

Plots created using the 'r4ss' package in R

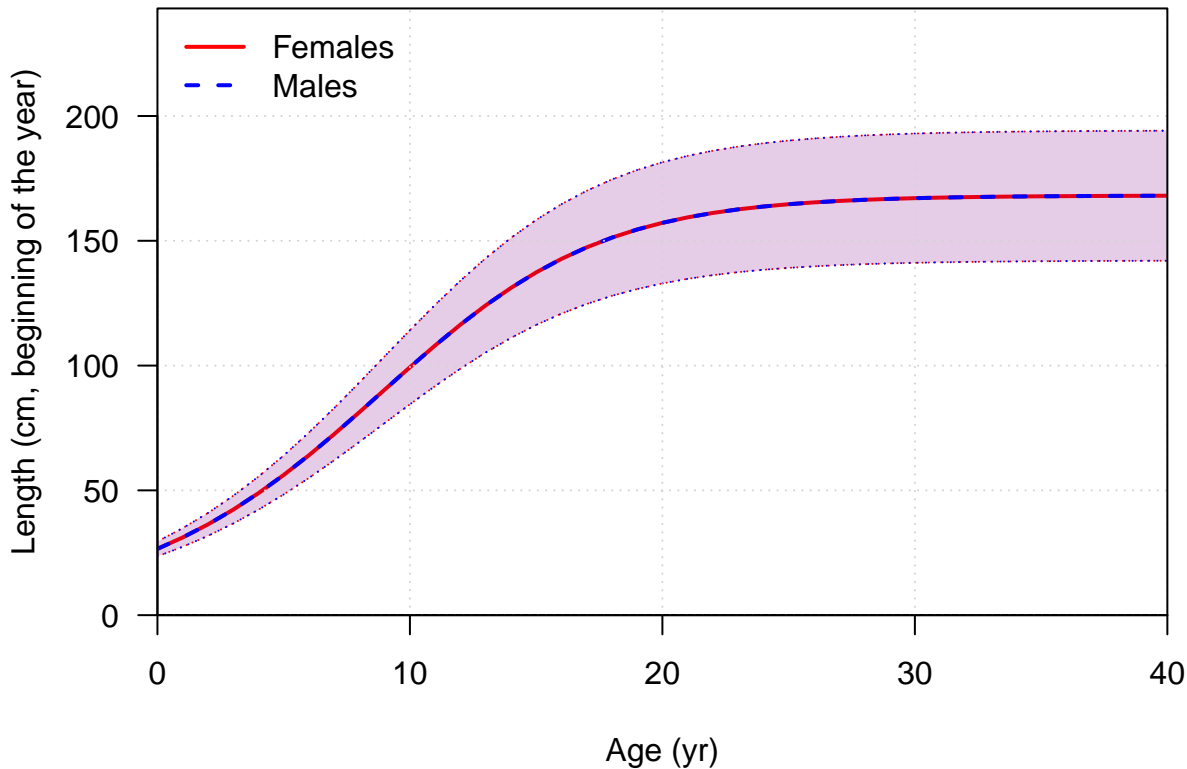
Stock Synthesis version: 3.30.15.0

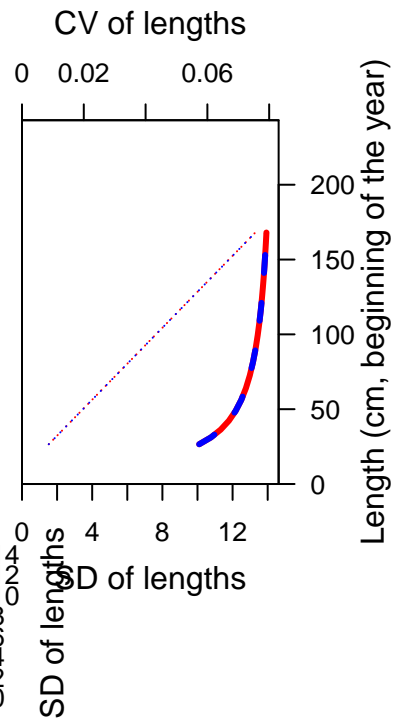
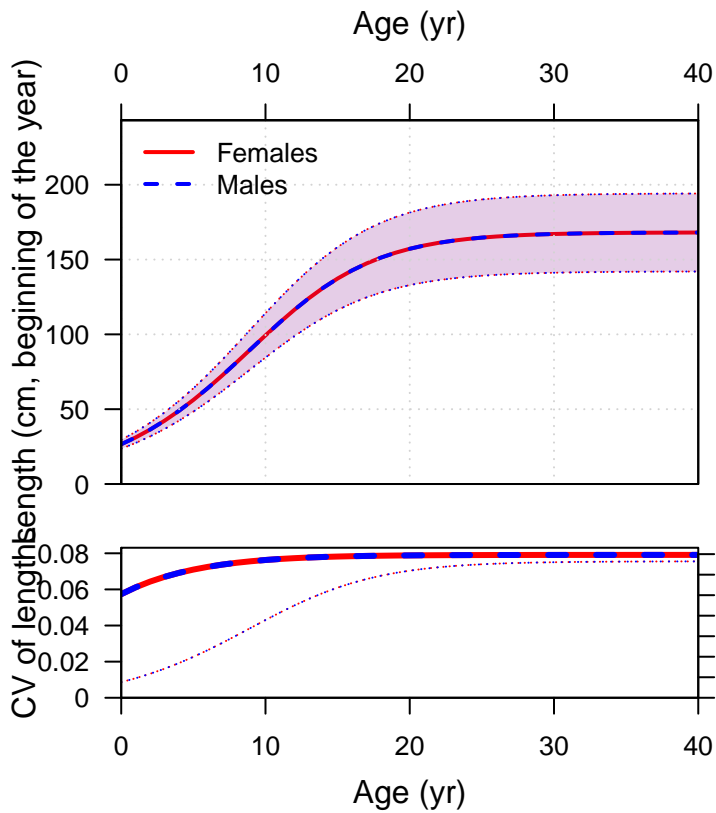
StartTime: Mon Apr 06 09:37:47 2020

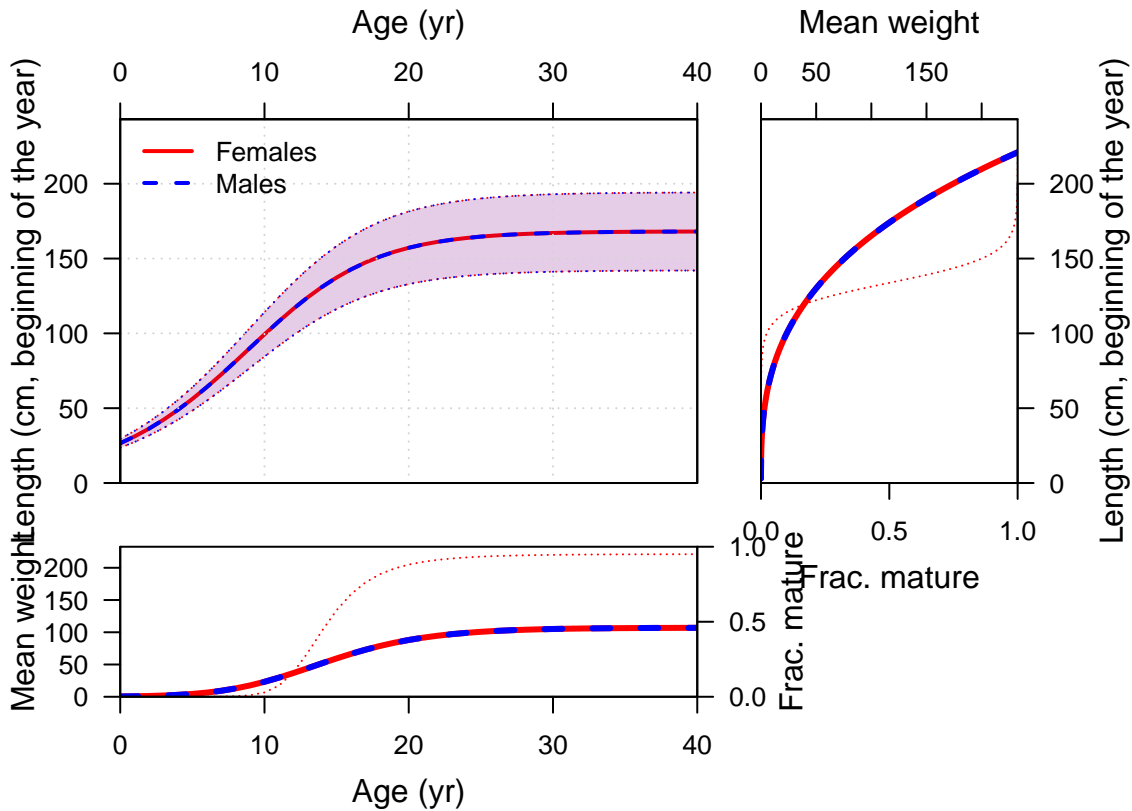
Data\_File: BET-EPO.dat

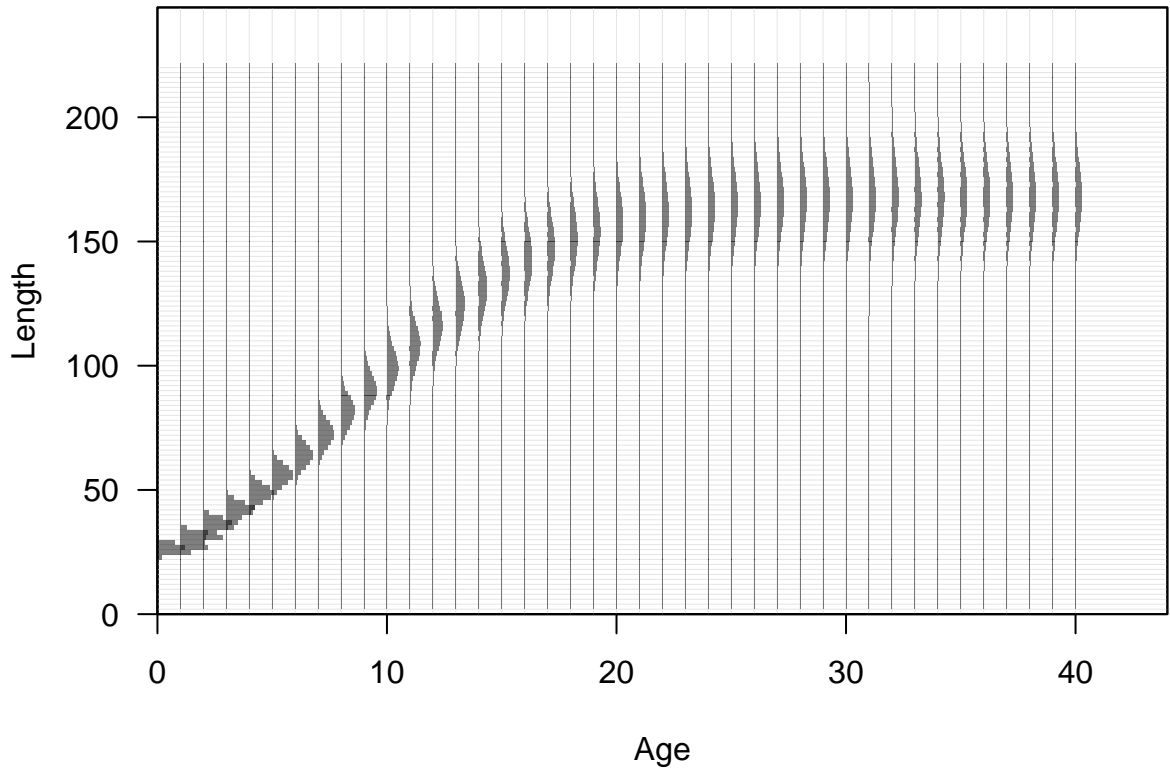
Control\_File: BET-EPO.ctl

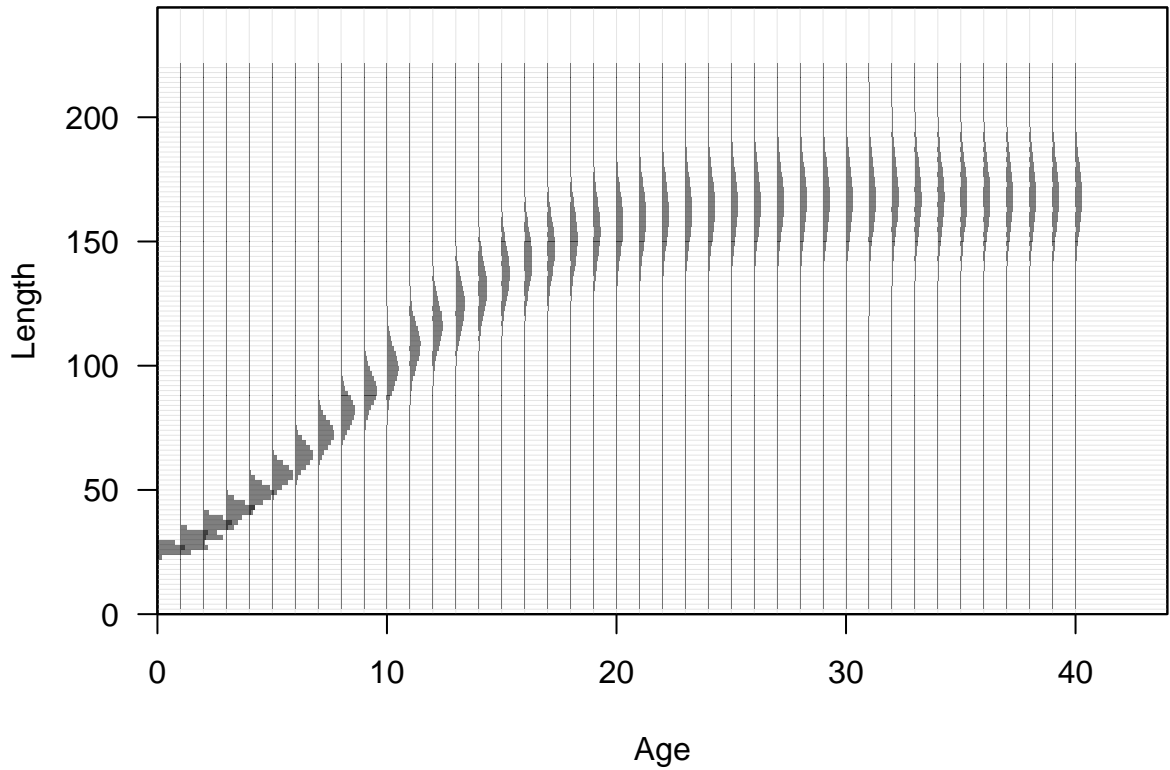
## Ending year expected growth (with 95% intervals)

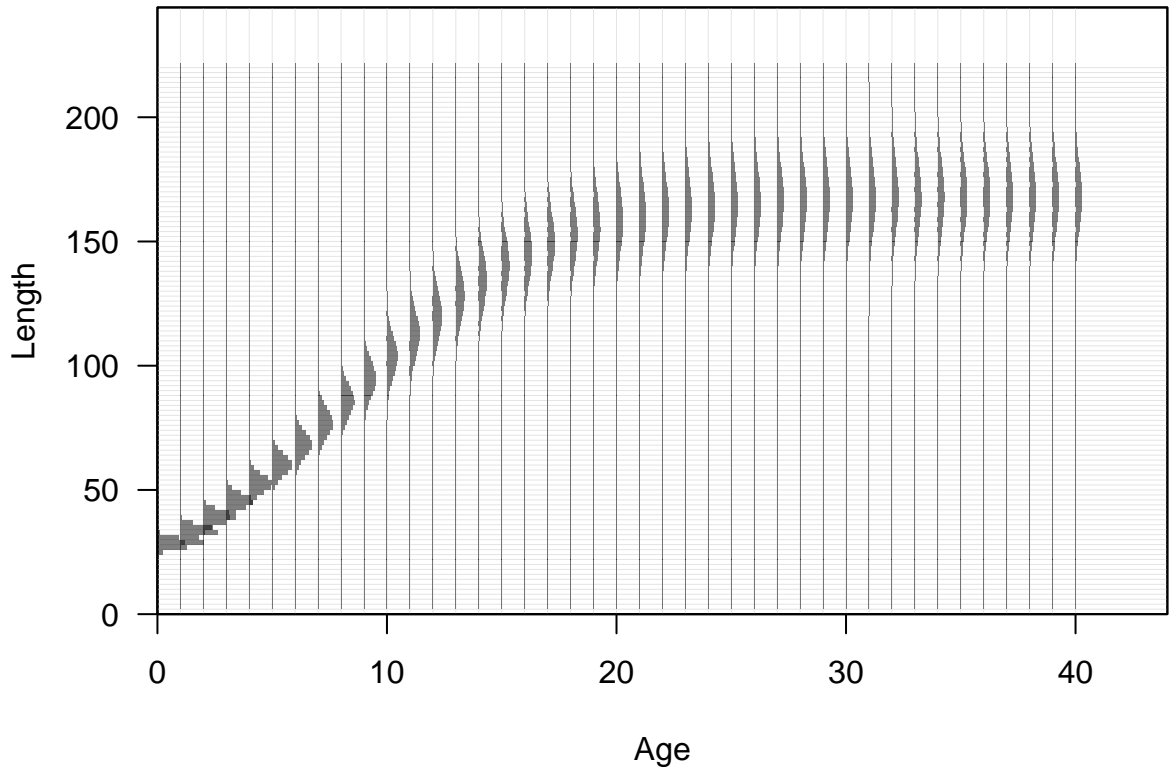


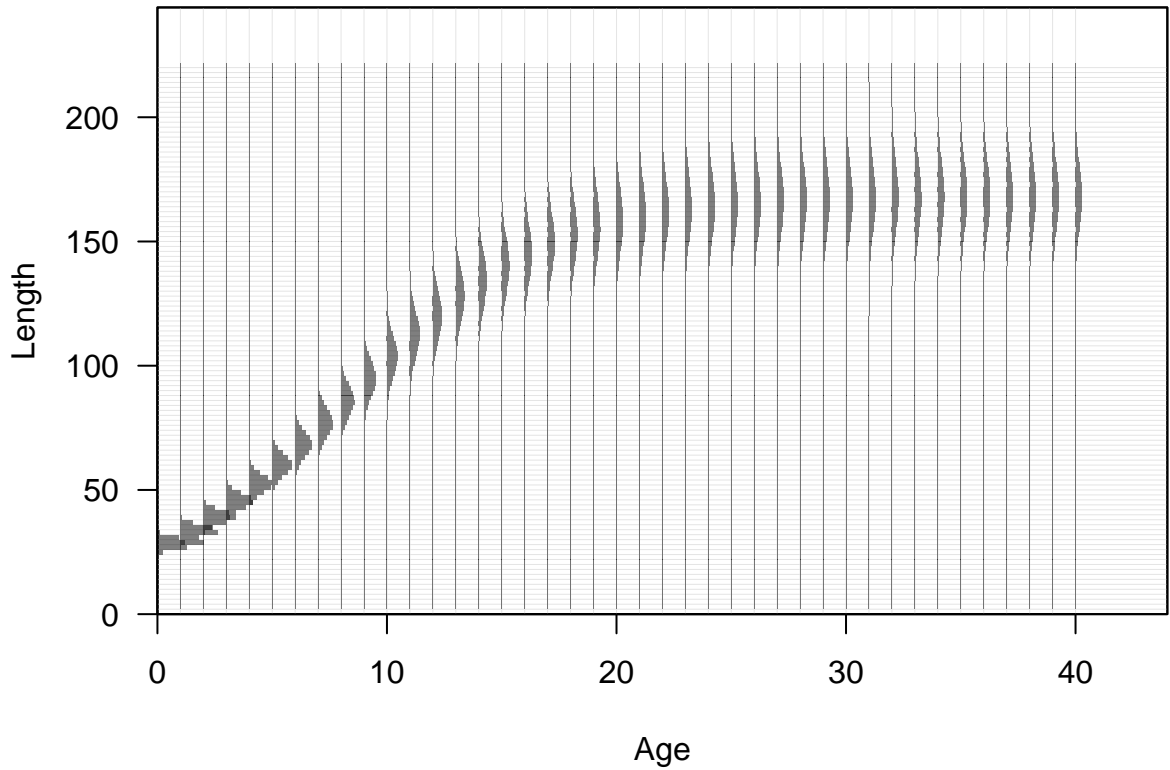




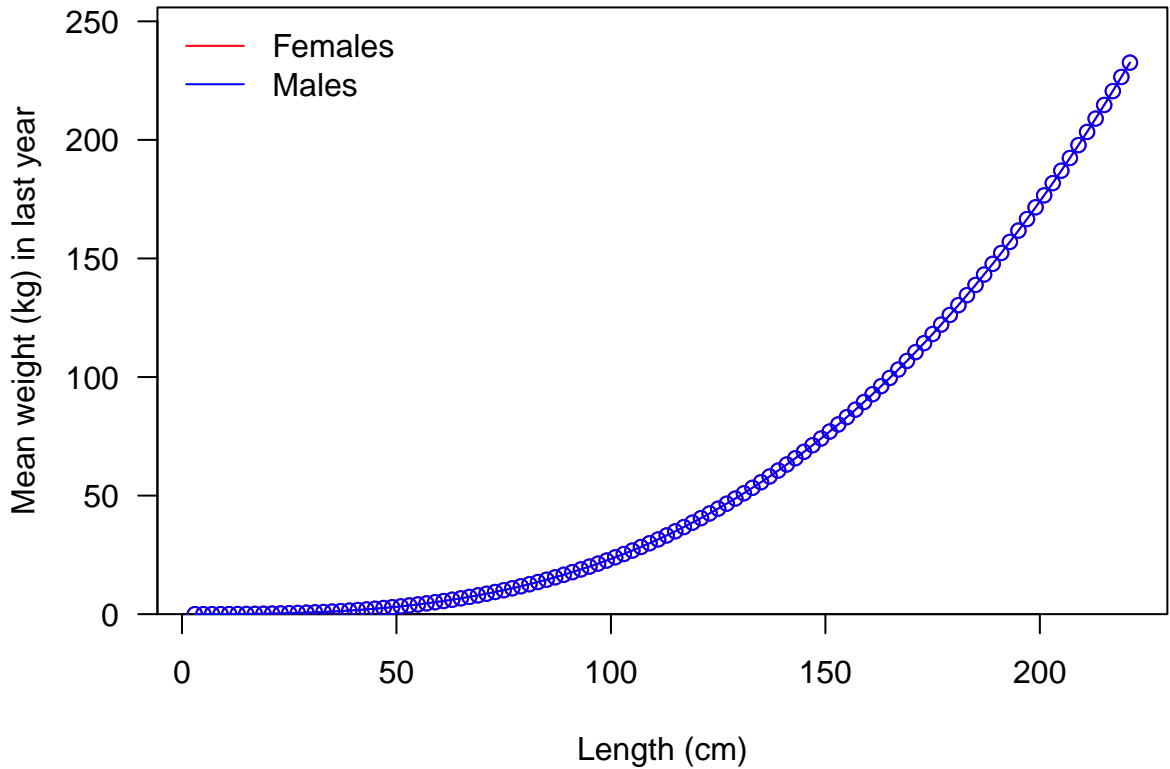


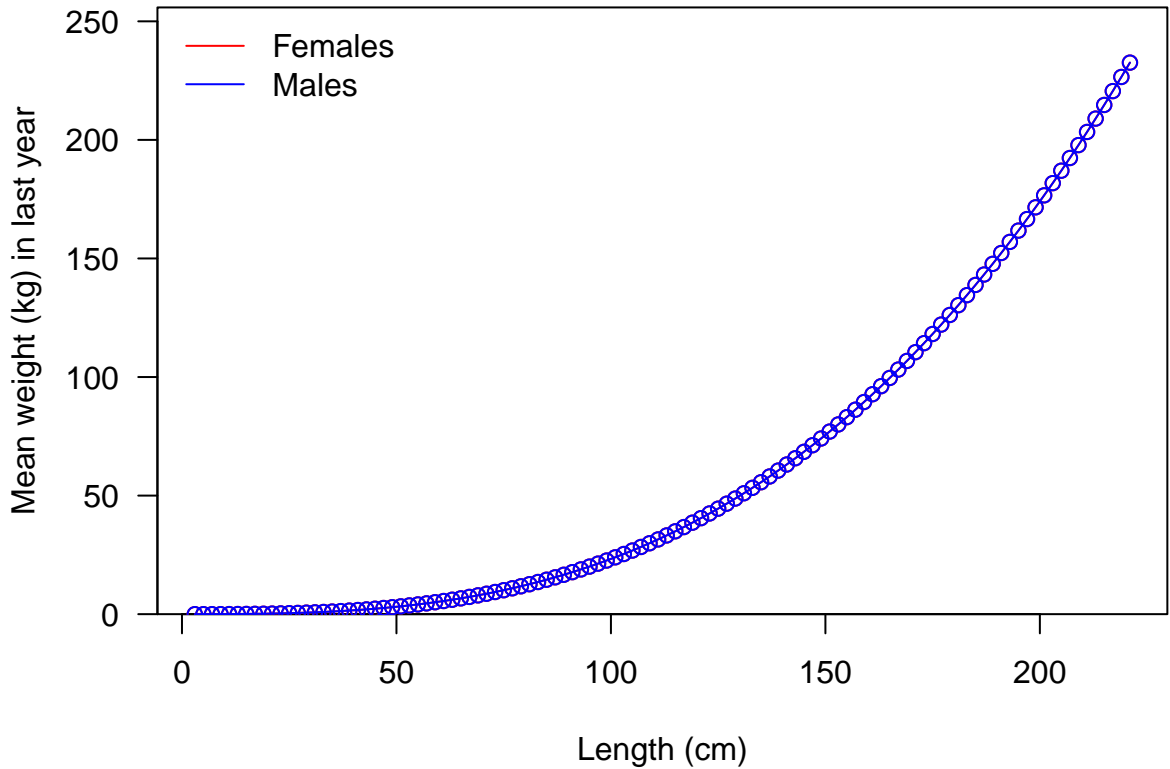


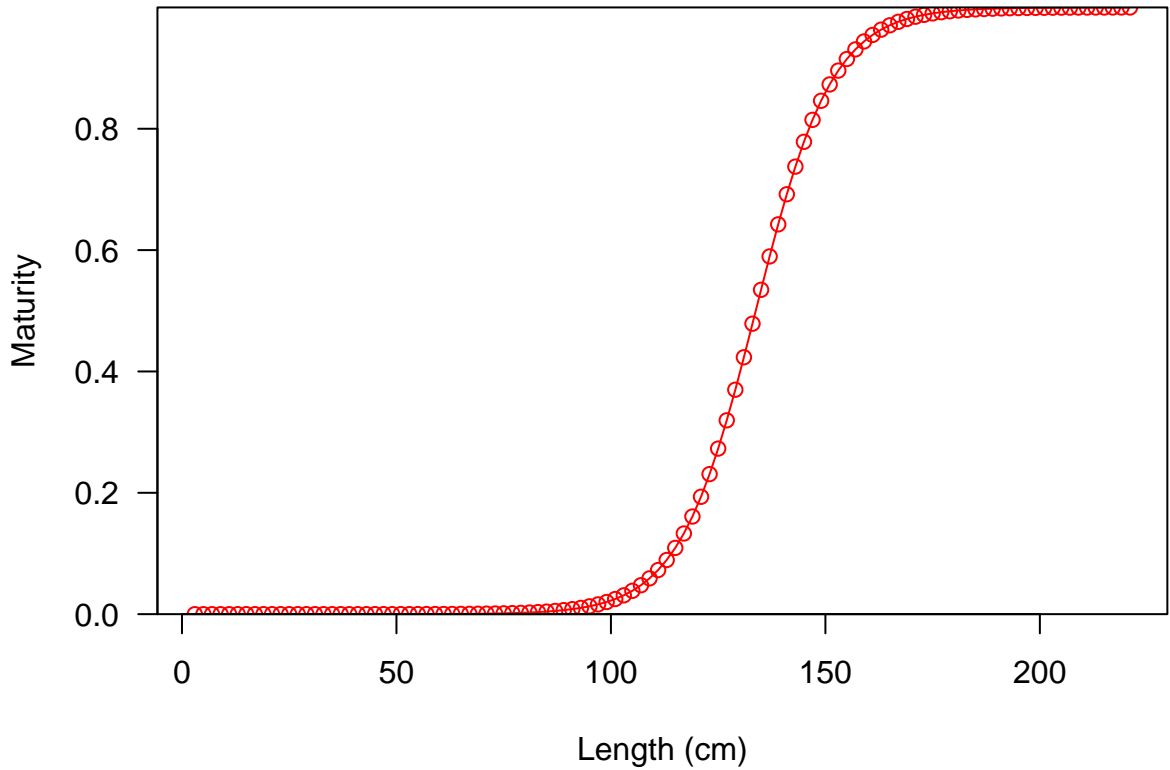


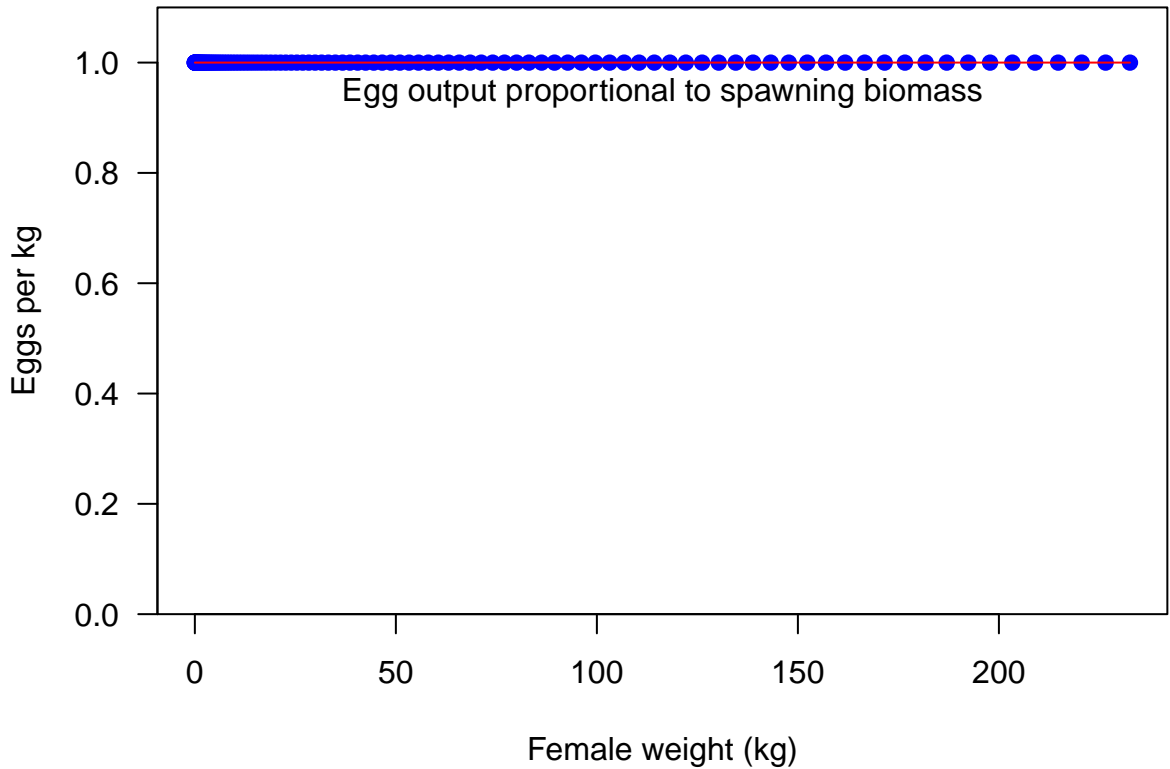


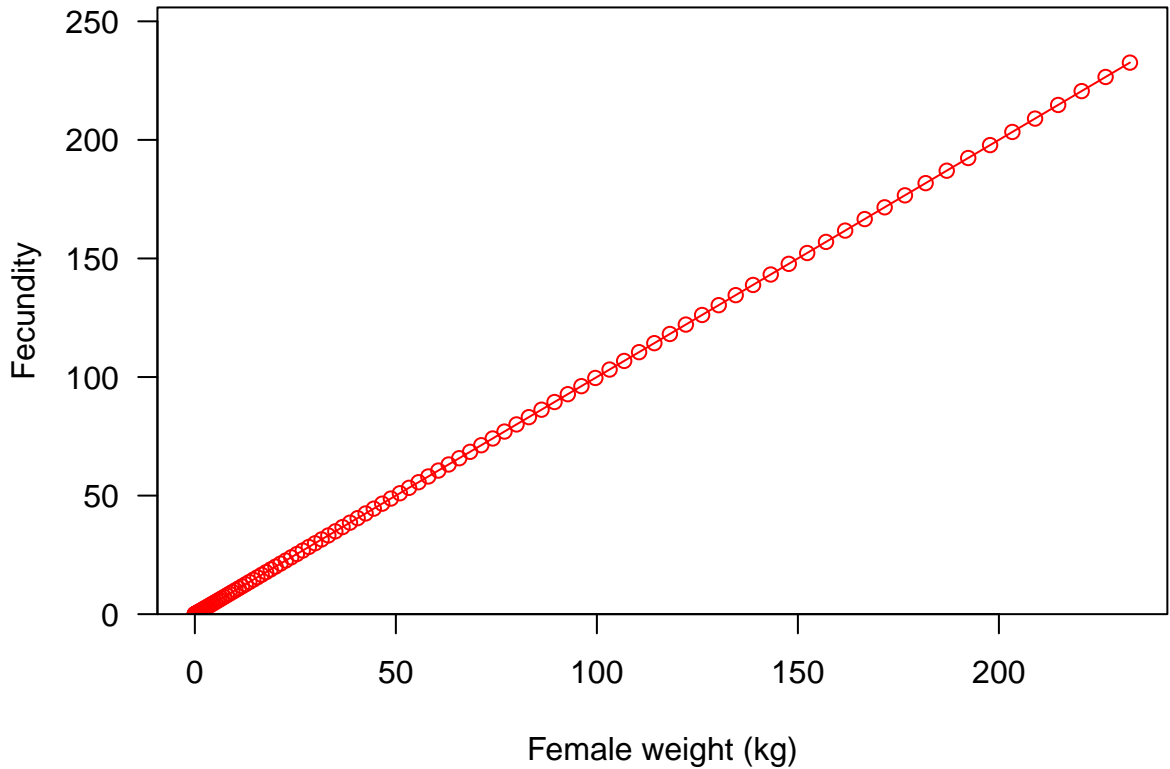


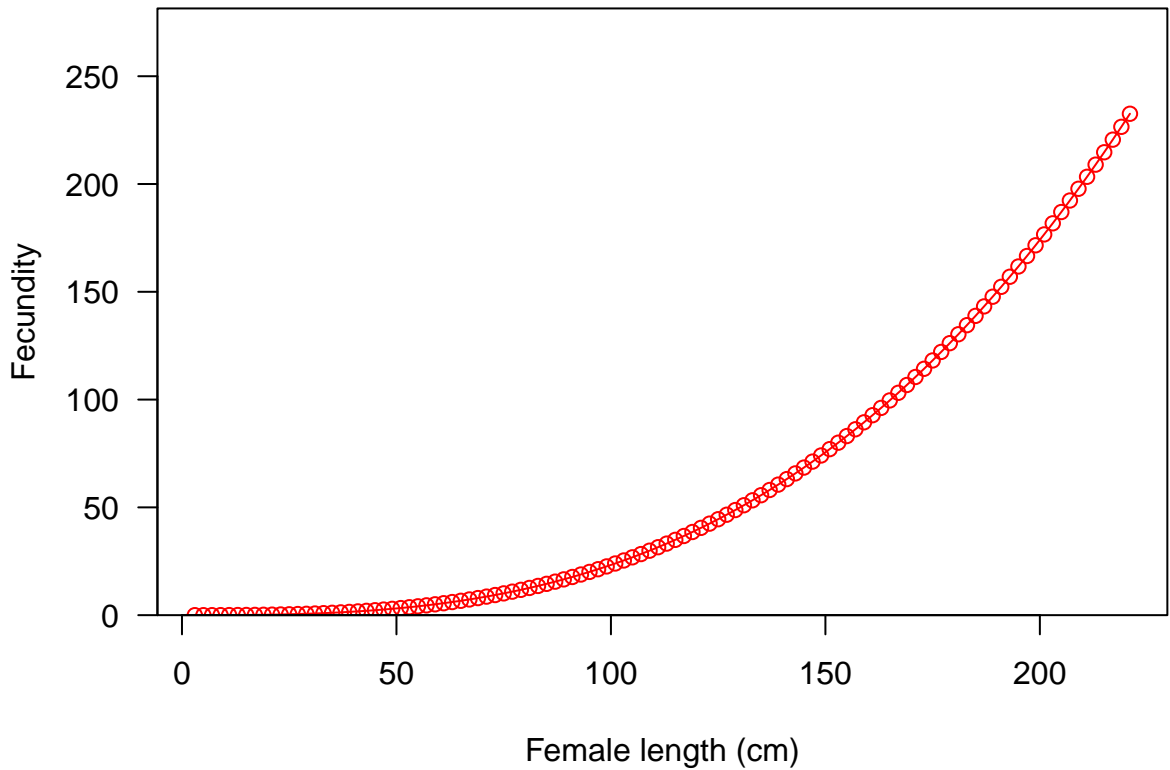


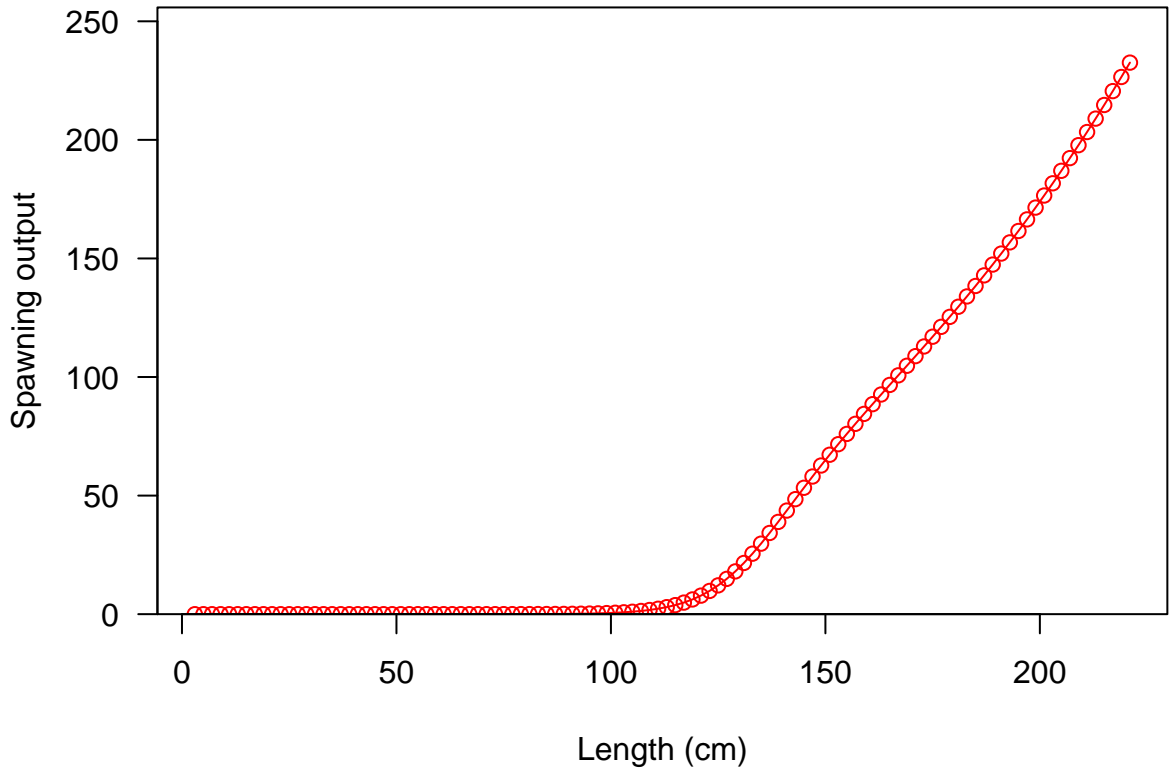


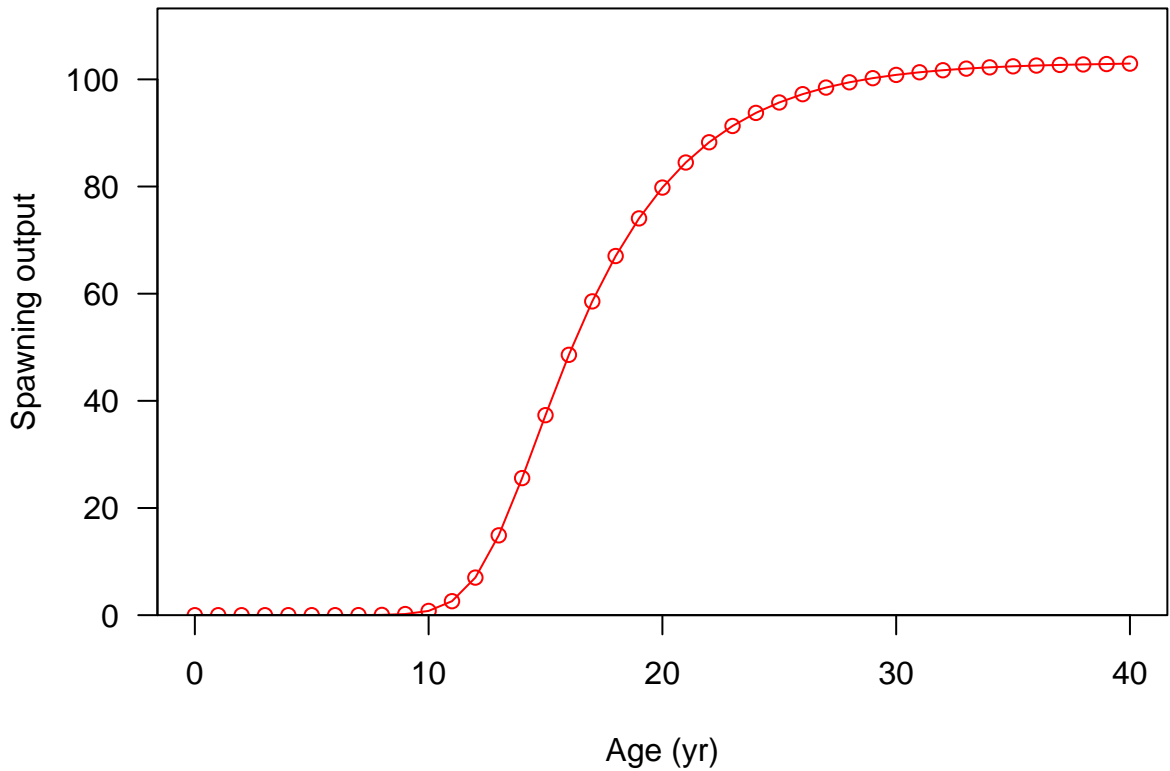






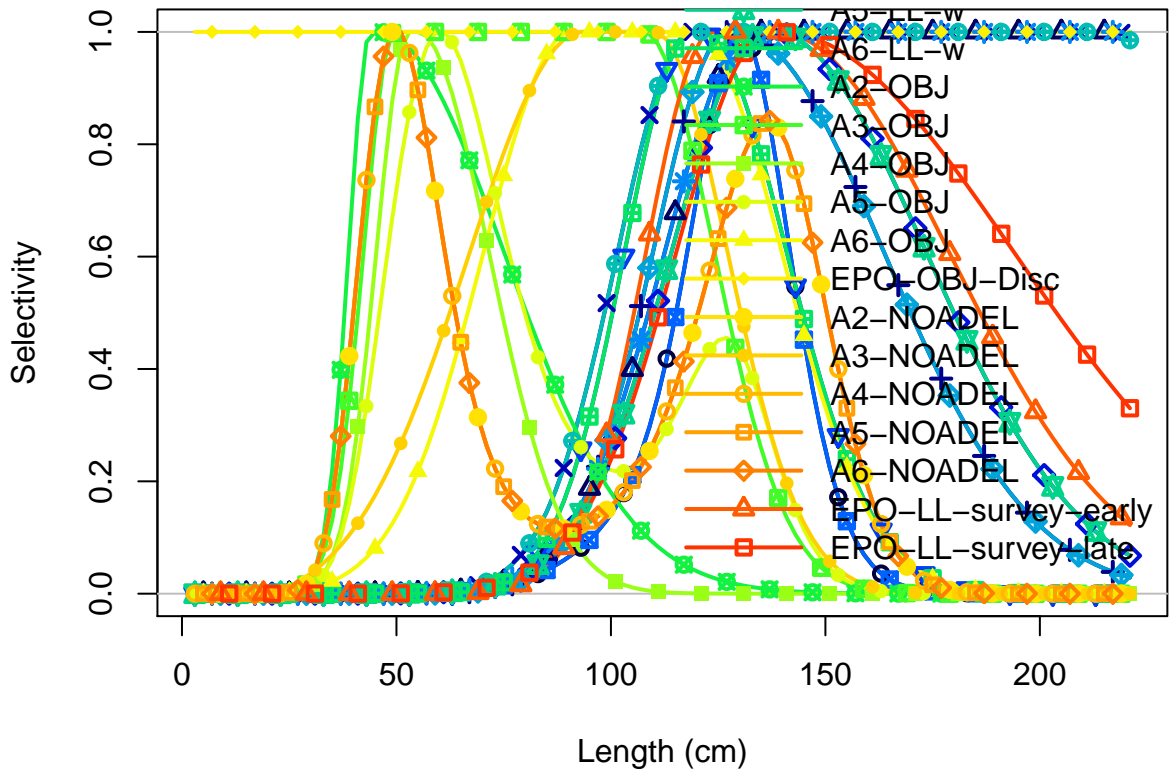




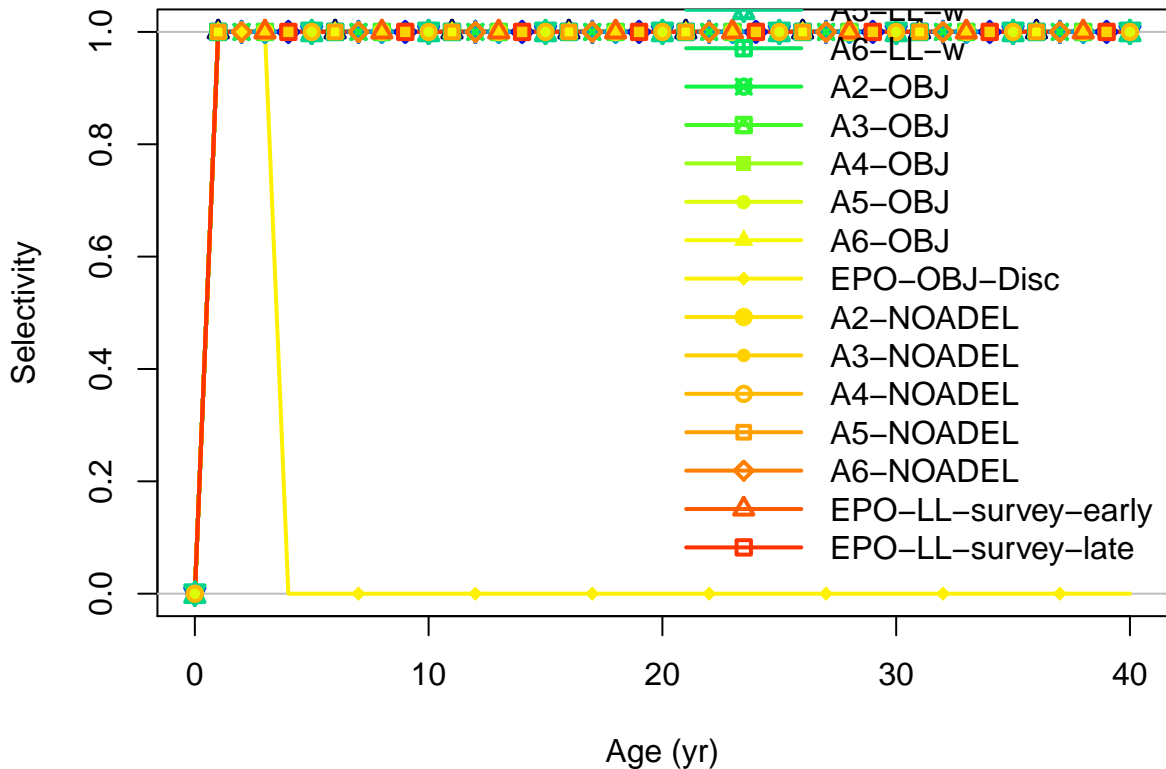




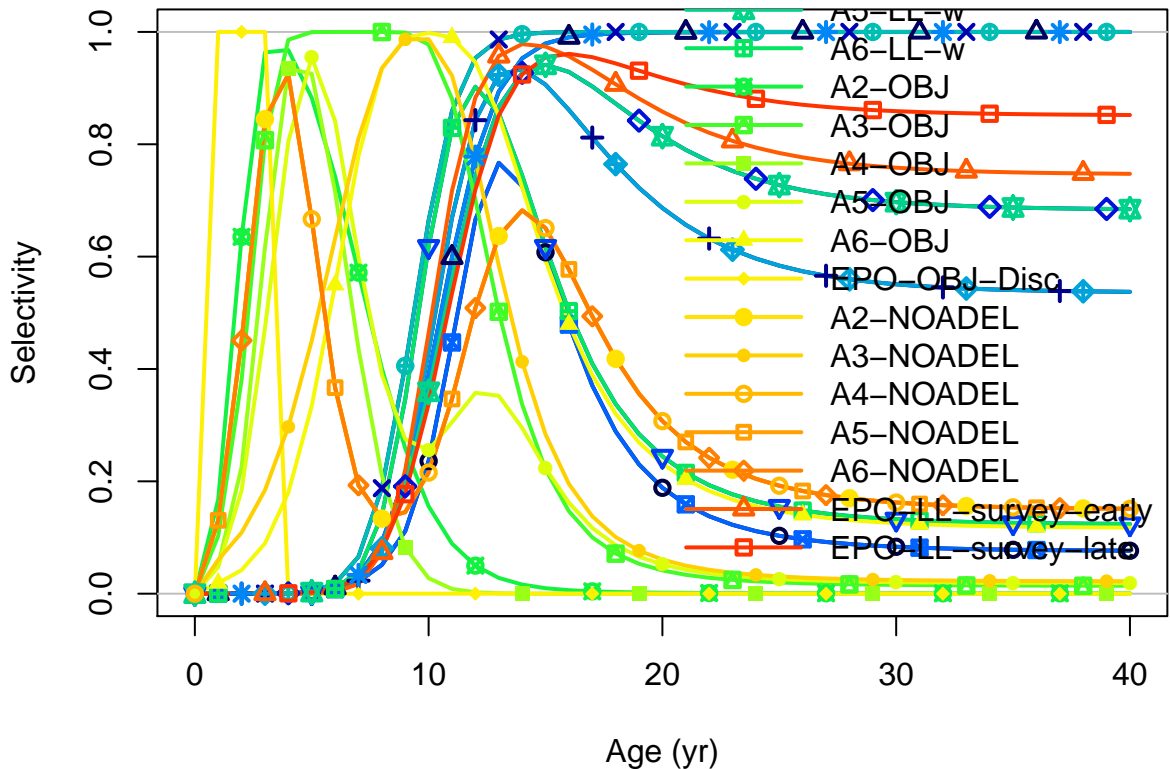
# Length-based selectivity by fleet in 180



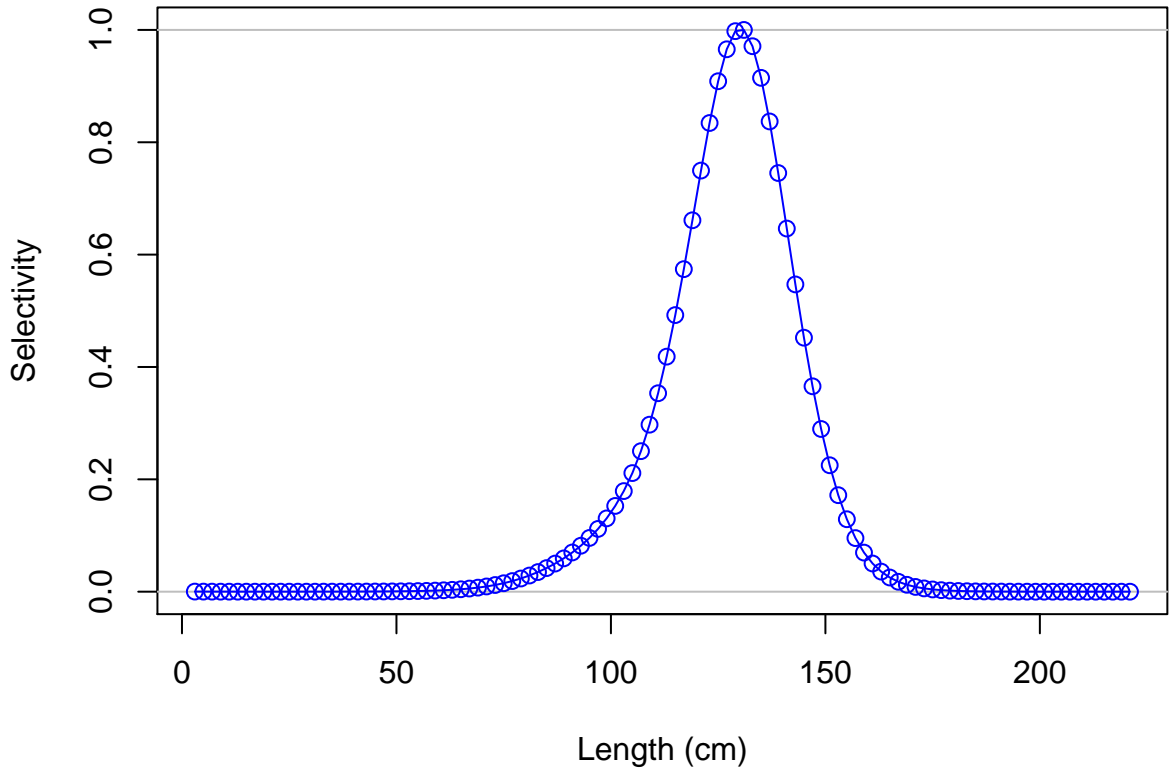
## Age-based selectivity by fleet in 180



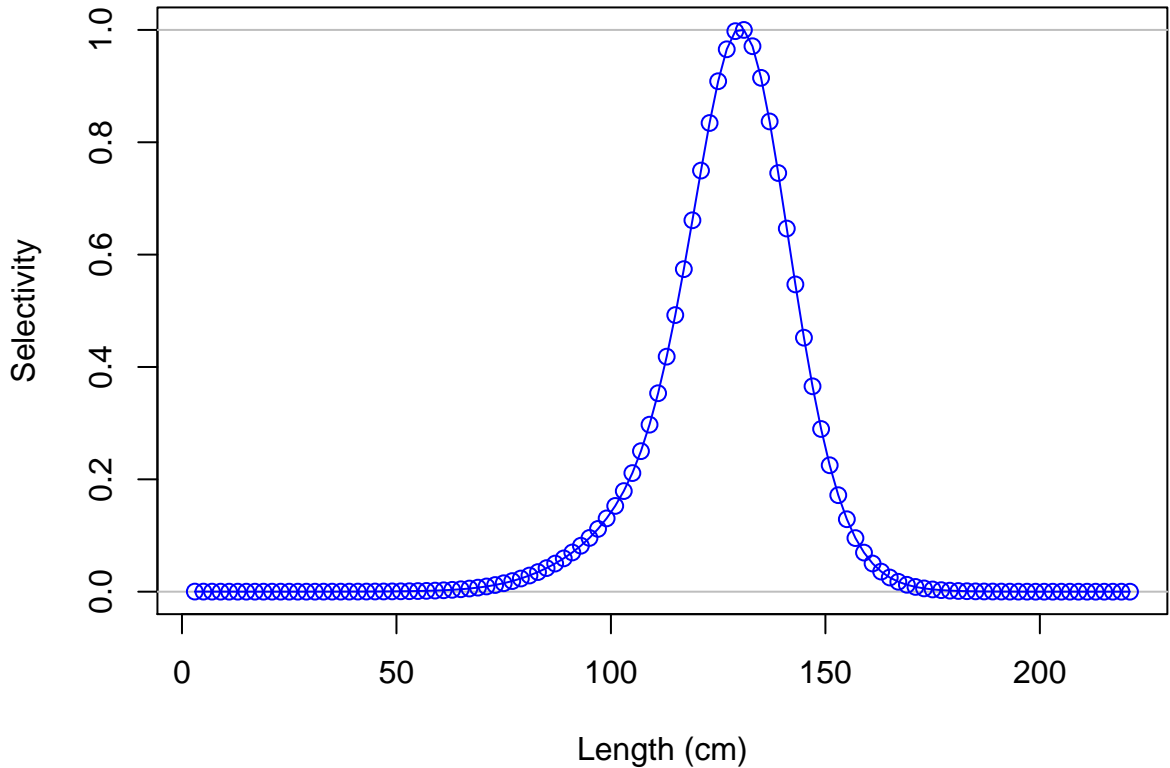
# Derived age-based from length-based selectivity by fleet in 180



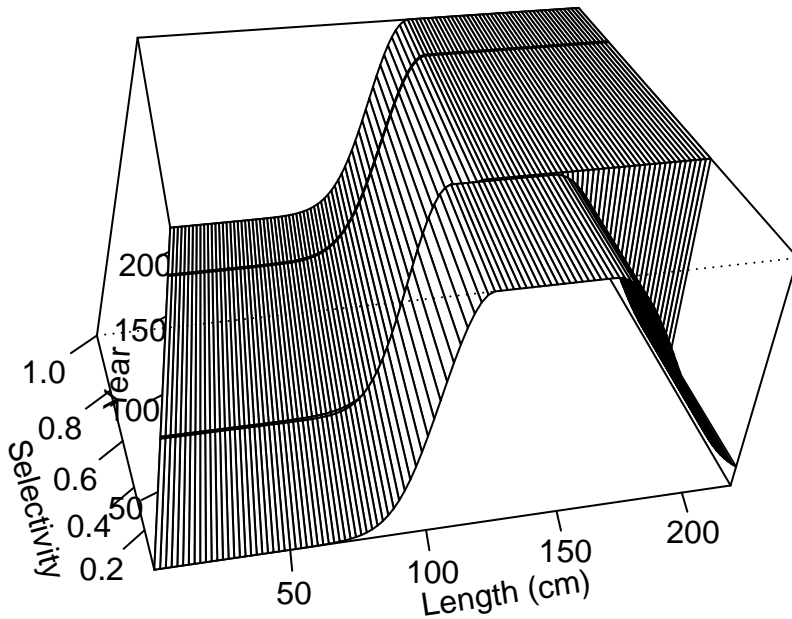
## Female ending year selectivity for A1-LL-n



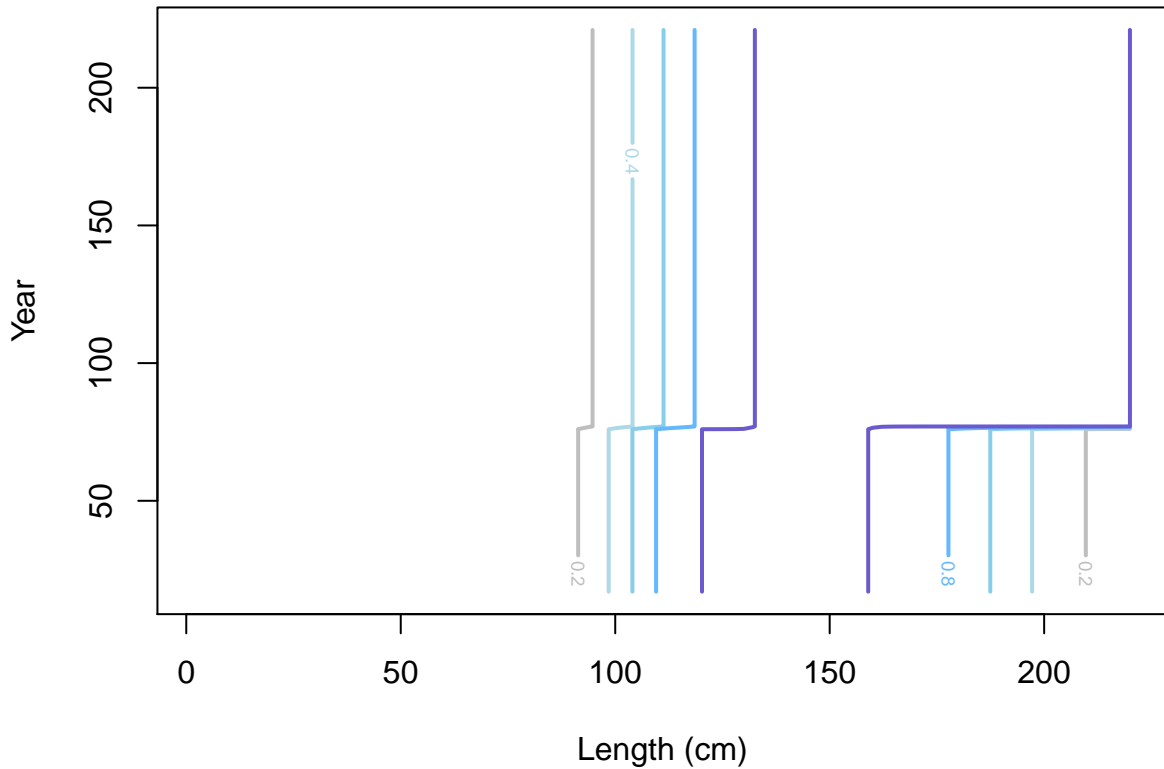
## Male ending year selectivity for A1-LL-n



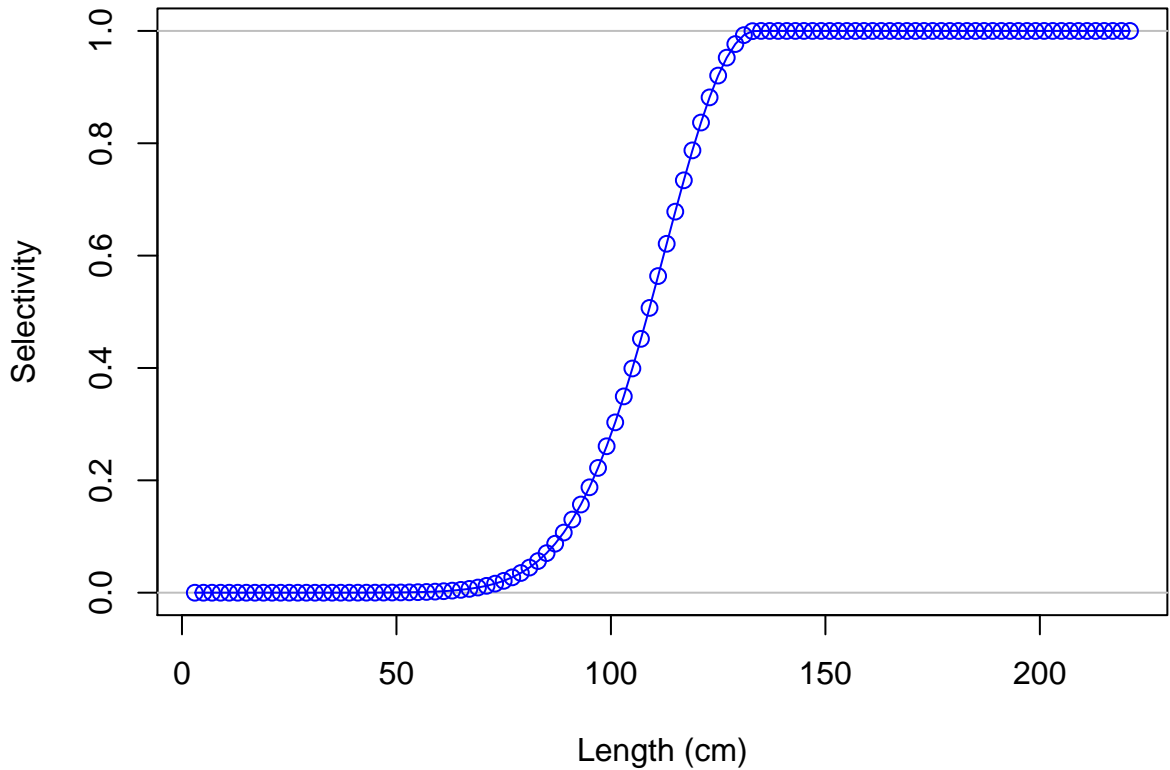
## Female time-varying selectivity for A2-LL-n



## Female time-varying selectivity for A2-LL-n

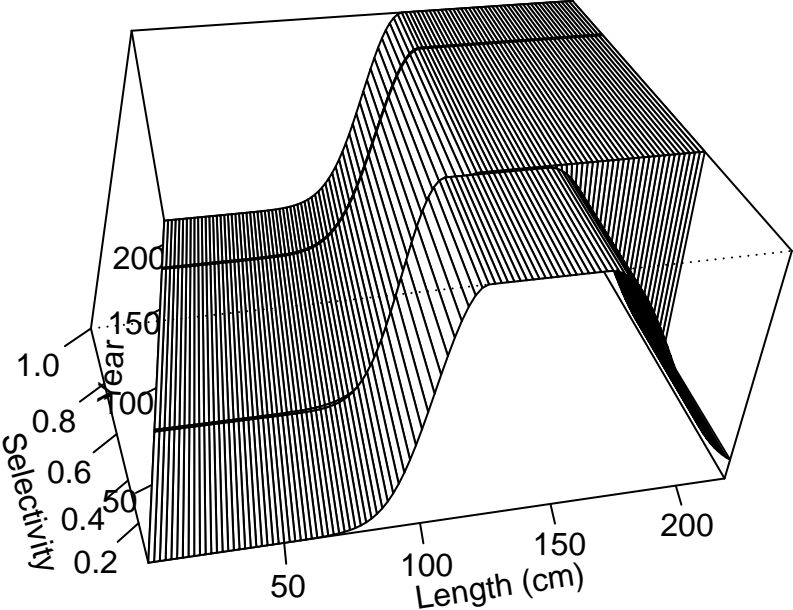


## Female ending year selectivity for A2-LL-n

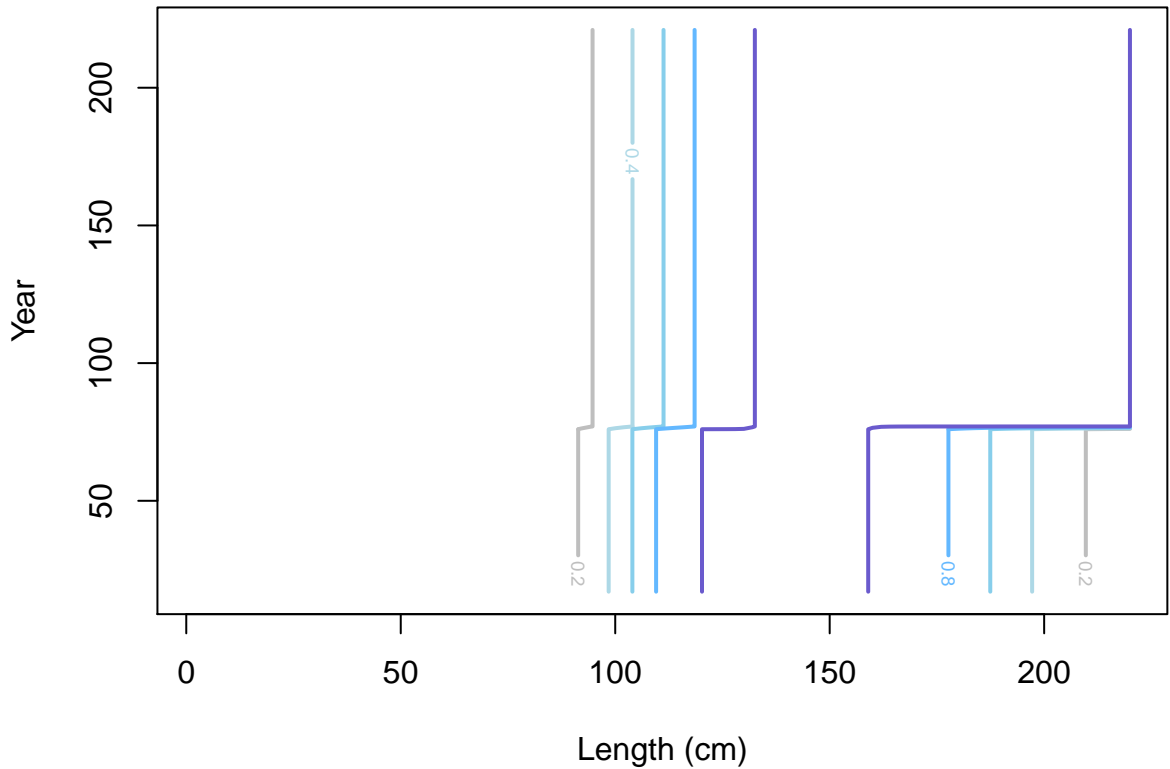




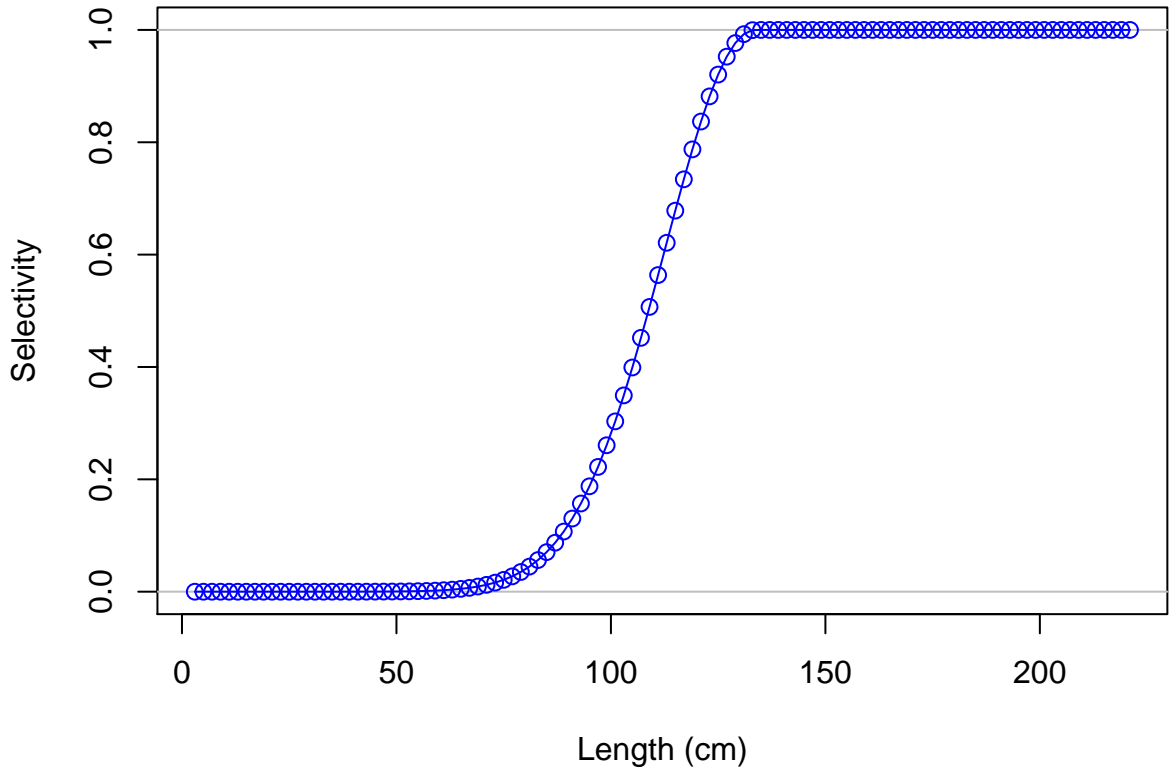
# Male time-varying selectivity for A2-LL-n



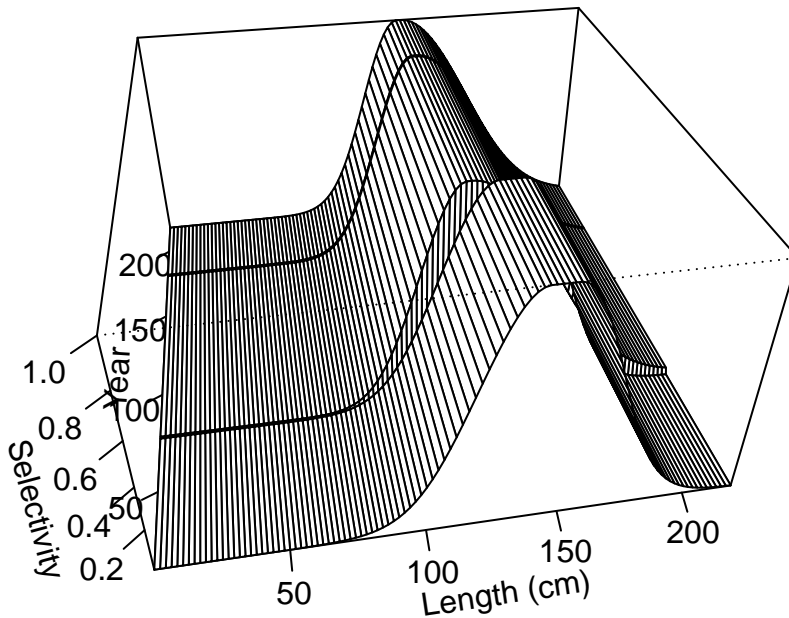
# Male time-varying selectivity for A2-LL-n



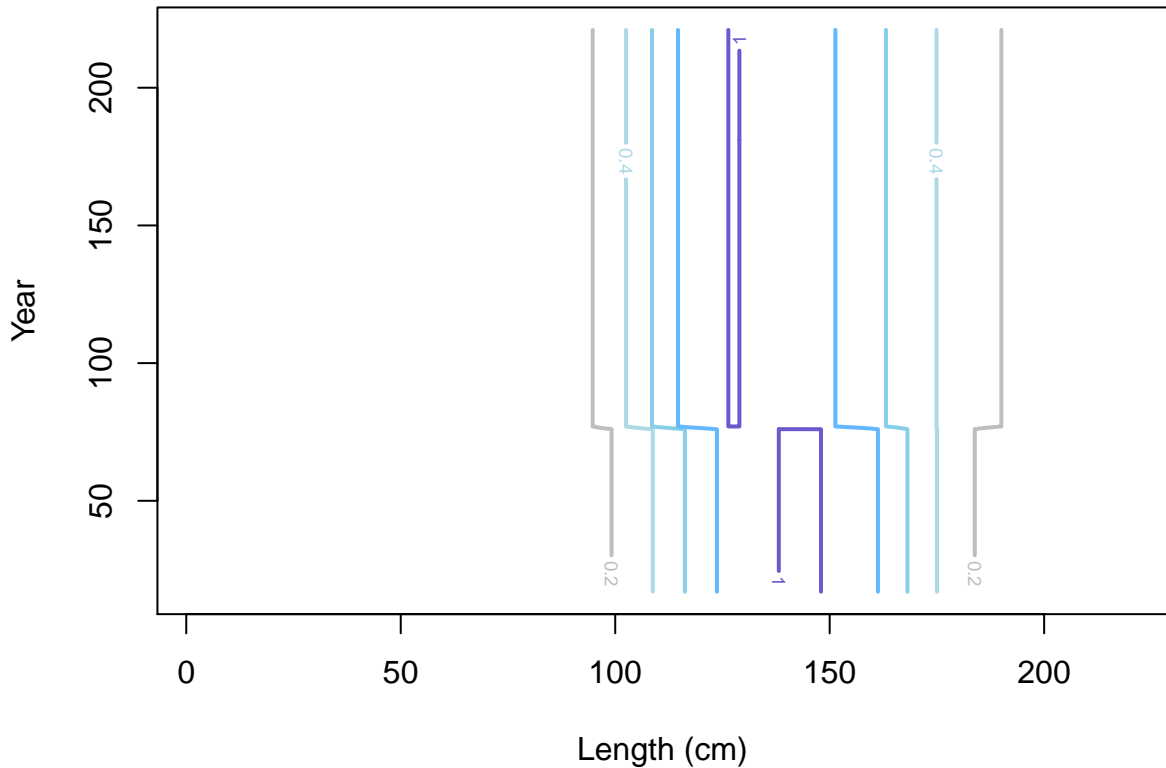
## Male ending year selectivity for A2-LL-n



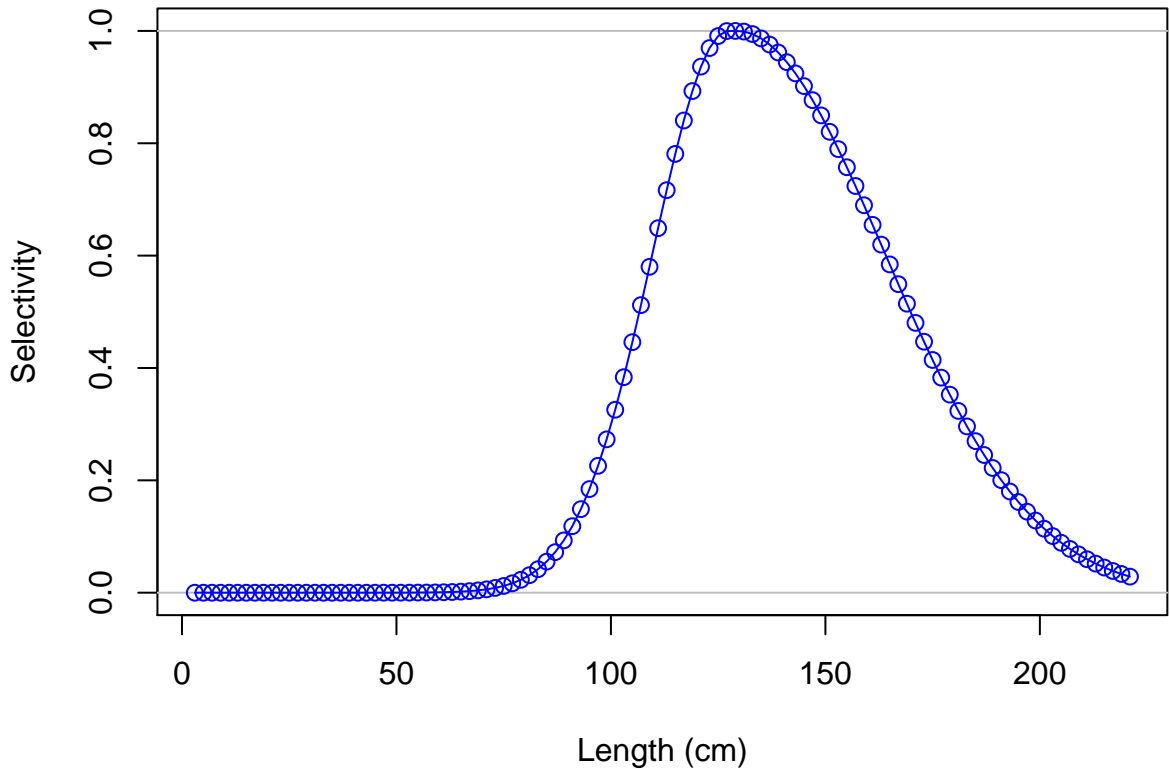
## Female time-varying selectivity for A3-LL-n



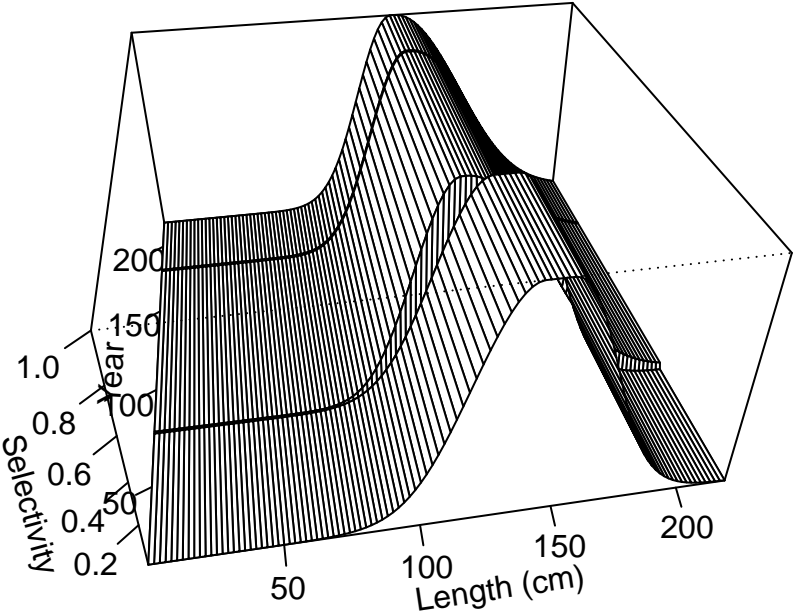
# Female time-varying selectivity for A3-LL-n



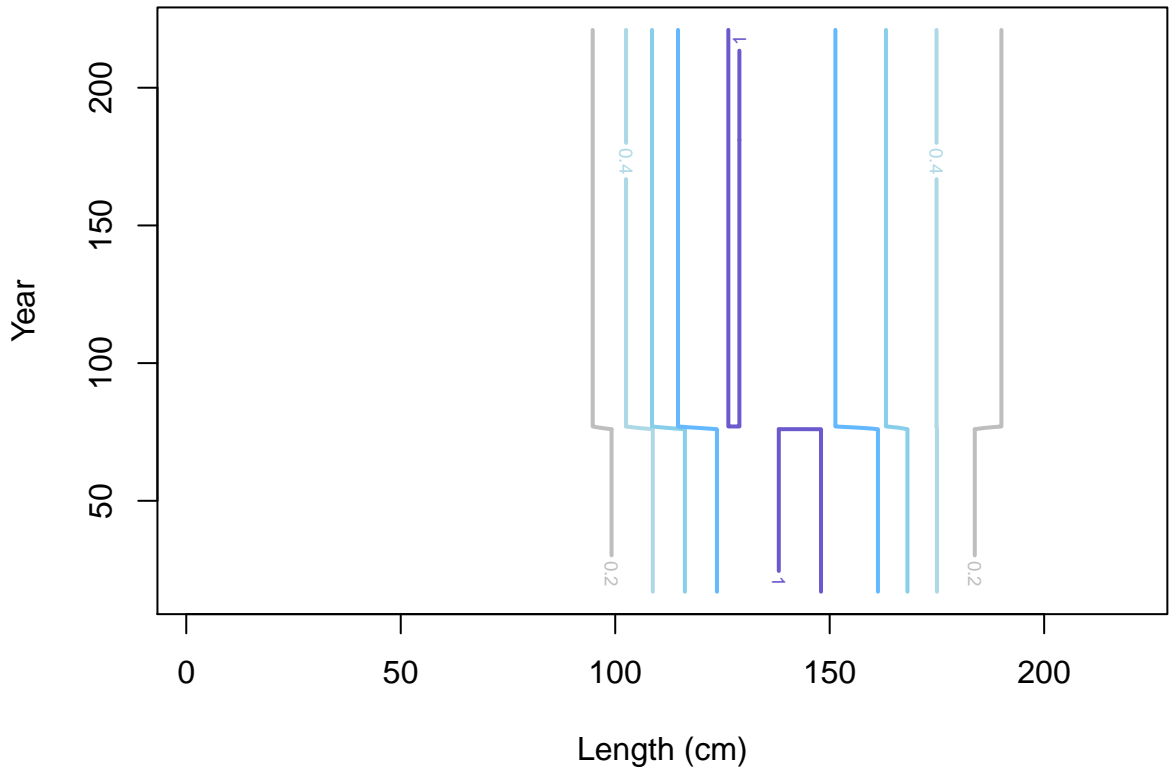
## Female ending year selectivity for A3-LL-n



# Male time-varying selectivity for A3-LL-n

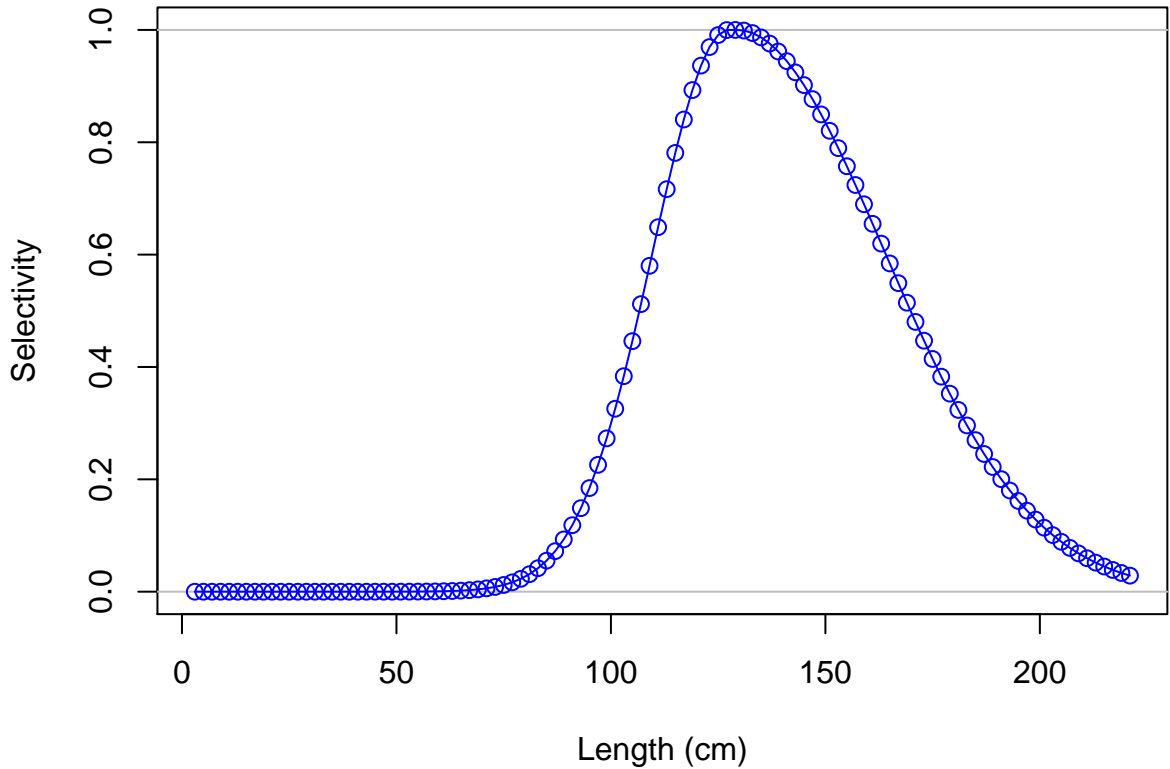


# Male time-varying selectivity for A3-LL-n

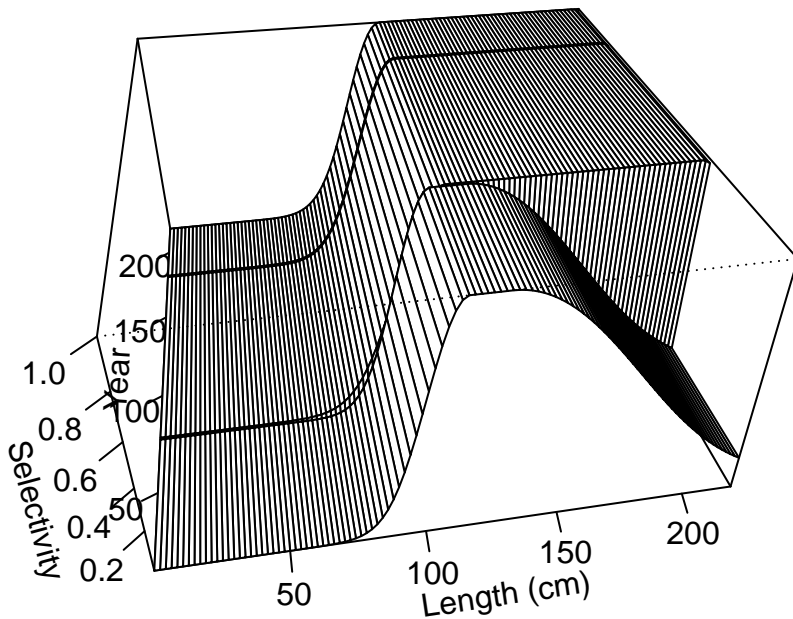




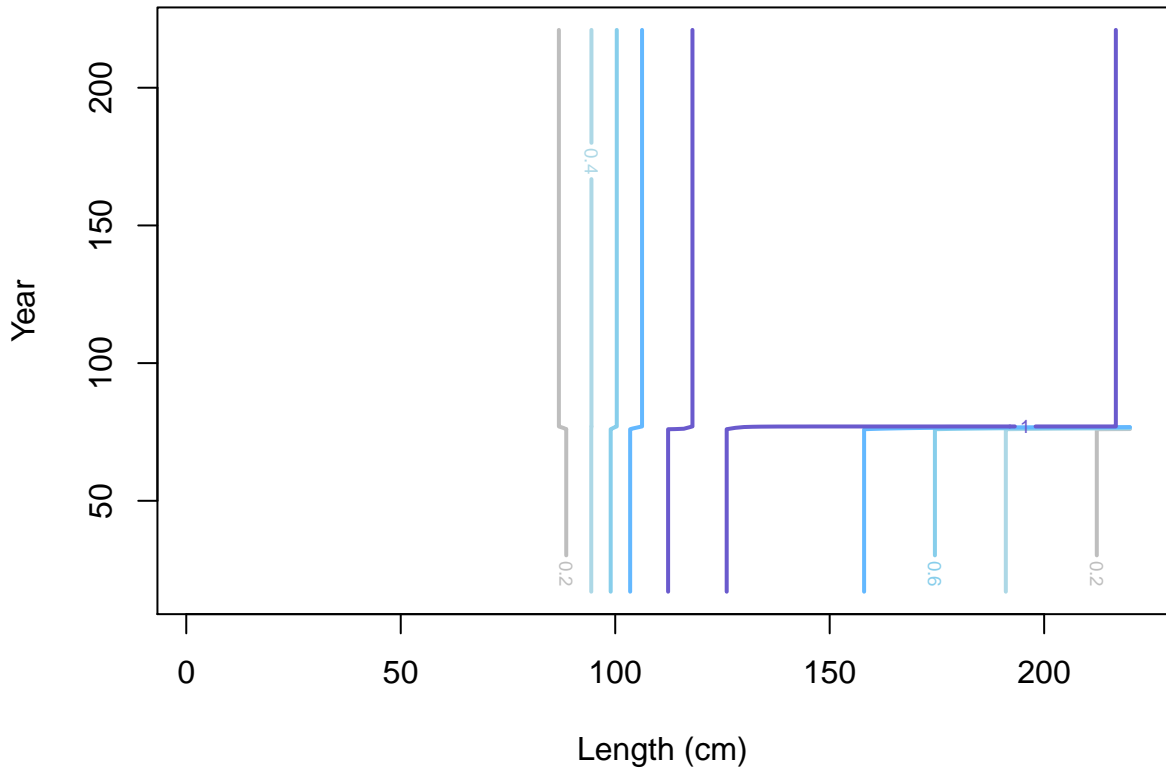
## Male ending year selectivity for A3-LL-n



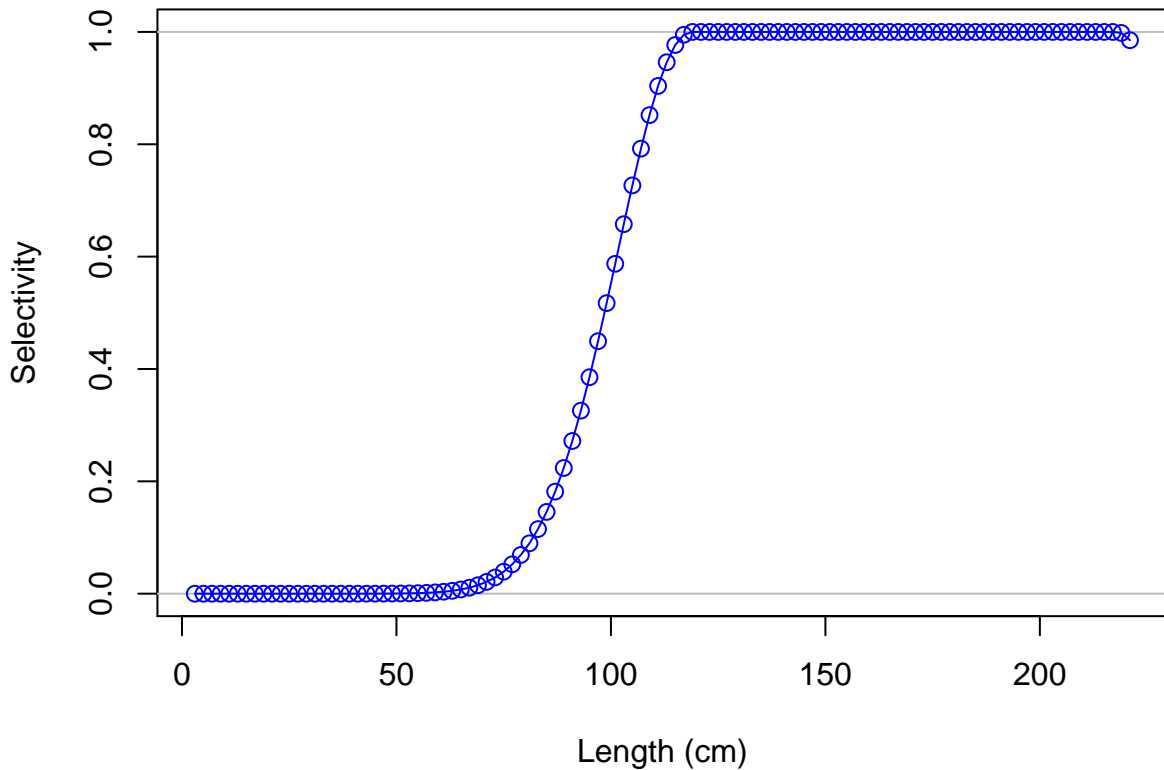
## Female time-varying selectivity for A4-LL-n



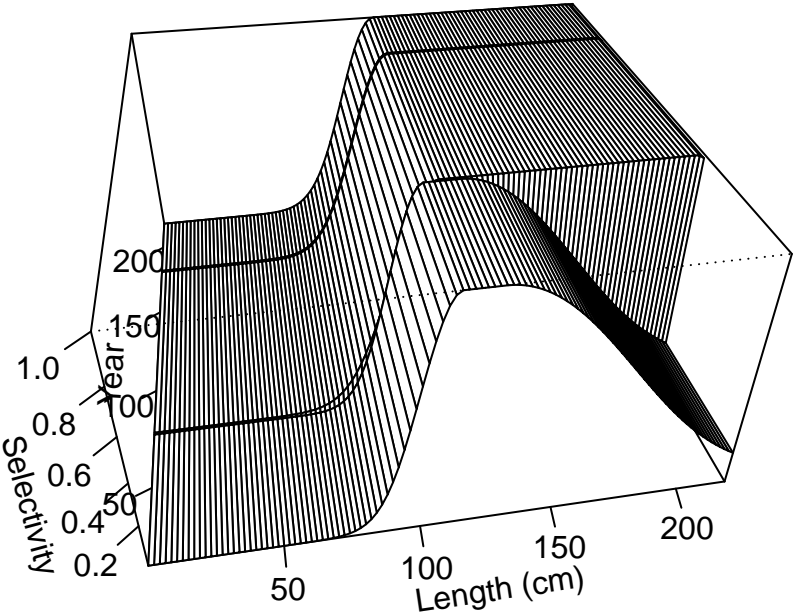
# Female time-varying selectivity for A4-LL-n



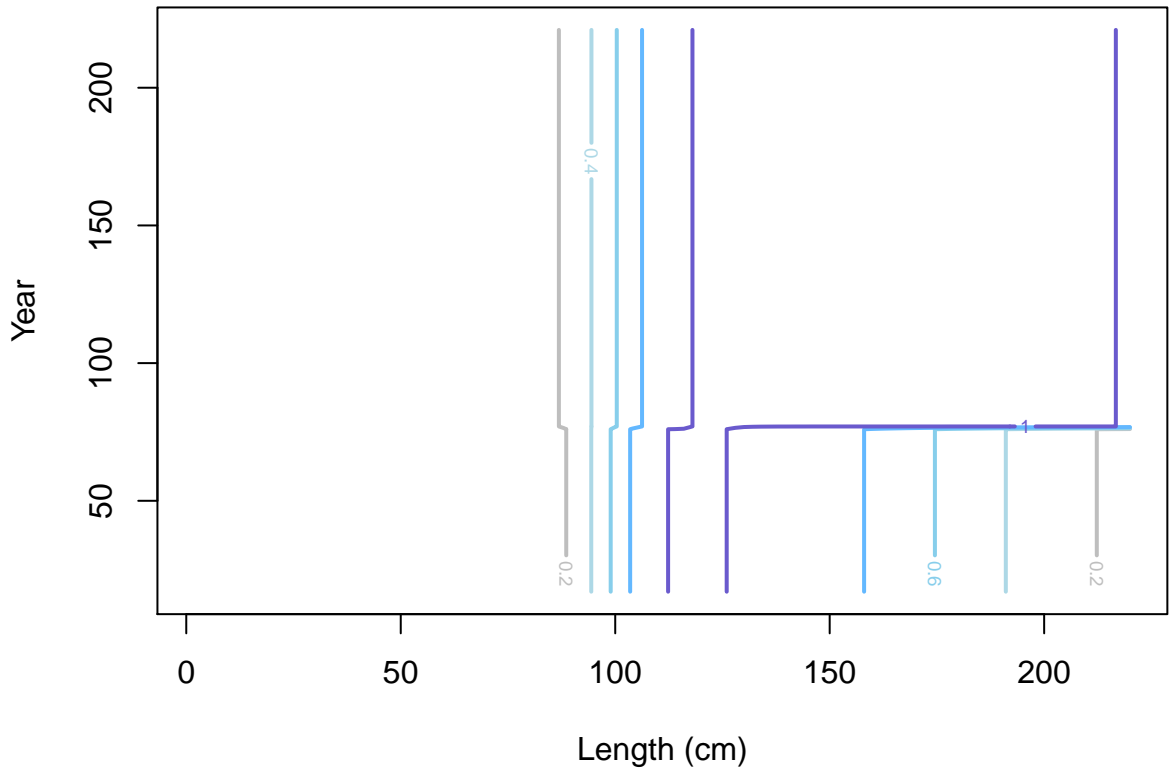
## Female ending year selectivity for A4-LL-n



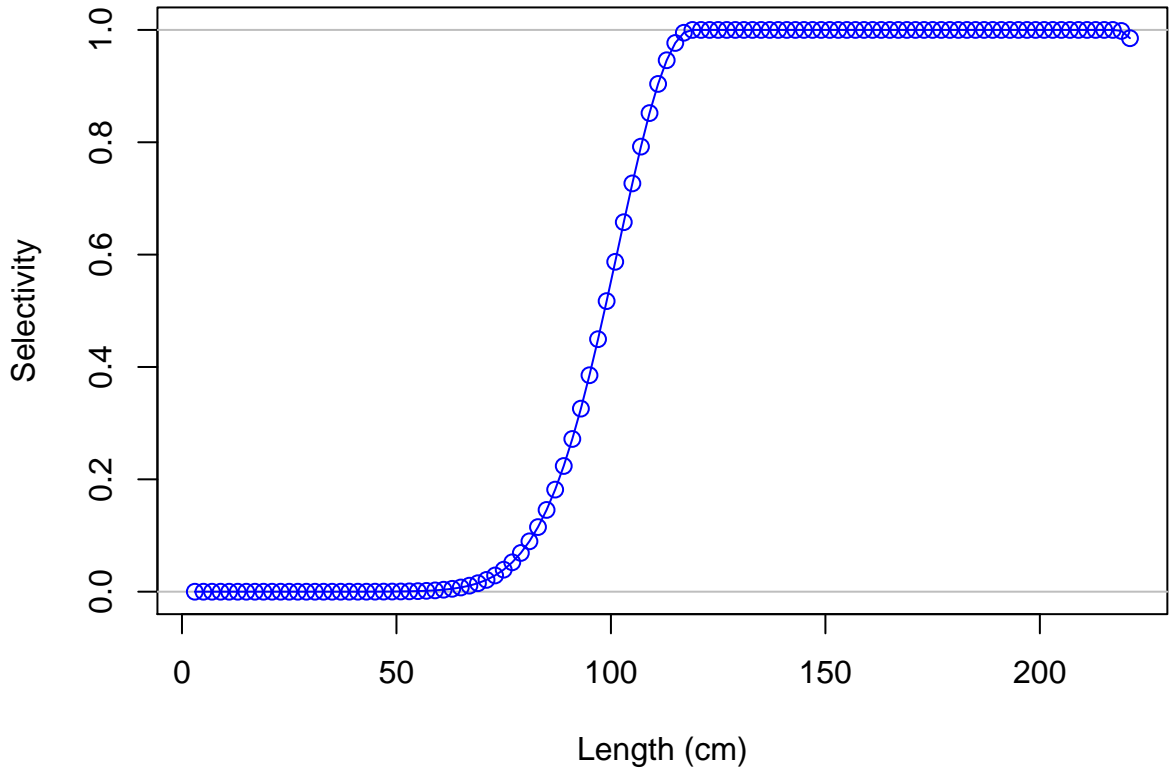
# Male time-varying selectivity for A4-LL-n



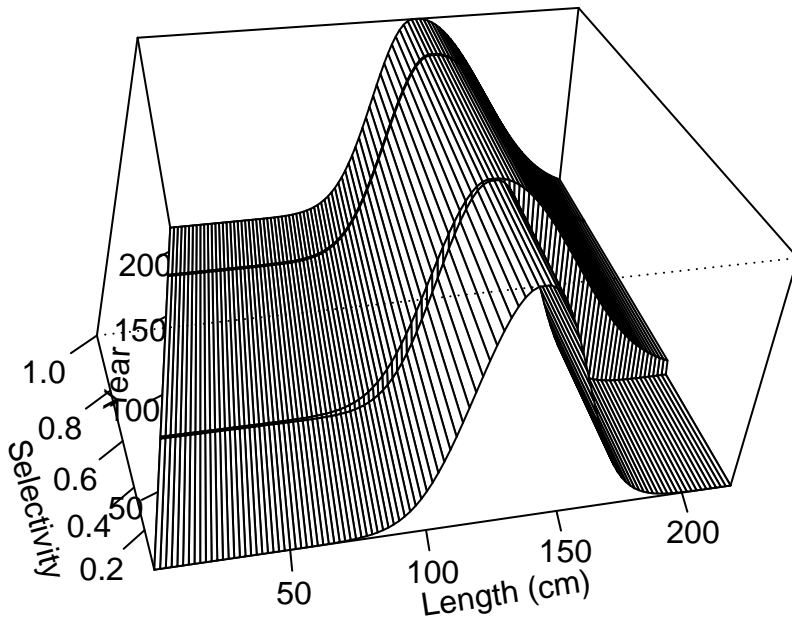
# Male time-varying selectivity for A4-LL-n



## Male ending year selectivity for A4-LL-n

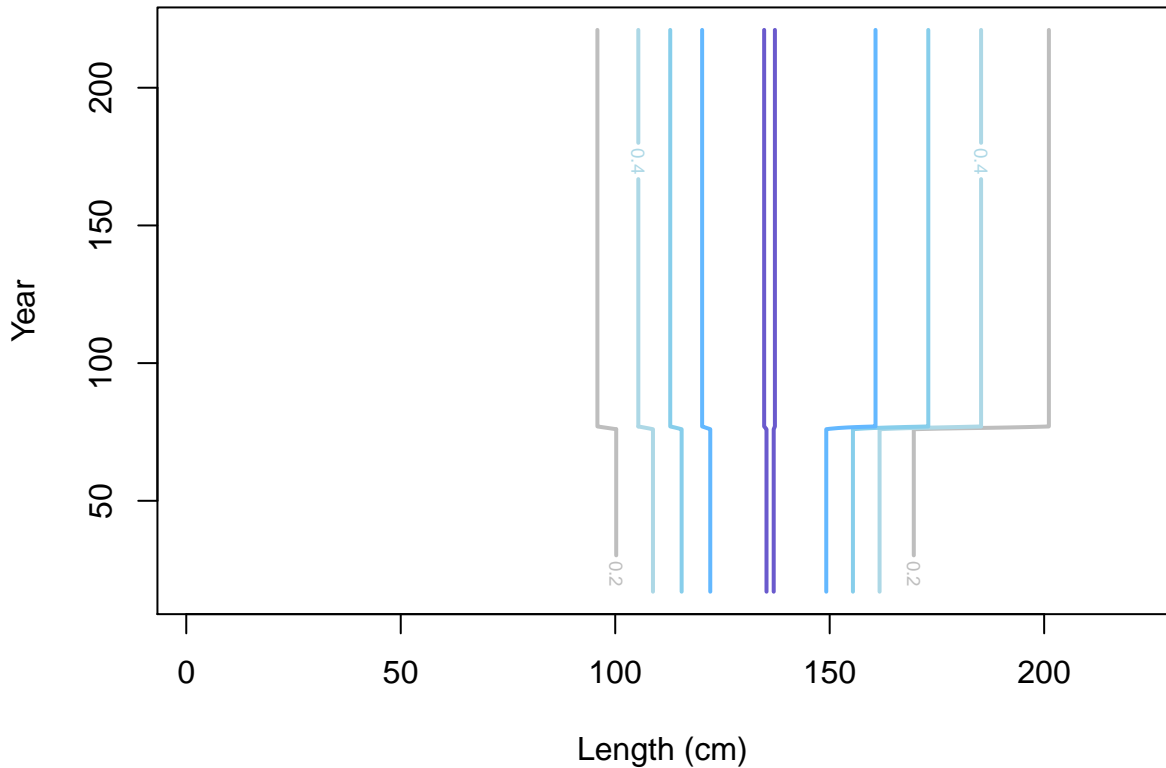


## Female time-varying selectivity for A5-LL-n

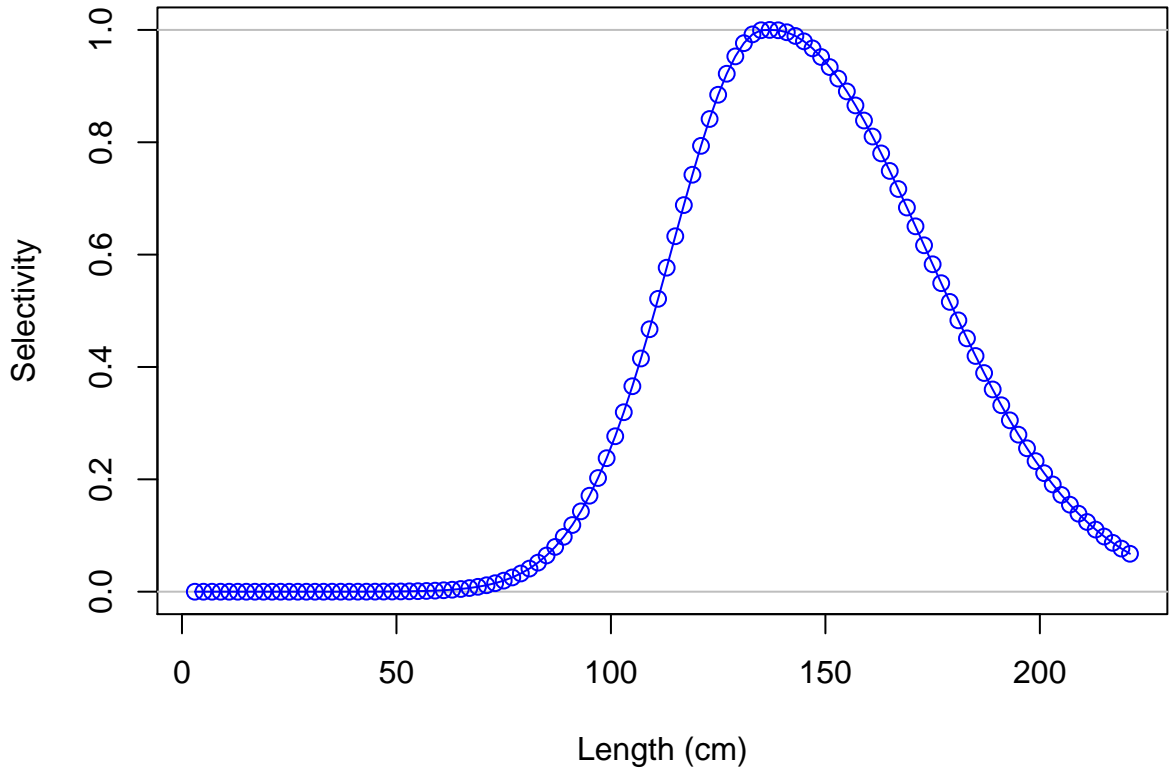




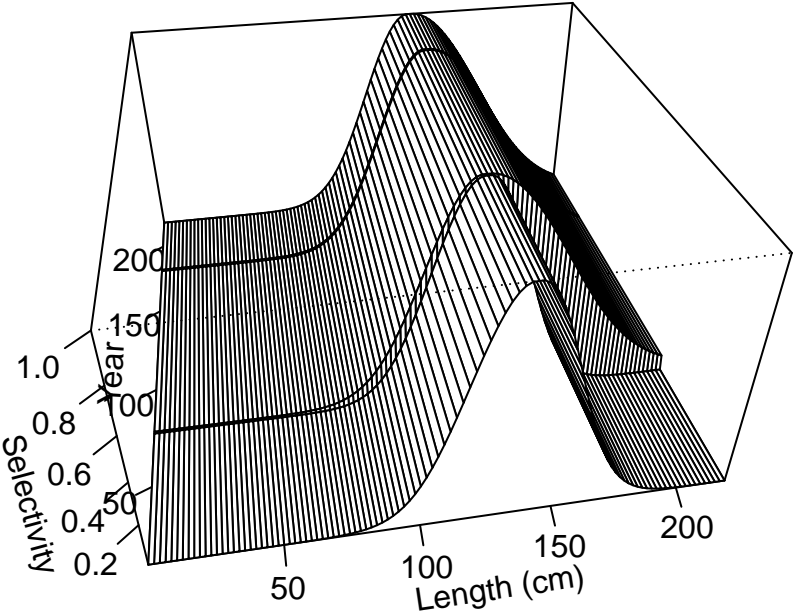
# Female time-varying selectivity for A5-LL-n



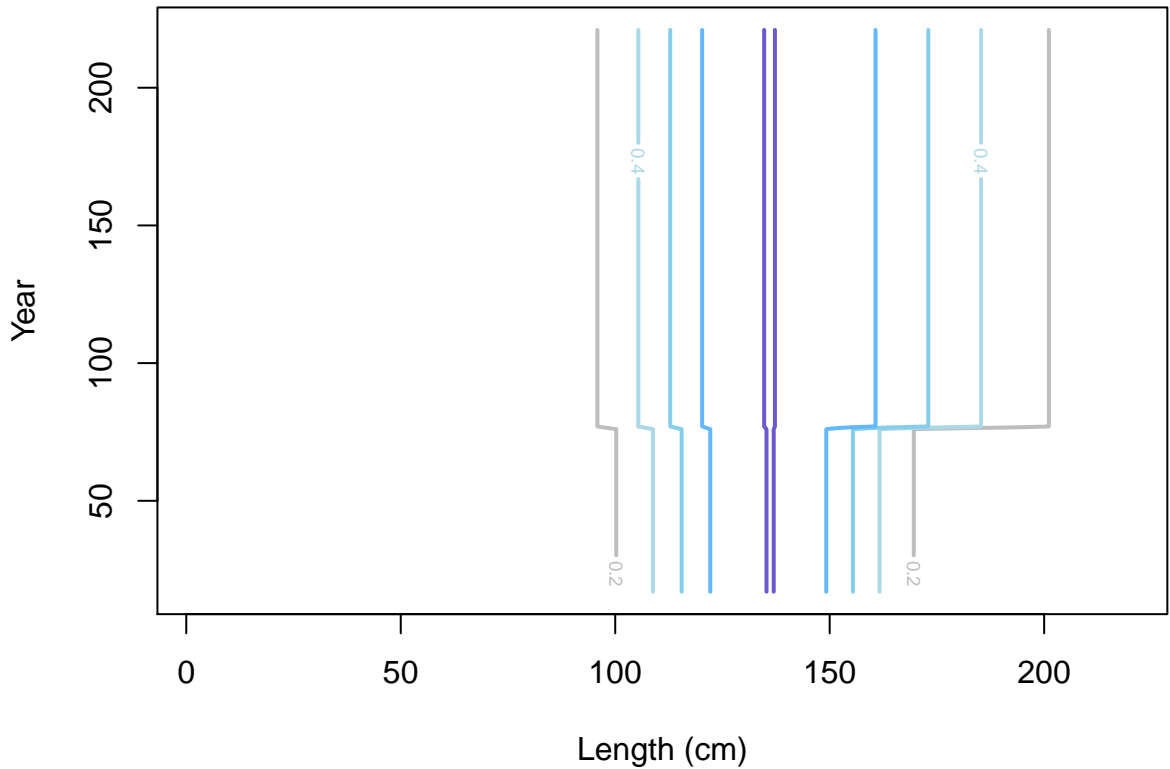
## Female ending year selectivity for A5-LL-n



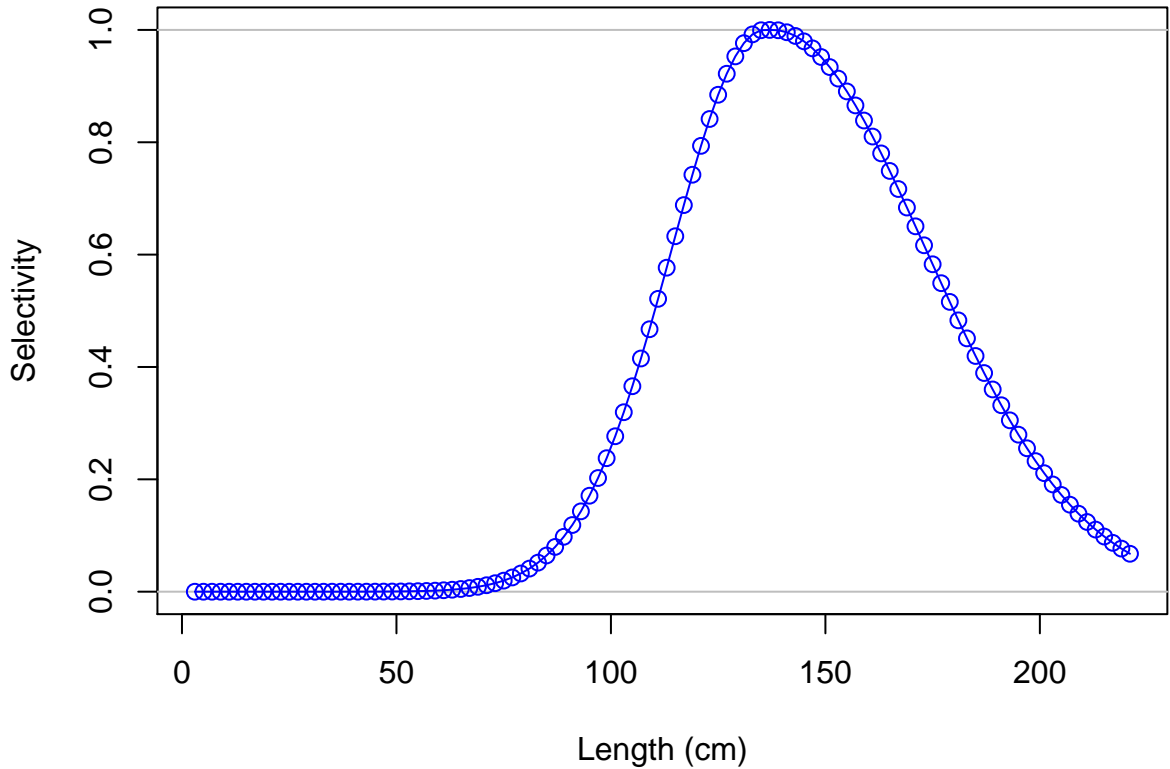
# Male time-varying selectivity for A5-LL-n



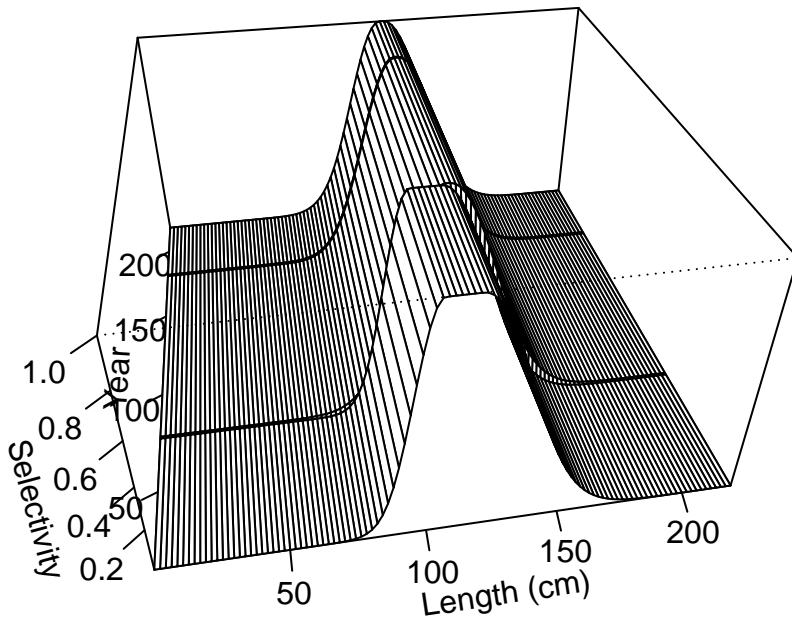
# Male time-varying selectivity for A5-LL-n



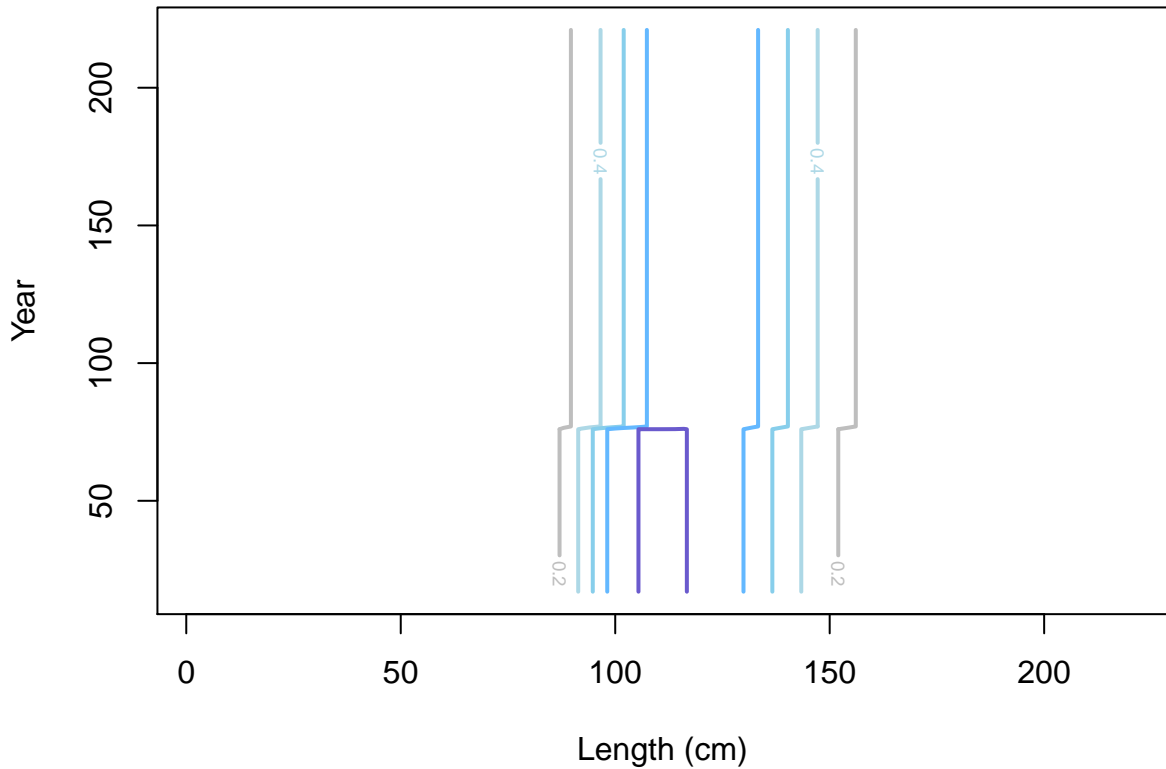
## Male ending year selectivity for A5-LL-n



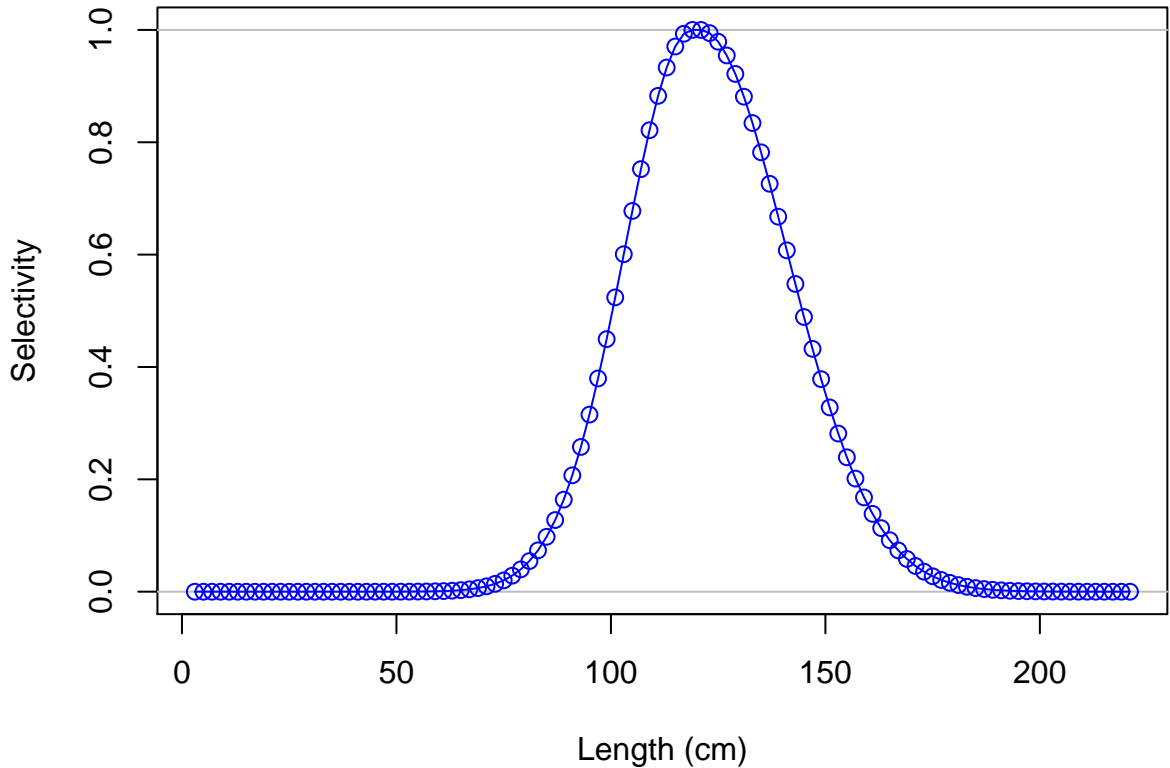
## Female time-varying selectivity for A6-LL-n



# Female time-varying selectivity for A6-LL-n

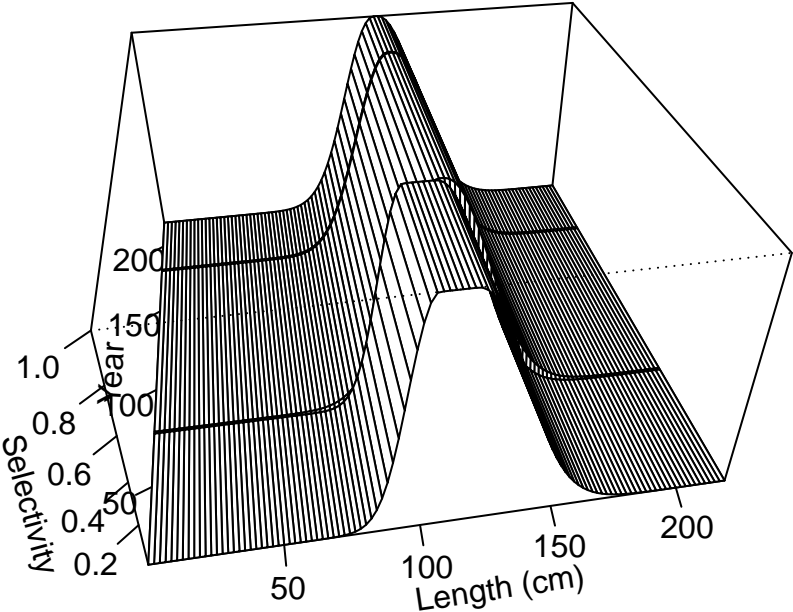


## Female ending year selectivity for A6-LL-n

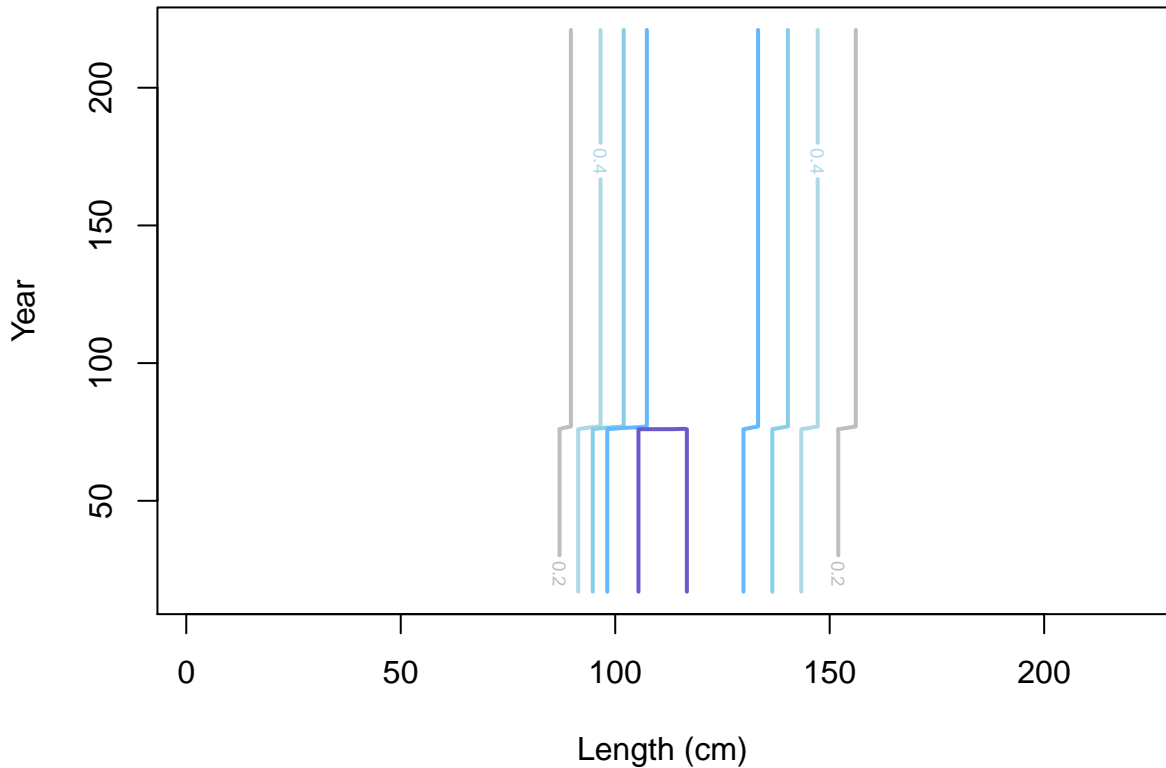




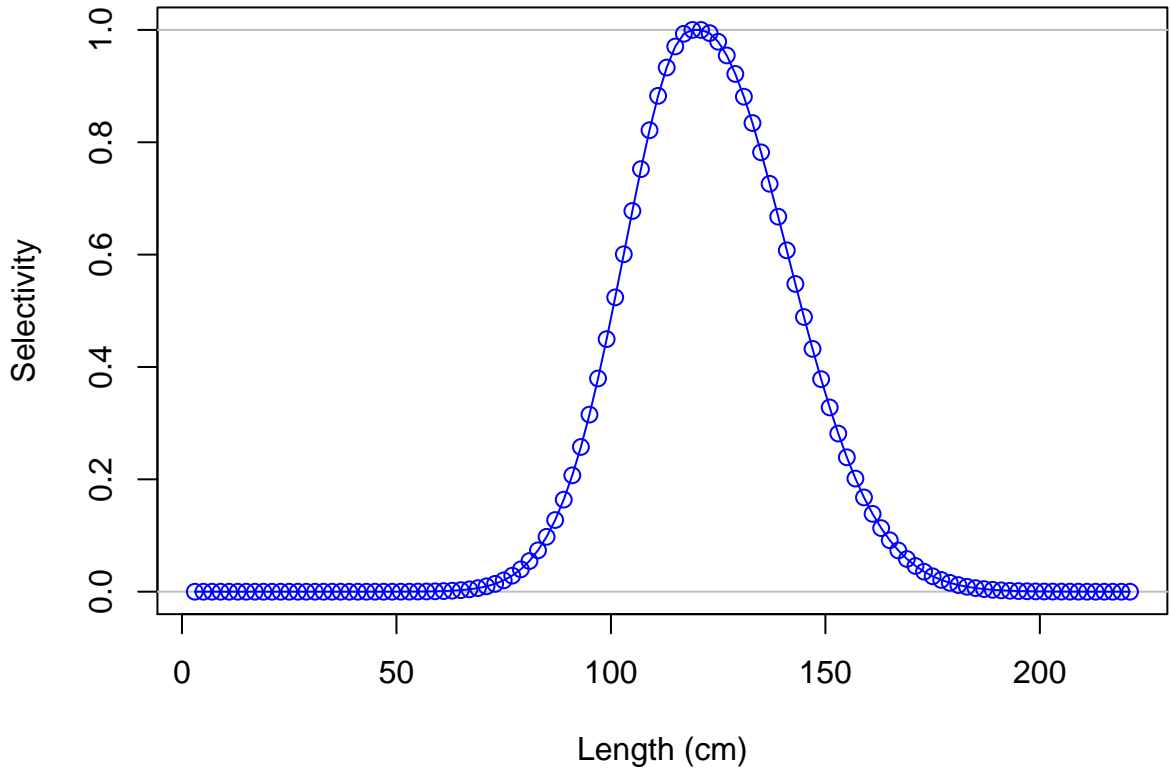
# Male time-varying selectivity for A6-LL-n



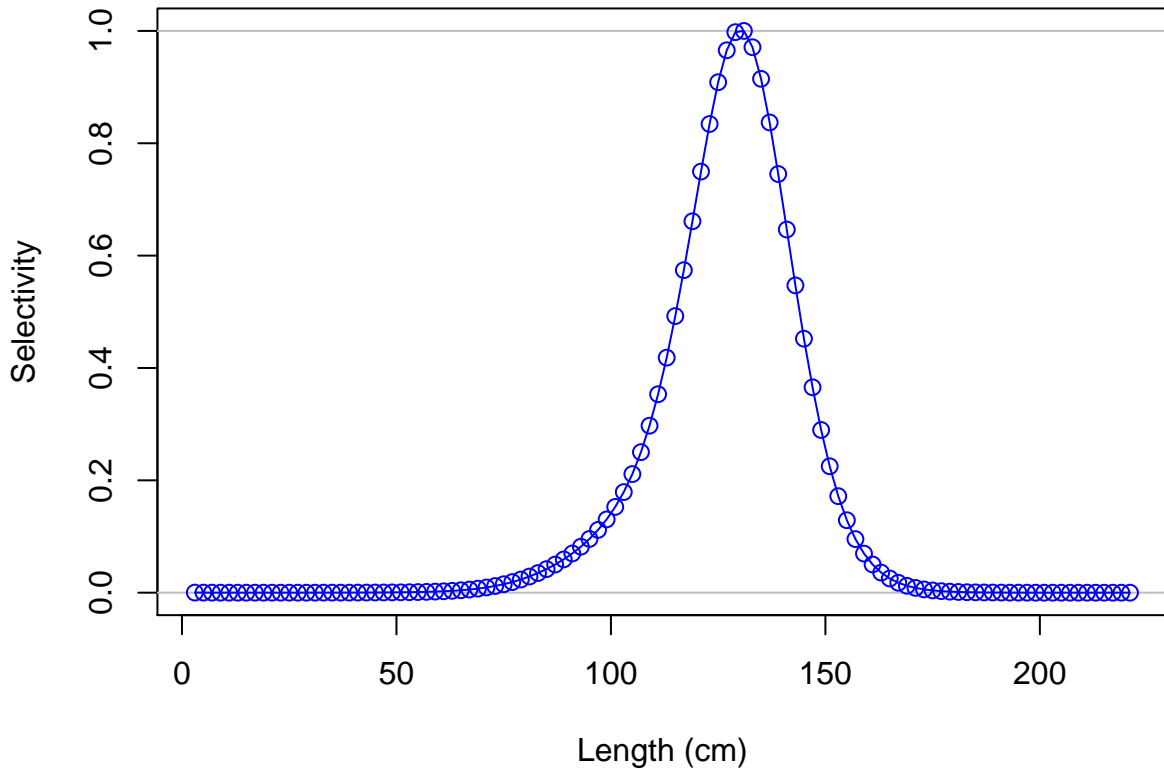
# Male time-varying selectivity for A6-LL-n



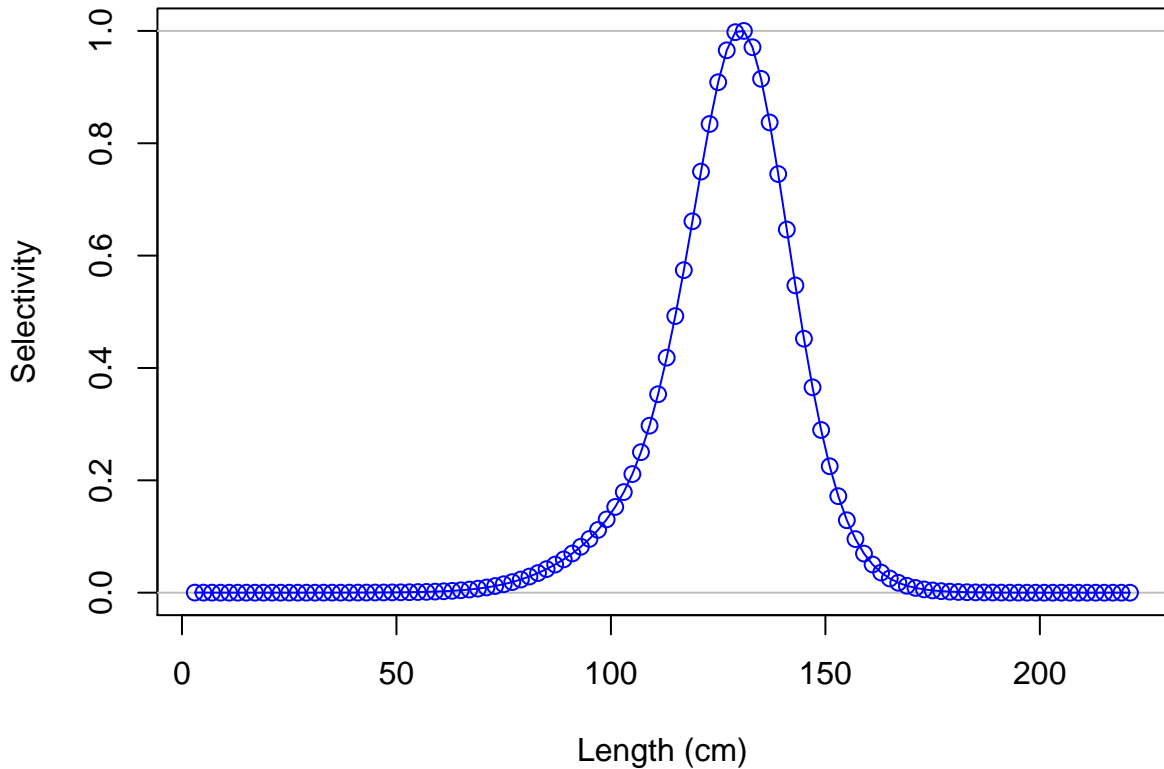
## Male ending year selectivity for A6-LL-n



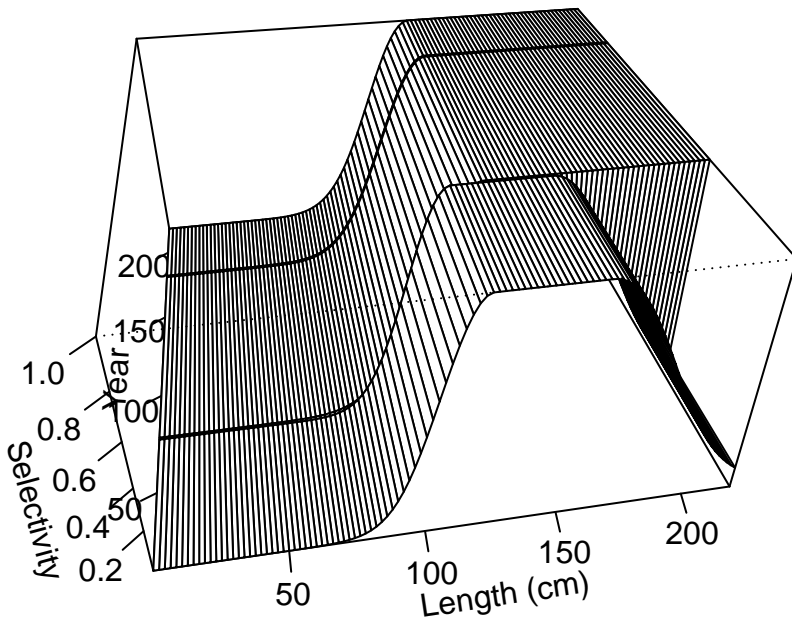
## Female ending year selectivity for A1-LL-w



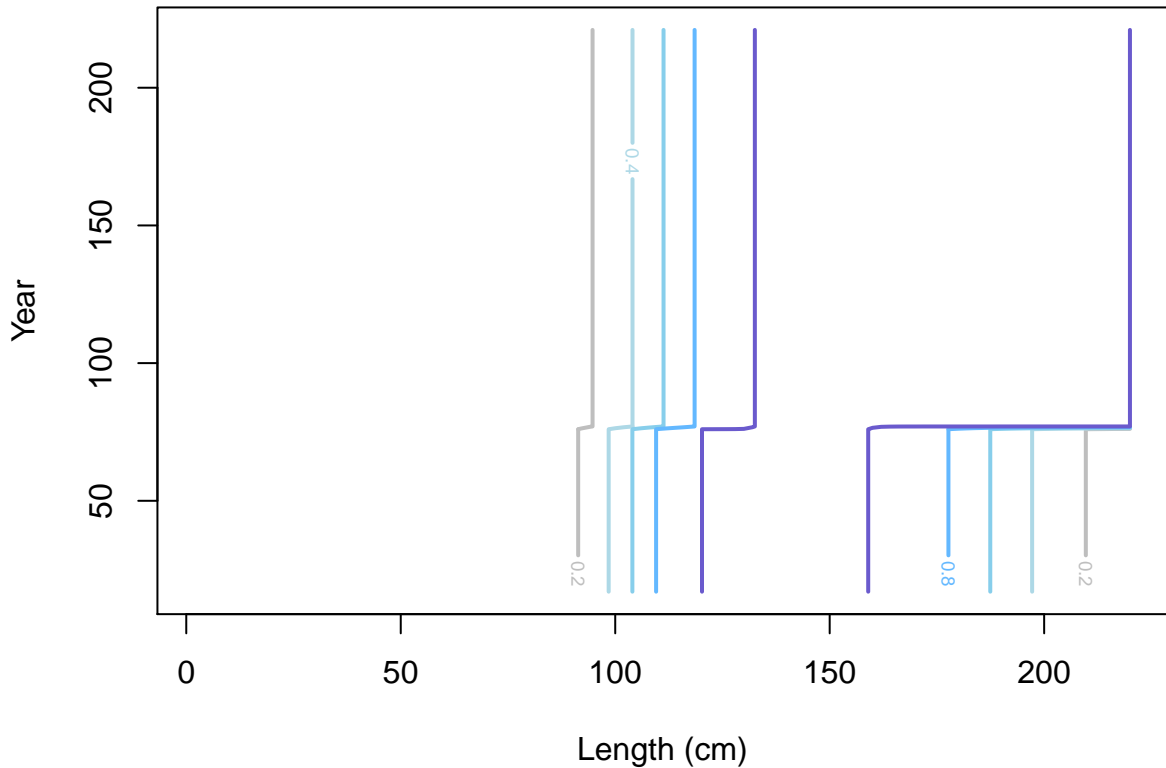
# Male ending year selectivity for A1-LL-w



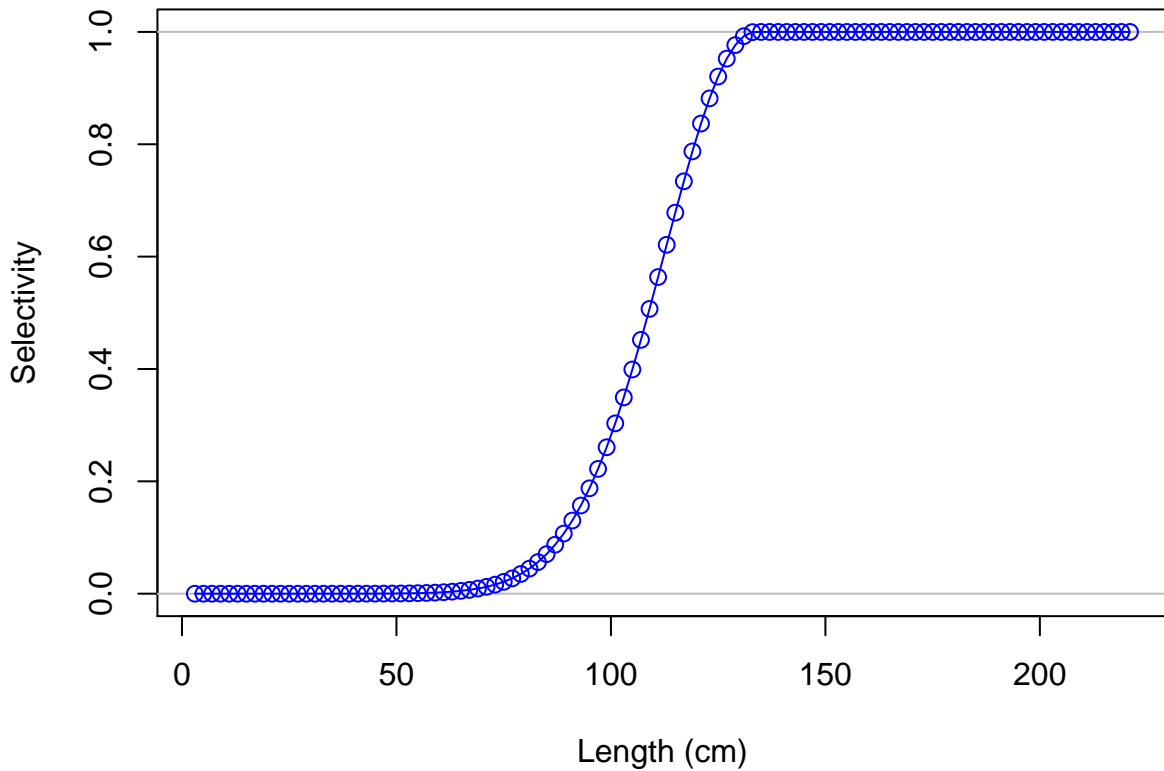
## Female time-varying selectivity for A2-LL-w



# Female time-varying selectivity for A2-LL-w

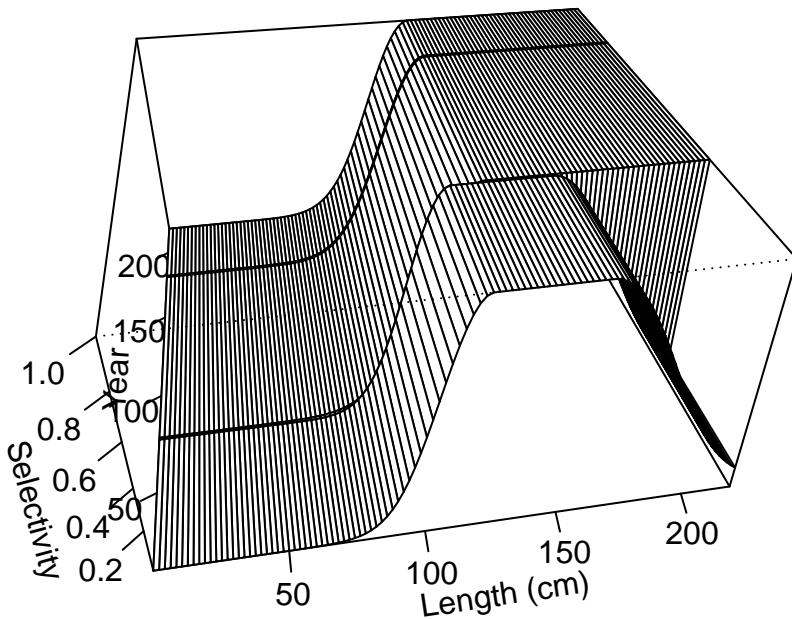


## Female ending year selectivity for A2-LL-w

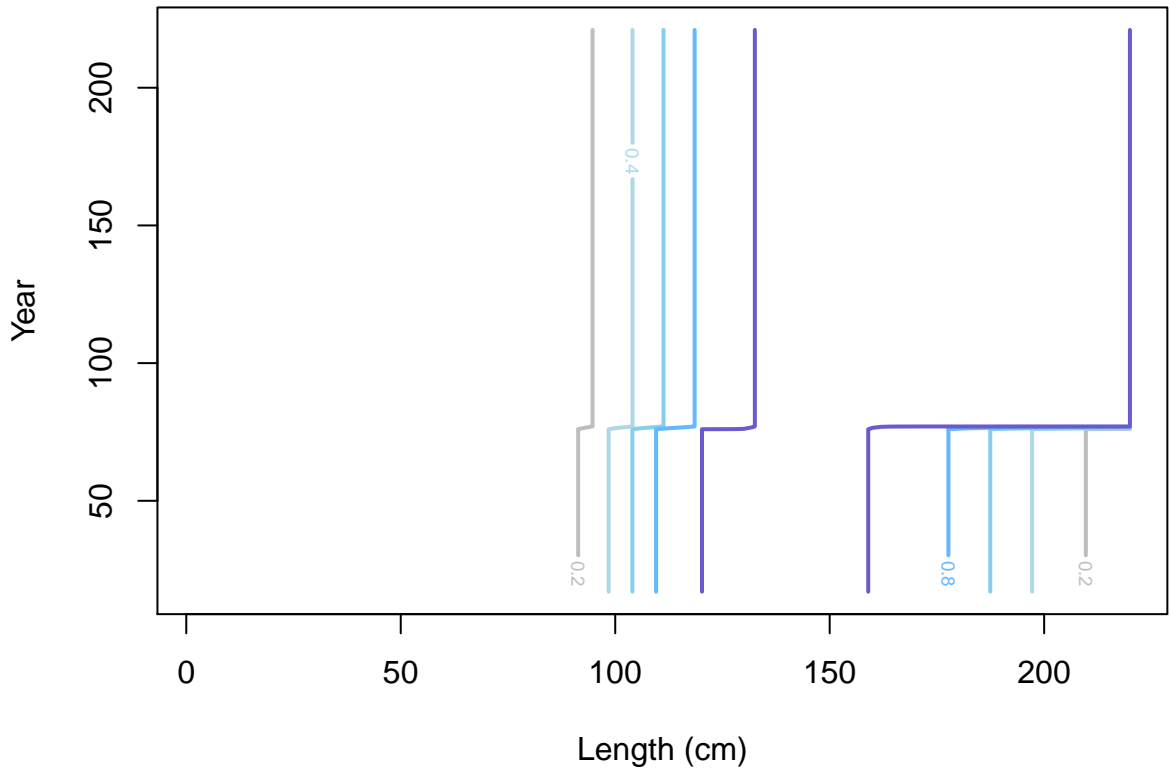




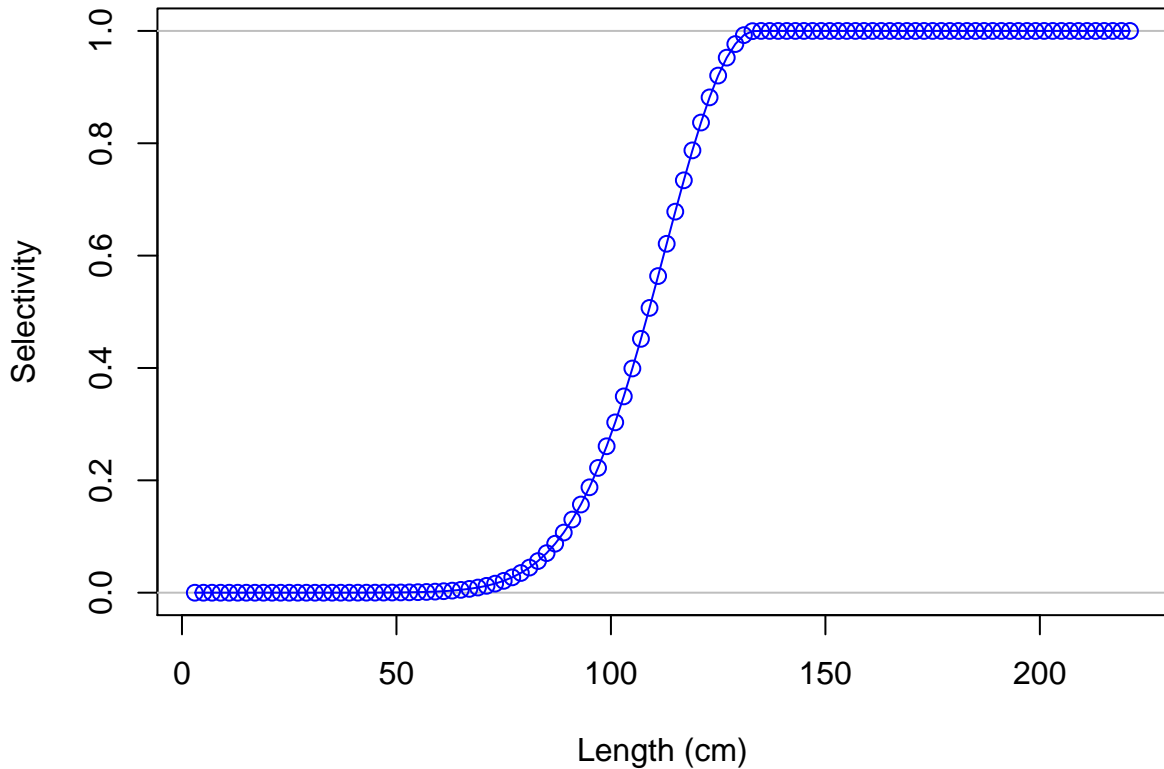
## Male time-varying selectivity for A2-LL-w



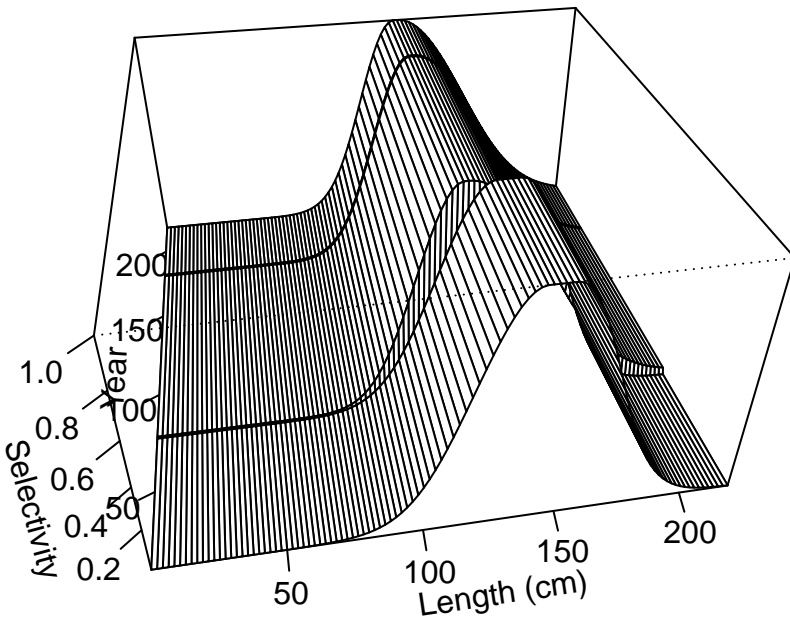
# Male time-varying selectivity for A2-LL-w



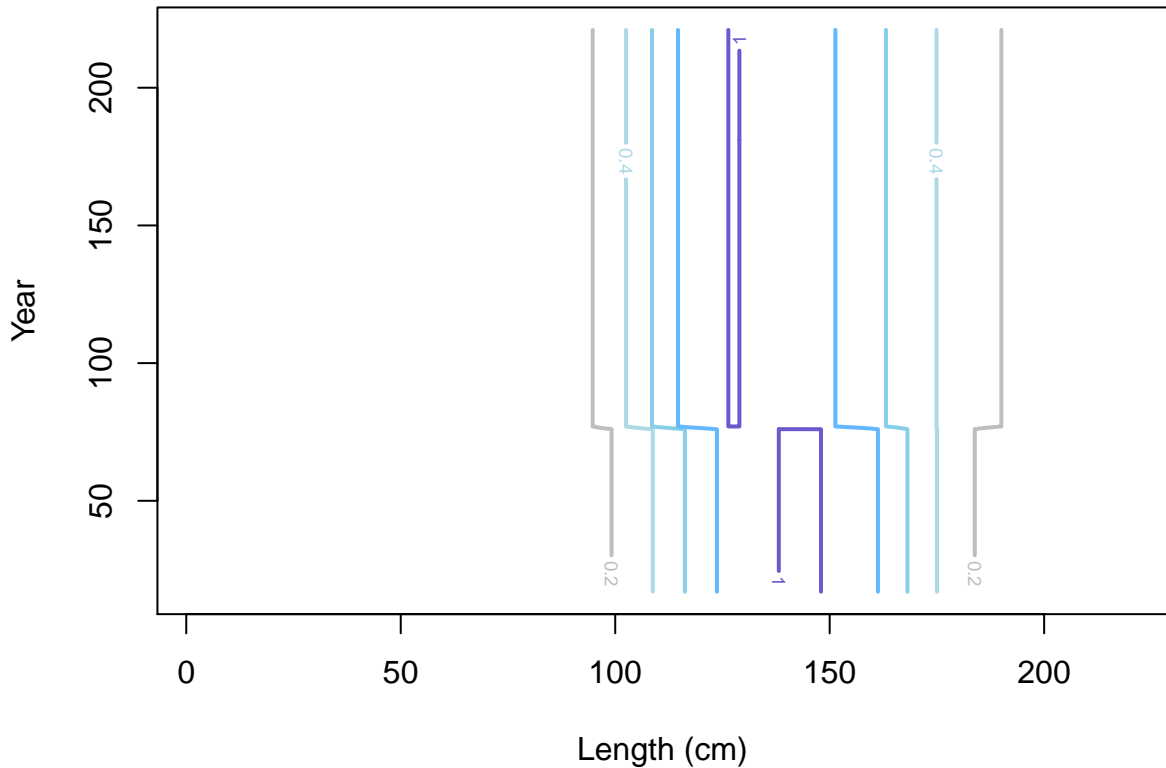
## Male ending year selectivity for A2-LL-w



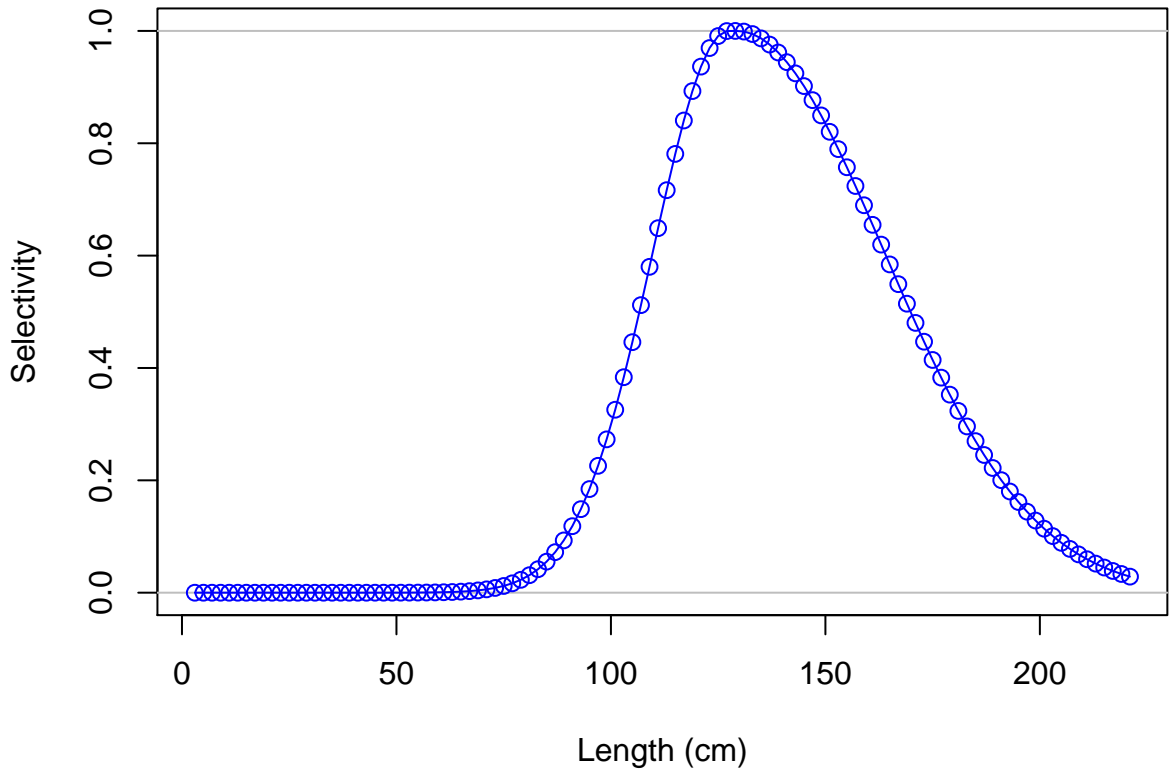
## Female time-varying selectivity for A3-LL-w



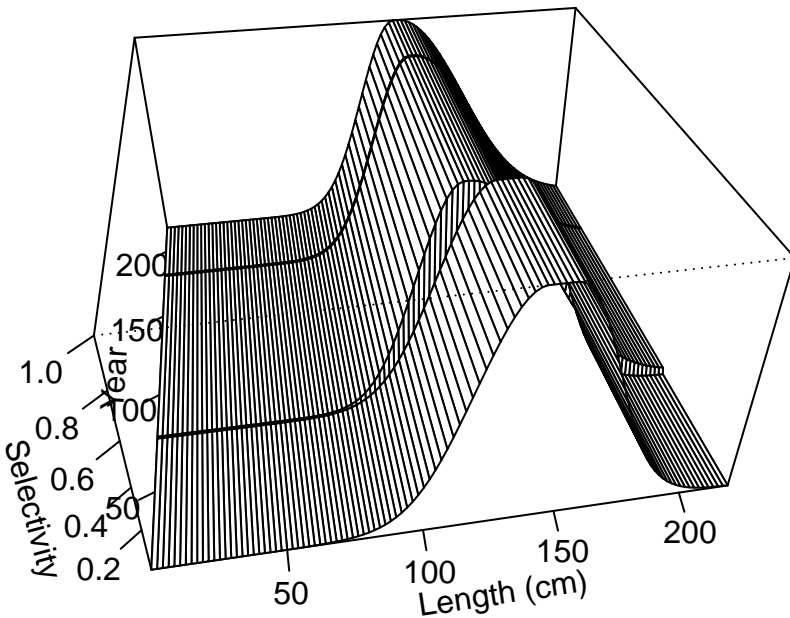
# Female time-varying selectivity for A3-LL-w



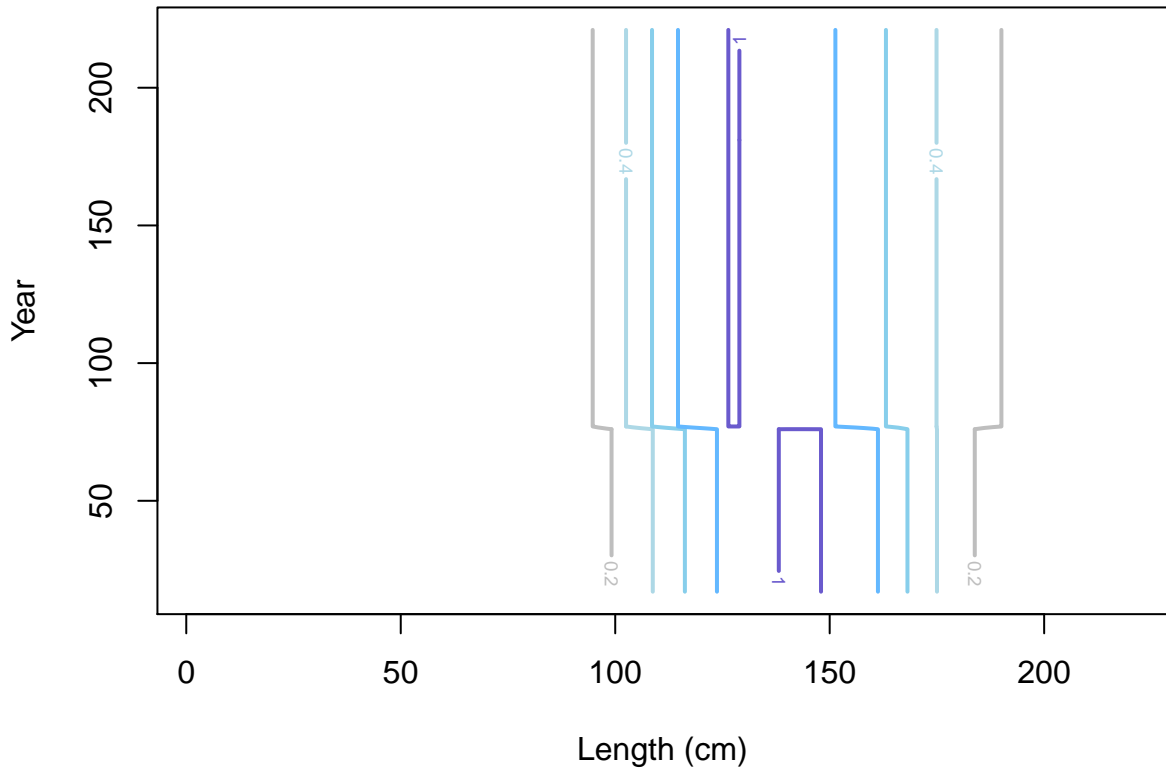
## Female ending year selectivity for A3-LL-w



## Male time-varying selectivity for A3-LL-w

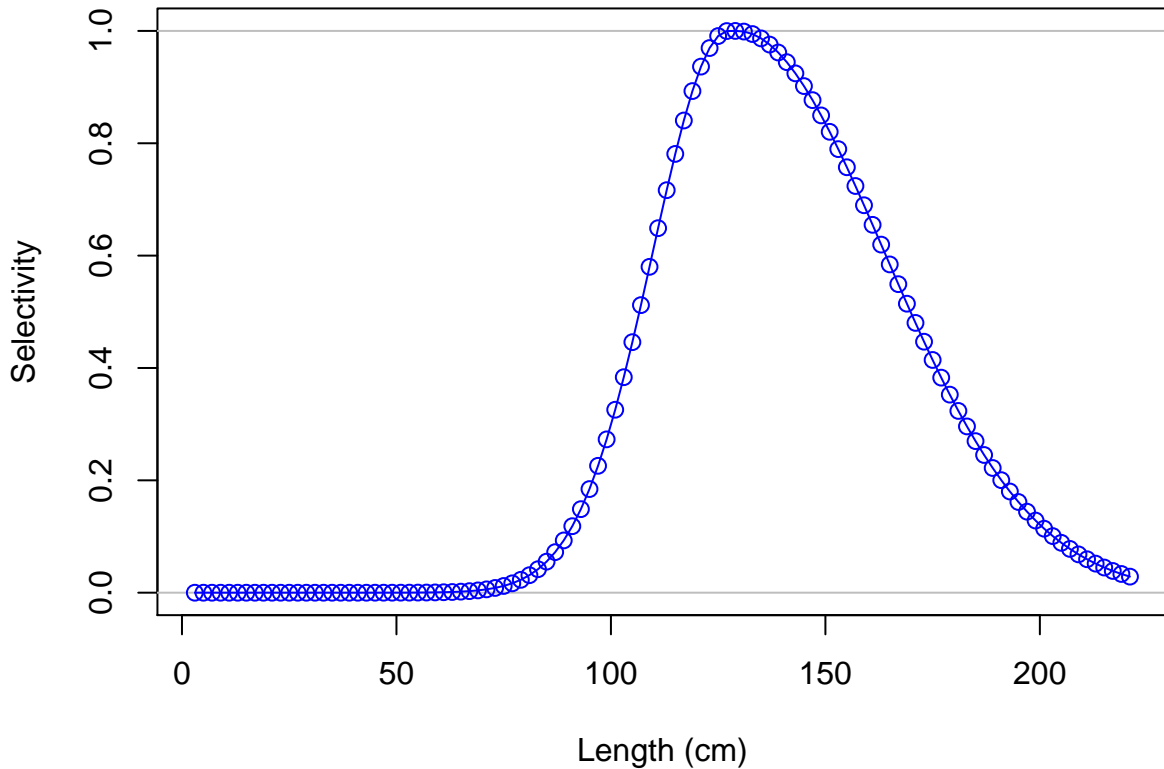


# Male time-varying selectivity for A3-LL-w

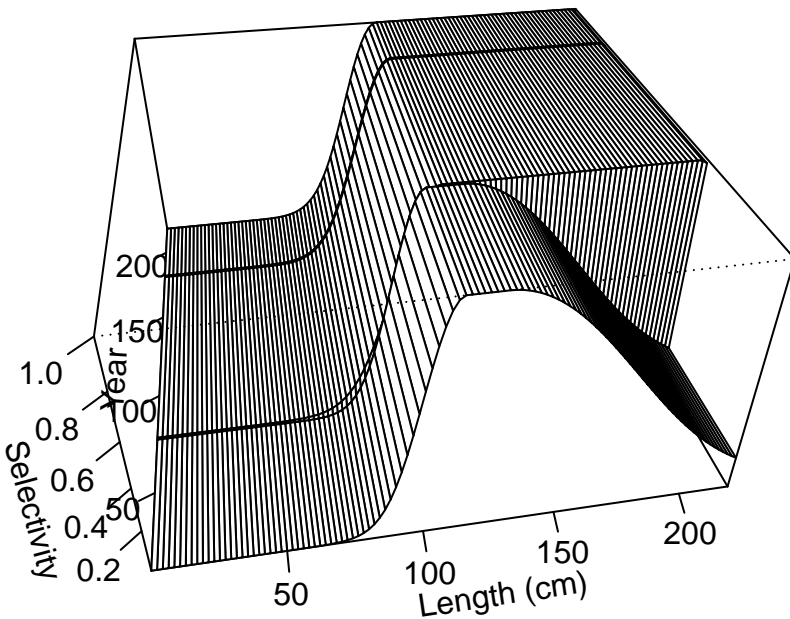




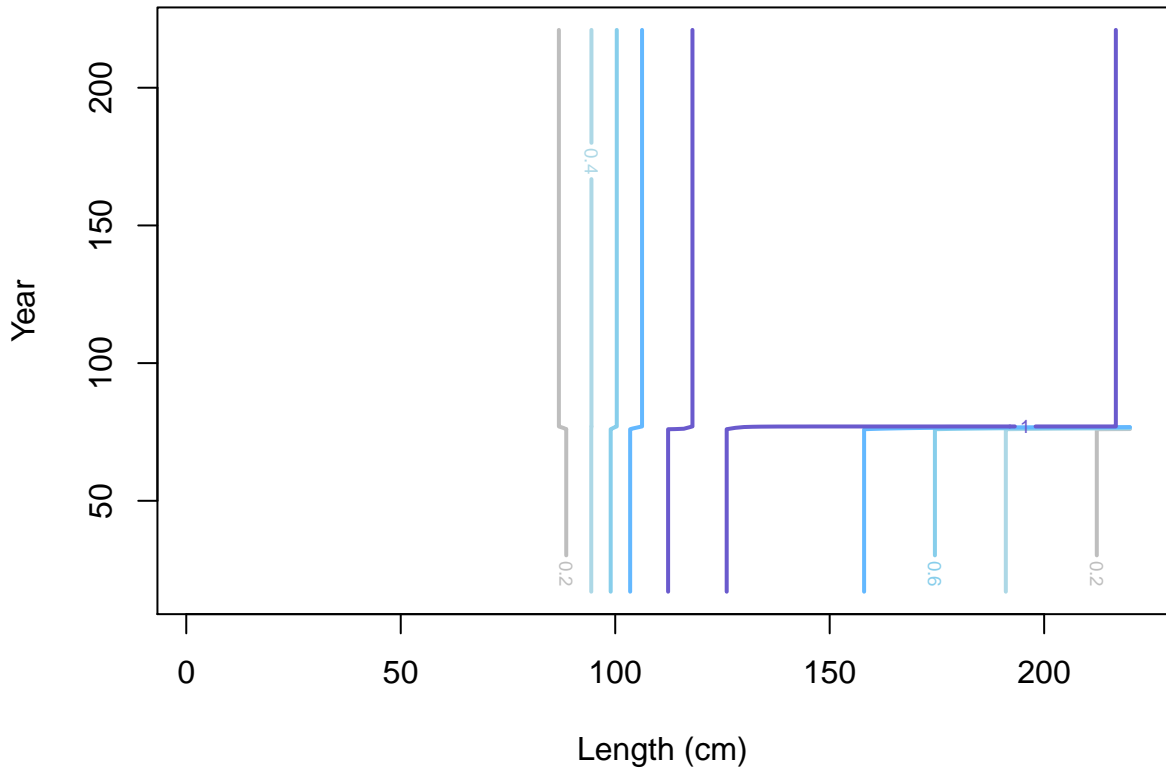
### Male ending year selectivity for A3-LL-w



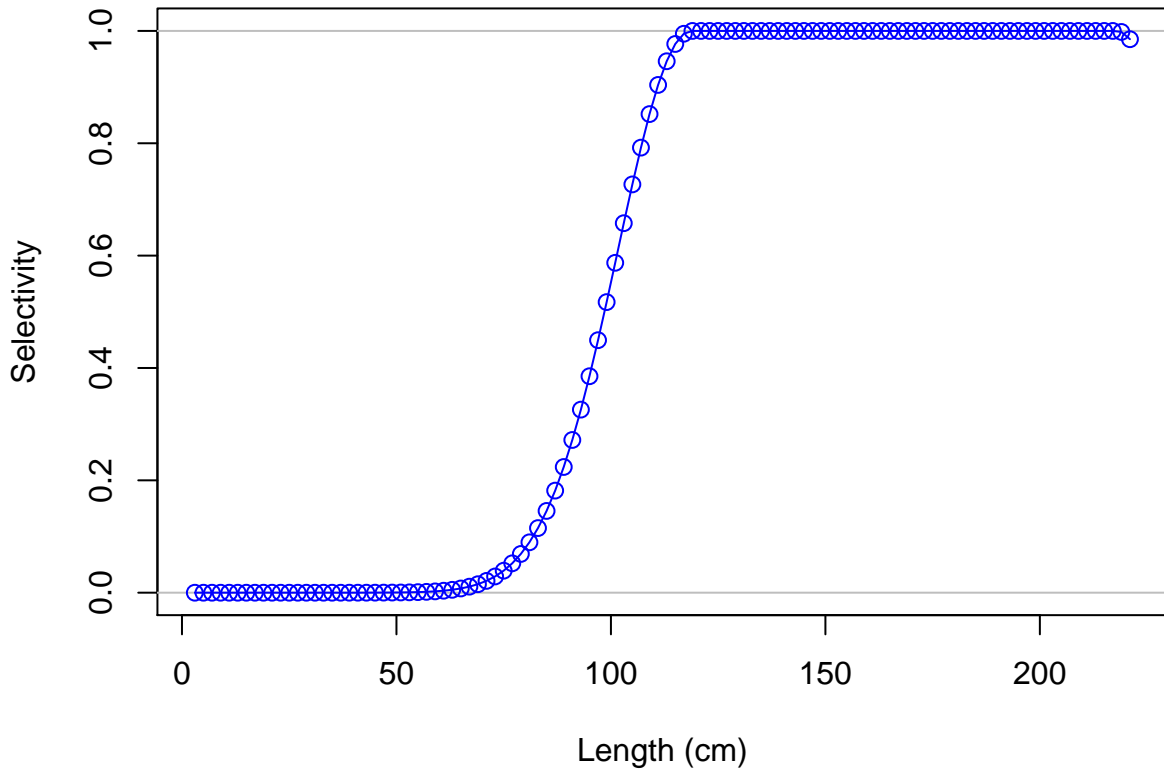
## Female time-varying selectivity for A4-LL-w



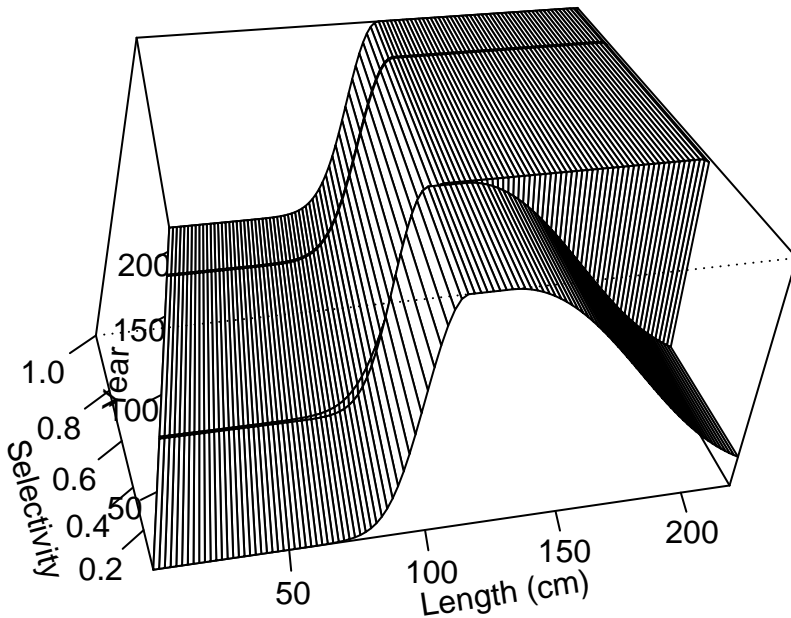
# Female time-varying selectivity for A4-LL-w



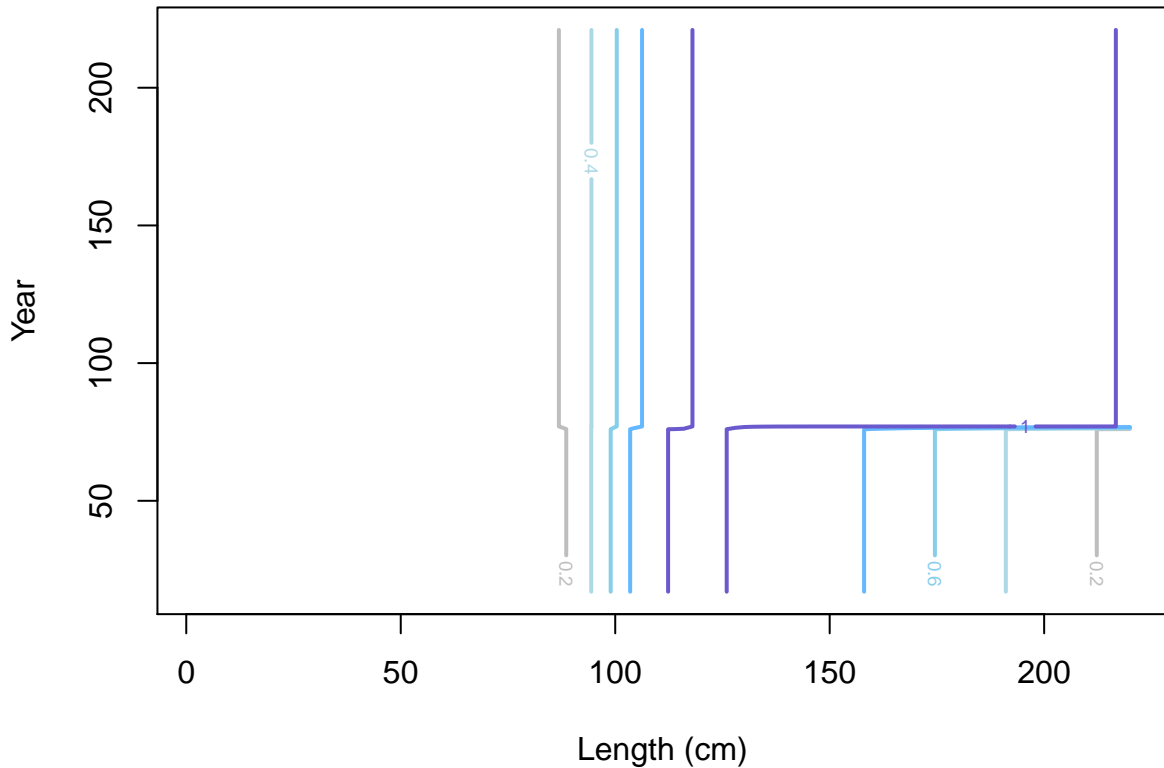
## Female ending year selectivity for A4-LL-w



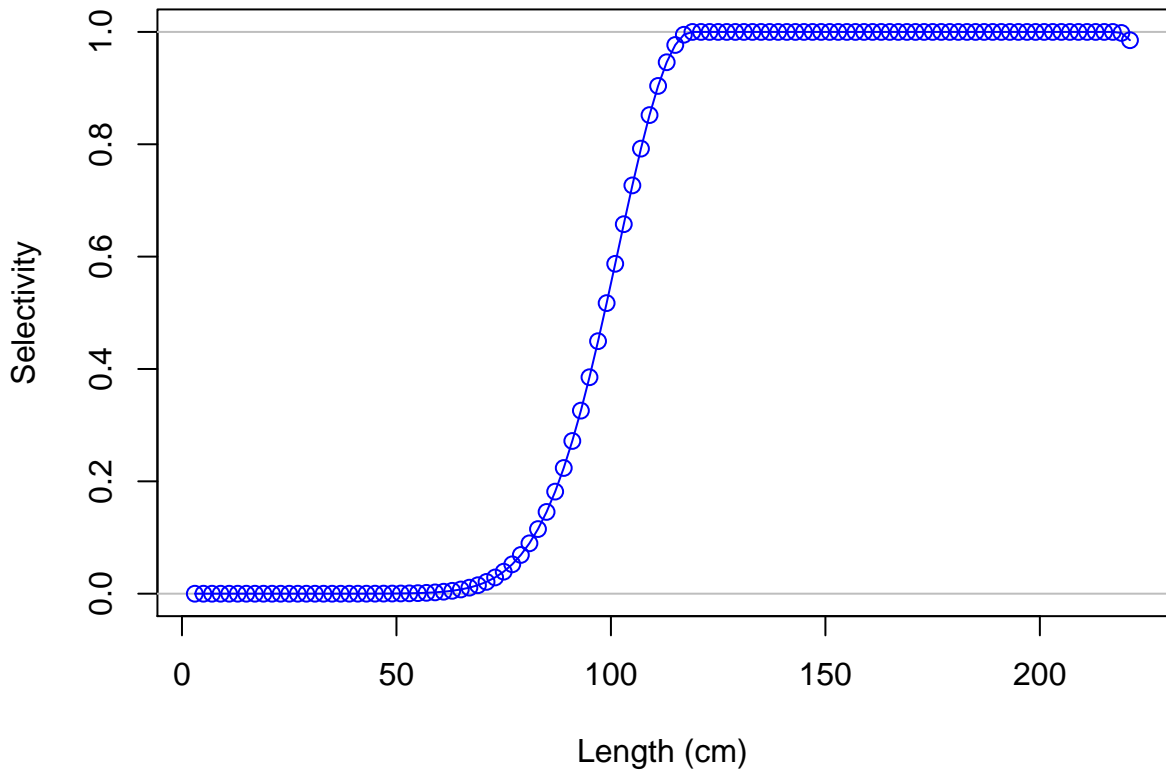
## Male time-varying selectivity for A4-LL-w



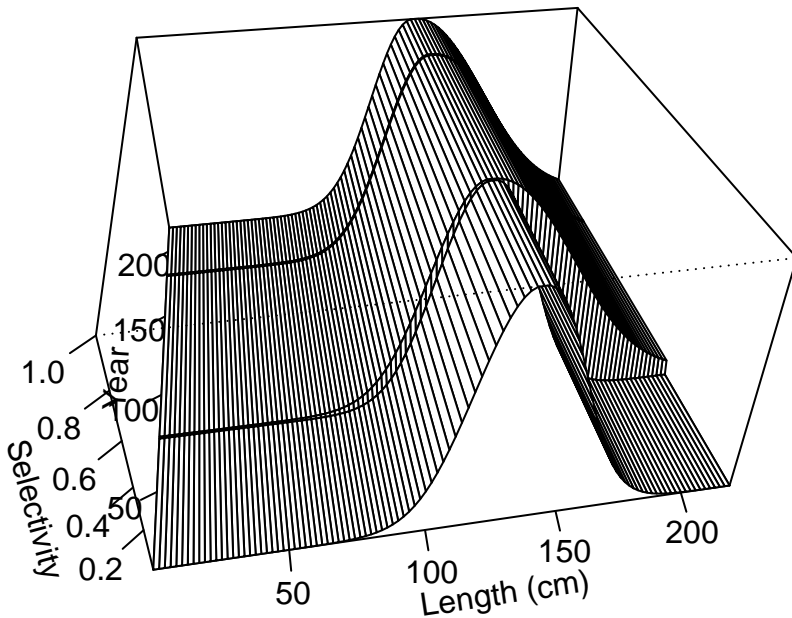
# Male time-varying selectivity for A4-LL-w



## Male ending year selectivity for A4-LL-w

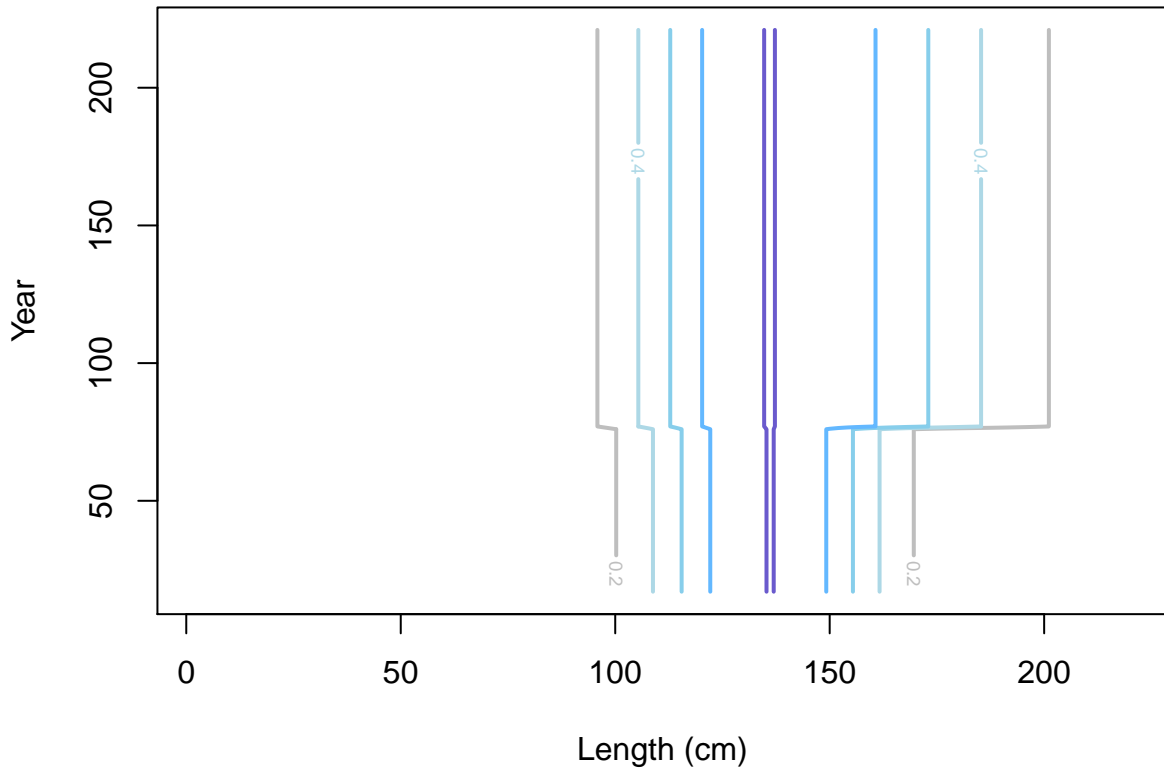


## Female time-varying selectivity for A5-LL-w

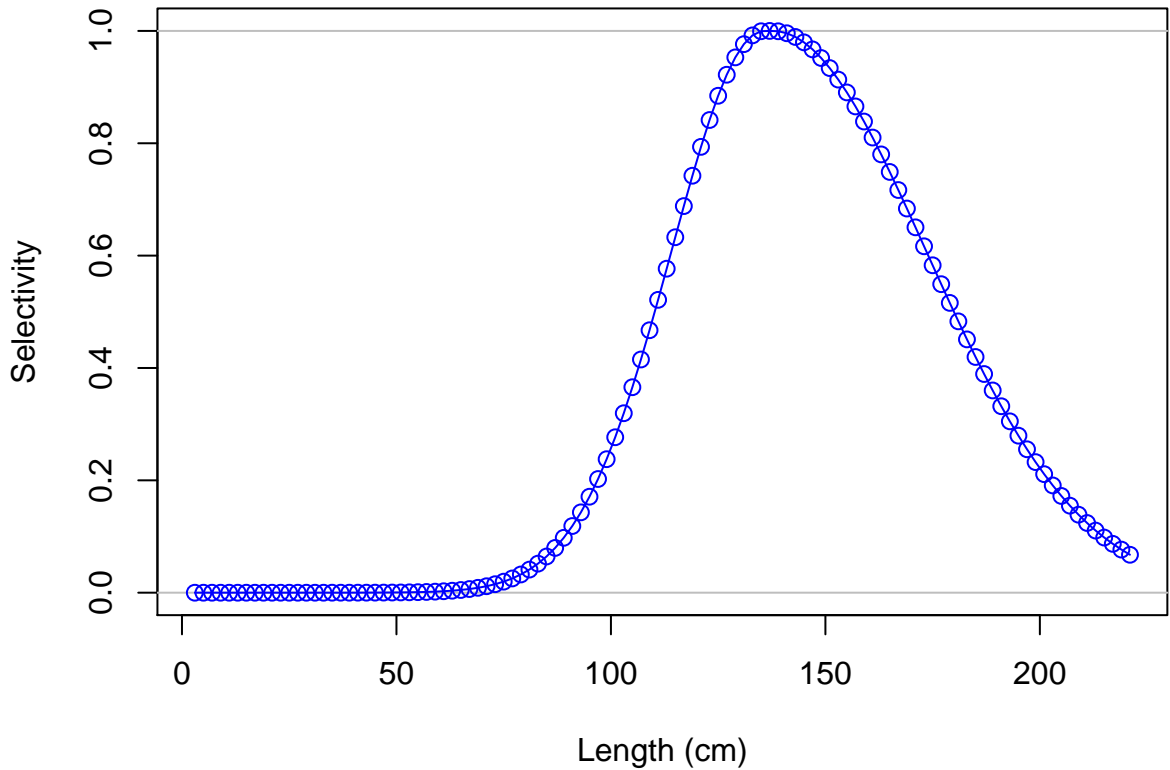




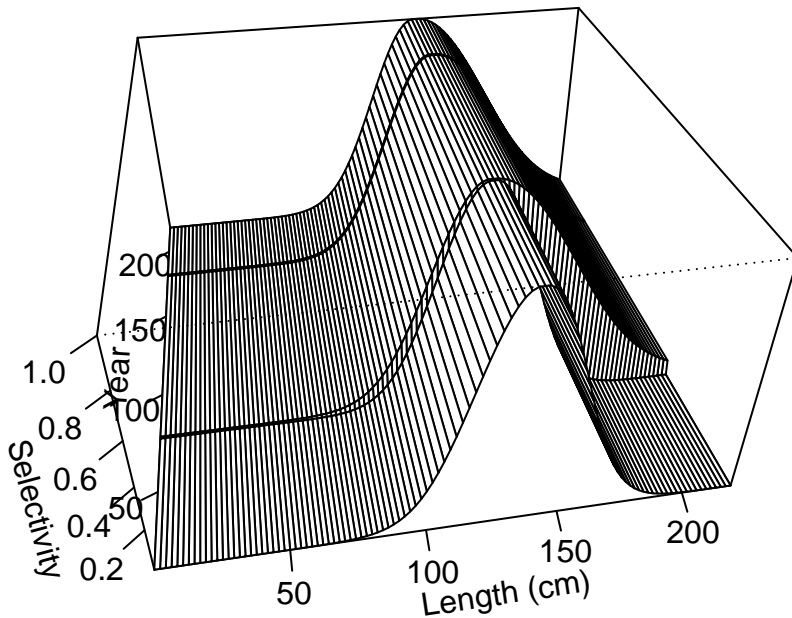
# Female time-varying selectivity for A5-LL-w



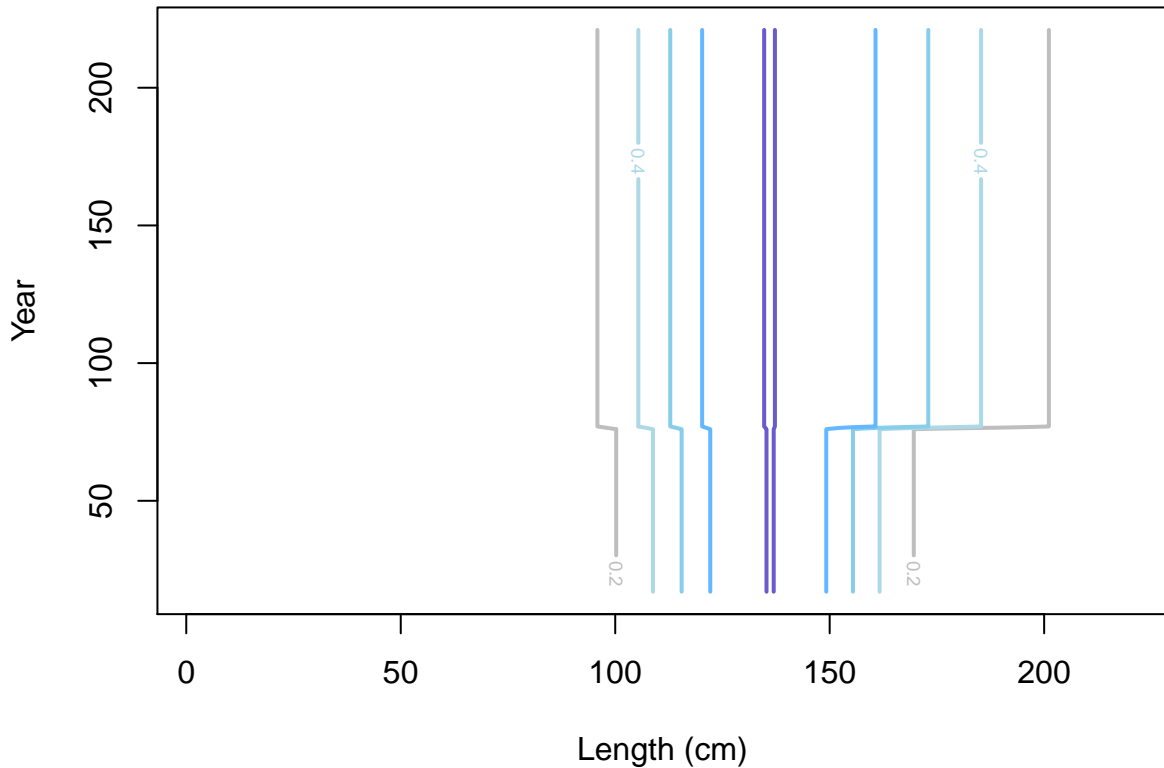
## Female ending year selectivity for A5-LL-w



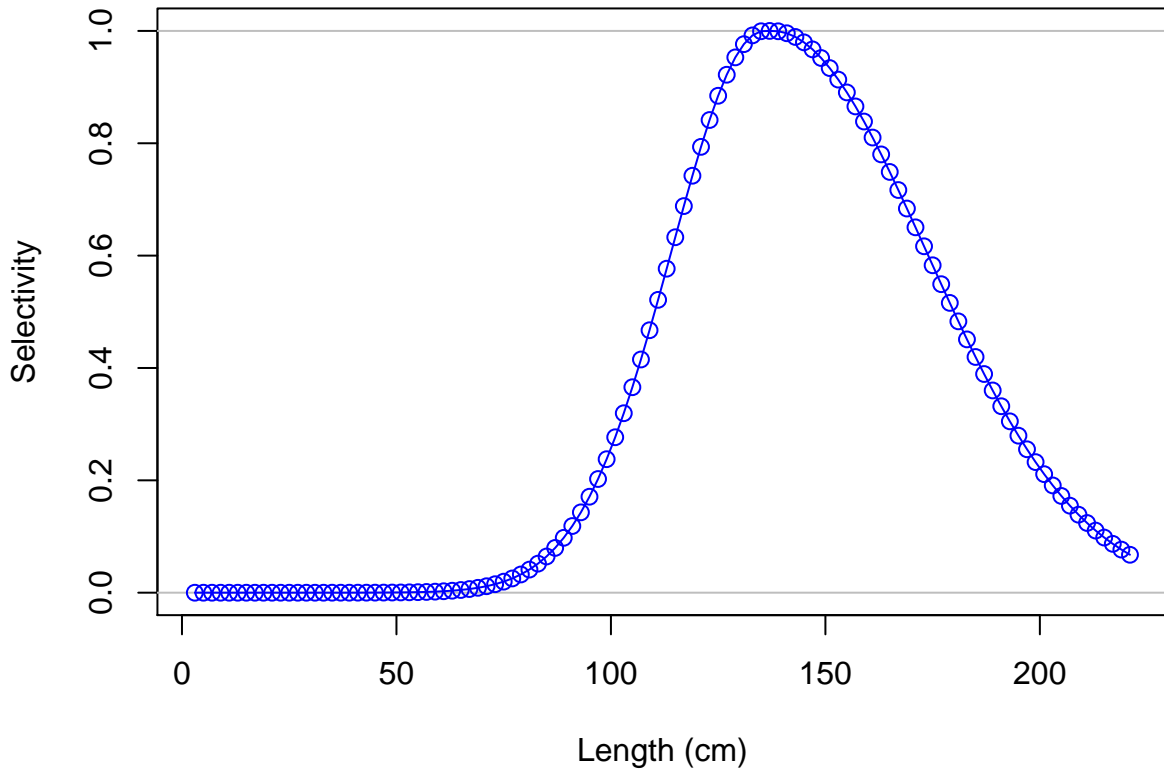
## Male time-varying selectivity for A5-LL-w



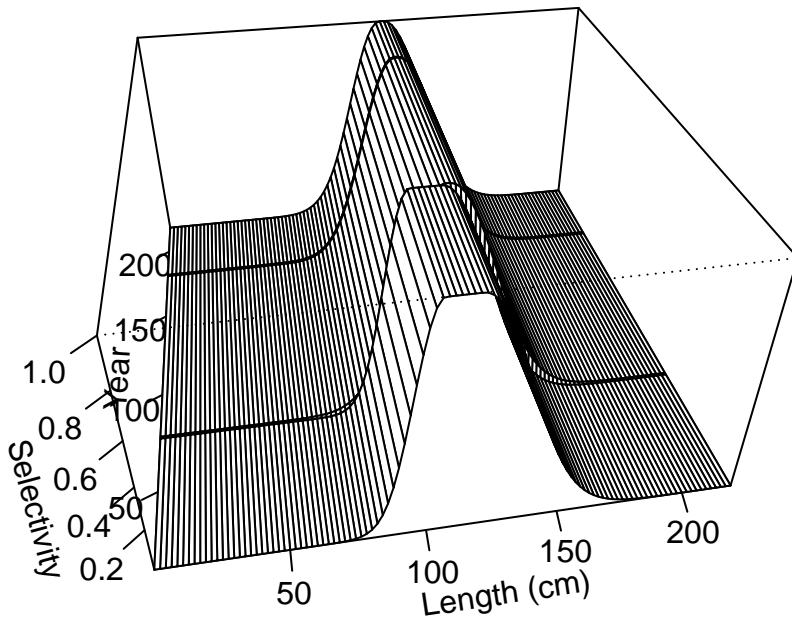
# Male time-varying selectivity for A5-LL-w



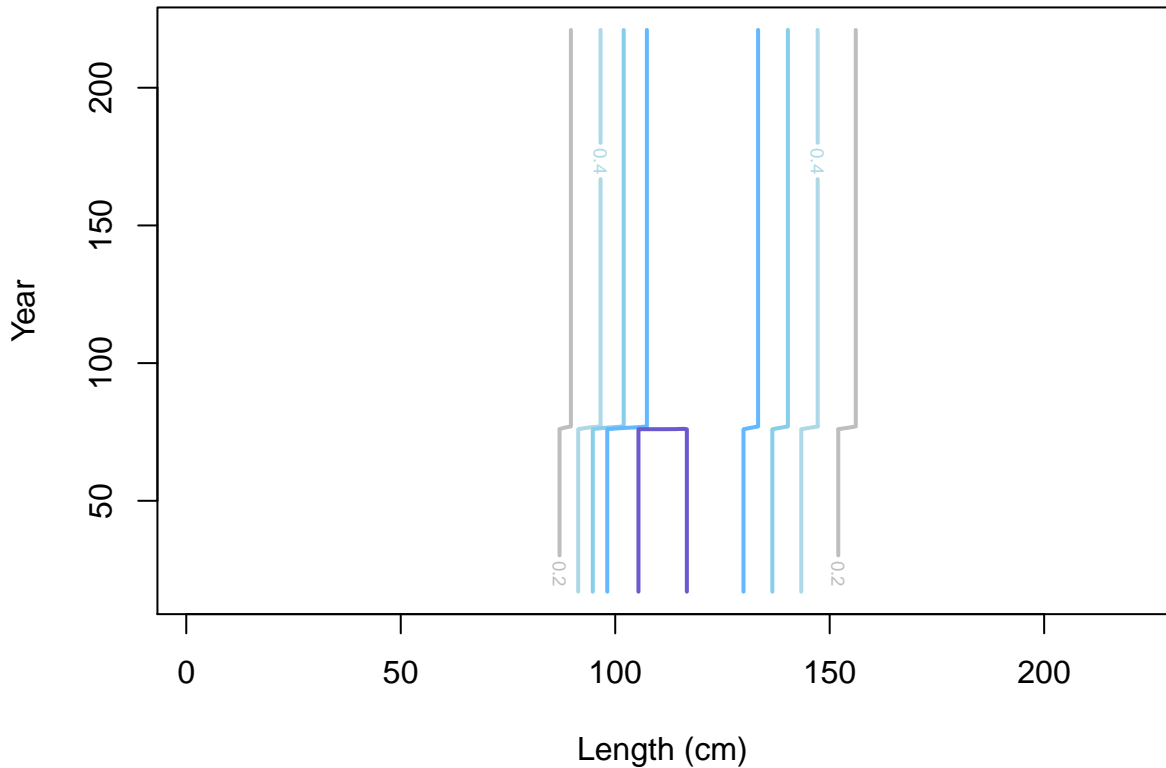
# Male ending year selectivity for A5-LL-w



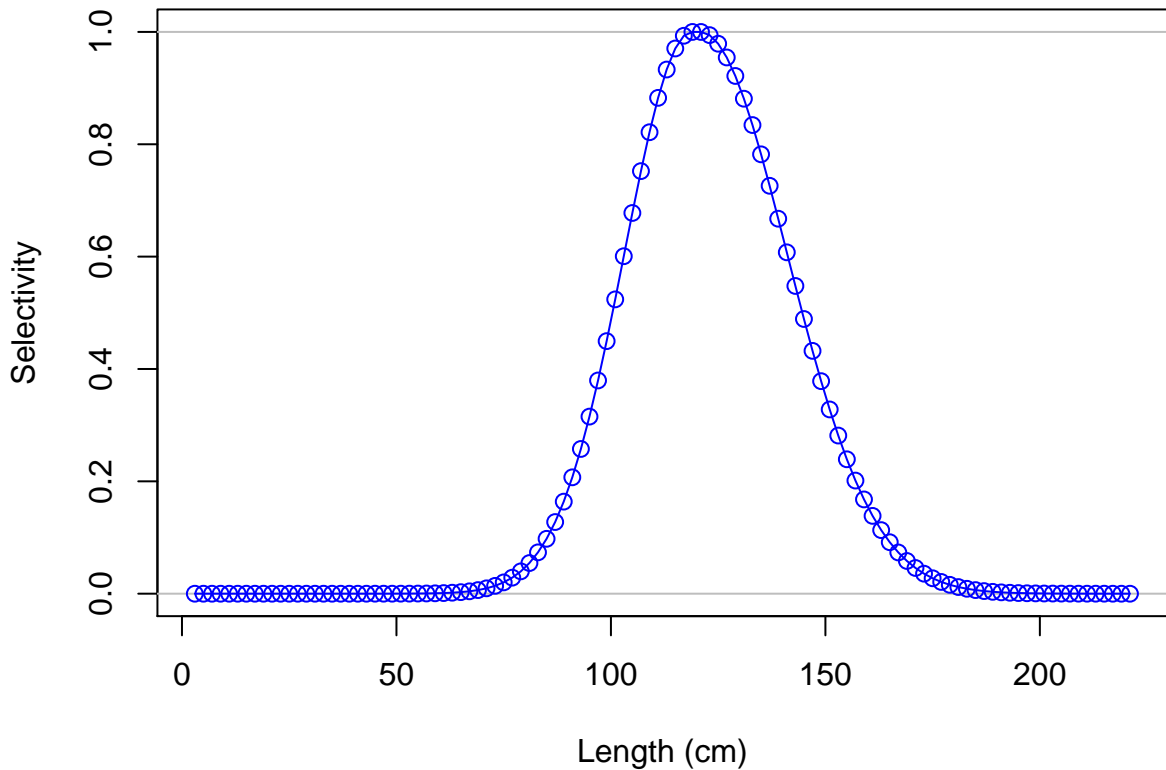
## Female time-varying selectivity for A6-LL-w



# Female time-varying selectivity for A6-LL-w

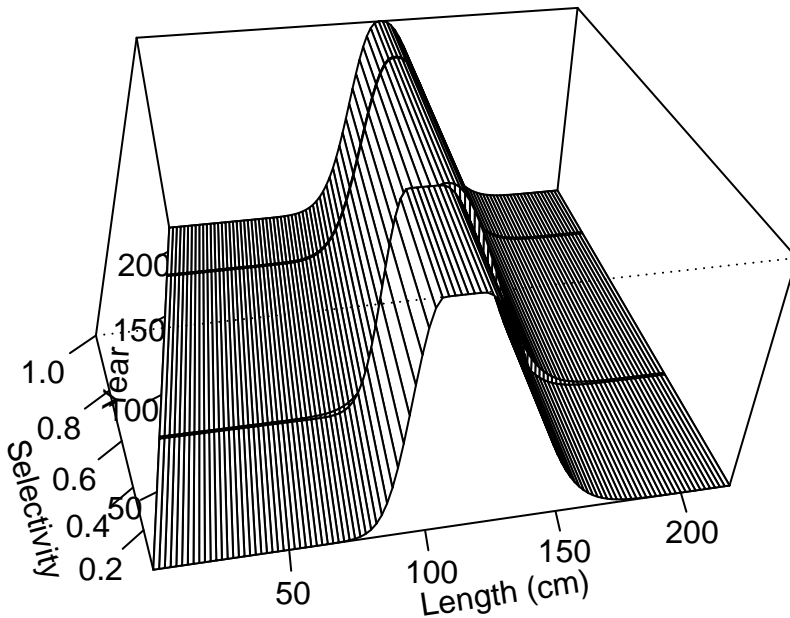


## Female ending year selectivity for A6-LL-w

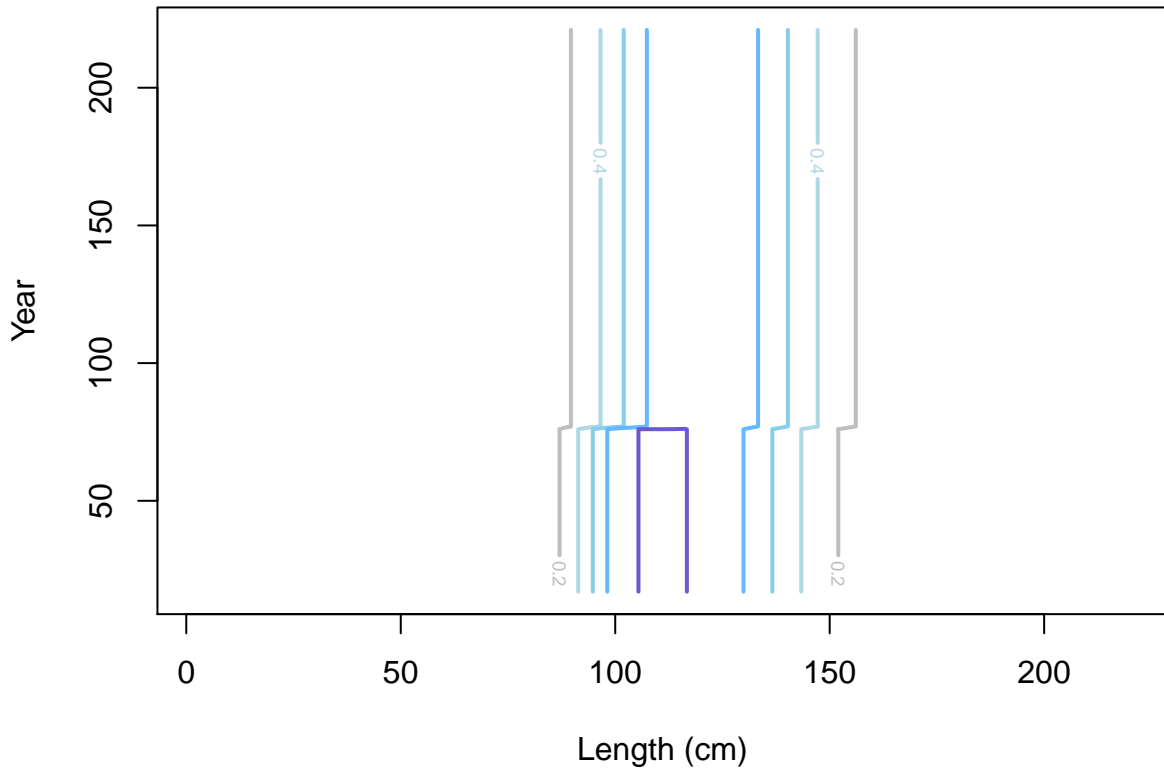




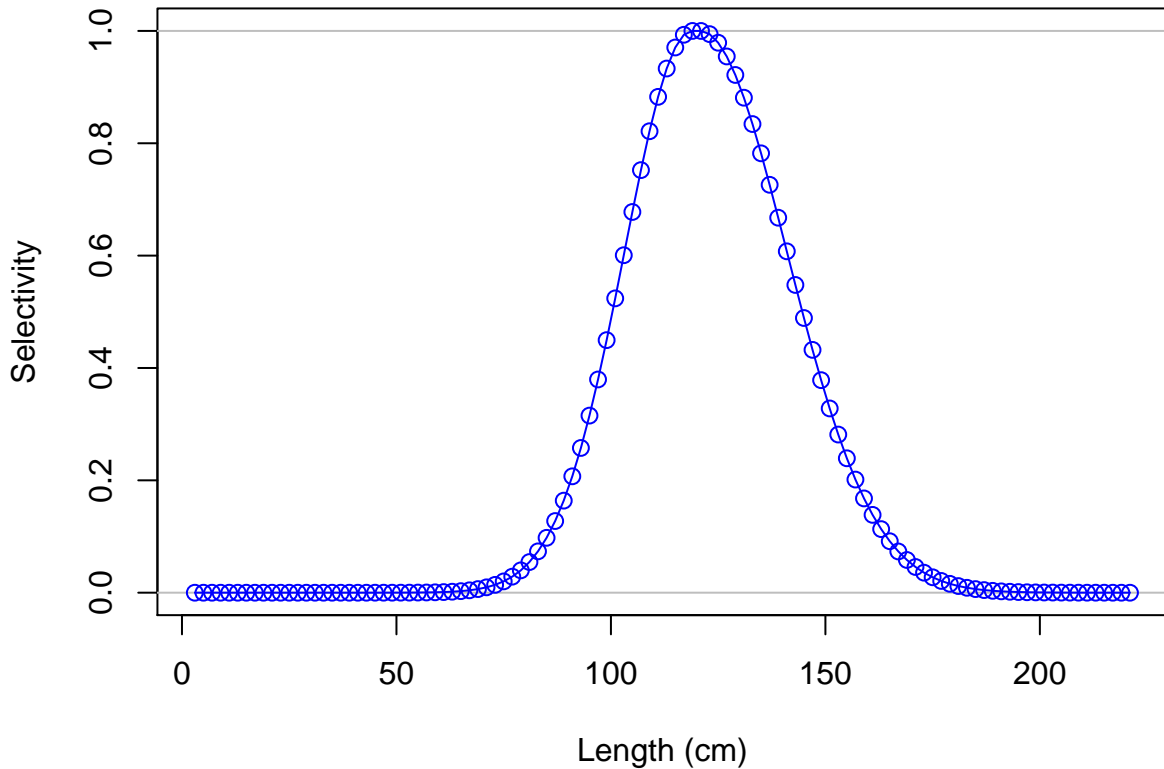
## Male time-varying selectivity for A6-LL-w



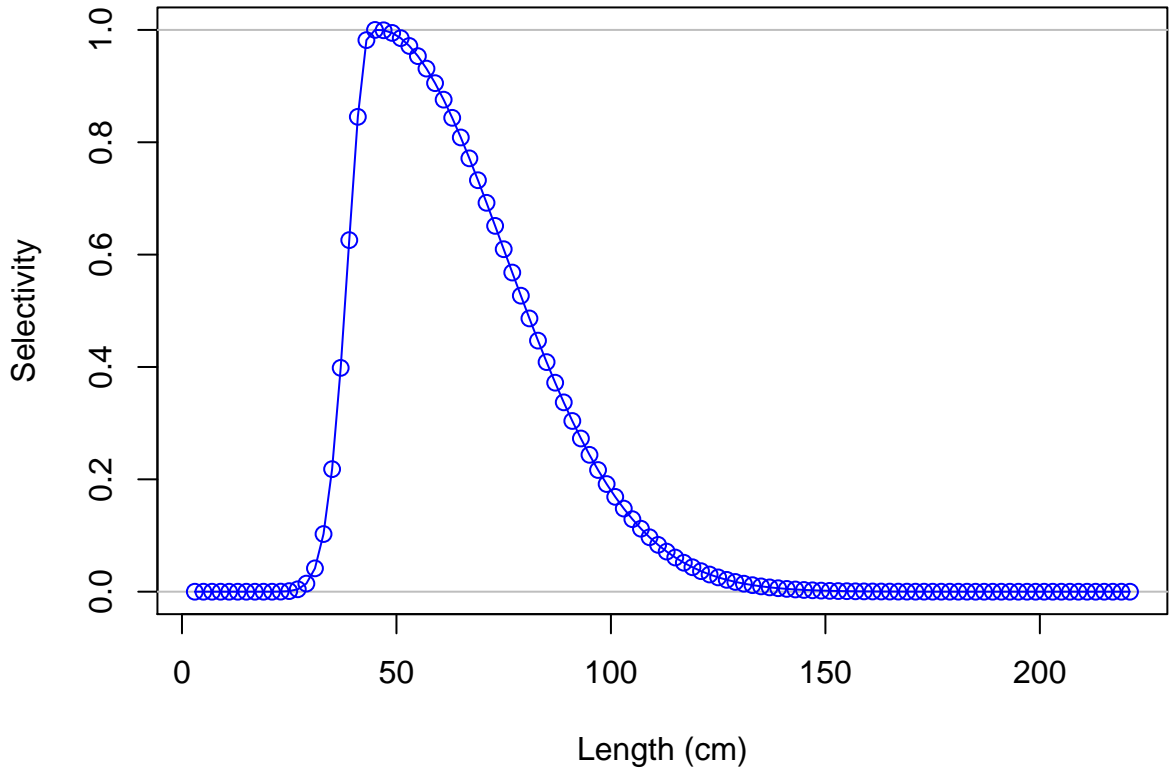
# Male time-varying selectivity for A6-LL-w



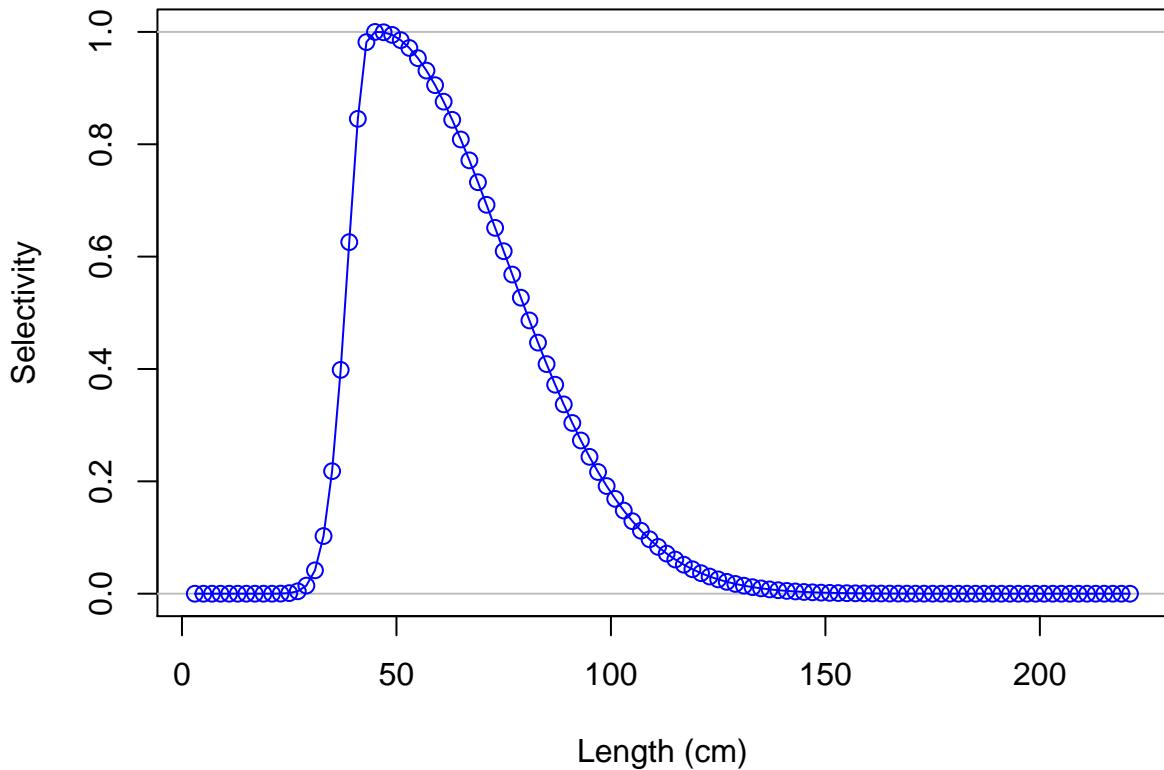
## Male ending year selectivity for A6-LL-w



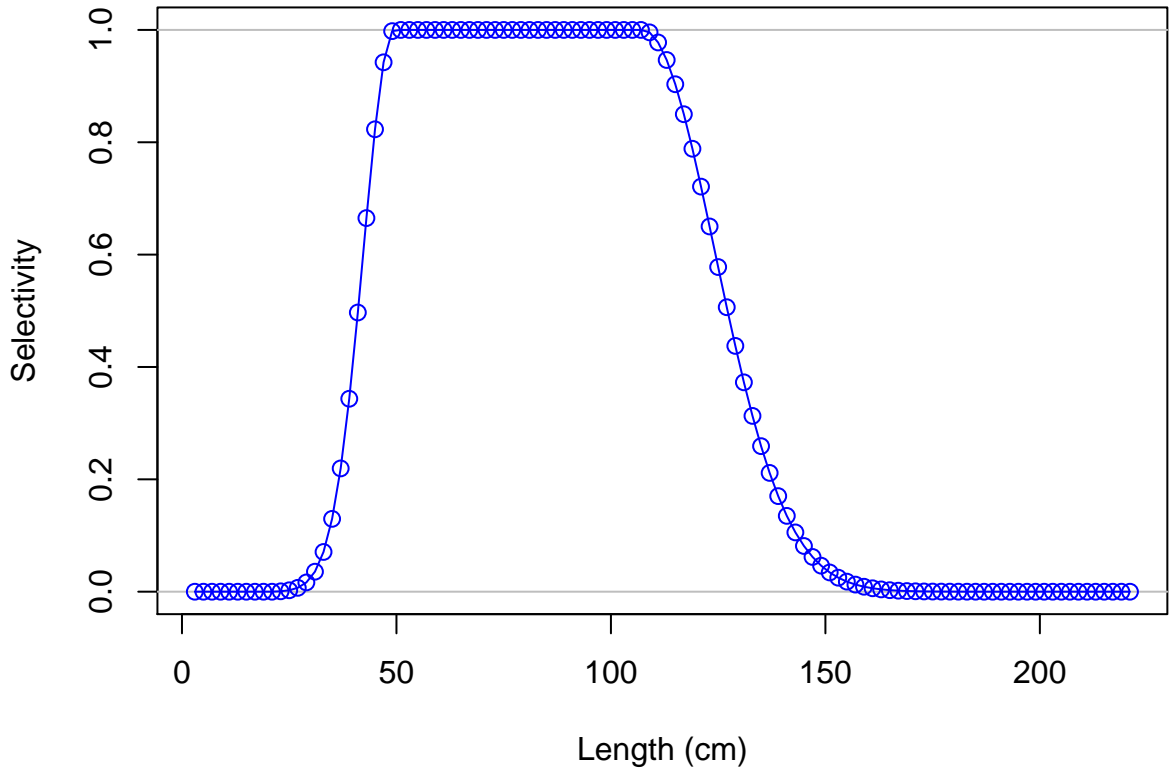
## Female ending year selectivity for A2-OBJ



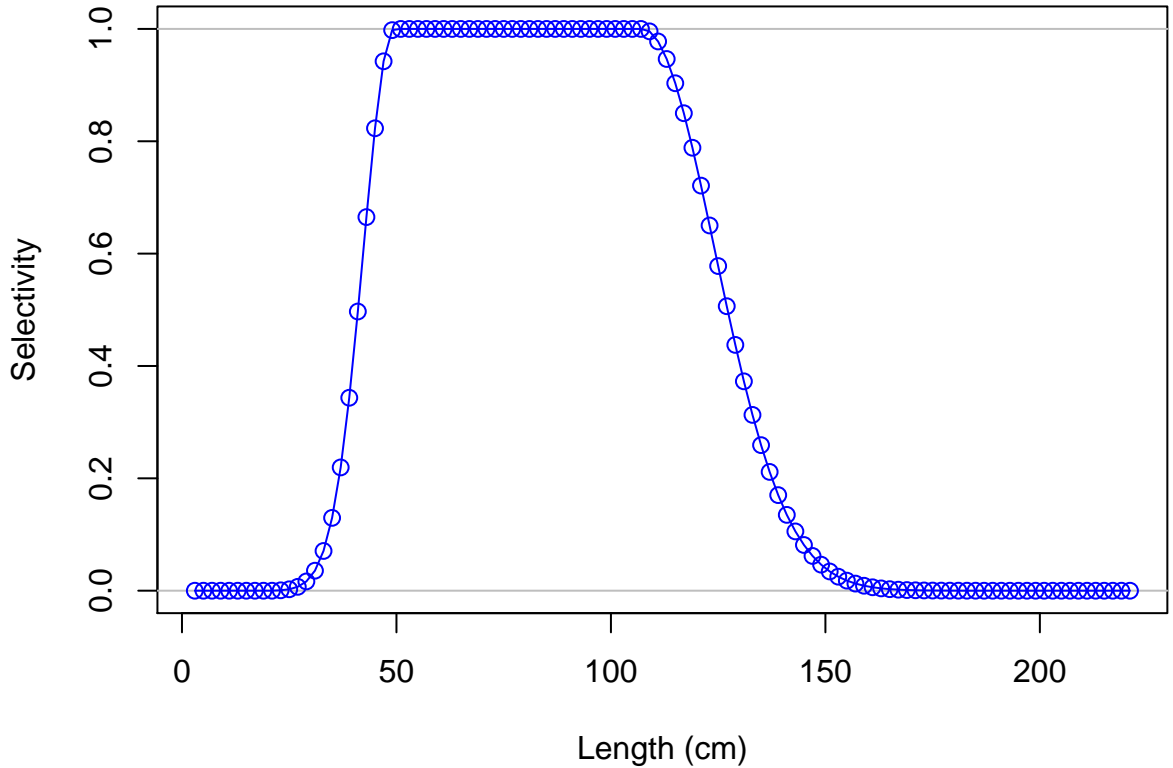
## Male ending year selectivity for A2-OBJ



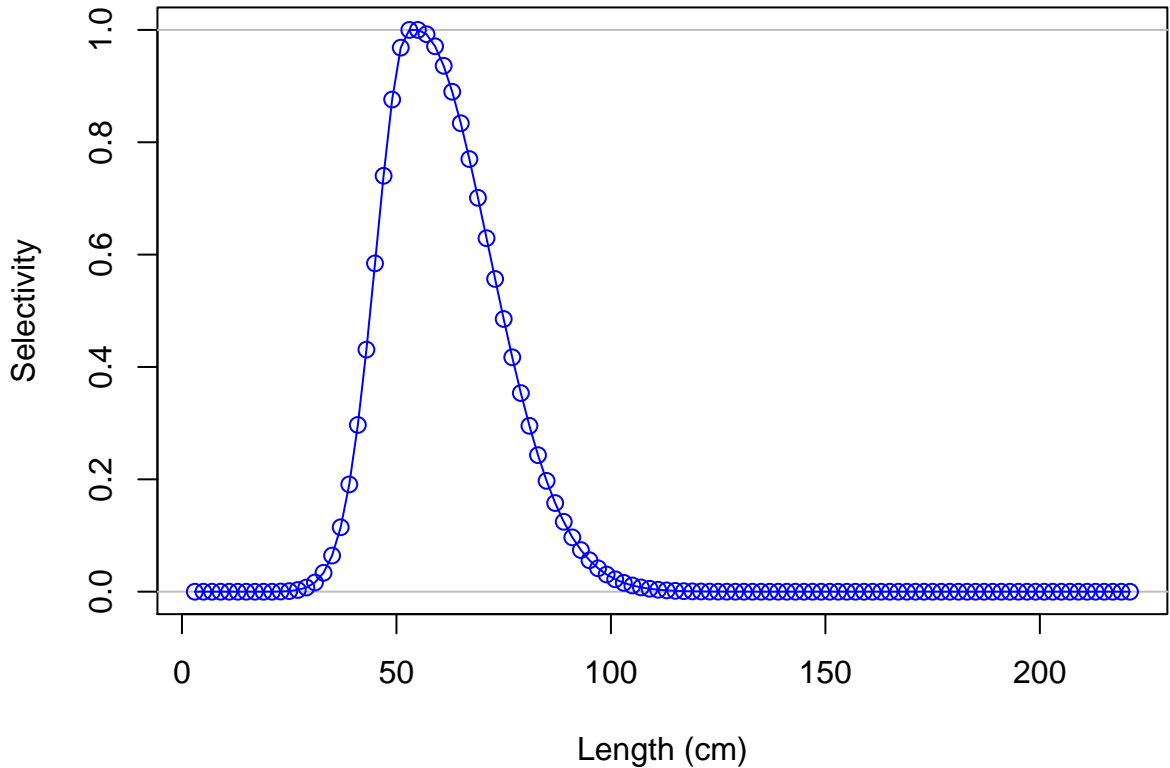
## Female ending year selectivity for A3-OBJ



# Male ending year selectivity for A3-OBJ

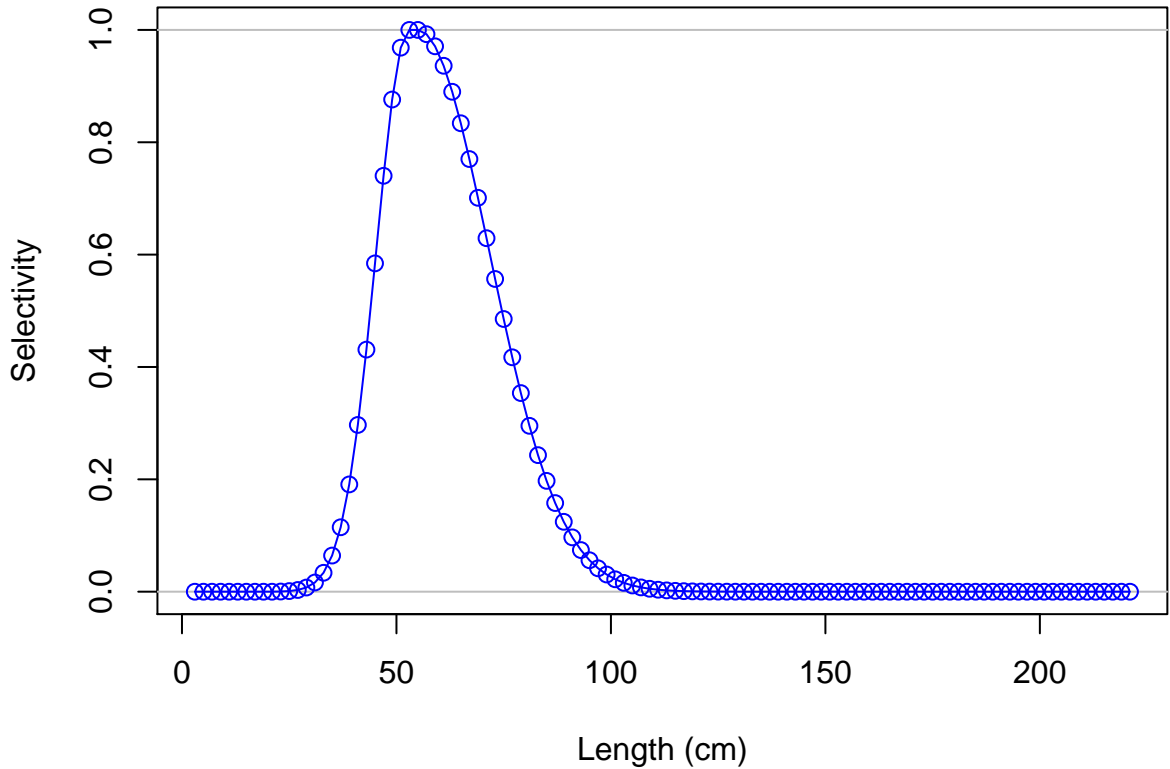


## Female ending year selectivity for A4-OBJ

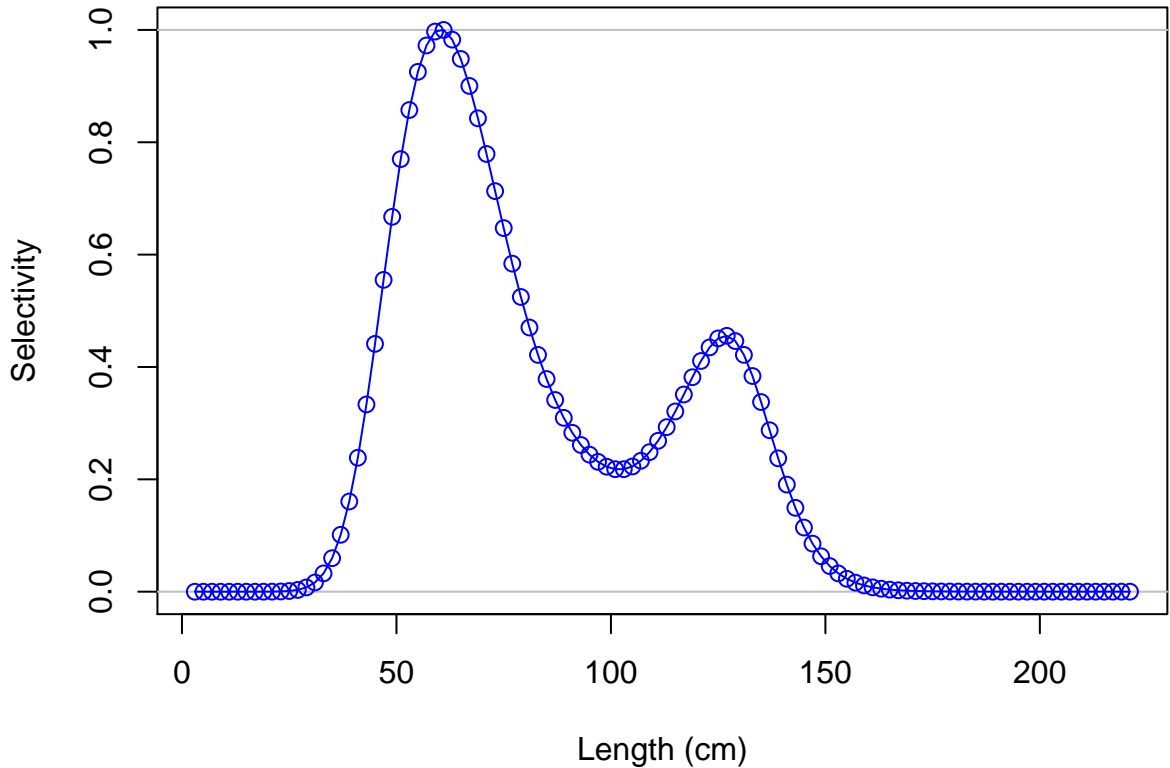




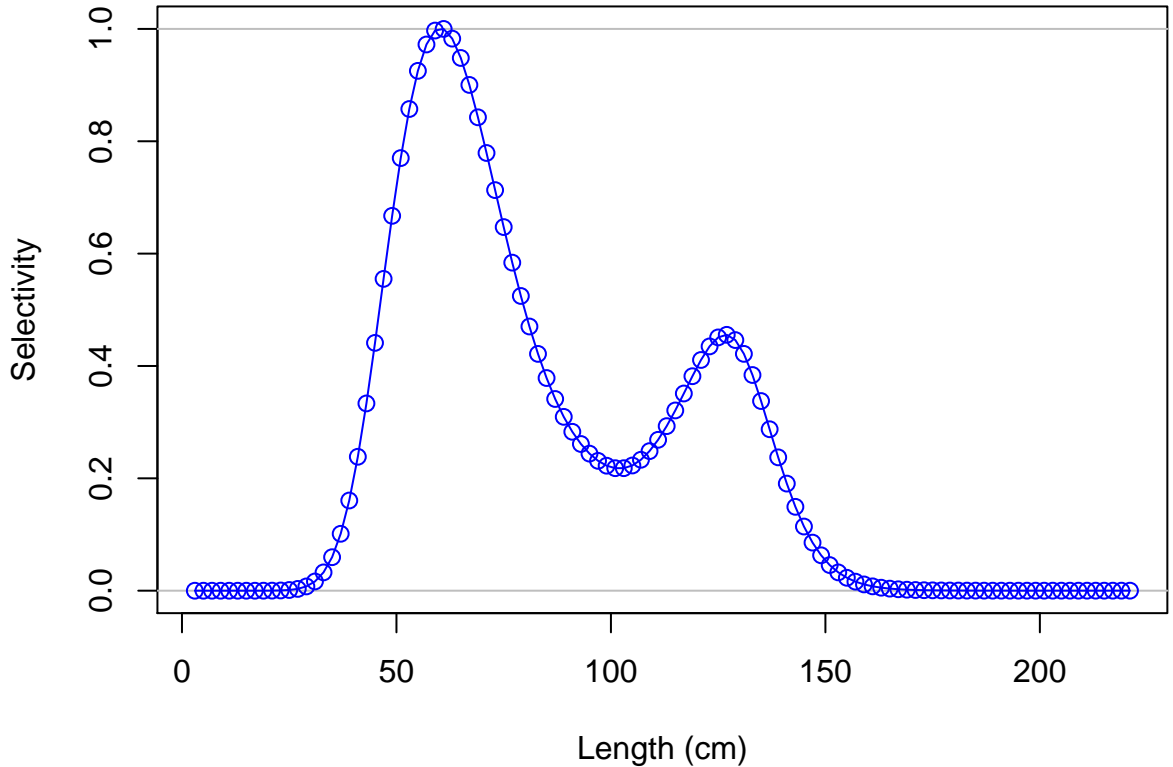
## Male ending year selectivity for A4-OBJ



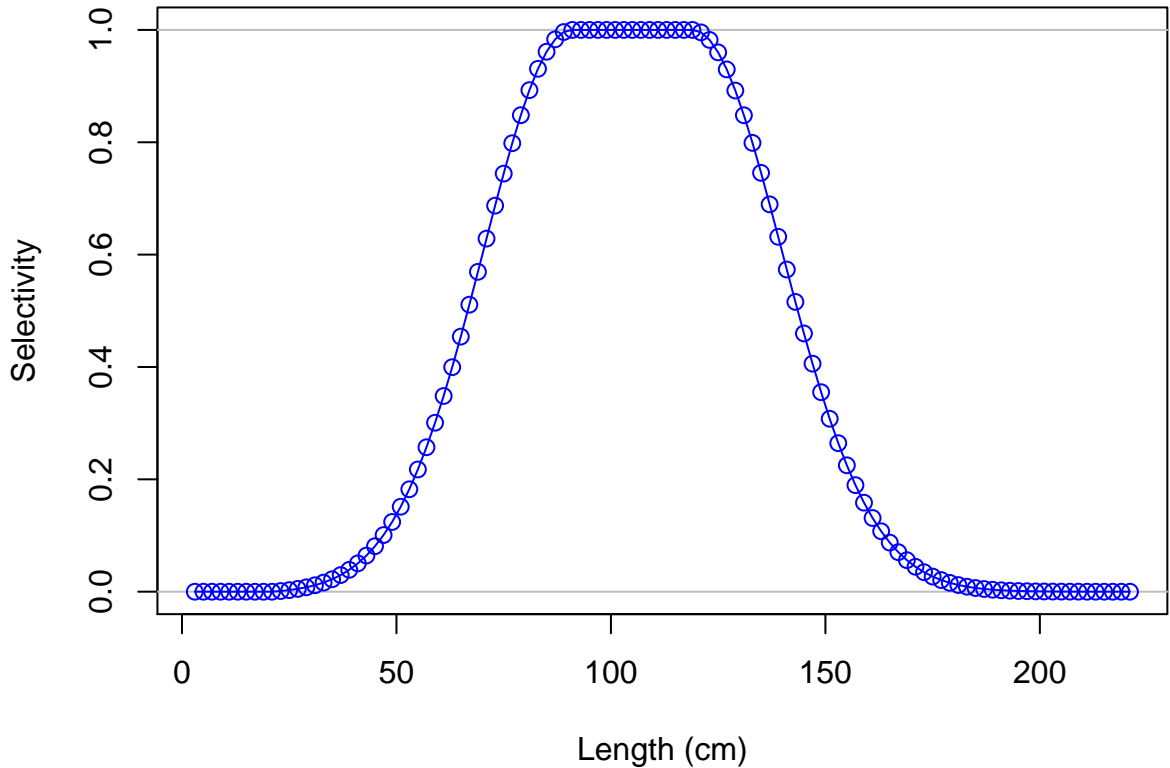
## Female ending year selectivity for A5-OBJ



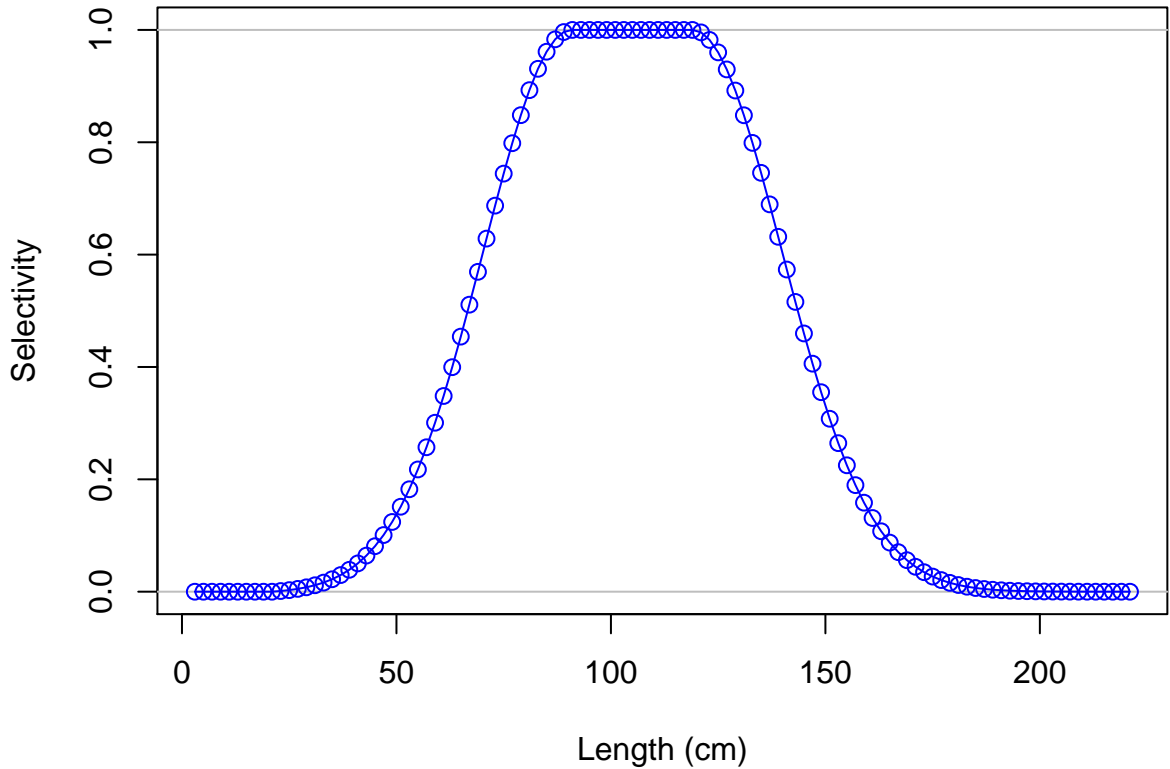
# Male ending year selectivity for A5-OBJ



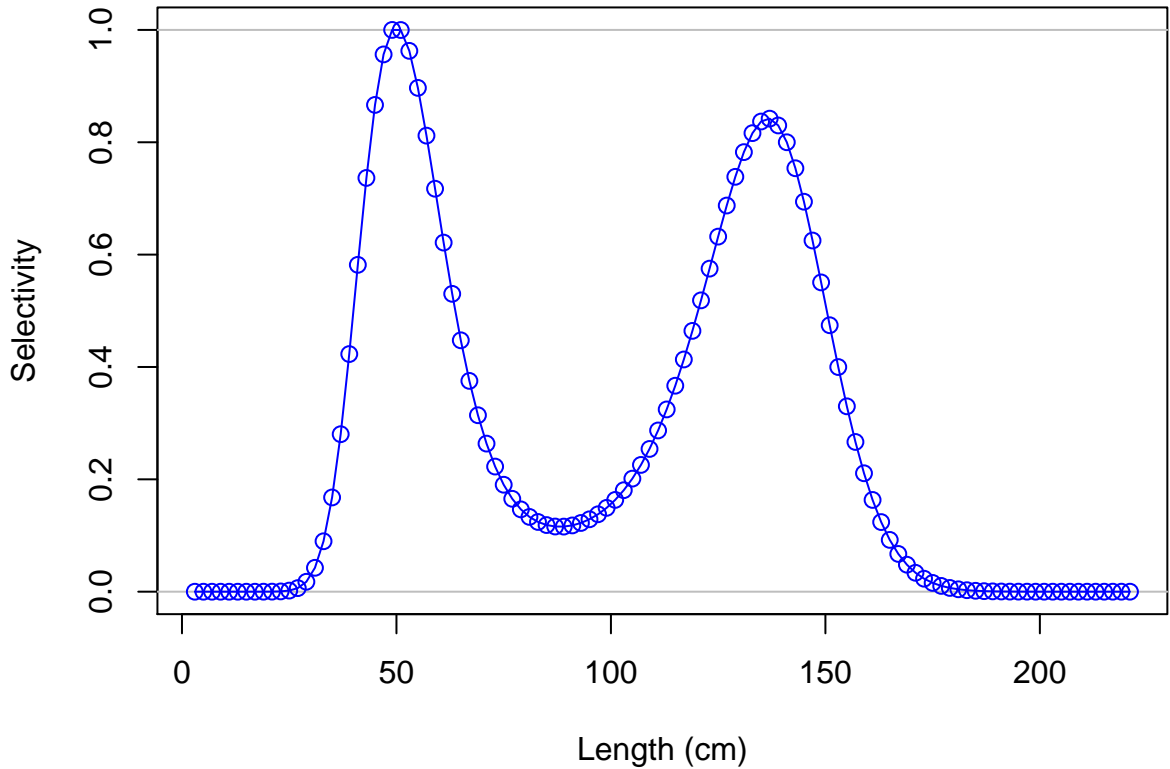
## Female ending year selectivity for A6-OBJ



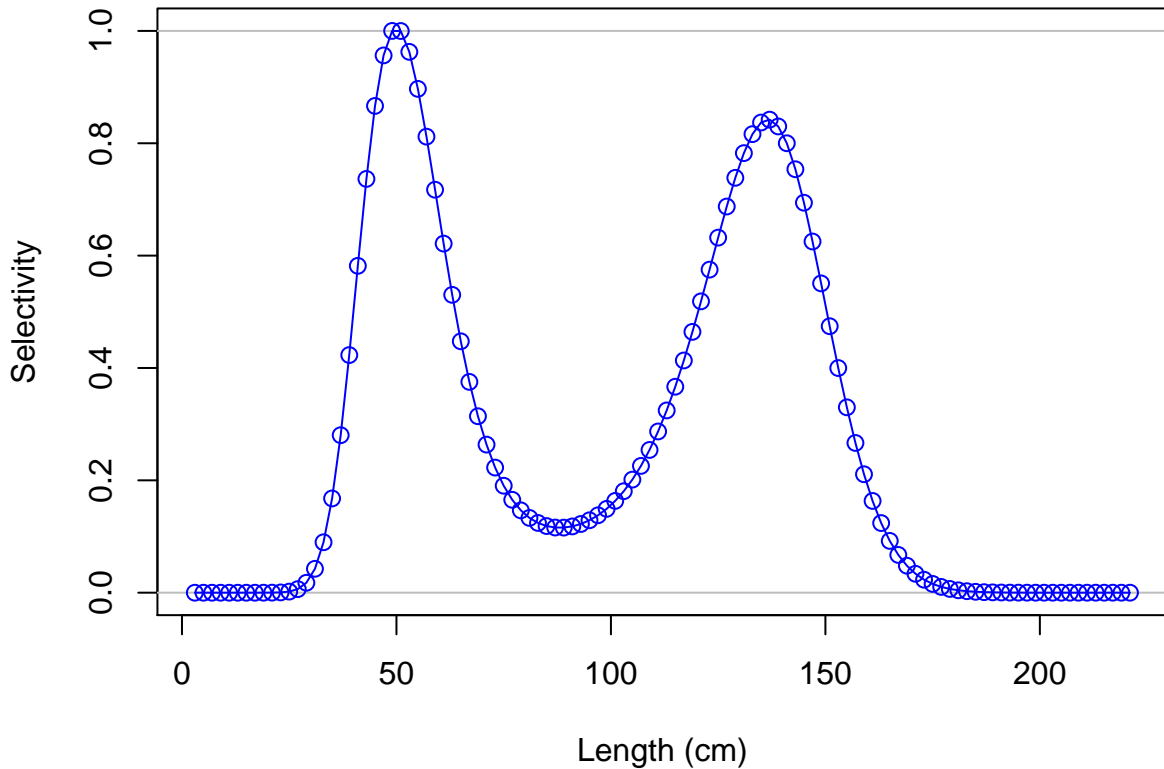
## Male ending year selectivity for A6-OBJ



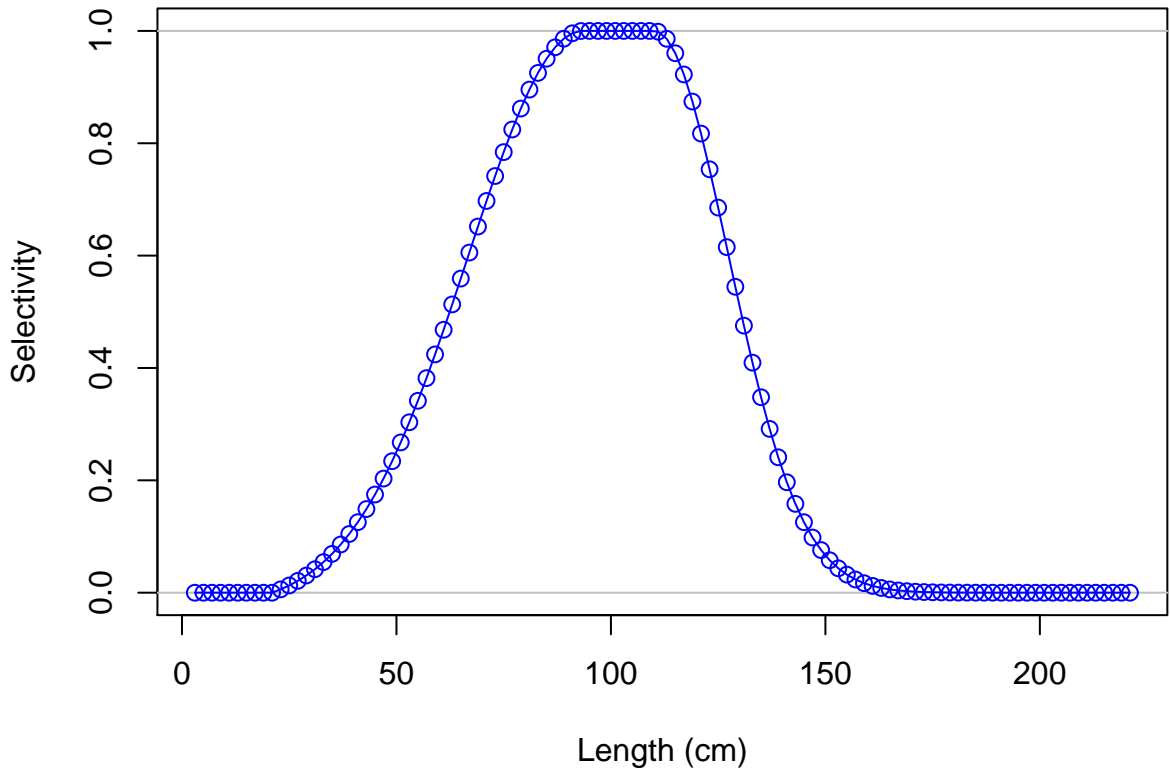
## Female ending year selectivity for A2-NOADEL



## Male ending year selectivity for A2-NOADEL

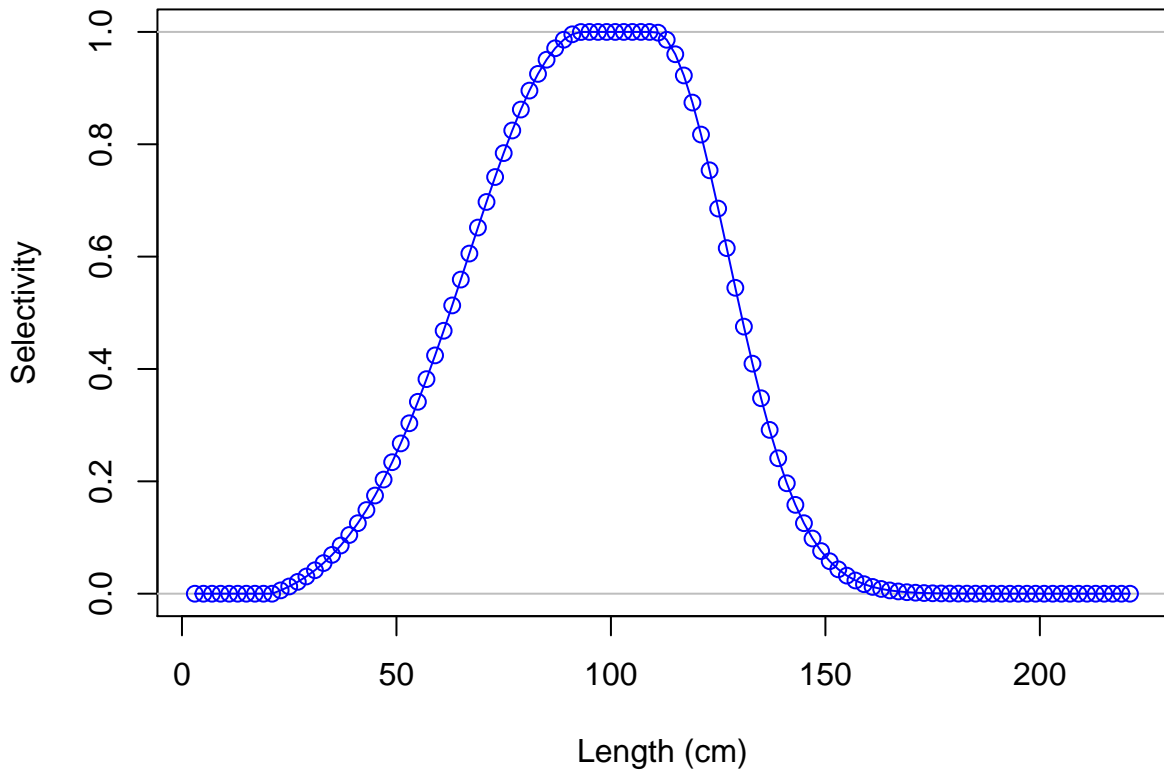


## Female ending year selectivity for A3-NOADEL

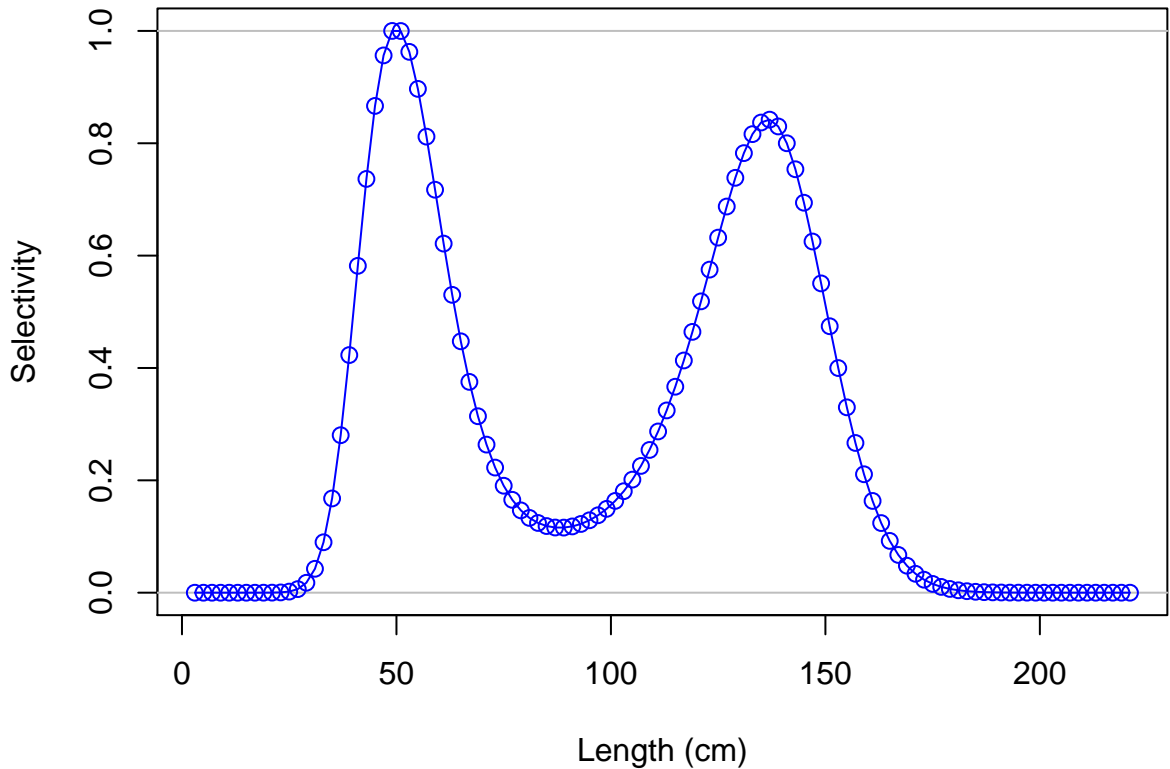




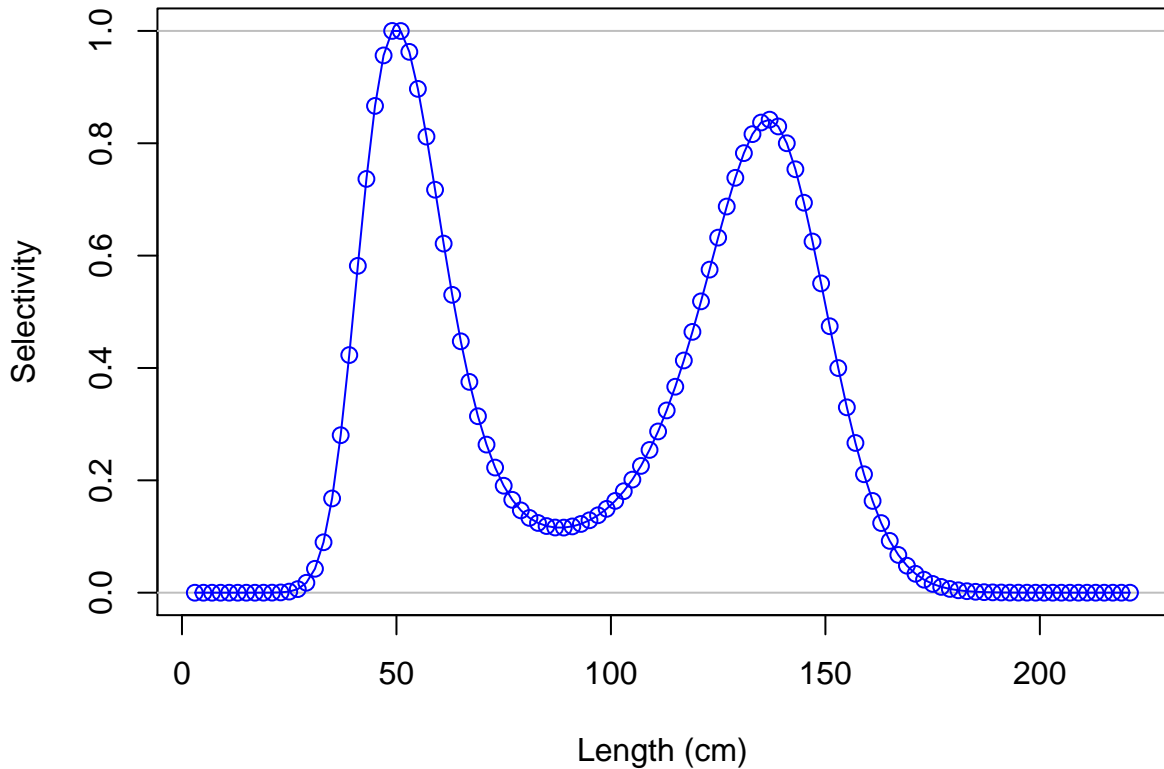
## Male ending year selectivity for A3-NOADEL



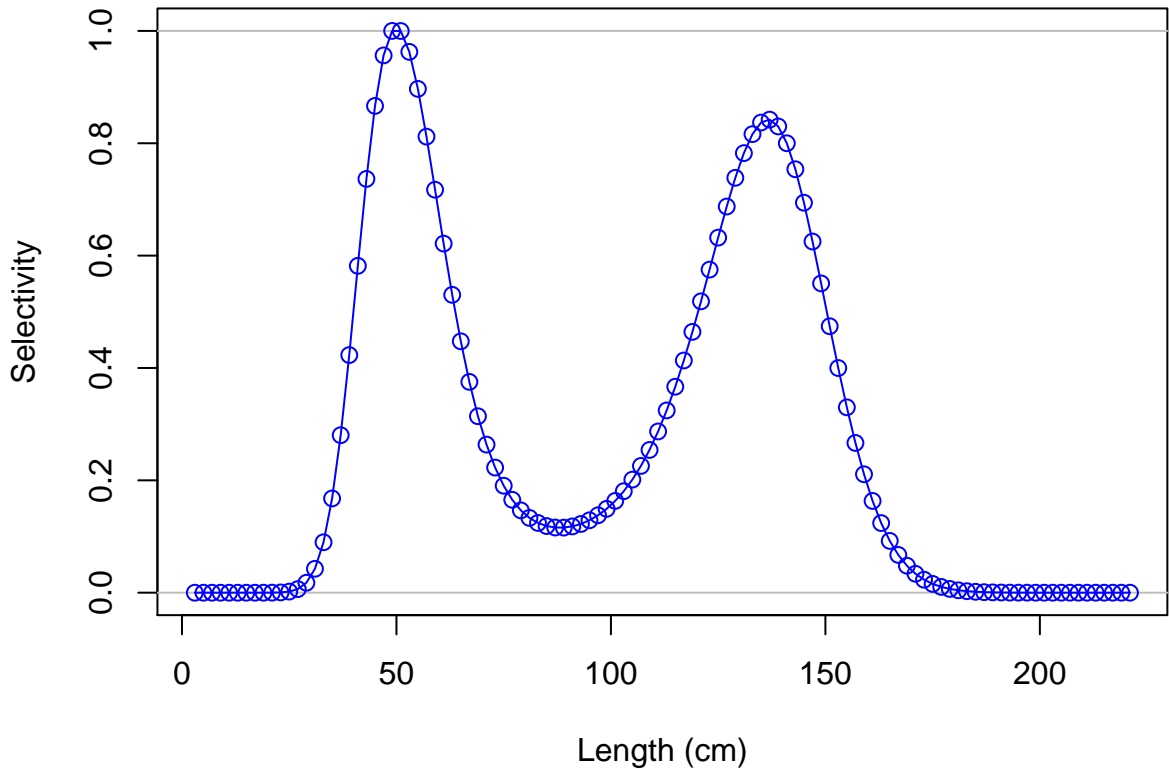
## Female ending year selectivity for A4-NOADEL



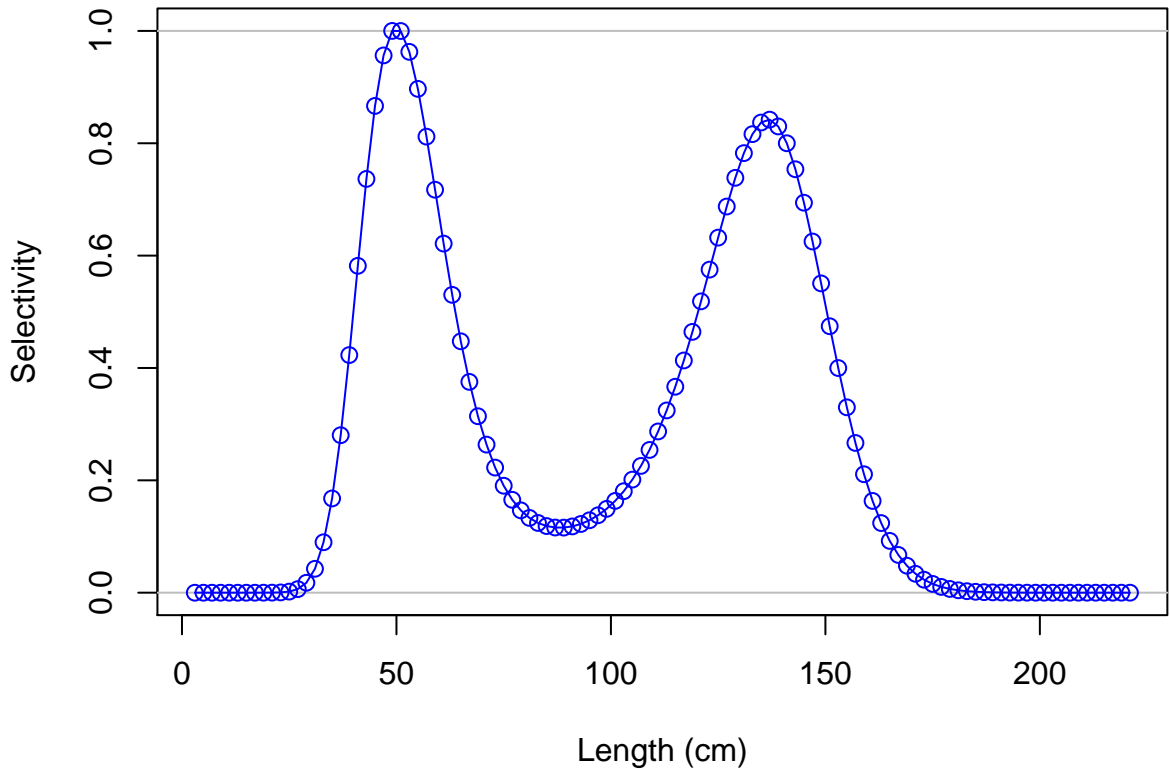
# Male ending year selectivity for A4-NOADEL



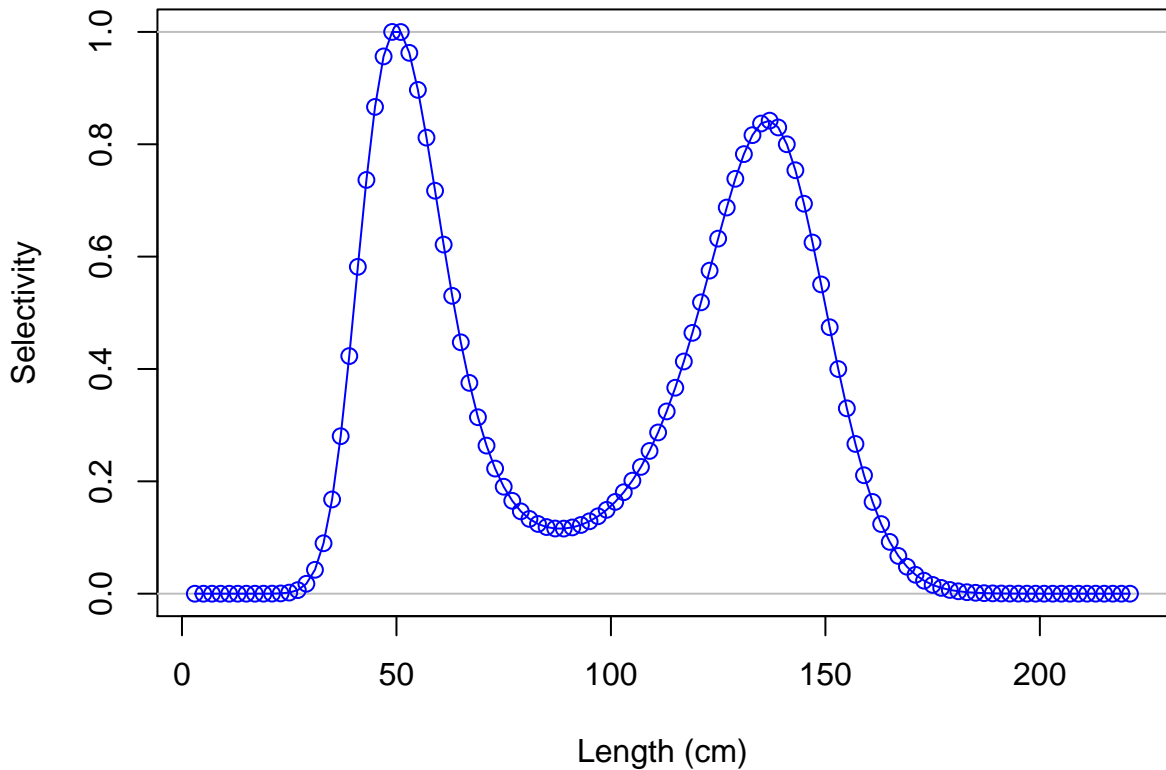
## Female ending year selectivity for A5-NOADEL



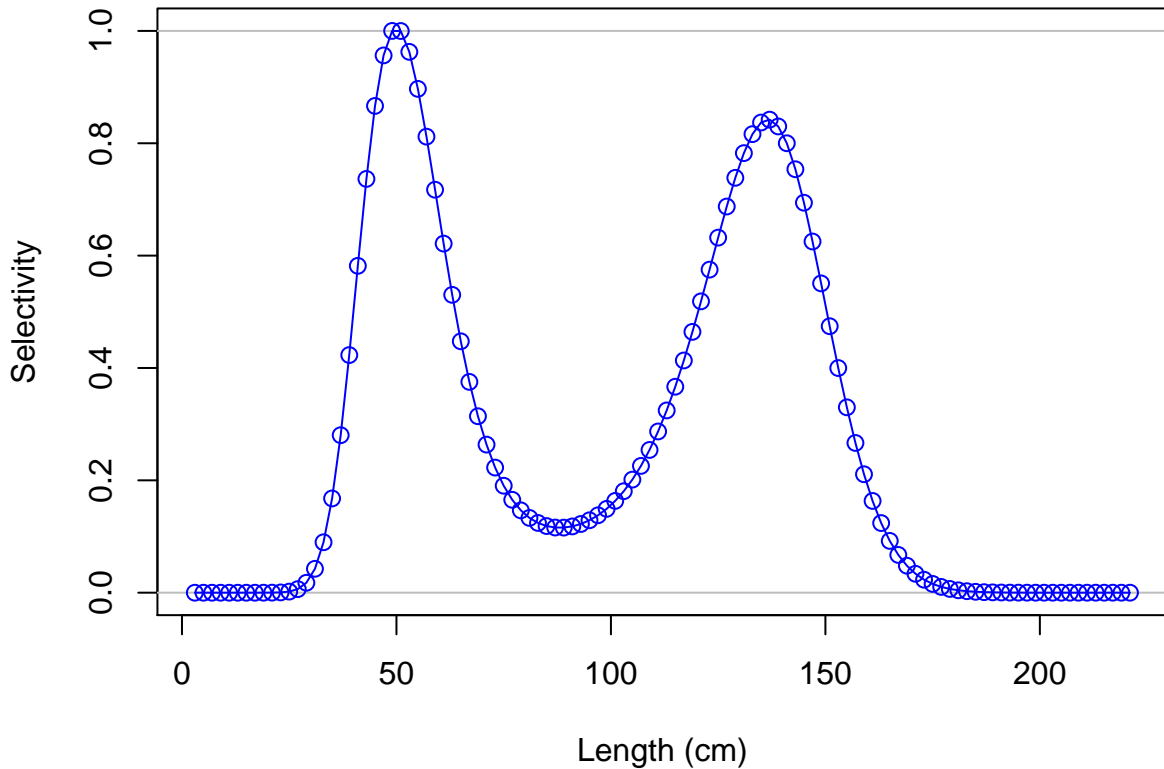
## Male ending year selectivity for A5-NOADEL



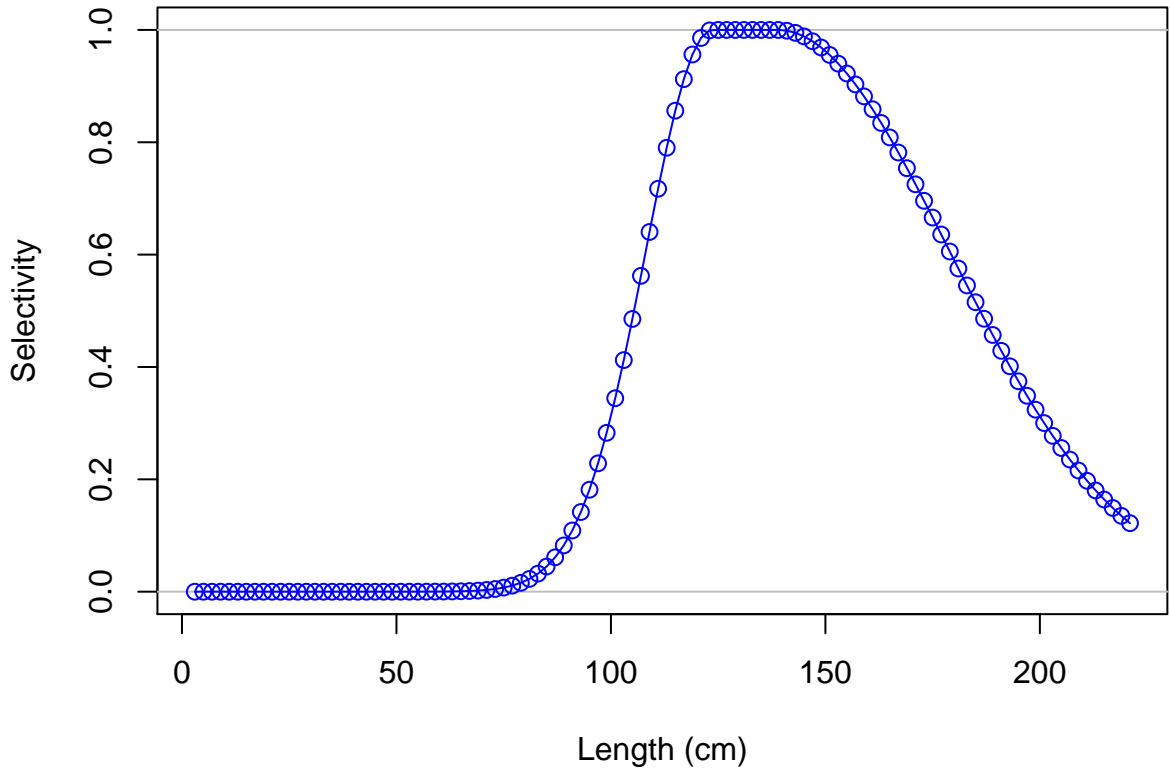
## Female ending year selectivity for A6-NOADEL



# Male ending year selectivity for A6-NOADEL

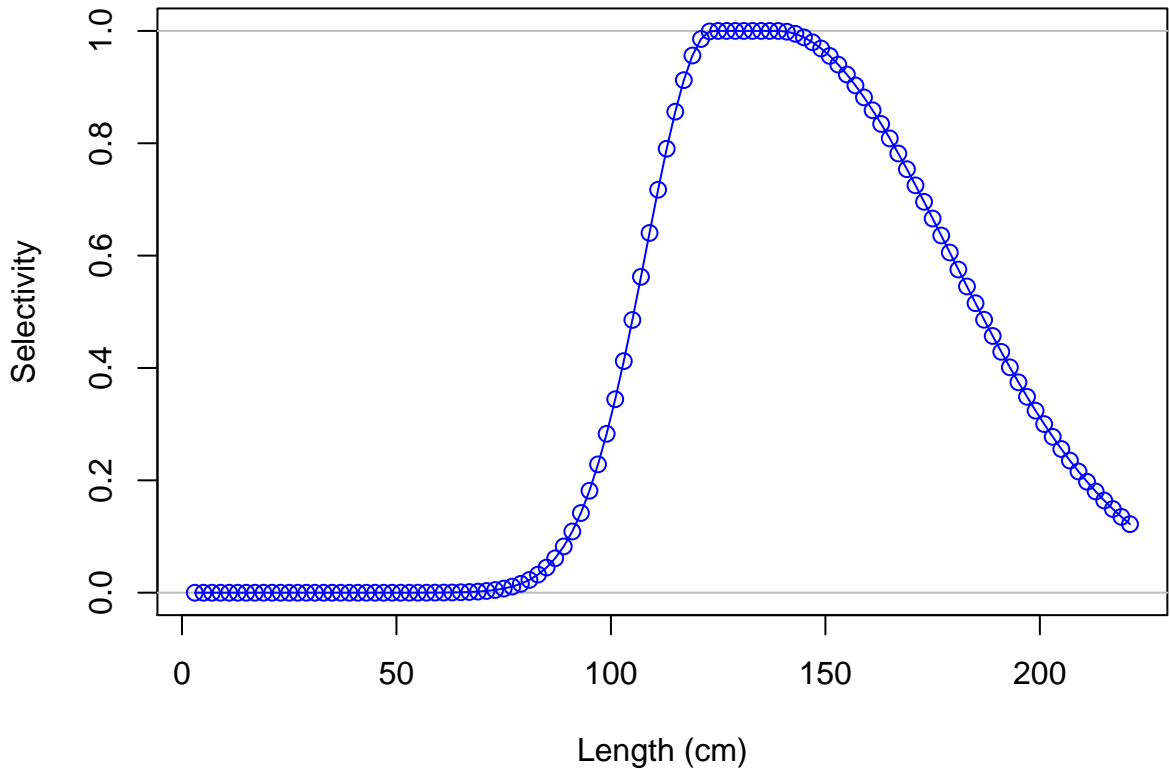


# Female ending year selectivity for EPO-LL-survey-early

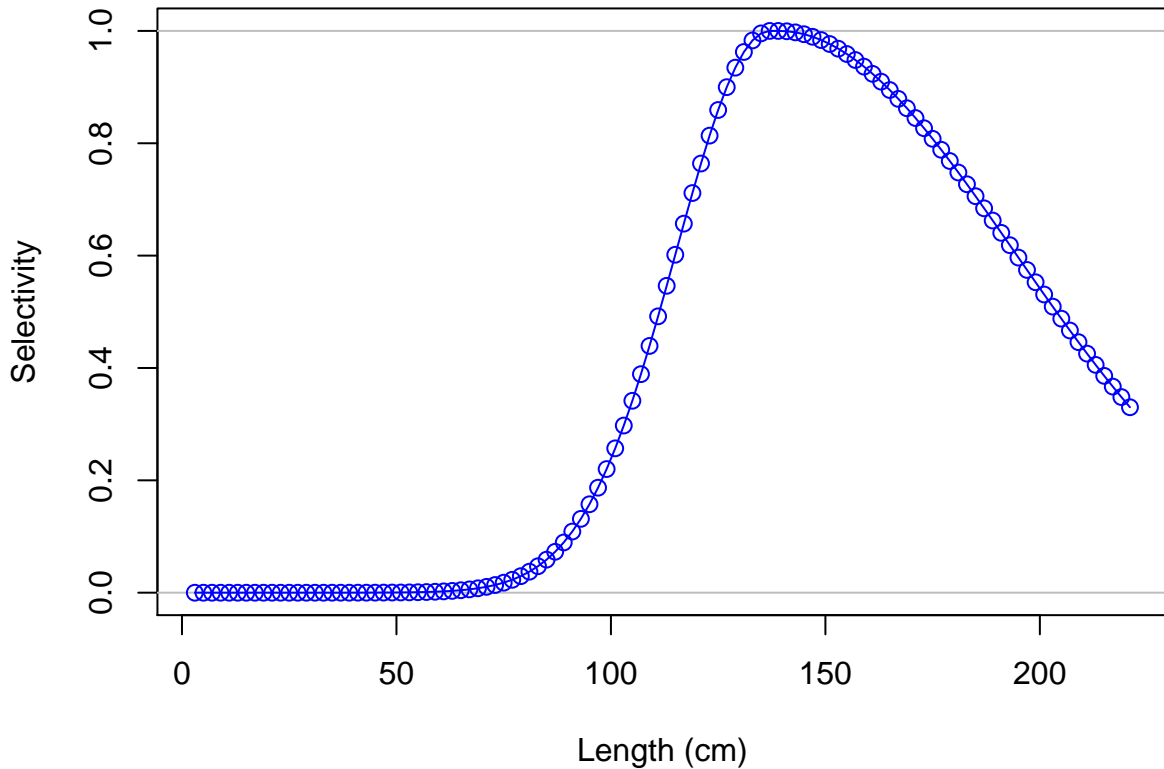




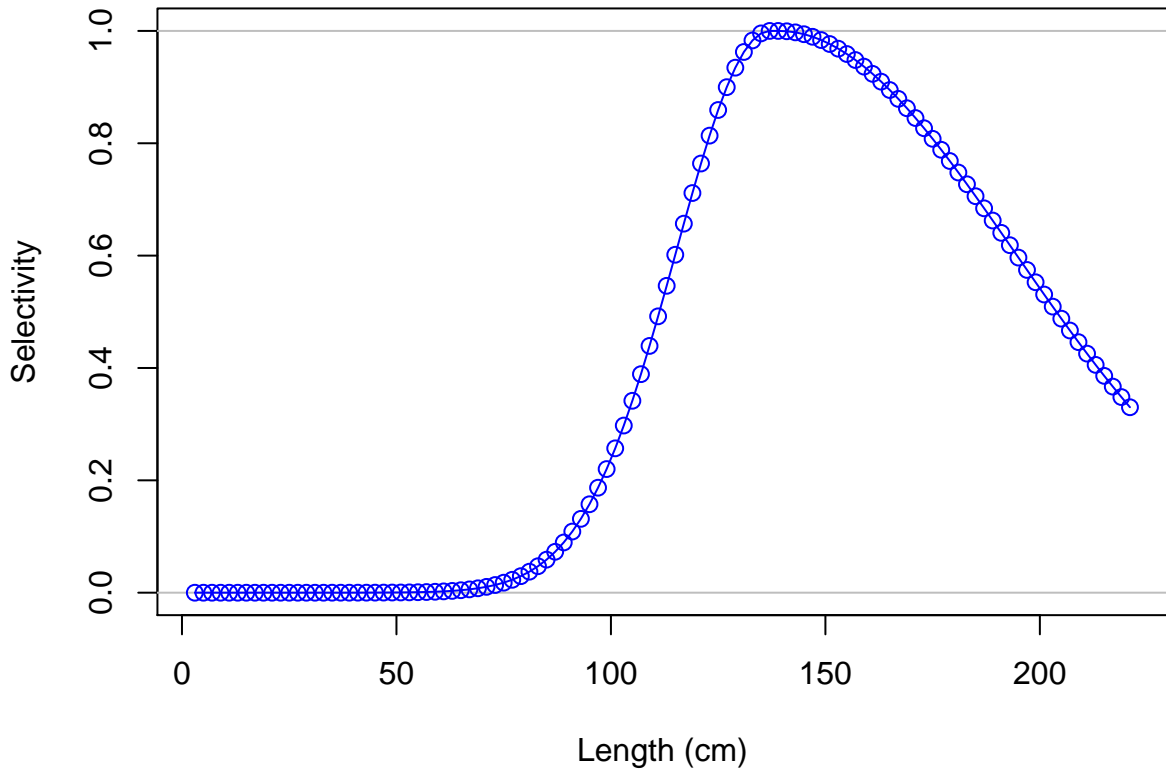
# Male ending year selectivity for EPO-LL-survey-early



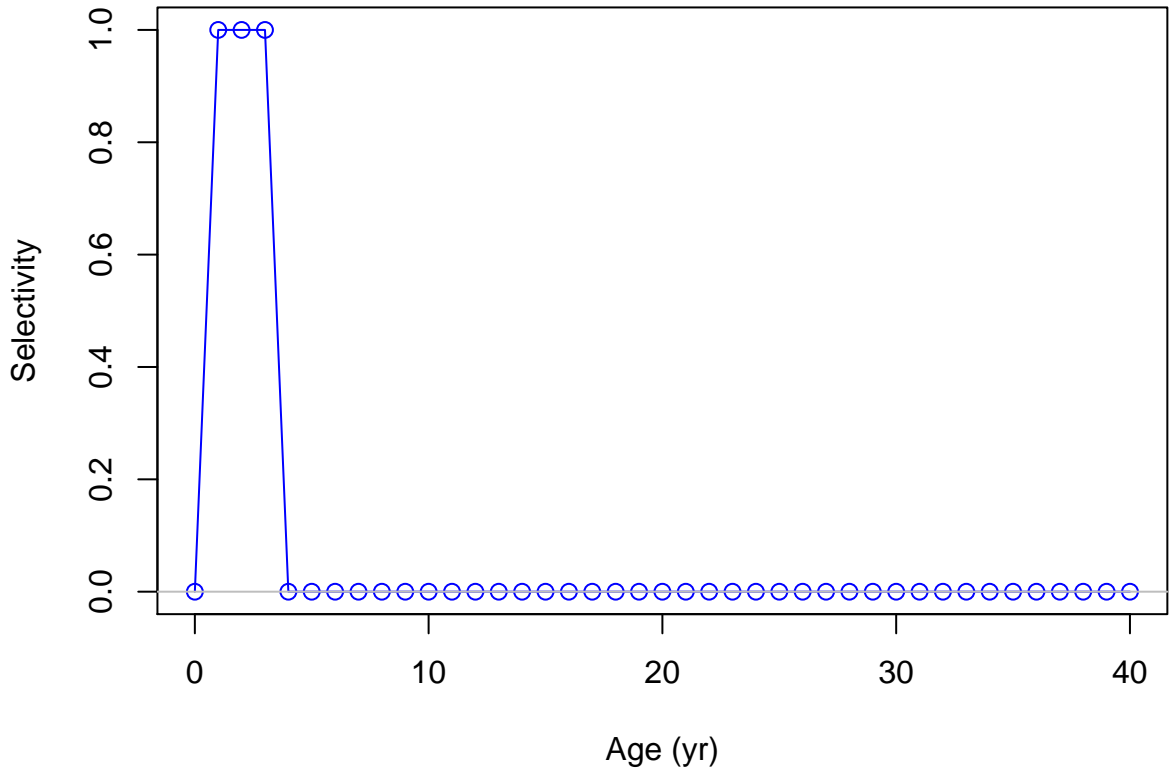
# Female ending year selectivity for EPO-LL-survey-late



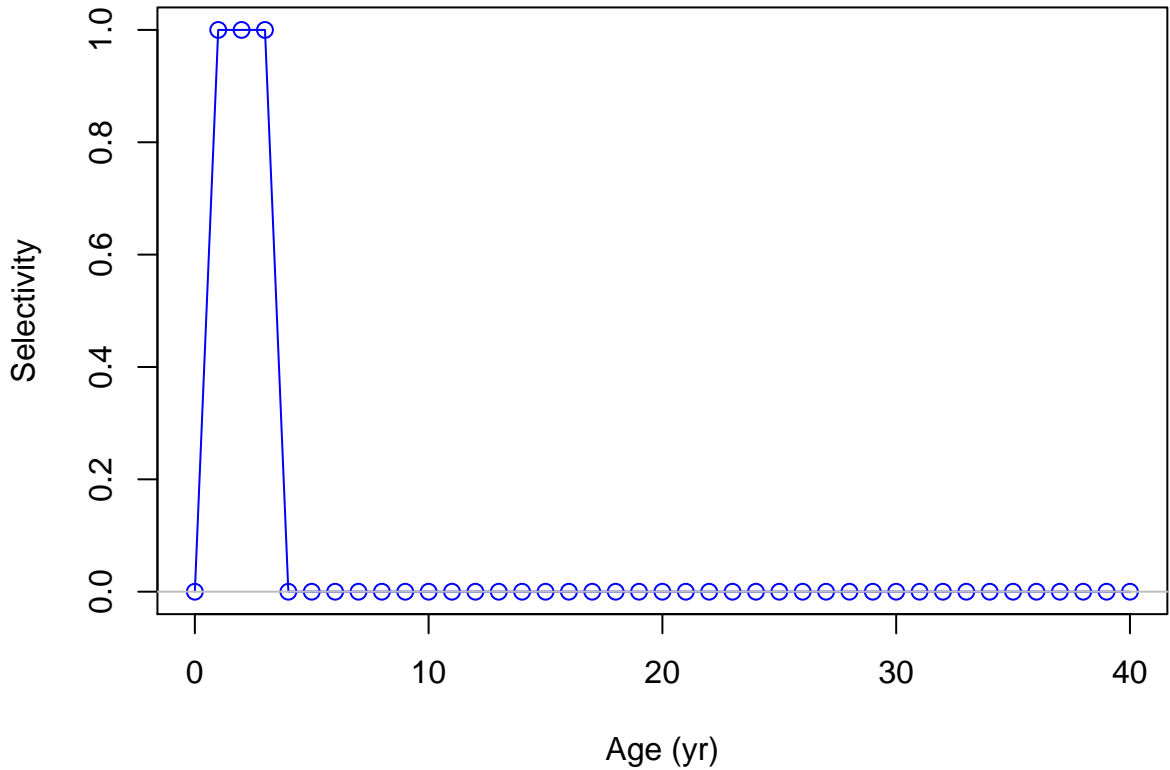
# Male ending year selectivity for EPO-LL-survey-late



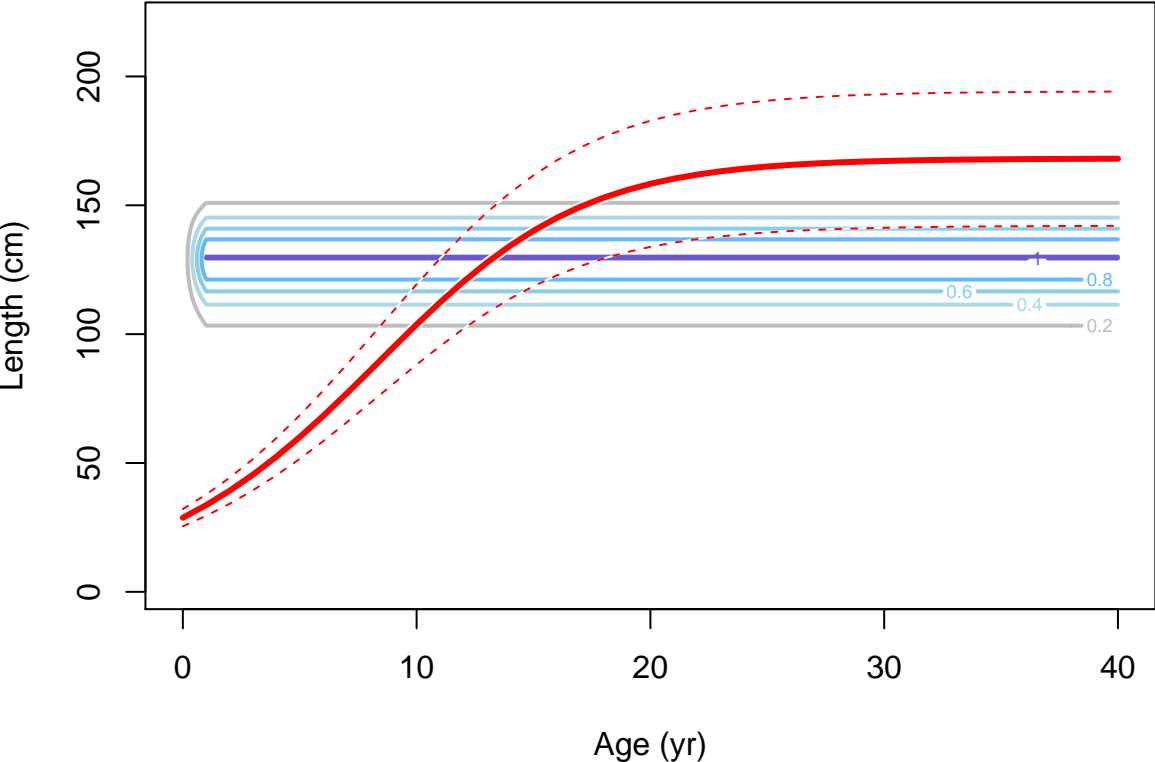
## Female ending year selectivity for EPO-OBJ-Disc



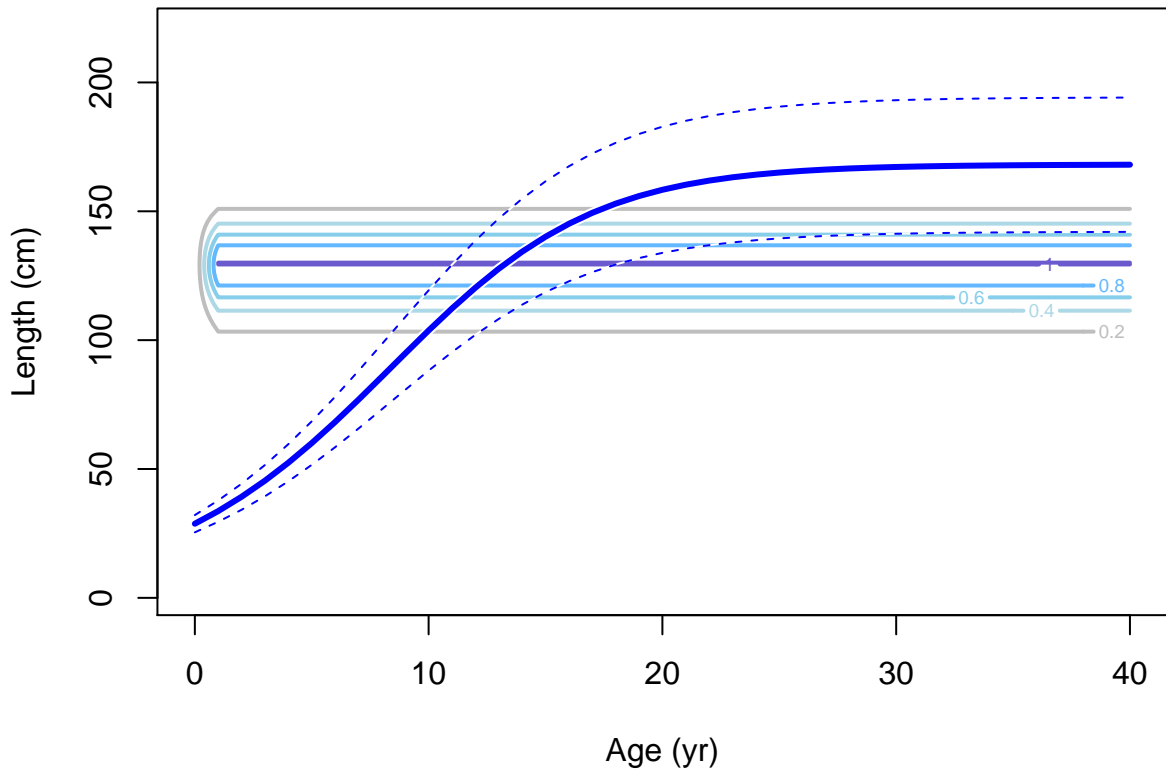
# Male ending year selectivity for EPO-OBJ-Disc



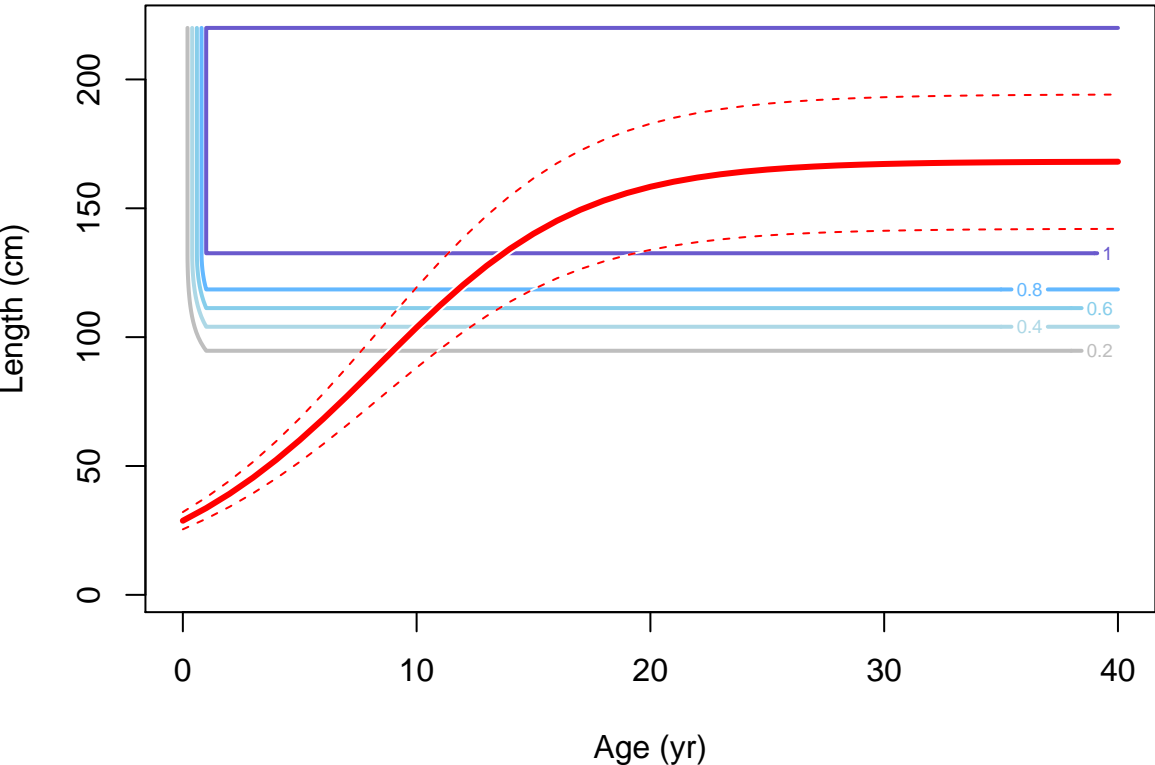
# Female ending year selectivity and growth for A1-LL-n



# Male ending year selectivity and growth for A1-LL-n

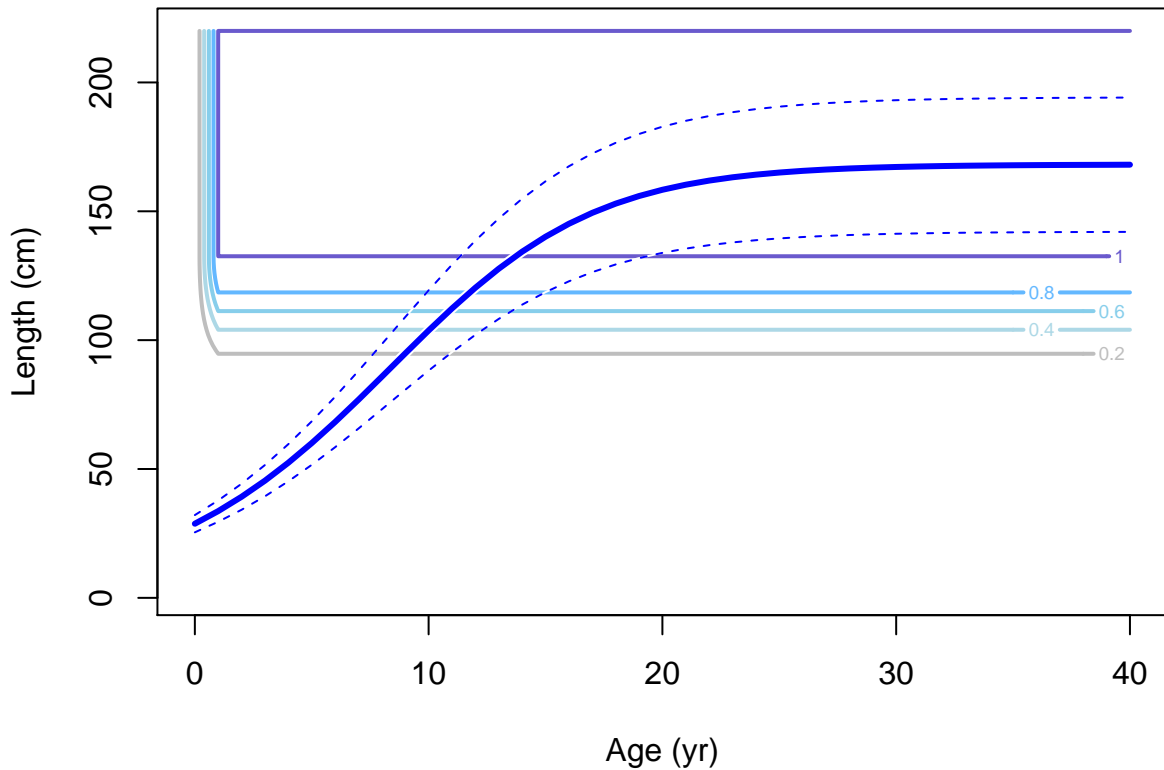


Female ending year selectivity and growth for A2-LL-n

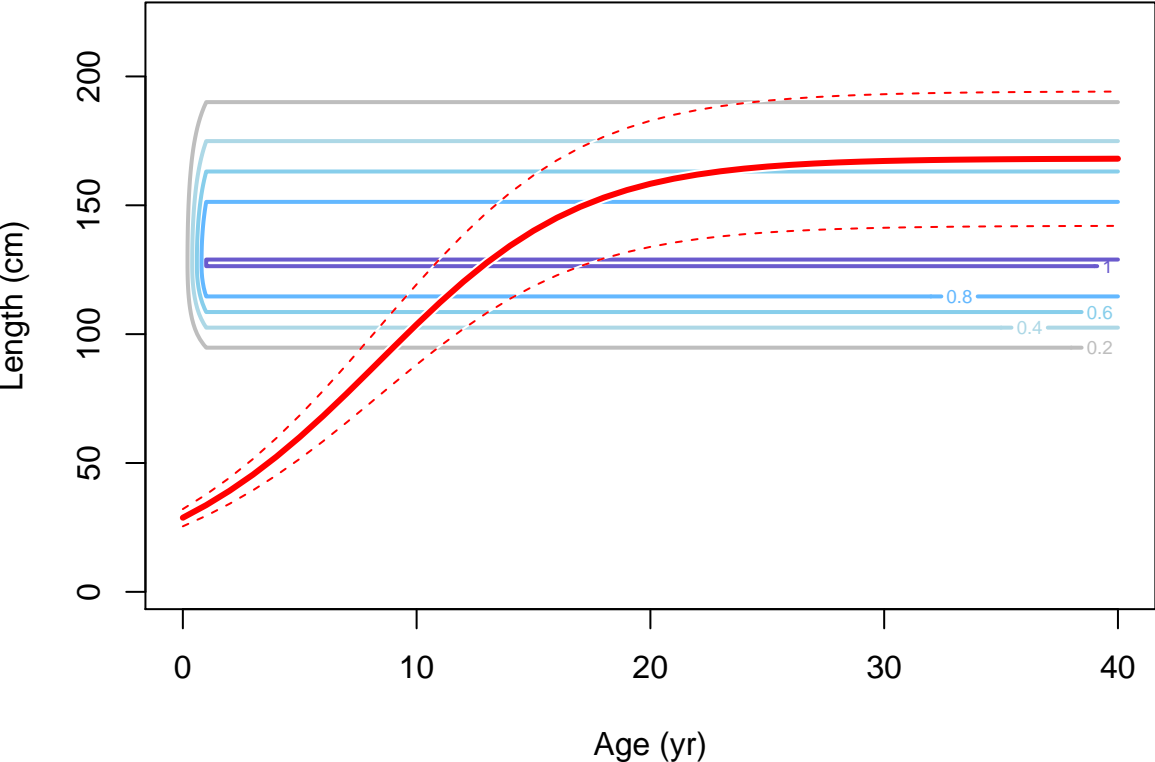




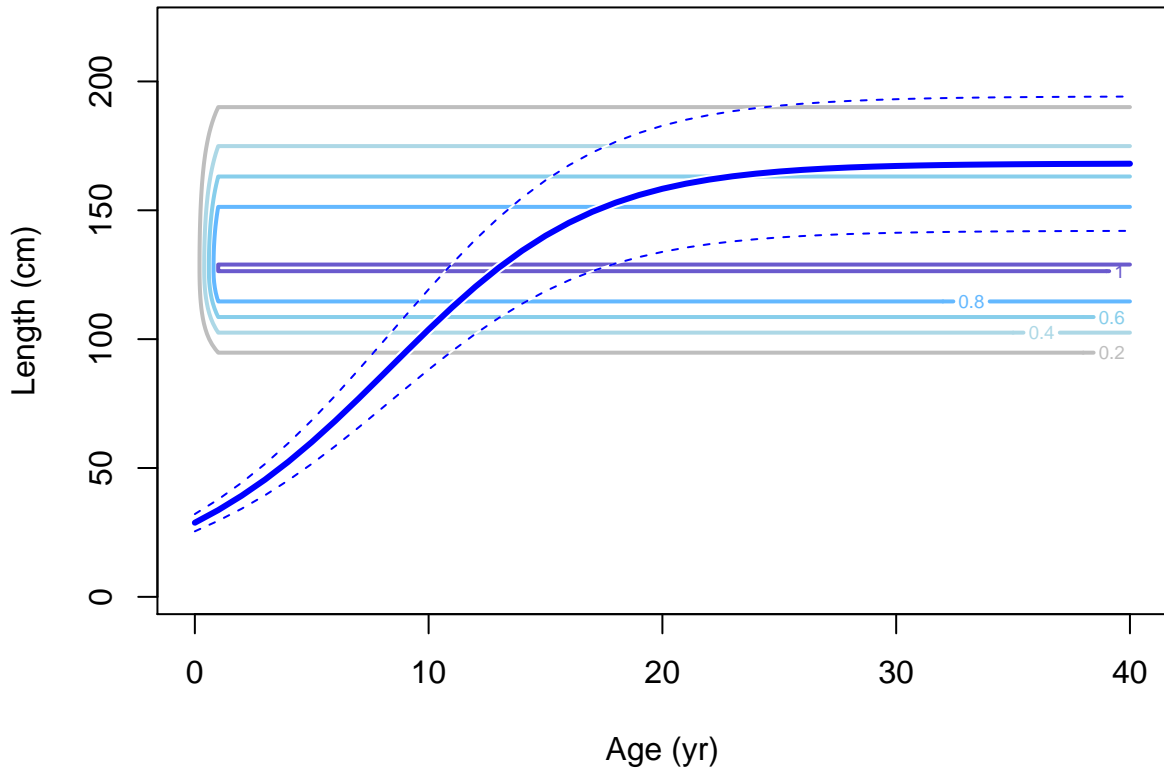
# Male ending year selectivity and growth for A2-LL-n



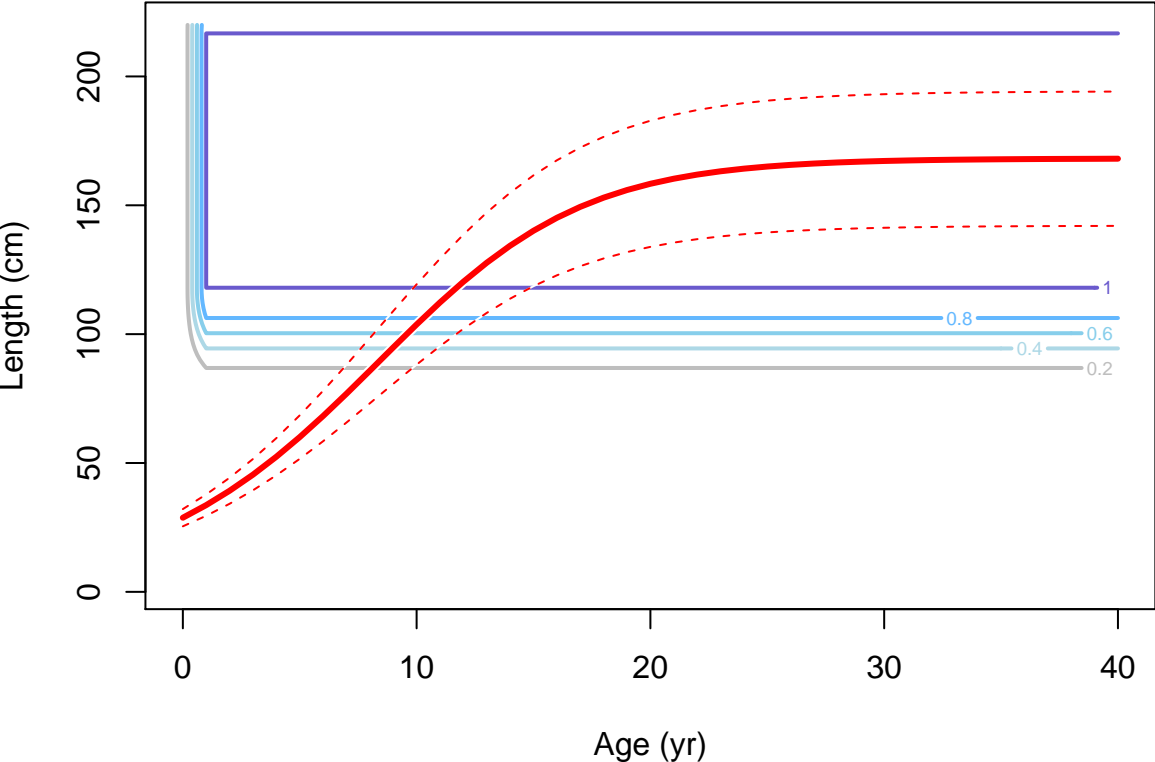
# Female ending year selectivity and growth for A3-LL-n



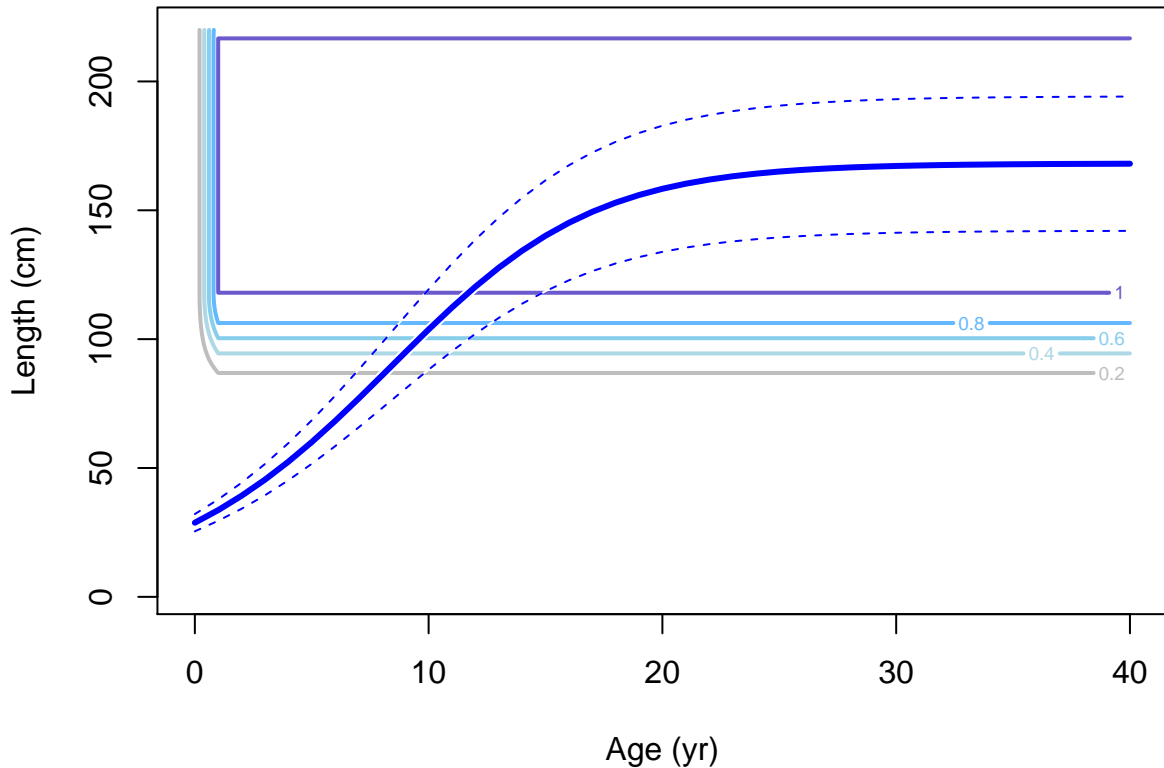
# Male ending year selectivity and growth for A3-LL-n



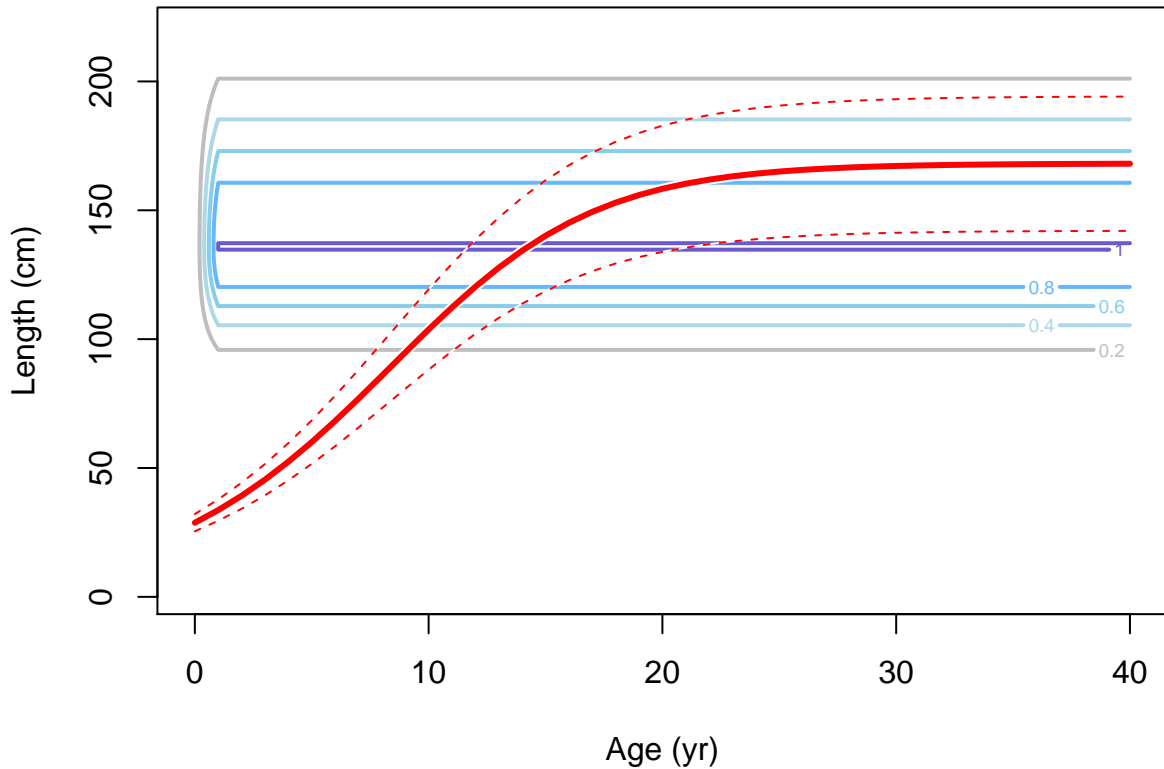
Female ending year selectivity and growth for A4-LL-n



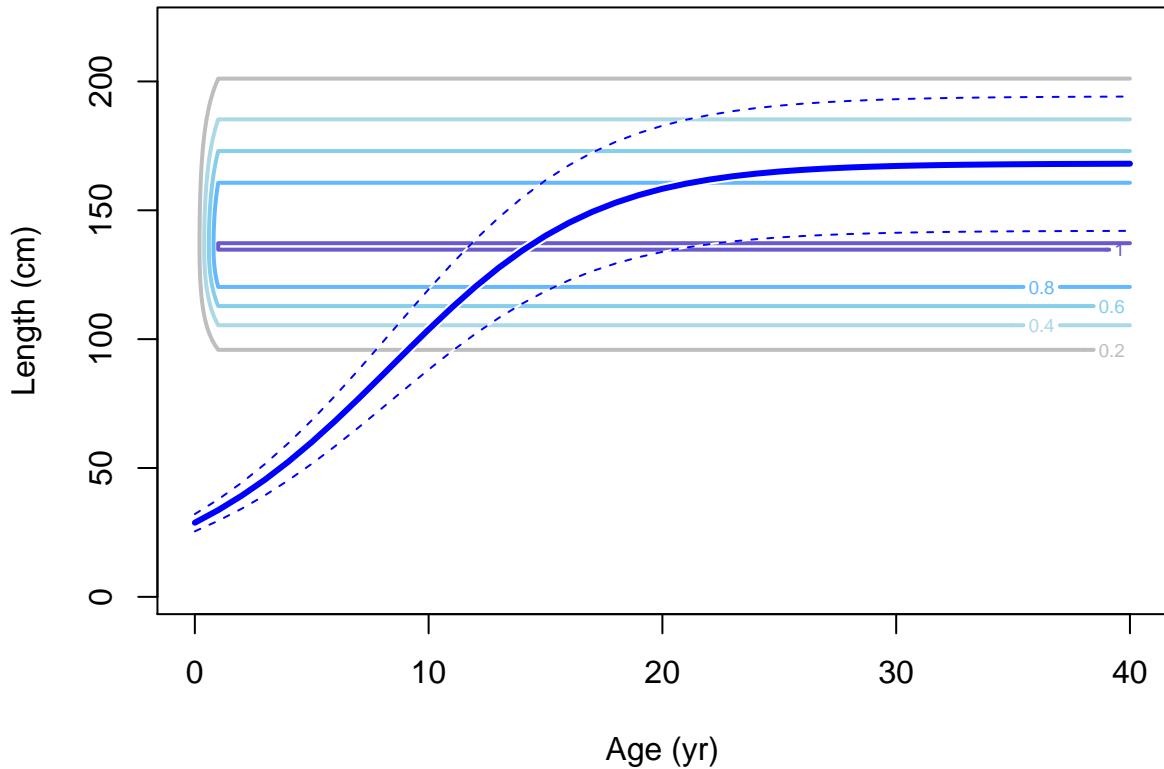
# Male ending year selectivity and growth for A4-LL-n



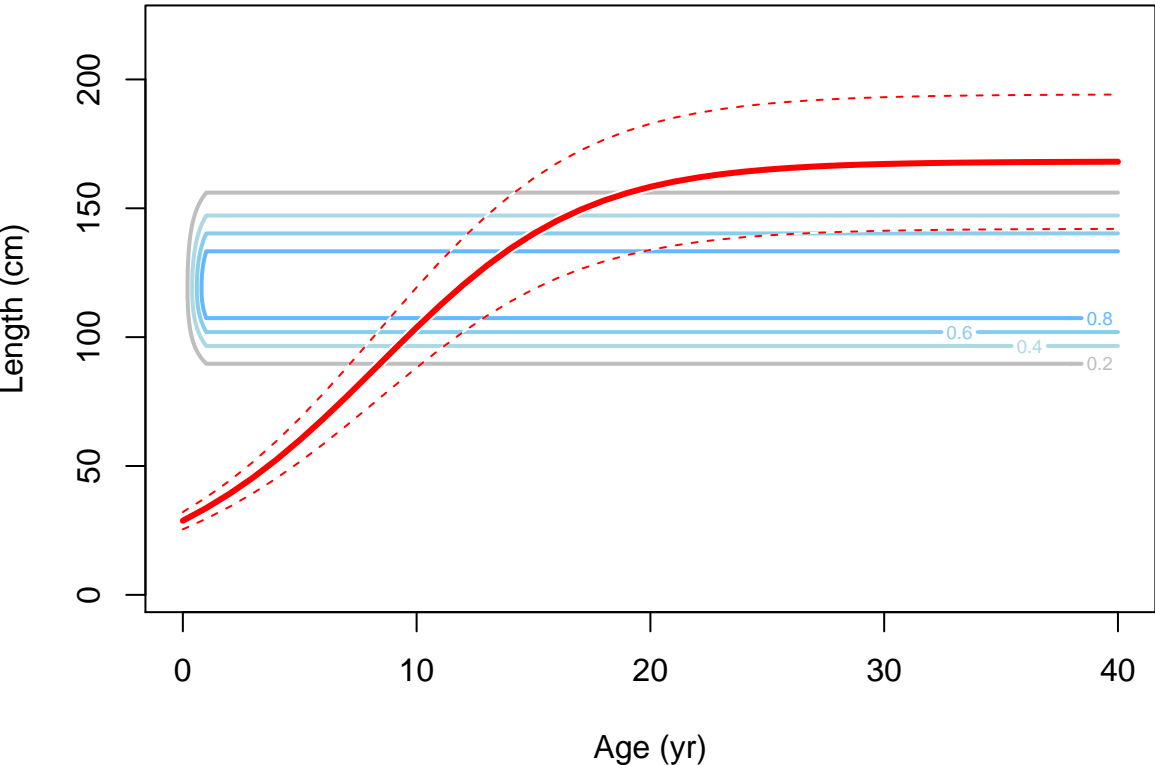
## Female ending year selectivity and growth for A5-LL-n



# Male ending year selectivity and growth for A5-LL-n

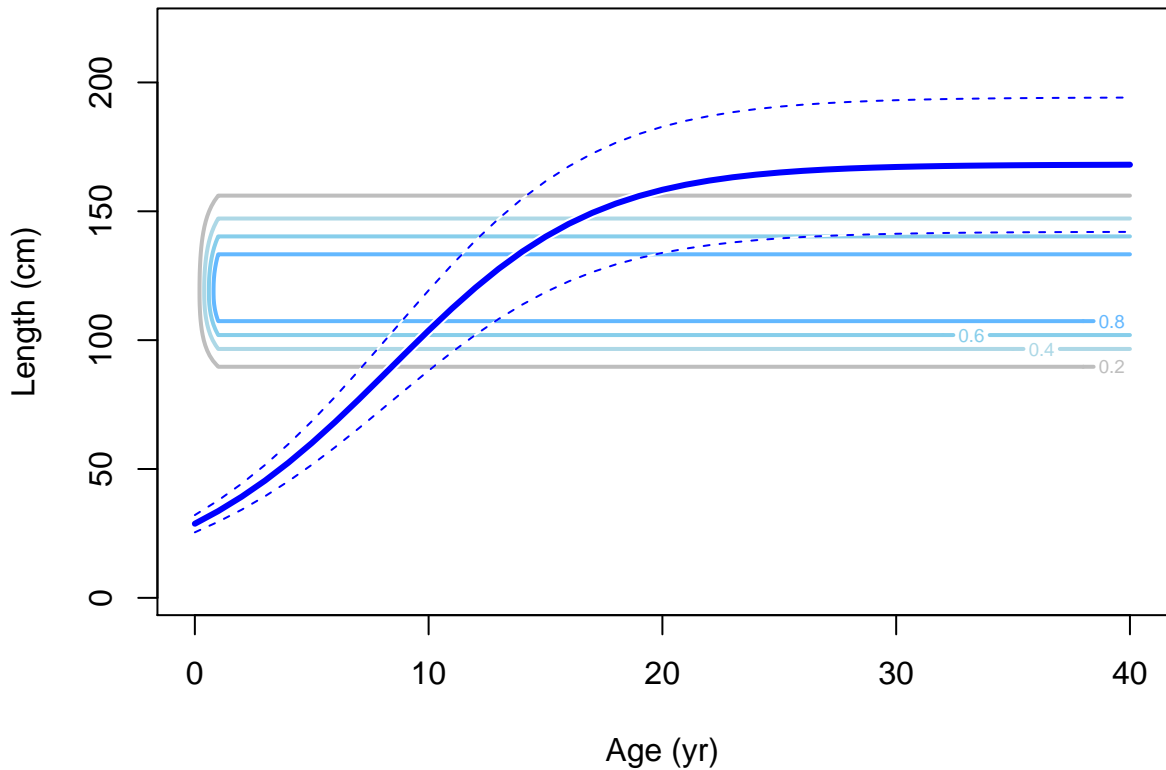


# Female ending year selectivity and growth for A6-LL-n

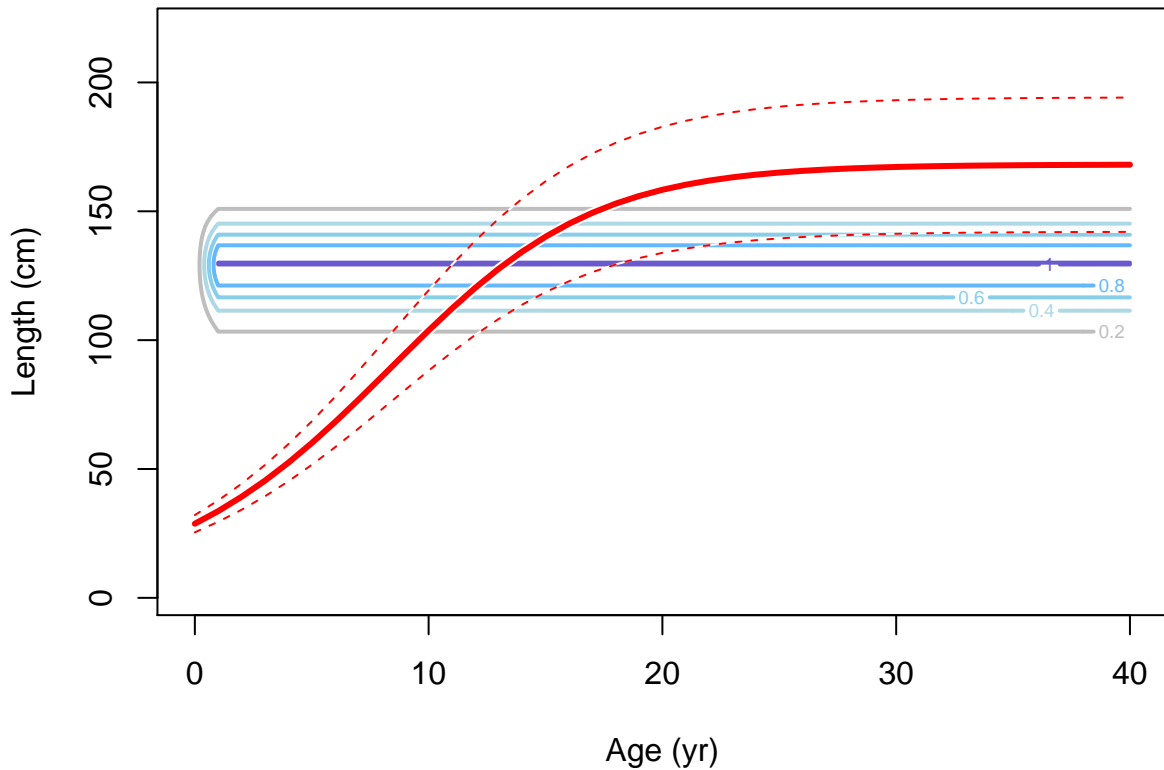




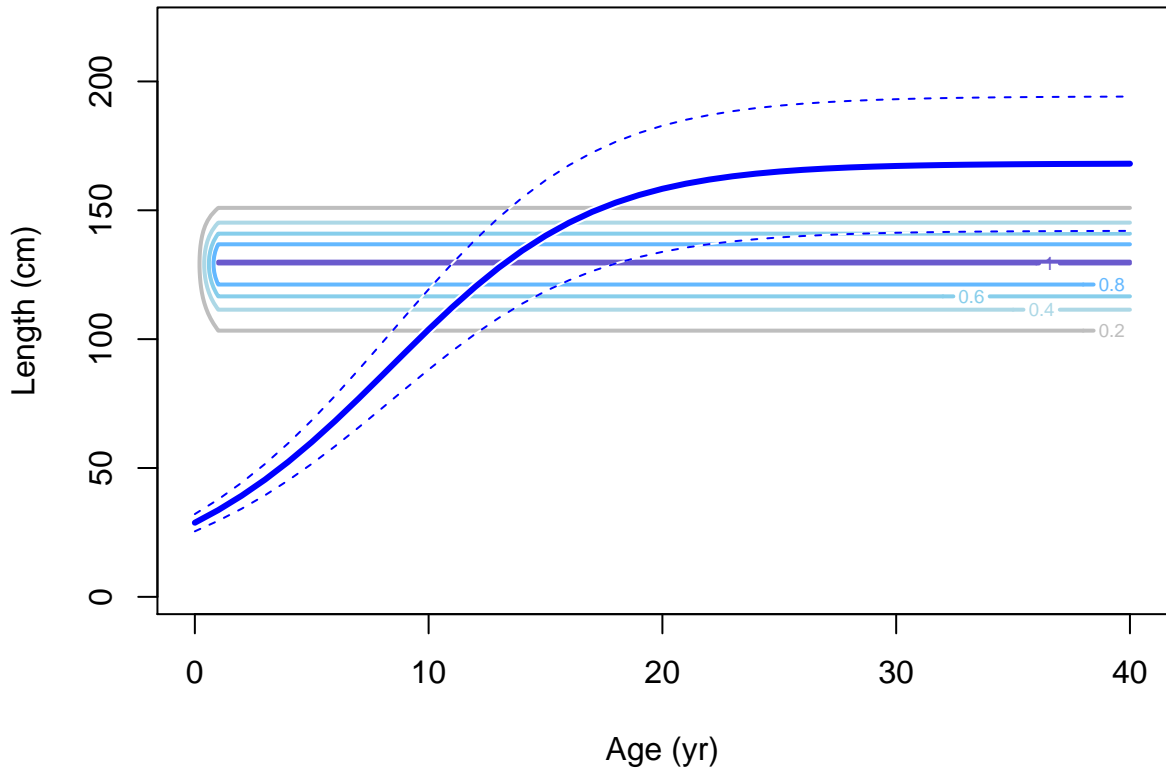
# Male ending year selectivity and growth for A6-LL-n



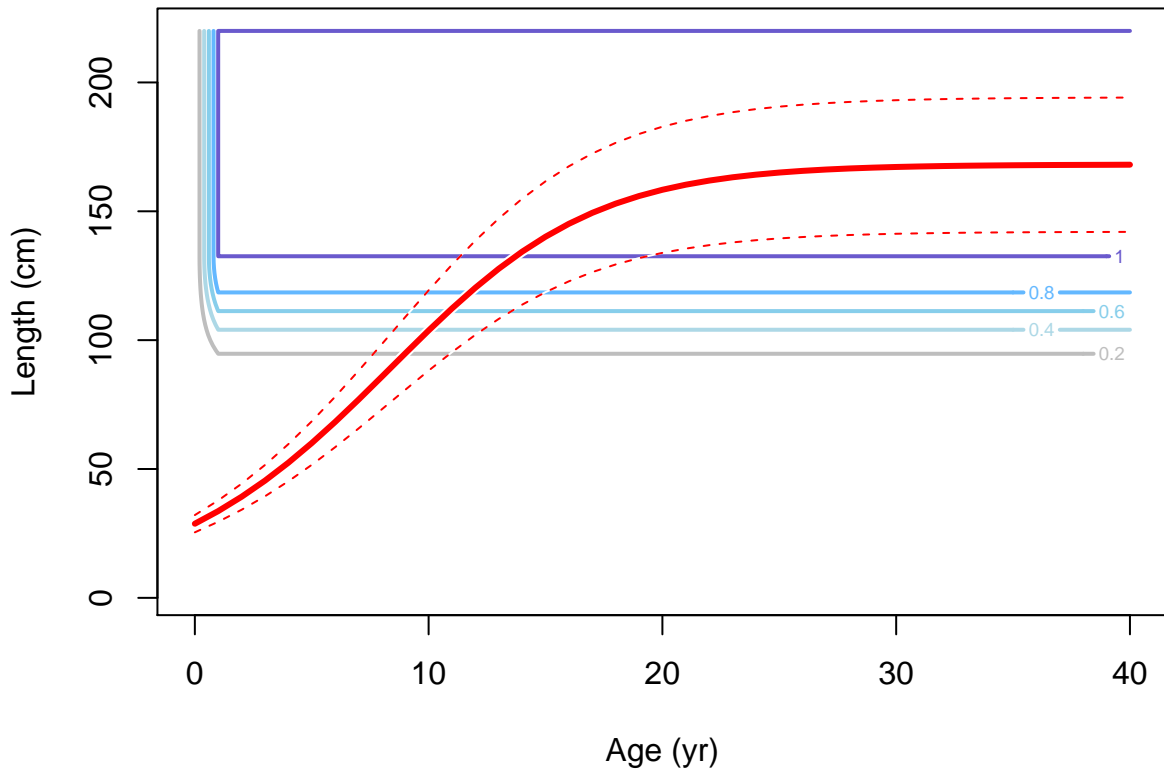
## Female ending year selectivity and growth for A1-LL-w



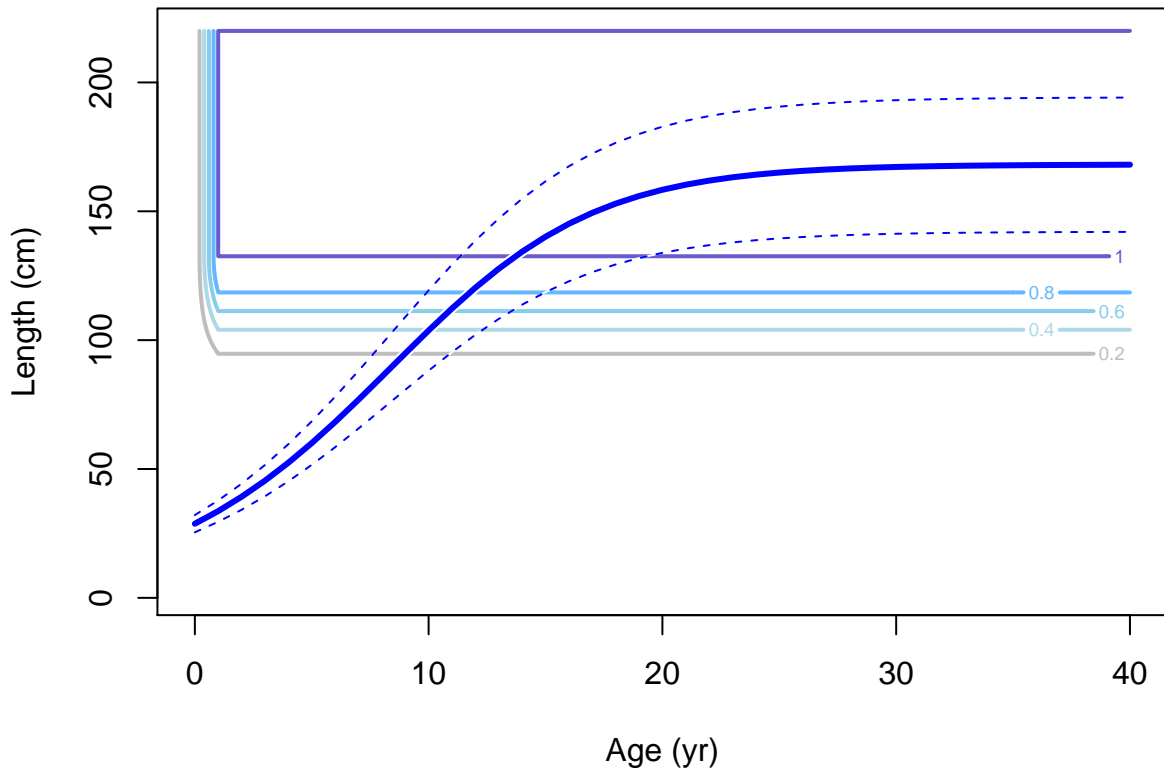
# Male ending year selectivity and growth for A1-LL-w



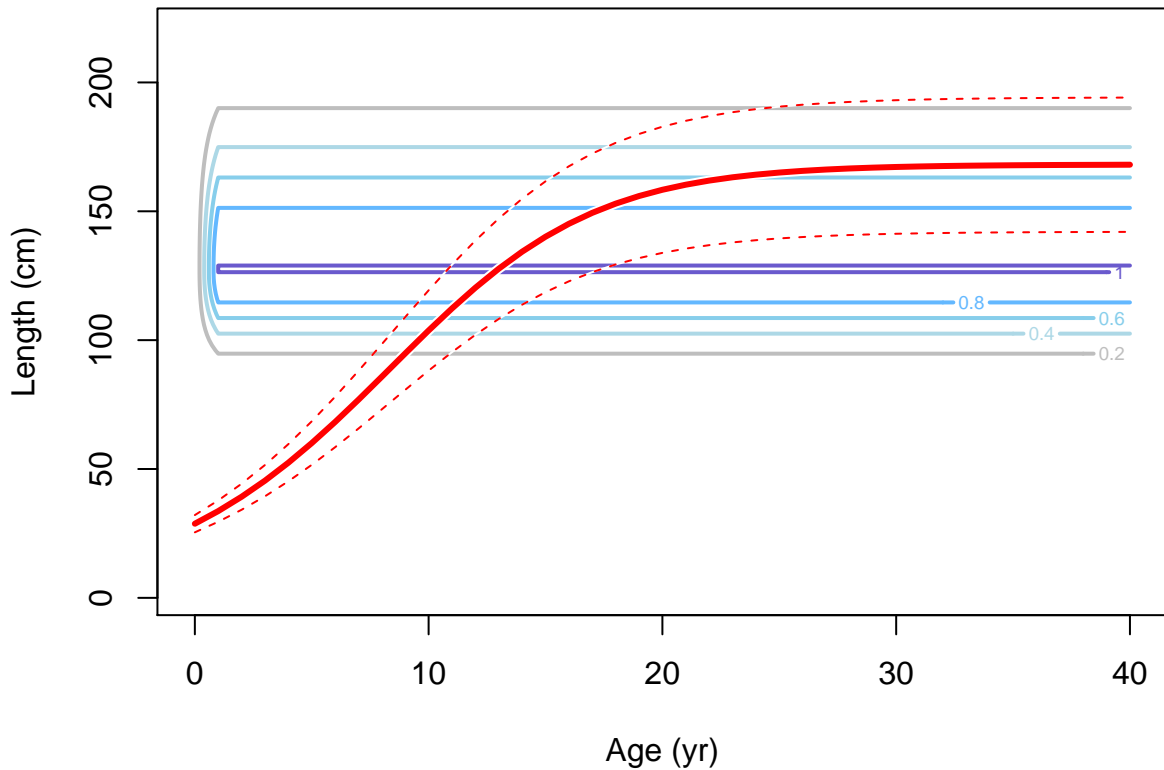
## Female ending year selectivity and growth for A2-LL-w



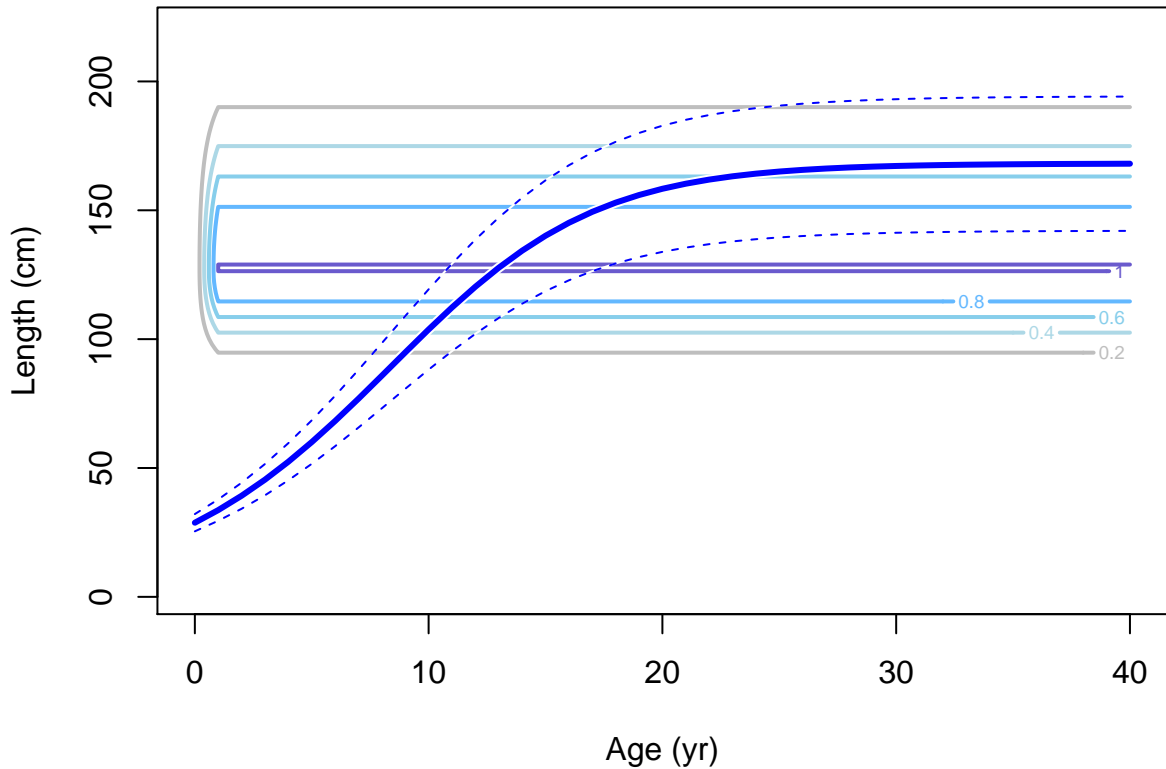
## Male ending year selectivity and growth for A2-LL-w



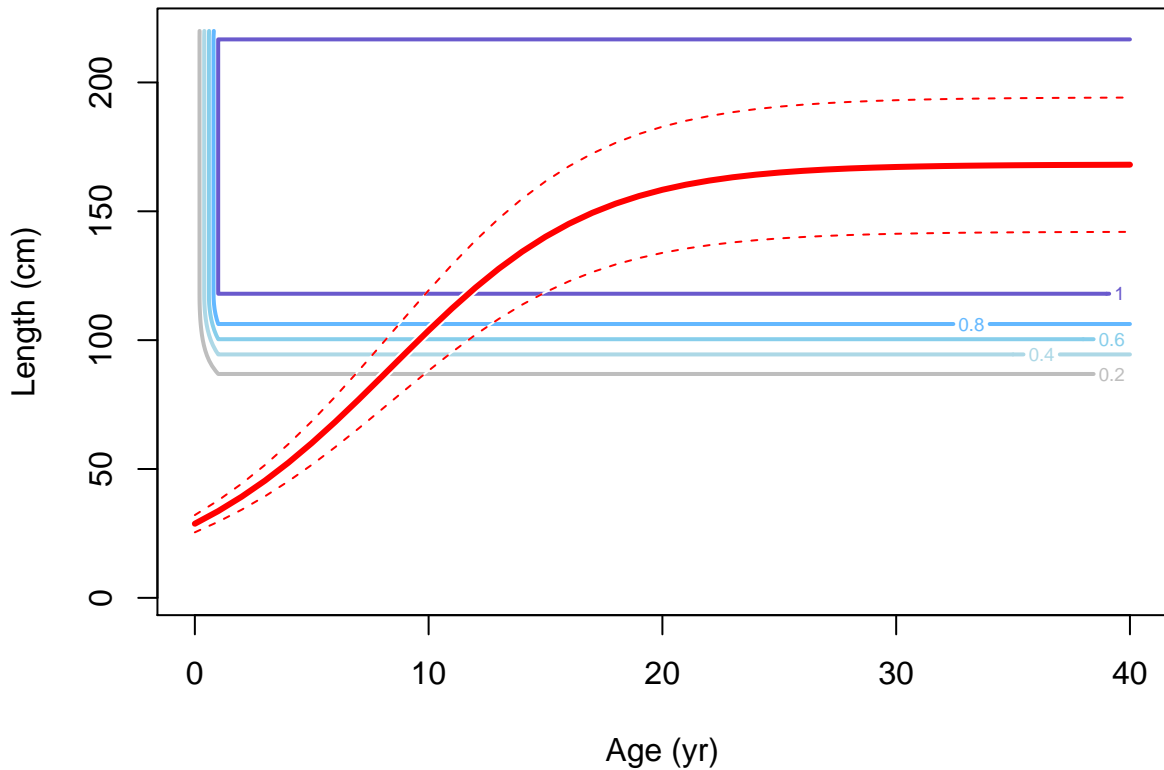
# Female ending year selectivity and growth for A3-LL-w



# Male ending year selectivity and growth for A3-LL-w

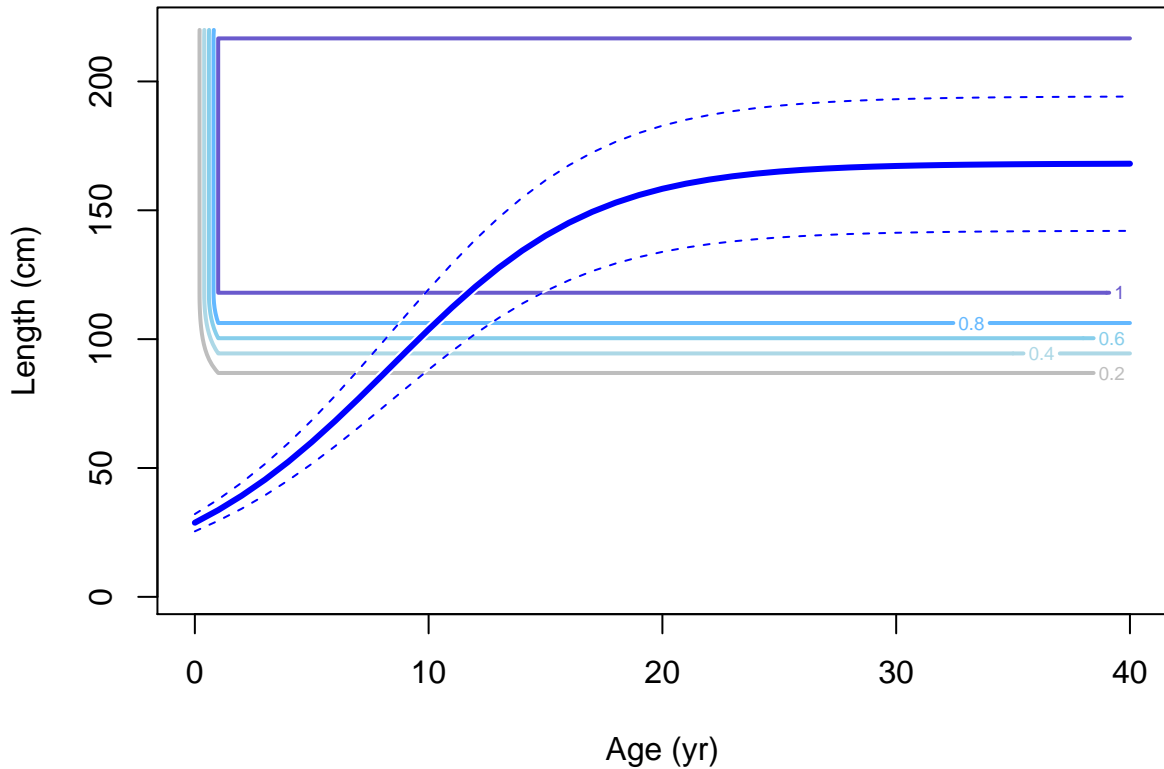


# Female ending year selectivity and growth for A4-LL-w

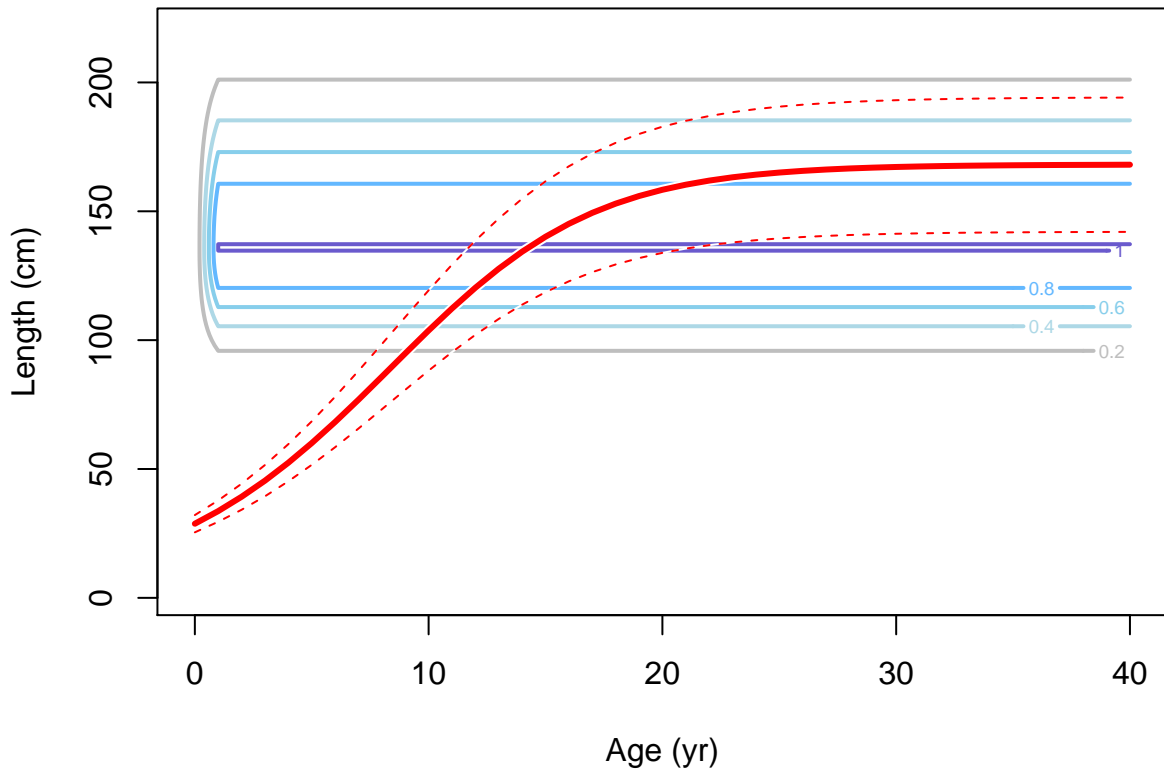




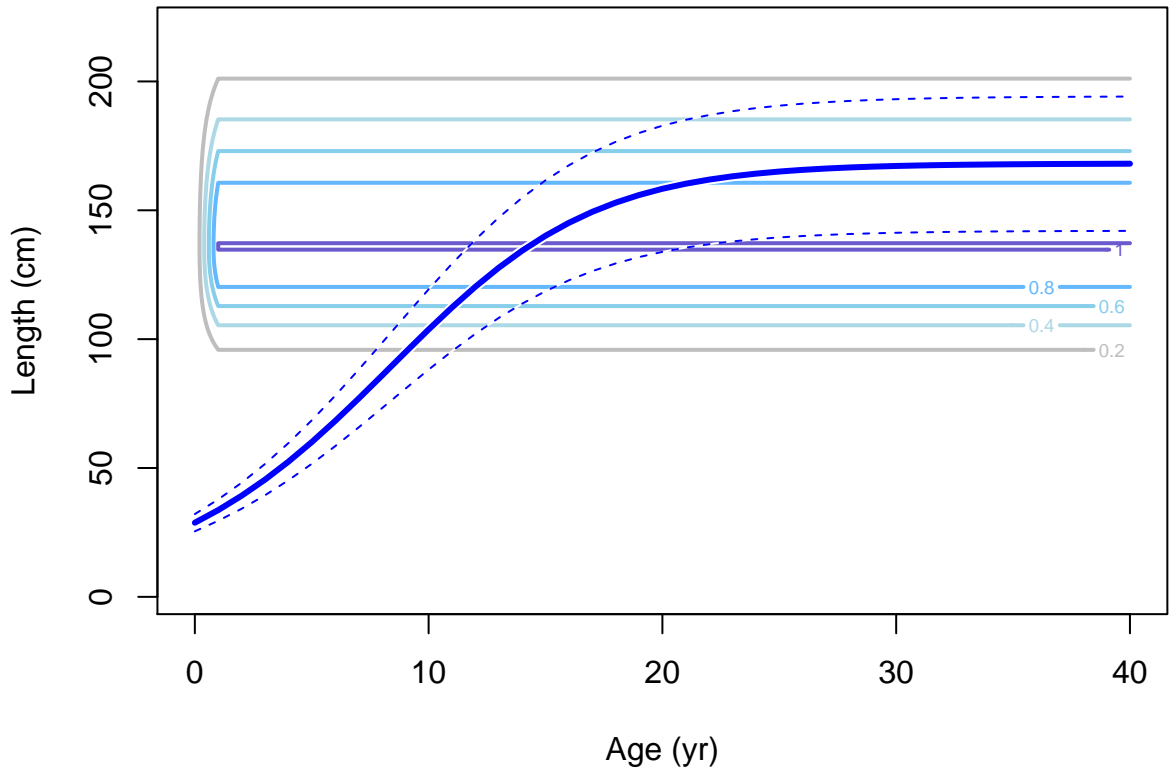
# Male ending year selectivity and growth for A4-LL-w



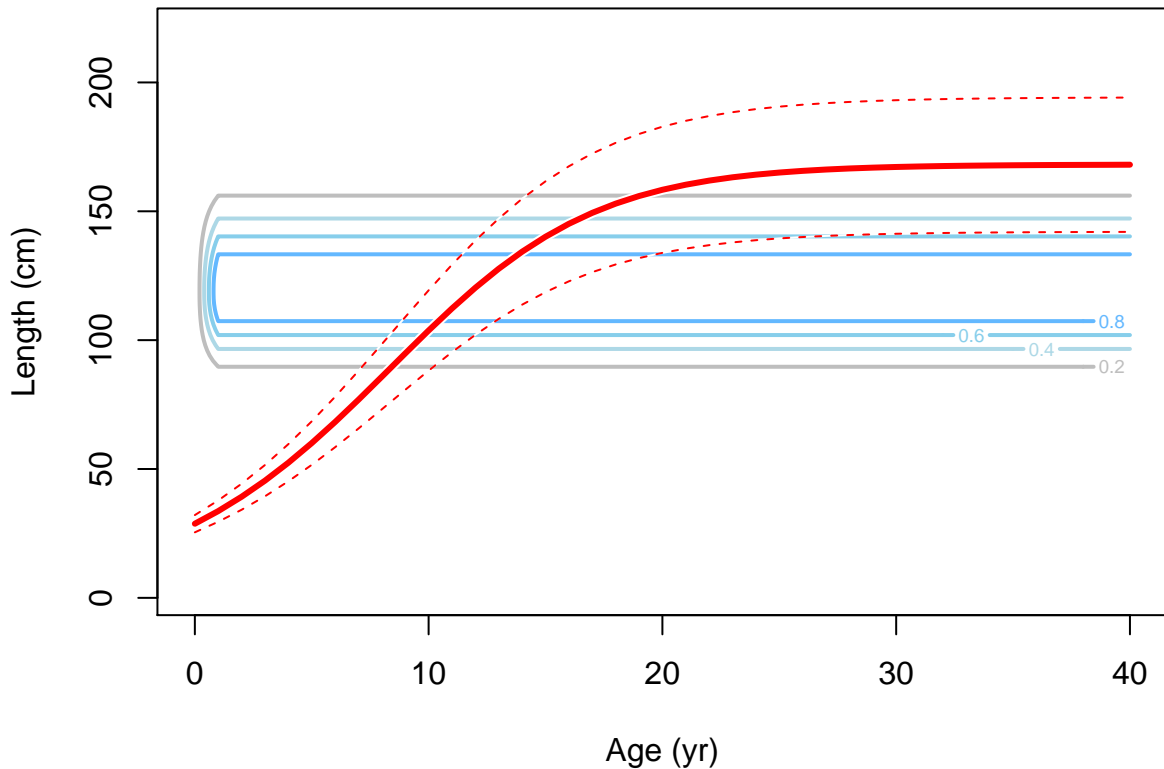
## Female ending year selectivity and growth for A5-LL-w



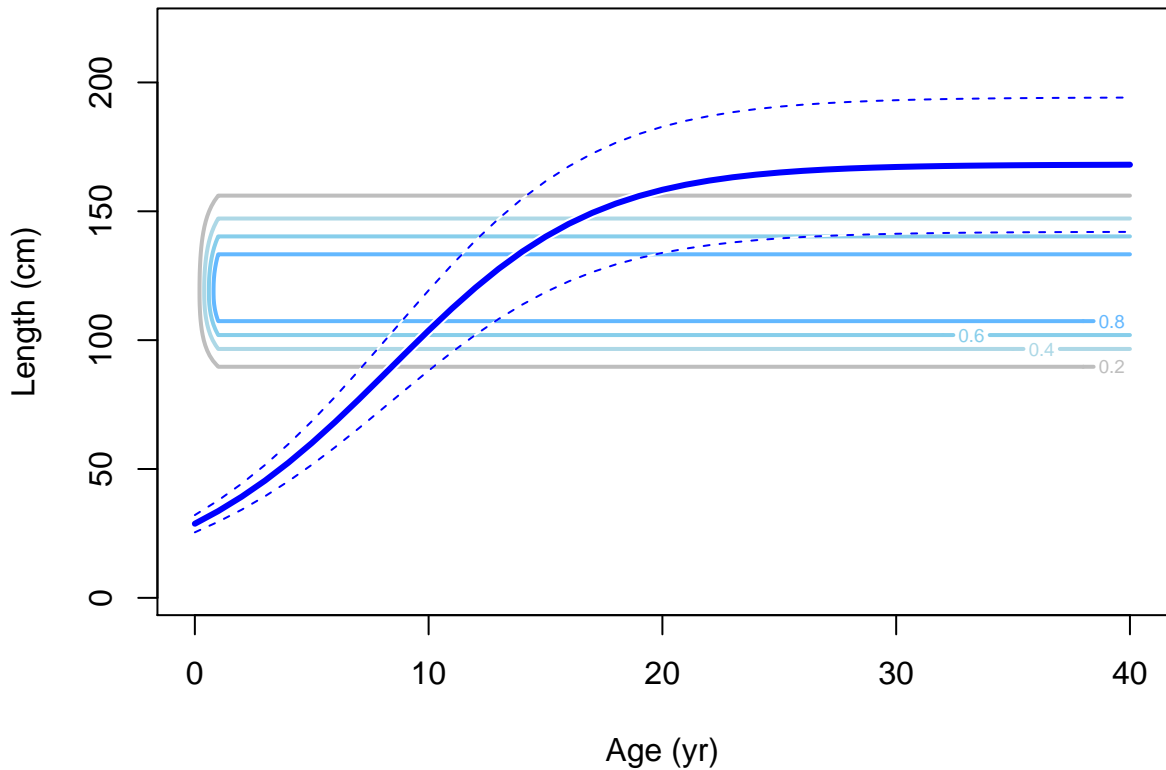
# Male ending year selectivity and growth for A5-LL-w



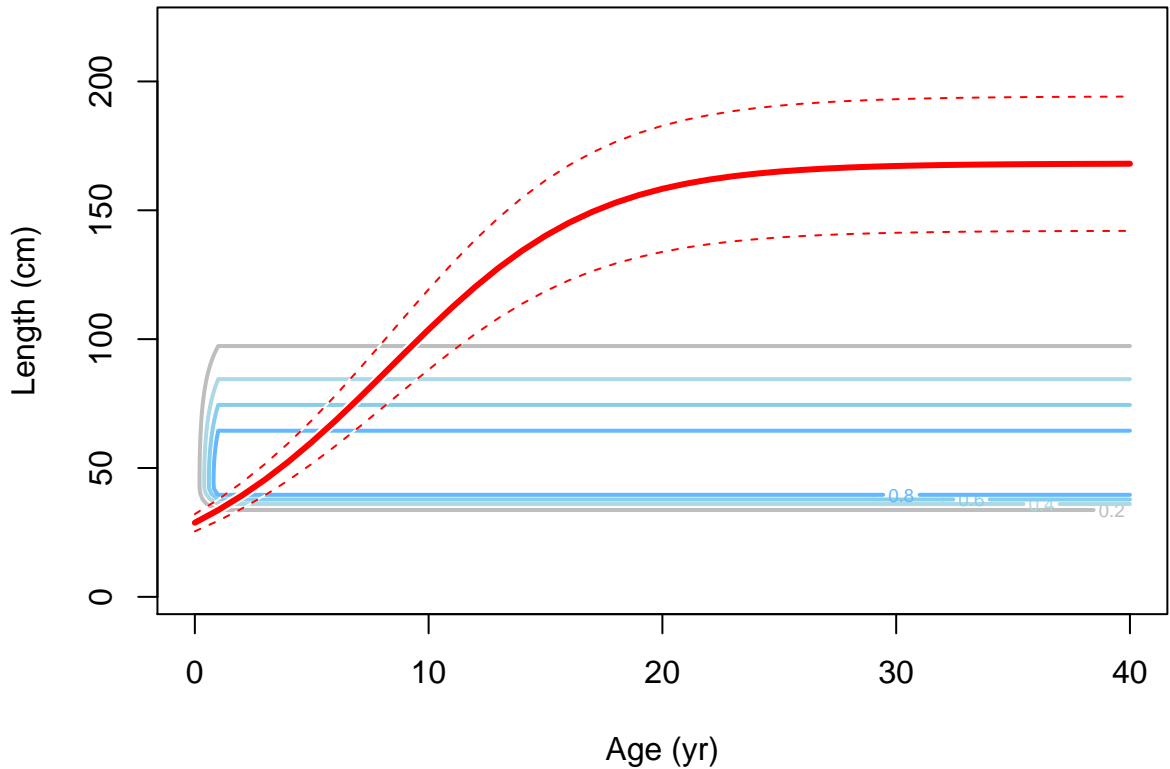
## Female ending year selectivity and growth for A6-LL-w



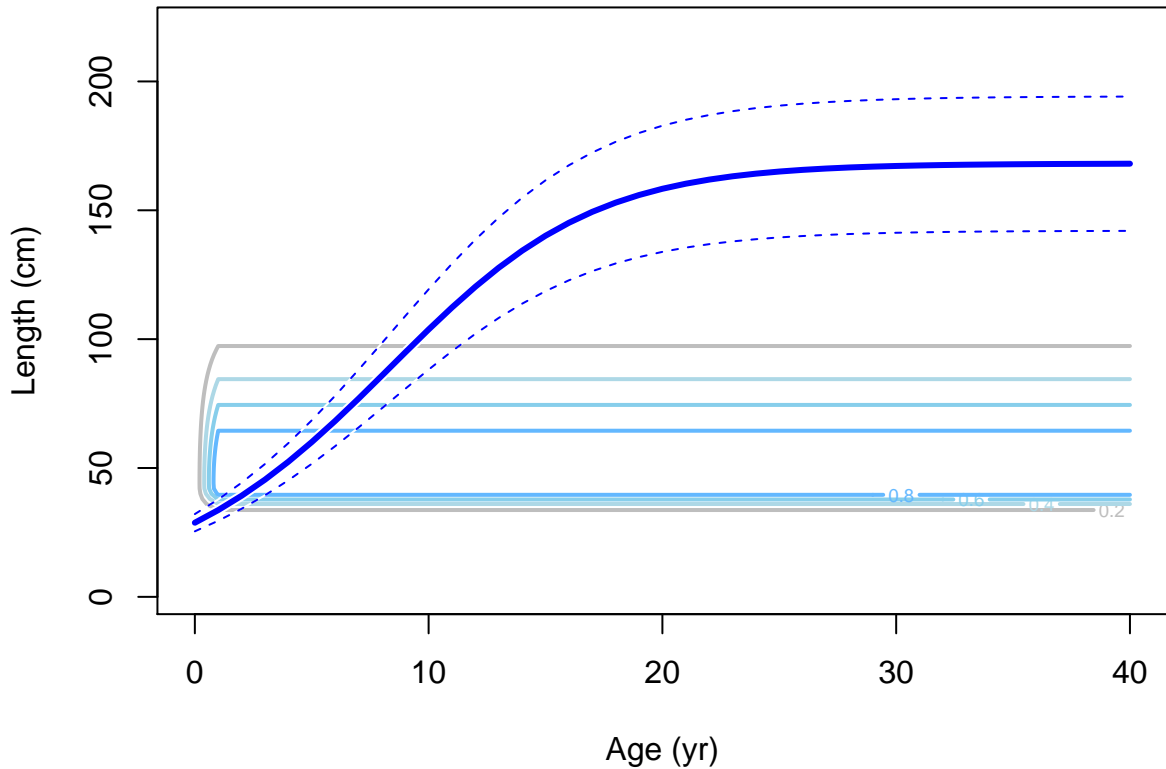
# Male ending year selectivity and growth for A6-LL-w



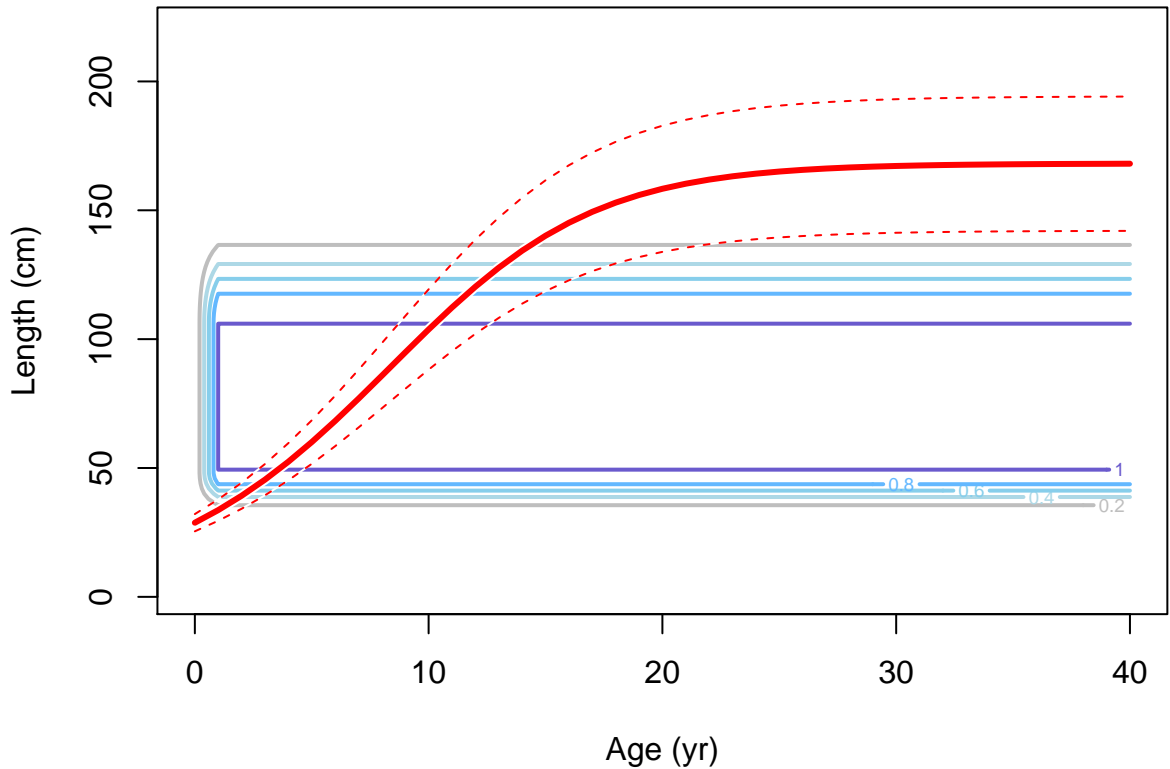
## Female ending year selectivity and growth for A2-OBJ



# Male ending year selectivity and growth for A2-OBJ

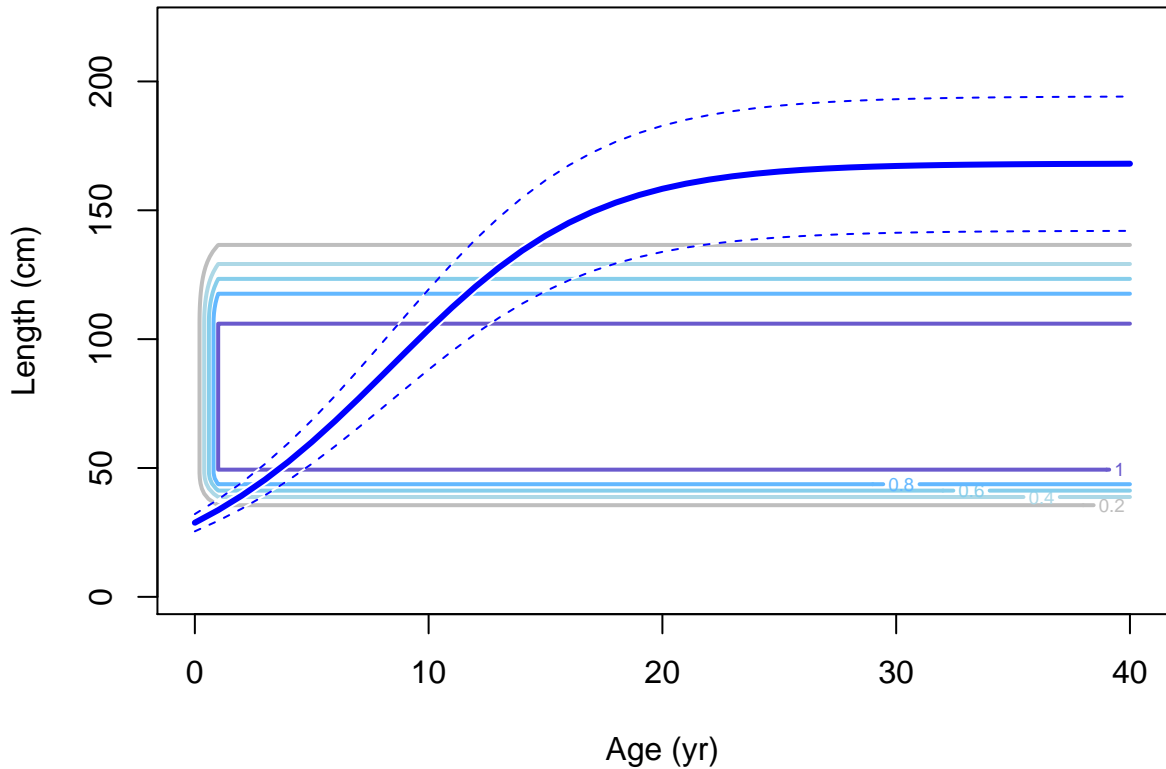


# Female ending year selectivity and growth for A3-Obj

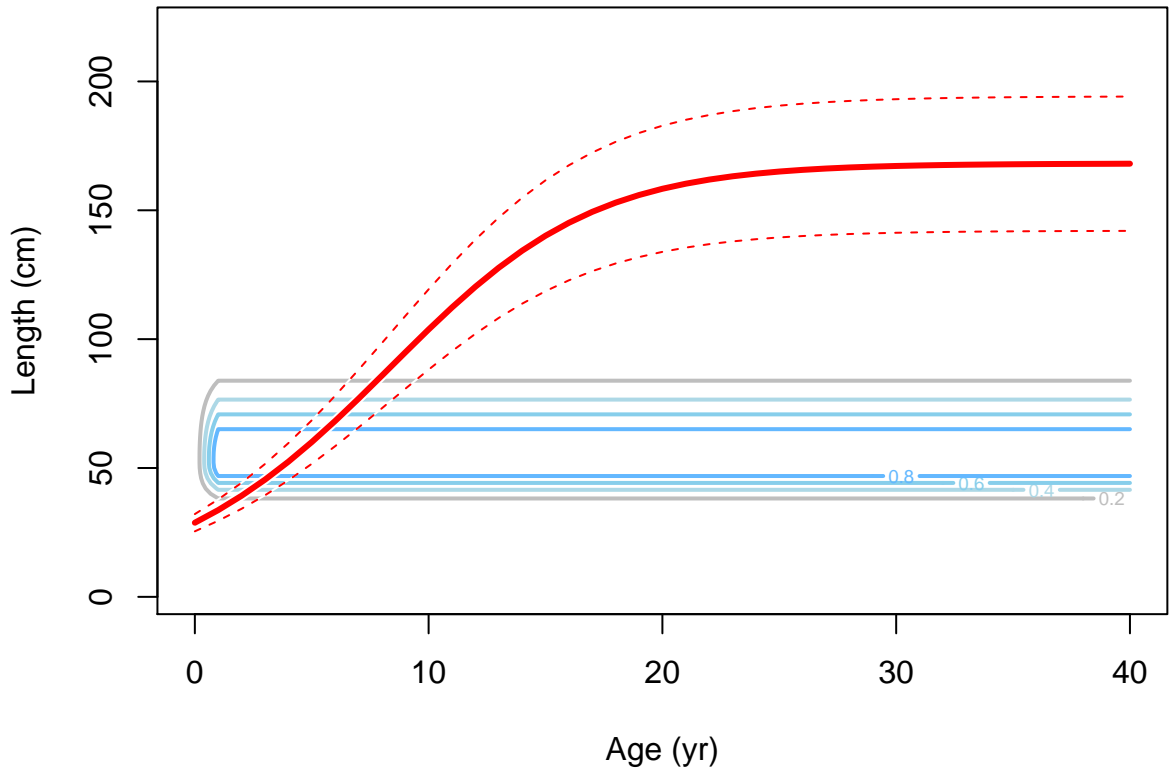




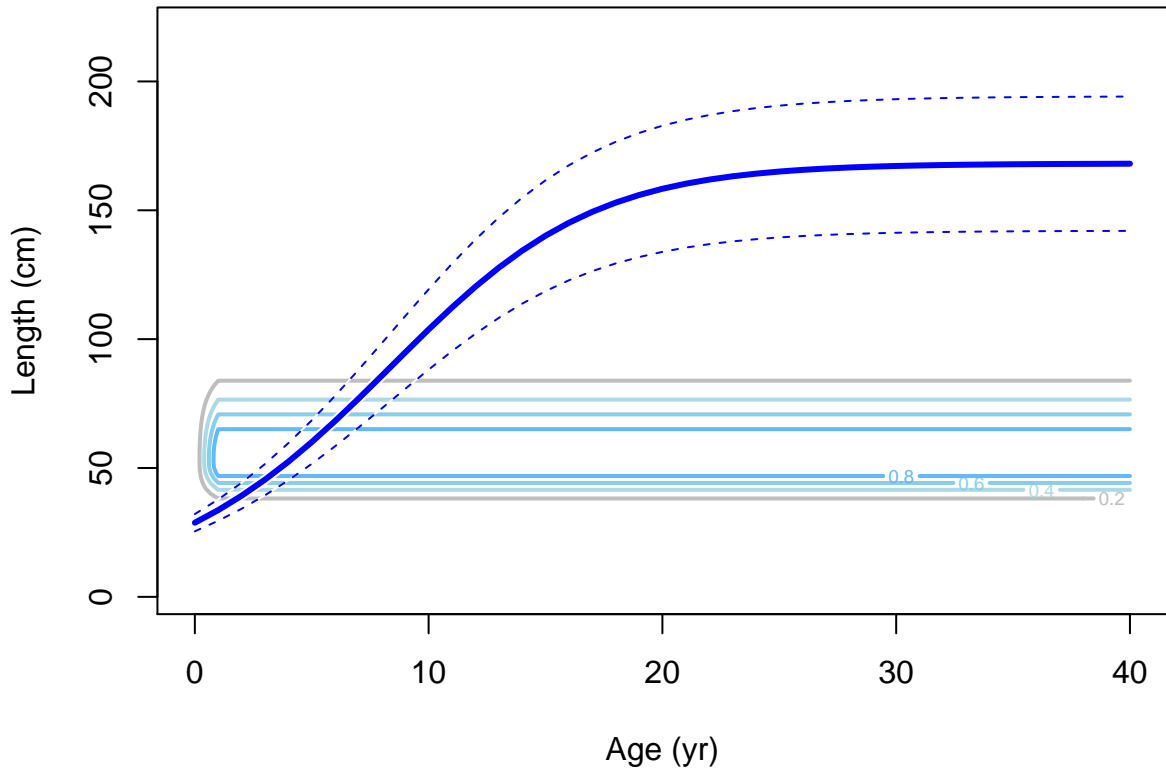
# Male ending year selectivity and growth for A3-OBJ



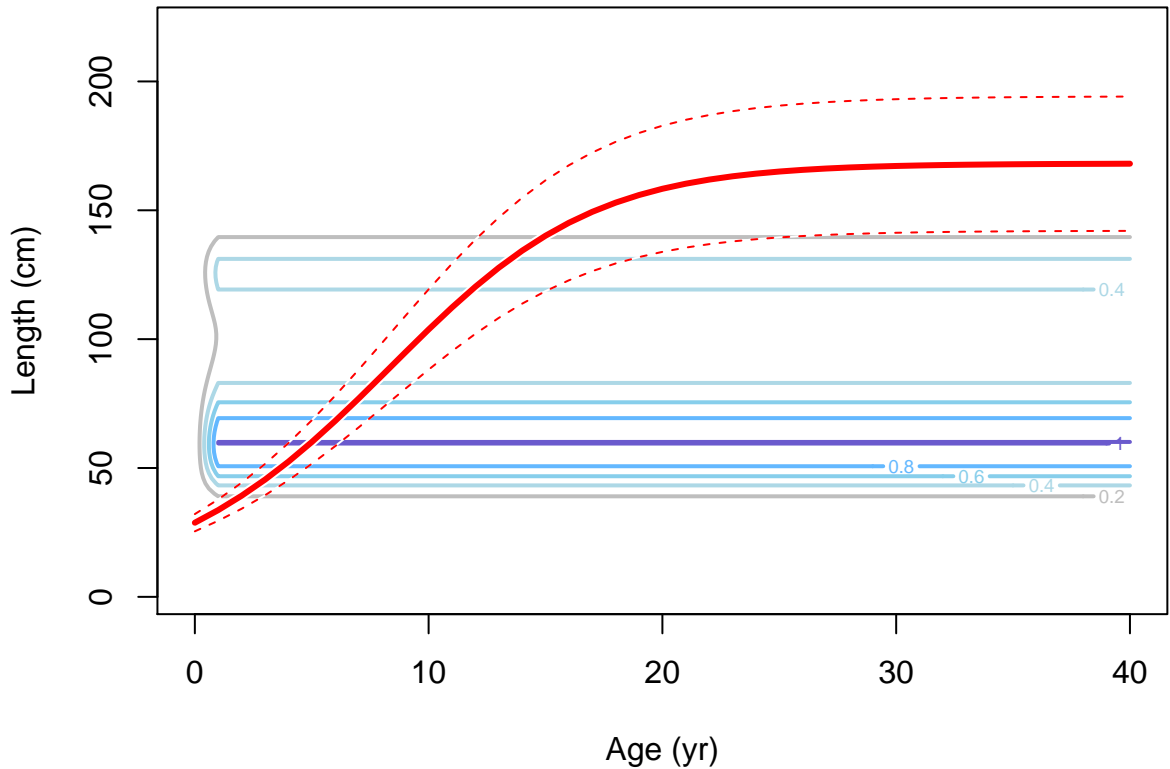
## Female ending year selectivity and growth for A4-OBJ



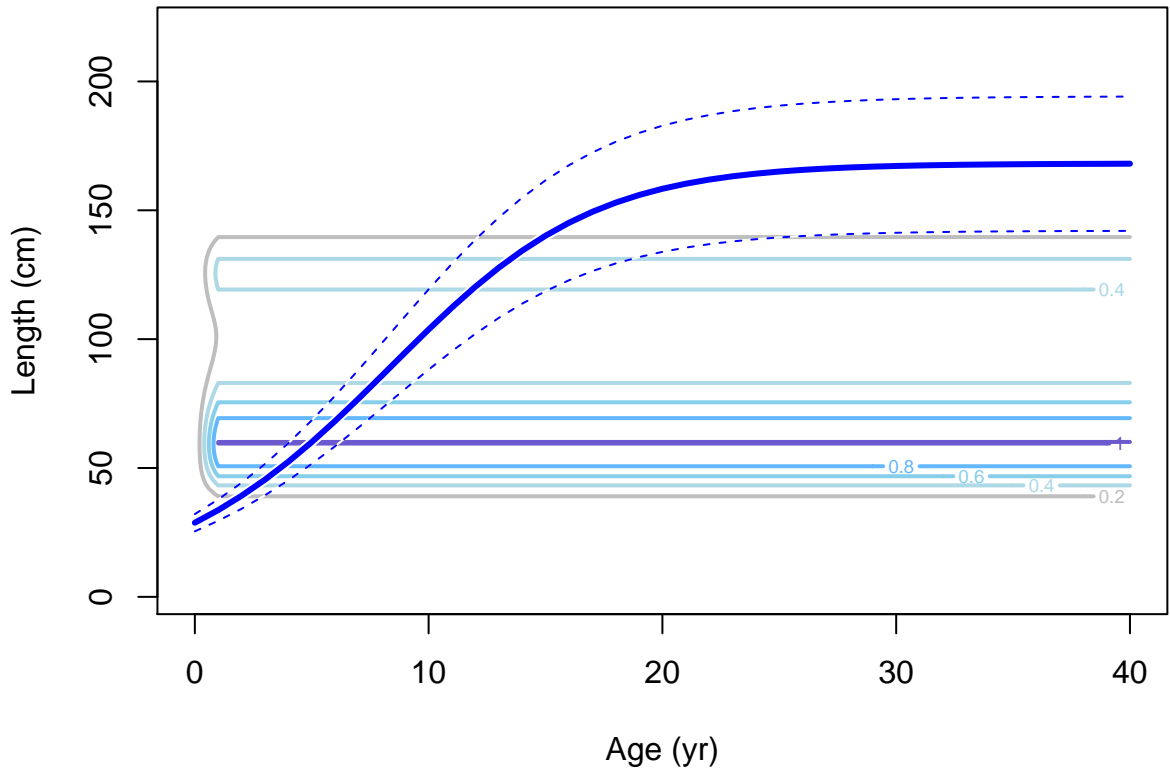
# Male ending year selectivity and growth for A4-OBJ



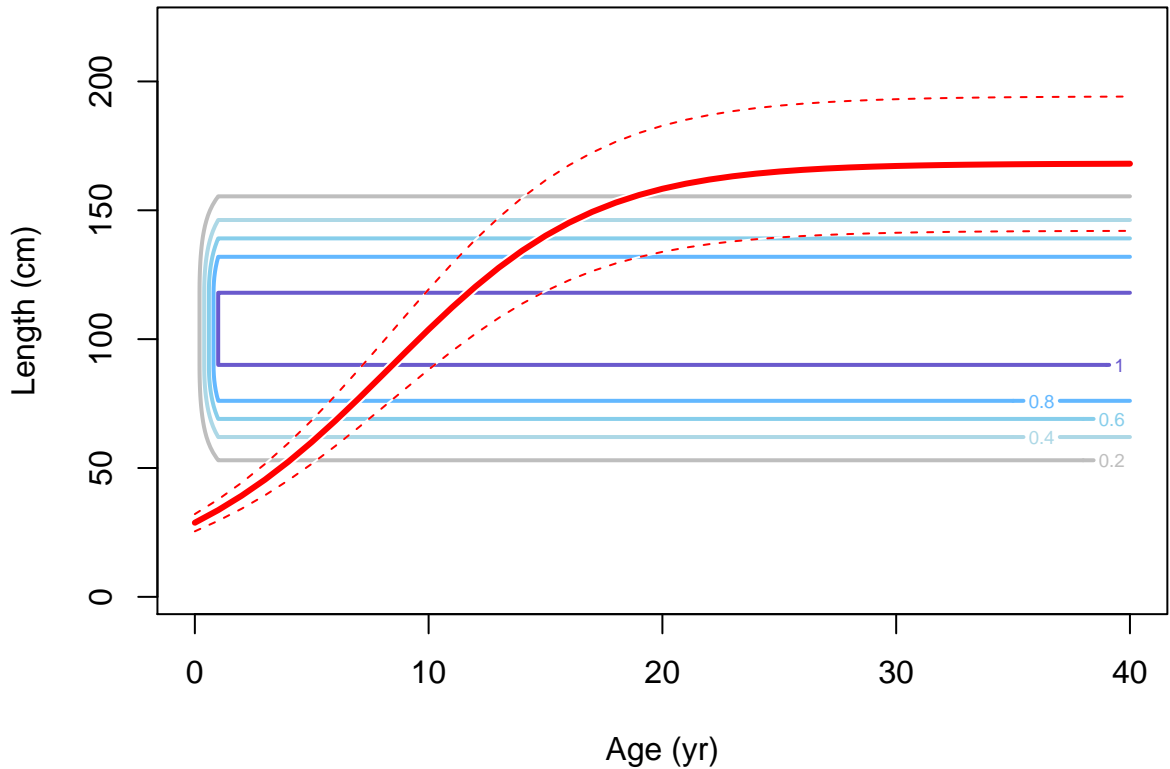
# Female ending year selectivity and growth for A5-OBJ



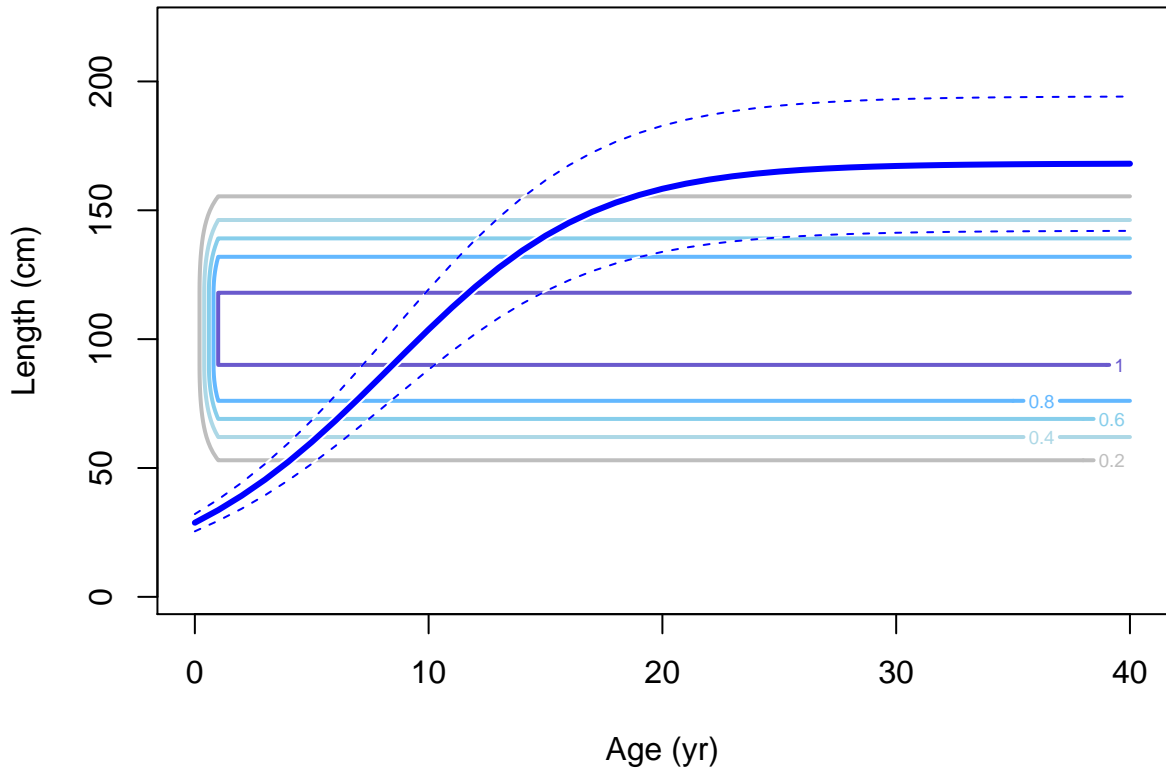
# Male ending year selectivity and growth for A5-OBJ



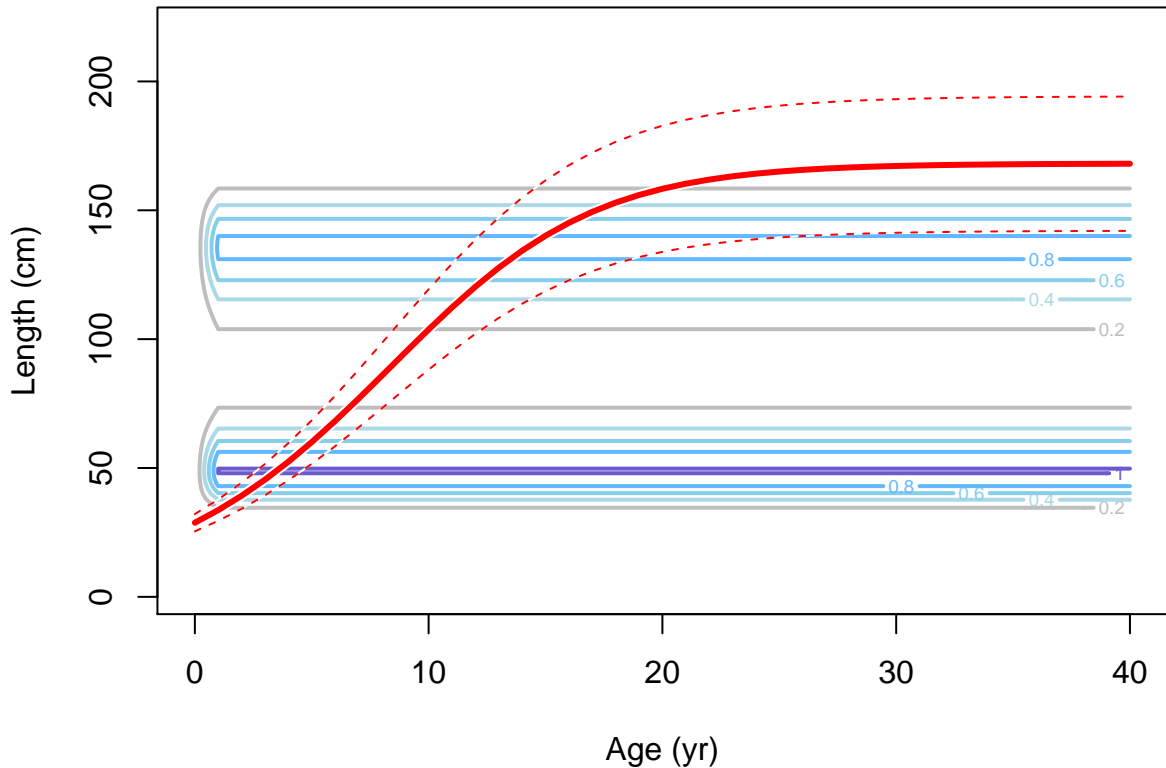
## Female ending year selectivity and growth for A6-OBJ



# Male ending year selectivity and growth for A6-OBJ

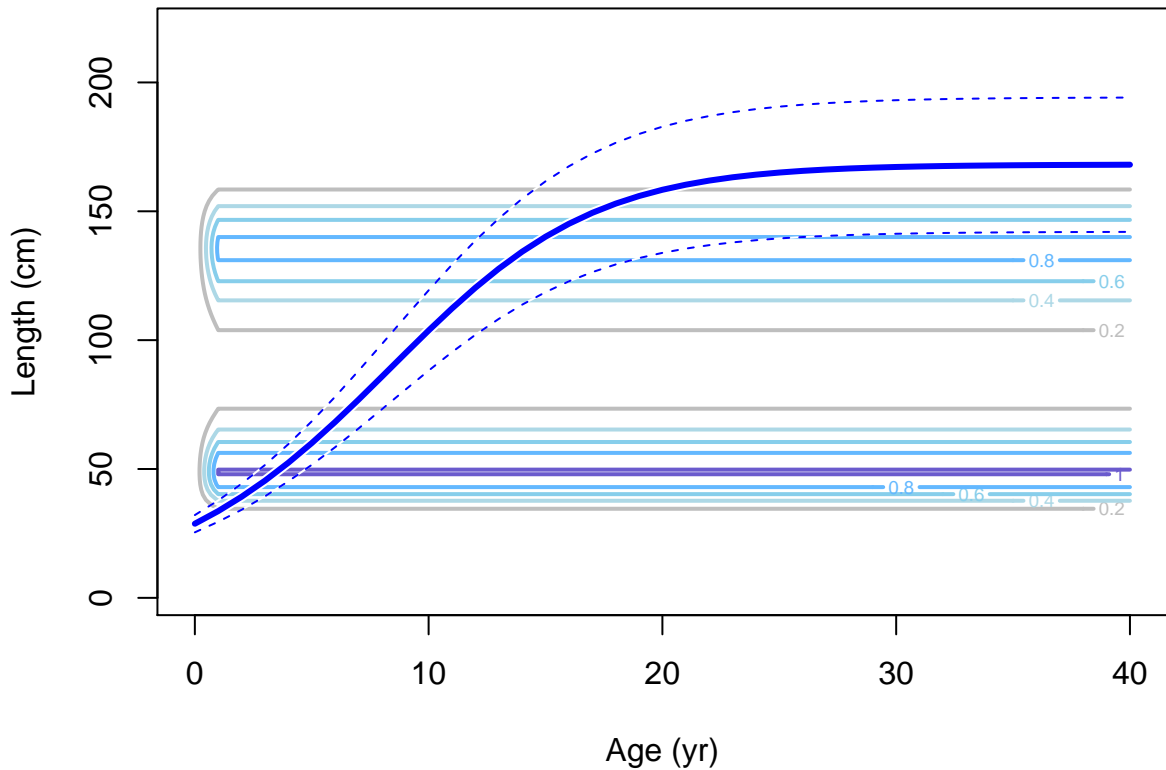


## Female ending year selectivity and growth for A2-NOADEL

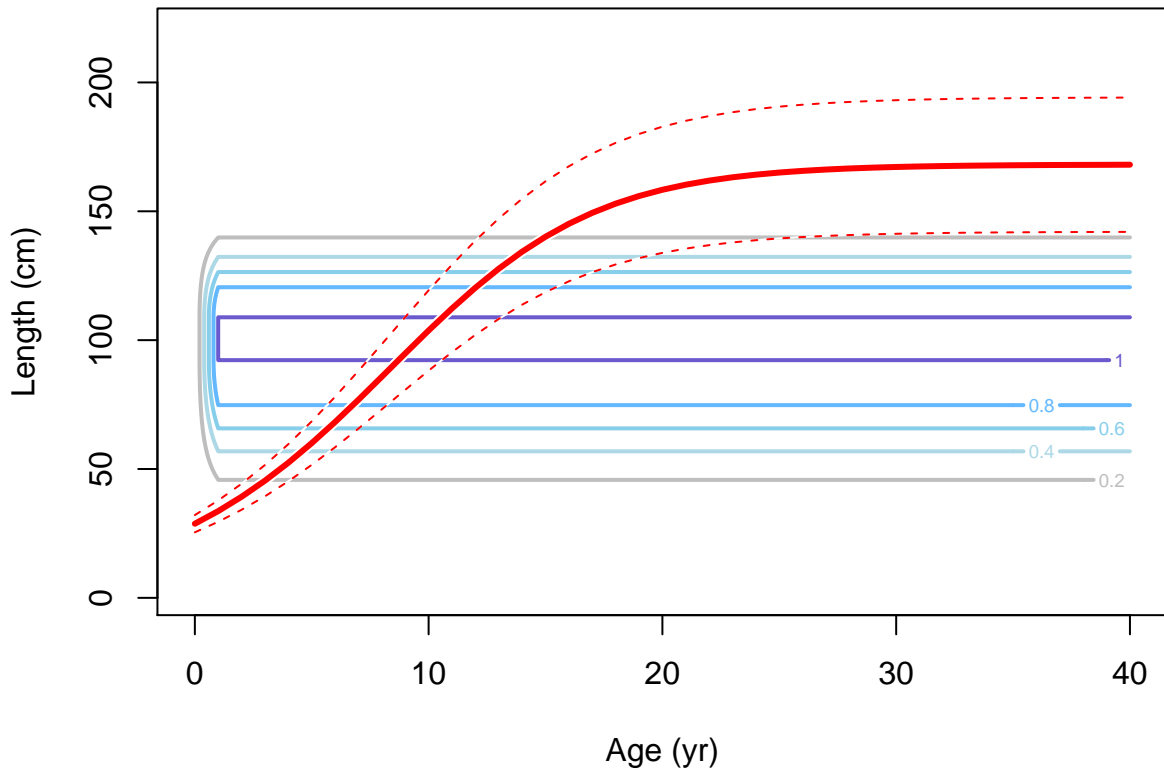




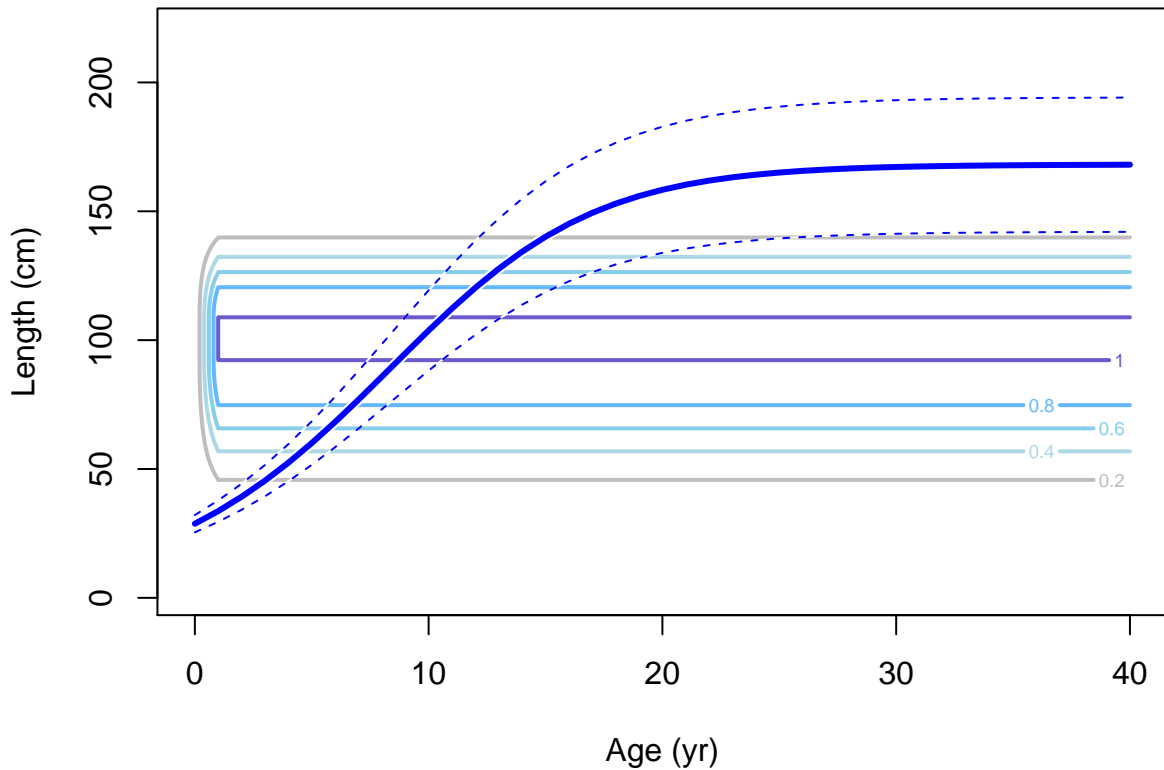
# Male ending year selectivity and growth for A2-NOADEL



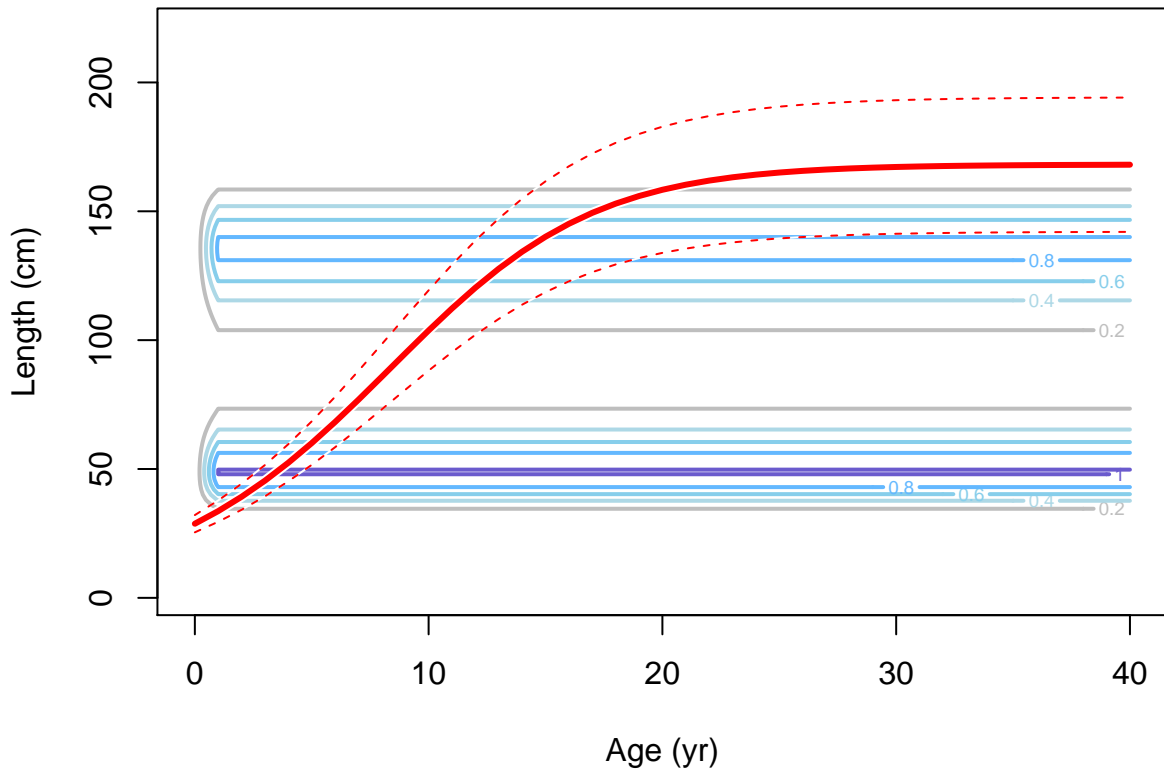
## Female ending year selectivity and growth for A3-NOADEL



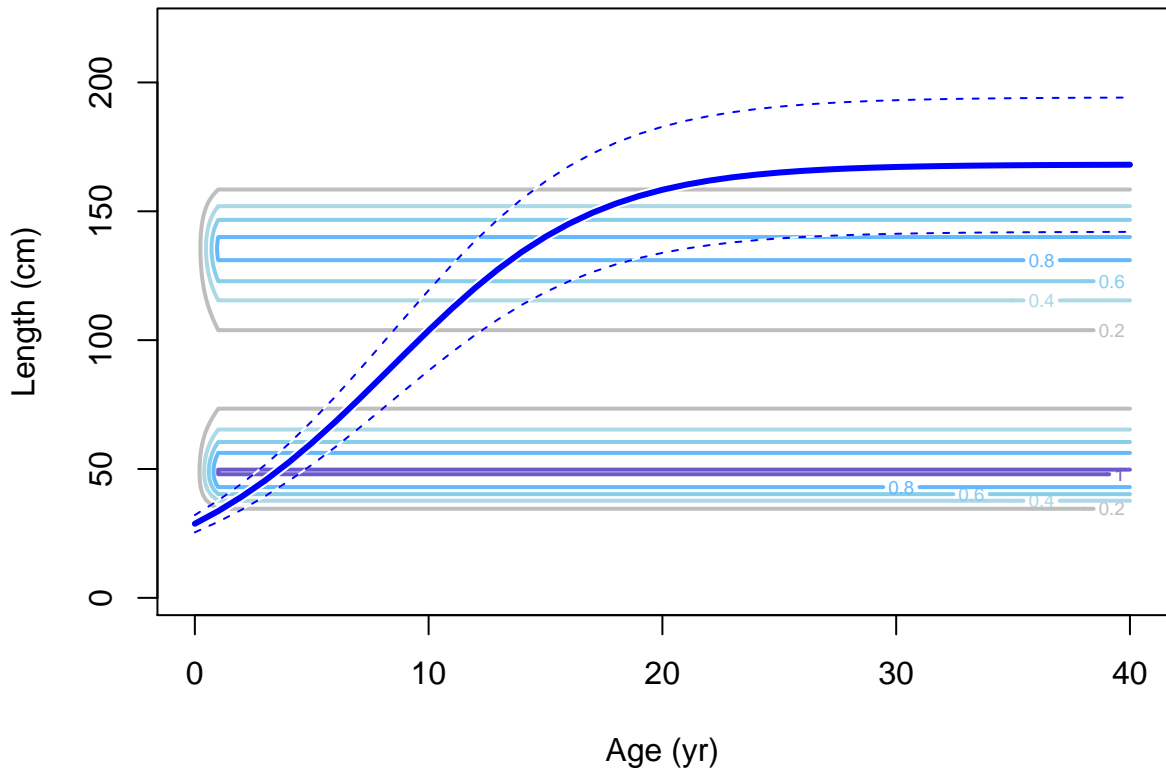
# Male ending year selectivity and growth for A3-NOADEL



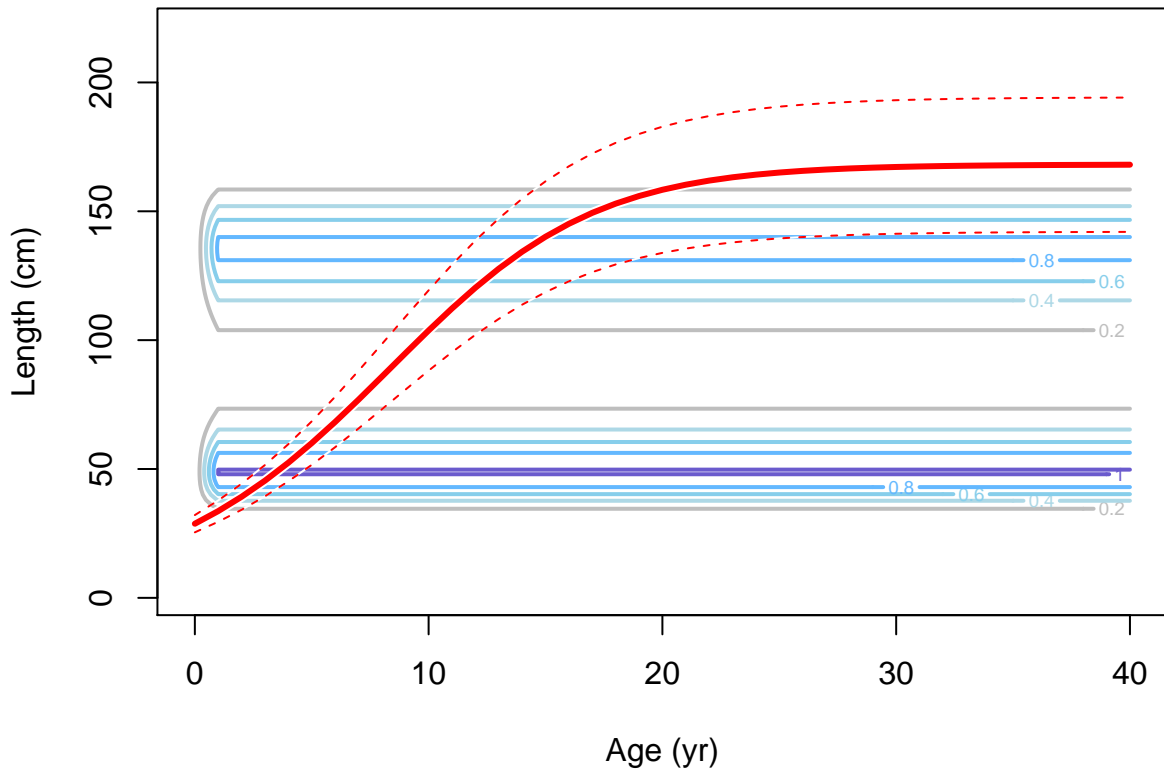
# Female ending year selectivity and growth for A4-NOADEL



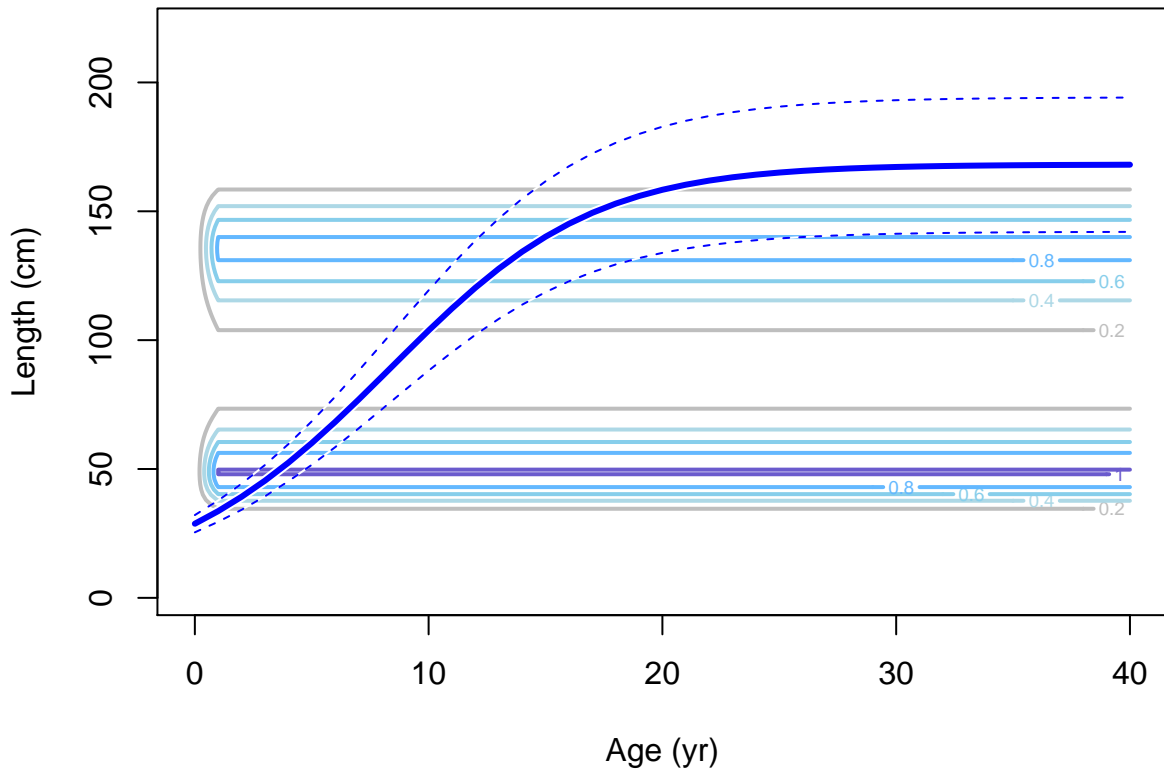
# Male ending year selectivity and growth for A4-NOADEL



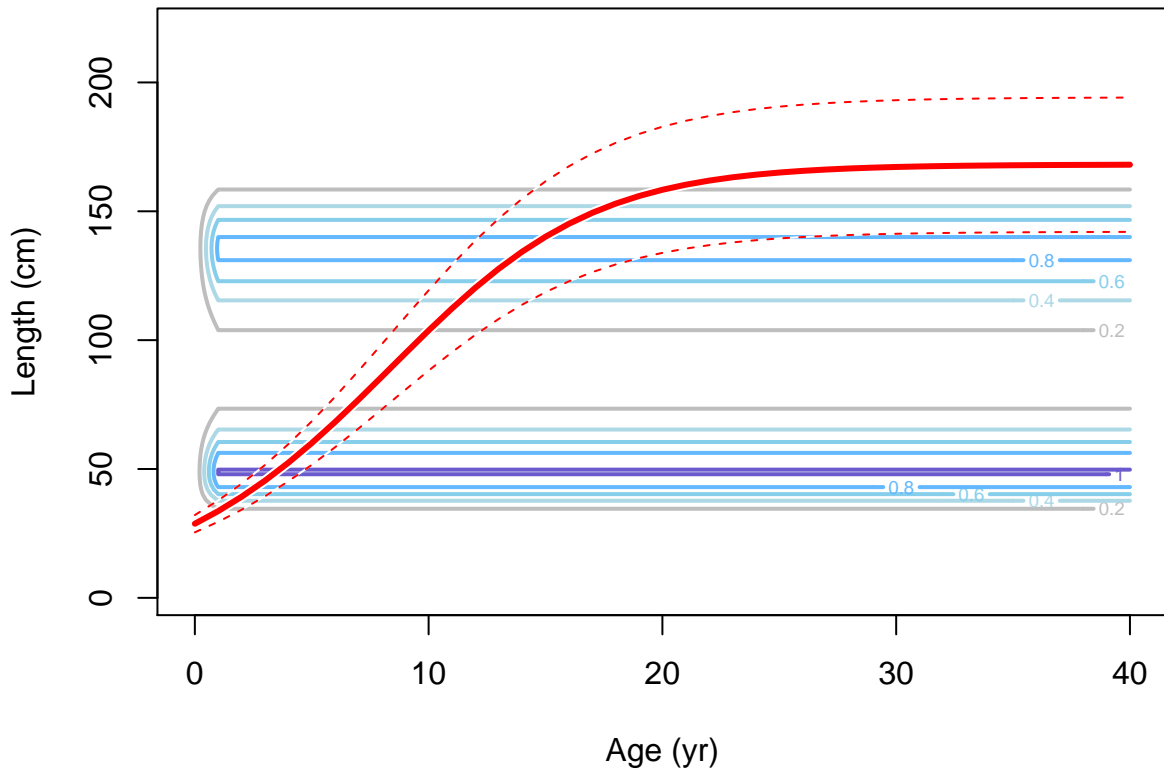
## Female ending year selectivity and growth for A5-NOADEL



# Male ending year selectivity and growth for A5-NOADEL

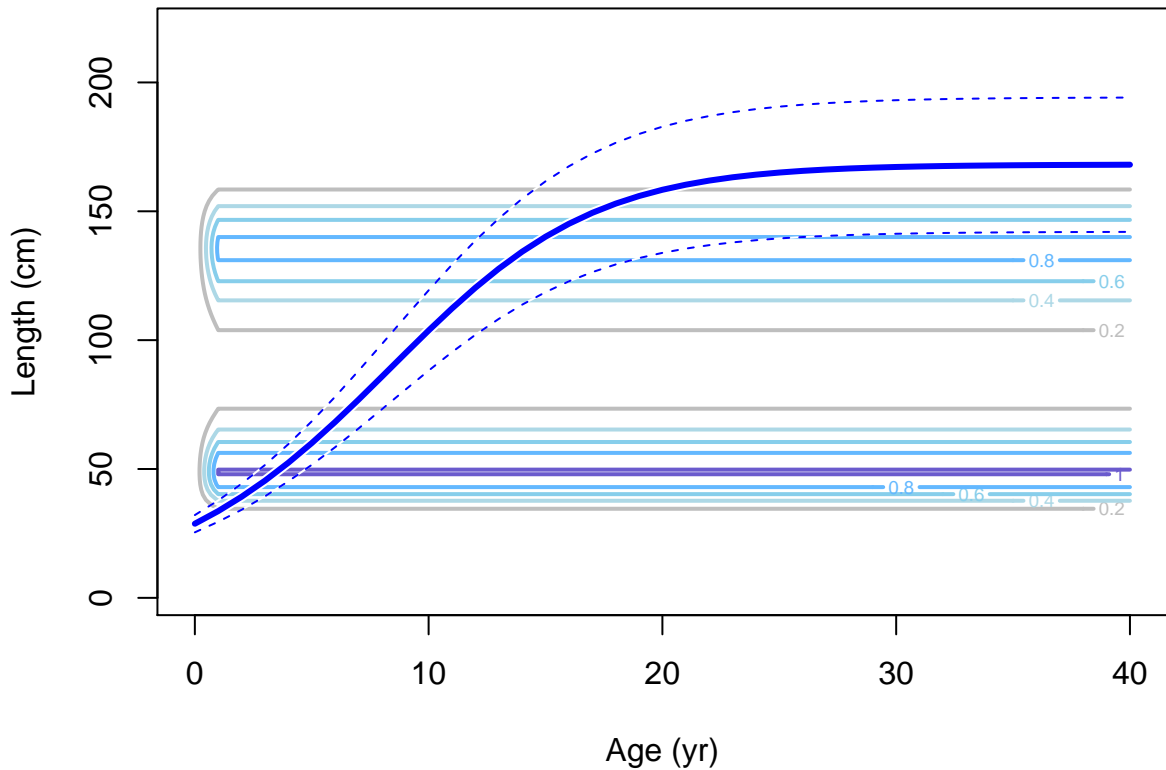


# Female ending year selectivity and growth for A6-NOADEL

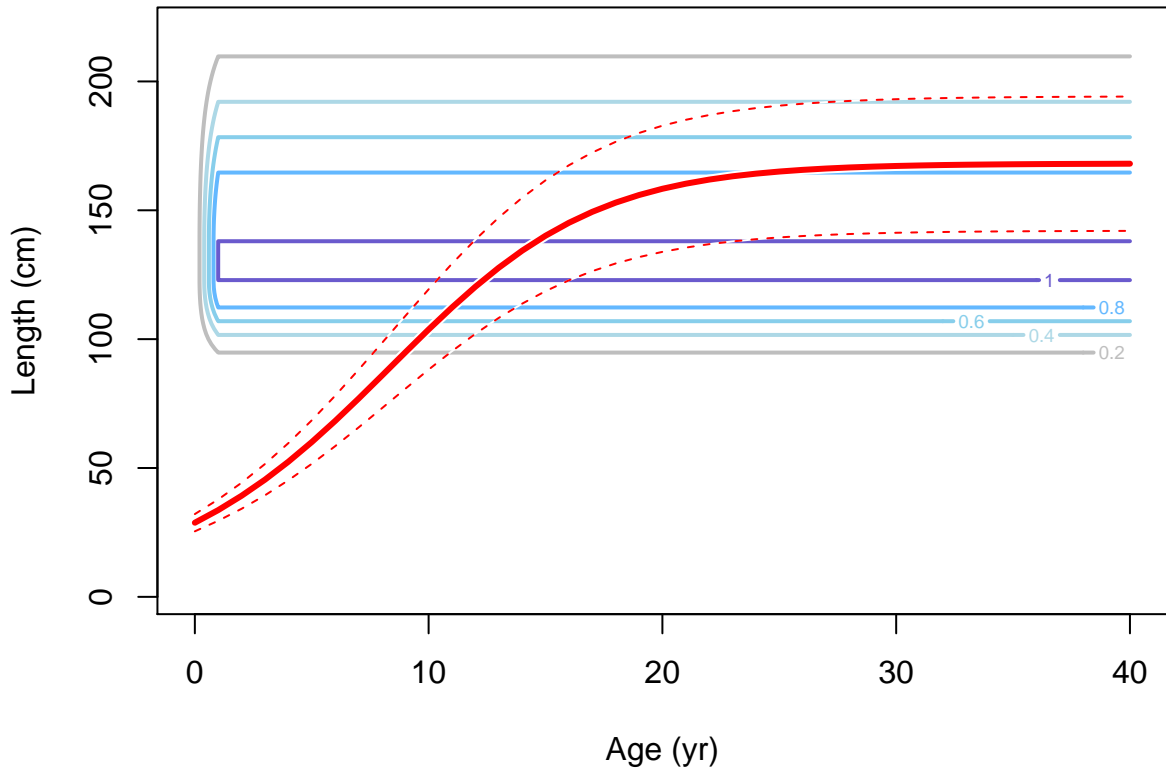




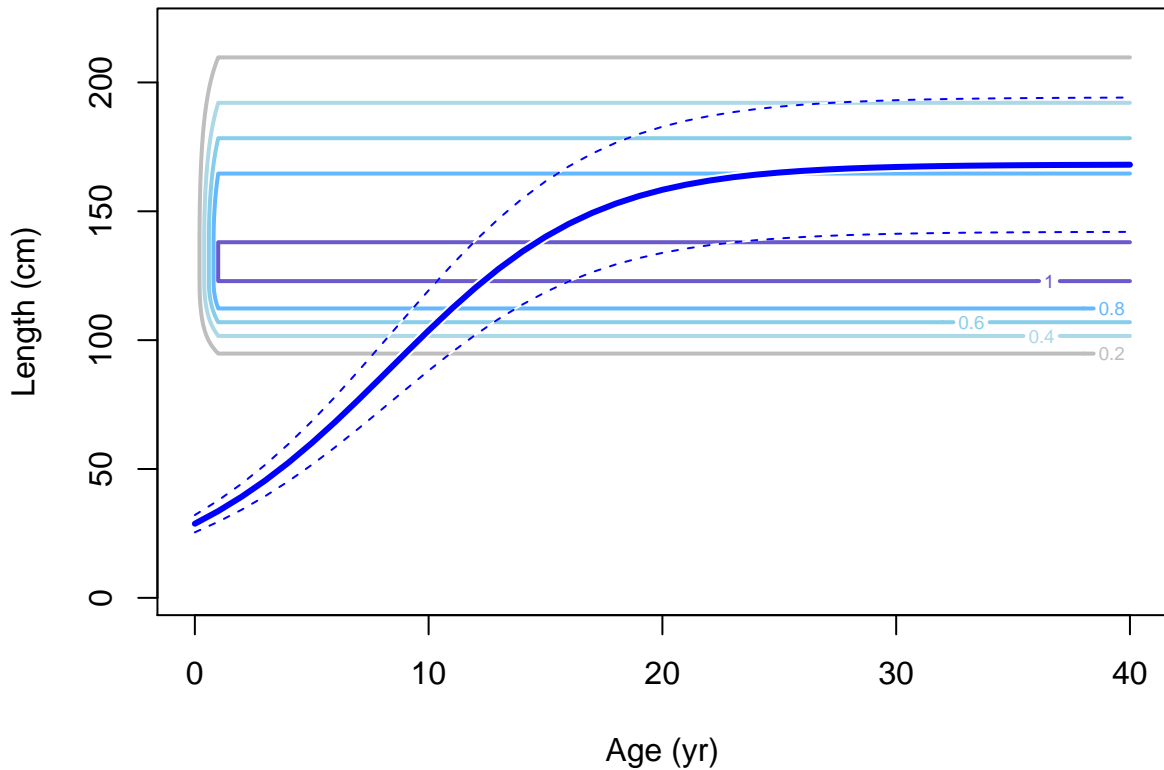
# Male ending year selectivity and growth for A6-NOADEL



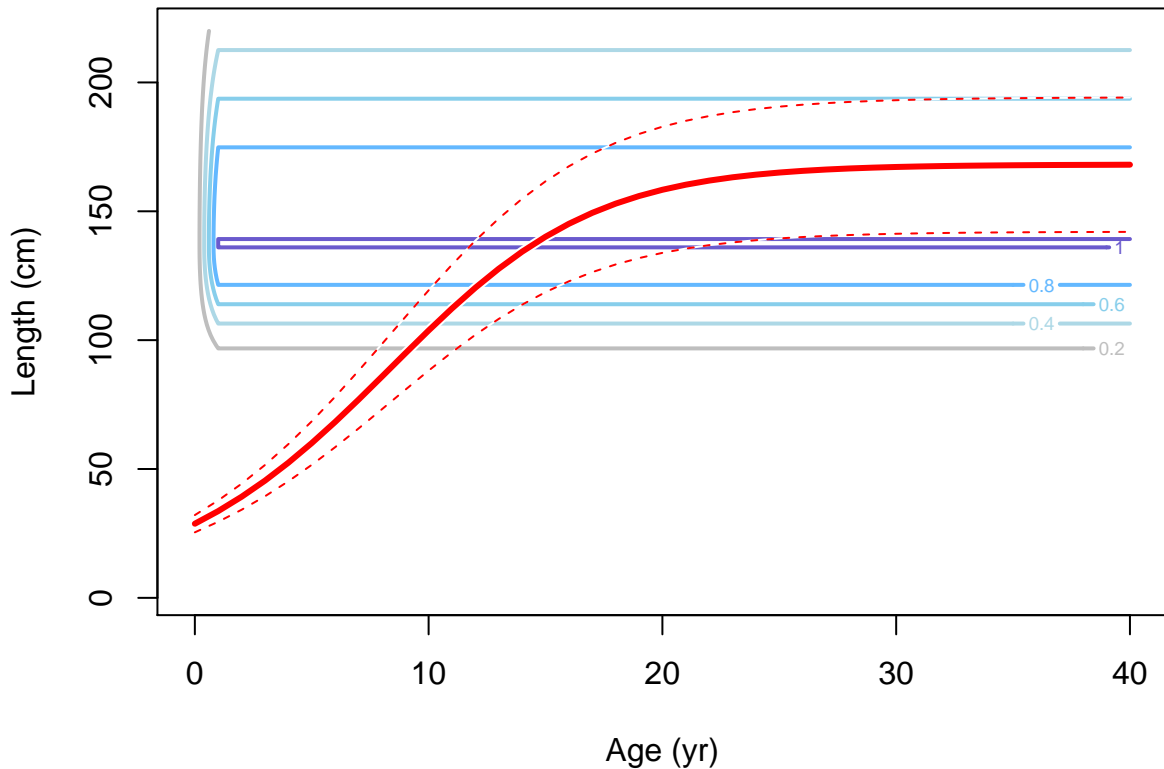
# Female ending year selectivity and growth for EPO-LL-survey-early



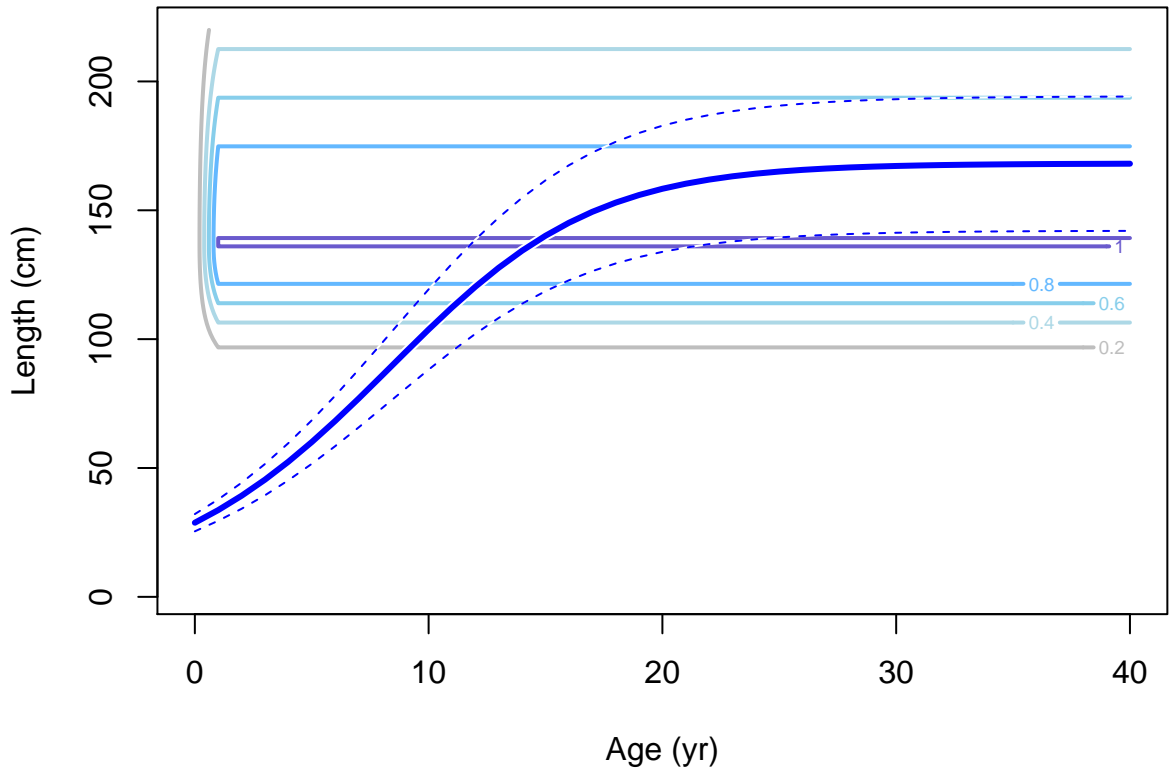
# Male ending year selectivity and growth for EPO-LL-survey-early



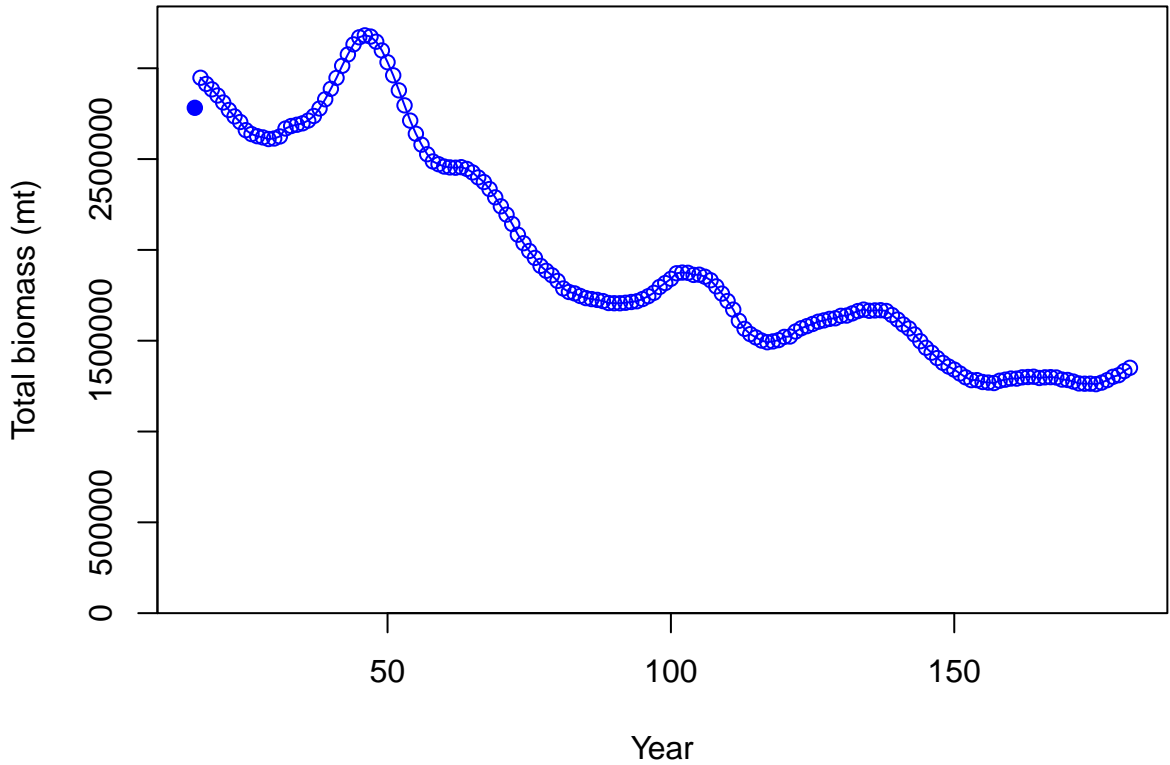
# Female ending year selectivity and growth for EPO-LL-survey-late



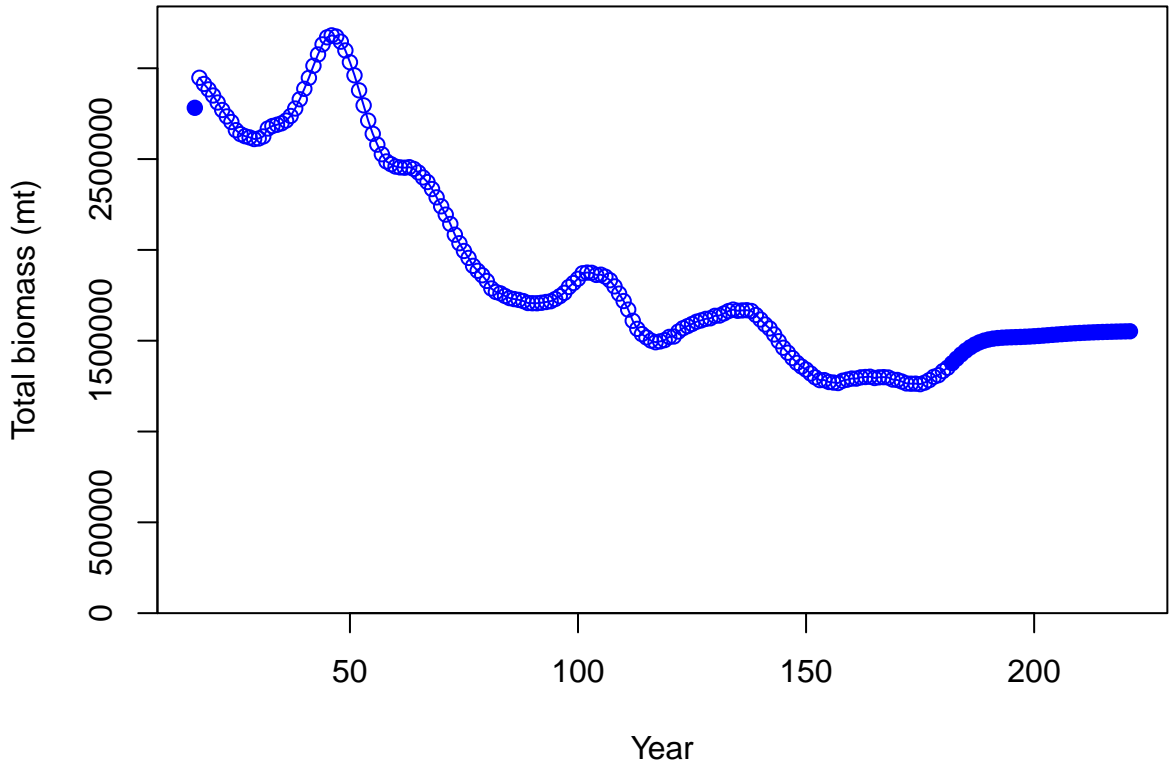
# Male ending year selectivity and growth for EPO-LL-survey-late



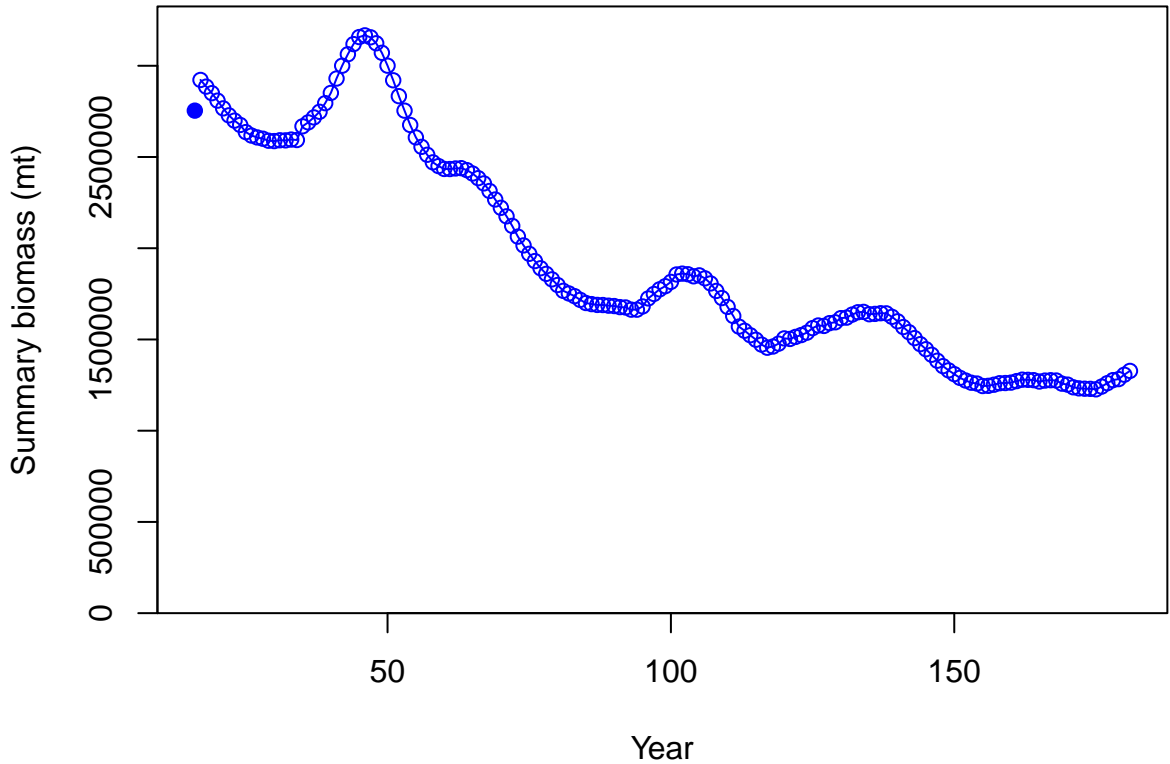
# Total biomass (mt)



Total biomass (mt) with forecast

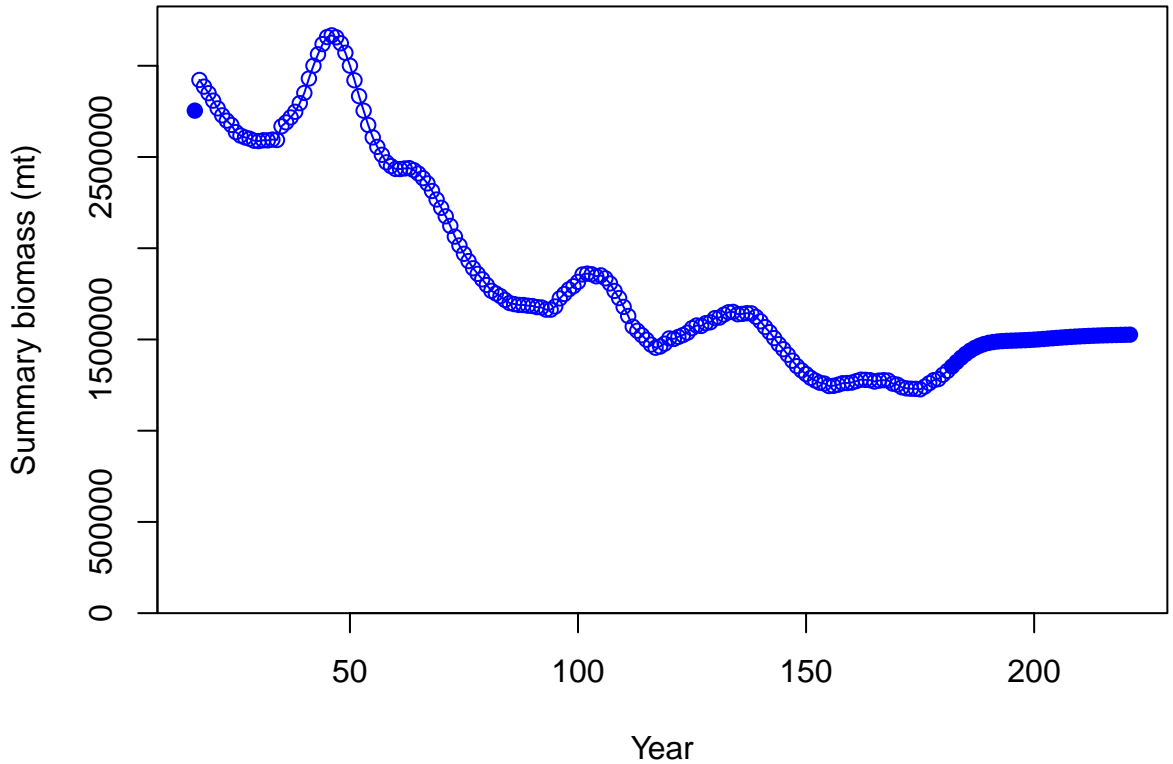


# Summary biomass (mt)

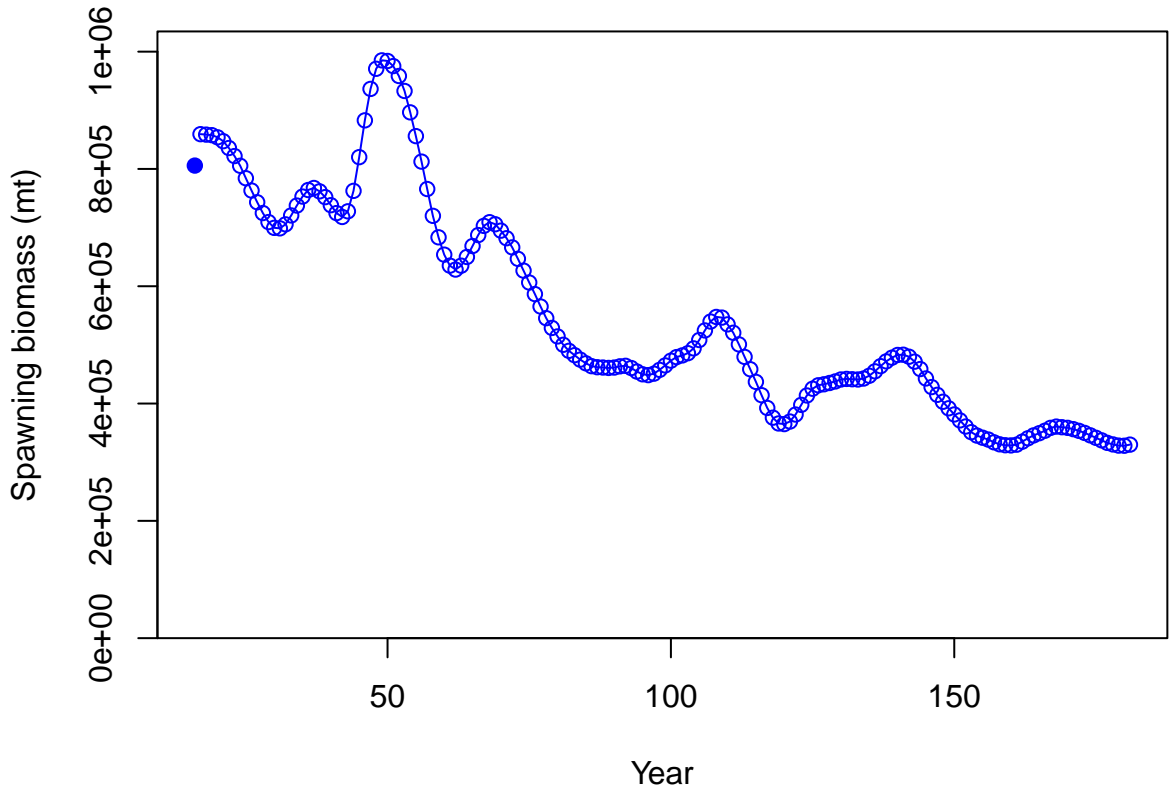




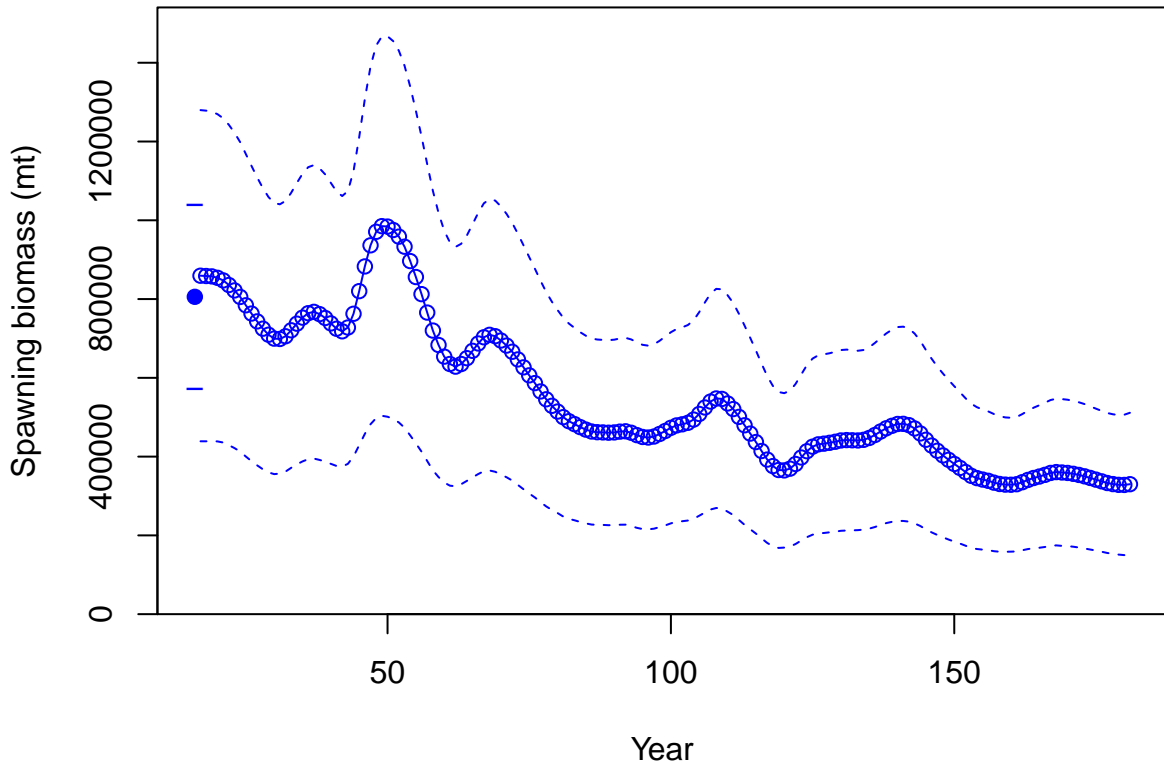
Summary biomass (mt) with forecast



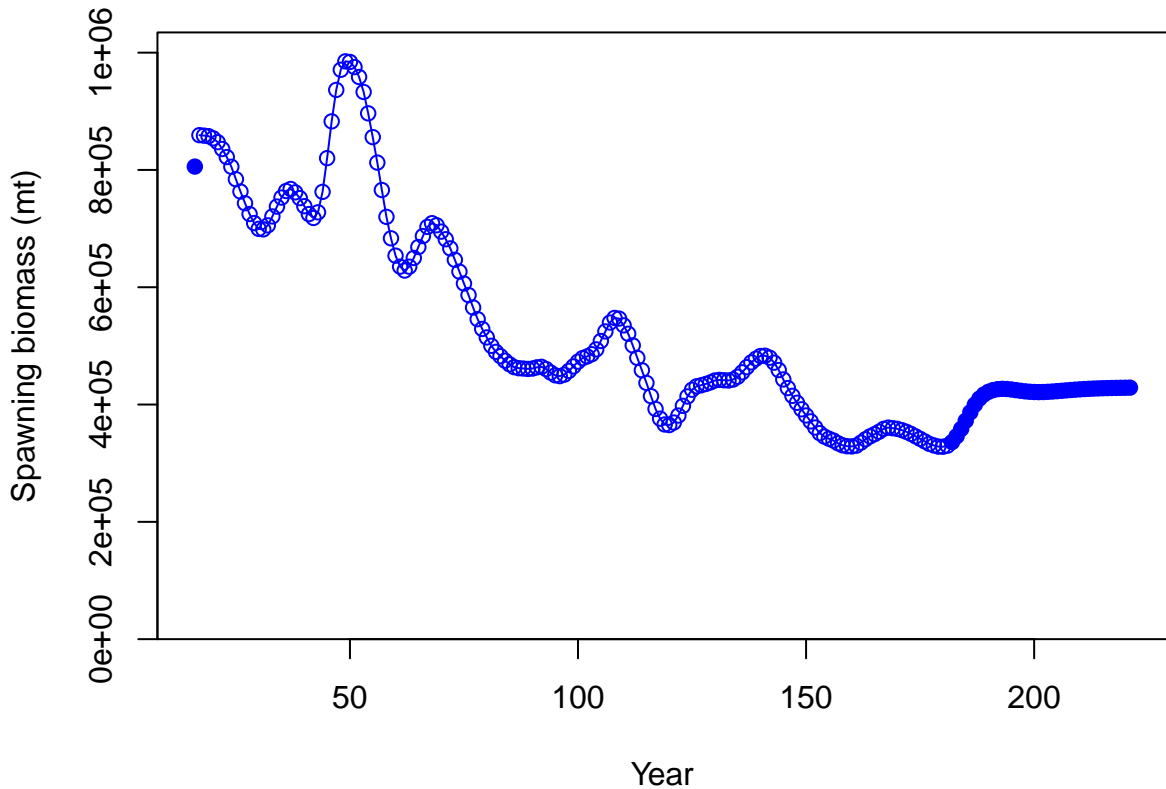
# Spawning biomass (mt)



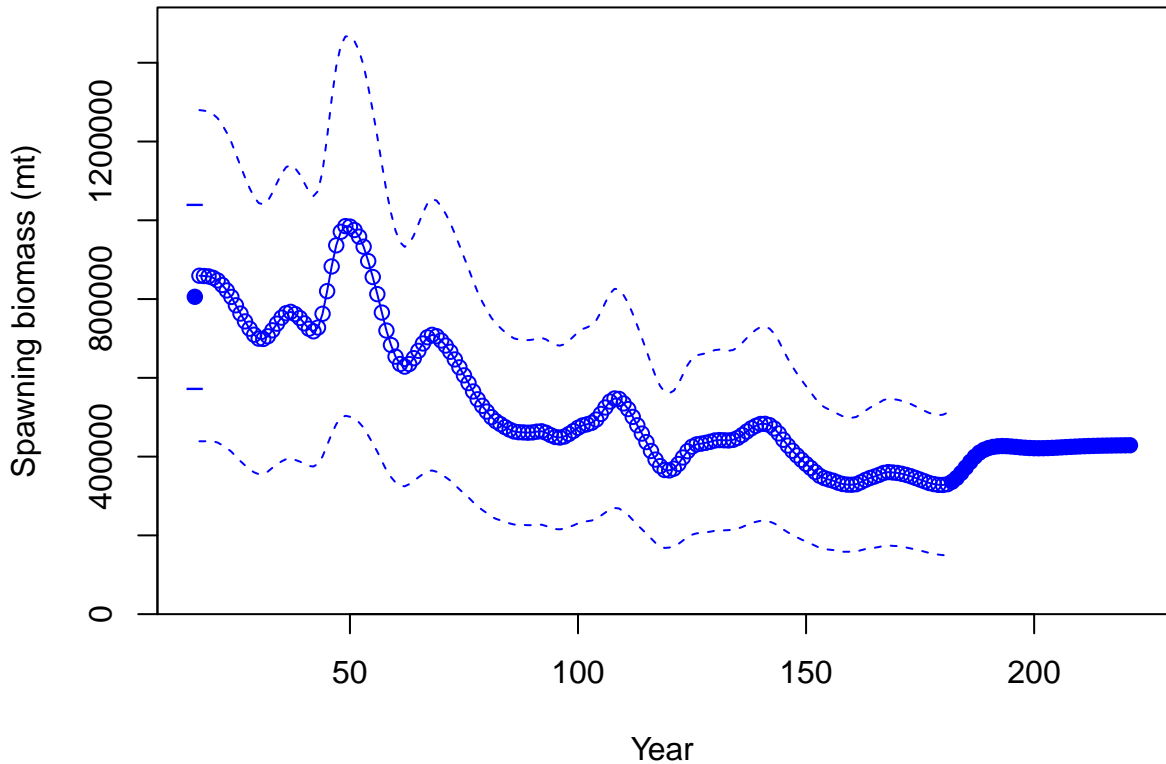
## Spawning biomass (mt) with ~95% asymptotic intervals



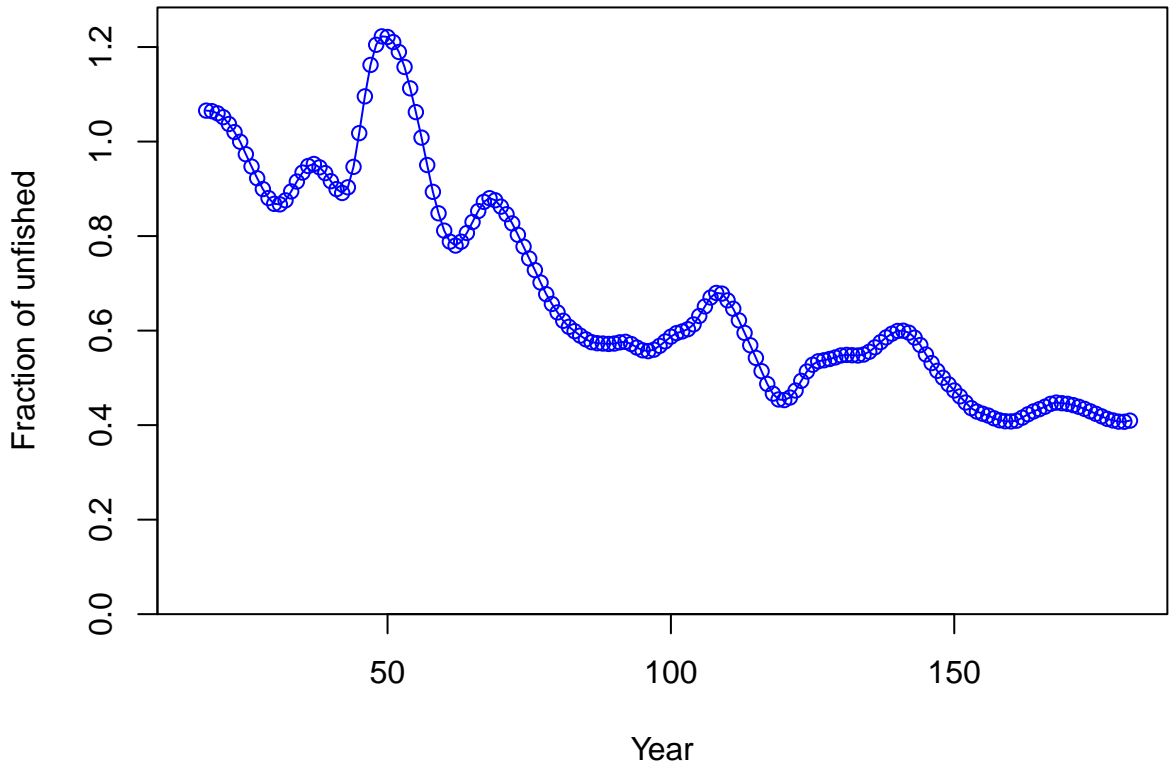
**Spawning biomass (mt) with forecast**



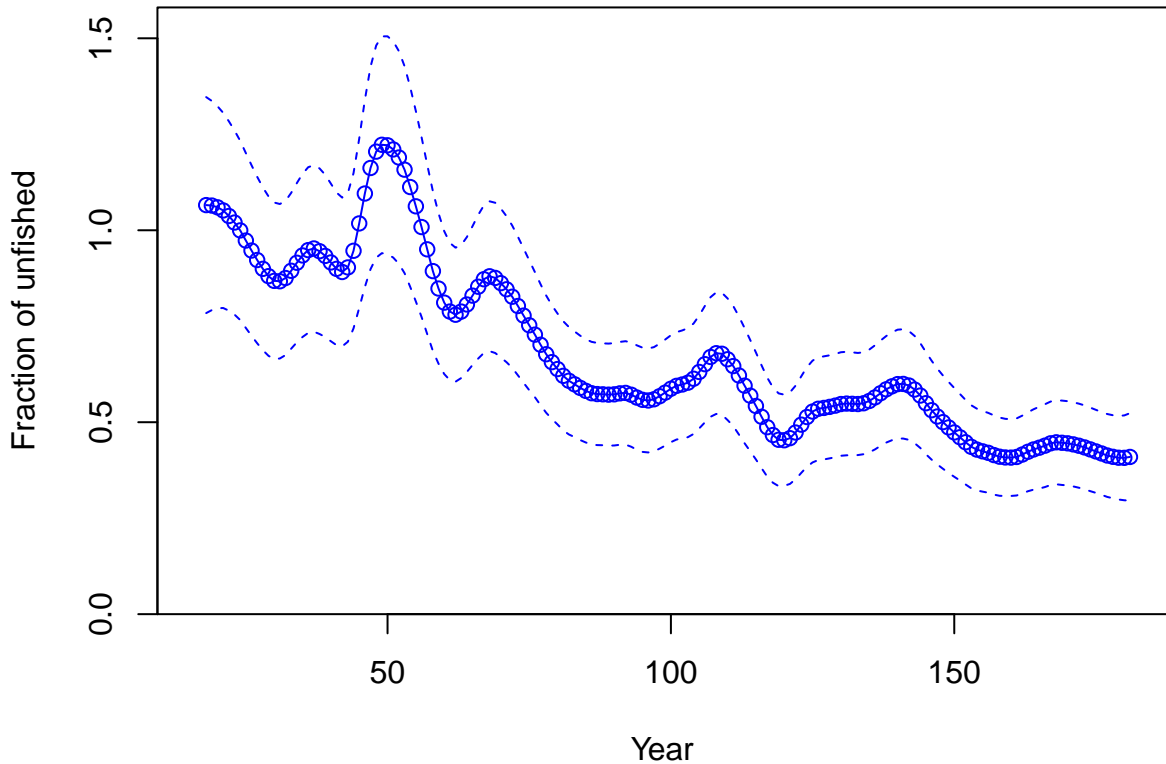
# Spawning biomass (mt) with forecast with ~95% asymptotic intervals



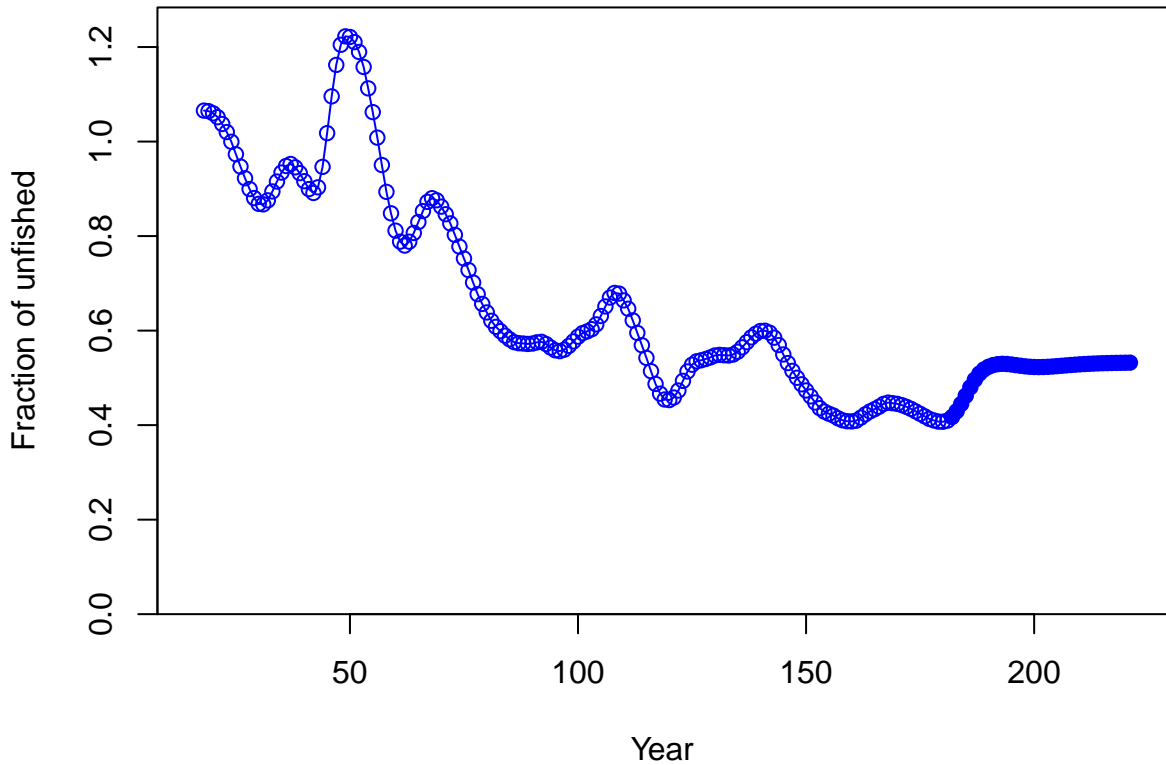
### Fraction of unfished



**Fraction of unfished with ~95% asymptotic intervals**

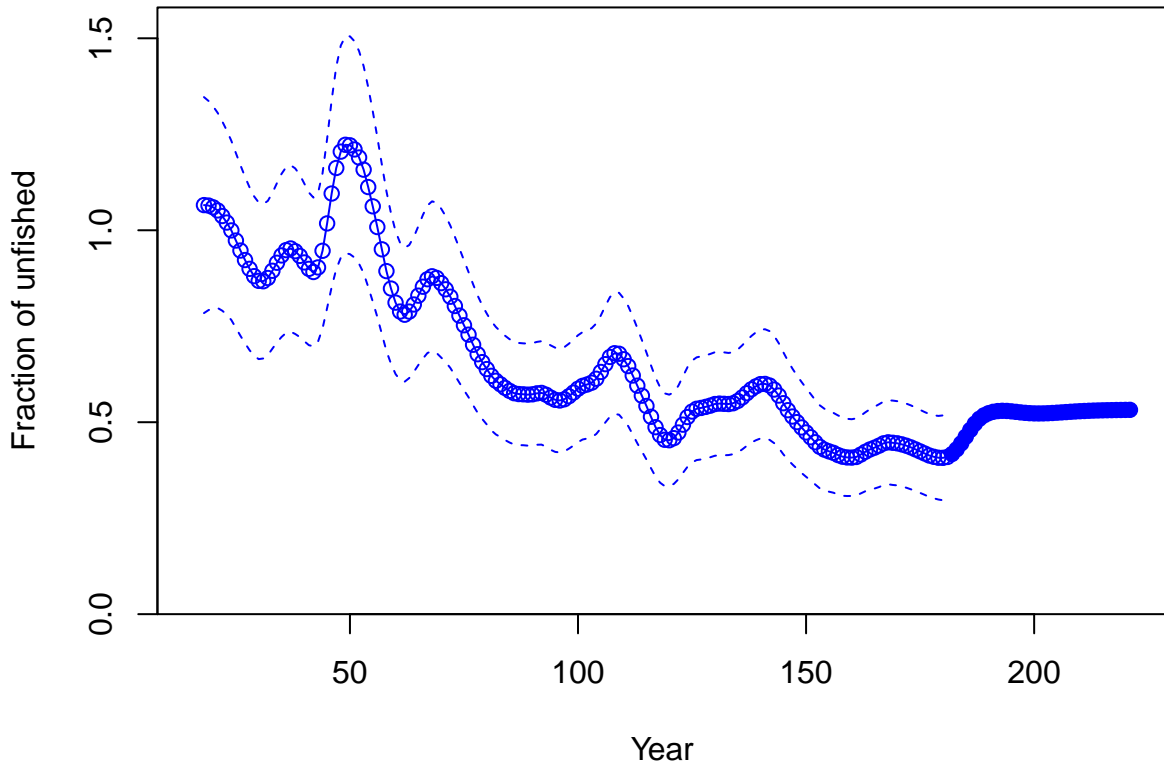


**Fraction of unfished with forecast**

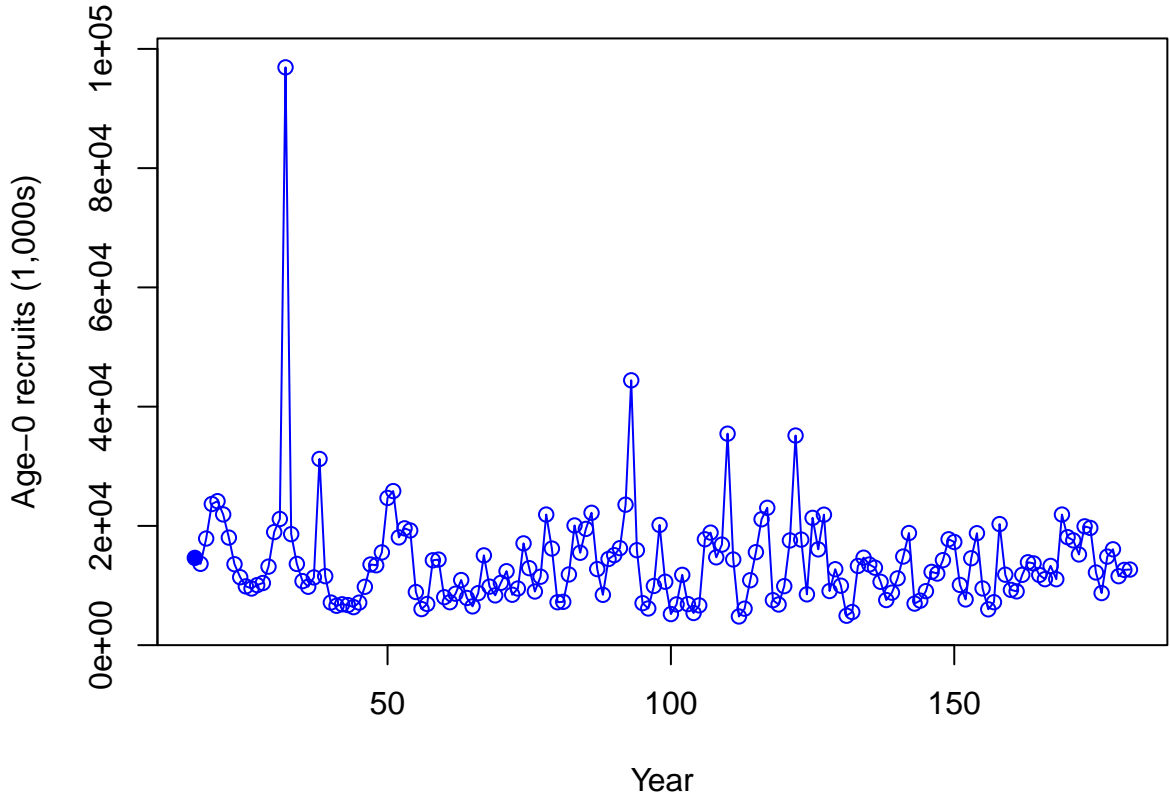




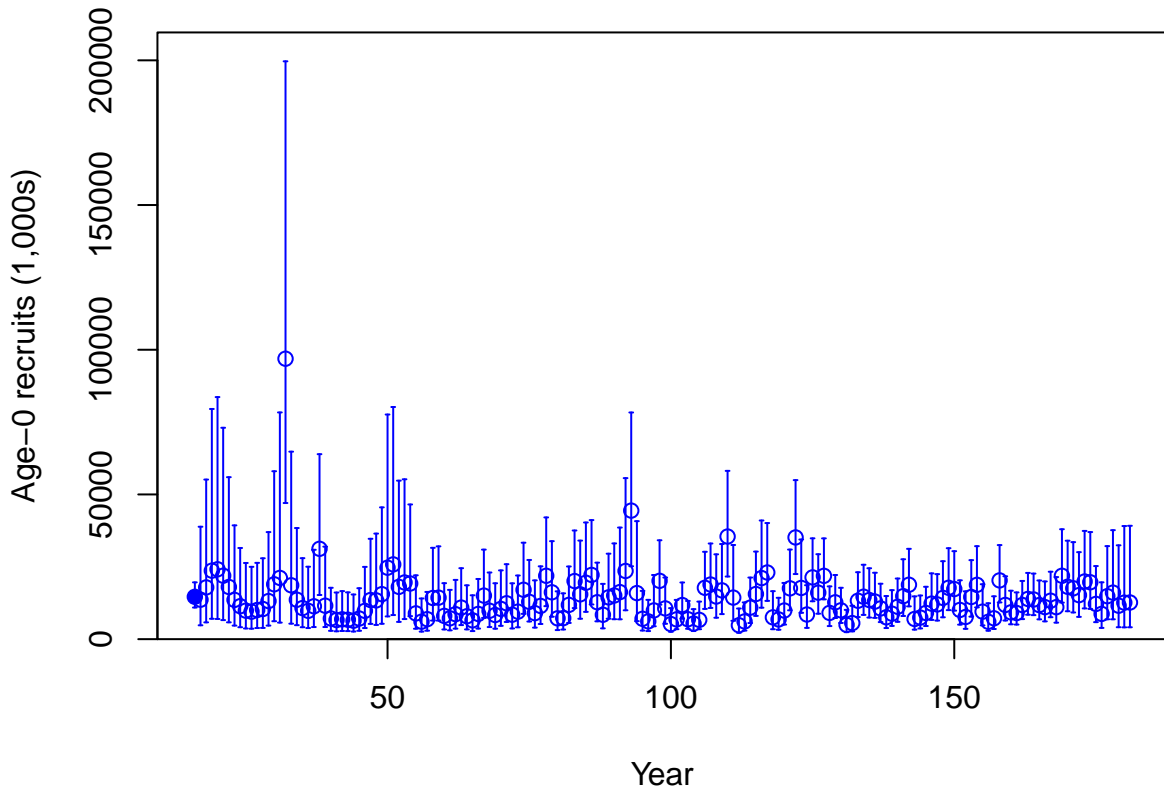
# Fraction of unfished with forecast with ~95% asymptotic intervals



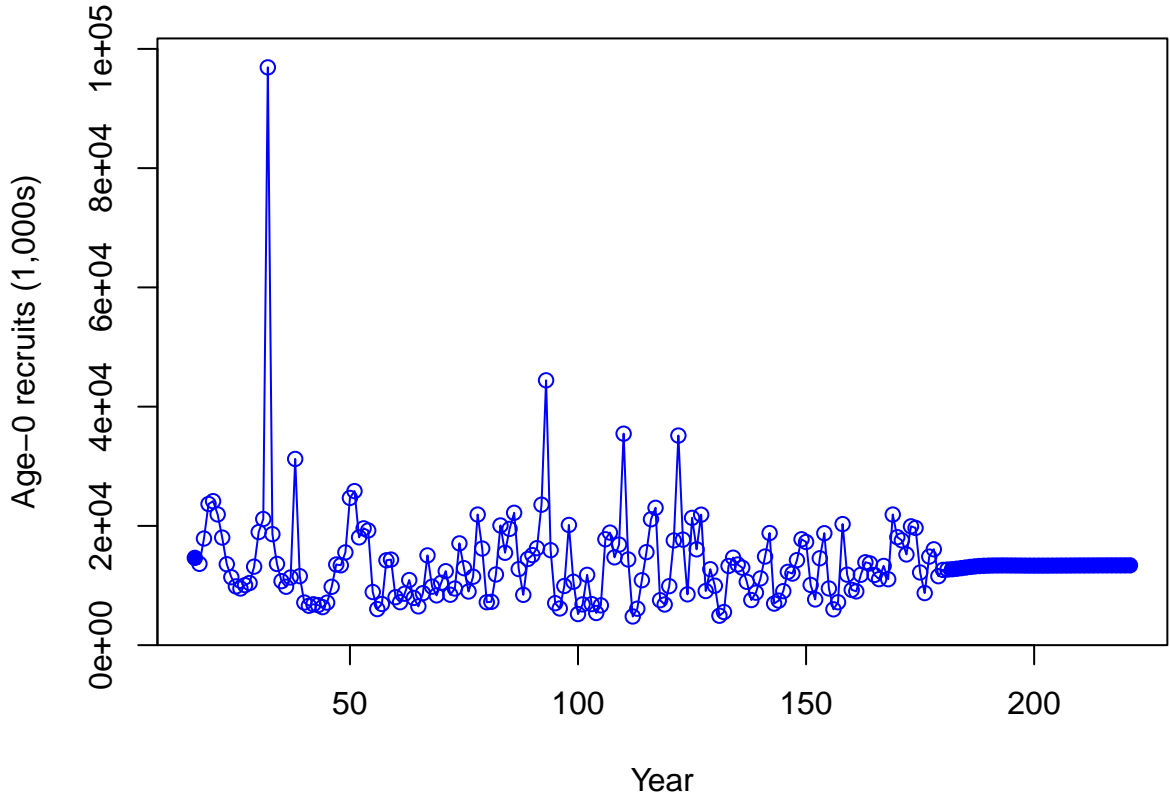
# Age-0 recruits (1,000s)



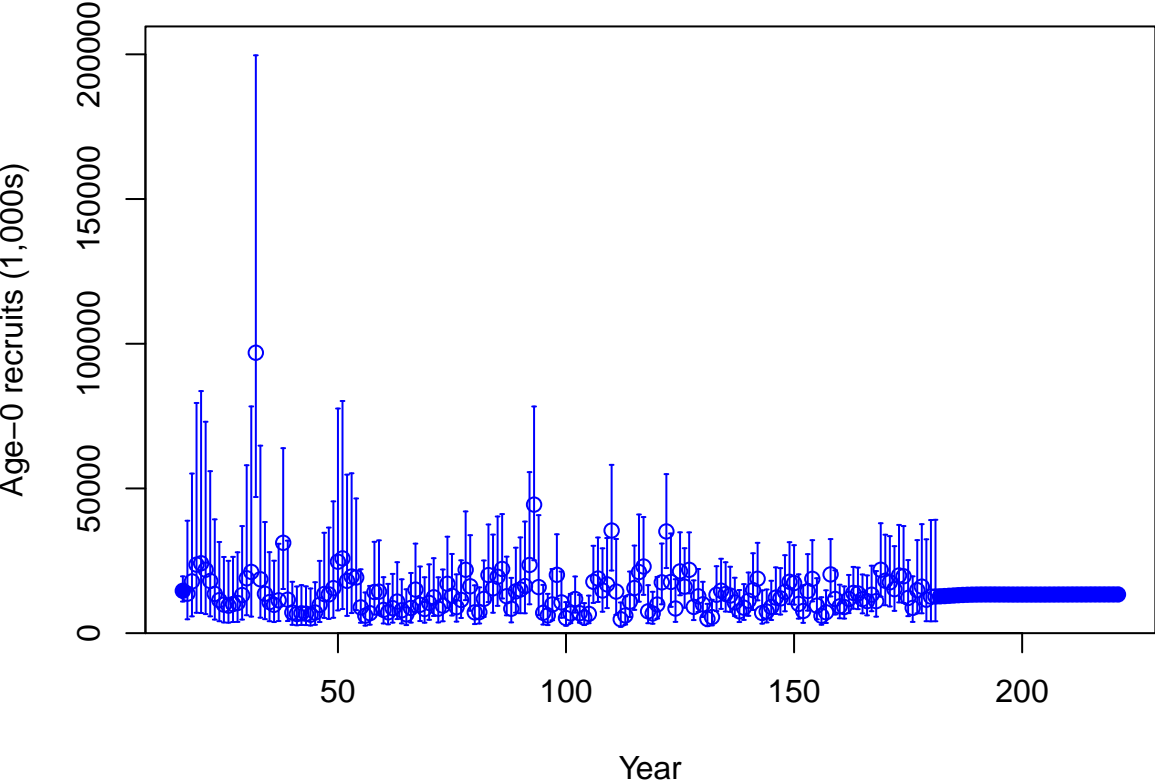
# Age-0 recruits (1,000s) with ~95% asymptotic intervals



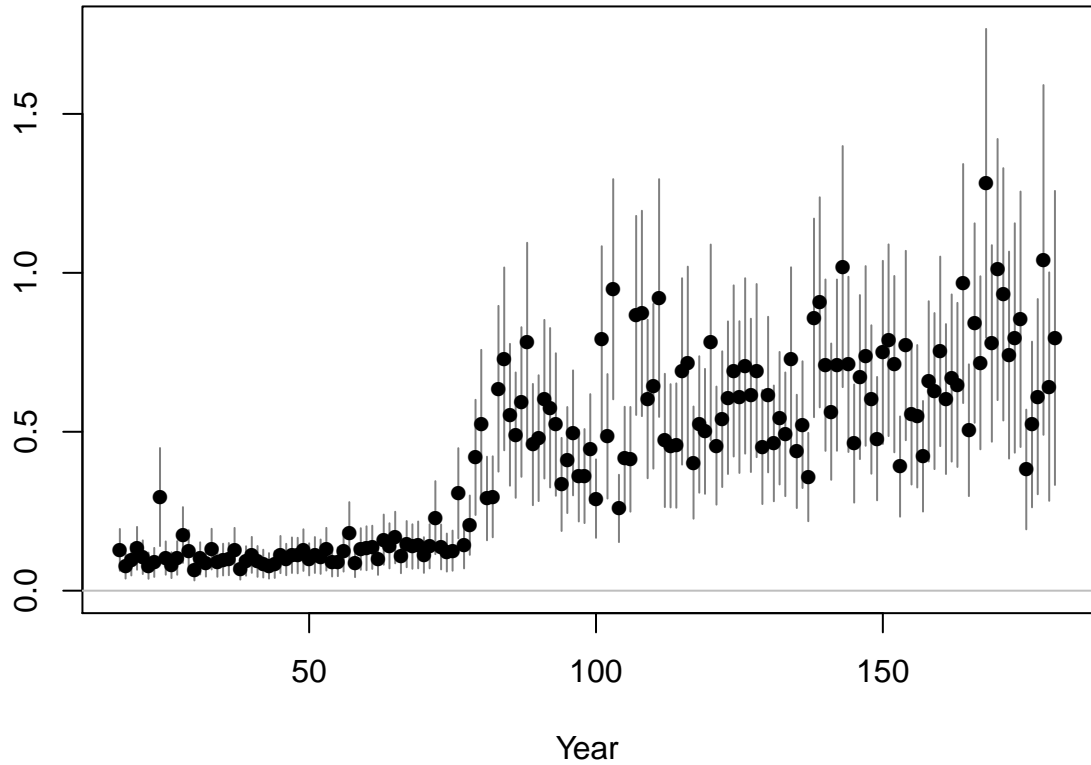
Age-0 recruits (1,000s) with forecast

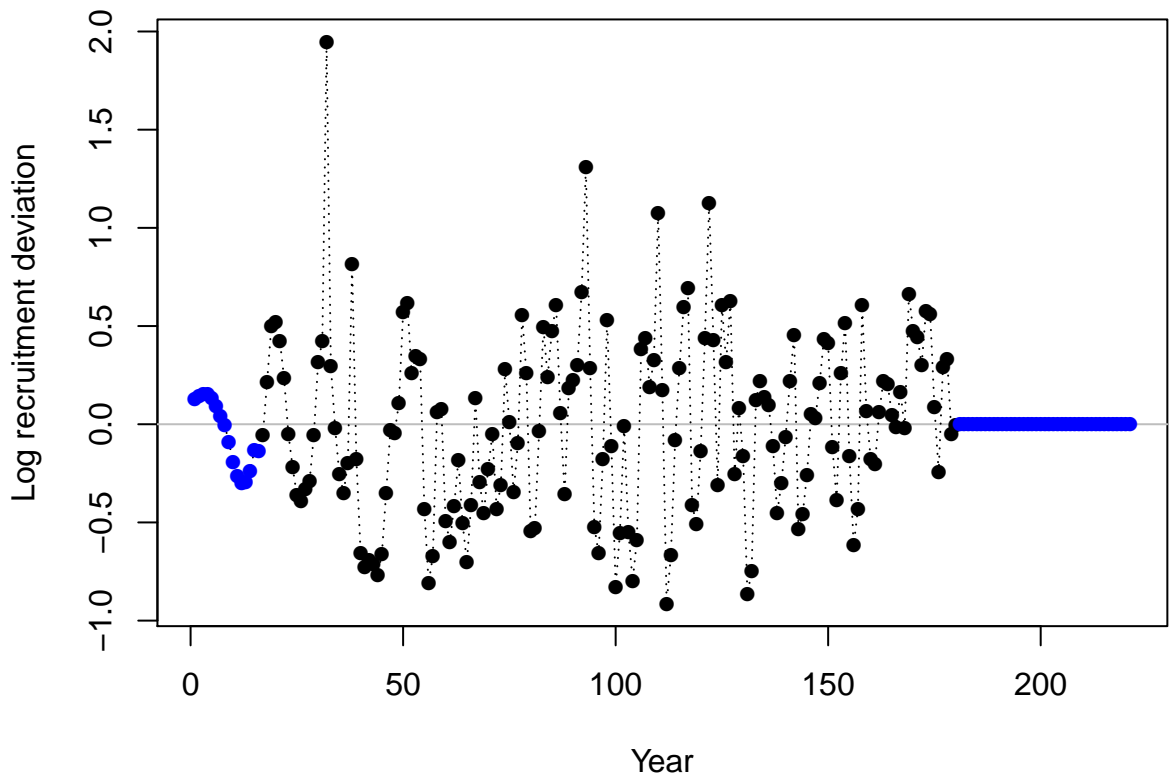


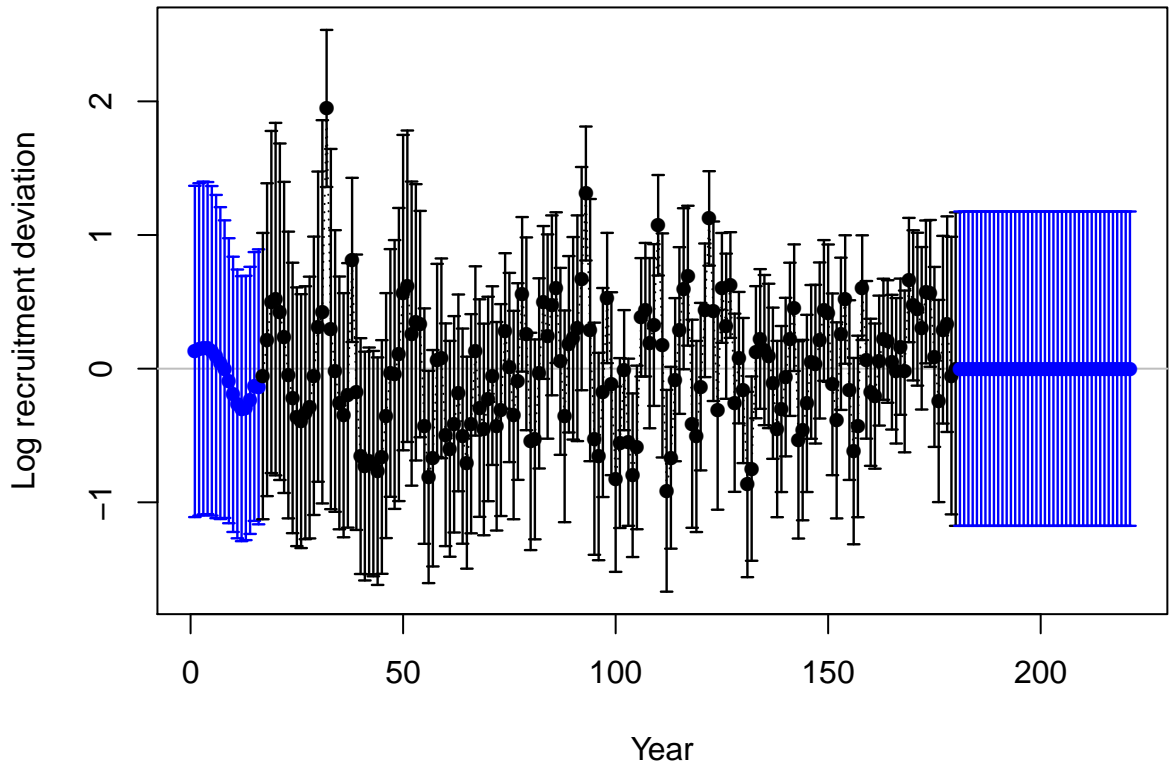
**Age-0 recruits (1,000s) with forecast with ~95% asymptotic intervals**



Summary Fishing Mortality

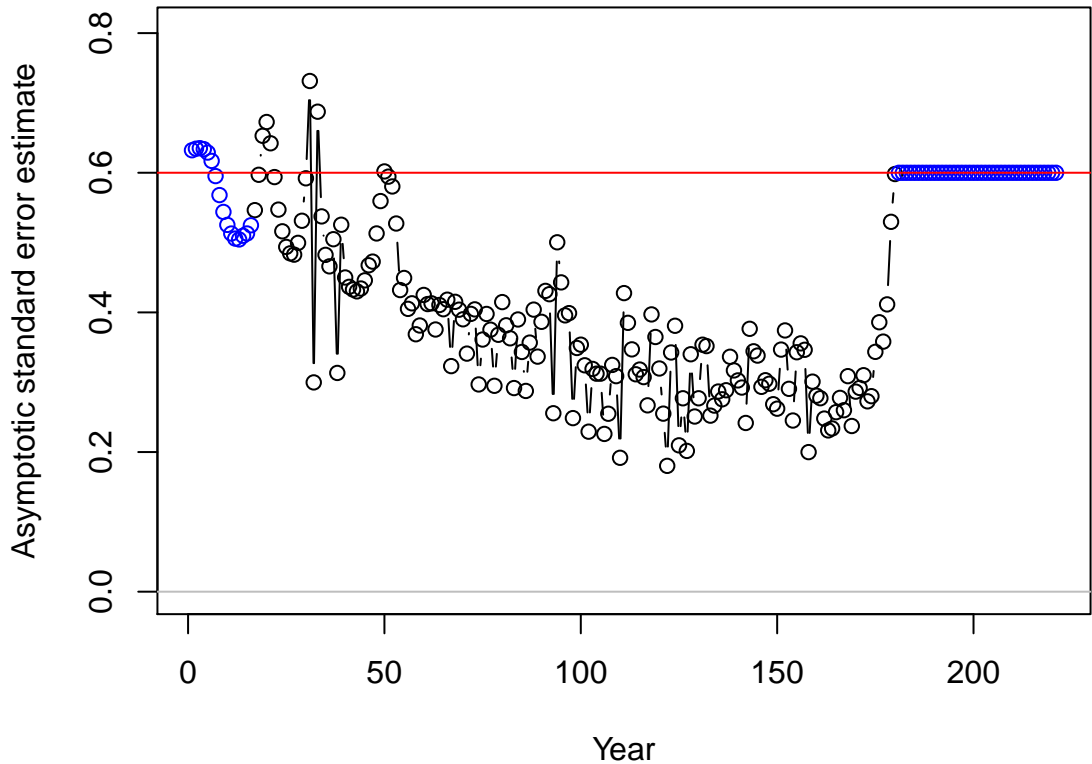


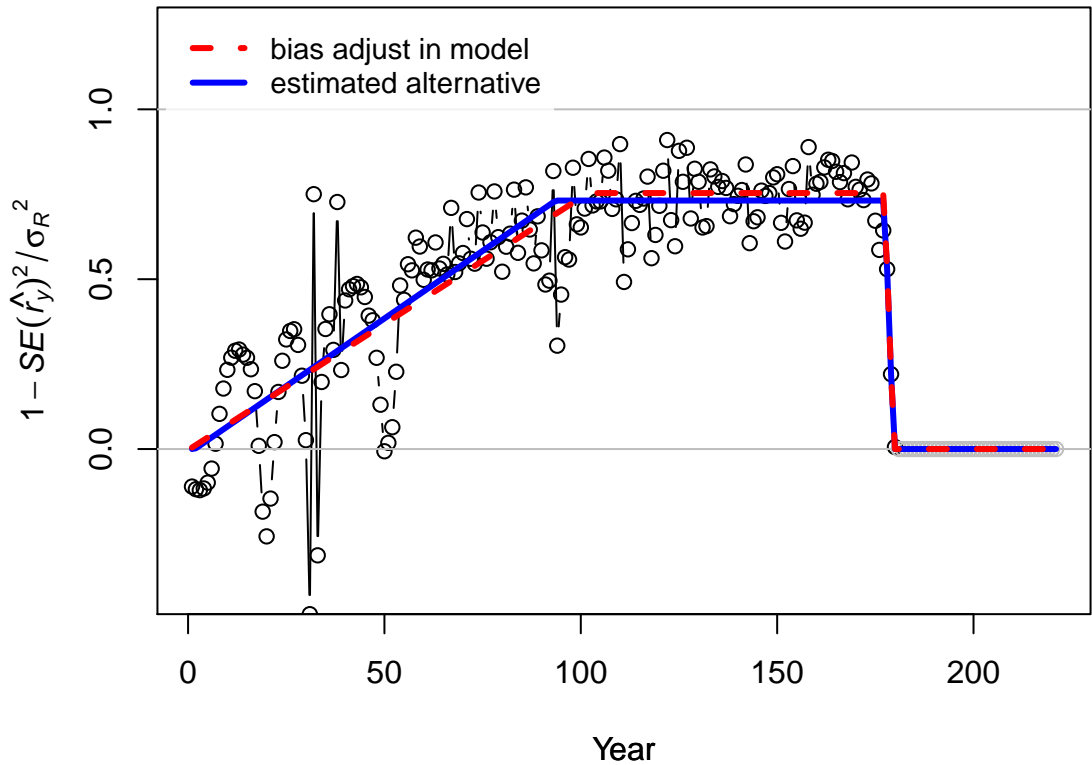


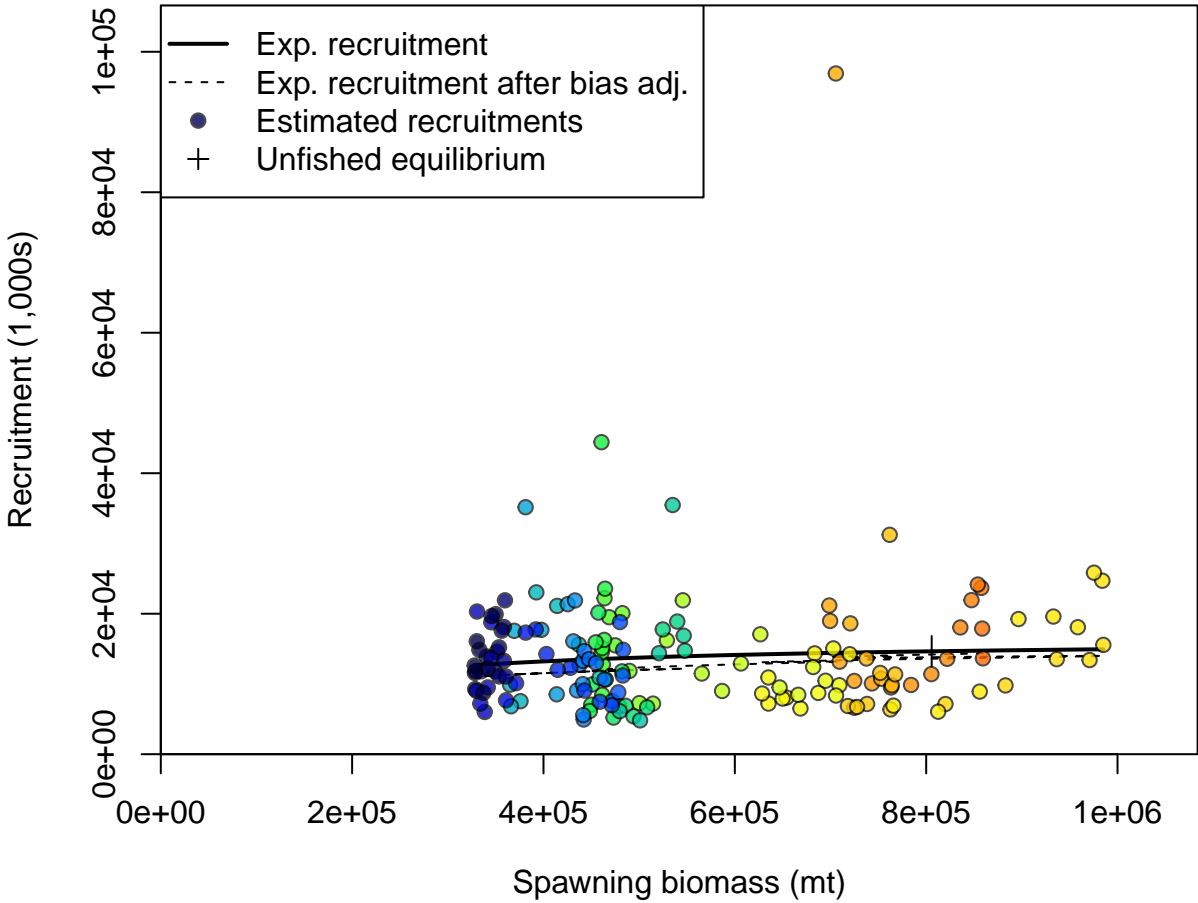


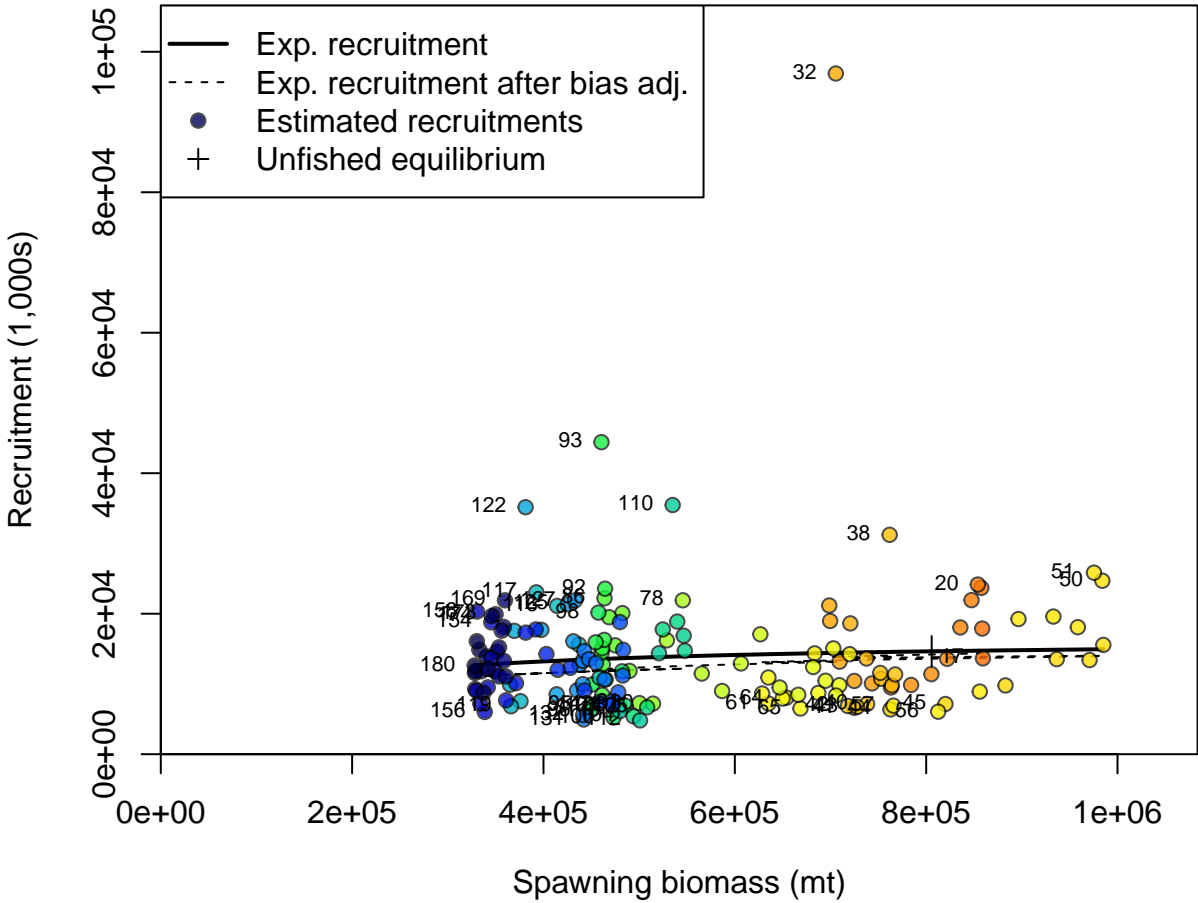


# Recruitment deviation variance

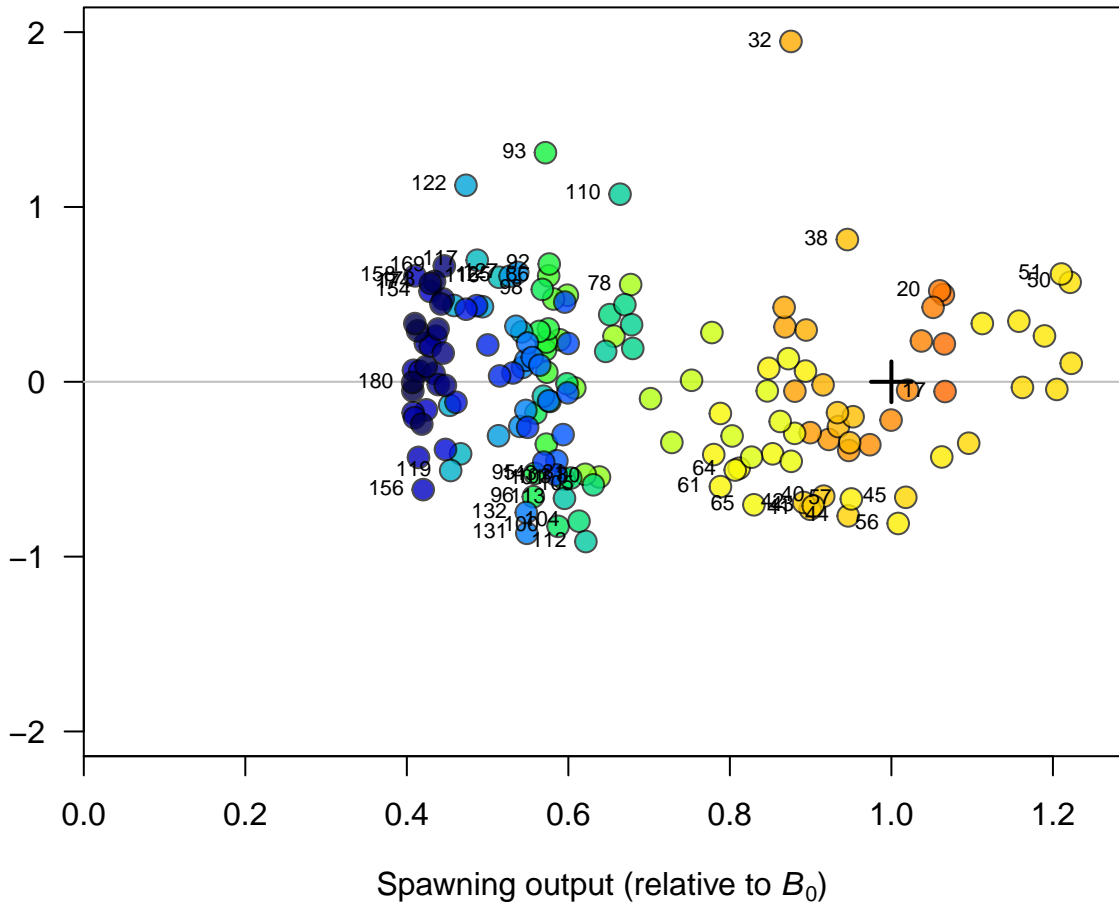




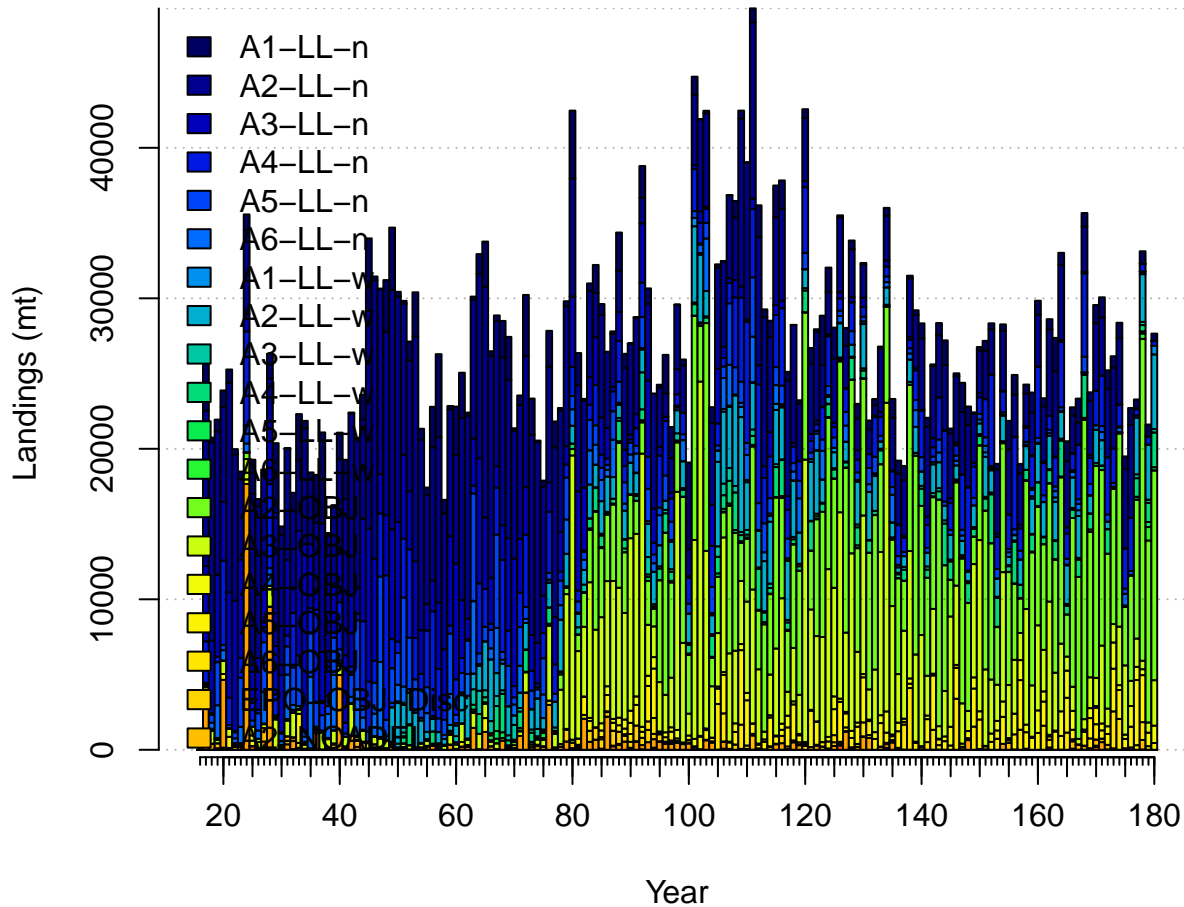




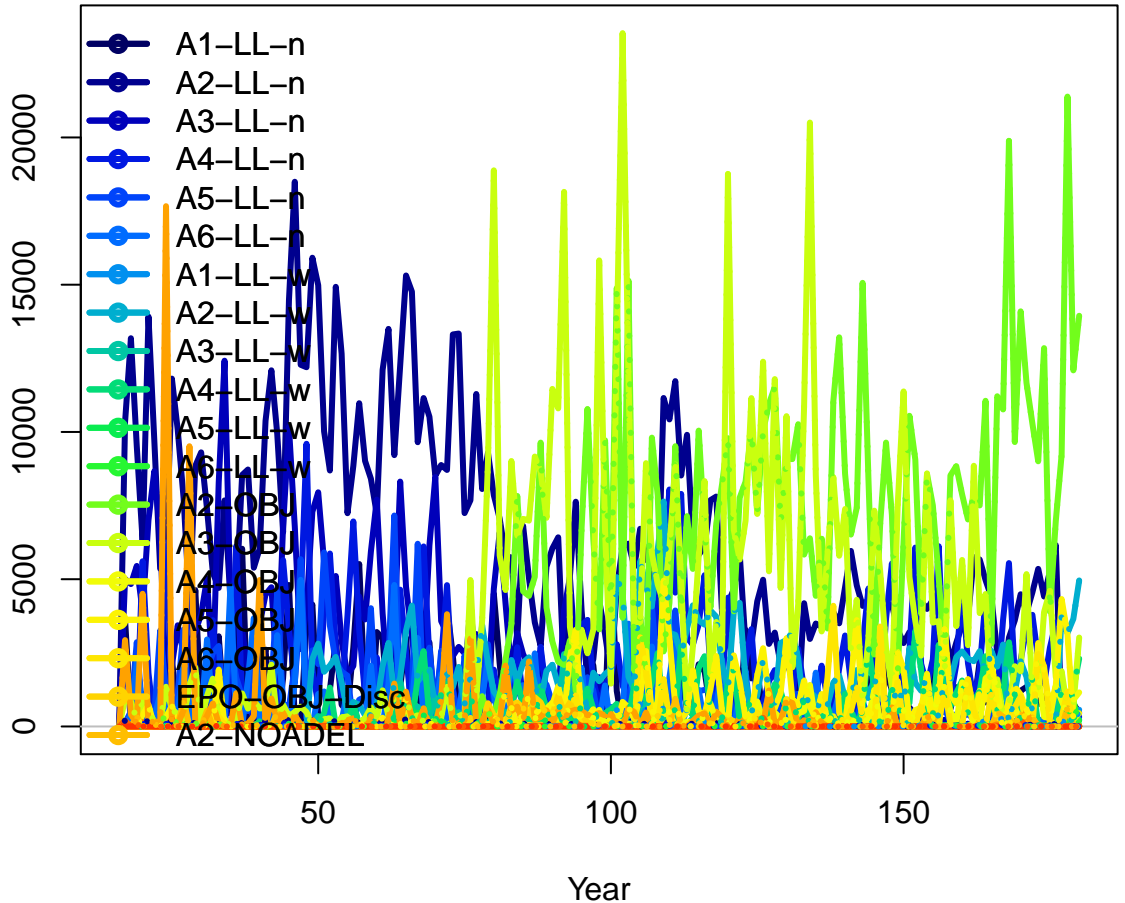
Log recruitment deviation





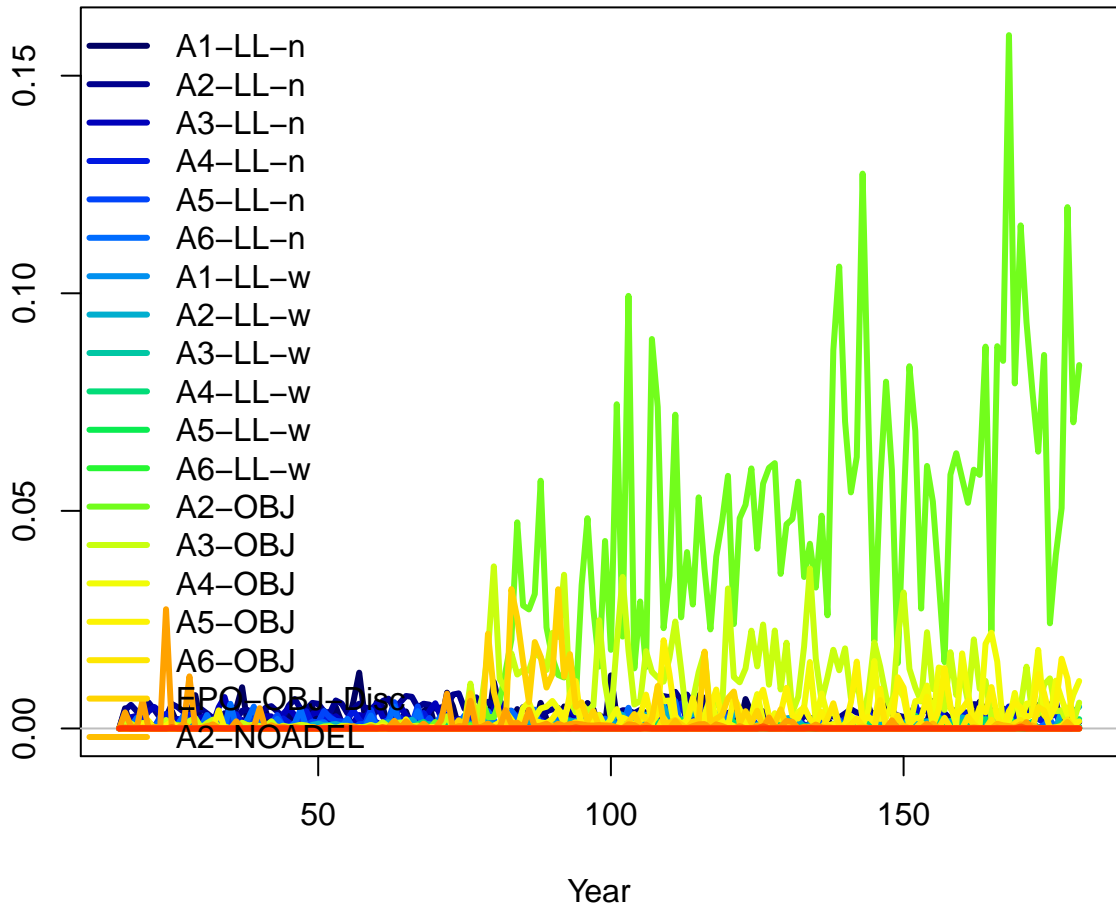


Observed and expected Landings (mt)

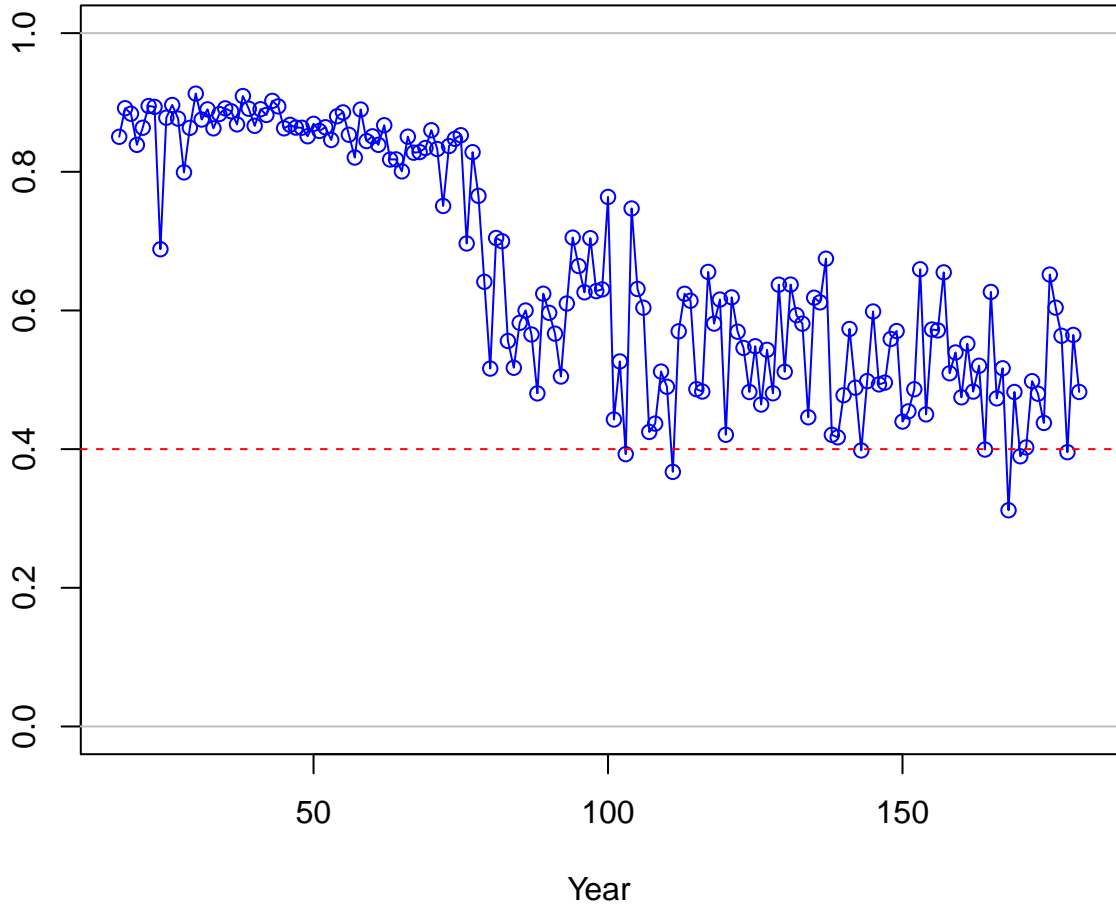


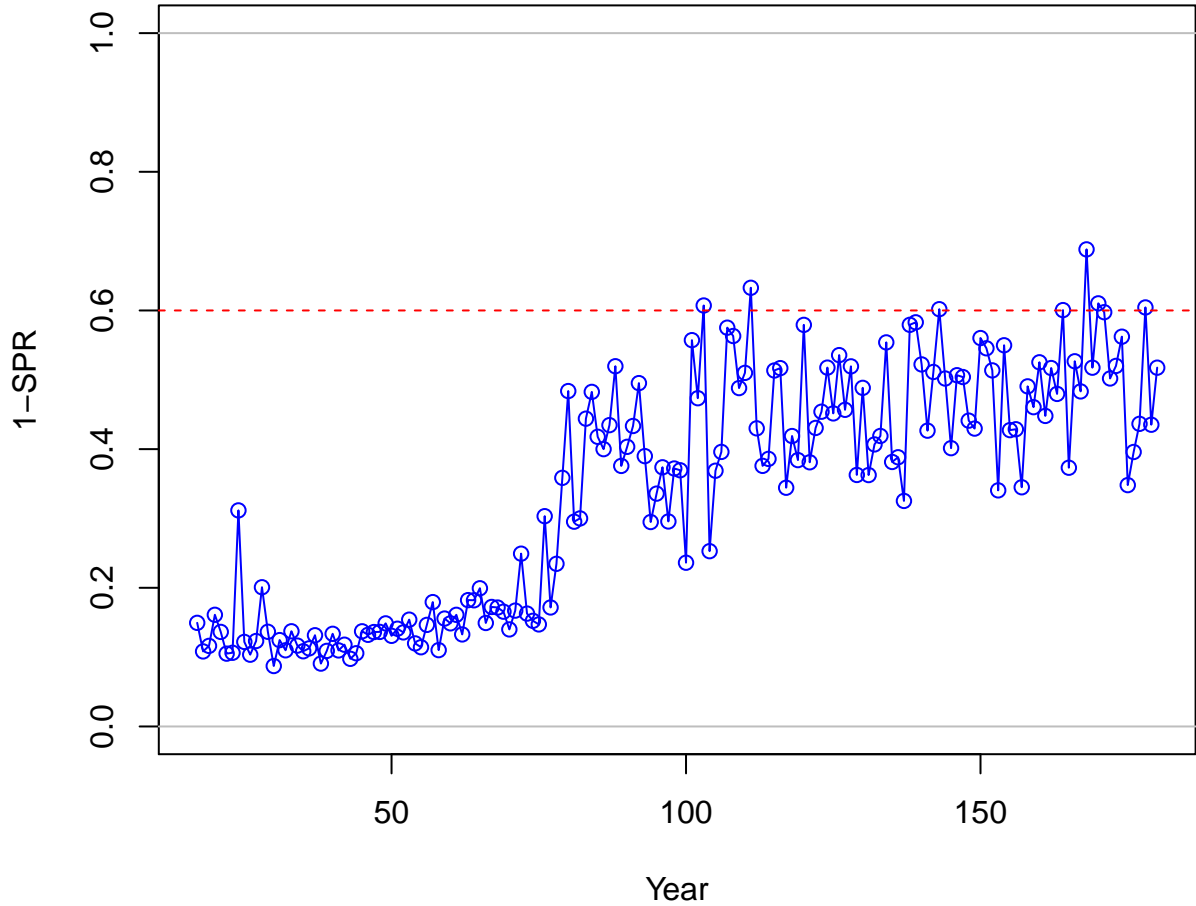


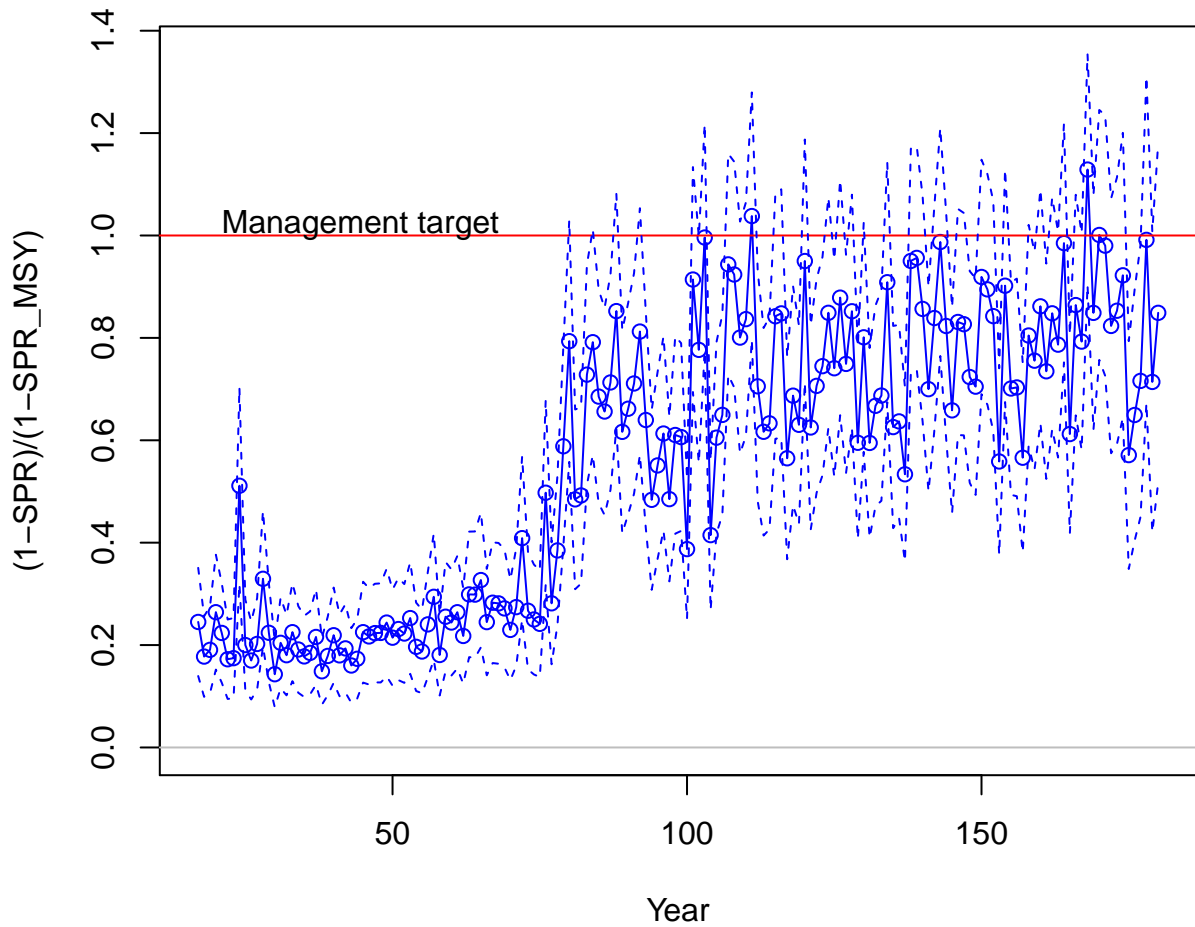
Continuous F



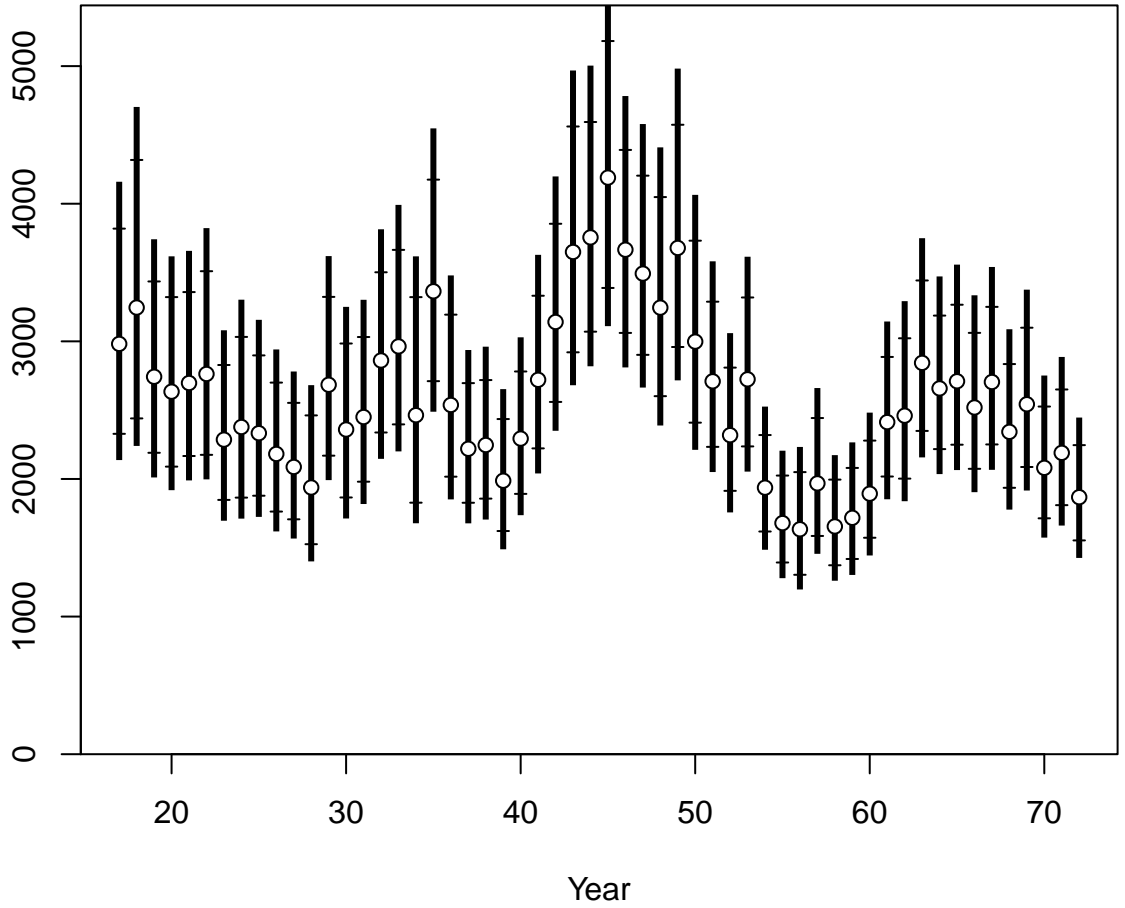
SPR



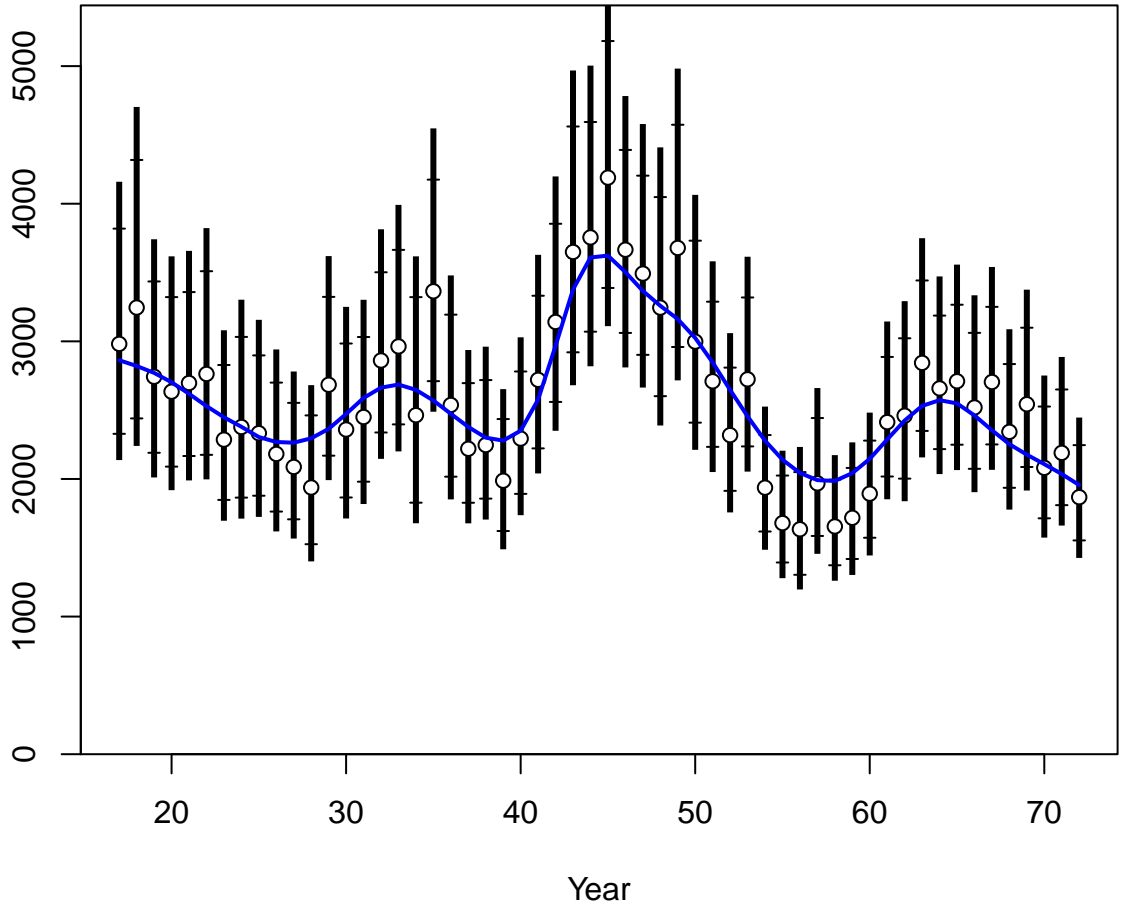




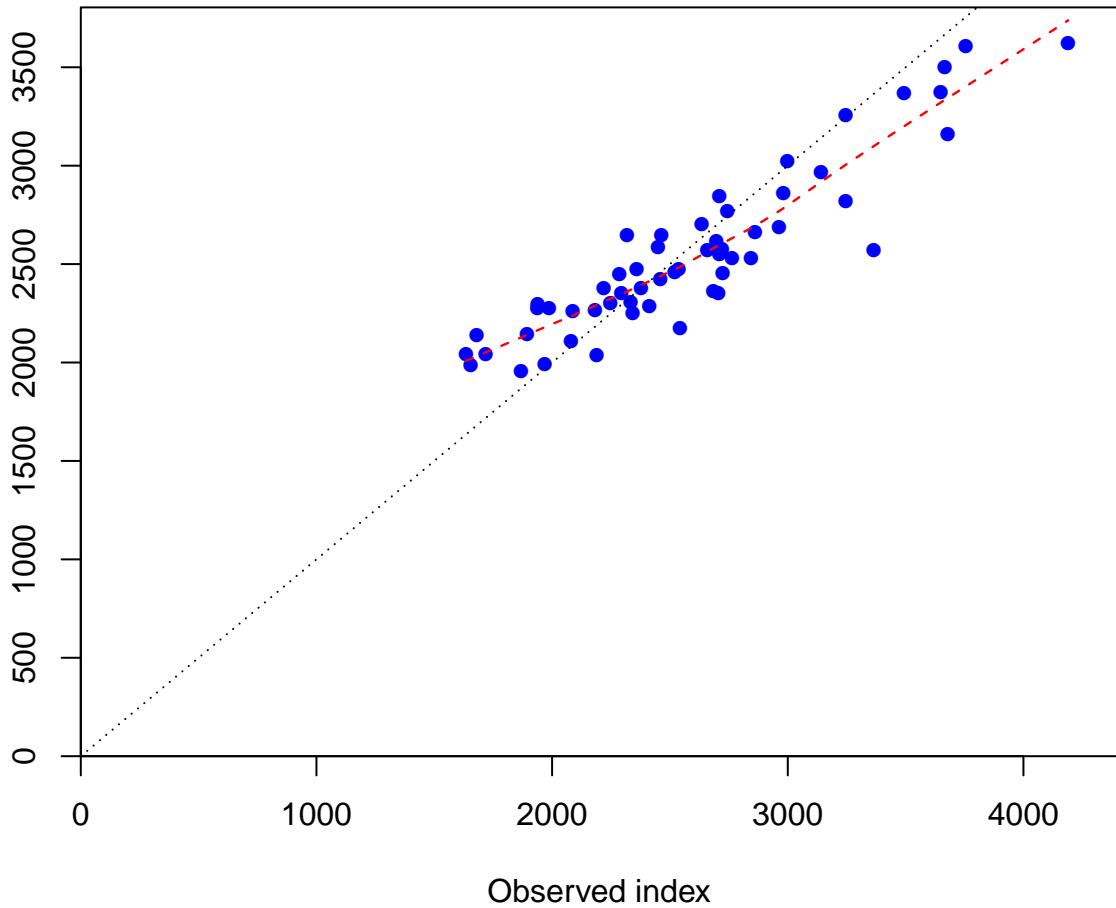
Index

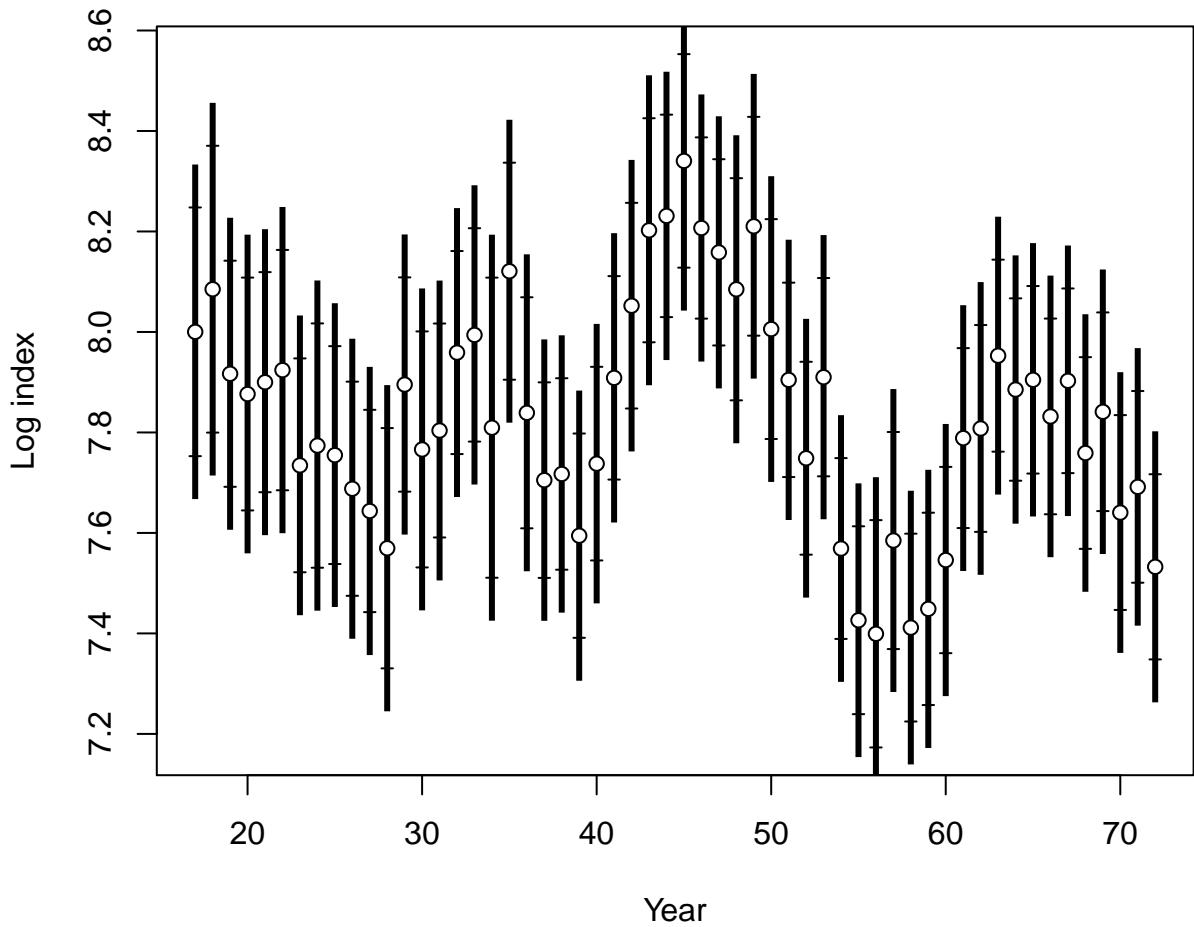


Index

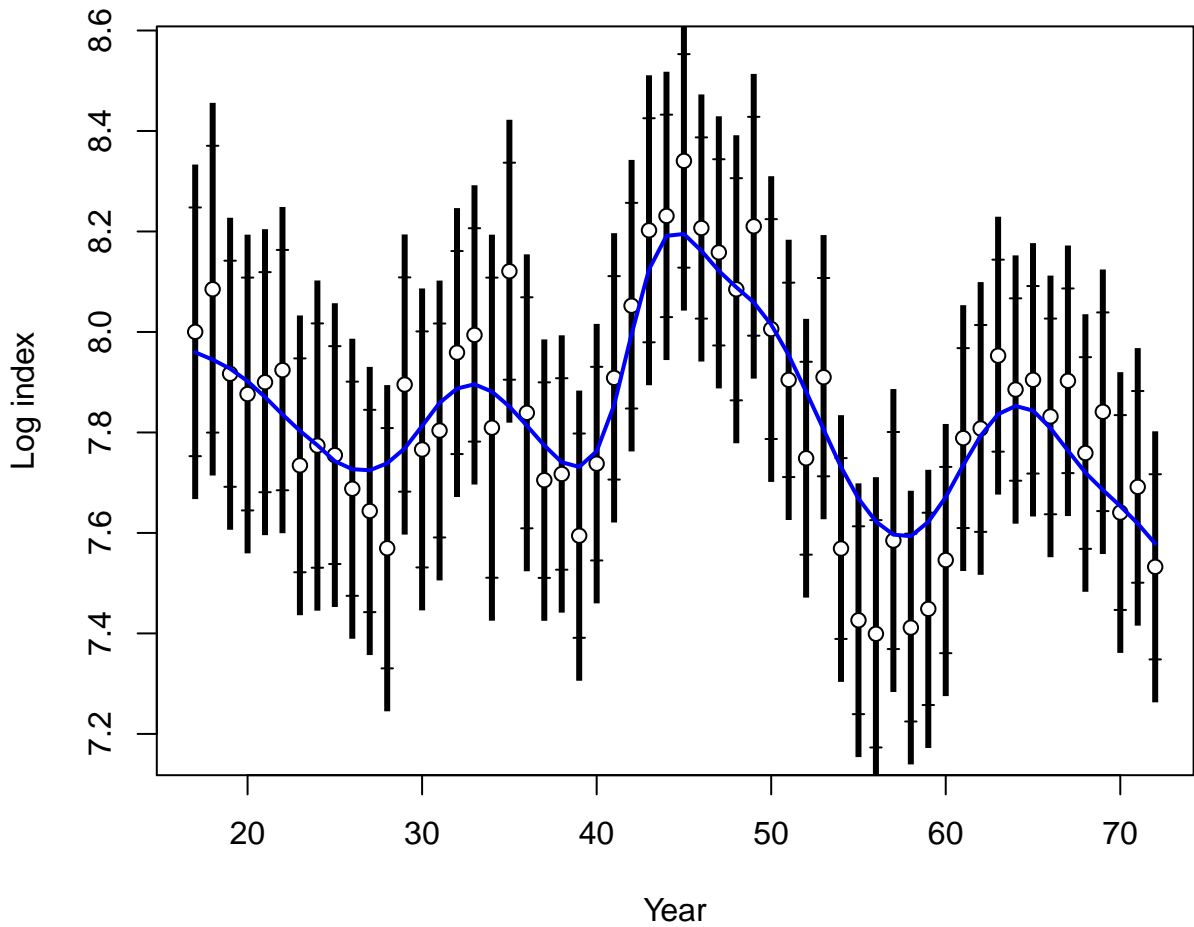


Expected index

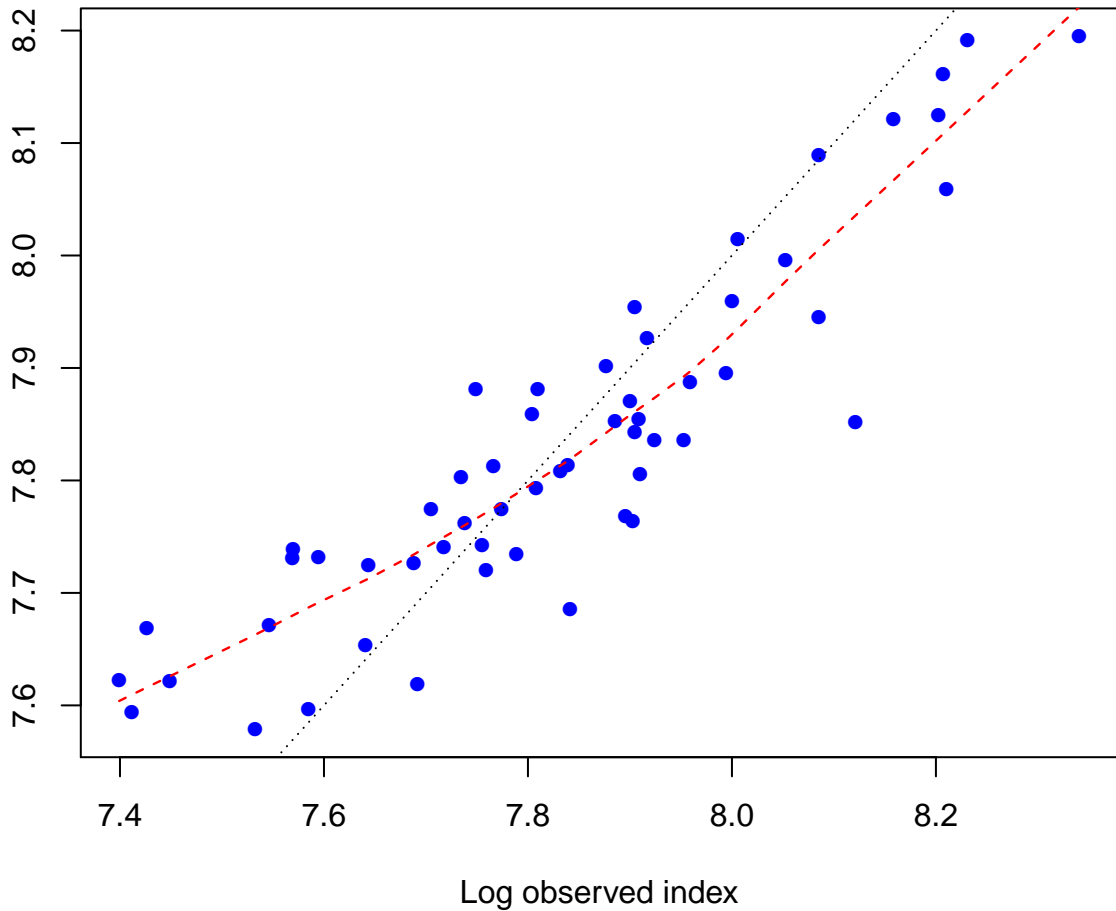








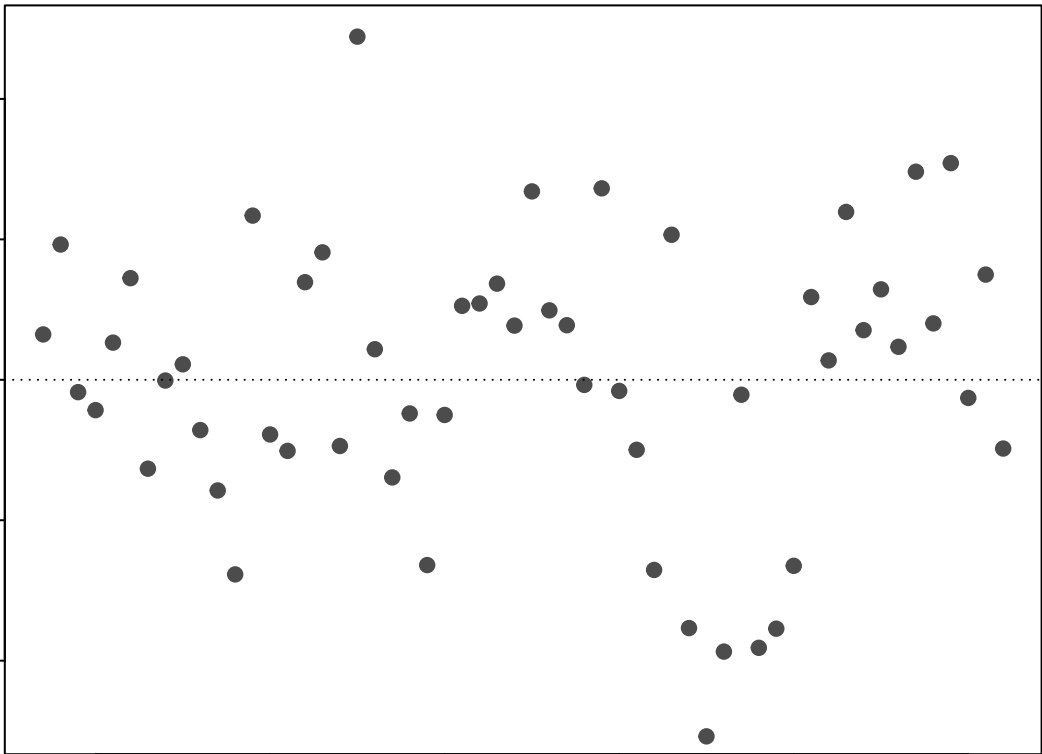
Log expected index



Log observed index

Residual

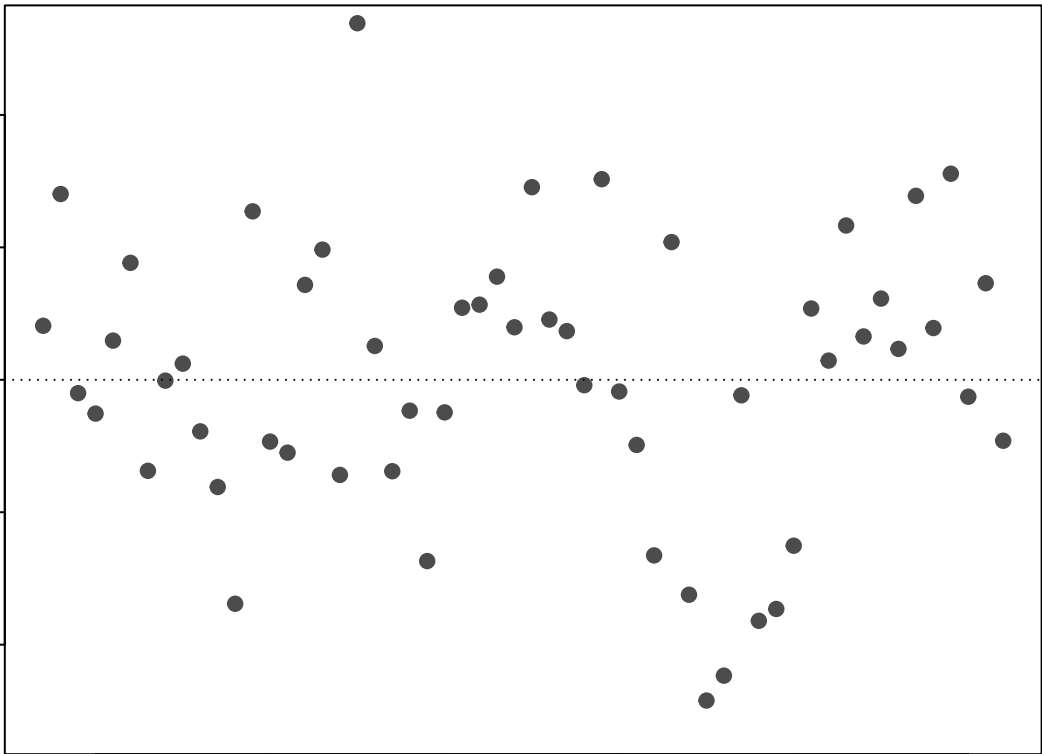
2  
1  
0  
-1  
-2



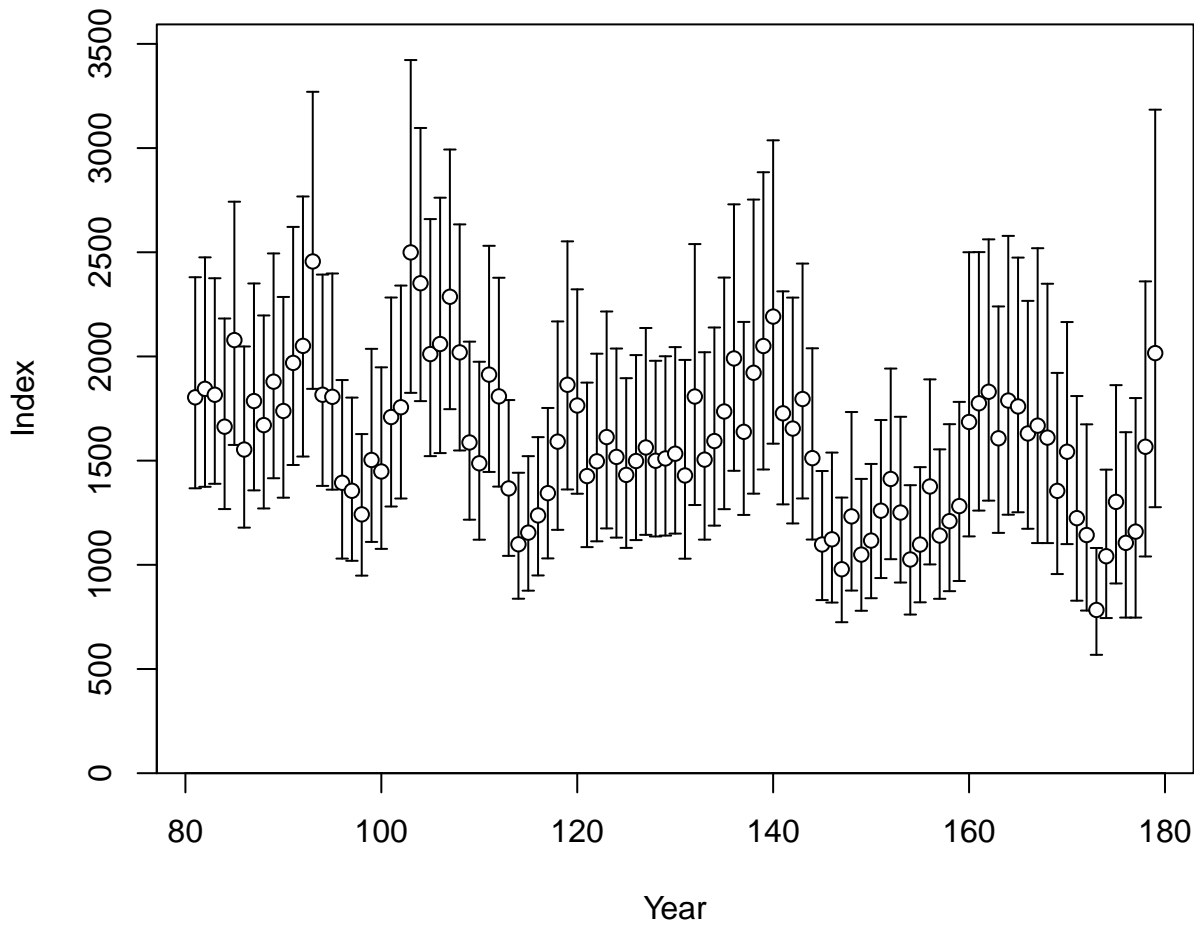
Year

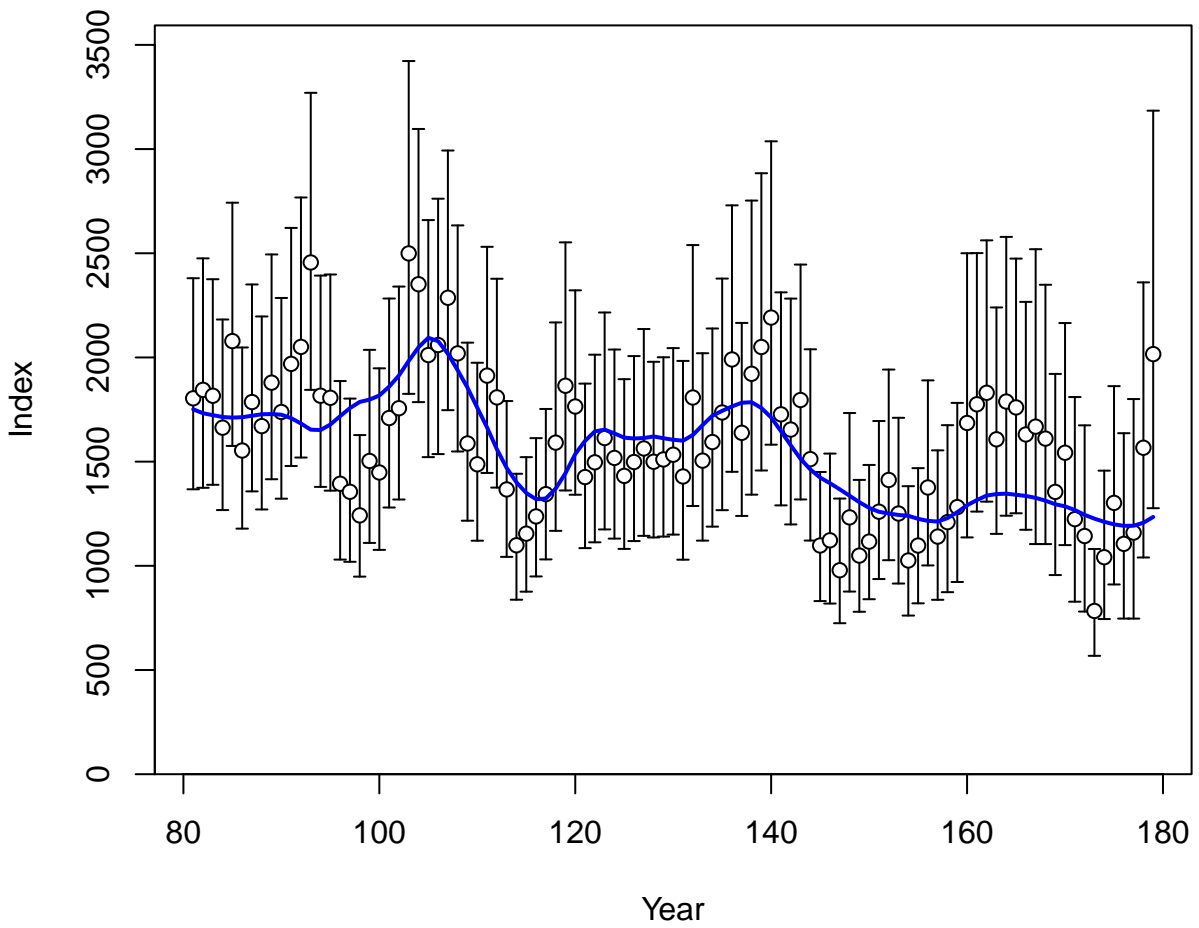
Deviation

0.2  
0.1  
0.0  
-0.1  
-0.2

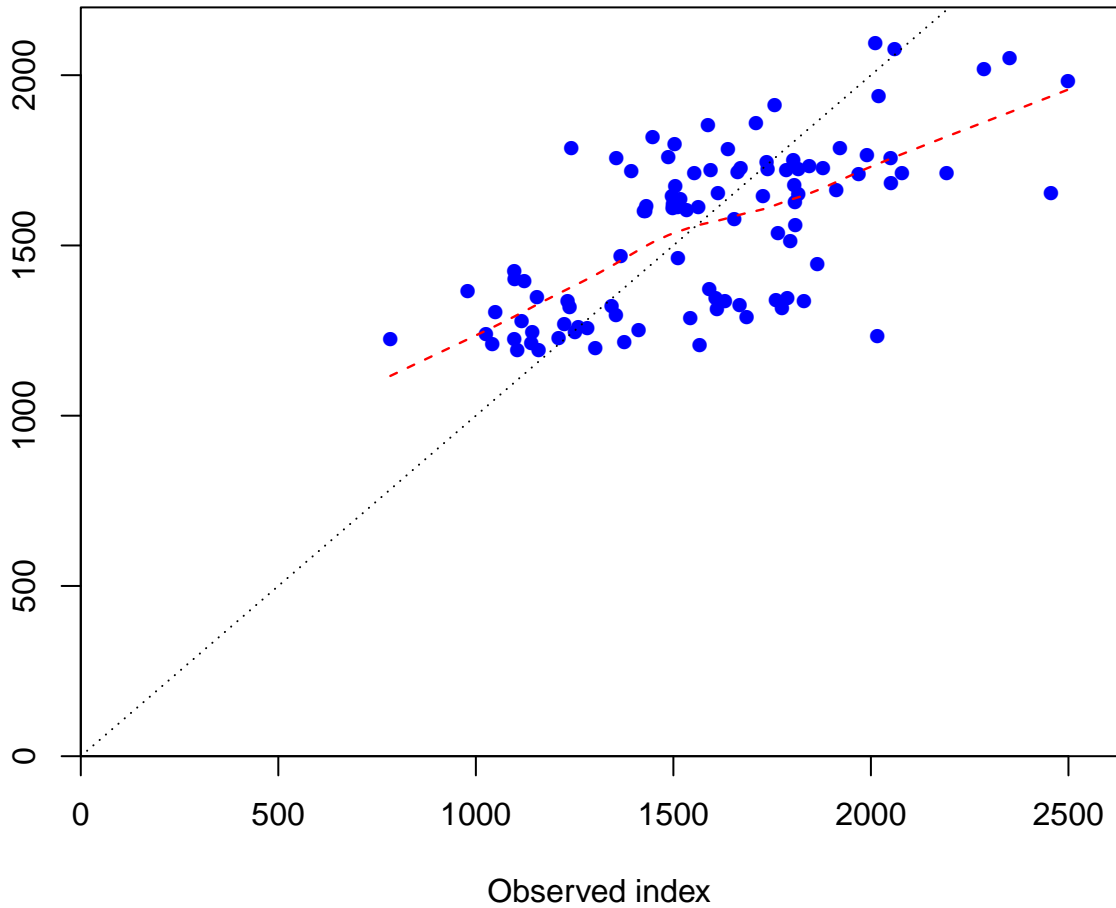


Year





Expected index



Log index

8.0  
7.5  
7.0  
6.5

80

100

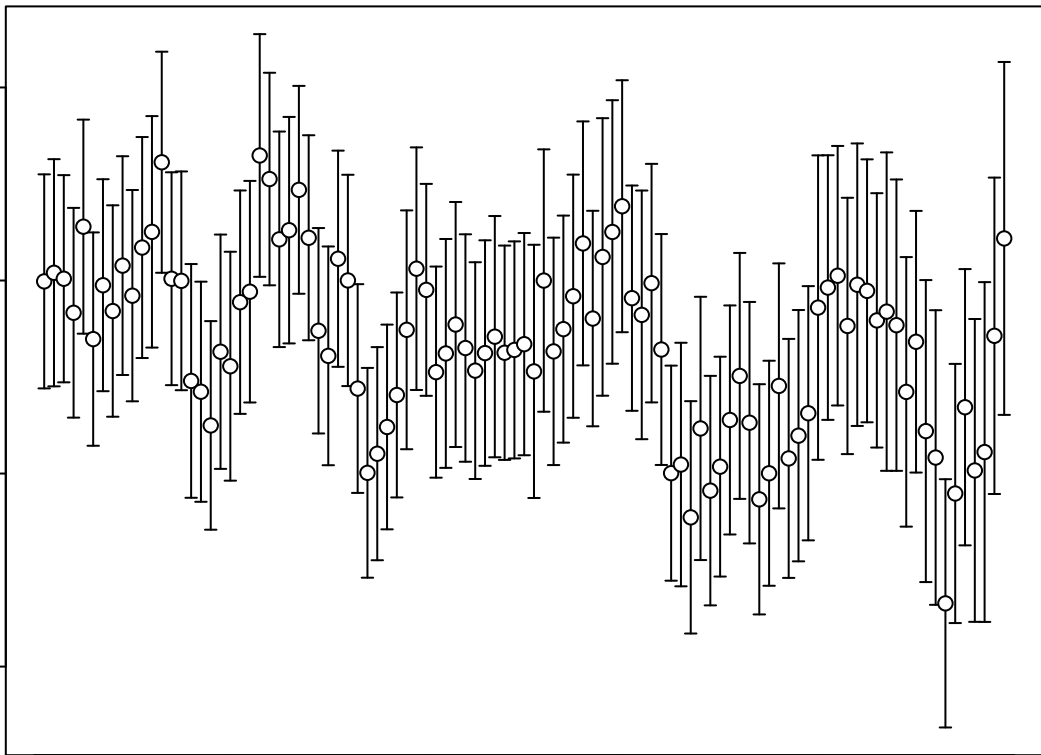
120

140

160

180

Year





Log index

8.0  
7.5  
7.0  
6.5

80

100

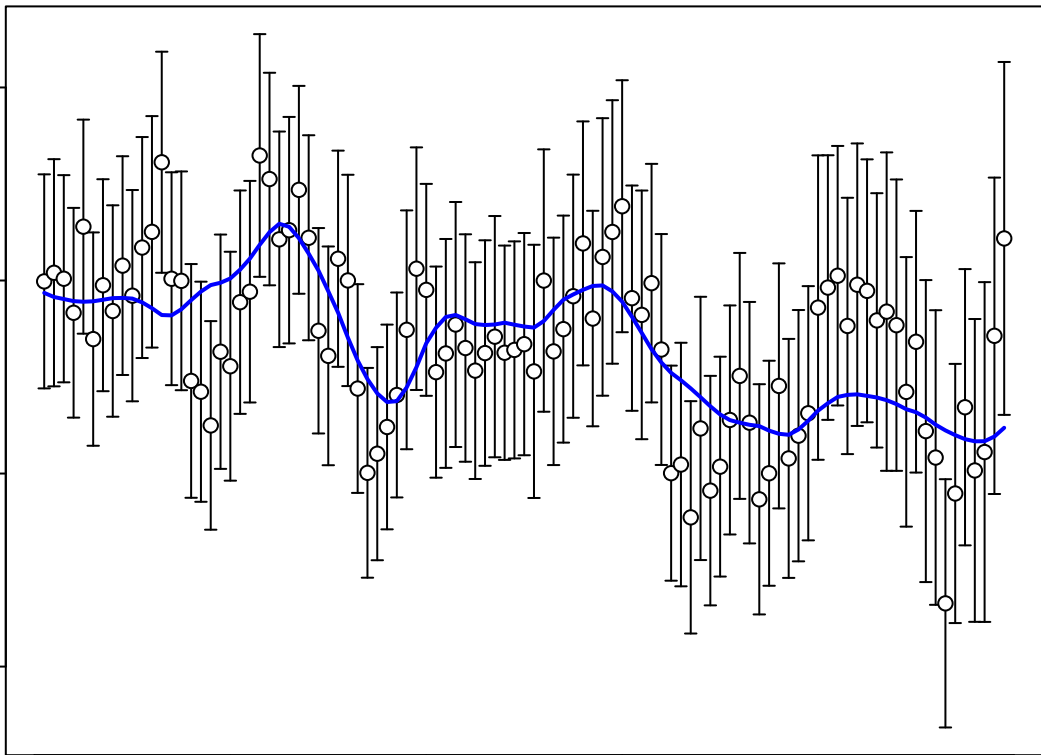
120

140

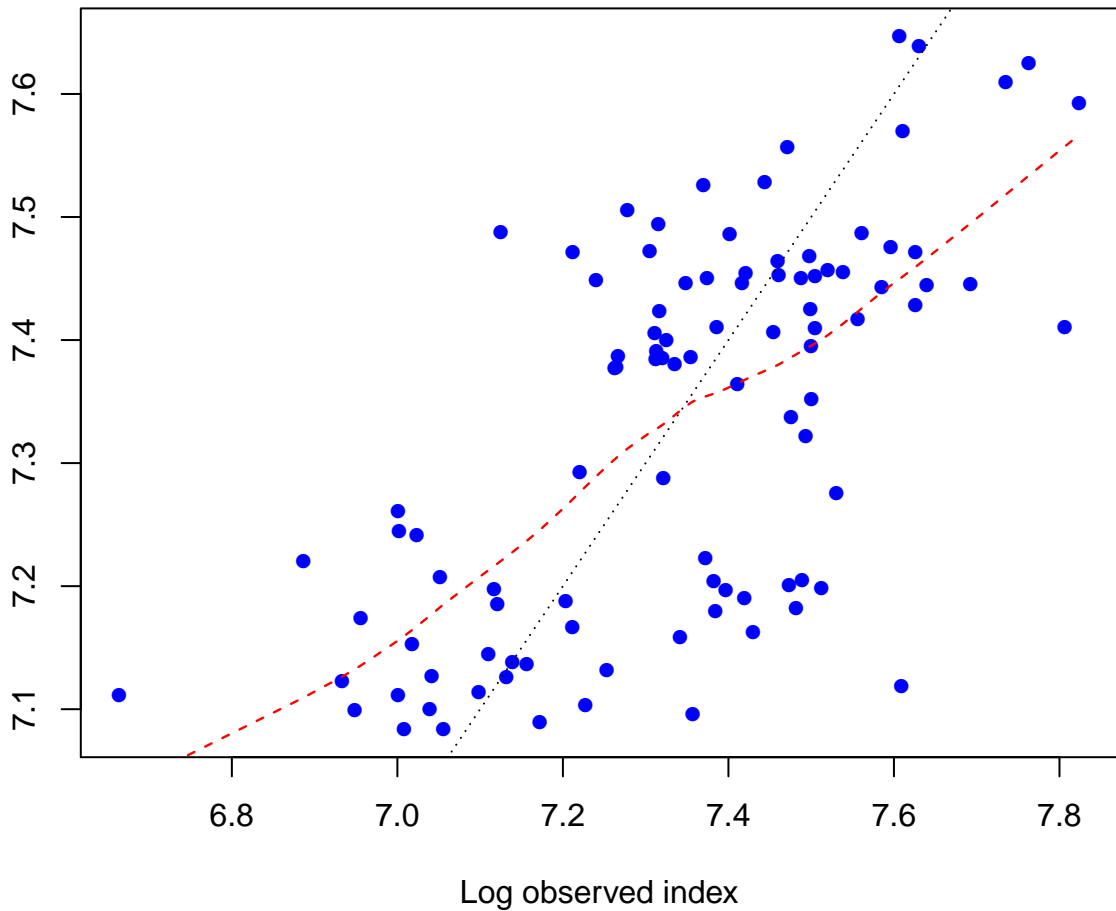
160

180

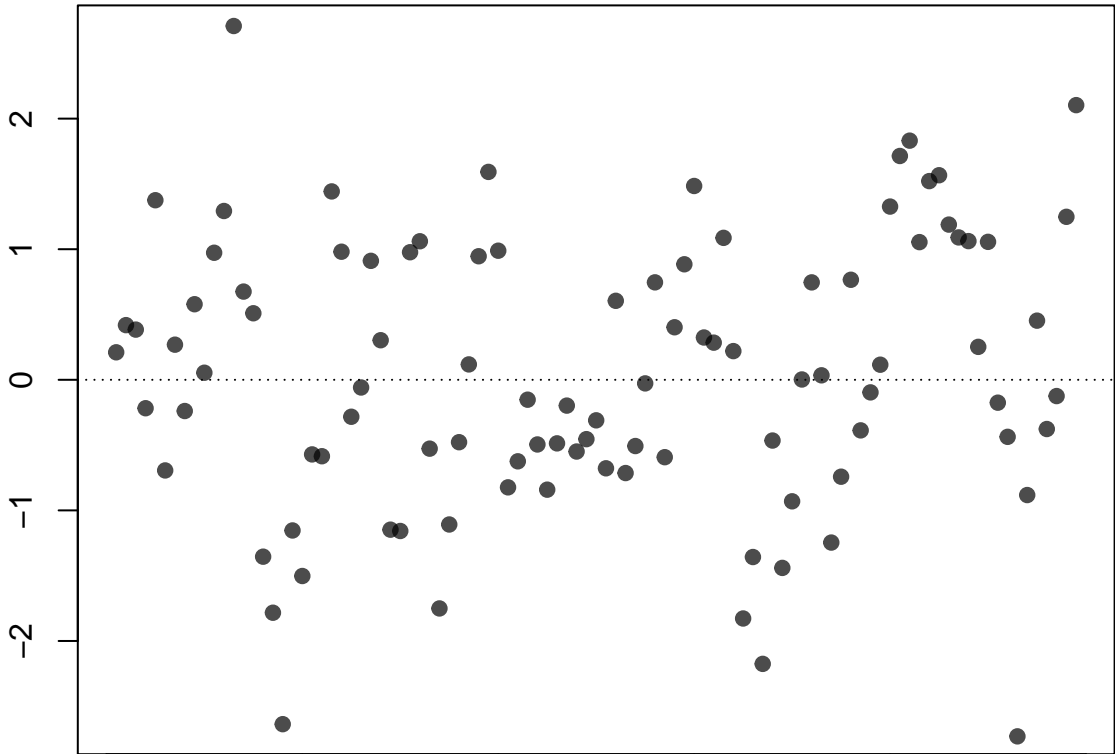
Year



Log expected index

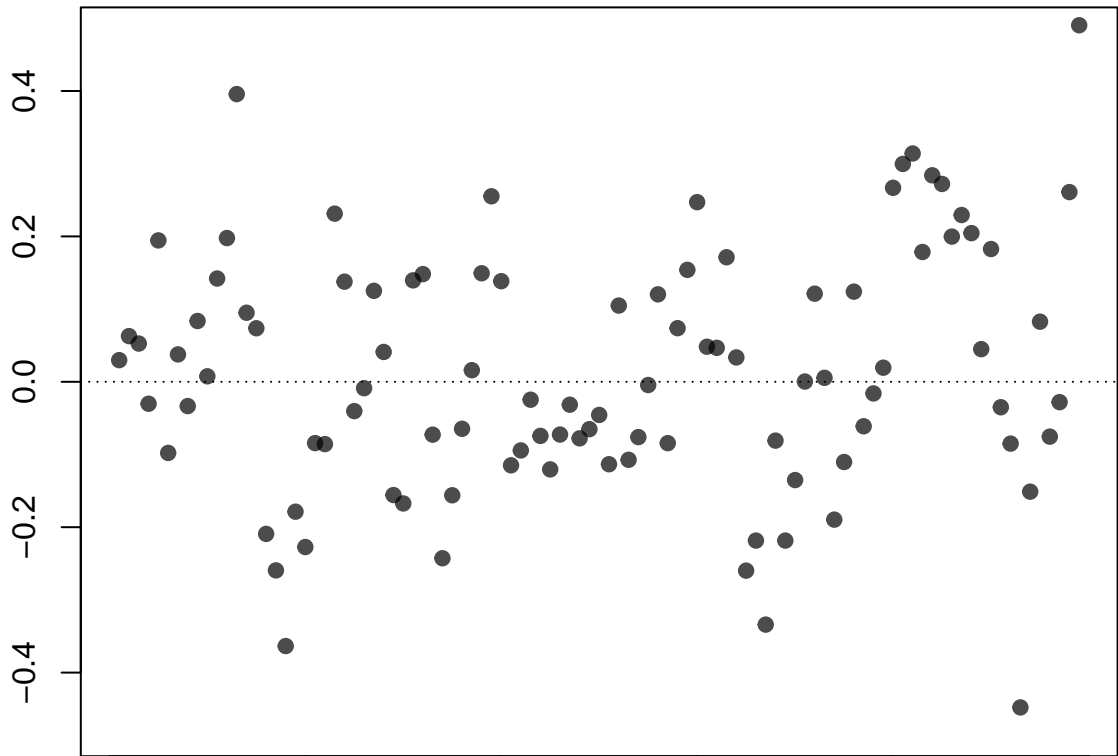


Residual



Year

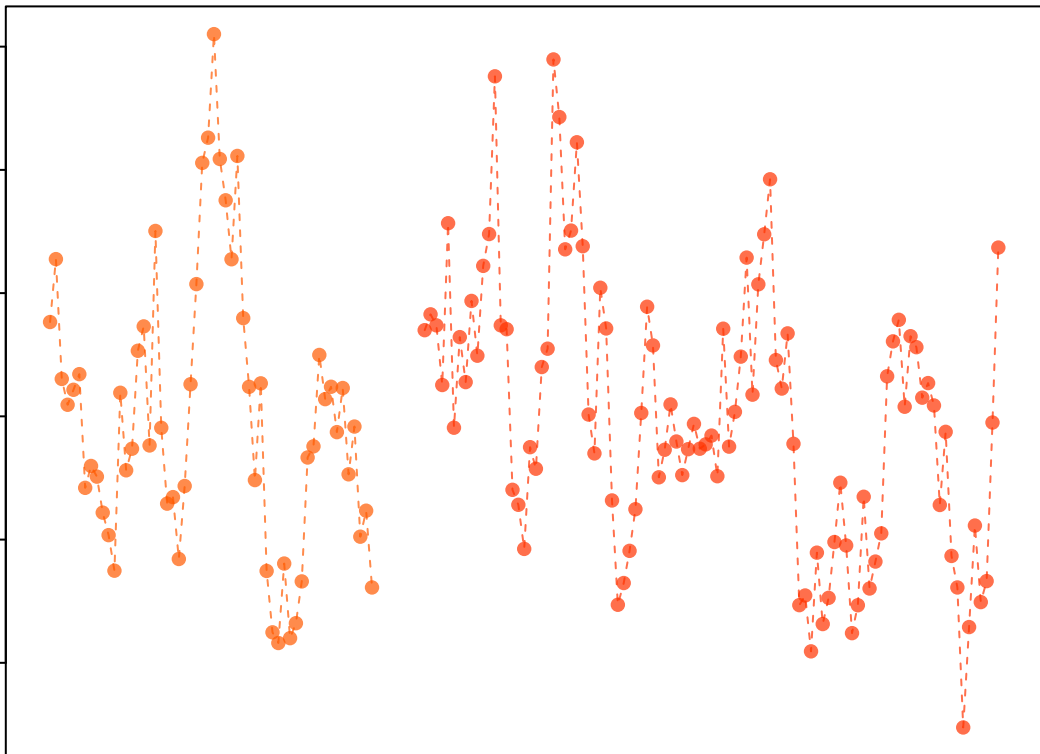
Deviation



Year

Standardized index

1.6  
1.4  
1.2  
1.0  
0.8  
0.6



50

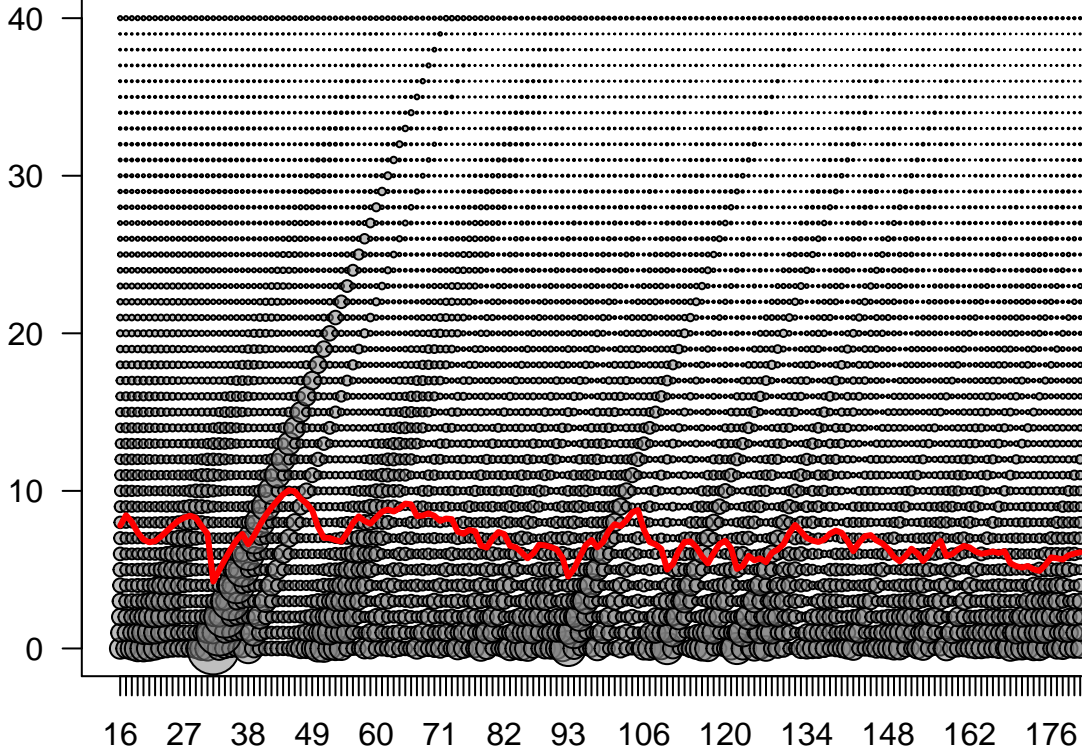
100

150

Year

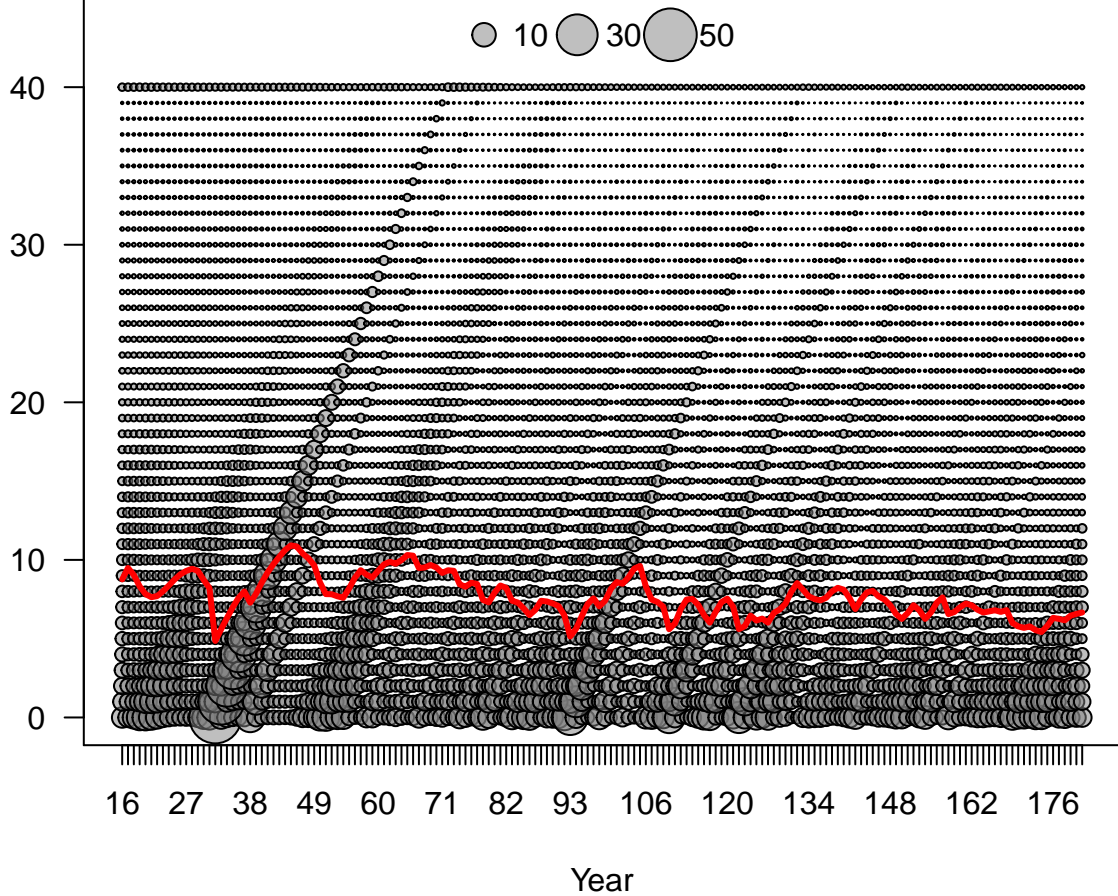
Age

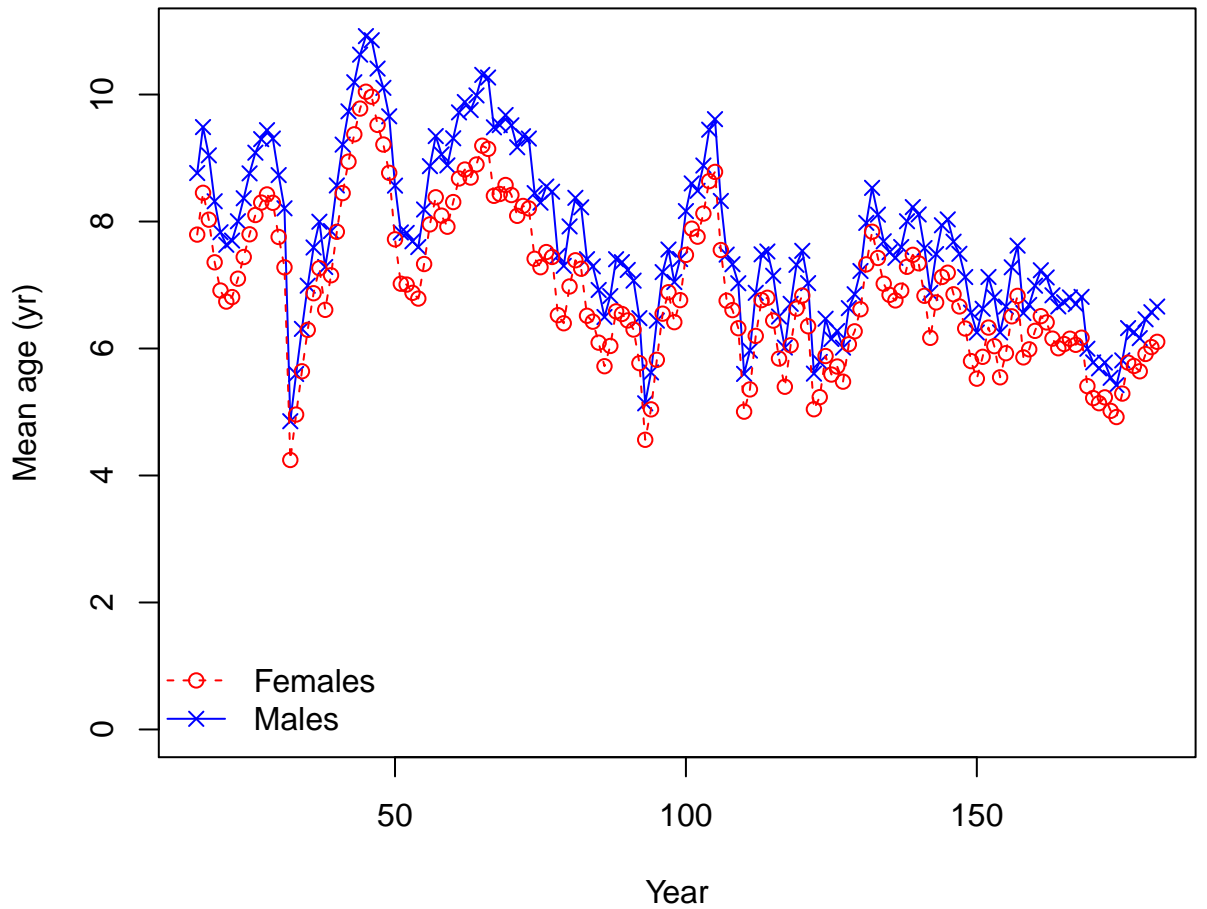
○ 10 ○ 30 ○ 50



Year

Age







Age

10 30 50

40

30

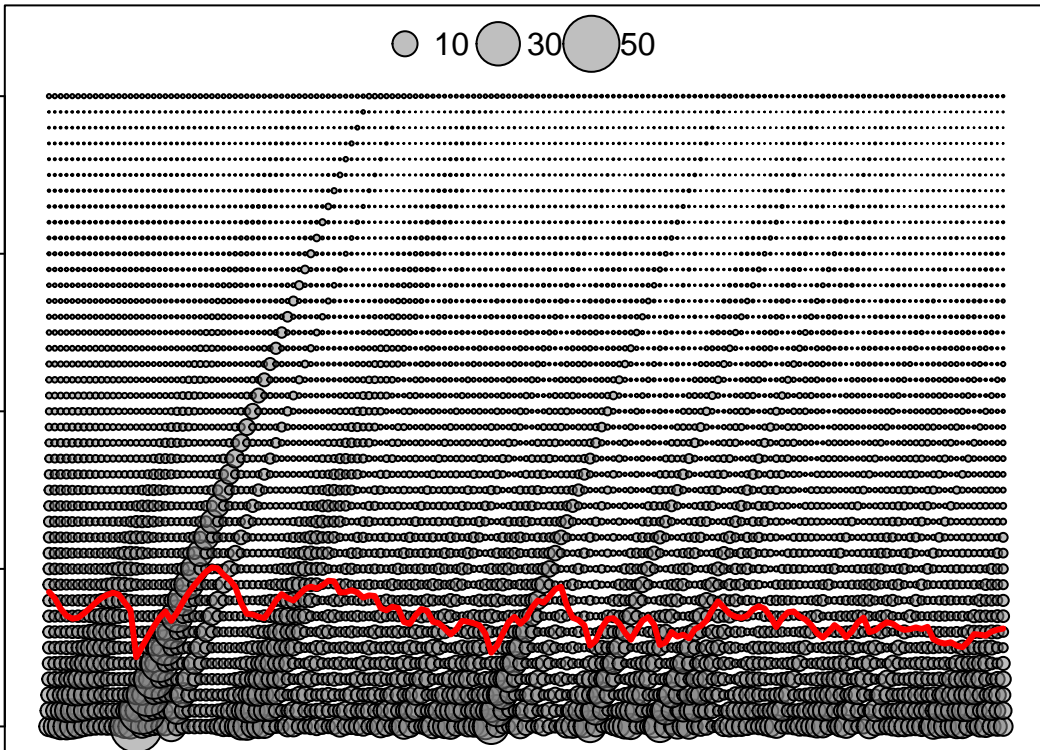
20

10

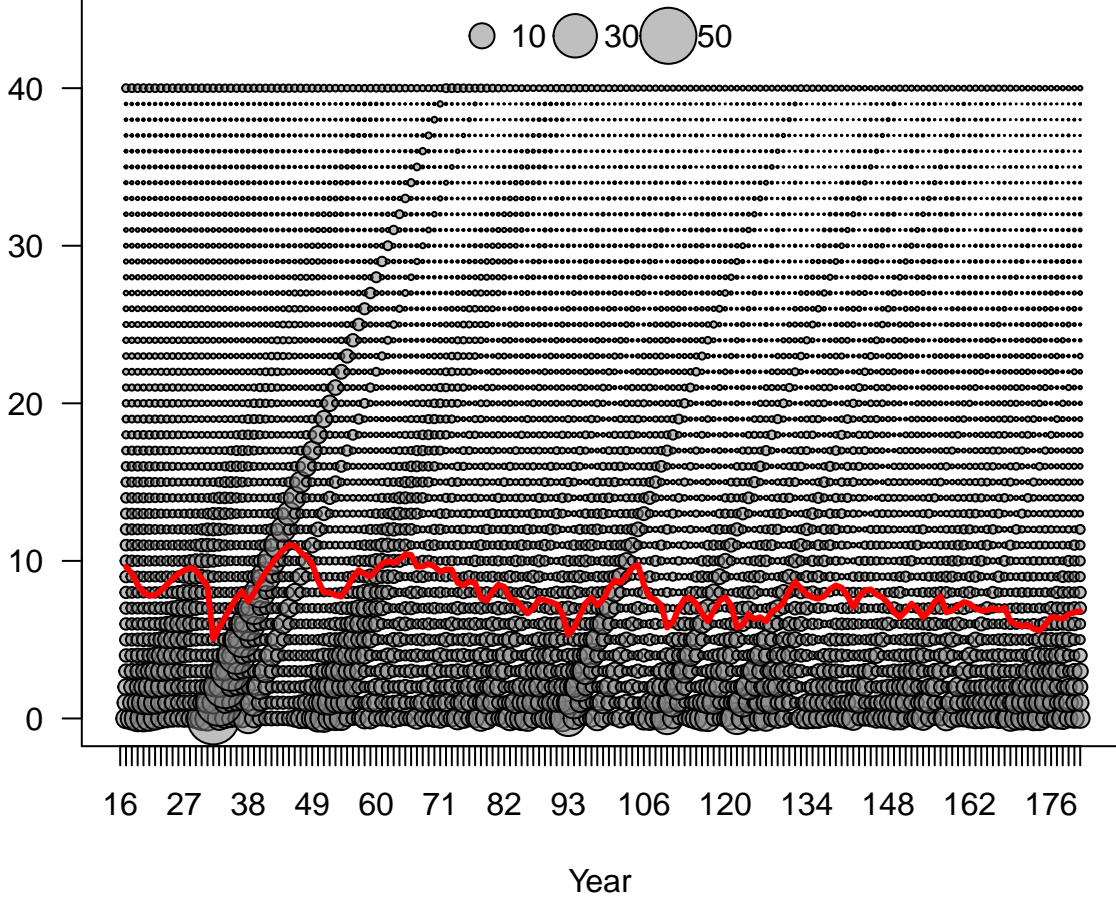
0

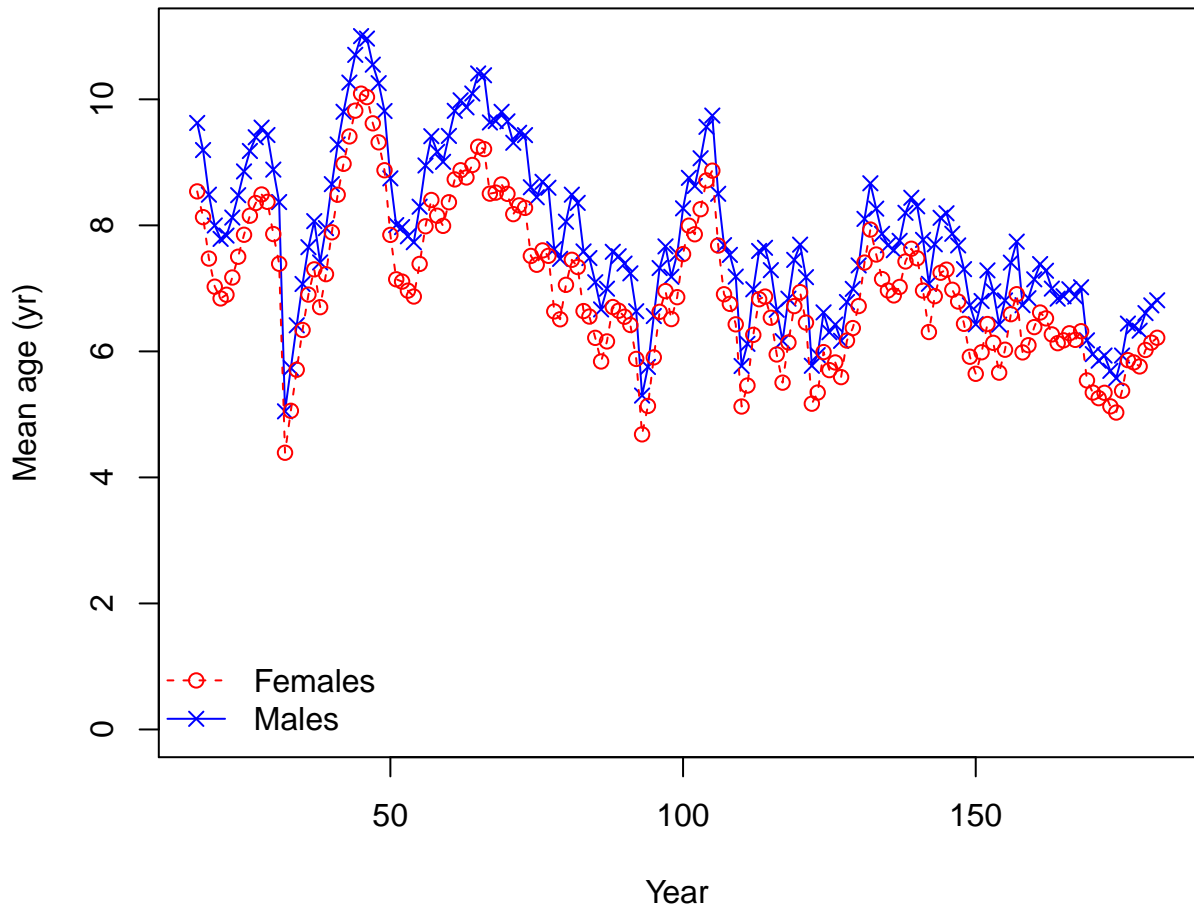
16 27 38 49 60 71 82 93 106 120 134 148 162 176

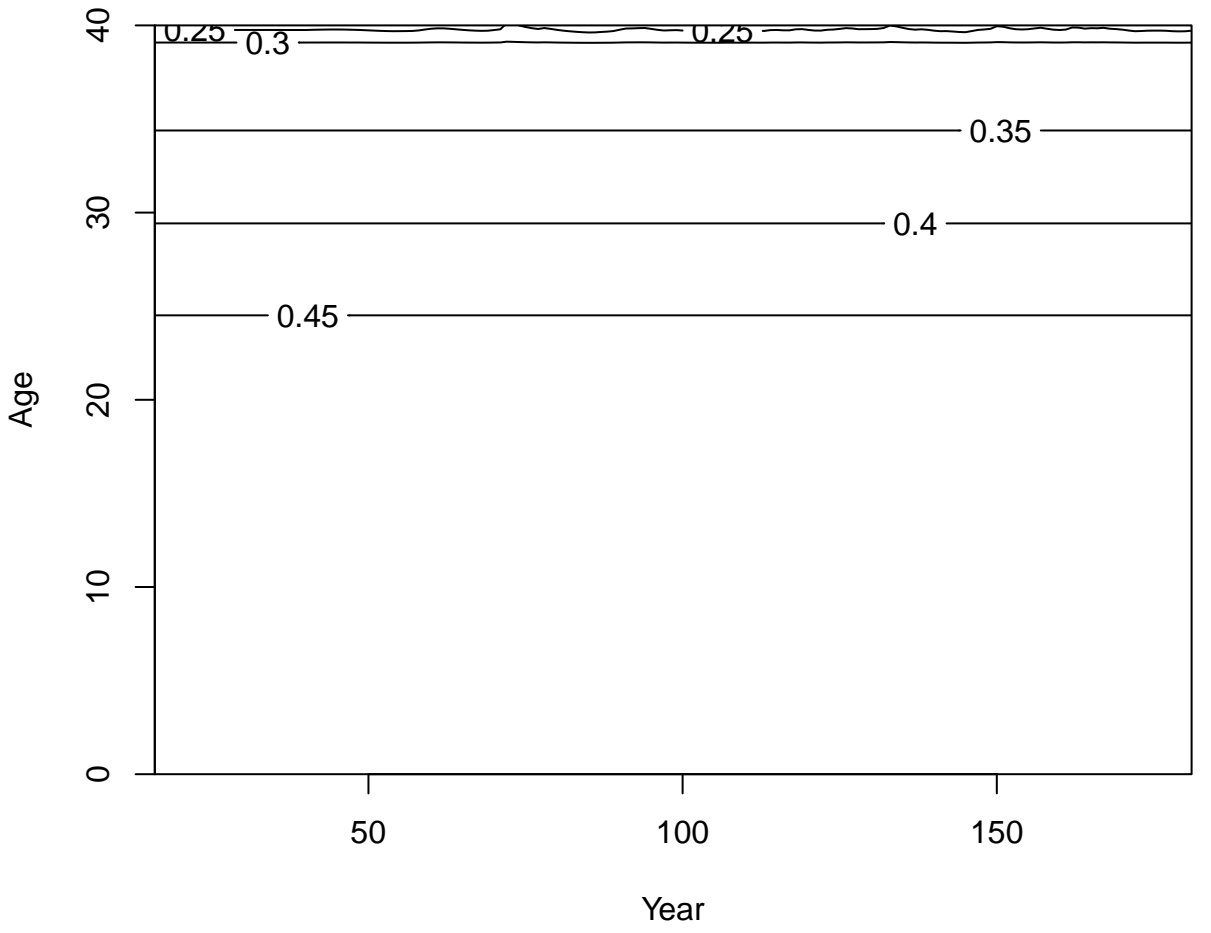
Year

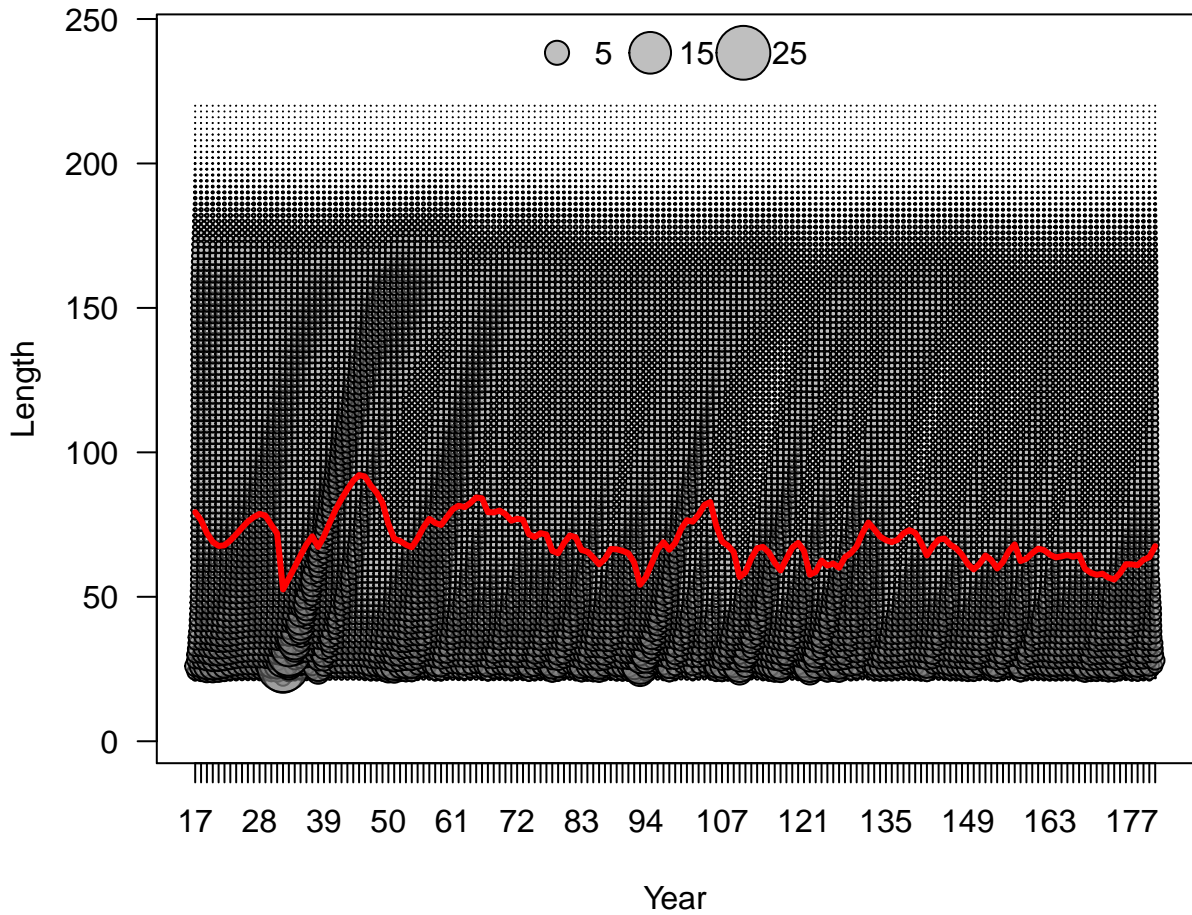


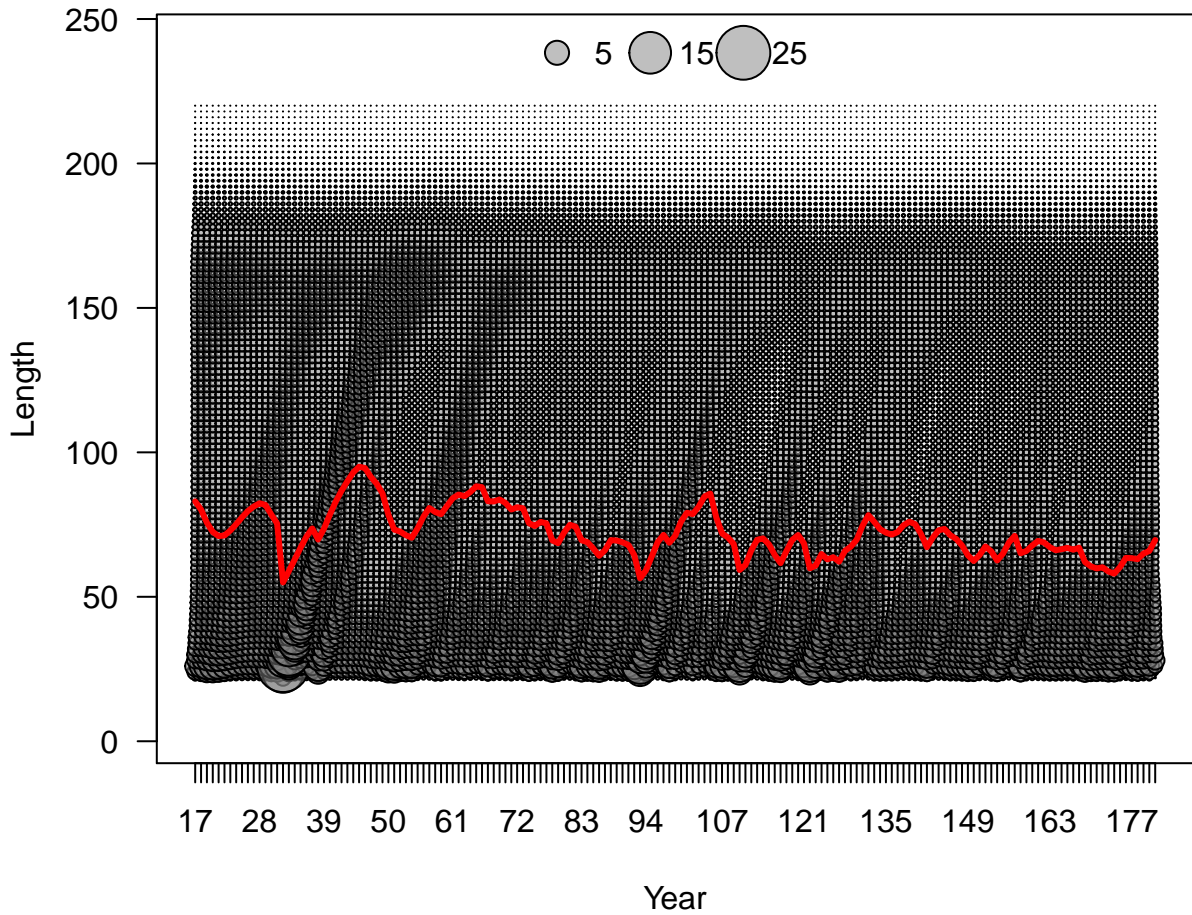
Age

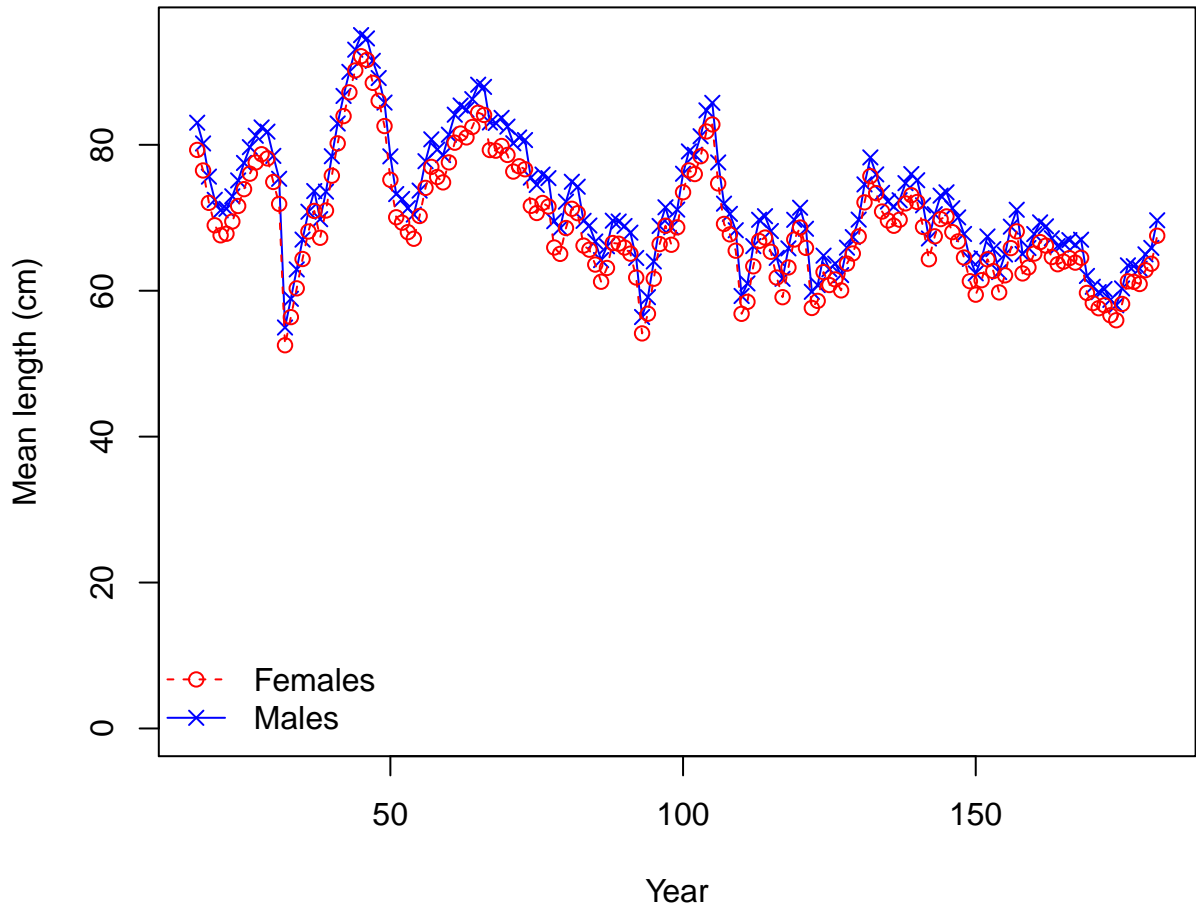


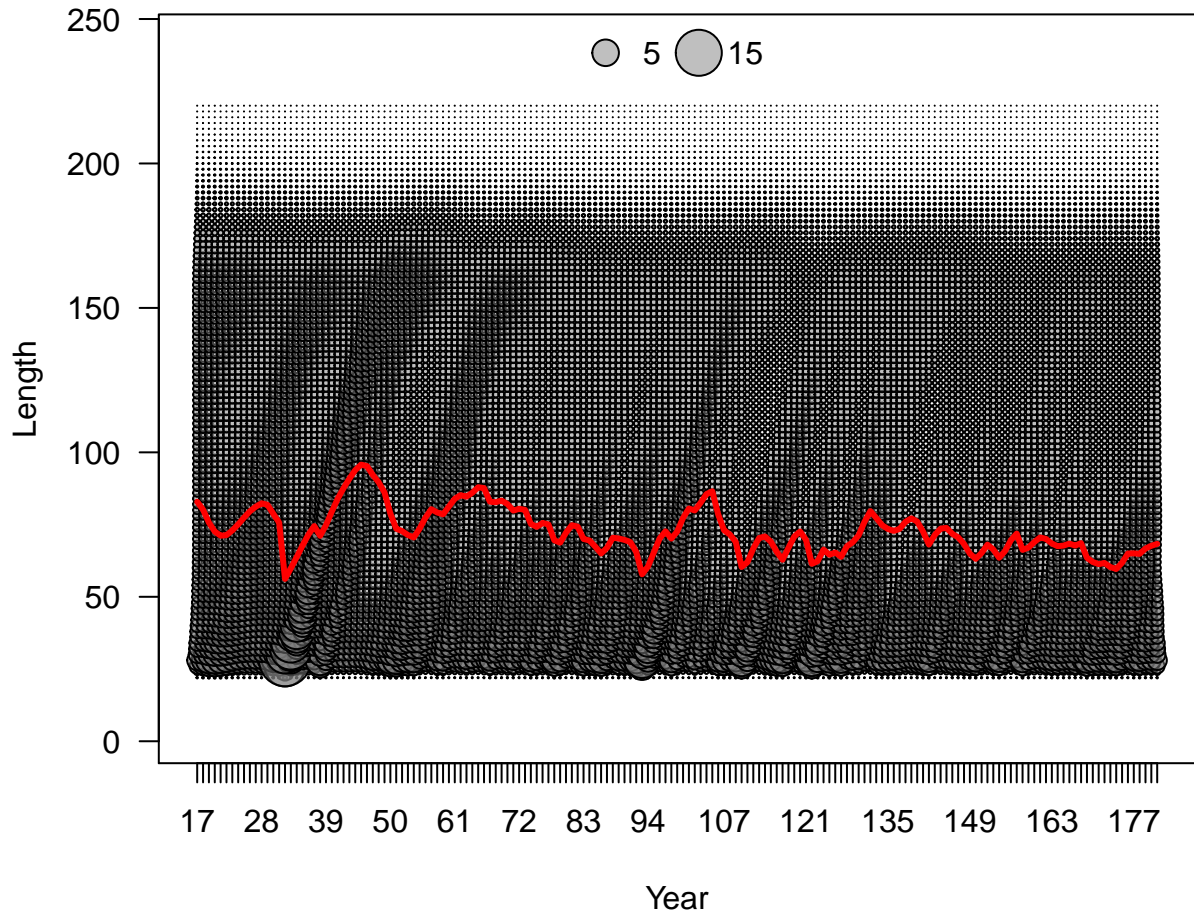




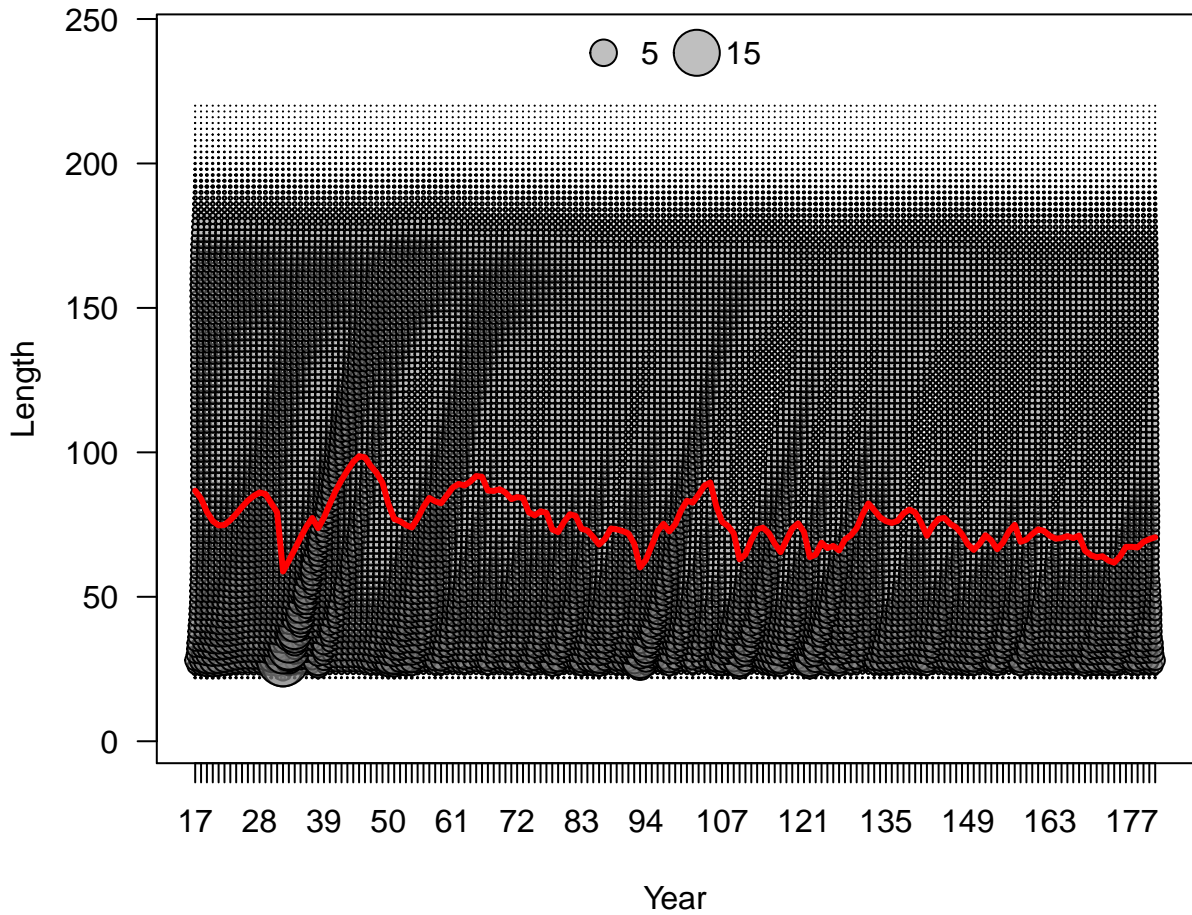


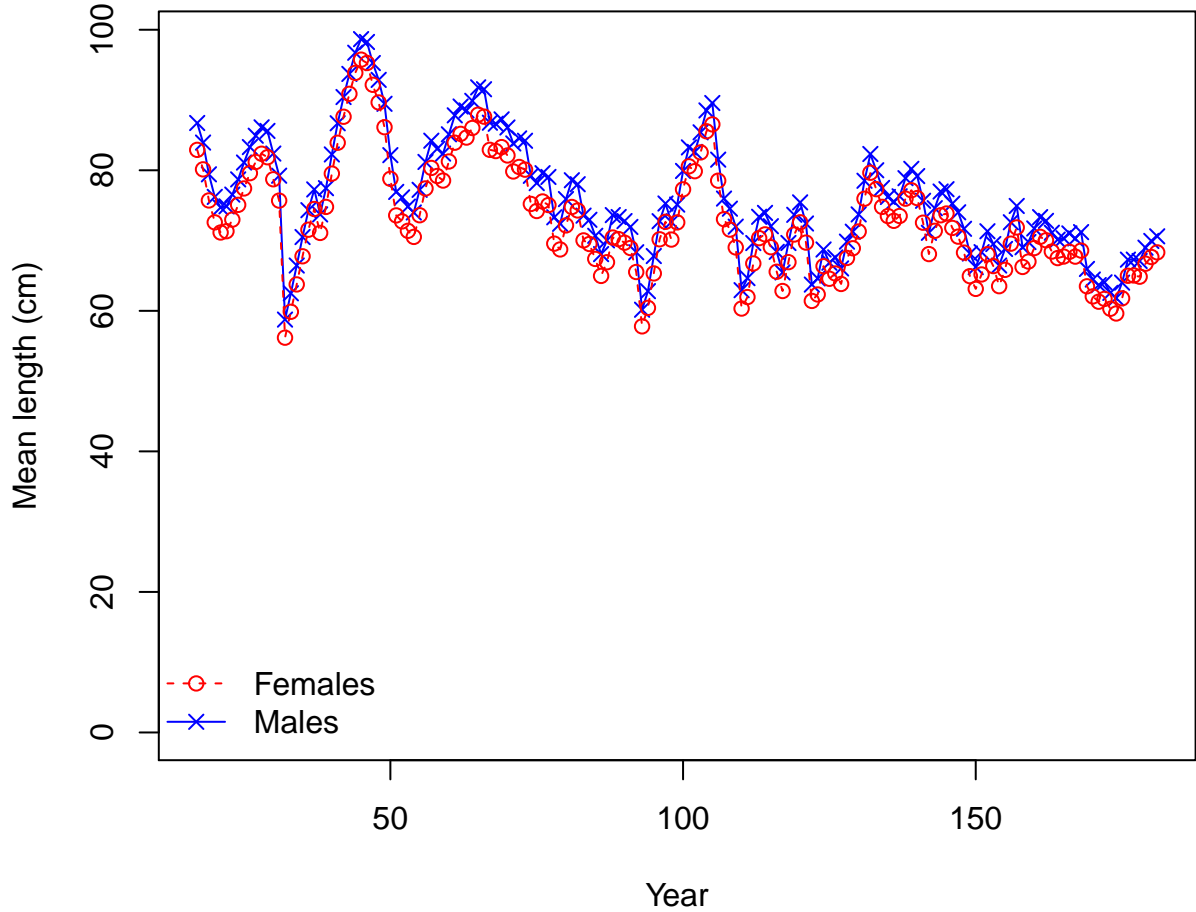




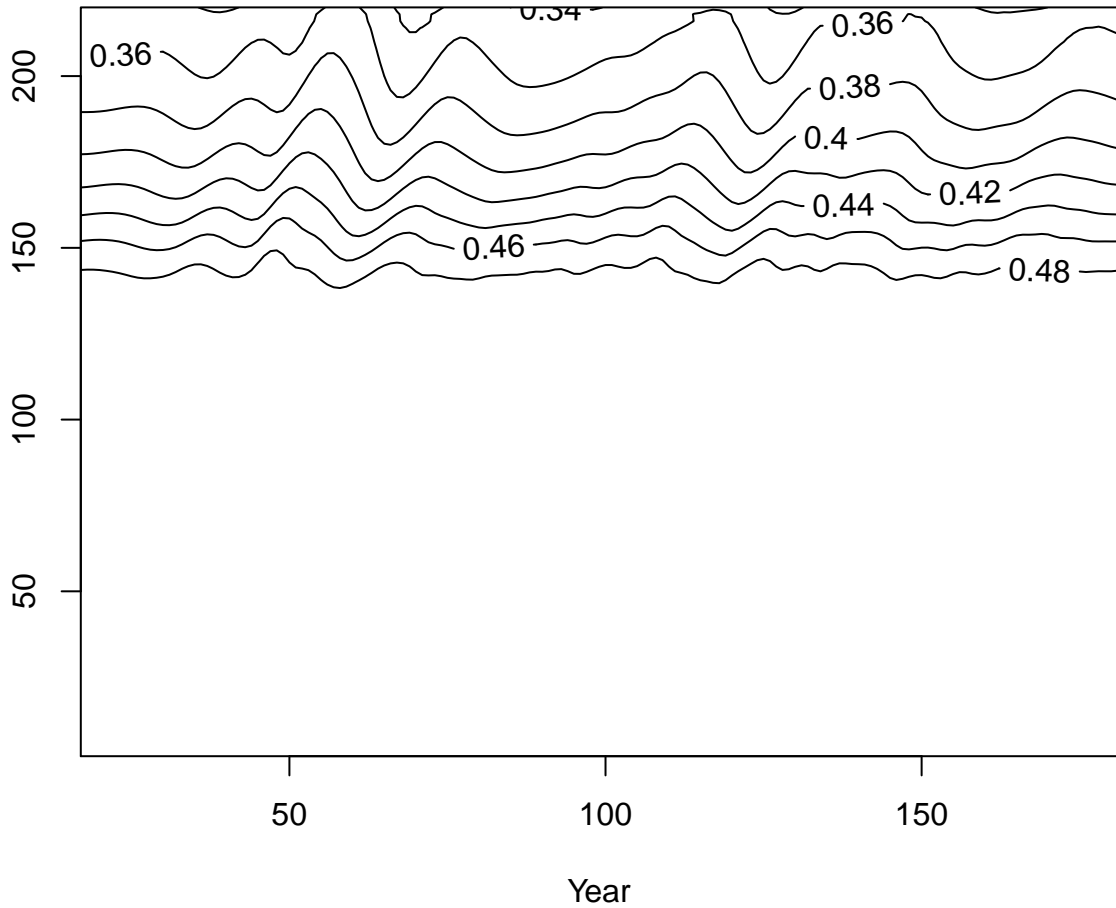


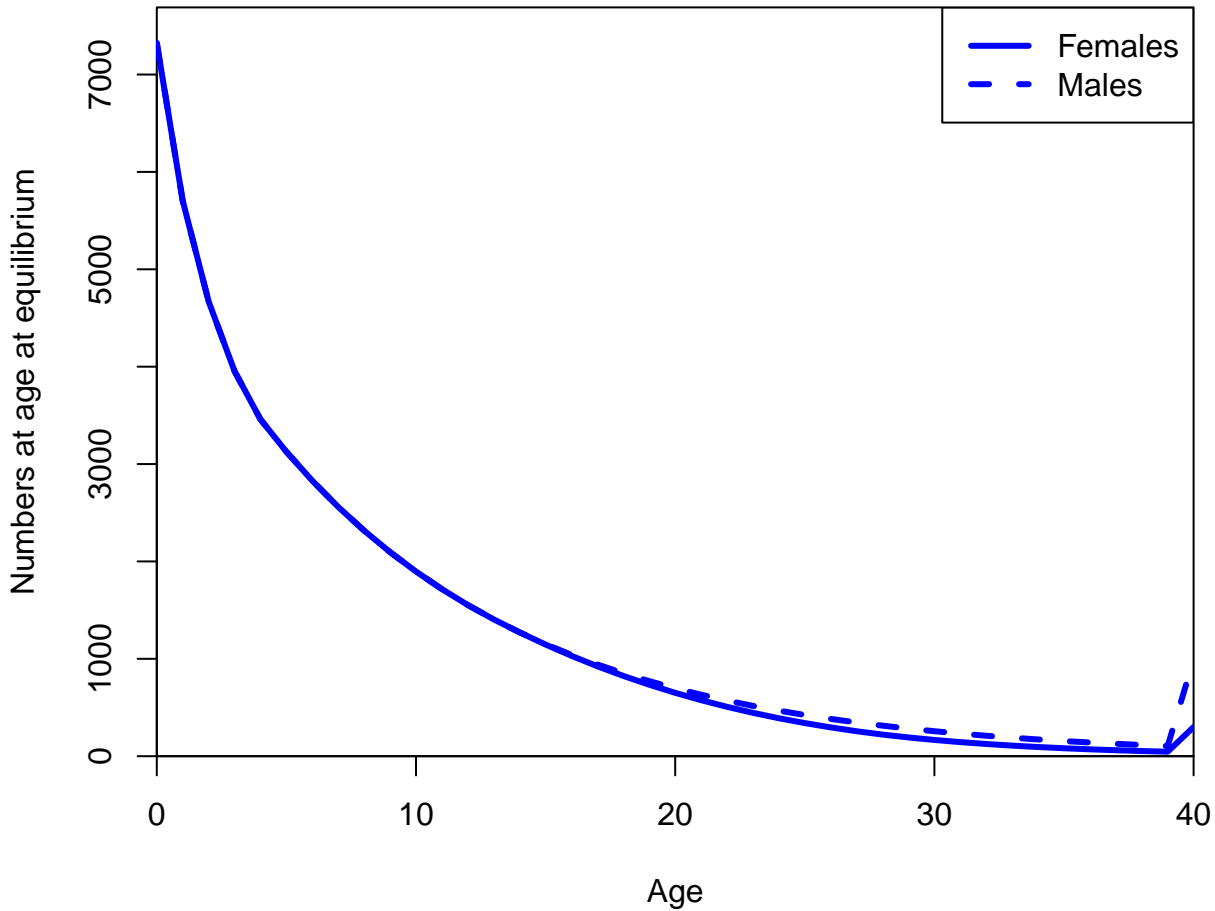


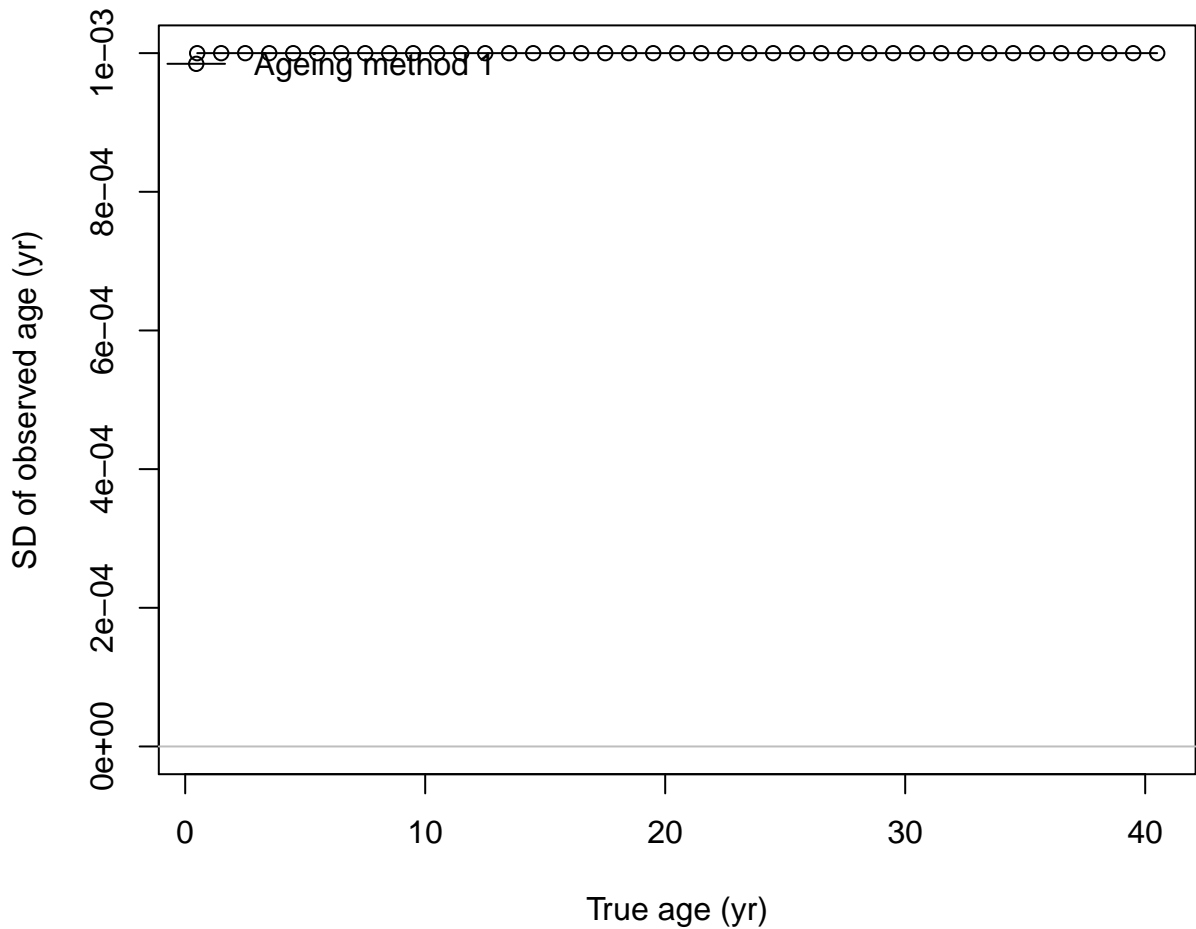




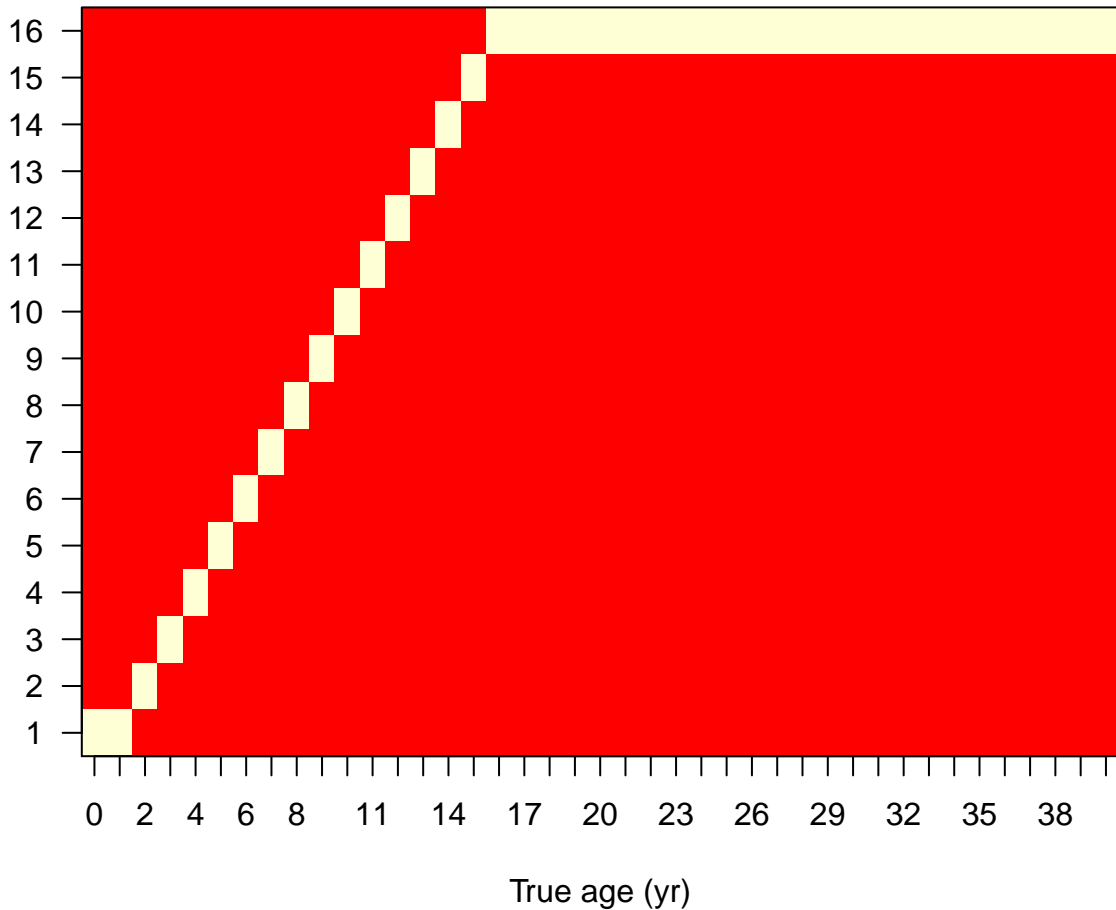
Length





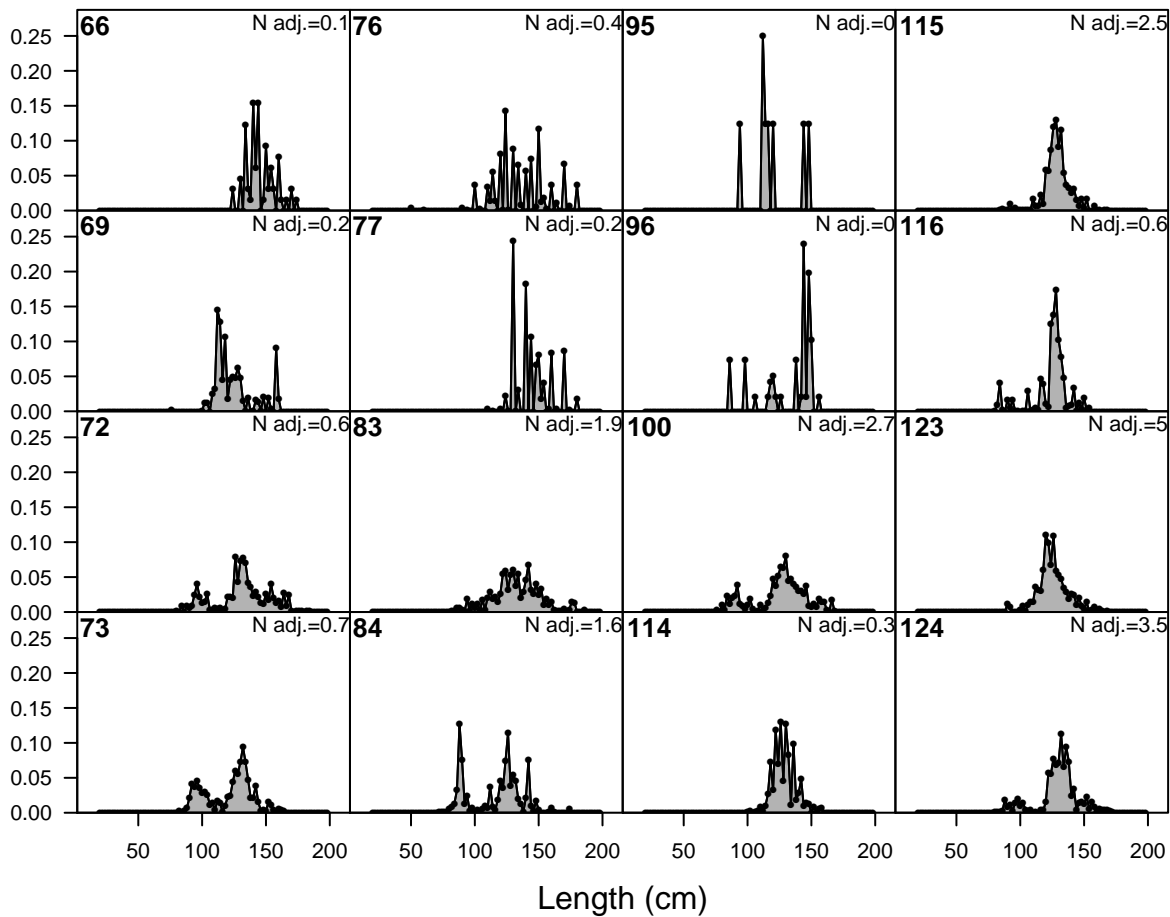


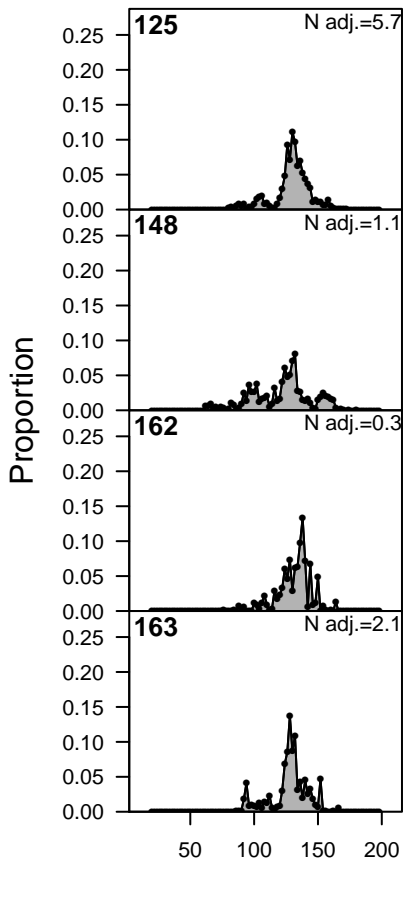
Observed age (yr)



True age (yr)

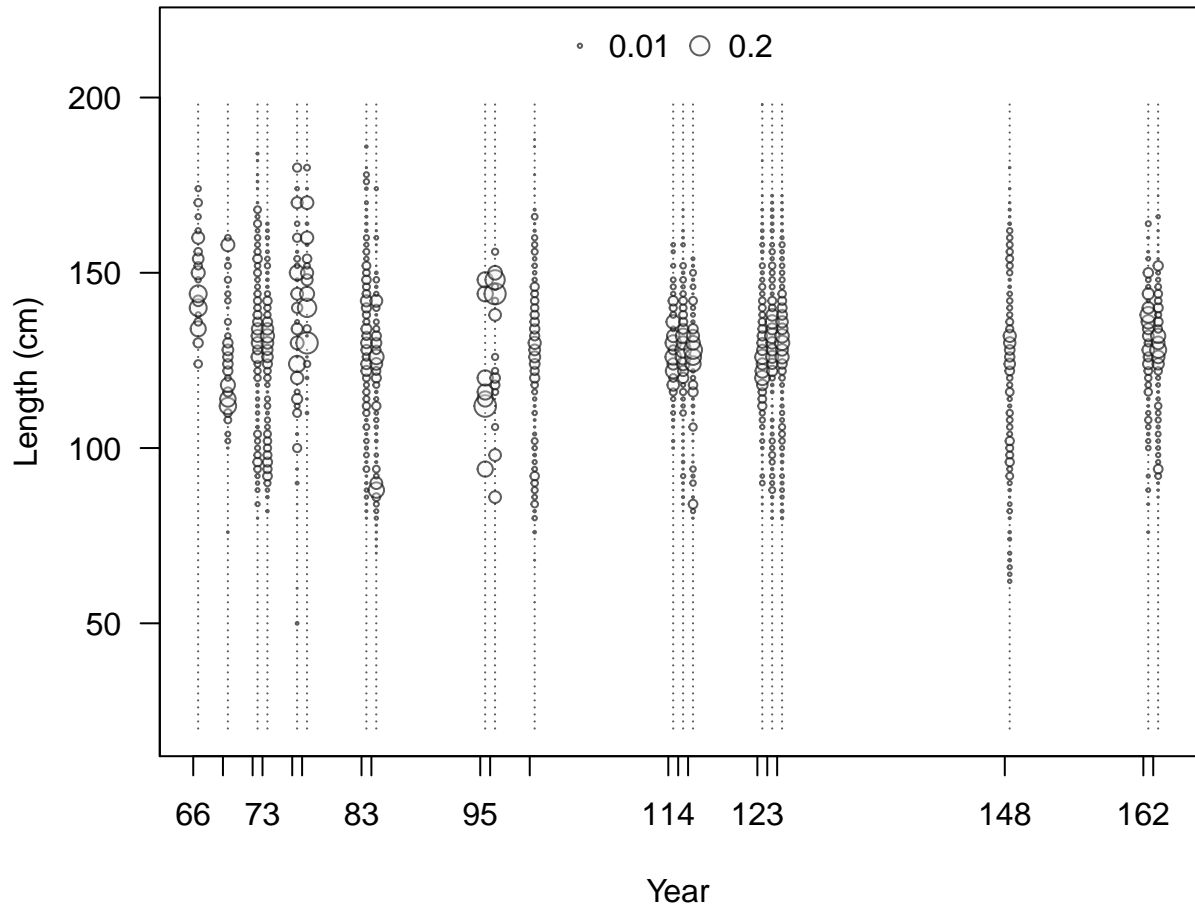
Proportion



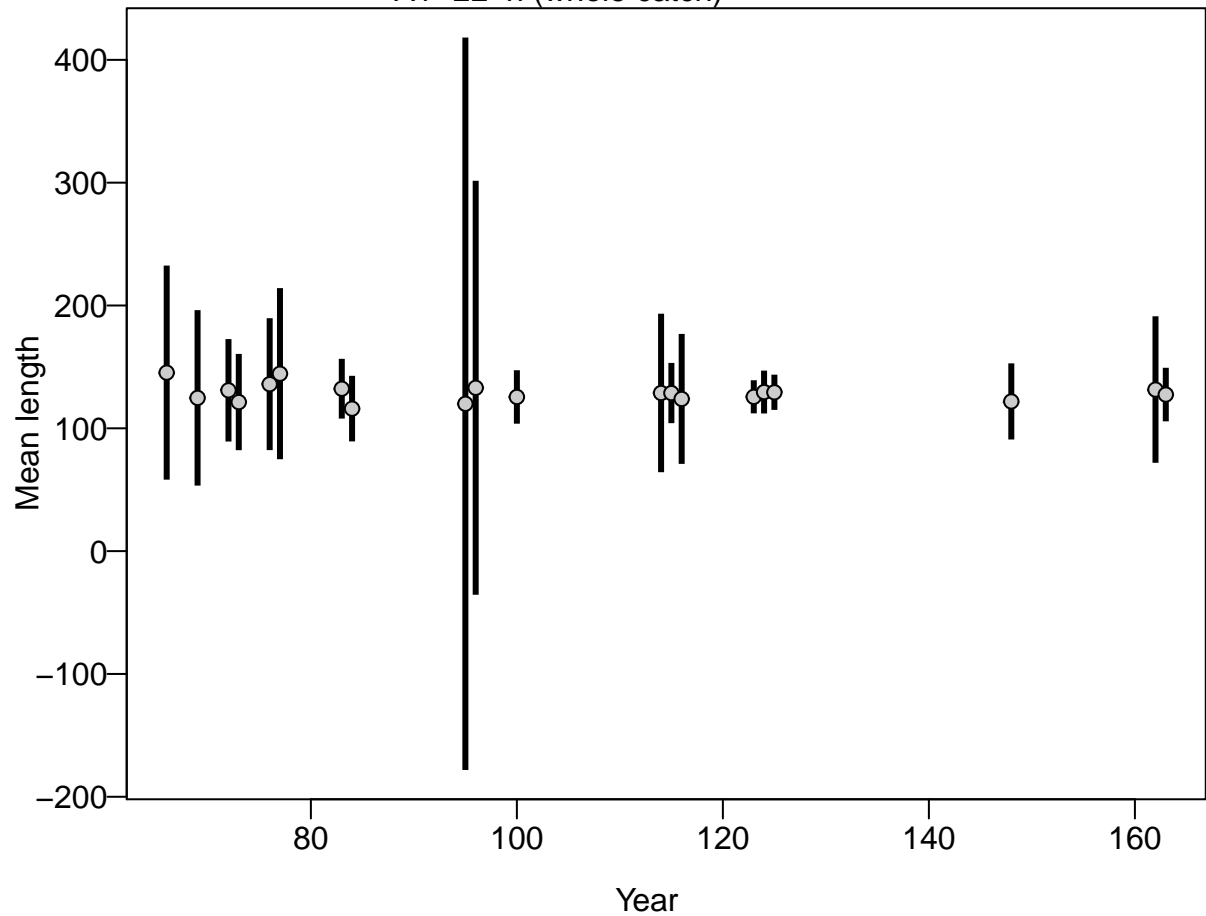


Length (cm)

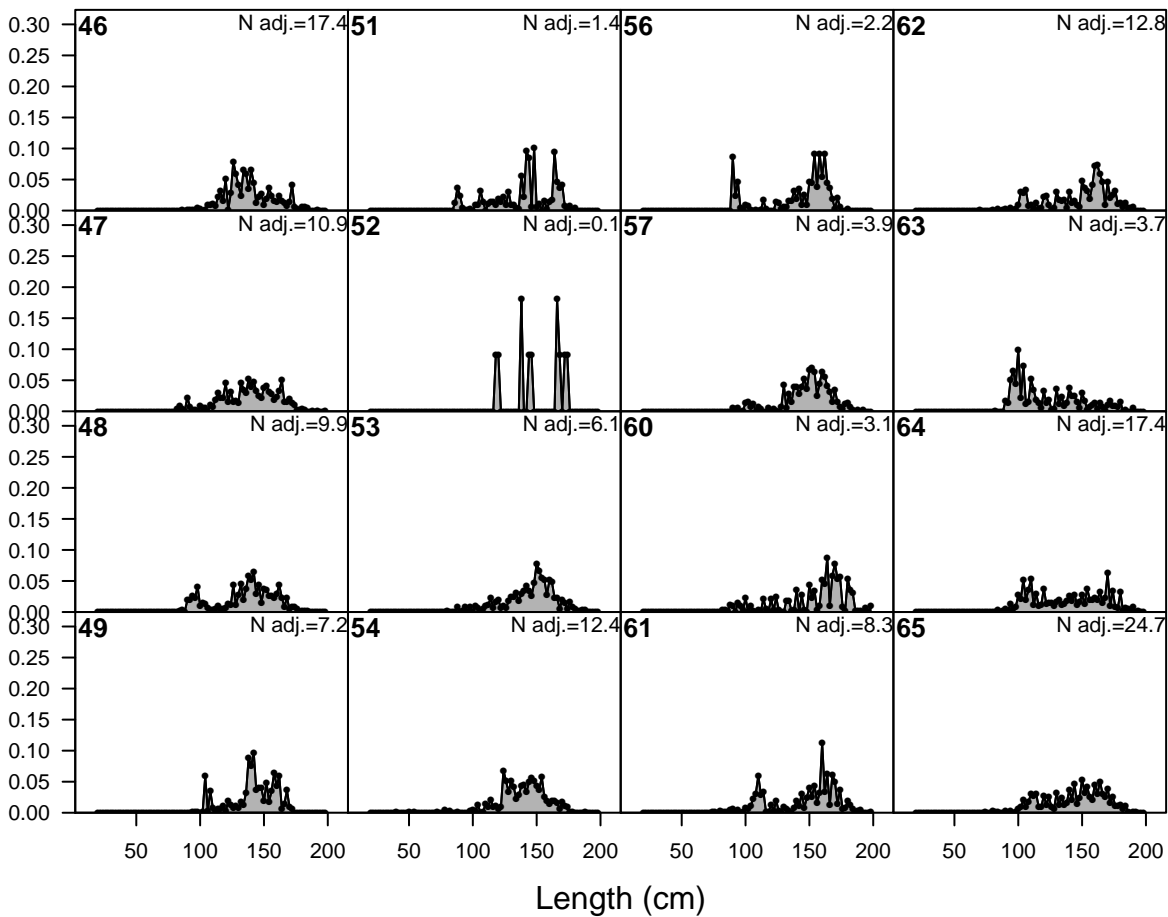




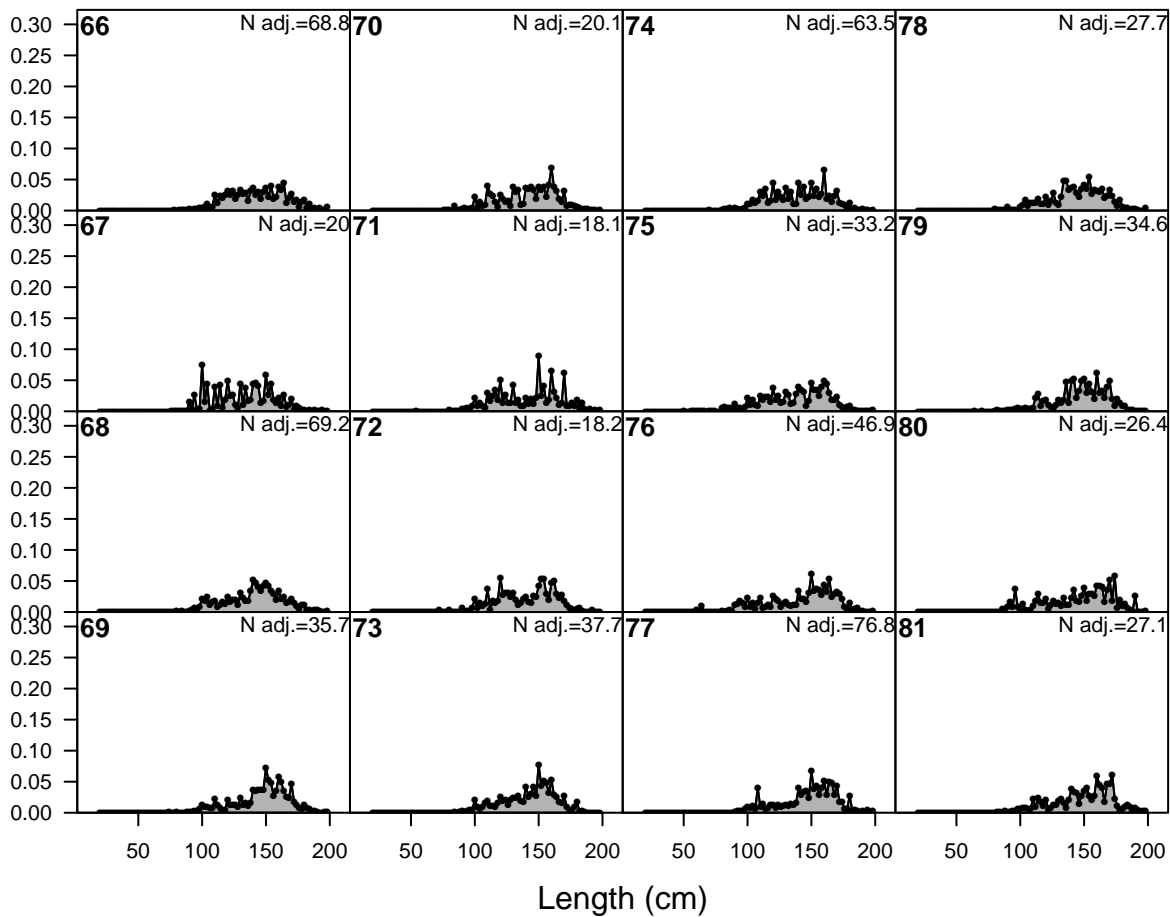
A1-LL-n (whole catch)



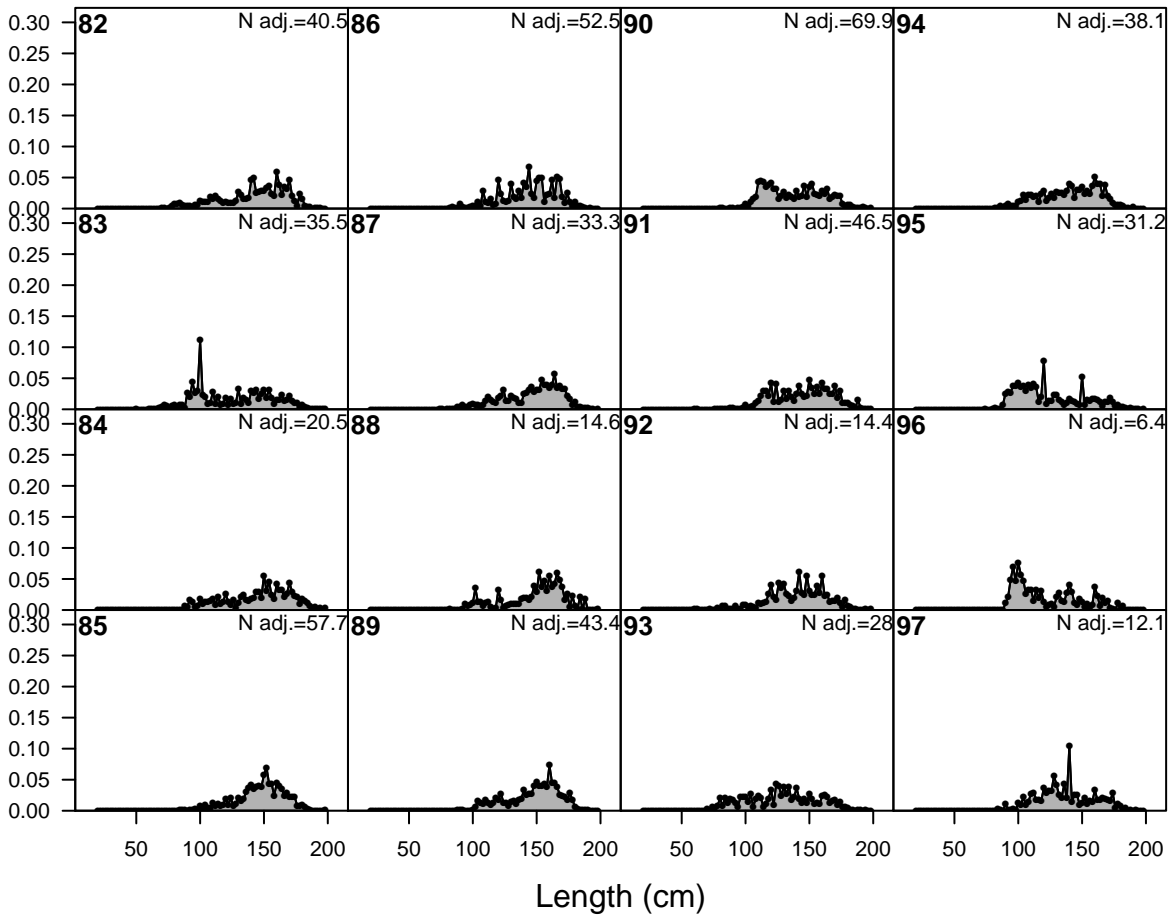
Proportion



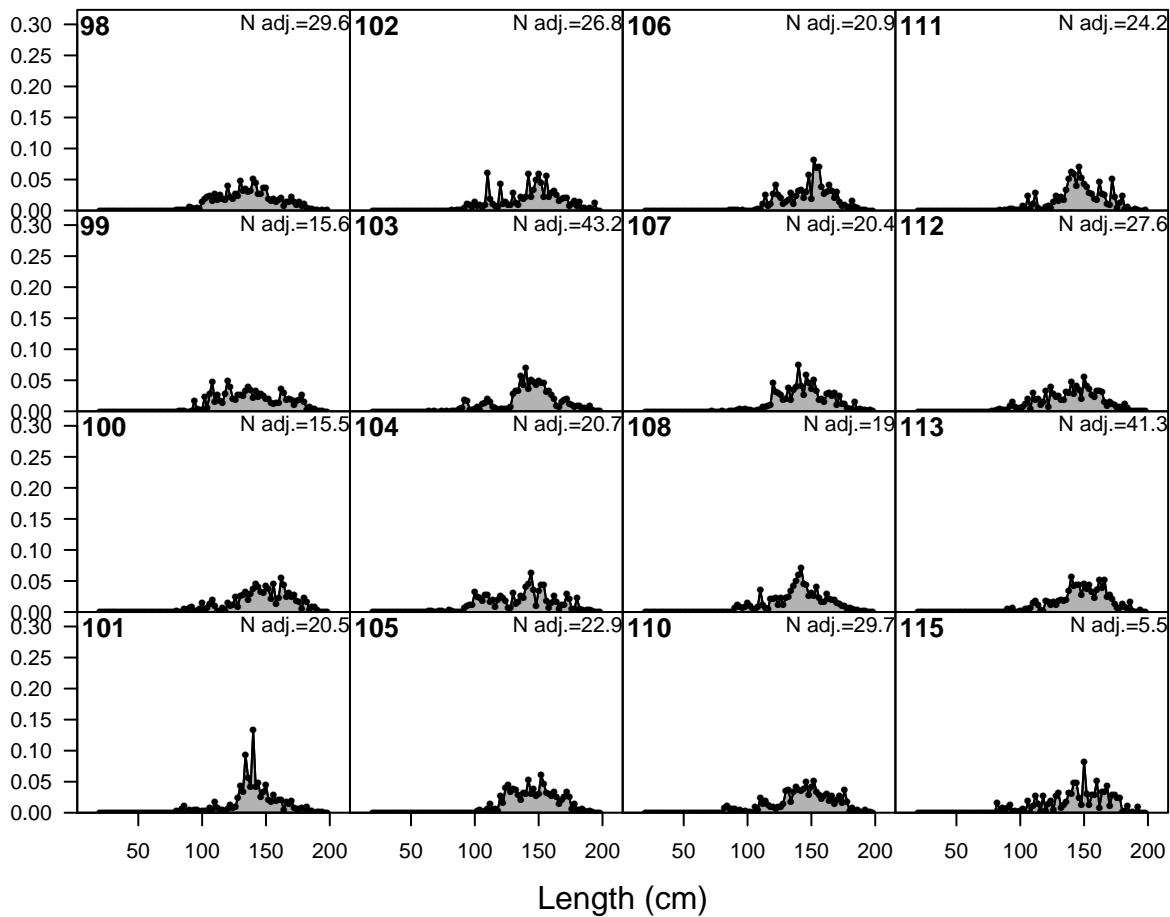
Proportion



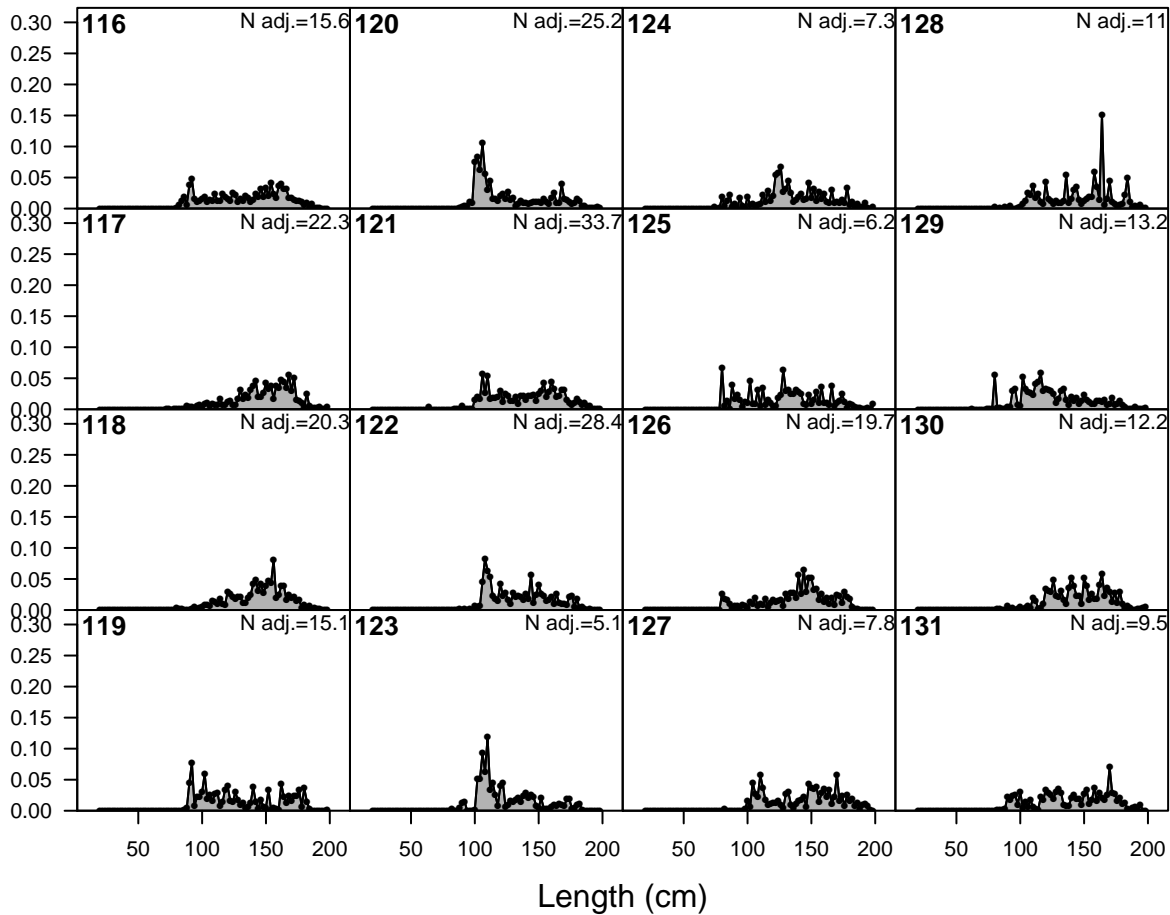
Proportion



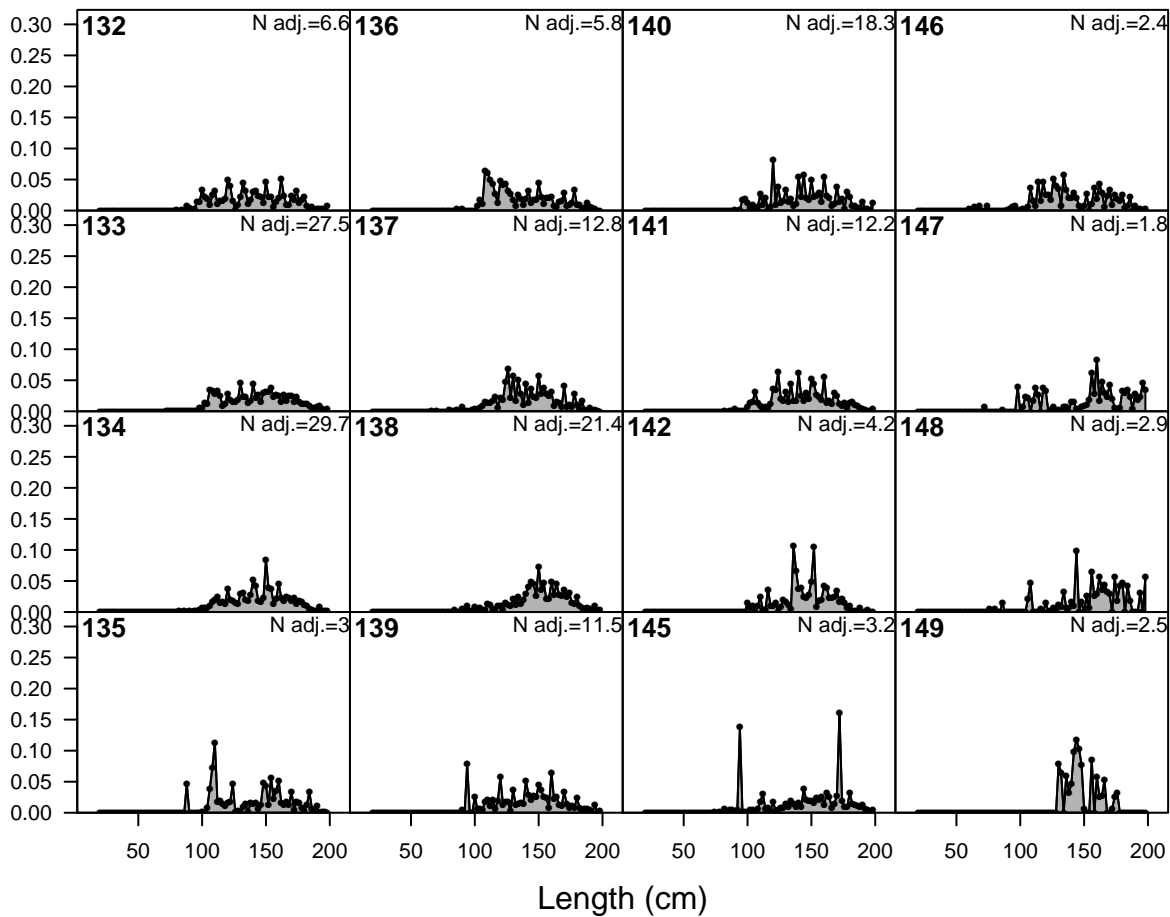
Proportion



Proportion

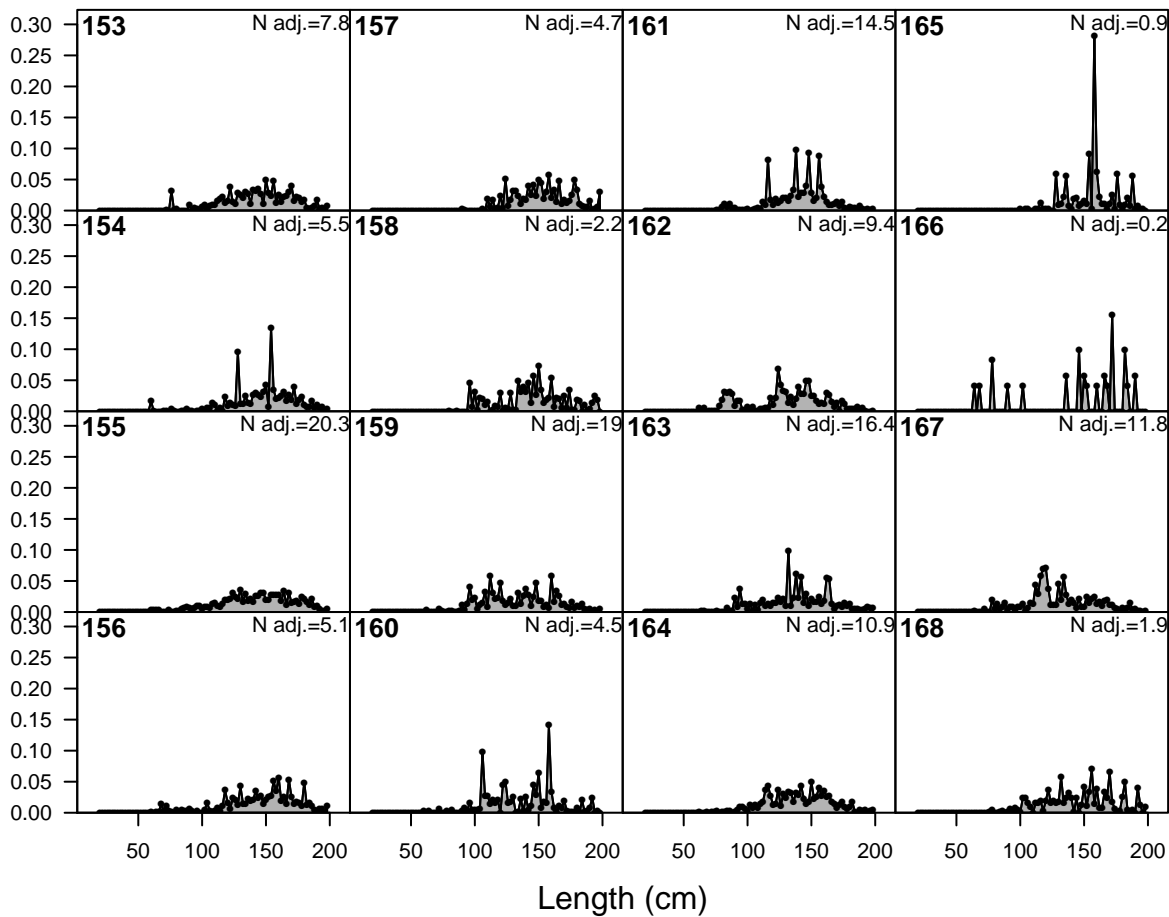


Proportion

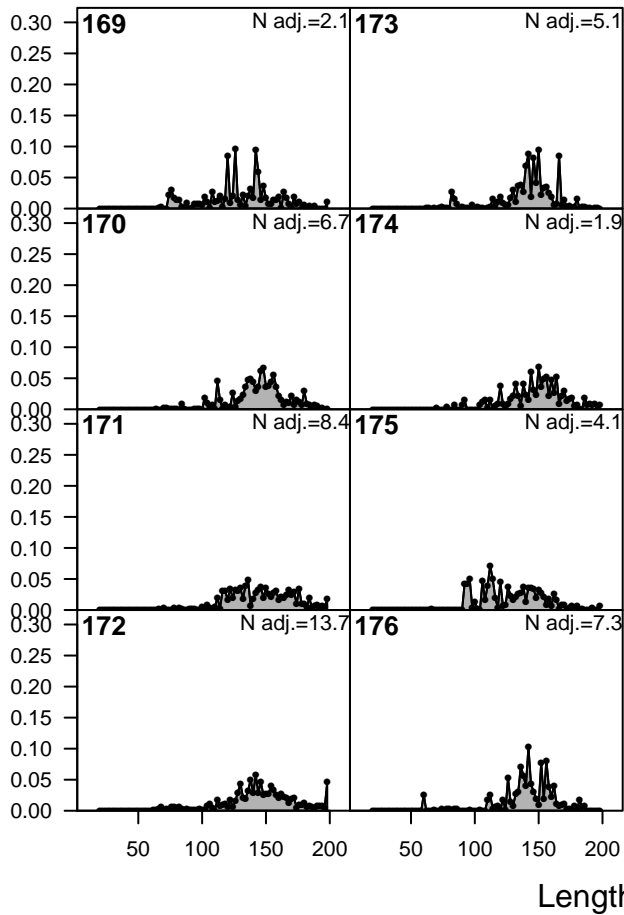


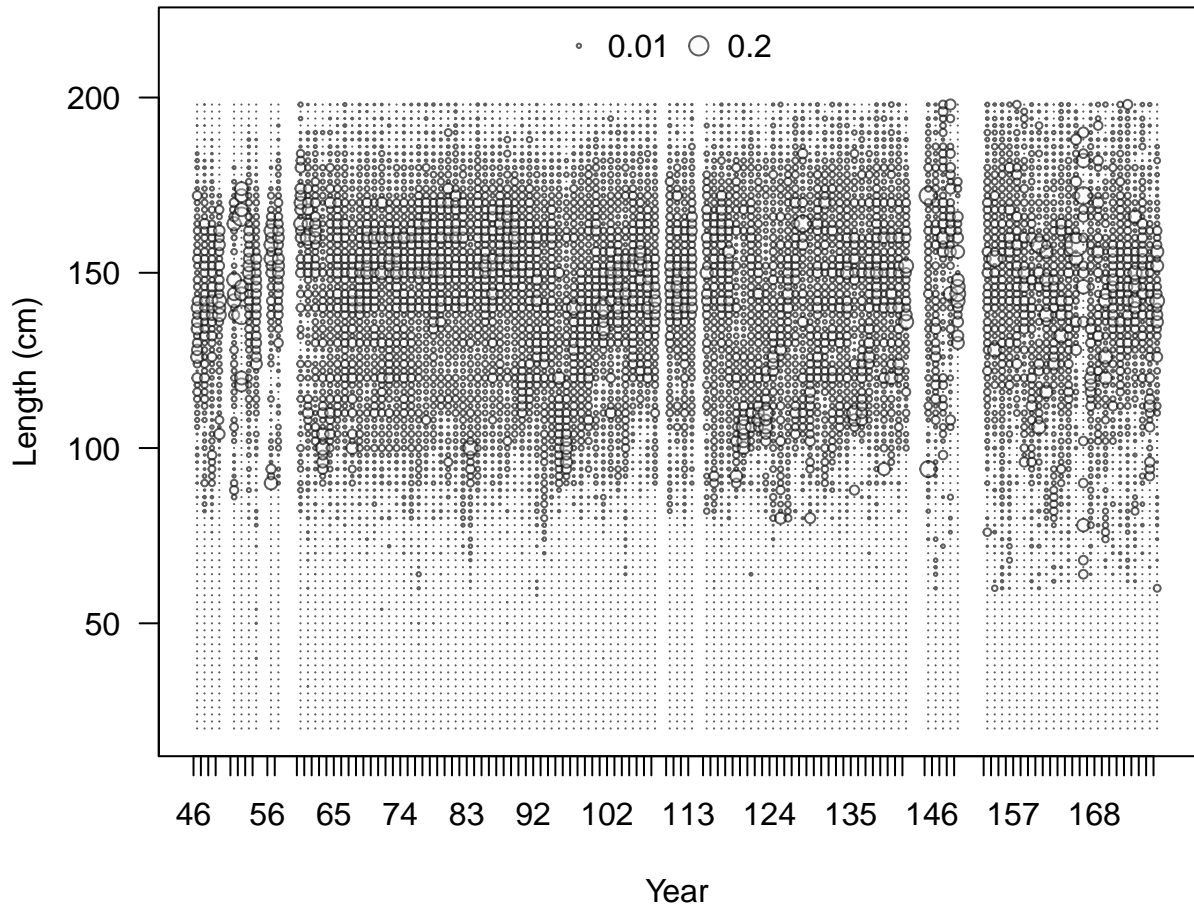


Proportion

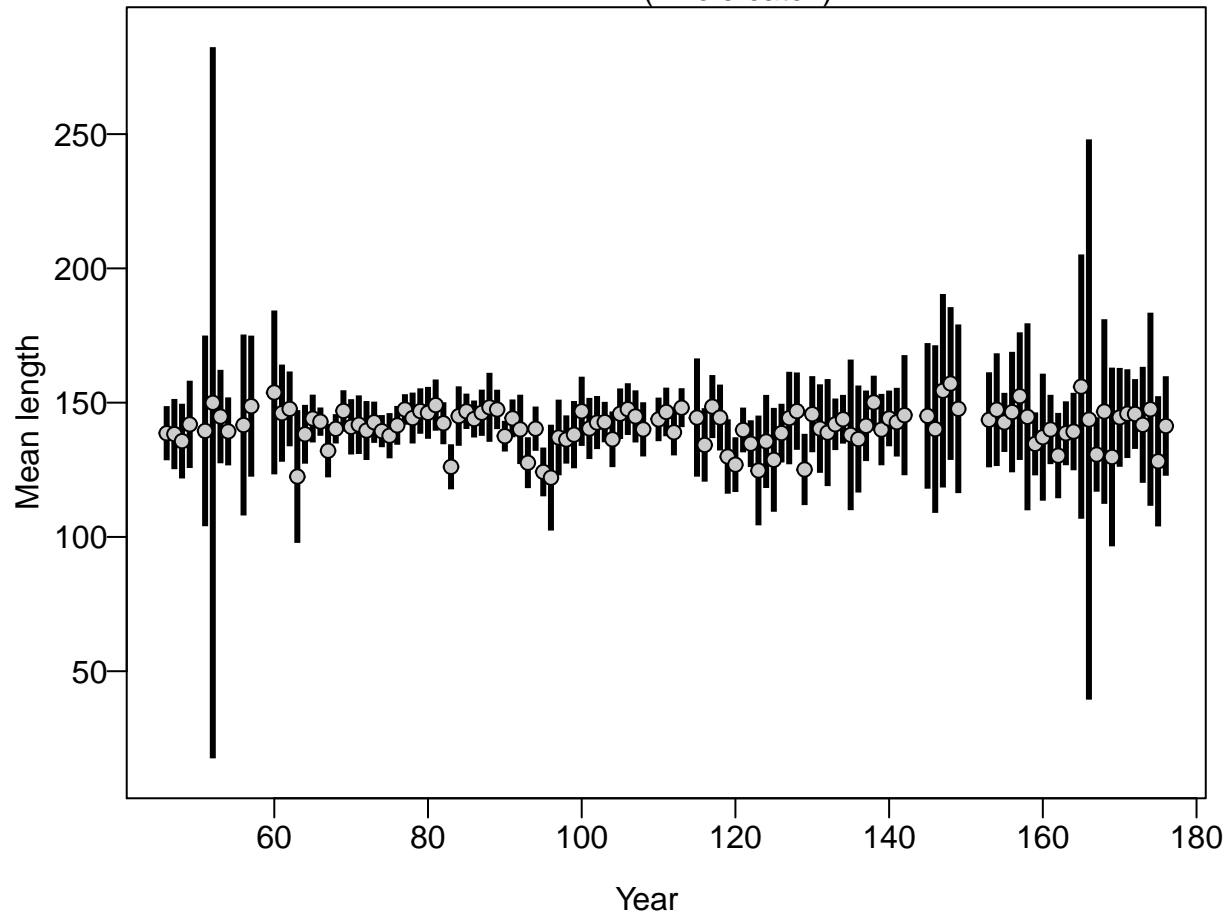


Proportion

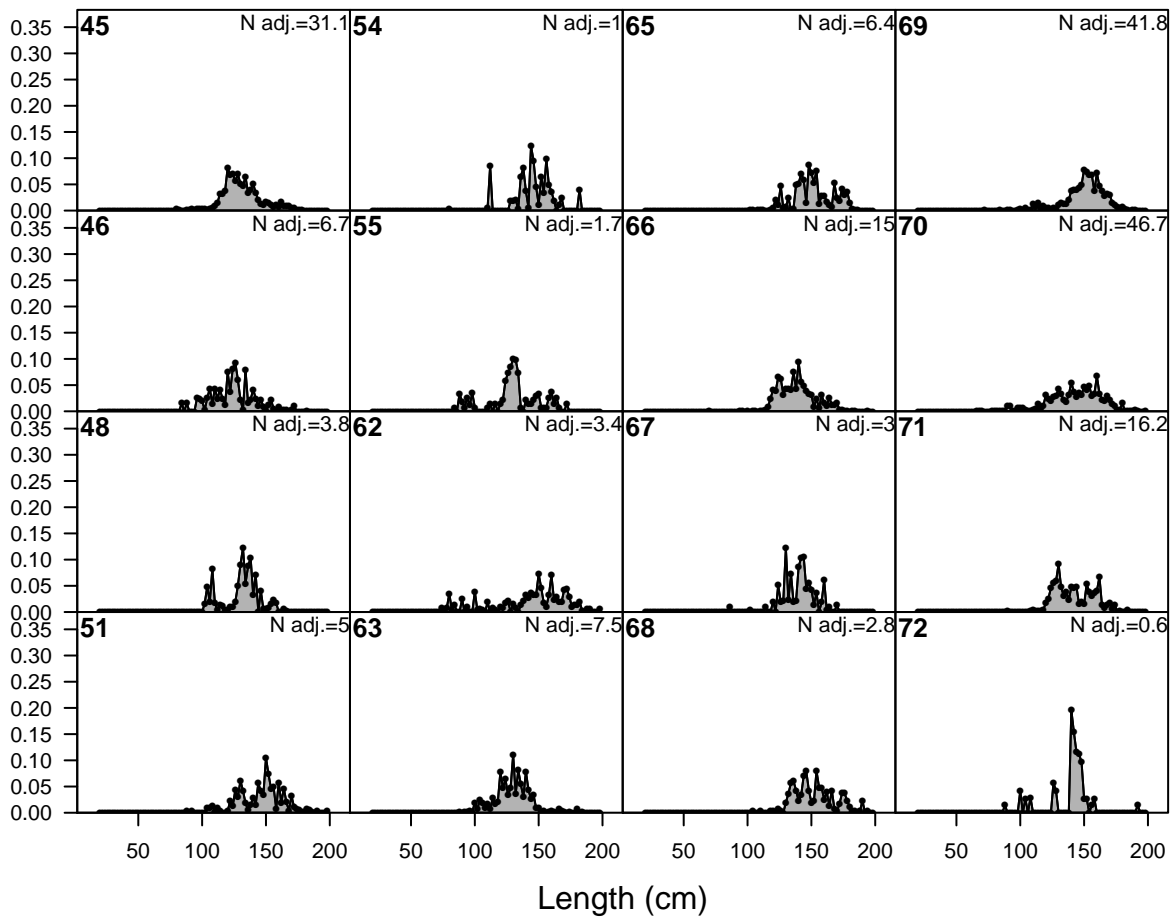




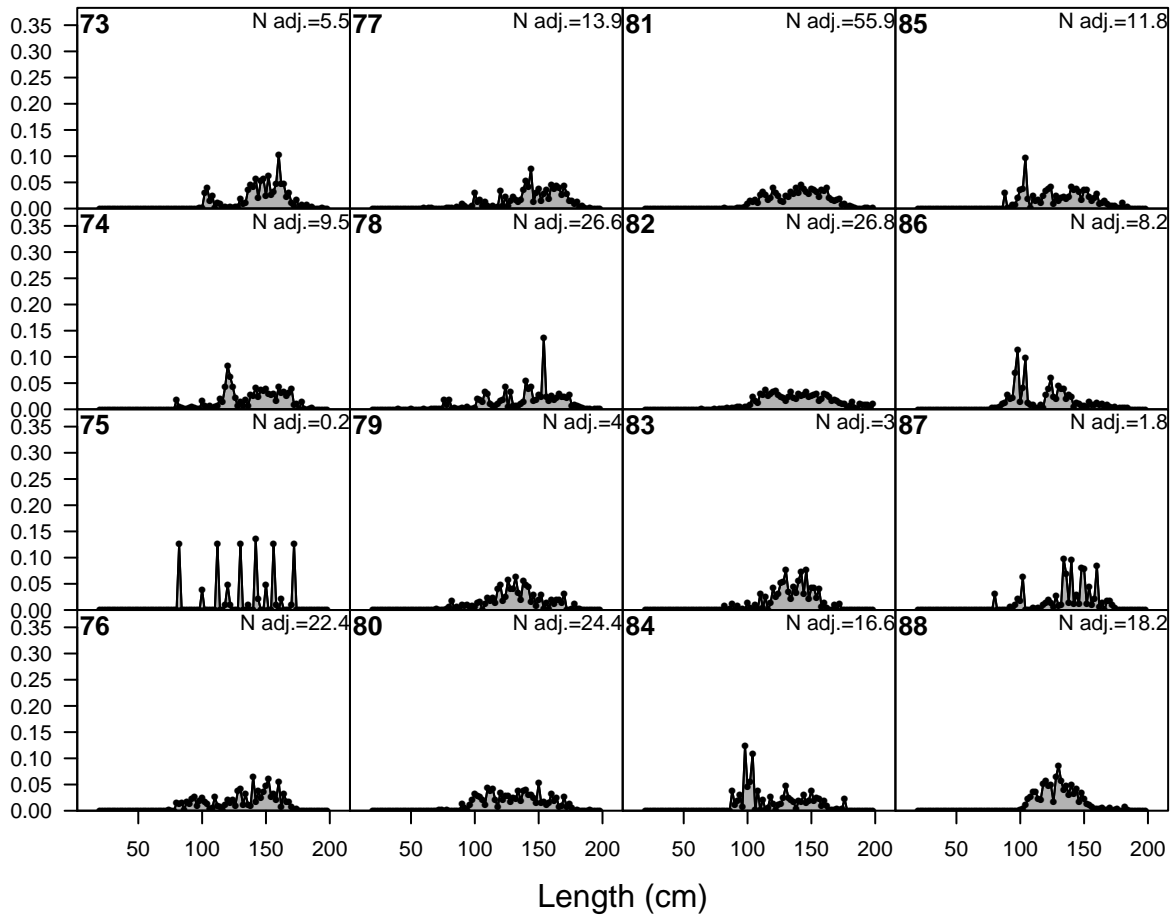
A2-LL-n (whole catch)



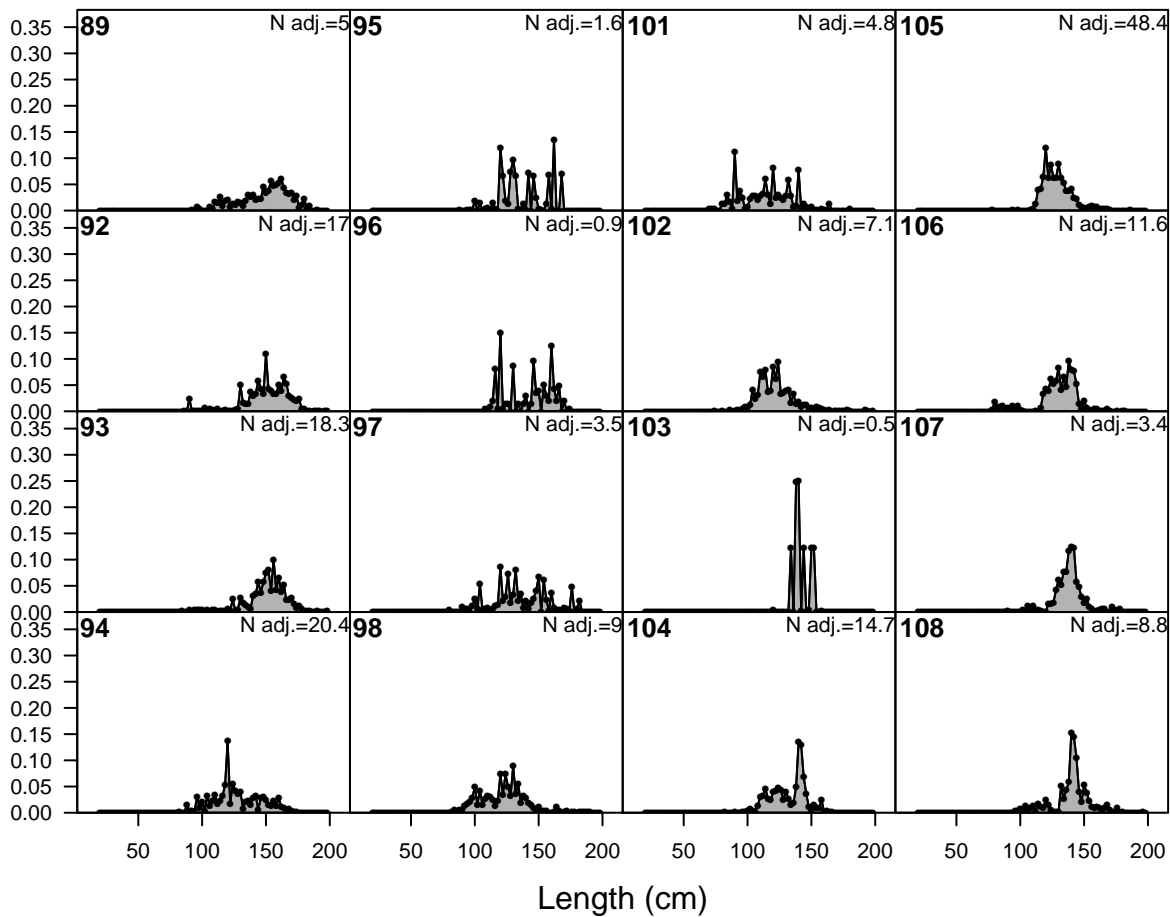
Proportion



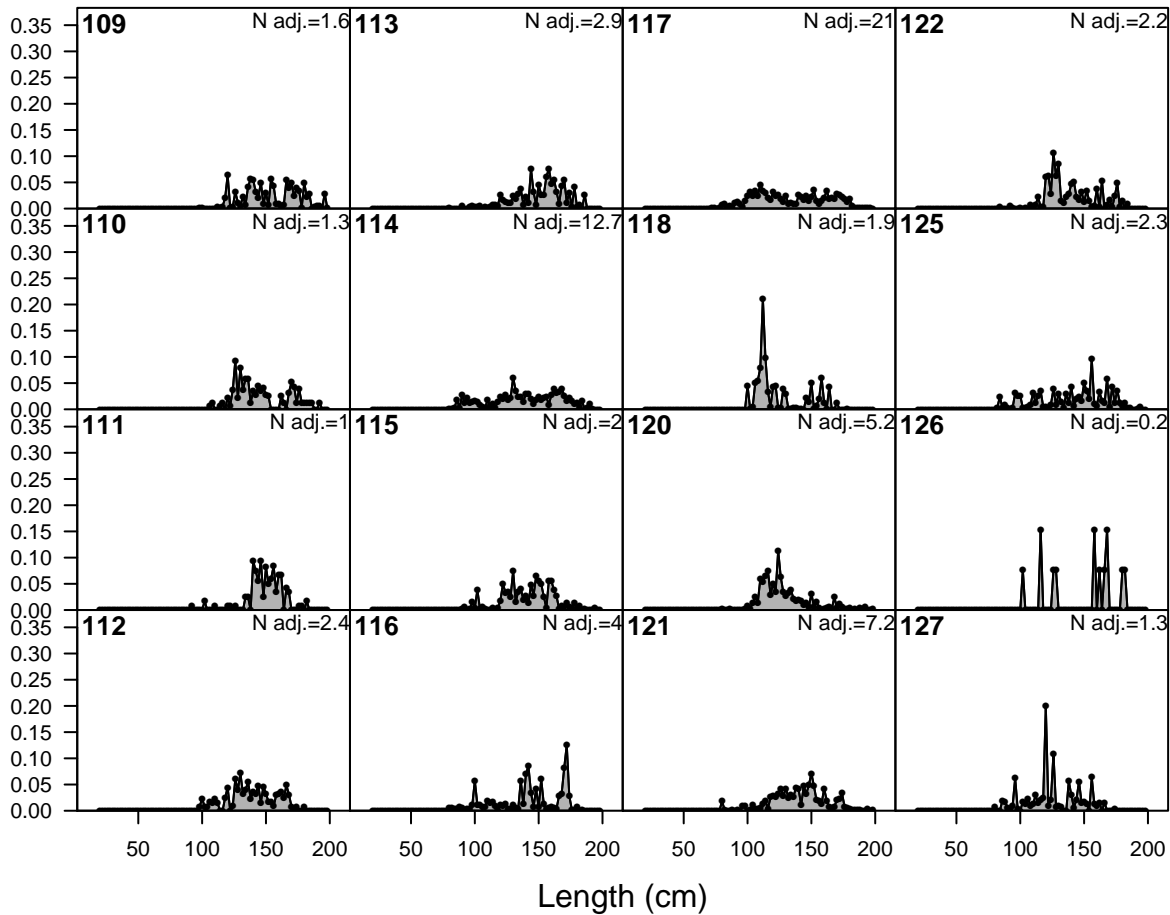
Proportion



Proportion

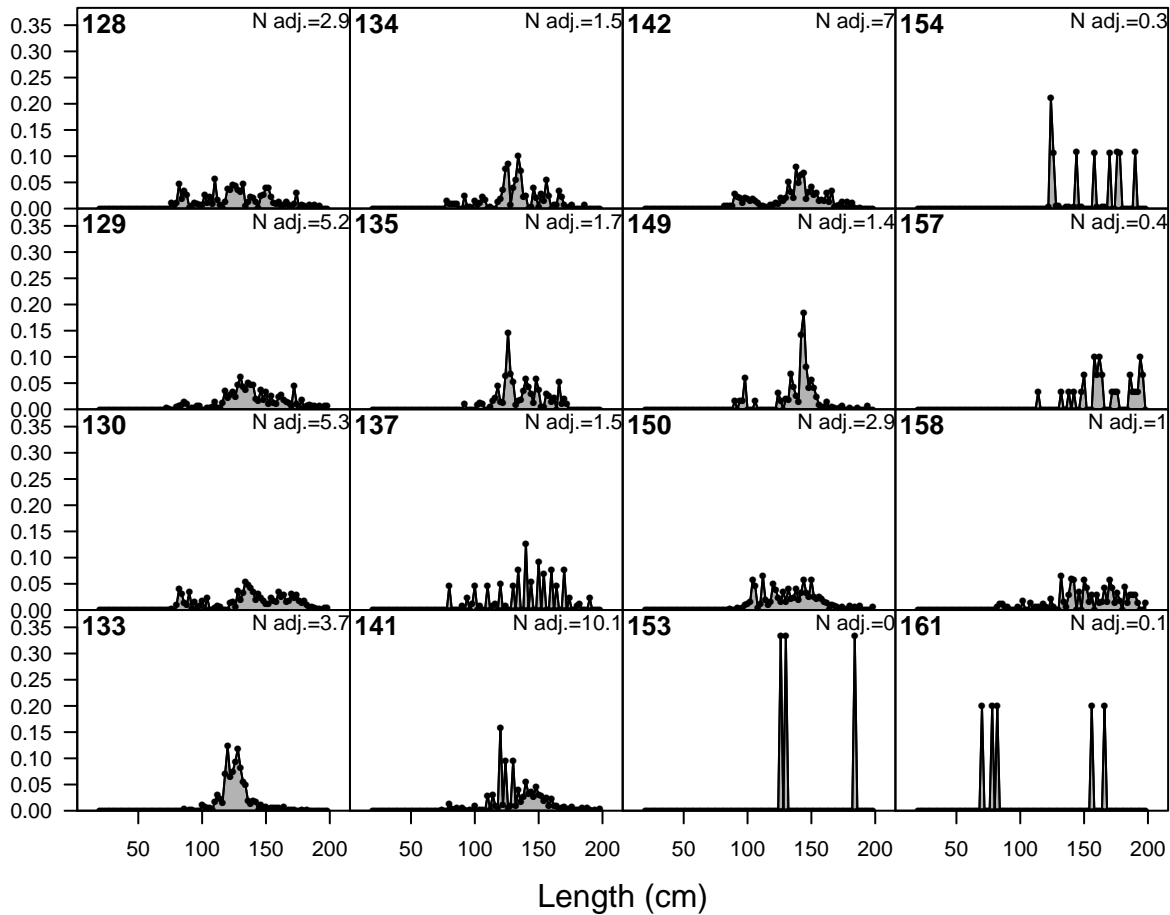


Proportion

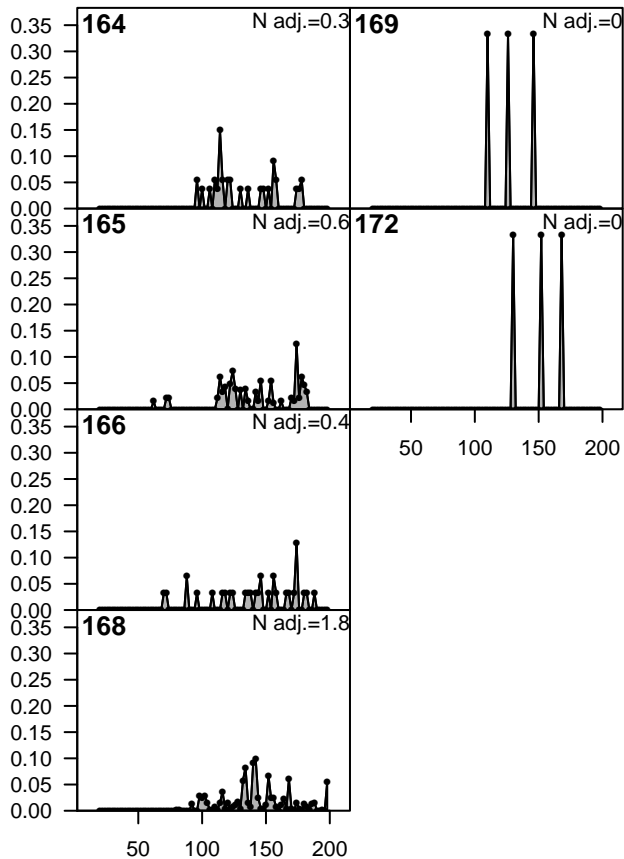




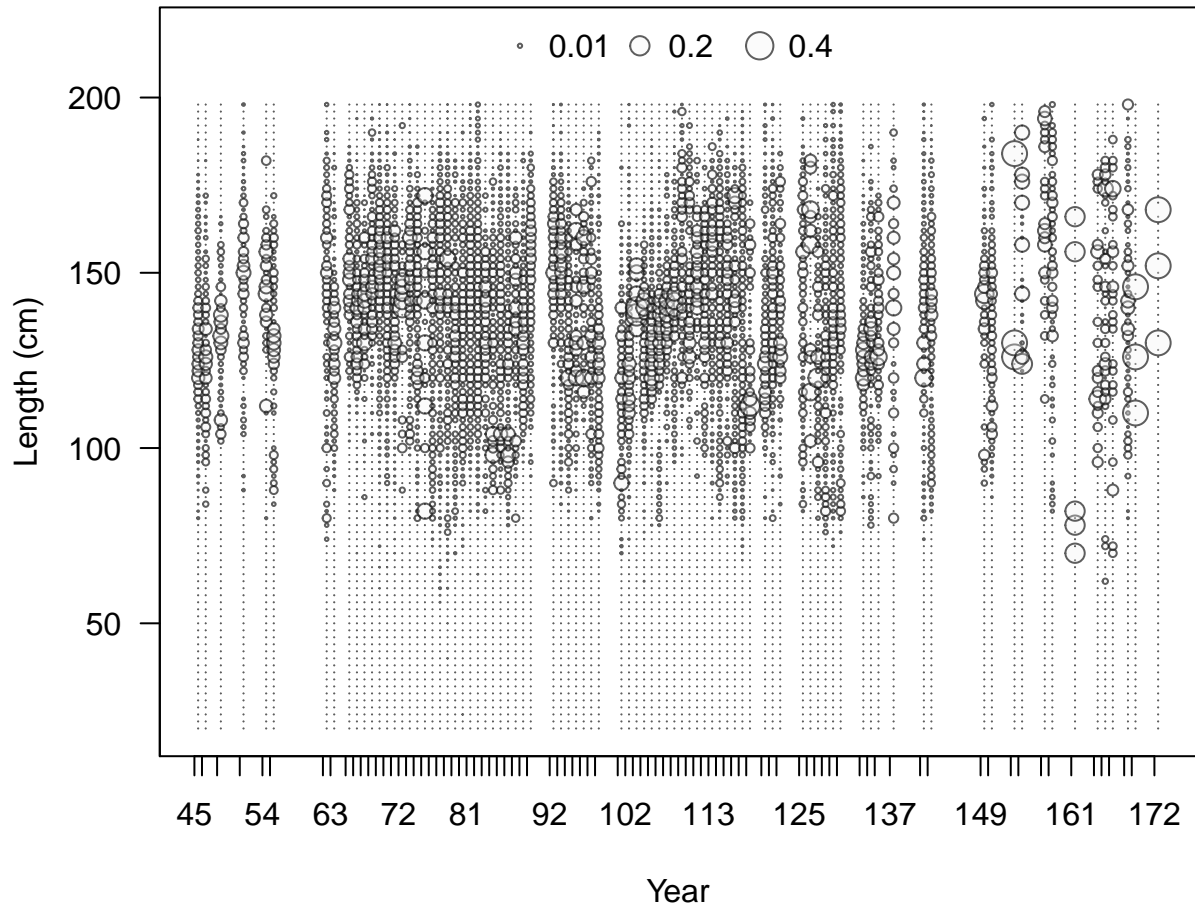
Proportion



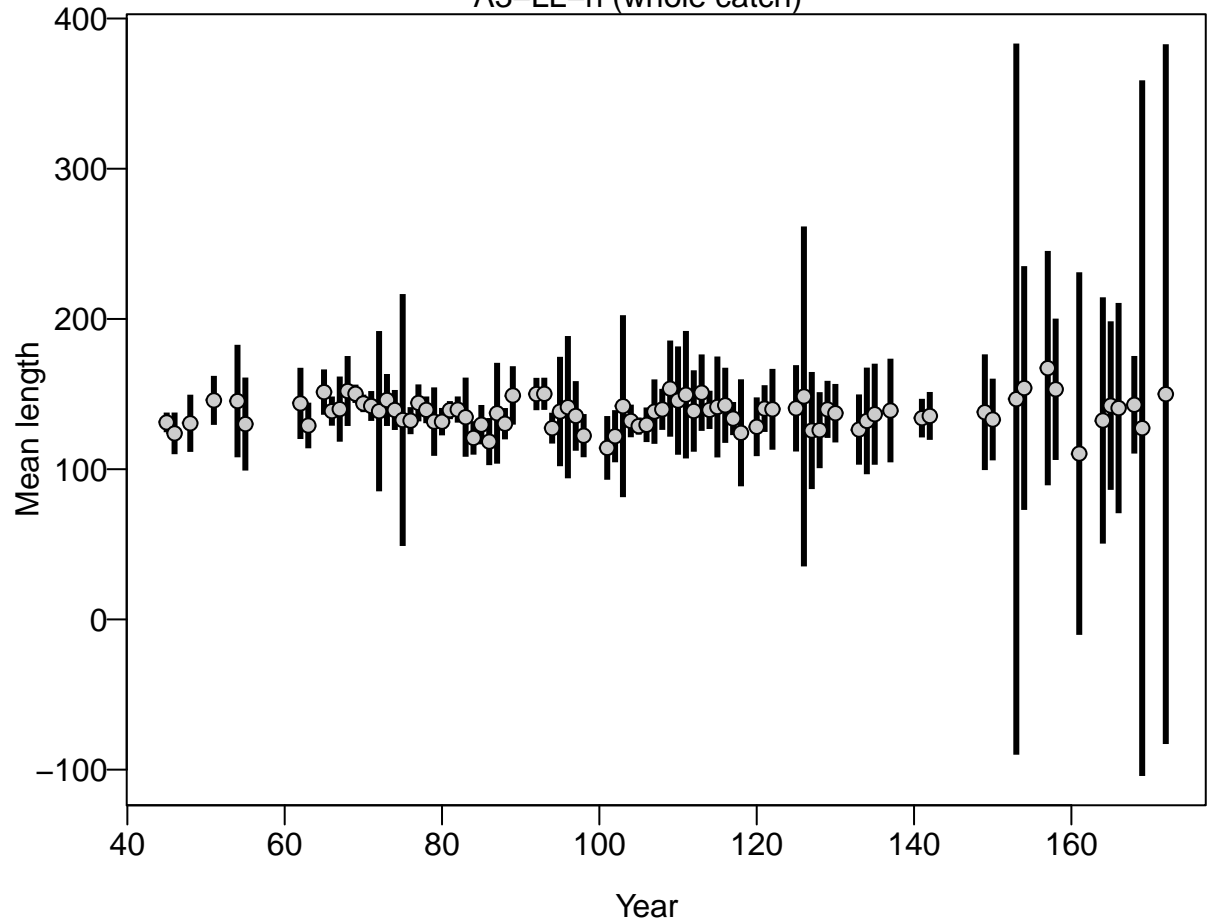
Proportion



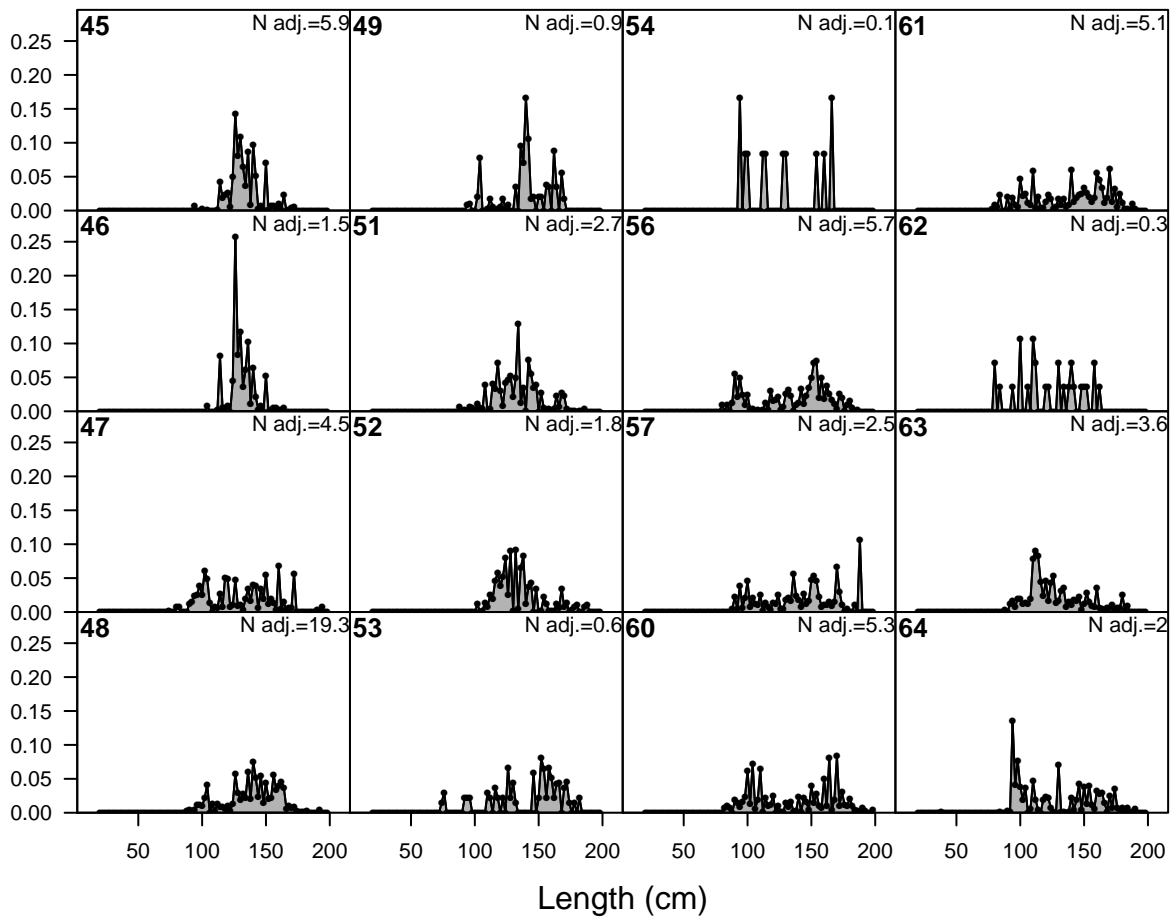
Length (cm)



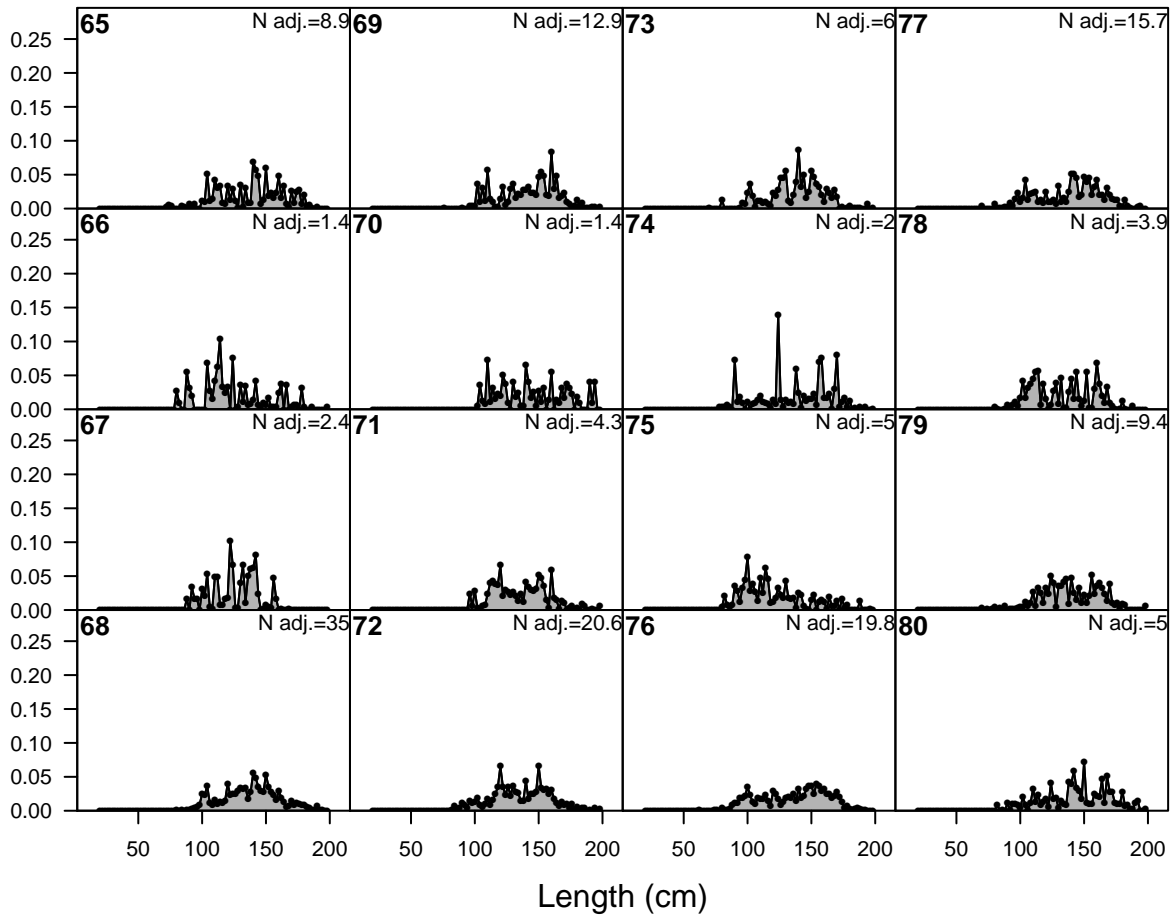
A3-LL-n (whole catch)



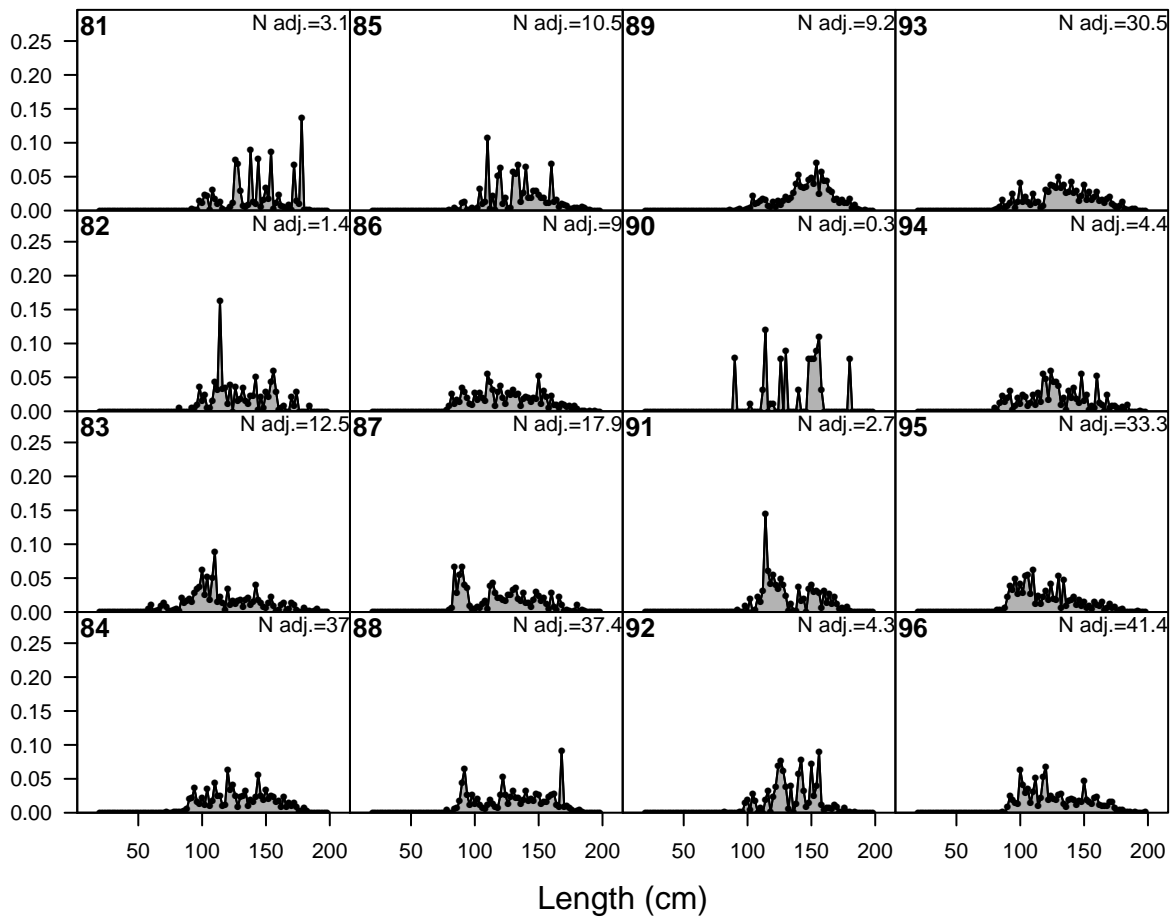
Proportion



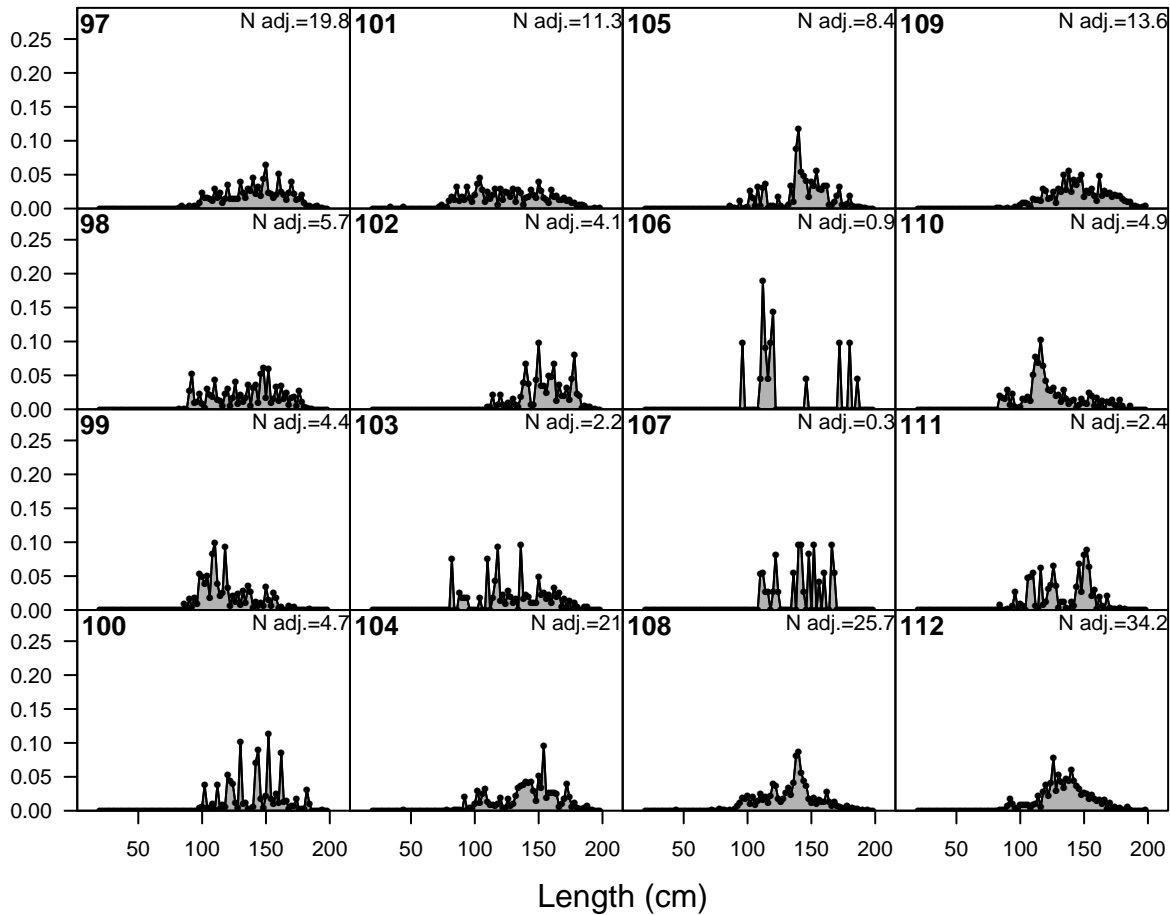
Proportion



Proportion

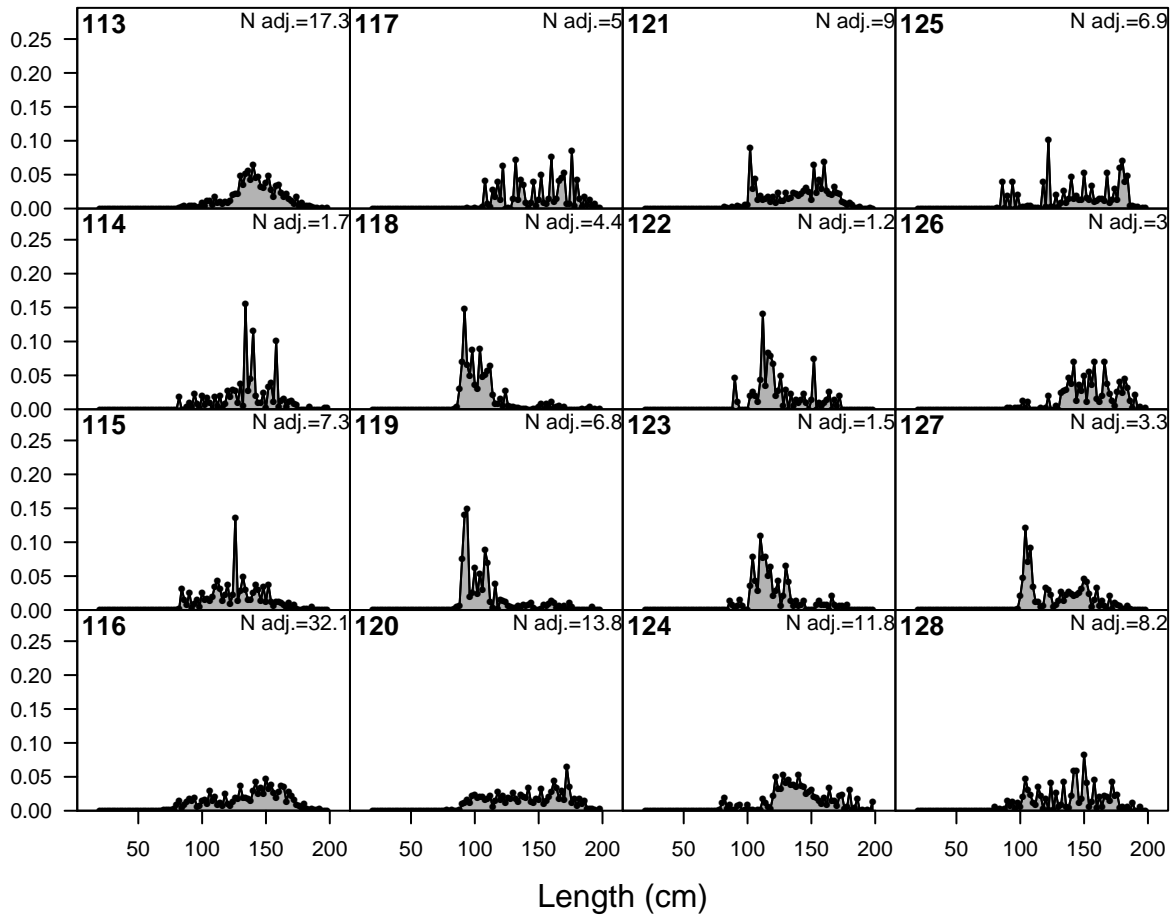


Proportion

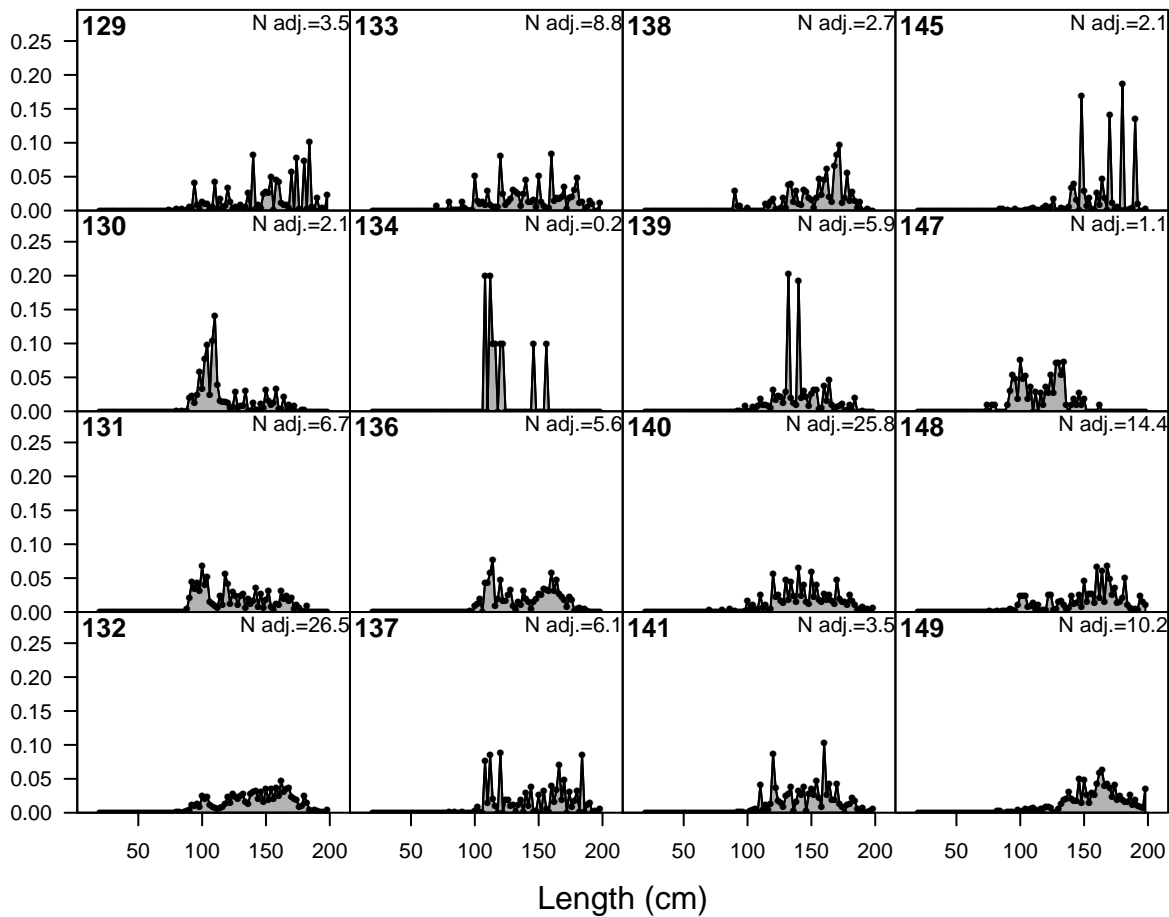




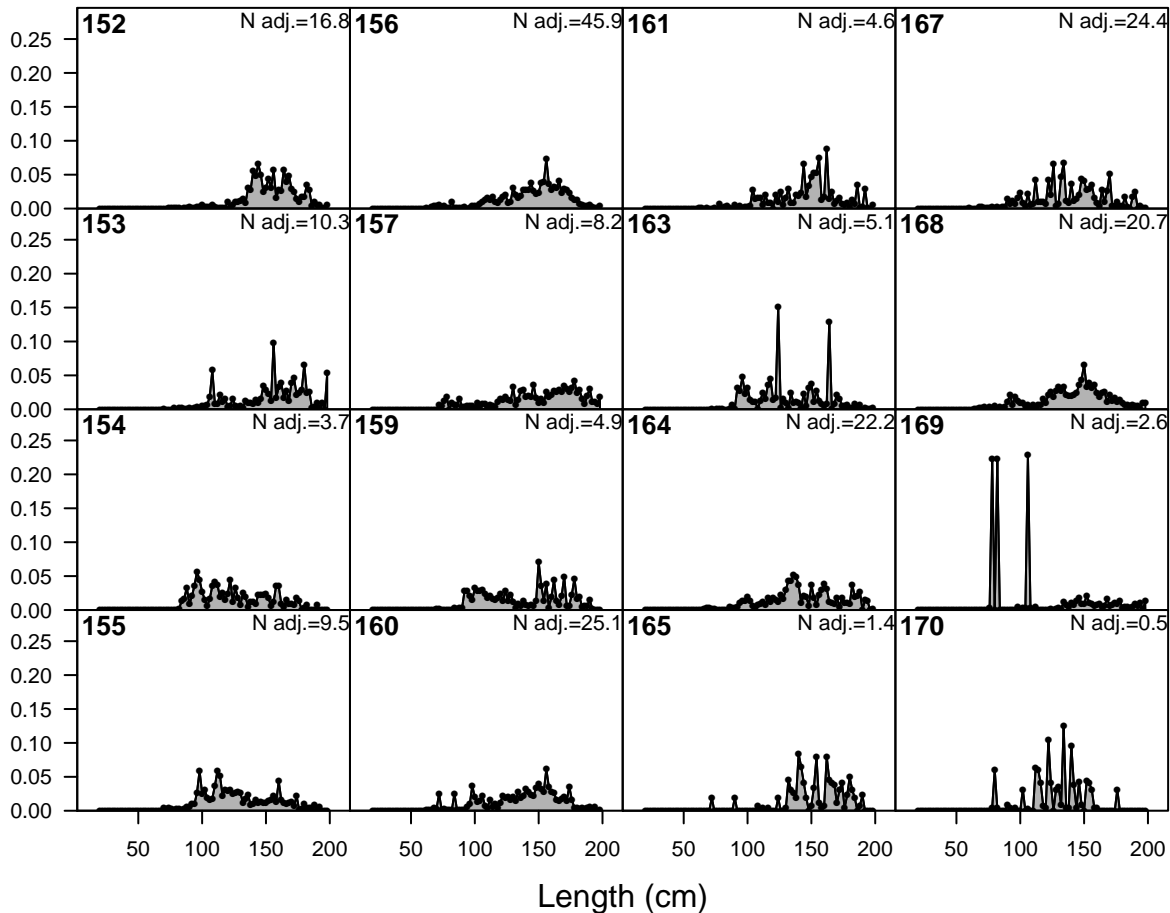
Proportion



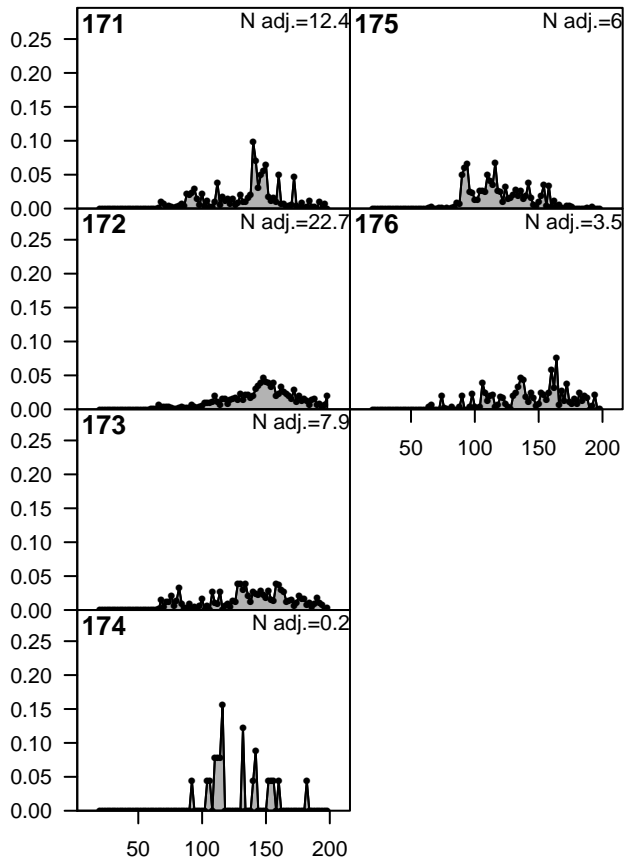
Proportion



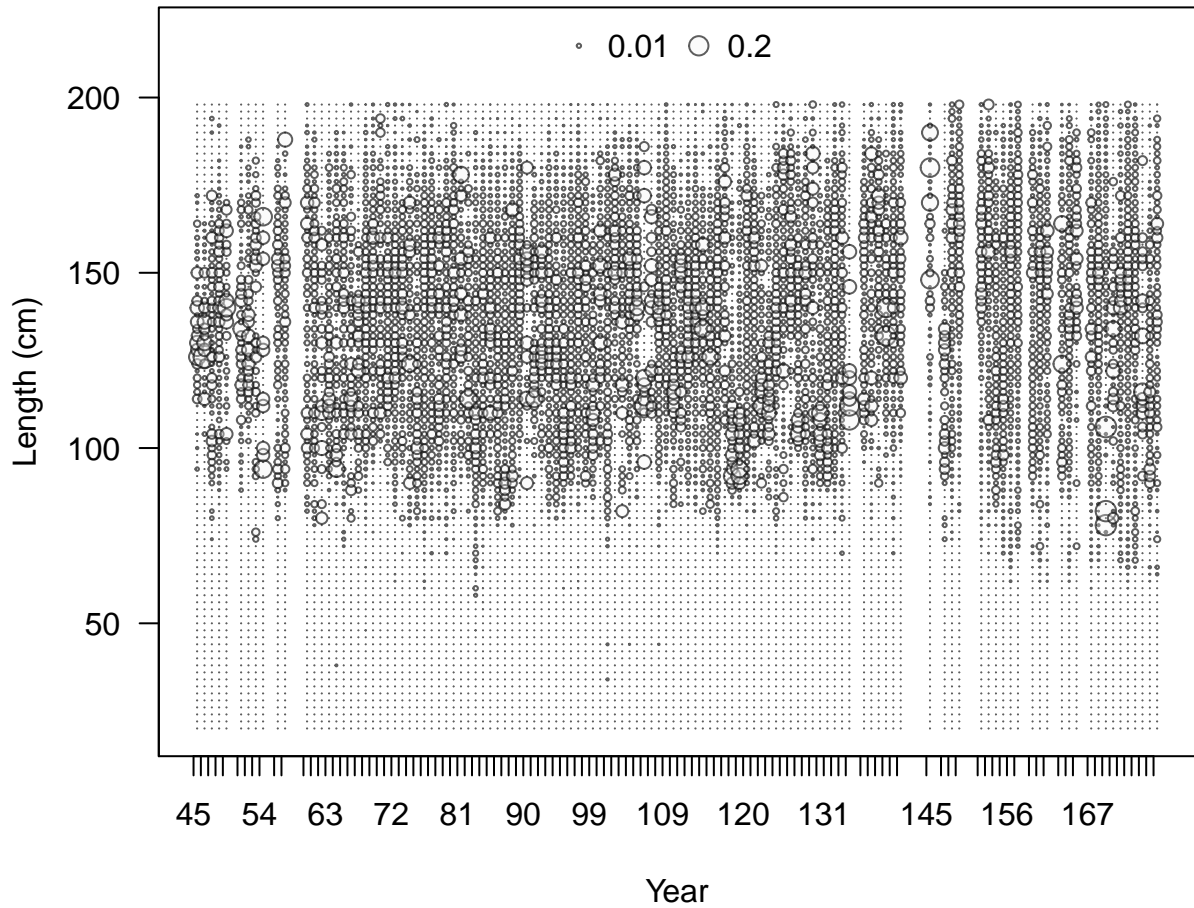
Proportion



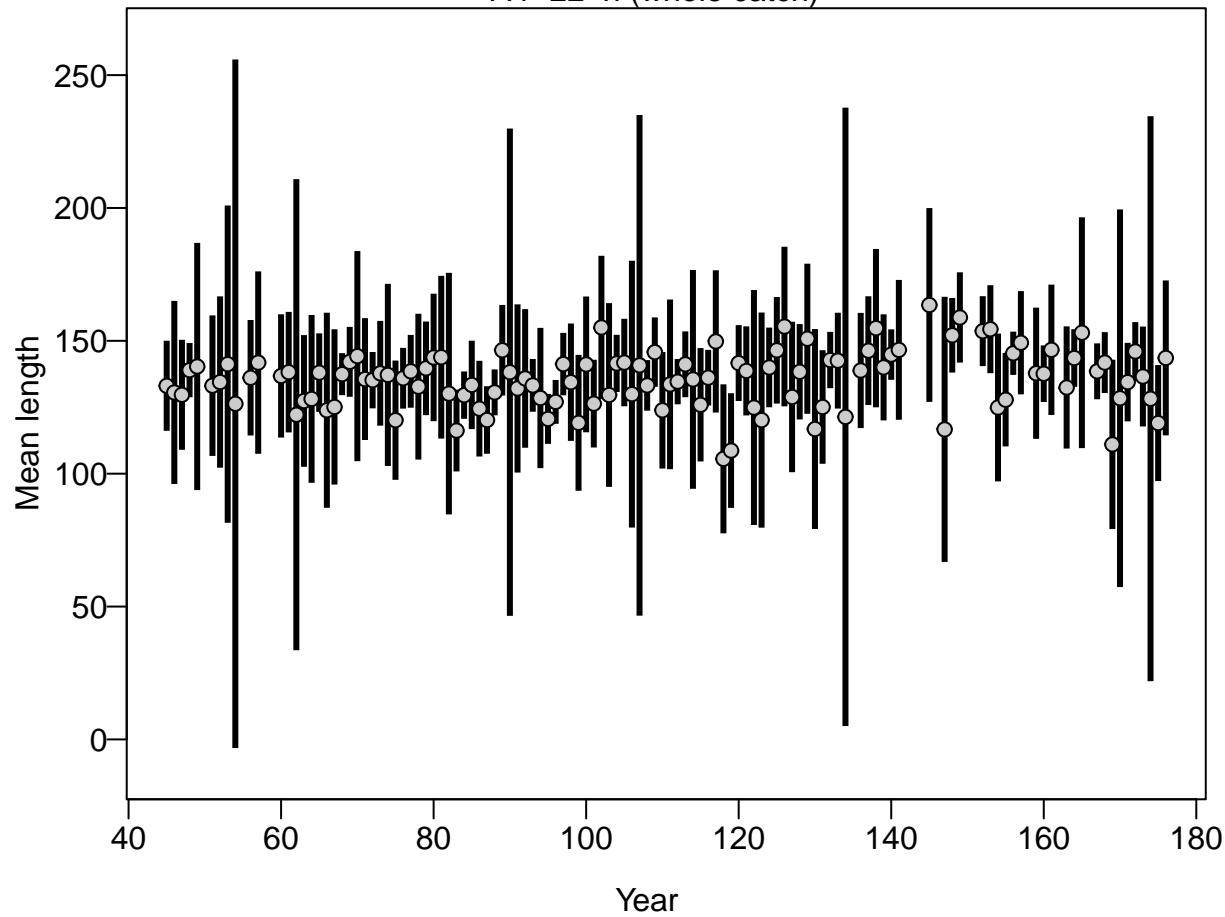
Proportion



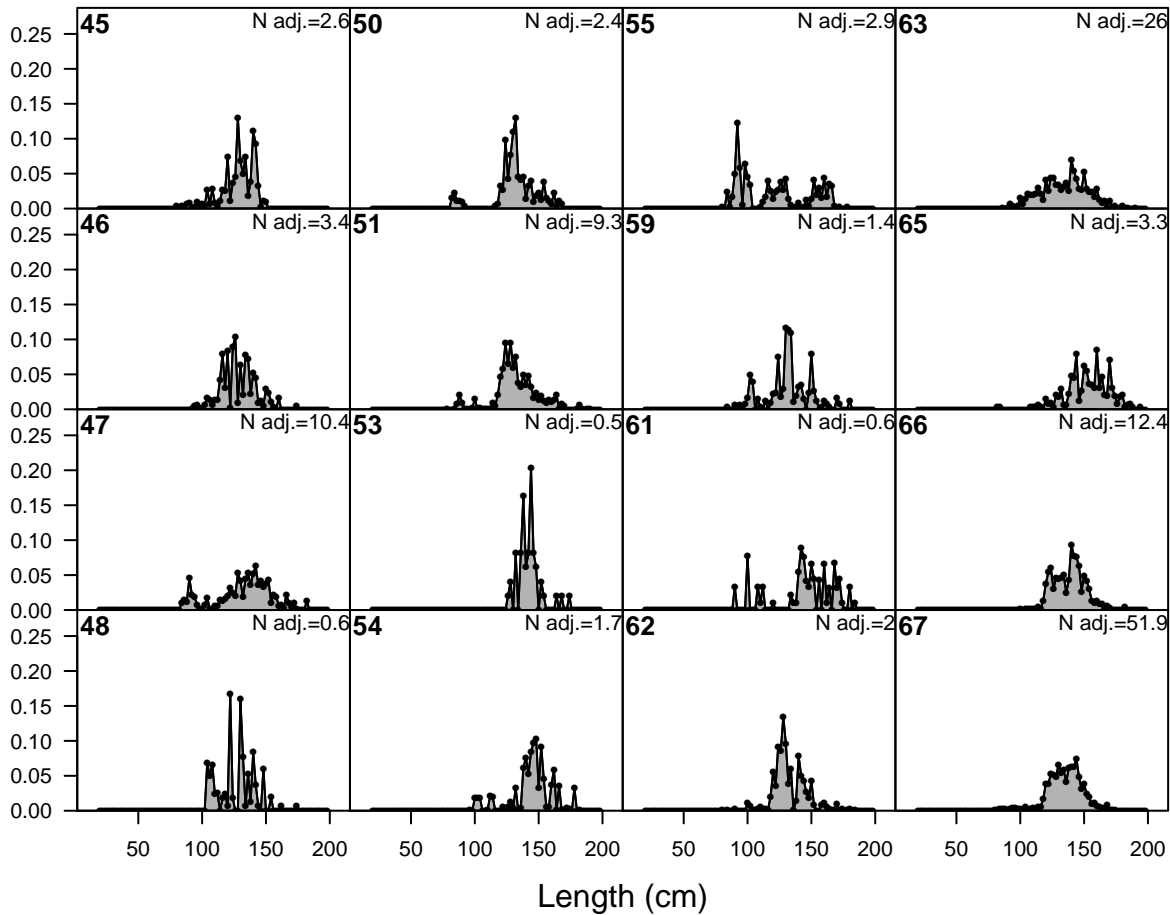
Length (cm)



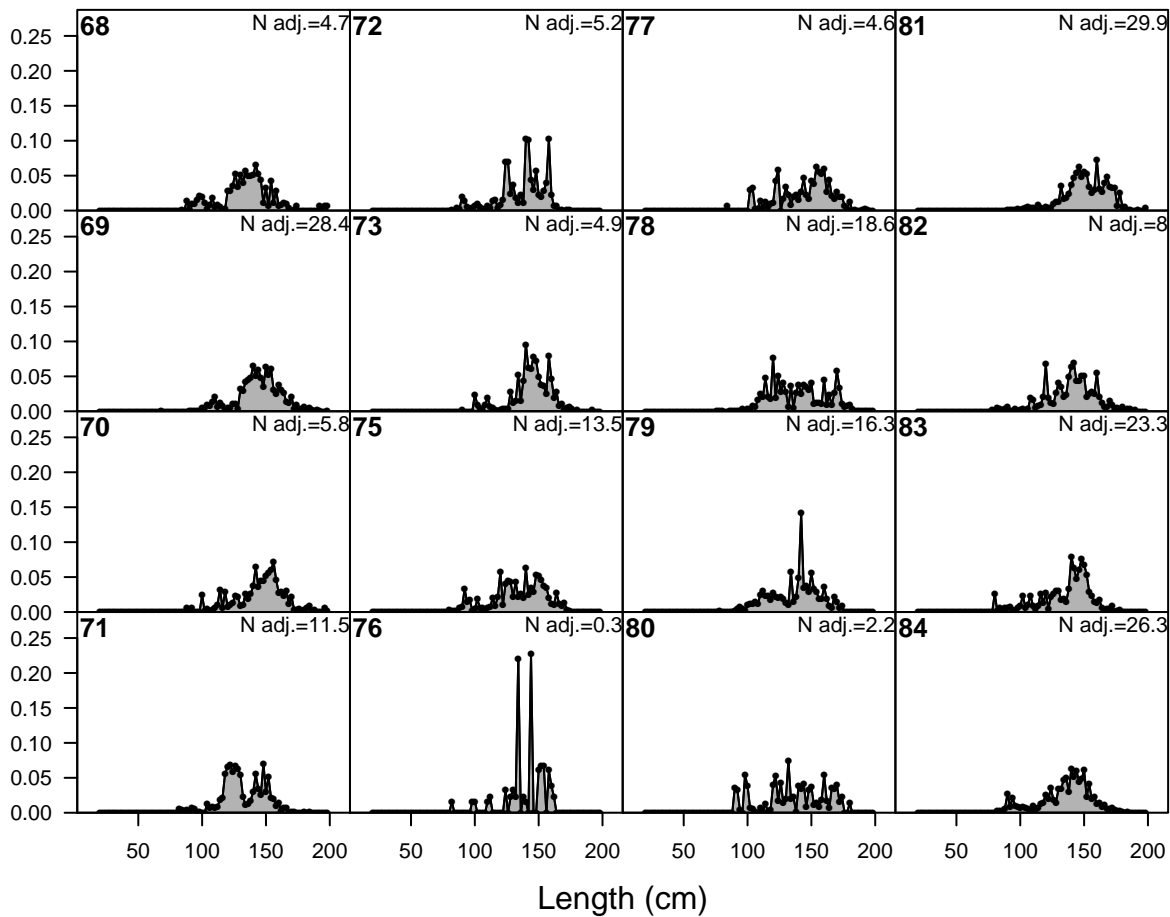
## A4-LL-n (whole catch)



Proportion

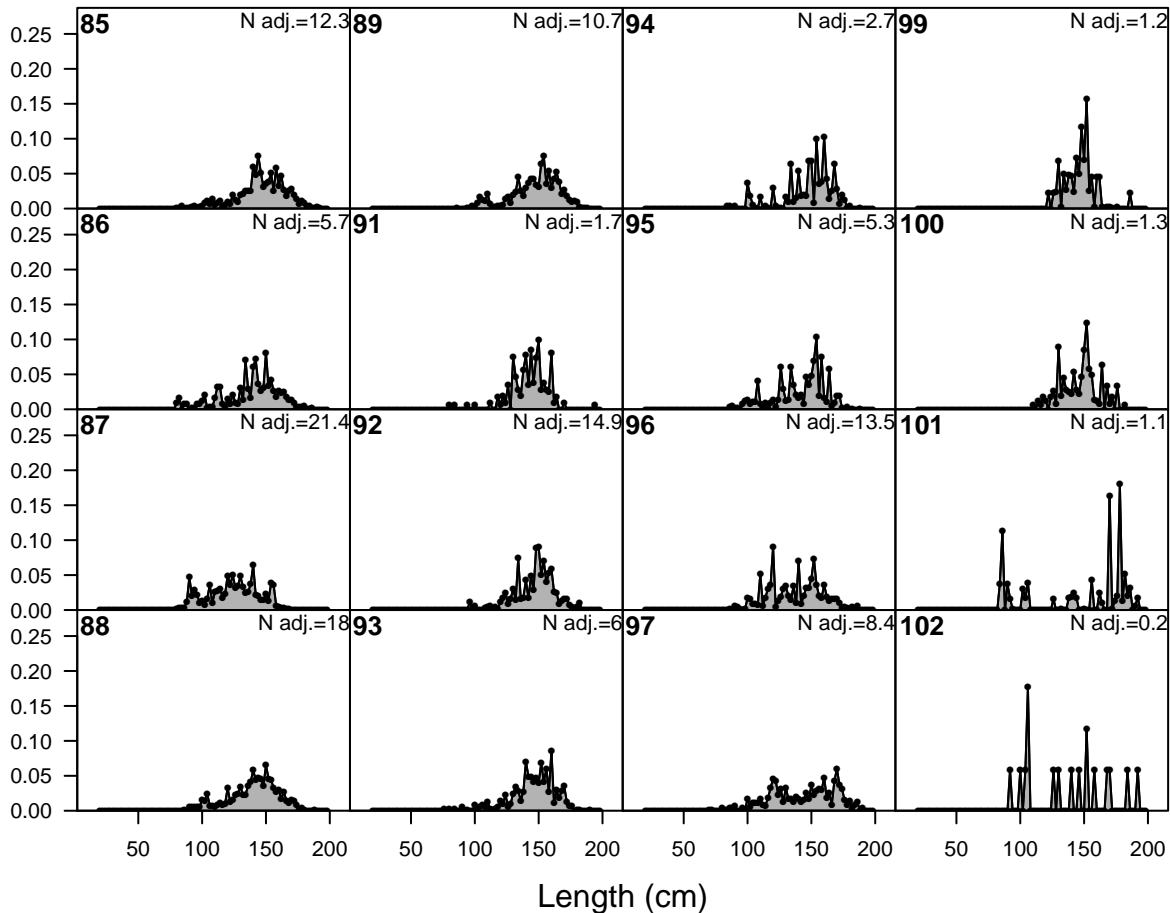


Proportion

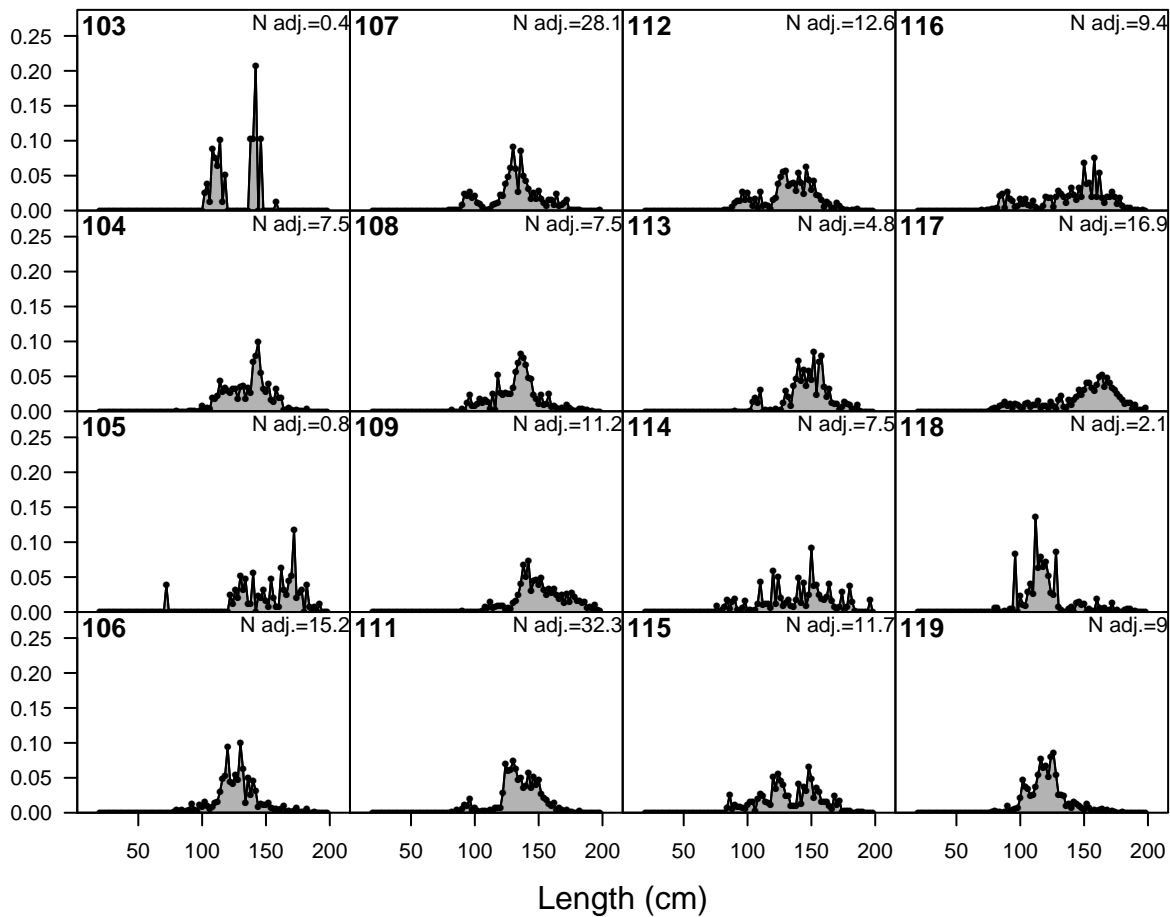




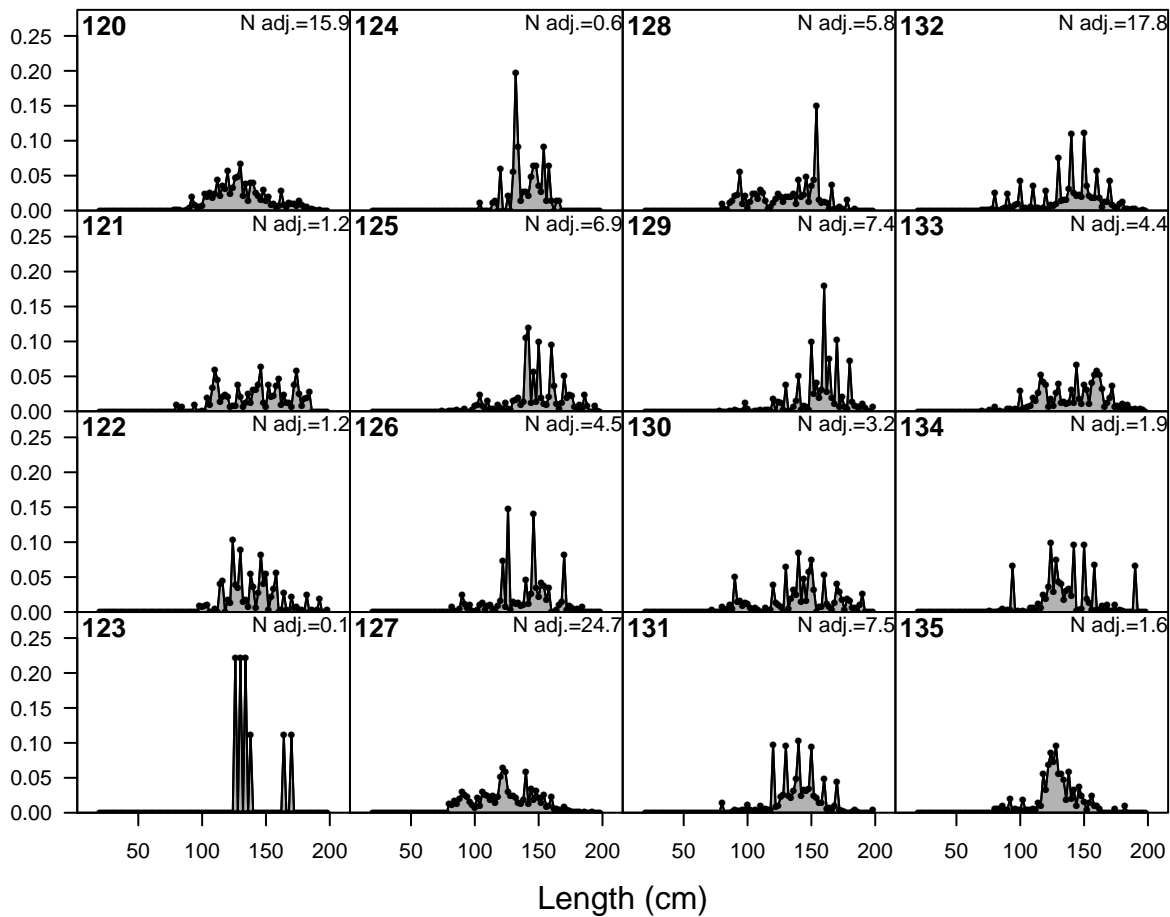
Proportion



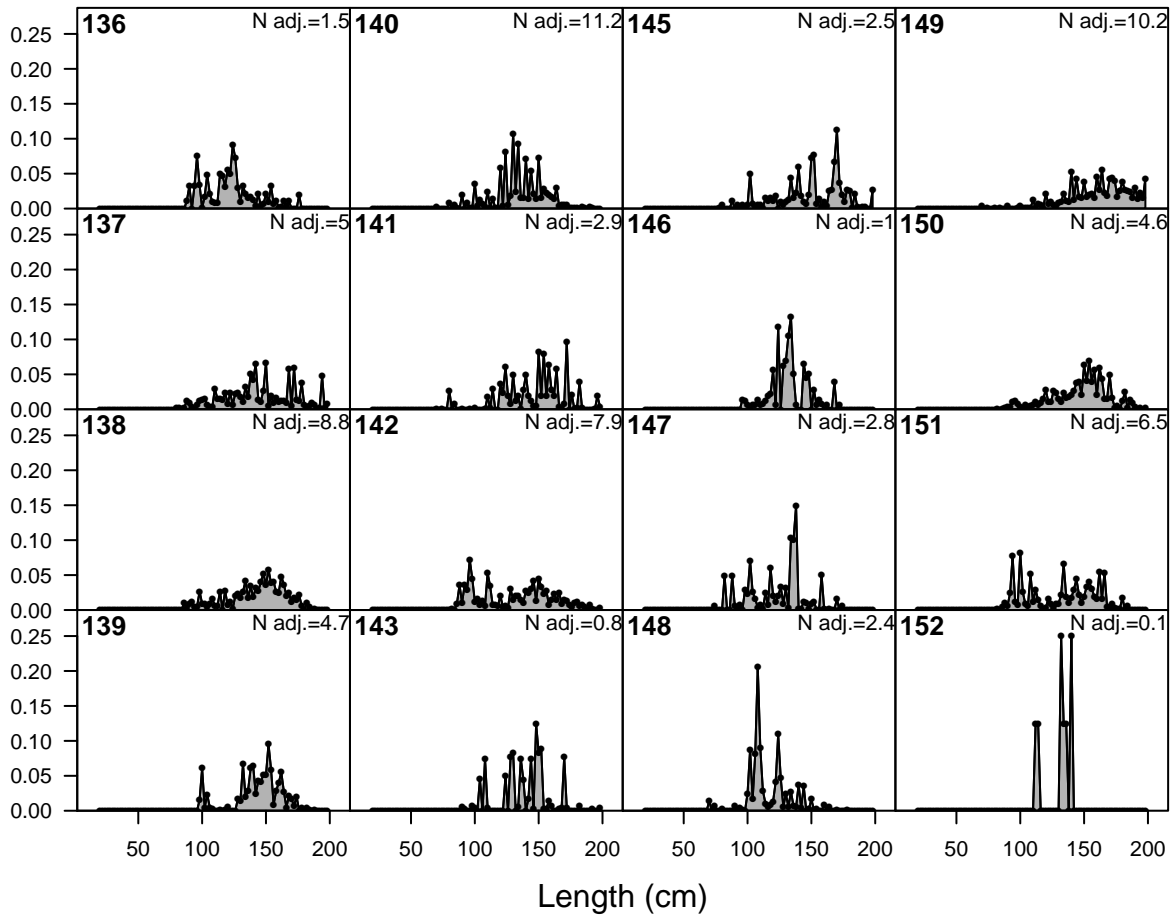
Proportion



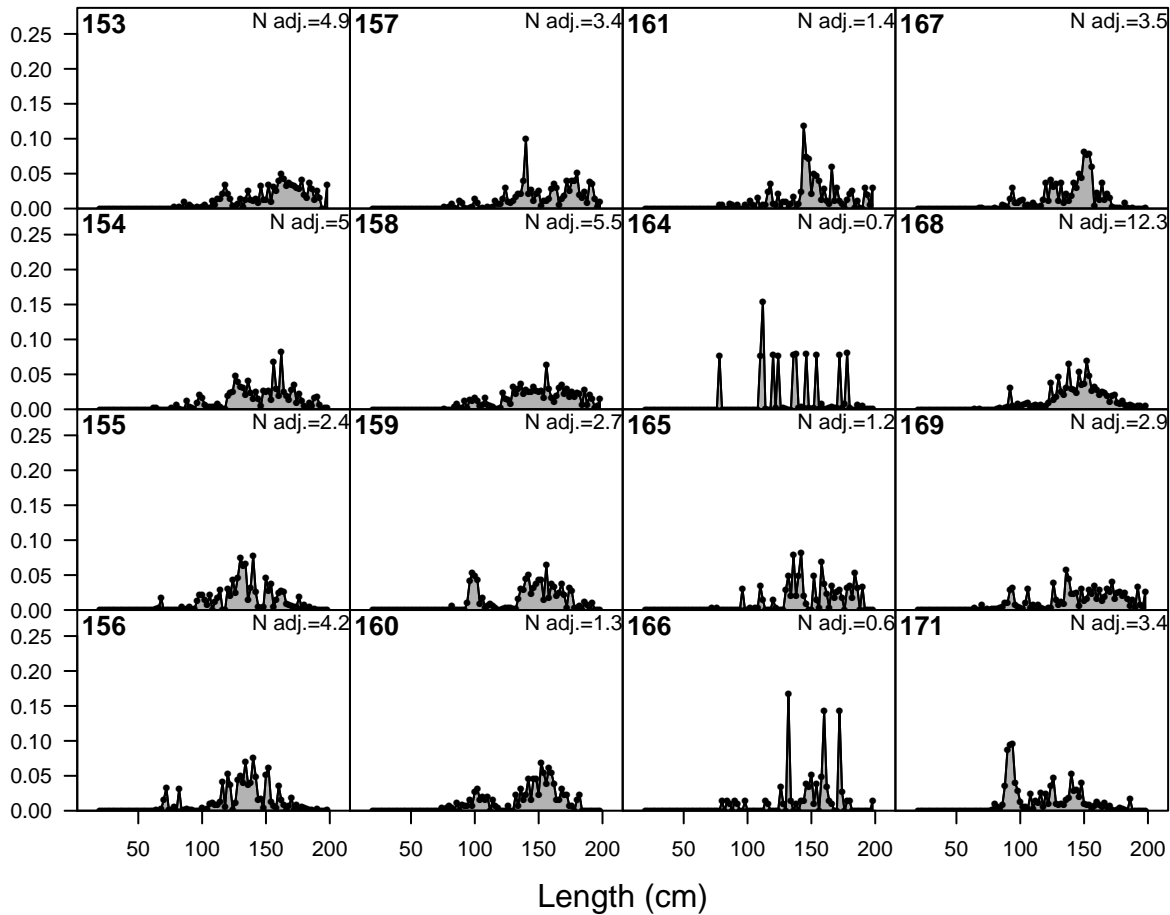
Proportion

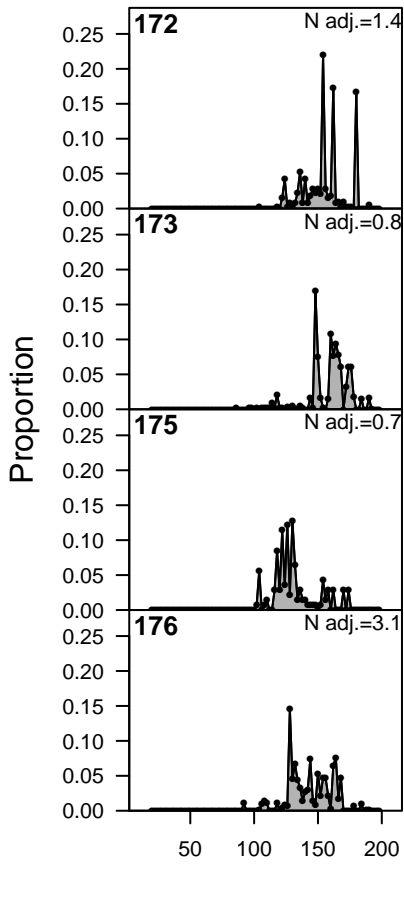


Proportion

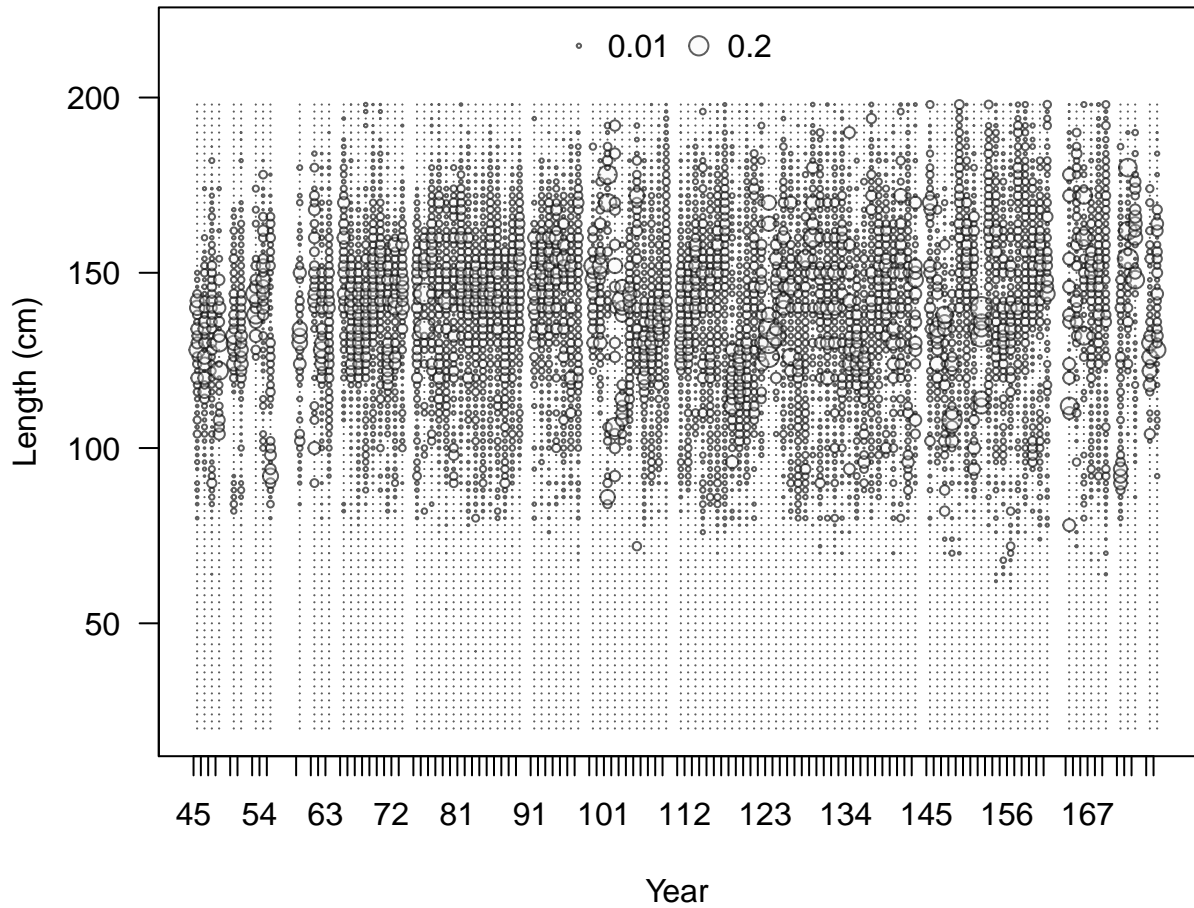


Proportion

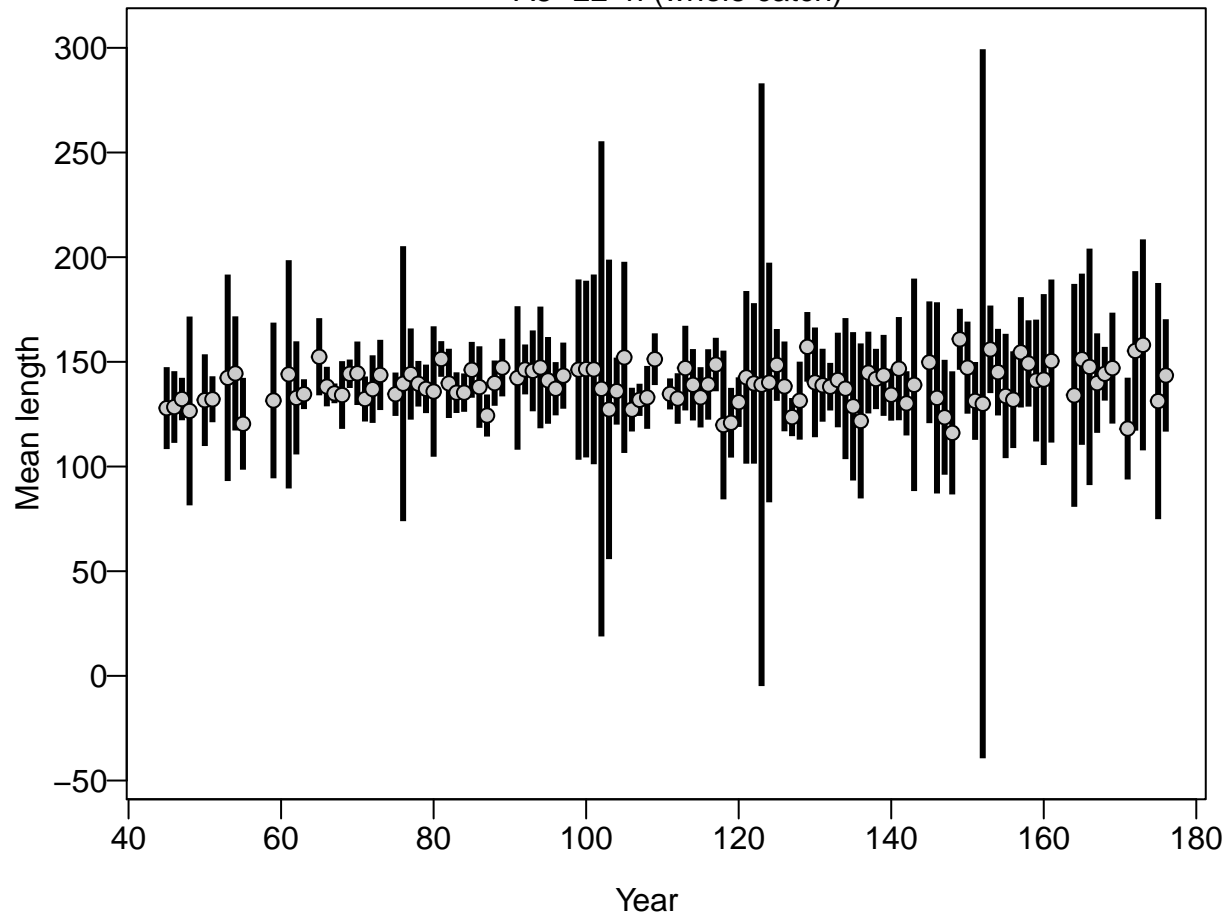




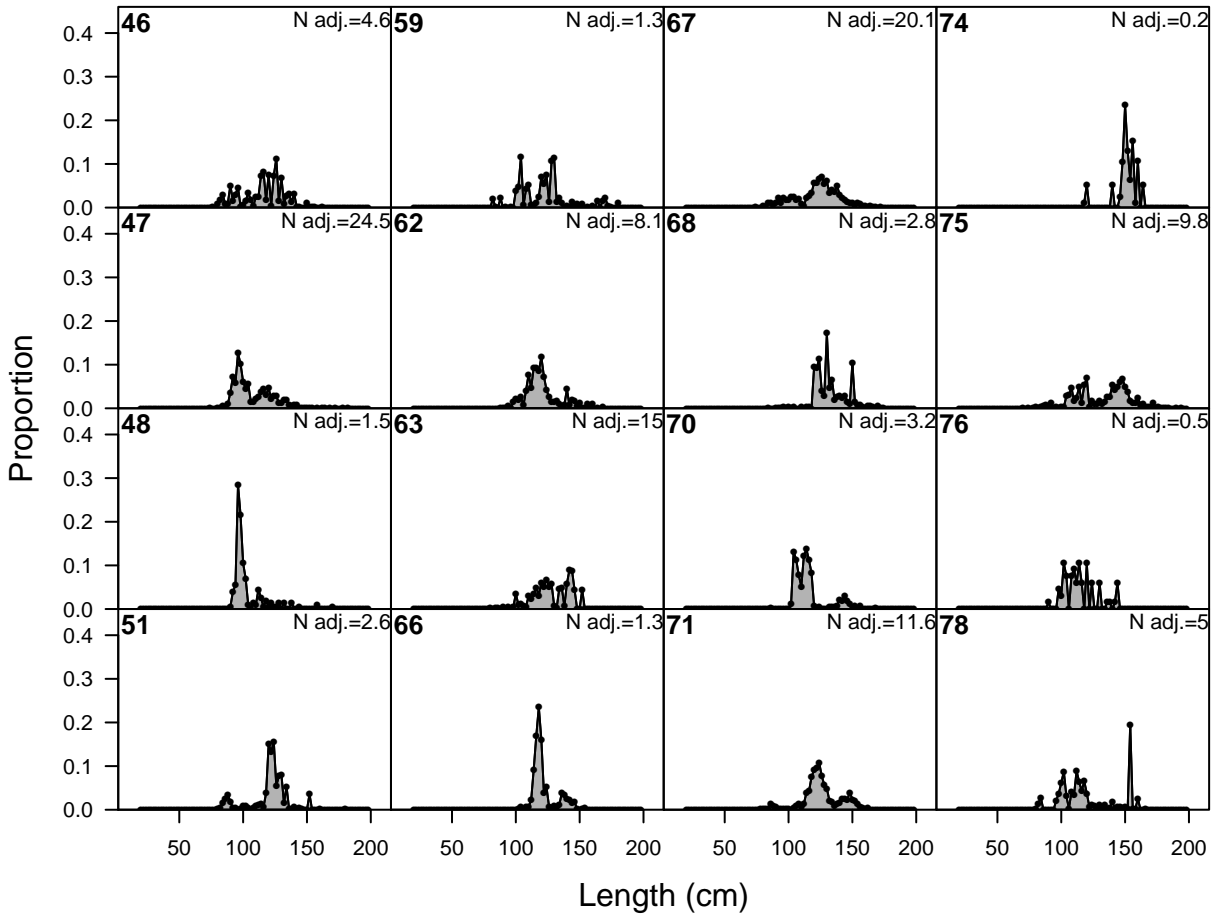
Length (cm)

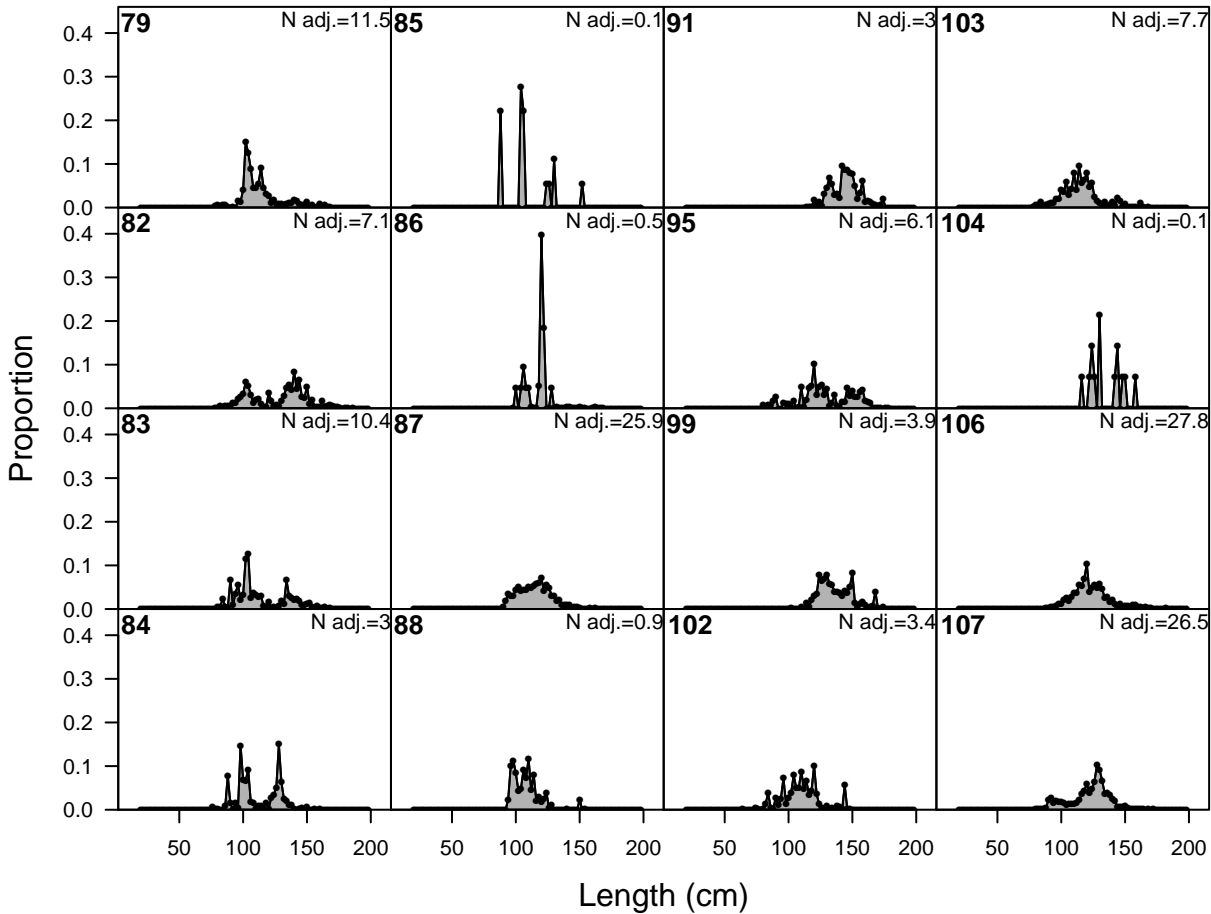


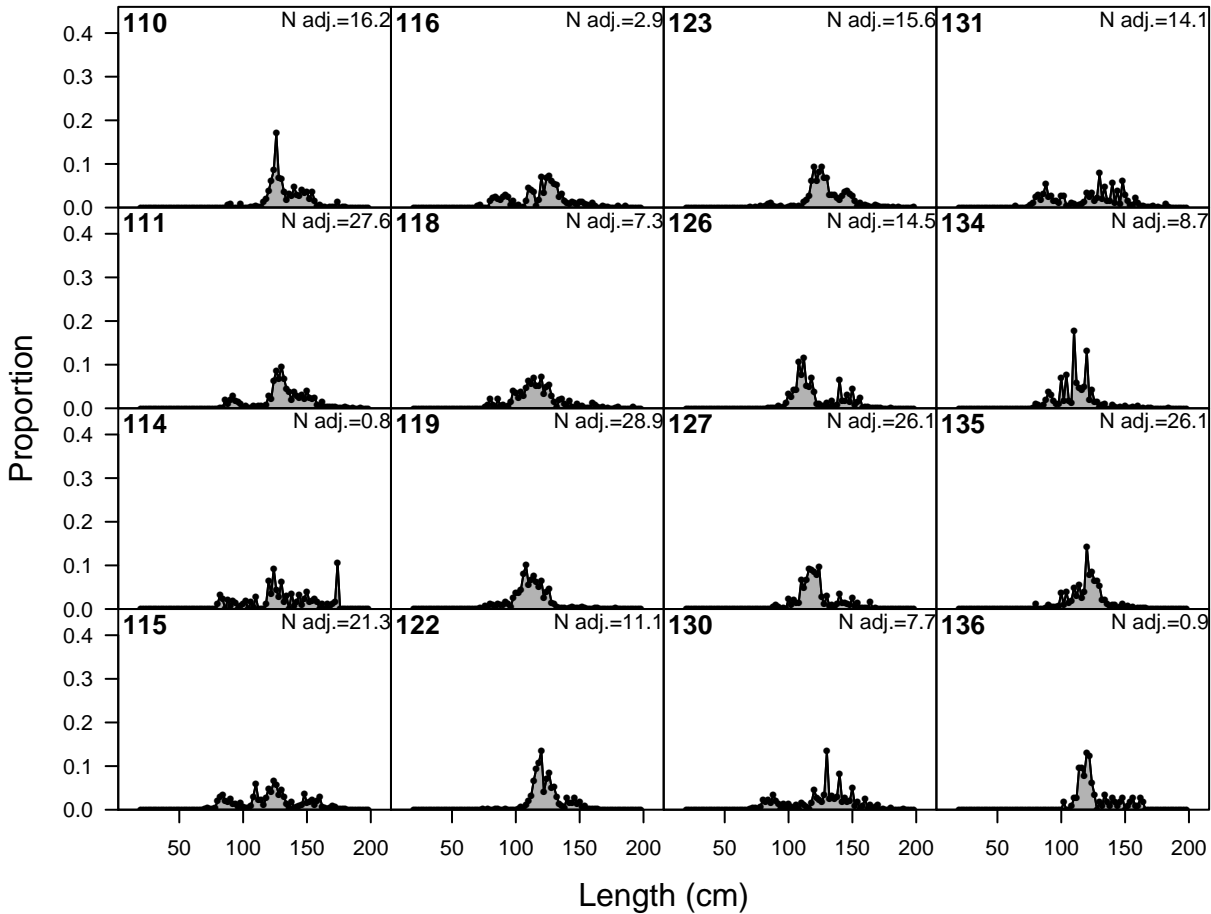
A5-LL-n (whole catch)



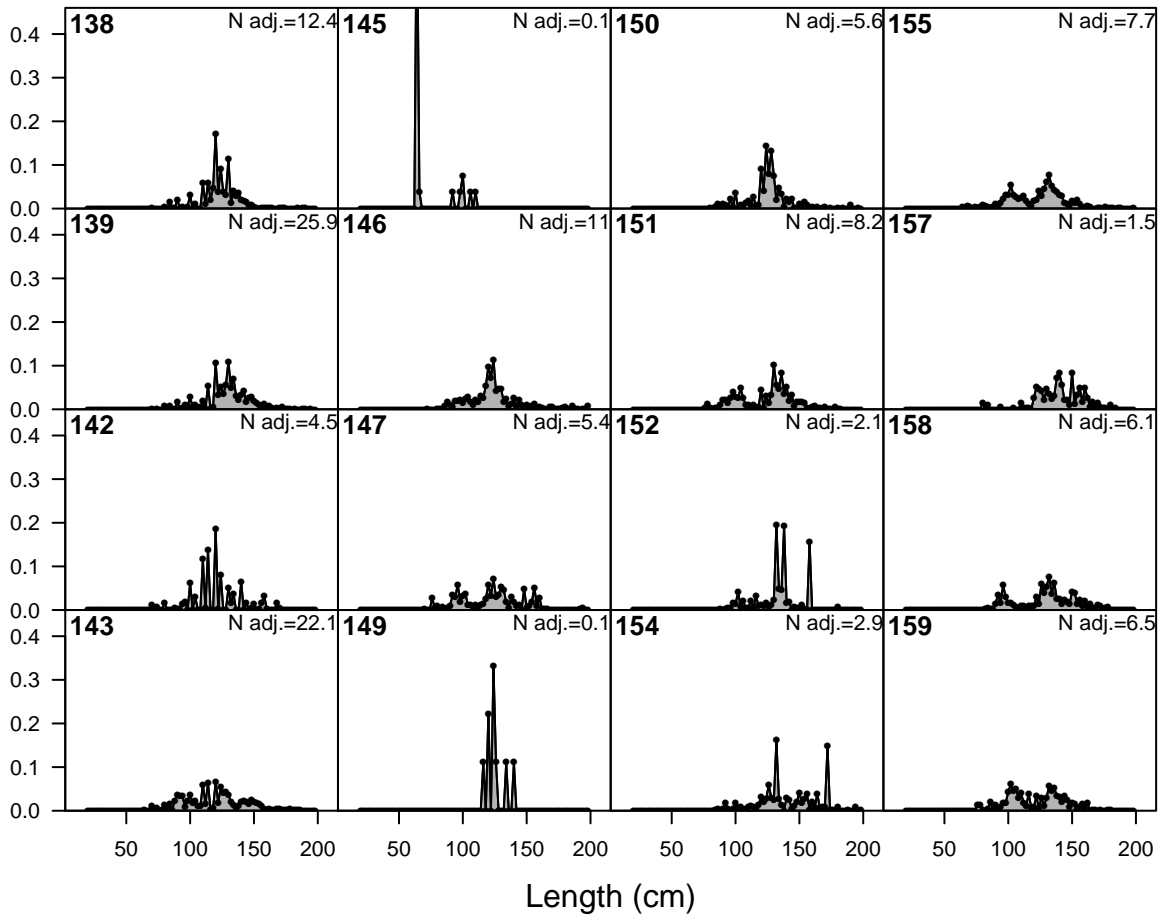


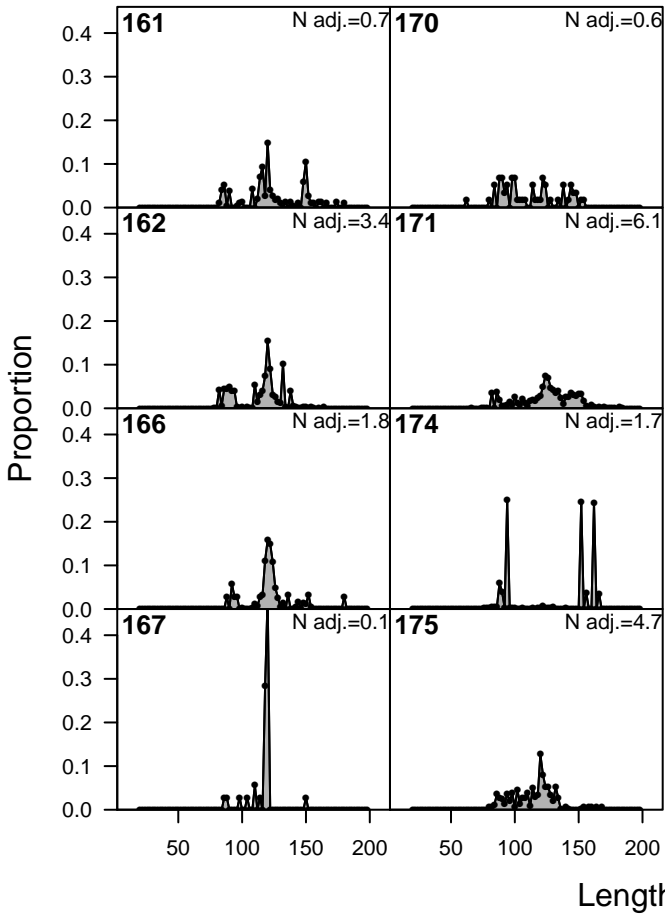


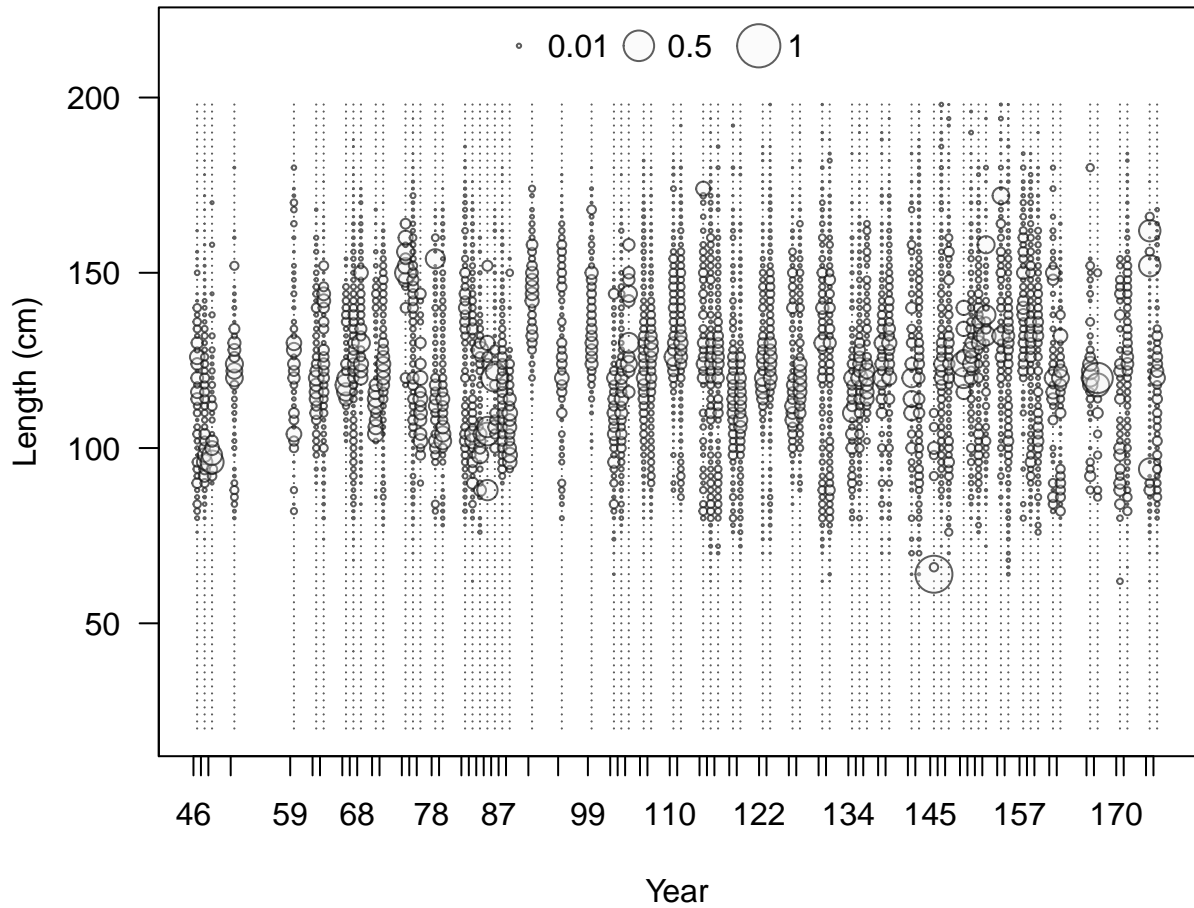




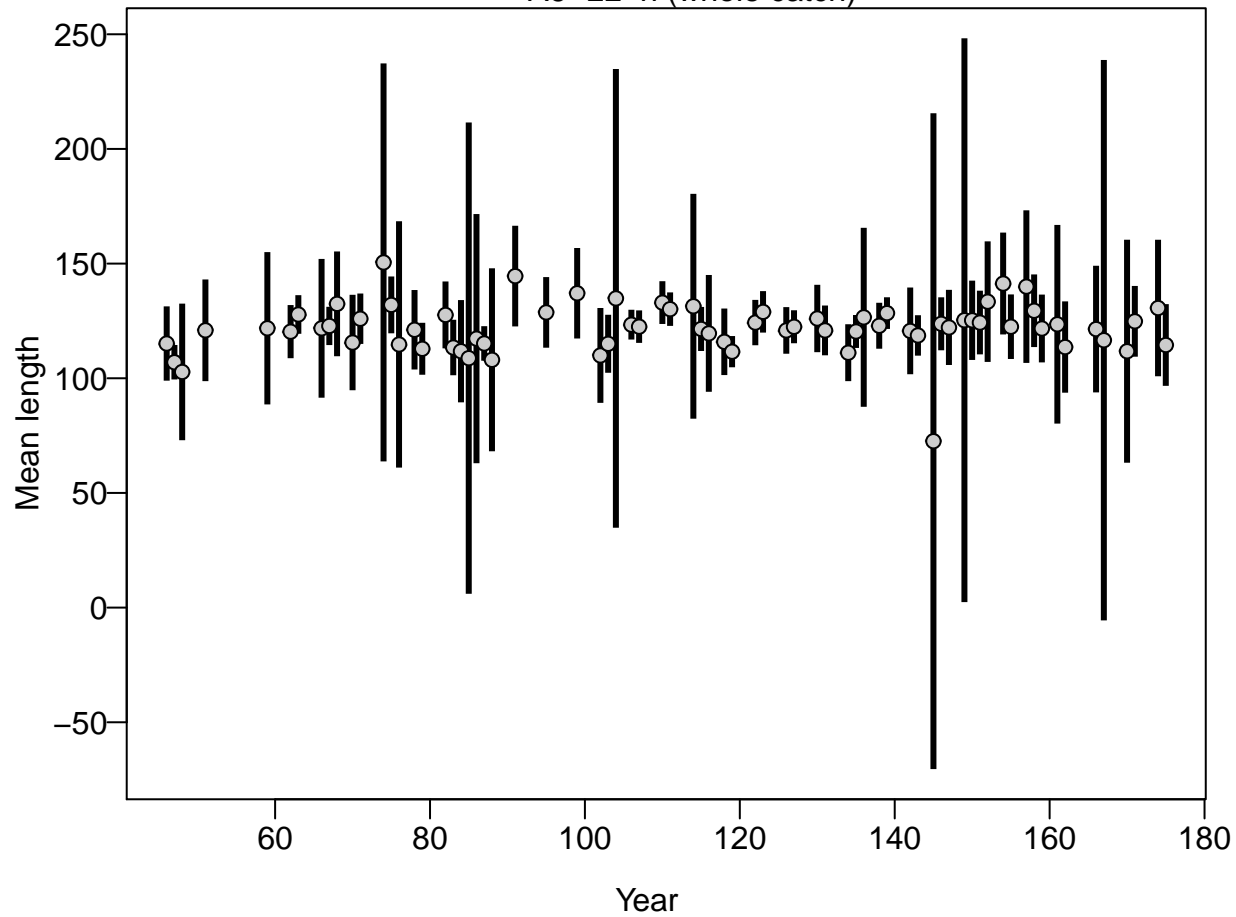
Proportion

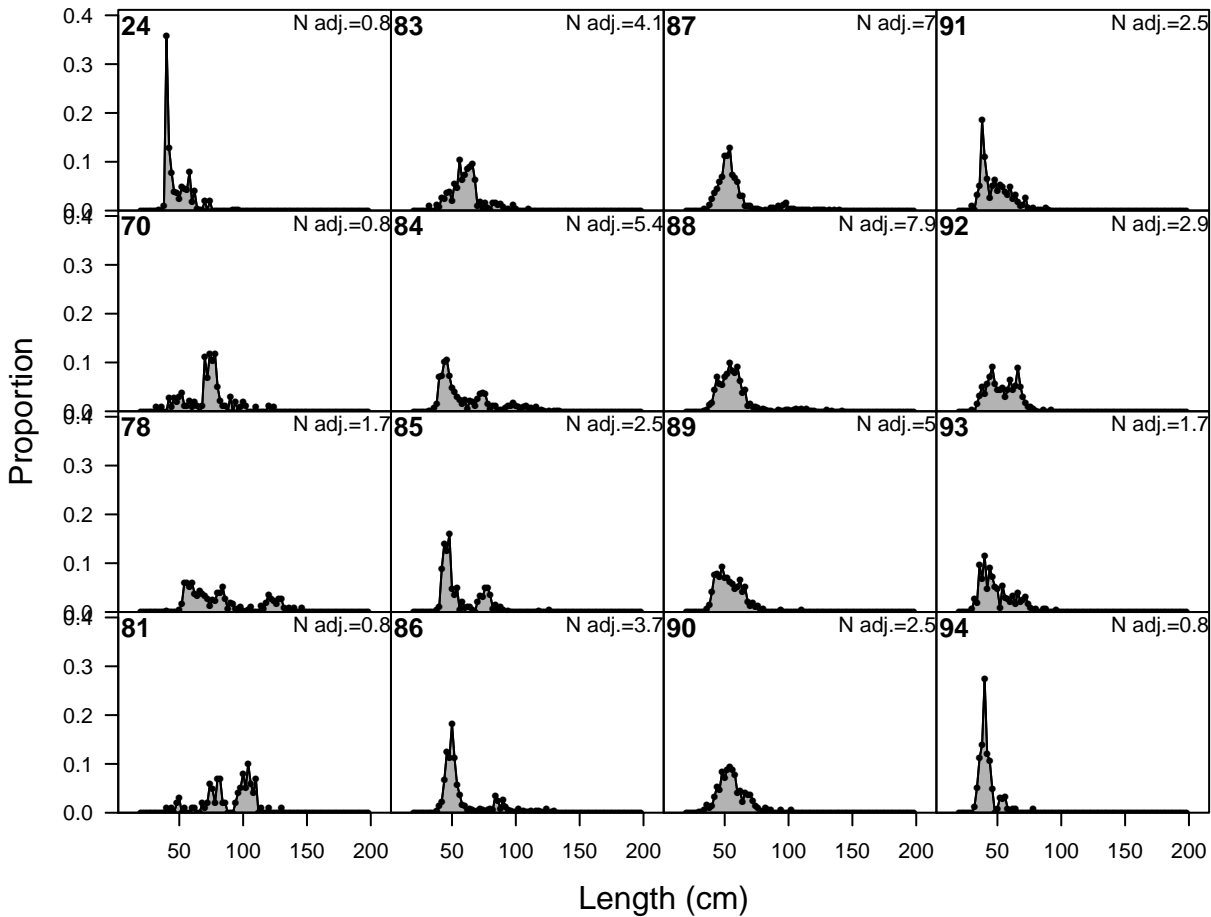




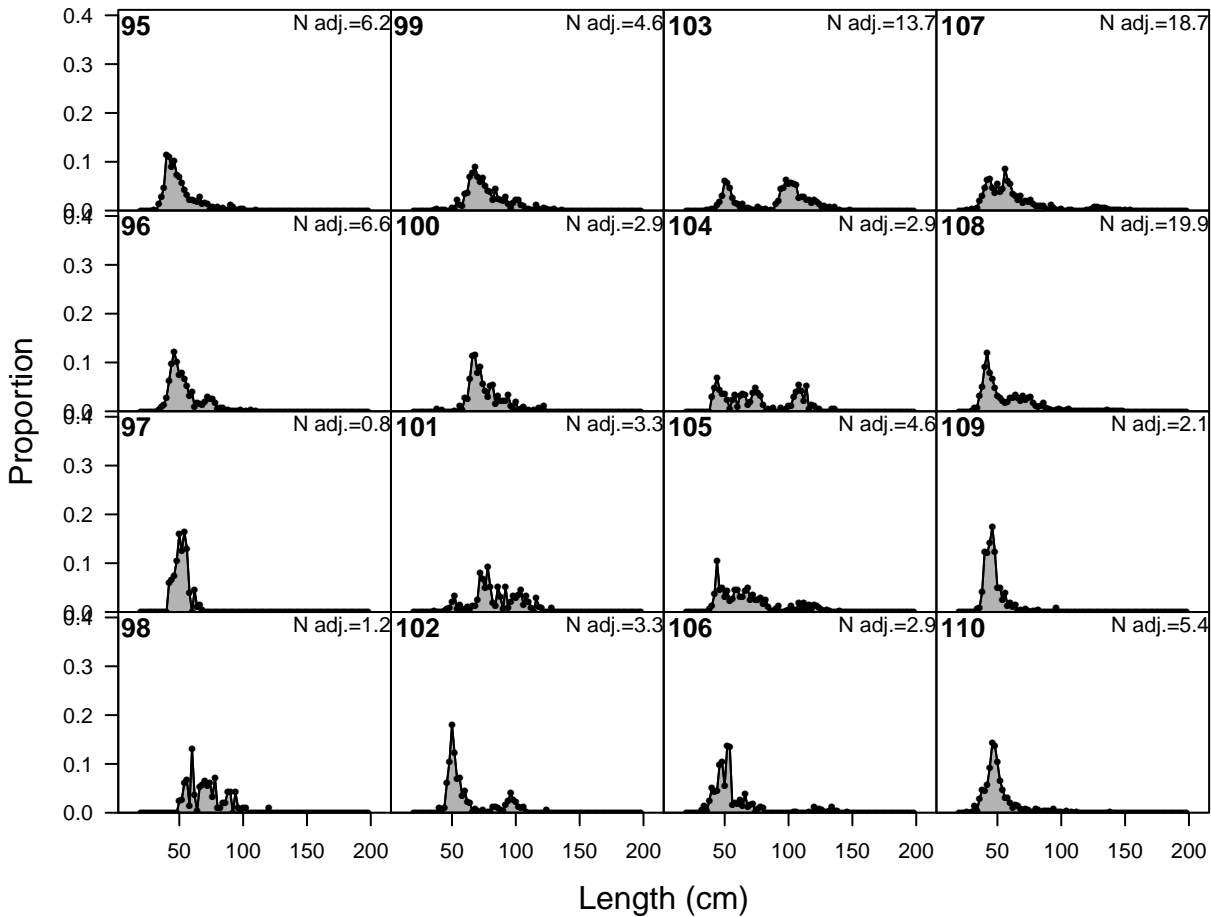


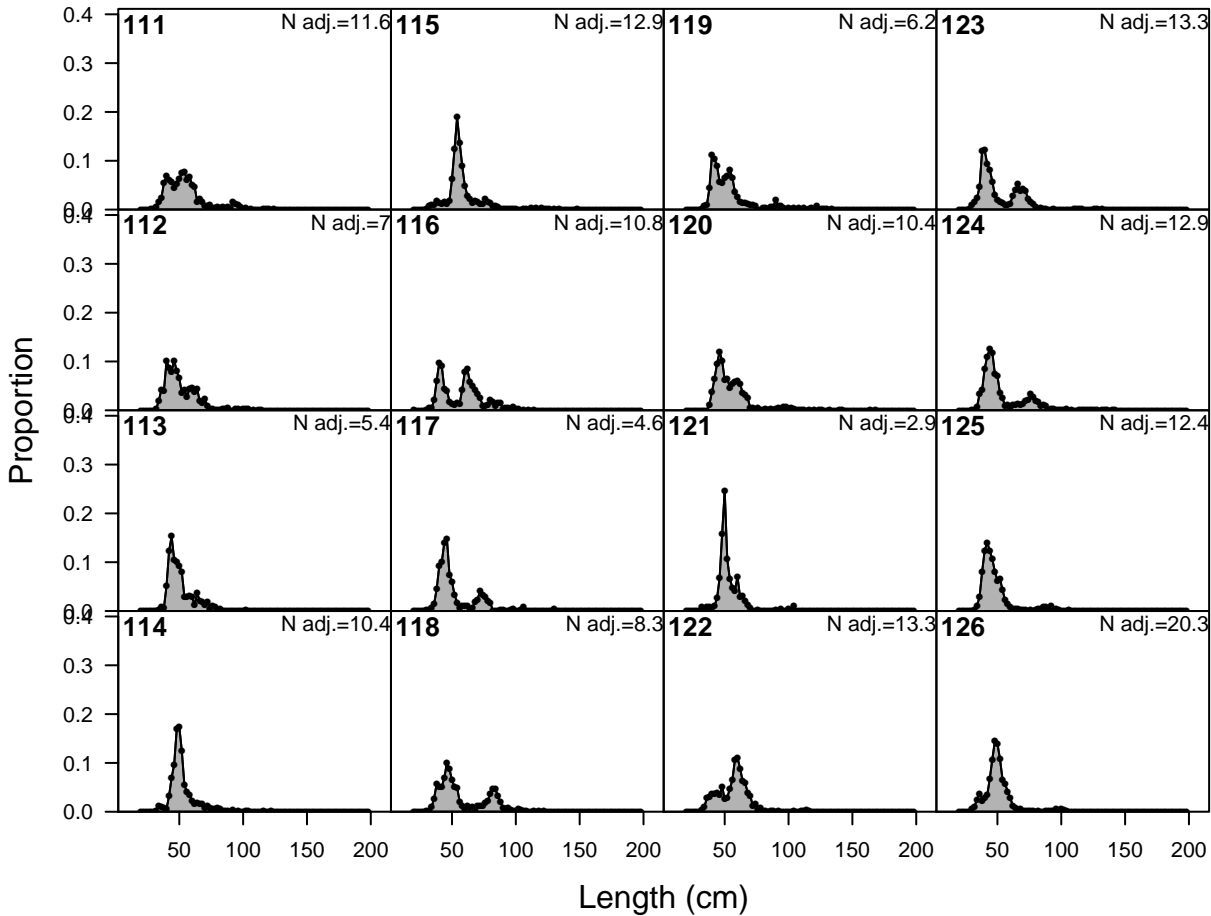
A6-LL-n (whole catch)

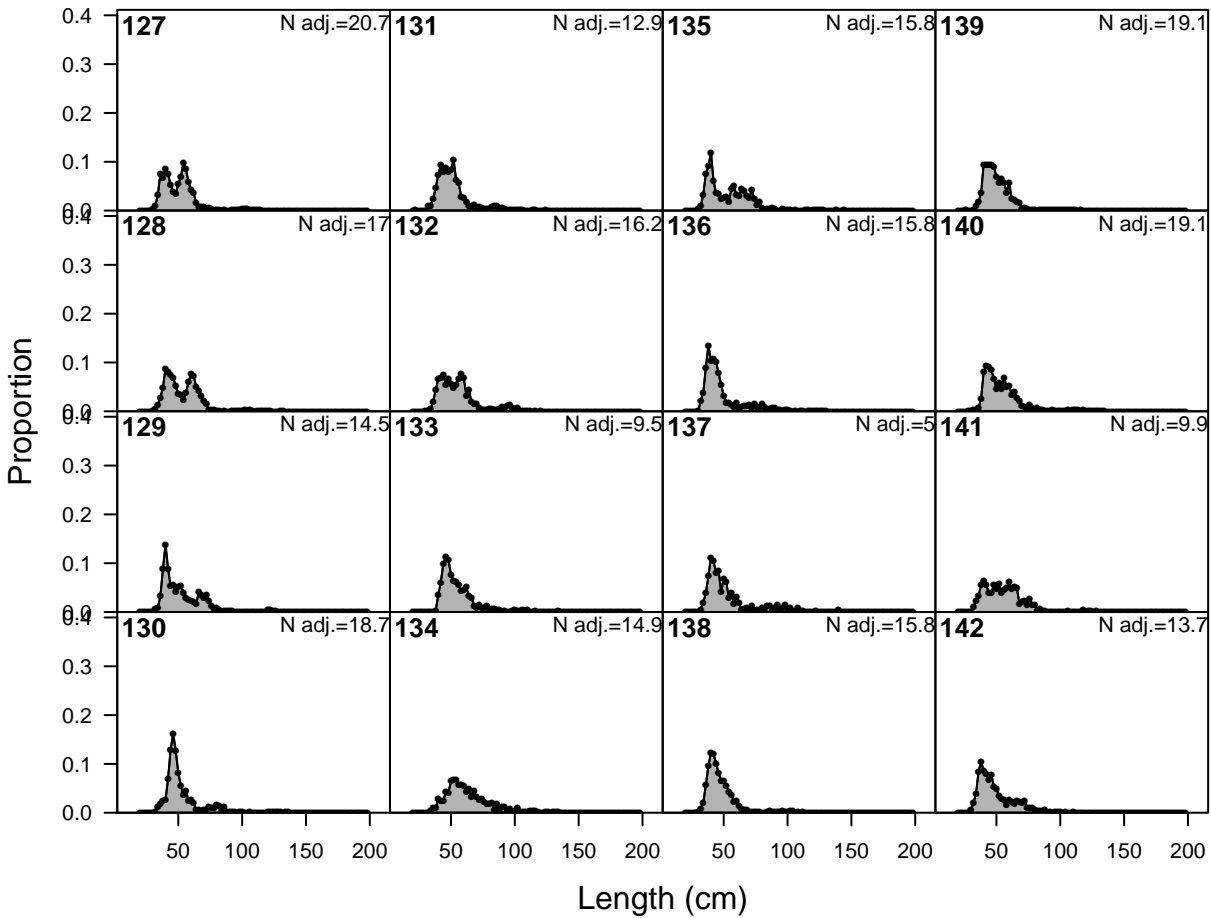


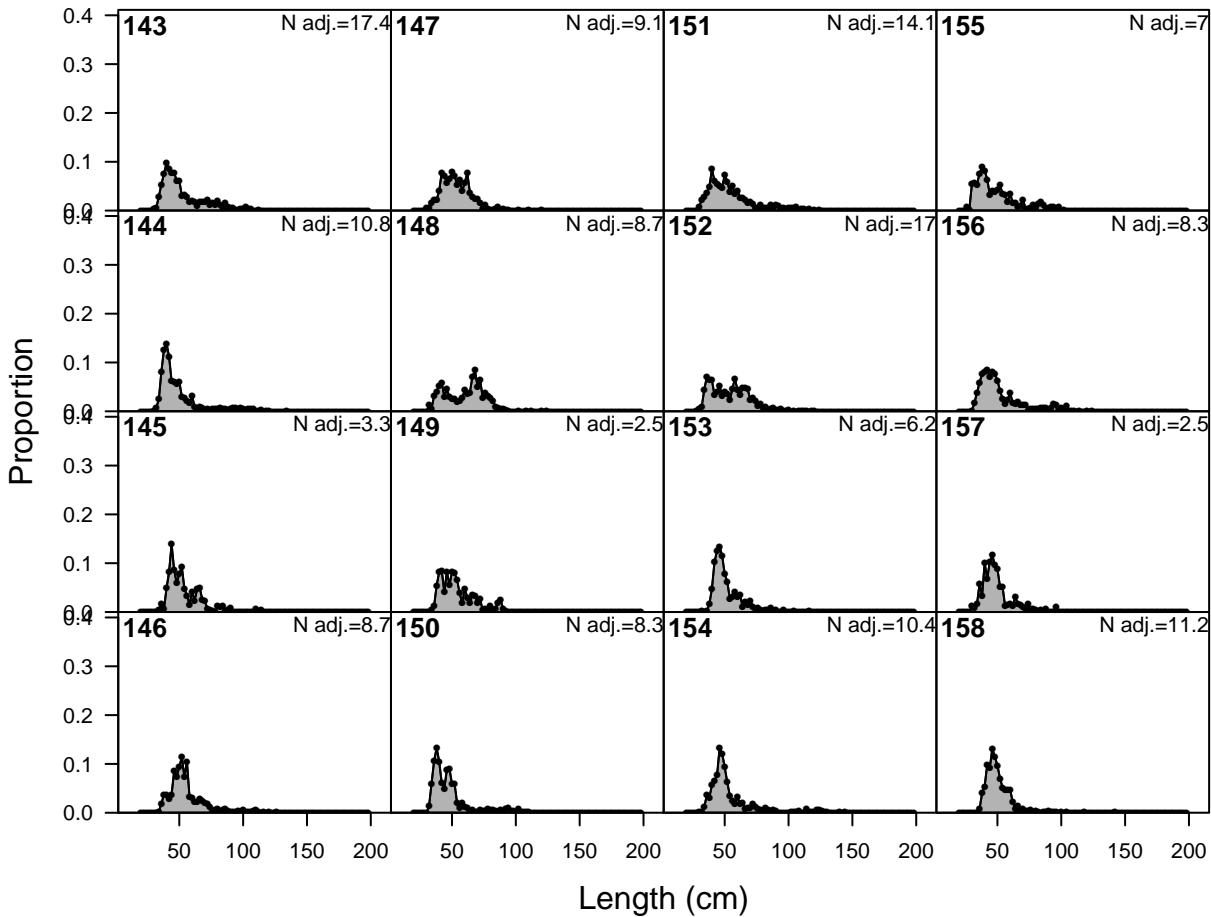


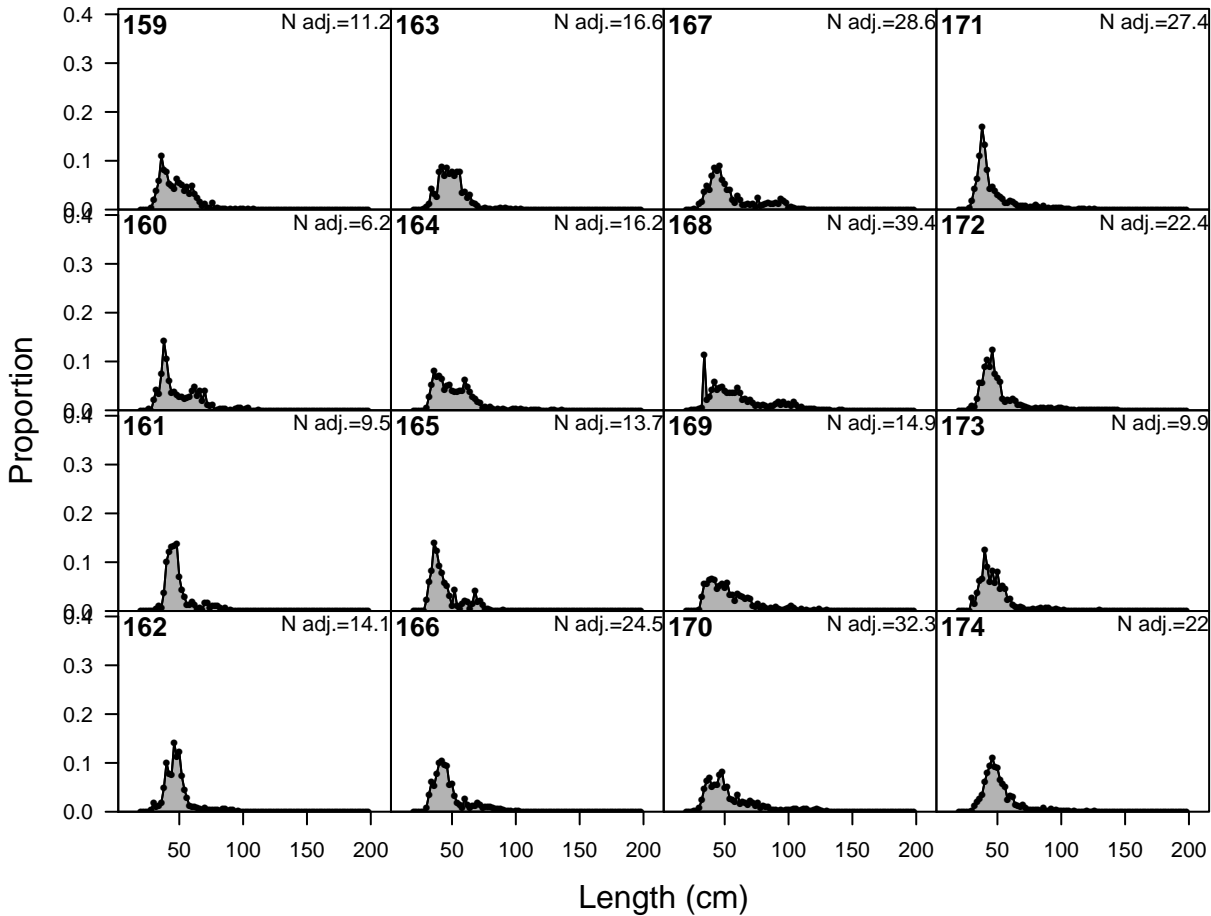


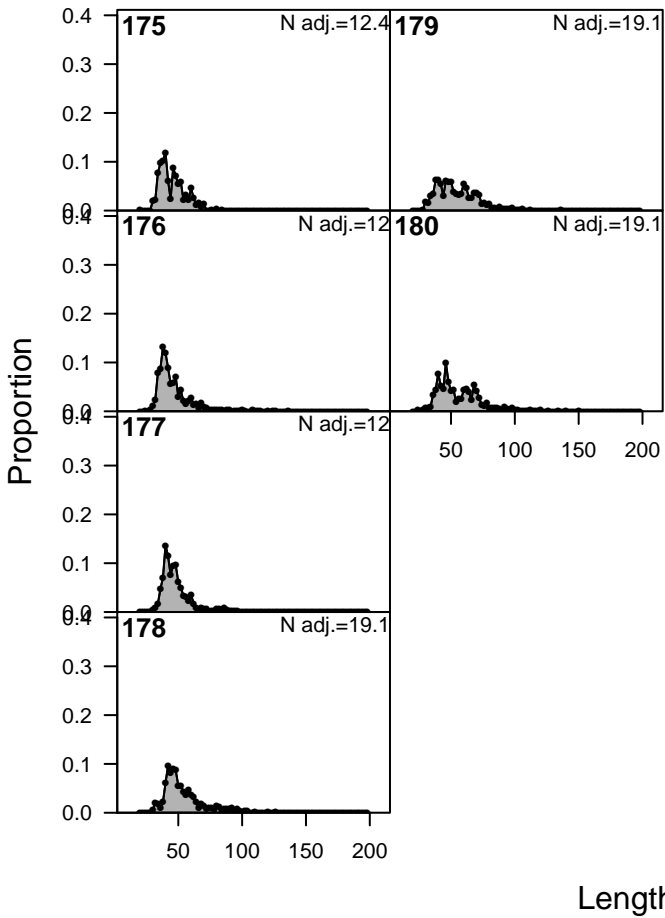


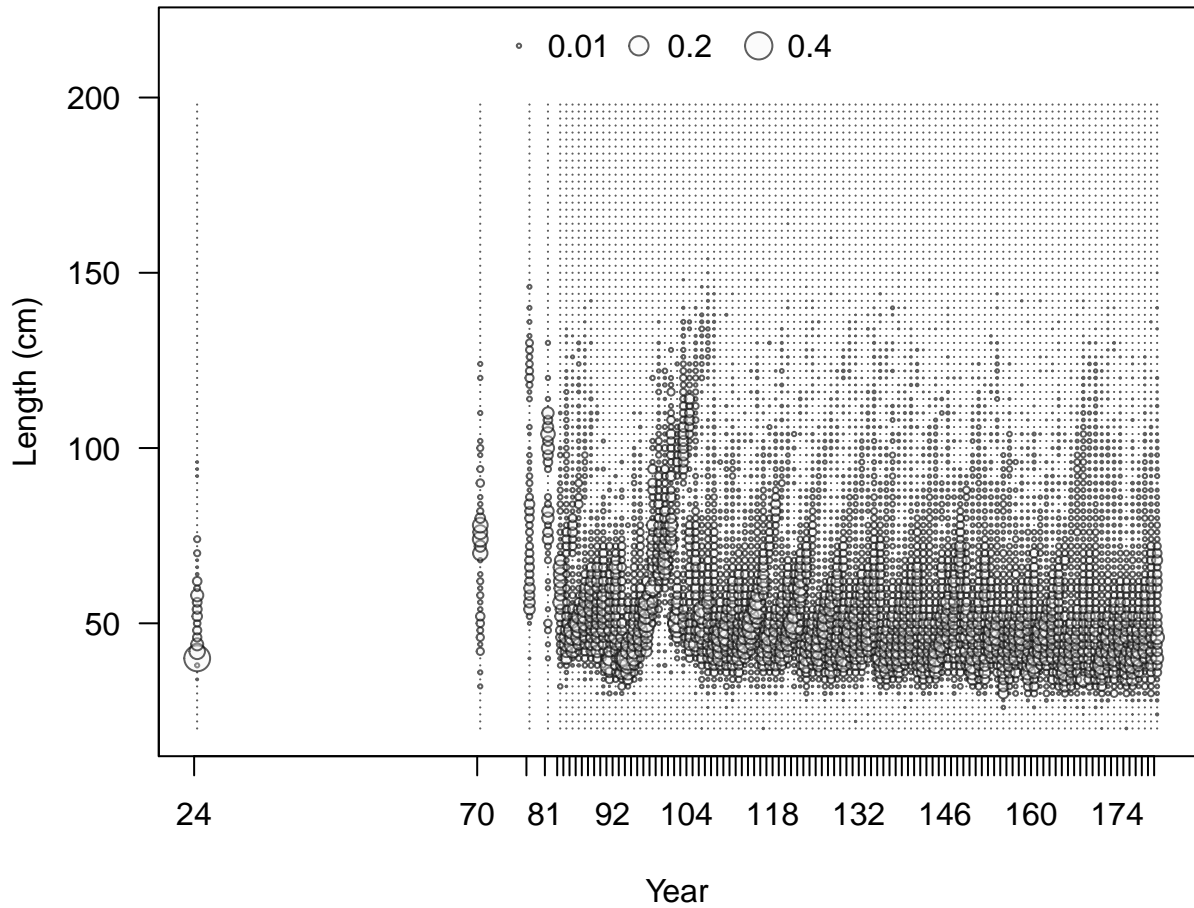




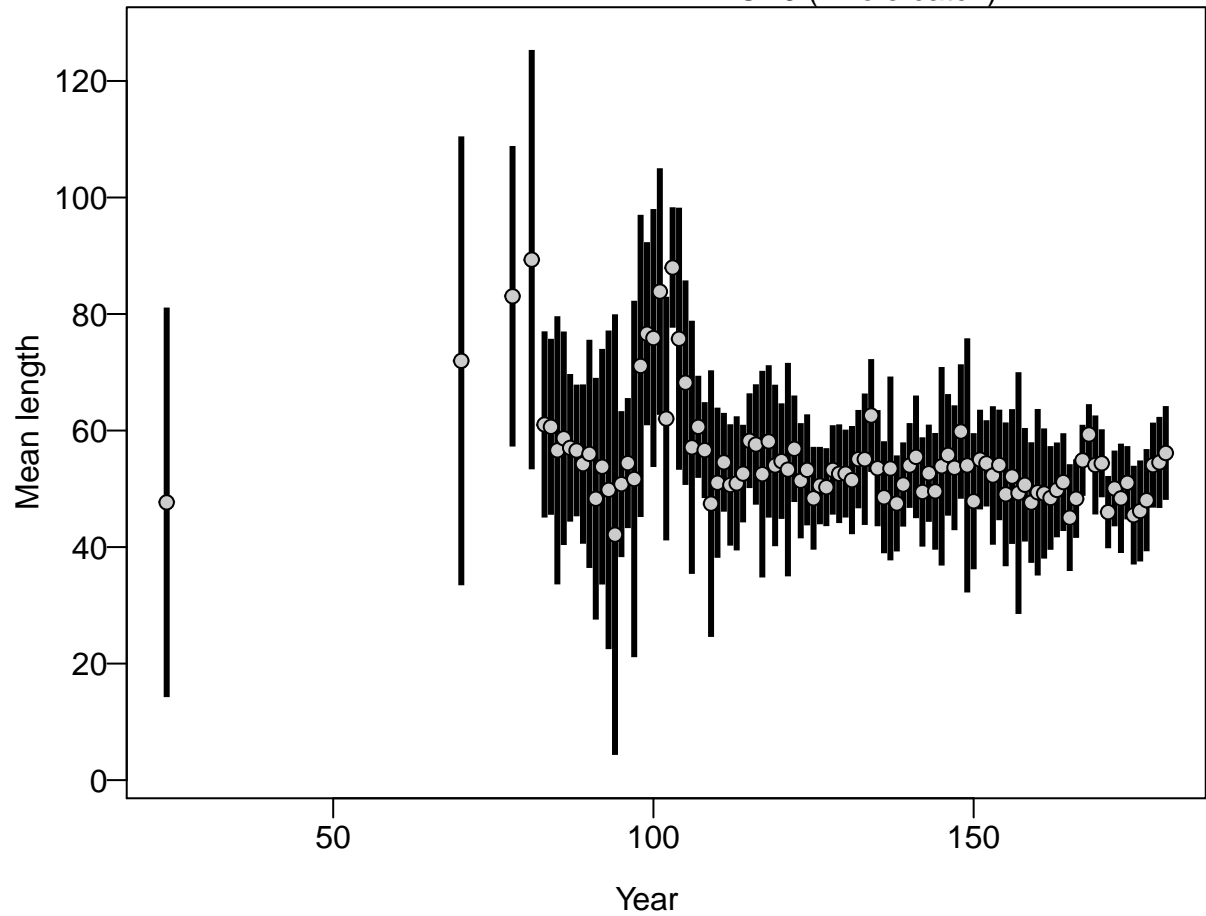




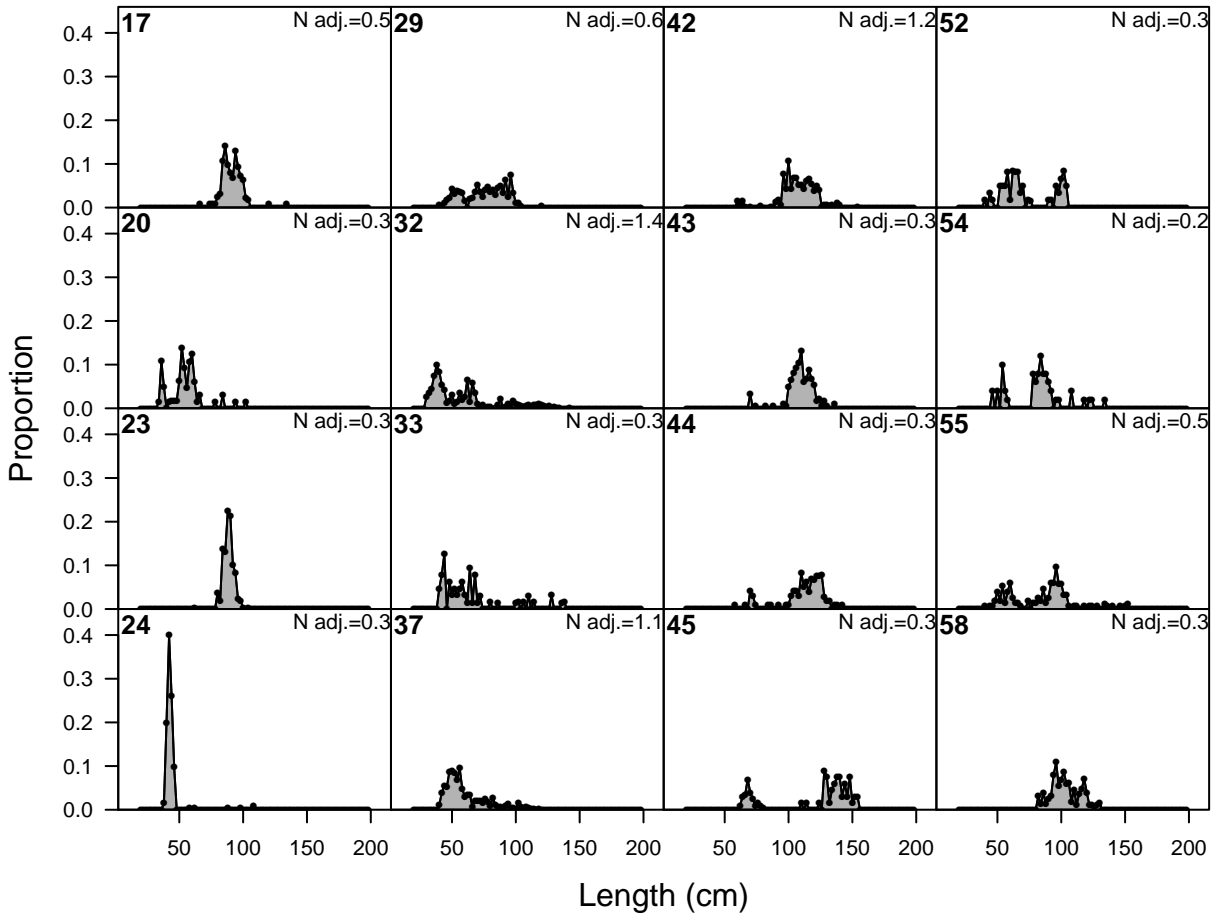


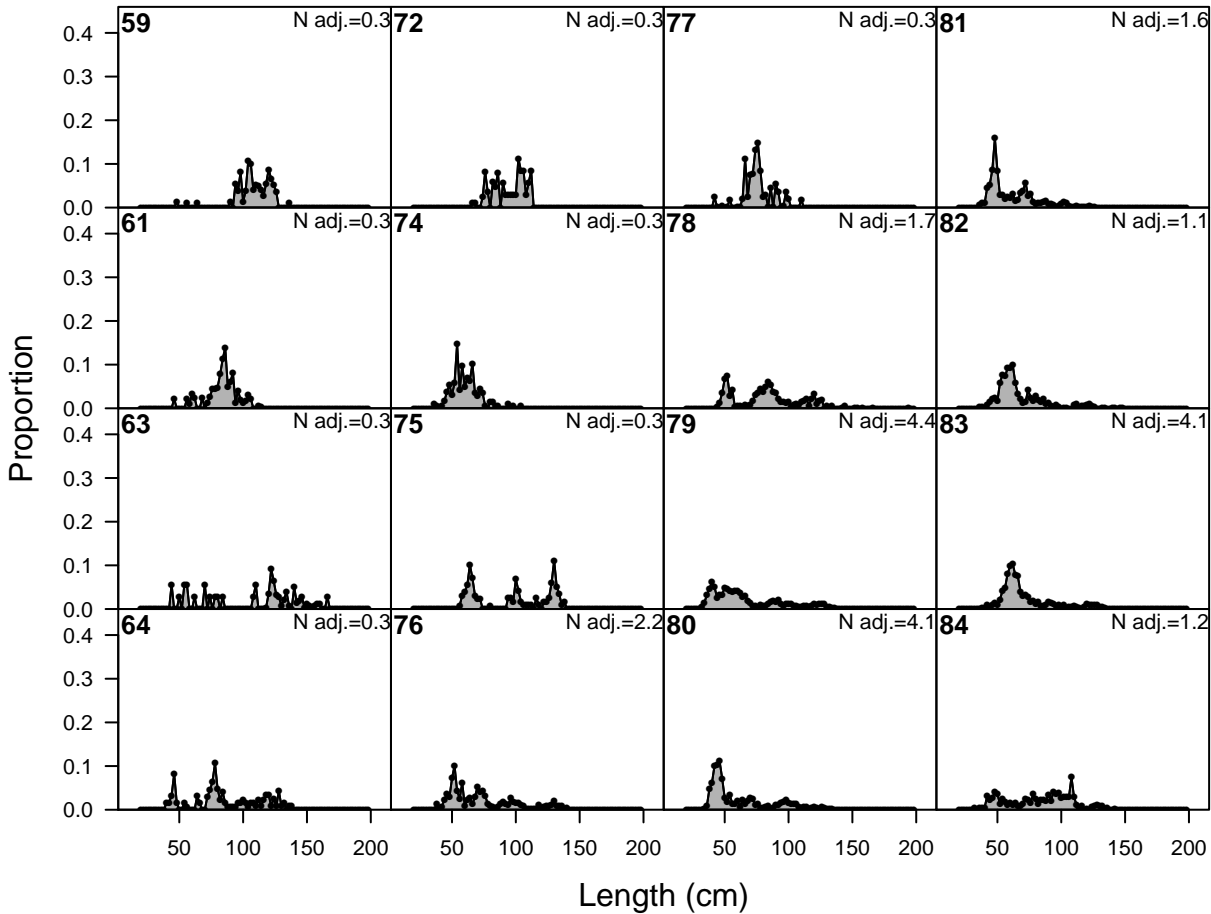


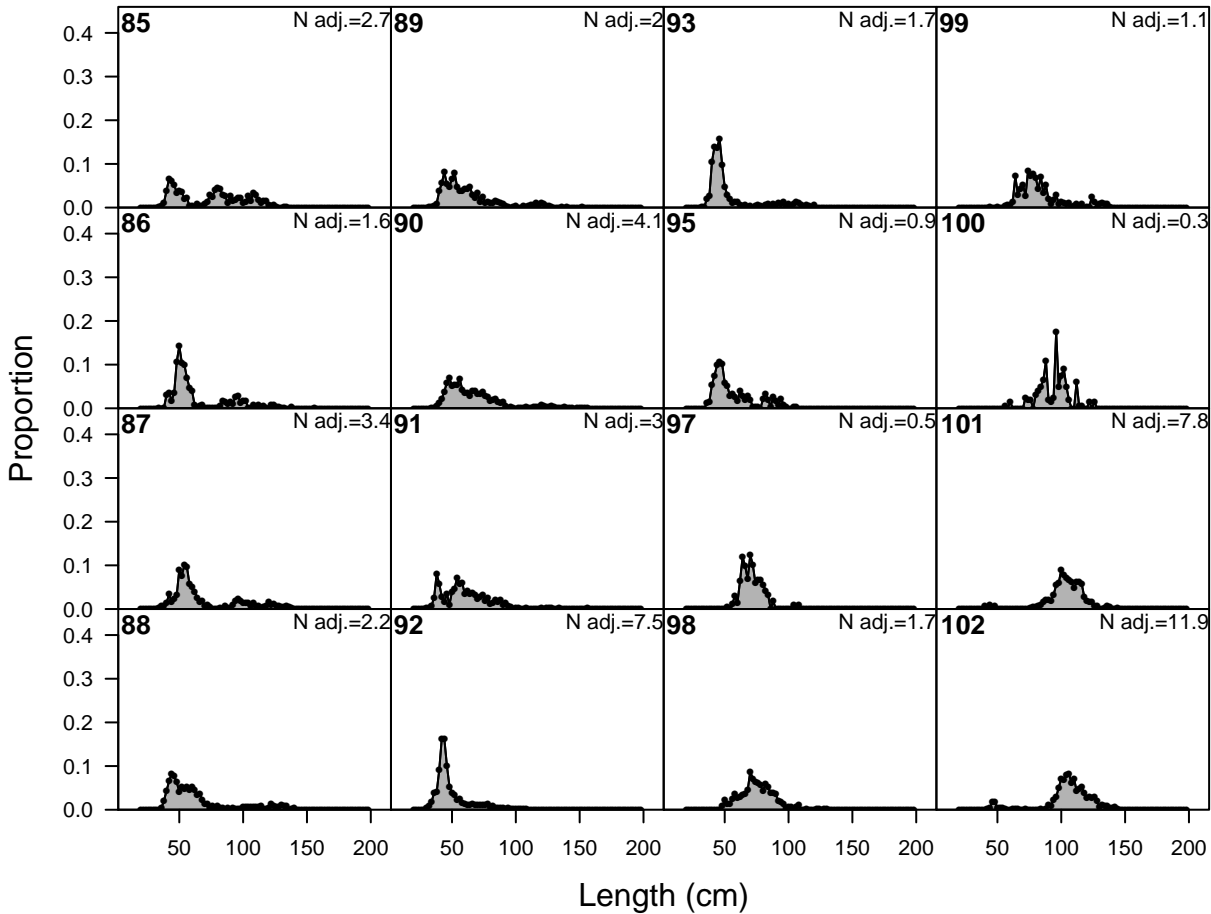
## A2-OBJ (whole catch)

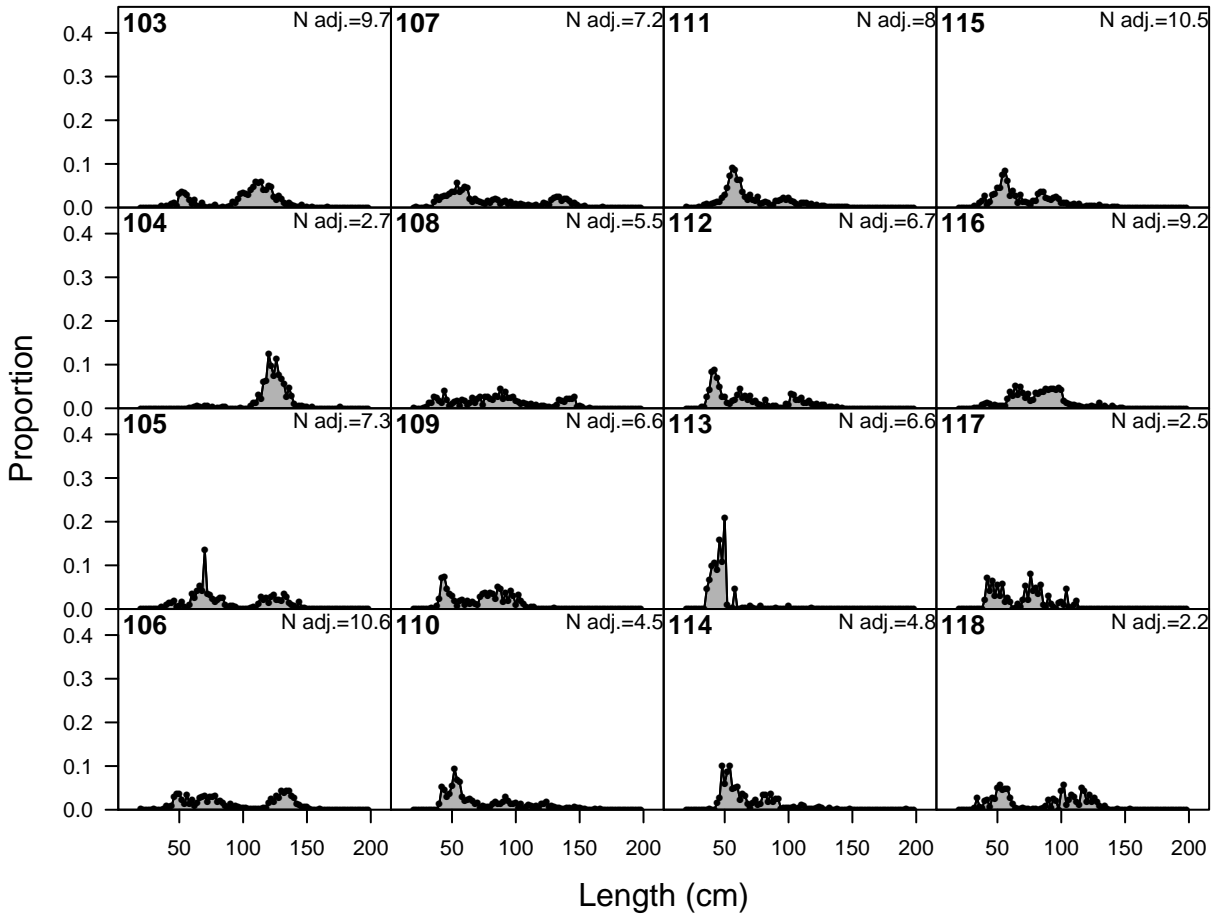


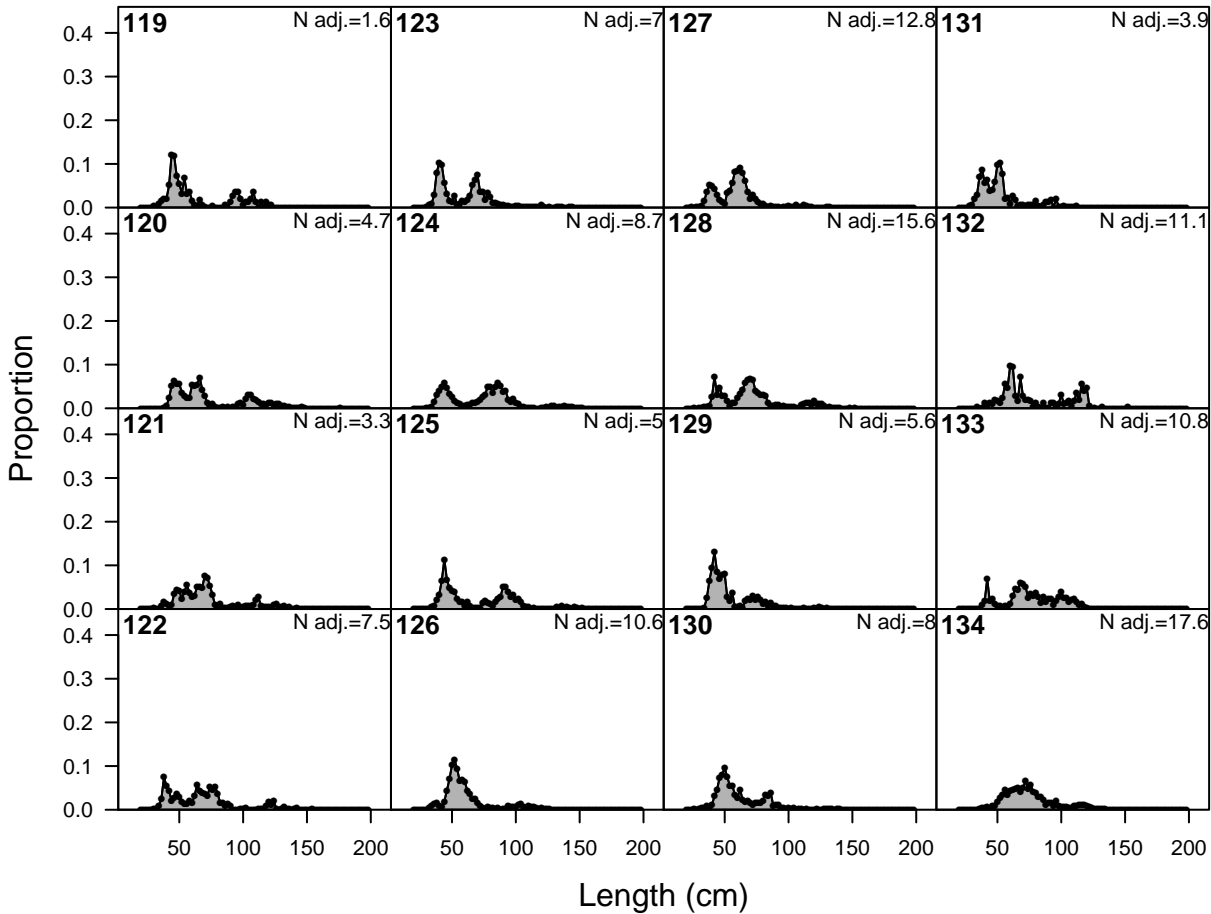


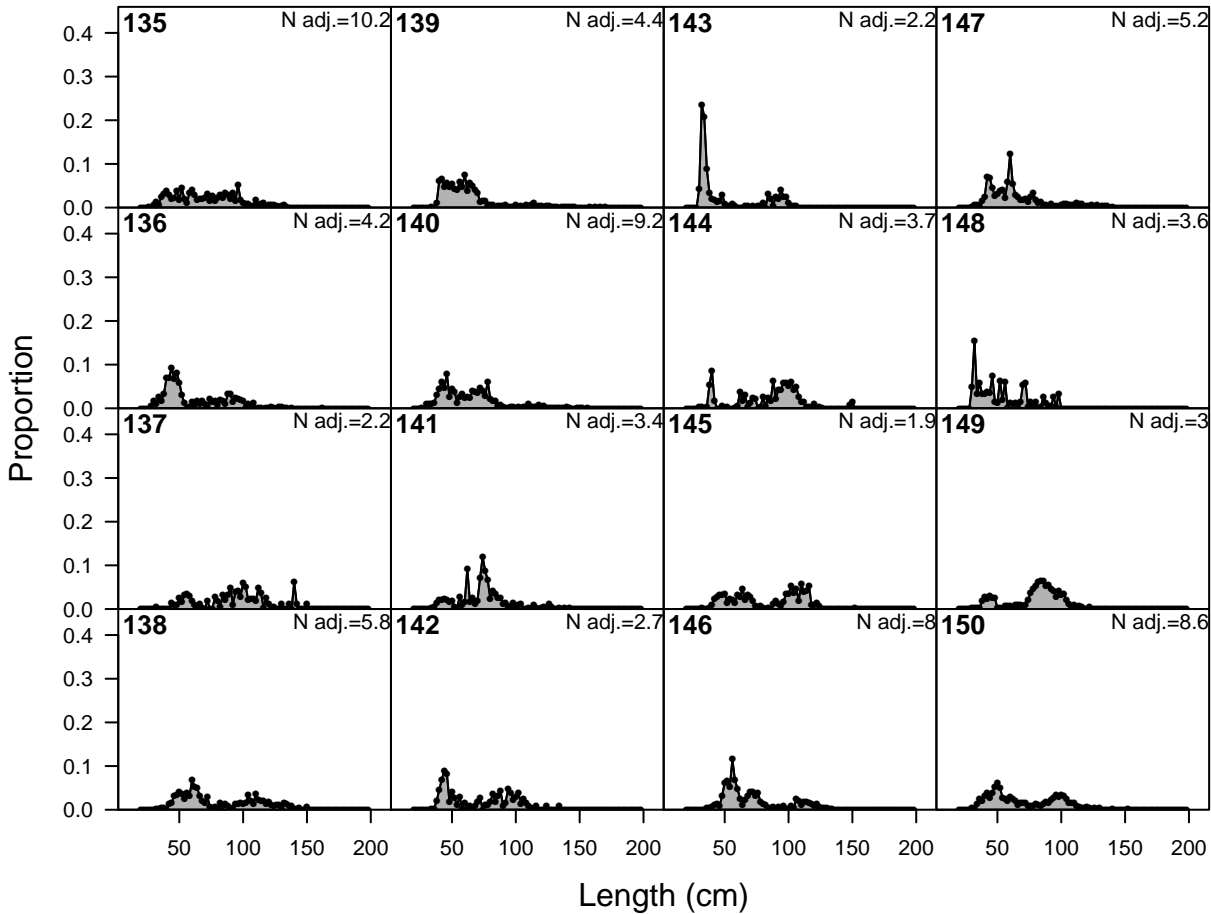


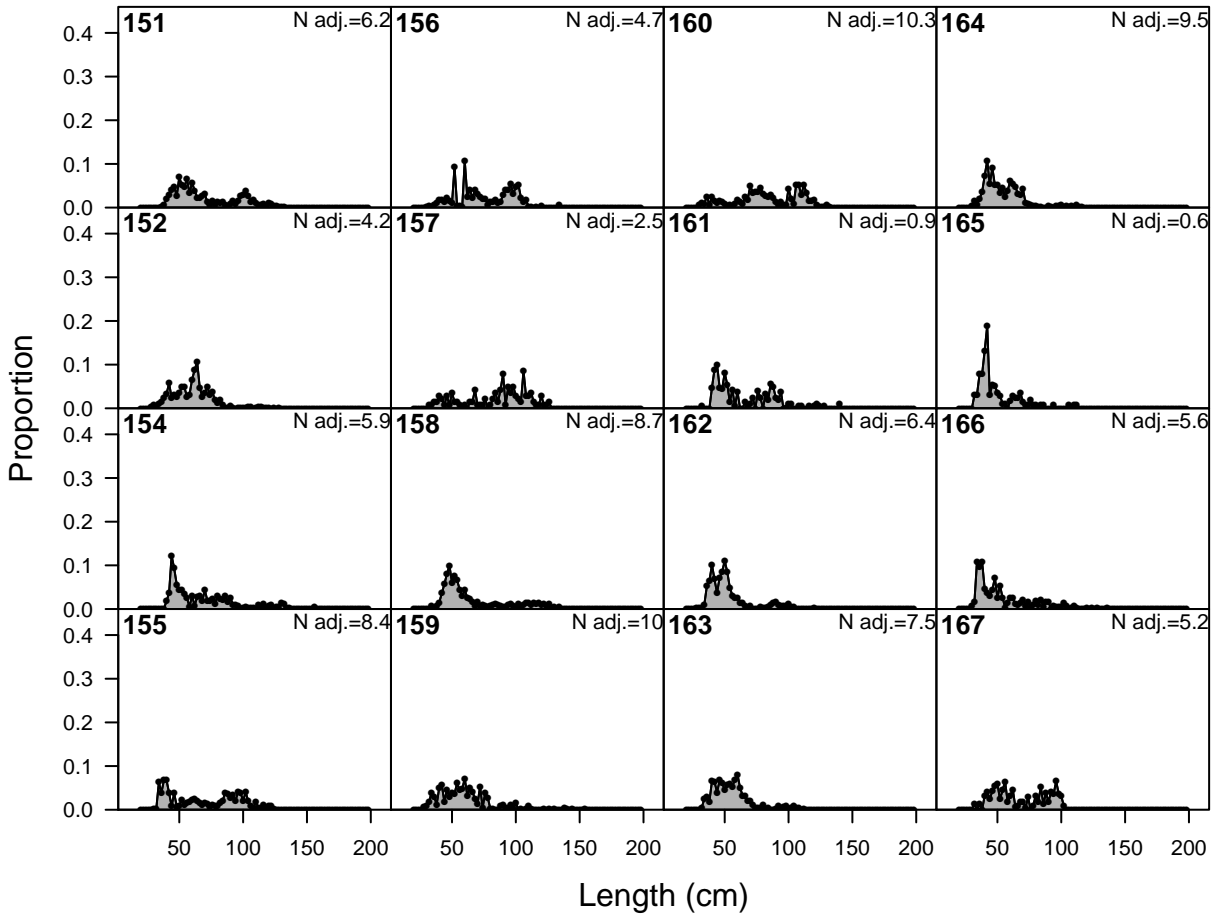


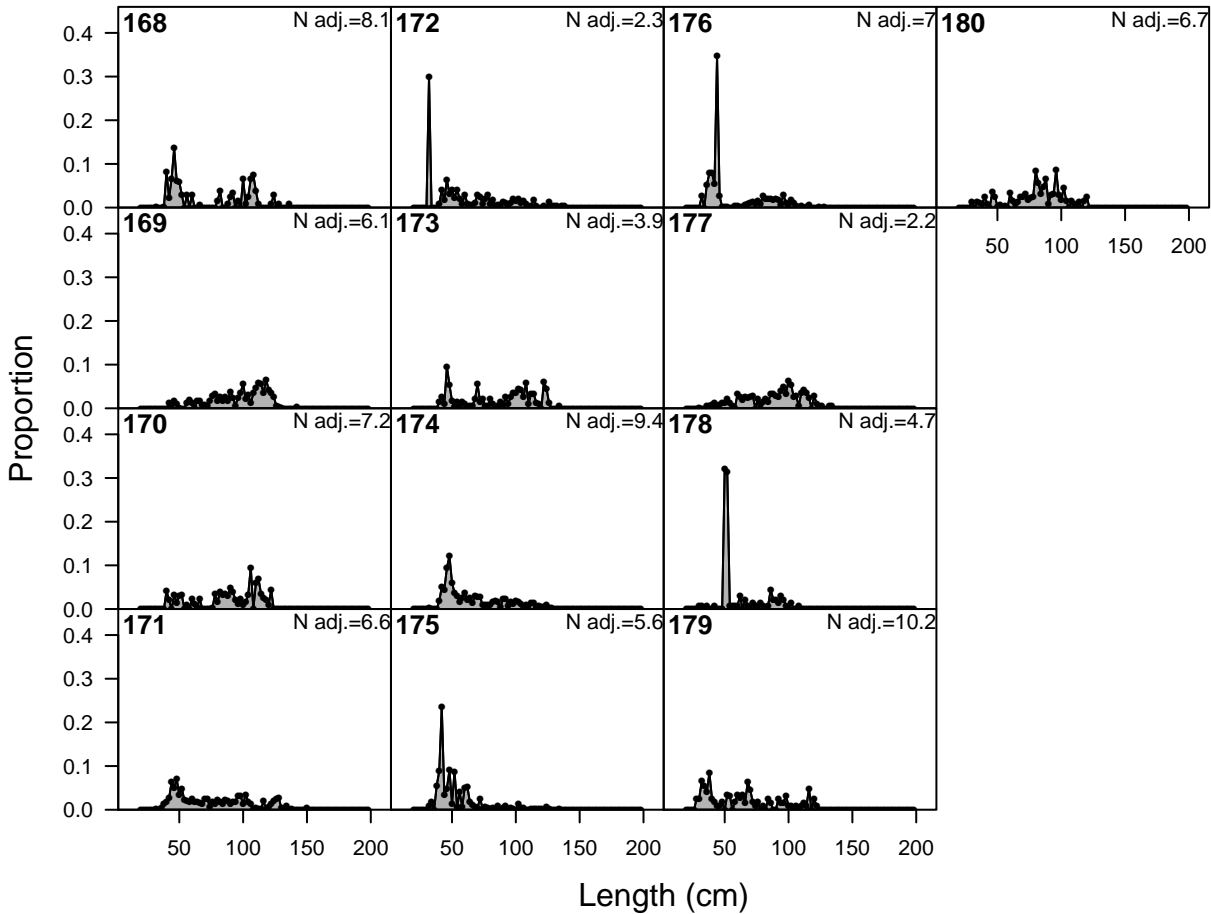




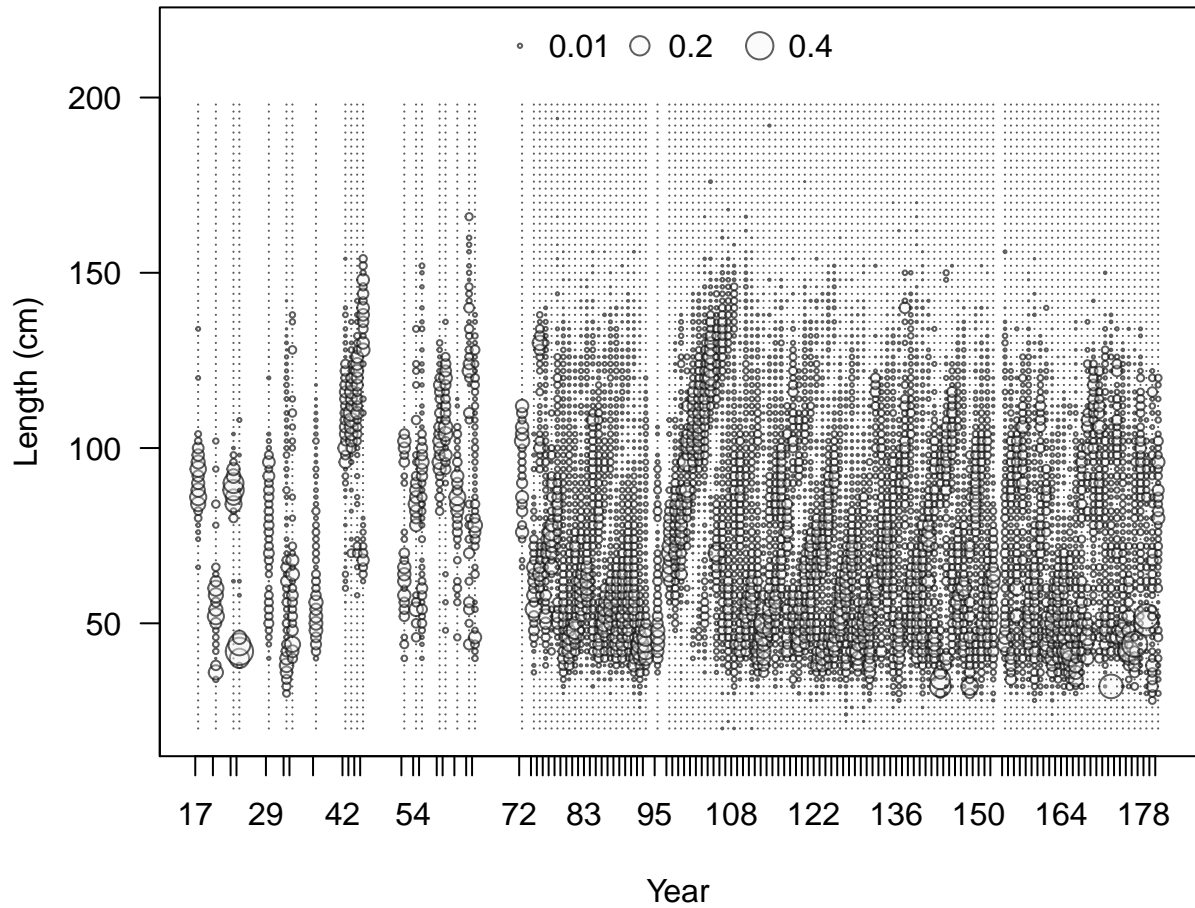




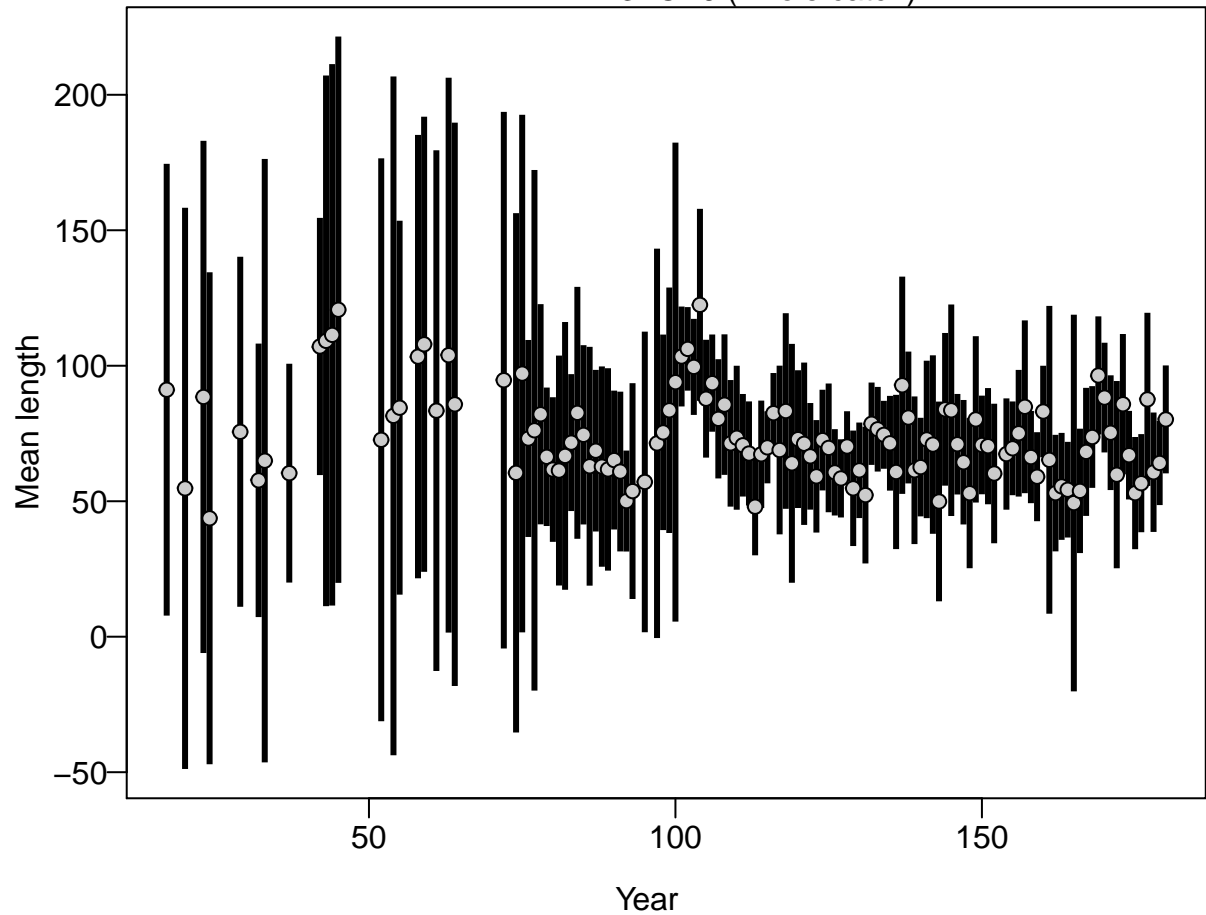




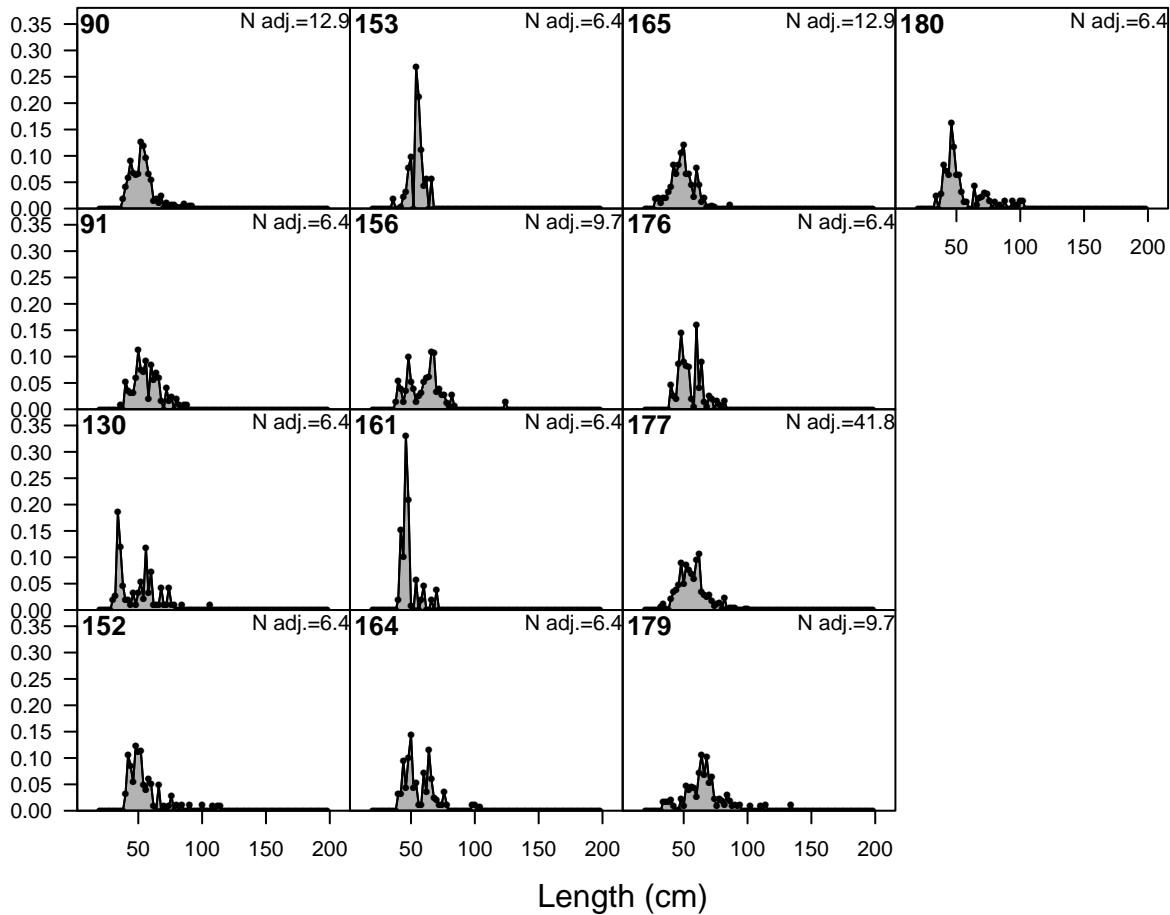


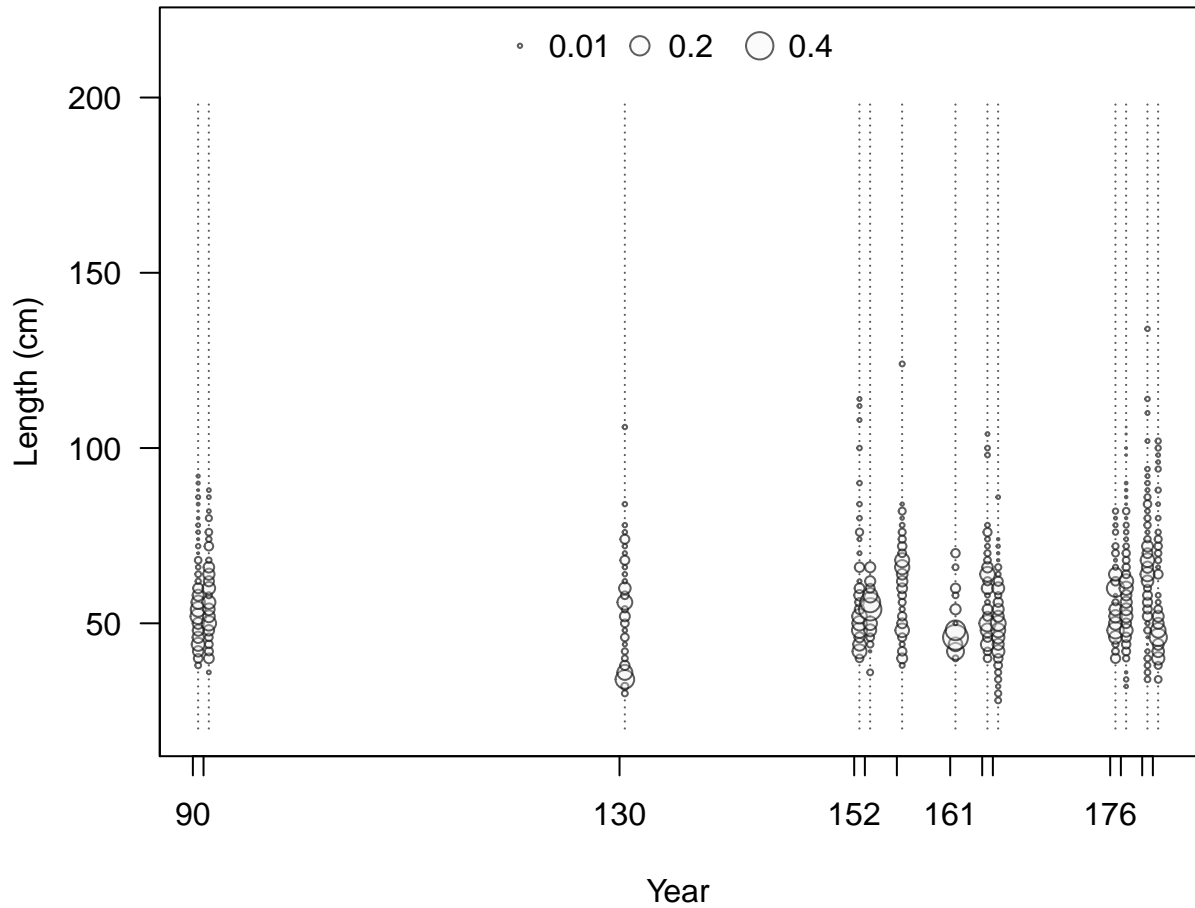


## A3-OBJ (whole catch)

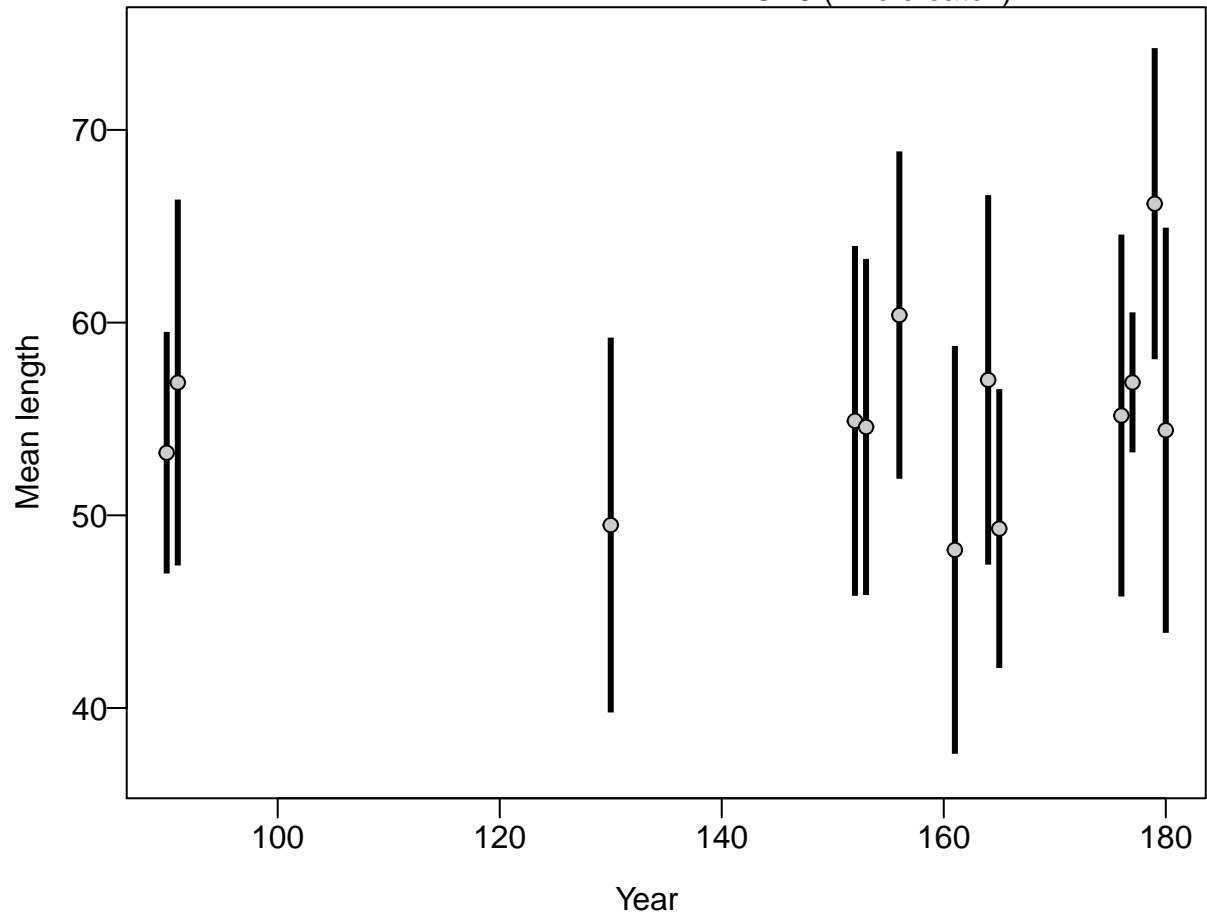


Proportion

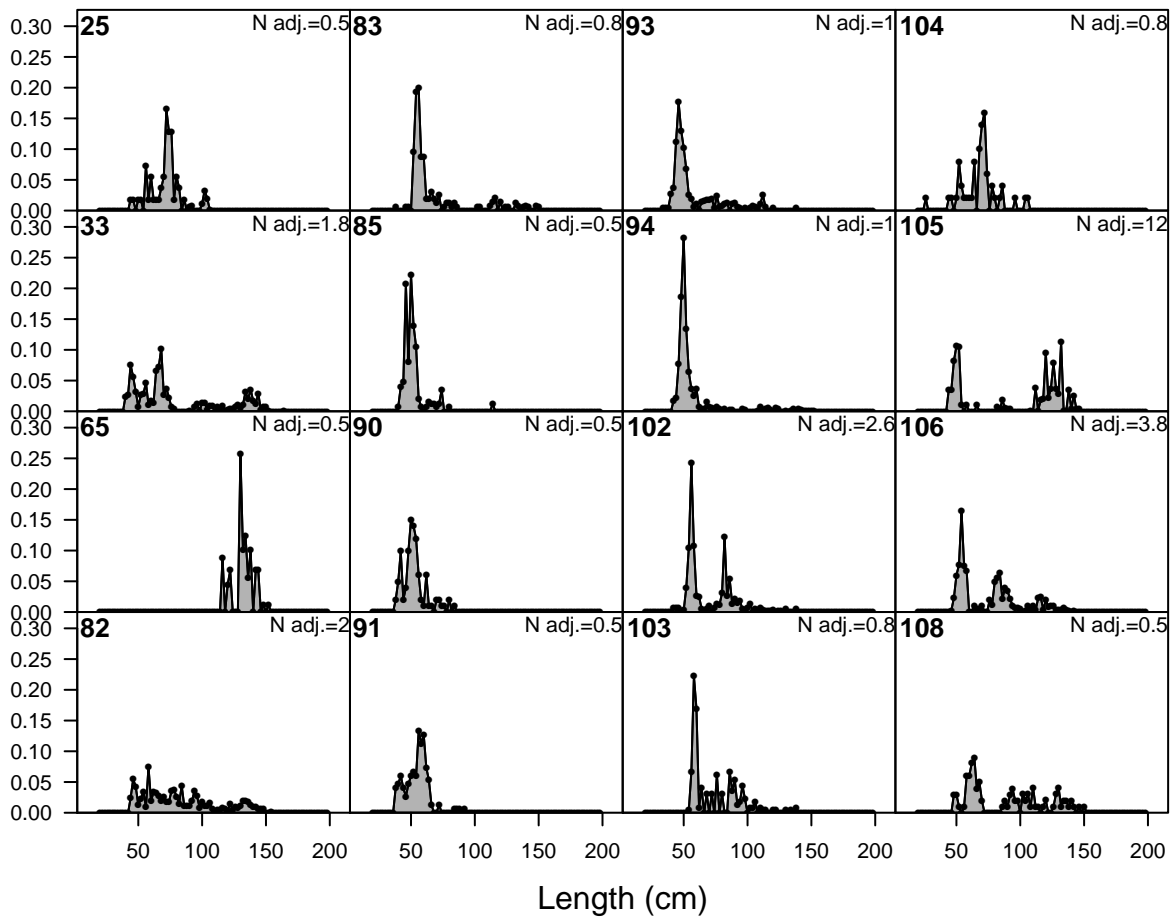




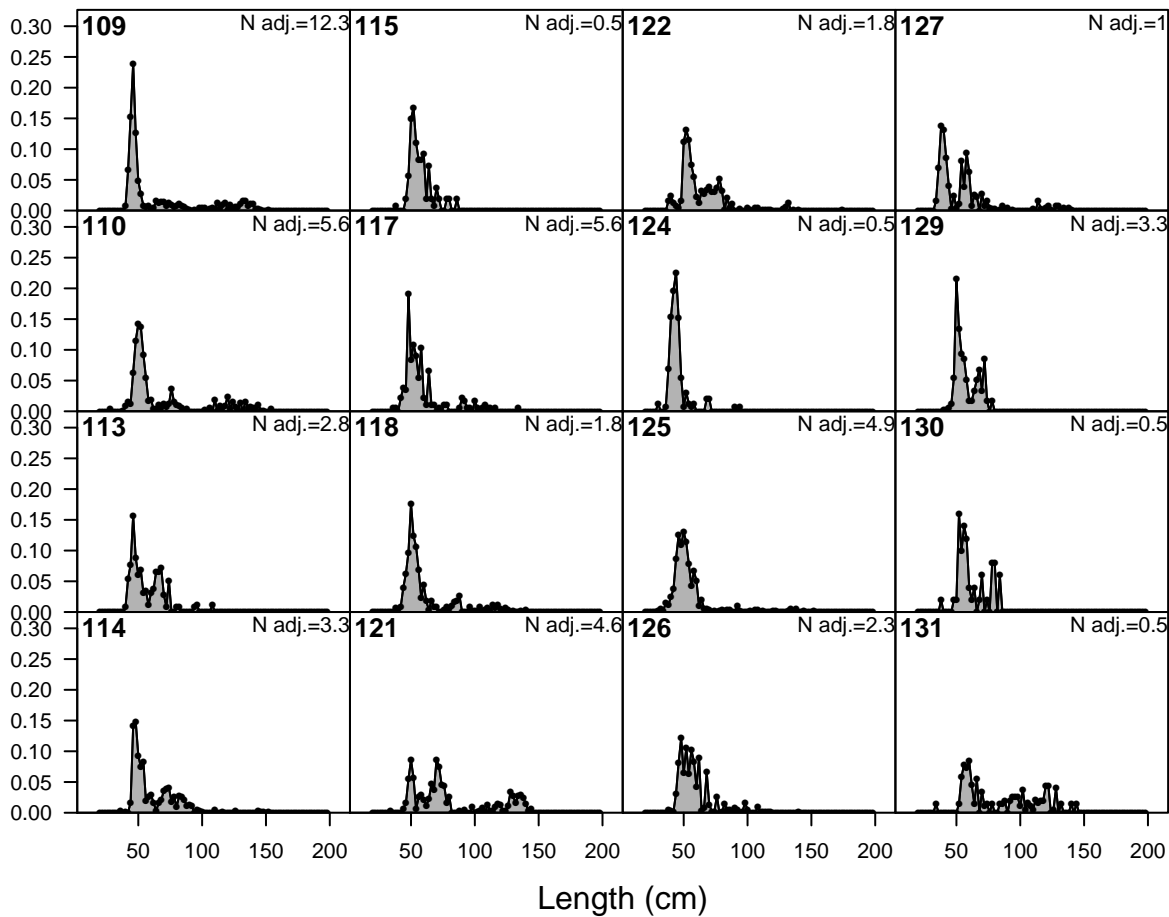
## A4-OBJ (whole catch)



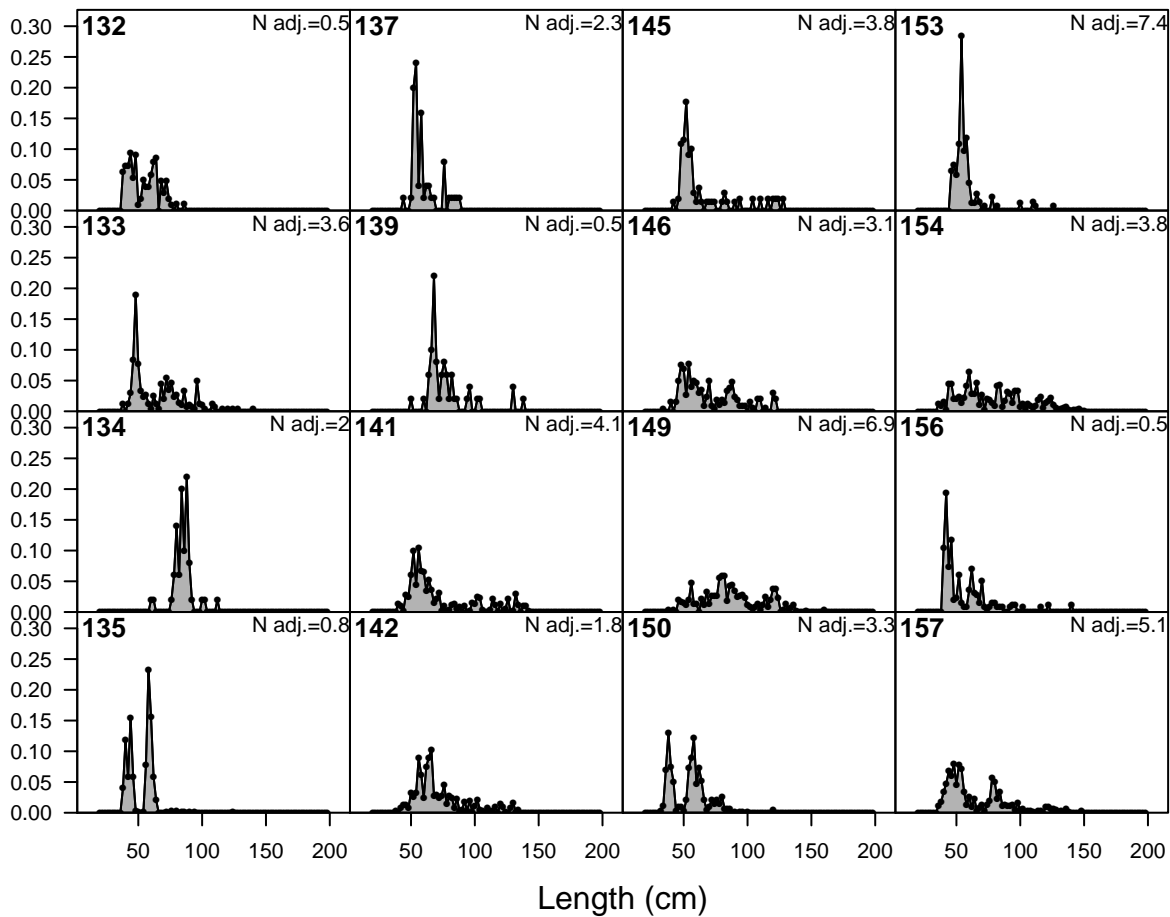
Proportion



Proportion

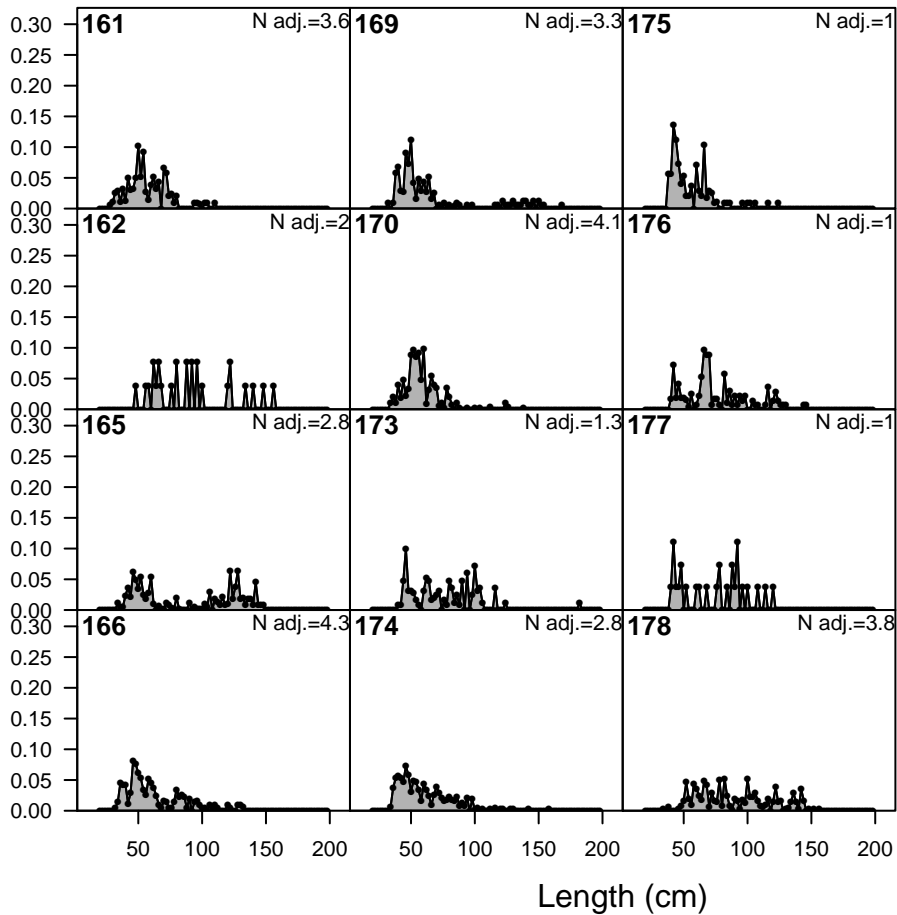


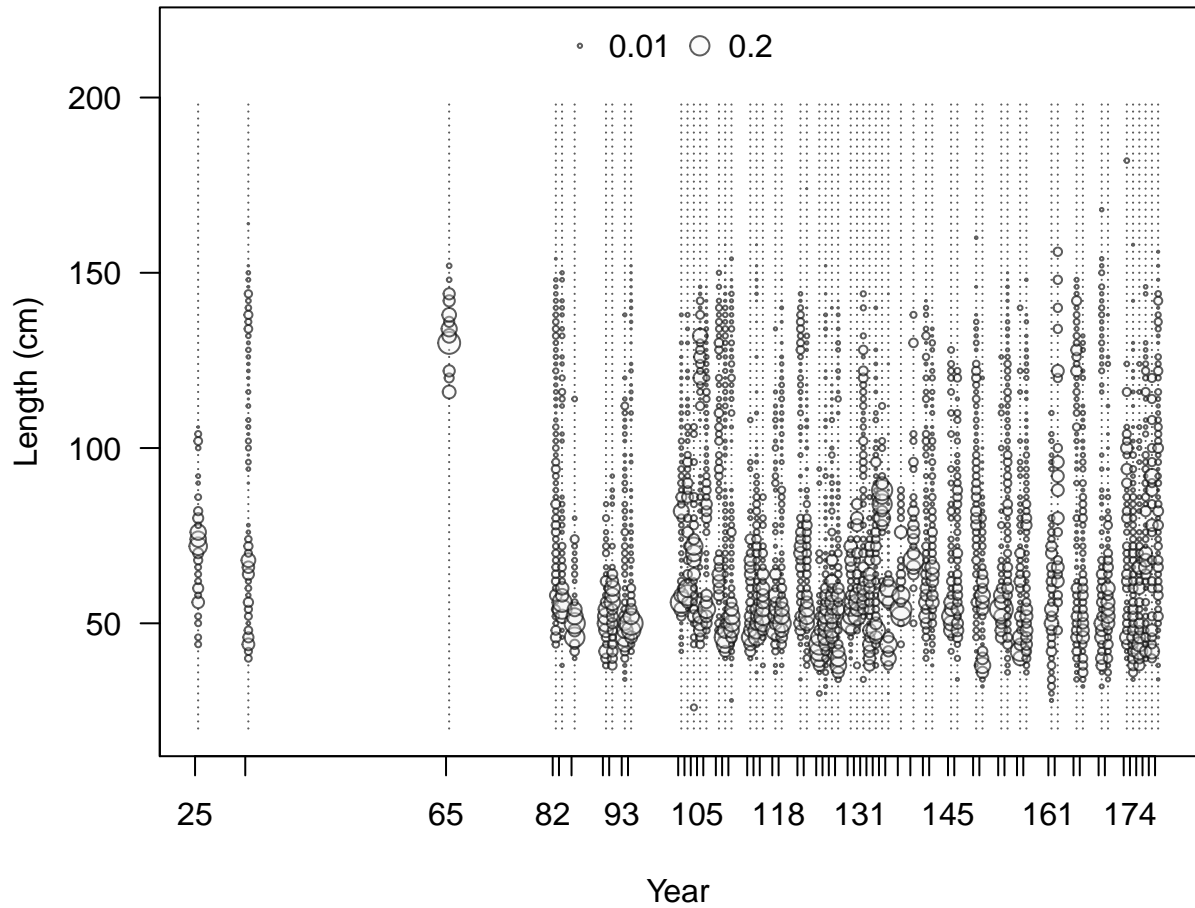
Proportion



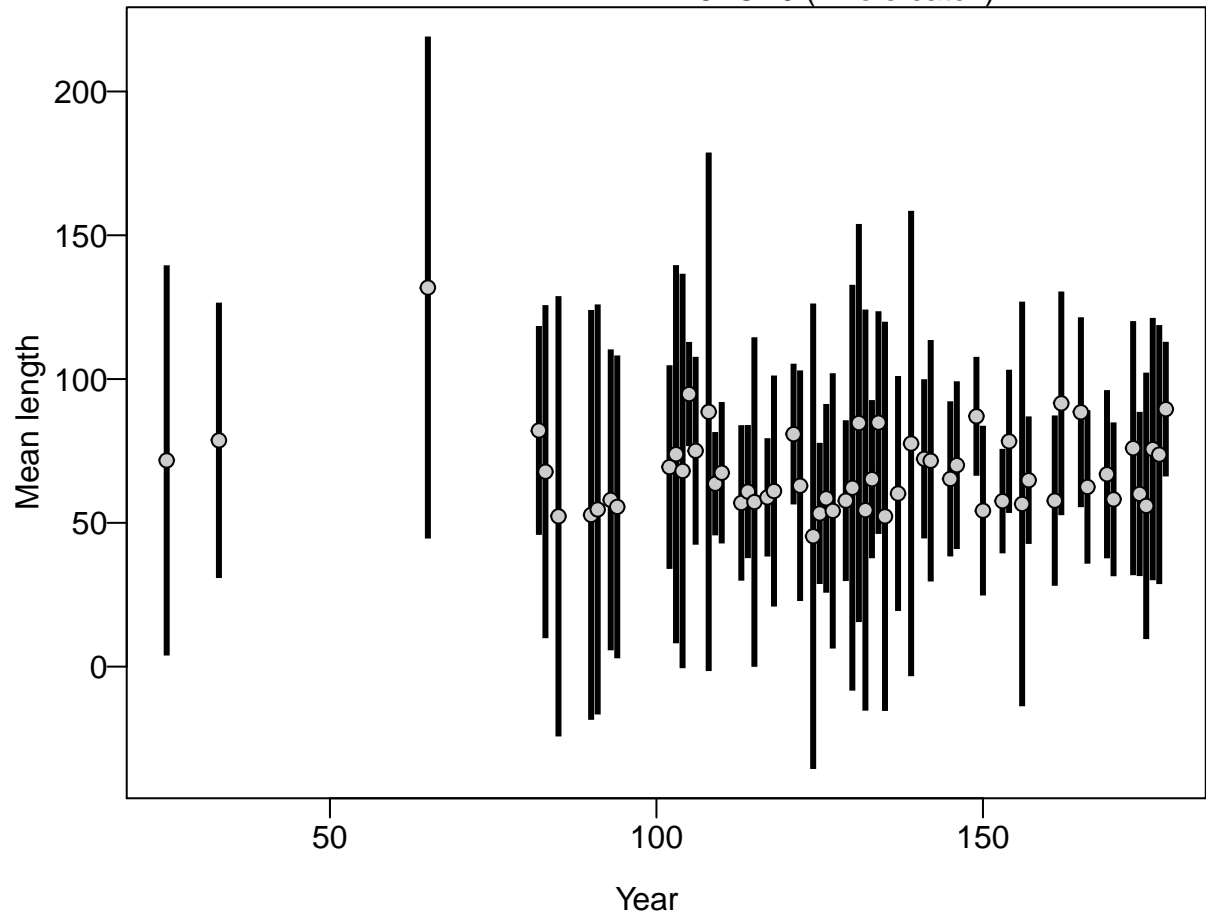


Proportion

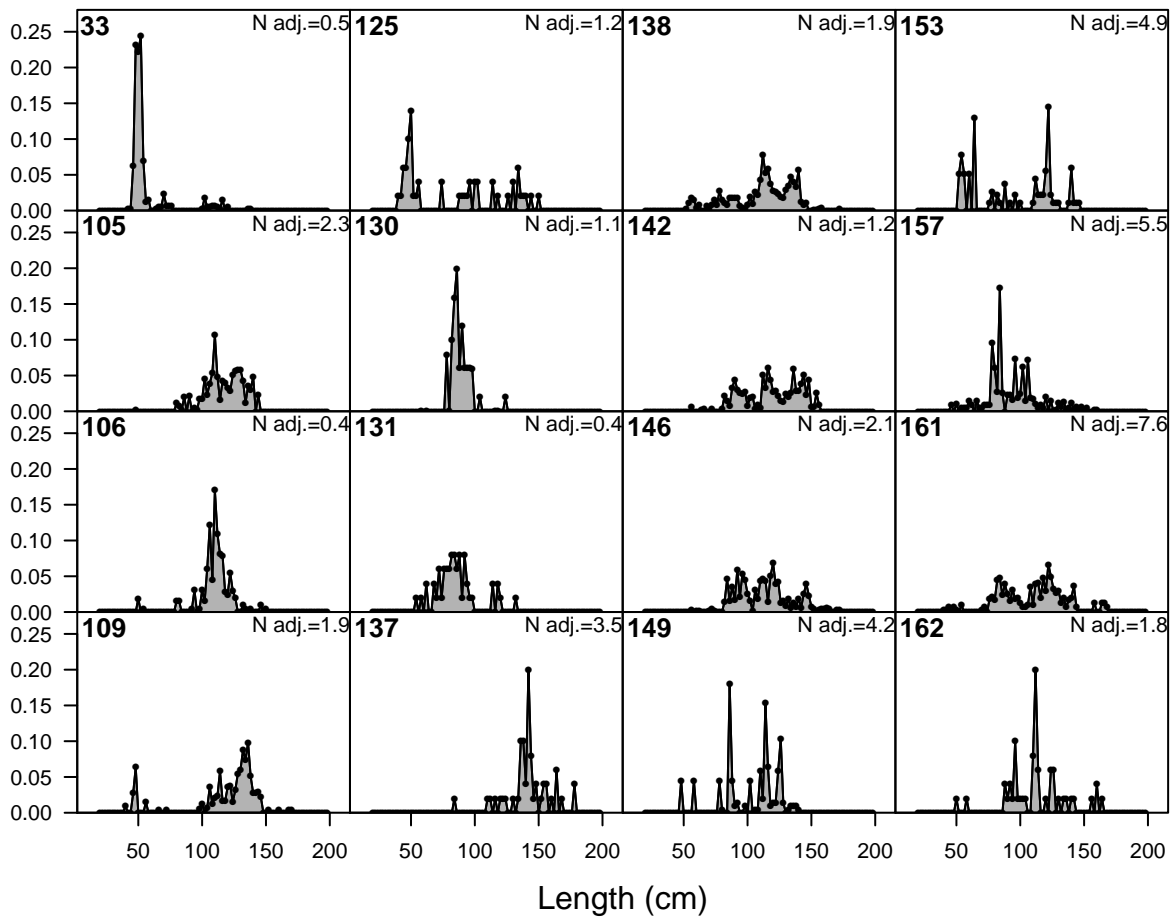




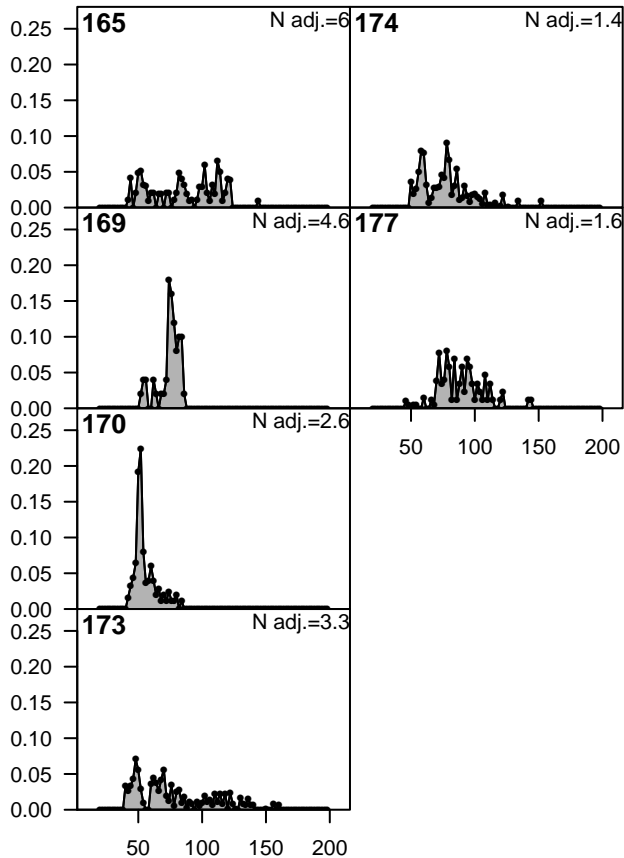
## A5-OBJ (whole catch)



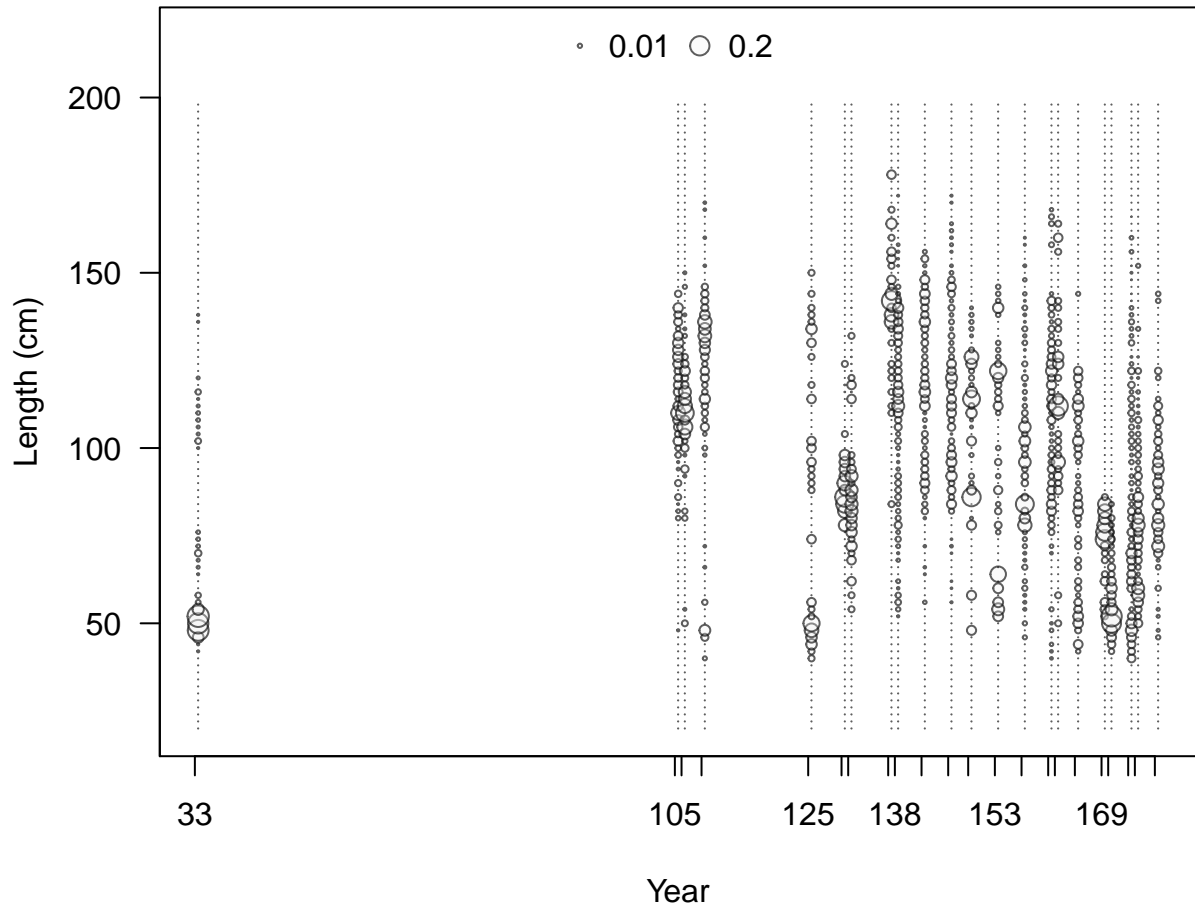
Proportion



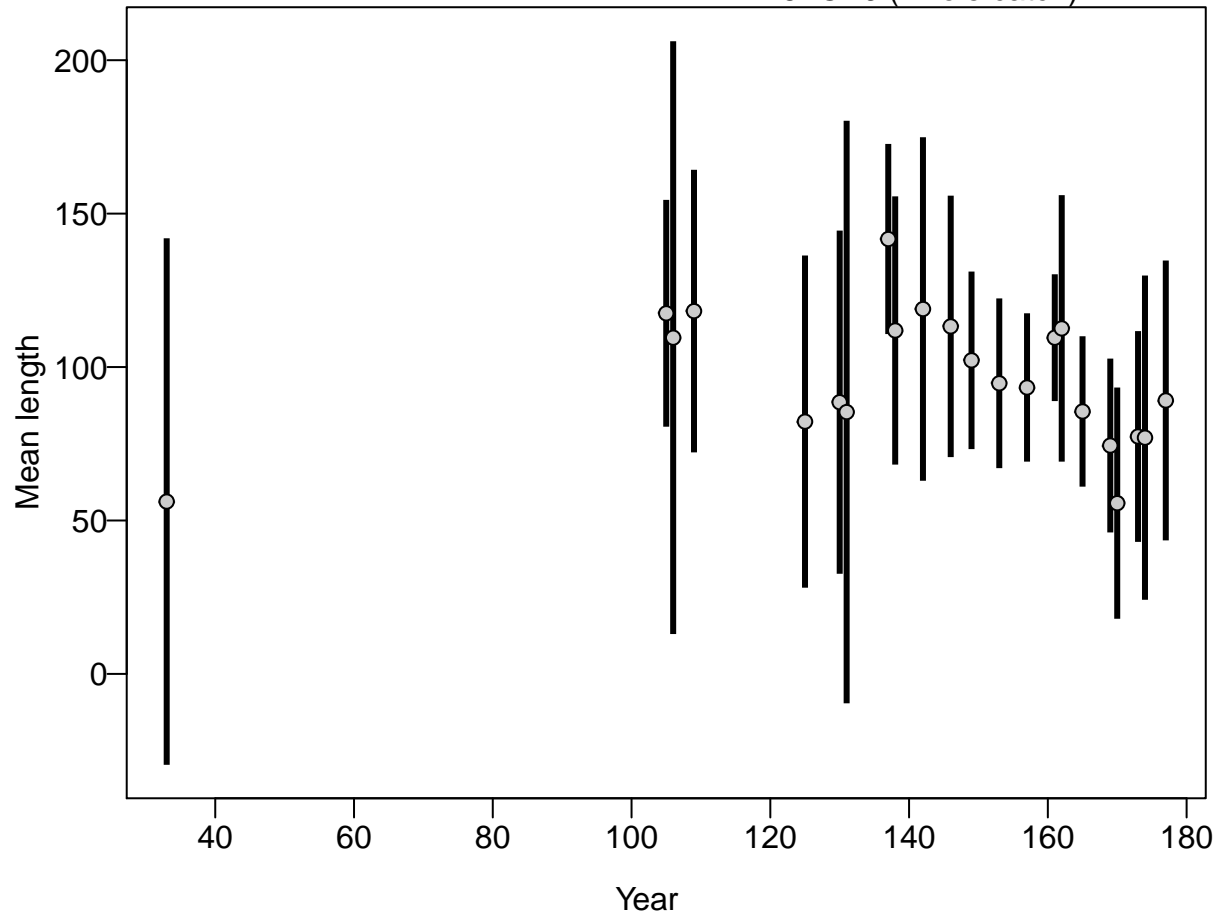
Proportion

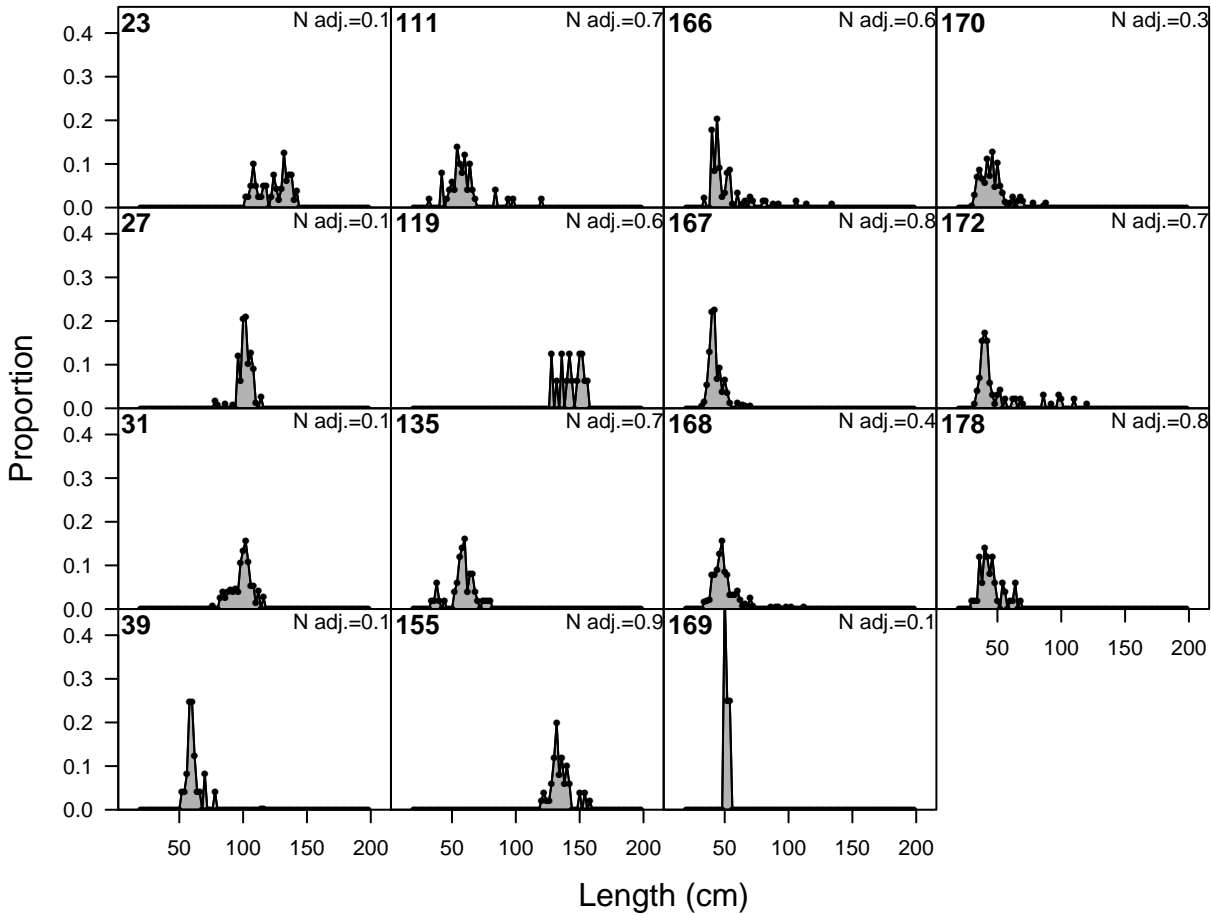


Length (cm)

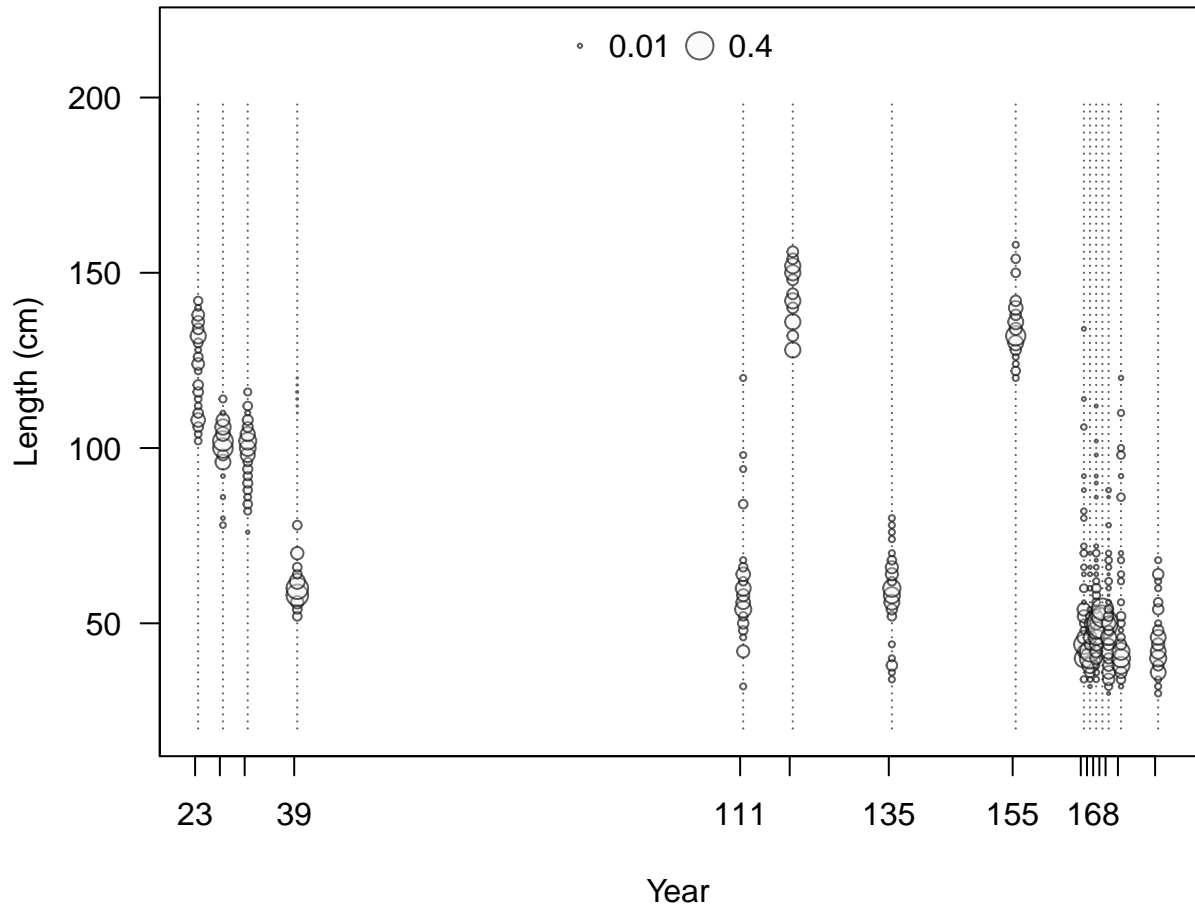


## A6-OBJ (whole catch)

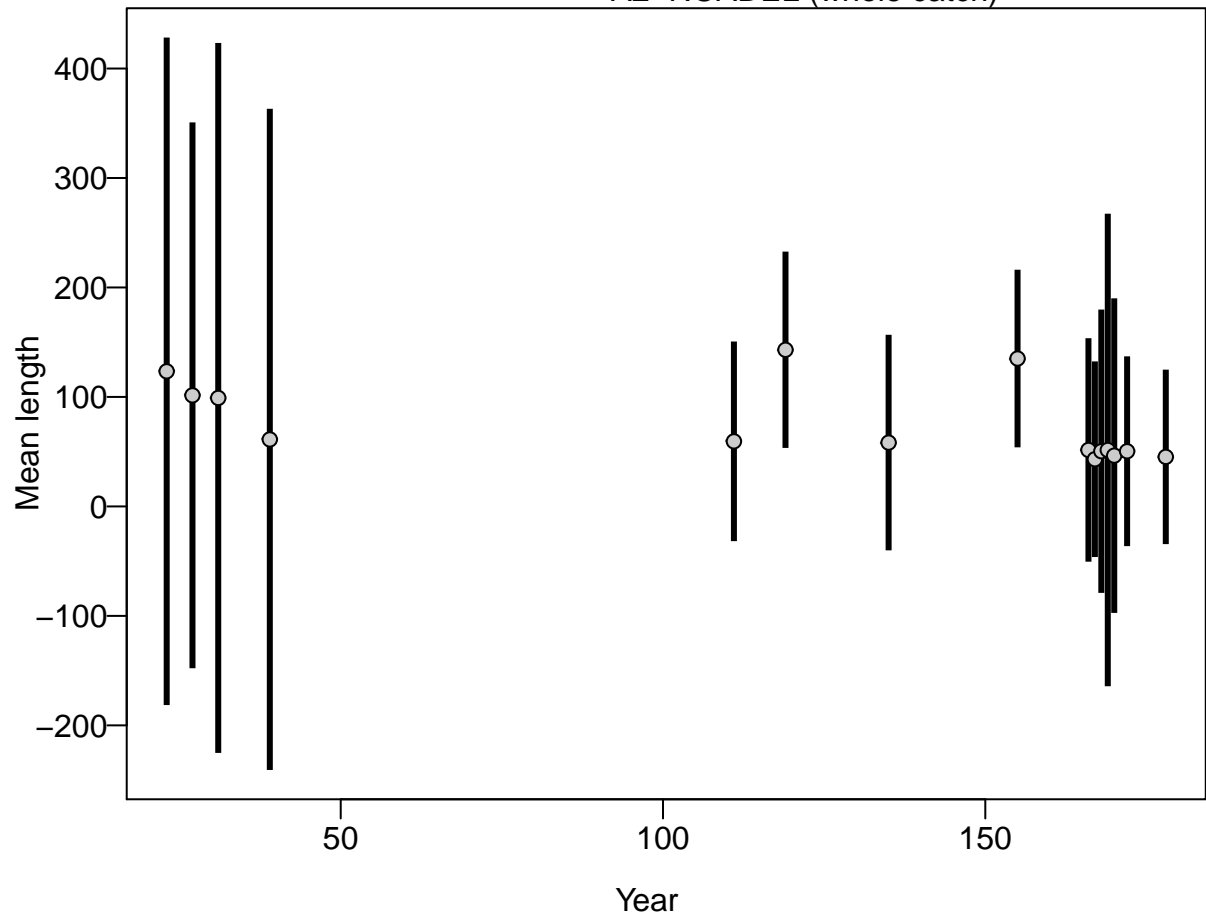


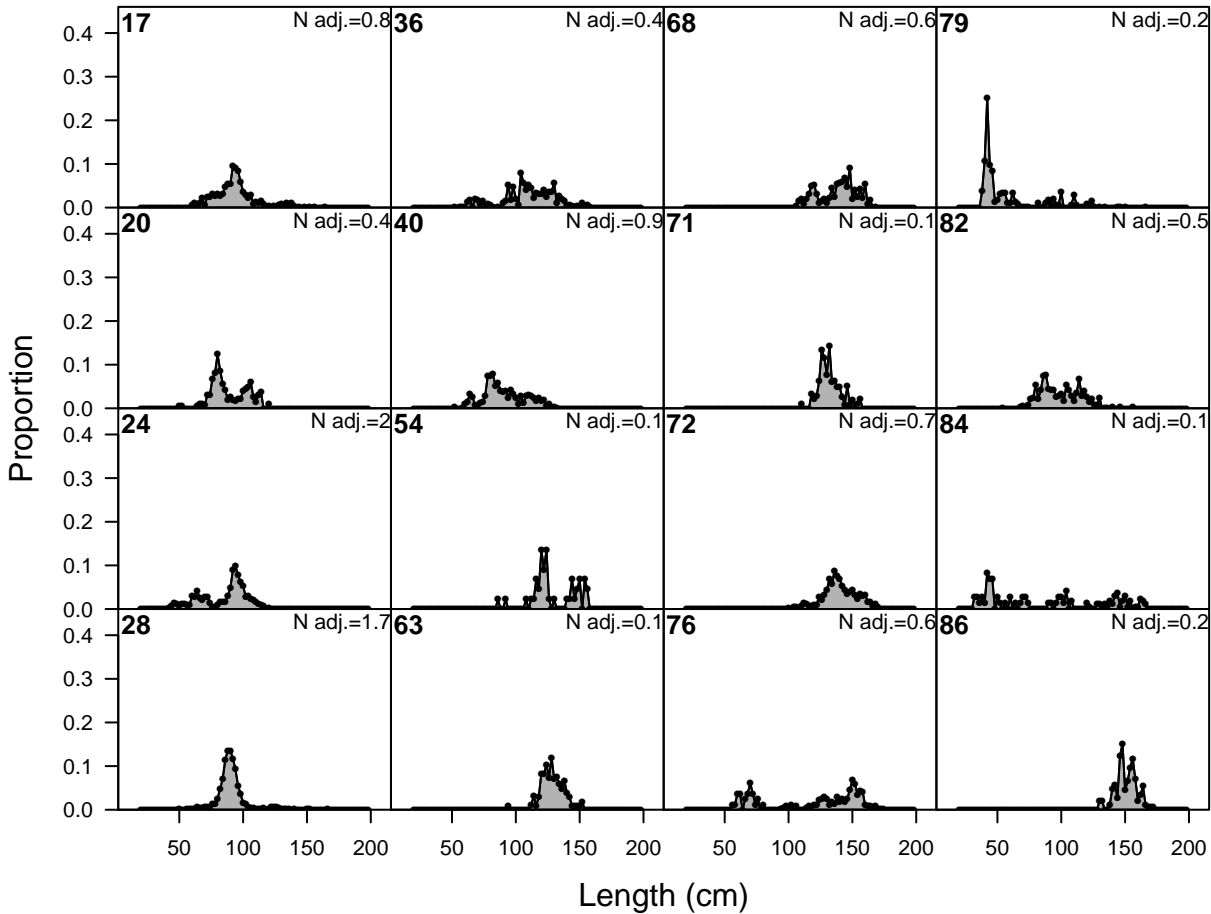


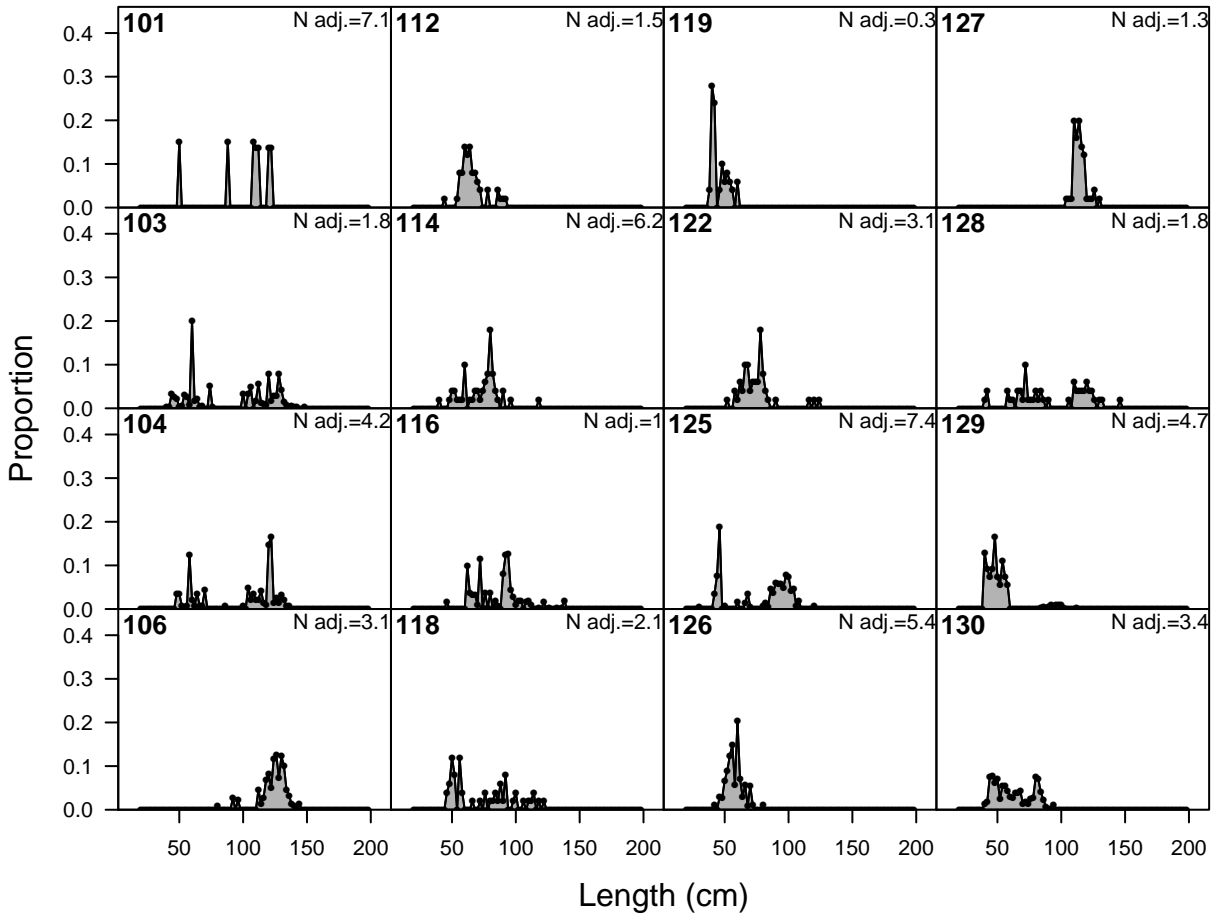




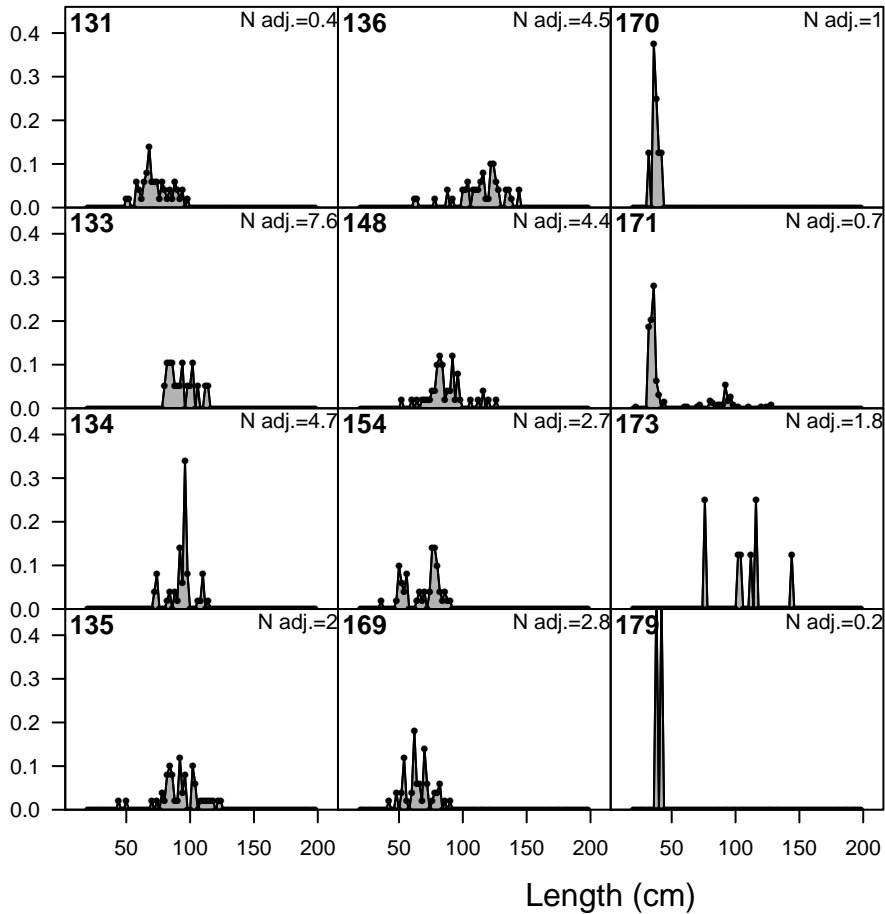
## A2-NOADEL (whole catch)

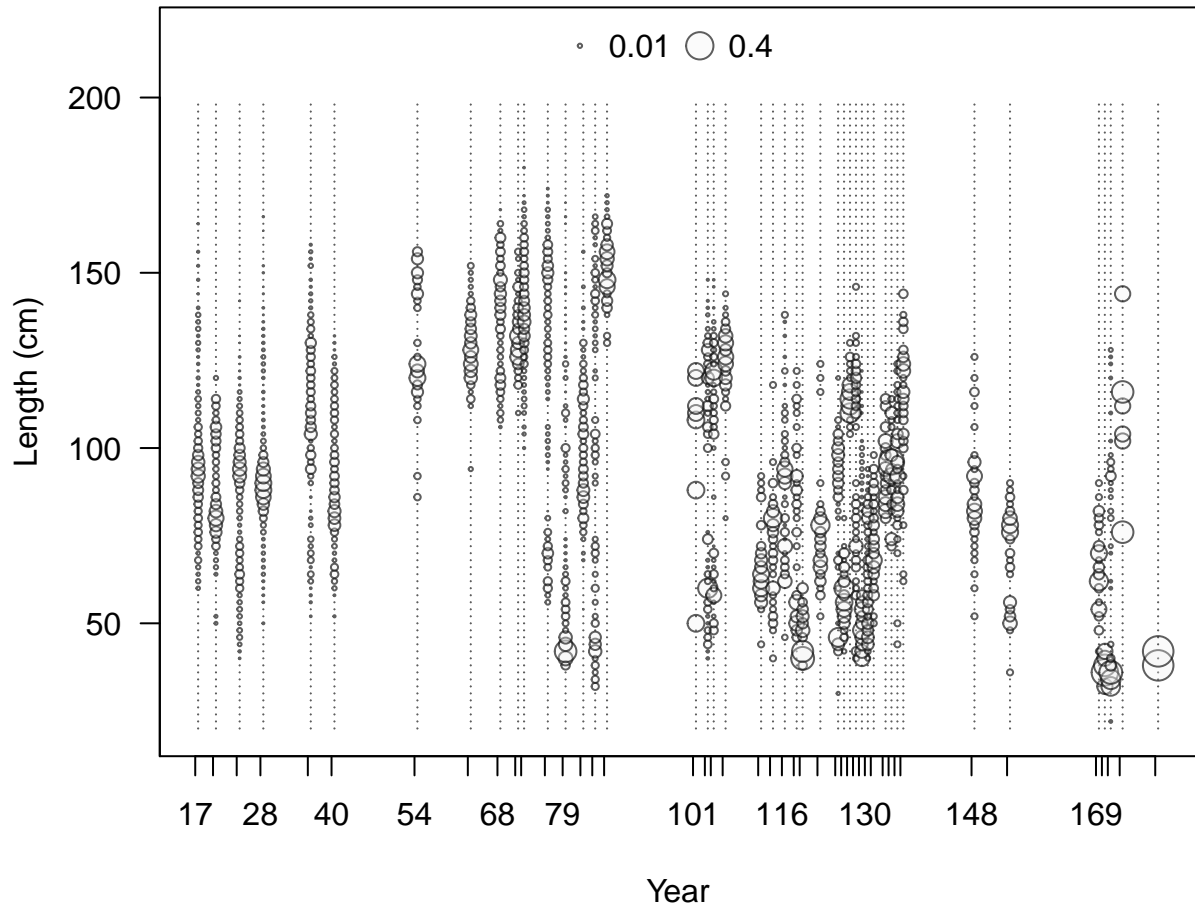




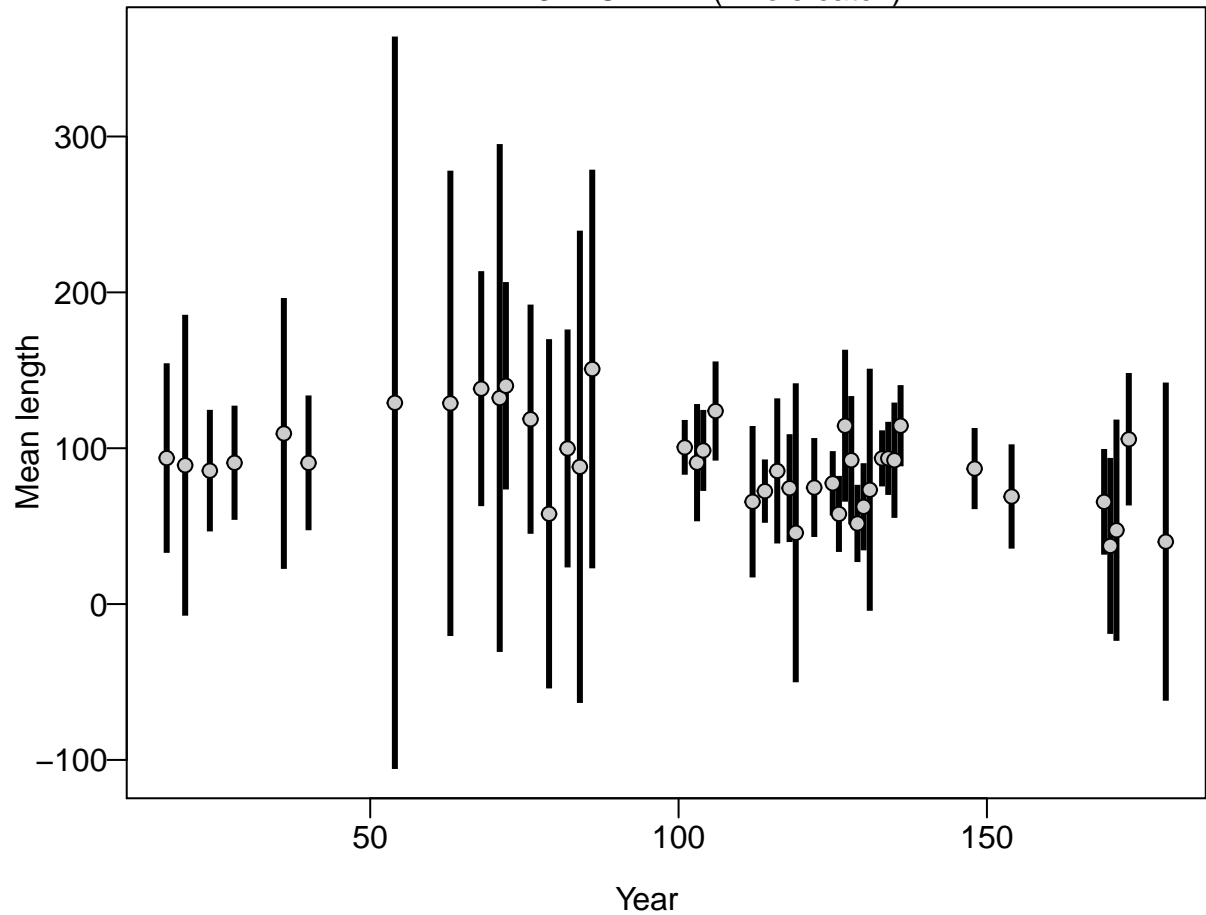


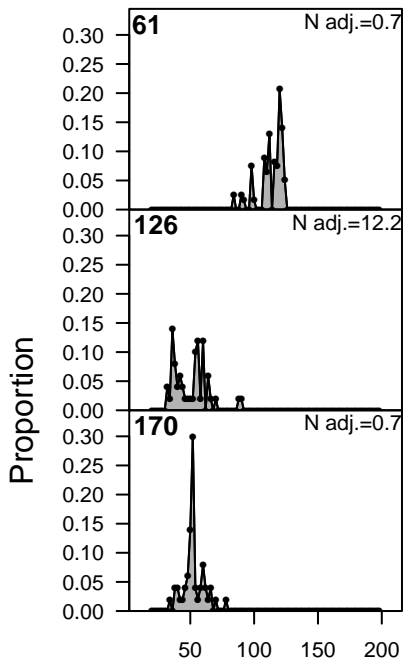
Proportion





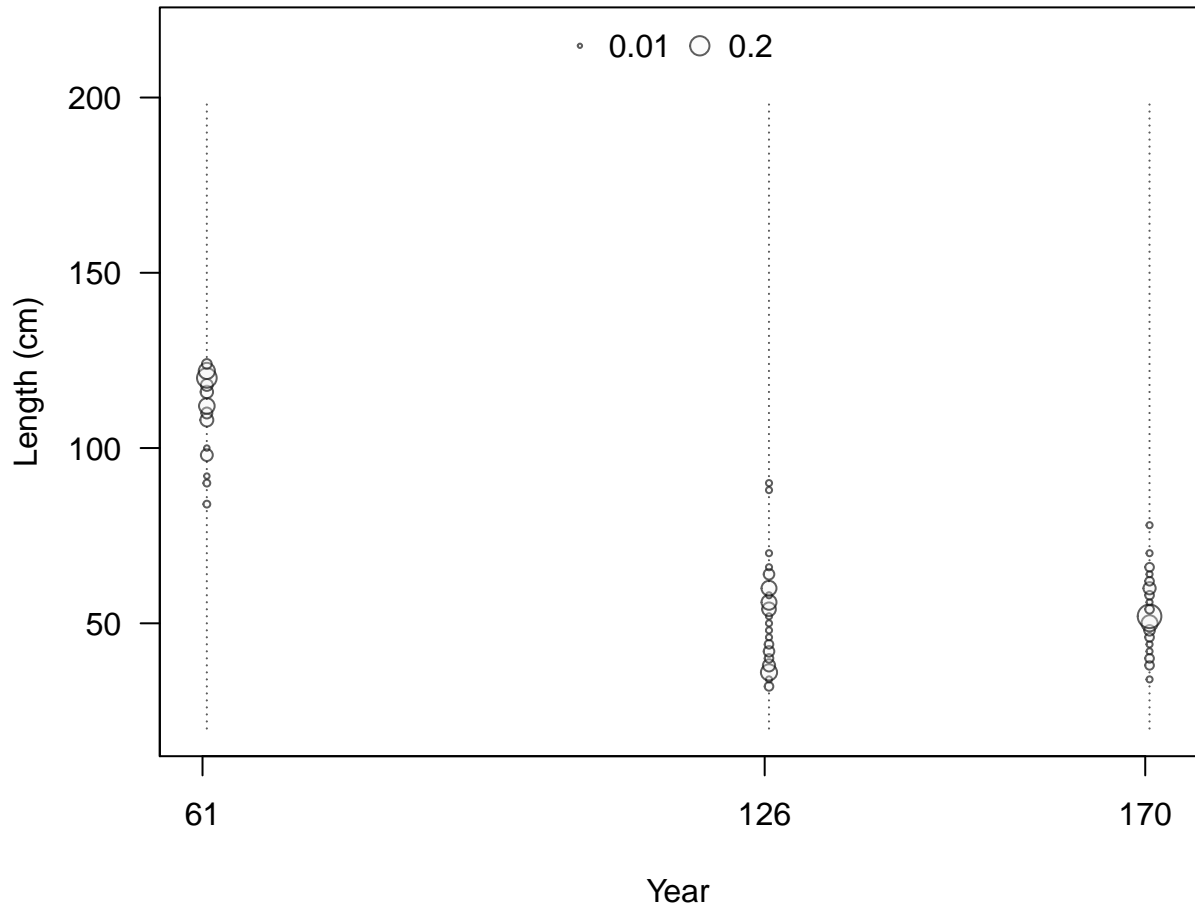
## A3-NOADEL (whole catch)



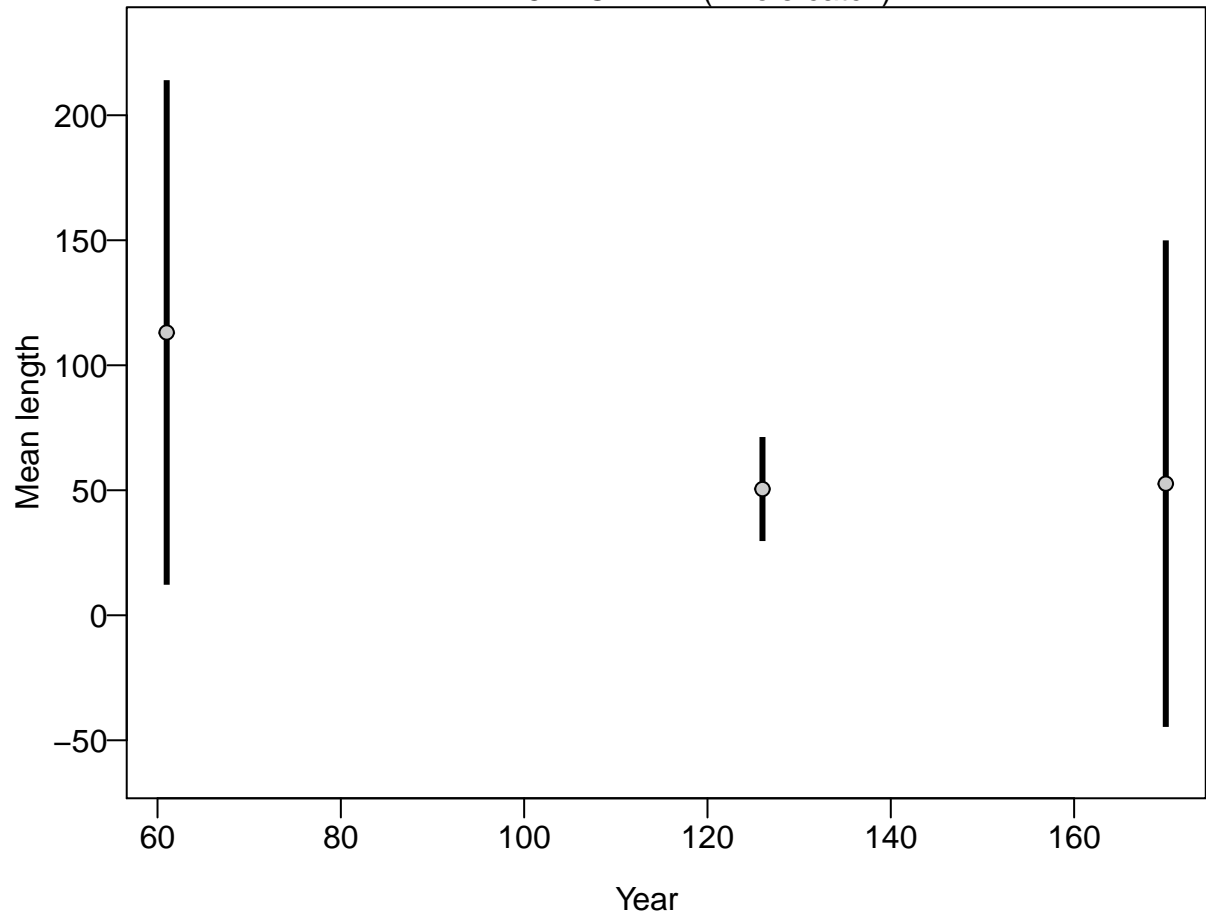


Length (cm)

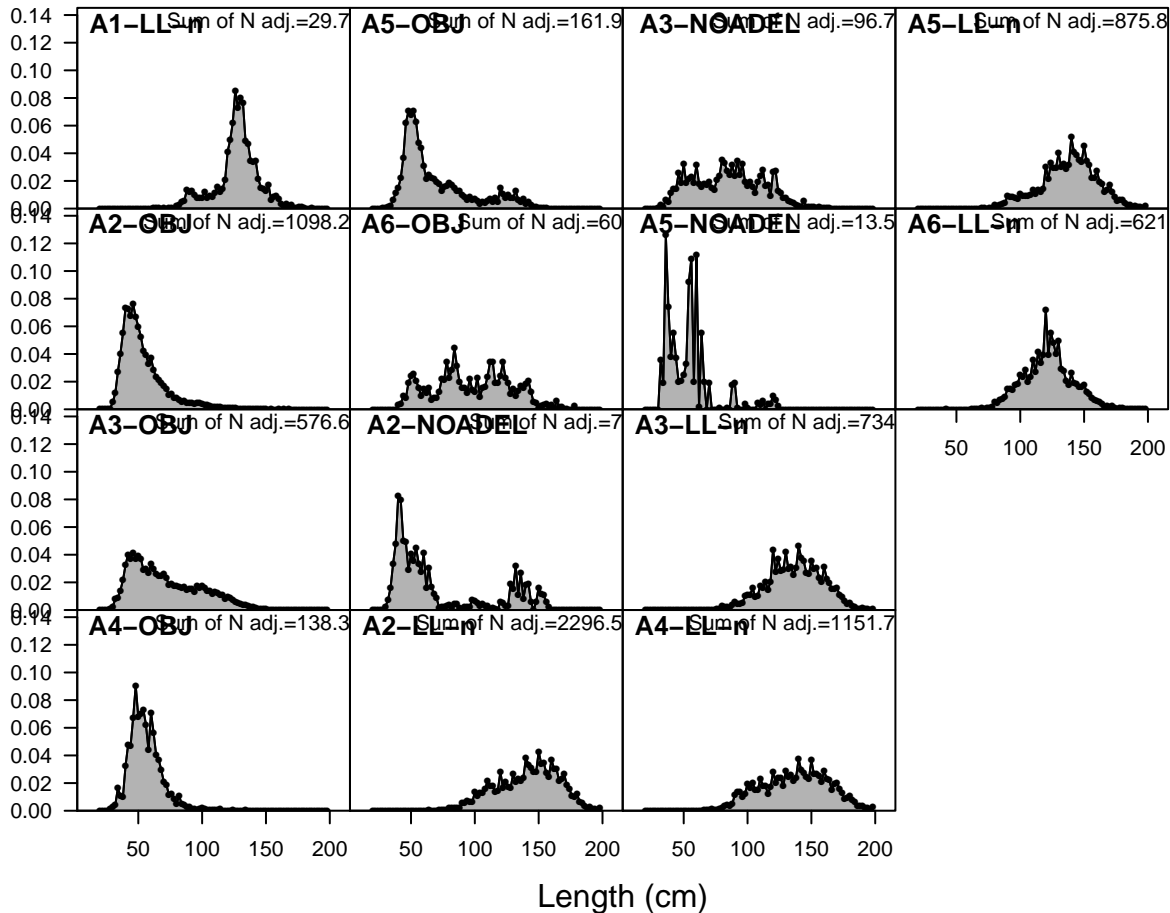


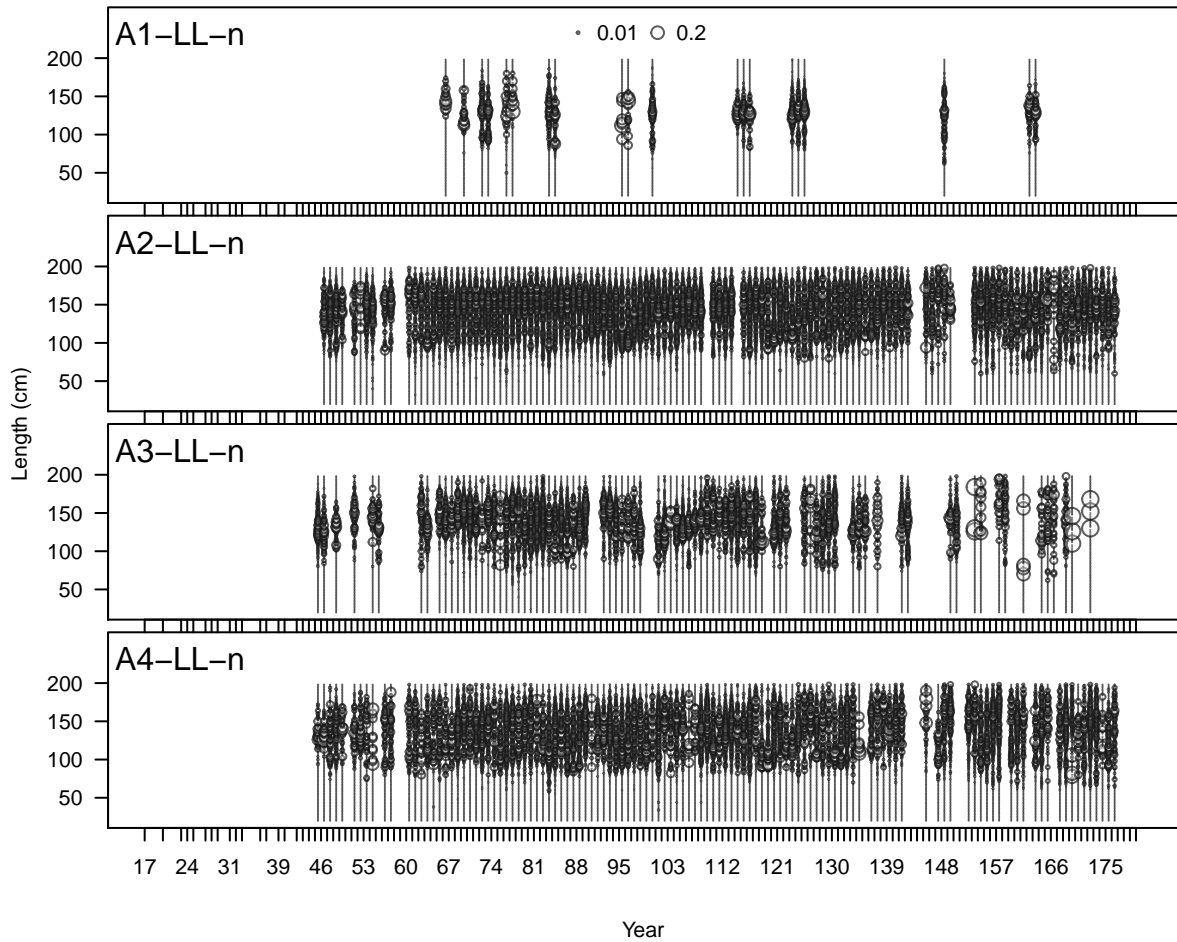


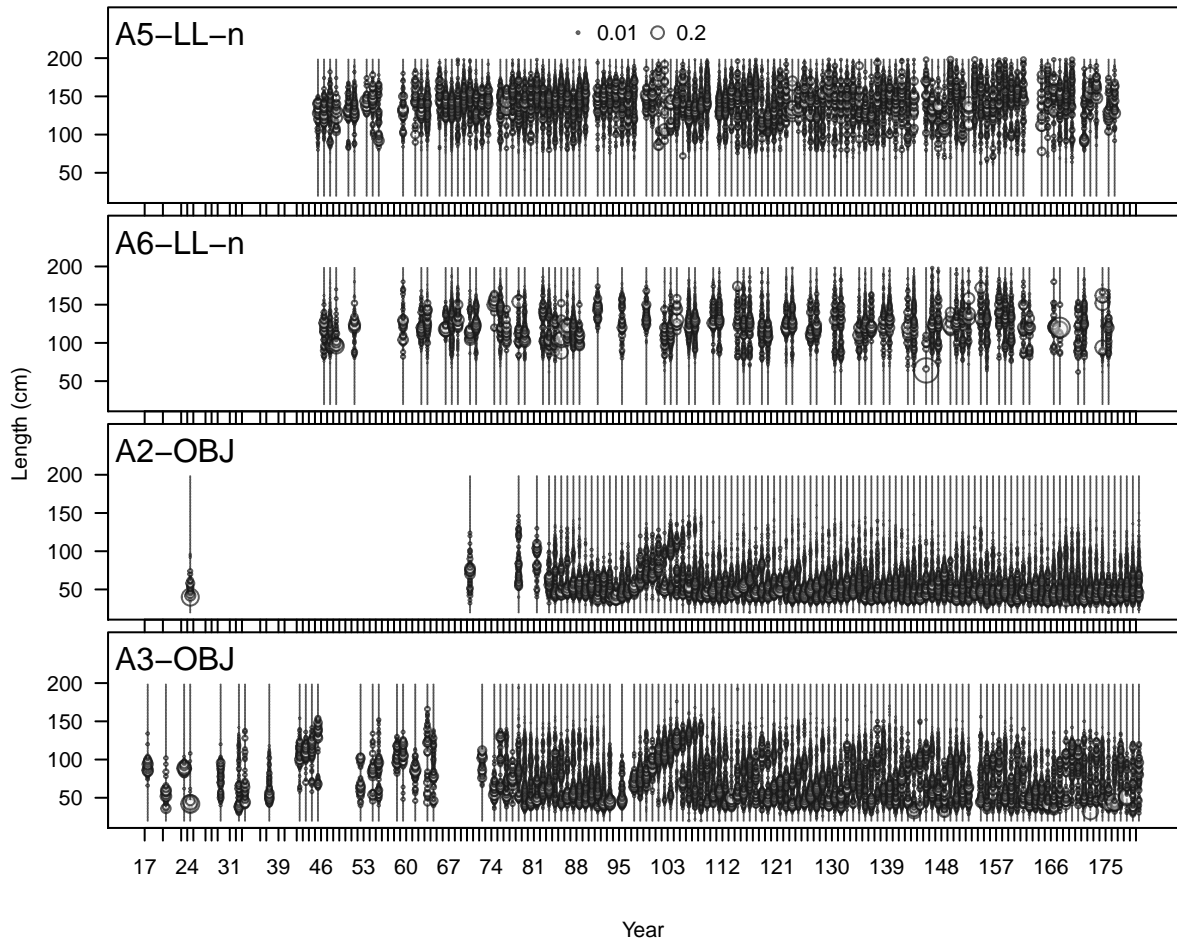
A5-NOADEL (whole catch)

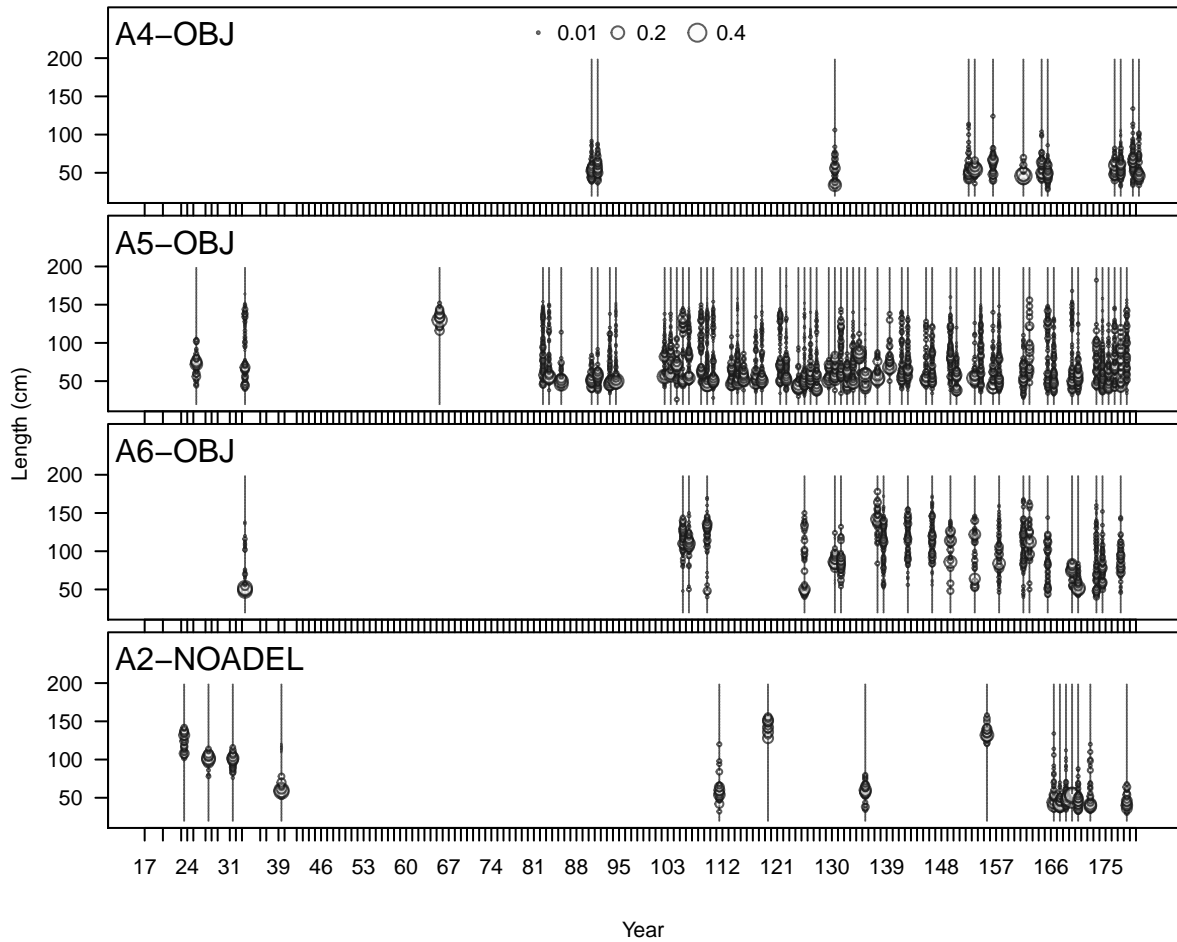


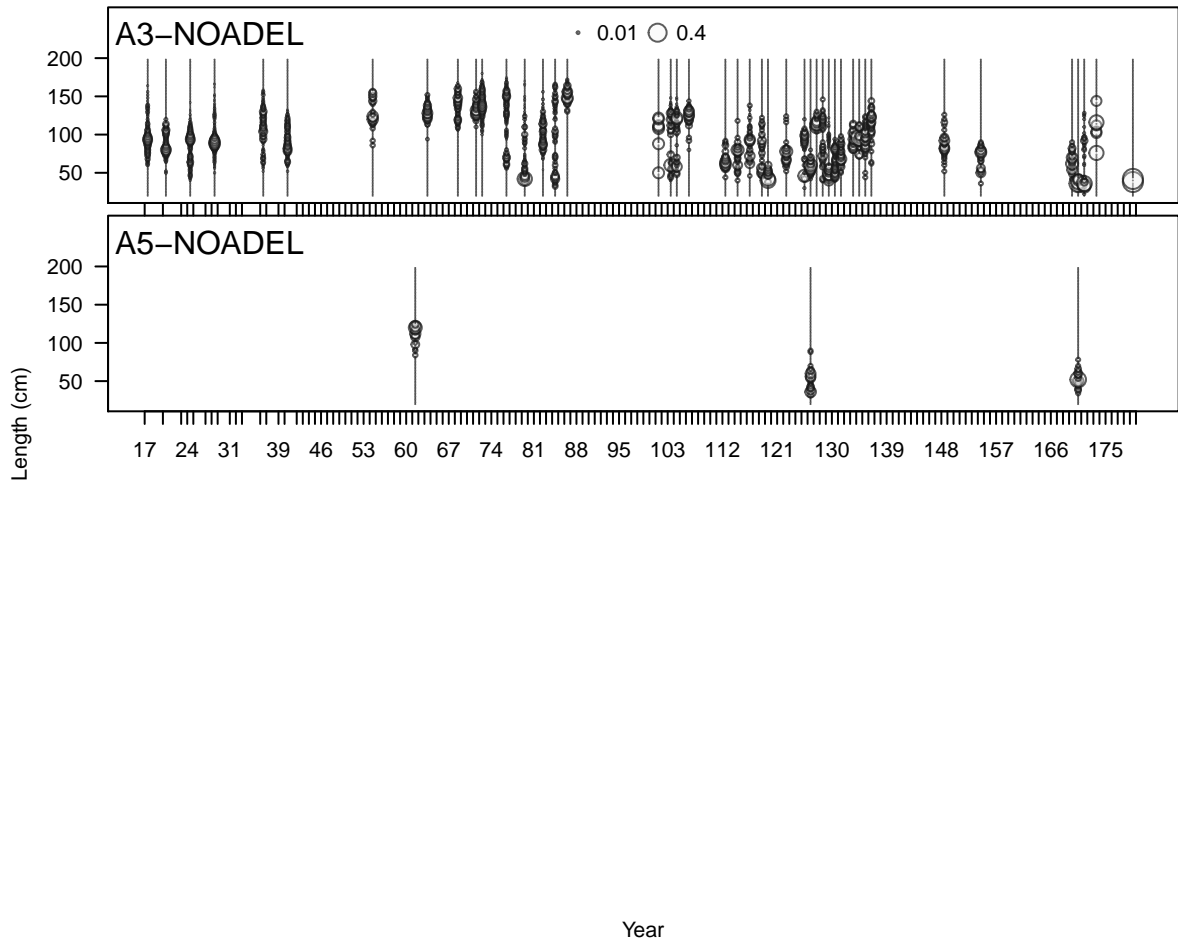
Proportion



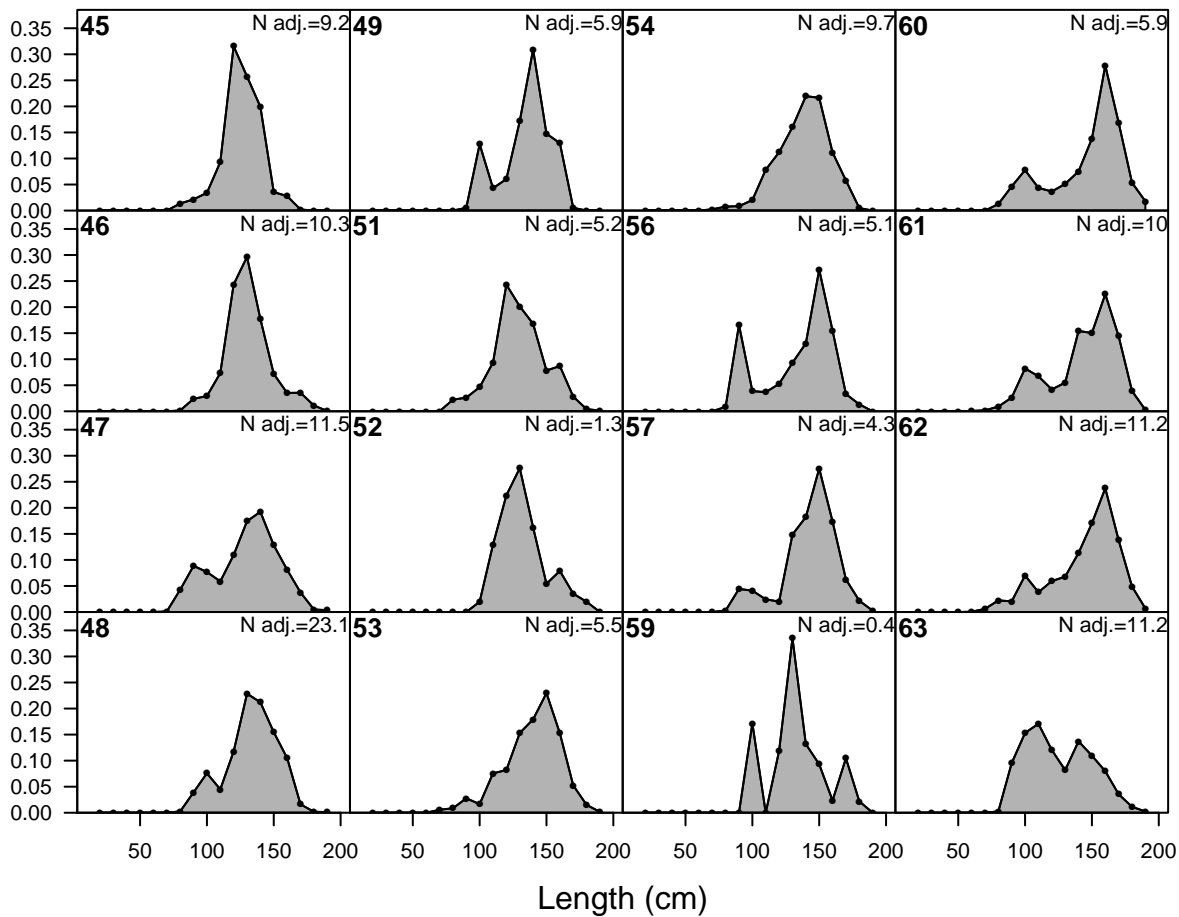






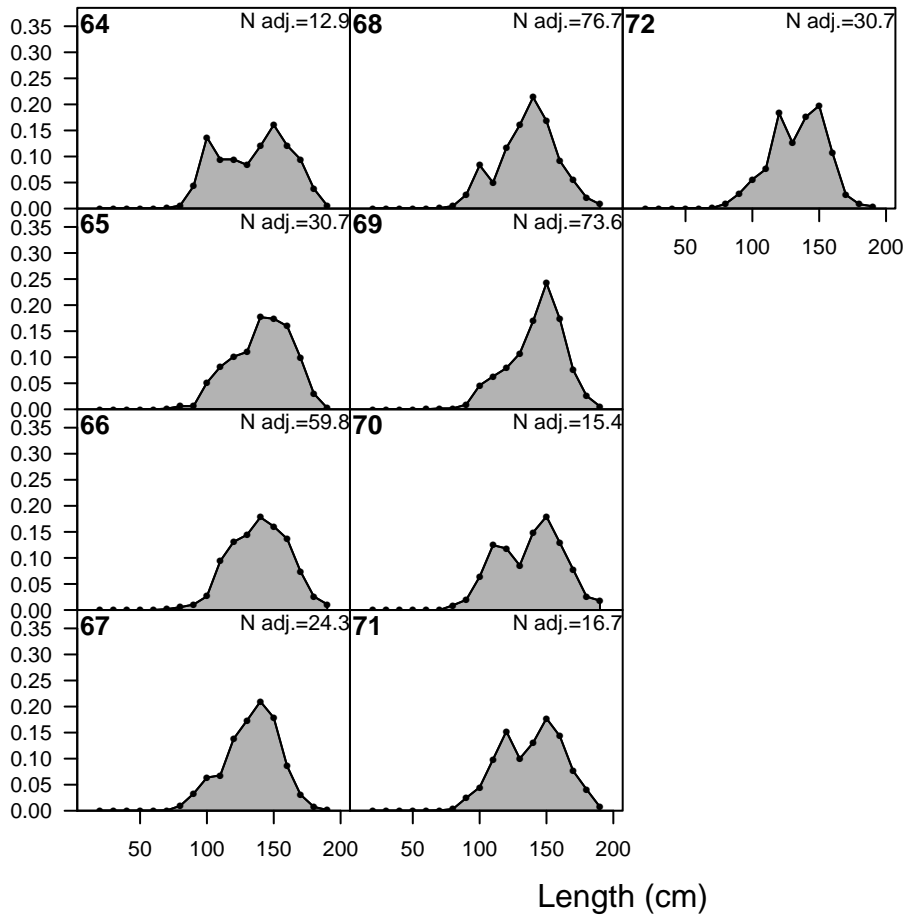


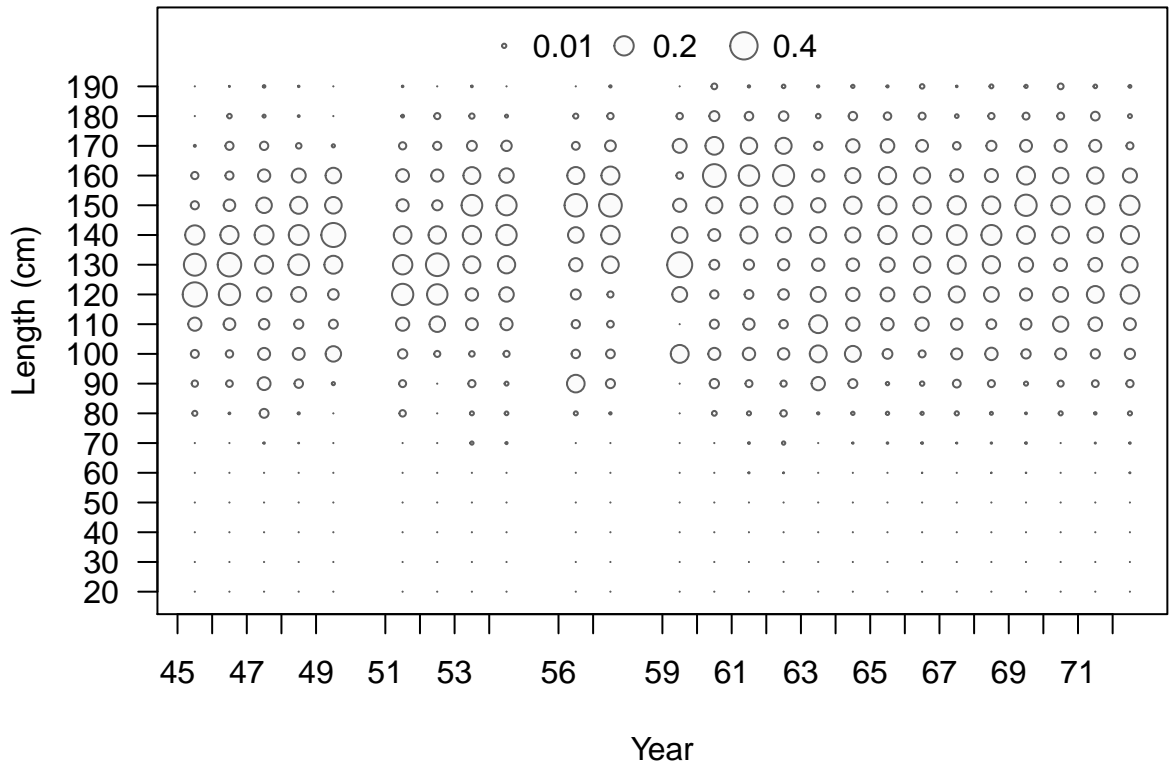
Proportion



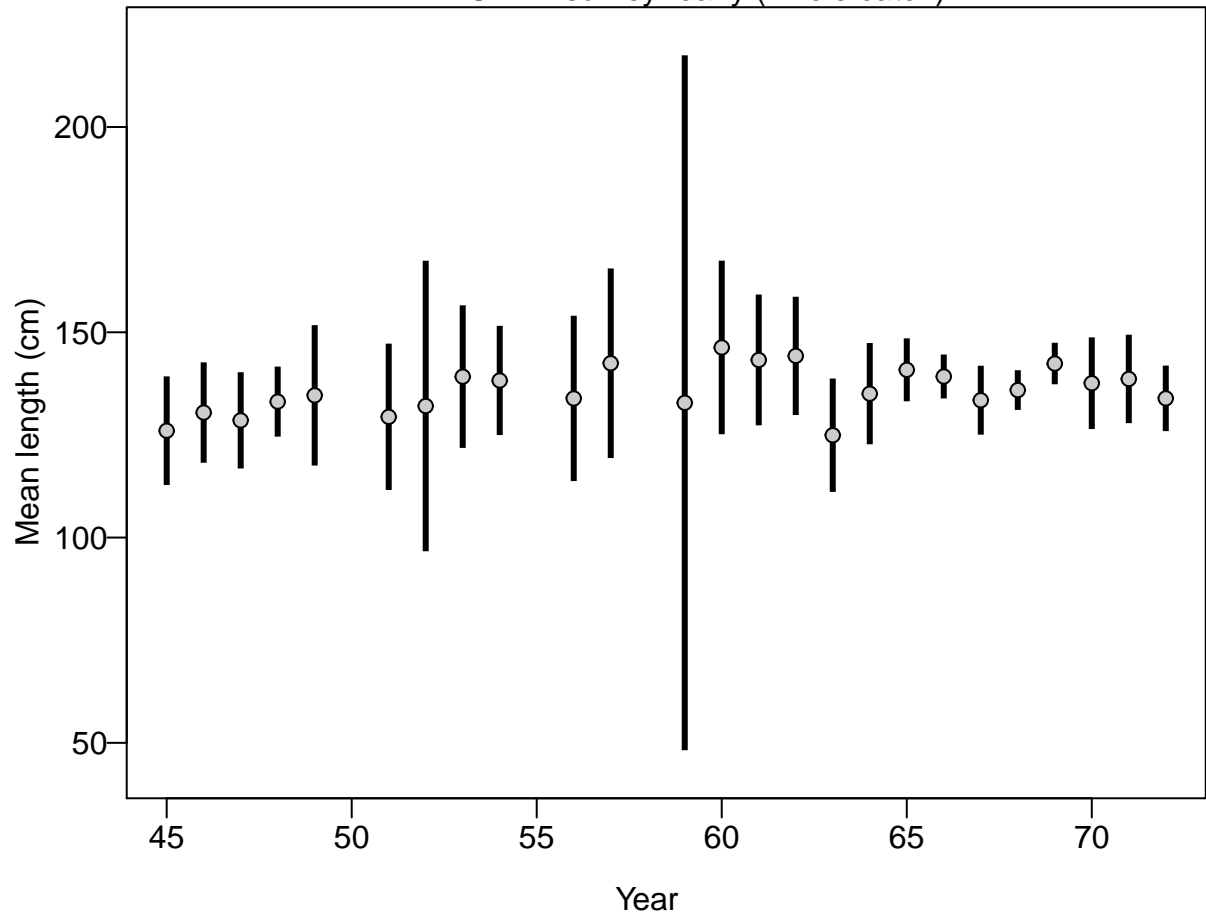


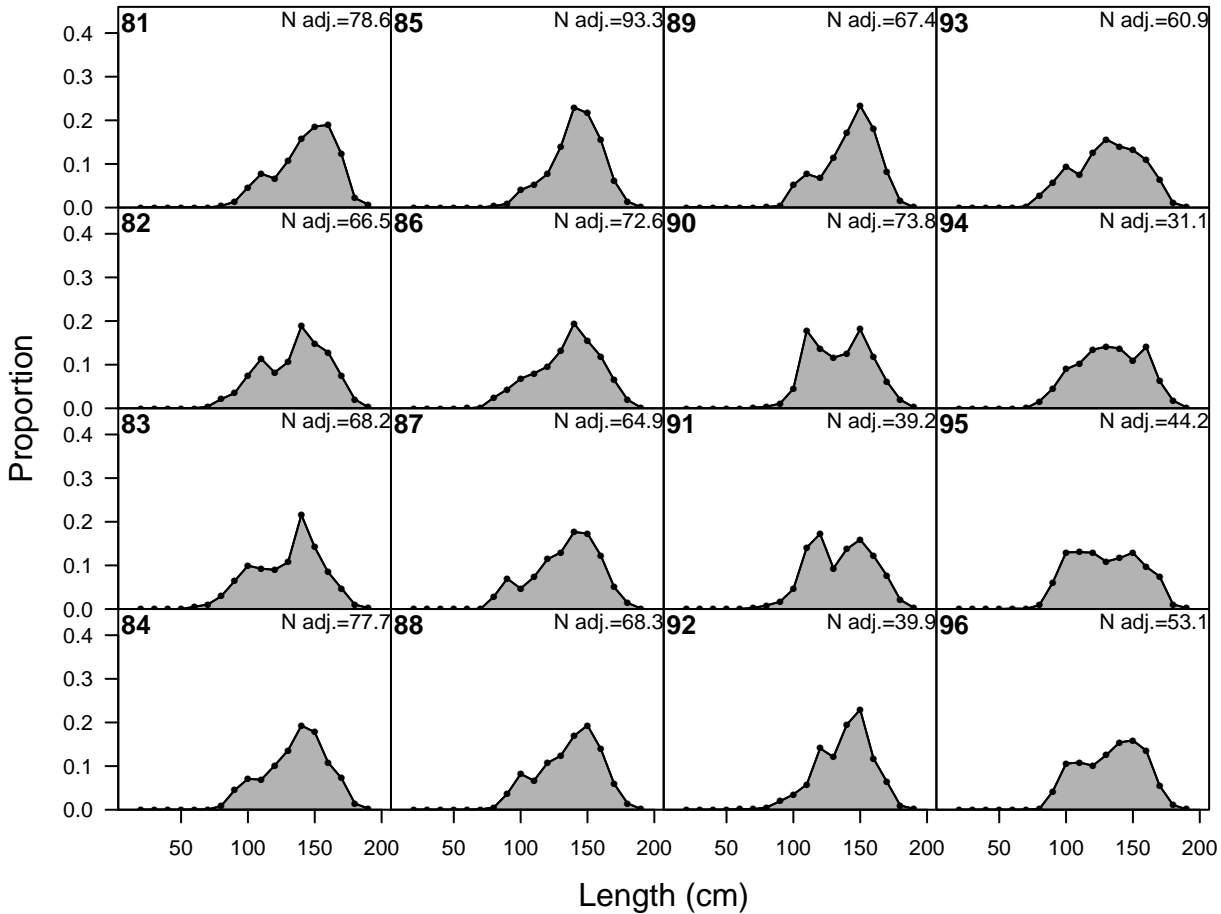
Proportion

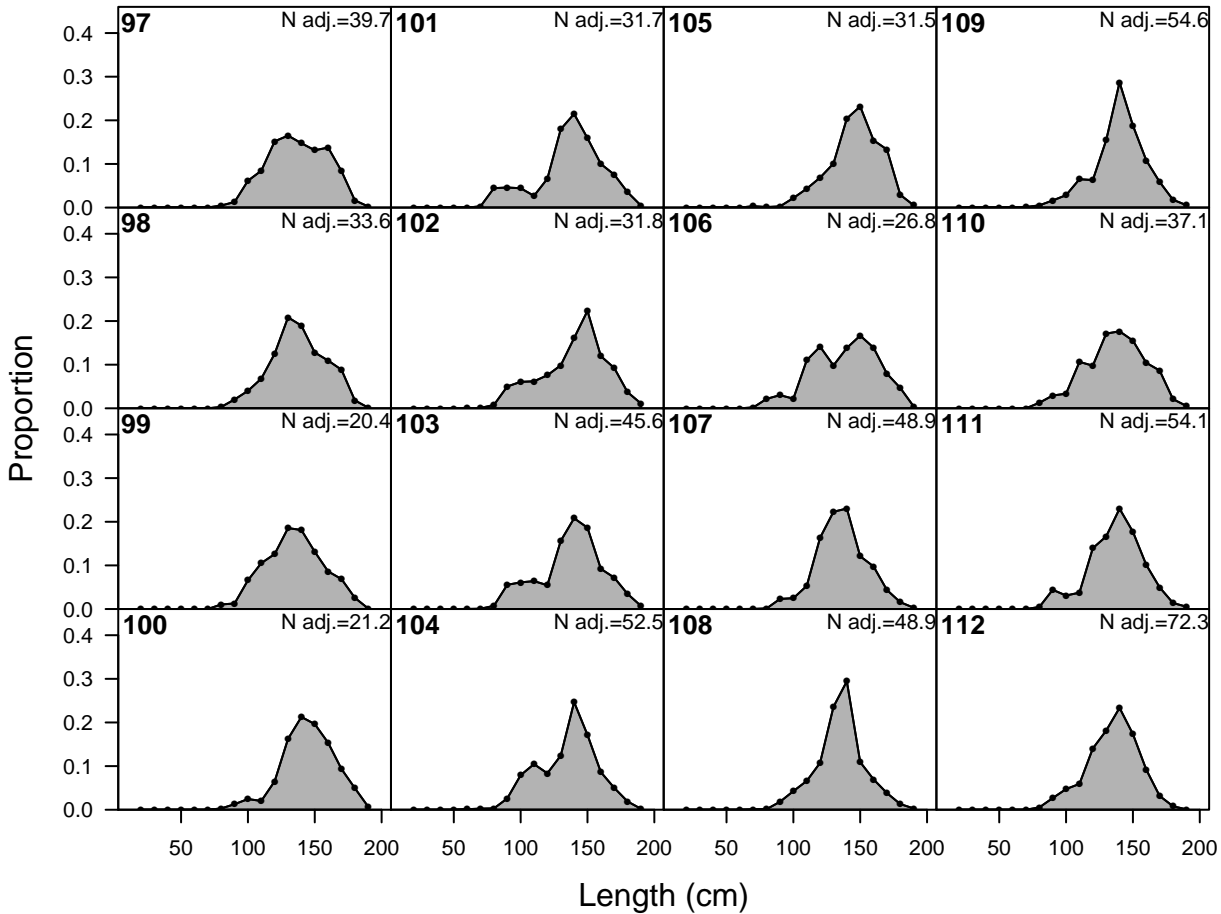


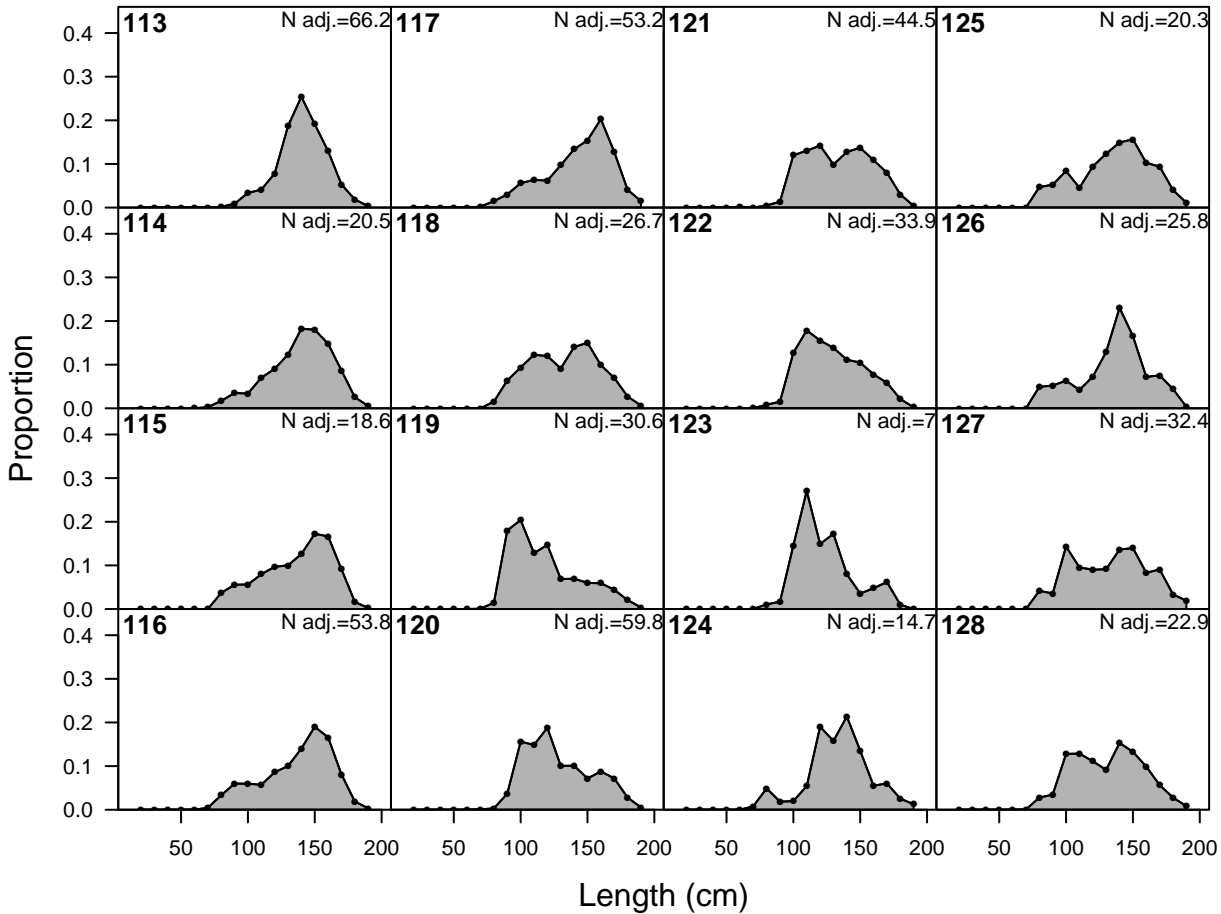


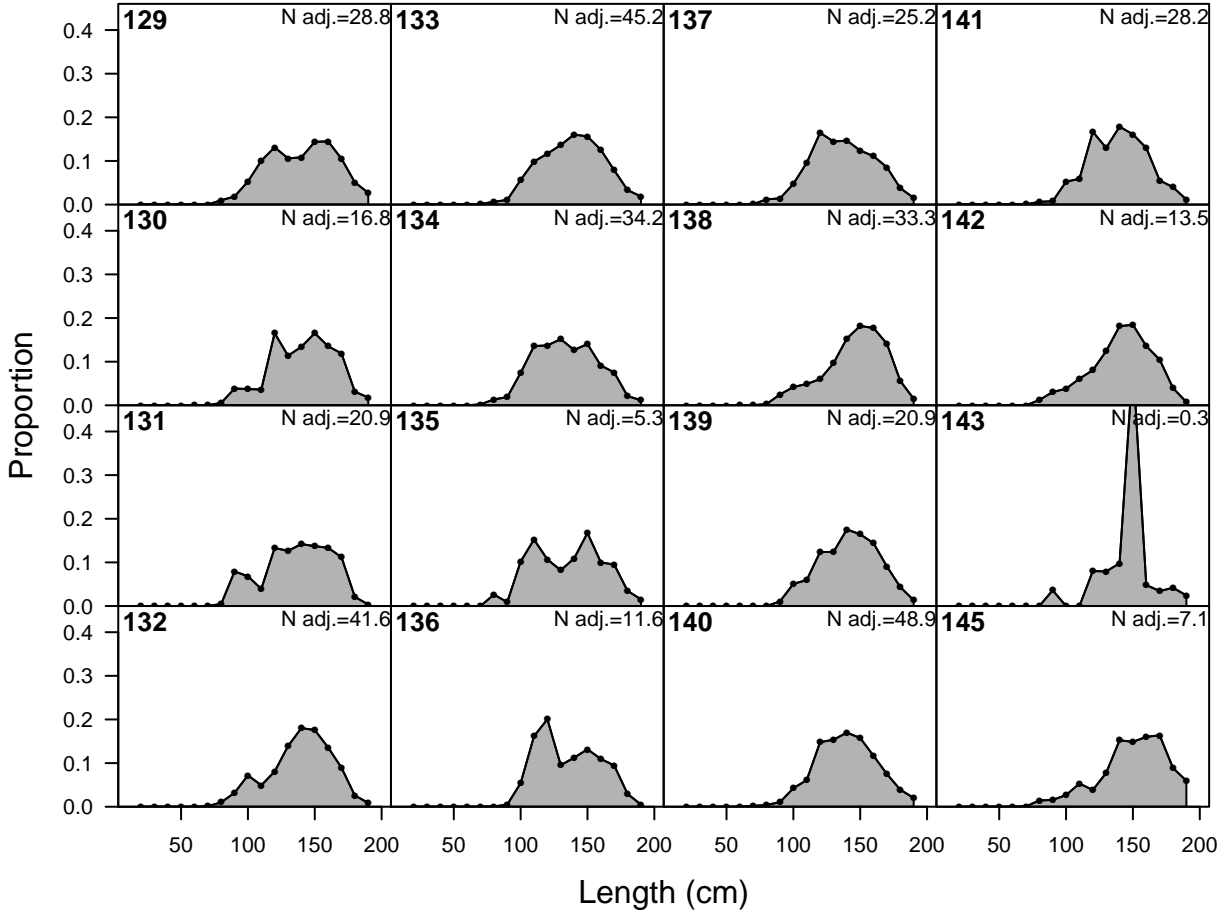
EPO-LL-survey-early (whole catch)

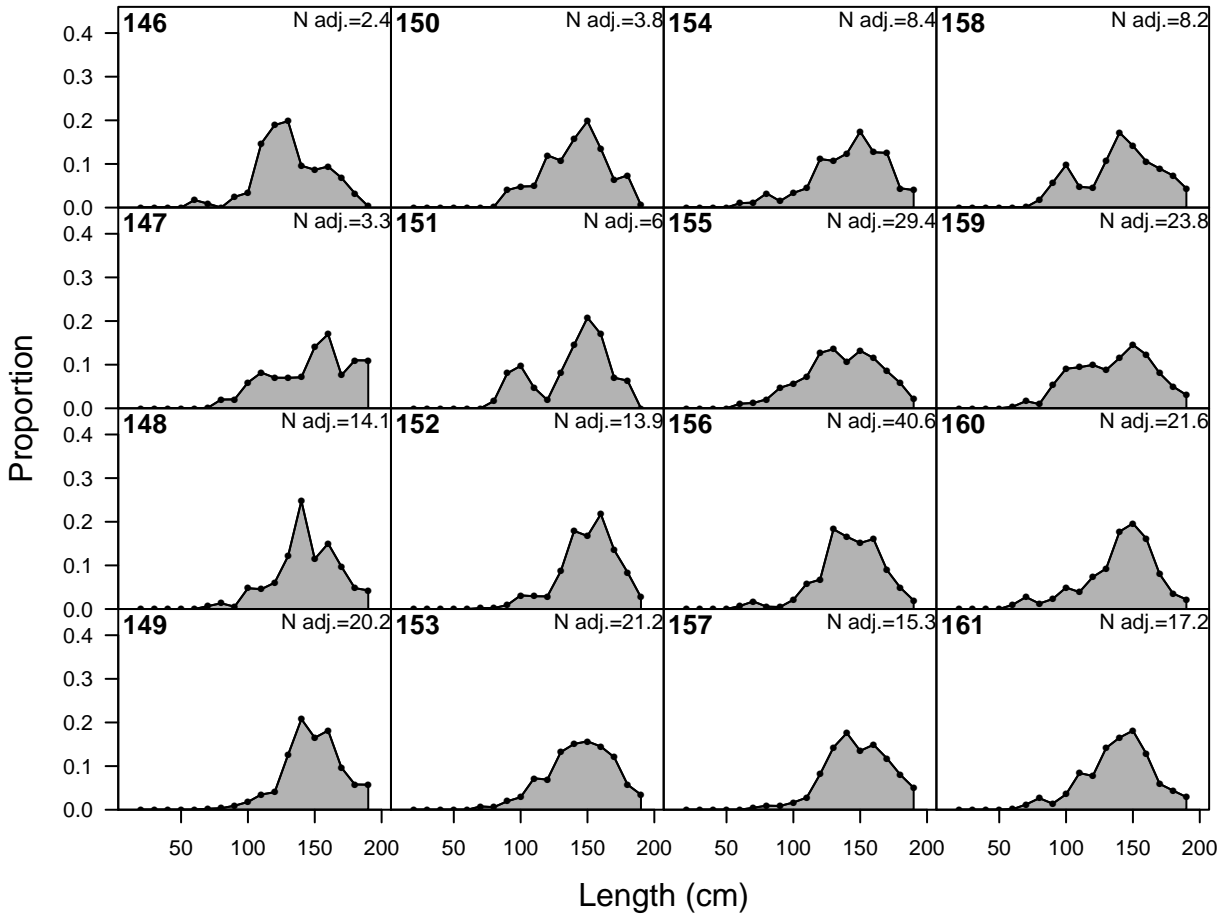




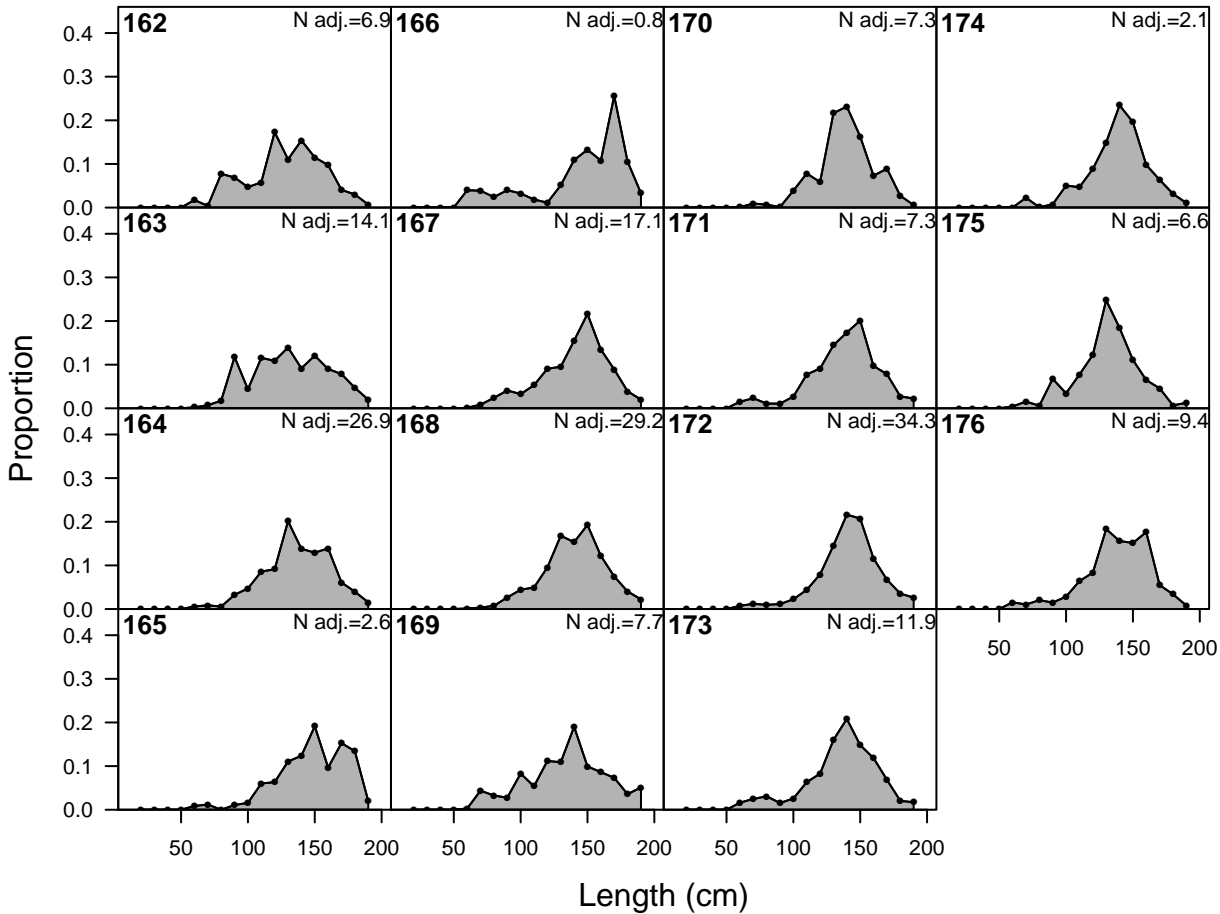


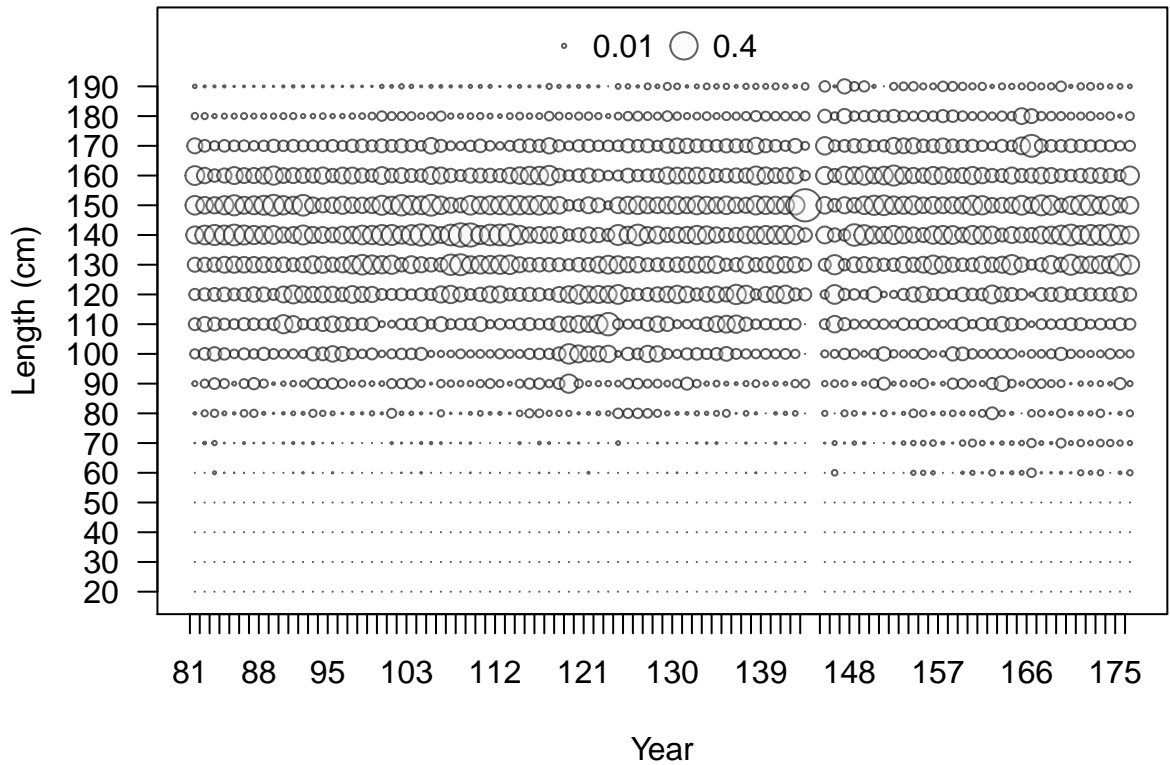




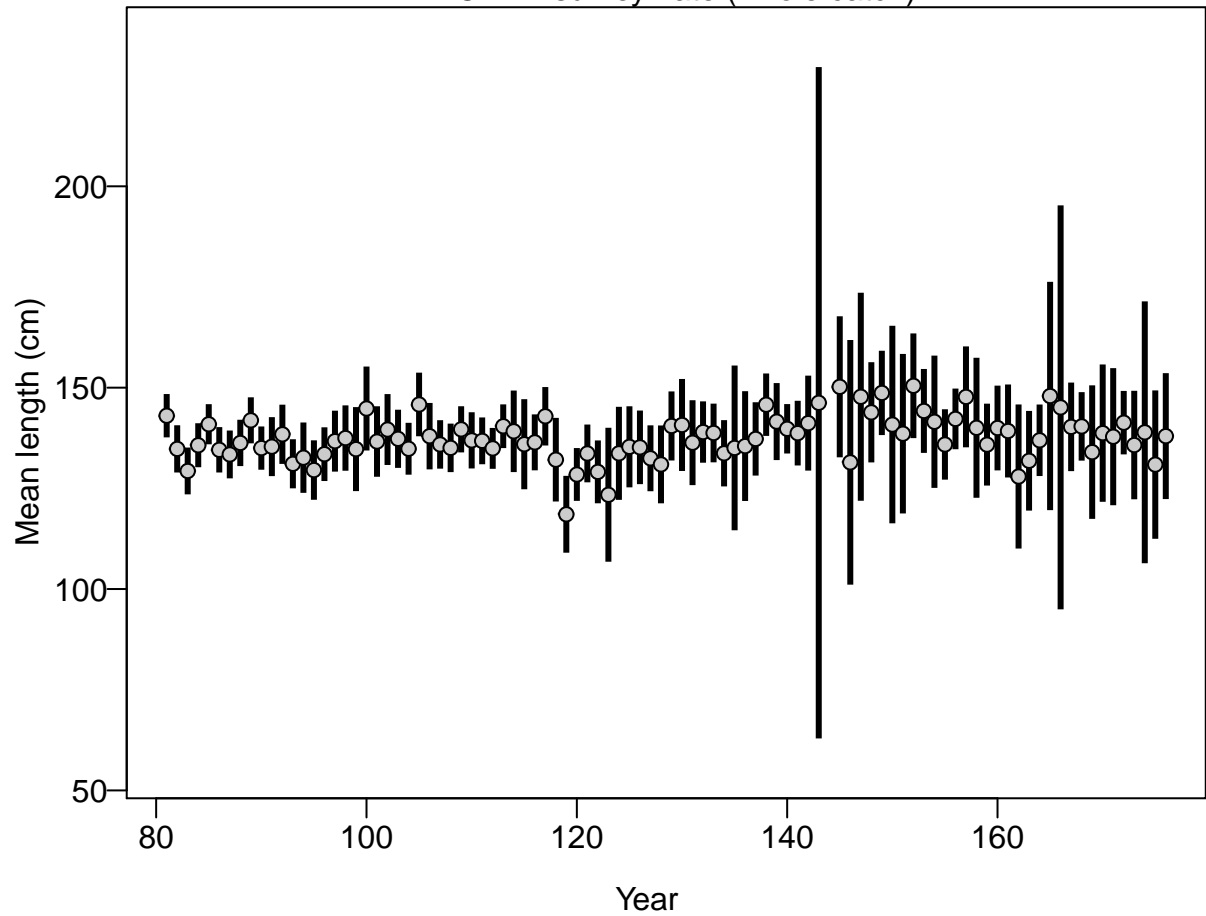




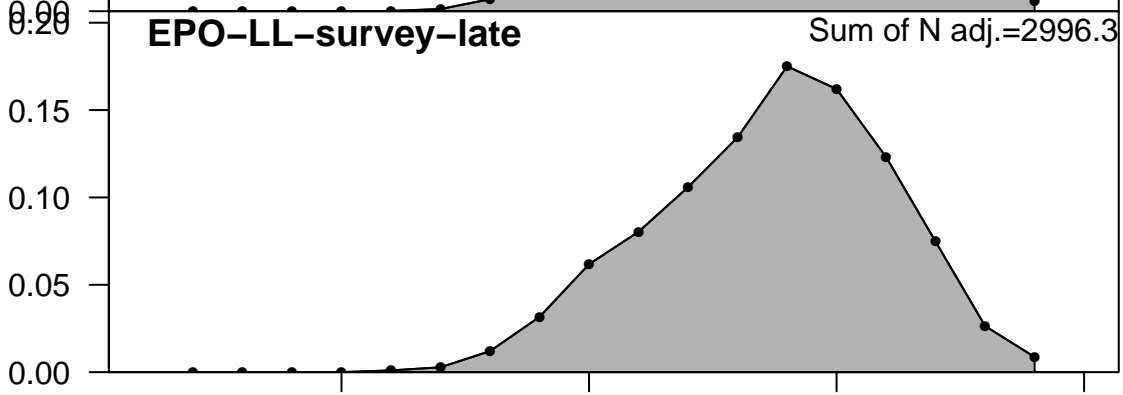
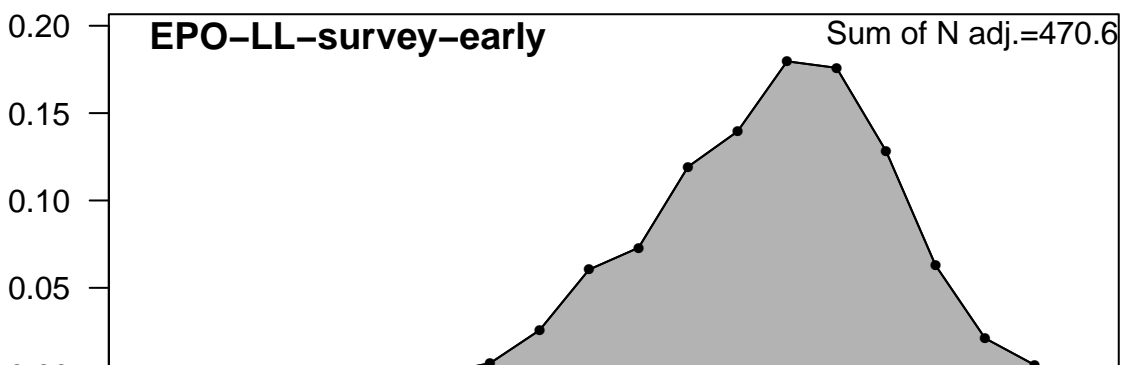




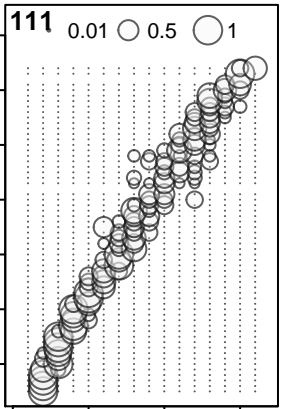
EPO-LL-survey-late (whole catch)



Proportion

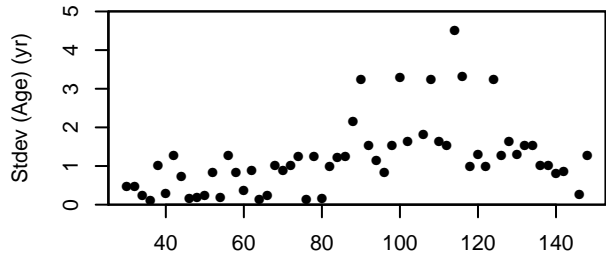
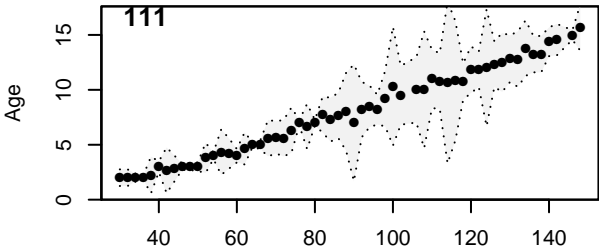


Length (cm)



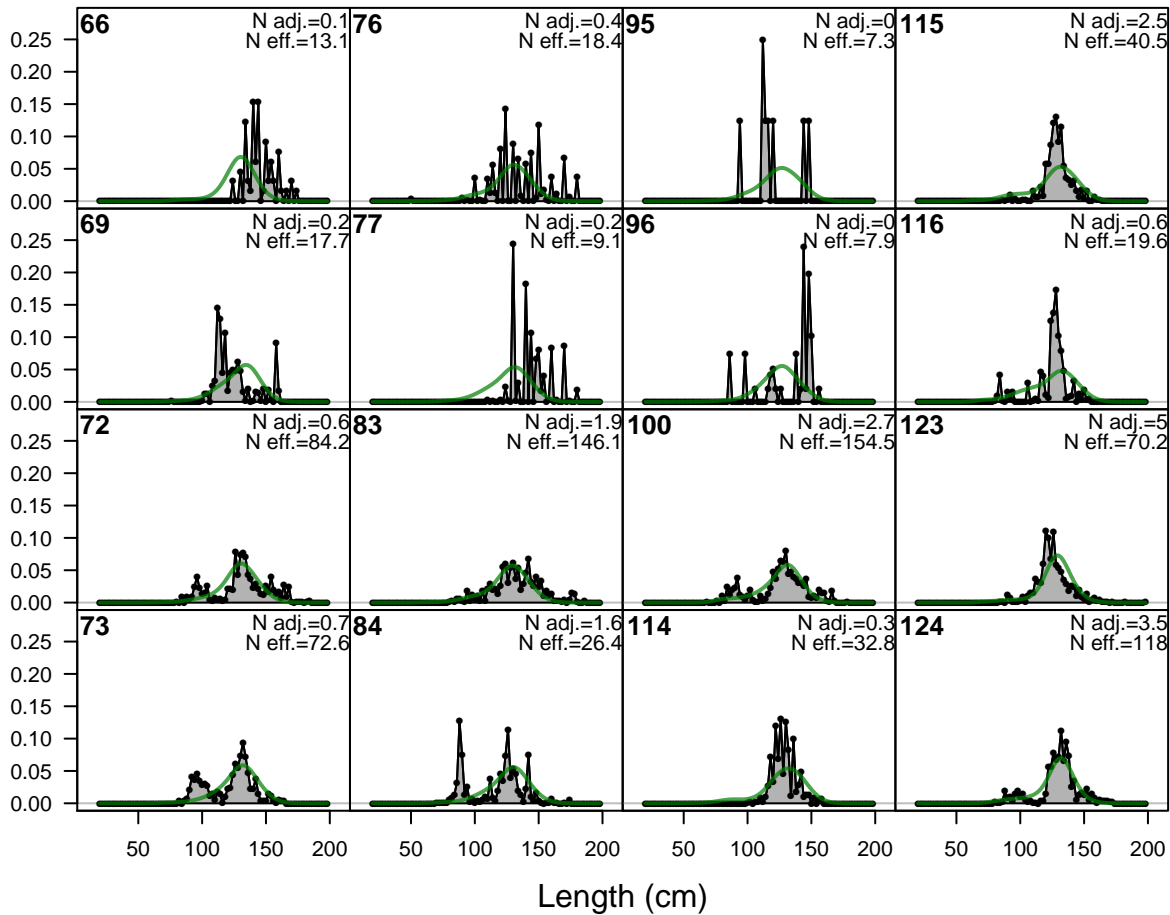
Length (cm)

Age (yr)

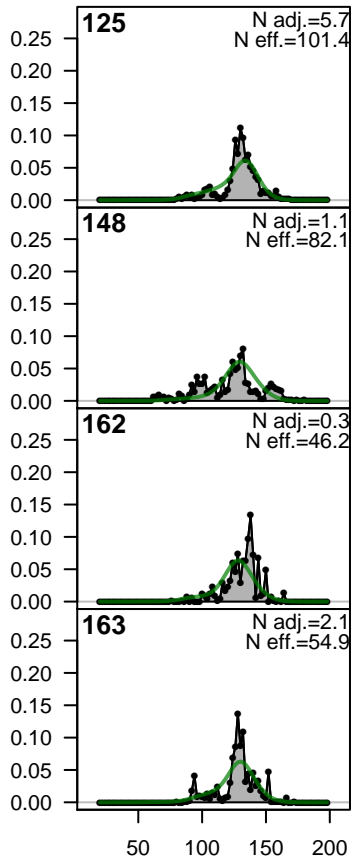


Length (cm)

Proportion

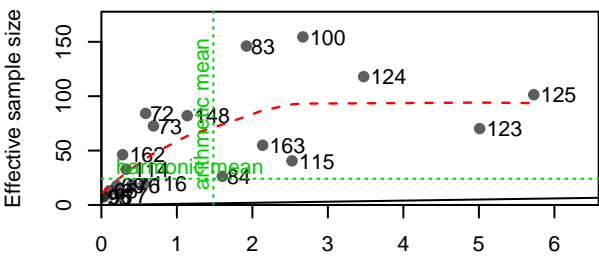
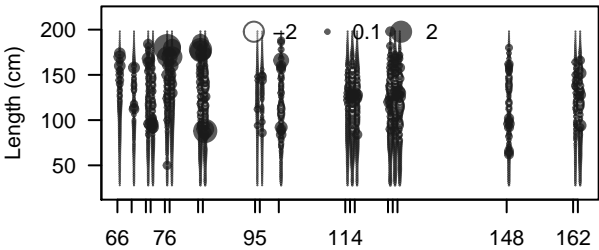


Proportion

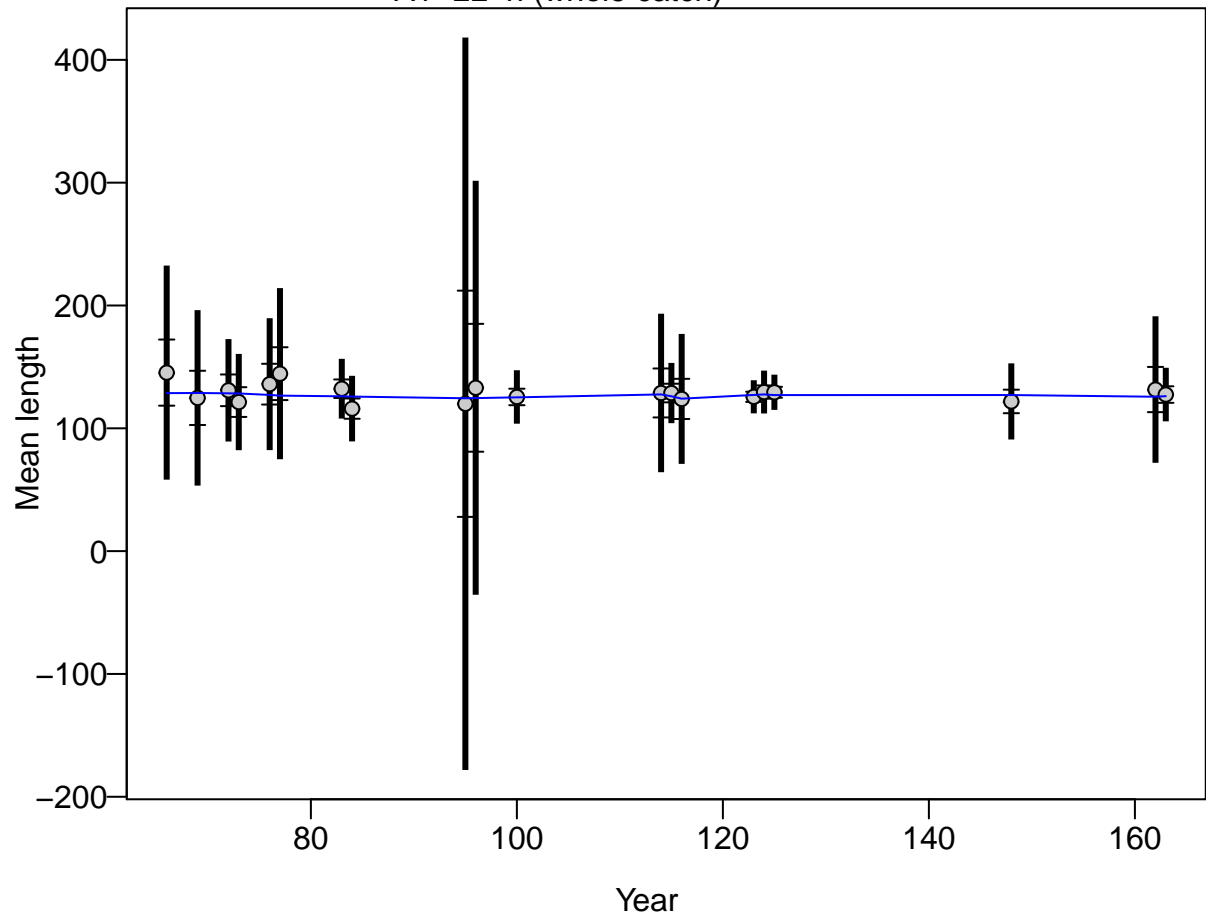


Length (cm)

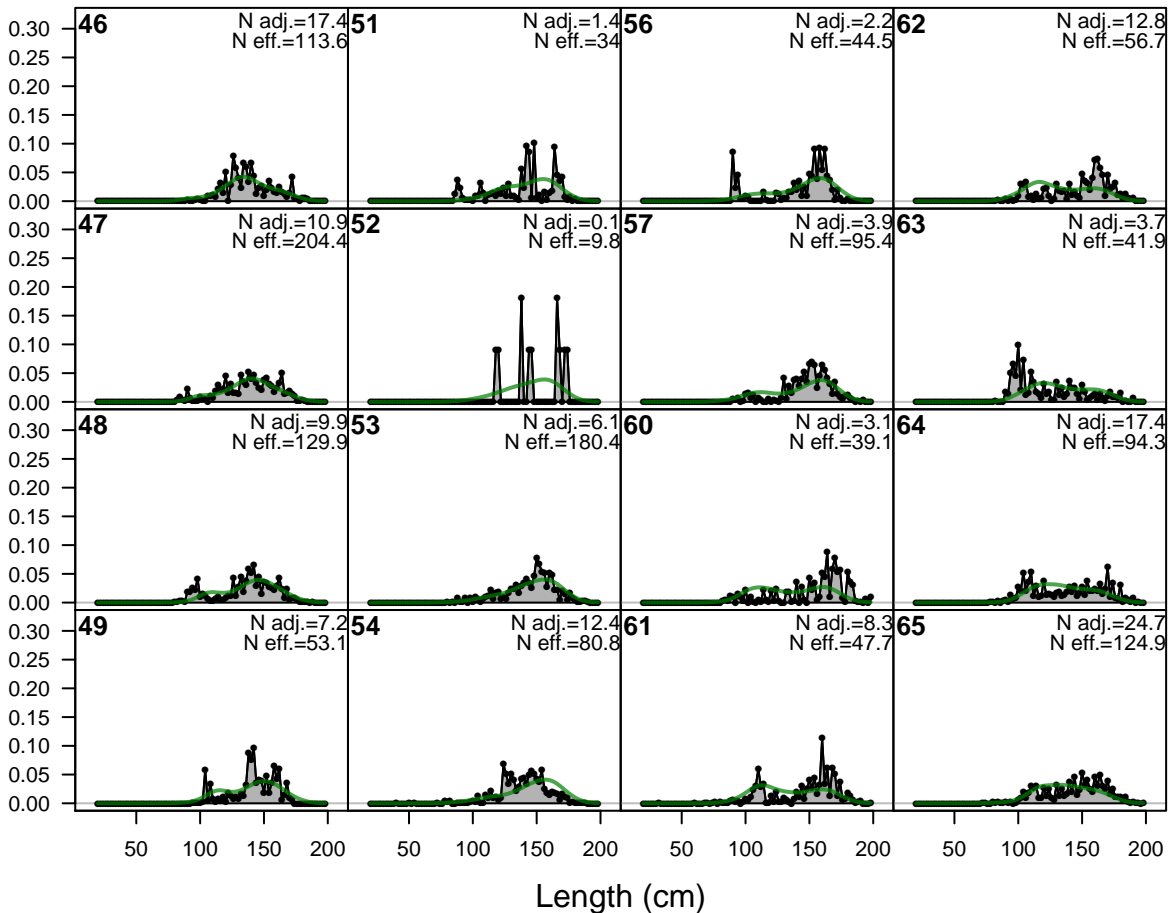




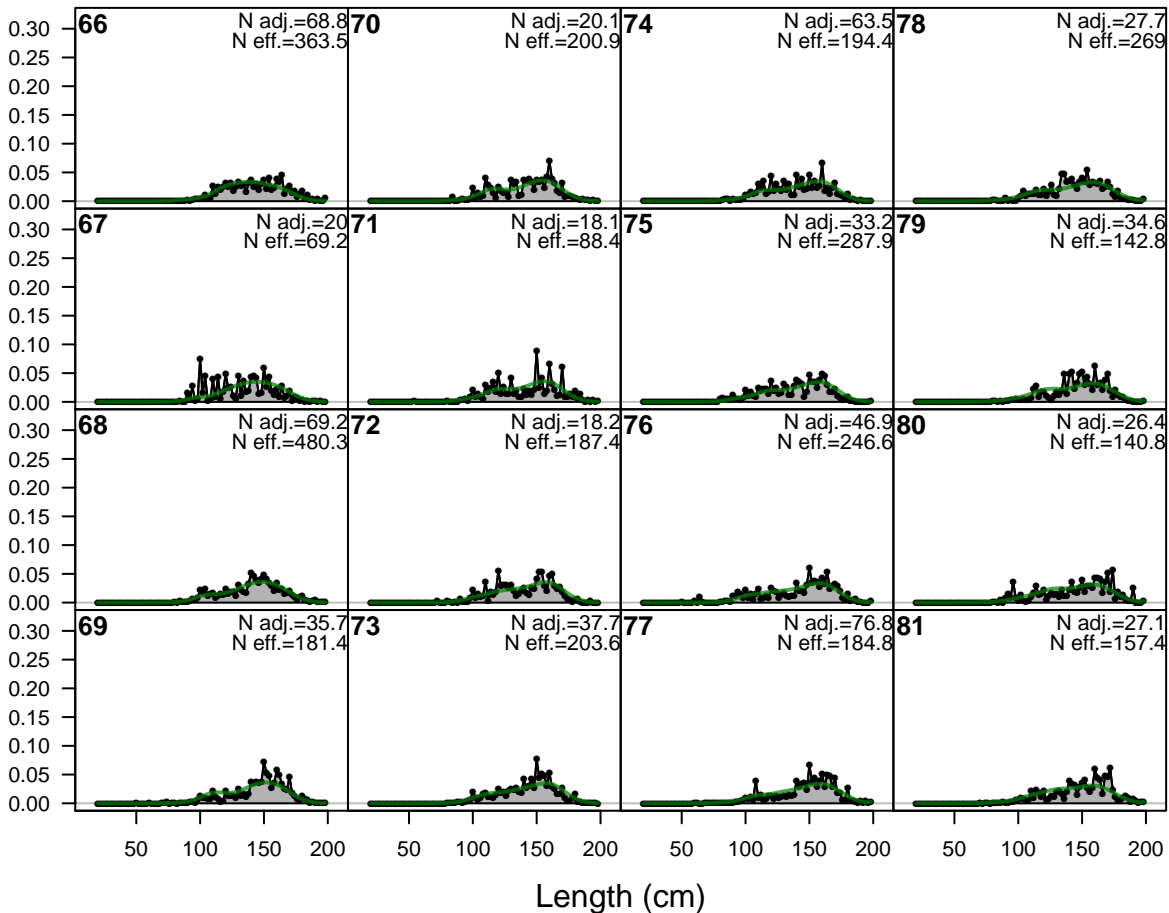
A1-LL-n (whole catch)



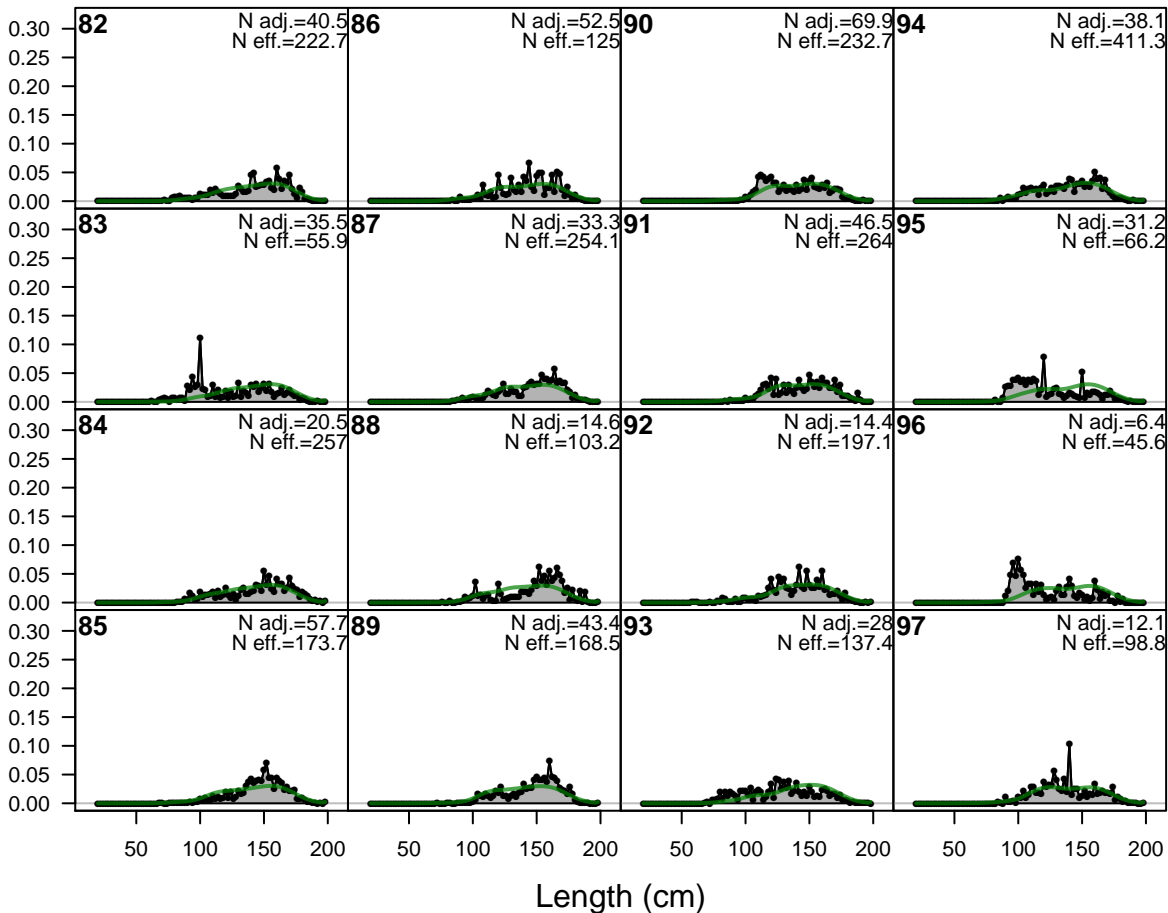
Proportion



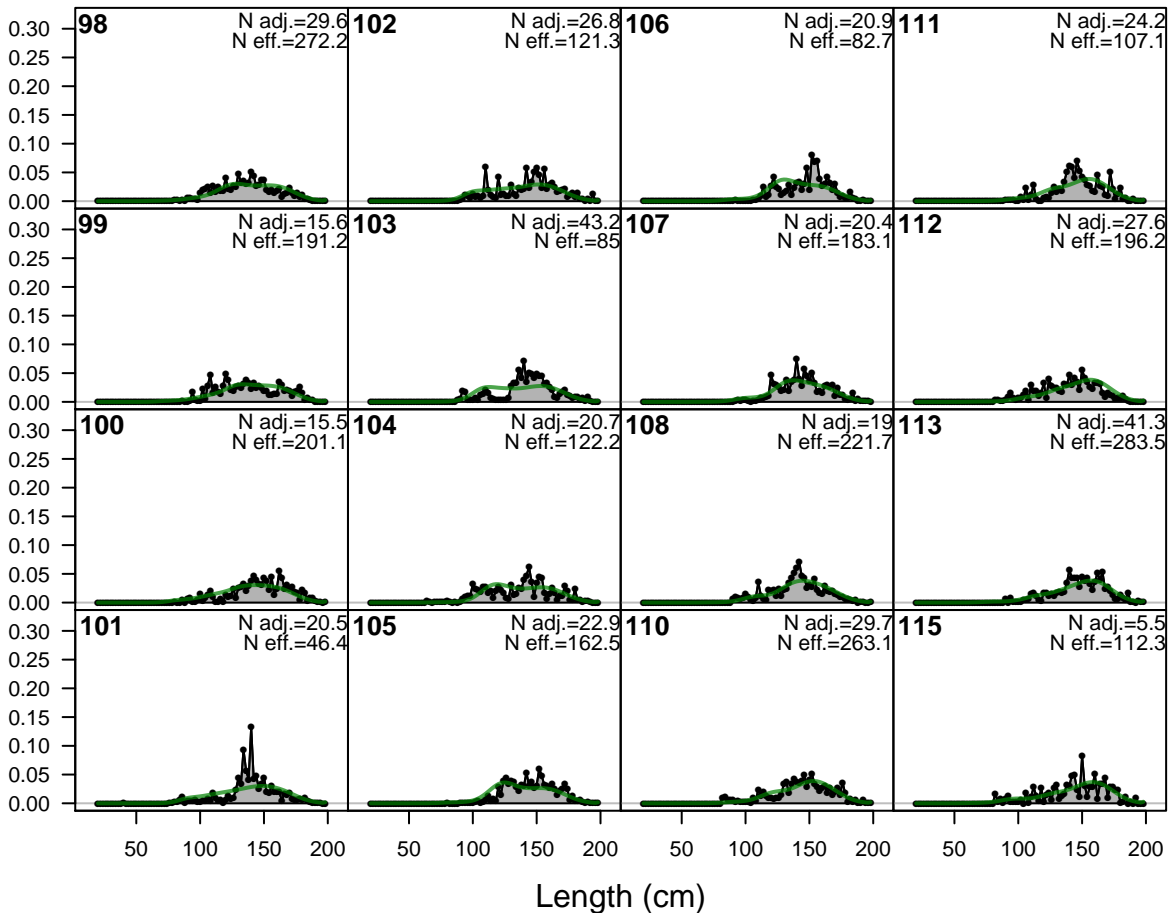
Proportion



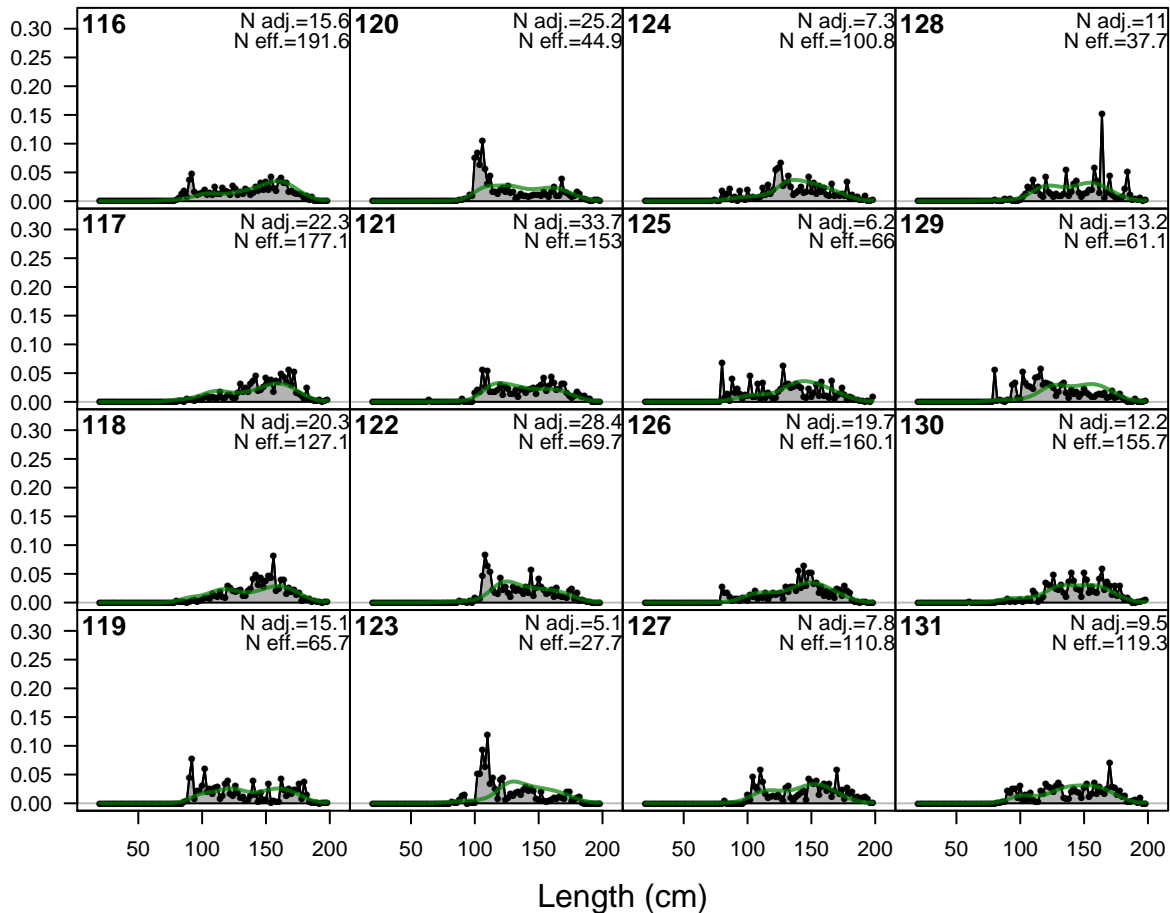
Proportion



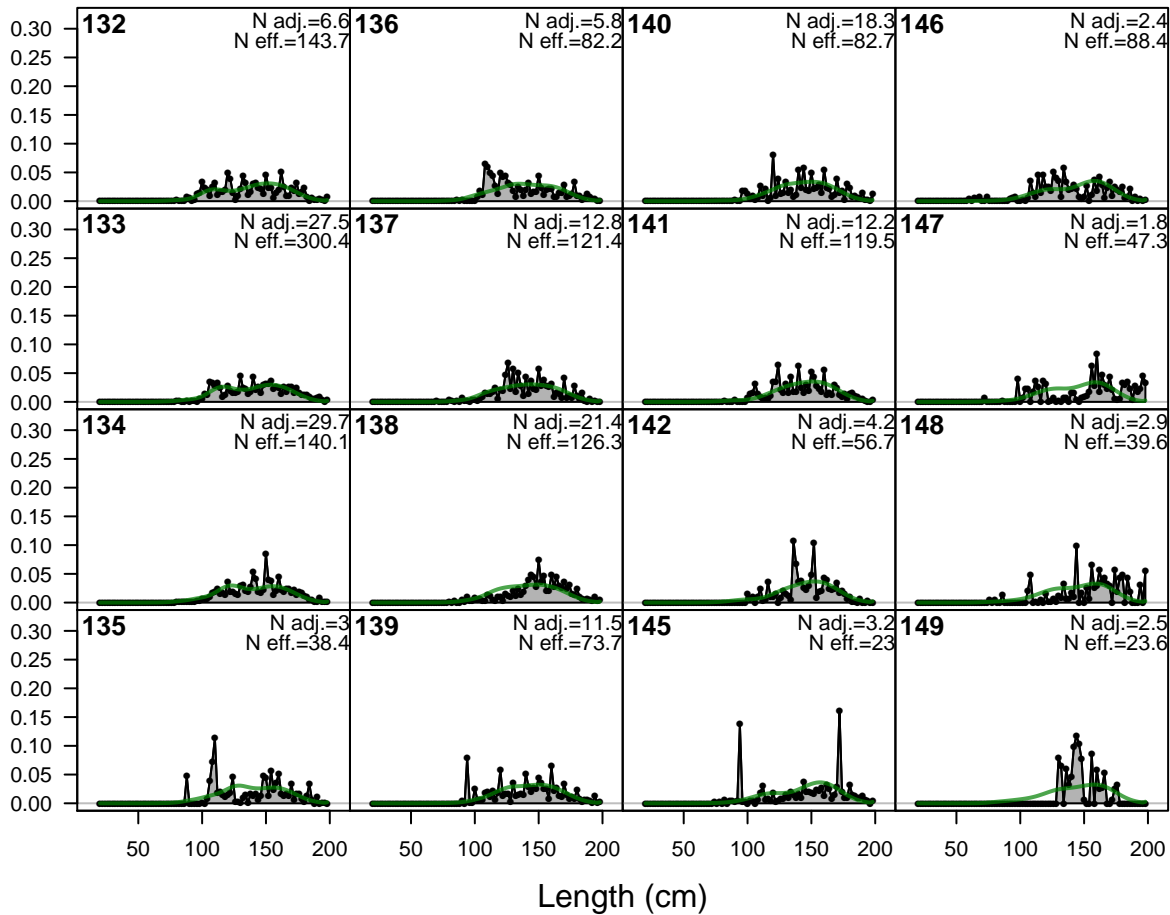
Proportion



Proportion

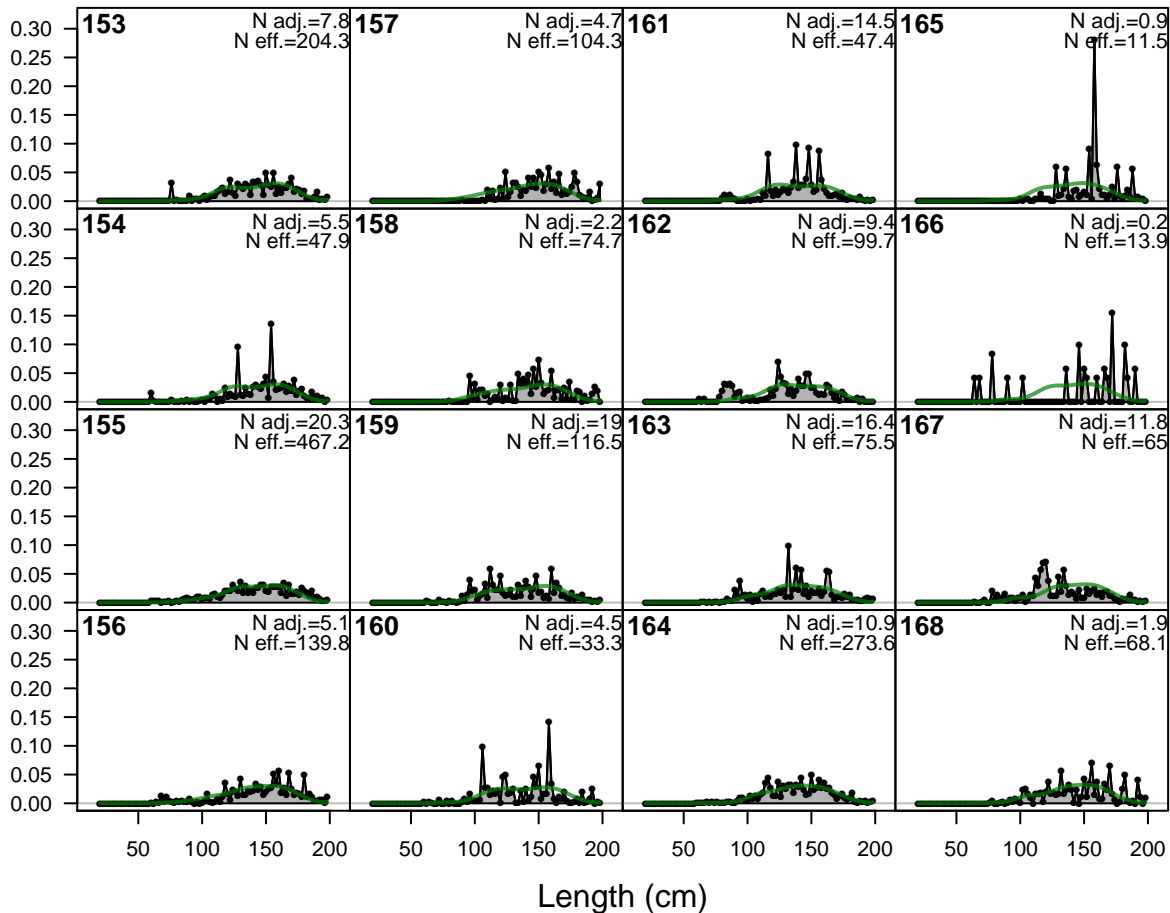


Proportion

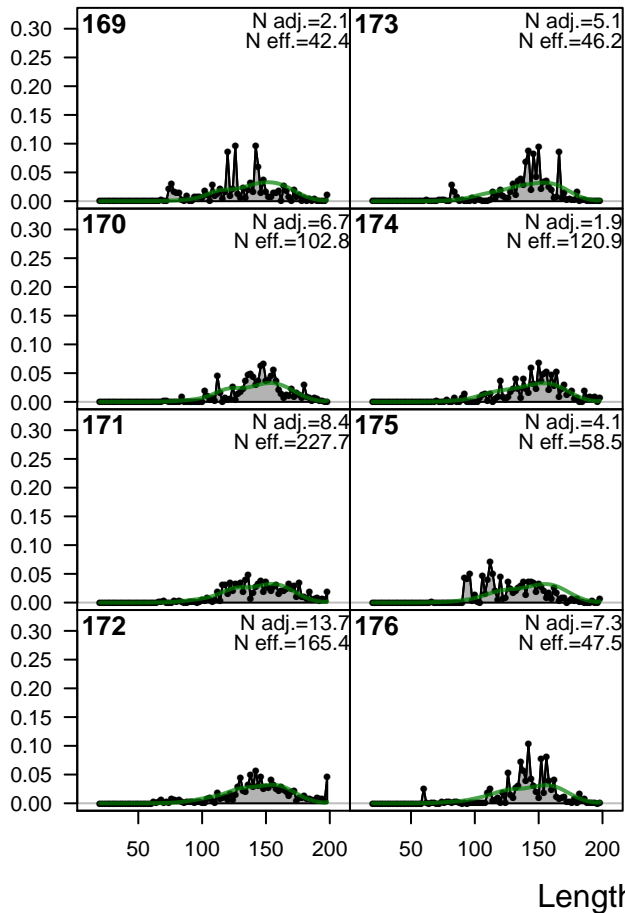


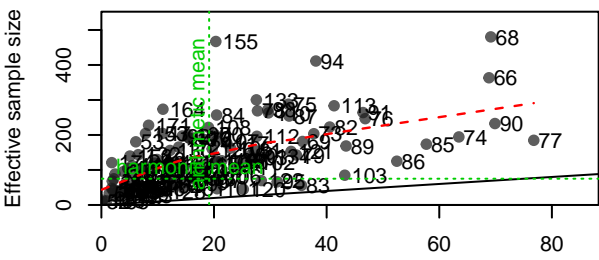
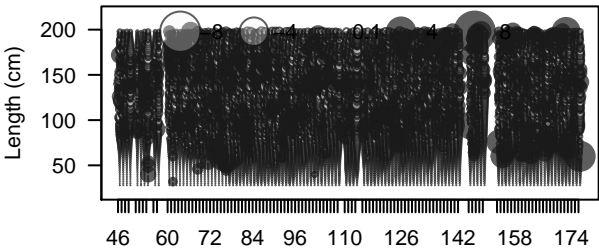


Proportion

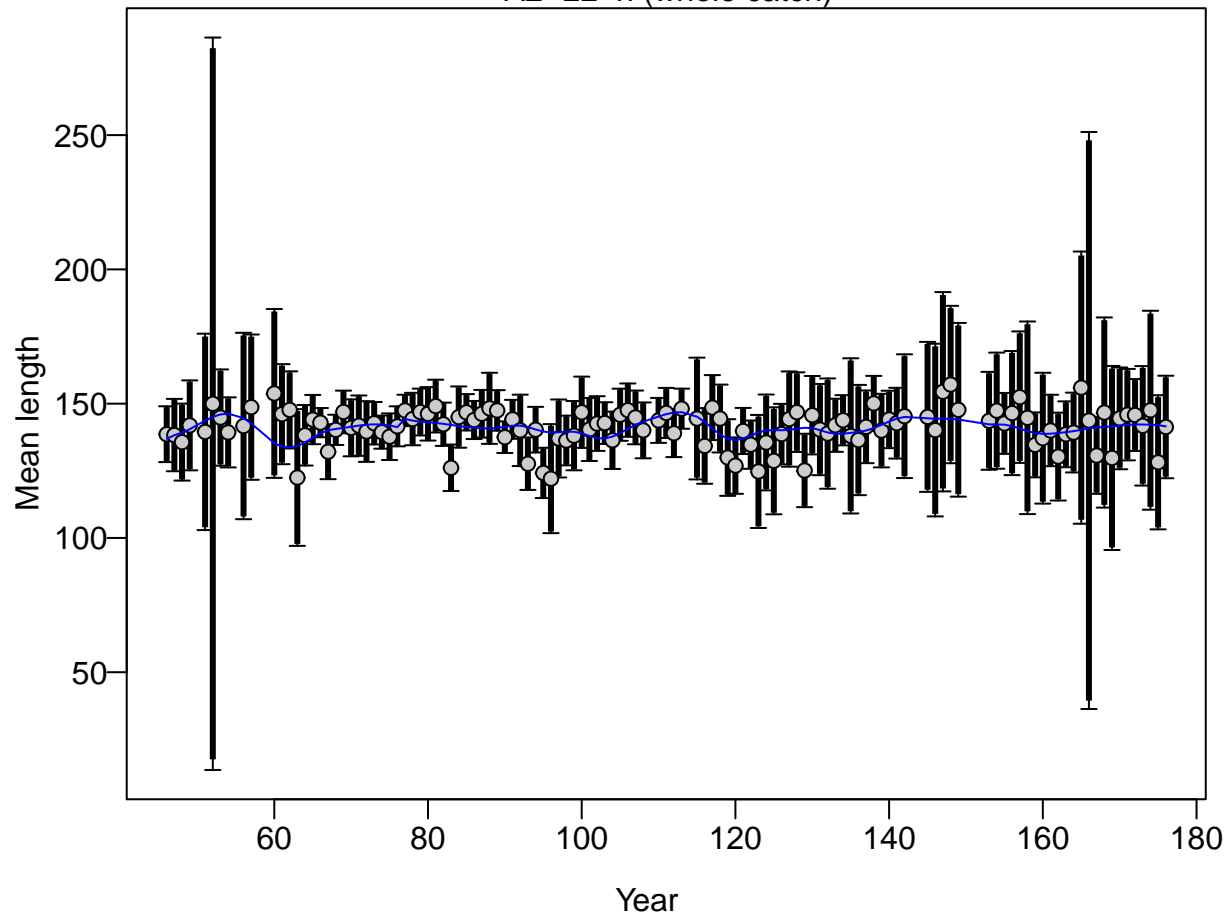


Proportion

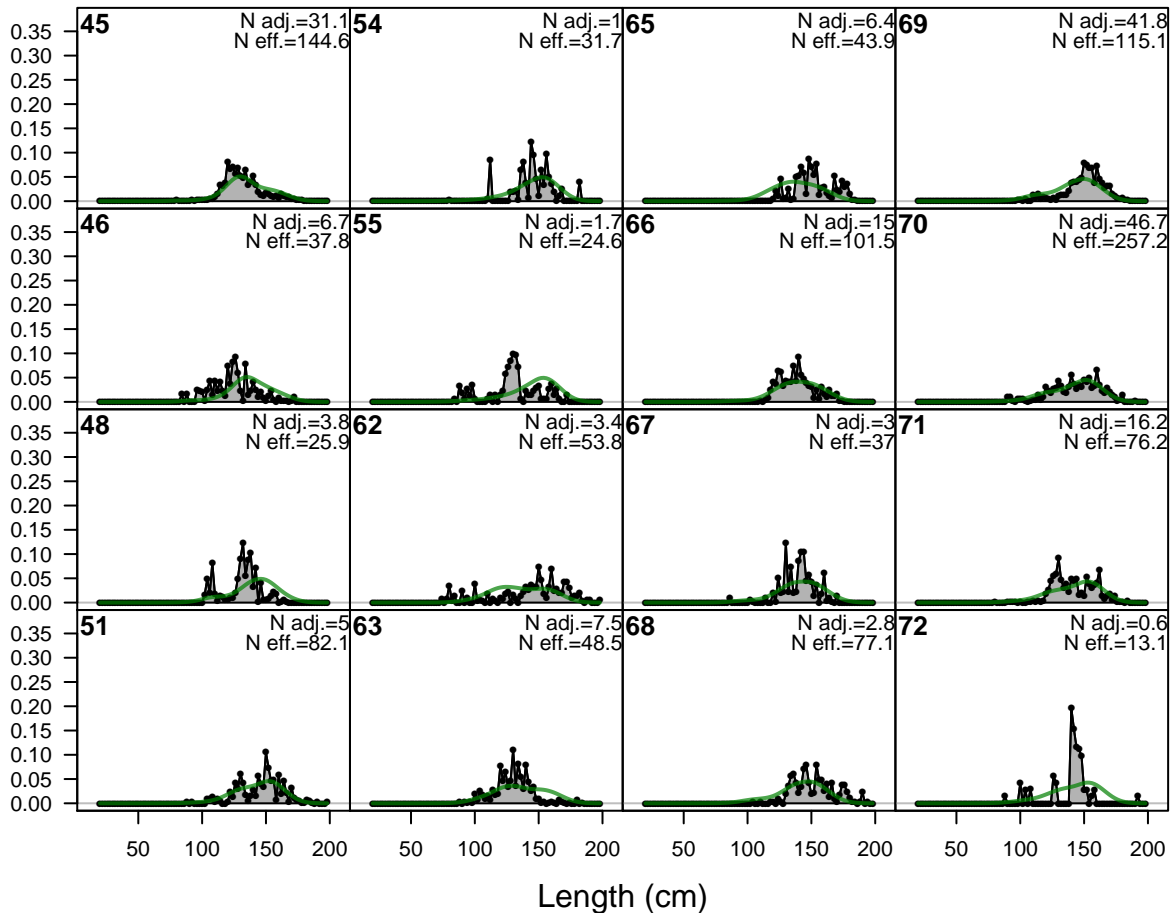




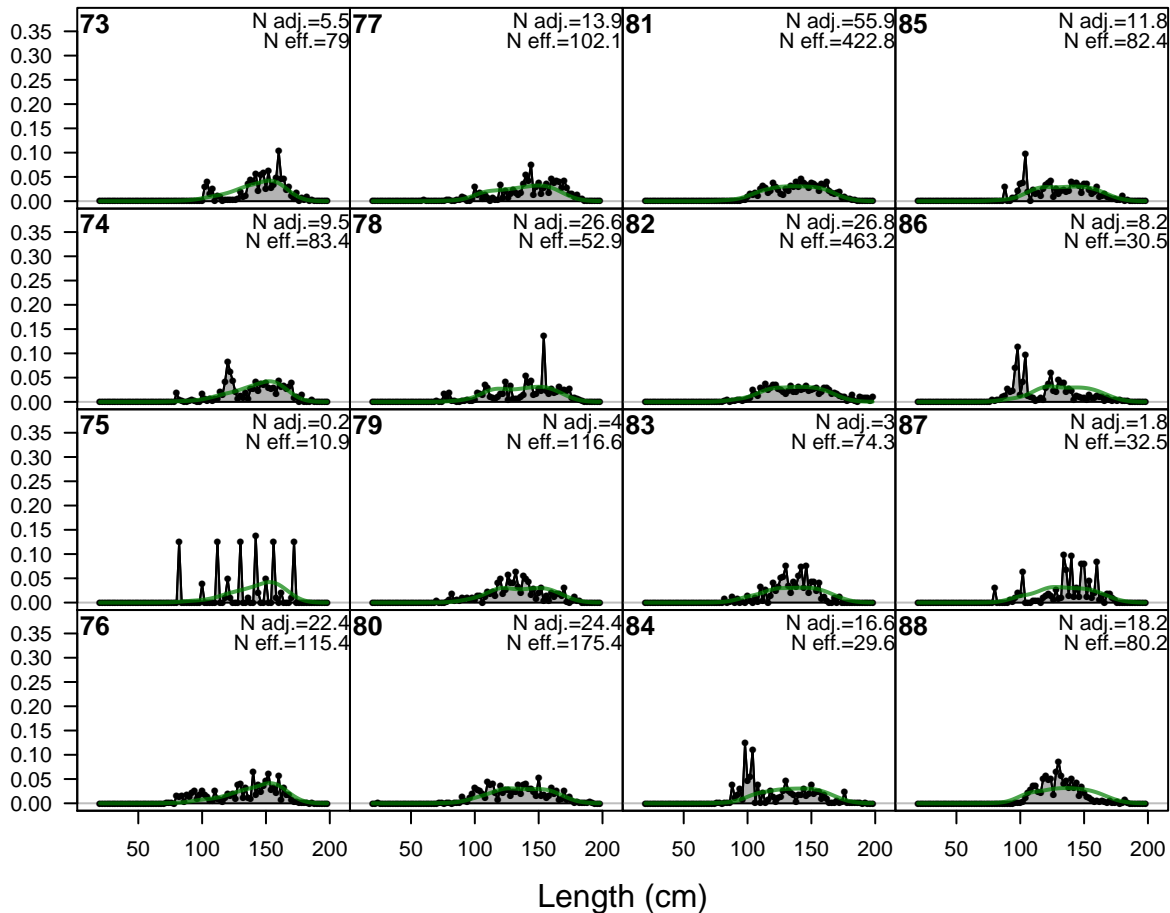
## A2-LL-n (whole catch)



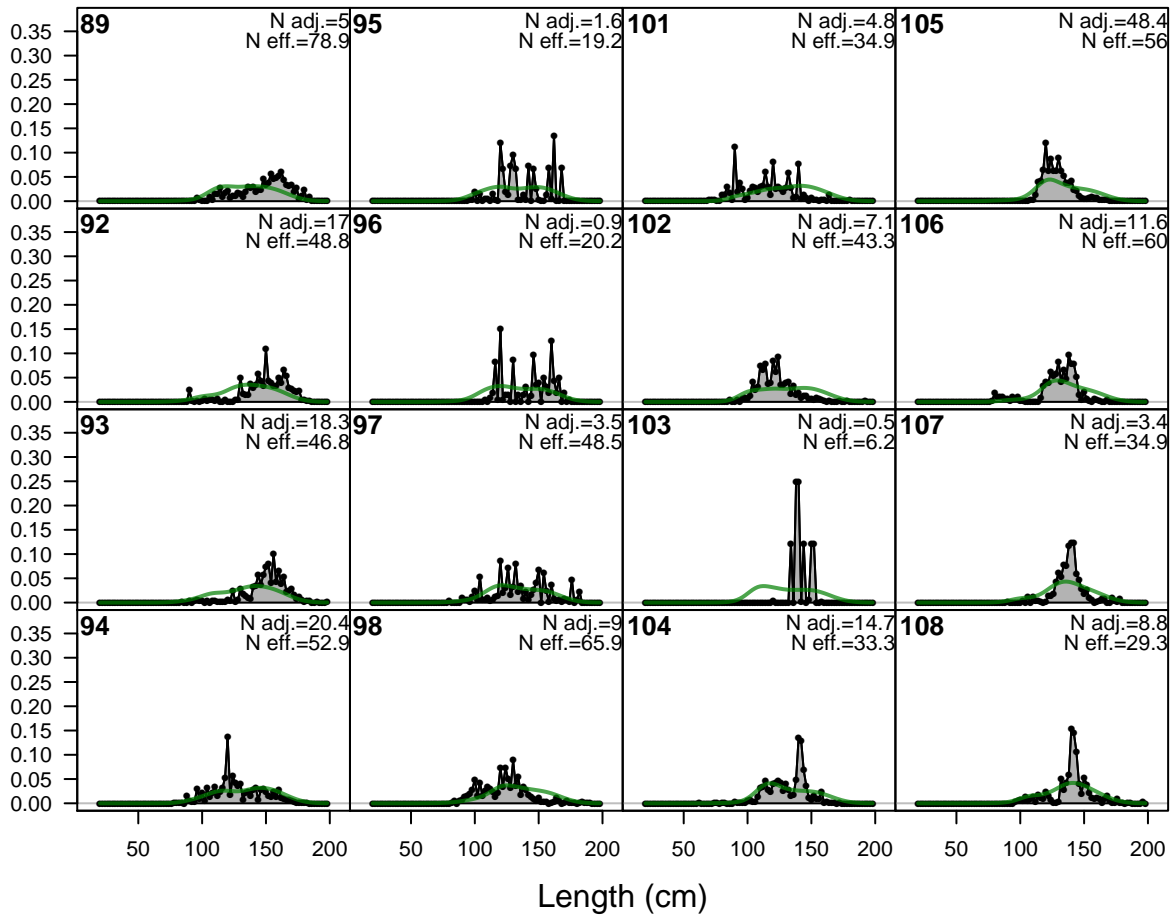
Proportion



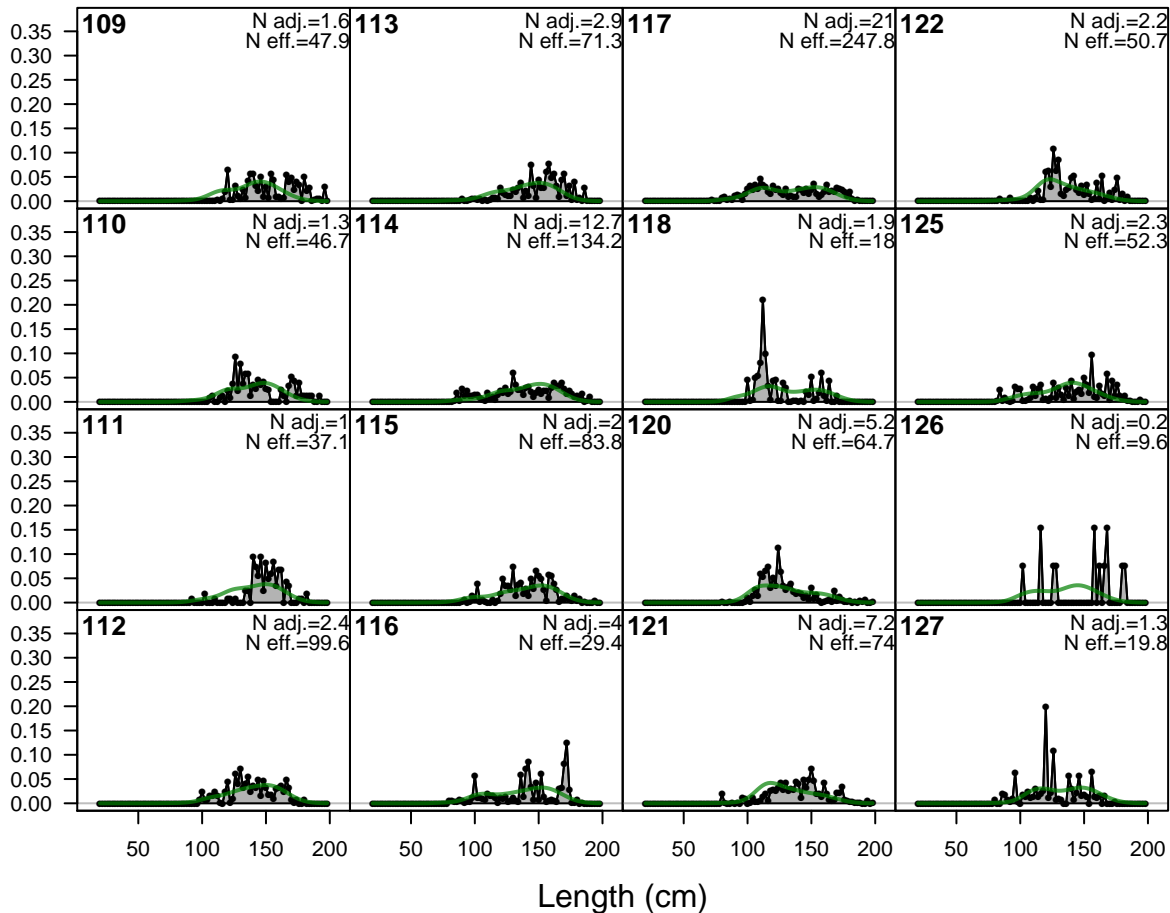
Proportion



Proportion

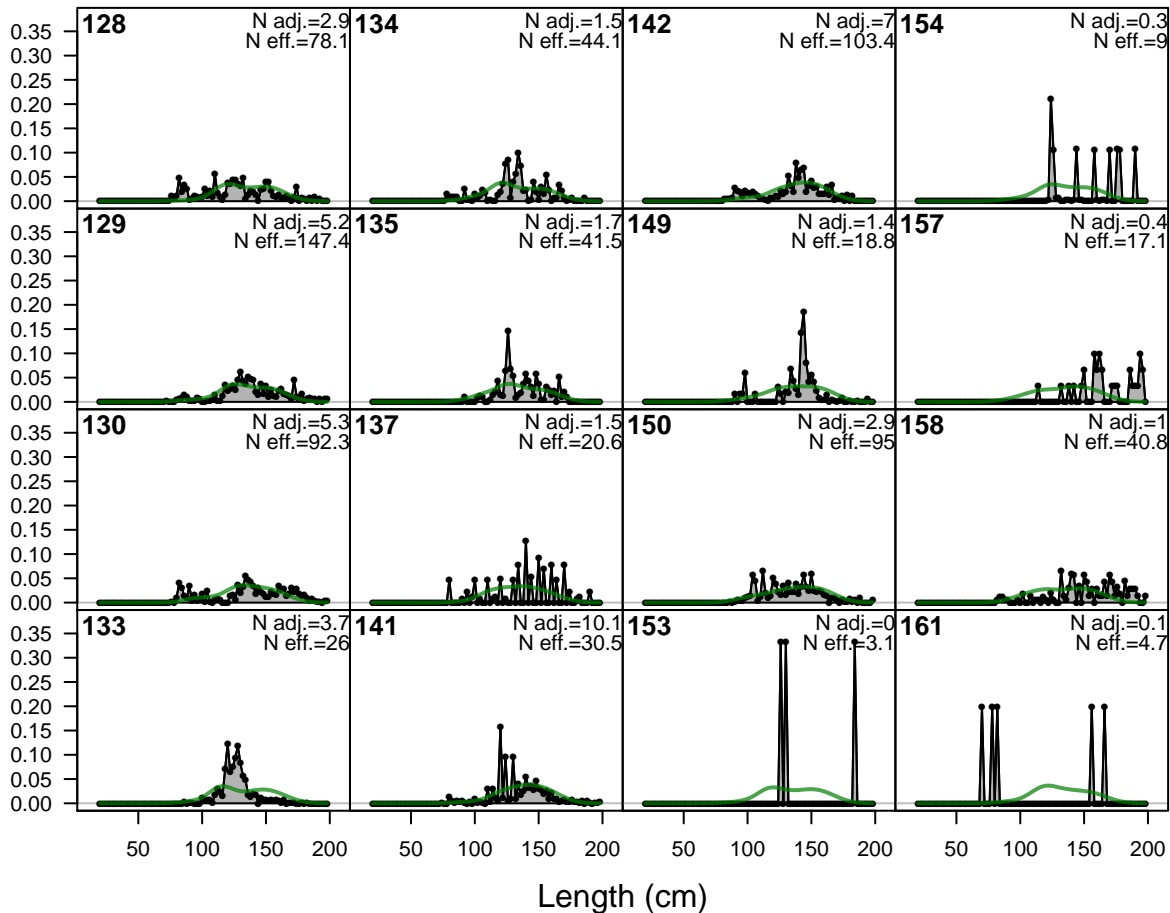


Proportion

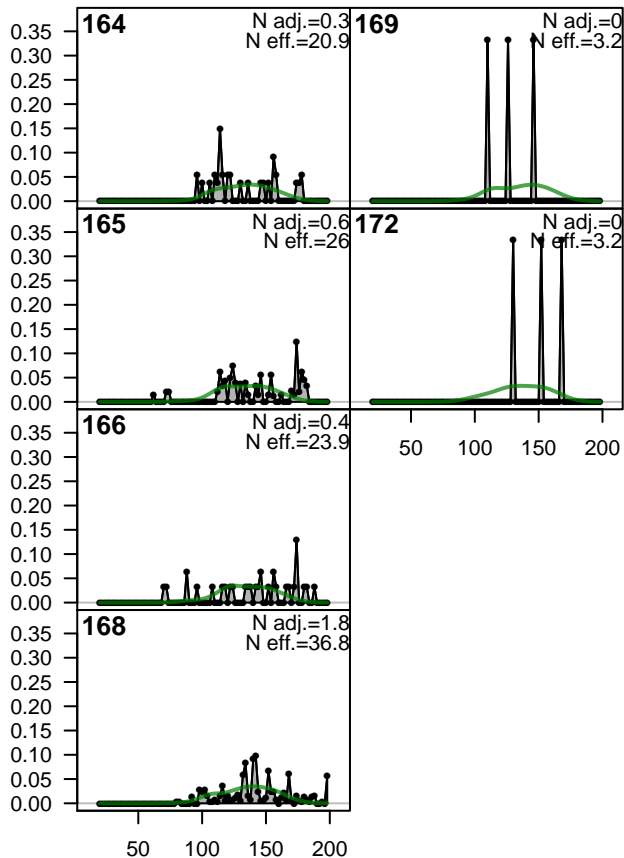




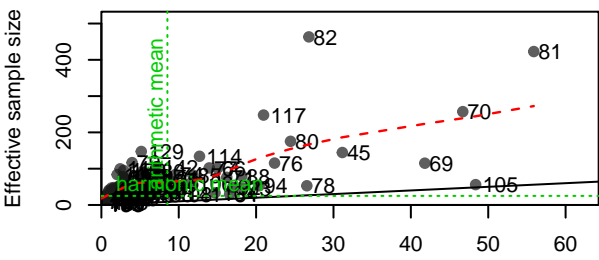
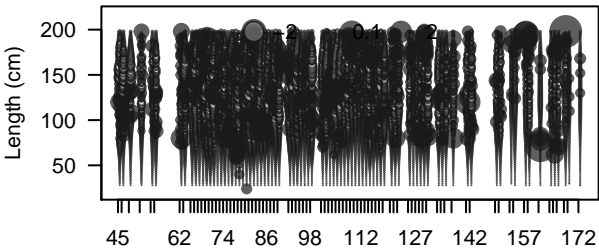
Proportion



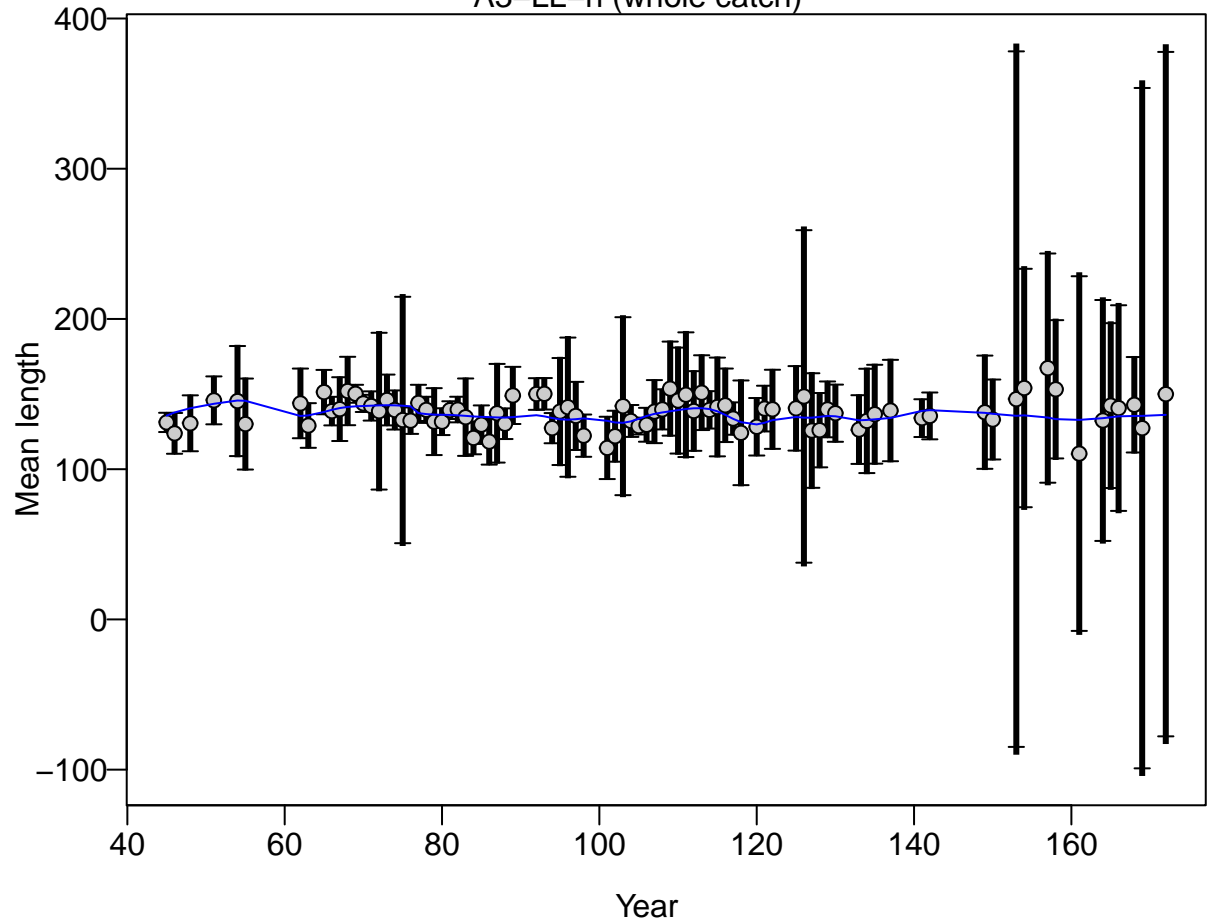
Proportion



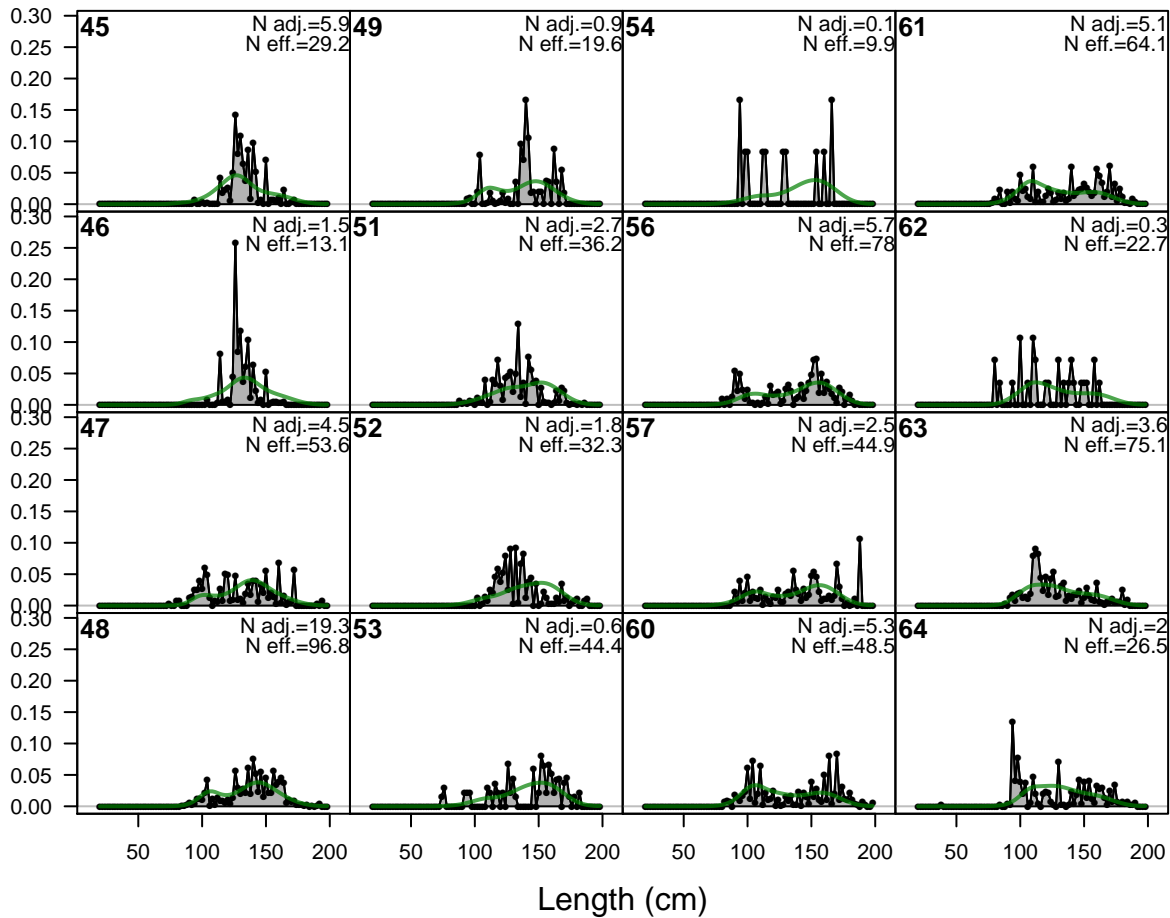
Length (cm)



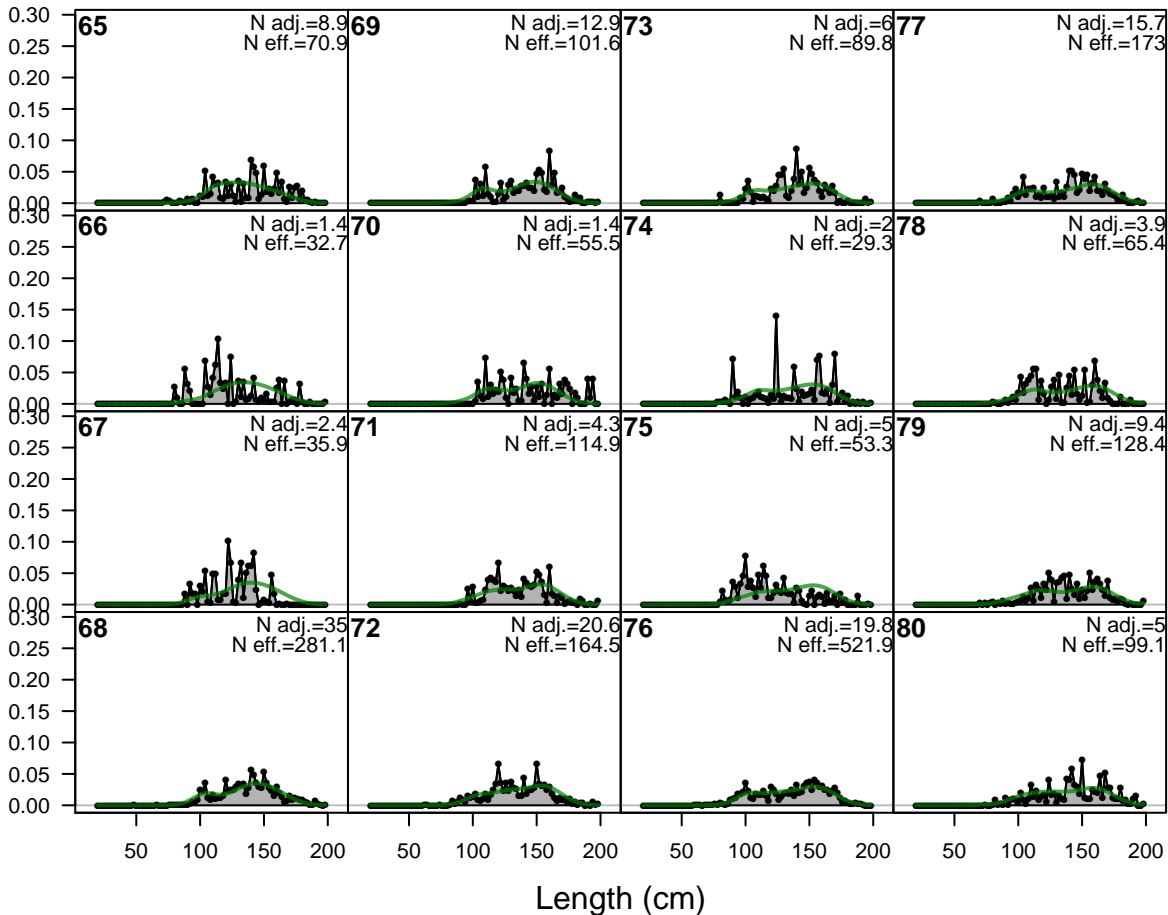
A3-LL-n (whole catch)



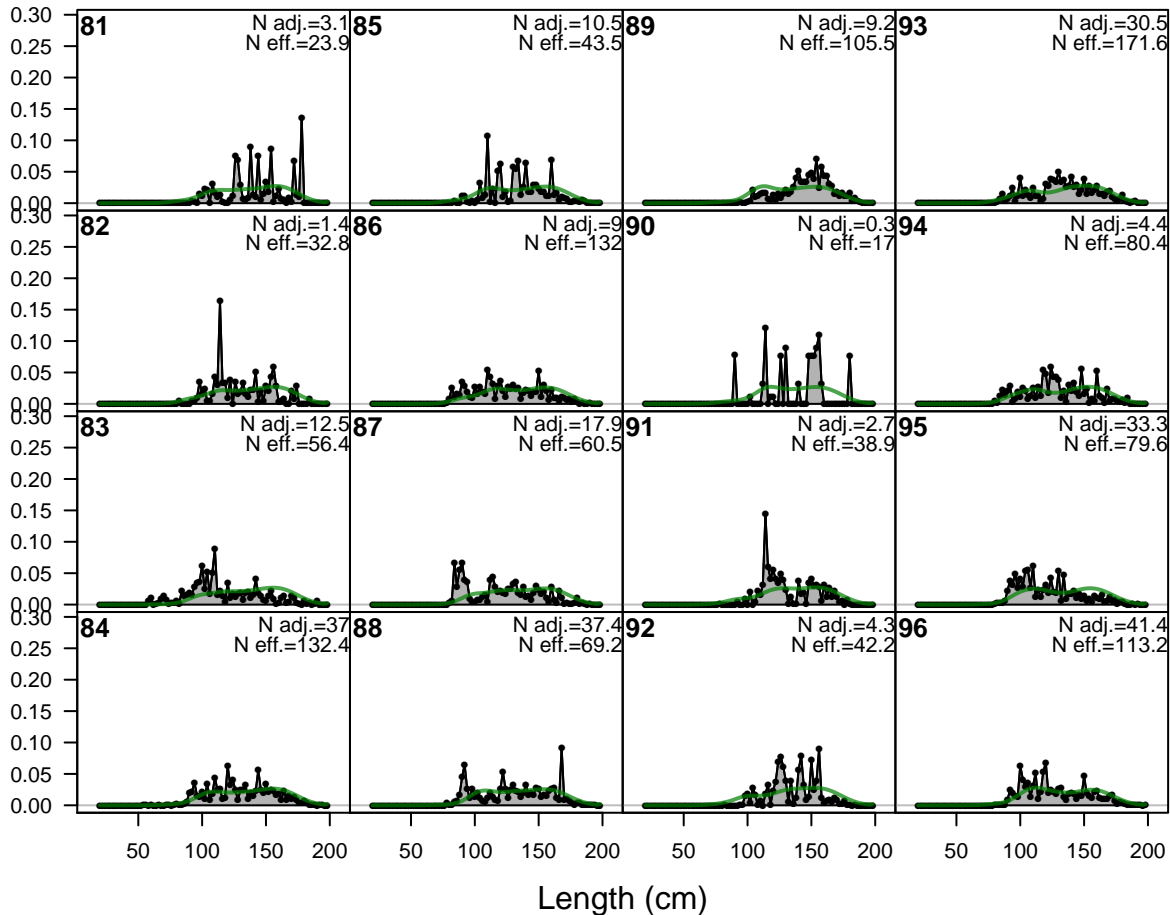
Proportion



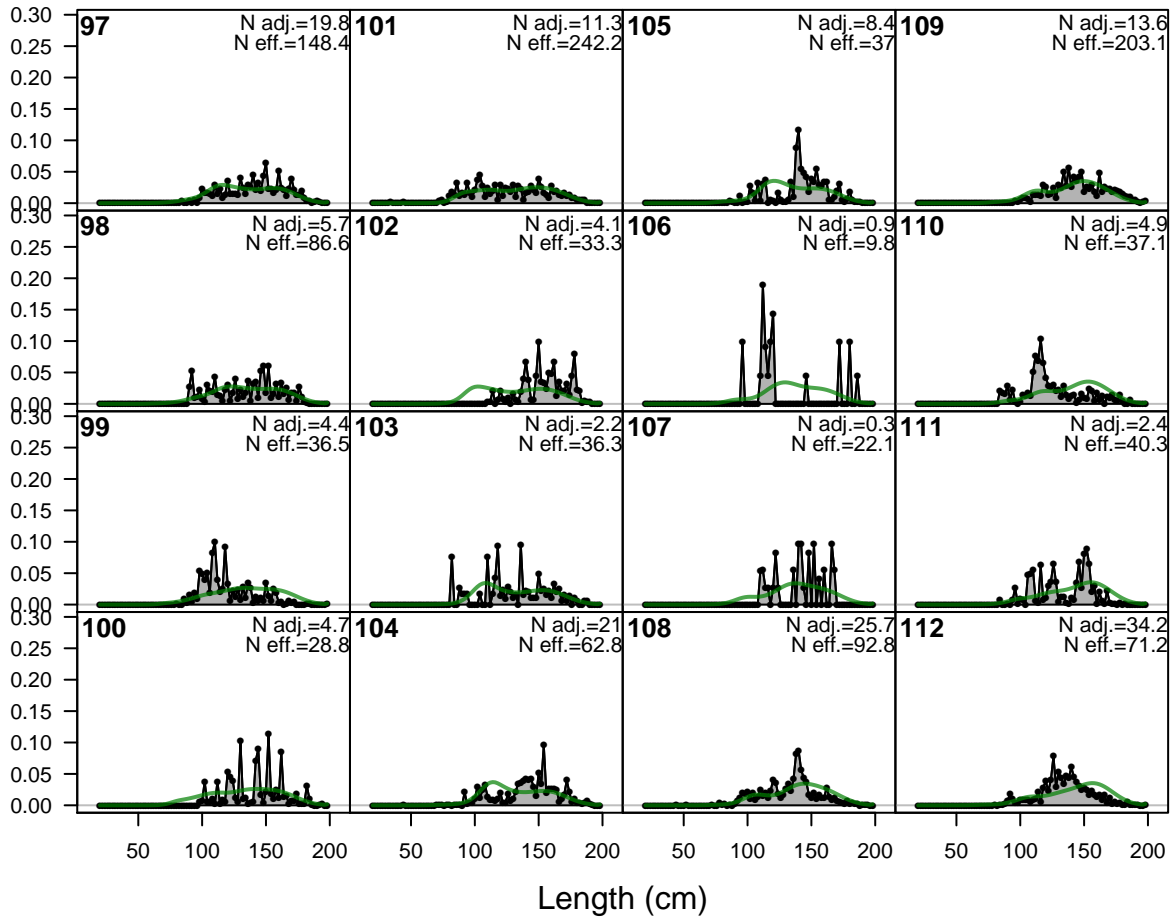
Proportion



Proportion

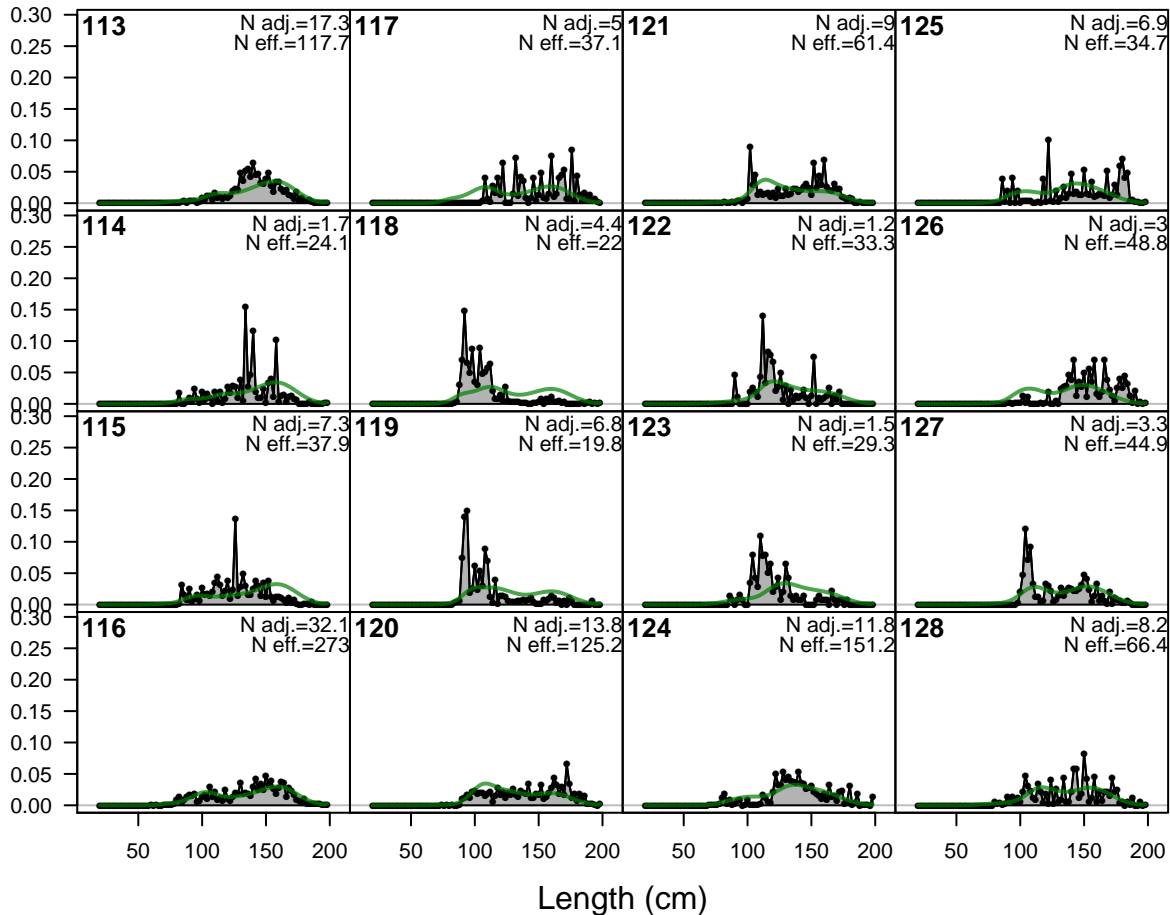


Proportion

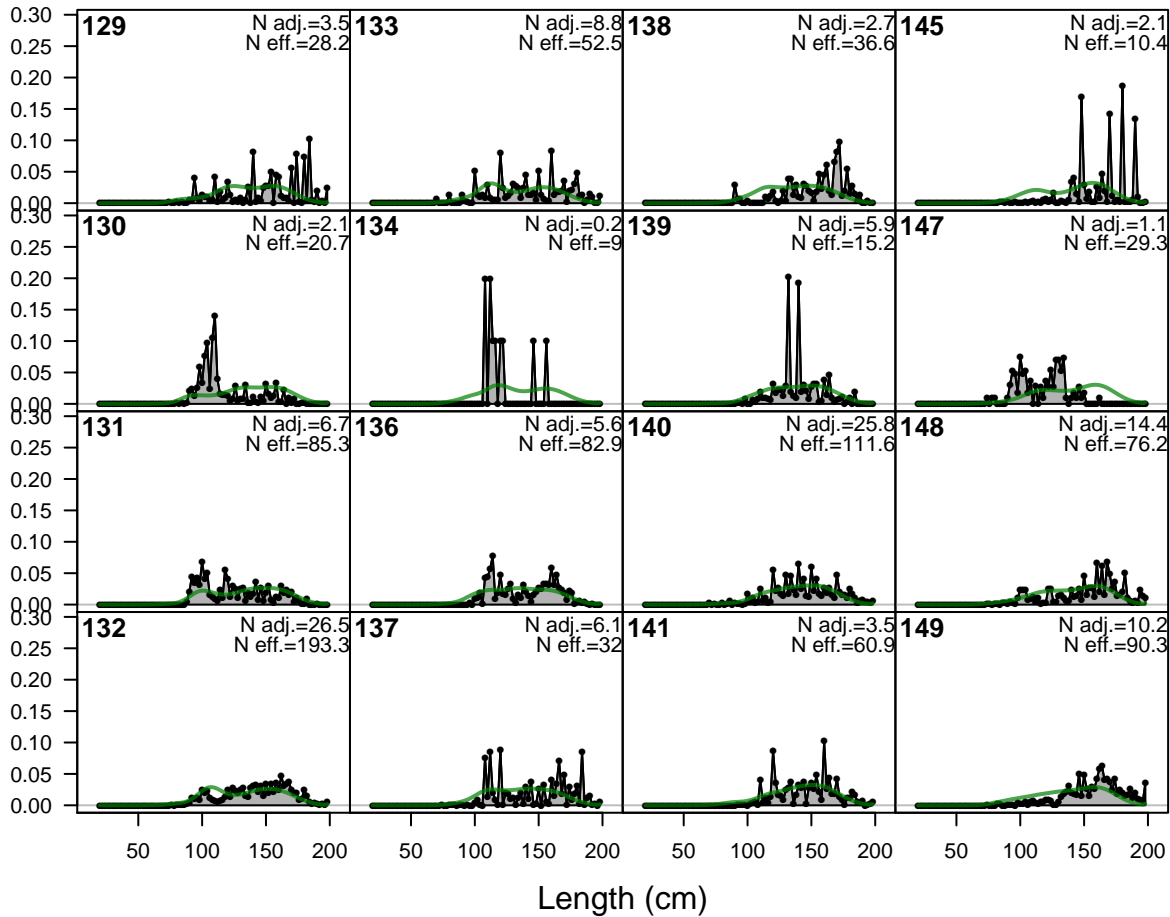




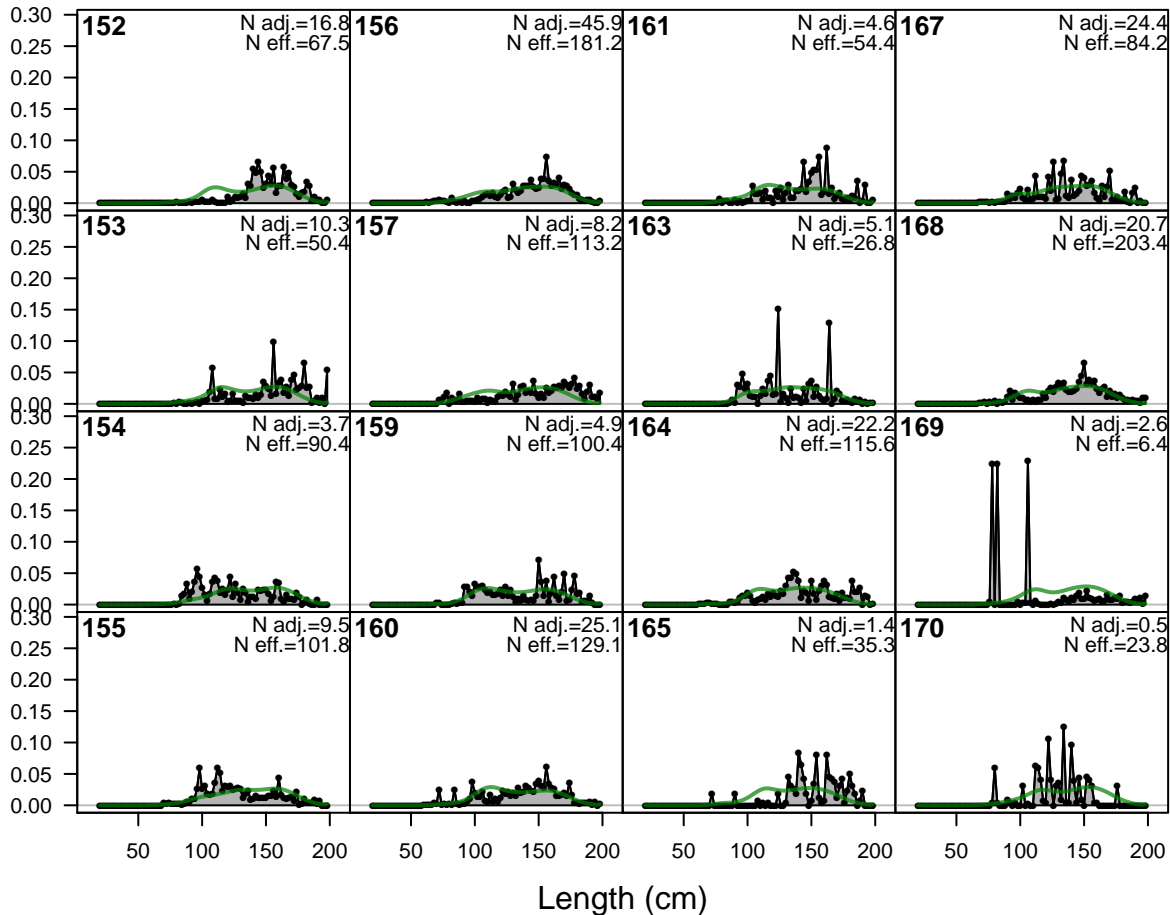
Proportion



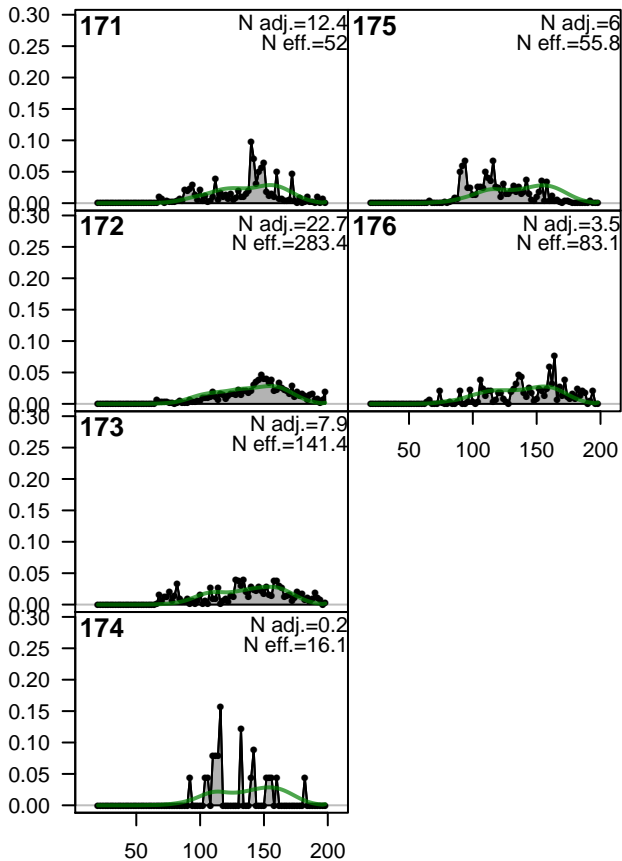
Proportion



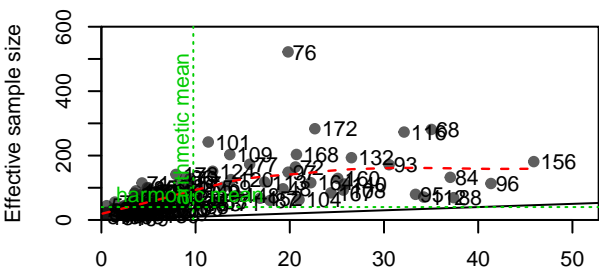
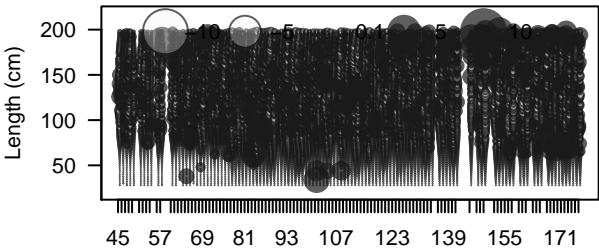
Proportion



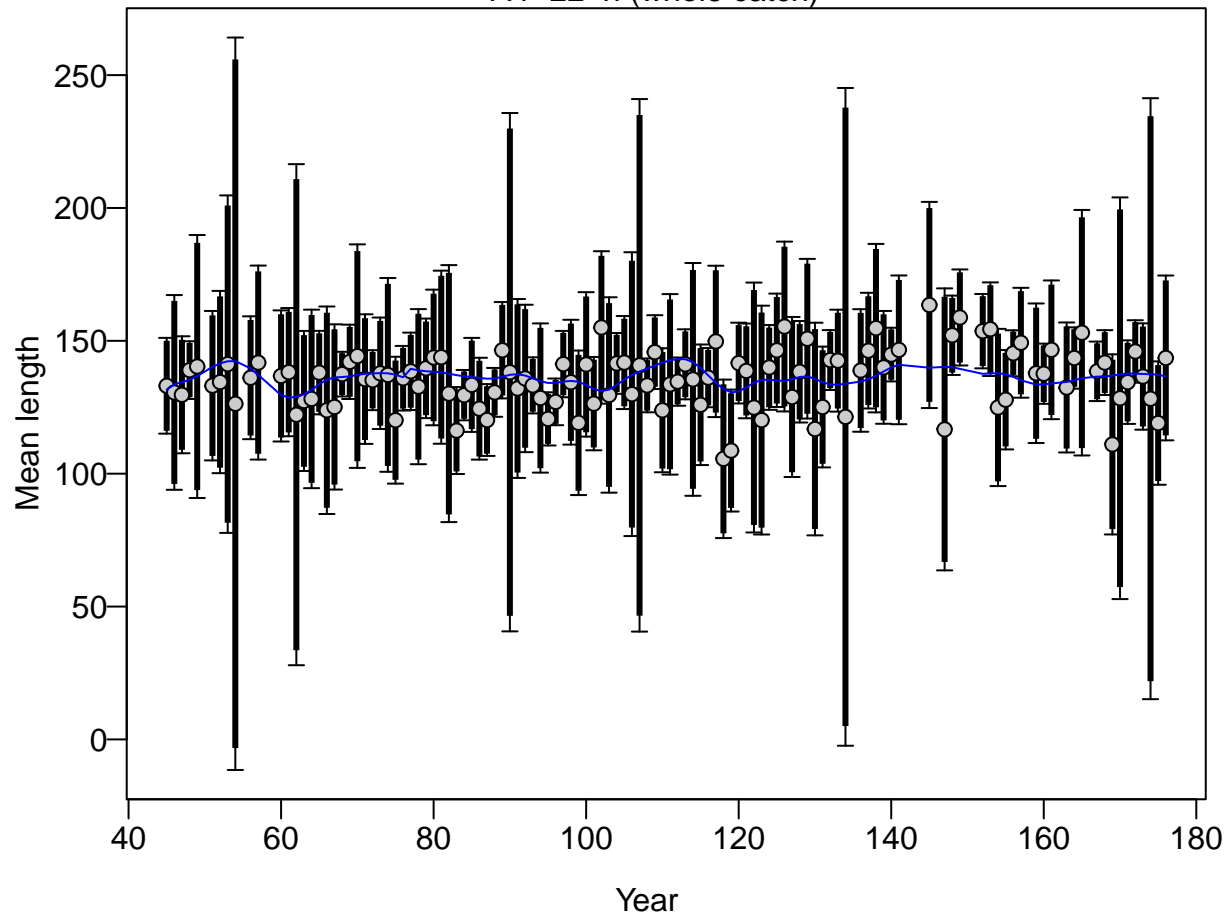
Proportion



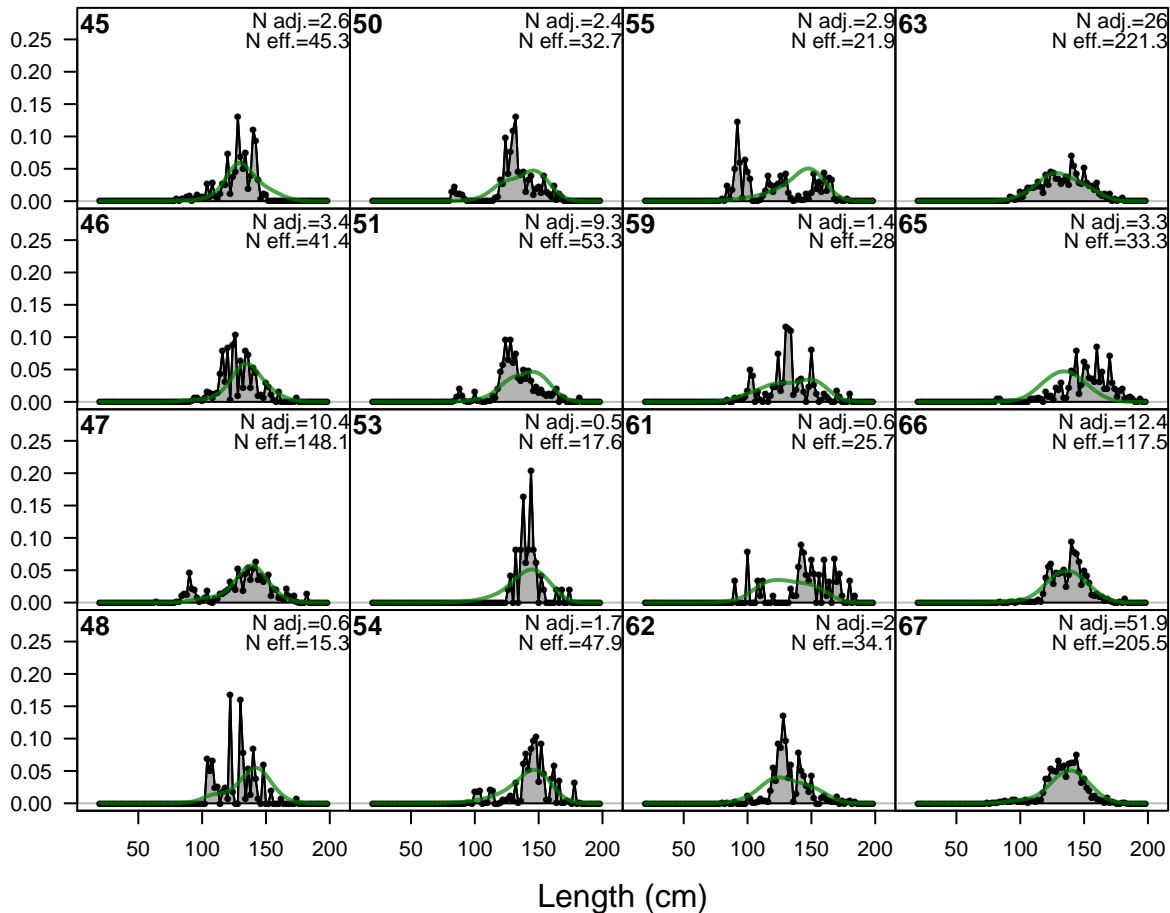
Length (cm)



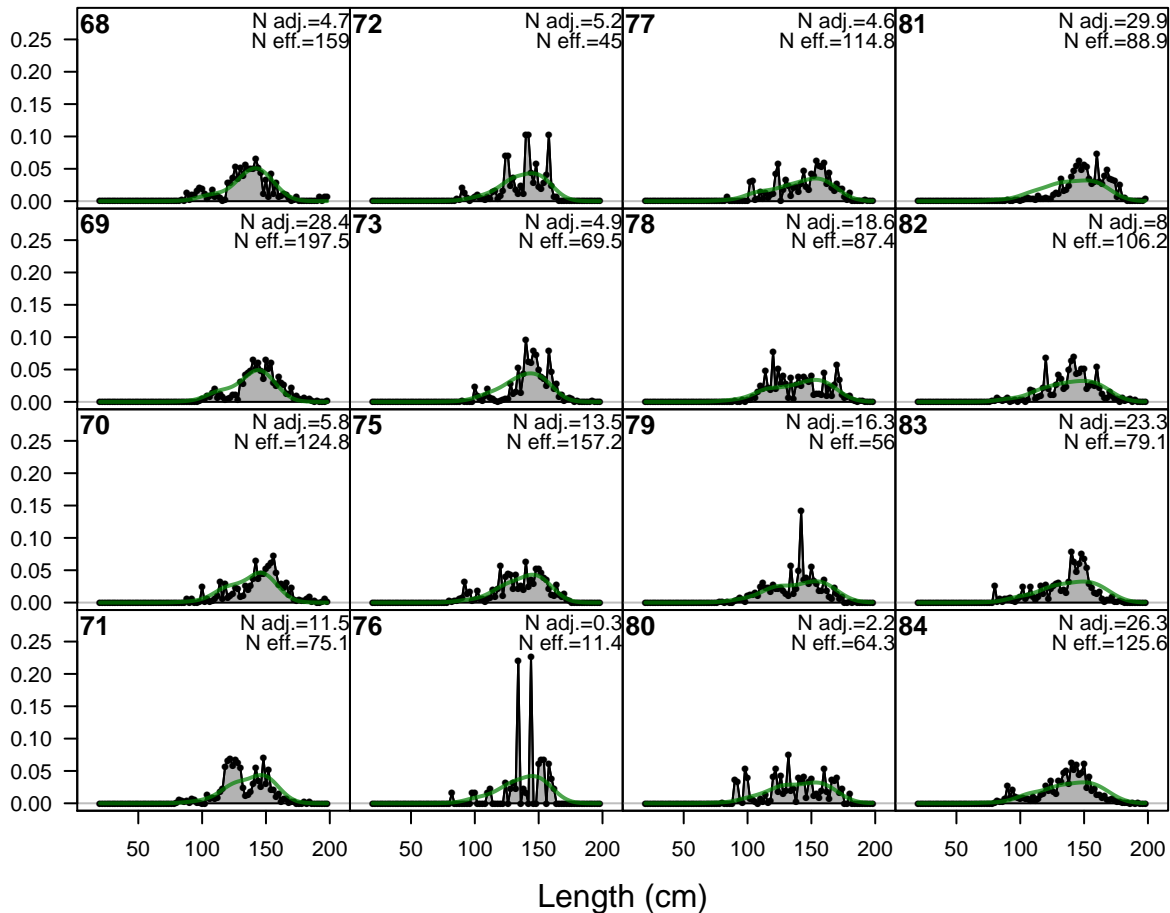
A4-LL-n (whole catch)



Proportion

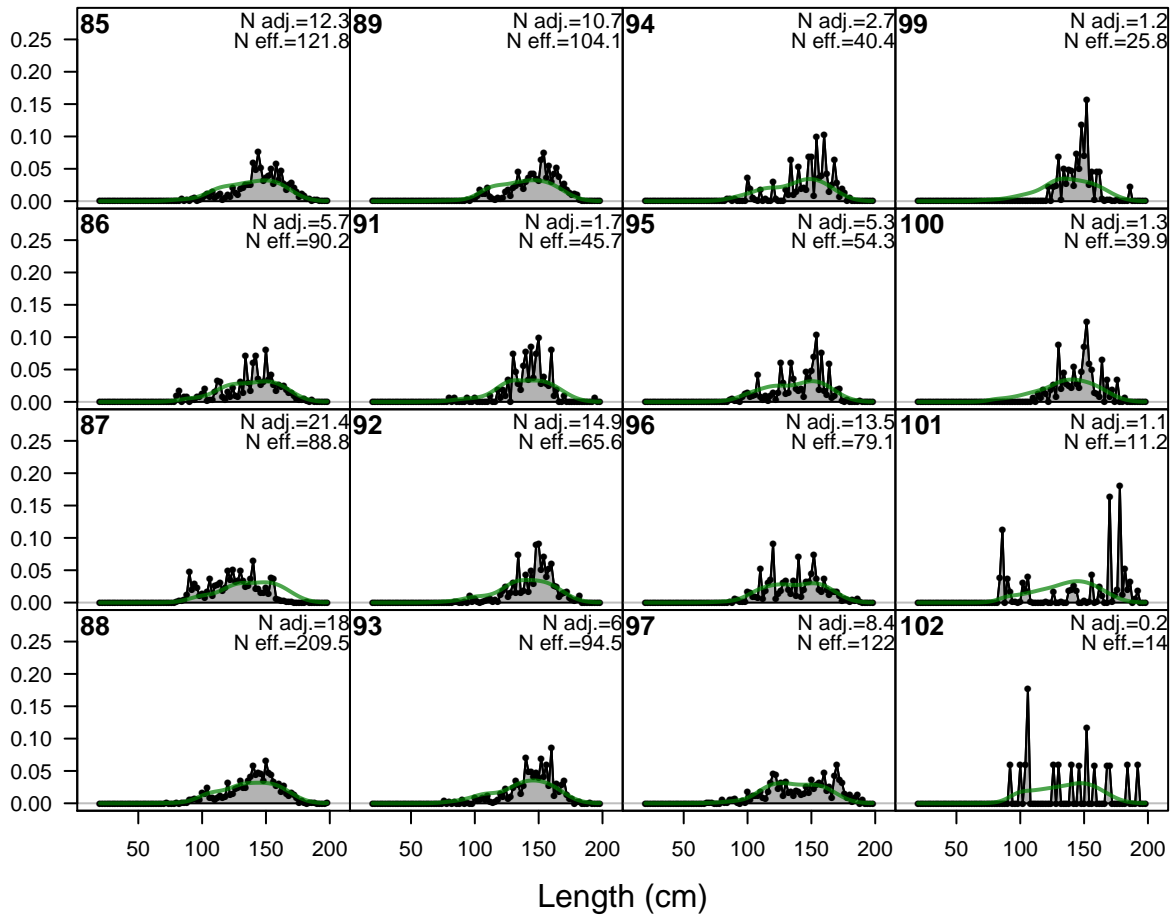


Proportion

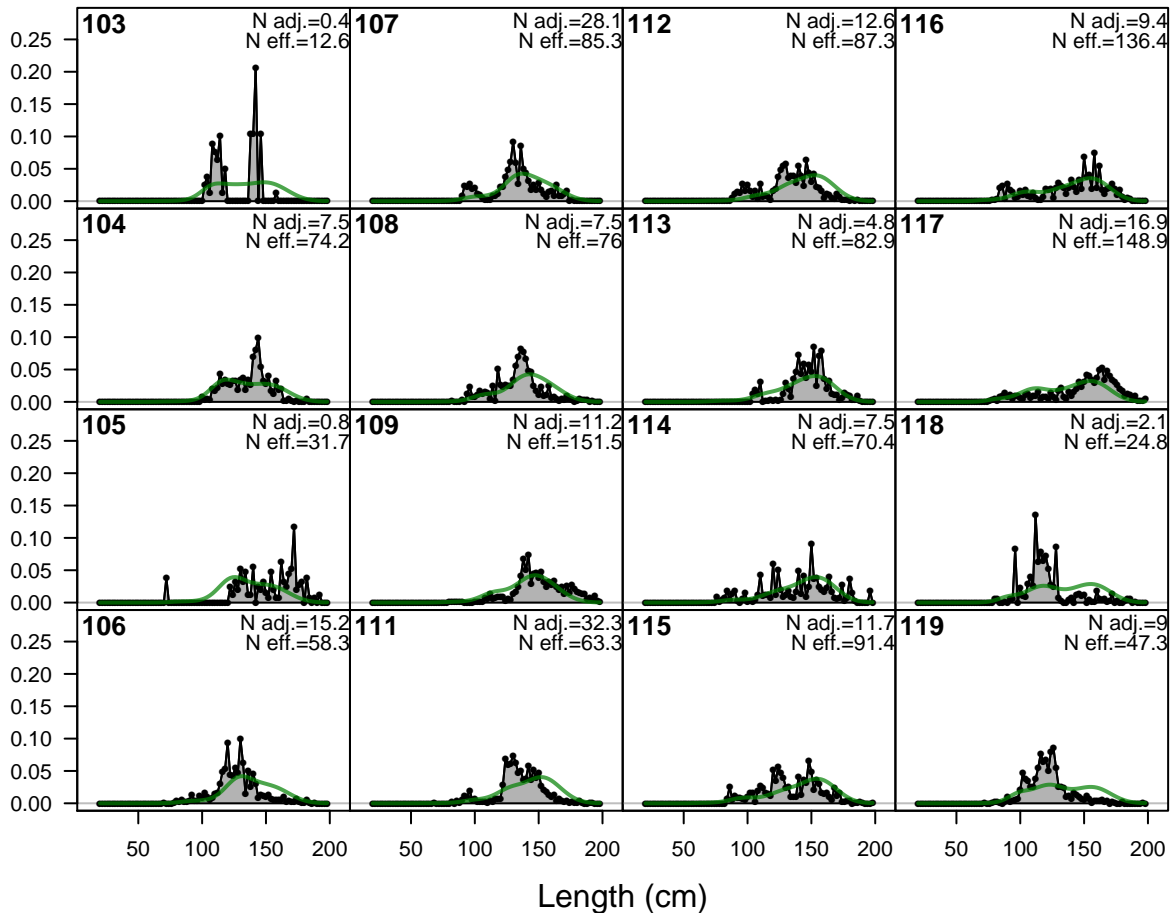




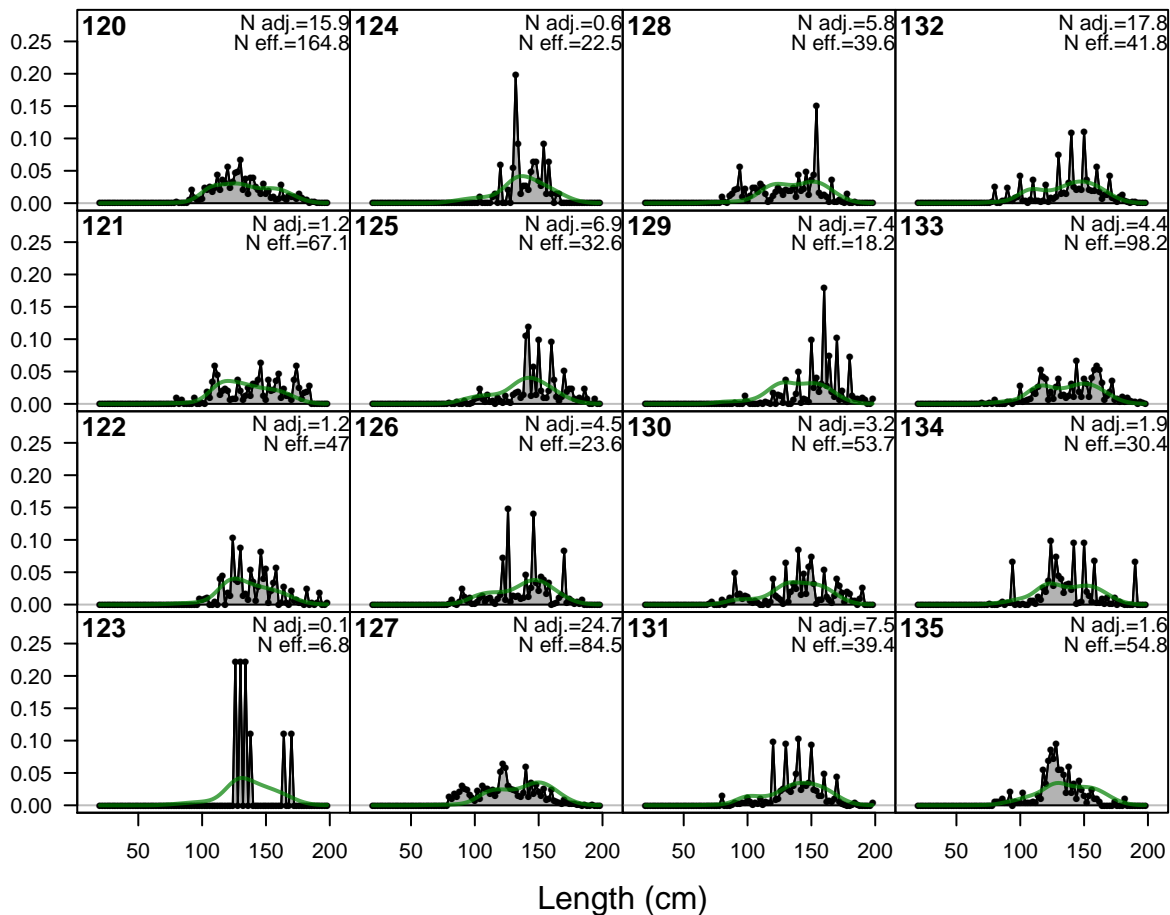
Proportion



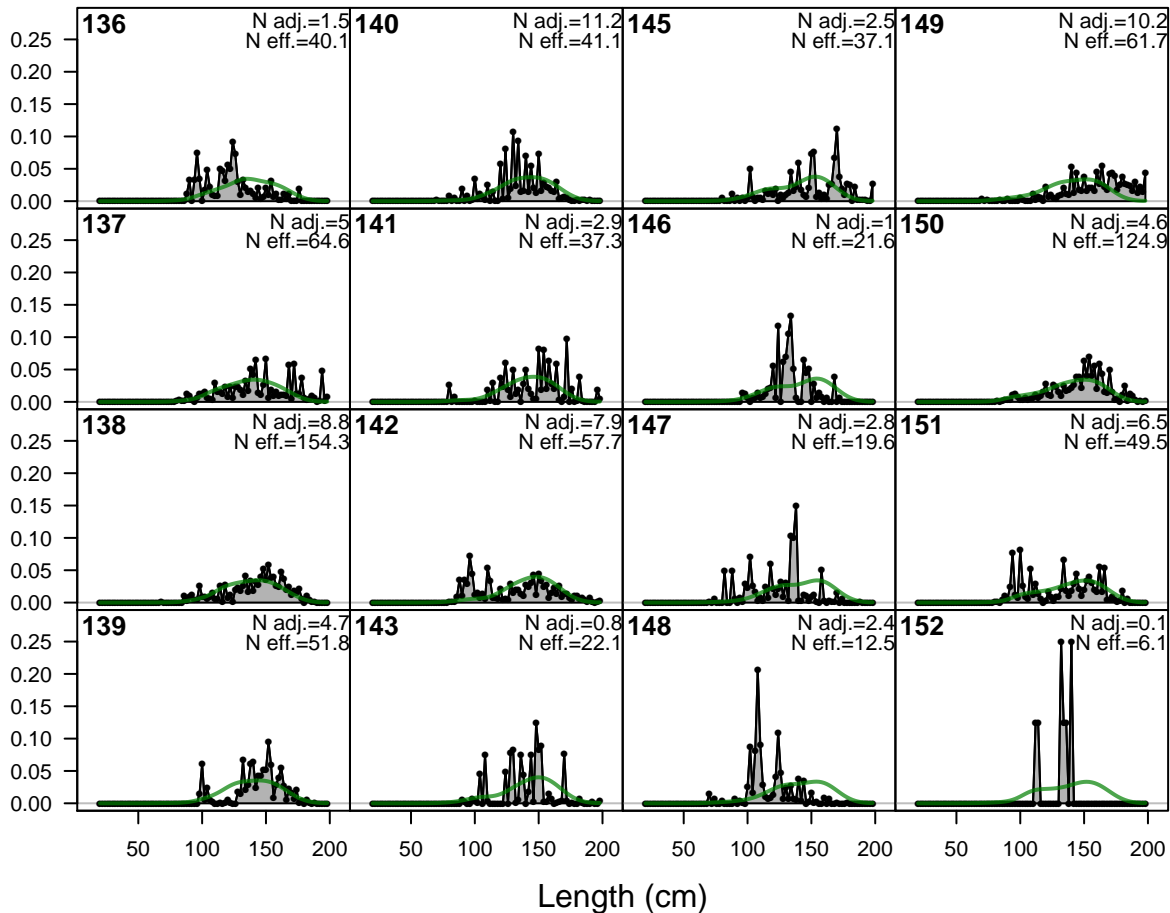
Proportion



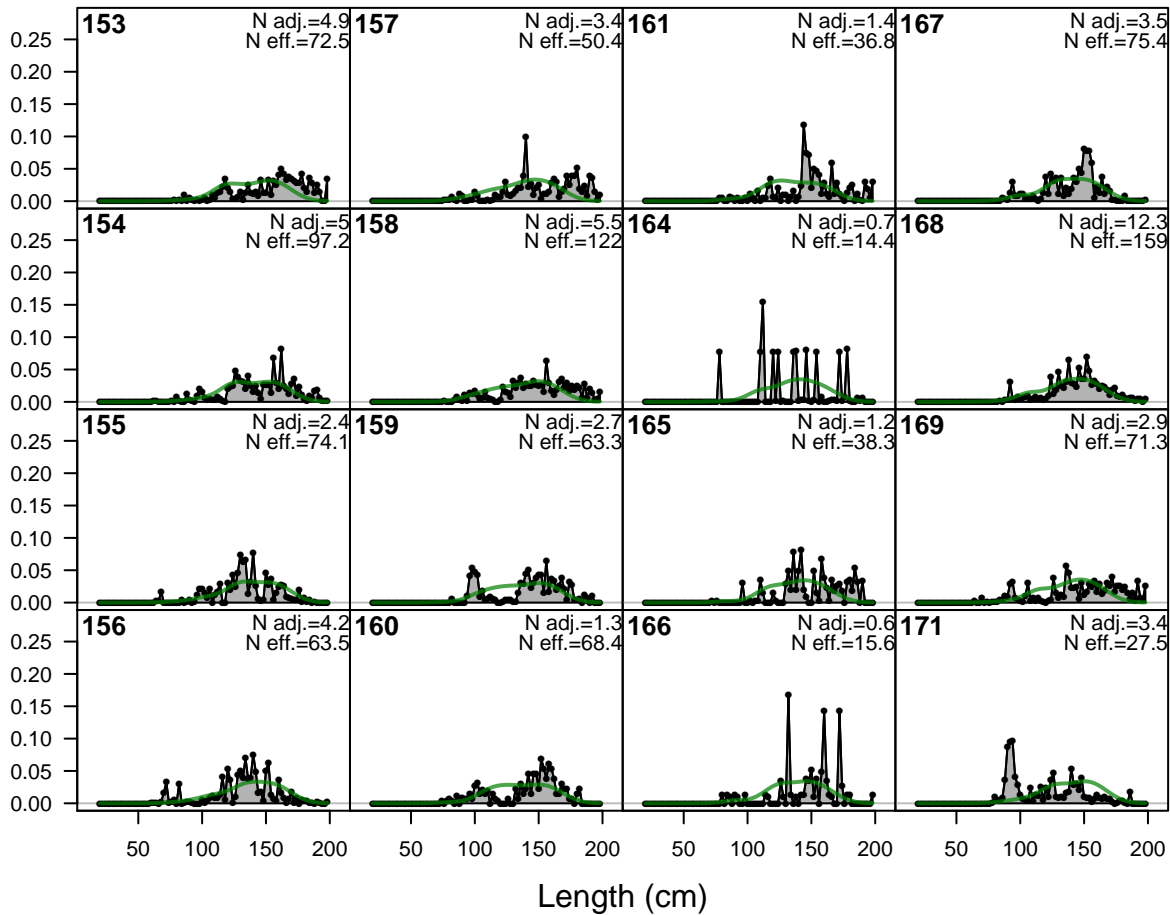
Proportion



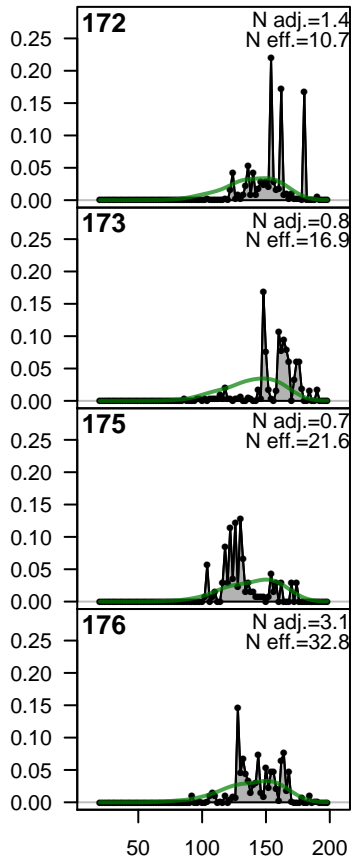
Proportion



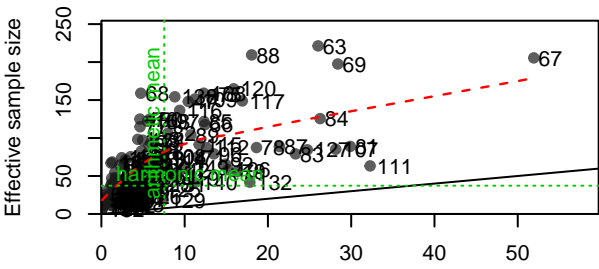
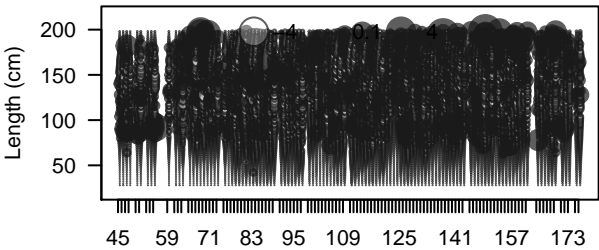
Proportion



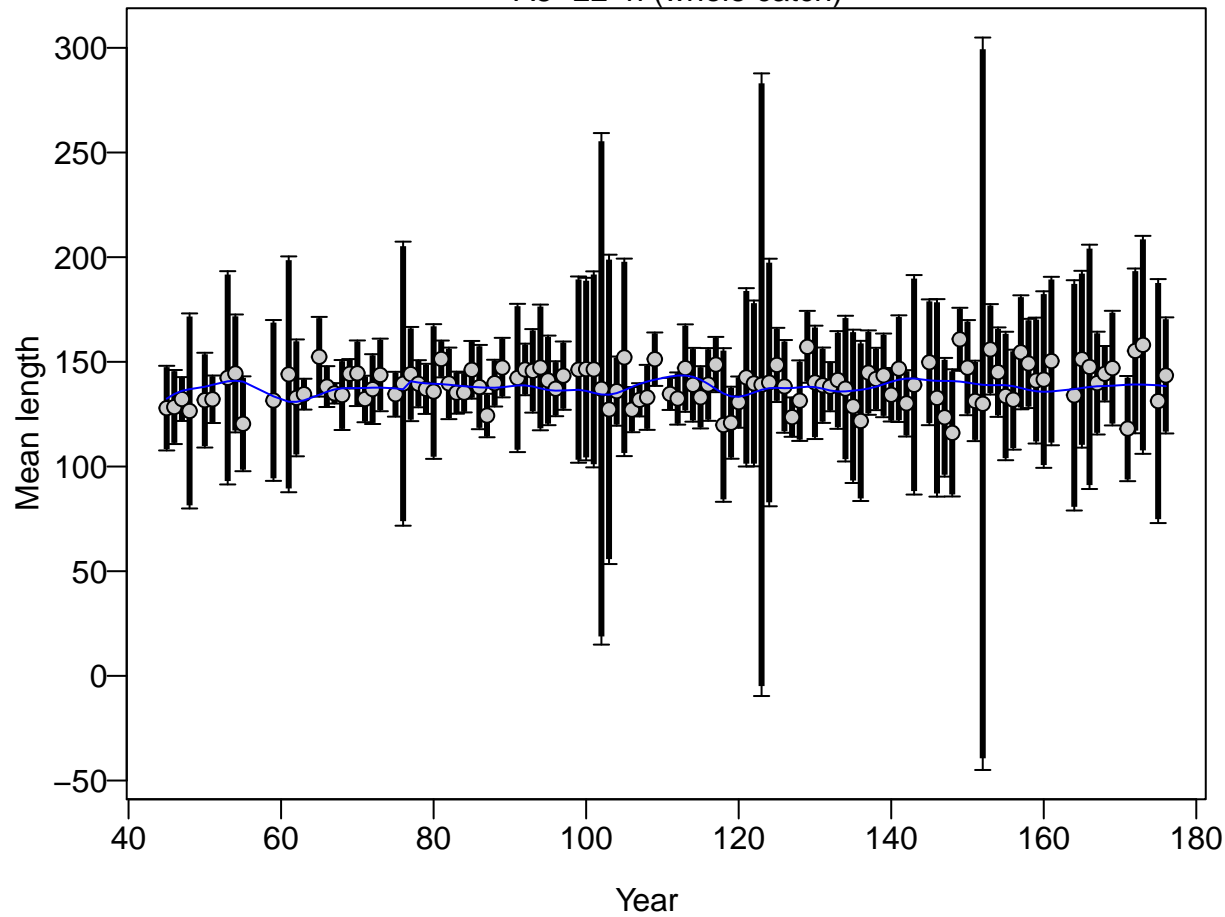
Proportion



Length (cm)

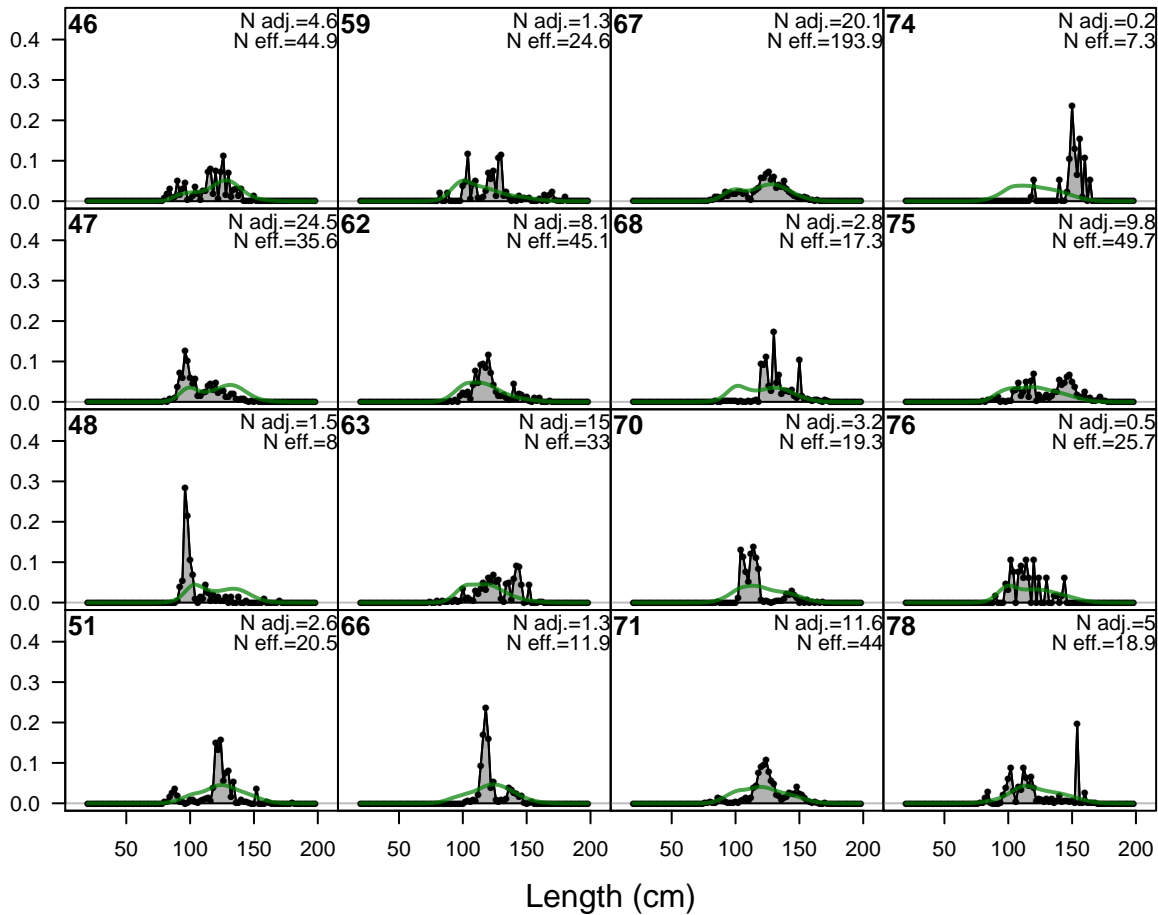


A5-LL-n (whole catch)

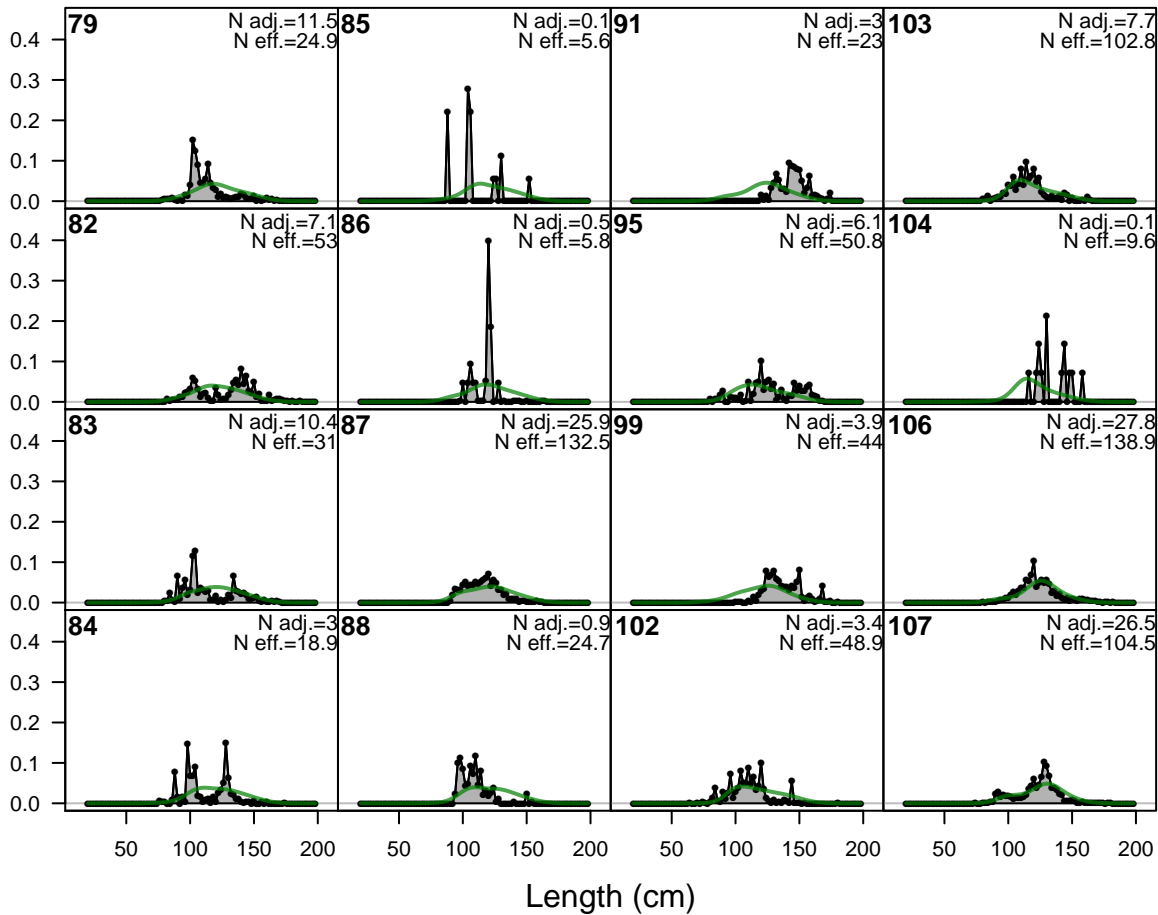




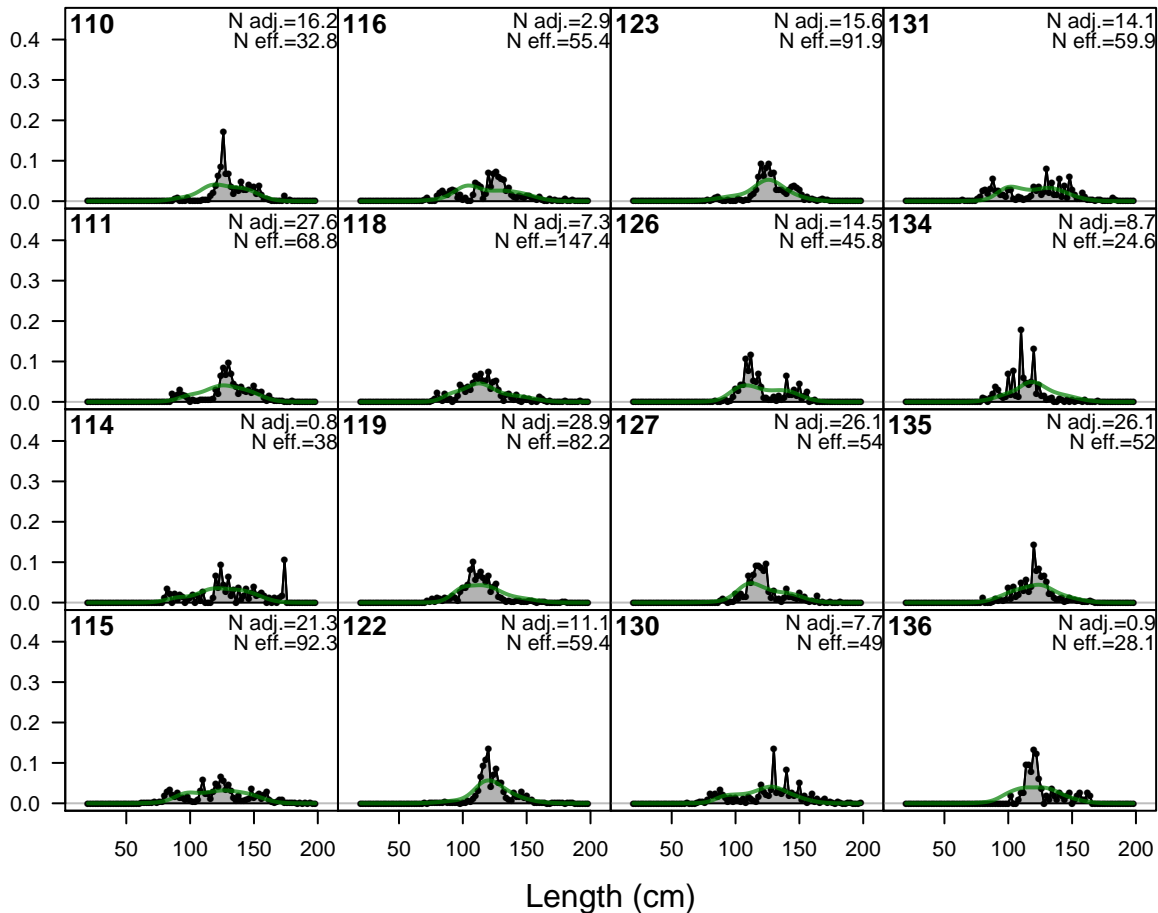
Proportion



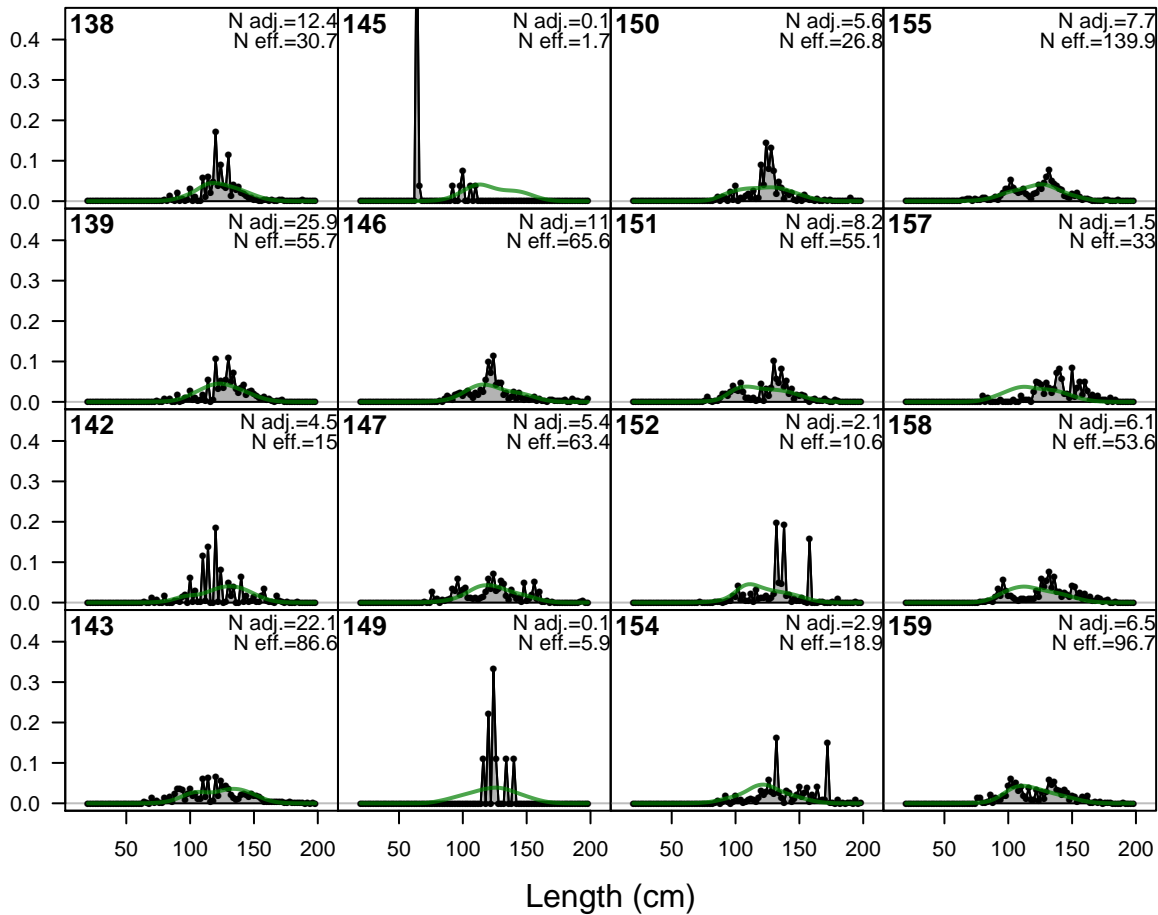
Proportion



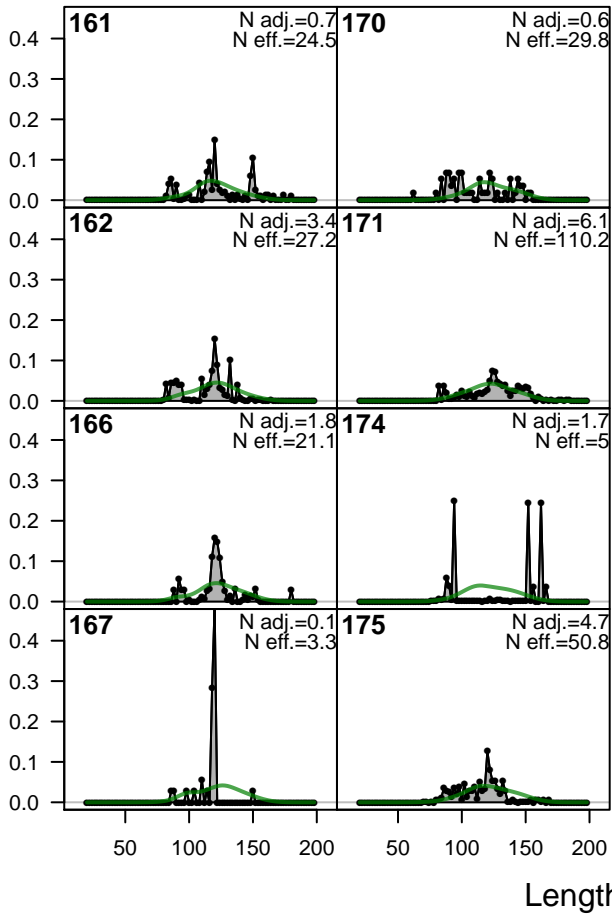
Proportion

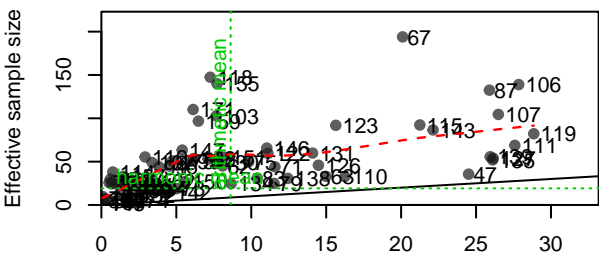
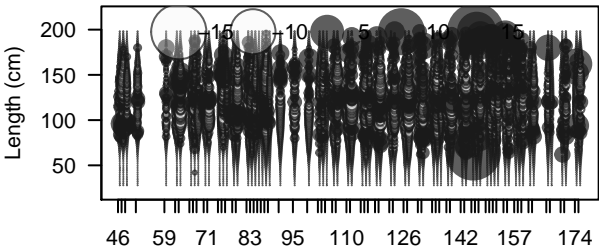


Proportion

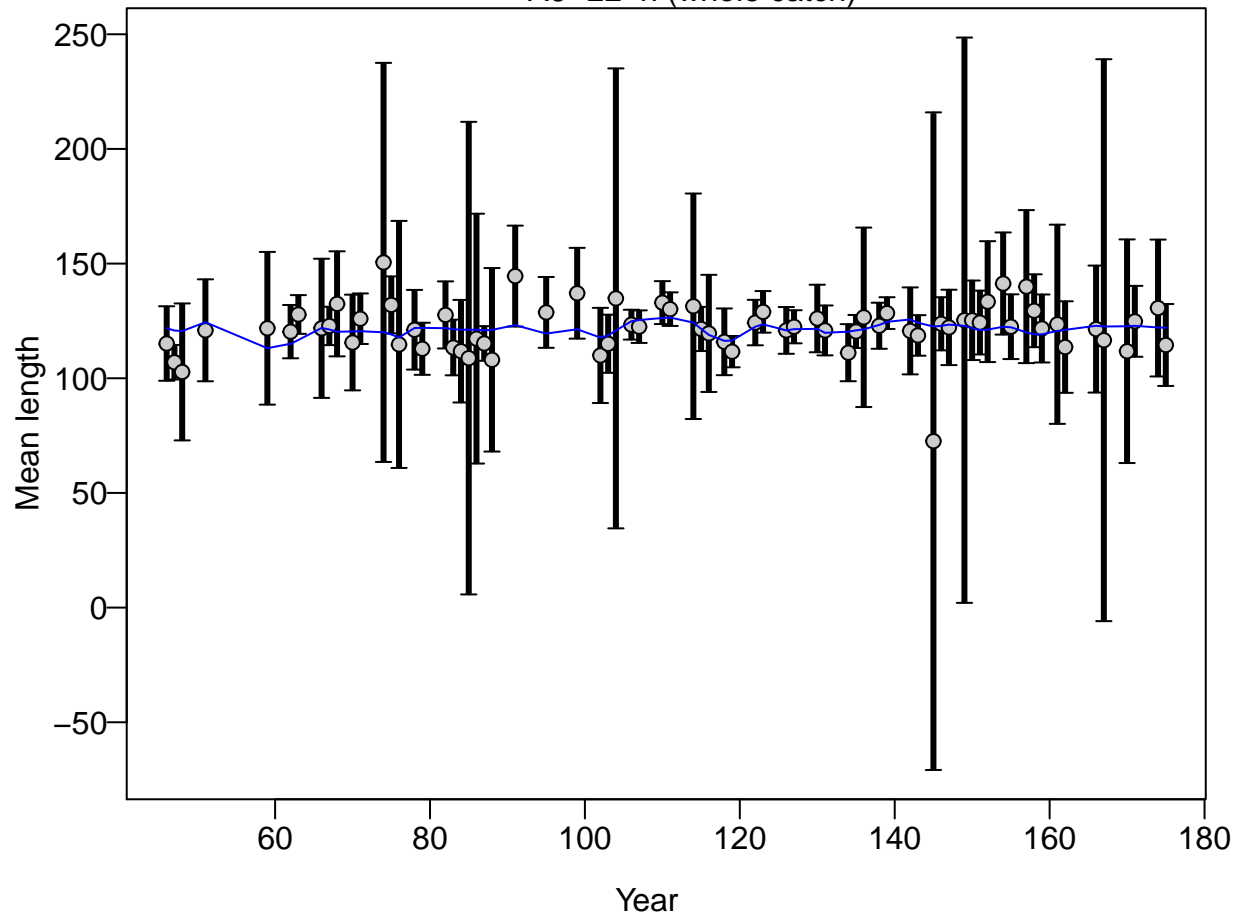


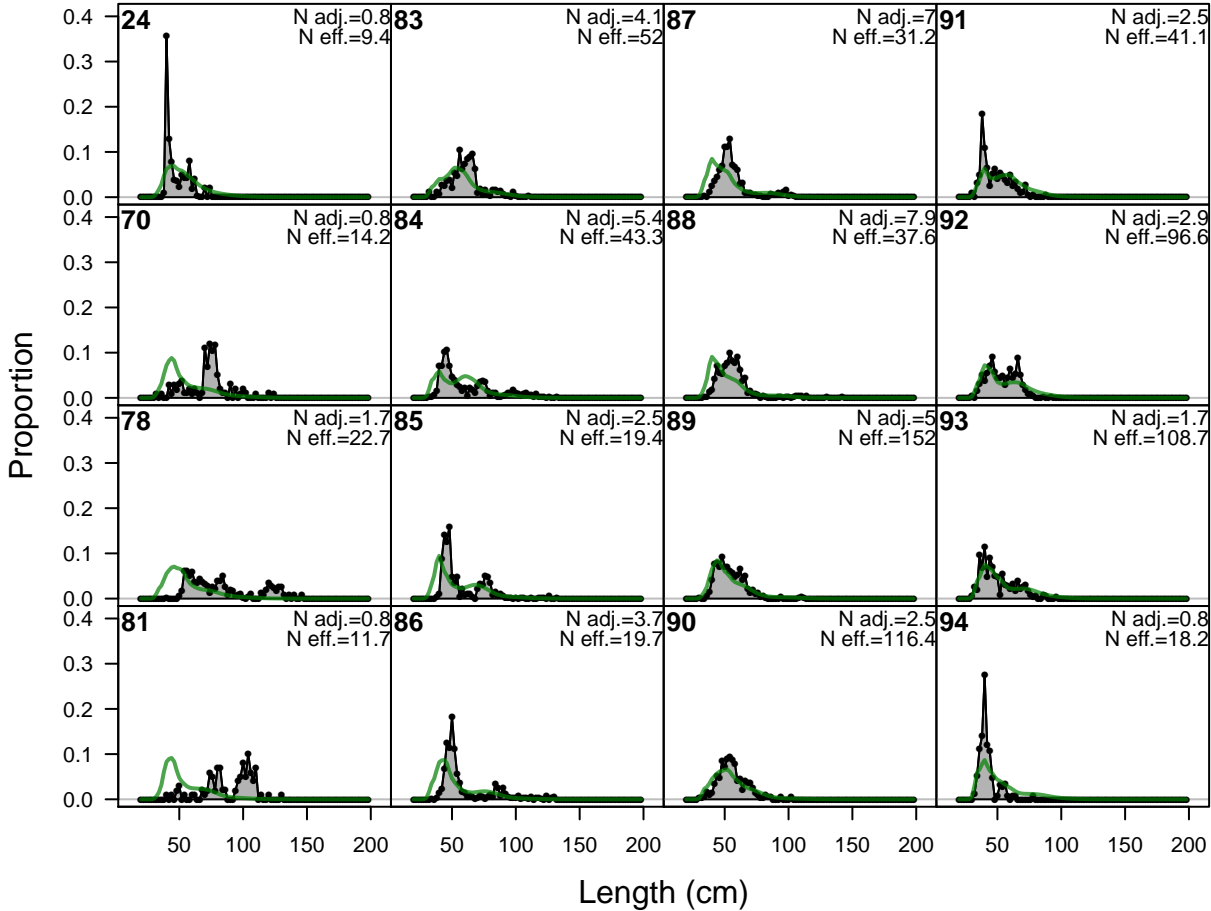
Proportion



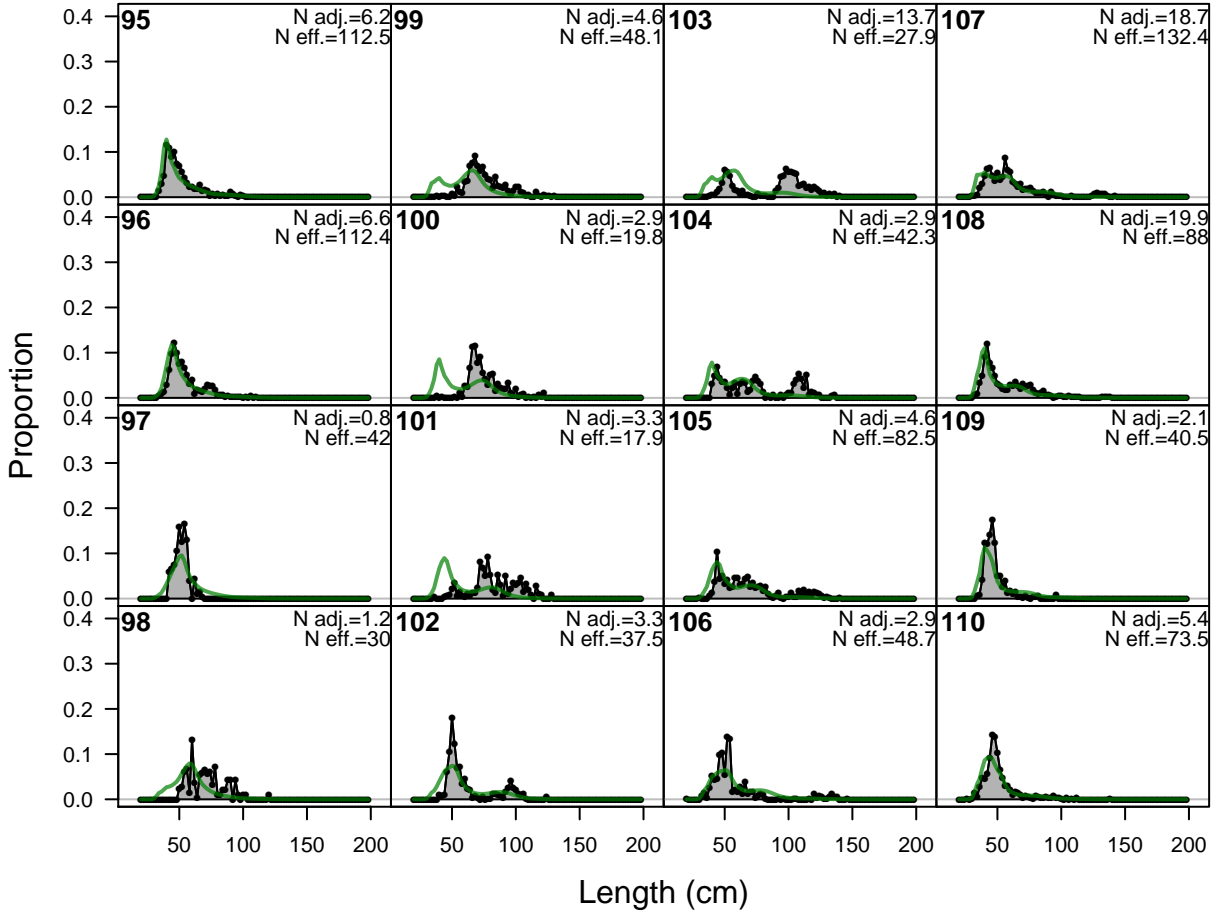


A6-LL-n (whole catch)

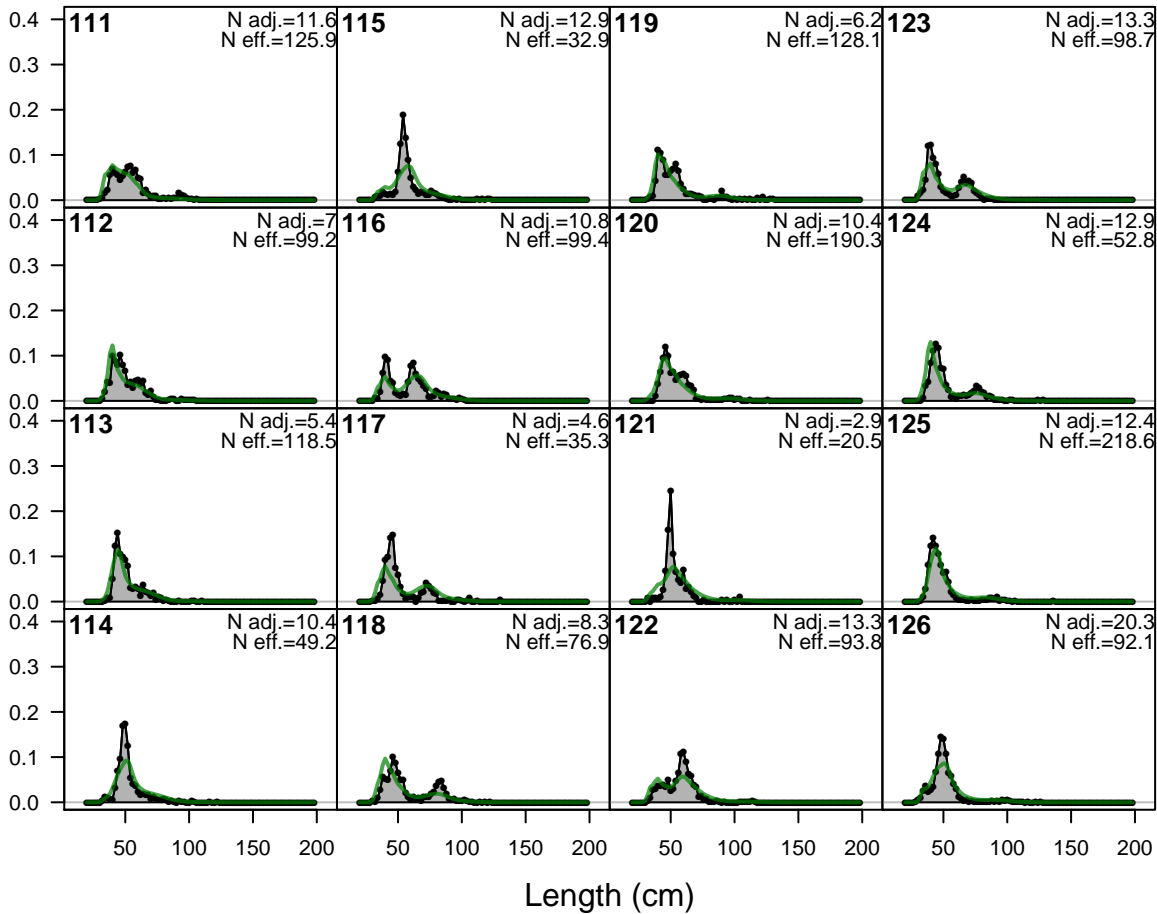




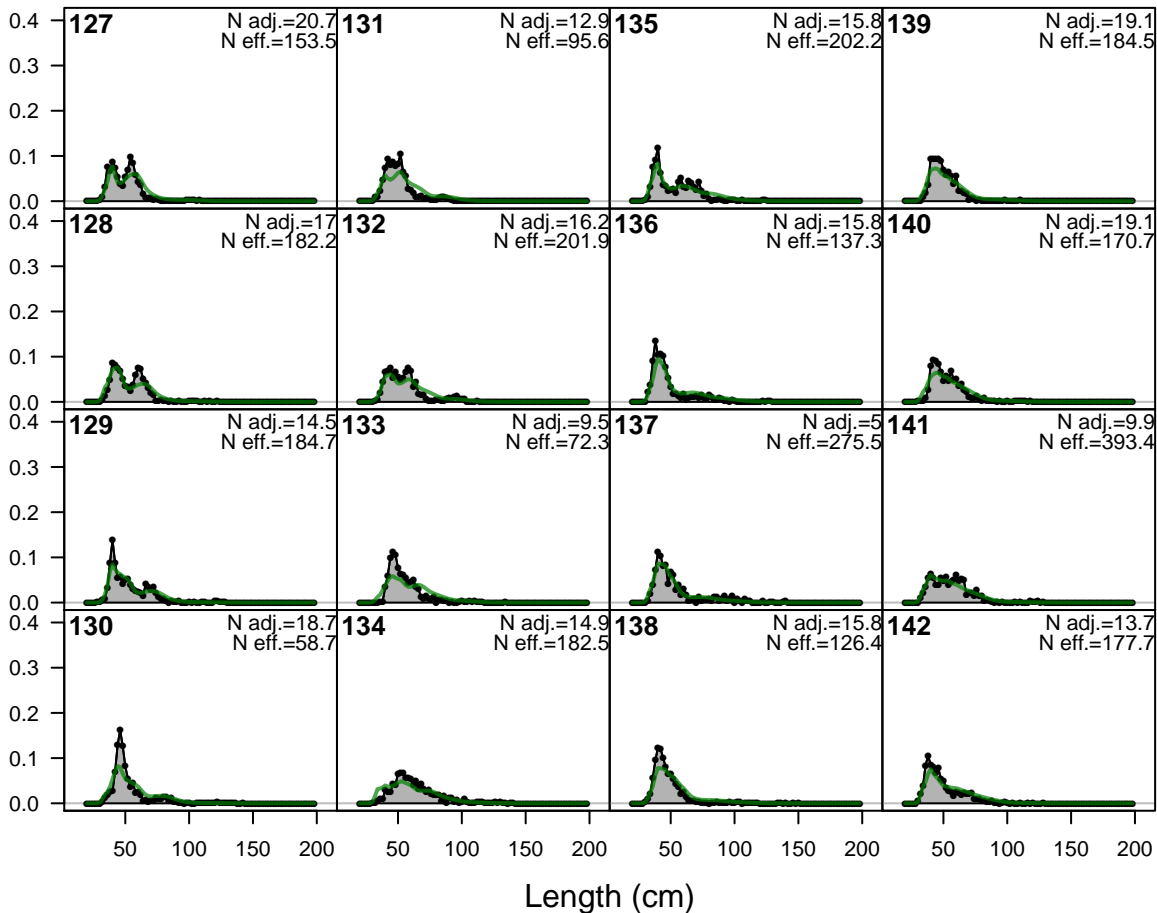




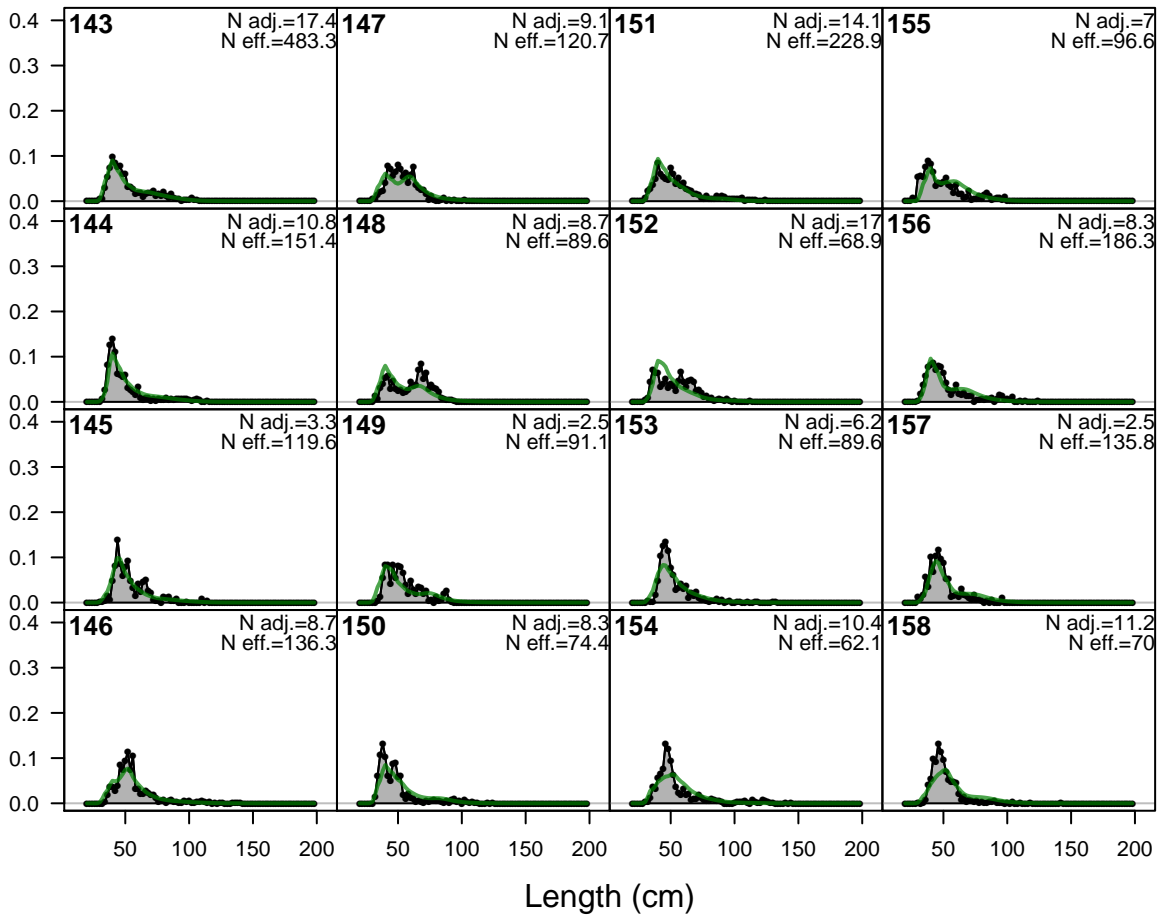
Proportion

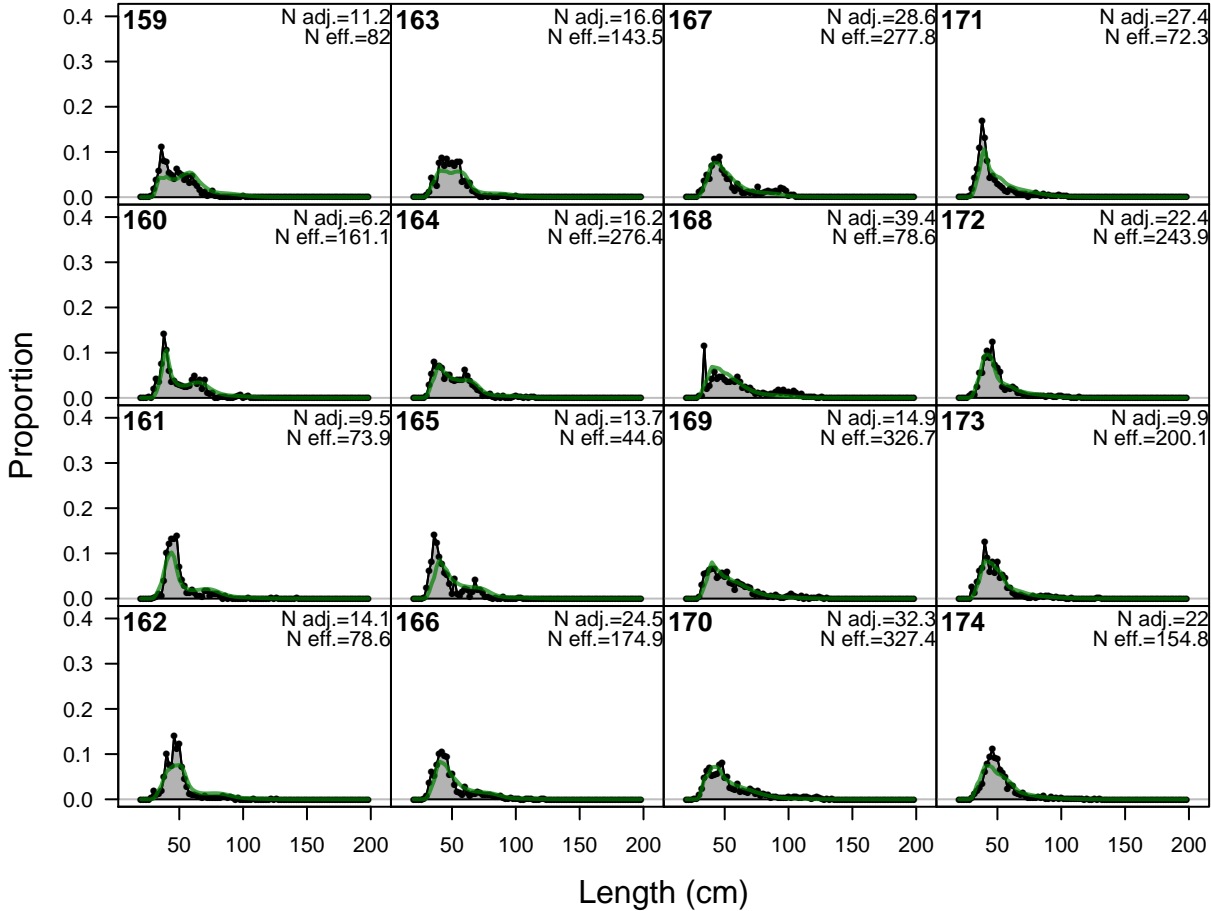


Proportion

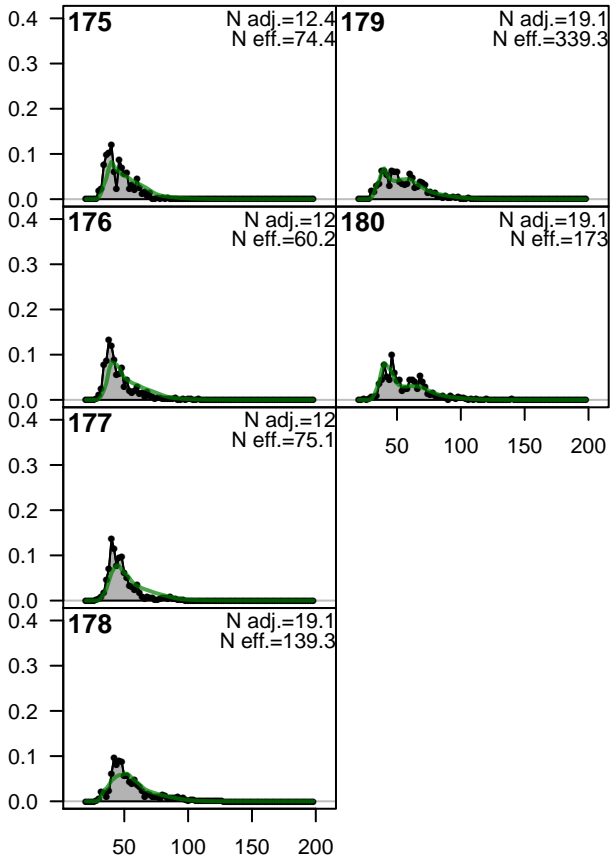


Proportion





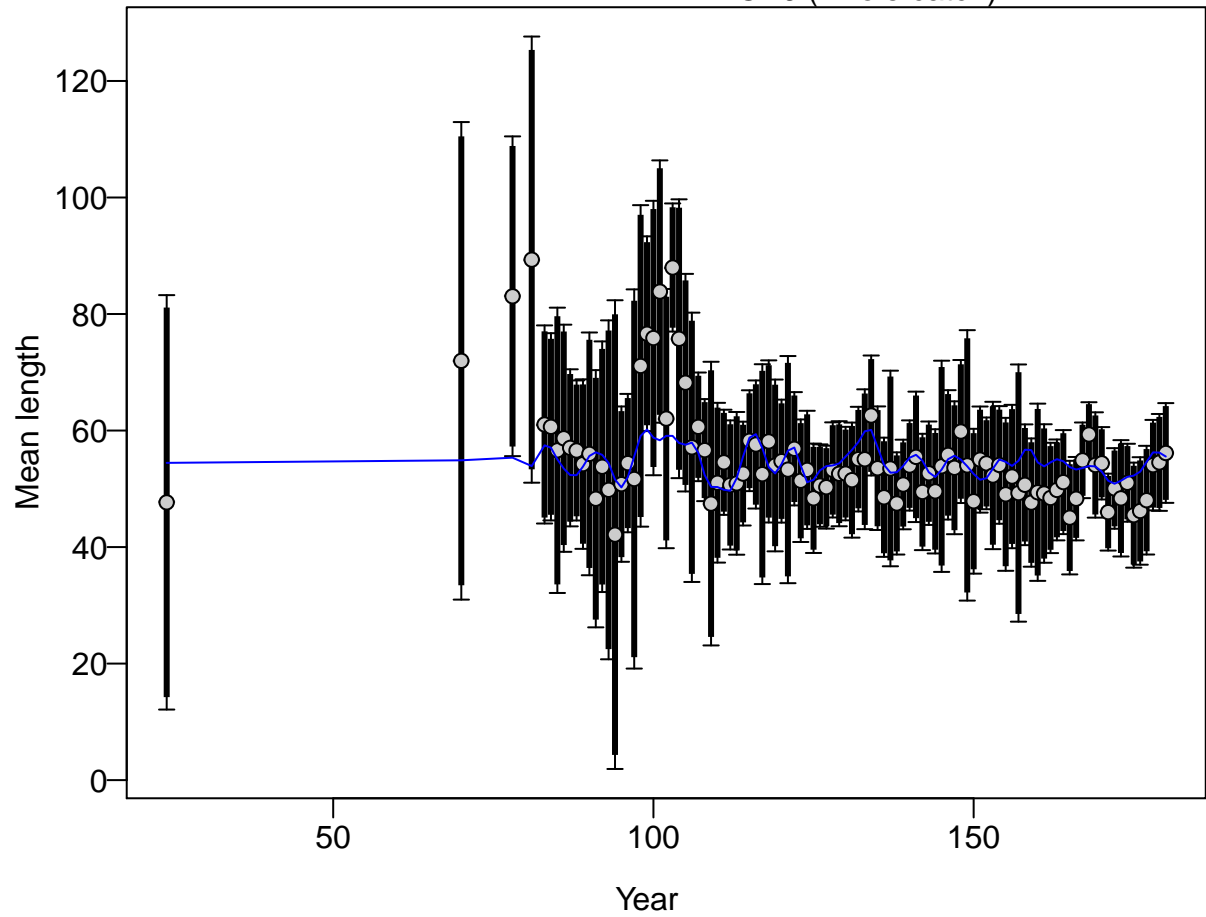
Proportion



Length (cm)

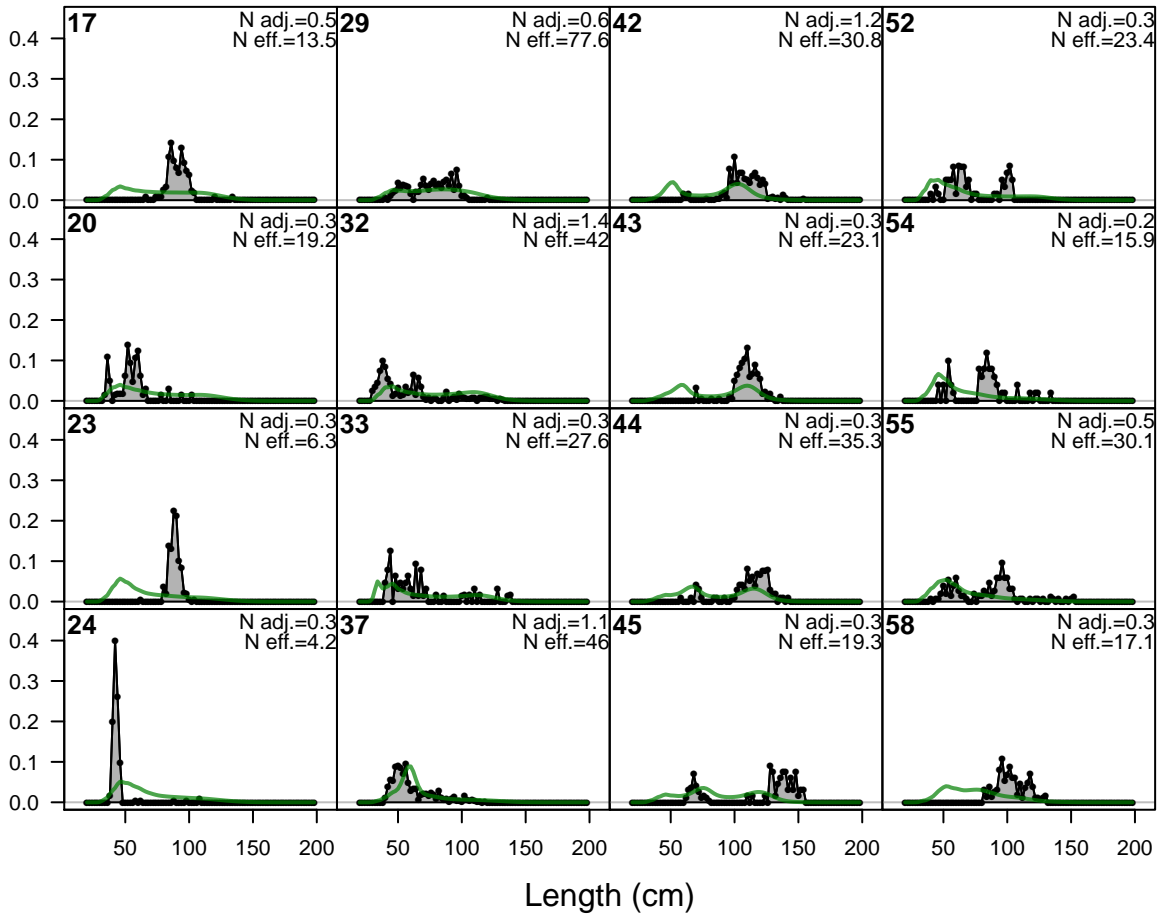


## A2-OBJ (whole catch)

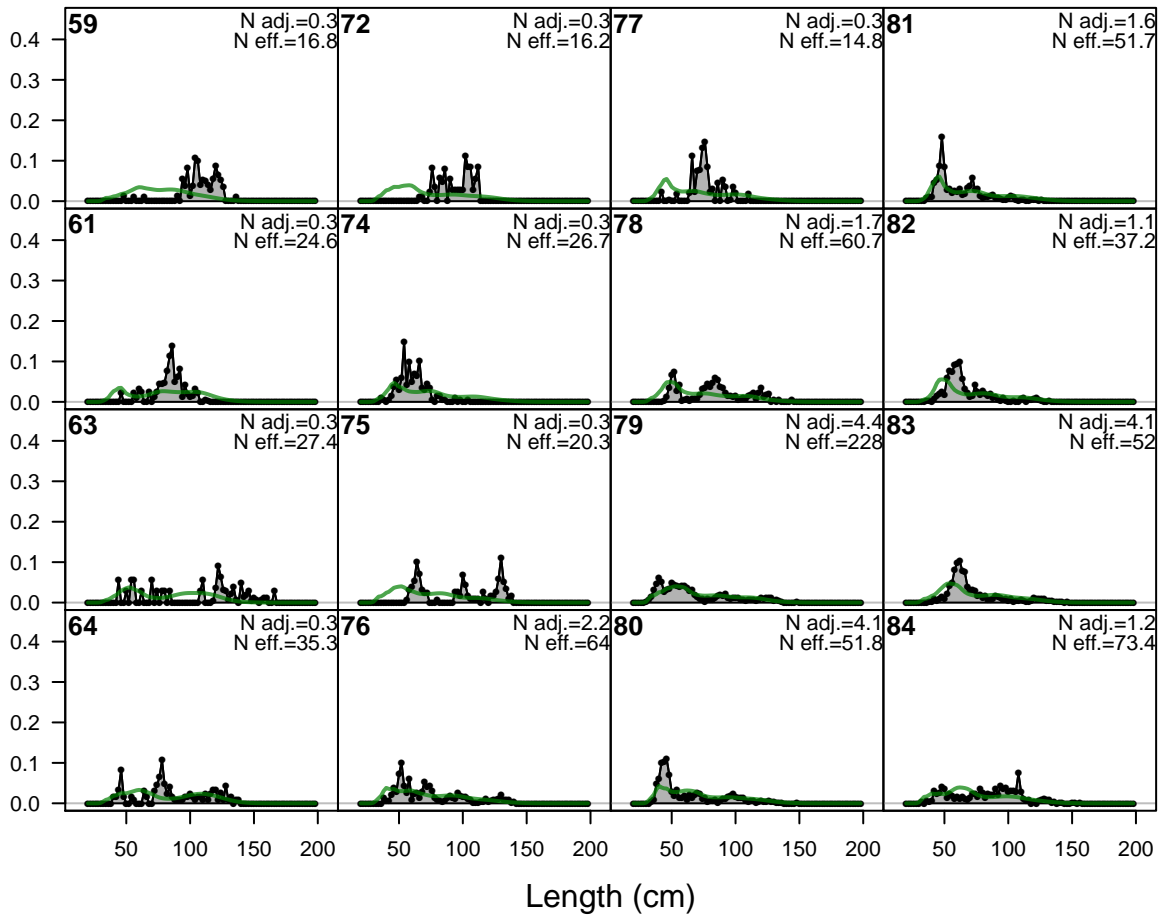




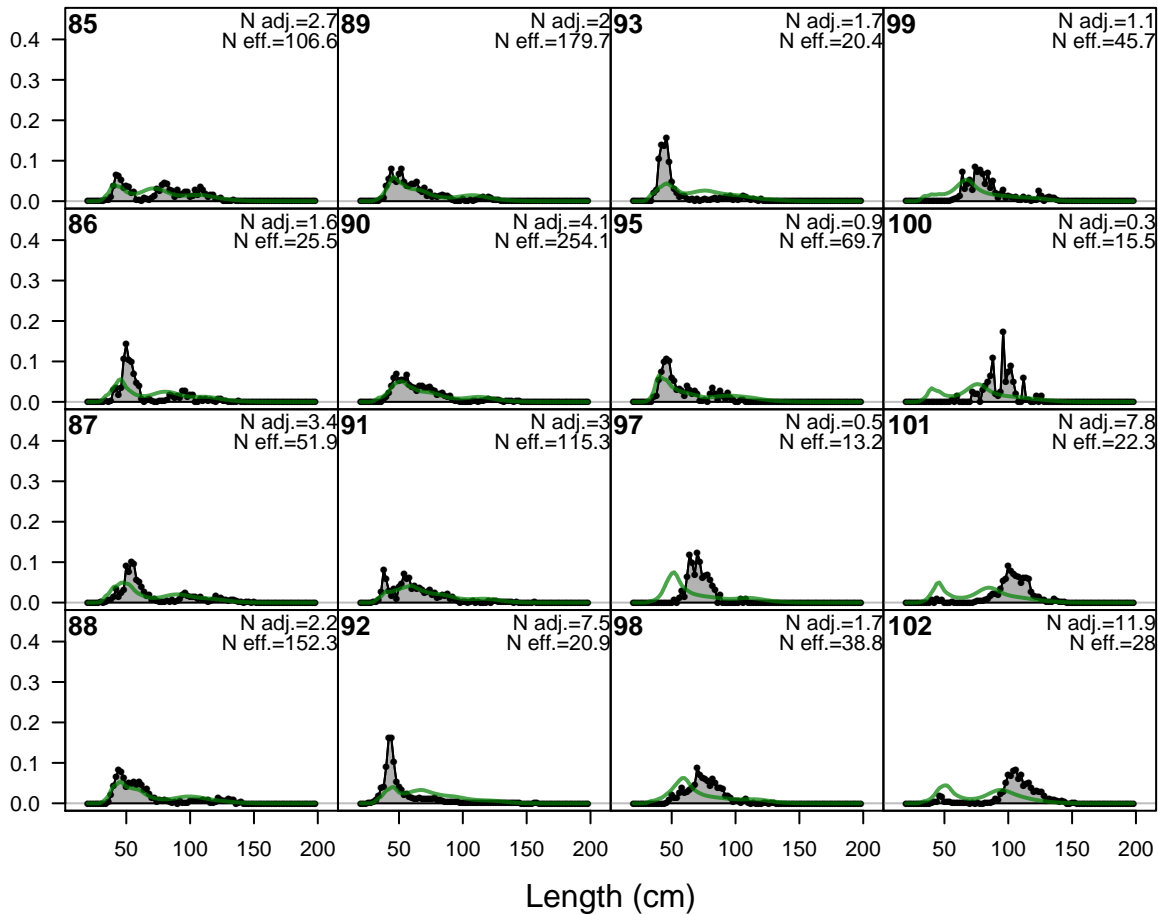
Proportion



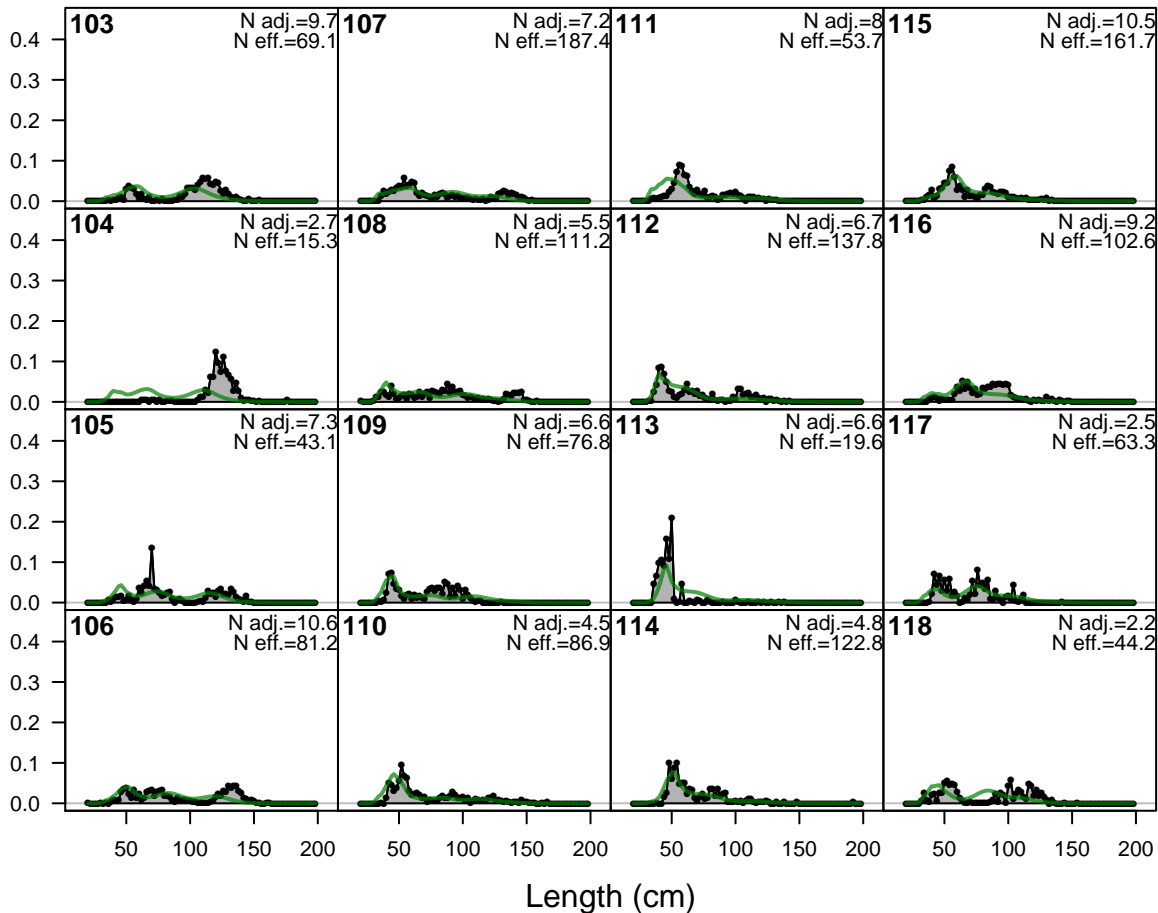
Proportion



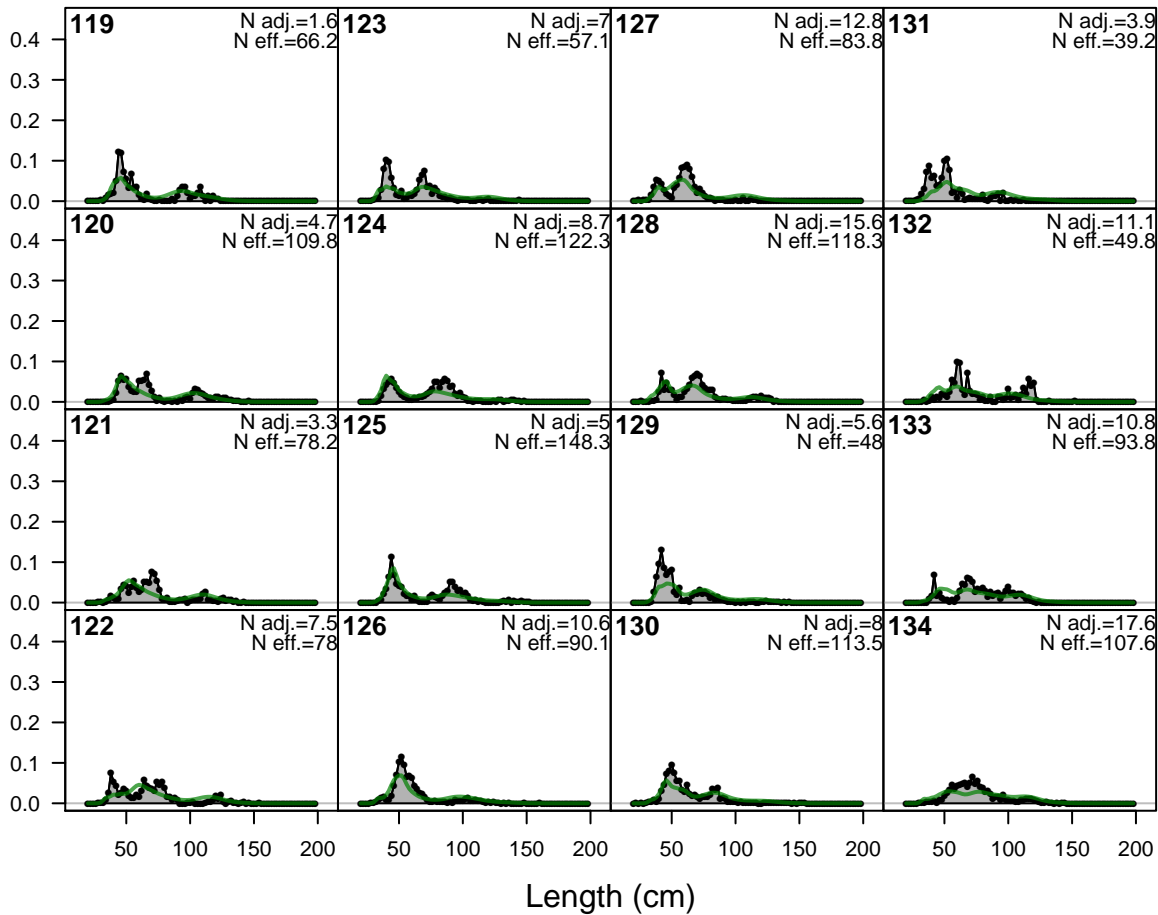
Proportion



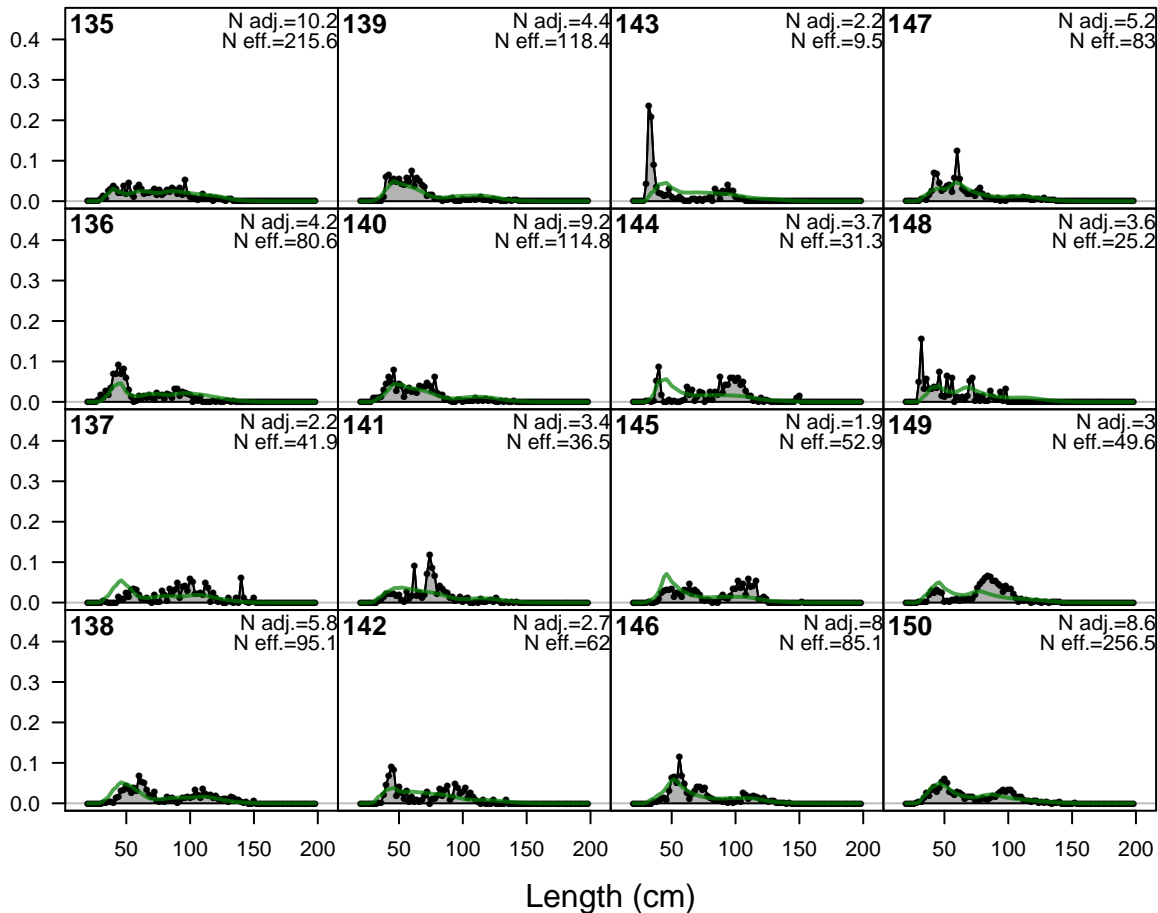
Proportion



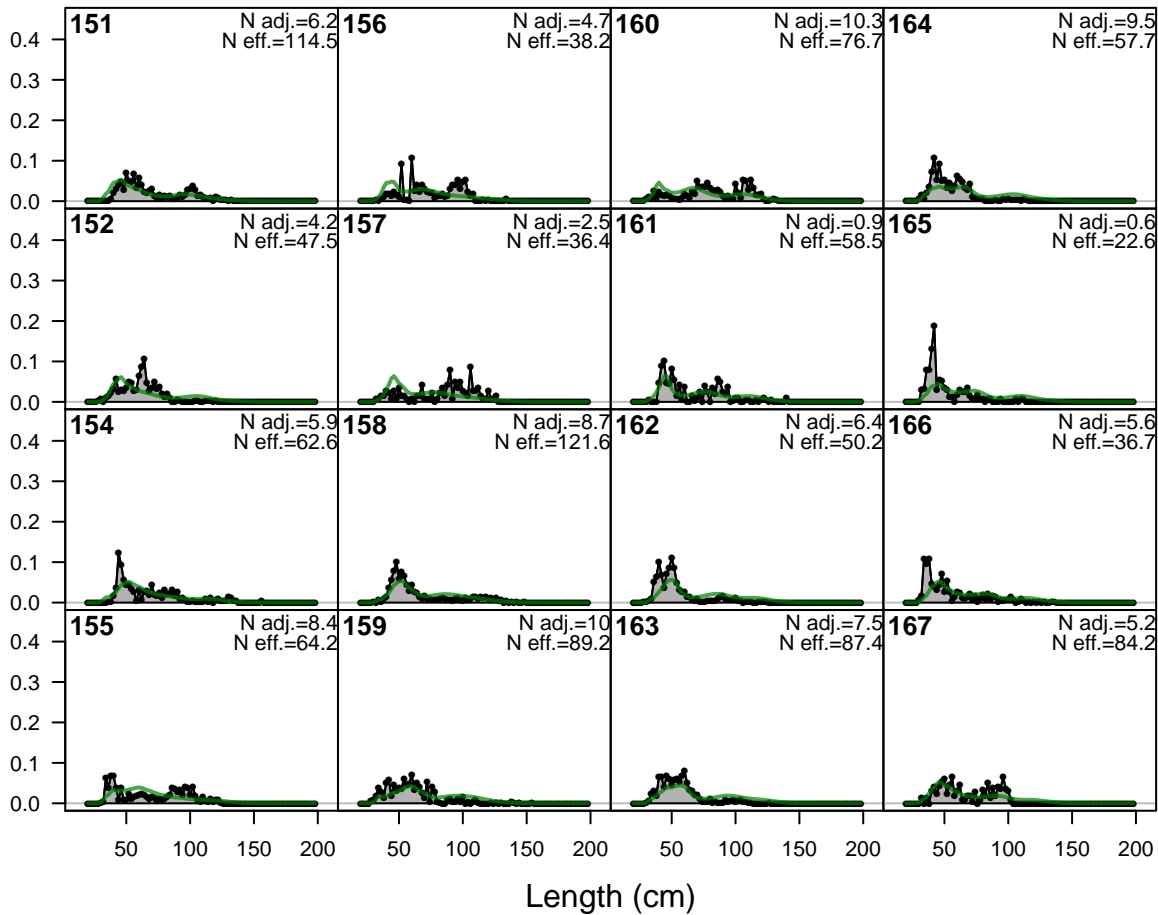
Proportion

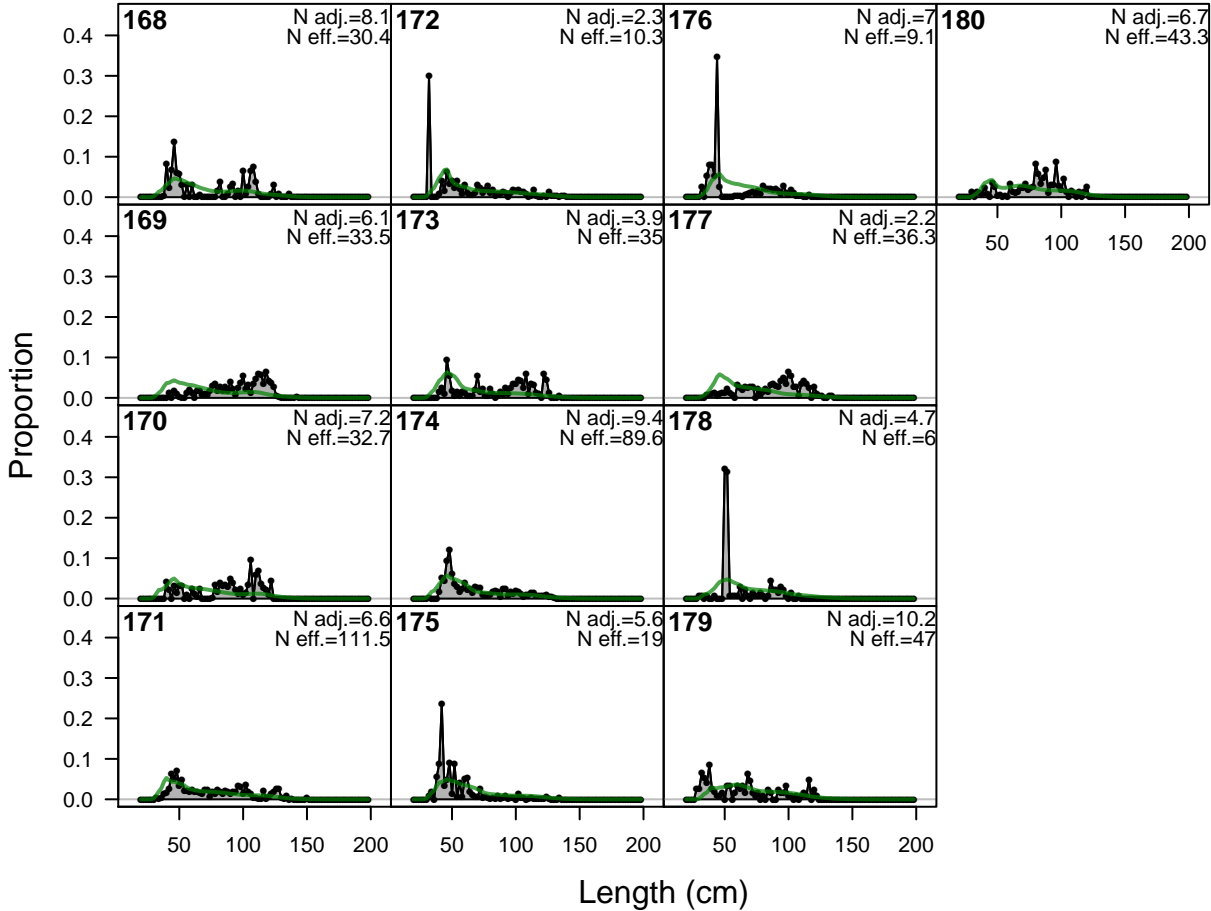


Proportion

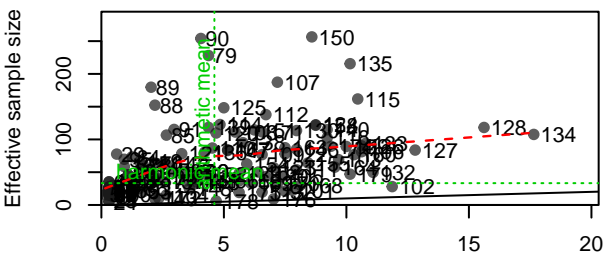
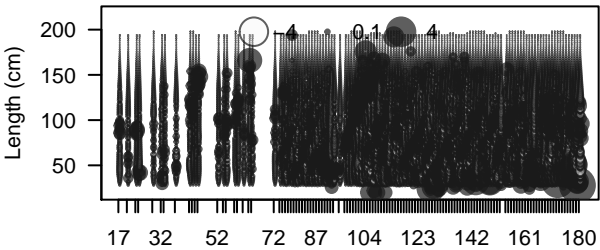


Proportion

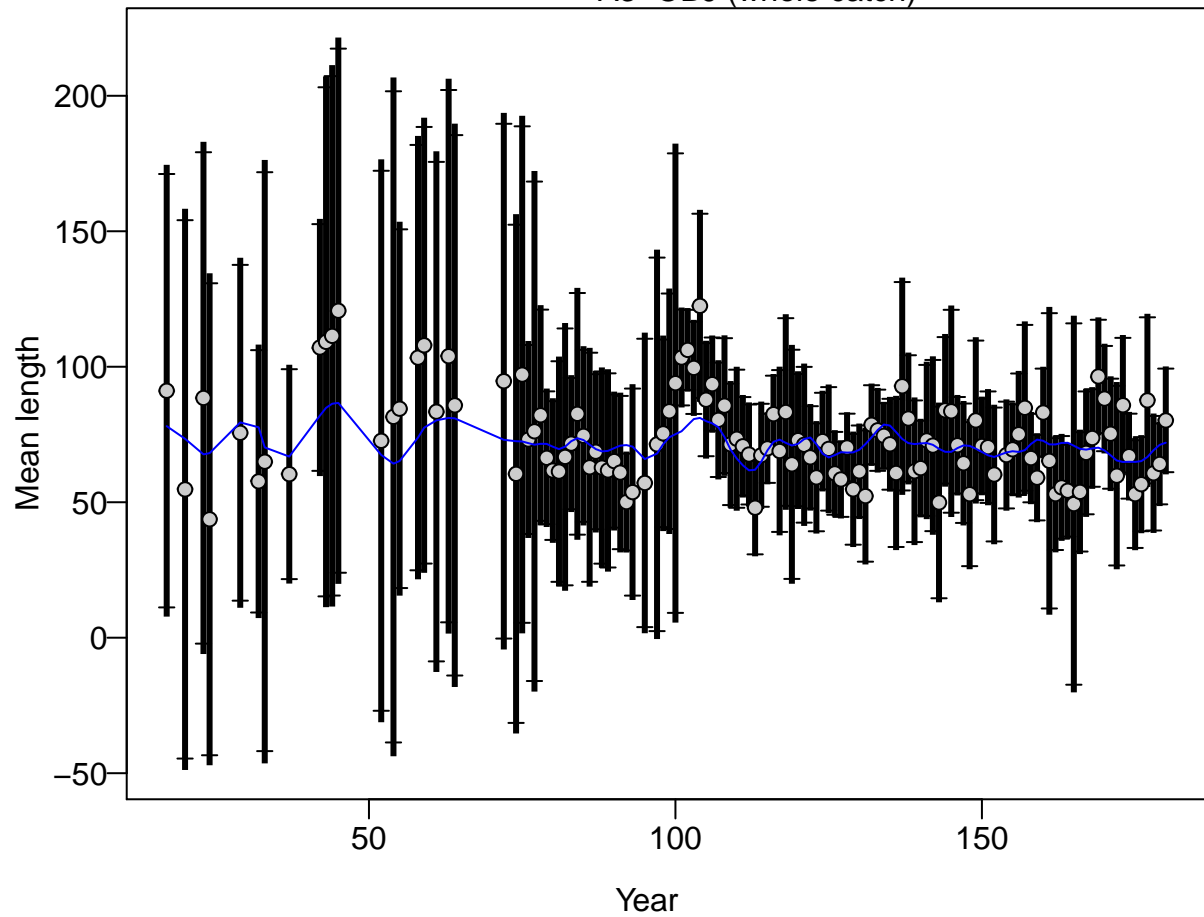




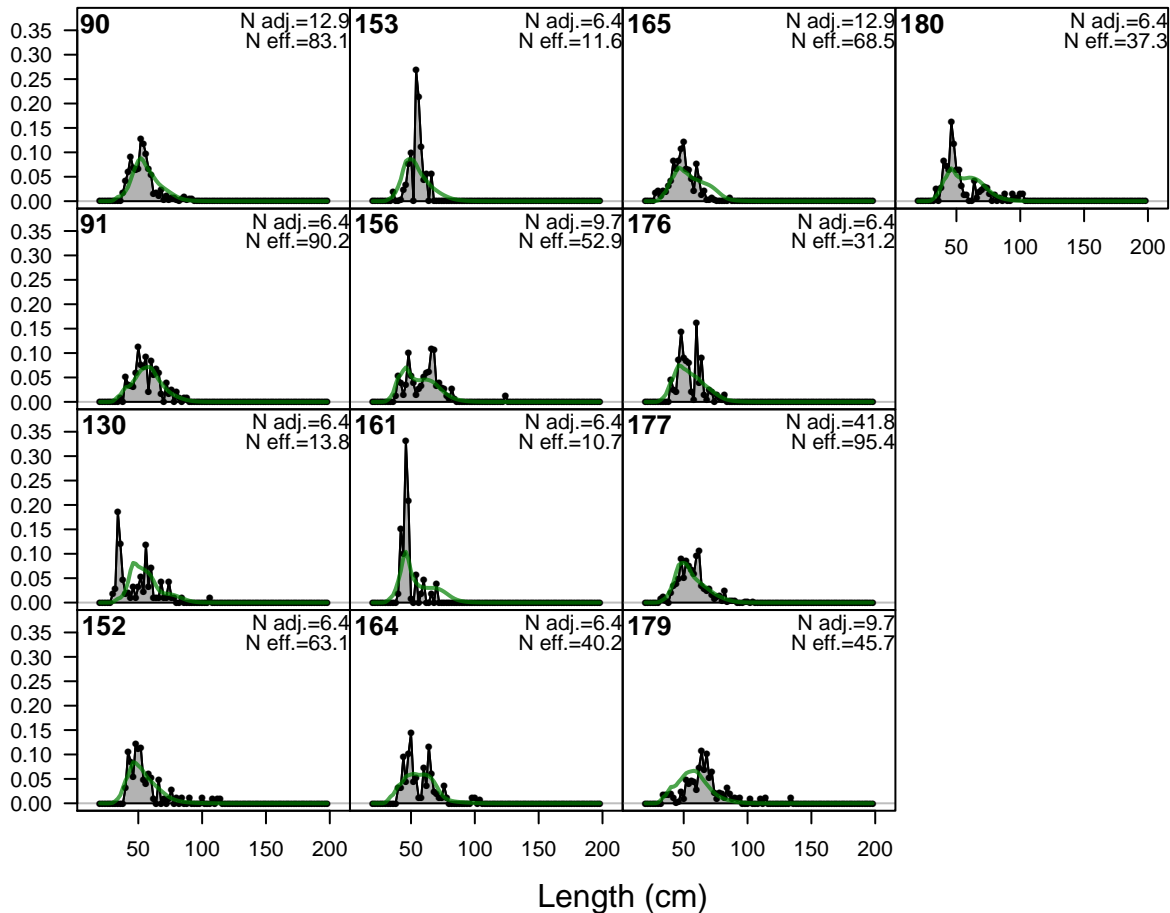


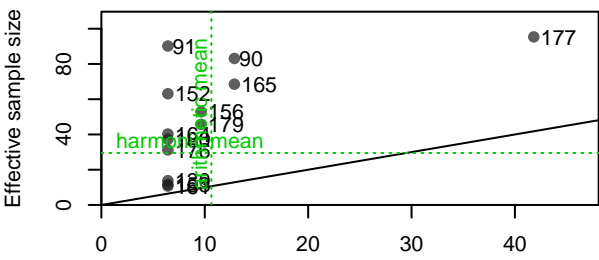
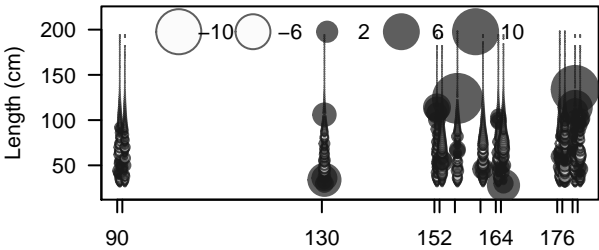


## A3-OBJ (whole catch)

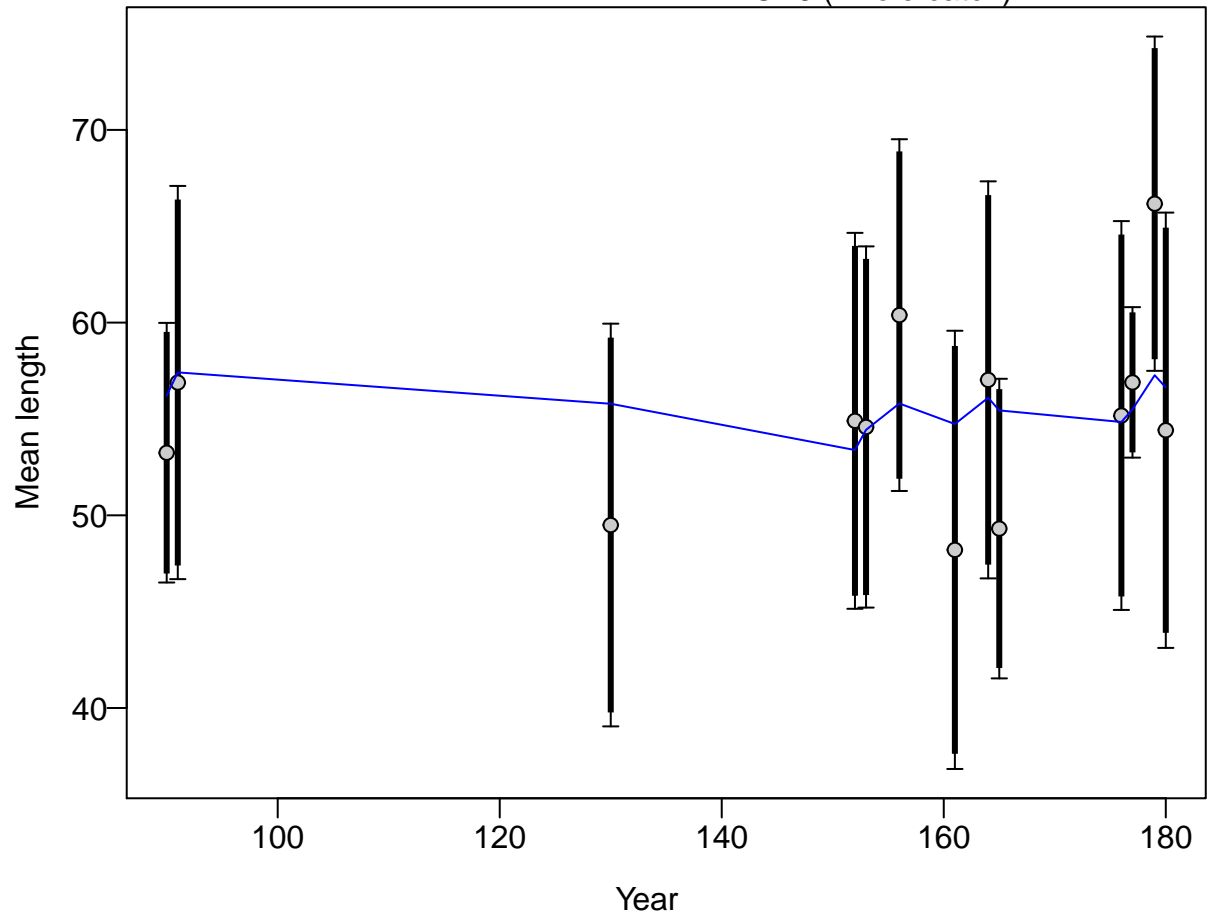


Proportion

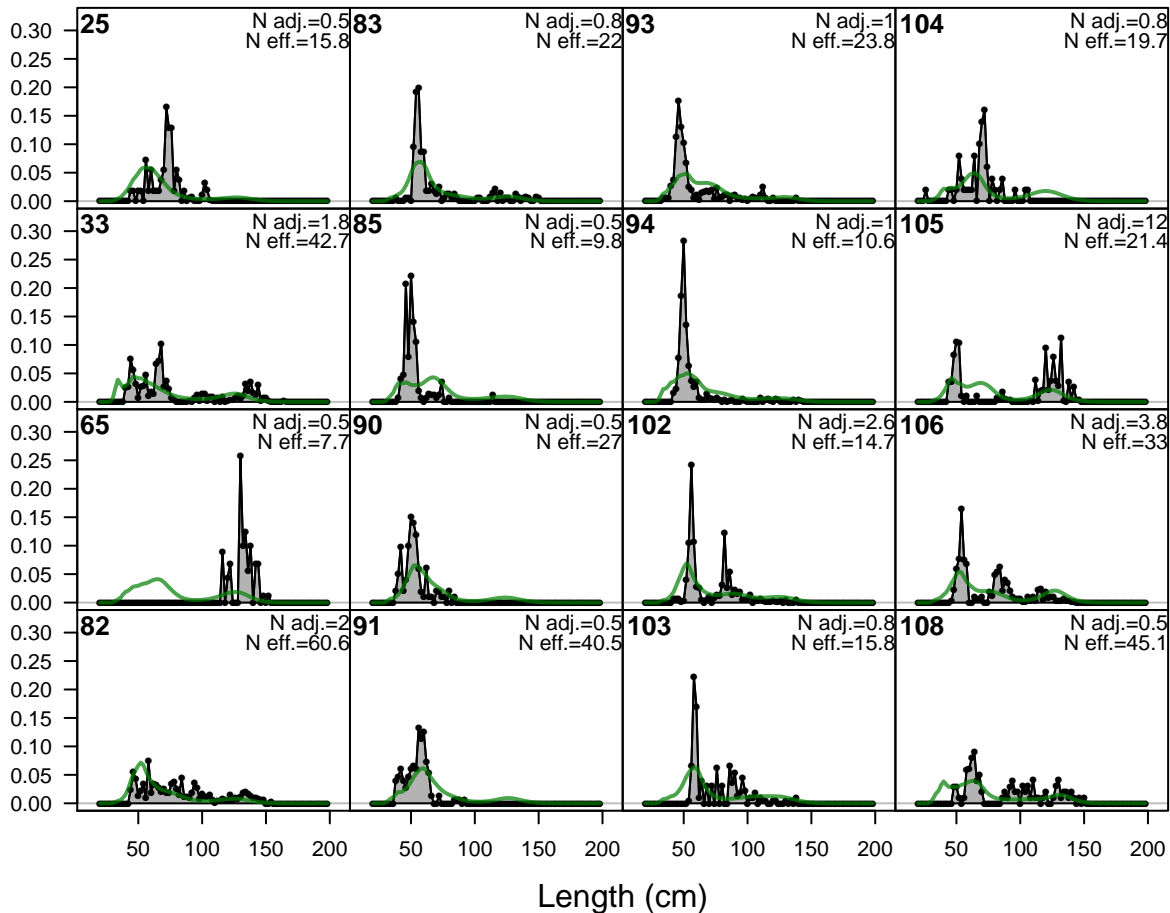




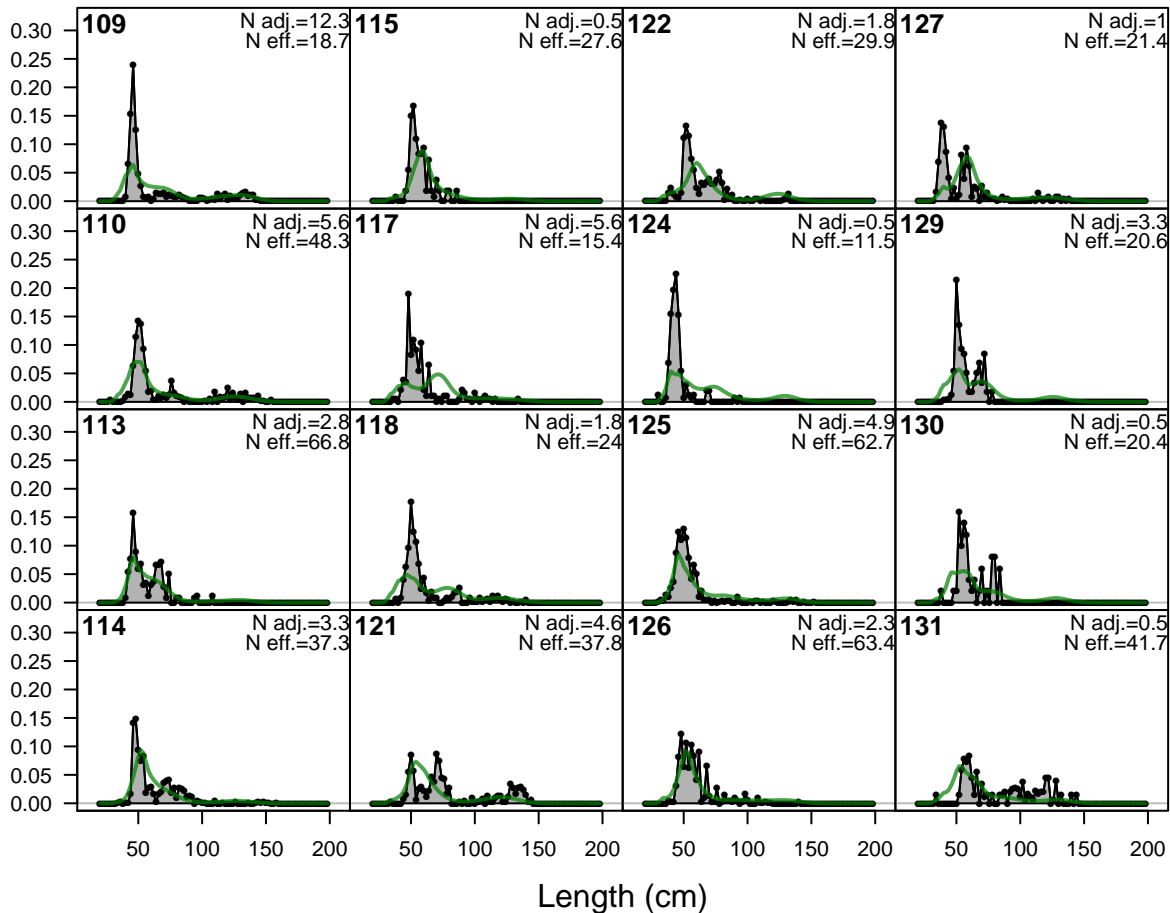
## A4-OBJ (whole catch)



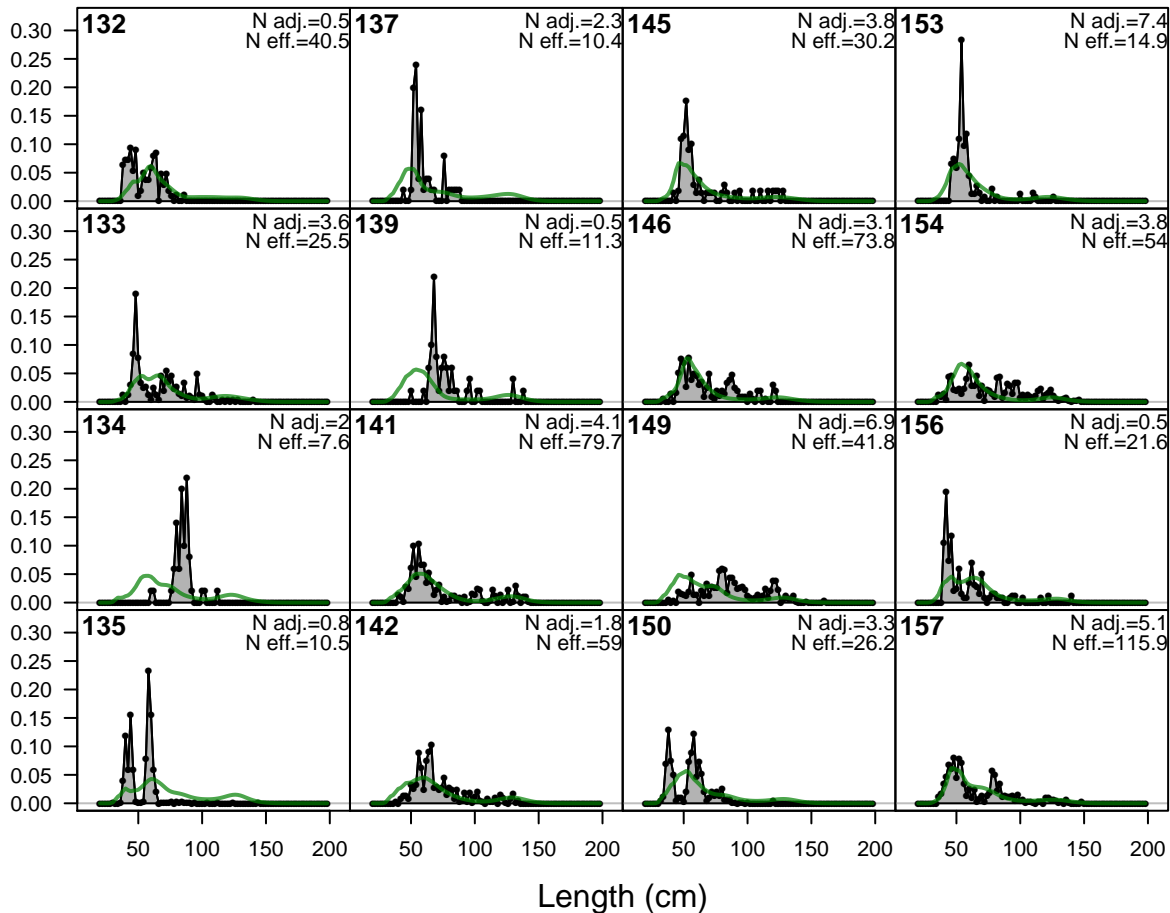
Proportion



Proportion

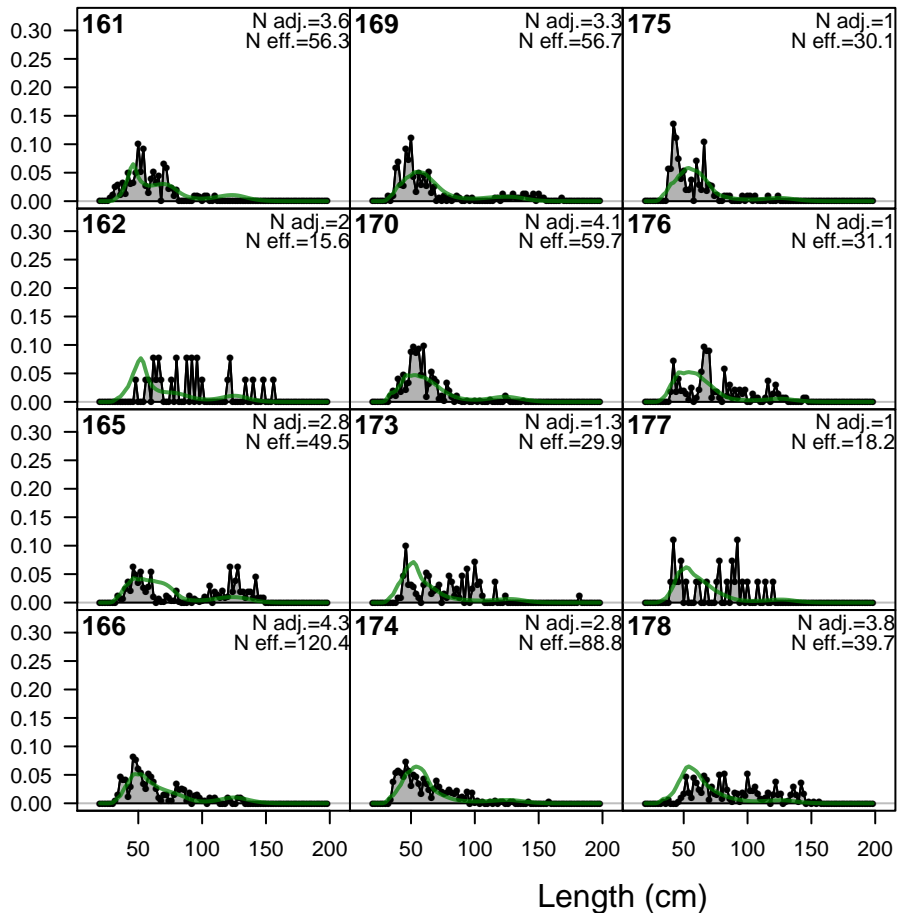


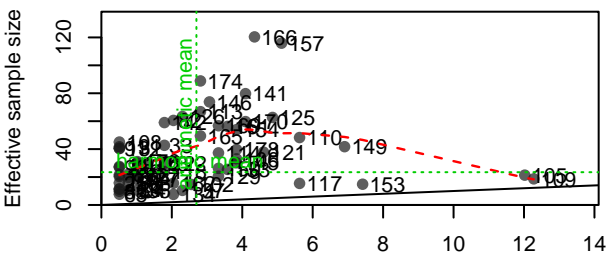
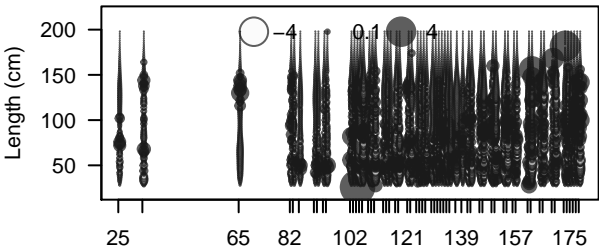
Proportion



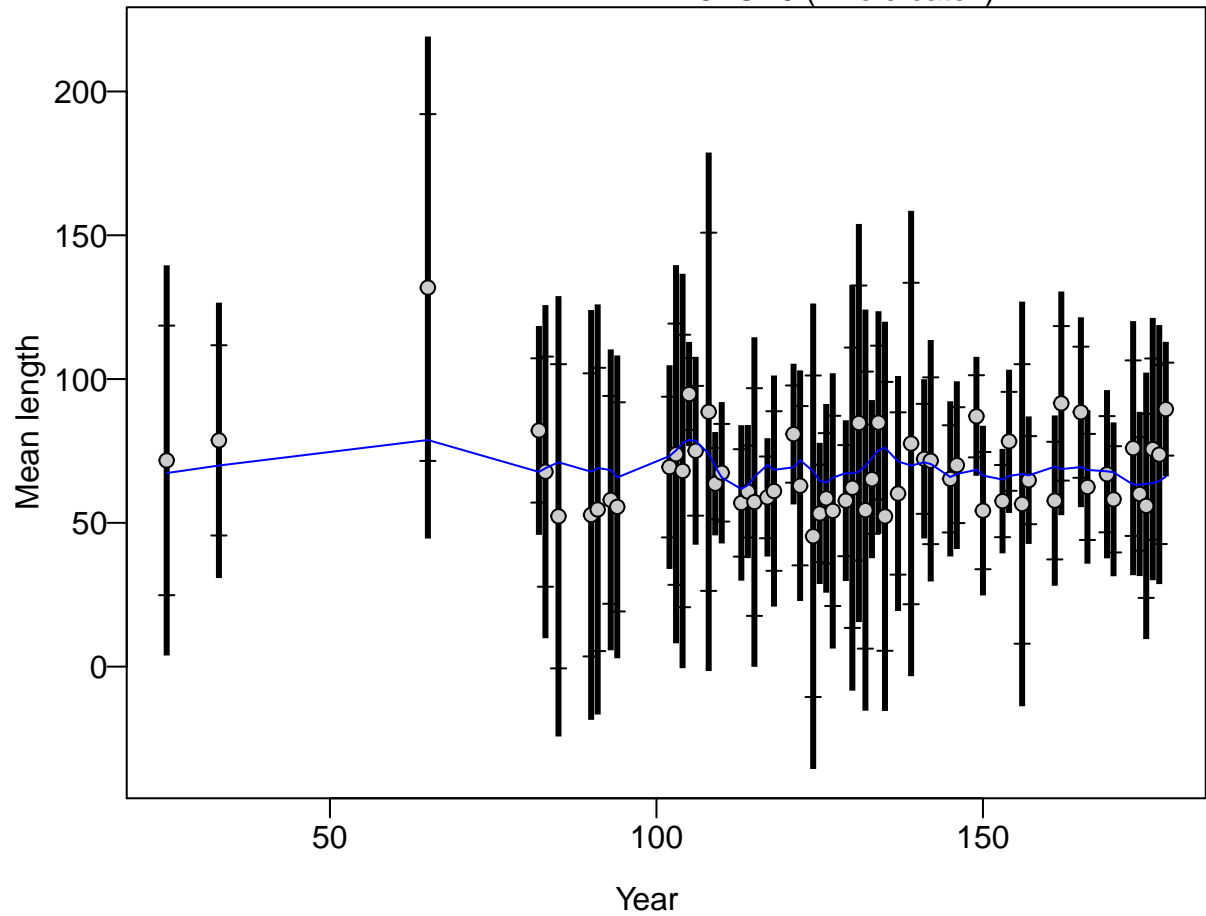


Proportion

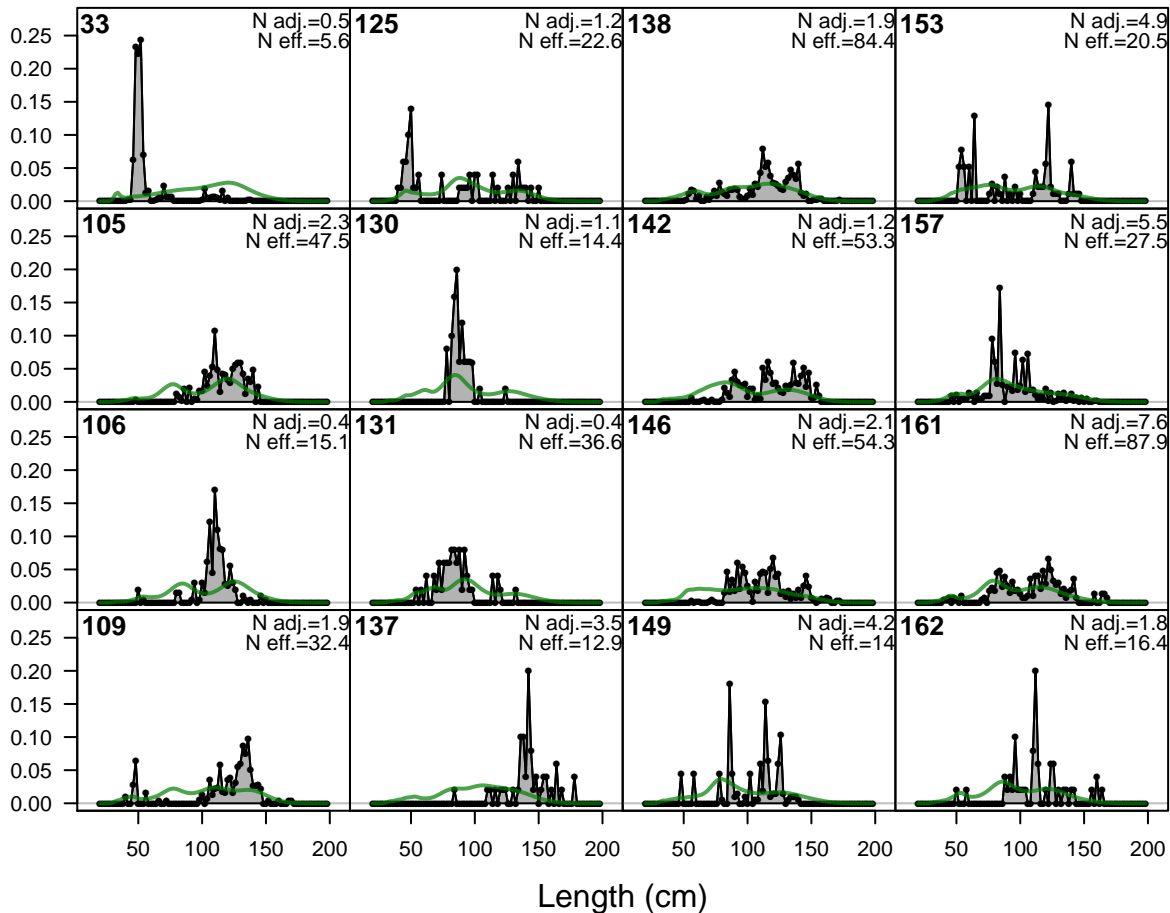




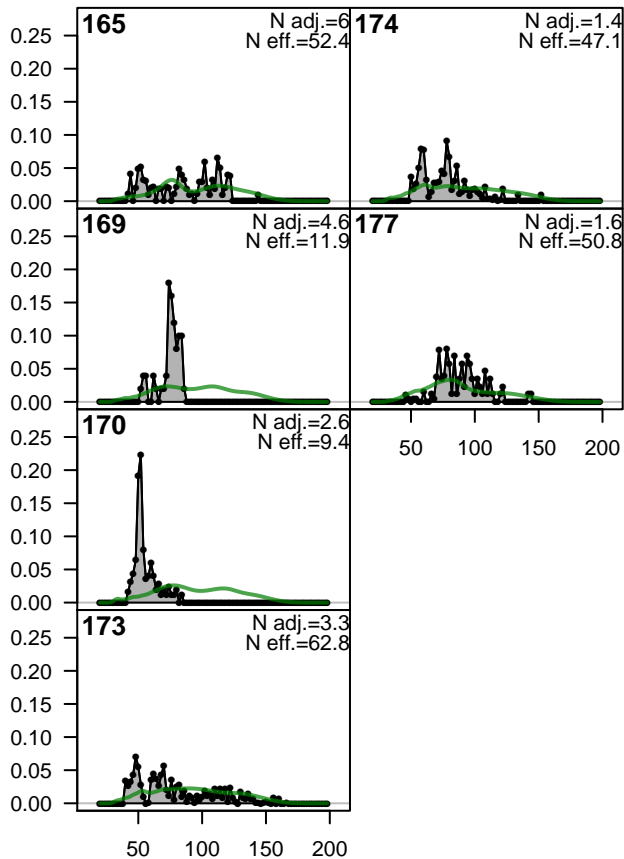
## A5-OBJ (whole catch)



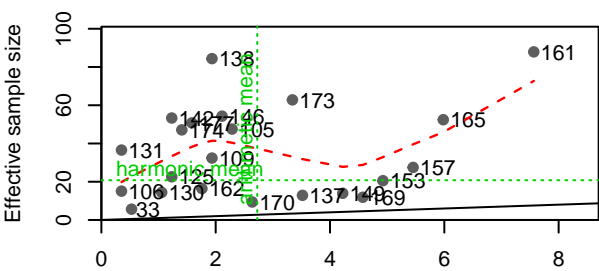
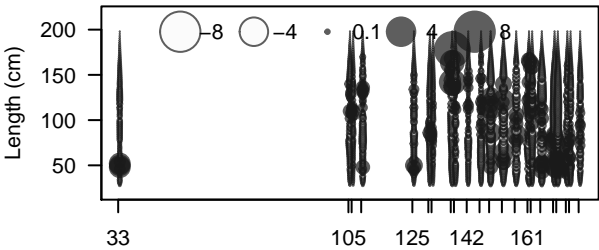
Proportion



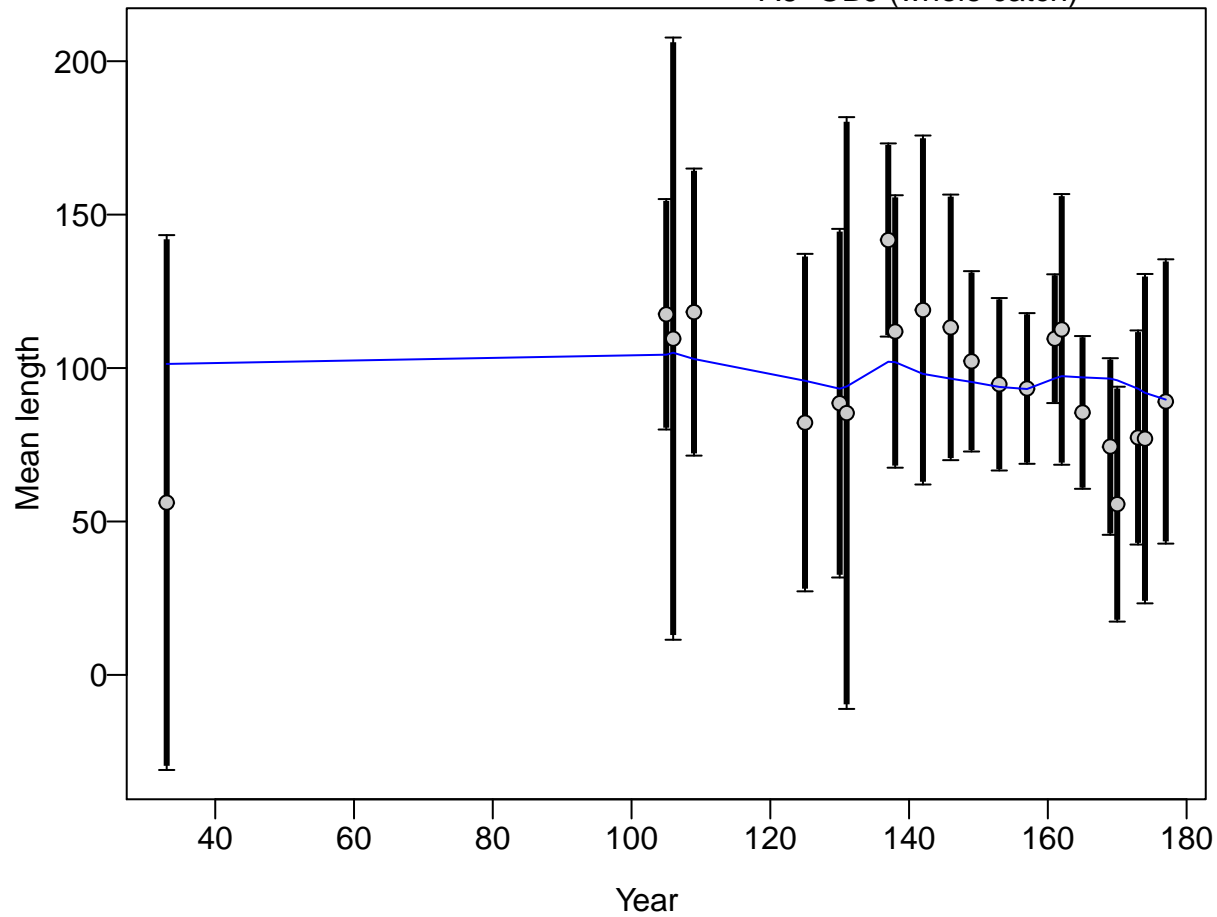
Proportion



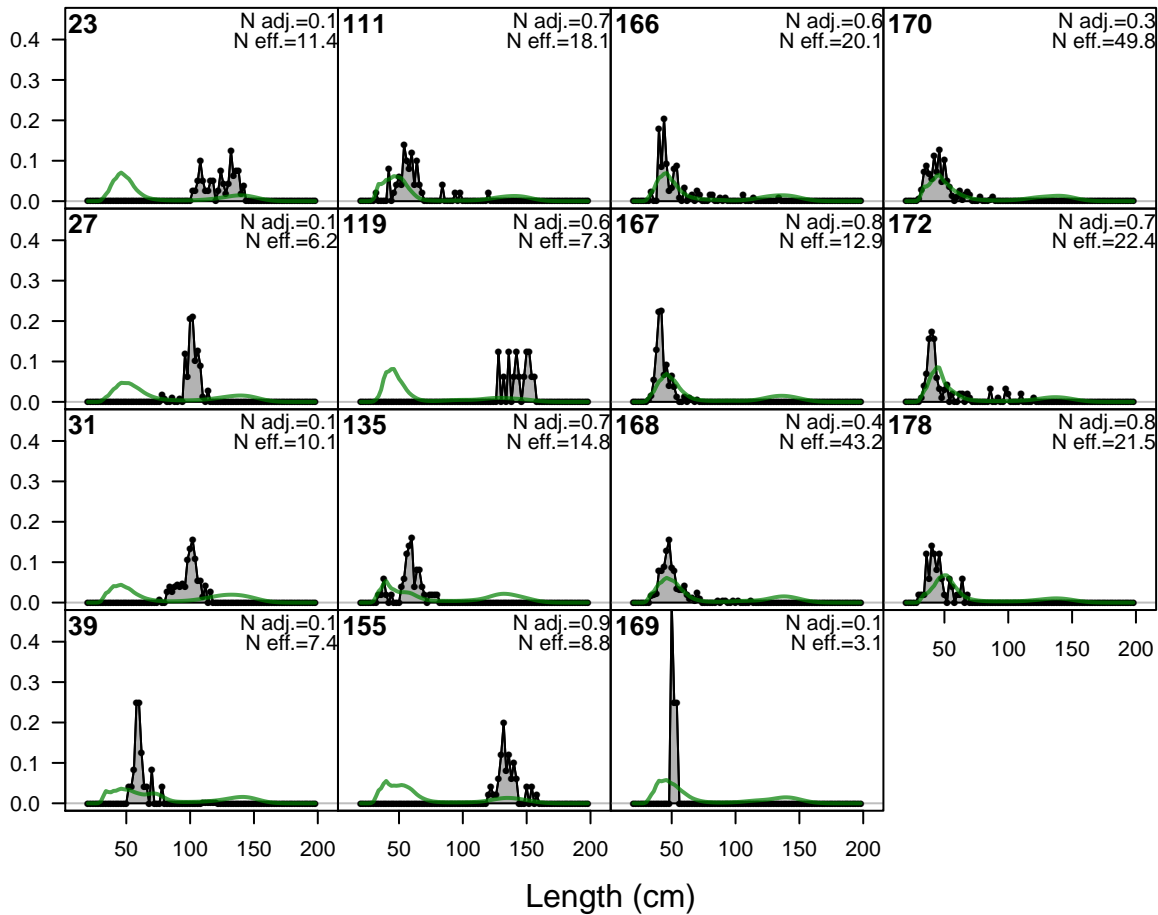
Length (cm)



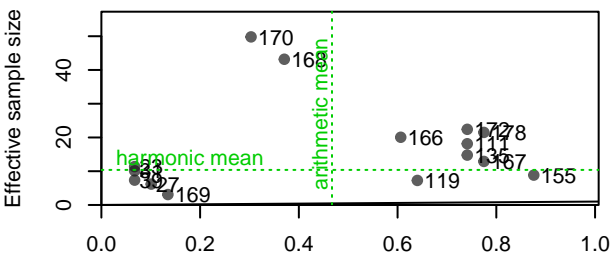
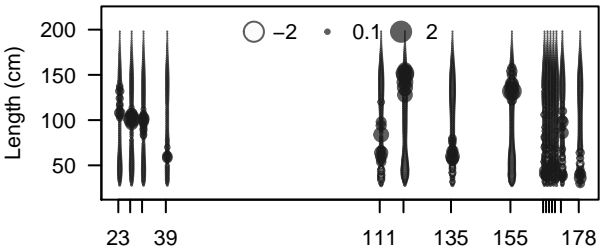
## A6-OBJ (whole catch)



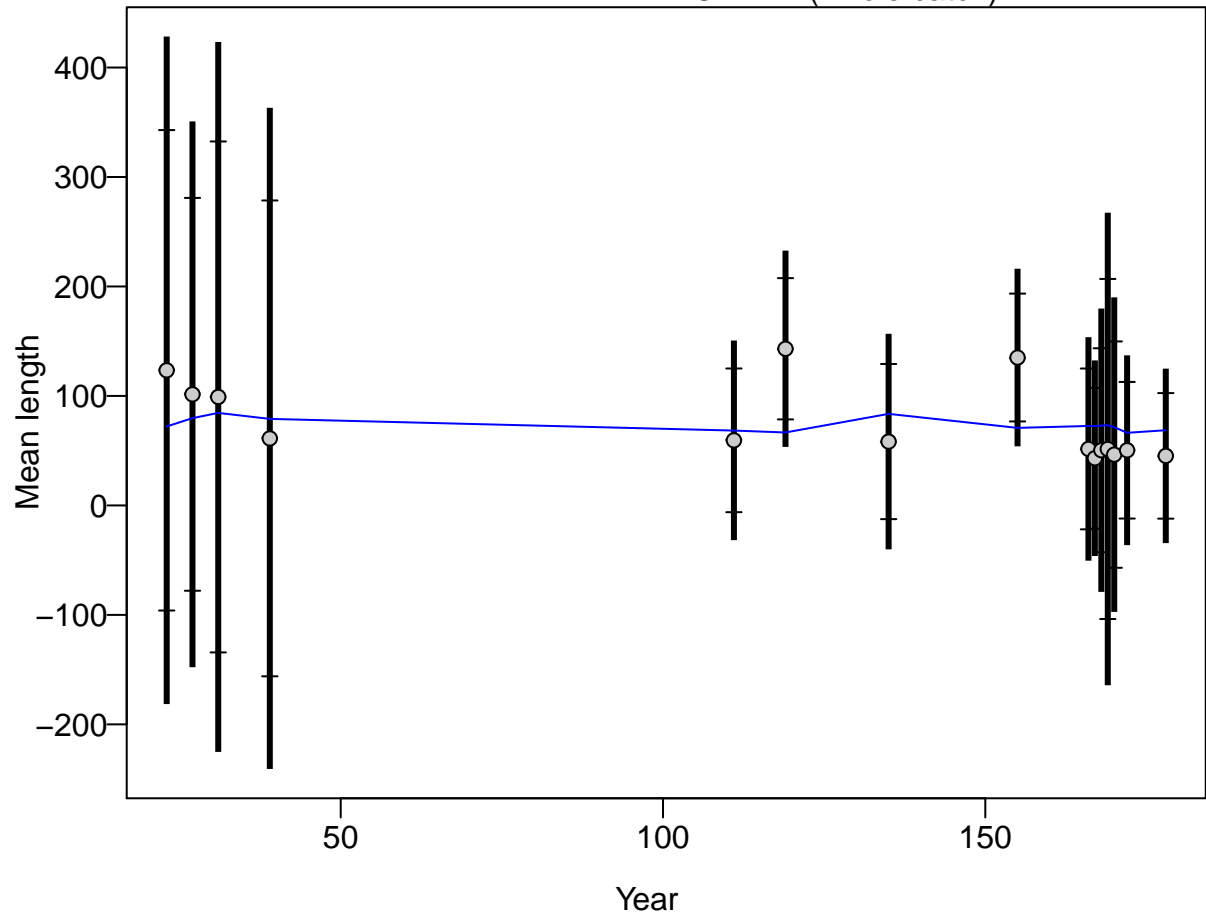
Proportion



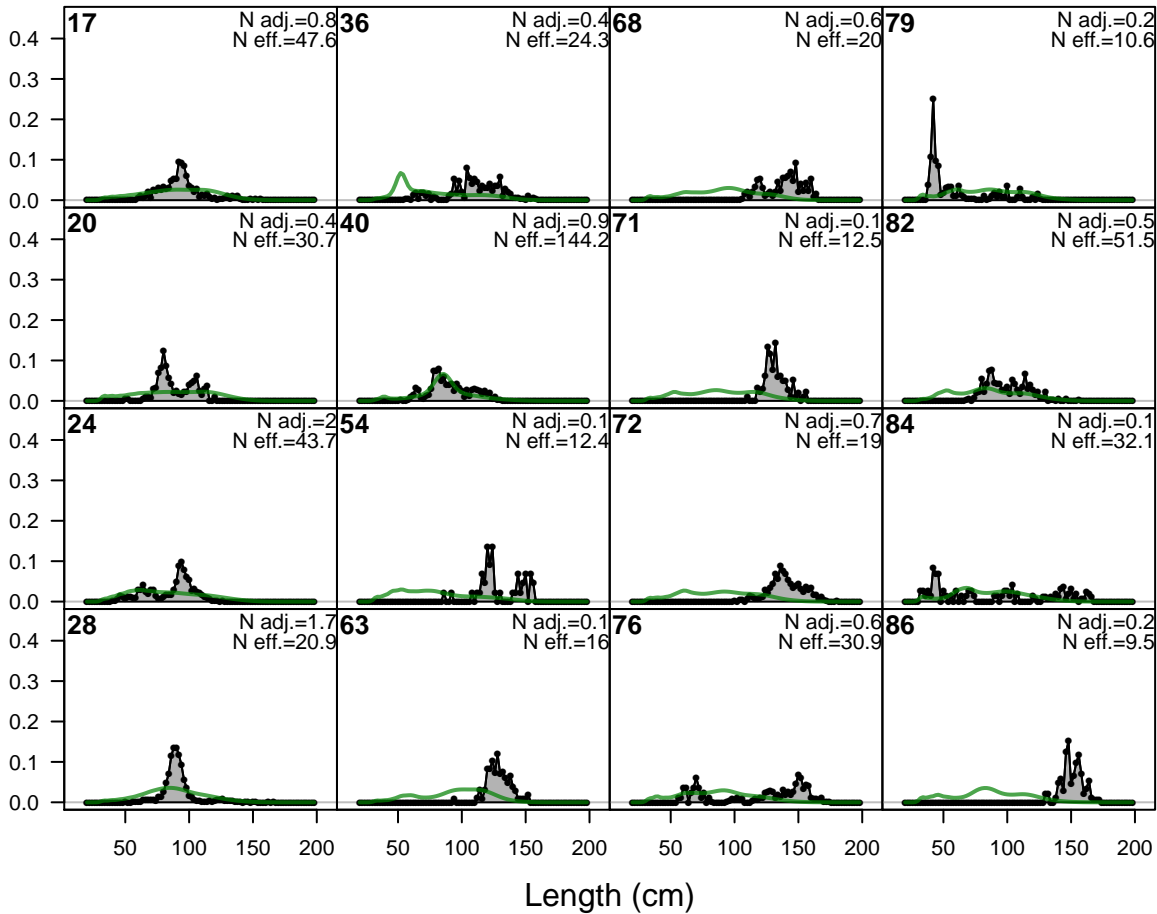




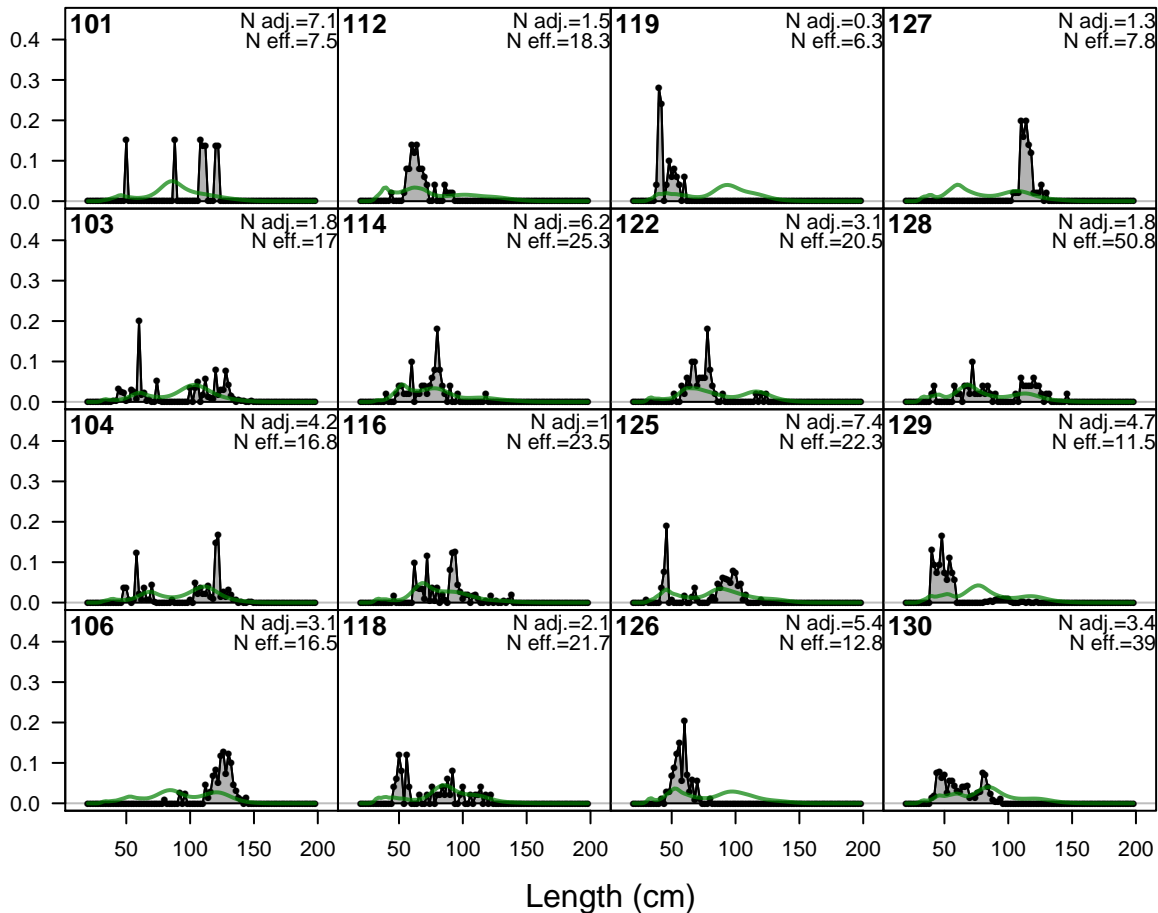
## A2-NOADEL (whole catch)



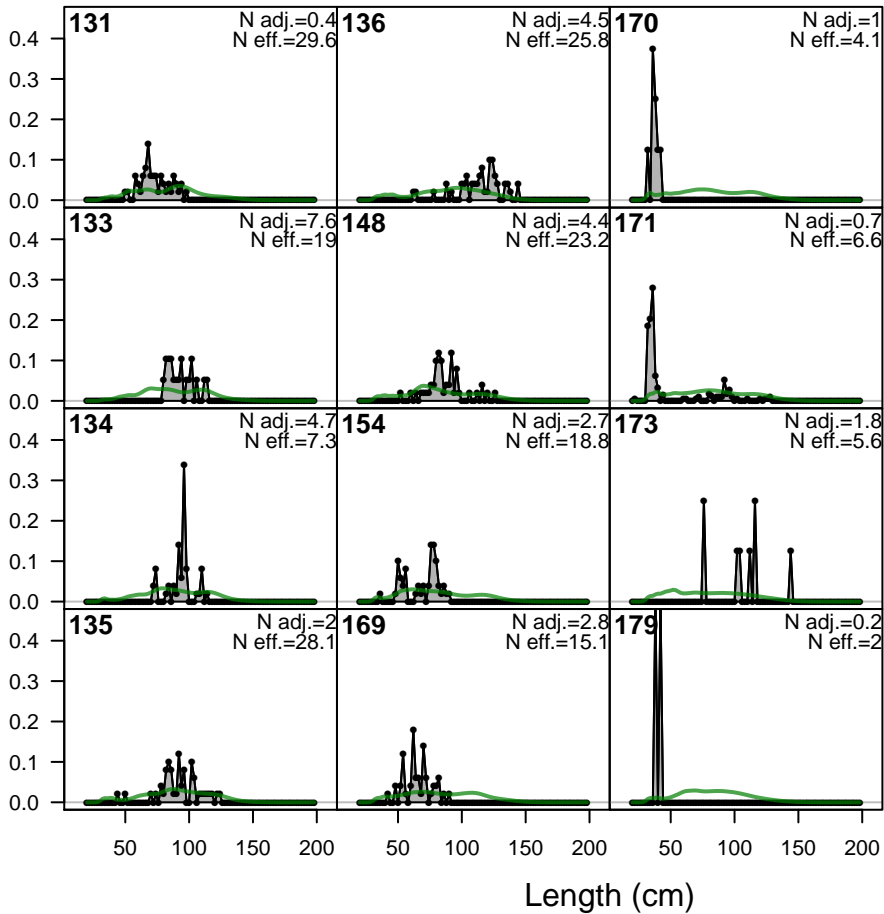
Proportion

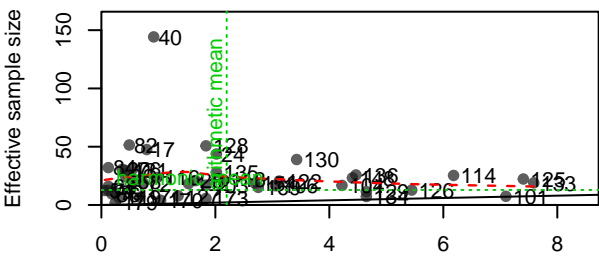
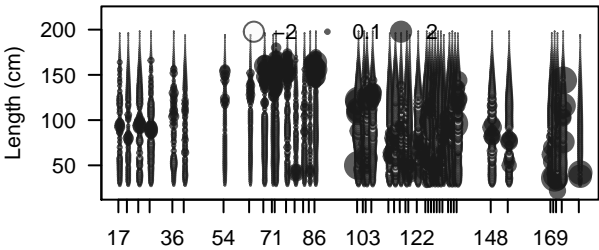


Proportion

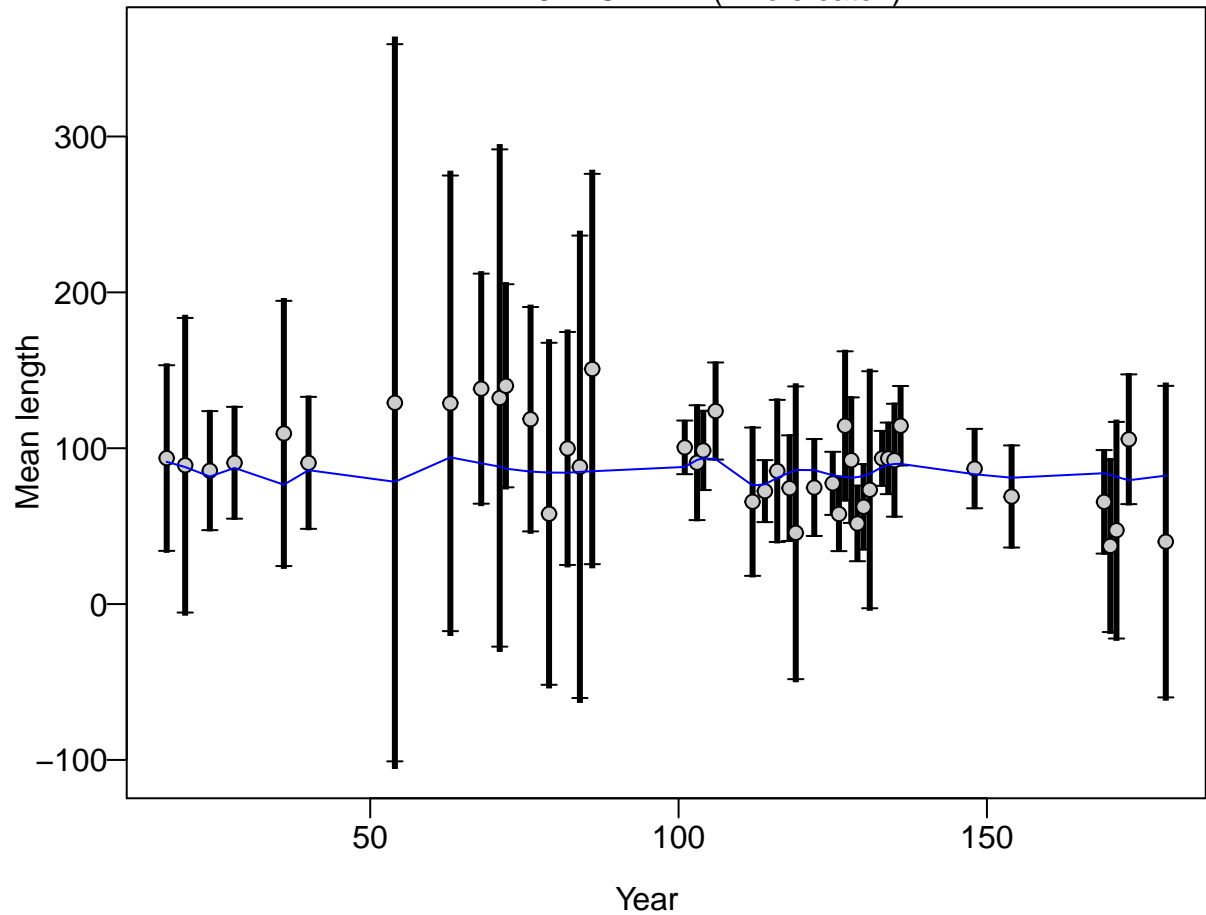


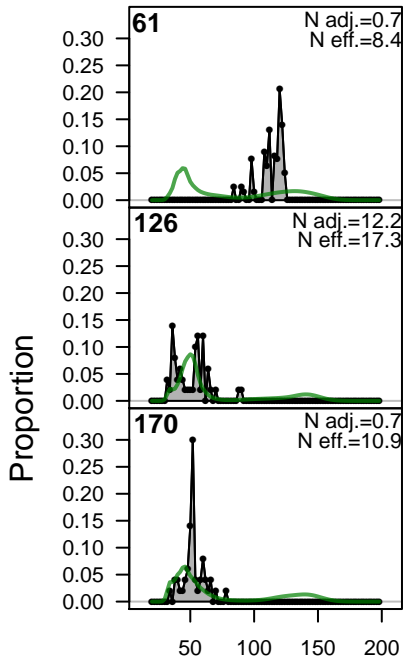
Proportion





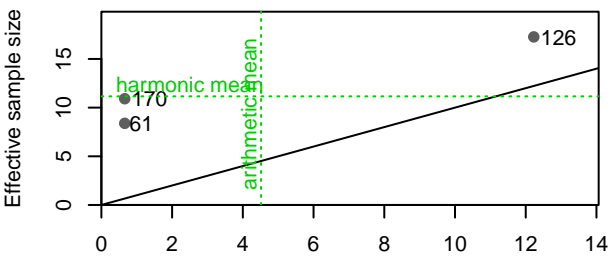
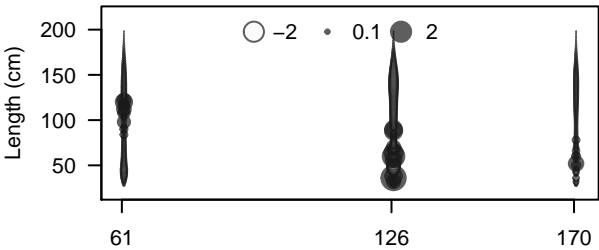
A3-NOADEL (whole catch)



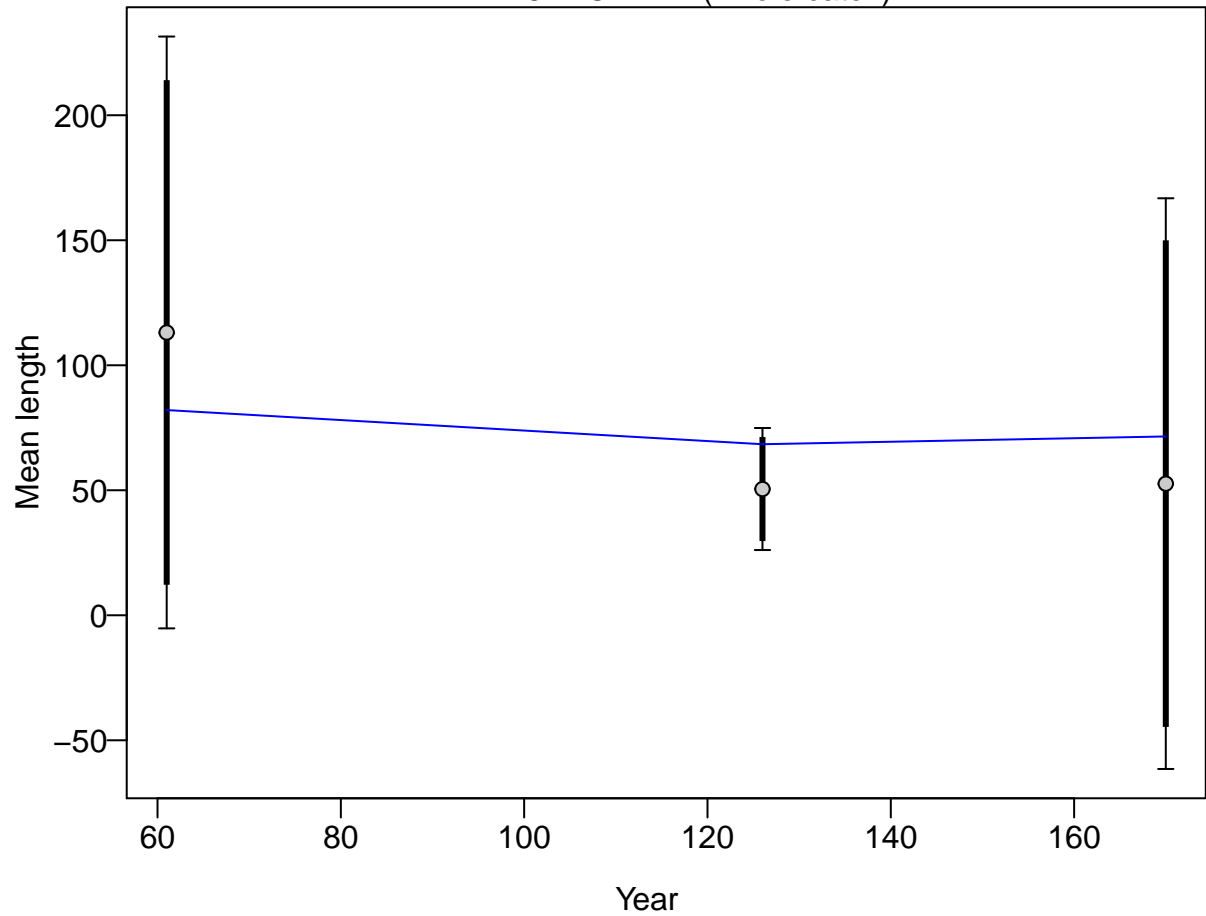


Length (cm)

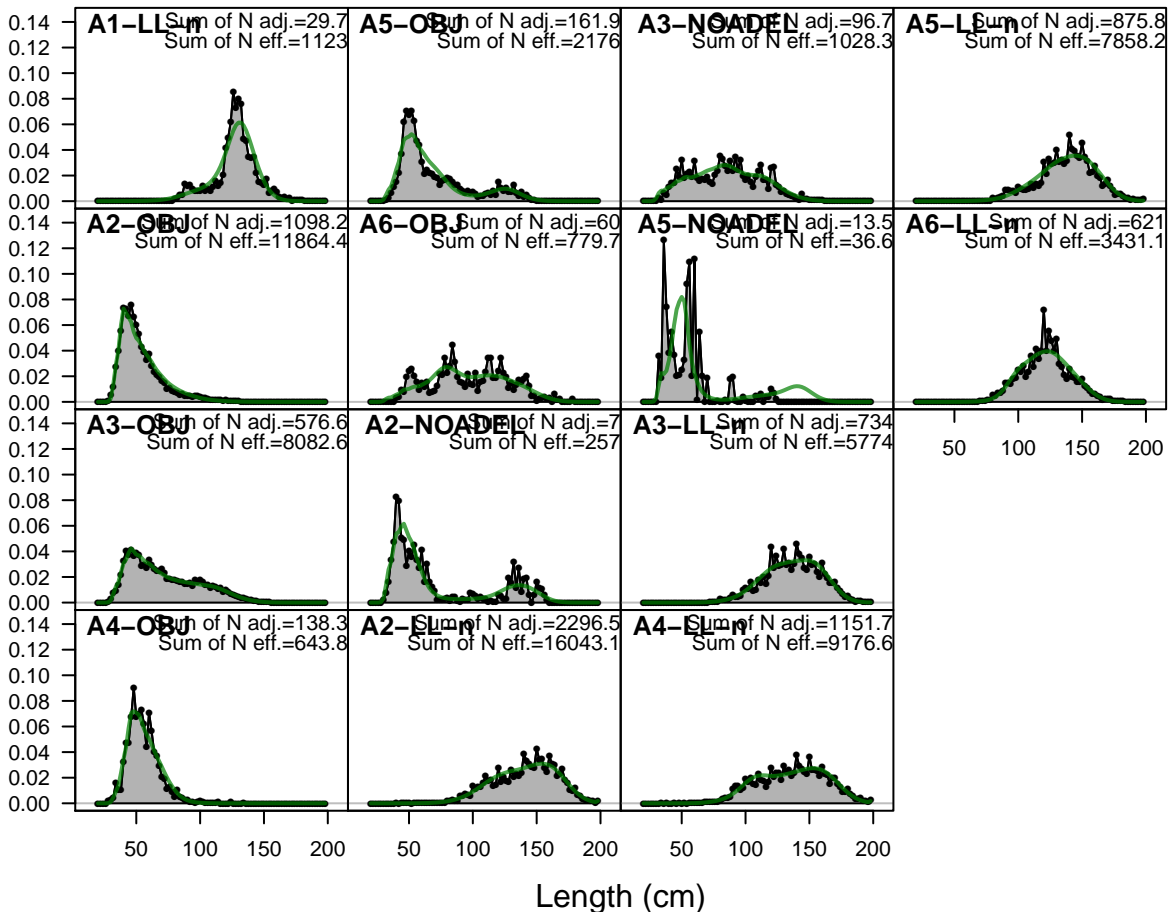




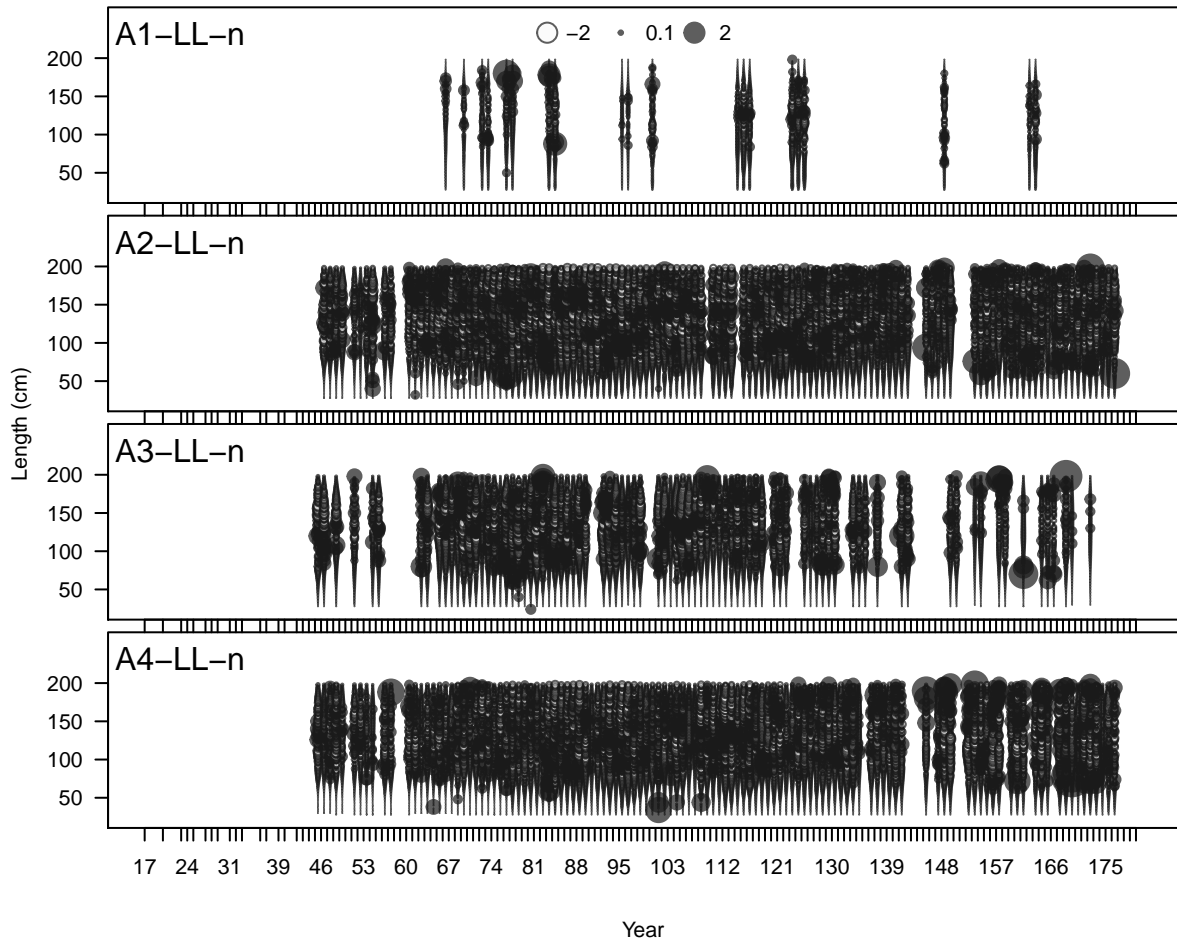
A5-NOADEL (whole catch)

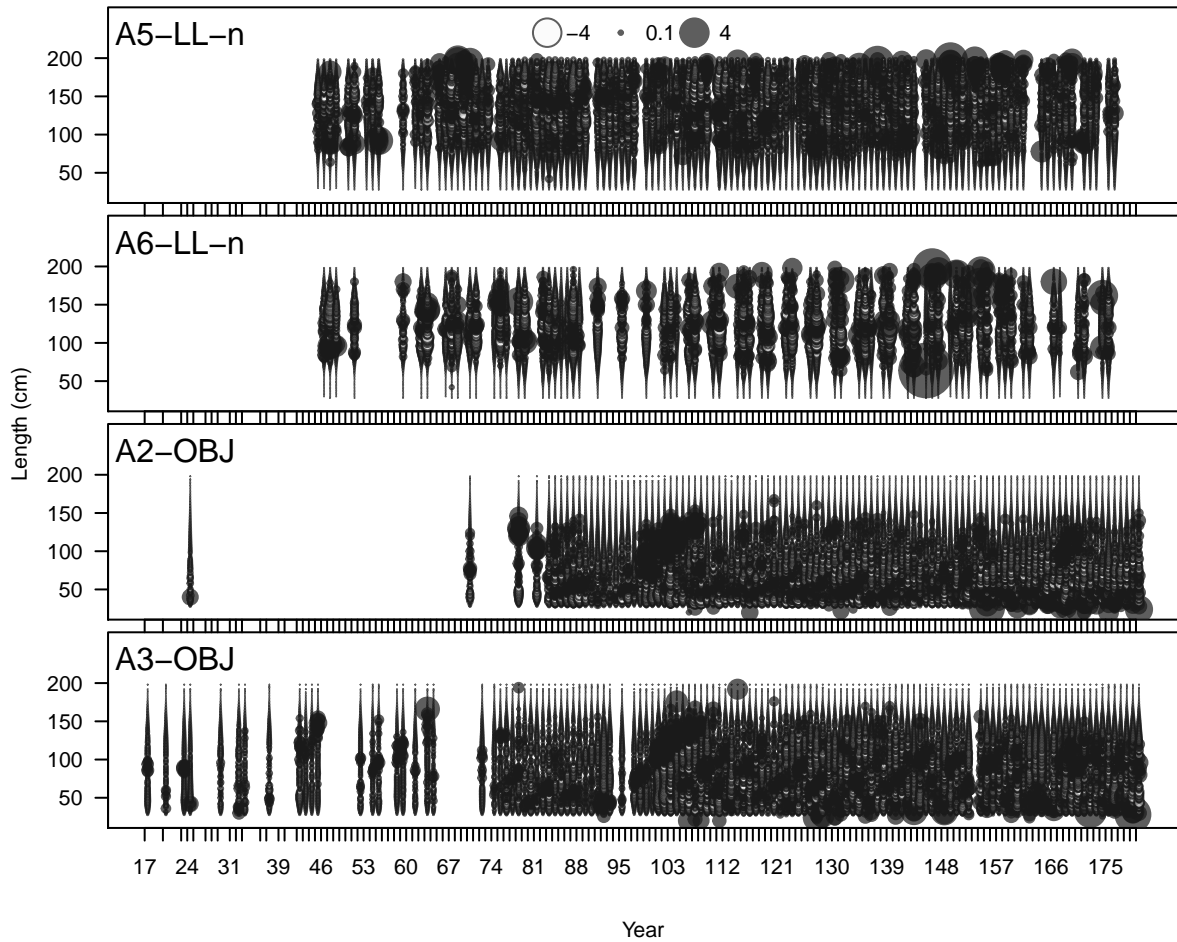


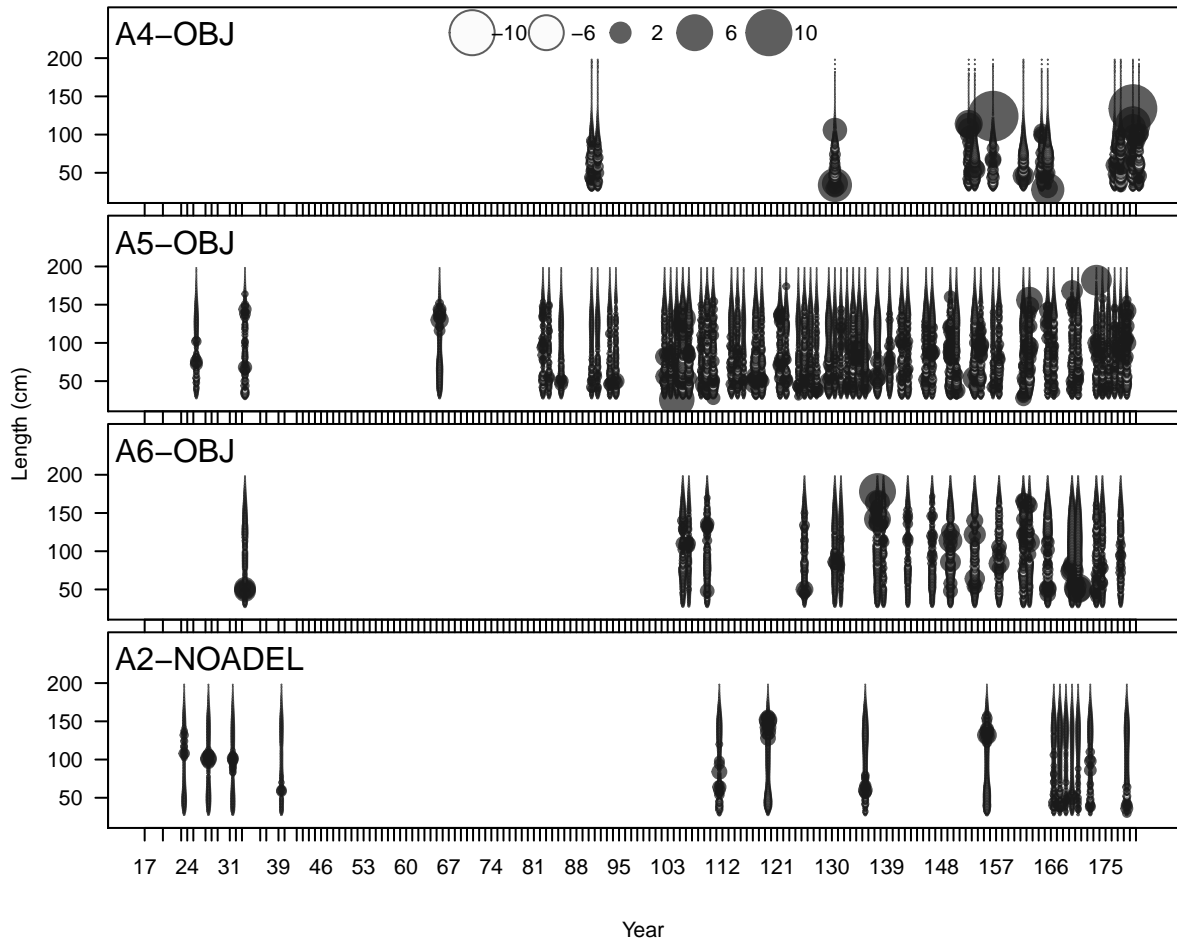
Proportion

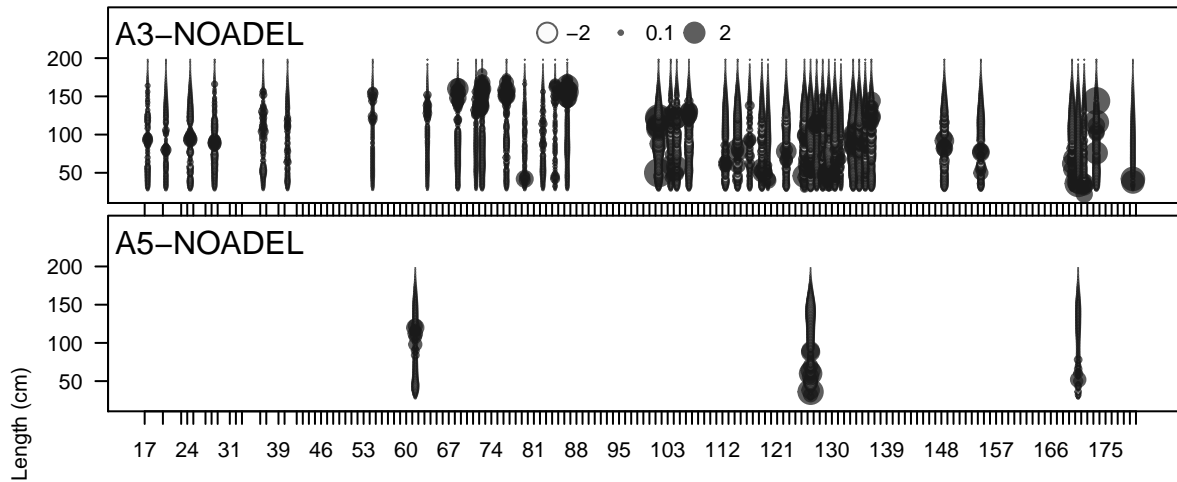


Length (cm)



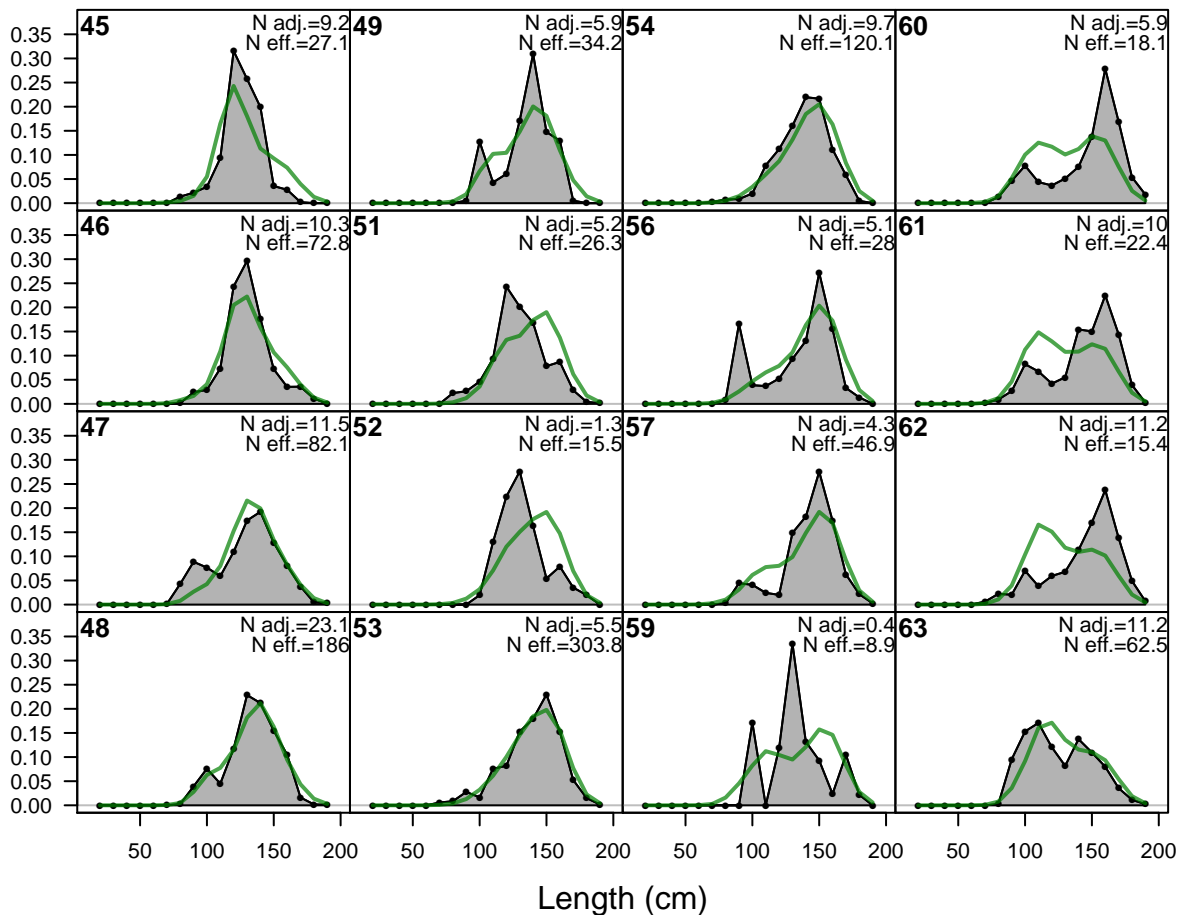






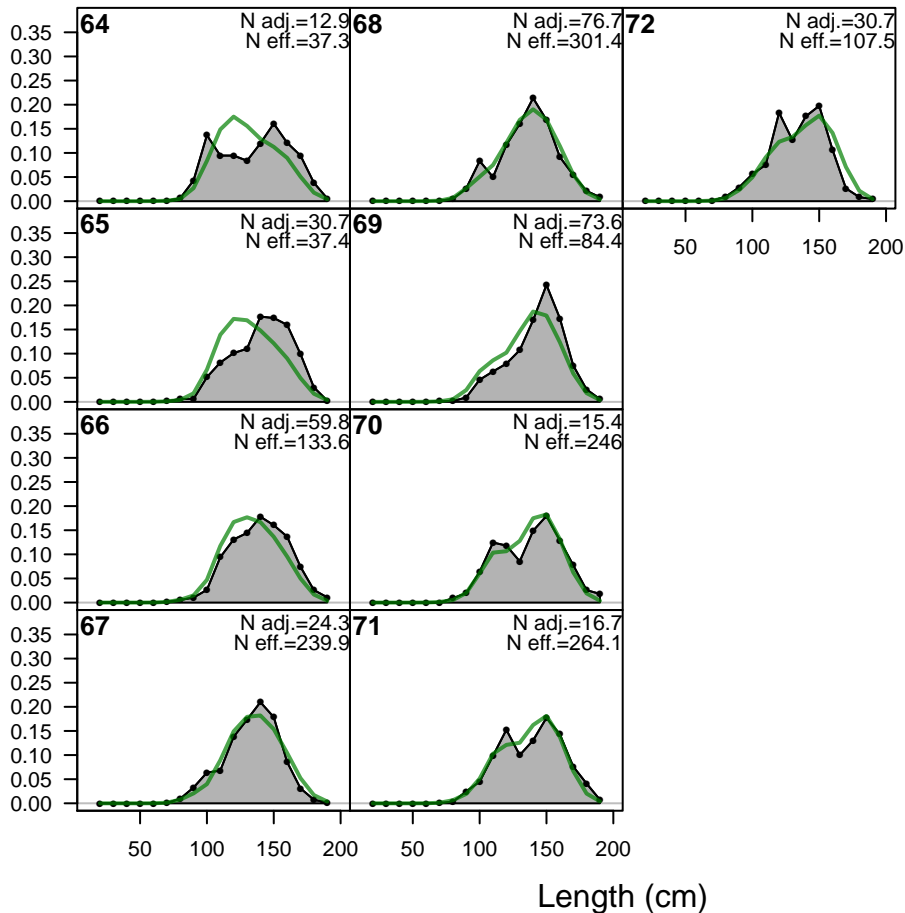
Year

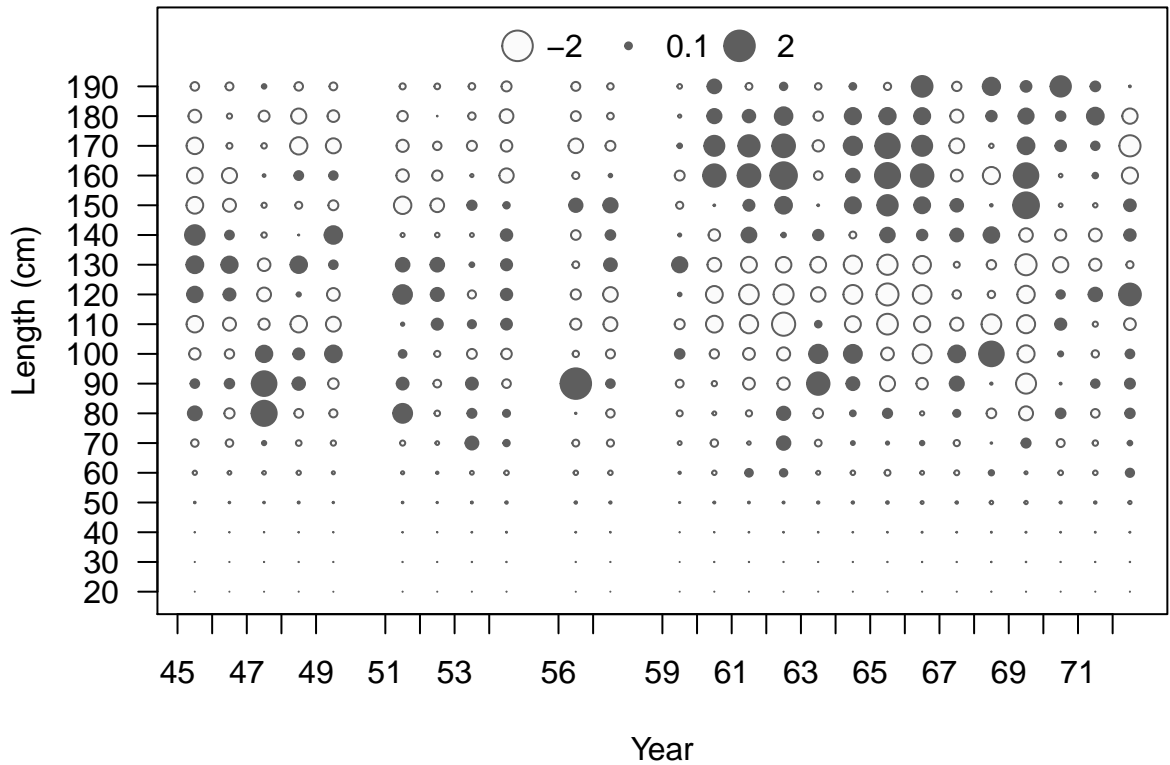
Proportion

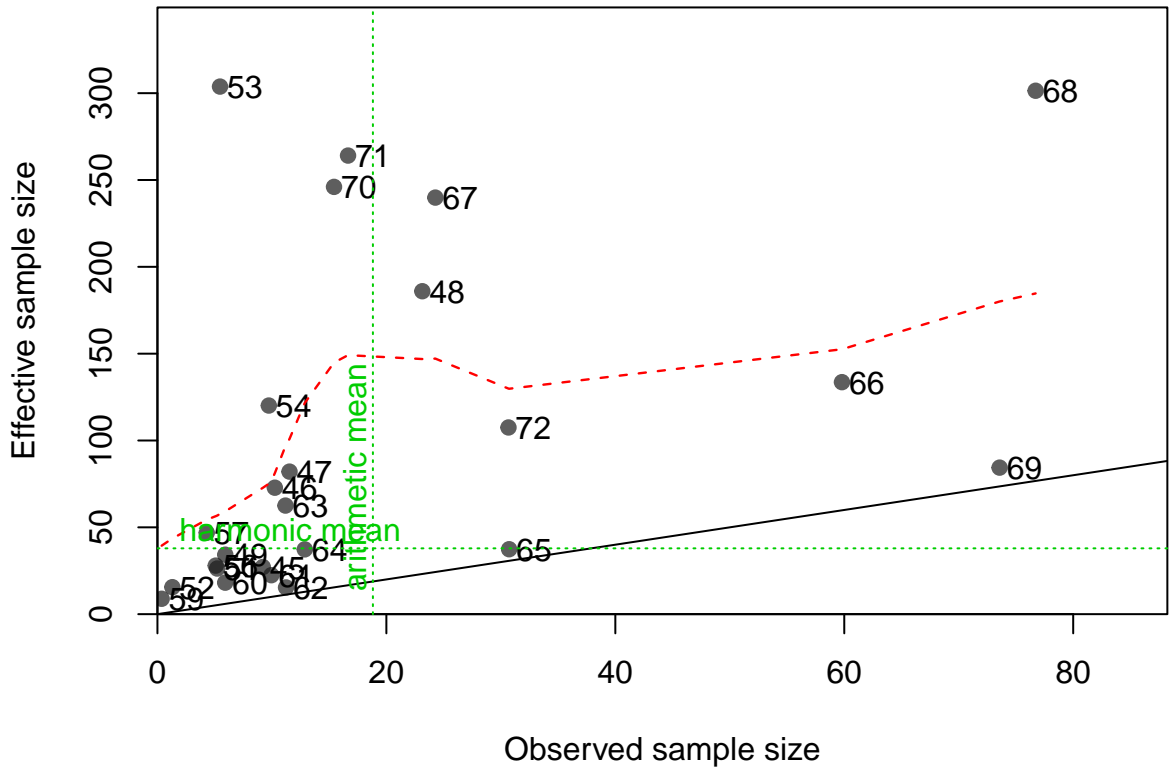




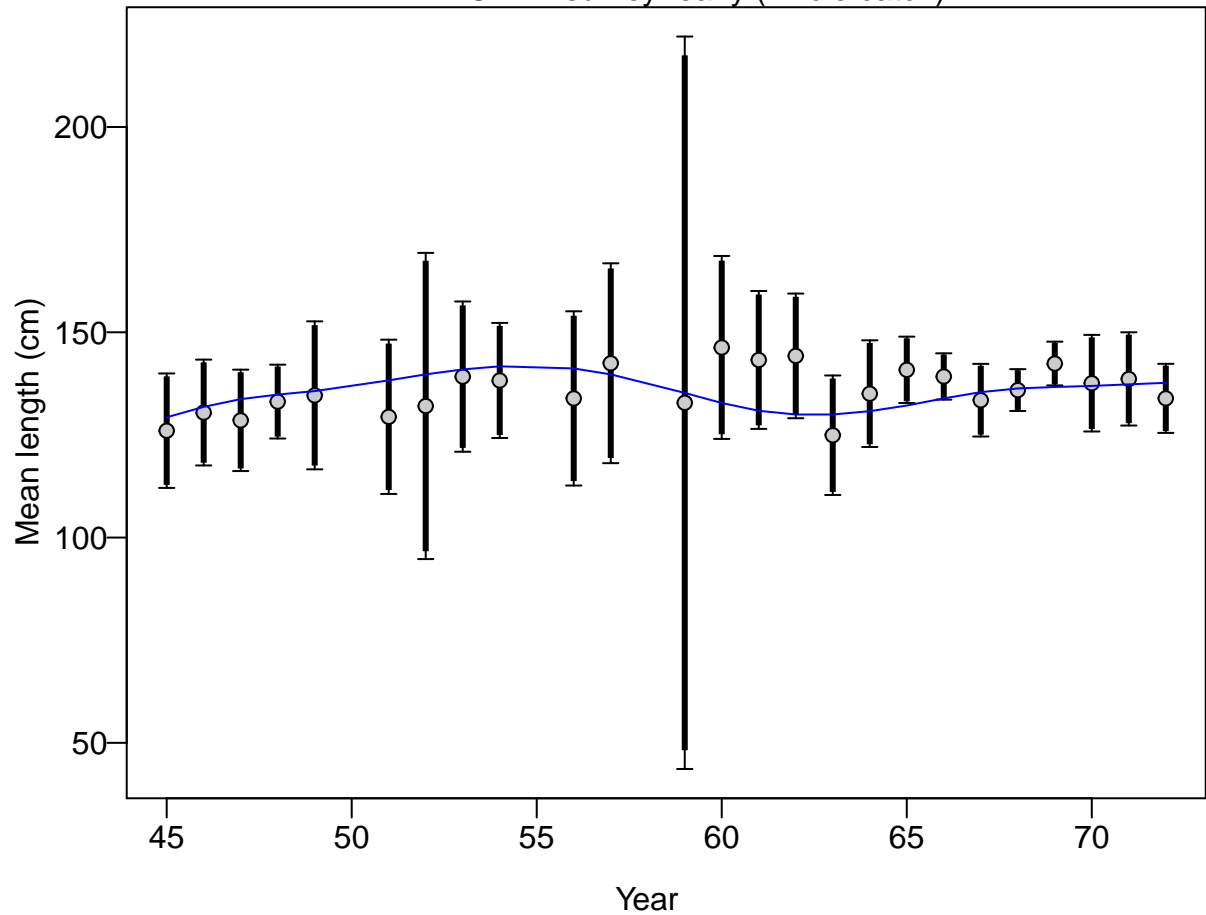
Proportion



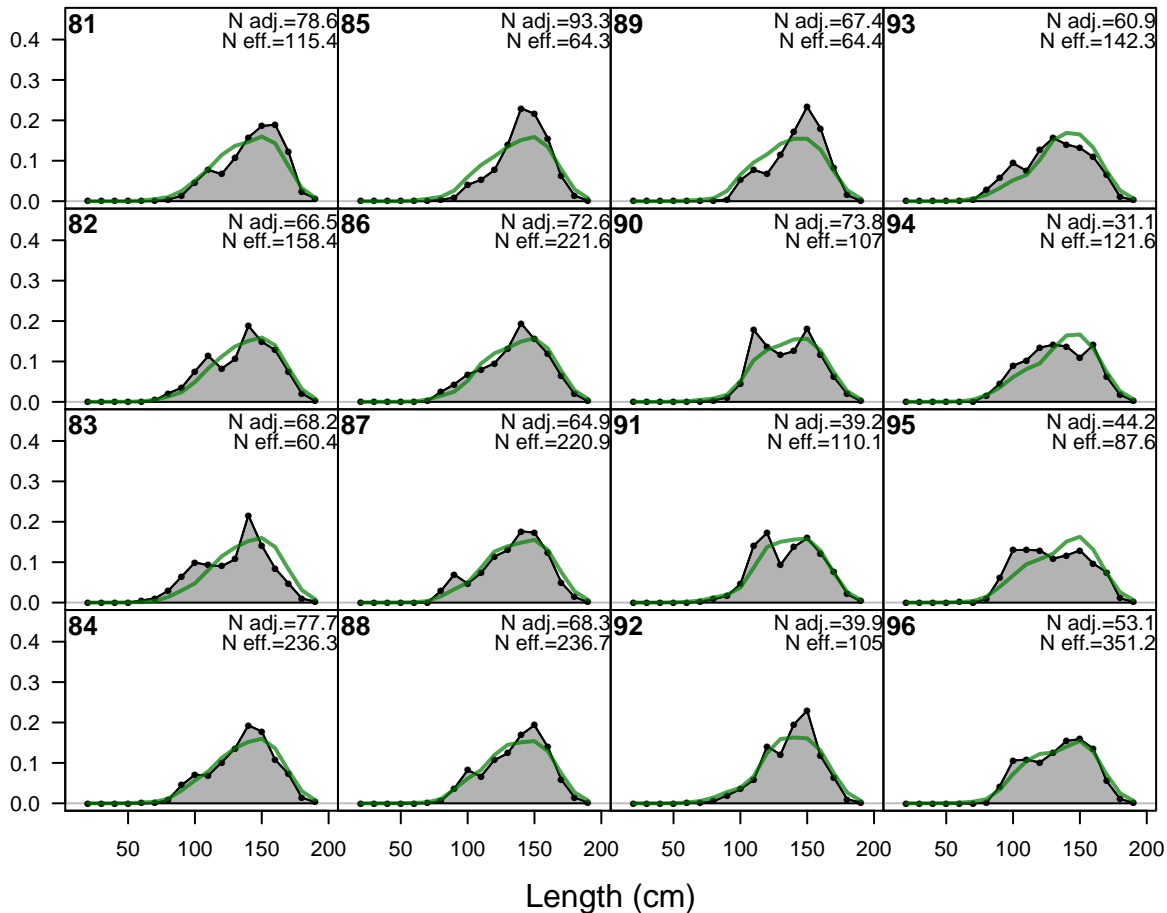




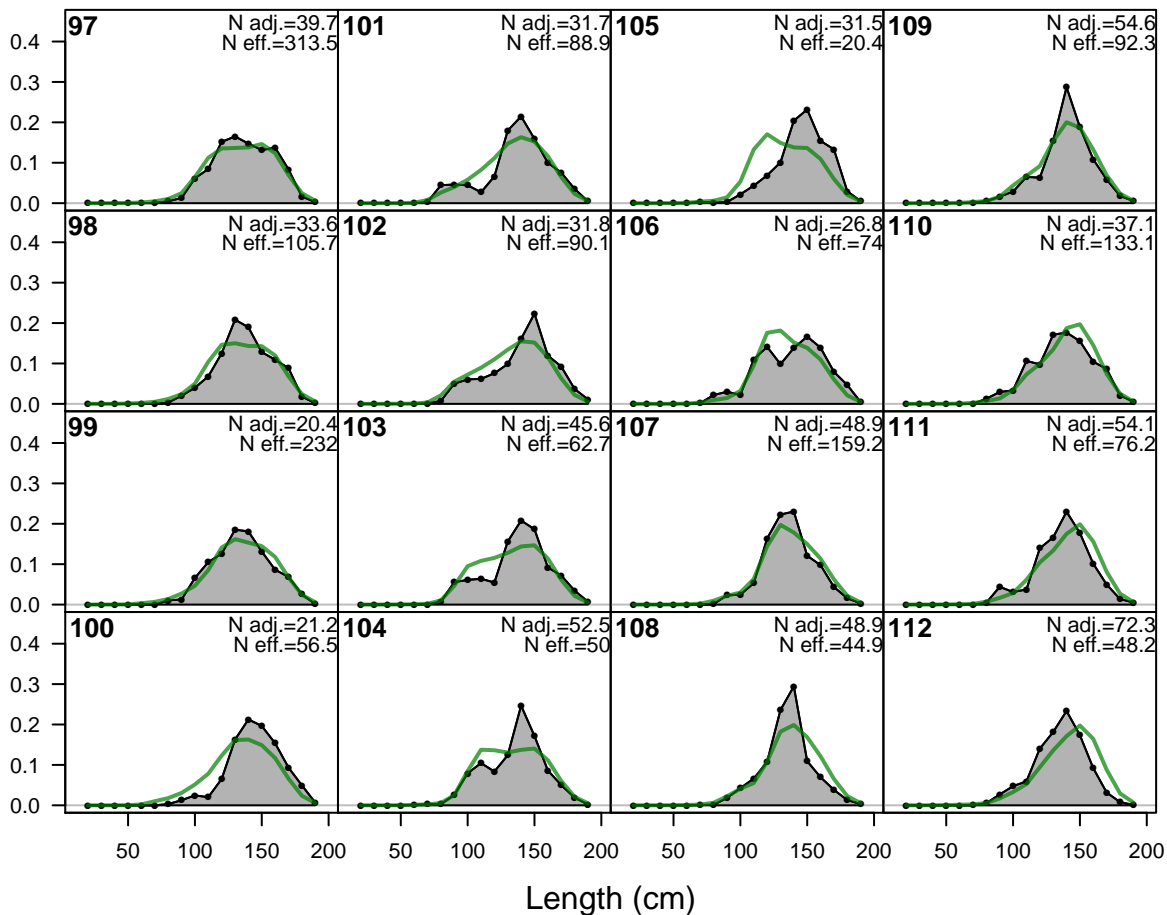
EPO-LL-survey-early (whole catch)



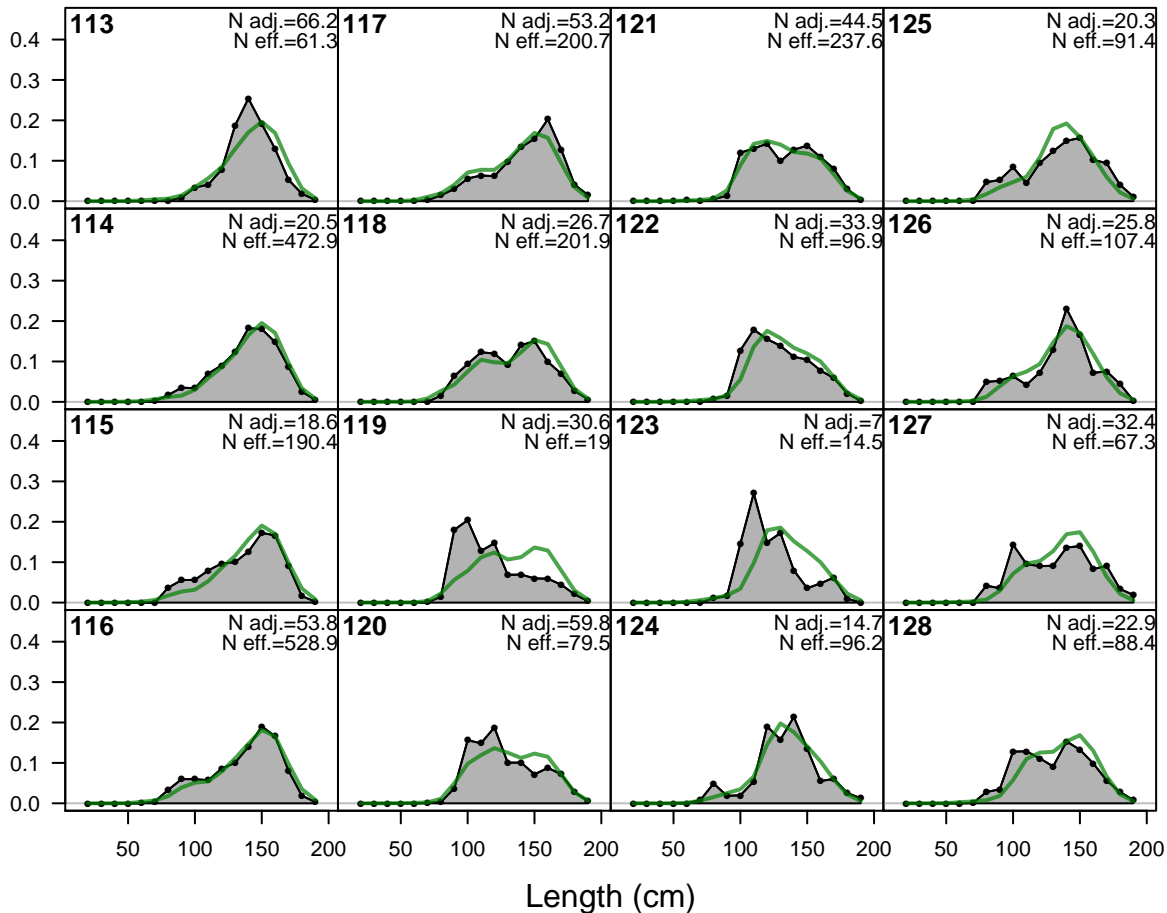
Proportion



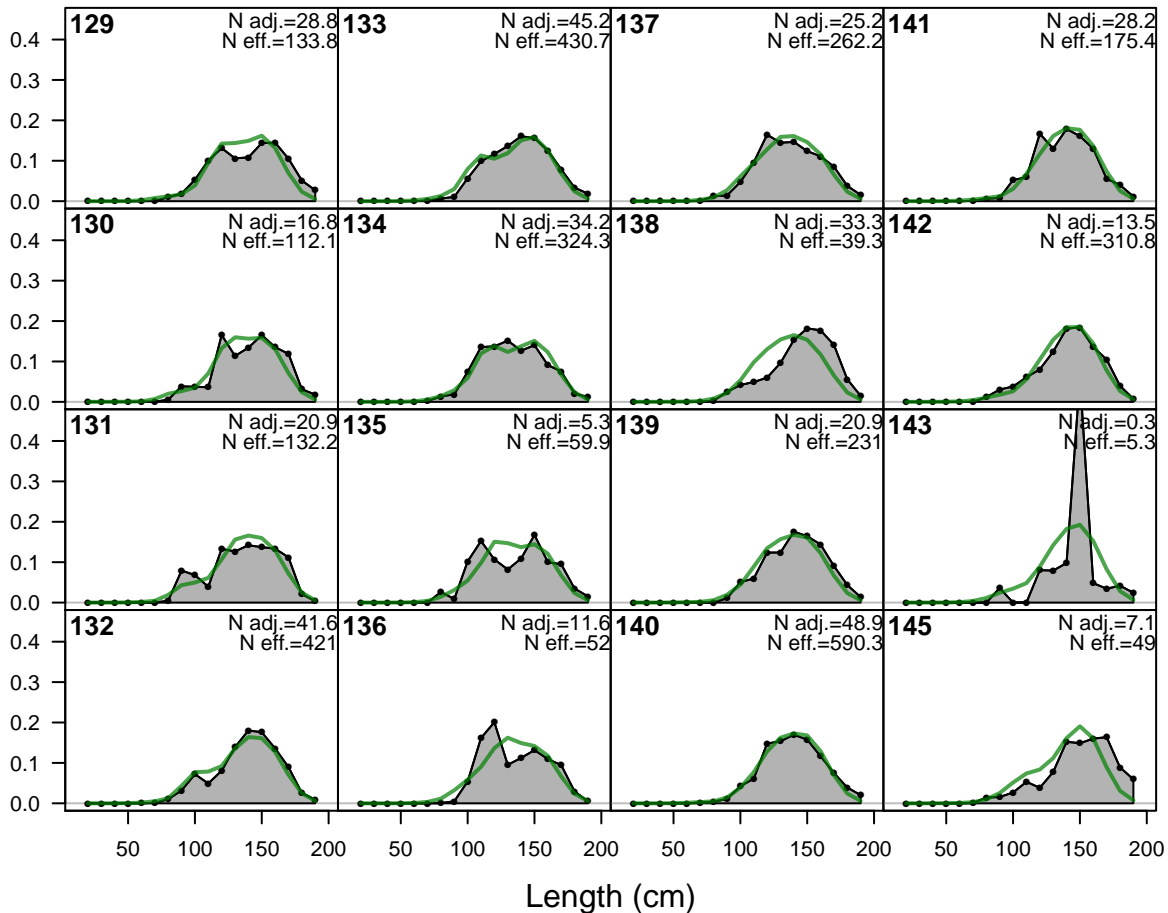
Proportion



Proportion

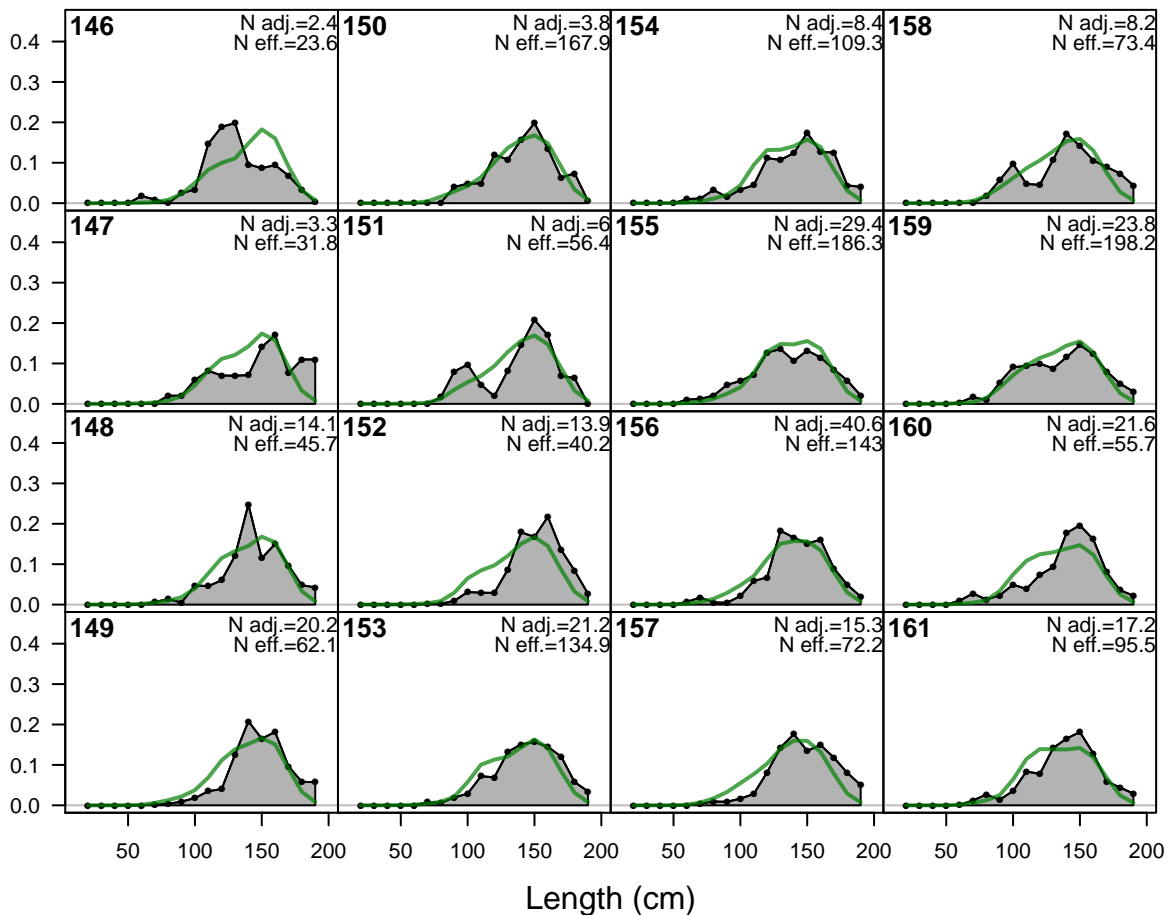


Proportion

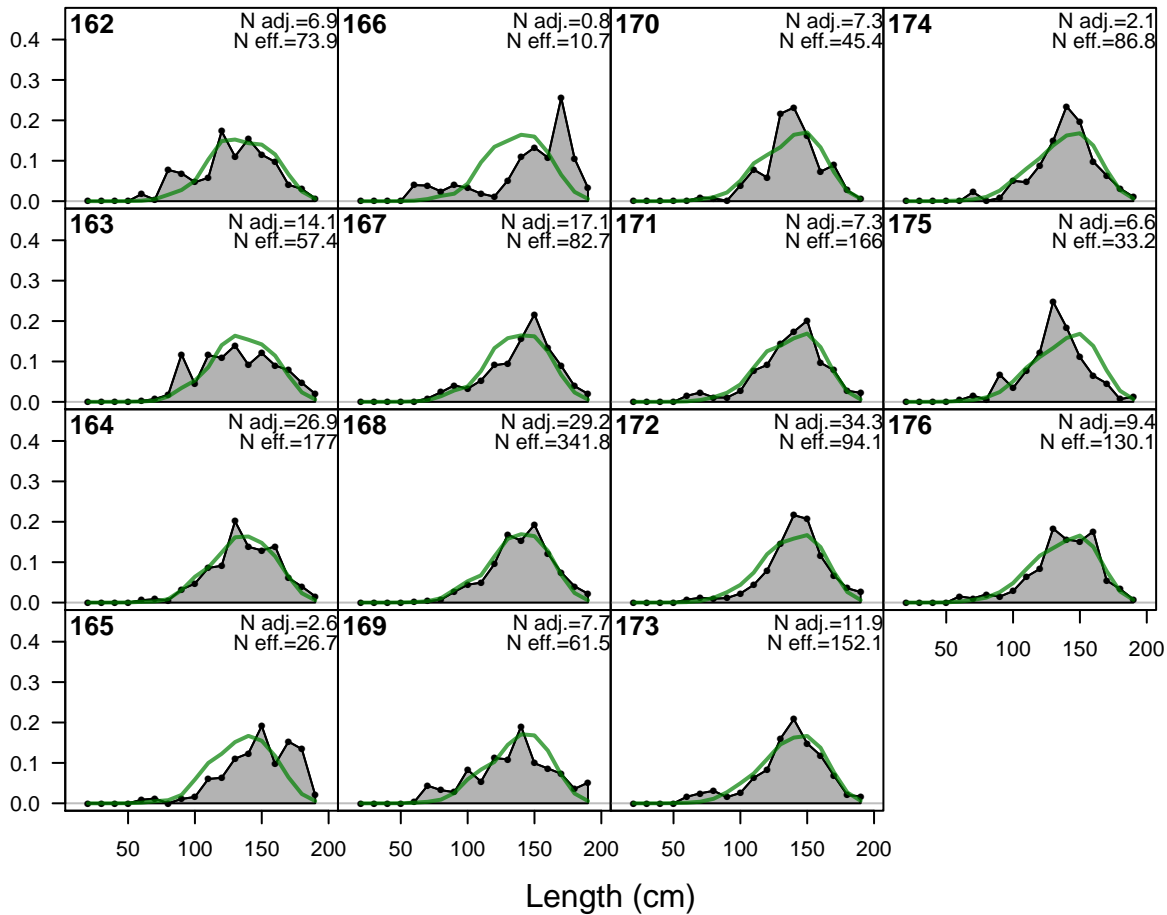


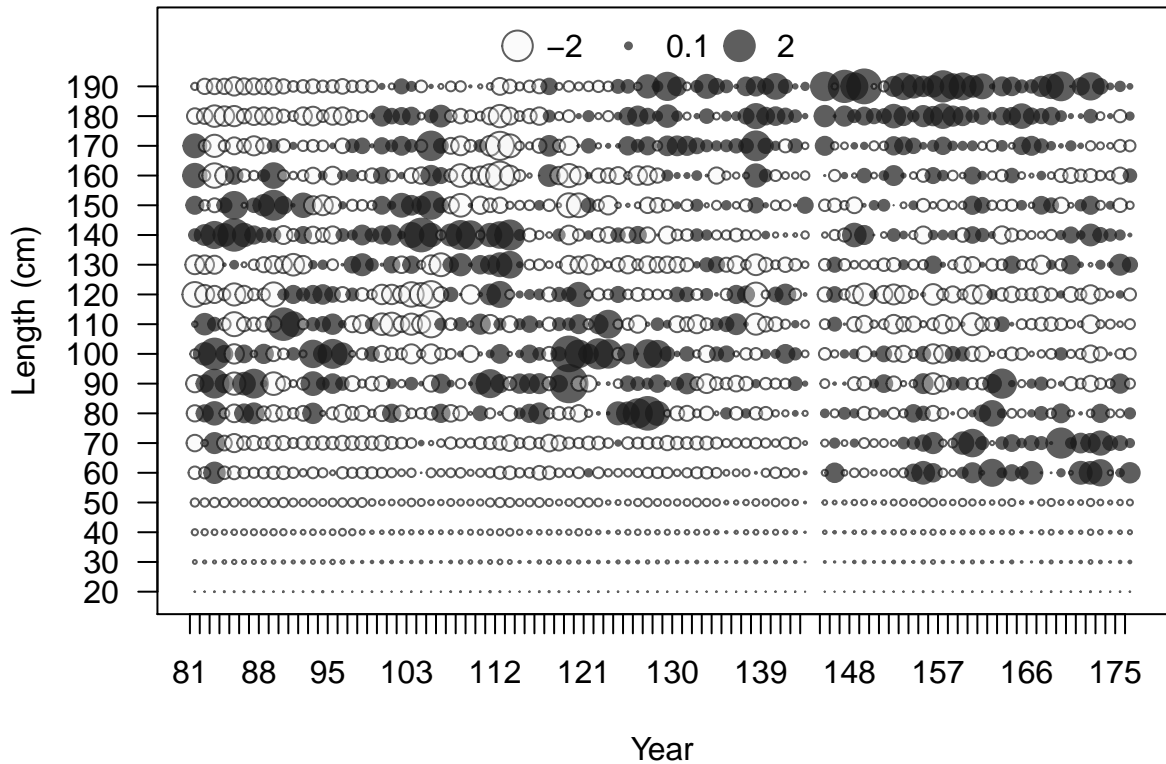


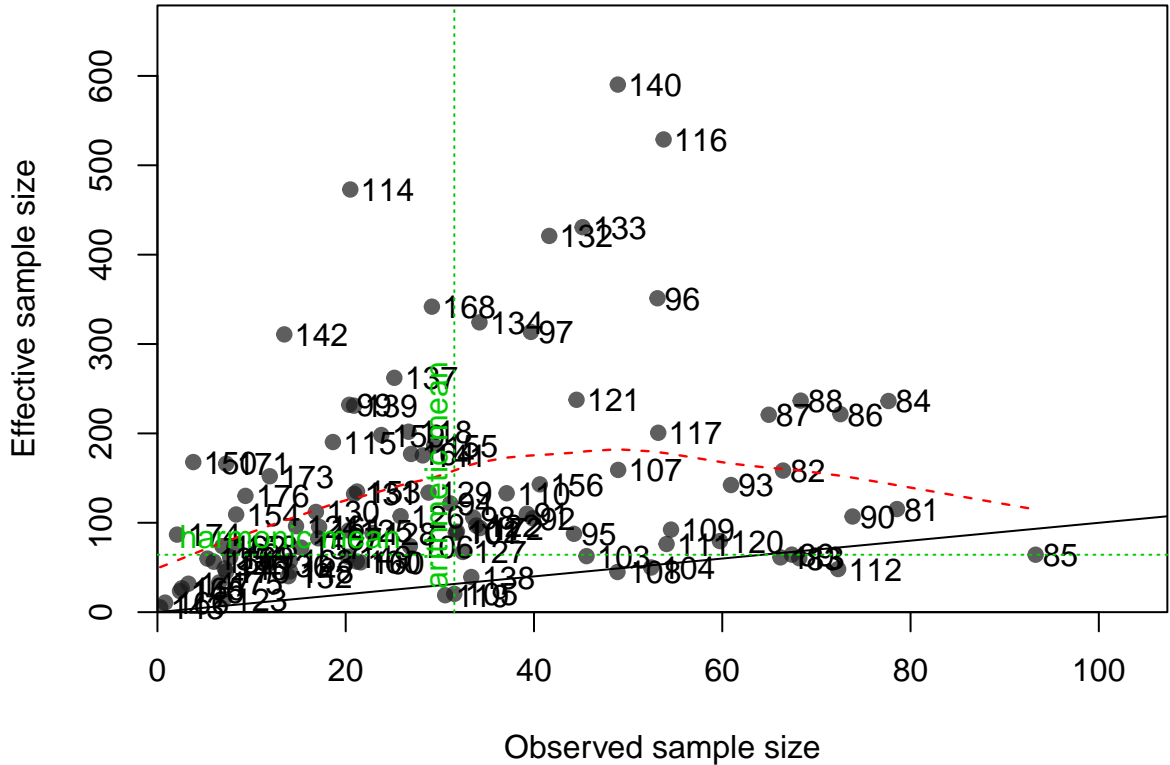
Proportion



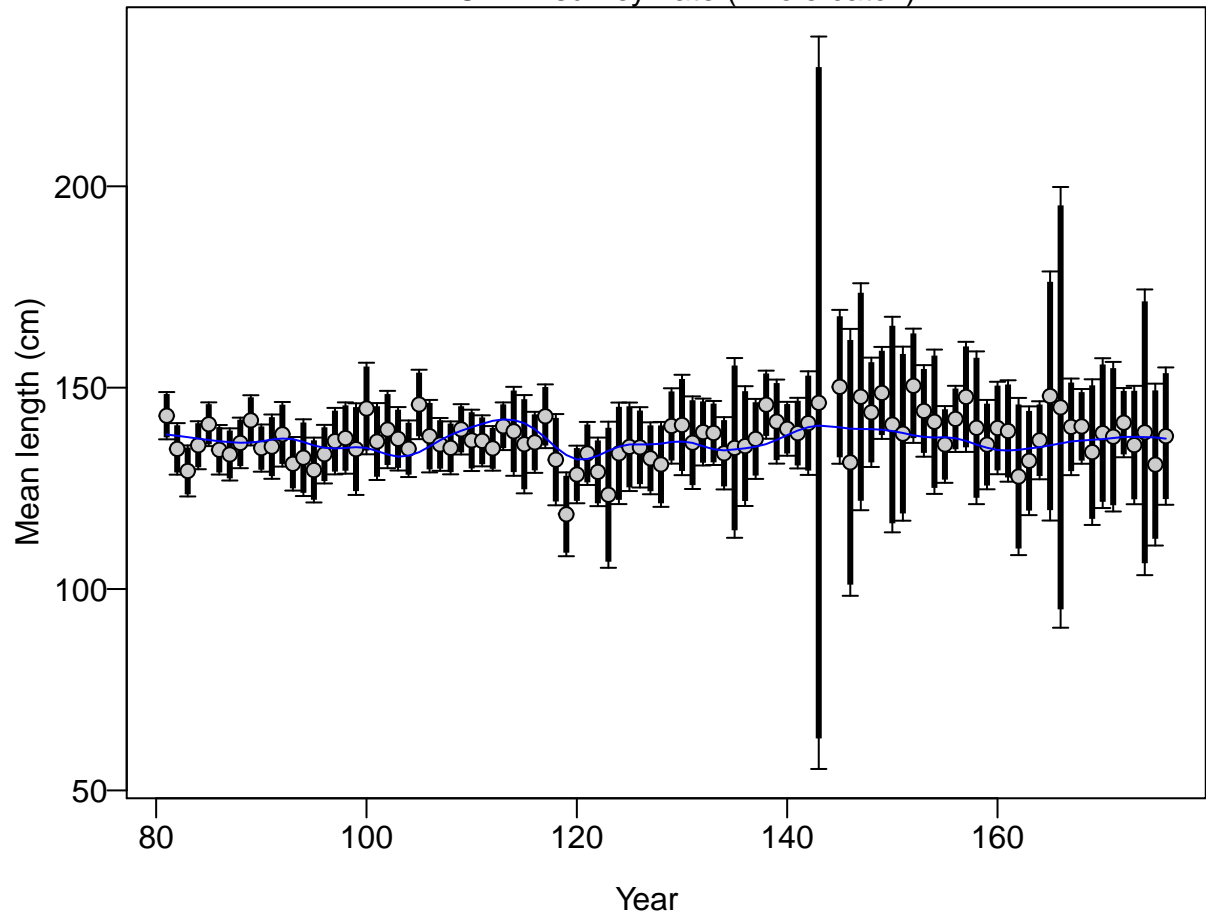
Proportion



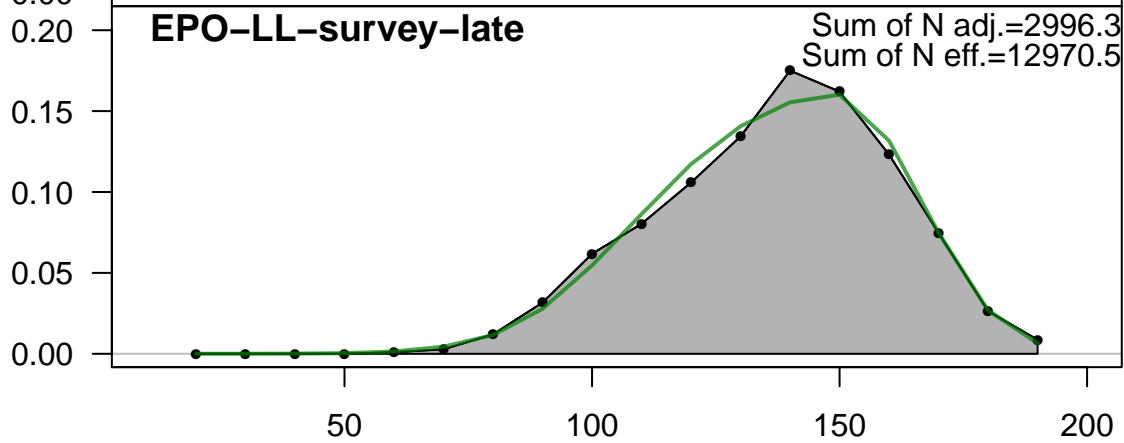
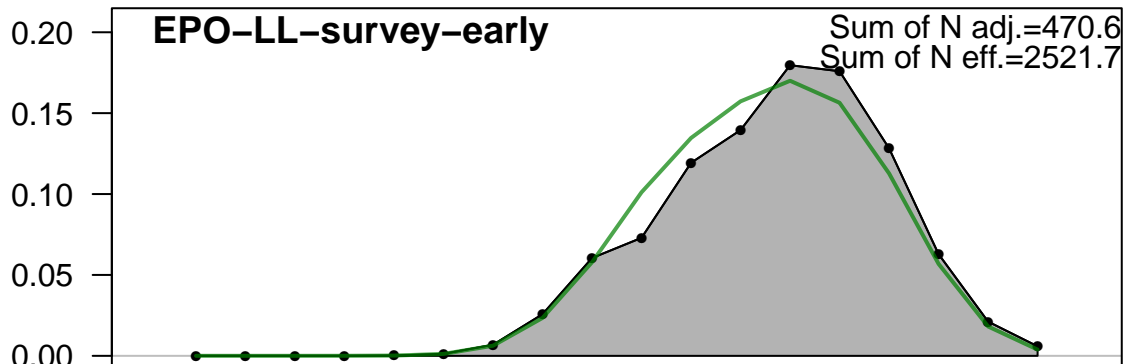




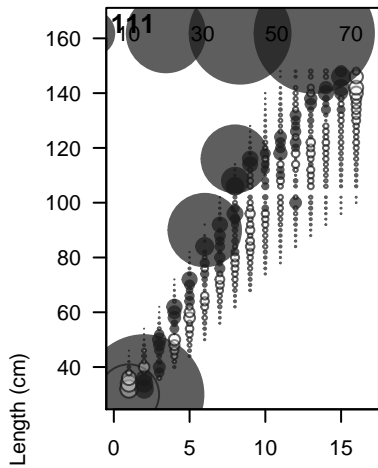
EPO-LL-survey-late (whole catch)



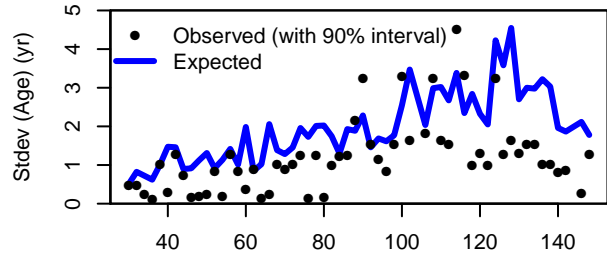
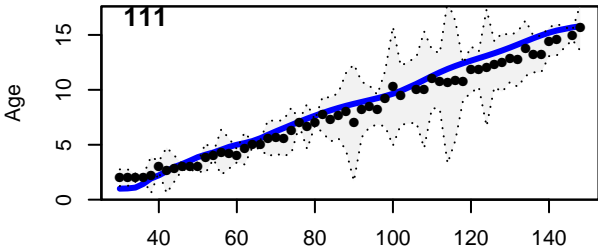
Proportion



Length (cm)

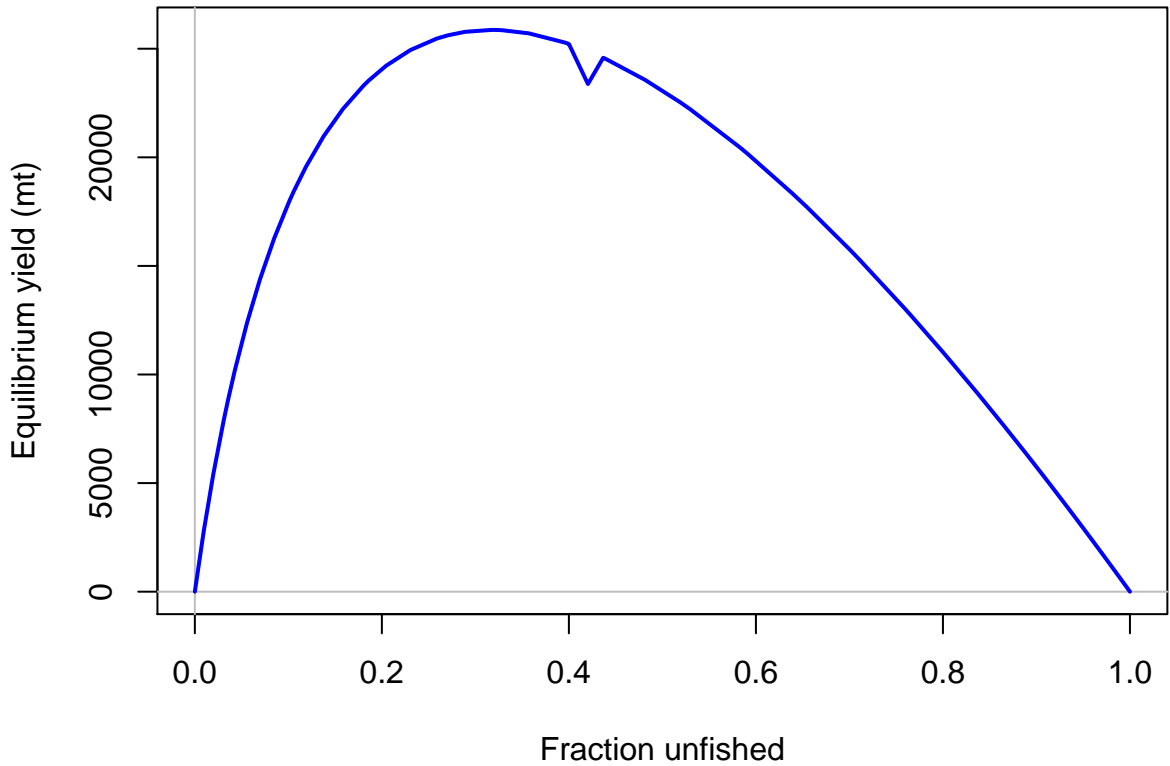


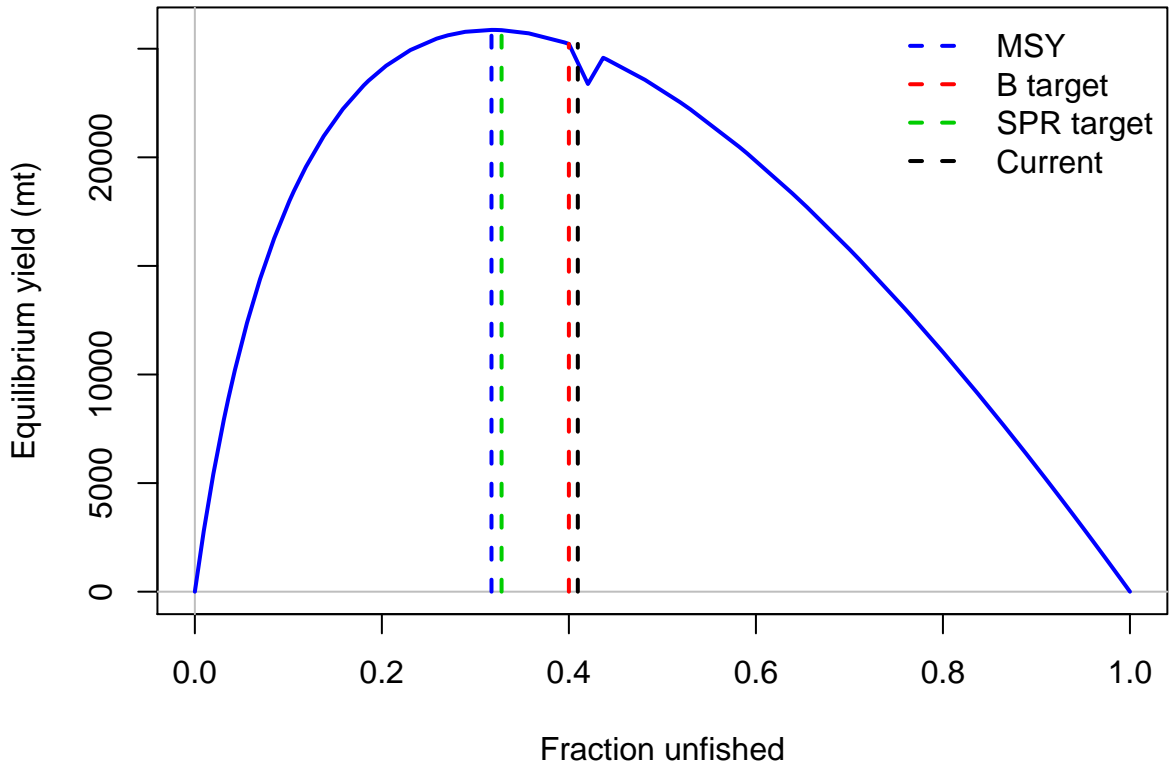
Age (yr)

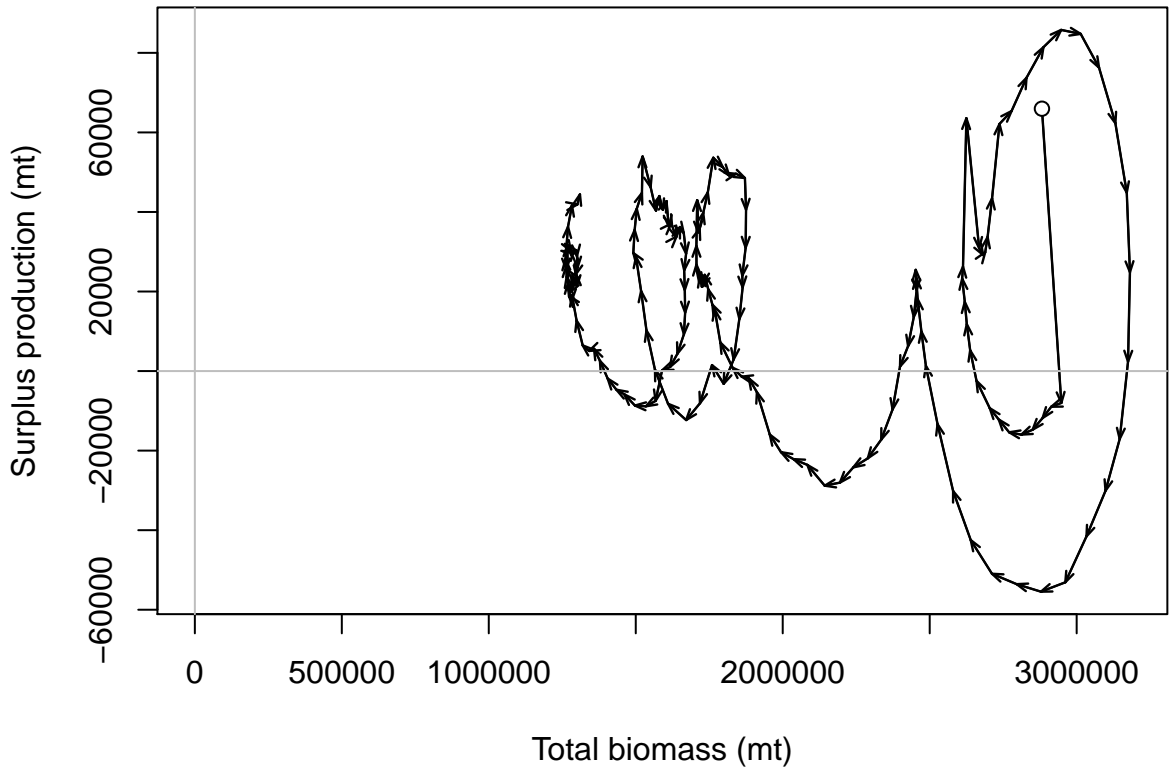


Length (cm)

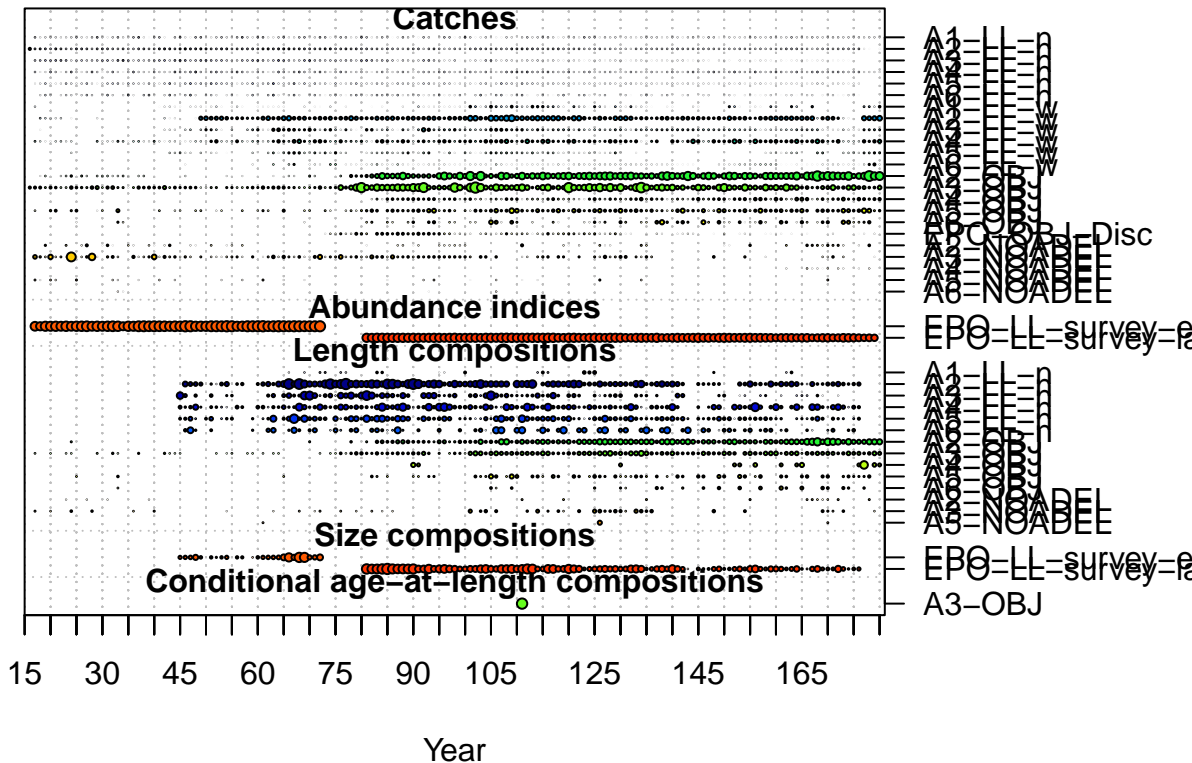


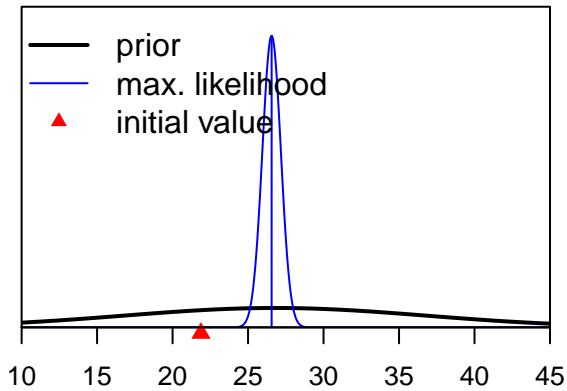
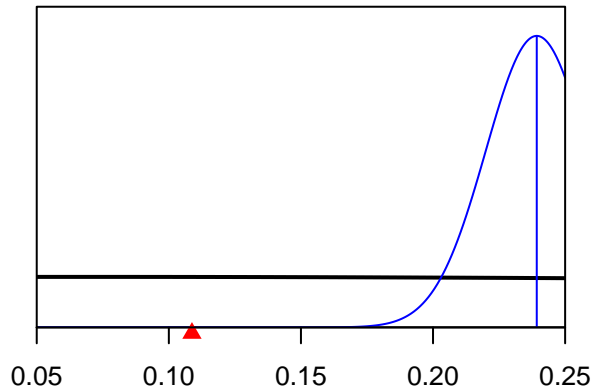
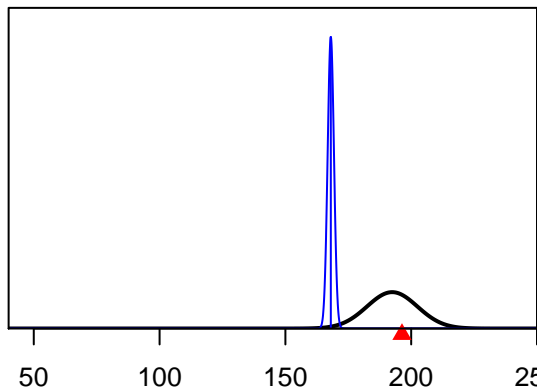
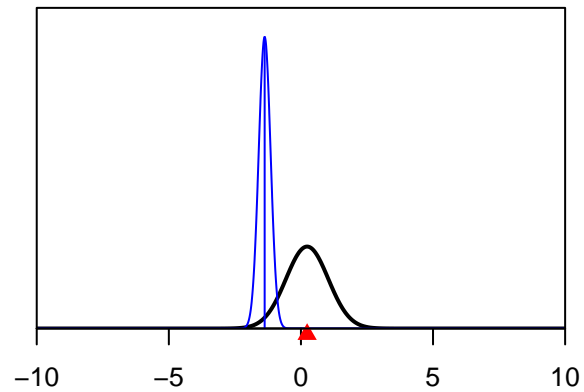






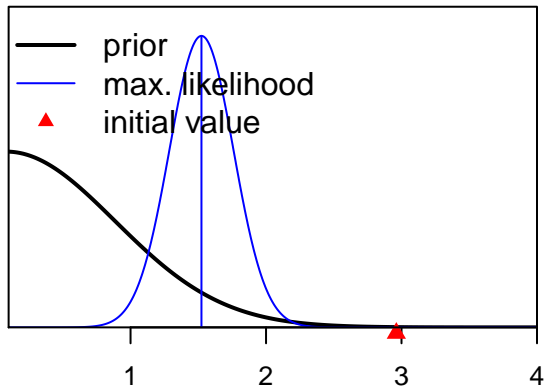




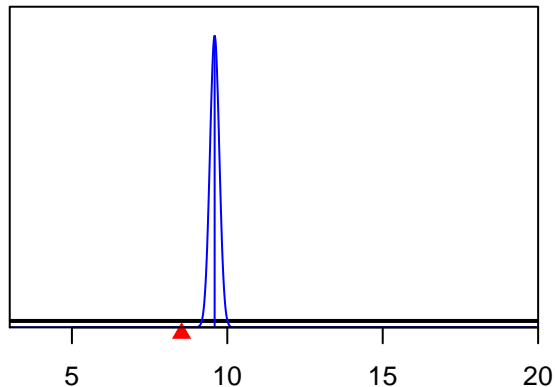
**L\_at\_Amin\_Fem\_GP\_1****VonBert\_K\_Fem\_GP\_1****L\_at\_Amax\_Fem\_GP\_1****Richards\_Fem\_GP\_1**

Parameter value

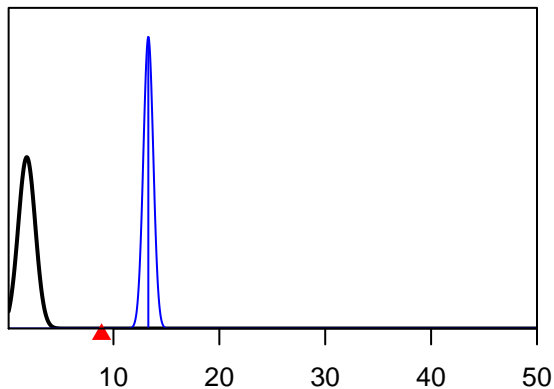
SD\_young\_Fem\_GP\_1



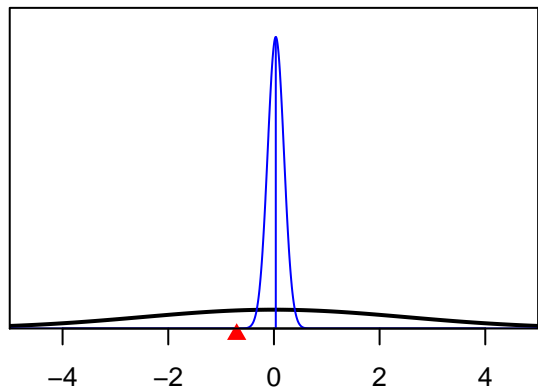
SR\_LN(R0)



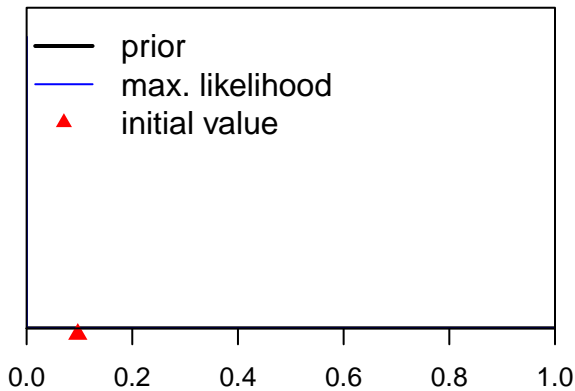
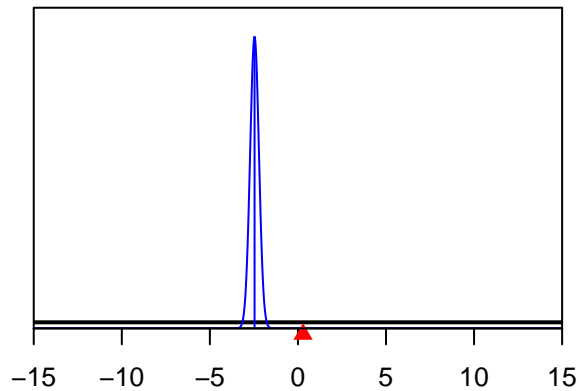
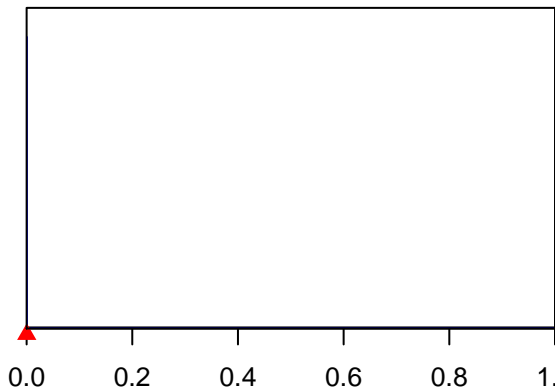
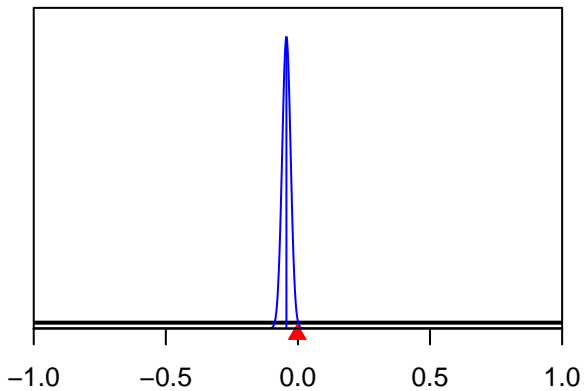
SD\_old\_Fem\_GP\_1



SR\_regime\_BLK1add\_16



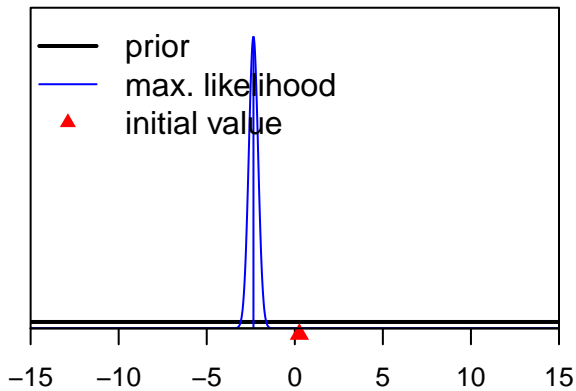
Parameter value

**InitF\_seas\_1\_flt\_2A2-LL-n****LnQ\_base\_EPO-LL-survey-early(24)****InitF\_seas\_1\_flt\_14A3-OBJ****Q\_extraSD\_EPO-LL-survey-early(24)**

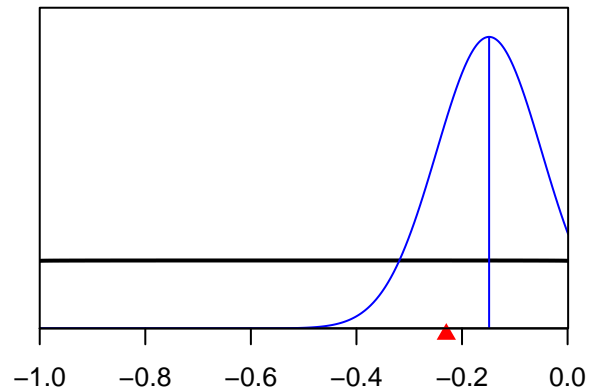
Parameter value



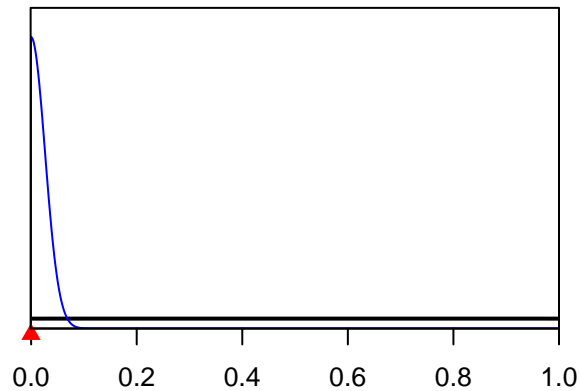
LnQ\_base\_EPO-LL-survey-late(25)



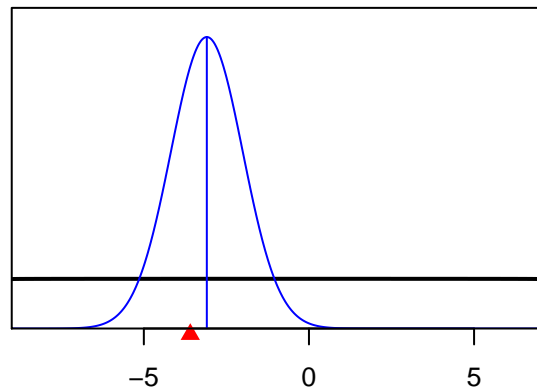
SizeSpline\_GradHi\_A1-LL-n(1)



SizeSpline\_GradLo\_A1-LL-n(1)

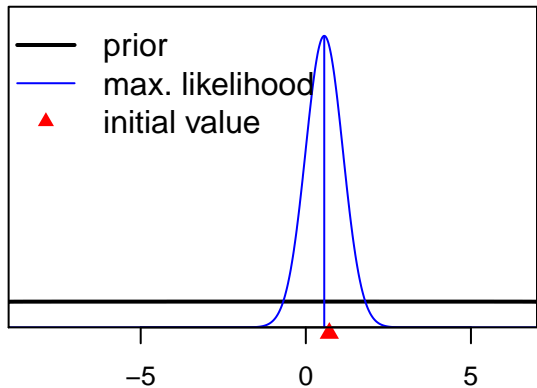


SizeSpline\_Val\_2\_A1-LL-n(1)

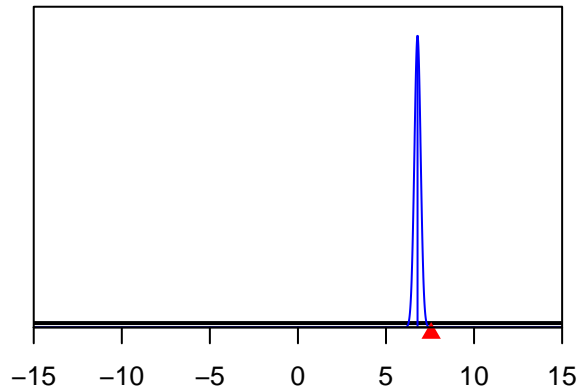


Parameter value

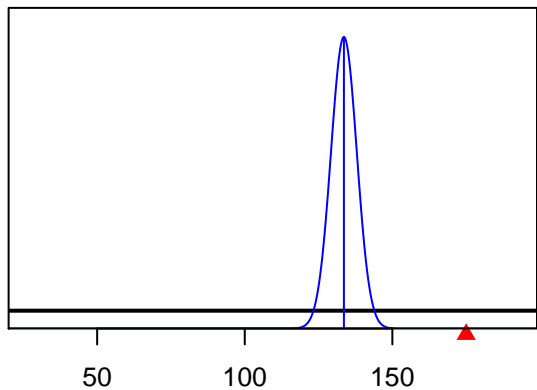
SizeSpline\_Val\_4\_A1-LL-n(1)



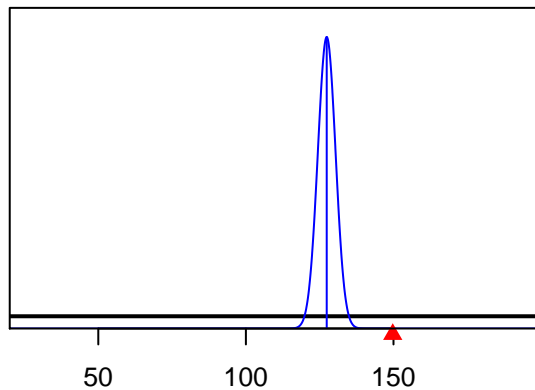
Size\_DbIN\_ascend\_se\_A2-LL-n(2)



Size\_DbIN\_peak\_A2-LL-n(2)

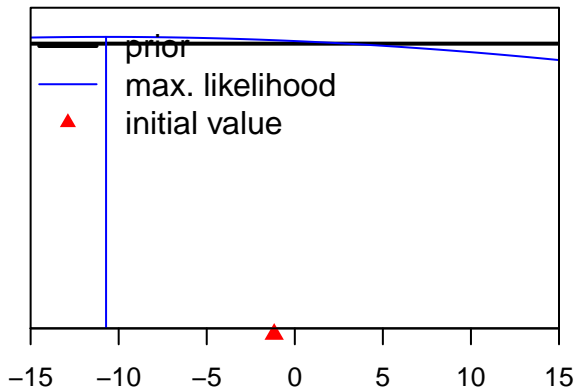


Size\_DbIN\_peak\_A3-LL-n(3)

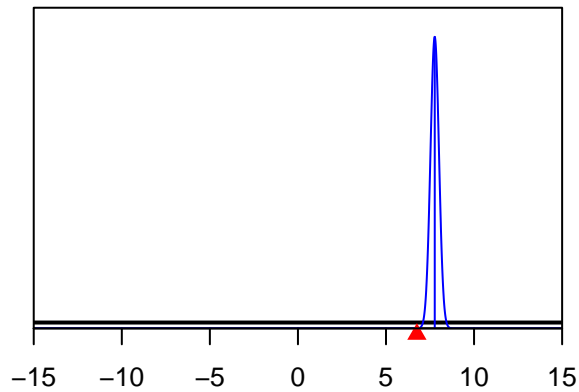


Parameter value

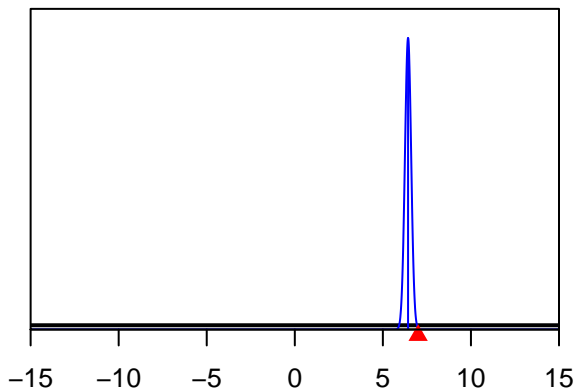
Size\_DbIN\_top\_logit\_A3-LL-n(3)



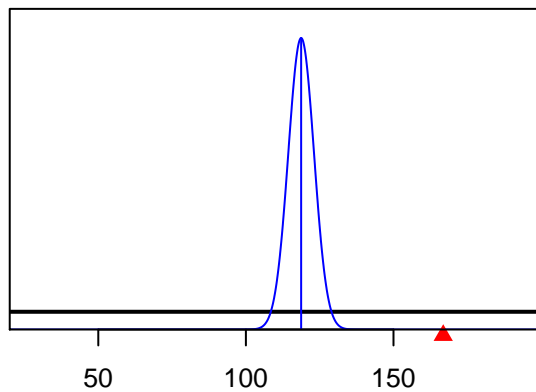
Size\_DbIN\_descend\_se\_A3-LL-n(3)



Size\_DbIN\_ascend\_se\_A3-LL-n(3)

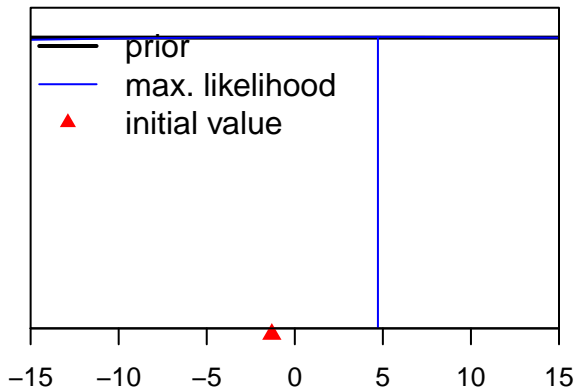


Size\_DbIN\_peak\_A4-LL-n(4)

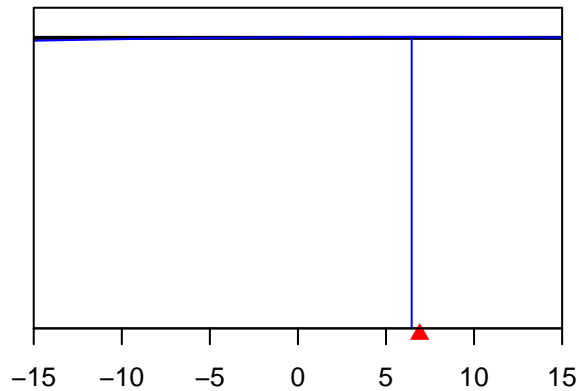


Parameter value

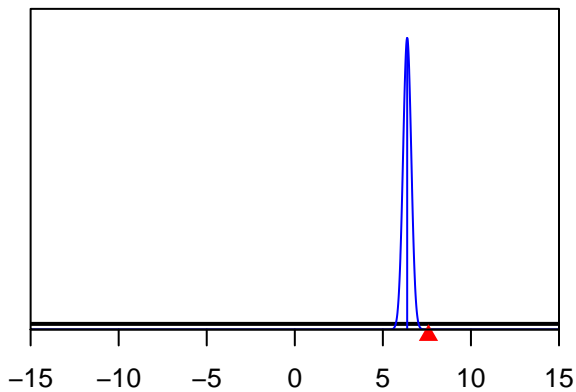
Size\_DbIN\_top\_logit\_A4-LL-n(4)



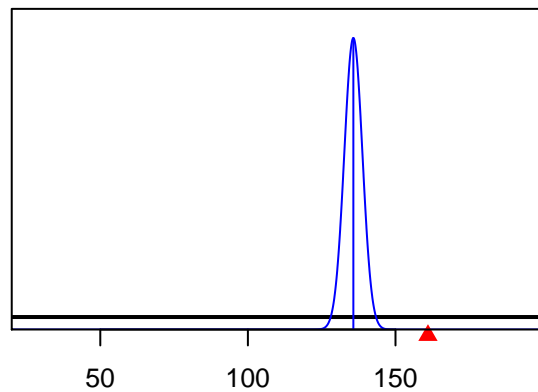
Size\_DbIN\_descend\_se\_A4-LL-n(4)



Size\_DbIN\_ascend\_se\_A4-LL-n(4)

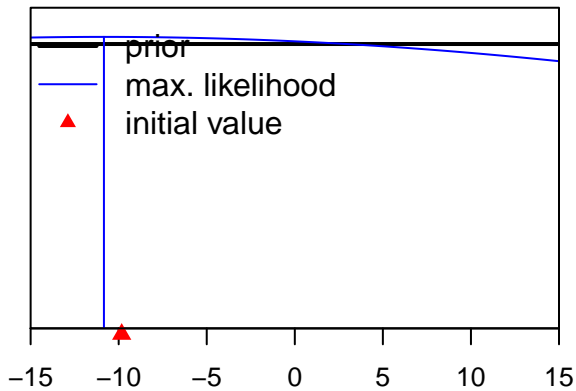


Size\_DbIN\_peak\_A5-LL-n(5)

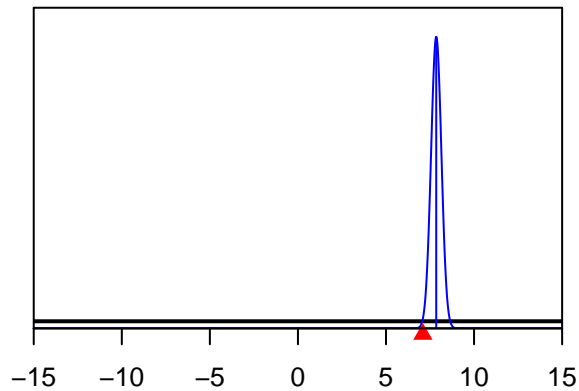


Parameter value

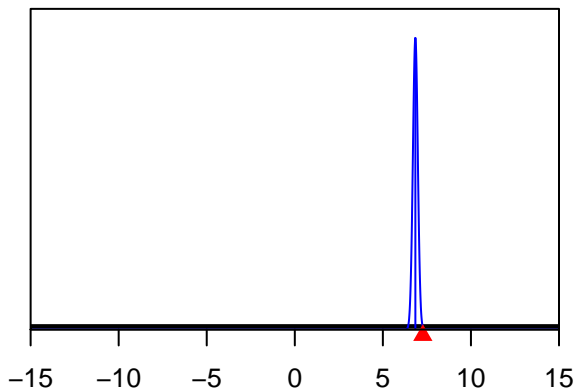
Size\_DbIN\_top\_logit\_A5-LL-n(5)



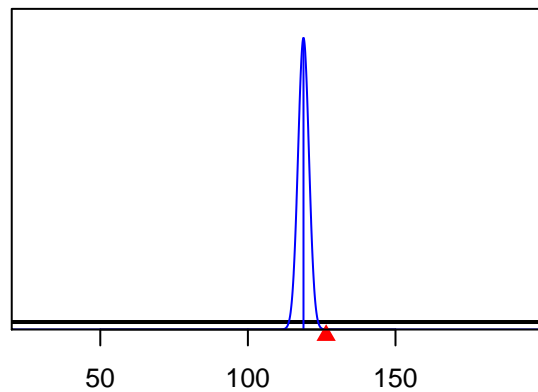
Size\_DbIN\_descend\_se\_A5-LL-n(5)



Size\_DbIN\_ascend\_se\_A5-LL-n(5)

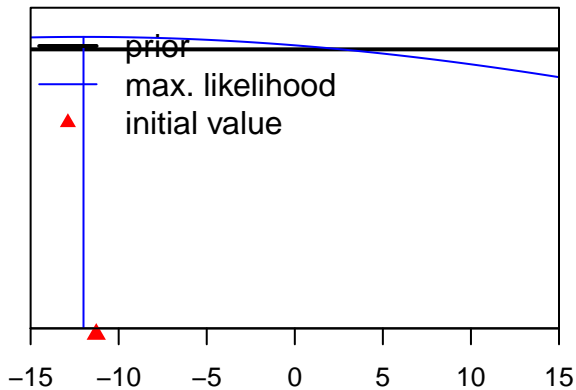


Size\_DbIN\_peak\_A6-LL-n(6)

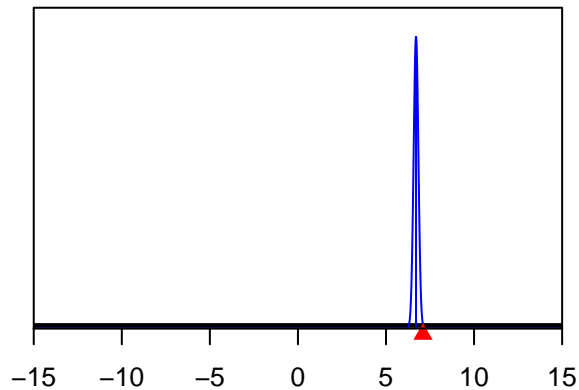


Parameter value

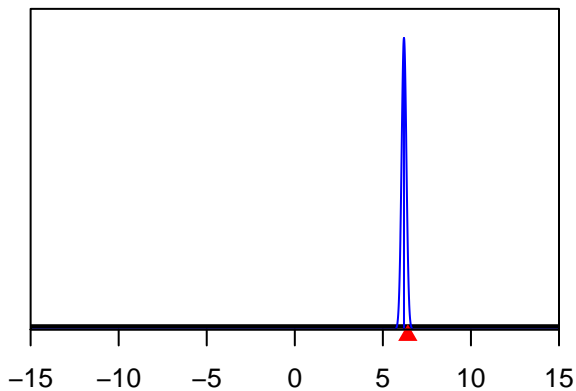
Size\_DbIN\_top\_logit\_A6-LL-n(6)



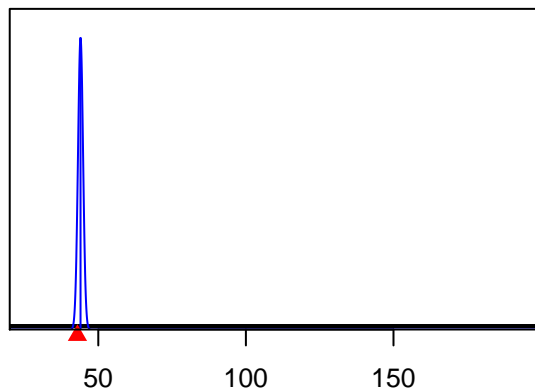
Size\_DbIN\_descend\_se\_A6-LL-n(6)



Size\_DbIN\_ascend\_se\_A6-LL-n(6)

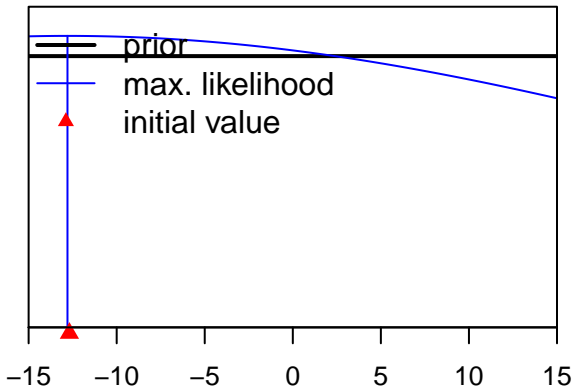


Size\_DbIN\_peak\_A2-OBJ(13)

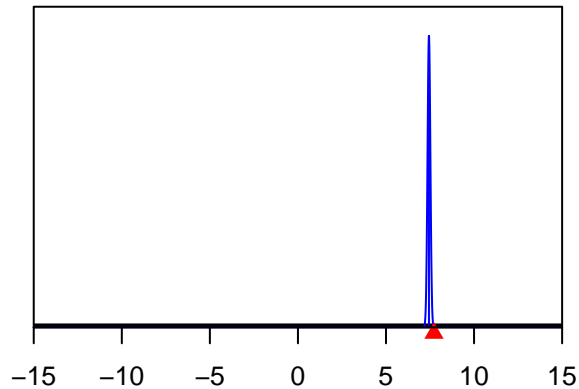


Parameter value

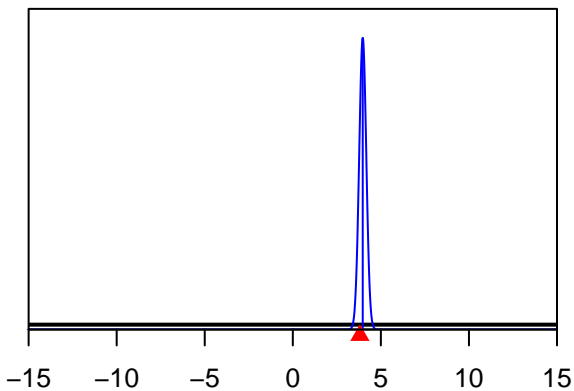
Size\_DbIN\_top\_logit\_A2-OBJ(13)



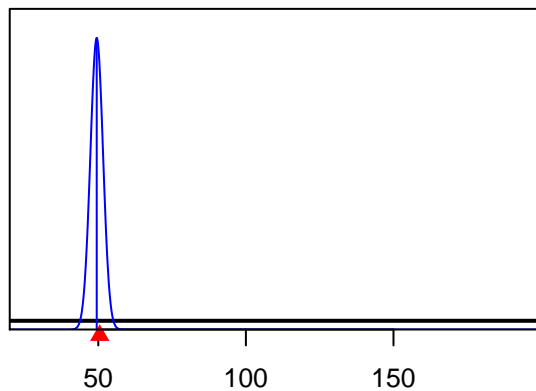
Size\_DbIN\_descend\_se\_A2-OBJ(13)



Size\_DbIN\_ascend\_se\_A2-OBJ(13)



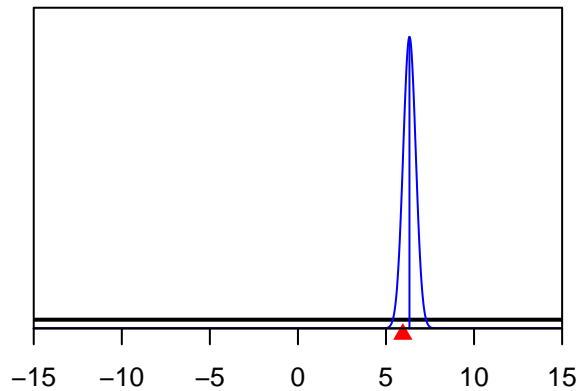
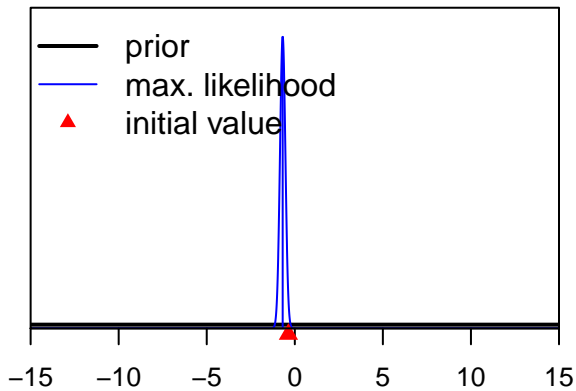
Size\_DbIN\_peak\_A3-OBJ(14)



Parameter value

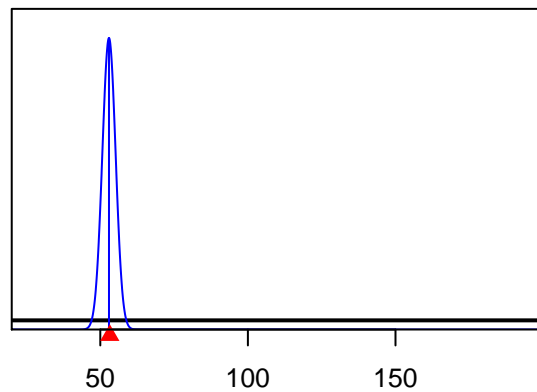
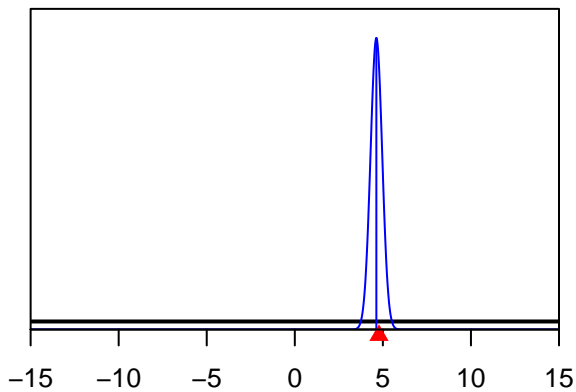
Size\_DbIN\_top\_logit\_A3-OBJ(14)

Size\_DbIN\_descend\_se\_A3-OBJ(14)



Size\_DbIN\_ascend\_se\_A3-OBJ(14)

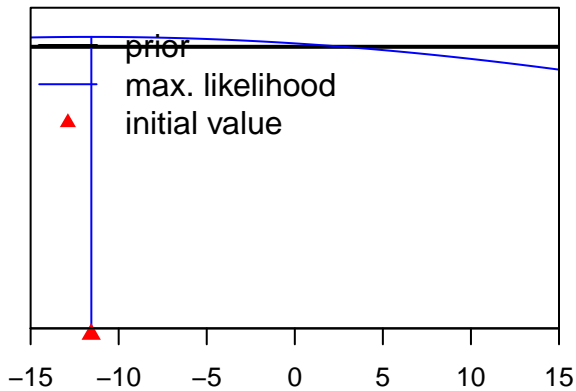
Size\_DbIN\_peak\_A4-OBJ(15)



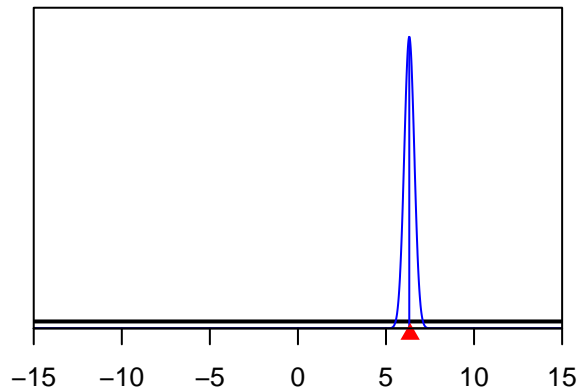
Parameter value



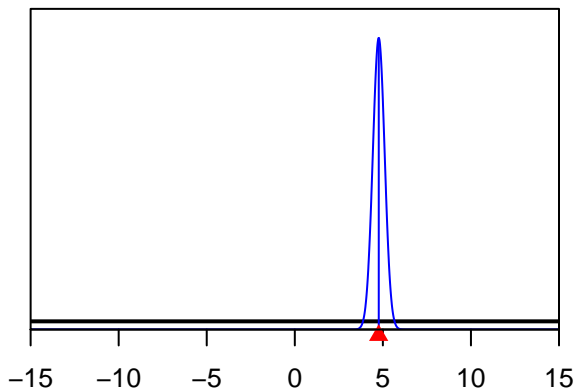
Size\_DbIN\_top\_logit\_A4-OBJ(15)



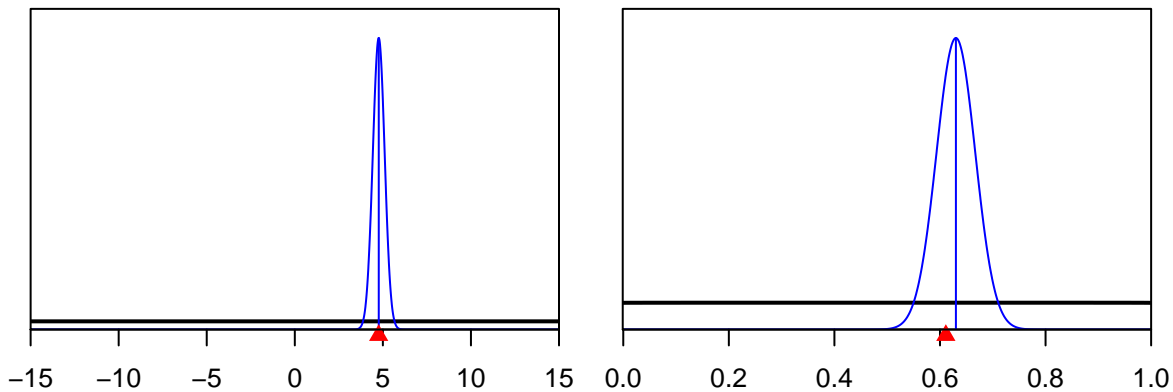
Size\_DbIN\_descend\_se\_A4-OBJ(15)



Size\_DbIN\_ascend\_se\_A4-OBJ(15)

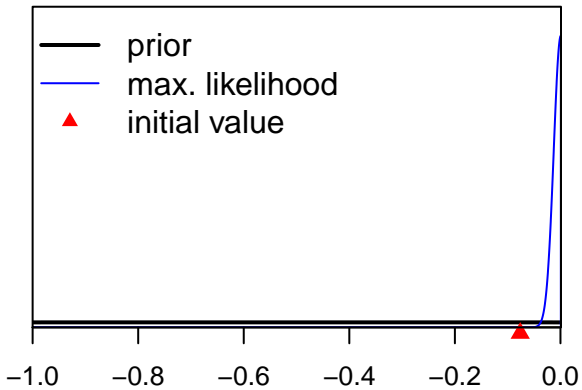


SizeSpline\_GradLo\_A5-OBJ(16)

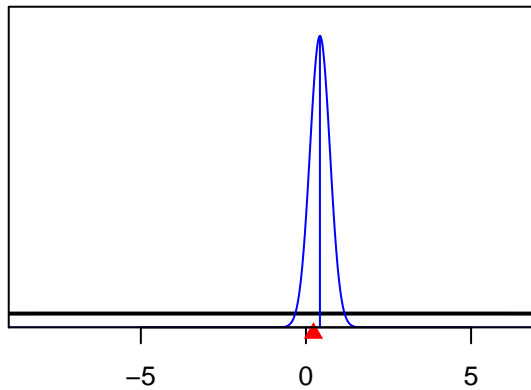


Parameter value

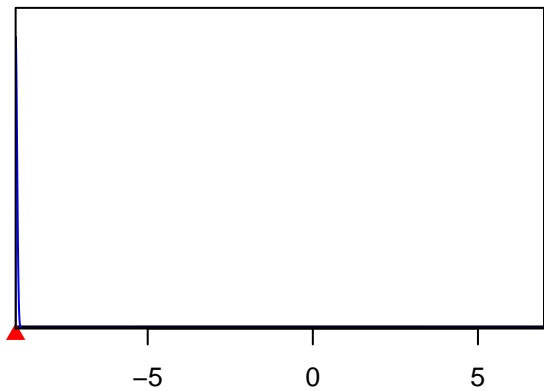
SizeSpline\_GradHi\_A5-Obj(16)



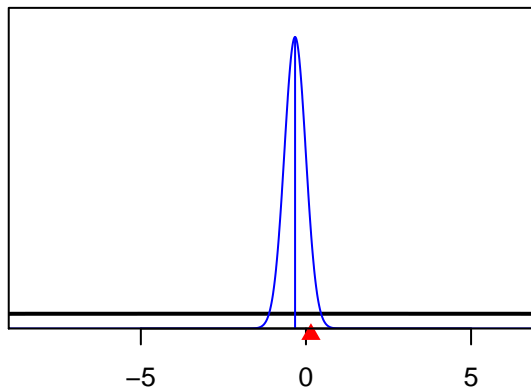
SizeSpline\_Val\_2\_A5-Obj(16)



SizeSpline\_Val\_1\_A5-Obj(16)

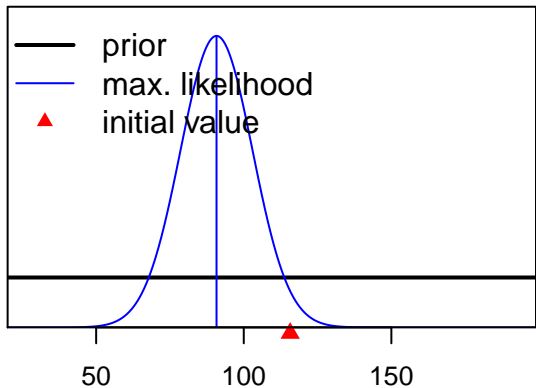


SizeSpline\_Val\_4\_A5-Obj(16)

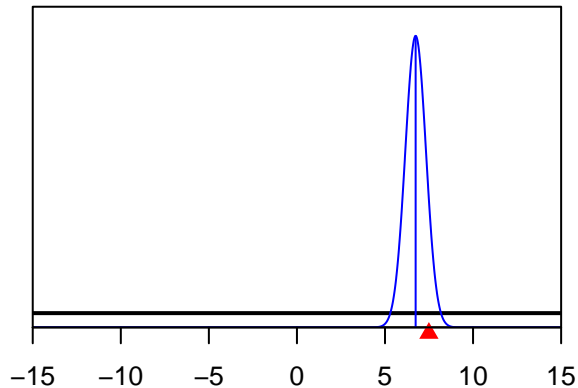


Parameter value

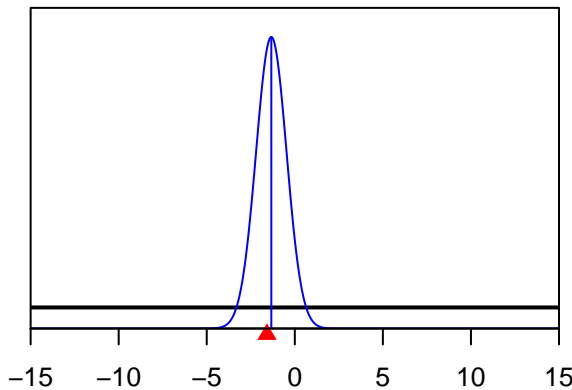
Size\_DbIN\_peak\_A6-OBJ(17)



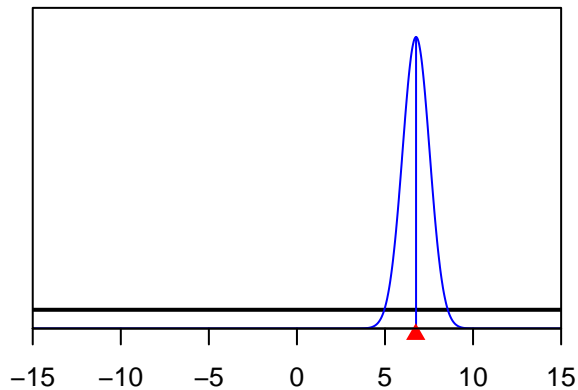
Size\_DbIN\_ascend\_se\_A6-OBJ(17)



Size\_DbIN\_top\_logit\_A6-OBJ(17)



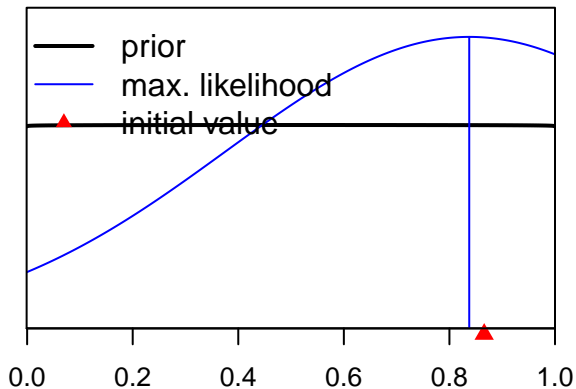
Size\_DbIN\_descend\_se\_A6-OBJ(17)



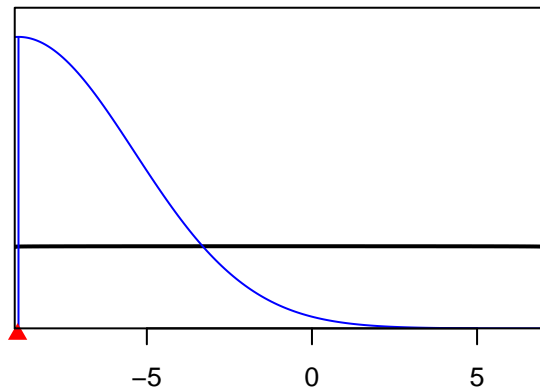
Parameter value

Density

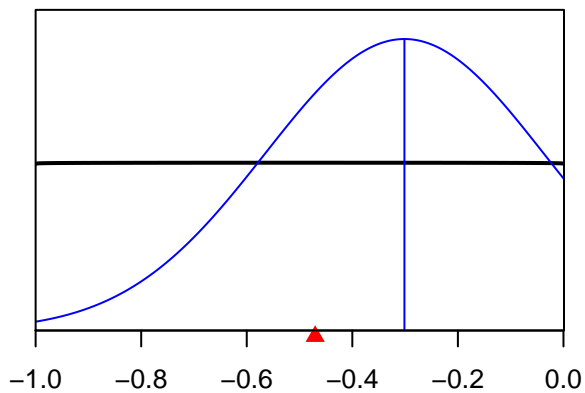
SizeSpline\_GradLo\_A2-NOADEL(19)



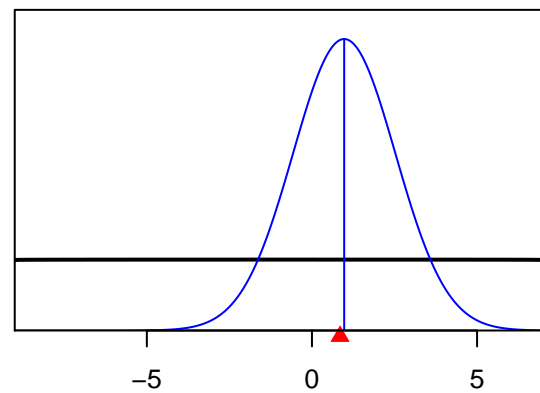
SizeSpline\_Val\_1\_A2-NOADEL(19)



SizeSpline\_GradHi\_A2-NOADEL(19)

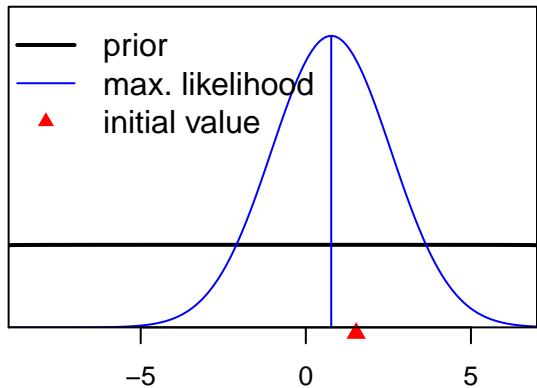


SizeSpline\_Val\_2\_A2-NOADEL(19)

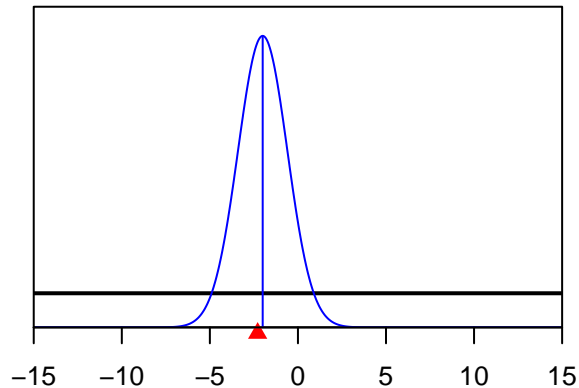


Parameter value

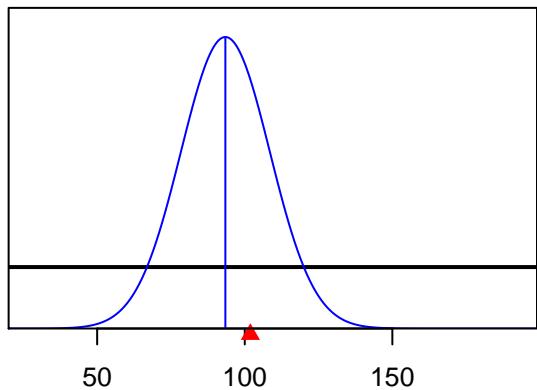
SizeSpline\_Val\_4\_A2-NOADEL(19)



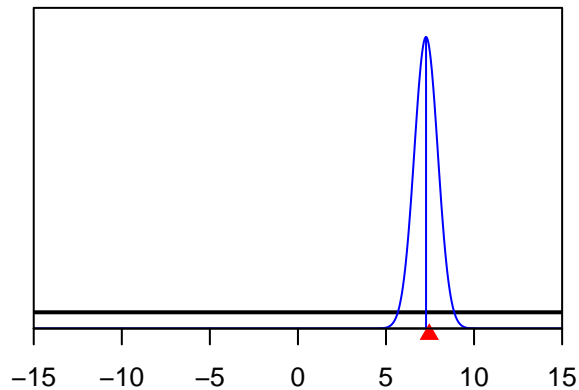
Size\_DbIN\_top\_logit\_A3-NOADEL(20)



Size\_DbIN\_peak\_A3-NOADEL(20)



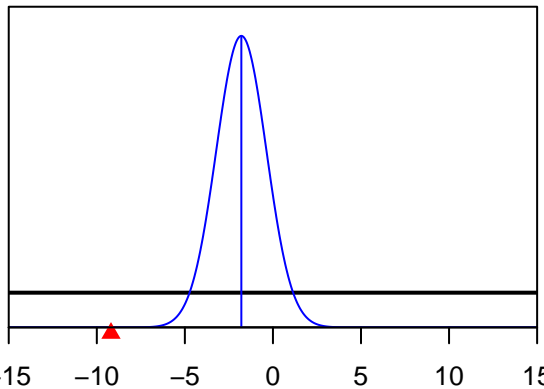
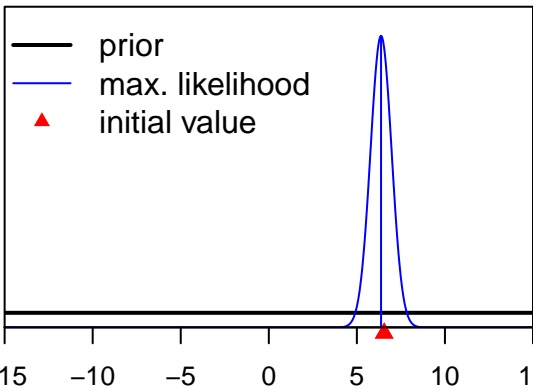
Size\_DbIN\_ascend\_se\_A3-NOADEL(20)



Parameter value

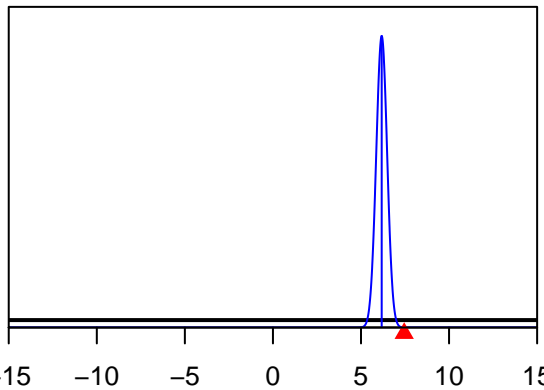
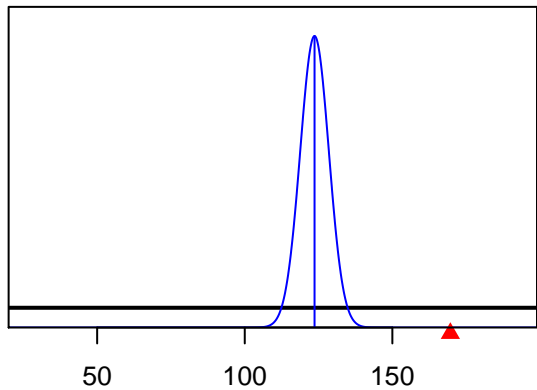
Size\_DbIN\_descend\_se\_A3-NOADEL(20)

Size\_DbIN\_top\_logit\_EPO-LL-survey-early(24)



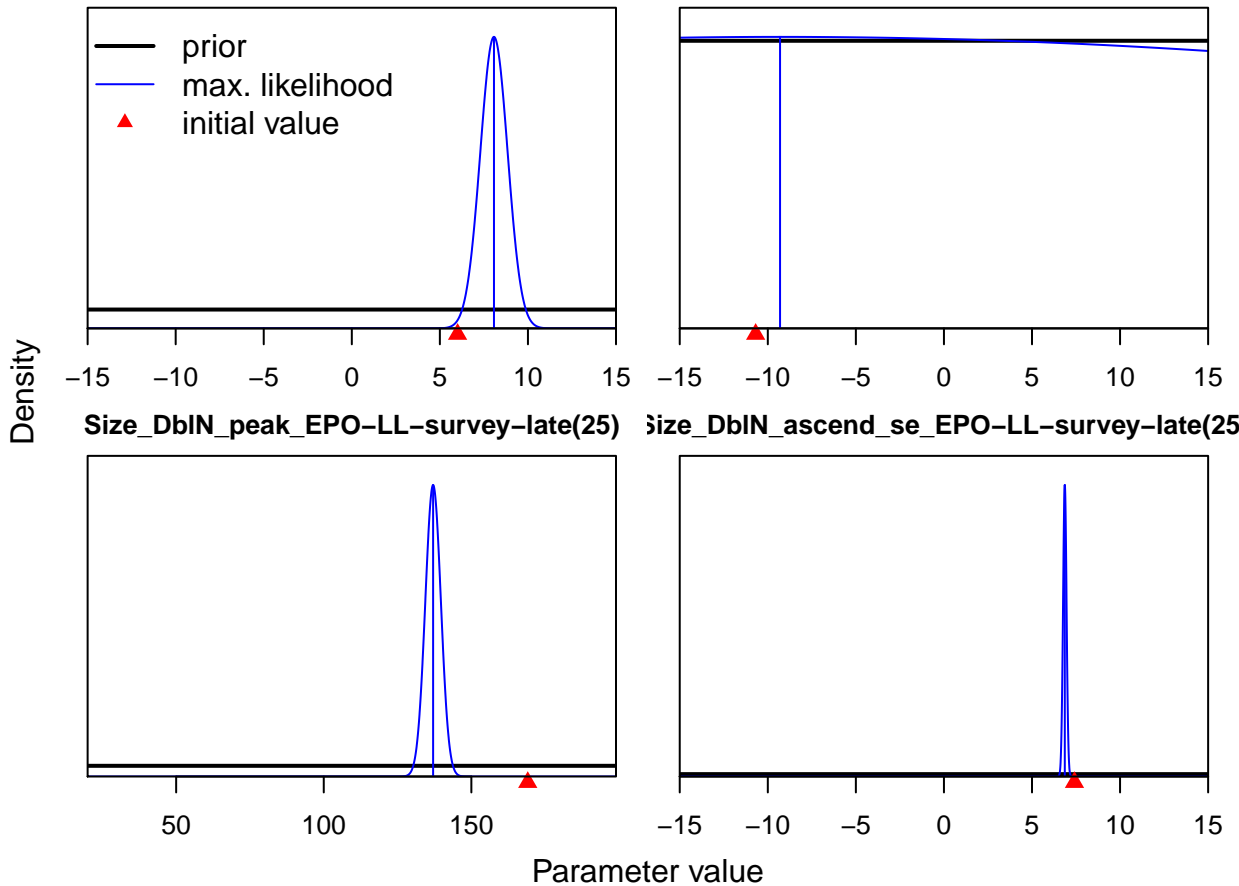
Size\_DbIN\_peak\_EPO-LL-survey-early(24)

ize\_DbIN\_ascend\_se\_EPO-LL-survey-early(24)

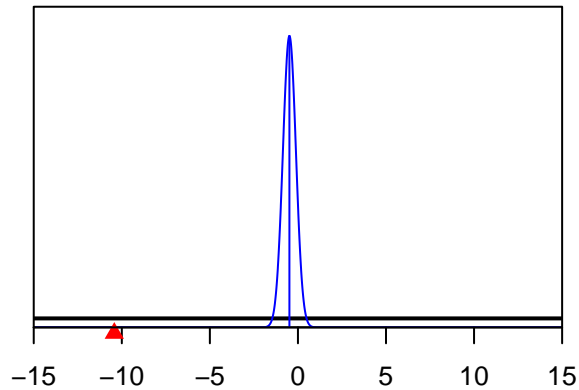
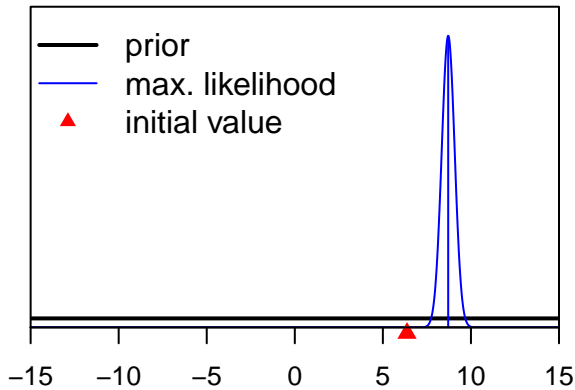


Parameter value

ze\_DblN\_descend\_se\_EPO-LL-survey-early(2Size\_DblN\_top\_logit\_EPO-LL-survey-late(25)



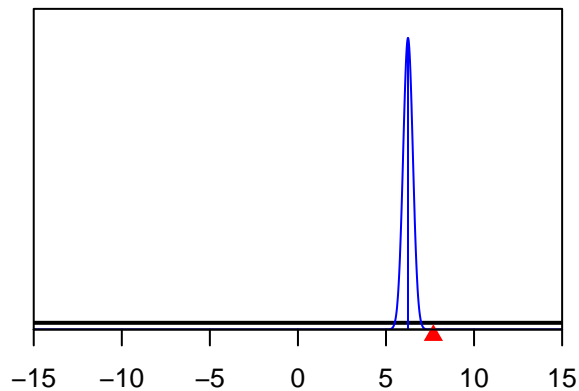
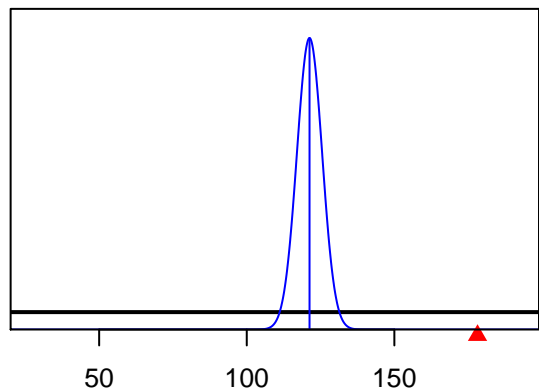
ize\_DbIN\_descend\_se\_EPO-LL-survey-late(2)Size\_DbIN\_top\_logit\_A2-LL-n(2)\_BLK2repl\_17



Density

Size\_DbIN\_peak\_A2-LL-n(2)\_BLK2repl\_17

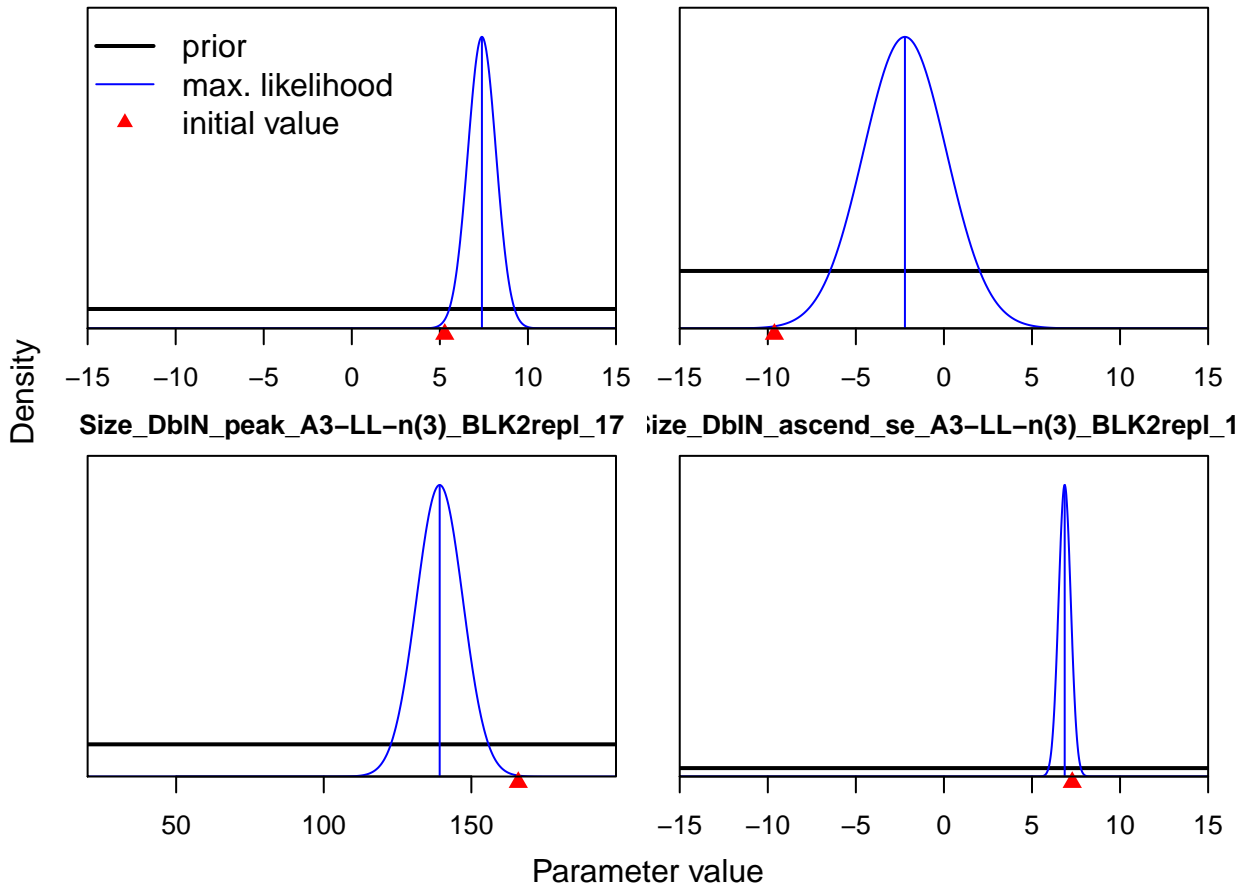
ize\_DbIN\_descend\_se\_A2-LL-n(2)\_BLK2repl\_17



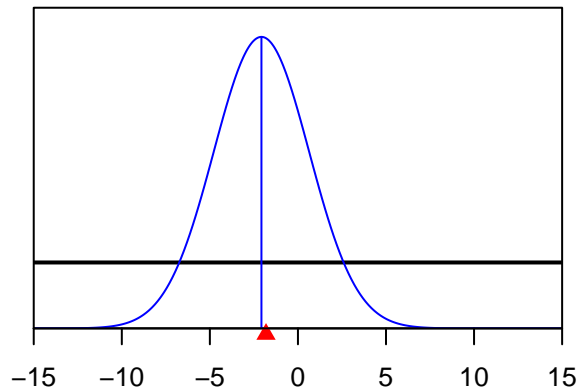
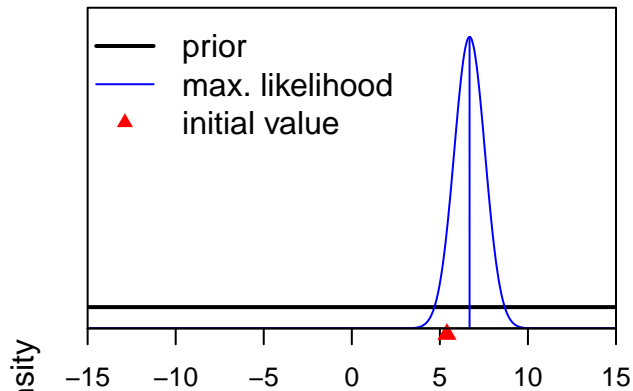
Parameter value



ize\_DbIN\_descend\_se\_A2-LL-n(2)\_BLK2repl\_Size\_DbIN\_top\_logit\_A3-LL-n(3)\_BLK2repl\_17

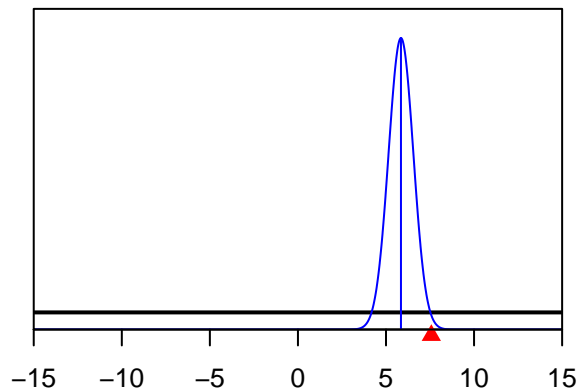
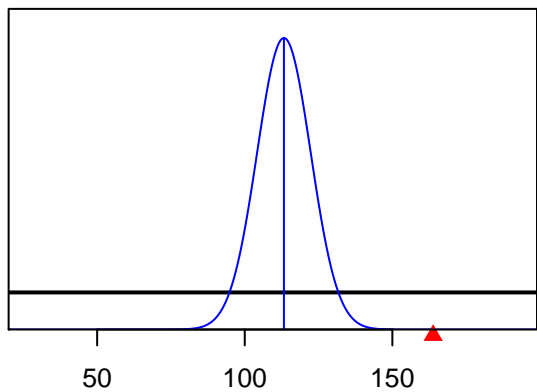


ize\_DbIN\_descend\_se\_A3-LL-n(3)\_BLK2repl\_Size\_DbIN\_top\_logit\_A4-LL-n(4)\_BLK2repl\_17



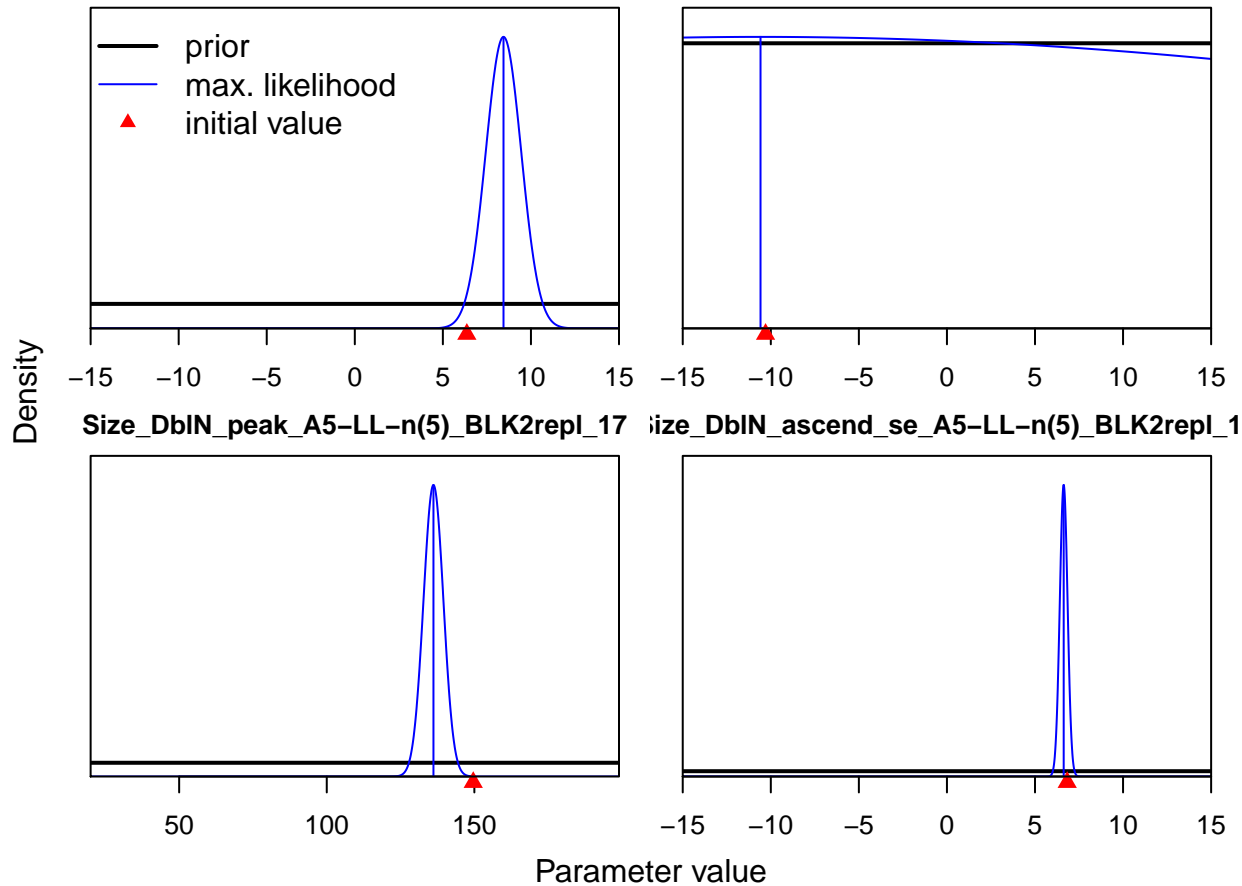
Size\_DbIN\_peak\_A4-LL-n(4)\_BLK2repl\_17

ize\_DbIN\_ascend\_se\_A4-LL-n(4)\_BLK2repl\_17

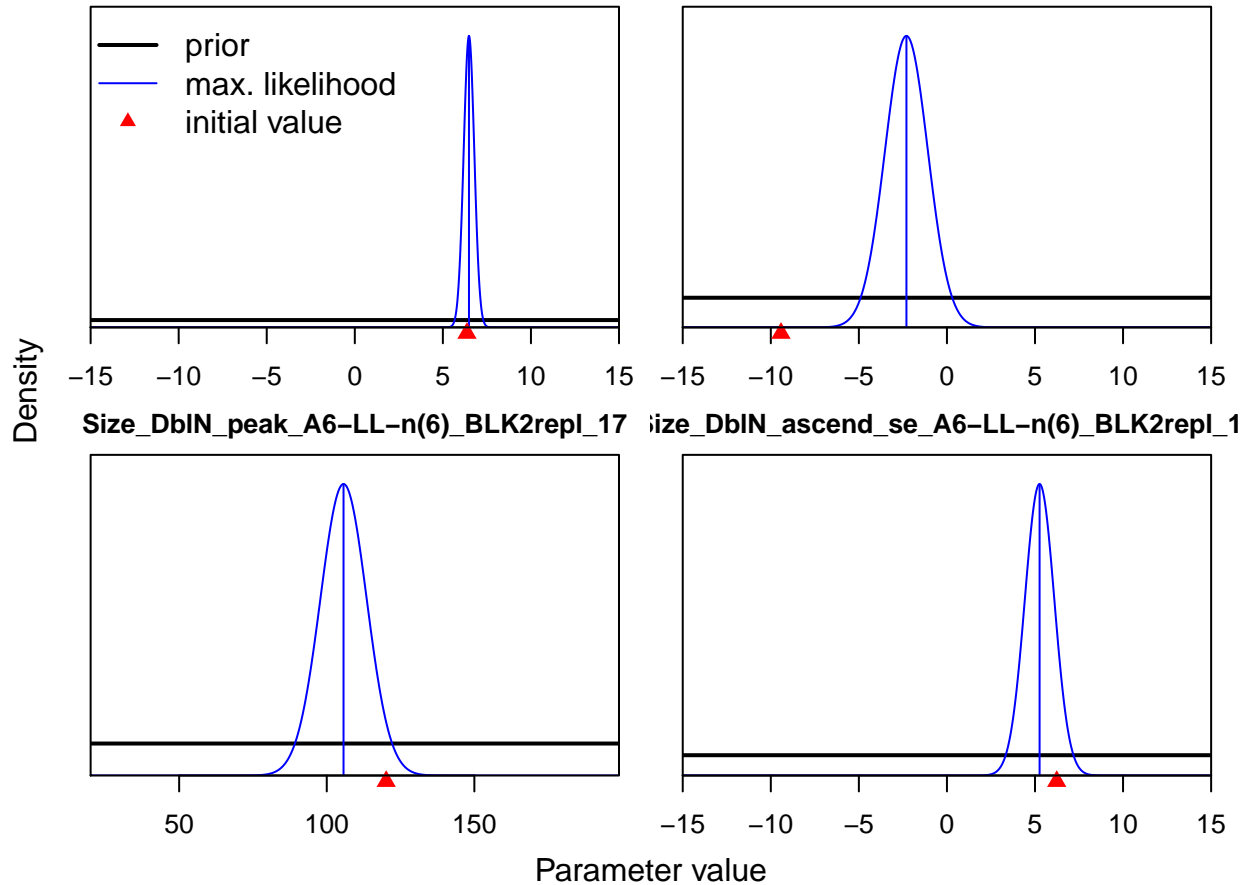


Parameter value

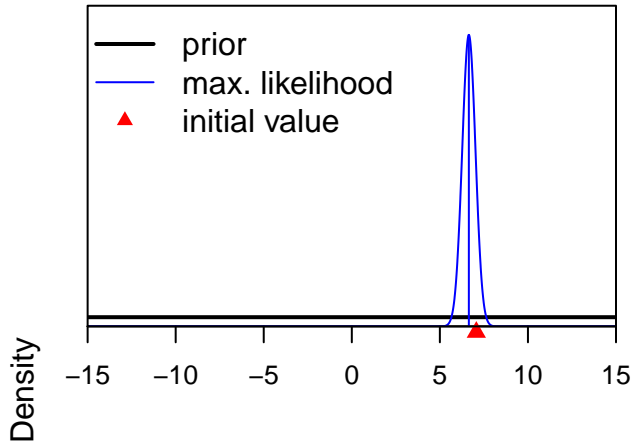
ize\_DbIN\_descend\_se\_A4-LL-n(4)\_BLK2repl\_Size\_DbIN\_top\_logit\_A5-LL-n(5)\_BLK2repl\_17



ize\_DbIN\_descend\_se\_A5-LL-n(5)\_BLK2repl\_Size\_DbIN\_top\_logit\_A6-LL-n(6)\_BLK2repl\_17



ize\_DbIN\_descend\_se\_A6-LL-n(6)\_BLK2repl\_1



Parameter value