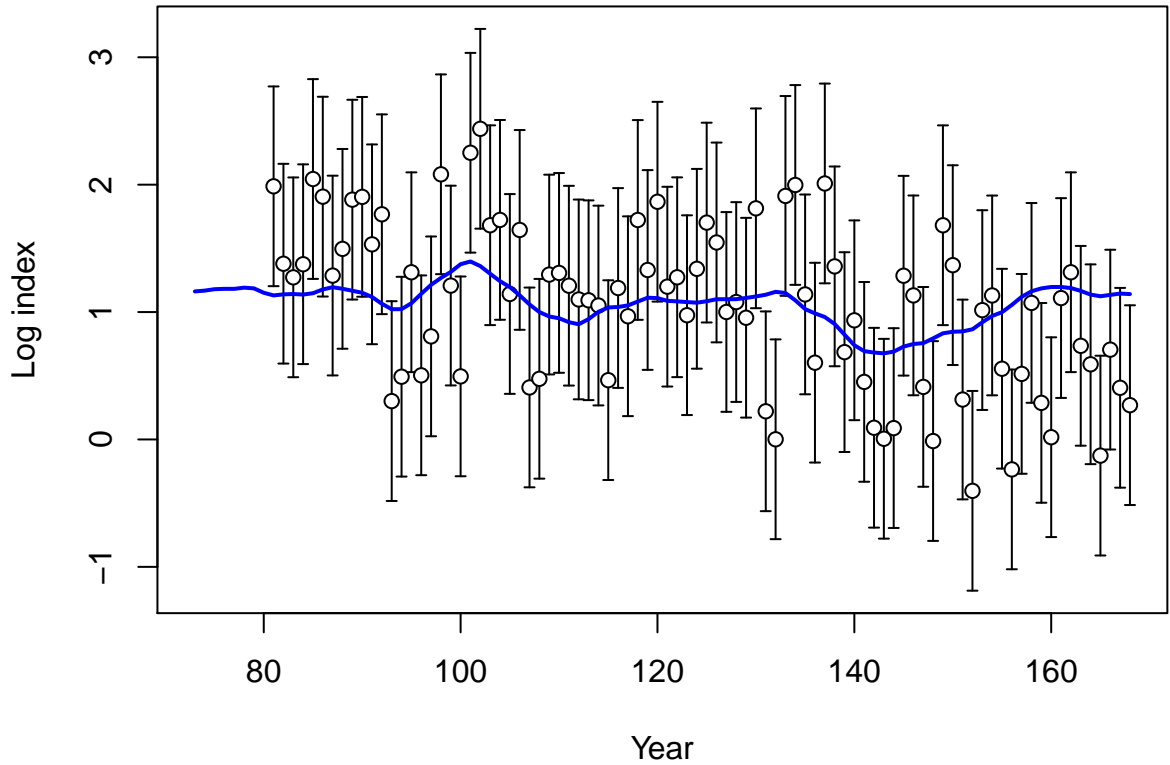
# Index F3-Obj\_C



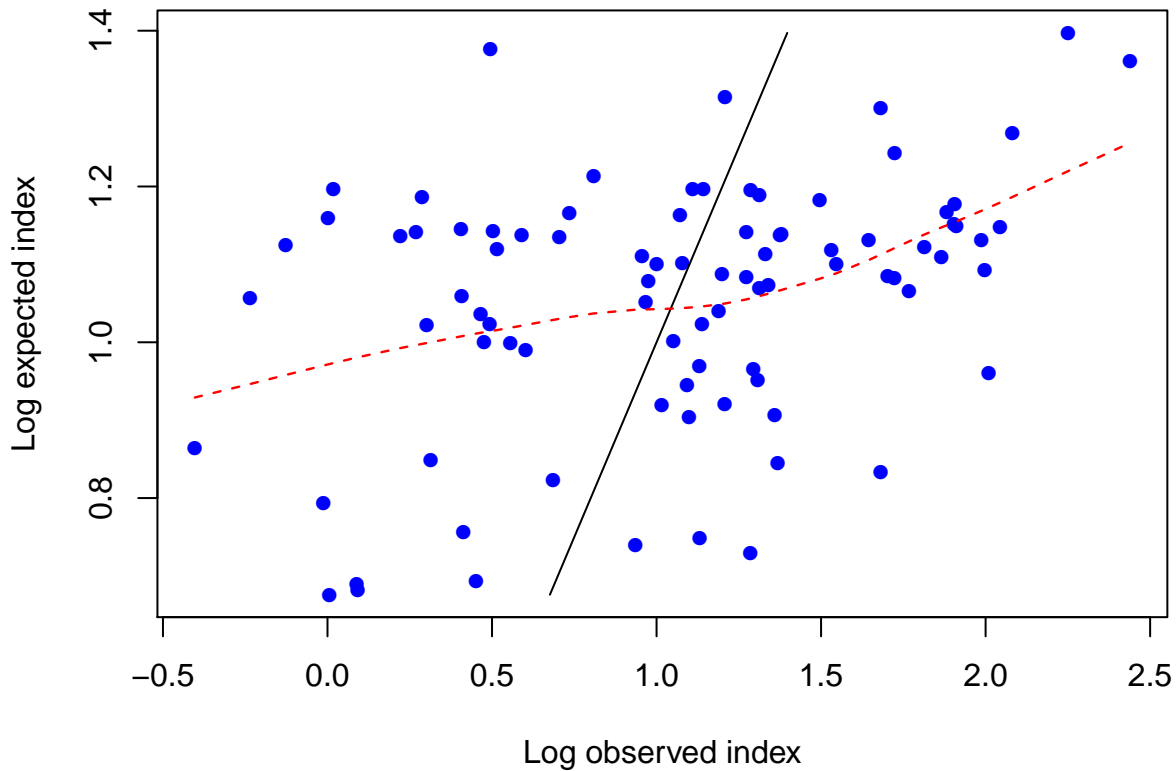
# Log index F3-OBJ\_C



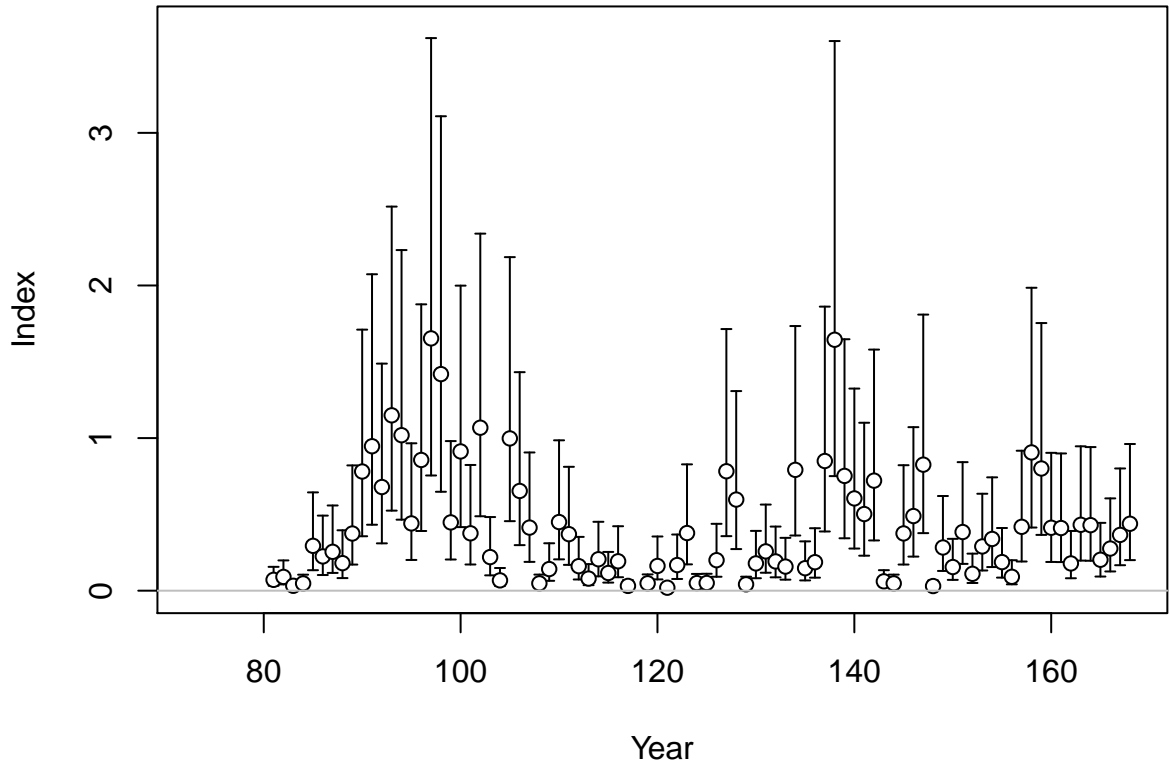
# Log index F3-OBJ\_C



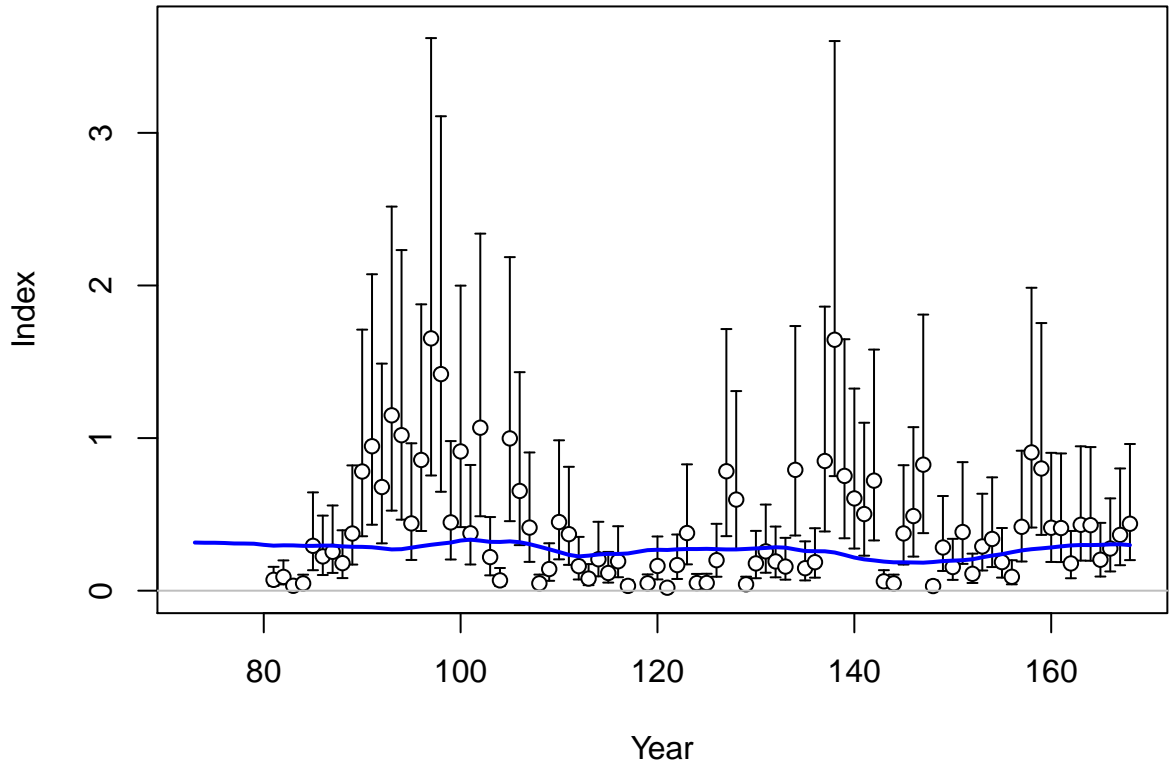
Log index F3-OBJ\_C



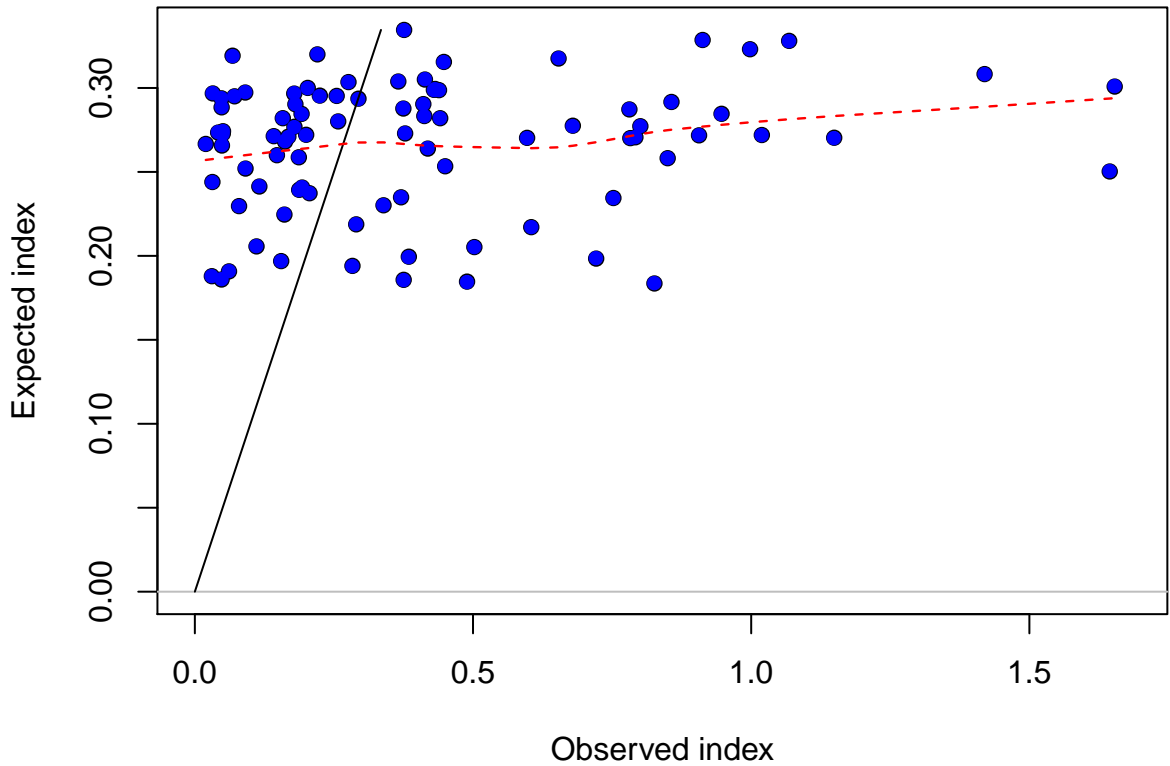
# Index F4-OBJ\_I



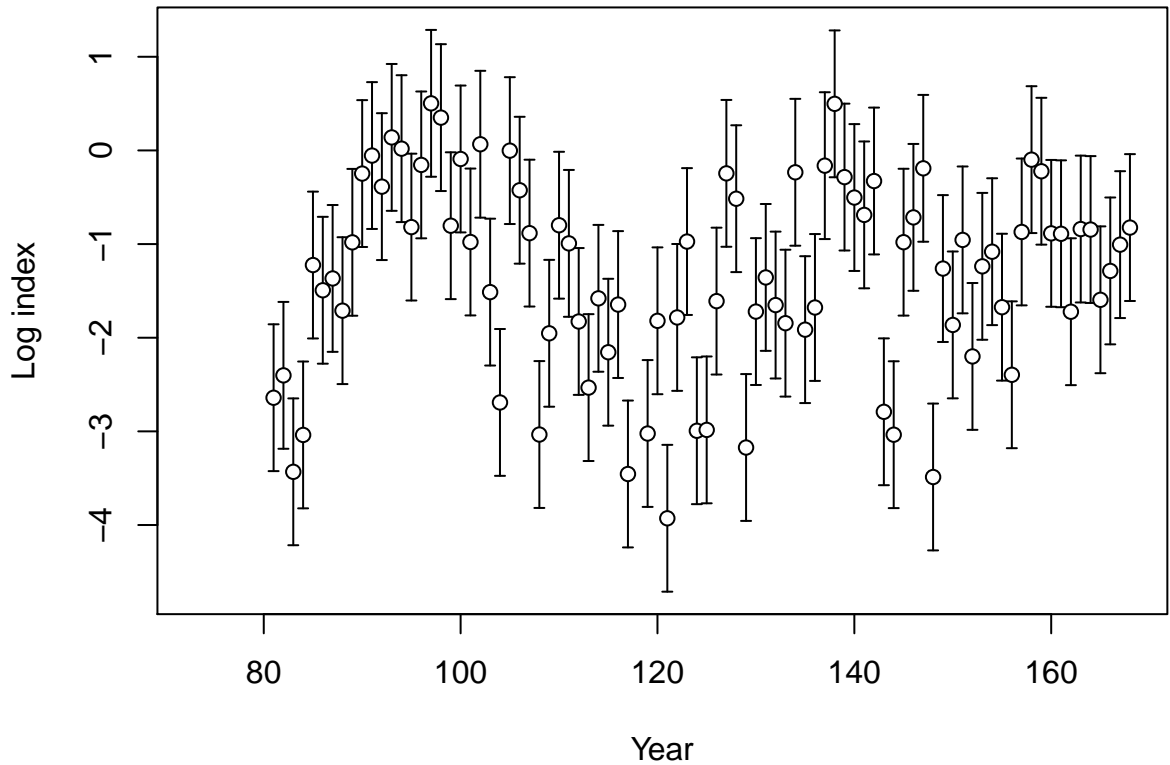
# Index F4-OBJ\_I



Index F4-OBJ\_I

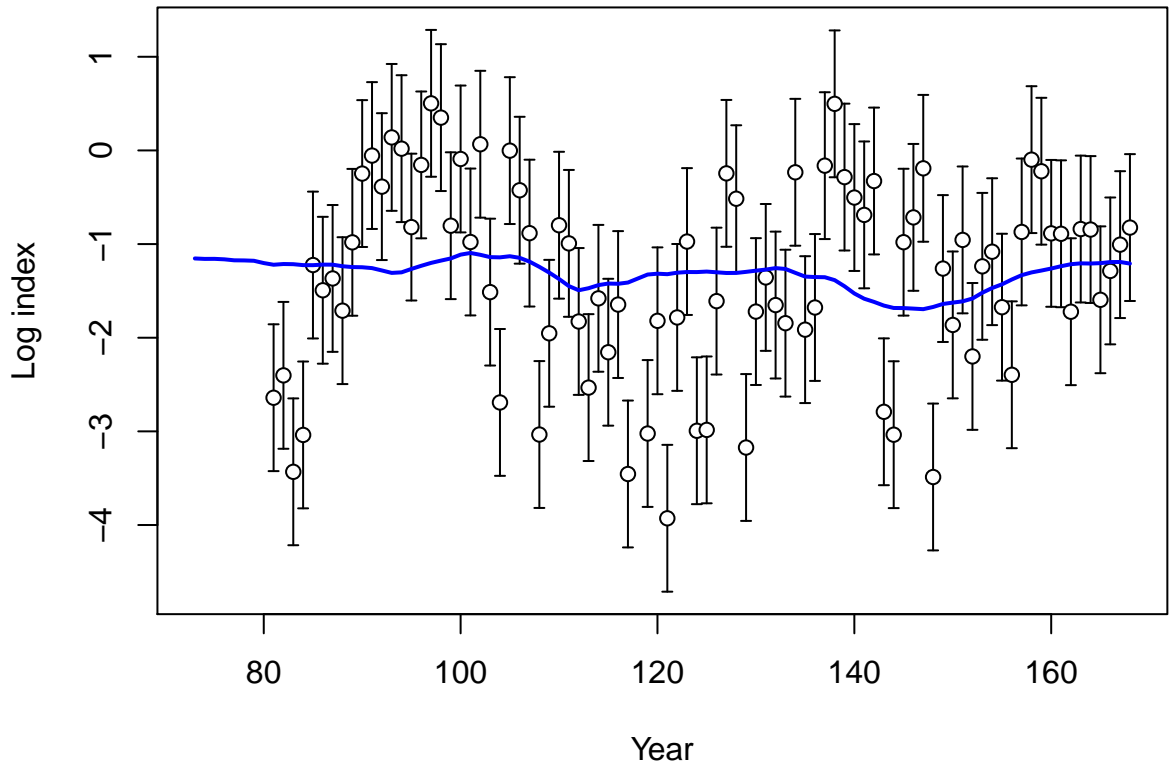


# Log index F4-OBJ\_I



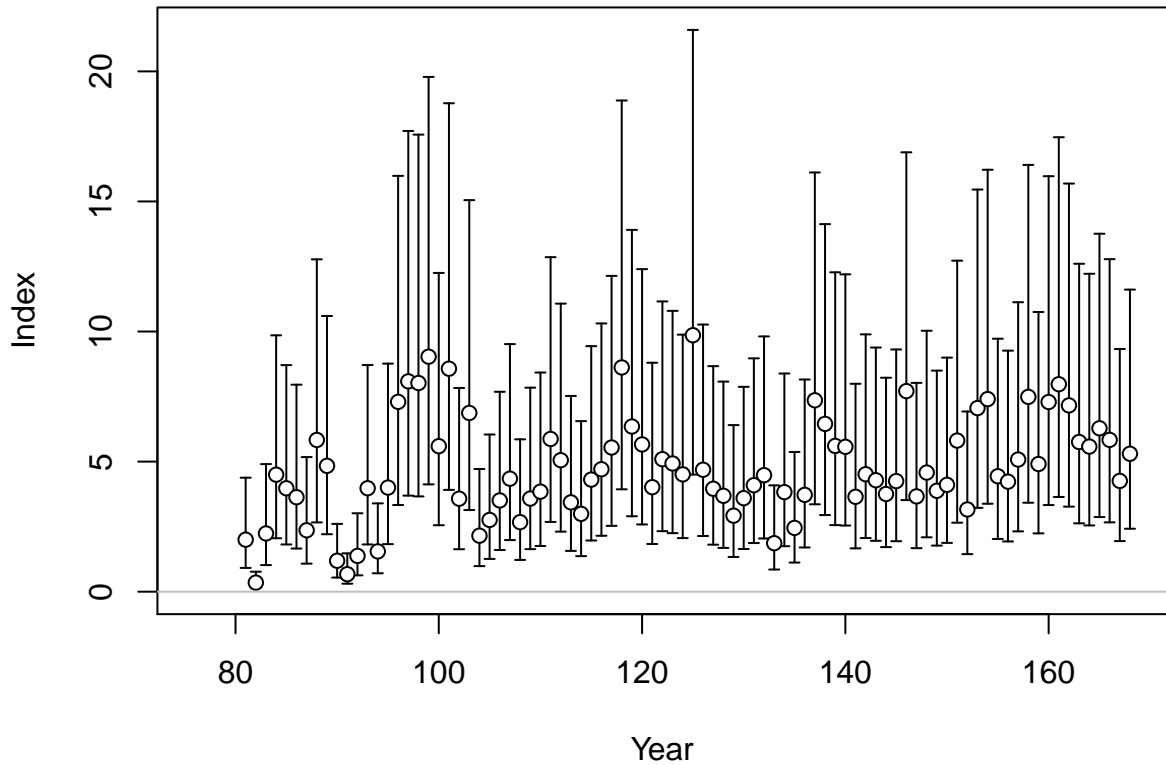


# Log index F4-OBJ\_I

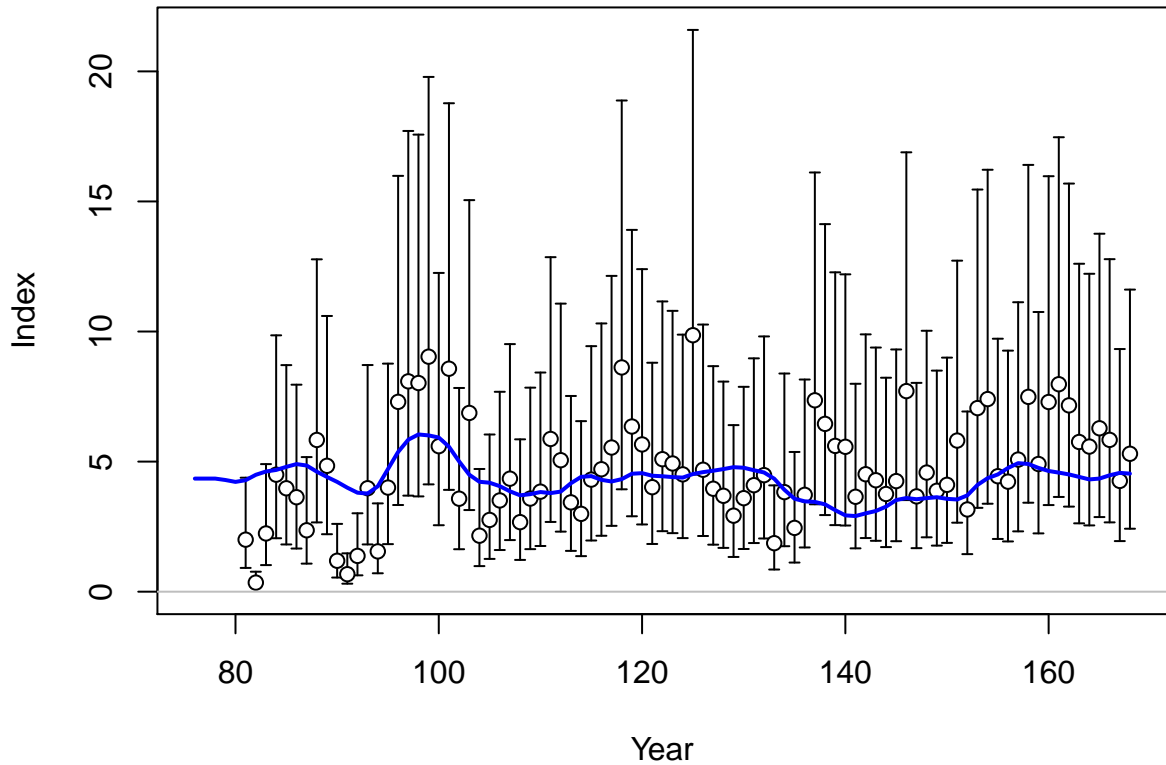




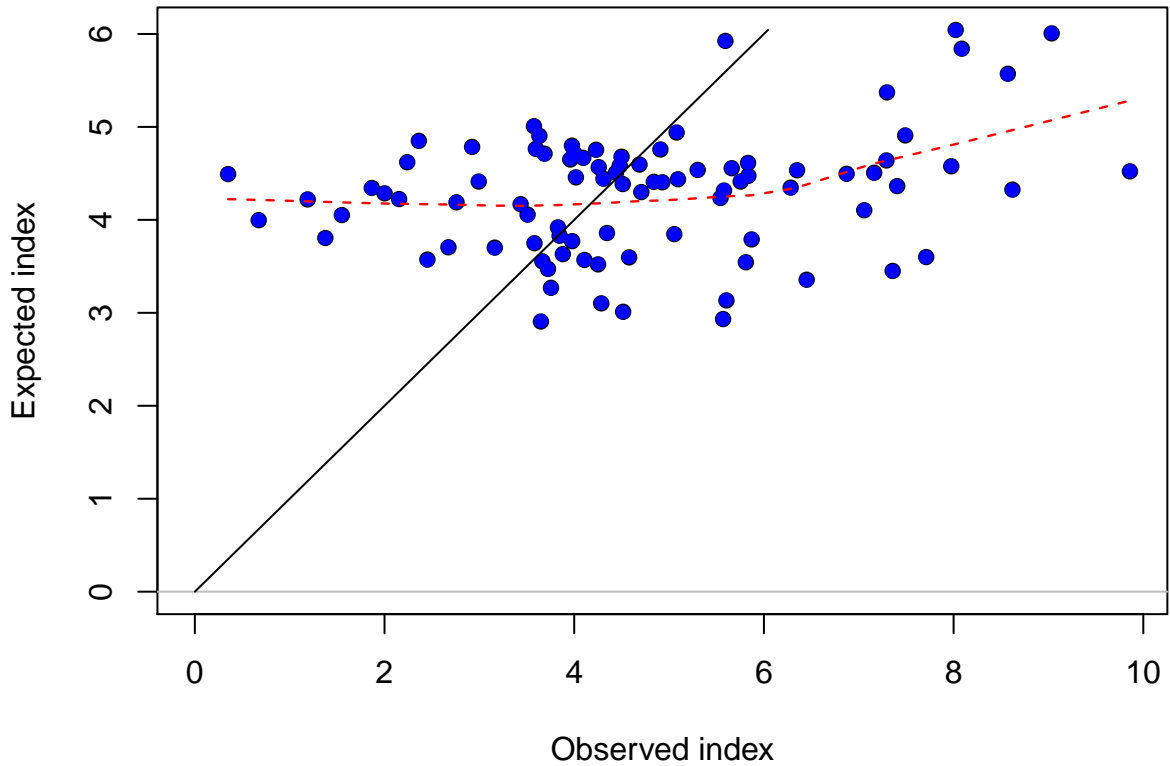
# Index F5-Obj\_N



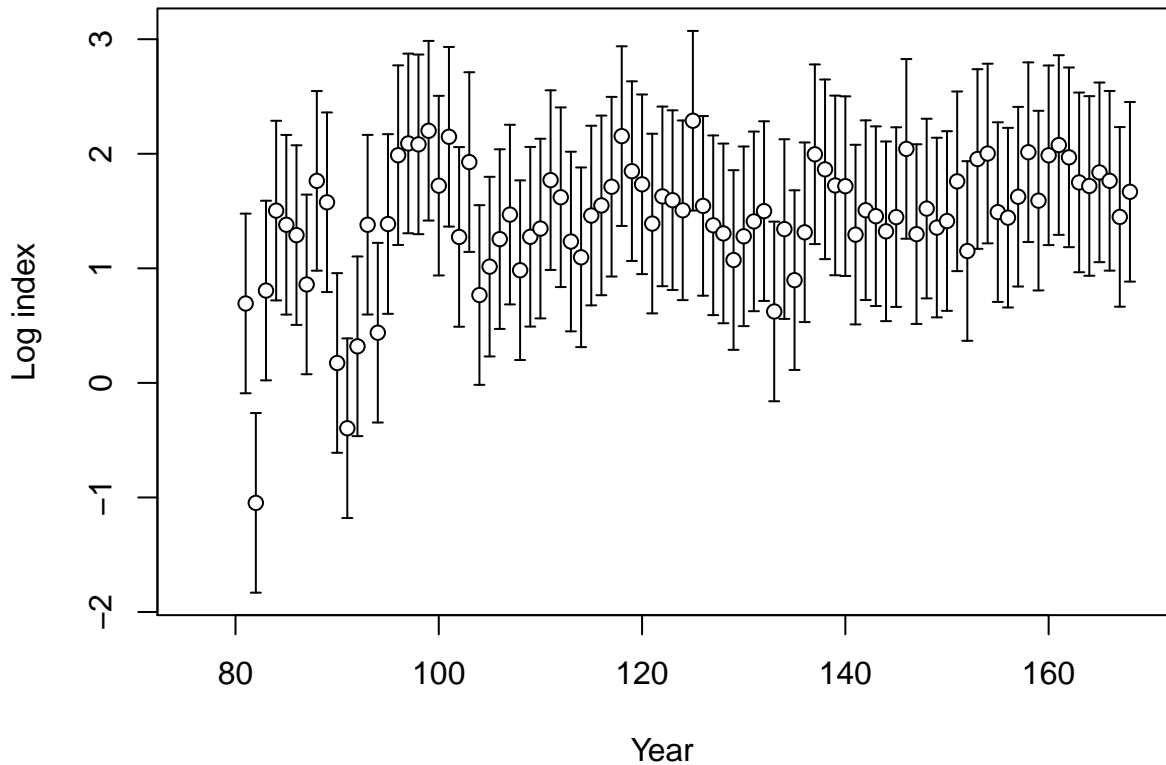
# Index F5-Obj\_N



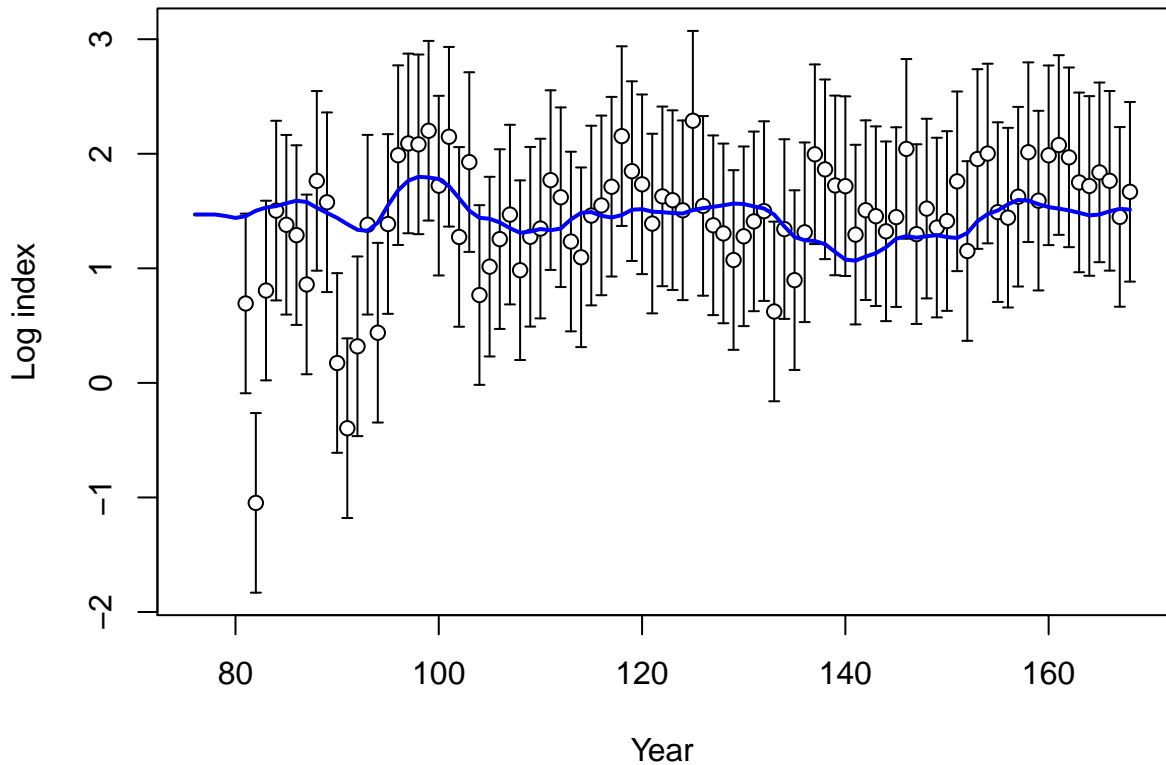
Index F5-Obj\_N



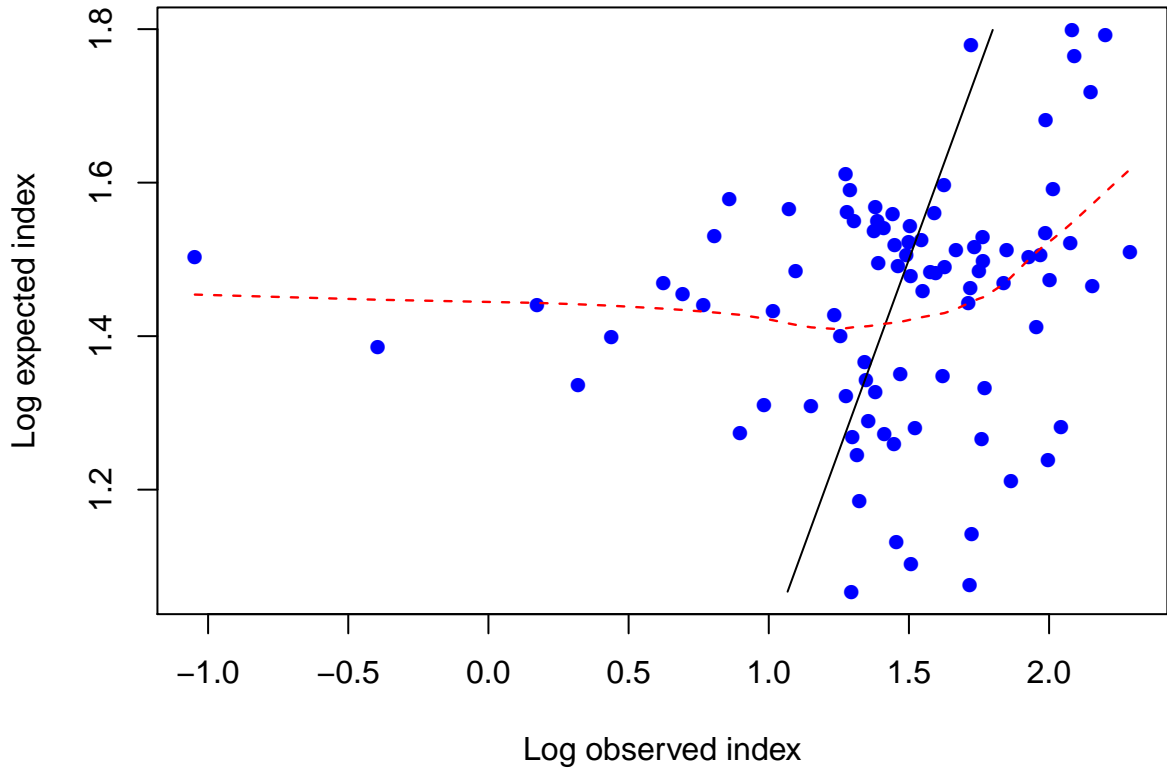
# Log index F5-OBJ\_N



# Log index F5-OBJ\_N

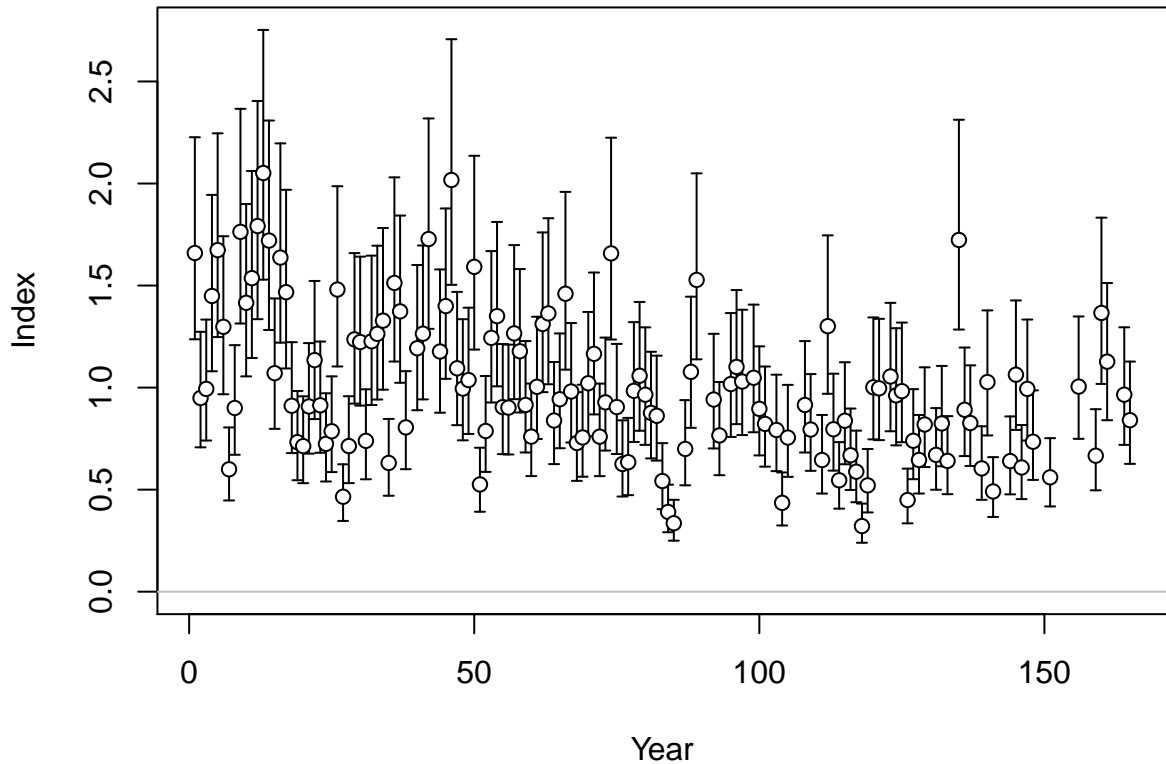


Log index F5-OBJ\_N

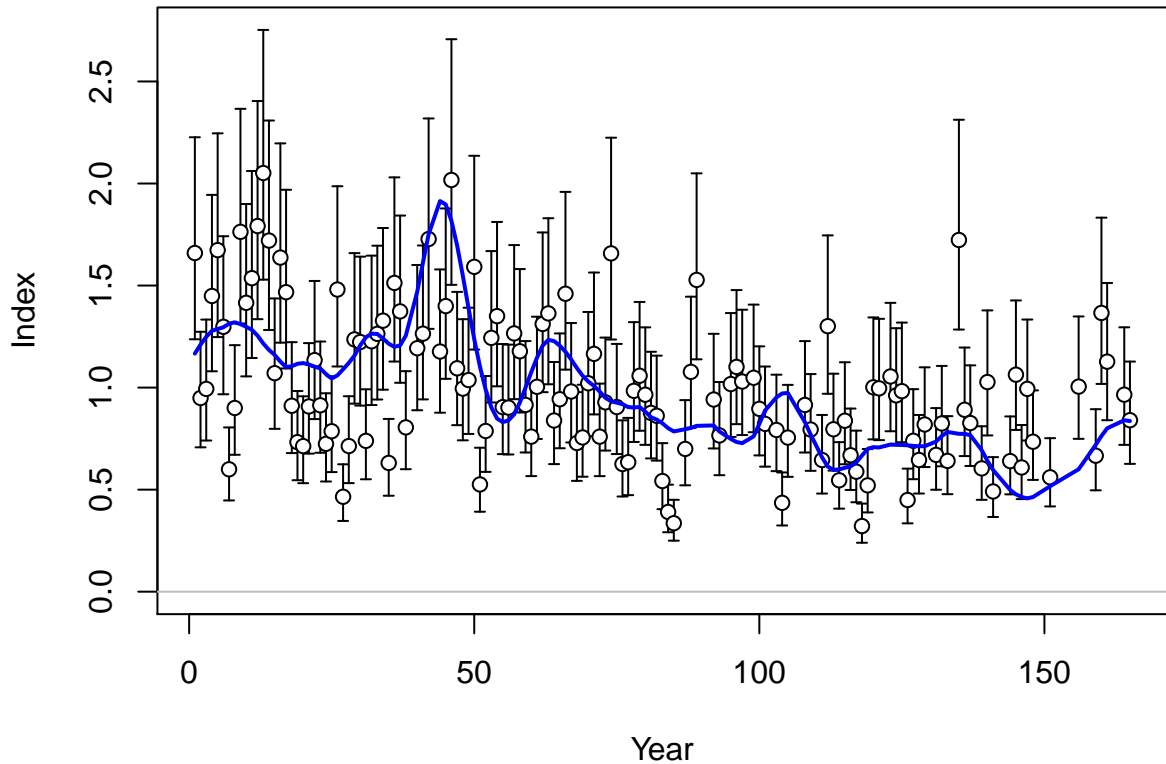




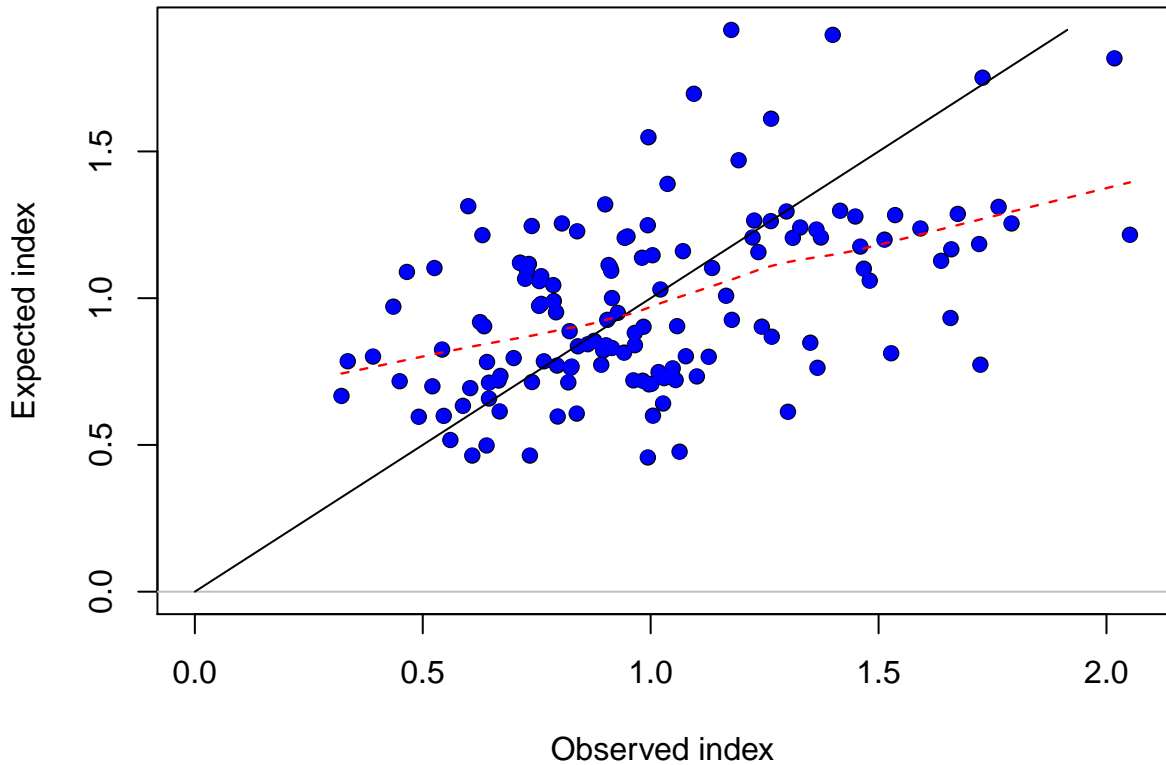
Index F12-LL\_N\_num



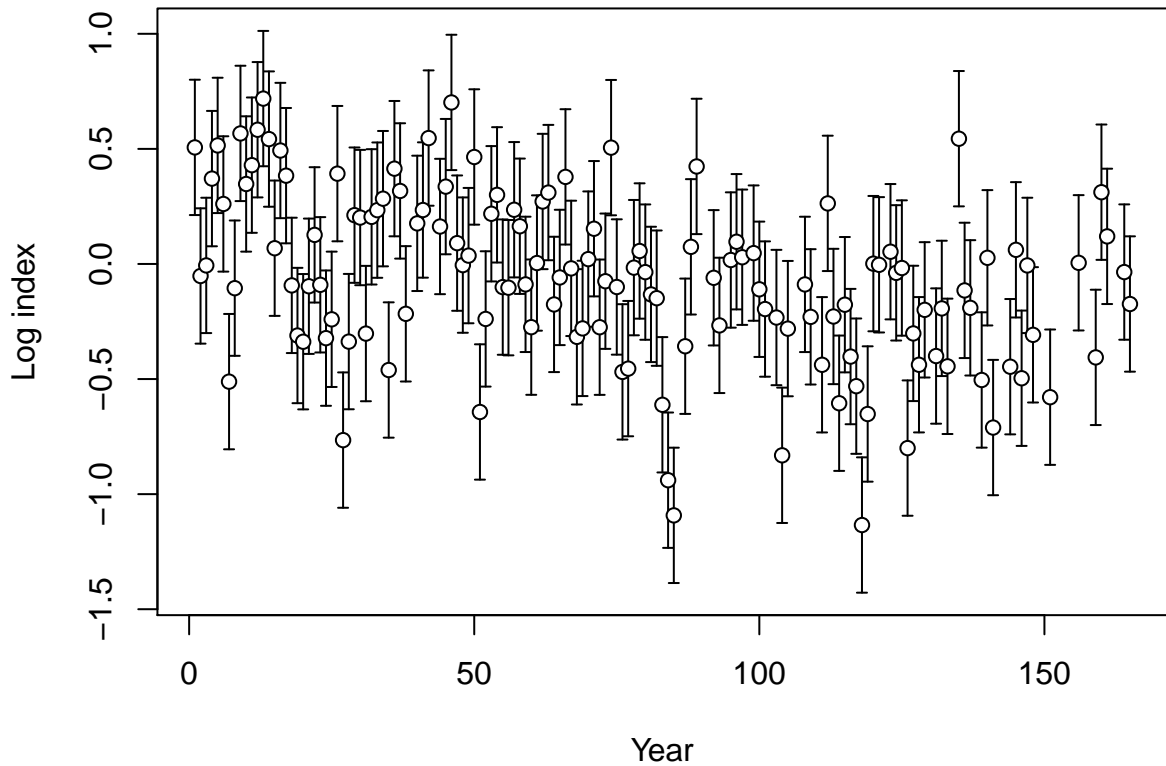
Index F12-LL\_N\_num



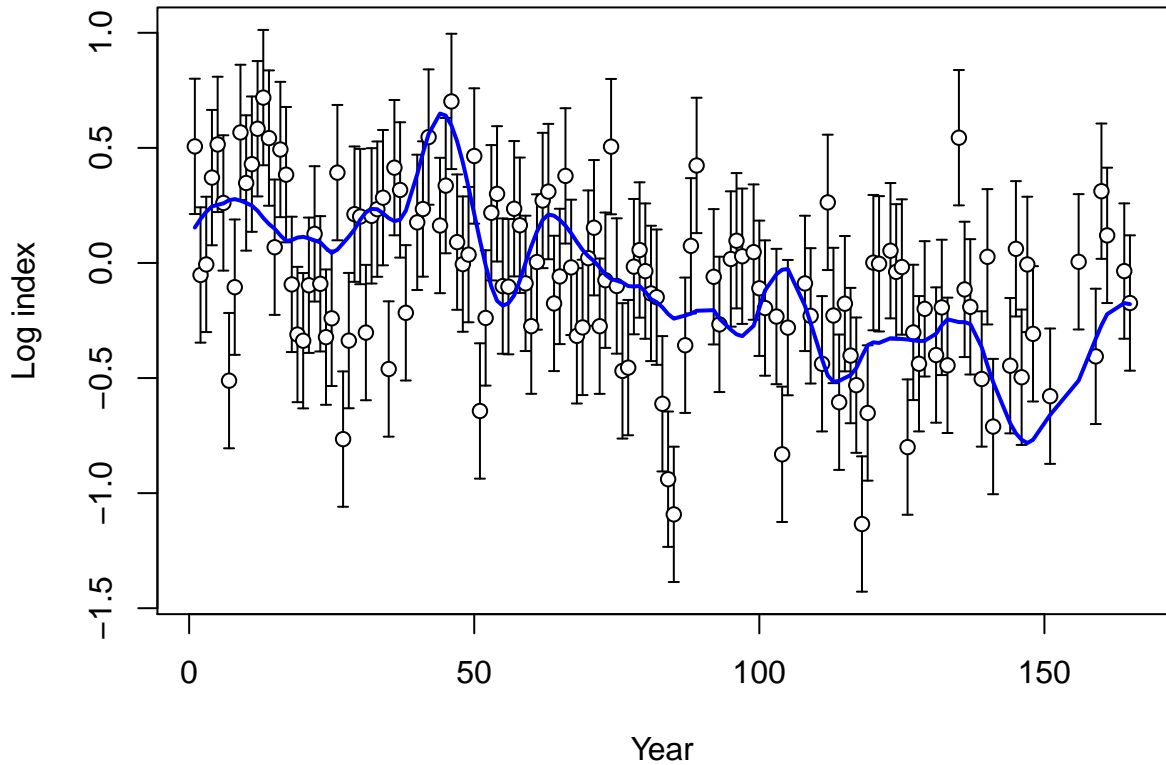
Index F12-LL\_N\_num



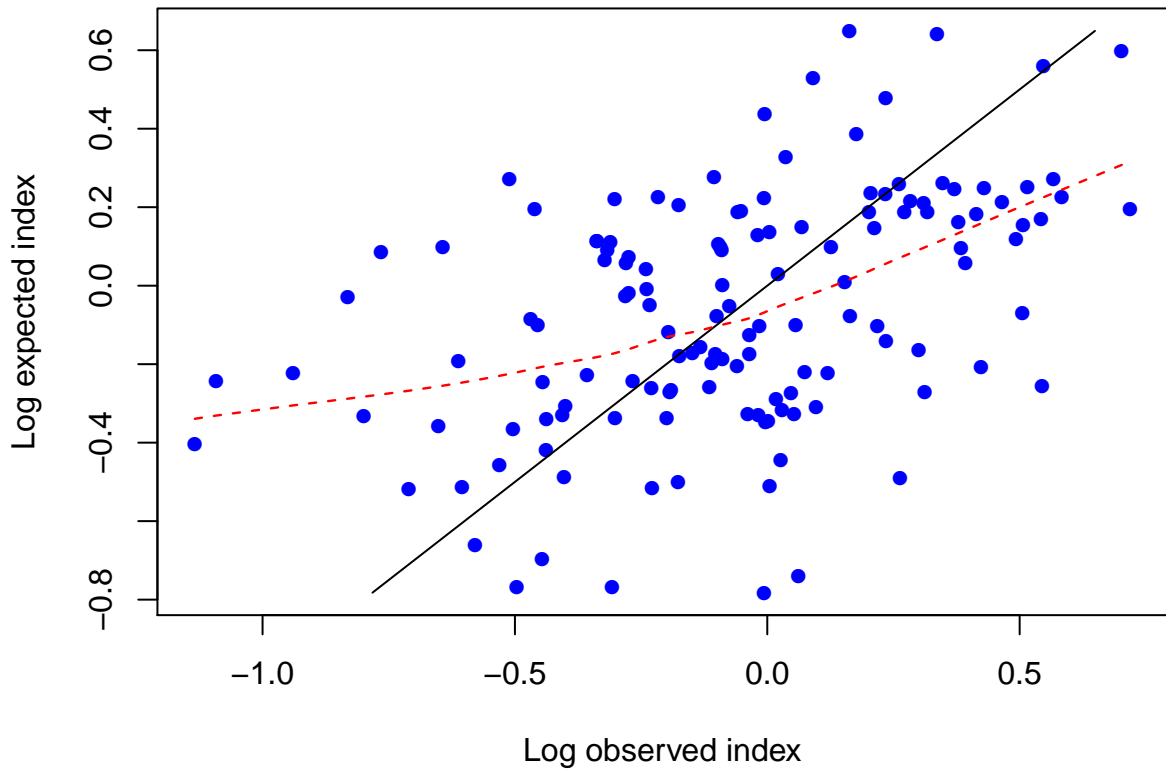
Log index F12-LL\_N\_num



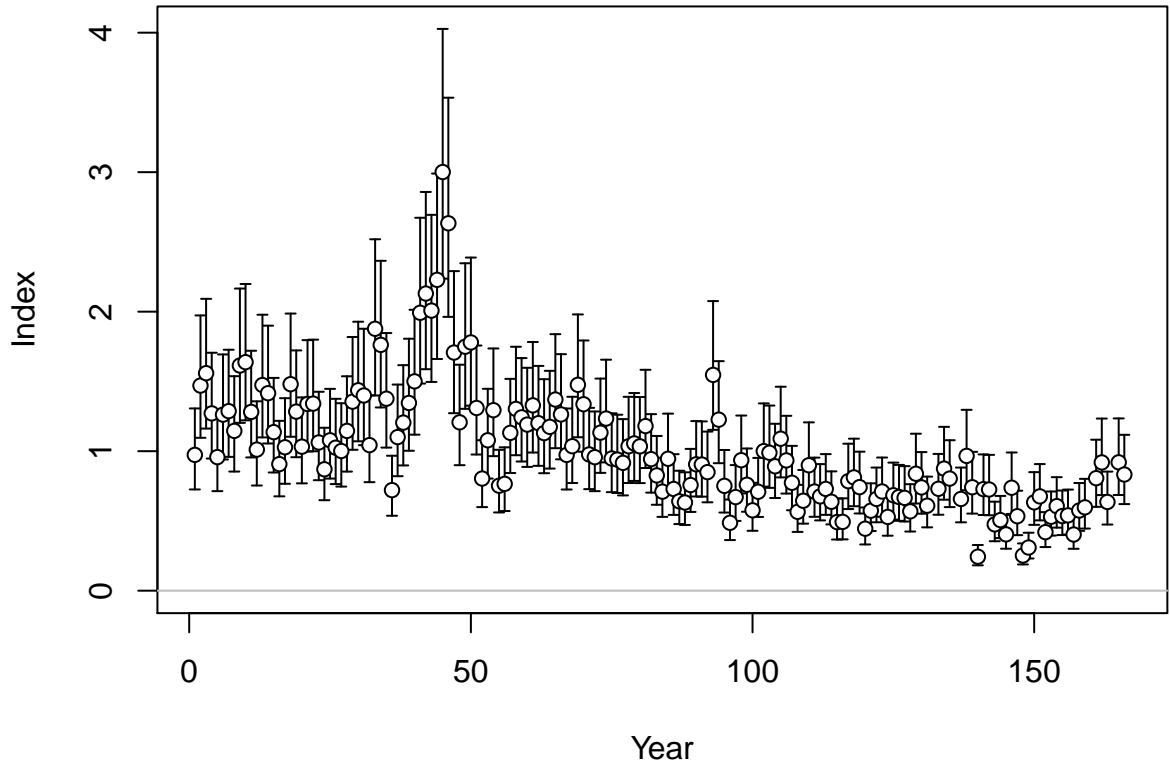
Log index F12-LL\_N\_num



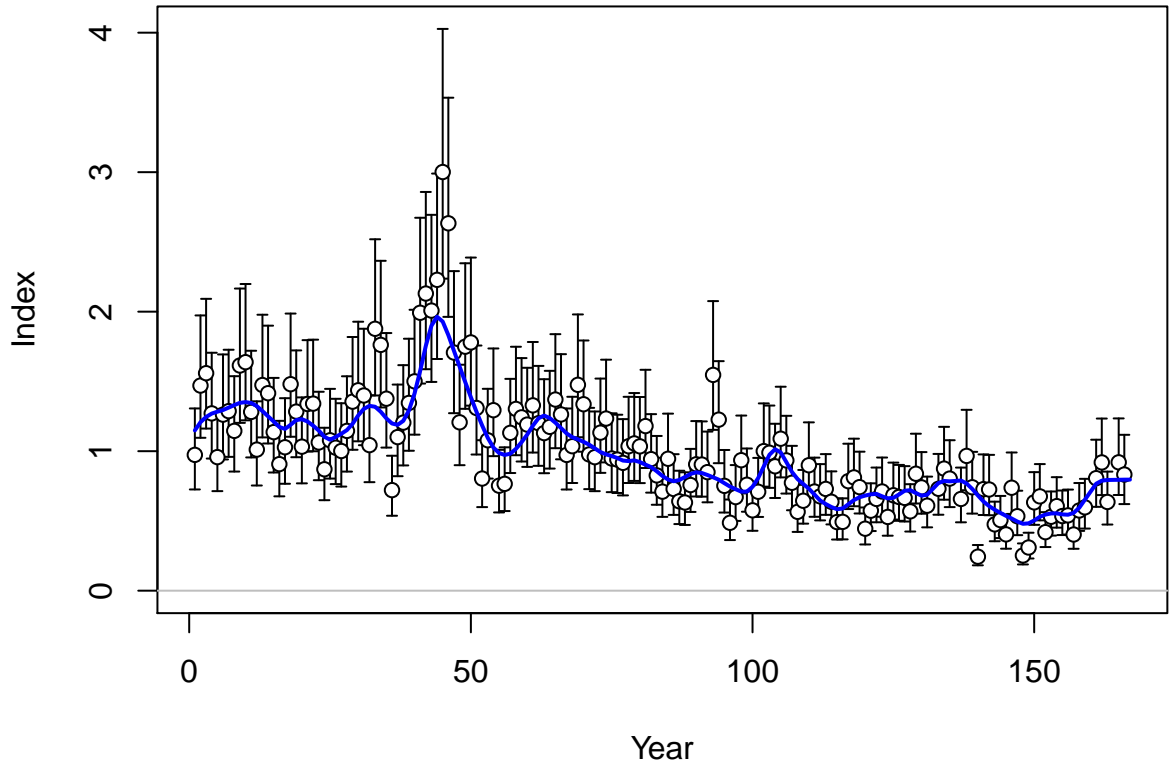
Log index F12-LL\_N\_num



Index F13-LL\_C\_num

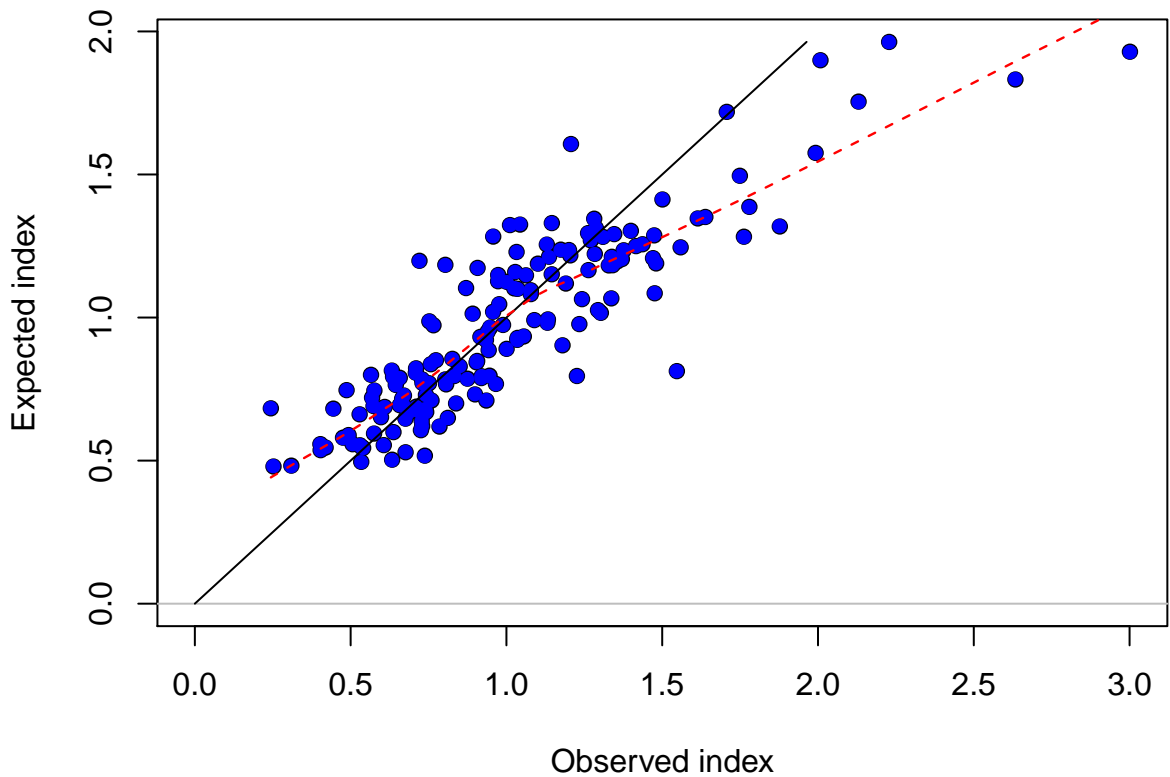


Index F13-LL\_C\_num

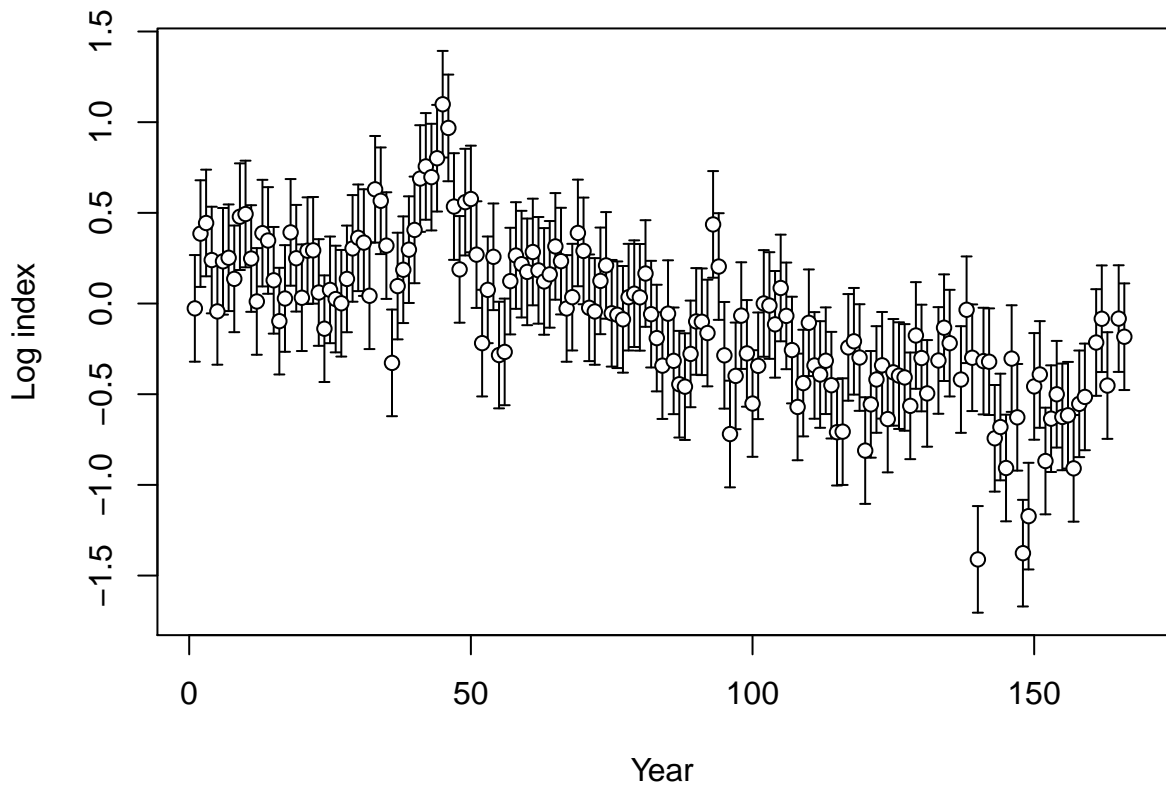




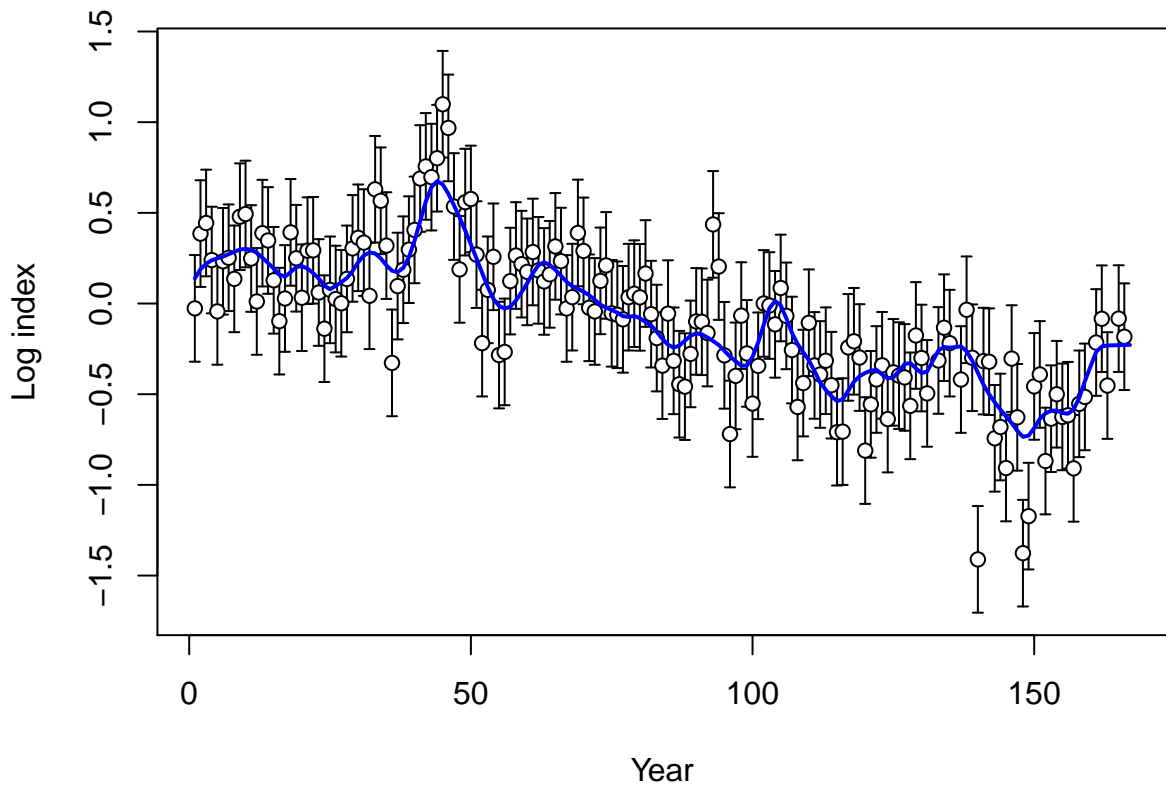
Index F13-LL\_C\_num



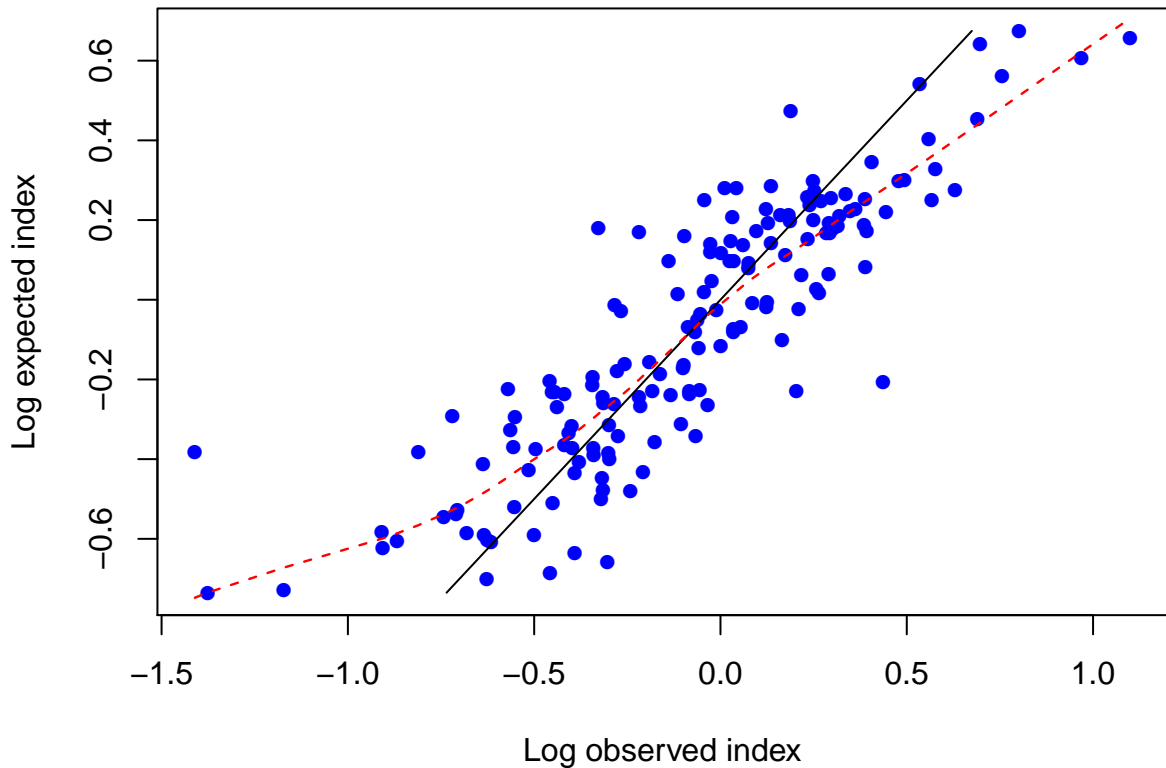
Log index F13-LL\_C\_num



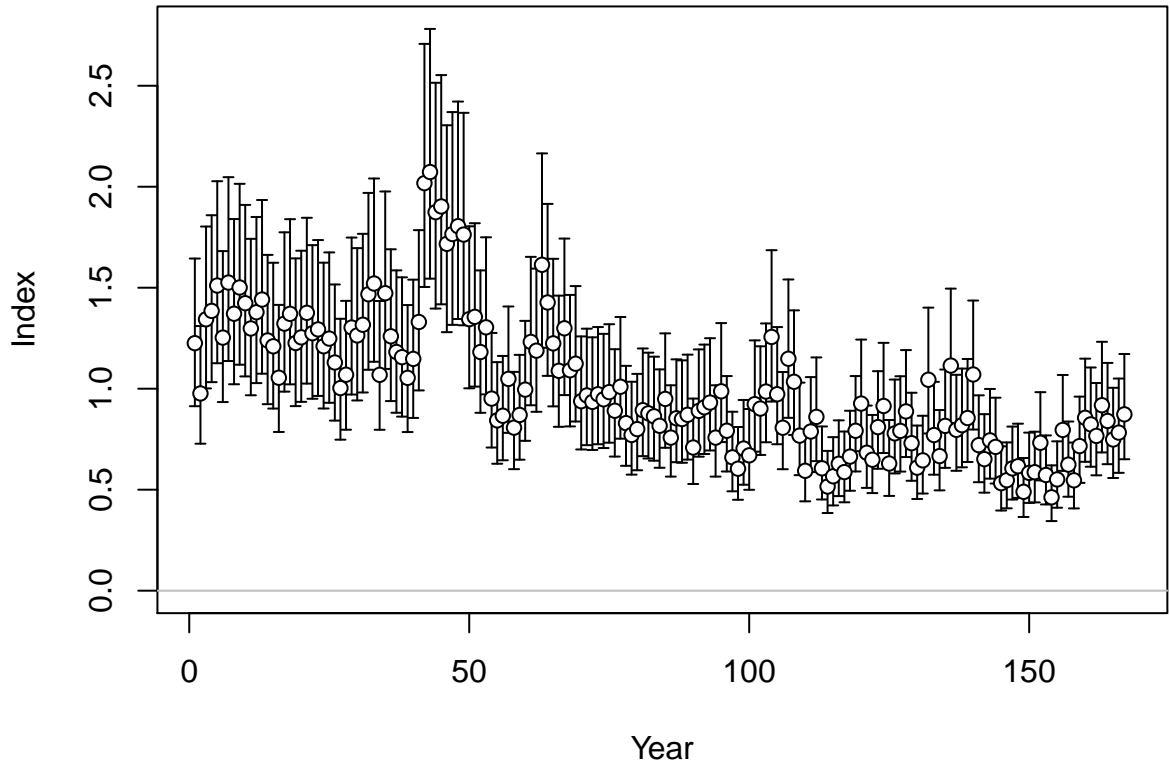
Log index F13-LL\_C\_num



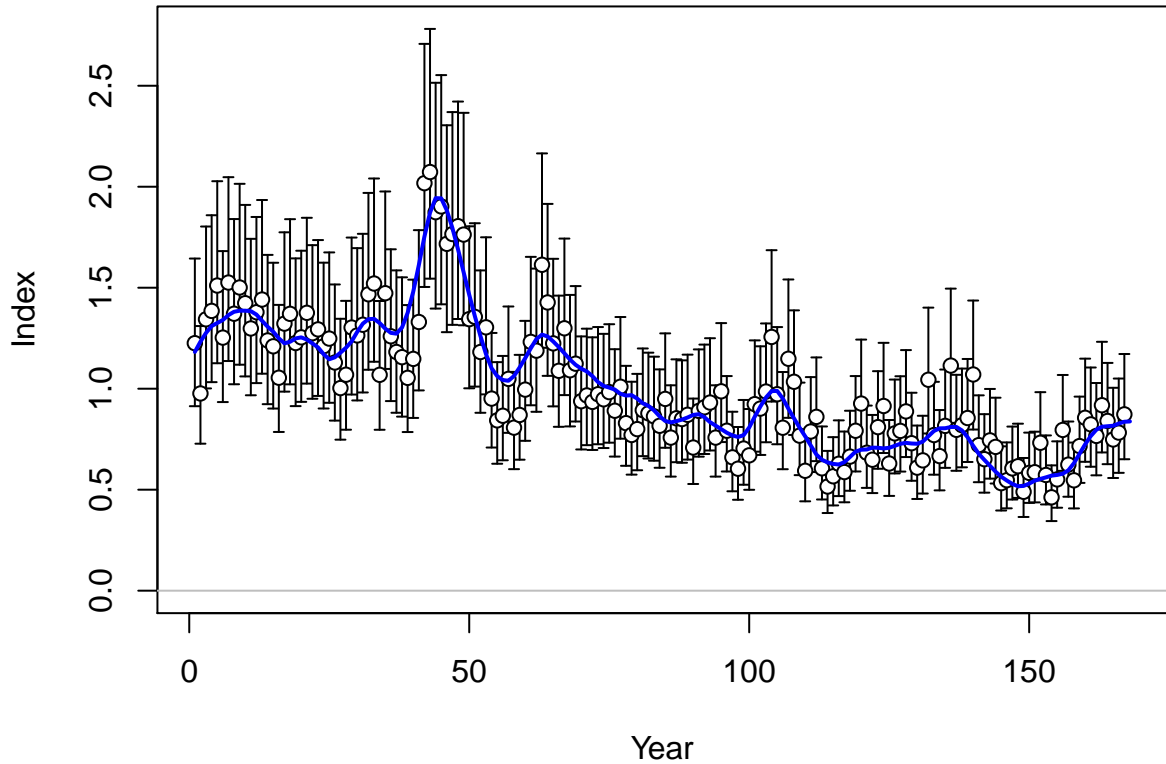
Log index F13-LL\_C\_num



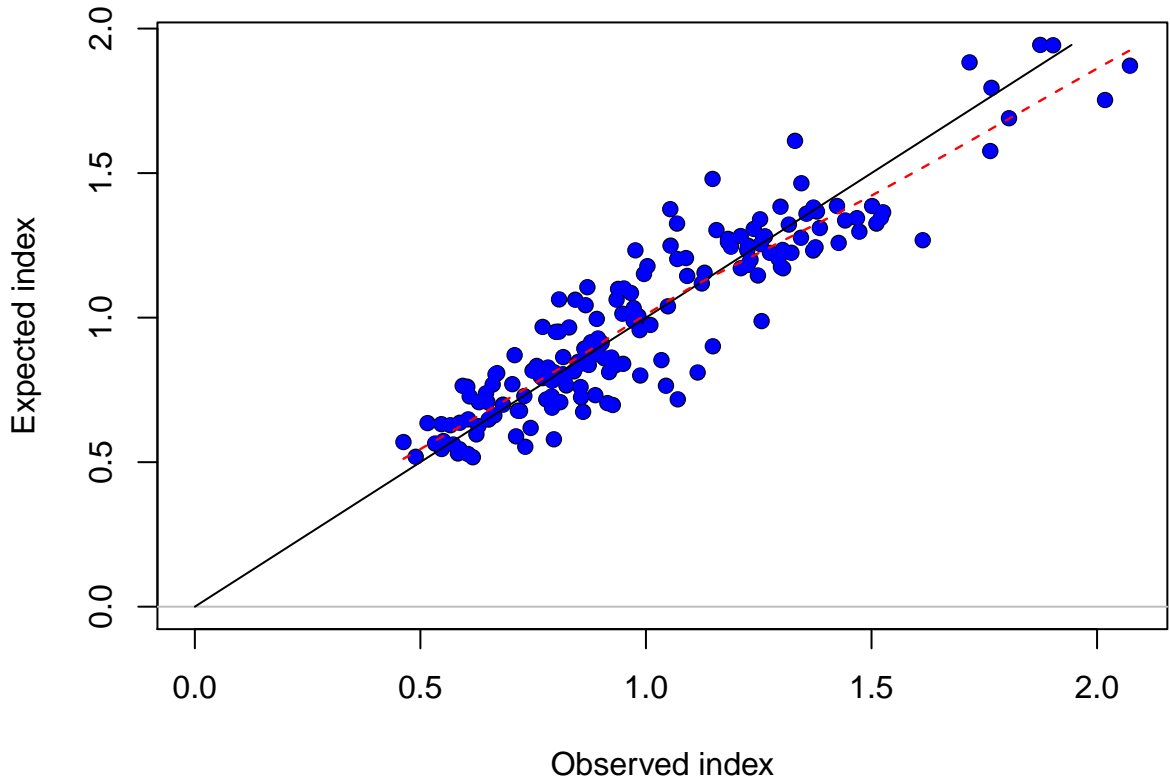
Index F14-LL\_S\_num



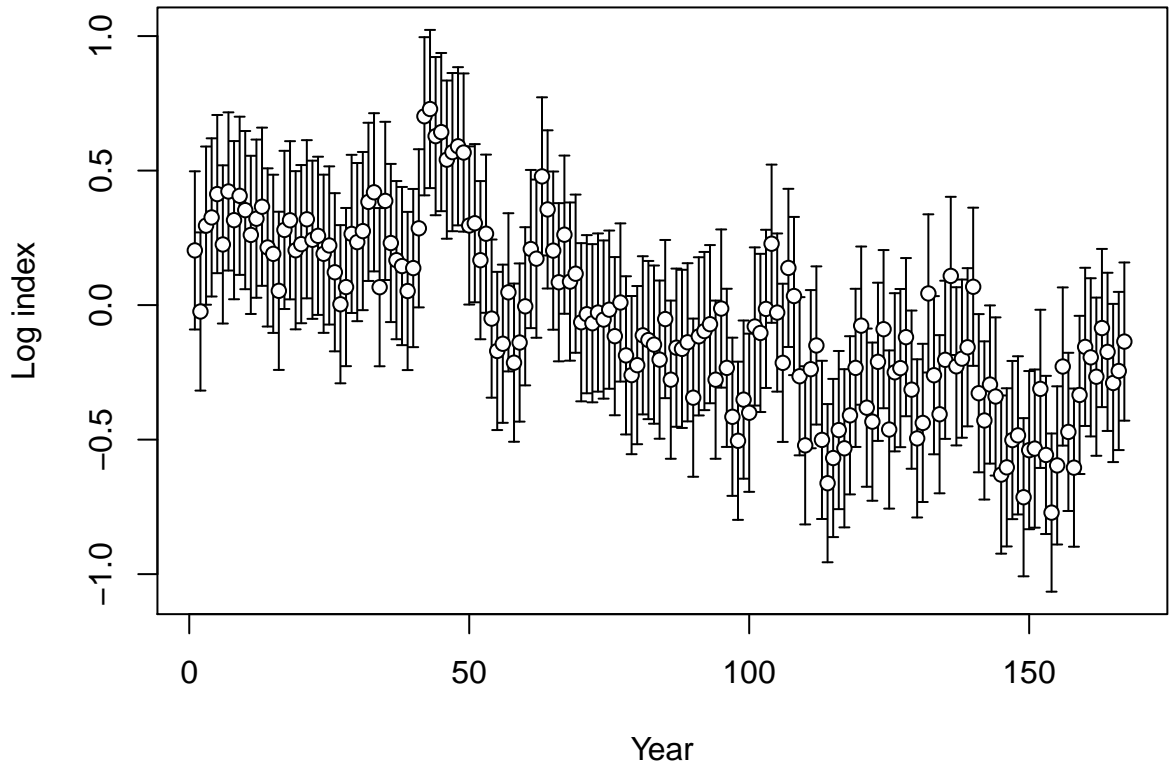
Index F14-LL\_S\_num



Index F14-LL\_S\_num

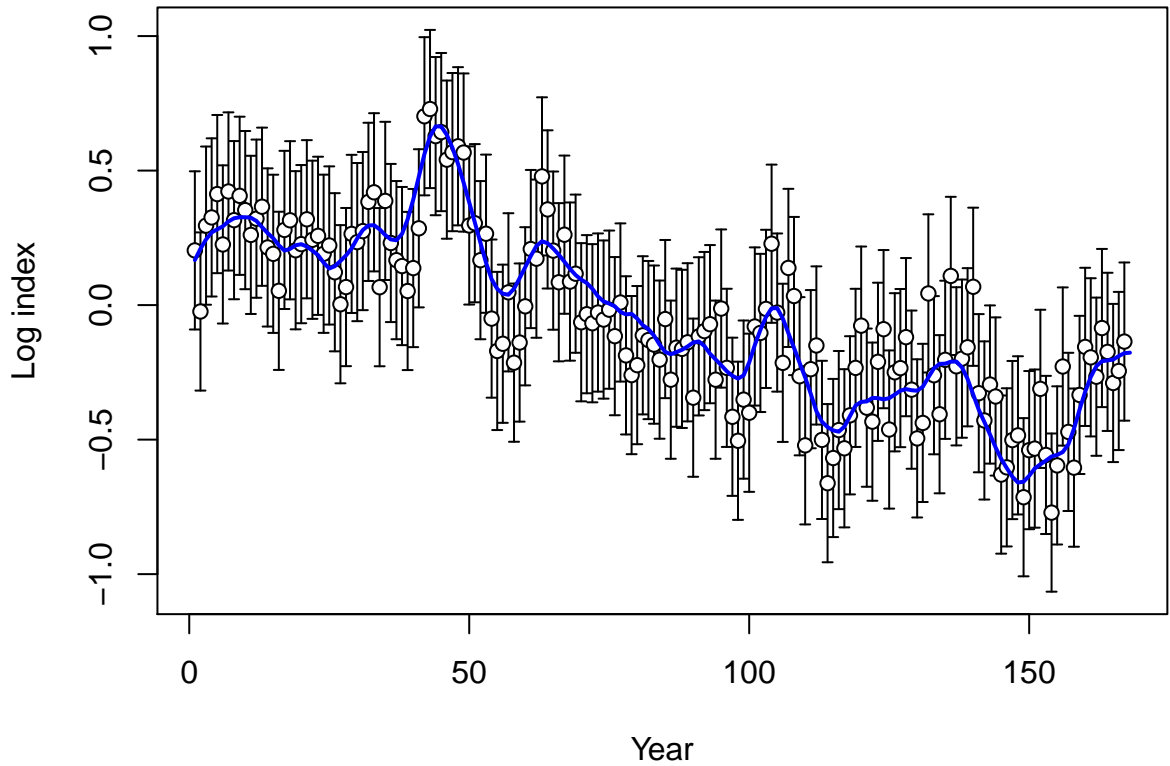


# Log index F14-LL\_S\_num

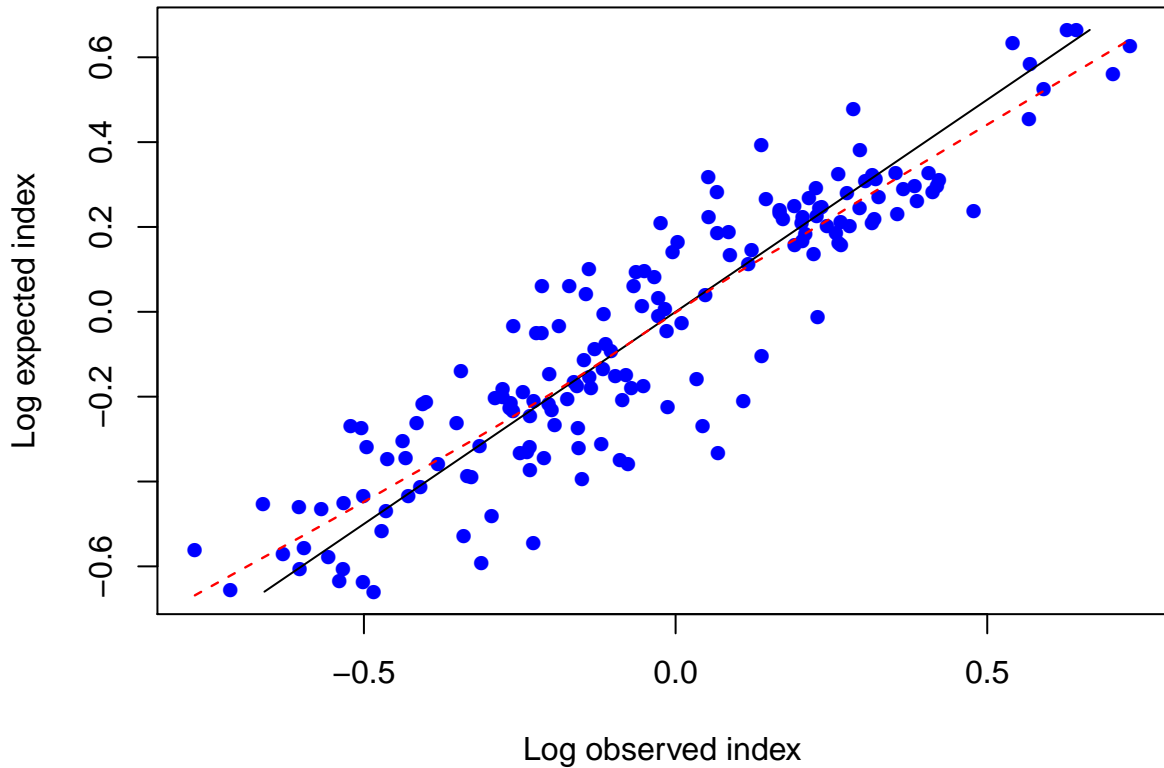




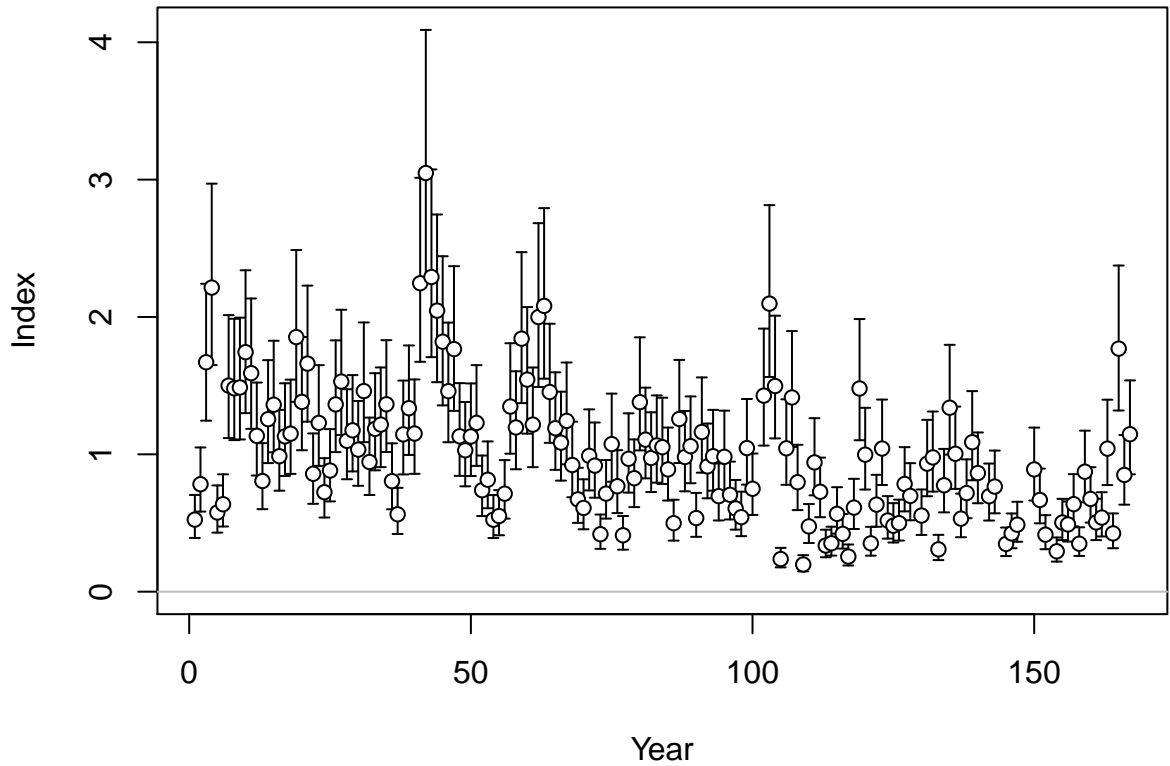
Log index F14-LL\_S\_num



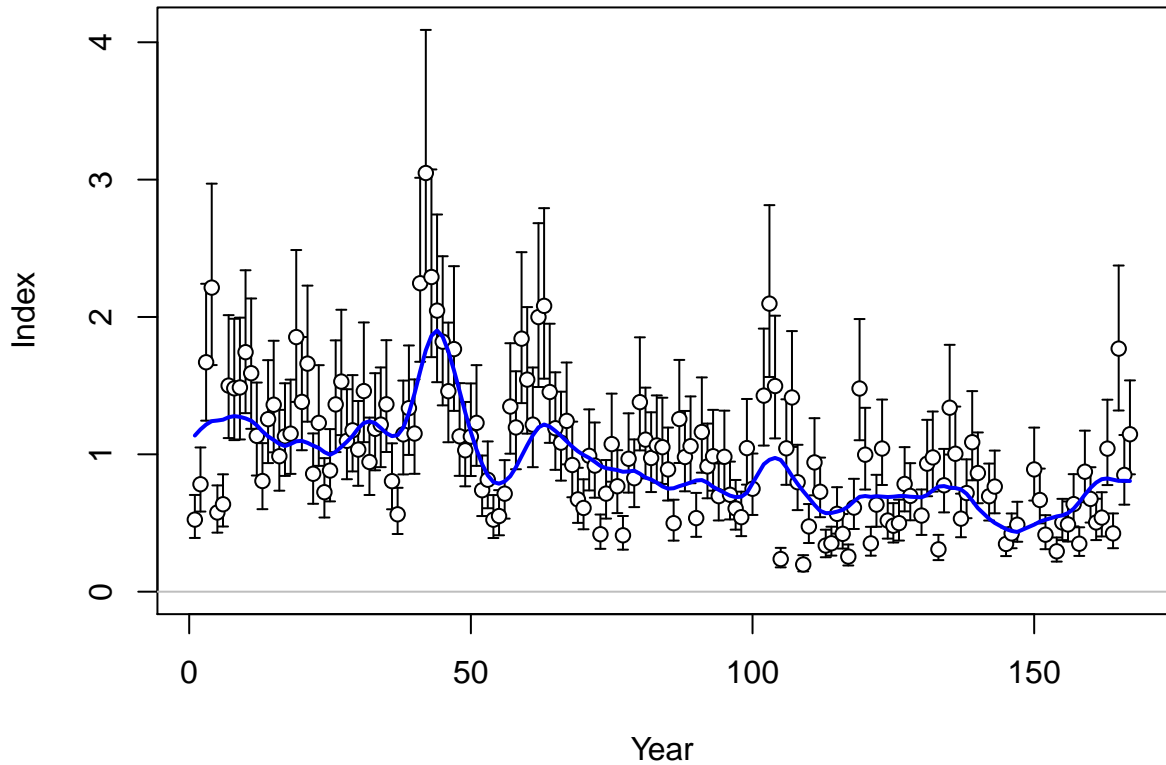
Log index F14-LL\_S\_num



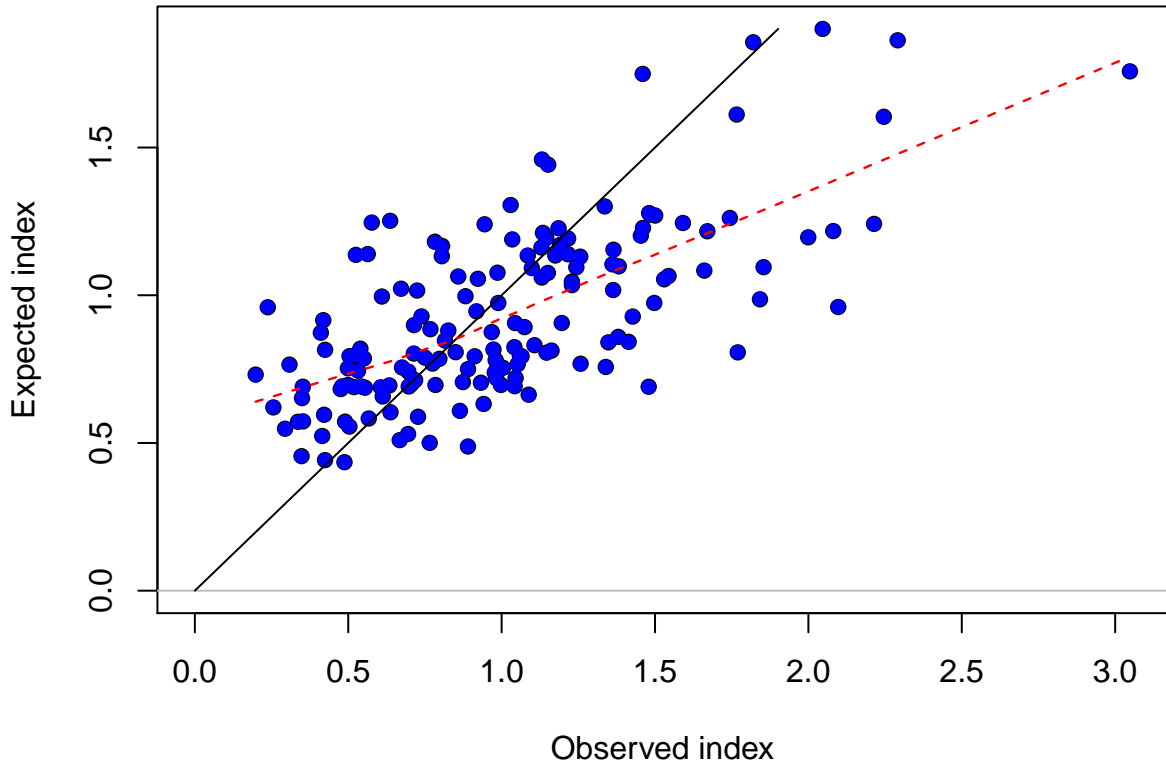
# Index F15-LL\_I\_num



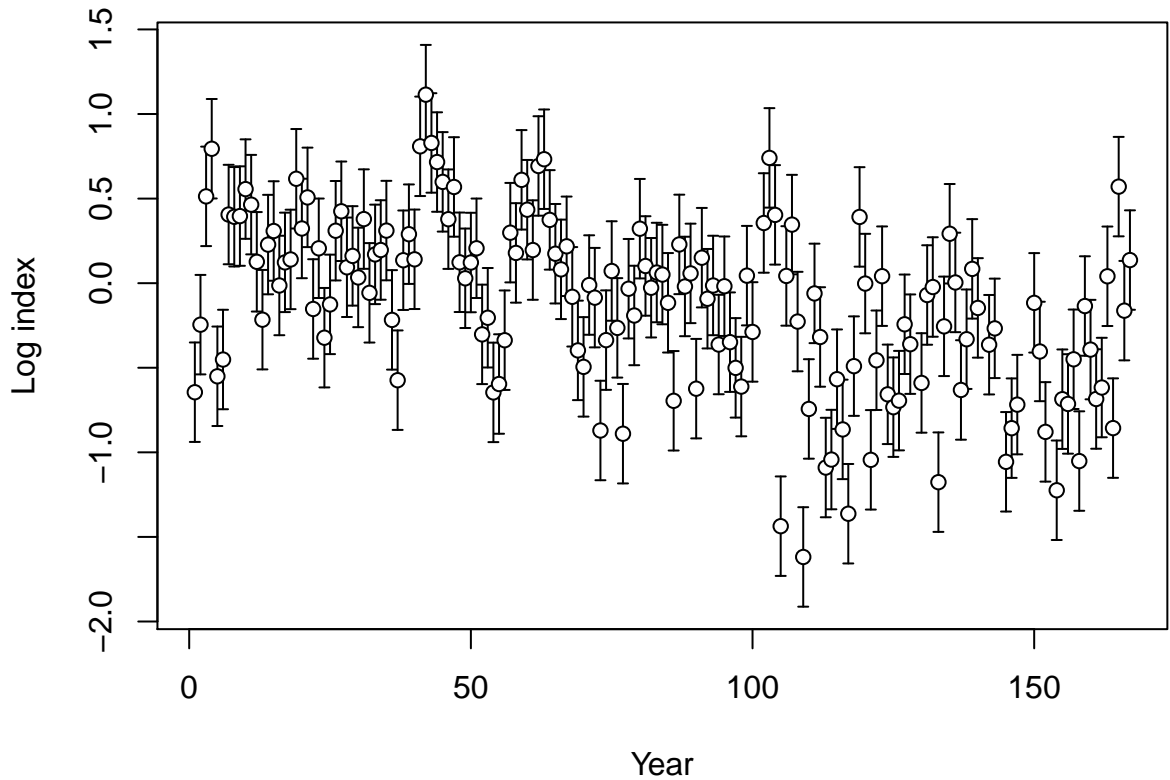
# Index F15-LL\_I\_num



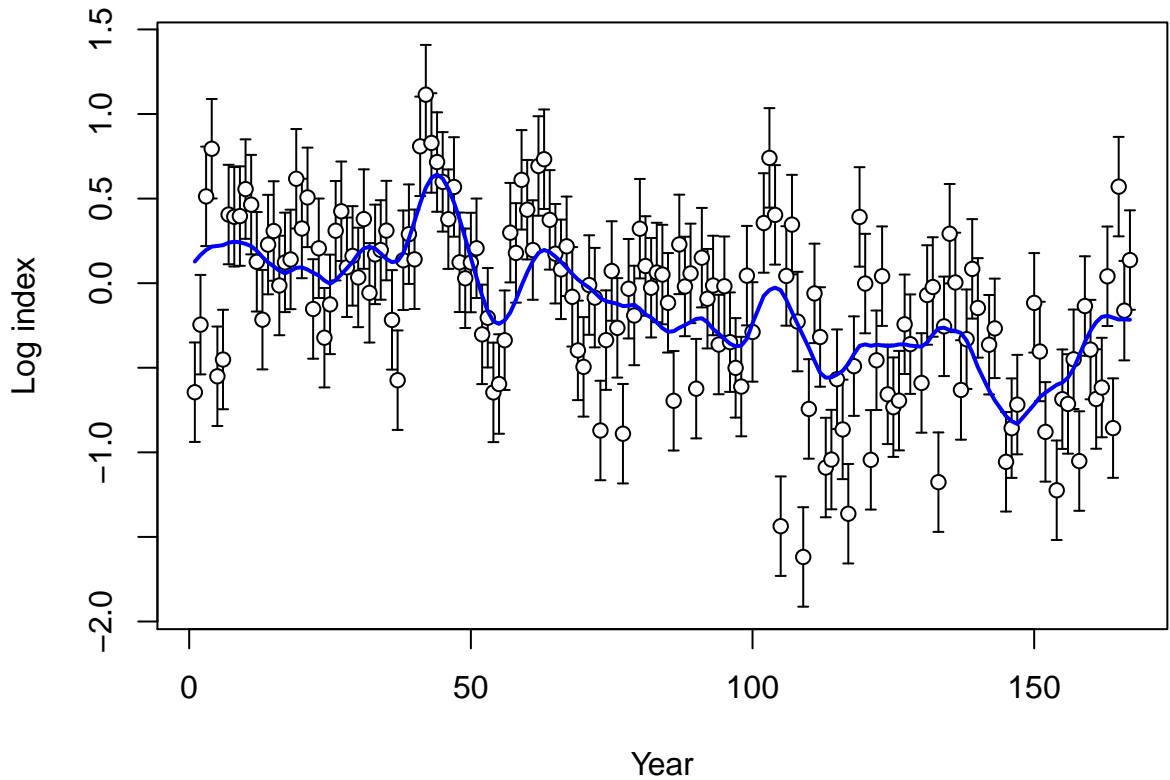
Index F15-LL\_I\_num



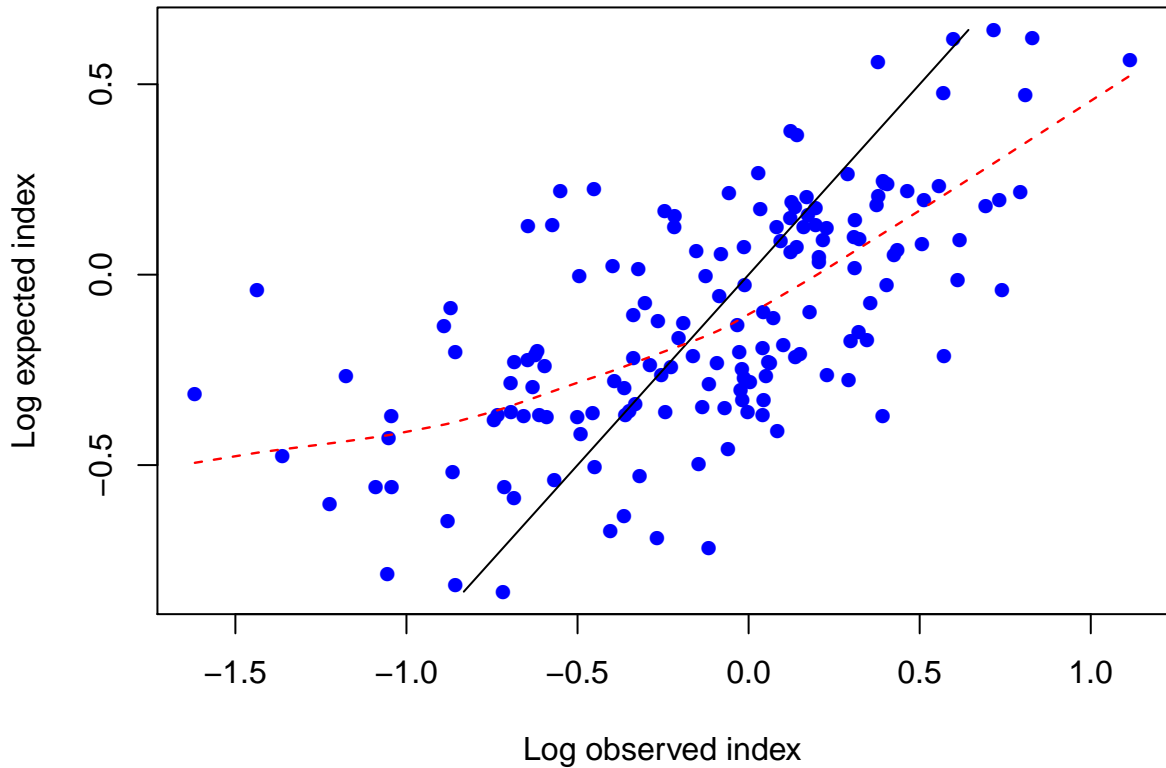
Log index F15-LL\_I\_num



Log index F15-LL\_I\_num

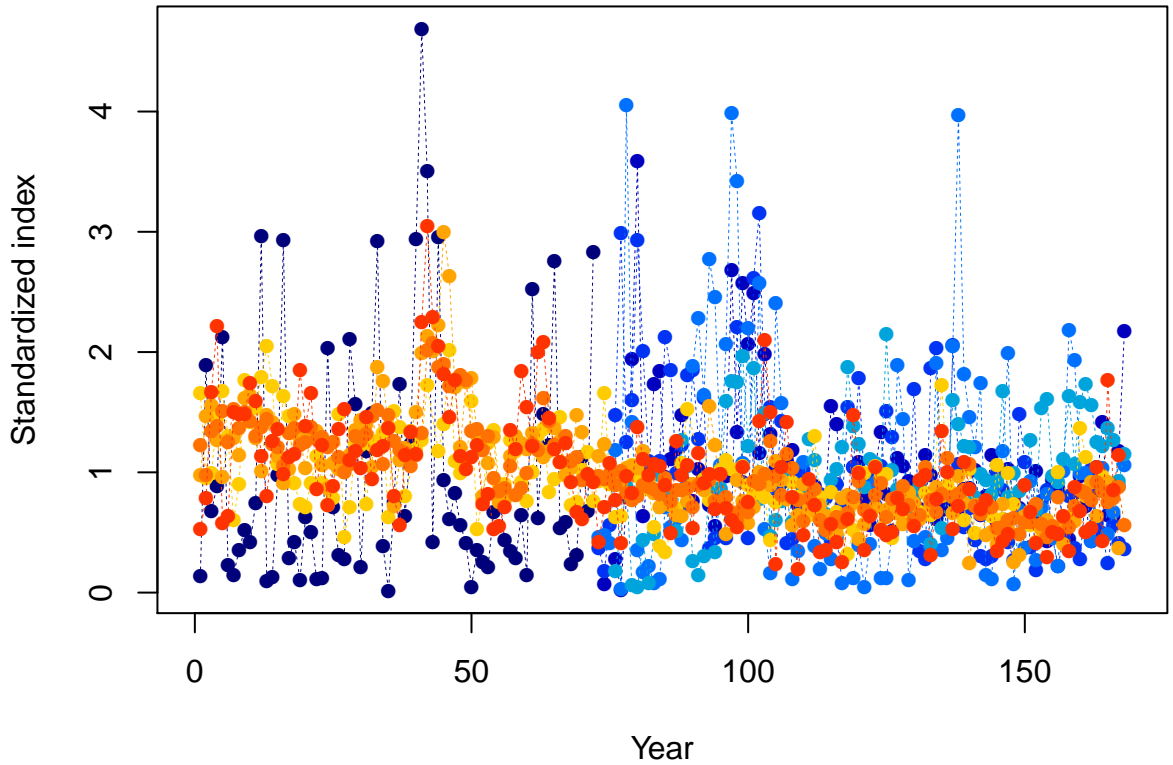


Log index F15-LL\_I\_num

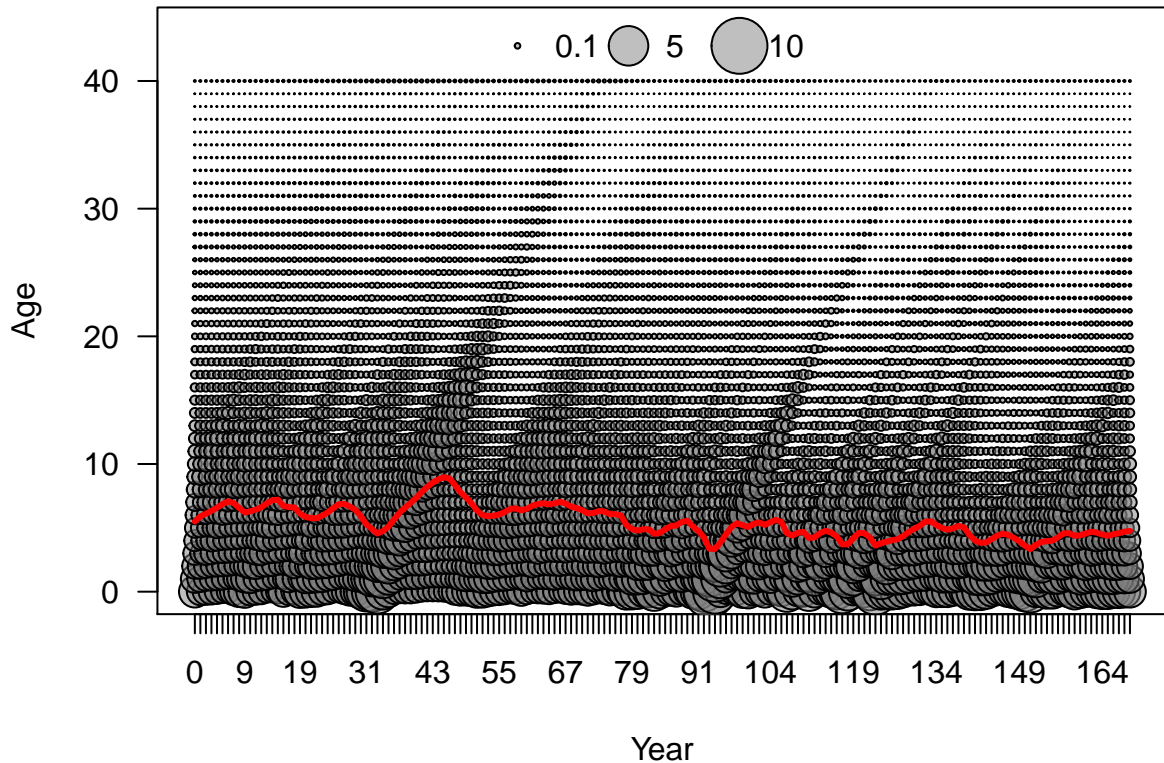




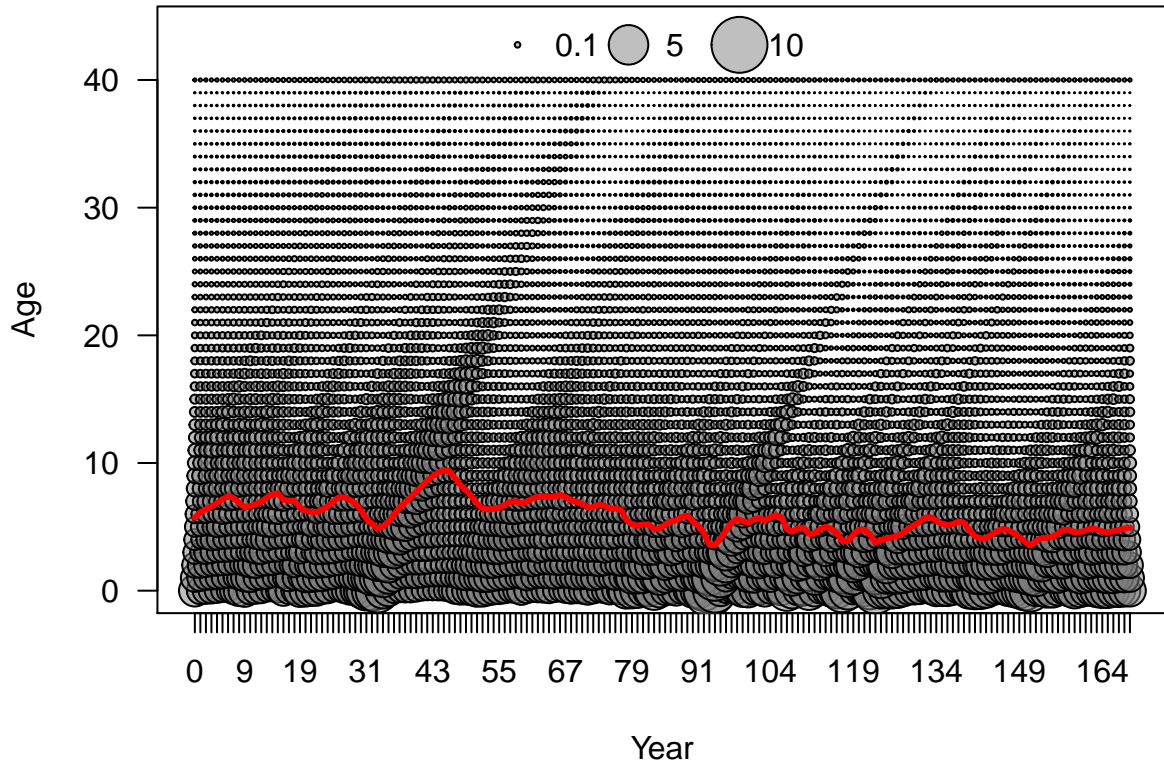
All cpue plot



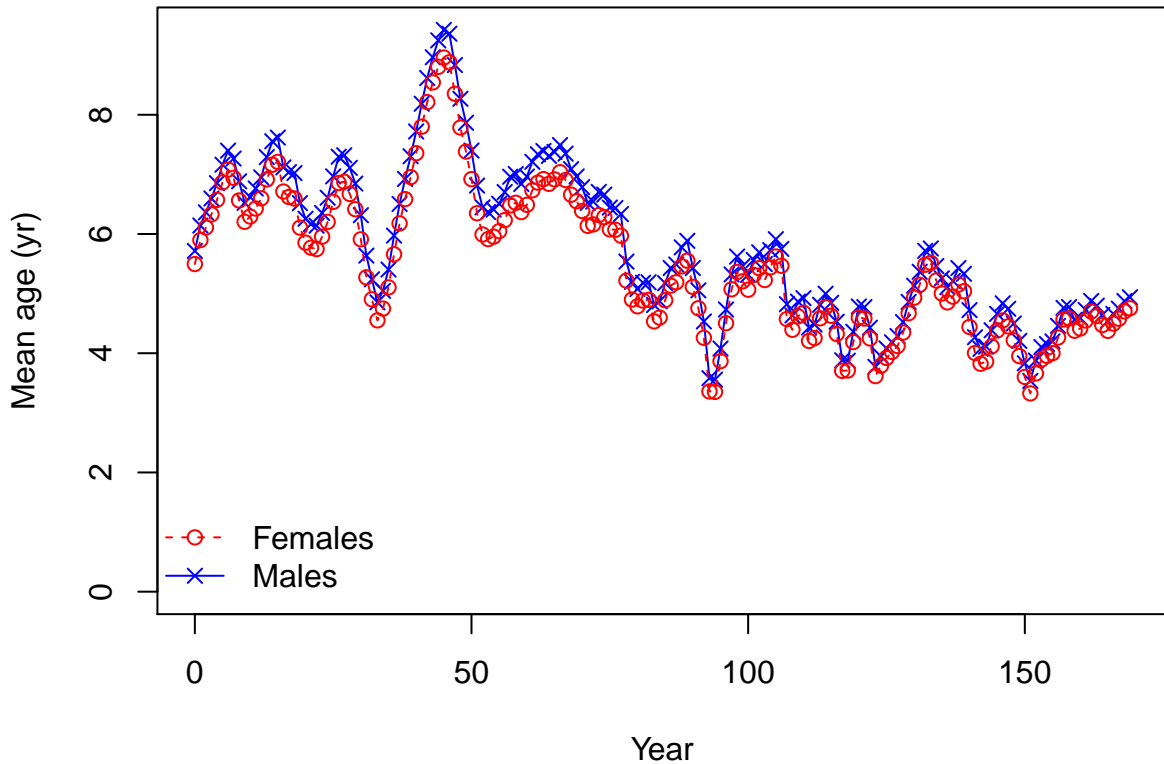
# Beginning of year expected numbers at age of females in (max ~ 8.6 million)



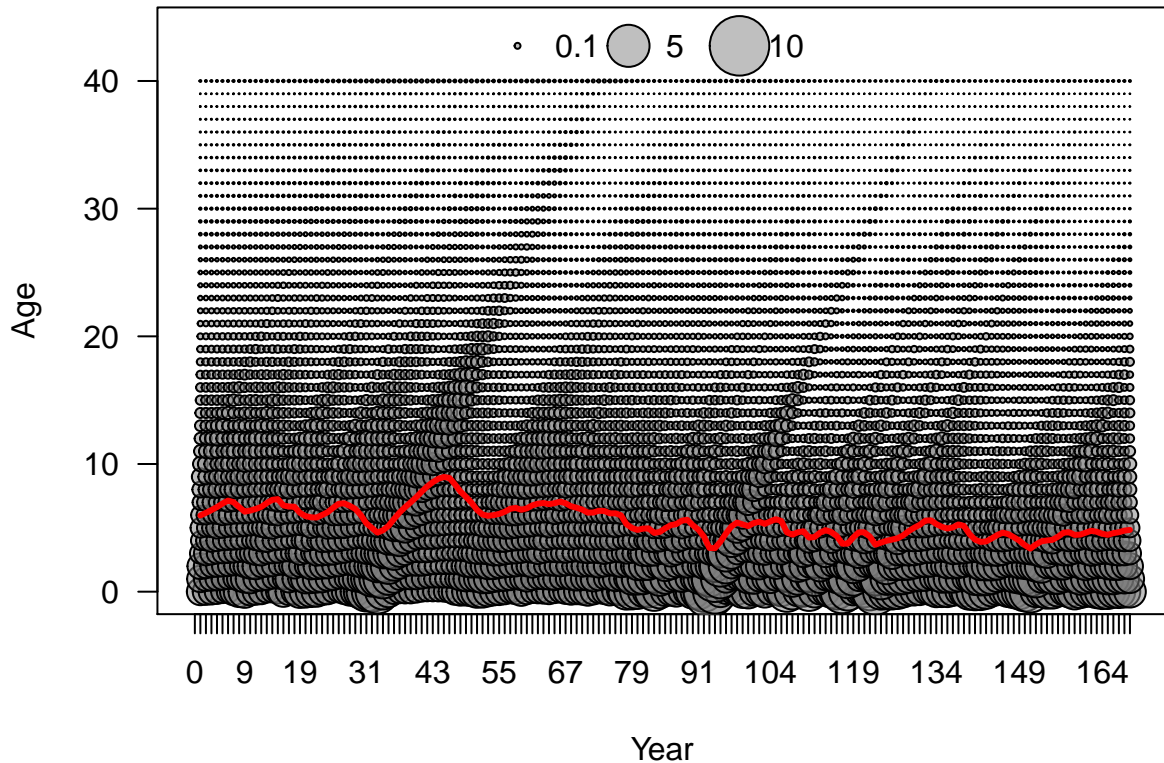
# Beginning of year expected numbers at age of males in (max ~ 8.6 million)



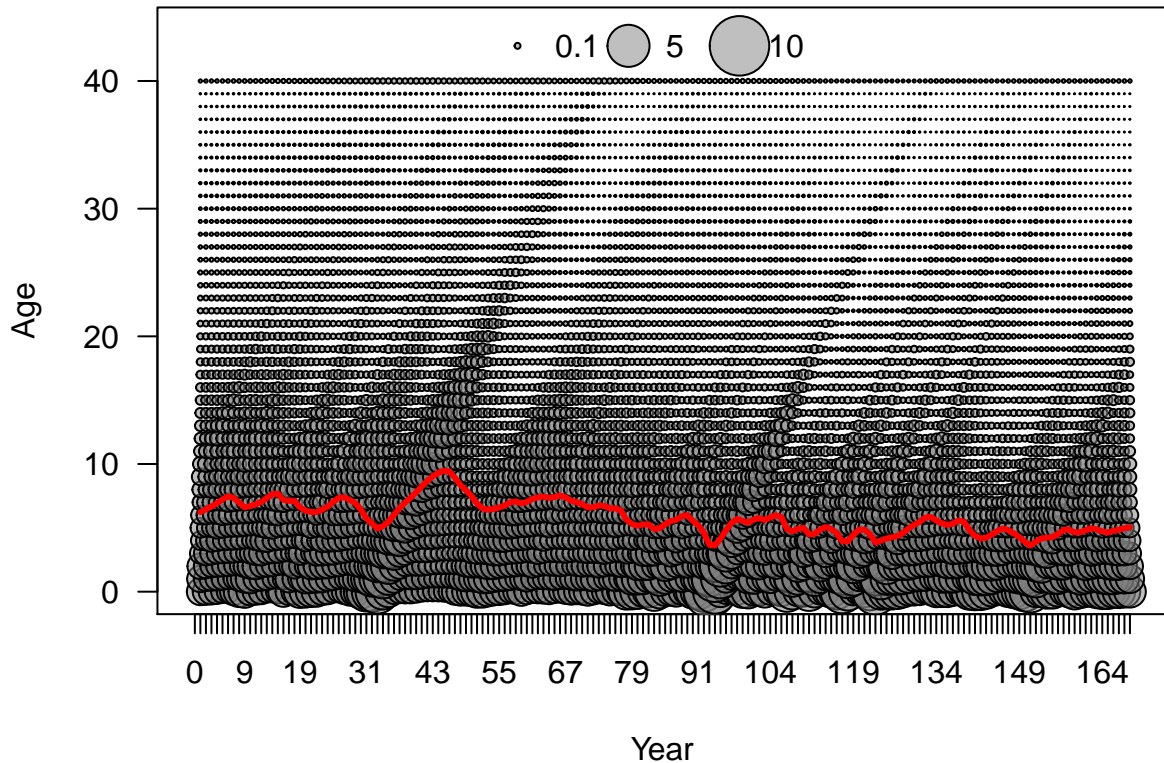
## Beginning of year mean age in the population



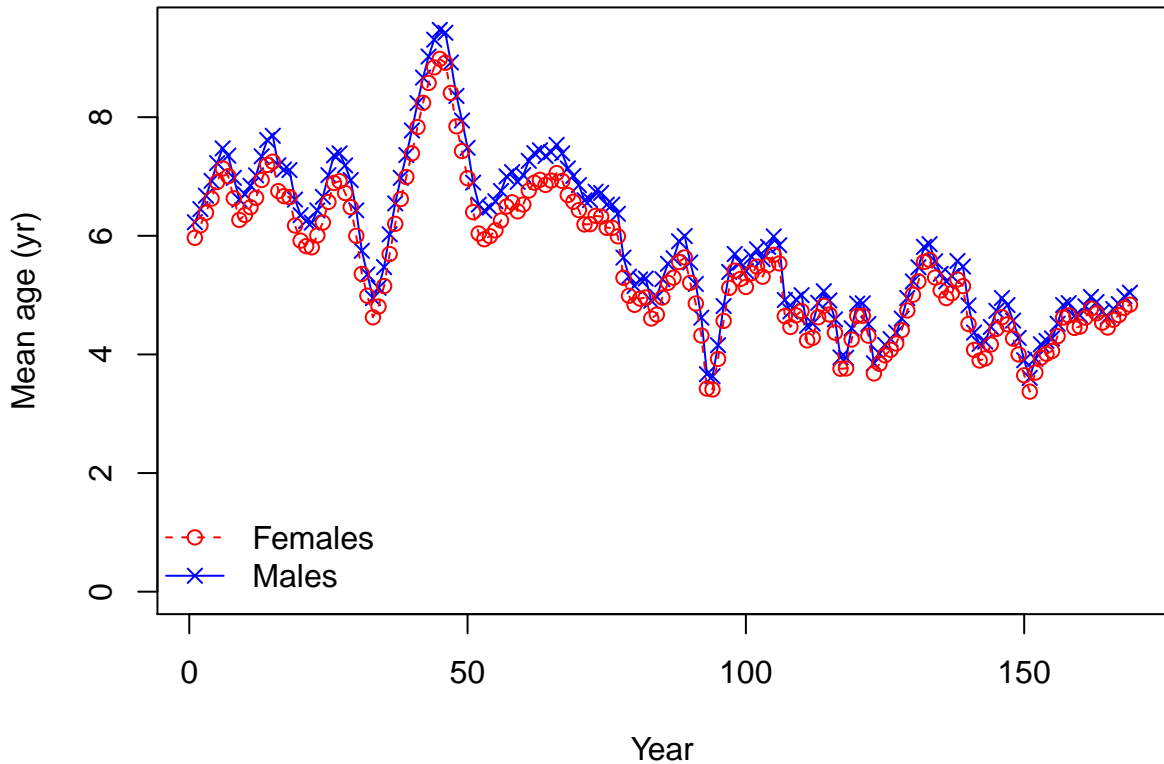
# Middle of year expected numbers at age of females in (max ~ 7.6 million)



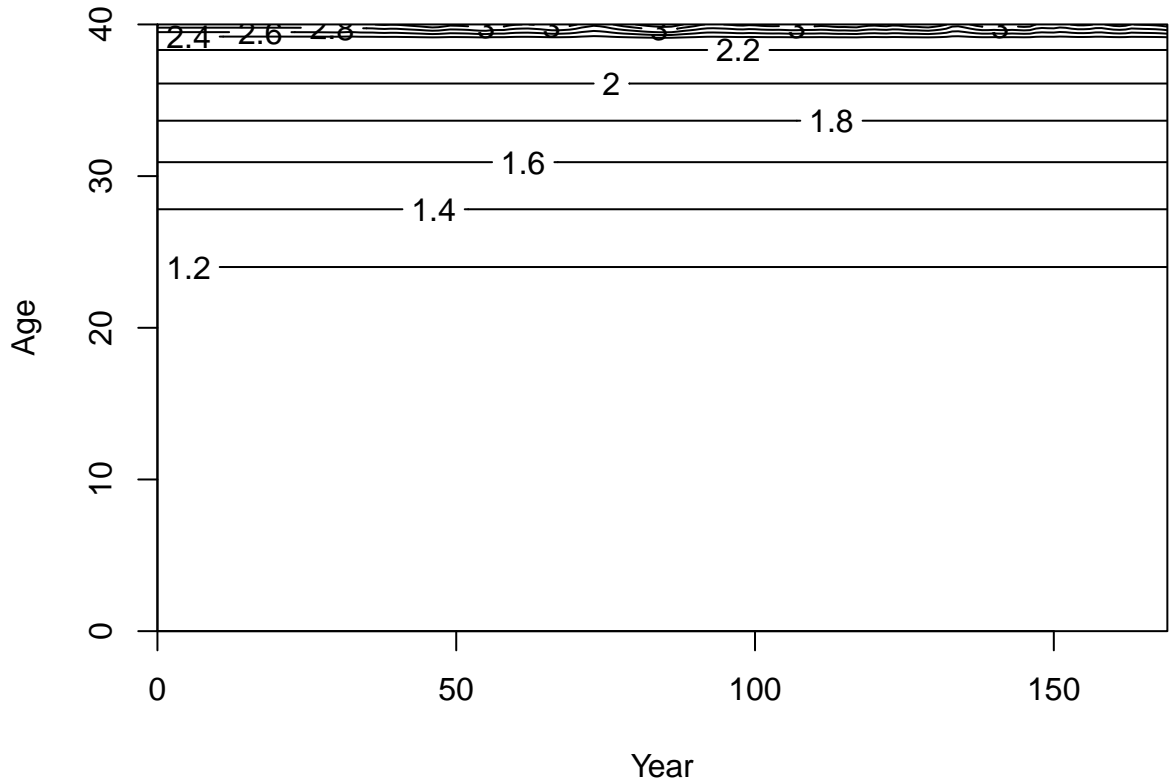
# Middle of year expected numbers at age of males in (max ~ 7.6 million)



## Middle of year mean age in the population

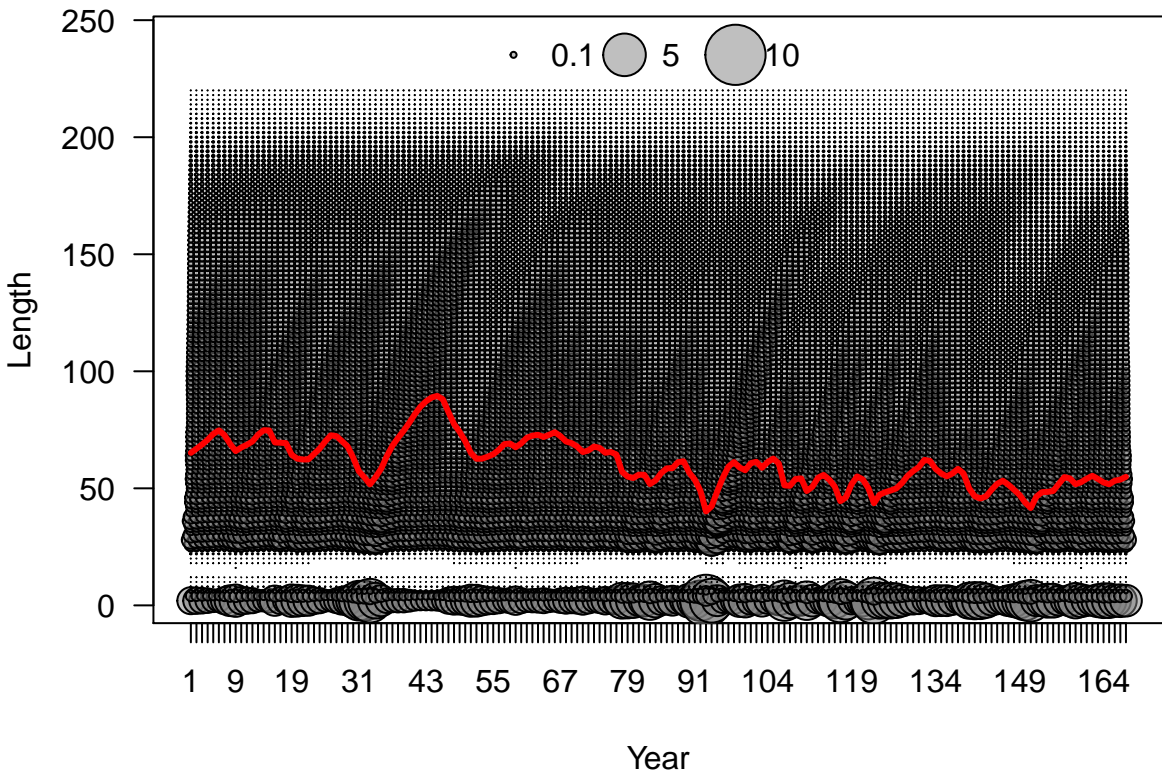


# Sex ratio of numbers at age (males/females)

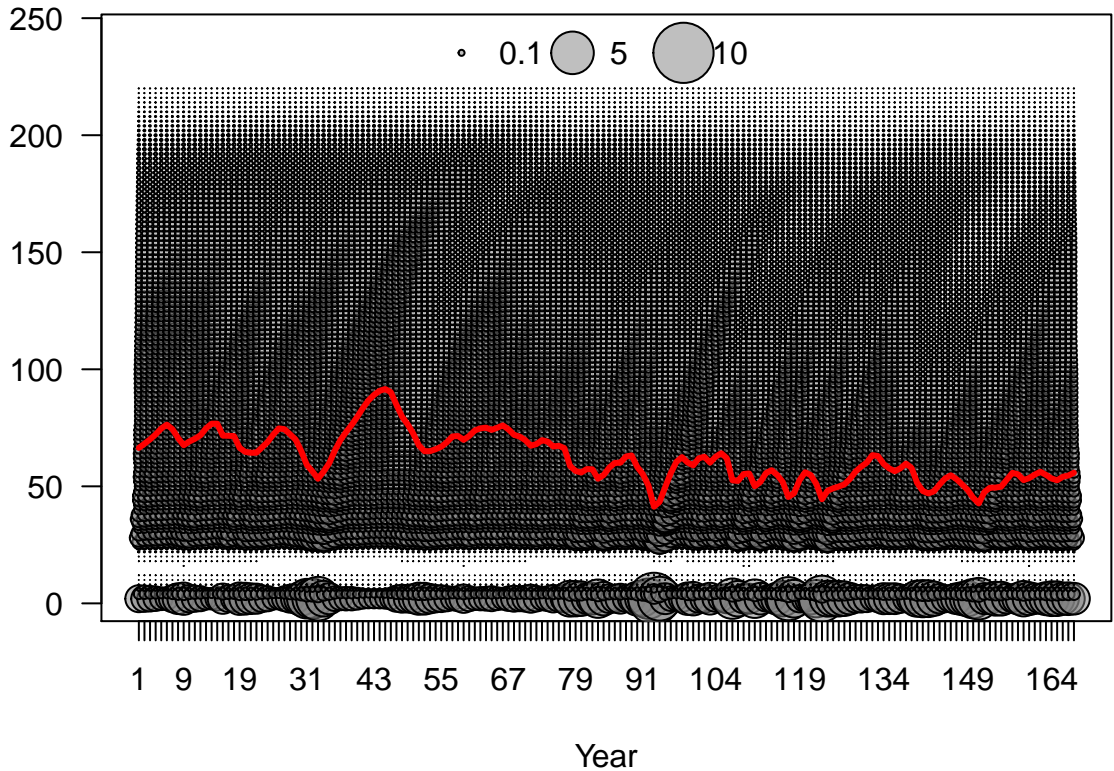




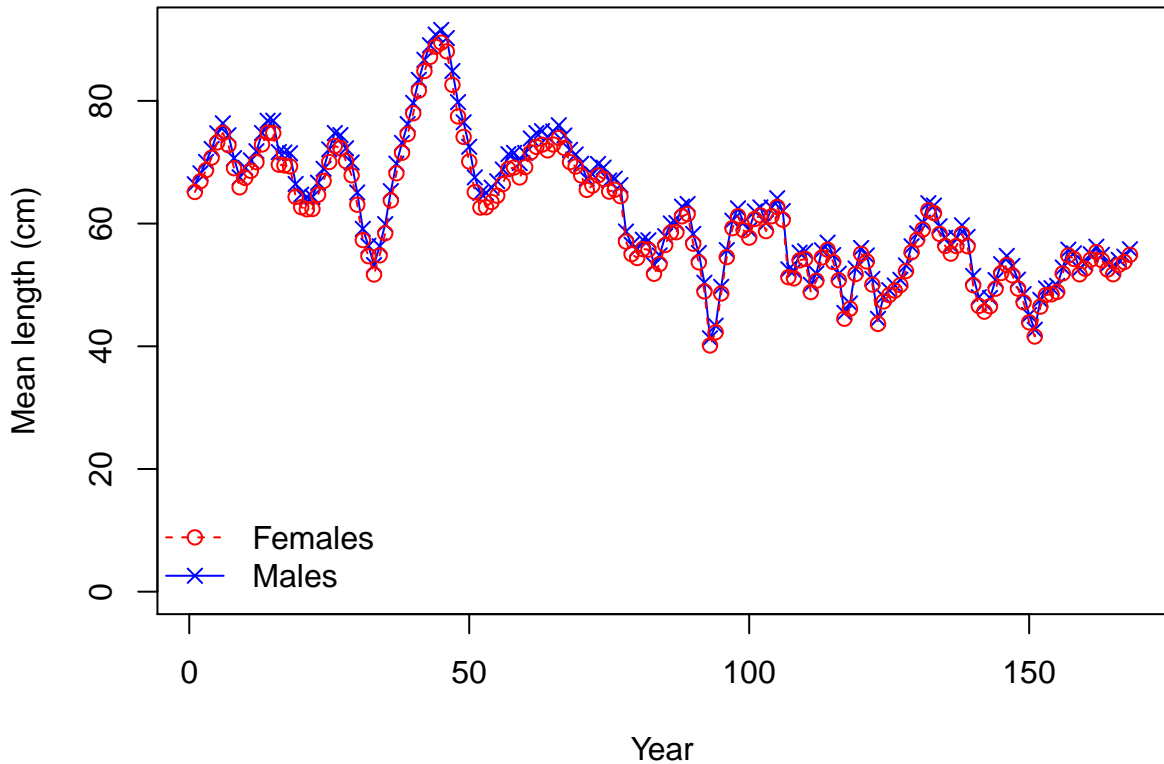
# Beginning of year expected numbers at length of females in (max ~ 7.4 million)



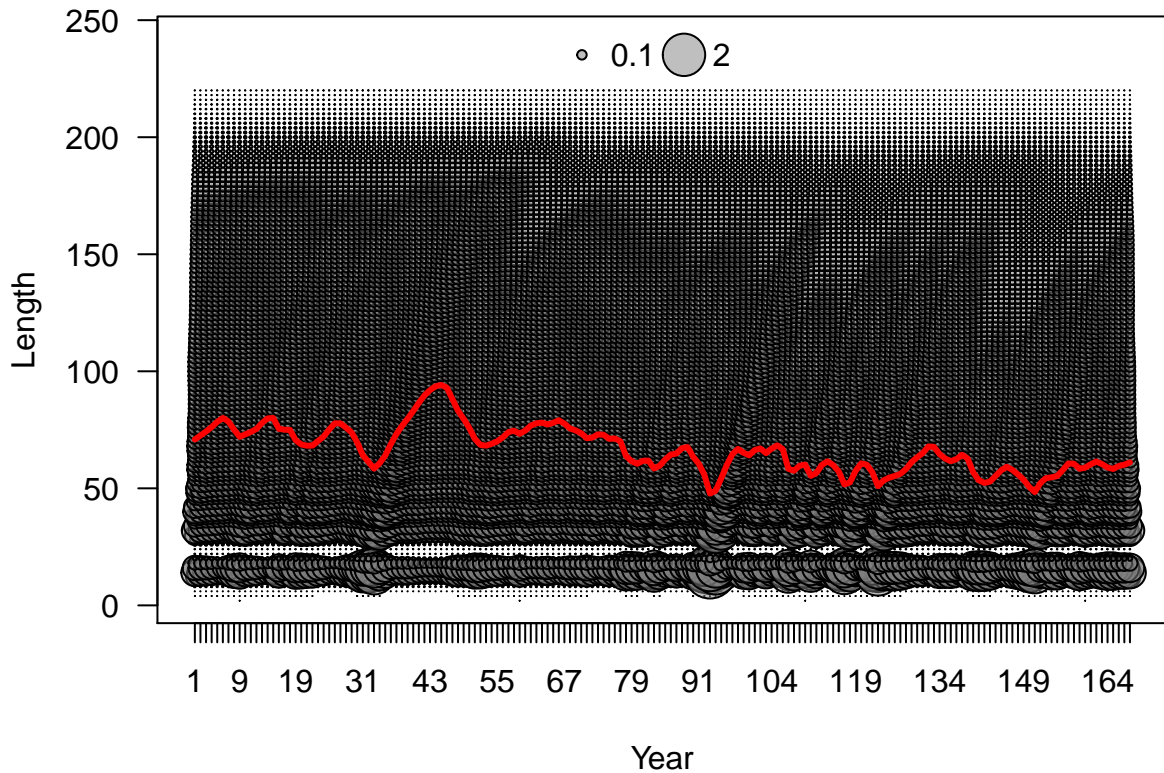
# Beginning of year expected numbers at length of males in (max ~ 7.4 million)



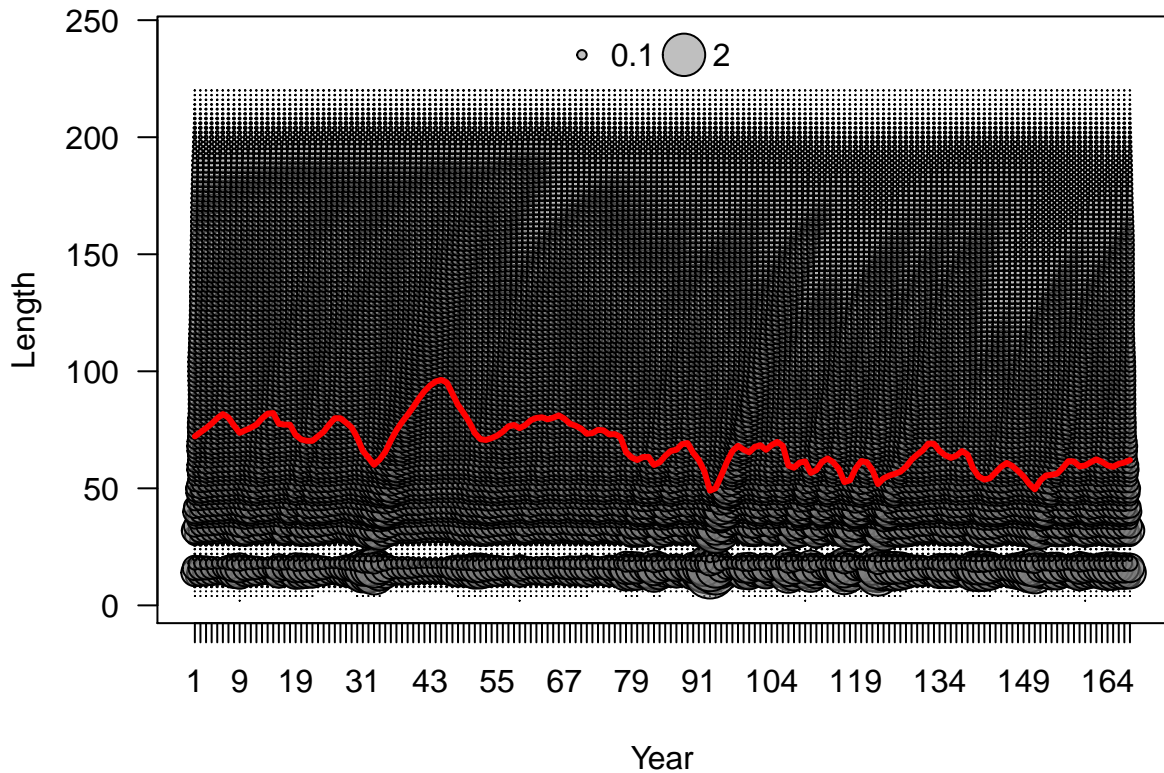
## Beginning of year mean length (cm) in the population



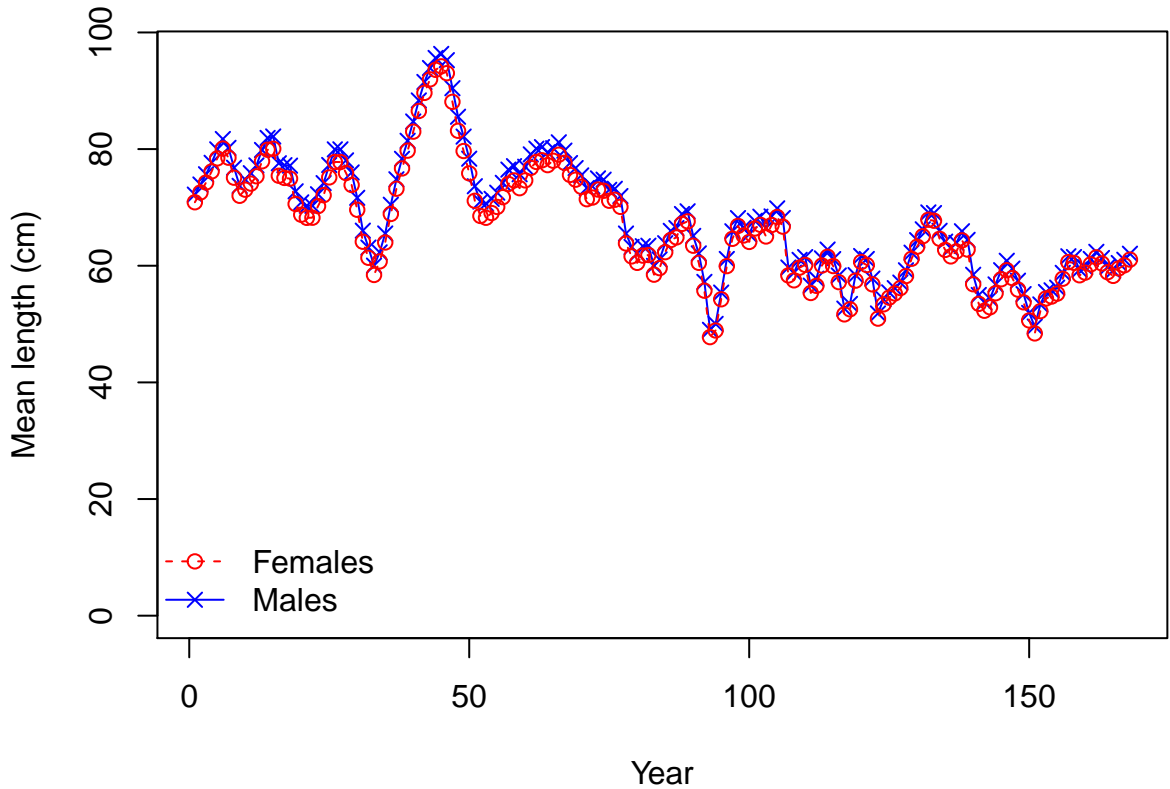
# Middle of year expected numbers at length of females in (max ~ 3.0 million)



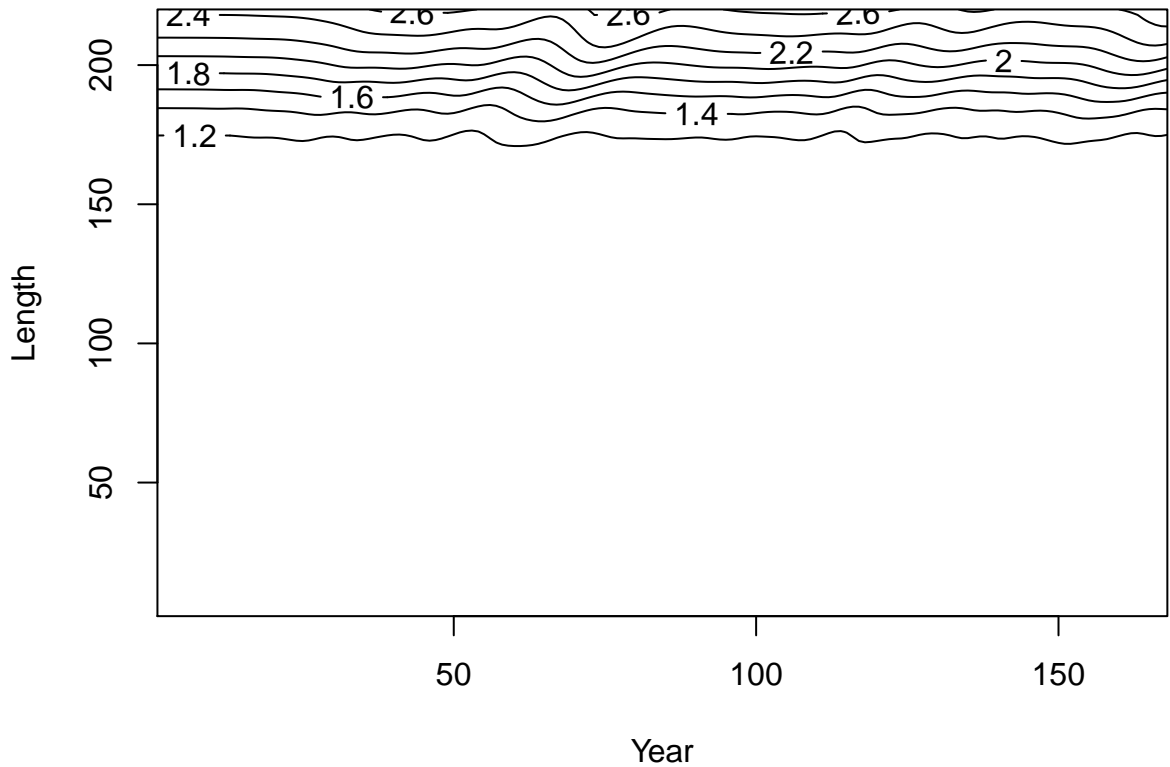
# Middle of year expected numbers at length of males in (max ~ 3.0 million)



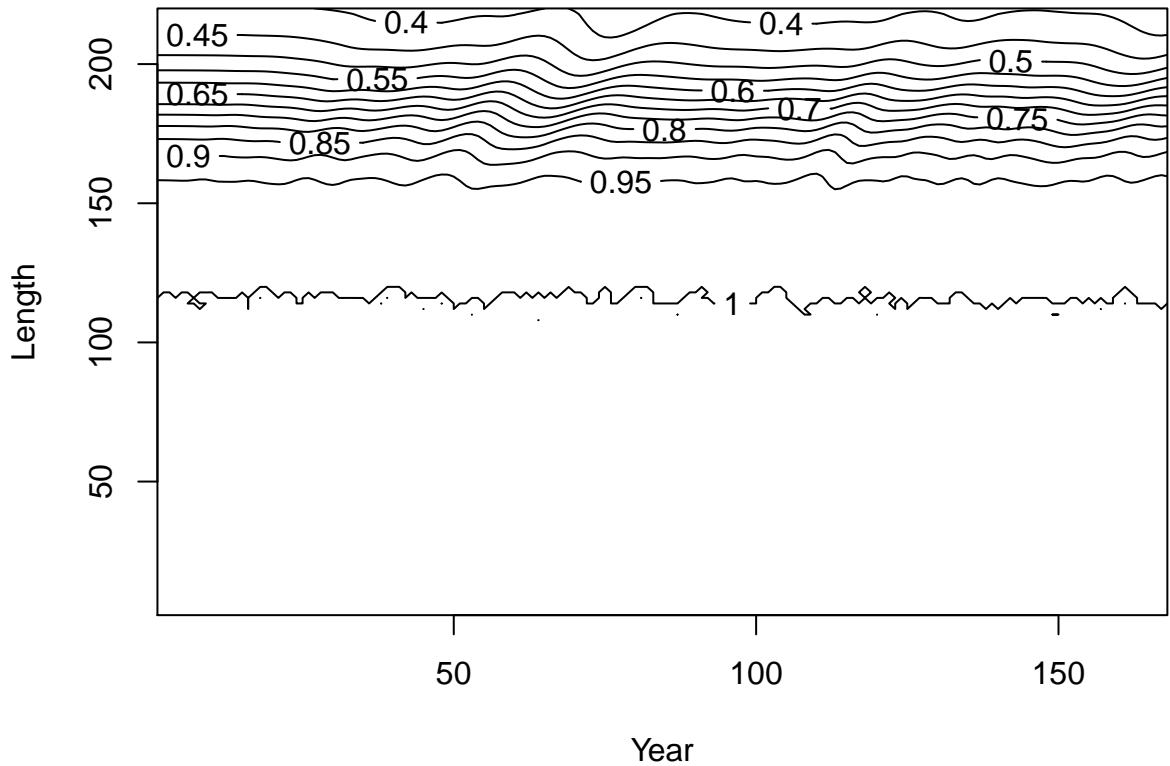
## Middle of year mean length (cm) in the population



# Sex ratio of numbers at length (males/females)

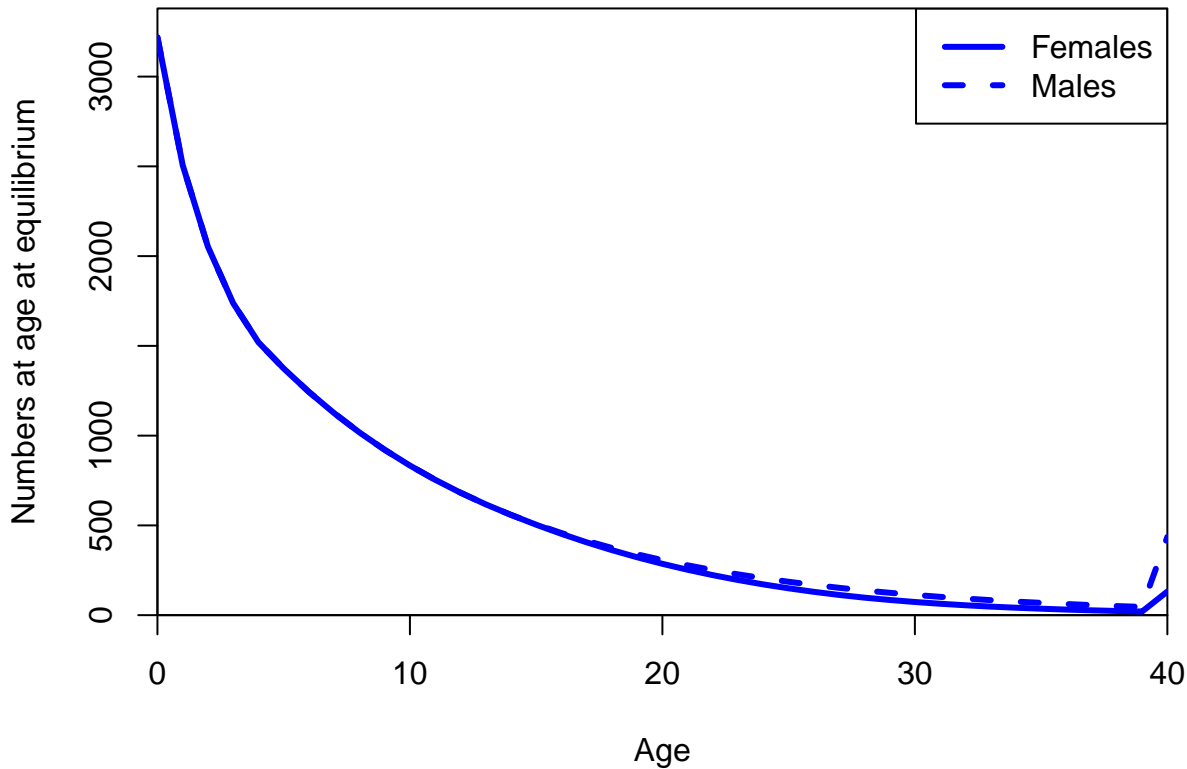


### Sex ratio of numbers at length (females/males)

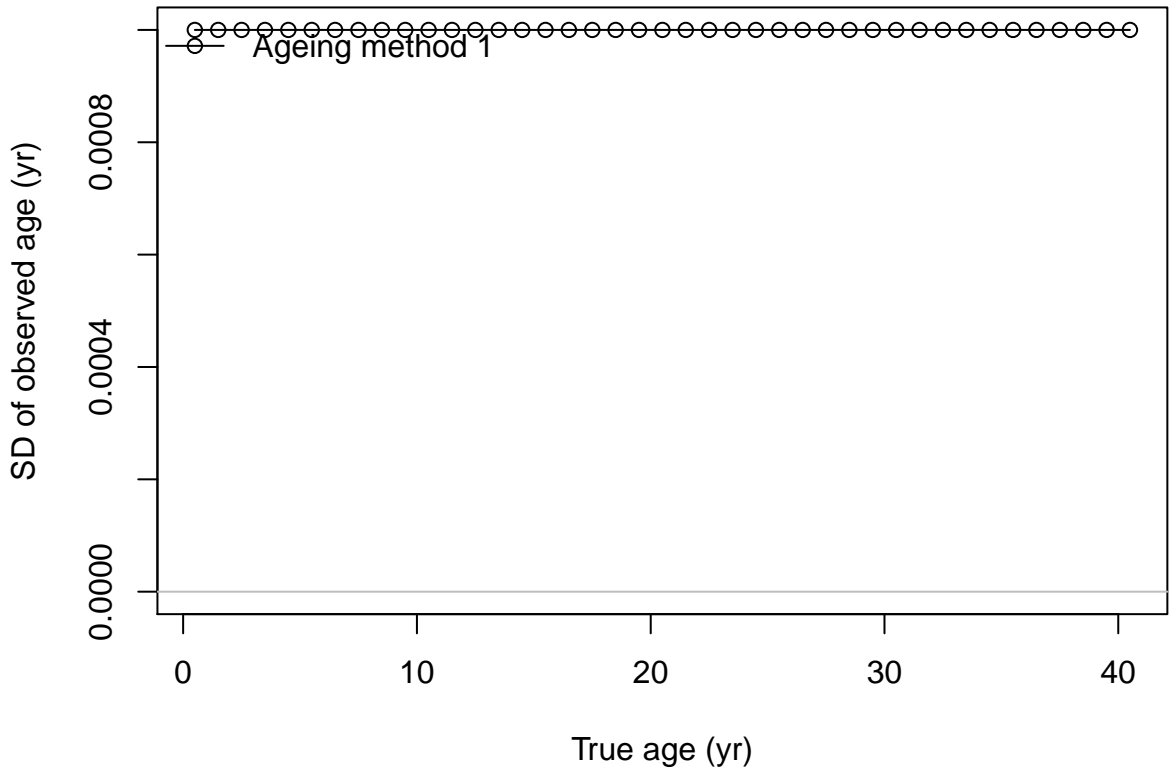




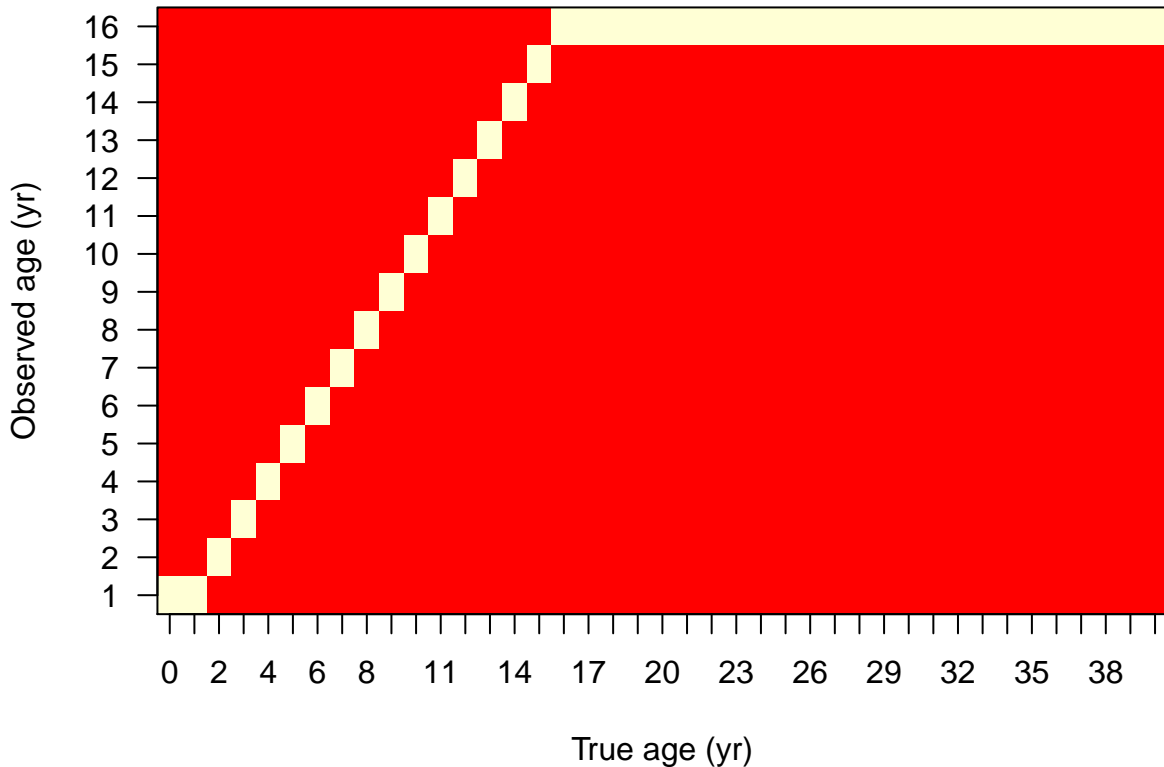
## Equilibrium age distribution



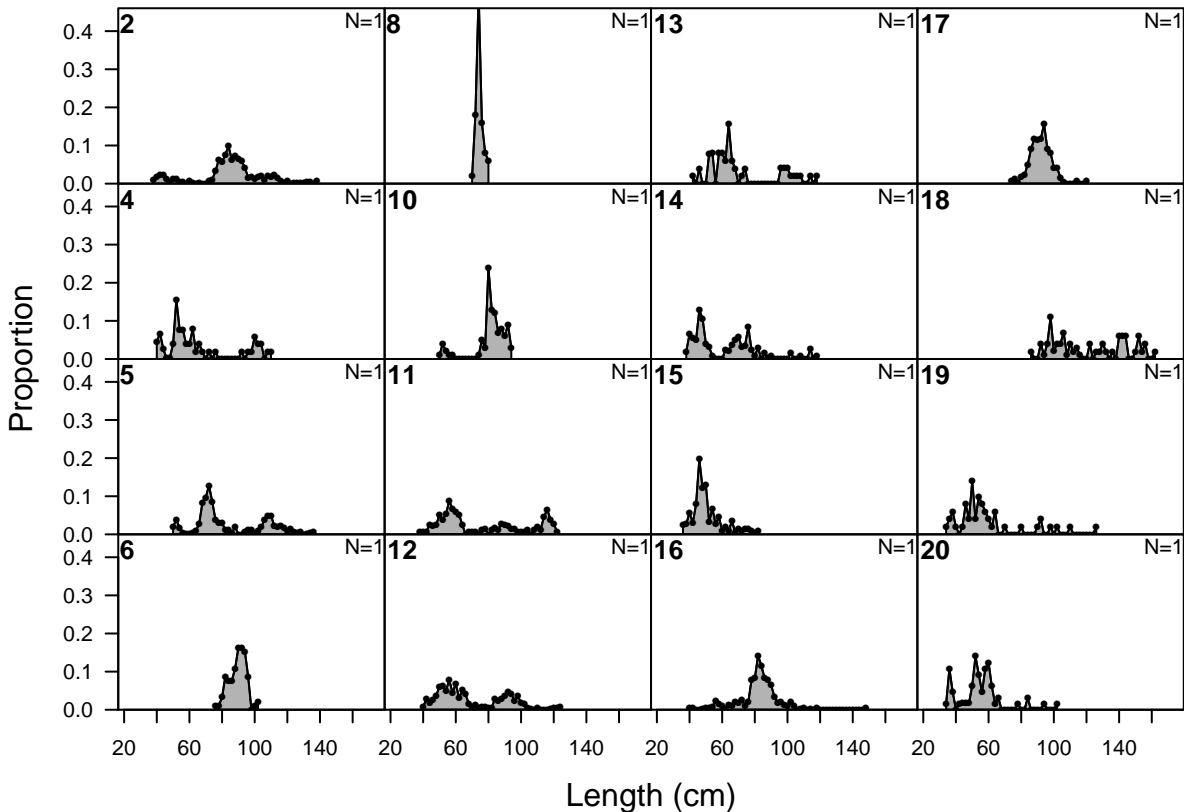
# Ageing imprecision



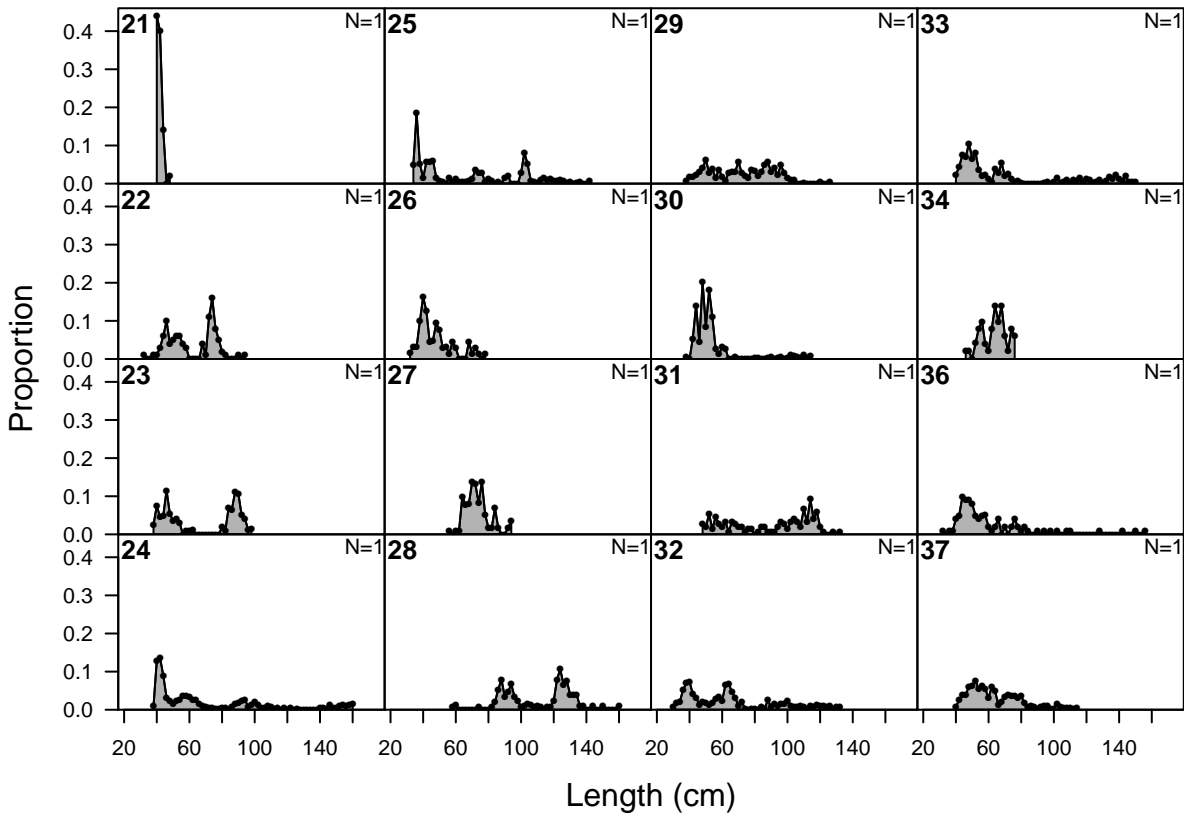
## Ageing imprecision: matrix for method 1



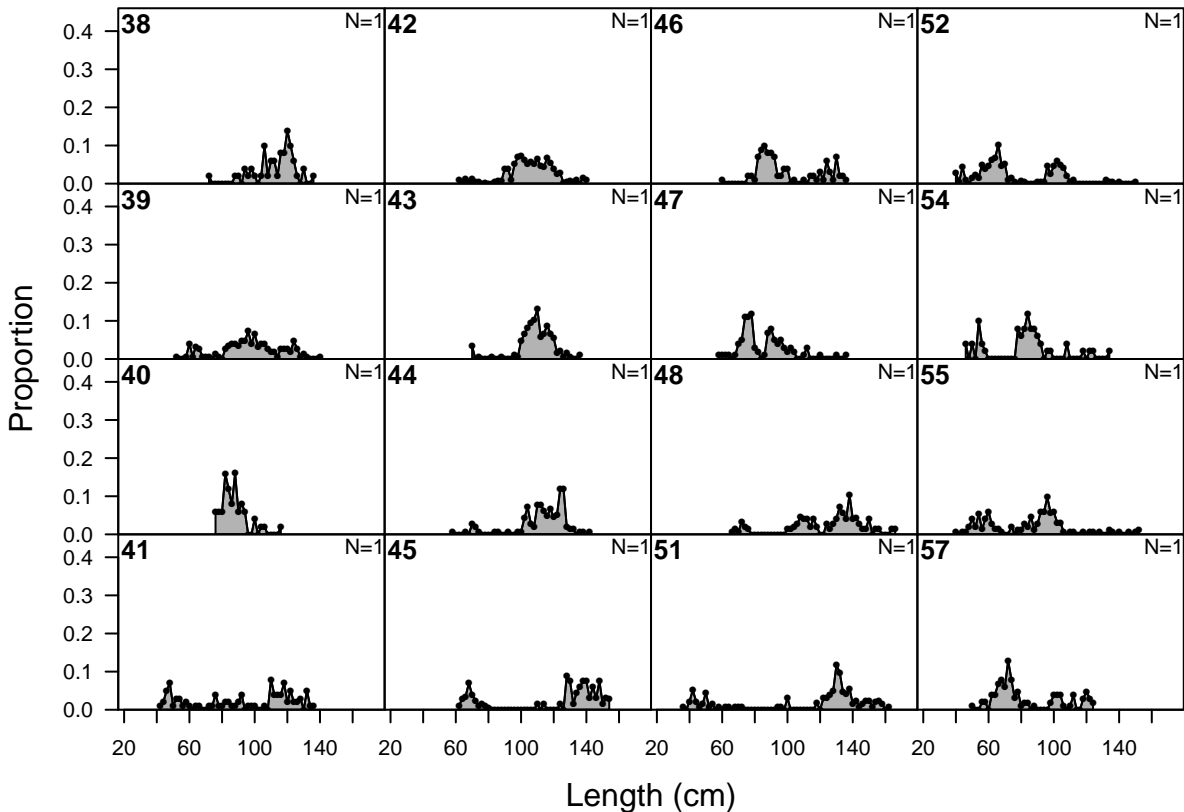
# length comp data, whole catch, F1-Obj\_early



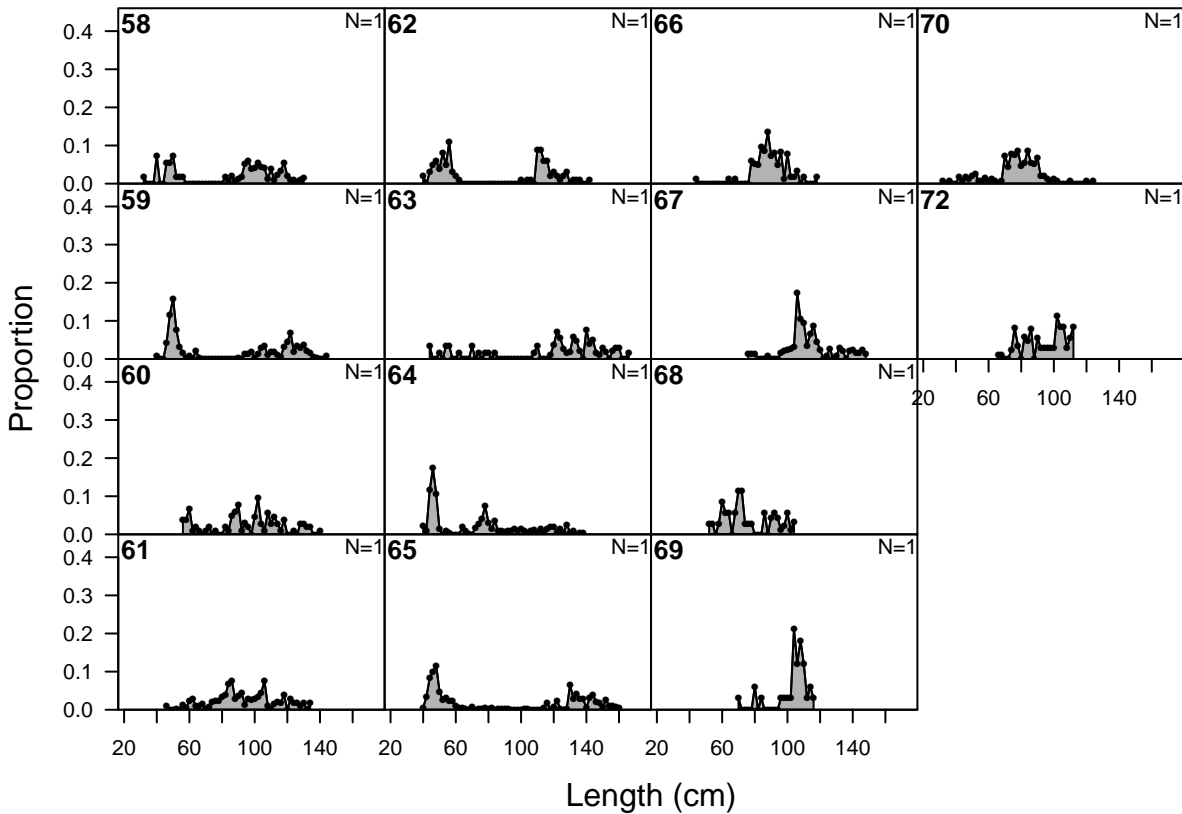
# length comp data, whole catch, F1-Obj\_early



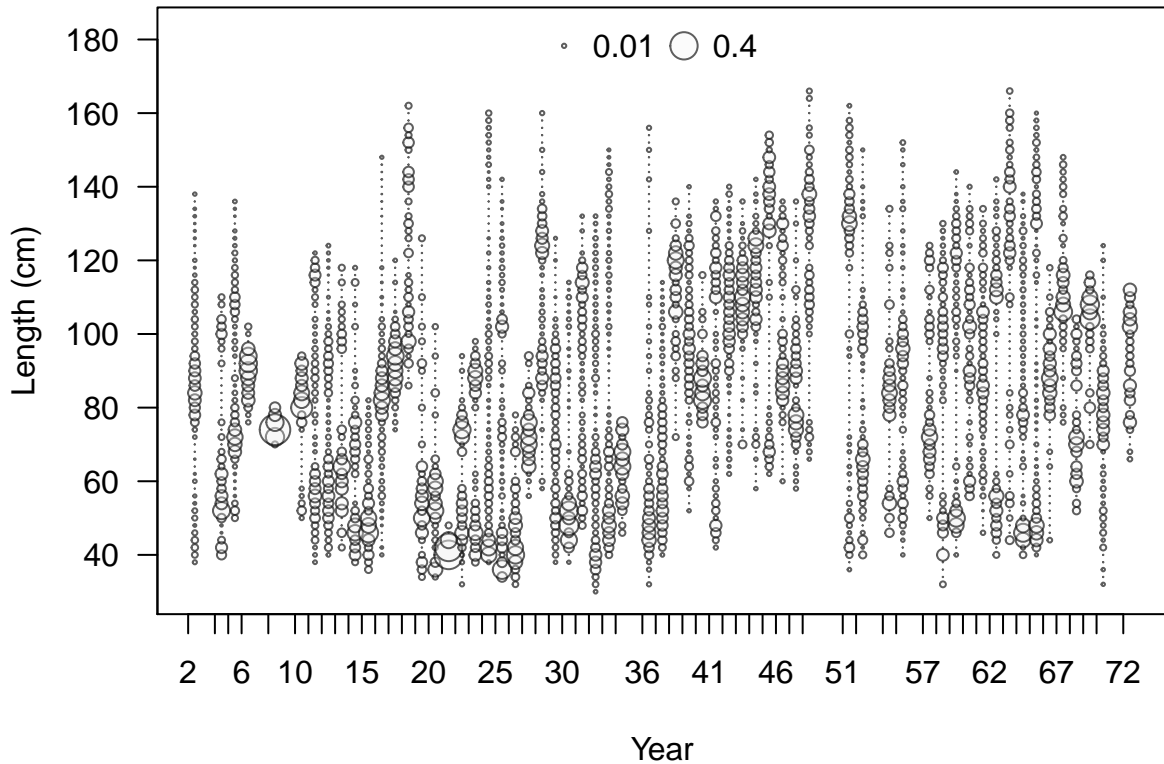
# length comp data, whole catch, F1-Obj\_early



# length comp data, whole catch, F1-Obj\_early

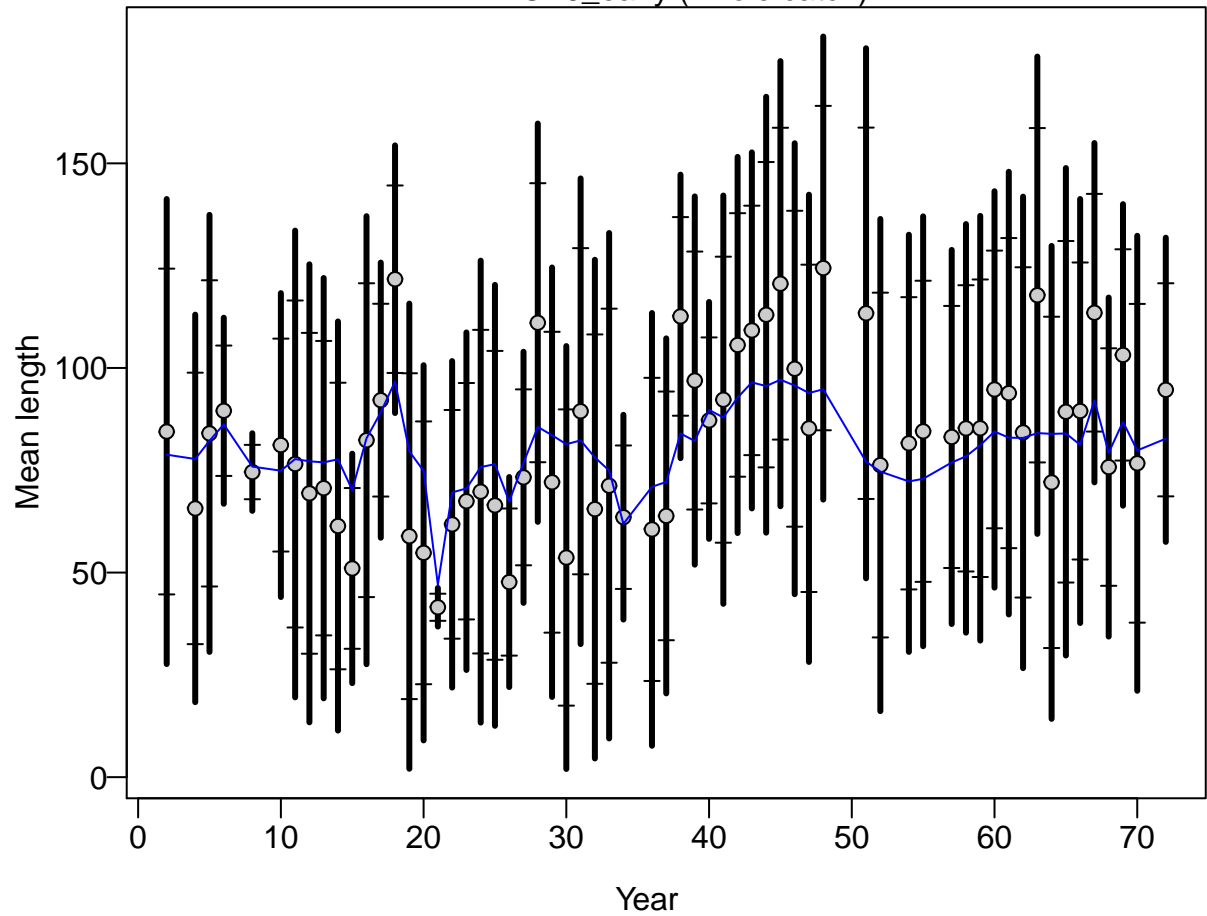


# length comp data, whole catch, F1-OBJ\_early (max=0.5)

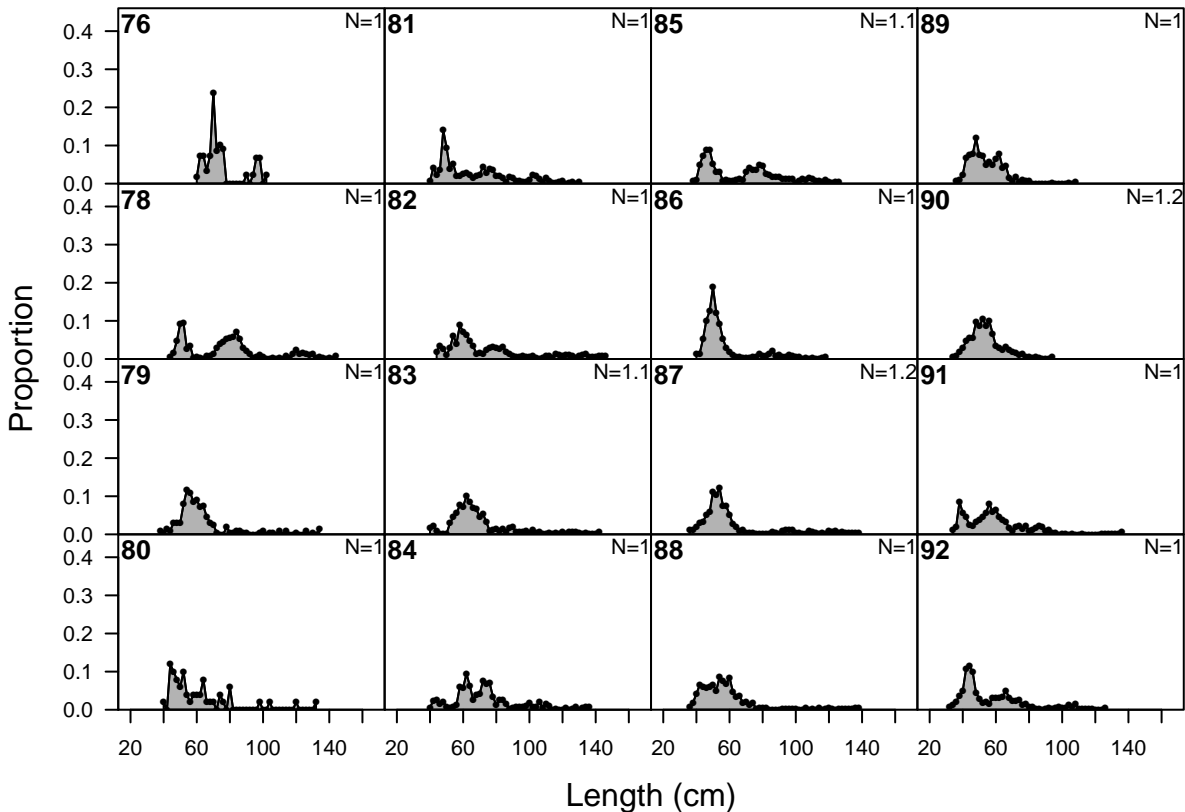




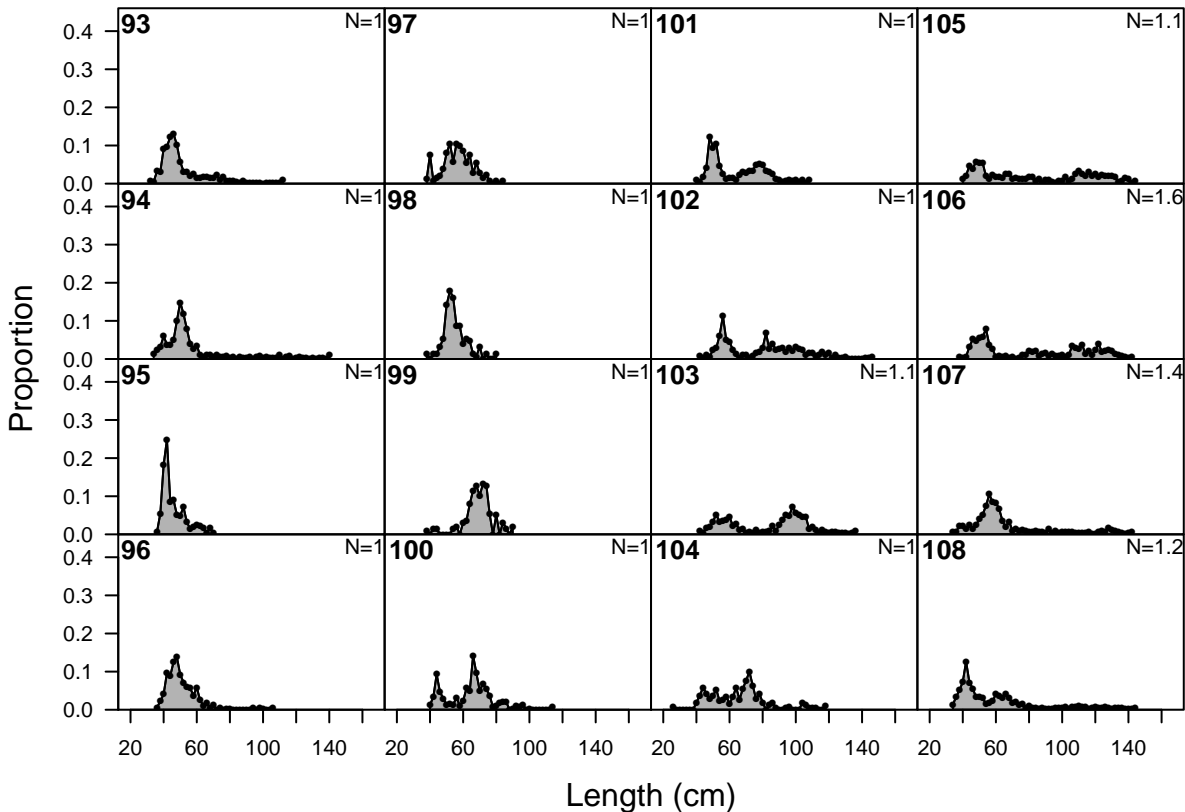
F1-OBJ\_early (whole catch)



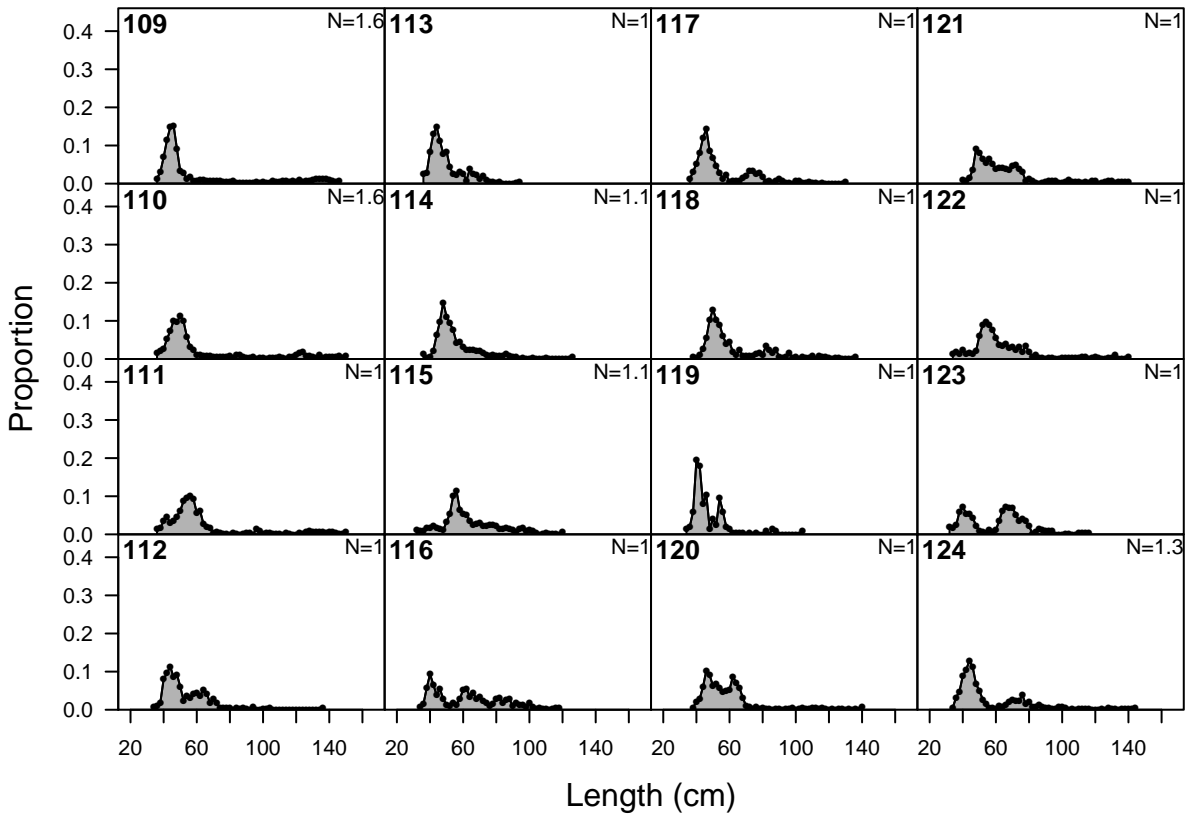
# length comp data, whole catch, F2-OBJ\_S



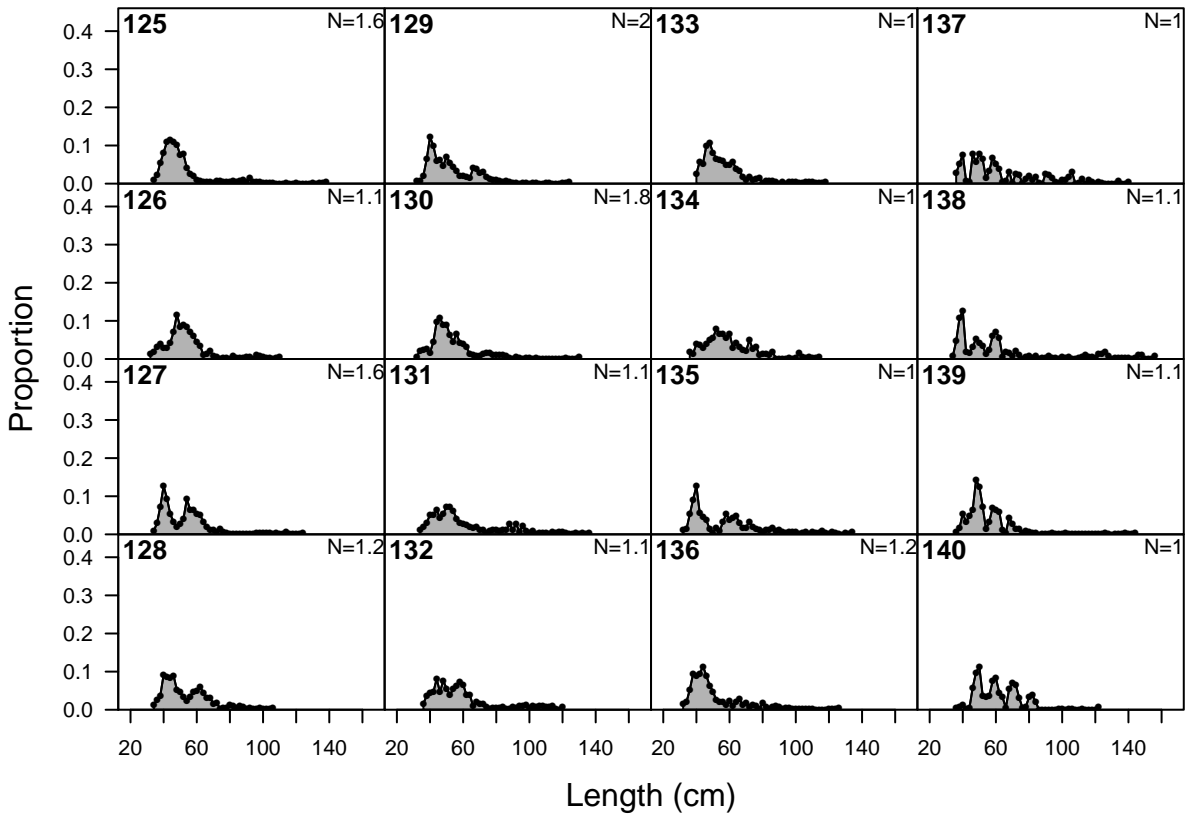
# length comp data, whole catch, F2-OBJ\_S



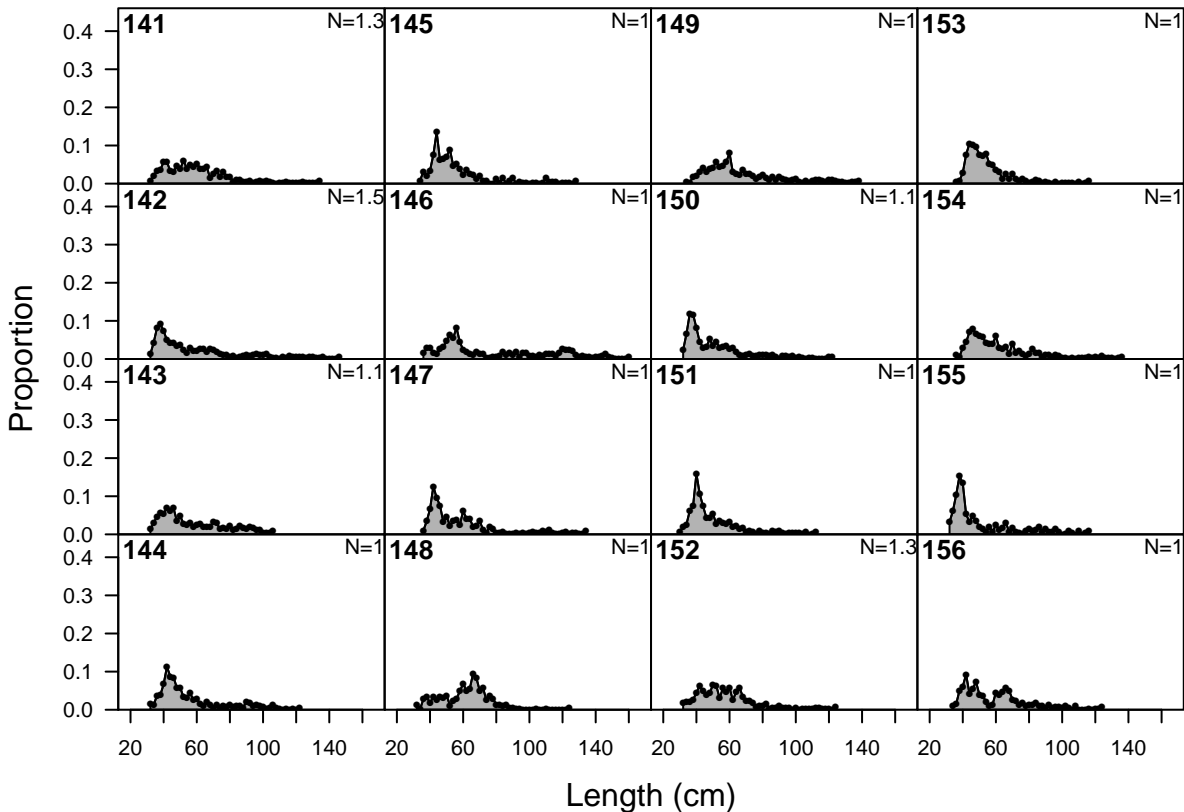
# length comp data, whole catch, F2-OBJ\_S



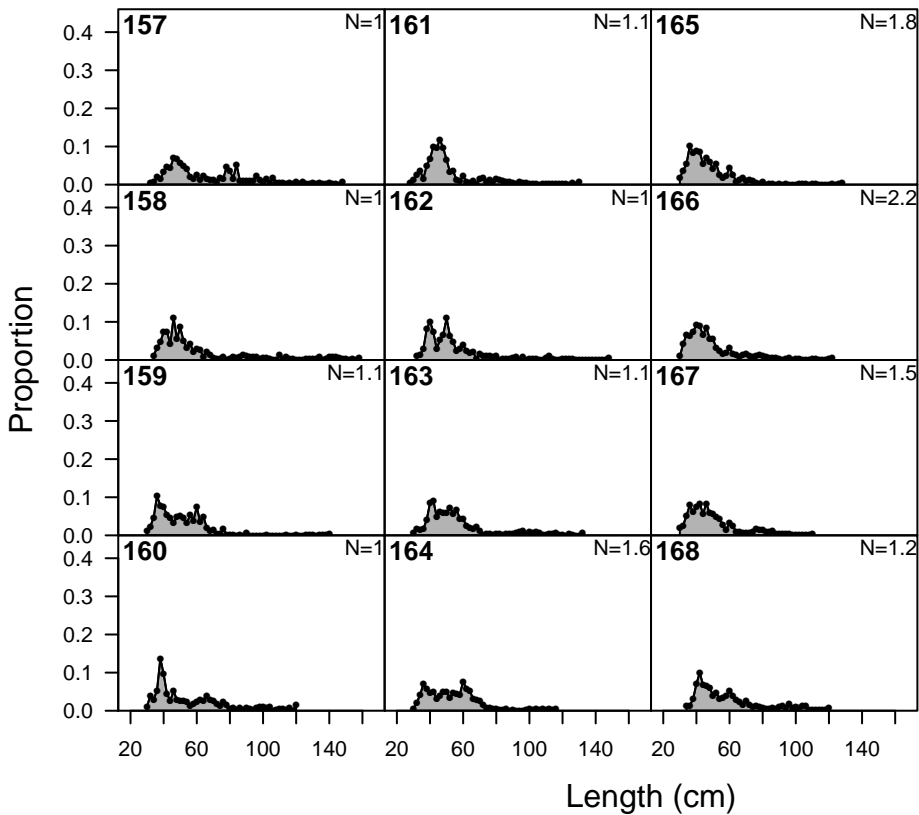
# length comp data, whole catch, F2-OBJ\_S



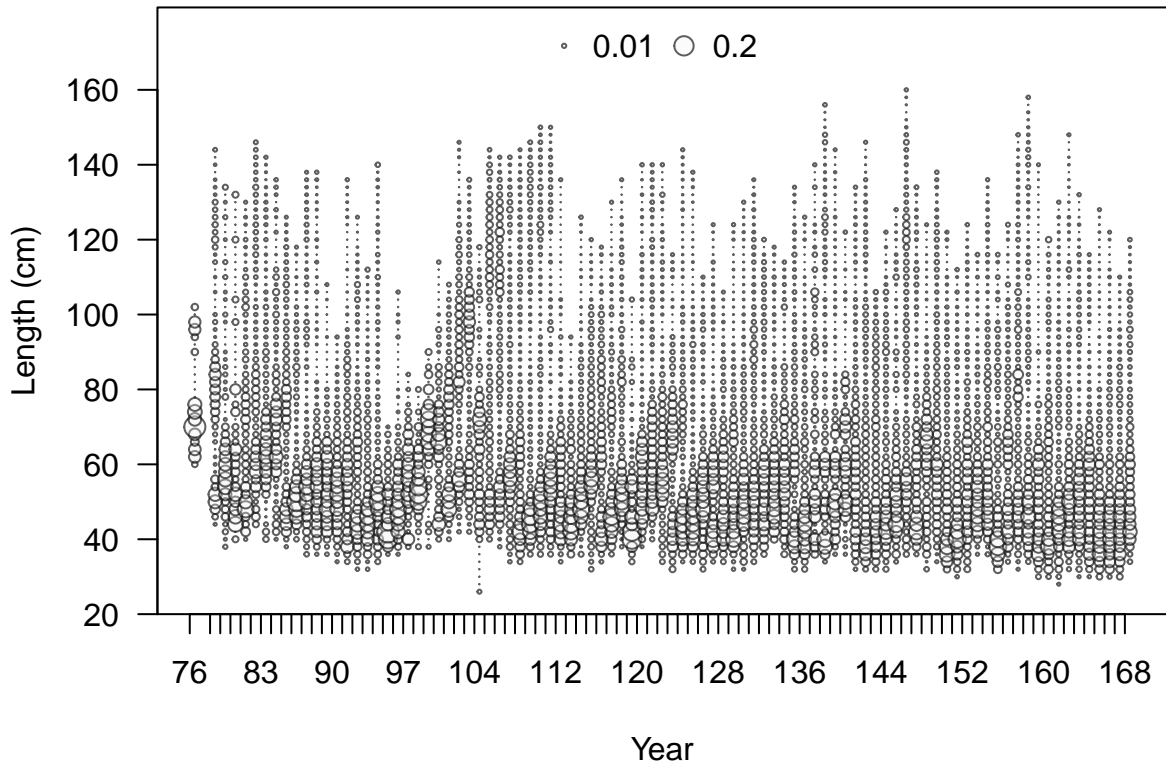
# length comp data, whole catch, F2-OBJ\_S



# length comp data, whole catch, F2-OBJ\_S

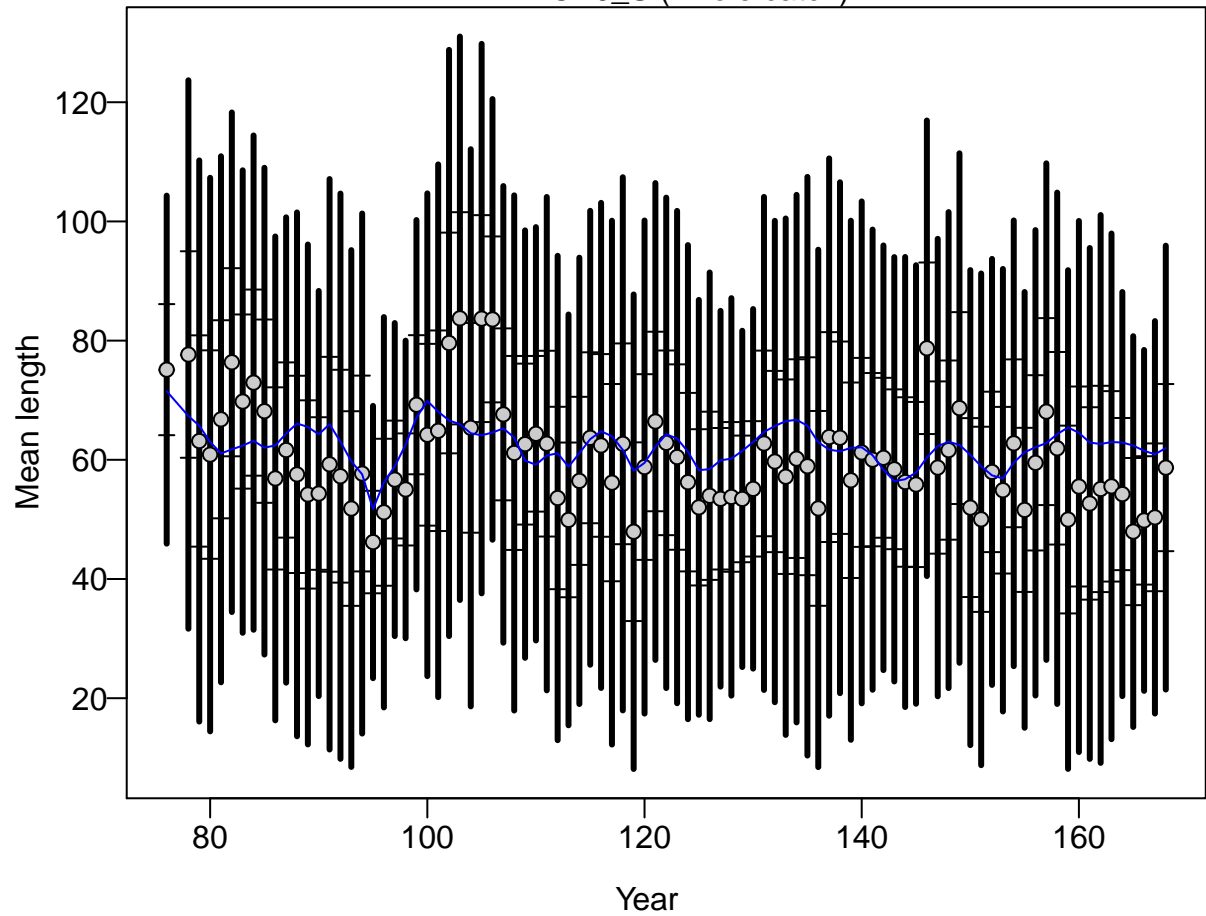


# length comp data, whole catch, F2-OBJ\_S (max=0.25)

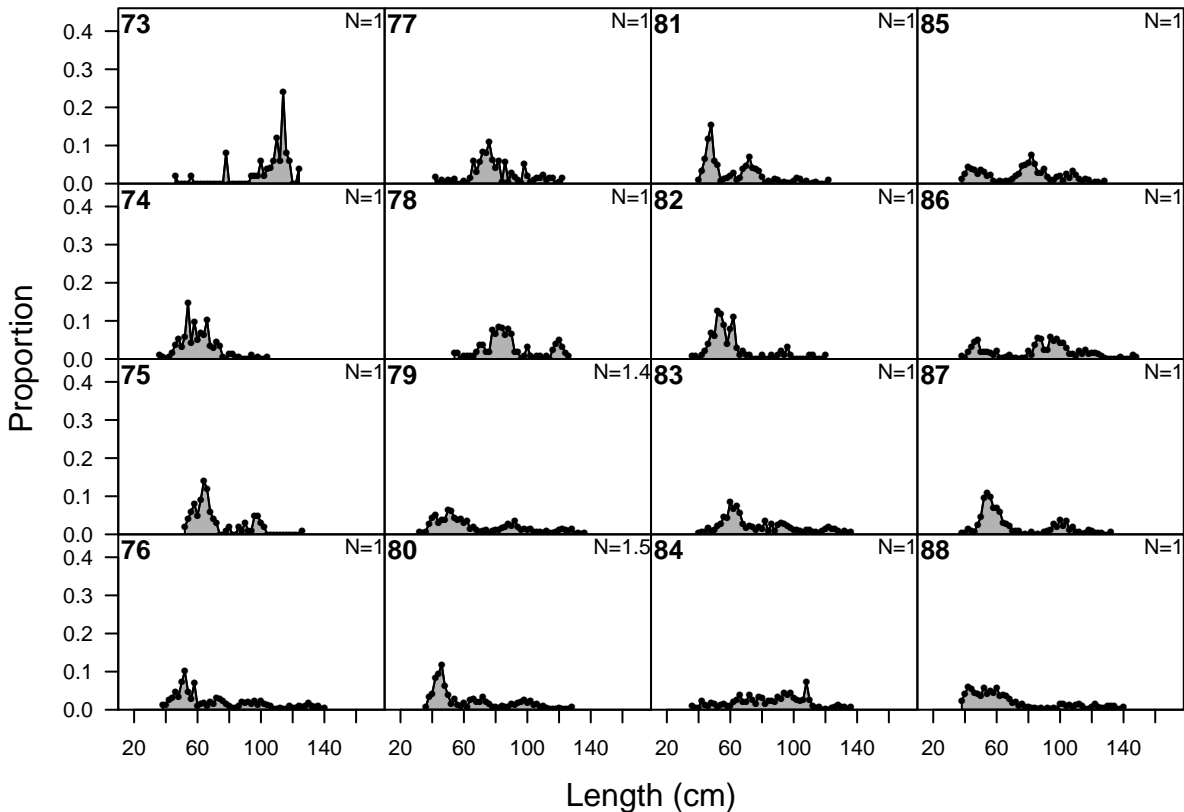




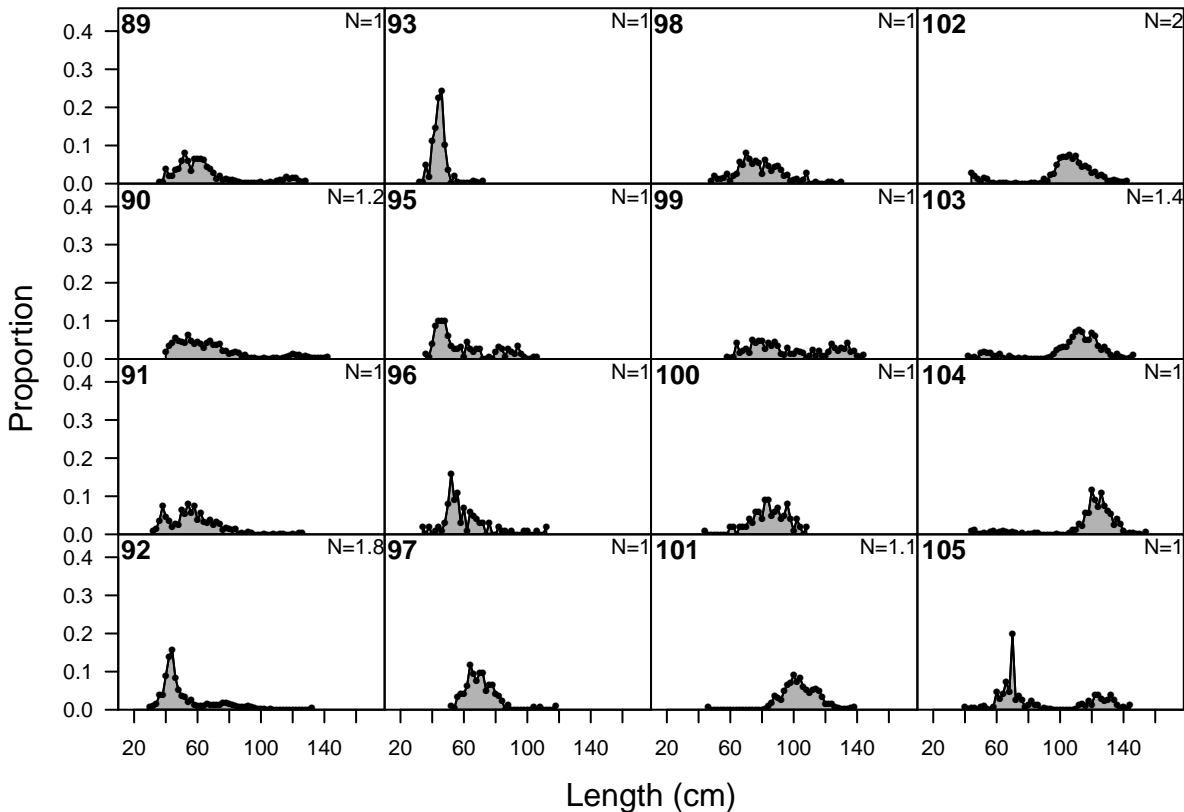
F2-OBJ\_S (whole catch)



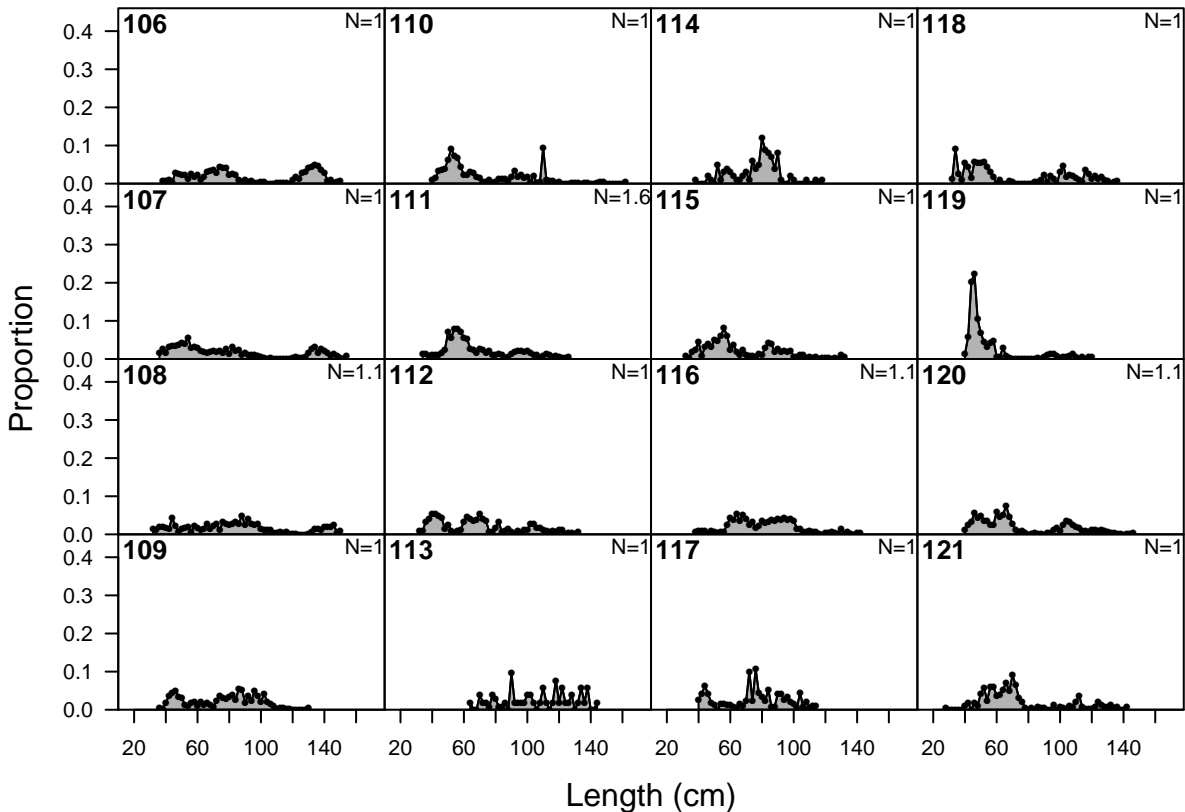
# length comp data, whole catch, F3-OBJ\_C



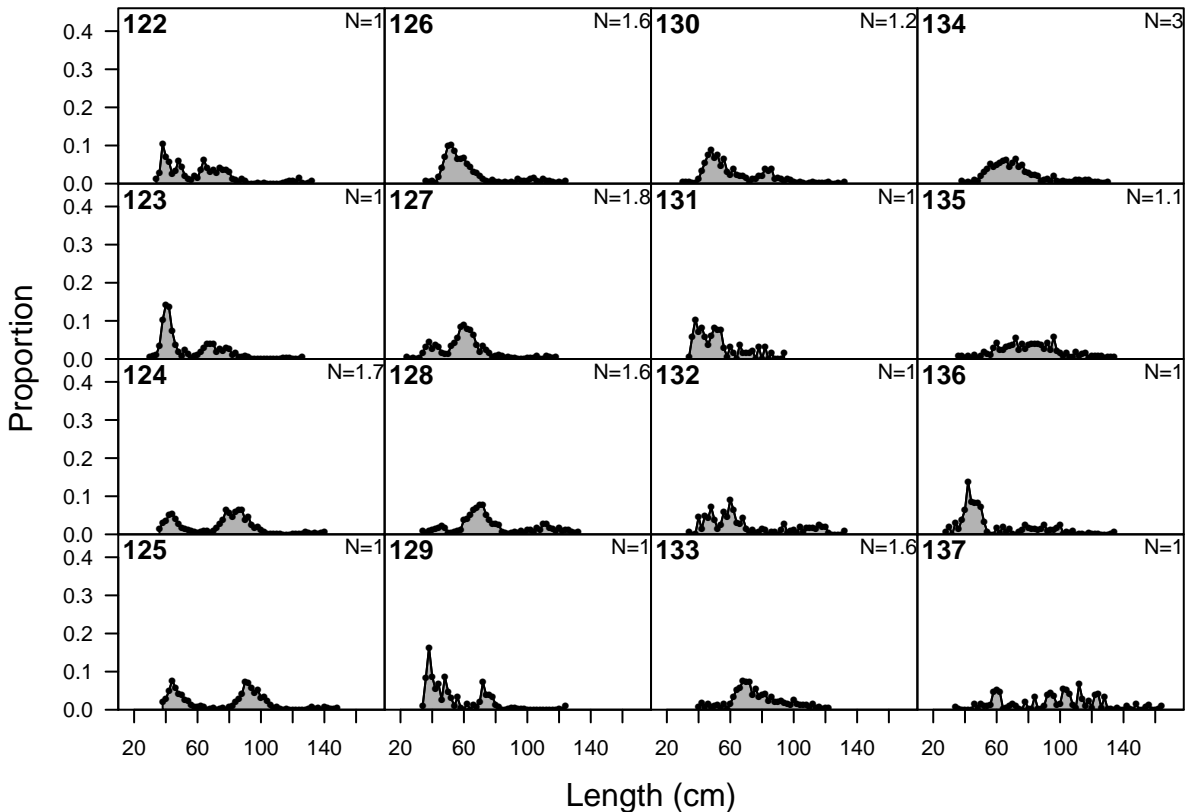
# length comp data, whole catch, F3-OBJ\_C



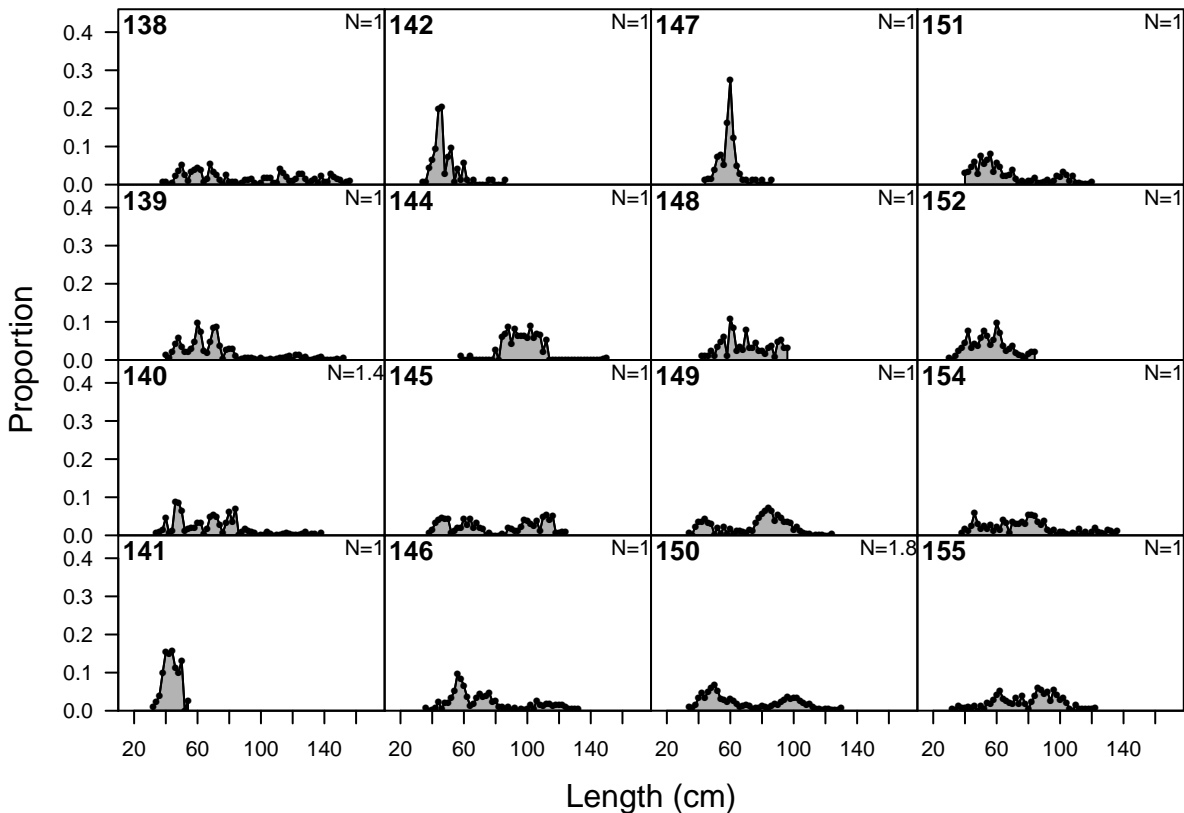
# length comp data, whole catch, F3-OBJ\_C



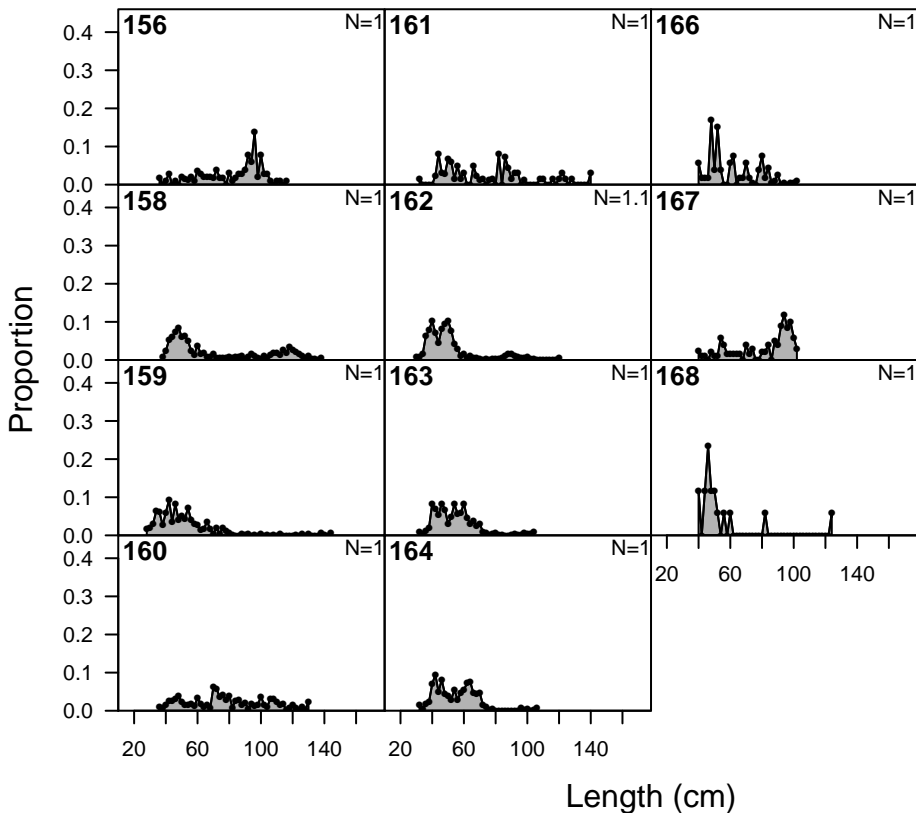
# length comp data, whole catch, F3-OBJ\_C



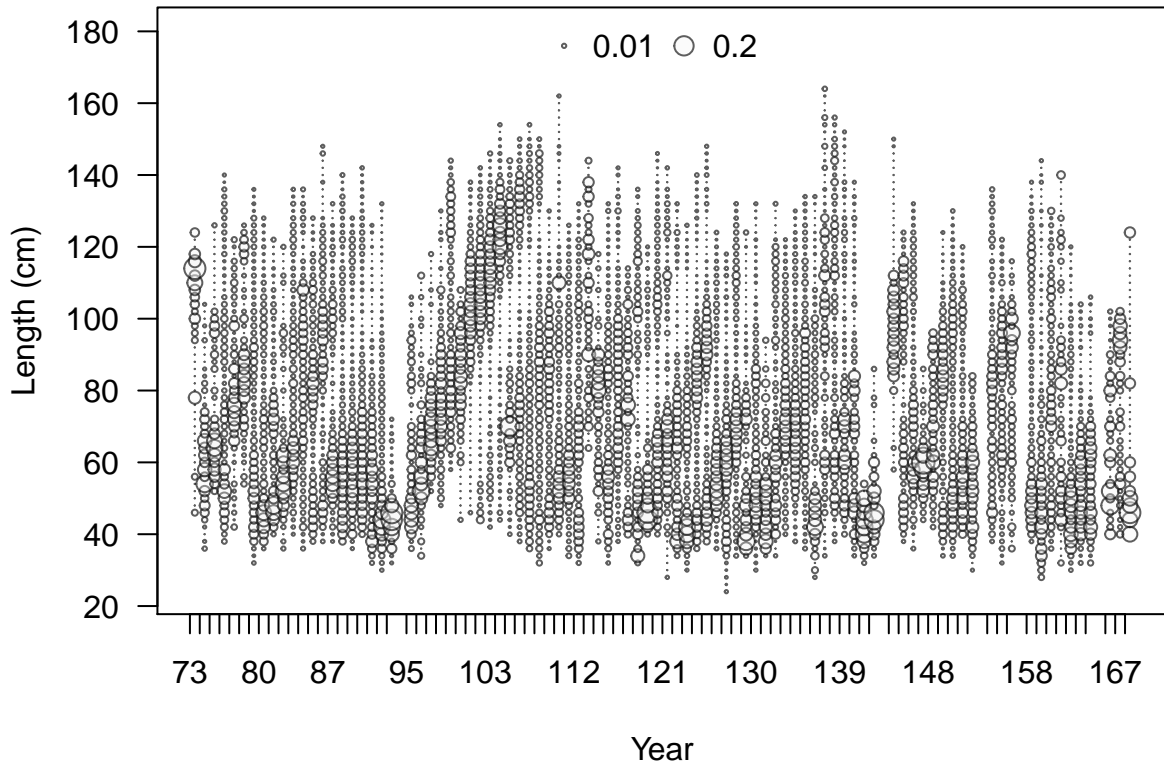
# length comp data, whole catch, F3-OBJ\_C



# length comp data, whole catch, F3-OBJ\_C

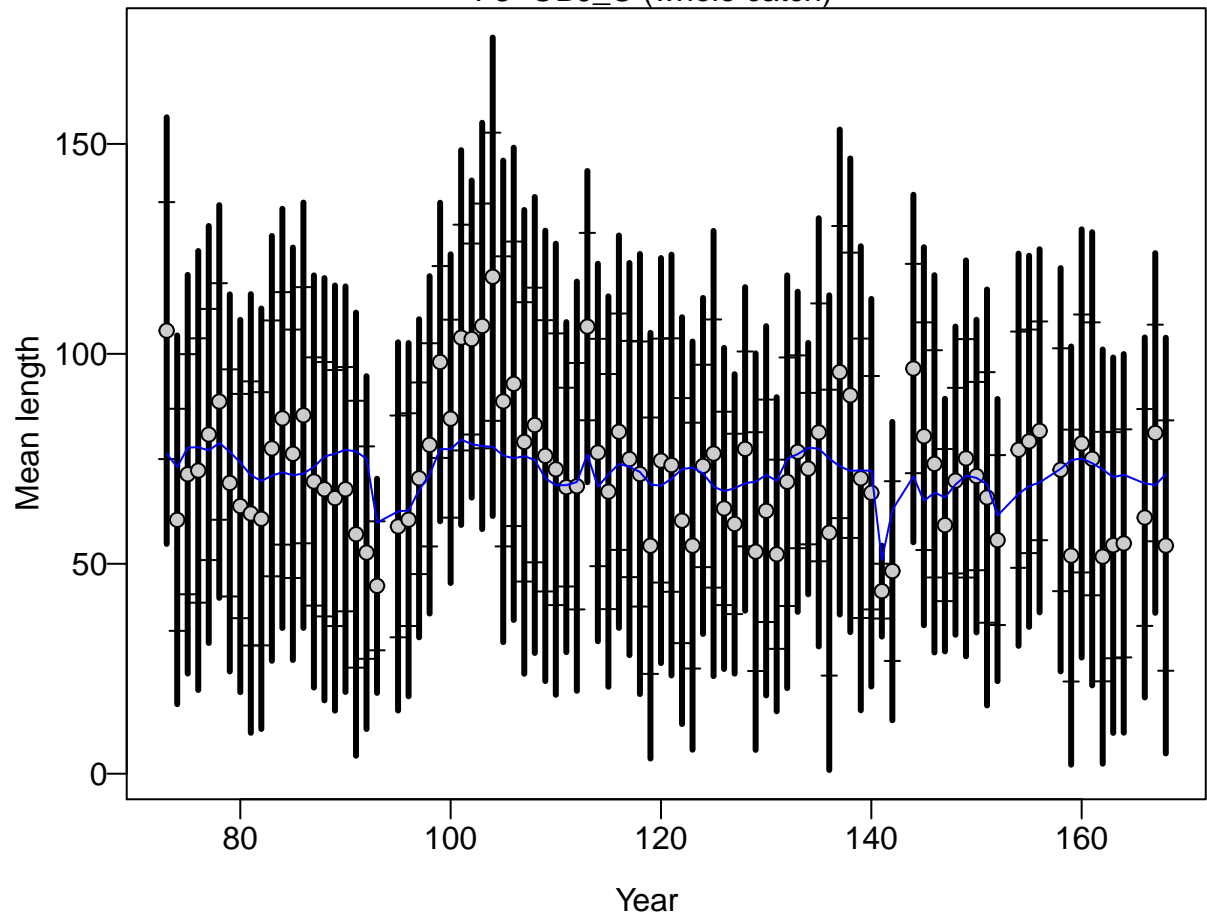


# length comp data, whole catch, F3-OBJ\_C (max=0.28)

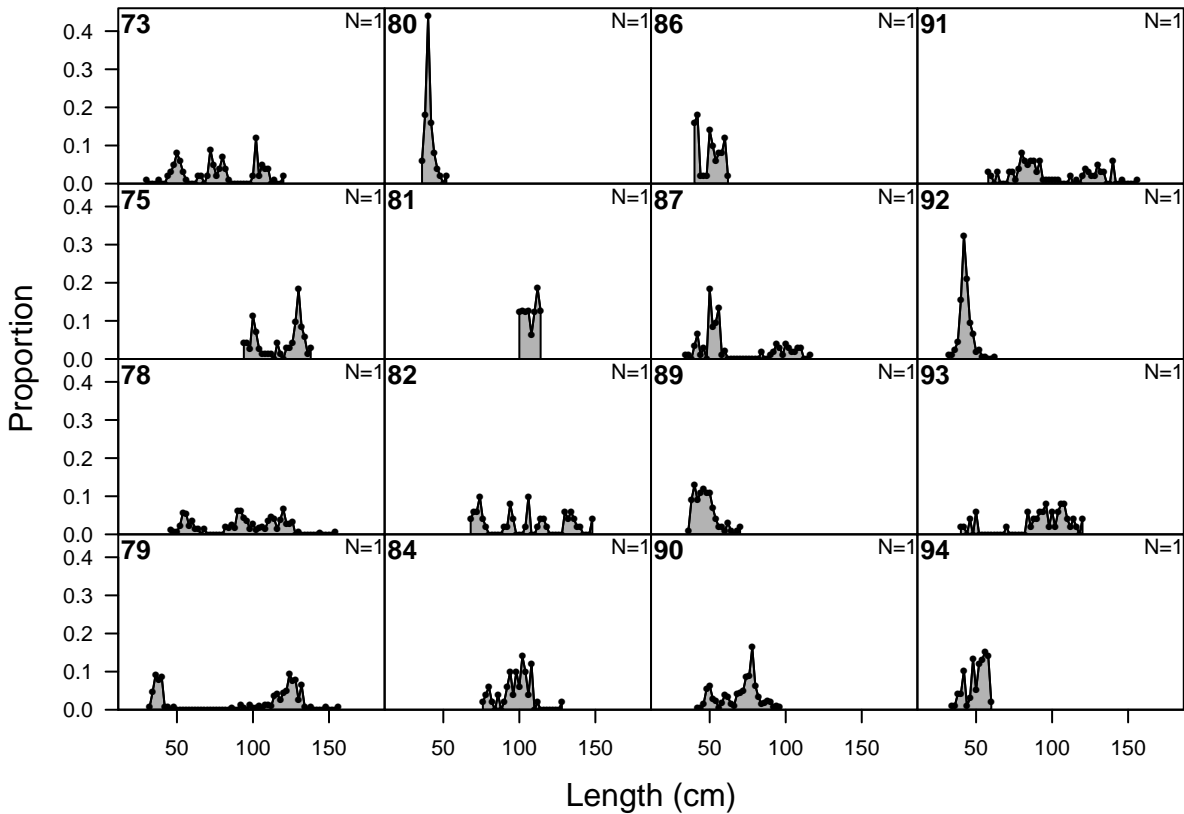




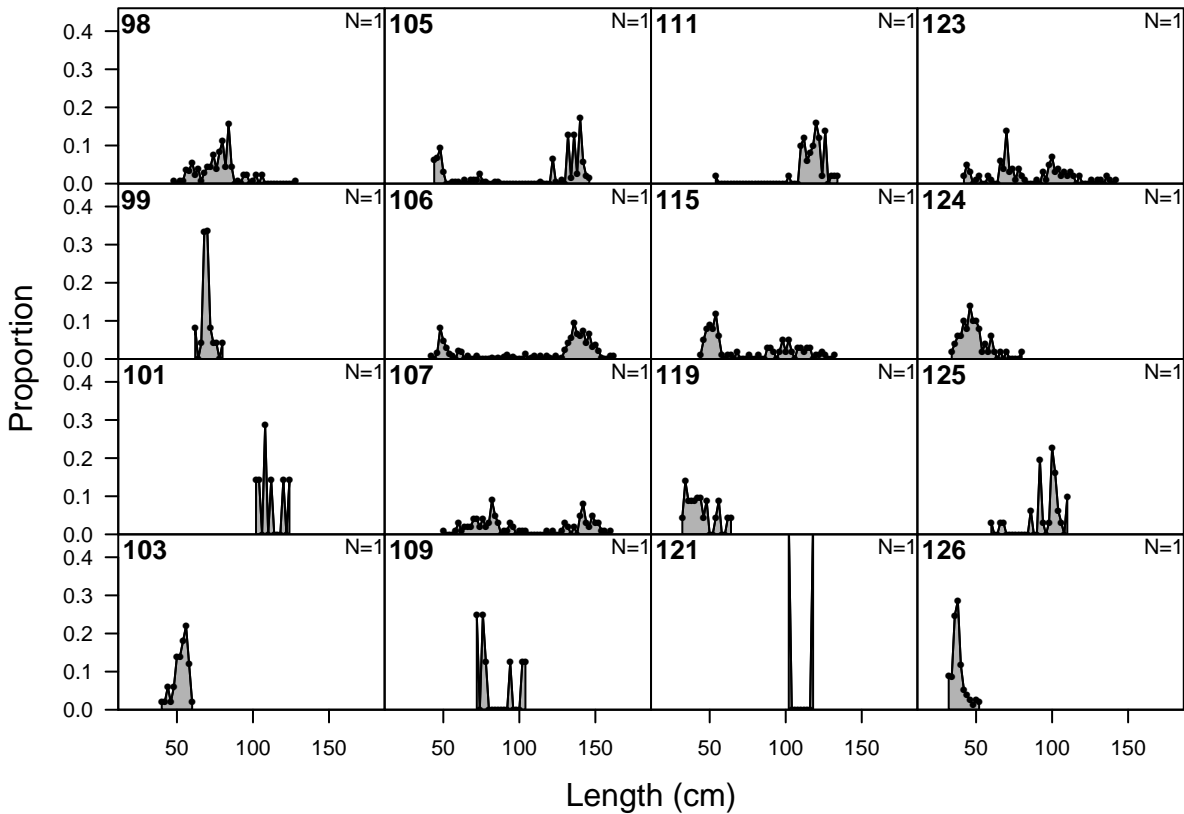
F3-OBJ\_C (whole catch)



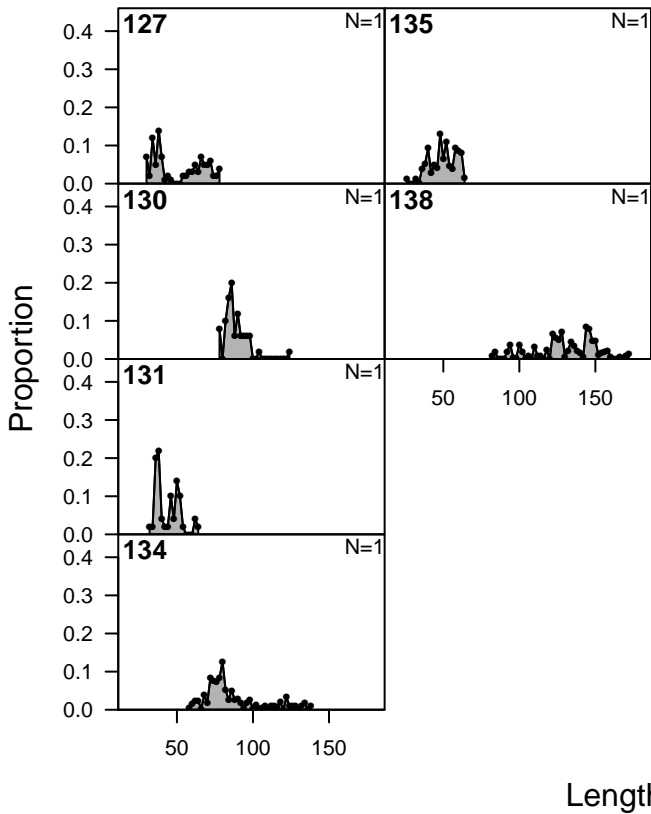
# length comp data, whole catch, F4-OBJ\_I



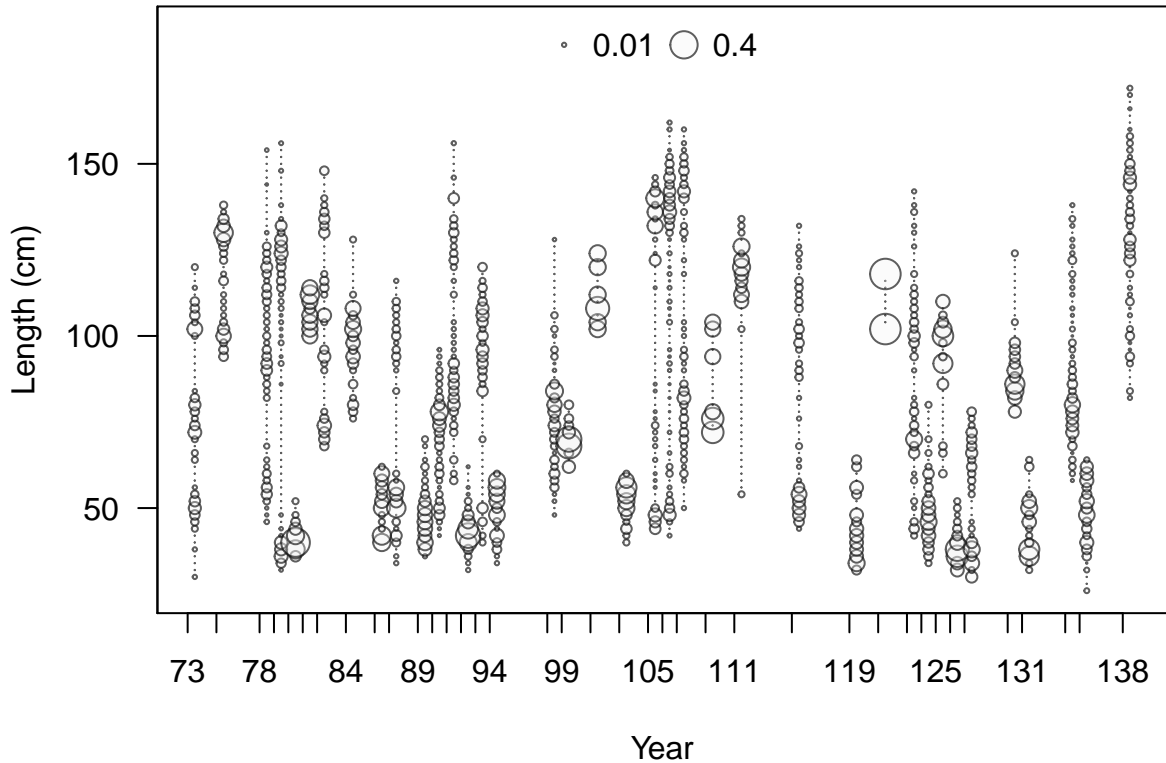
# length comp data, whole catch, F4-OBJ\_I



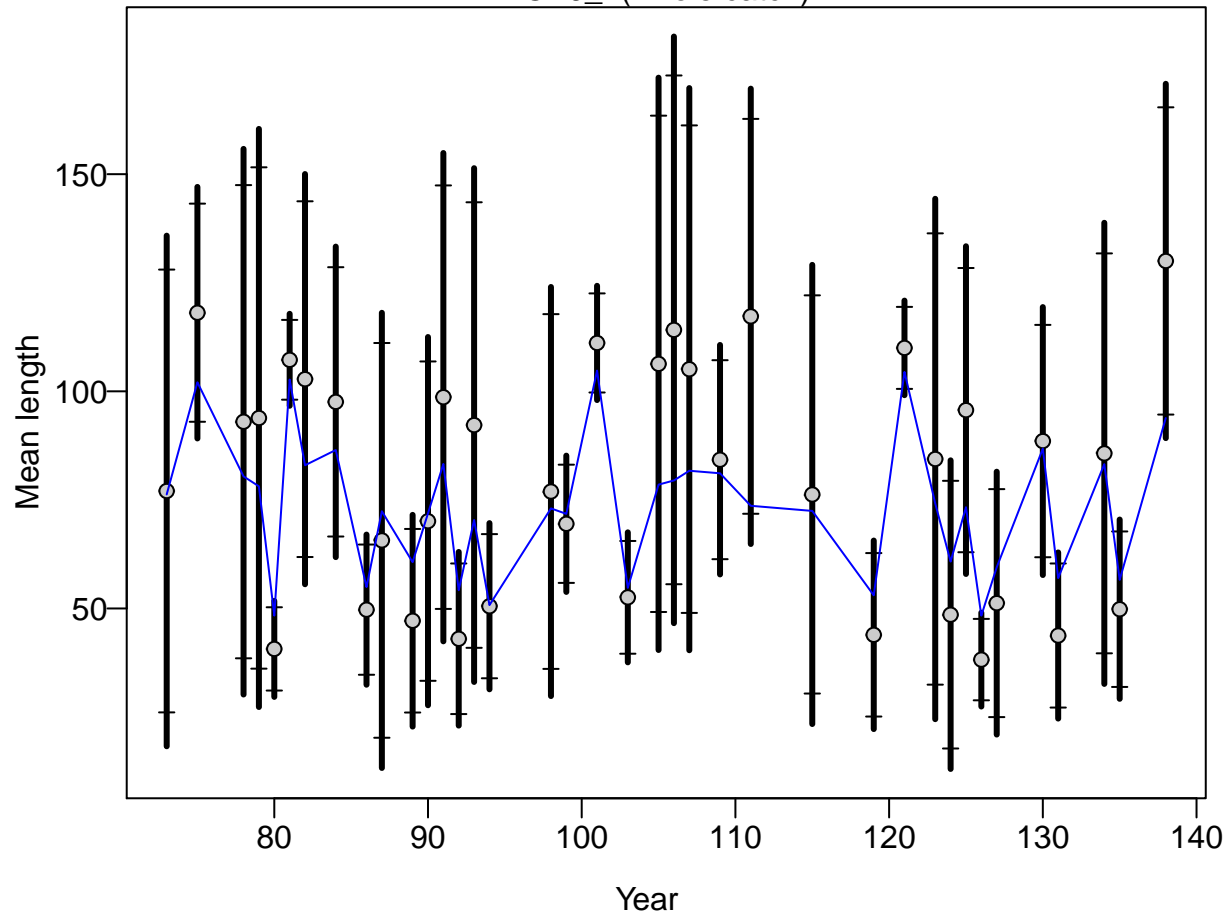
# length comp data, whole catch, F4-OBJ\_I



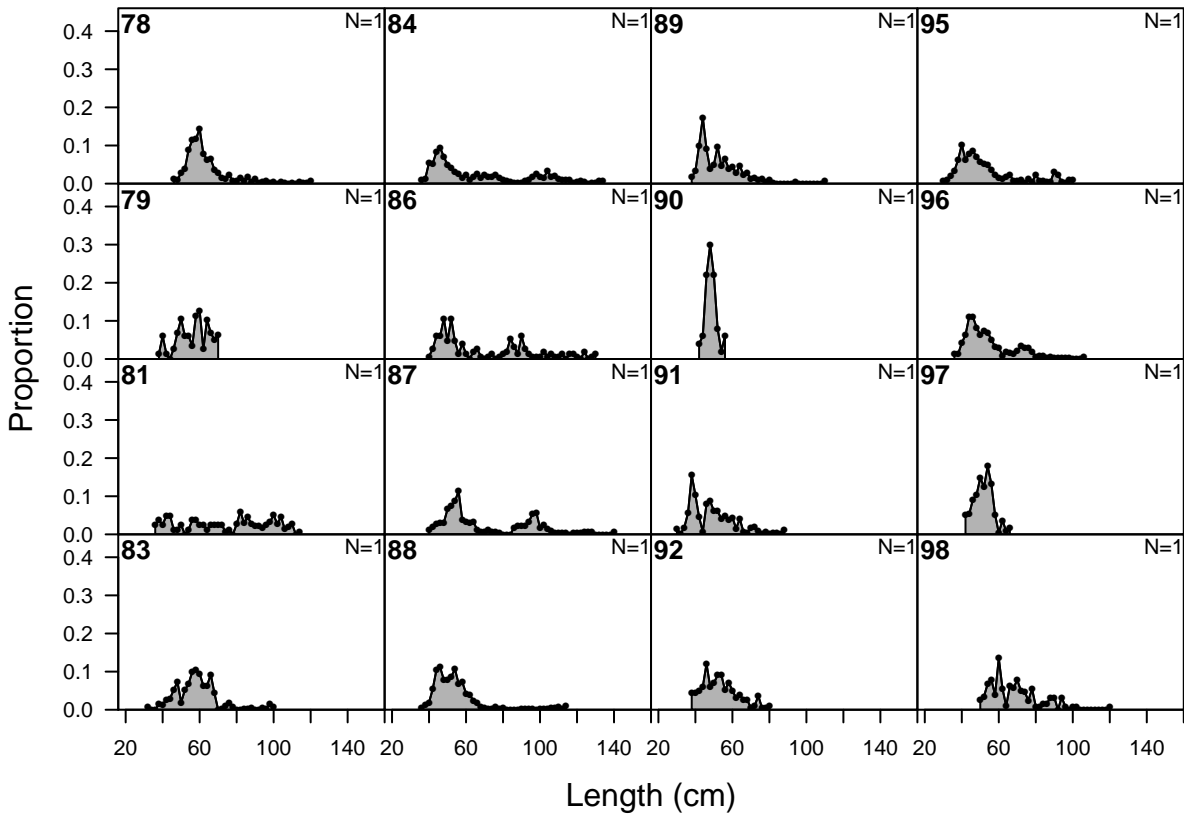
# length comp data, whole catch, F4-OBJ\_I (max=0.5)



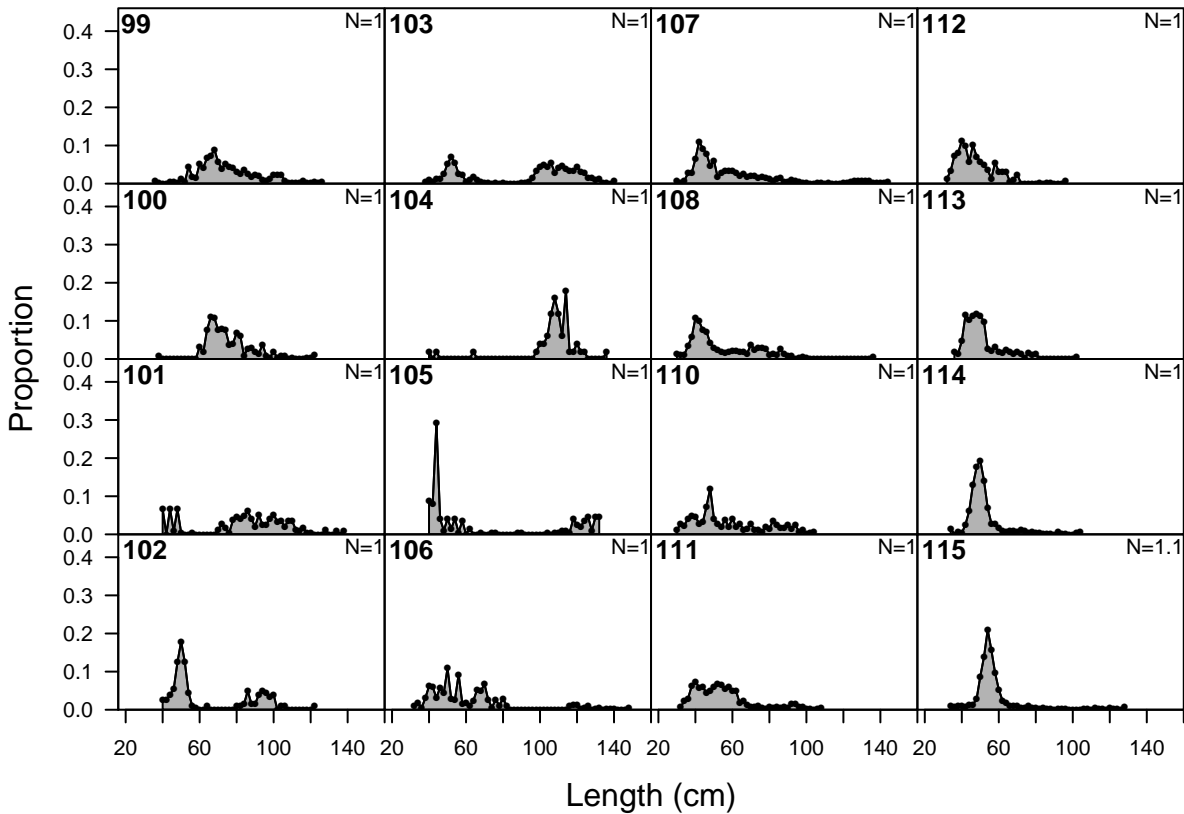
F4-OBJ\_I (whole catch)



# length comp data, whole catch, F5-OBJ\_N

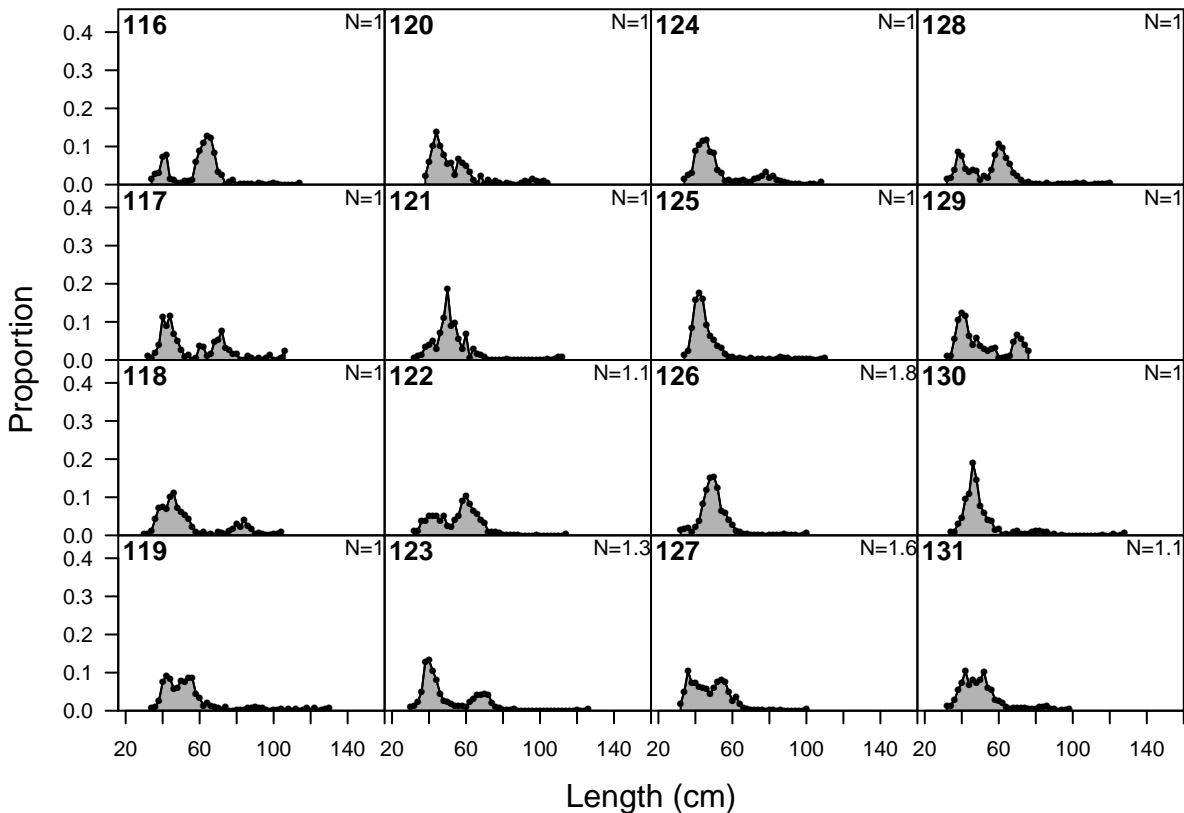


# length comp data, whole catch, F5-Obj\_N

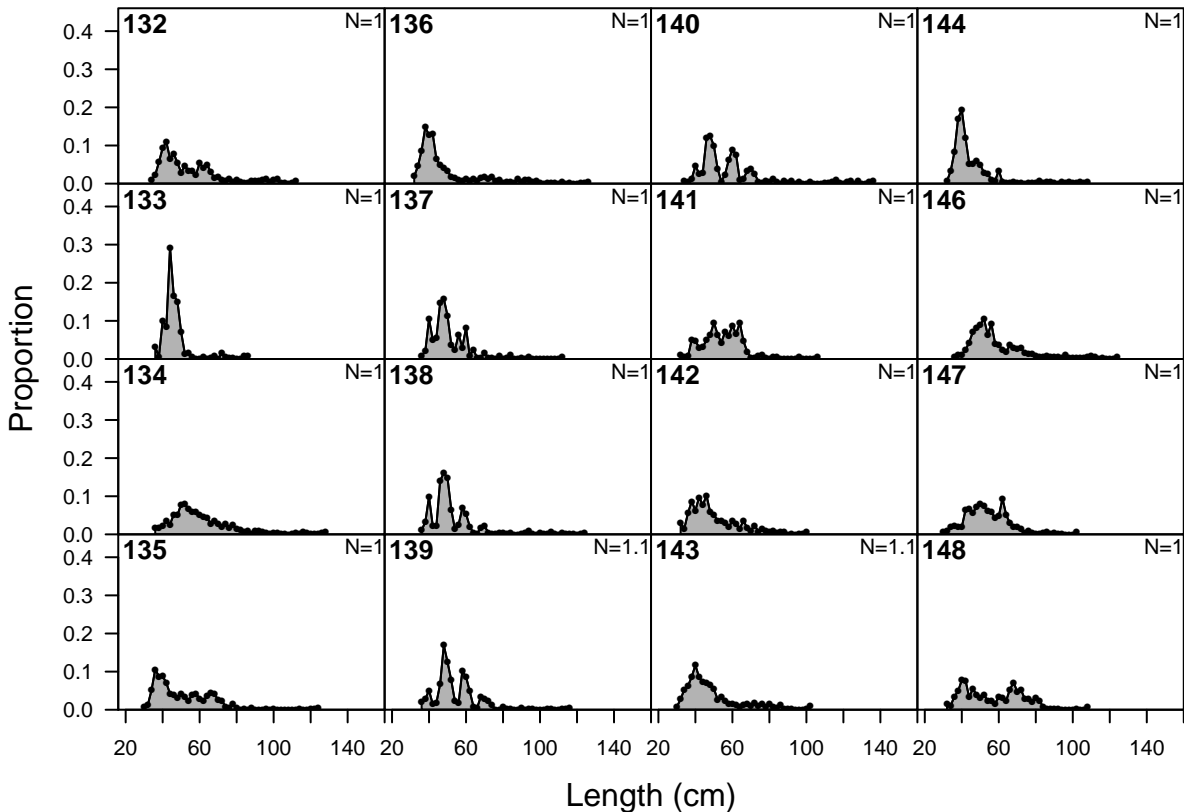




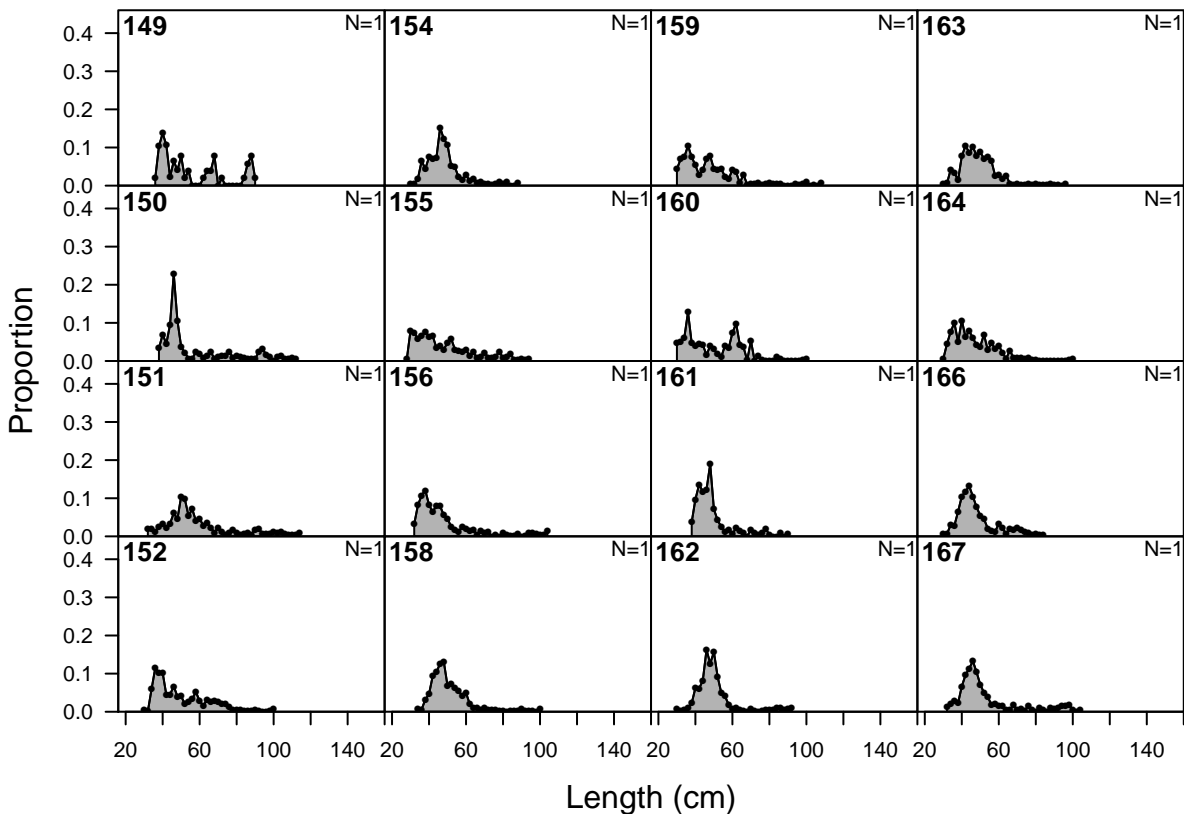
# length comp data, whole catch, F5-OBJ\_N



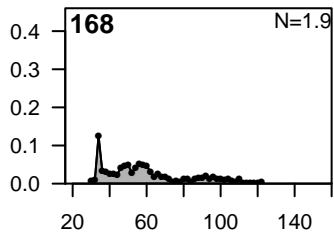
# length comp data, whole catch, F5-Obj\_N



# length comp data, whole catch, F5-OBJ\_N



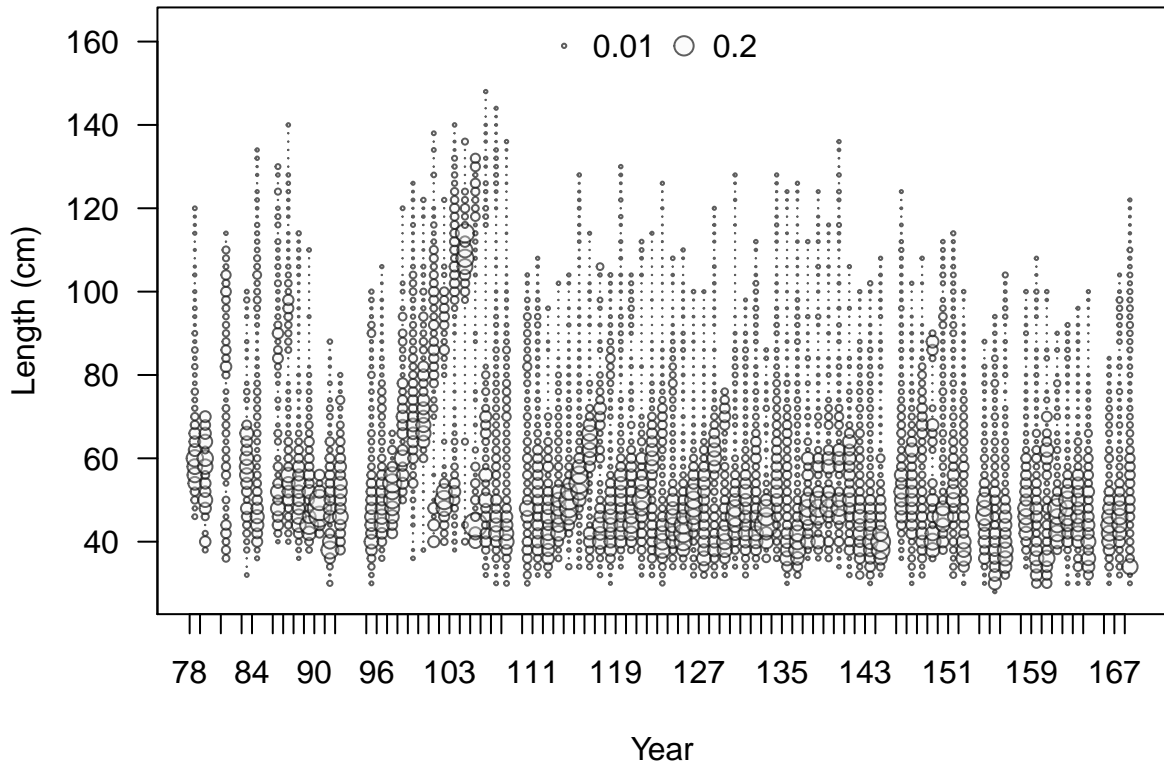
# length comp data, whole catch, F5-OBJ\_N



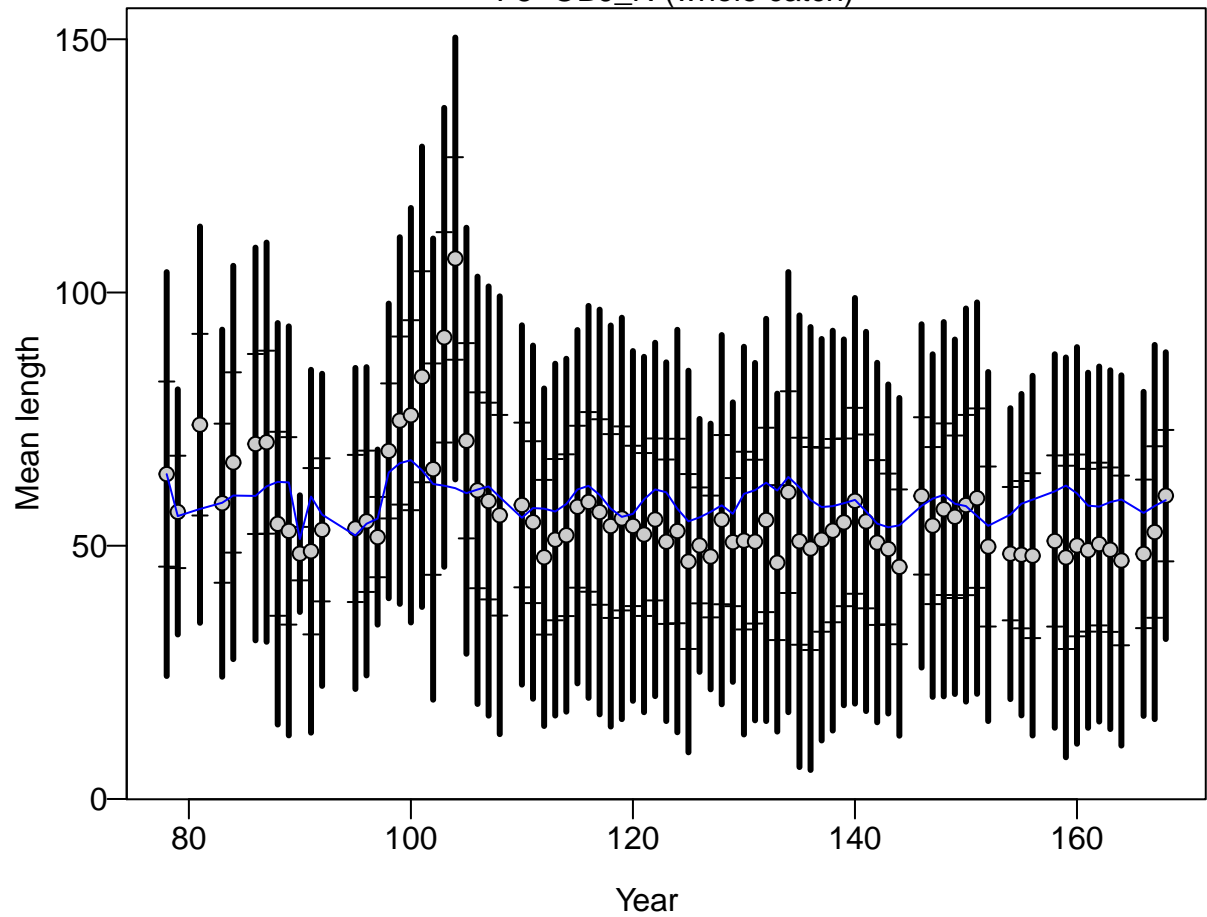
Proportion

Length (cm)

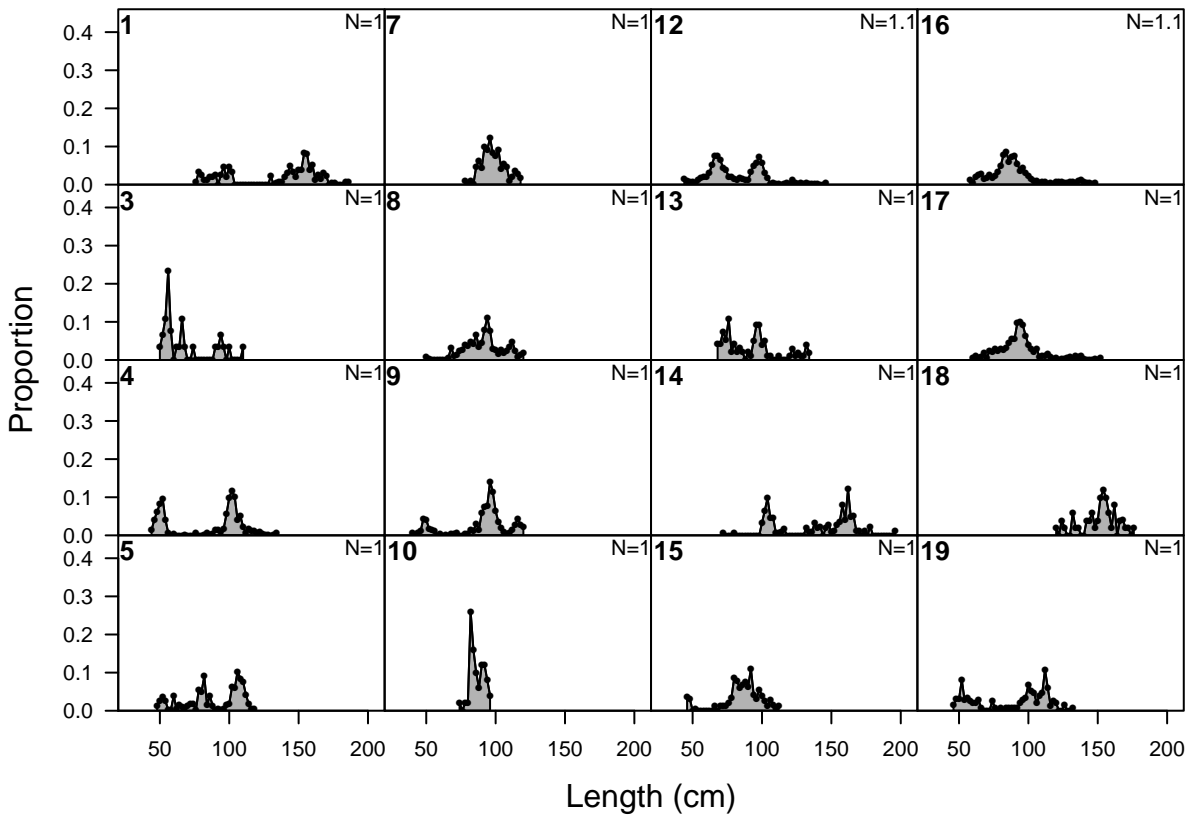
# length comp data, whole catch, F5-OBJ\_N (max=0.3)



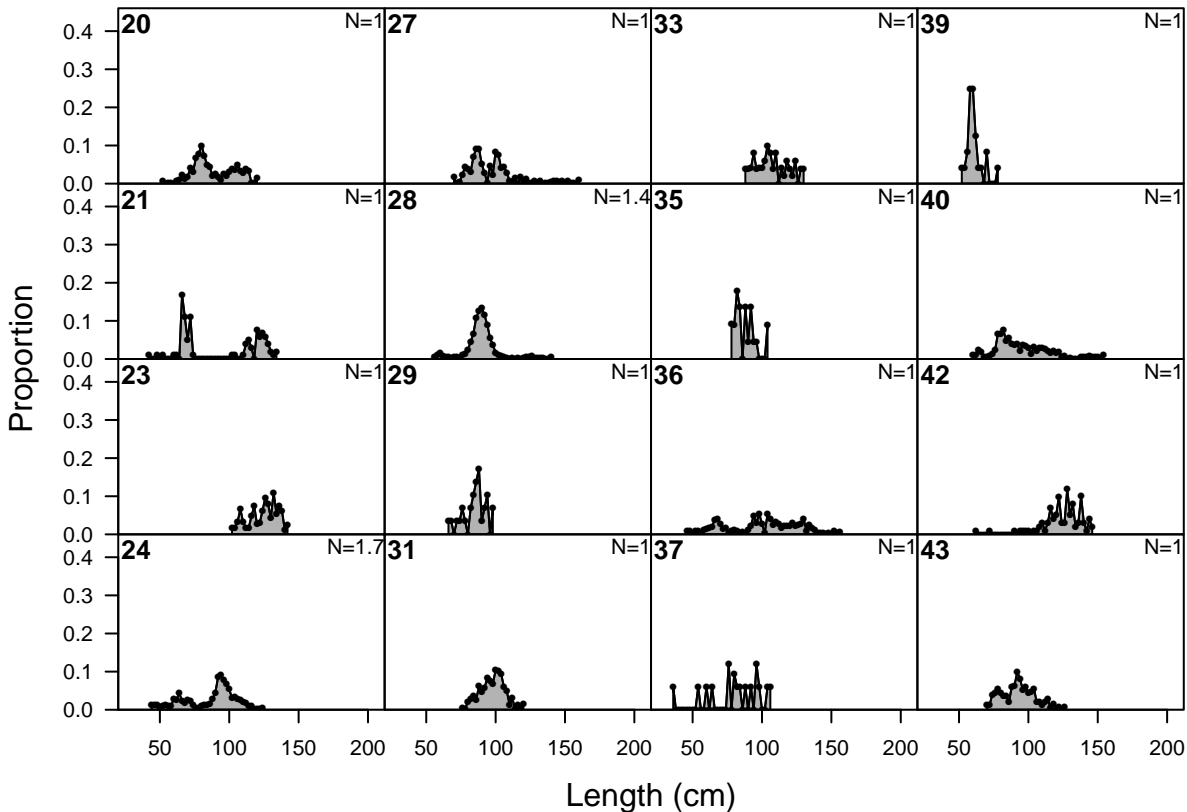
F5-OBJ\_N (whole catch)



# length comp data, whole catch, F6-NOA-DEL\_early

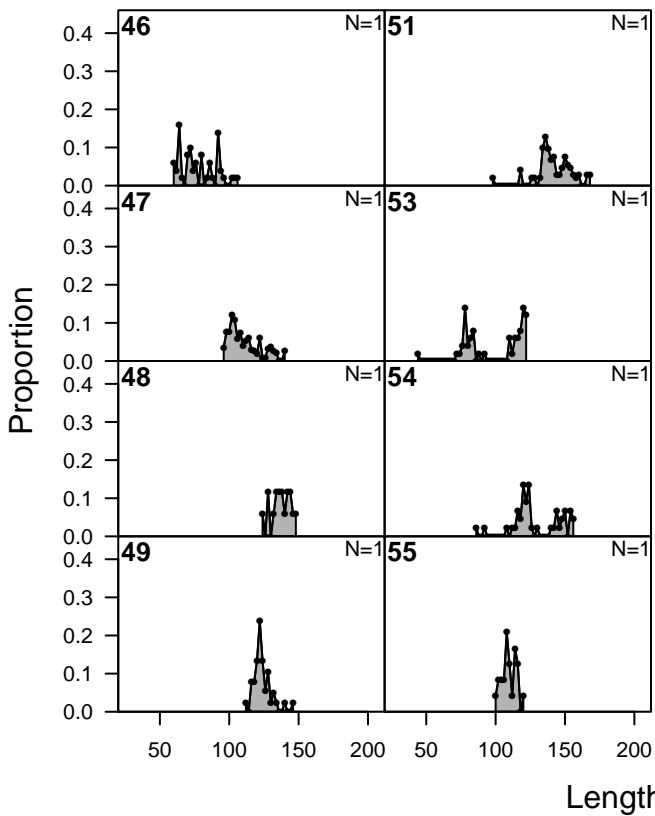


# length comp data, whole catch, F6-NOA-DEL\_early

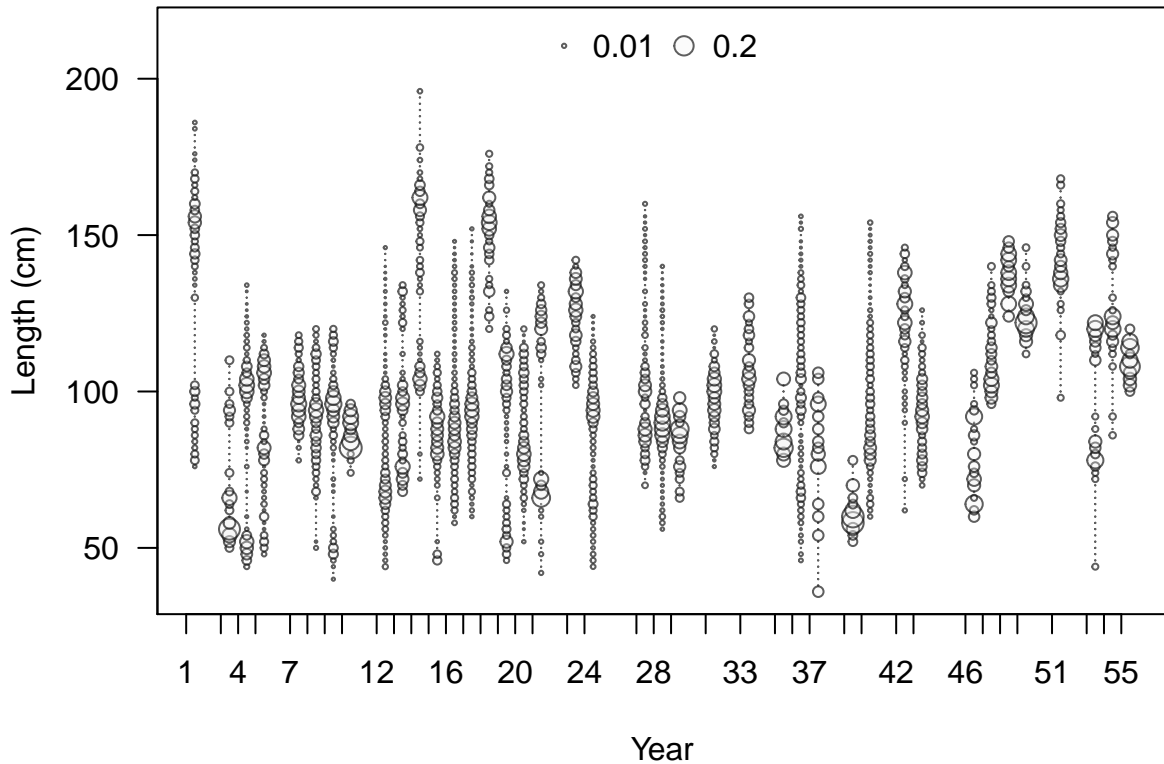




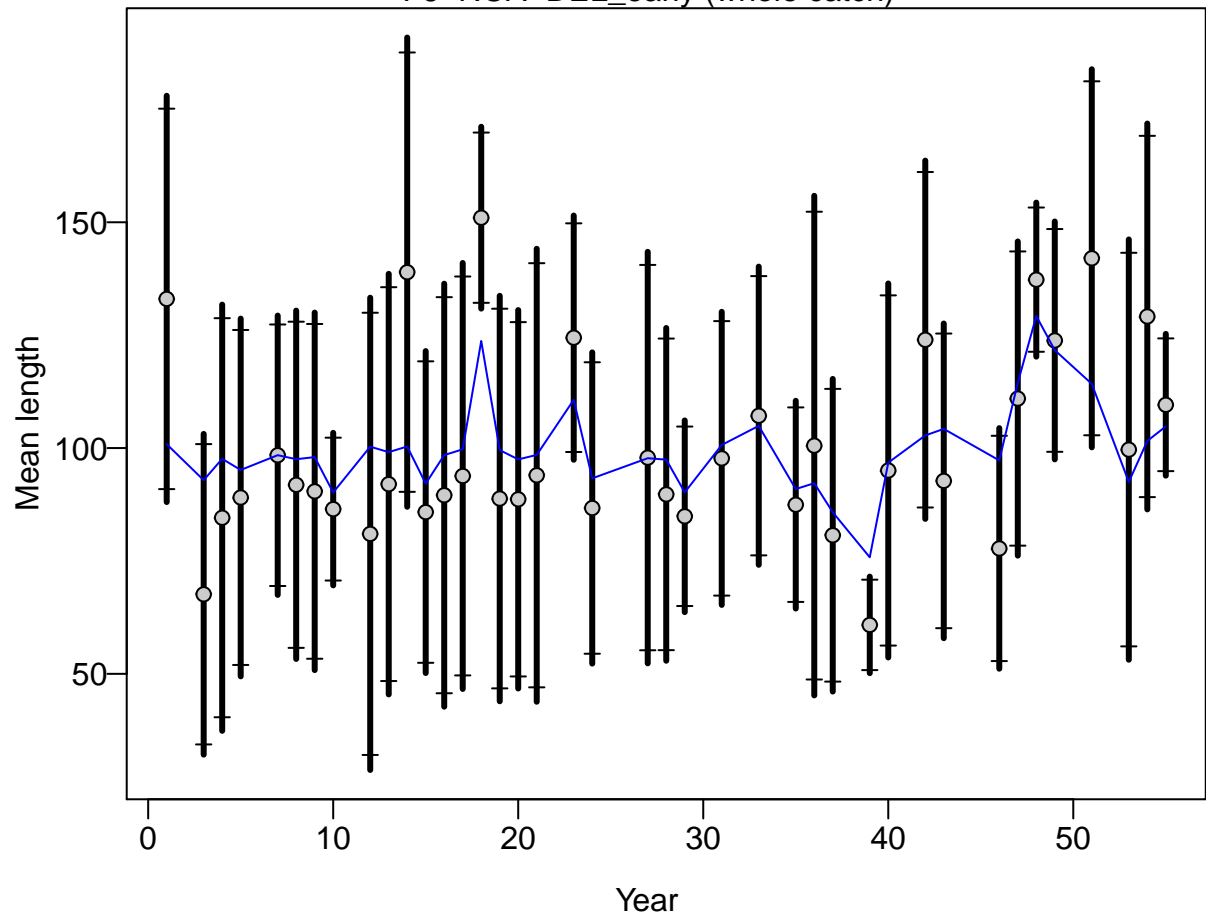
# length comp data, whole catch, F6-NOA-DEL\_early



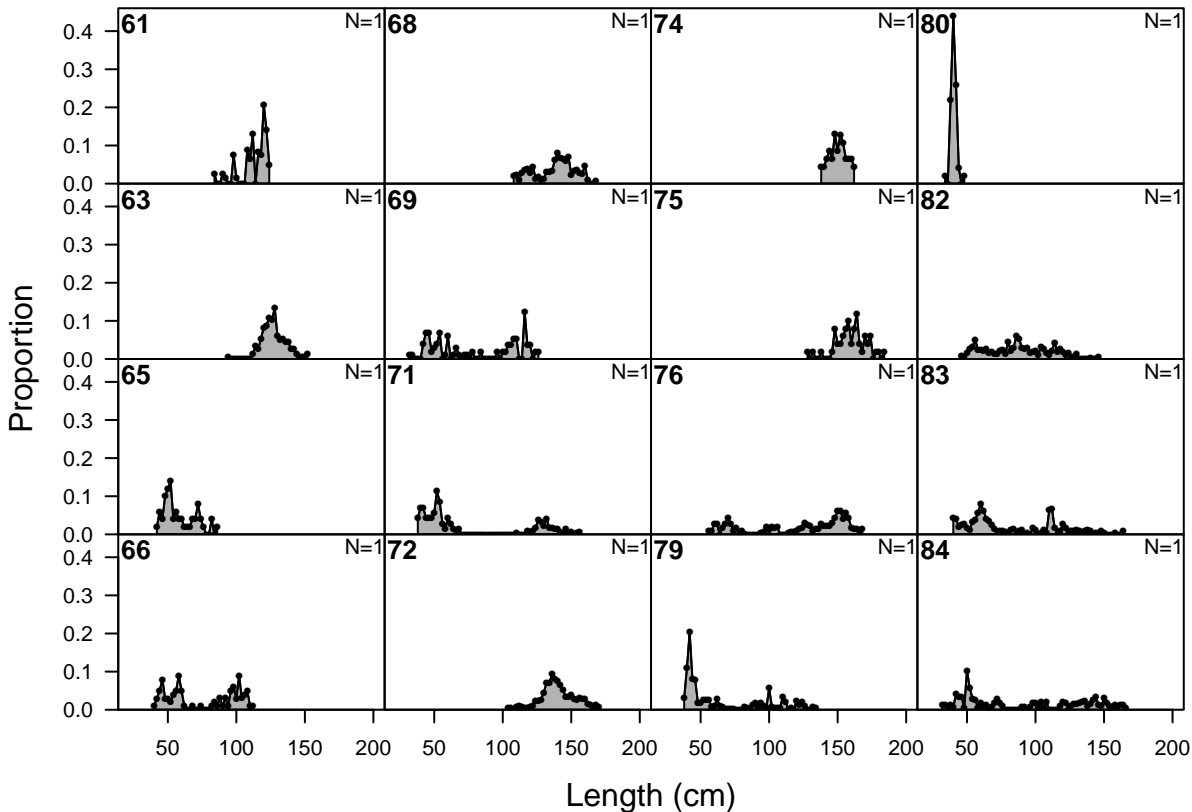
# length comp data, whole catch, F6-NOA-DEL\_early (max=0.26)



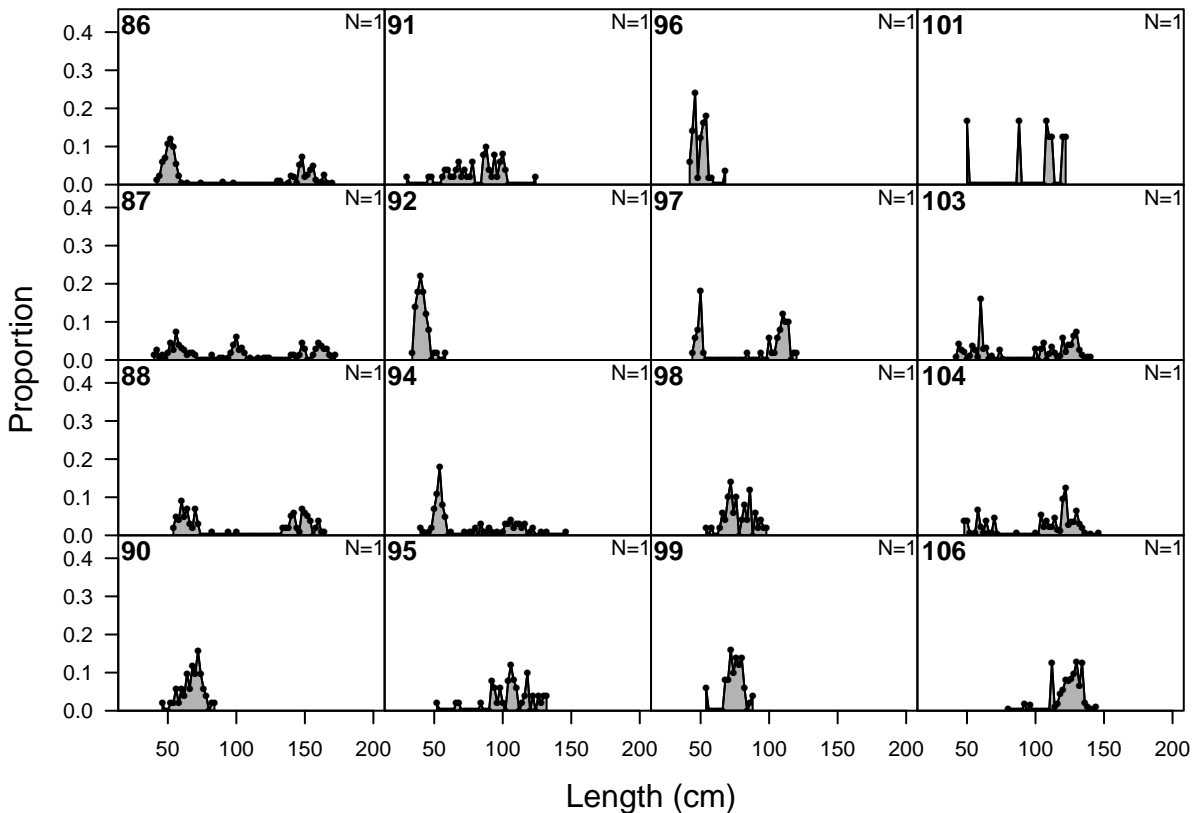
F6-NOA-DEL\_early (whole catch)



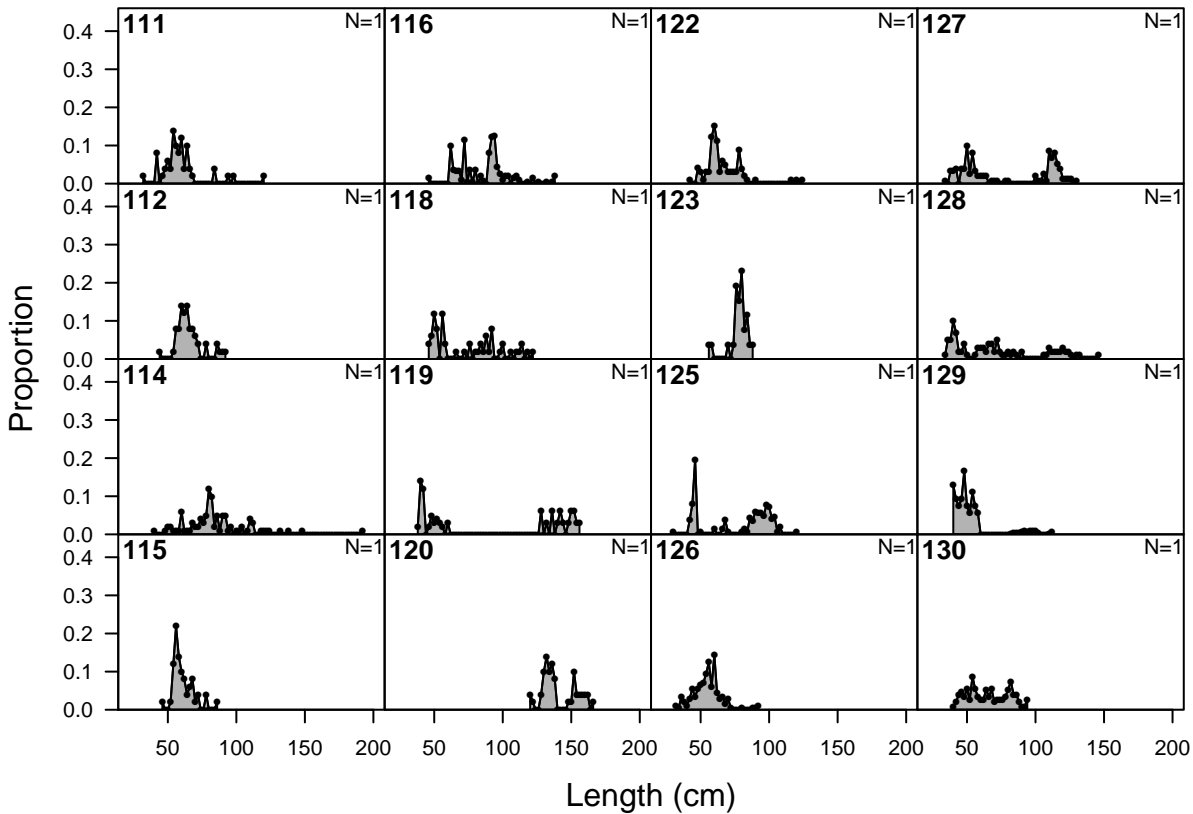
# length comp data, whole catch, F7-NOA-DEL\_late



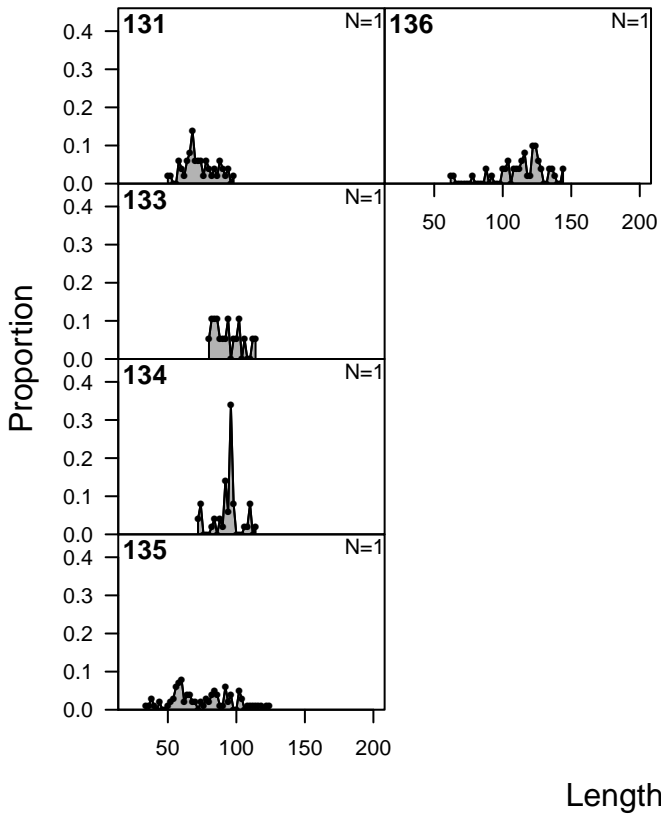
# length comp data, whole catch, F7-NOA-DEL\_late



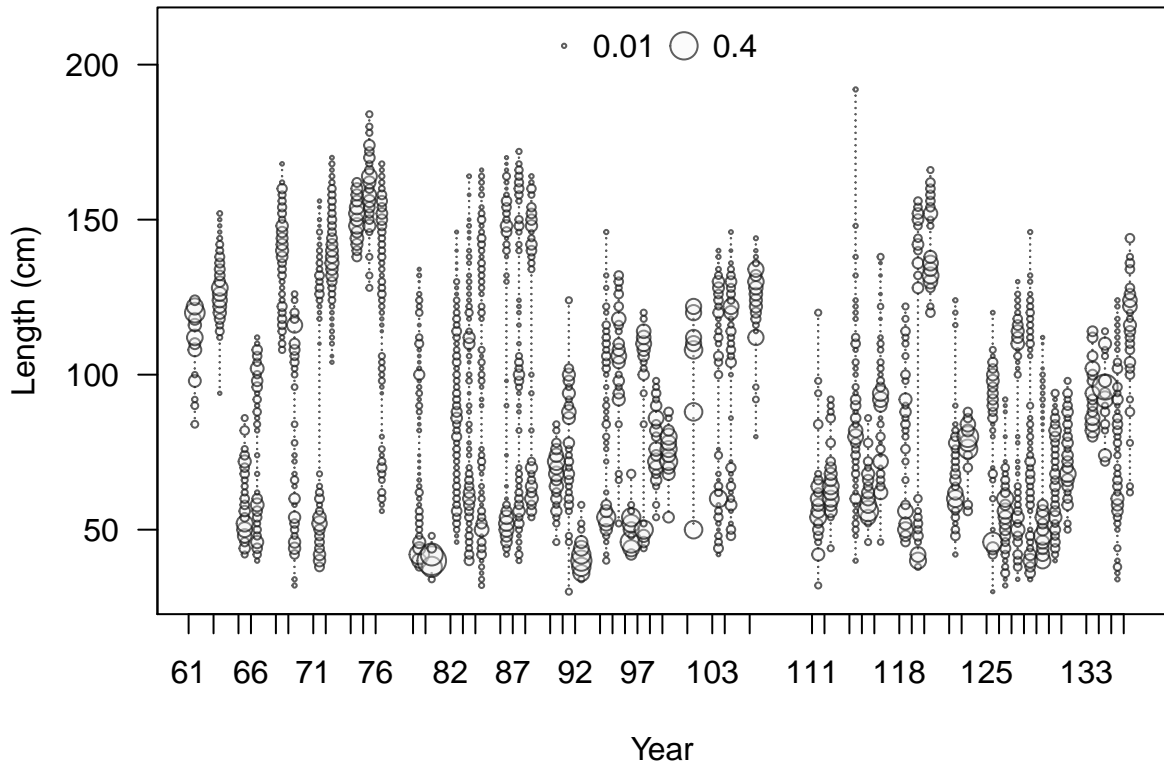
# length comp data, whole catch, F7-NOA-DEL\_late



# length comp data, whole catch, F7-NOA-DEL\_late

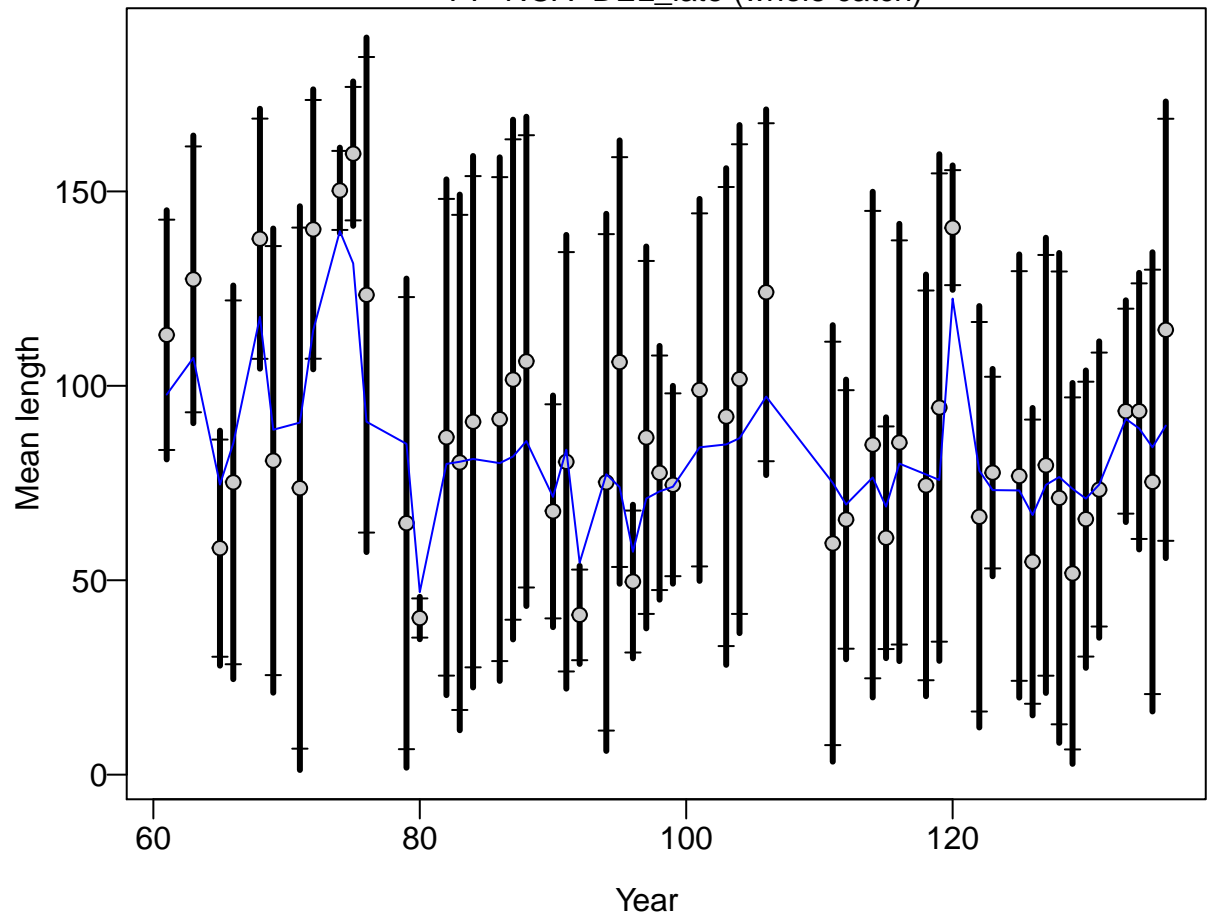


# length comp data, whole catch, F7-NOA-DEL\_late (max=0.44)

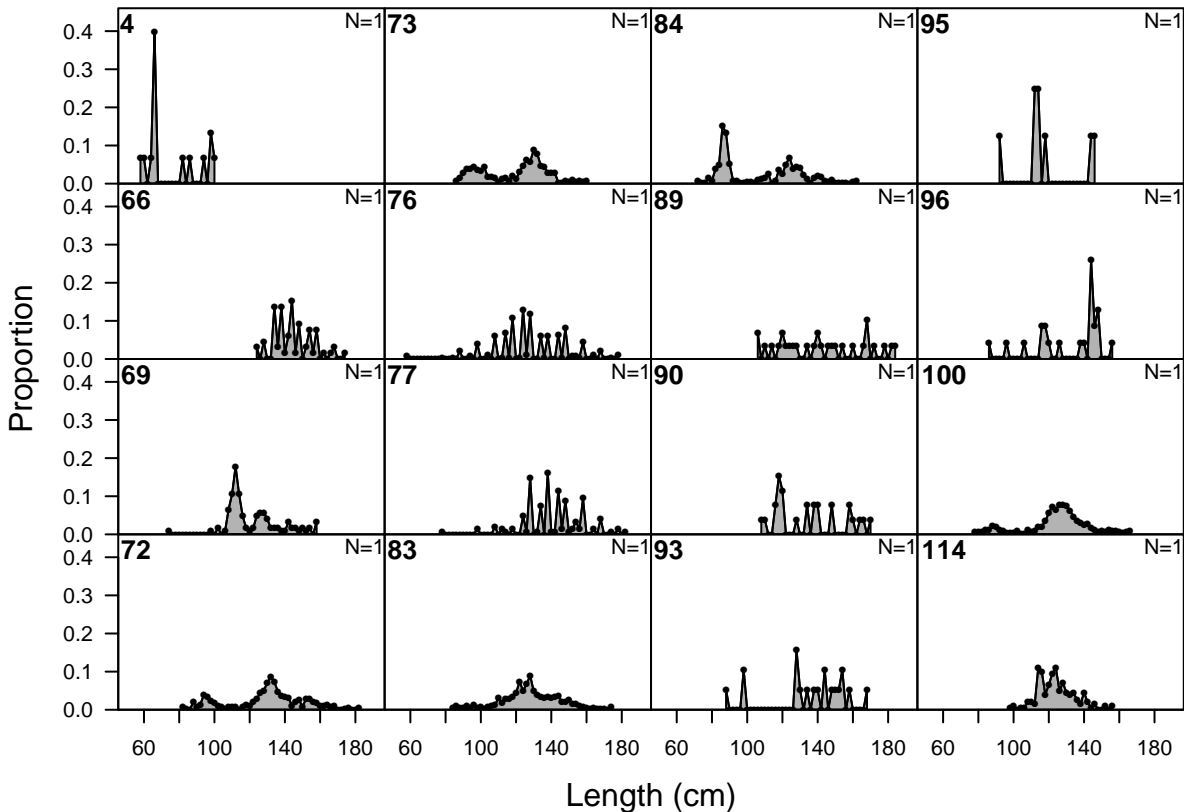




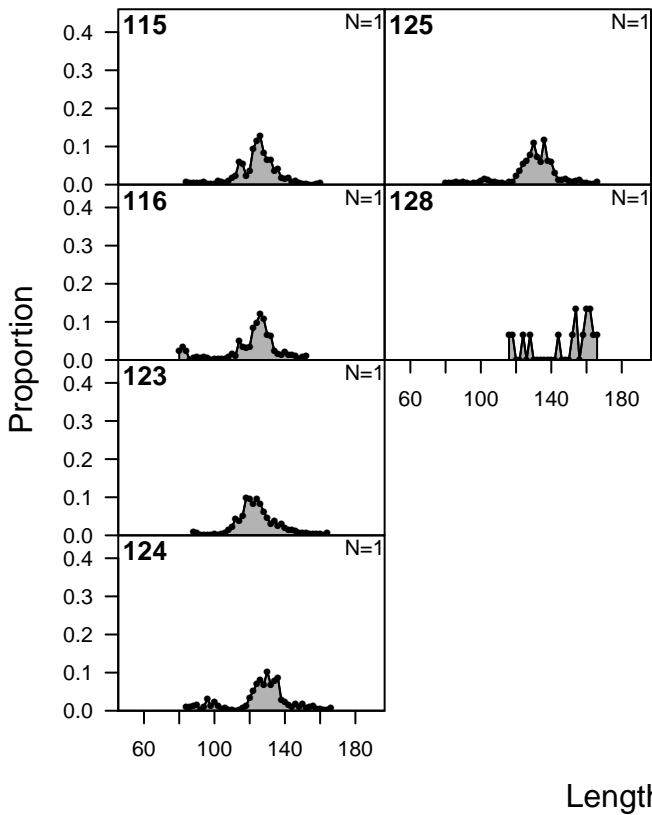
F7-NOA-DEL\_late (whole catch)



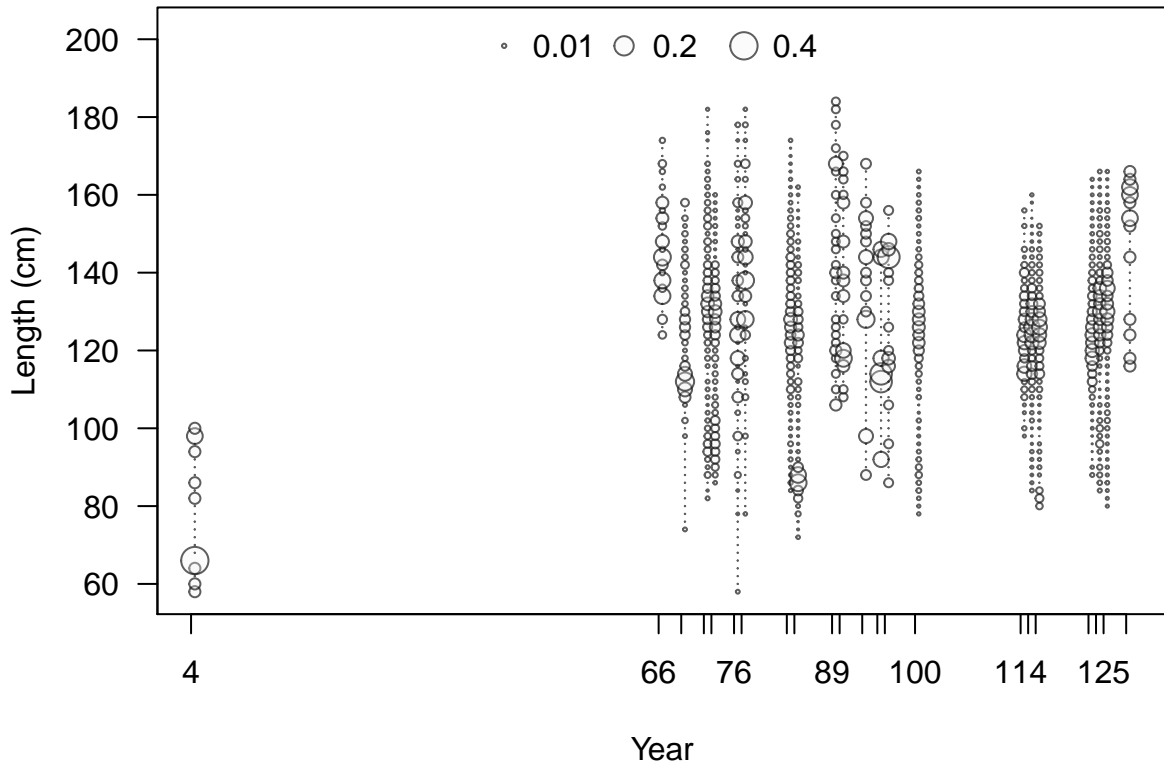
# length comp data, whole catch, F12-LL\_N\_num



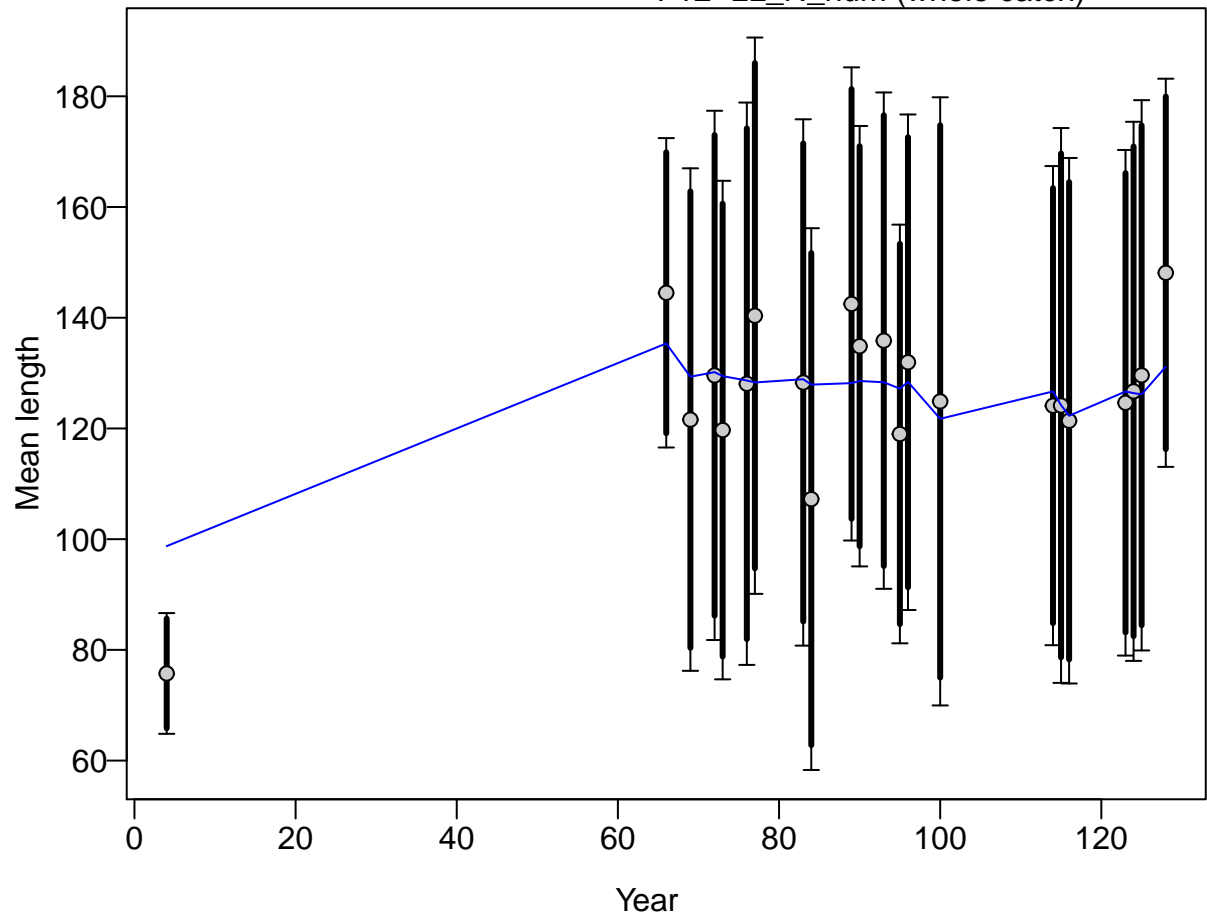
# length comp data, whole catch, F12-LL\_N\_num



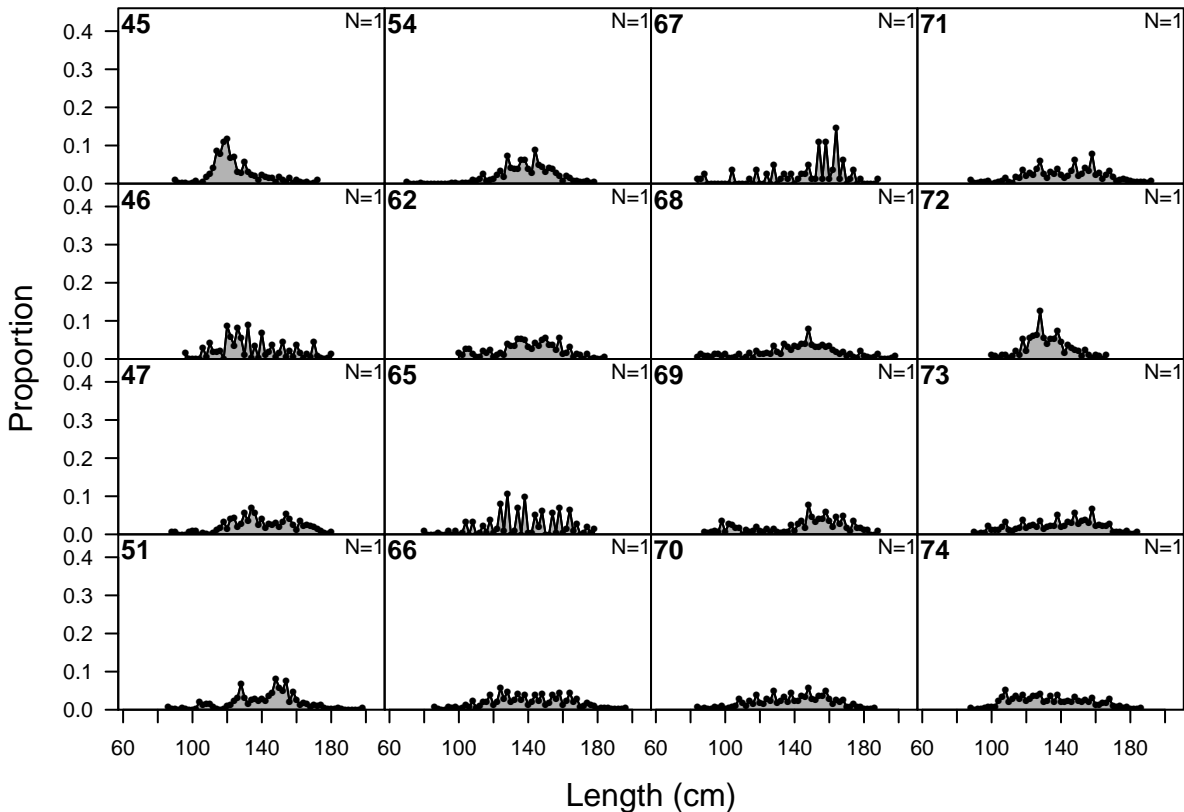
# length comp data, whole catch, F12-LL\_N\_num (max=0.4)



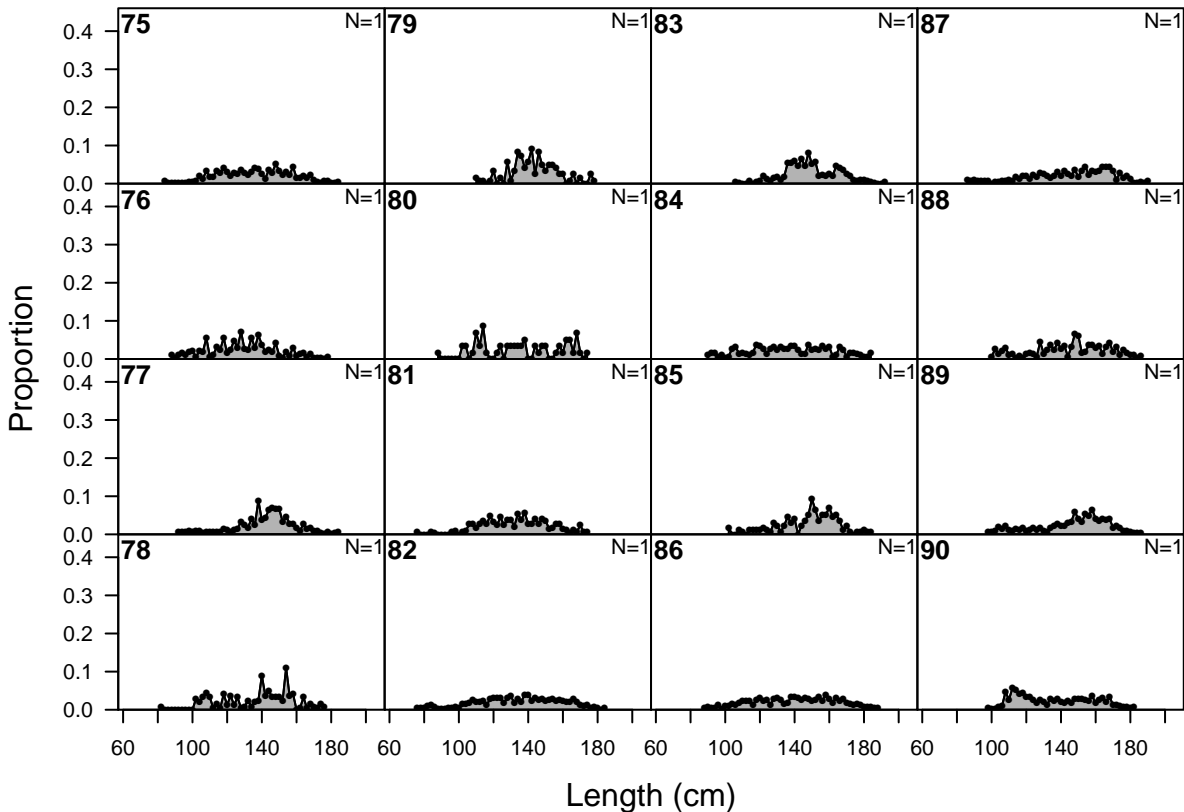
F12-LL\_N\_num (whole catch)



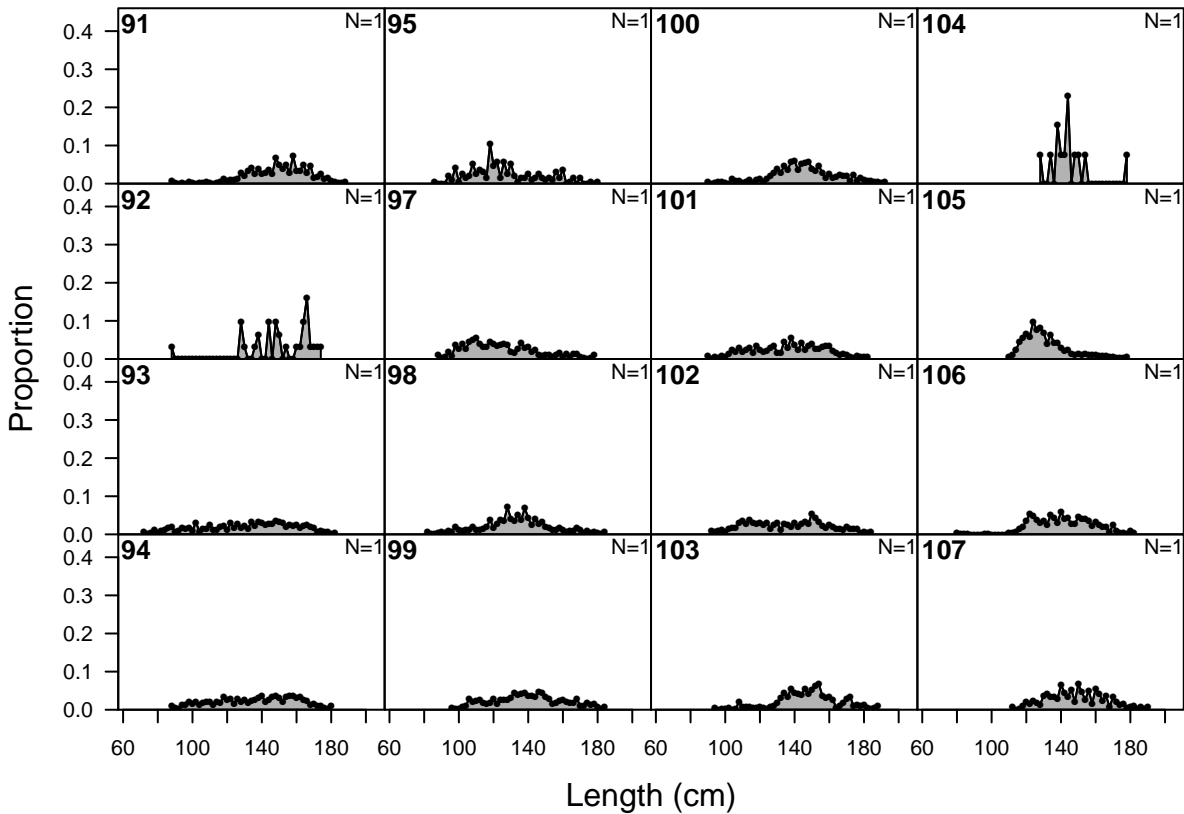
# length comp data, whole catch, F13-LL\_C\_num



# length comp data, whole catch, F13-LL\_C\_num

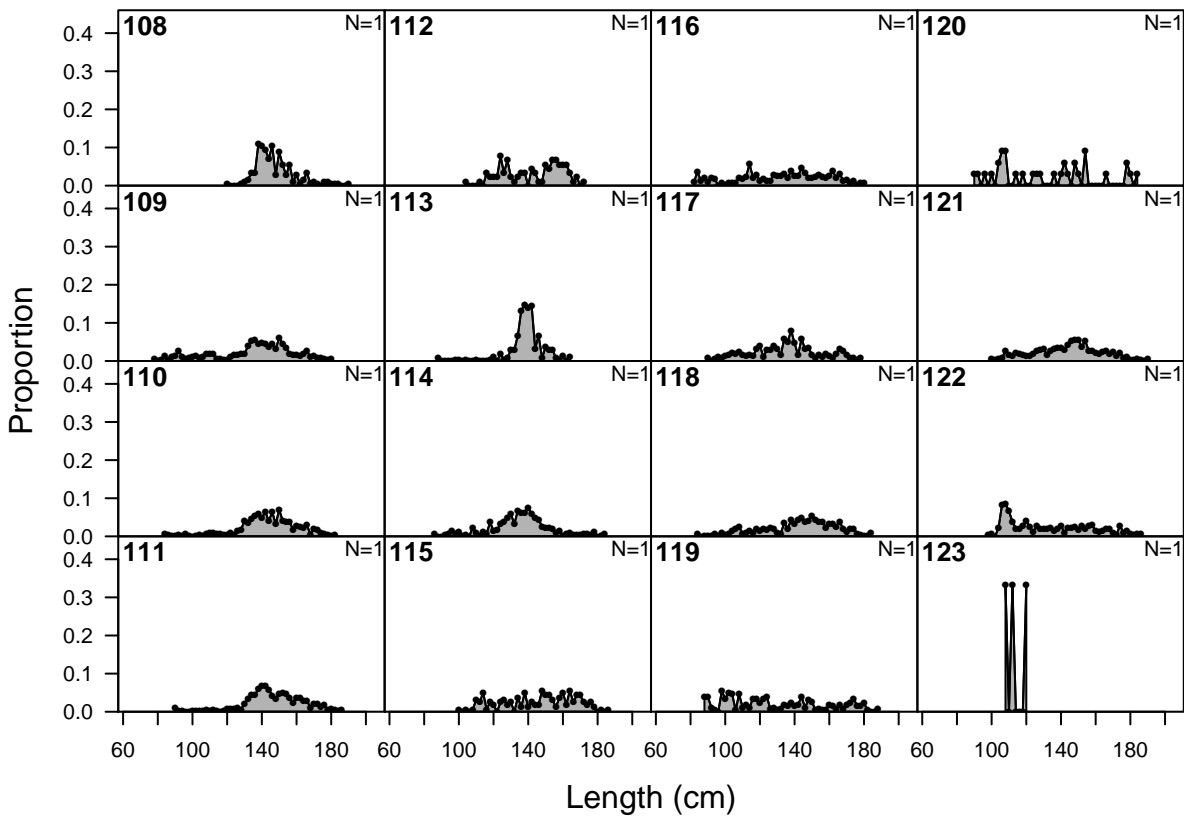


# length comp data, whole catch, F13-LL\_C\_num

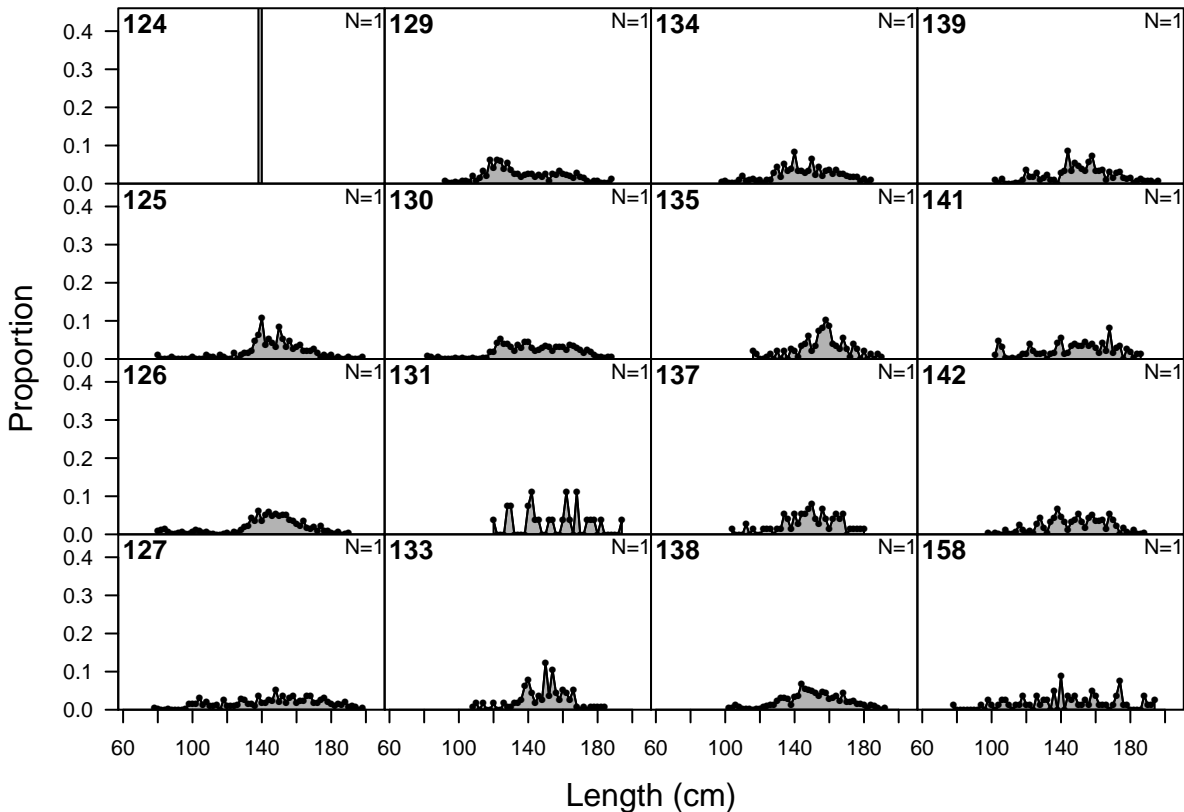




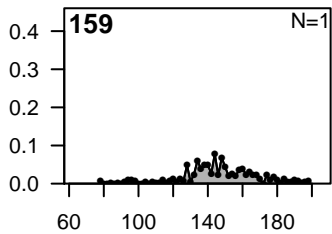
# length comp data, whole catch, F13-LL\_C\_num



# length comp data, whole catch, F13-LL\_C\_num



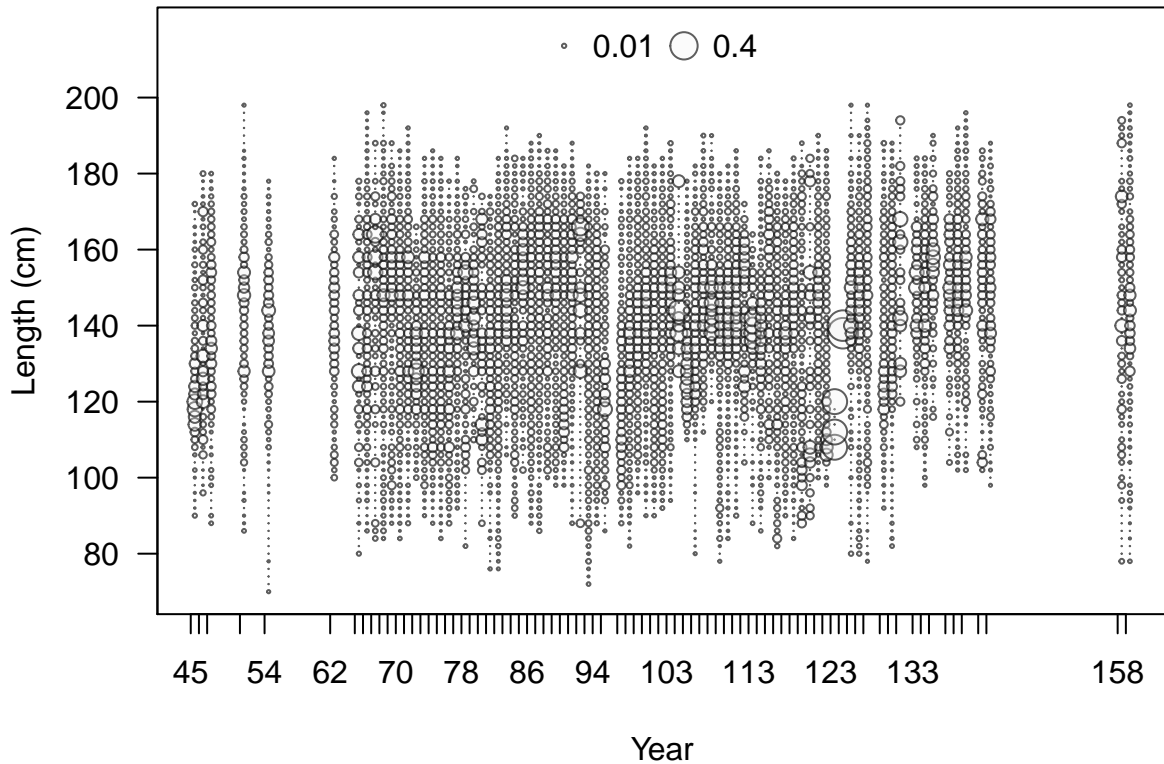
# length comp data, whole catch, F13-LL\_C\_num



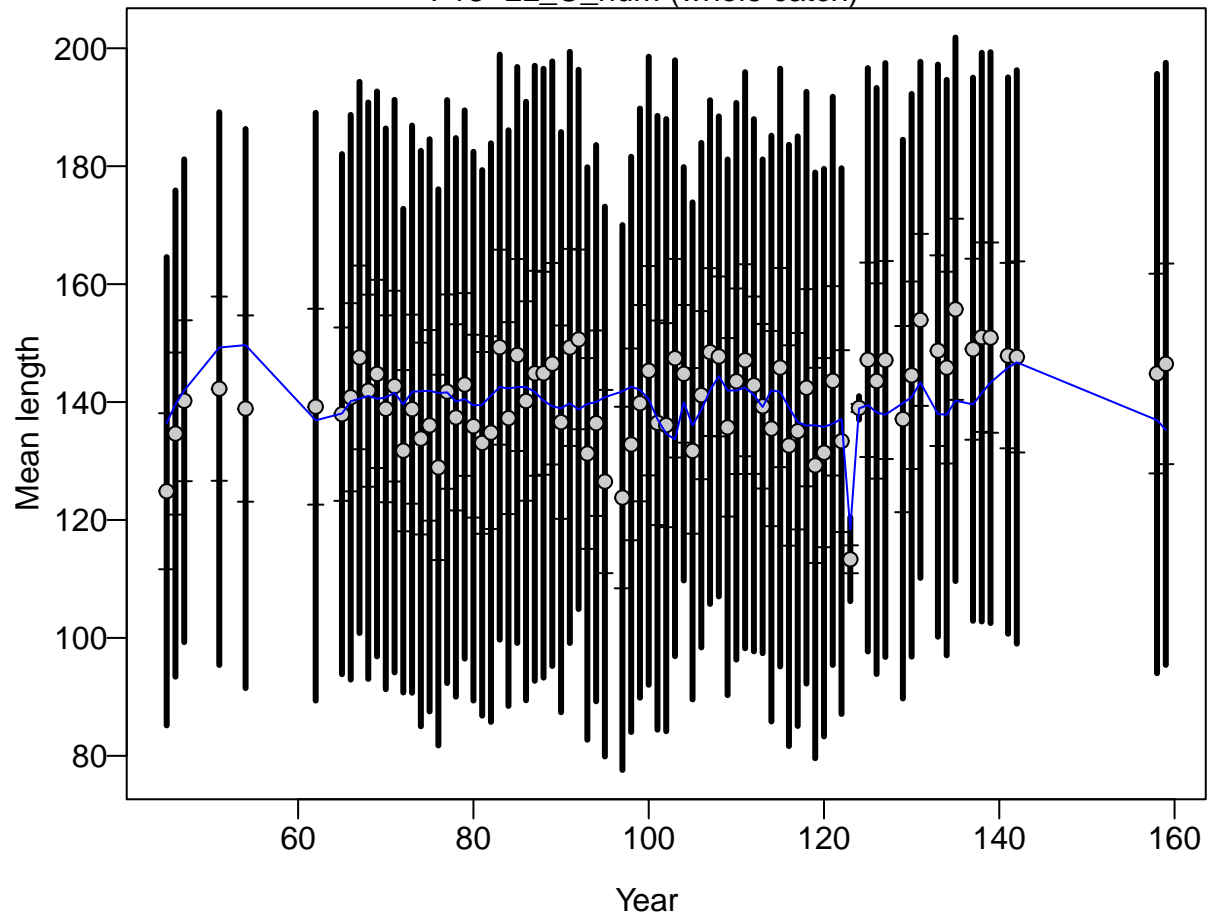
Proportion

Length (cm)

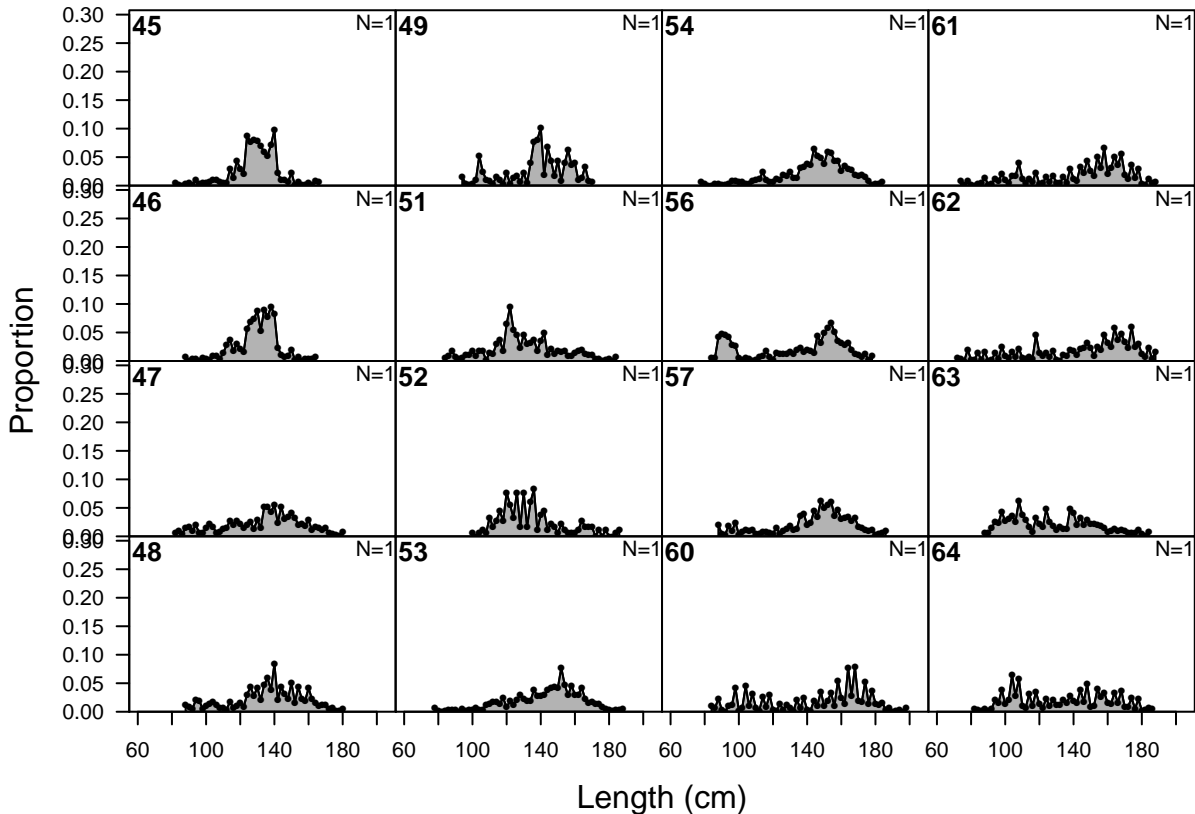
length comp data, whole catch, F13-LL\_C\_num (max=0.5)



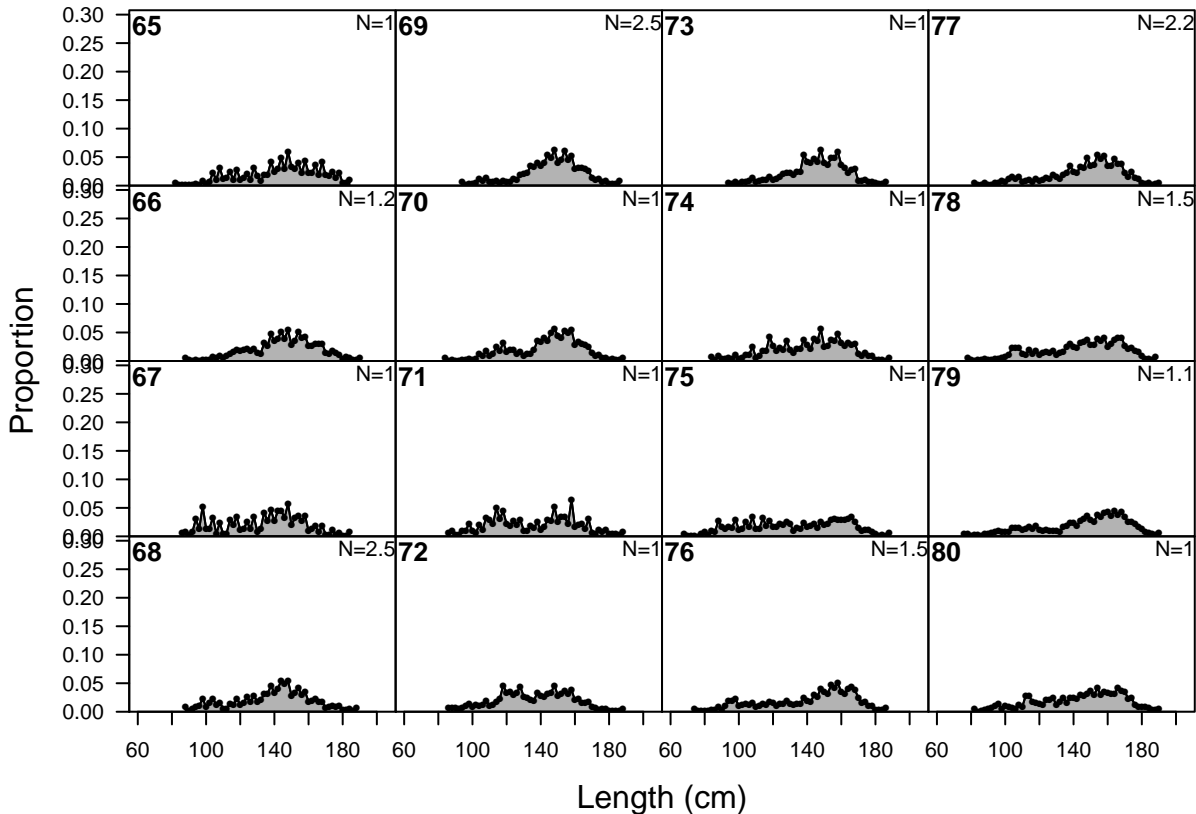
F13-LL\_C\_num (whole catch)



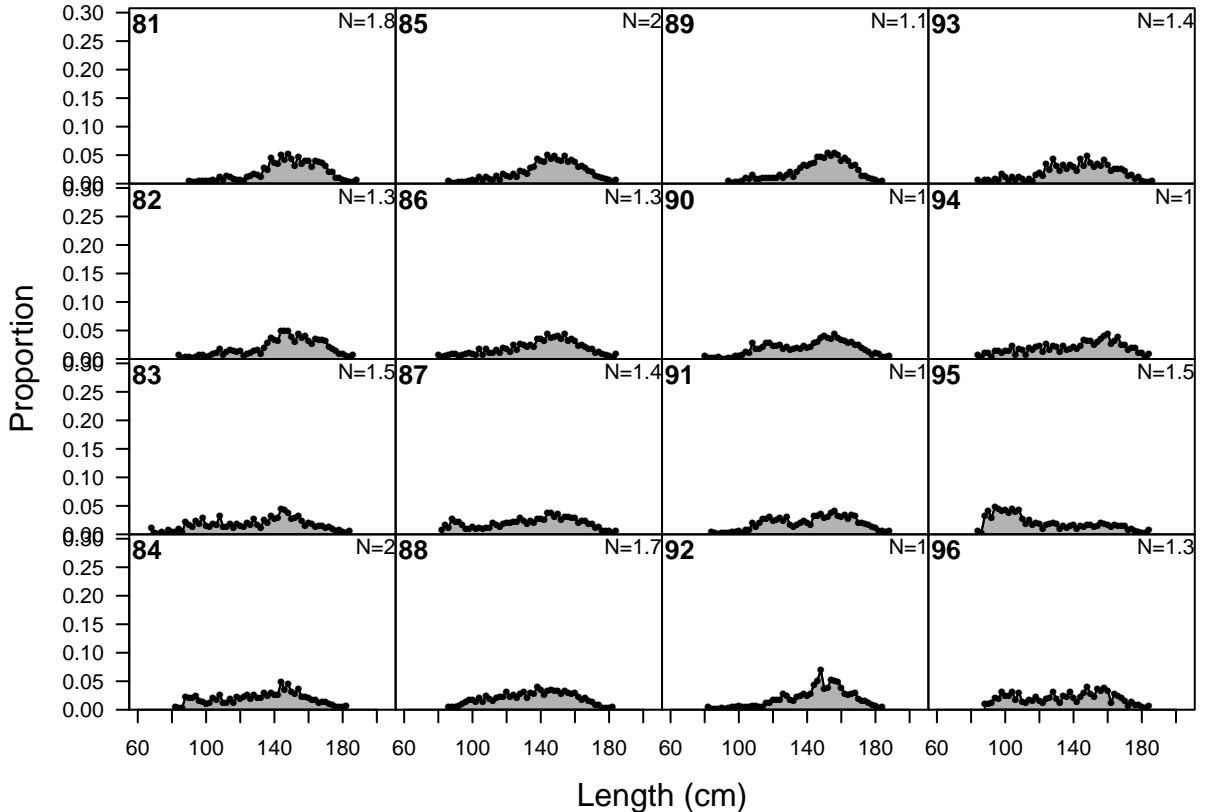
# length comp data, whole catch, F14-LL\_S\_num



# length comp data, whole catch, F14-LL\_S\_num

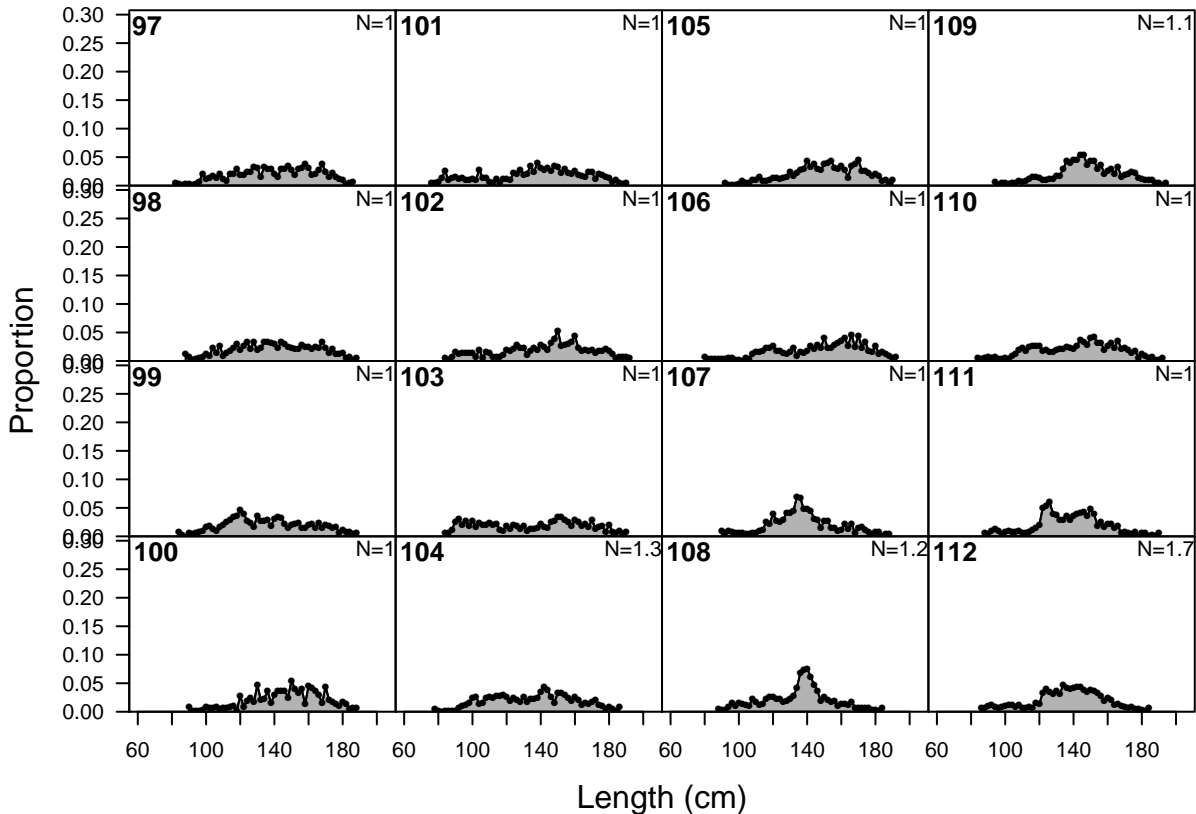


# length comp data, whole catch, F14-LL\_S\_num

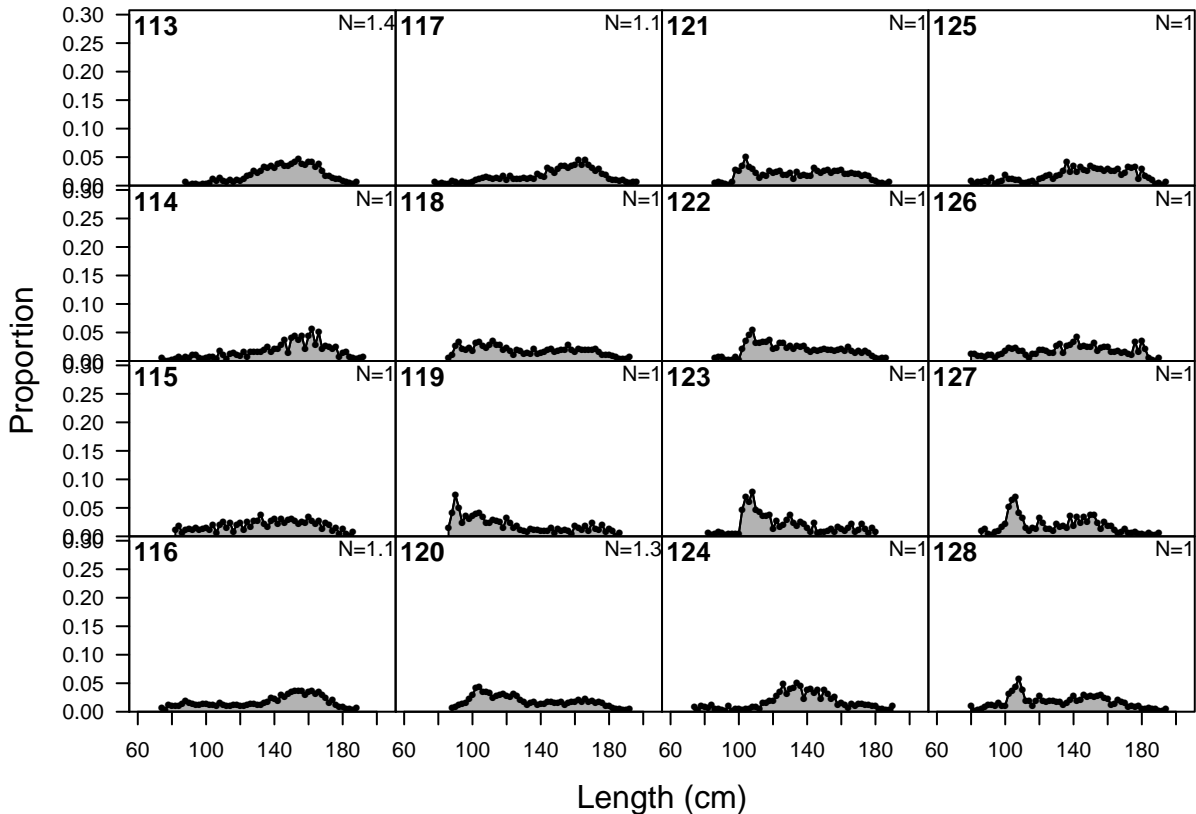




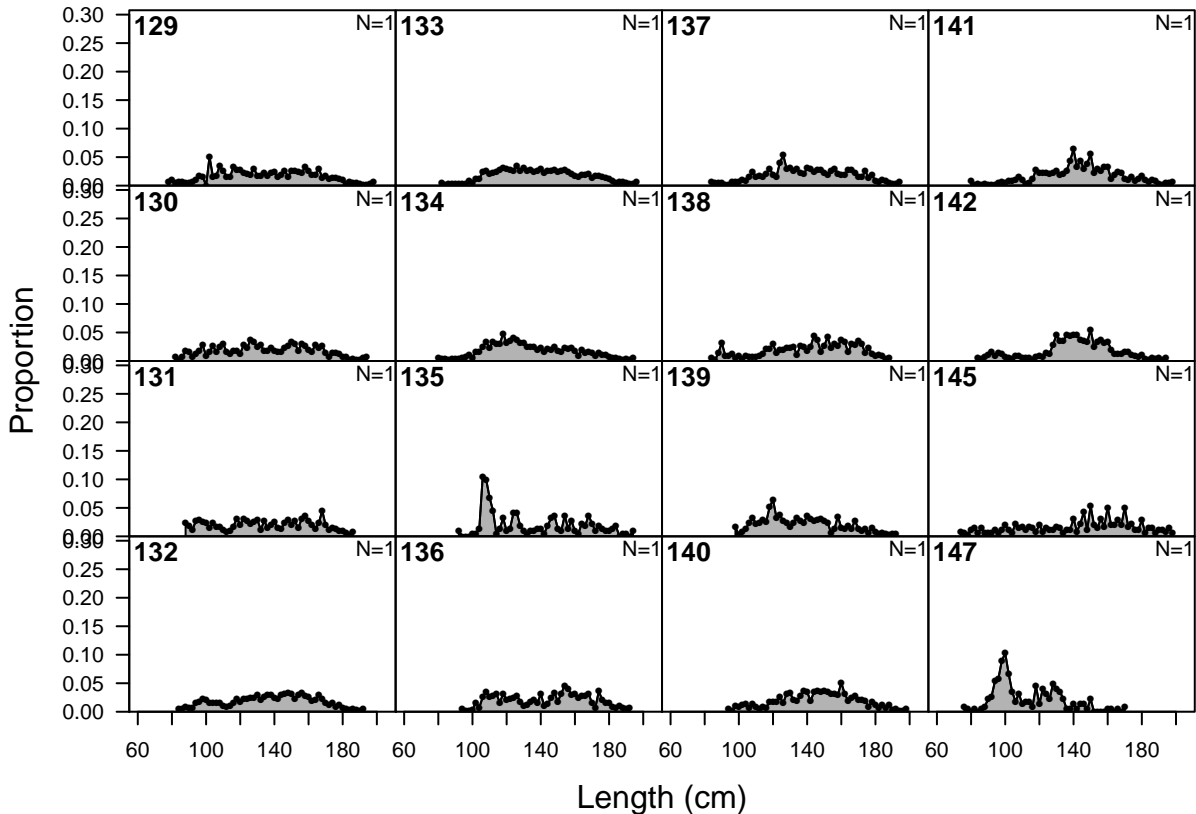
# length comp data, whole catch, F14-LL\_S\_num



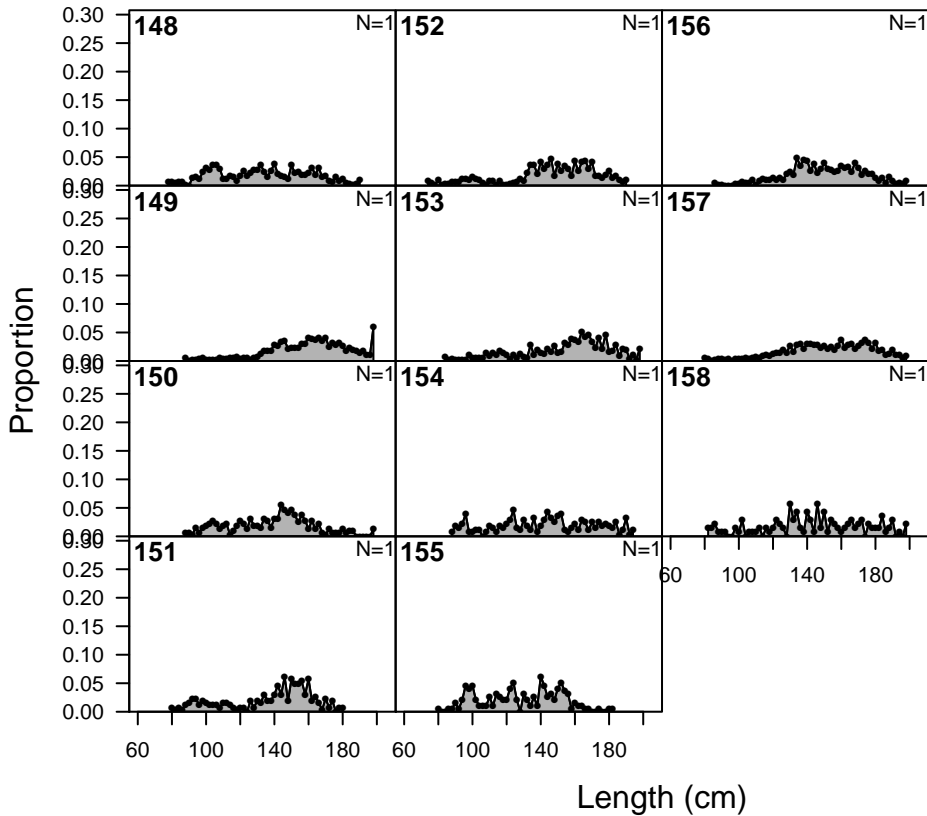
# length comp data, whole catch, F14-LL\_S\_num



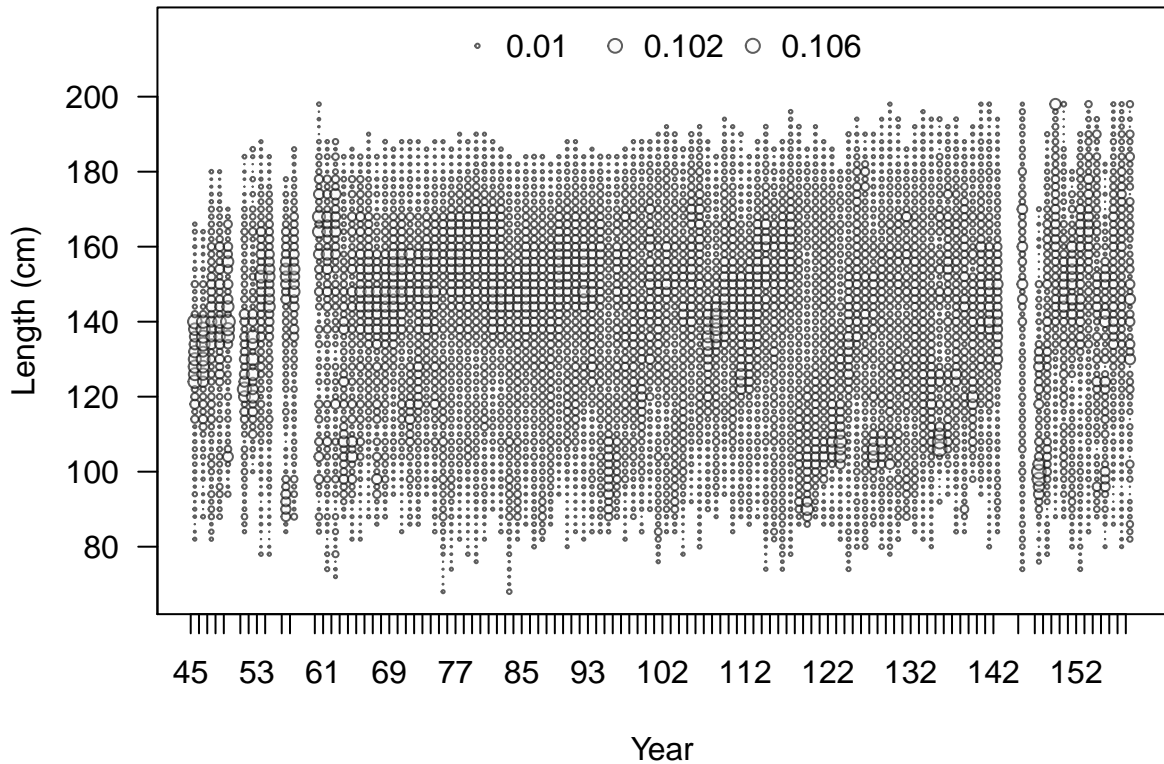
# length comp data, whole catch, F14-LL\_S\_num



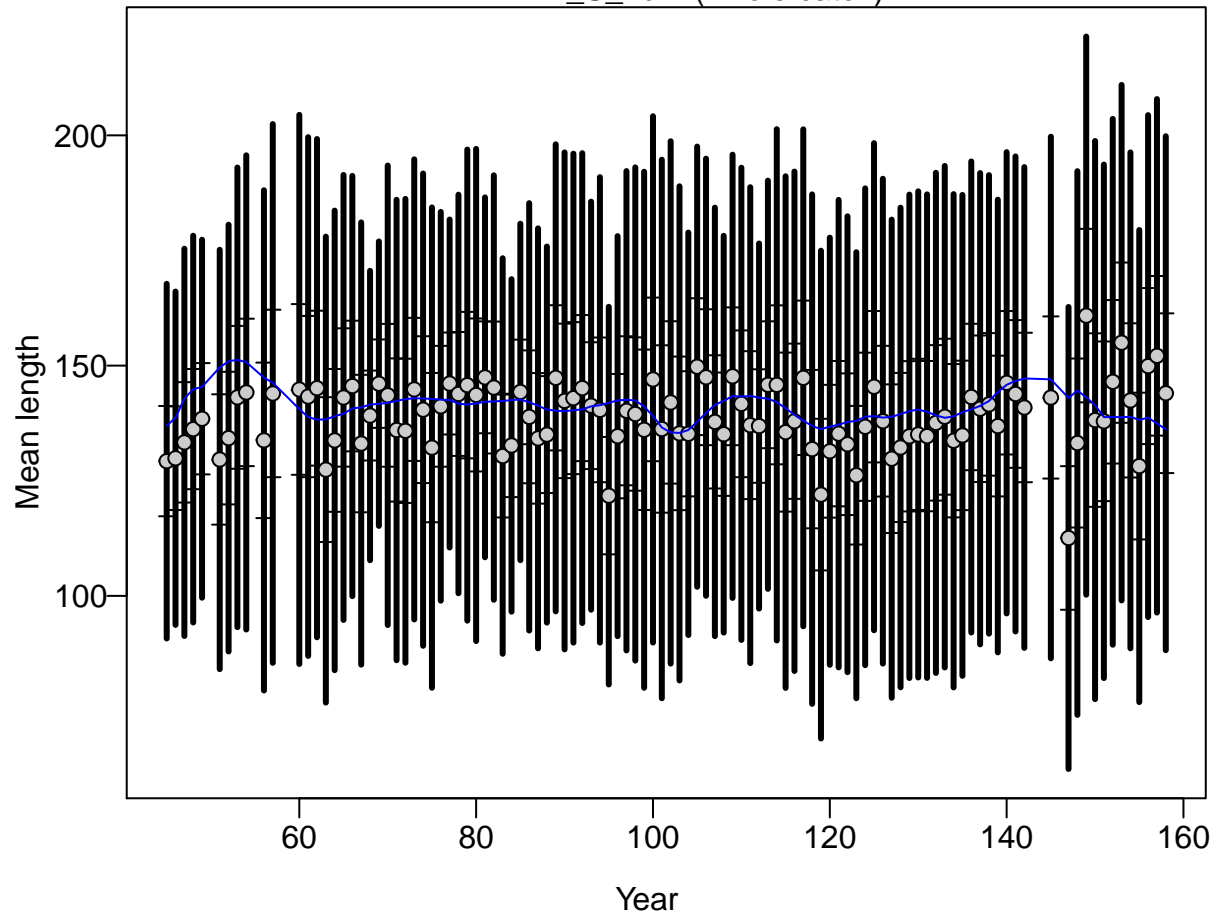
# length comp data, whole catch, F14-LL\_S\_num



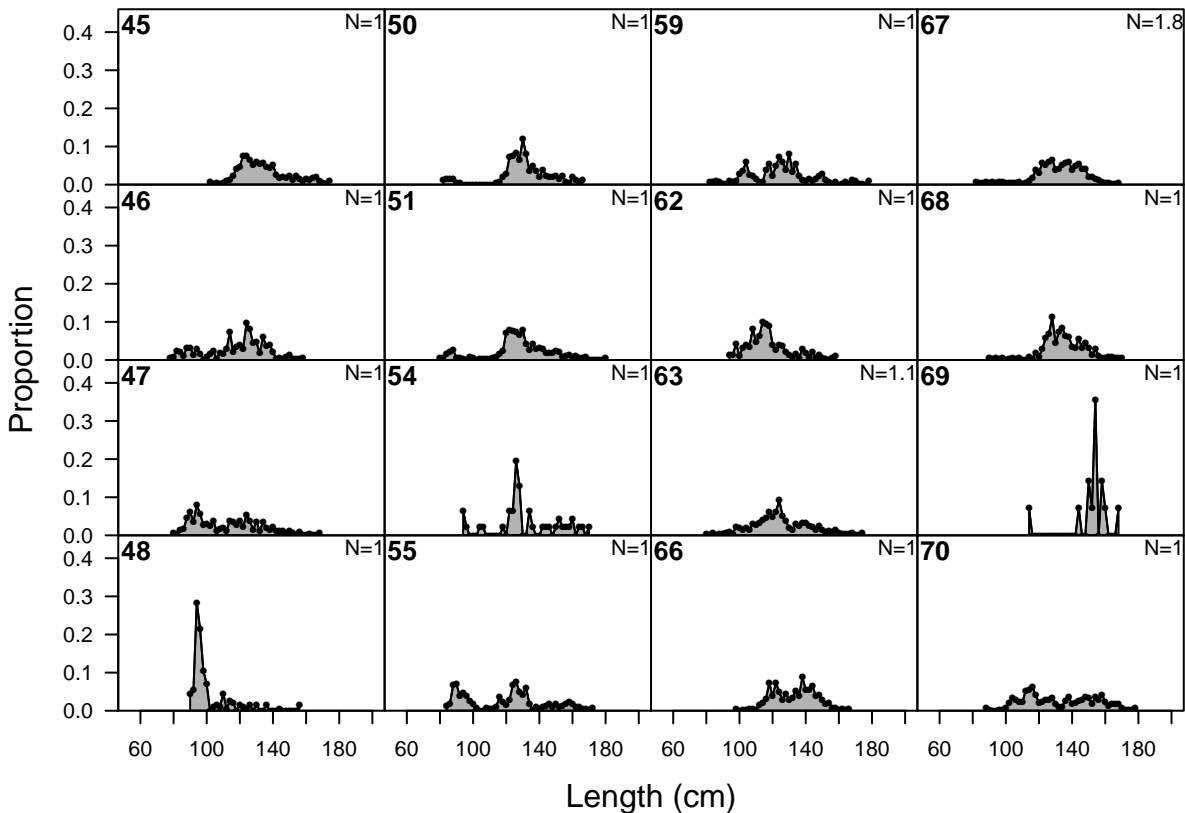
# length comp data, whole catch, F14-LL\_S\_num (max=0.1)



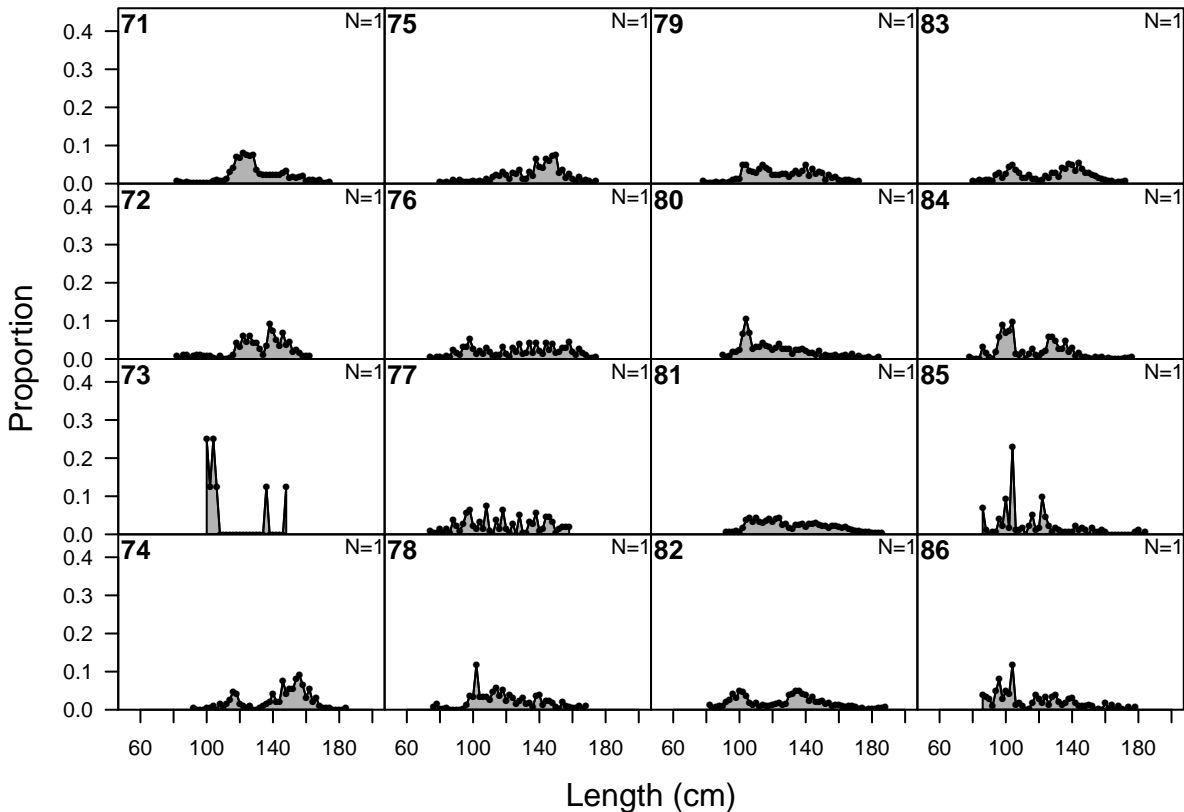
F14-LL\_S\_num (whole catch)



# length comp data, whole catch, F15-LL\_I\_num

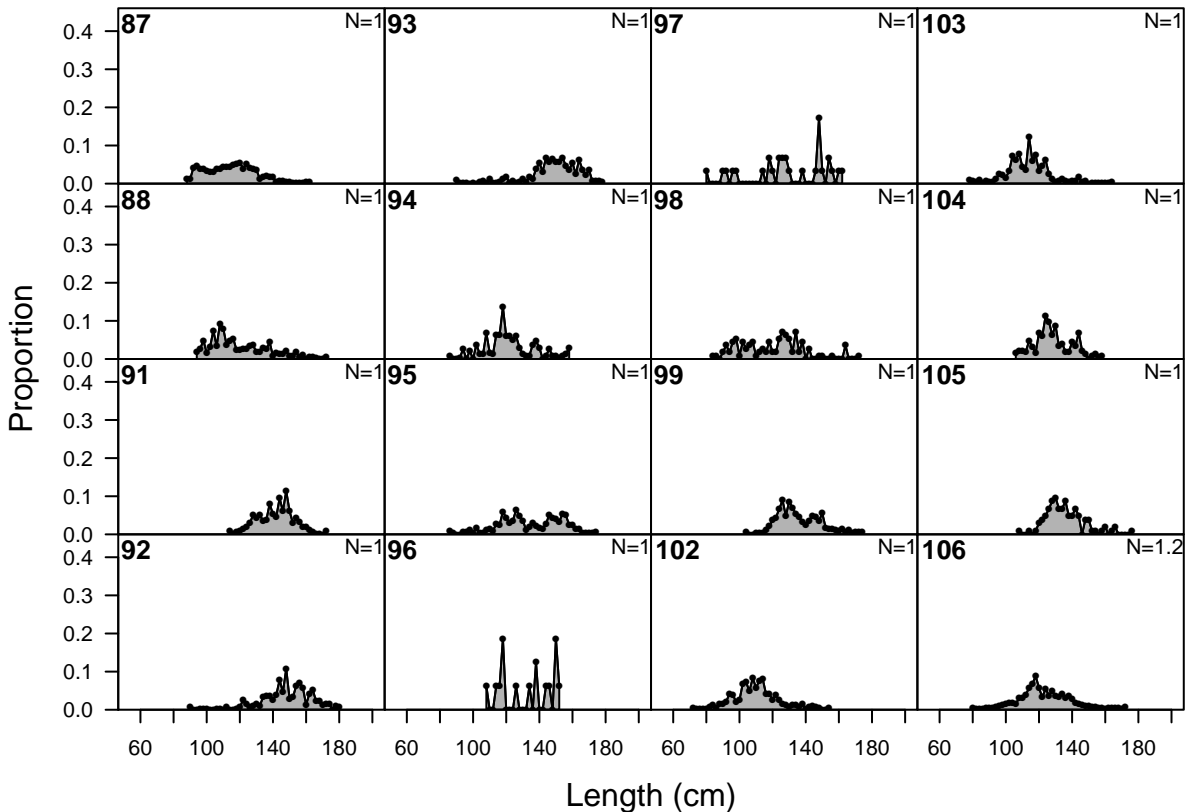


# length comp data, whole catch, F15-LL\_I\_num

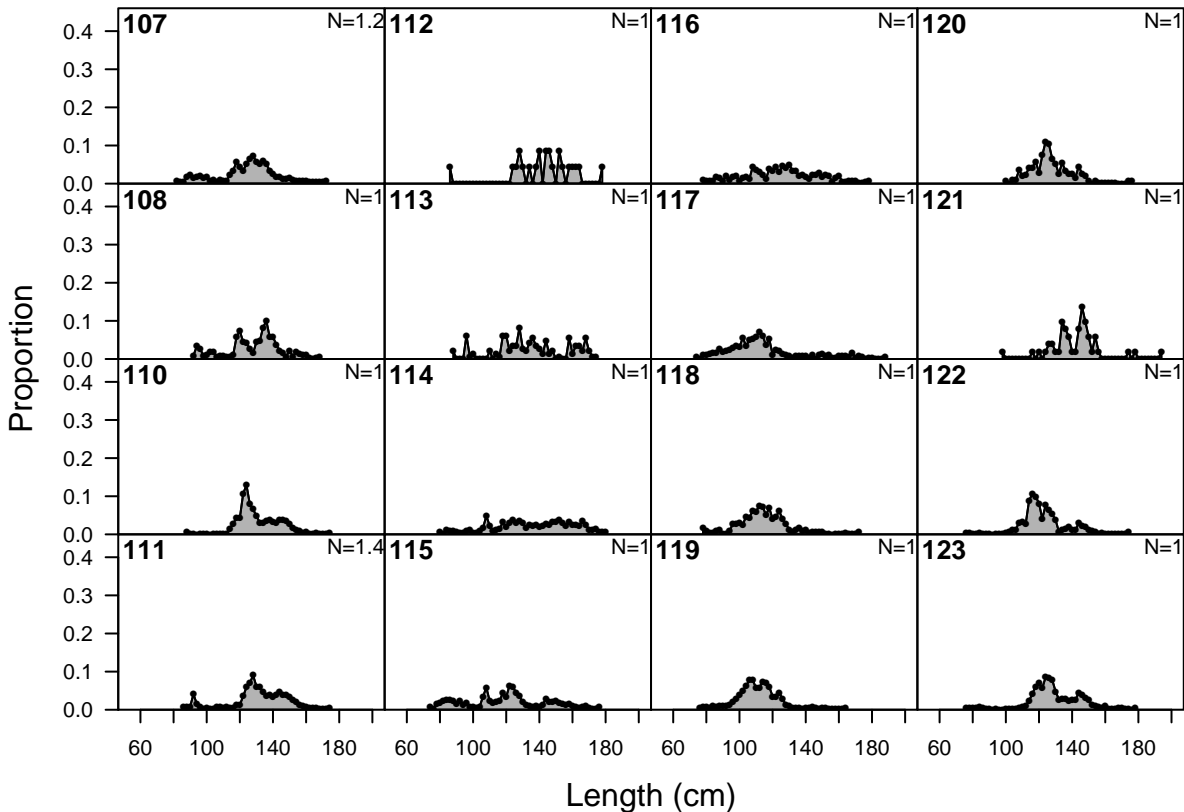




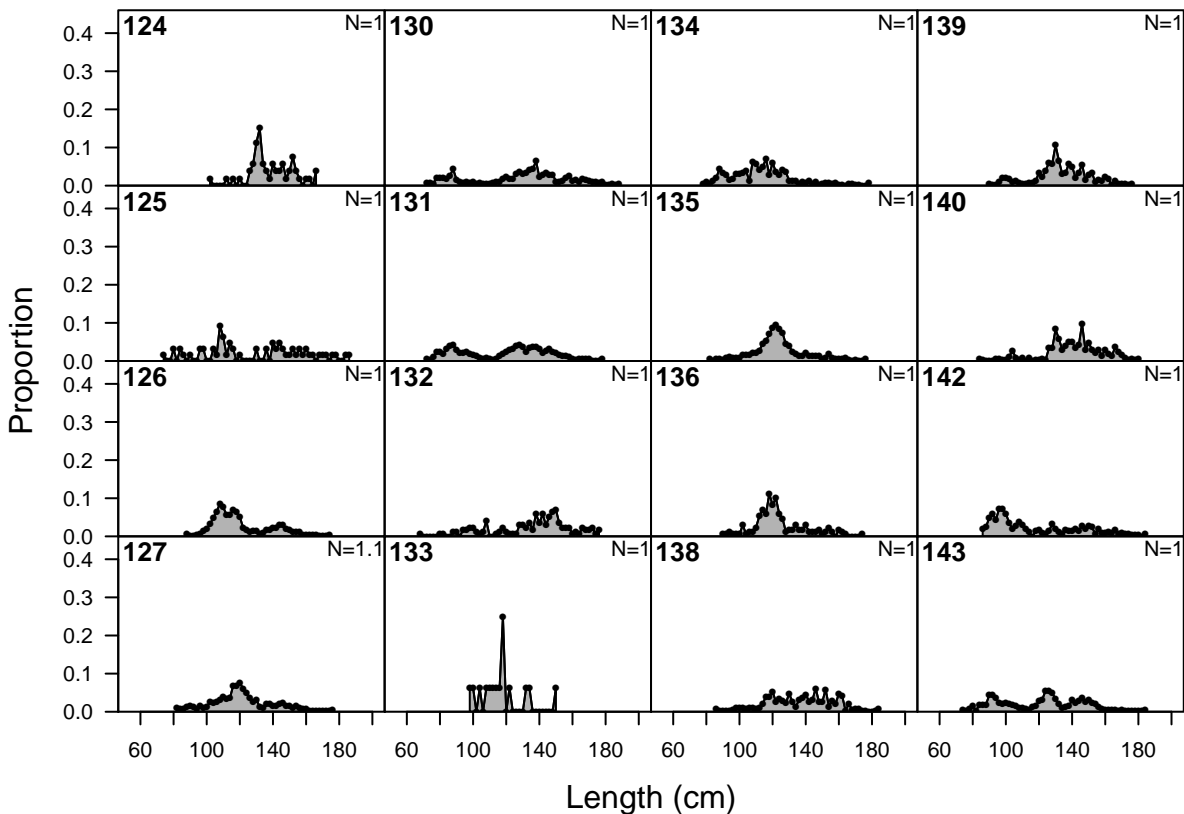
# length comp data, whole catch, F15-LL\_I\_num



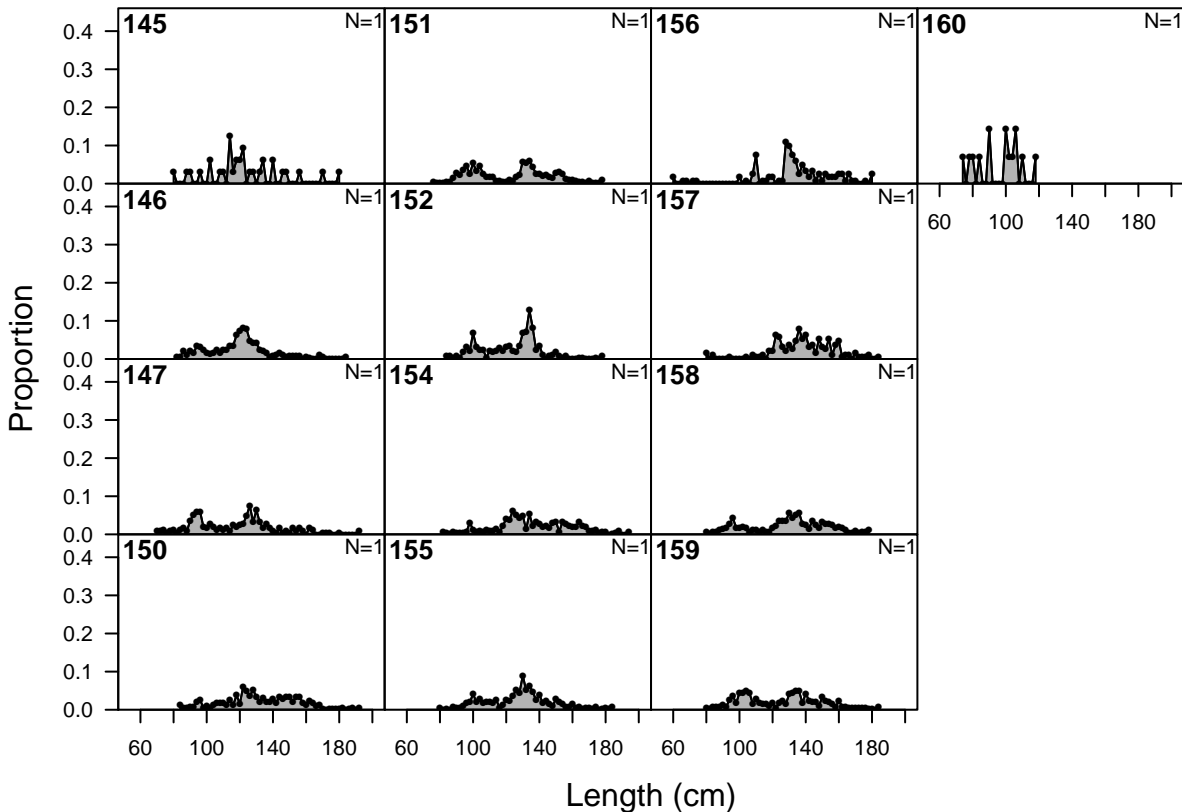
# length comp data, whole catch, F15-LL\_I\_num



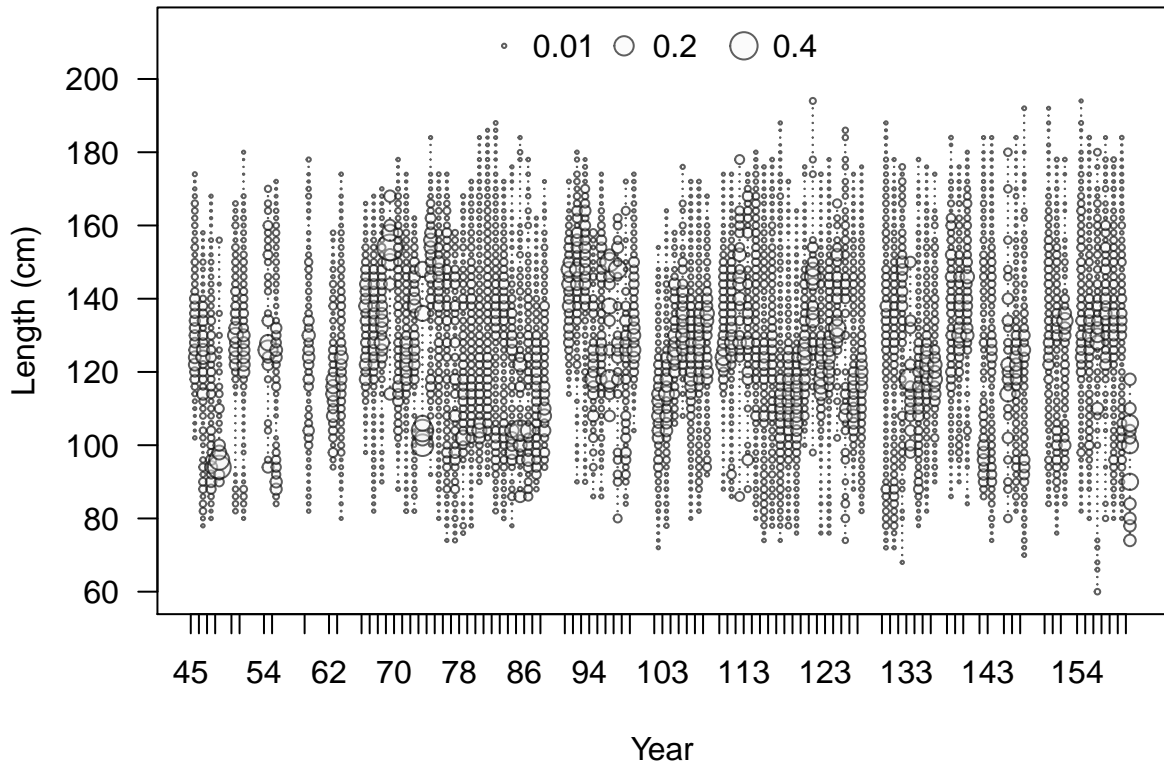
# length comp data, whole catch, F15-LL\_I\_num



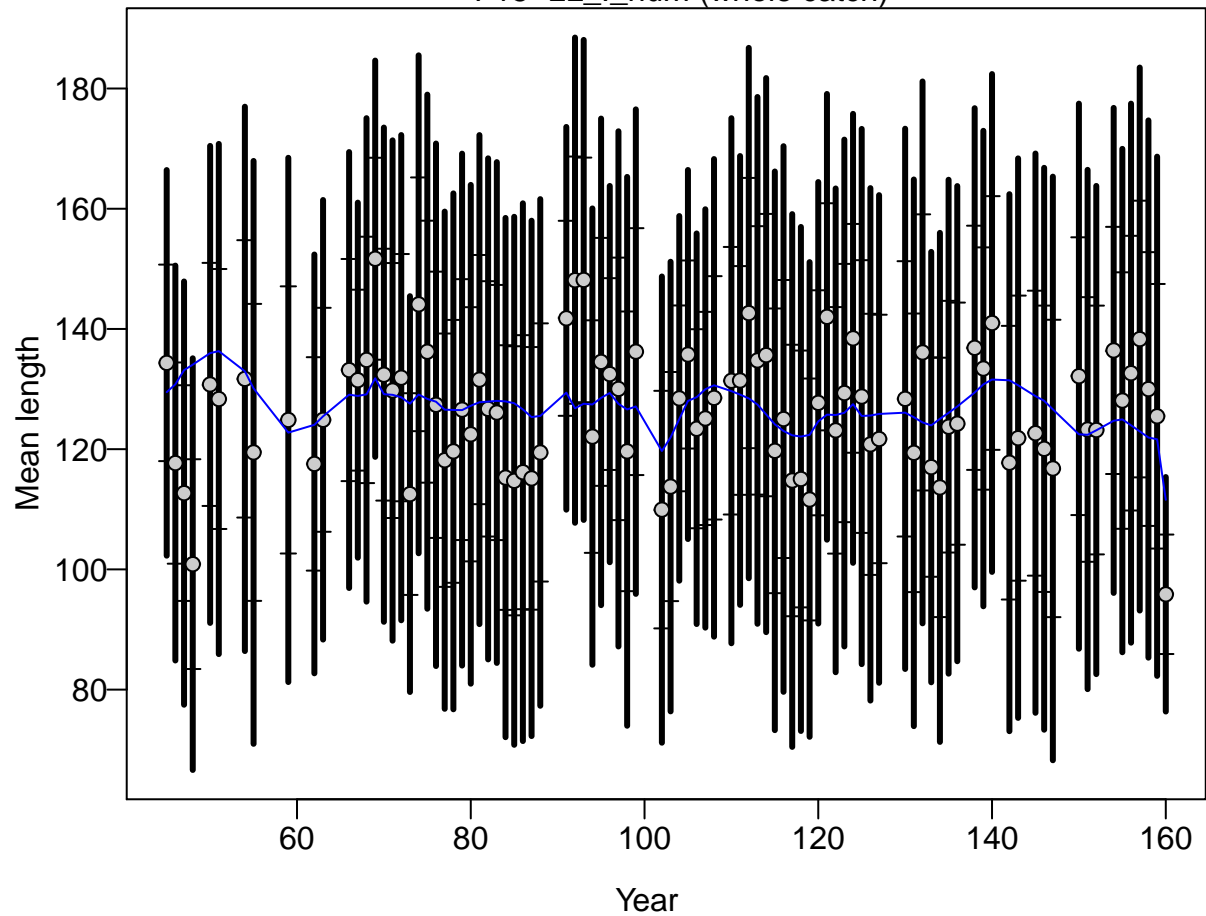
# length comp data, whole catch, F15-LL\_I\_num



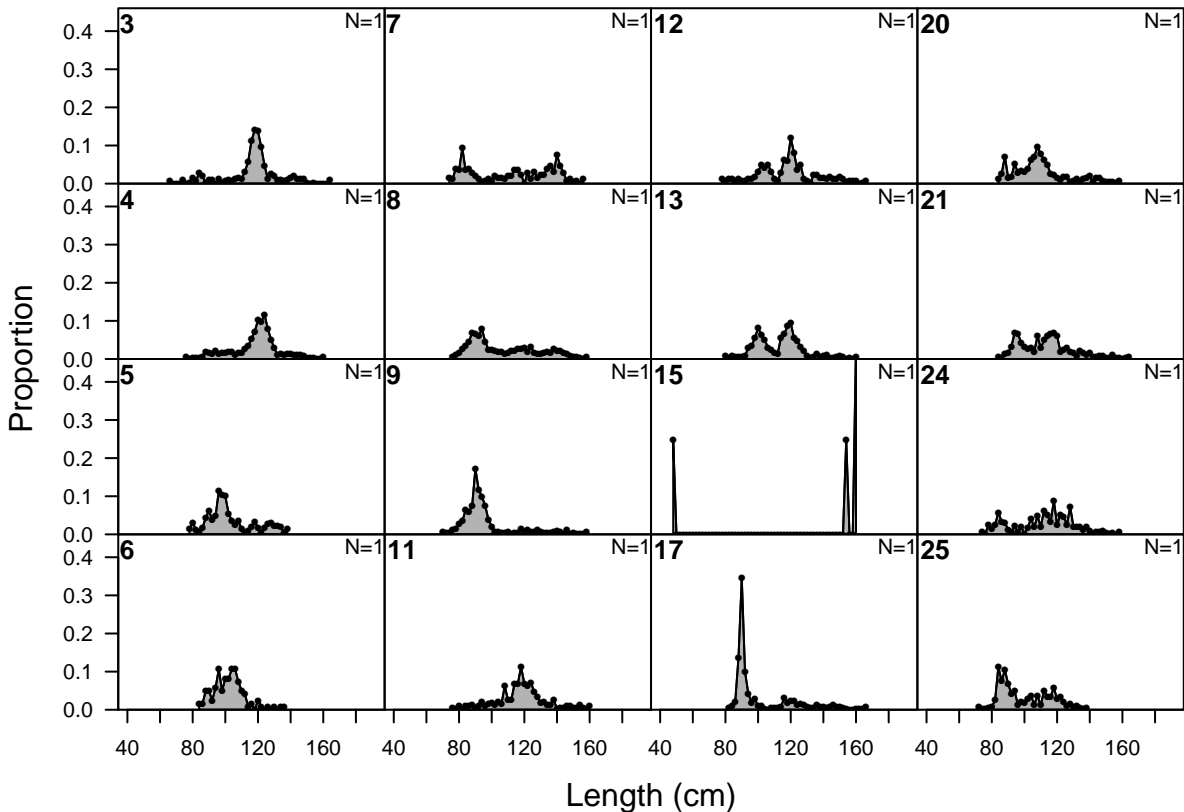
length comp data, whole catch, F15-LL\_I\_num (max=0.36)



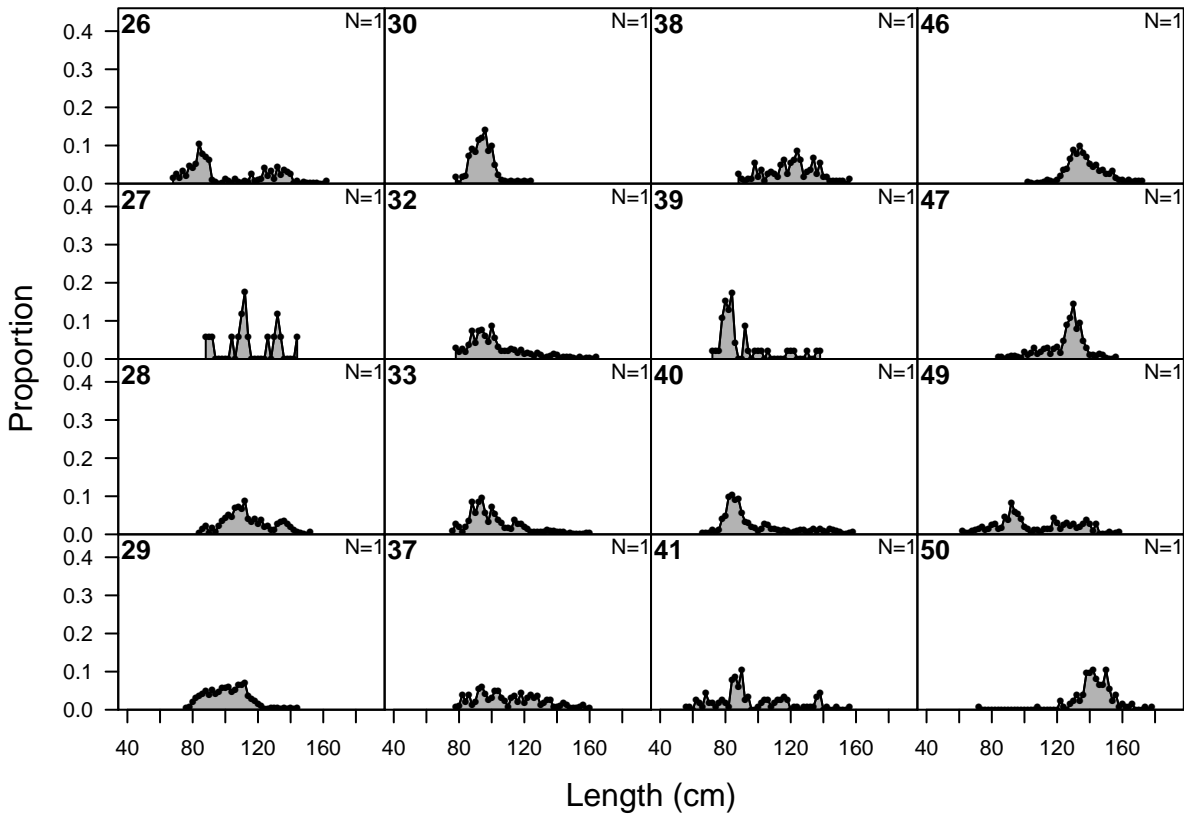
F15-LL\_I\_num (whole catch)



# length comp data, whole catch, S1-LLt\_N\_len

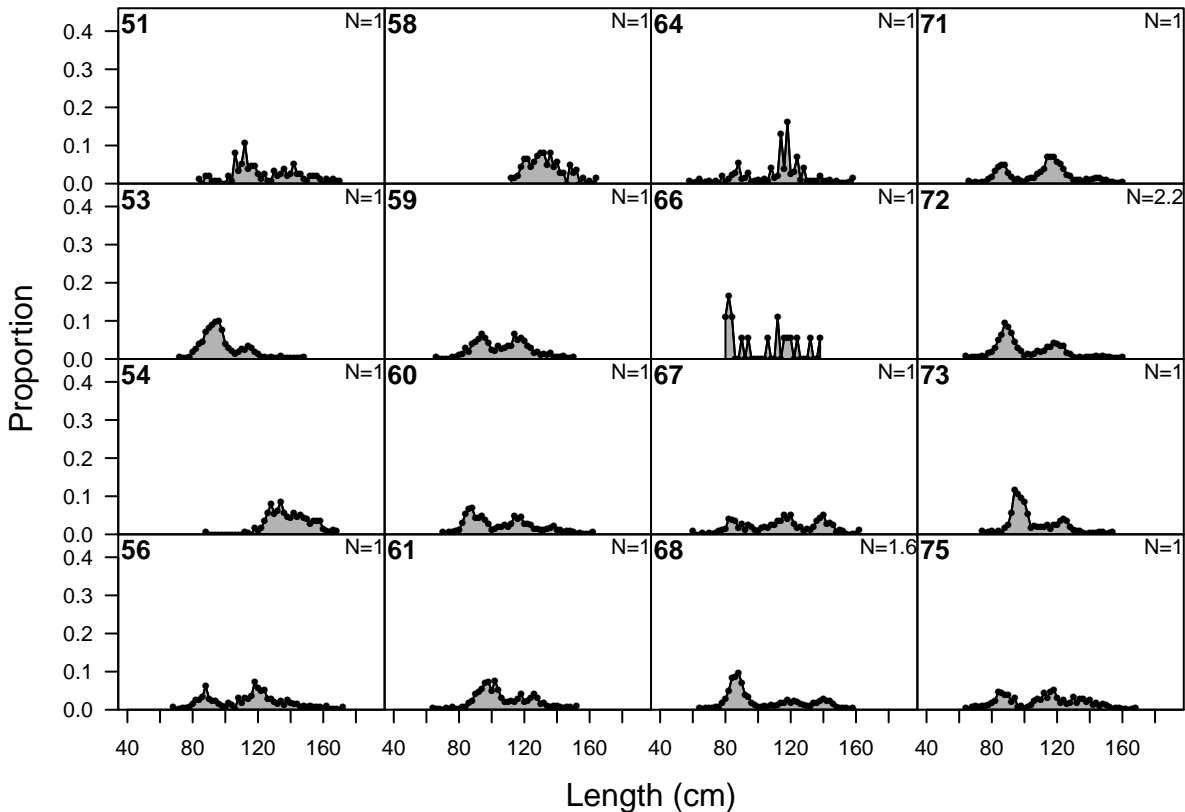


# length comp data, whole catch, S1-LLt\_N\_len

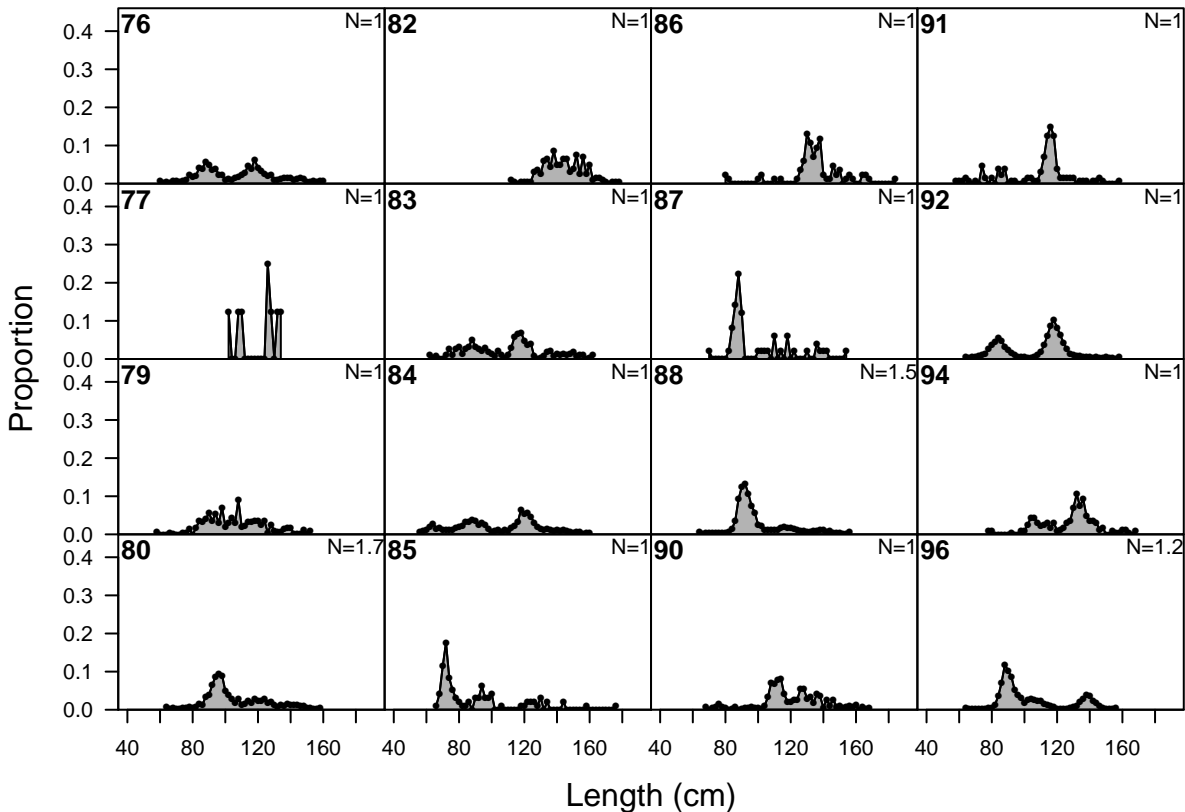




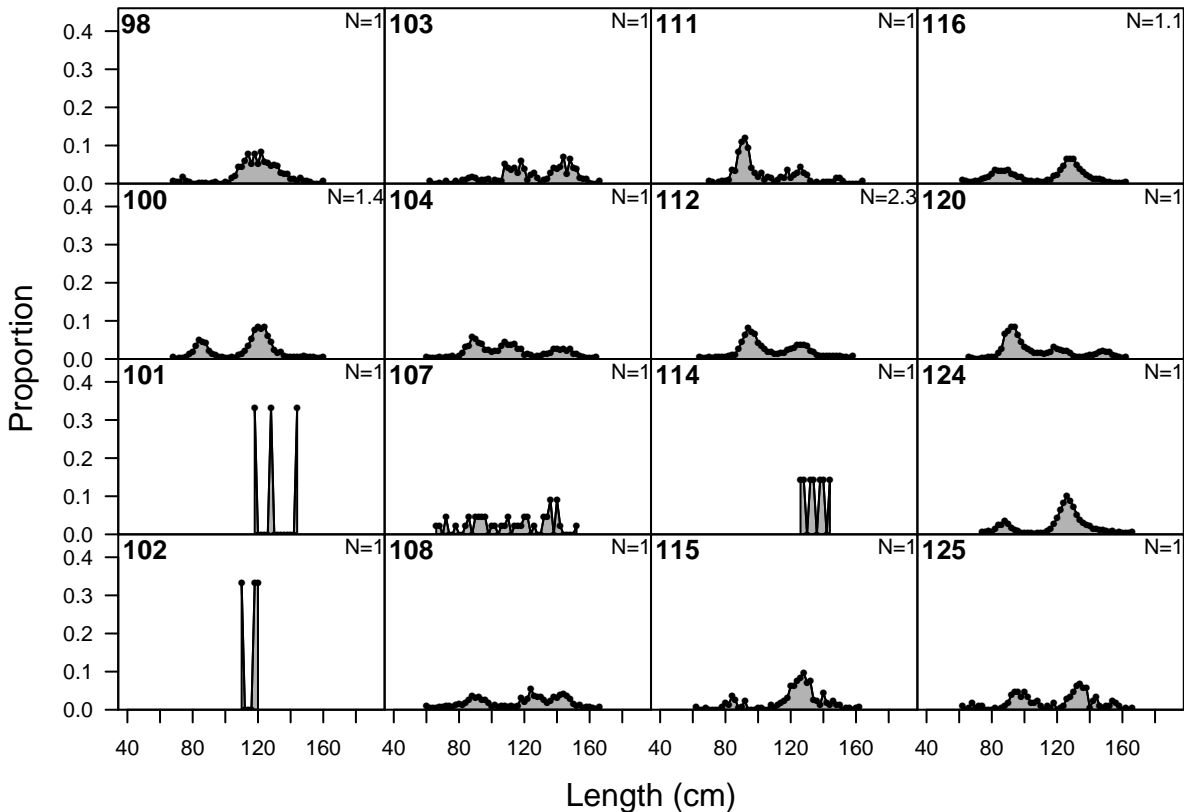
# length comp data, whole catch, S1-LLt\_N\_len



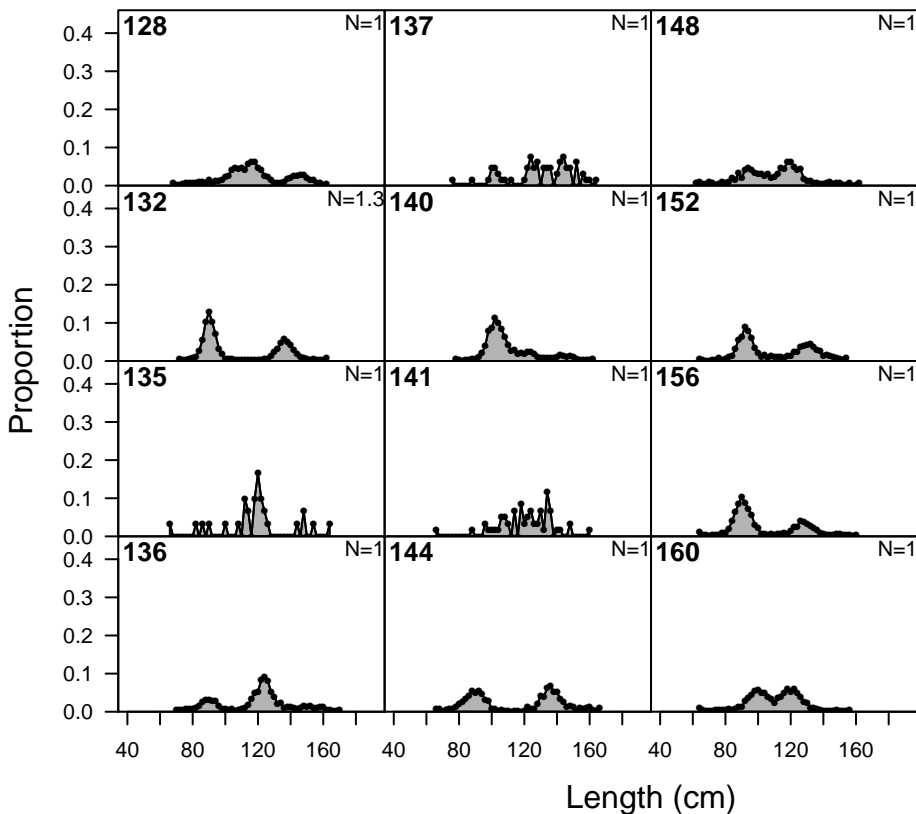
# length comp data, whole catch, S1-LLt\_N\_len



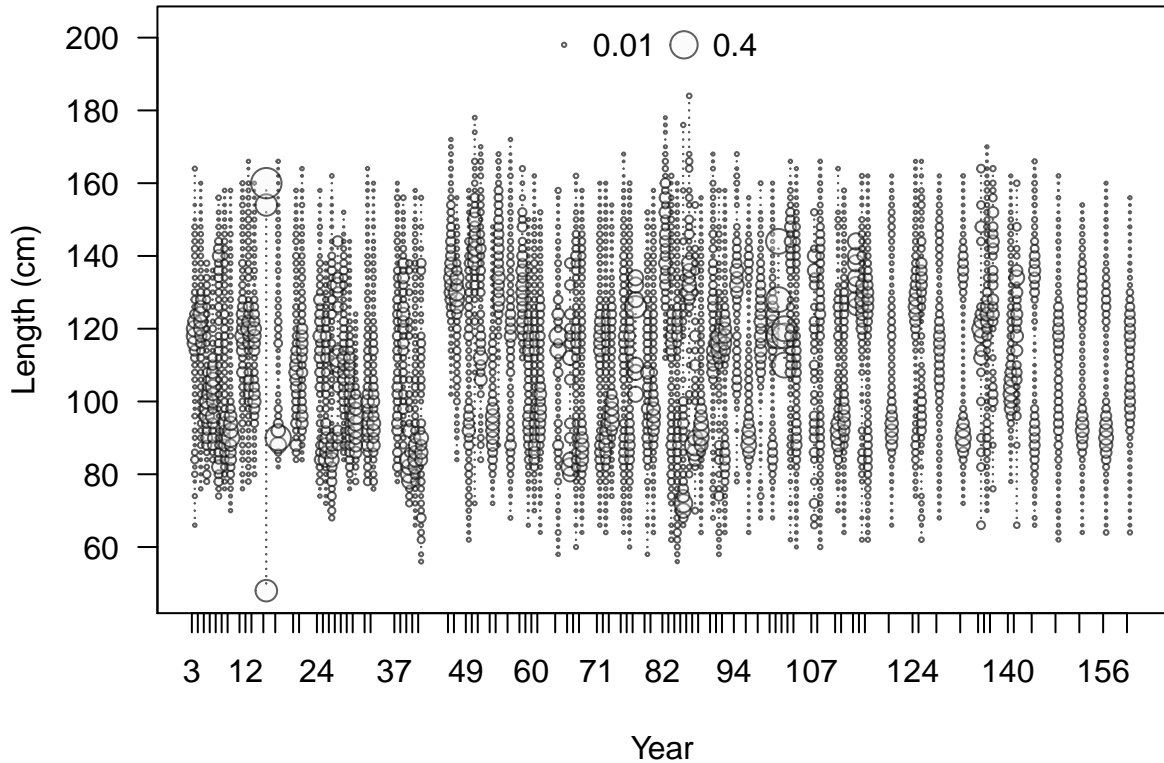
# length comp data, whole catch, S1-LLt\_N\_len



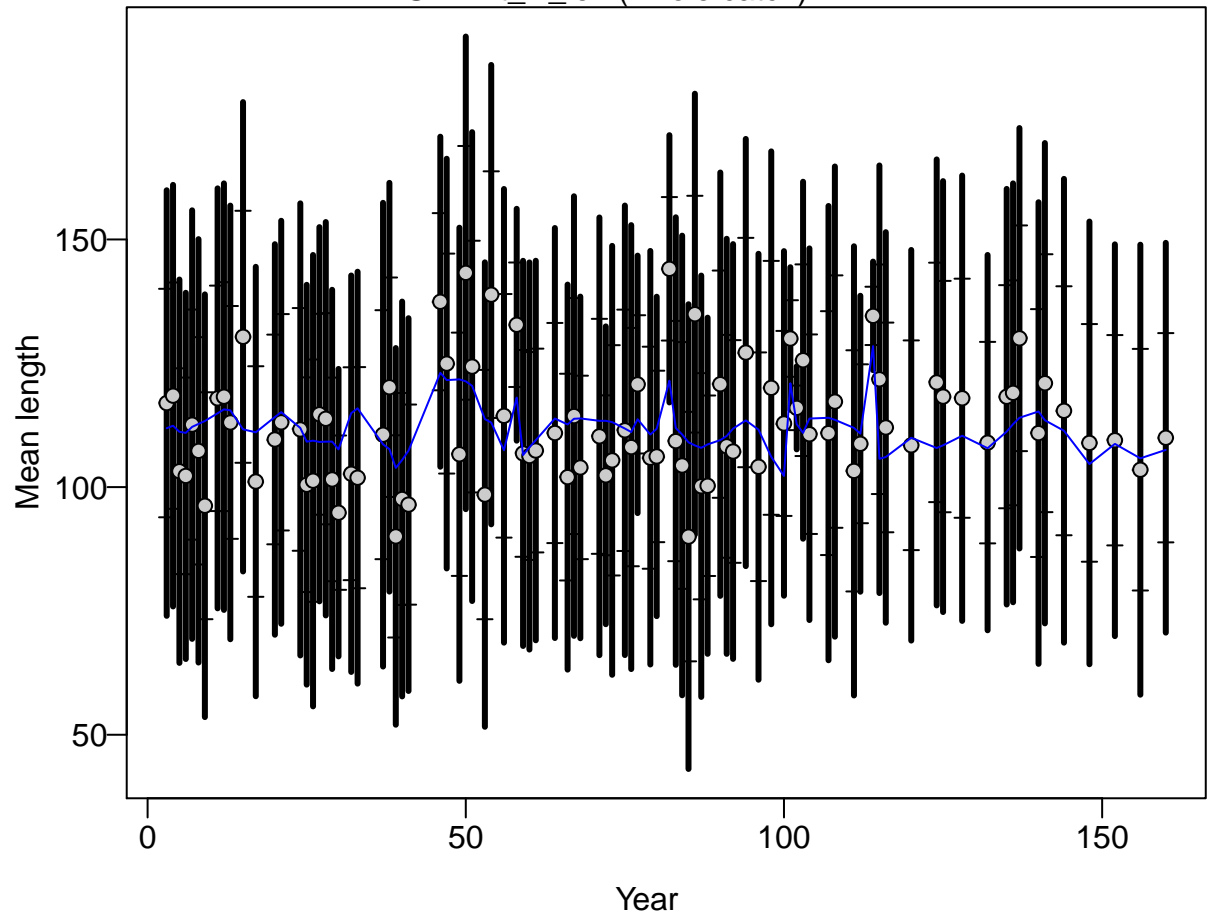
# length comp data, whole catch, S1-LLt\_N\_len



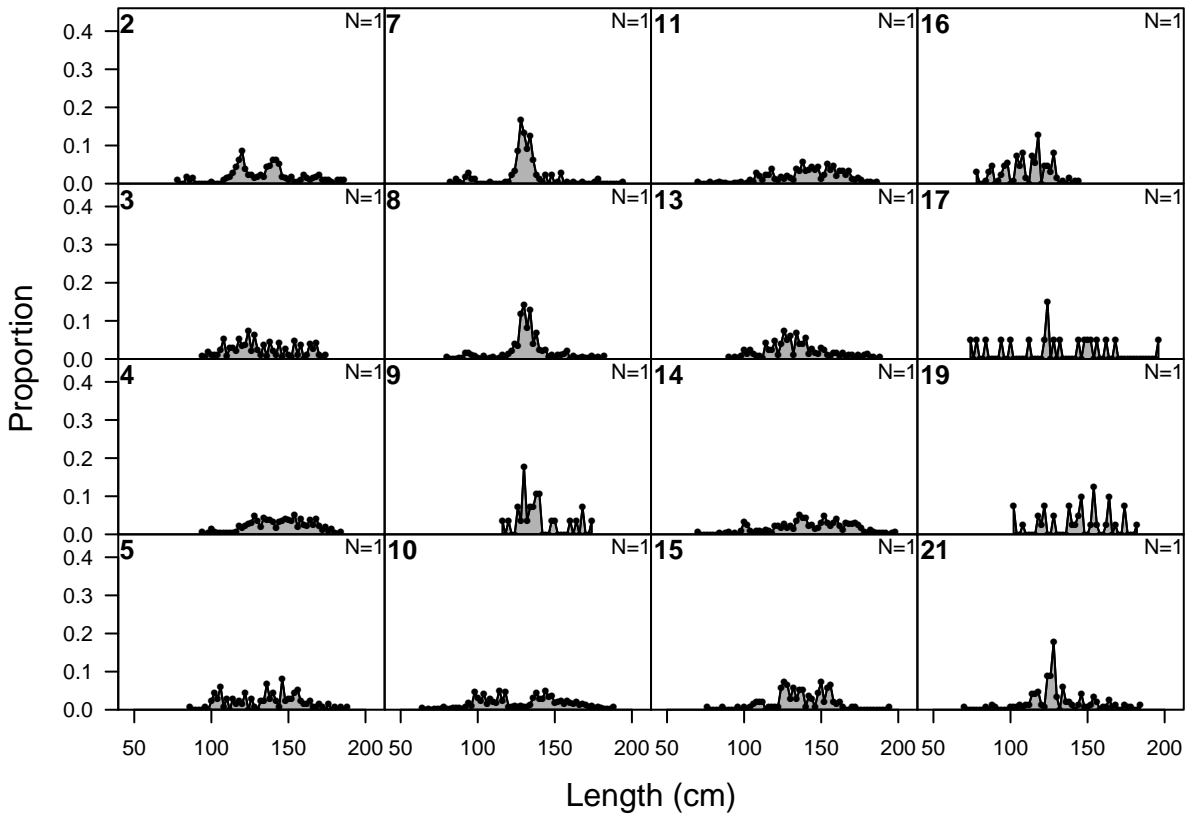
# length comp data, whole catch, S1-LLt\_N\_len (max=0.5)



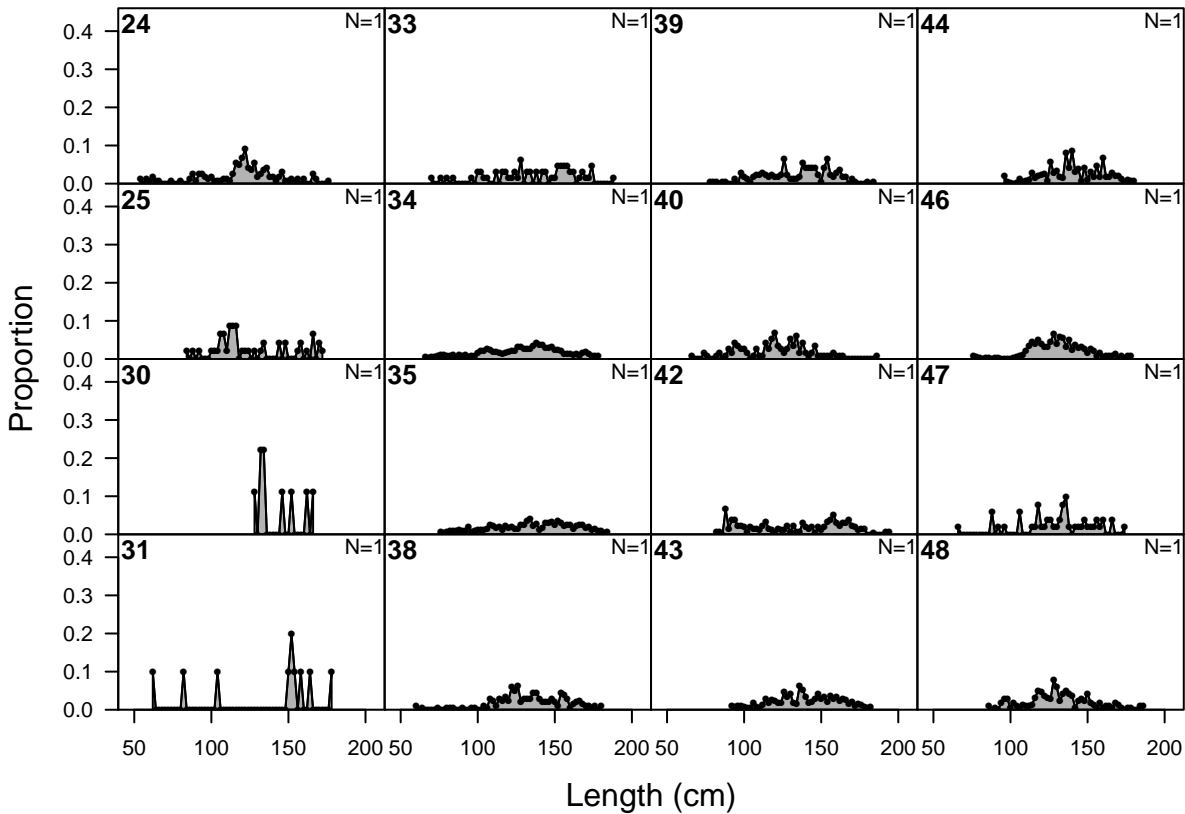
S1-LLt\_N\_len (whole catch)



# length comp data, whole catch, S2-LLt\_C\_len

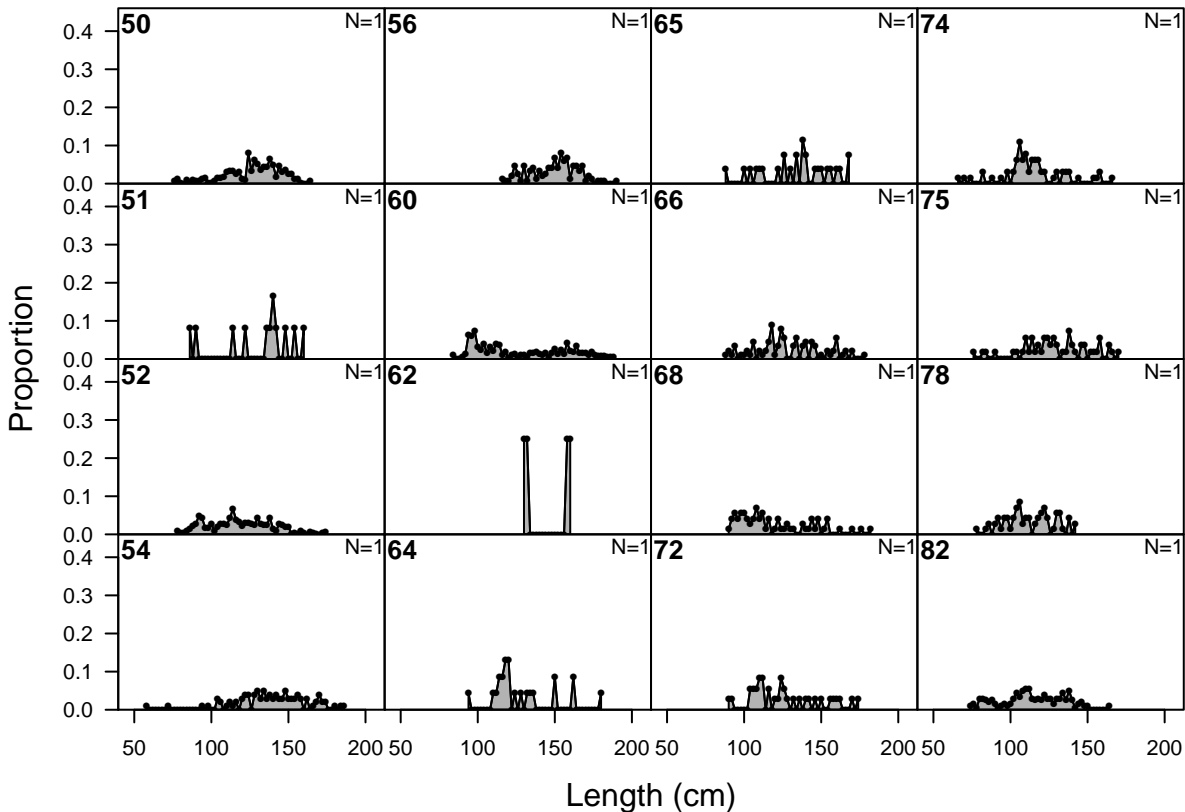


# length comp data, whole catch, S2-LLt\_C\_len

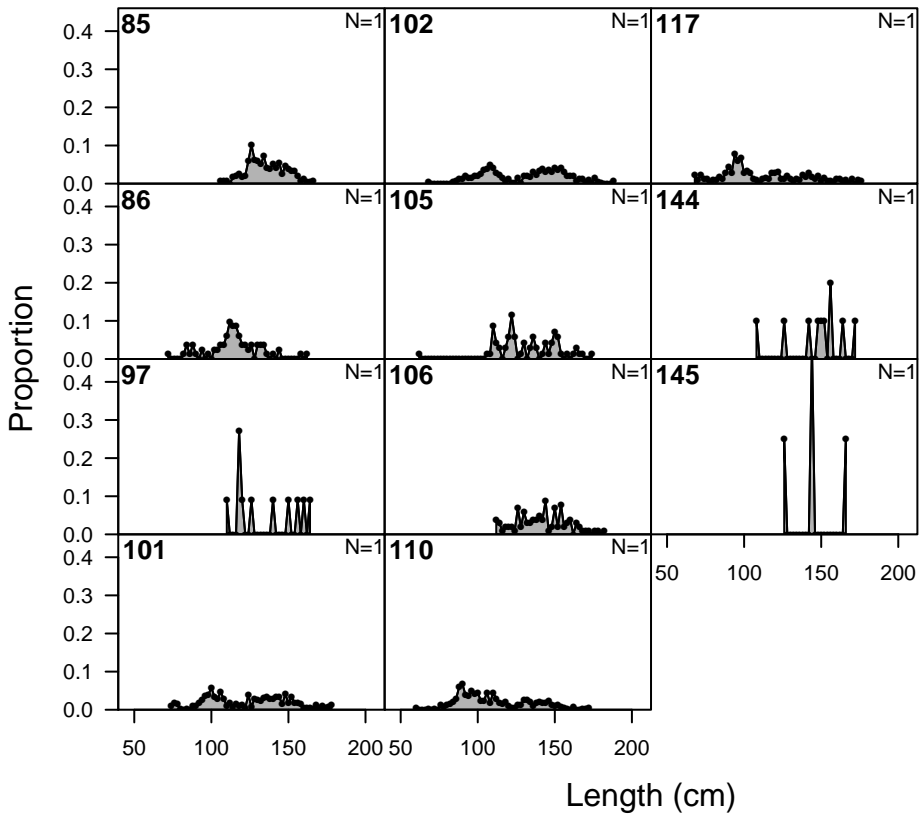




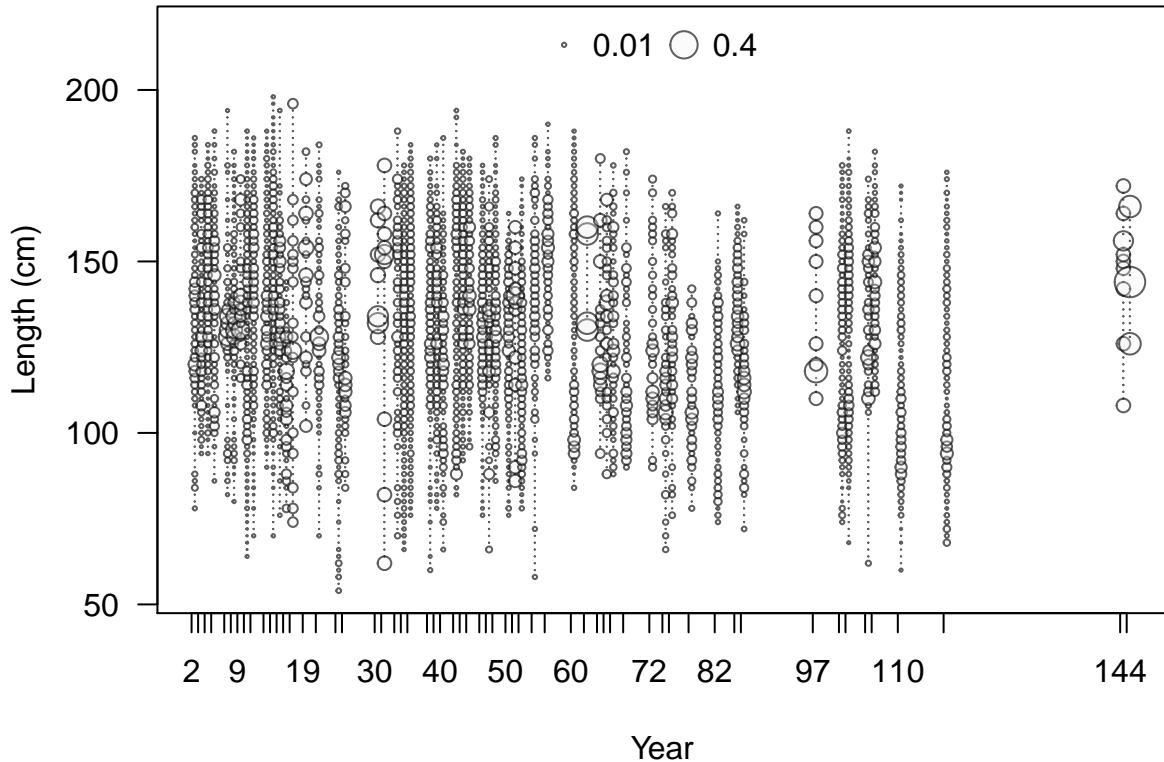
# length comp data, whole catch, S2-LLt\_C\_len



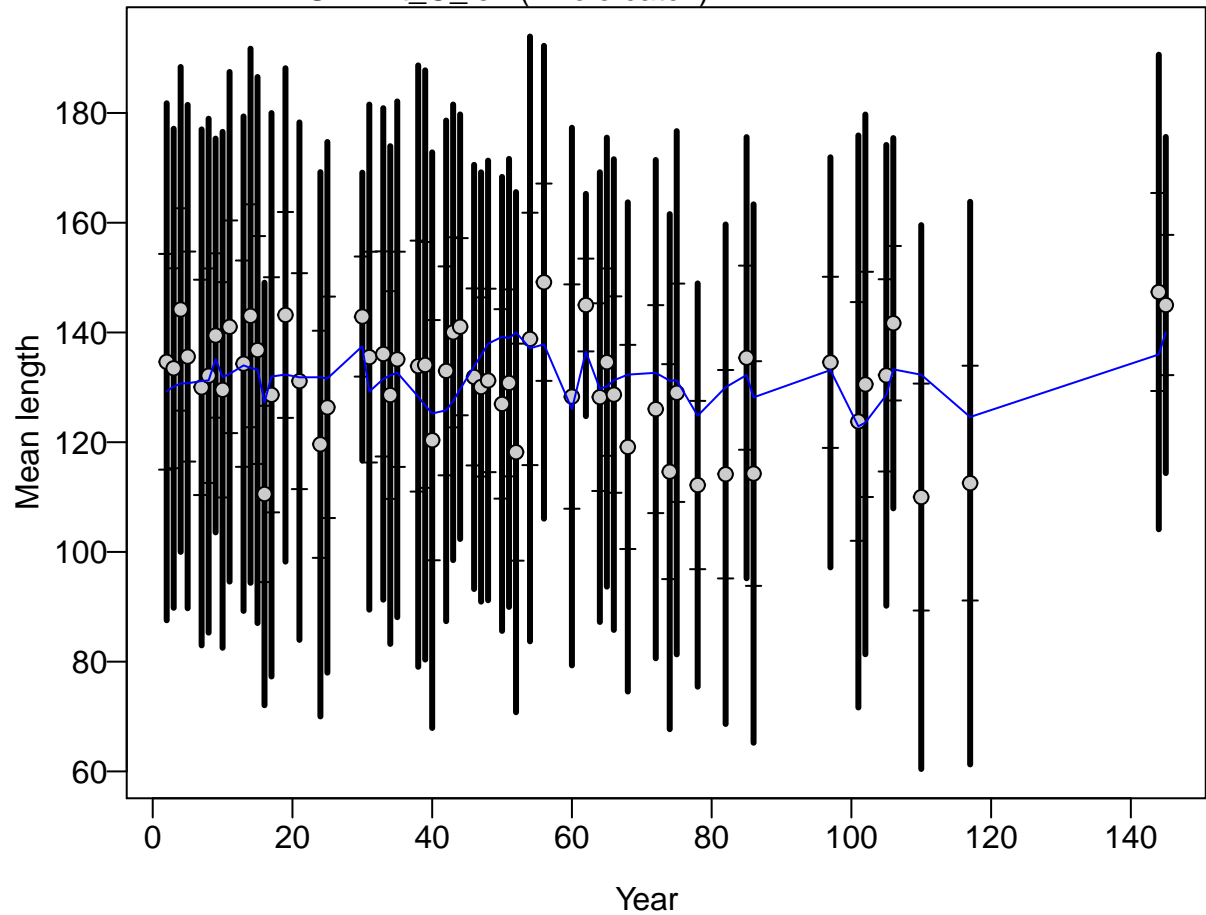
# length comp data, whole catch, S2-LLt\_C\_len



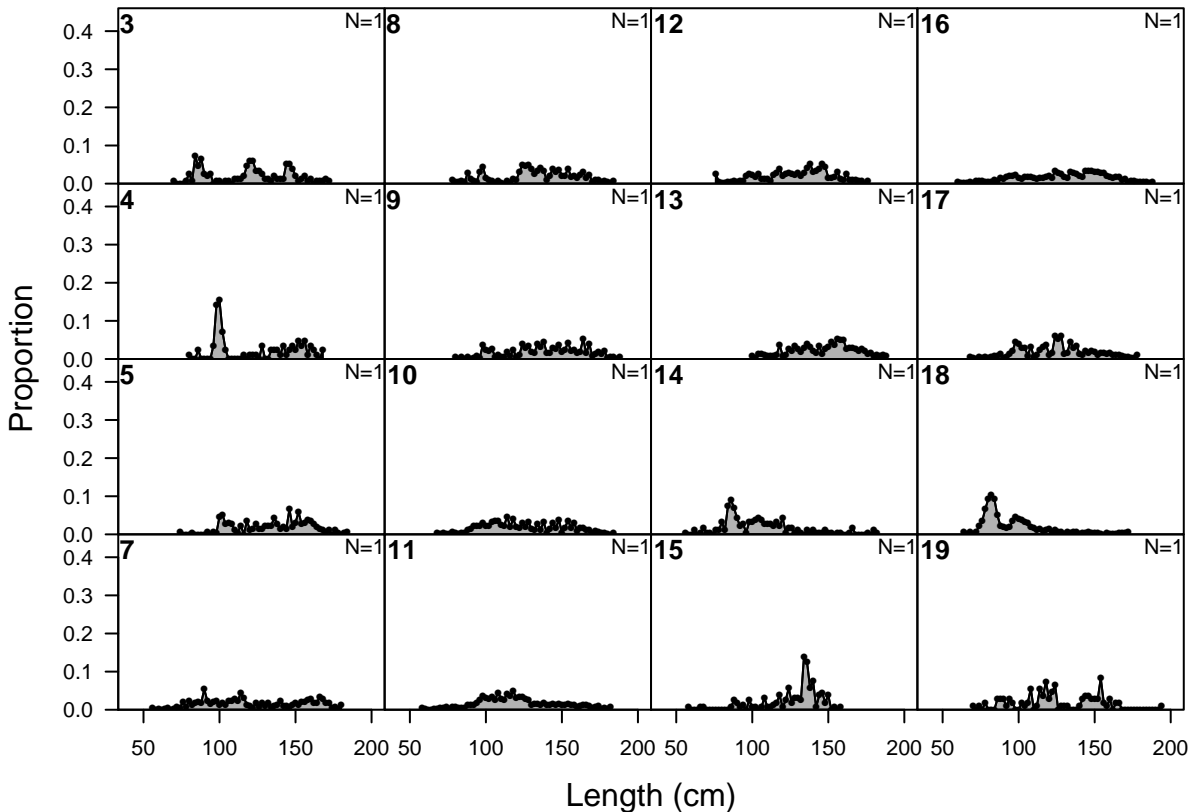
# length comp data, whole catch, S2-LLt\_C\_len (max=0.5)



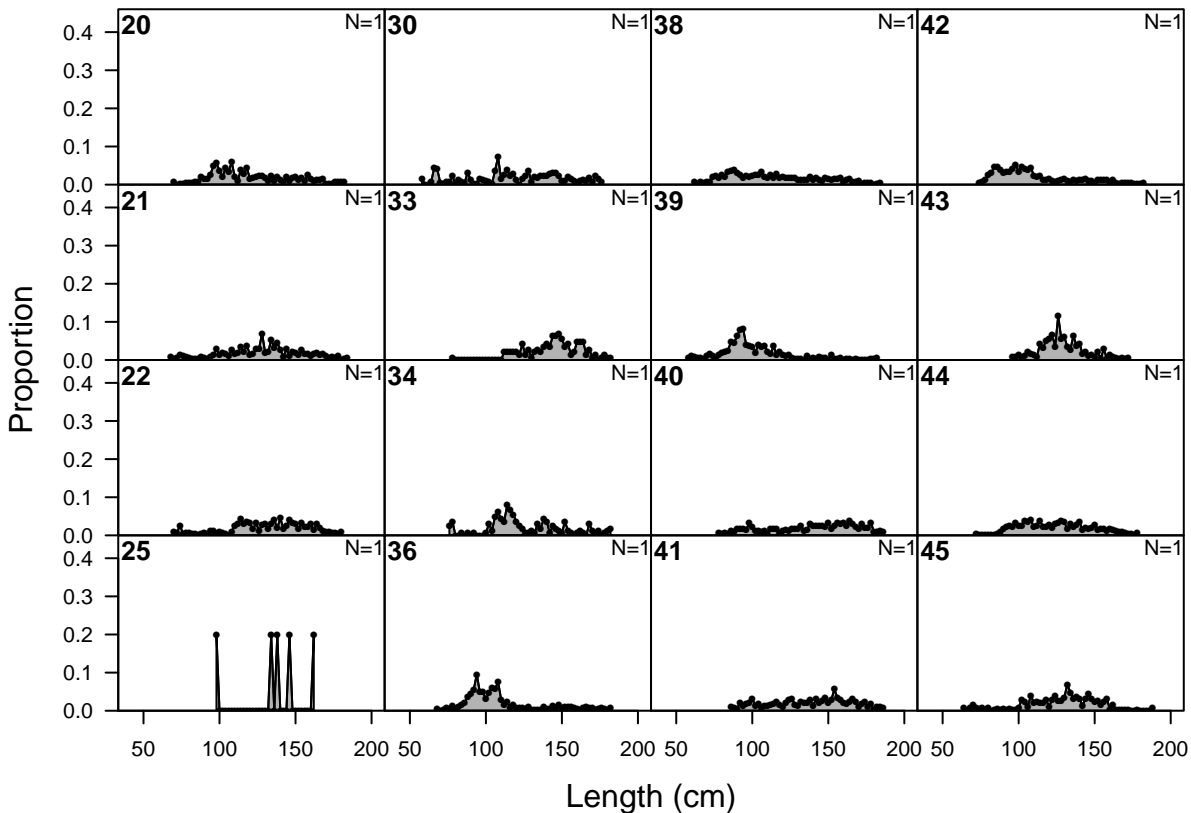
S2-LLt\_C\_len (whole catch)



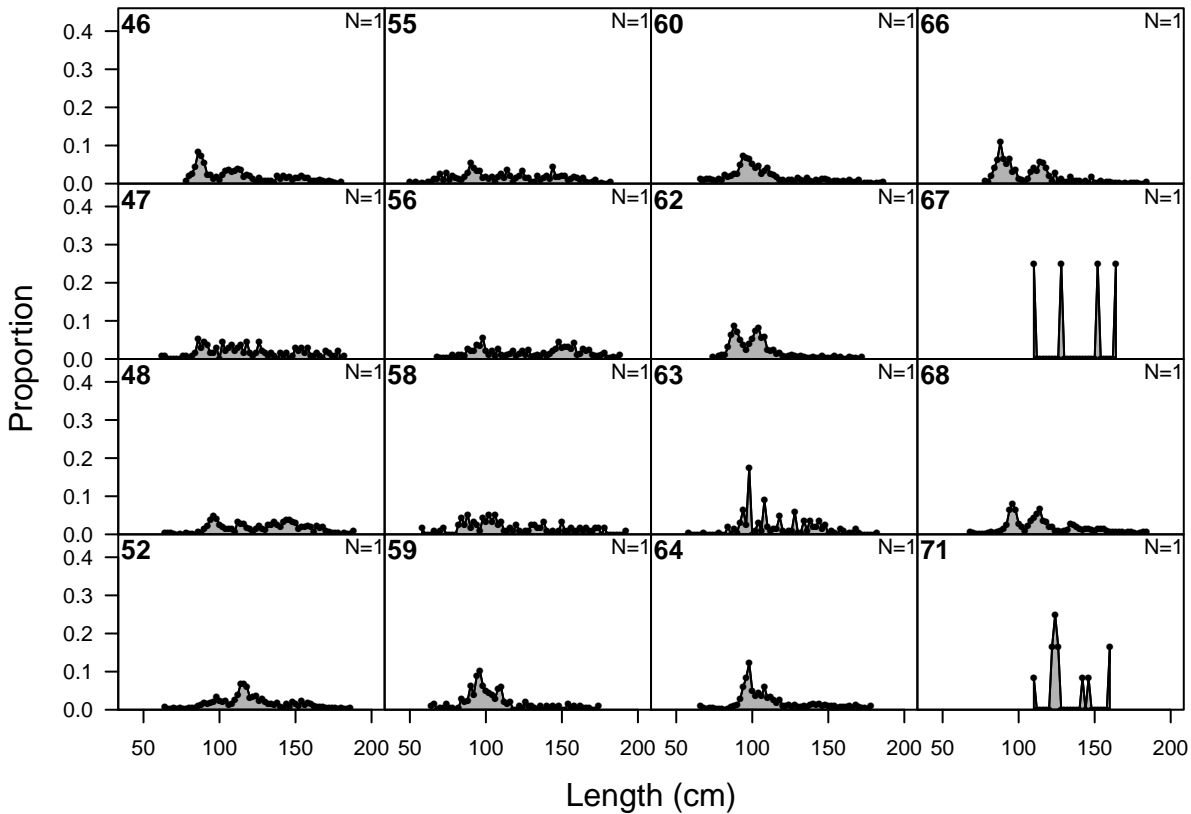
# length comp data, whole catch, S3-LLt\_S\_len



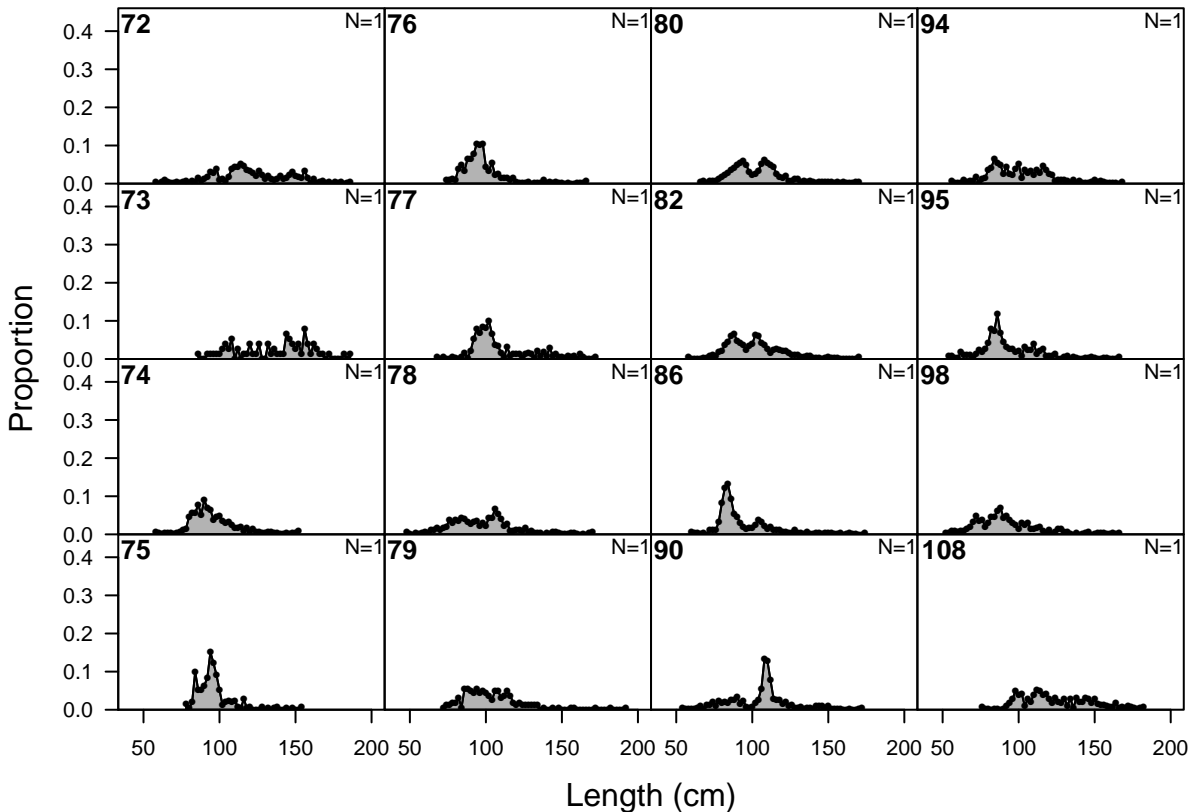
# length comp data, whole catch, S3-LLt\_S\_len



# length comp data, whole catch, S3-LLt\_S\_len

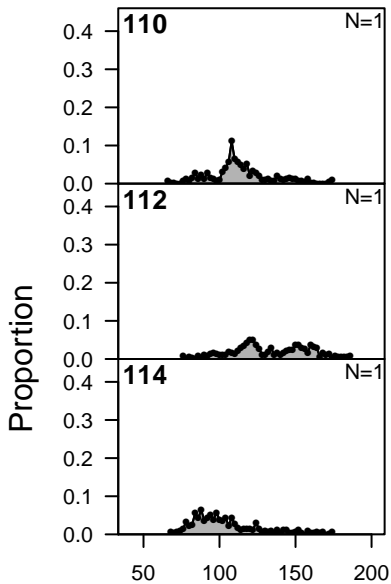


# length comp data, whole catch, S3-LLt\_S\_len



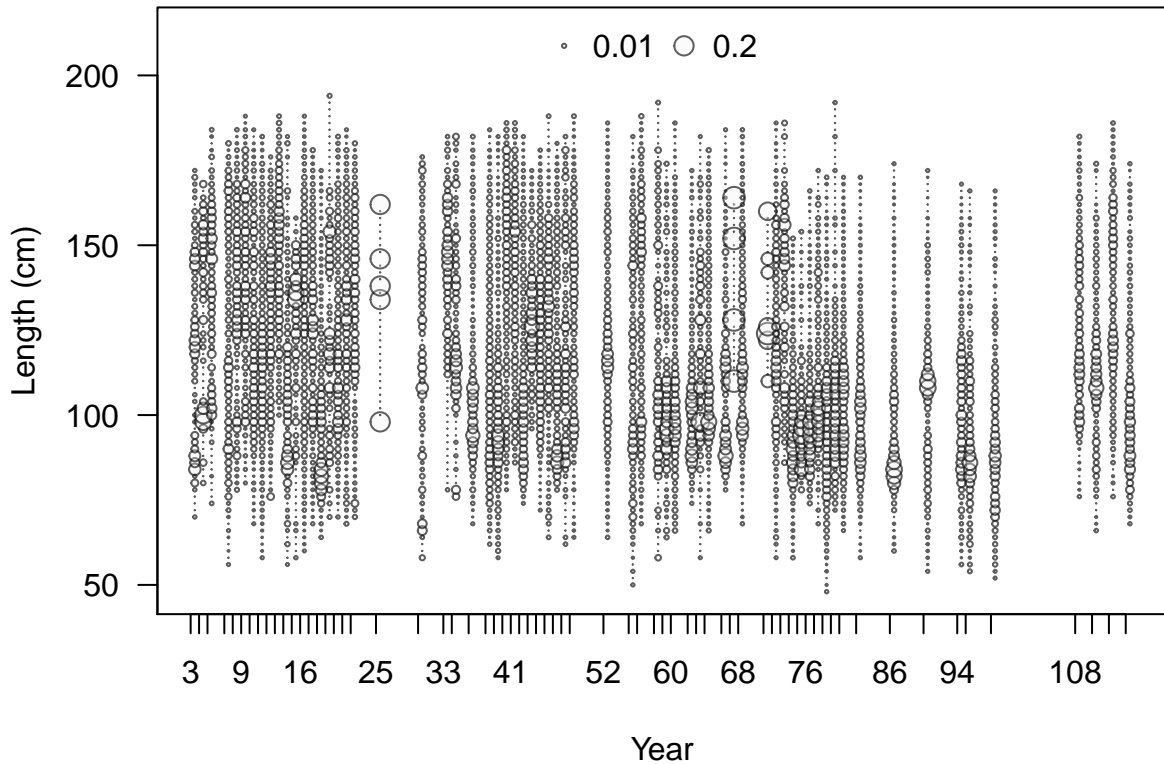


# length comp data, whole catch, S3-LLt\_S\_len

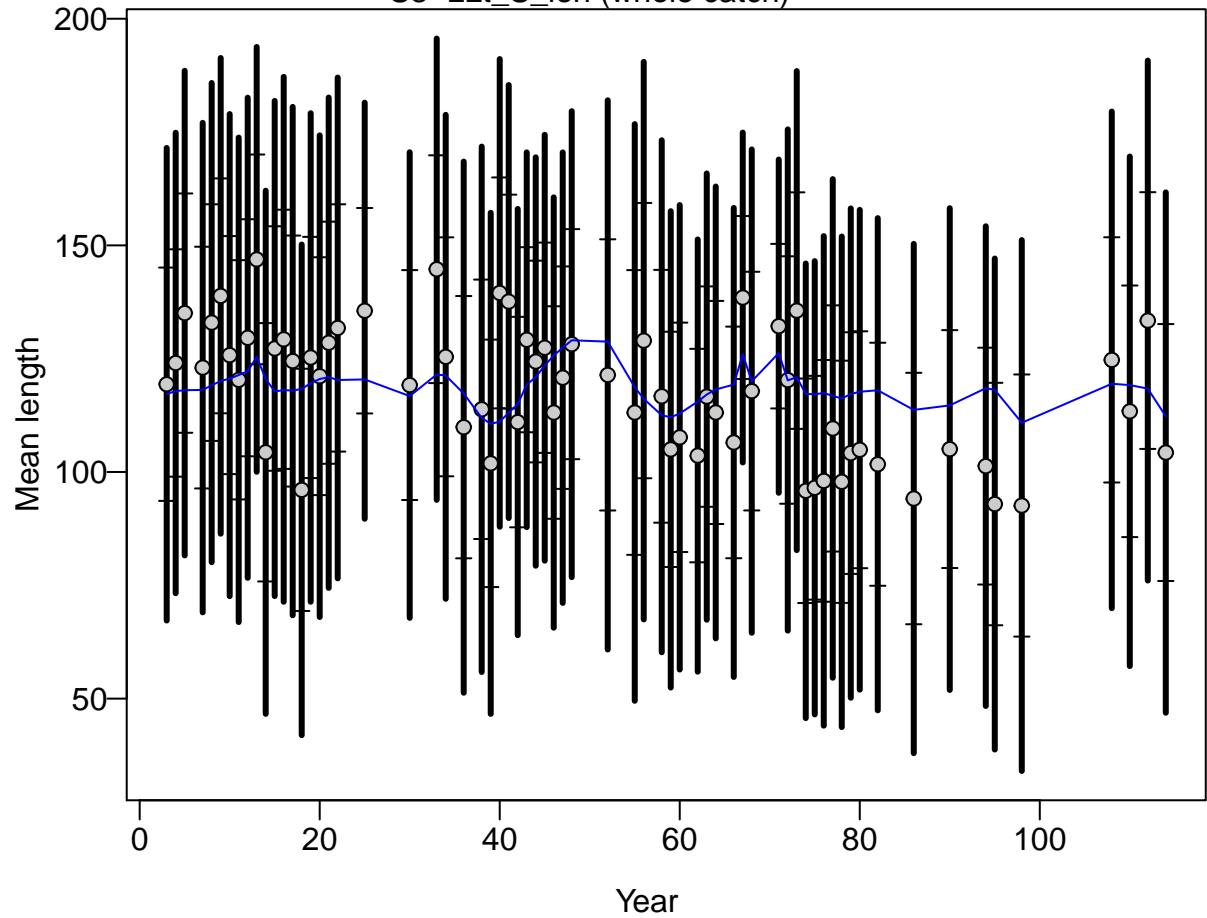


Length (cm)

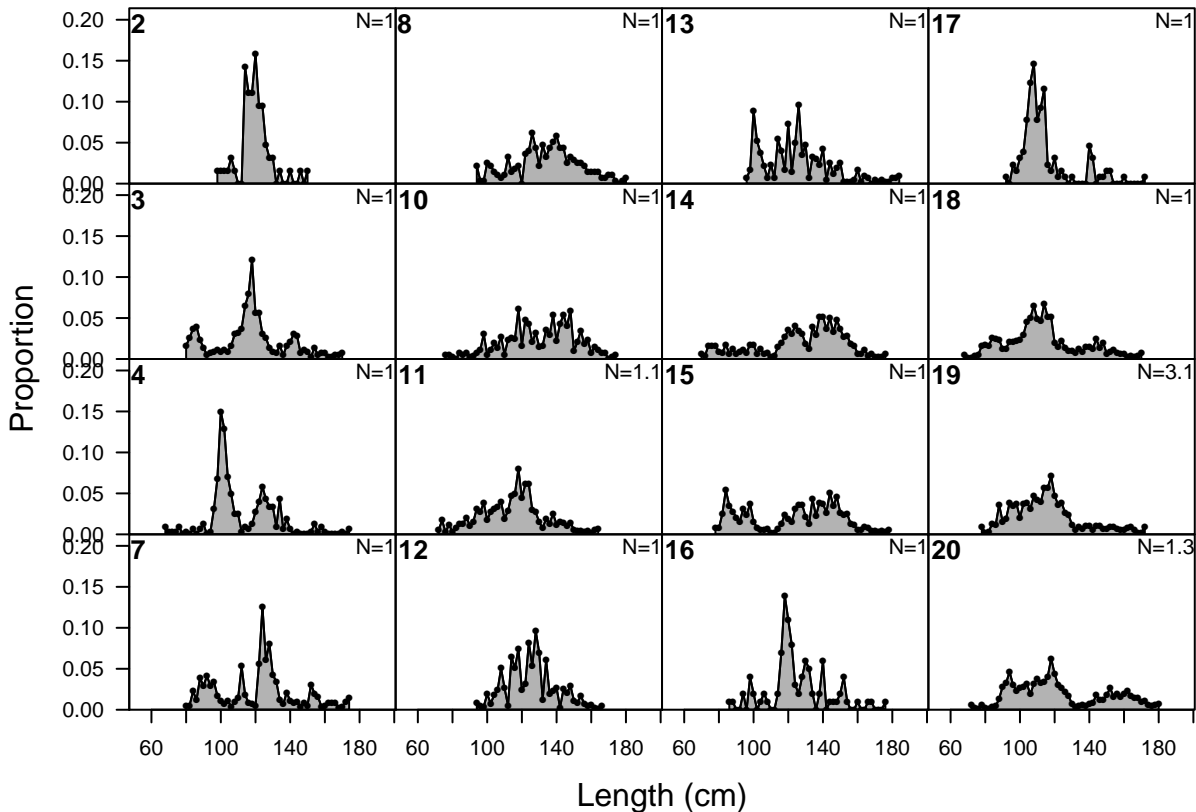
# length comp data, whole catch, S3-LLt\_S\_len (max=0.25)



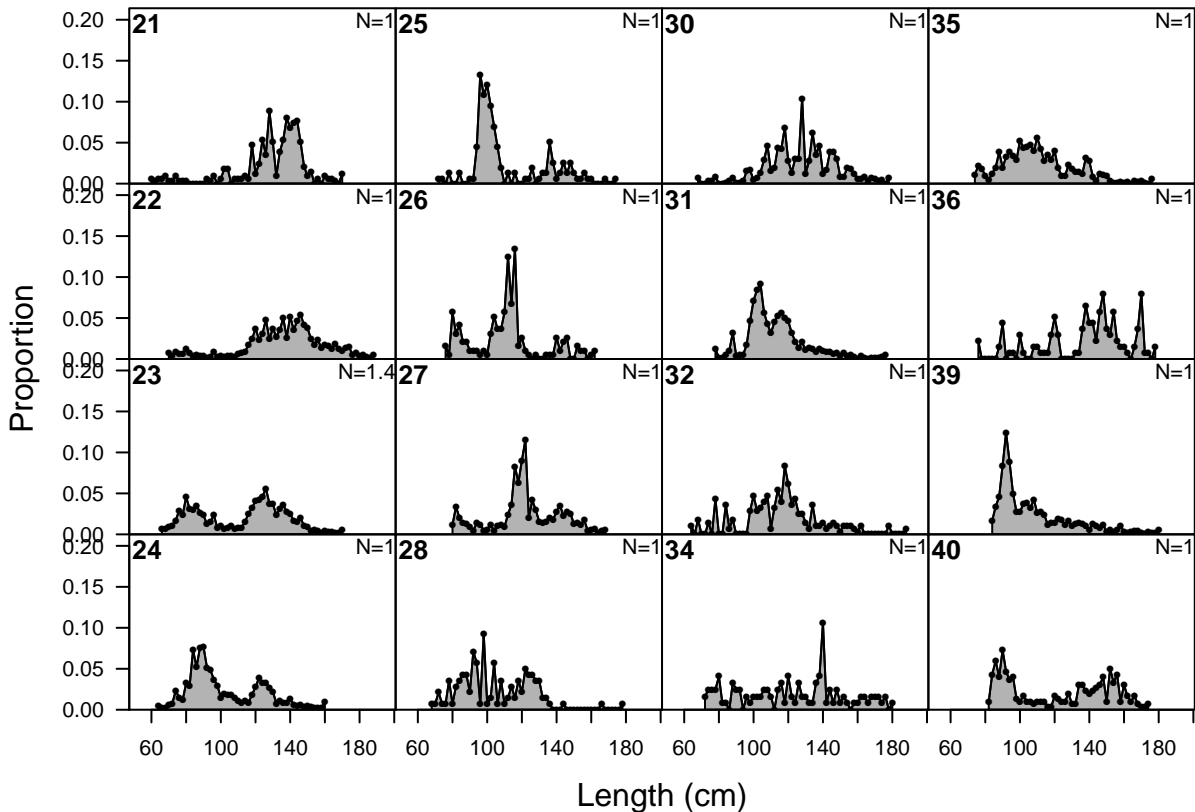
S3-LLt\_S\_len (whole catch)



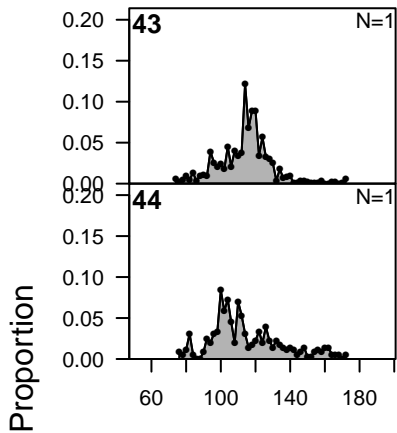
# length comp data, whole catch, S4-LLt\_I\_len



# length comp data, whole catch, S4-LLt\_I\_len

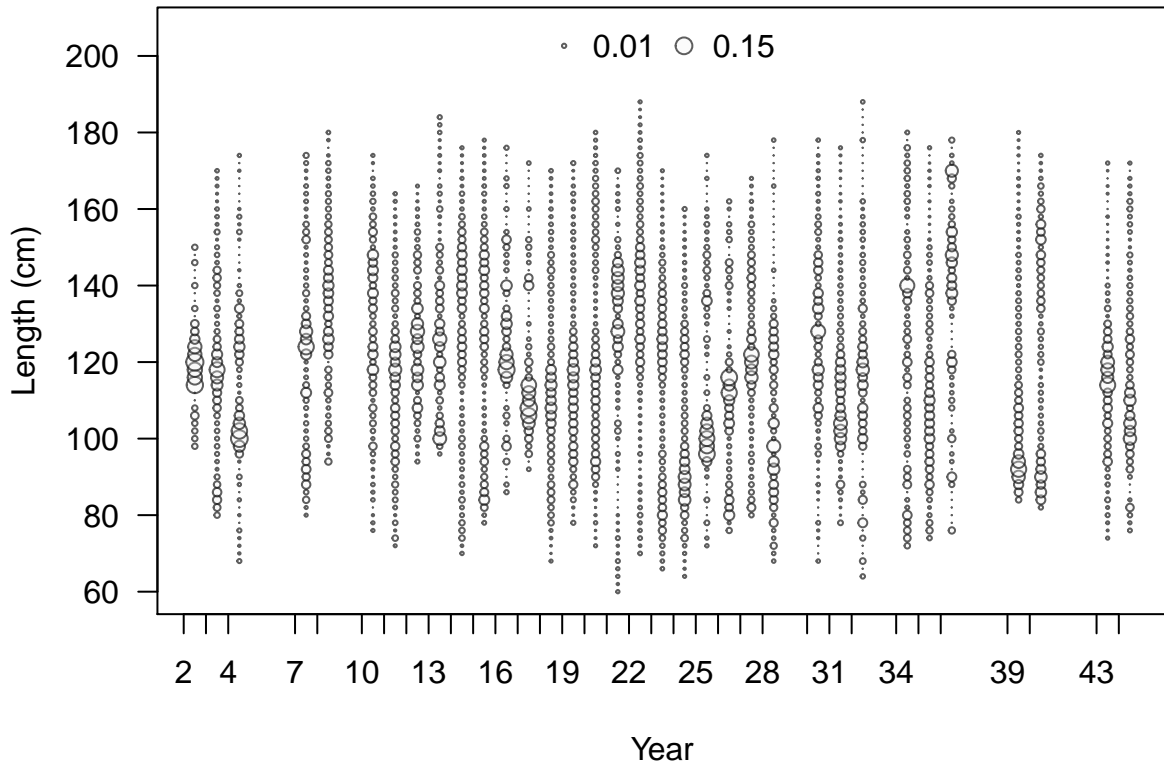


# length comp data, whole catch, S4-LLt\_I\_len

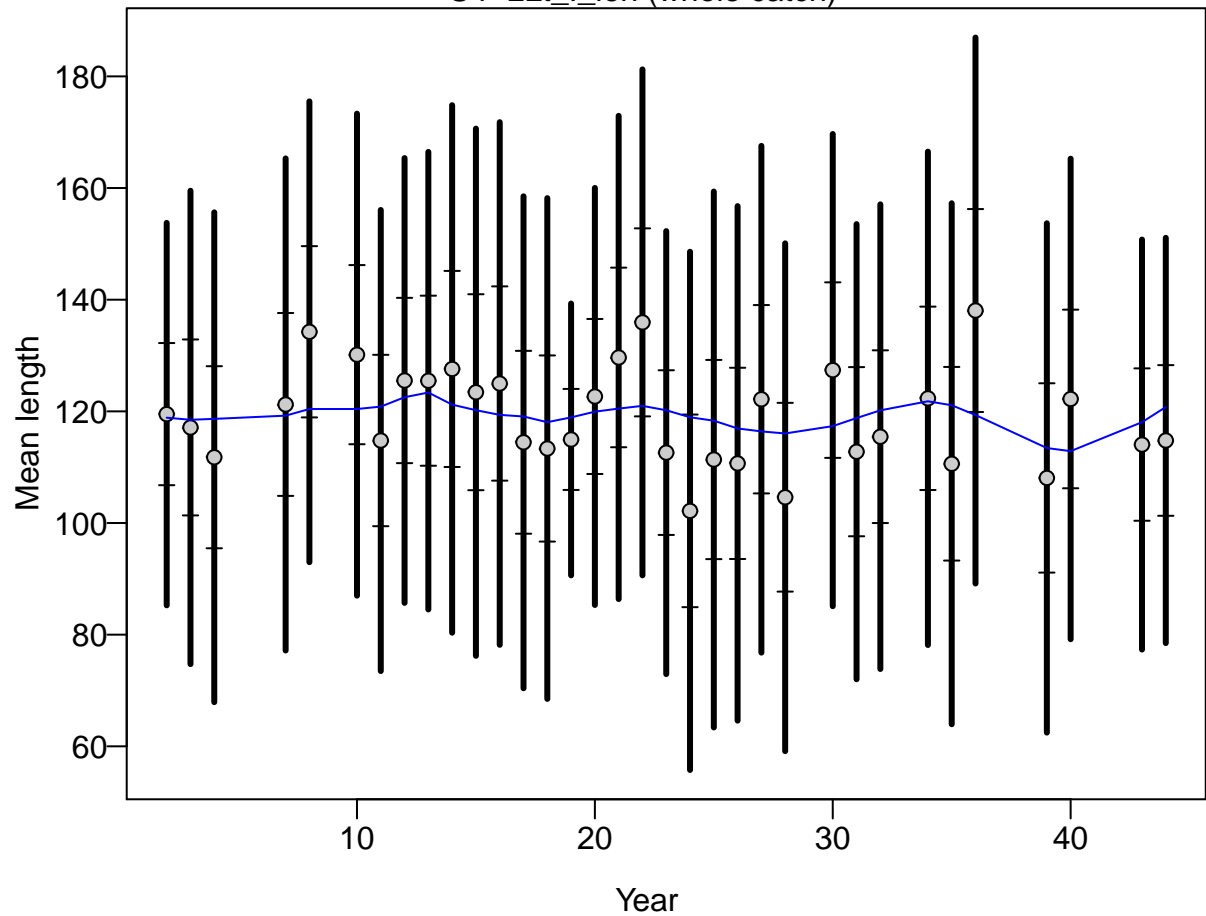


Length (cm)

# length comp data, whole catch, S4-LLt\_I\_len (max=0.16)

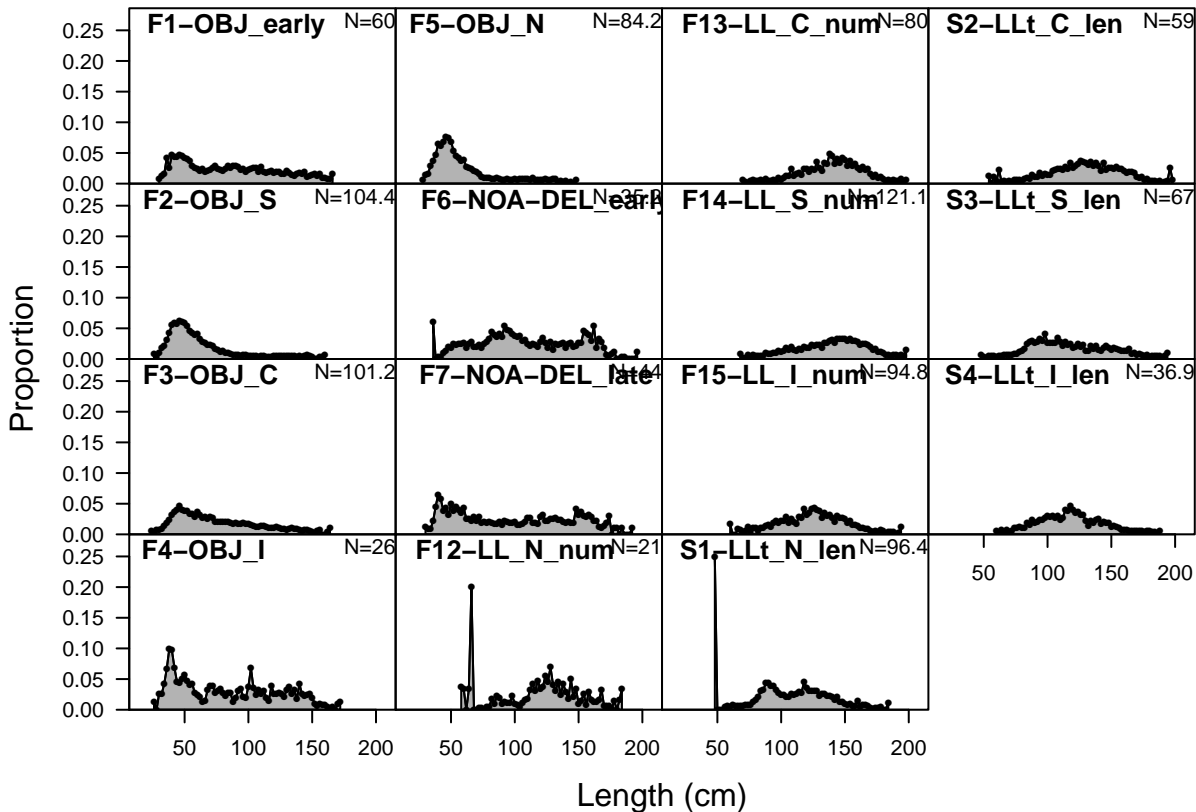


S4-LLt\_I\_len (whole catch)

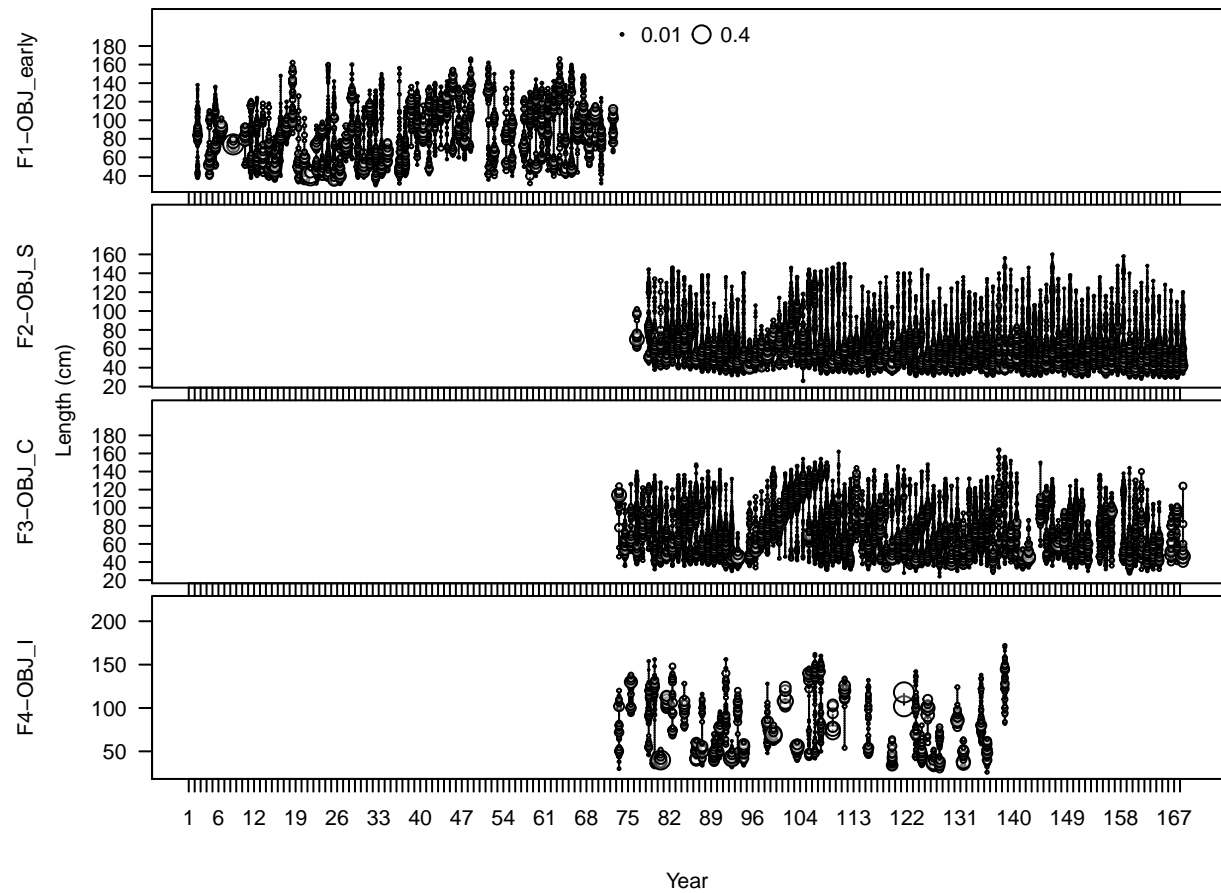




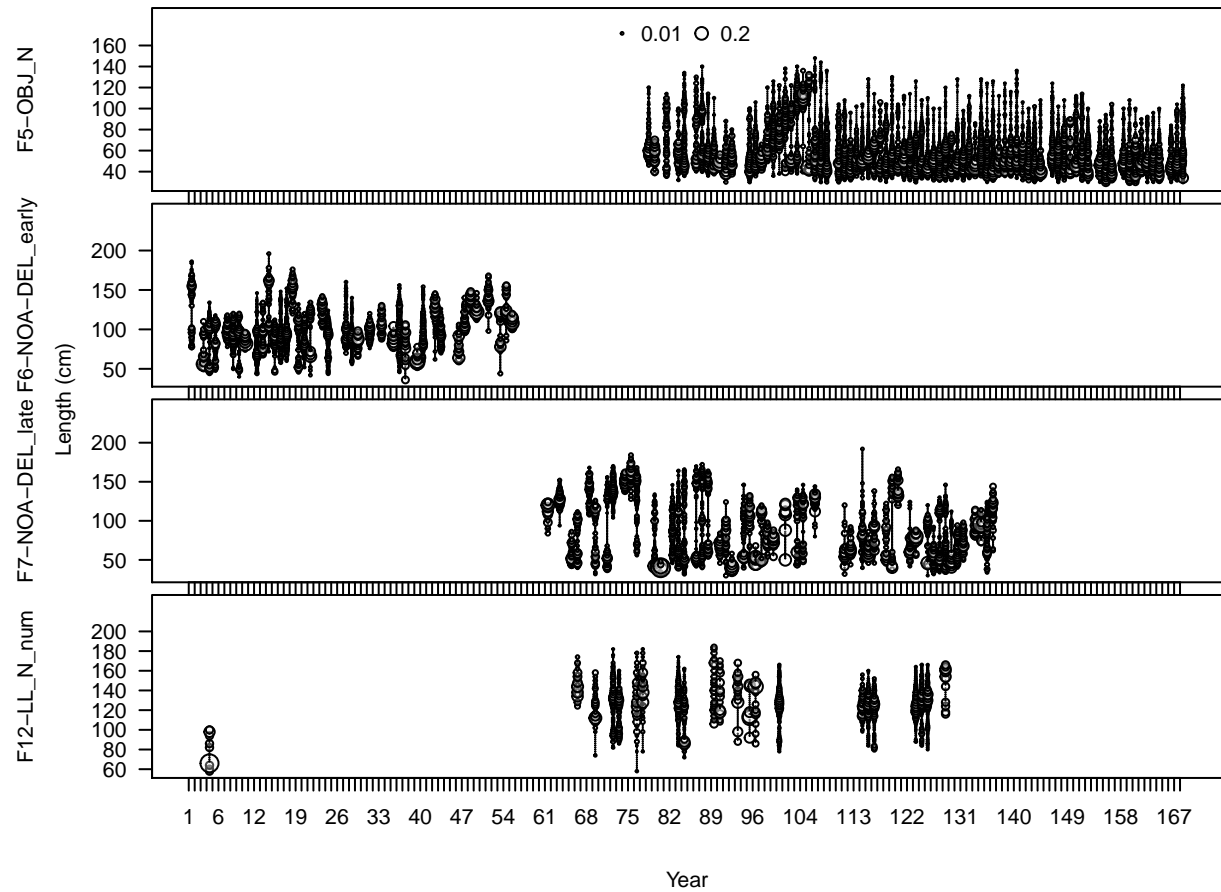
# length comp data, whole catch, aggregated across time by fleet



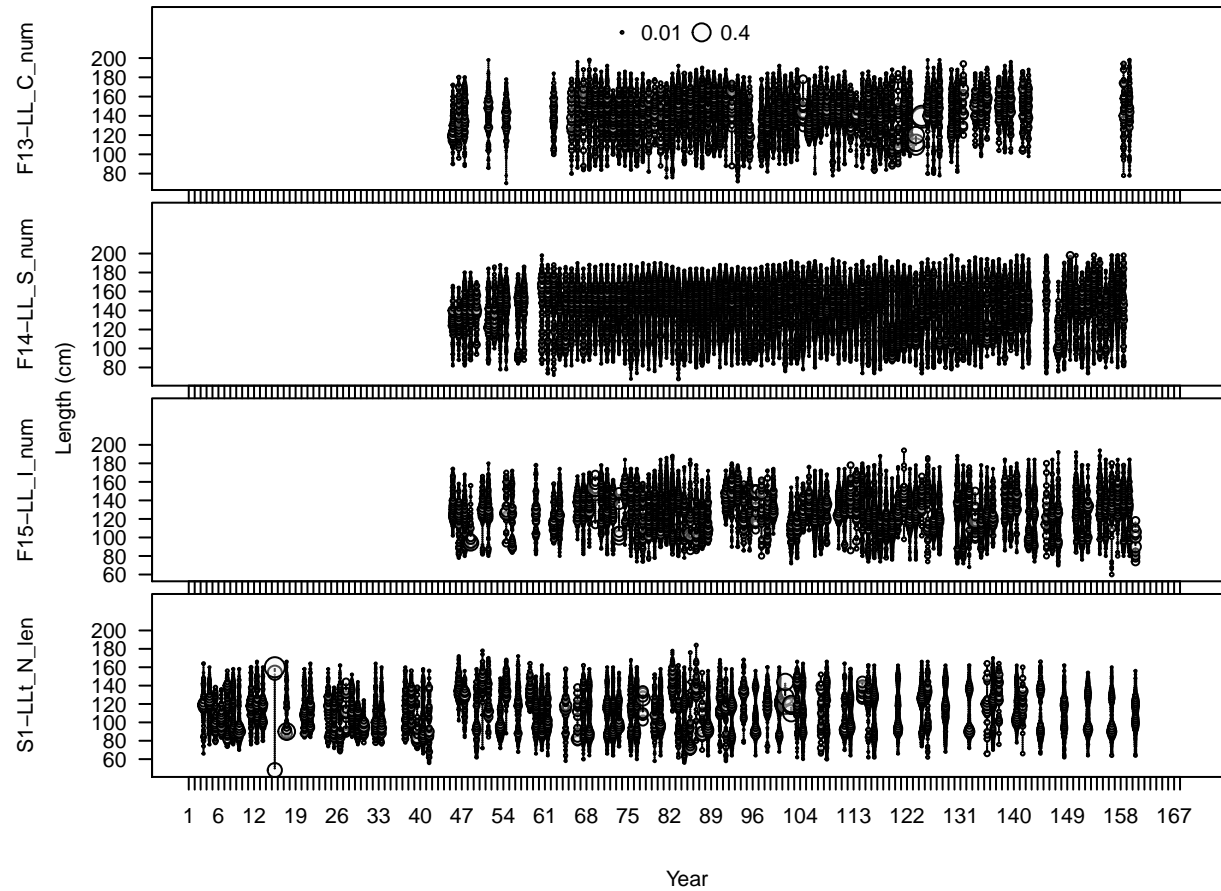
# length comp data, sexes combined, whole catch, comparing across fleets



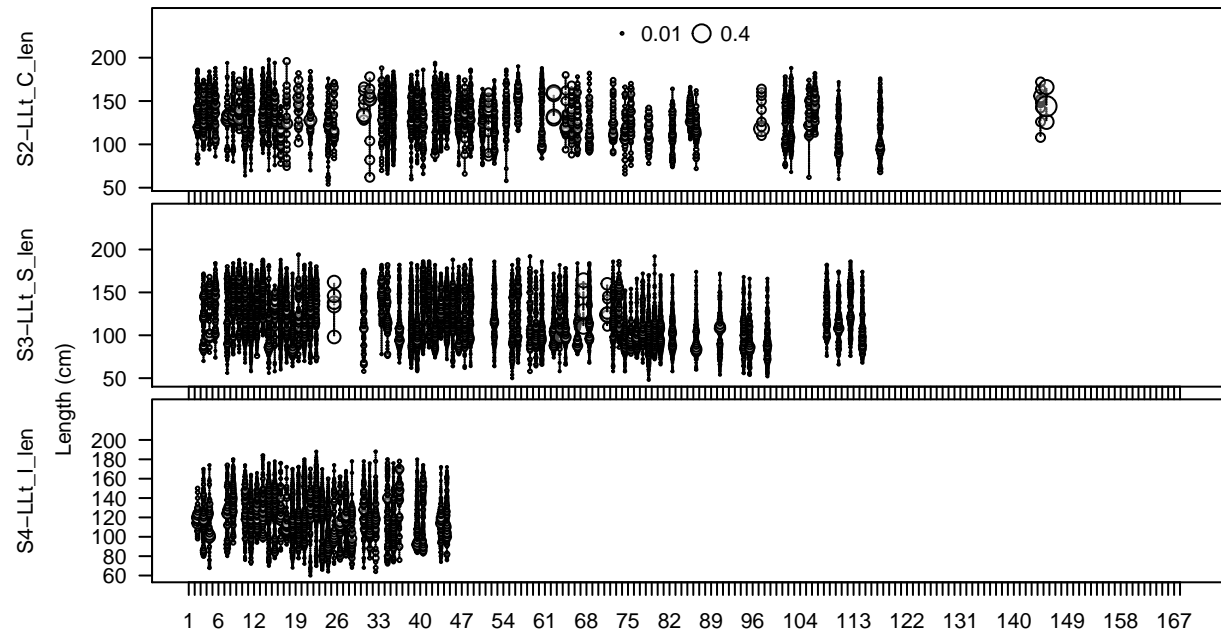
# length comp data, sexes combined, whole catch, comparing across fleets



# length comp data, sexes combined, whole catch, comparing across fleets

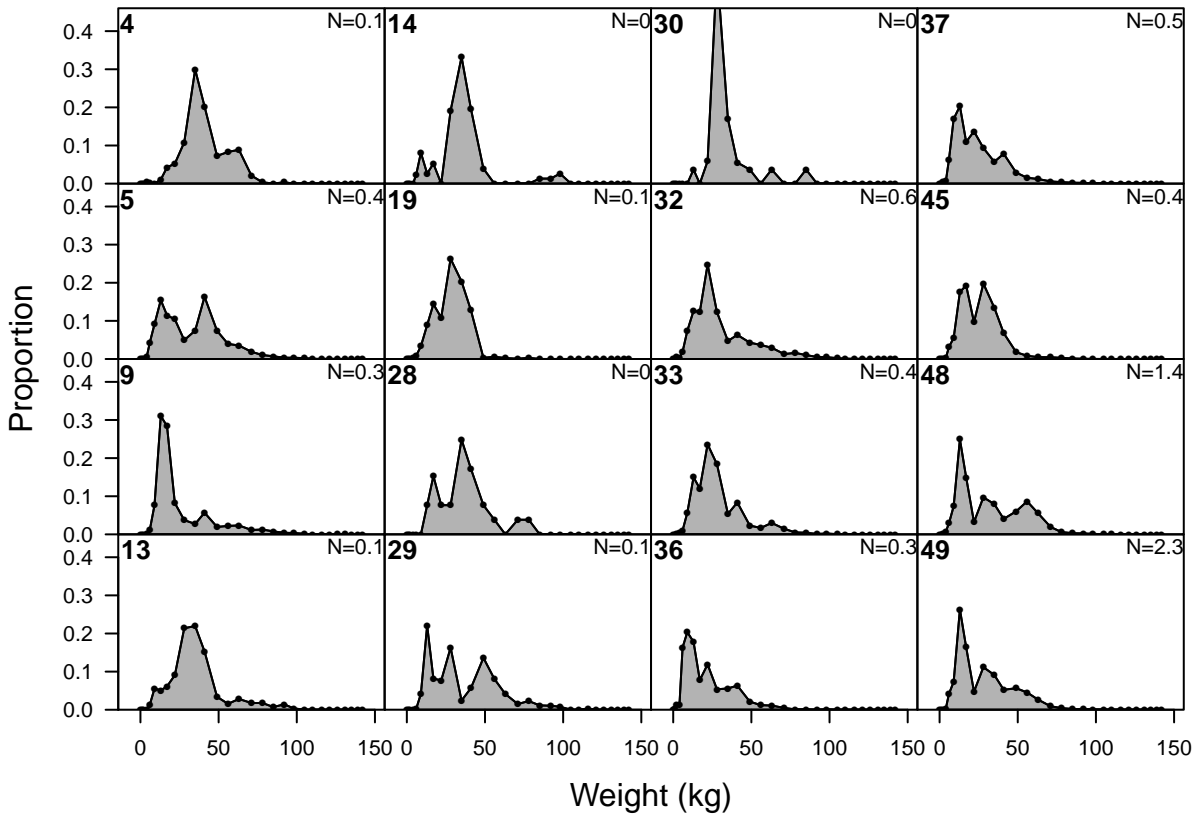


# length comp data, sexes combined, whole catch, comparing across fleets

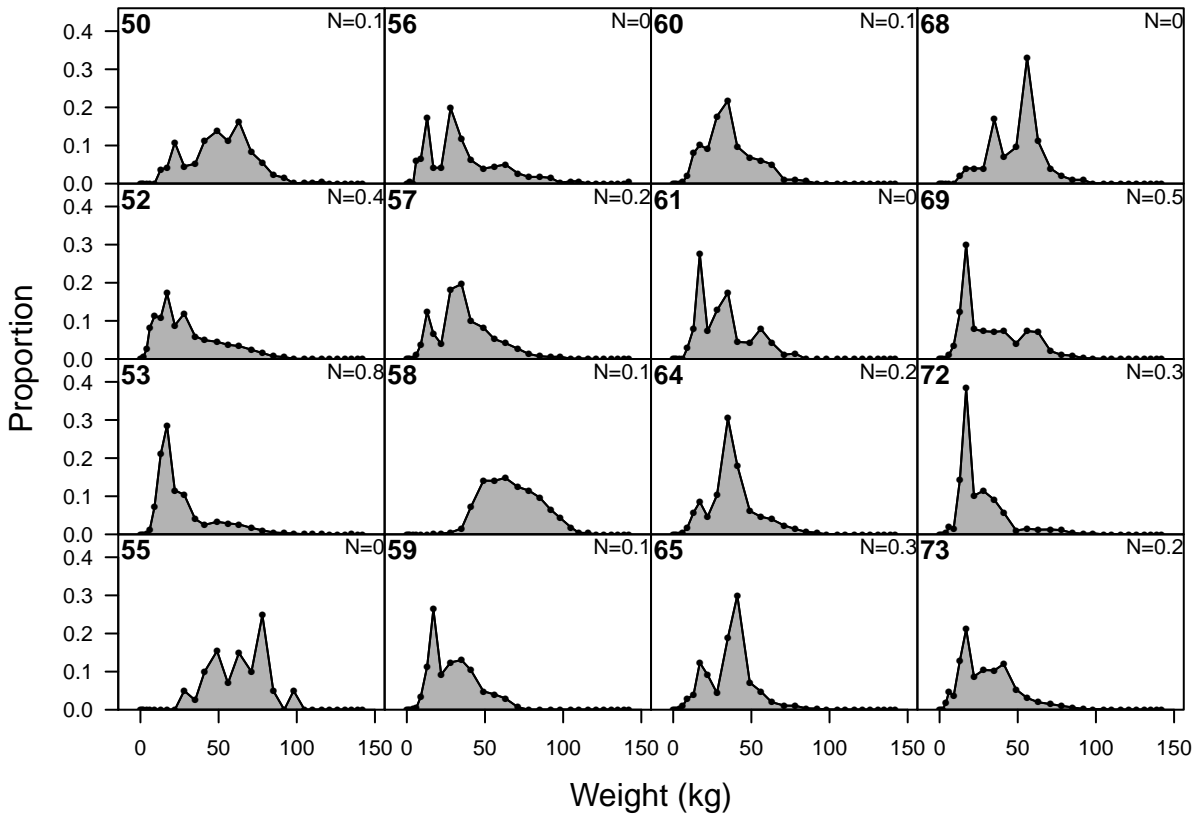


Year

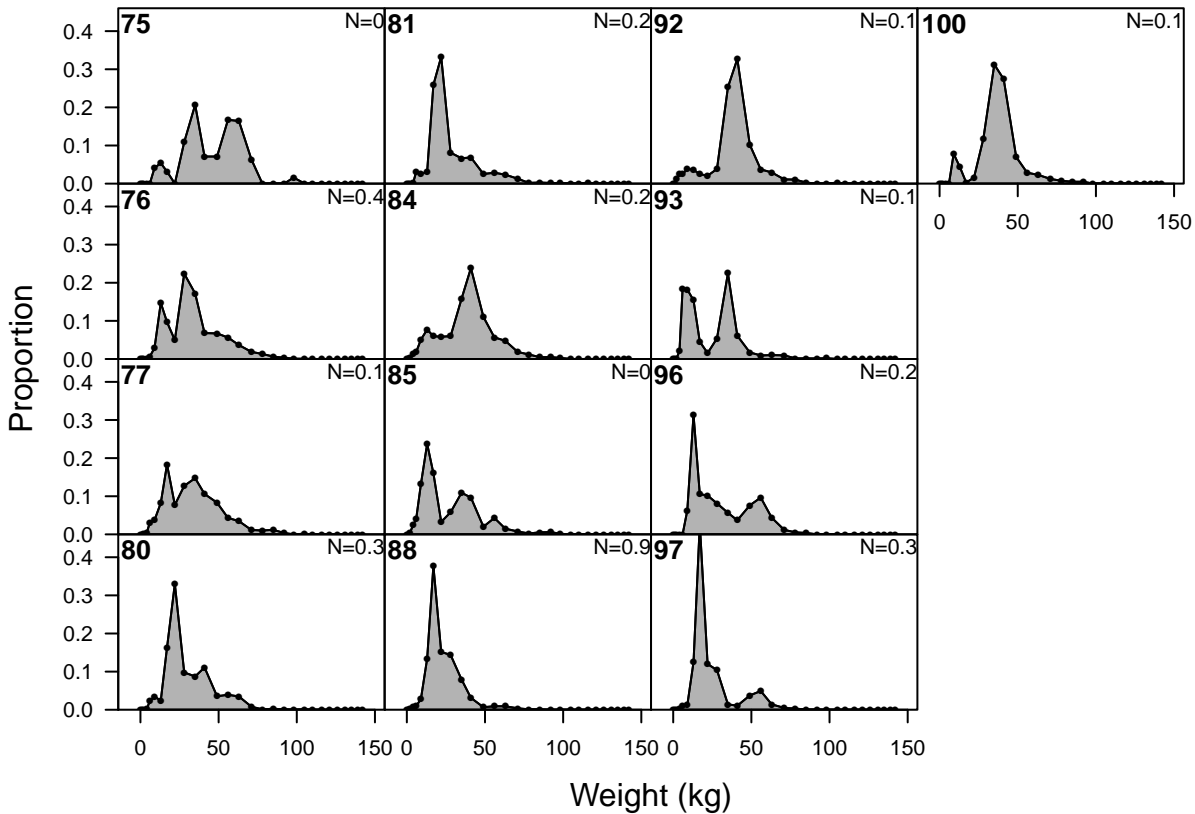
### size comp data, whole catch, S5-LLc\_N\_w



# size comp data, whole catch, S5-LLc\_N\_w

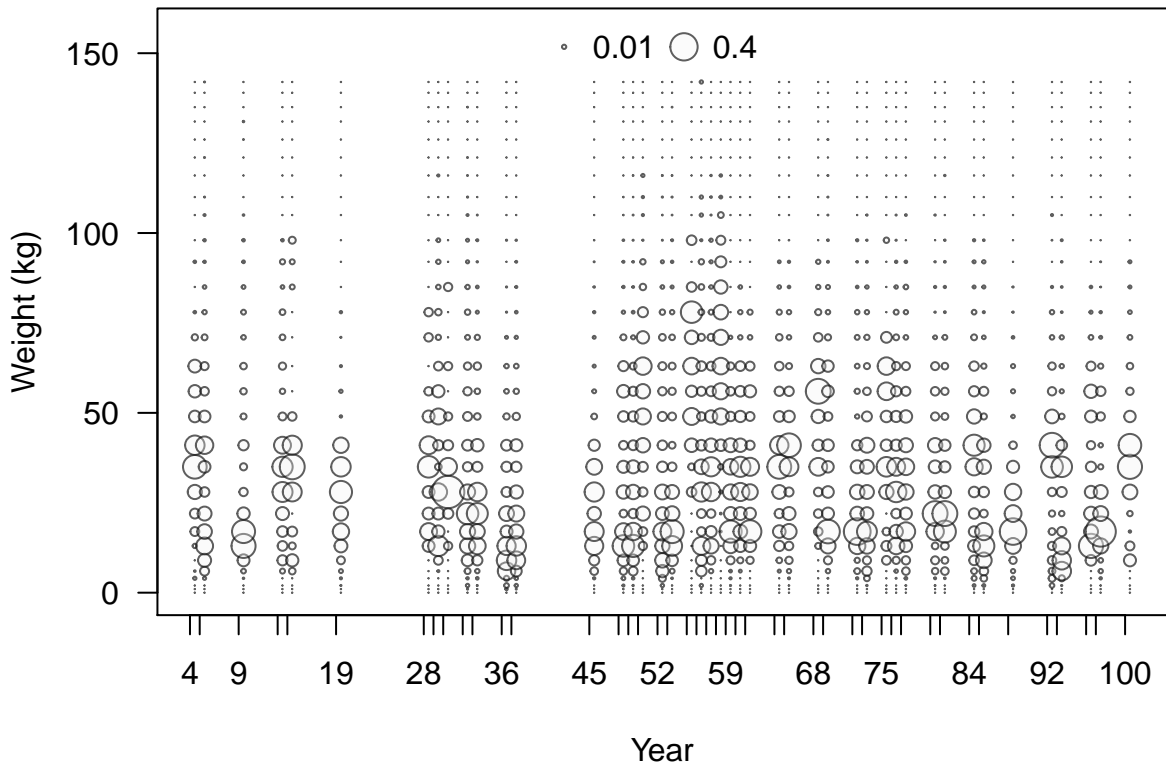


# size comp data, whole catch, S5-LLc\_N\_w

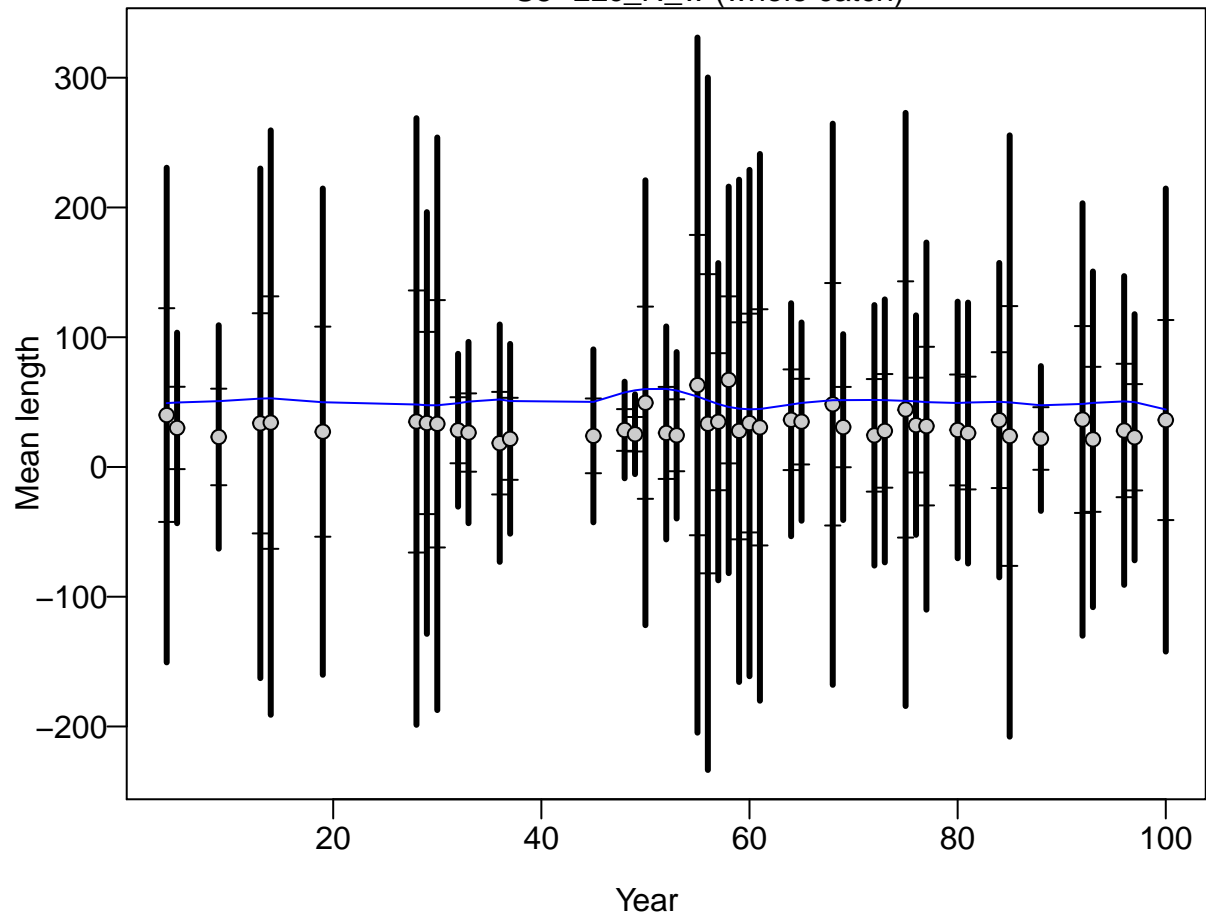




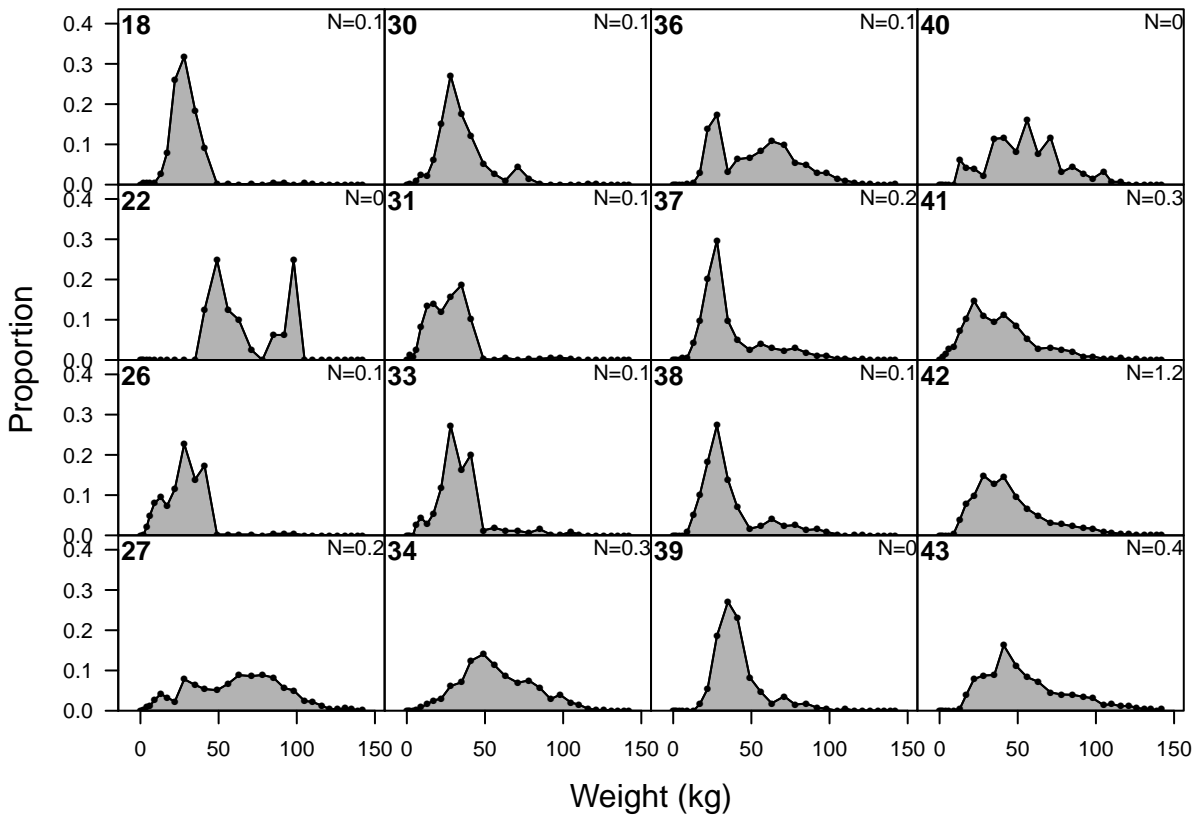
size comp data, whole catch, S5-LLc\_N\_w (max=0.56)



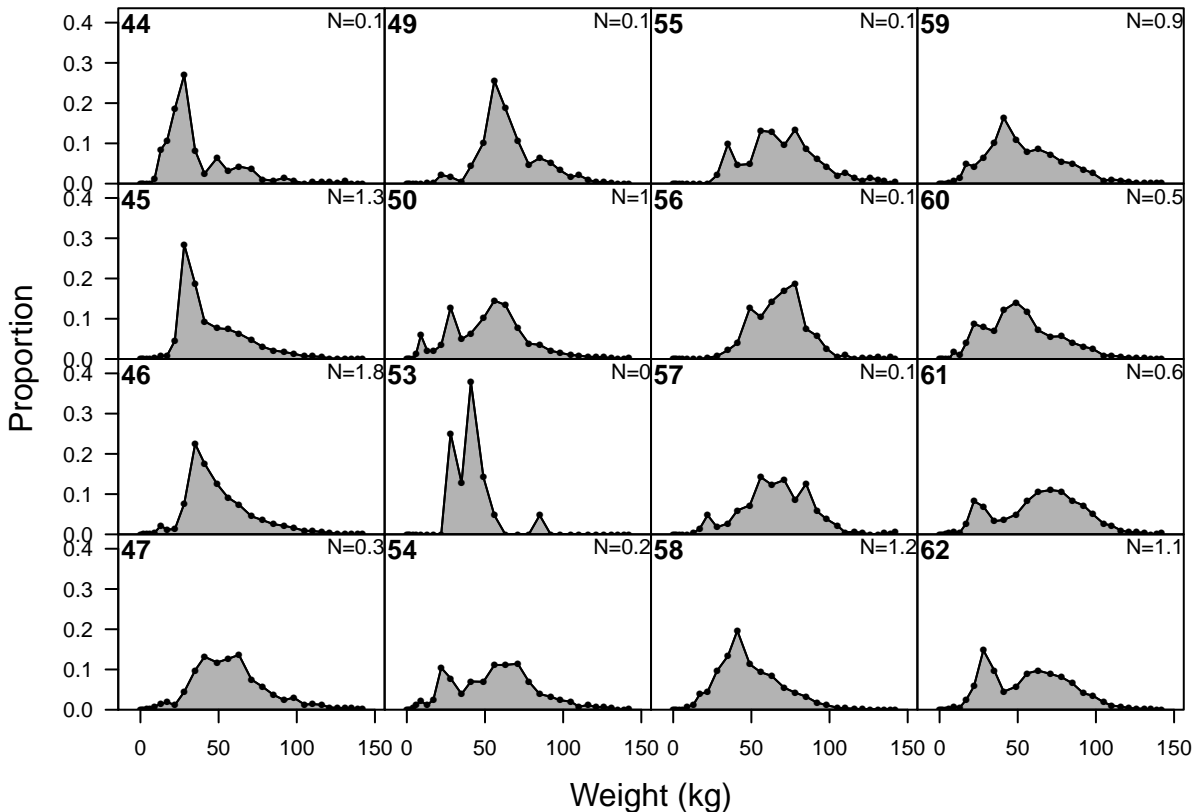
S5-LLc\_N\_w (whole catch)



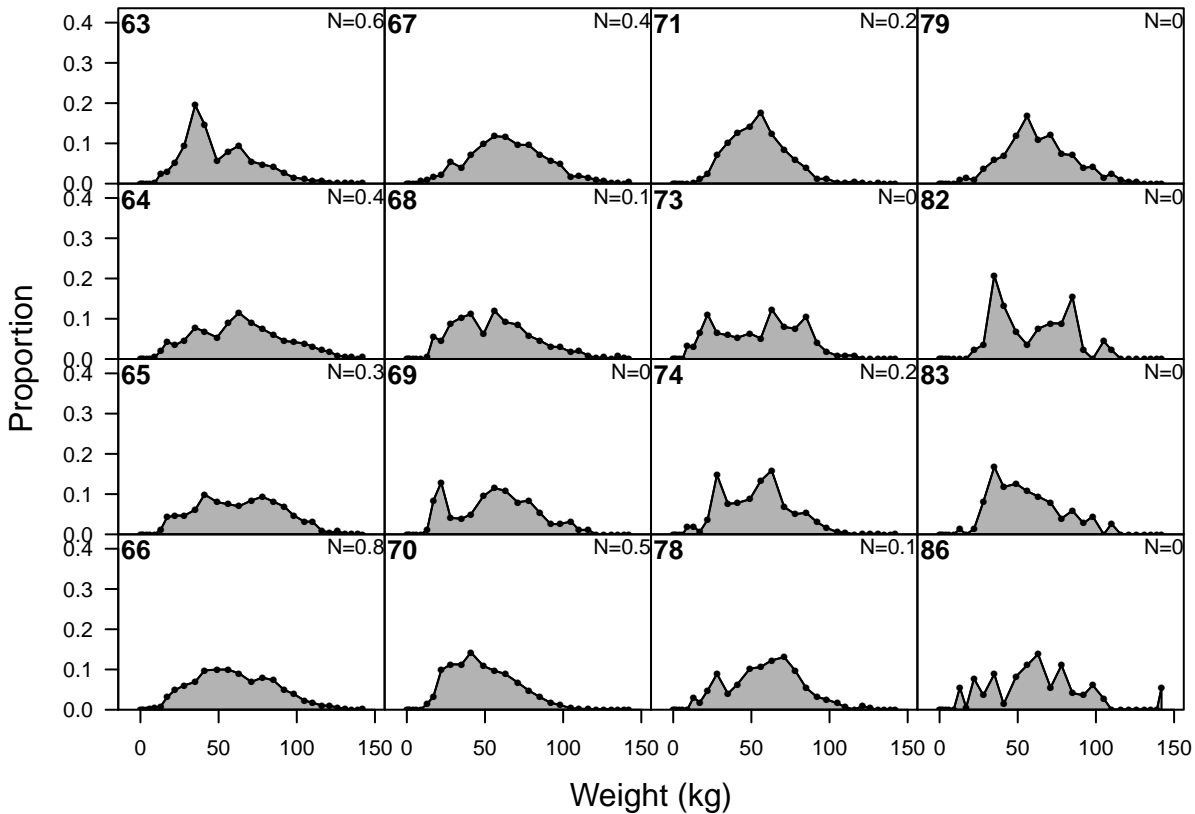
### size comp data, whole catch, S6-LLc\_C\_w



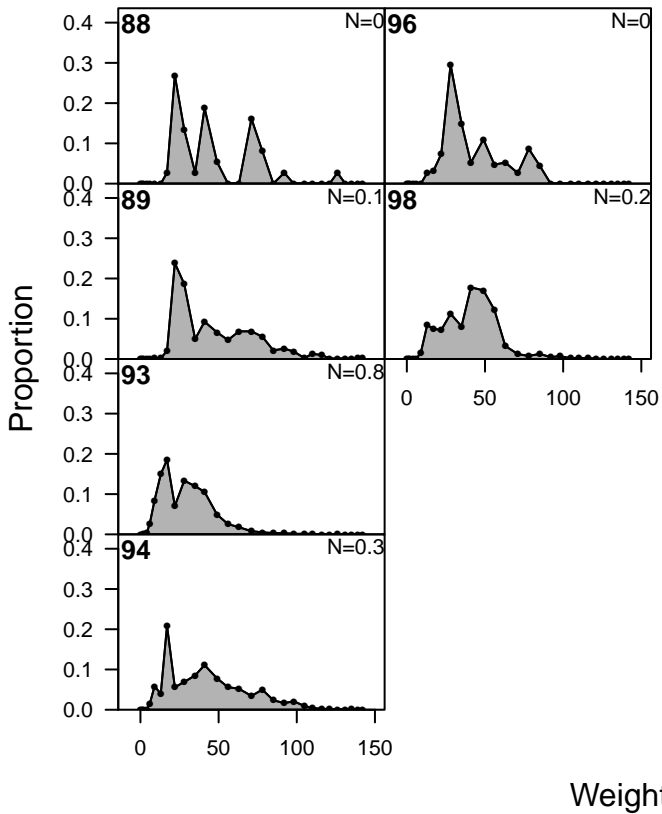
# size comp data, whole catch, S6-LLc\_C\_w



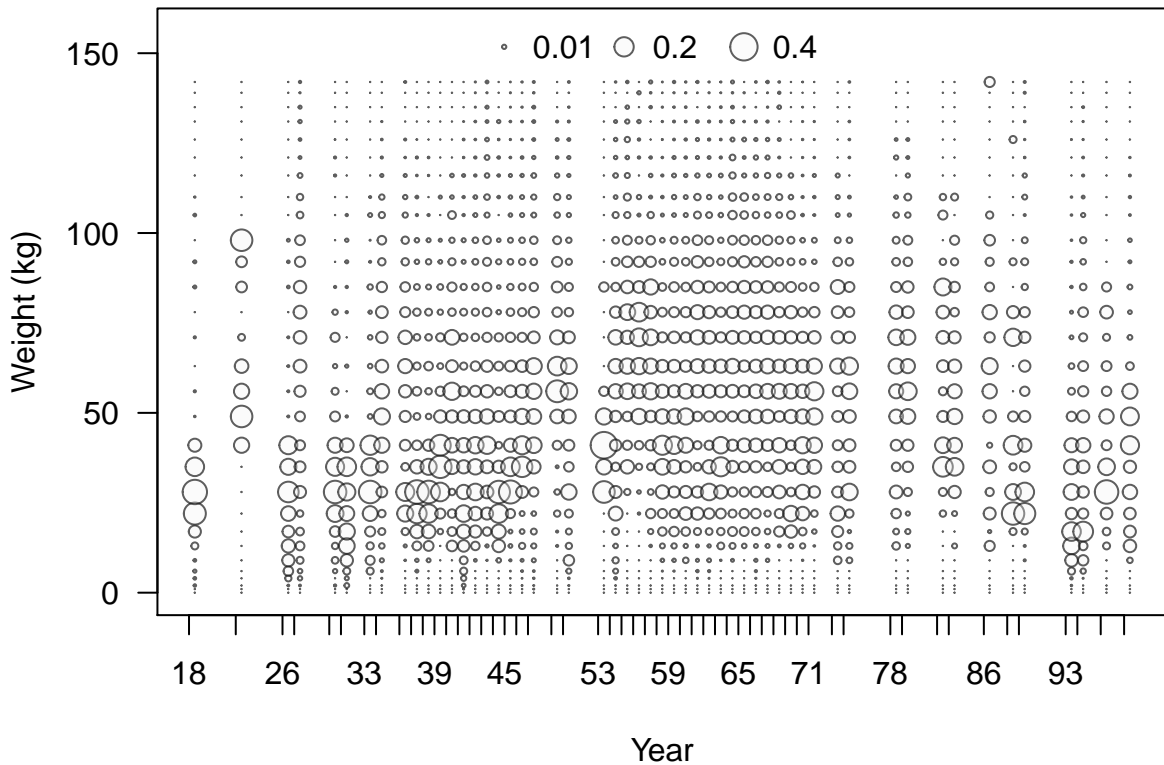
# size comp data, whole catch, S6-LLc\_C\_w



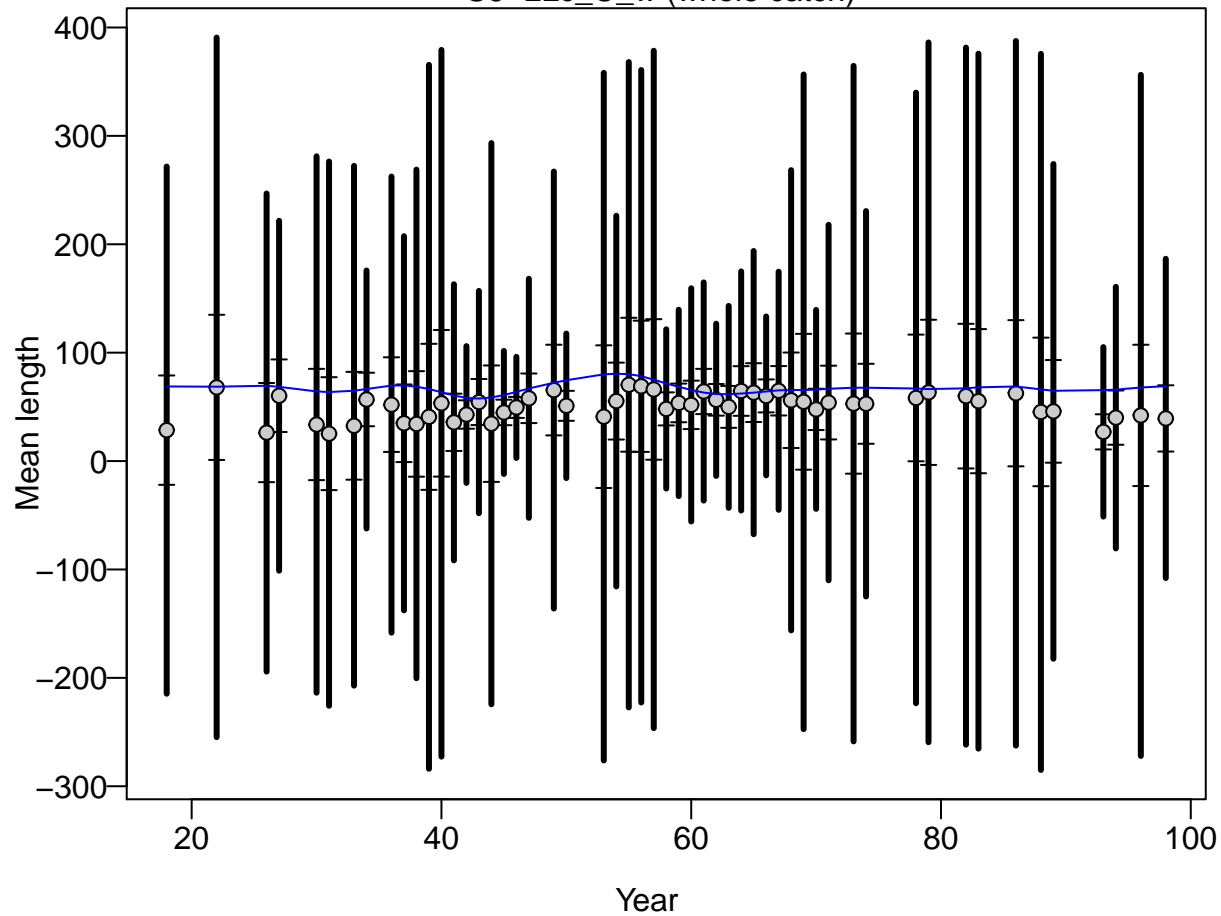
# size comp data, whole catch, S6-LLc\_C\_w



size comp data, whole catch, S6-LLc\_C\_w (max=0.38)

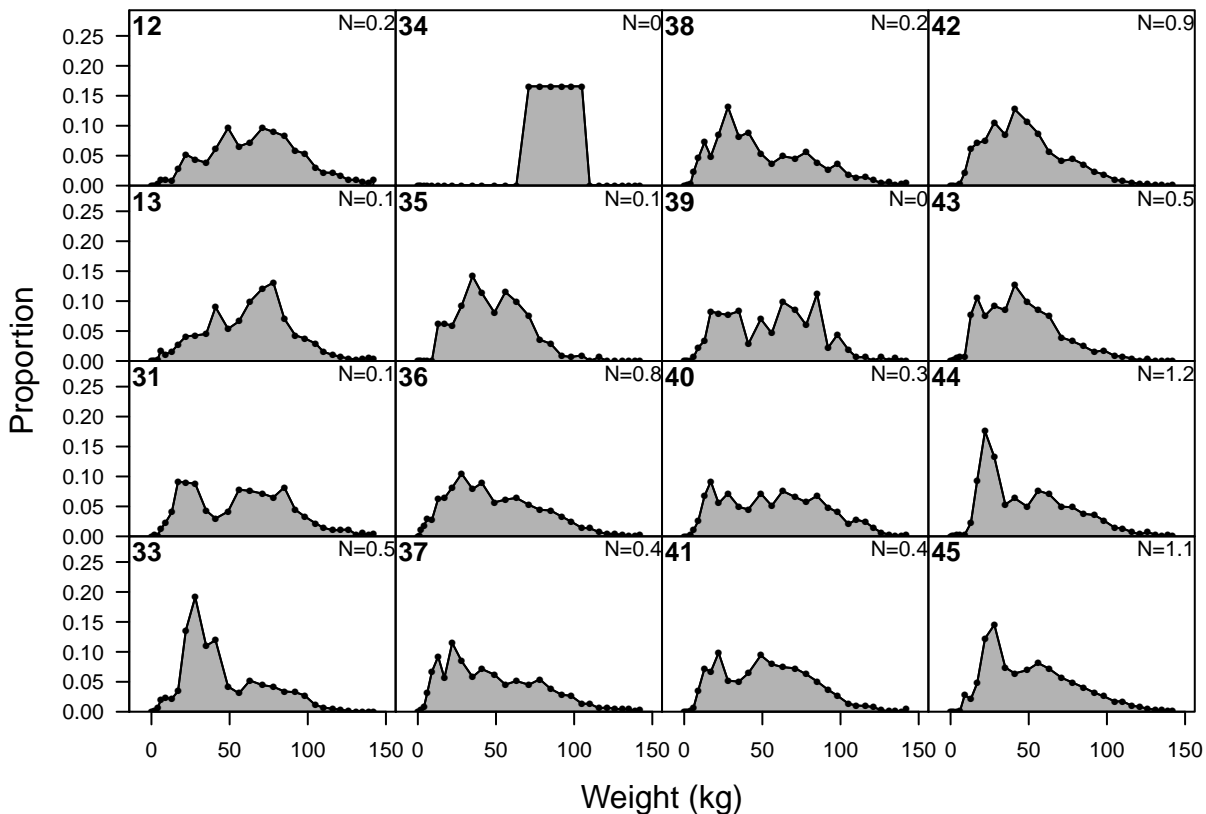


## S6-LLc\_C\_w (whole catch)

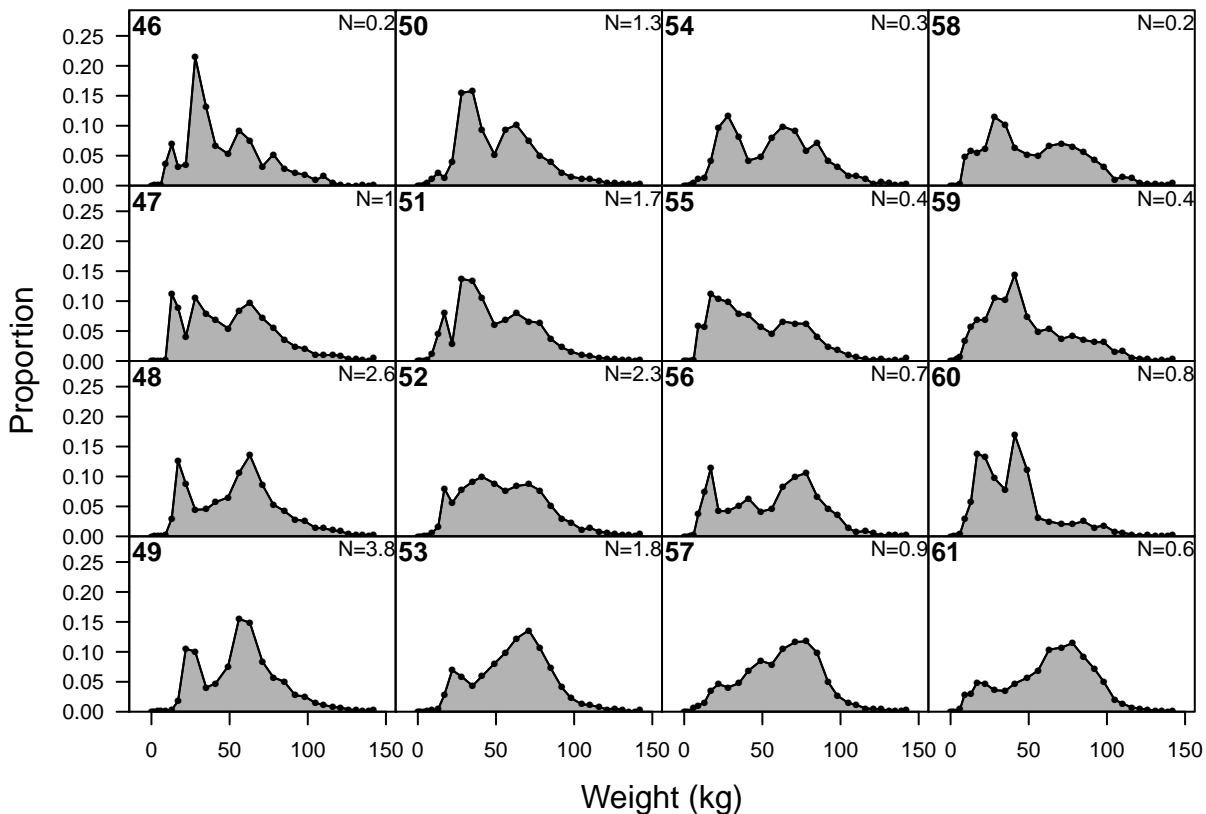




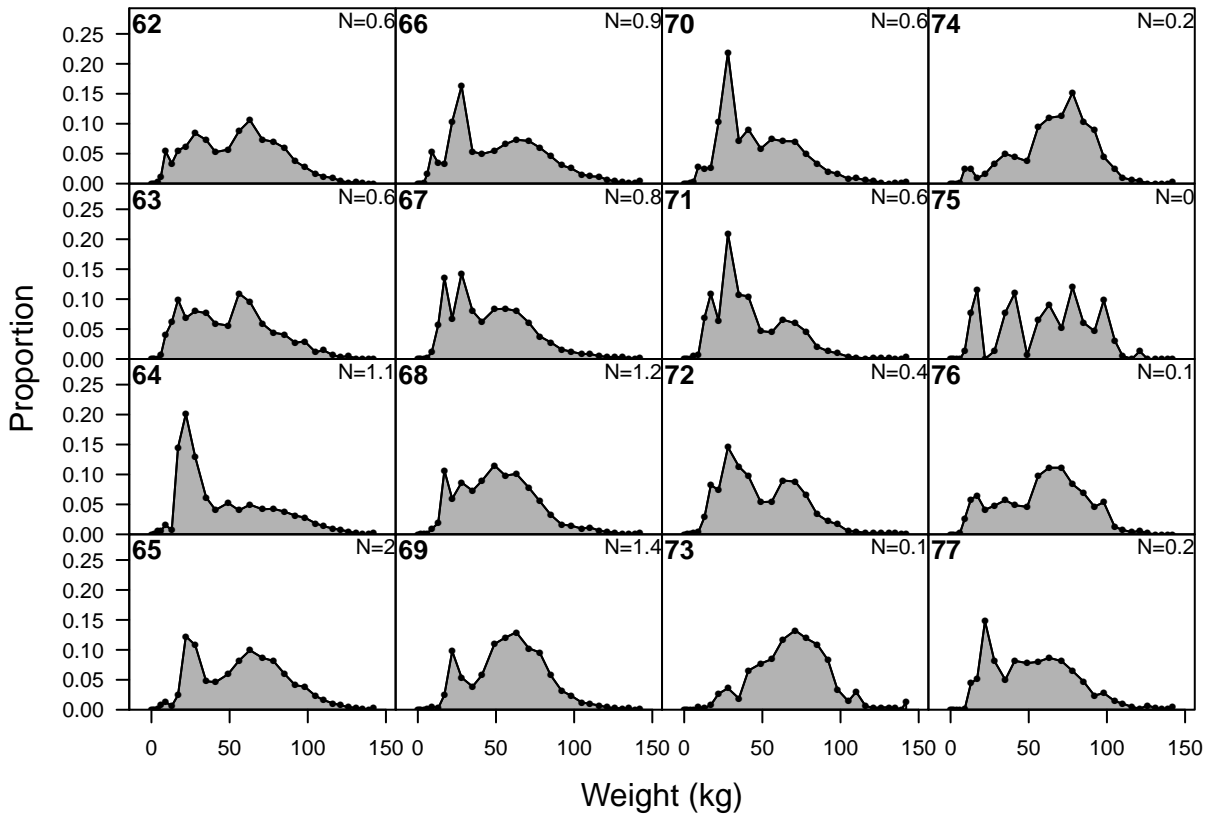
## size comp data, whole catch, S7-LLc\_S\_w



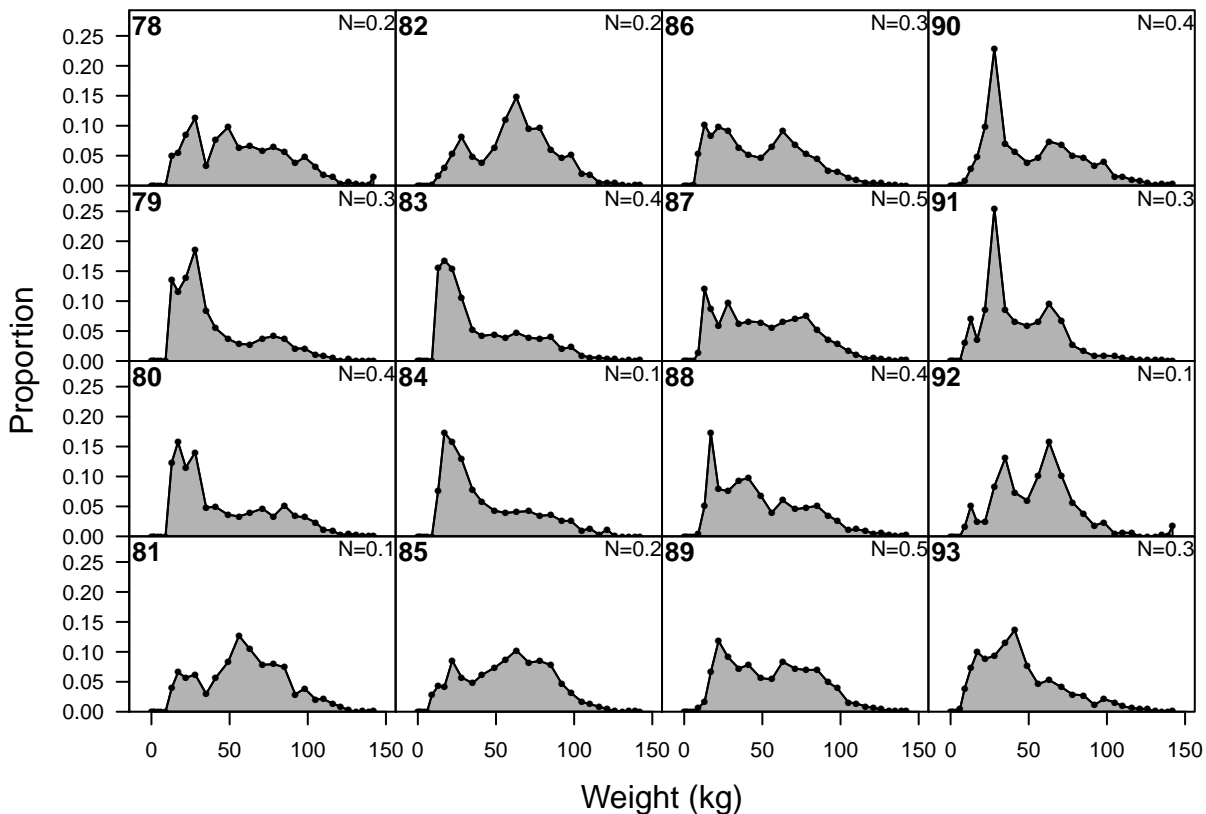
# size comp data, whole catch, S7-LLc\_S\_w



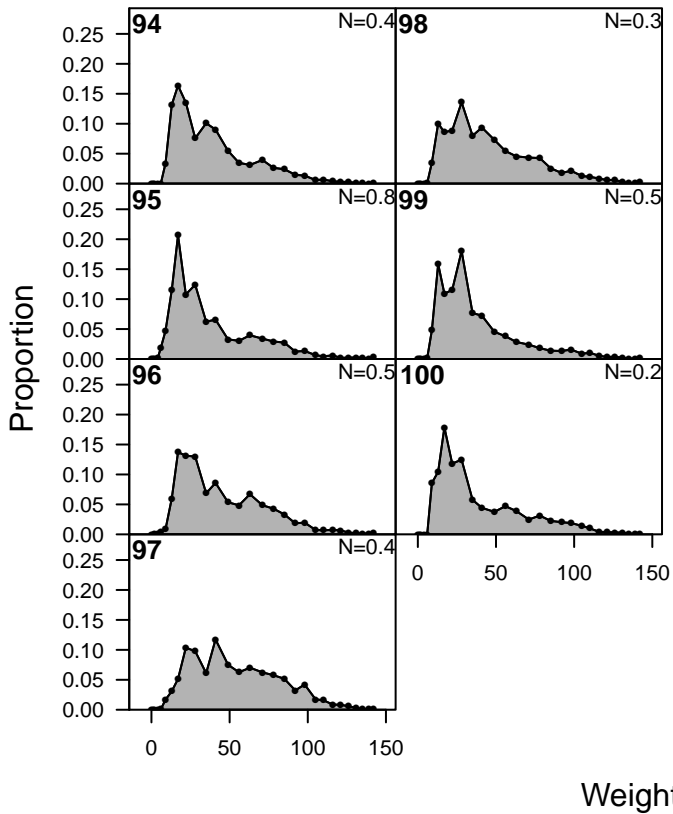
# size comp data, whole catch, S7-LLc\_S\_w



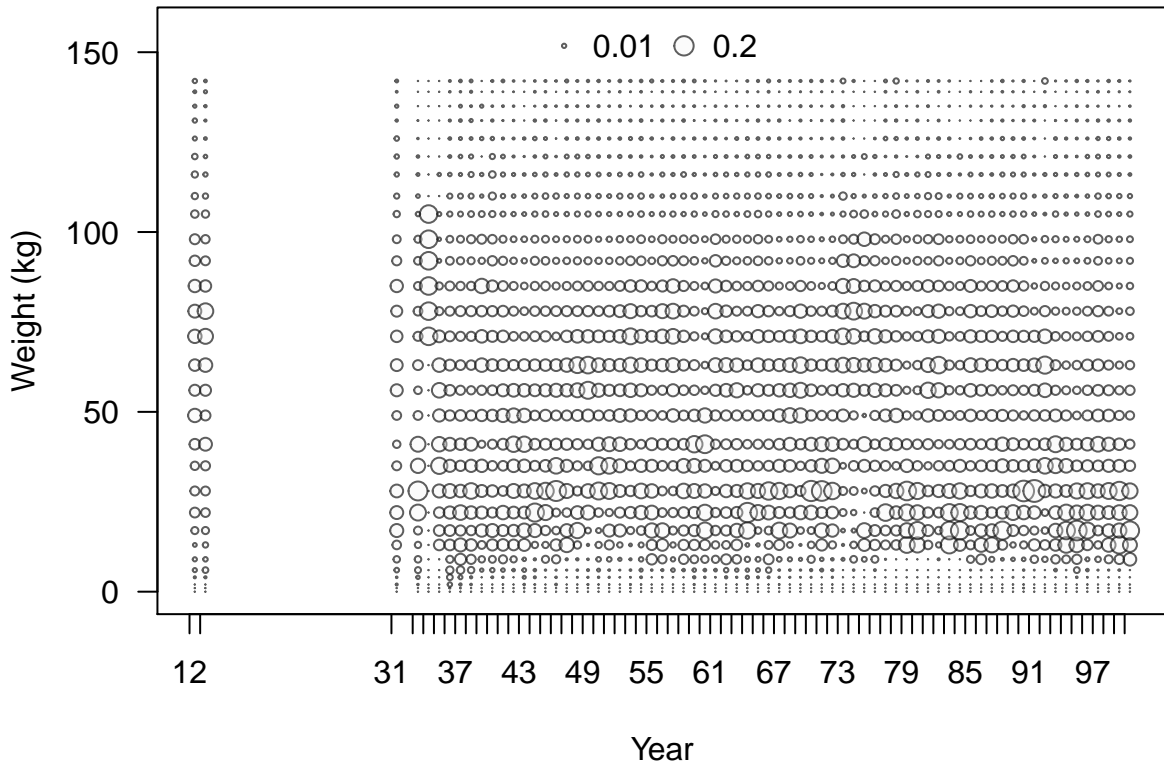
# size comp data, whole catch, S7-LLc\_S\_w



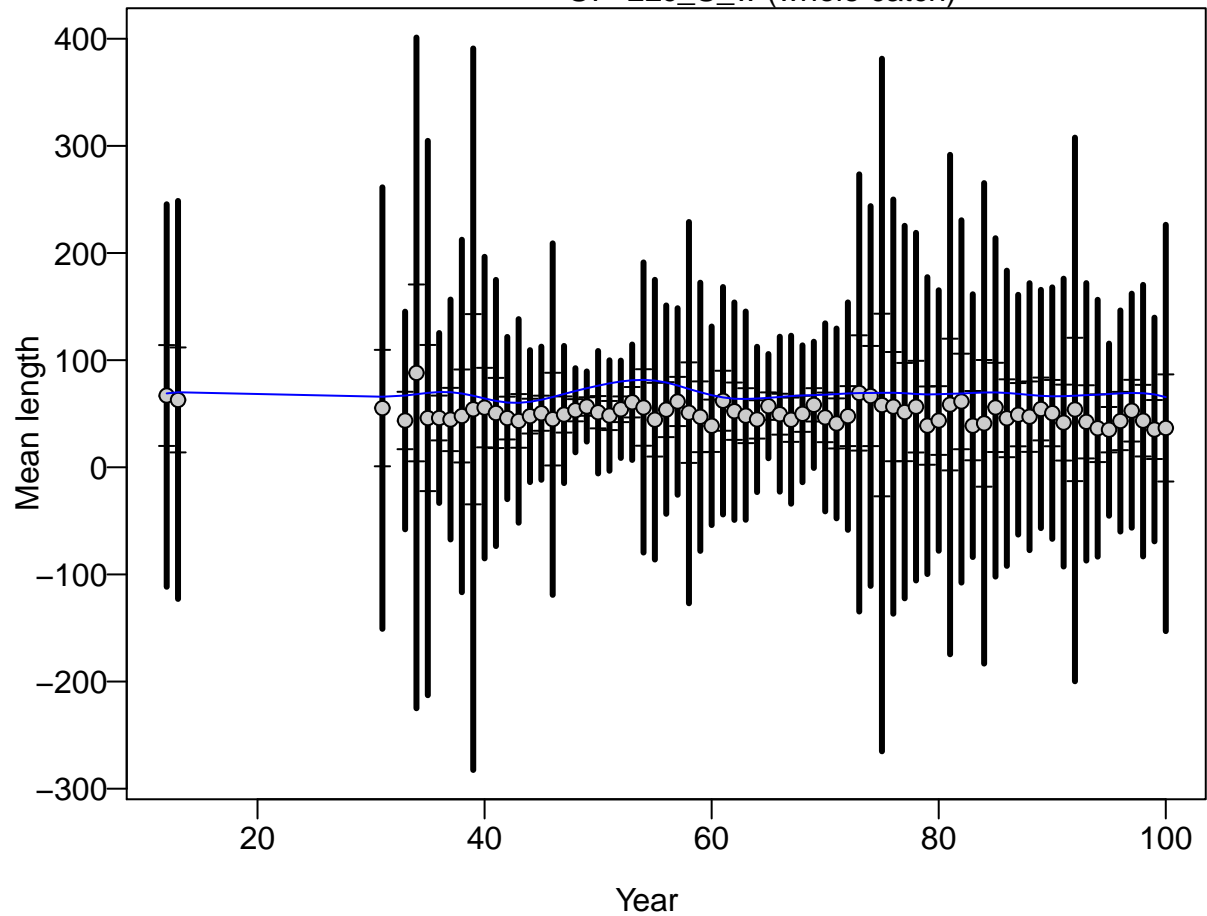
# size comp data, whole catch, S7-LLc\_S\_w



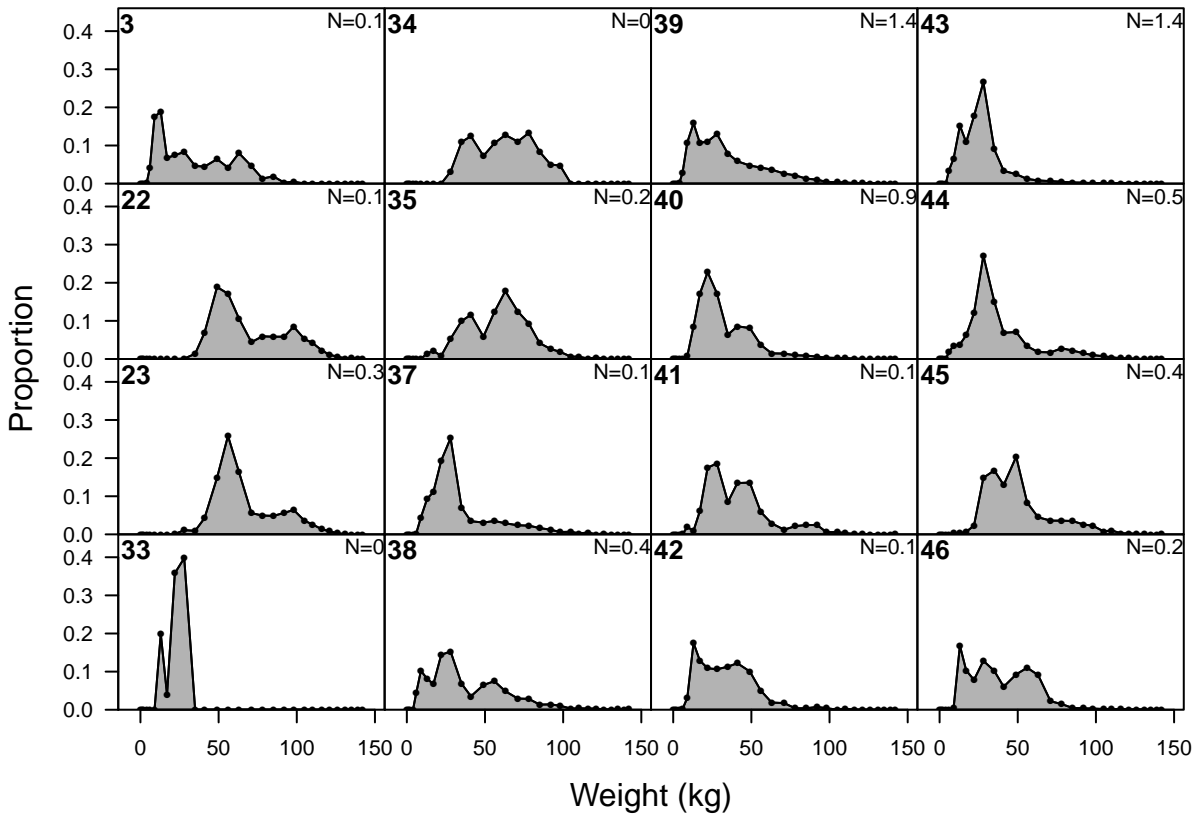
# size comp data, whole catch, S7-LLc\_S\_w (max=0.25)



## S7-LLc\_S\_w (whole catch)

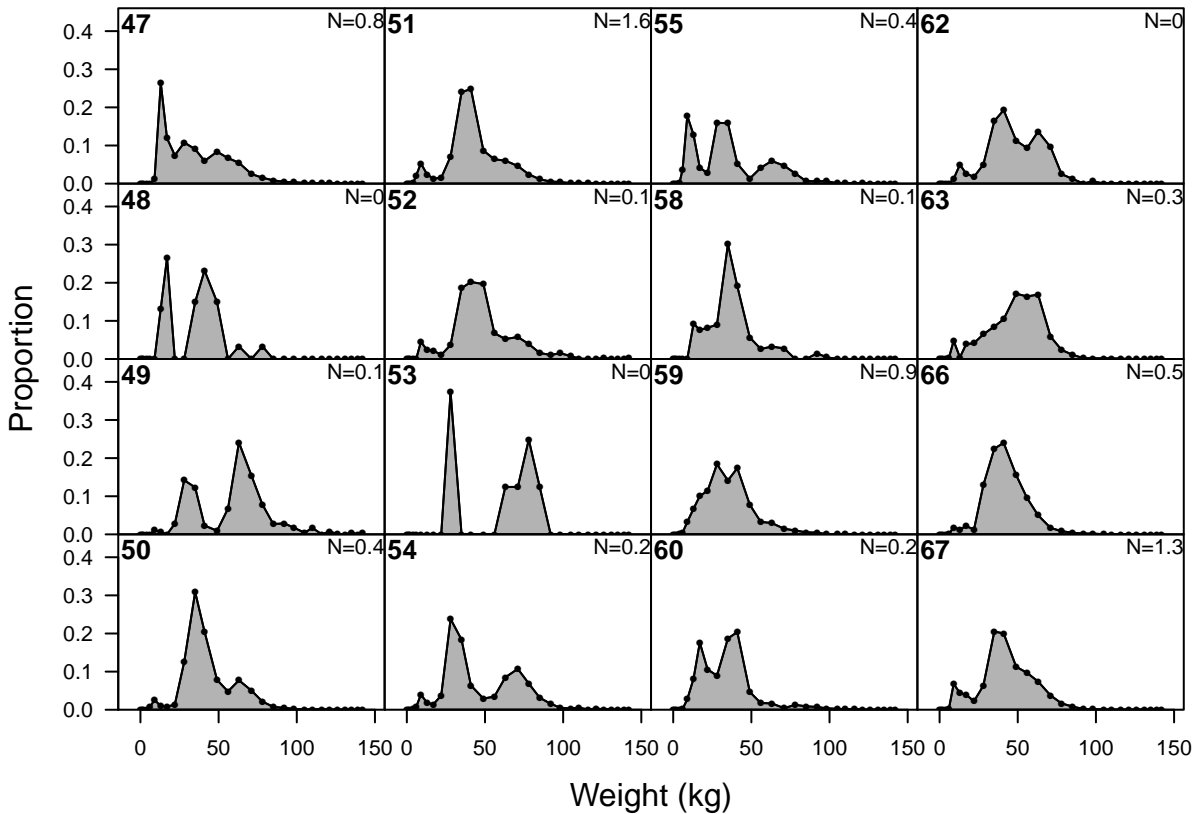


## size comp data, whole catch, S8-LLc\_I\_w

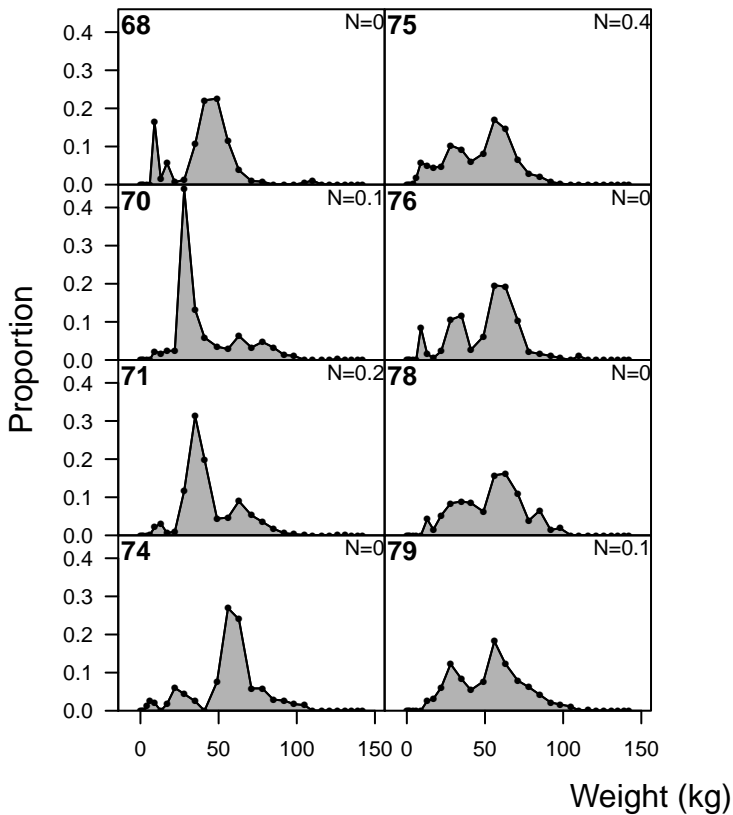




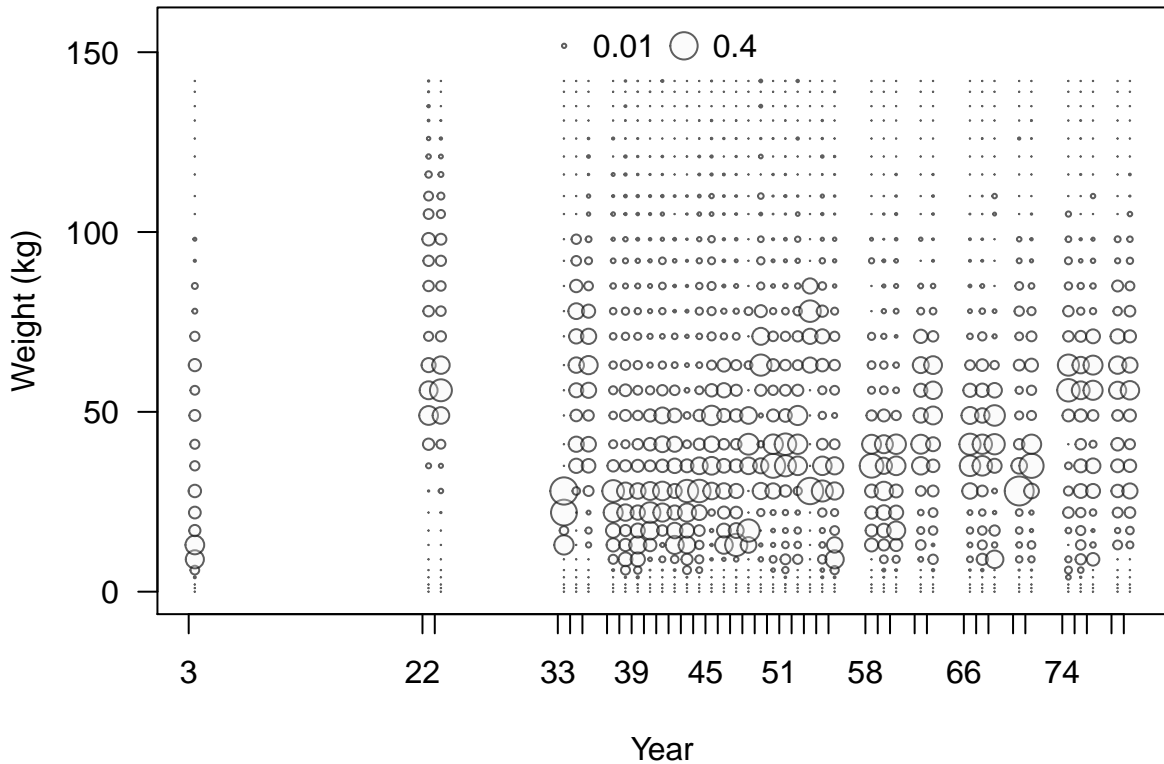
### size comp data, whole catch, S8-LLc\_I\_w



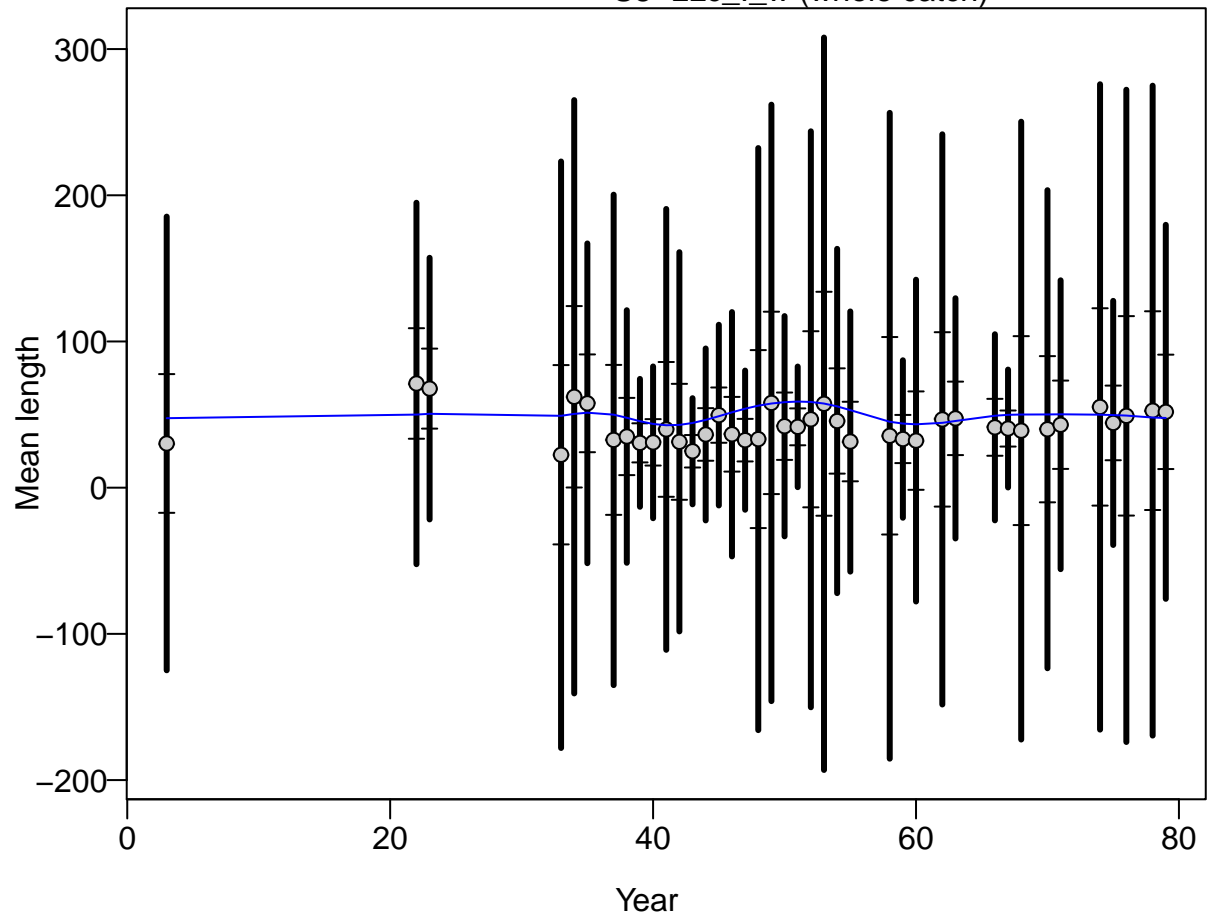
# size comp data, whole catch, S8-LLc\_I\_w



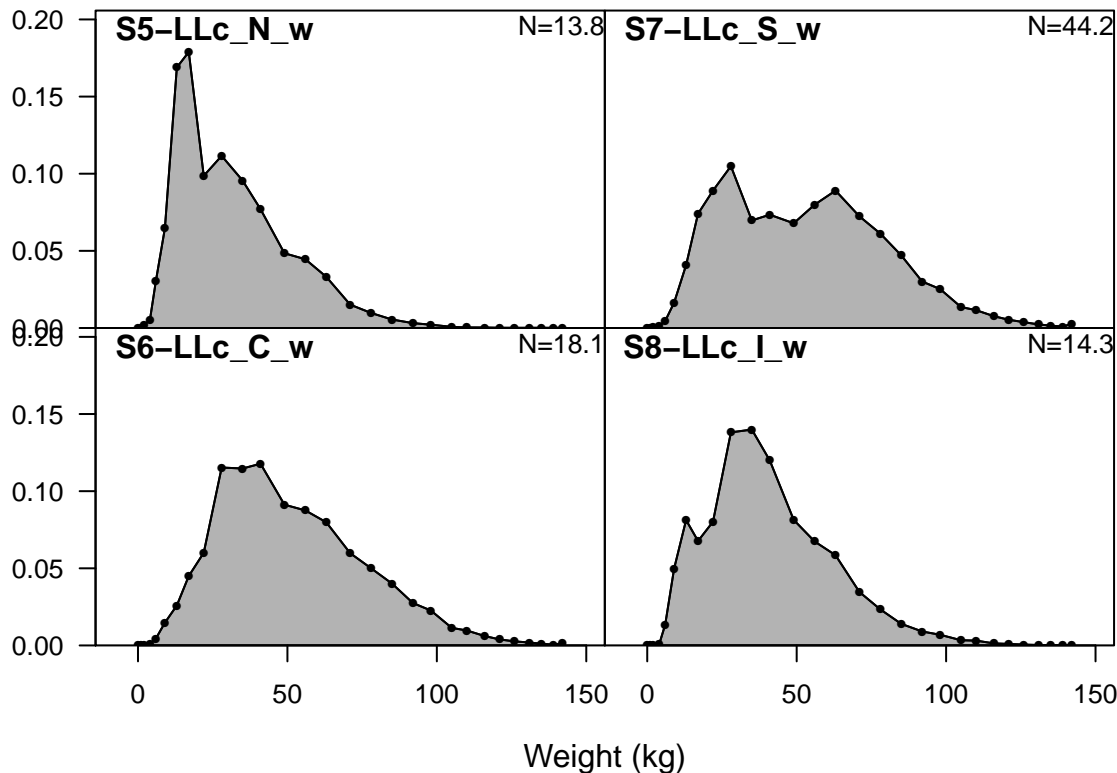
size comp data, whole catch, S8-LLc\_I\_w (max=0.45)



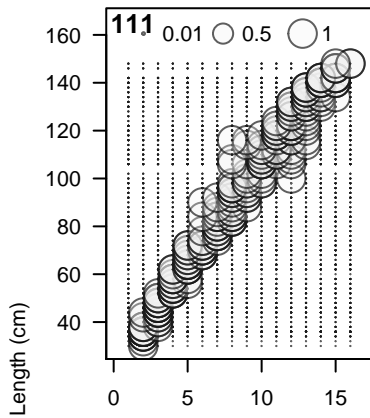
## S8-LLc\_I\_w (whole catch)



# size comp data, whole catch, aggregated across time by fleet

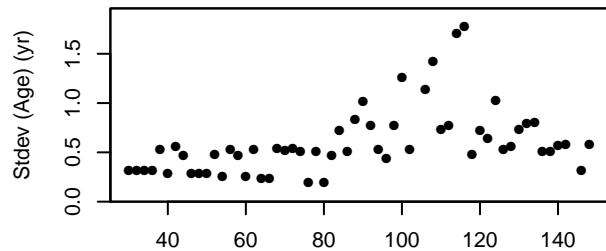
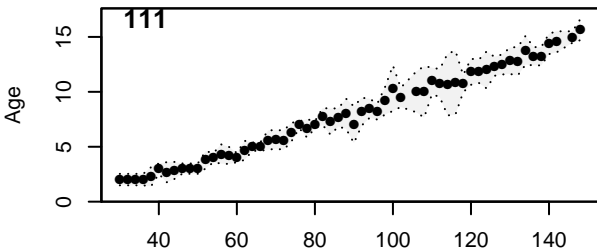


conditional age-at-length data, whole catch, F3-OBJ\_C (max=1)



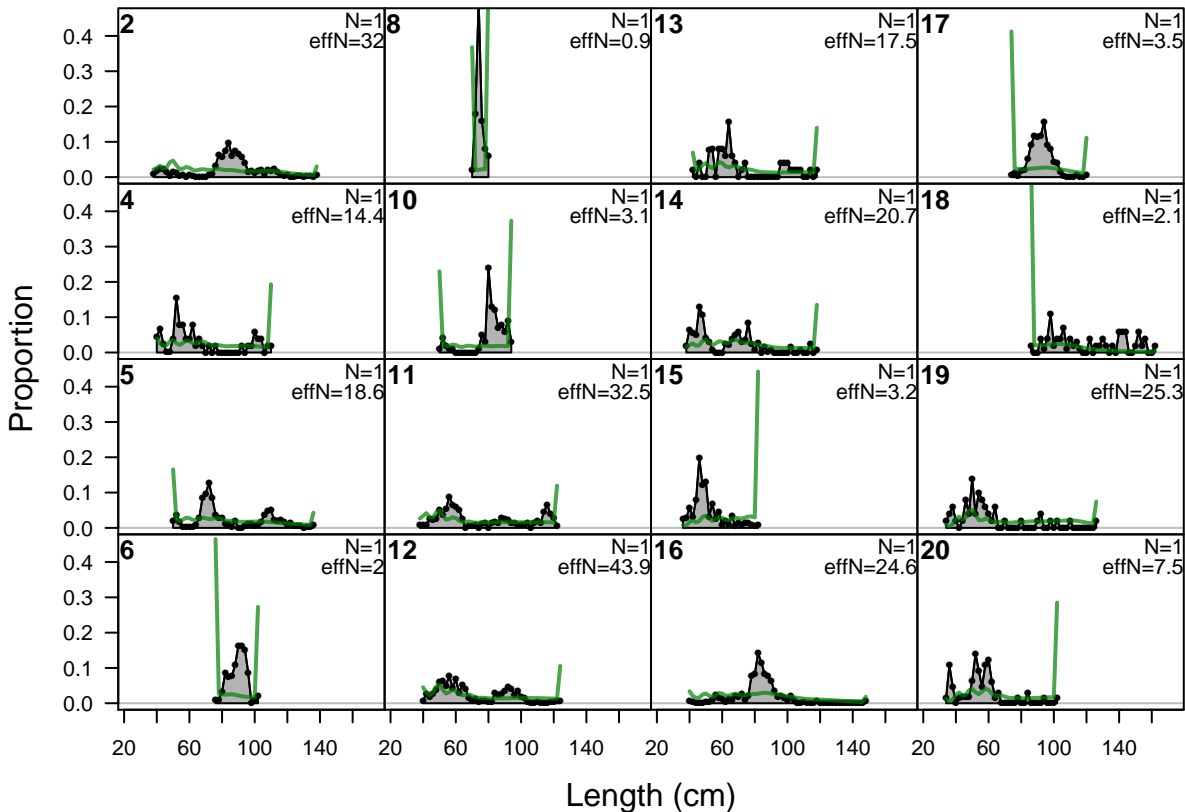
Age (yr)

# Conditional AAL plot, whole catch, F3-OBJ\_C



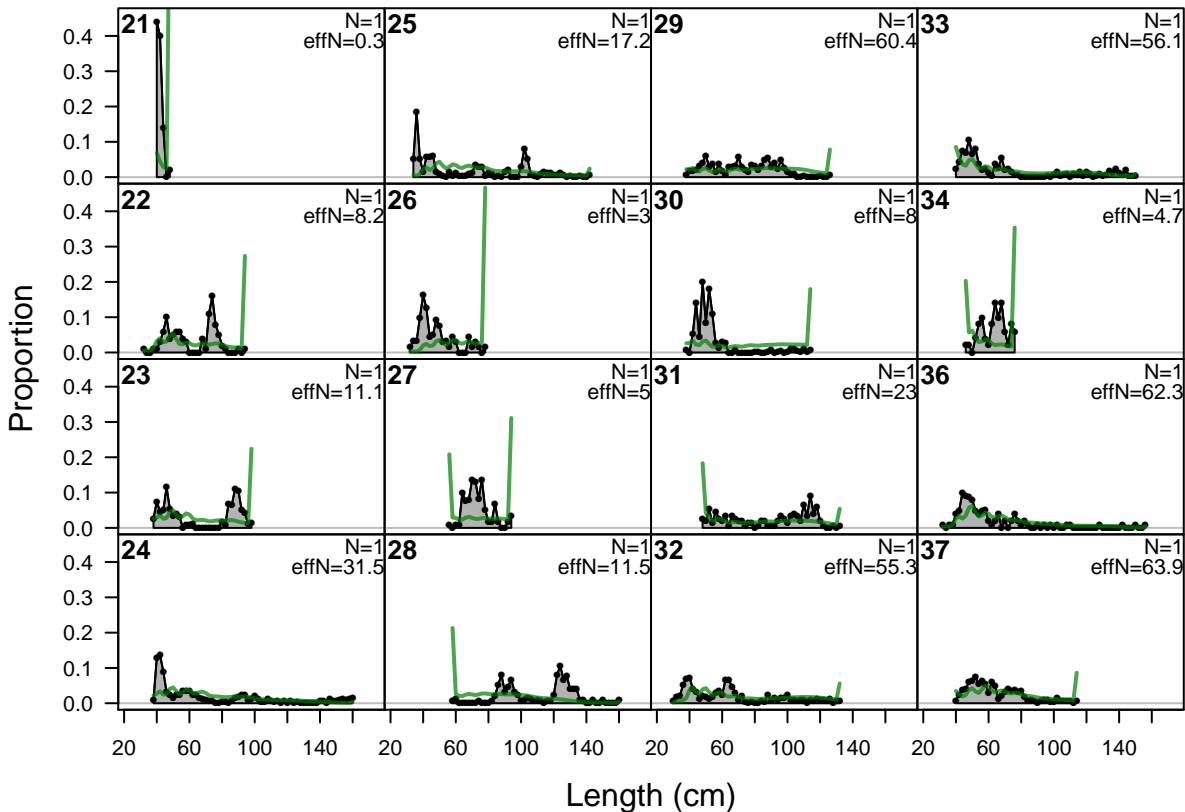
Length (cm)

## length comps, whole catch, F1-OBJ\_early

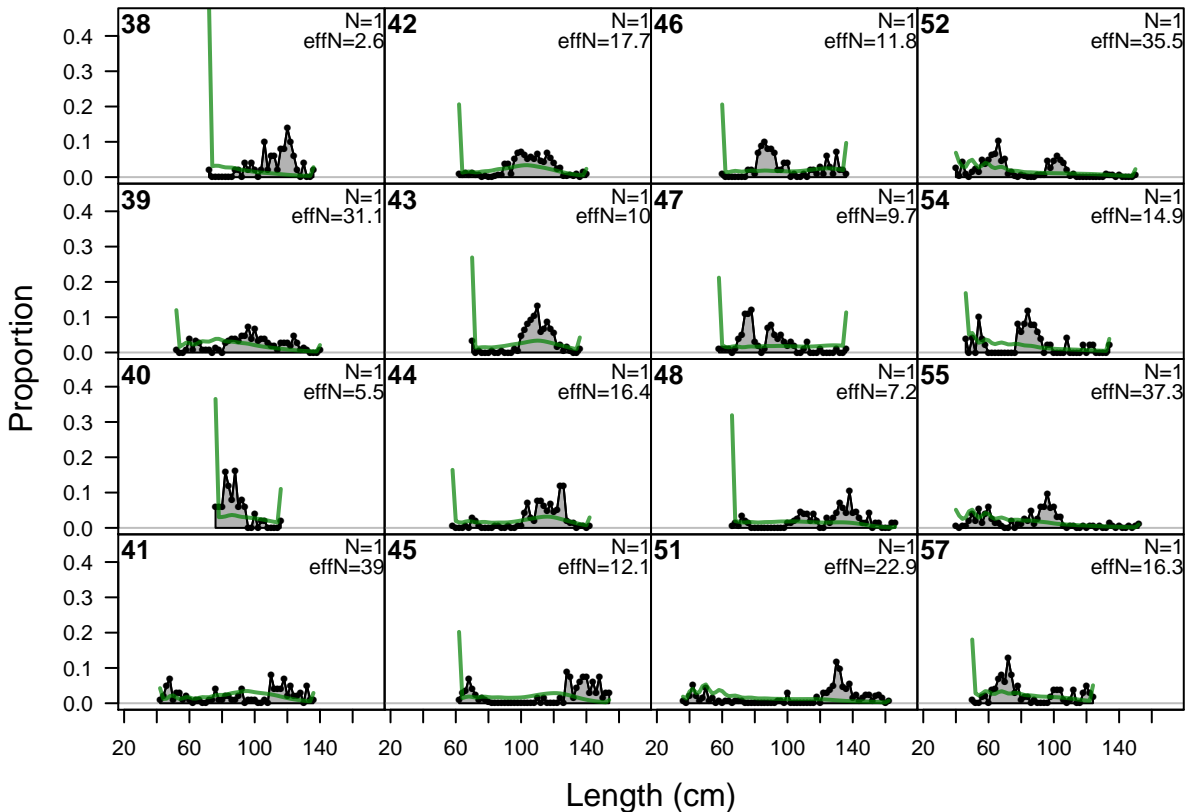




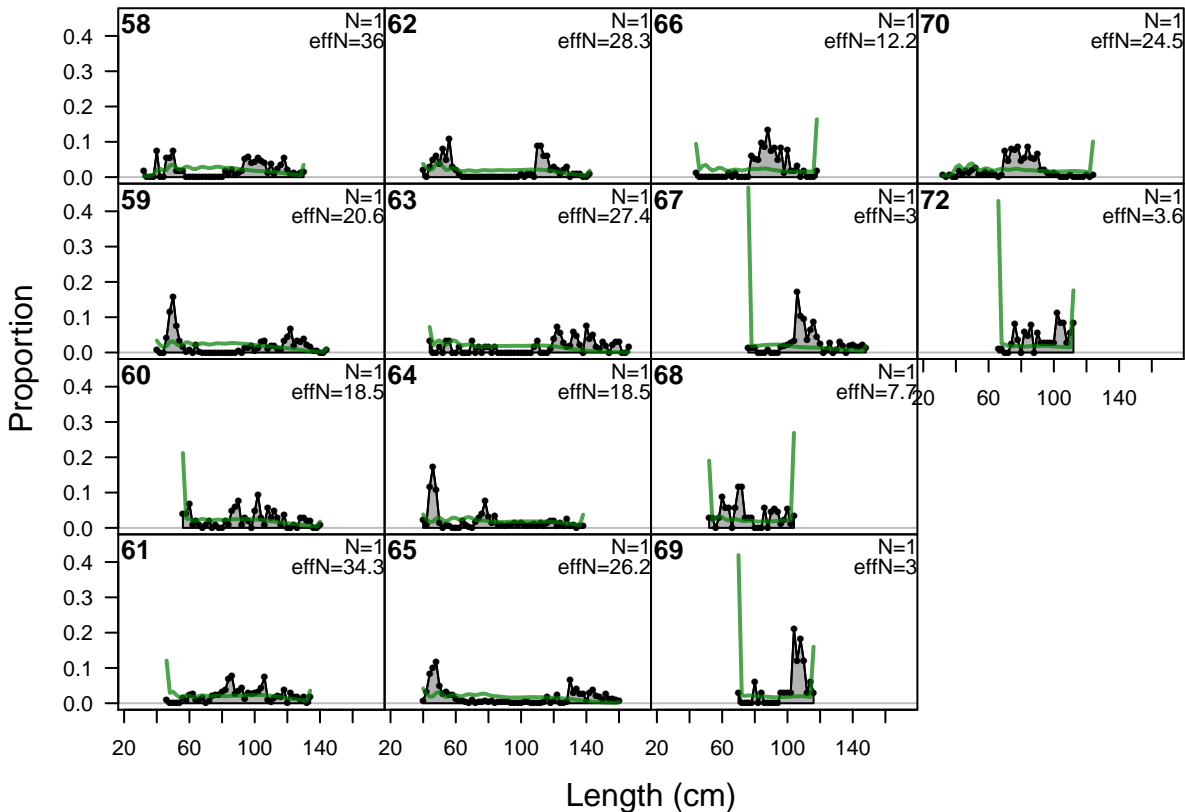
# length comps, whole catch, F1-Obj\_early



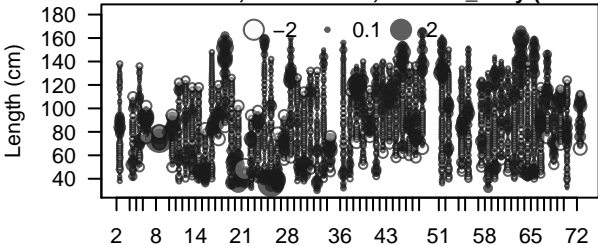
# length comps, whole catch, F1-OBJ\_early



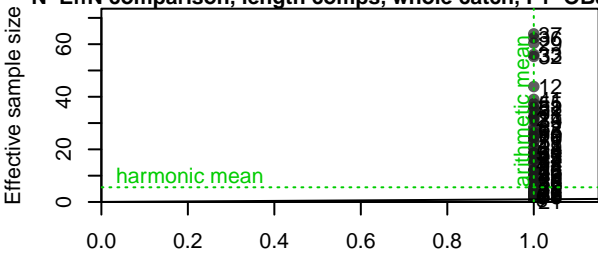
# length comps, whole catch, F1-Obj\_early



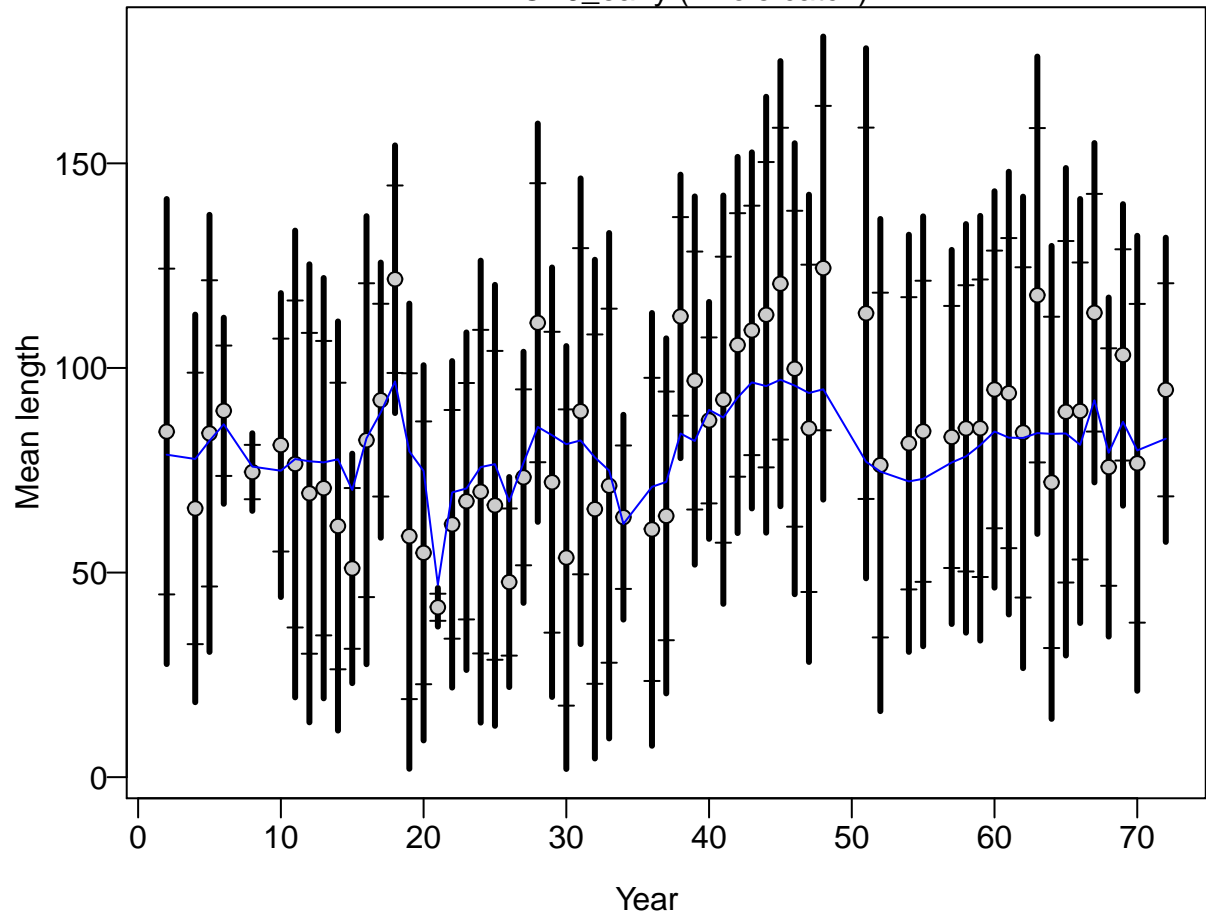
**Pearson residuals, whole catch, F1-Obj\_early (max=3.3)**



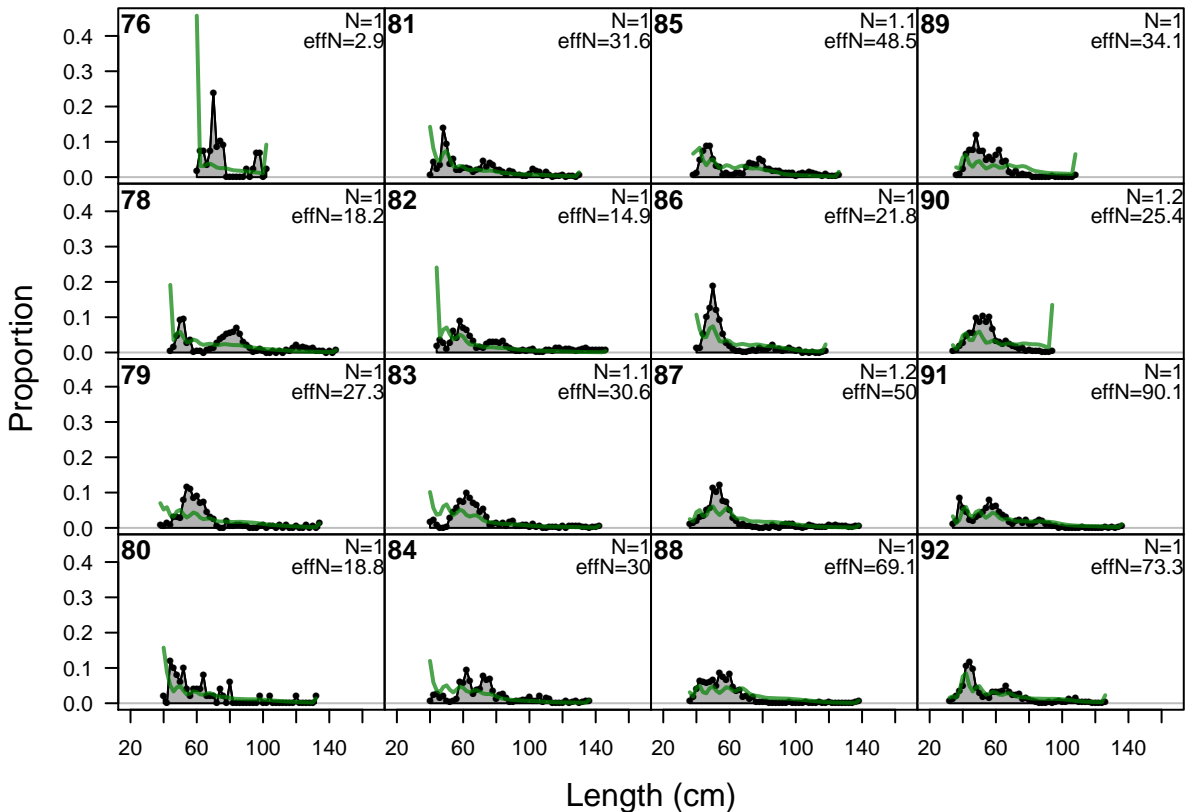
**N-EffN comparison, length comps, whole catch, F1-Obj\_early**



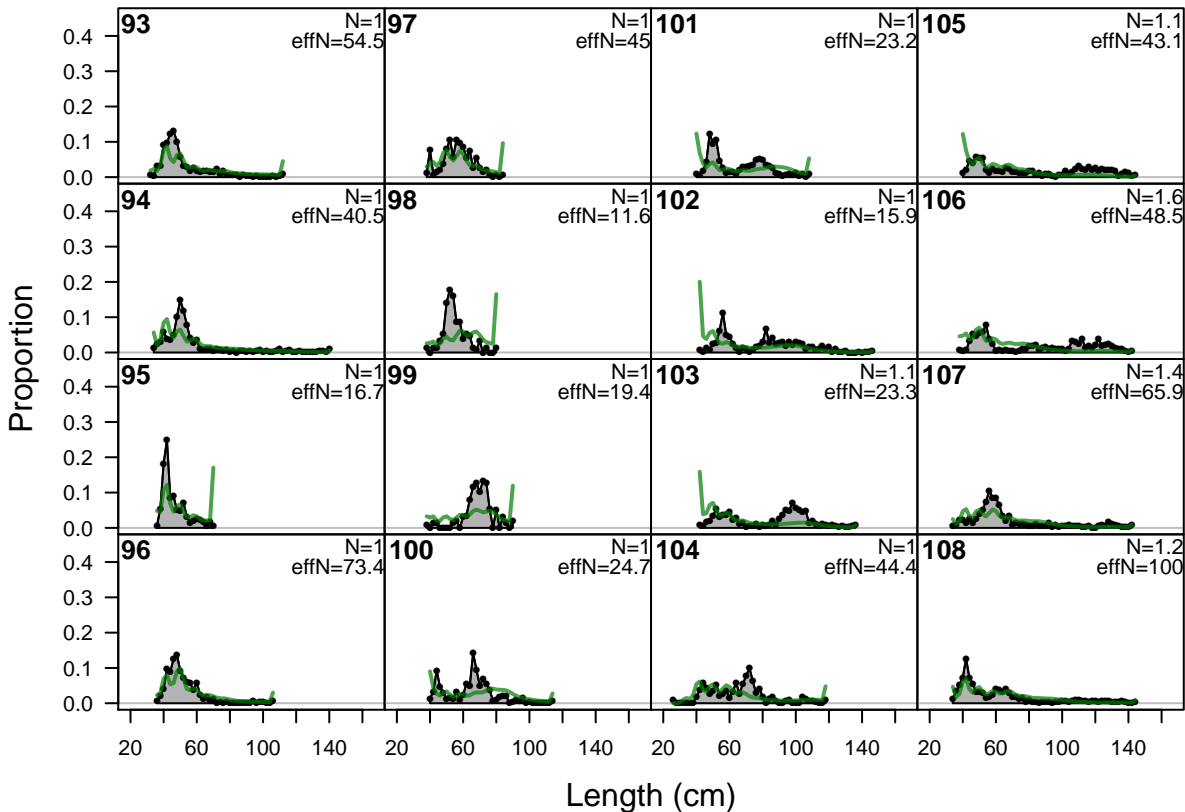
F1-OBJ\_early (whole catch)



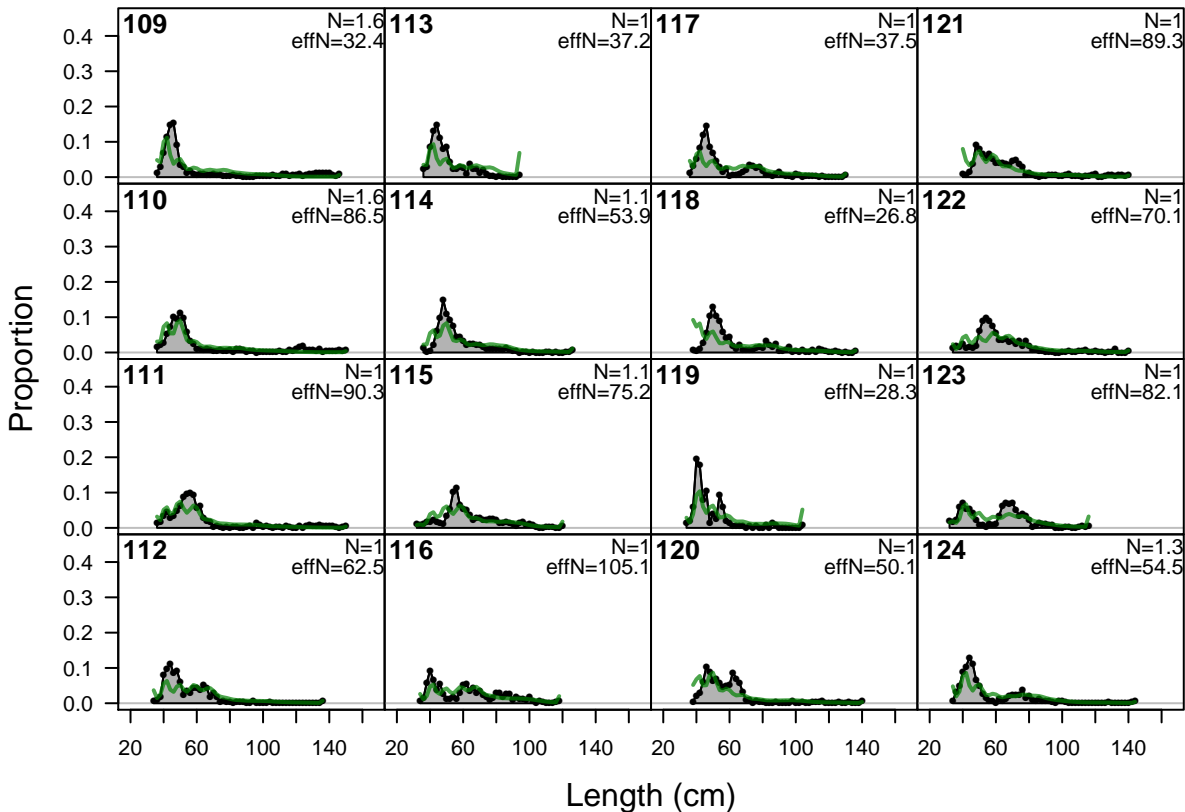
## length comps, whole catch, F2-OBJ\_S



## length comps, whole catch, F2-OBJ\_S

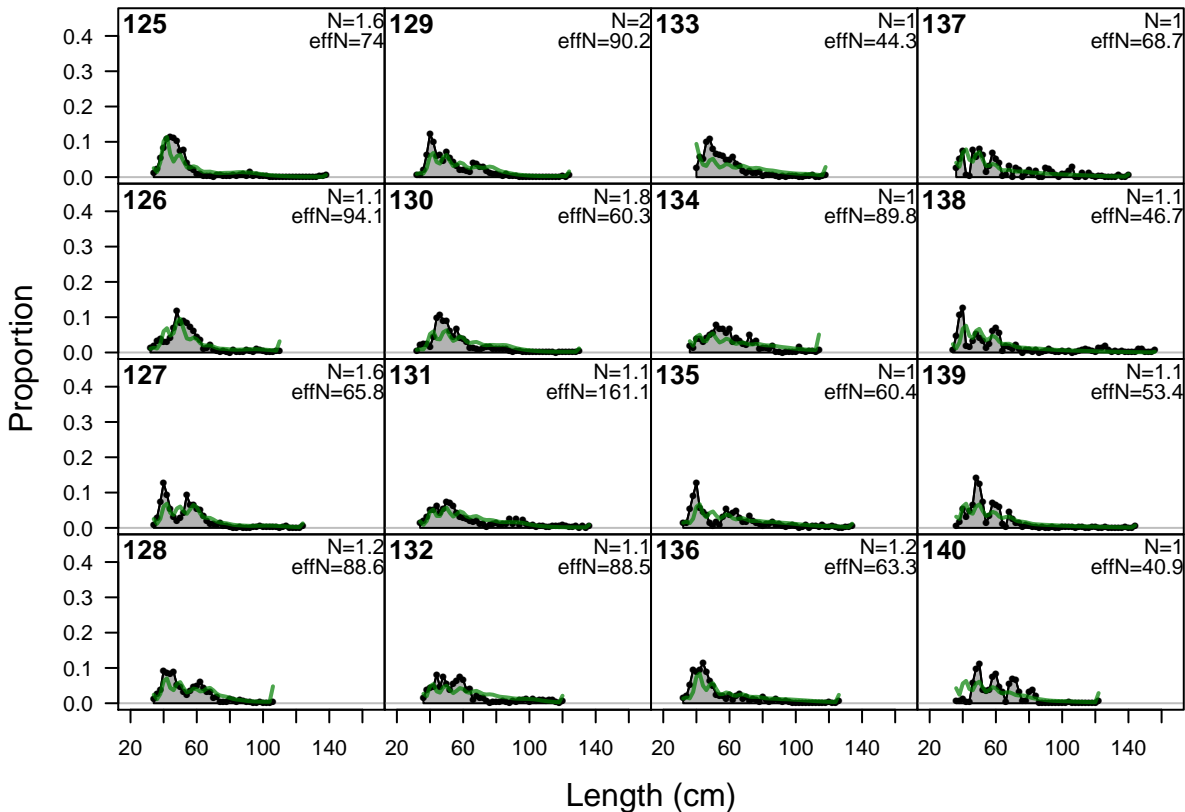


# length comps, whole catch, F2-OBJ\_S

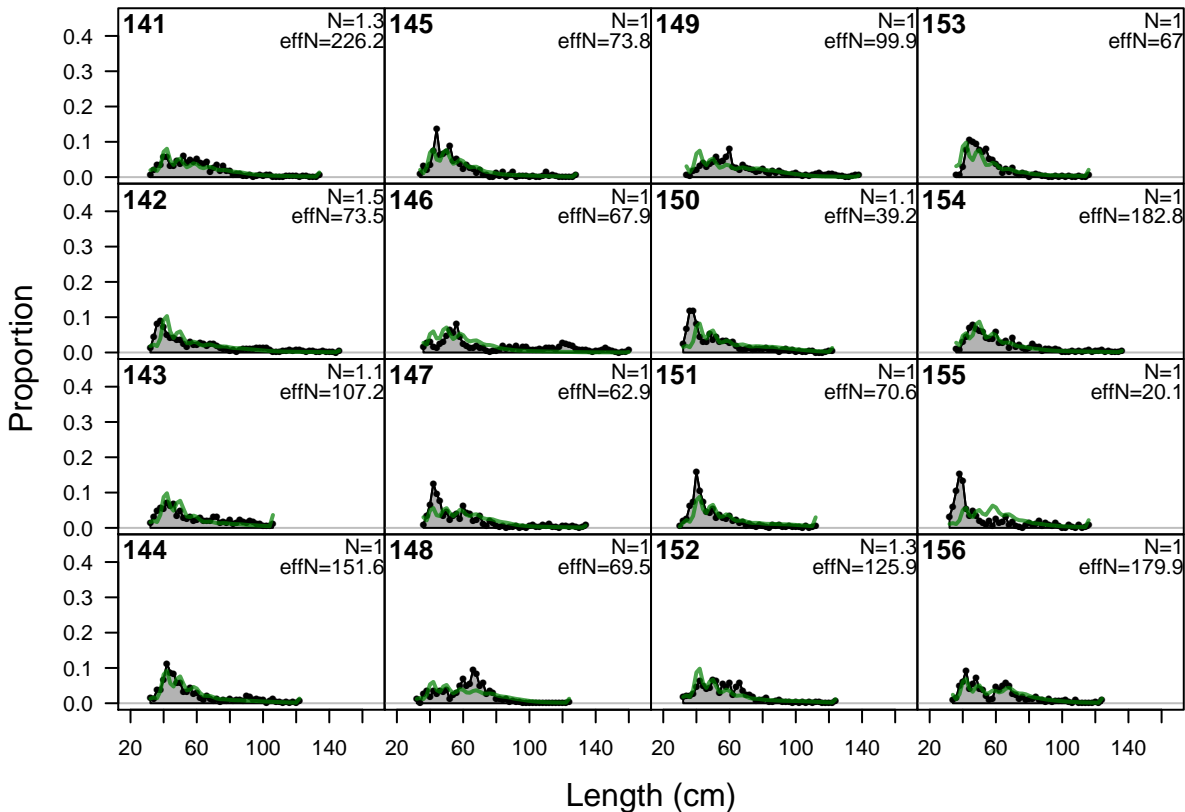




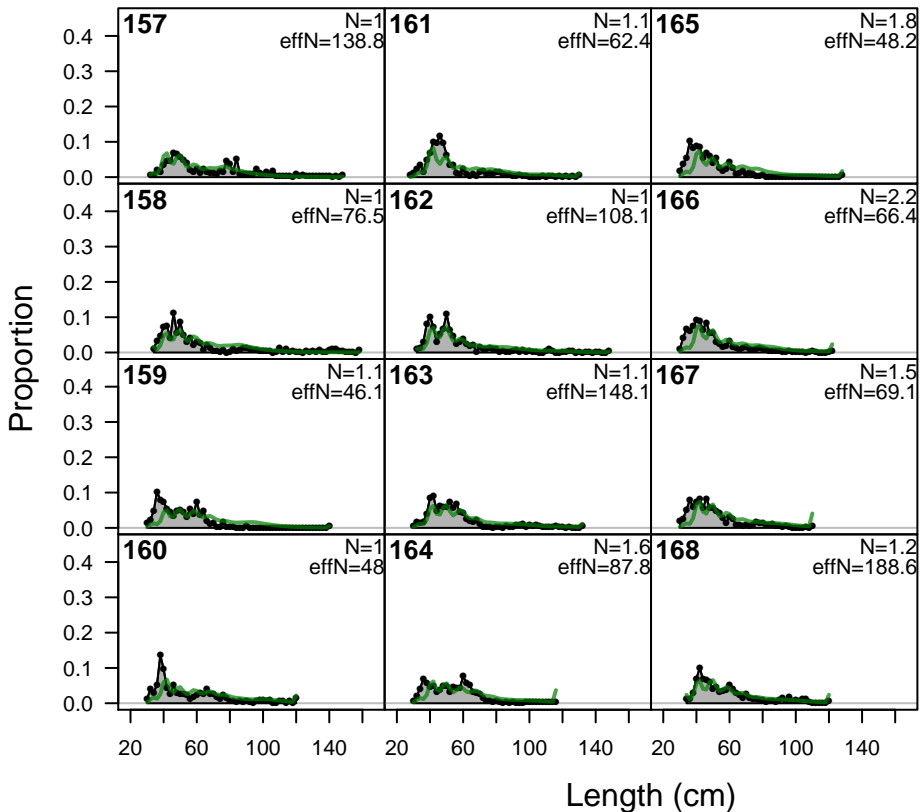
# length comps, whole catch, F2-OBJ\_S



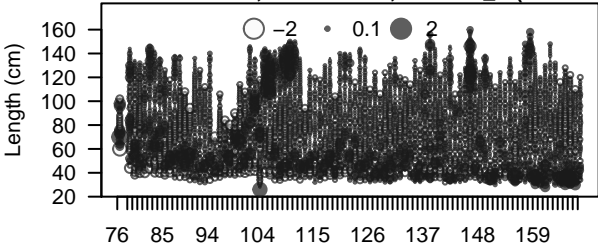
# length comps, whole catch, F2-OBJ\_S



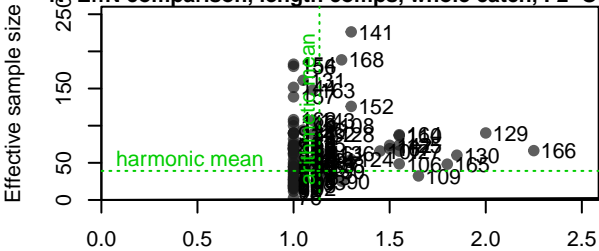
# length comps, whole catch, F2-OBJ\_S



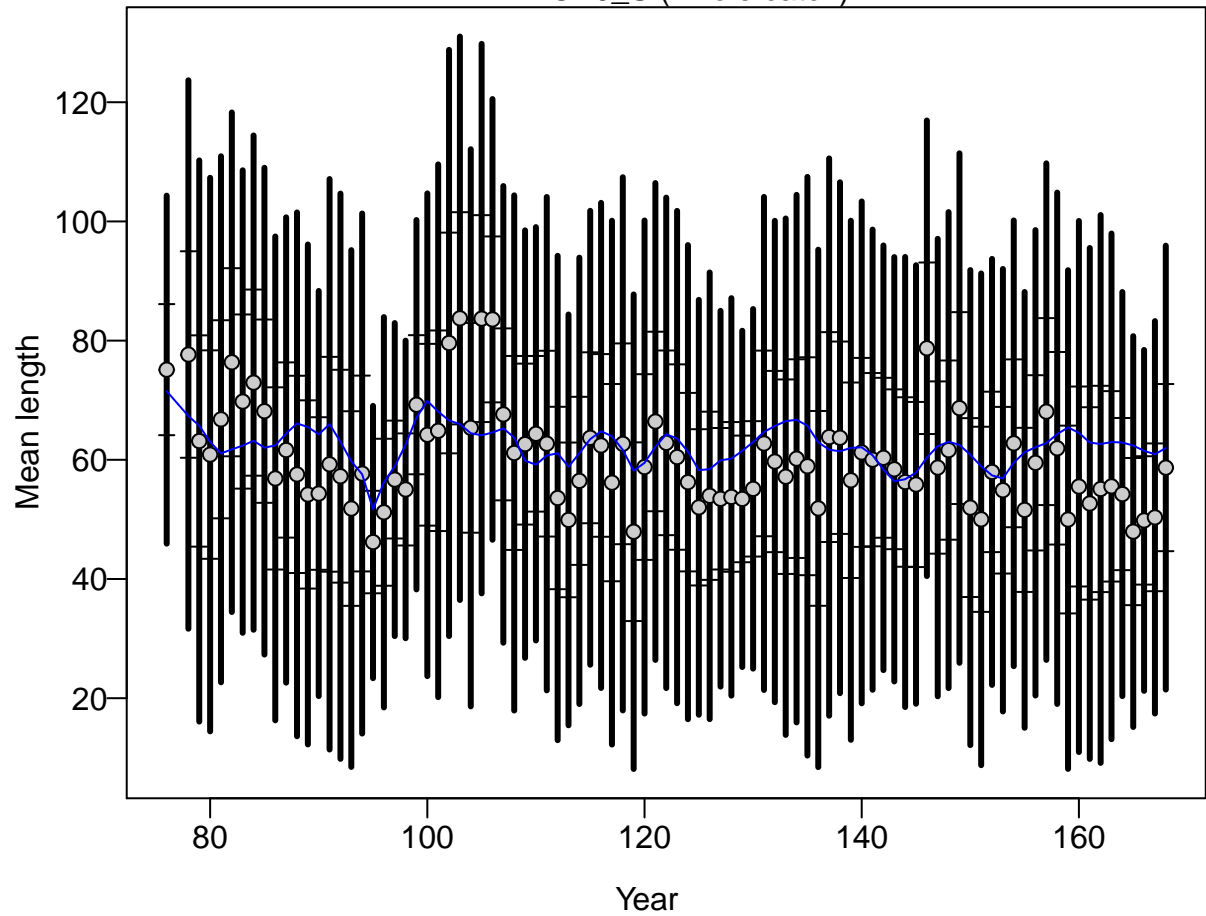
**Pearson residuals, whole catch, F2-OBJ\_S (max=1.14)**



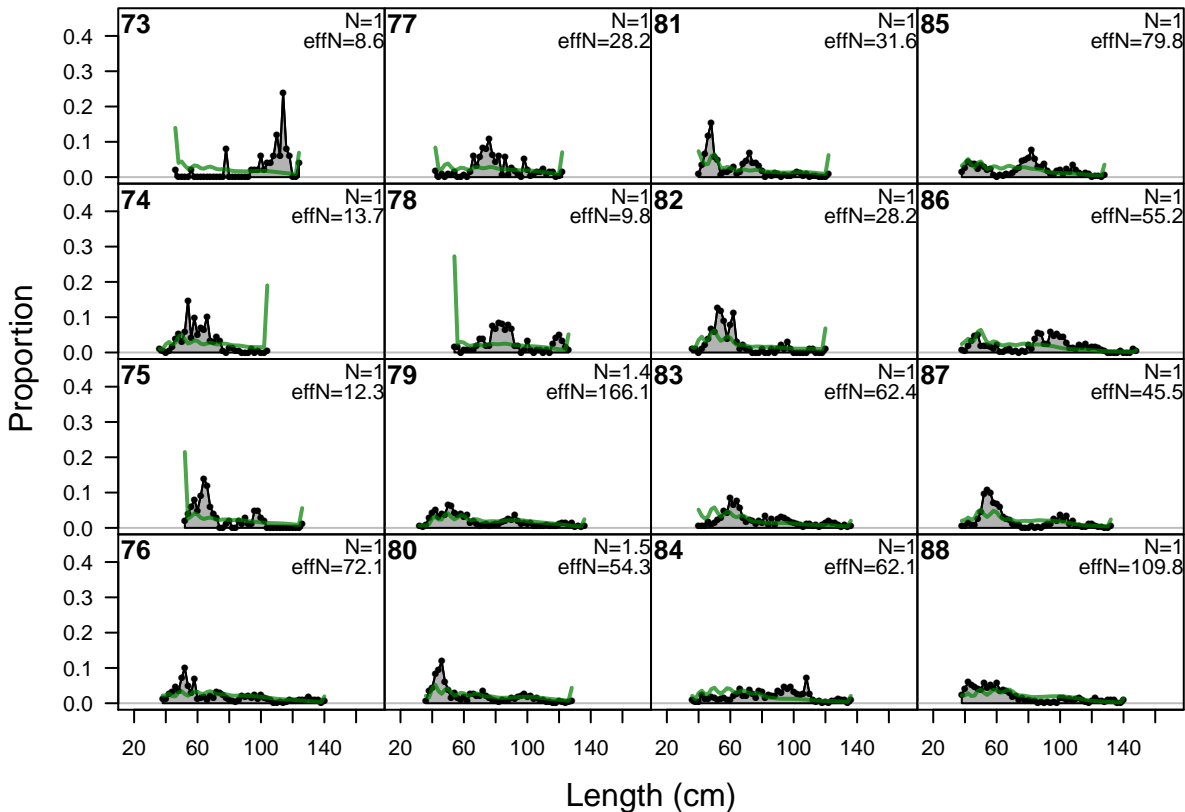
**N-EffN comparison, length comps, whole catch, F2-OBJ**



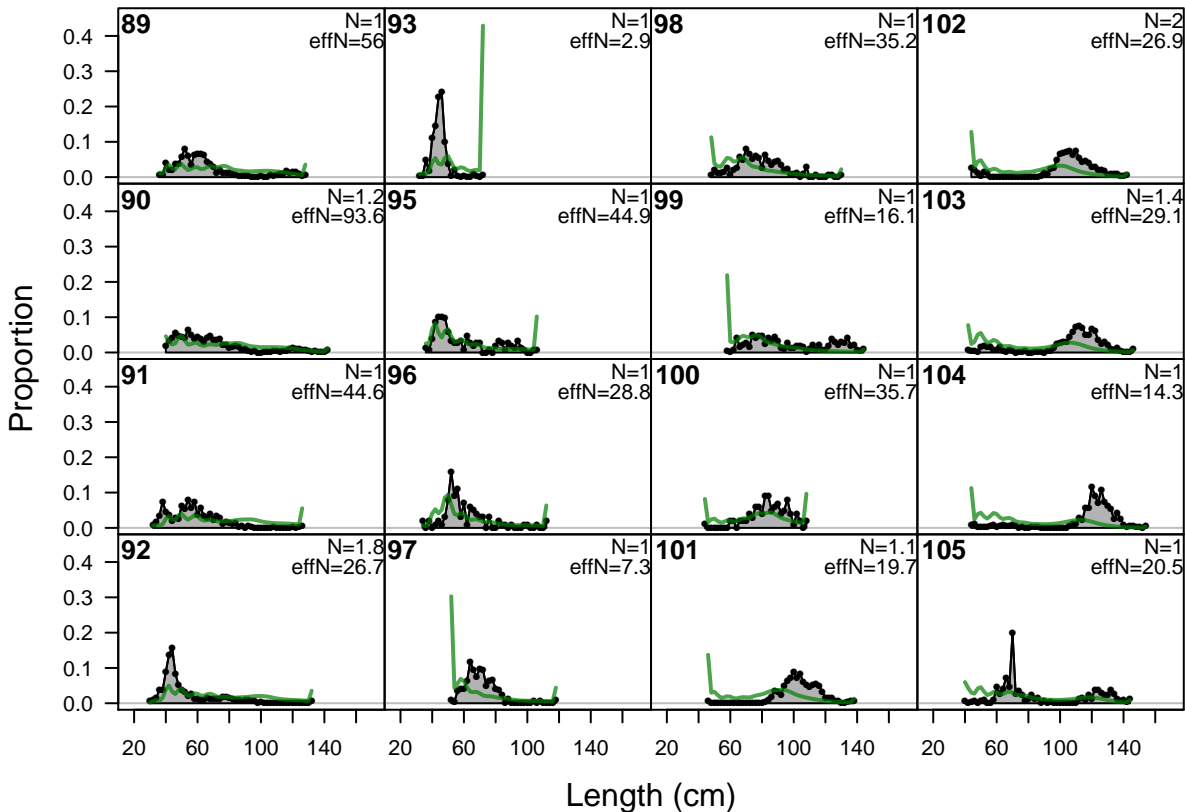
F2-OBJ\_S (whole catch)



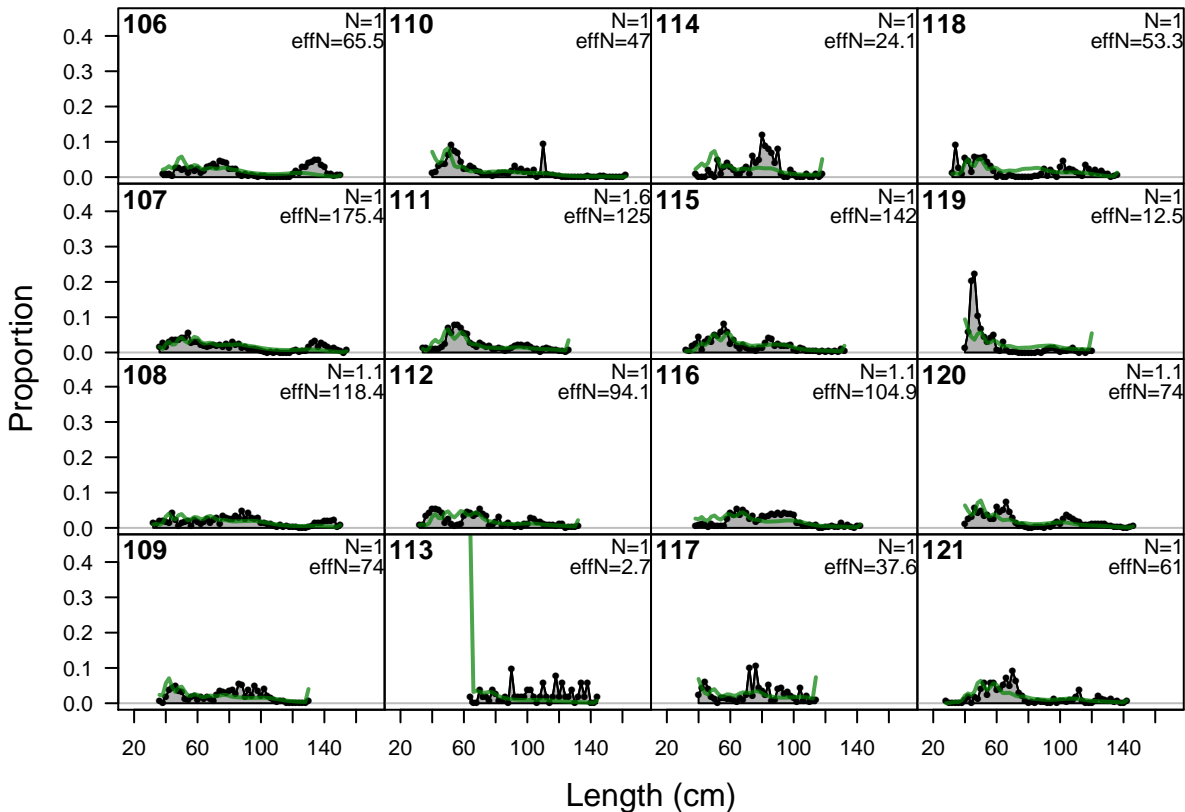
# length comps, whole catch, F3-OBJ\_C



# length comps, whole catch, F3-OBJ\_C

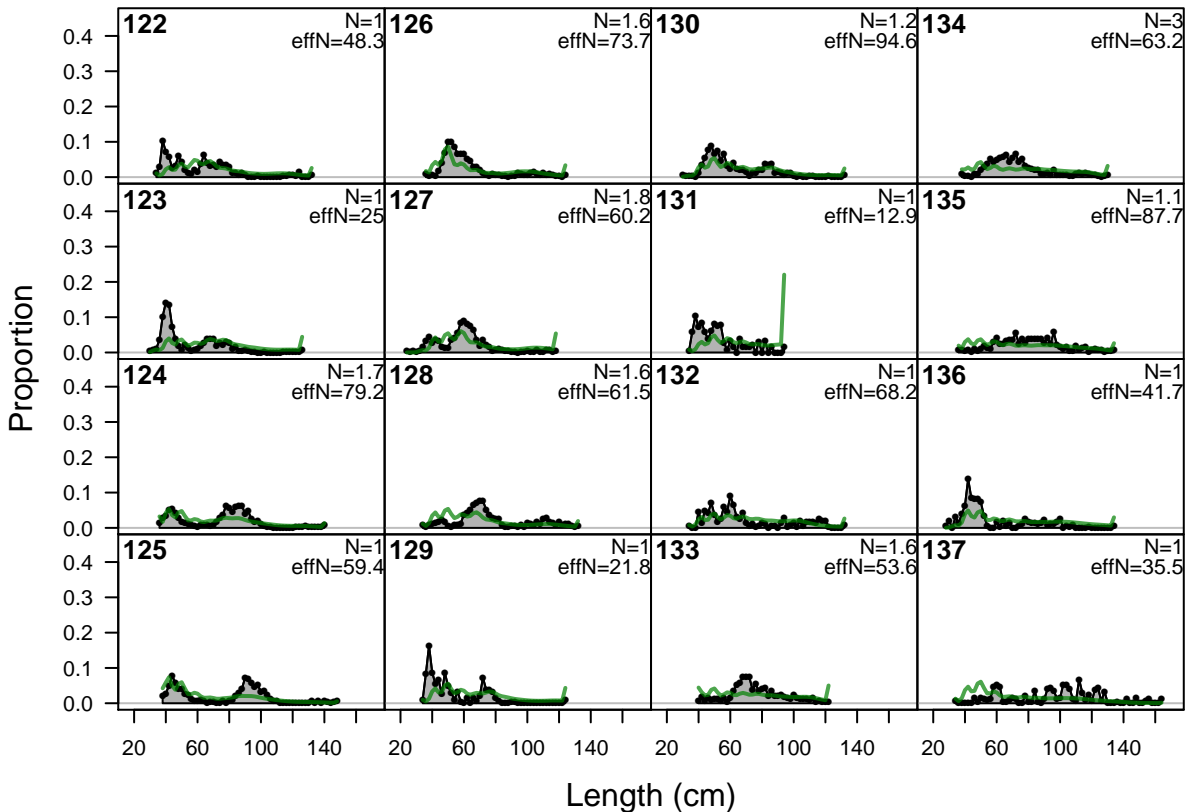


# length comps, whole catch, F3-OBJ\_C

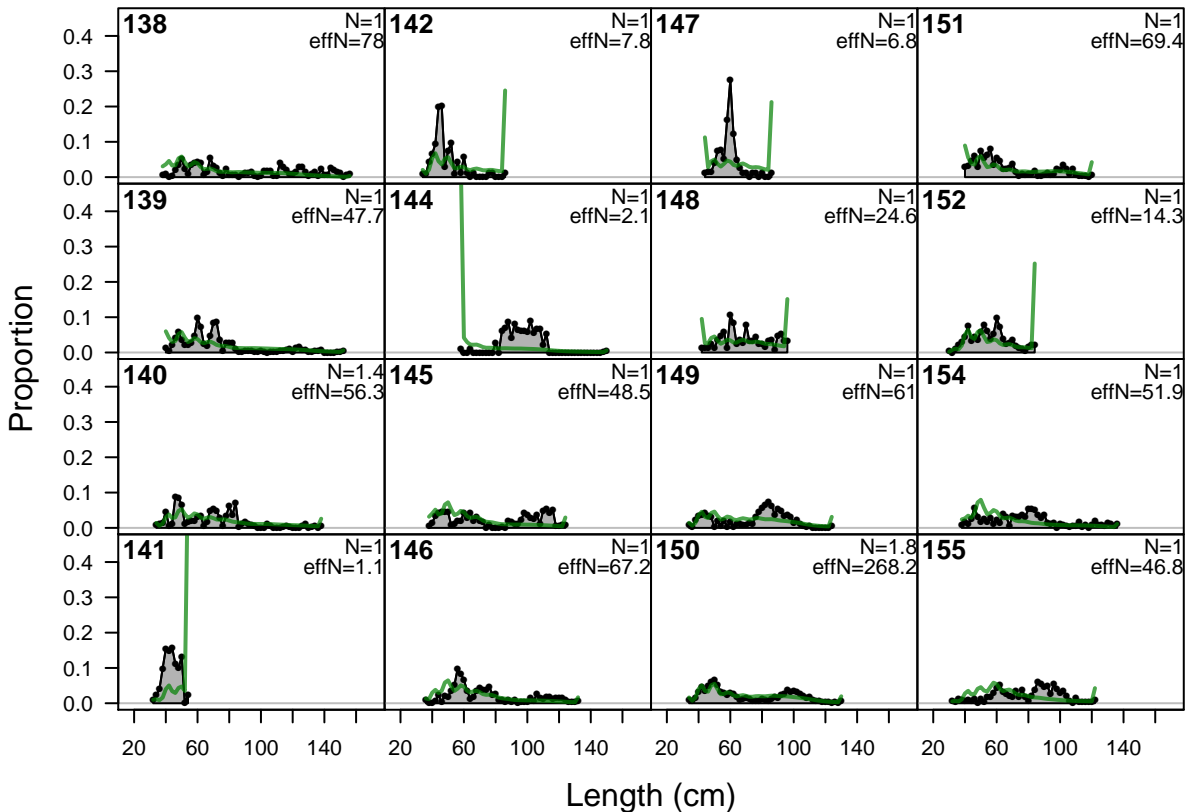




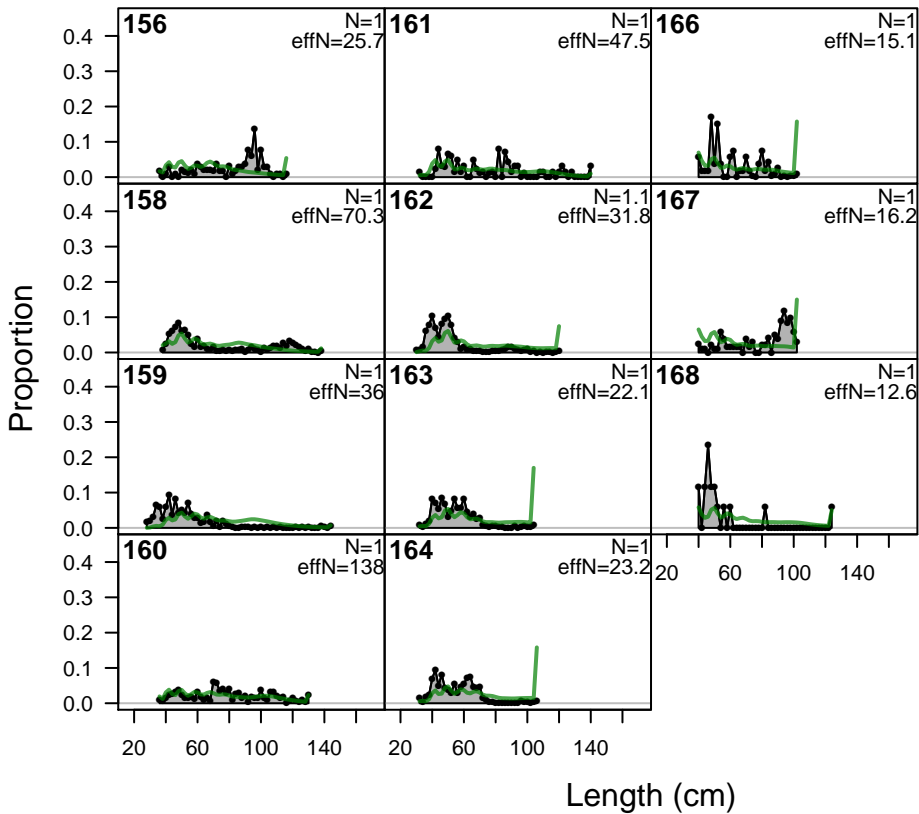
# length comps, whole catch, F3-OBJ\_C



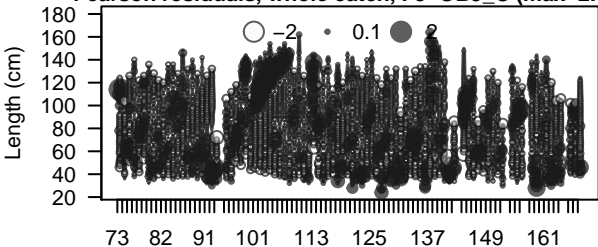
## length comps, whole catch, F3-OBJ\_C



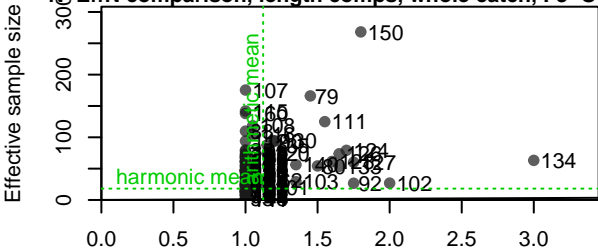
# length comps, whole catch, F3-OBJ\_C



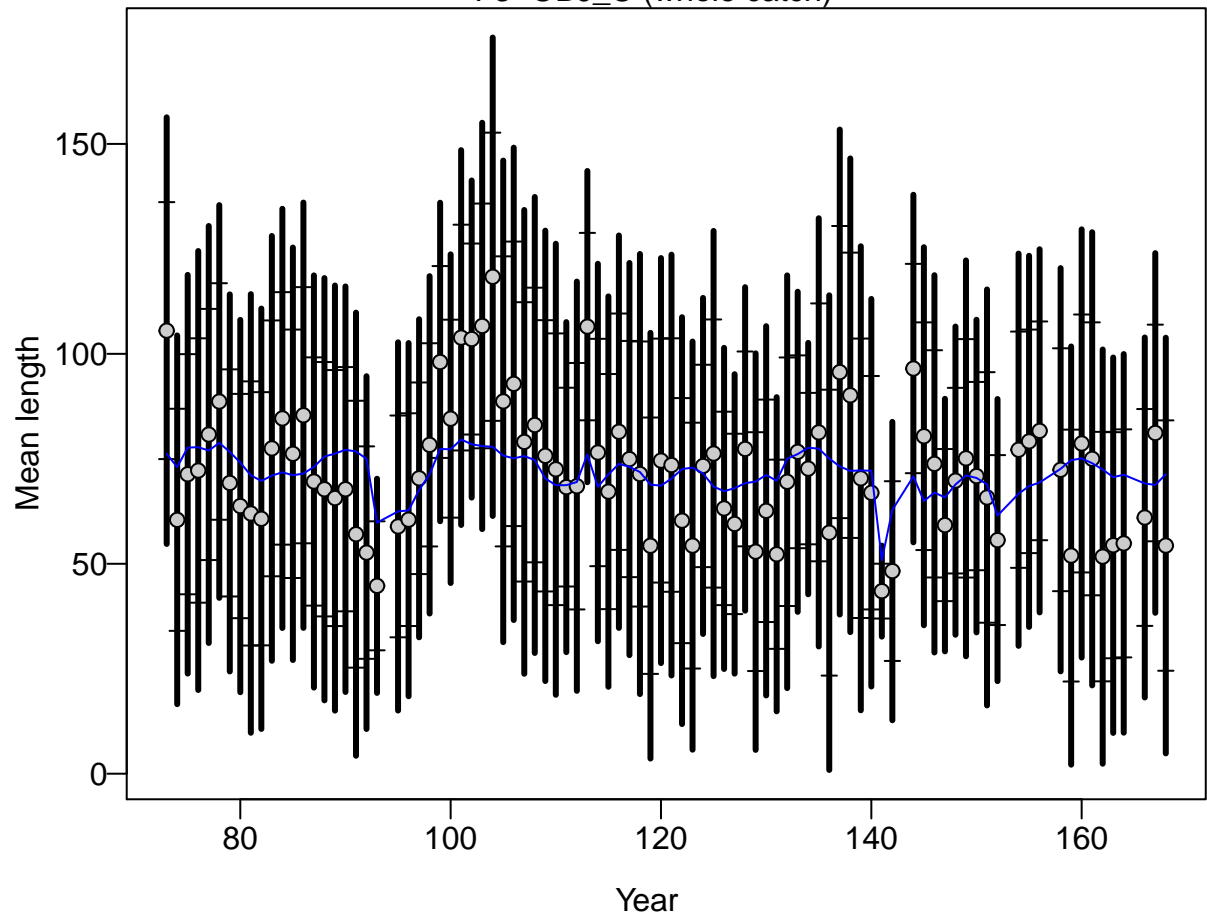
**Pearson residuals, whole catch, F3-OBJ\_C (max=2.07)**



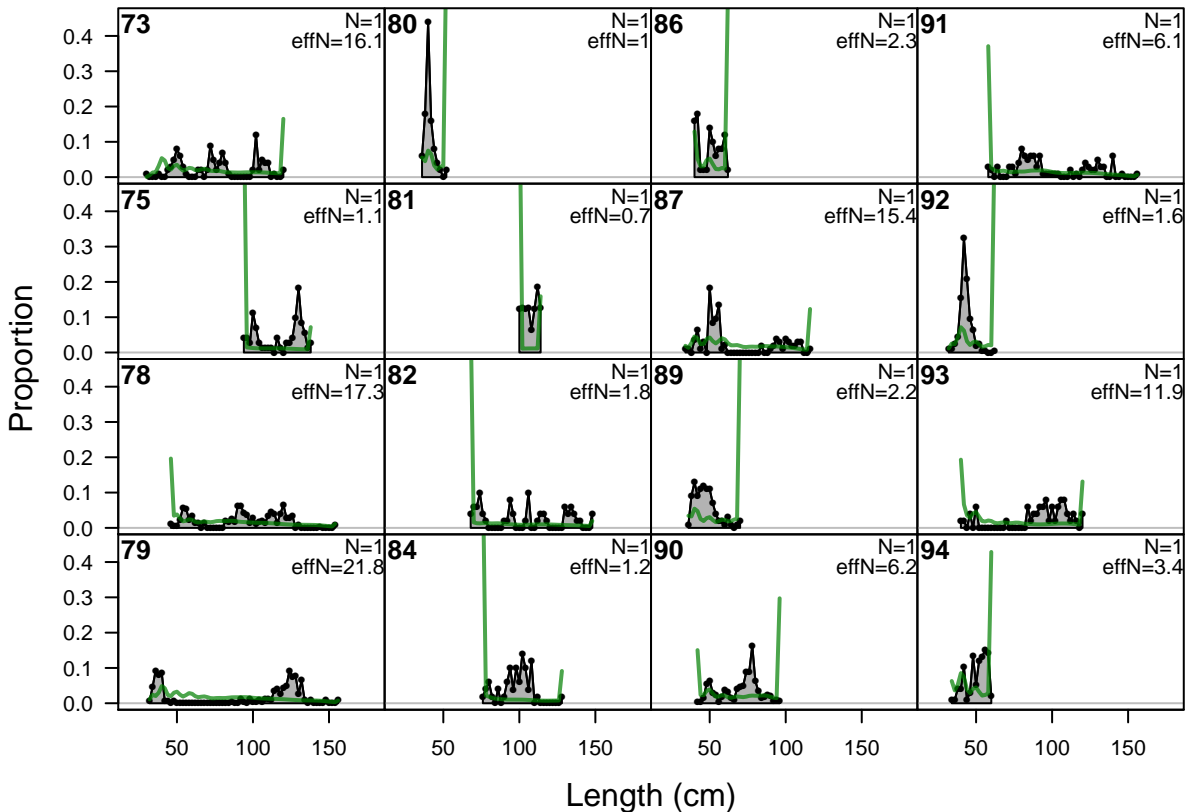
**N-EffN comparison, length comps, whole catch, F3-OBJ**



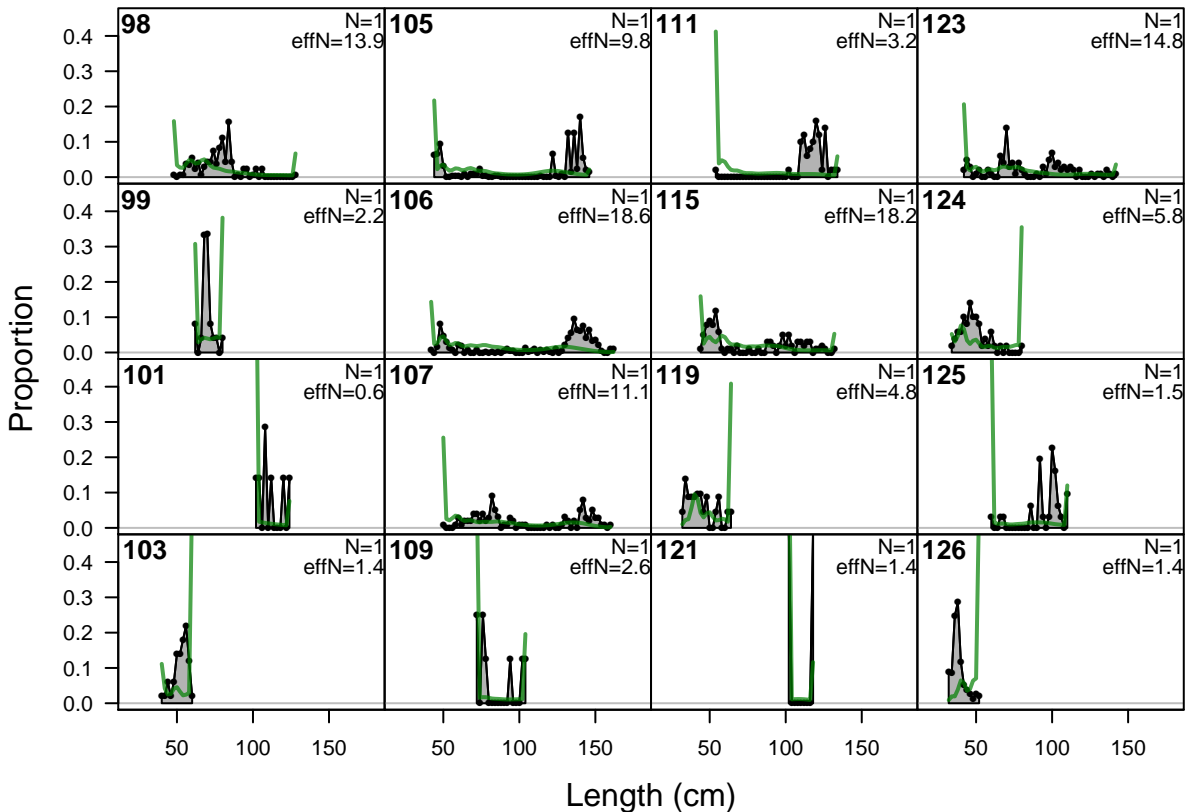
F3-OBJ\_C (whole catch)



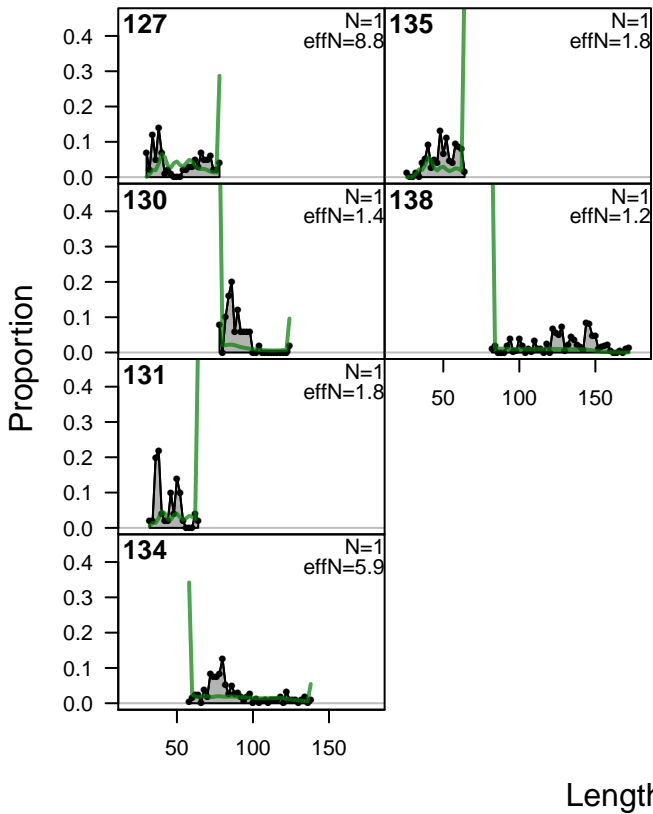
# length comps, whole catch, F4-OBJ\_I



# length comps, whole catch, F4-OBJ\_I

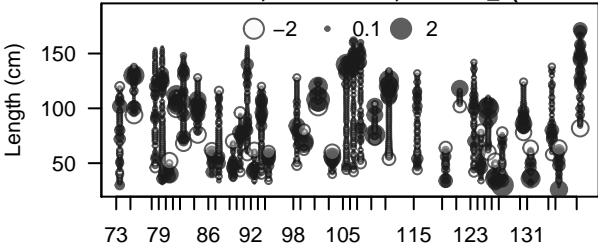


# length comps, whole catch, F4-OBJ\_I

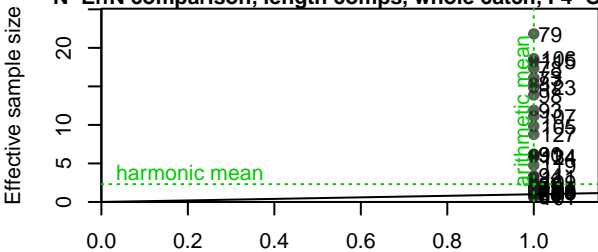




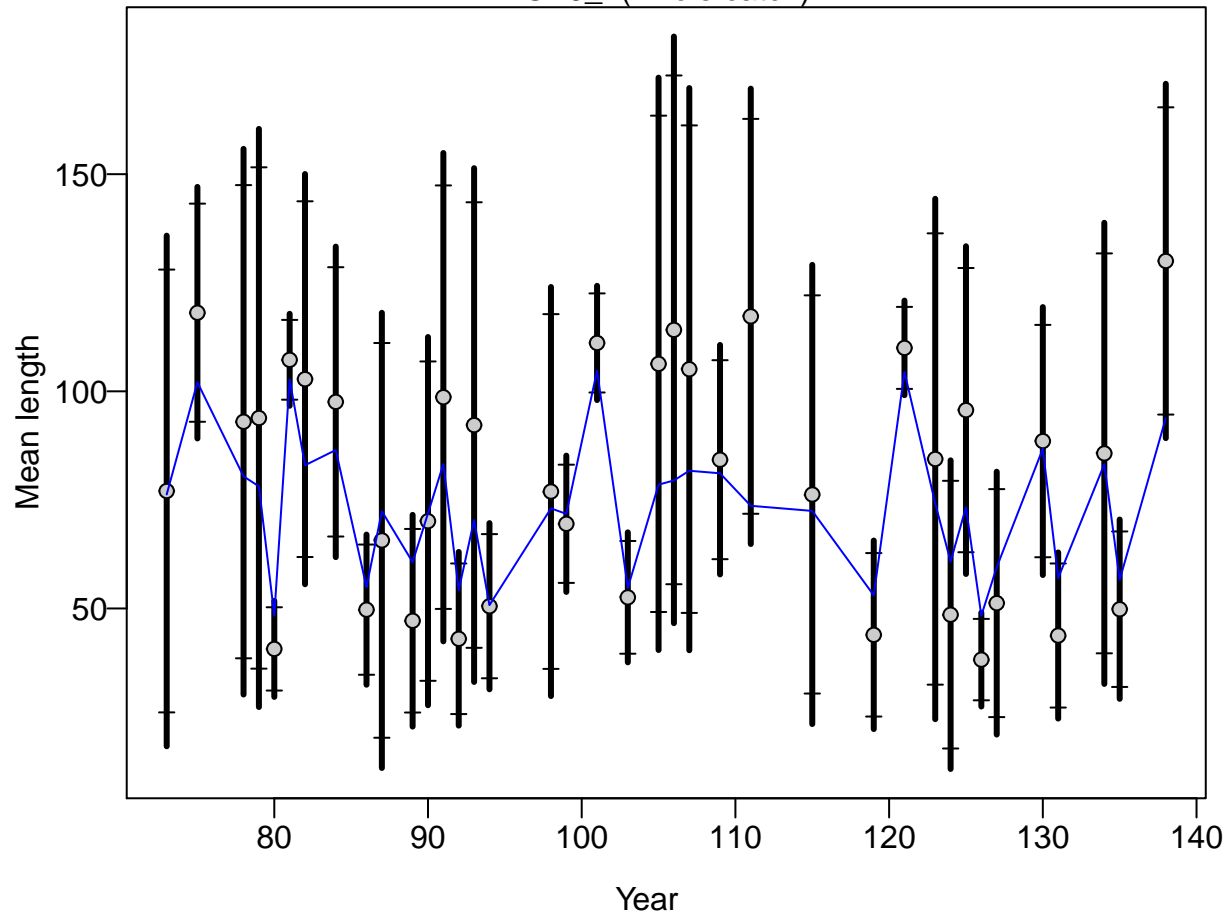
**Pearson residuals, whole catch, F4-OBJ\_1 (max=2.31)**



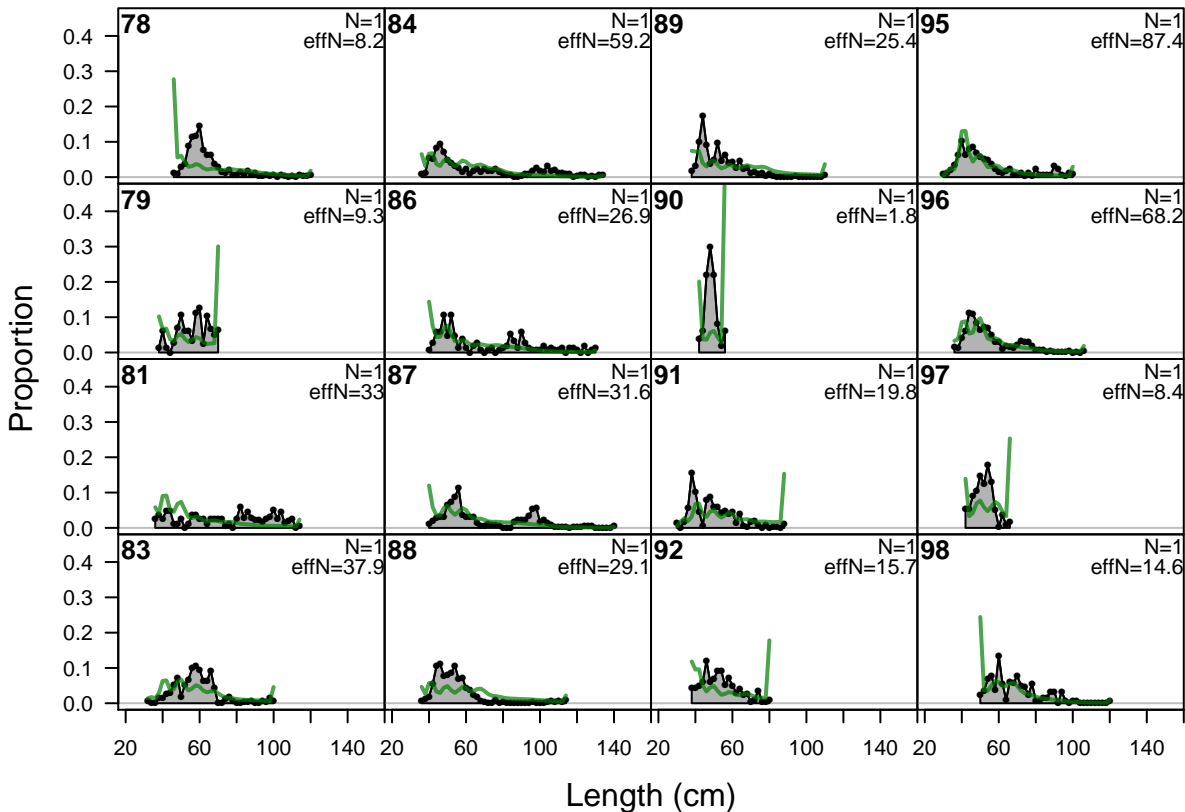
**N-EffN comparison, length comps, whole catch, F4-OB.**



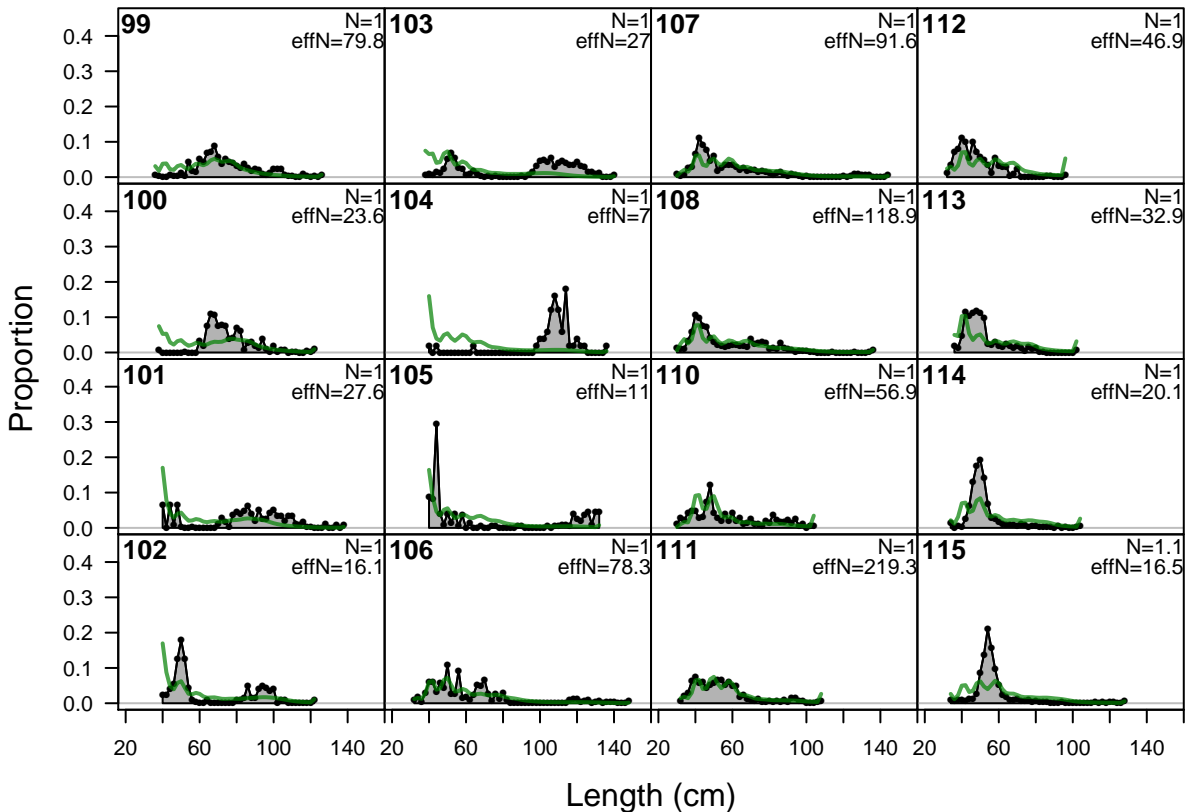
F4-OBJ\_I (whole catch)



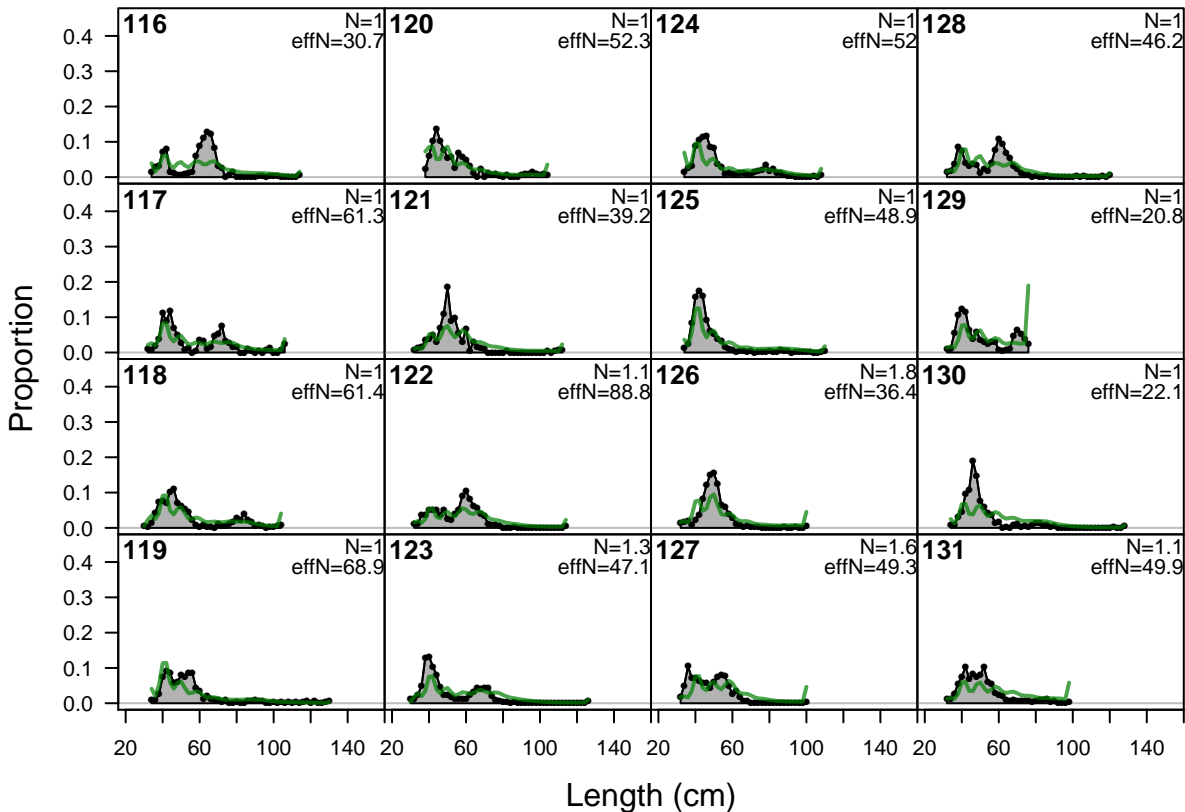
# length comps, whole catch, F5-OBJ\_N



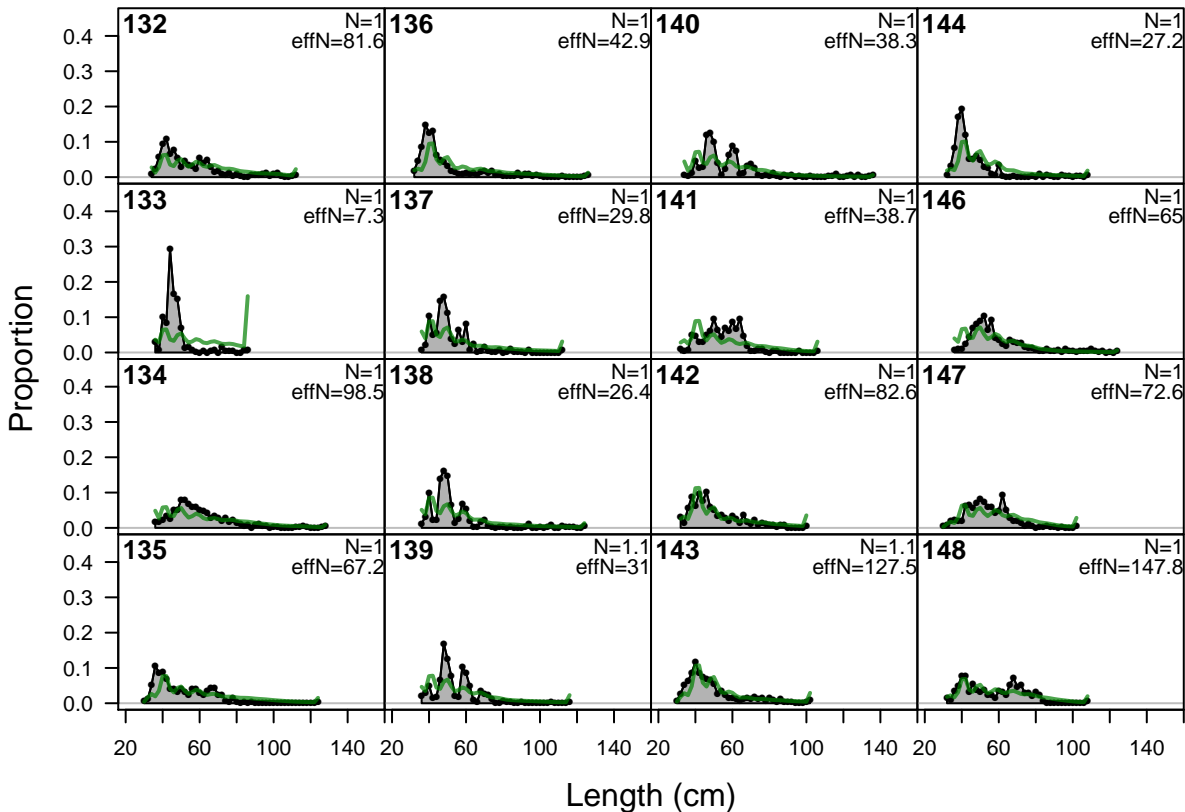
# length comps, whole catch, F5-Obj\_N



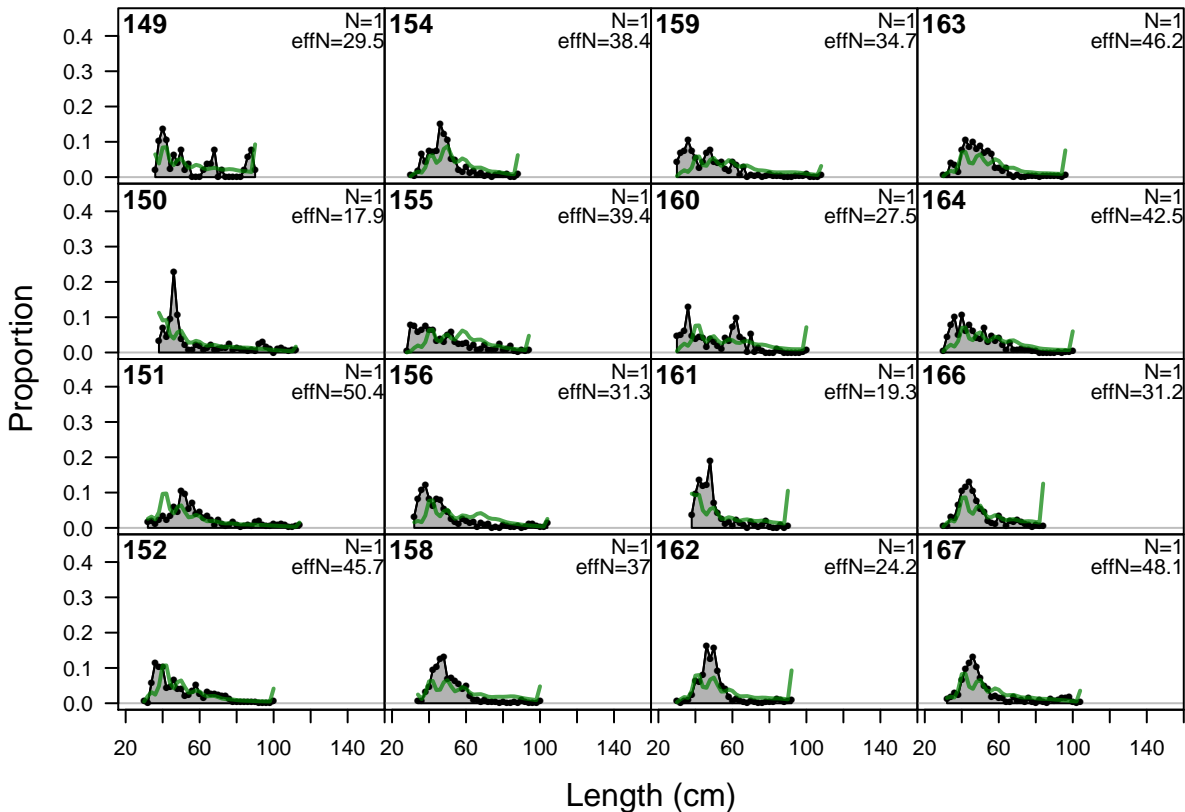
# length comps, whole catch, F5-Obj\_N



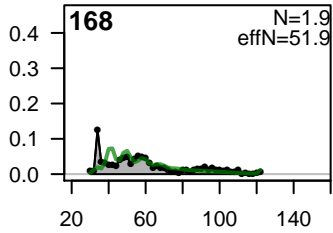
# length comps, whole catch, F5-Obj\_N



# length comps, whole catch, F5-Obj\_N



# length comps, whole catch, F5-Obj\_N

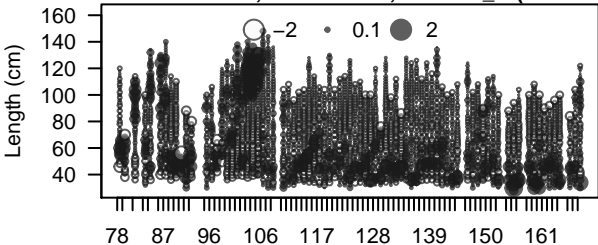


Proportion

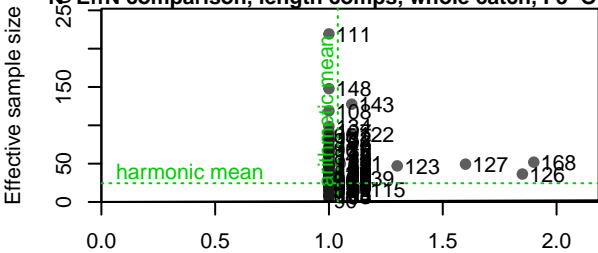
Length (cm)



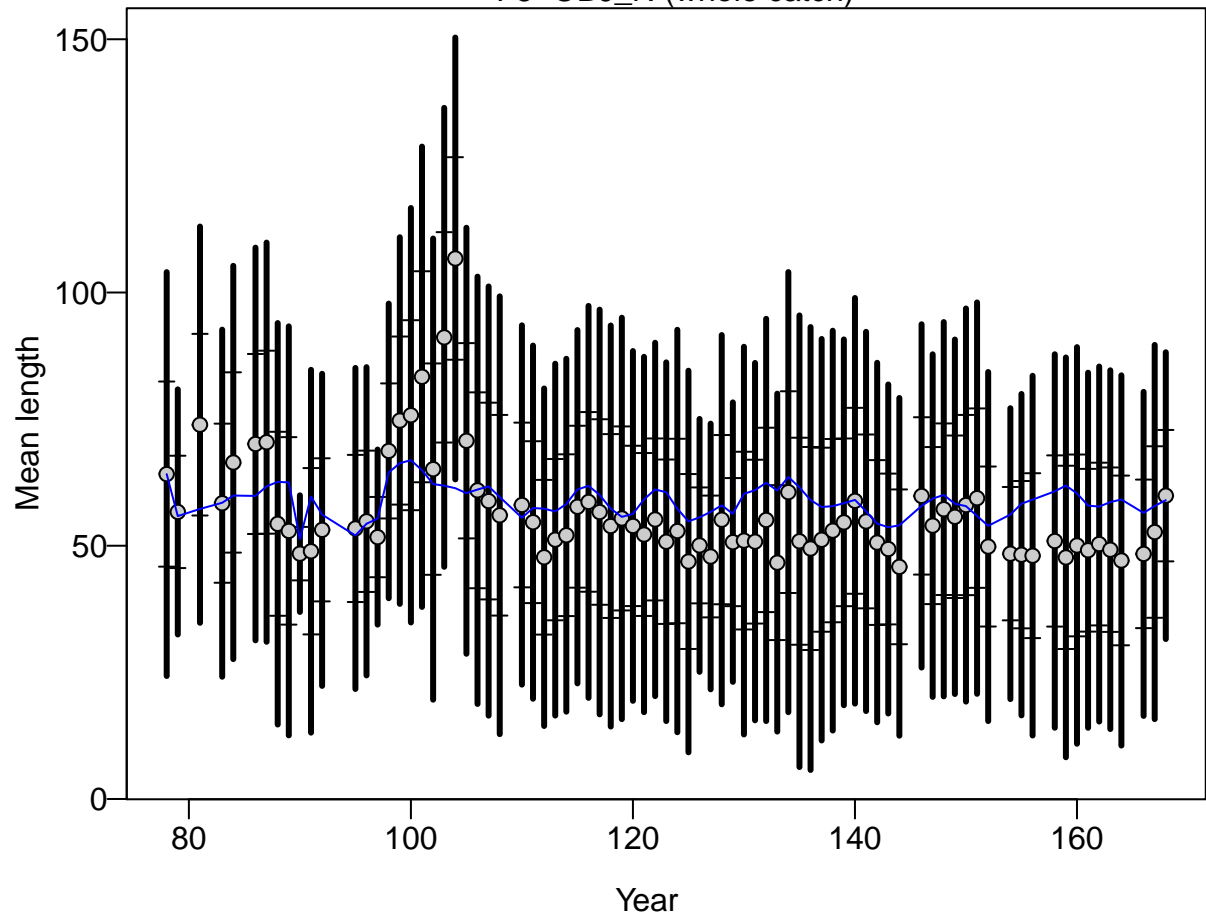
**Pearson residuals, whole catch, F5-OBJ\_N (max=2.09)**



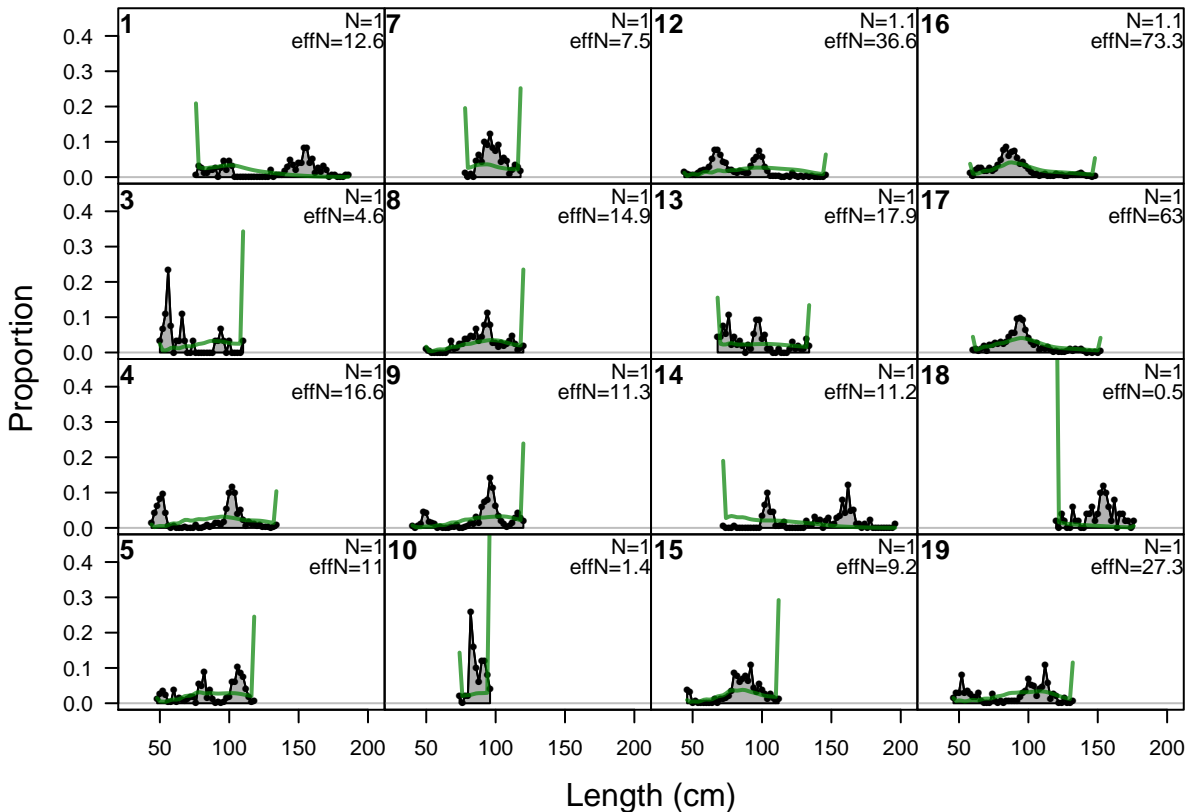
**EffN comparison, length comps, whole catch, F5-OBJ**



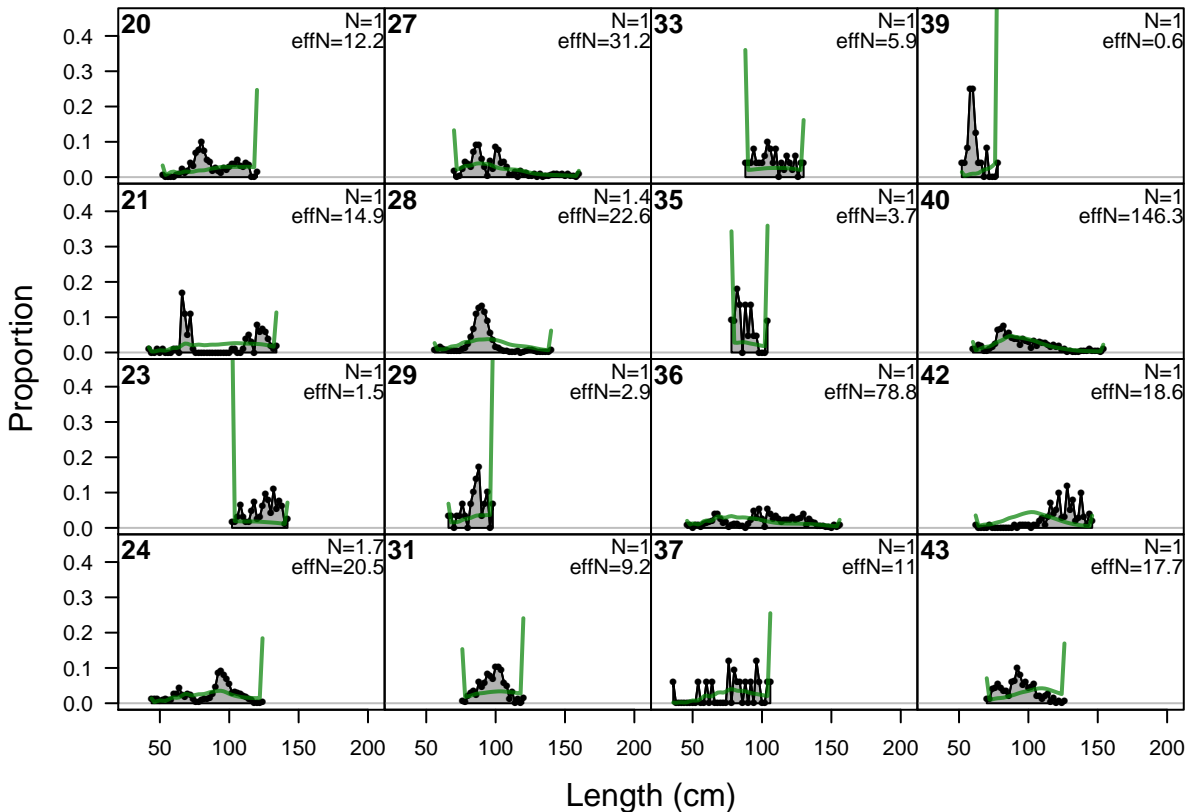
F5-OBJ\_N (whole catch)



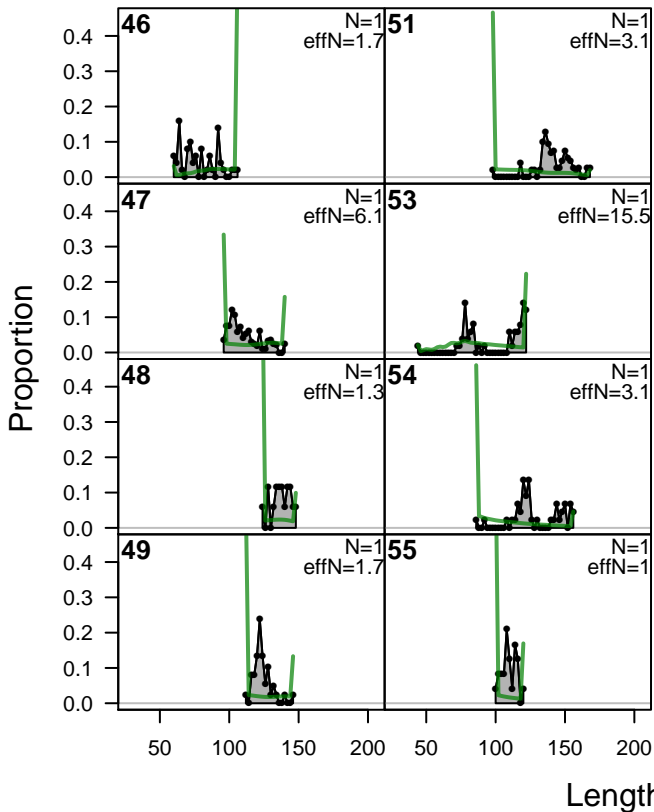
## length comps, whole catch, F6-NOA-DEL\_early



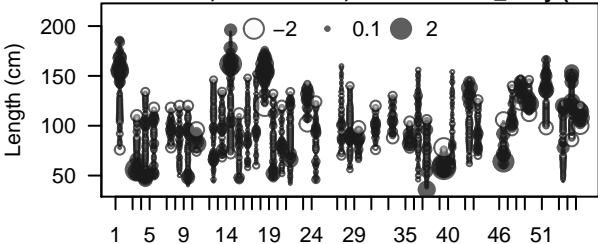
## length comps, whole catch, F6-NOA-DEL\_early



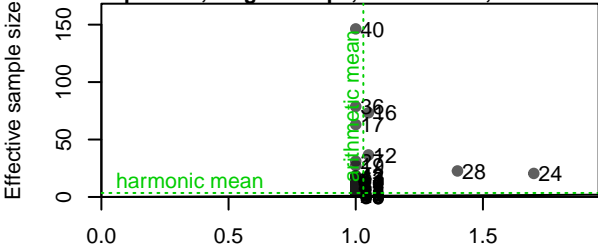
# length comps, whole catch, F6-NOA-DEL\_early



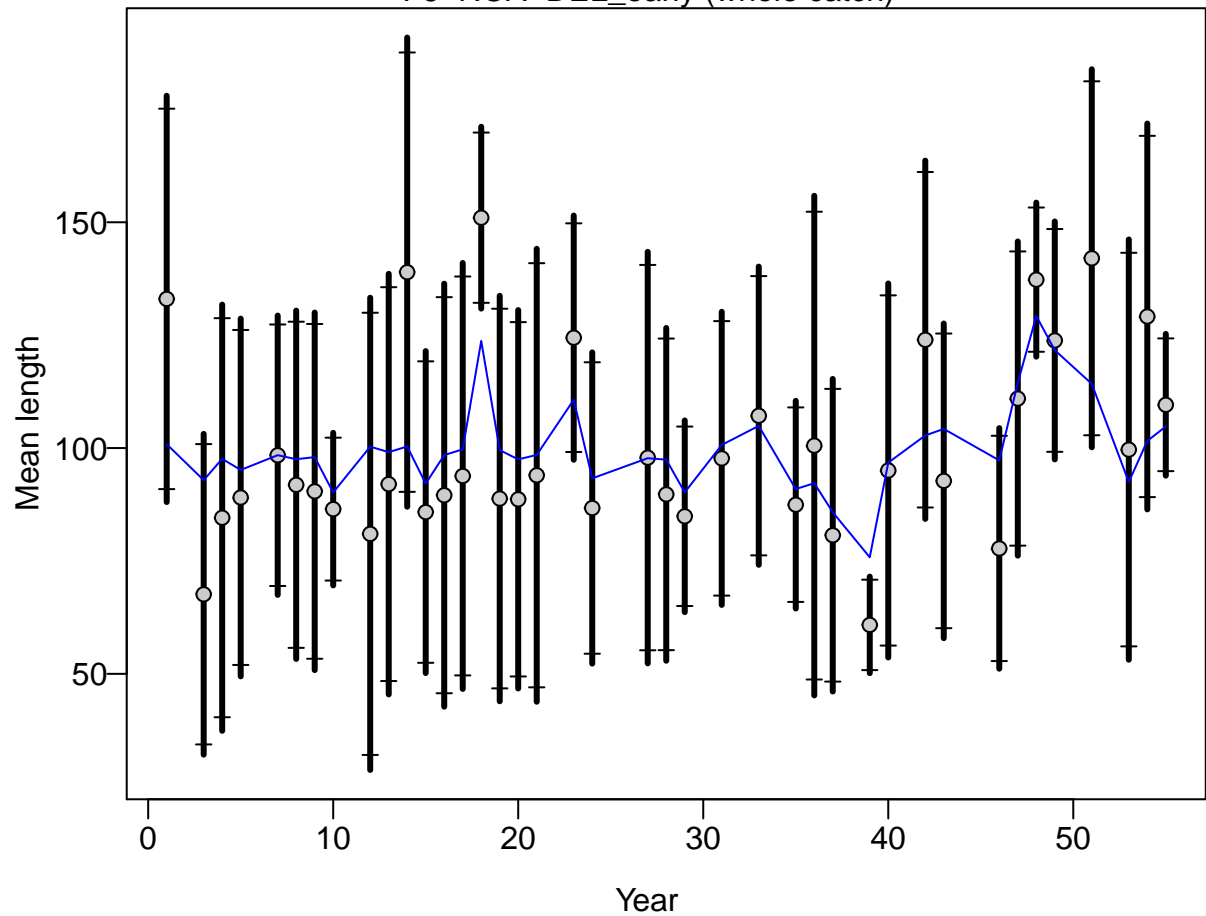
**Pearson residuals, whole catch, F6-NOA-DEL\_early (max=**



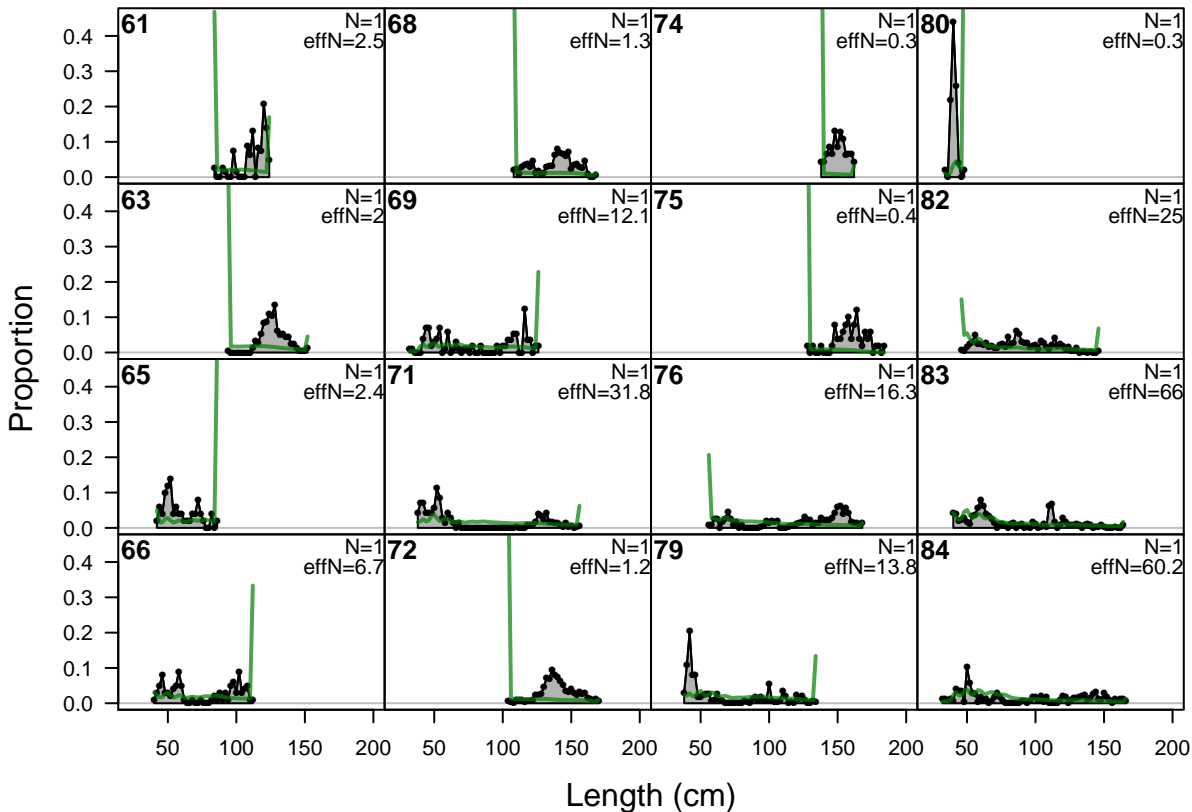
**N-EffN comparison, length comps, whole catch, F6-NOA-DE**



F6-NOA-DEL\_early (whole catch)

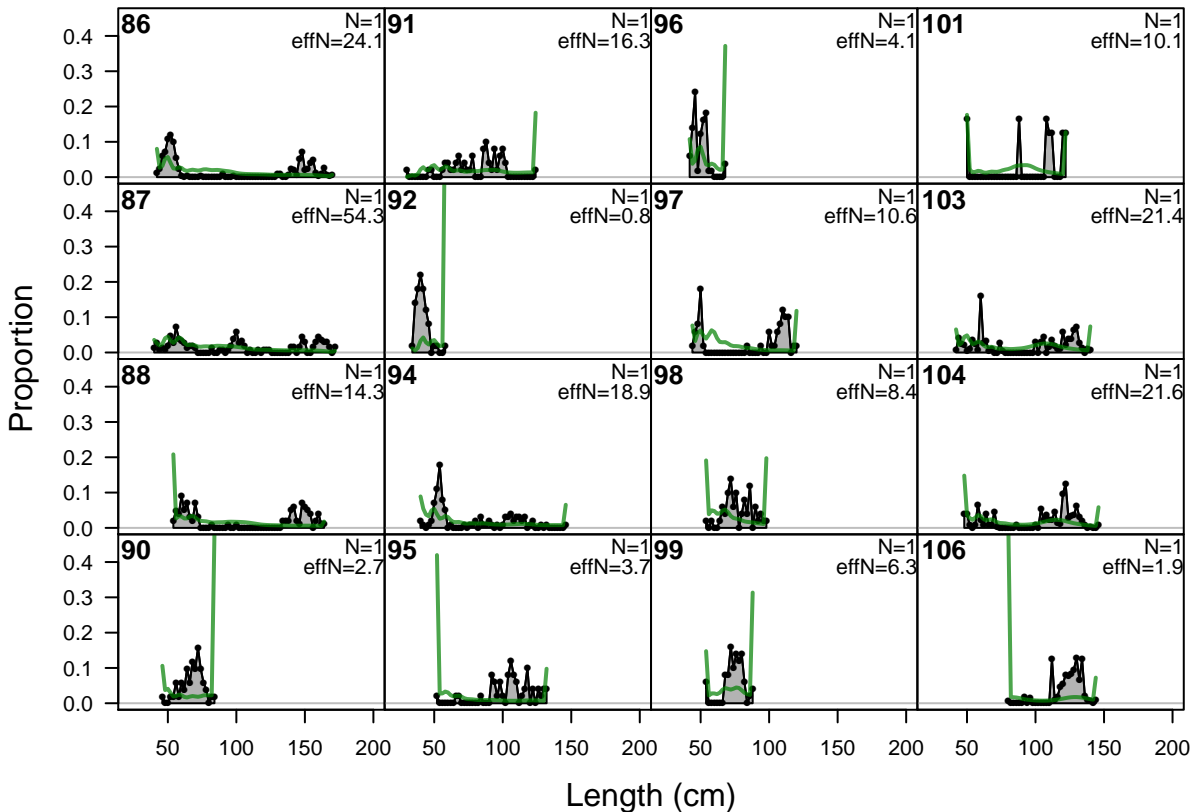


# length comps, whole catch, F7-NOA-DEL\_late

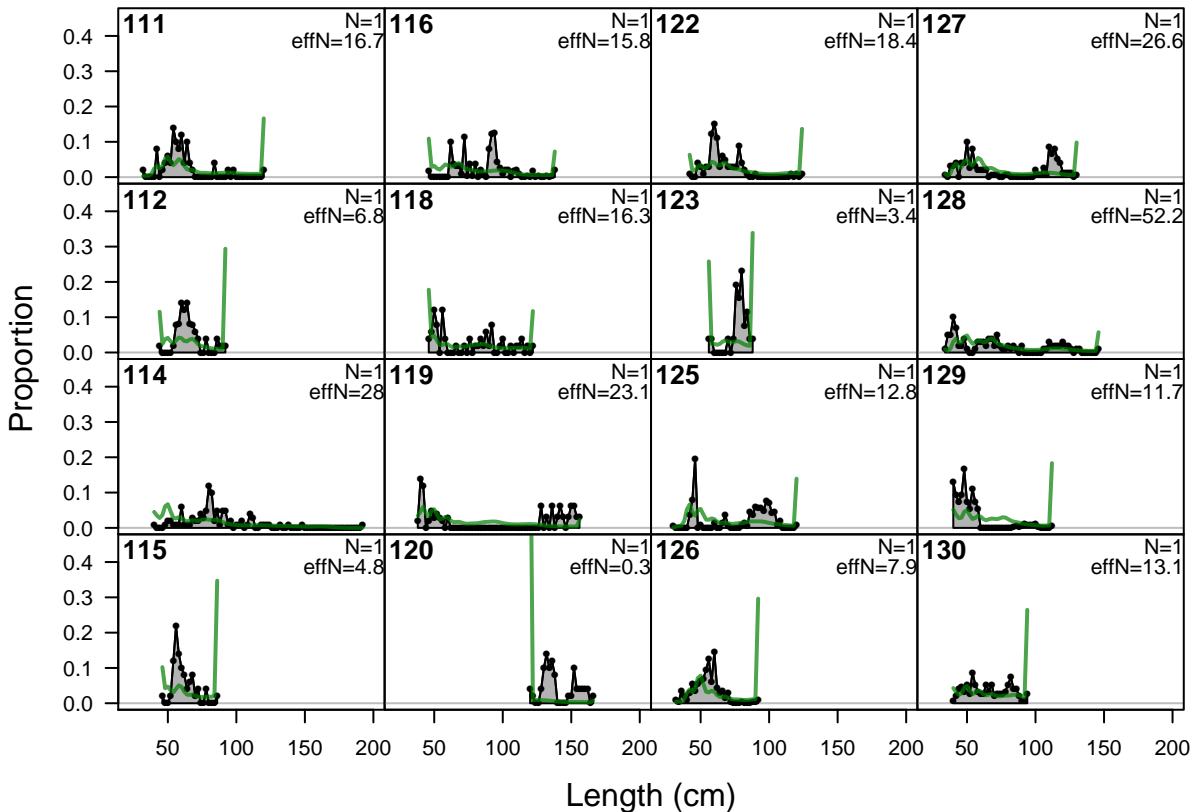




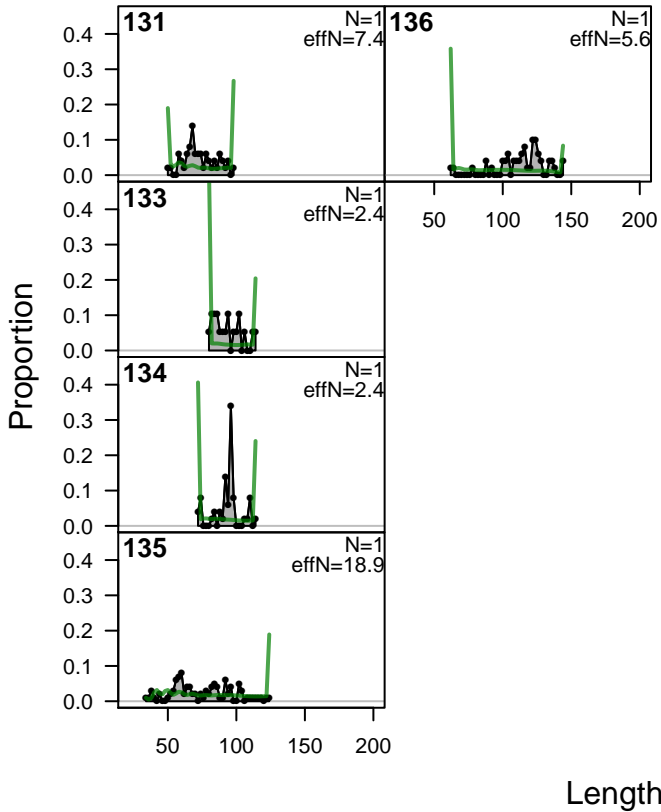
## length comps, whole catch, F7-NOA-DEL\_late



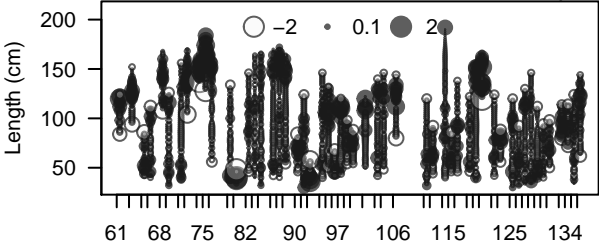
# length comps, whole catch, F7-NOA-DEL\_late



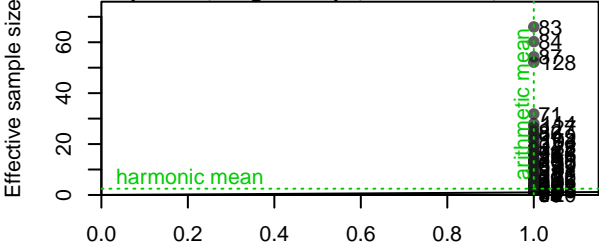
# length comps, whole catch, F7-NOA-DEL\_late



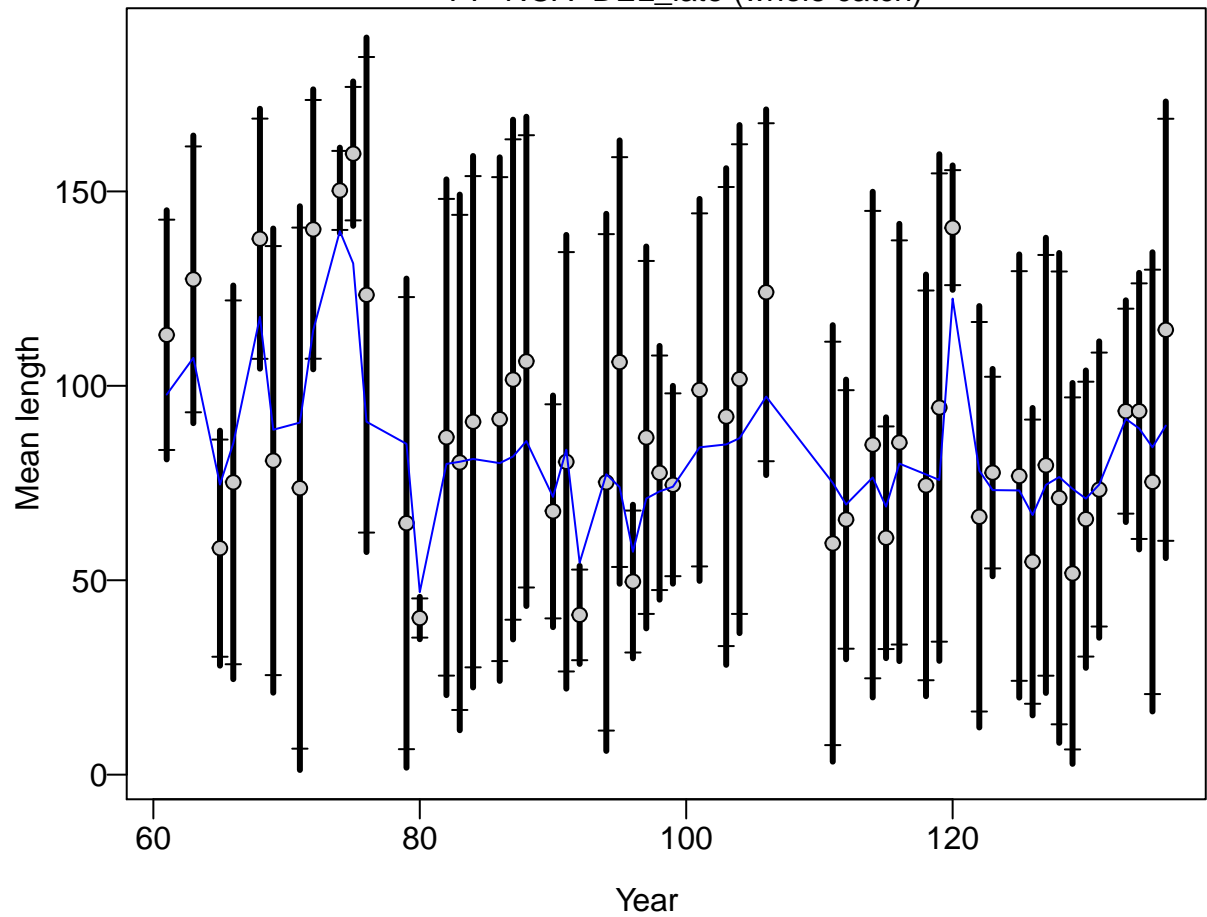
**Pearson residuals, whole catch, F7-NOA-DEL\_late (max=2)**



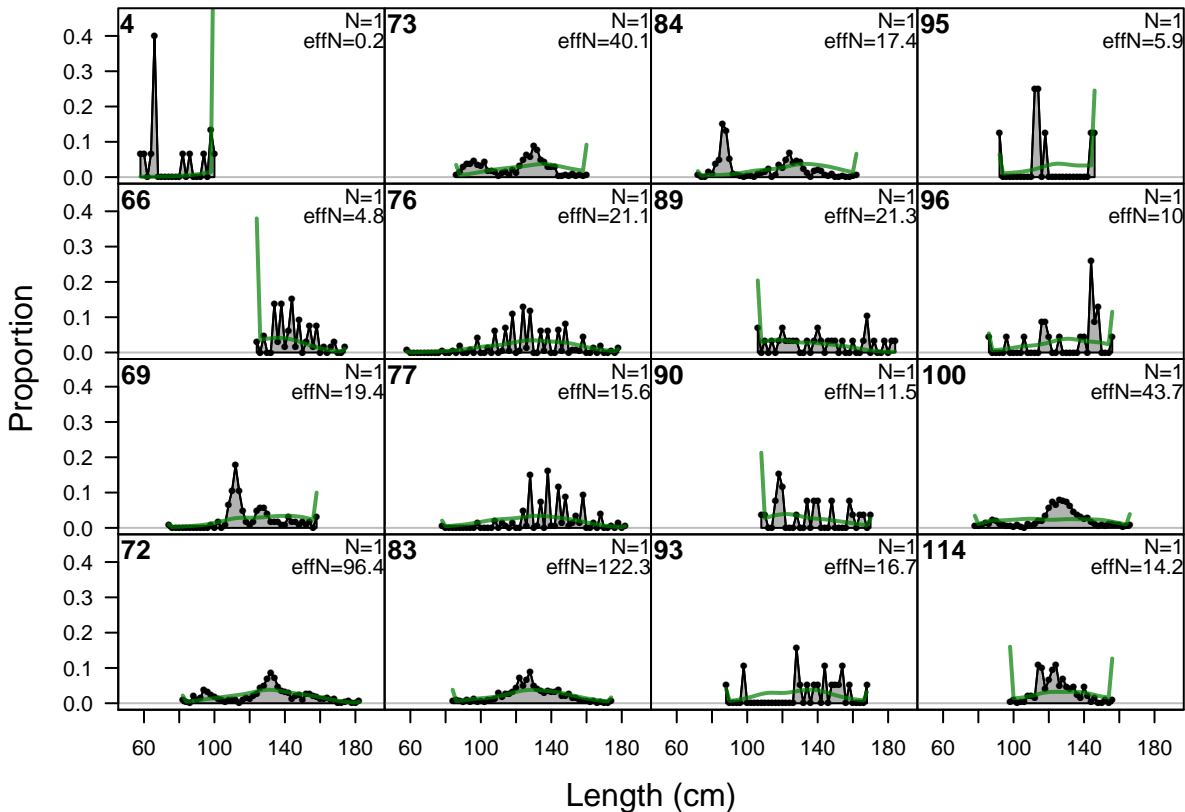
**N-EffN comparison, length comps, whole catch, F7-NOA-DE**



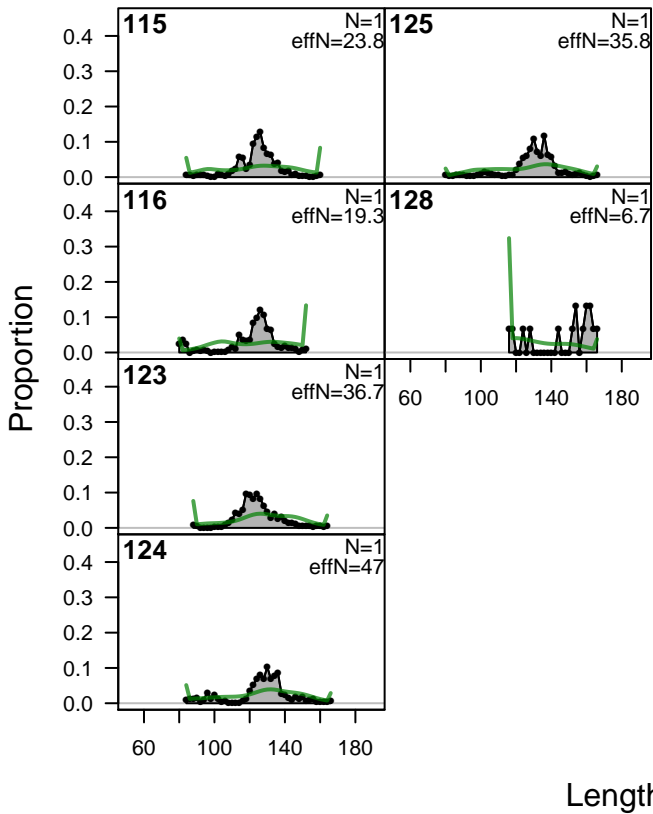
F7-NOA-DEL\_late (whole catch)



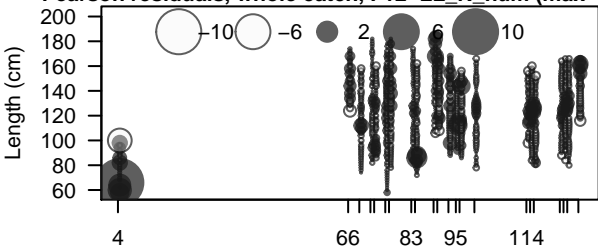
## length comps, whole catch, F12-LL\_N\_num



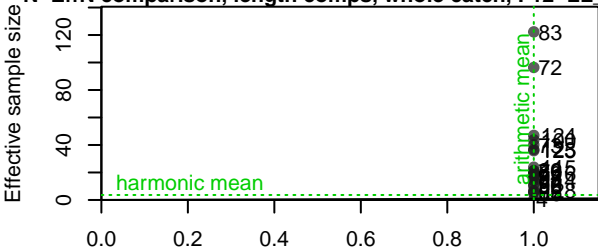
# length comps, whole catch, F12-LL\_N\_num



**Pearson residuals, whole catch, F12-LL N\_num (max=10.**

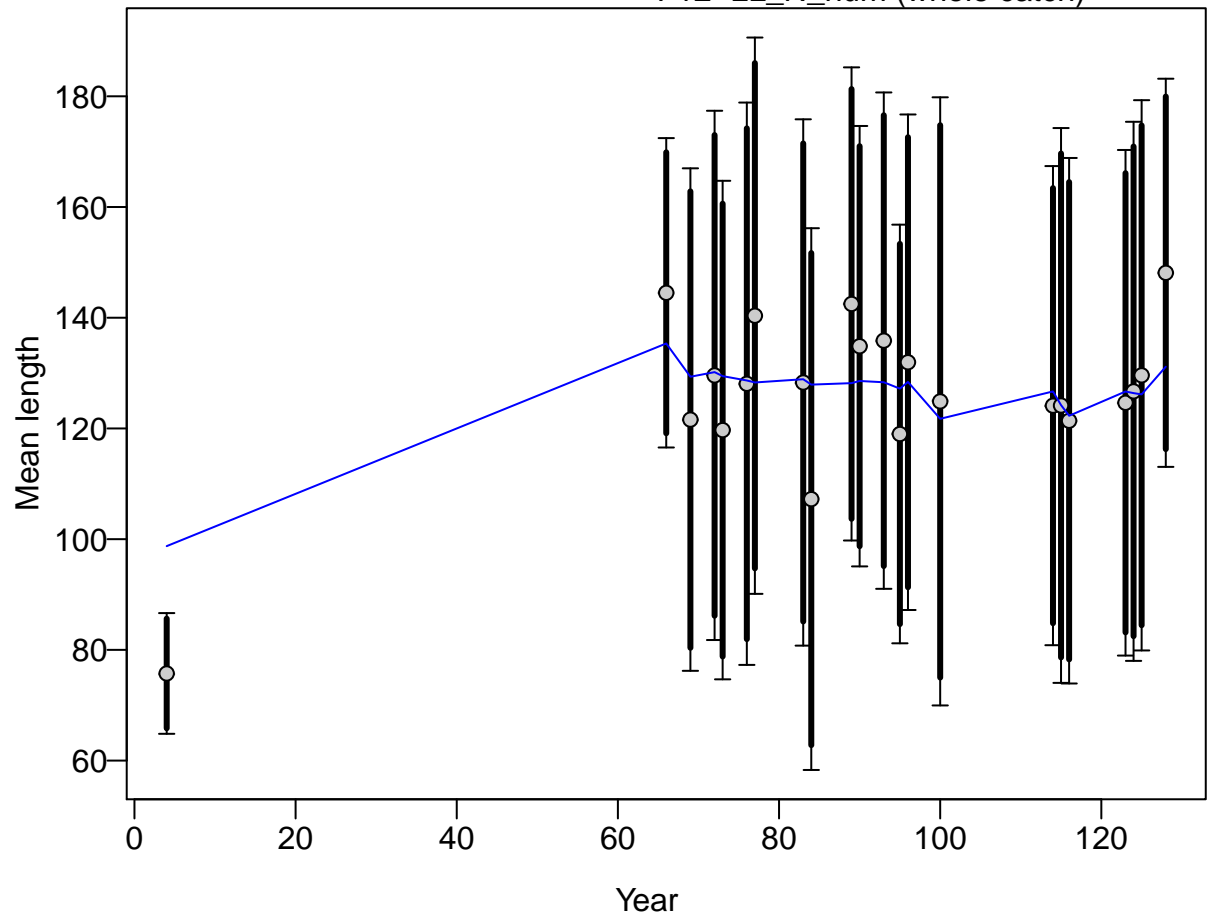


**N-EffN comparison, length comps, whole catch, F12-LL N.**

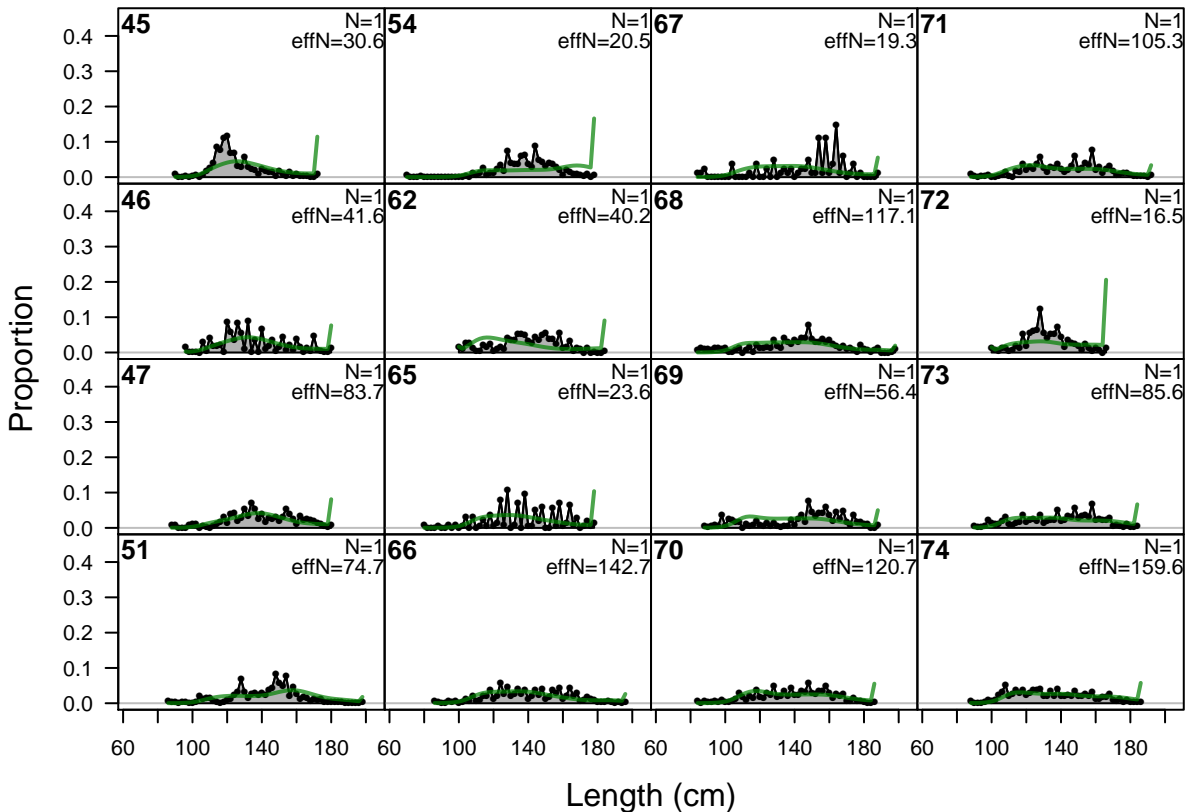




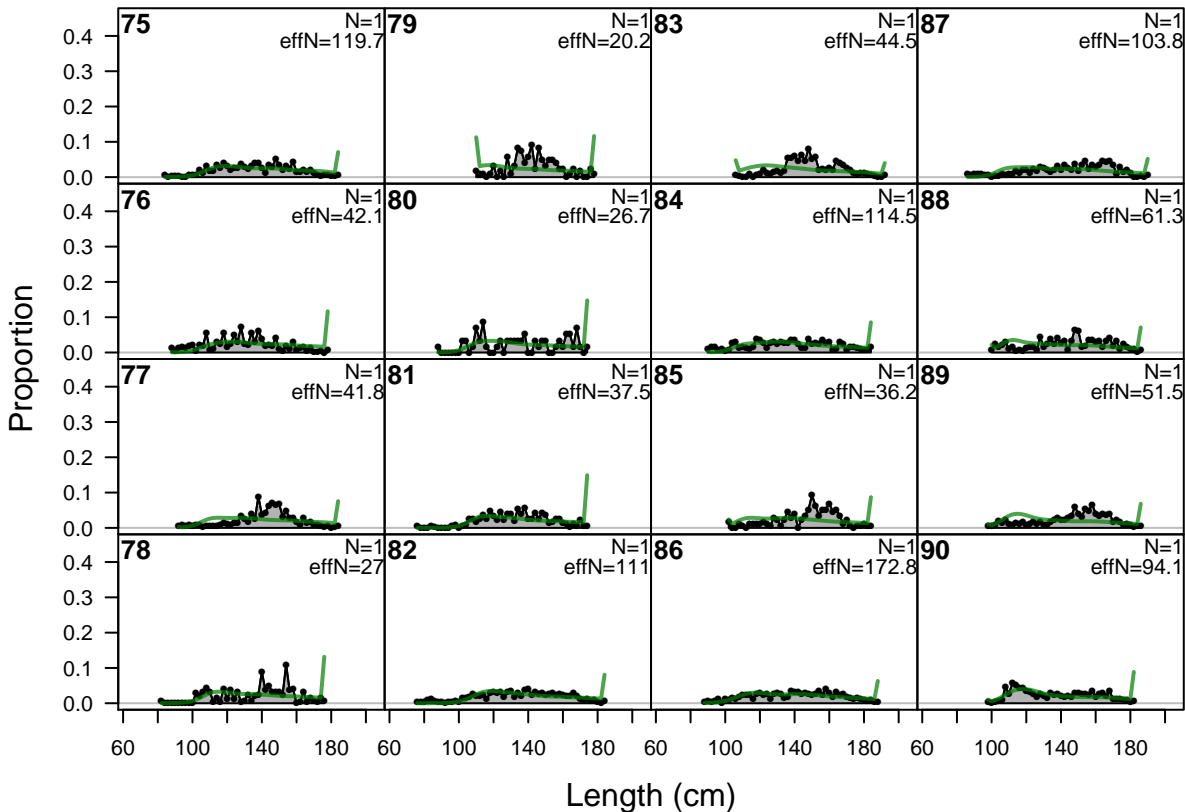
F12-LL\_N\_num (whole catch)



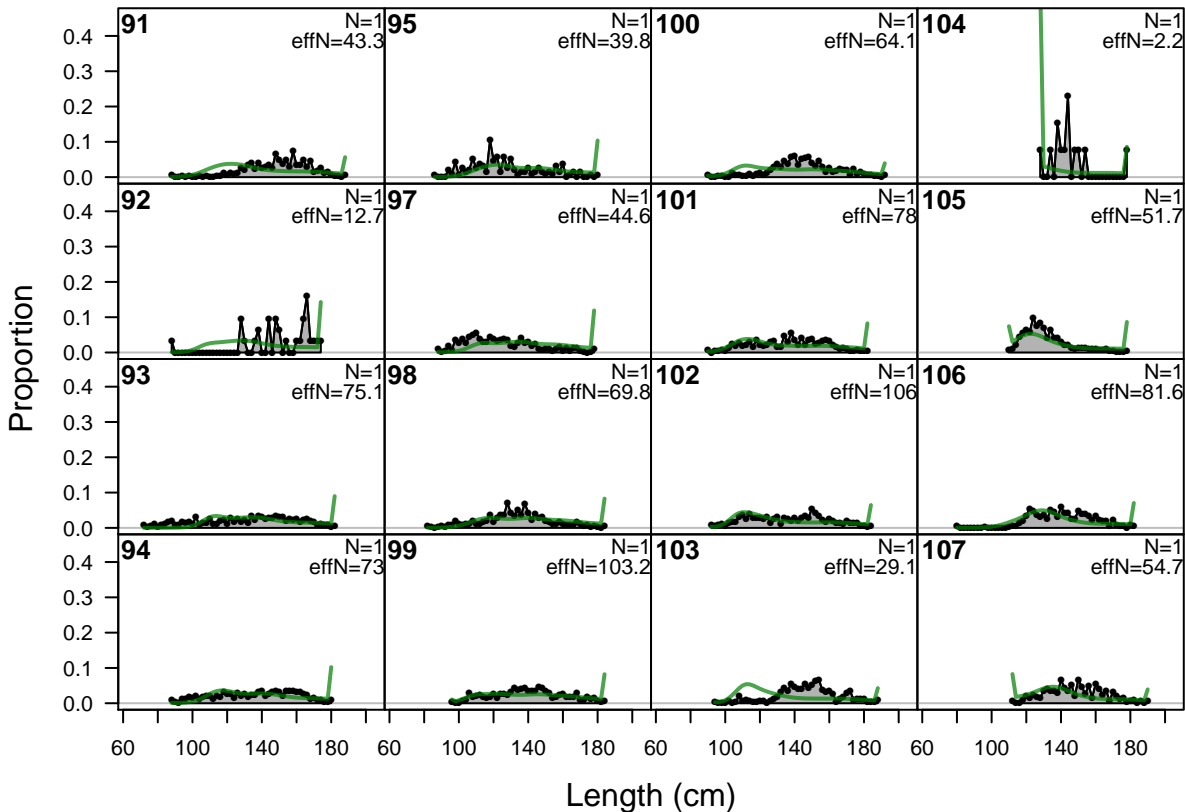
# length comps, whole catch, F13-LL\_C\_num



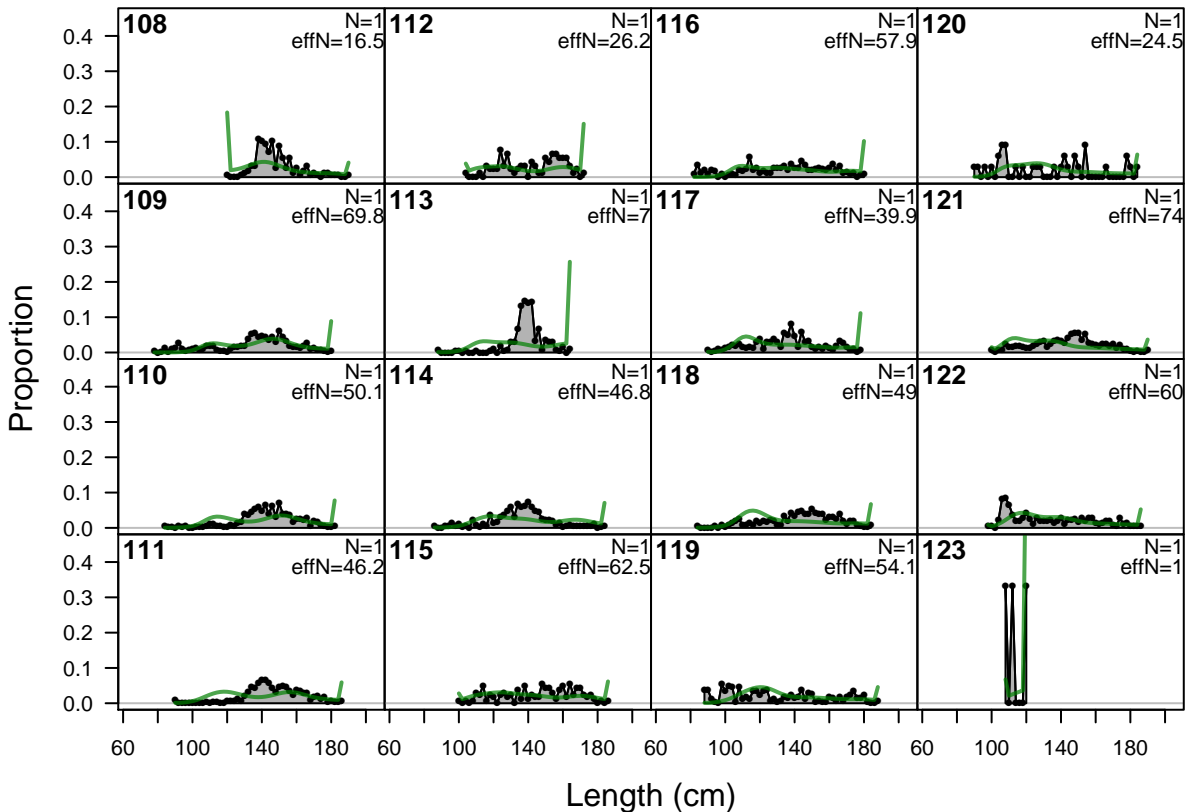
## length comps, whole catch, F13-LL\_C\_num



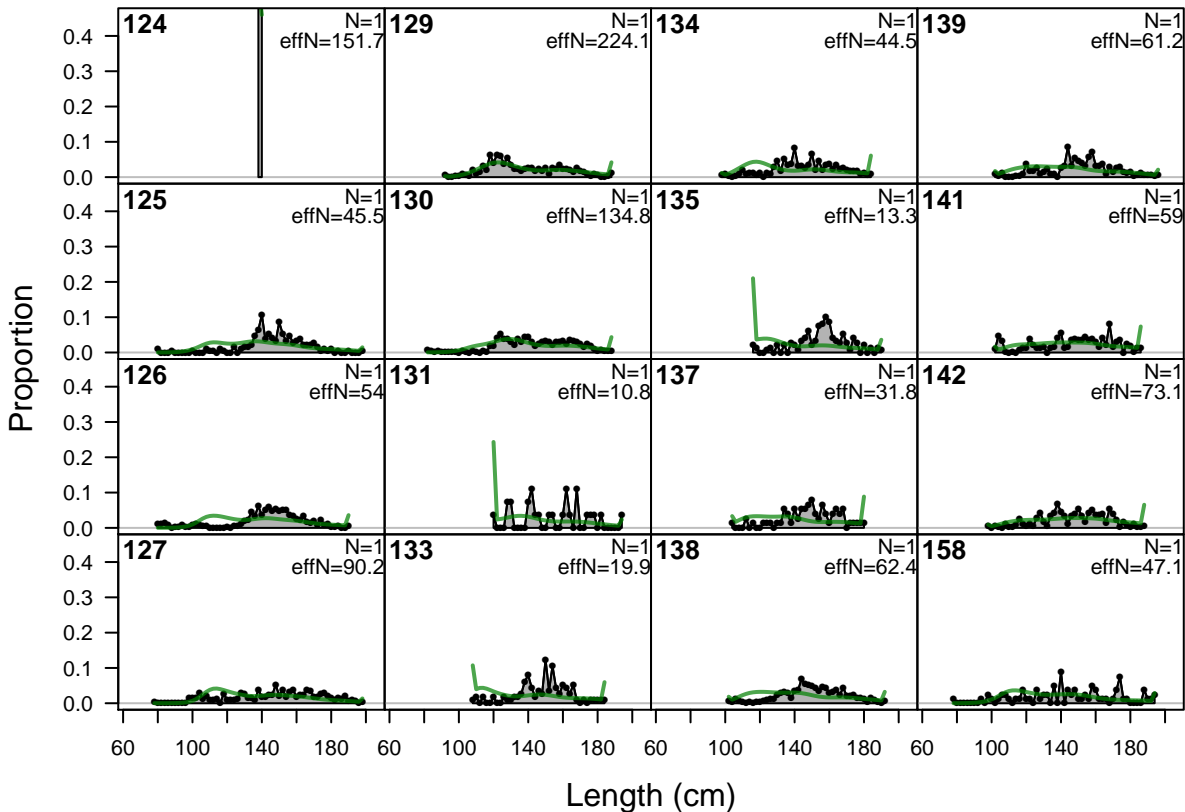
## length comps, whole catch, F13-LL\_C\_num



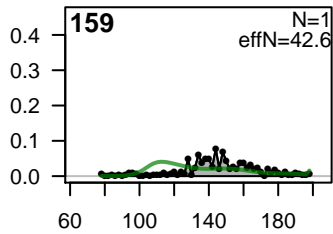
## length comps, whole catch, F13-LL\_C\_num



## length comps, whole catch, F13-LL\_C\_num



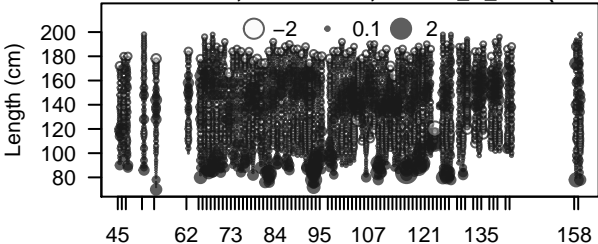
# length comps, whole catch, F13-LL\_C\_num



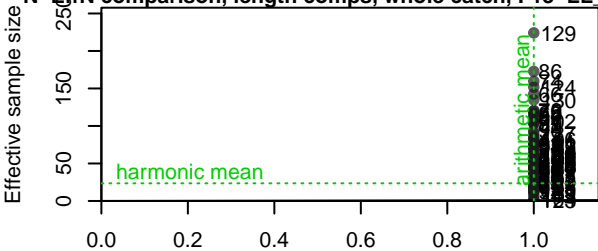
Proportion

Length (cm)

Pearson residuals, whole catch, F13-LL\_C\_num (max=2.

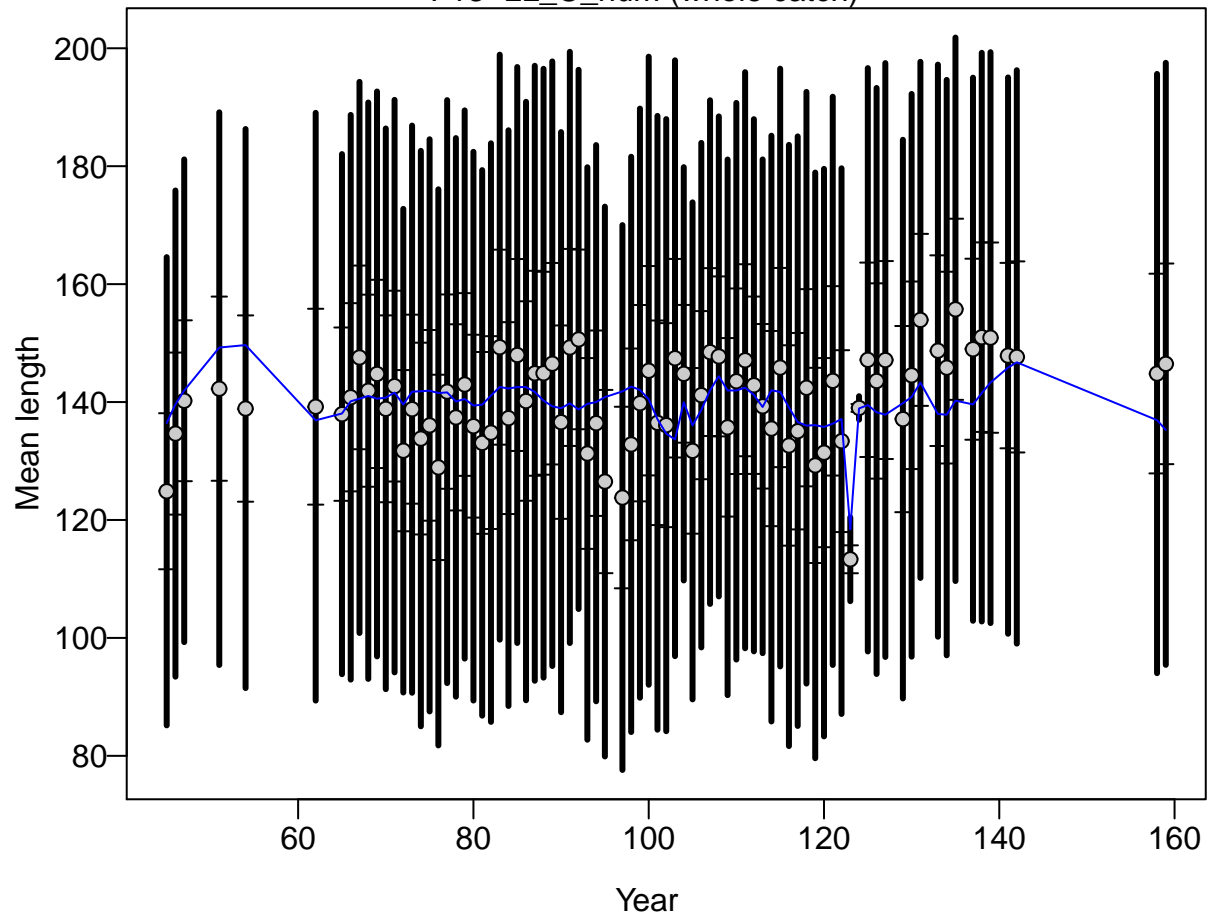


N-EffN comparison, length comps, whole catch, F13-LL\_C.

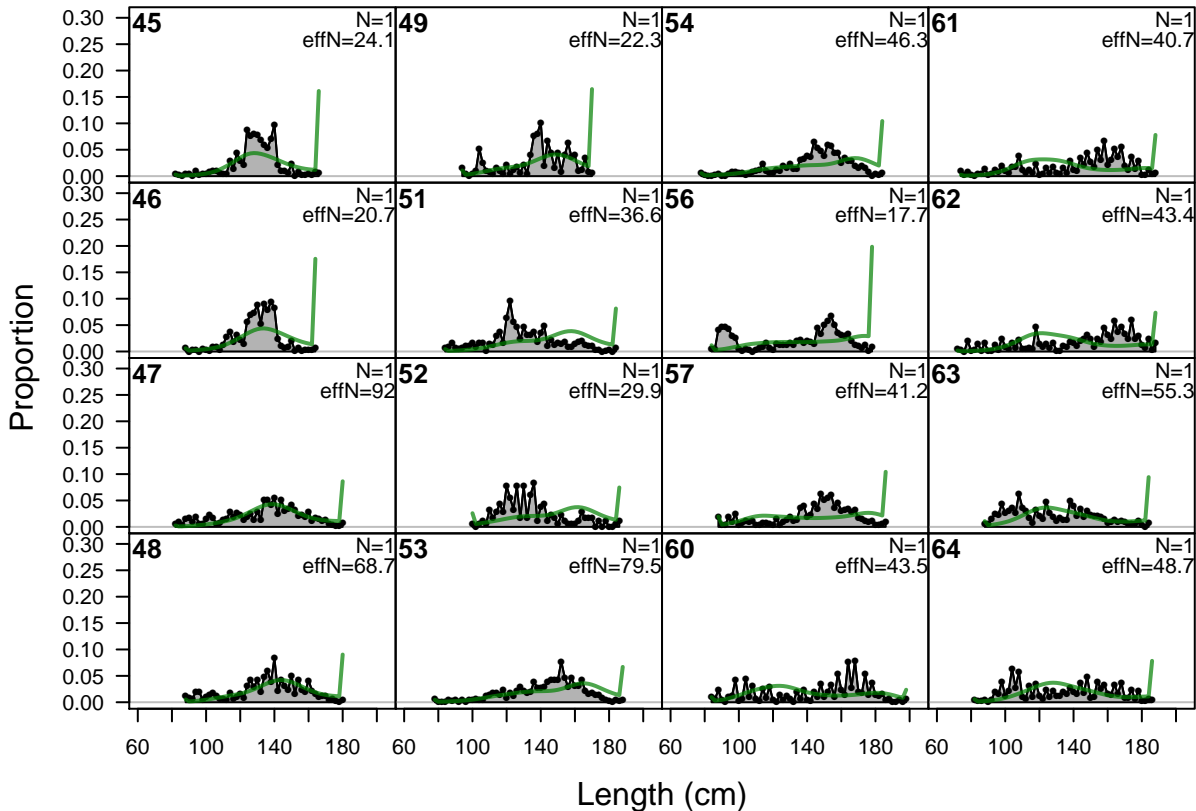




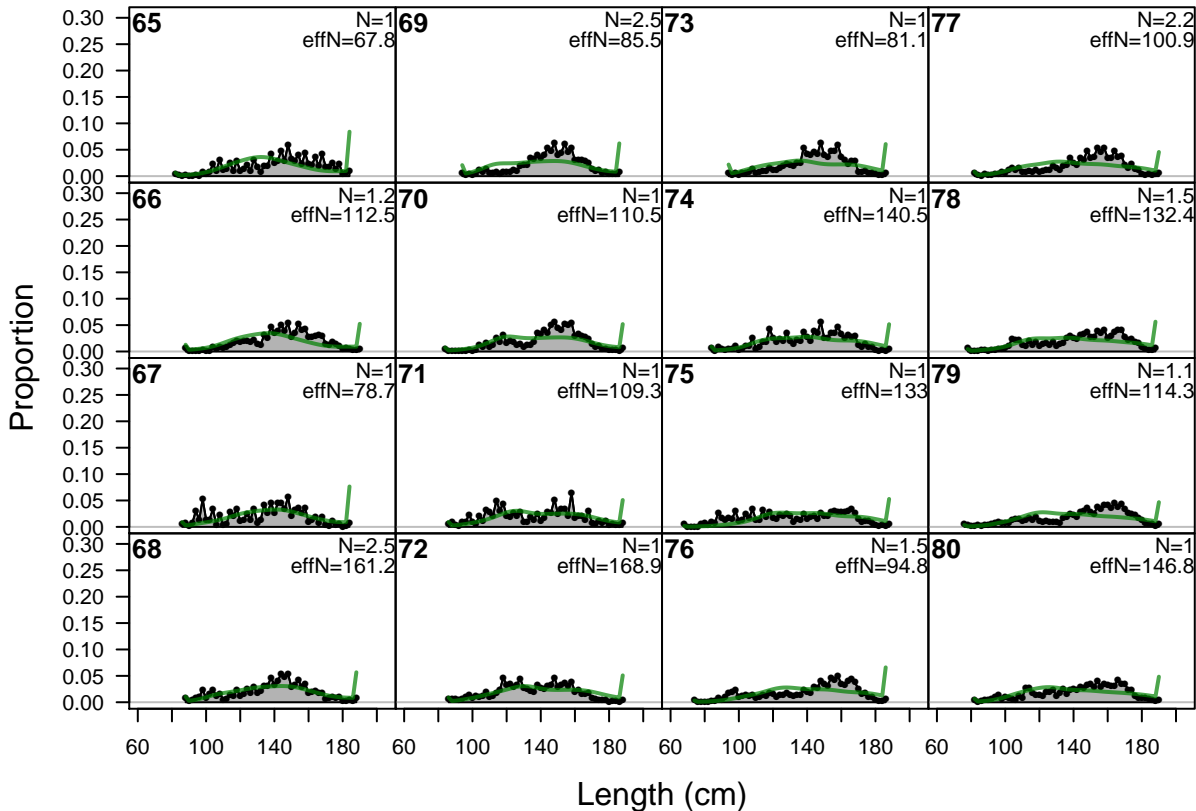
F13-LL\_C\_num (whole catch)



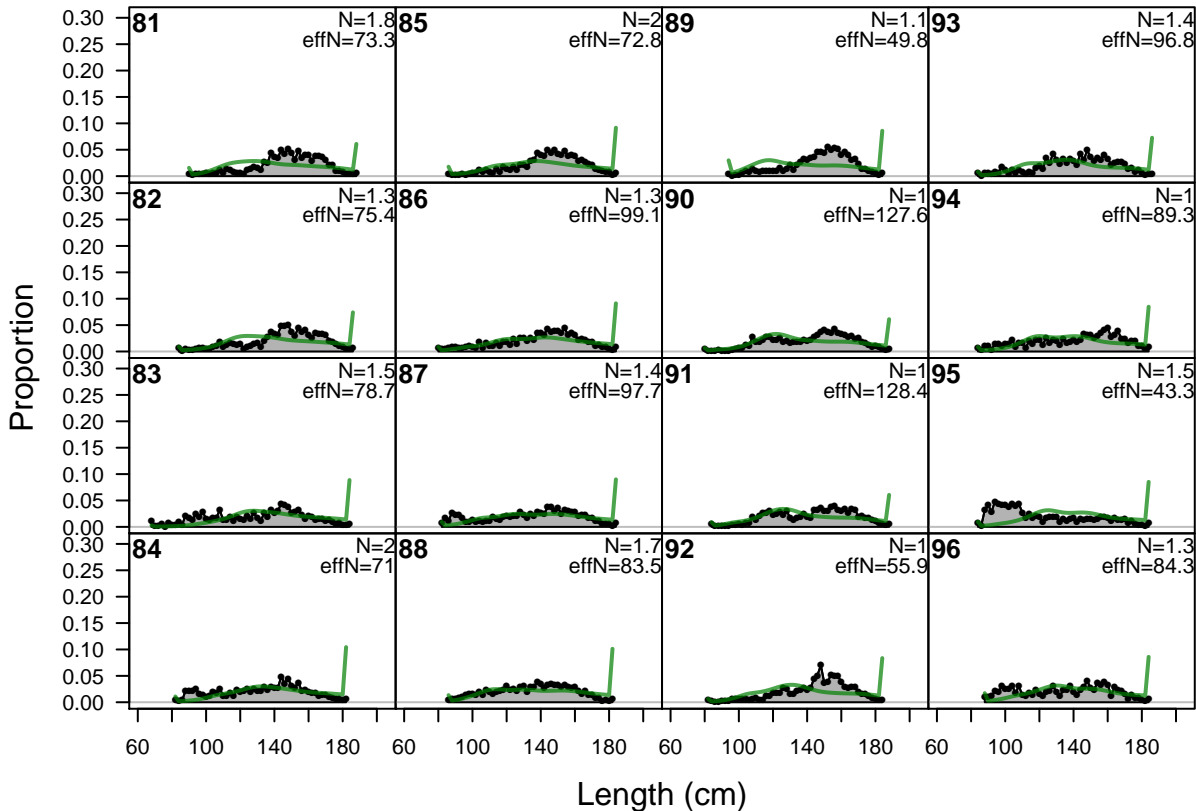
## length comps, whole catch, F14-LL\_S\_num



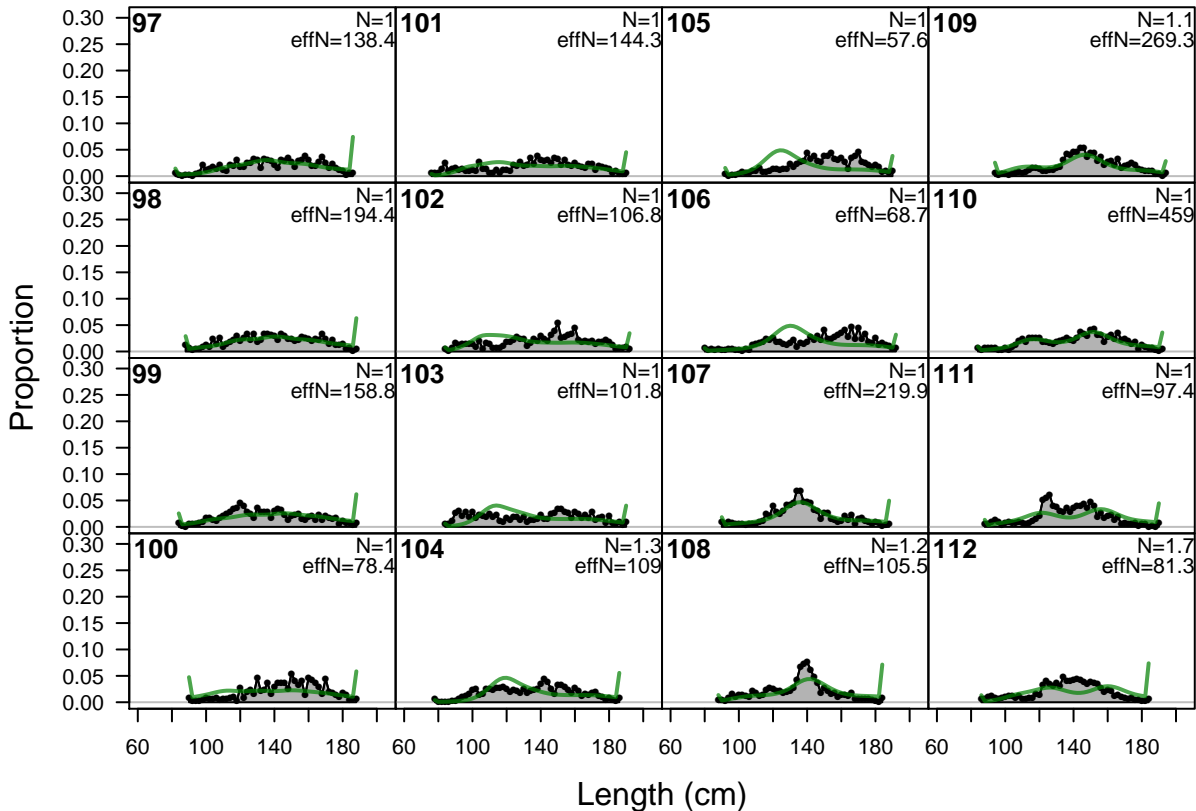
## length comps, whole catch, F14-LL\_S\_num



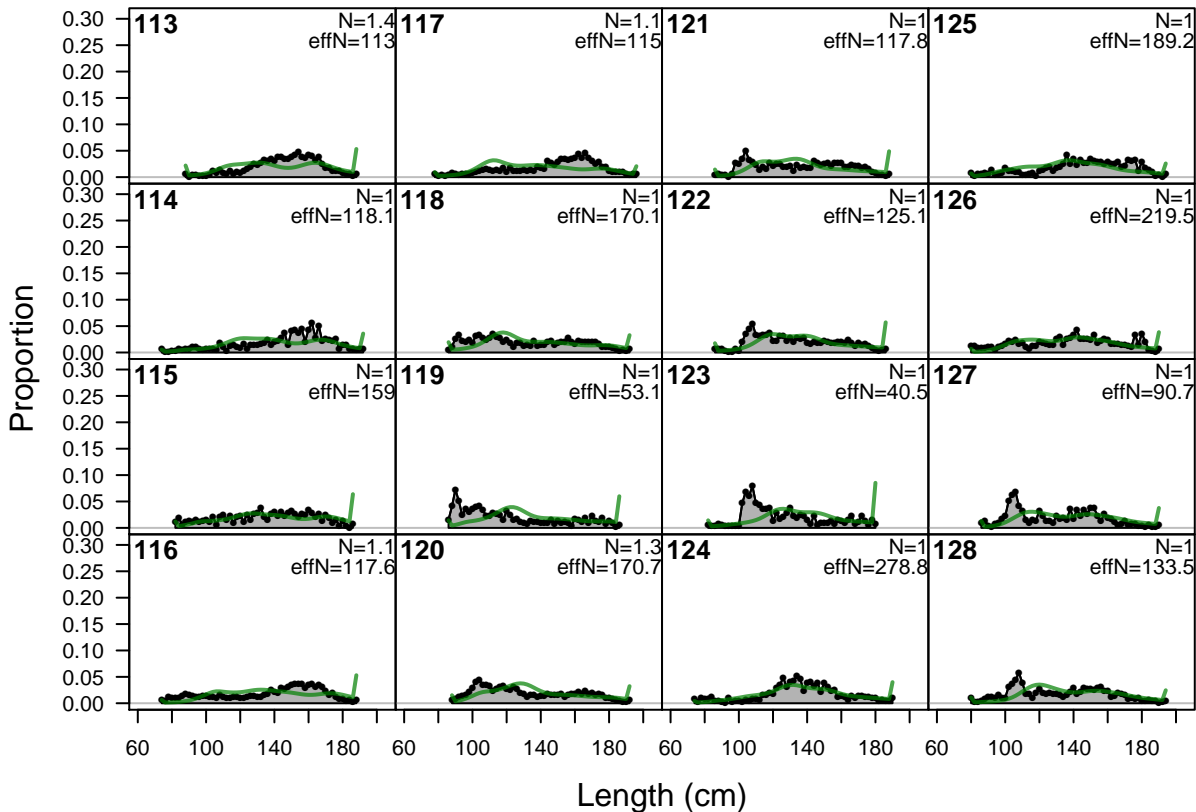
## length comps, whole catch, F14-LL\_S\_num



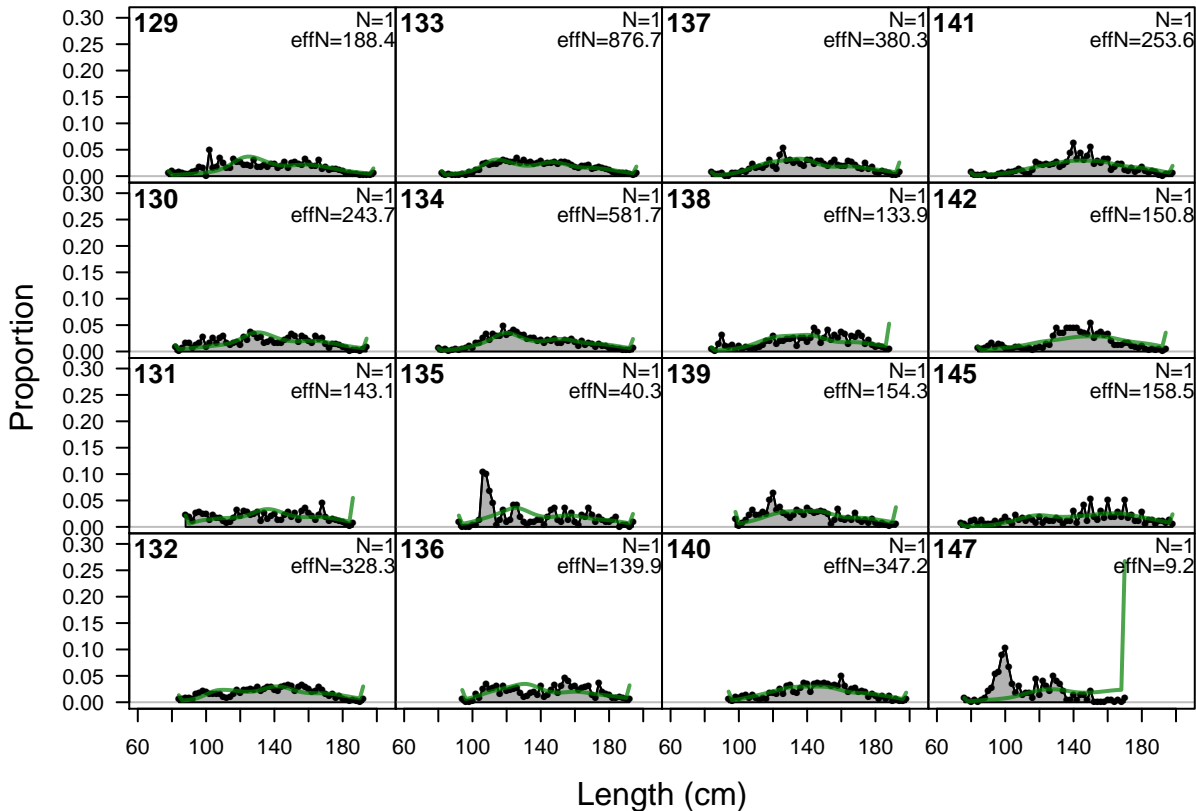
## length comps, whole catch, F14-LL\_S\_num



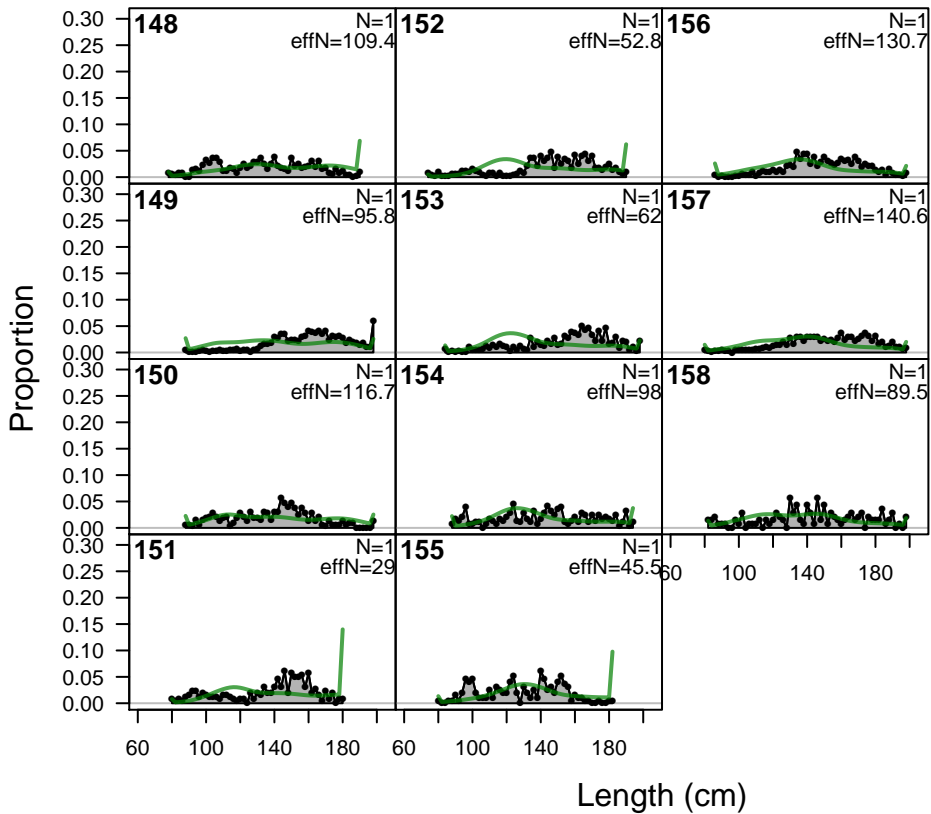
## length comps, whole catch, F14-LL\_S\_num



## length comps, whole catch, F14-LL\_S\_num

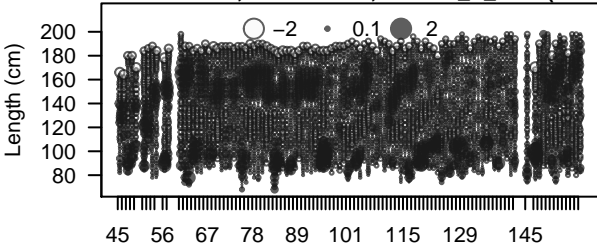


# length comps, whole catch, F14-LL\_S\_num

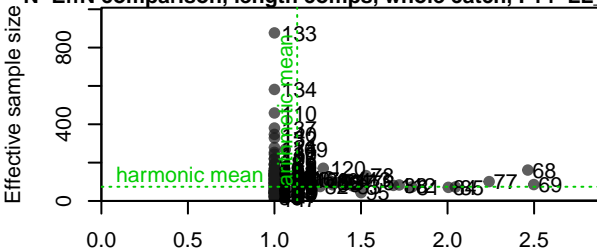




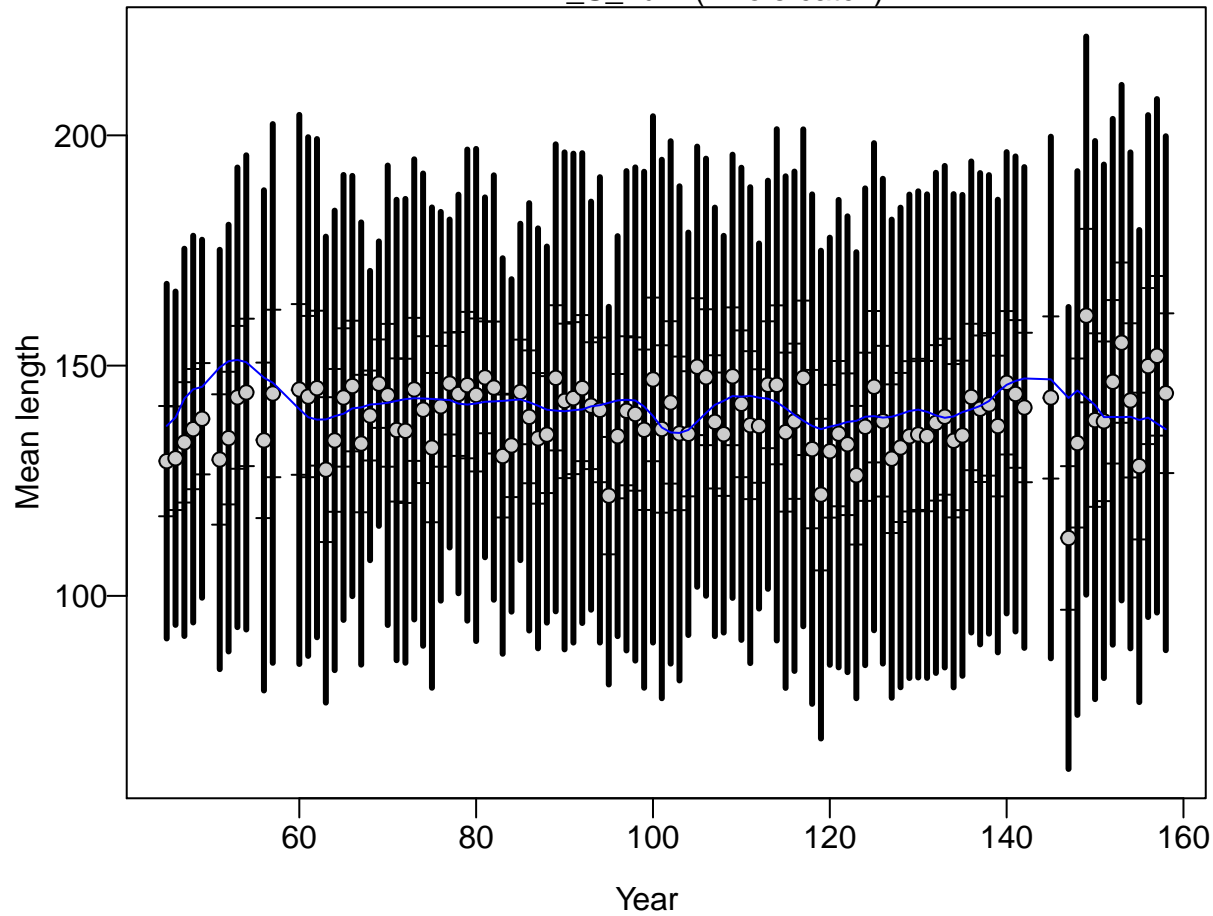
**Pearson residuals, whole catch, F14-LL\_S\_num (max=1.**



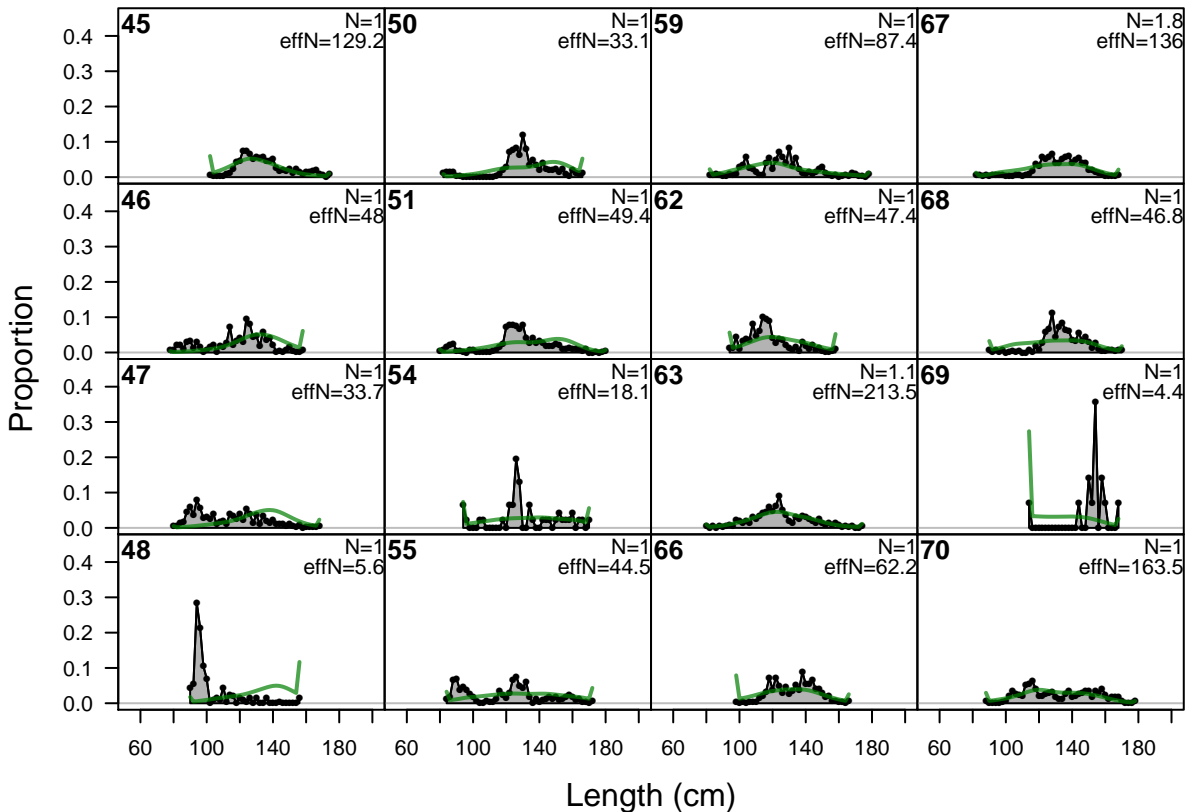
**N-EffN comparison, length comps, whole catch, F14-LL\_S**



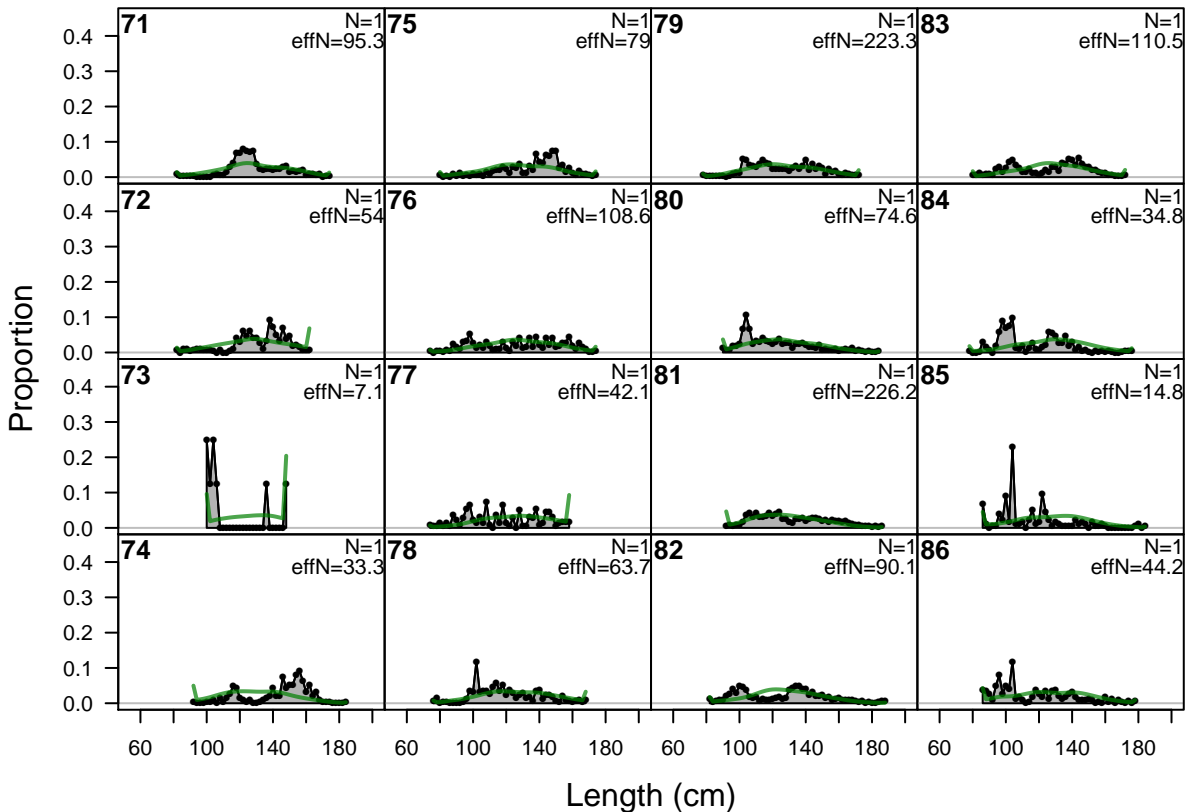
F14-LL\_S\_num (whole catch)



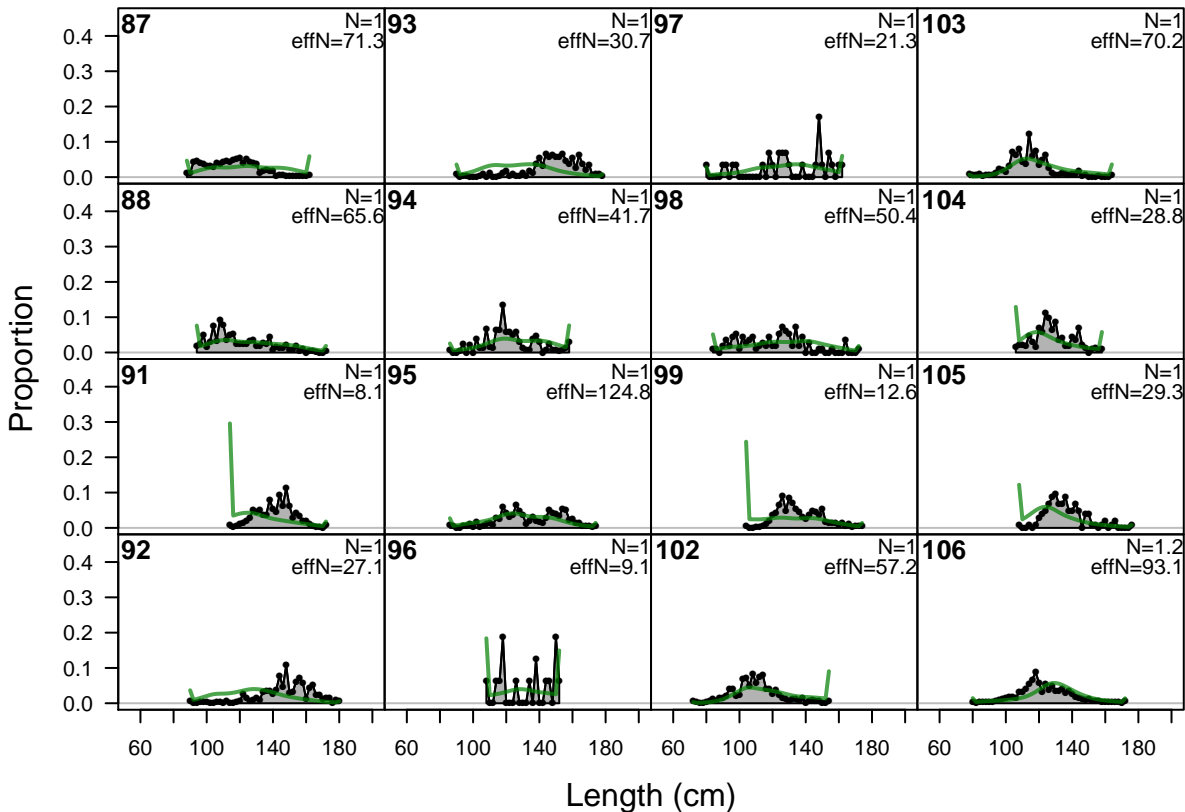
## length comps, whole catch, F15-LL\_I\_num



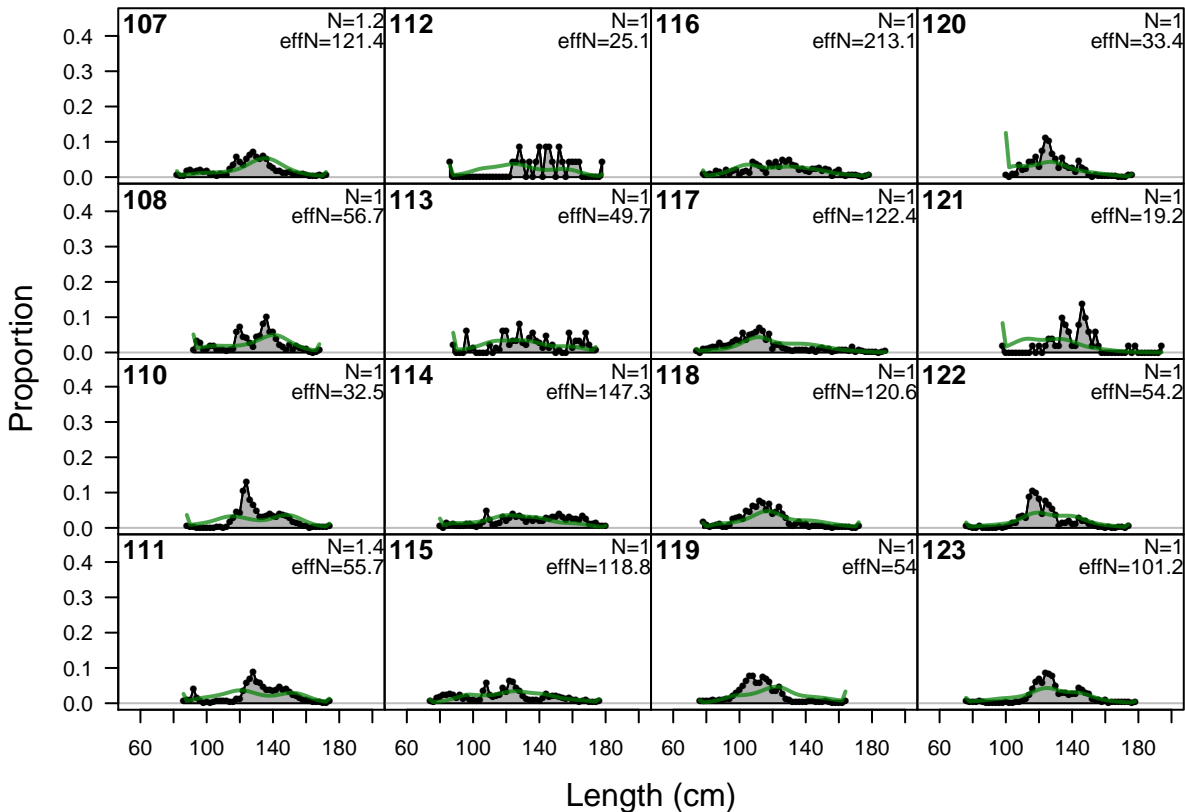
# length comps, whole catch, F15-LL\_I\_num



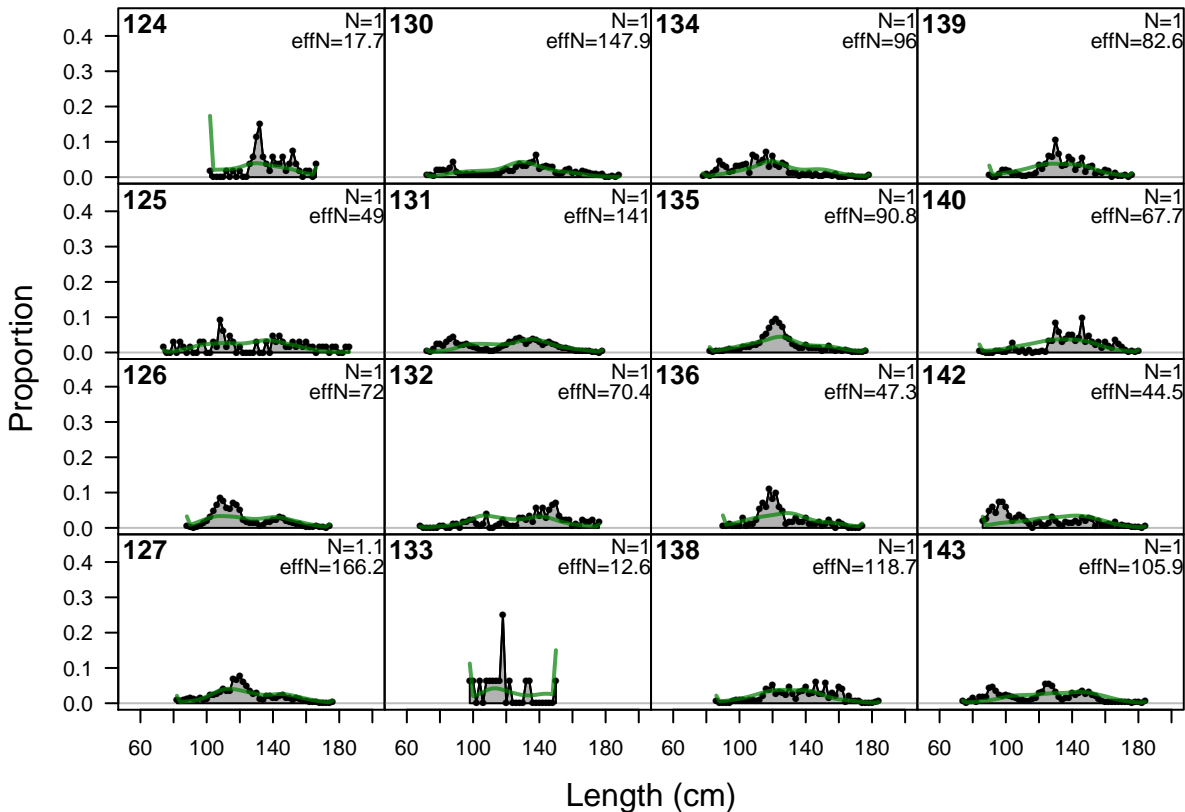
## length comps, whole catch, F15-LL\_I\_num



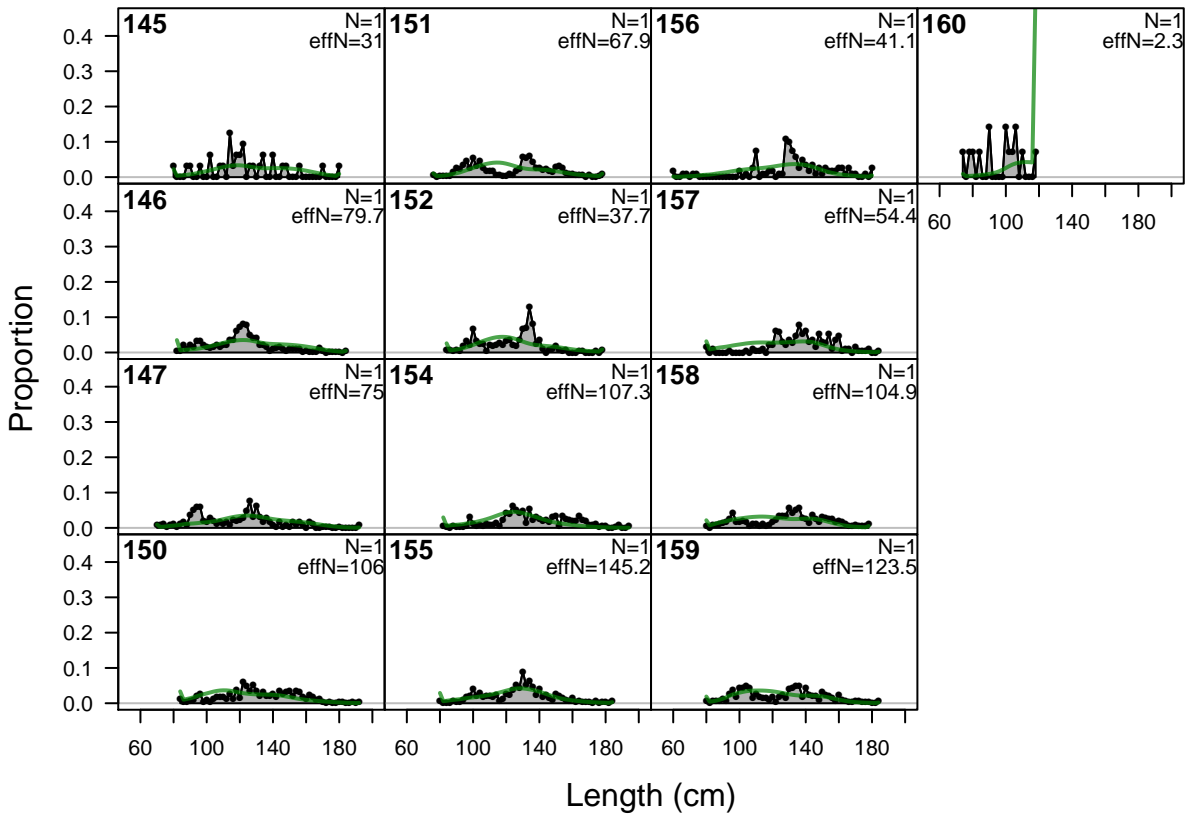
# length comps, whole catch, F15-LL\_I\_num



## length comps, whole catch, F15-LL\_I\_num

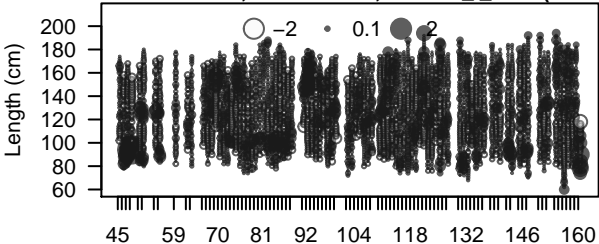


# length comps, whole catch, F15-LL\_I\_num

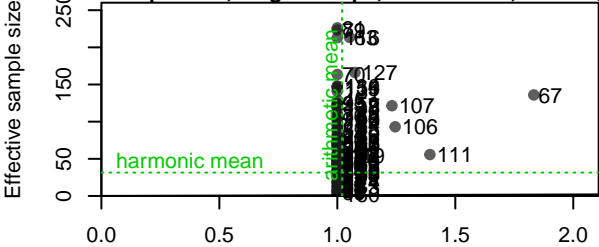




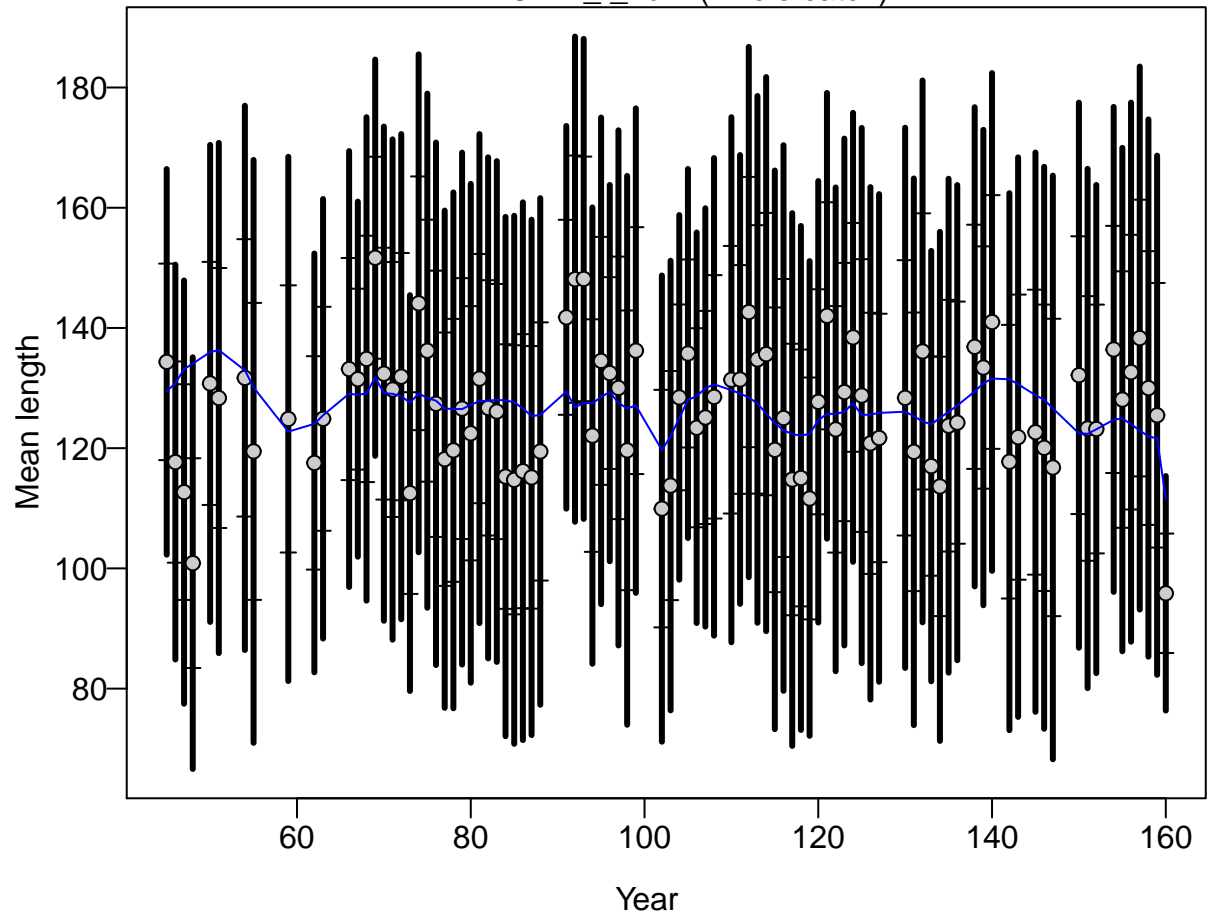
Pearson residuals, whole catch, F15-LL\_I\_num (max=3.



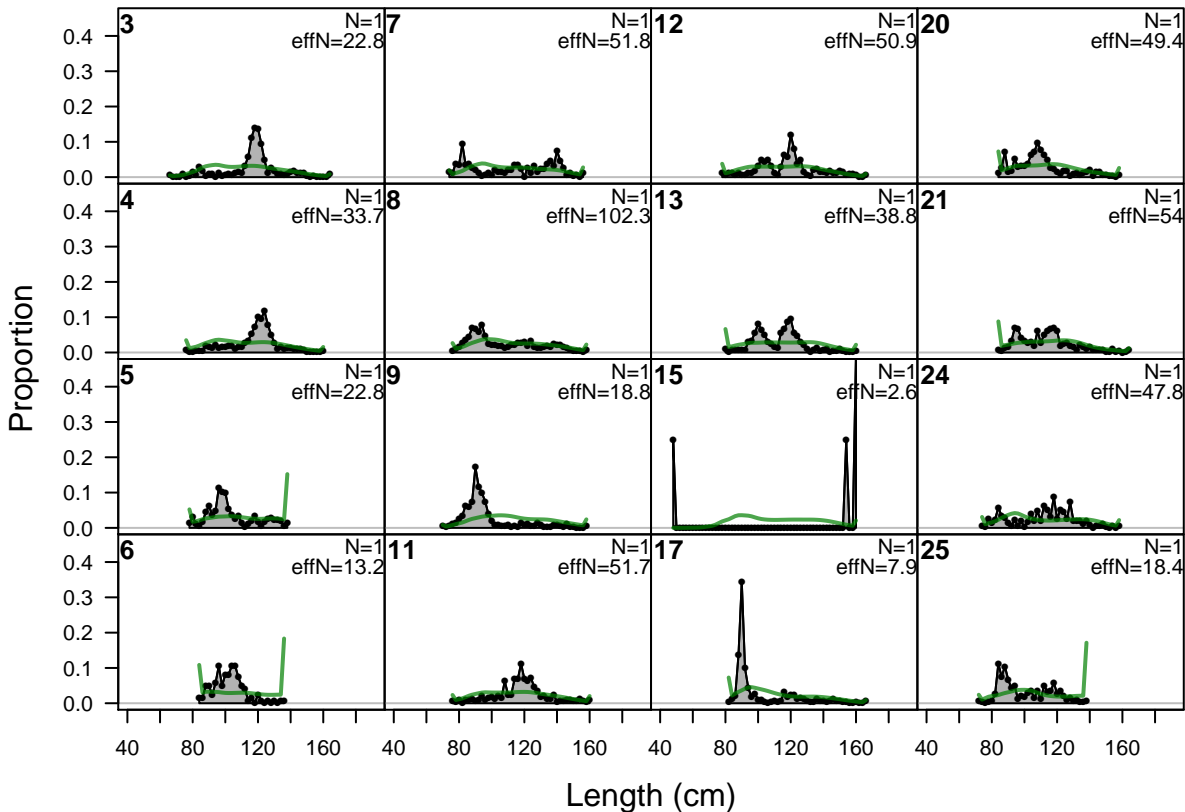
N-EffN comparison, length comps, whole catch, F15-LL\_I



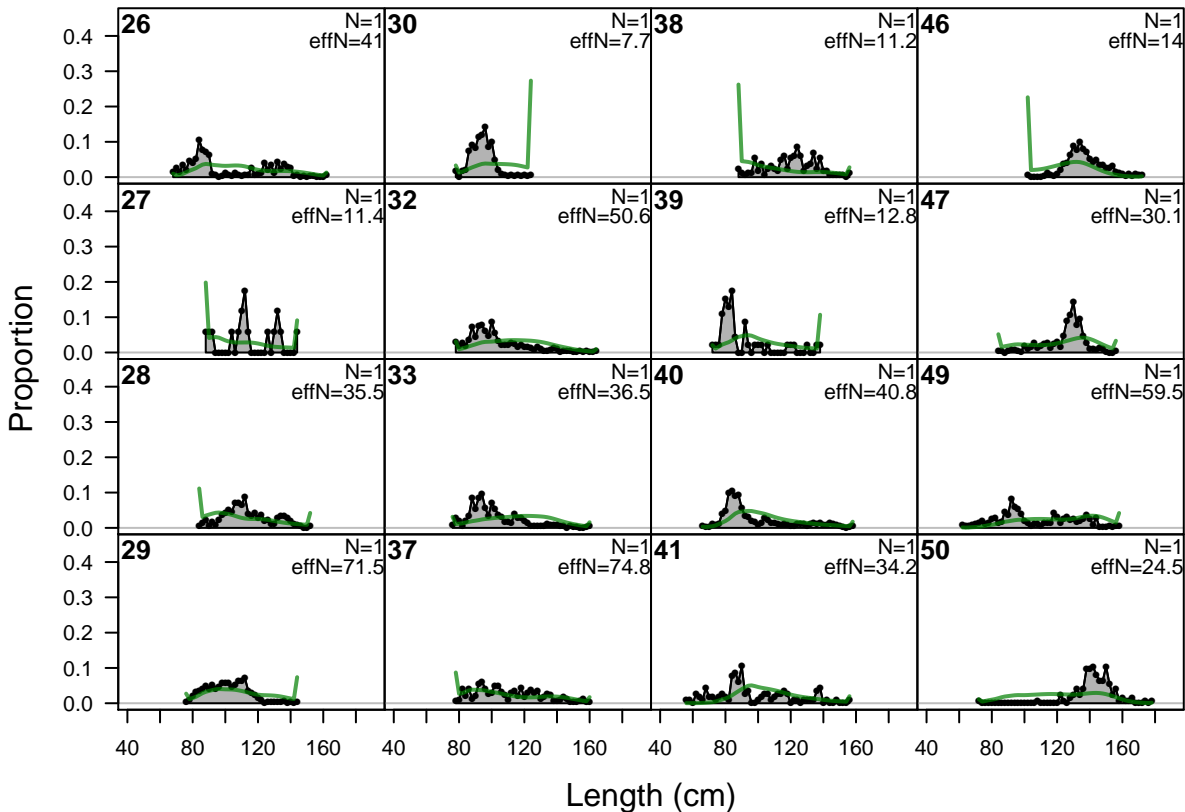
F15-LL\_I\_num (whole catch)



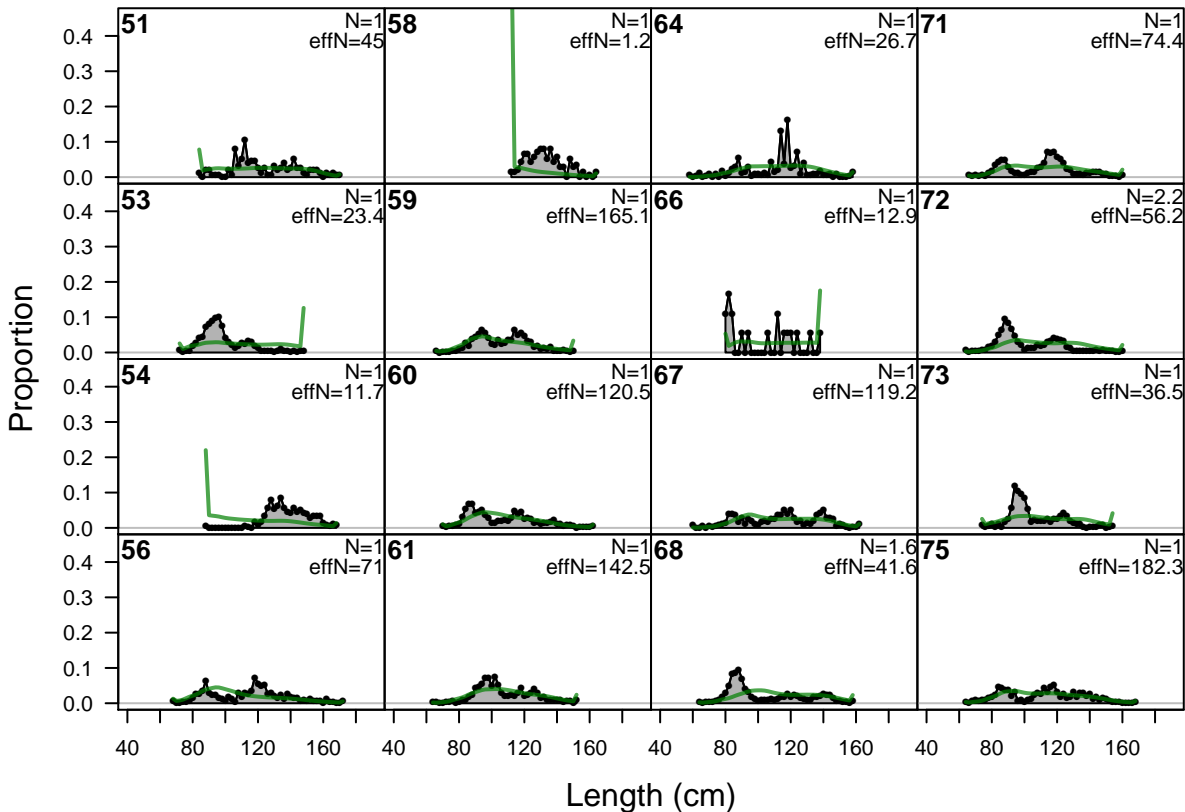
## length comps, whole catch, S1-LLt\_N\_len



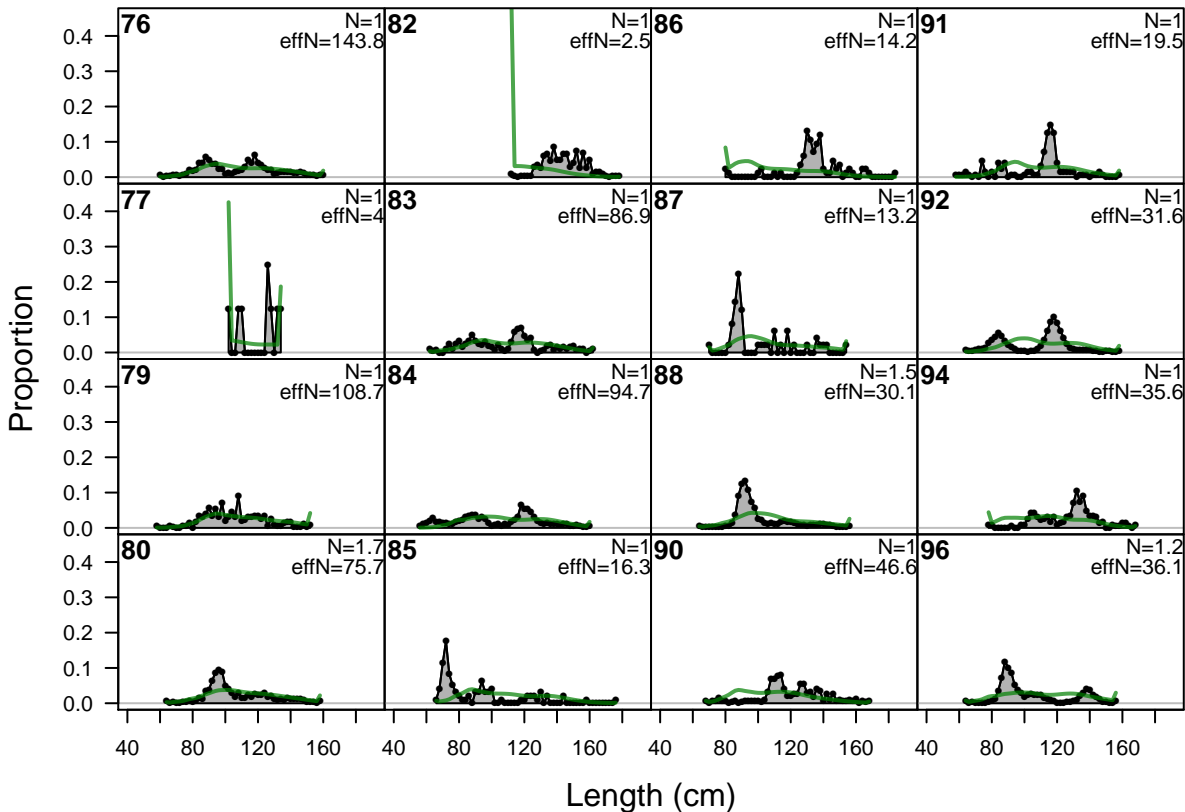
## length comps, whole catch, S1-LLt\_N\_len



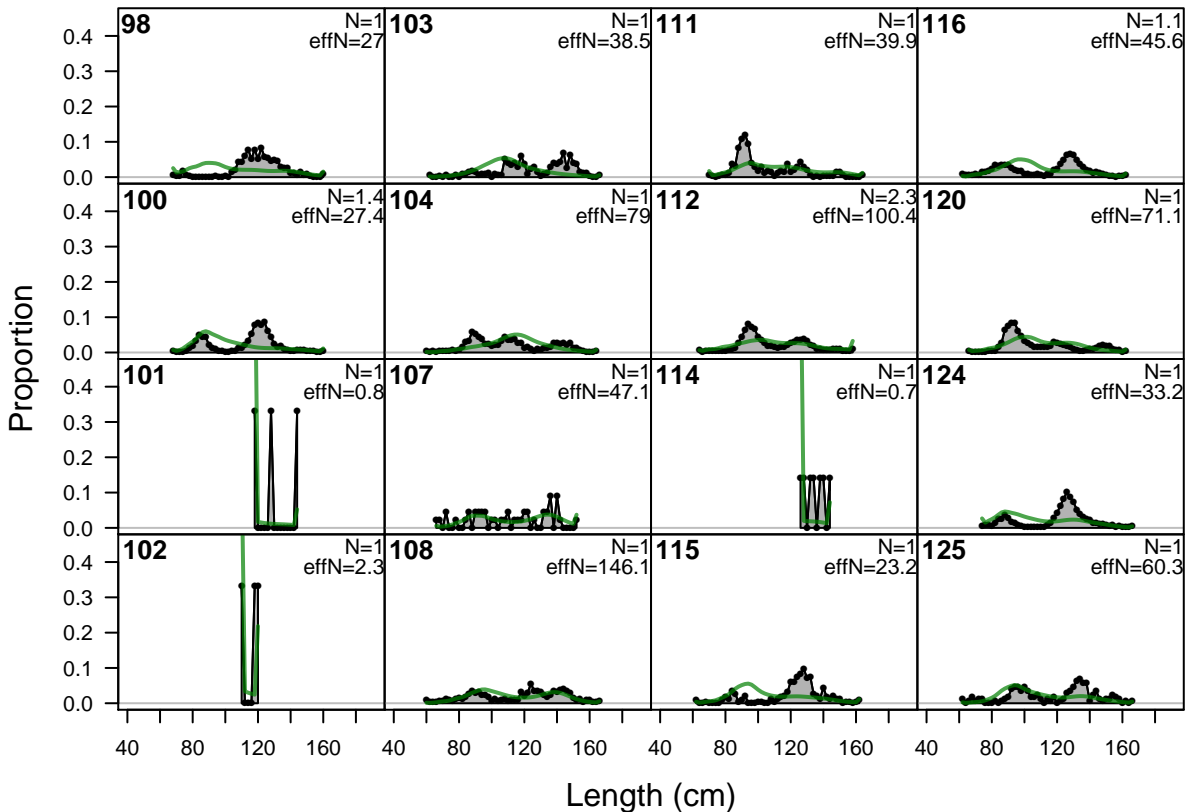
# length comps, whole catch, S1-LLt\_N\_len



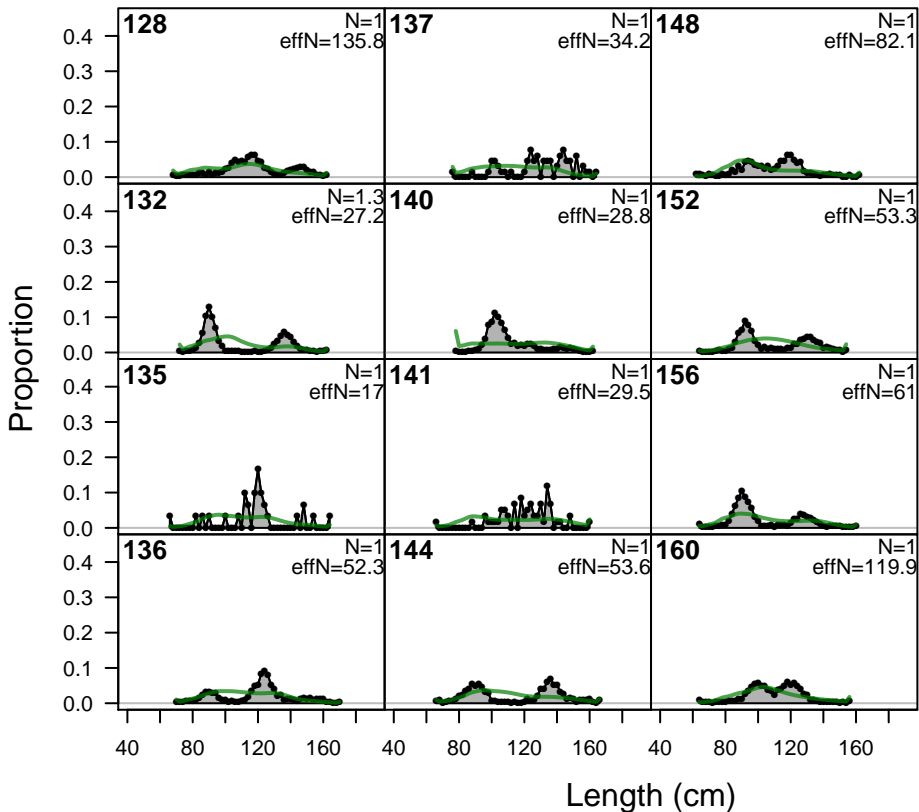
## length comps, whole catch, S1-LLt\_N\_len



# length comps, whole catch, S1-LLt\_N\_len

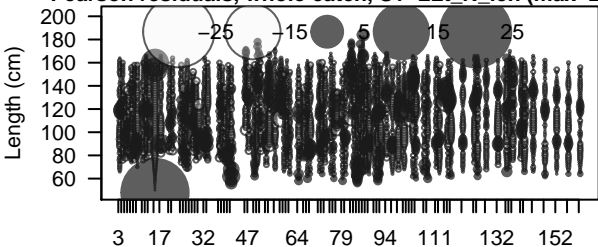


# length comps, whole catch, S1-LLt\_N\_len

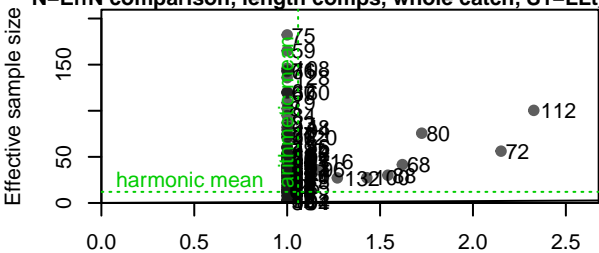




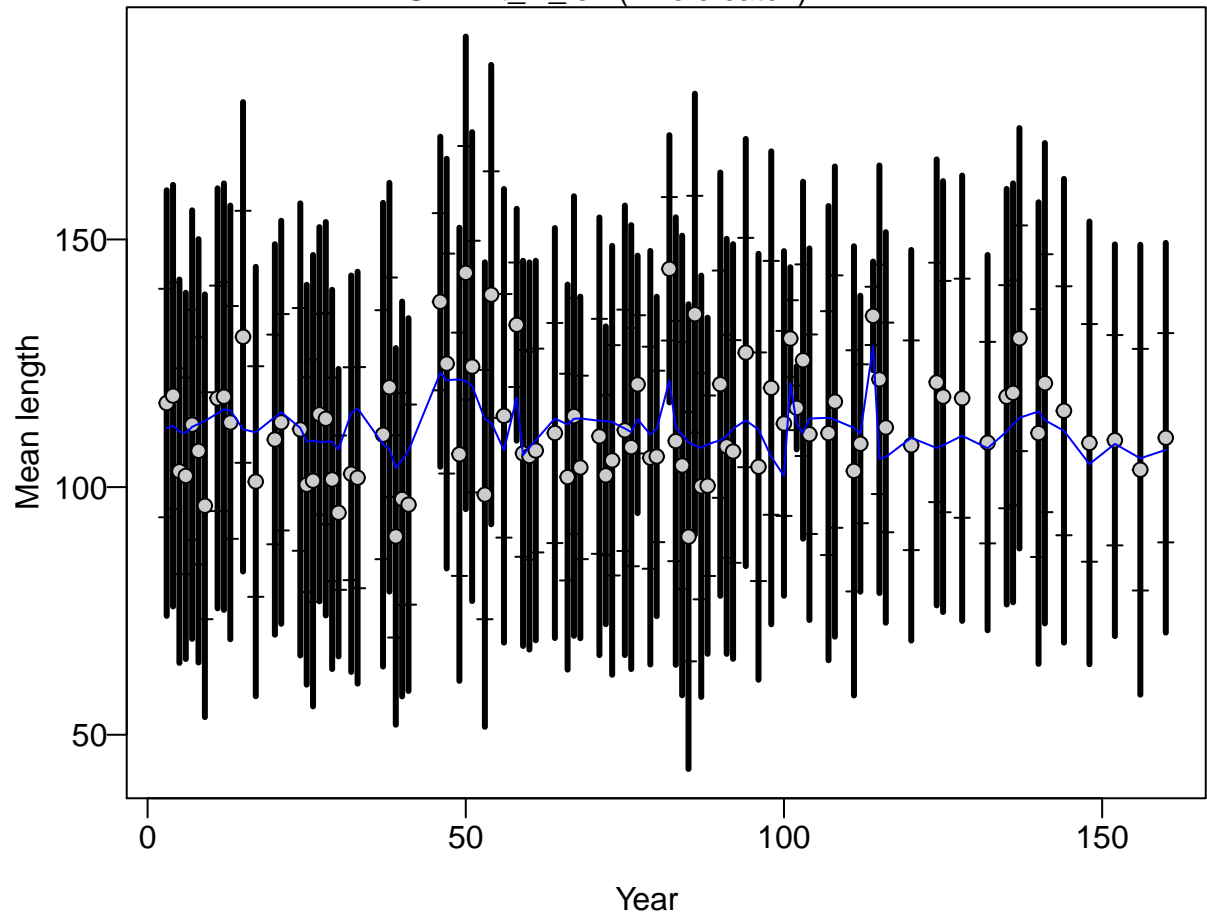
**Pearson residuals, whole catch, S1-LLt N len (max=22.1**



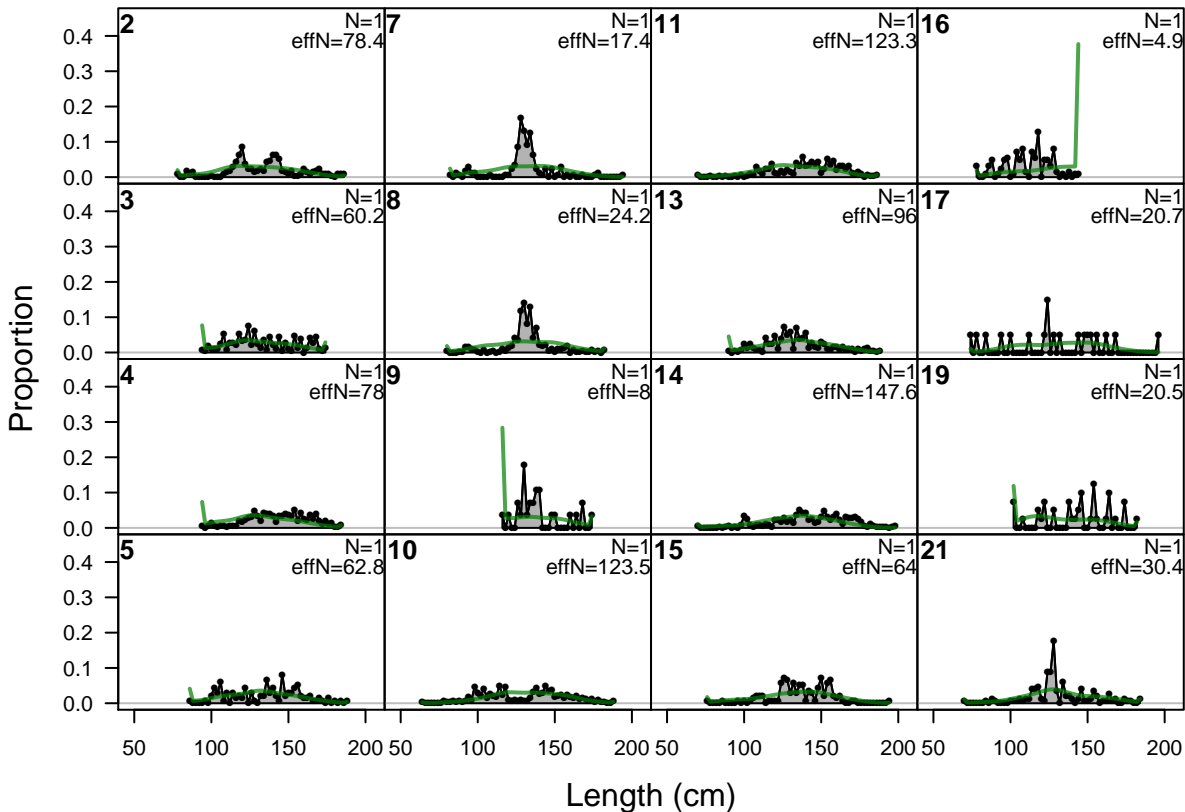
**N-EffN comparison, length comps, whole catch, S1-LLt N**



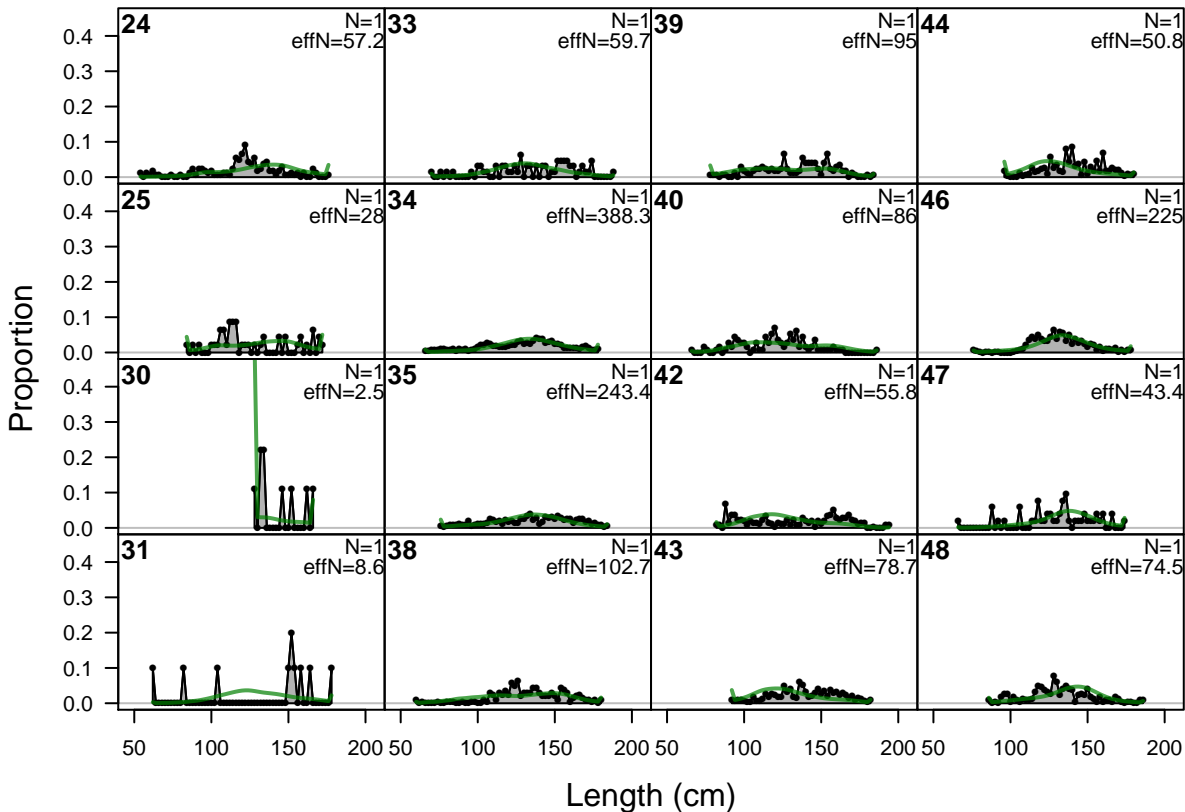
S1-LLt\_N\_len (whole catch)



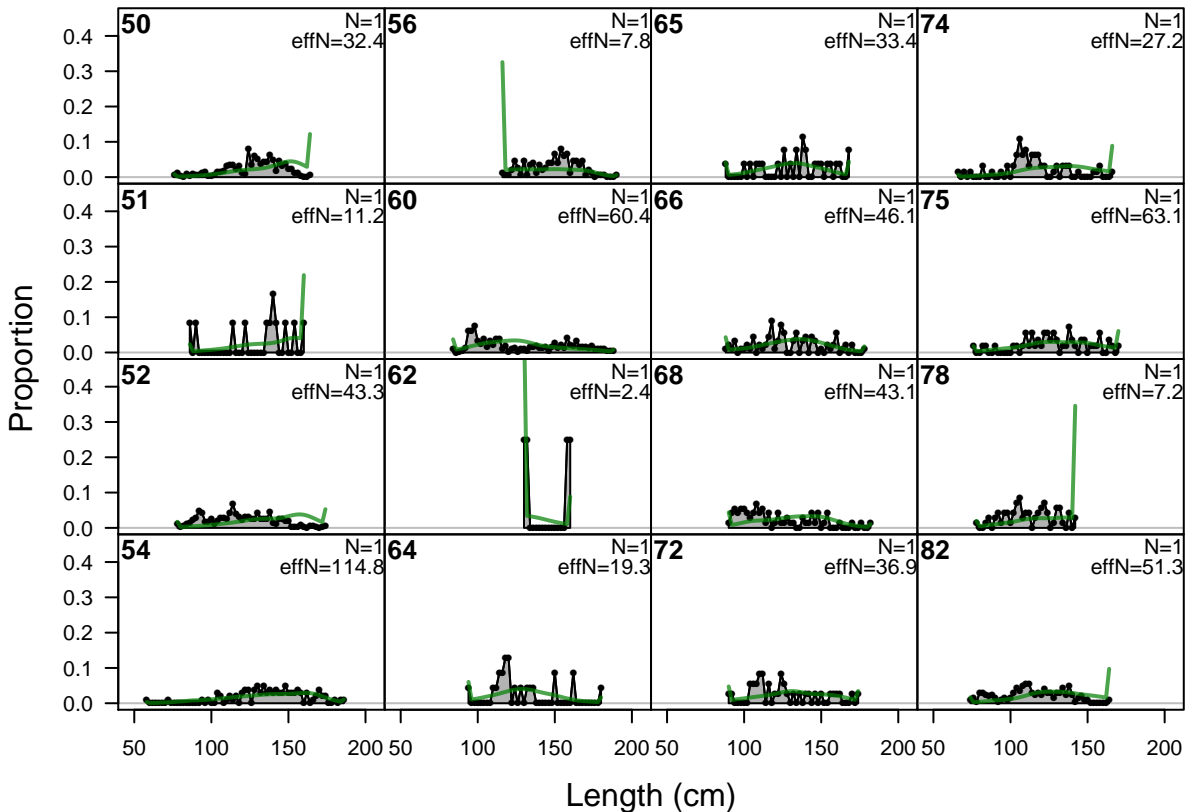
## length comps, whole catch, S2-LLt\_C\_len



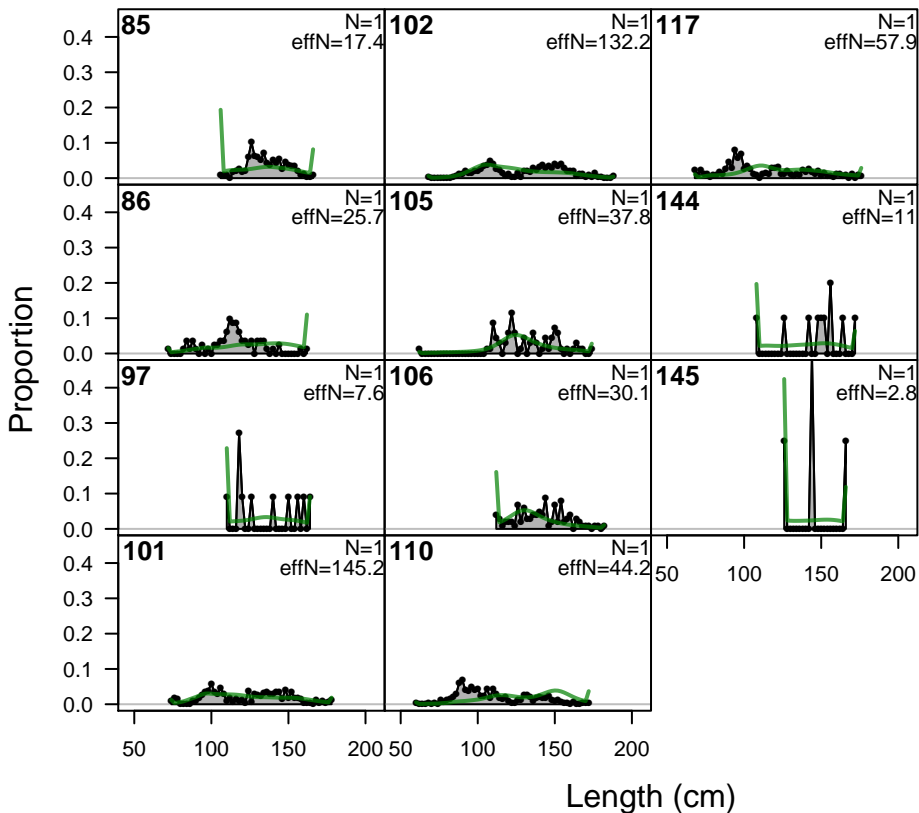
## length comps, whole catch, S2-LLt\_C\_len



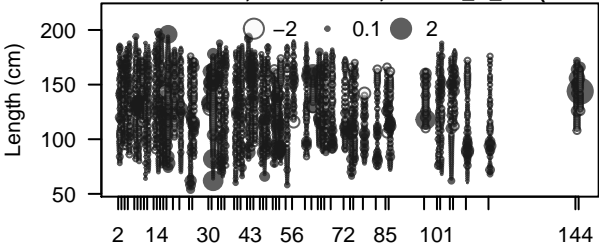
## length comps, whole catch, S2-LLt\_C\_len



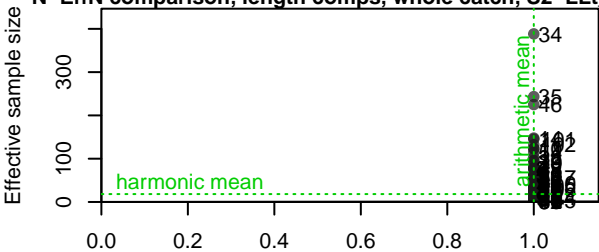
# length comps, whole catch, S2-LLt\_C\_len



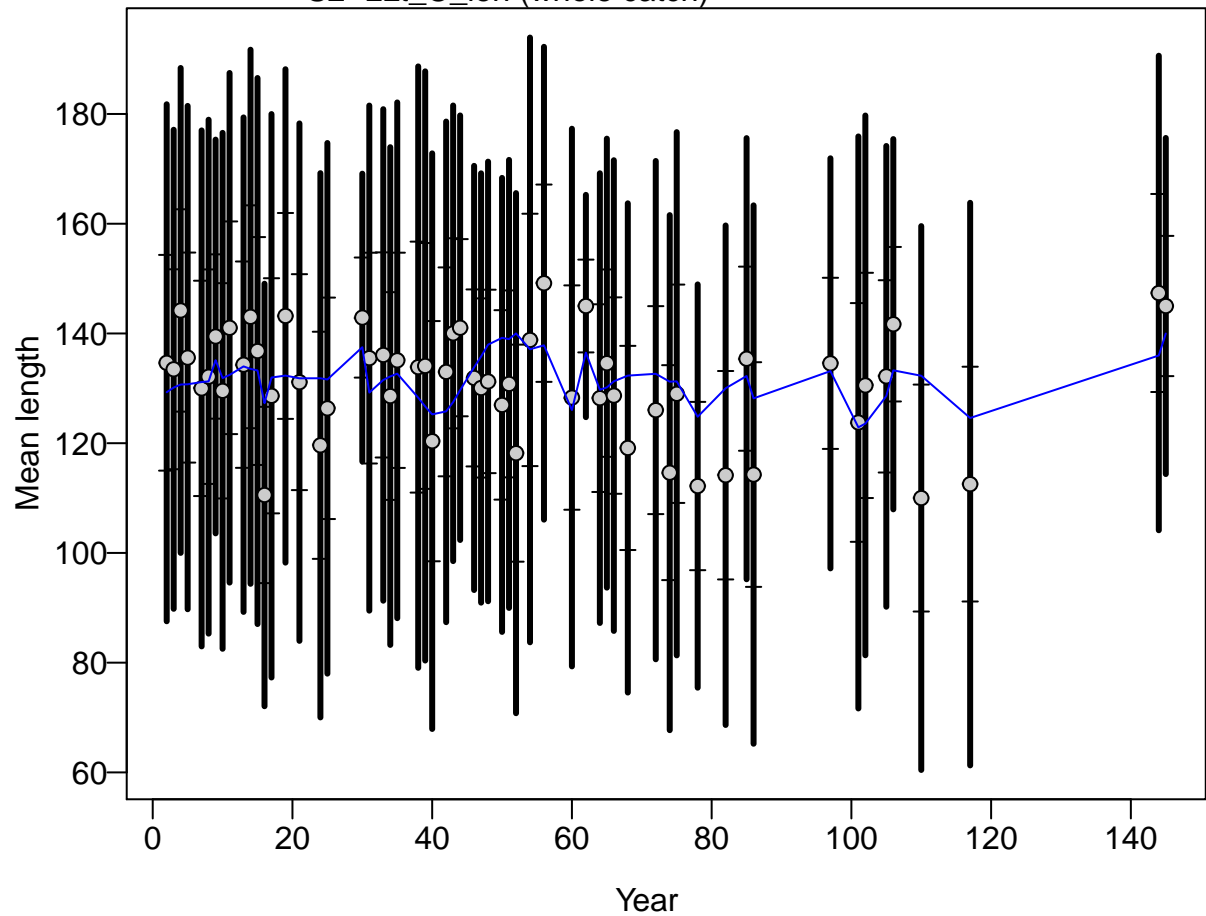
Pearson residuals, whole catch, S2-LLt C len (max=3.1)



N-EffN comparison, length comps, whole catch, S2-LLt C

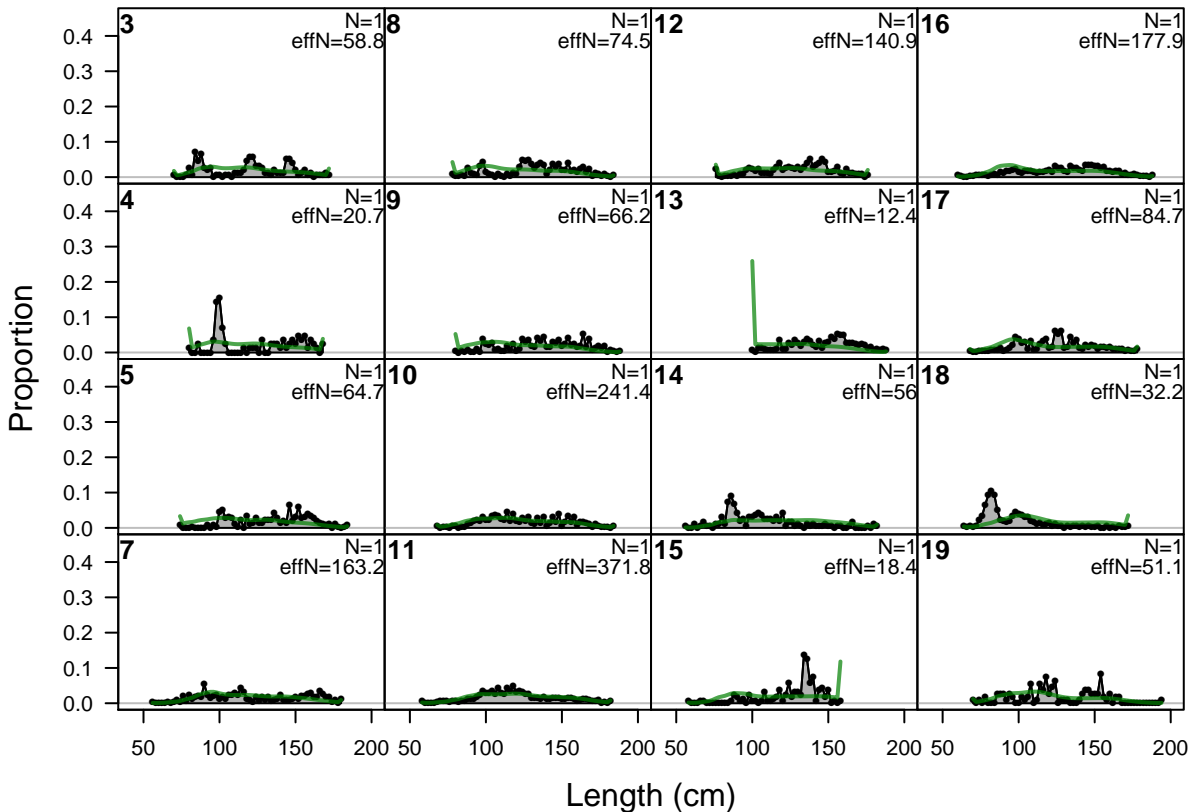


S2-LLt\_C\_len (whole catch)

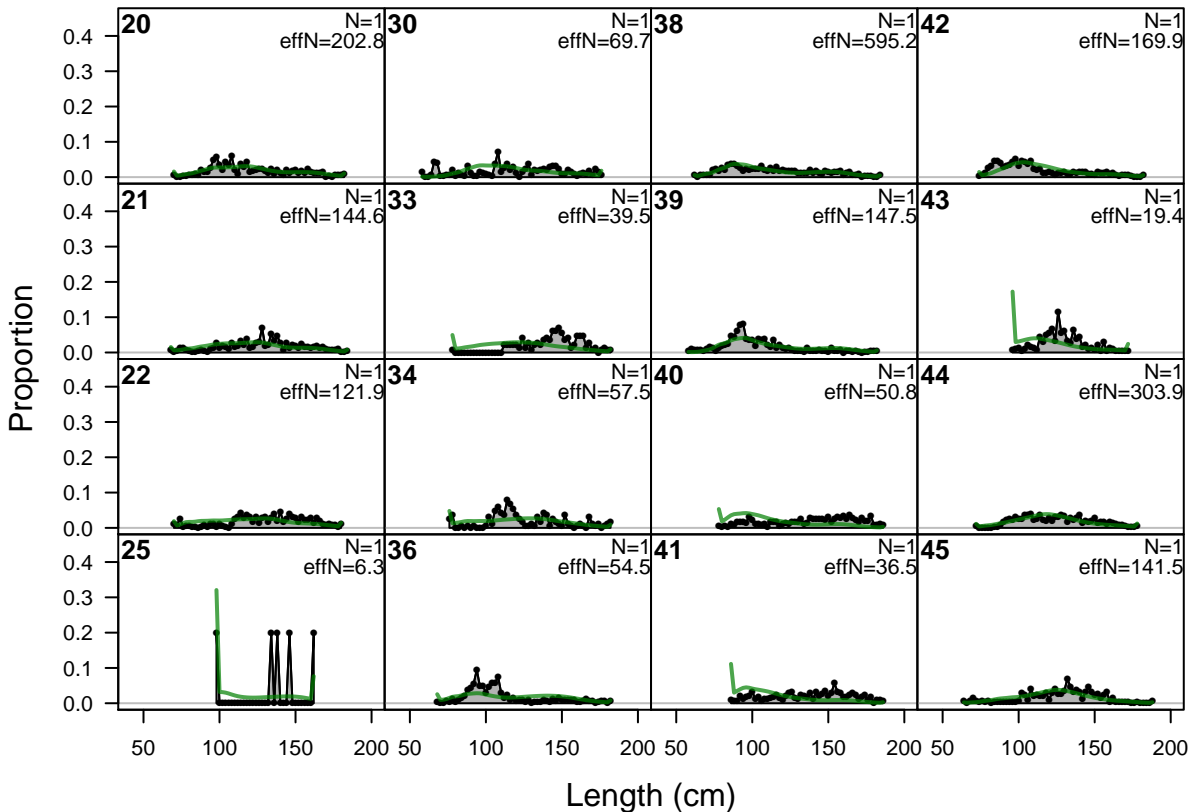




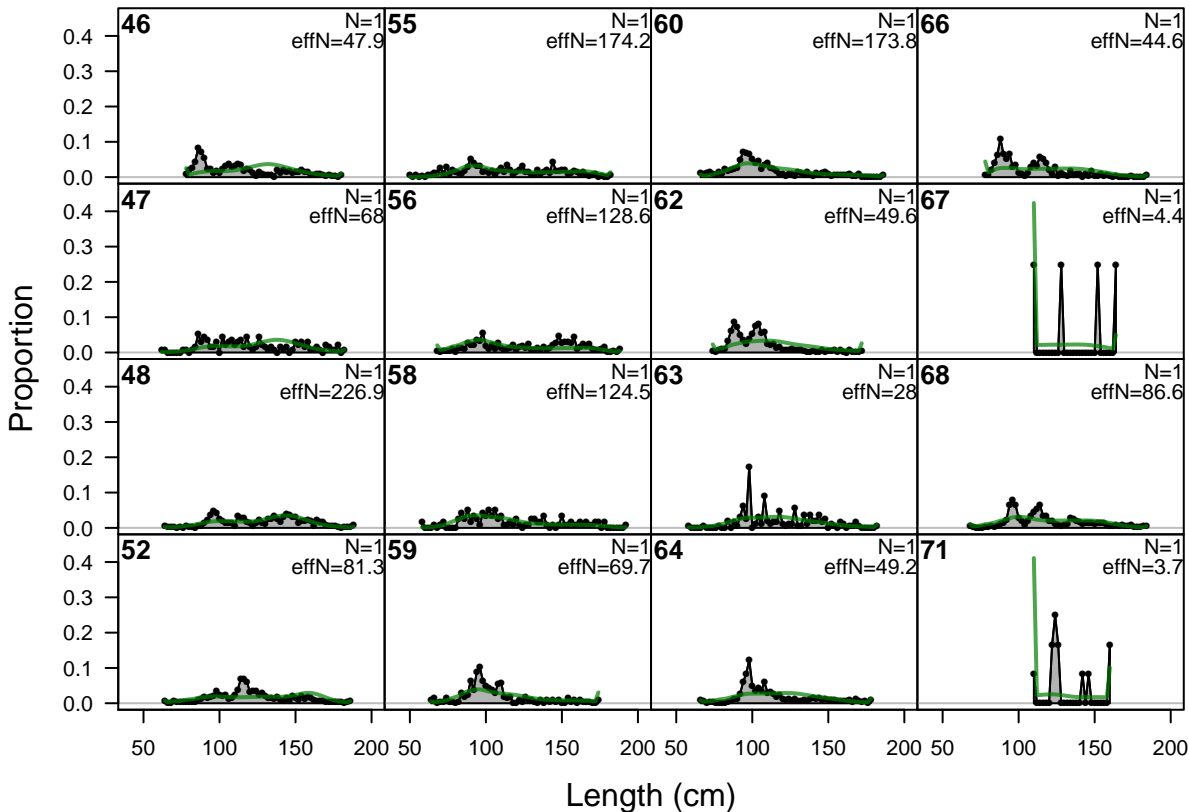
## length comps, whole catch, S3-LLt\_S\_len



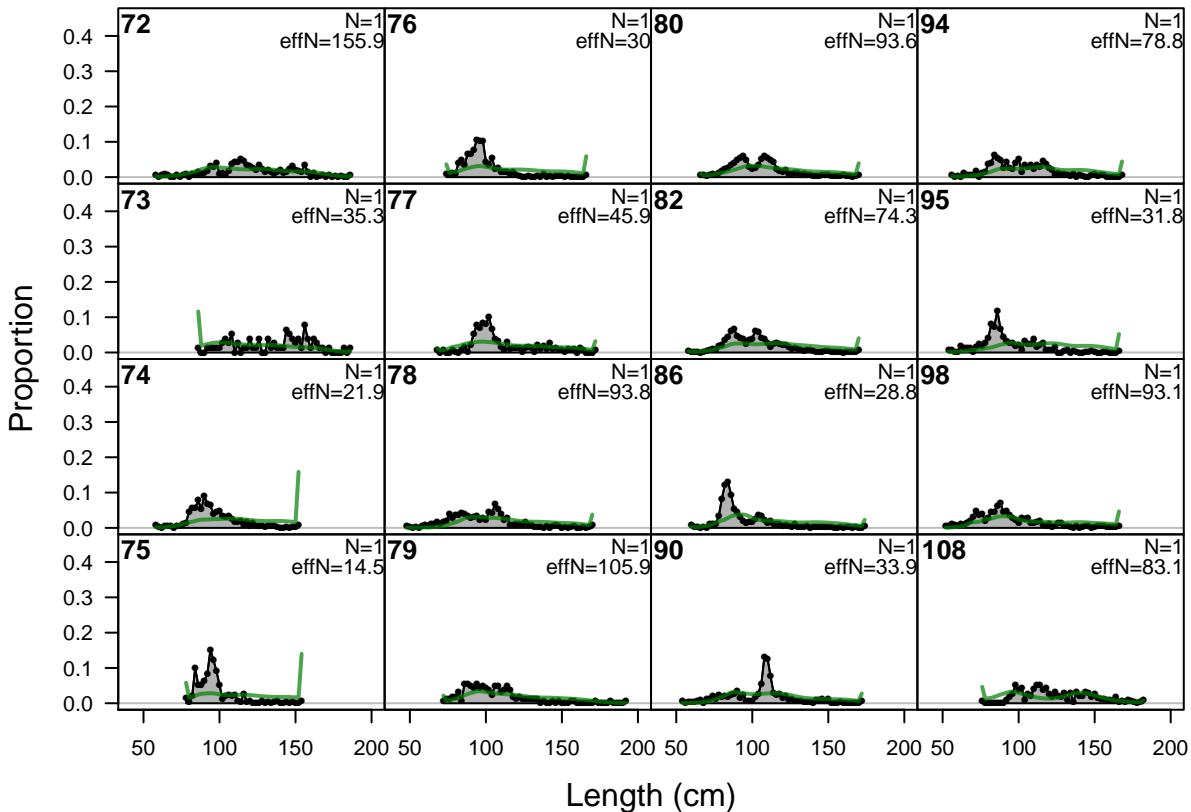
## length comps, whole catch, S3-LLt\_S\_len



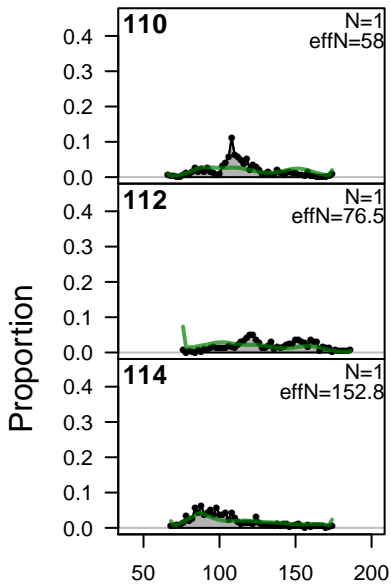
## length comps, whole catch, S3-LLt\_S\_len



## length comps, whole catch, S3-LLt\_S\_len

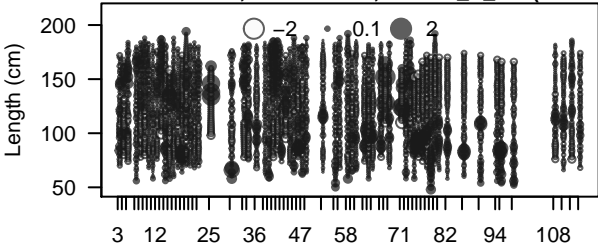


# length comps, whole catch, S3-LLt\_S\_len

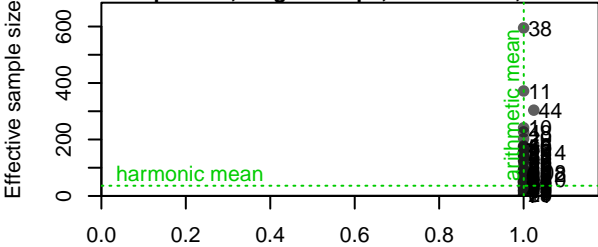


Length (cm)

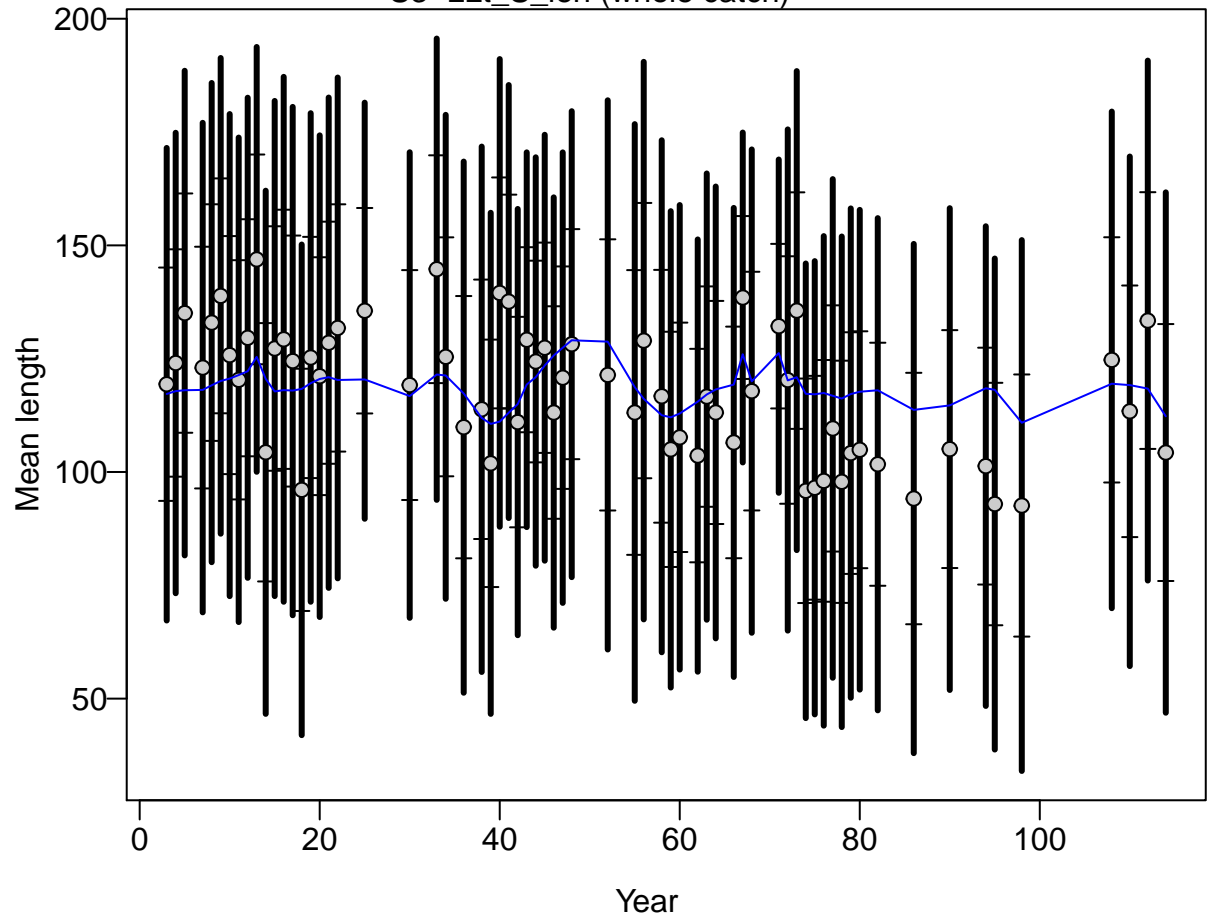
Pearson residuals, whole catch, S3-LLt S\_len (max=1.7)



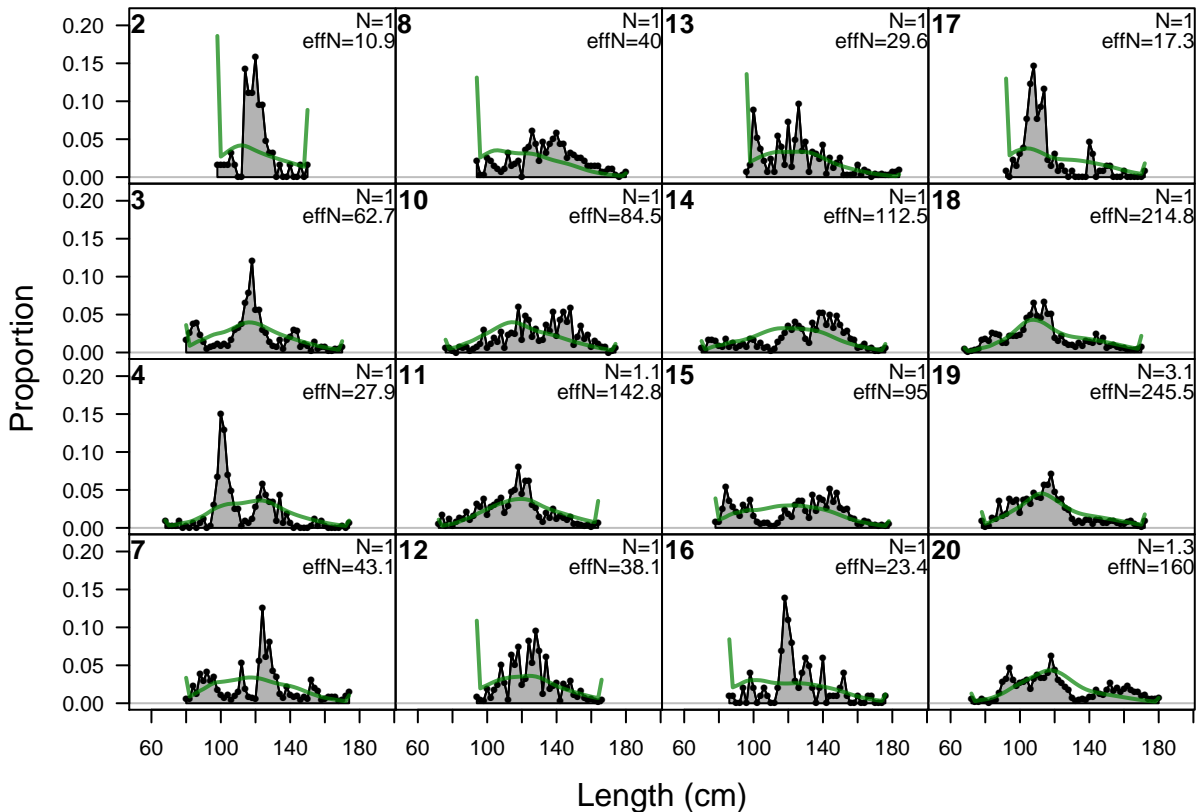
N-EffN comparison, length comps, whole catch, S3-LLt S



S3-LLt\_S\_len (whole catch)

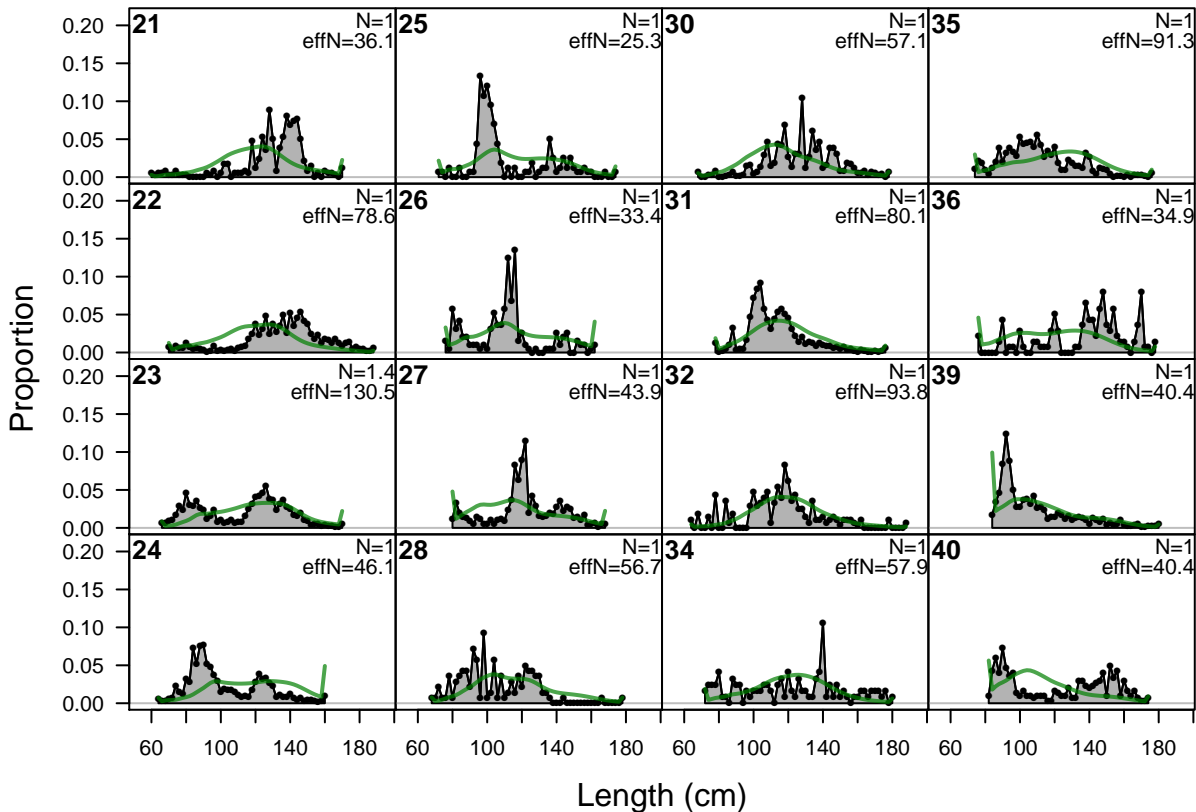


## length comps, whole catch, S4-LLt\_I\_len

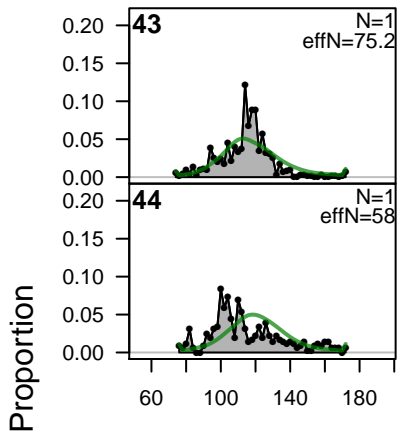




# length comps, whole catch, S4-LLt\_I\_len

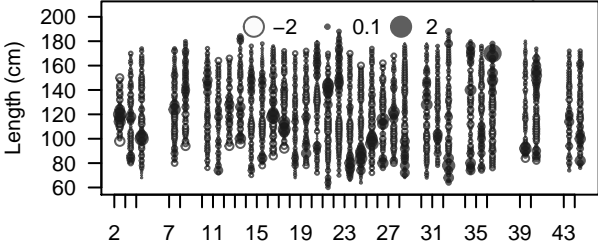


## length comps, whole catch, S4-LLt\_I\_len

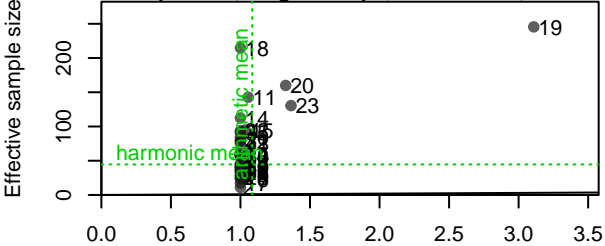


Length (cm)

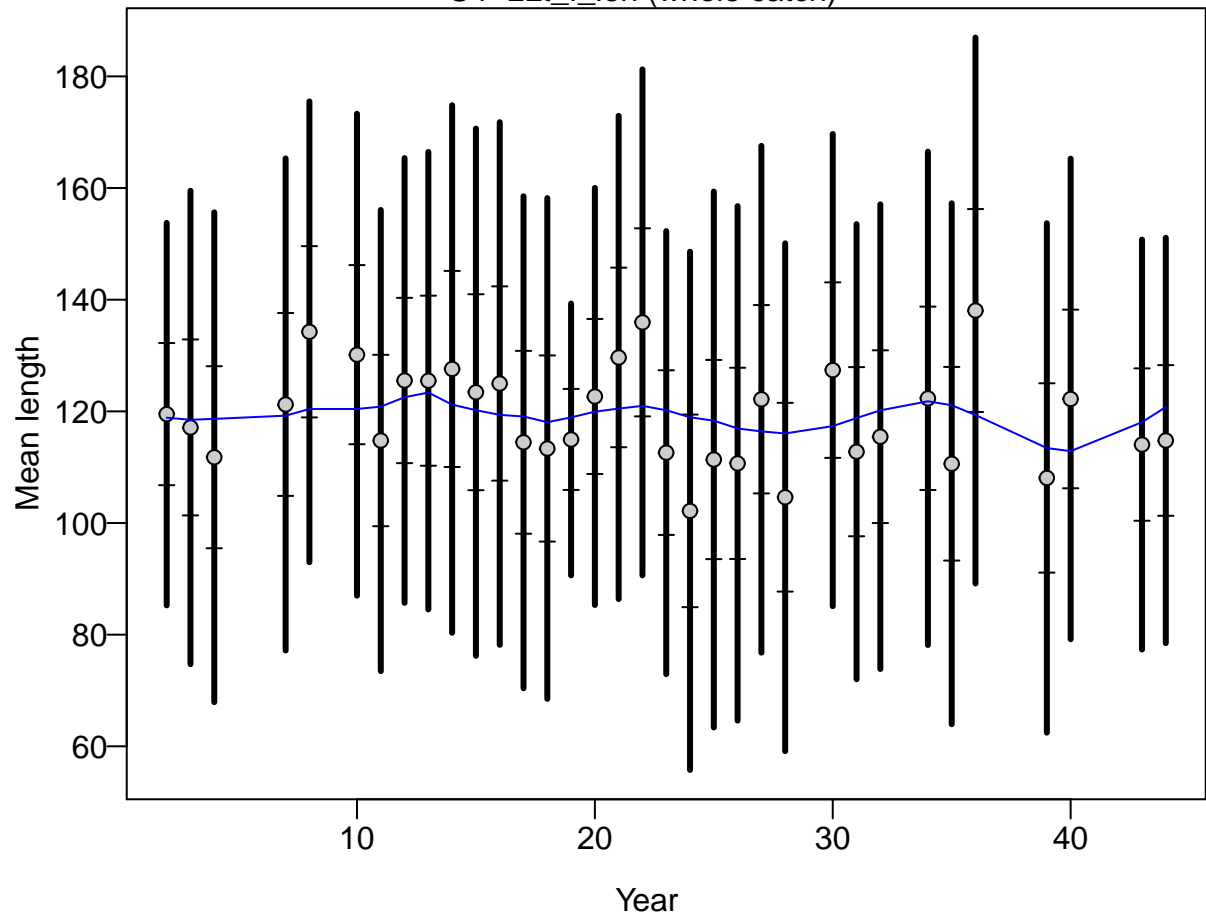
Pearson residuals, whole catch, S4-LLt I len (max=1.3)



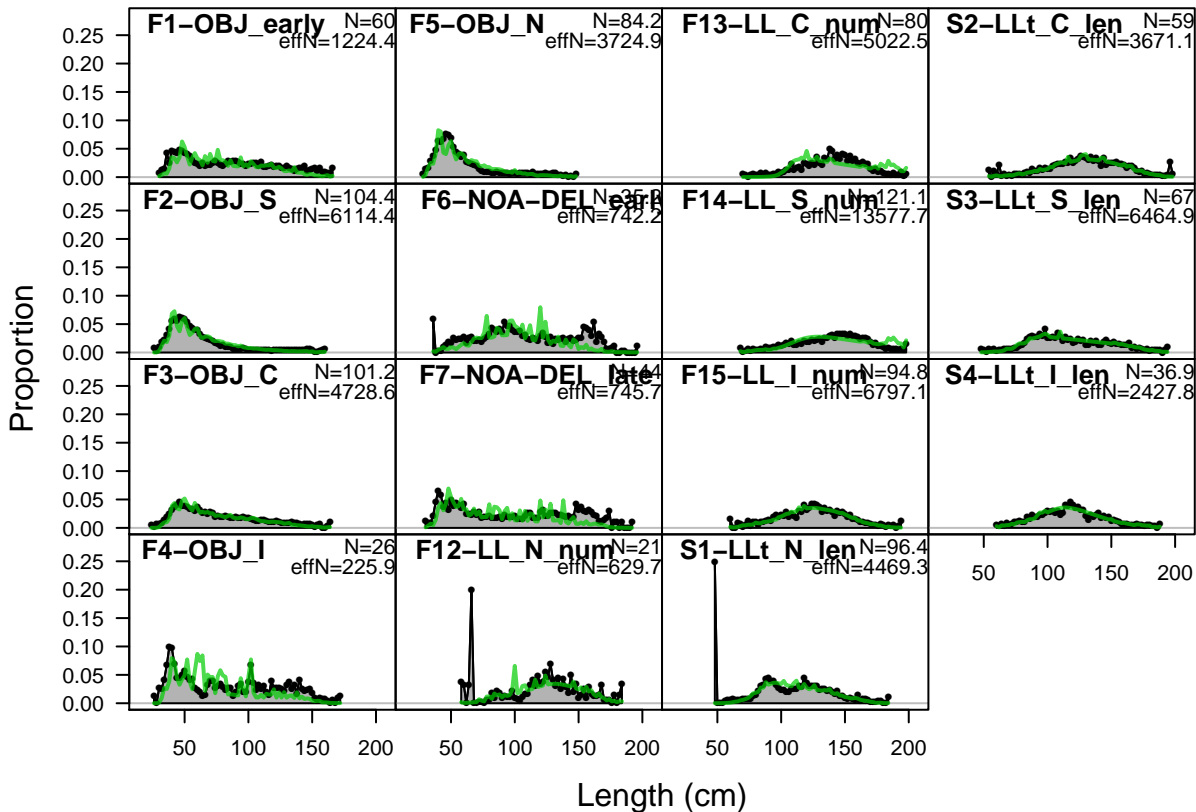
N-Effn comparison, length comps, whole catch, S4-LLt I



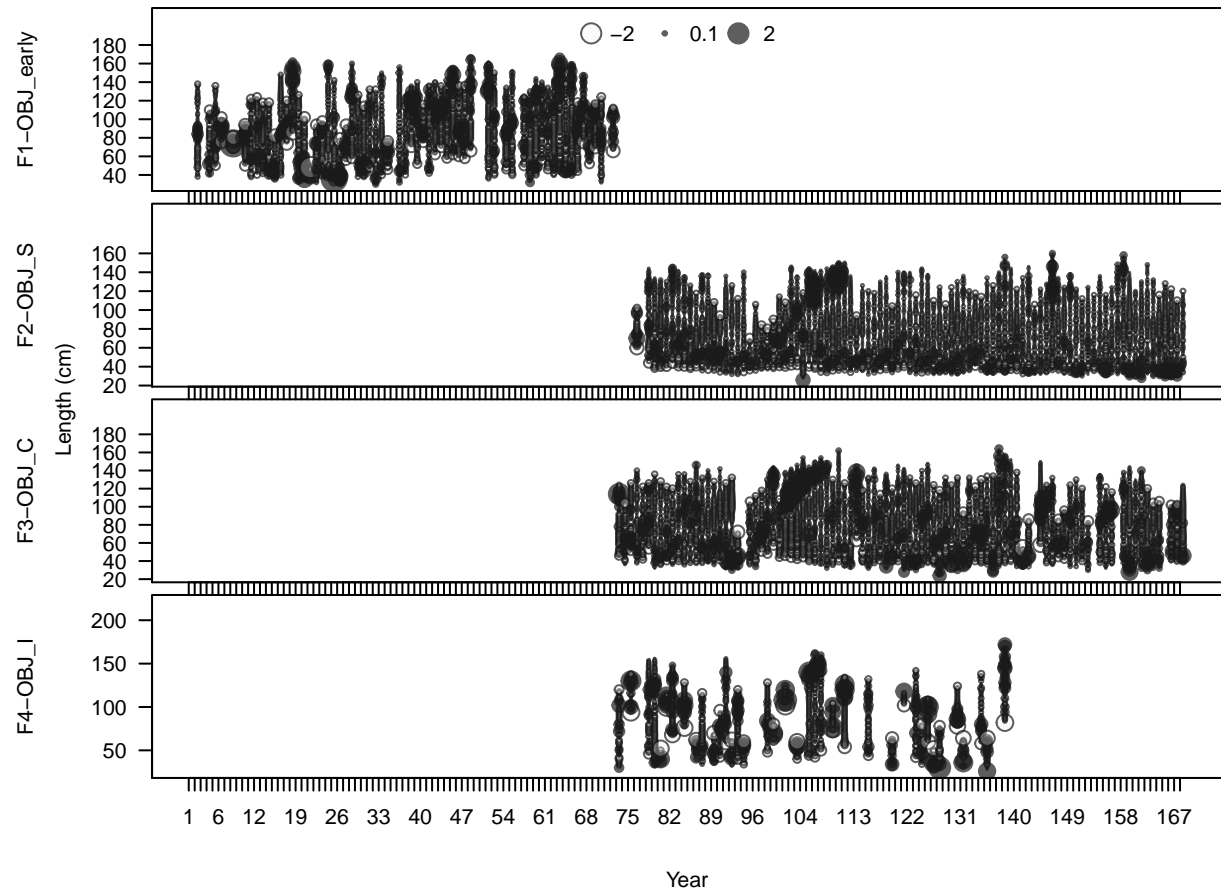
S4-LLt\_I\_len (whole catch)



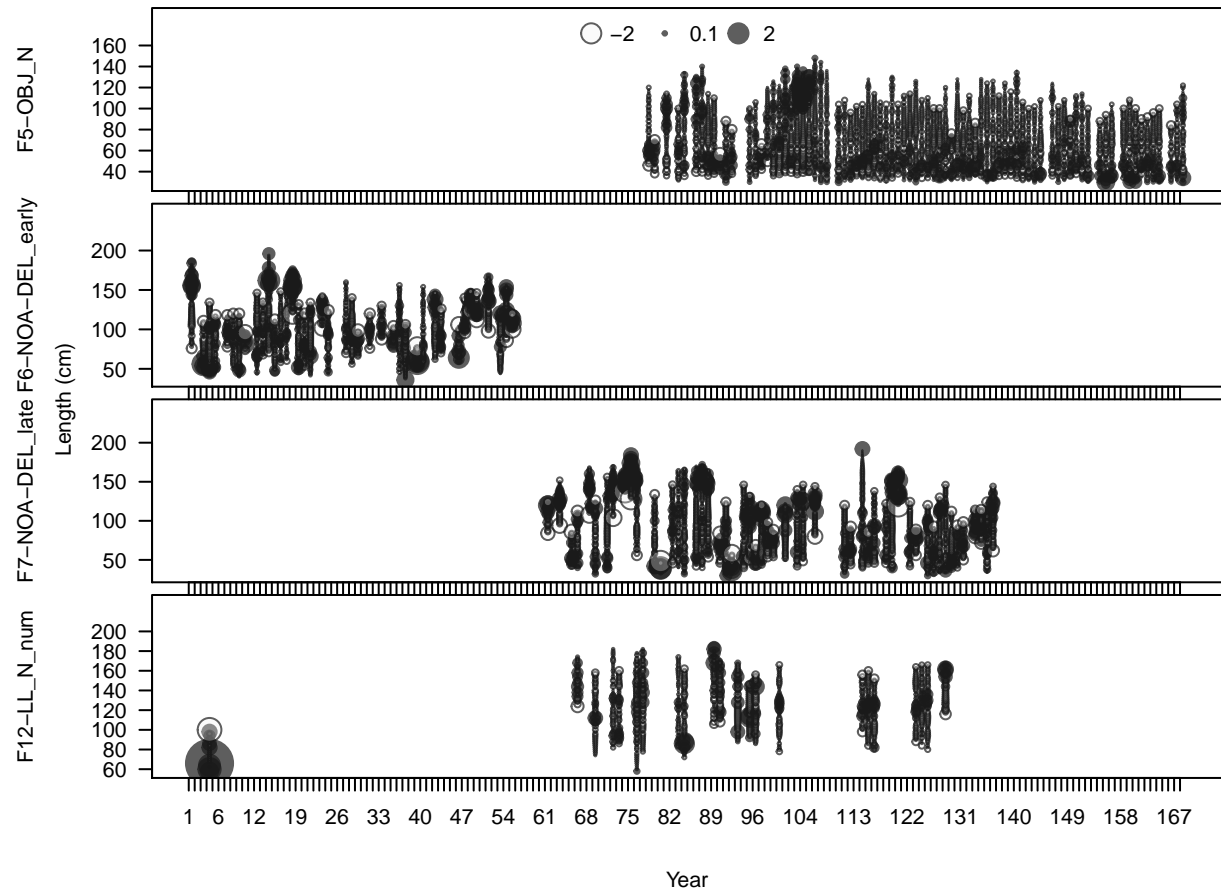
## length comps, whole catch, aggregated across time by fleet



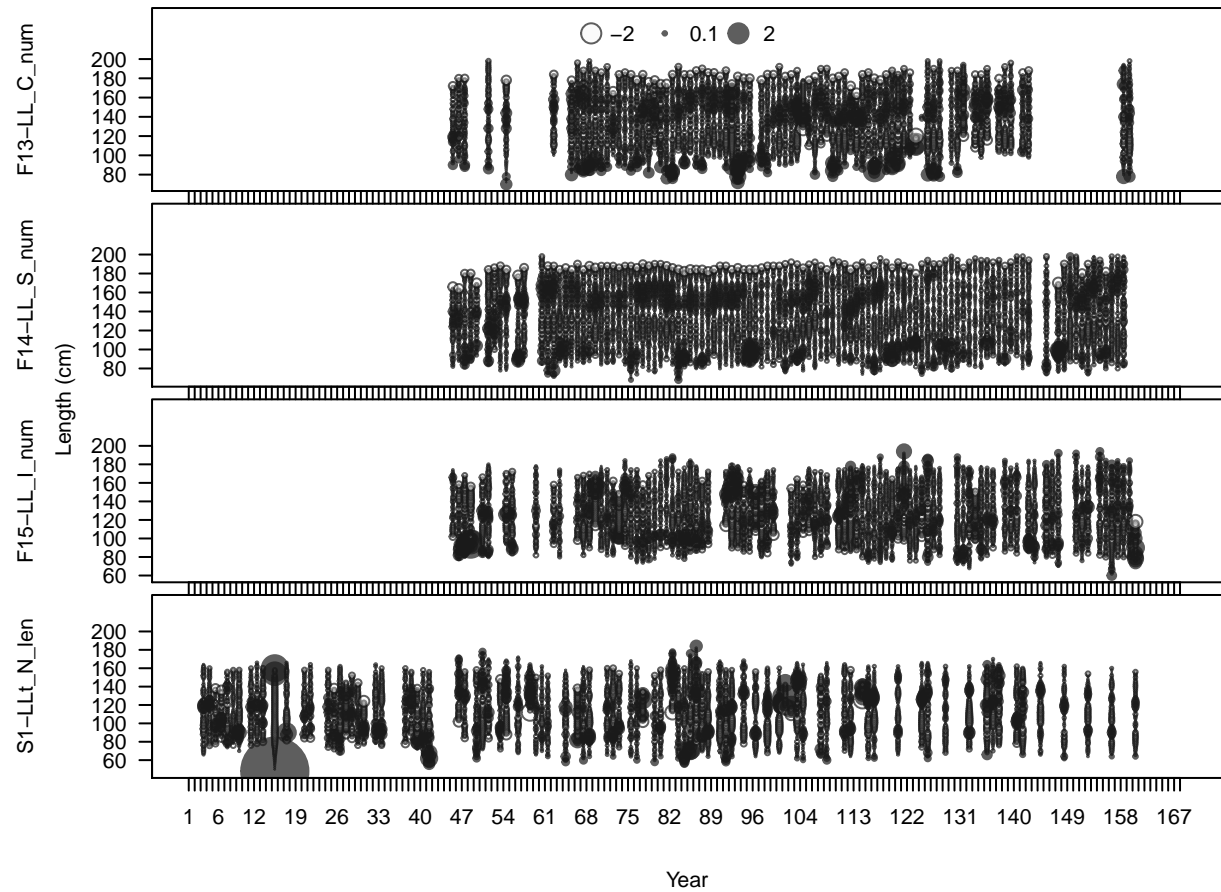
# Pearson residuals, sexes combined, whole catch, comparing across fleets



# Pearson residuals, sexes combined, whole catch, comparing across fleets

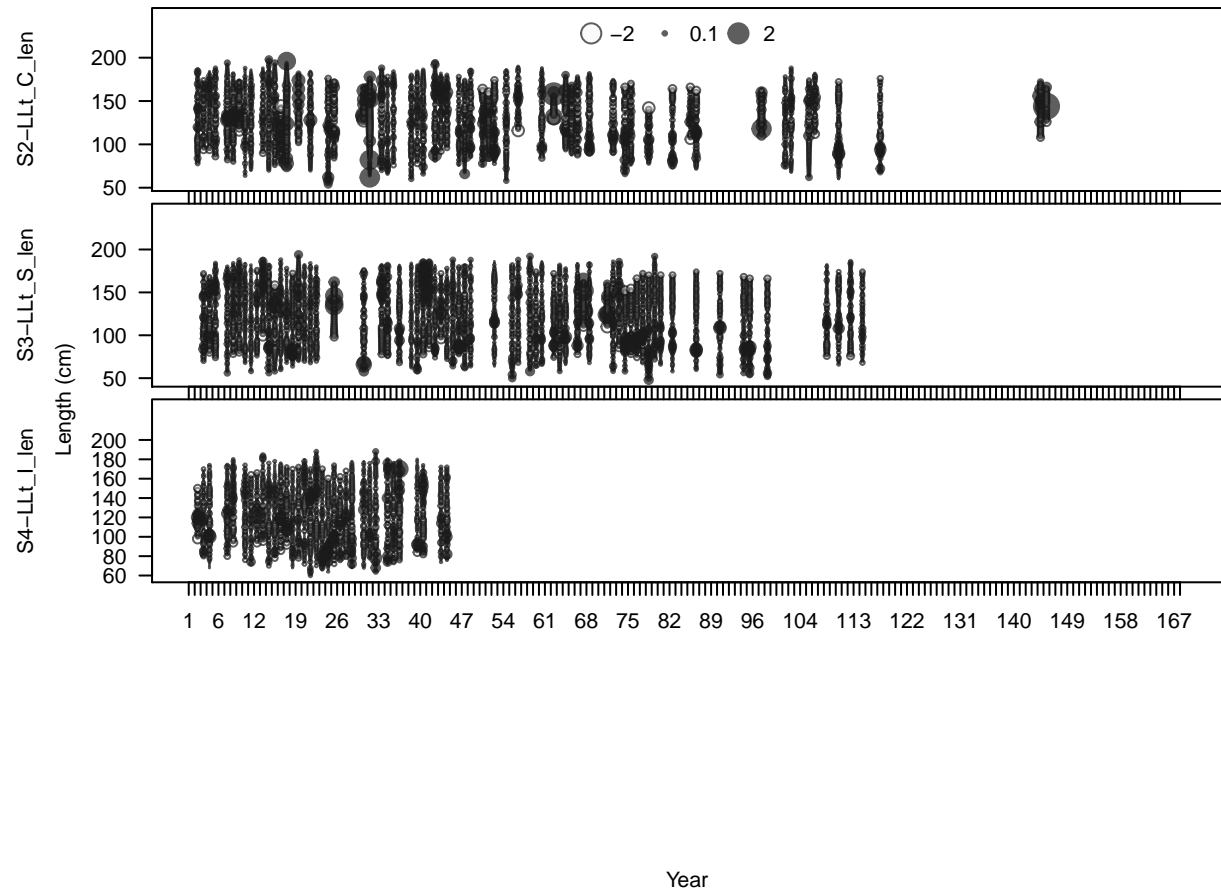


# Pearson residuals, sexes combined, whole catch, comparing across fleets

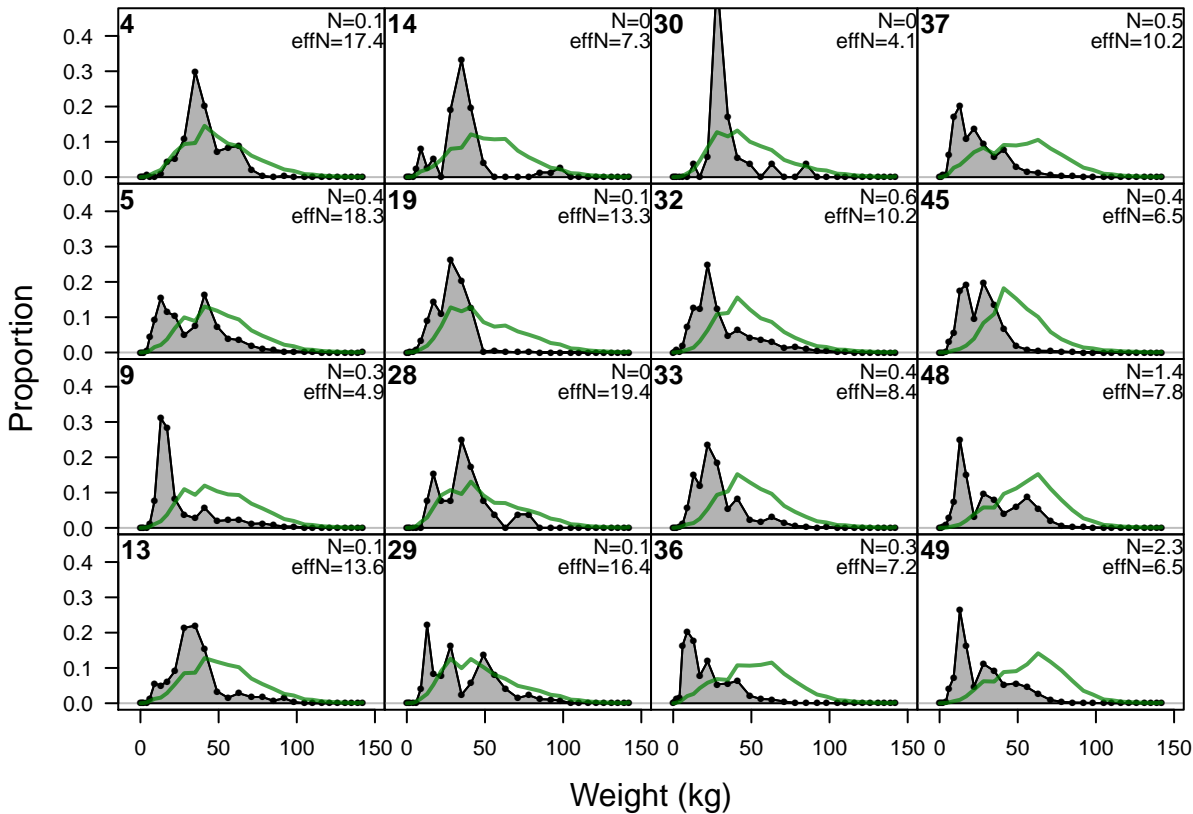




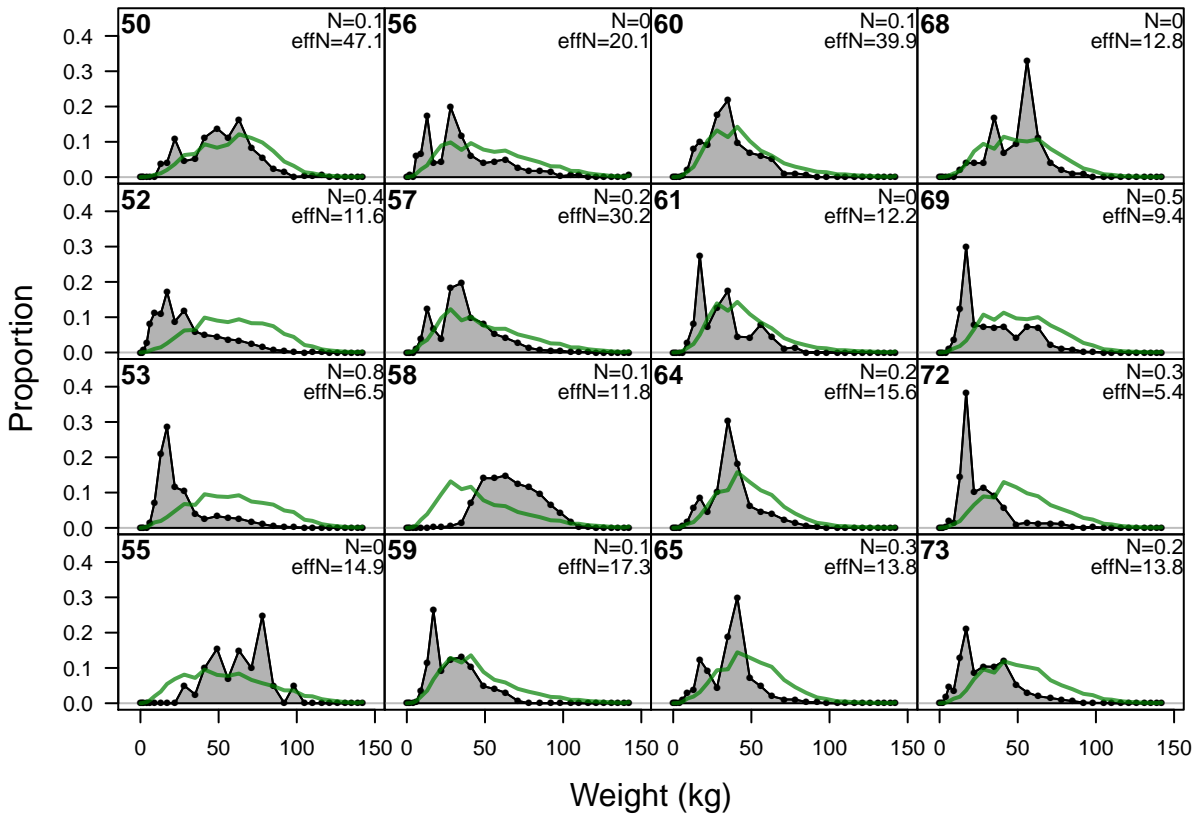
# Pearson residuals, sexes combined, whole catch, comparing across fleets



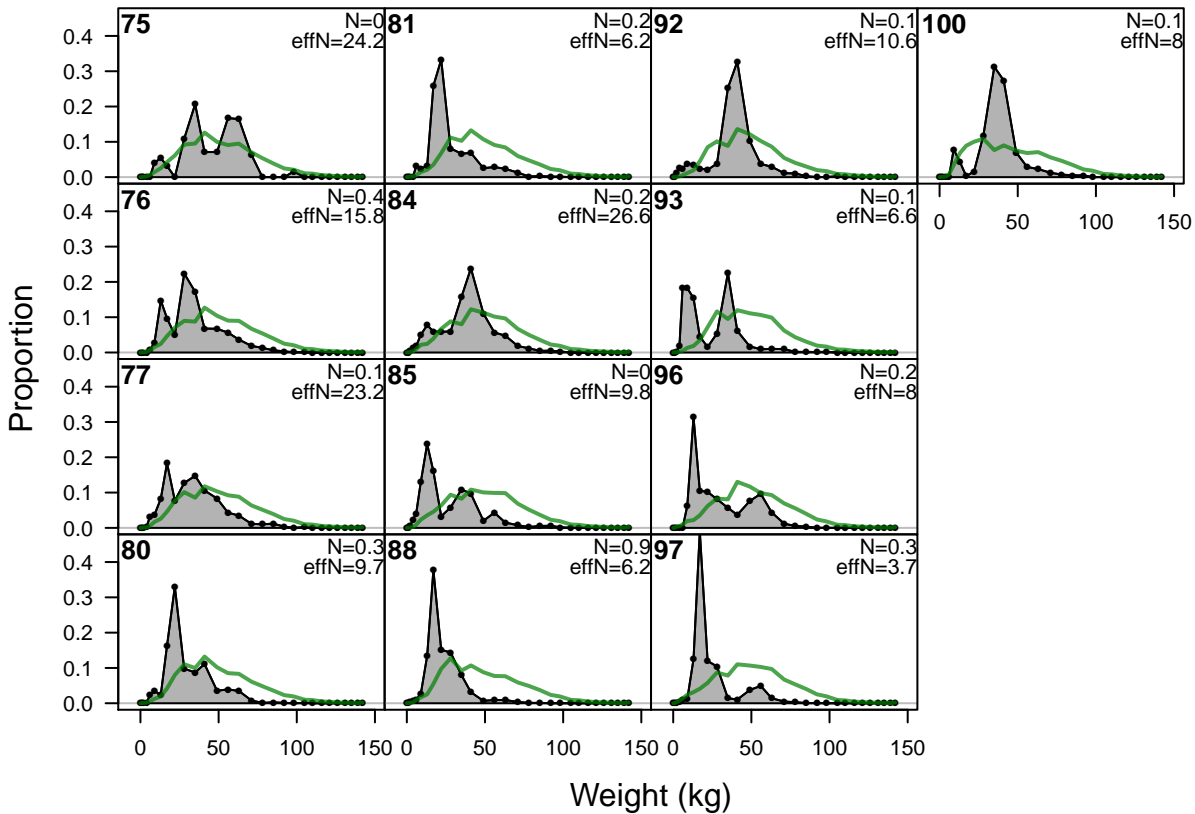
# size comps, whole catch, S5-LLc\_N\_w



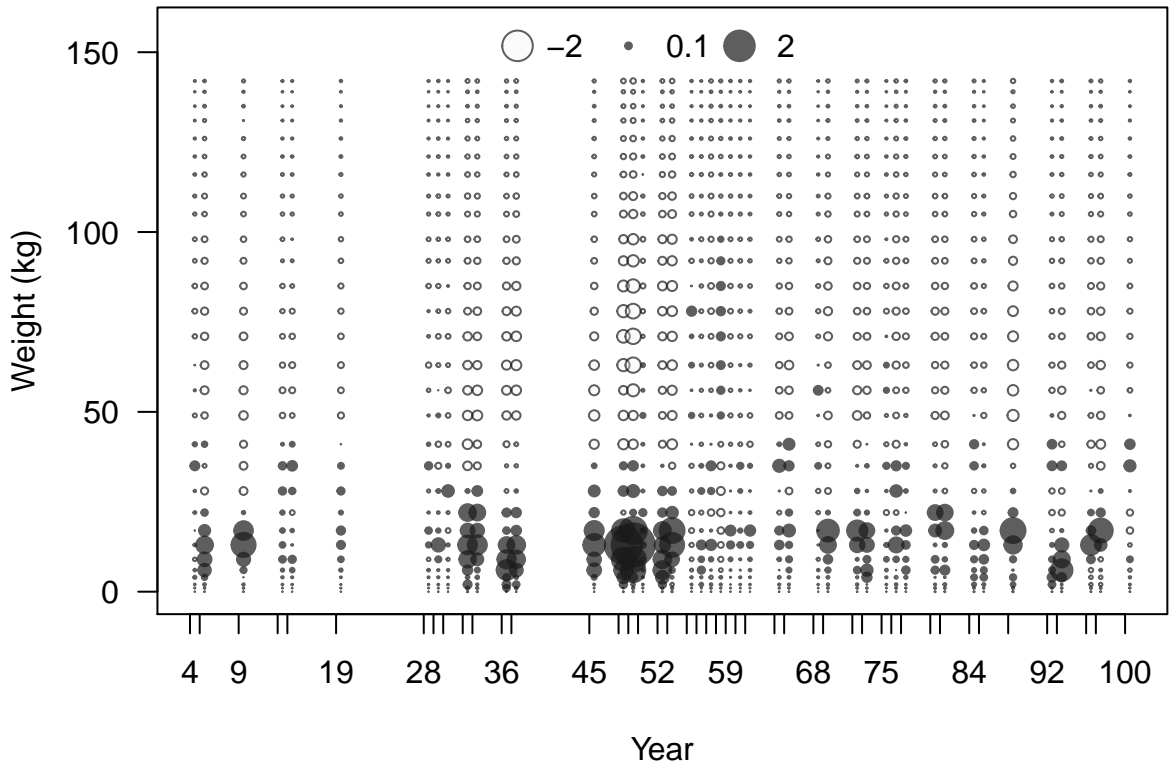
## size comps, whole catch, S5-LLc\_N\_w



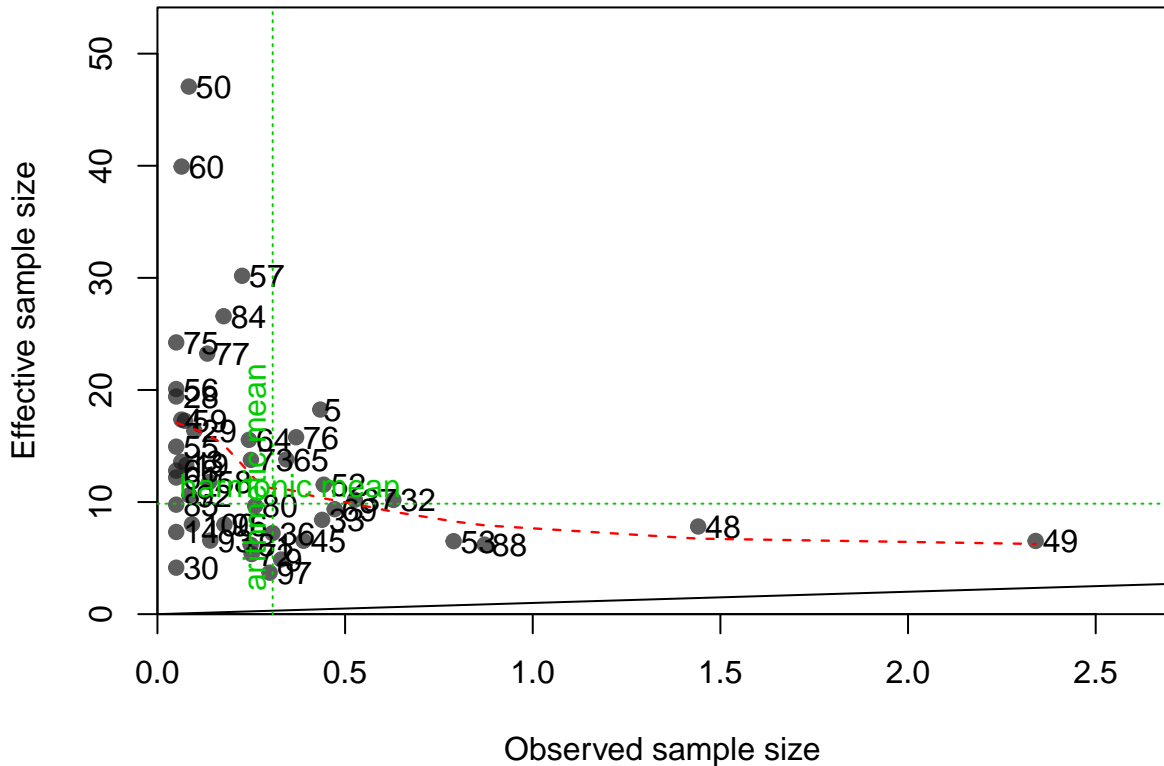
# size comps, whole catch, S5-LLc\_N\_w



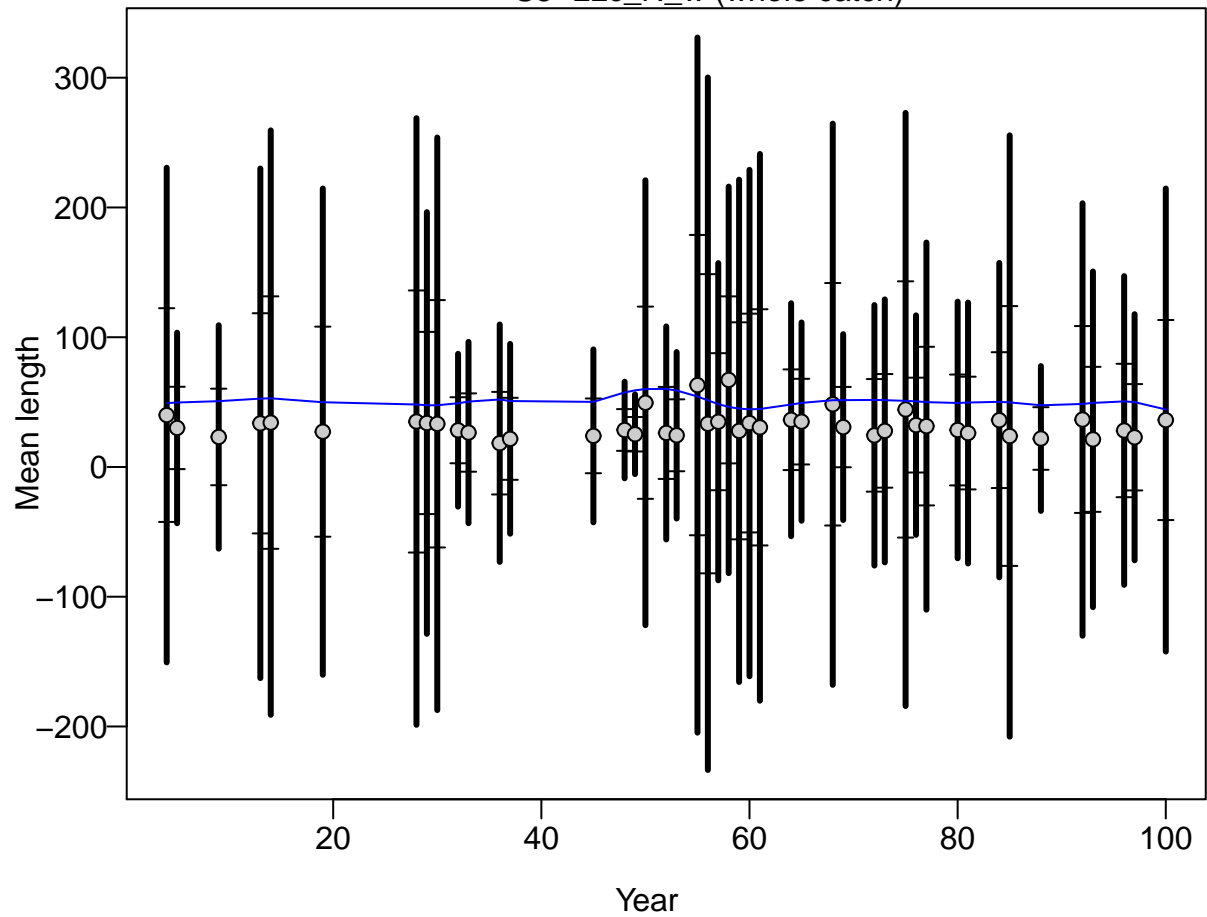
# Pearson residuals, whole catch, S5-LLc\_N\_w (max=3.96)



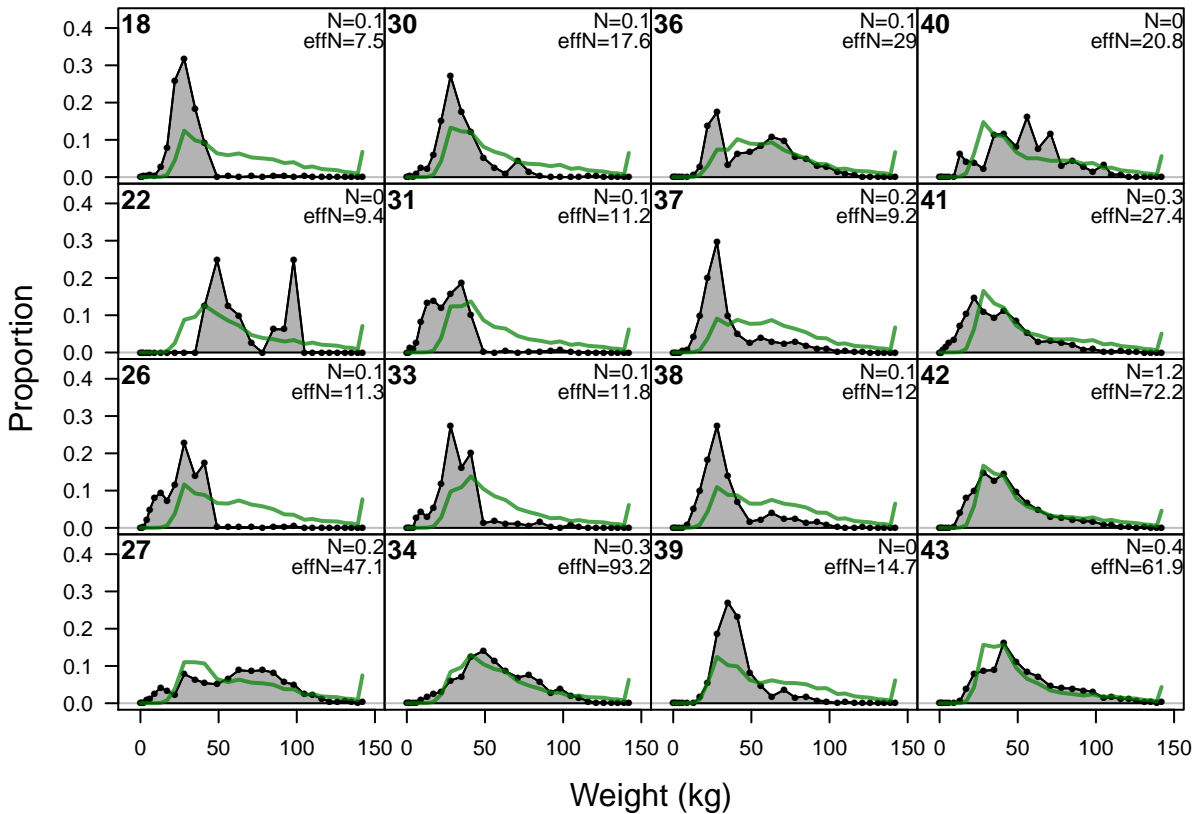
# N-EffN comparison, size comps, whole catch, S5-LLc\_N\_w



S5-LLc\_N\_w (whole catch)

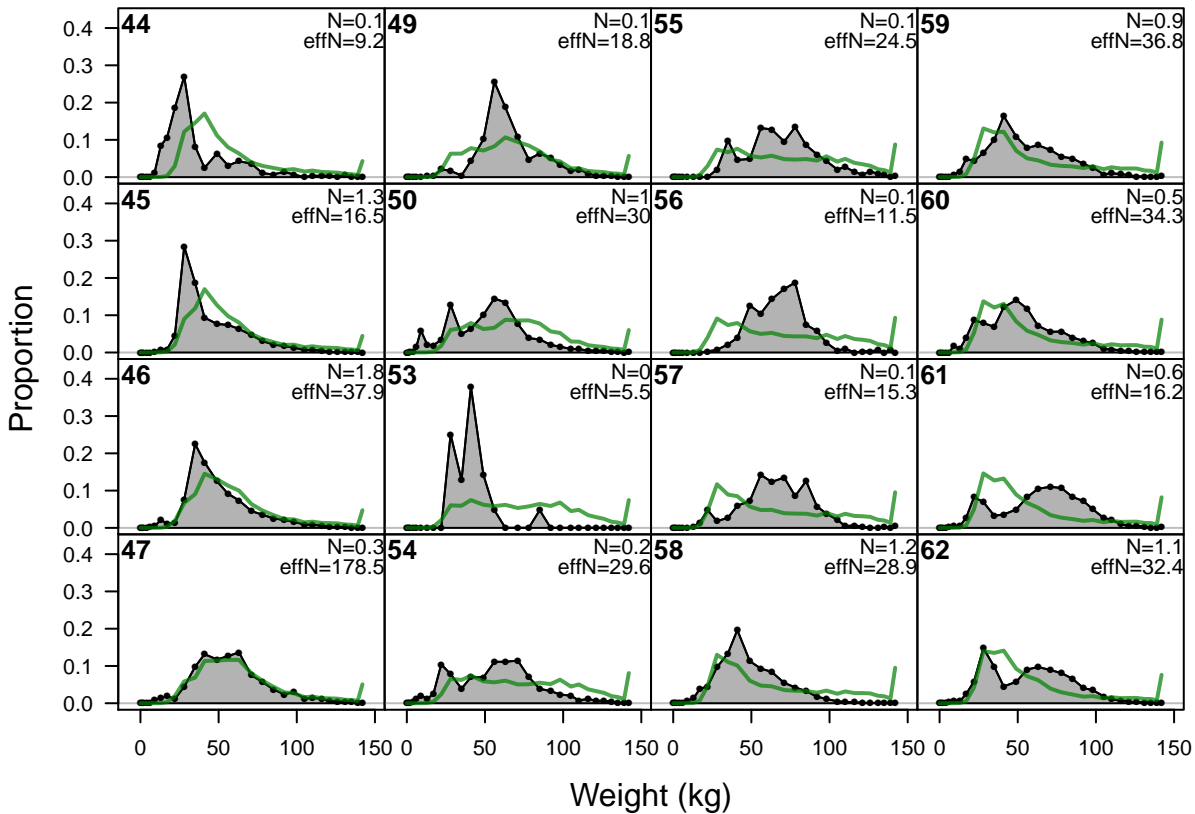


# size comps, whole catch, S6-LLc\_C\_w

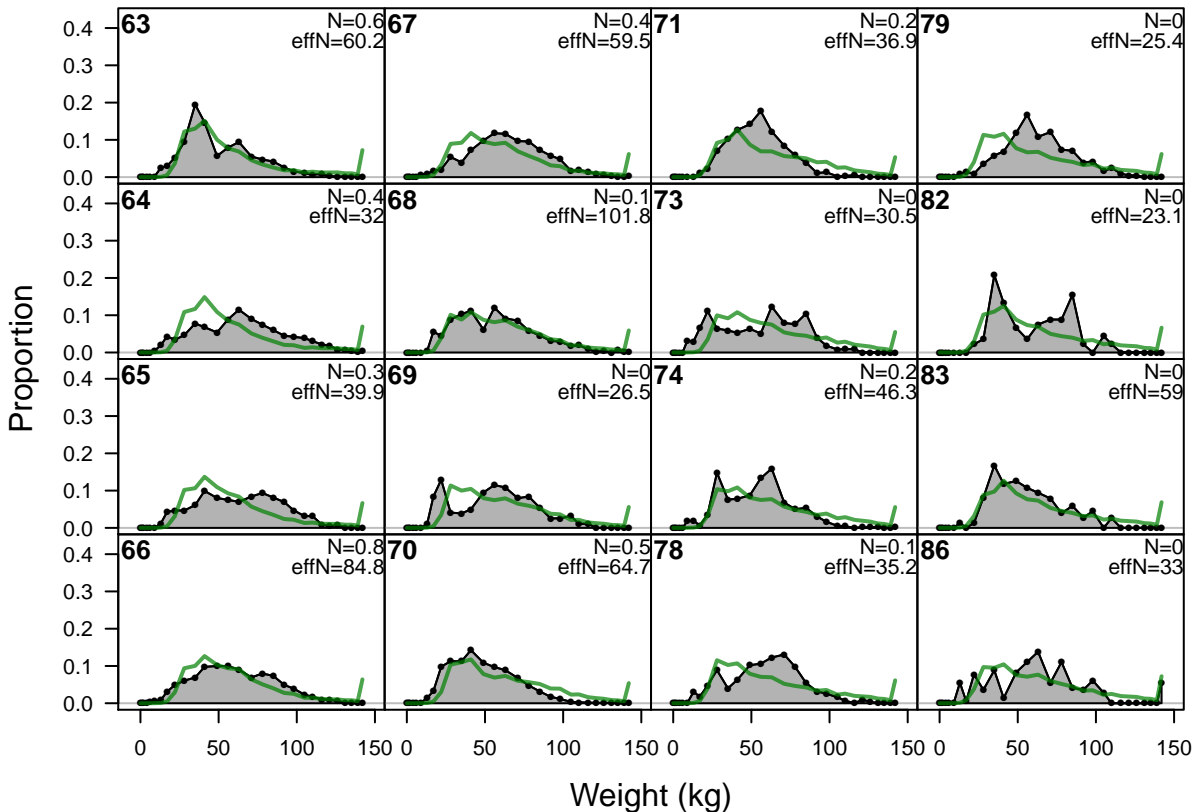




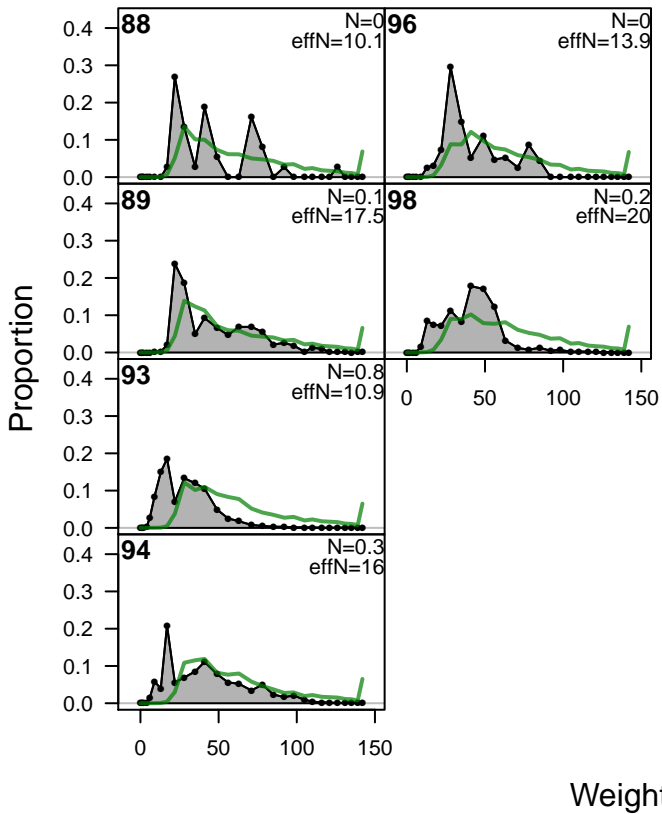
# size comps, whole catch, S6-LLc\_C\_w



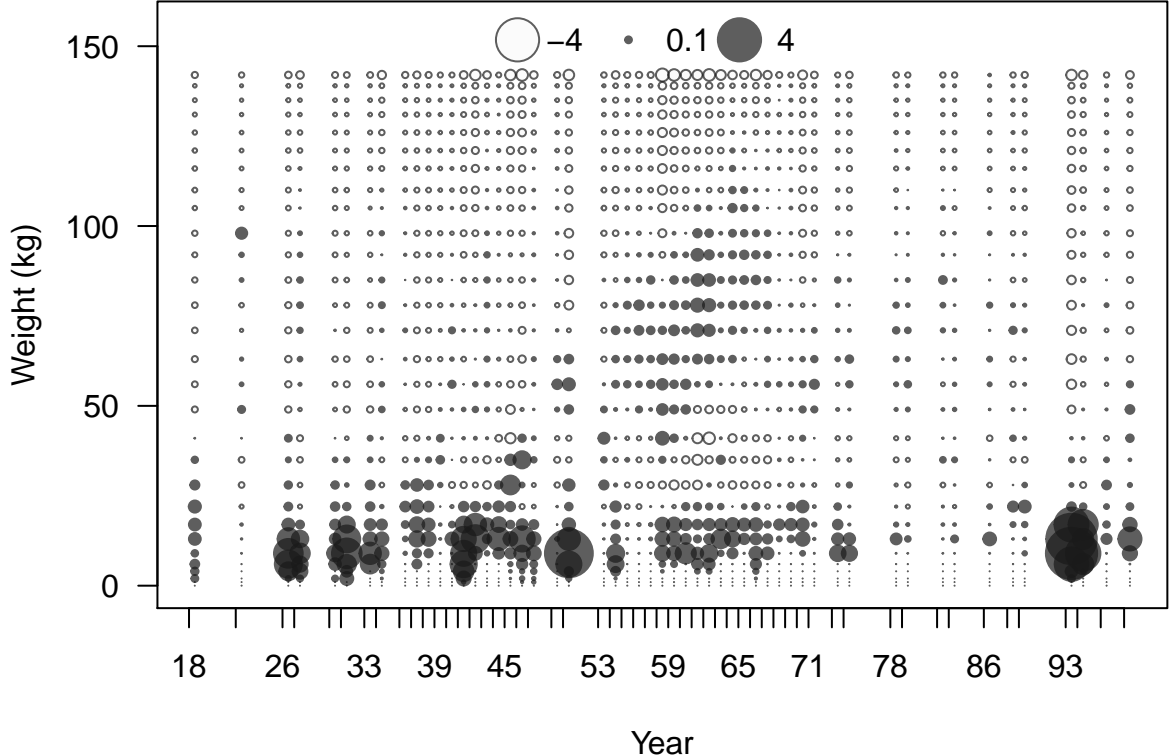
# size comps, whole catch, S6-LLc\_C\_w



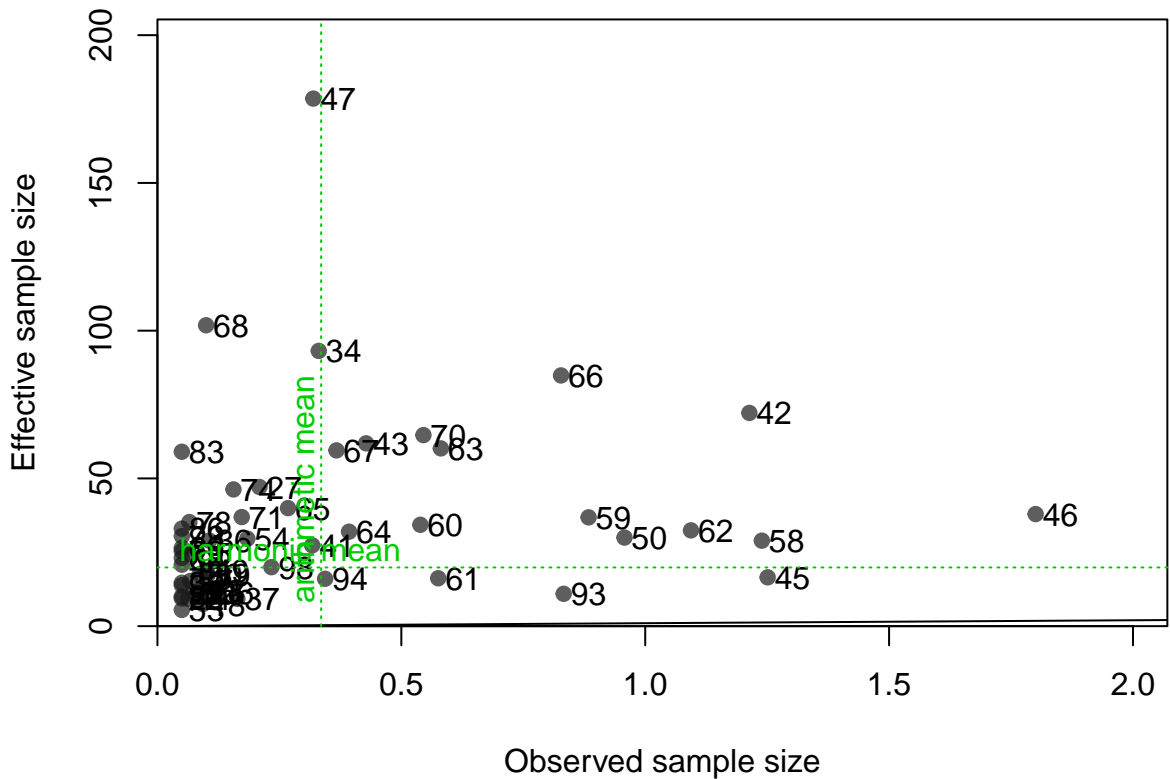
# size comps, whole catch, S6-LLc\_C\_w



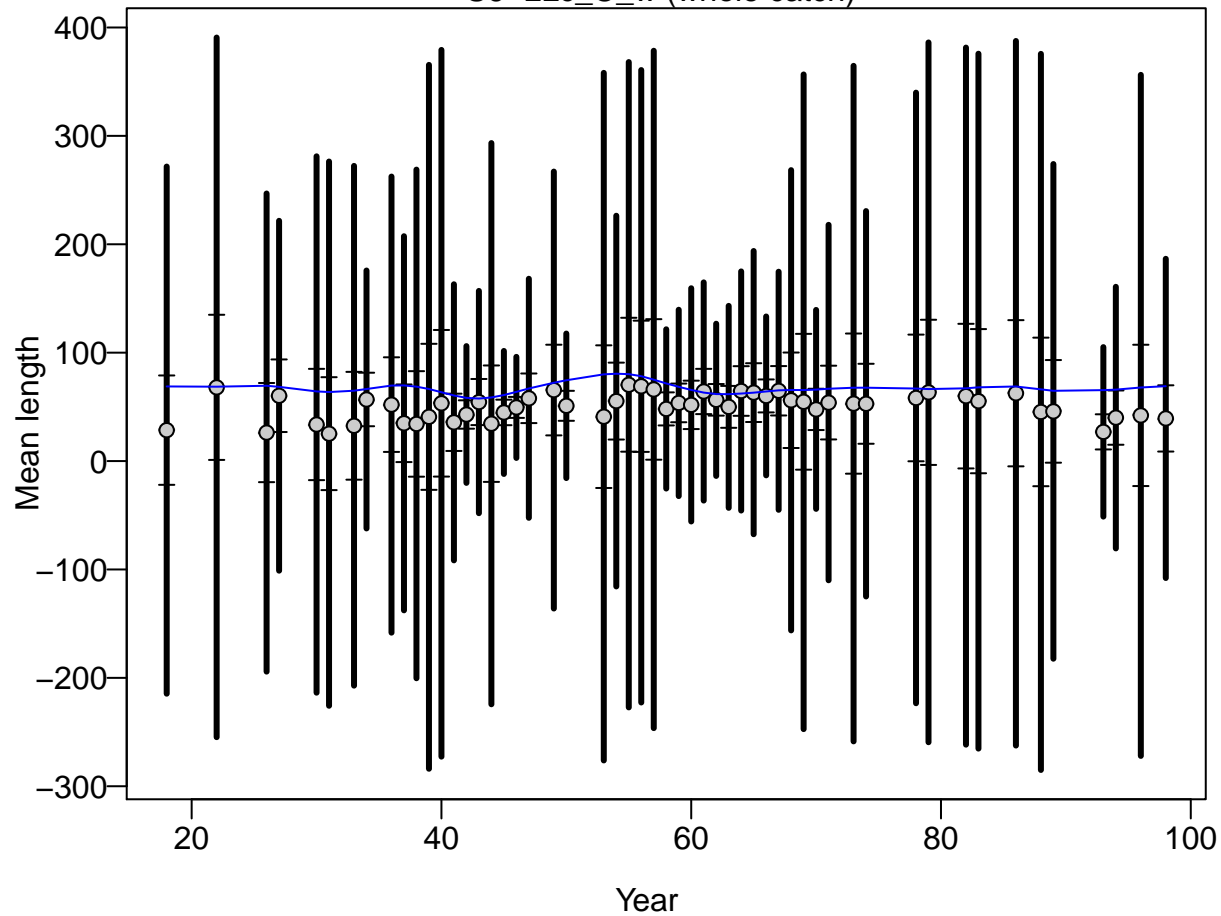
# Pearson residuals, whole catch, S6-LLc\_C\_w (max=5.62)



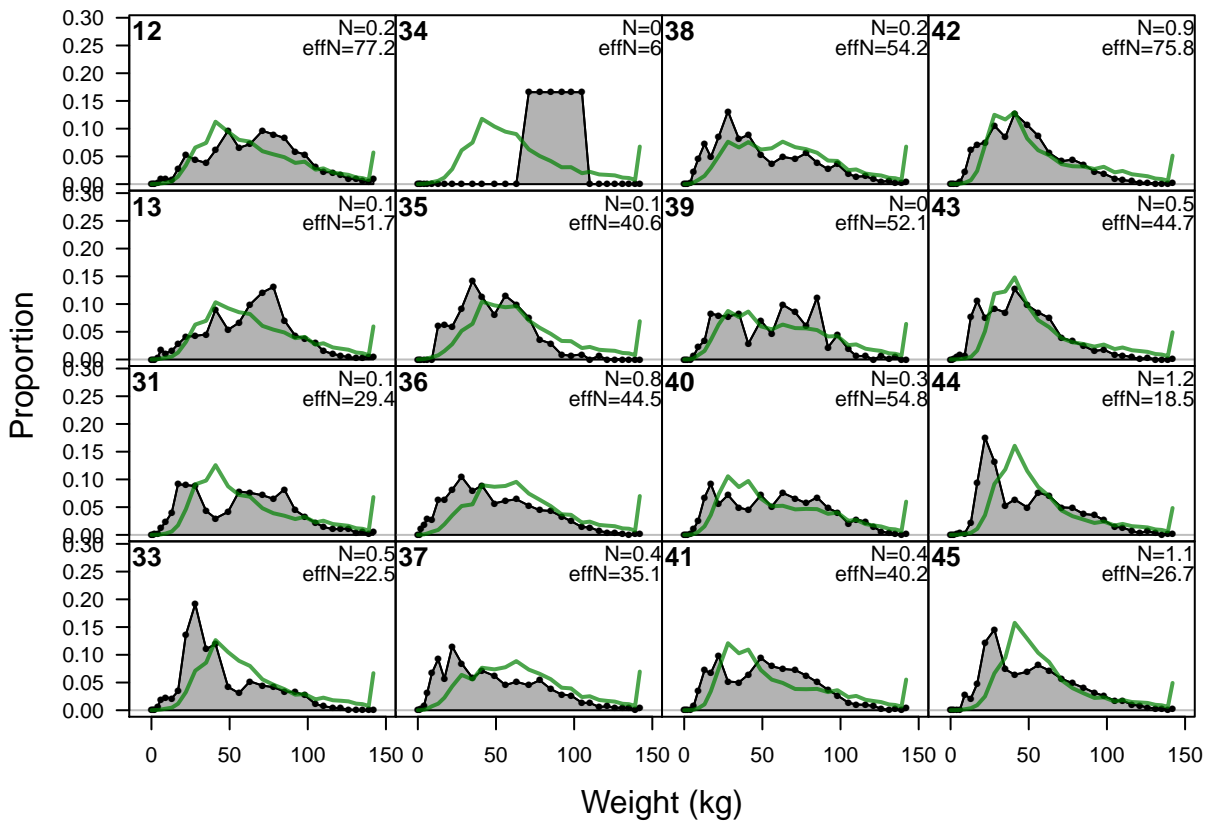
# N-EffN comparison, size comps, whole catch, S6-LLc\_C\_w



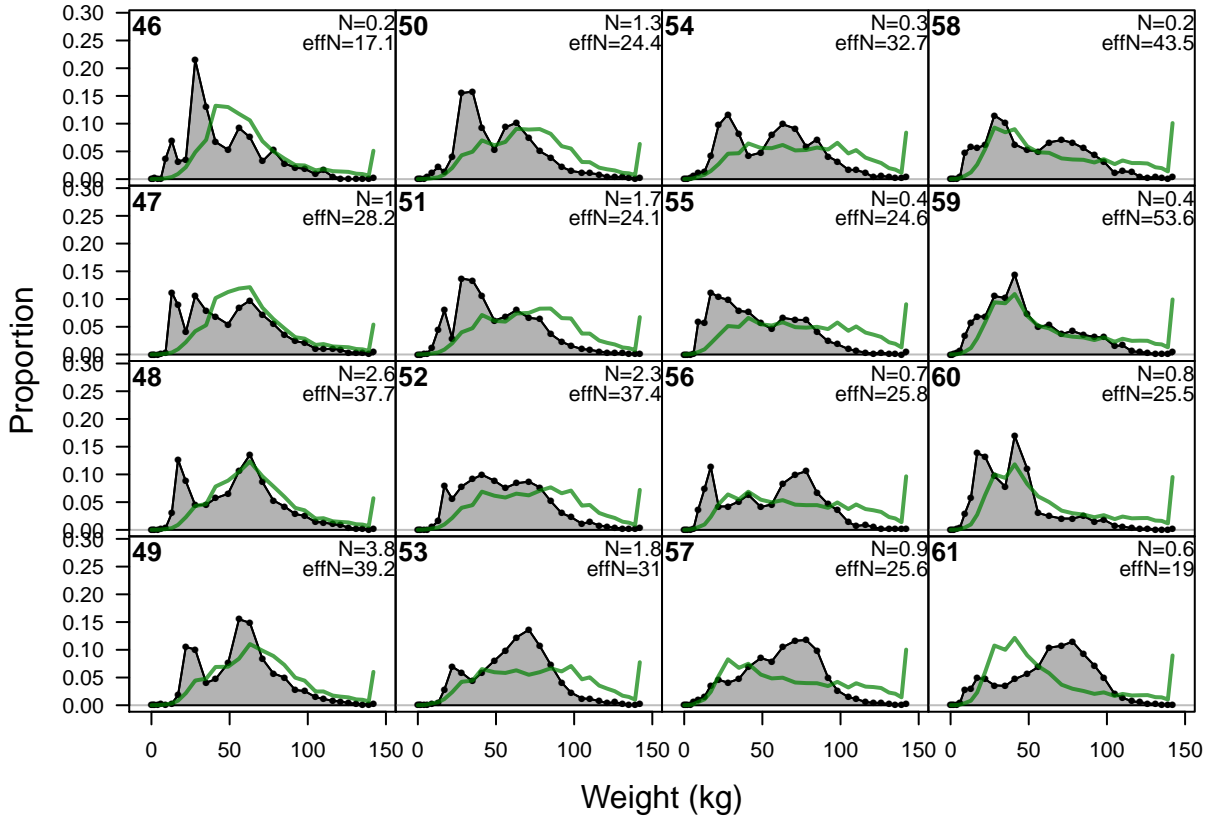
## S6-LLc\_C\_w (whole catch)



## size comps, whole catch, S7-LLc\_S\_w

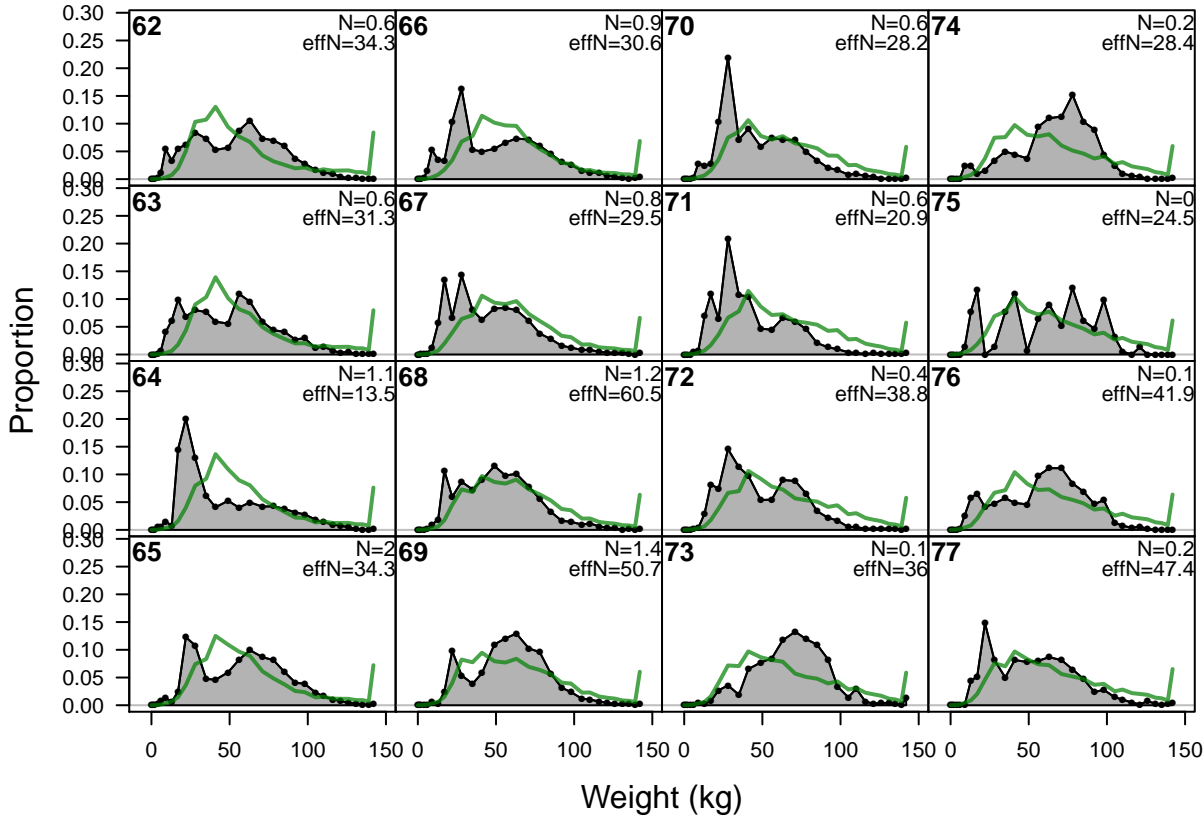


# size comps, whole catch, S7-LLc\_S\_w

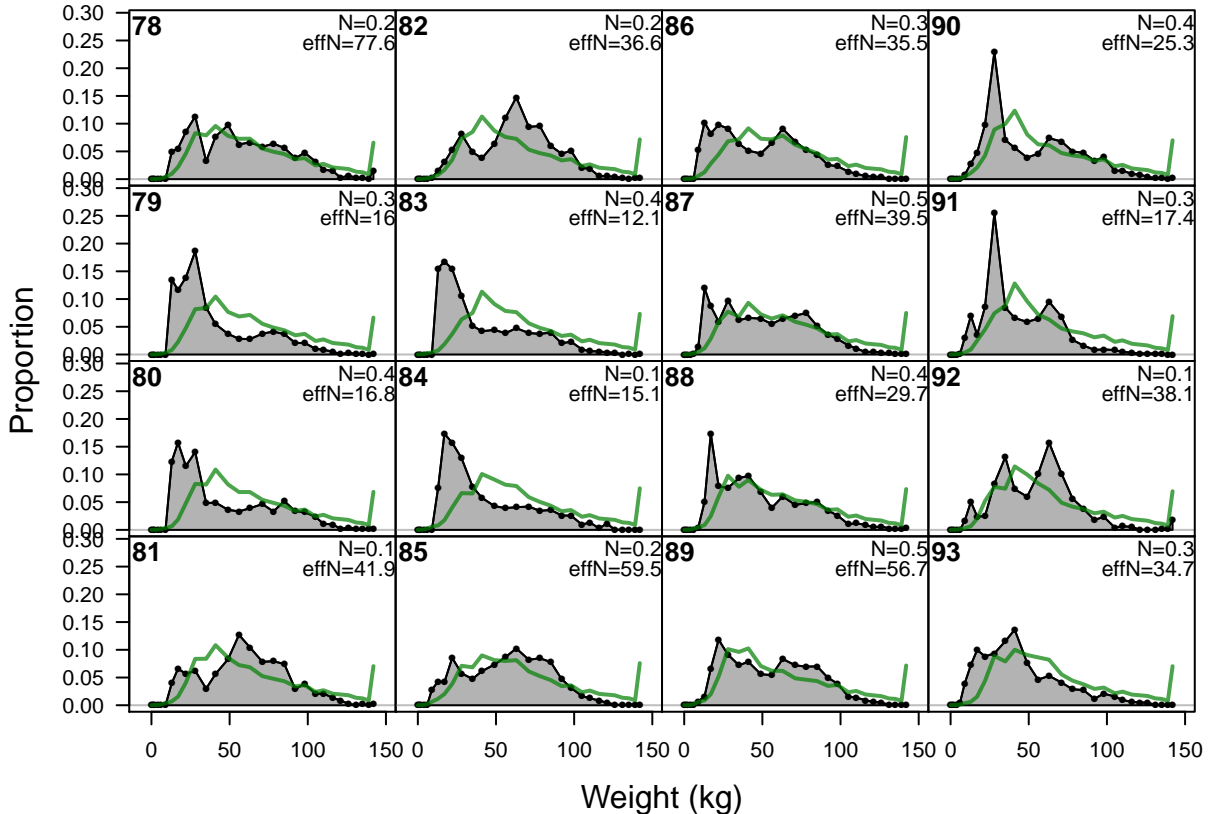




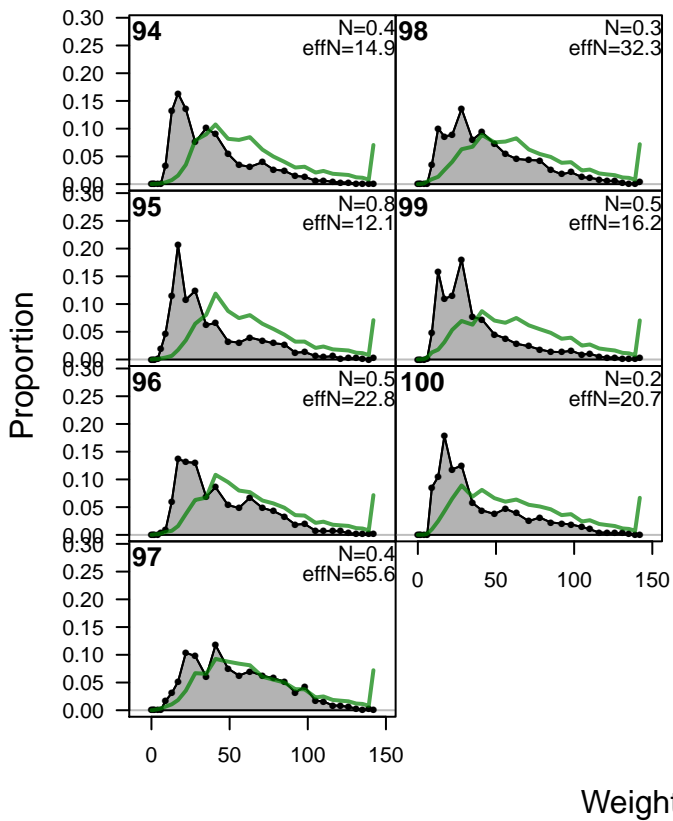
# size comps, whole catch, S7-LLc\_S\_w



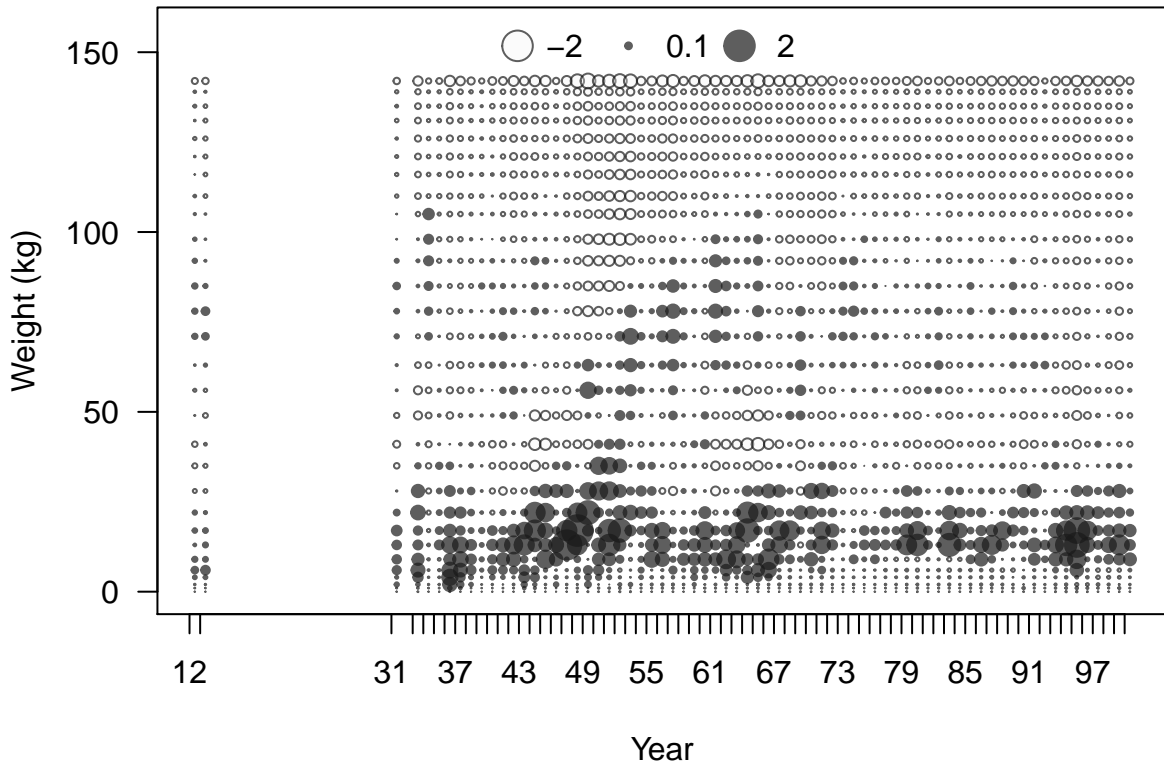
# size comps, whole catch, S7-LLc\_S\_w



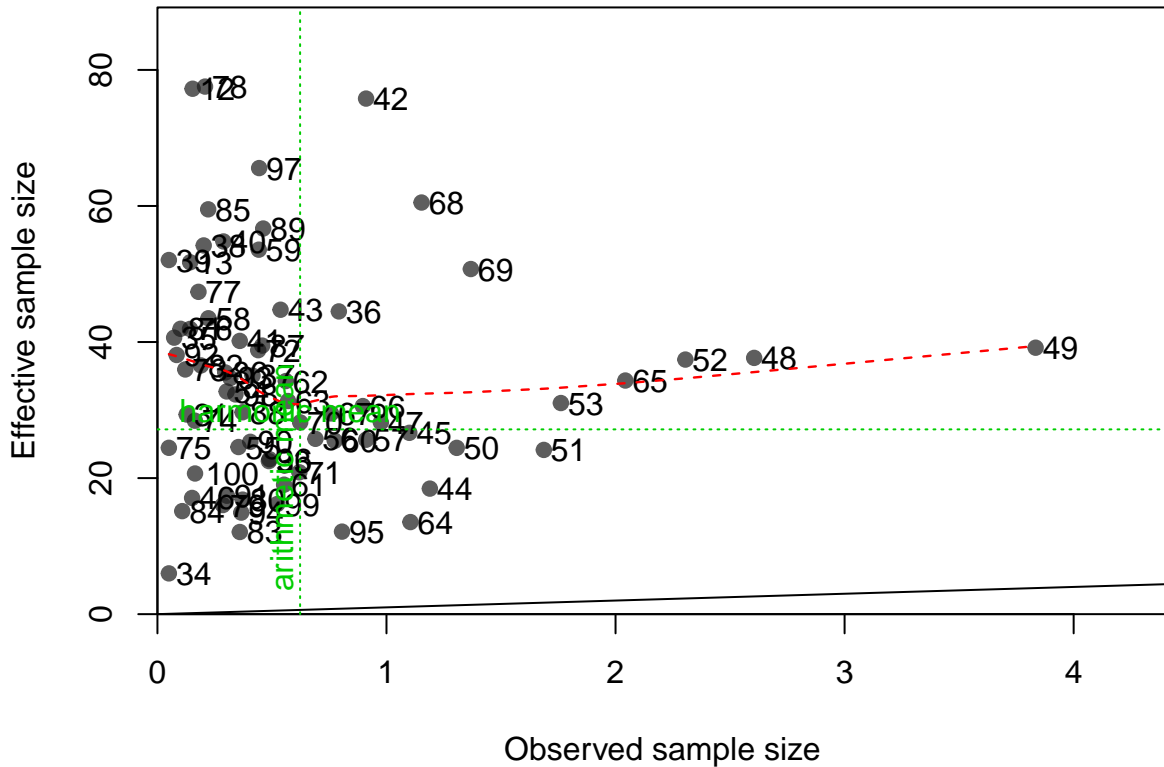
# size comps, whole catch, S7-LLc\_S\_w



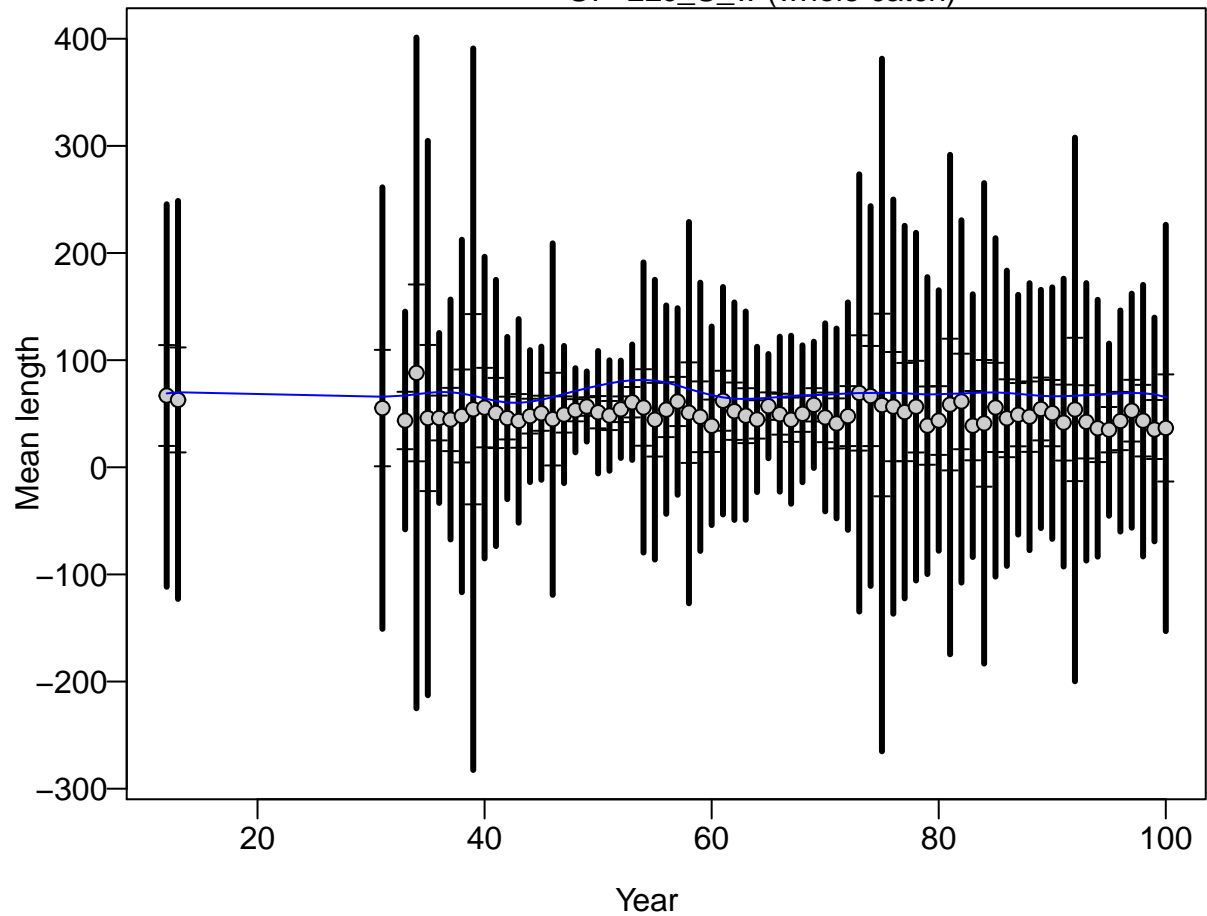
# Pearson residuals, whole catch, S7-LLc\_S\_w (max=2.01)



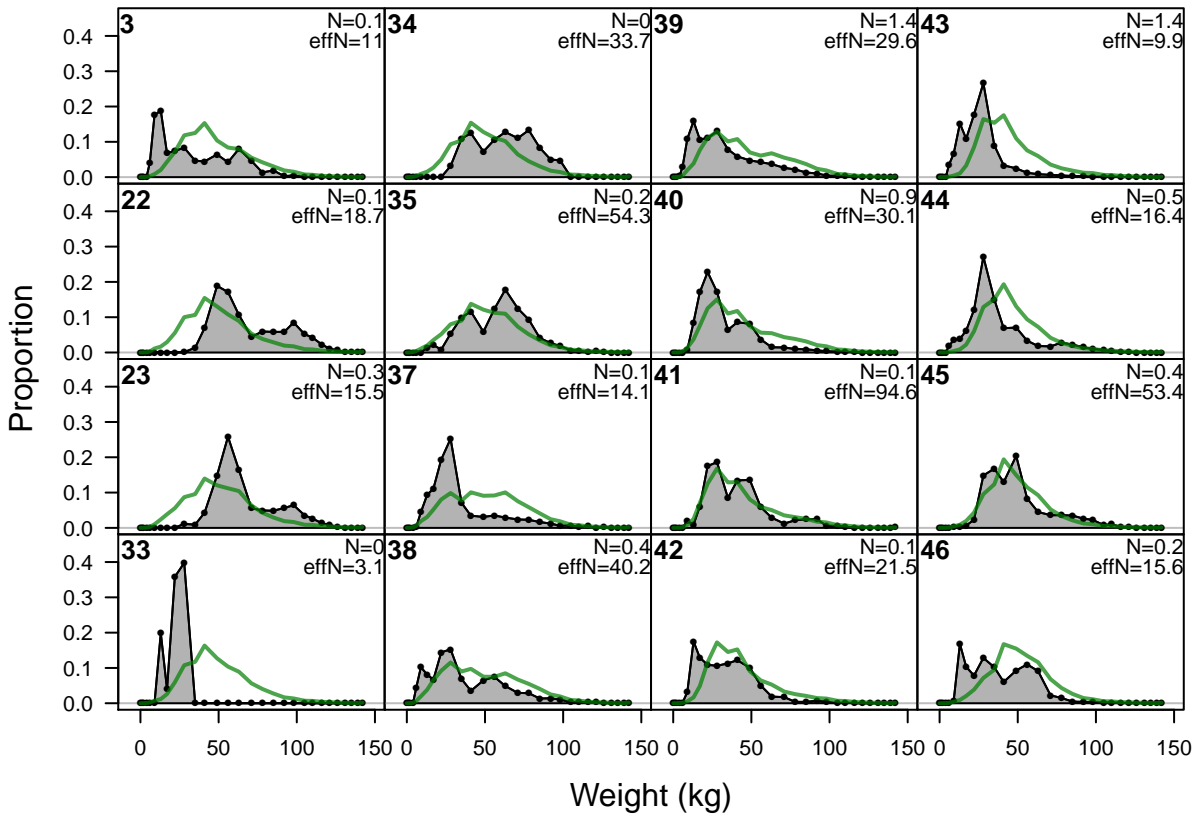
# N-EffN comparison, size comps, whole catch, S7-LLc\_S\_w



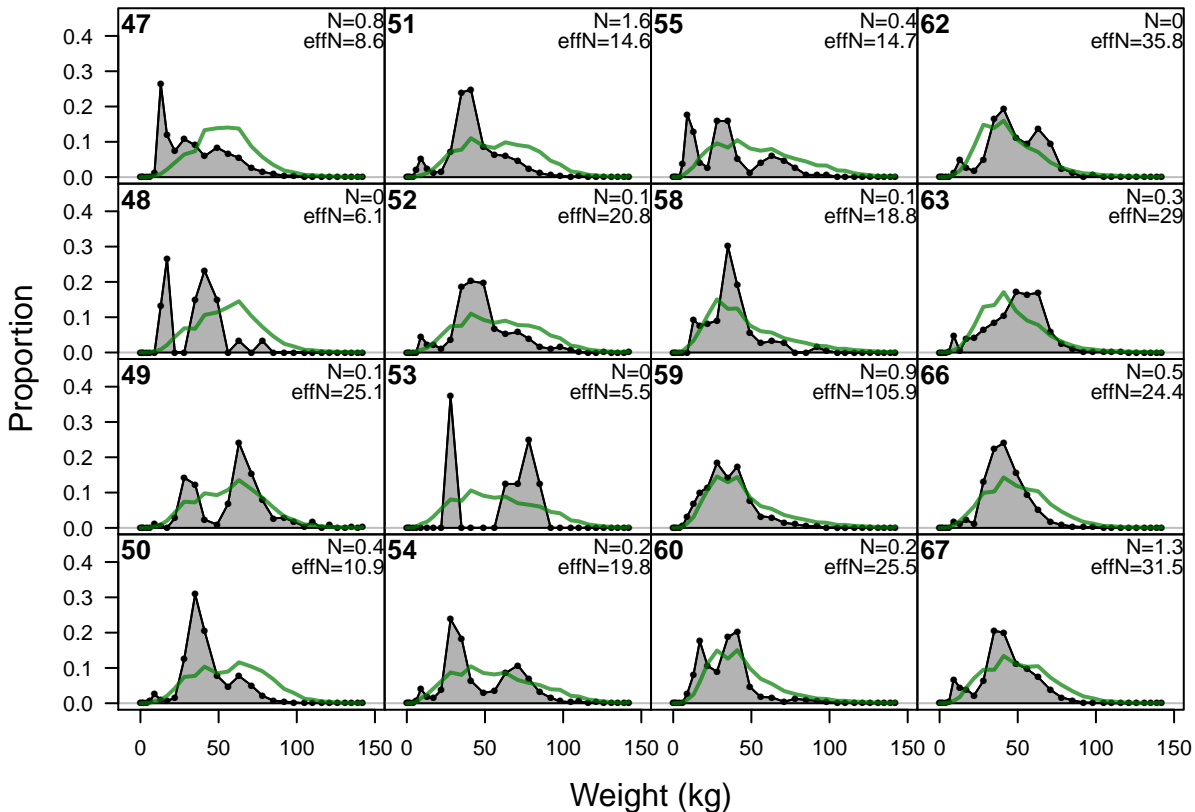
## S7-LLc\_S\_w (whole catch)



## size comps, whole catch, S8-LLc\_I\_w

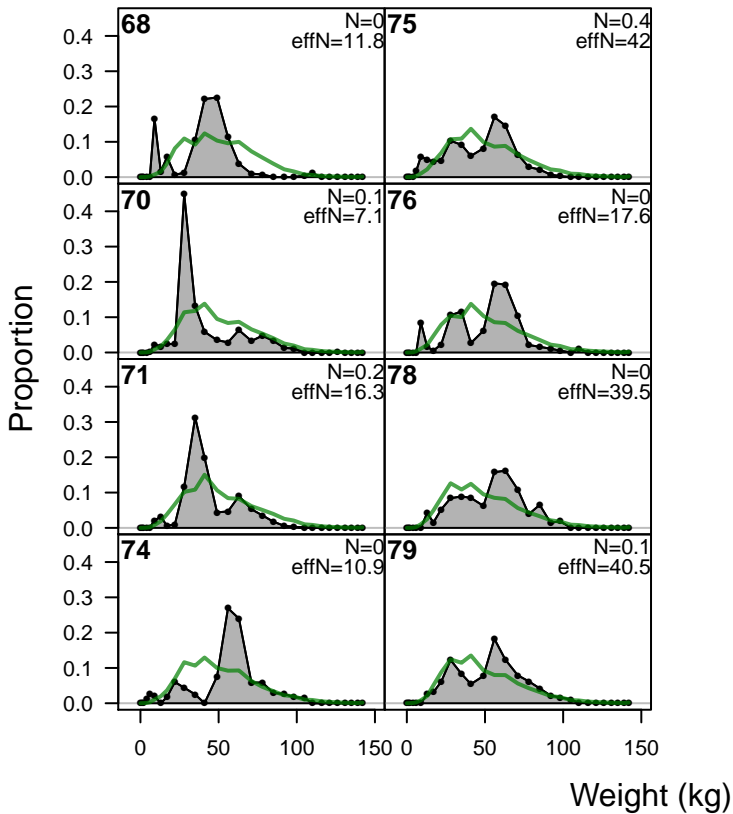


## size comps, whole catch, S8-LLc\_I\_w

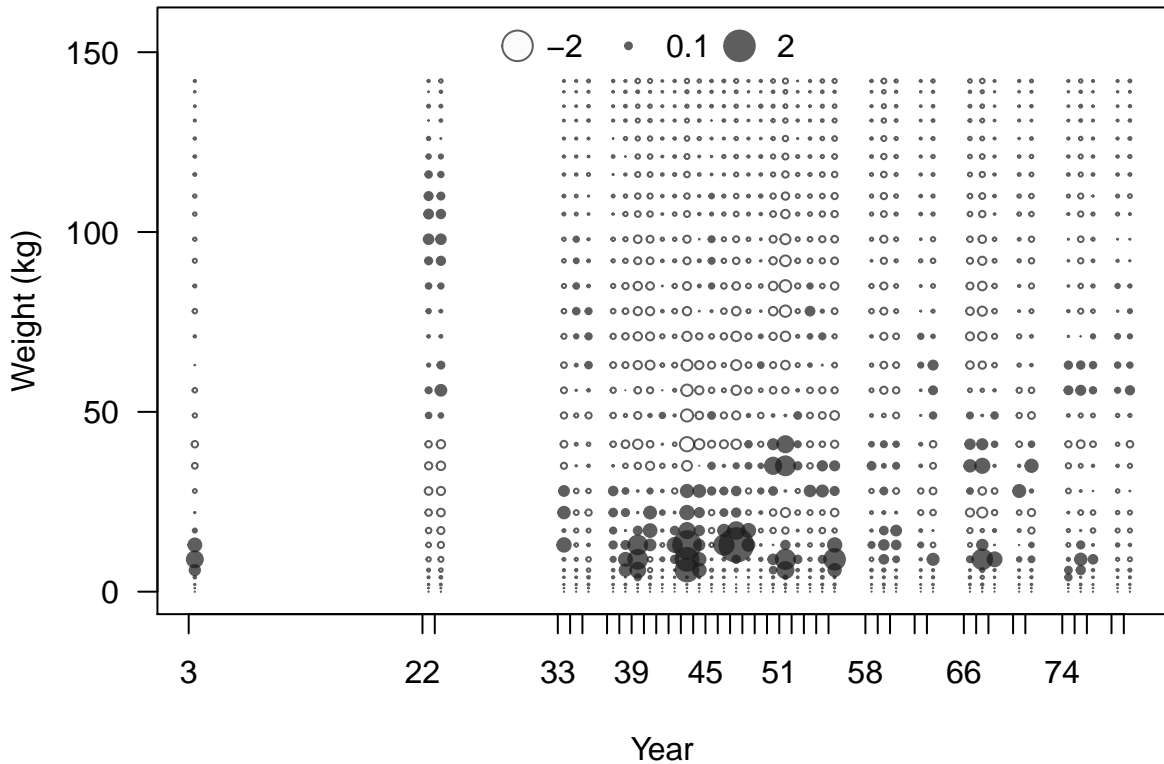




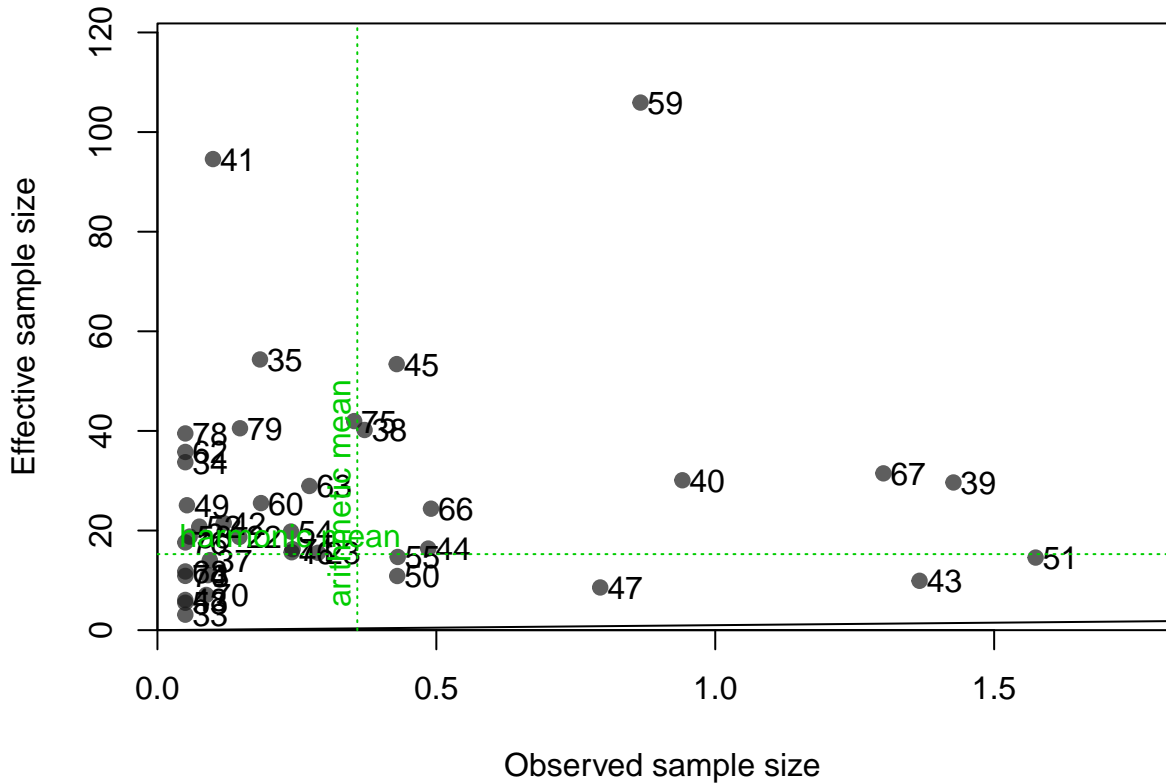
# size comps, whole catch, S8-LLc\_I\_w



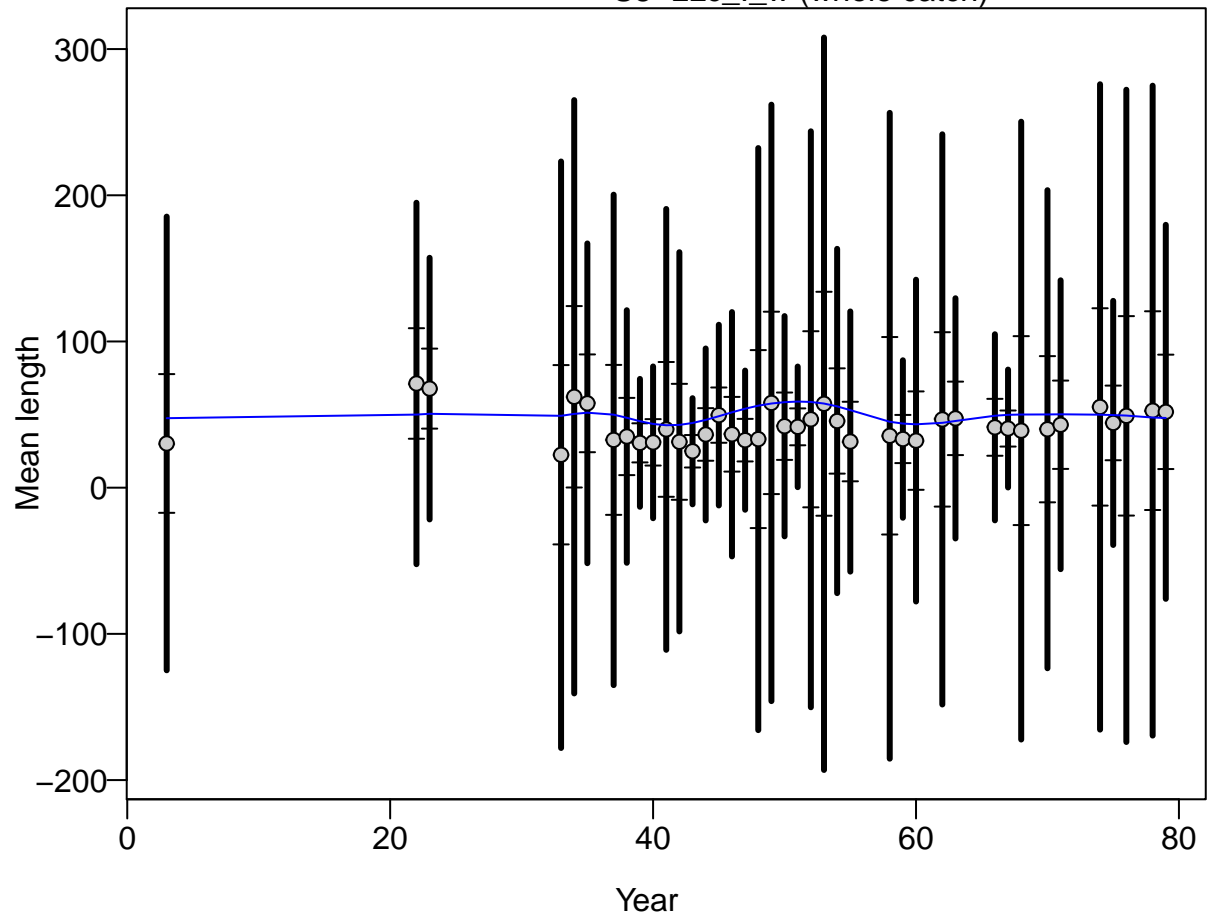
# Pearson residuals, whole catch, S8-LLc\_I\_w (max=2.4)



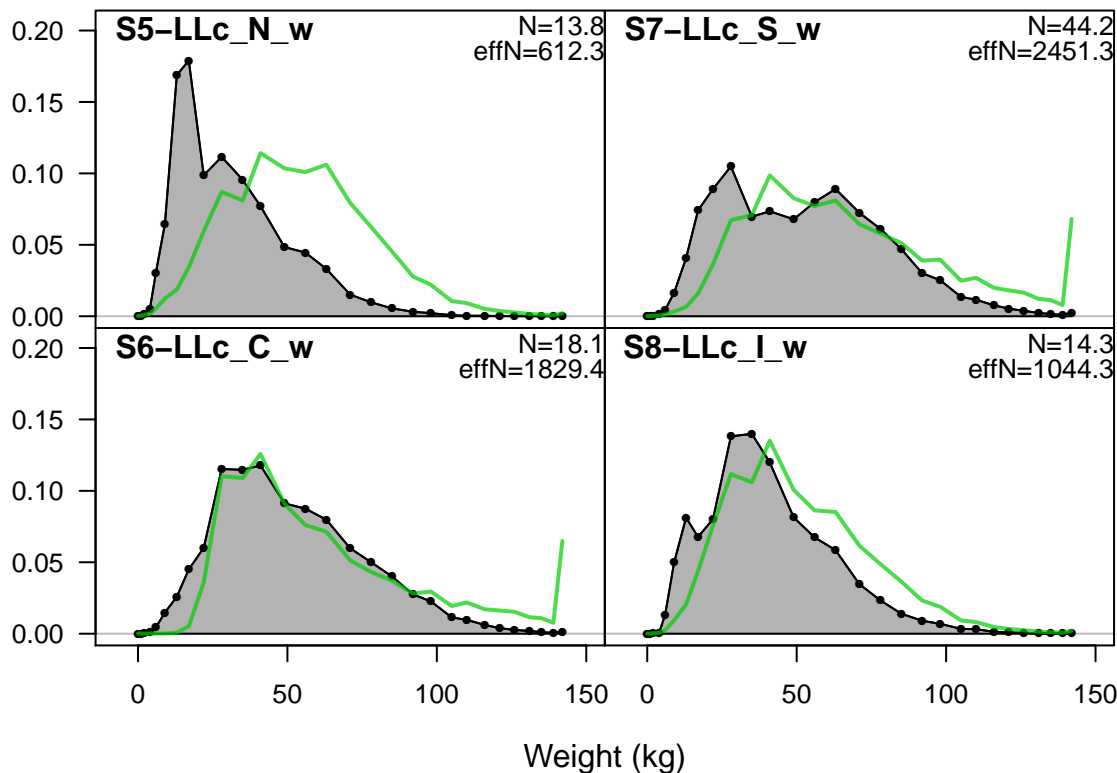
# N-EffN comparison, size comps, whole catch, S8-LLc\_I\_w



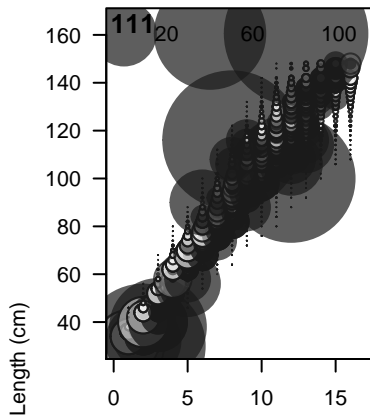
## S8-LLc\_I\_w (whole catch)



# size comps, whole catch, aggregated across time by fleet

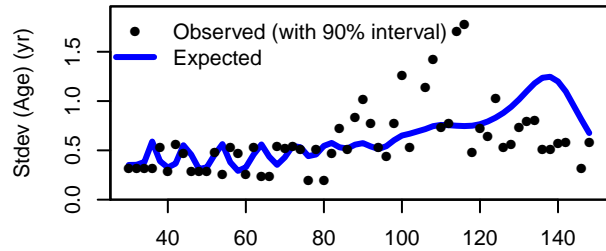
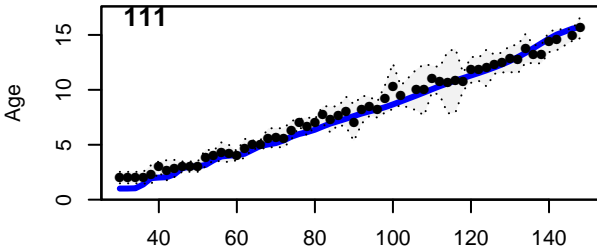


Pearson residuals, whole catch, F3-OBJ\_C (max=93.17)

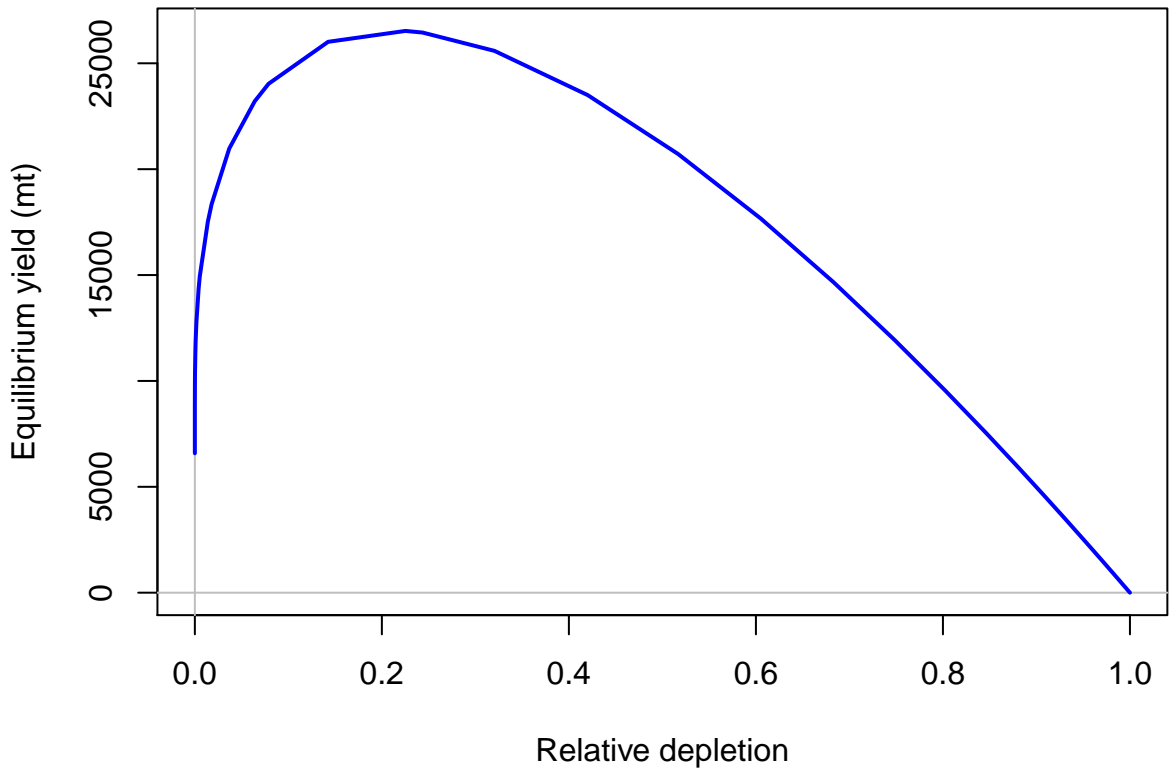


Age (yr)

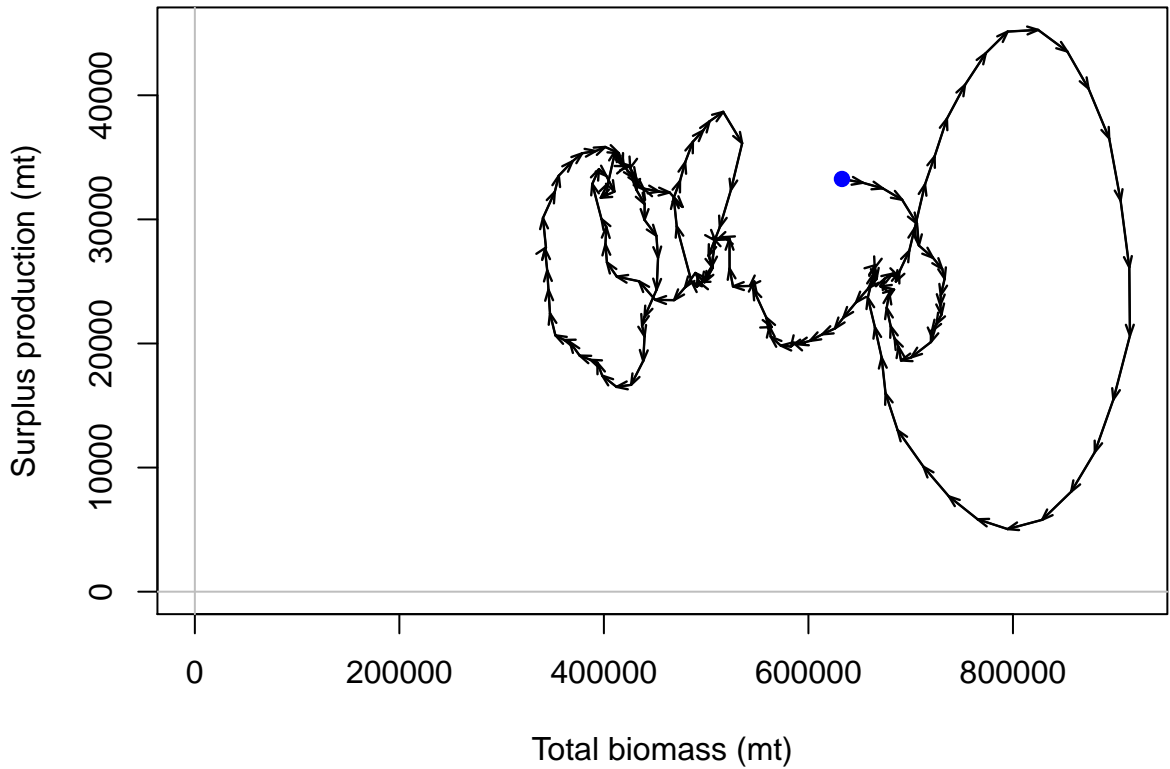
# Conditional AAL plot, whole catch, F3-OBJ\_C



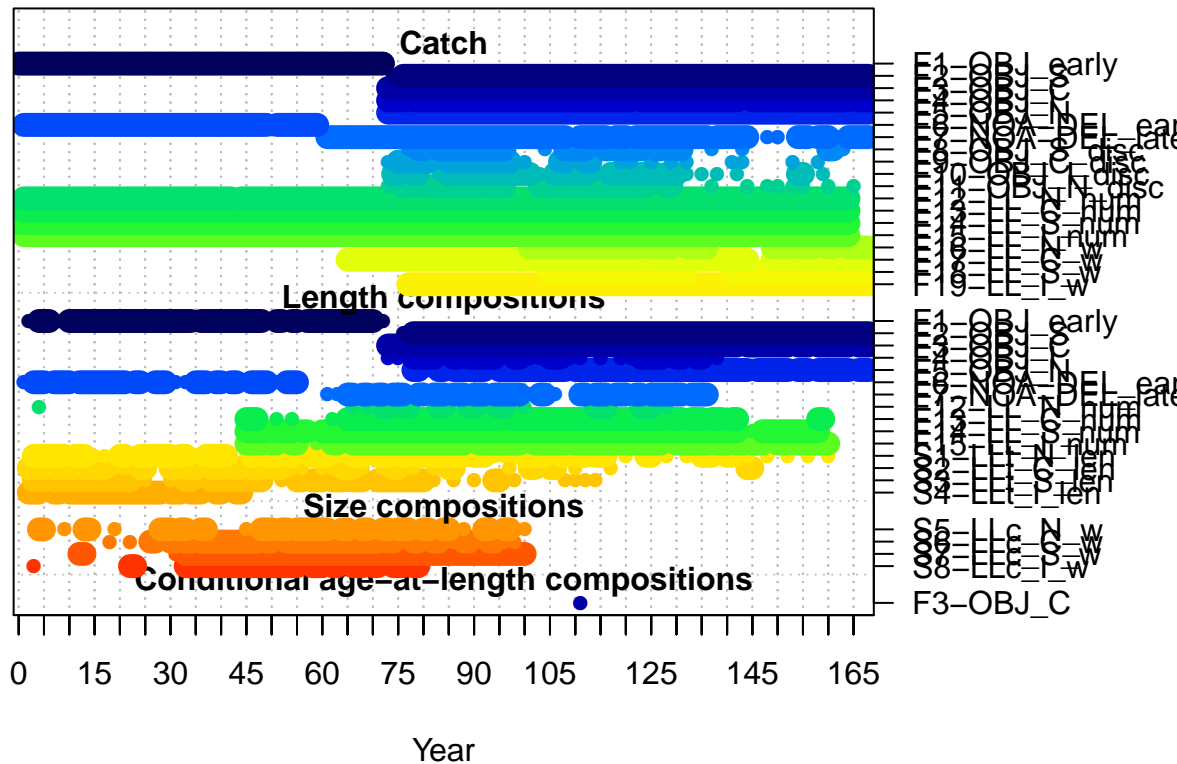
Length (cm)







# Data by type and year



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

