

Plots created using the 'r4ss' package in R

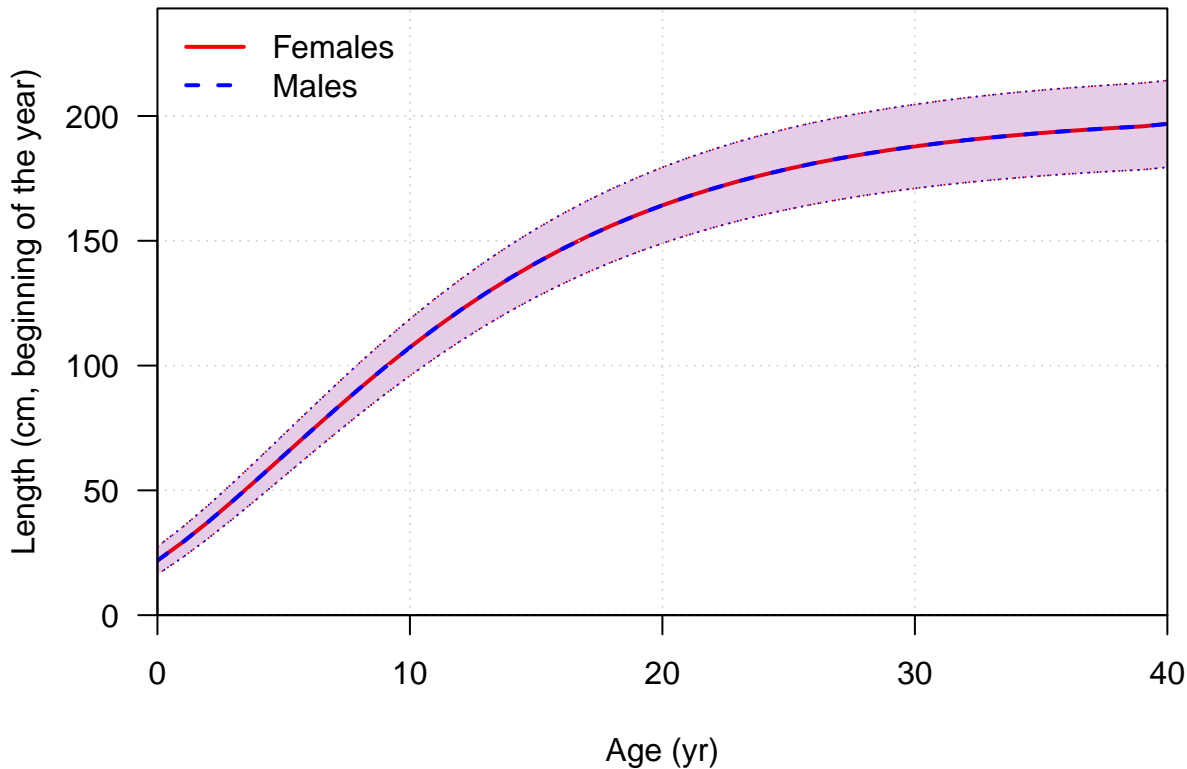
Stock Synthesis version: 3.30.15.0

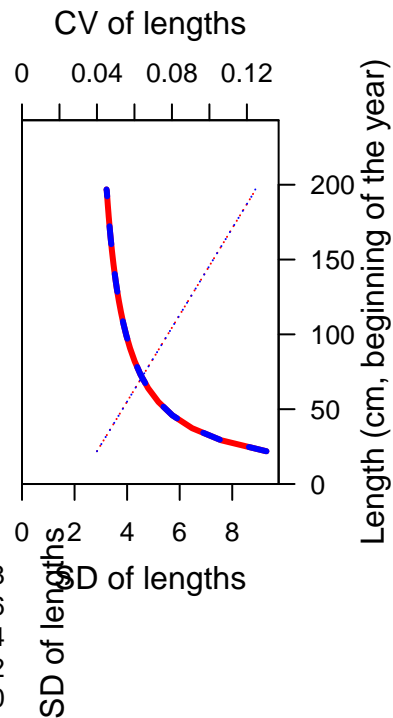
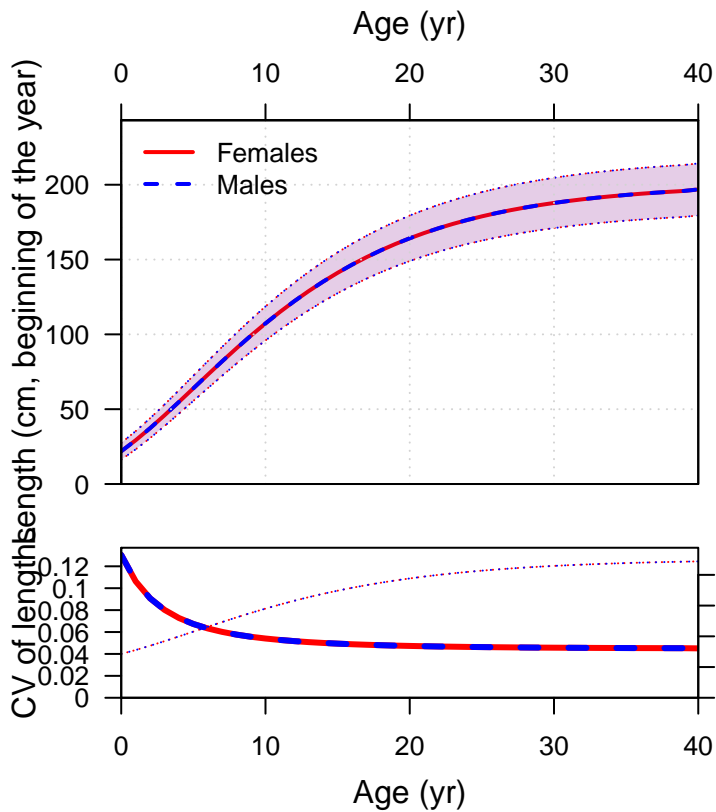
StartTime: Tue Apr 07 18:08:15 2020

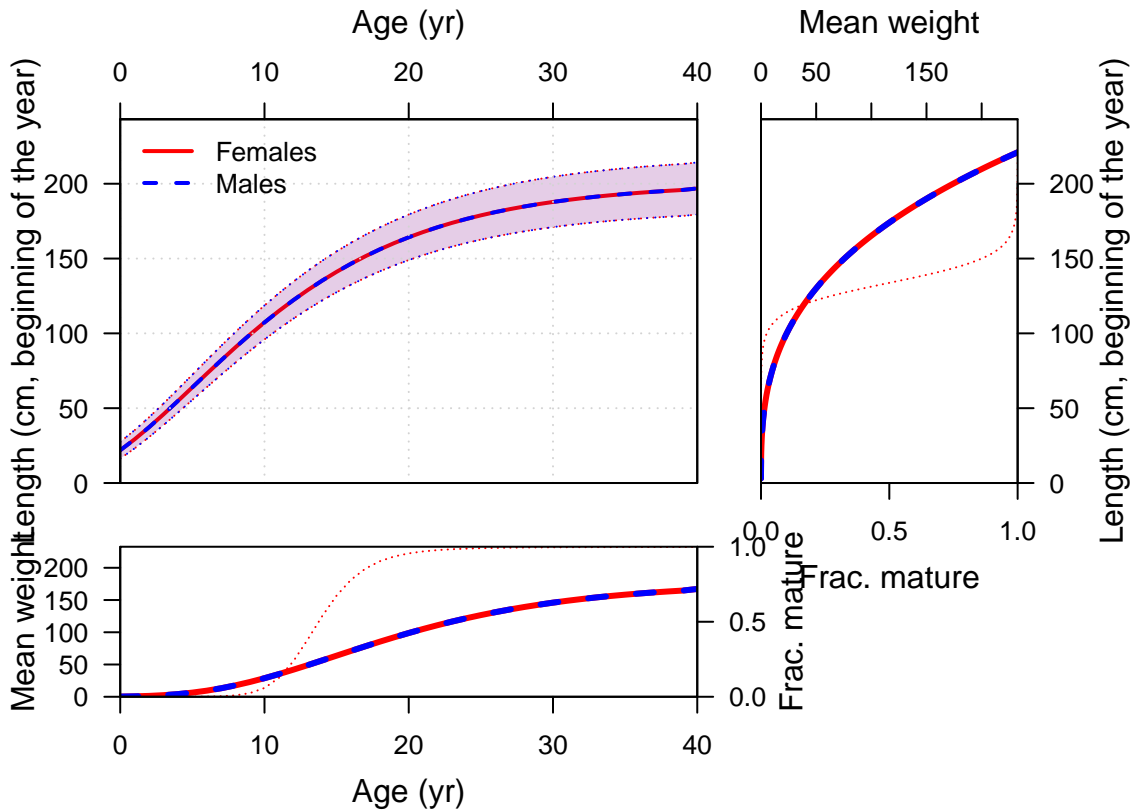
Data\_File: BET-EPO.dat

Control\_File: BET-EPO.ctl

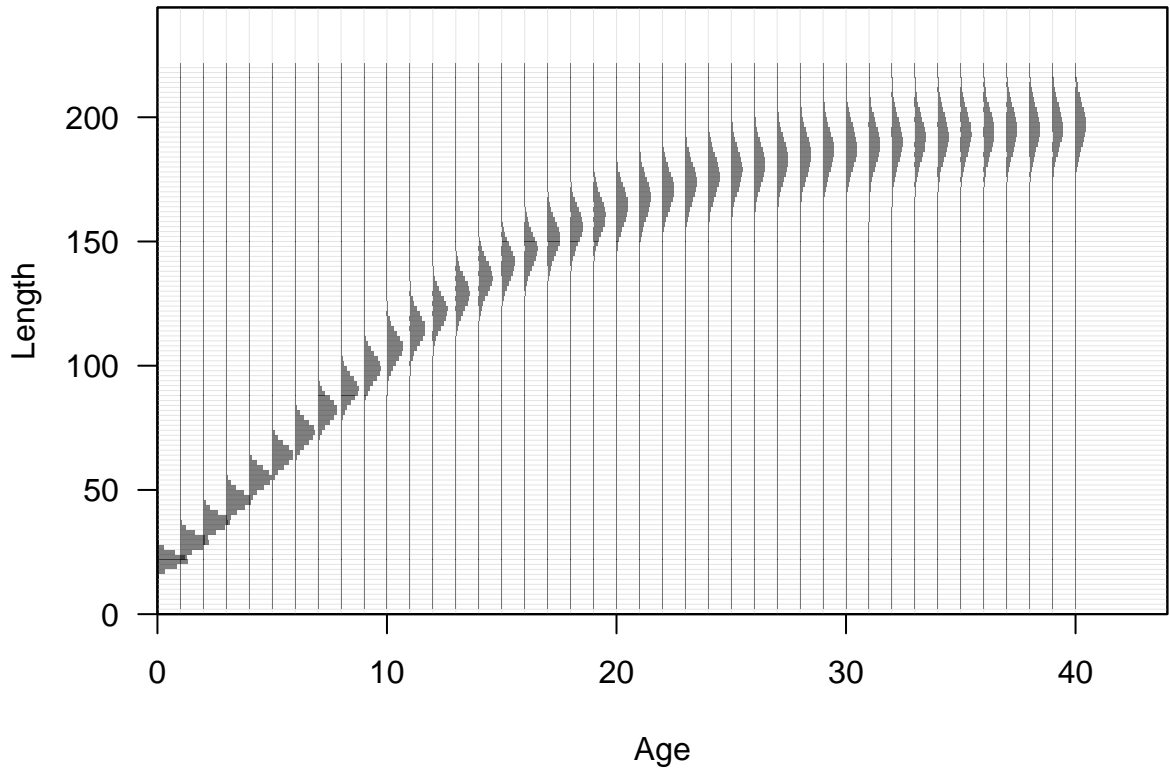
## Ending year expected growth (with 95% intervals)

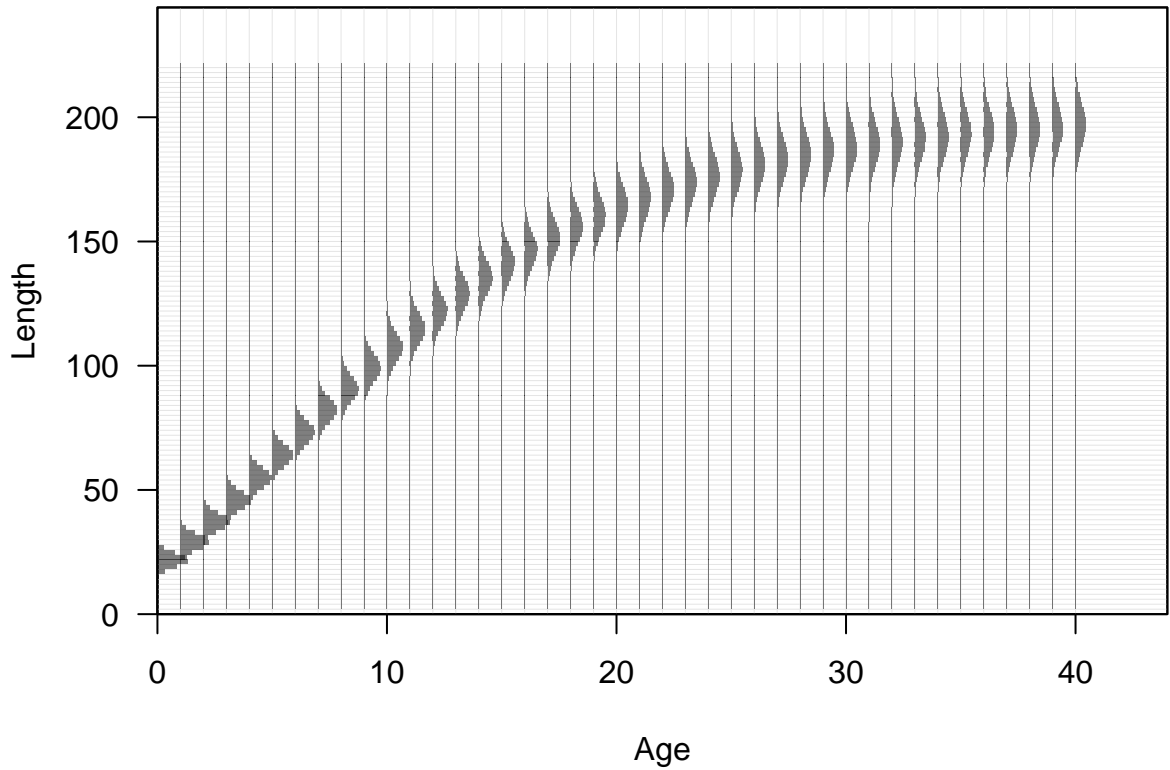


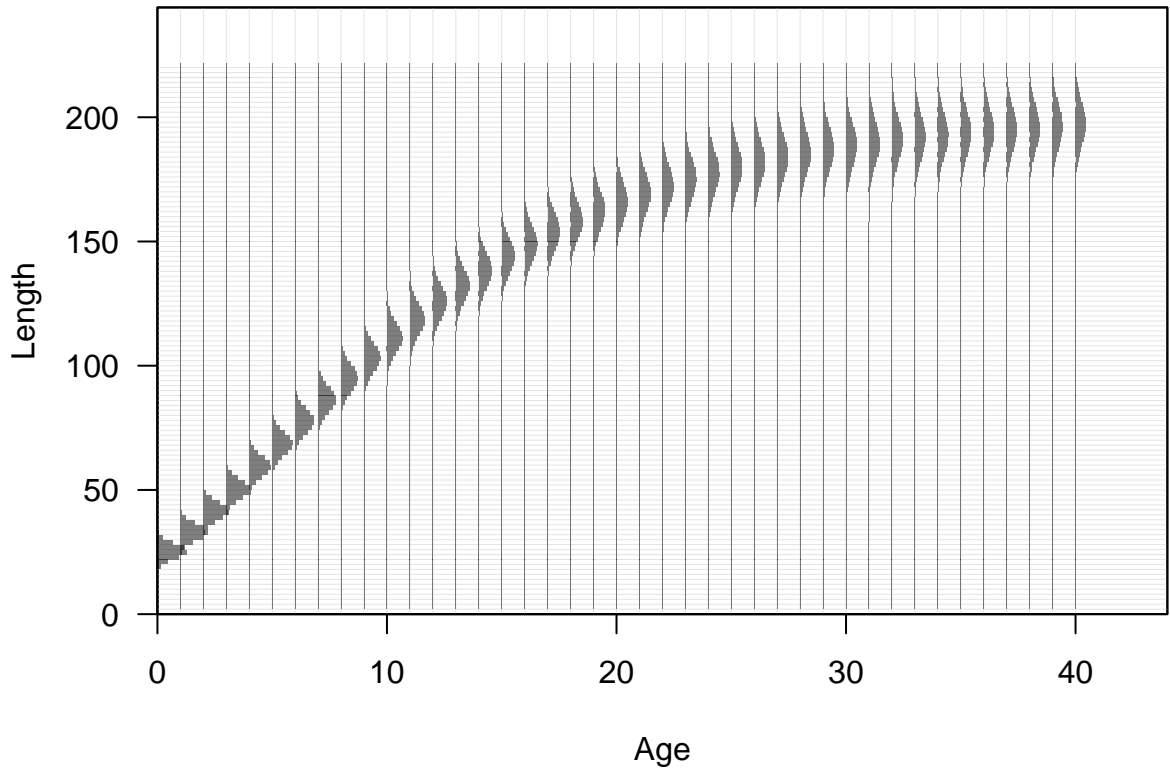


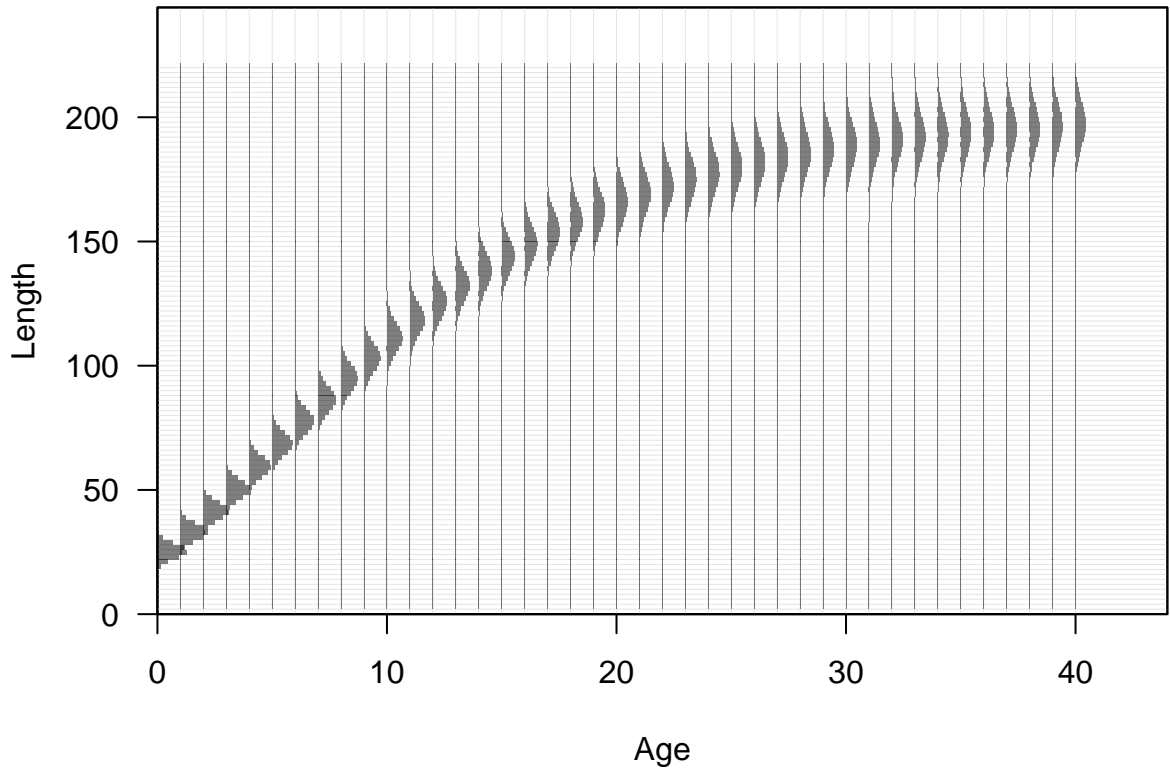


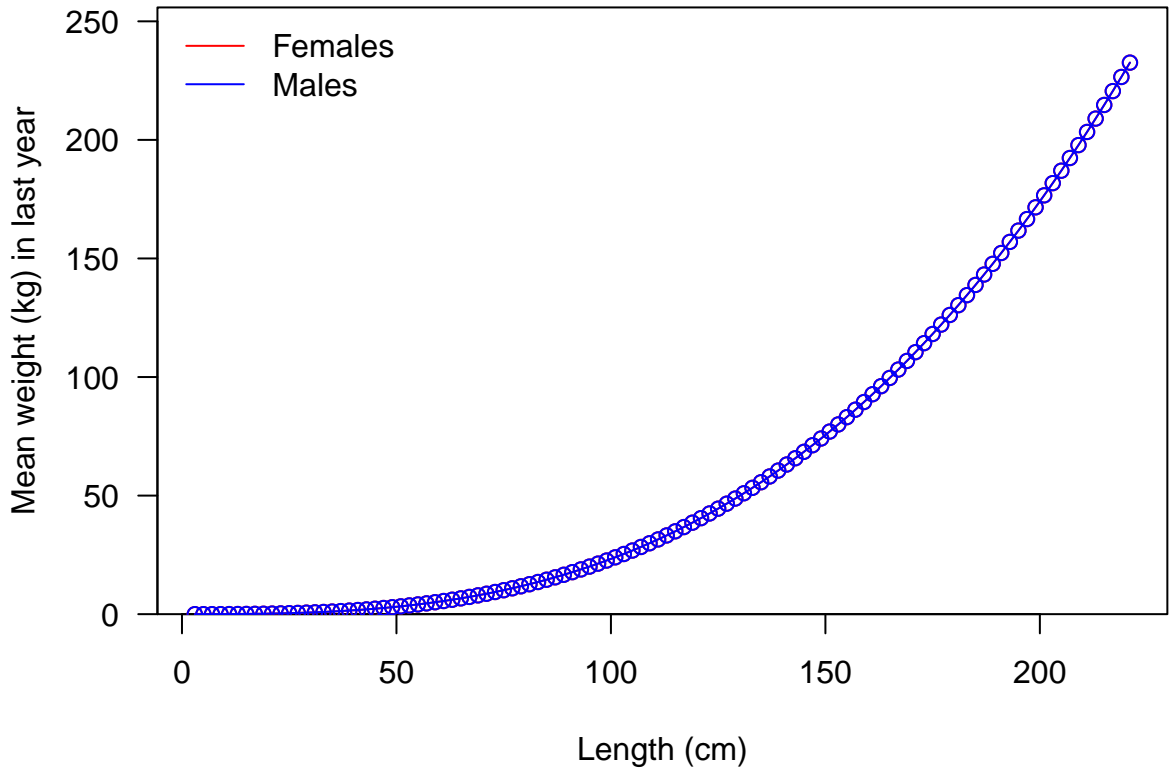


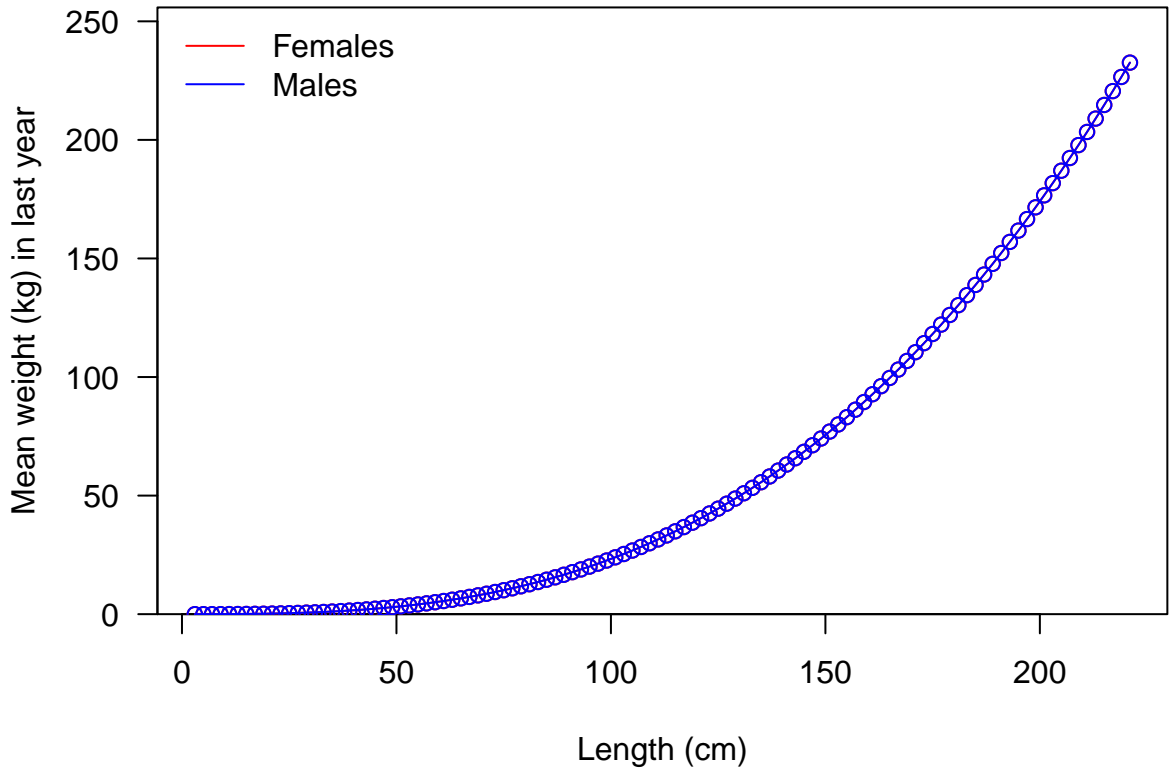


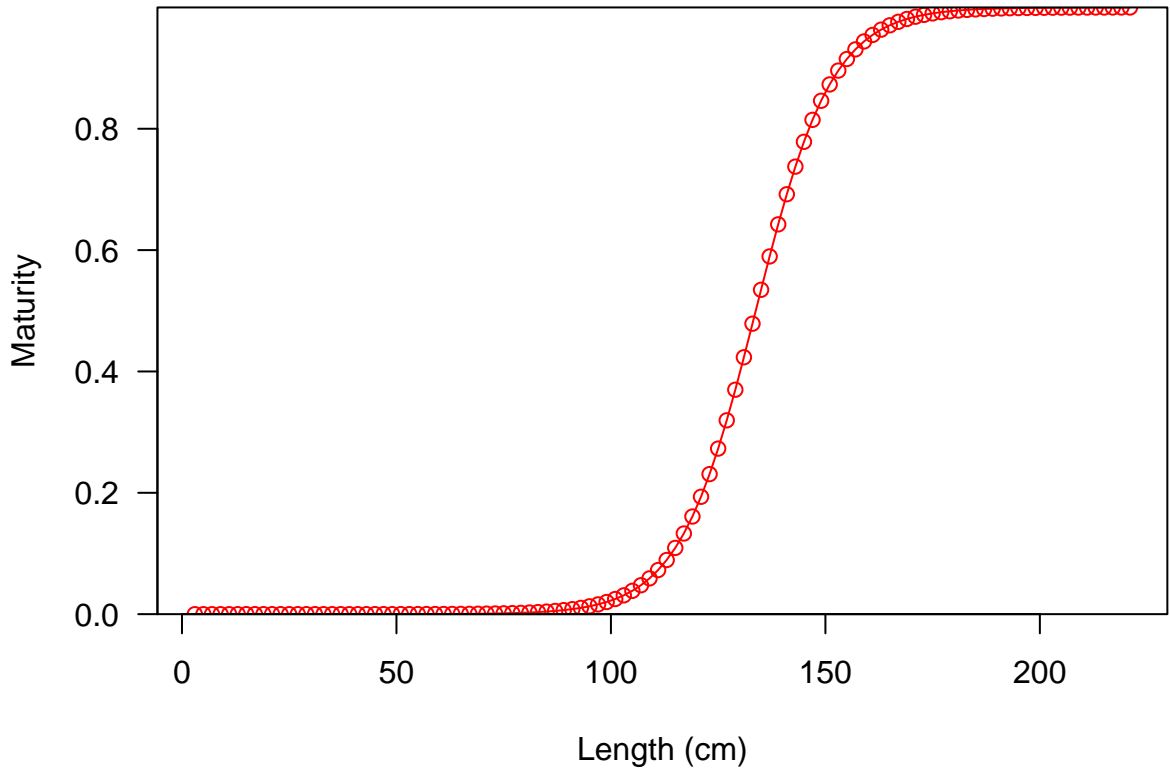


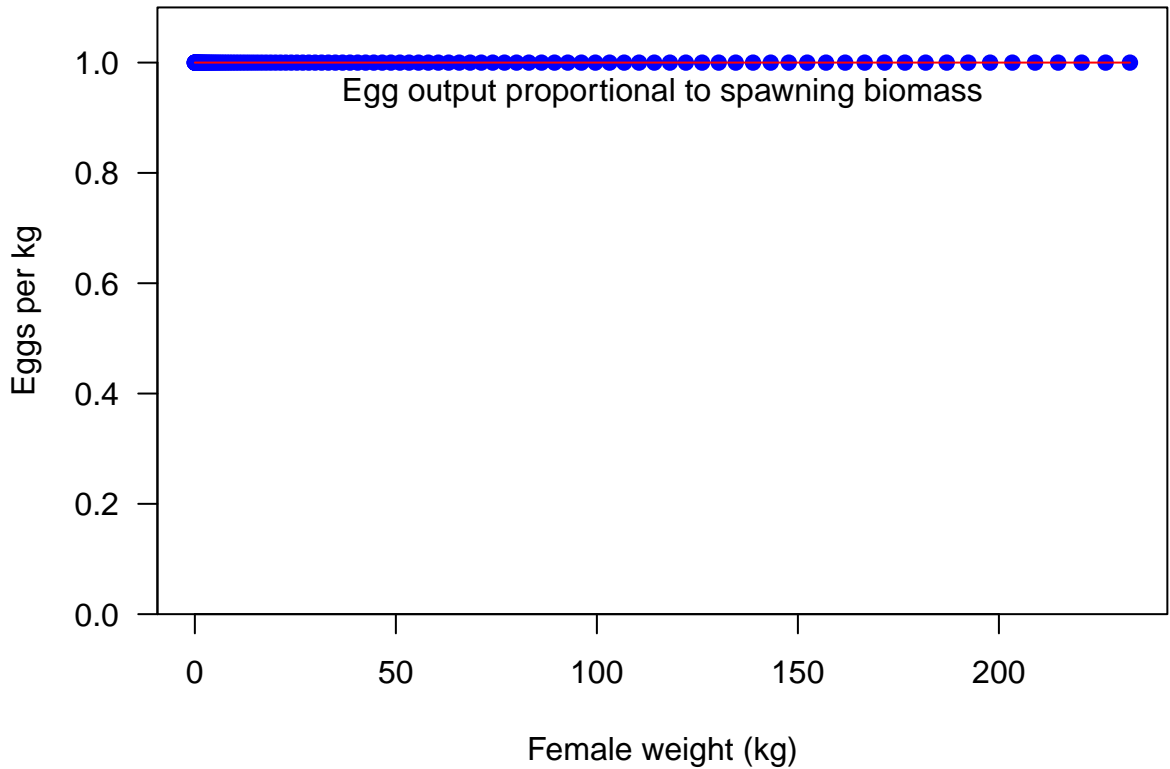




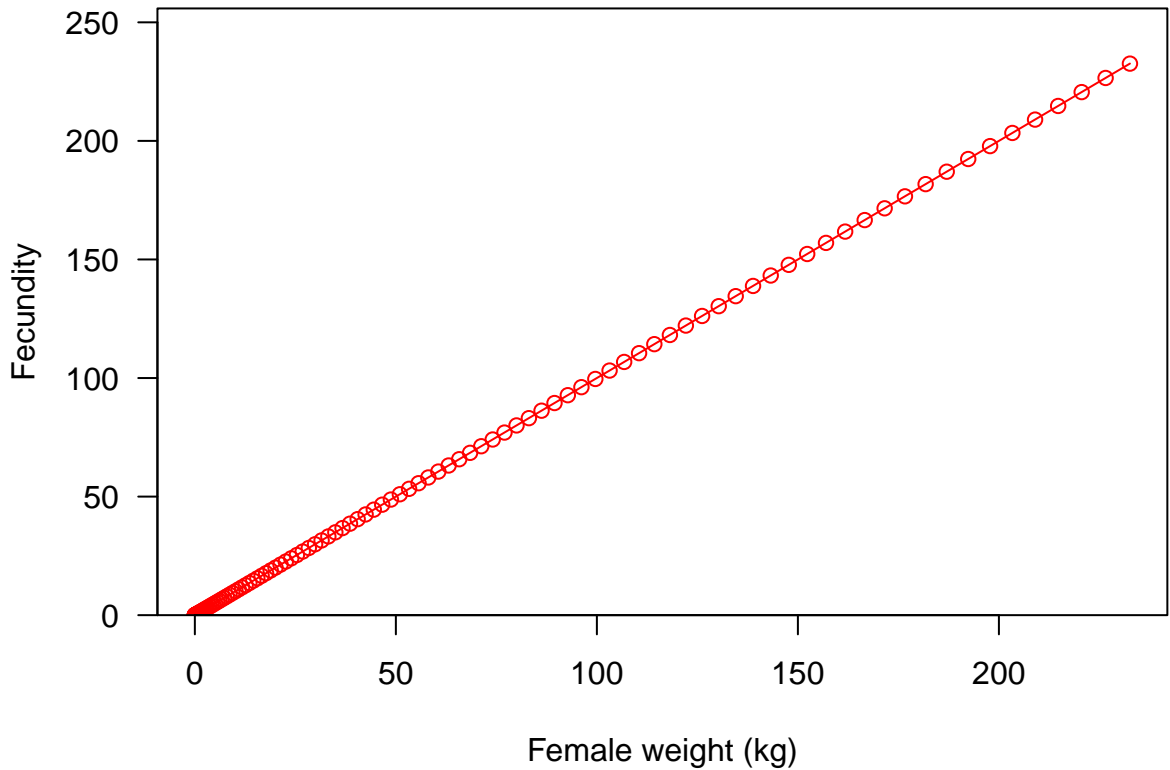


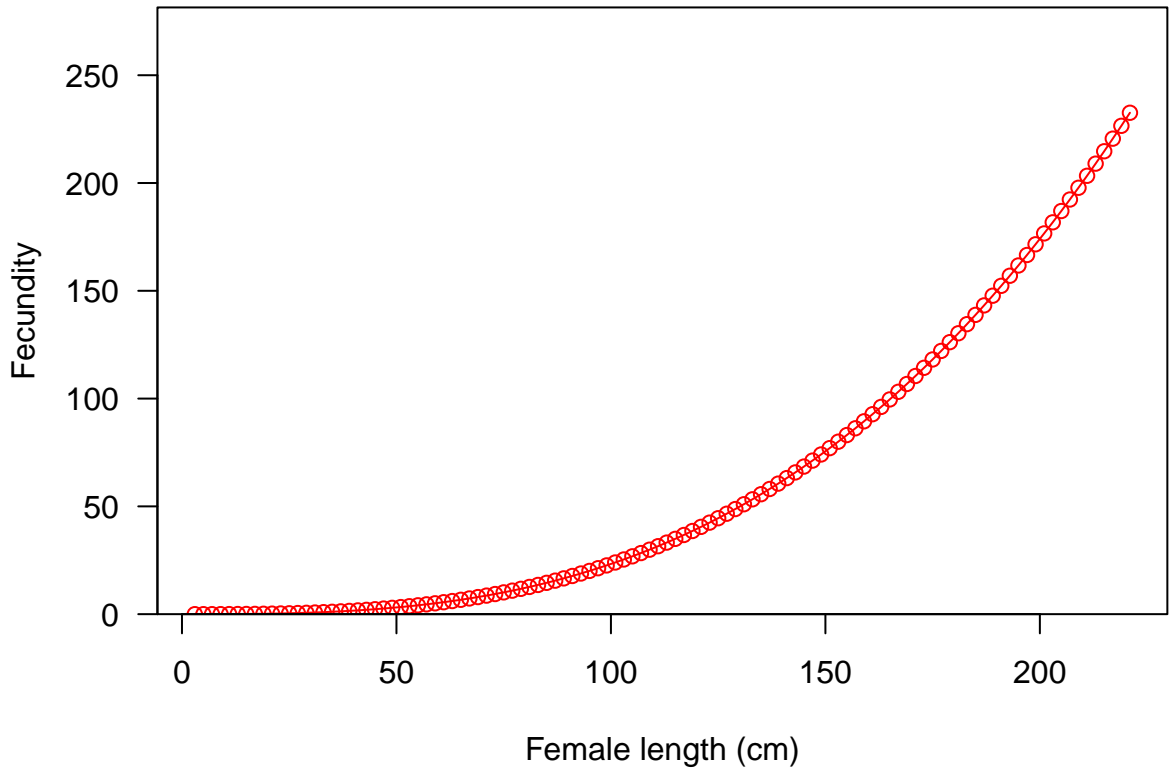


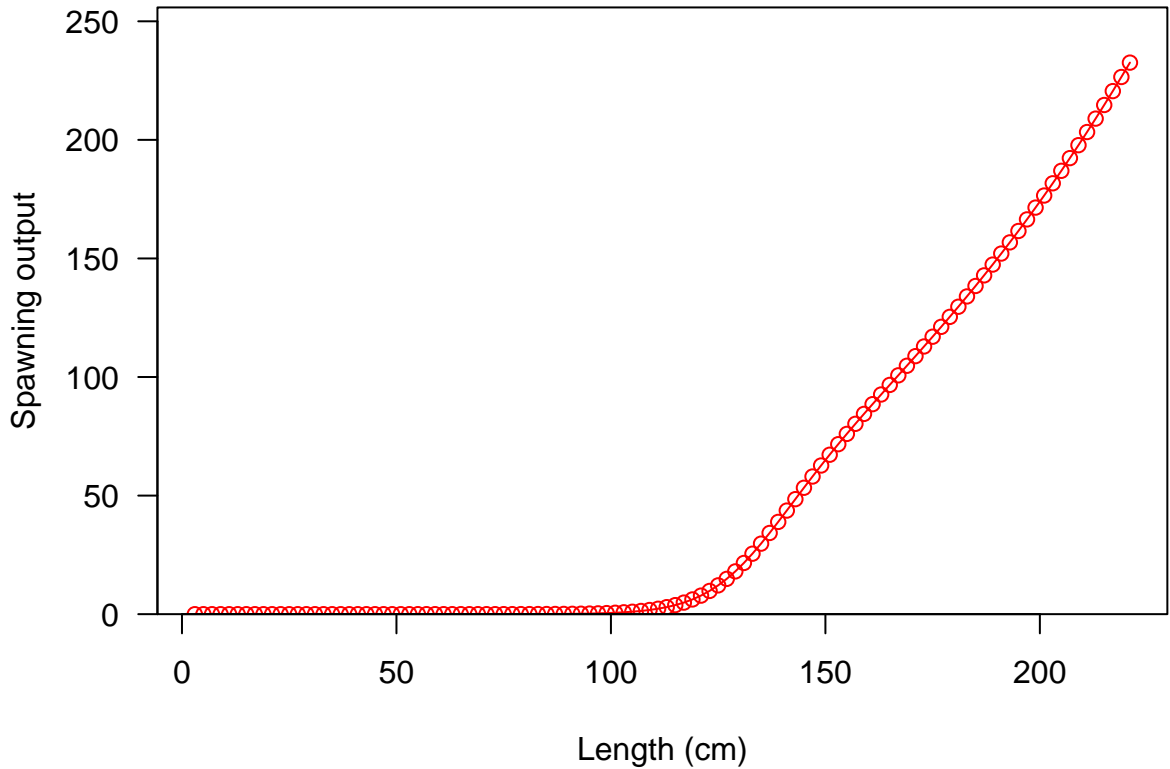


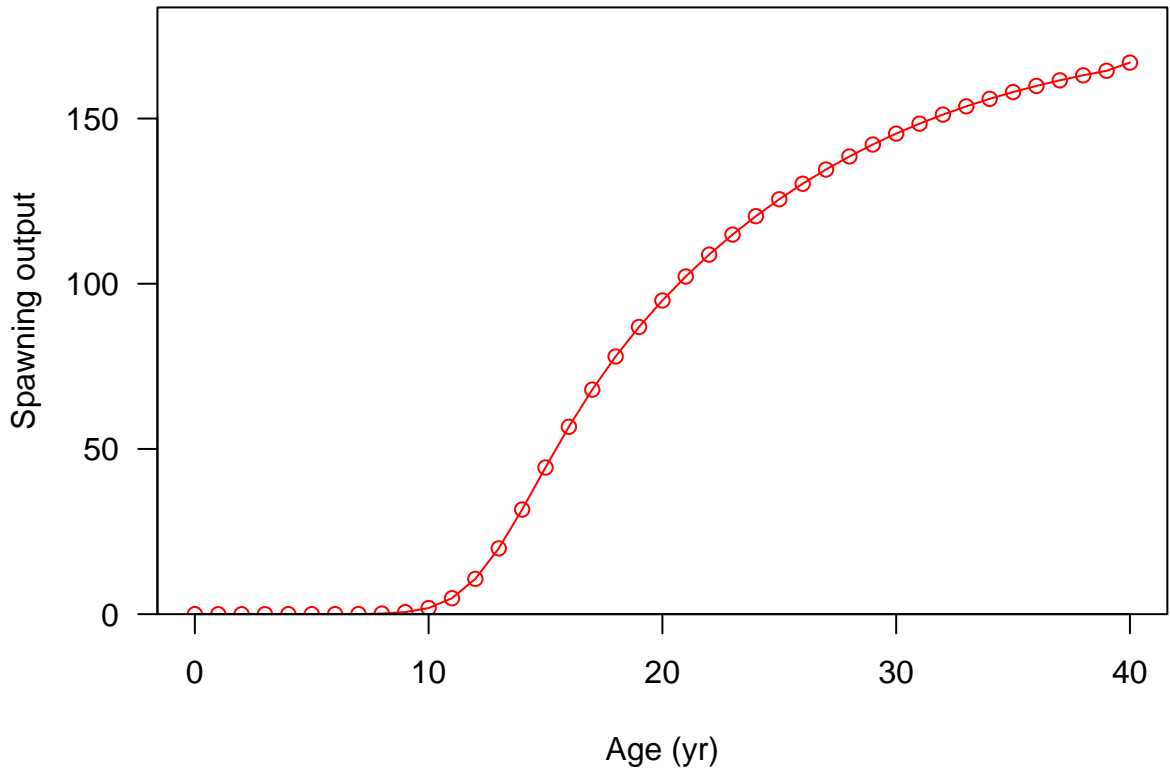


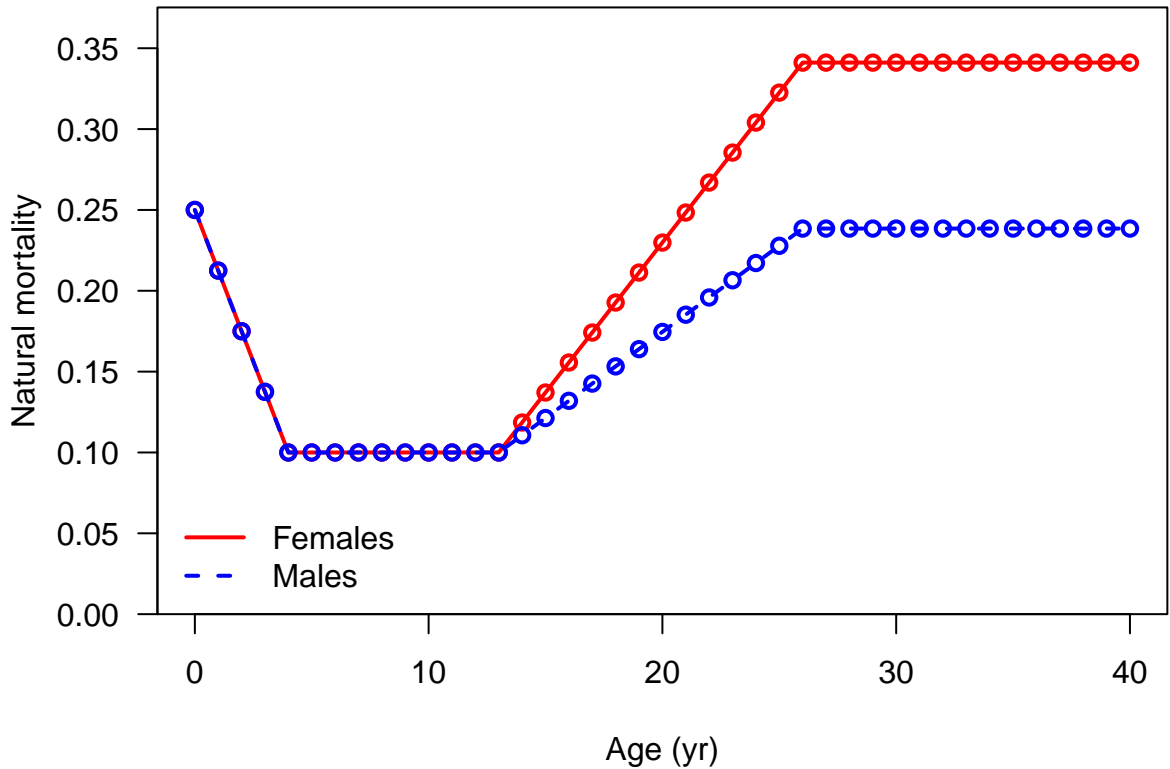




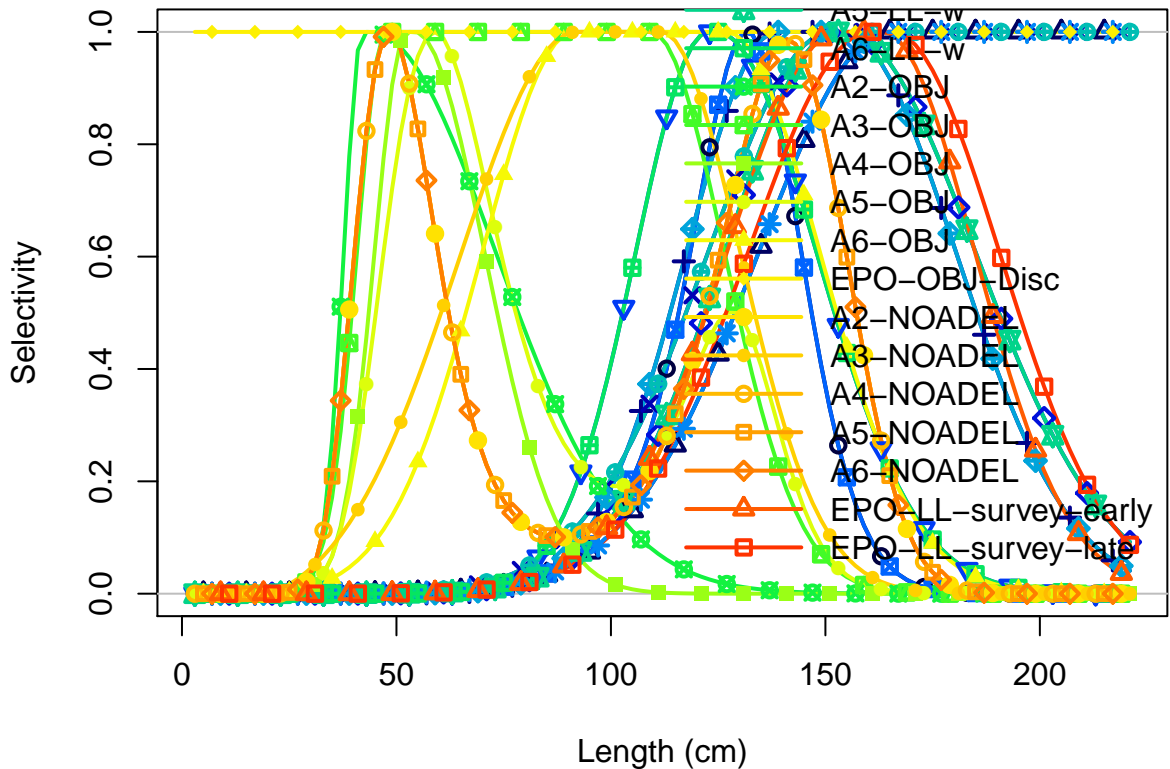






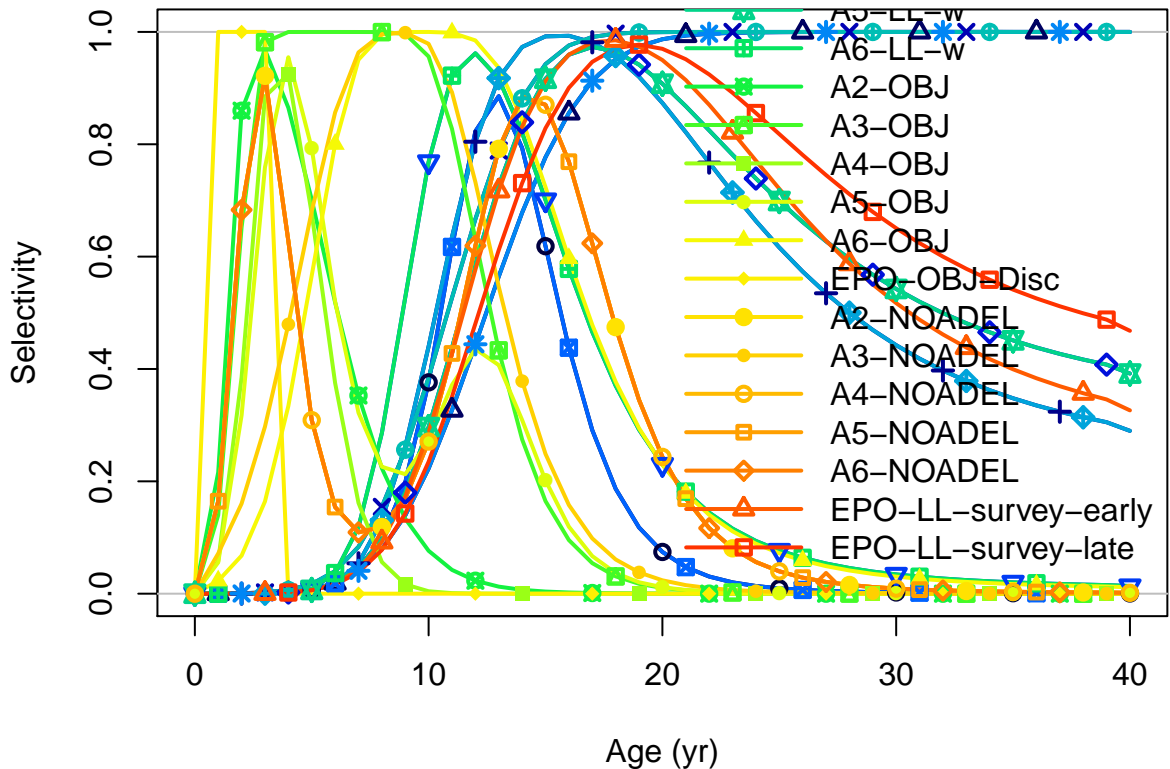


## Length-based selectivity by fleet in 180



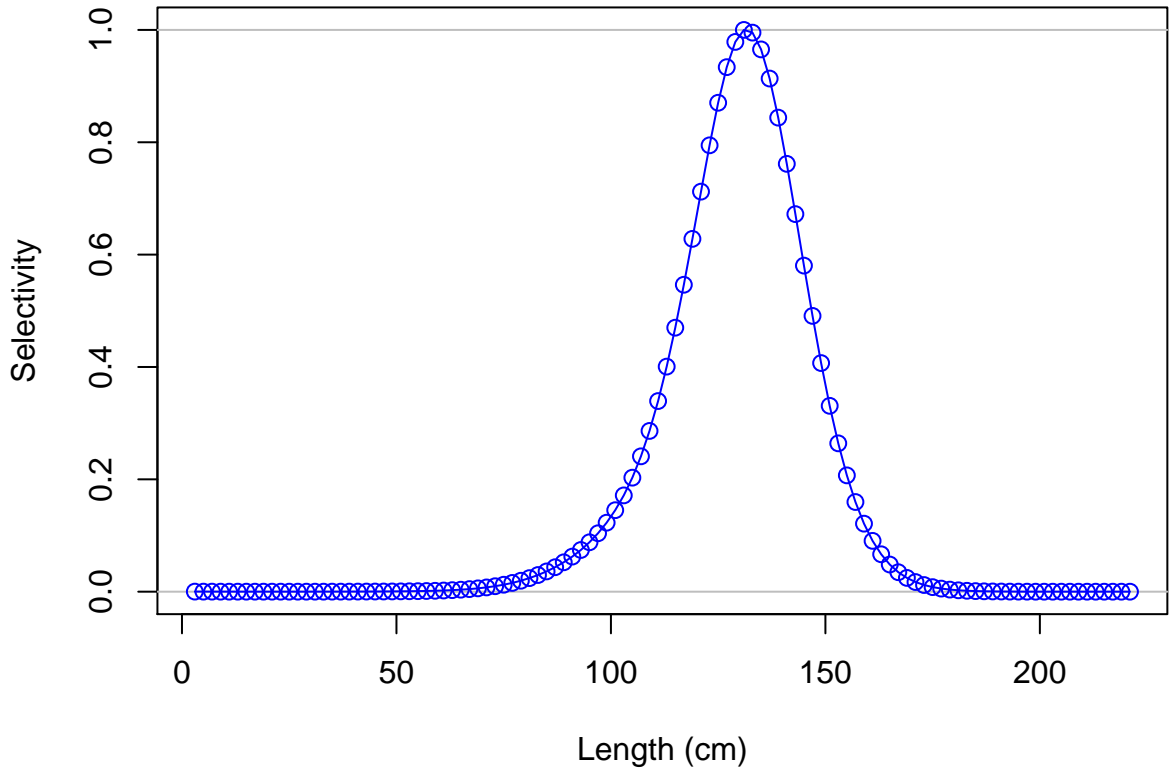


# Derived age-based from length-based selectivity by fleet in 180

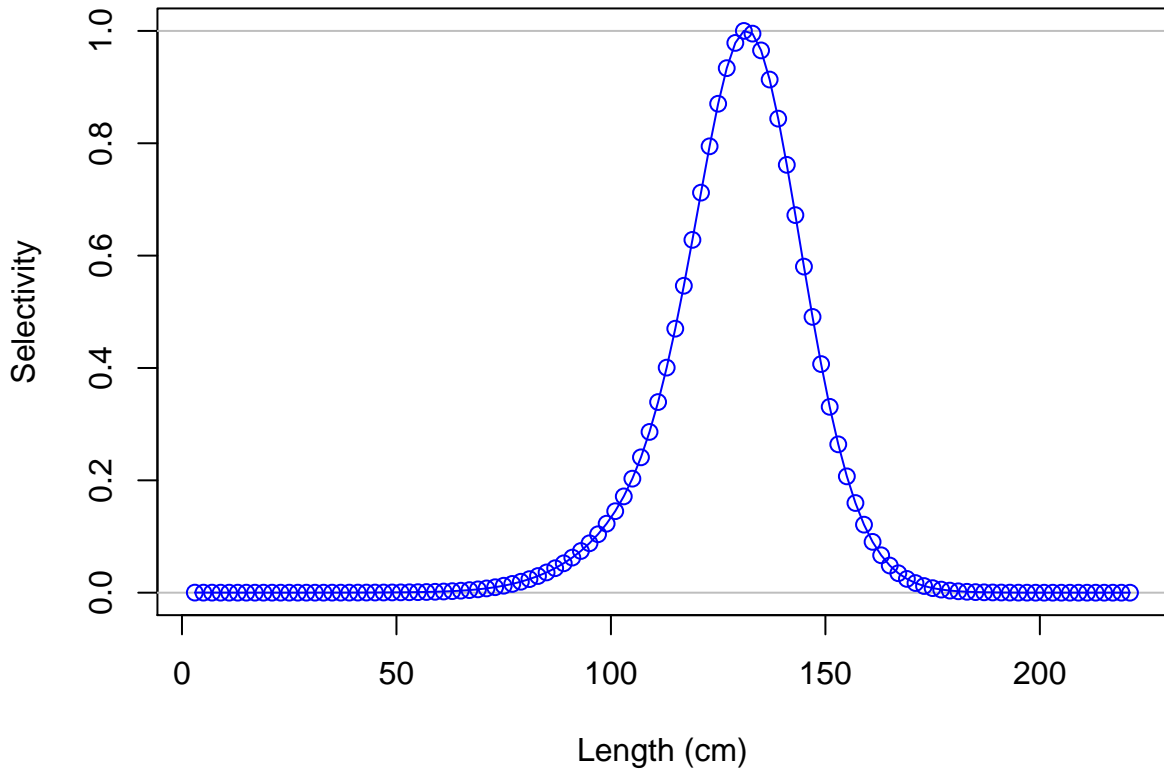




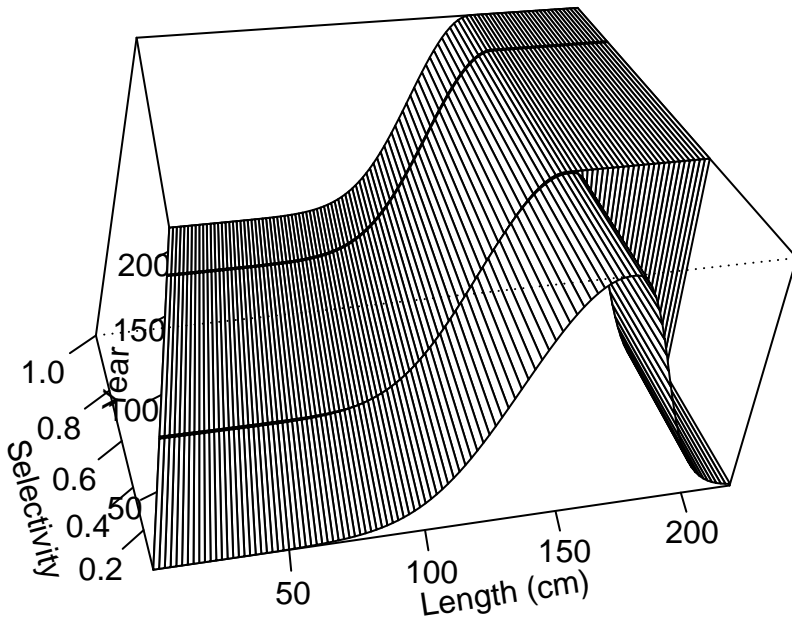
## Female ending year selectivity for A1-LL-n



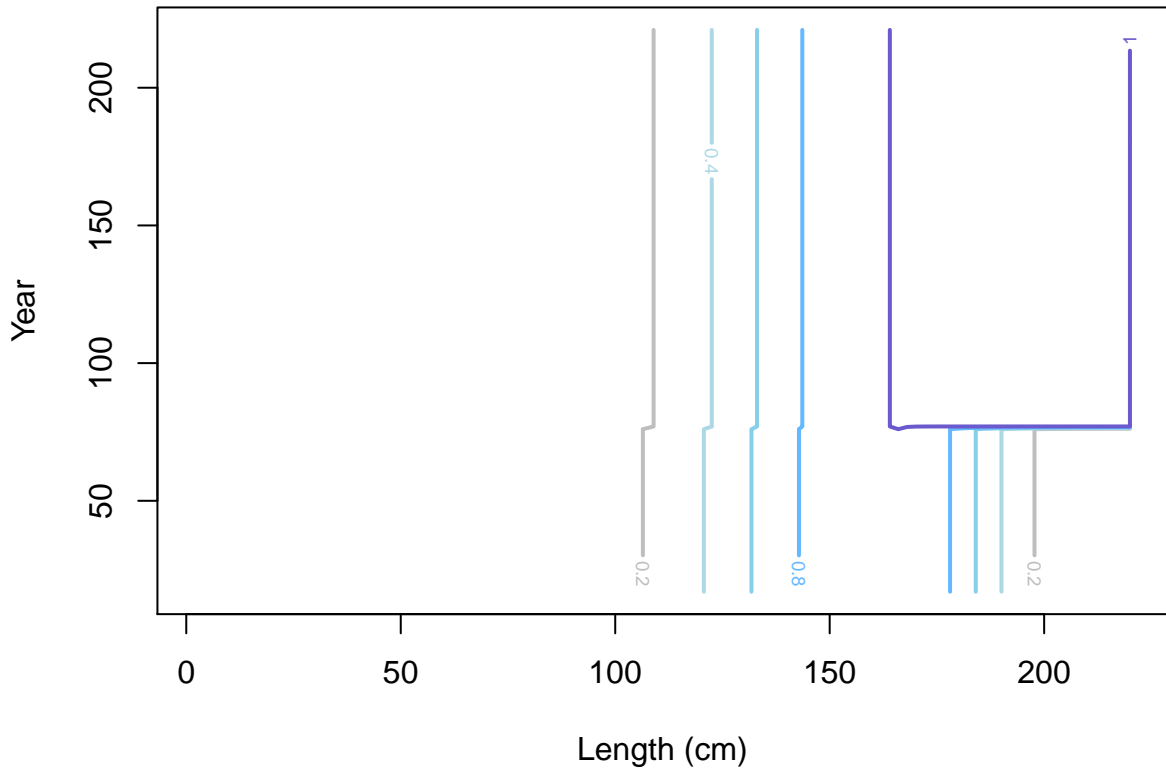
## Male ending year selectivity for A1-LL-n



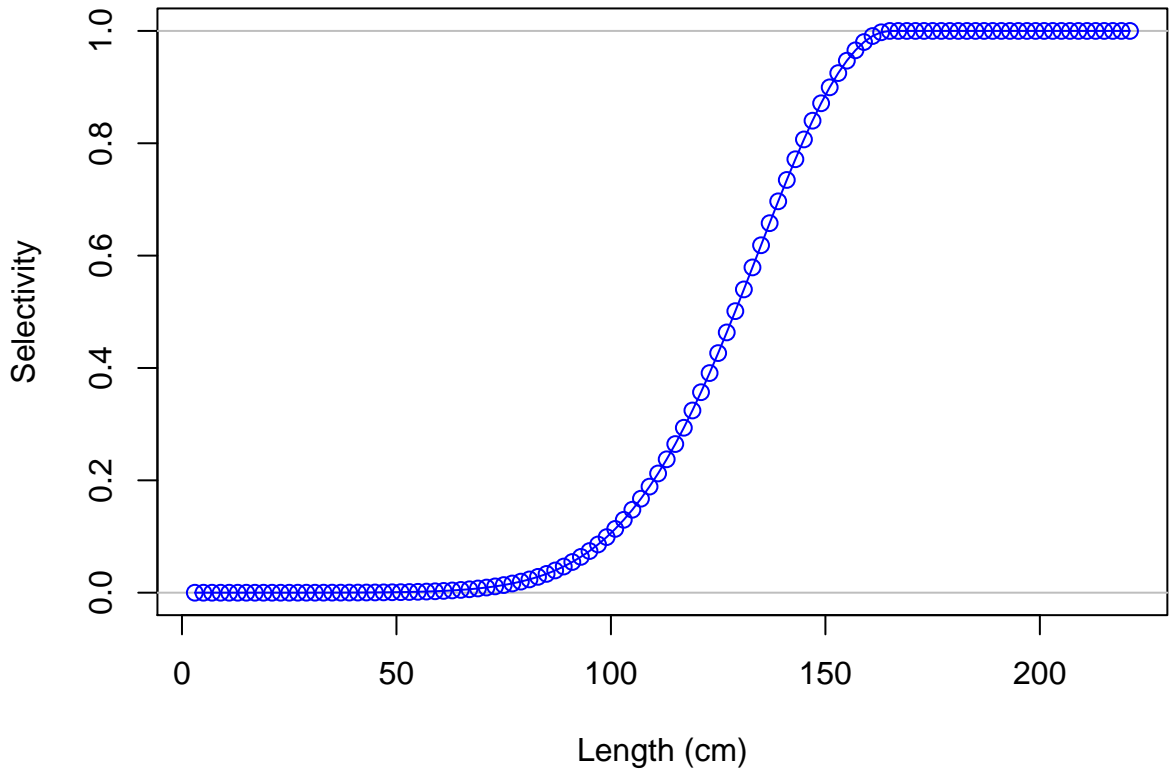
## Female time-varying selectivity for A2-LL-n



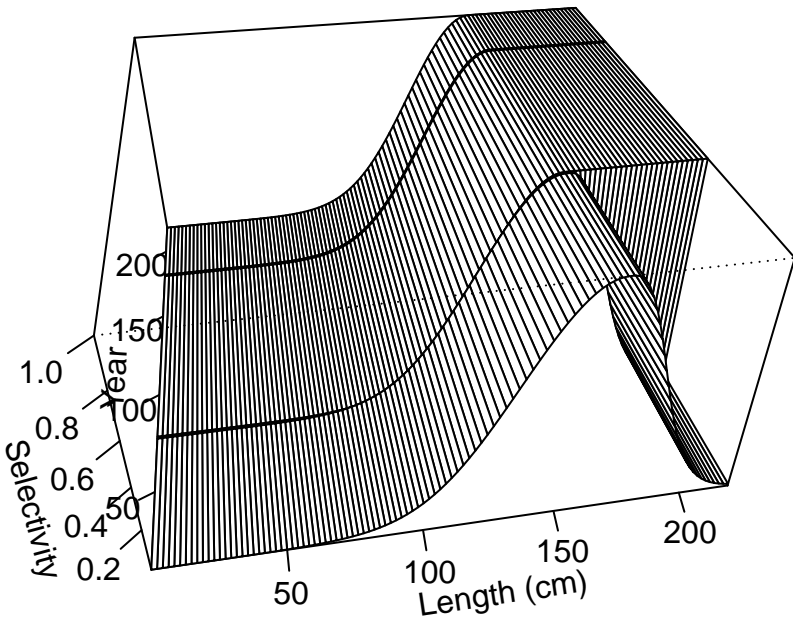
## Female time-varying selectivity for A2-LL-n



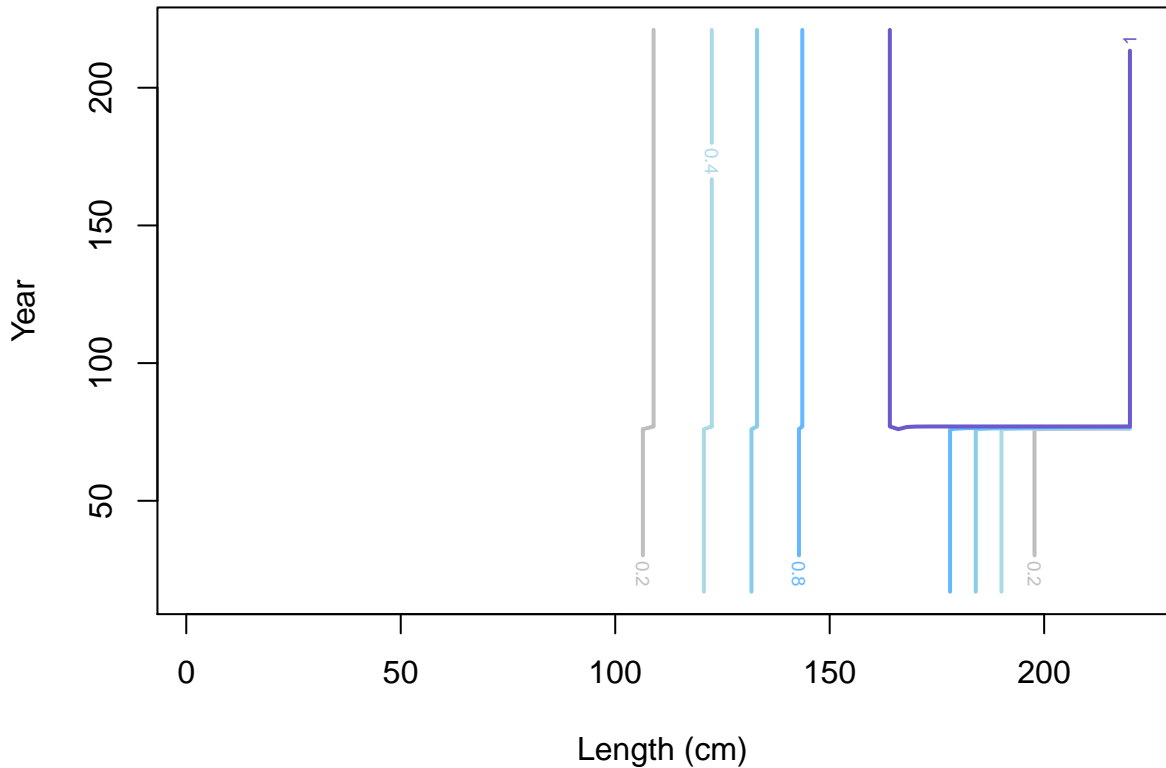
## Female ending year selectivity for A2-LL-n



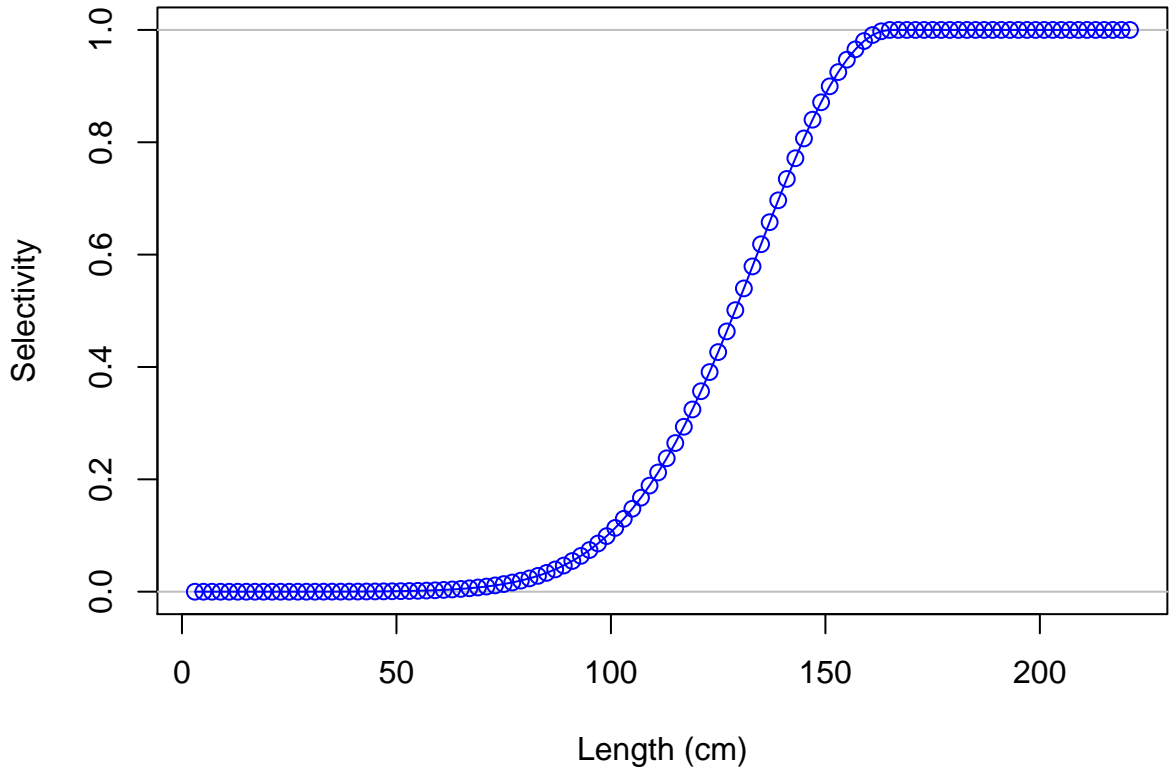
## Male time-varying selectivity for A2-LL-n



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

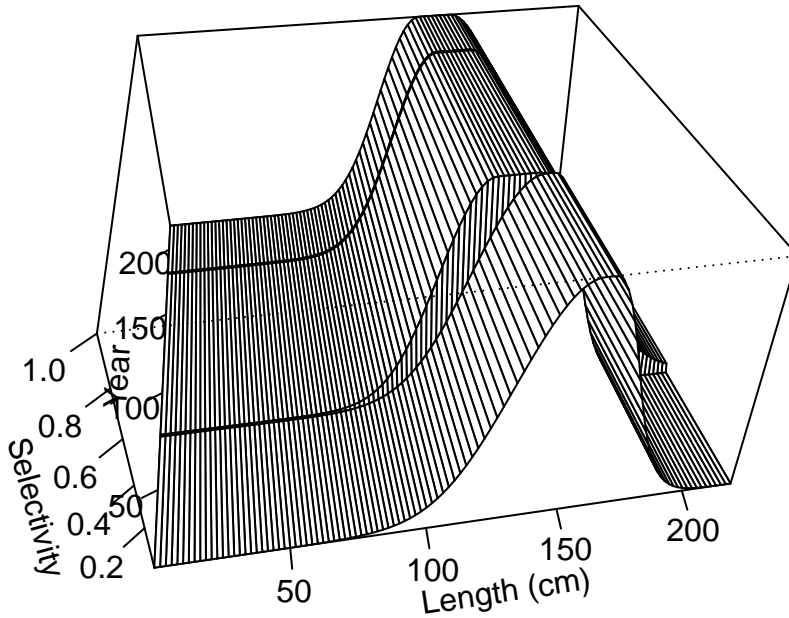


## Male ending year selectivity for A2-LL-n

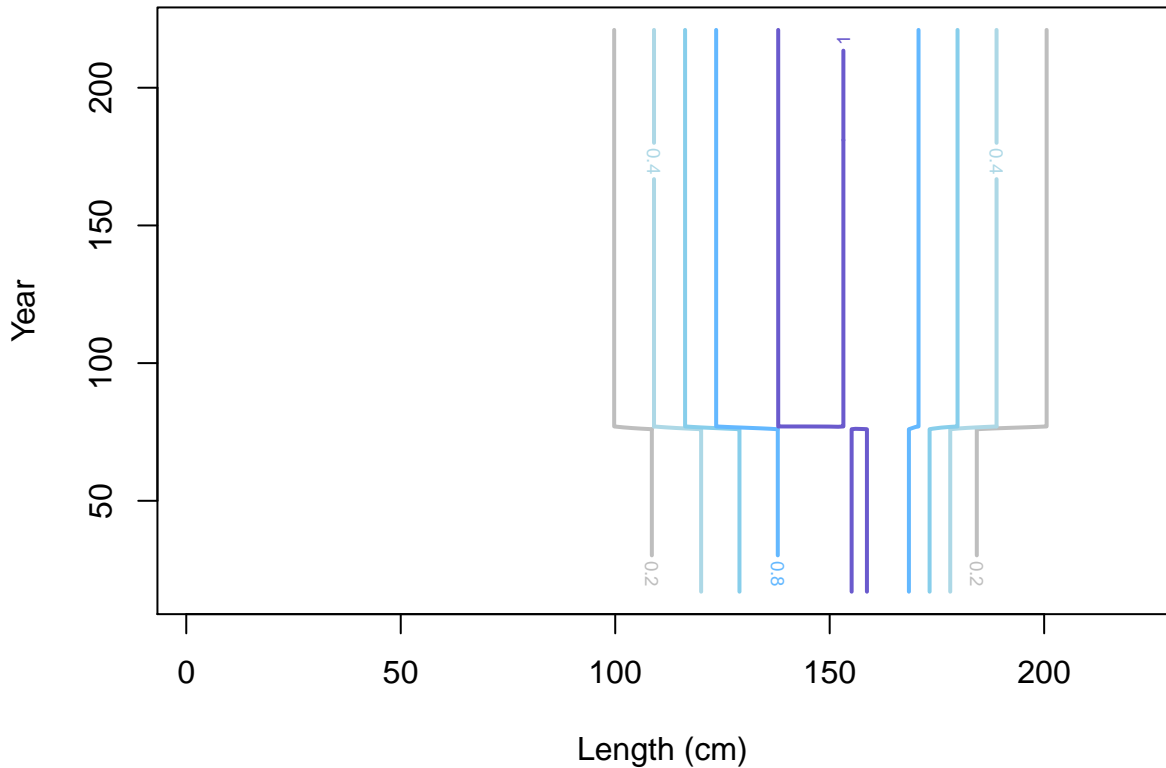




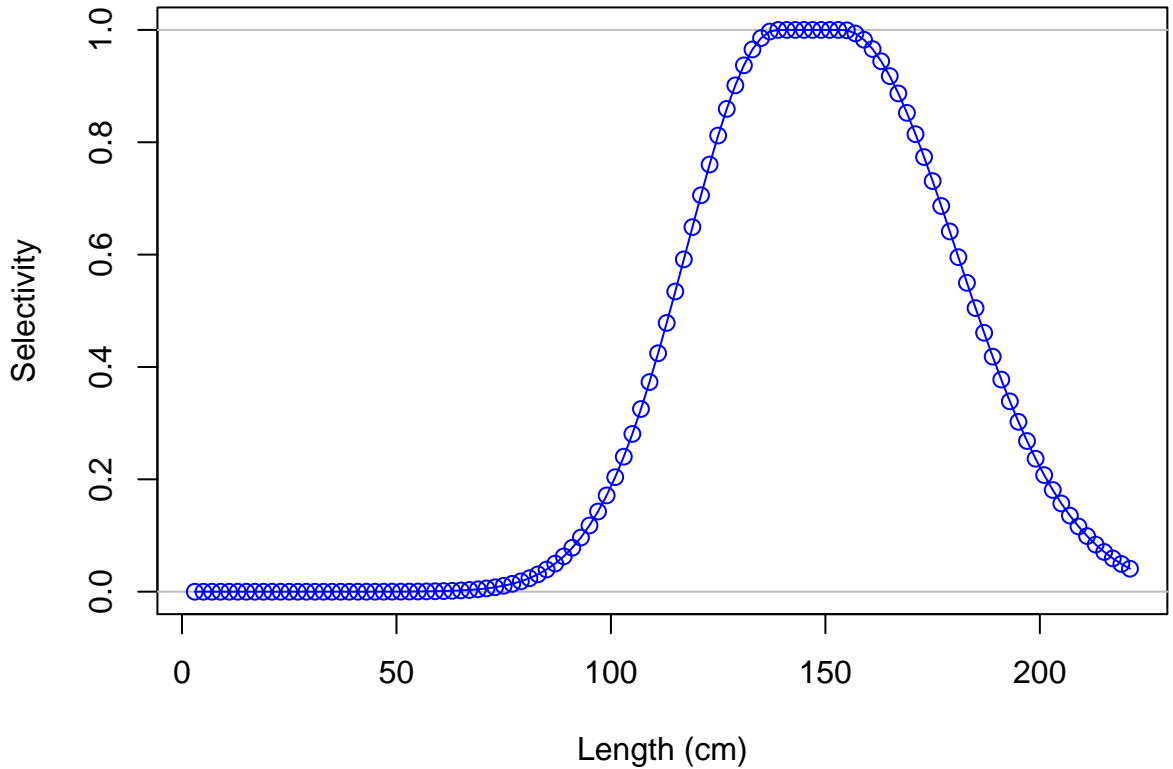
## Female time-varying selectivity for A3-LL-n



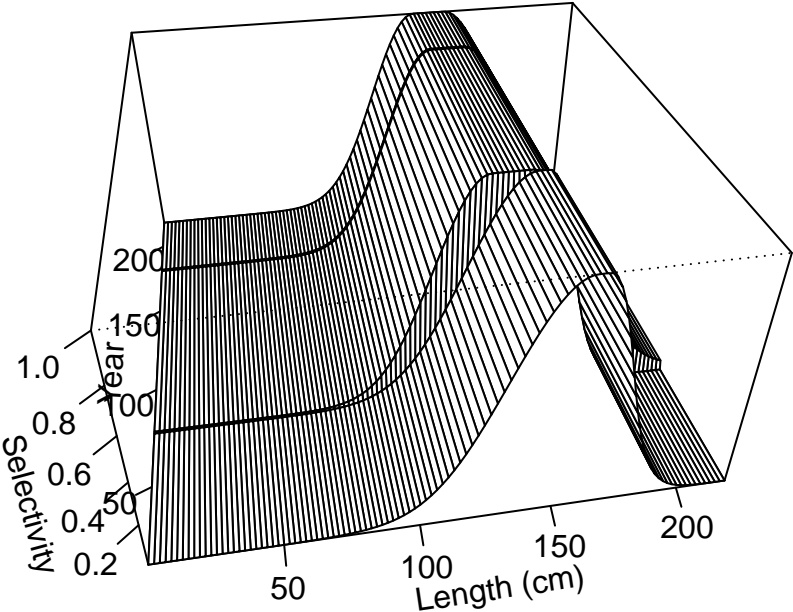
## Female time-varying selectivity for A3-LL-n



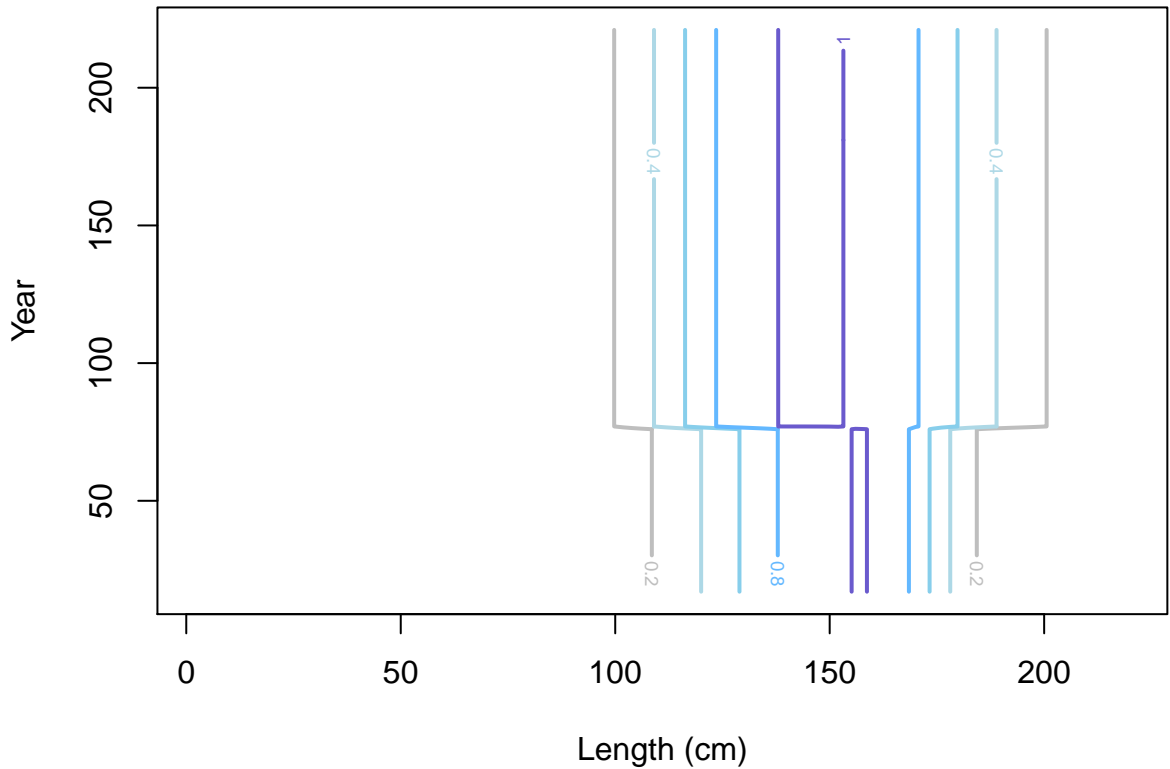
## Female ending year selectivity for A3-LL-n



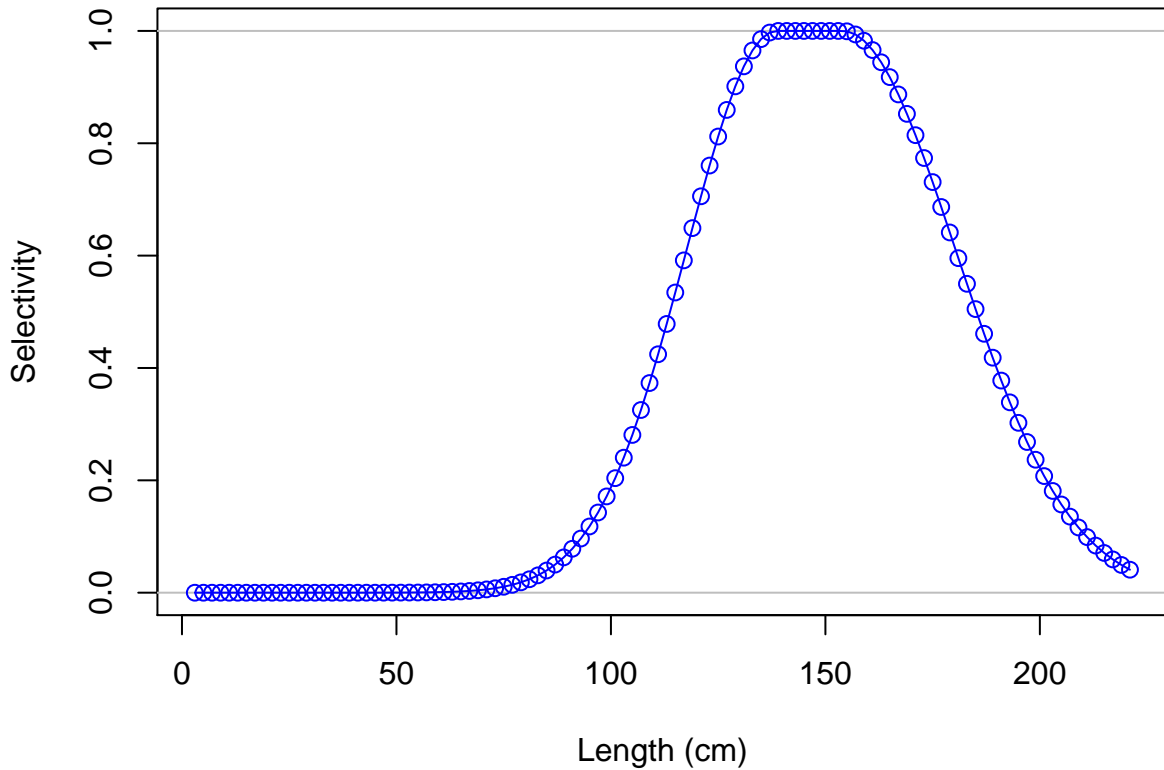
# Male time-varying selectivity for A3-LL-n



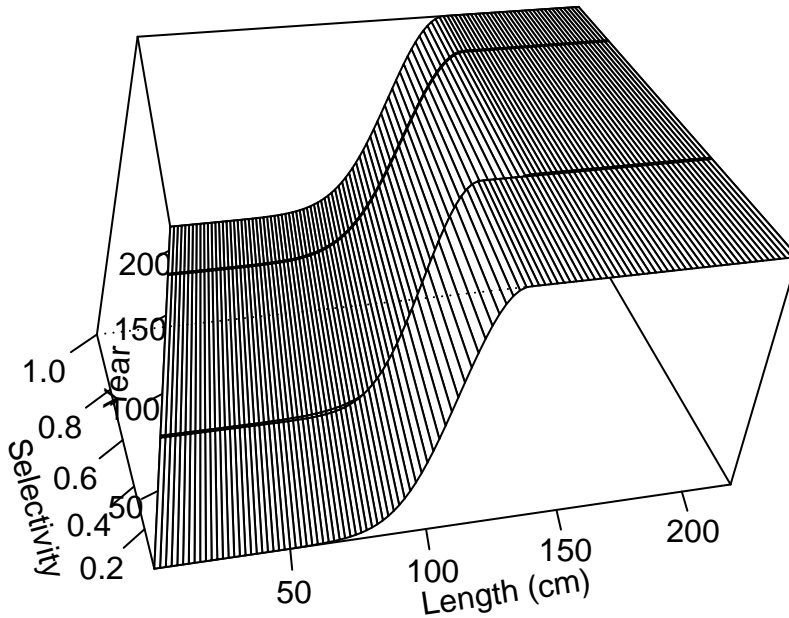
# Male time-varying selectivity for A3-LL-n



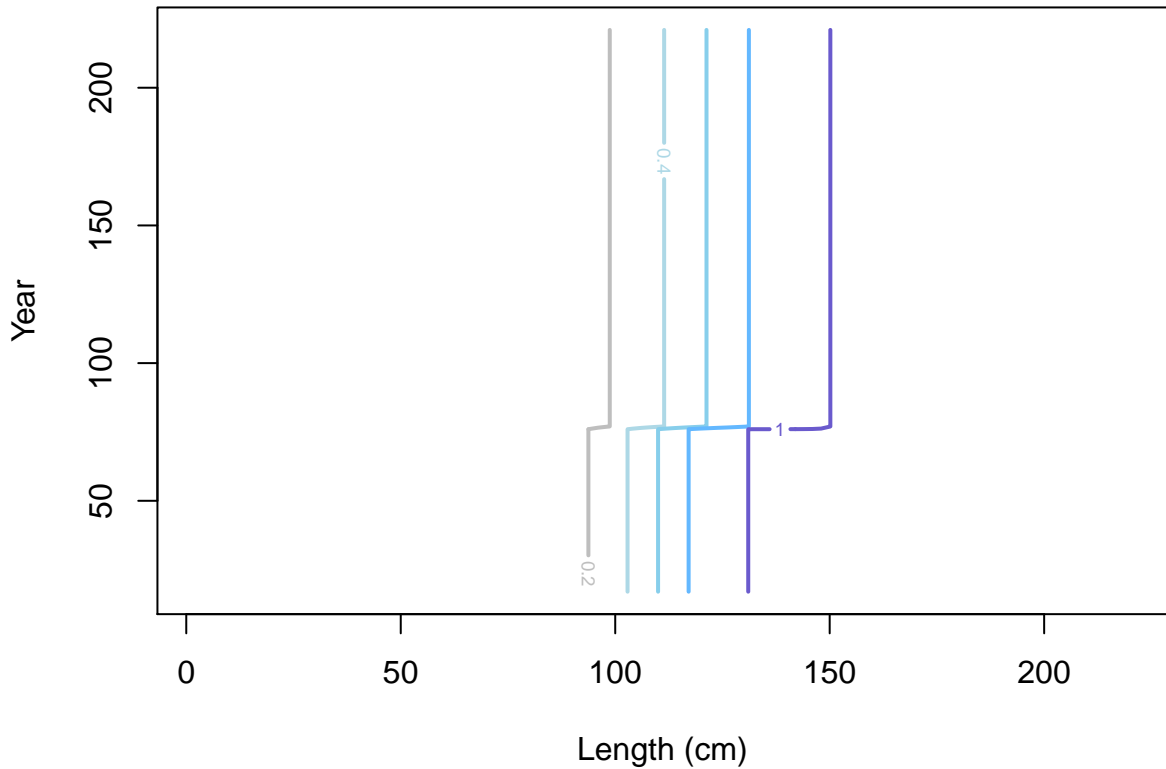
## Male ending year selectivity for A3-LL-n



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

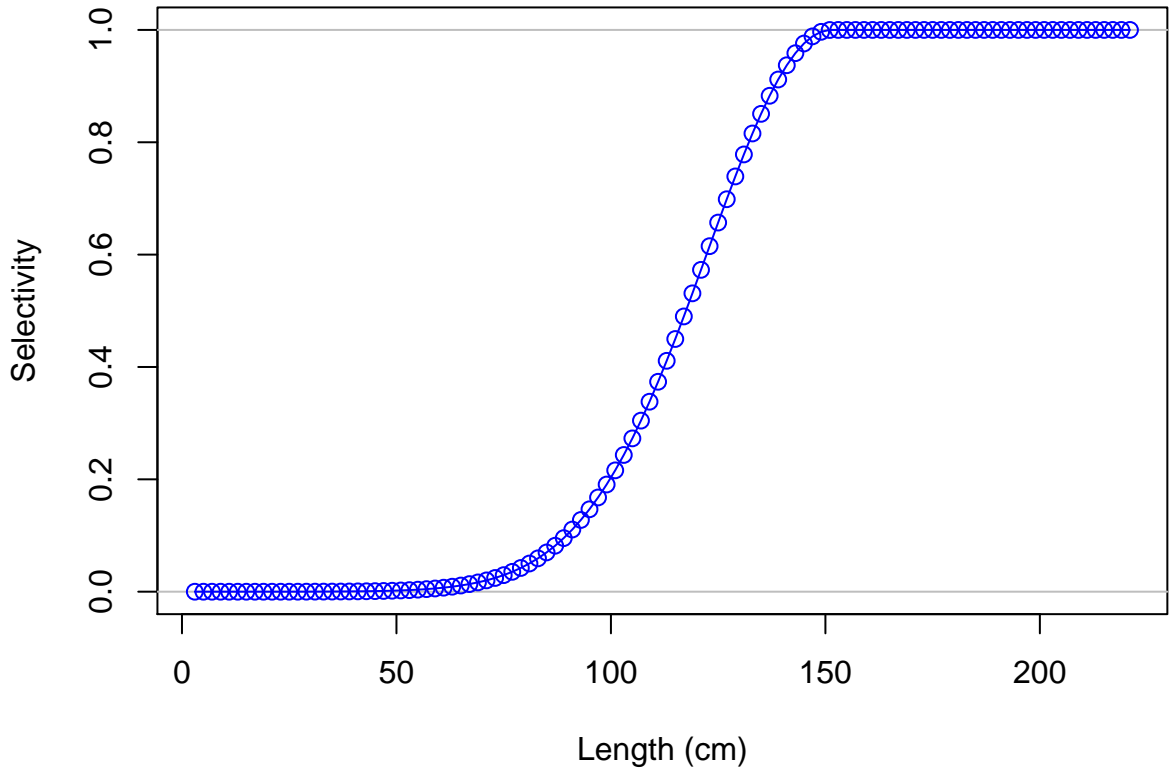


# Female time-varying selectivity for A4-LL-n

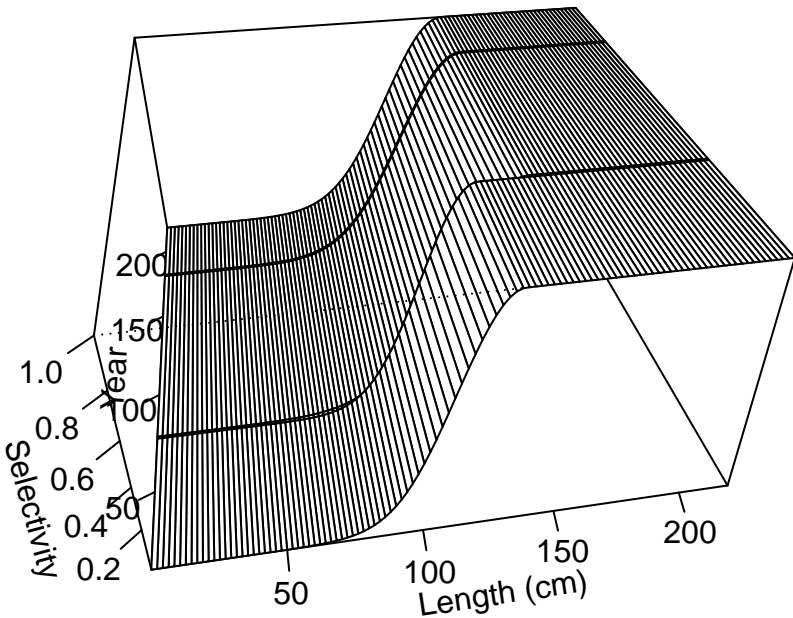




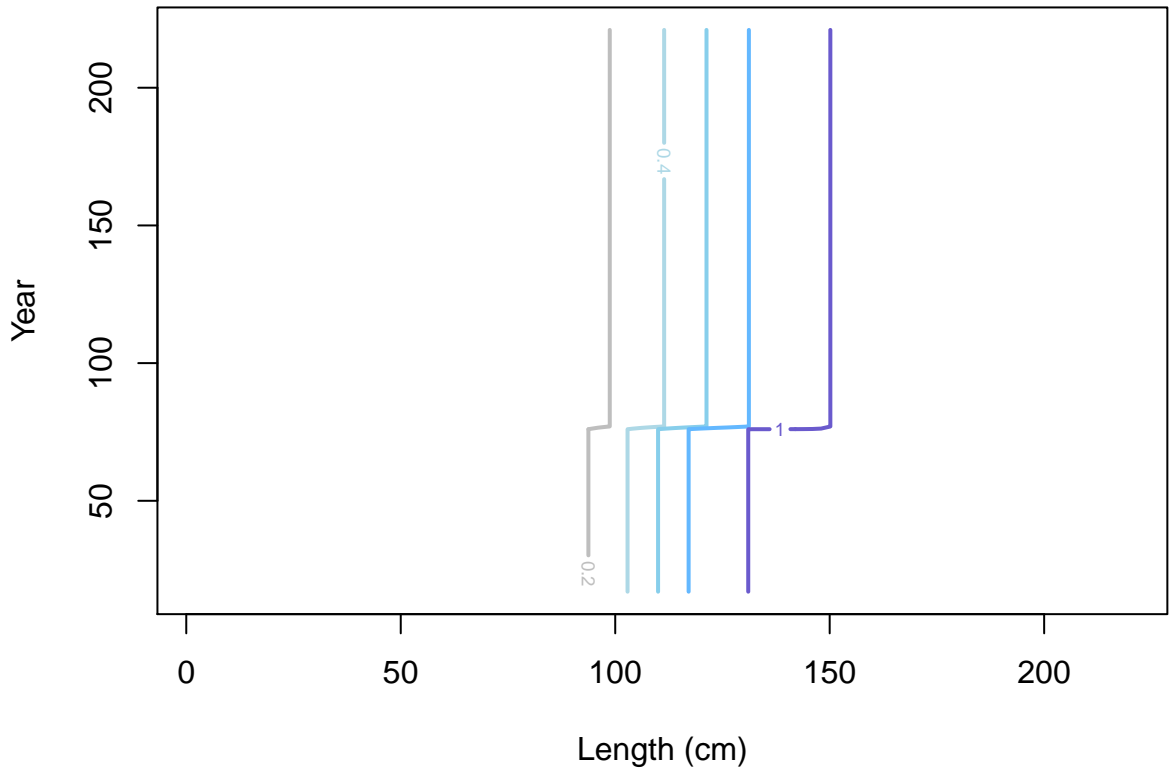
## Female ending year selectivity for A4-LL-n



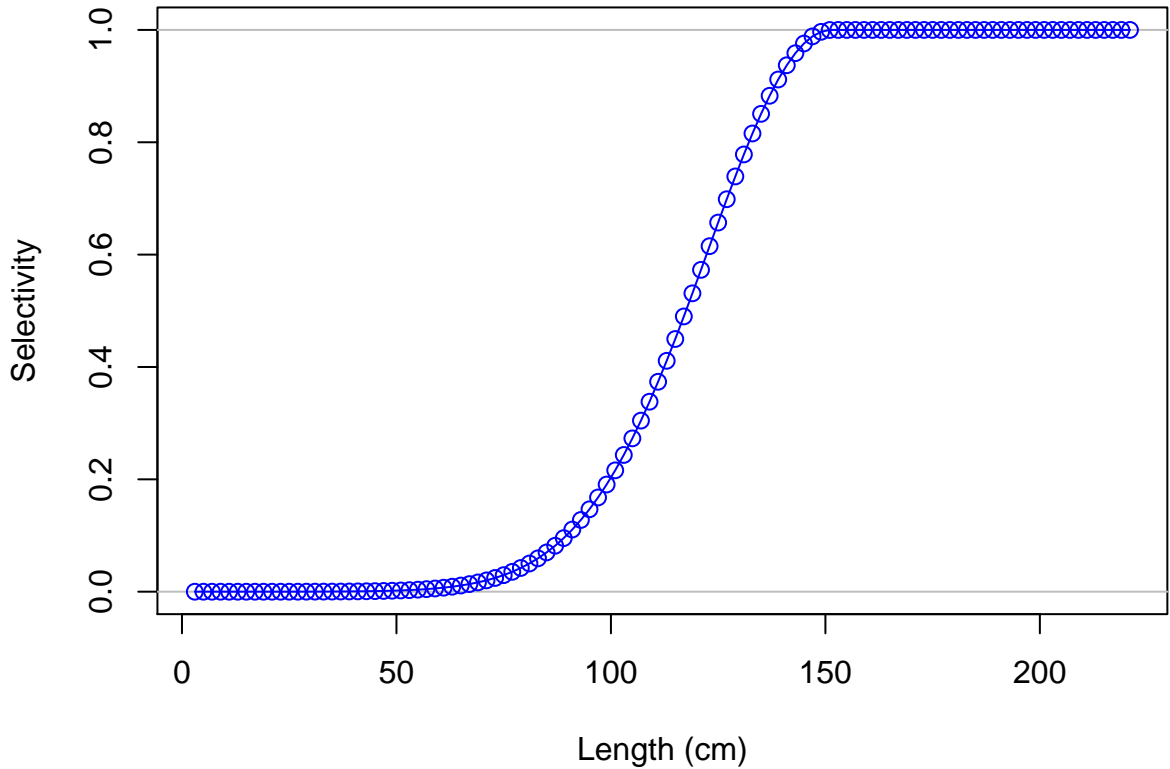
## Male time-varying selectivity for A4-LL-n



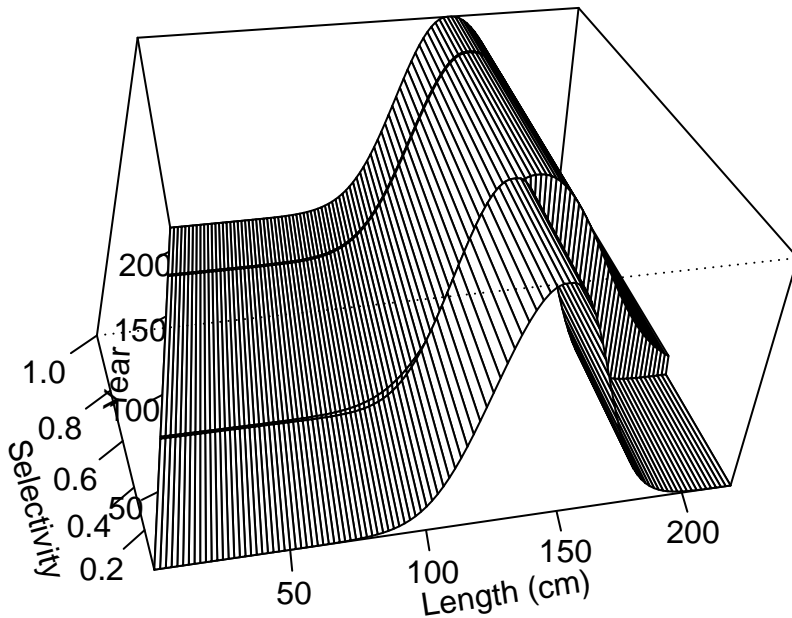
# Male time-varying selectivity for A4-LL-n



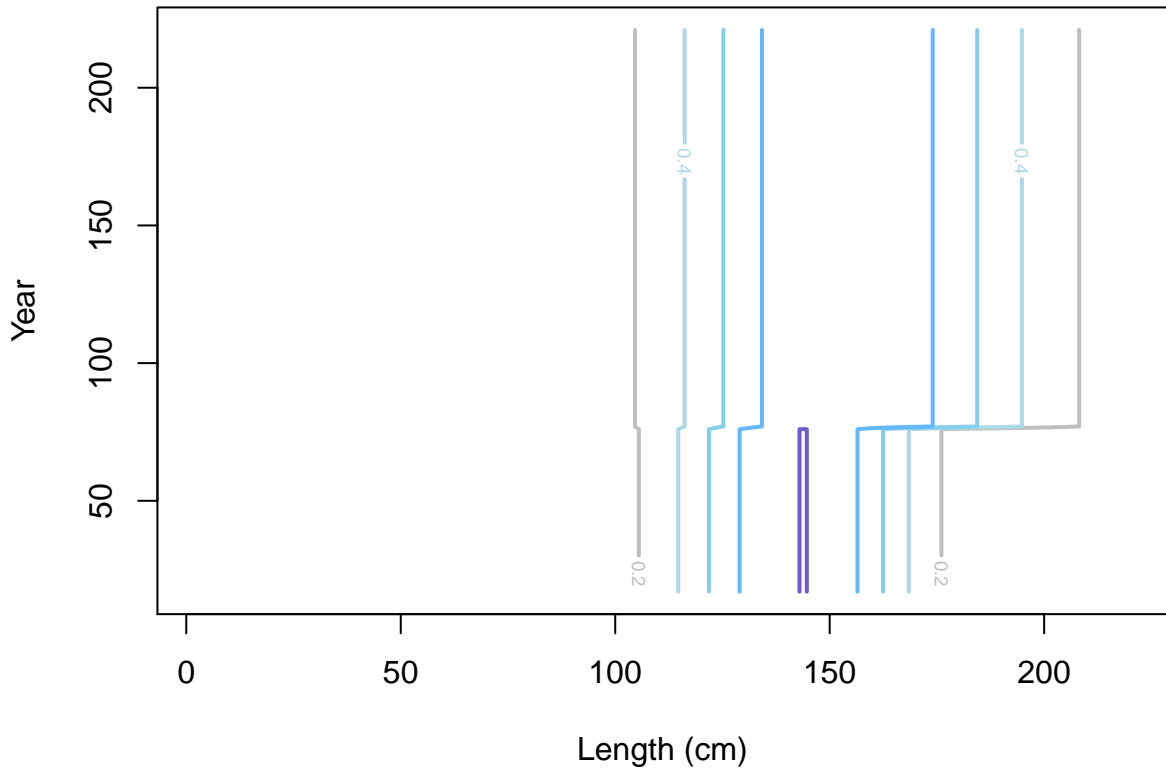
## Male ending year selectivity for A4-LL-n



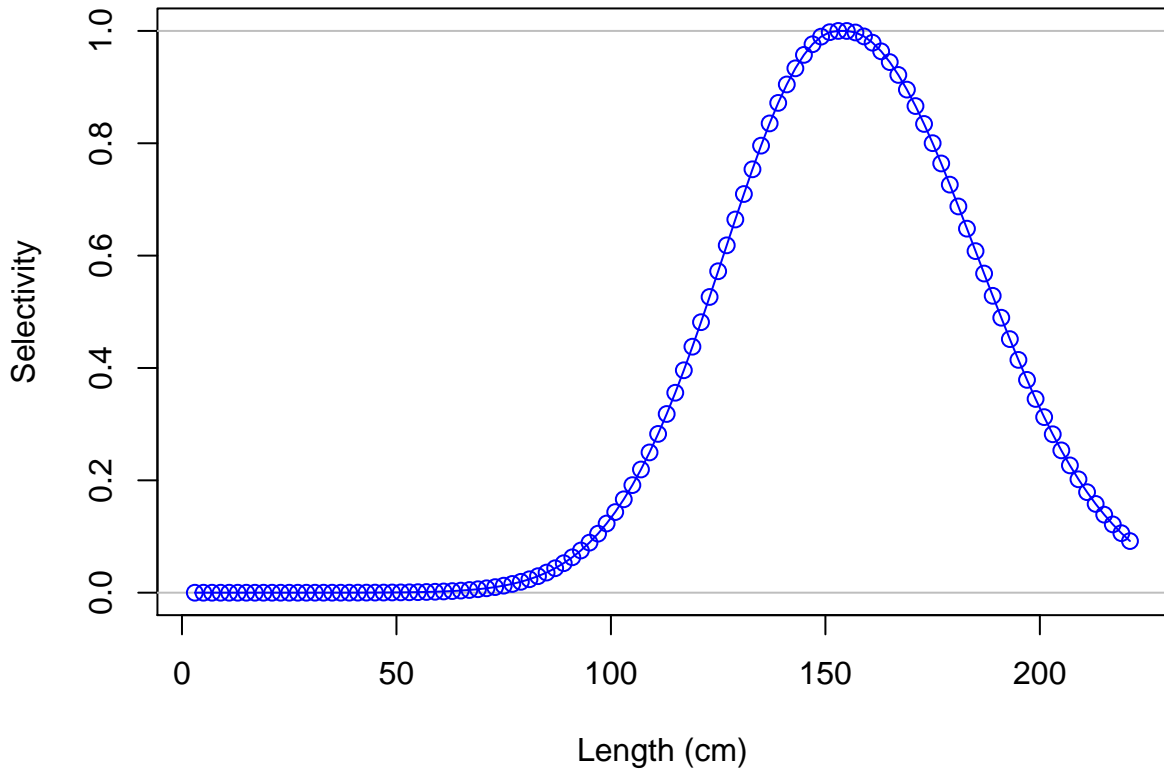
## Female time-varying selectivity for A5-LL-n



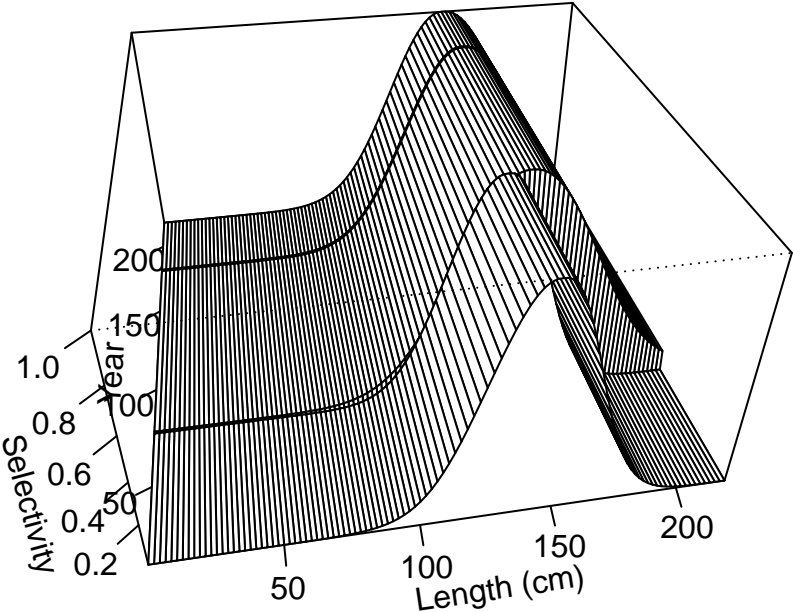
# Female time-varying selectivity for A5-LL-n



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

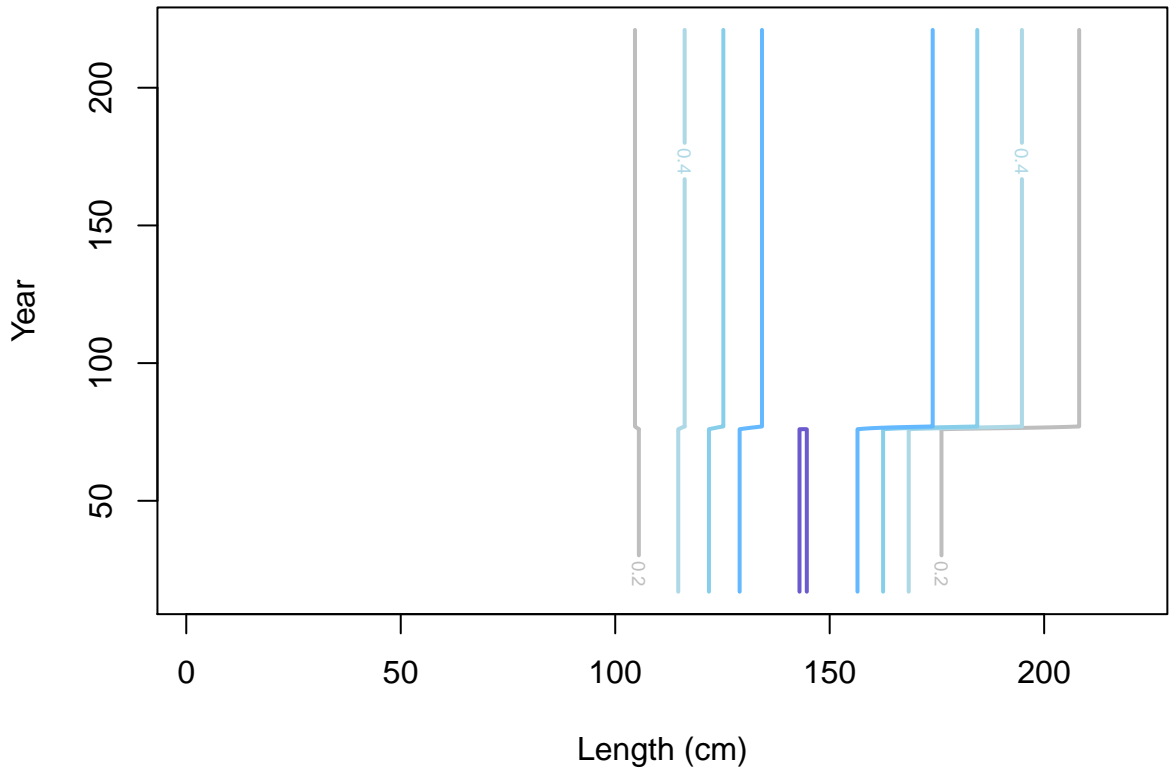


# Male time-varying selectivity for A5-LL-n

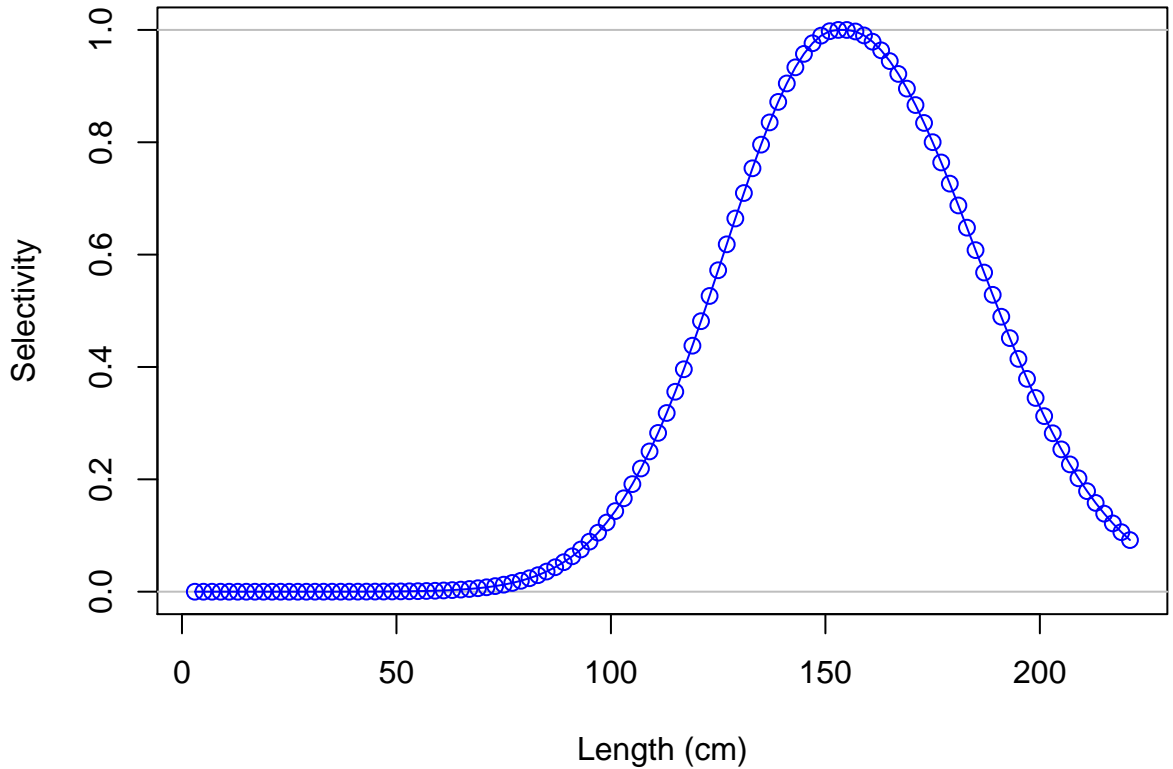




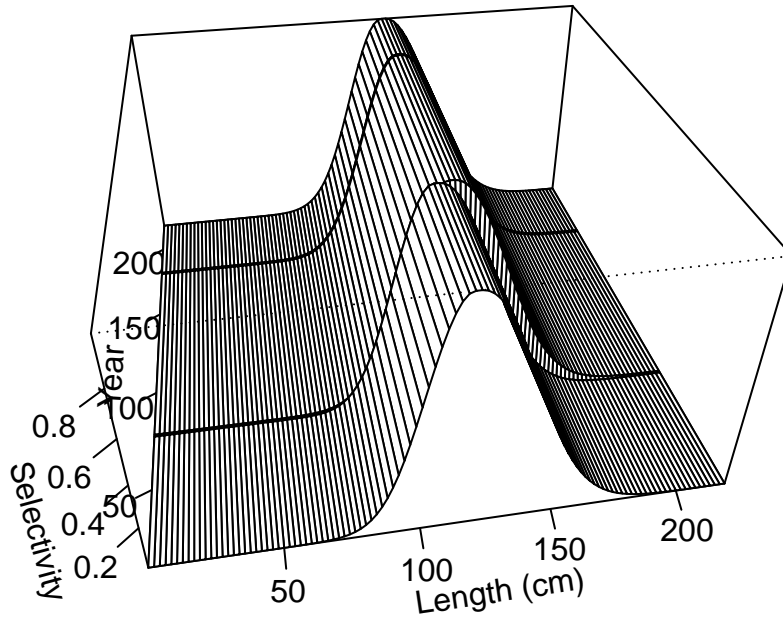
# Male time-varying selectivity for A5-LL-n



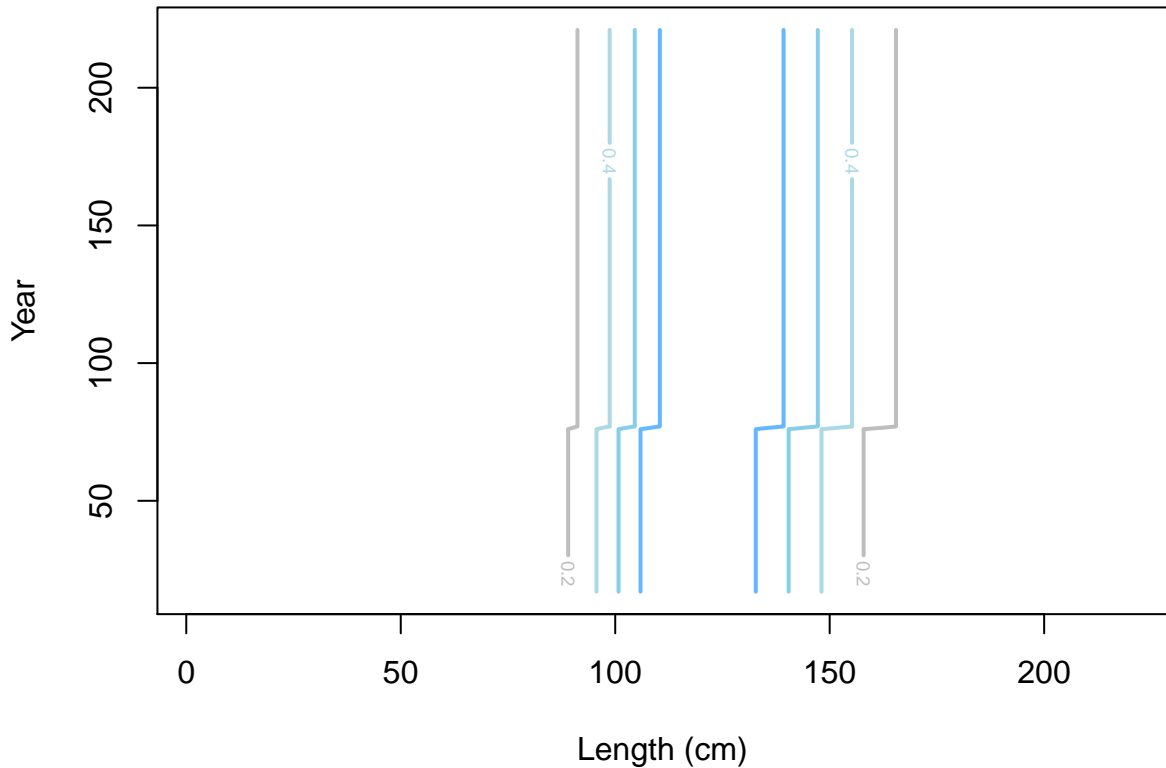
## Male ending year selectivity for A5-LL-n



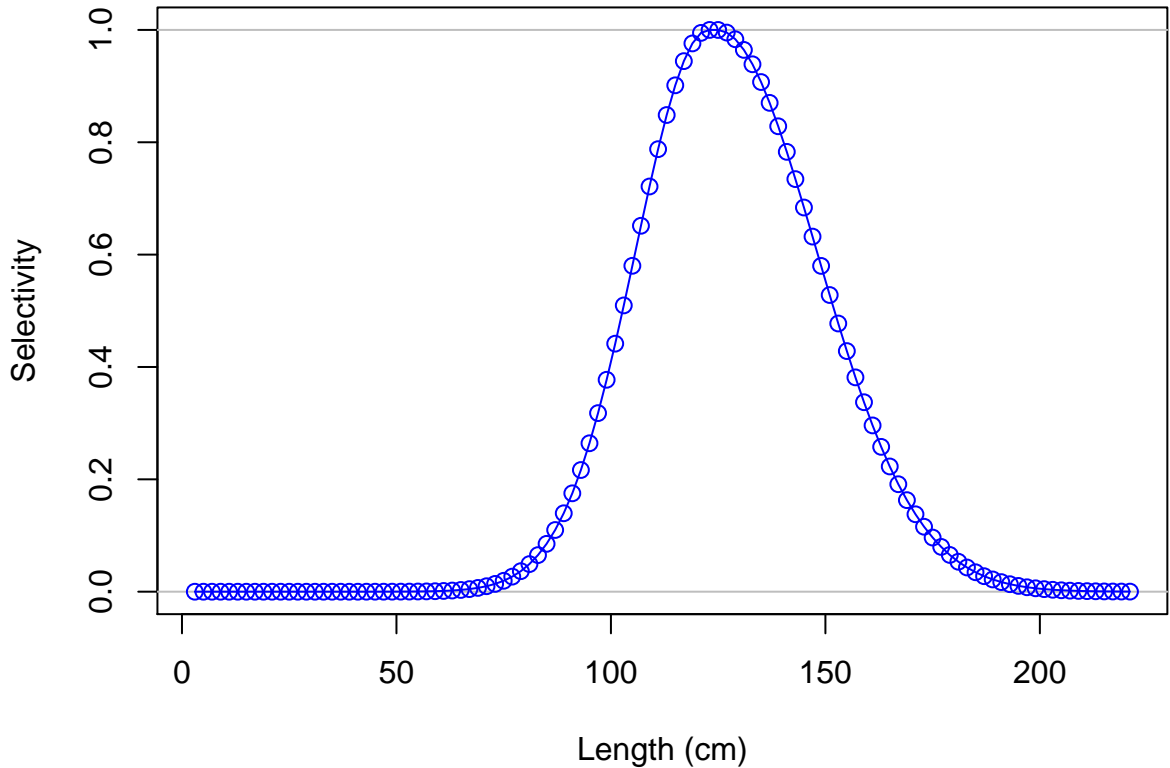
## Female time-varying selectivity for A6-LL-n



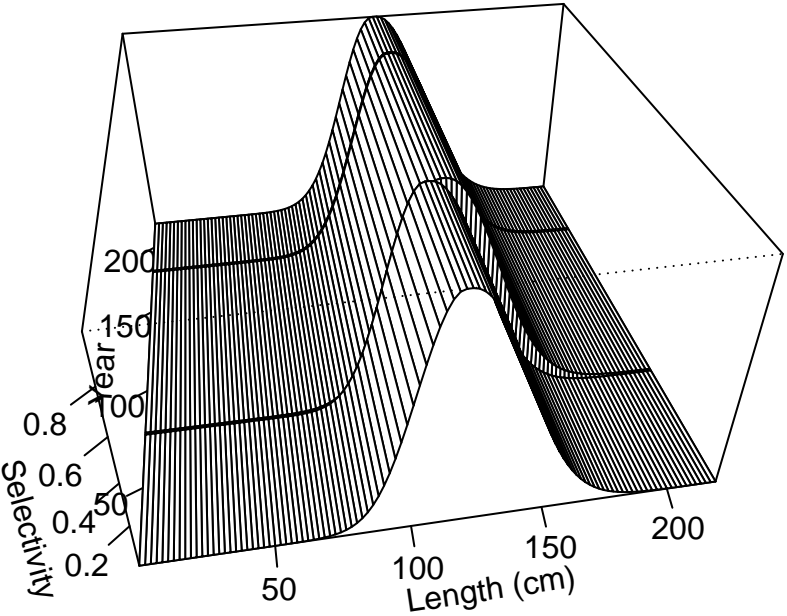
# Female time-varying selectivity for A6-LL-n



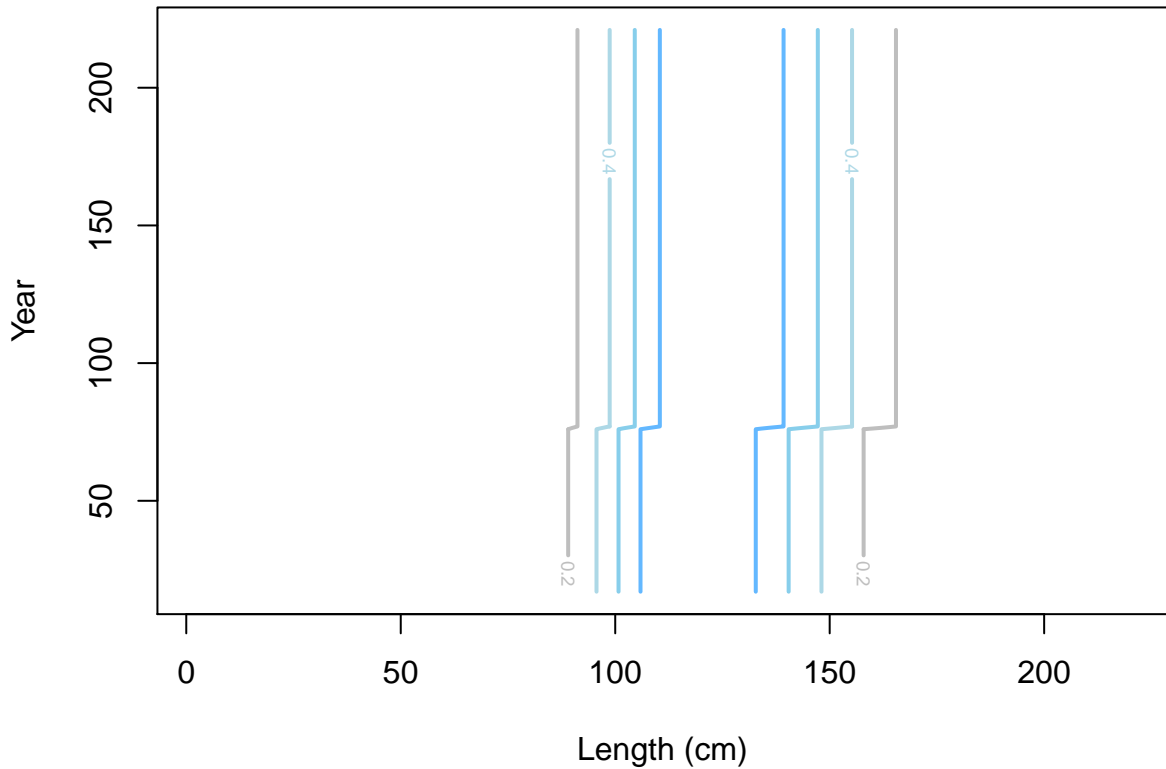
## Female ending year selectivity for A6-LL-n



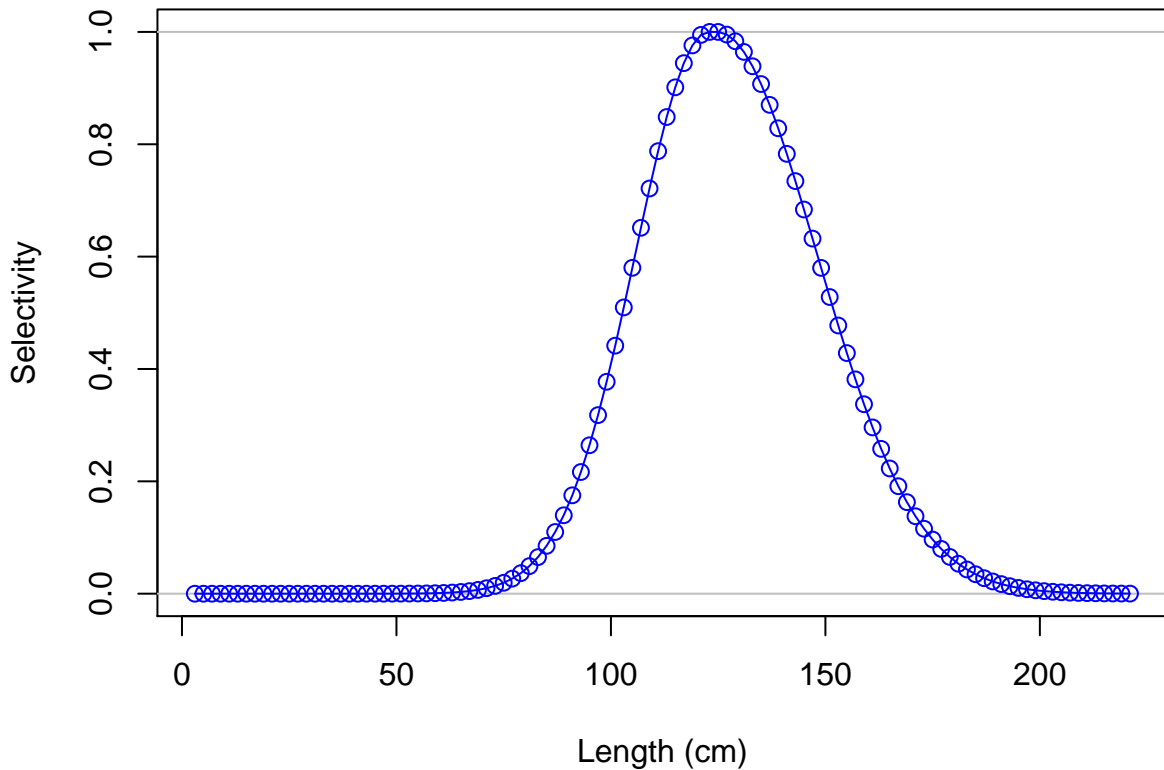
# Male time-varying selectivity for A6-LL-n



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

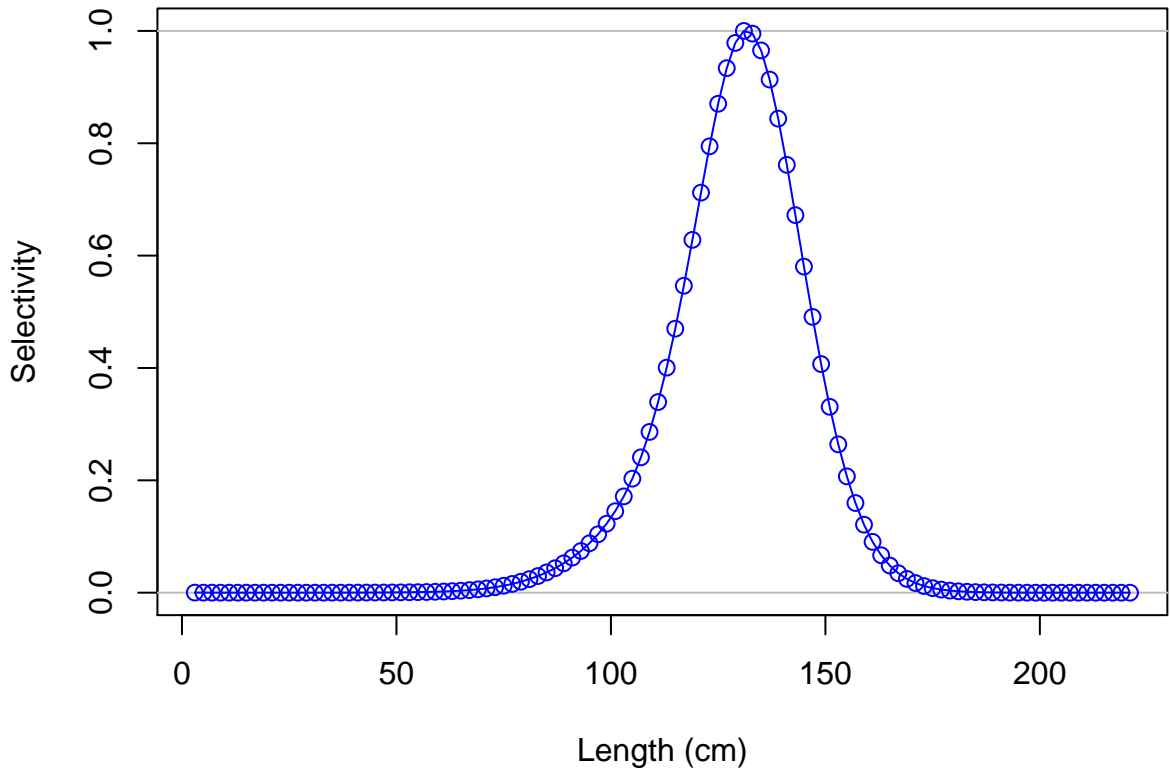


# Male ending year selectivity for A6-LL-n

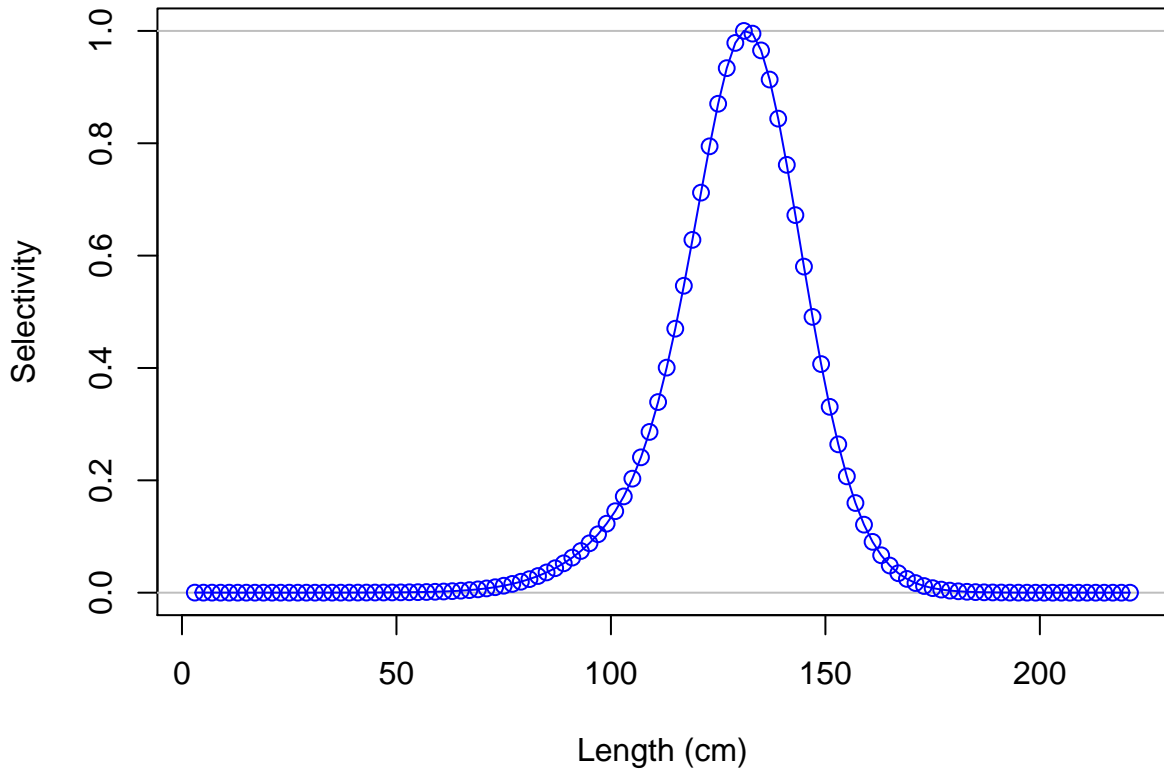




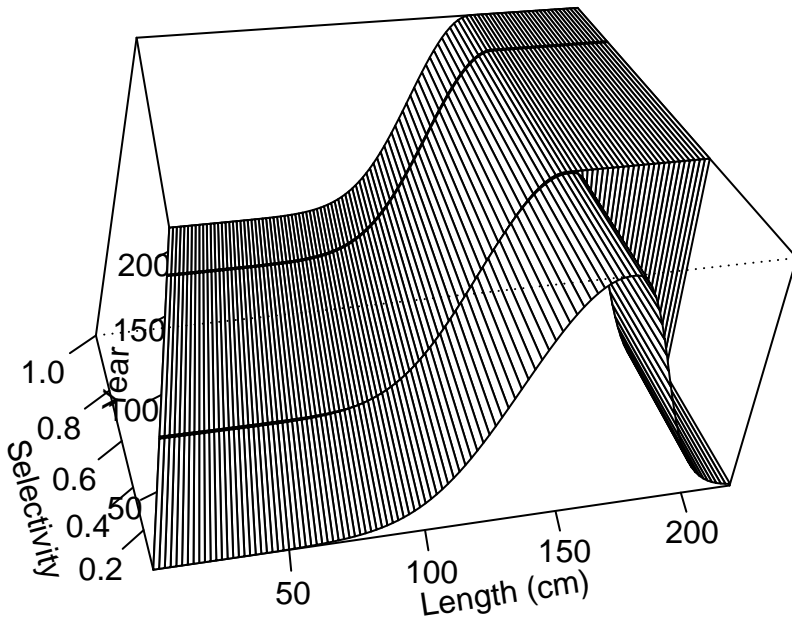
## Female ending year selectivity for A1-LL-w



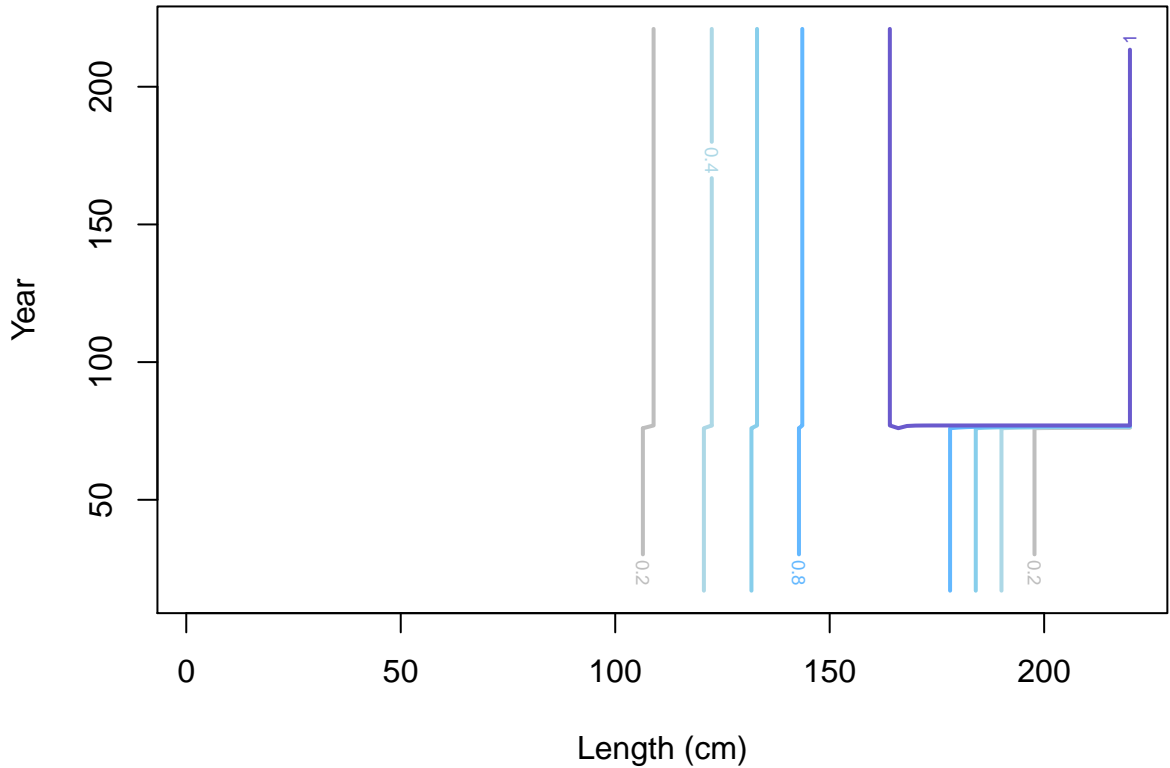
# Male ending year selectivity for A1-LL-w



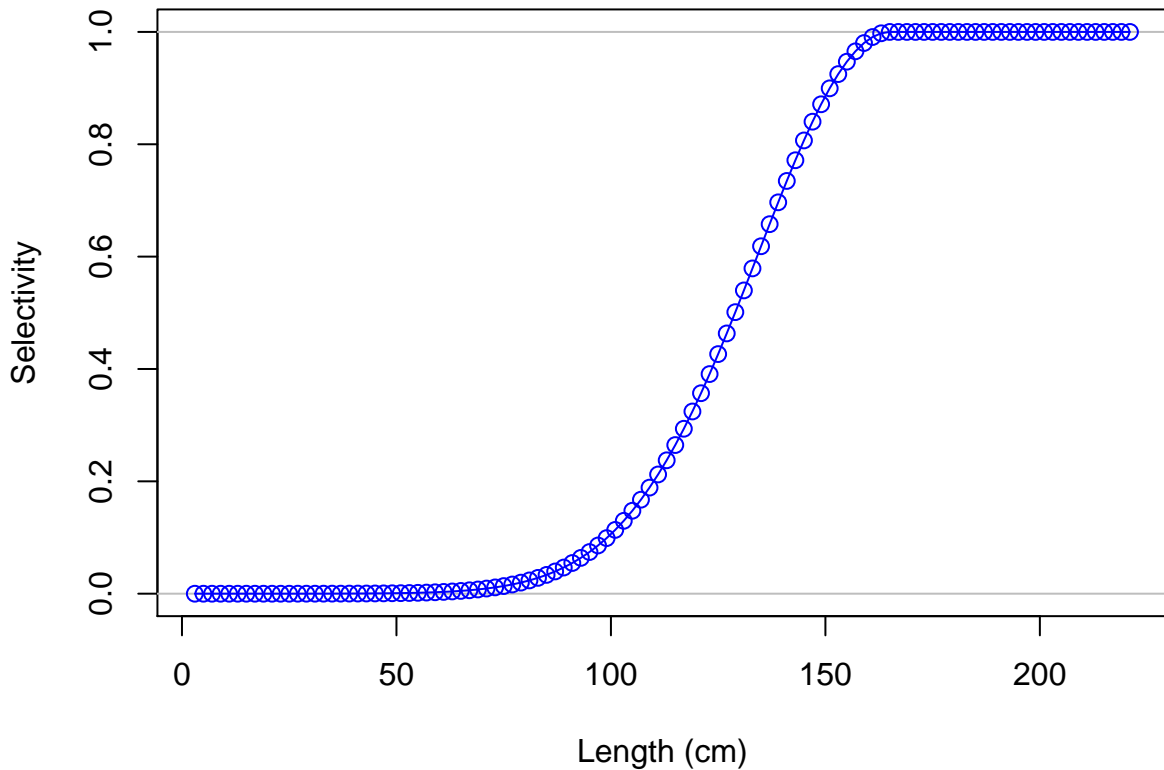
## Female time-varying selectivity for A2-LL-w



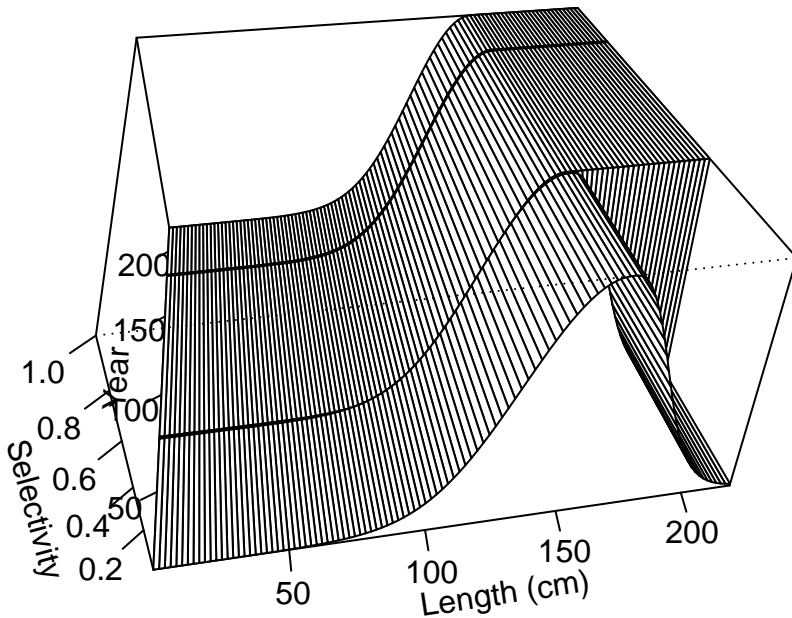
## Female time-varying selectivity for A2-LL-w



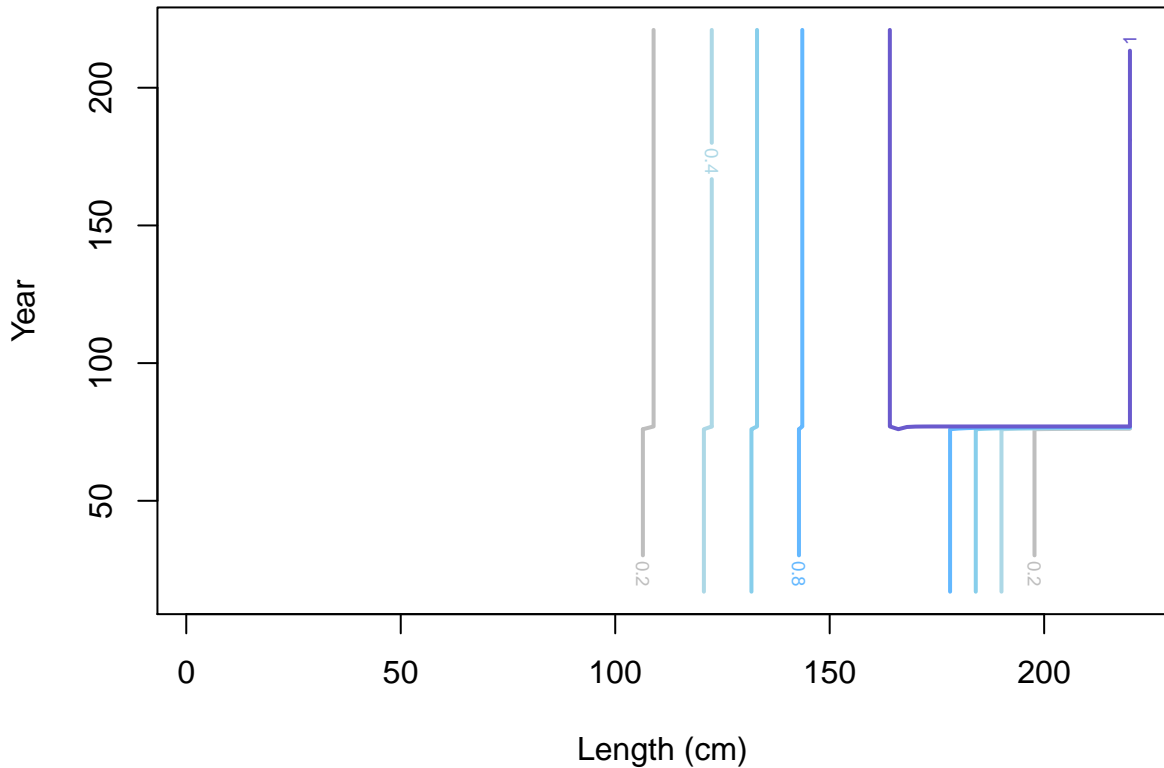
## Female ending year selectivity for A2-LL-w



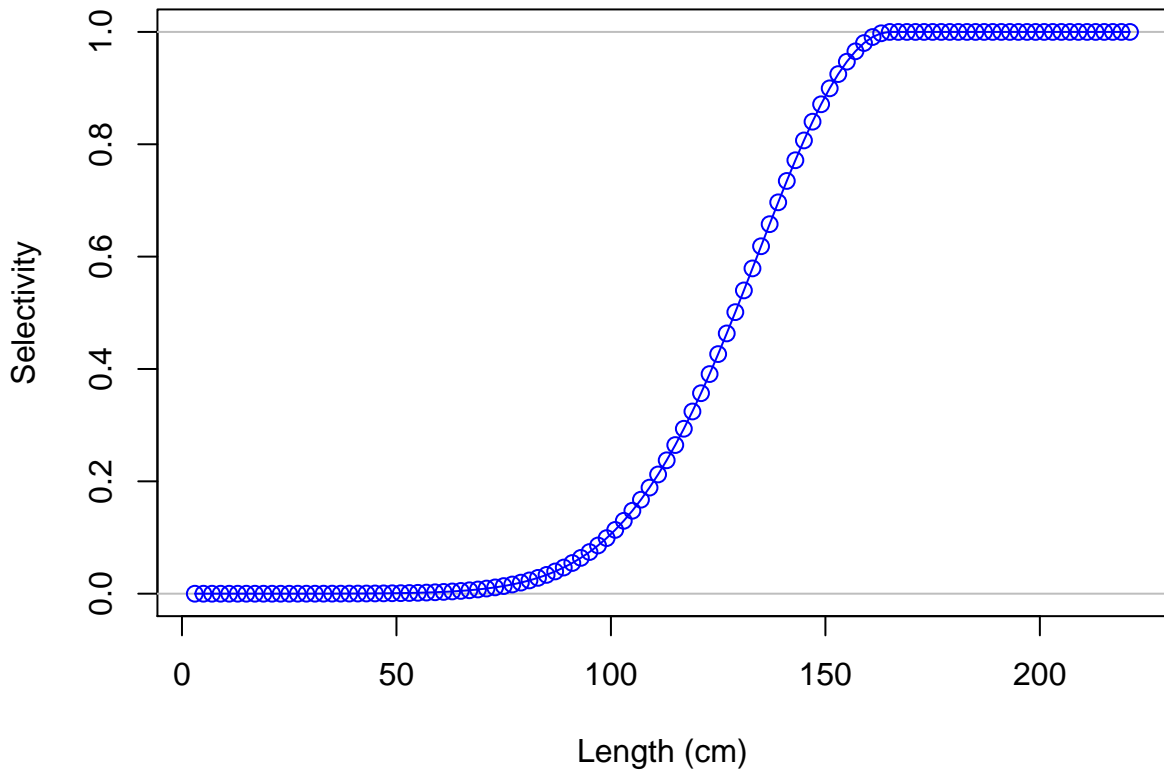
# Male time-varying selectivity for A2-LL-w



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

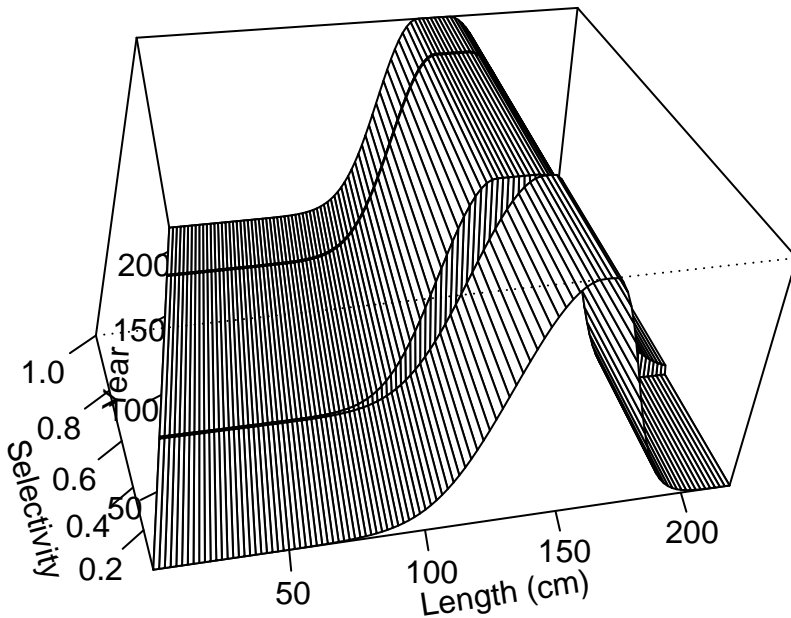


## Male ending year selectivity for A2-LL-w

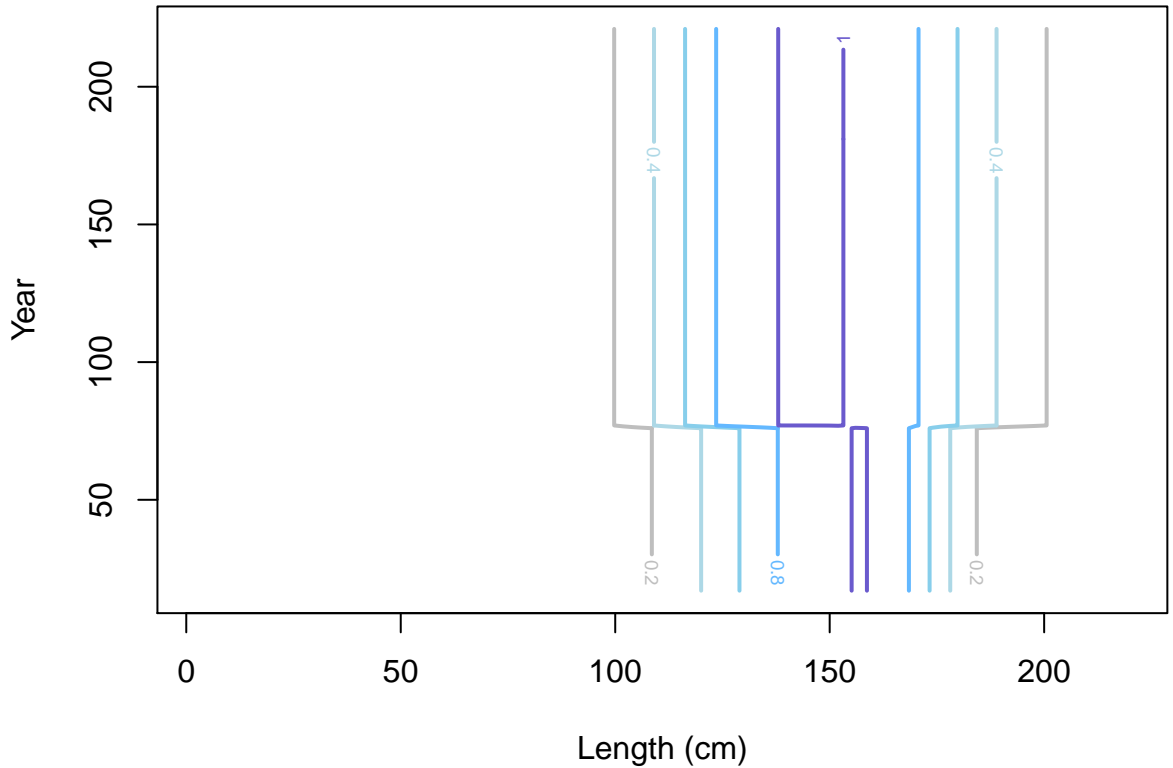




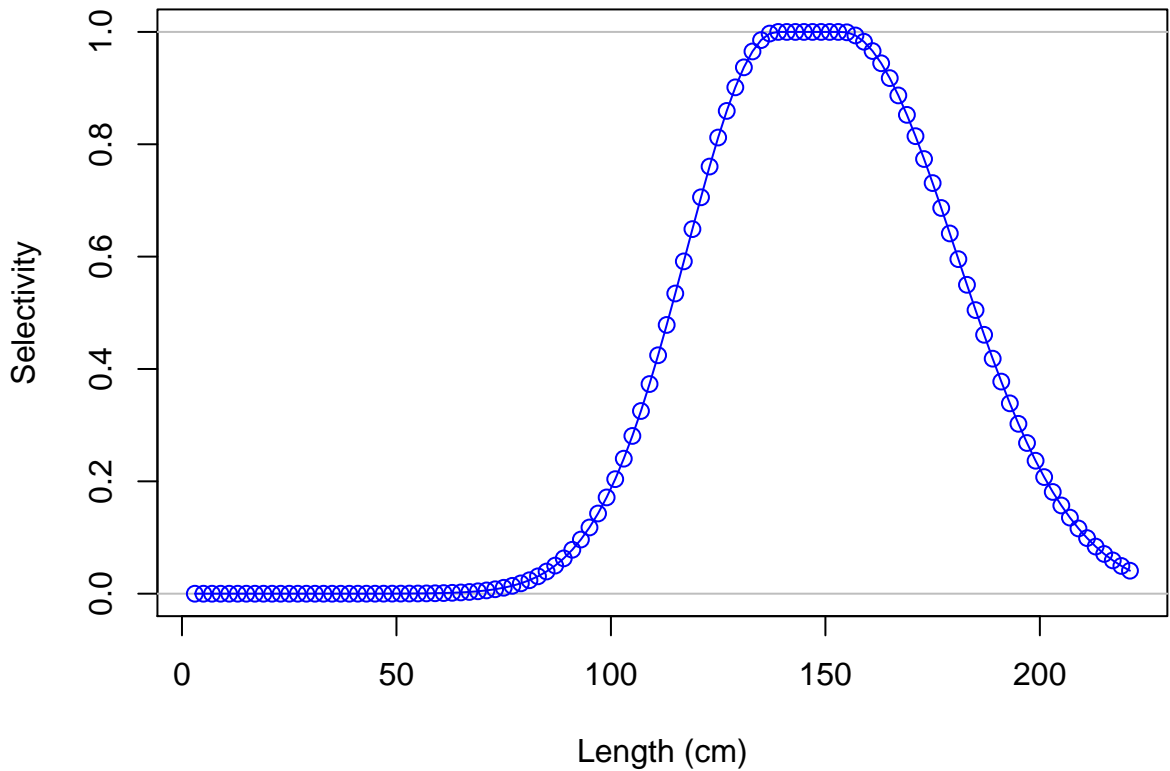
## Female time-varying selectivity for A3-LL-w



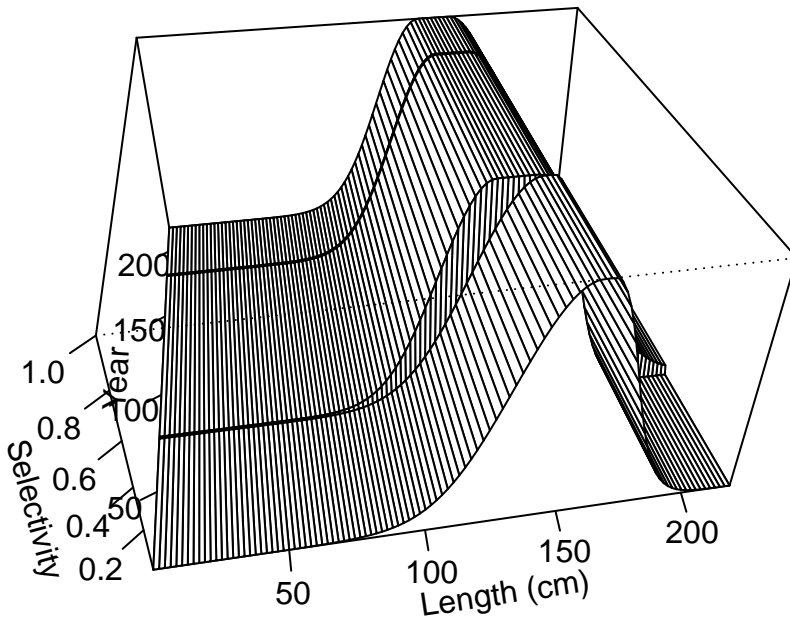
# Female time-varying selectivity for A3-LL-w



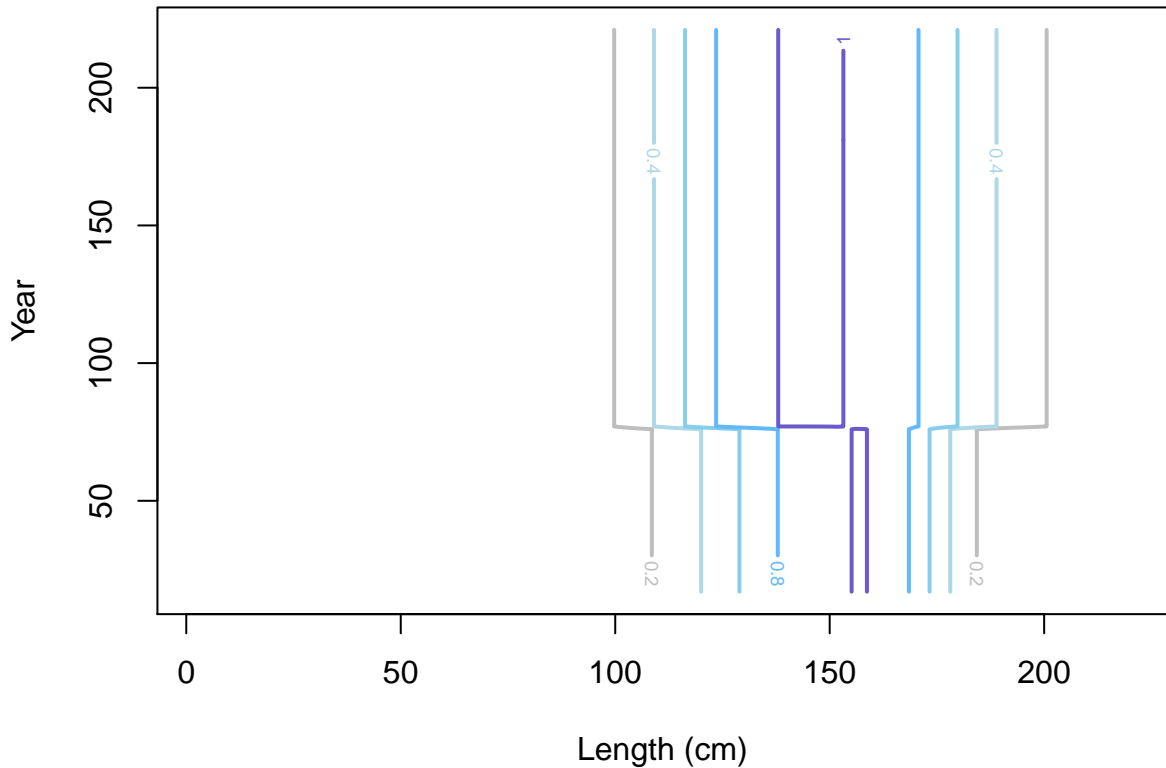
## Female ending year selectivity for A3-LL-w



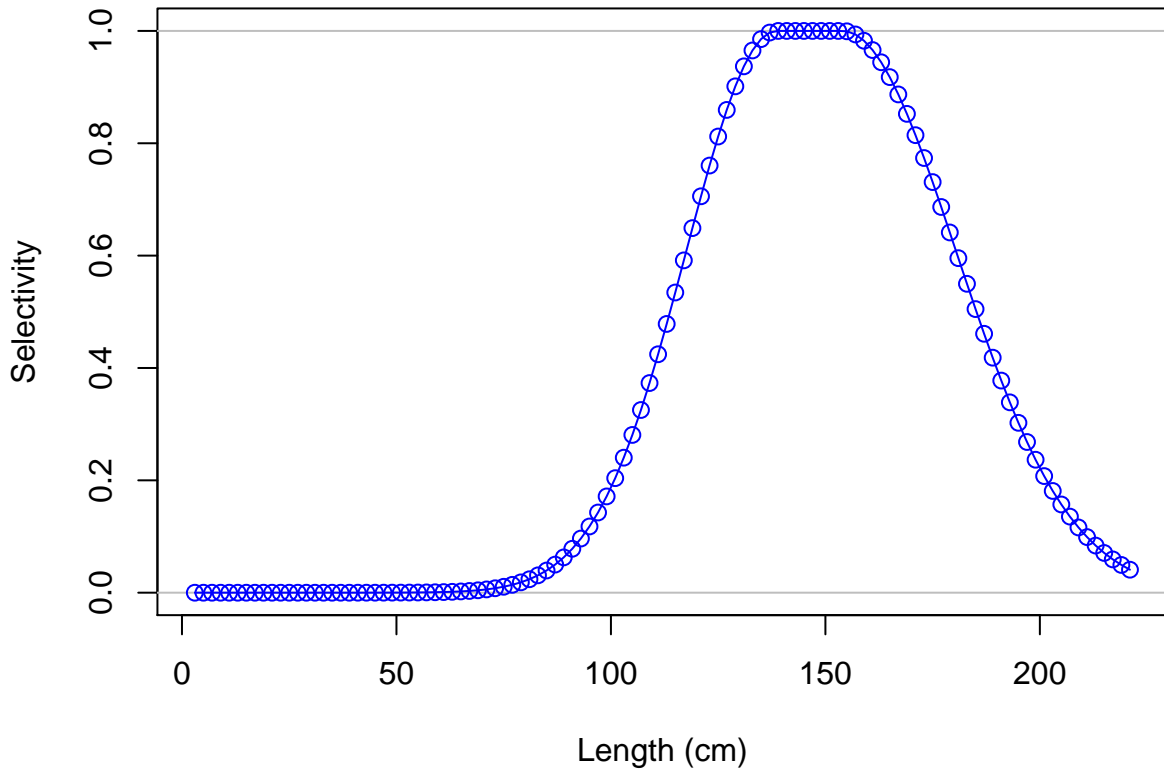
# Male time-varying selectivity for A3-LL-w



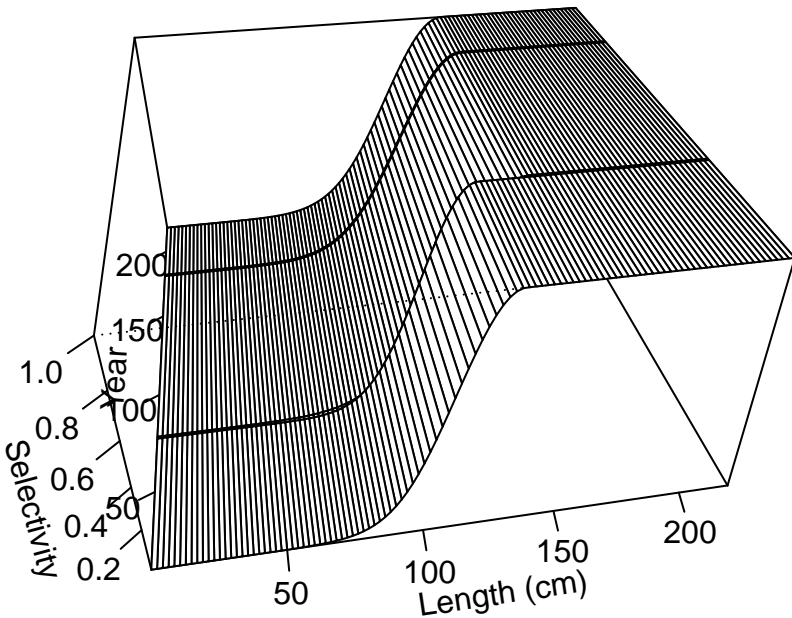
# Male time-varying selectivity for A3-LL-w



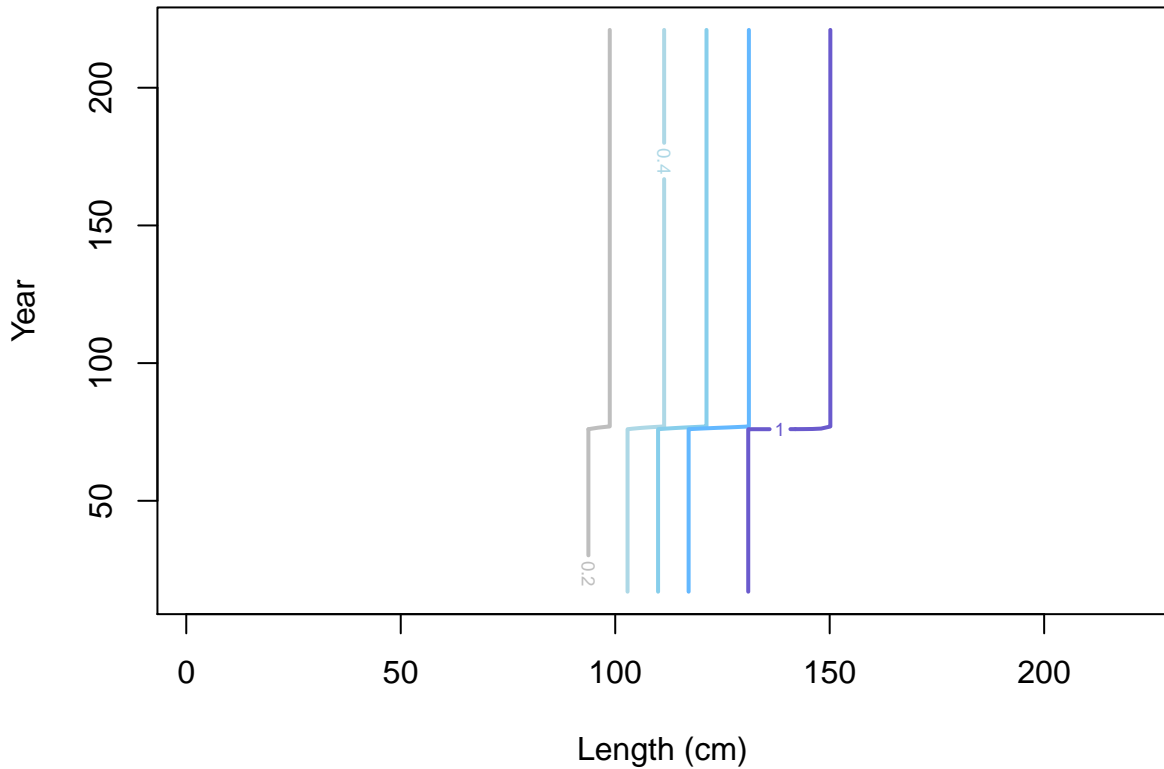
### Male ending year selectivity for A3-LL-w



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

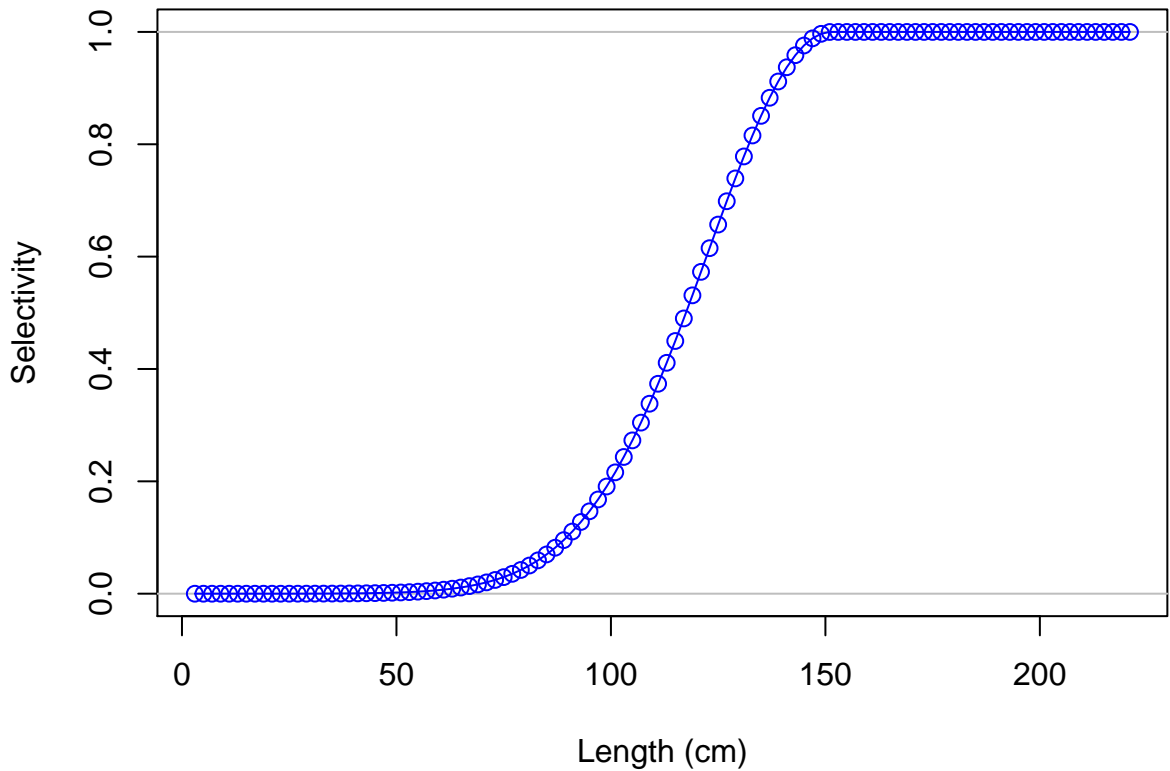


# Female time-varying selectivity for A4-LL-w

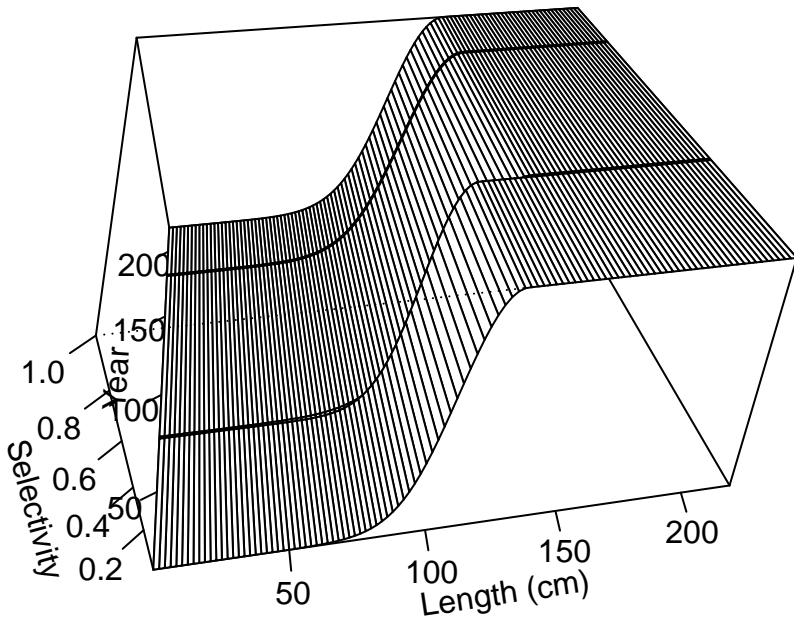




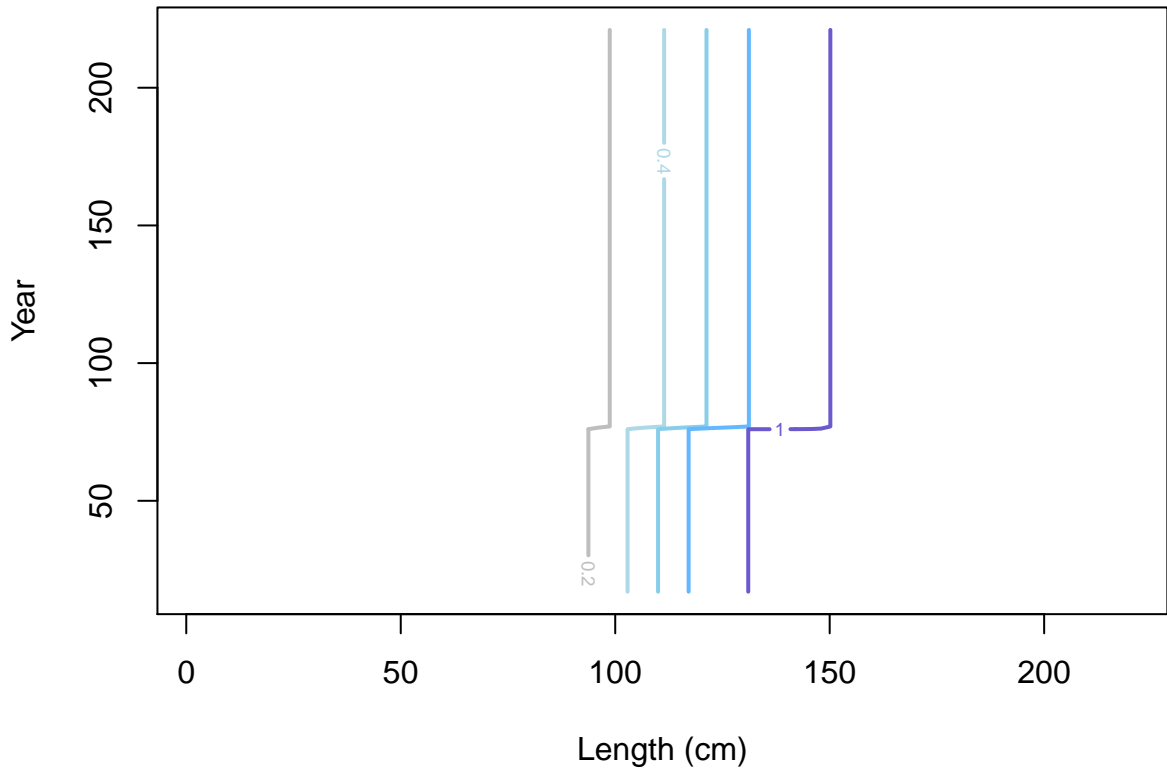
## Female ending year selectivity for A4-LL-w



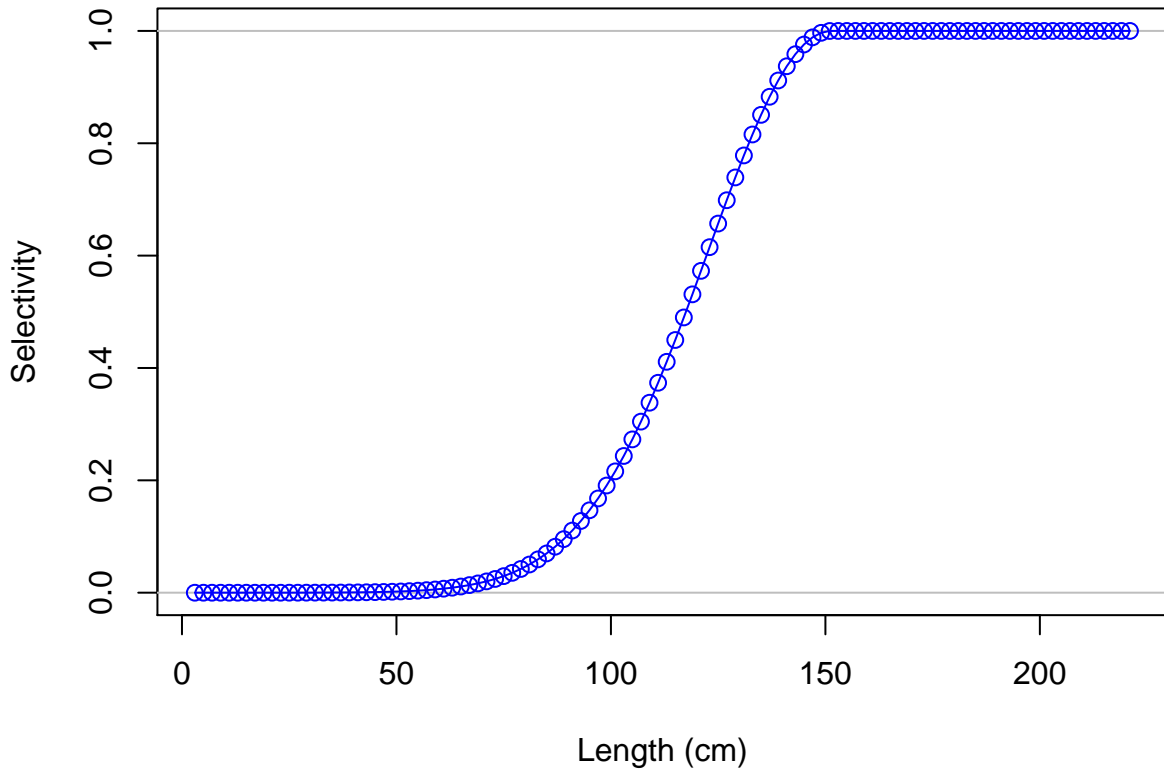
## Male time-varying selectivity for A4-LL-w



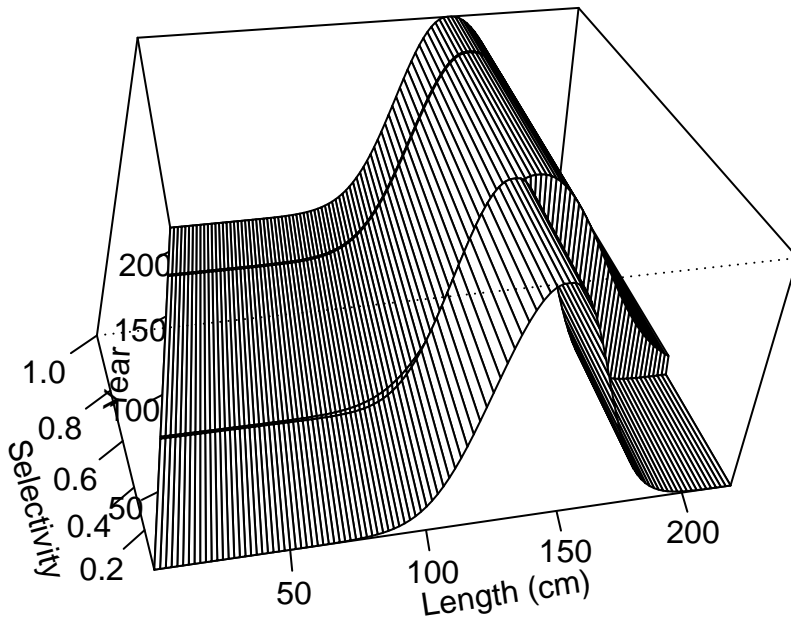
# Male time-varying selectivity for A4-LL-w



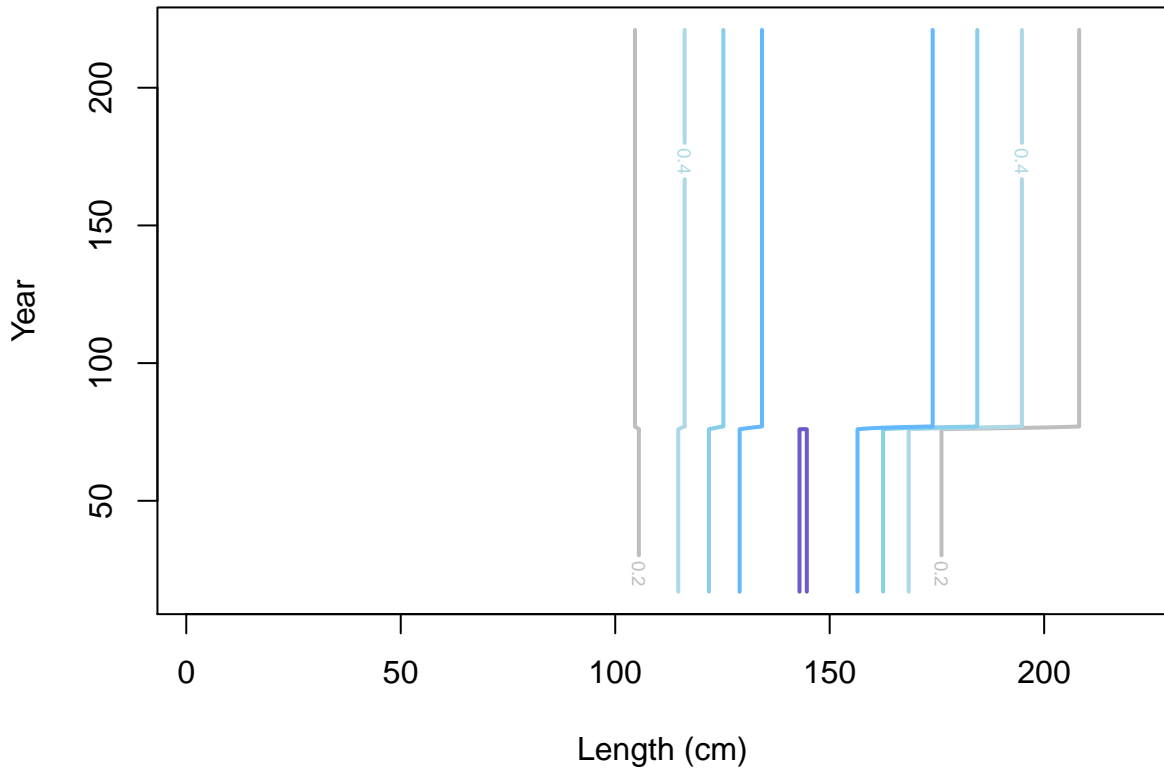
## Male ending year selectivity for A4-LL-w



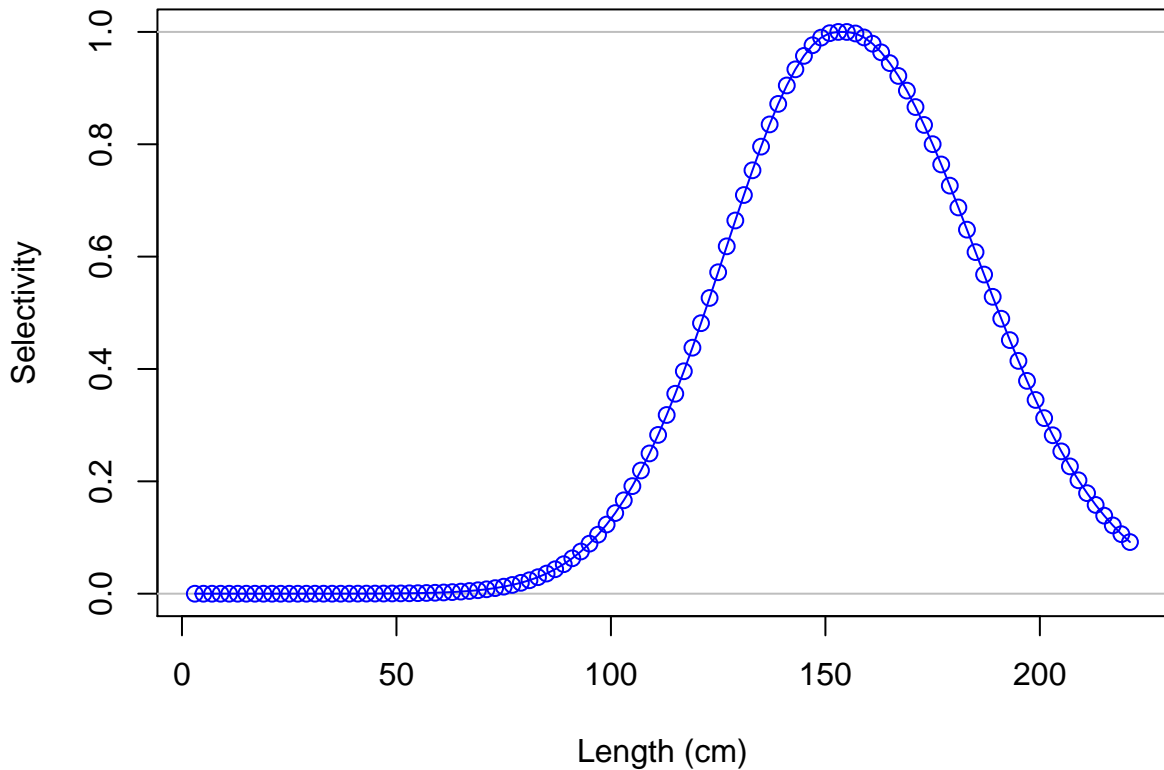
## Female time-varying selectivity for A5-LL-w



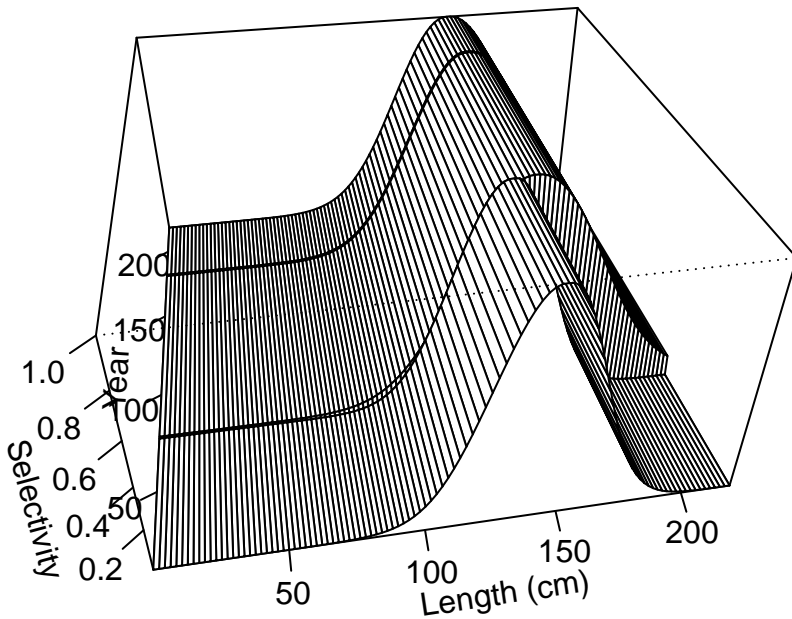
# Female time-varying selectivity for A5-LL-w



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

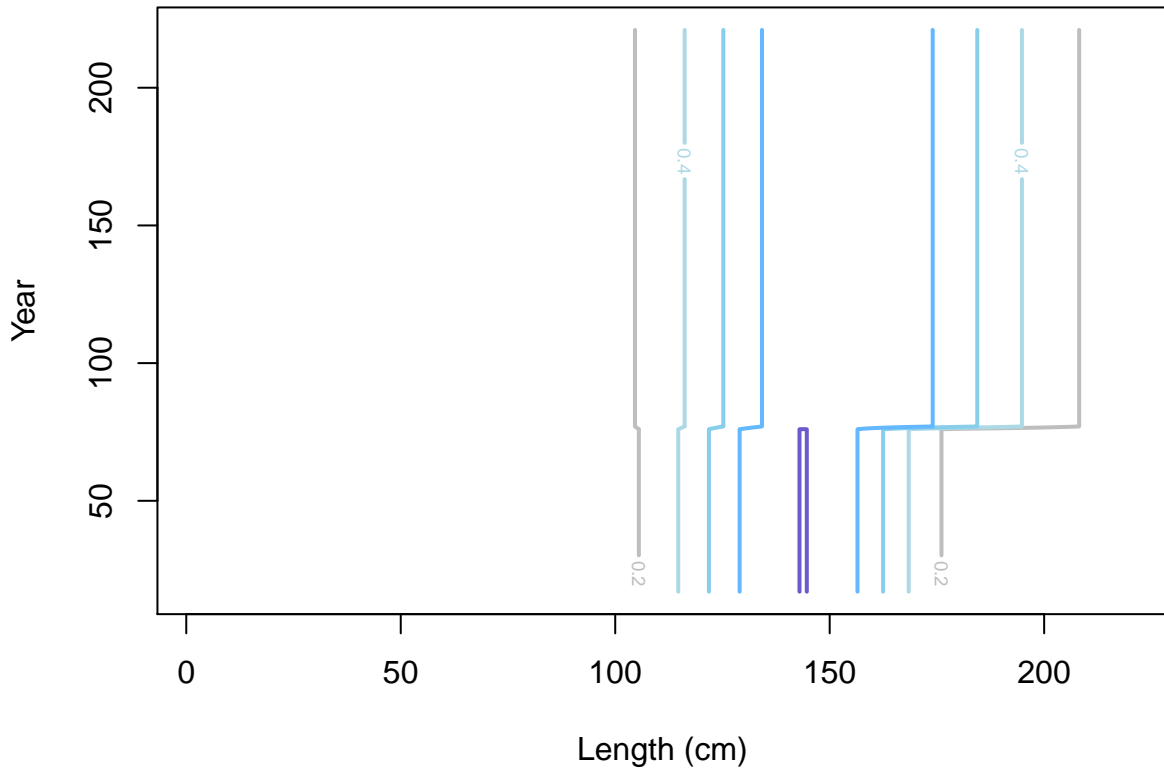


# Male time-varying selectivity for A5-LL-w

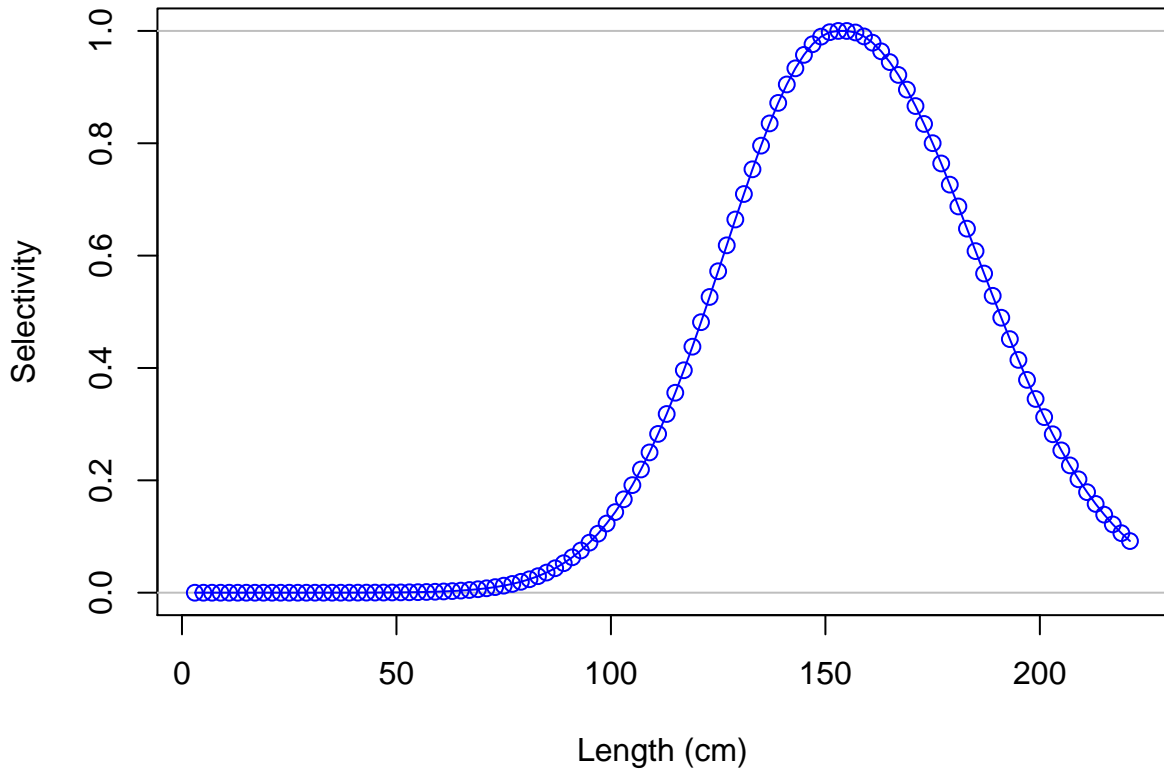




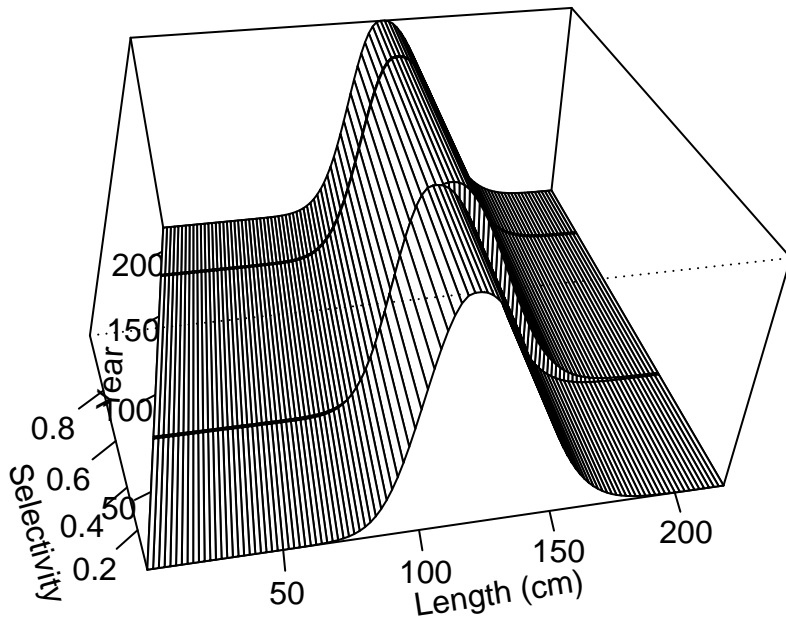
# Male time-varying selectivity for A5-LL-w



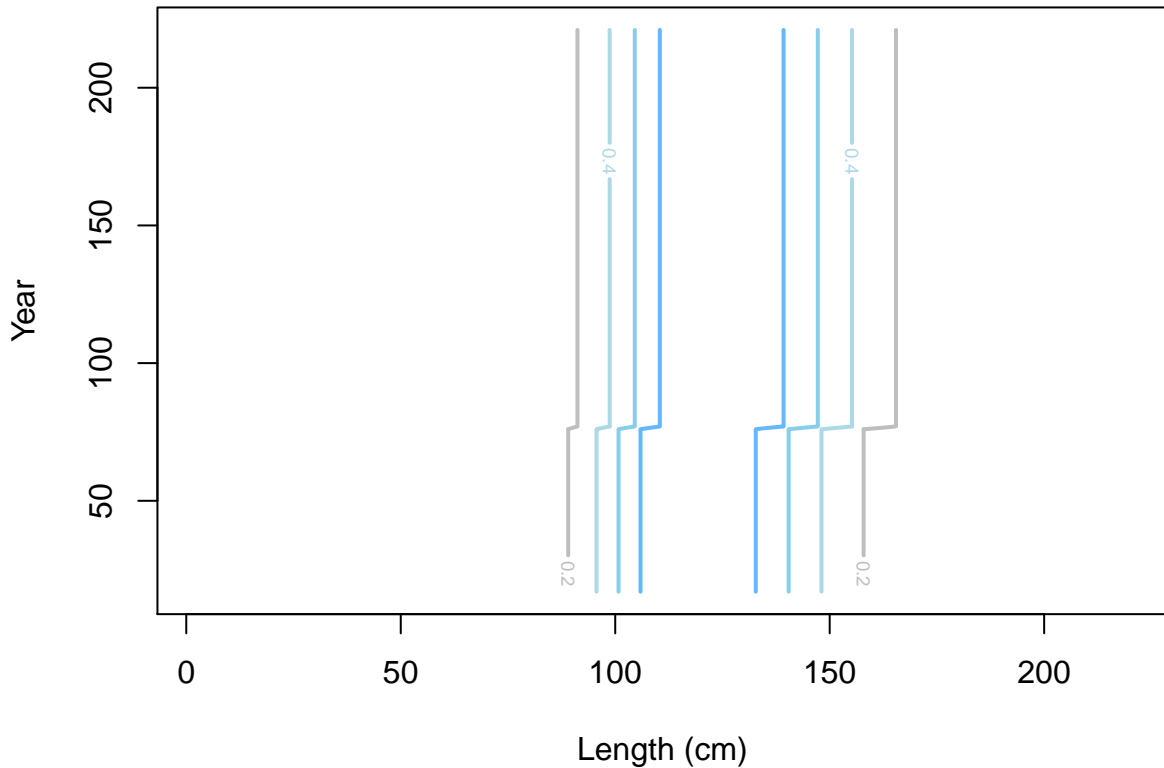
### Male ending year selectivity for A5-LL-w



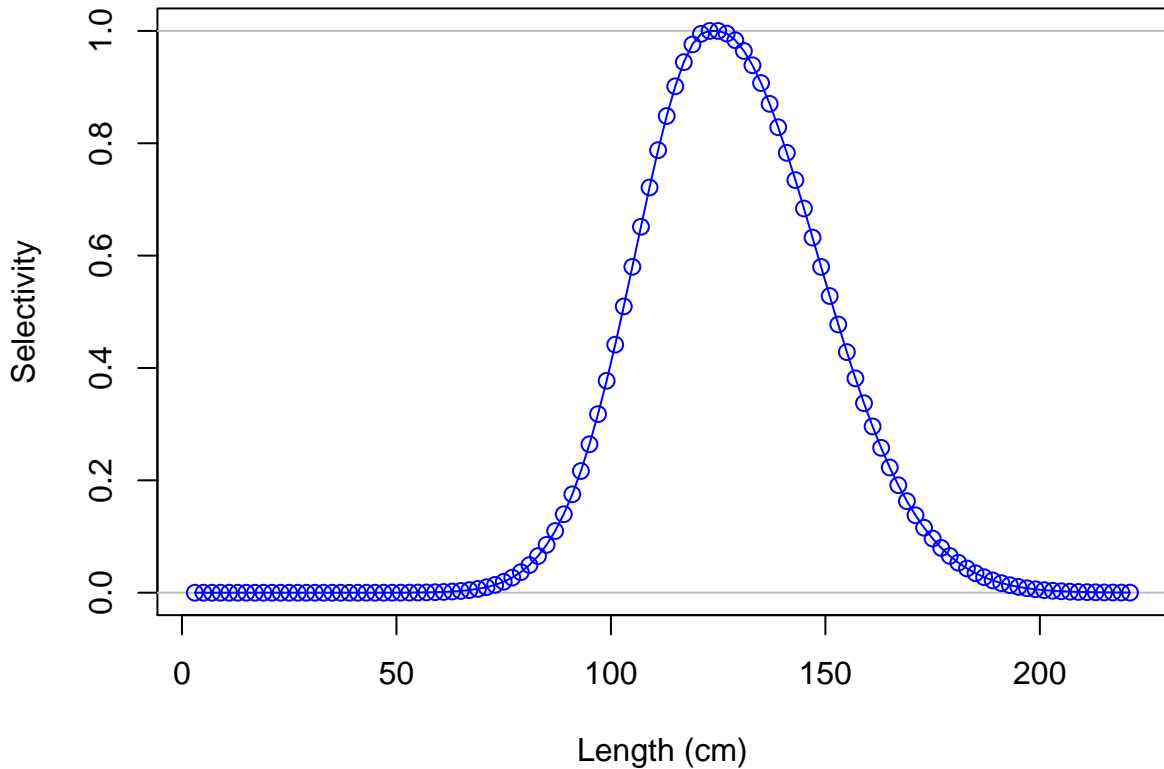
## Female time-varying selectivity for A6-LL-w



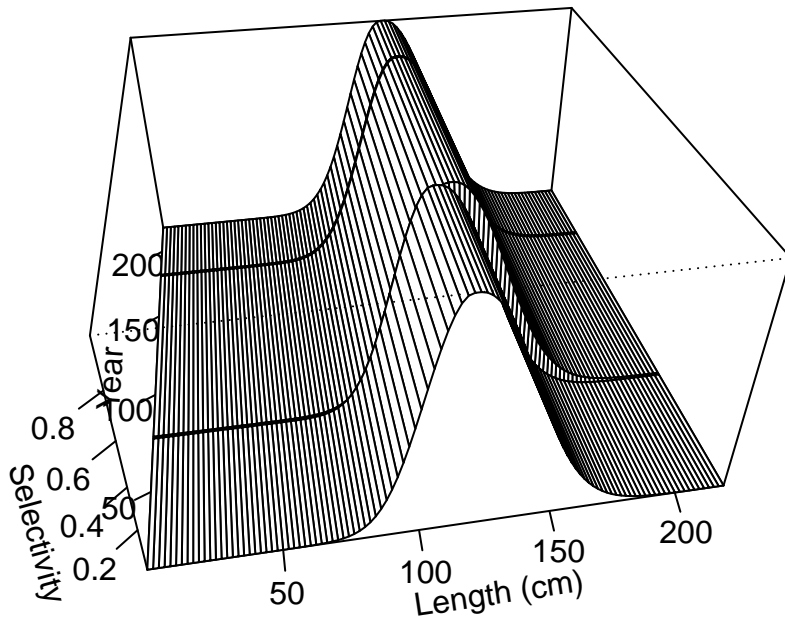
# Female time-varying selectivity for A6-LL-w



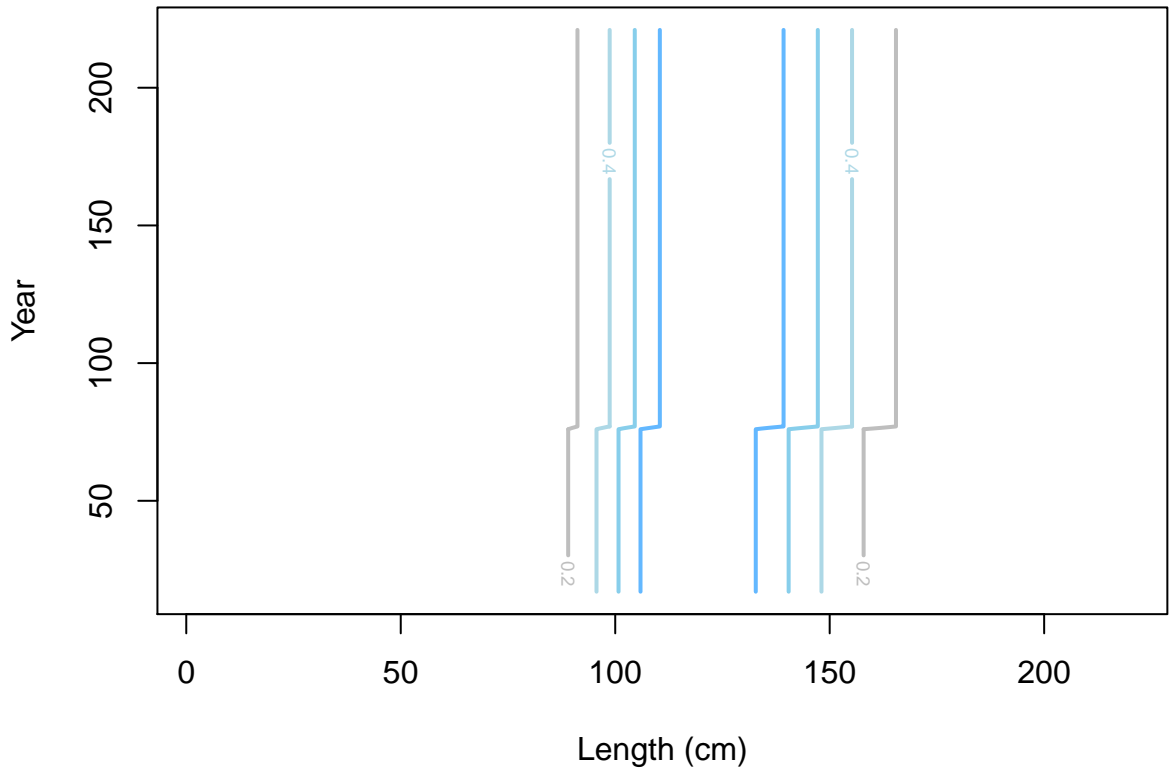
## Female ending year selectivity for A6-LL-w



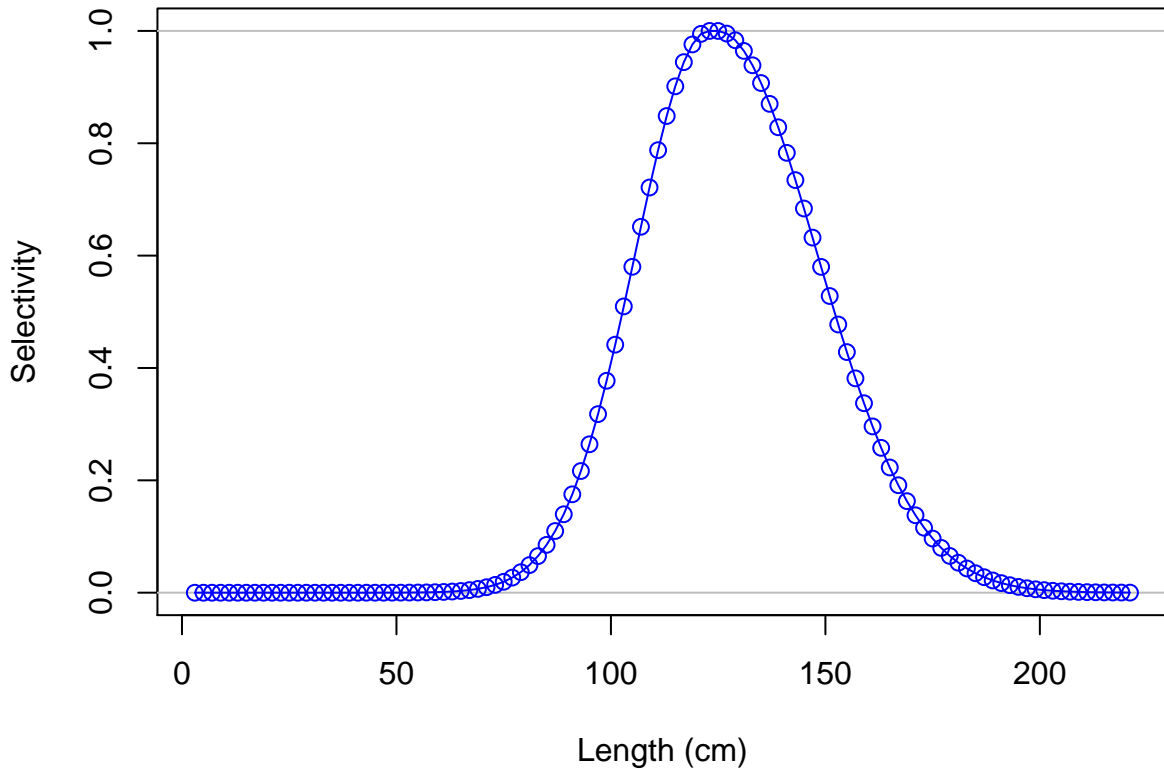
## Male time-varying selectivity for A6-LL-w



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

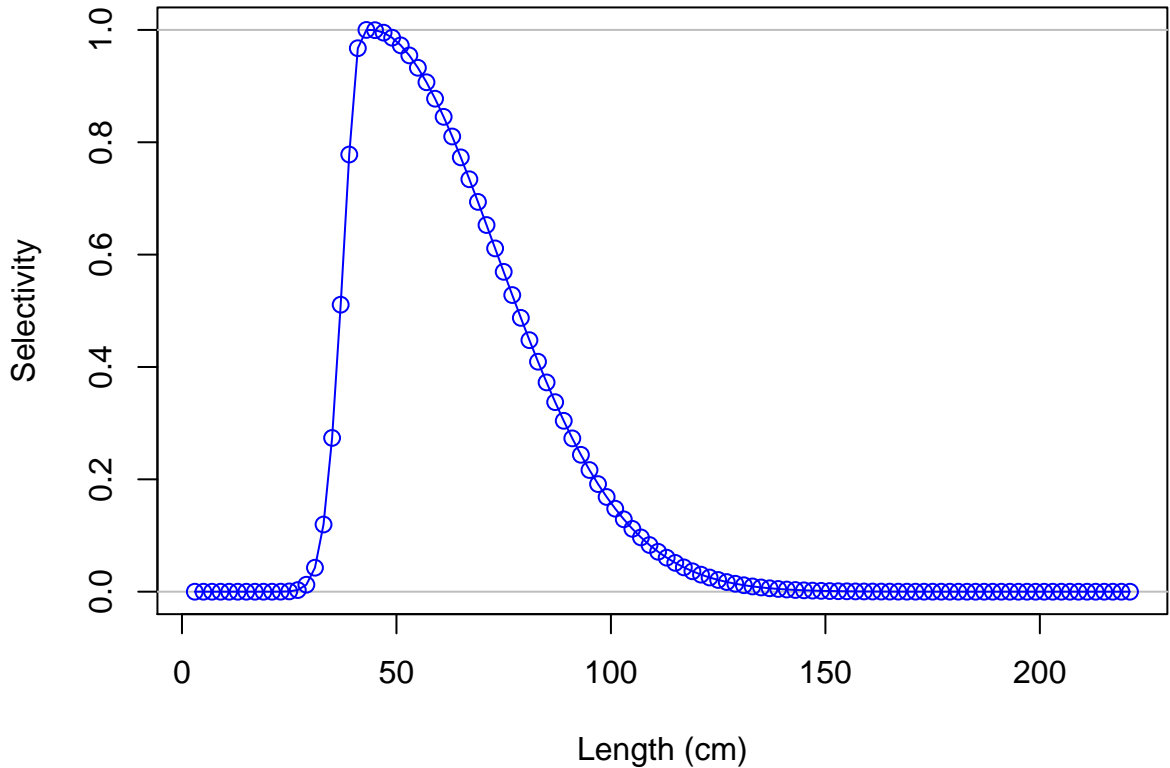


# Male ending year selectivity for A6-LL-w

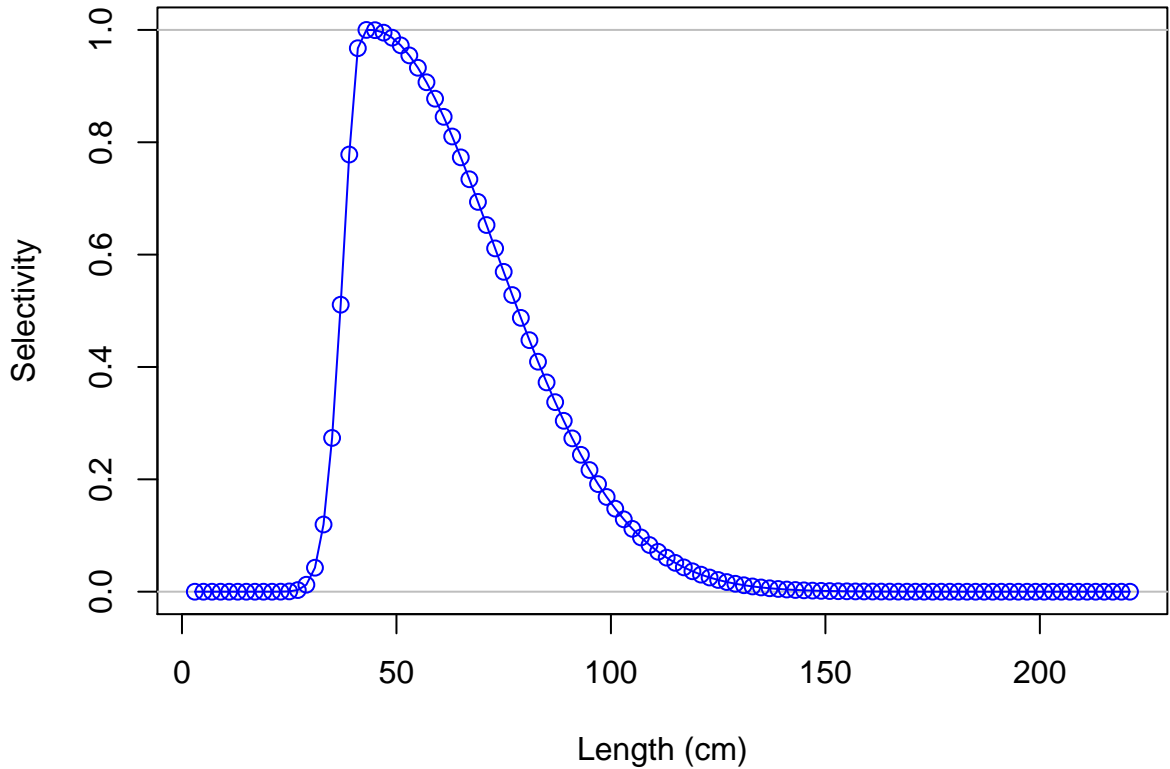




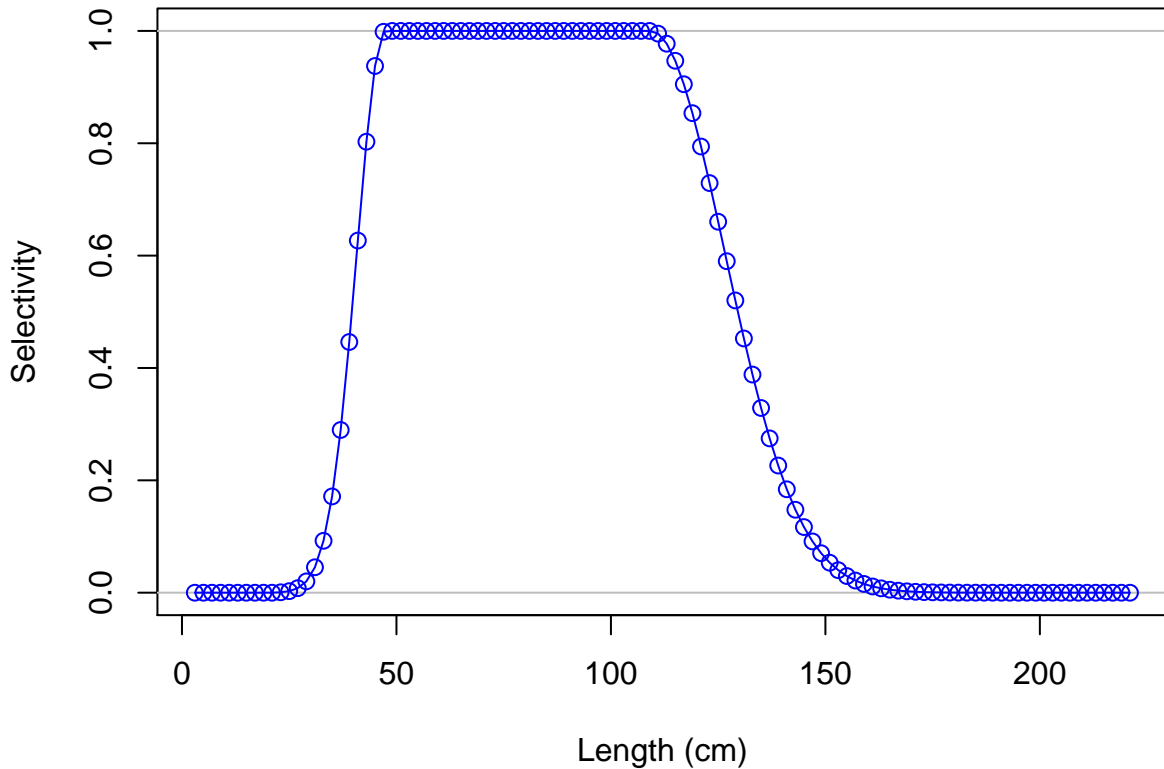
## Female ending year selectivity for A2-OBJ



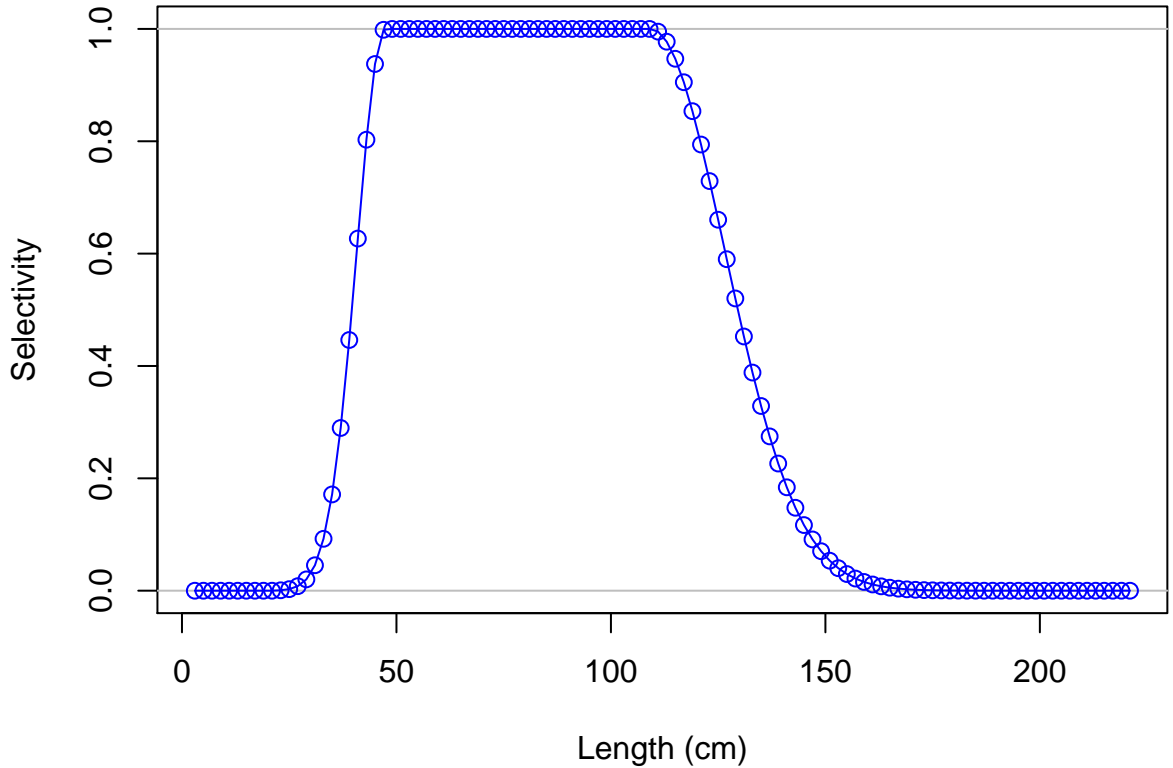
## Male ending year selectivity for A2-OBJ



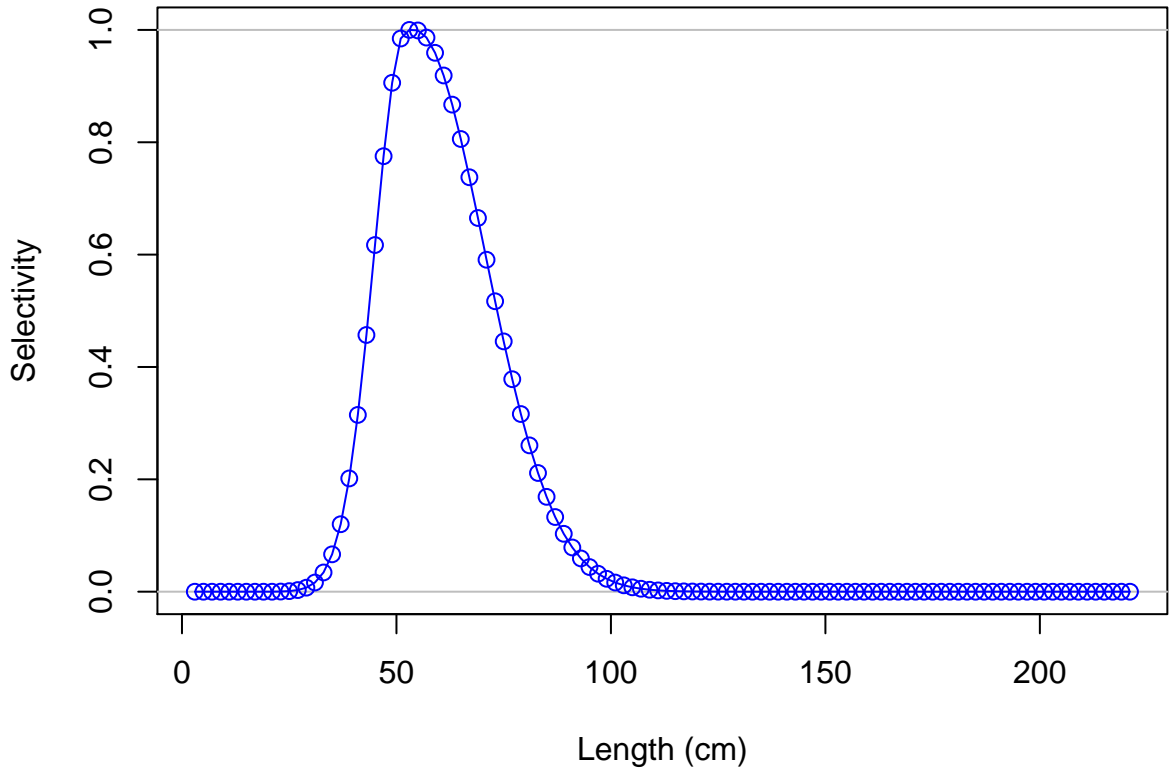
## Female ending year selectivity for A3-OBJ



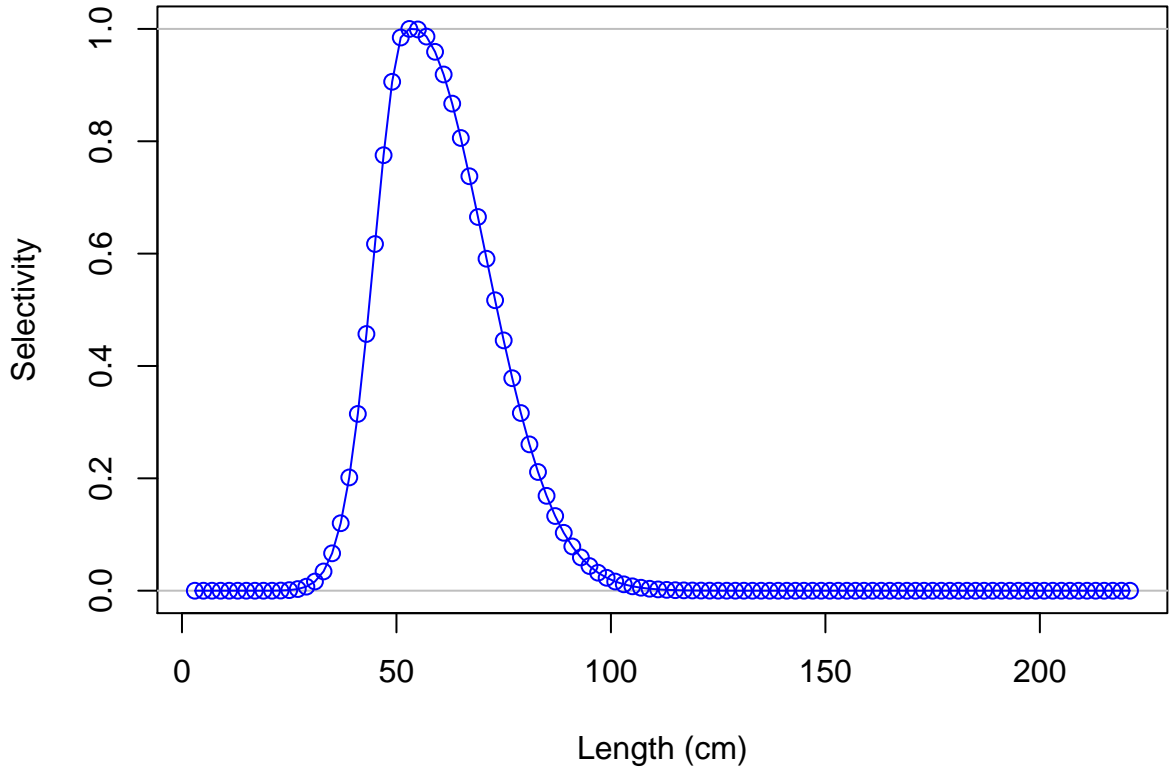
### Male ending year selectivity for A3-OBJ



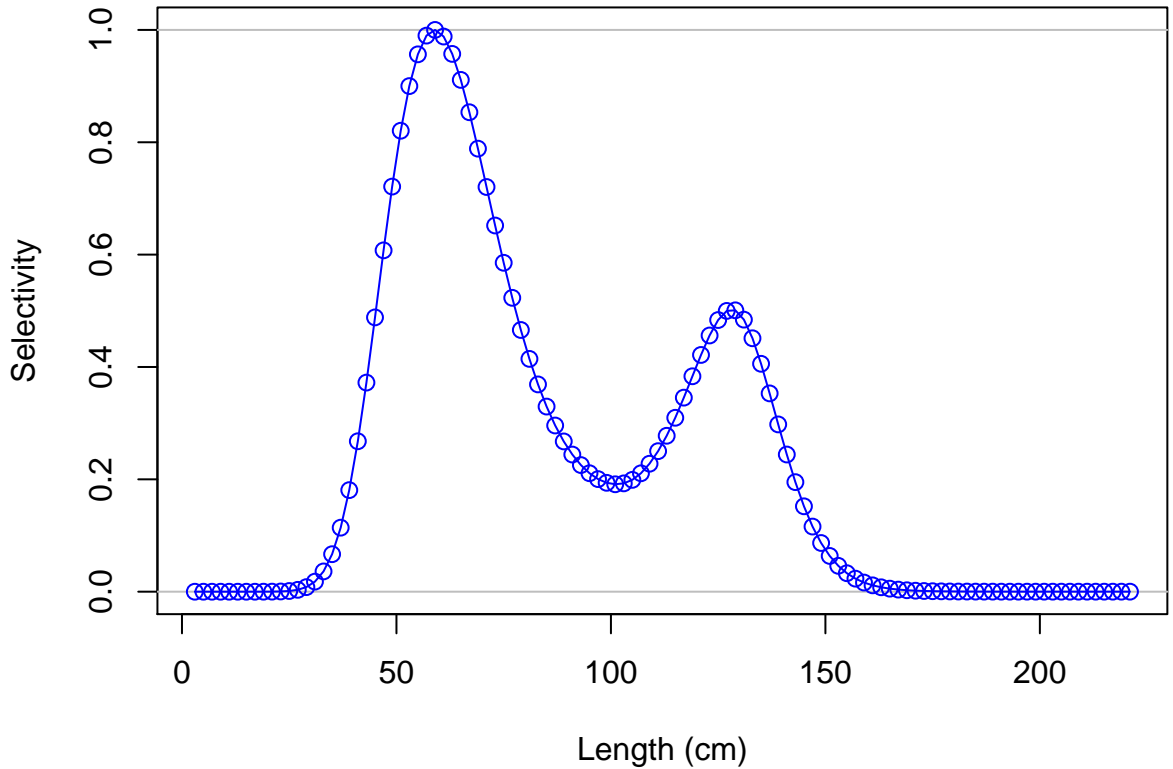
## Female ending year selectivity for A4-OBJ



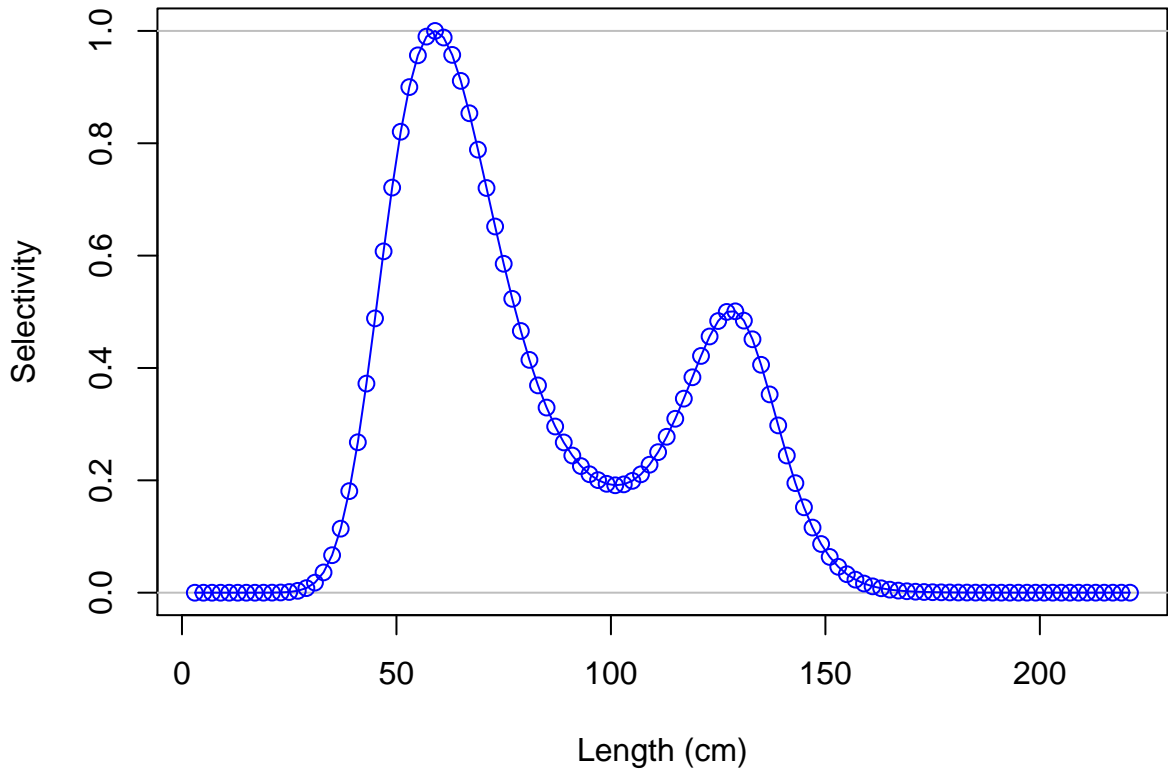
# Male ending year selectivity for A4-OBJ



## Female ending year selectivity for A5-OBJ

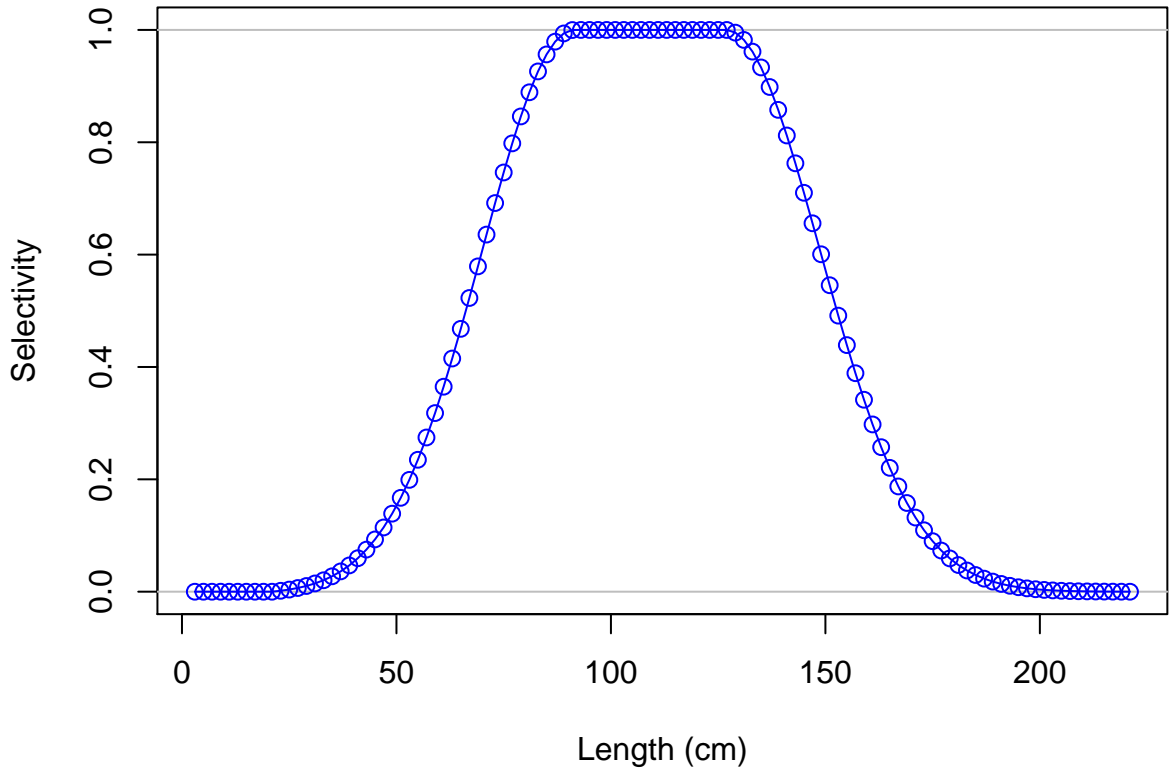


## Male ending year selectivity for A5-OBJ

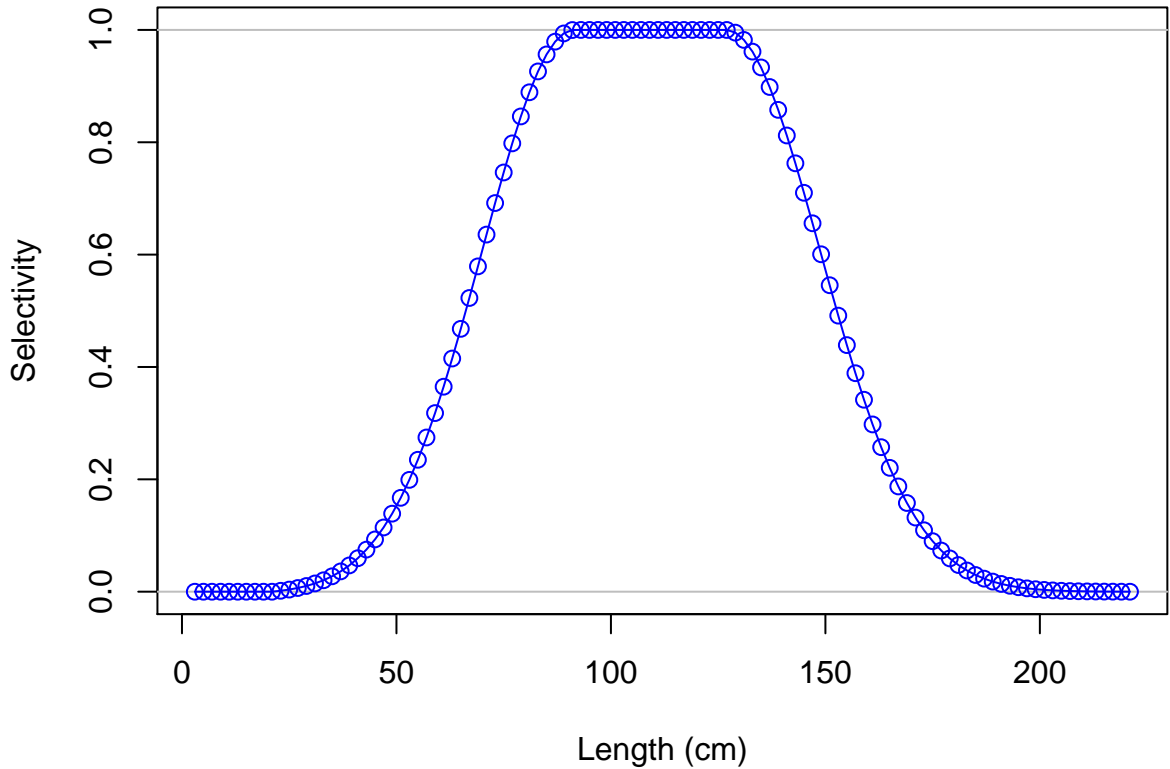




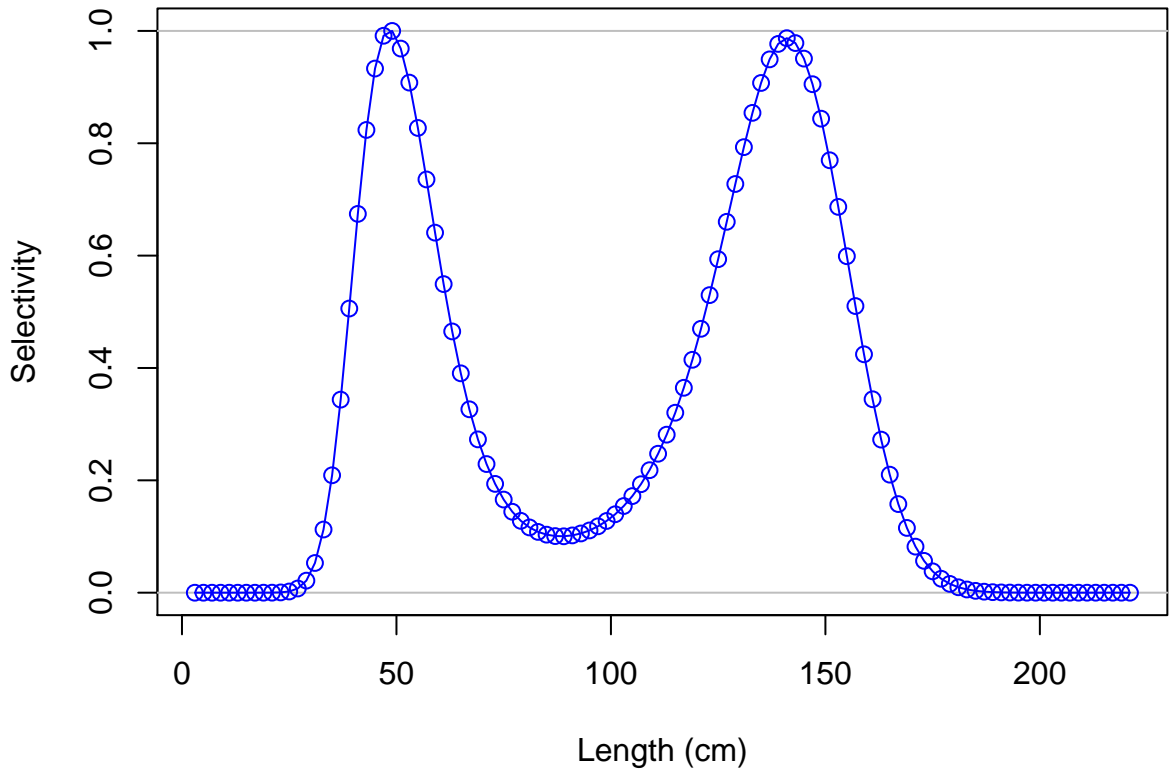
## Female ending year selectivity for A6-OBJ



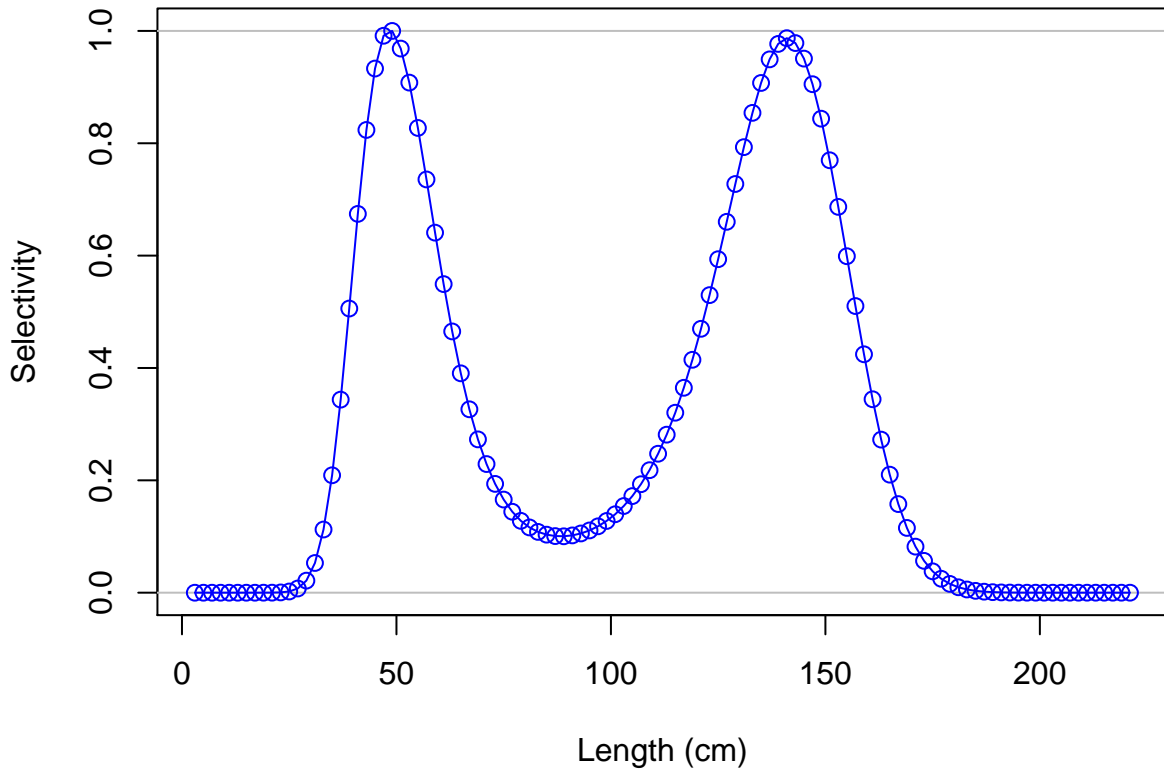
# Male ending year selectivity for A6-OBJ



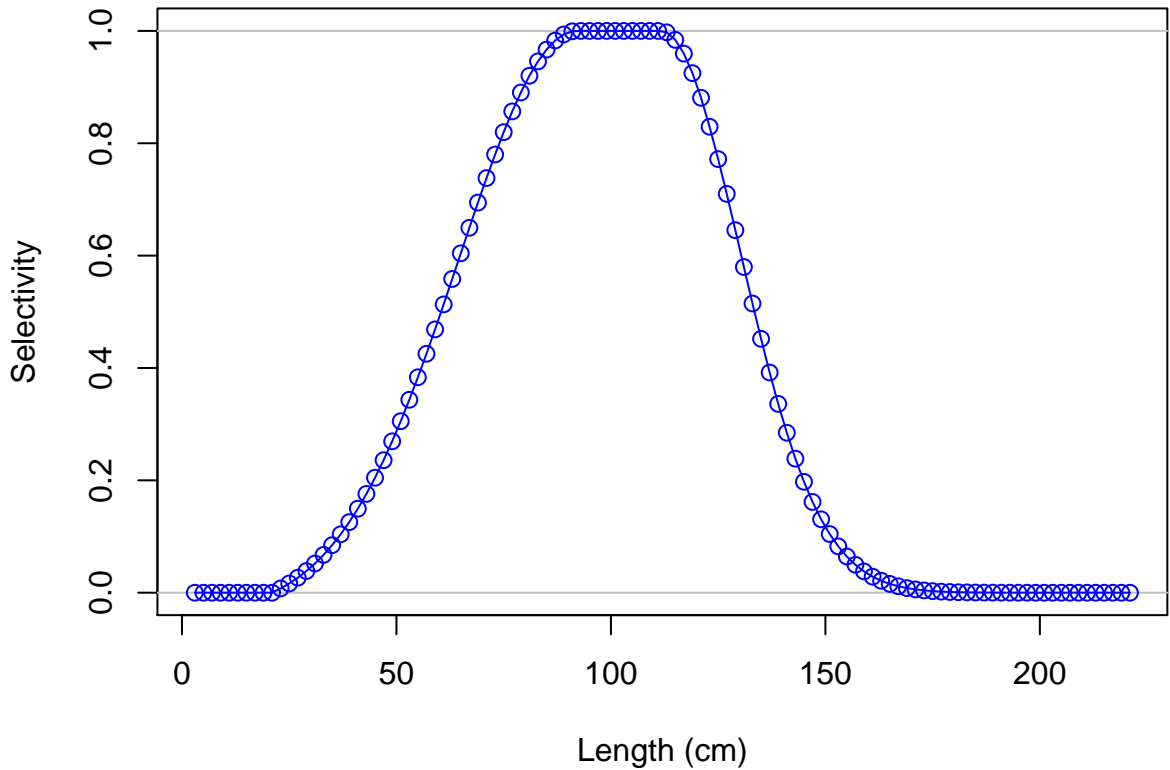
## Female ending year selectivity for A2-NOADEL



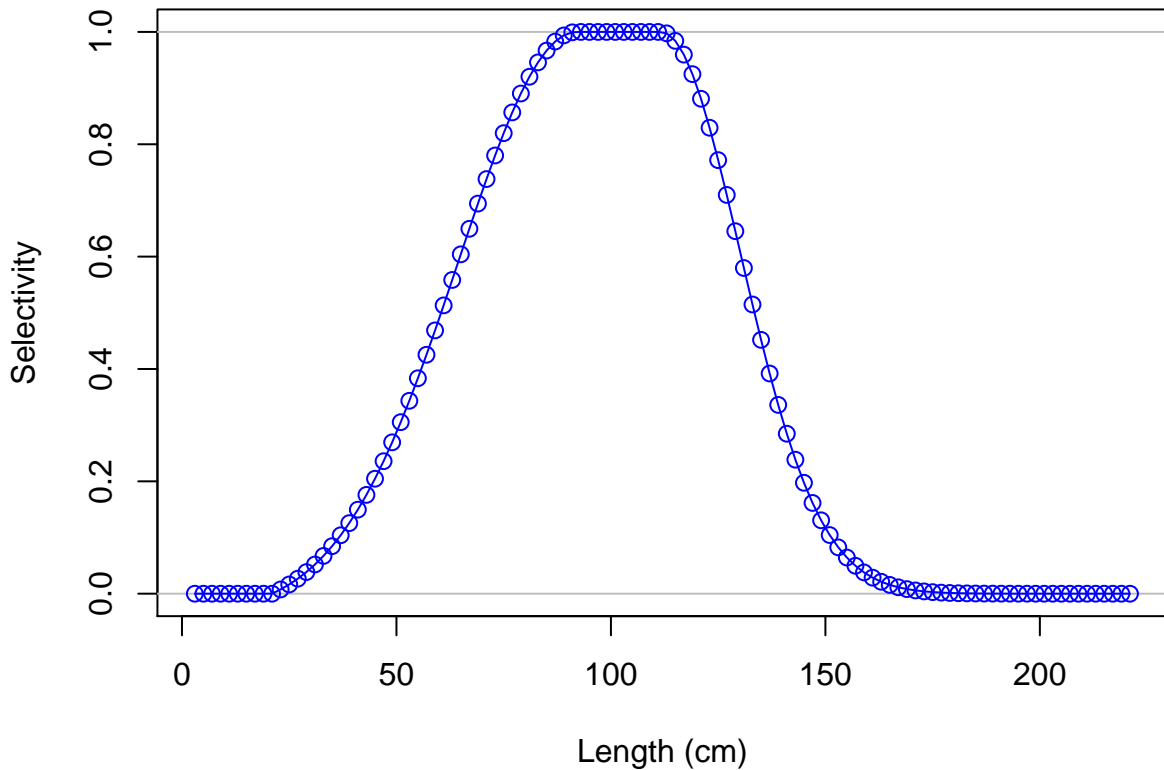
## Male ending year selectivity for A2-NOADEL



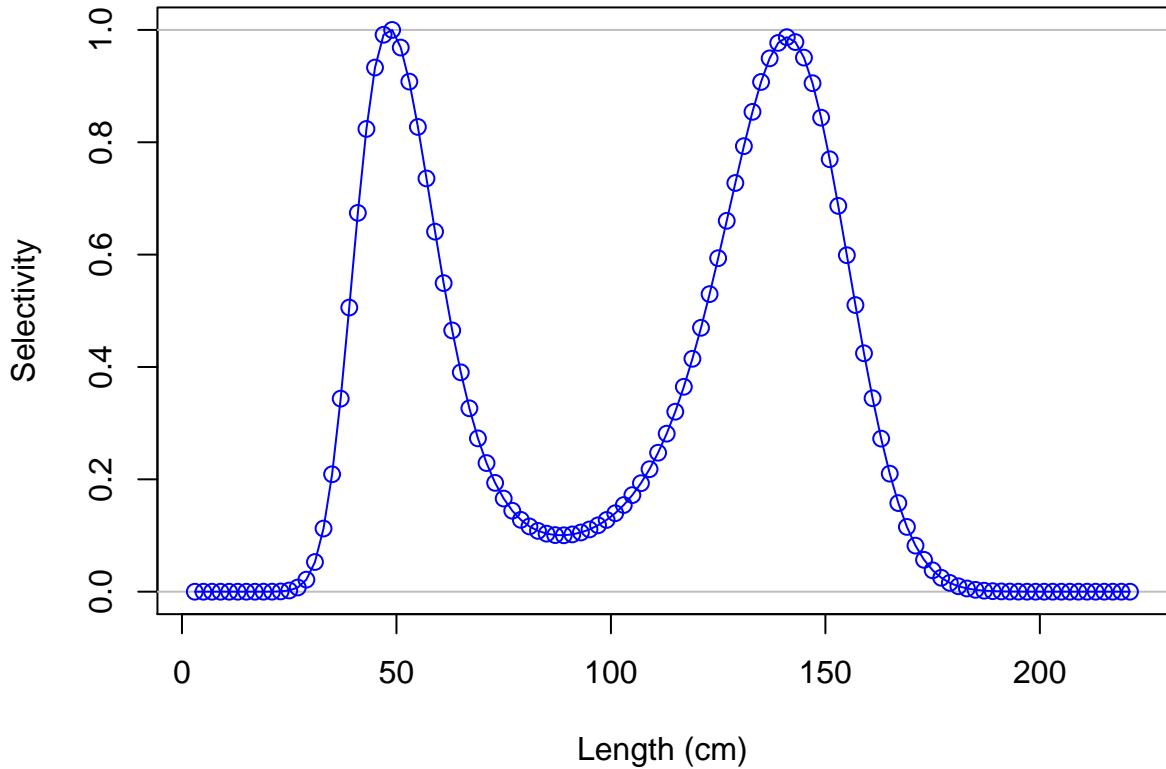
## Female ending year selectivity for A3-NOADEL



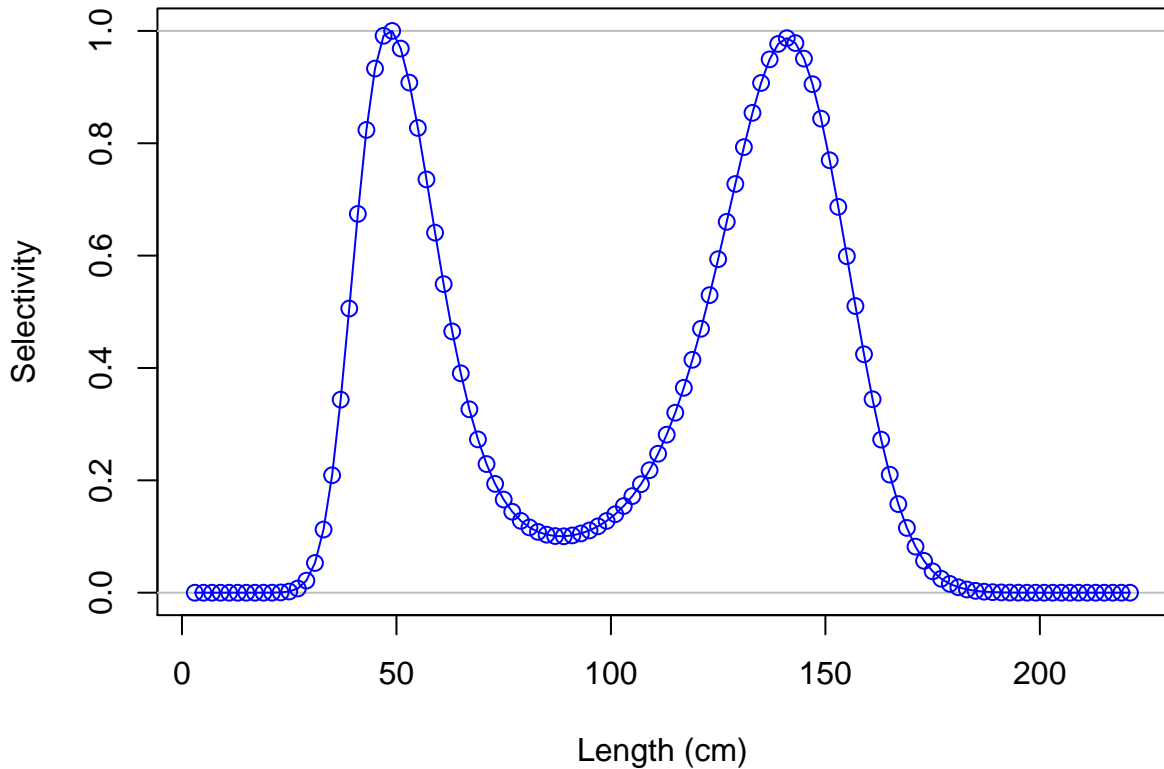
## Male ending year selectivity for A3-NOADEL



## Female ending year selectivity for A4-NOADEL

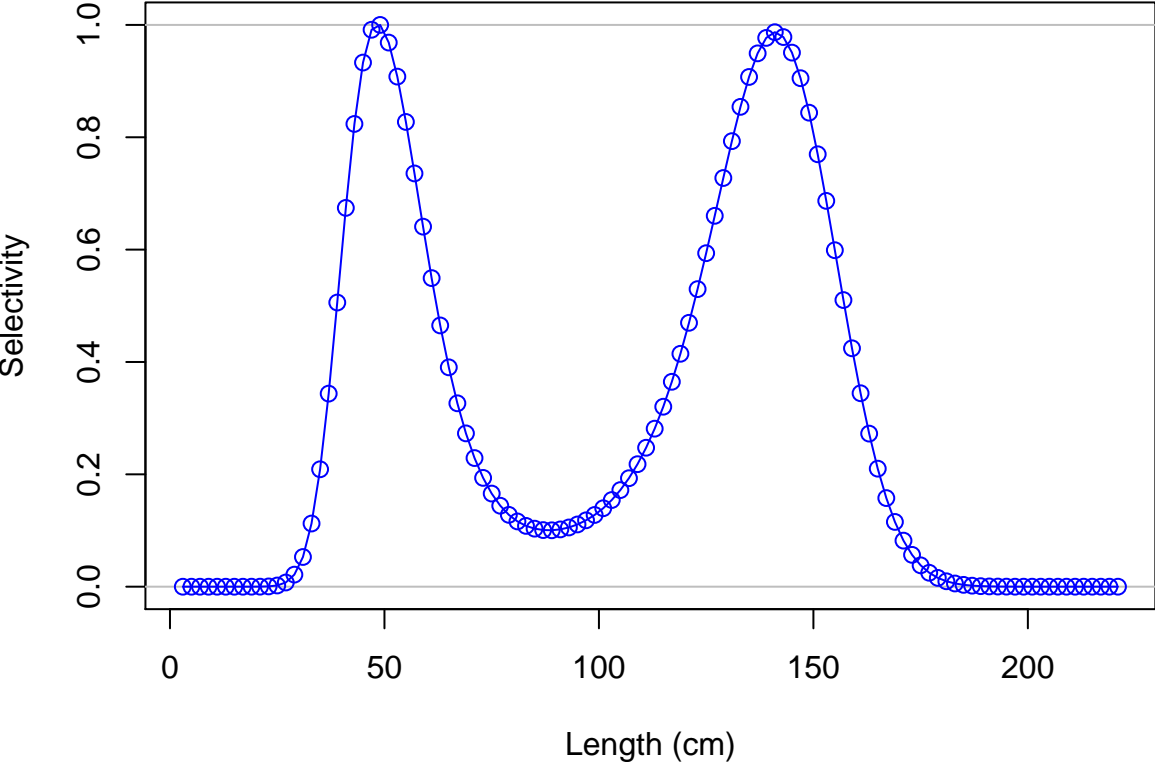


## Male ending year selectivity for A4-NOADEL

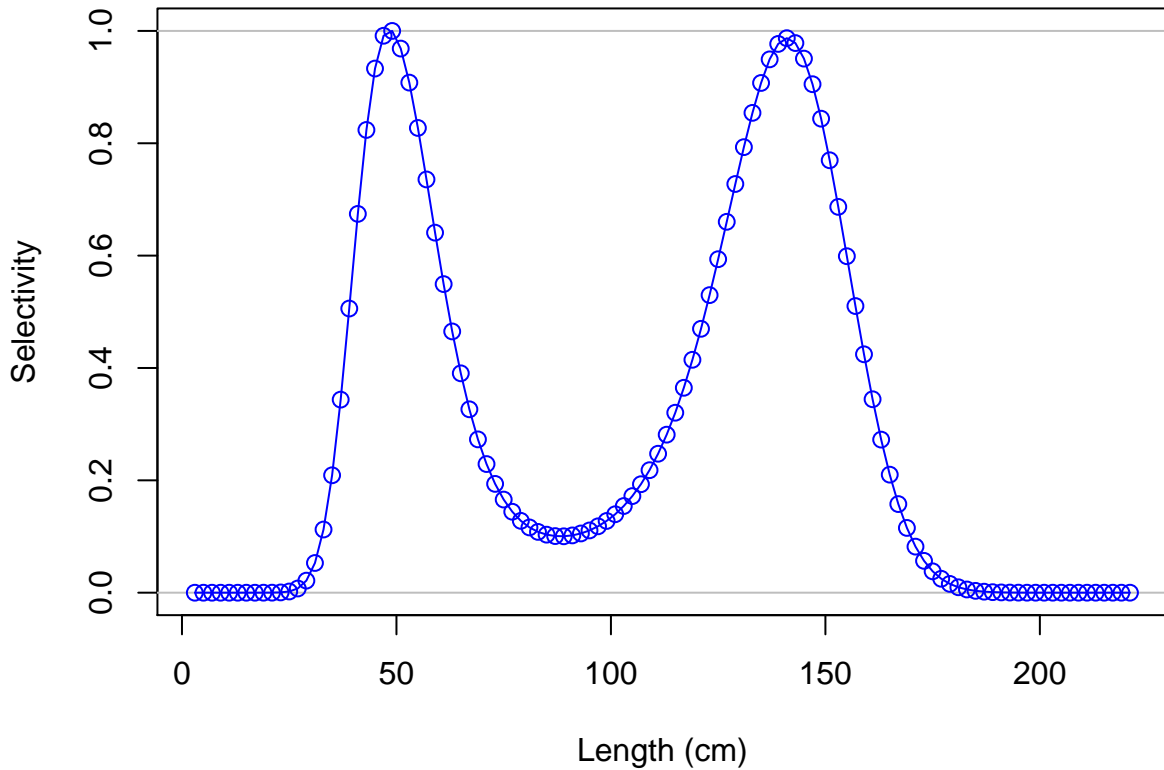




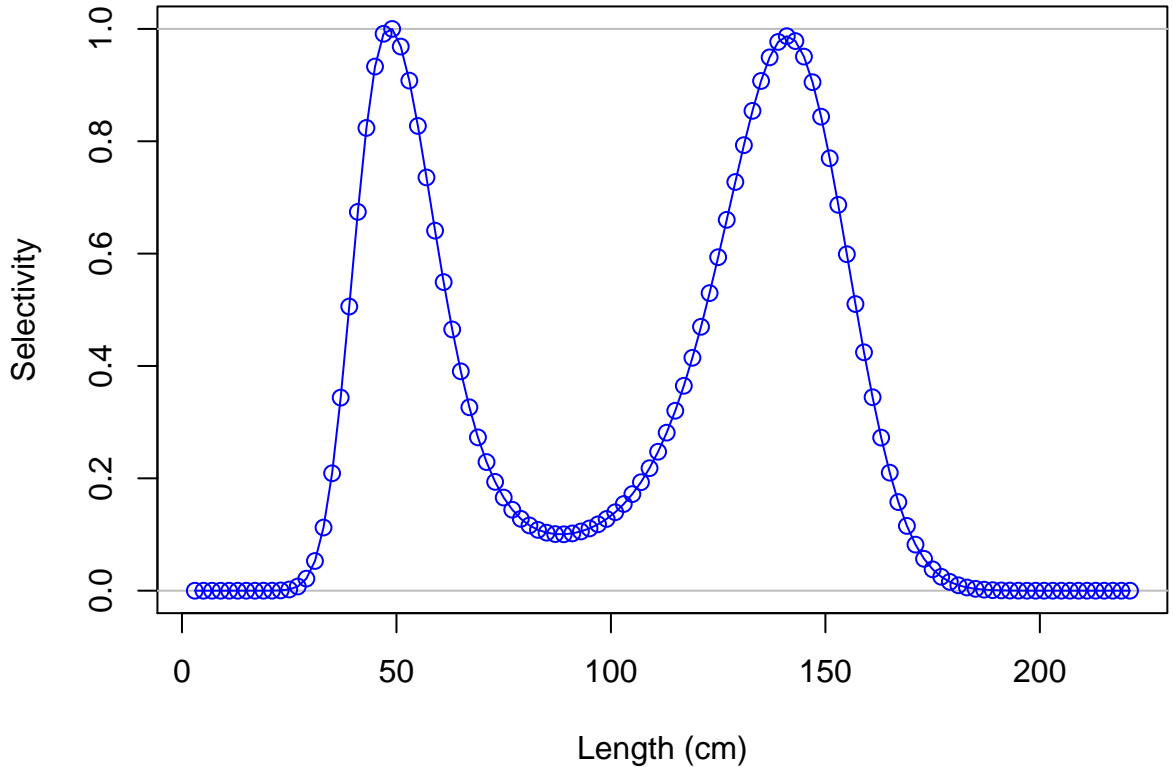
# Female ending year selectivity for A5-NOADEL



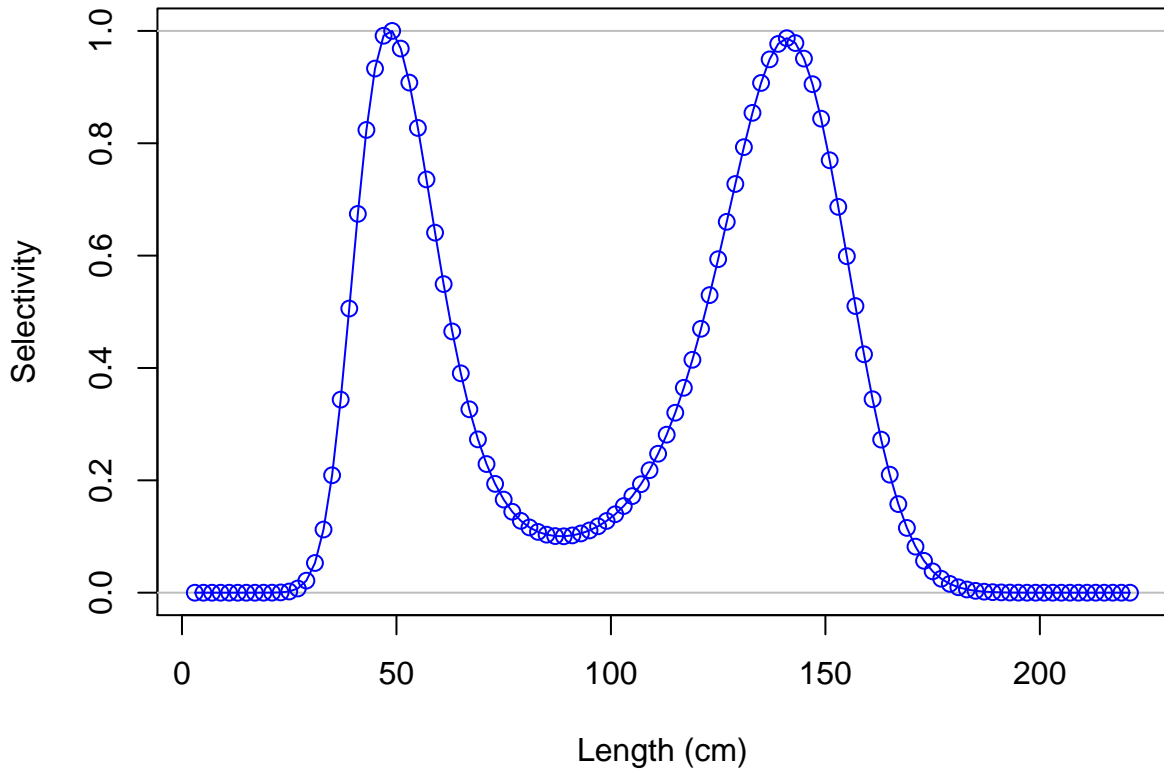
## Male ending year selectivity for A5-NOADEL



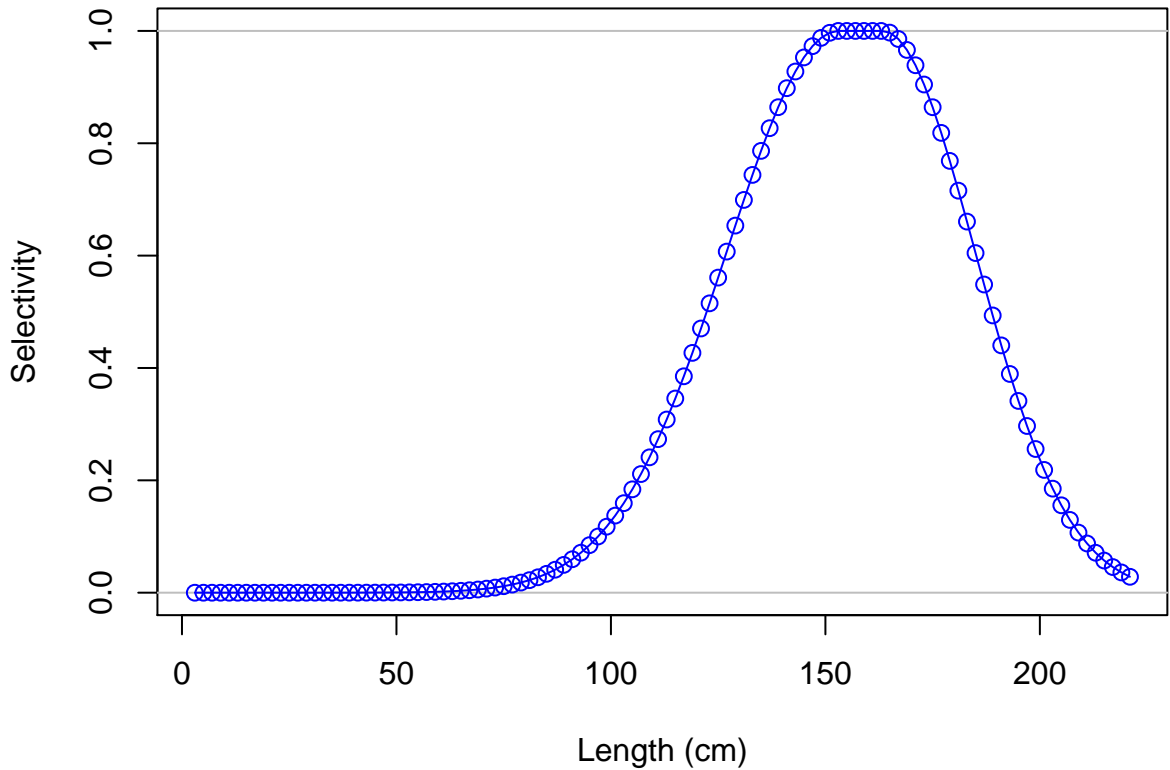
## Female ending year selectivity for A6-NOADEL



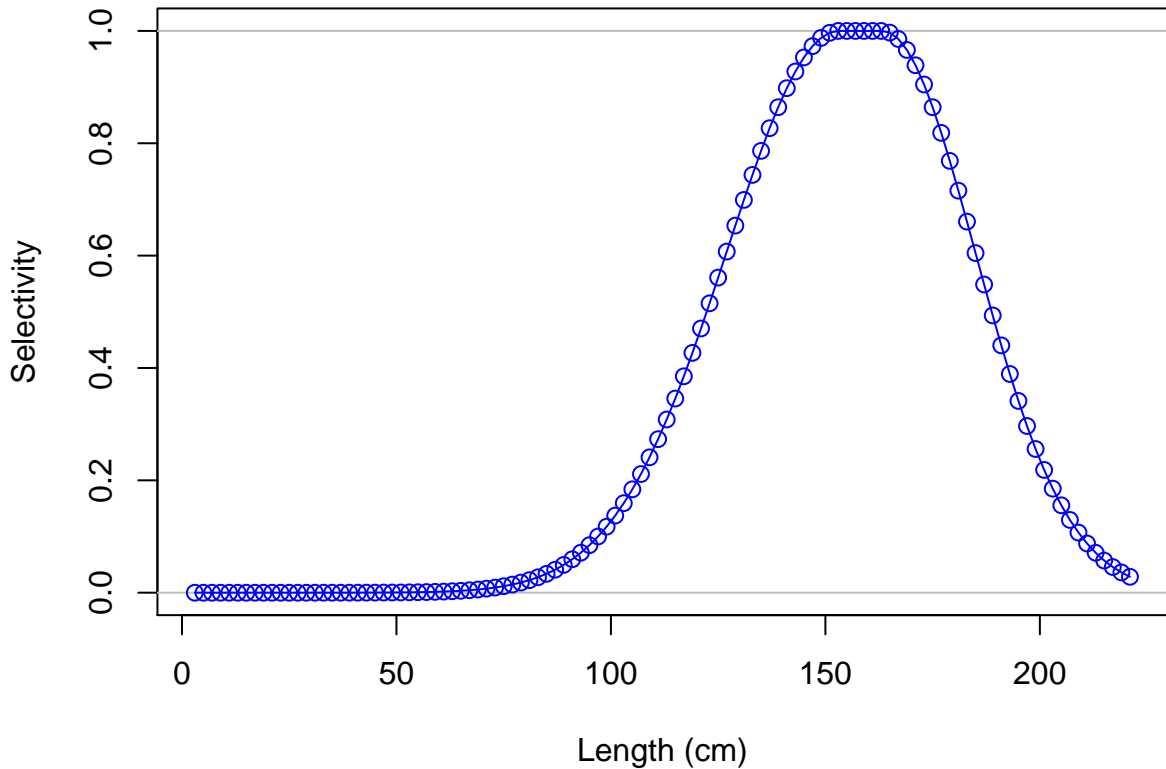
## Male ending year selectivity for A6-NOADEL



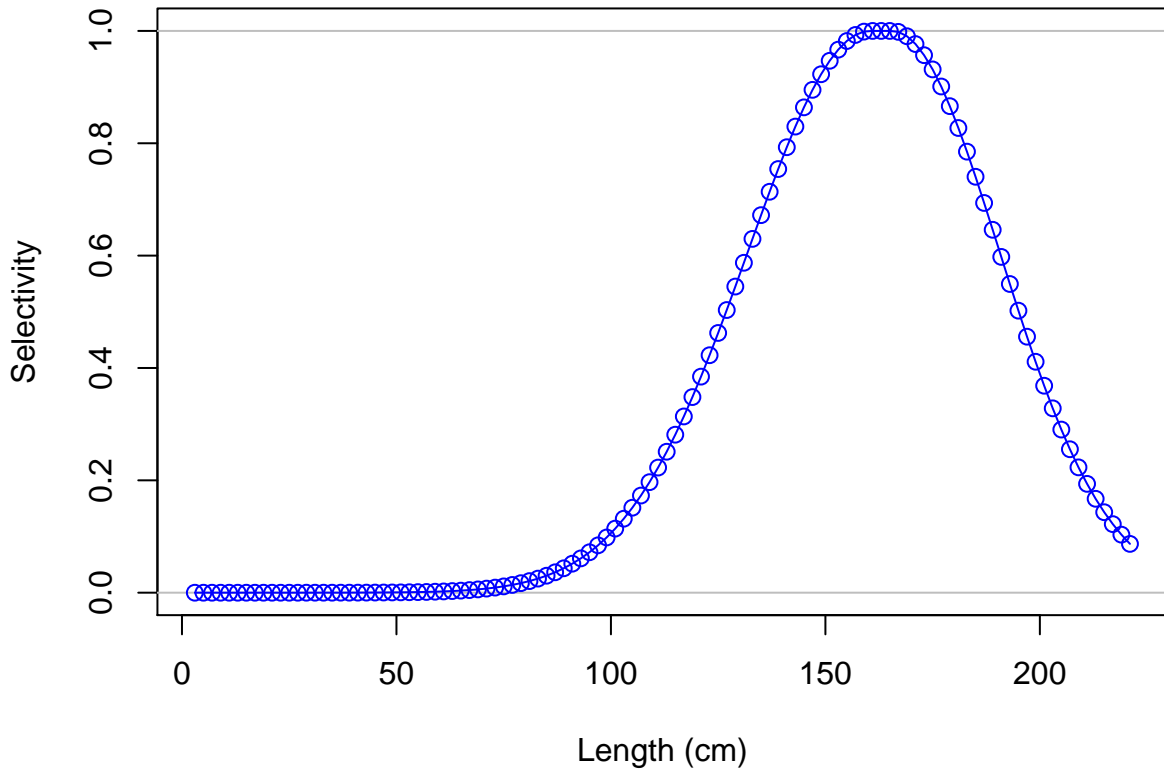
# Female ending year selectivity for EPO-LL-survey-early



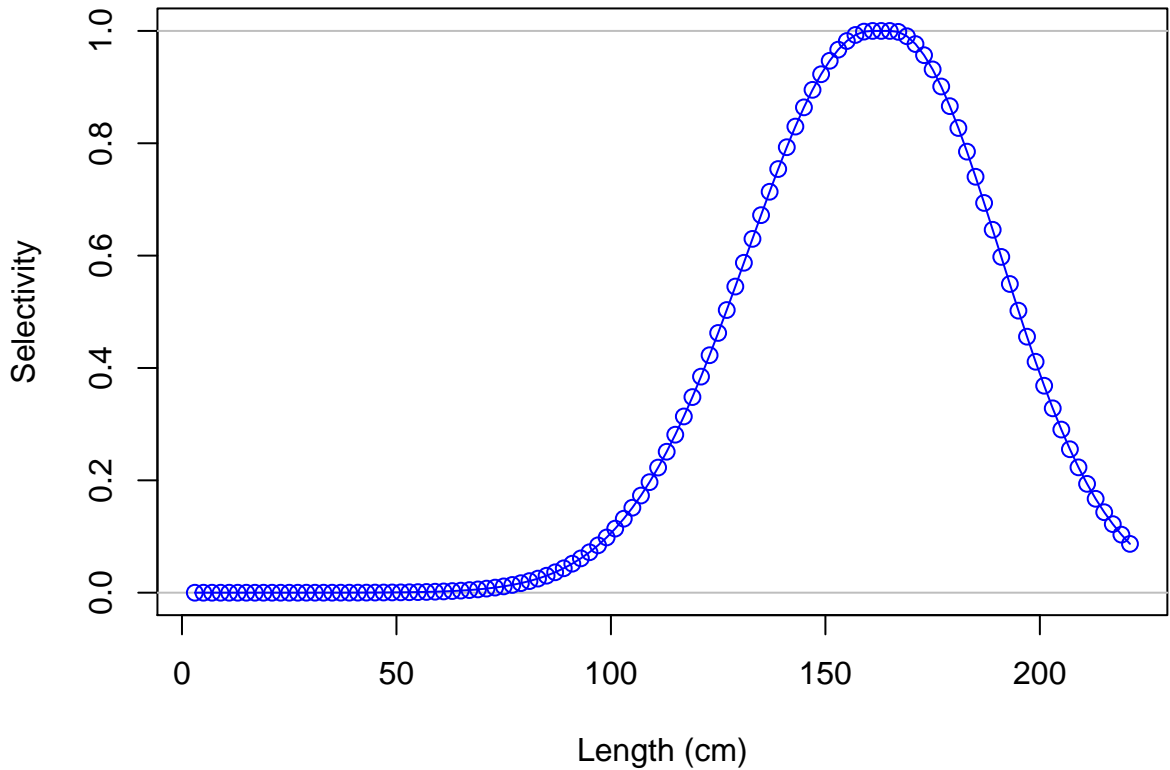
# Male ending year selectivity for EPO-LL-survey-early



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

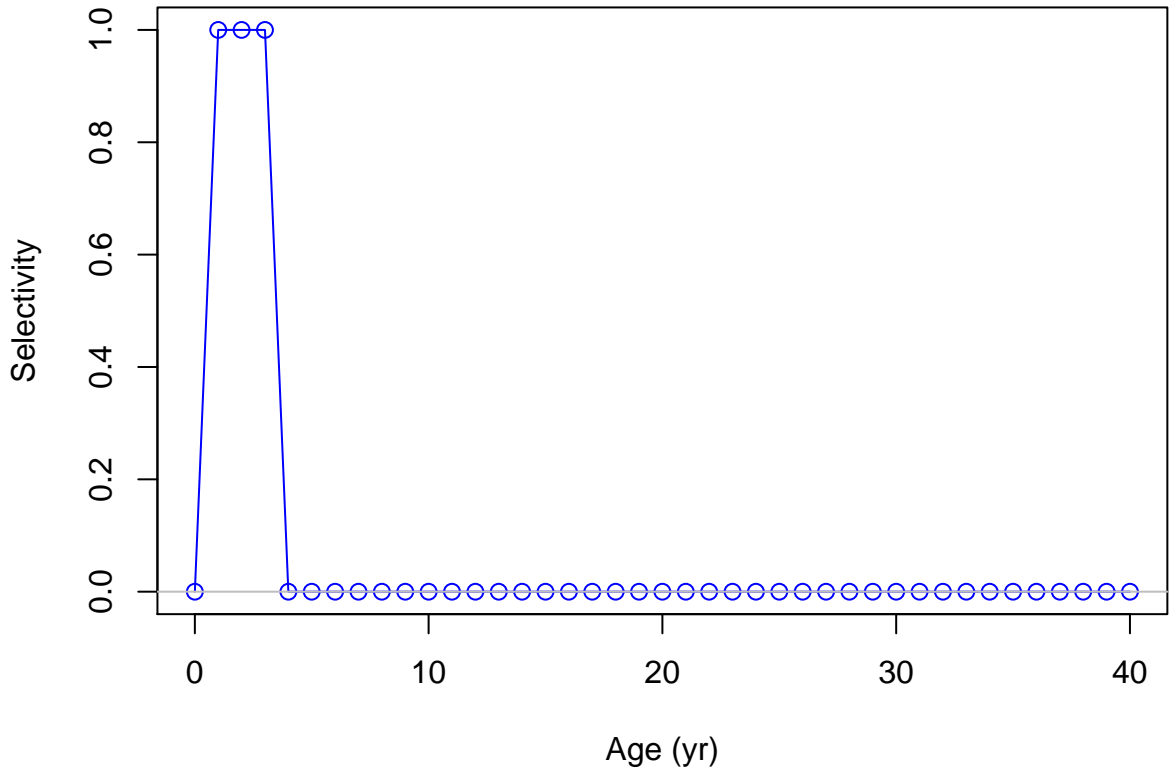


# Male ending year selectivity for EPO-LL-survey-late

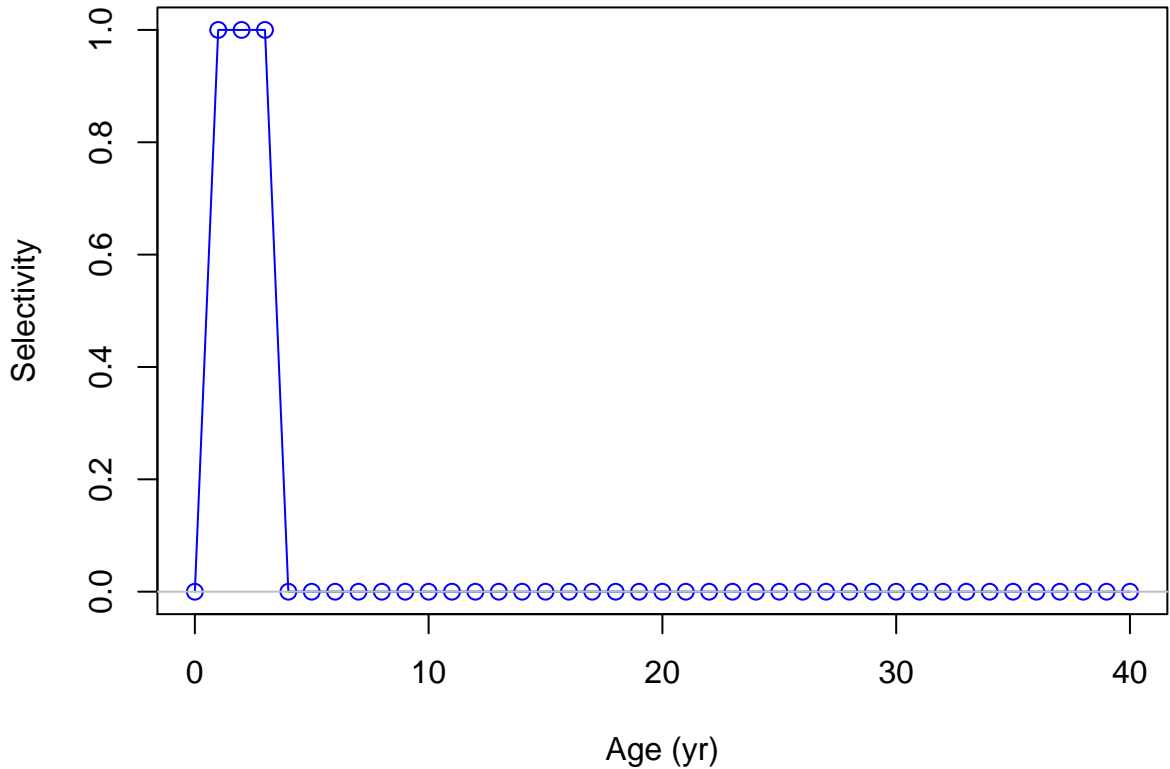




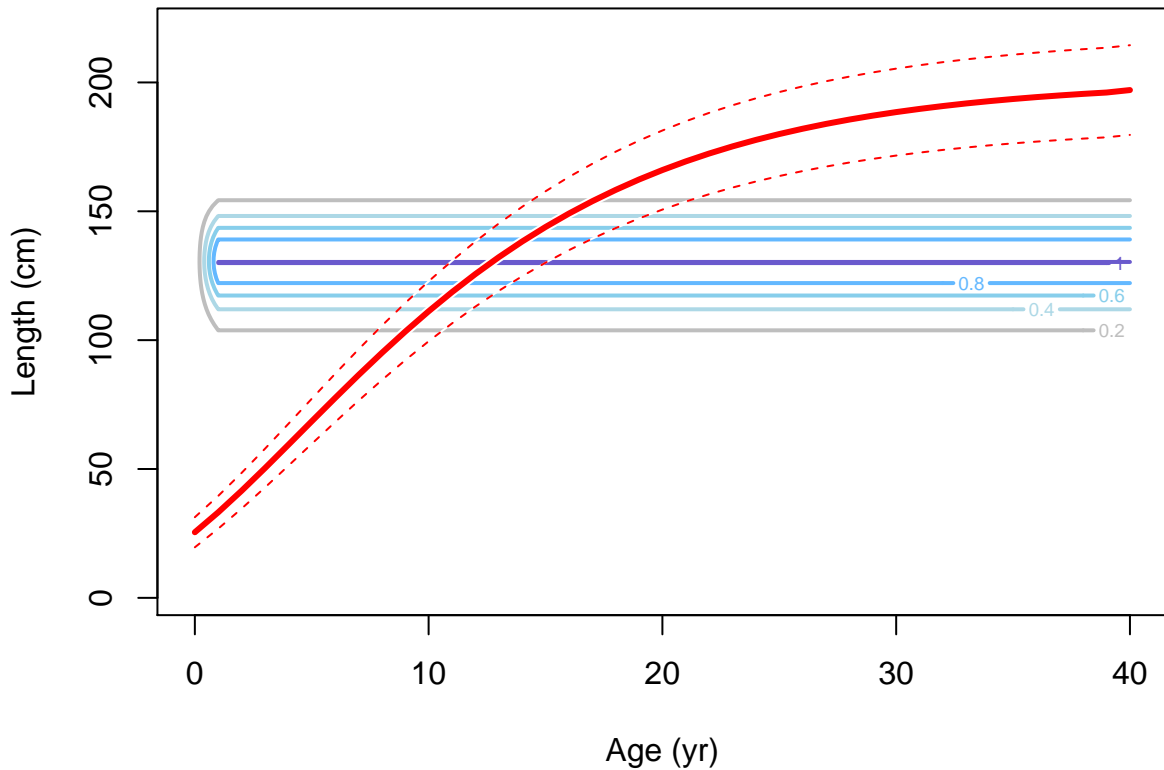
## Female ending year selectivity for EPO-OBJ-Disc



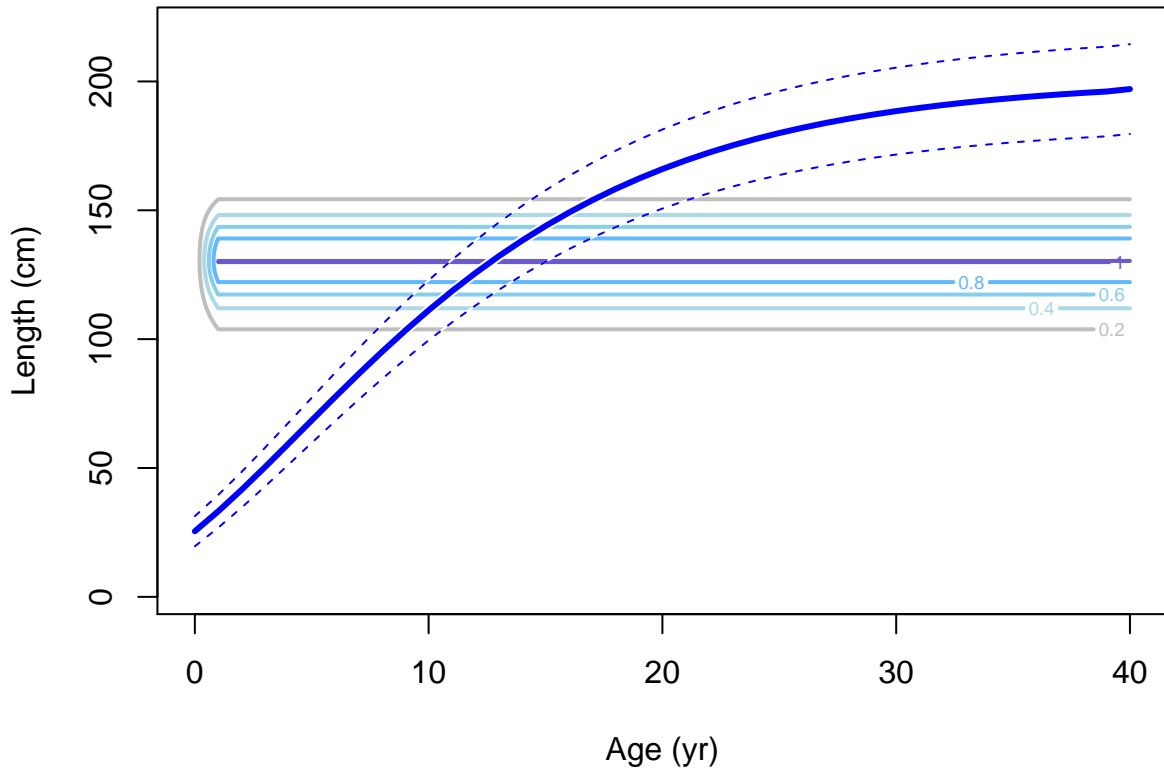
# Male ending year selectivity for EPO-Obj-Disc



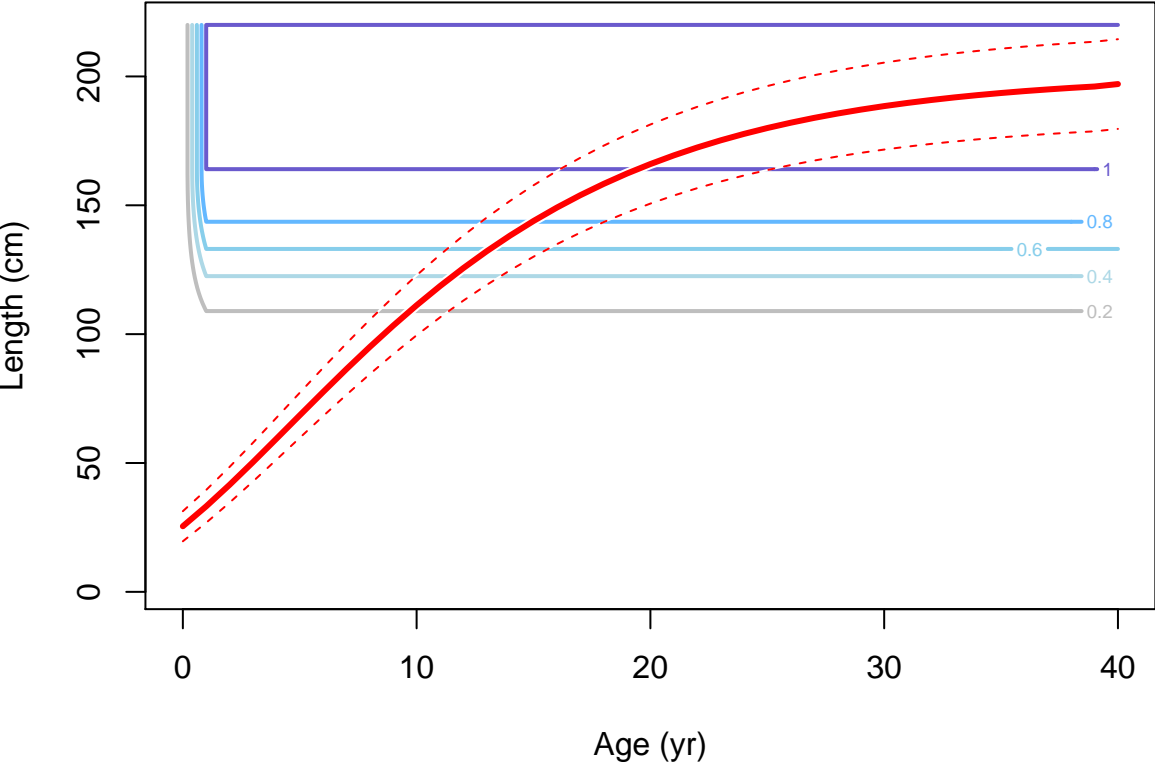
## Female ending year selectivity and growth for A1-LL-n



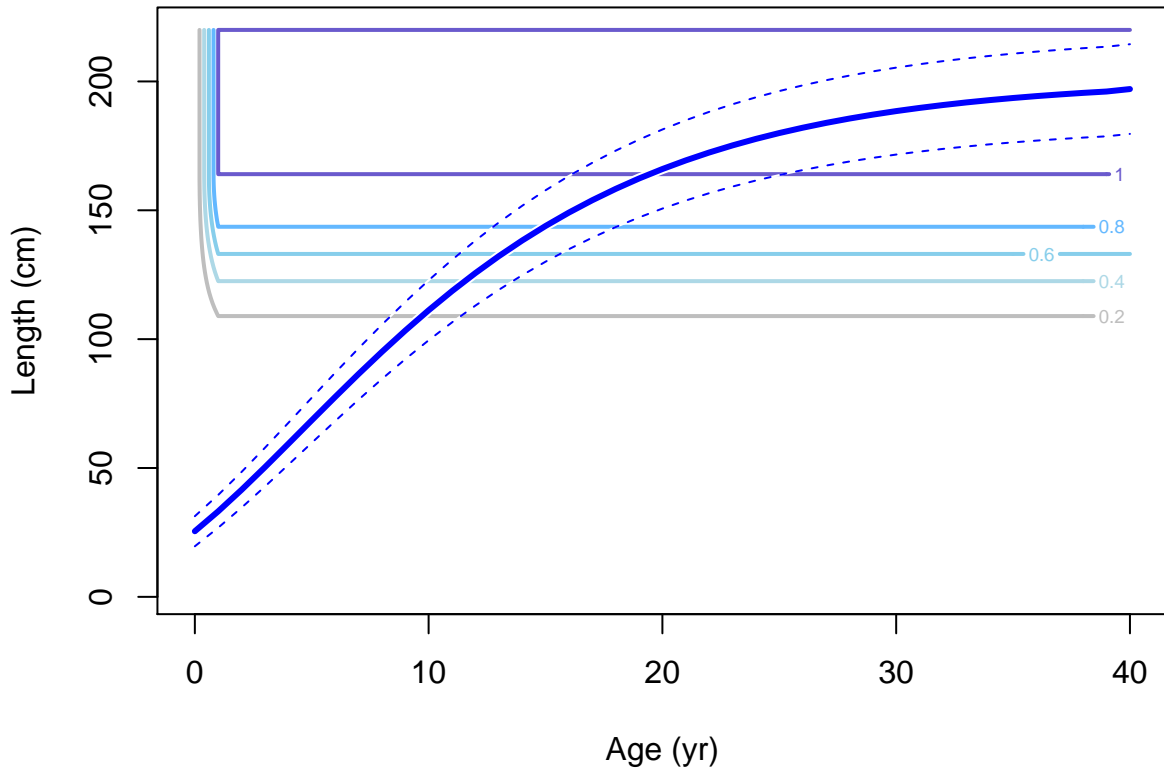
# Male ending year selectivity and growth for A1-LL-n



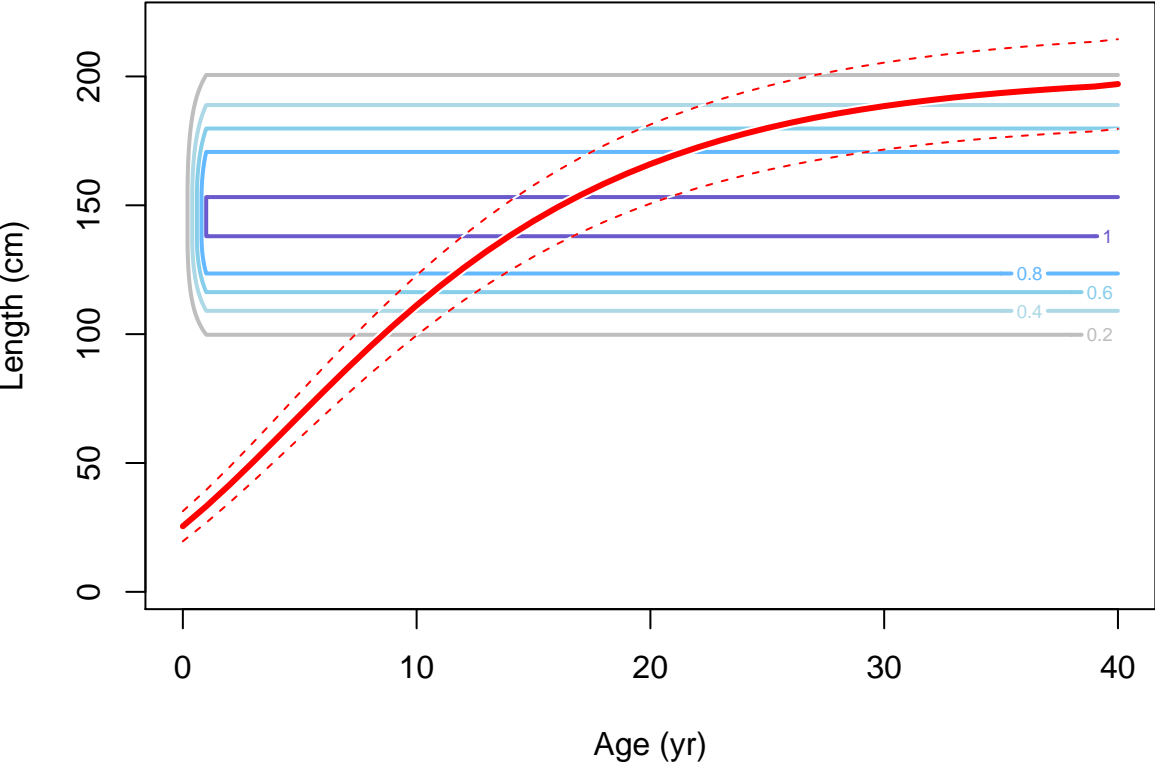
Female ending year selectivity and growth for A2-LL-n



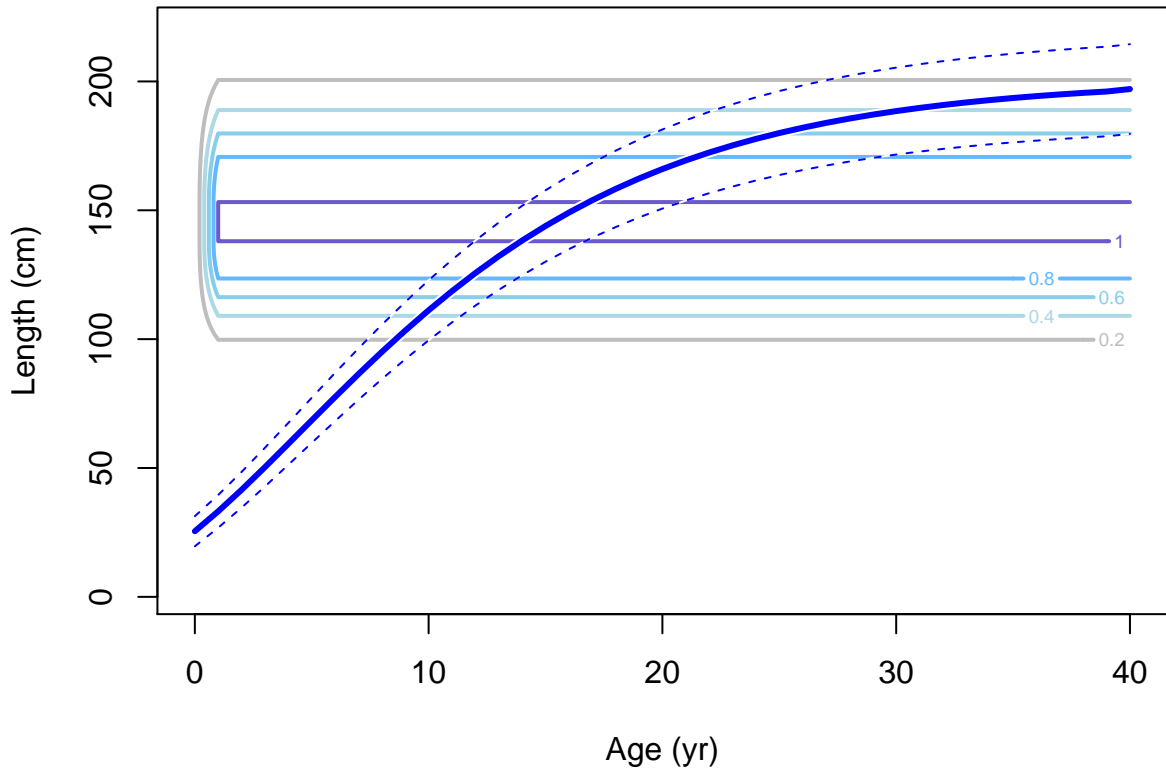
# Male ending year selectivity and growth for A2-LL-n



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

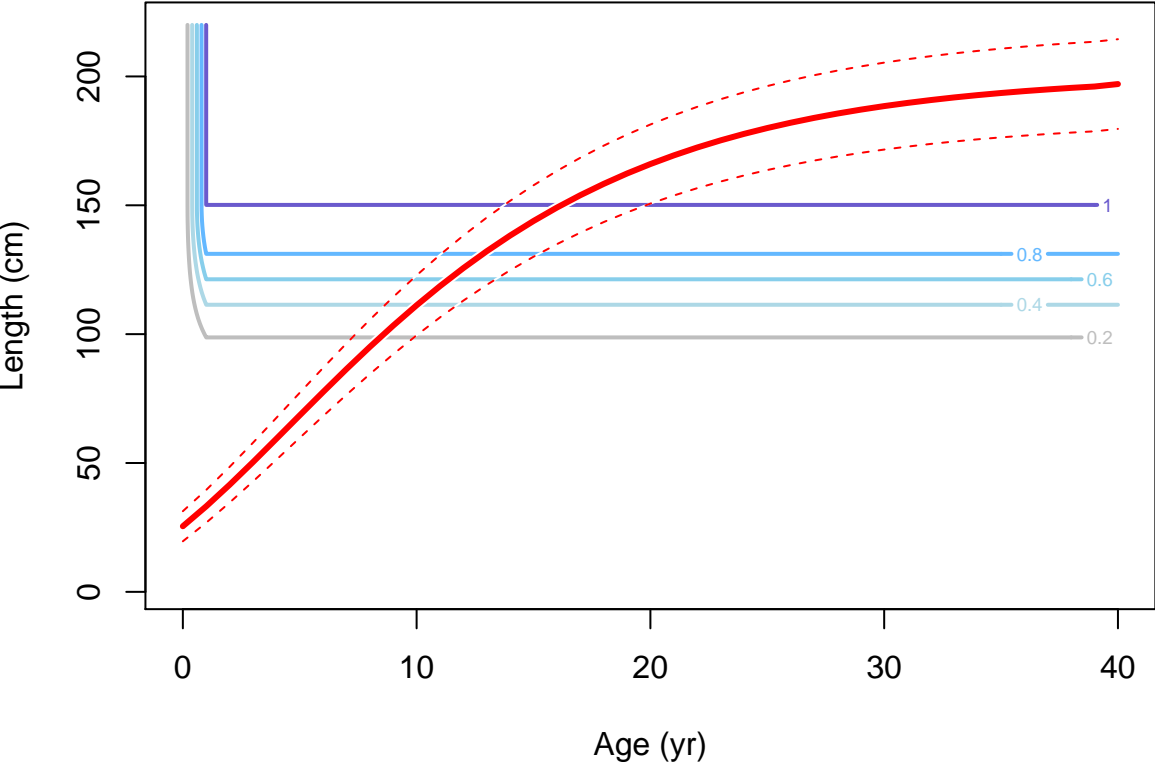


# Male ending year selectivity and growth for A3-LL-n

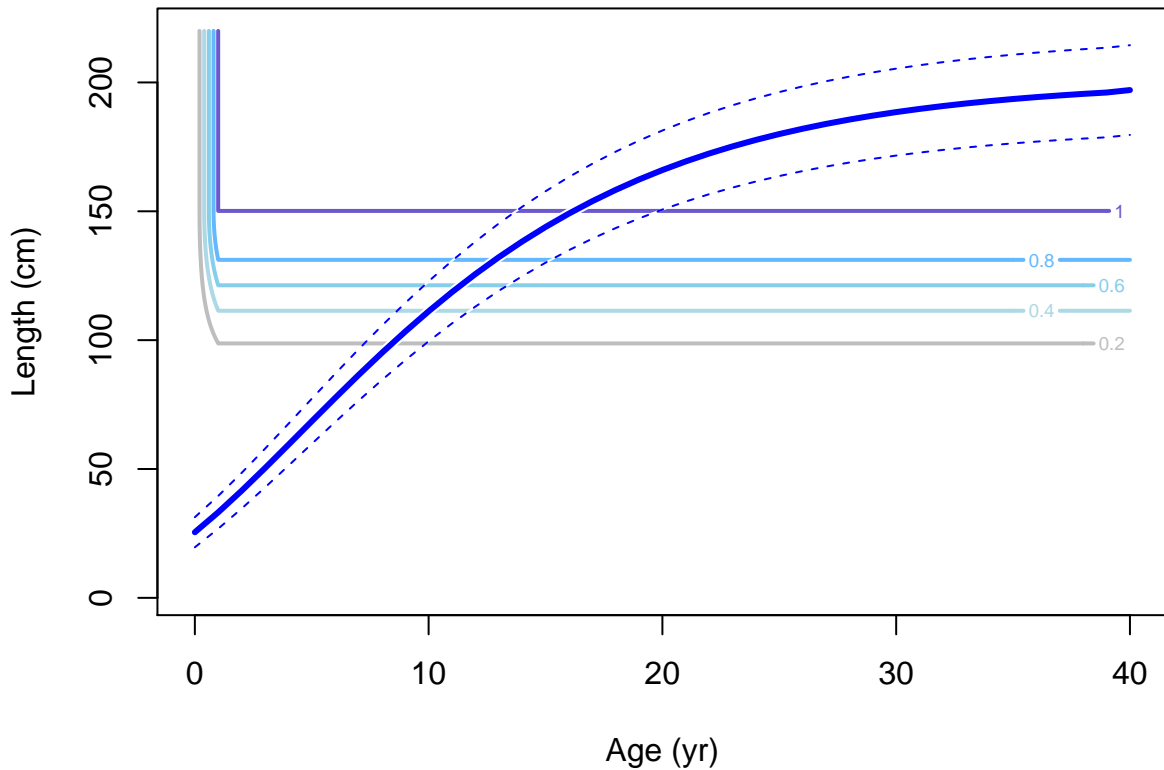




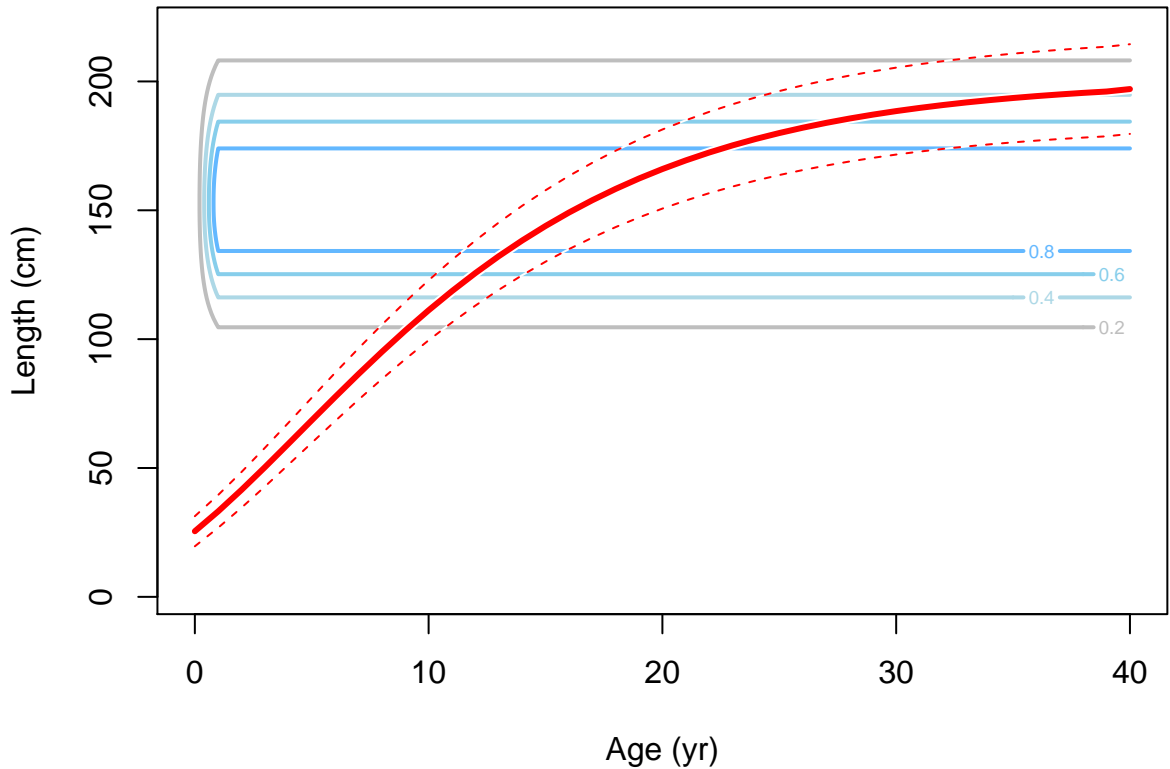
Female ending year selectivity and growth for A4-LL-n



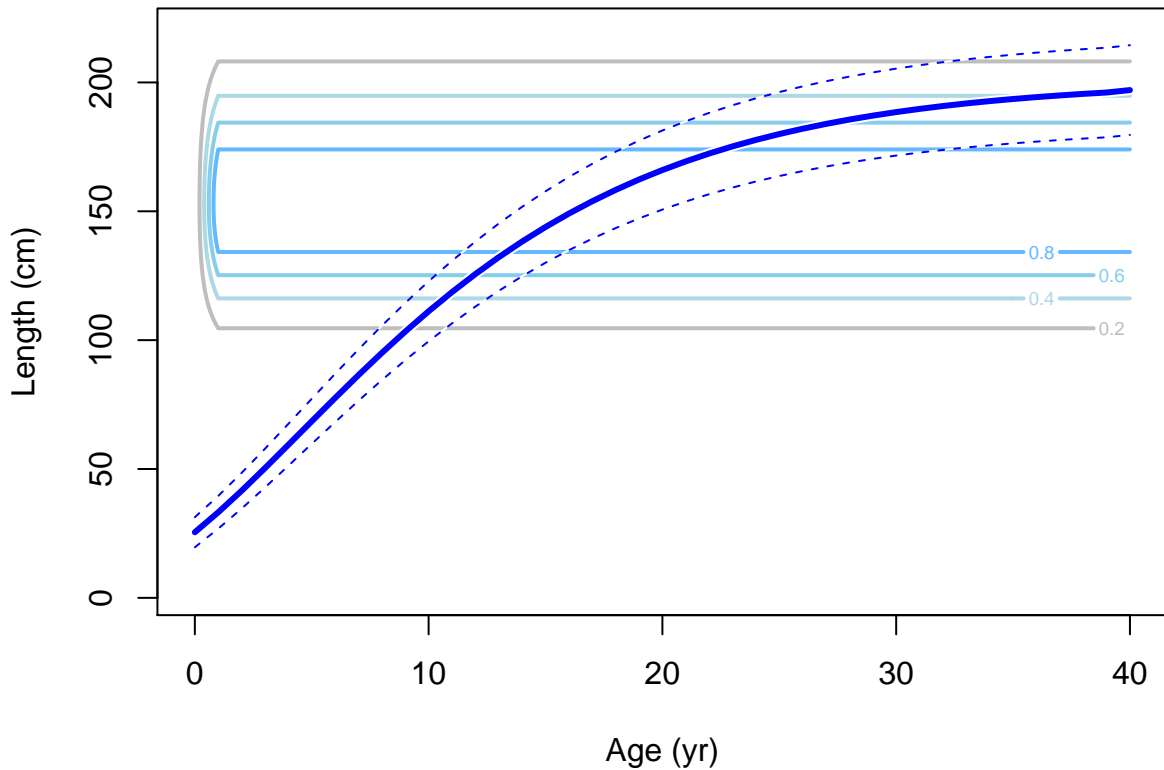
# Male ending year selectivity and growth for A4-LL-n



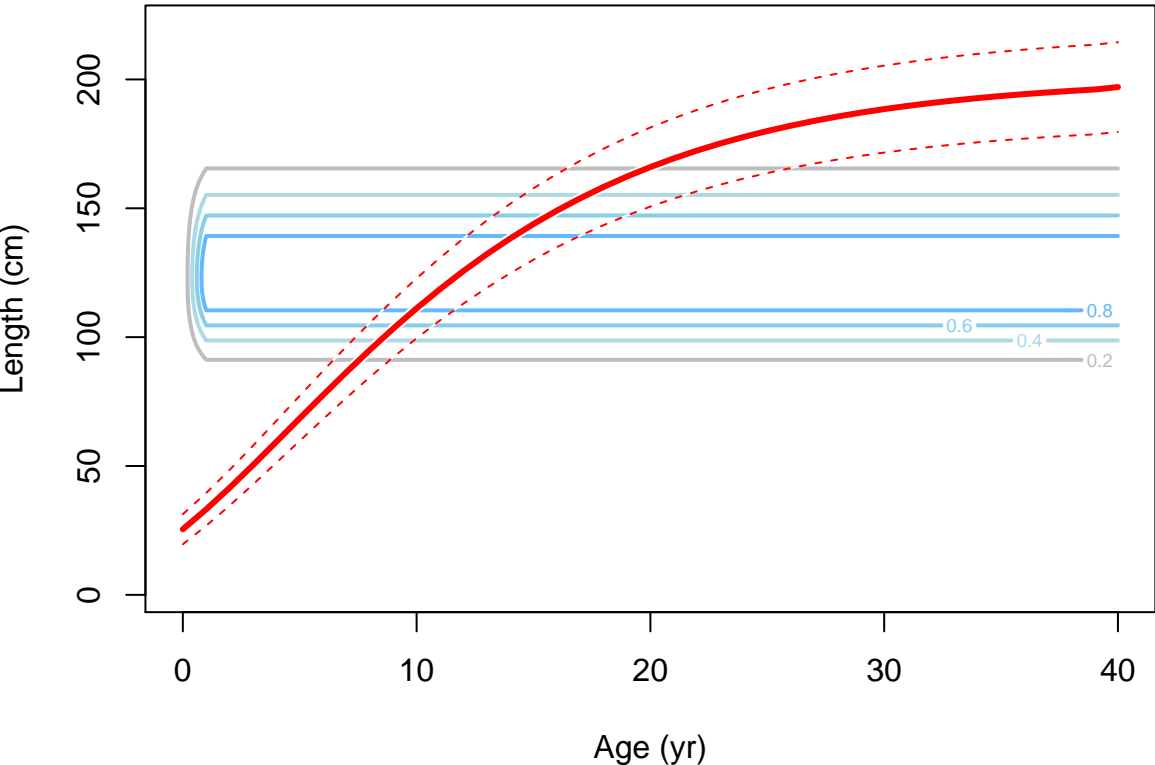
## Female ending year selectivity and growth for A5-LL-n



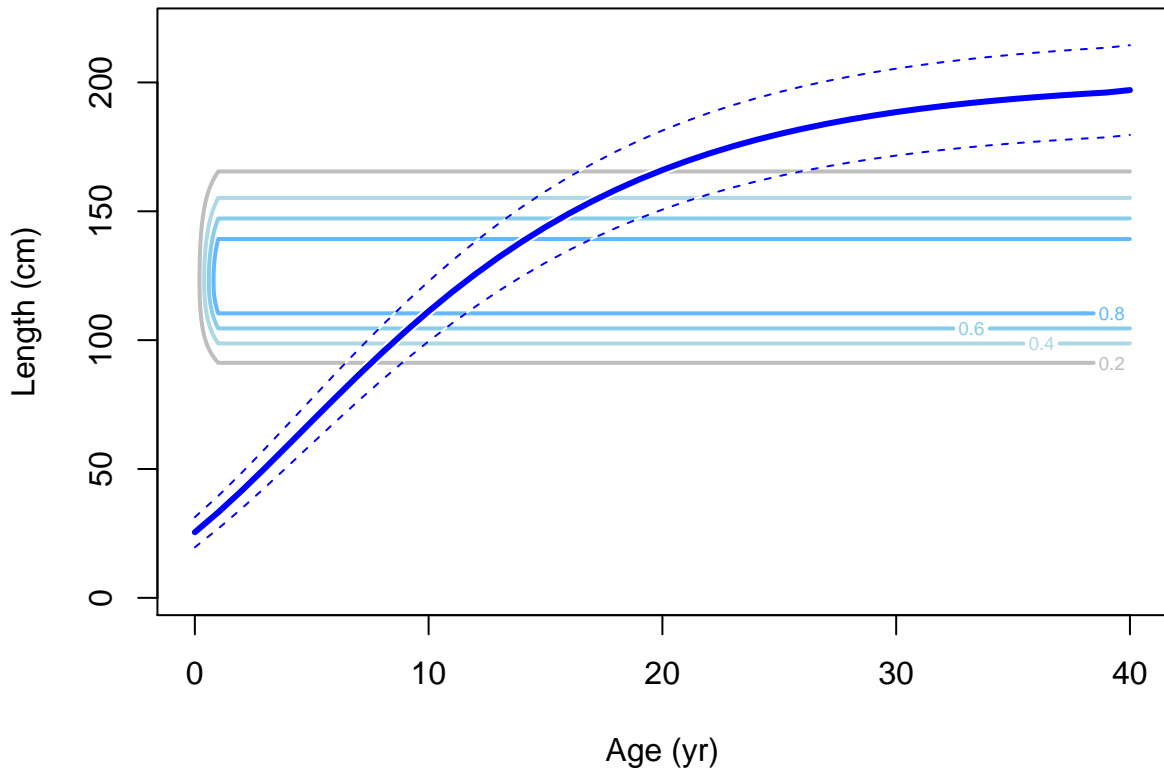
## Male ending year selectivity and growth for A5-LL-n



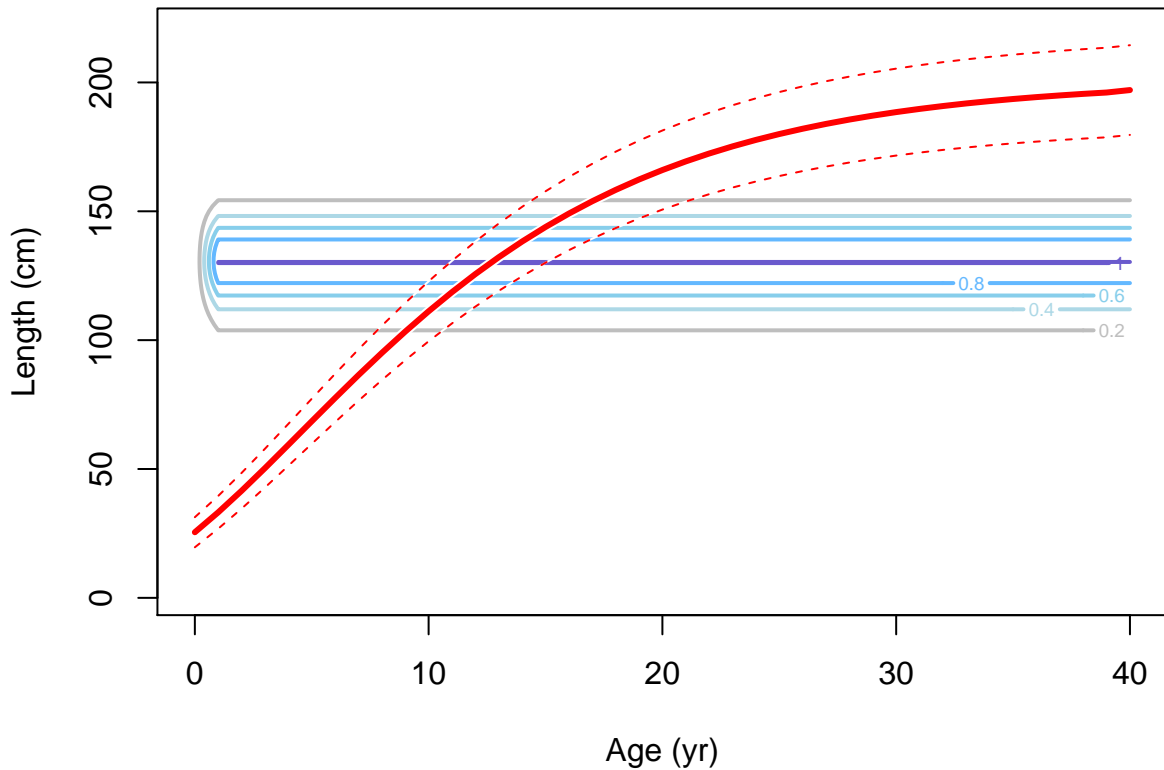
# Female ending year selectivity and growth for A6-LL-n



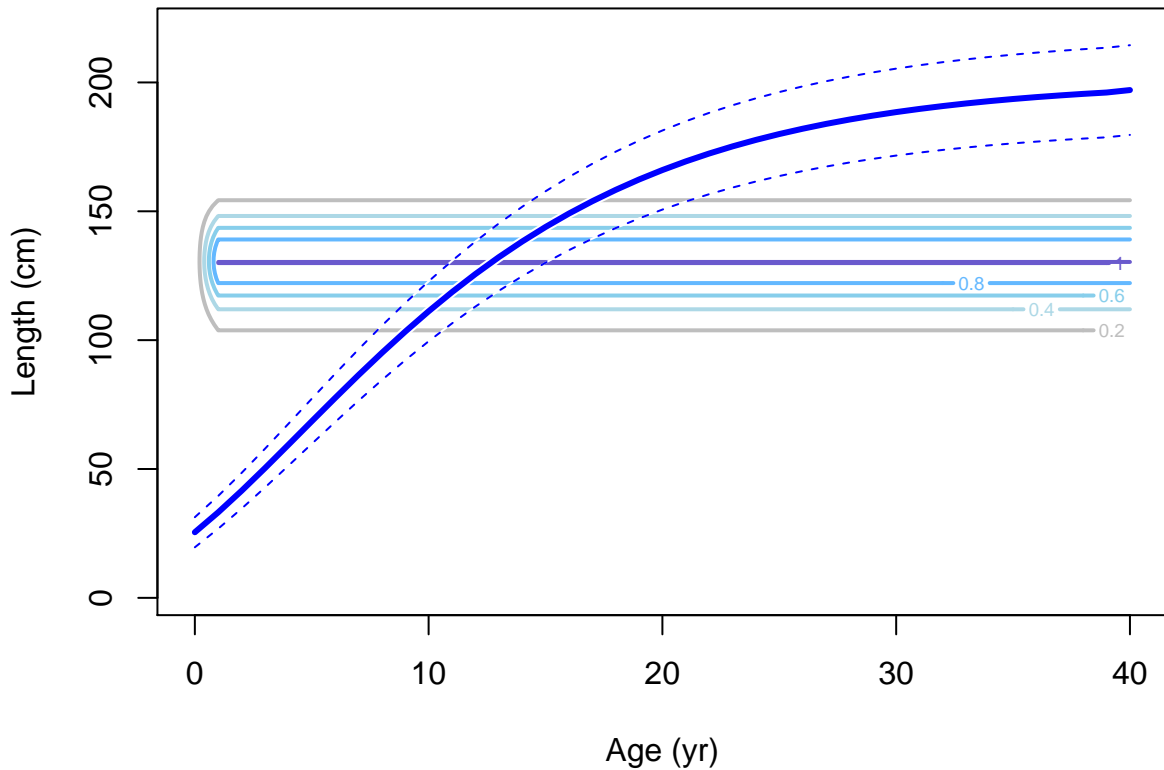
# Male ending year selectivity and growth for A6-LL-n



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

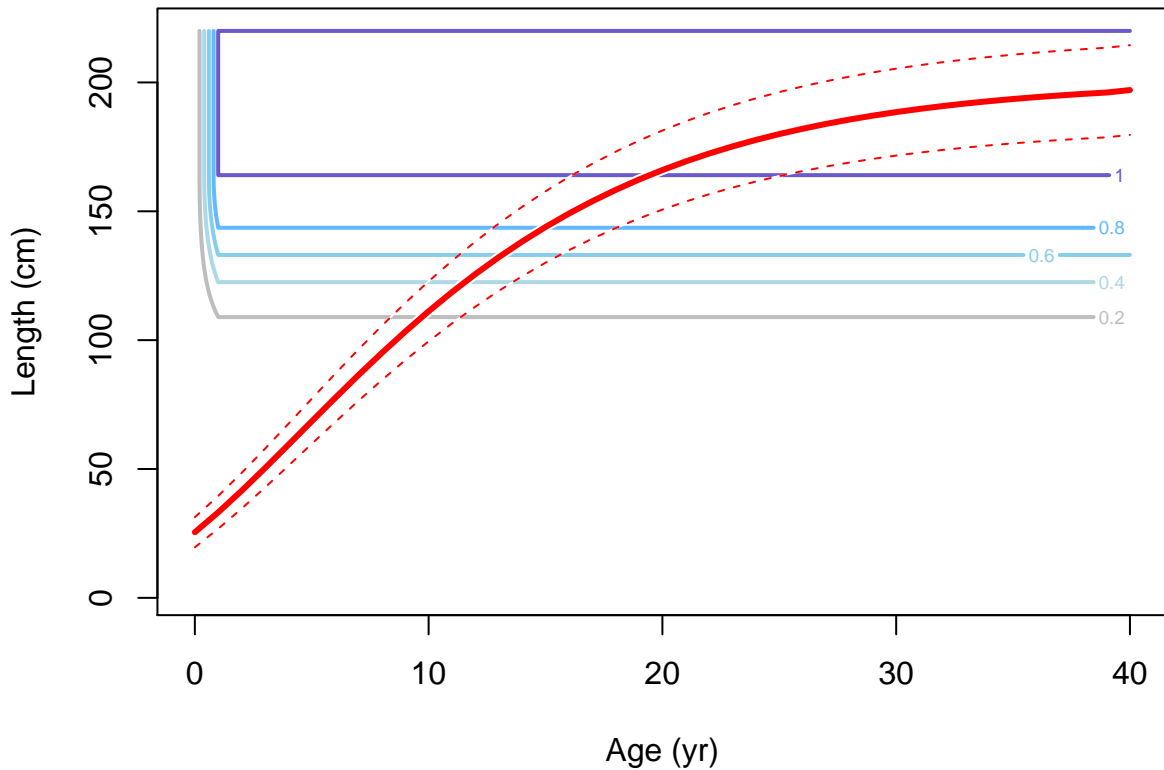


# Male ending year selectivity and growth for A1-LL-w

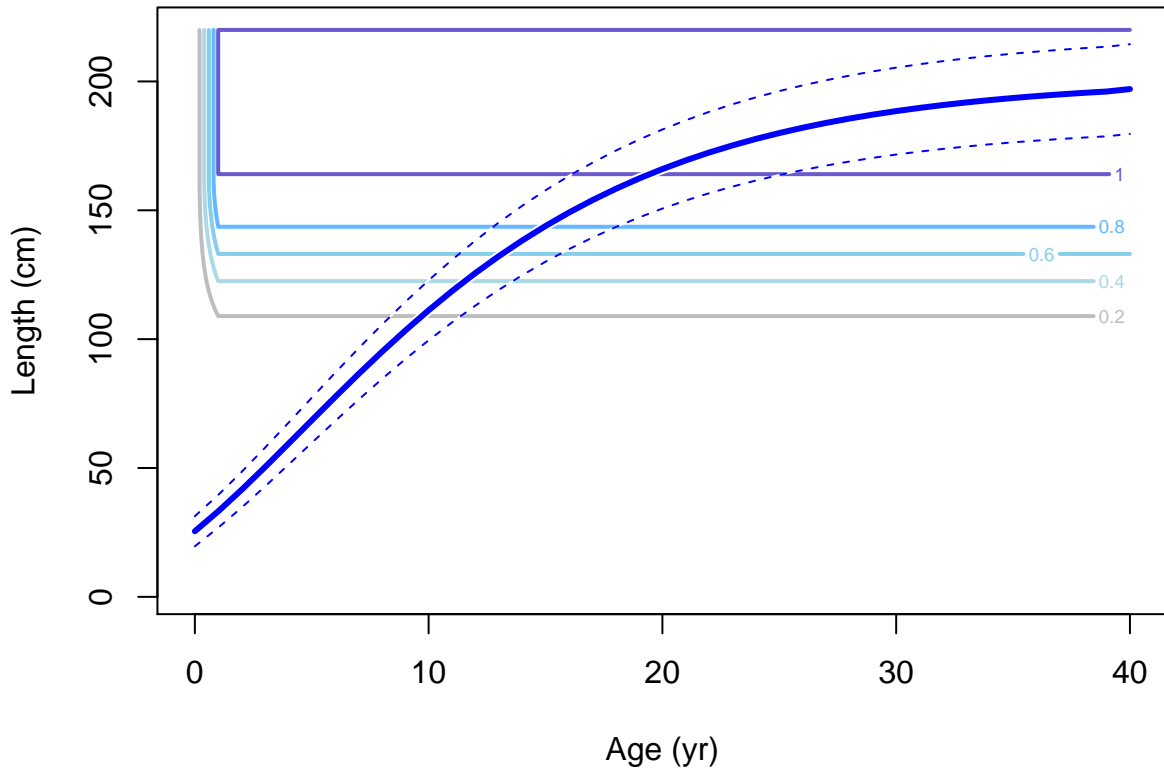




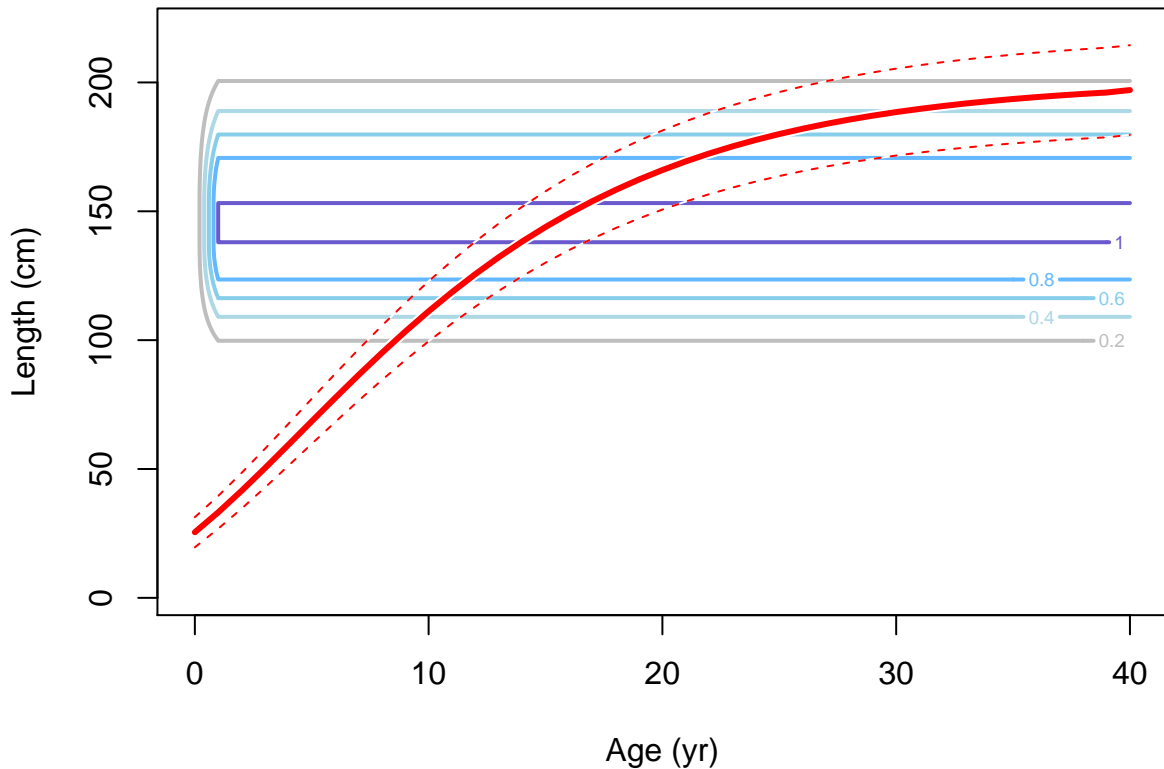
## Female ending year selectivity and growth for A2-LL-w



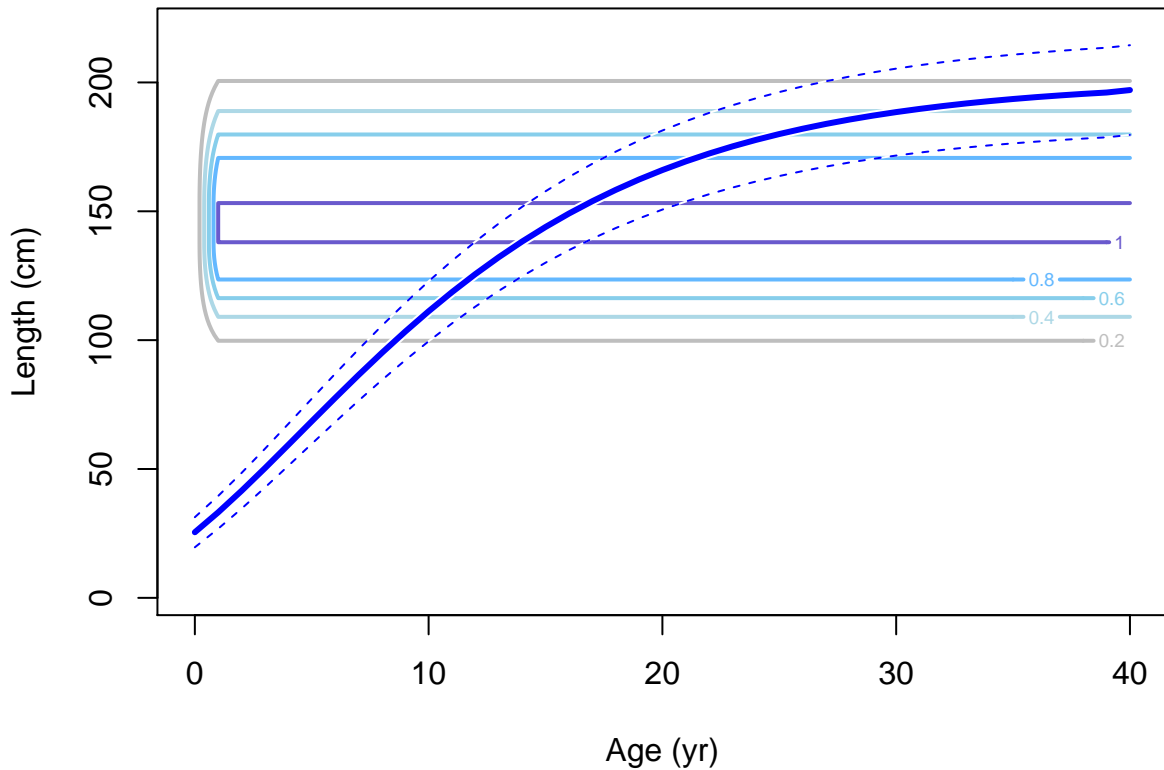
# Male ending year selectivity and growth for A2-LL-w



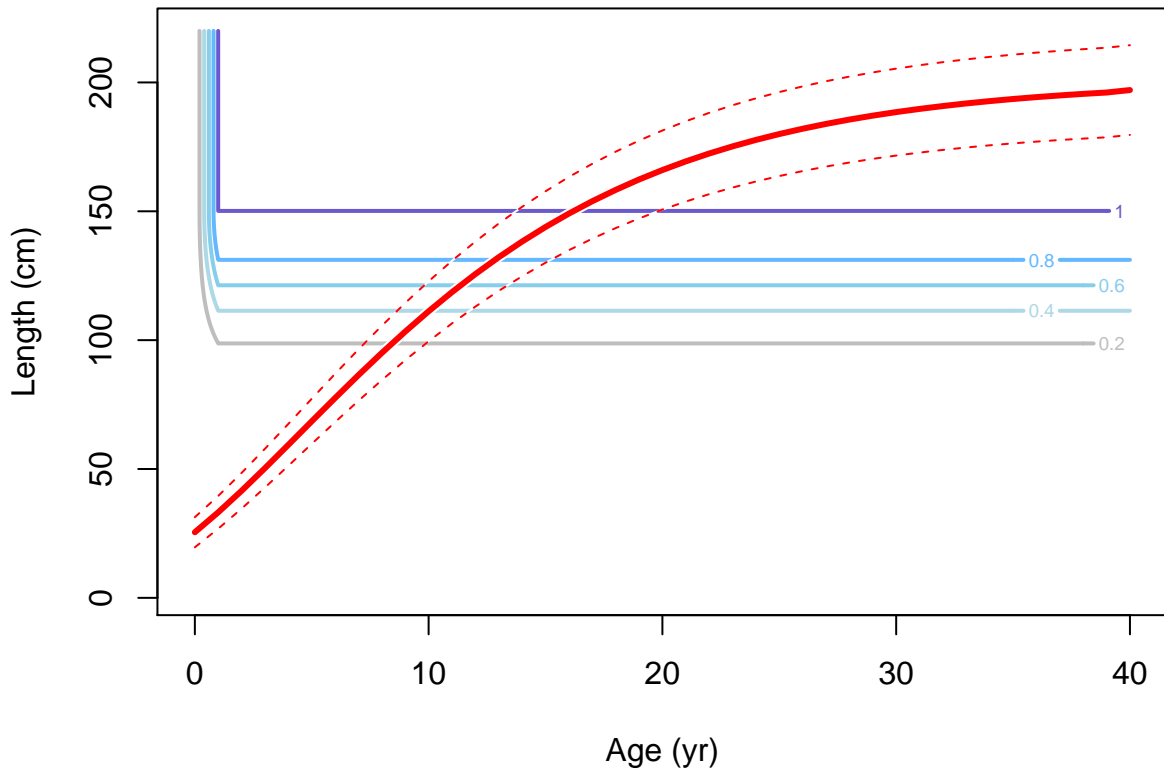
## Female ending year selectivity and growth for A3-LL-w



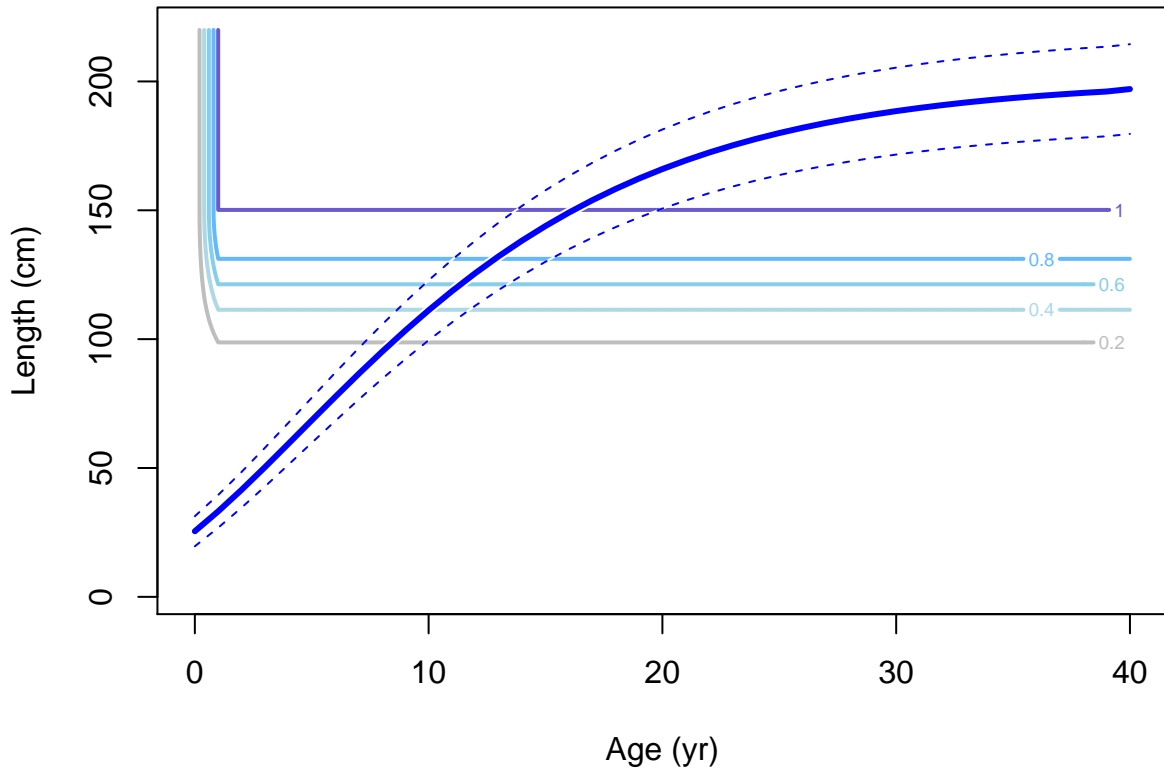
## Male ending year selectivity and growth for A3-LL-w



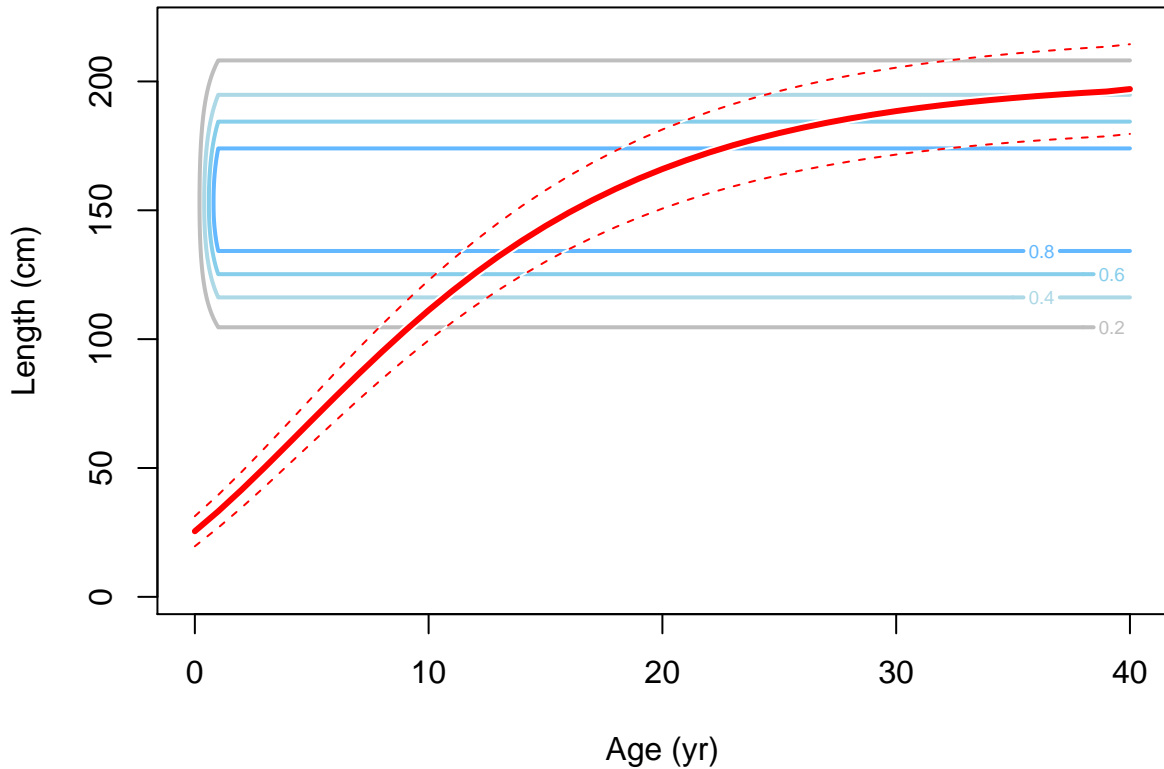
## Female ending year selectivity and growth for A4-LL-w



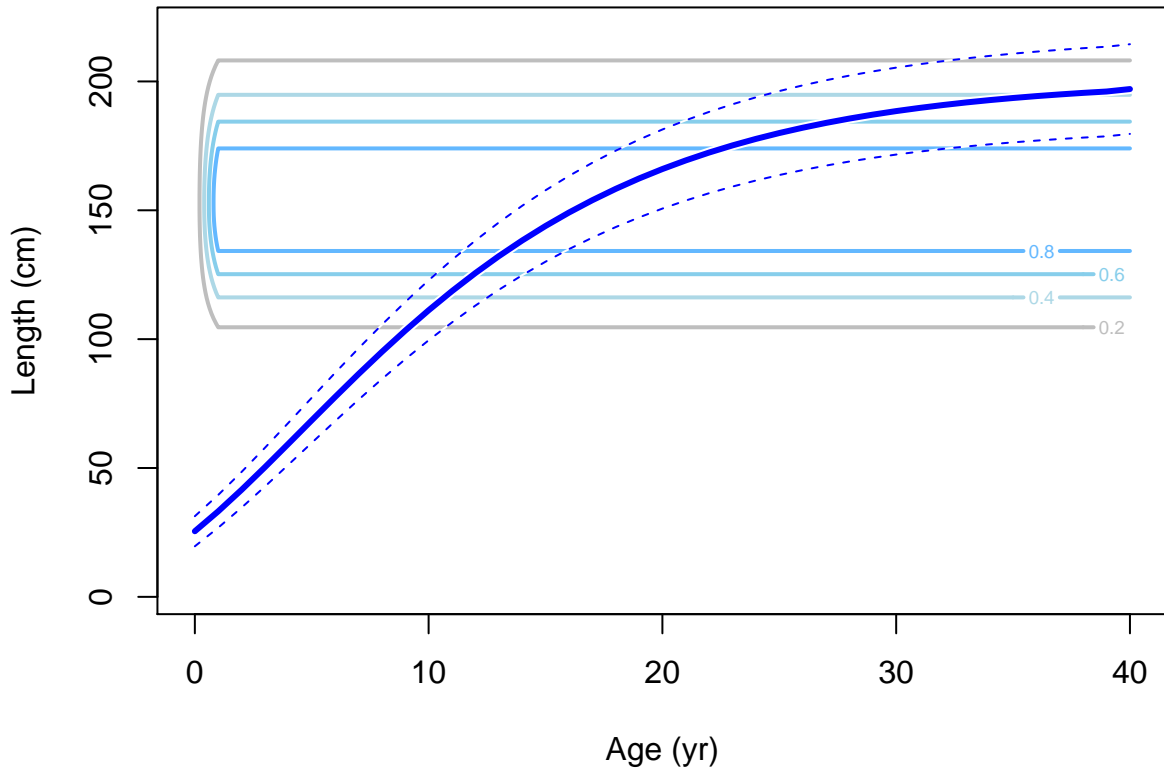
# Male ending year selectivity and growth for A4-LL-w



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

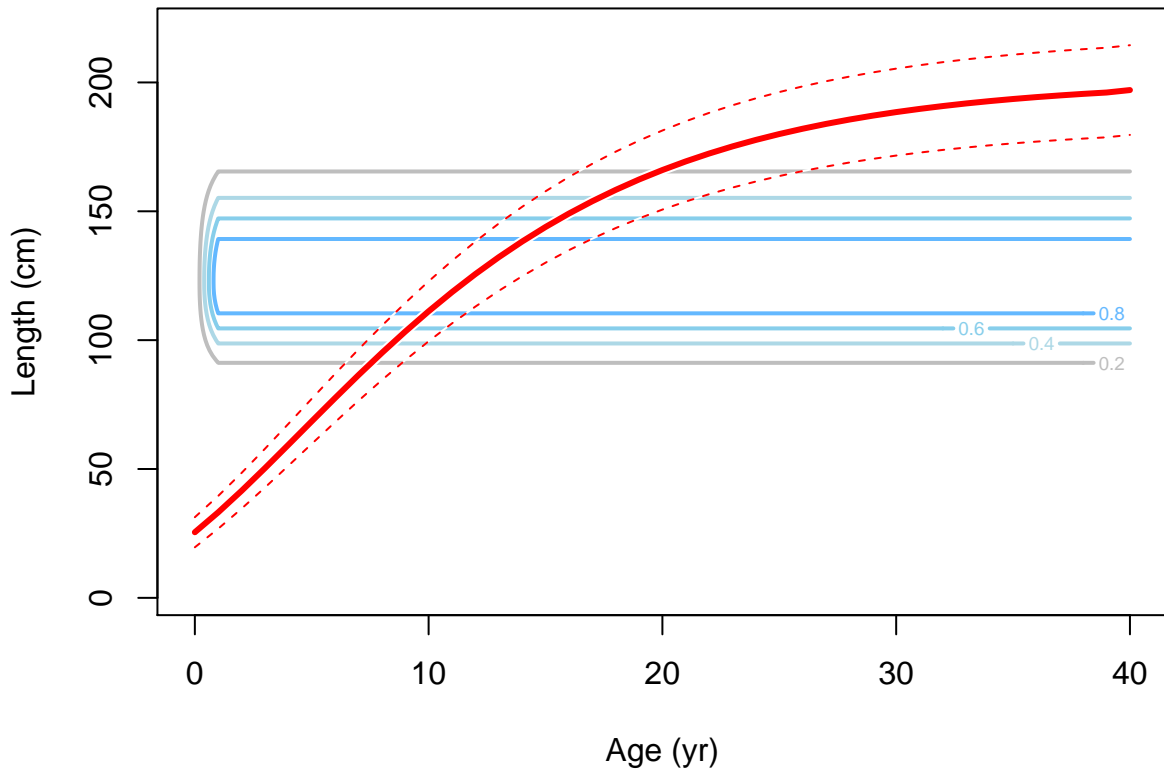


# Male ending year selectivity and growth for A5-LL-w

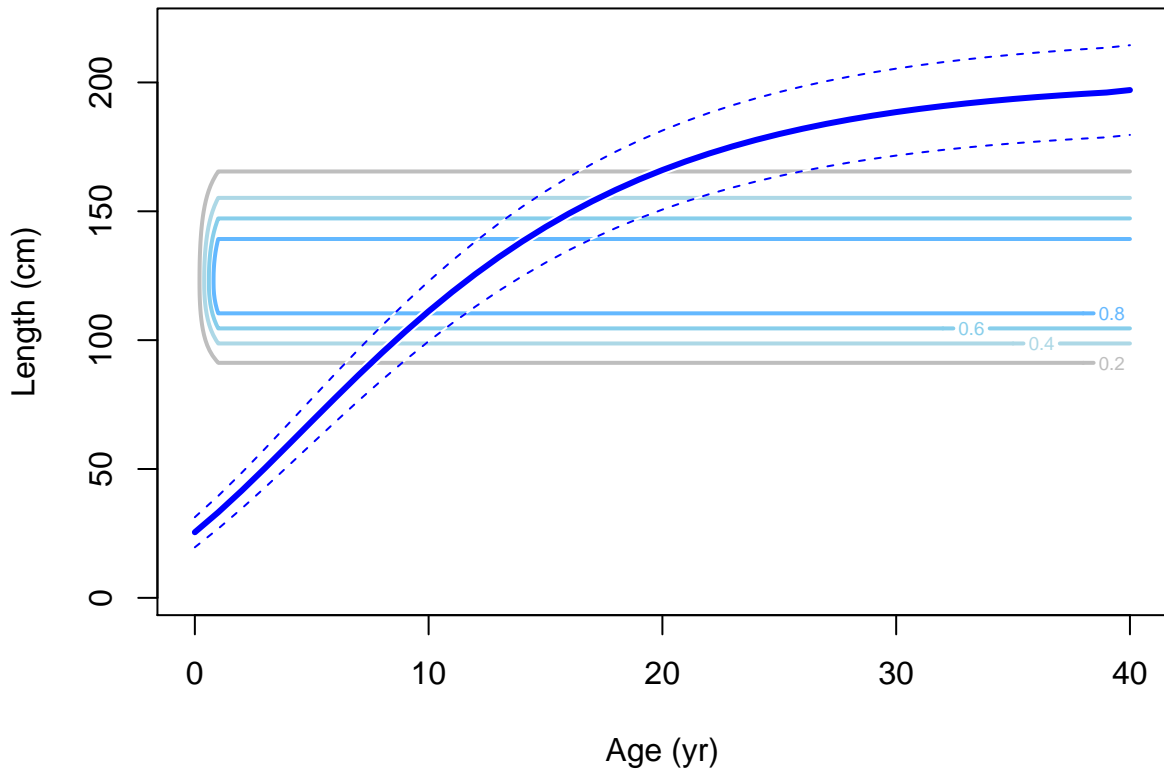




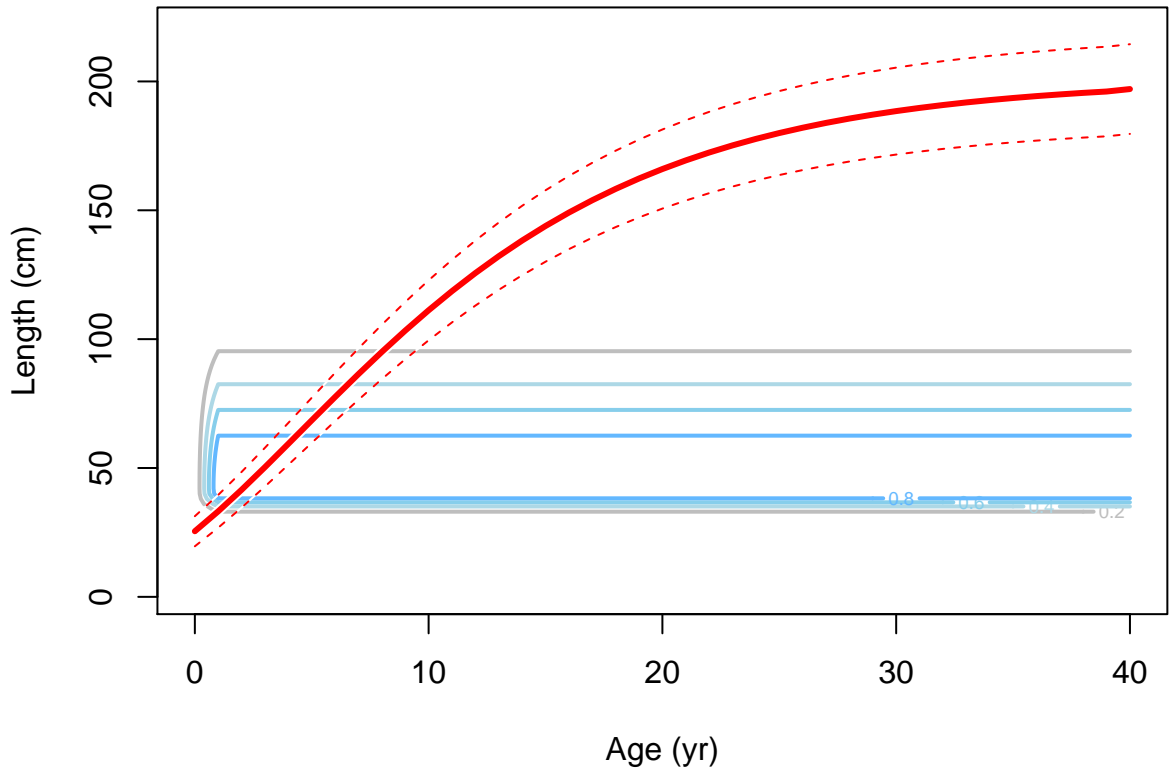
## Female ending year selectivity and growth for A6-LL-w



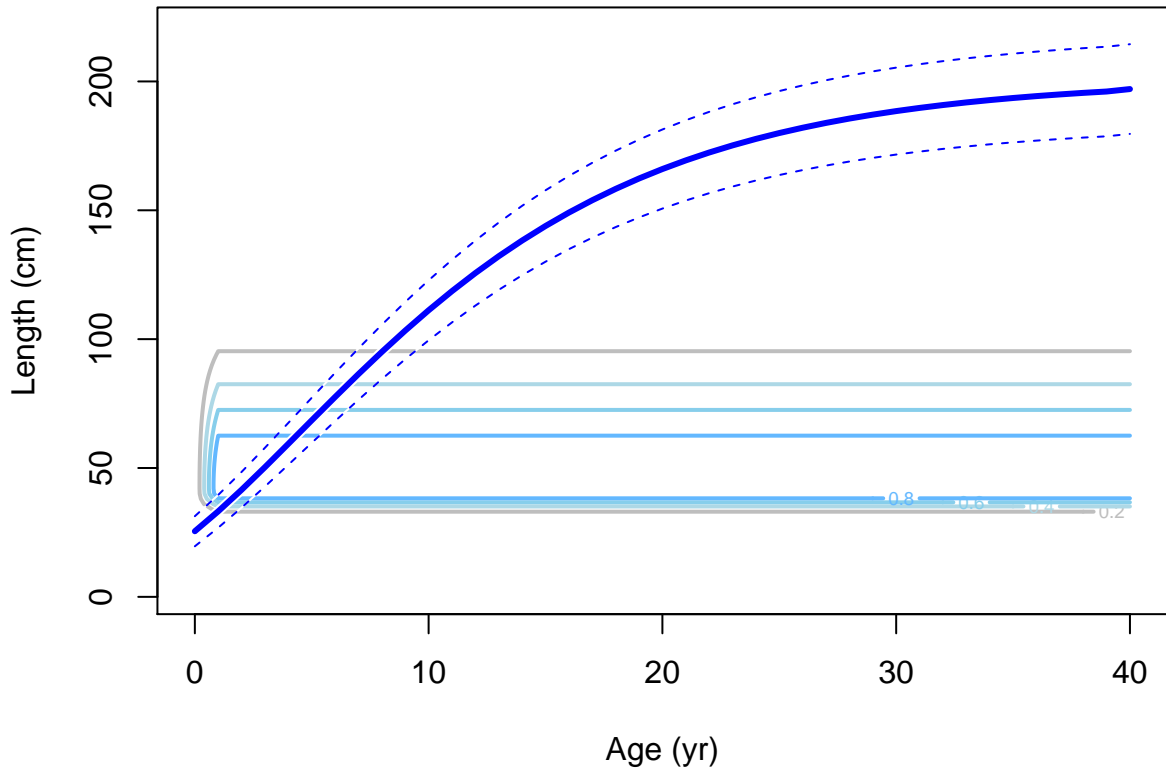
# Male ending year selectivity and growth for A6-LL-w



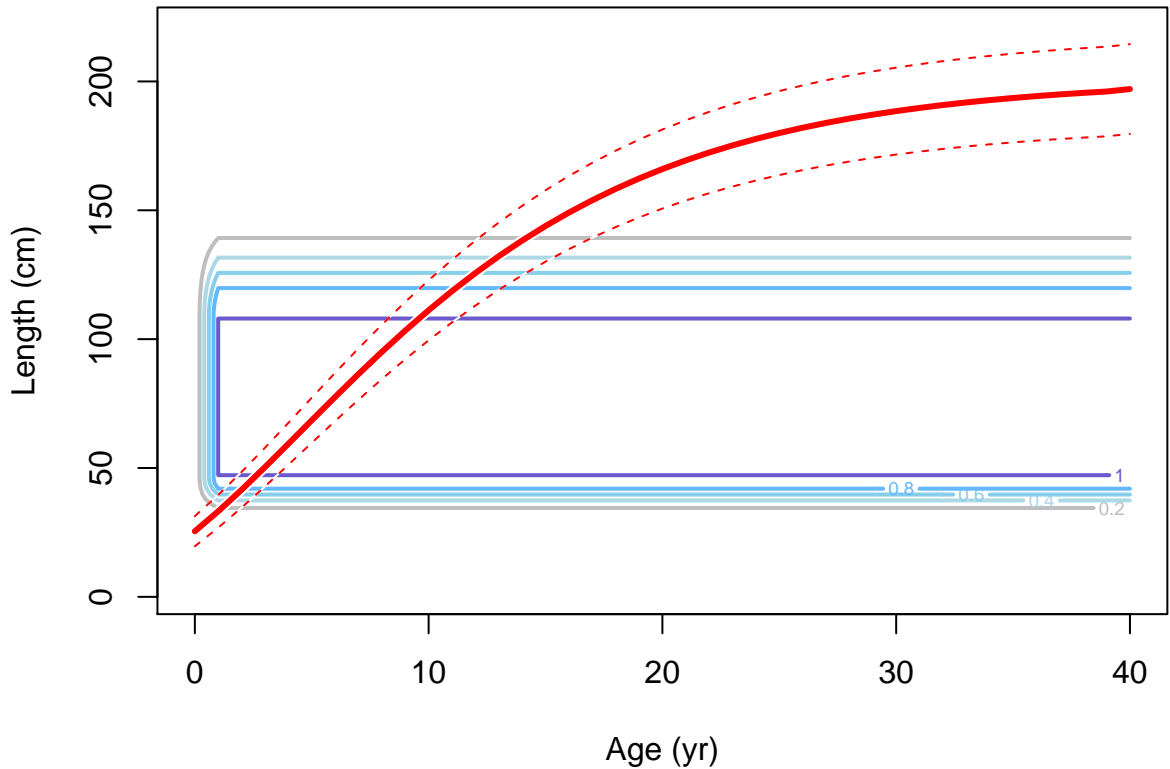
## Female ending year selectivity and growth for A2-OBJ



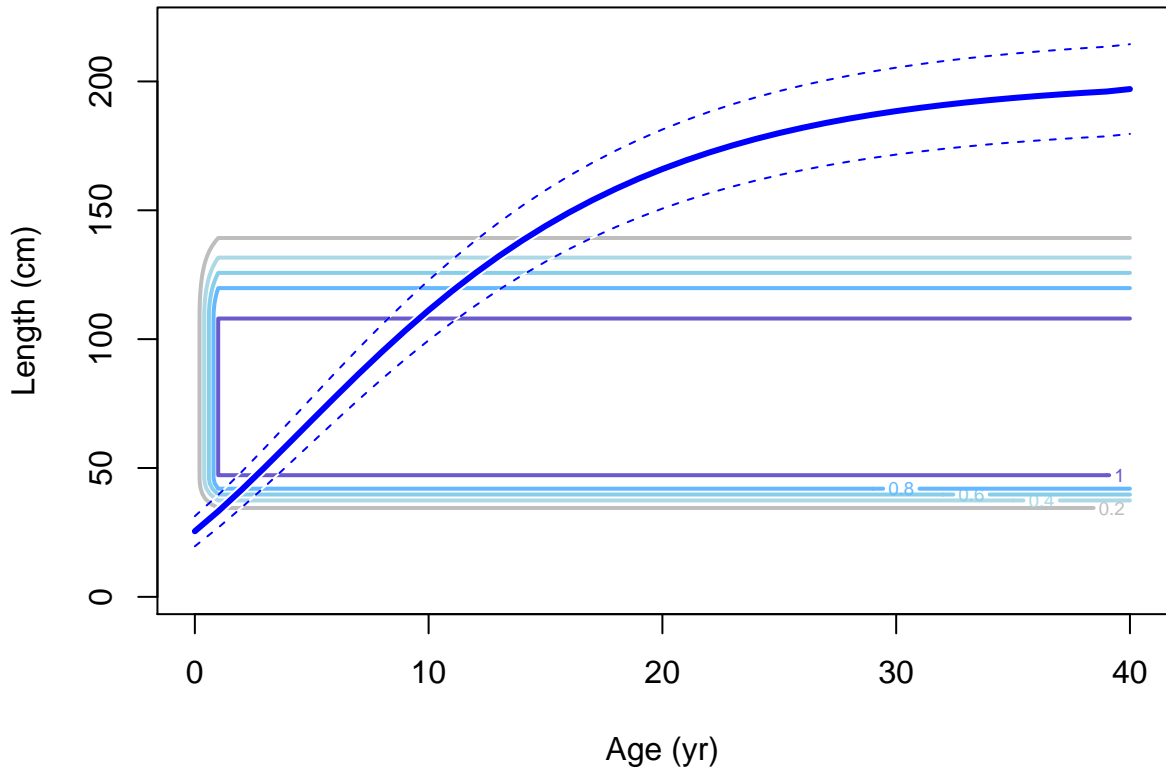
# Male ending year selectivity and growth for A2-OBJ



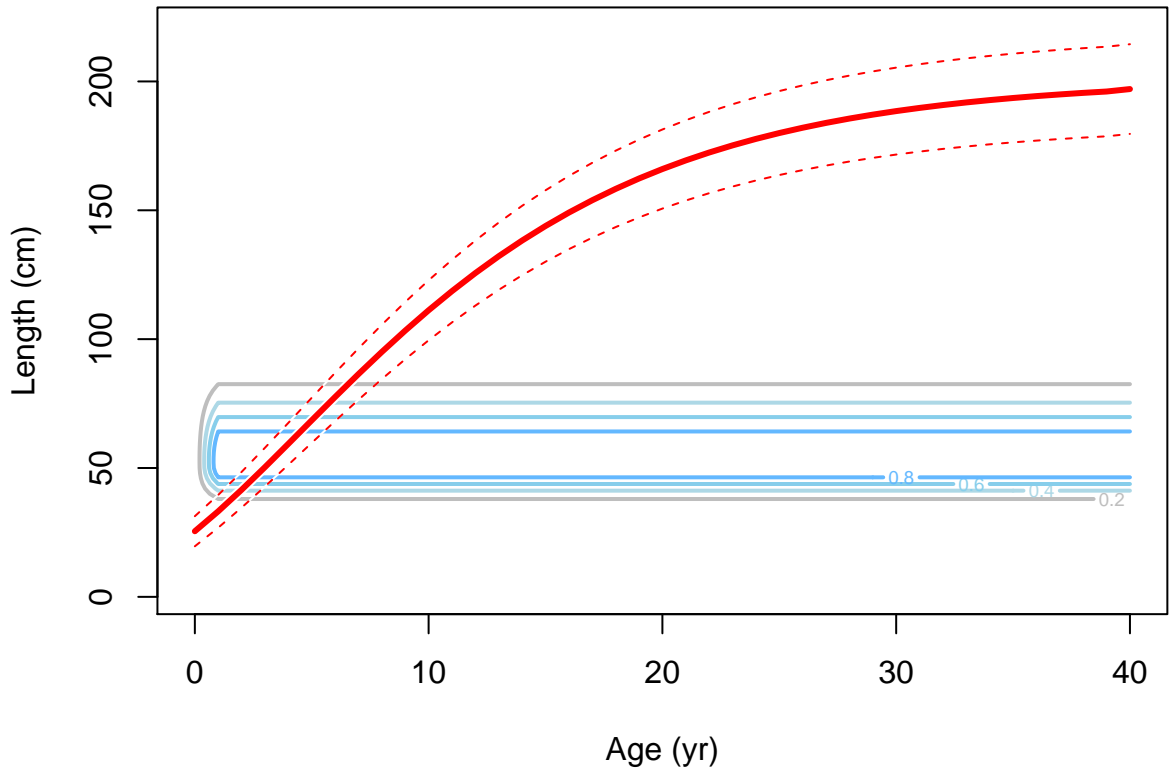
## Female ending year selectivity and growth for A3-OBJ



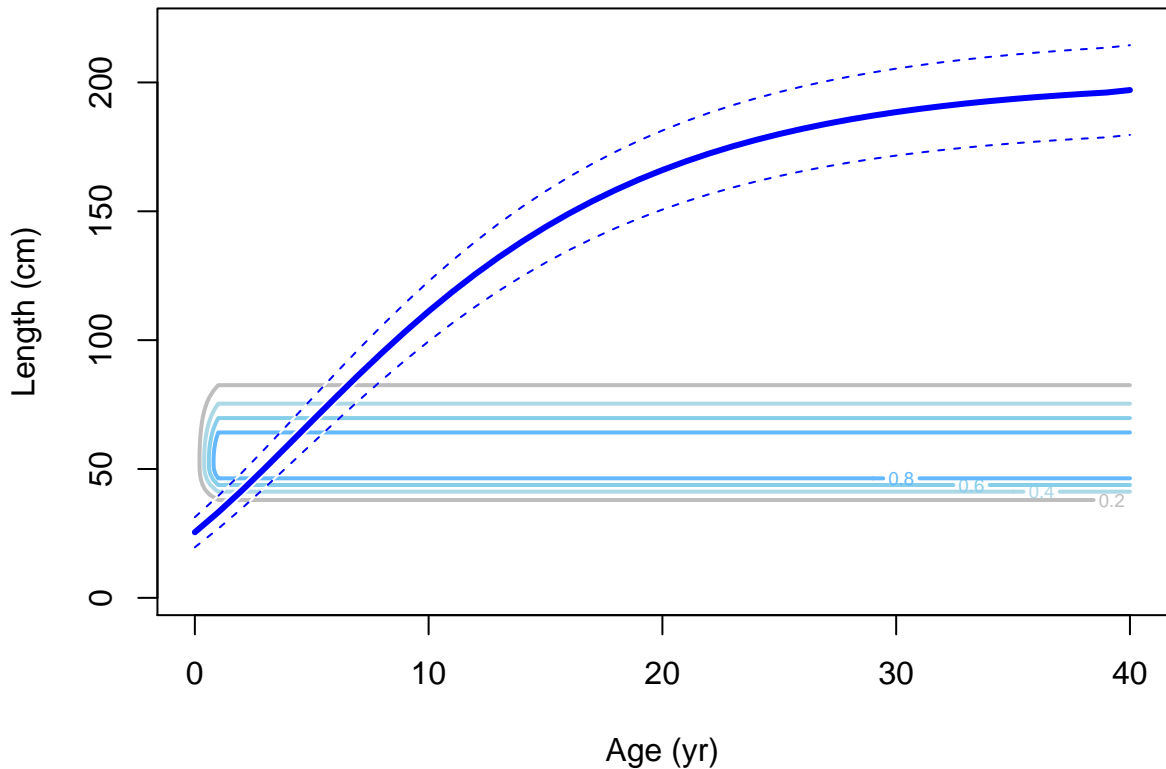
# Male ending year selectivity and growth for A3-OBJ



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

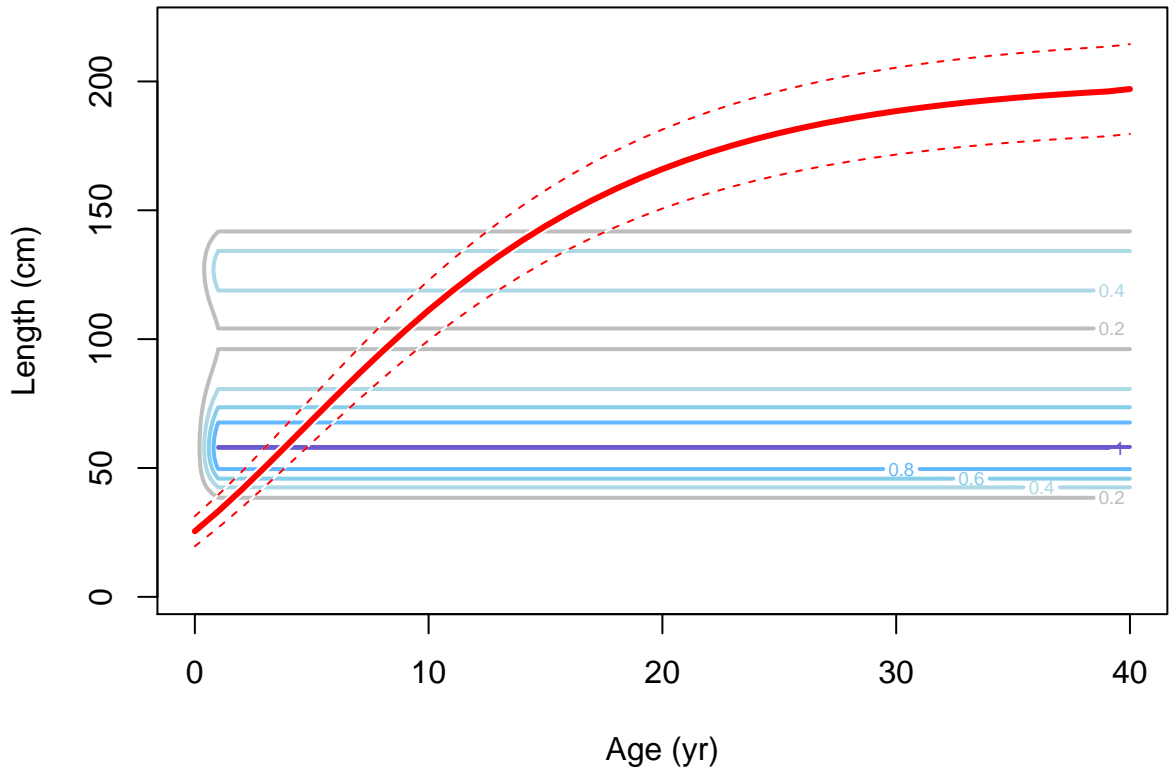


# Male ending year selectivity and growth for A4-OBJ

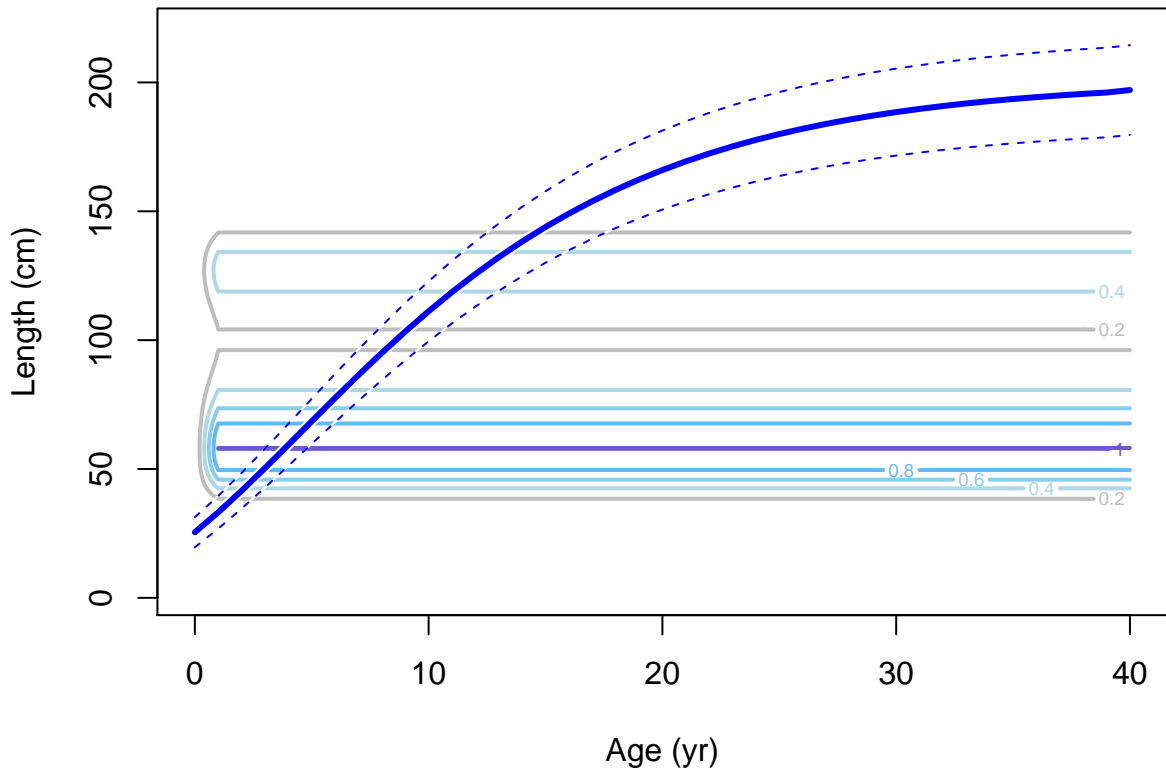




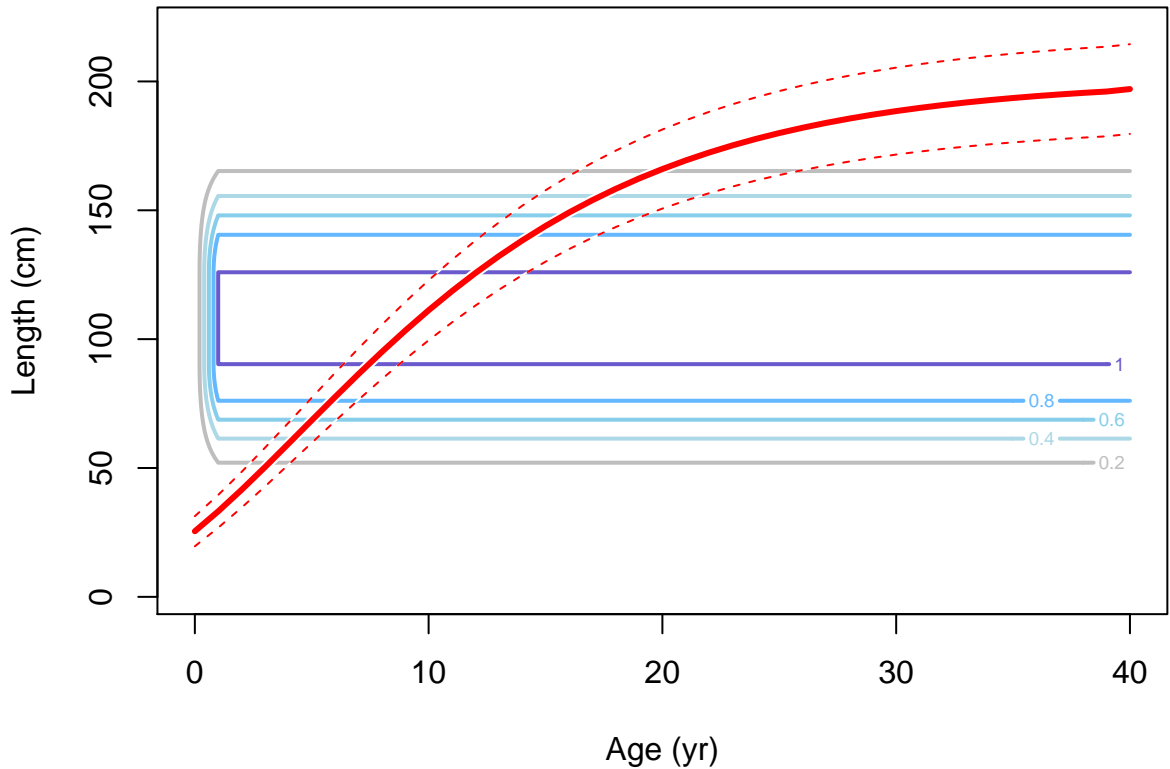
## Female ending year selectivity and growth for A5-OBJ



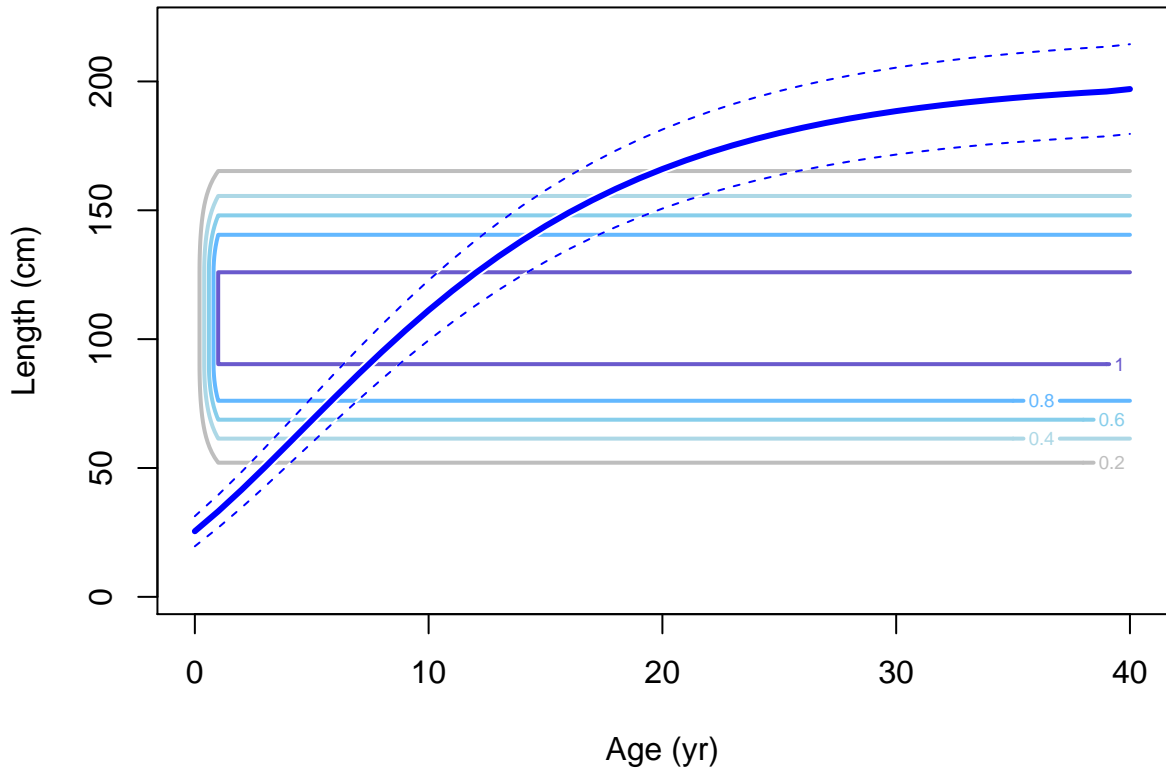
# Male ending year selectivity and growth for A5-OBJ



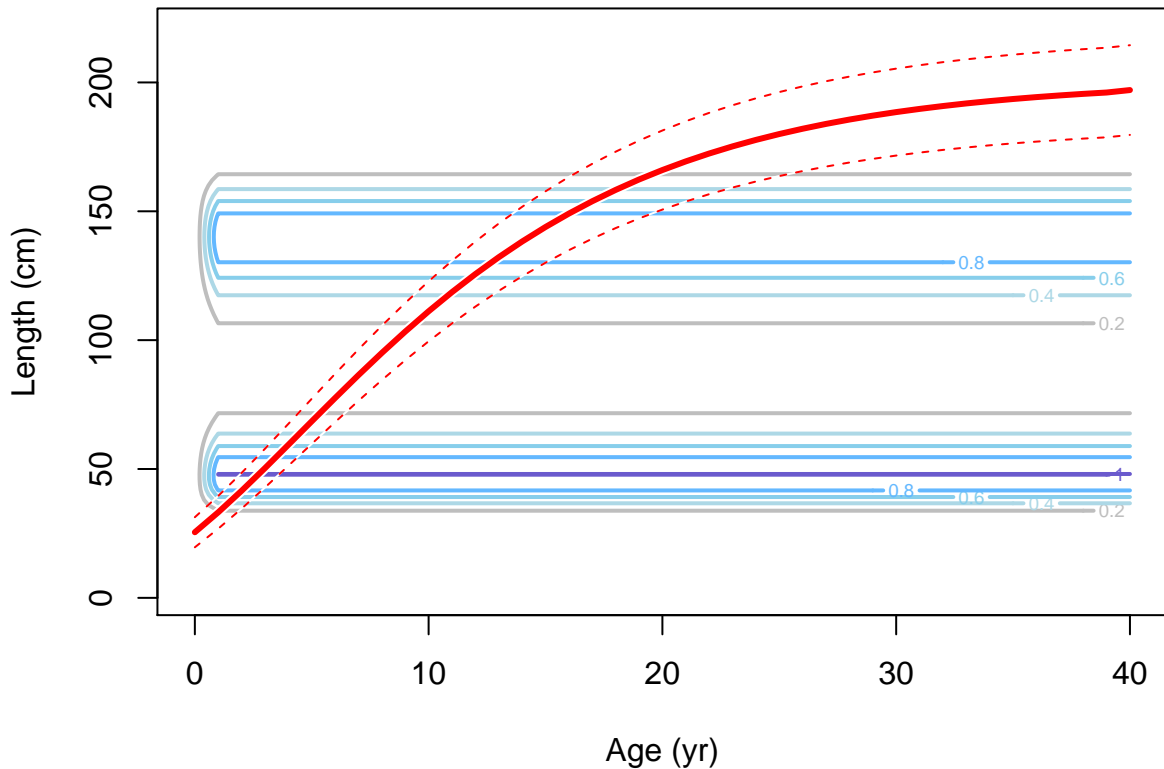
## Female ending year selectivity and growth for A6-OBJ



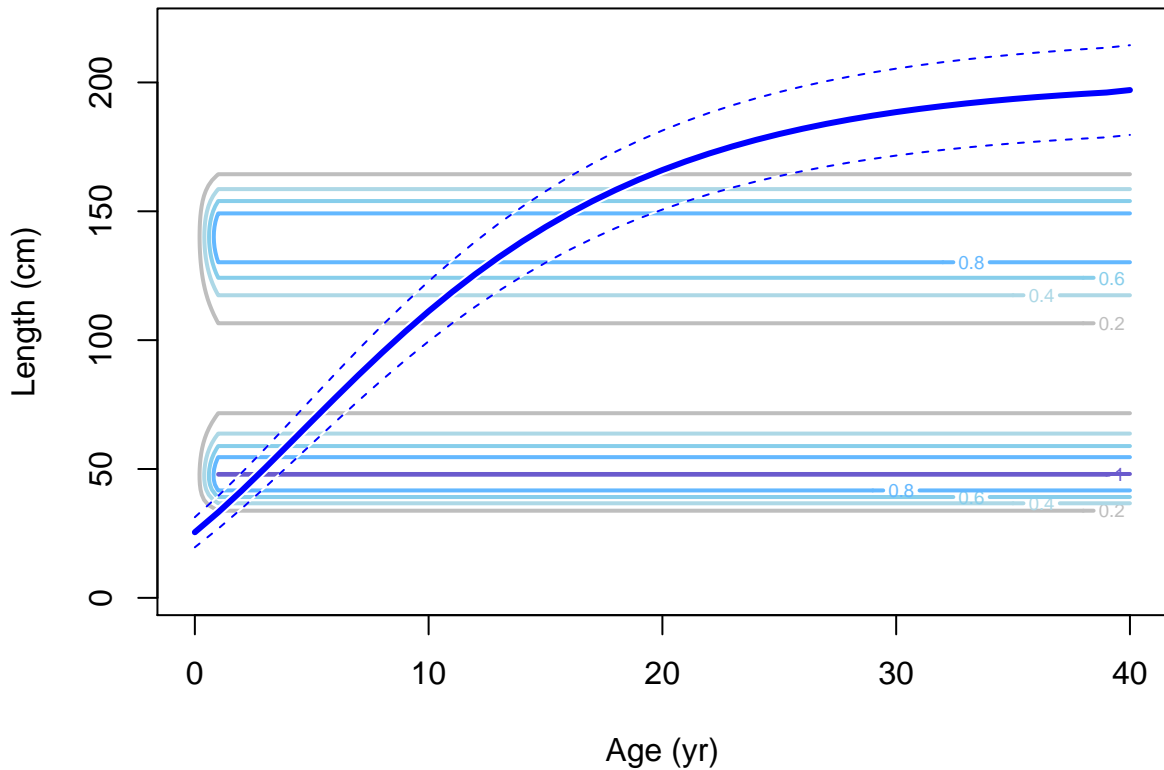
## Male ending year selectivity and growth for A6-OBJ



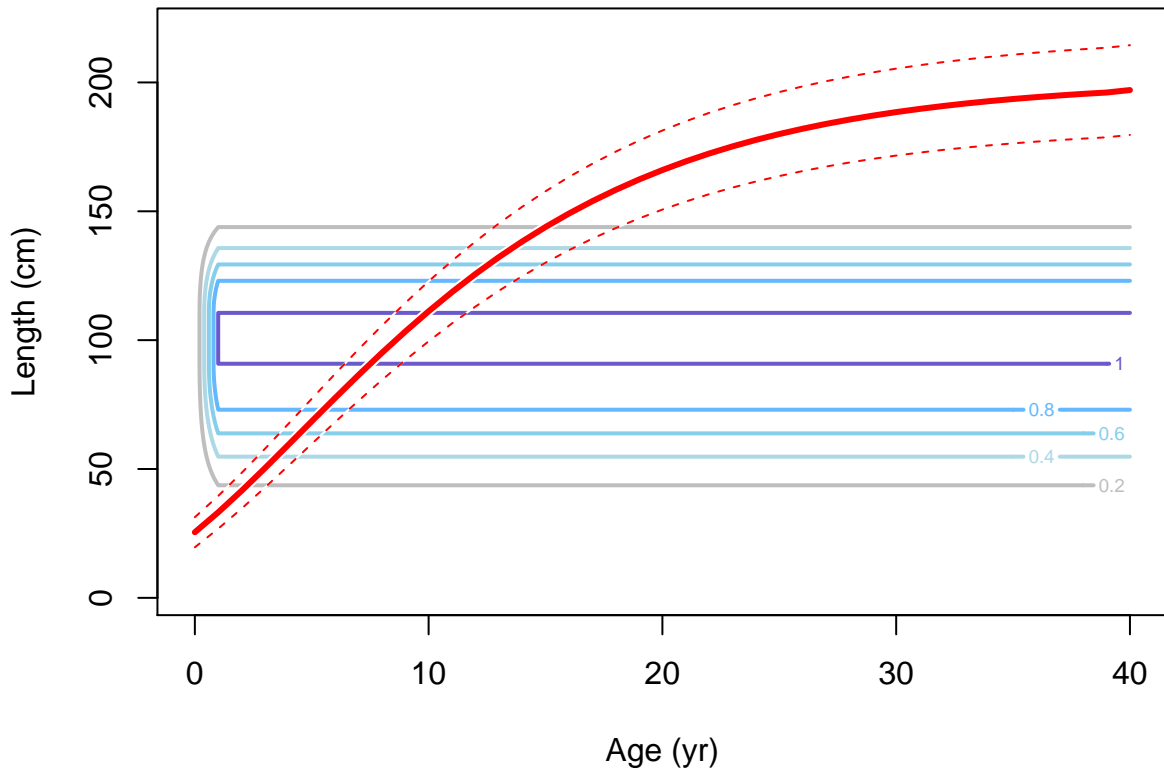
# Female ending year selectivity and growth for A2-NOADEL



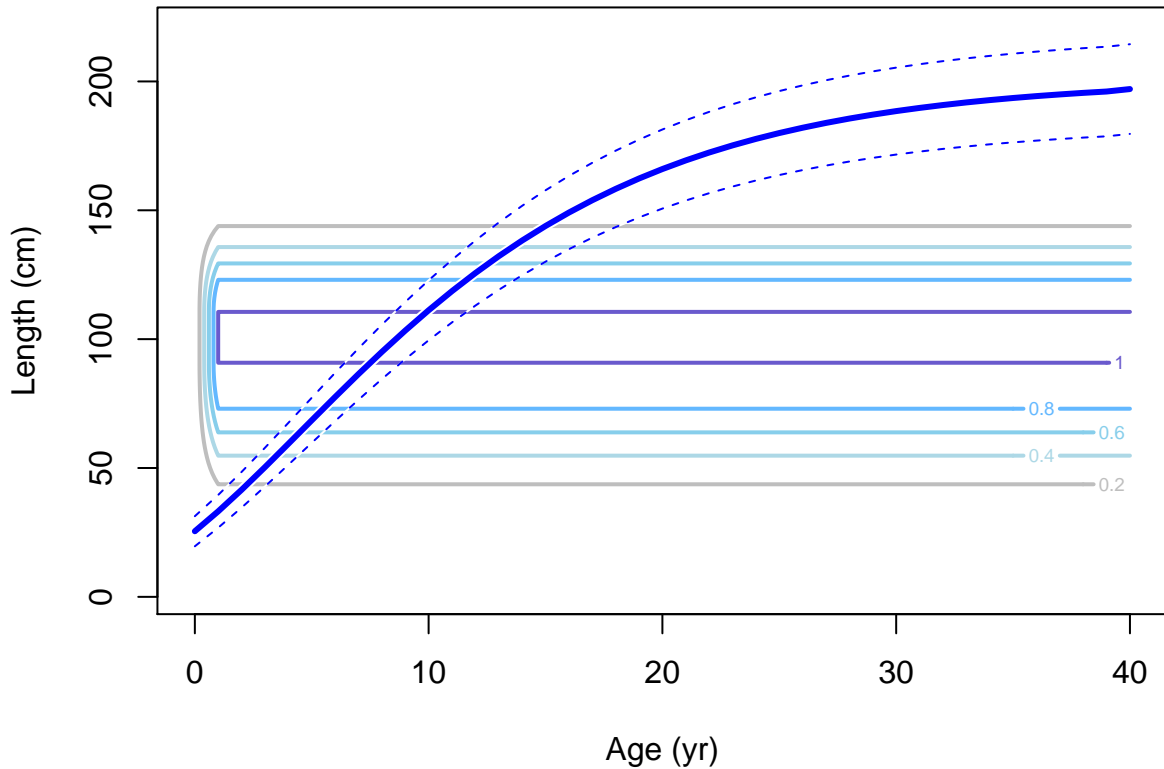
# Male ending year selectivity and growth for A2-NOADEL



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

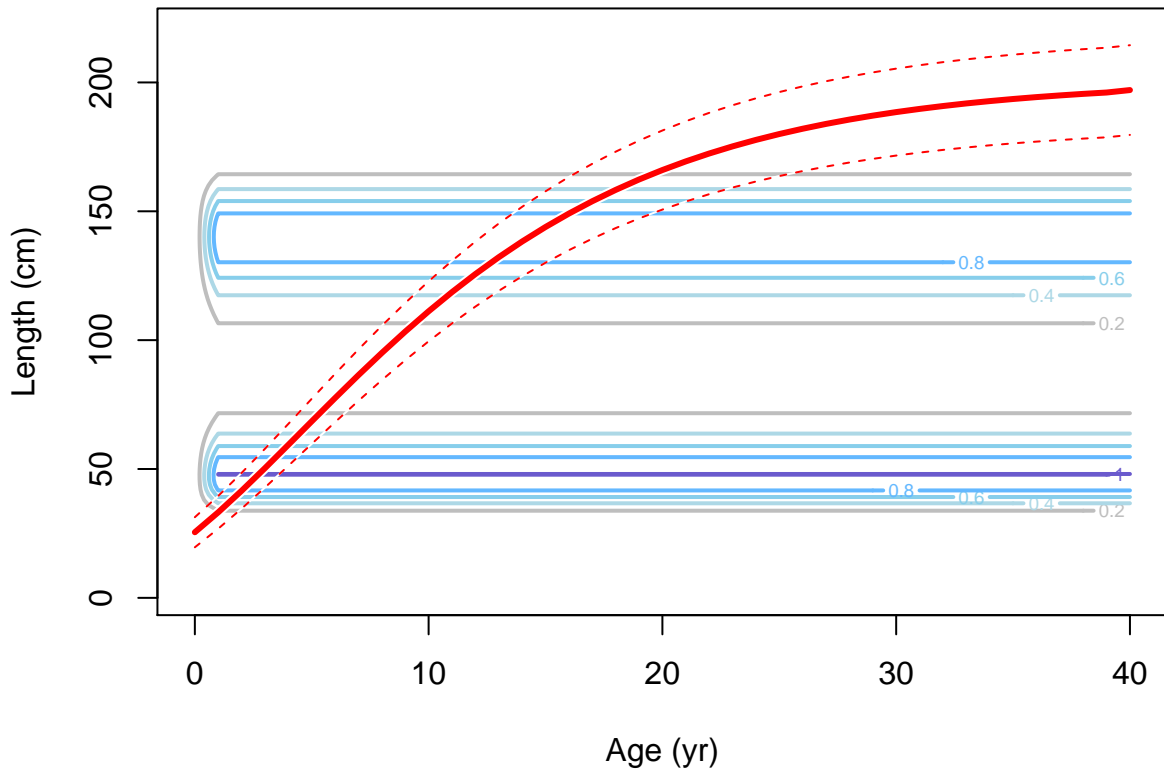


## Male ending year selectivity and growth for A3-NOADEL

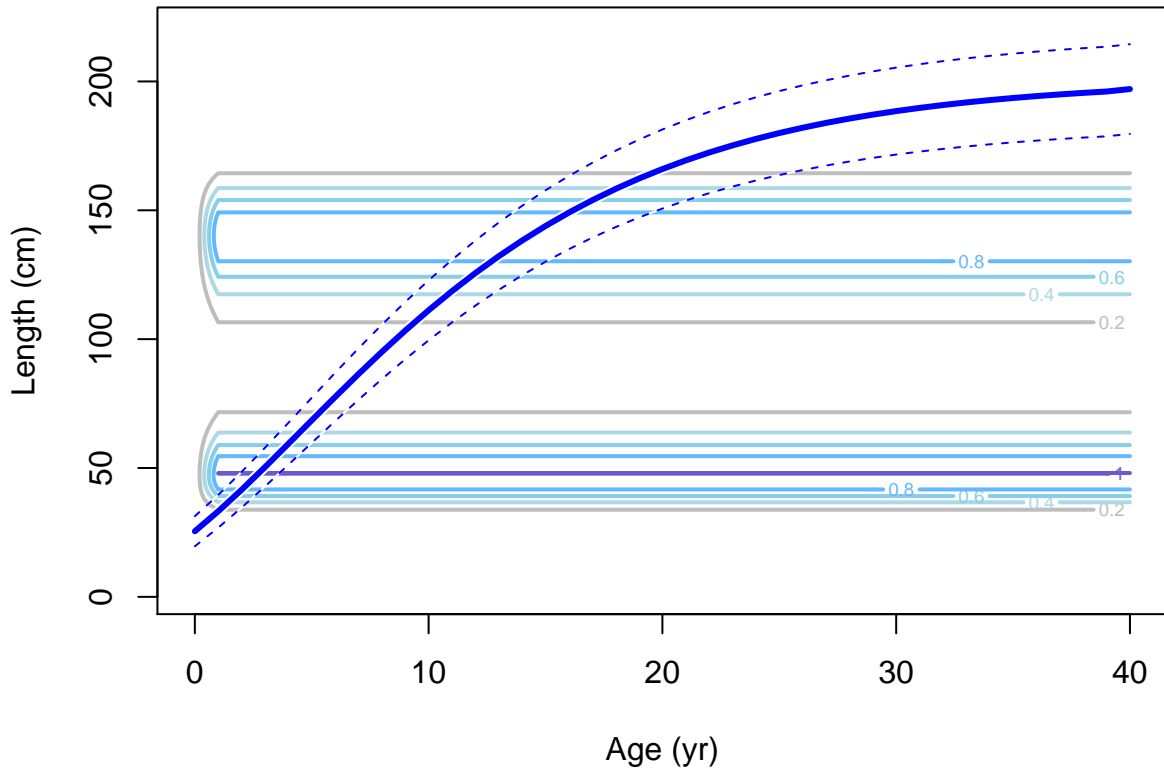




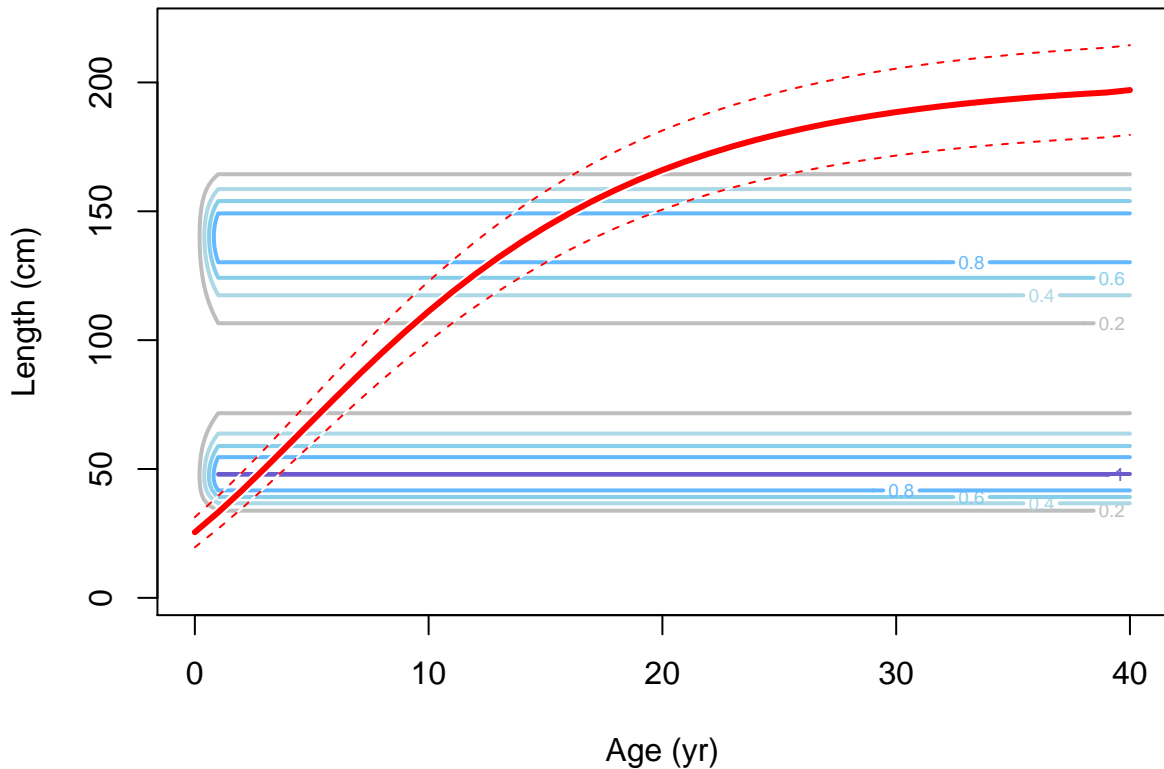
# Female ending year selectivity and growth for A4-NOADEL



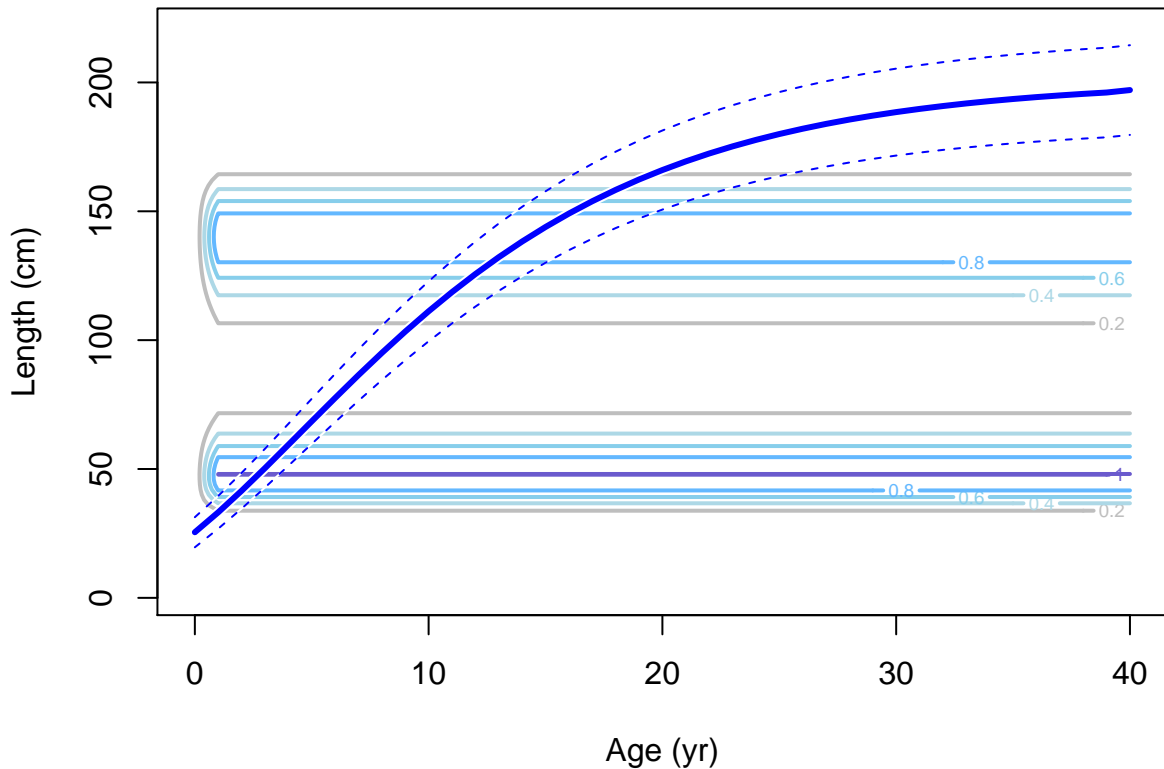
# Male ending year selectivity and growth for A4-NOADEL



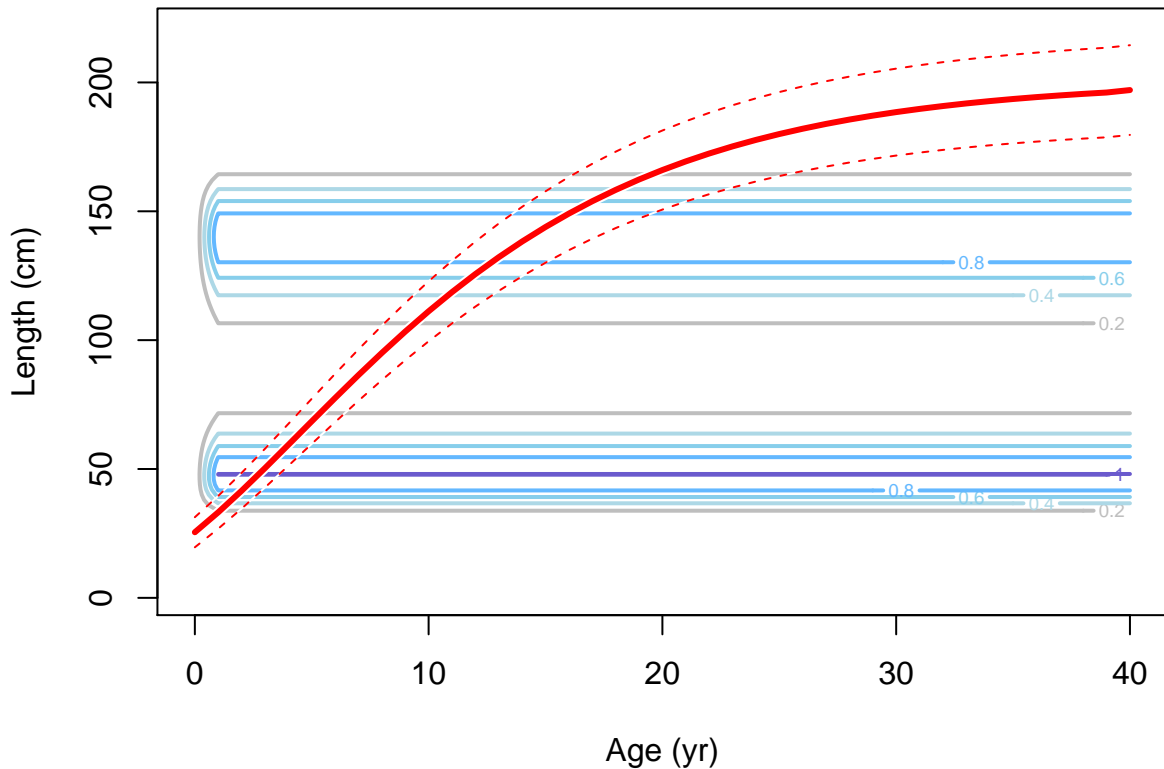
# Female ending year selectivity and growth for A5-NOADEL



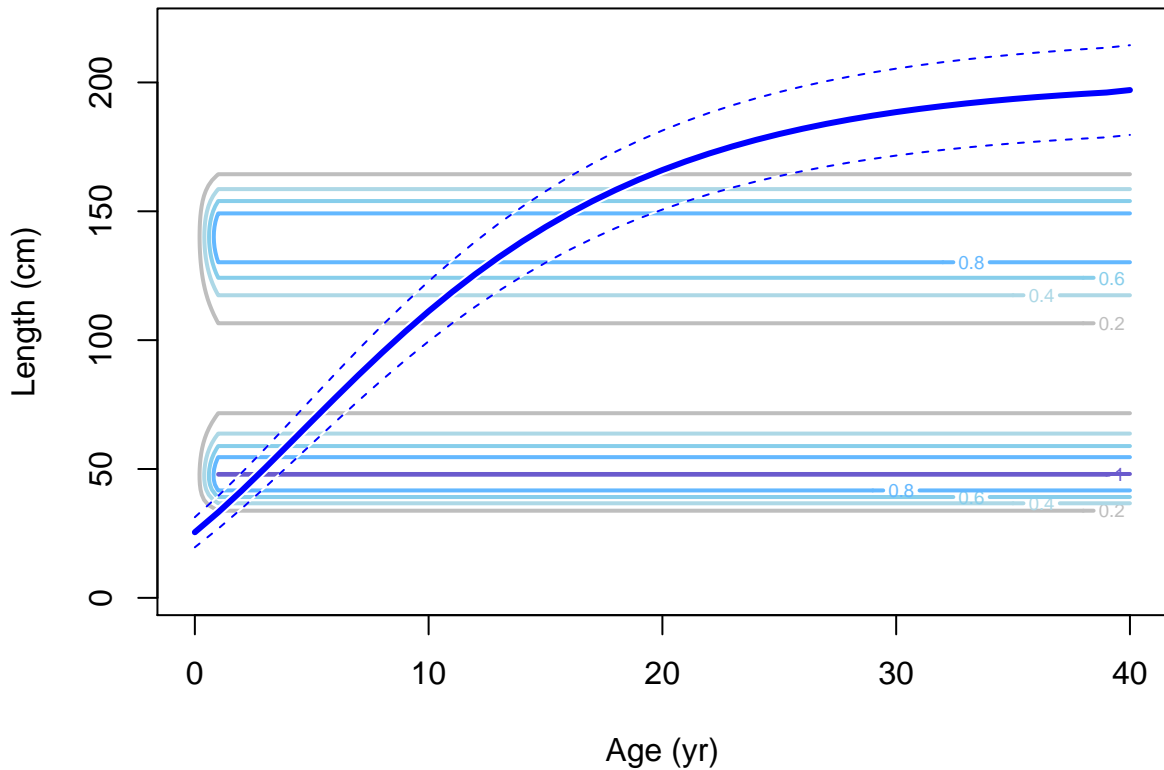
# Male ending year selectivity and growth for A5-NOADEL



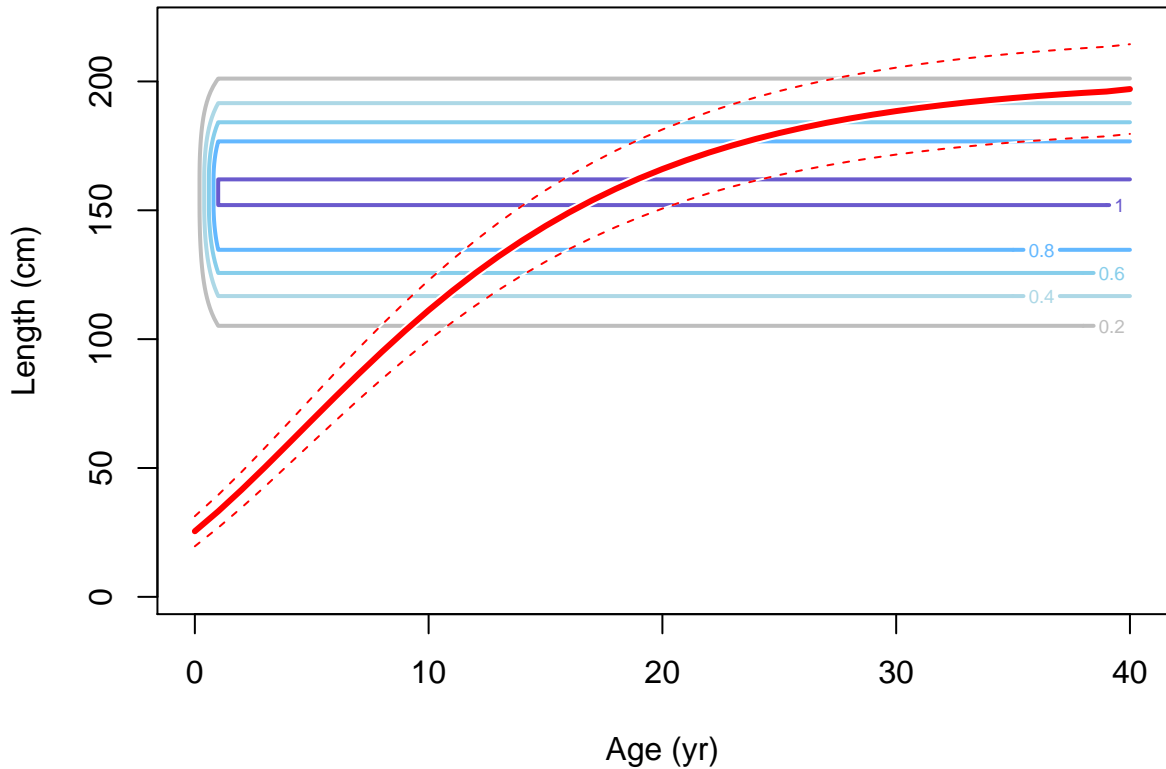
# Female ending year selectivity and growth for A6-NOADEL



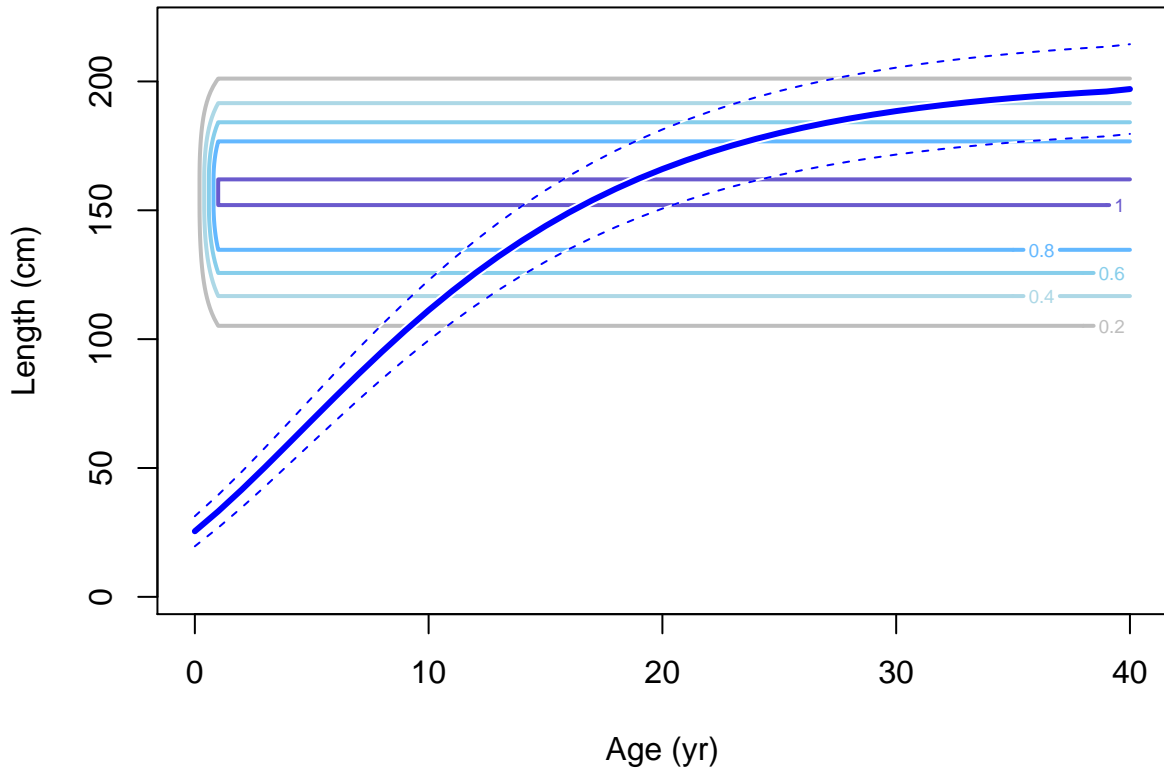
# Male ending year selectivity and growth for A6-NOADEL



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

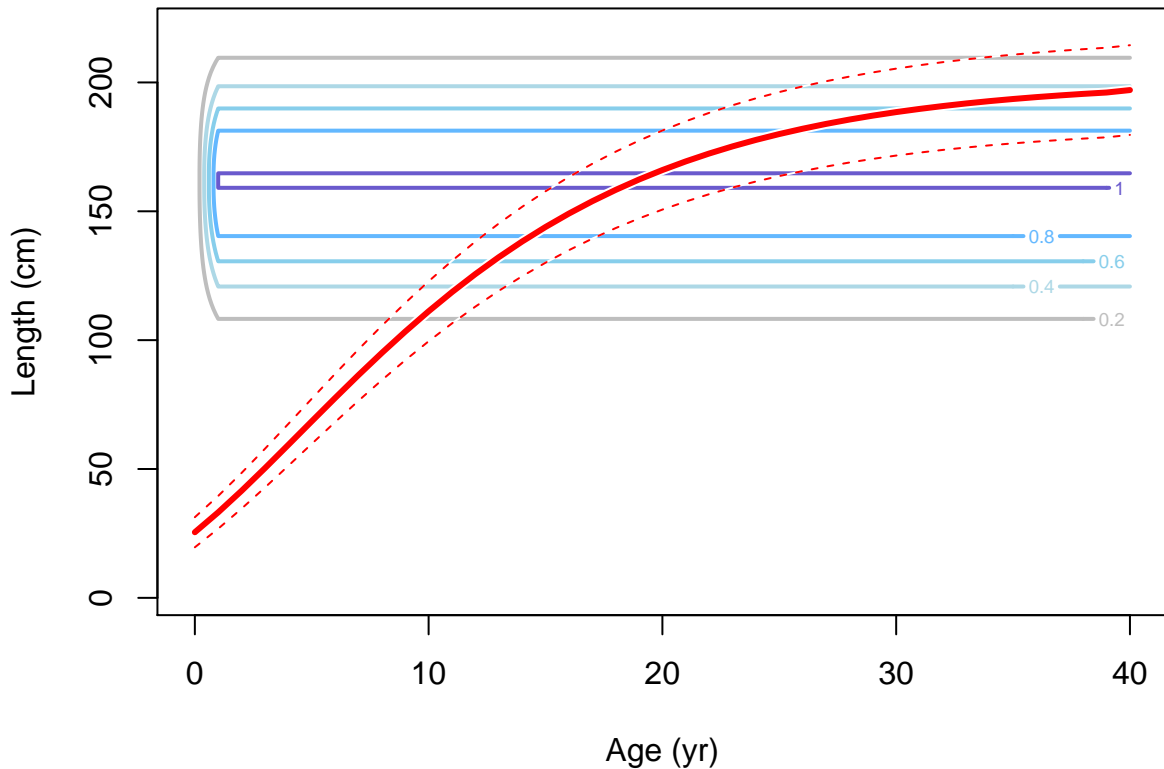


# Male ending year selectivity and growth for EPO-LL-survey-early

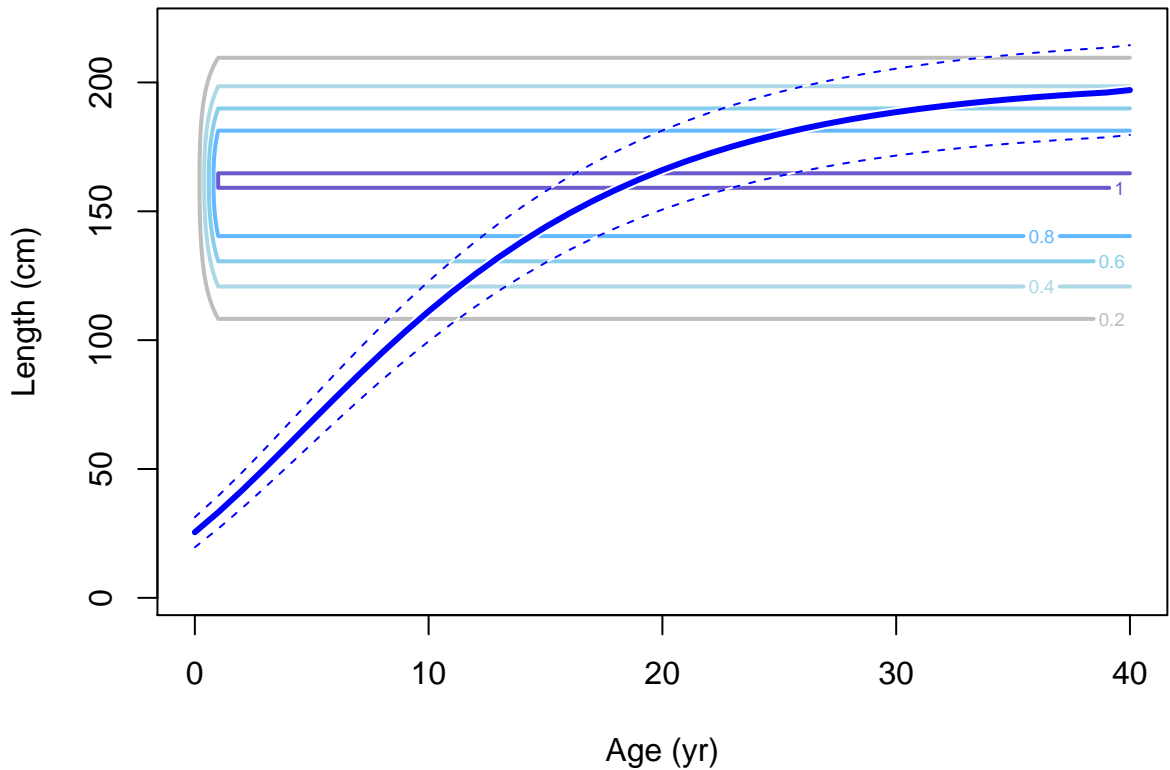




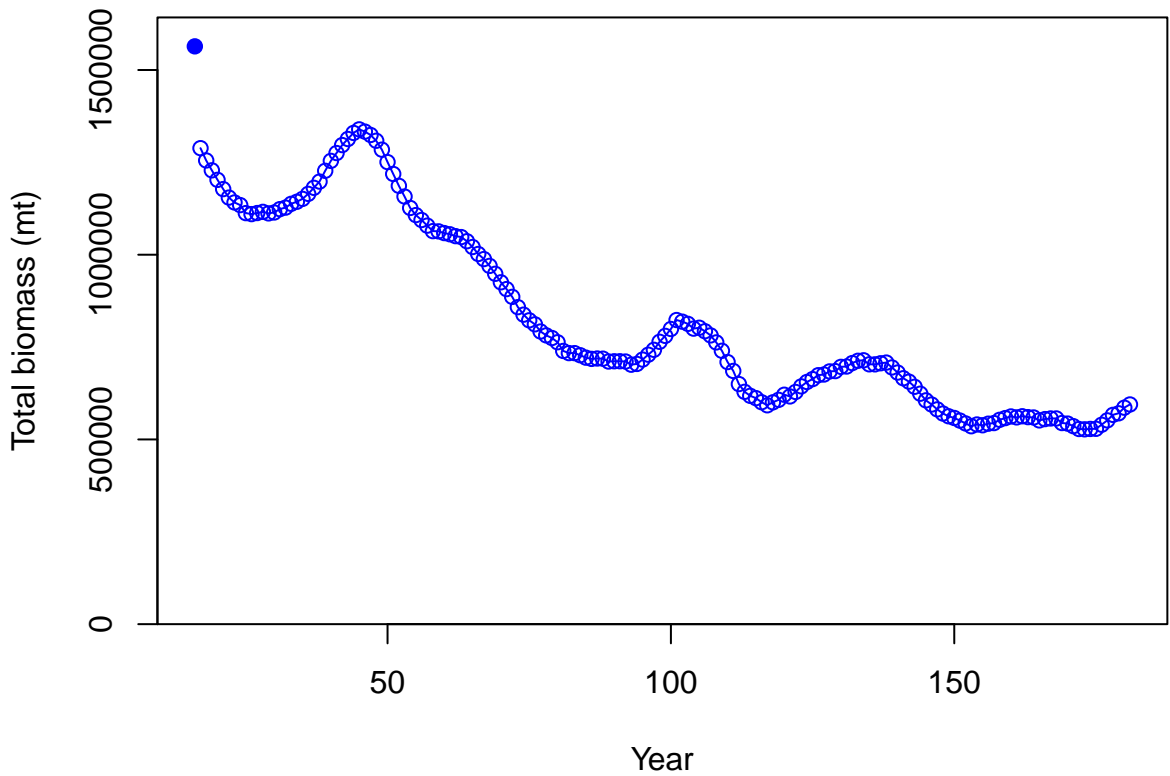
# Female ending year selectivity and growth for EPO-LL-survey-late



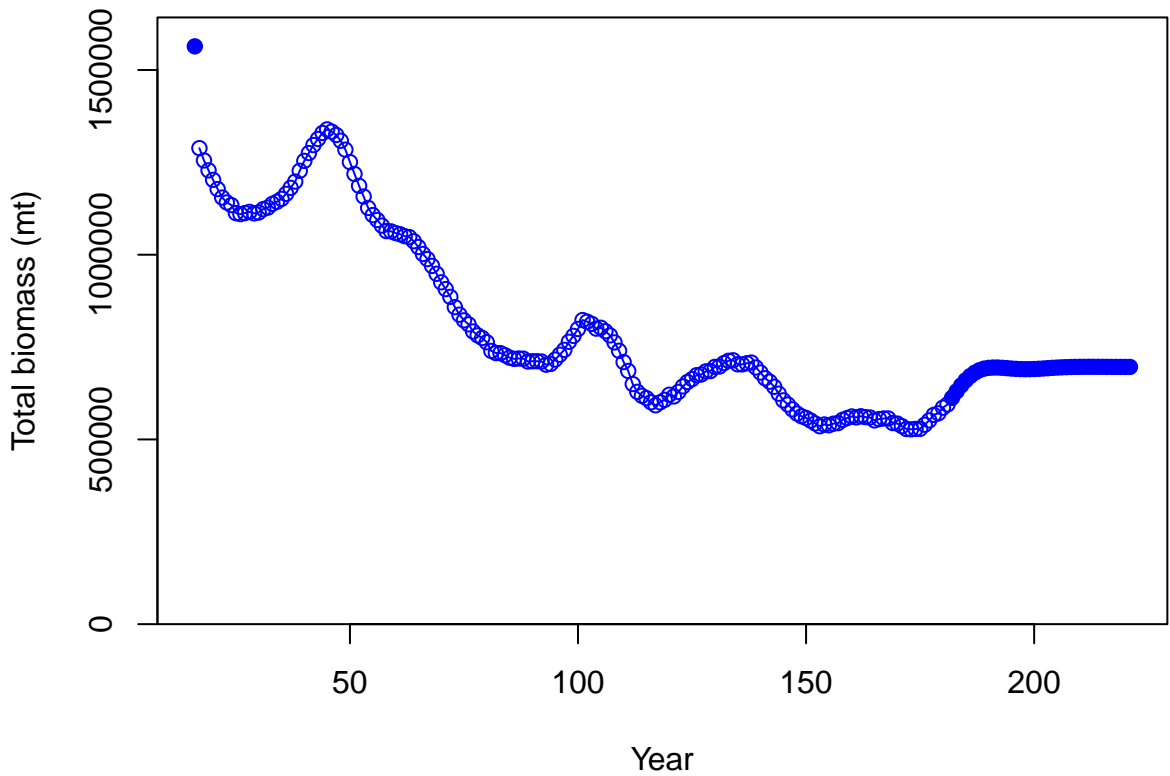
# Male ending year selectivity and growth for EPO-LL-survey-late



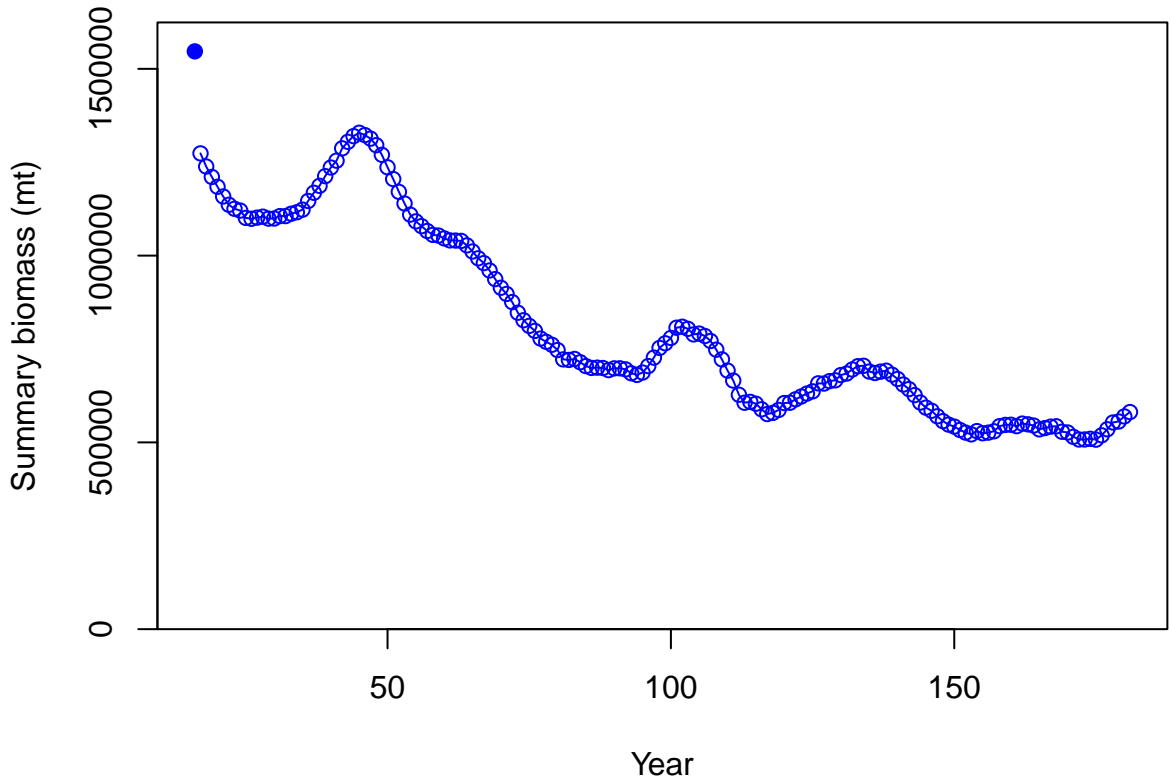
# Total biomass (mt)



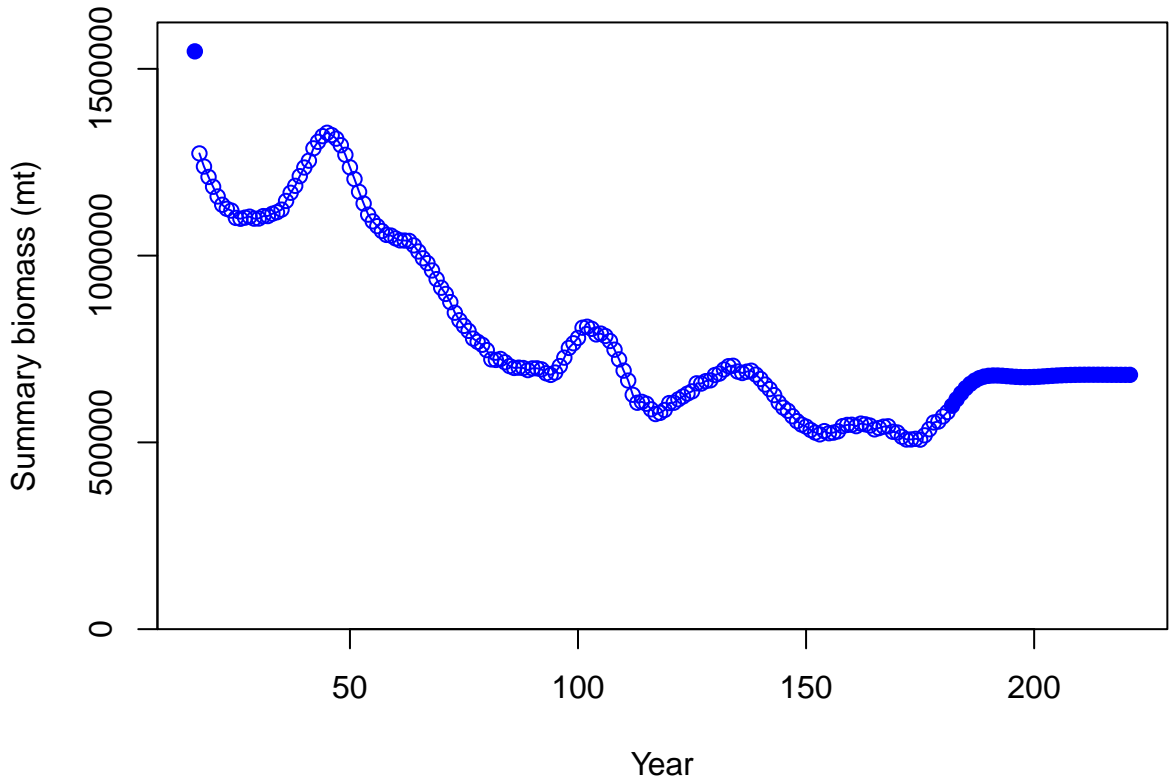
Total biomass (mt) with forecast



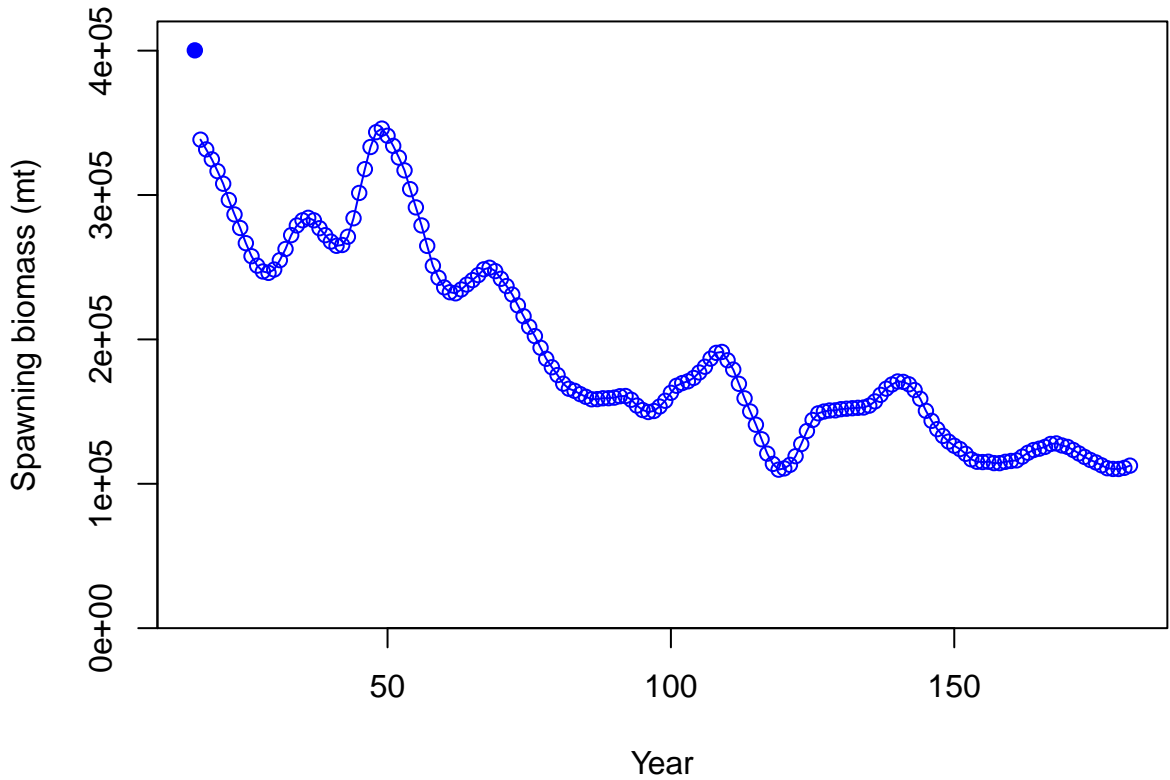
# Summary biomass (mt)



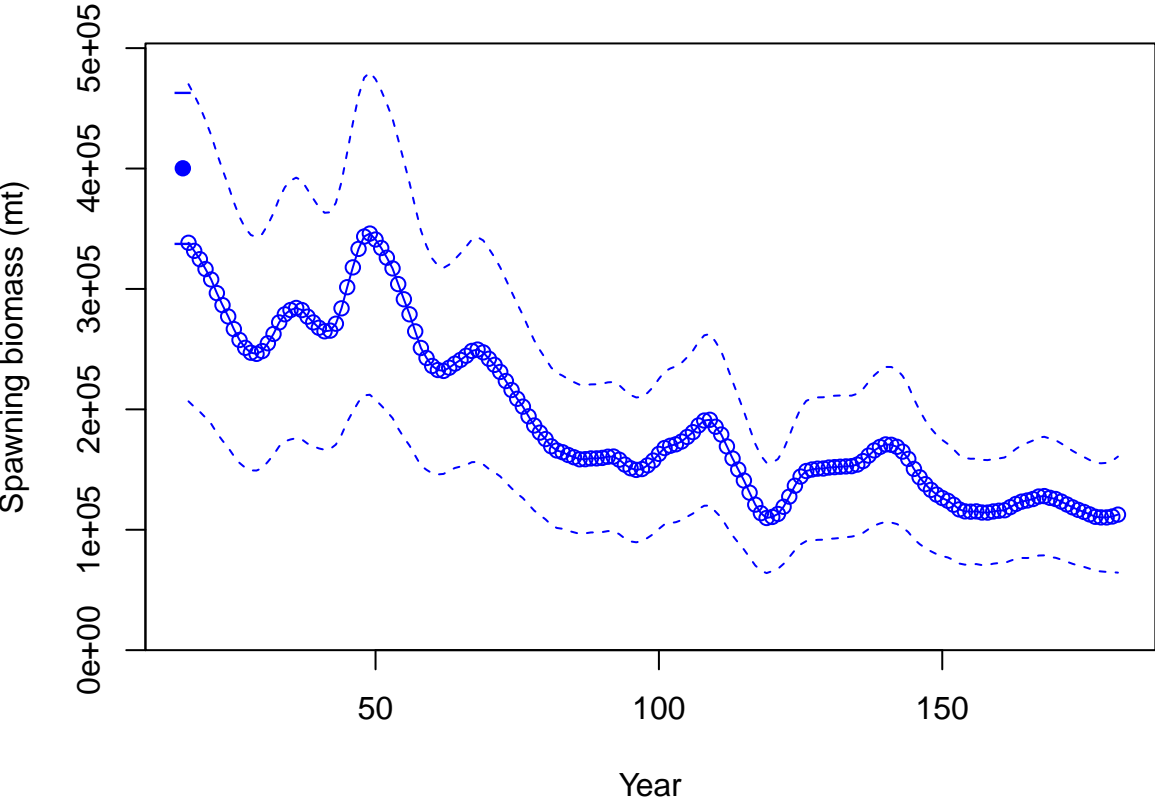
### Summary biomass (mt) with forecast



# Spawning biomass (mt)

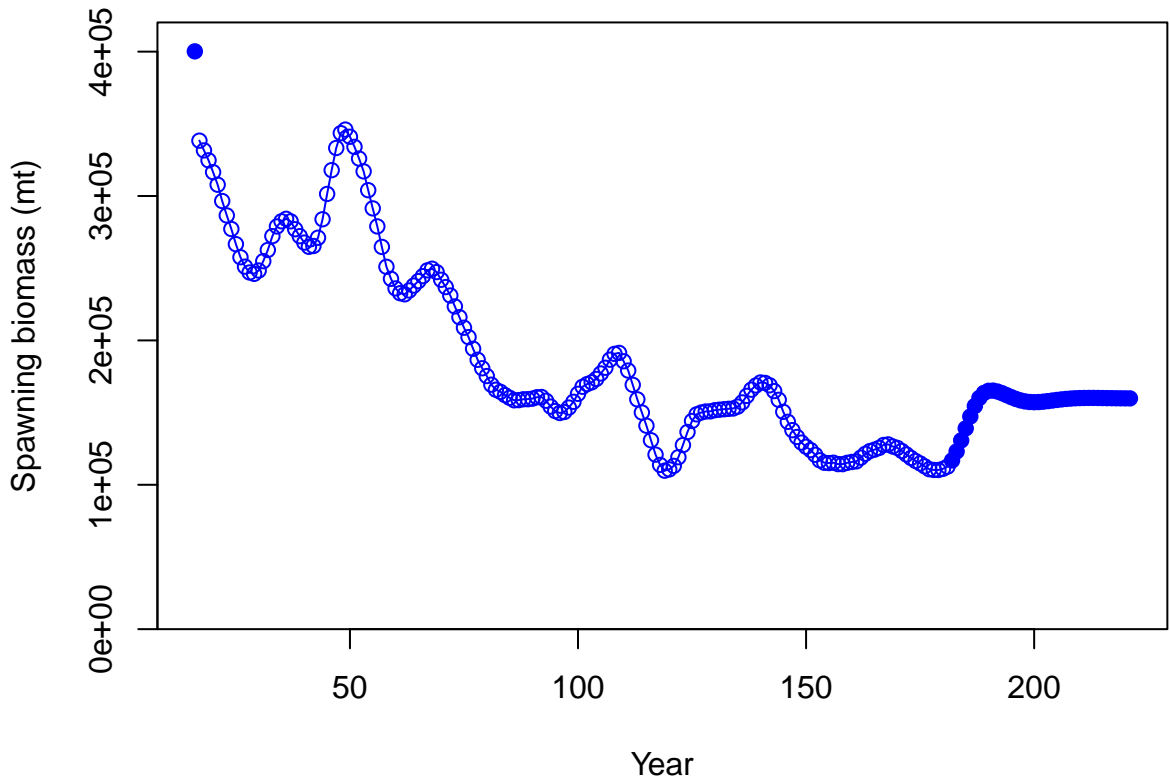


Spawning biomass (mt) with ~95% asymptotic intervals

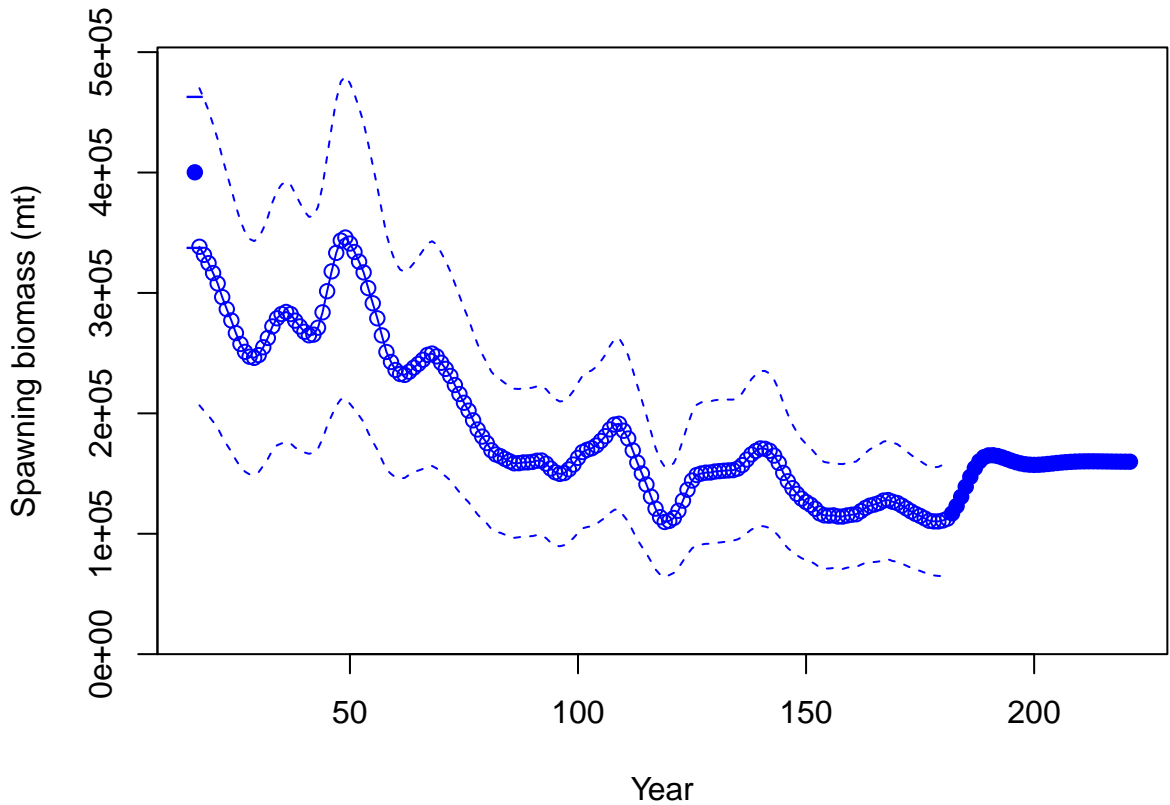




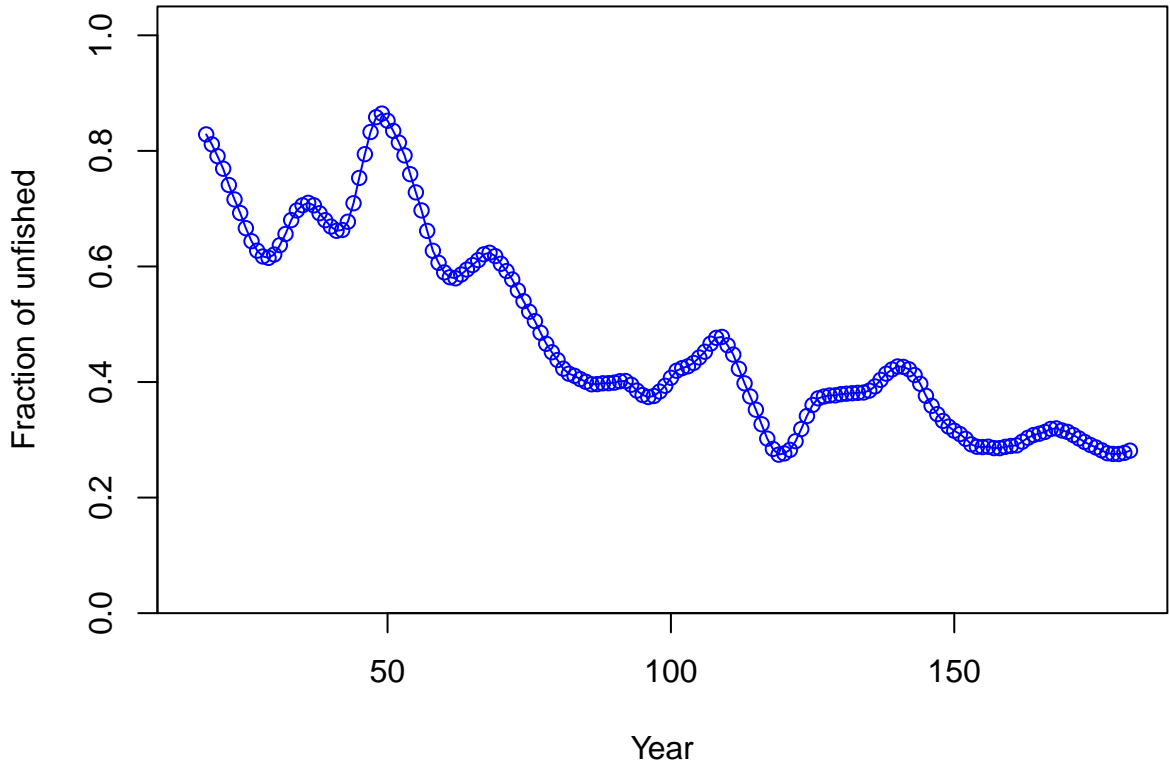
**Spawning biomass (mt) with forecast**



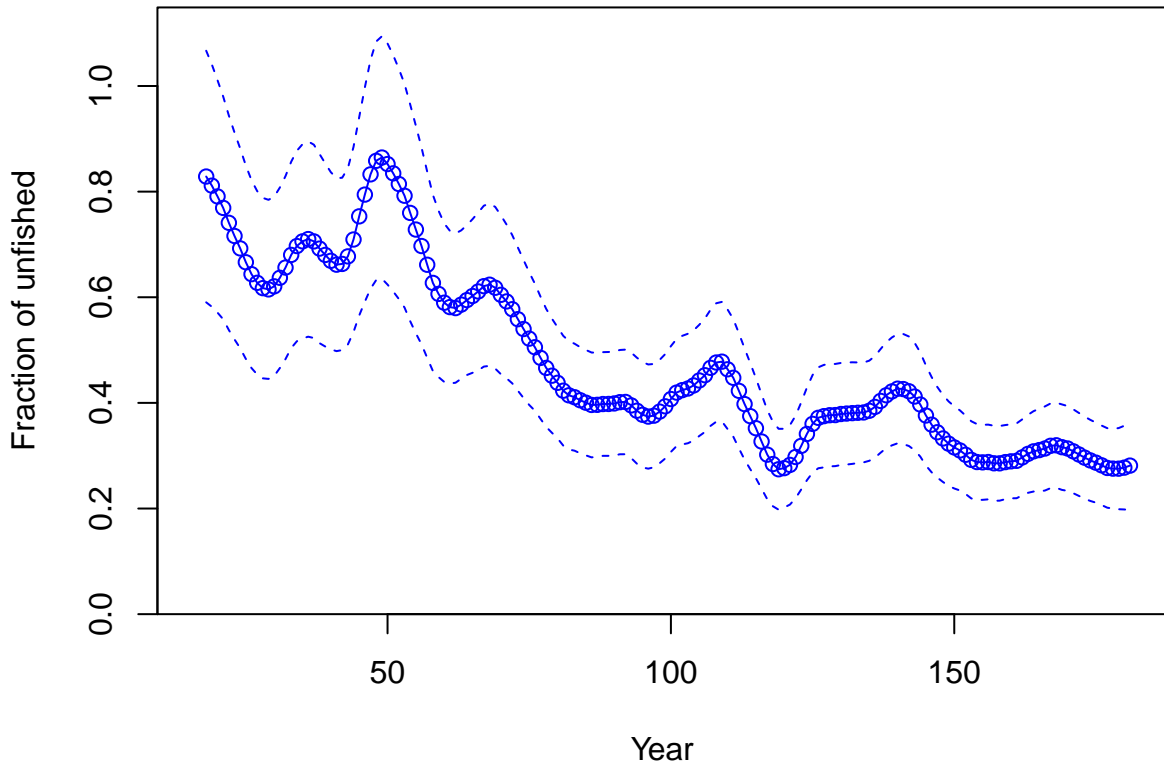
# Spawning biomass (mt) with forecast with ~95% asymptotic intervals



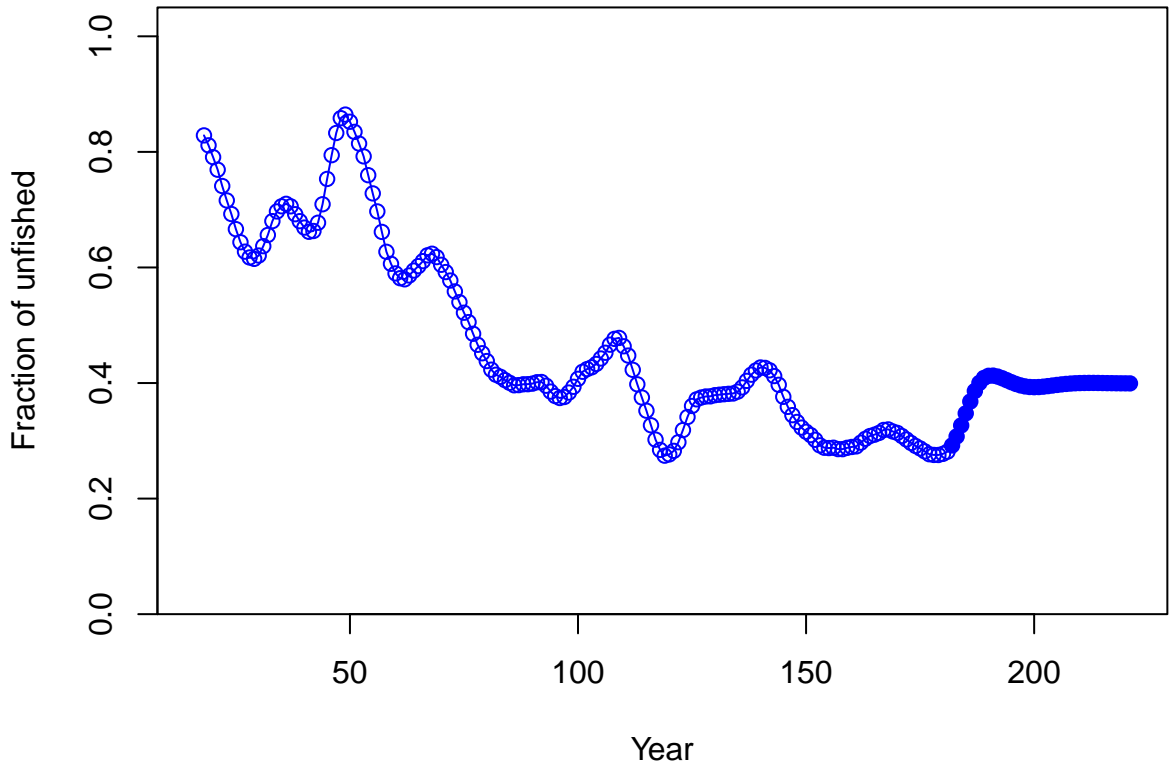
# Fraction of unfished



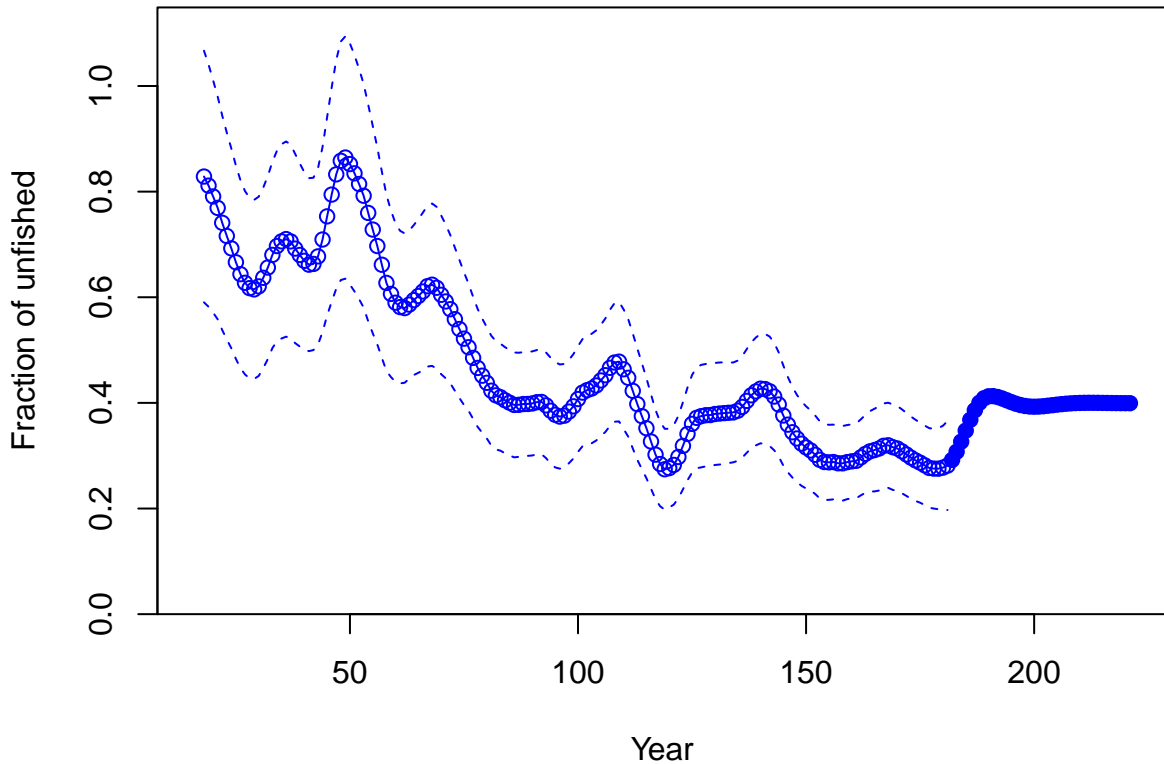
**Fraction of unfished with ~95% asymptotic intervals**



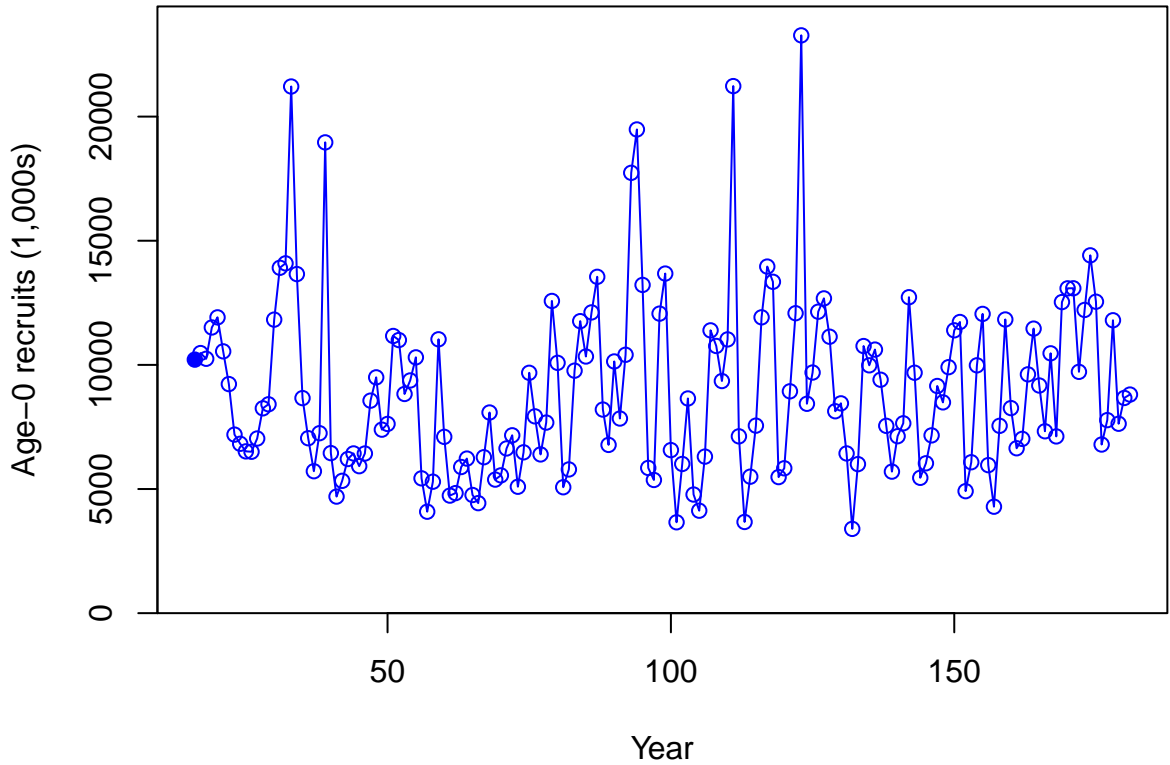
**Fraction of unfished with forecast**



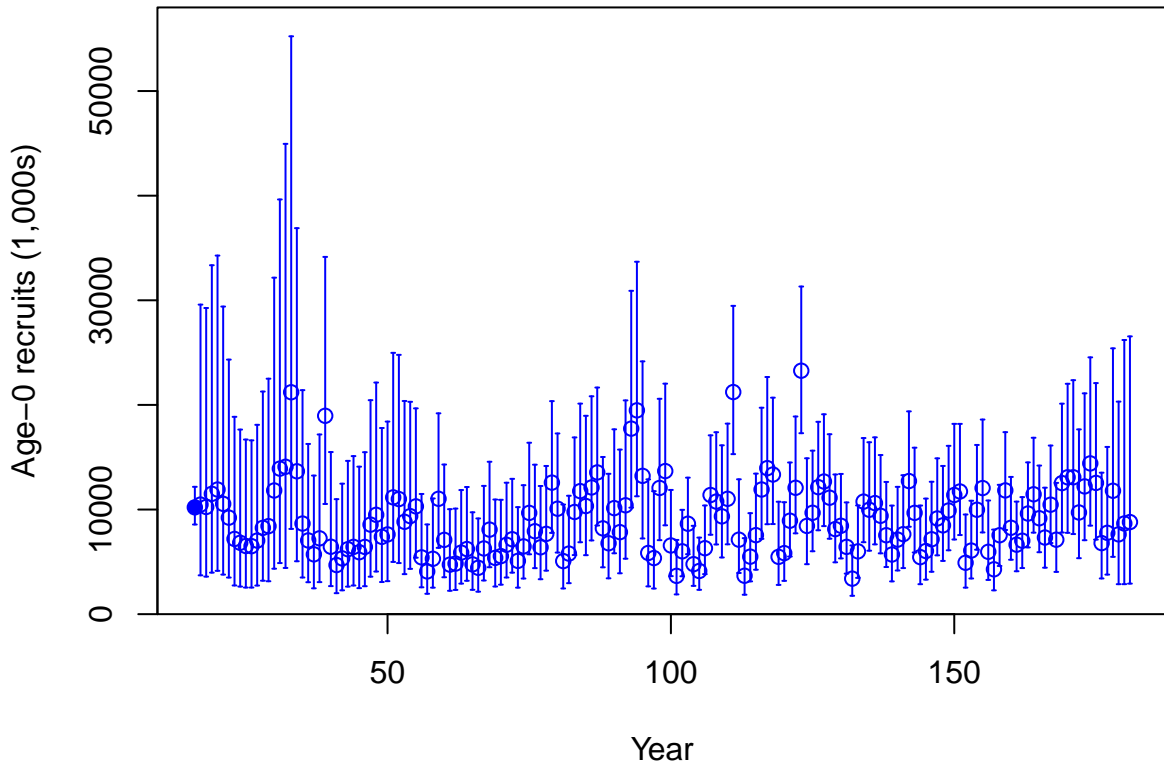
**Fraction of unfished with forecast with ~95% asymptotic intervals**



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

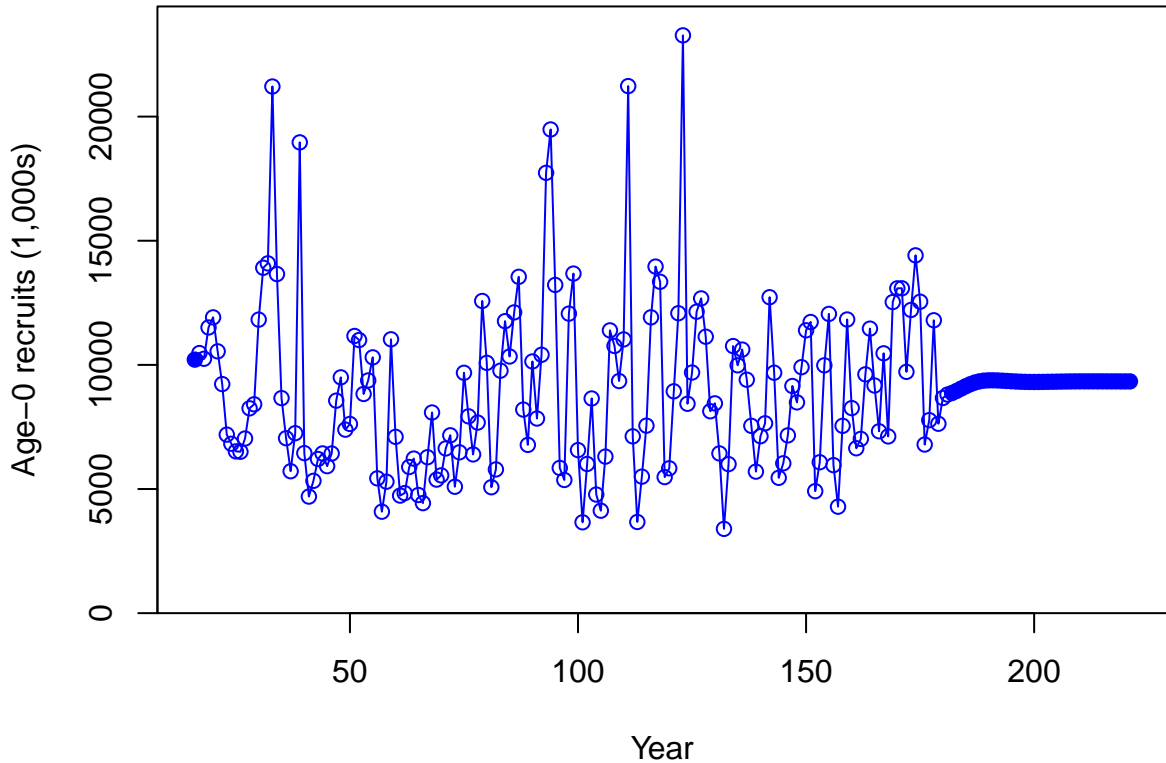


# Age-0 recruits (1,000s) with ~95% asymptotic intervals

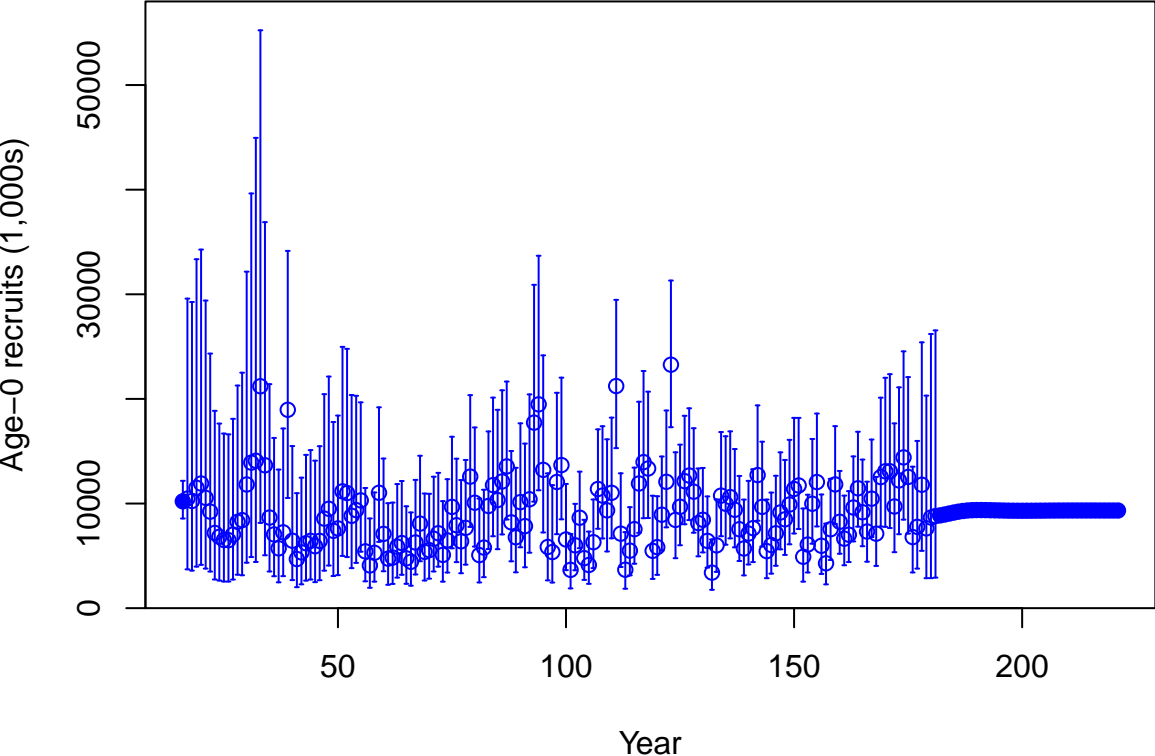




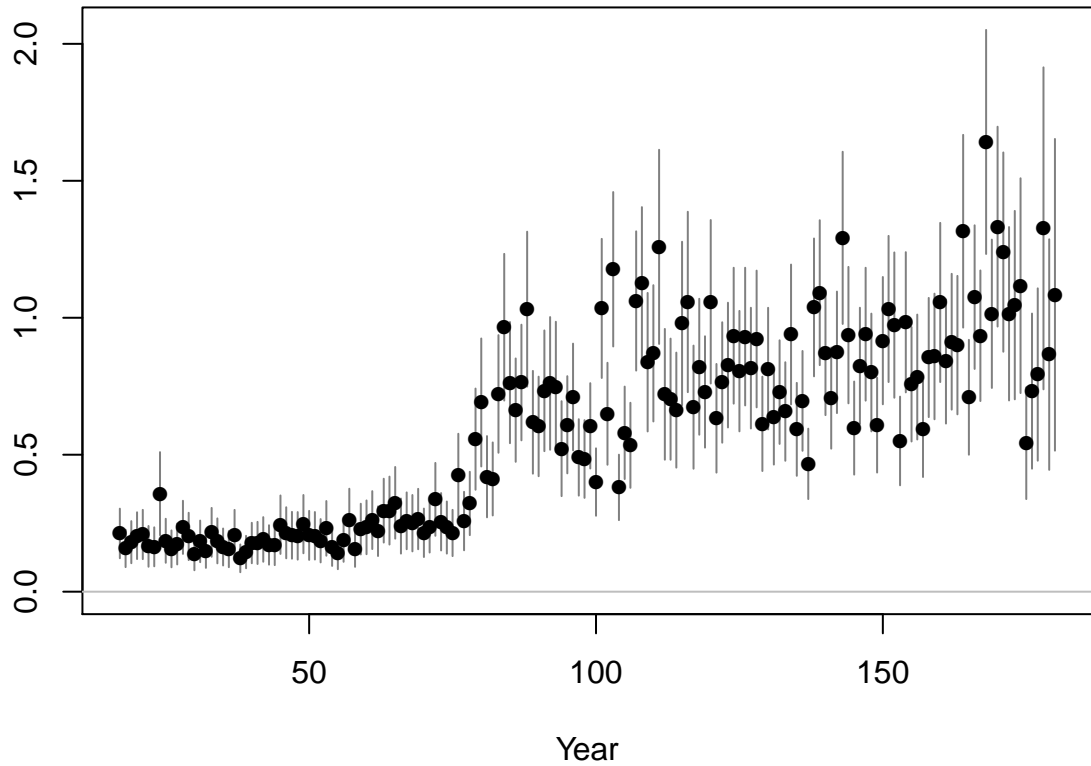
**Age-0 recruits (1,000s) with forecast**

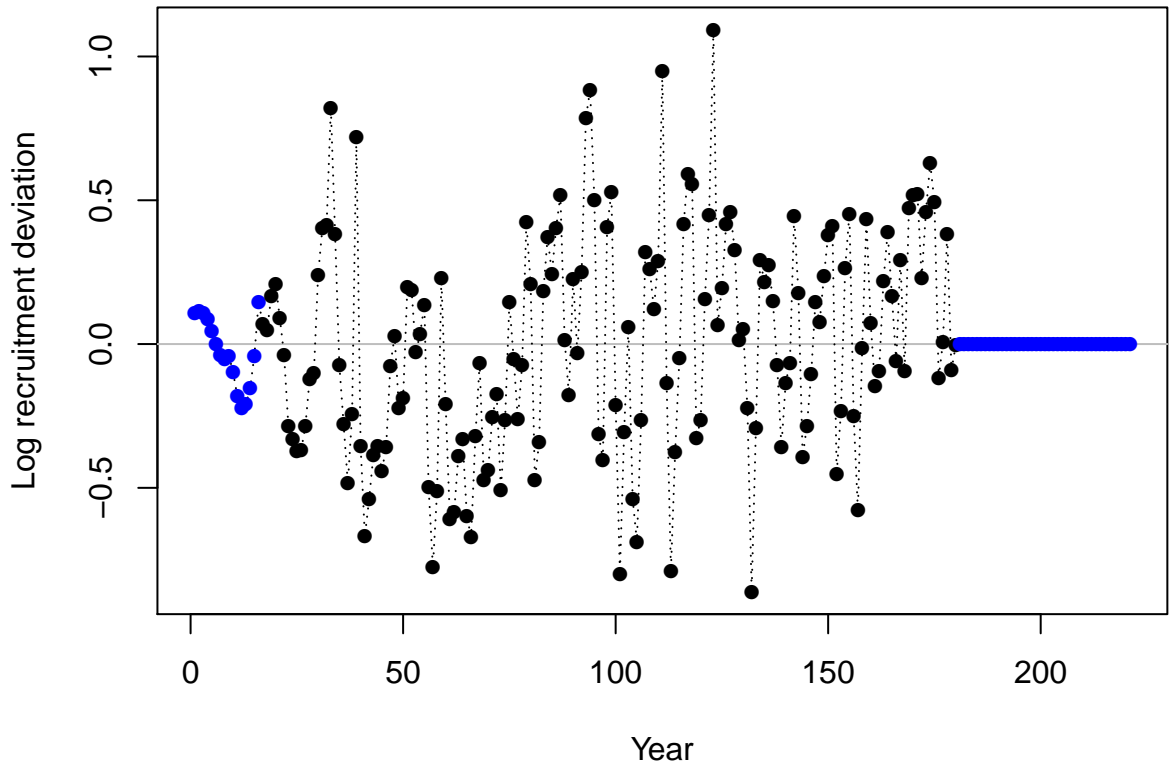


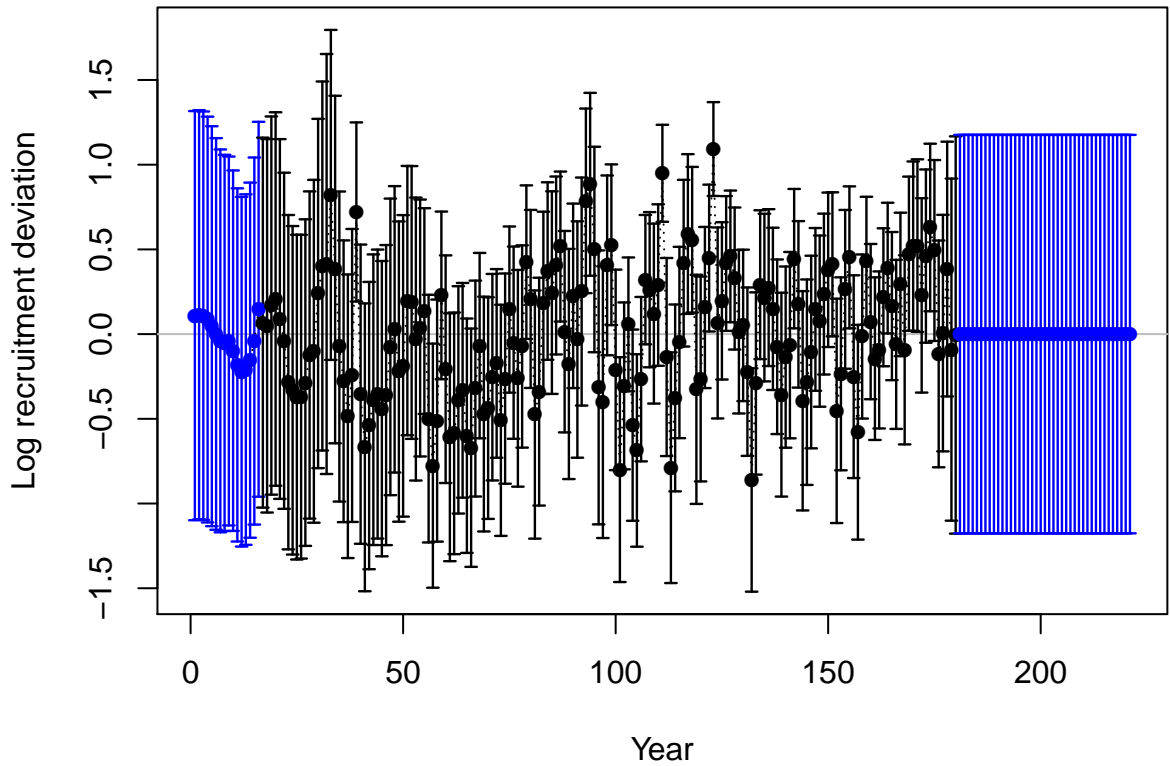
**Age-0 recruits (1,000s) with forecast with ~95% asymptotic intervals**



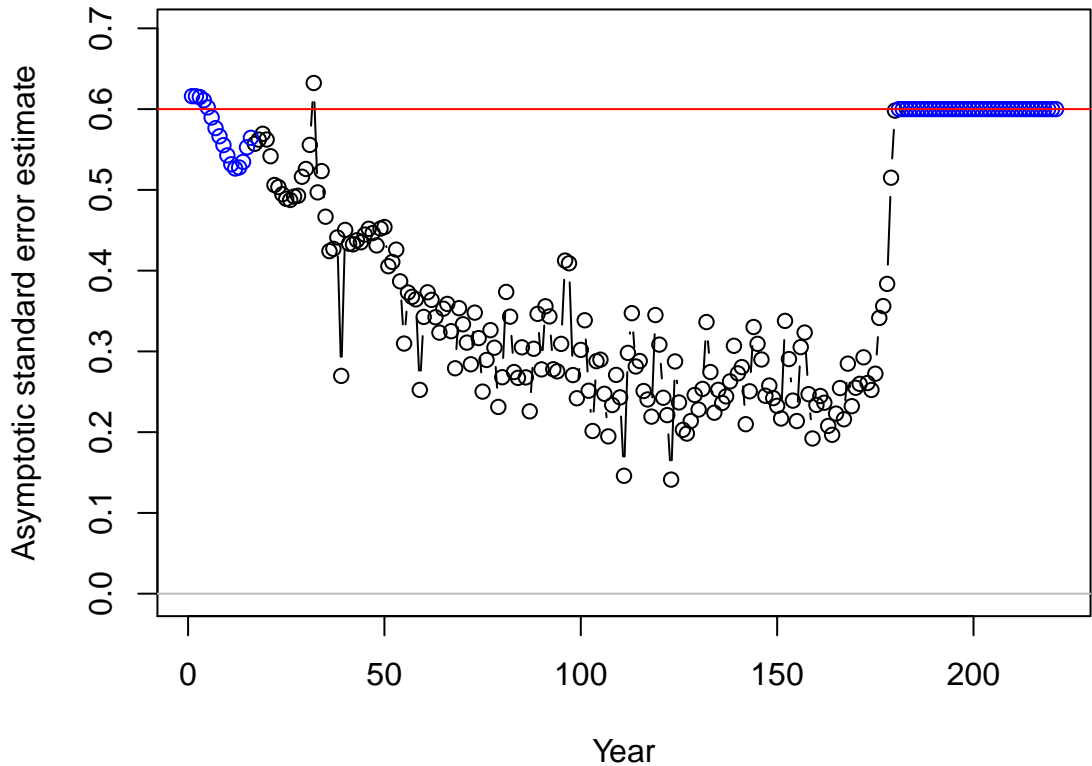
Summary Fishing Mortality

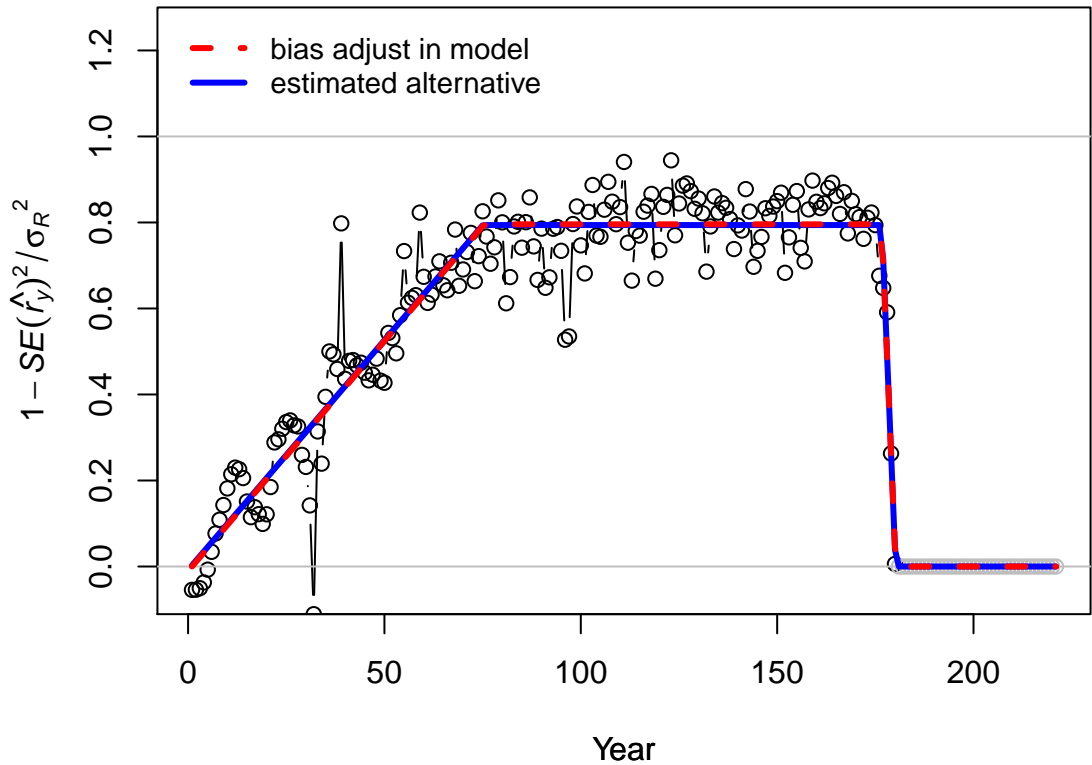


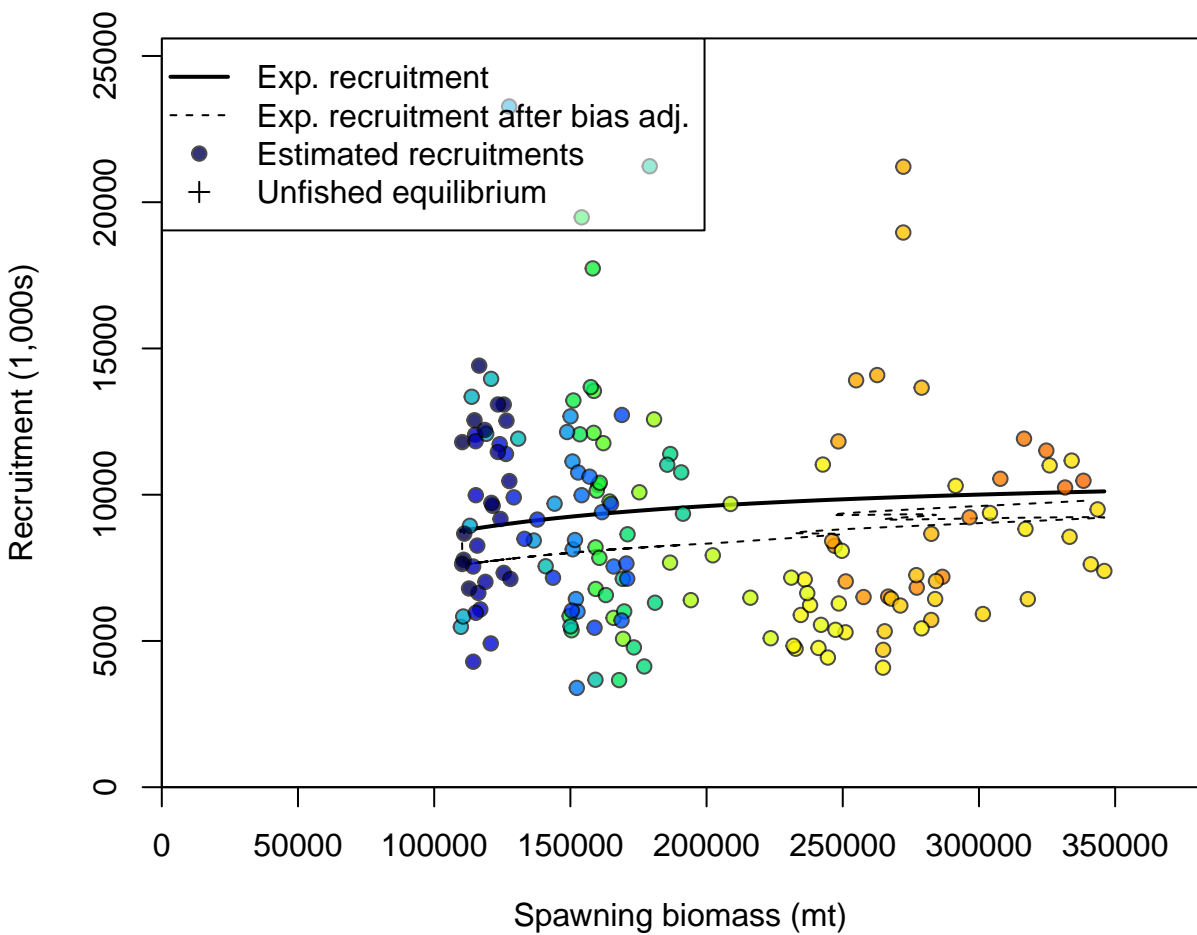




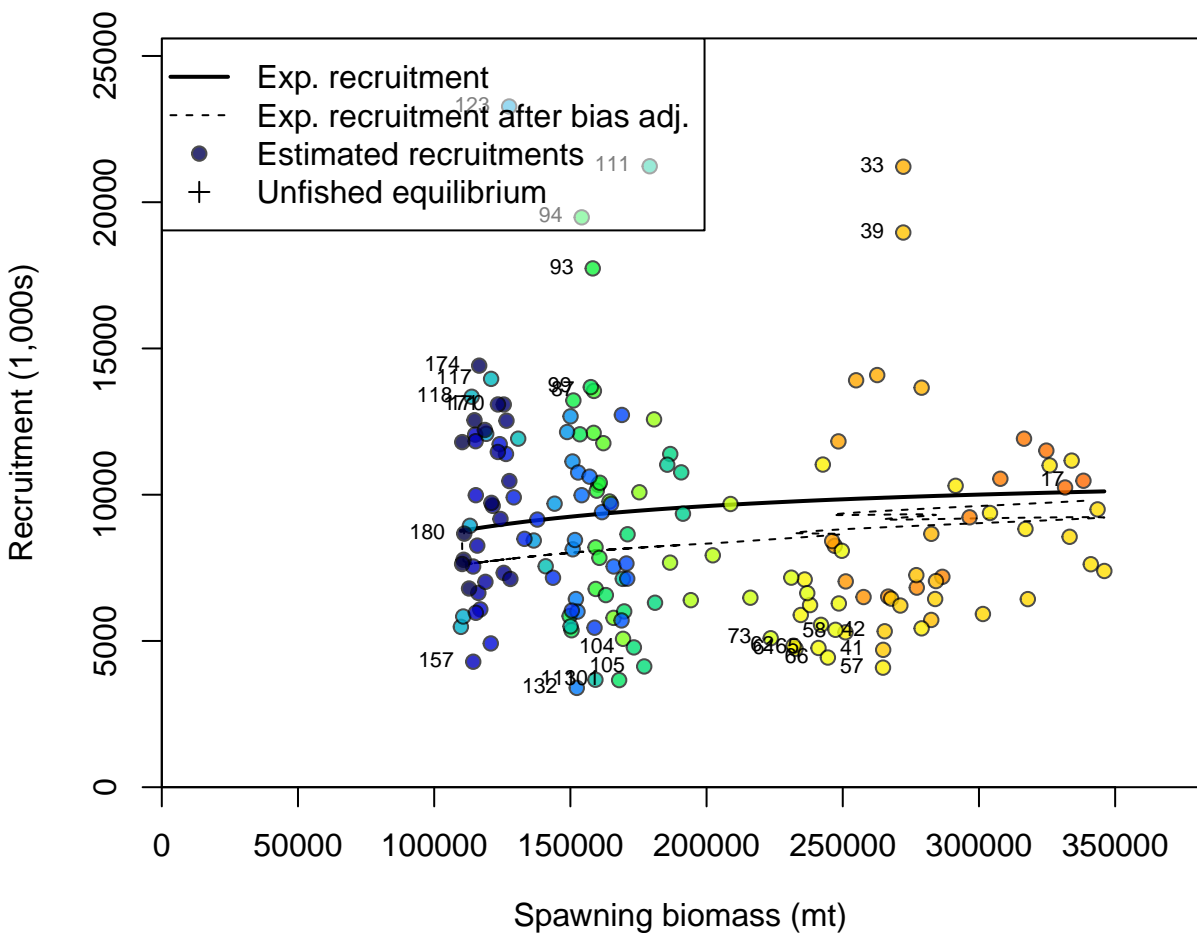
# Recruitment deviation variance



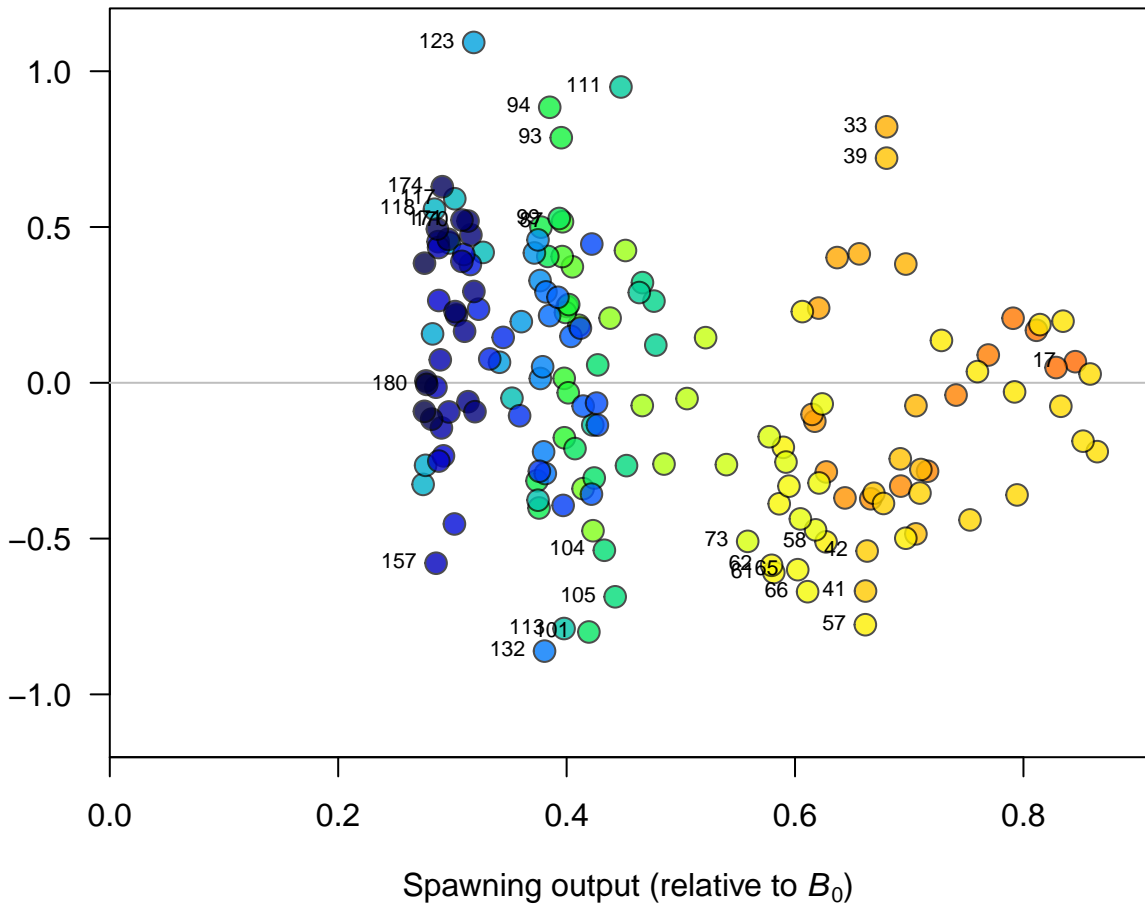


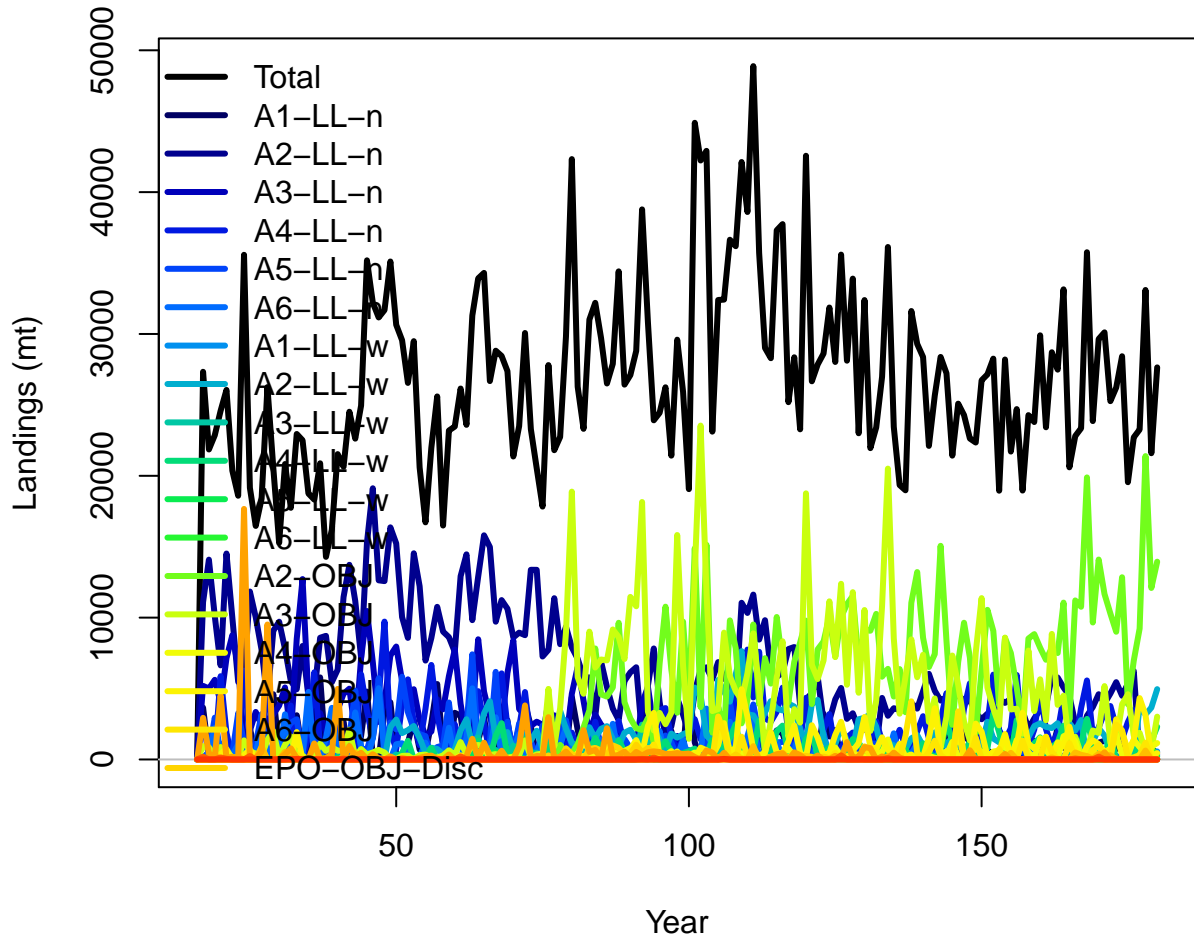


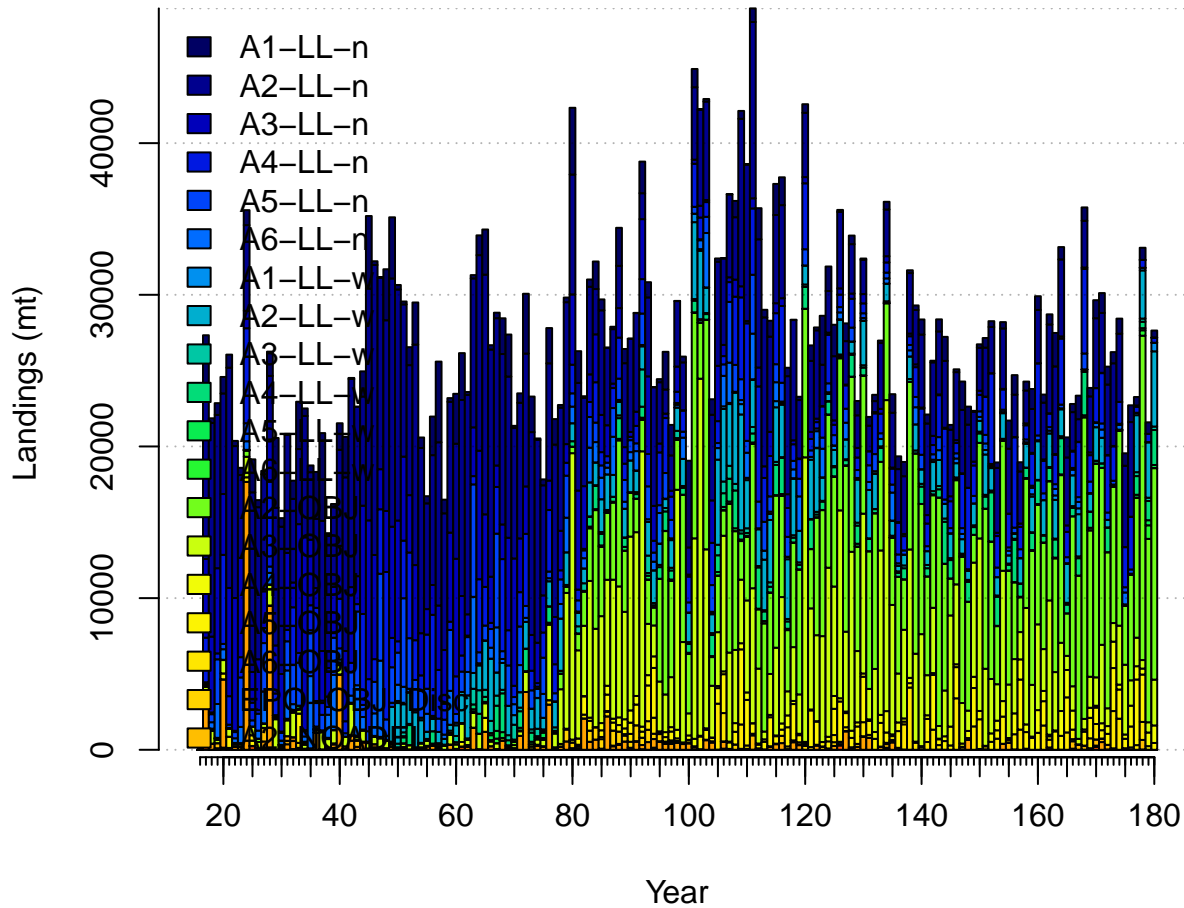




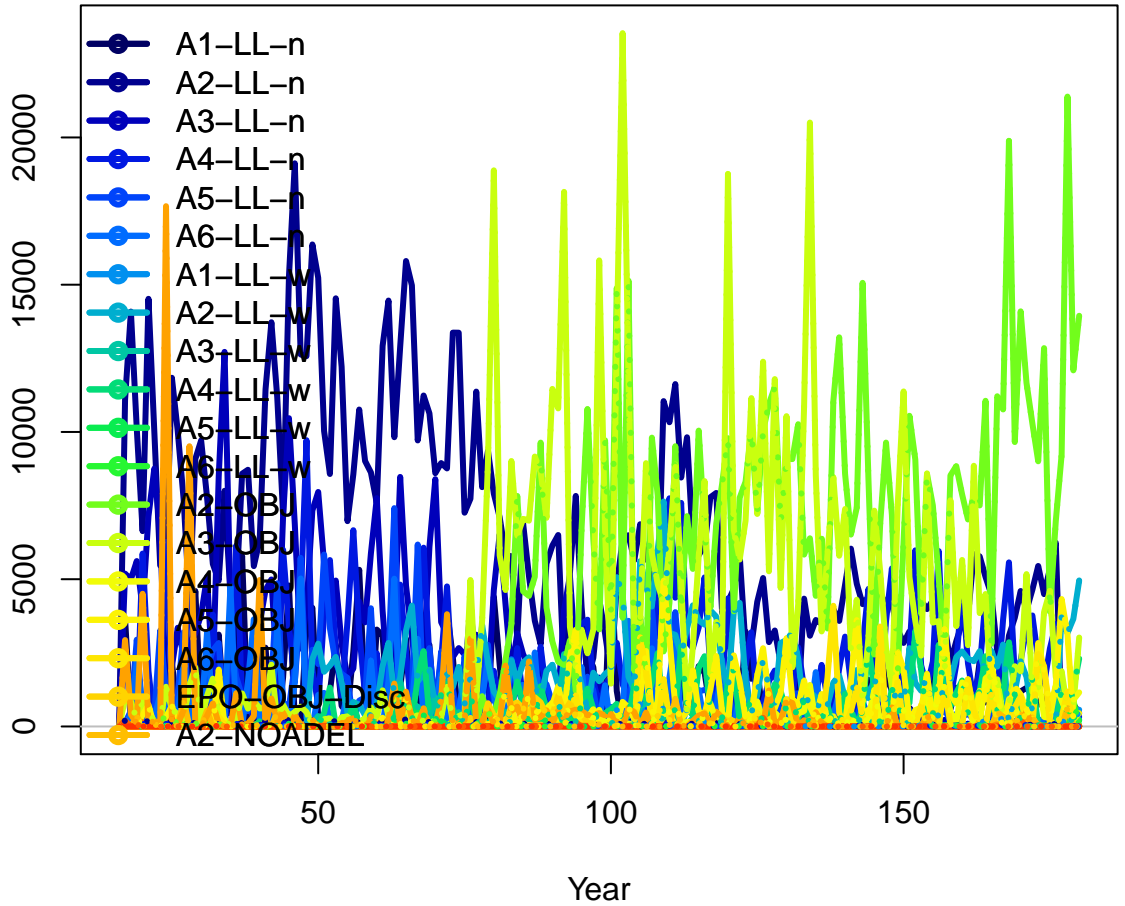
Log recruitment deviation



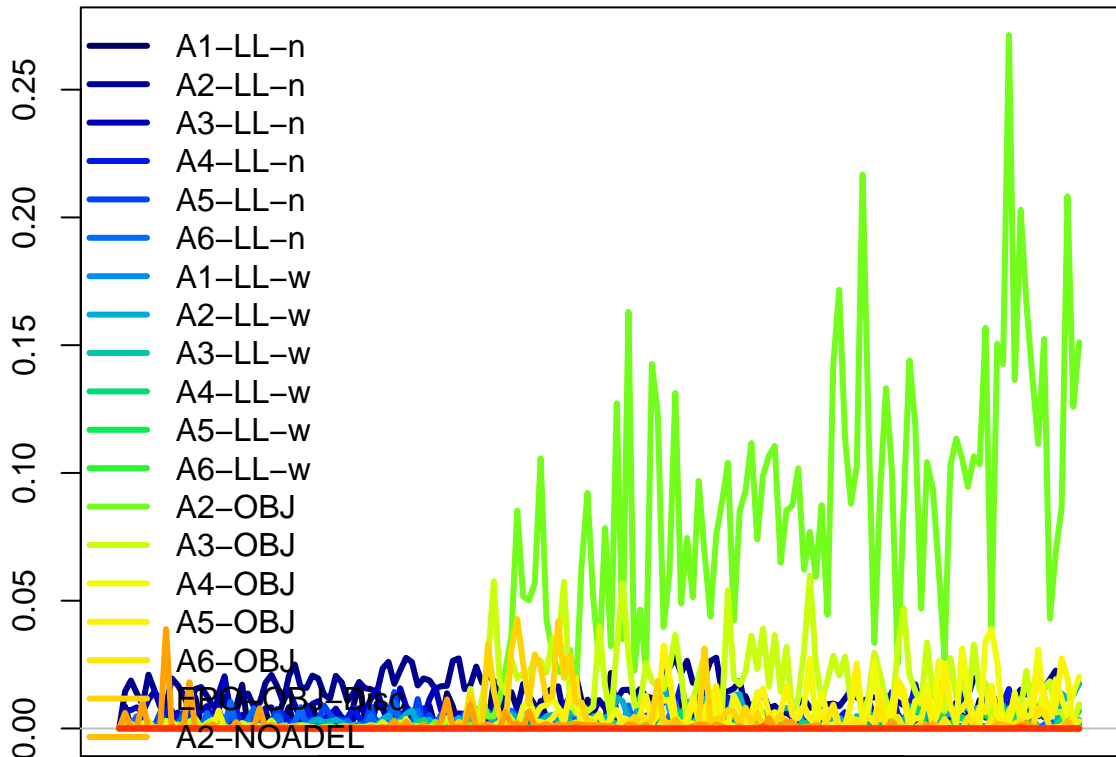




Observed and expected Landings (mt)



Continuous F



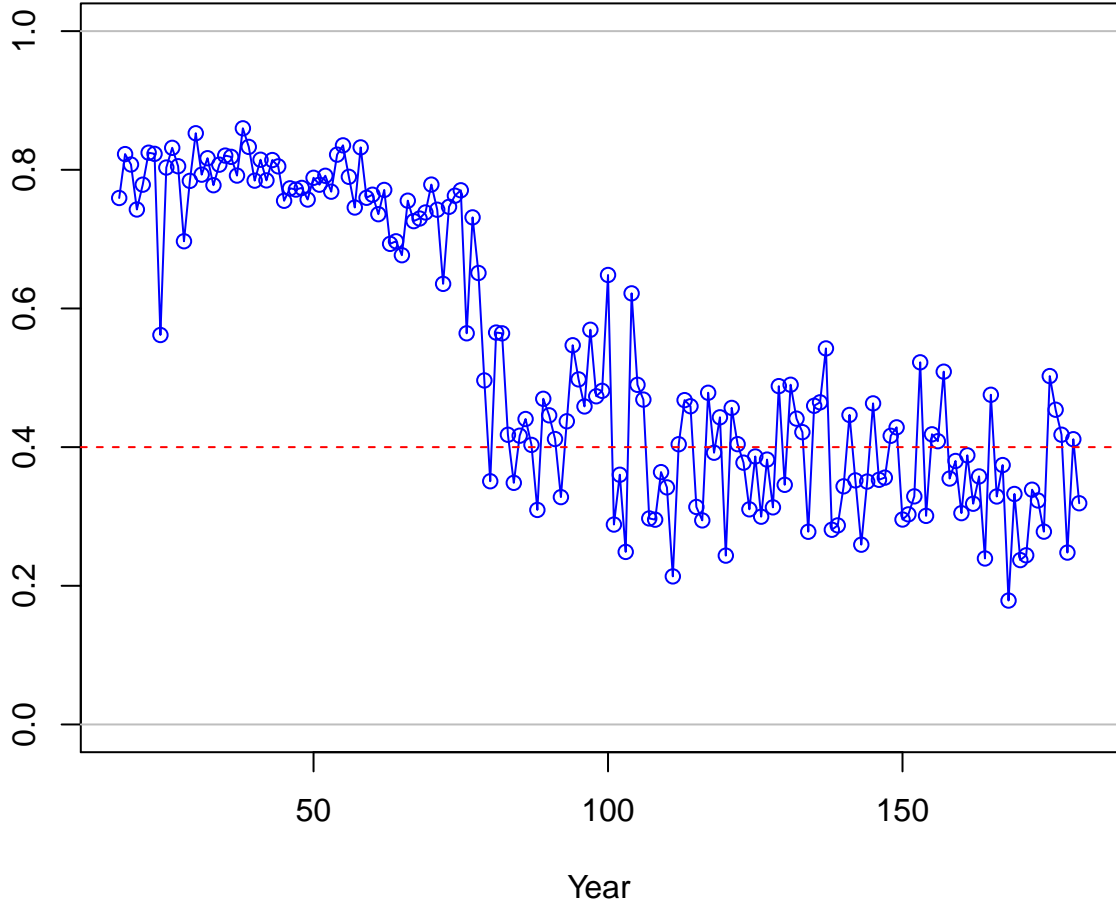
50

100

150

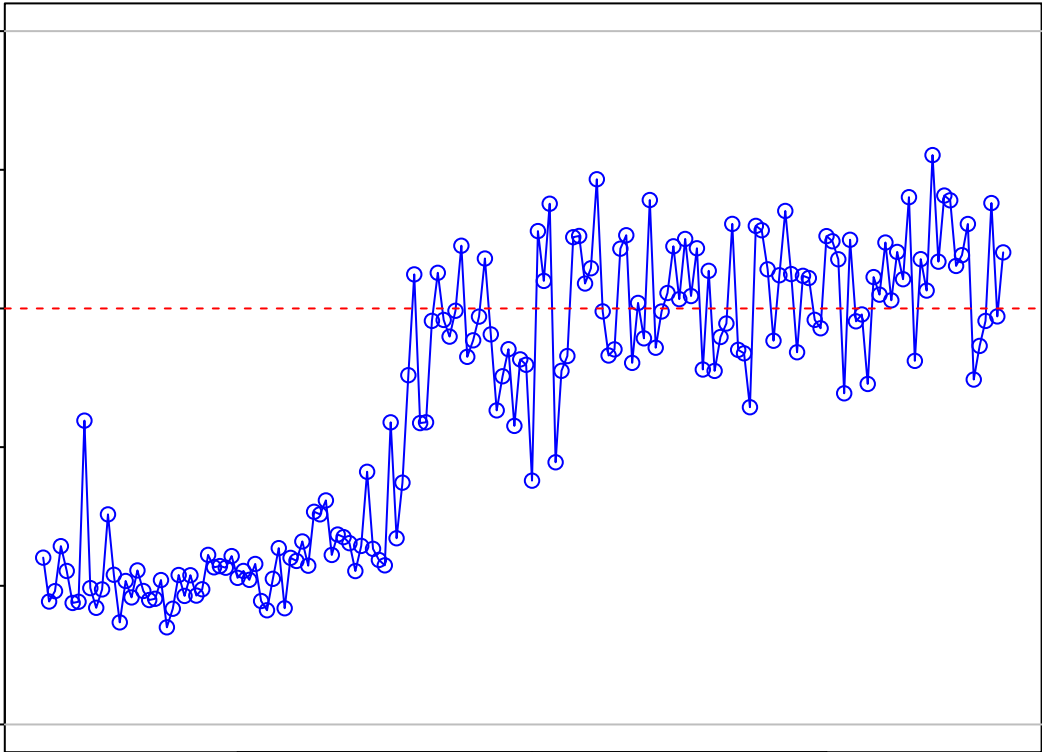
Year

SPR



1-SPR

1.0  
0.8  
0.6  
0.4  
0.2  
0.0



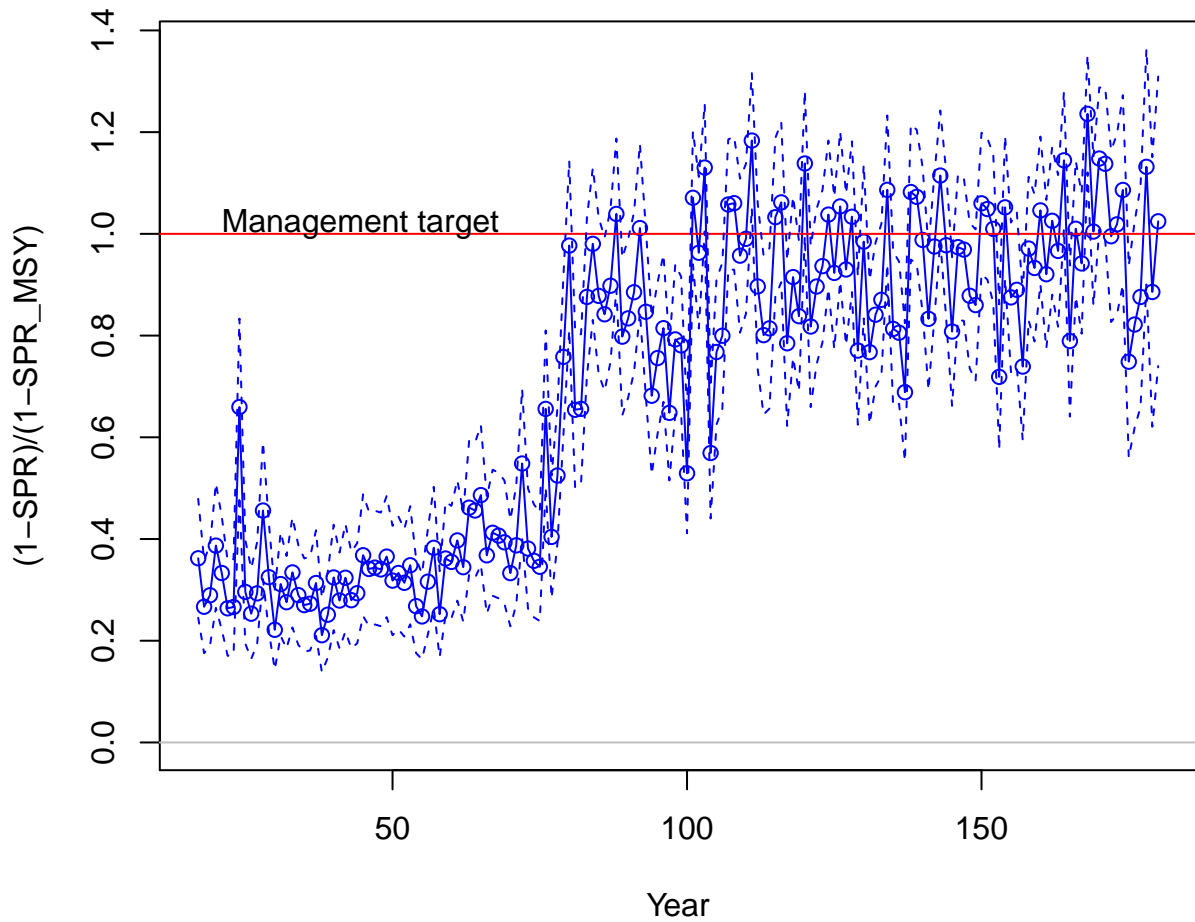
50

100

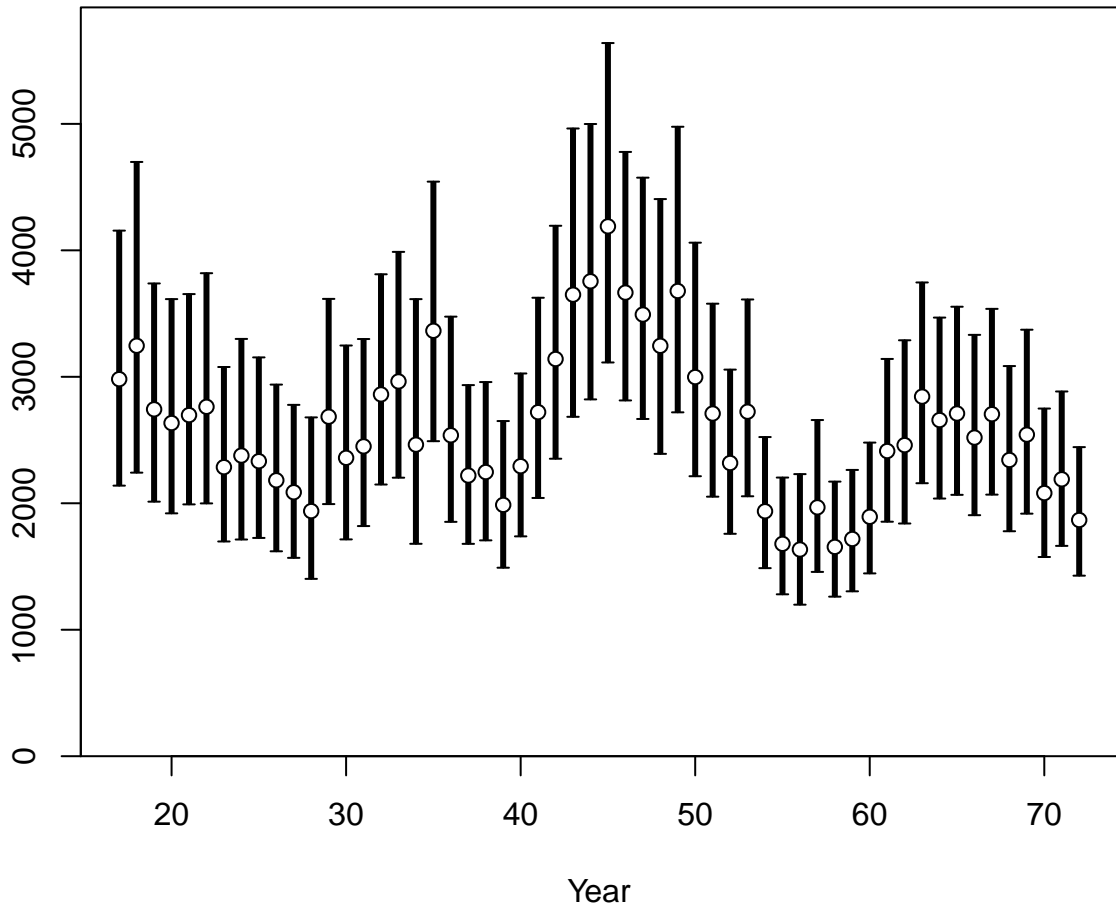
150

Year

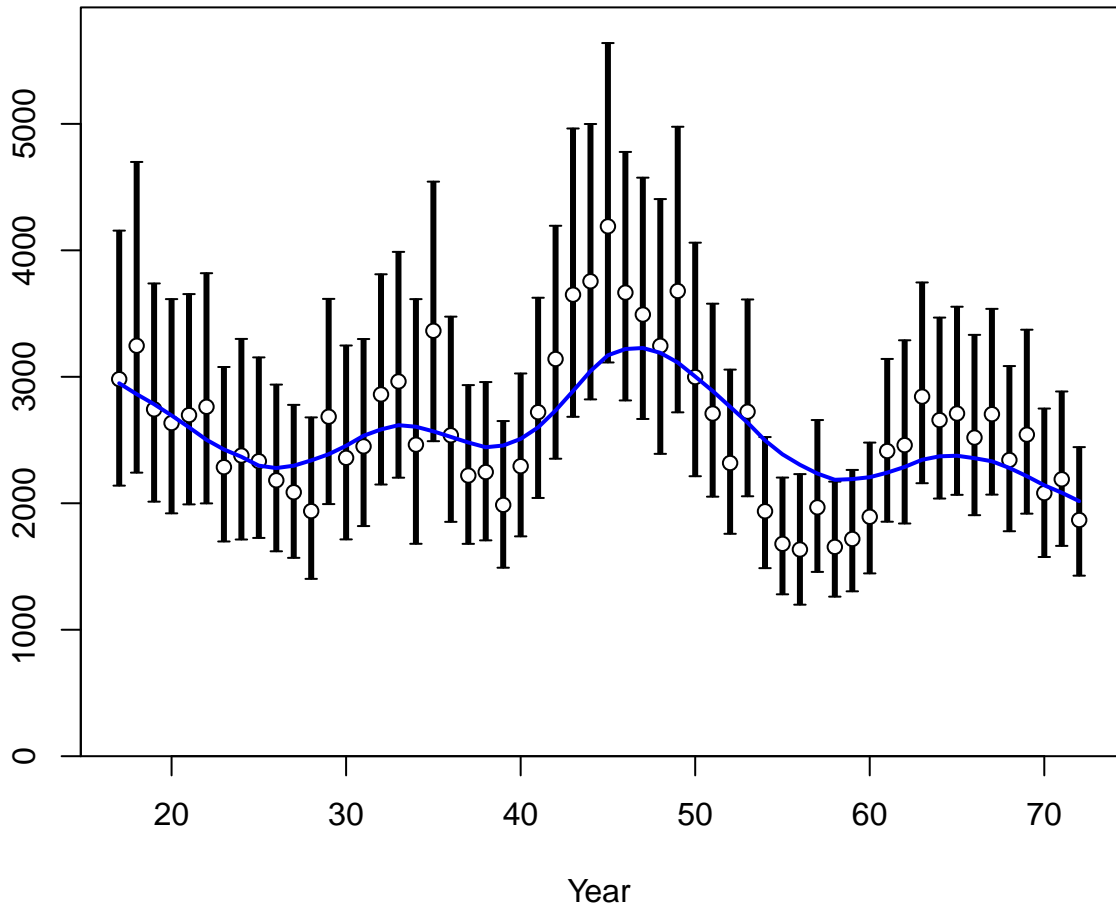




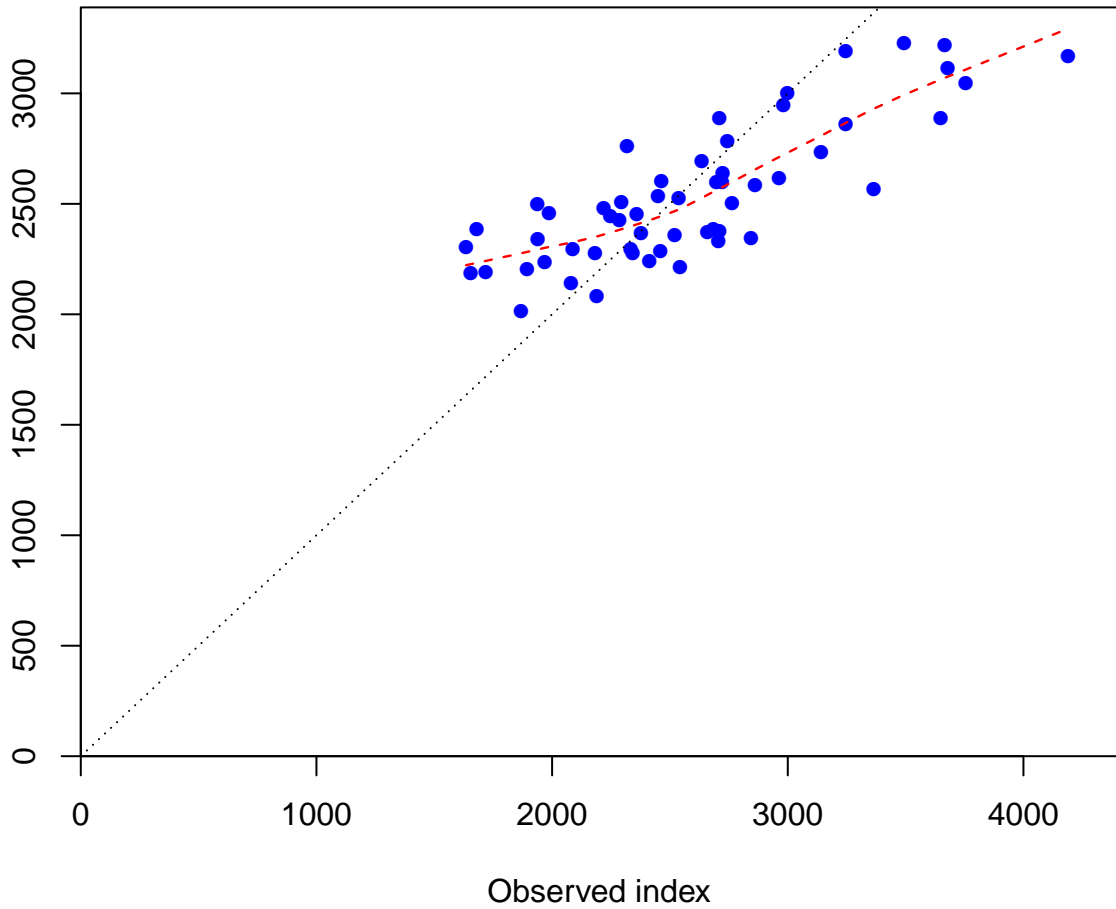
Index



Index



Expected index



Log index

8.5

8.0

7.5

20

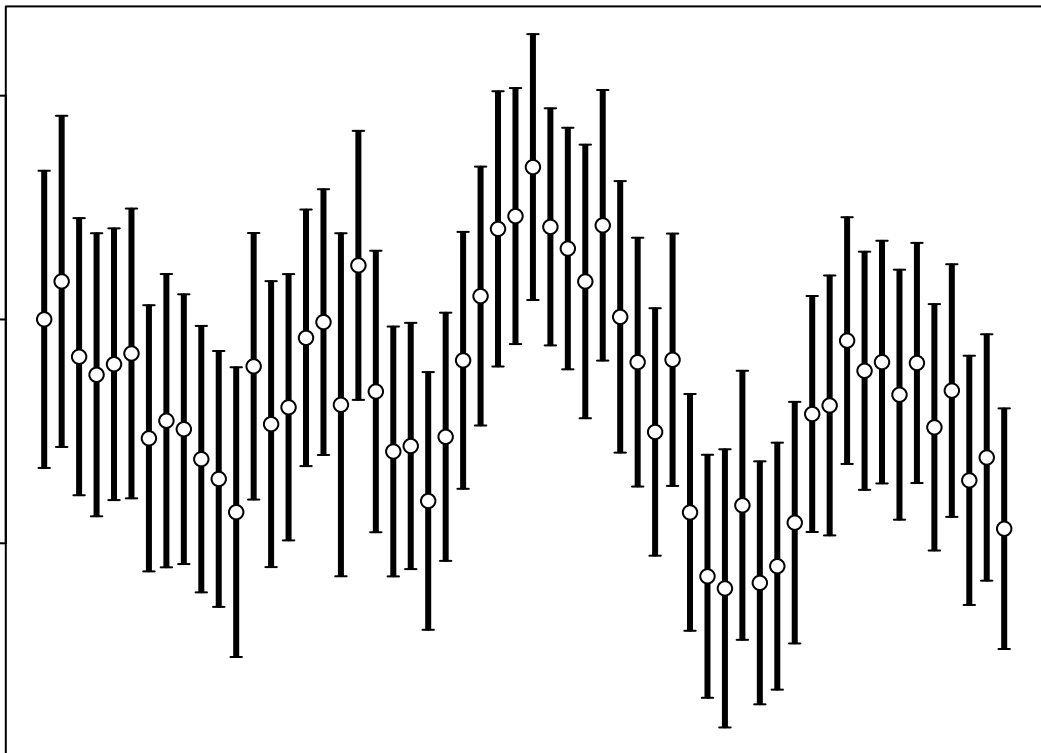
30

40

60

70

Year



Log index

8.5

8.0

7.5

20

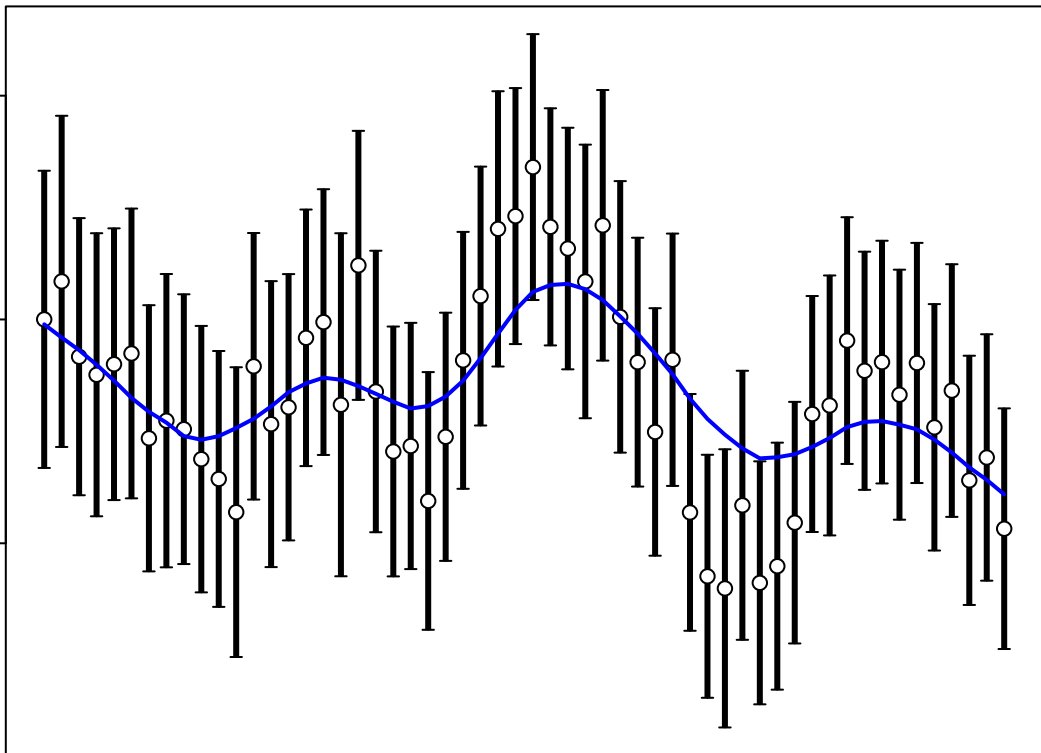
30

40

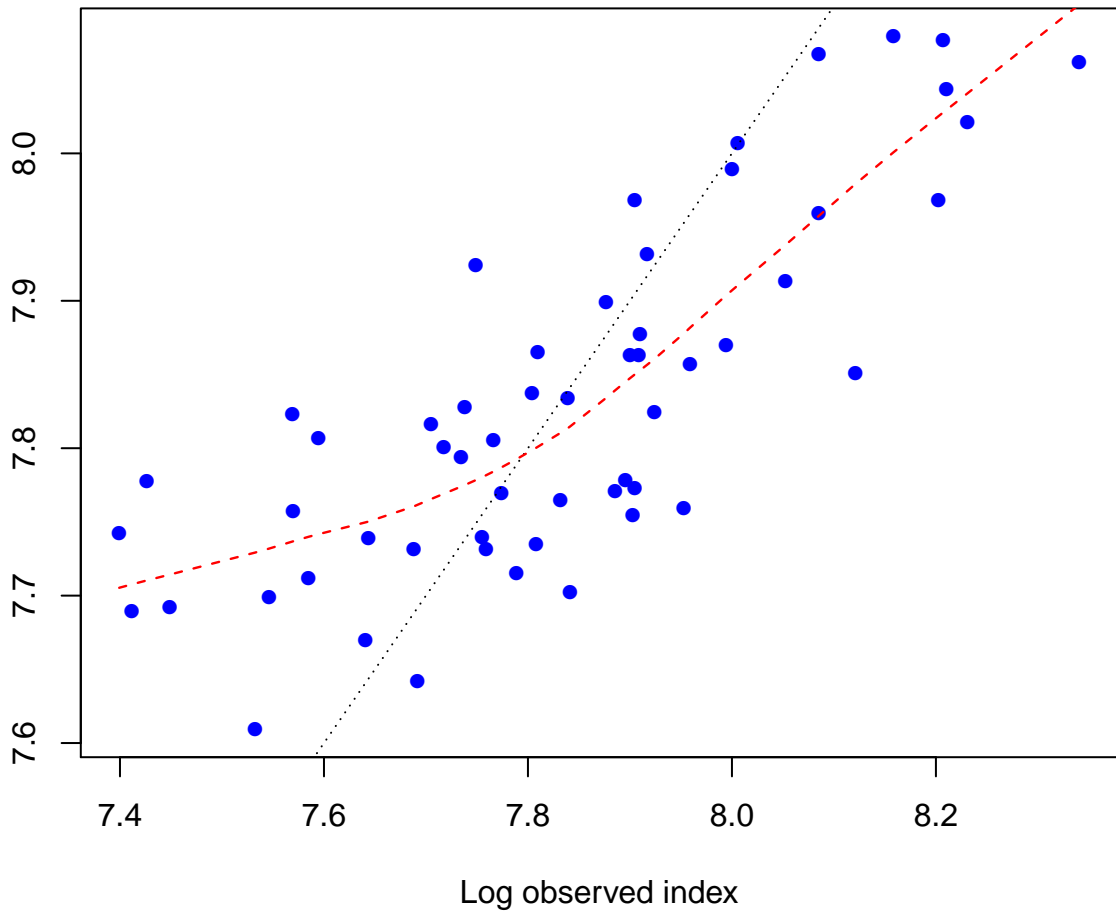
60

70

Year



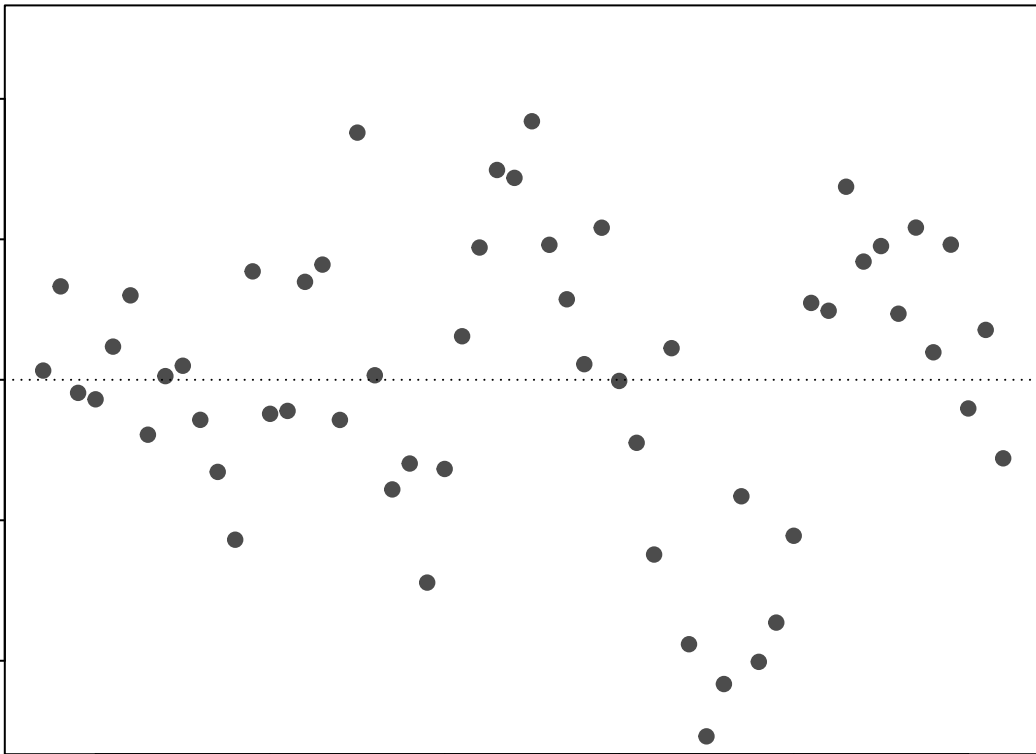
Log expected index



Log observed index

Residual

2  
1  
0  
-1  
-2



Year

20

30

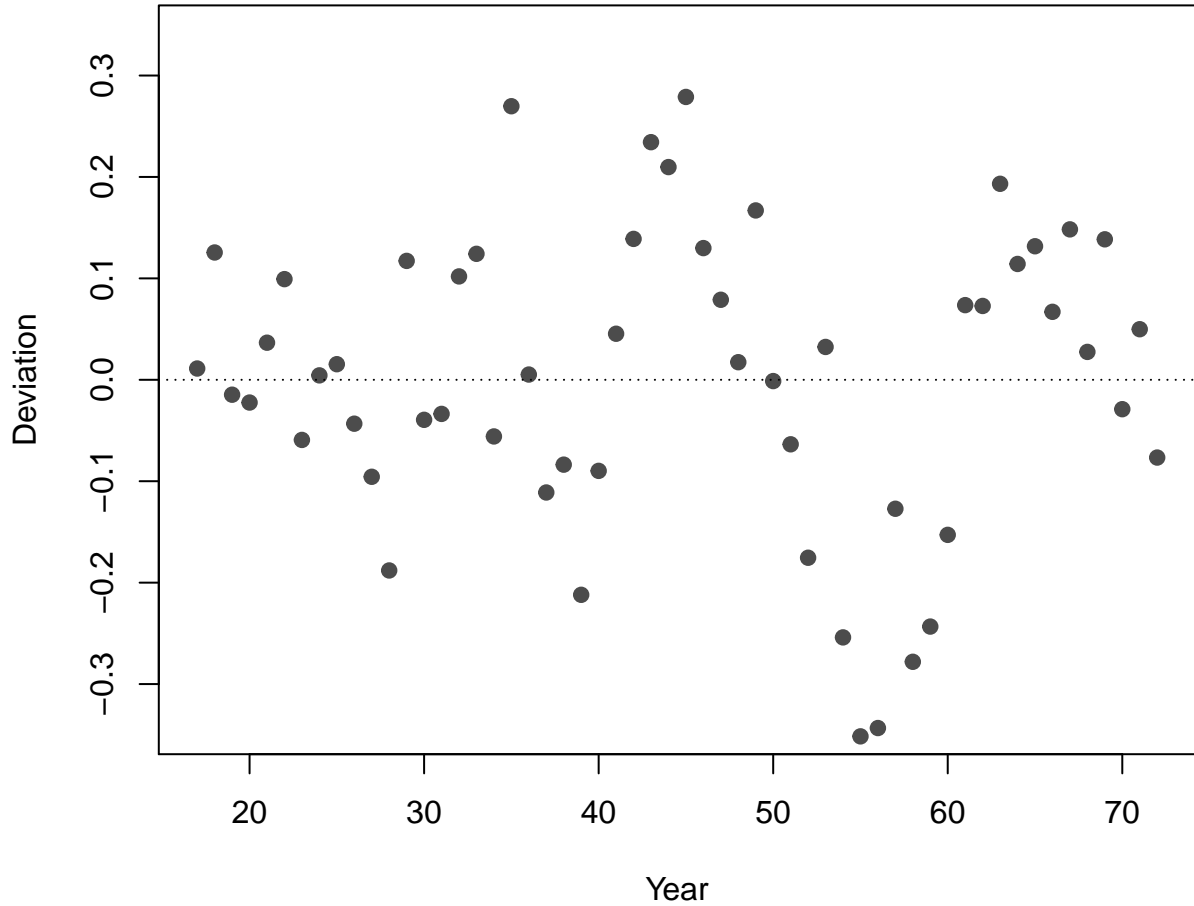
40

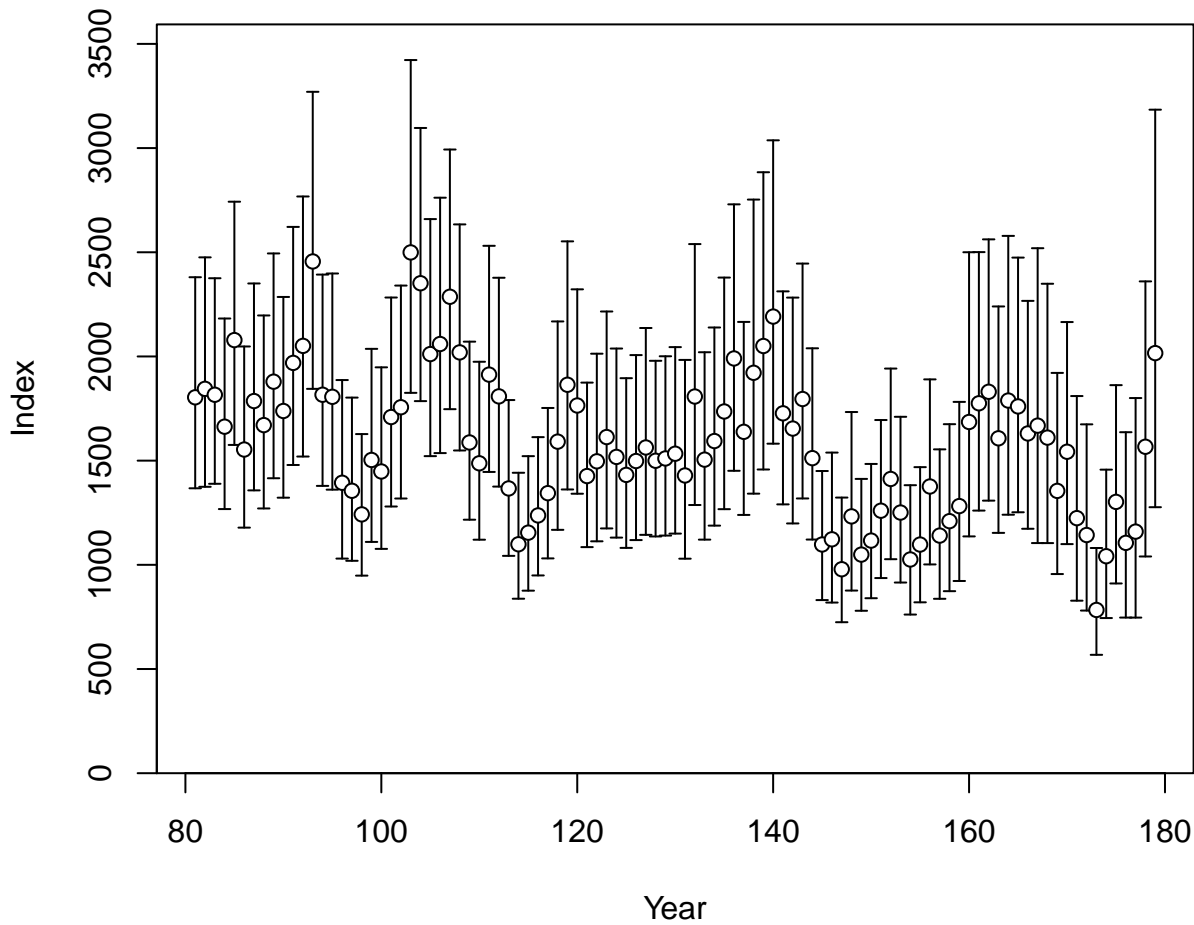
50

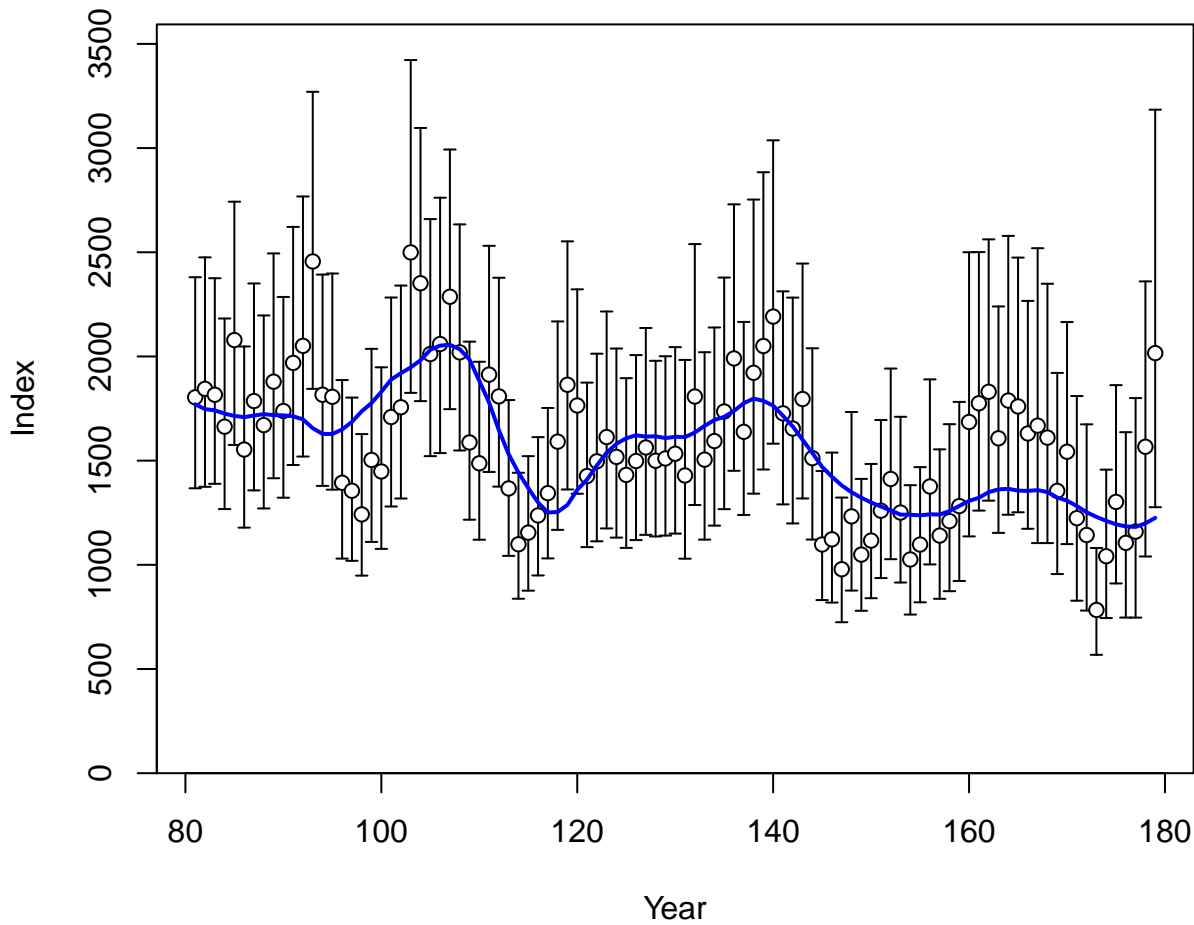
60

70

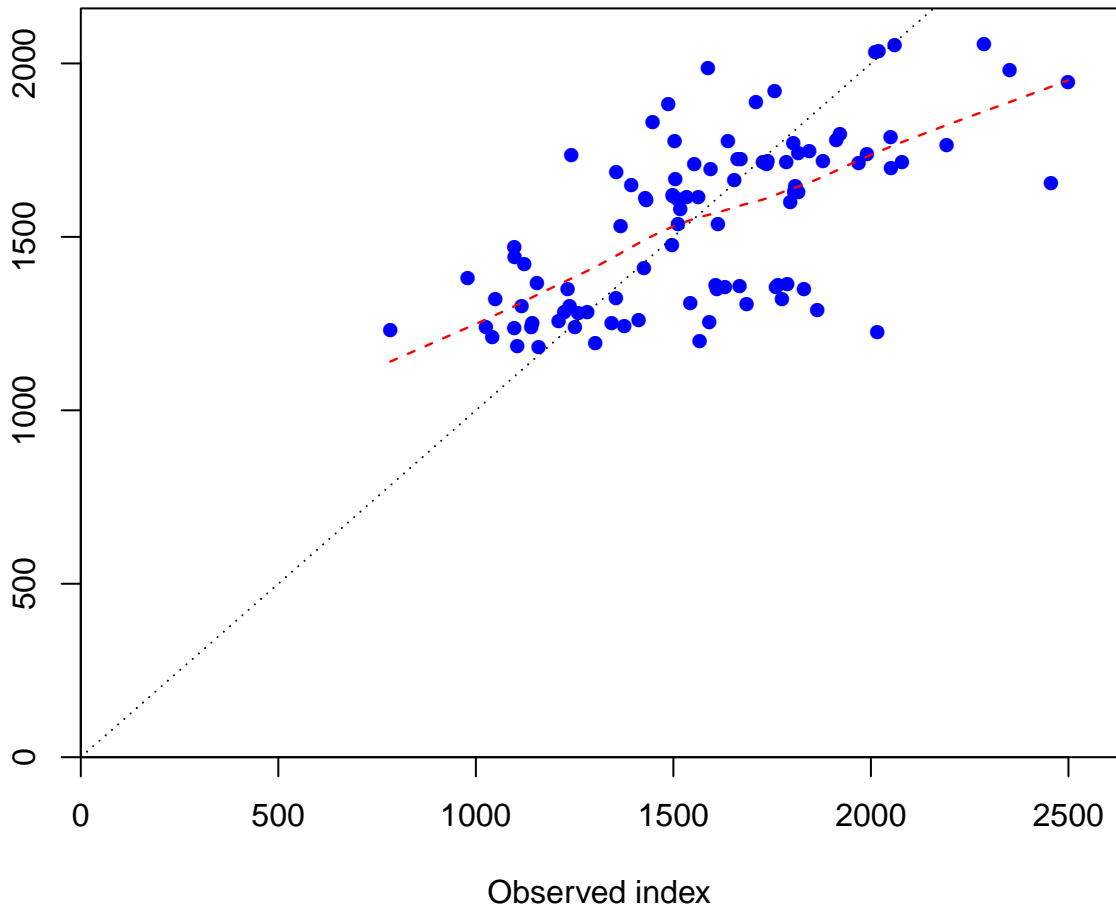








Expected index



Log index

8.0  
7.5  
7.0  
6.5

80

100

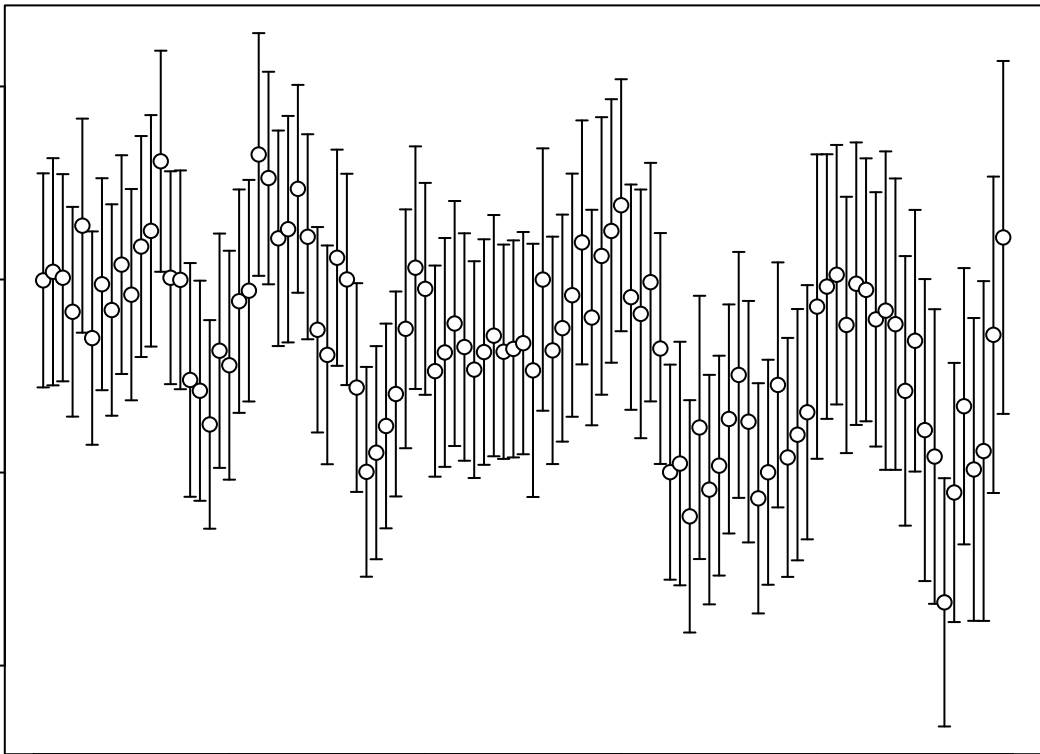
120

140

160

180

Year



Log index

8.0  
7.5  
7.0  
6.5

80

100

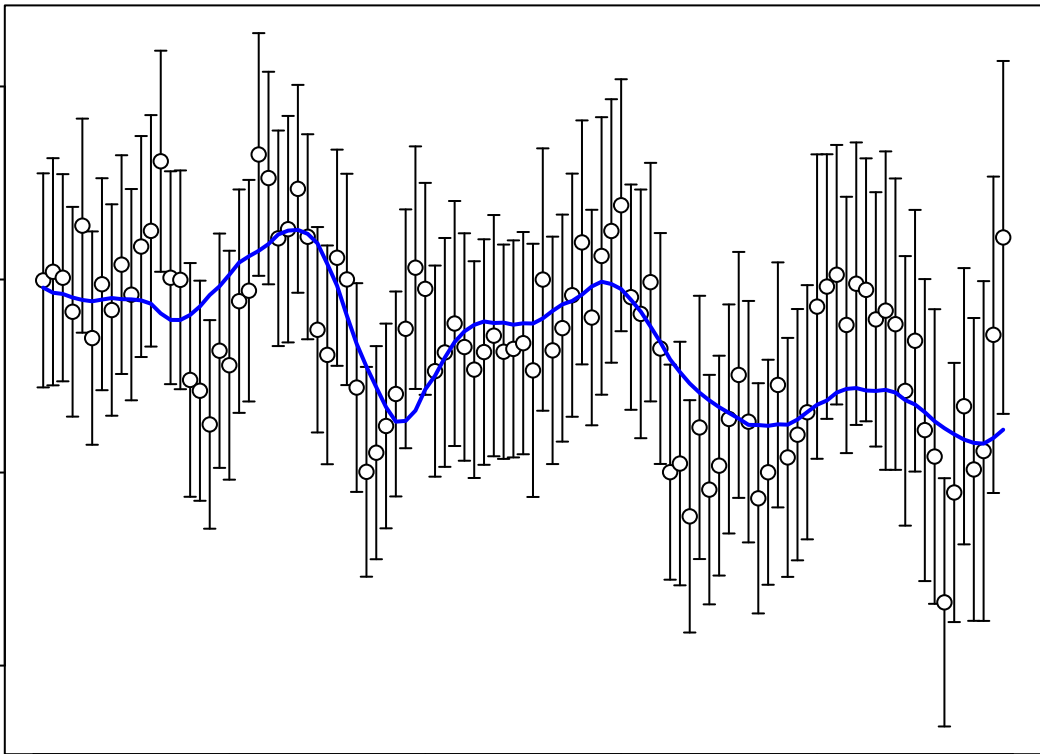
120

140

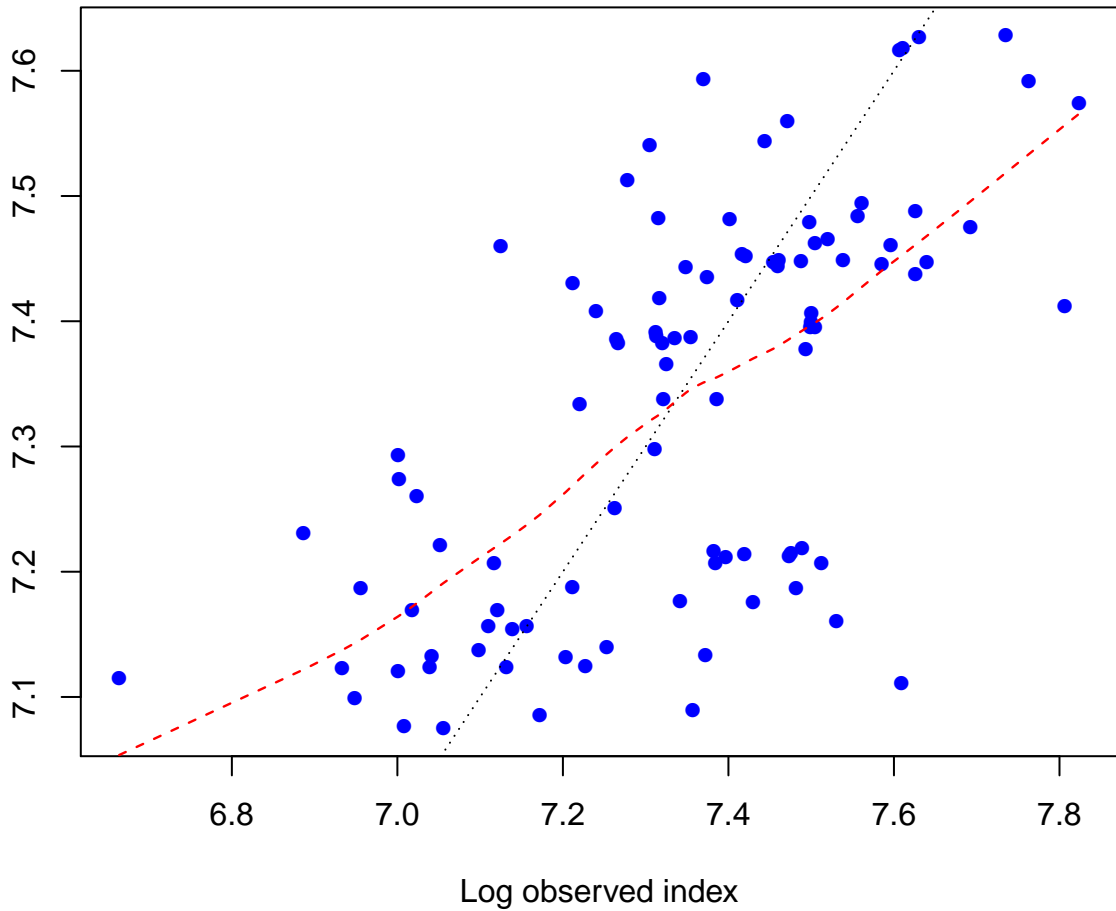
160

180

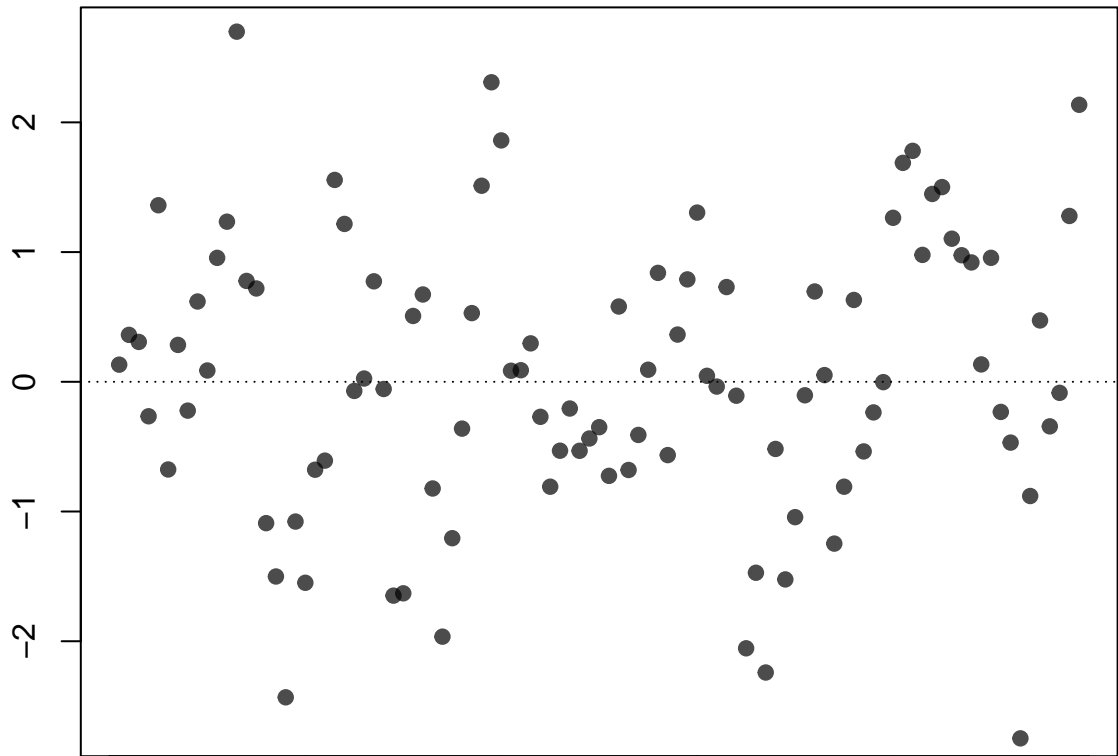
Year



Log expected index



Residual



2

1

0

-1

-2

80

100

120

140

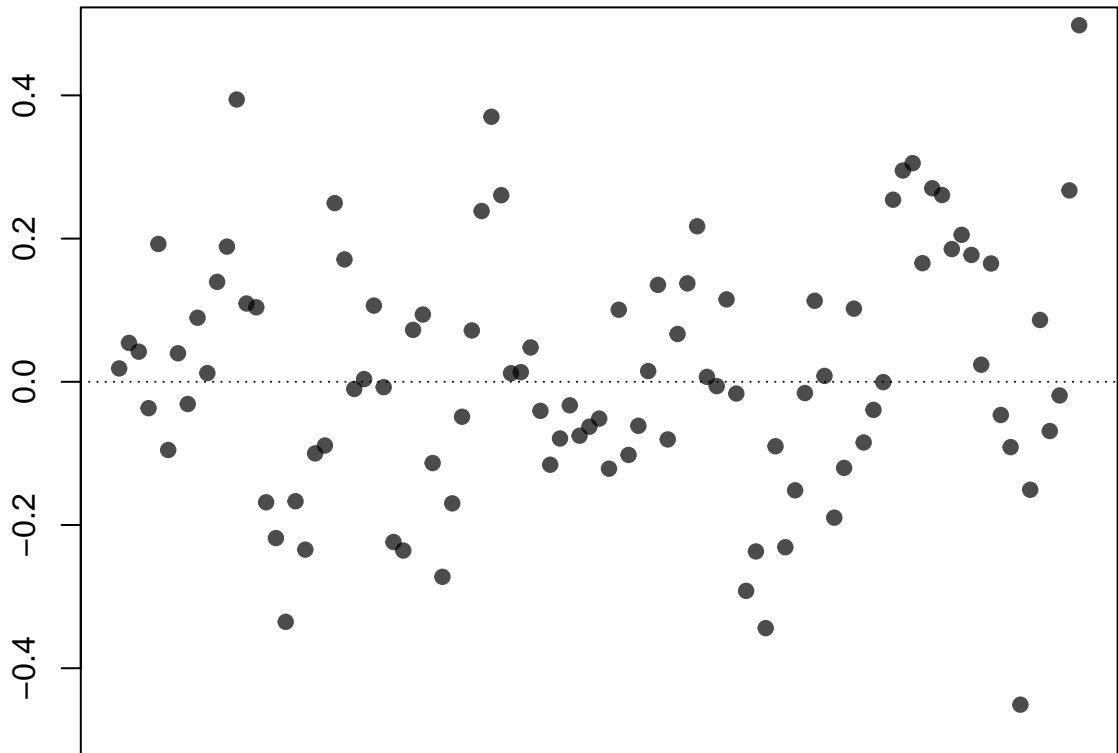
160

180

Year



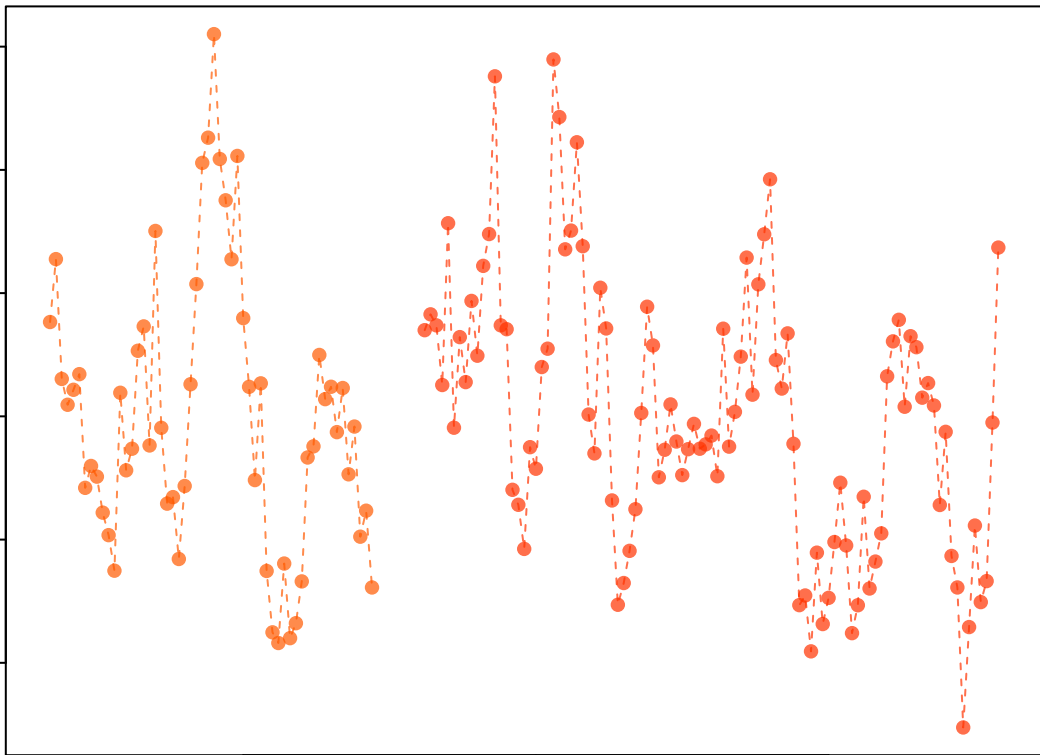
Deviation



Year

Standardized index

1.6  
1.4  
1.2  
1.0  
0.8  
0.6



50

100

150

Year

Age

○ 2 ○ 6 ○ 10

40

30

20

10

0

16

27

38

49

60

71

82

93

106

120

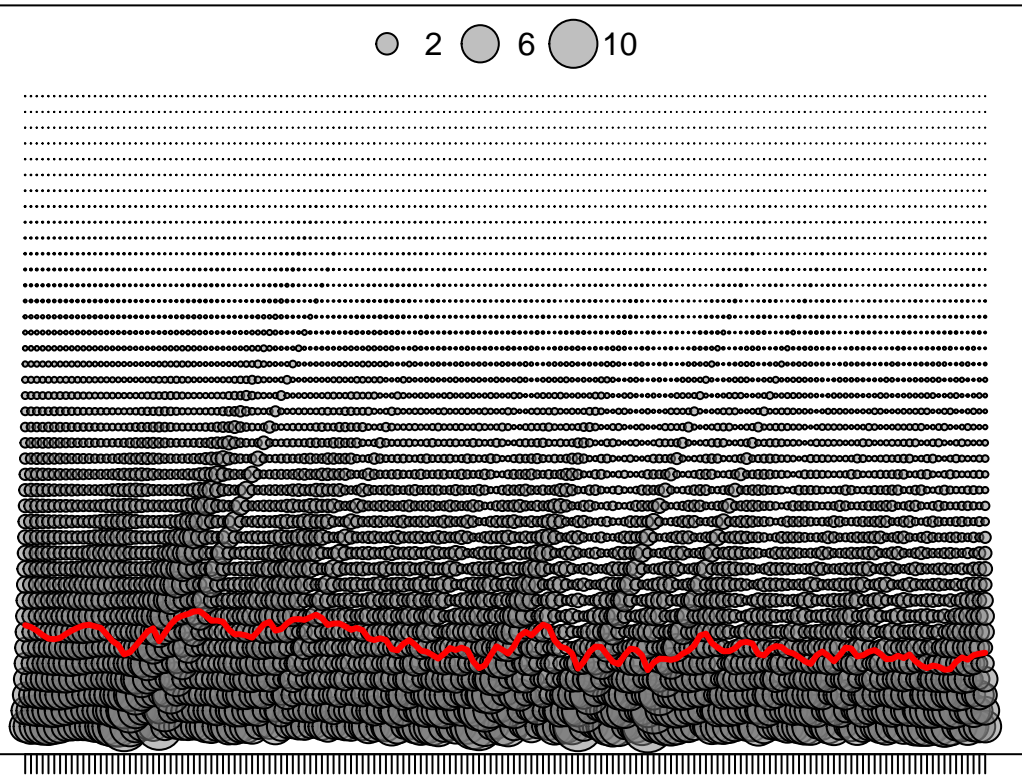
134

148

162

176

Year



Age

40

30

20

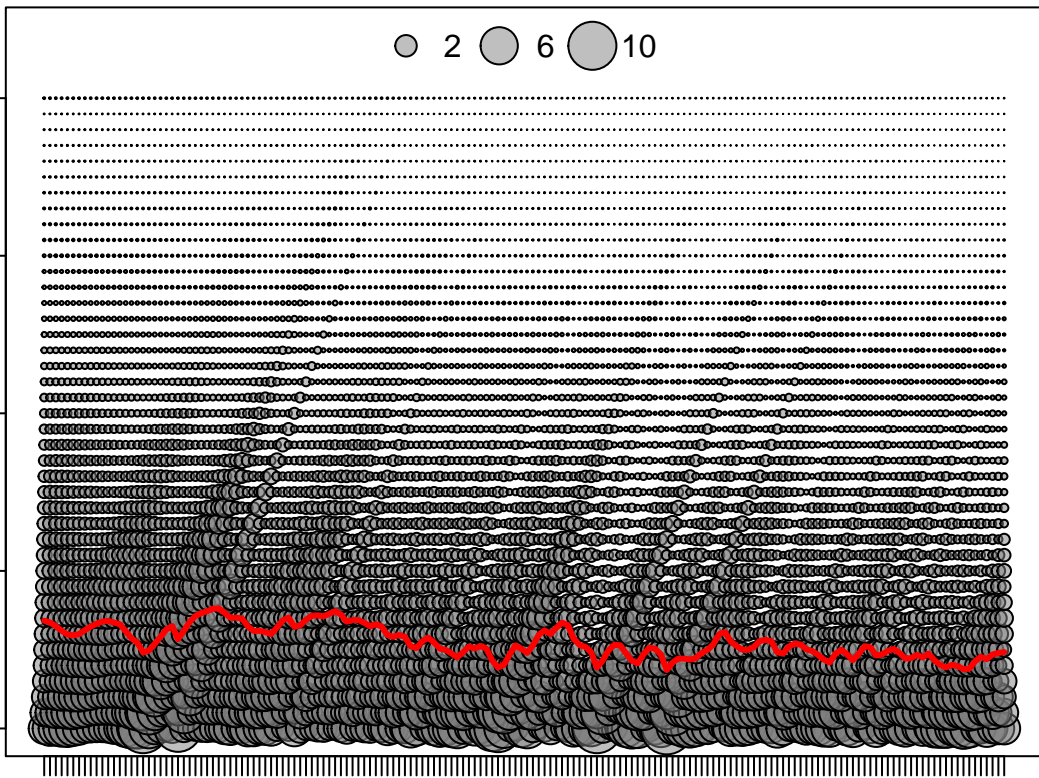
10

0

○ 2 ○ 6 ○ 10

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

Year



Mean age (yr)

6

4

2

0

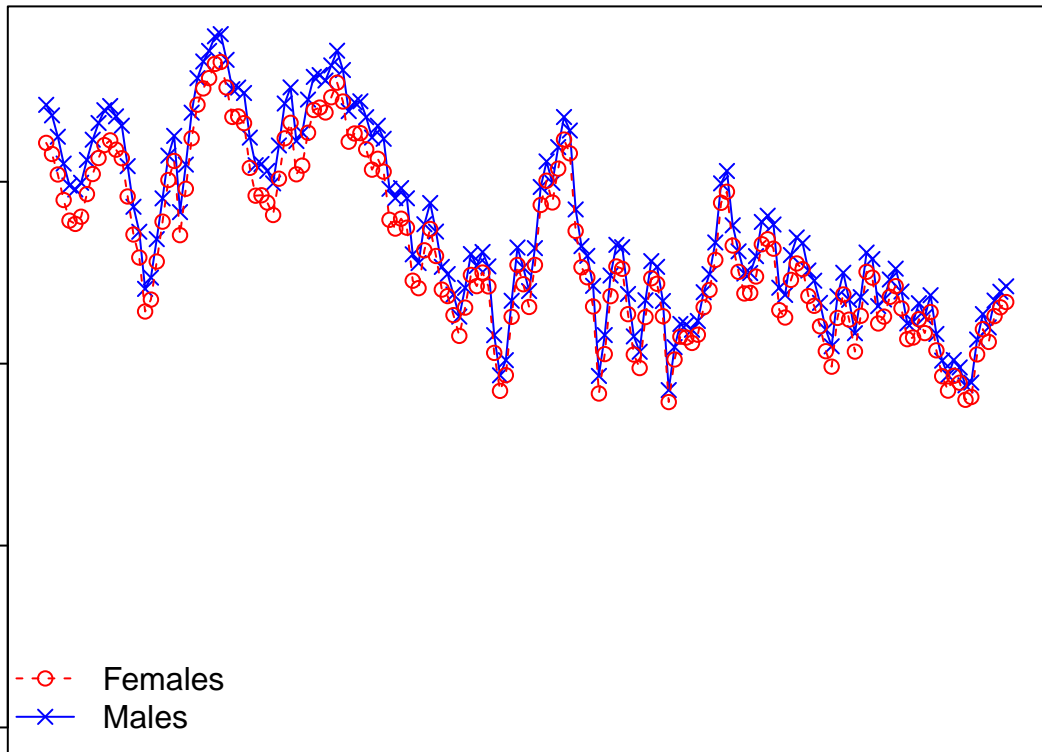
-o- Females  
-x- Males

50

100

150

Year



Age

40

30

20

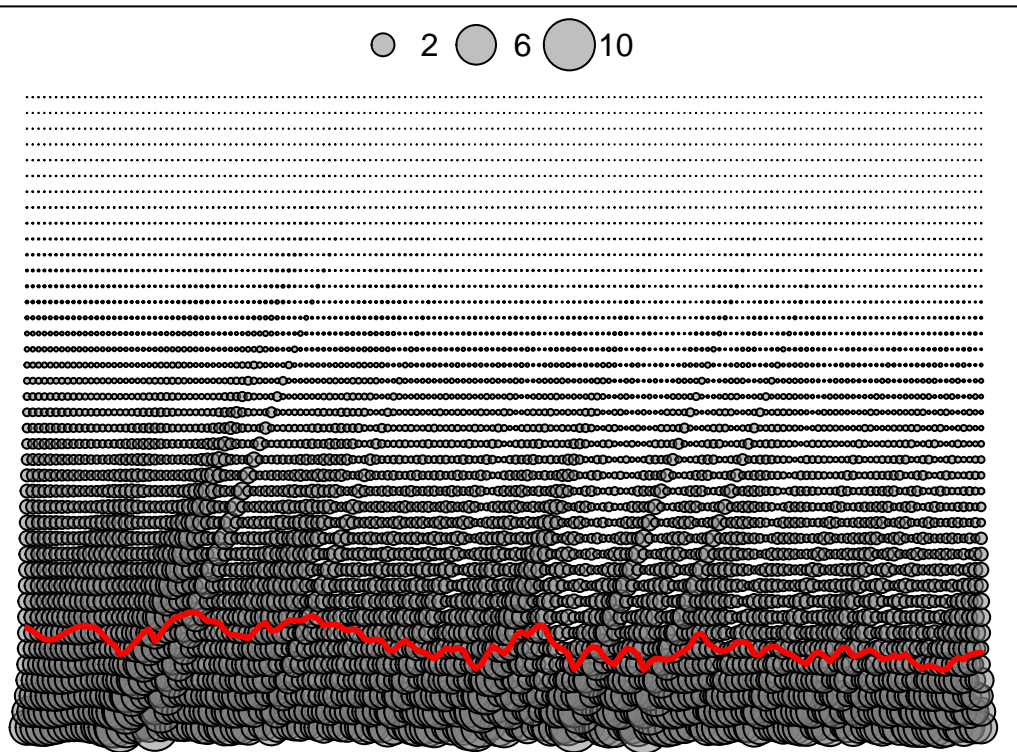
10

0

○ 2   ○ 6   ○ 10

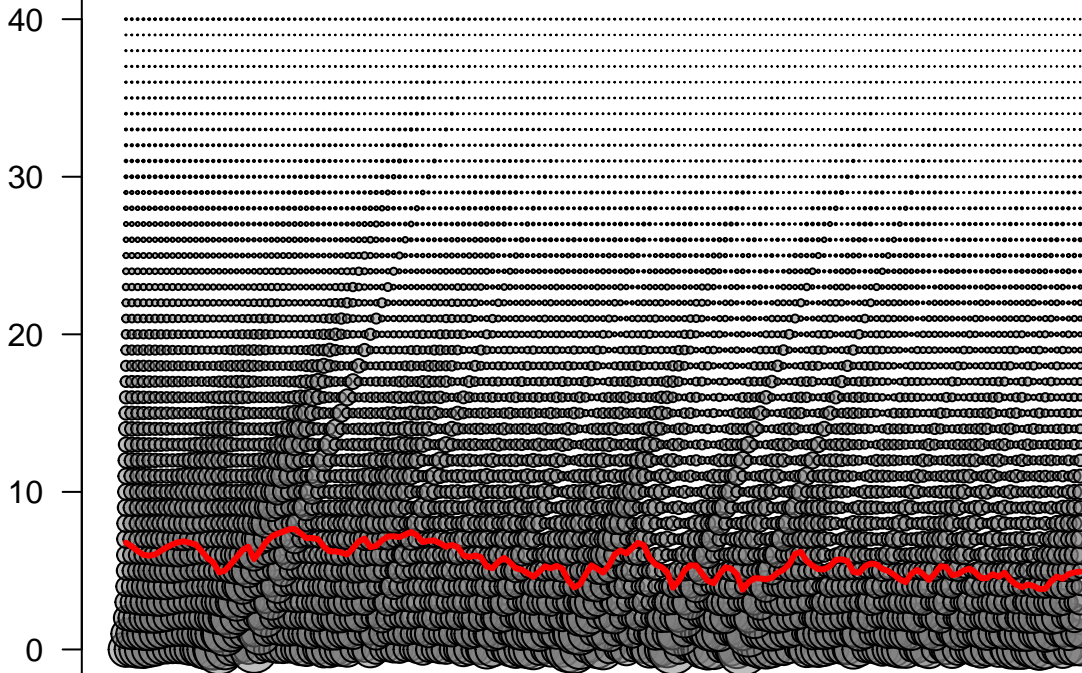
16 27 38 49 60 71 82 93 106 120 134 148 162 176

Year



Age

○ 2 ○ 6 ○ 10



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

Year

Mean age (yr)

6

4

2

0

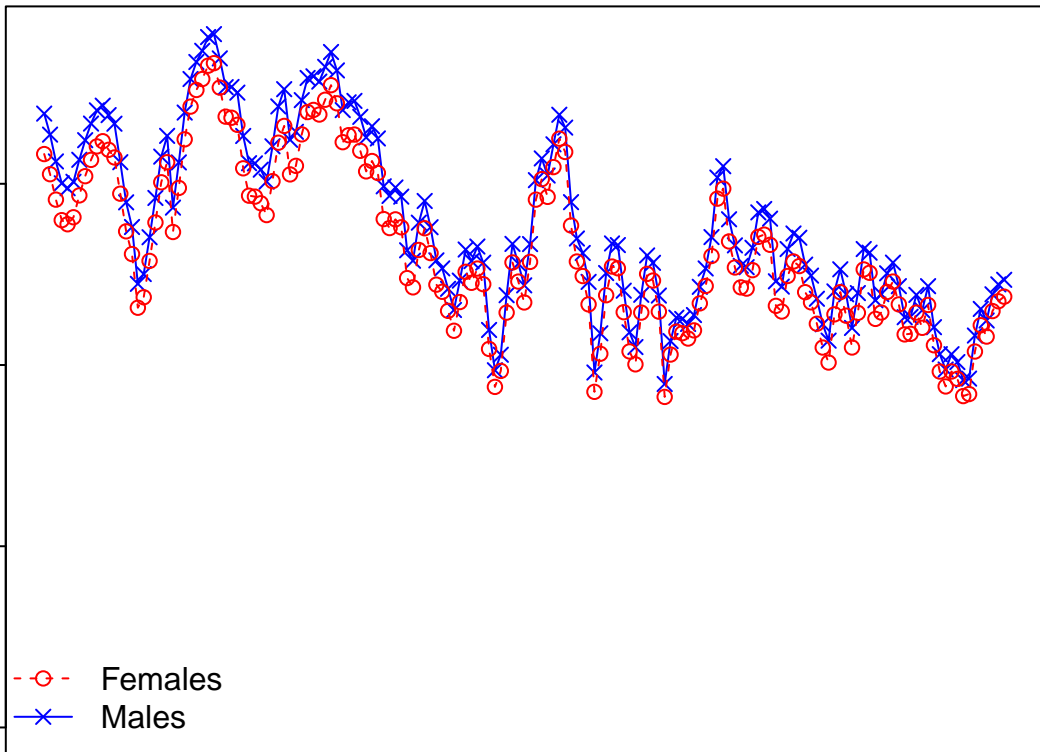
-o- Females  
-x- Males

50

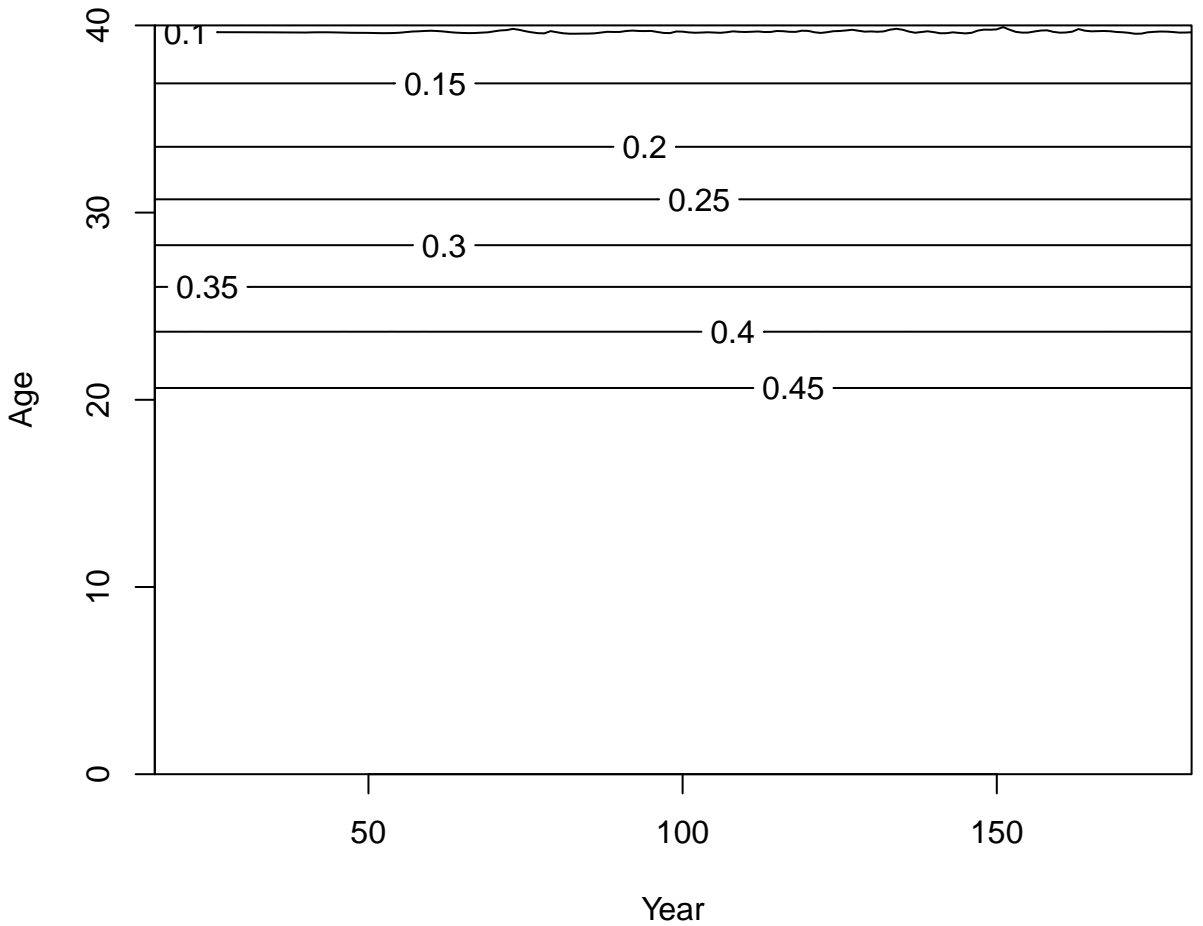
100

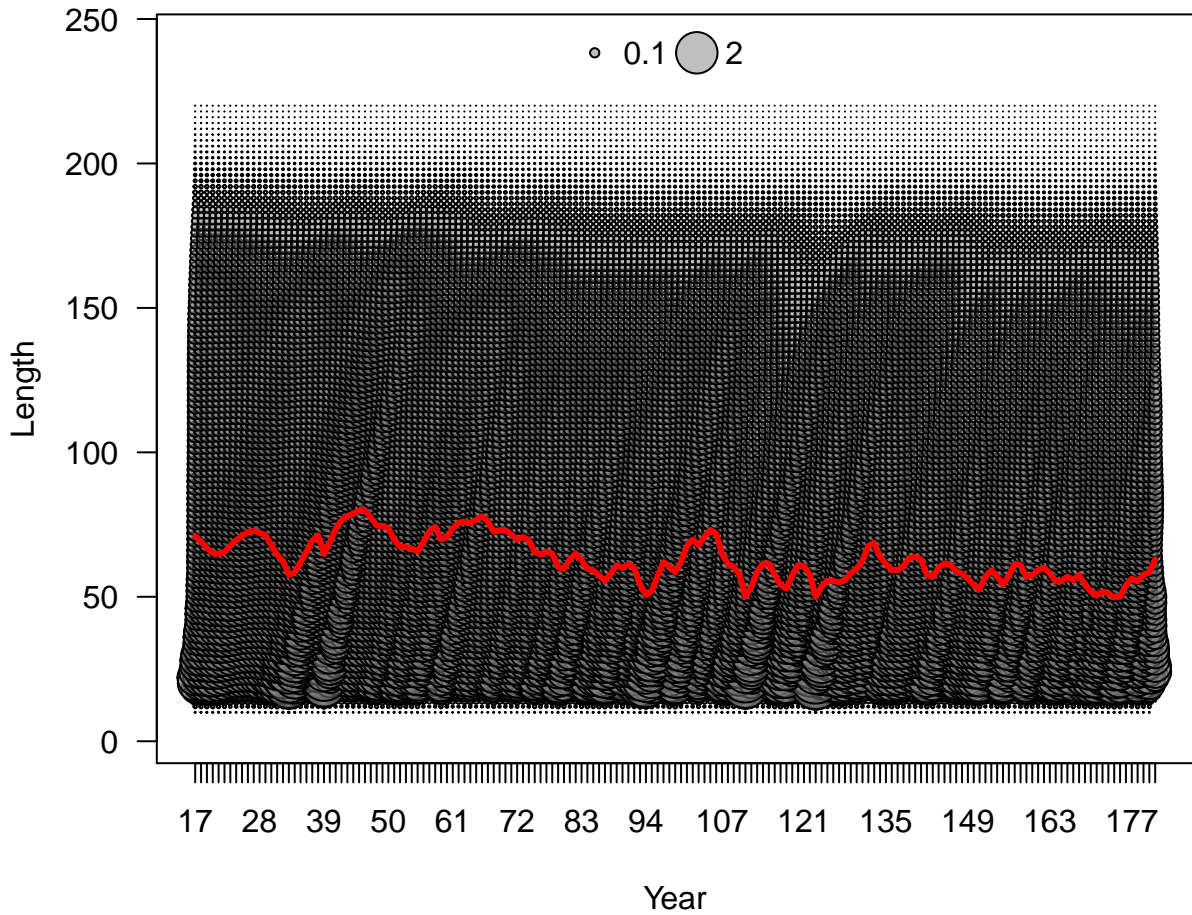
150

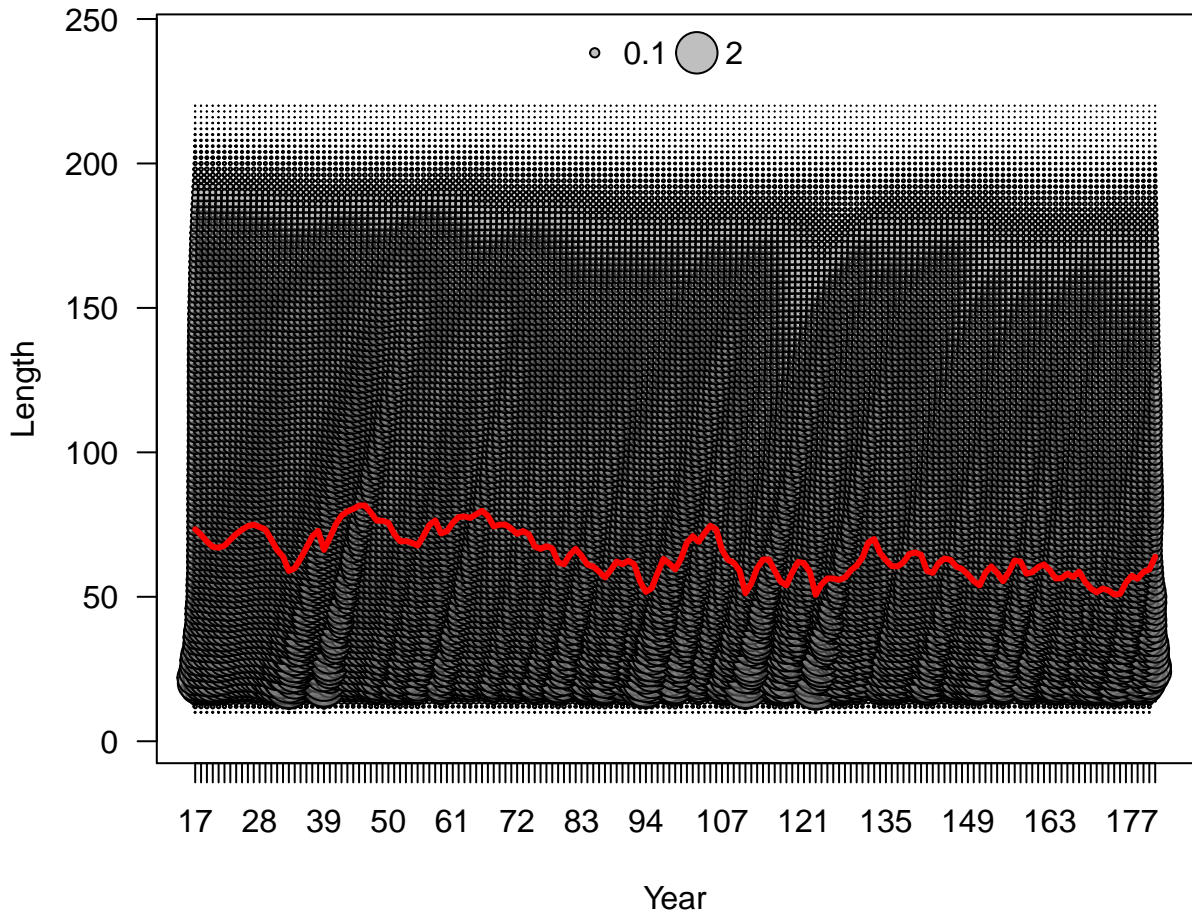
Year

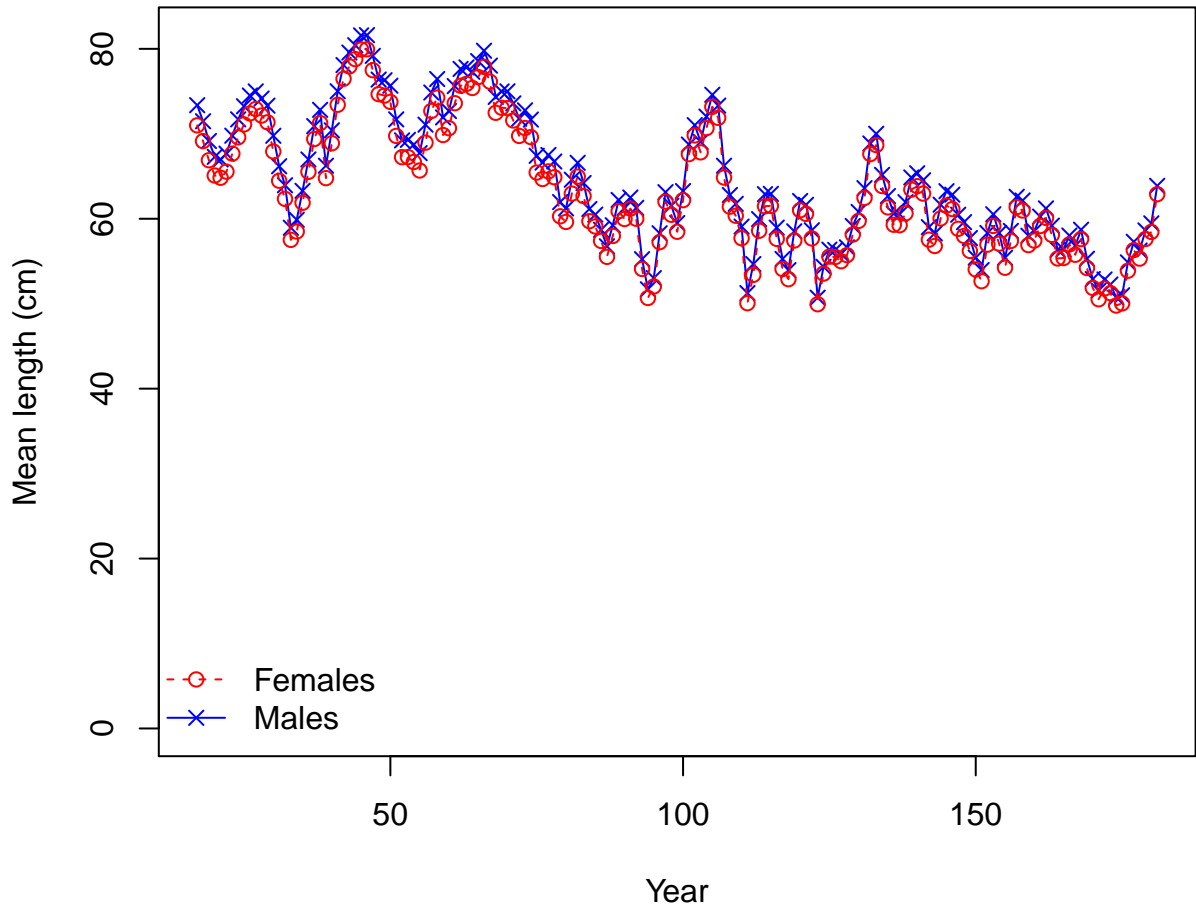


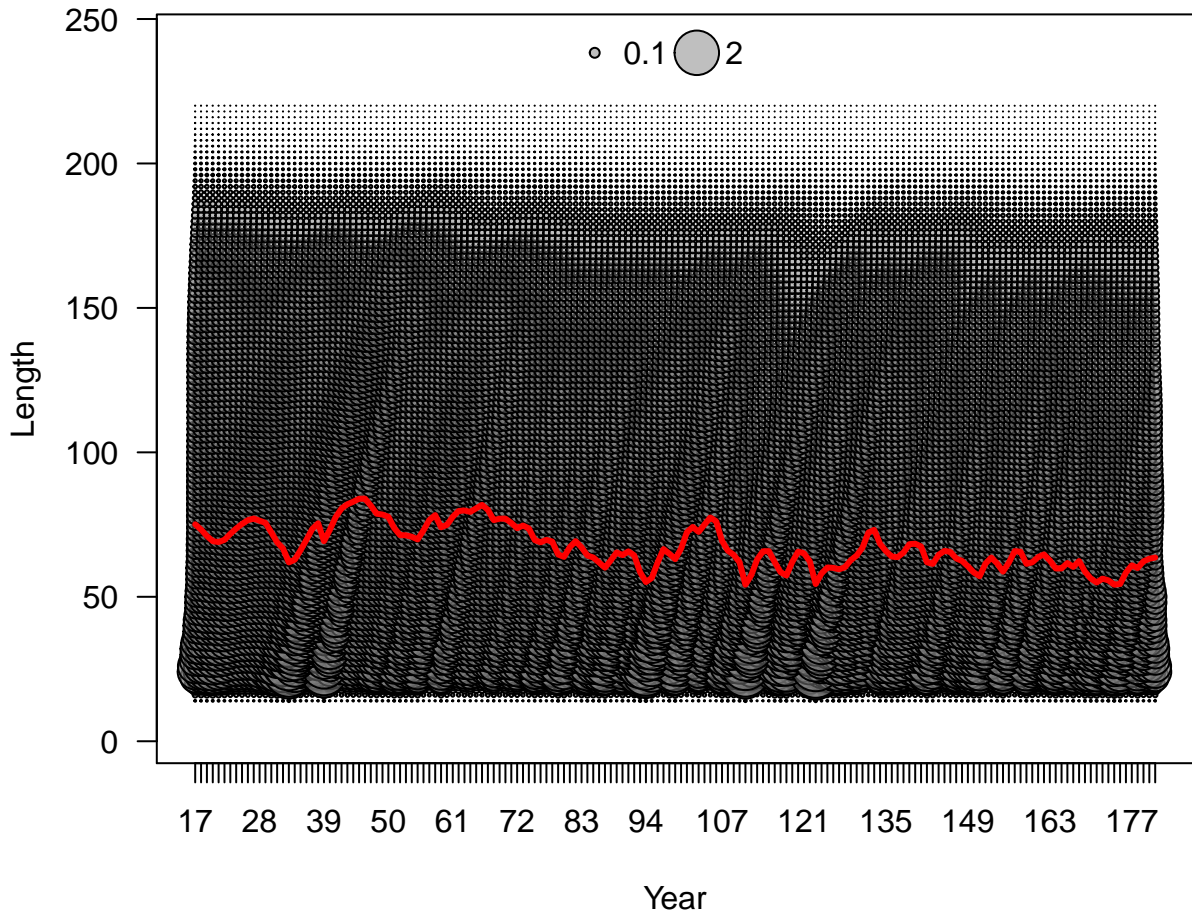




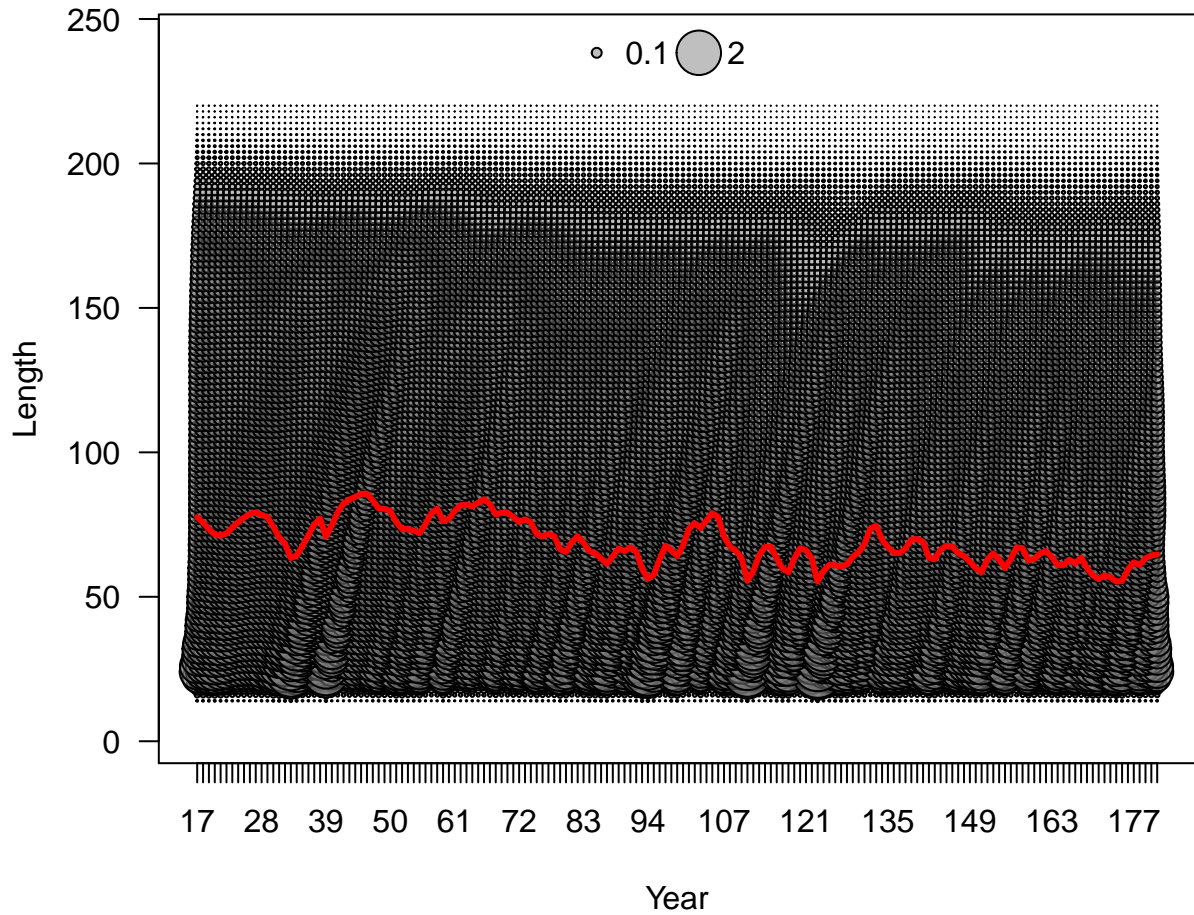


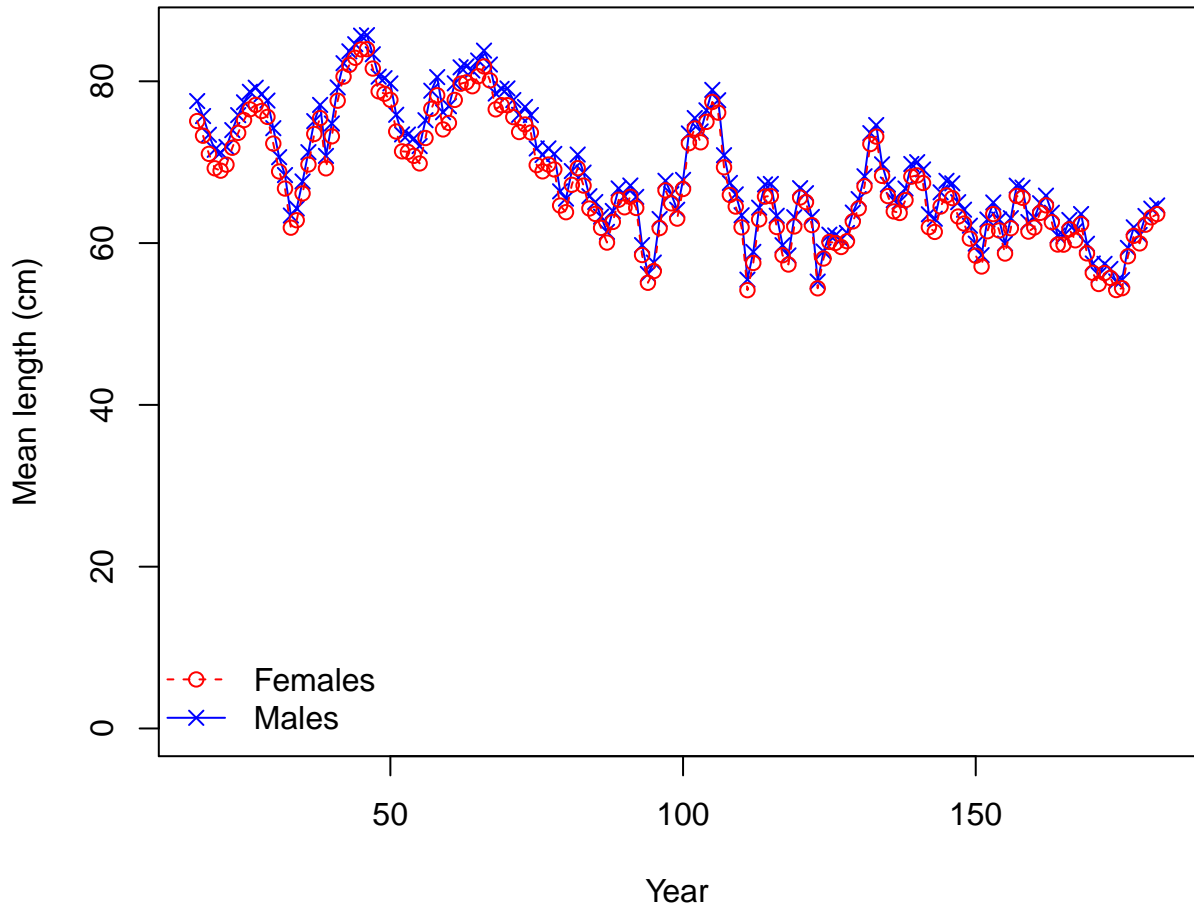




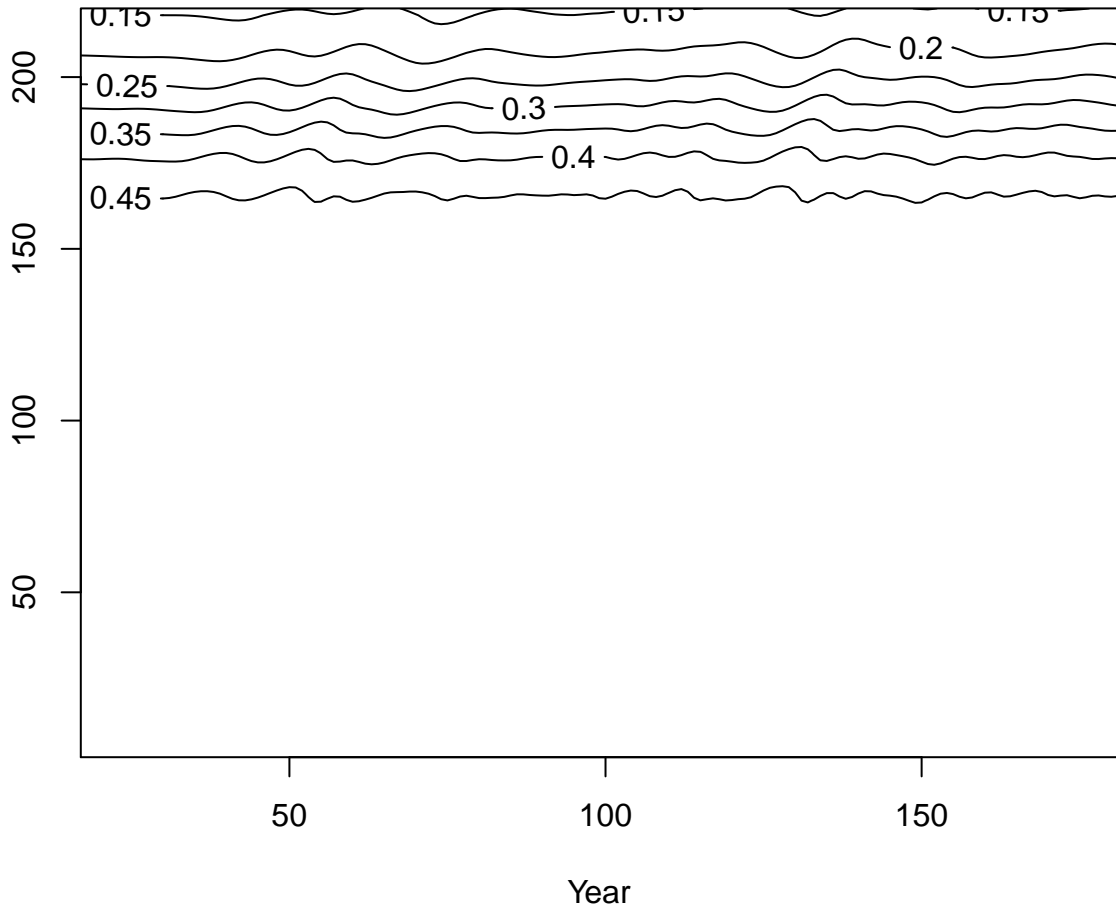




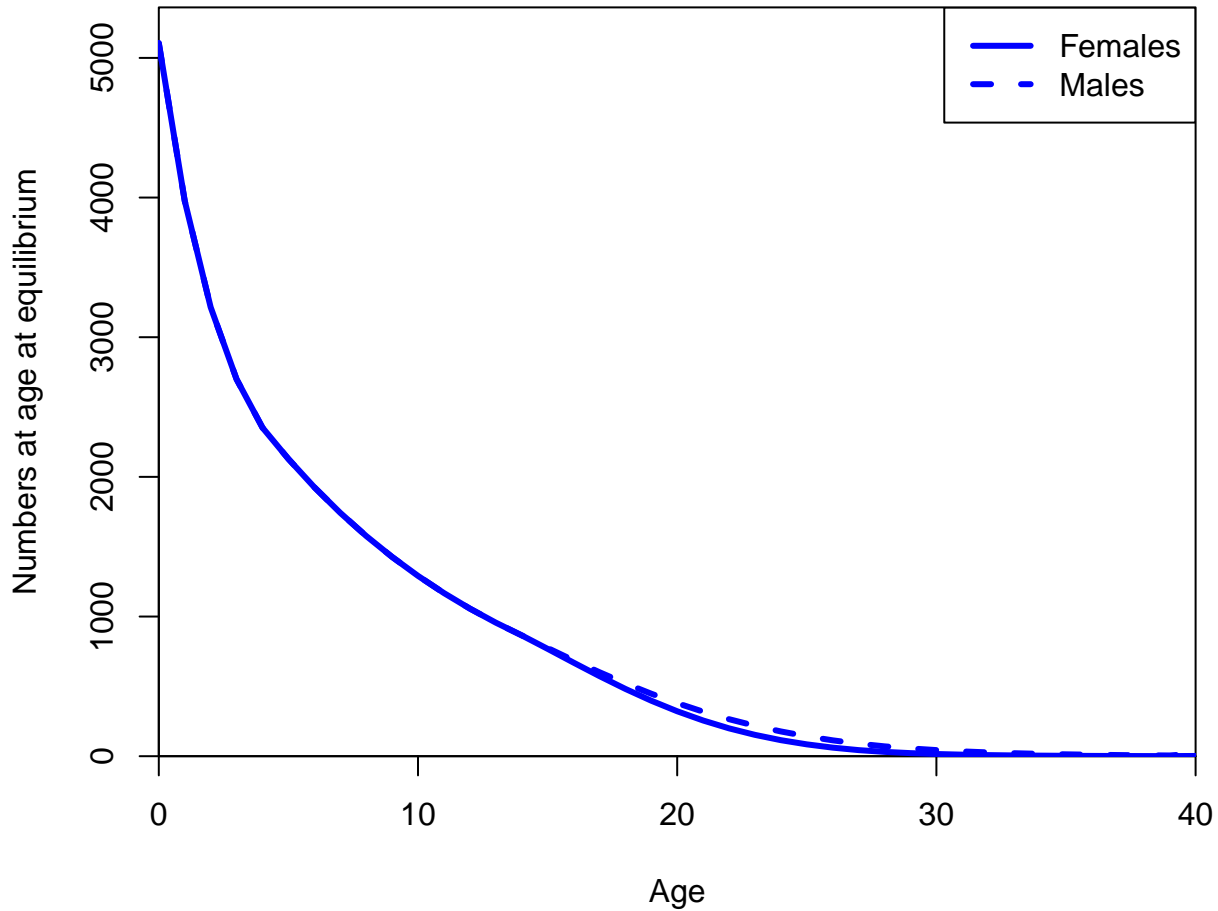


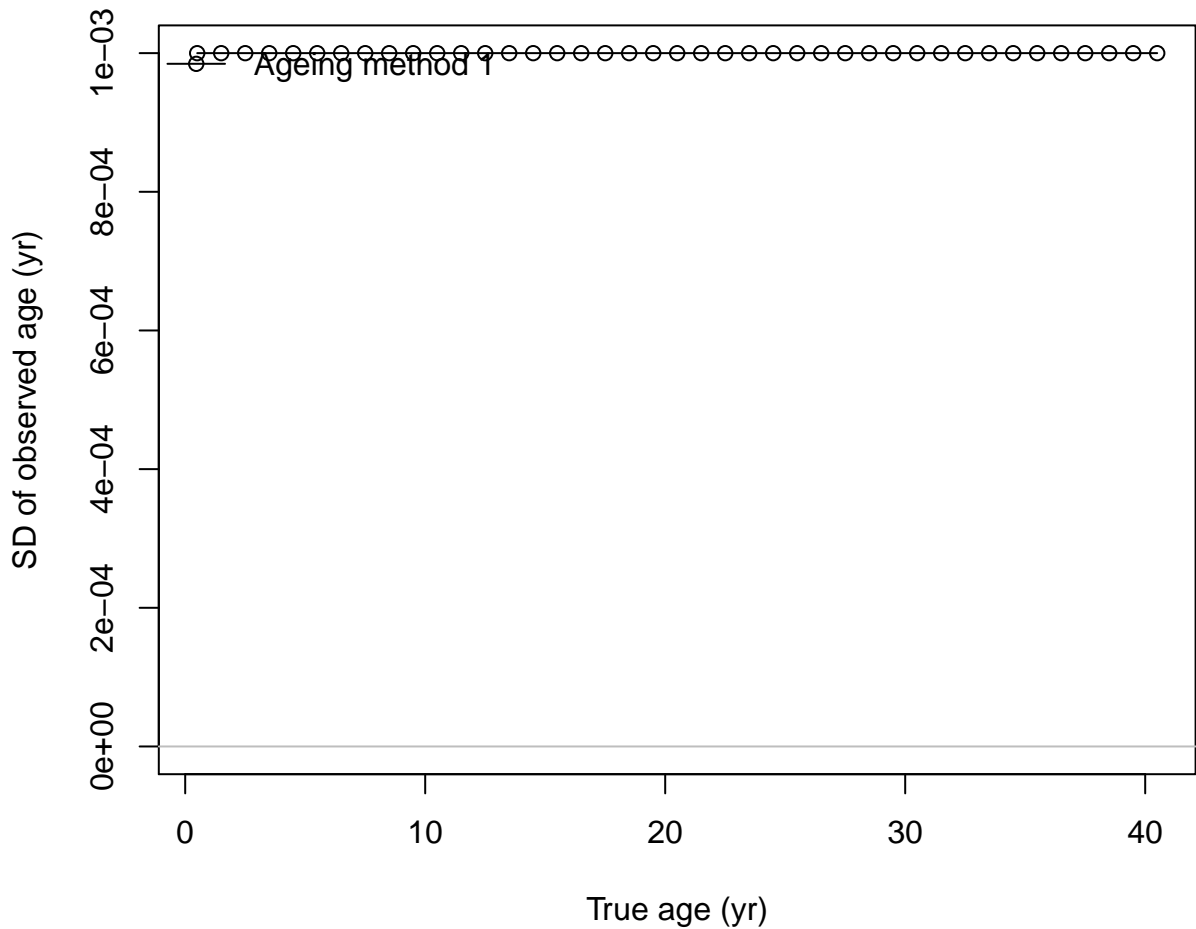


Length

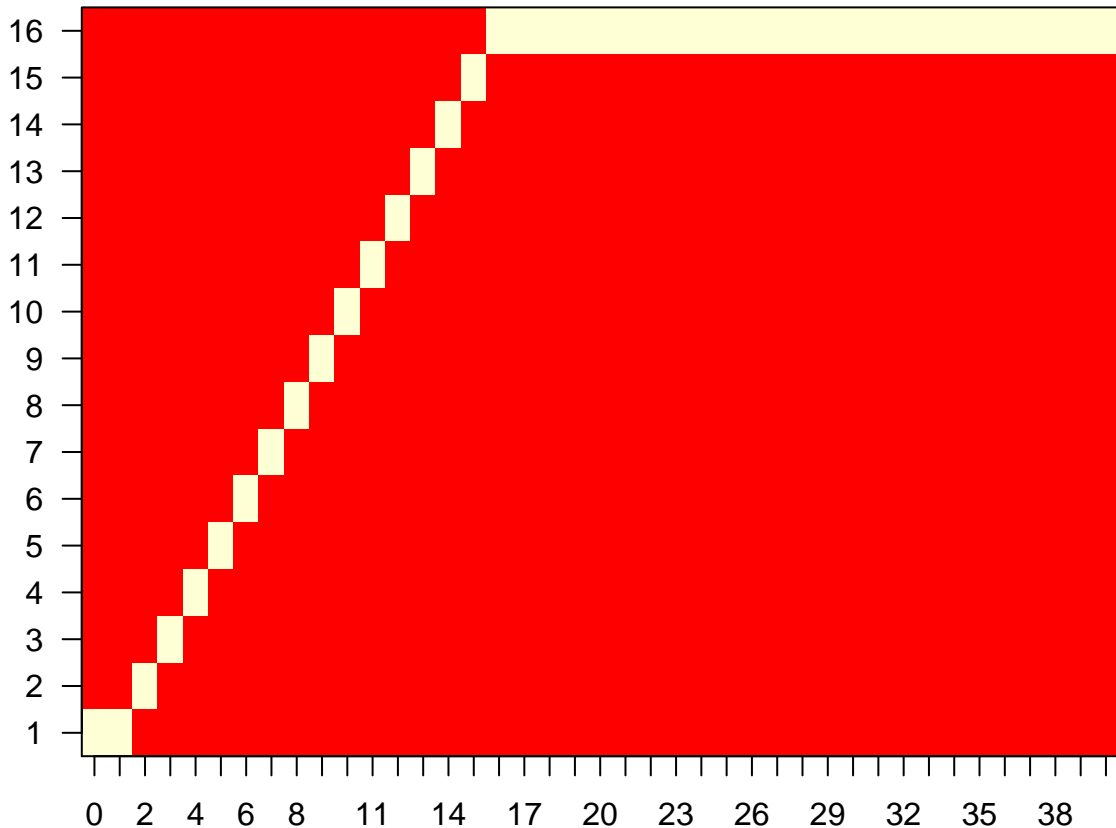






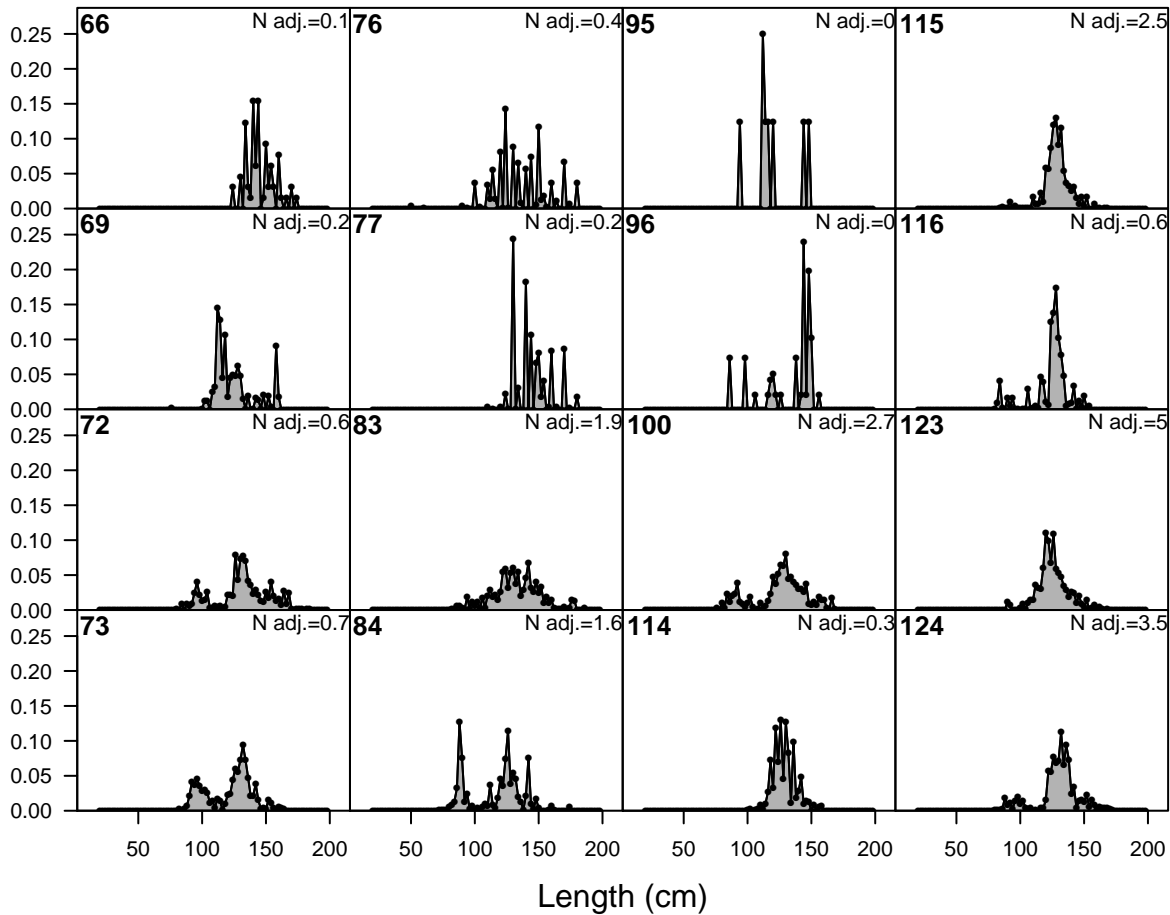


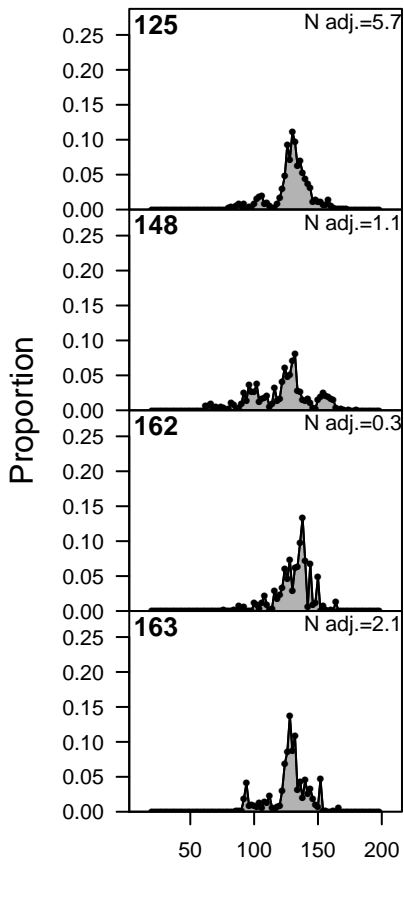
Observed age (yr)



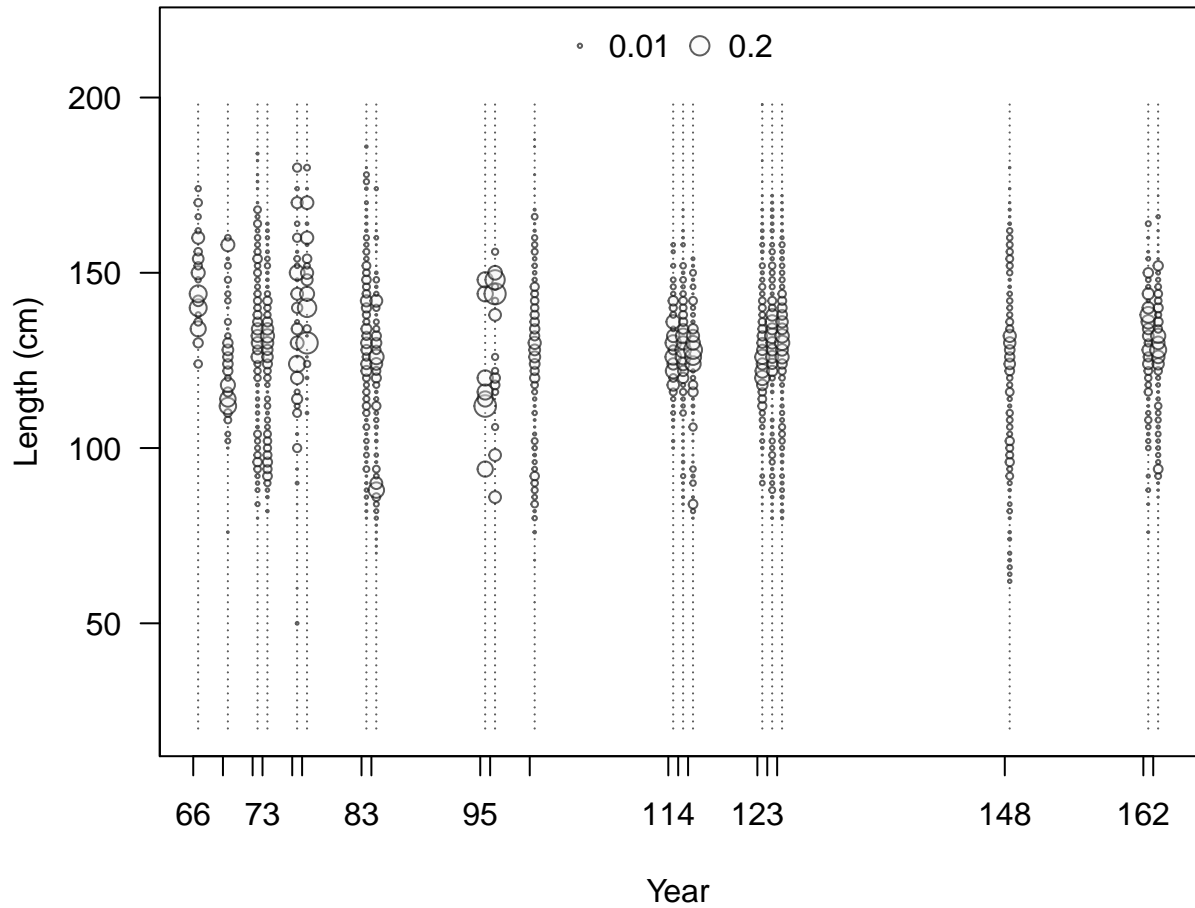
True age (yr)

Proportion

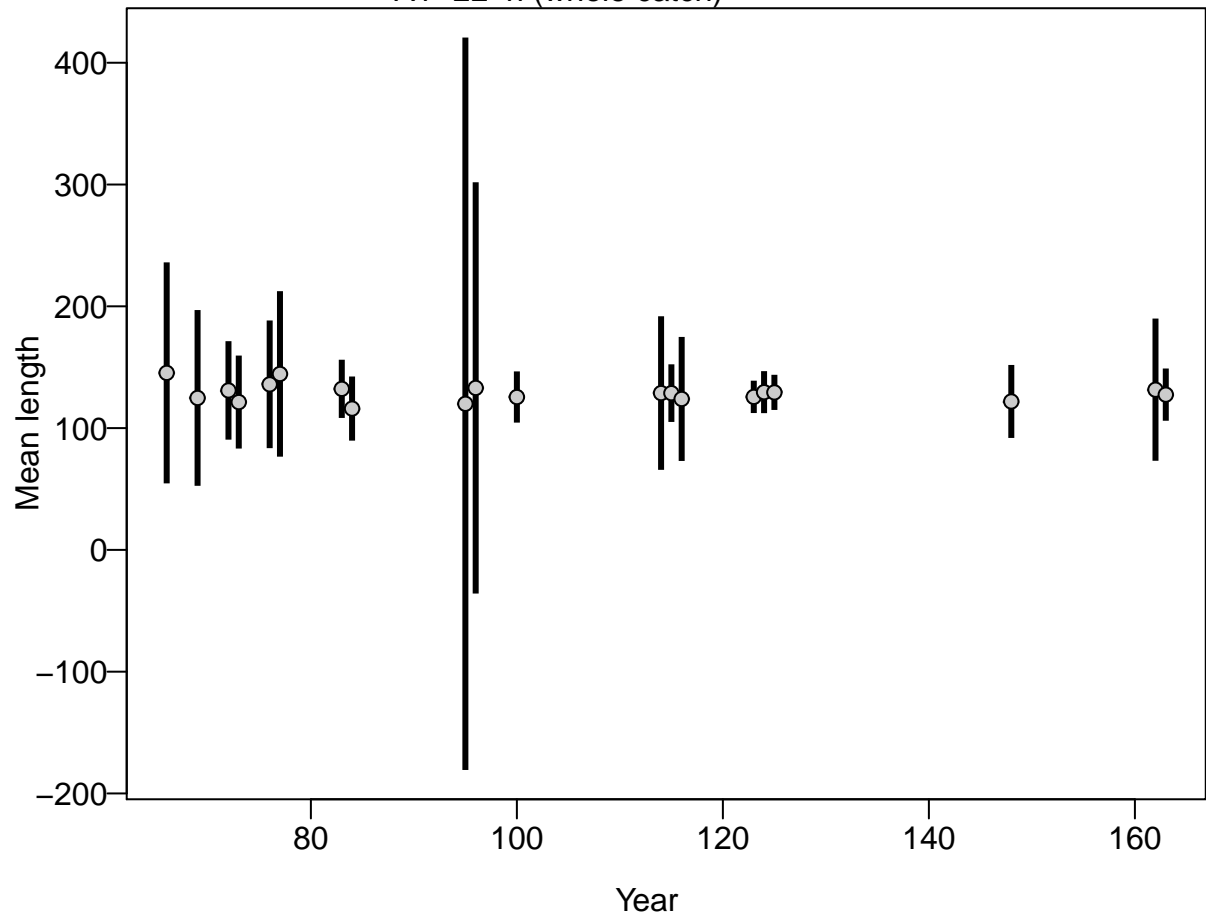




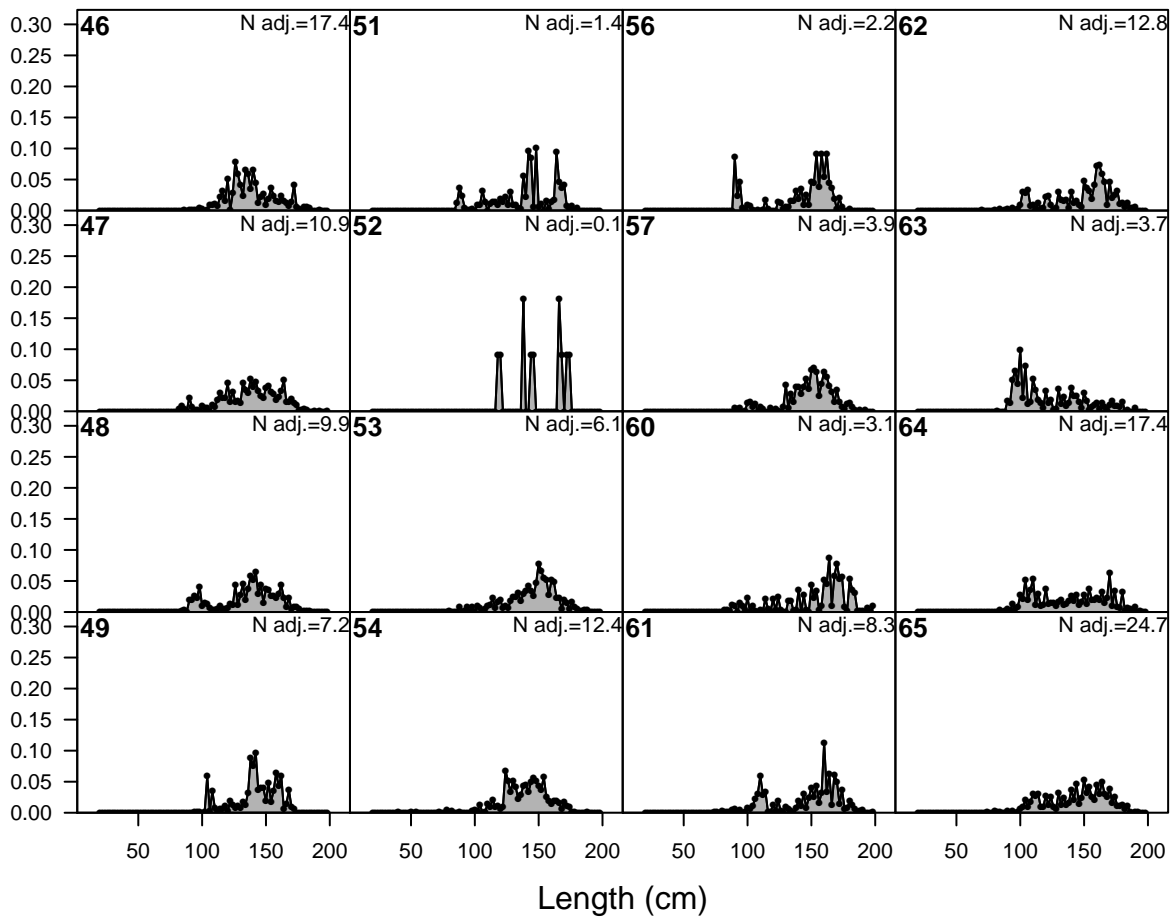
Length (cm)



A1-LL-n (whole catch)

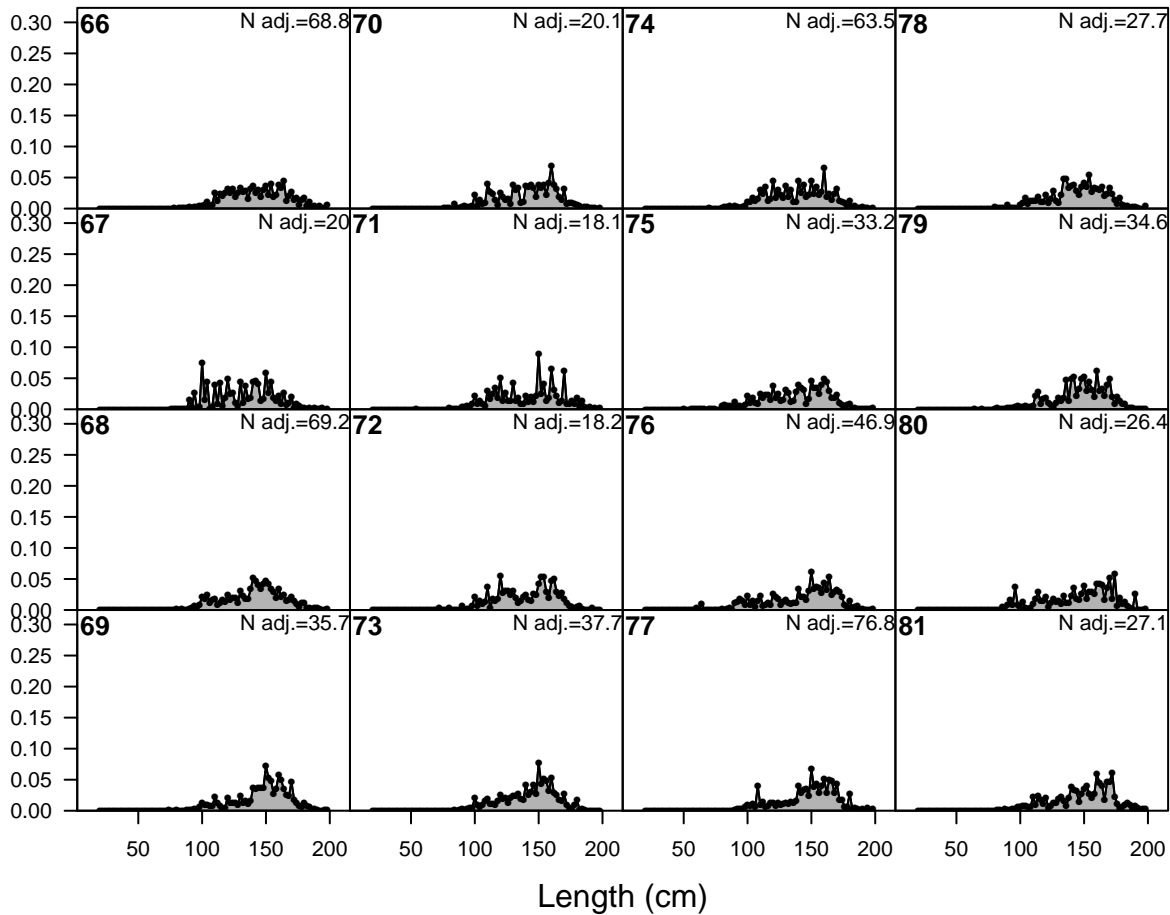


Proportion

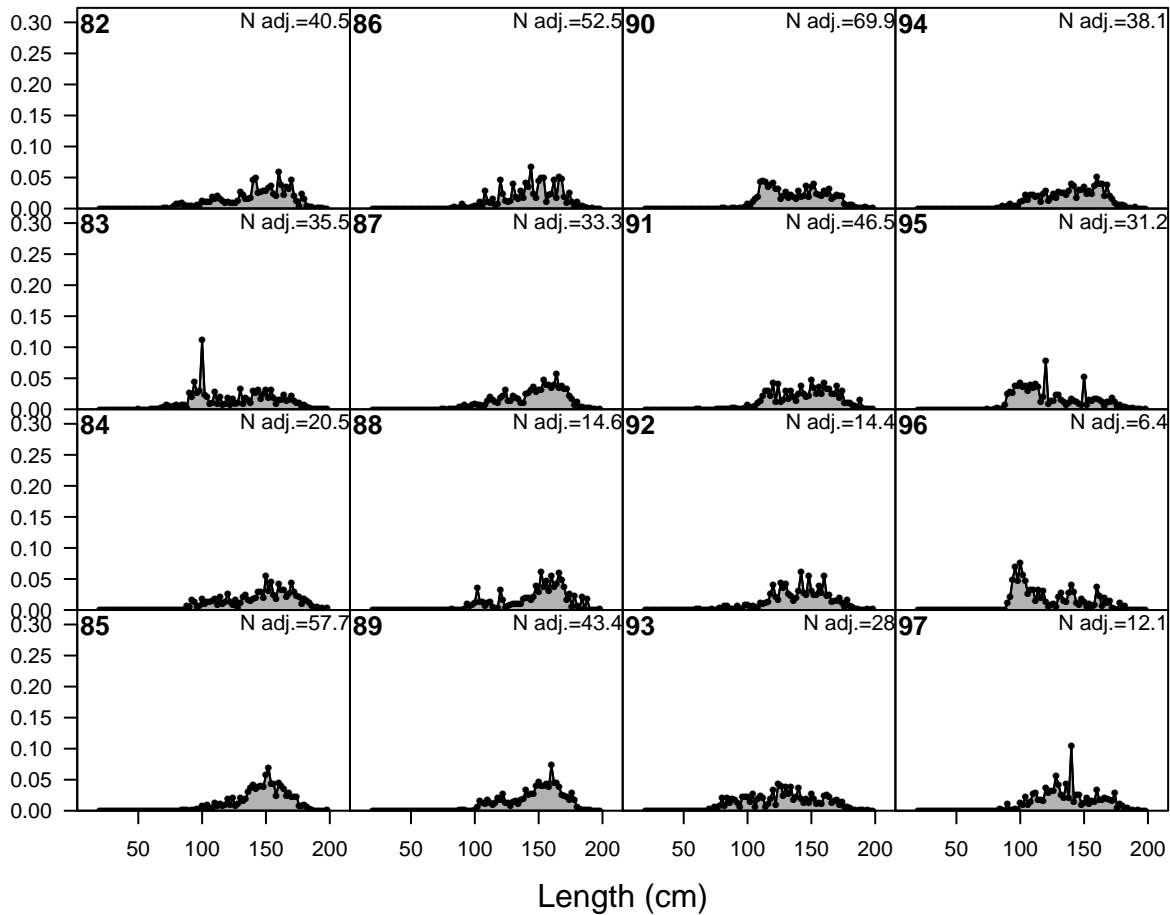




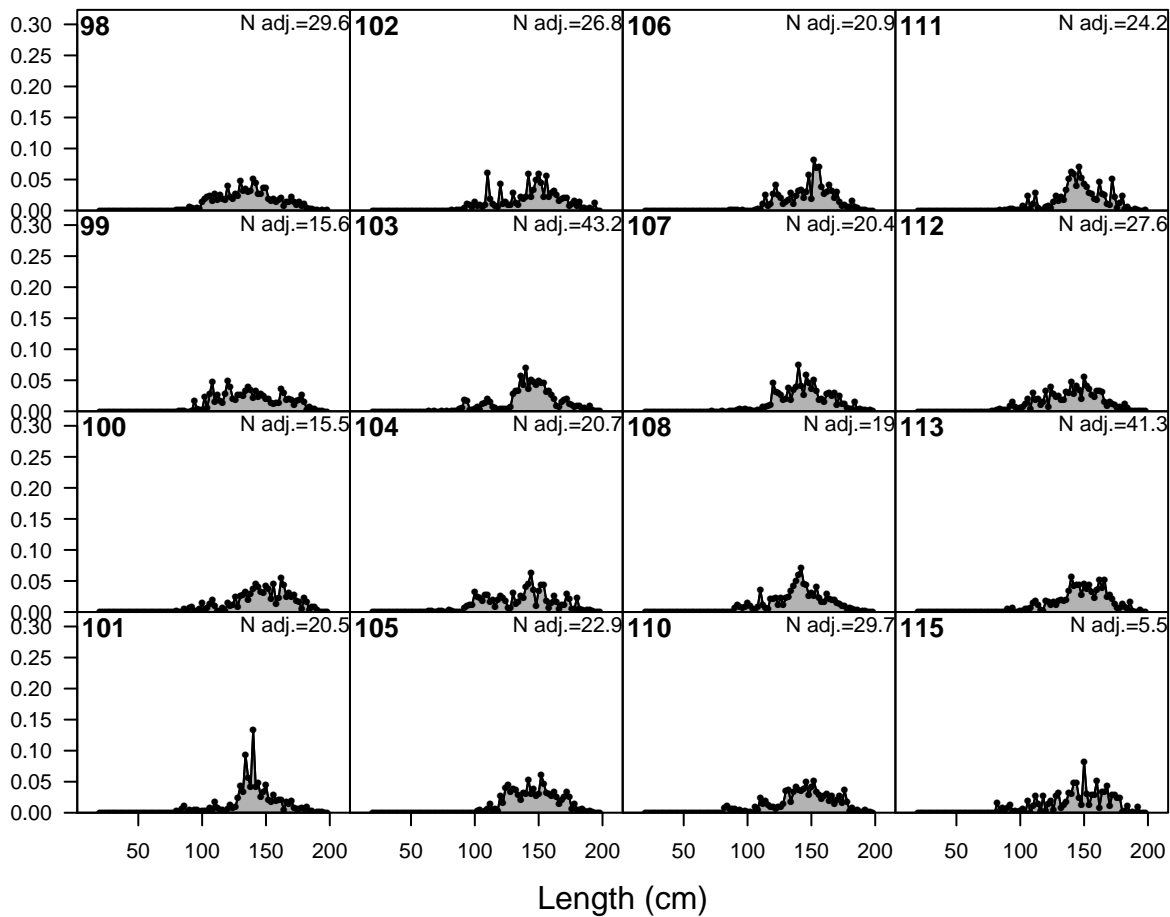
Proportion



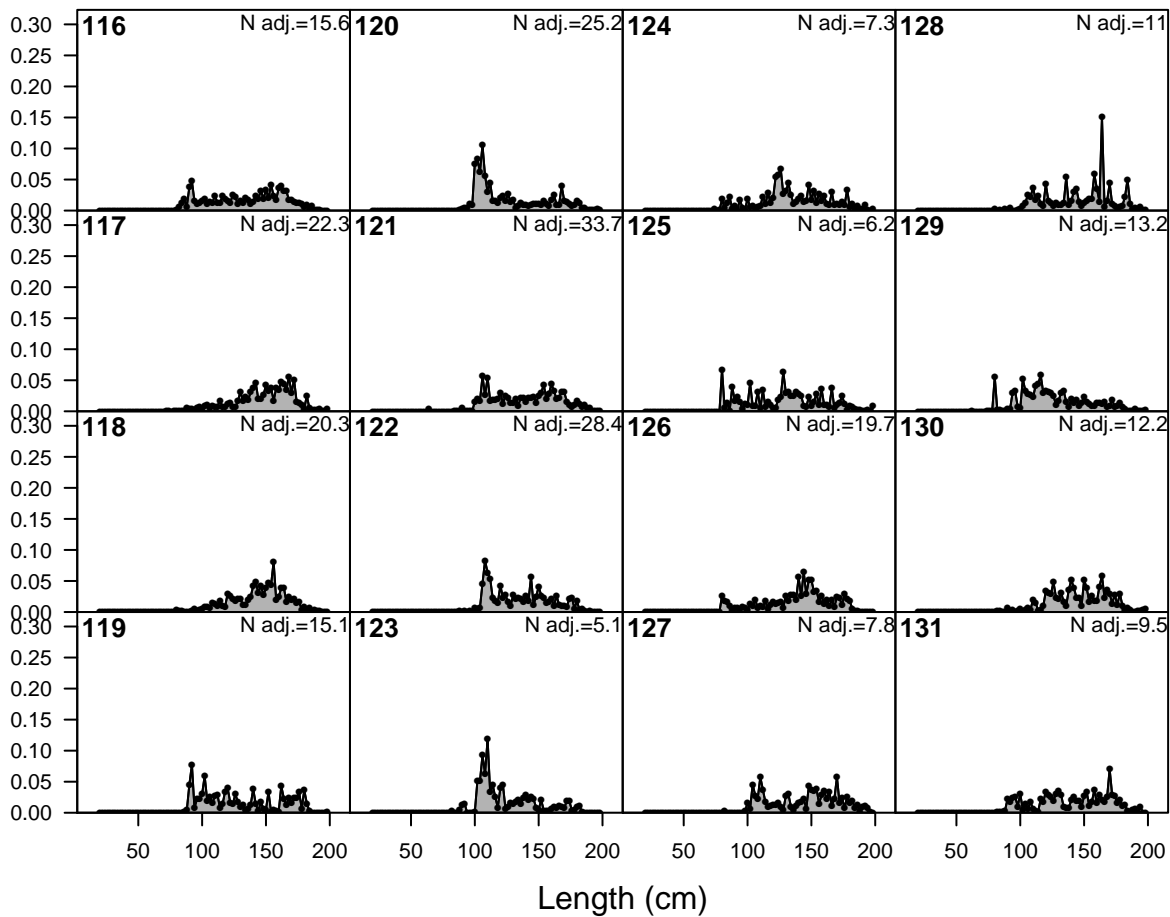
Proportion



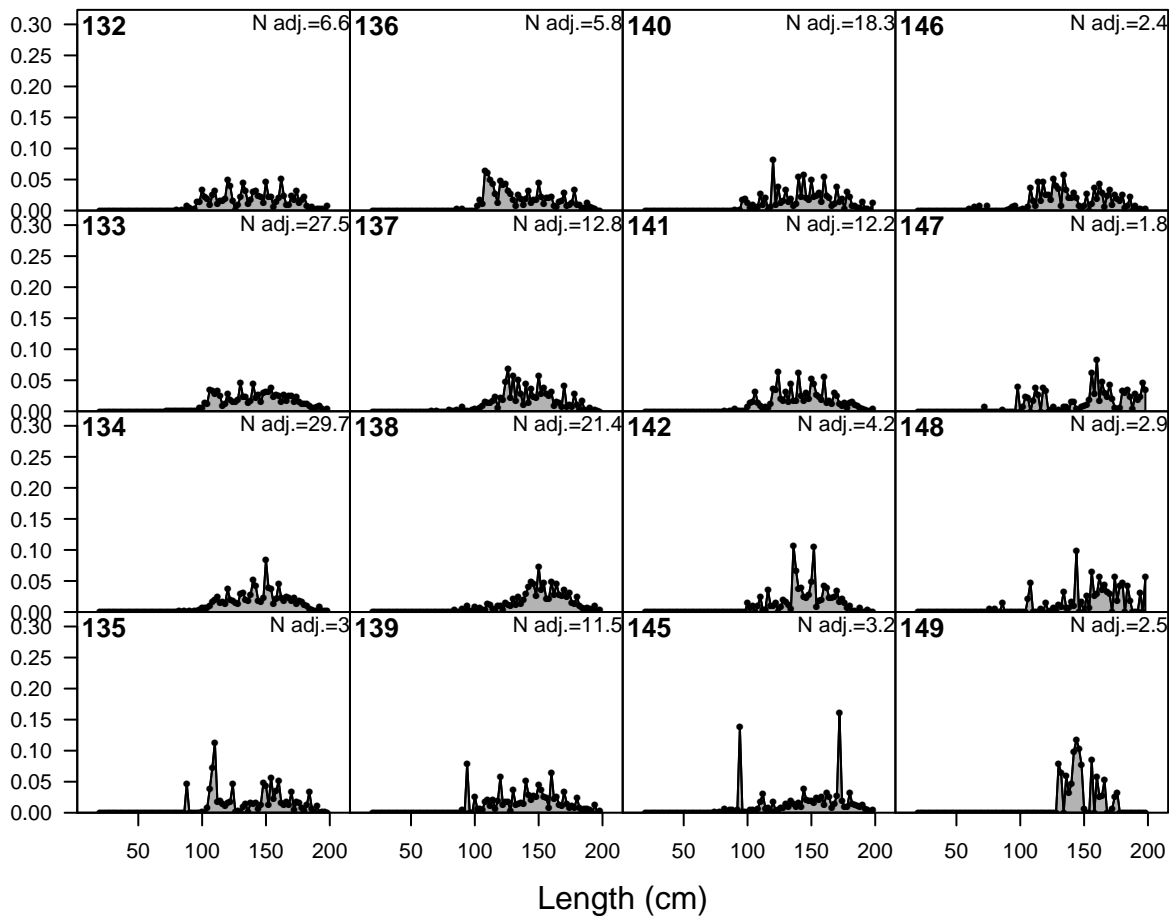
Proportion



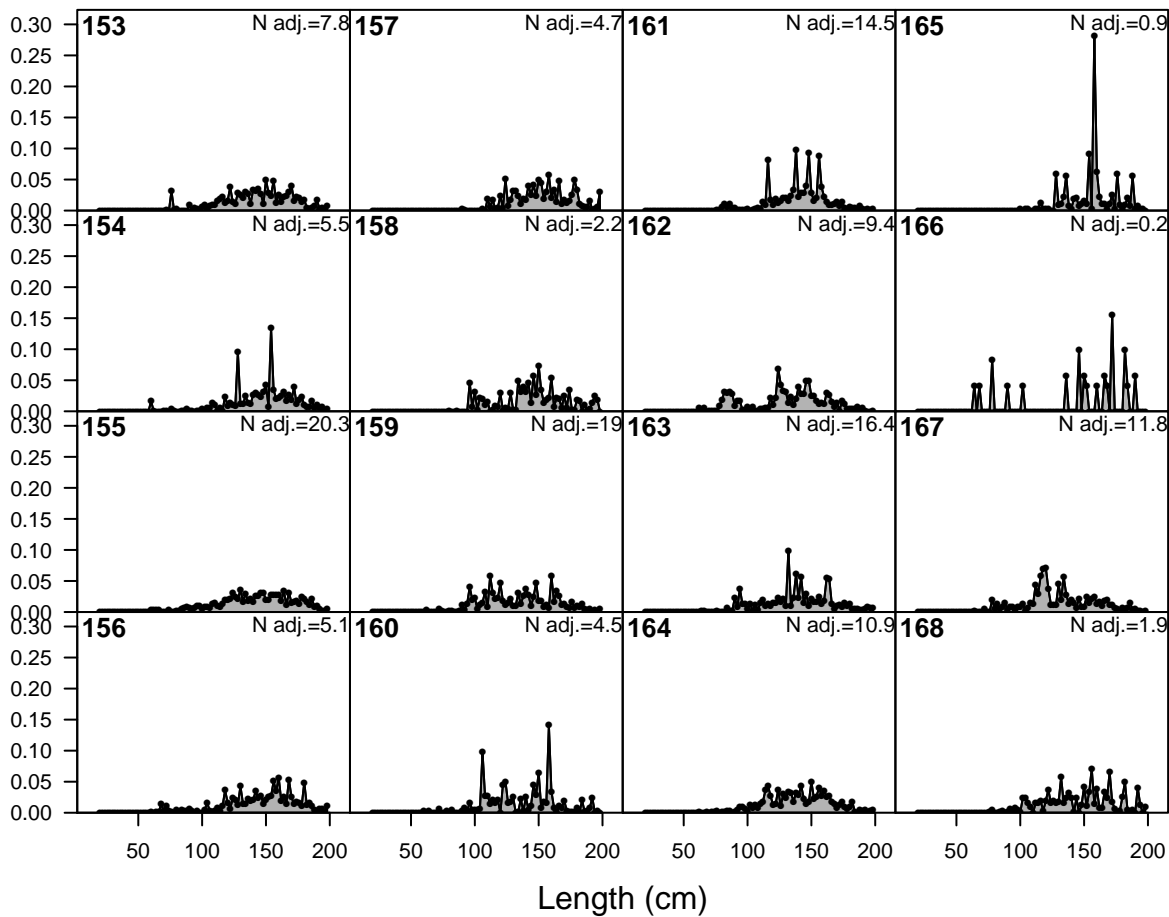
Proportion



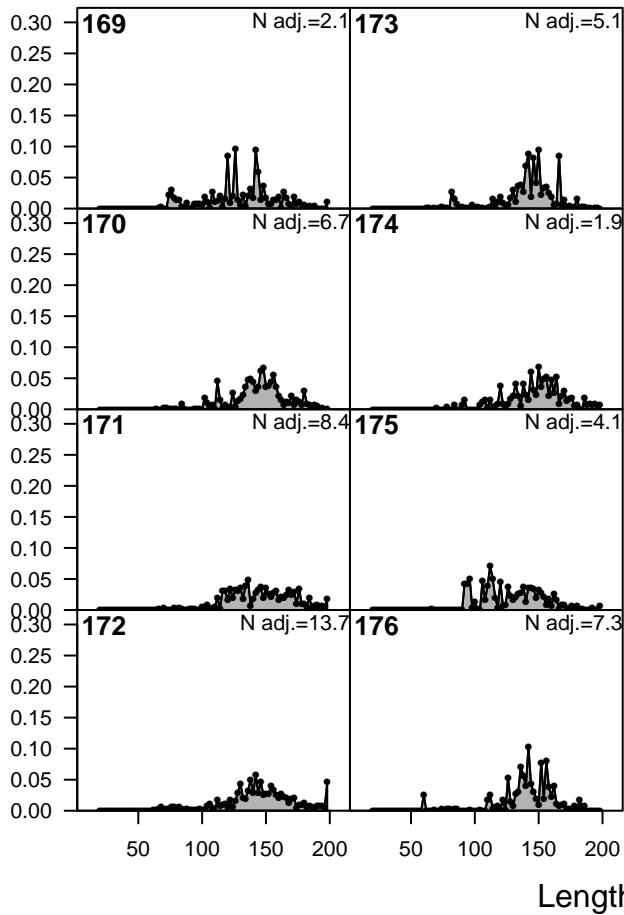
Proportion

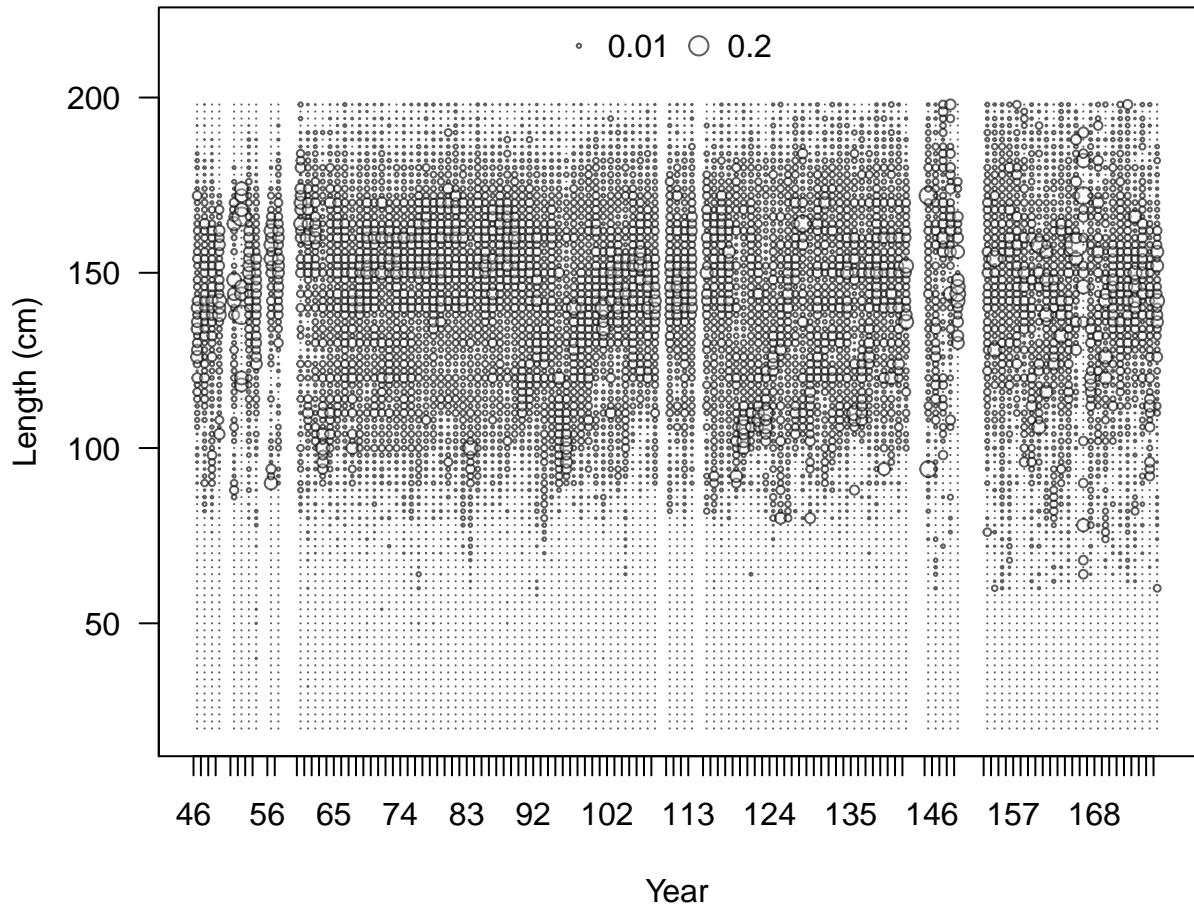


Proportion



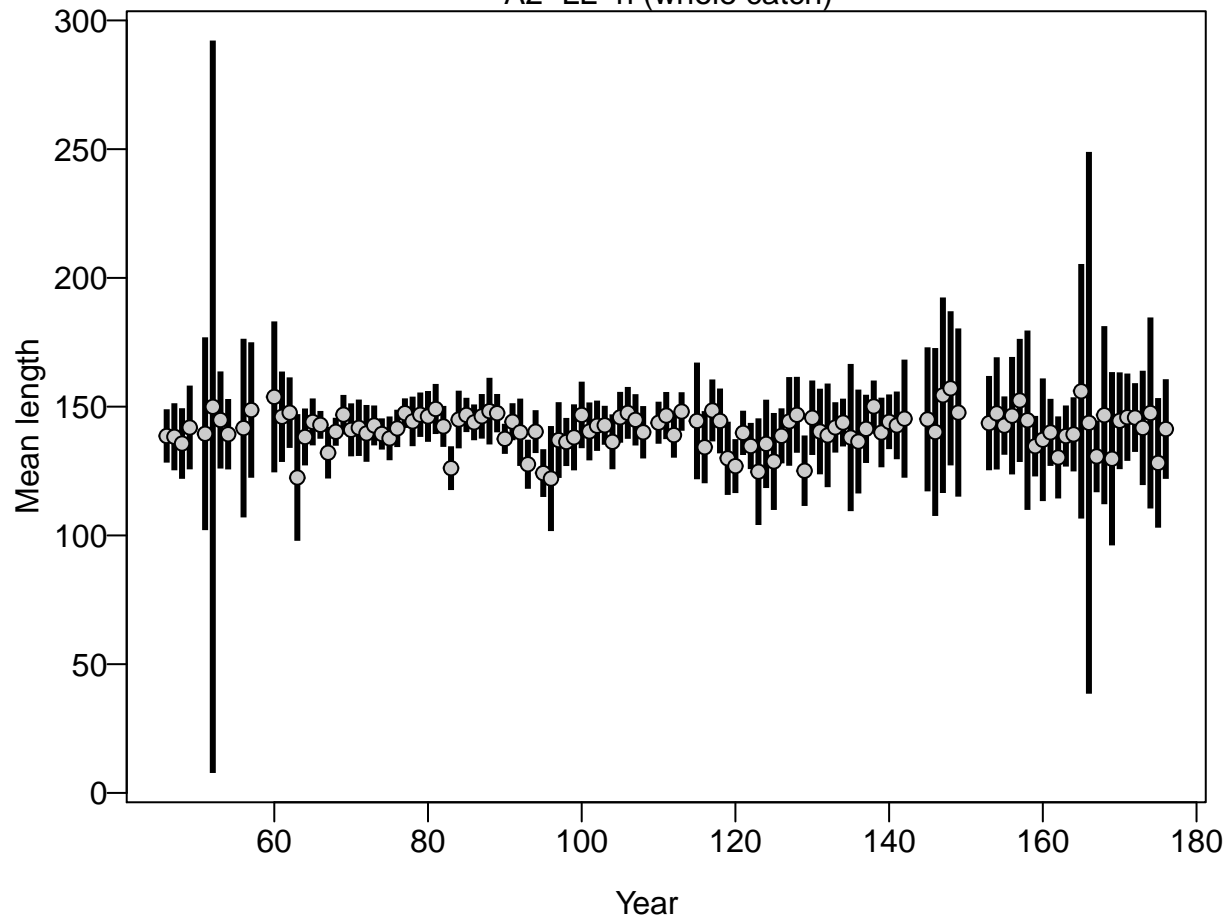
Proportion



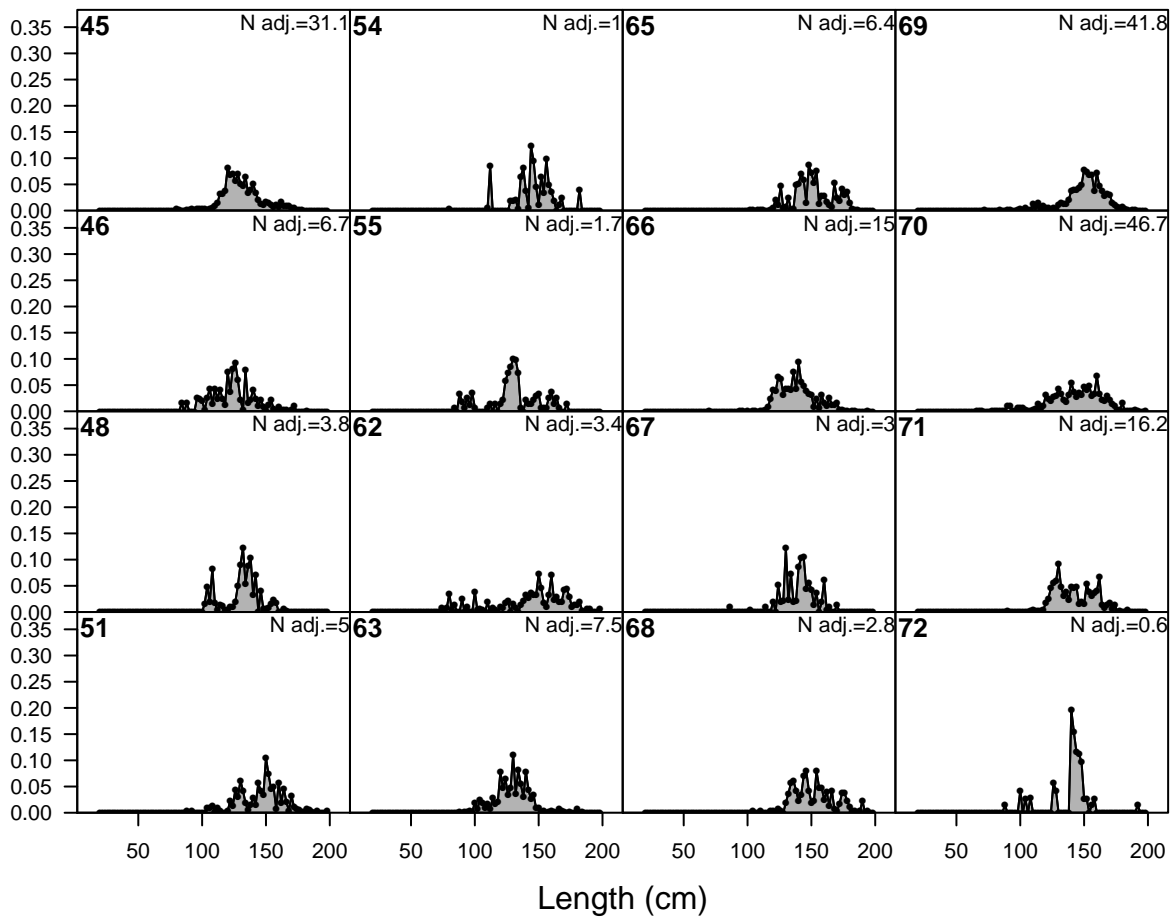




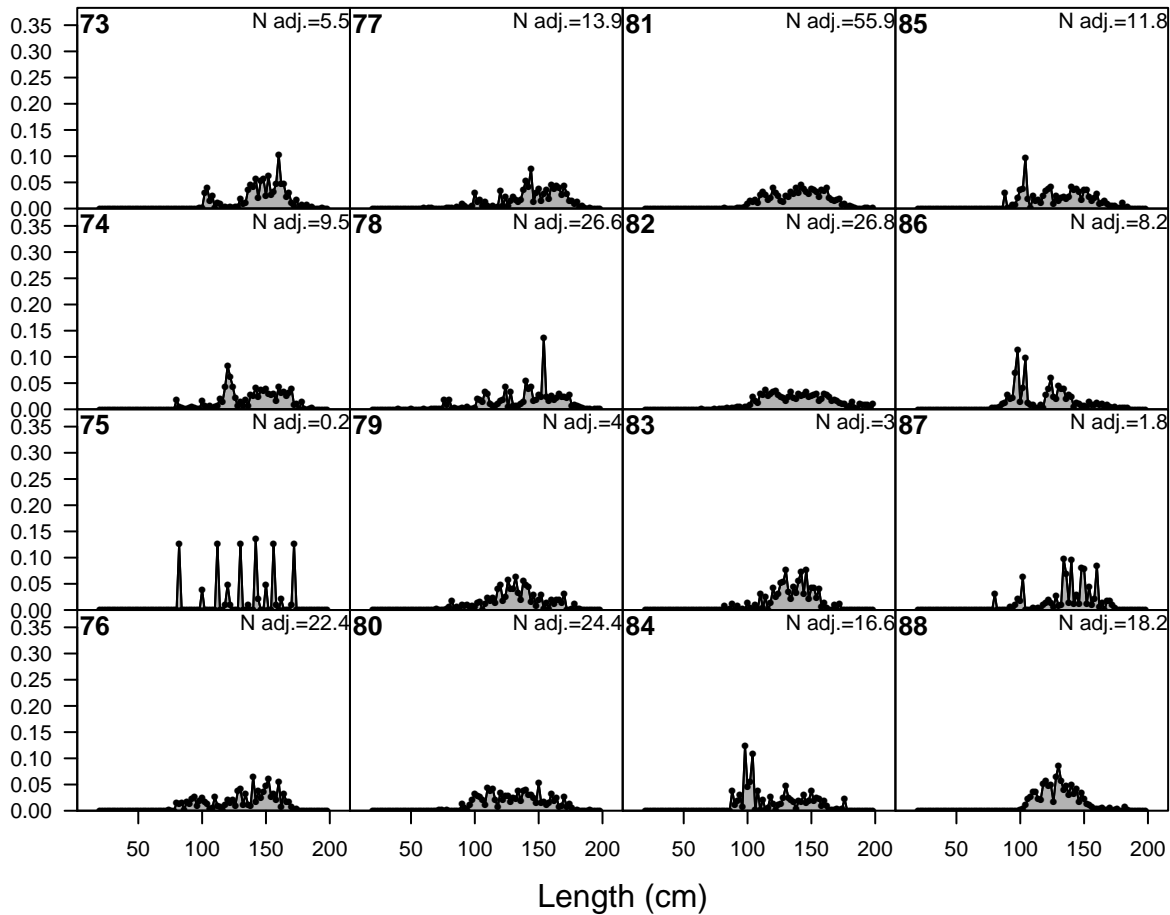
A2-LL-n (whole catch)



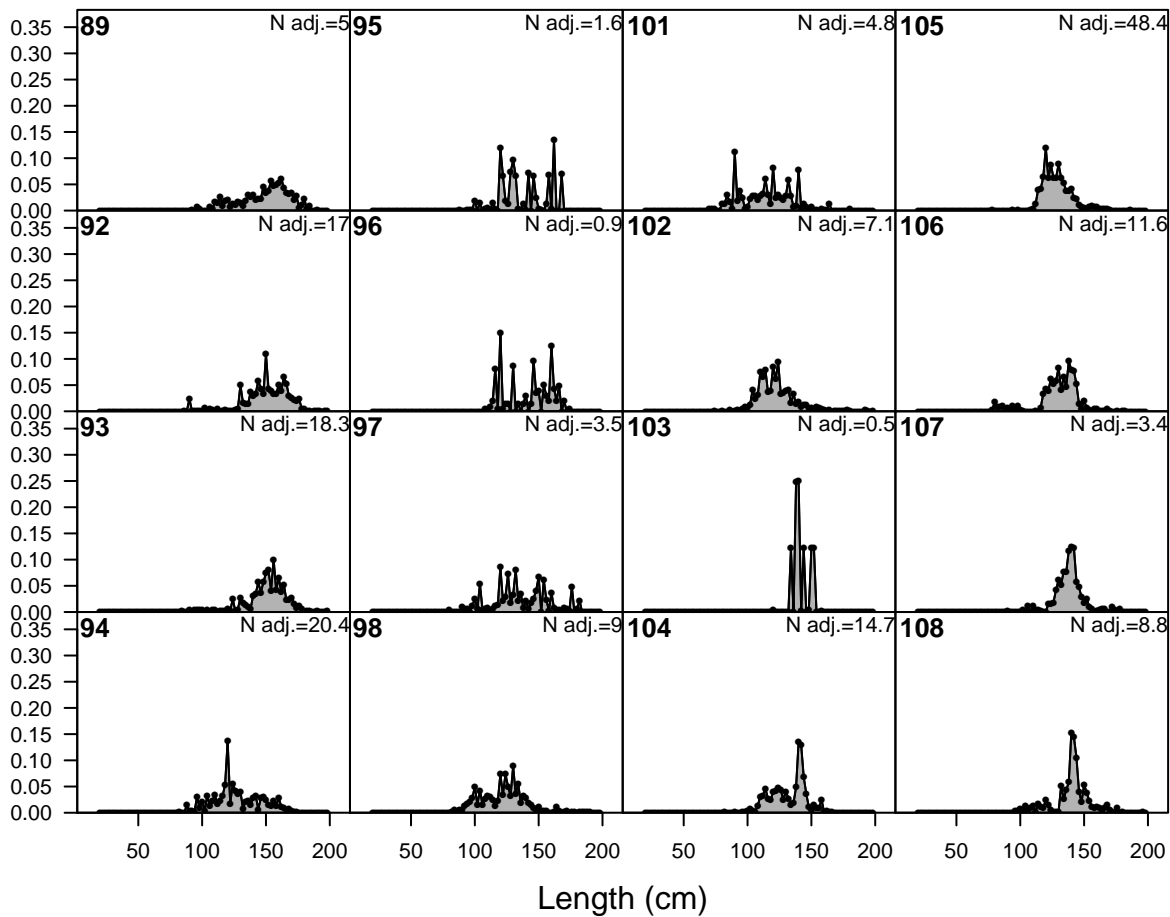
Proportion



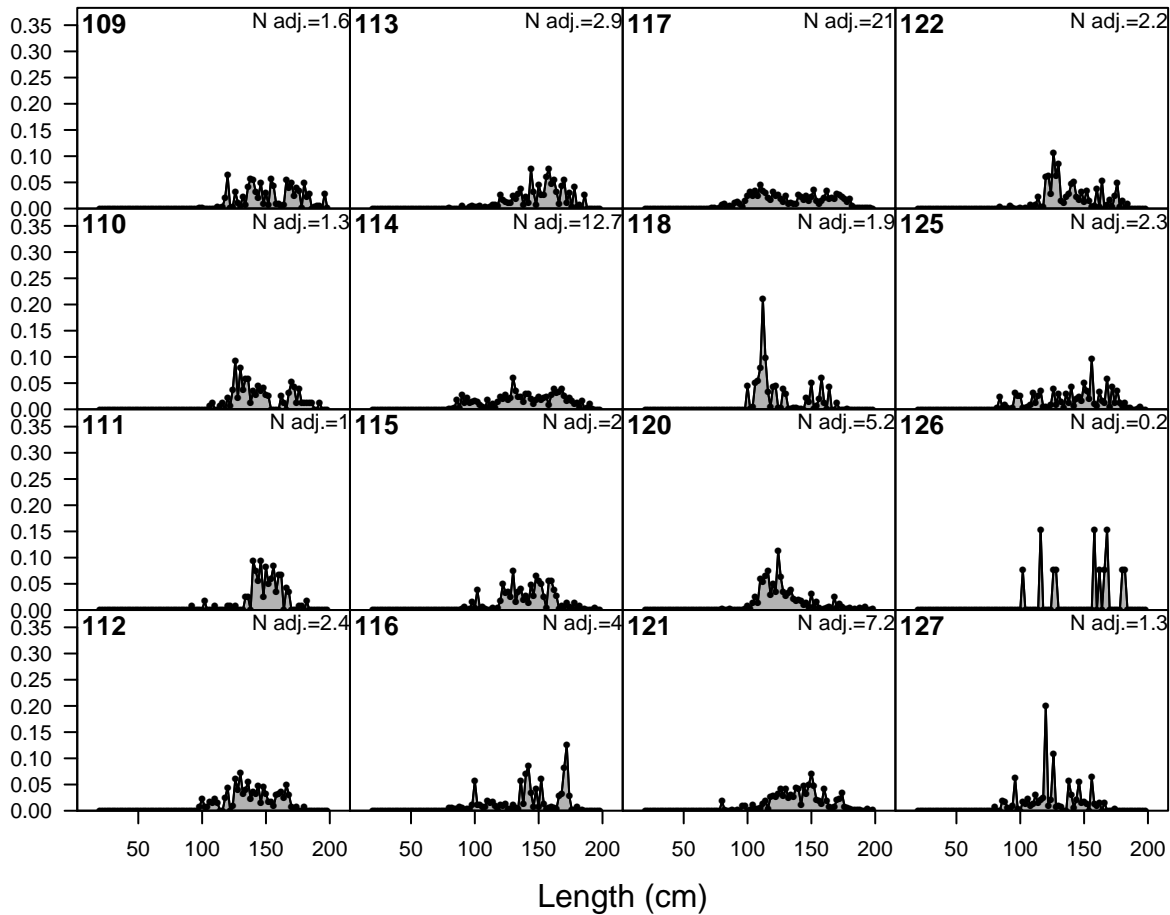
Proportion



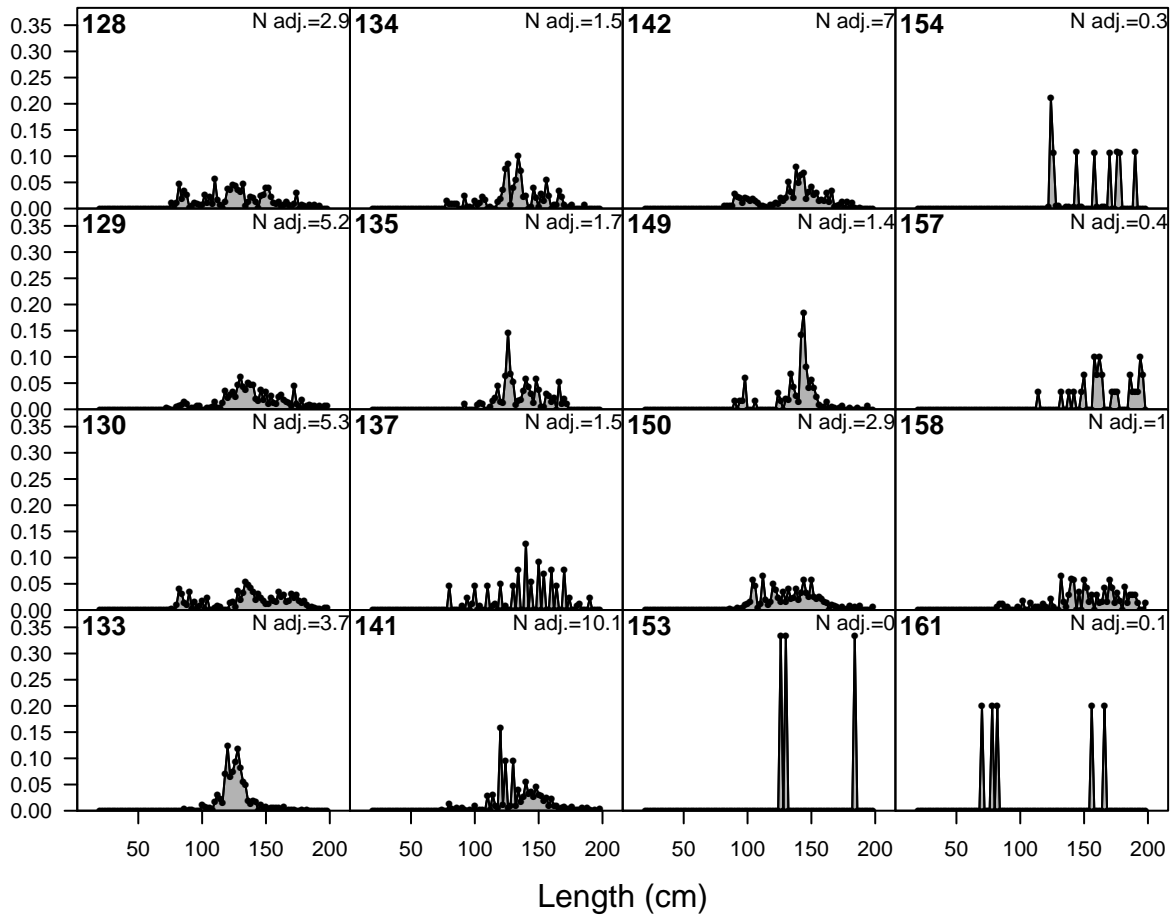
Proportion



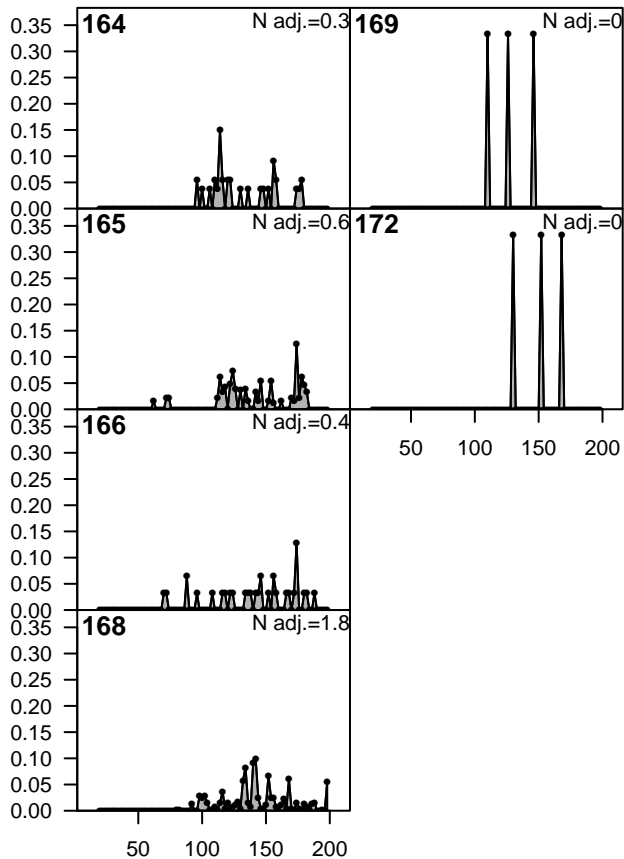
Proportion



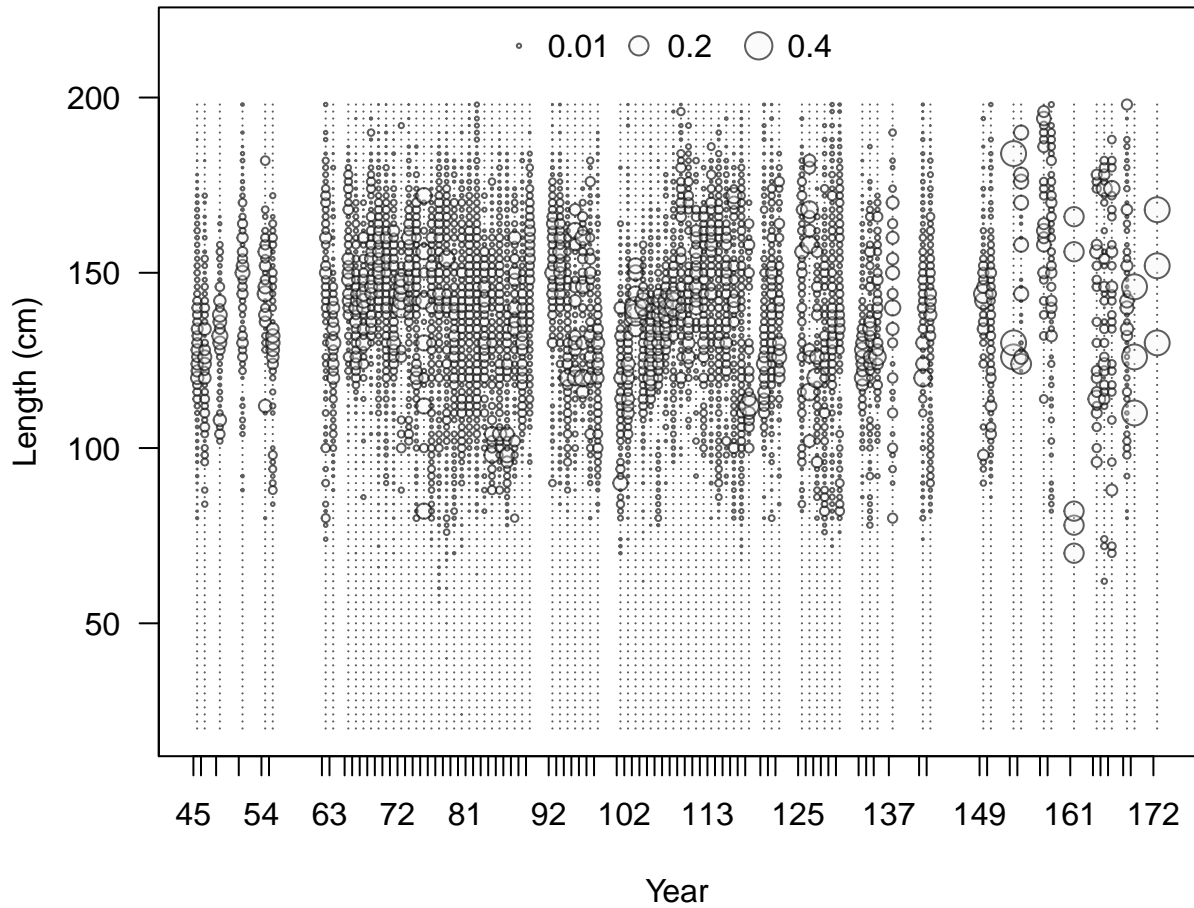
Proportion



Proportion

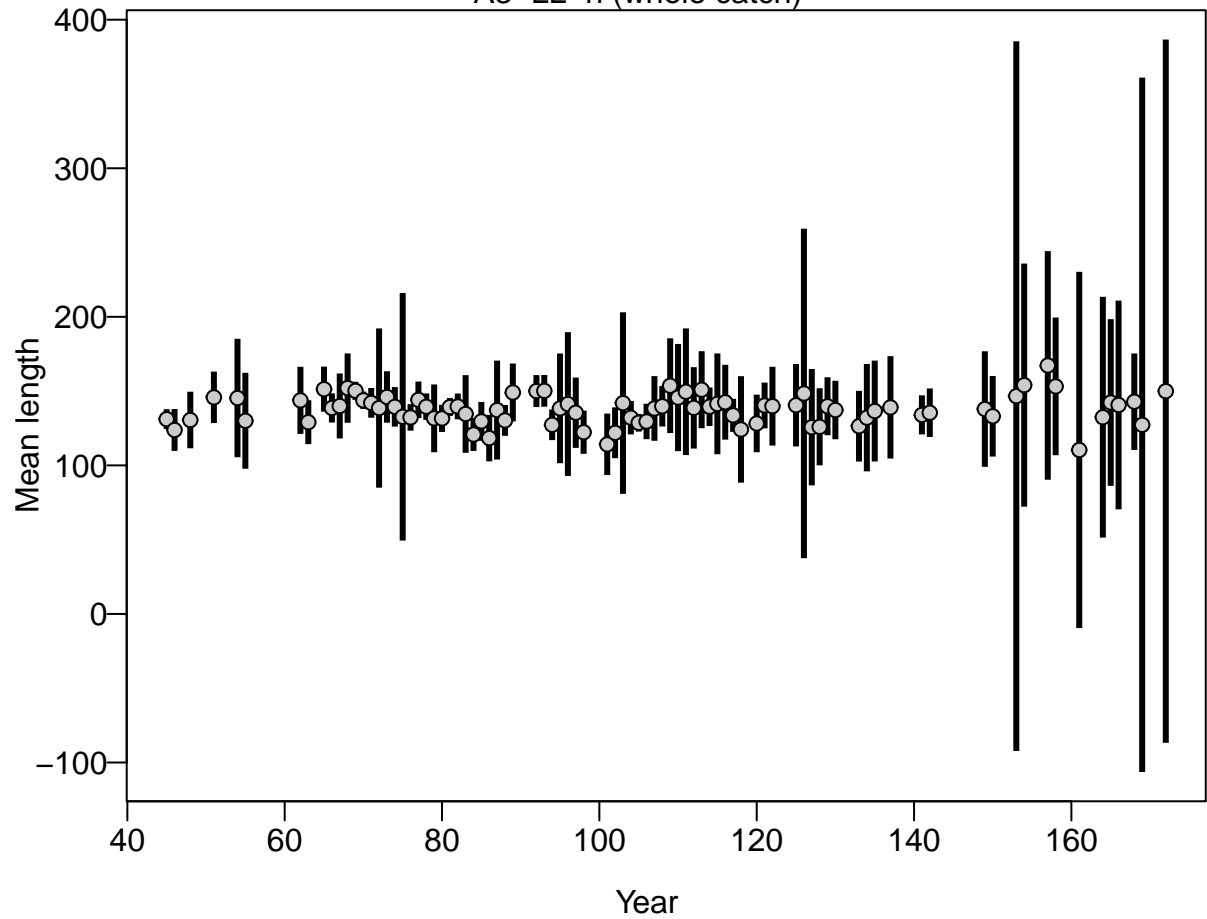


Length (cm)

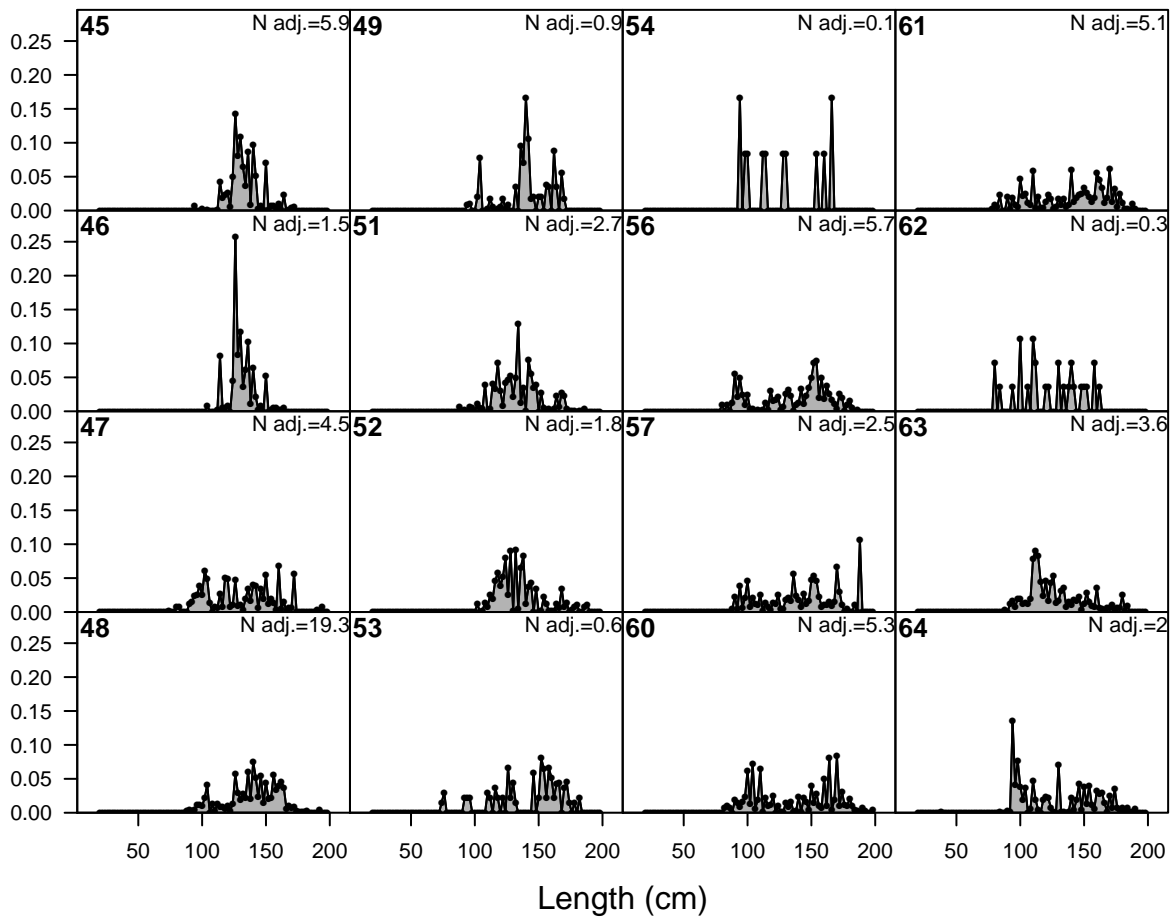




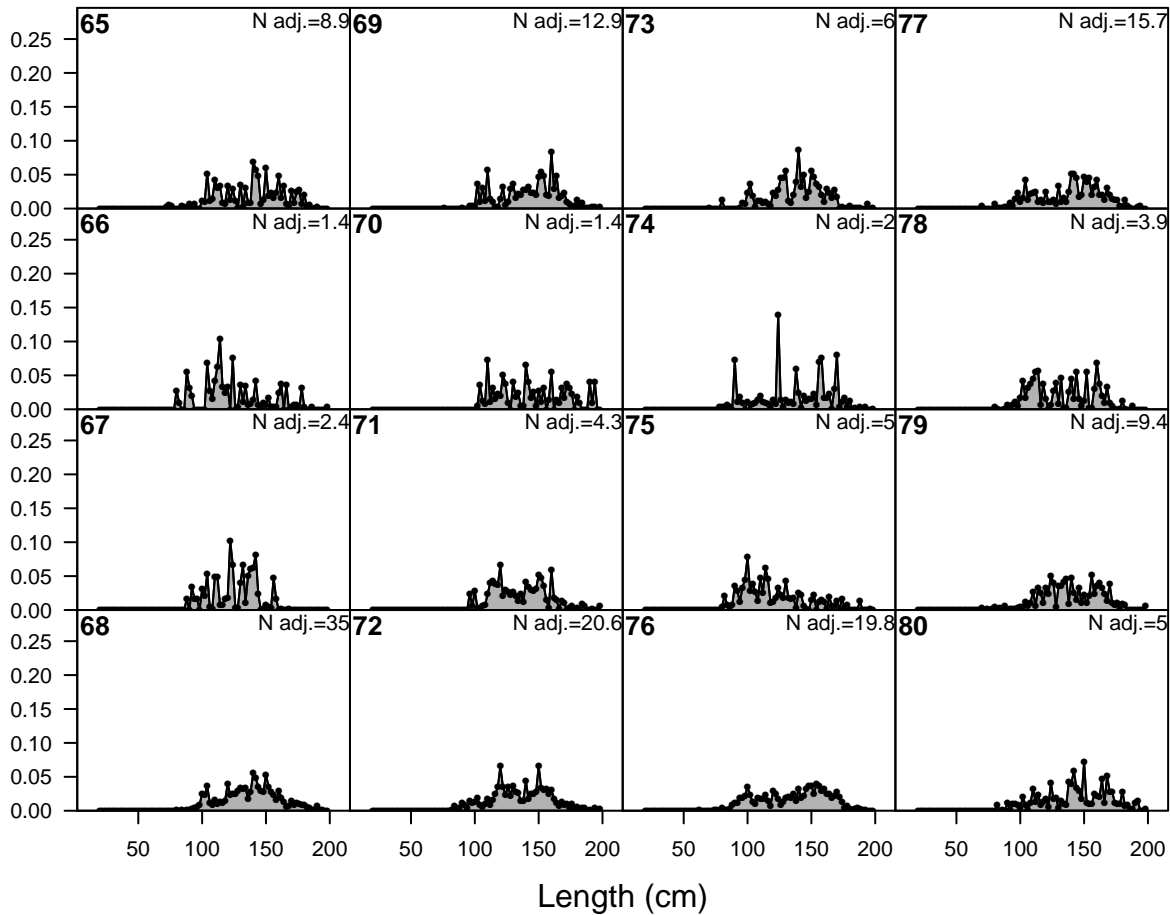
## A3-LL-n (whole catch)



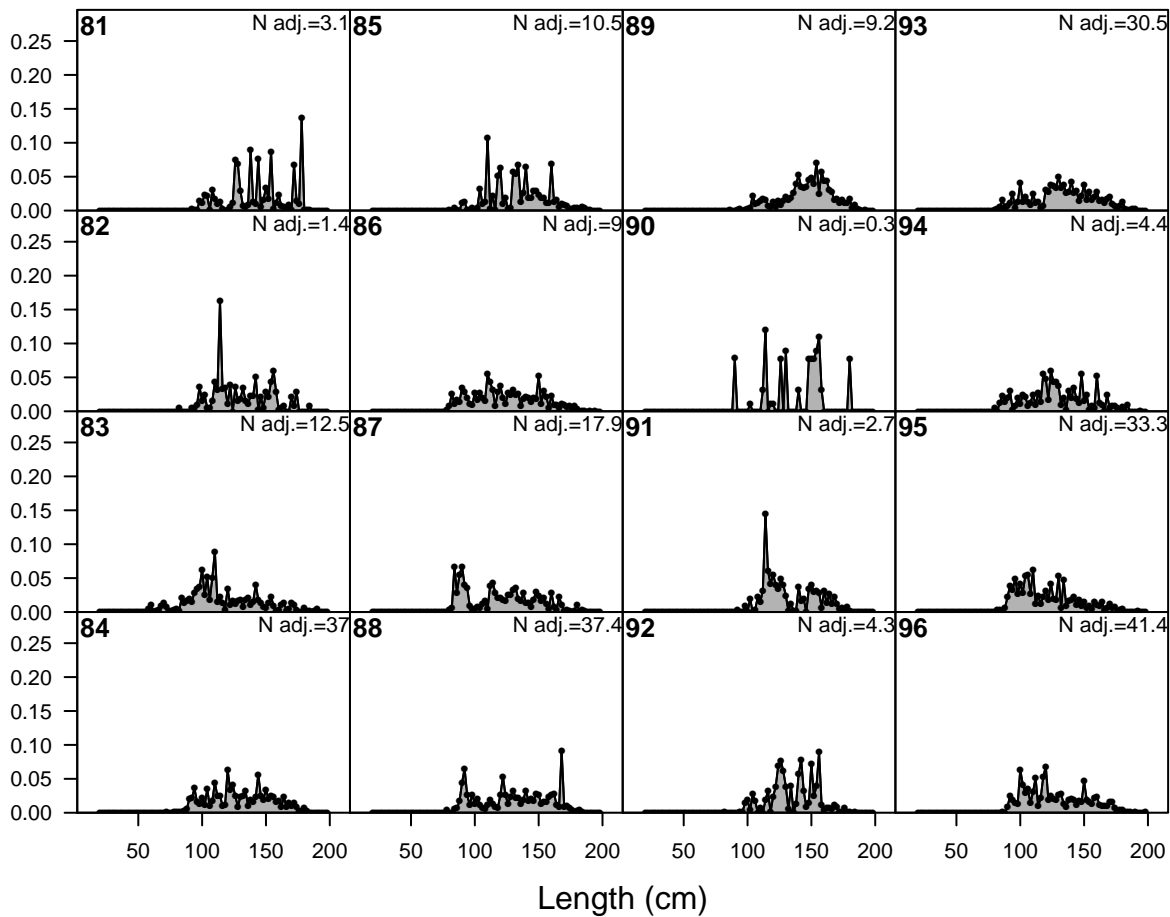
Proportion



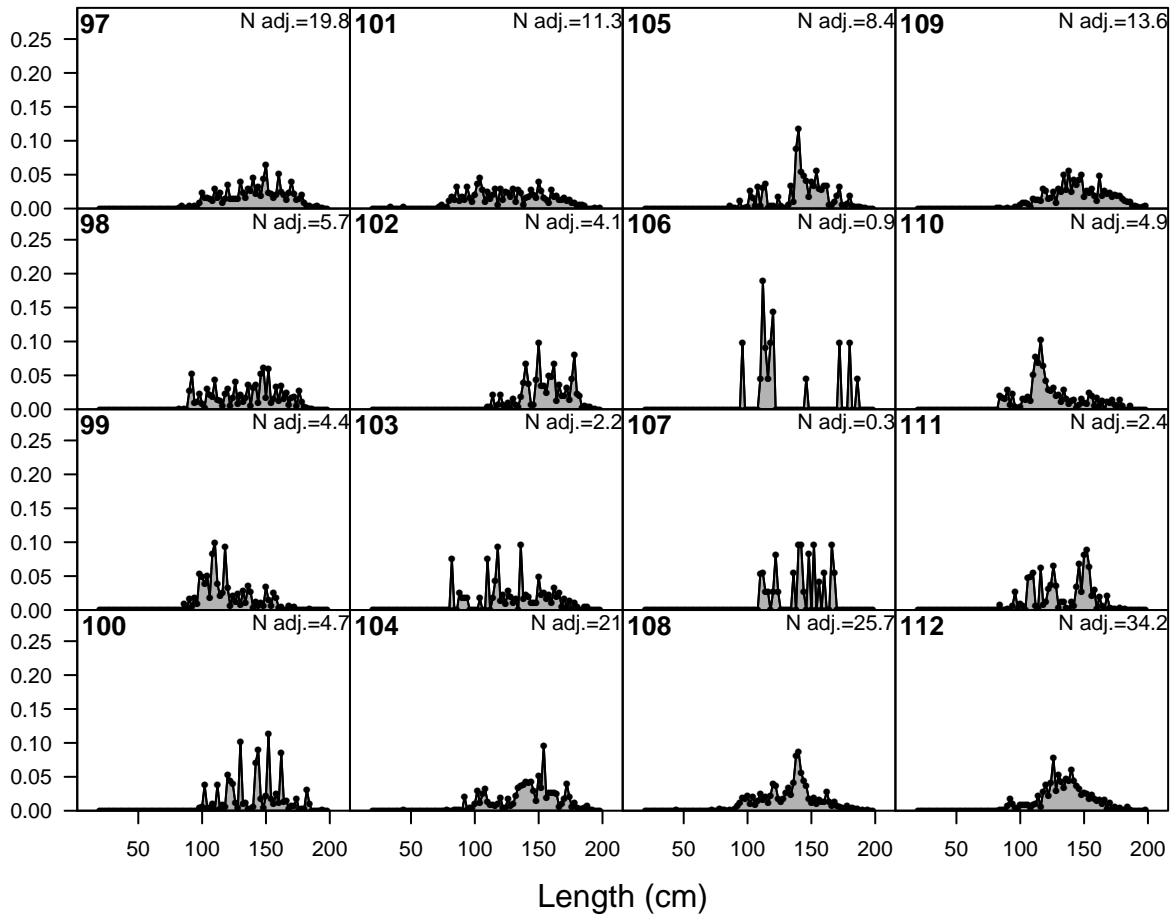
Proportion



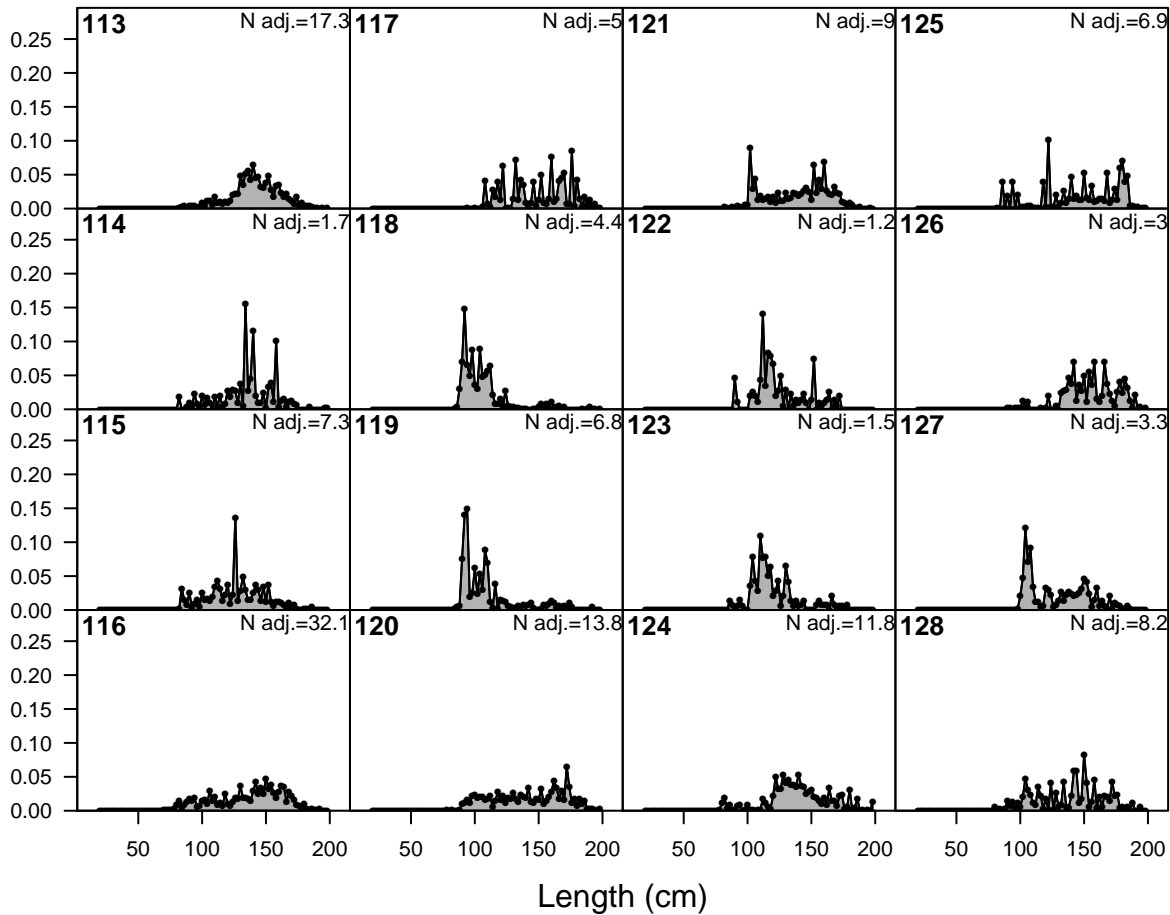
Proportion



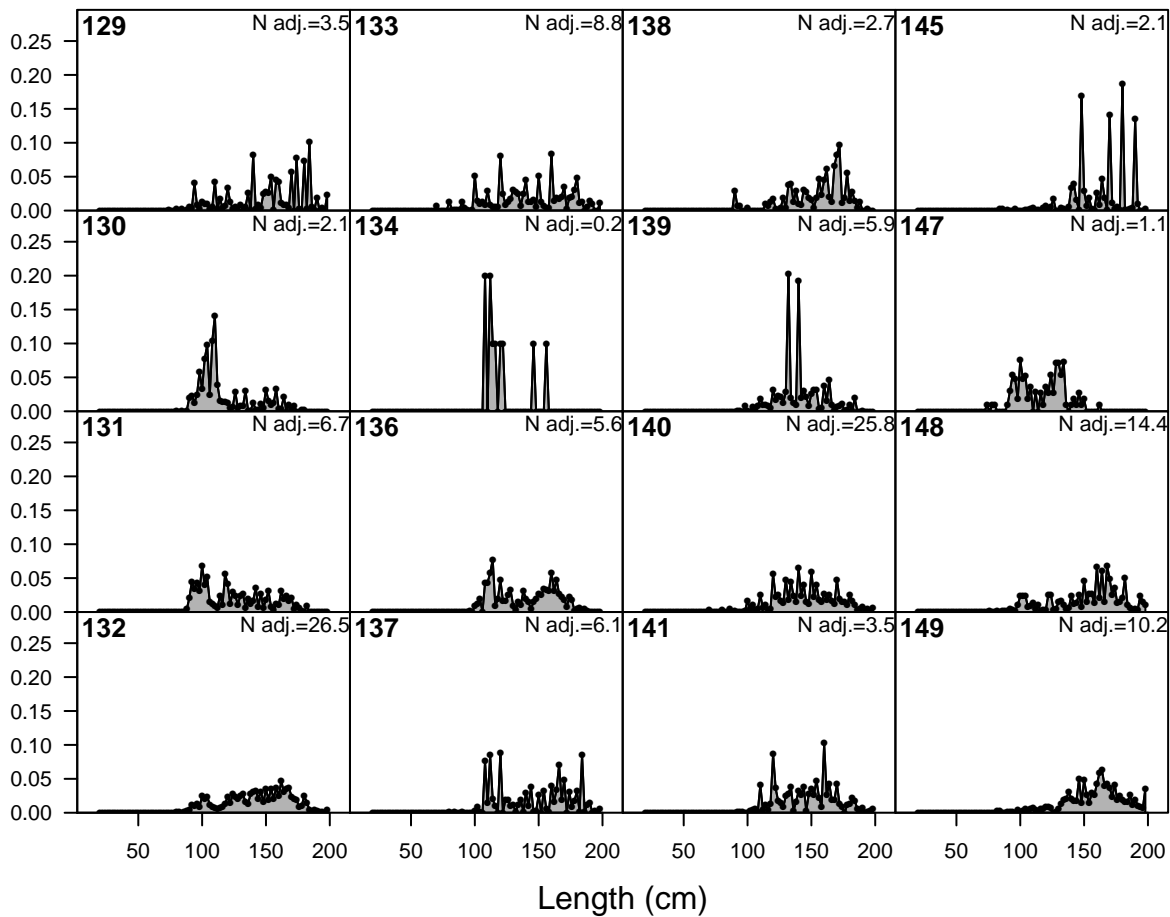
Proportion



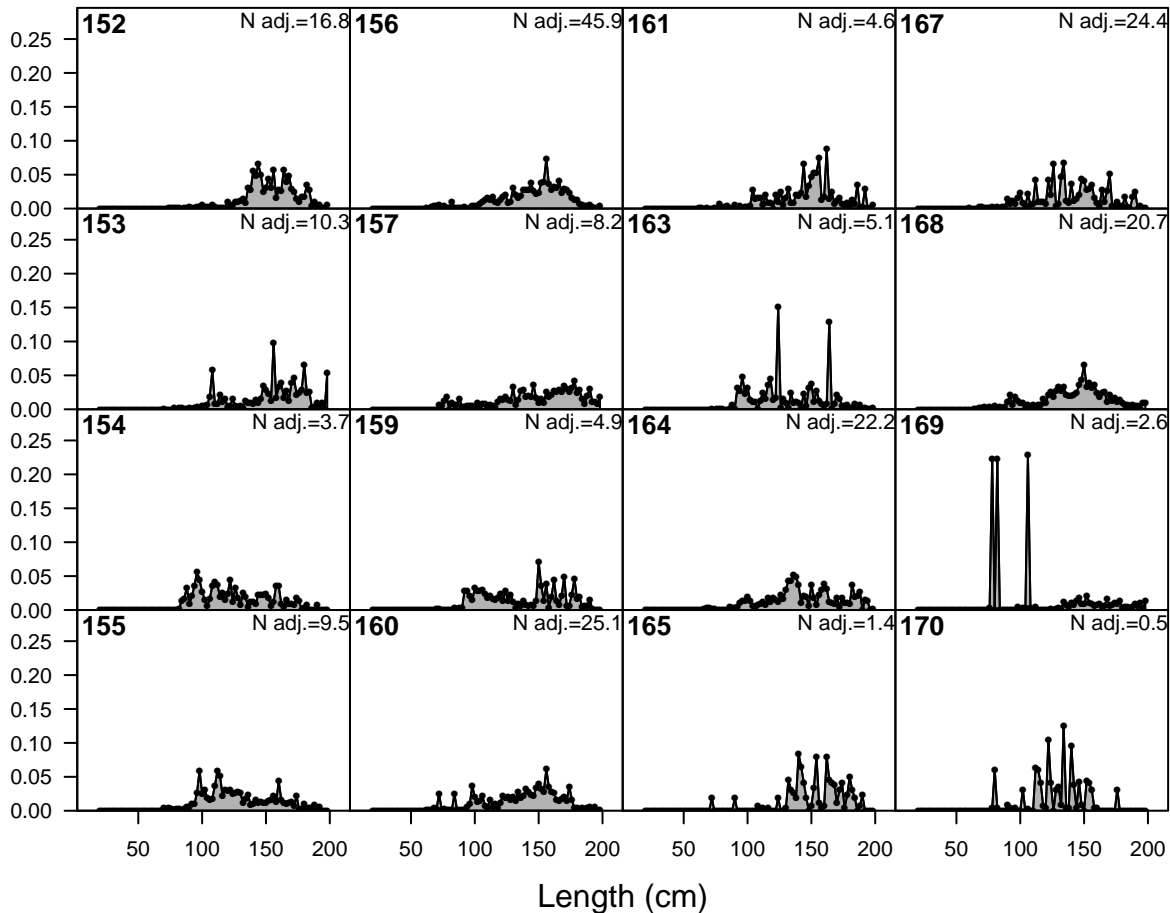
Proportion



Proportion

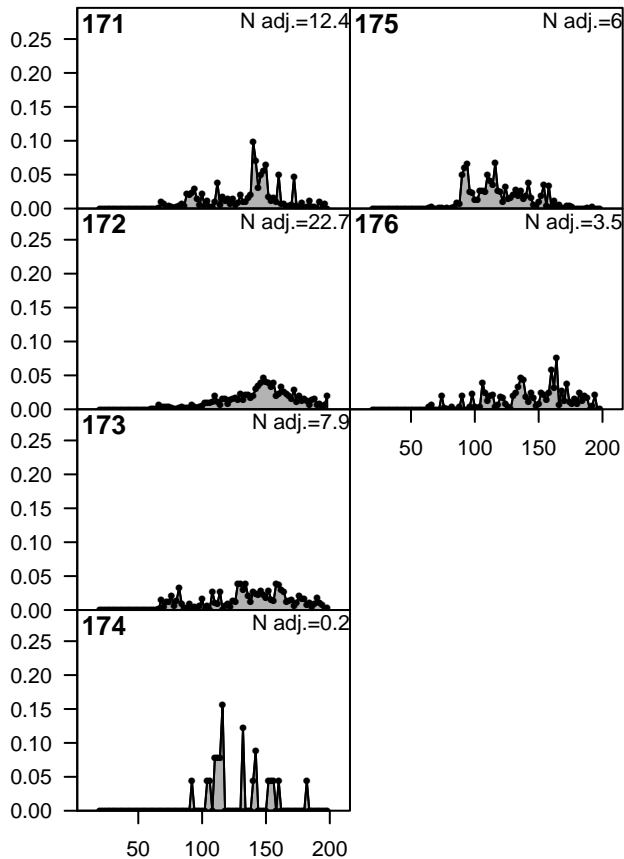


Proportion

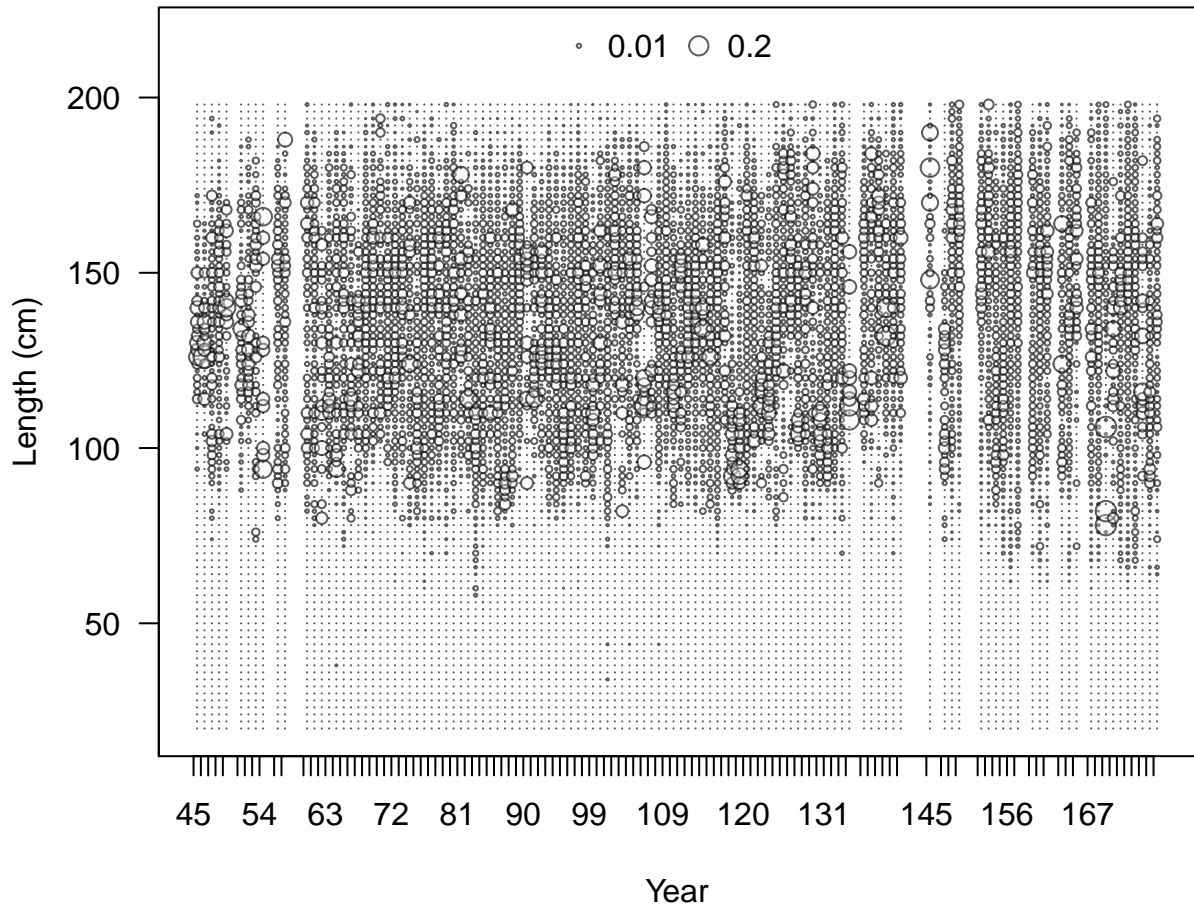




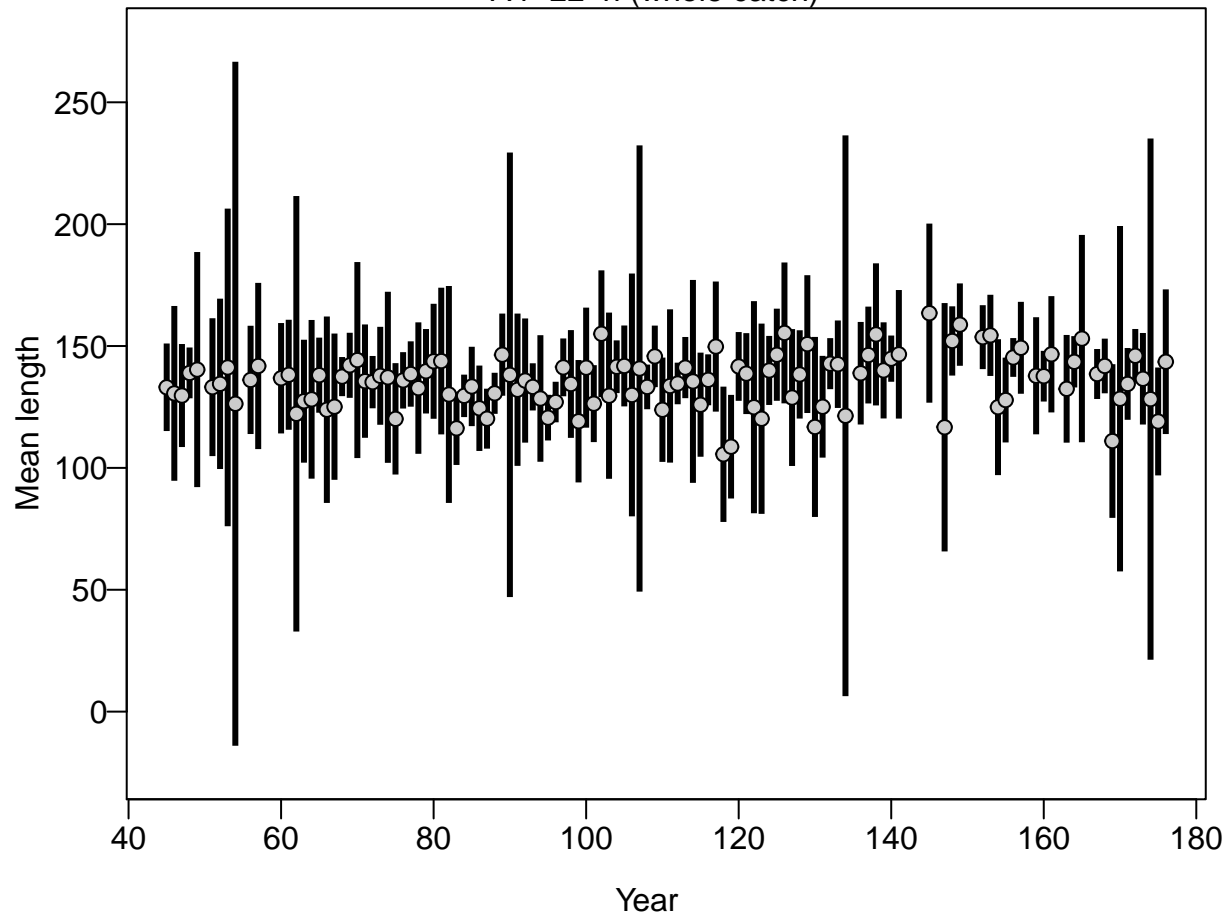
Proportion



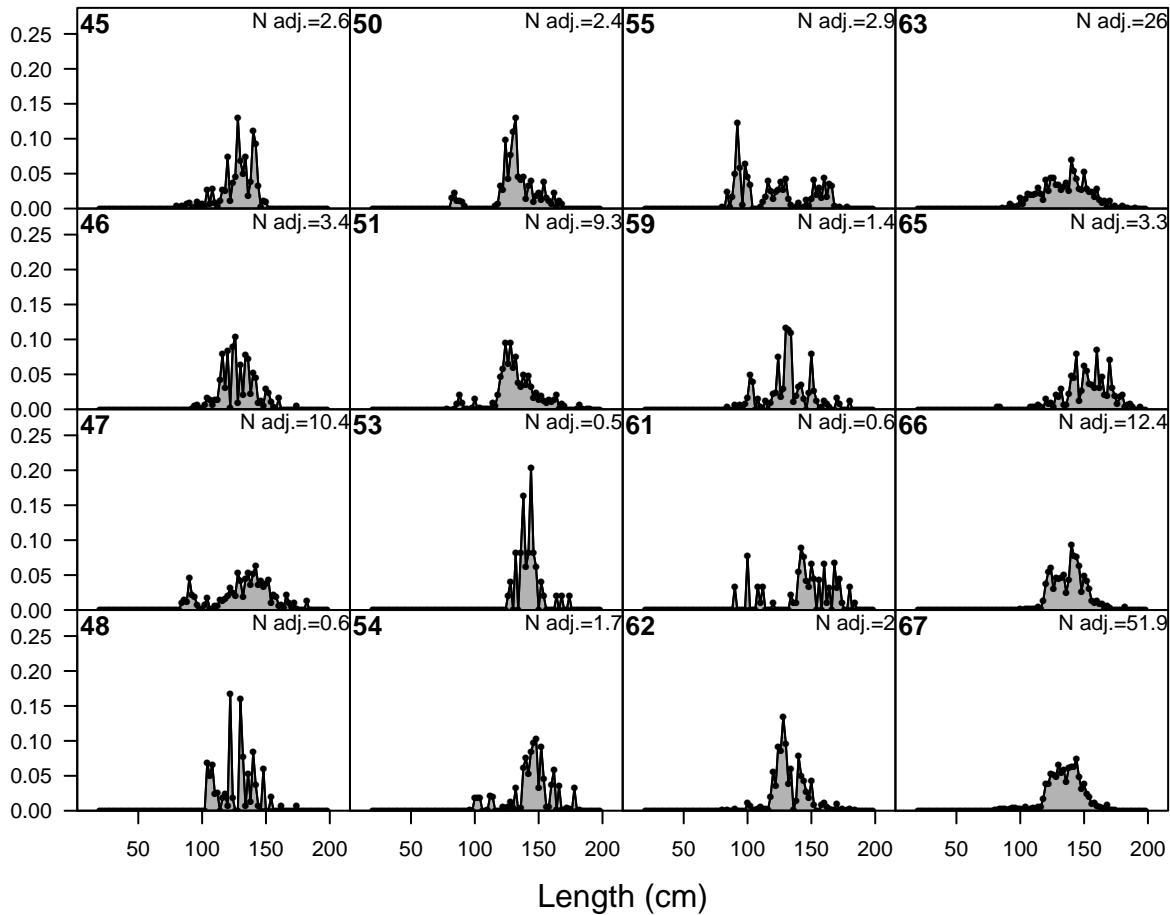
Length (cm)



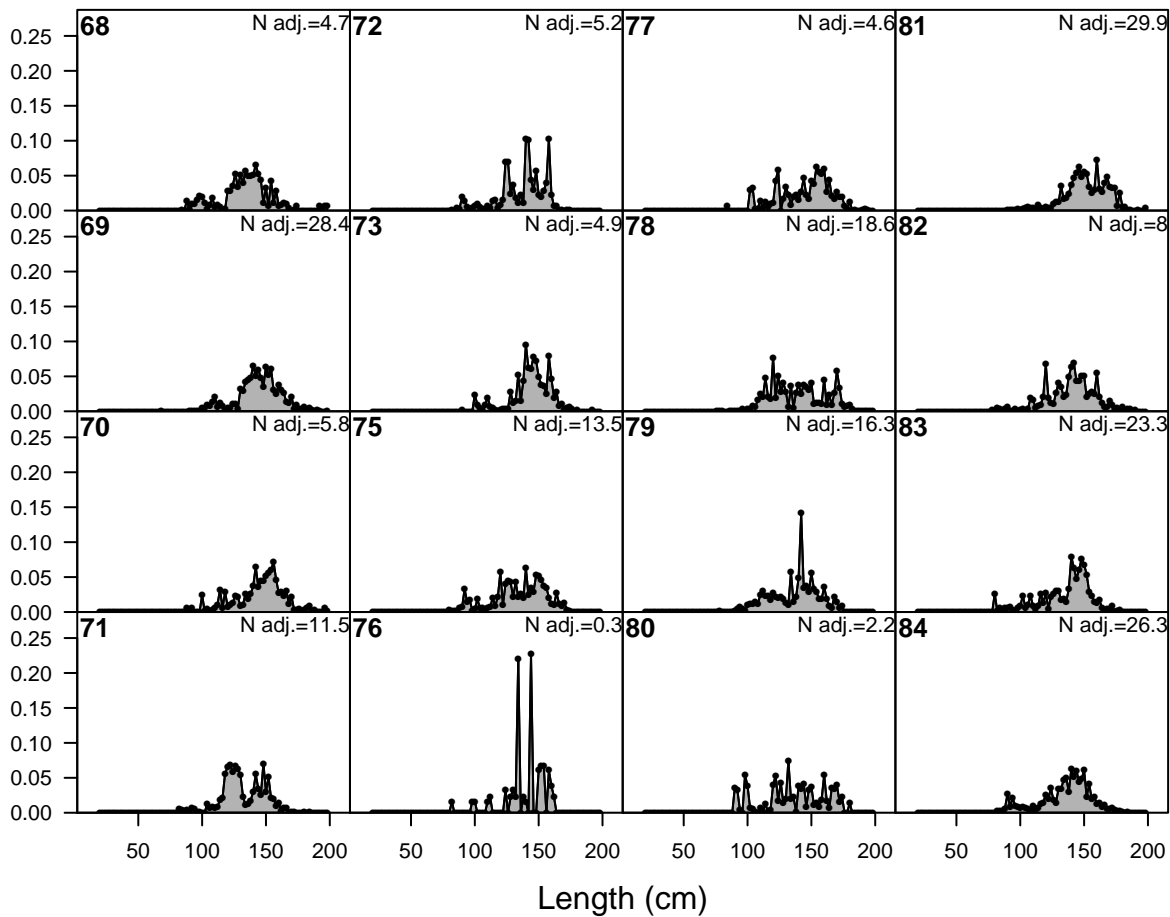
A4-LL-n (whole catch)



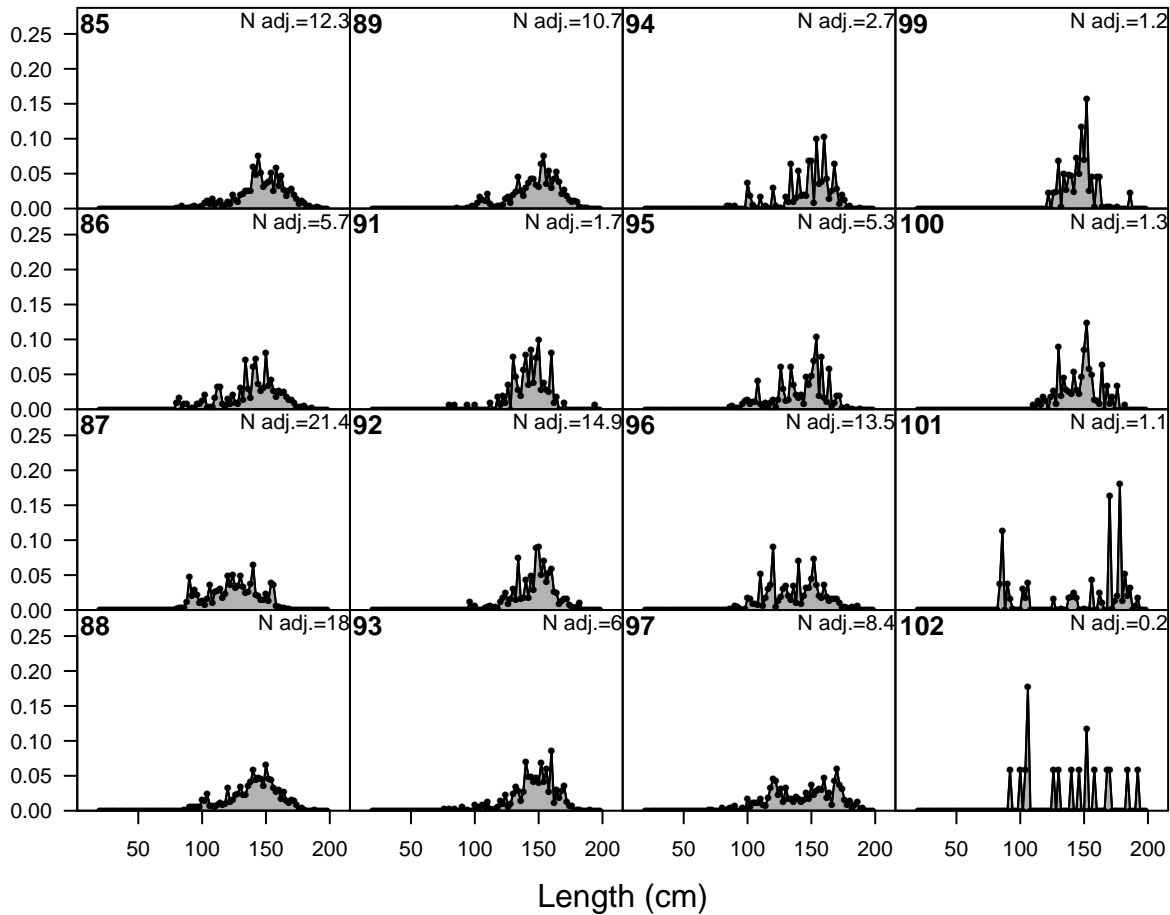
Proportion



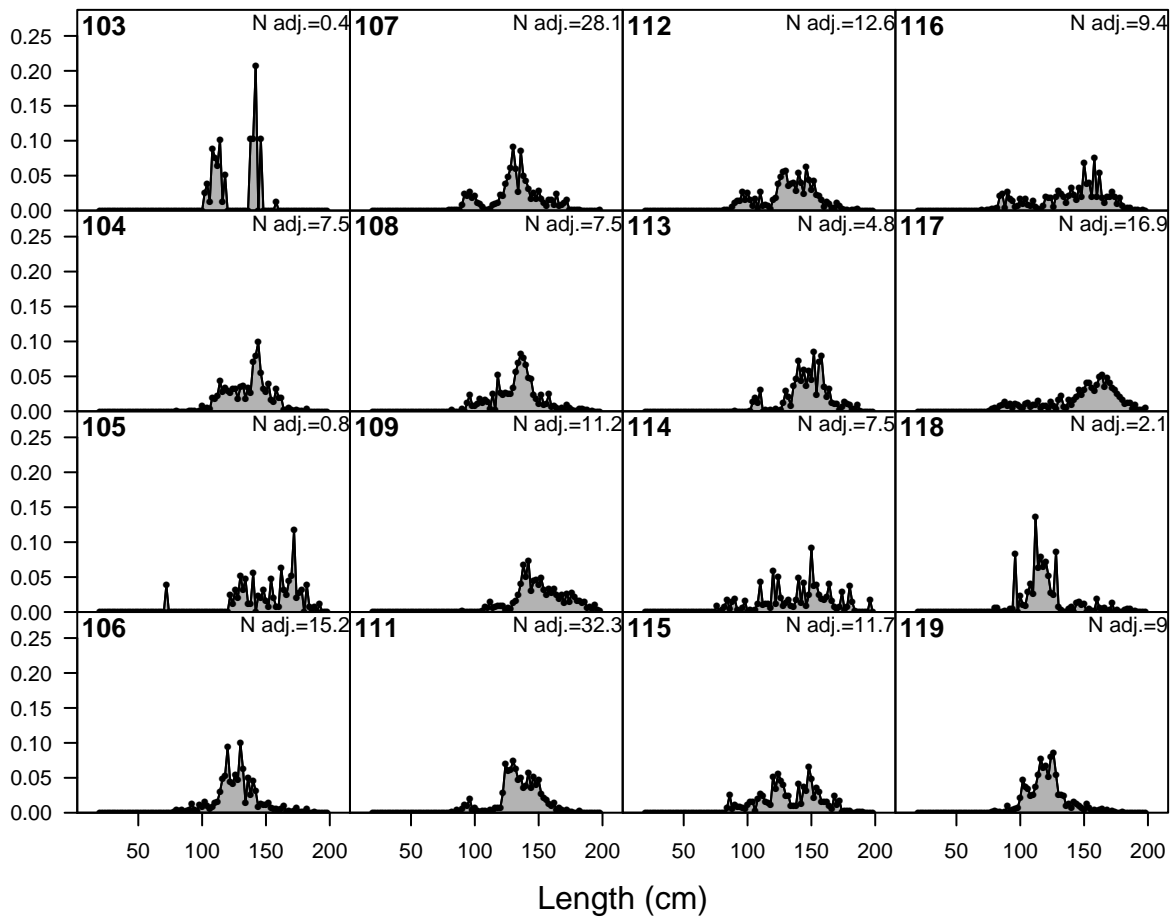
Proportion



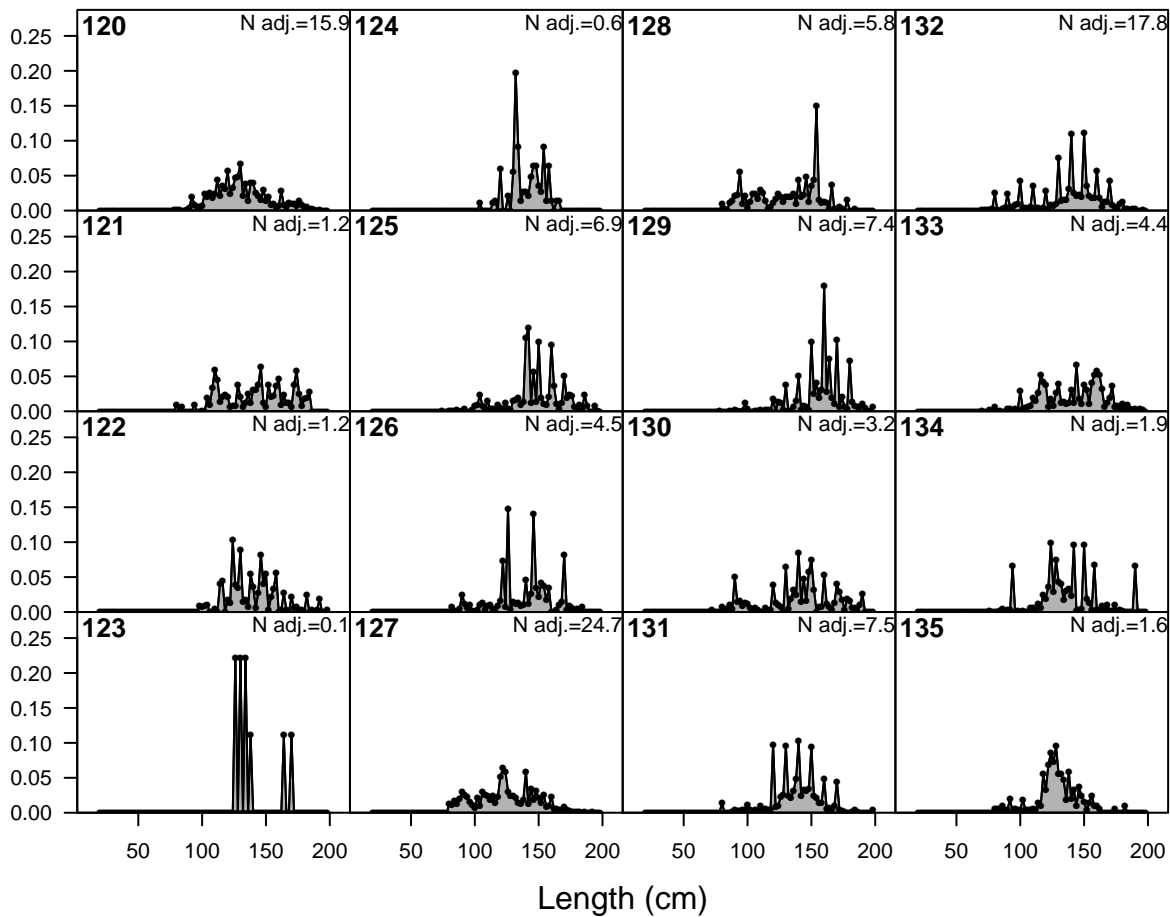
Proportion



Proportion

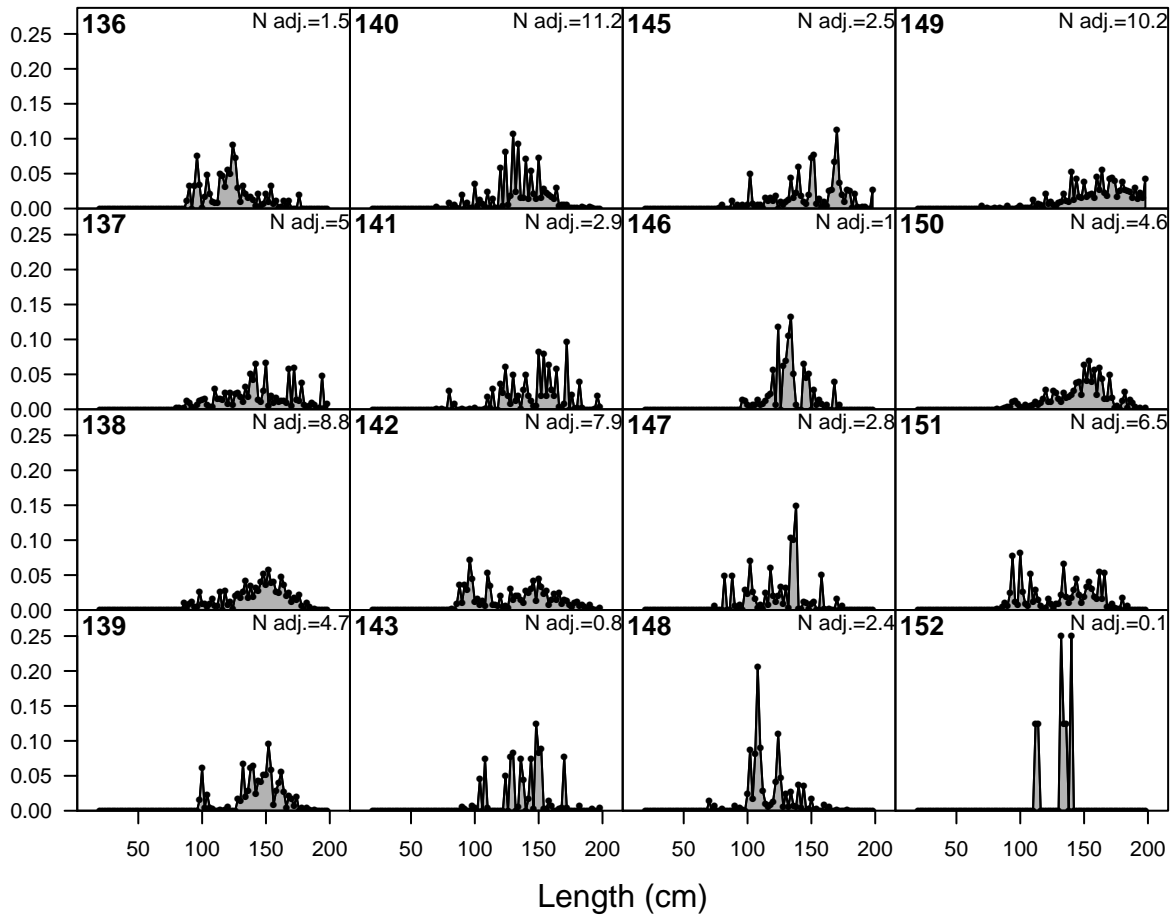


Proportion

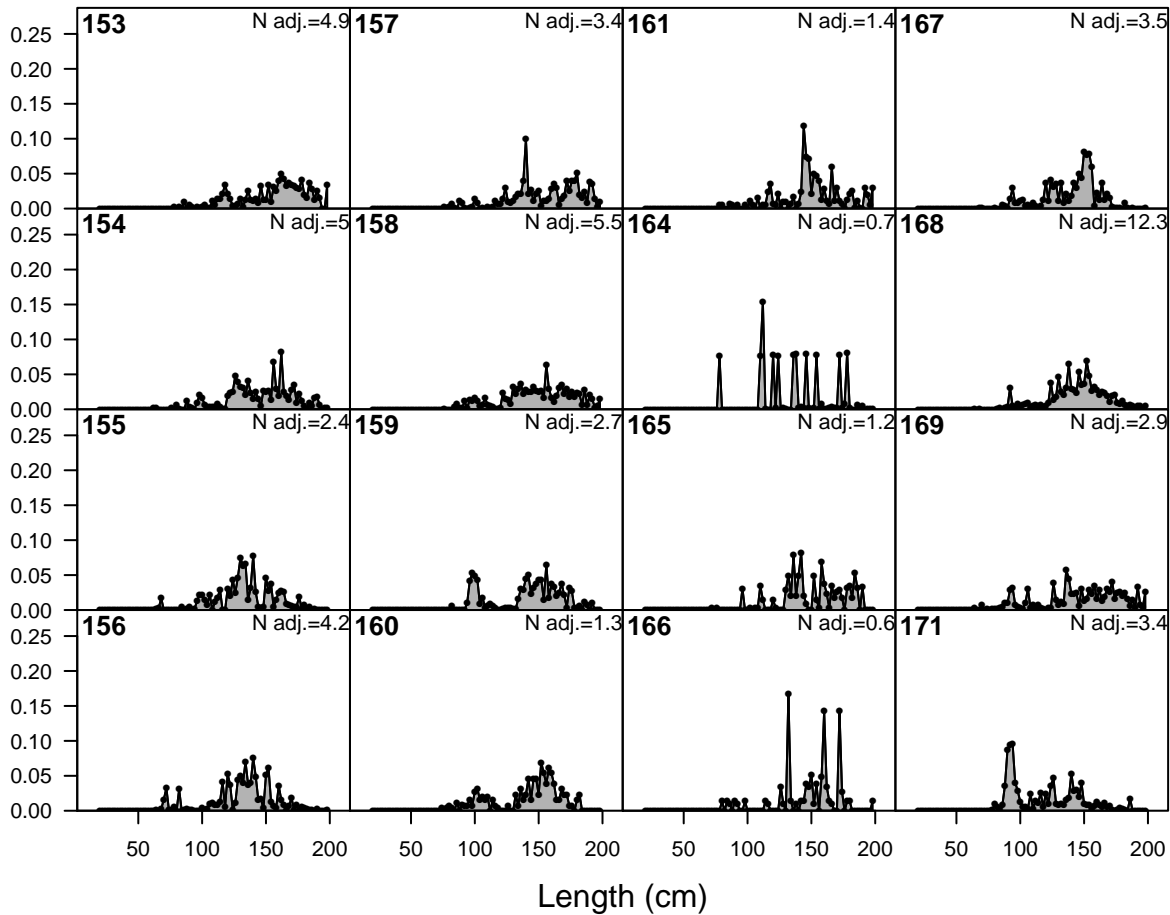


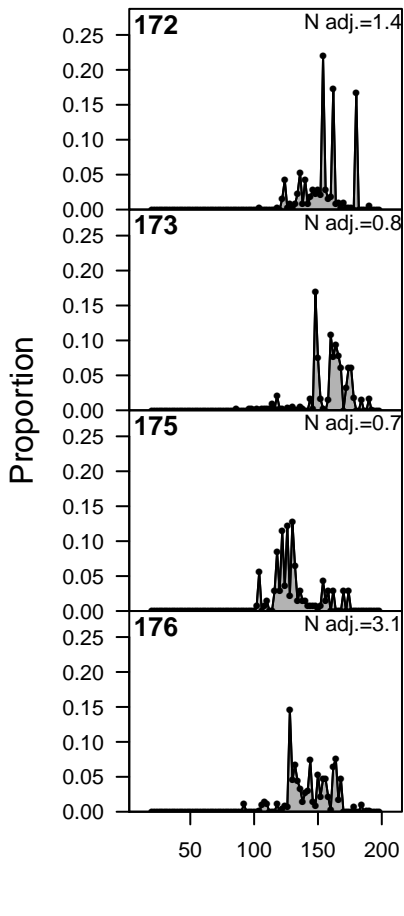


Proportion

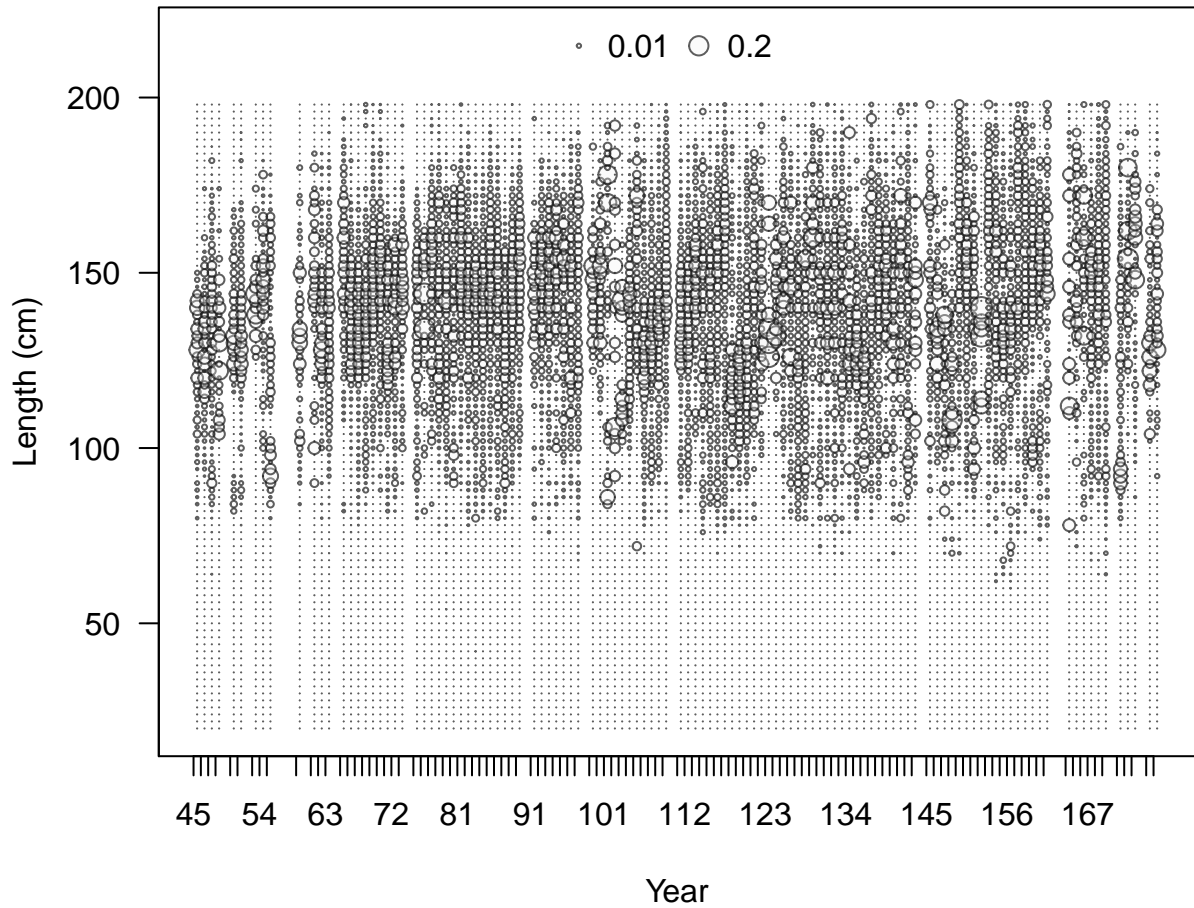


Proportion

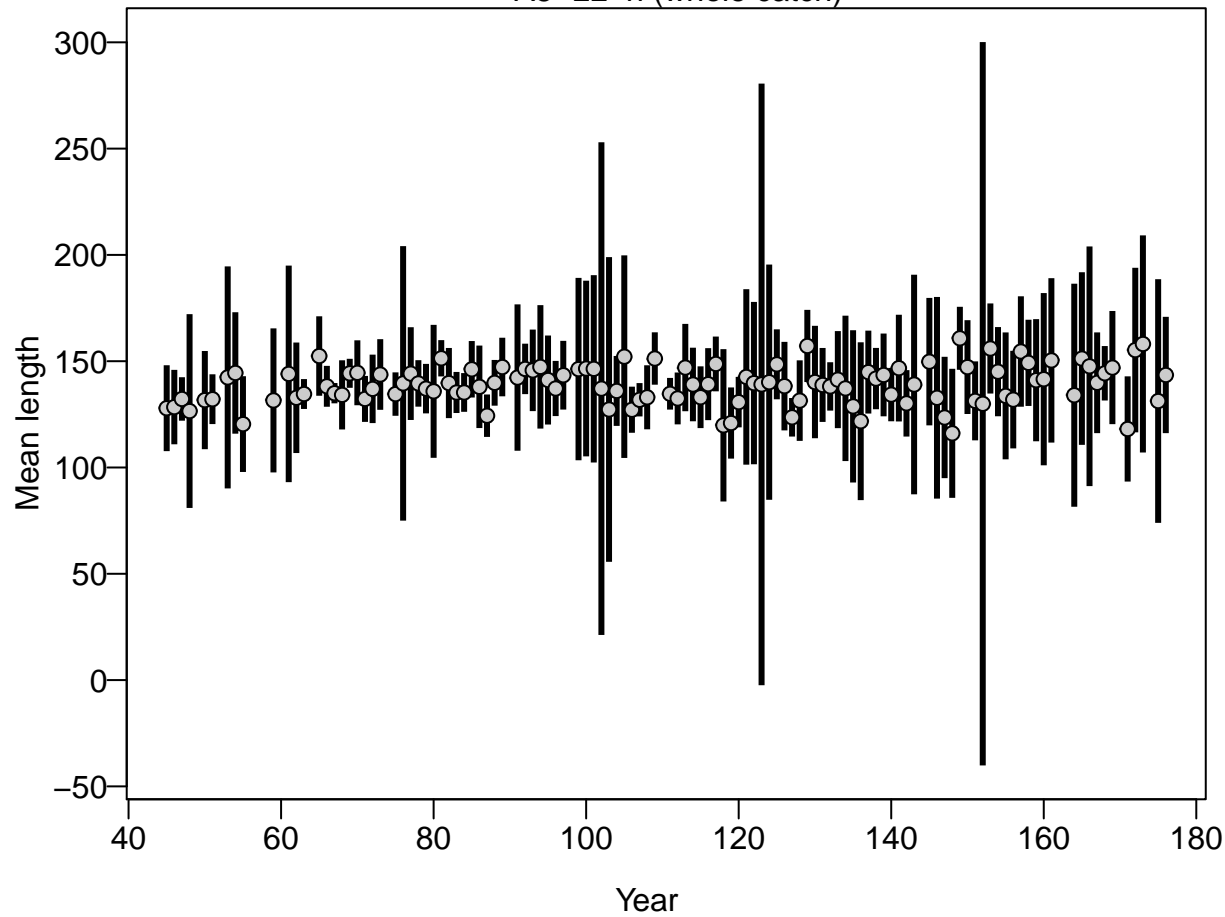


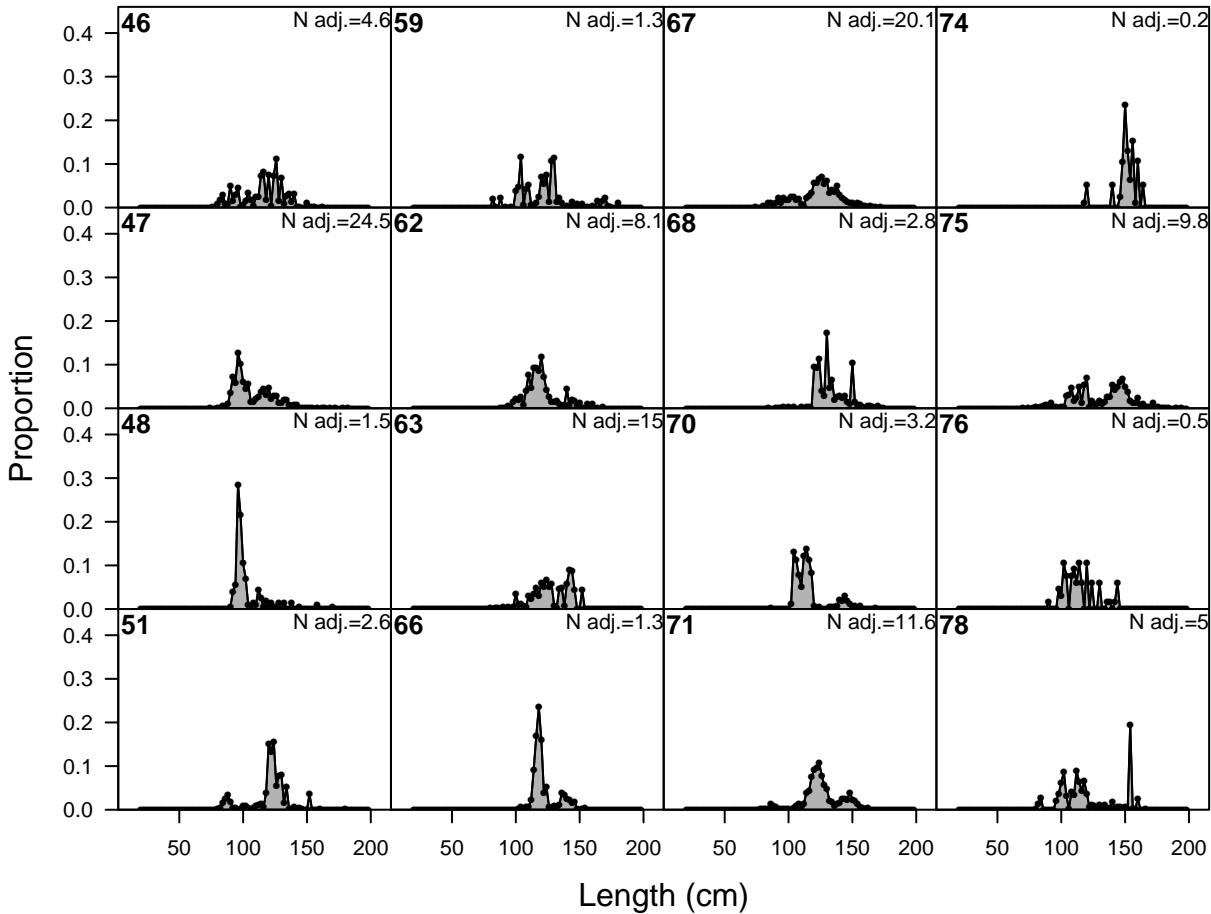


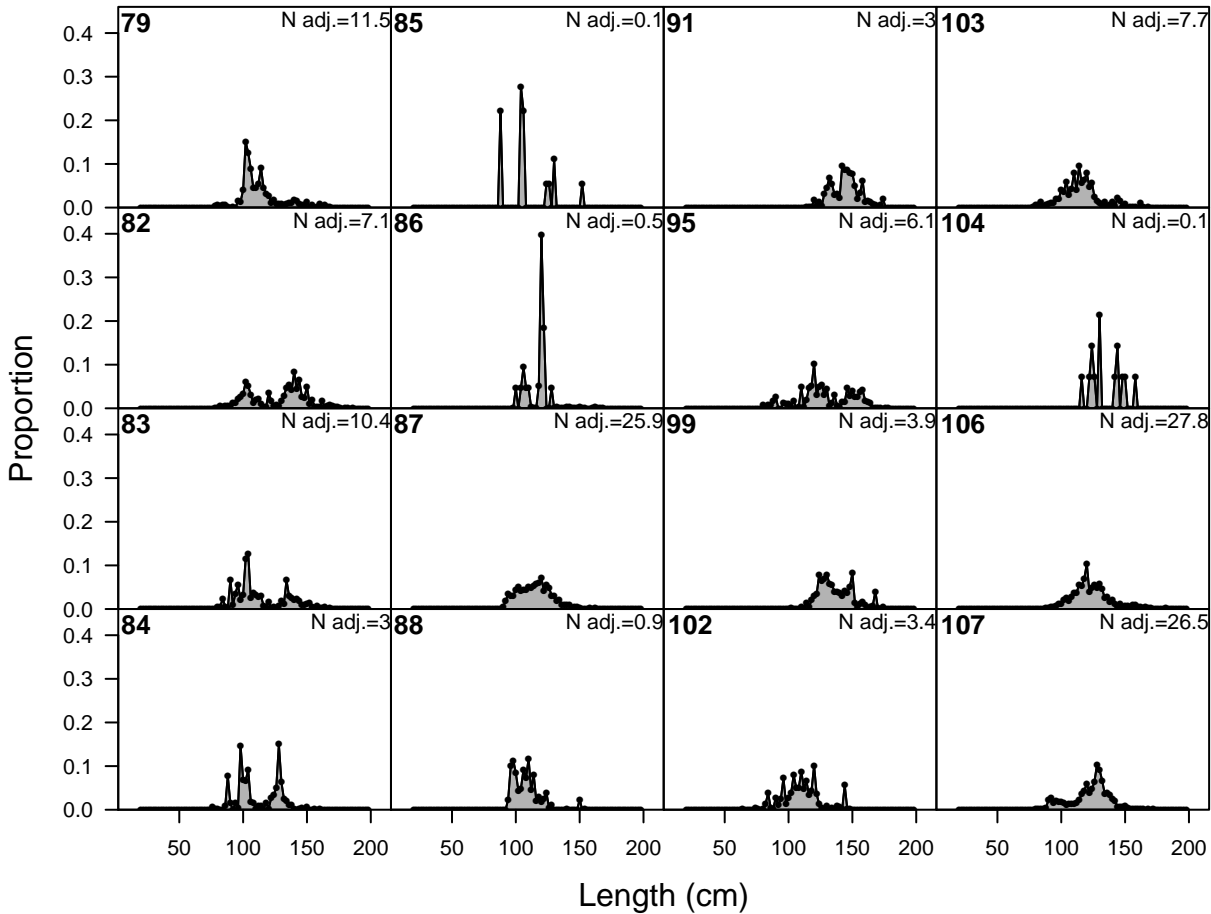
Length (cm)

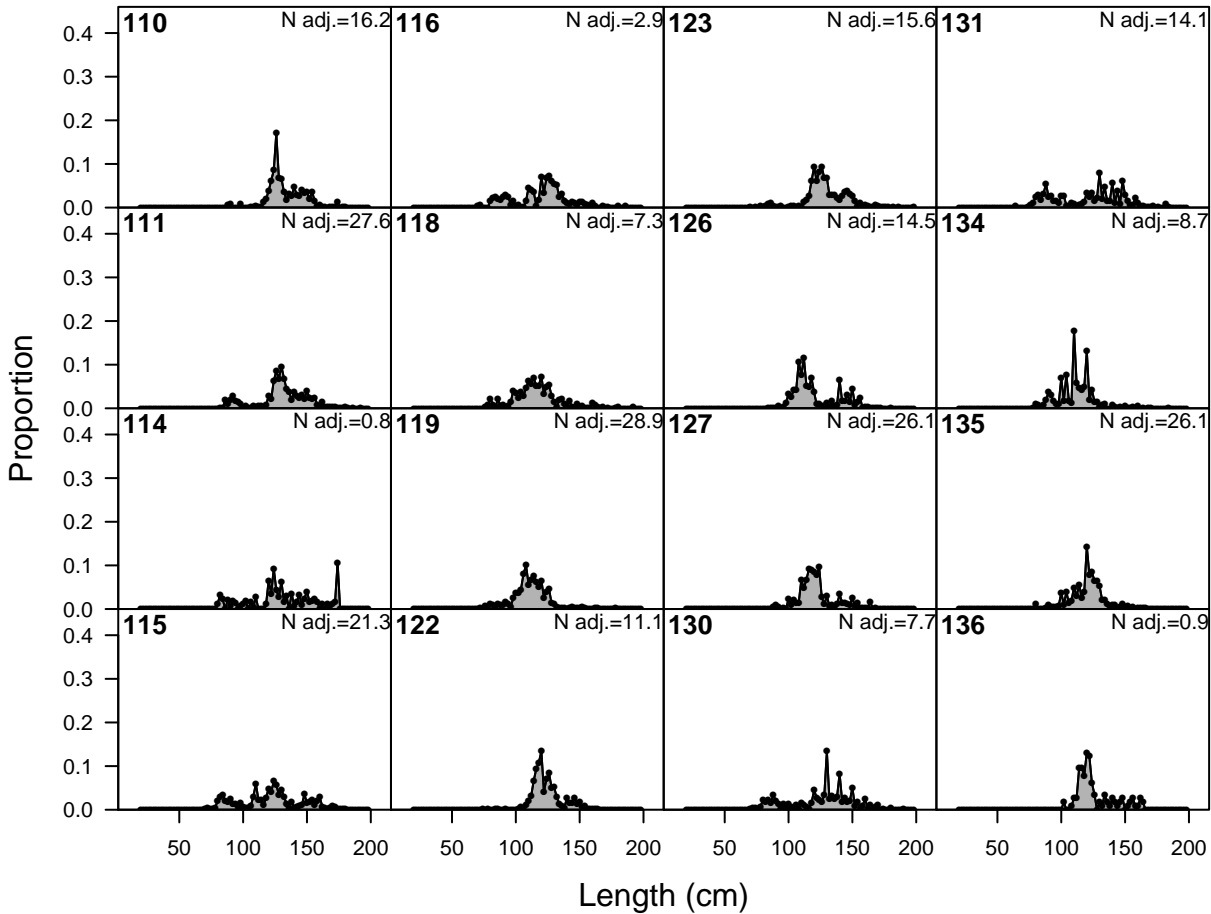


A5-LL-n (whole catch)

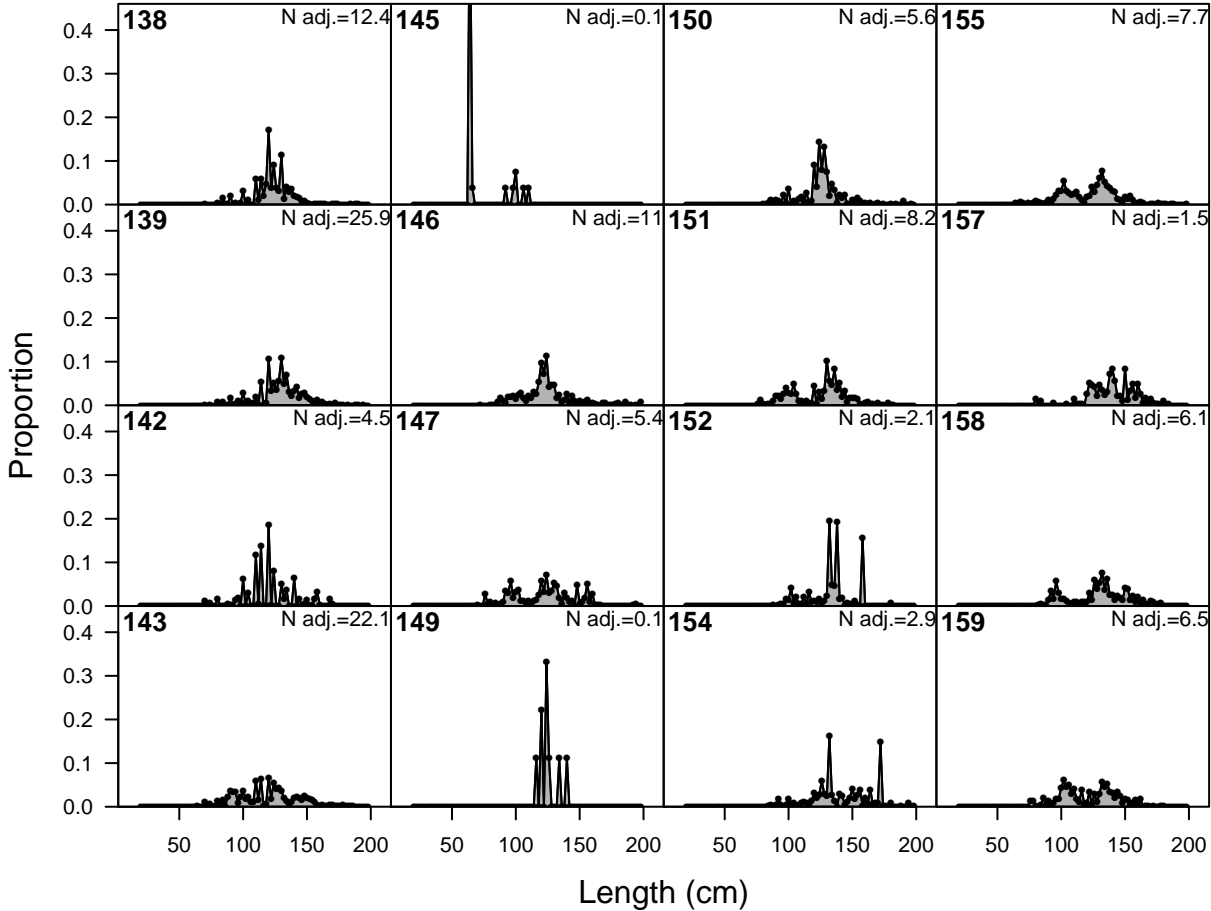


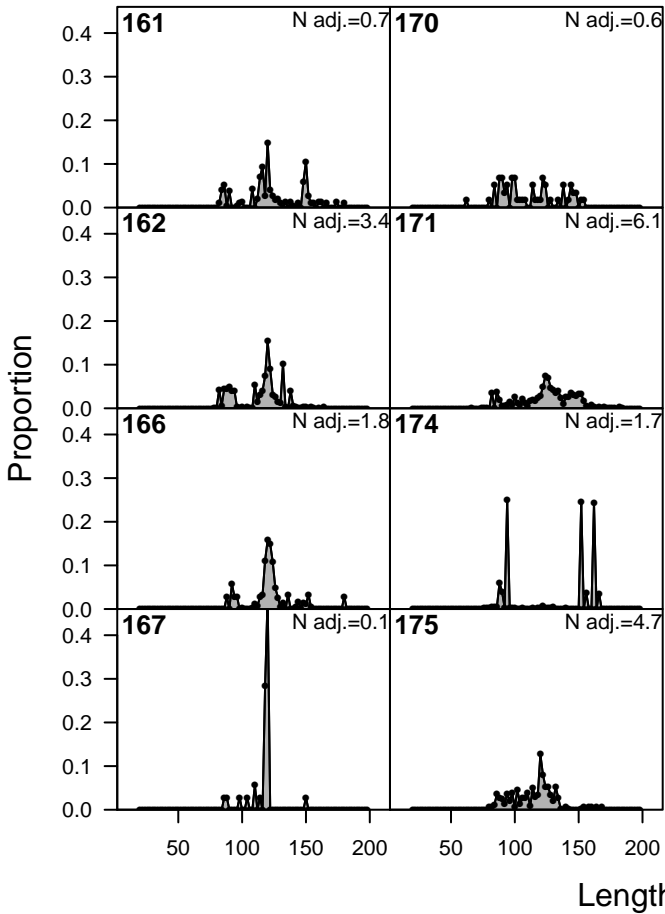


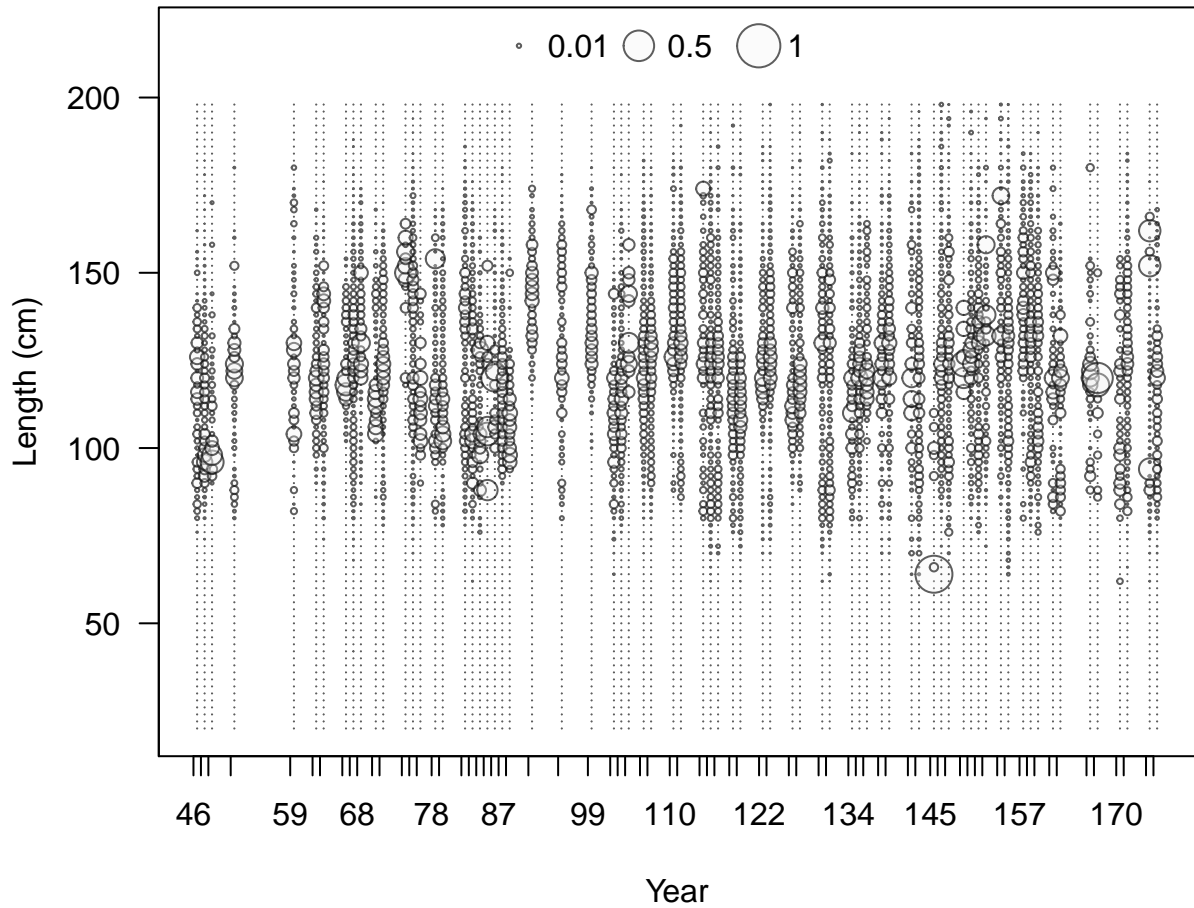




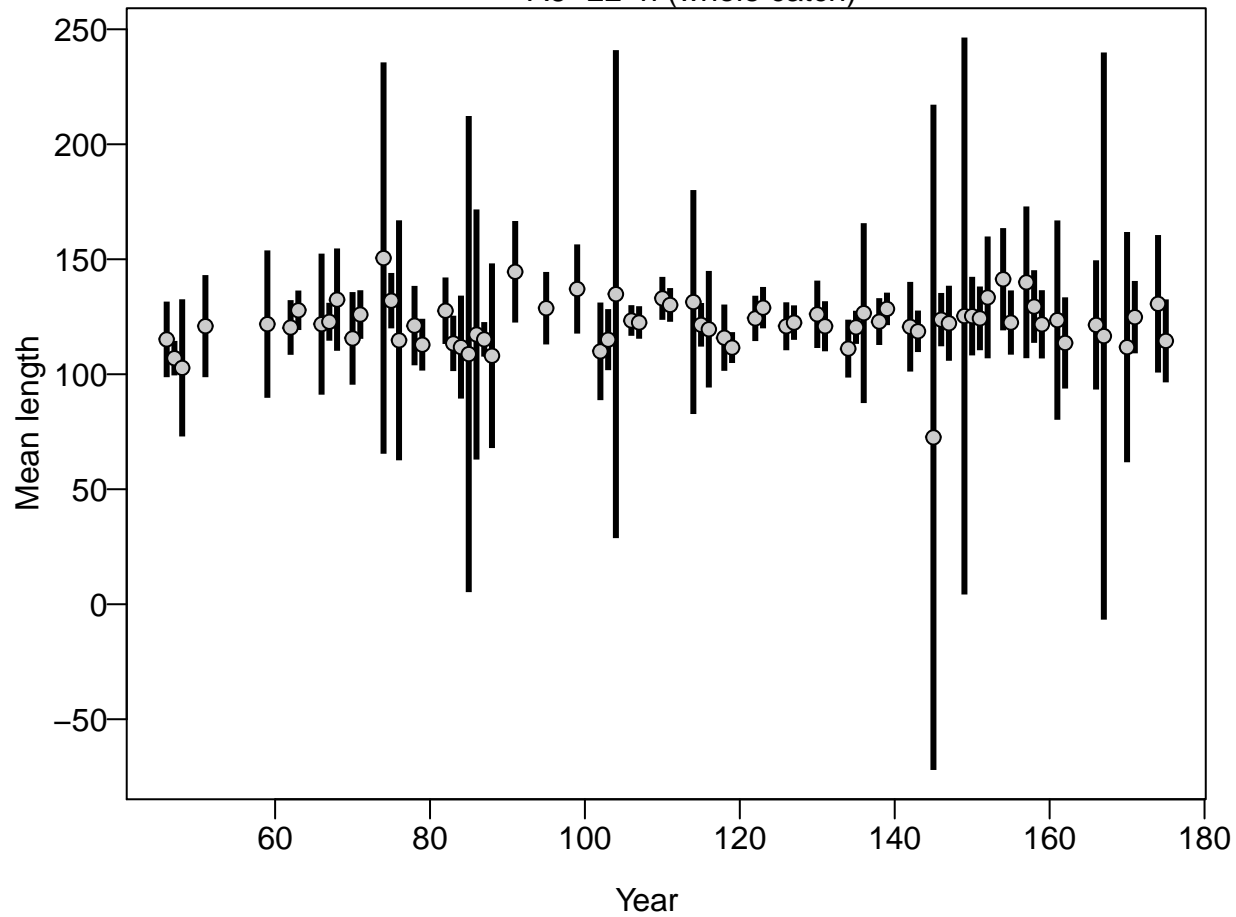


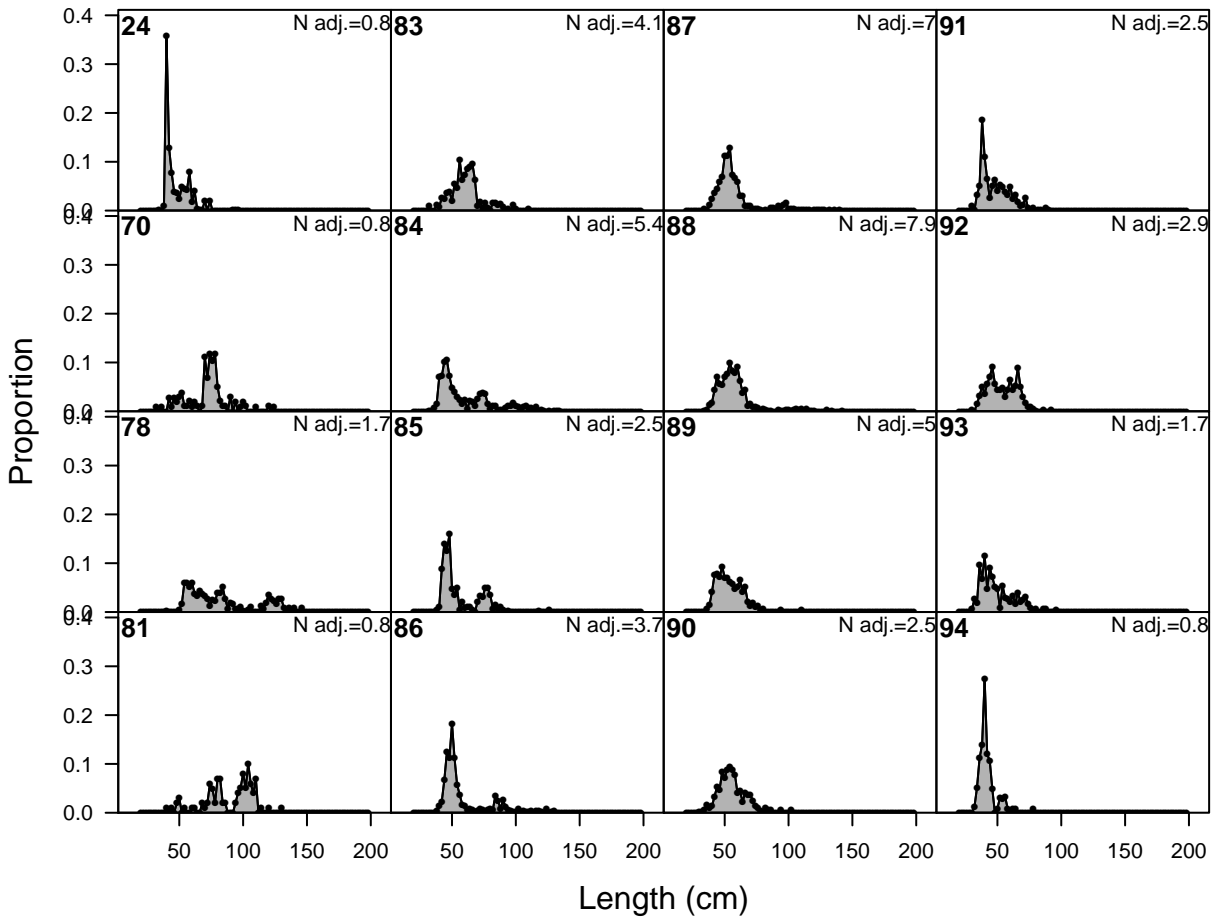


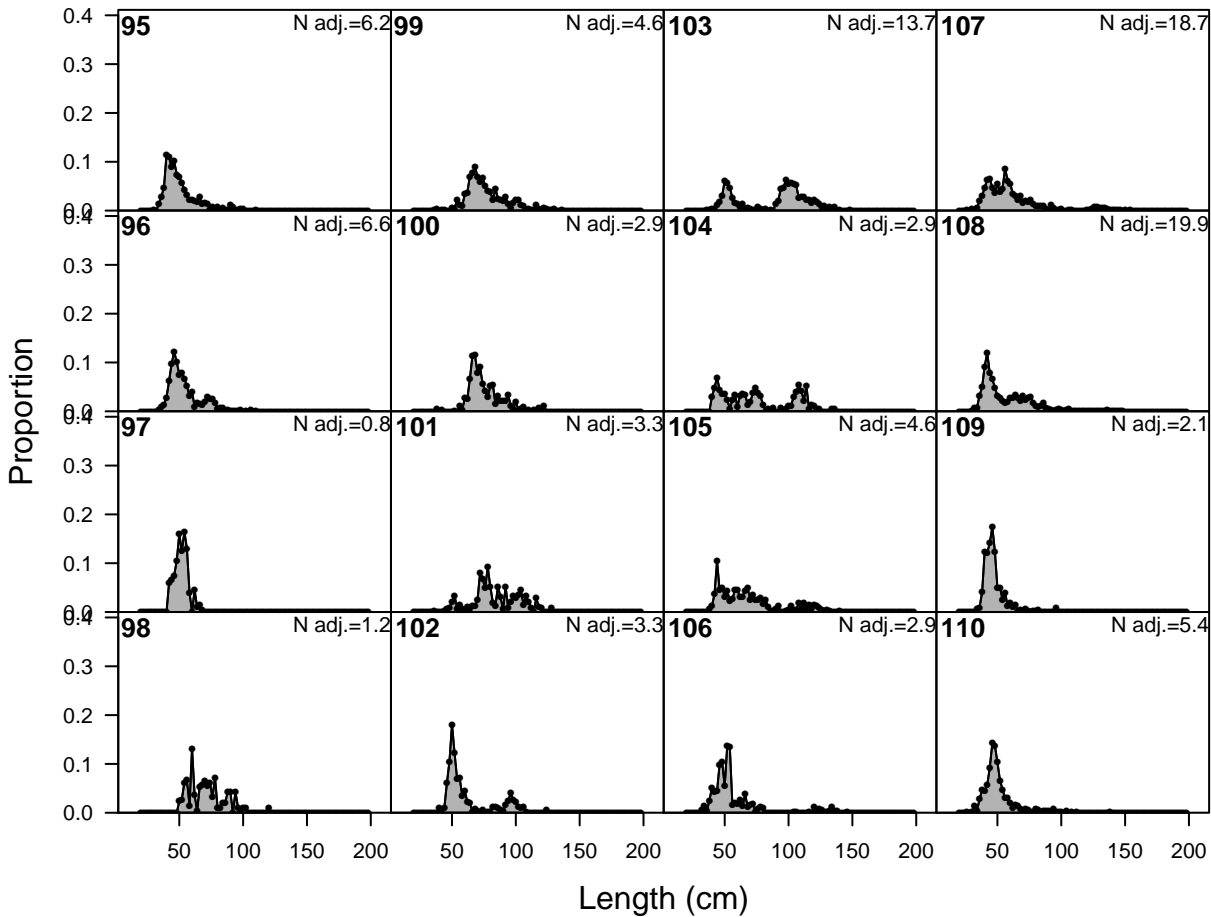


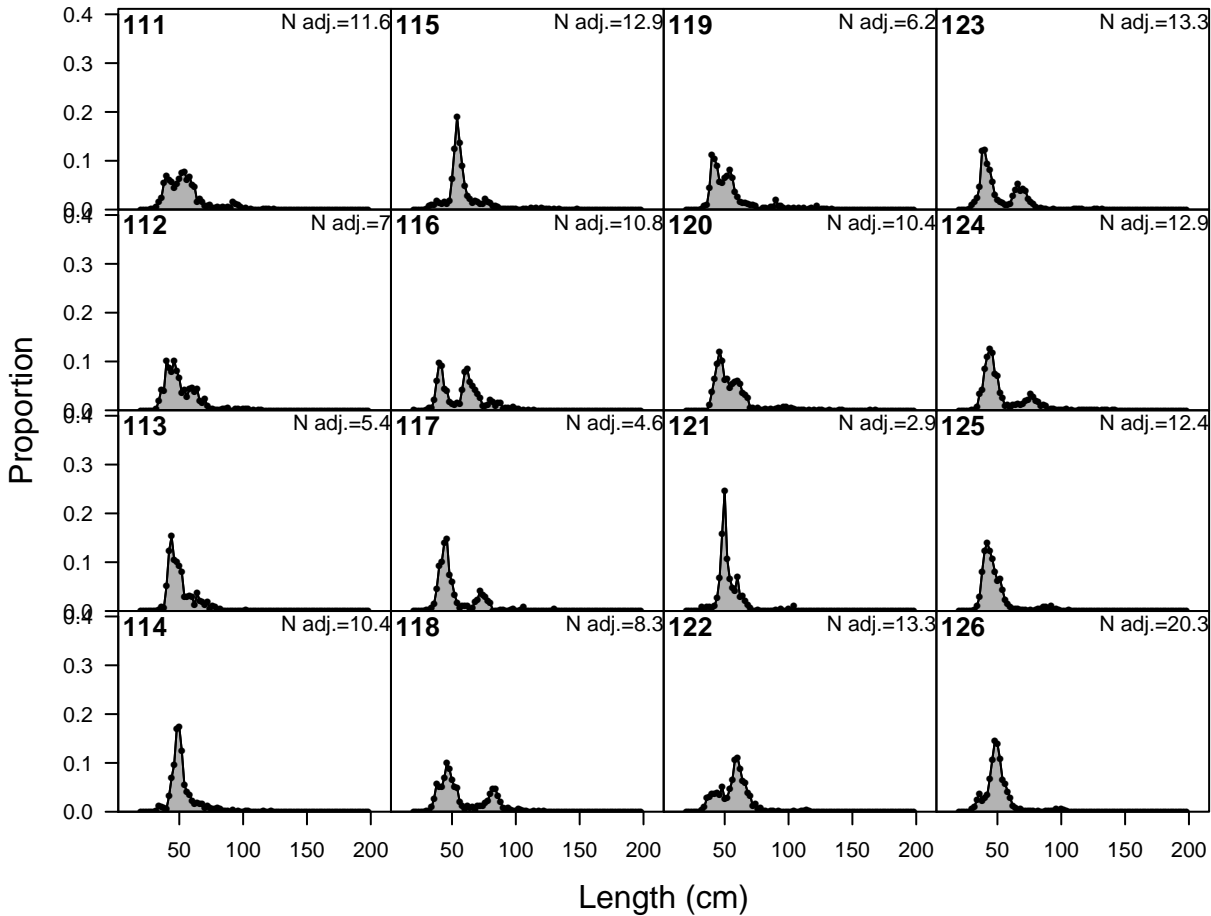


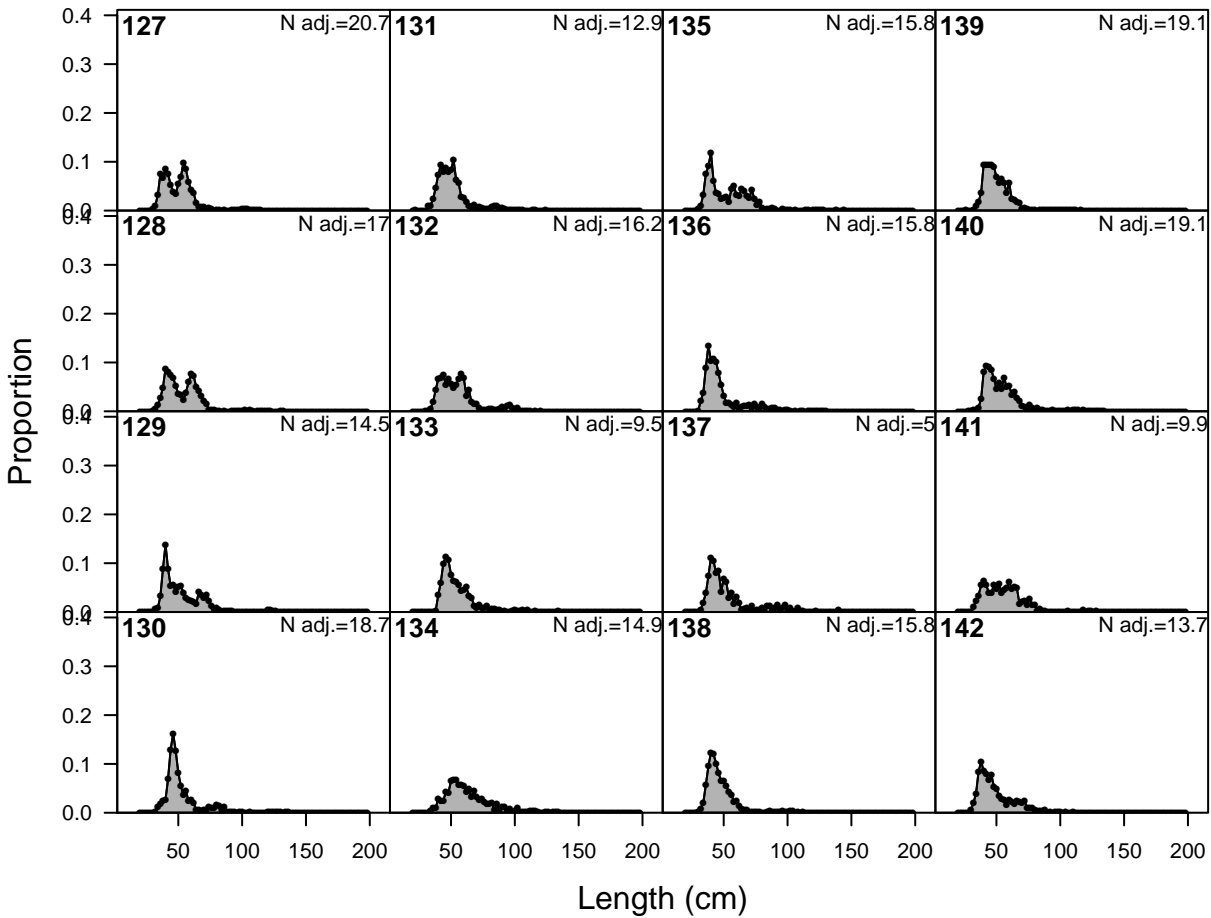
A6-LL-n (whole catch)



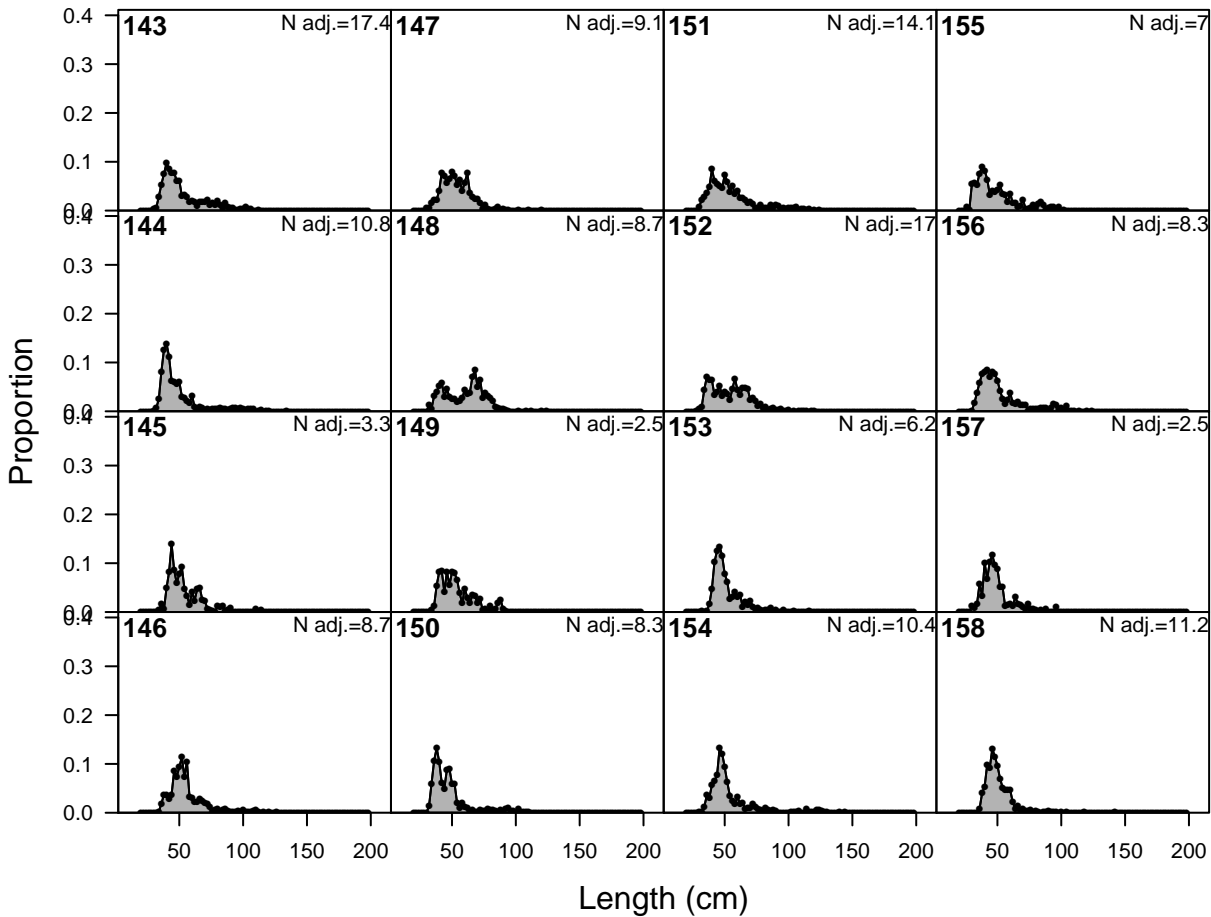


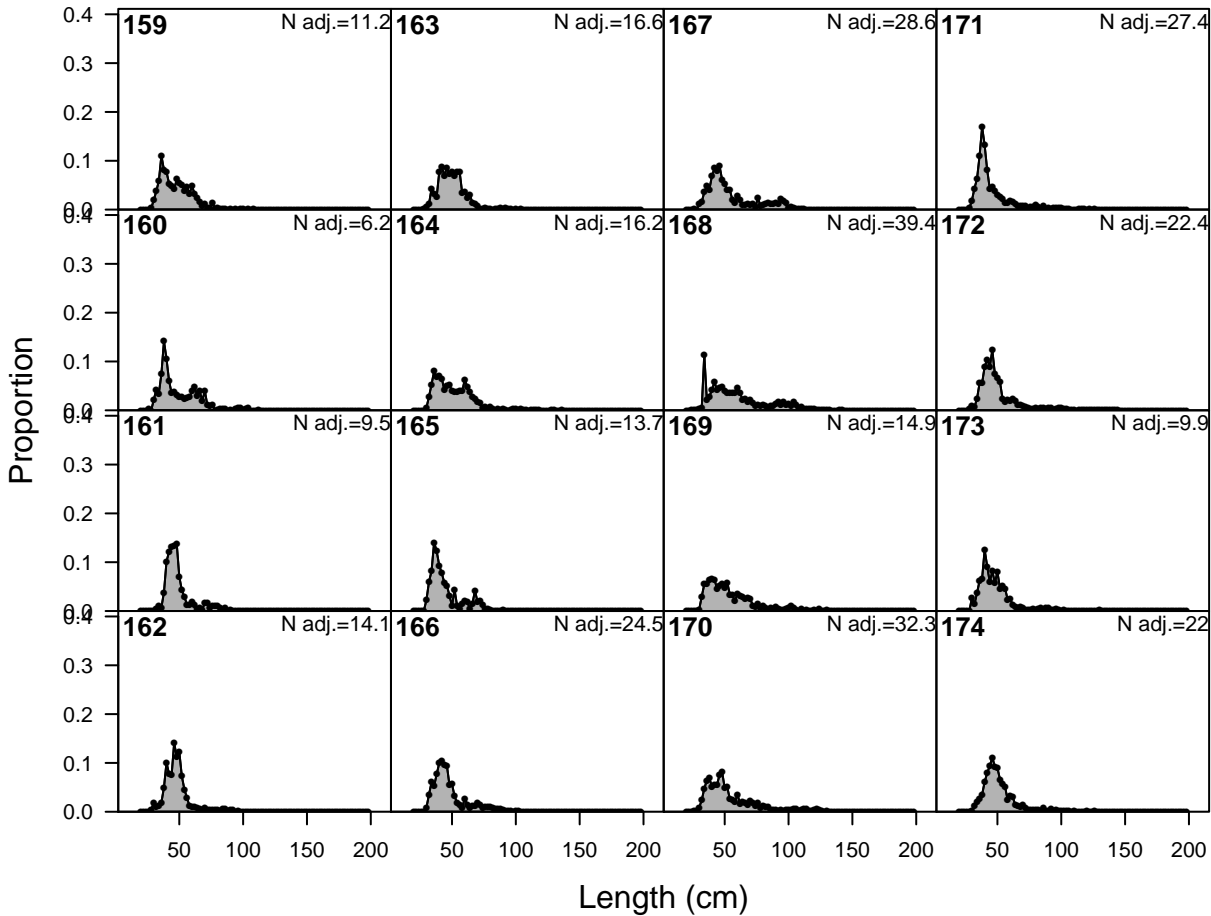


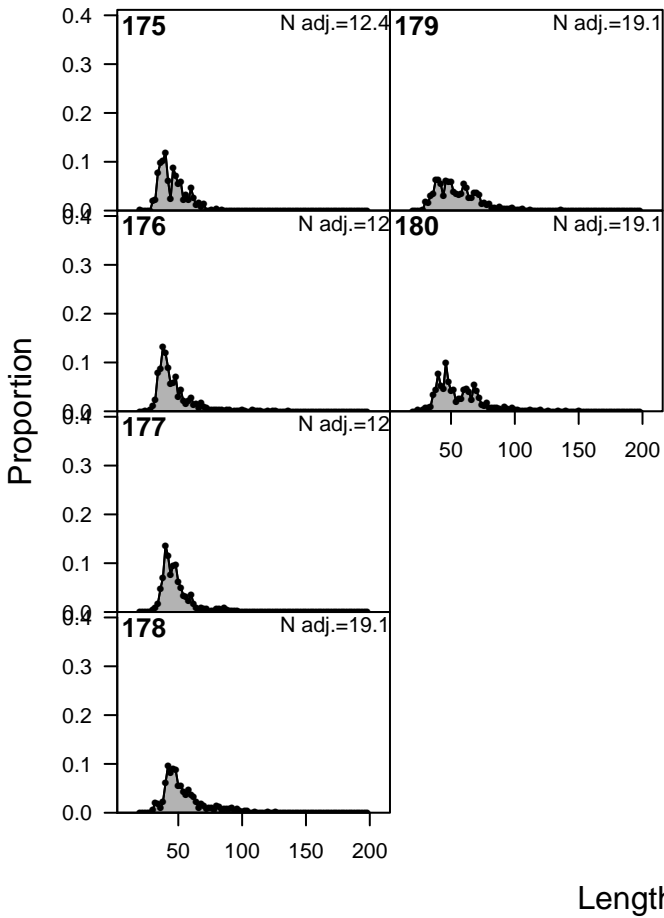


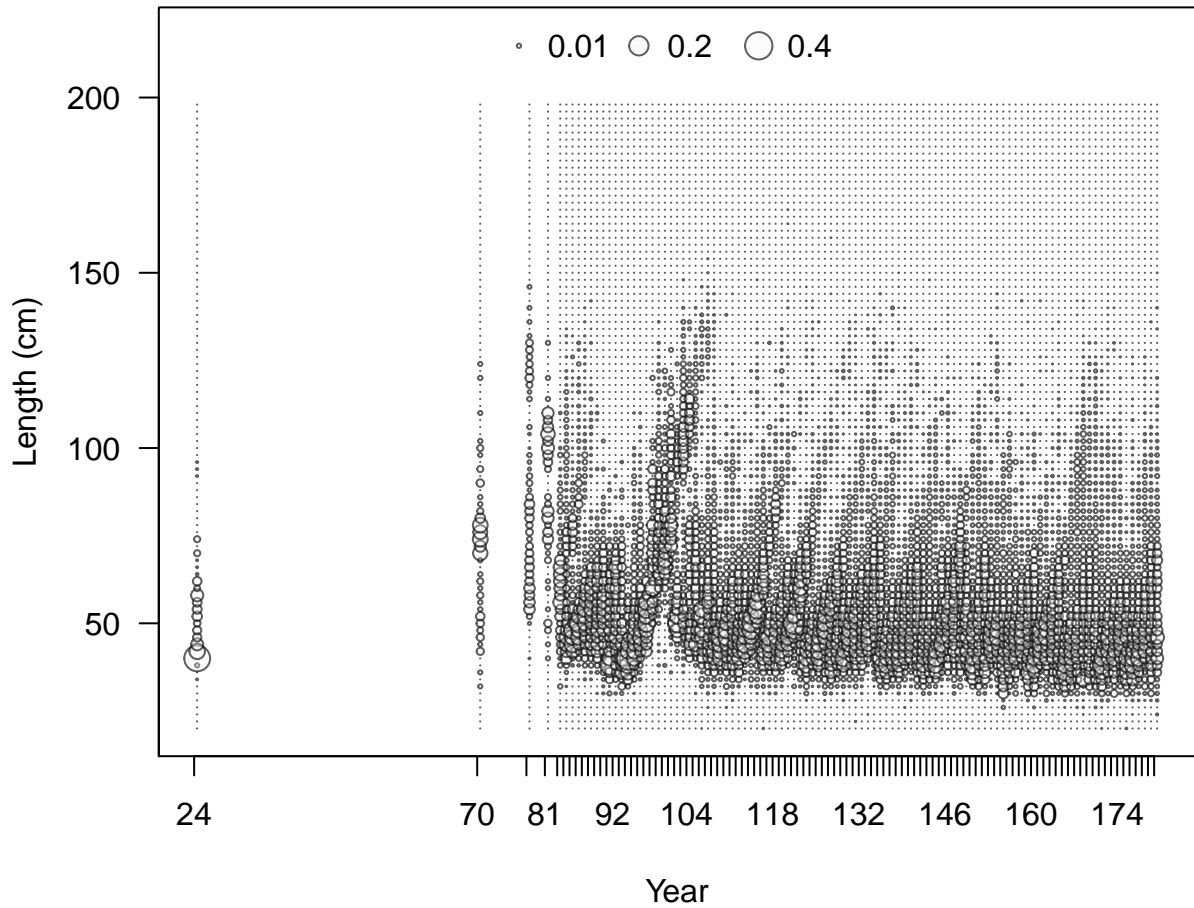




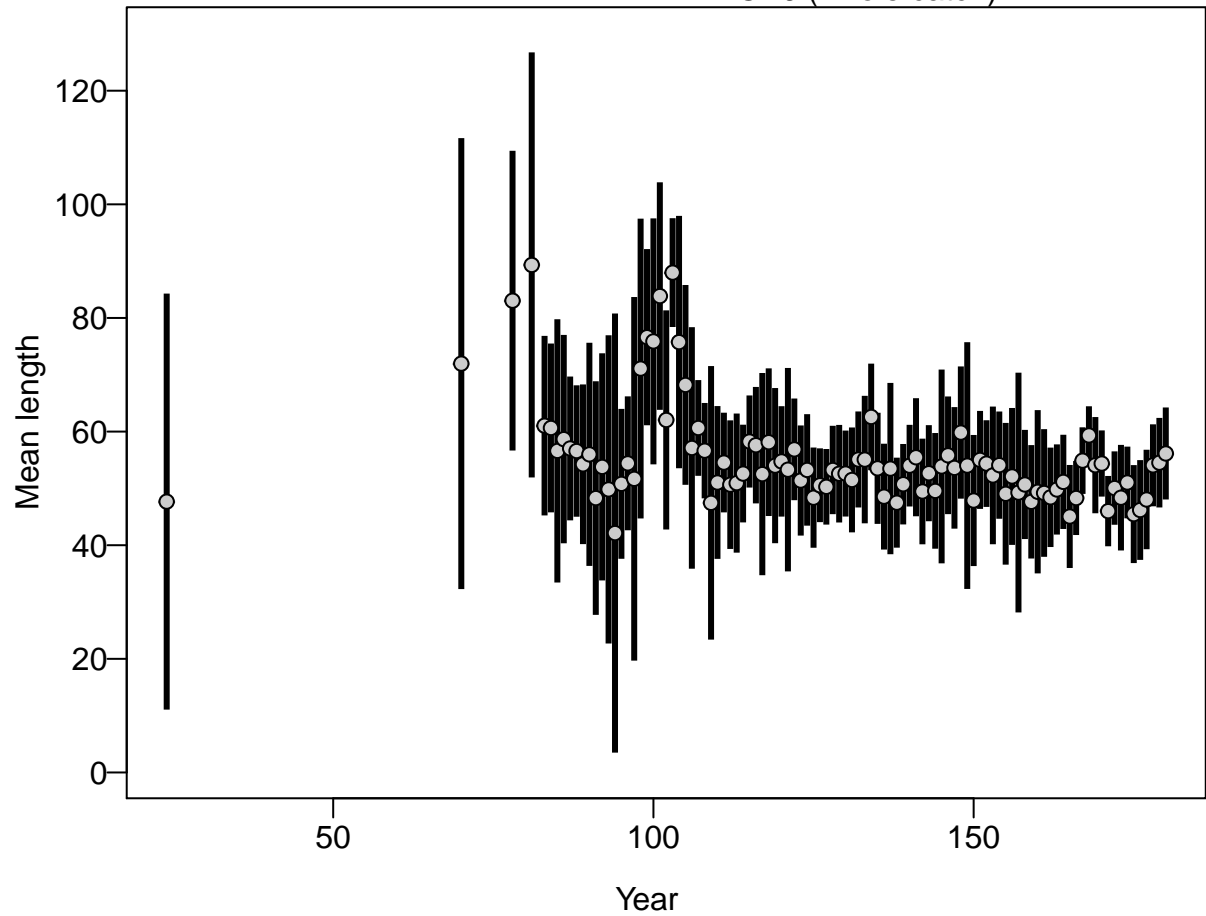


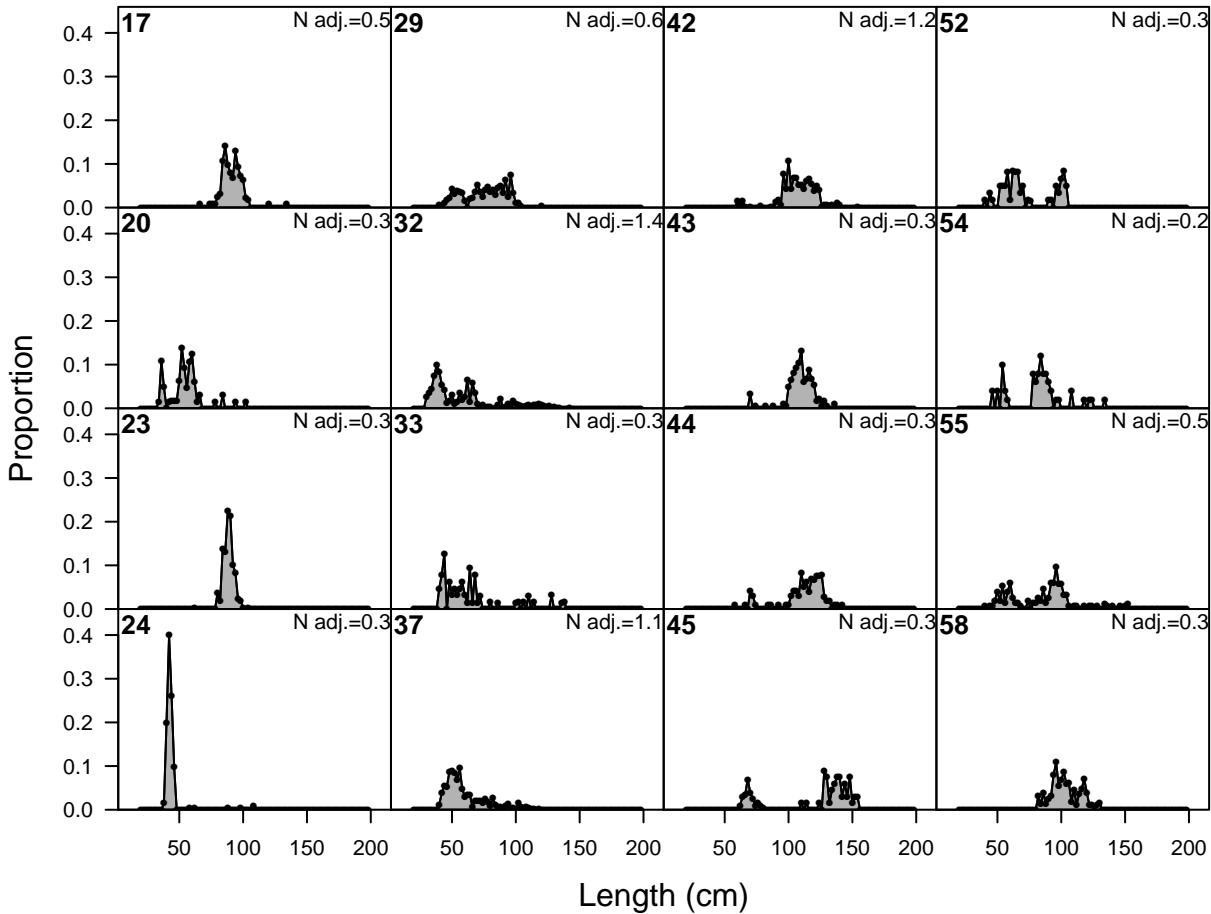


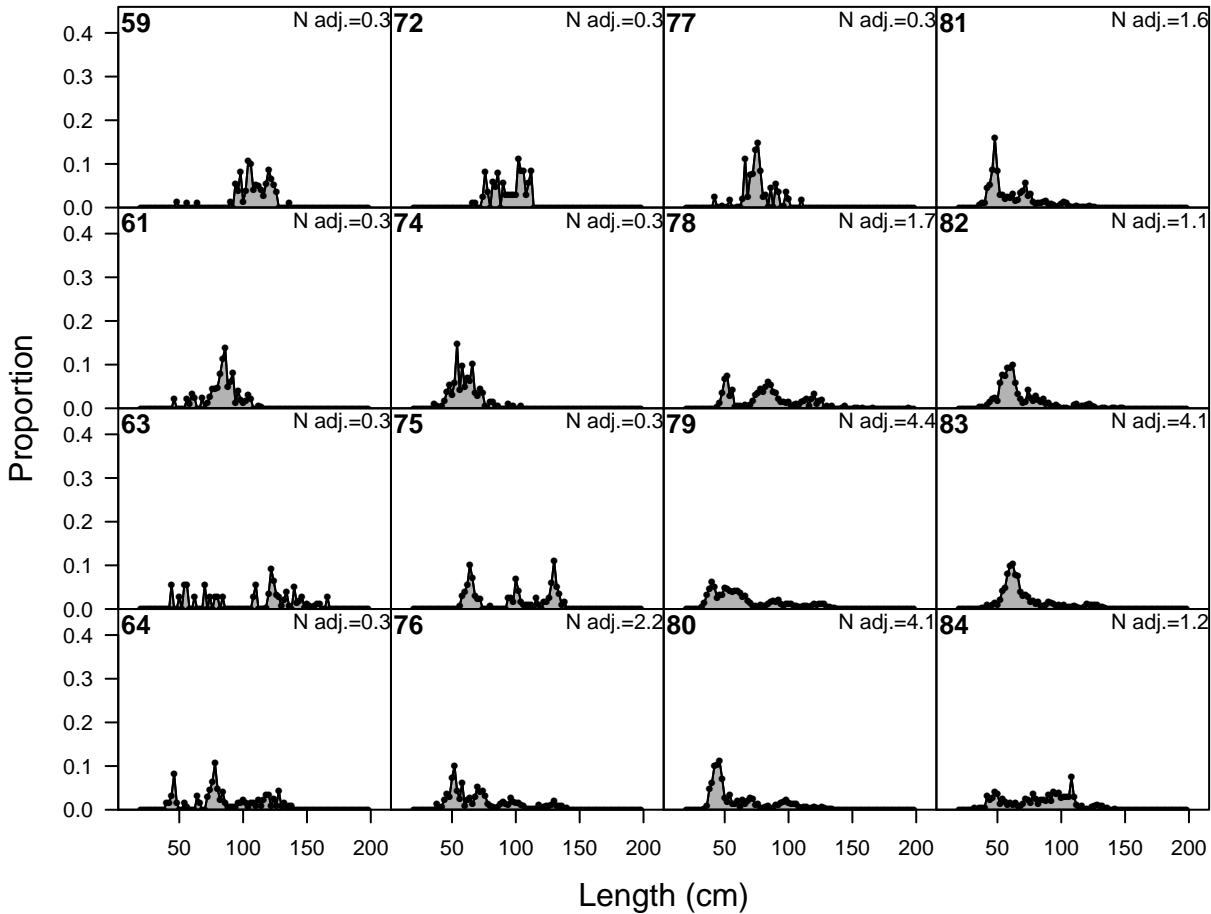


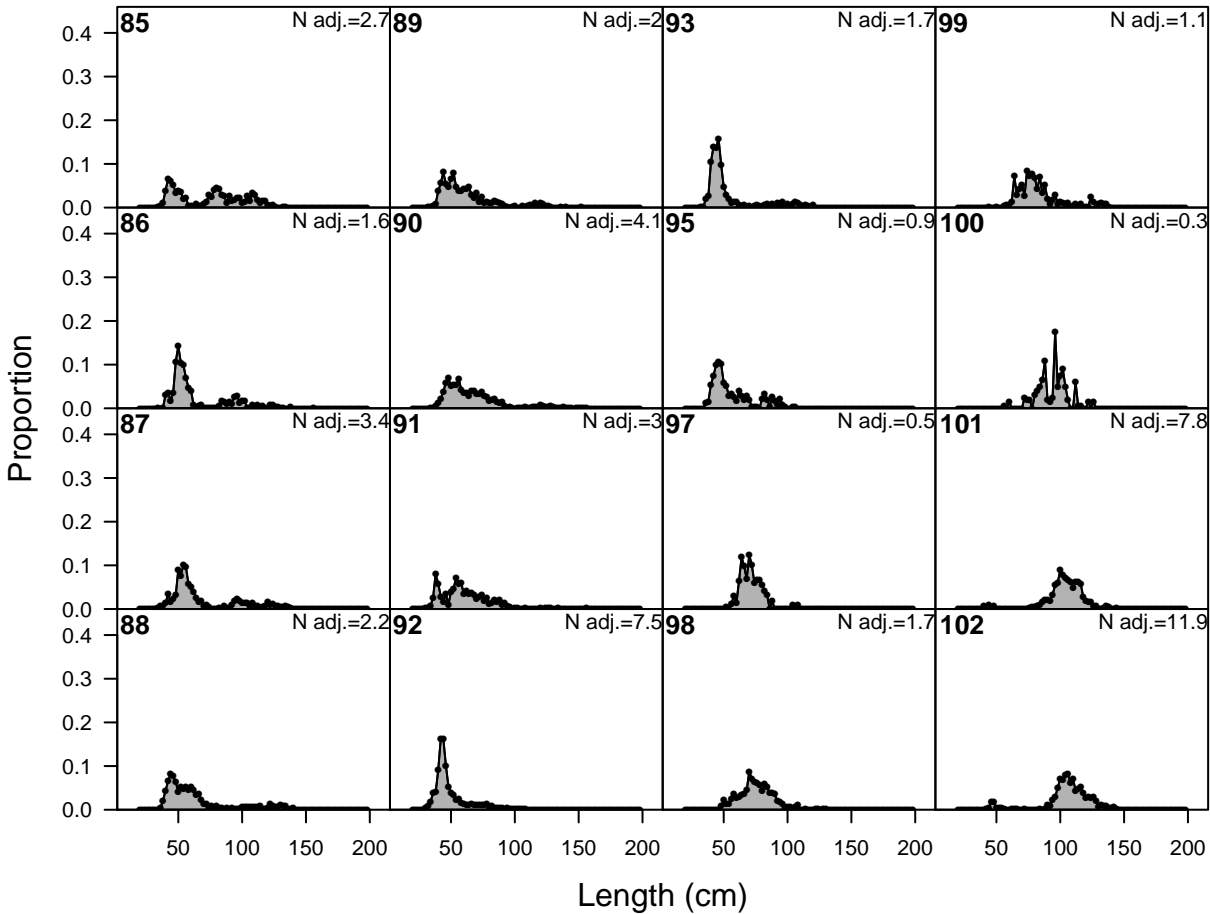


## A2-OBJ (whole catch)

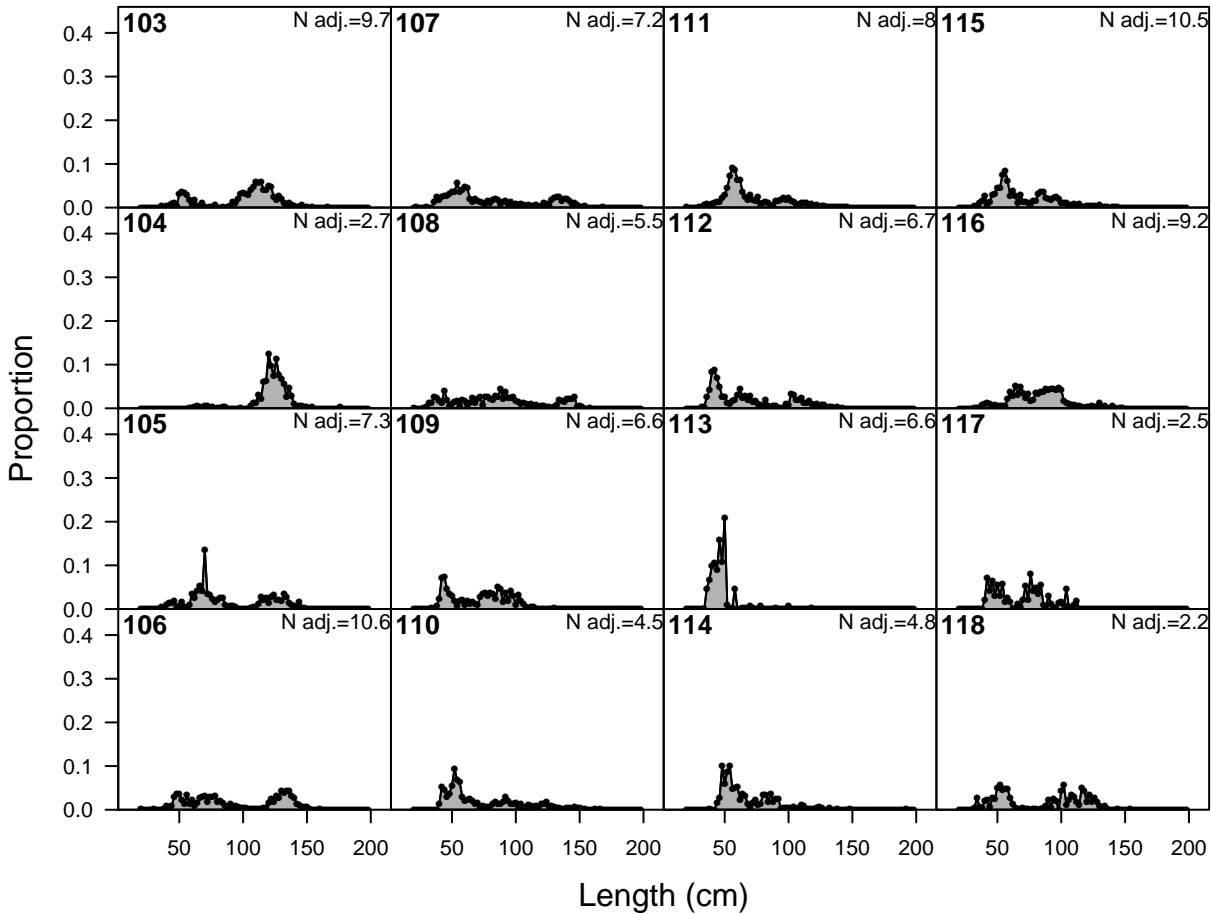


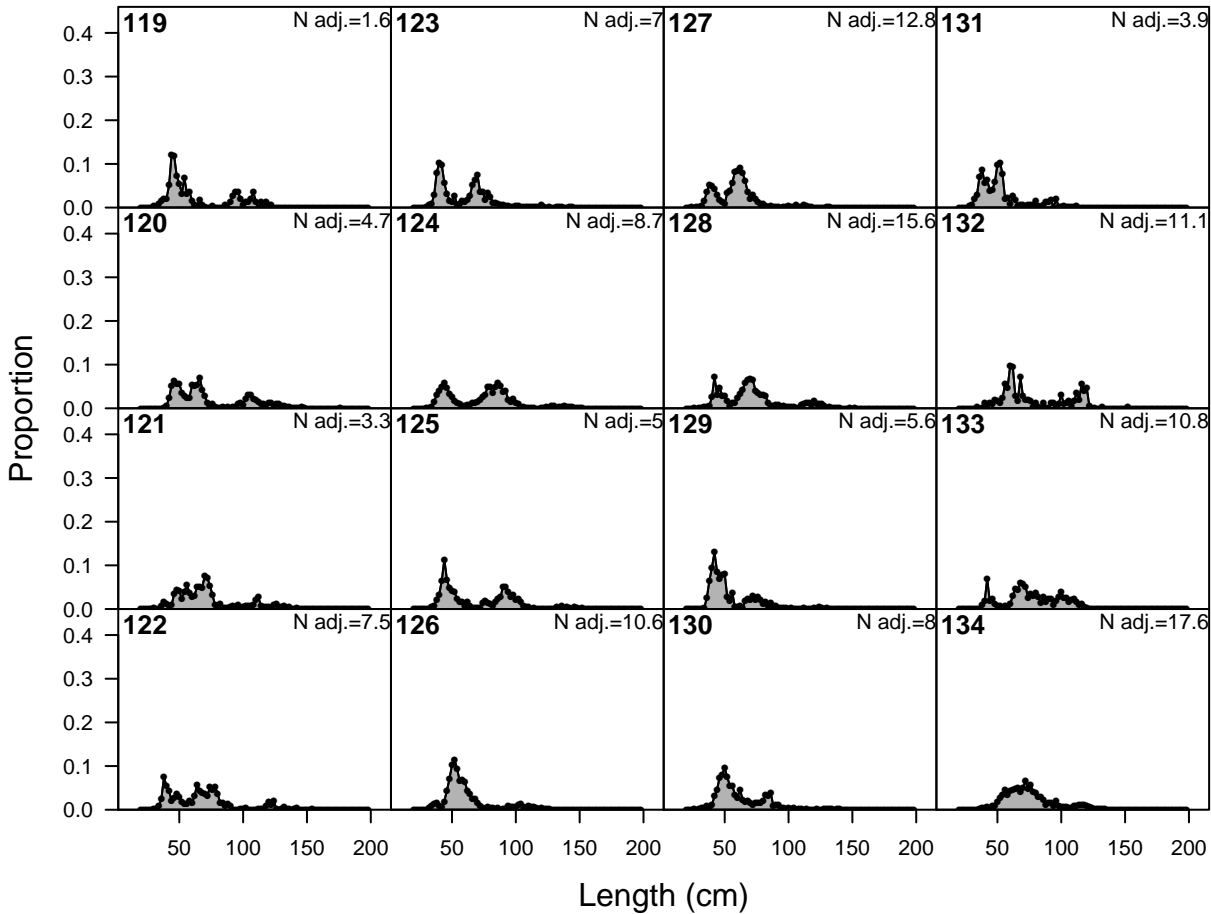


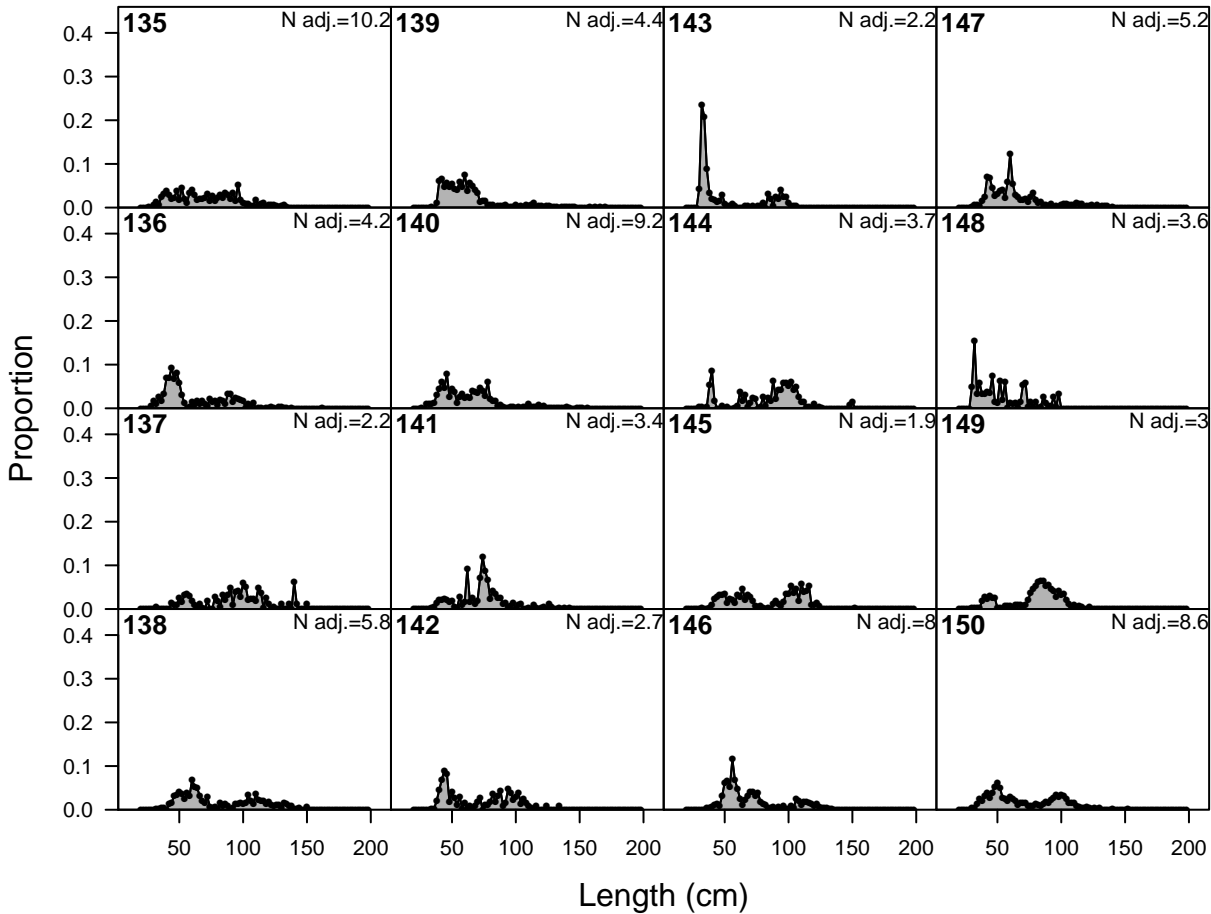


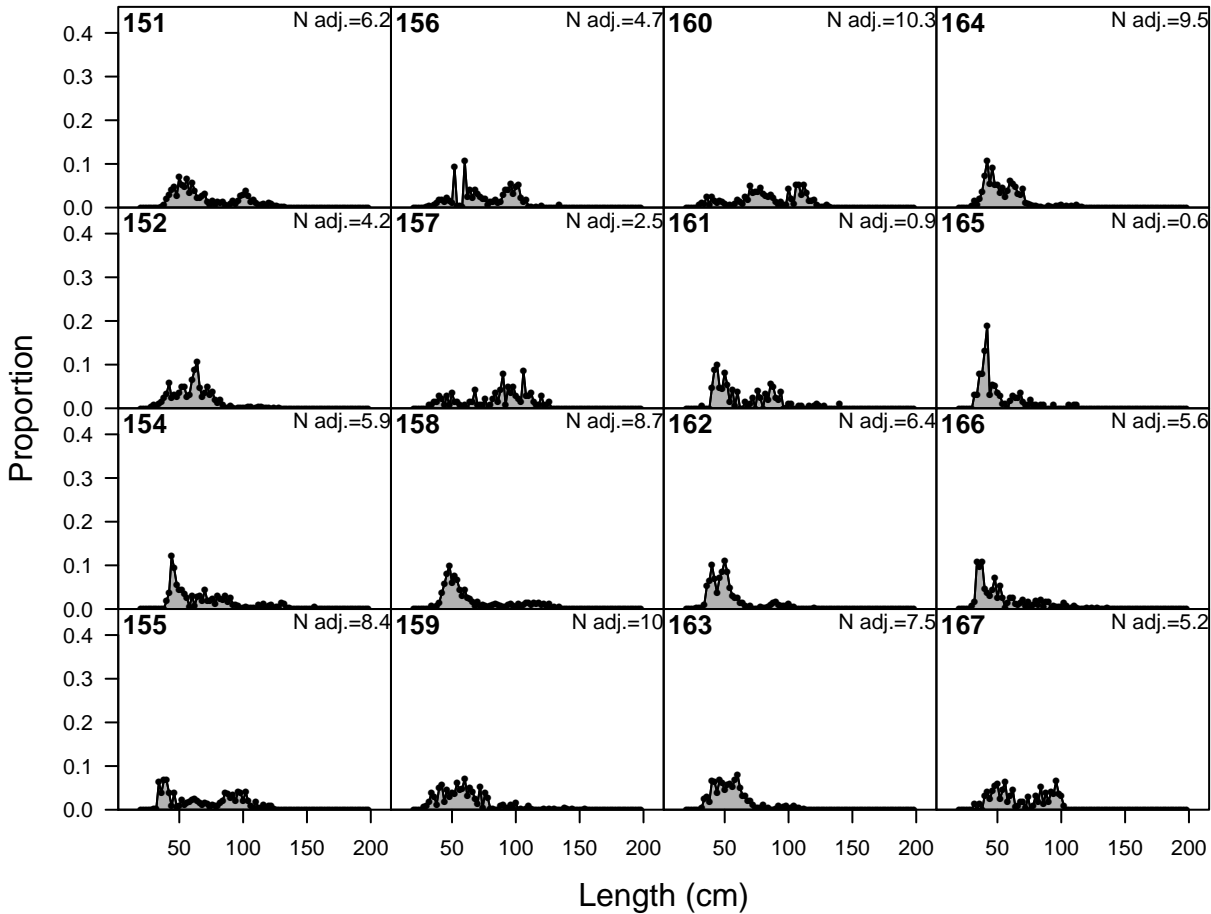


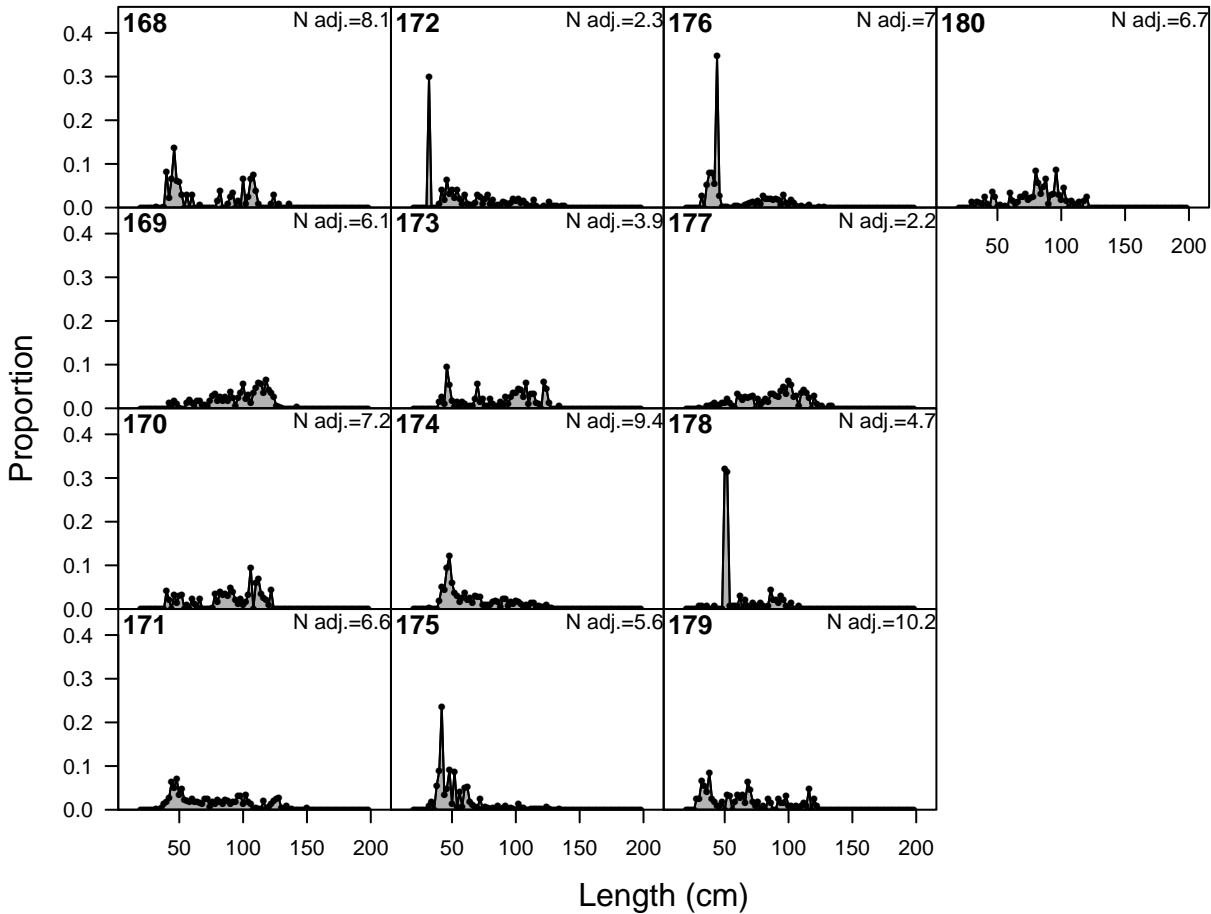


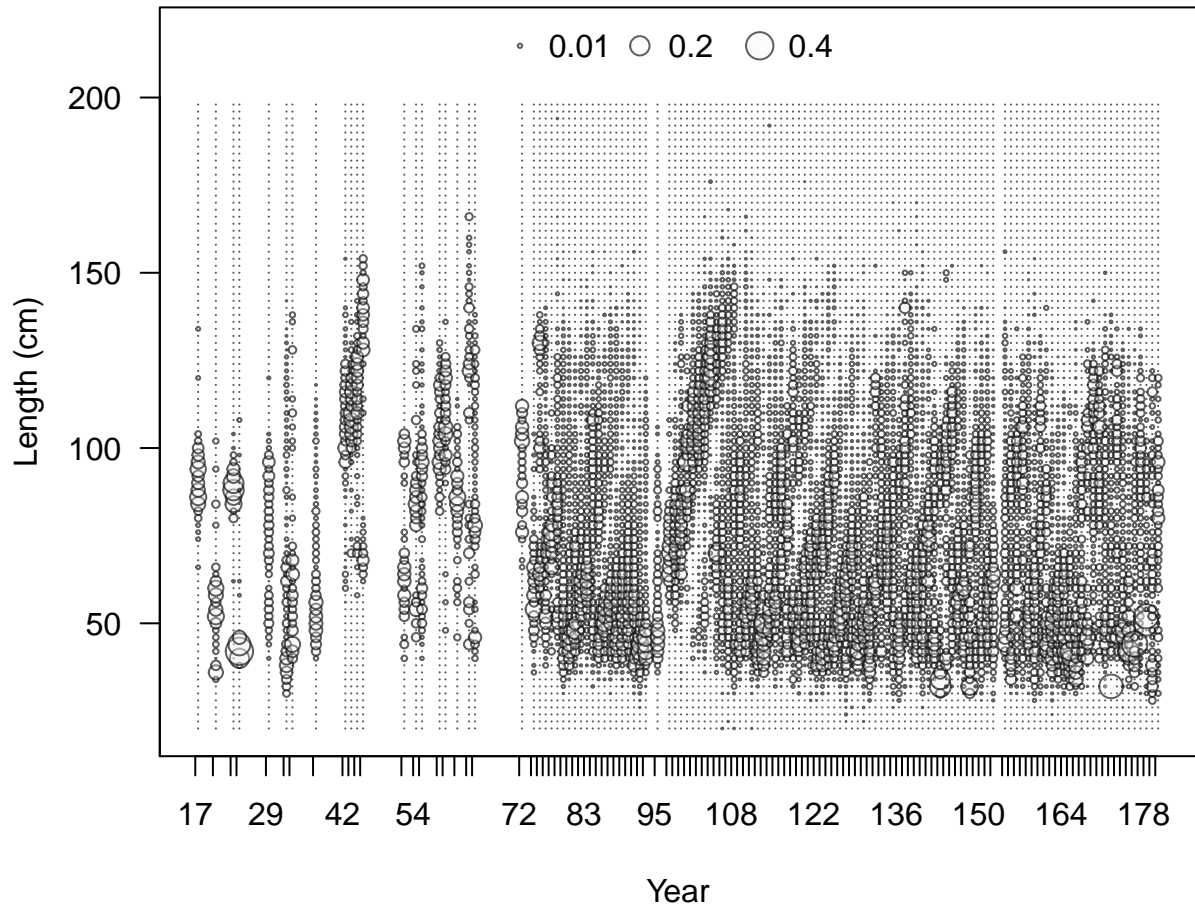




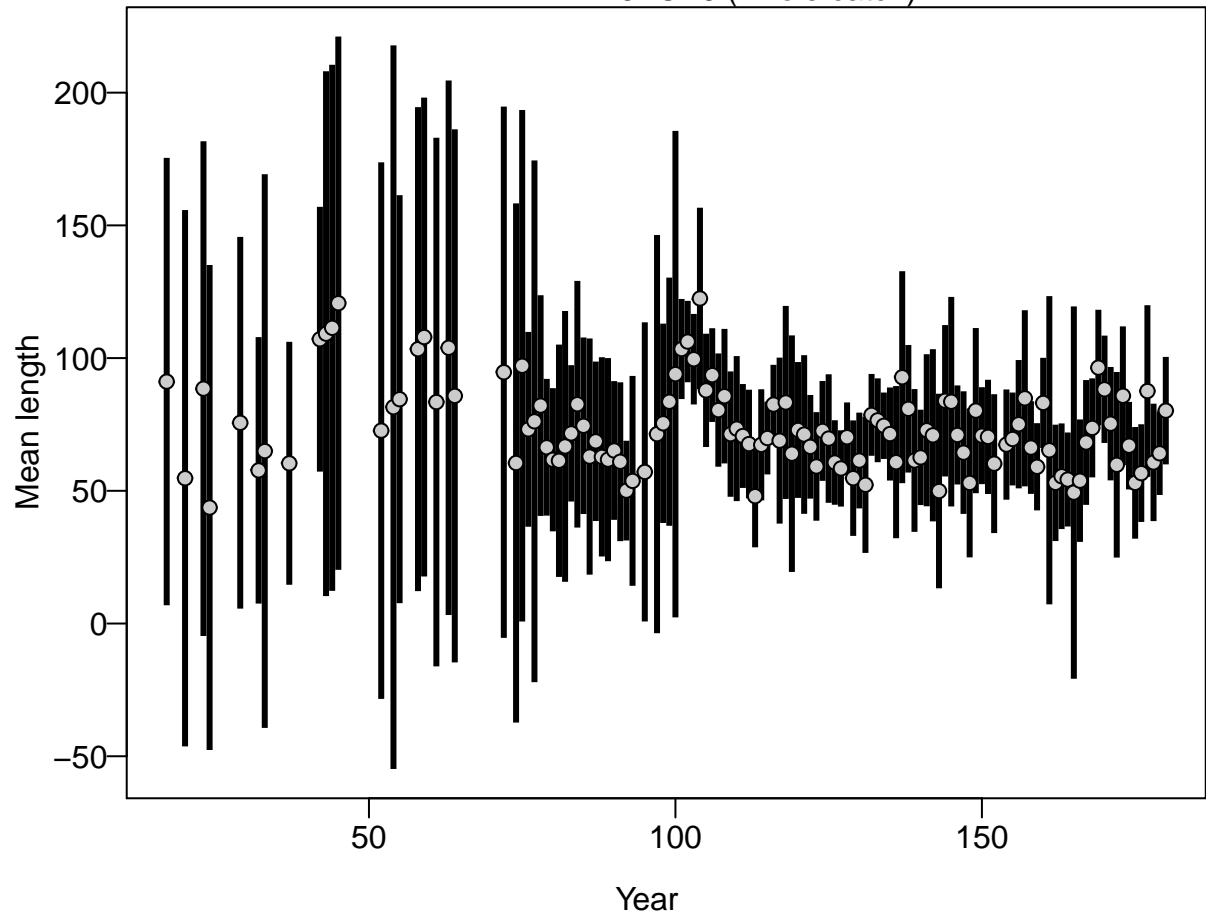




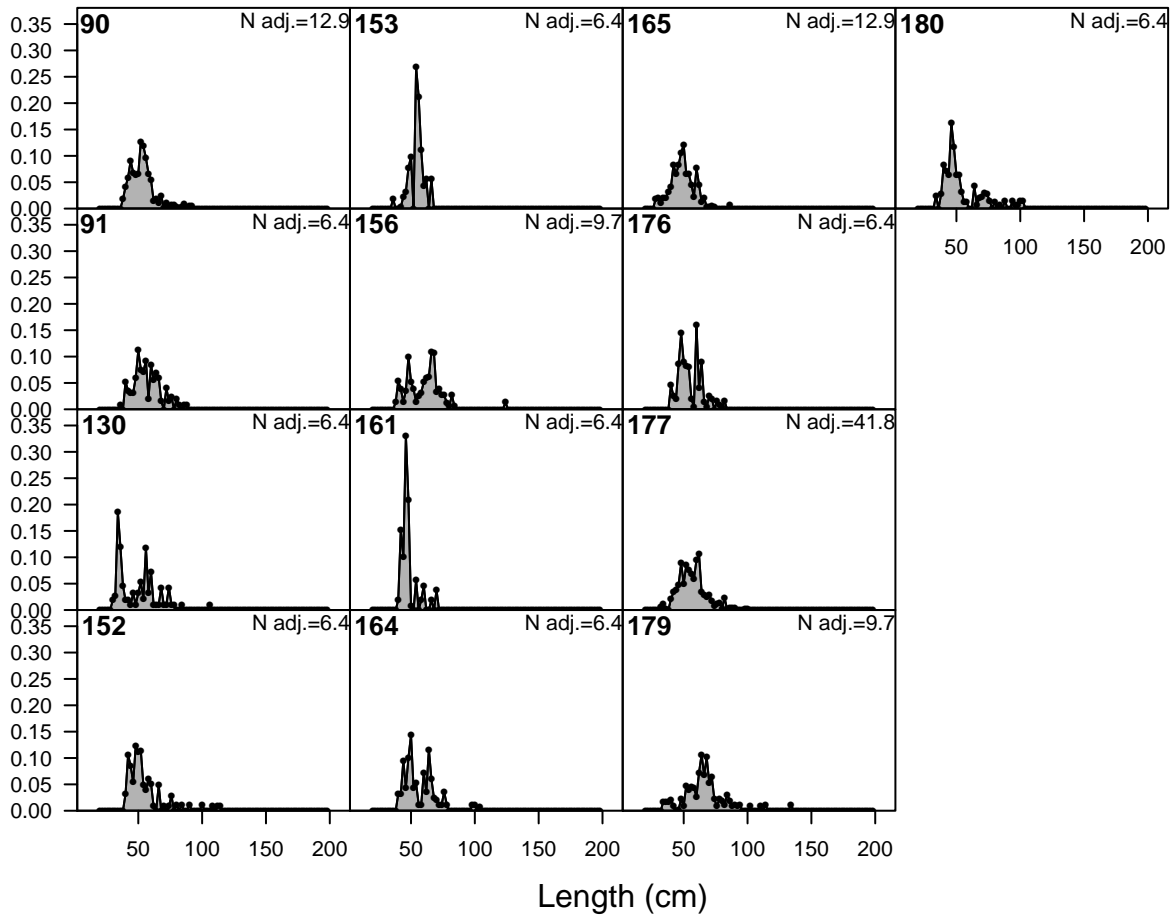




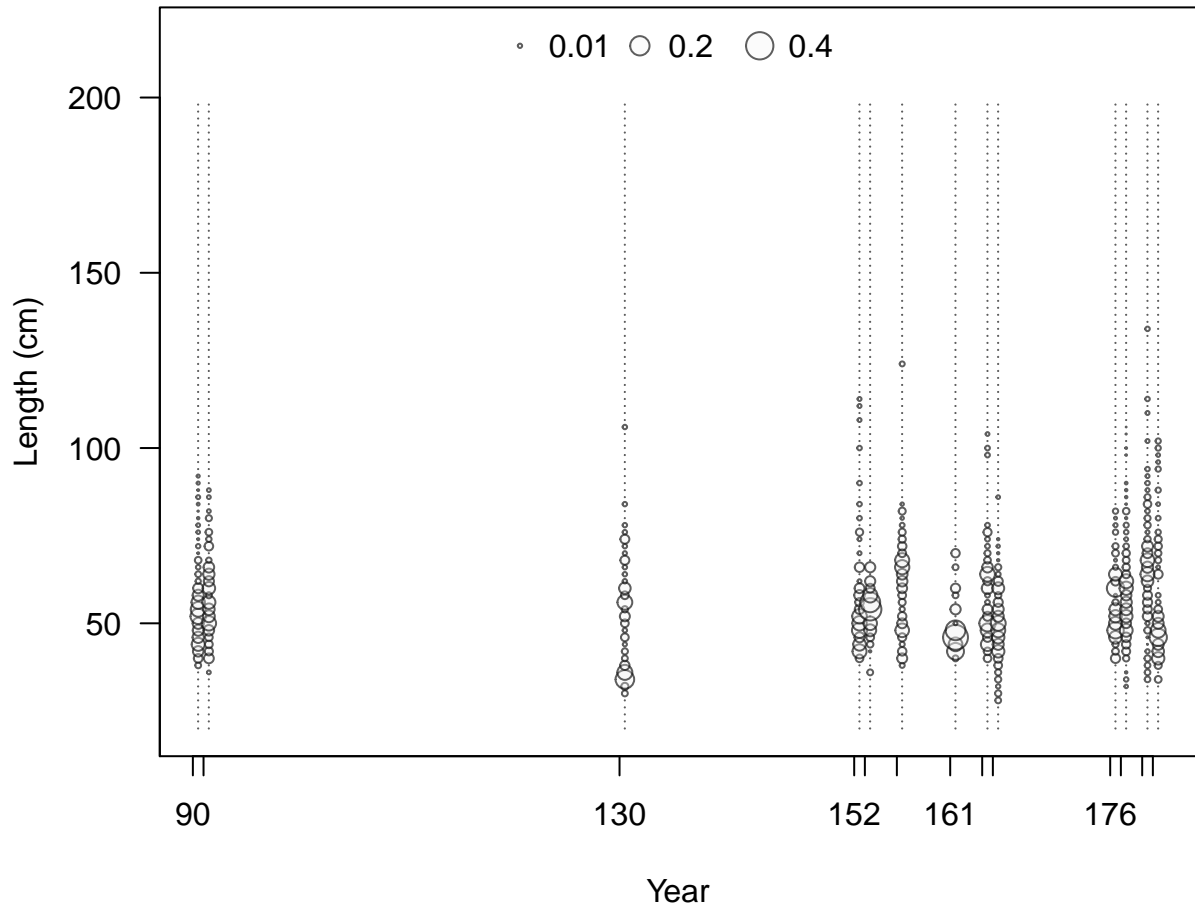
## A3-OBJ (whole catch)



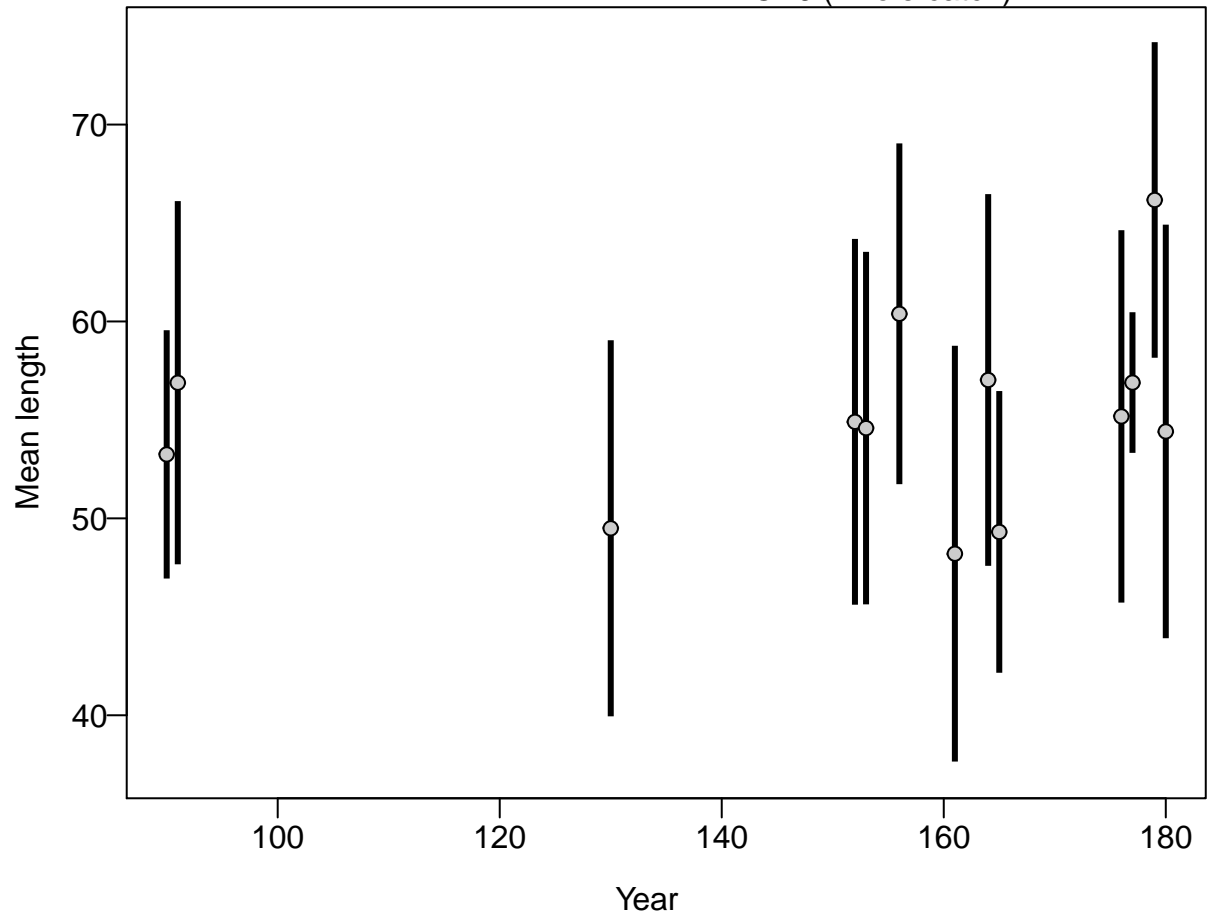
Proportion



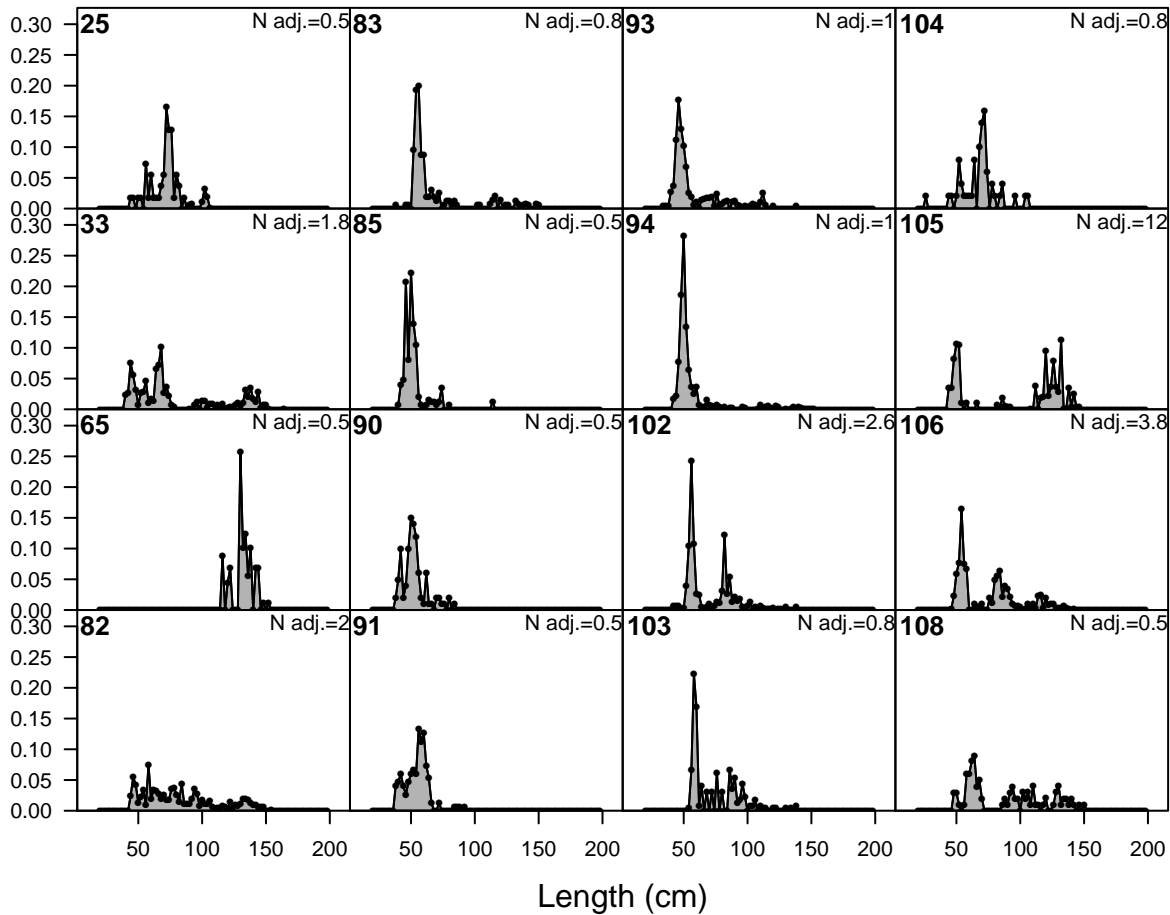




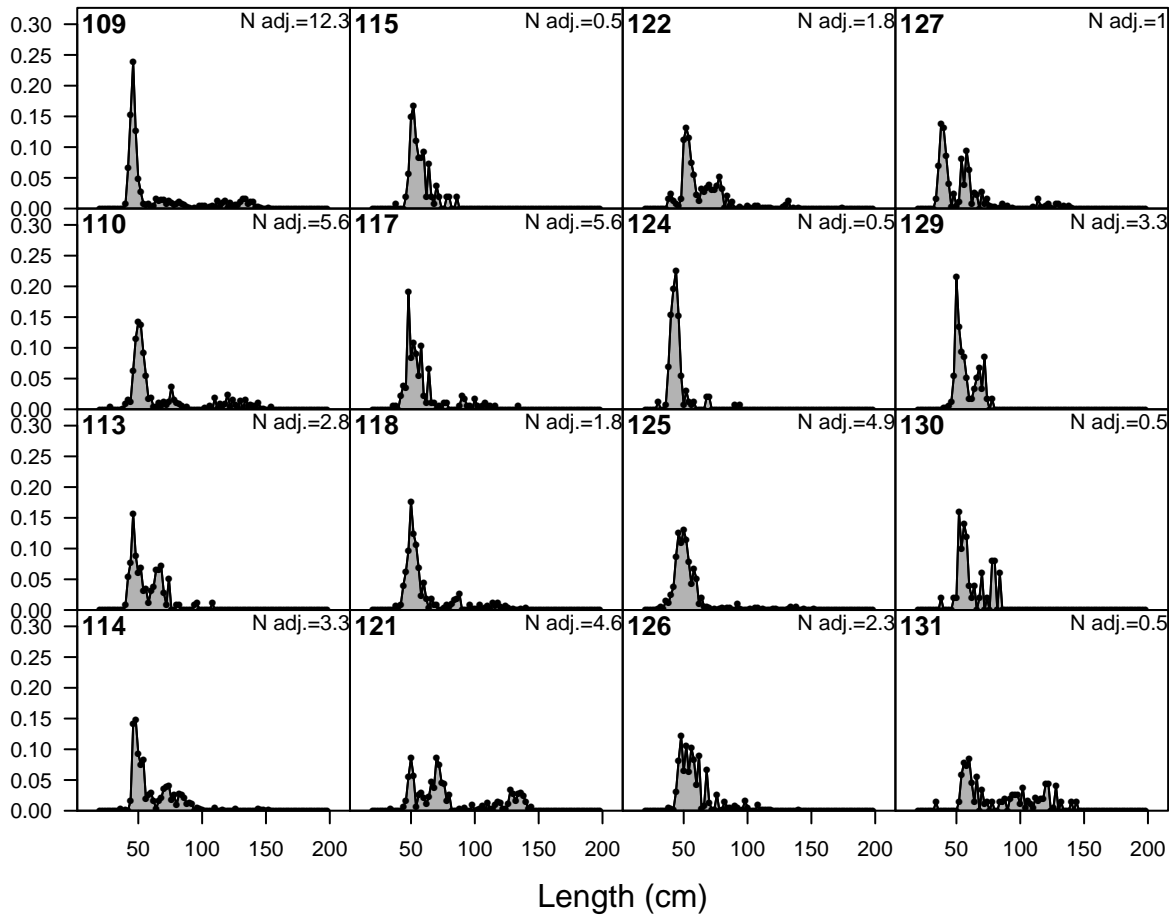
## A4-OBJ (whole catch)



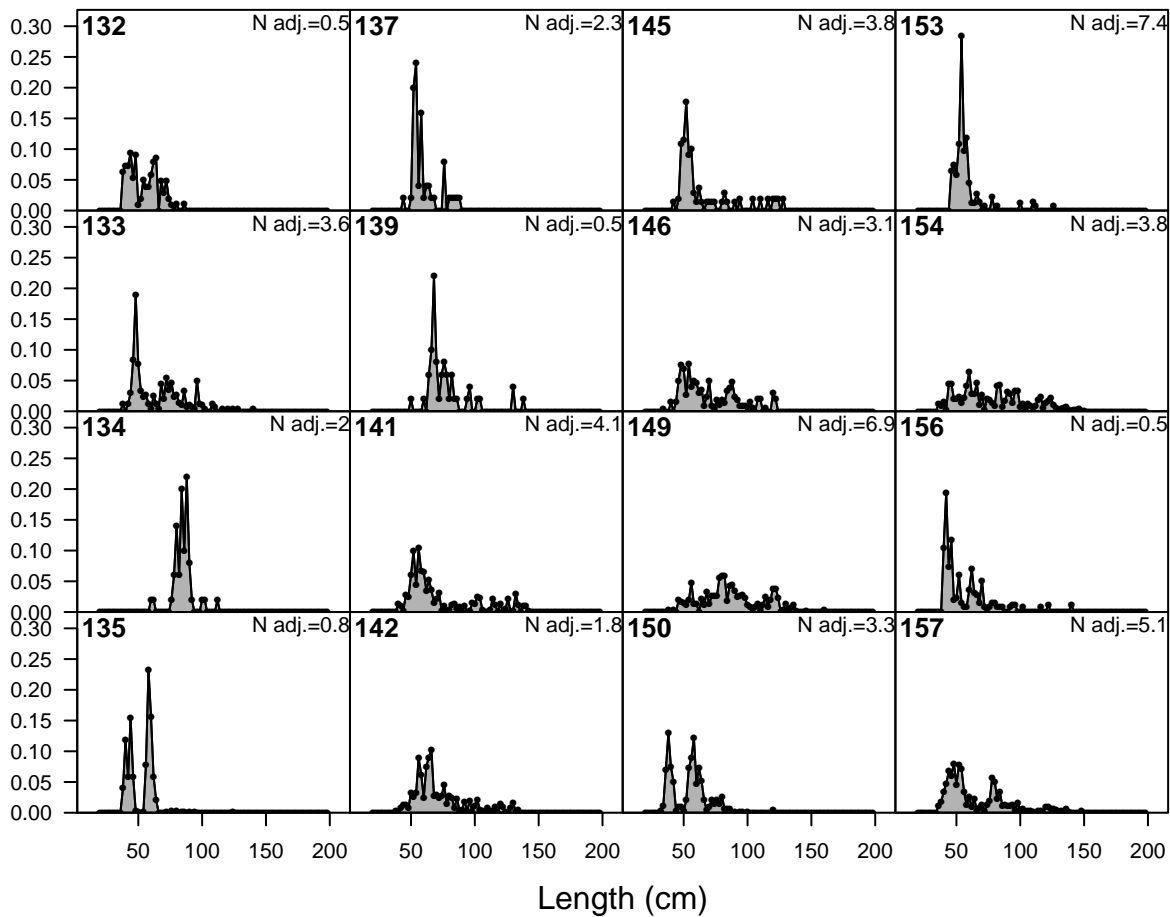
Proportion



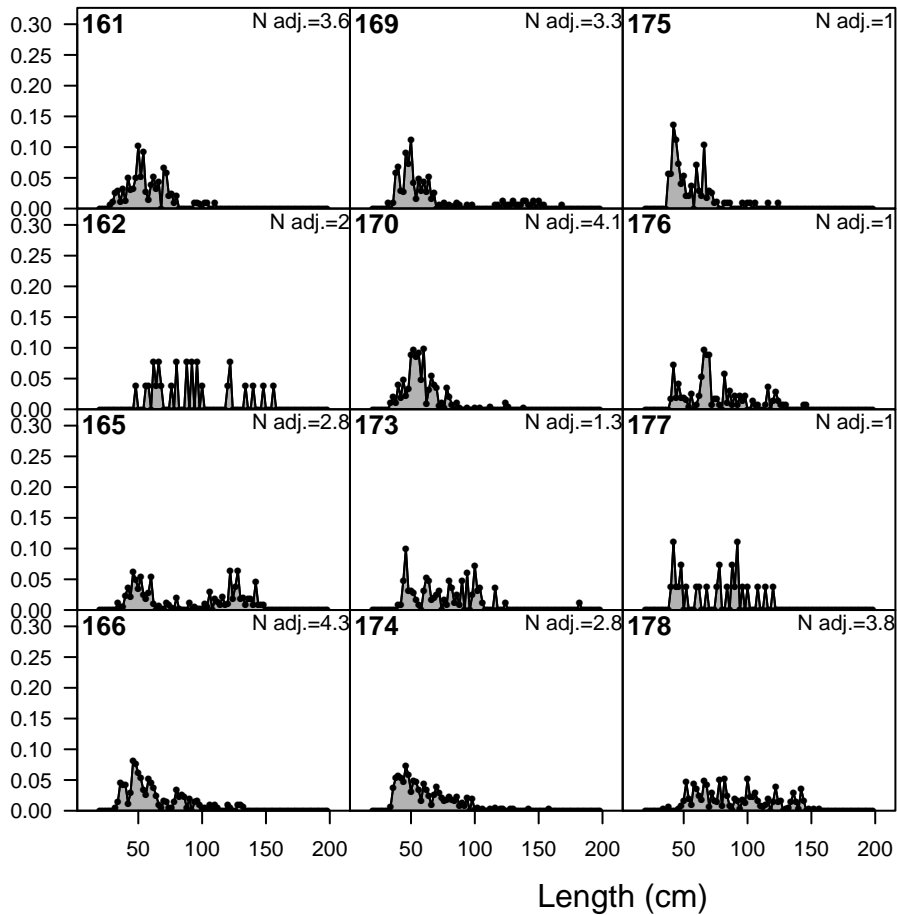
Proportion

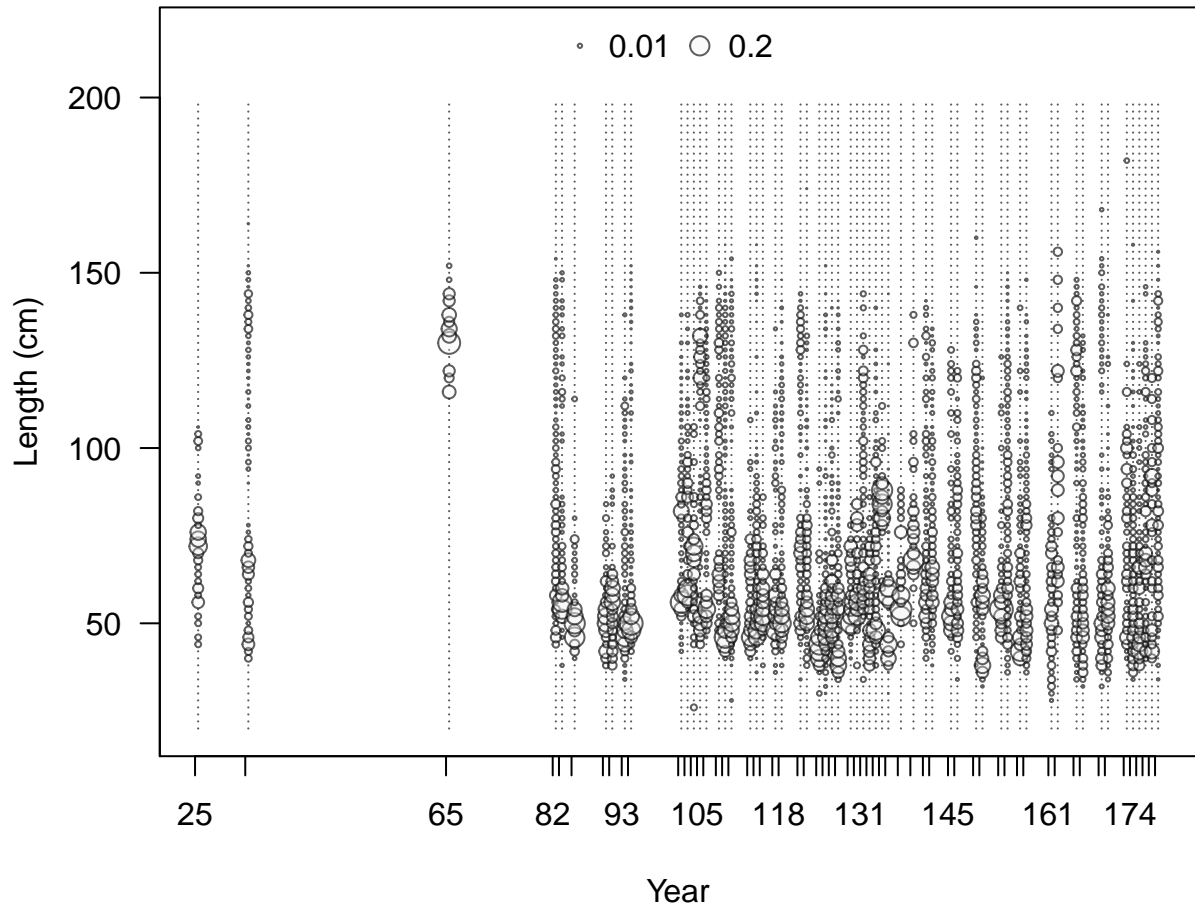


Proportion

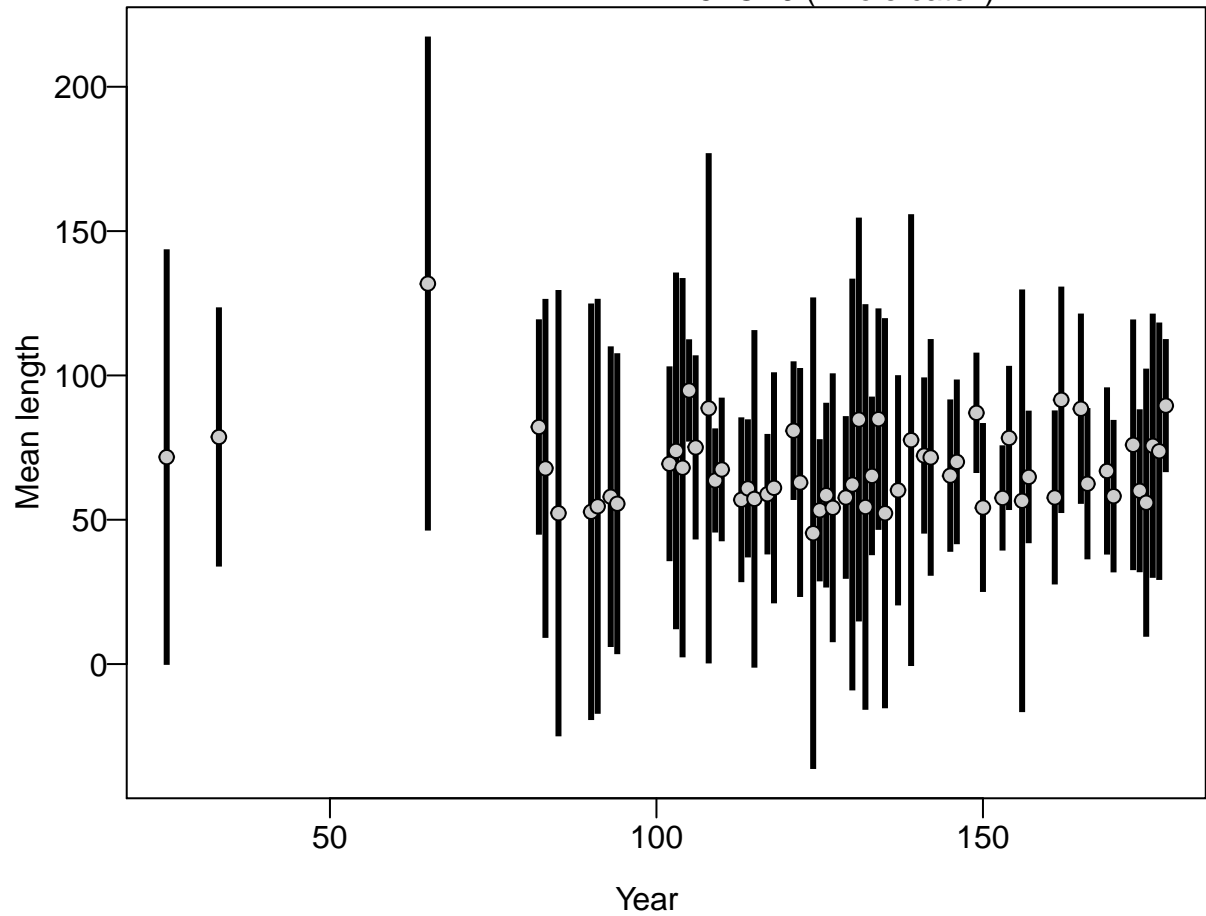


Proportion



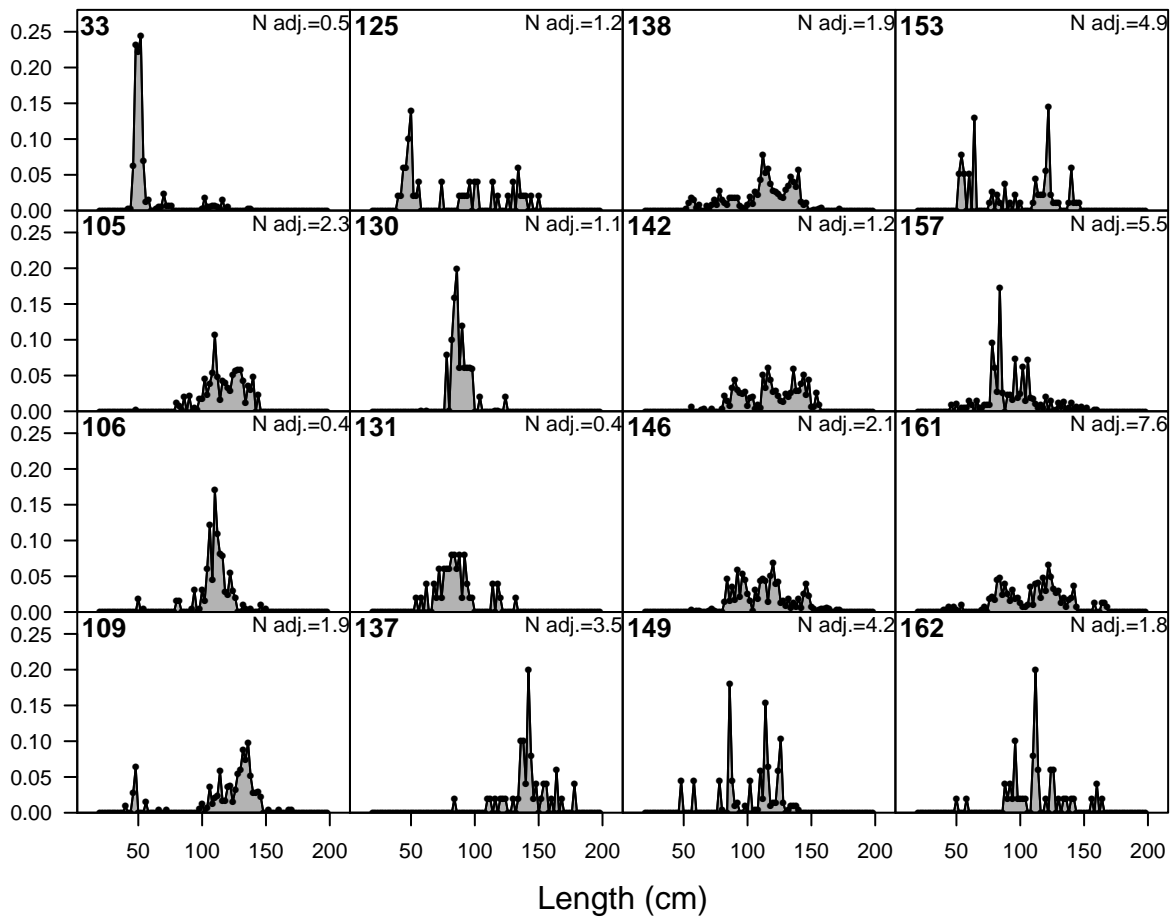


## A5-OBJ (whole catch)

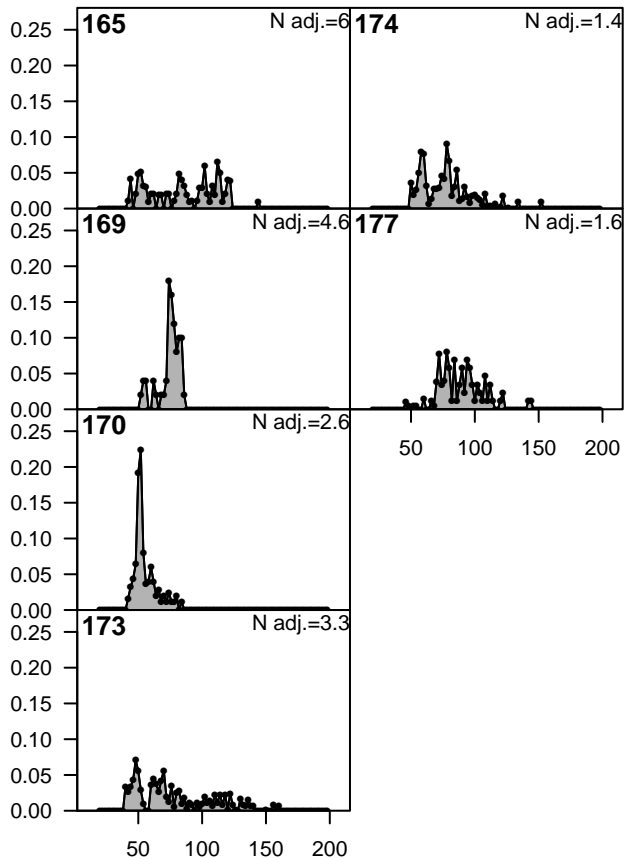




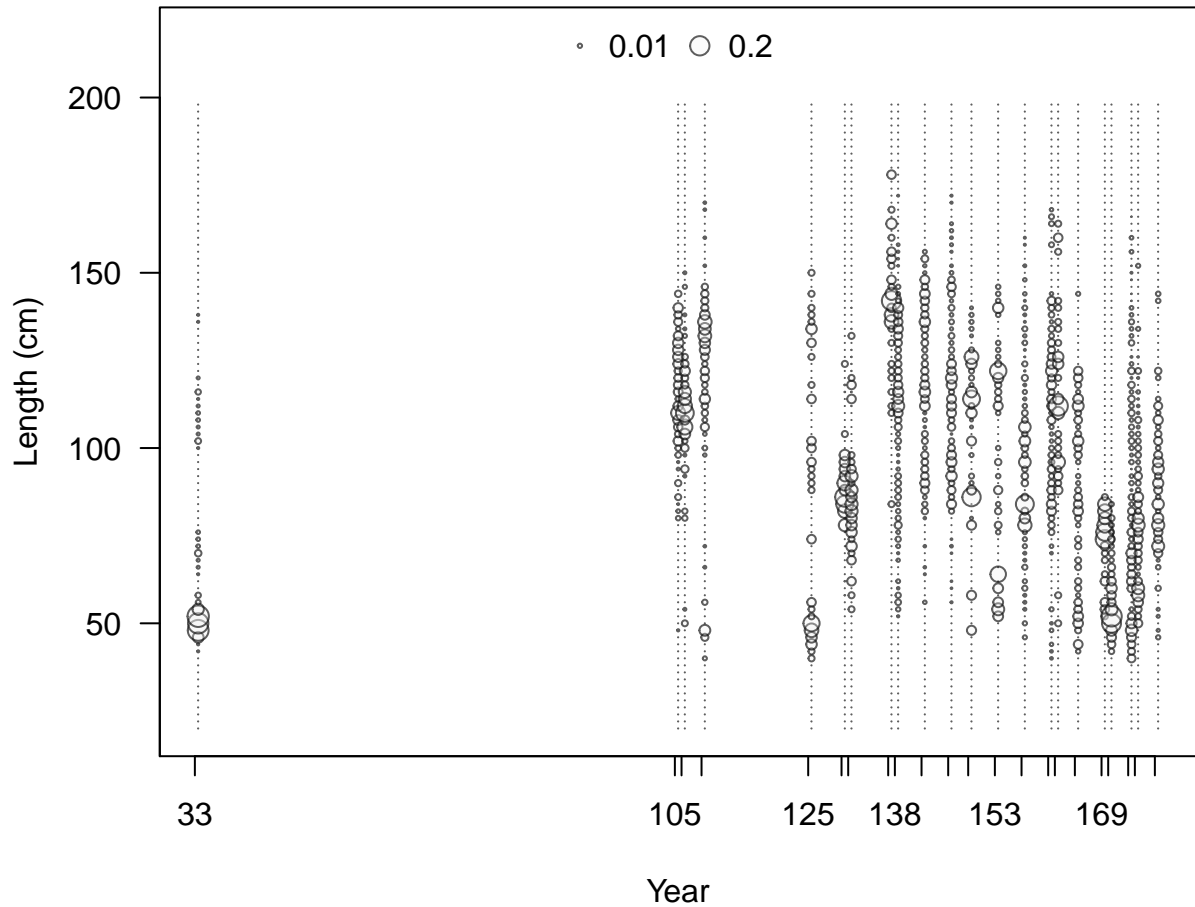
Proportion



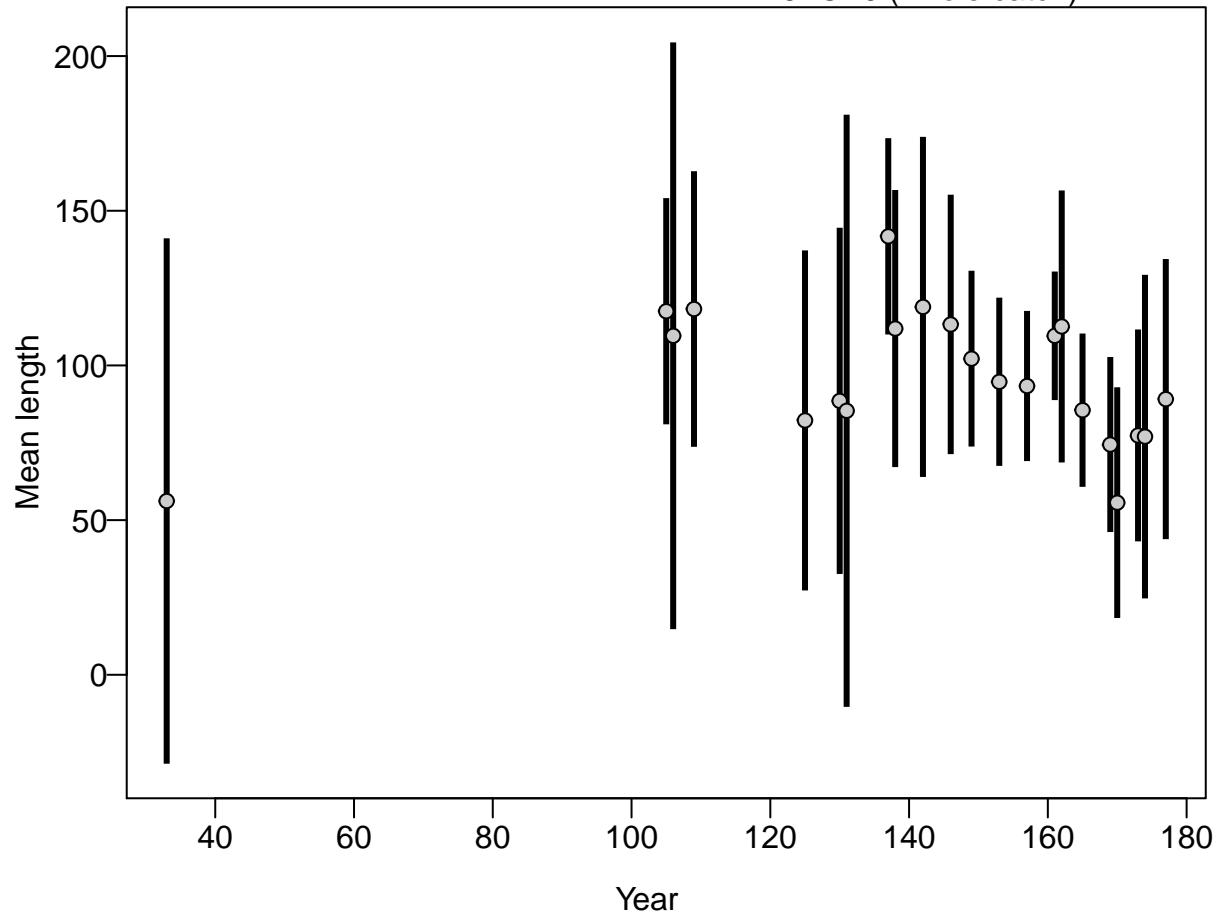
Proportion

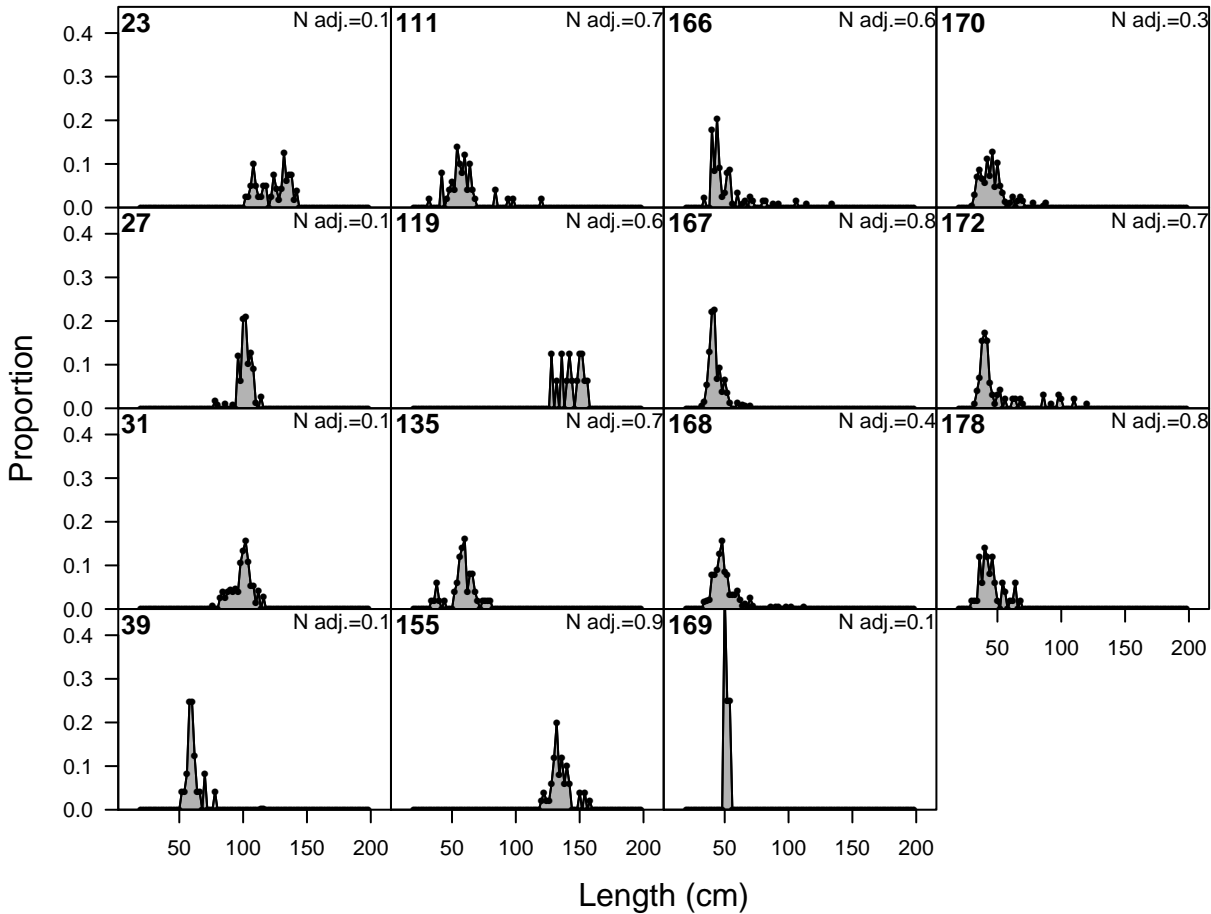


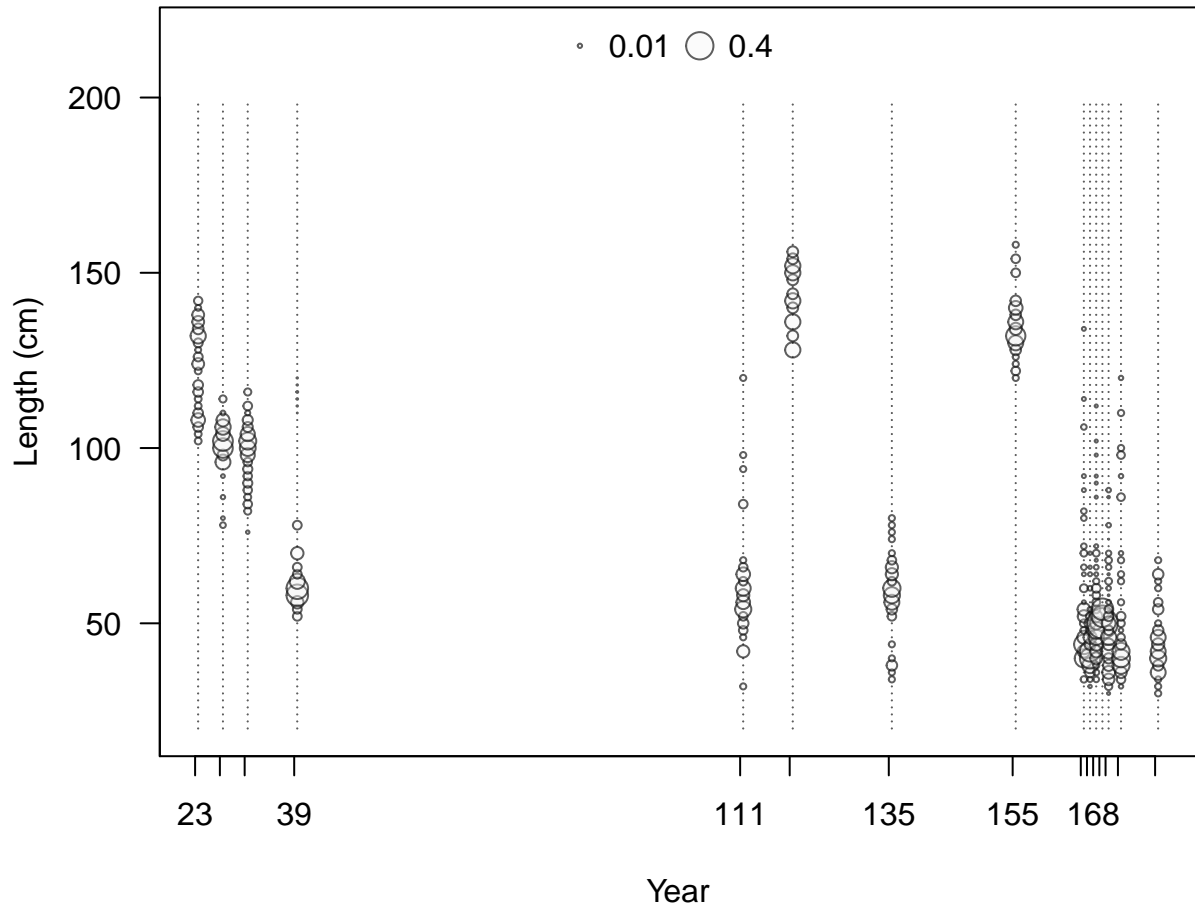
Length (cm)



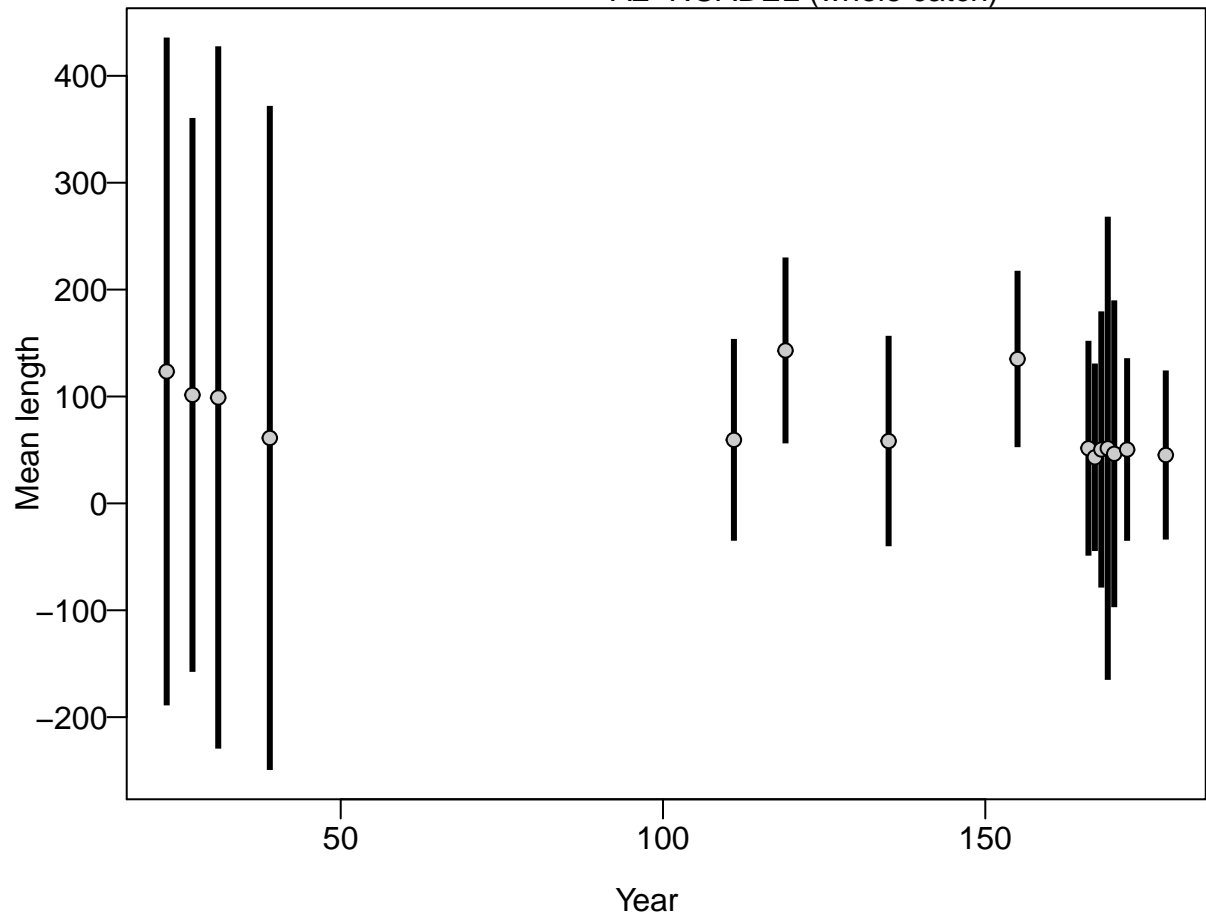
## A6-OBJ (whole catch)

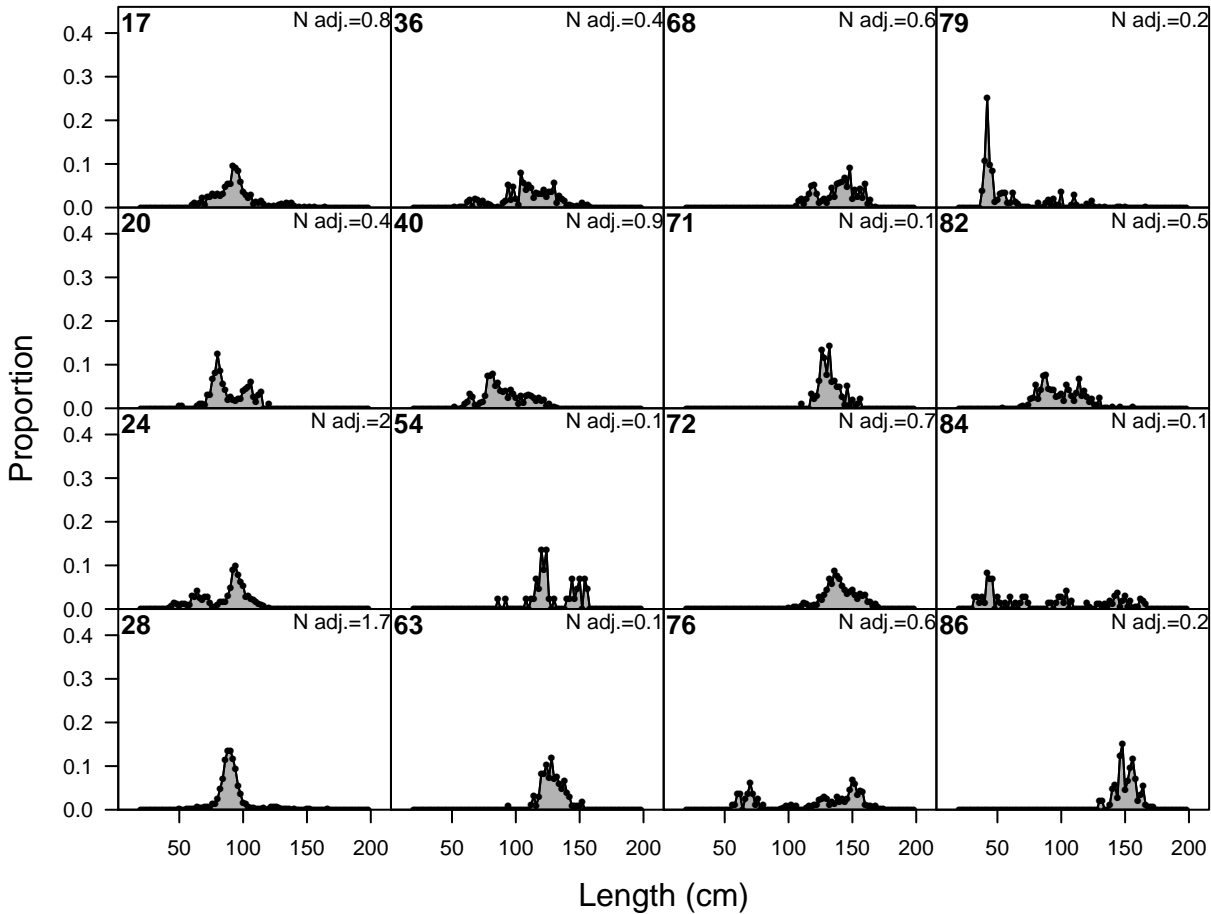




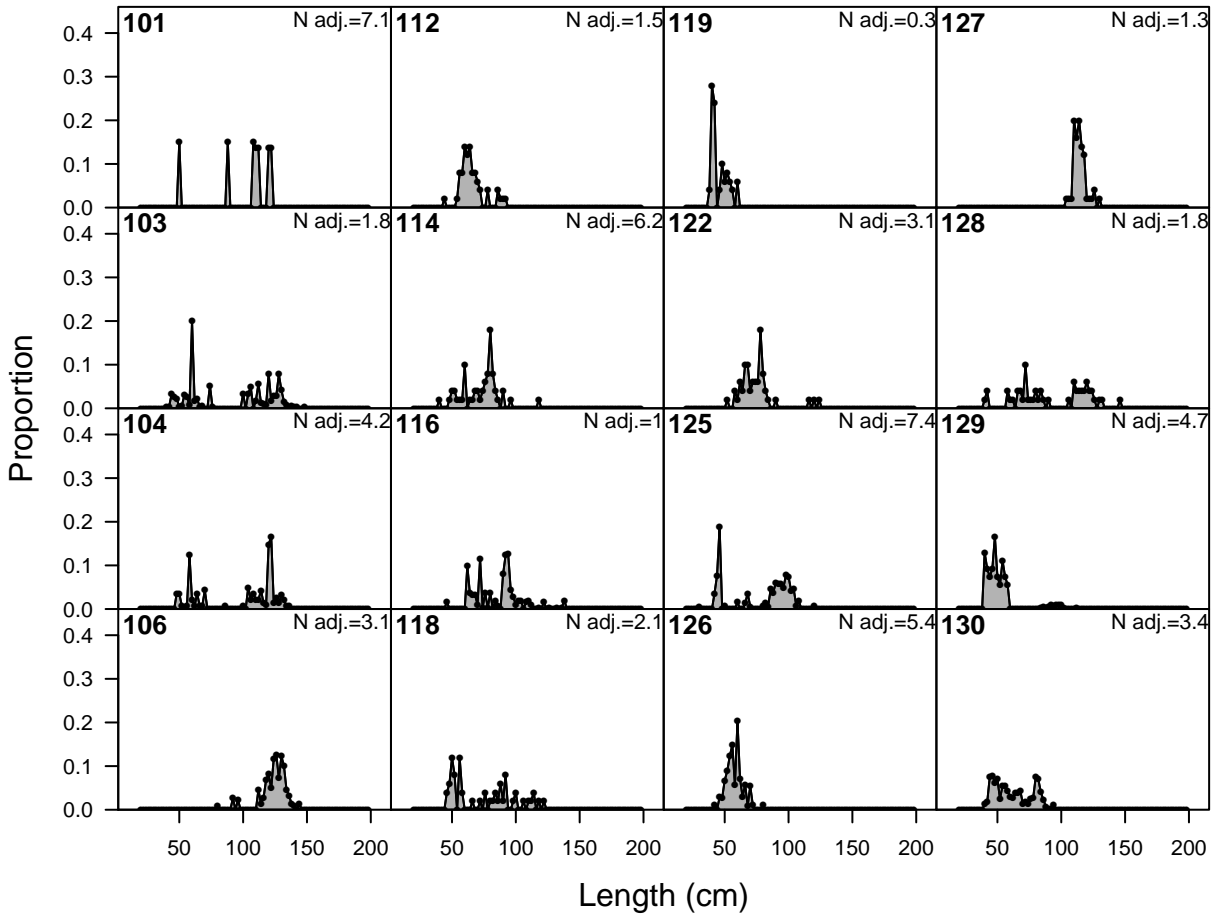


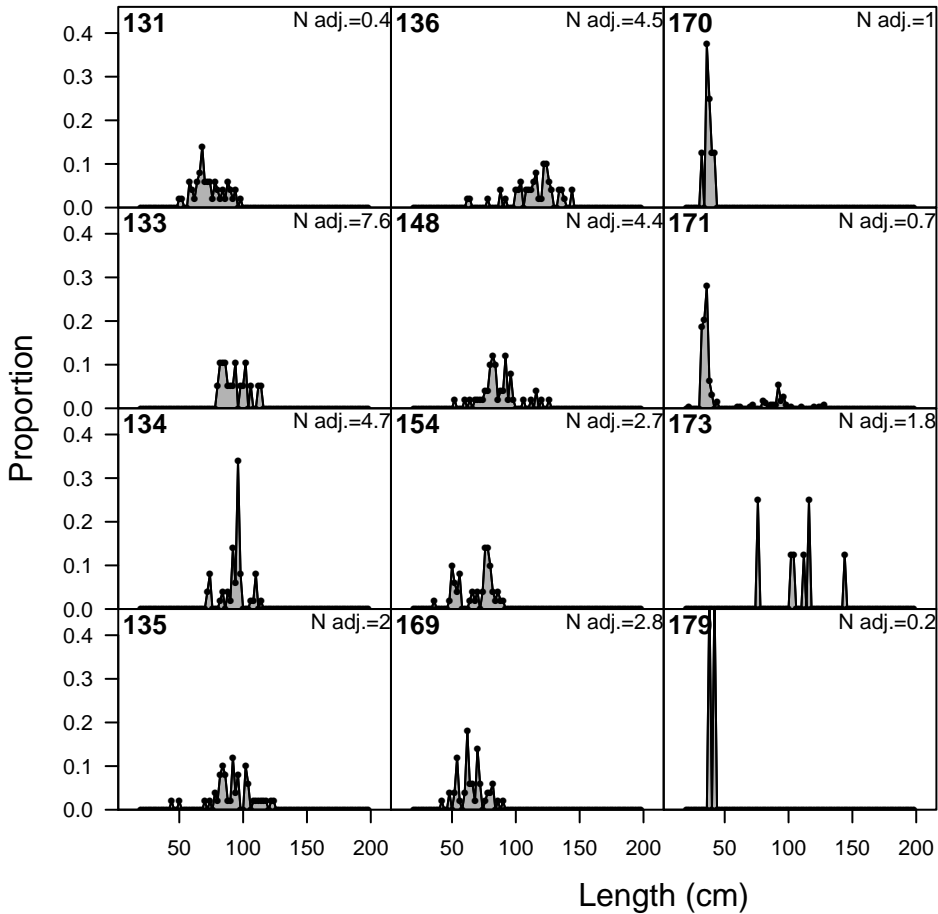
## A2-NOADEL (whole catch)

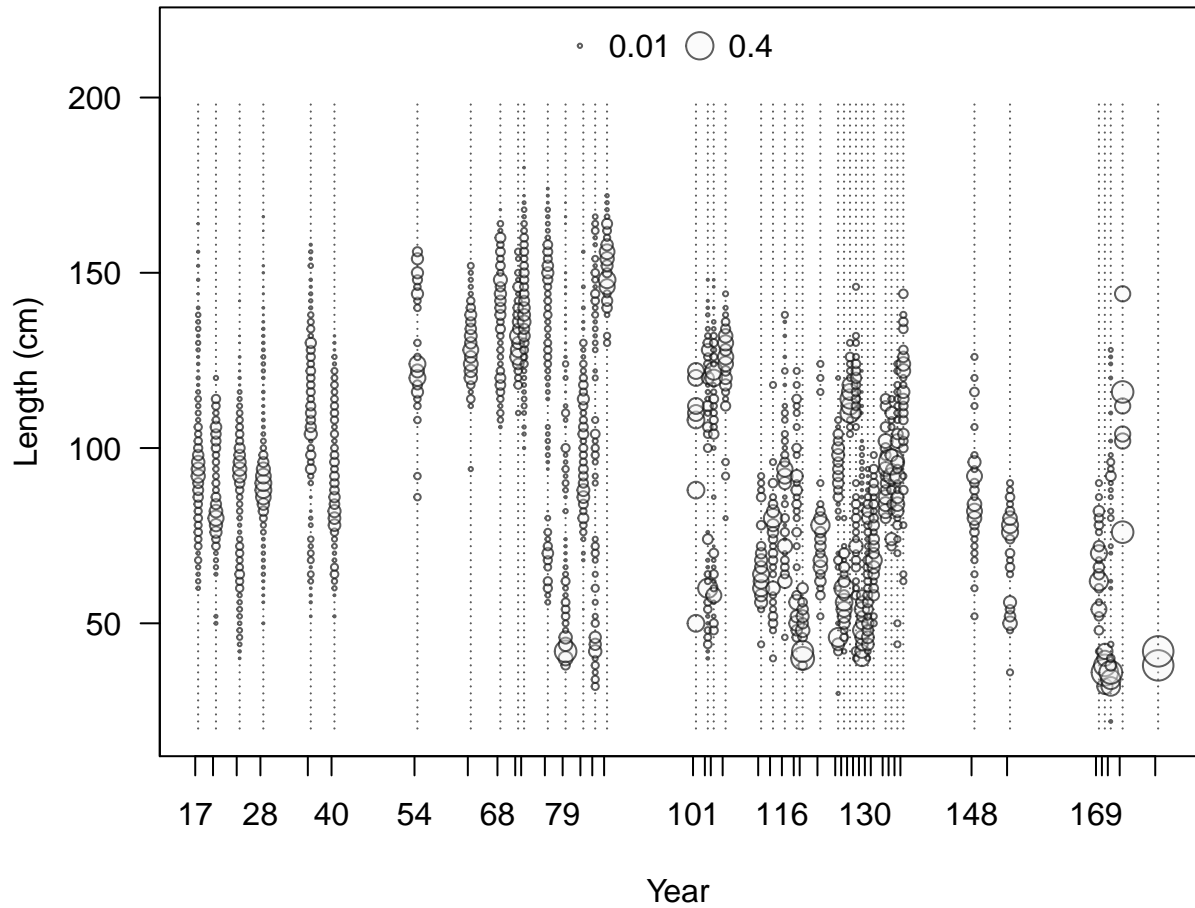




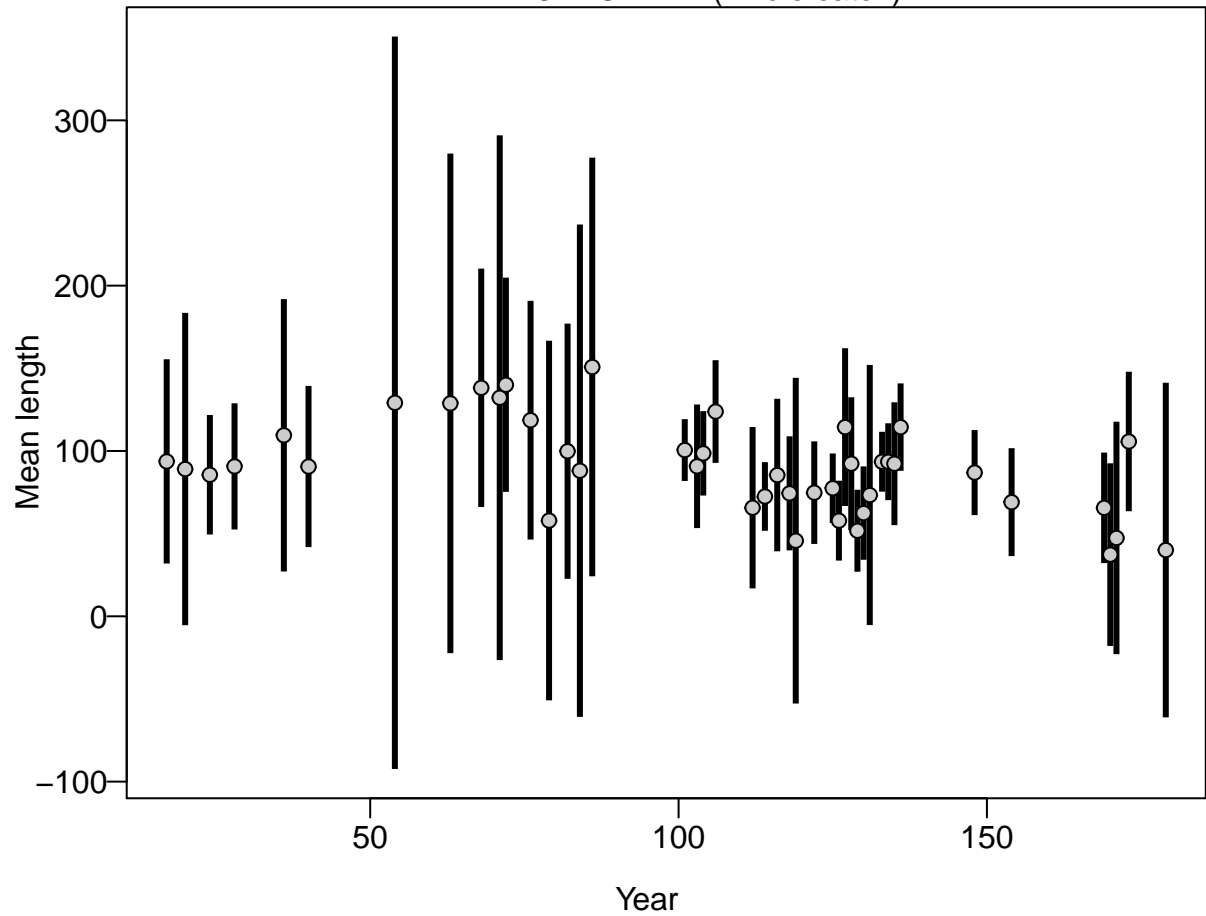


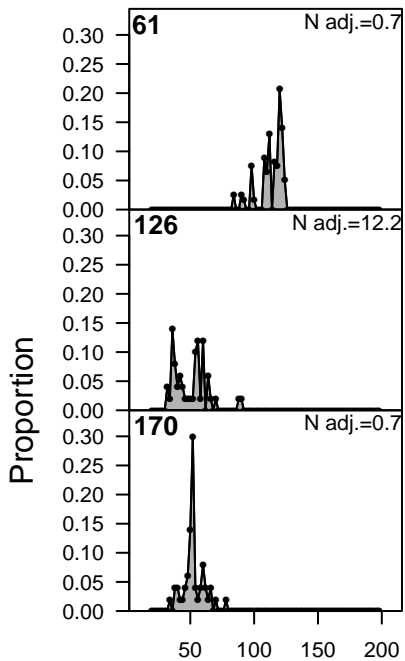




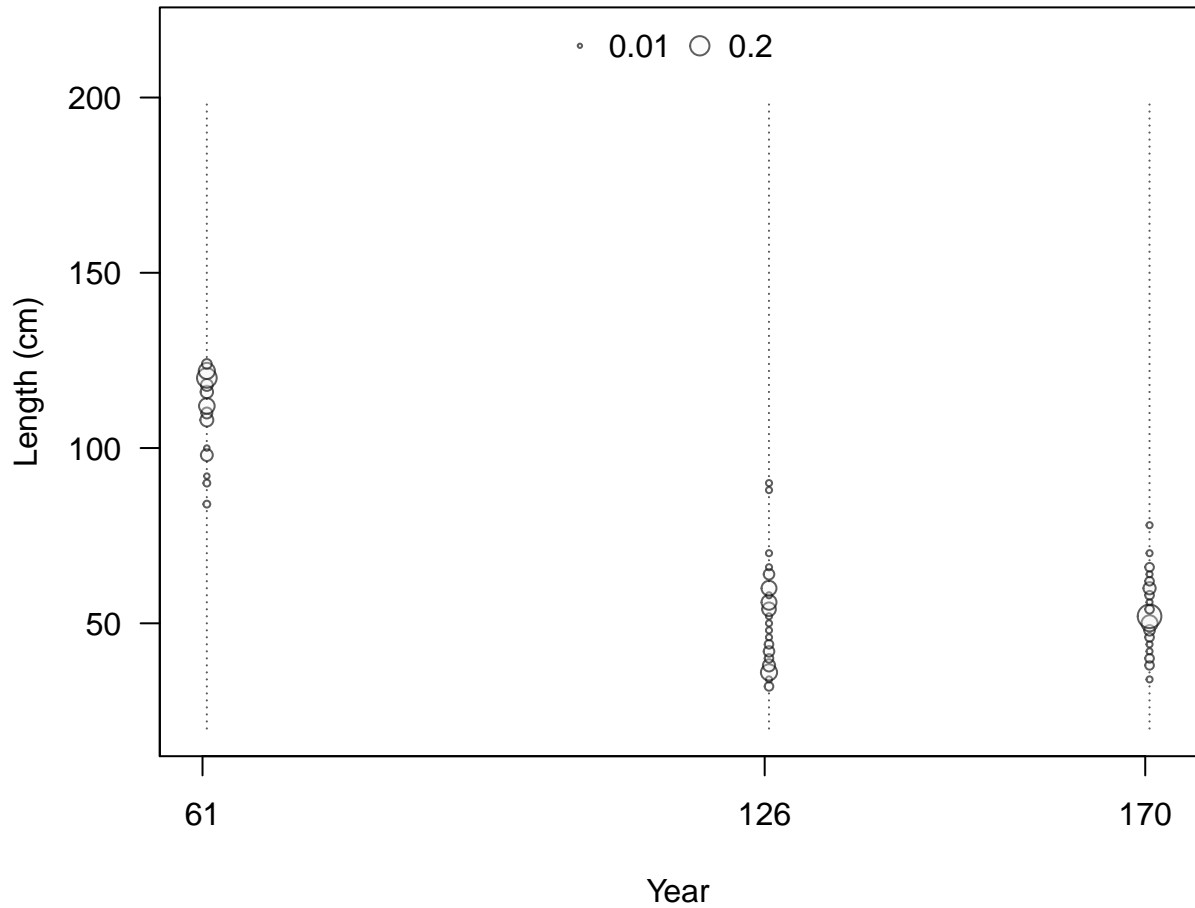


A3-NOADEL (whole catch)

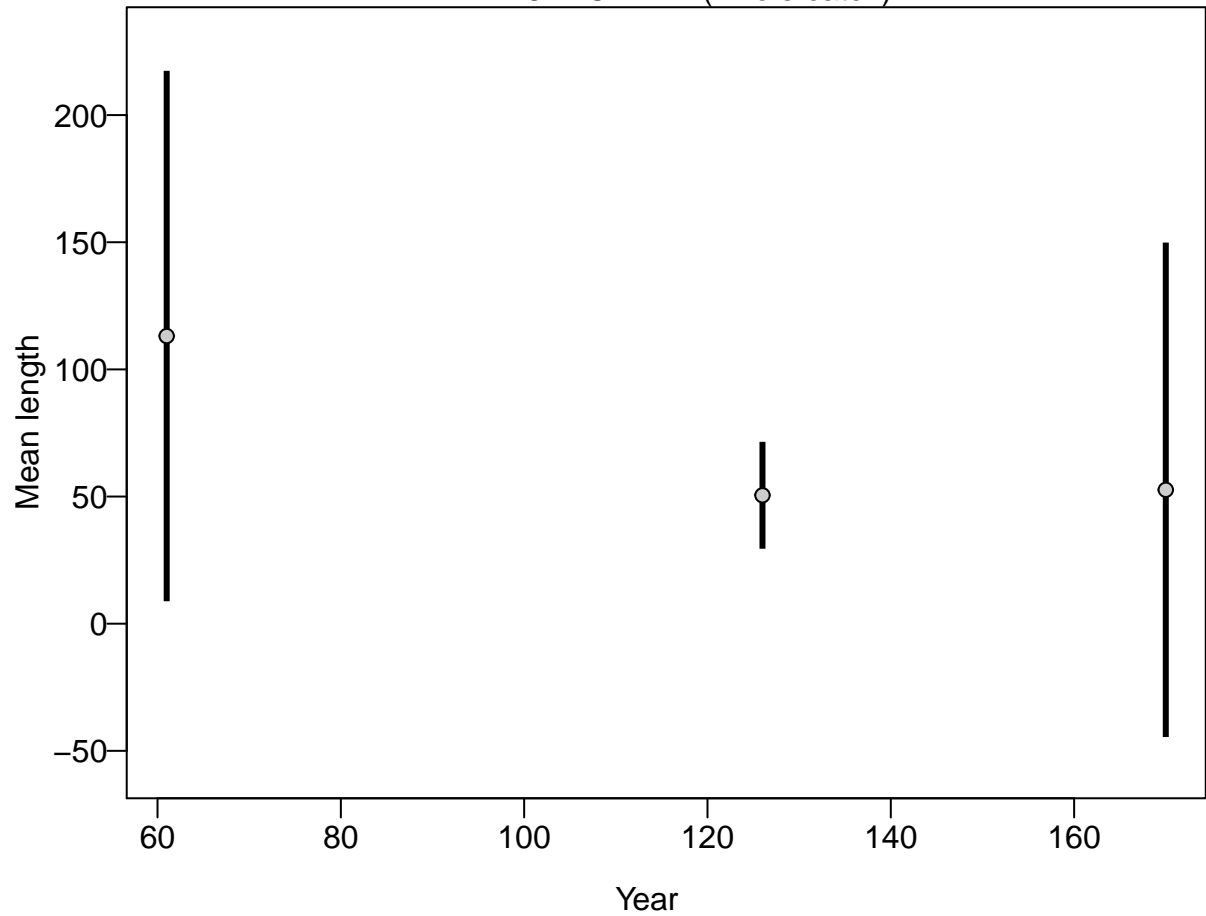




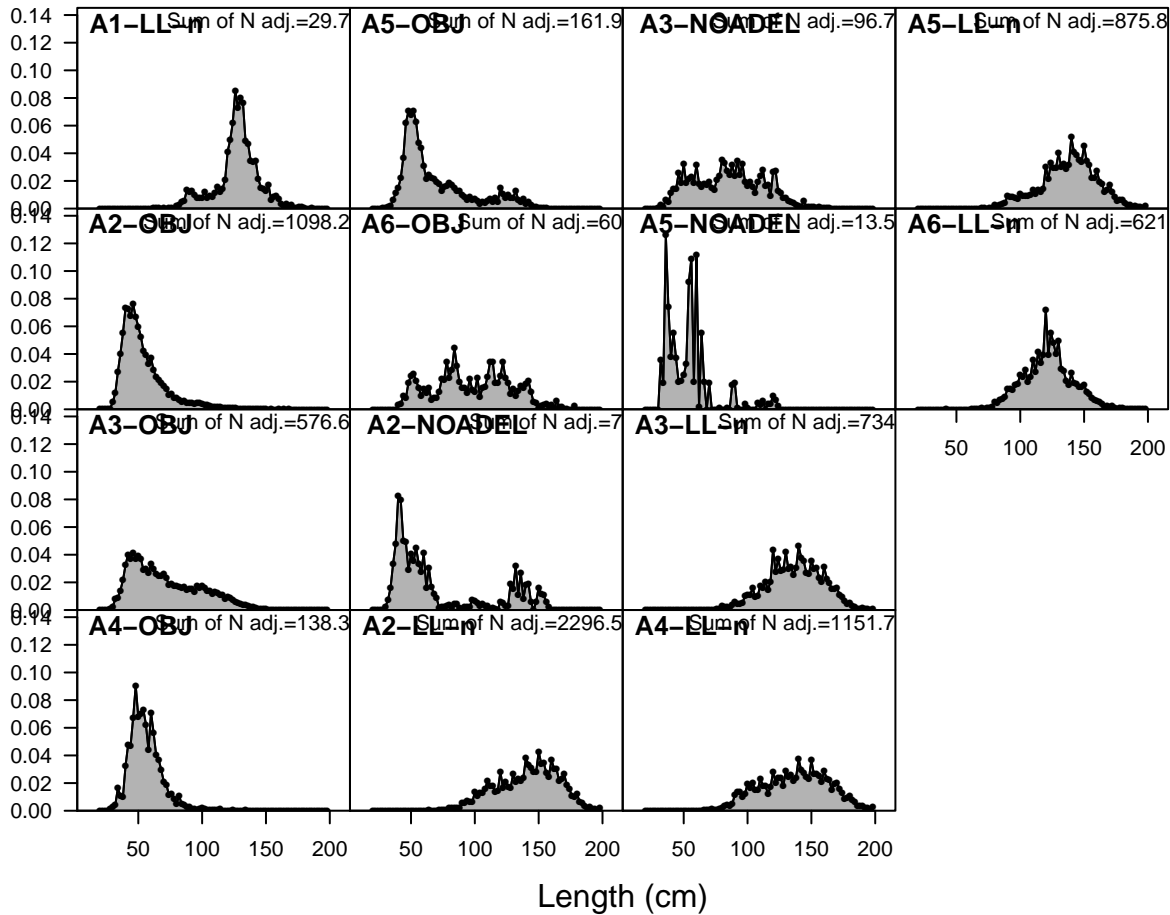
Length (cm)



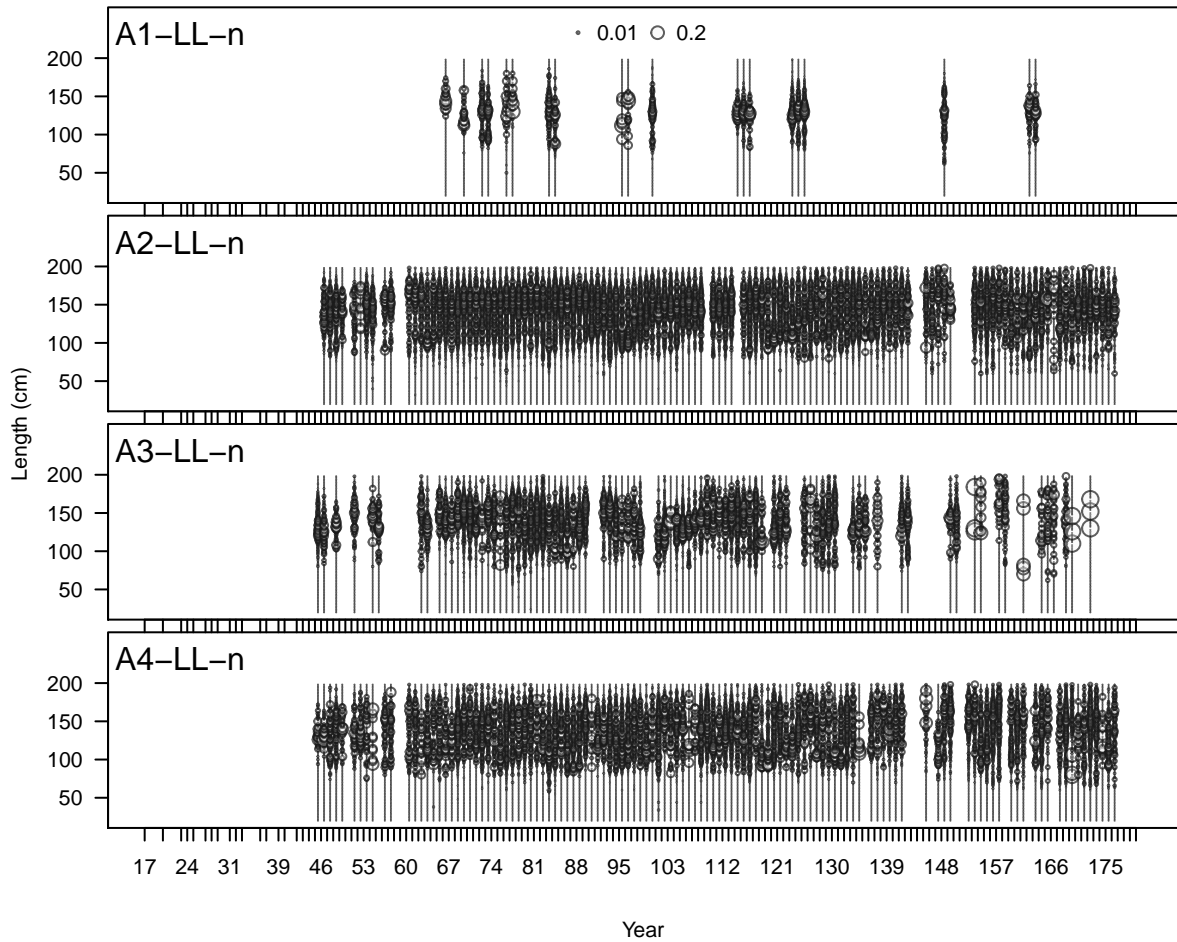
A5-NOADEL (whole catch)

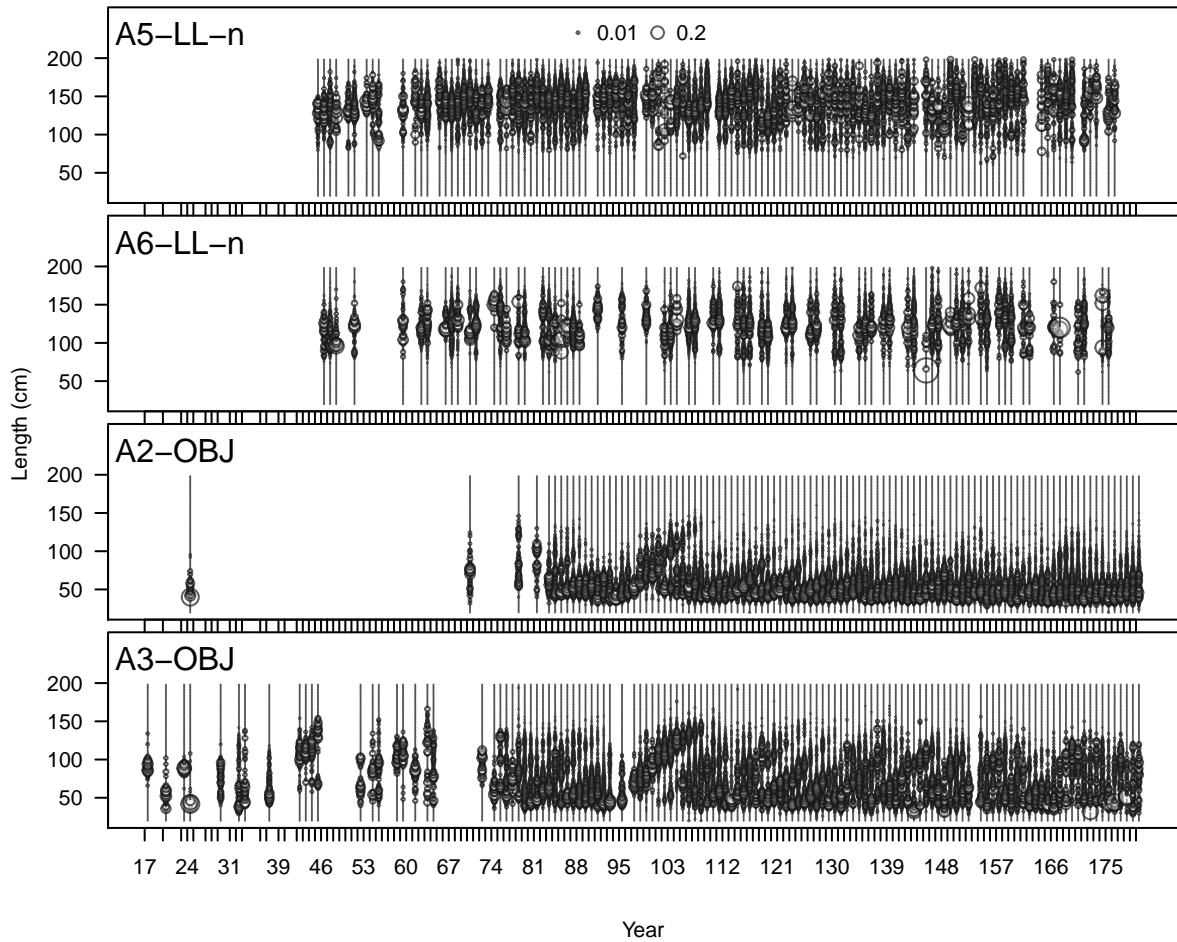


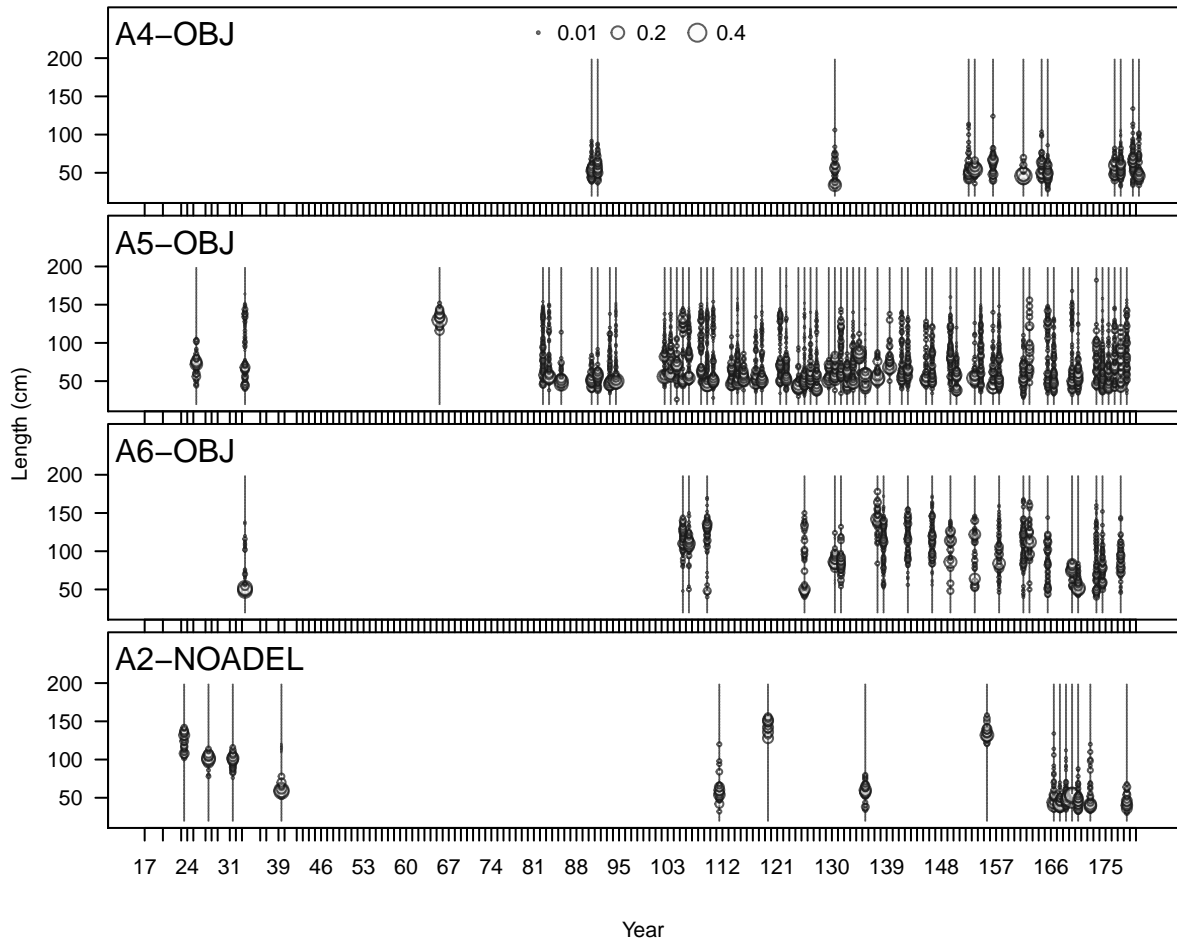
Proportion

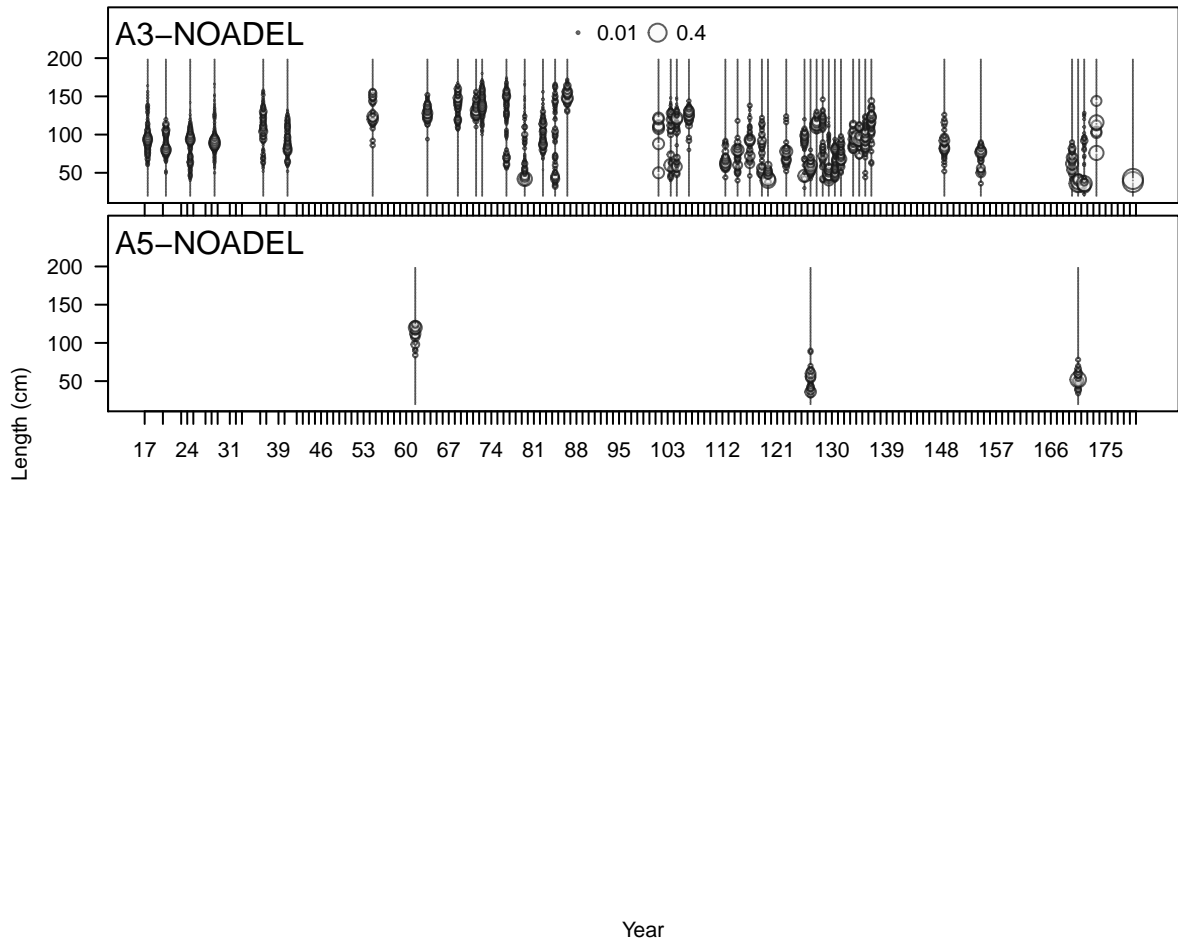




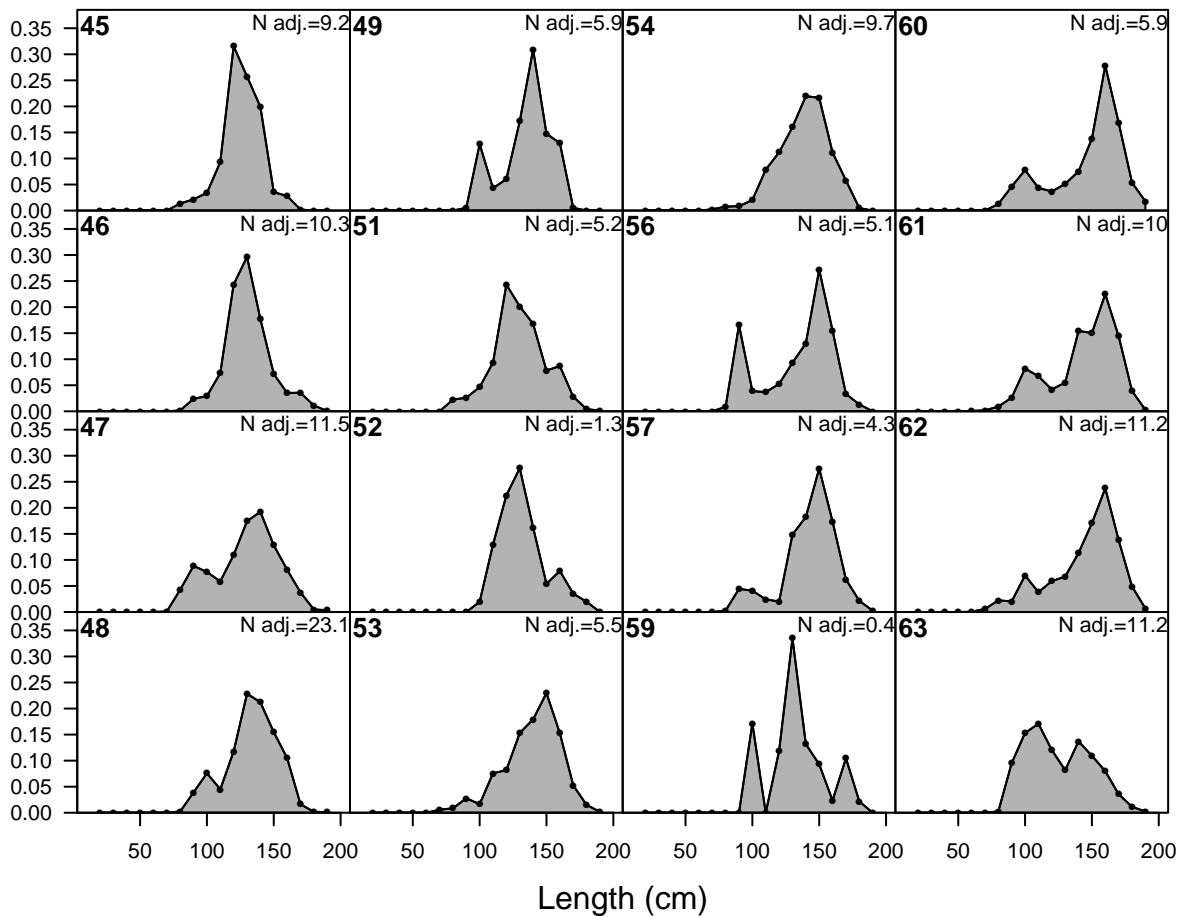




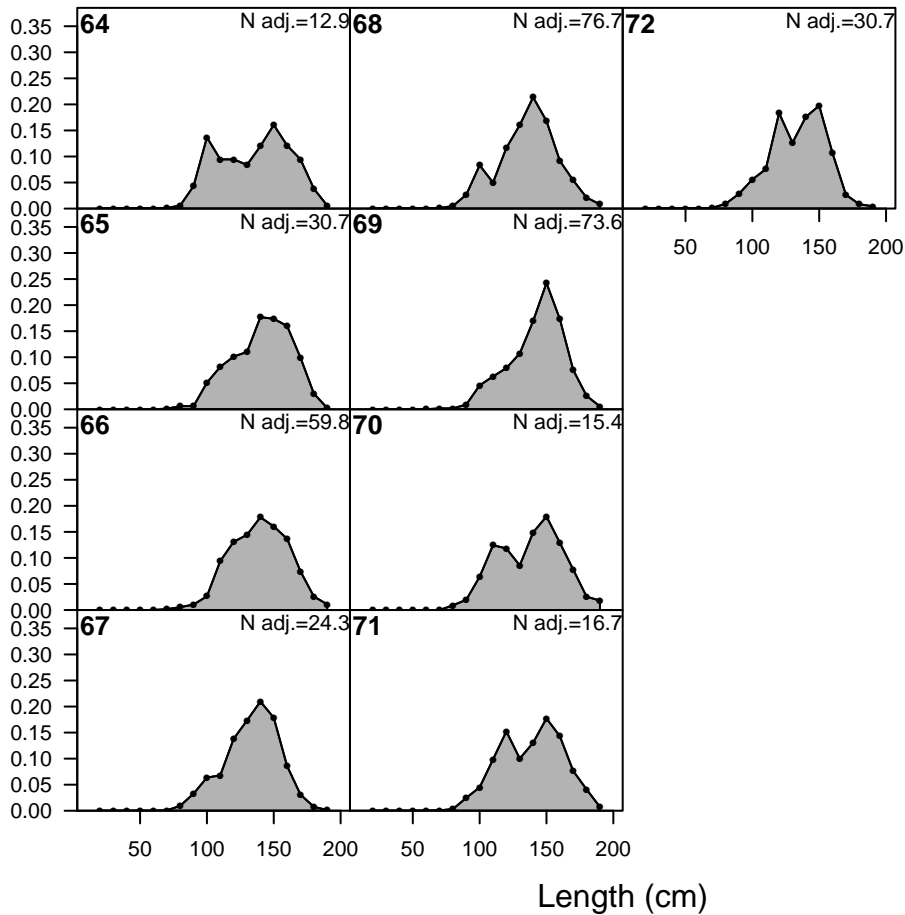


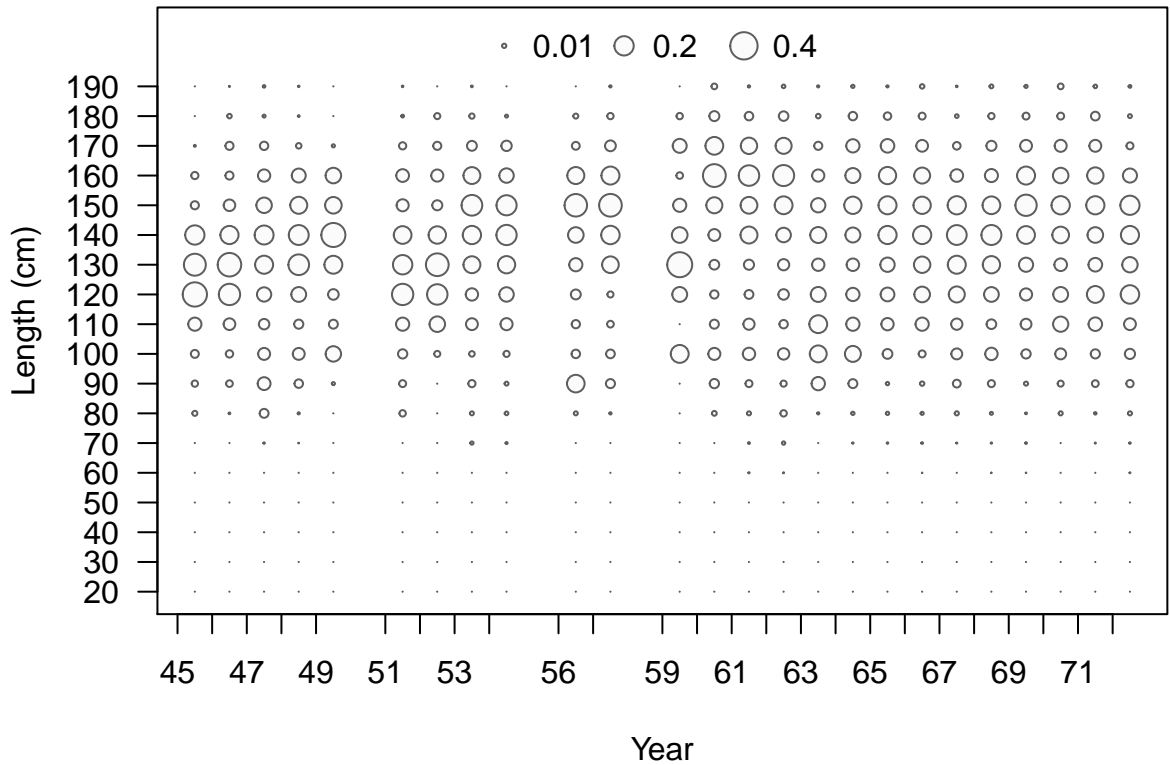


Proportion

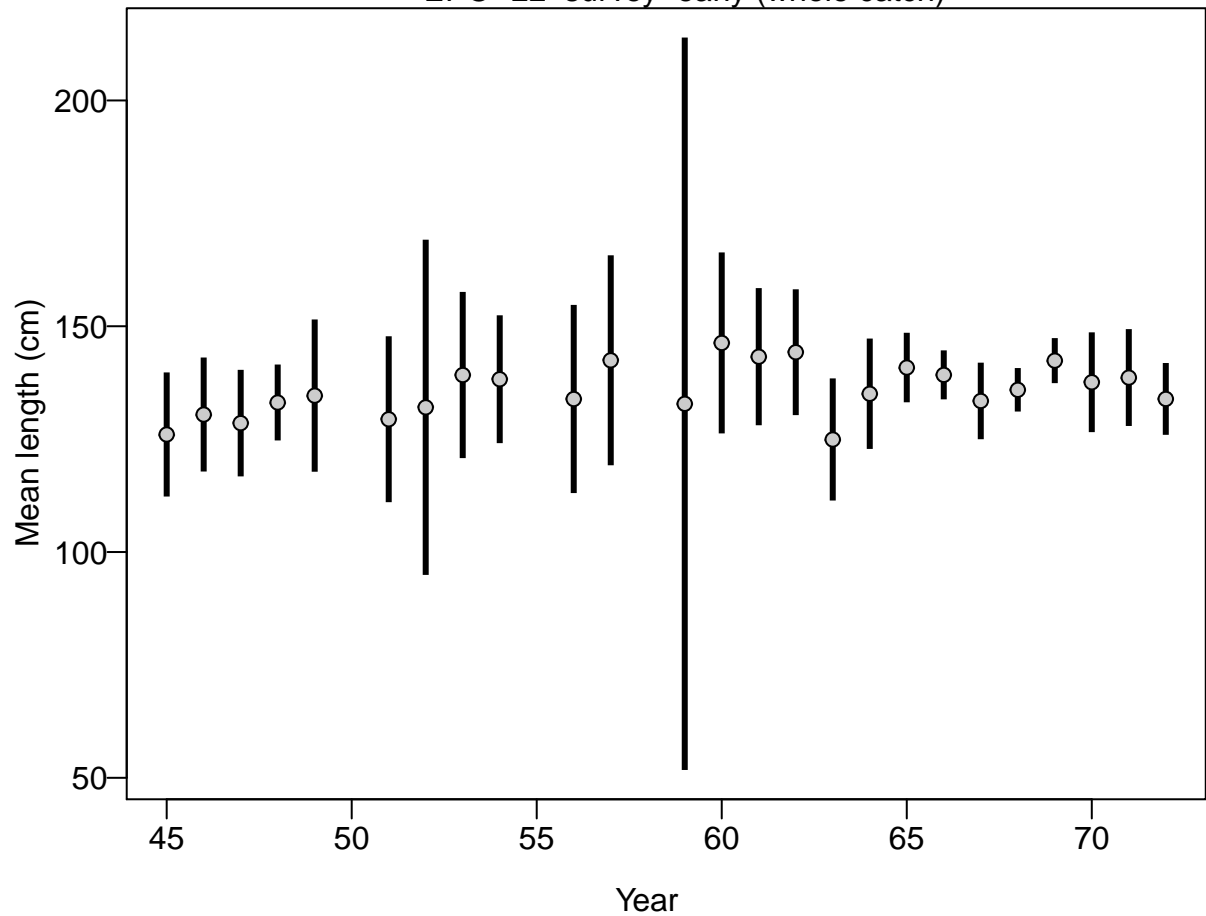


Proportion

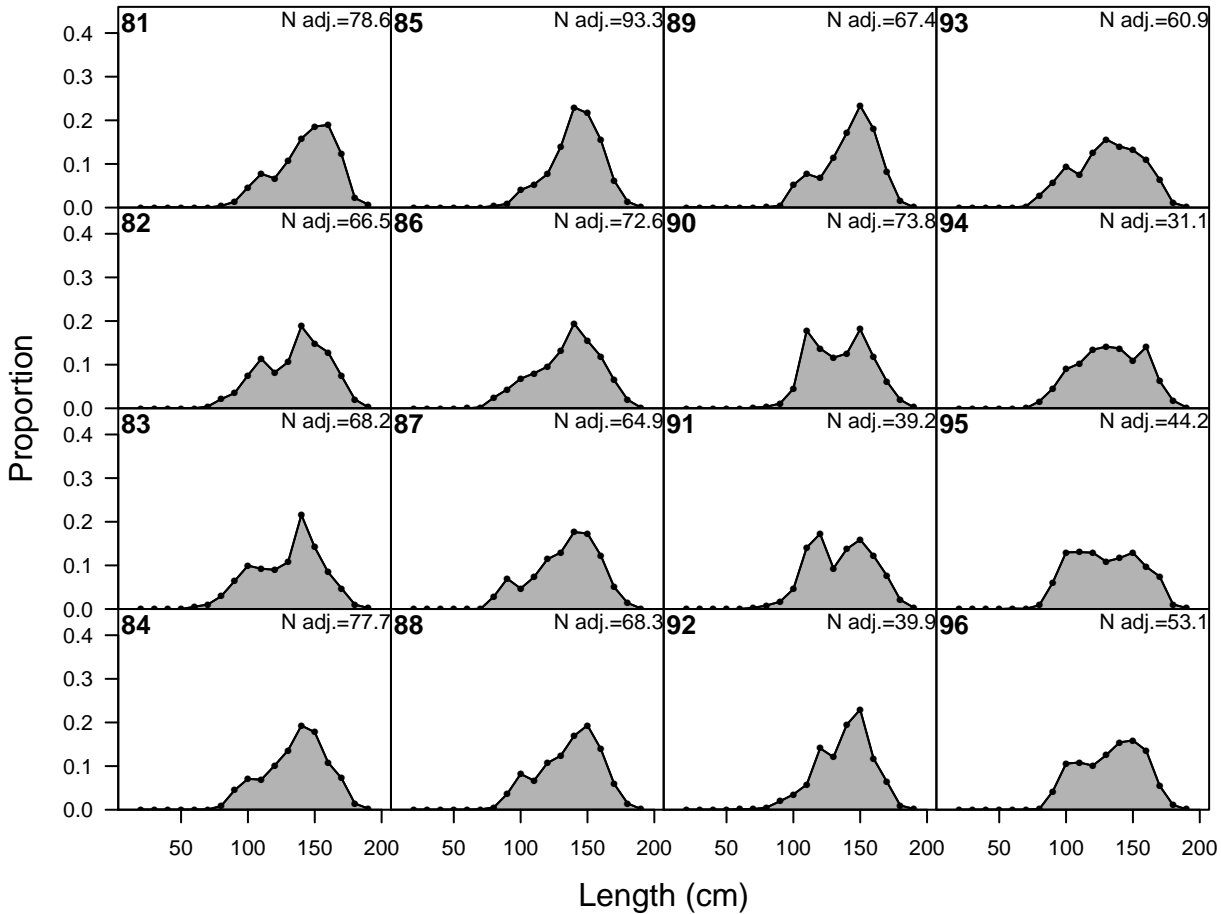


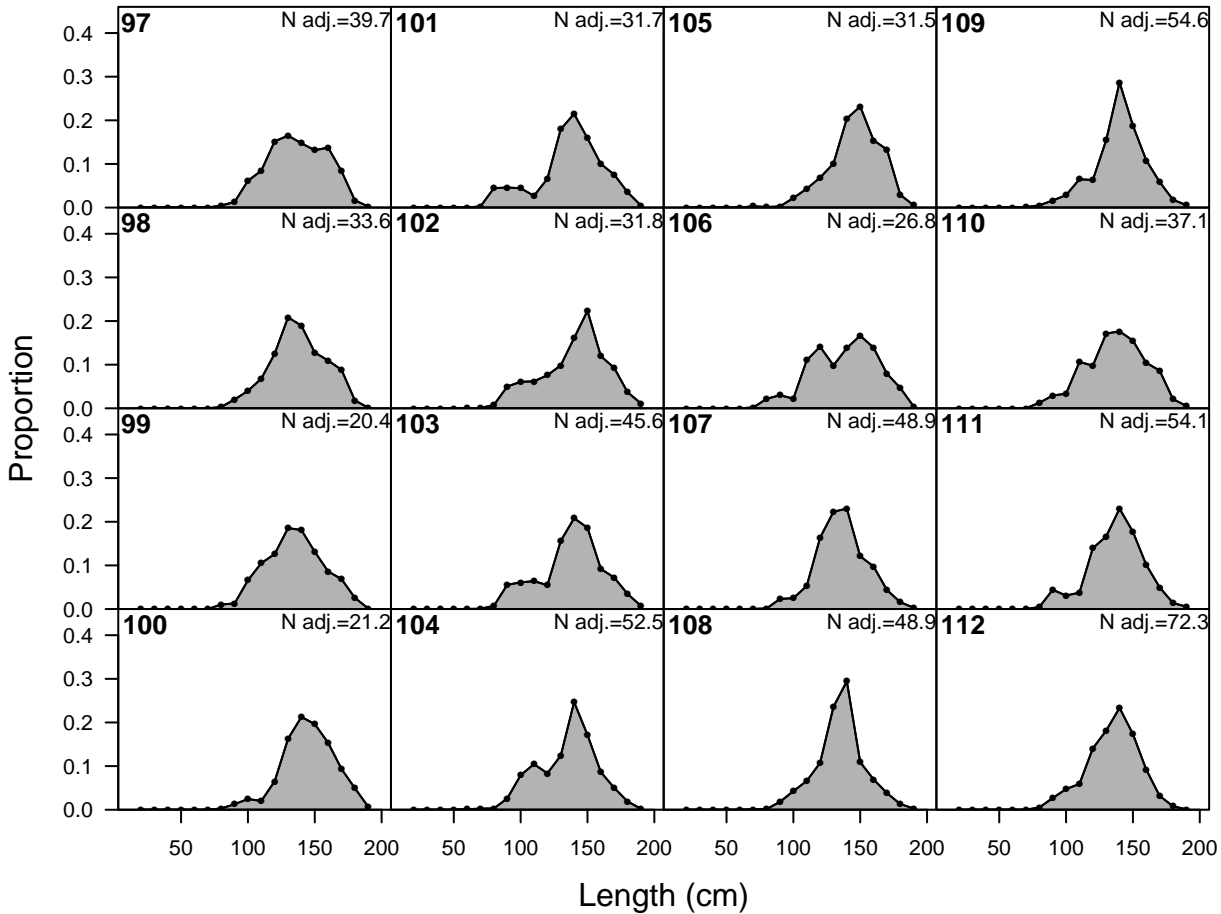


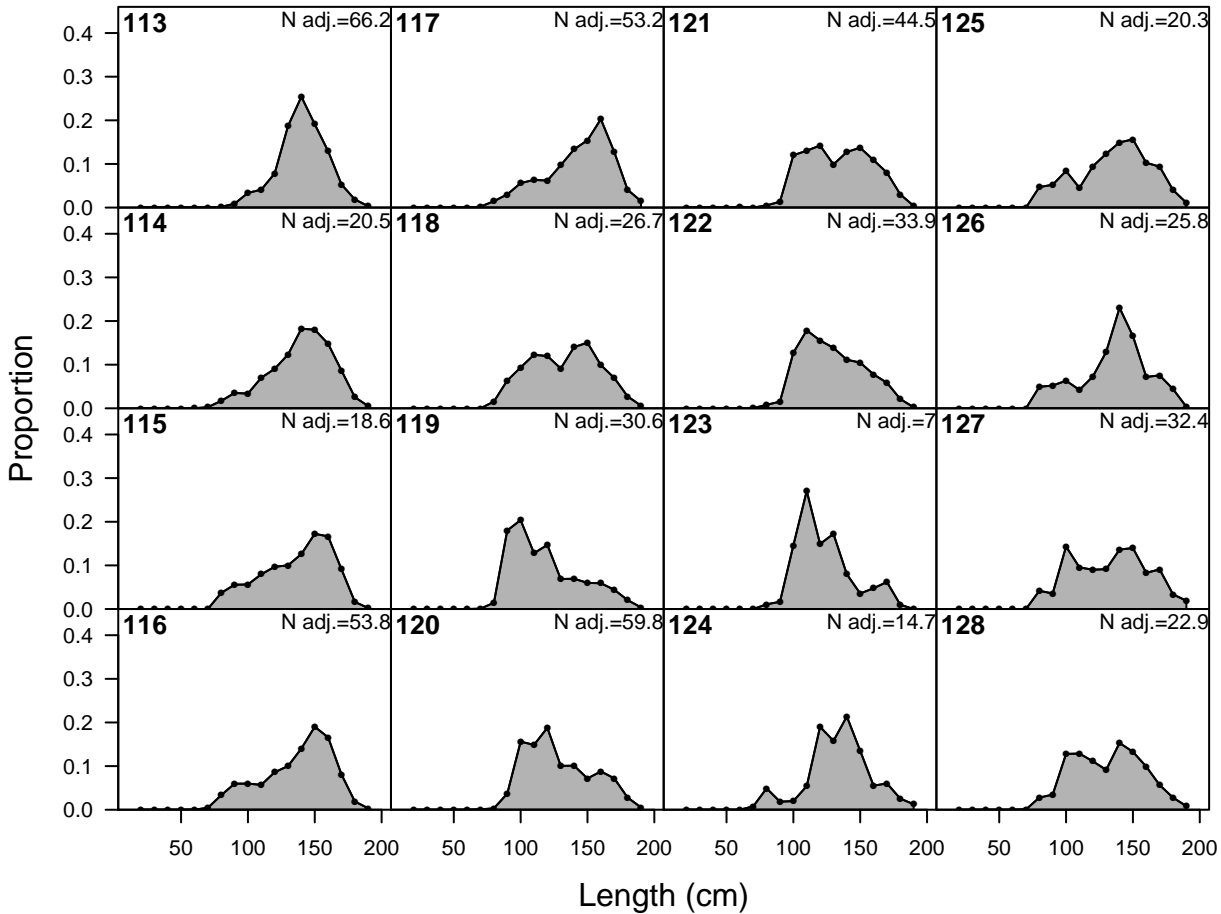
EPO-LL-survey-early (whole catch)

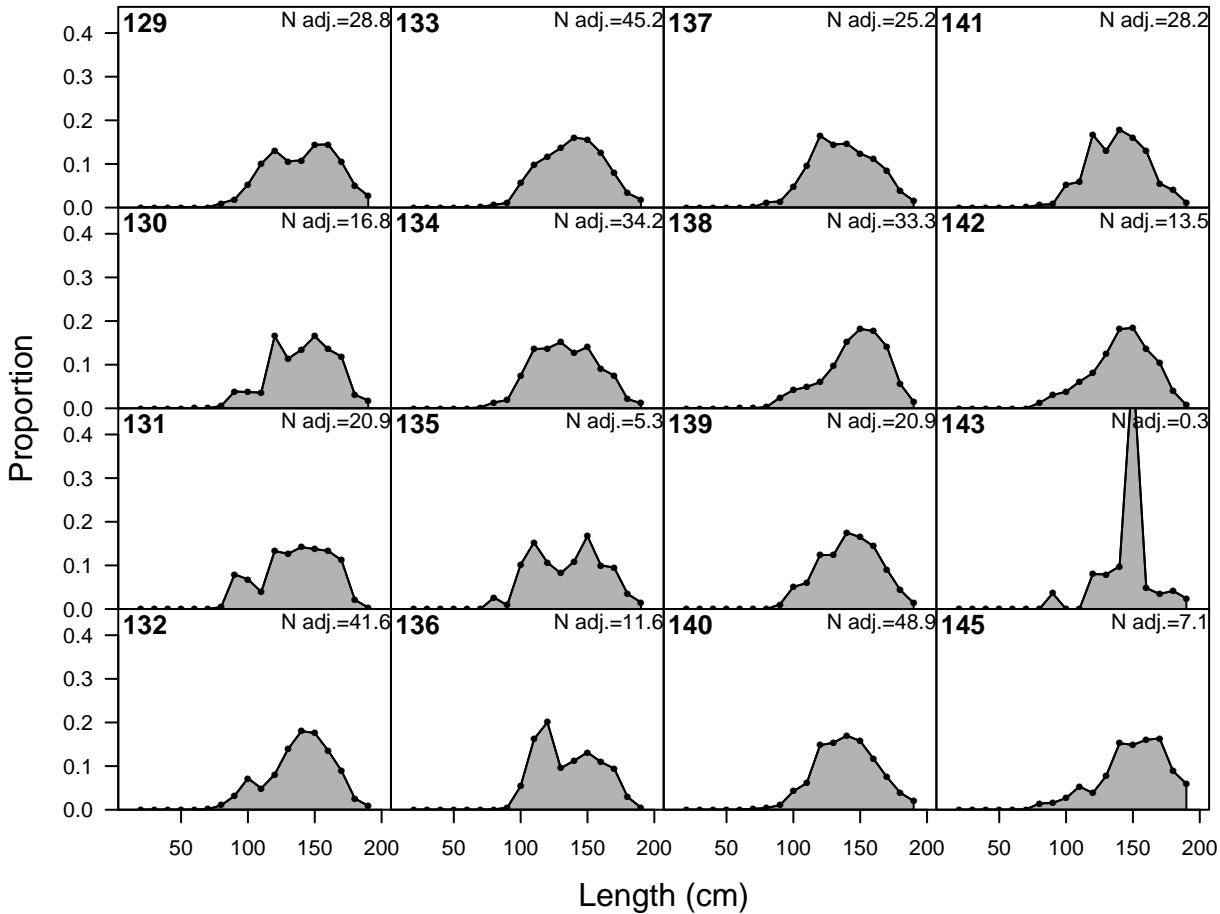


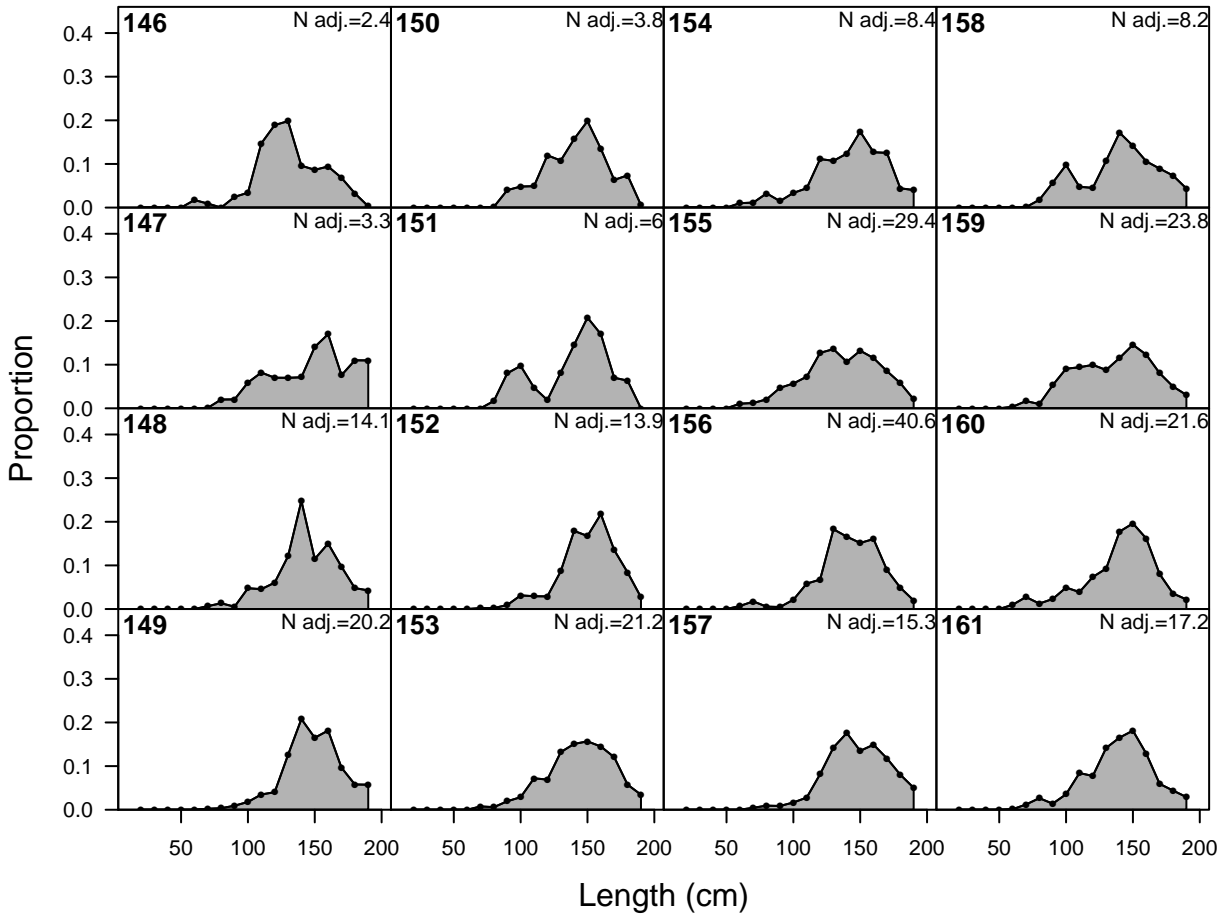


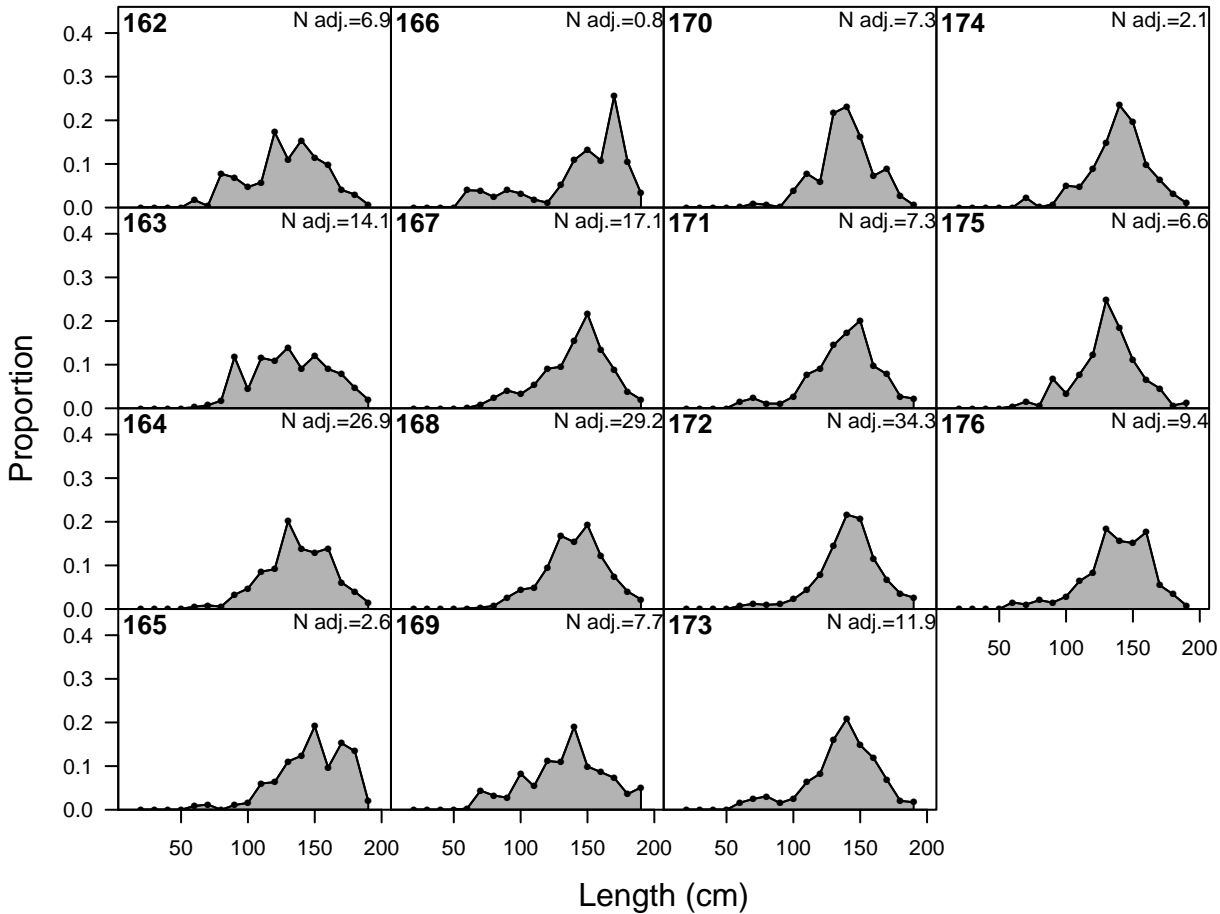


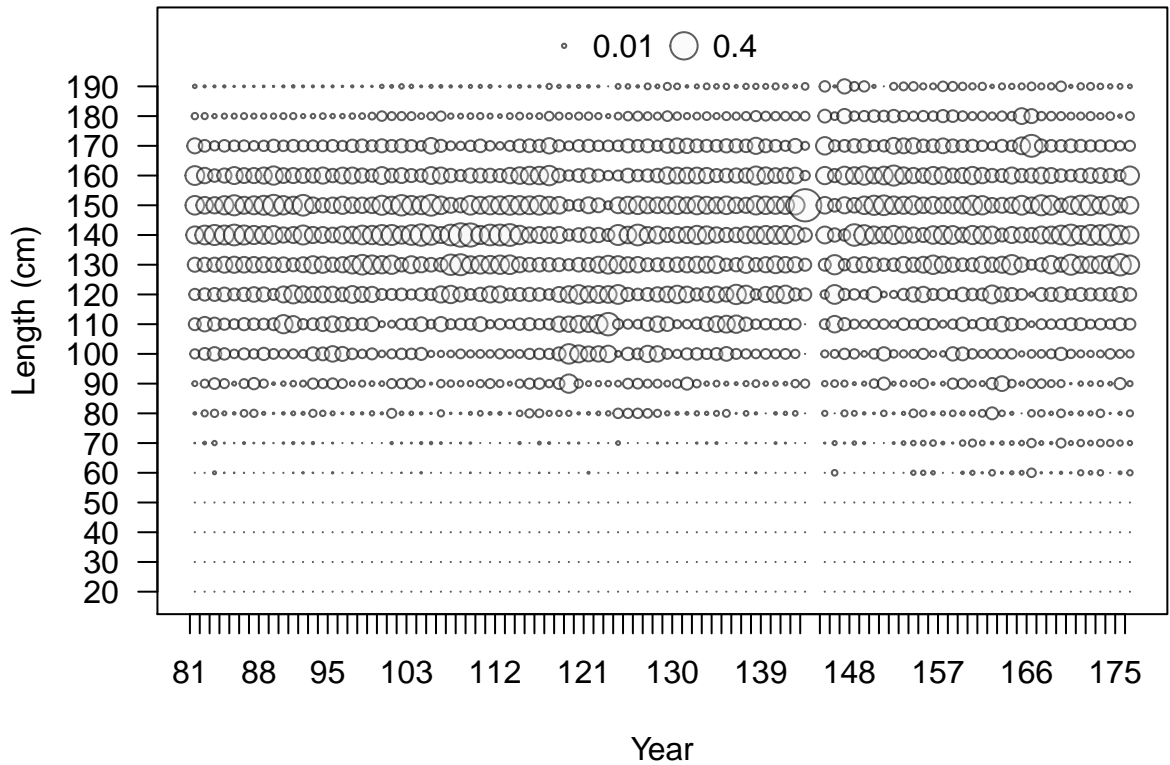




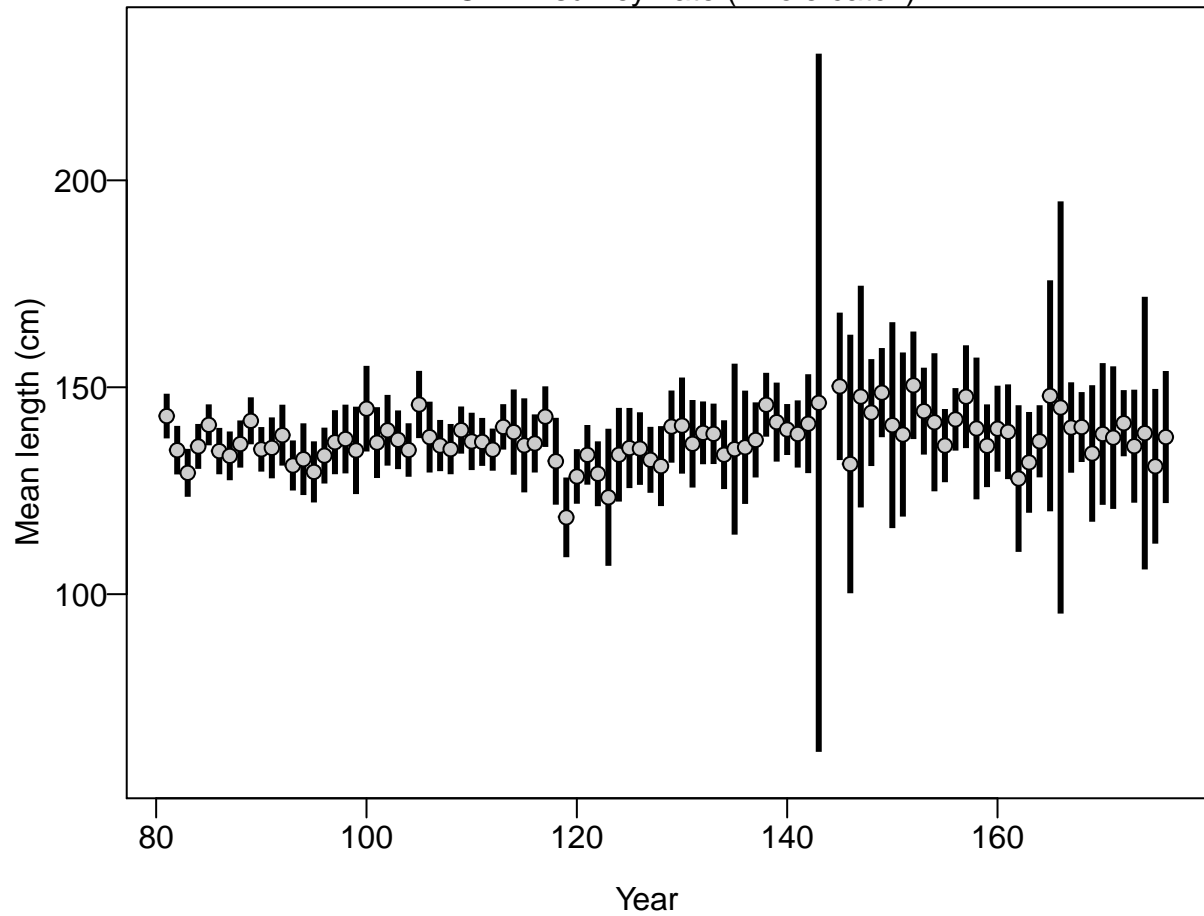








EPO-LL-survey-late (whole catch)





**EPO-LL-survey-early**

Sum of N adj.=470.6

0.20

0.15

0.10

0.05

0.00

Proportion

**EPO-LL-survey-late**

Sum of N adj.=2996.3

0.20

0.15

0.10

0.05

0.00

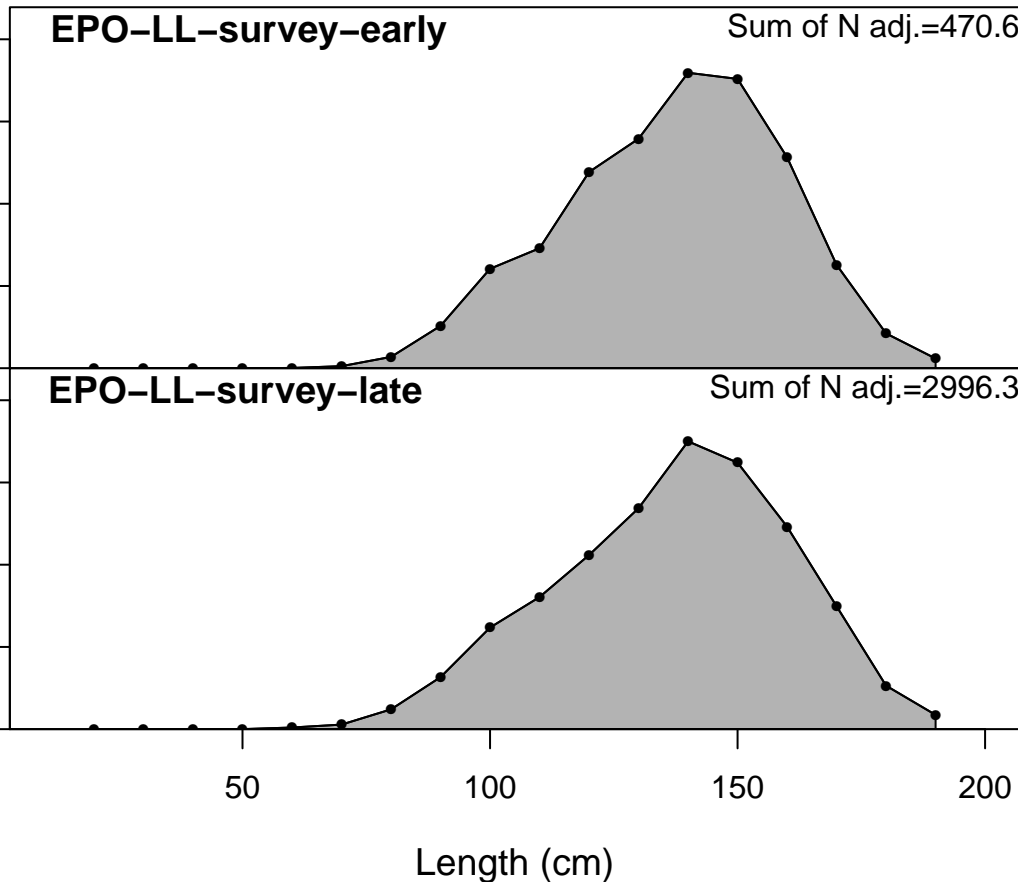
50

100

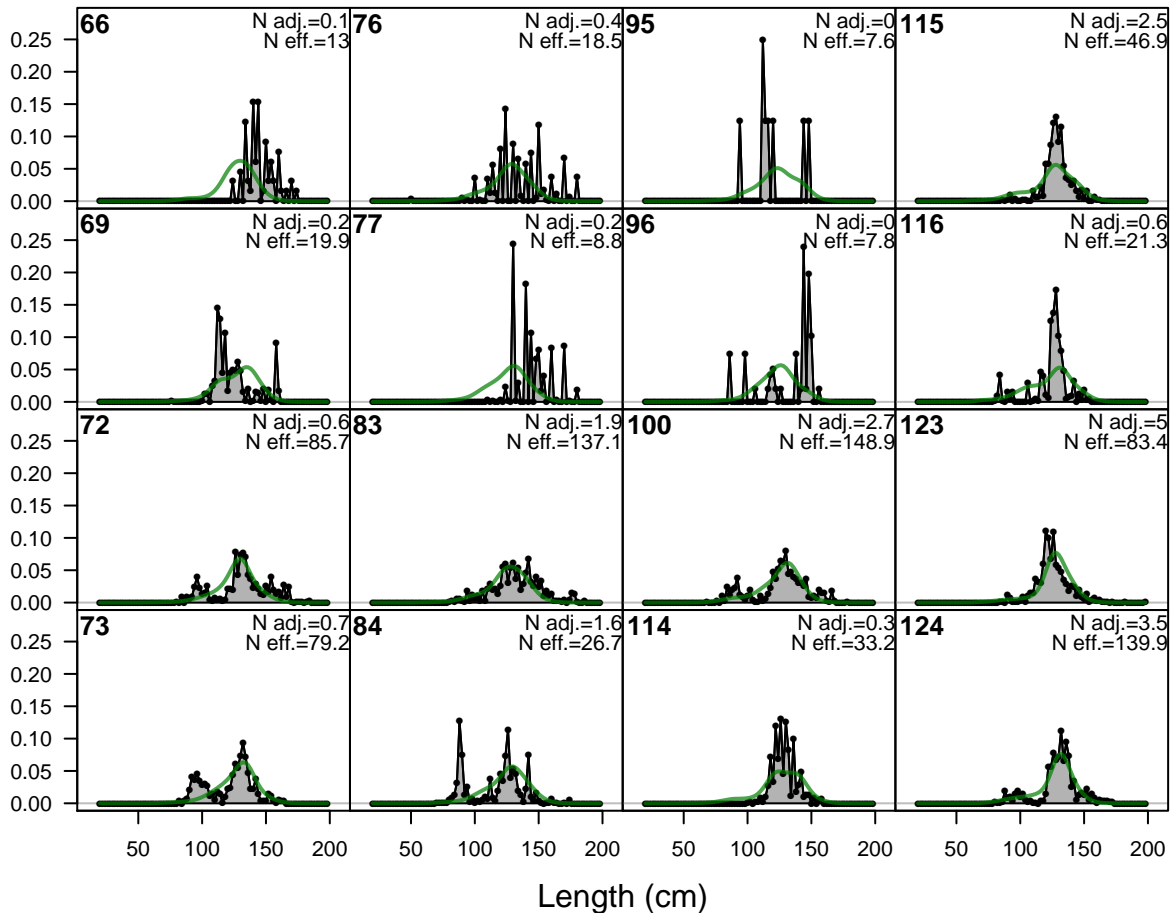
150

200

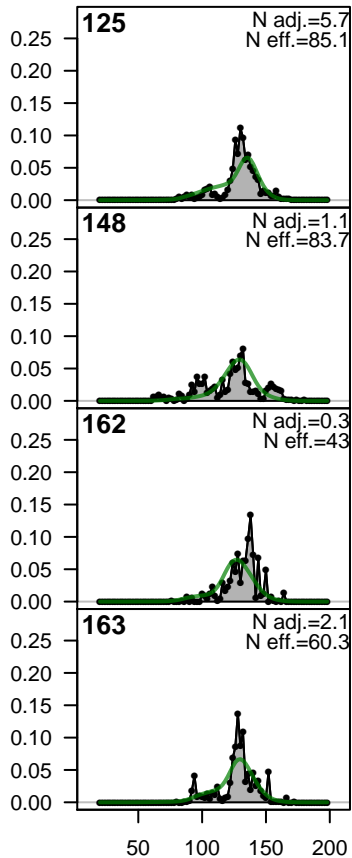
Length (cm)



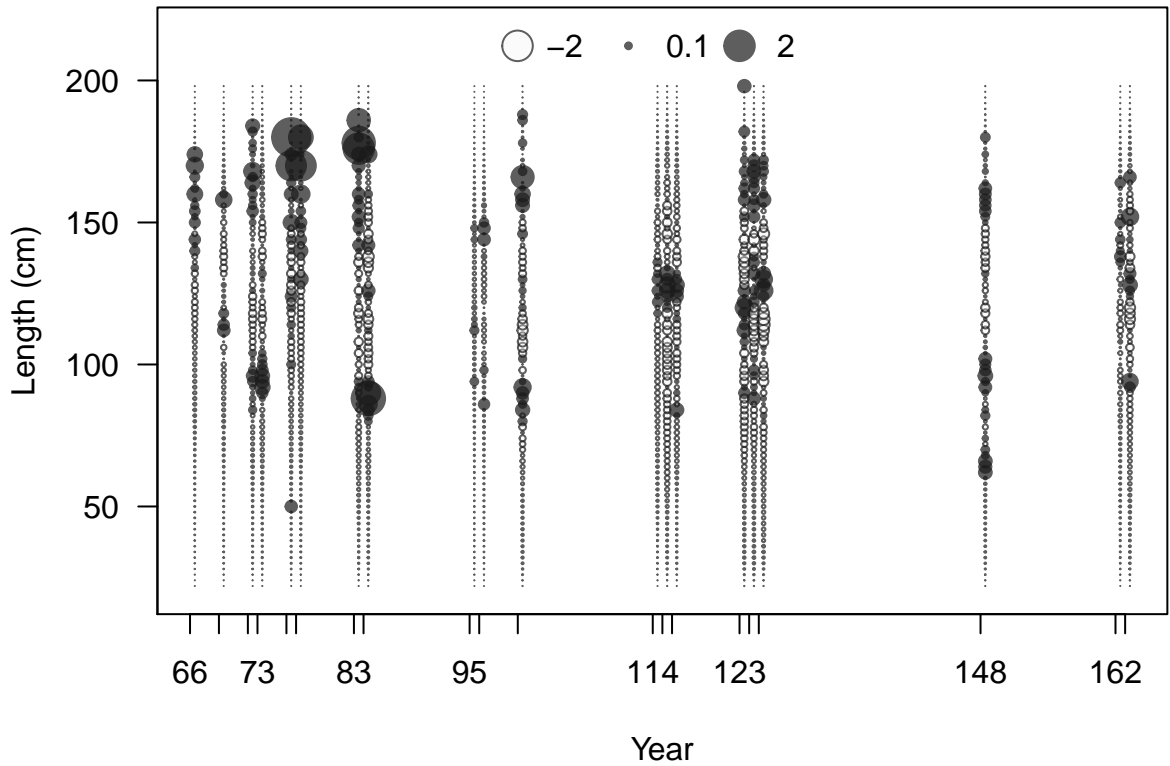
Proportion

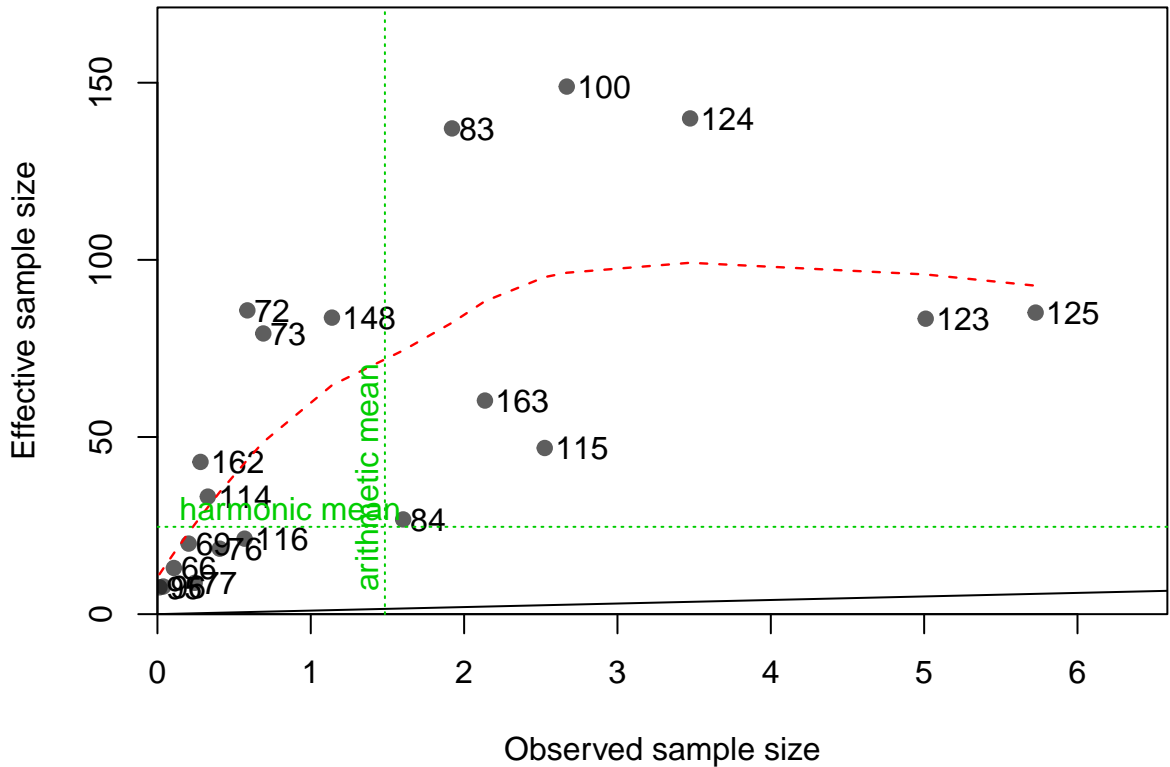


Proportion

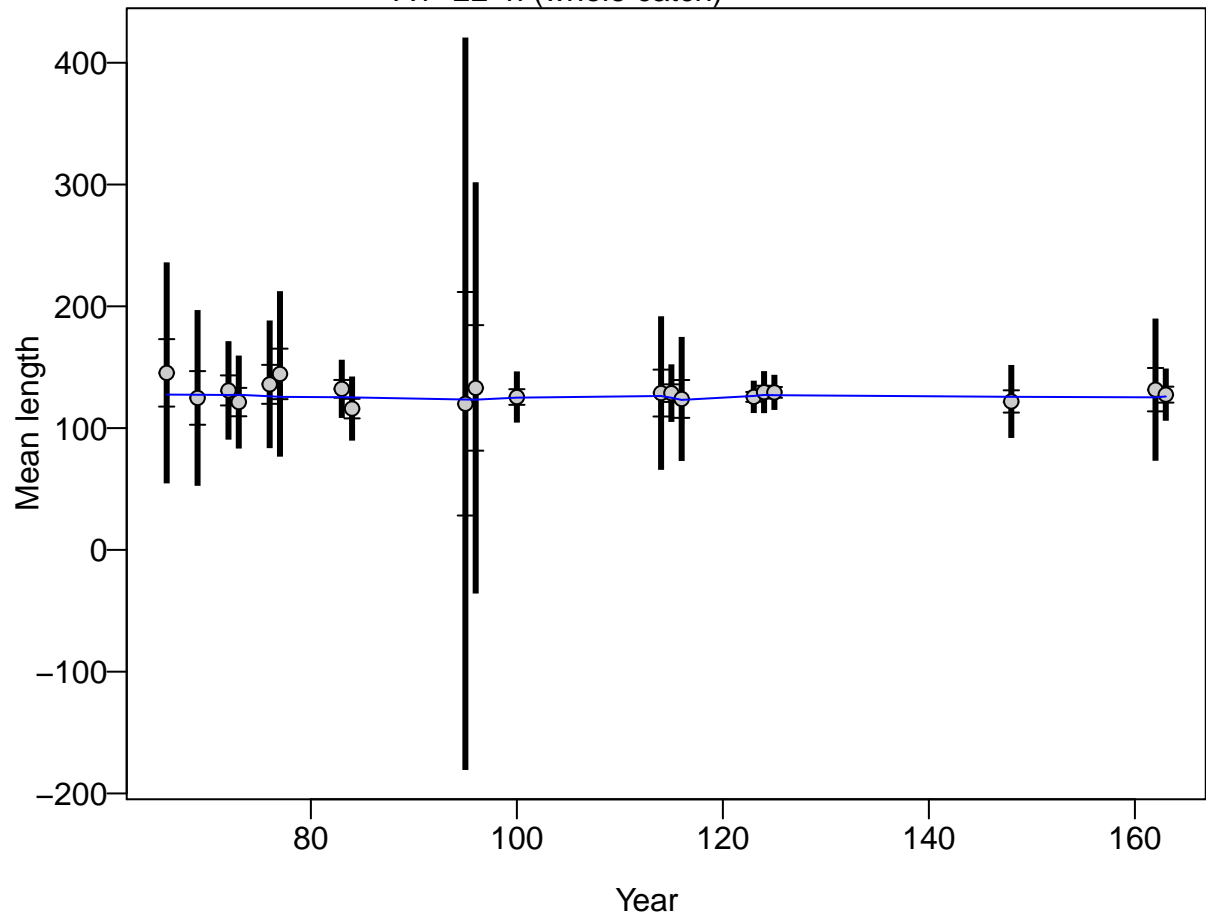


Length (cm)

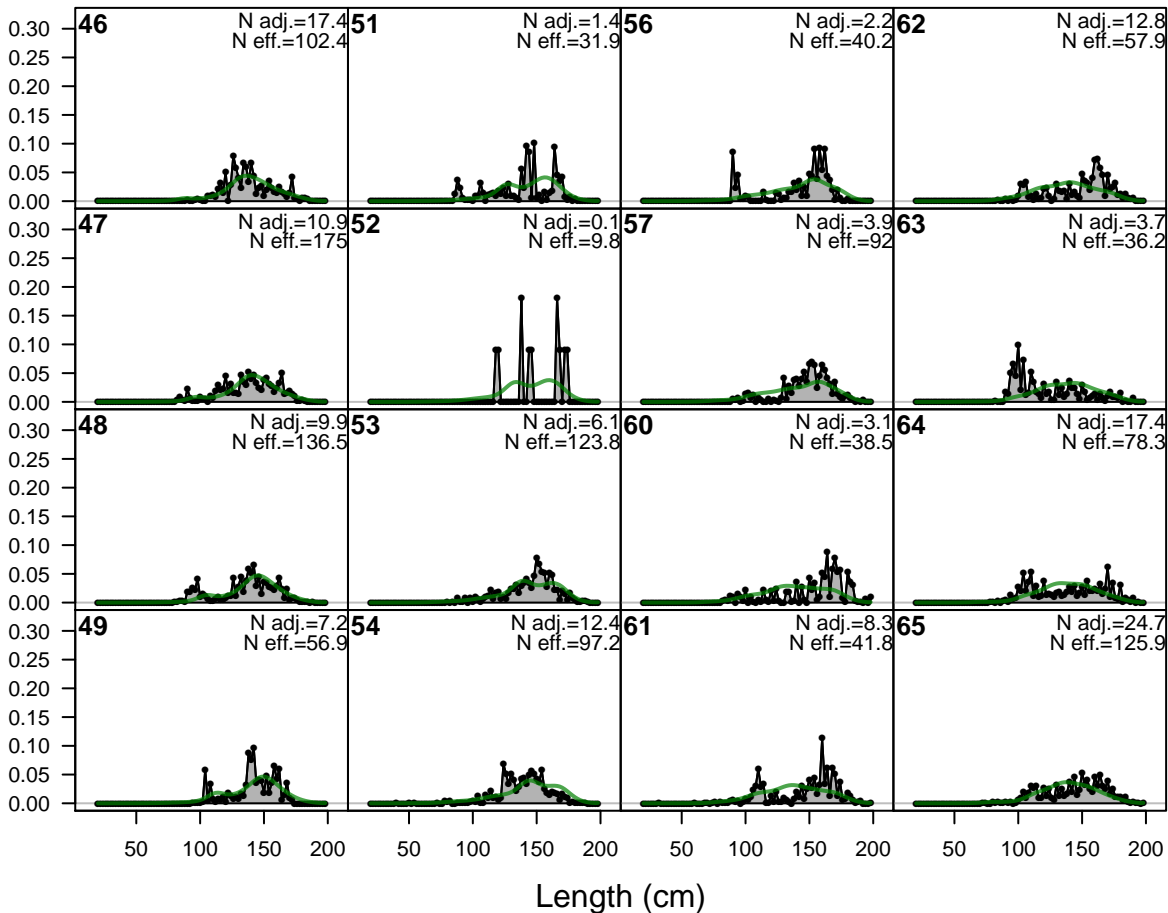




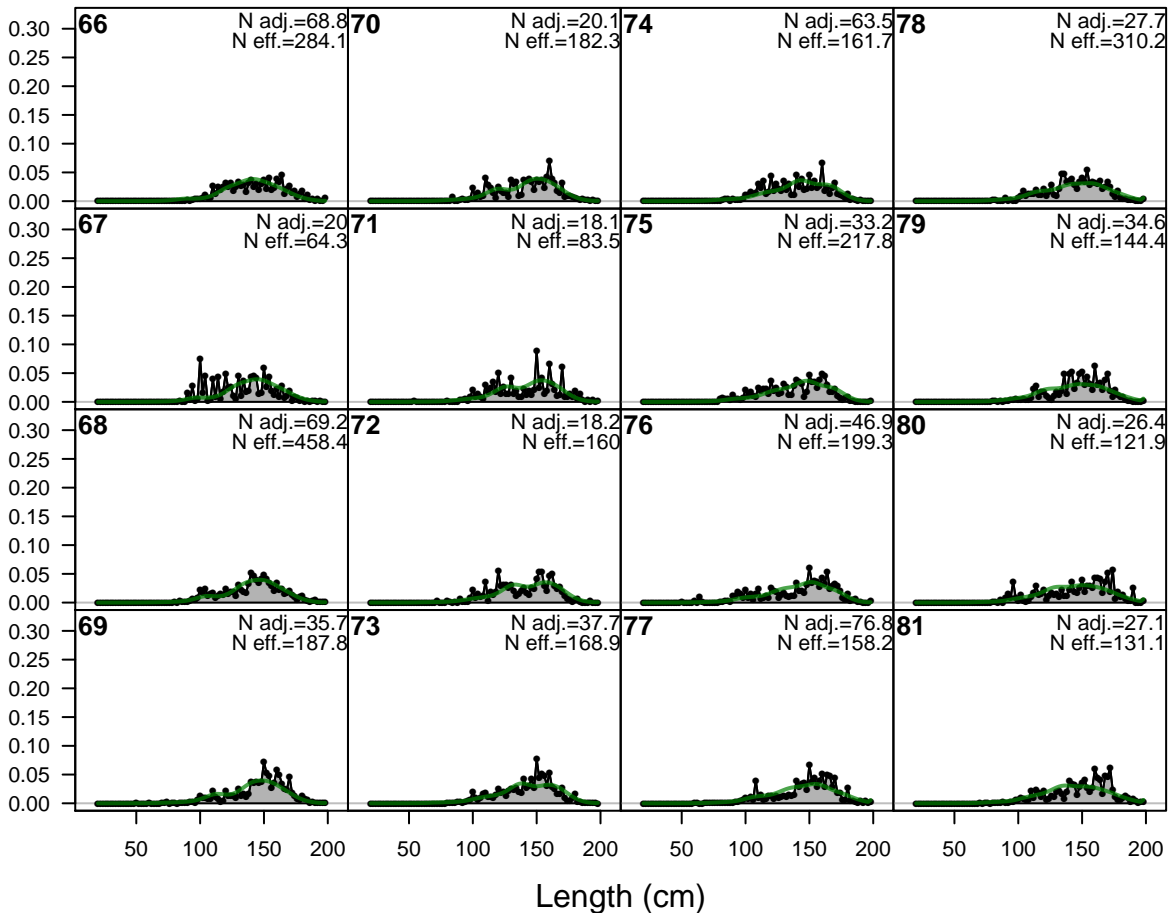
A1-LL-n (whole catch)



Proportion

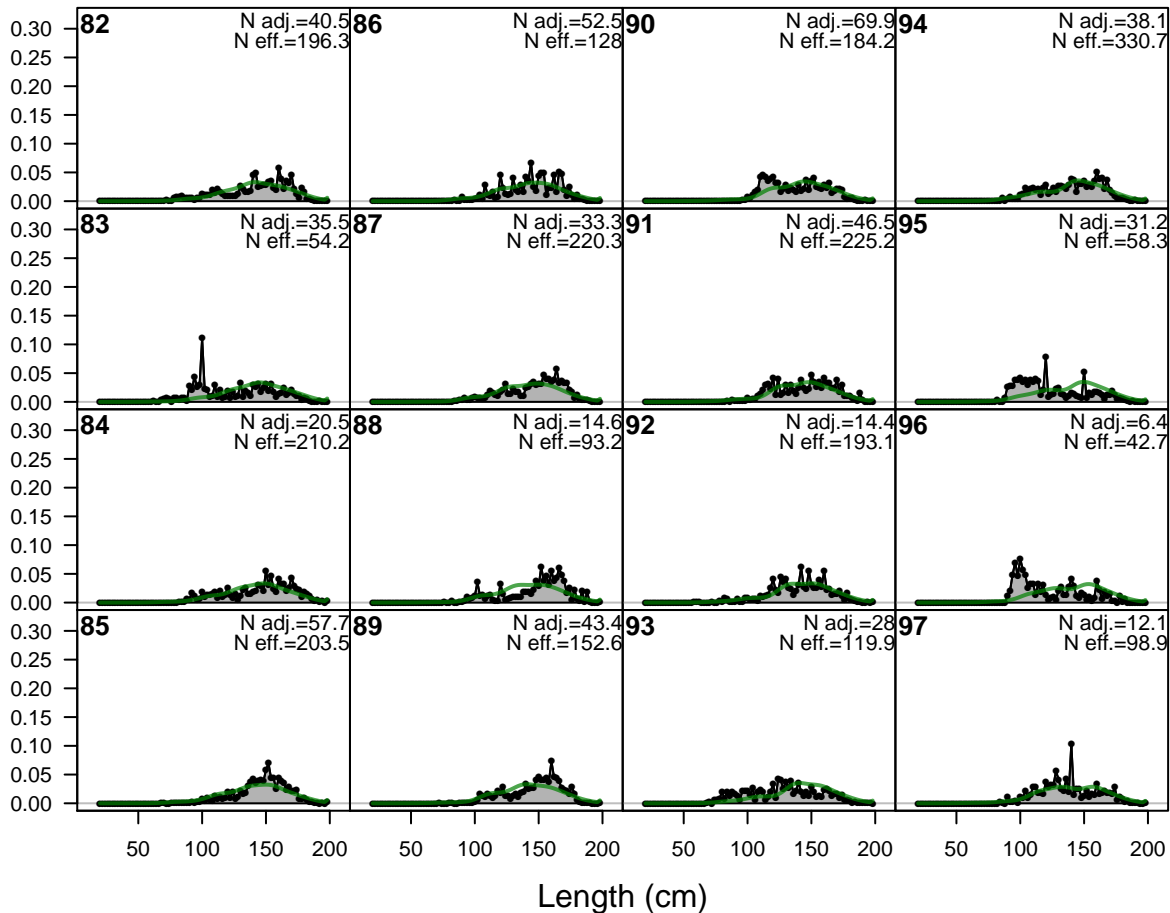


Proportion

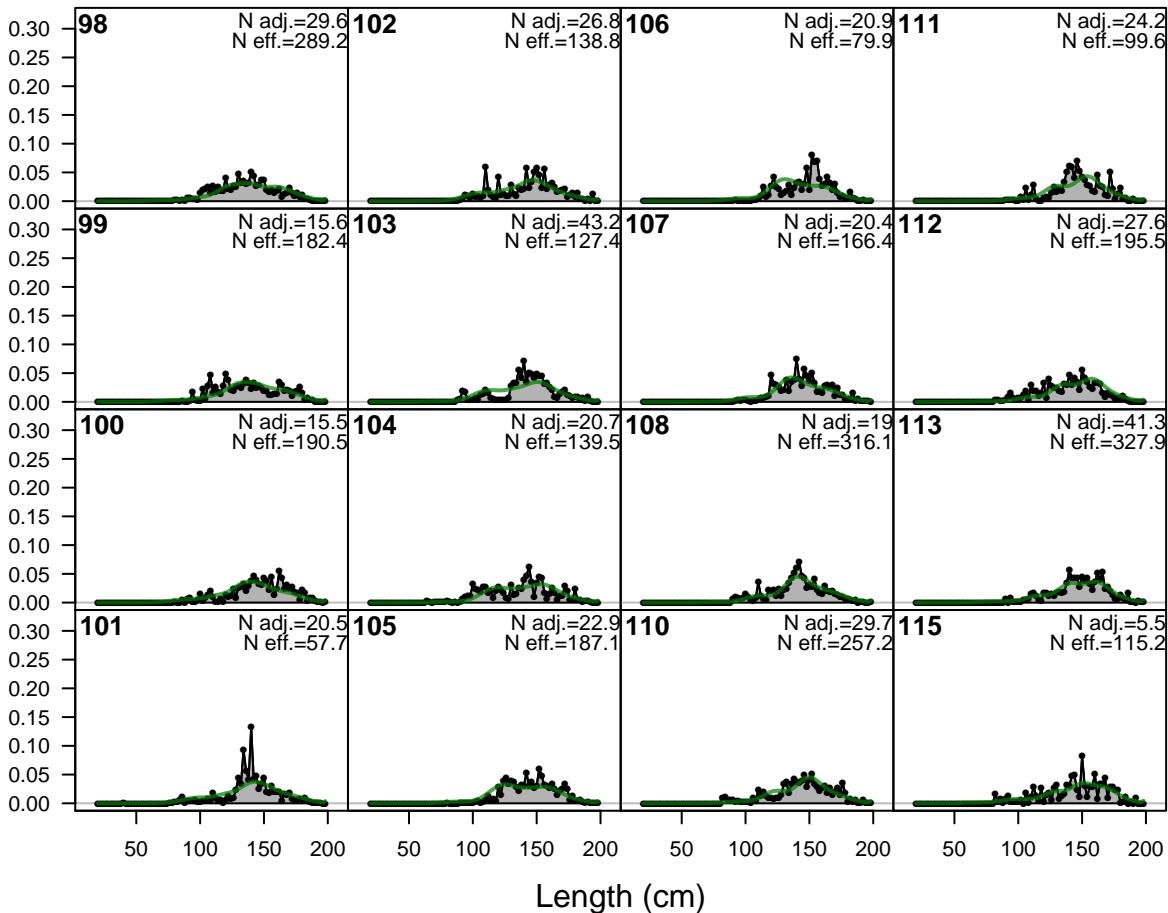




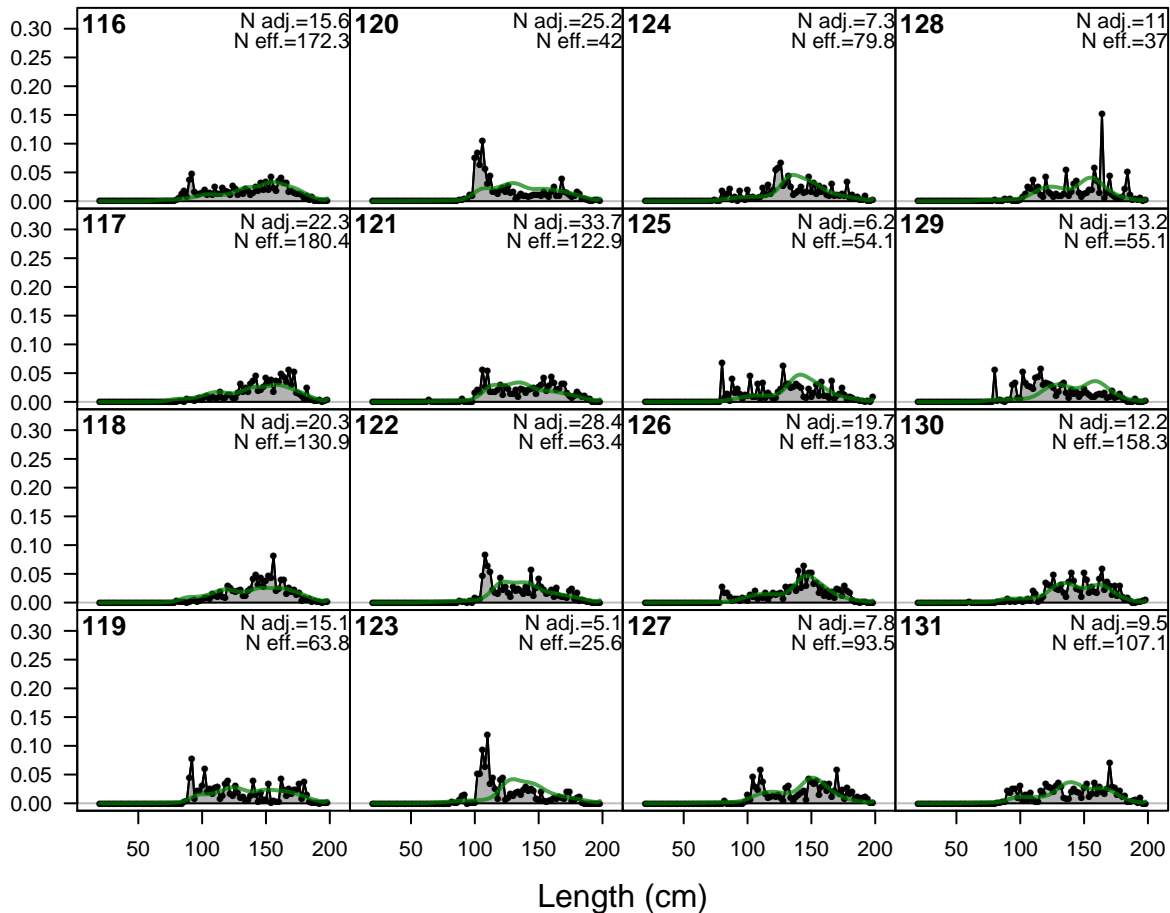
Proportion



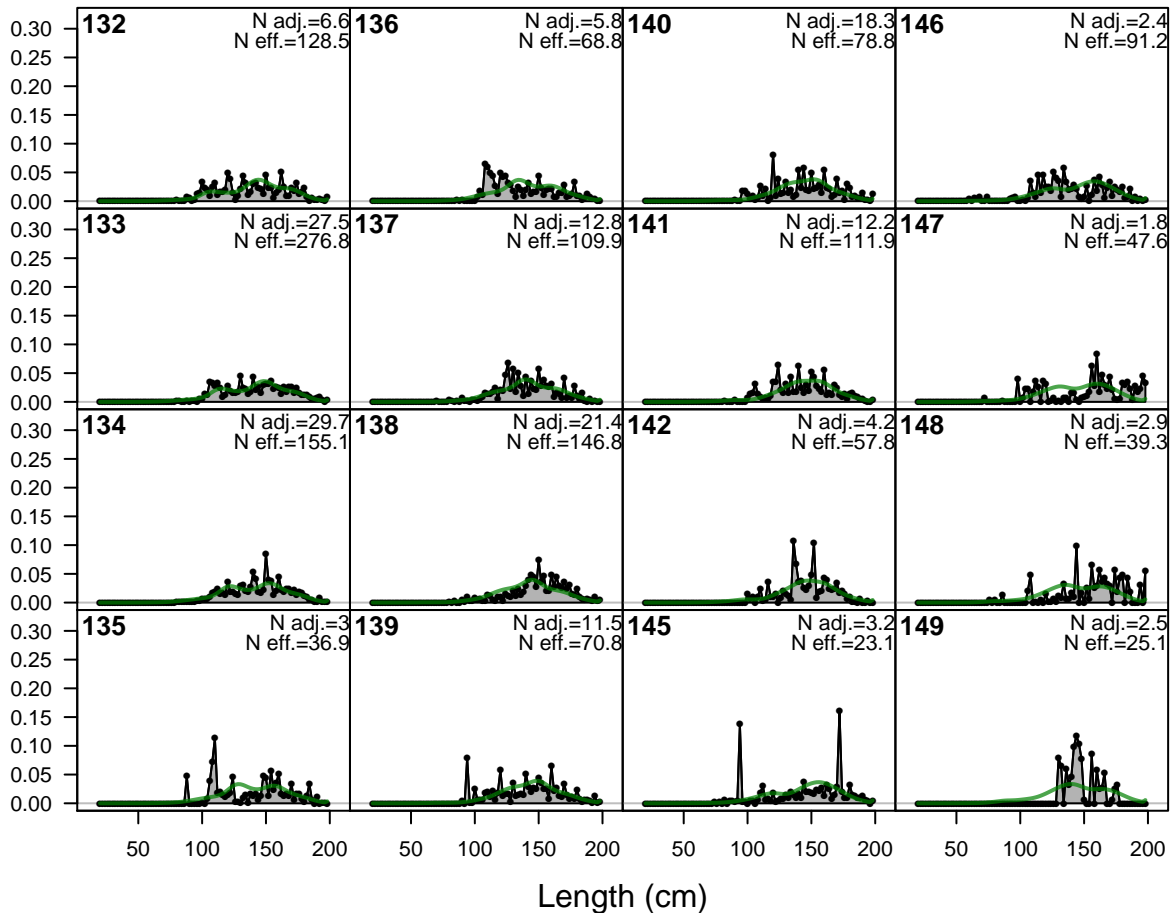
Proportion



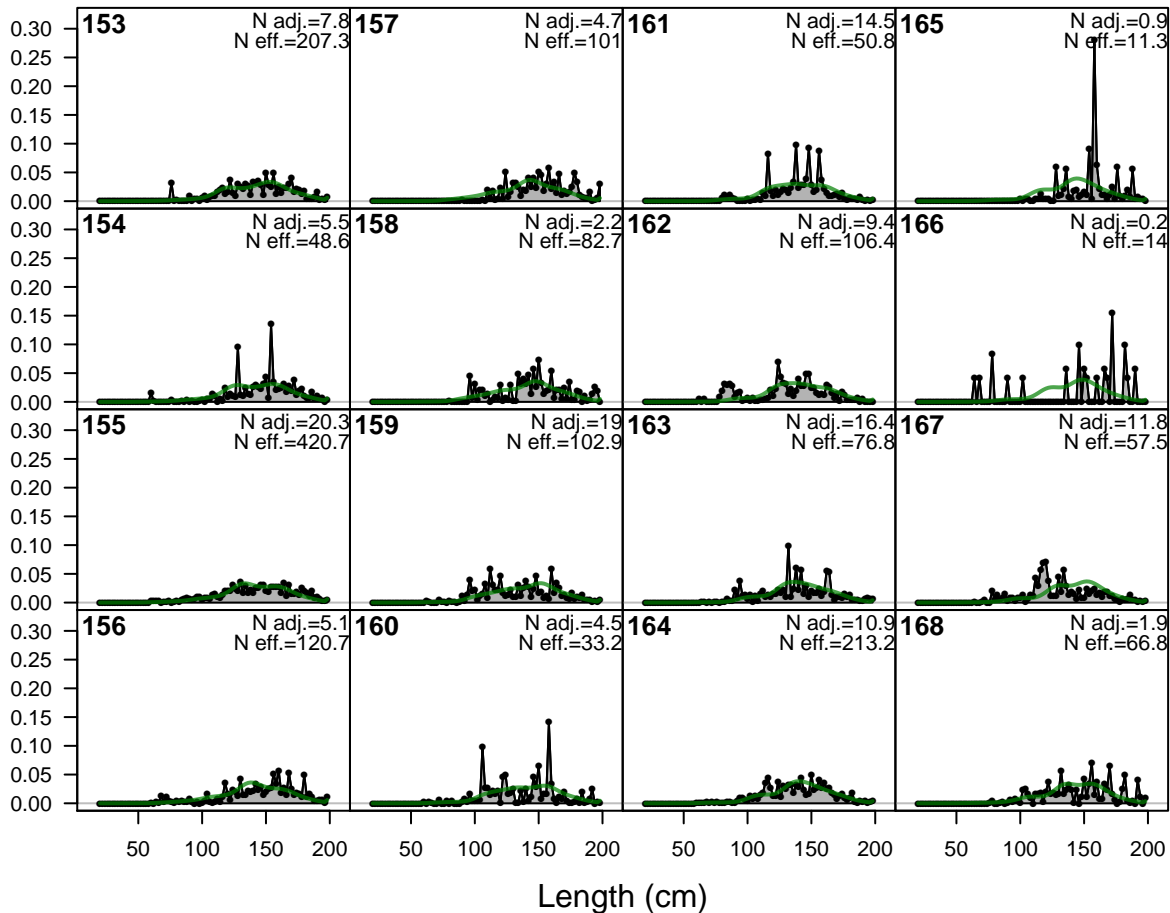
Proportion



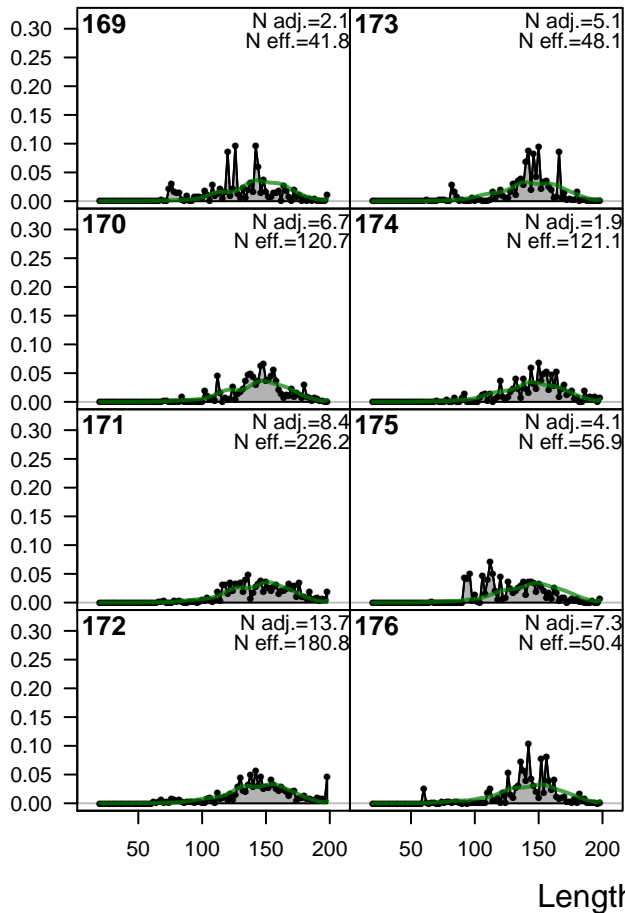
Proportion

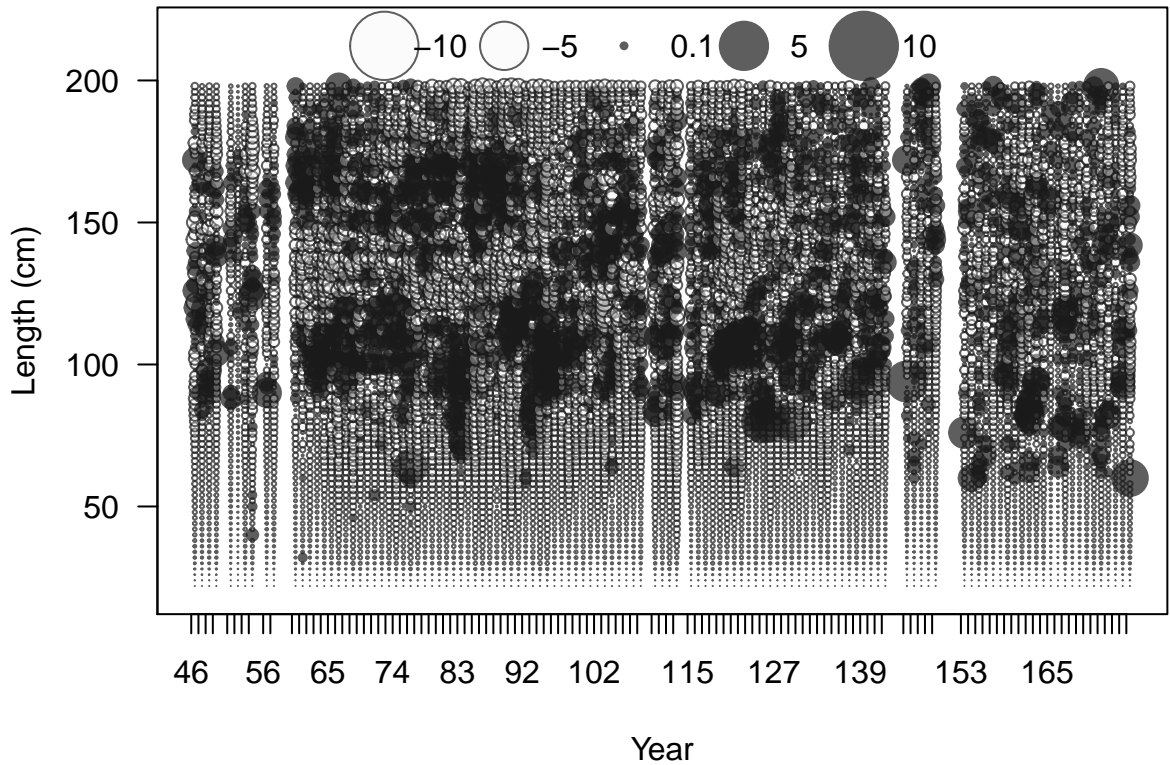


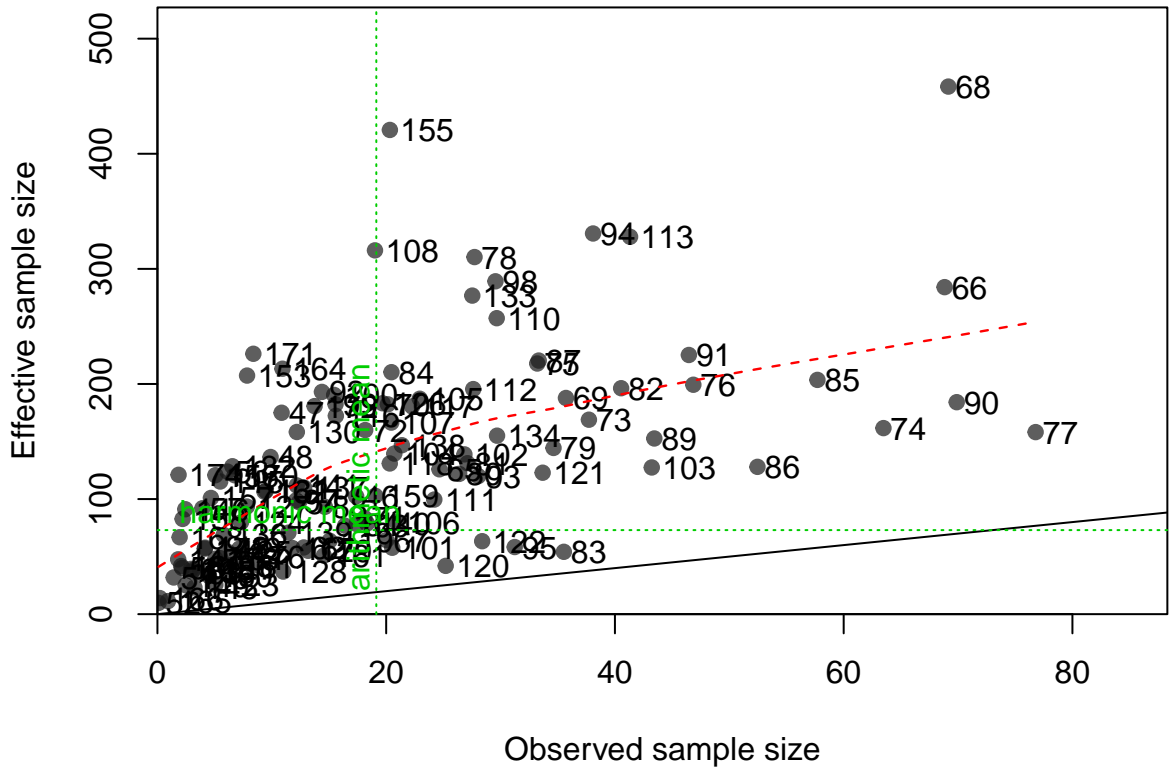
Proportion



Proportion

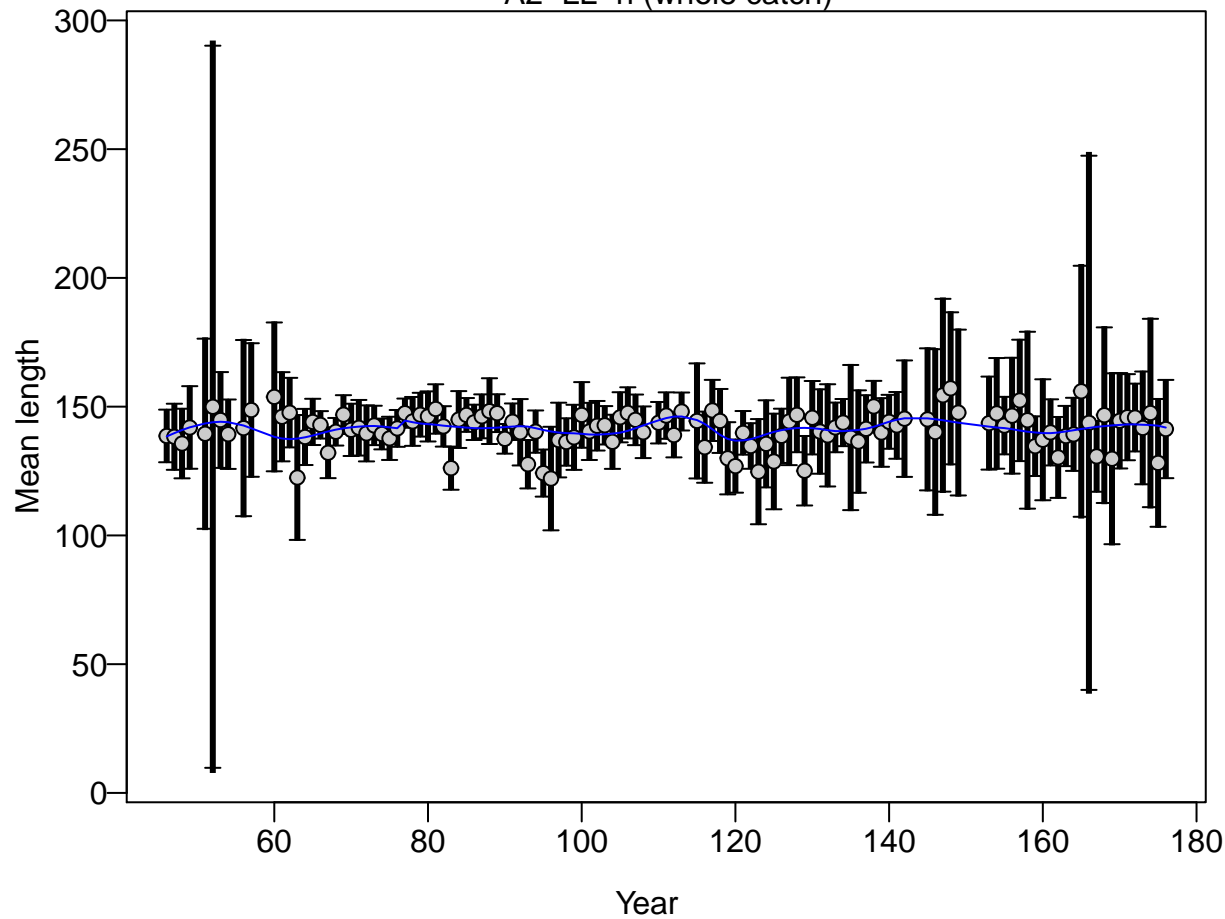




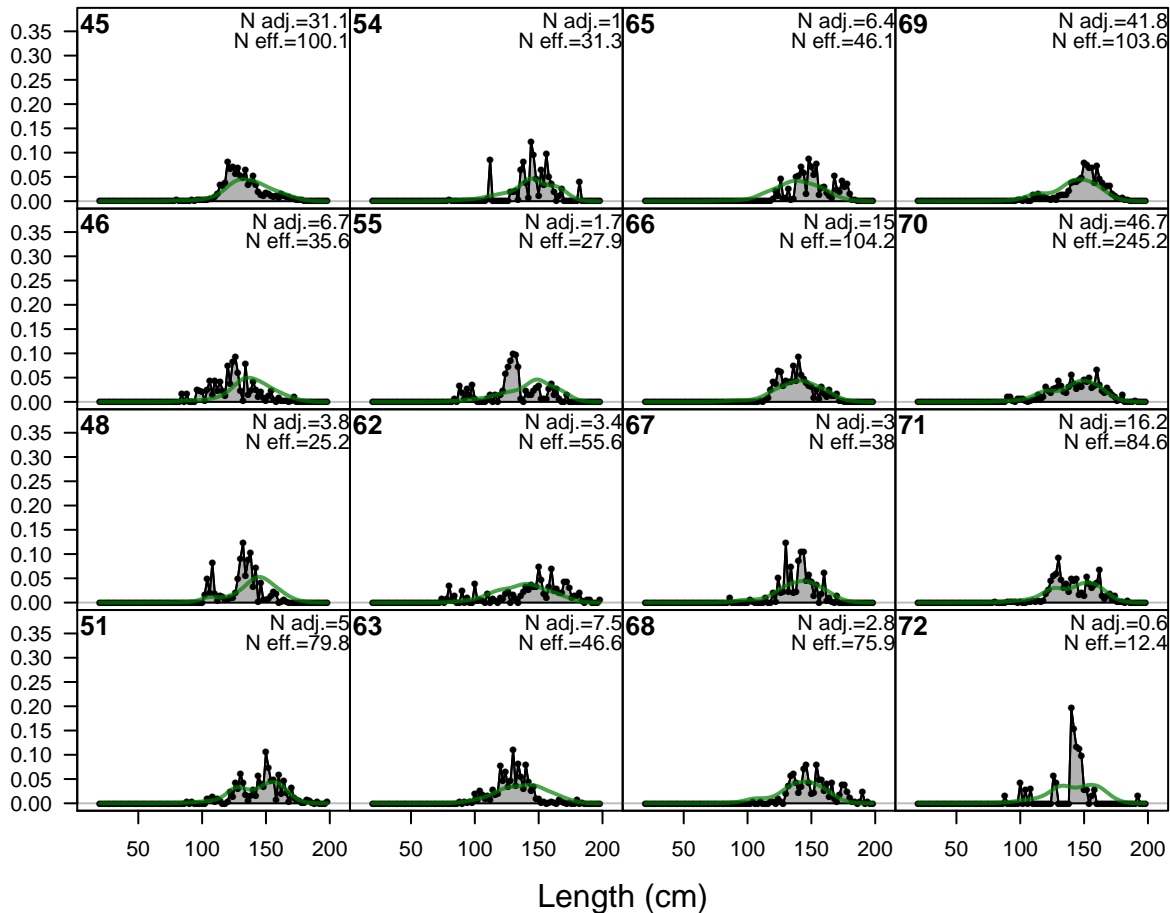




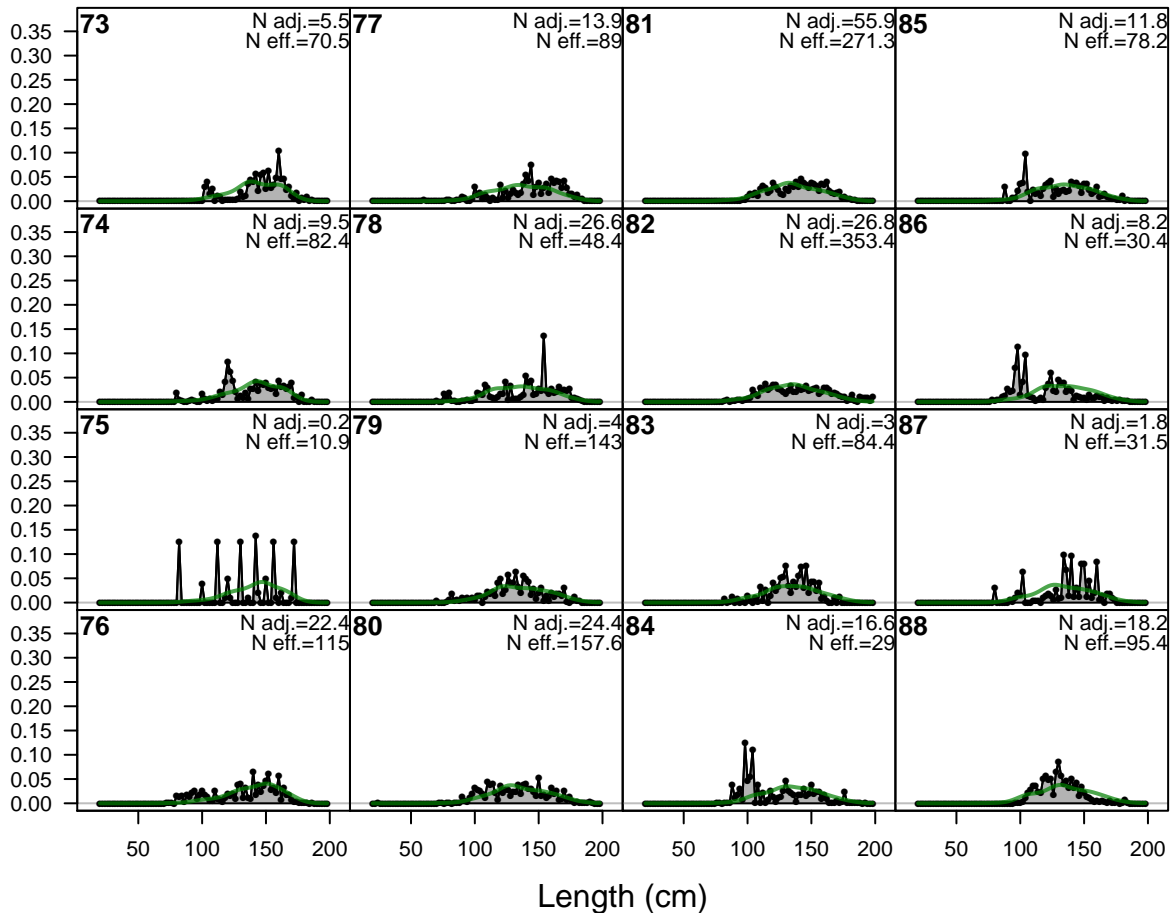
A2-LL-n (whole catch)



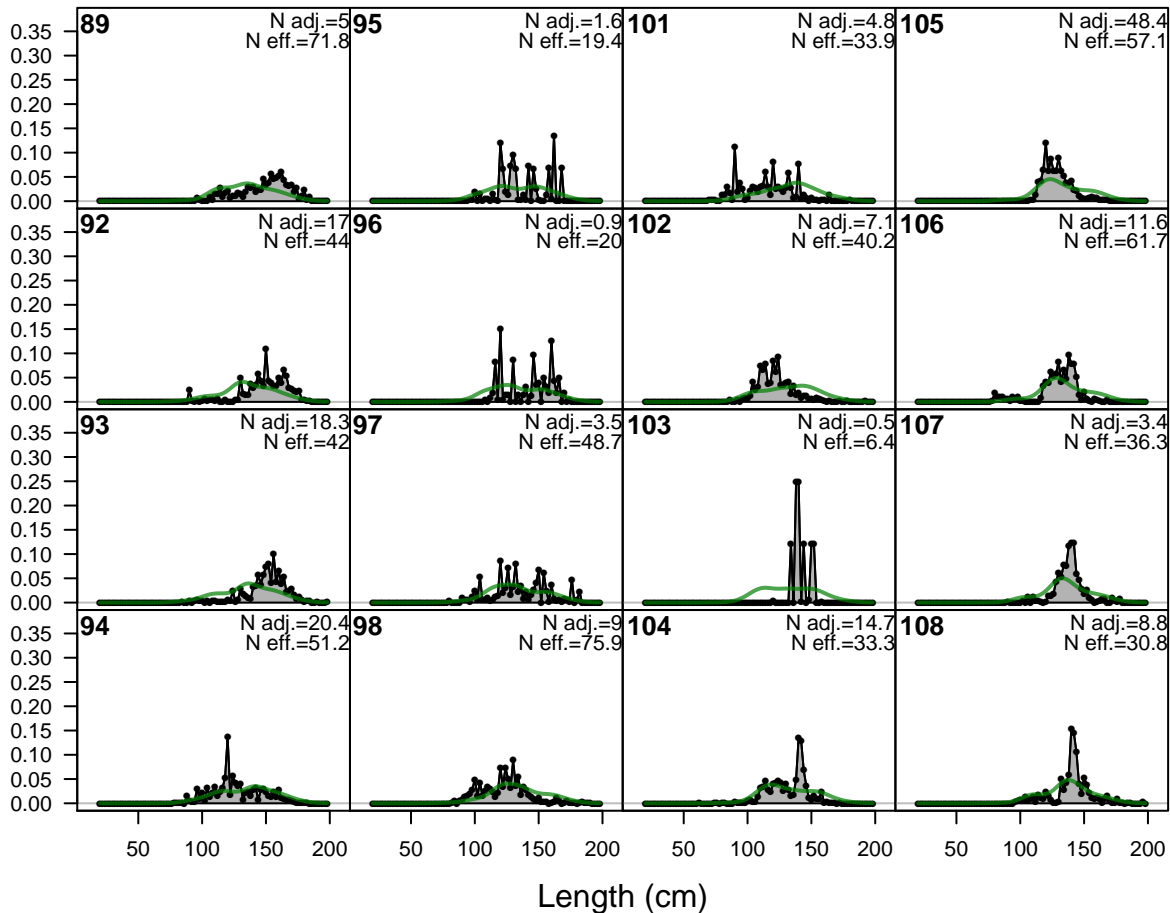
Proportion



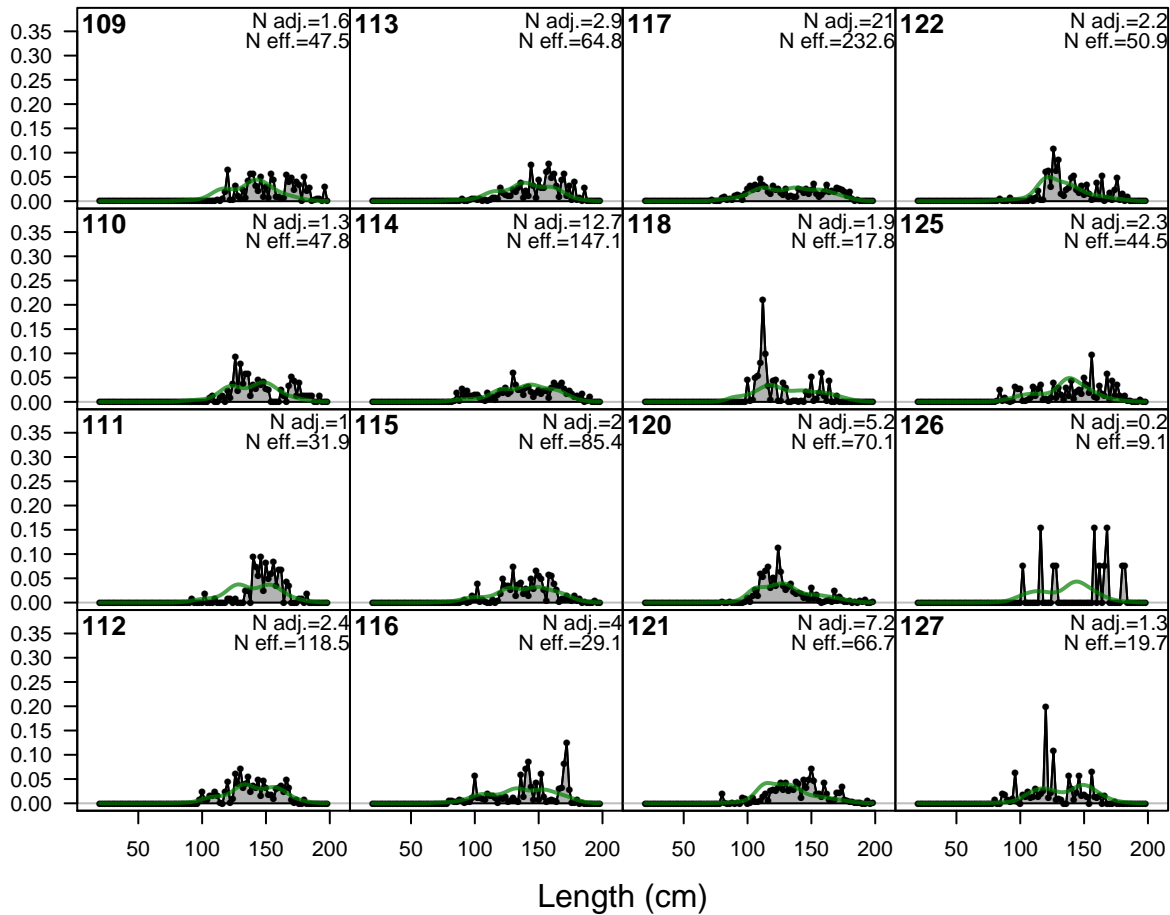
Proportion



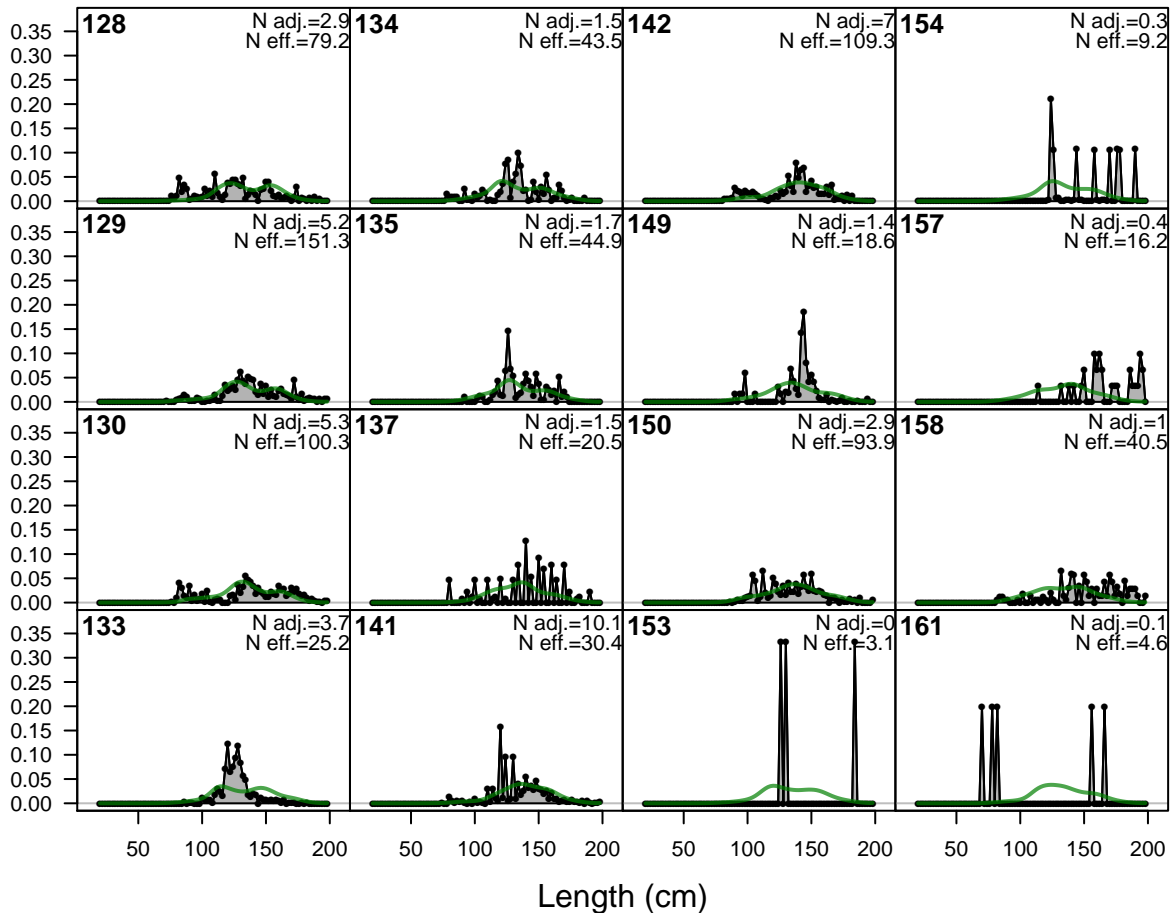
Proportion



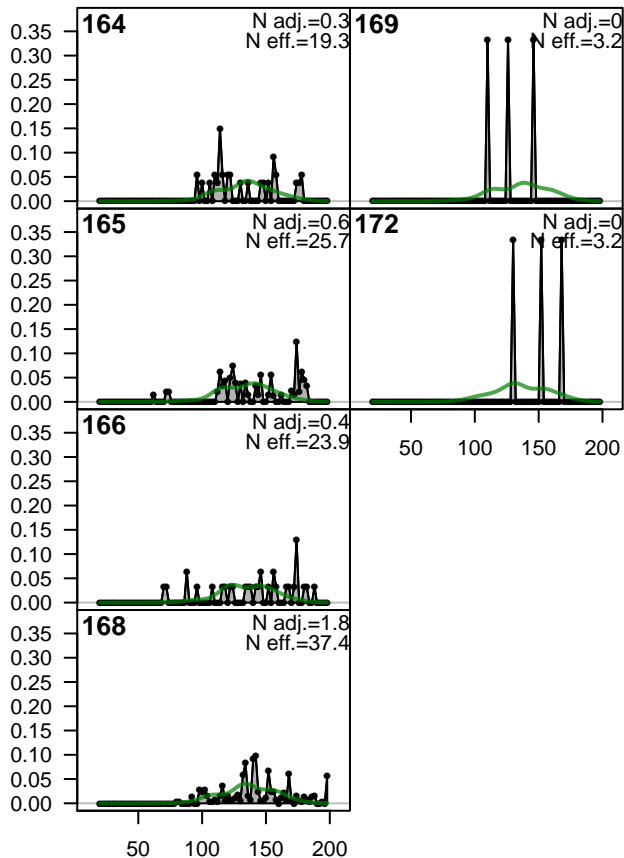
Proportion



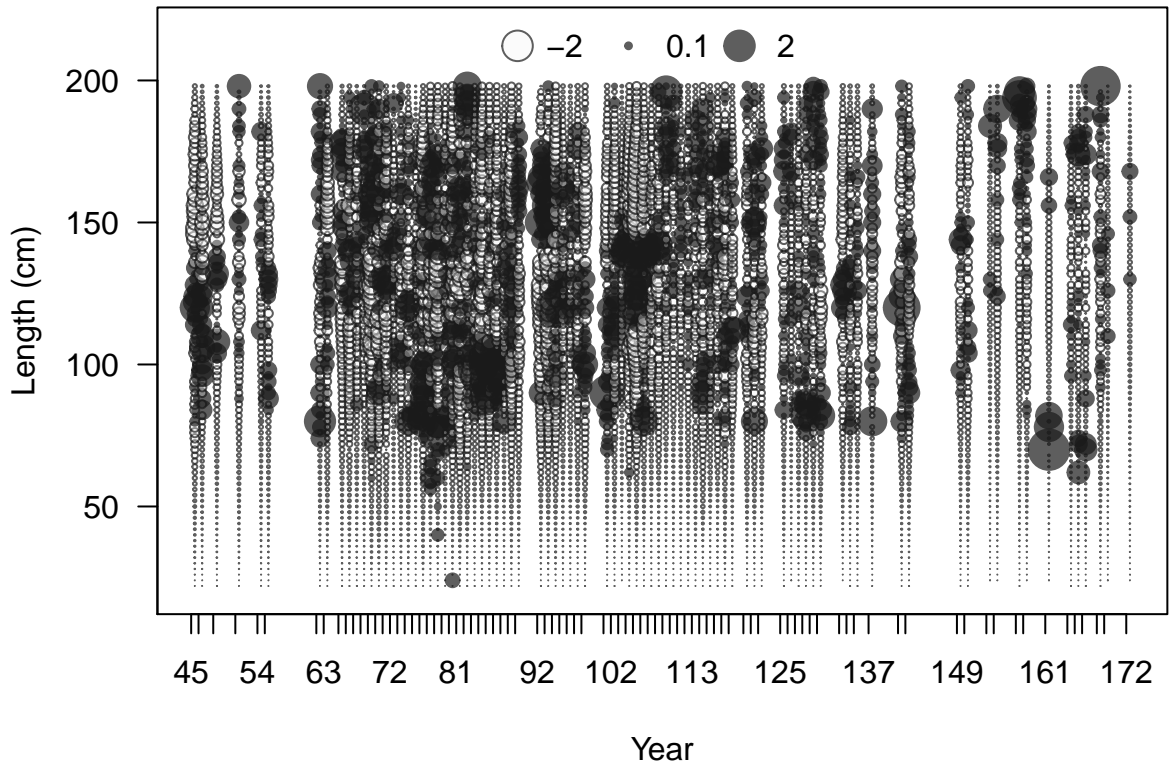
Proportion



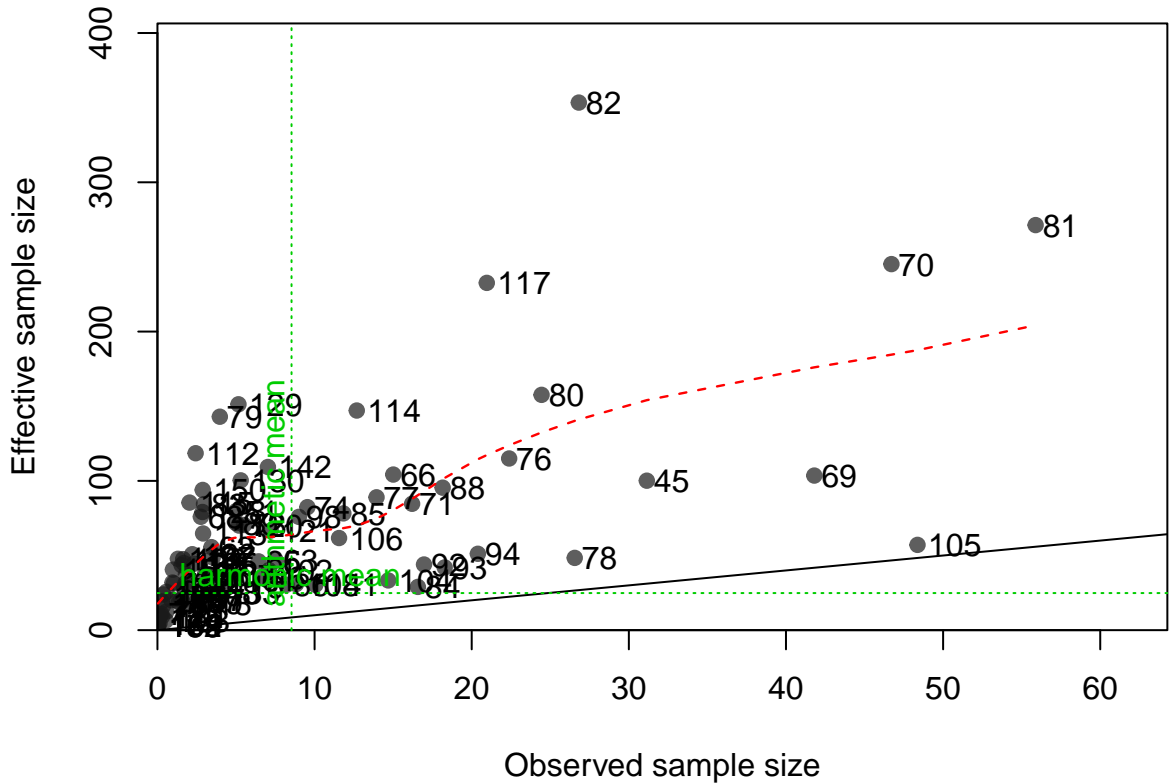
Proportion



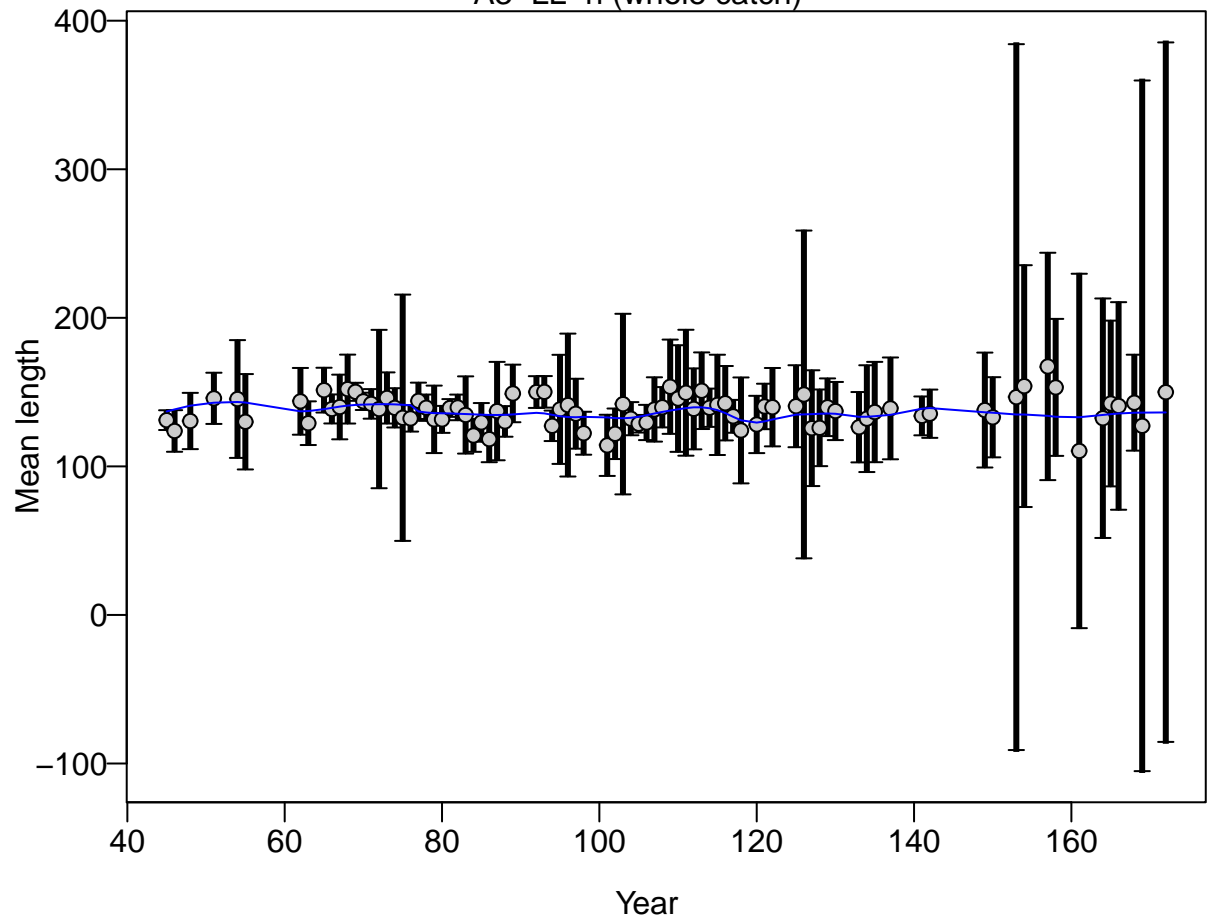
Length (cm)



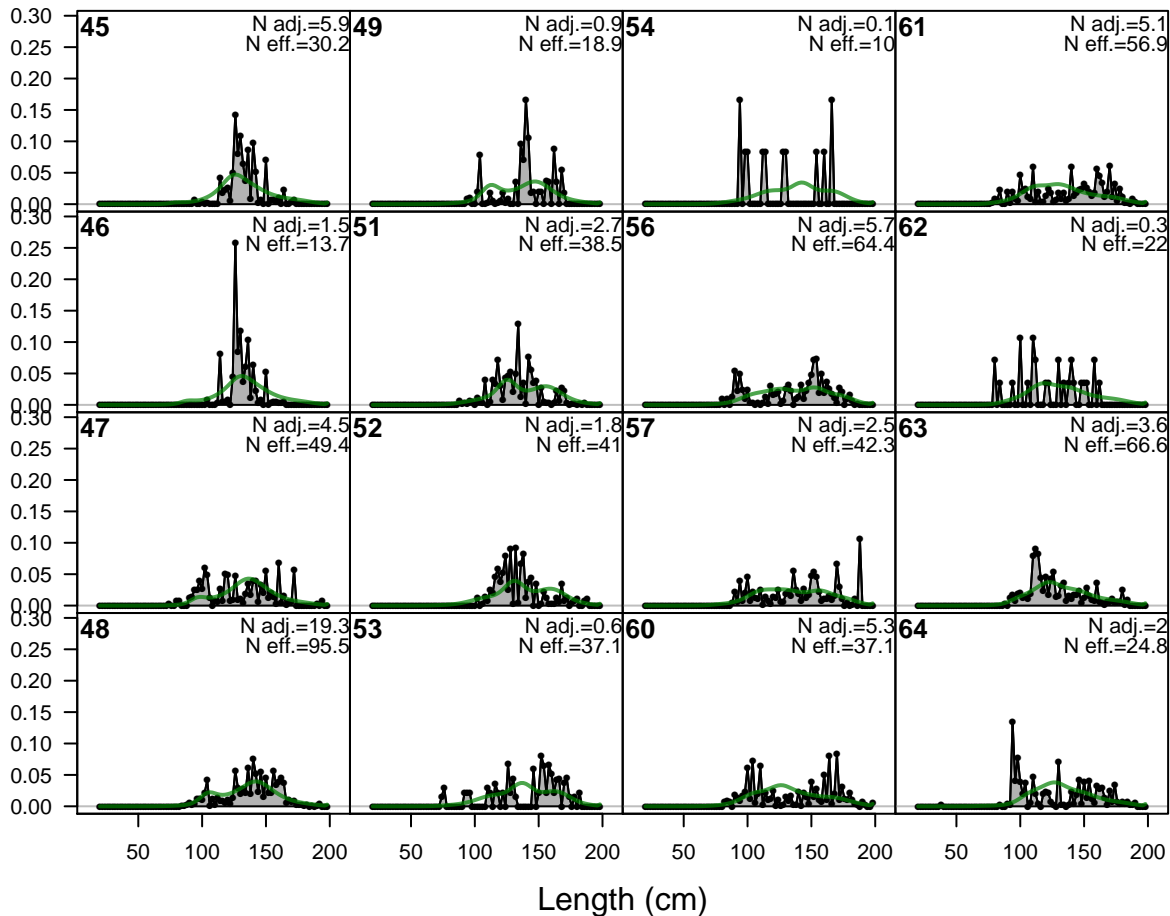




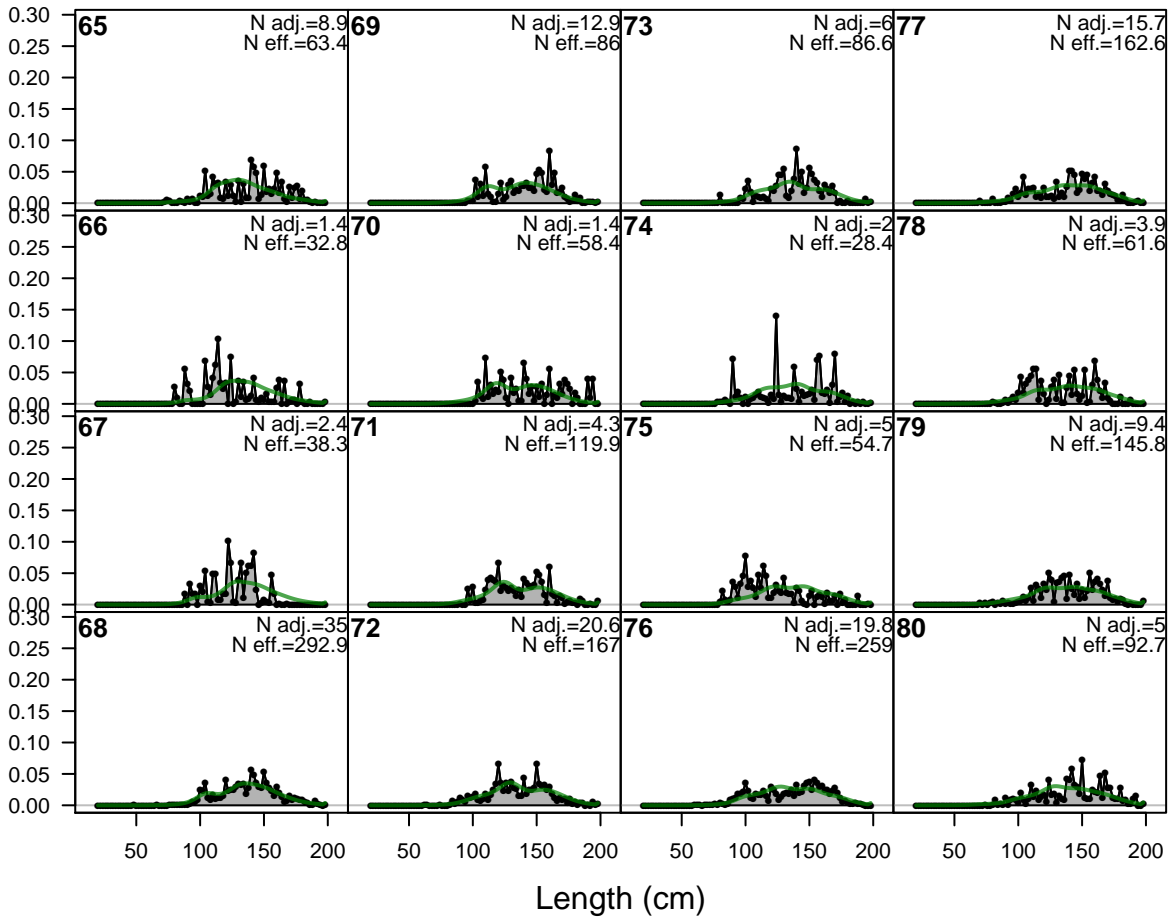
A3-LL-n (whole catch)



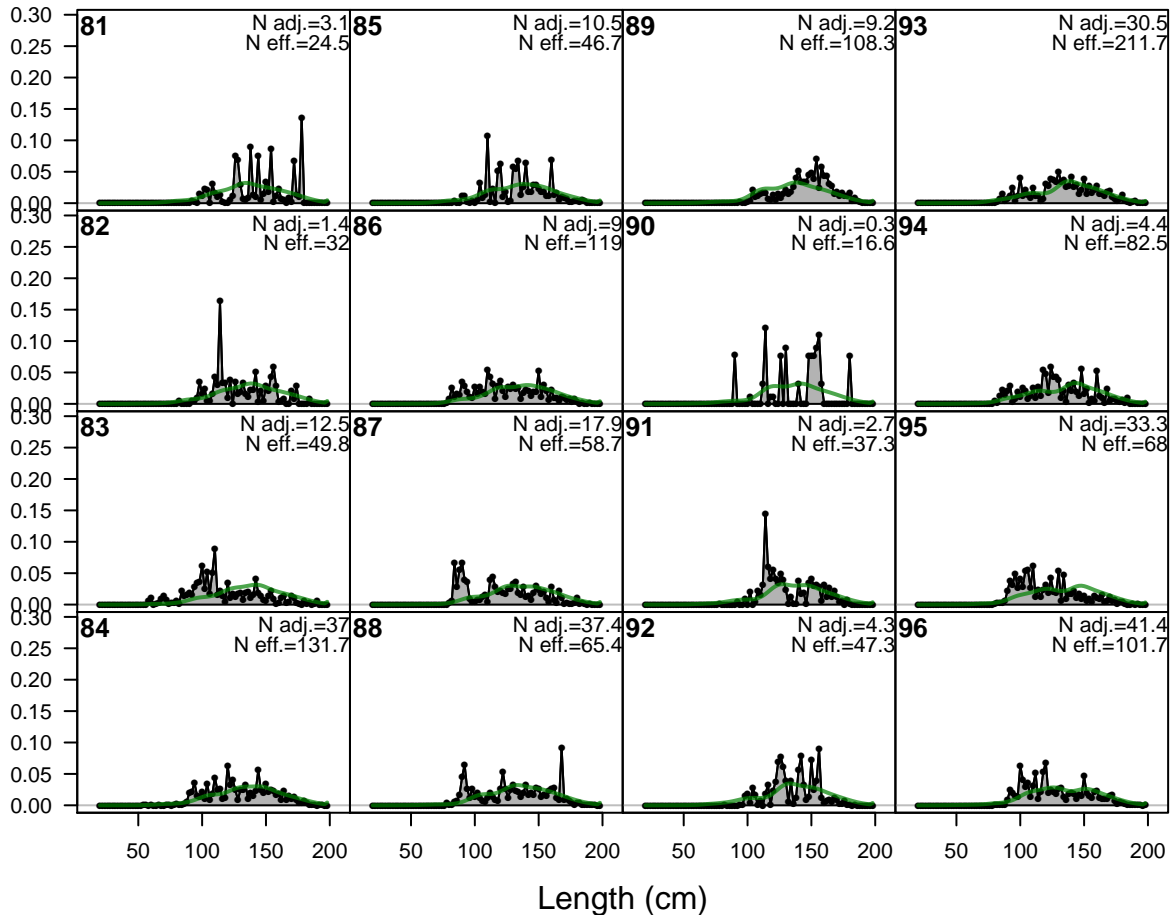
Proportion



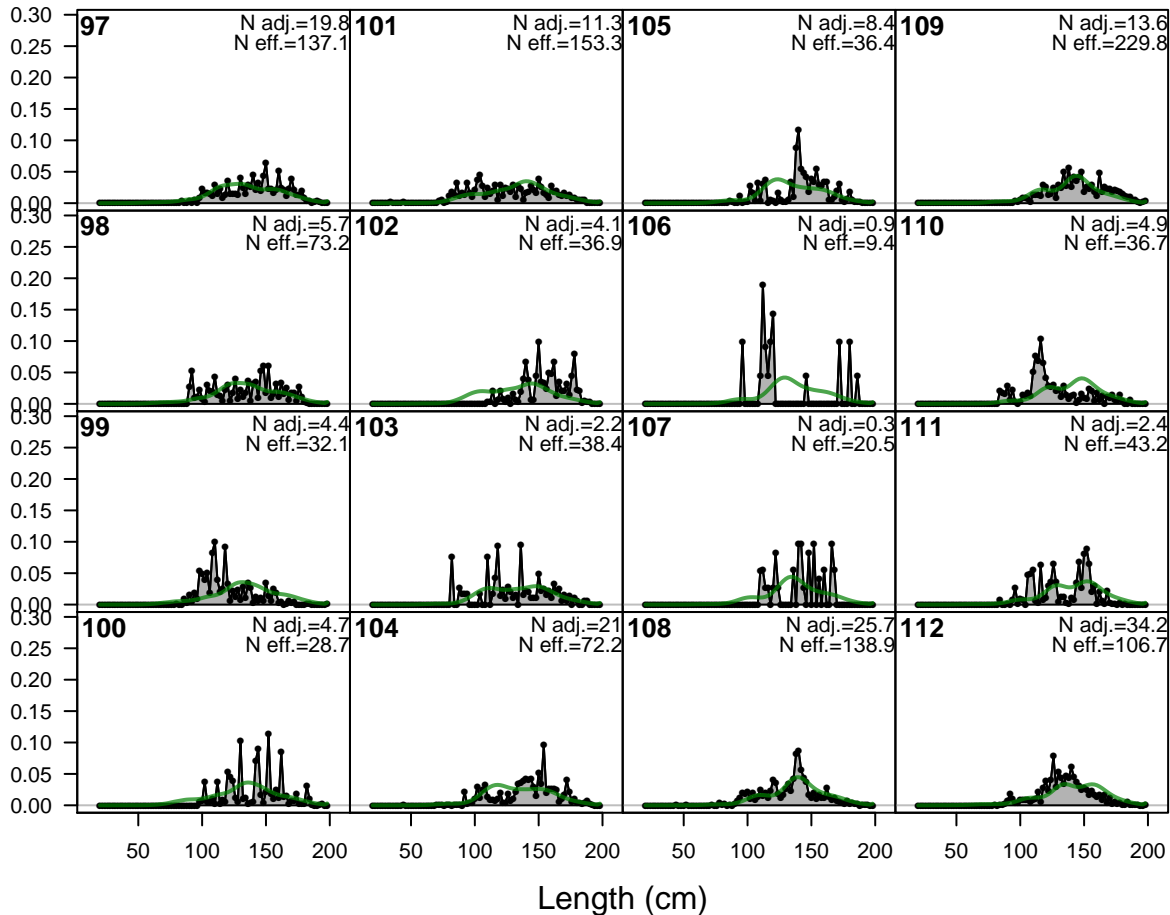
Proportion



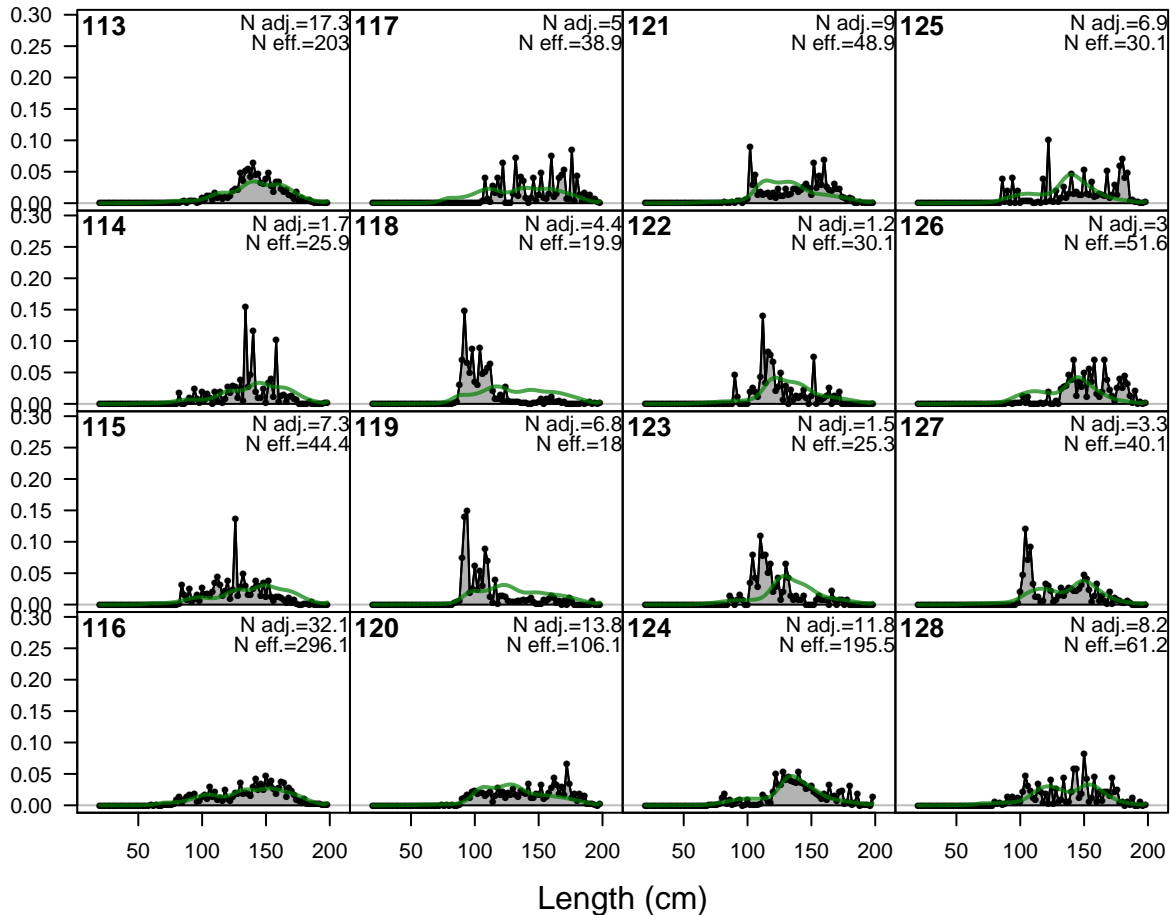
Proportion



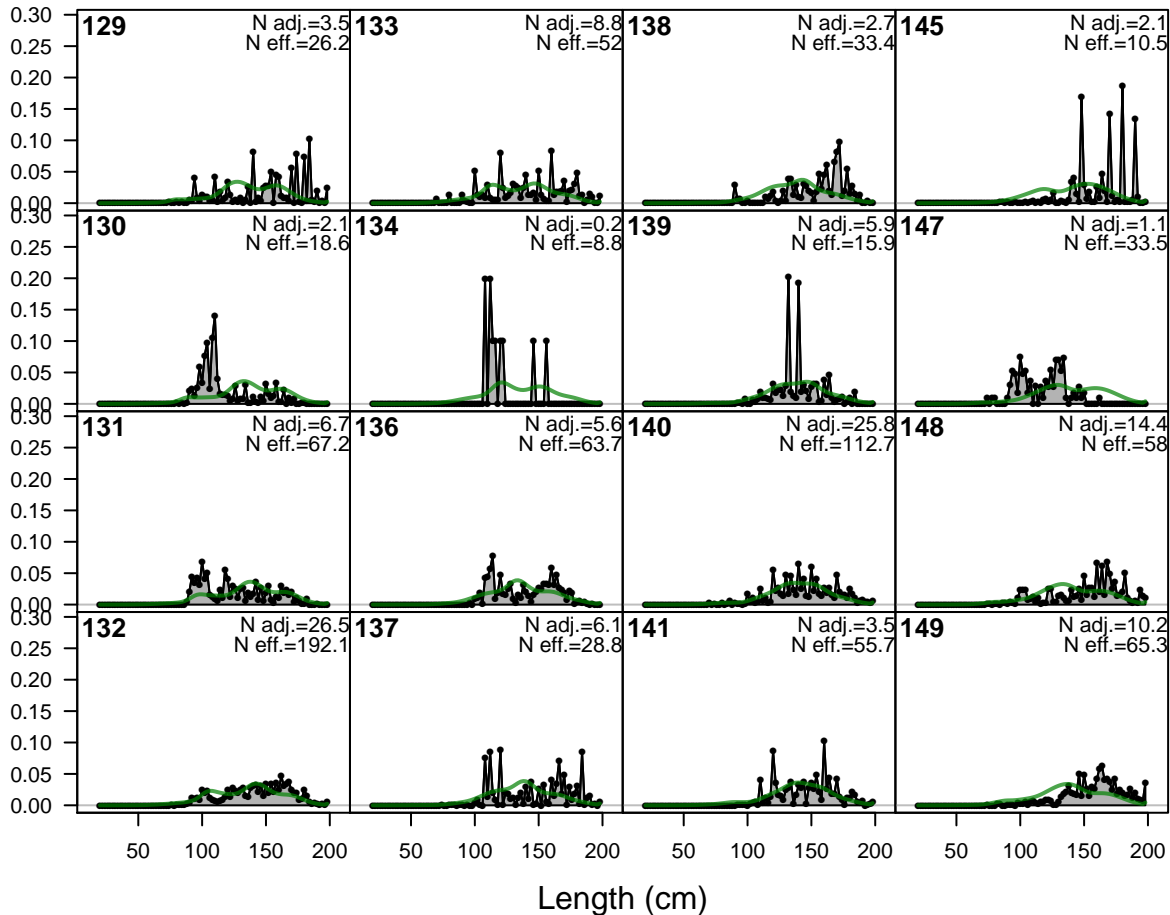
Proportion



Proportion

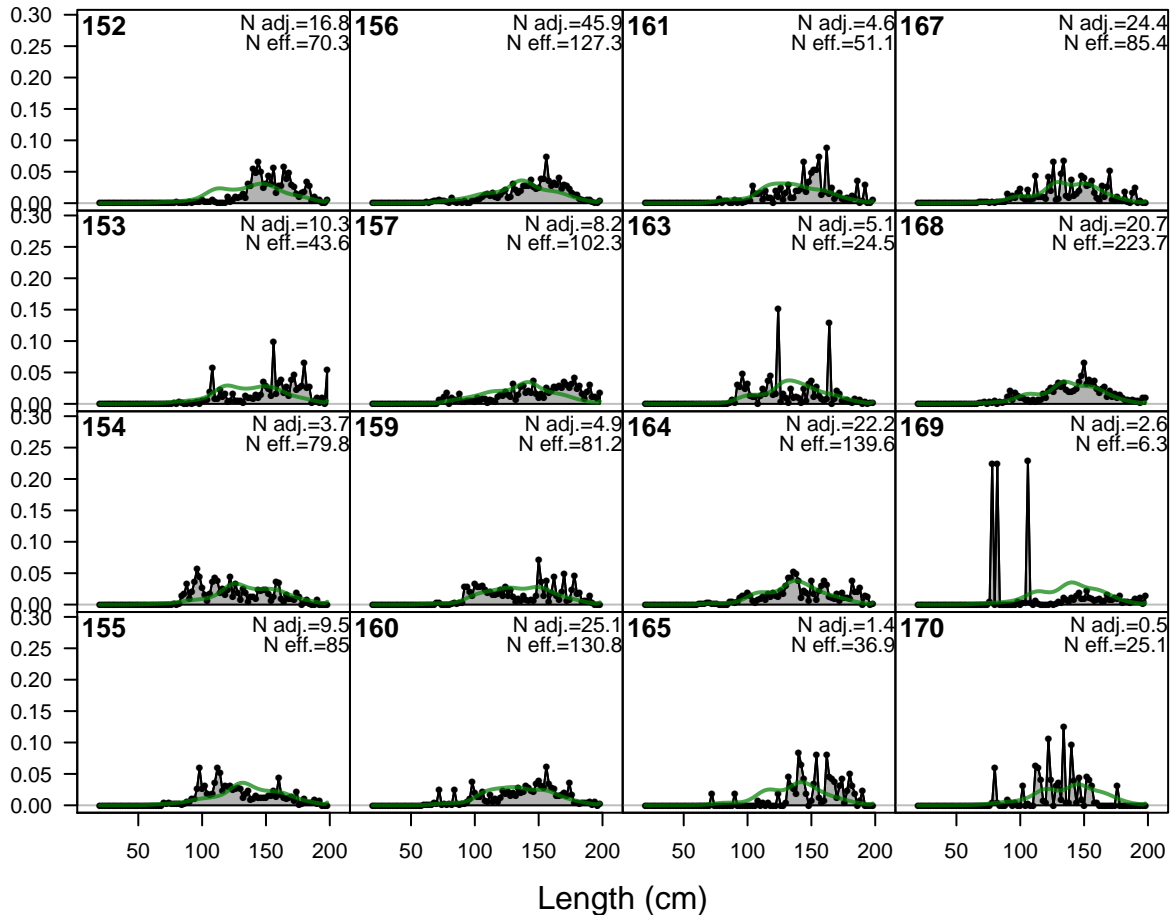


Proportion

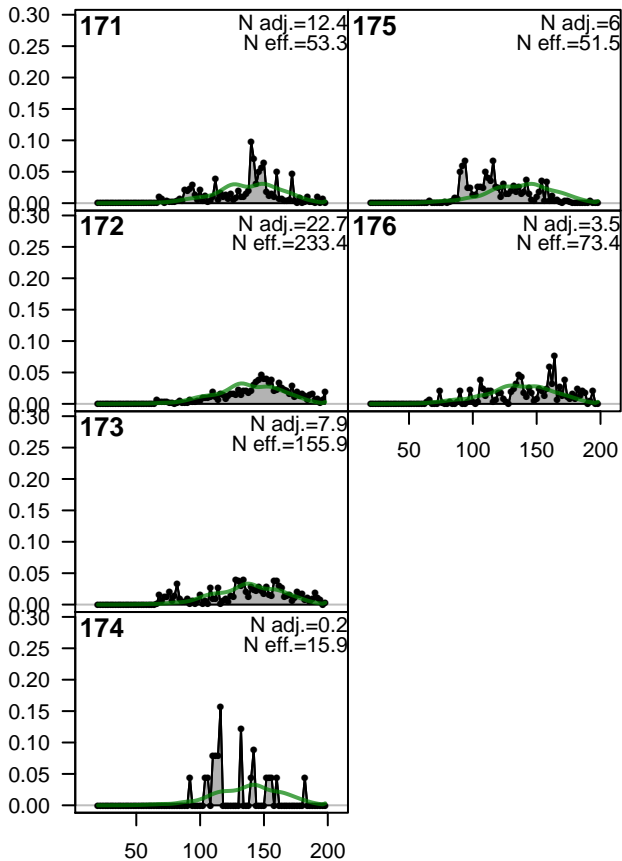




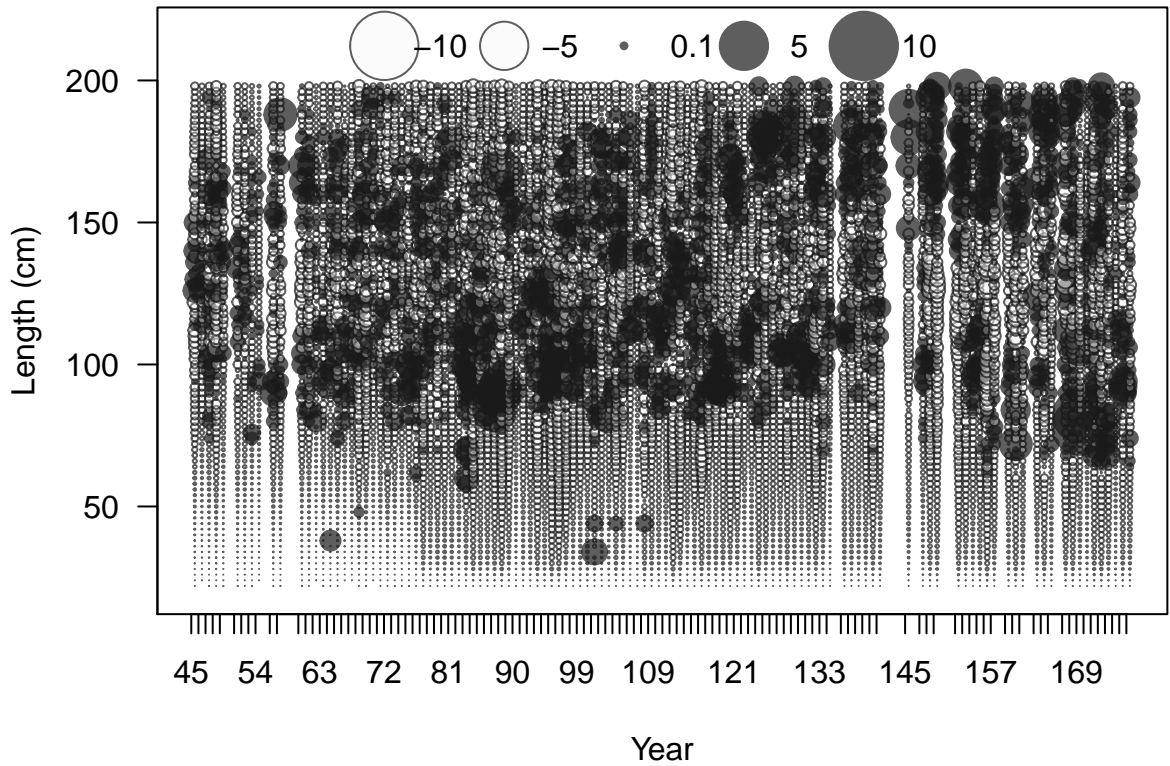
Proportion

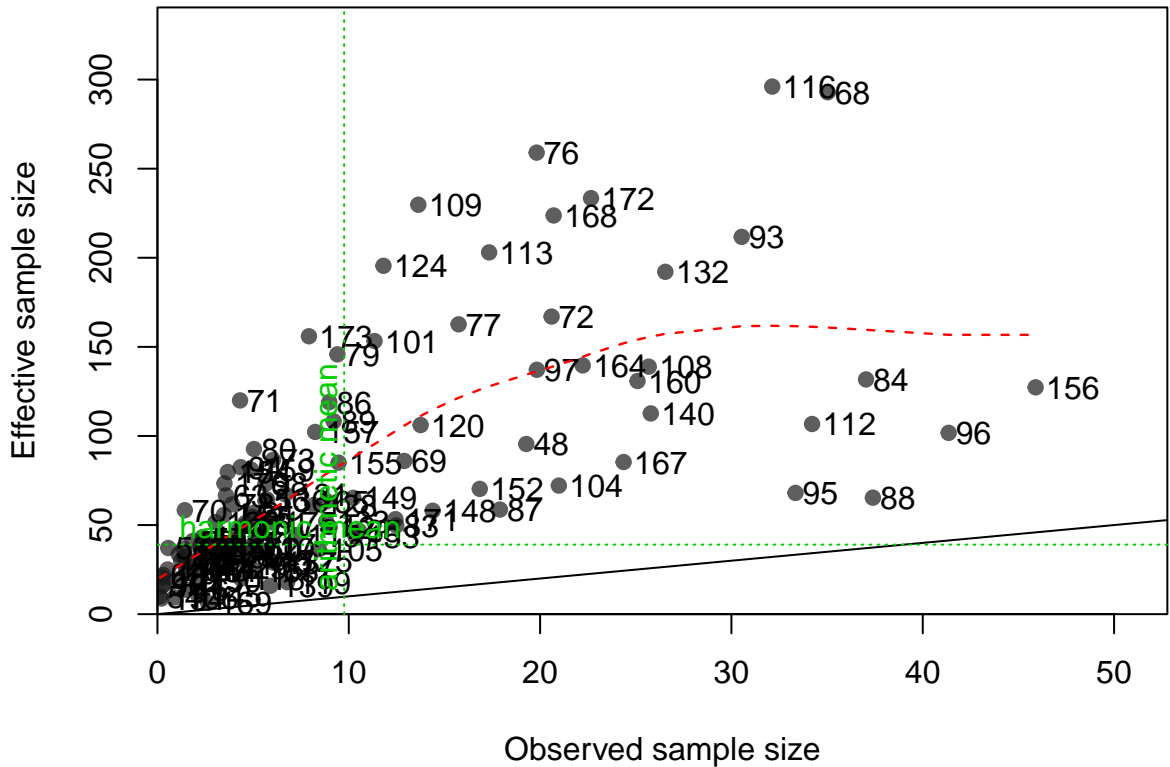


Proportion

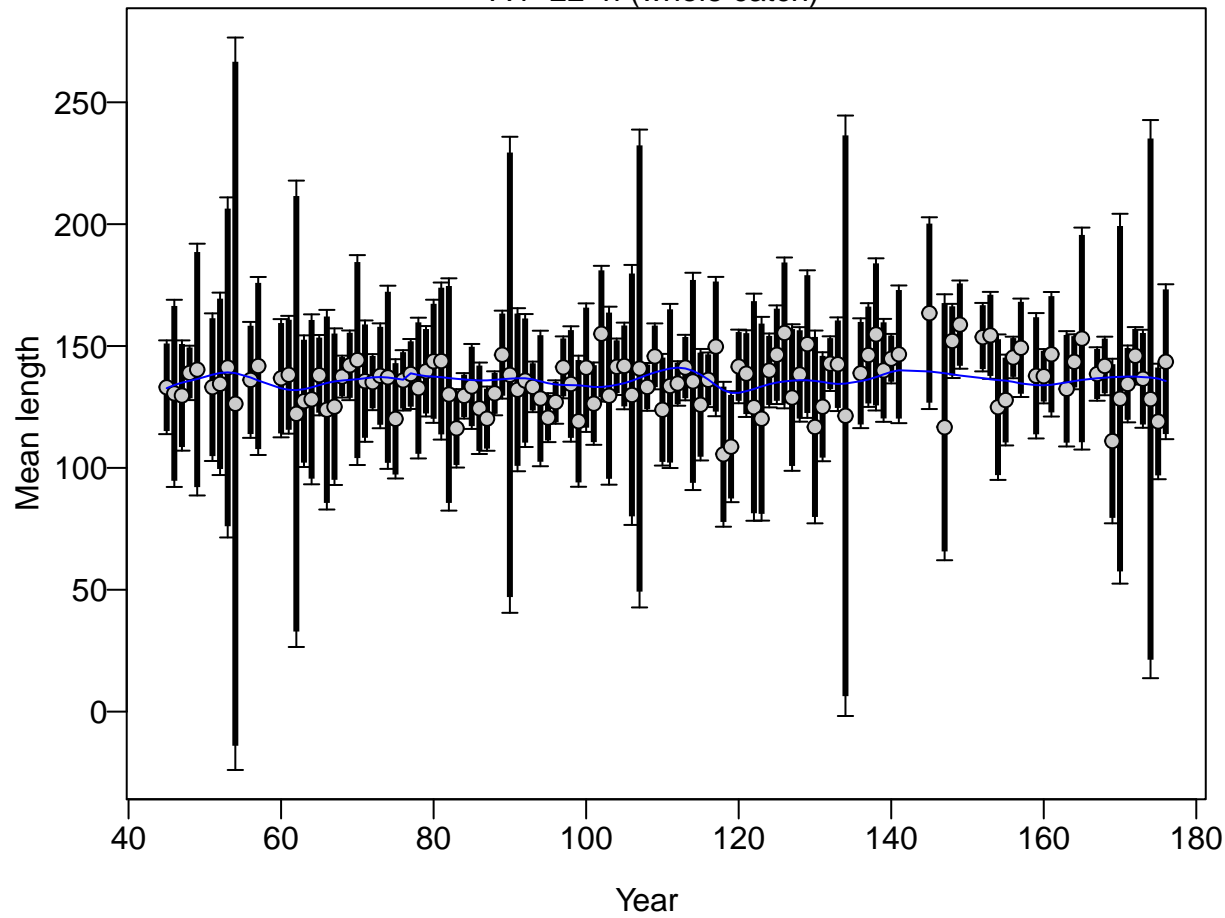


Length (cm)

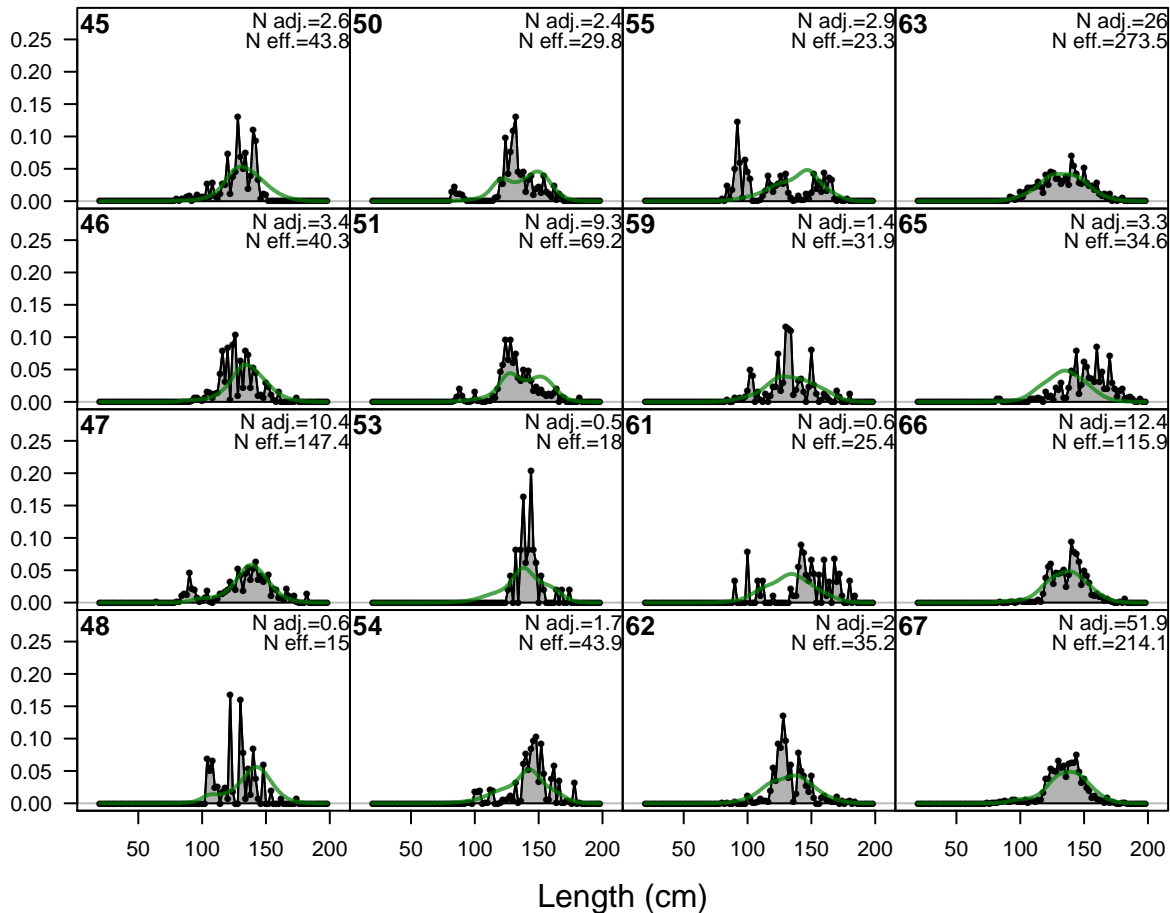




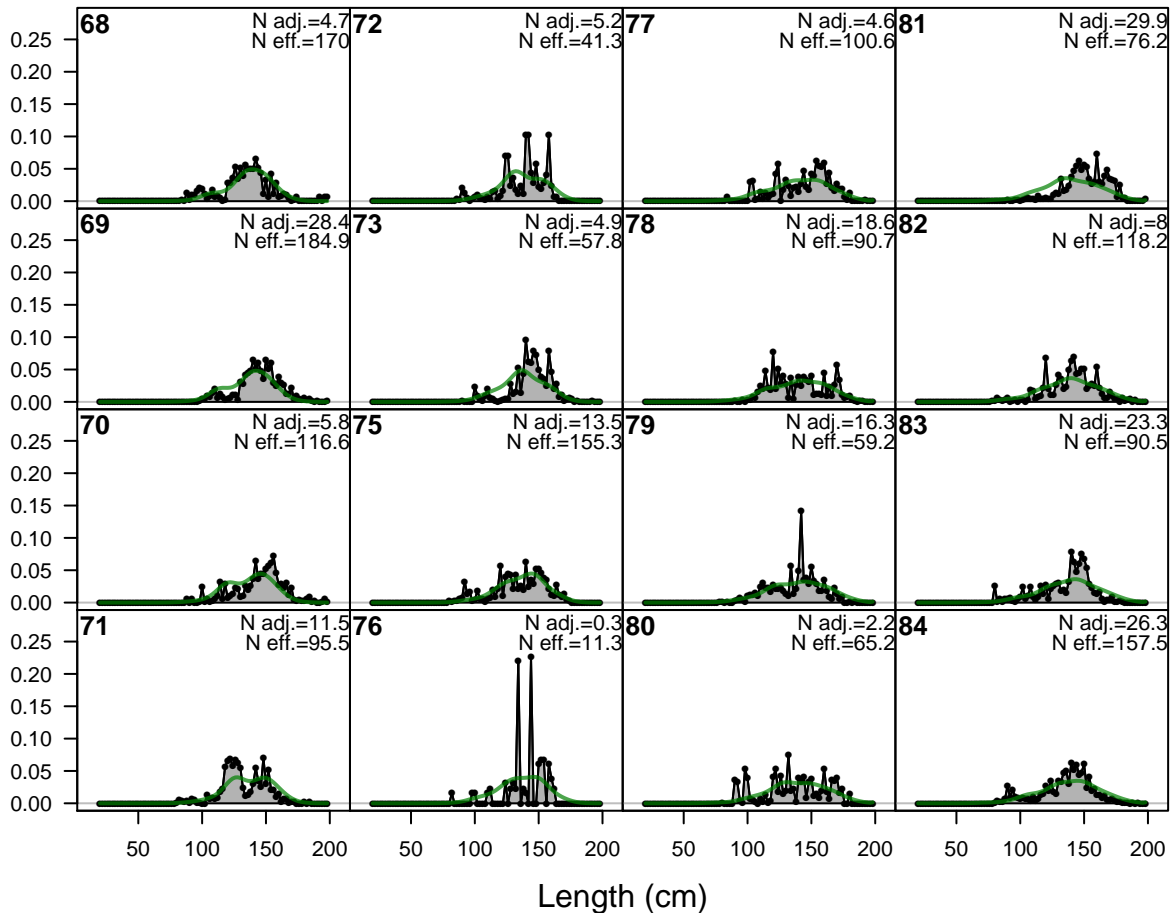
## A4-LL-n (whole catch)



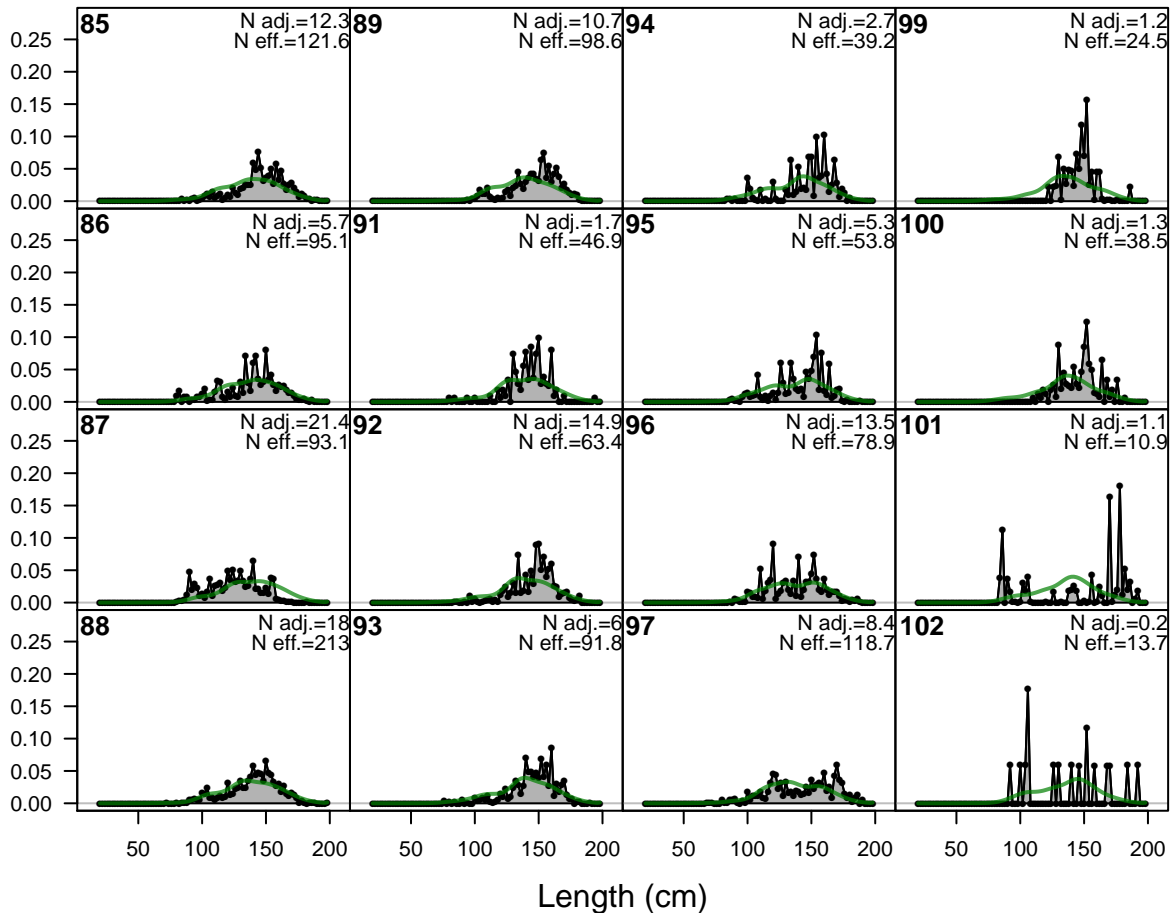
Proportion



Proportion

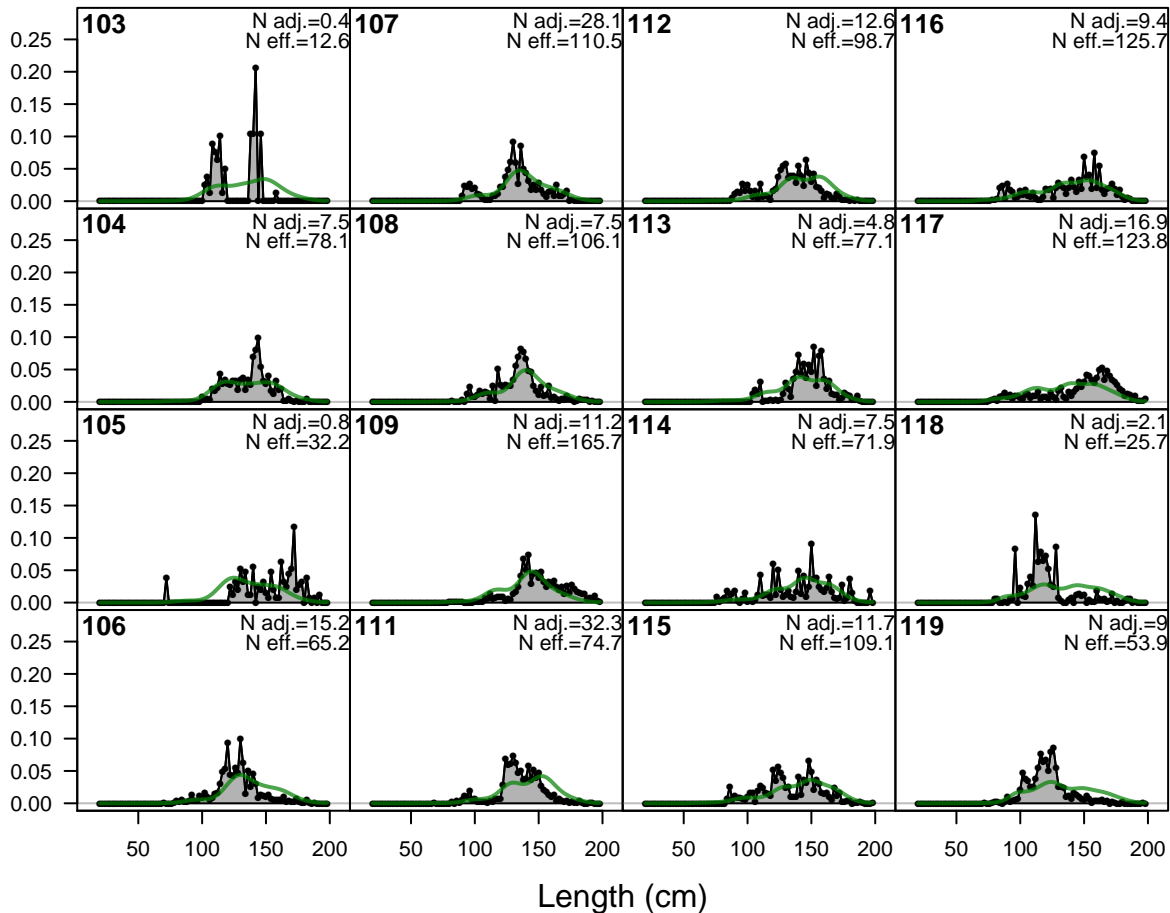


Proportion

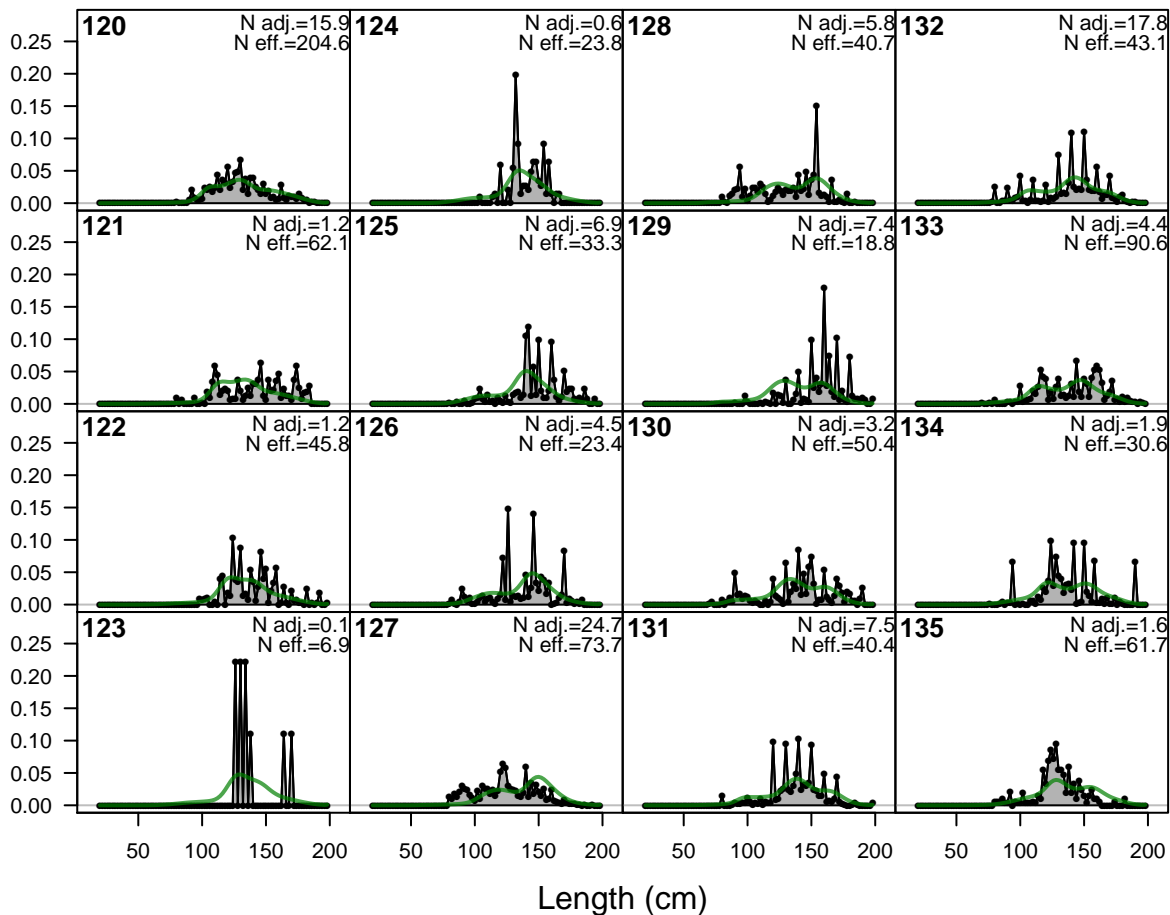




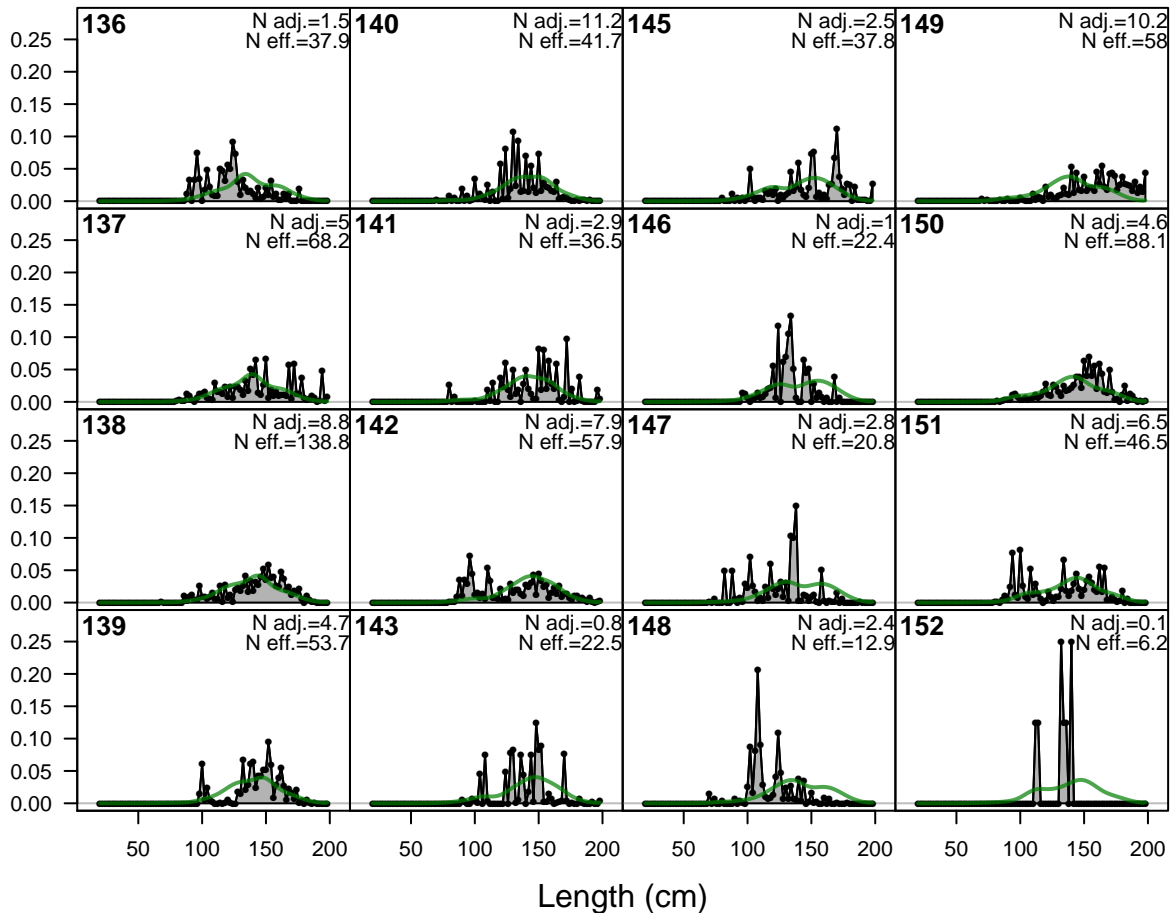
Proportion



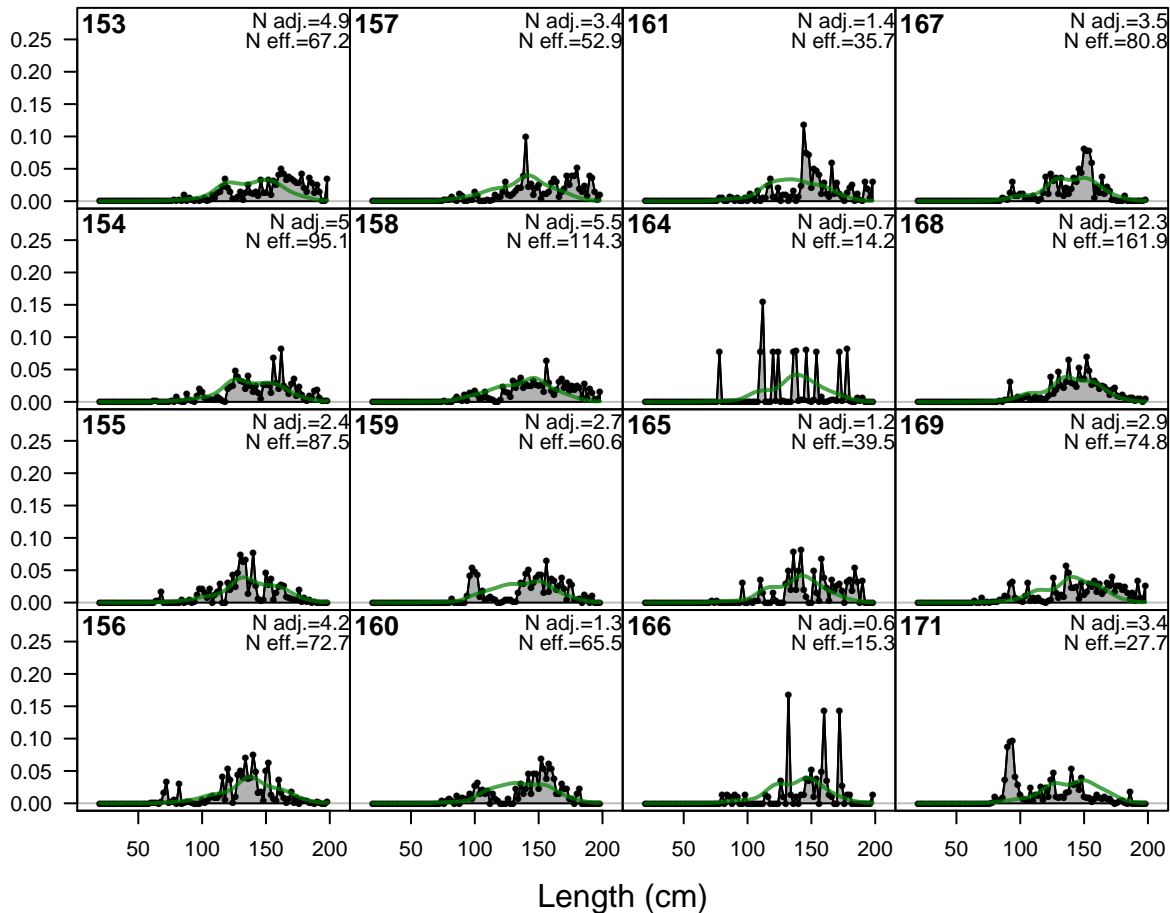
Proportion



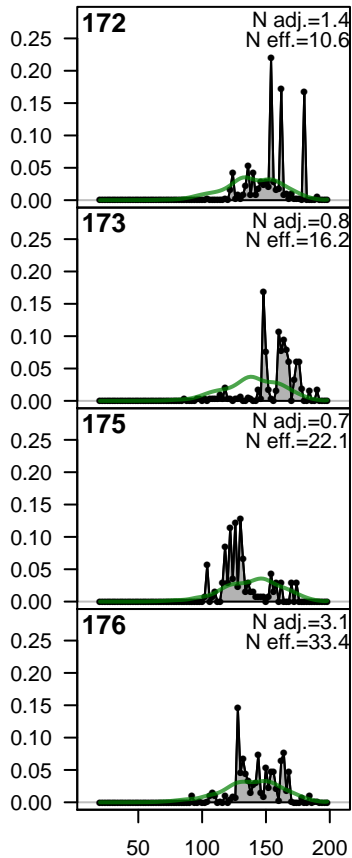
Proportion



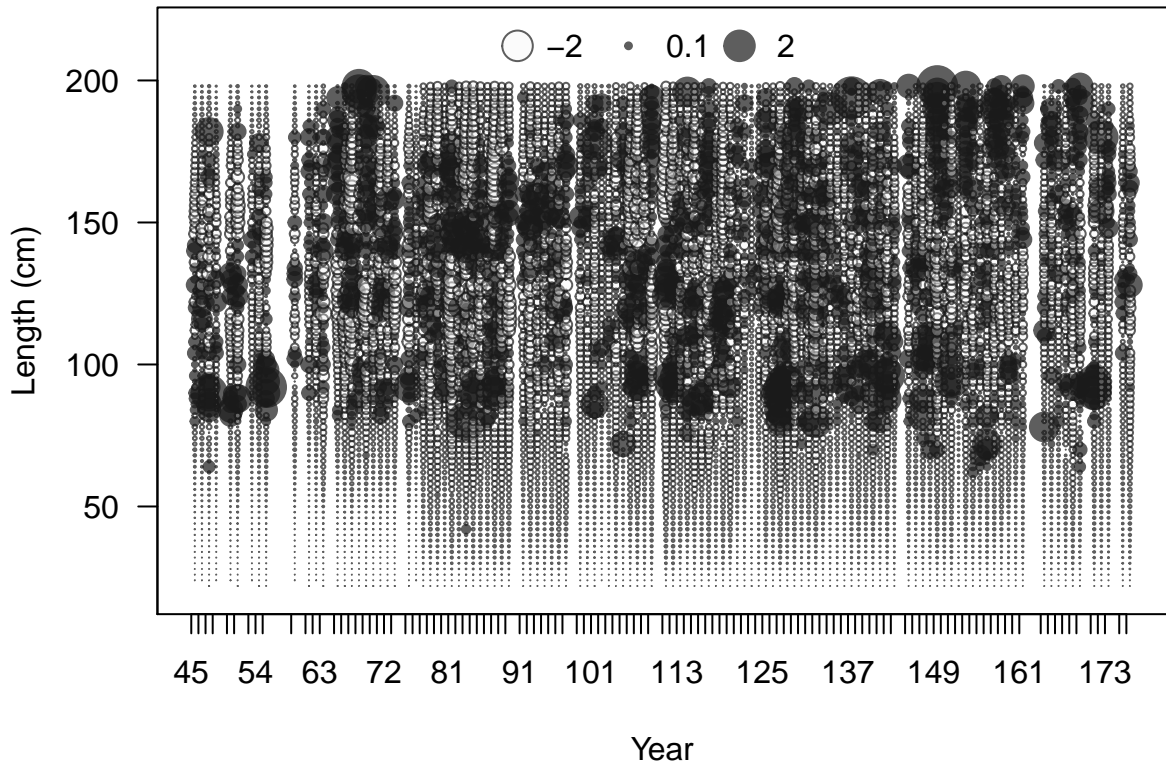
Proportion

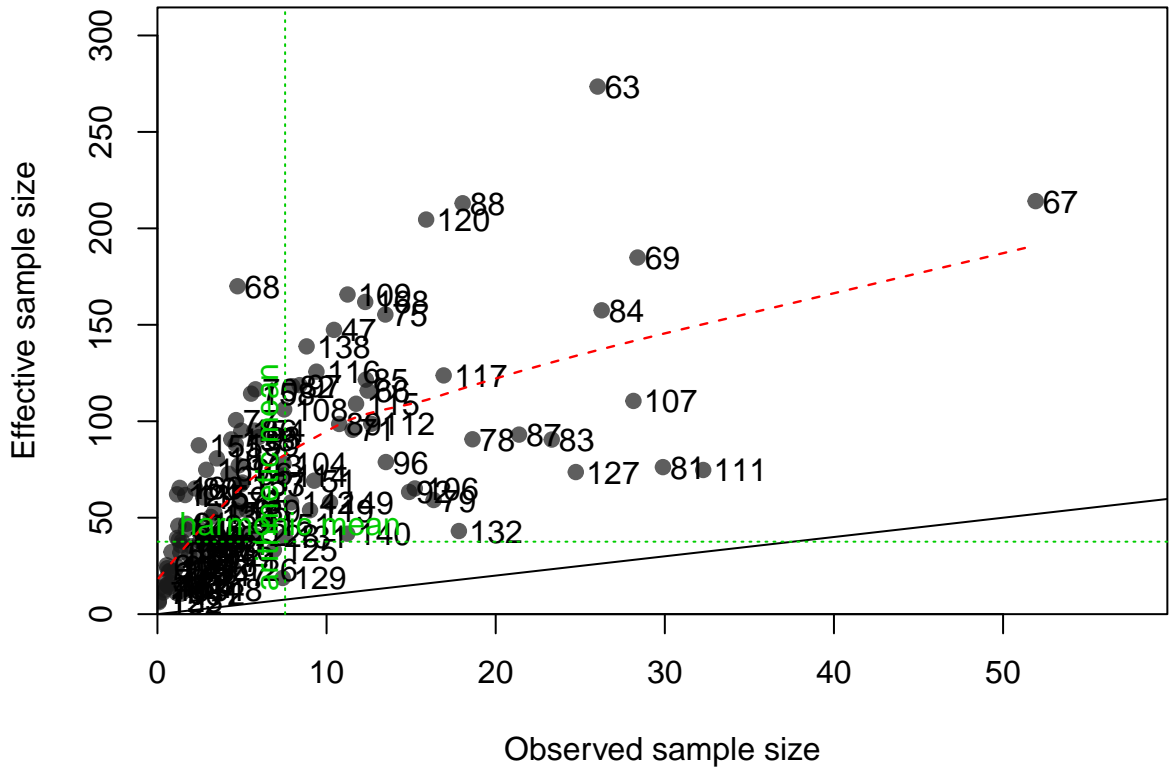


Proportion

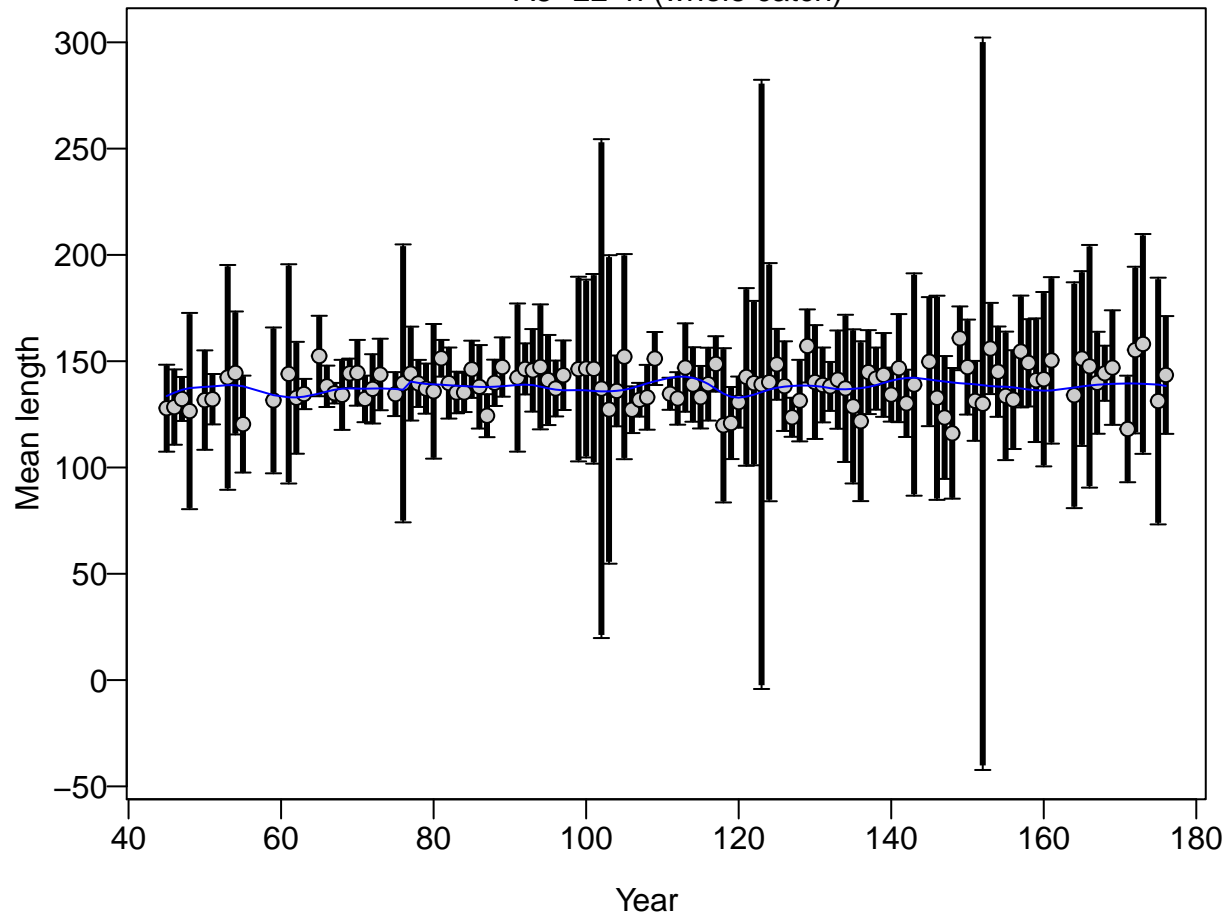


Length (cm)



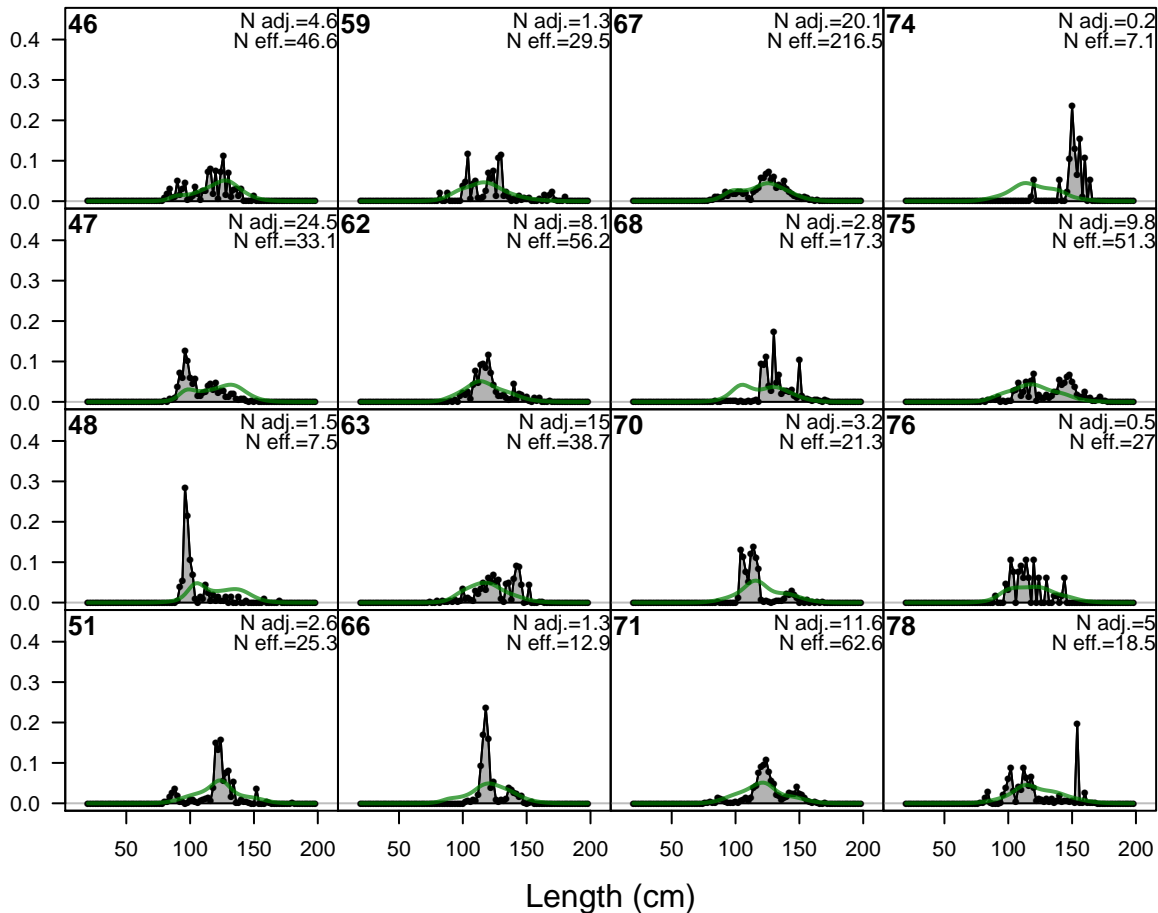


A5-LL-n (whole catch)

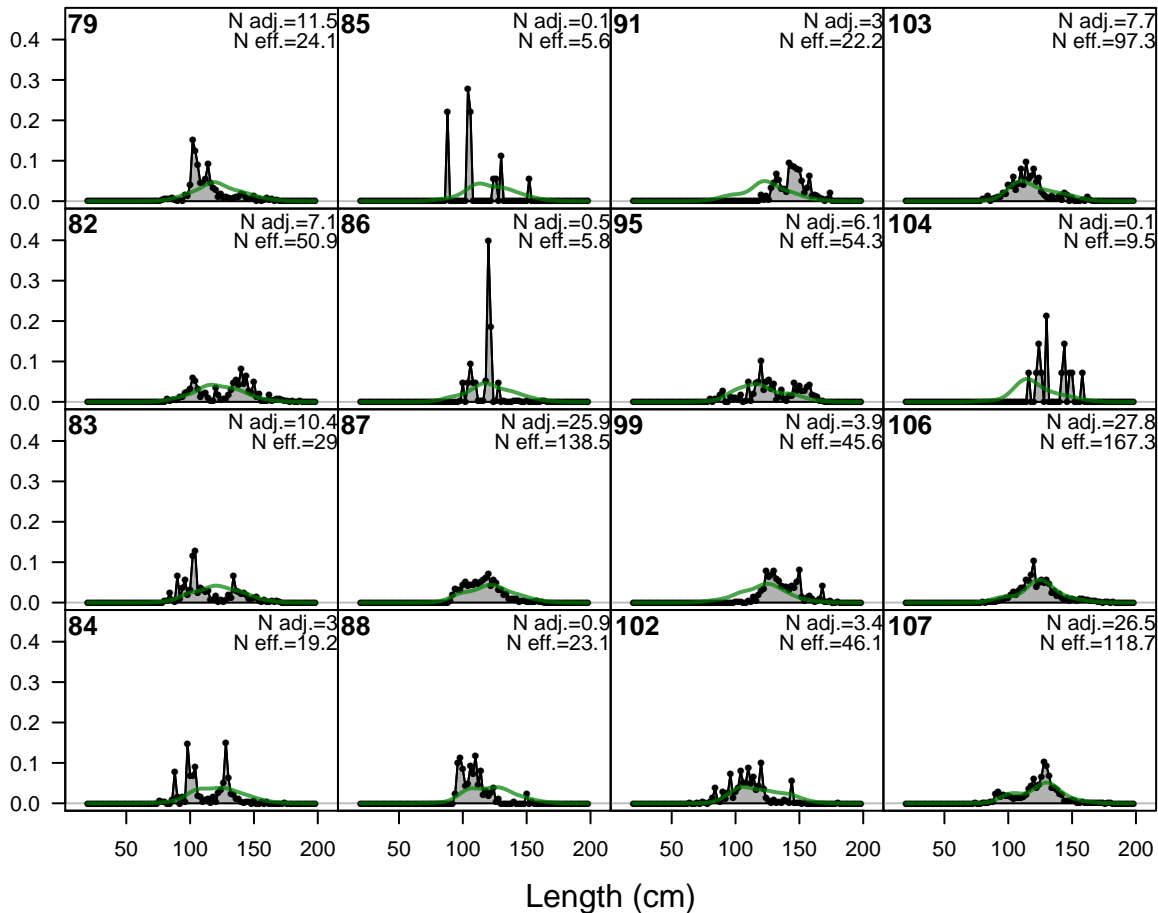




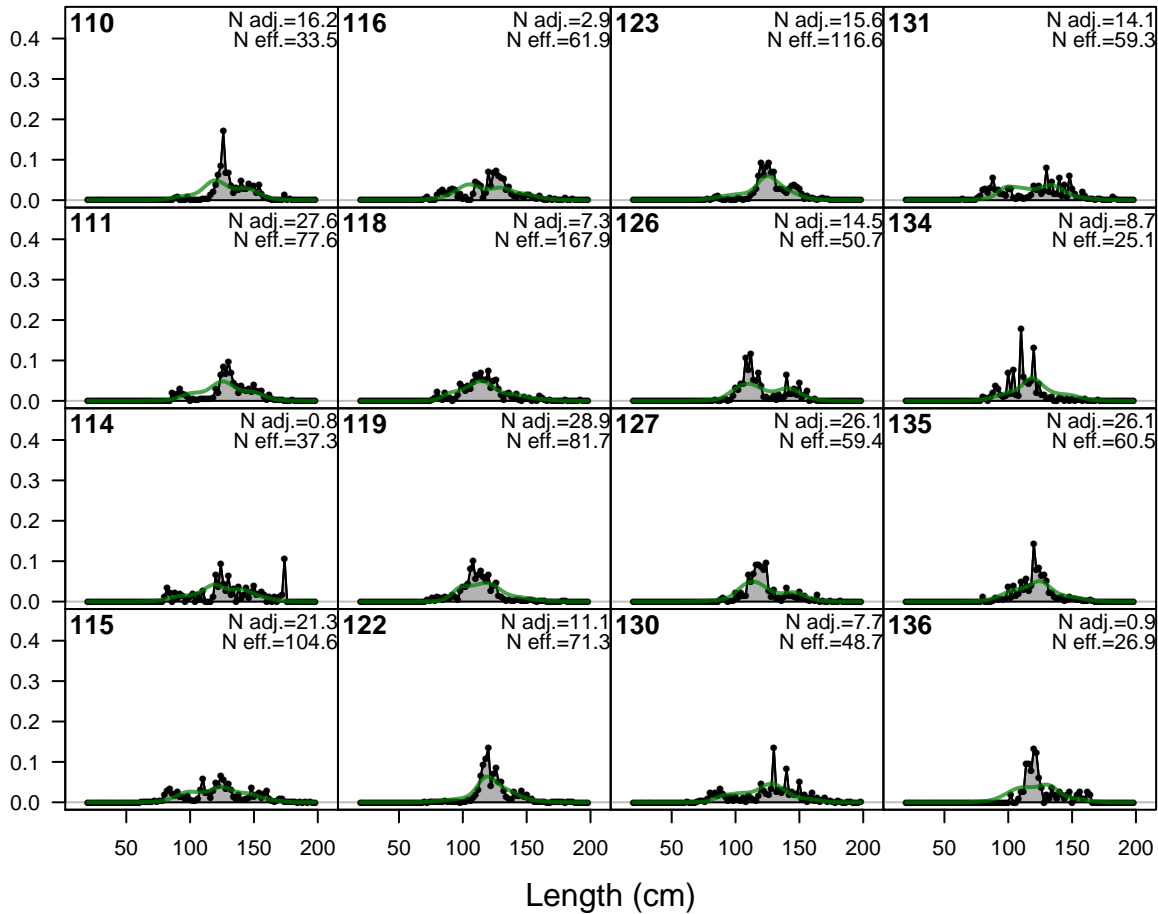
Proportion



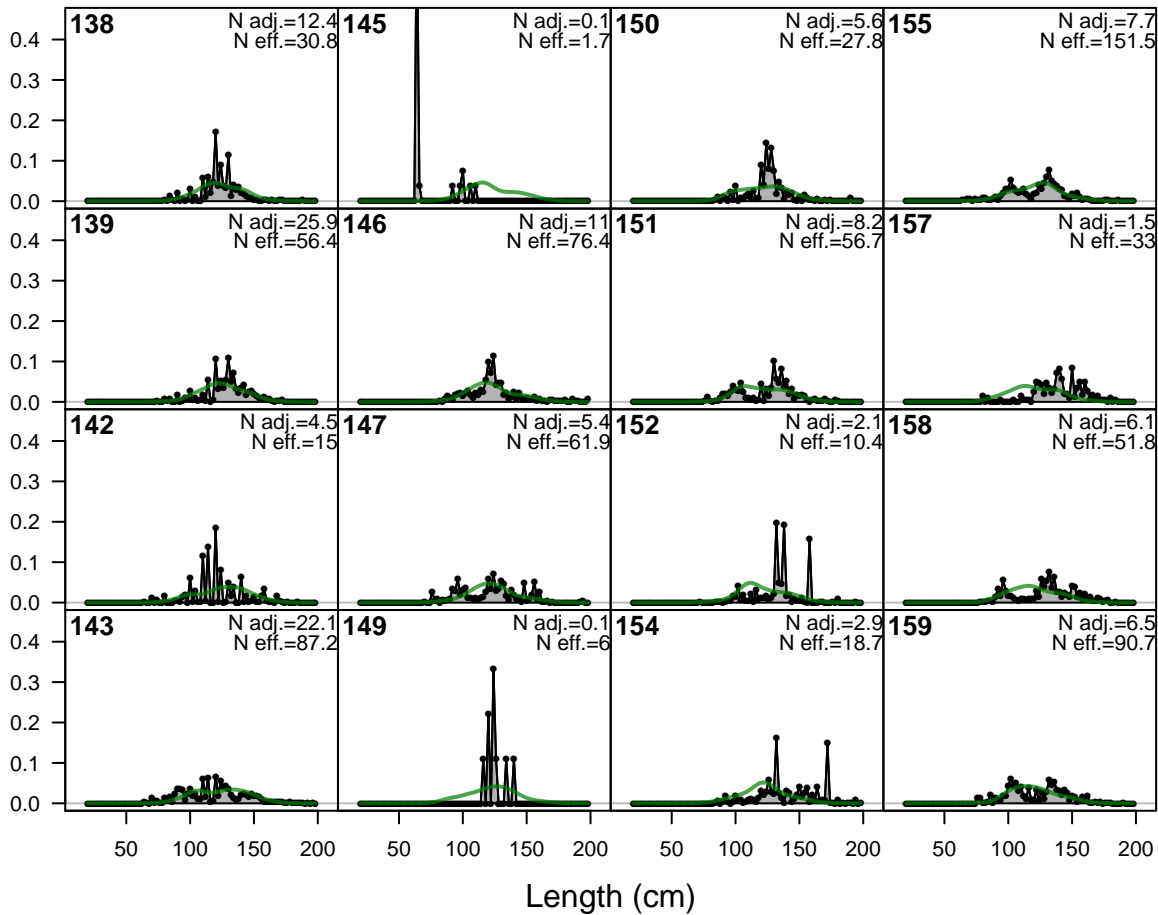
Proportion



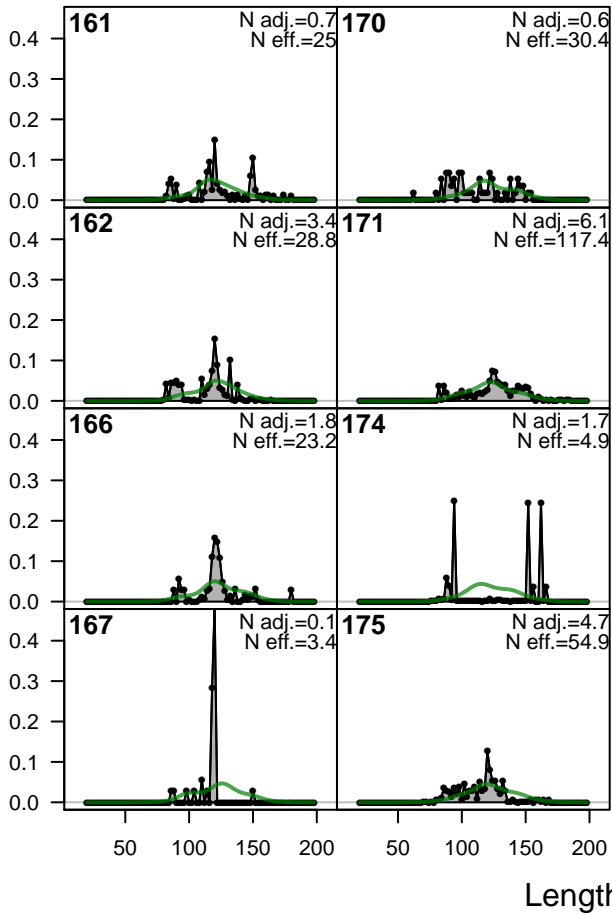
Proportion

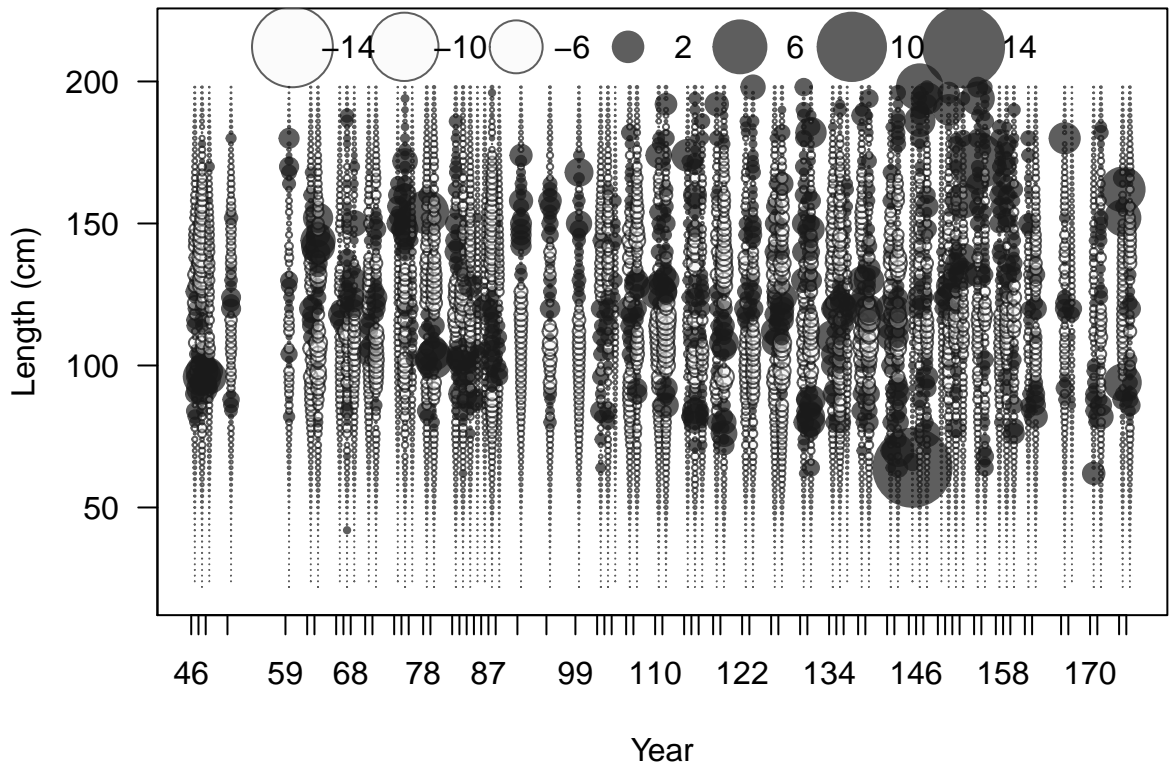


Proportion

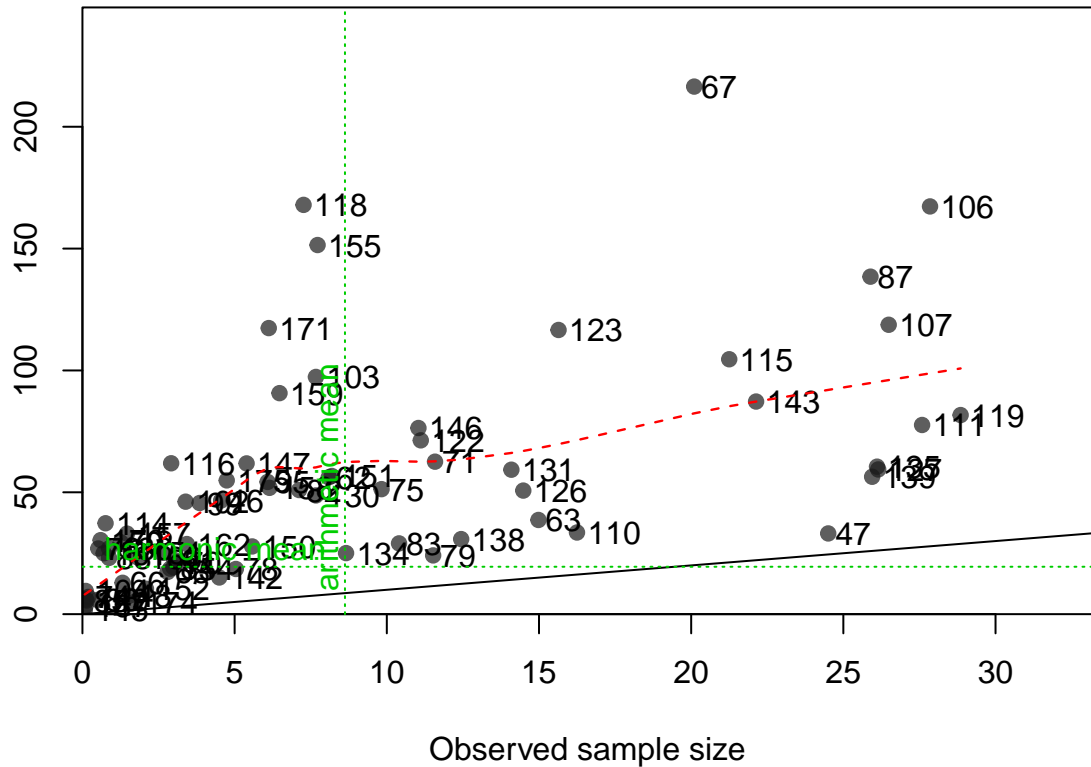


Proportion

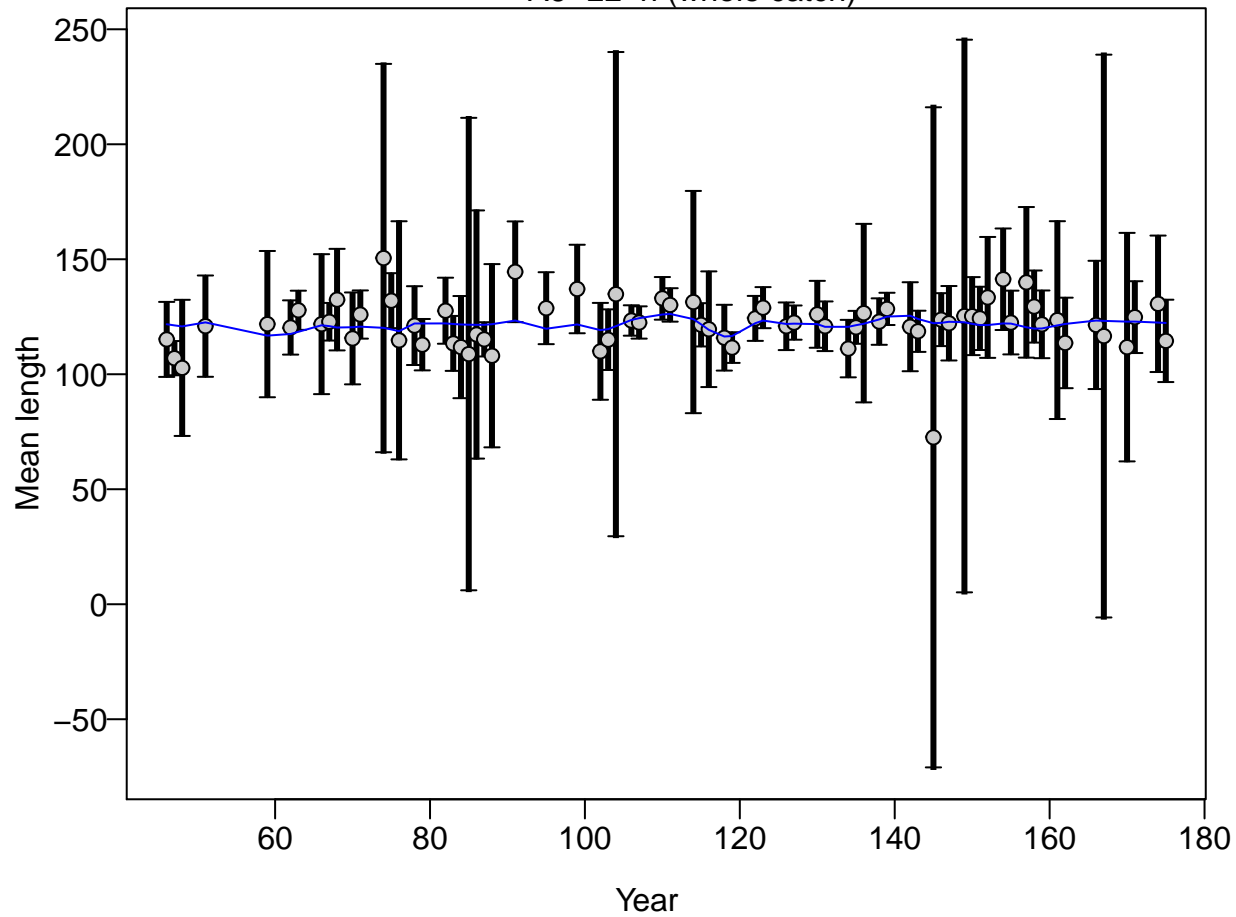




Effective sample size

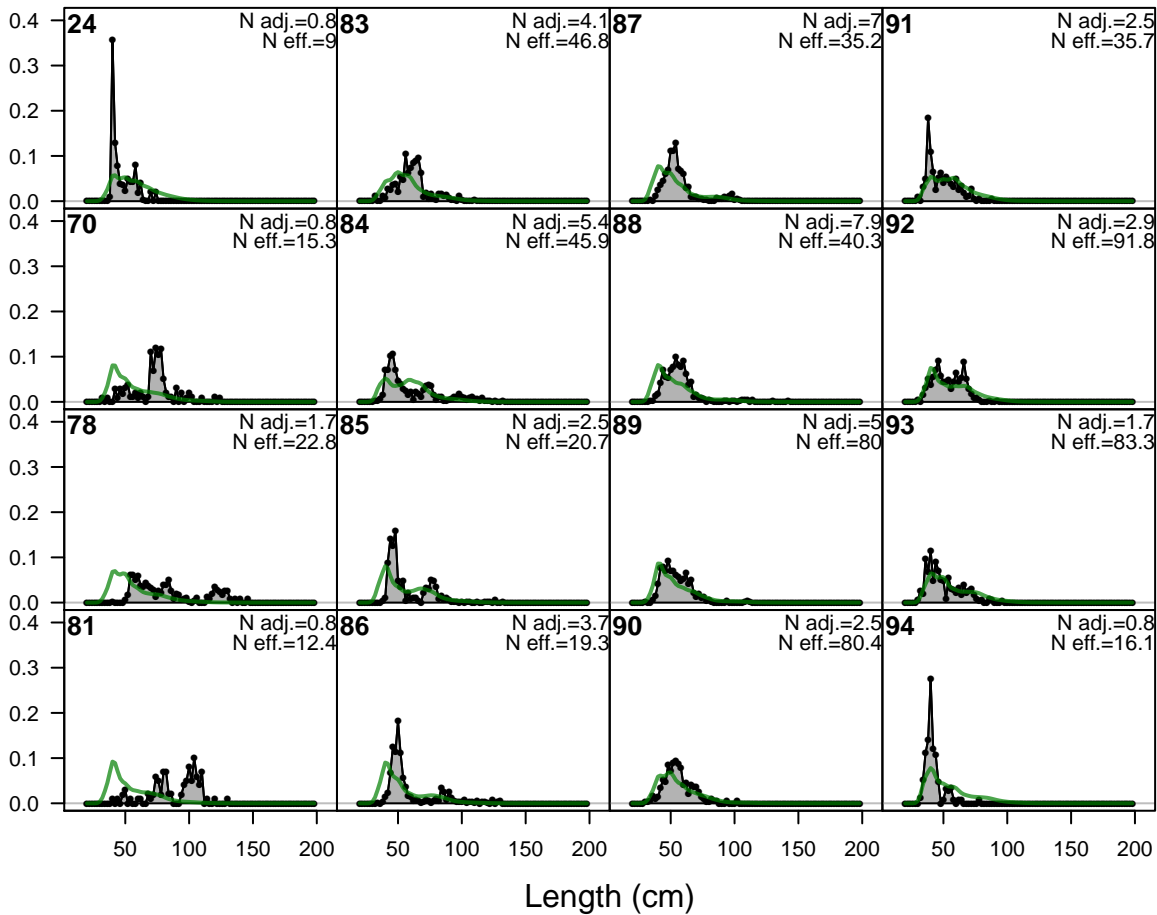


A6-LL-n (whole catch)

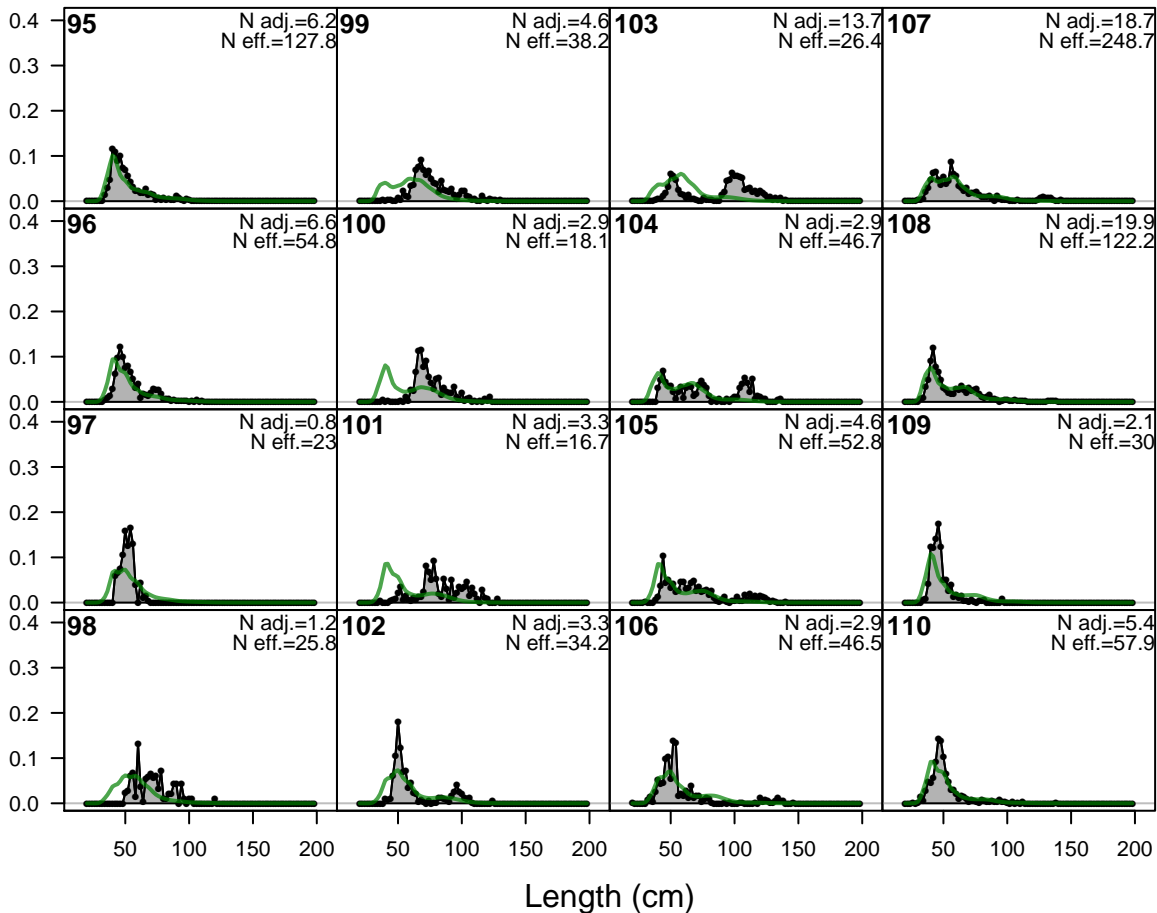




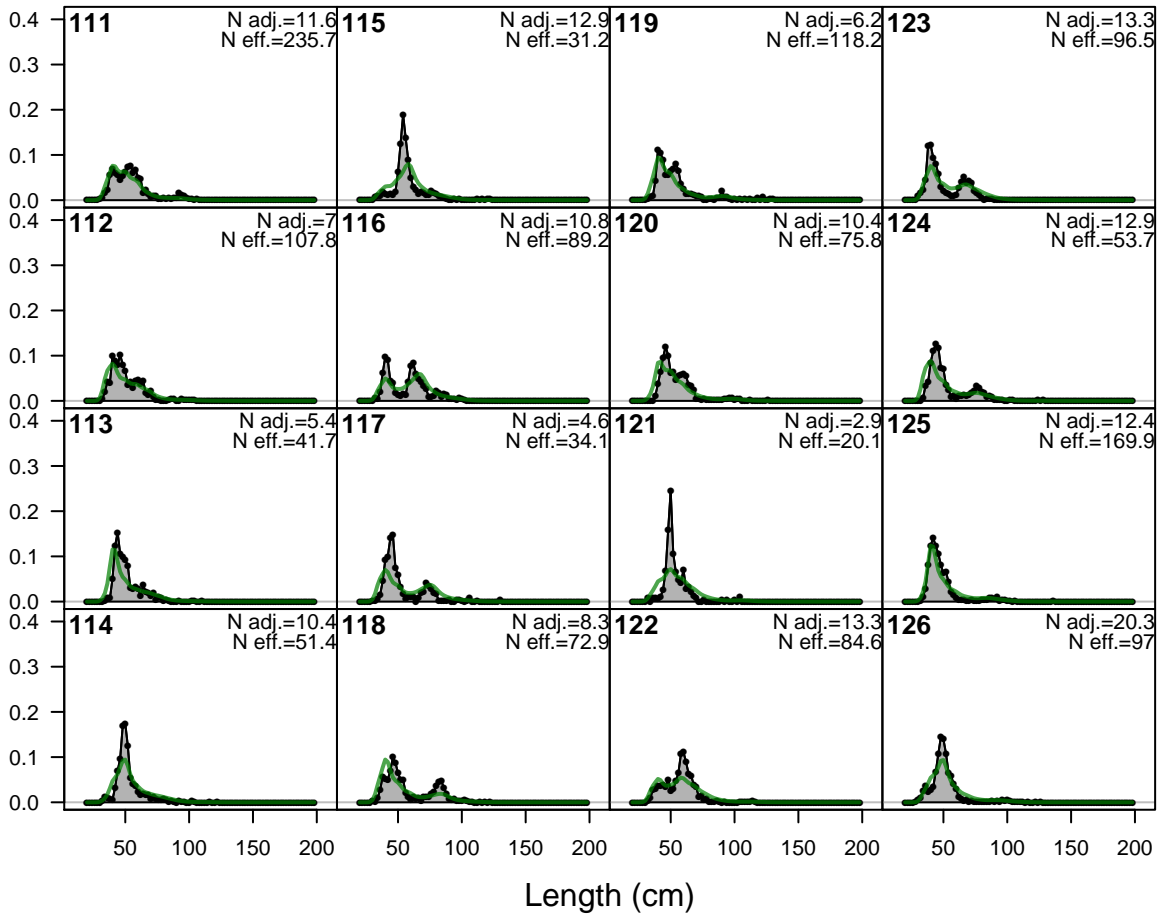
Proportion



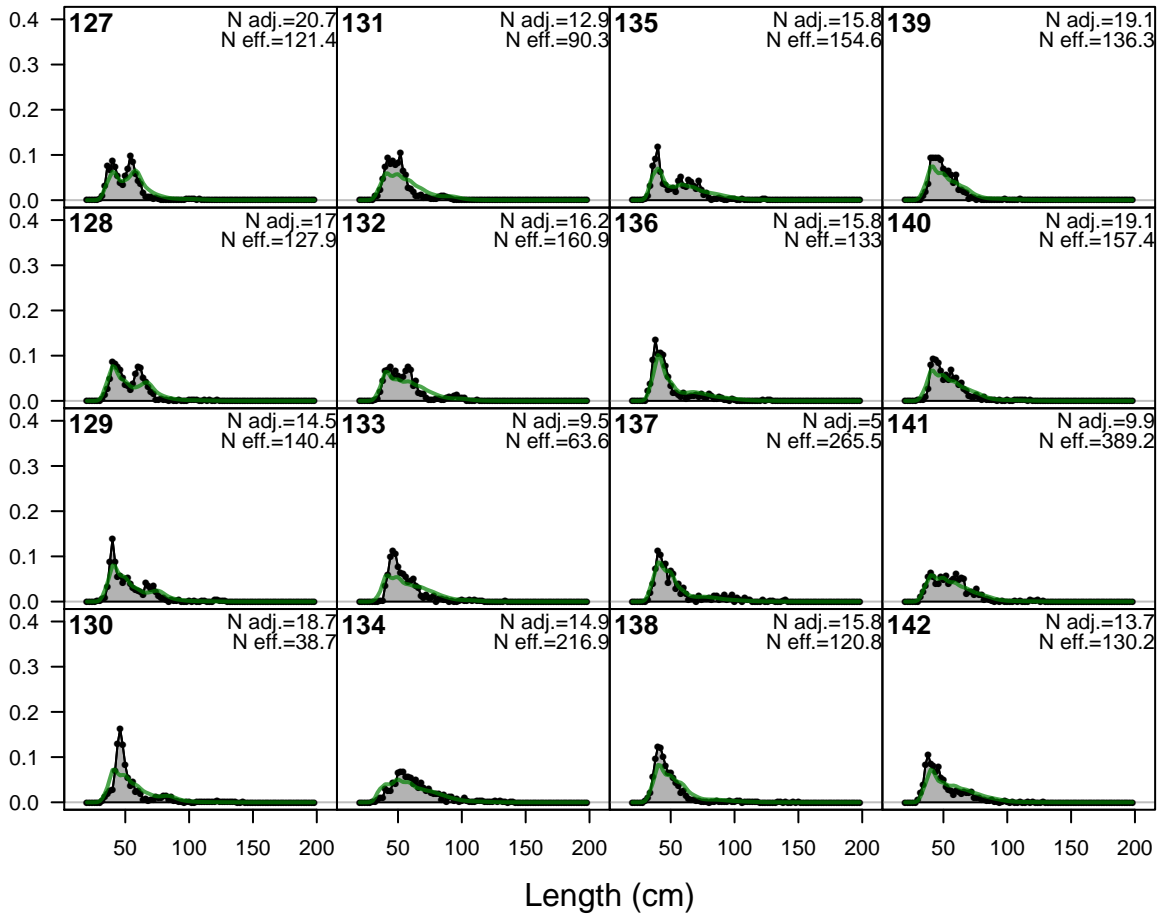
Proportion



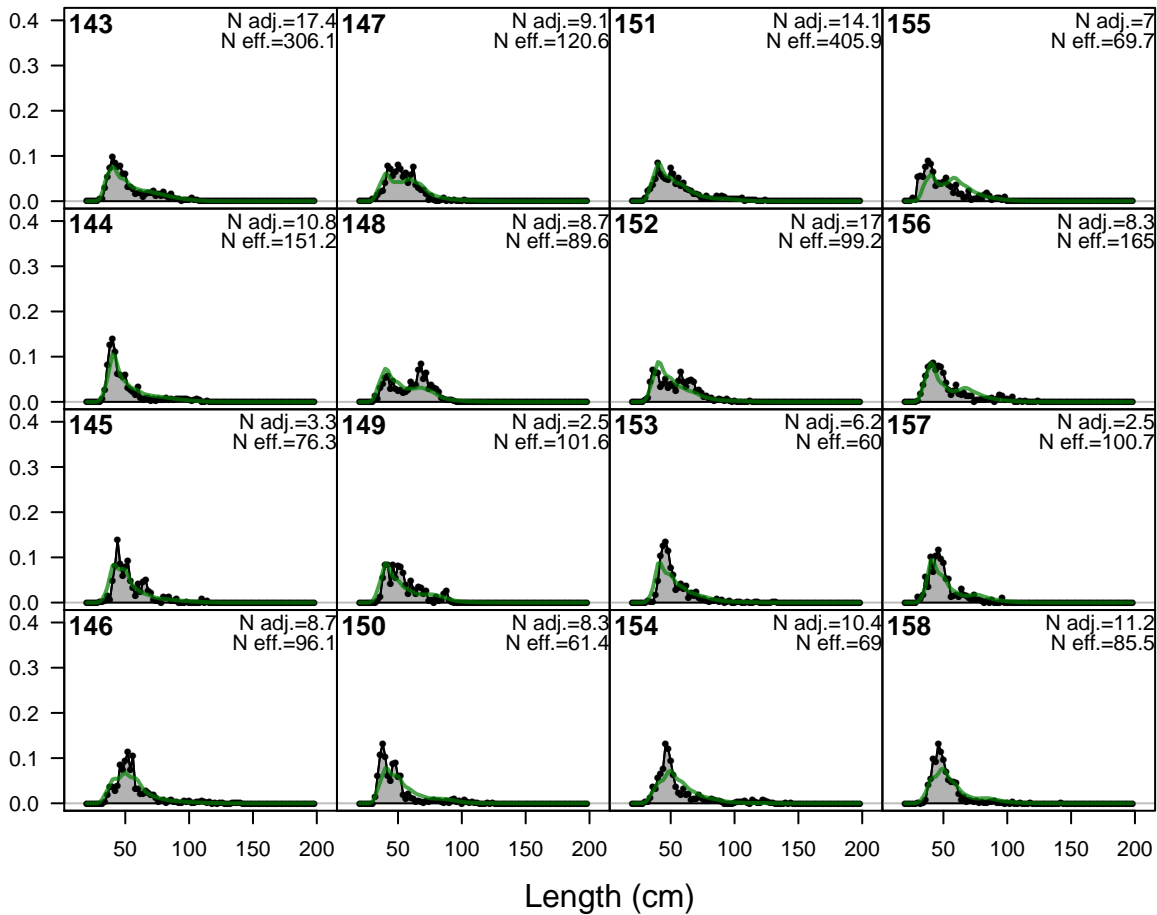
Proportion

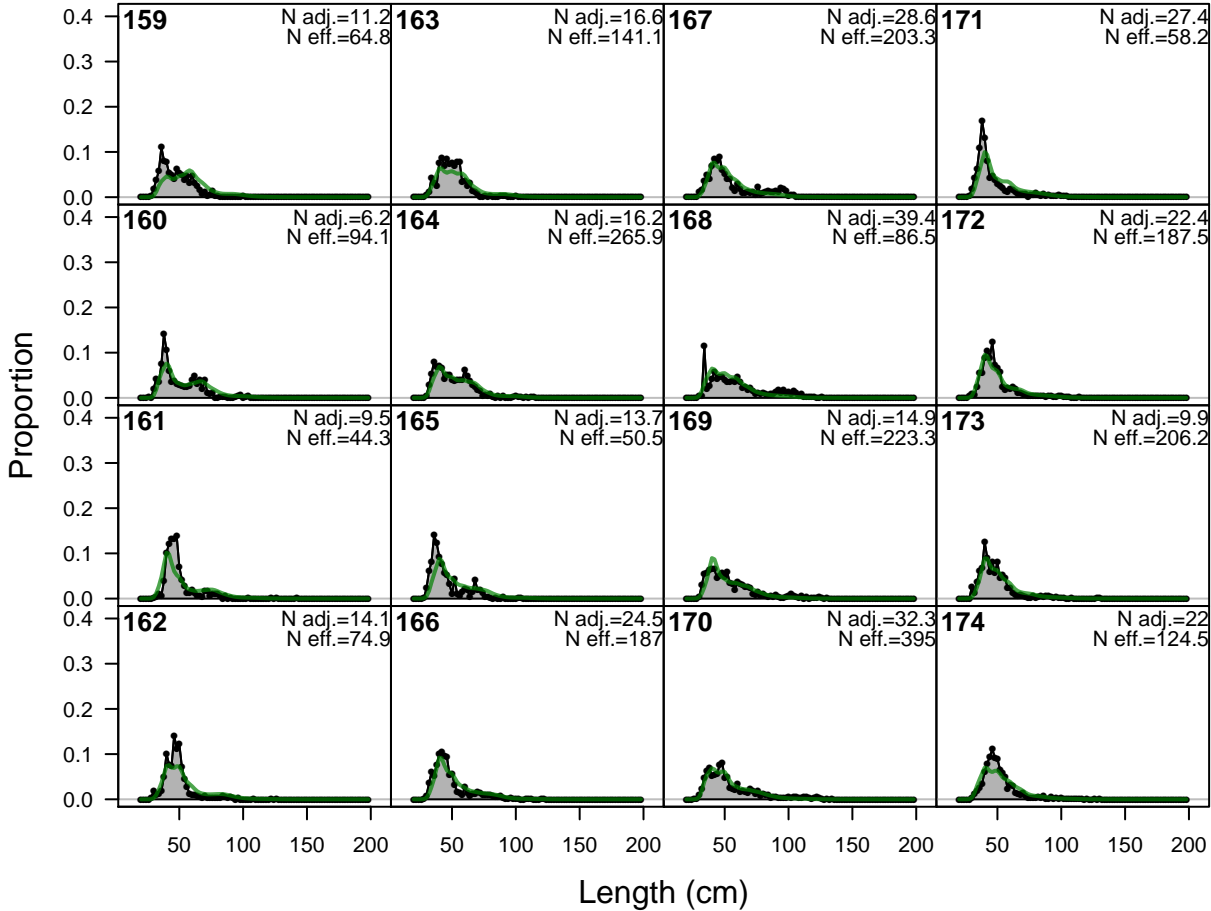


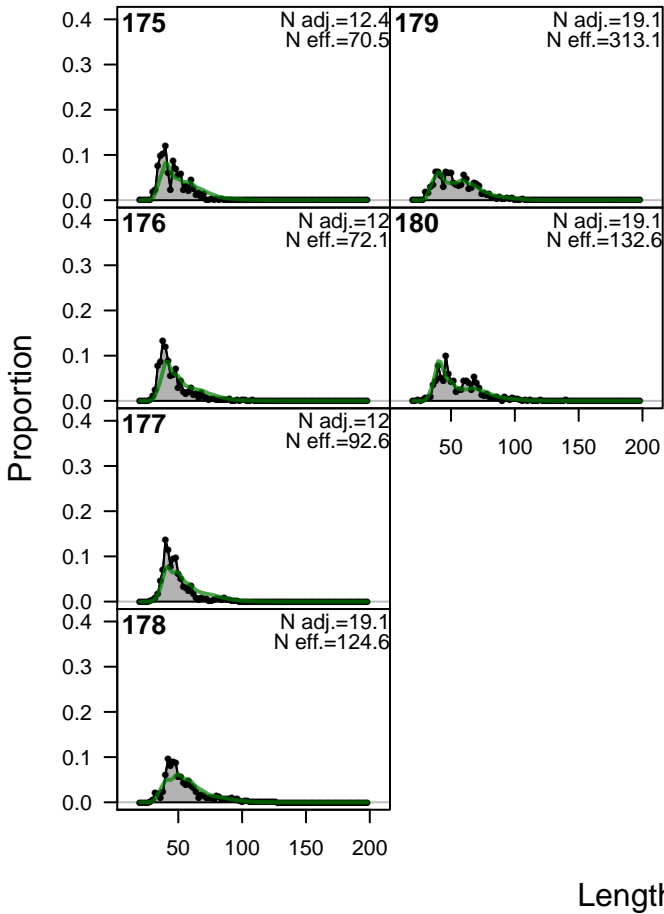
Proportion

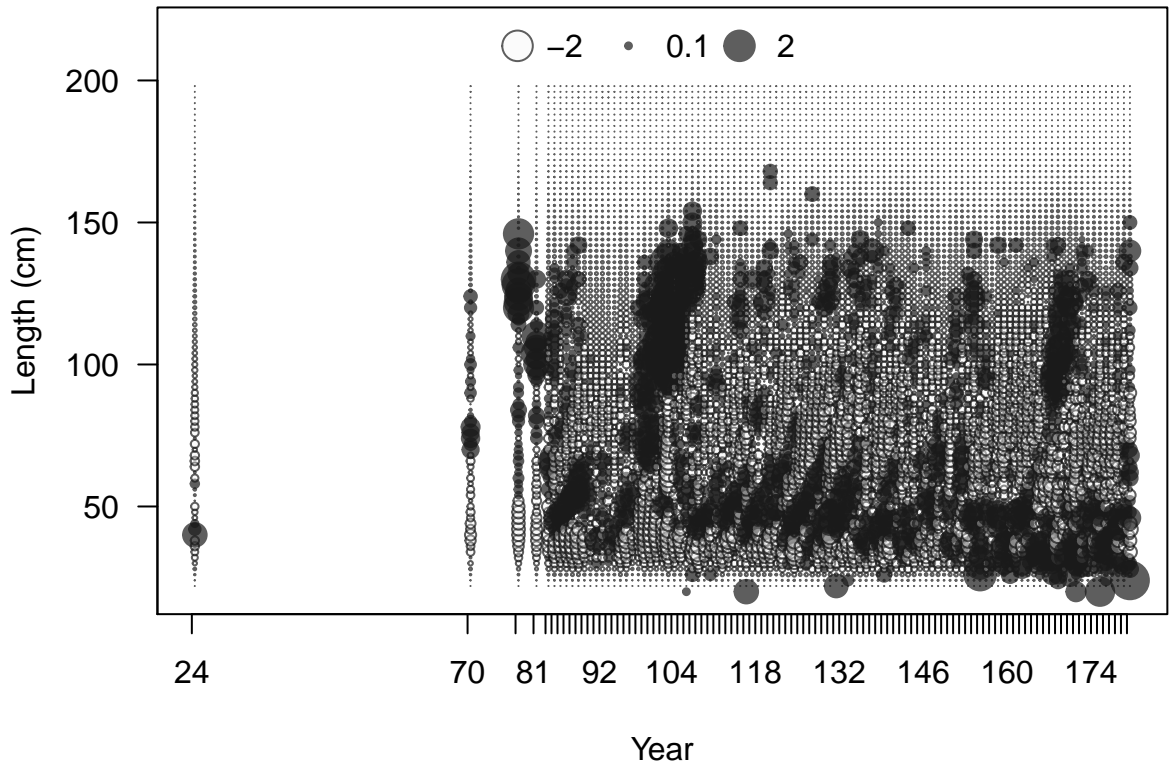


Proportion



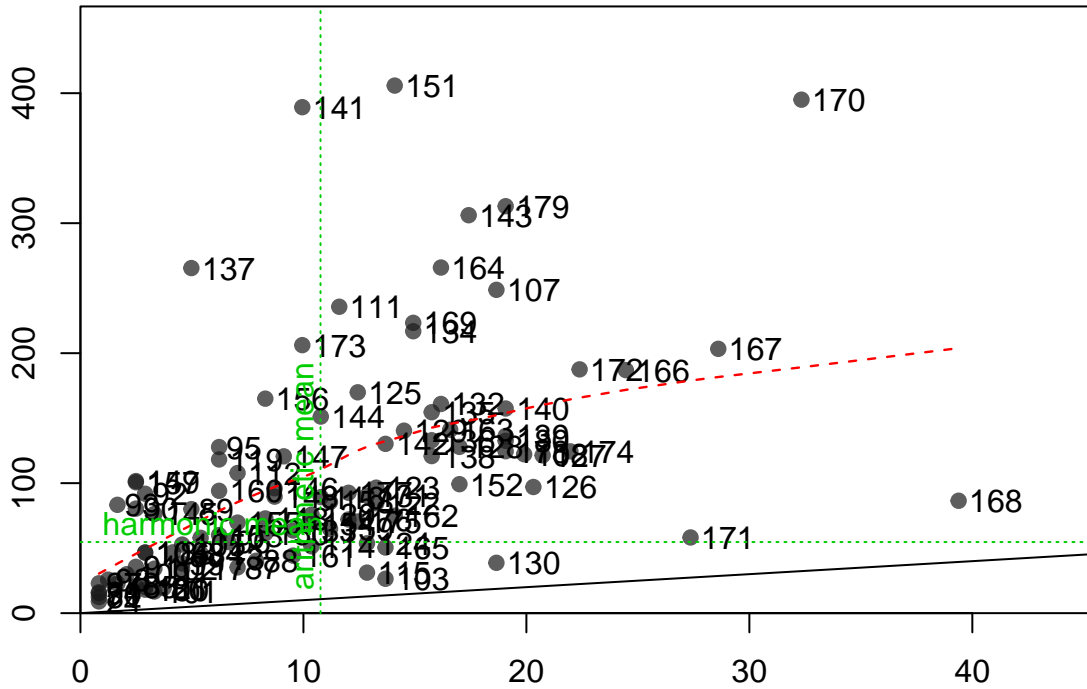






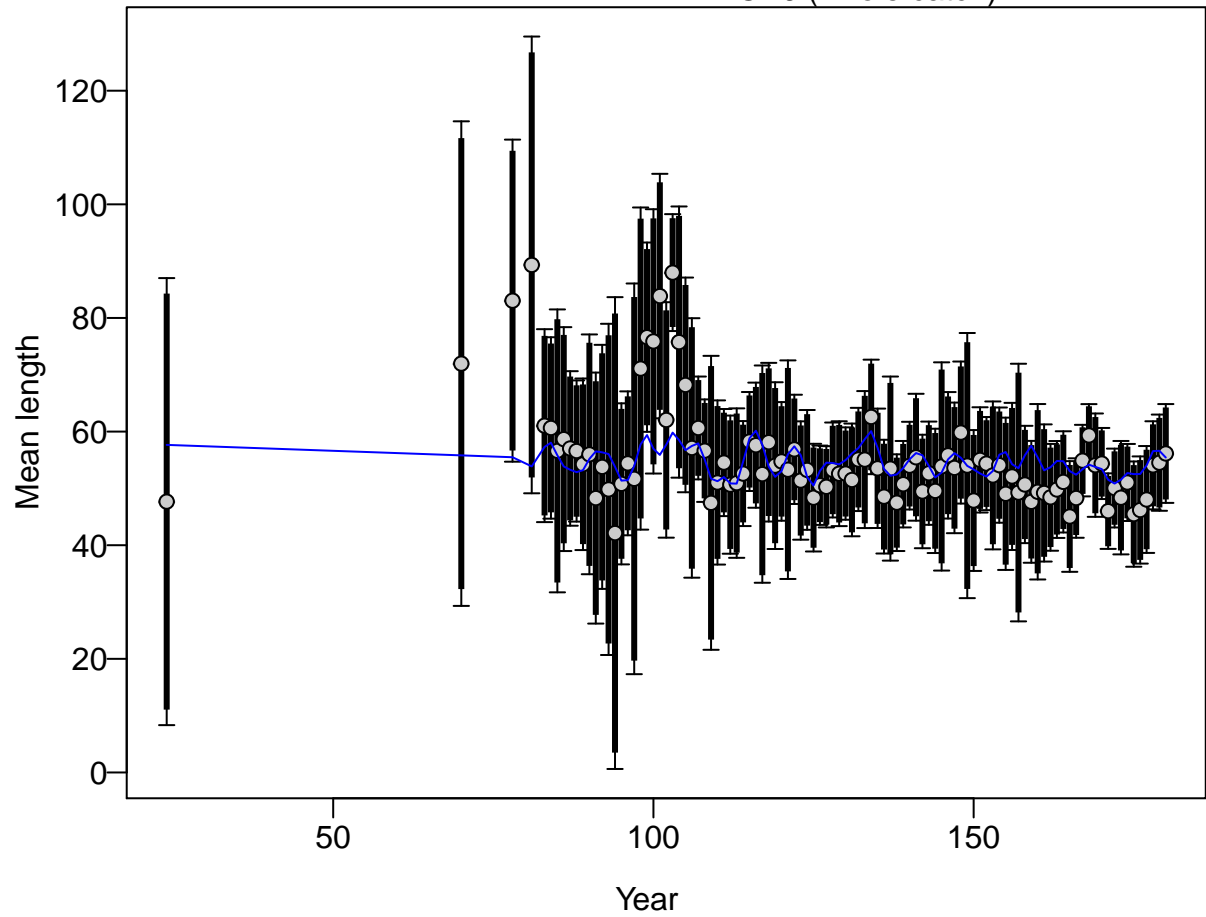


Effective sample size

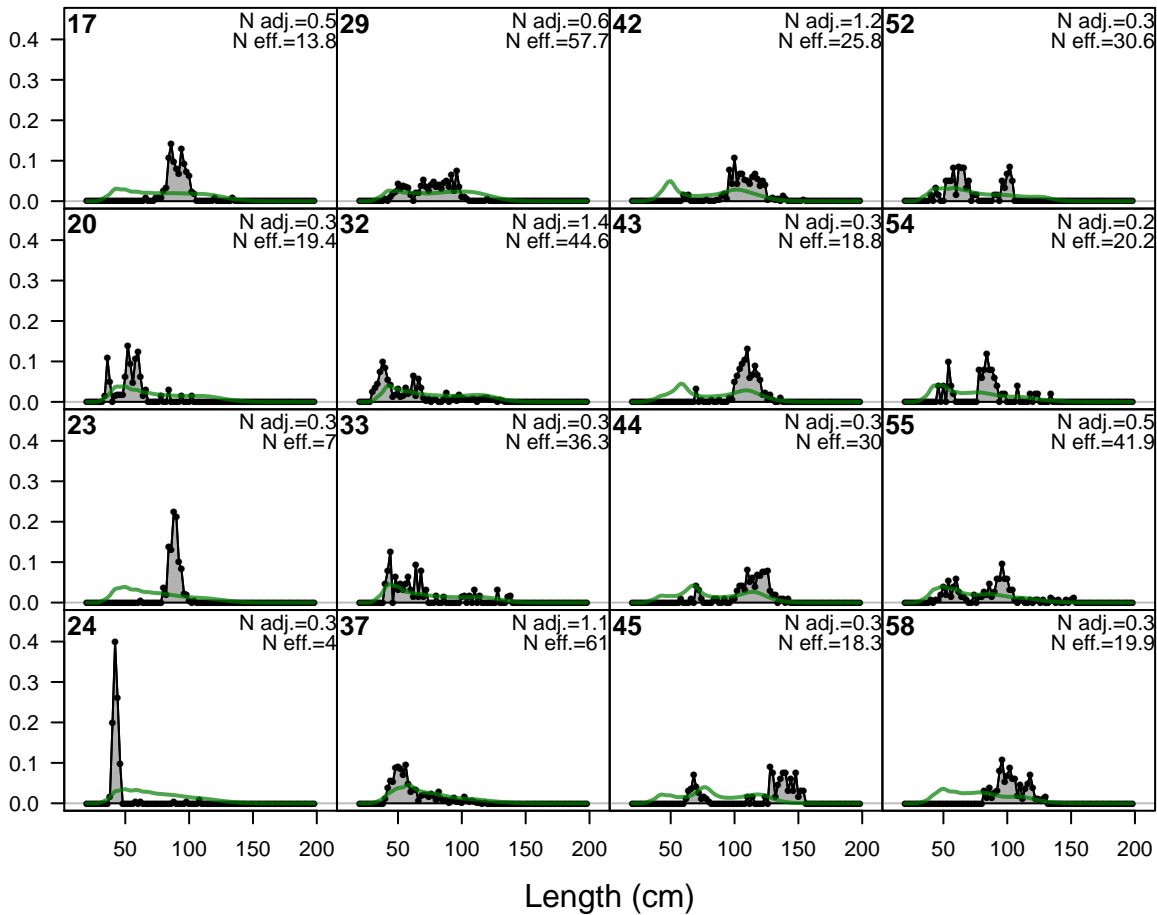


Observed sample size

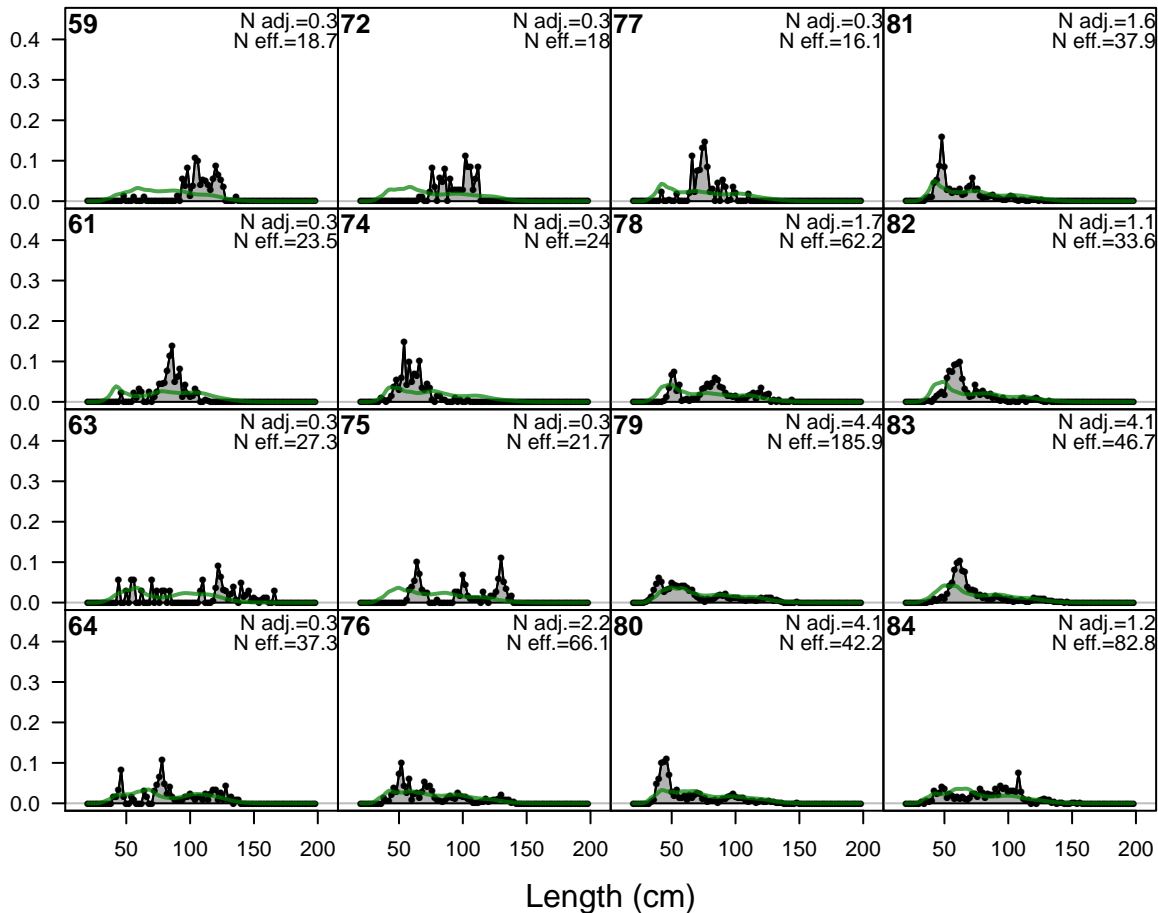
## A2-OBJ (whole catch)



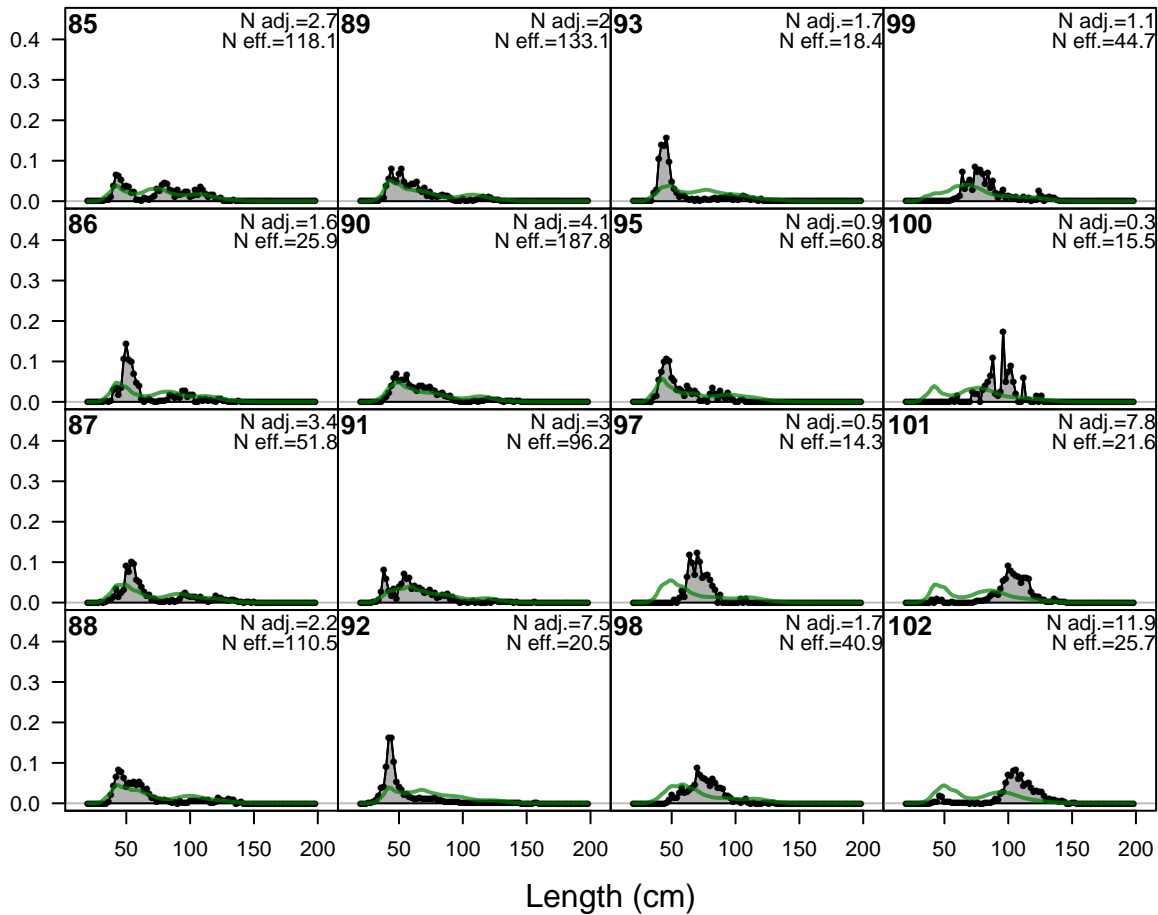
Proportion



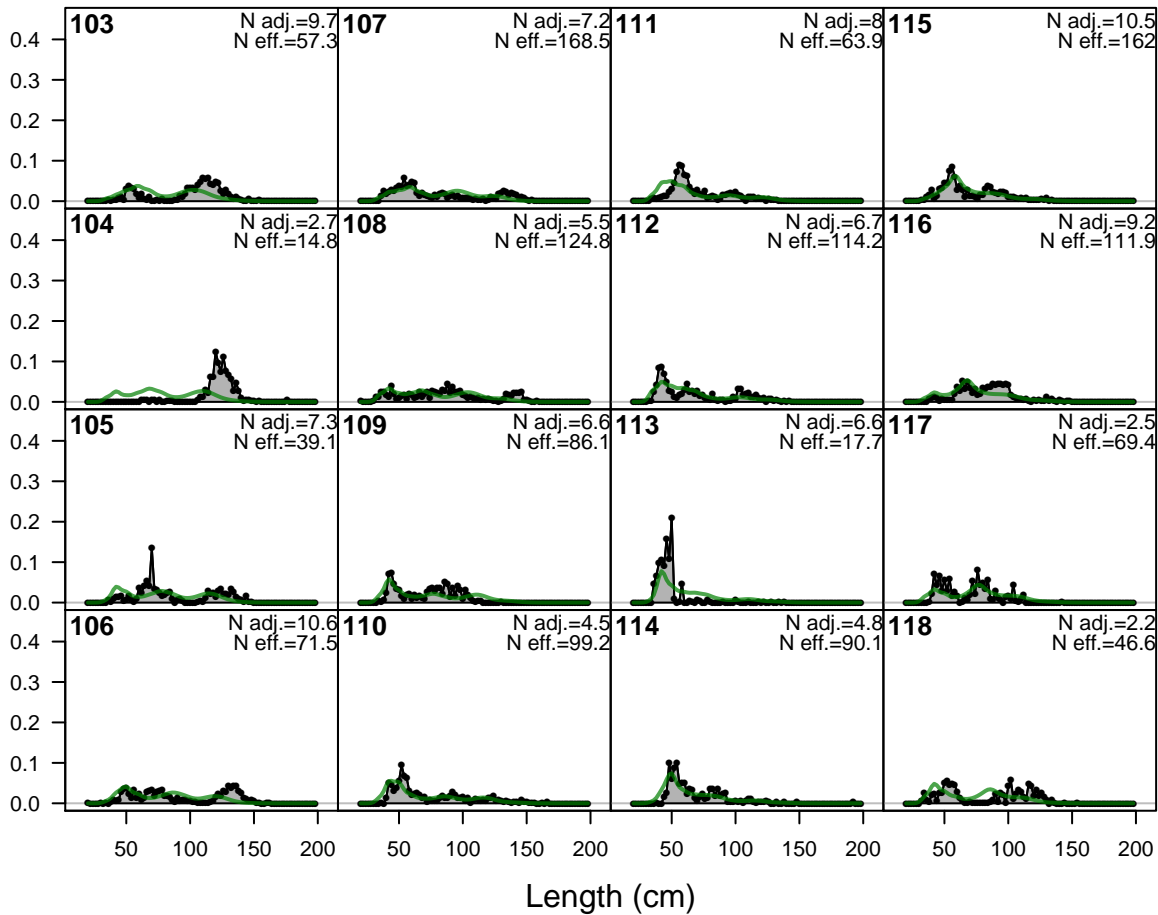
Proportion



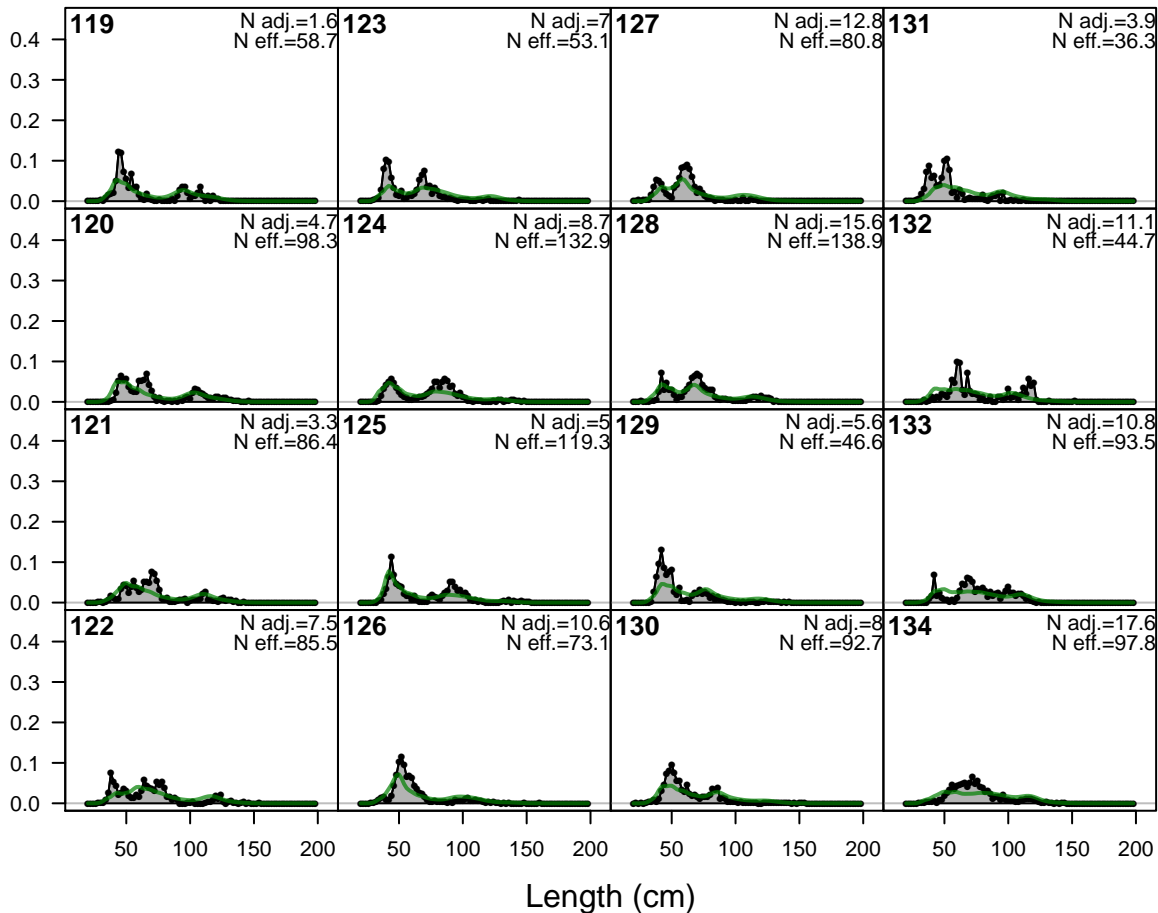
Proportion



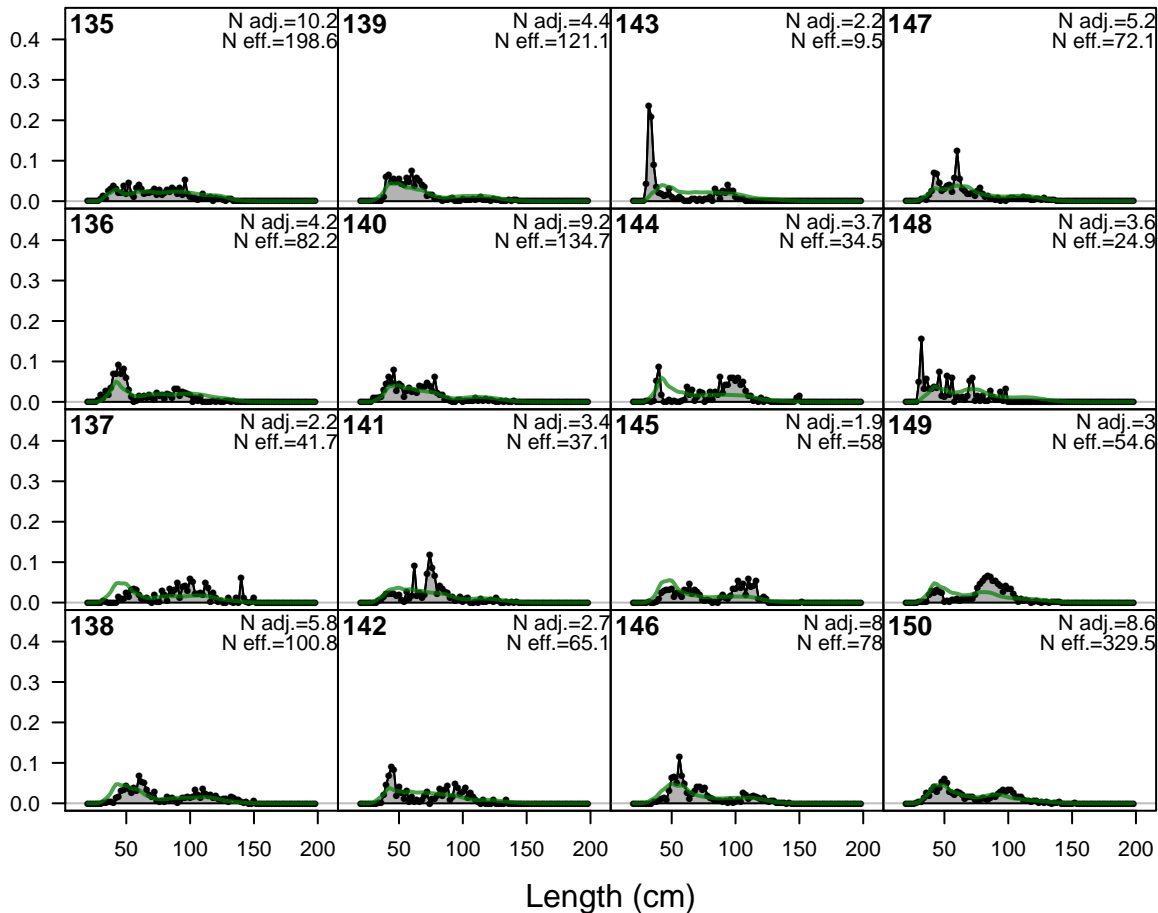
Proportion



Proportion

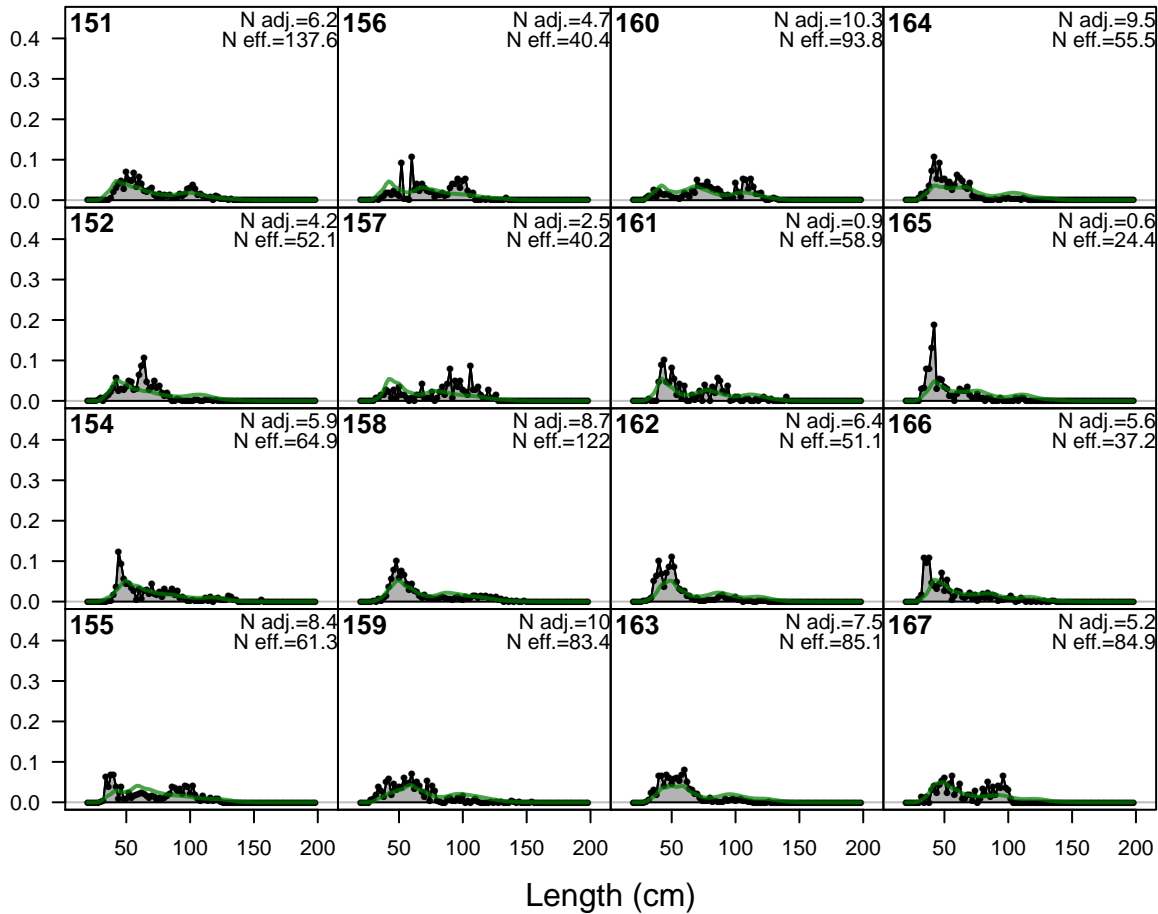


Proportion

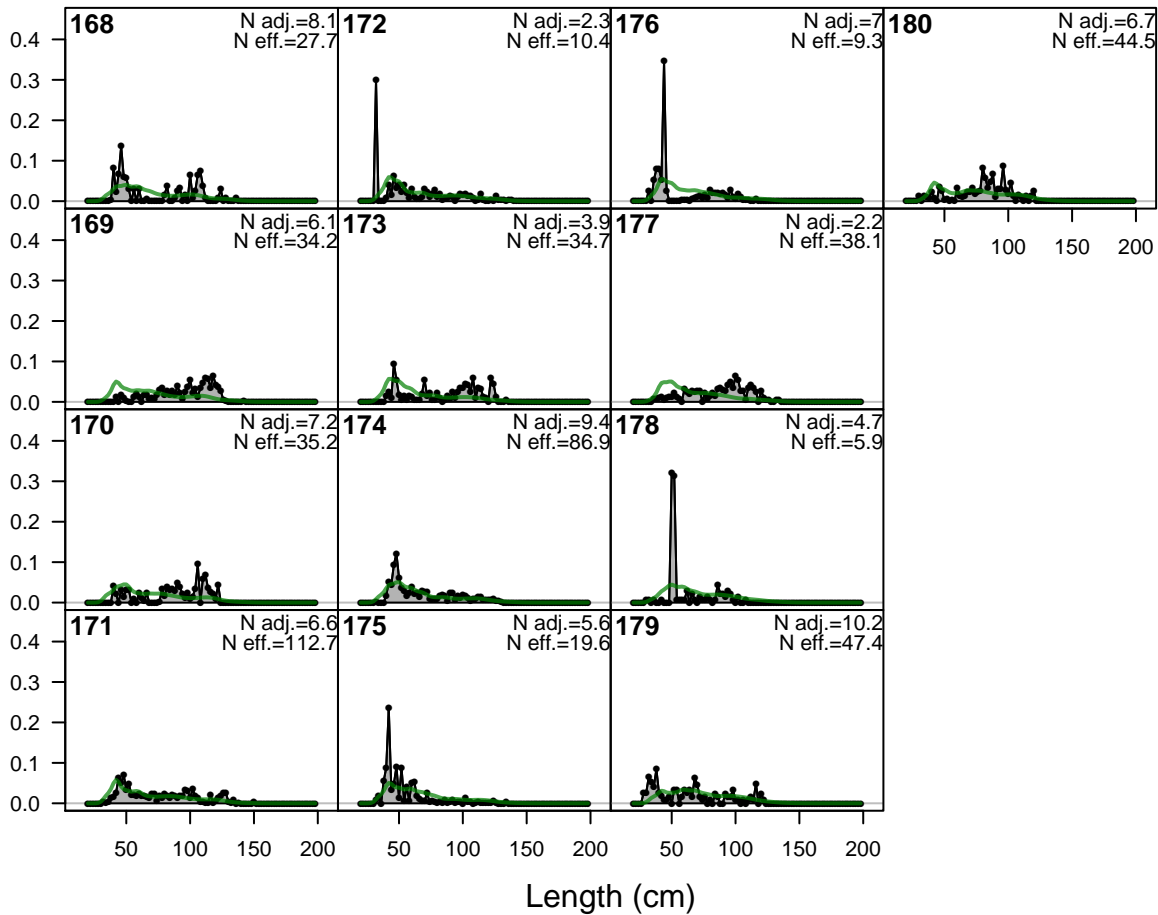


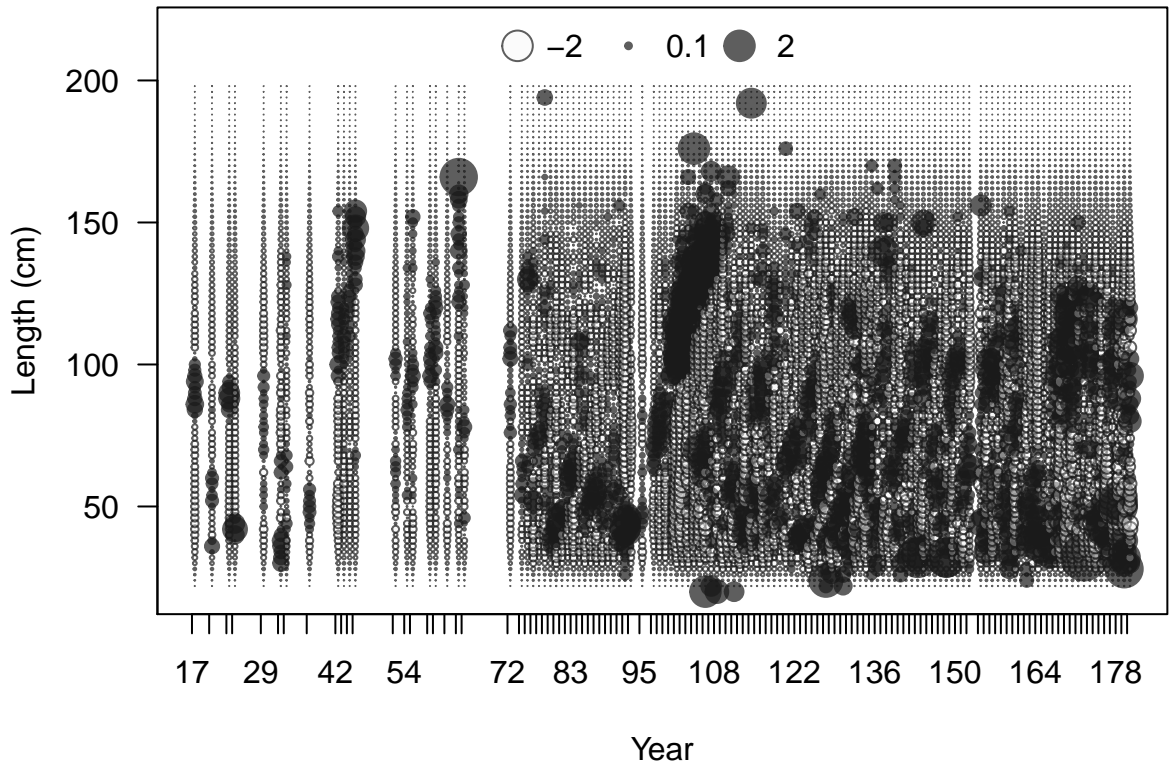


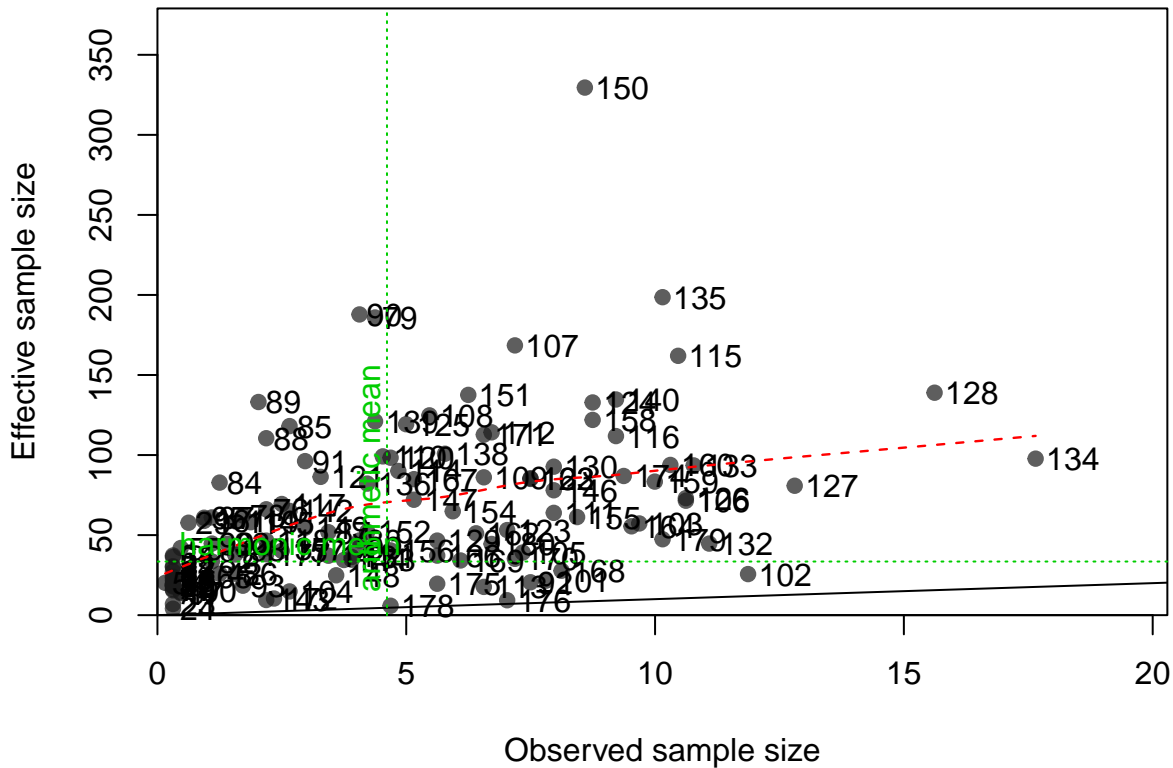
Proportion



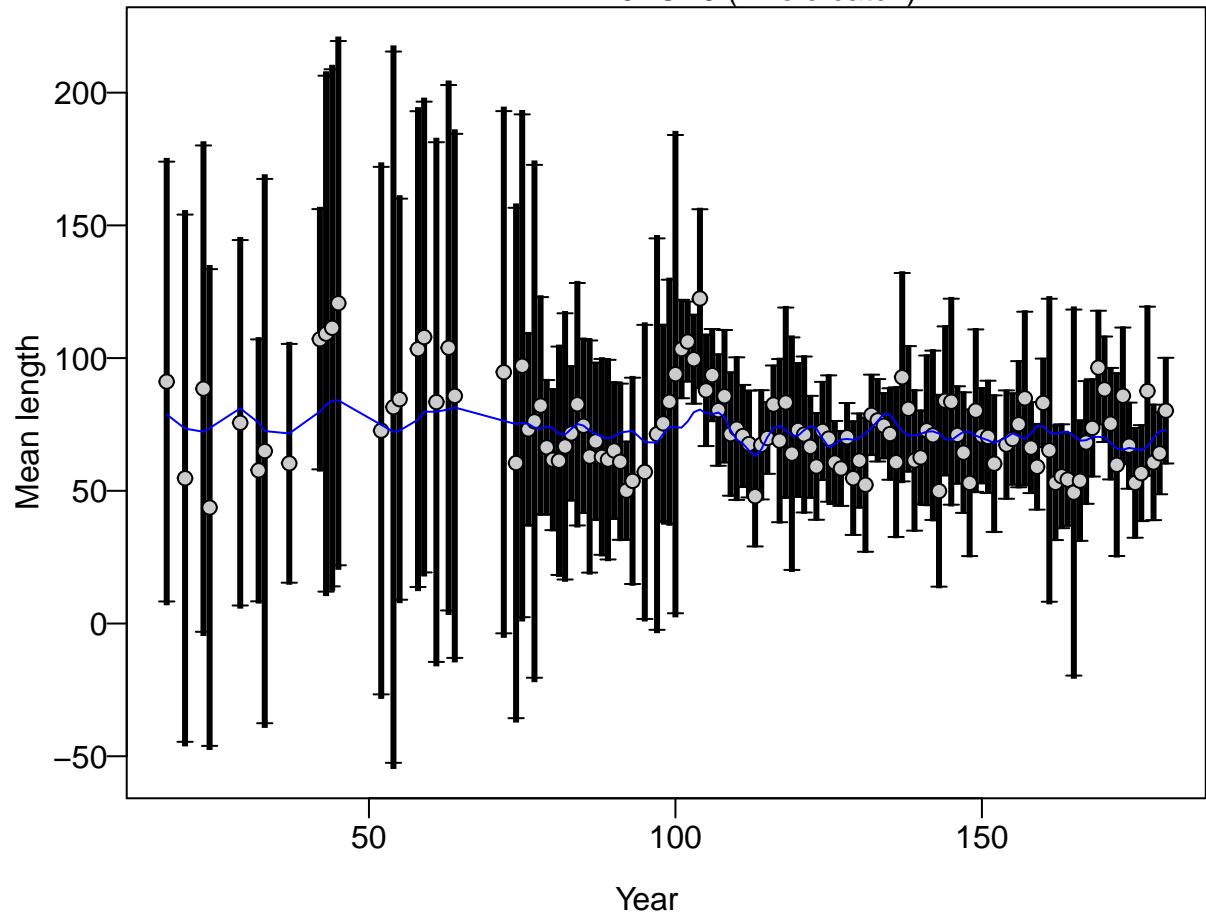
Proportion



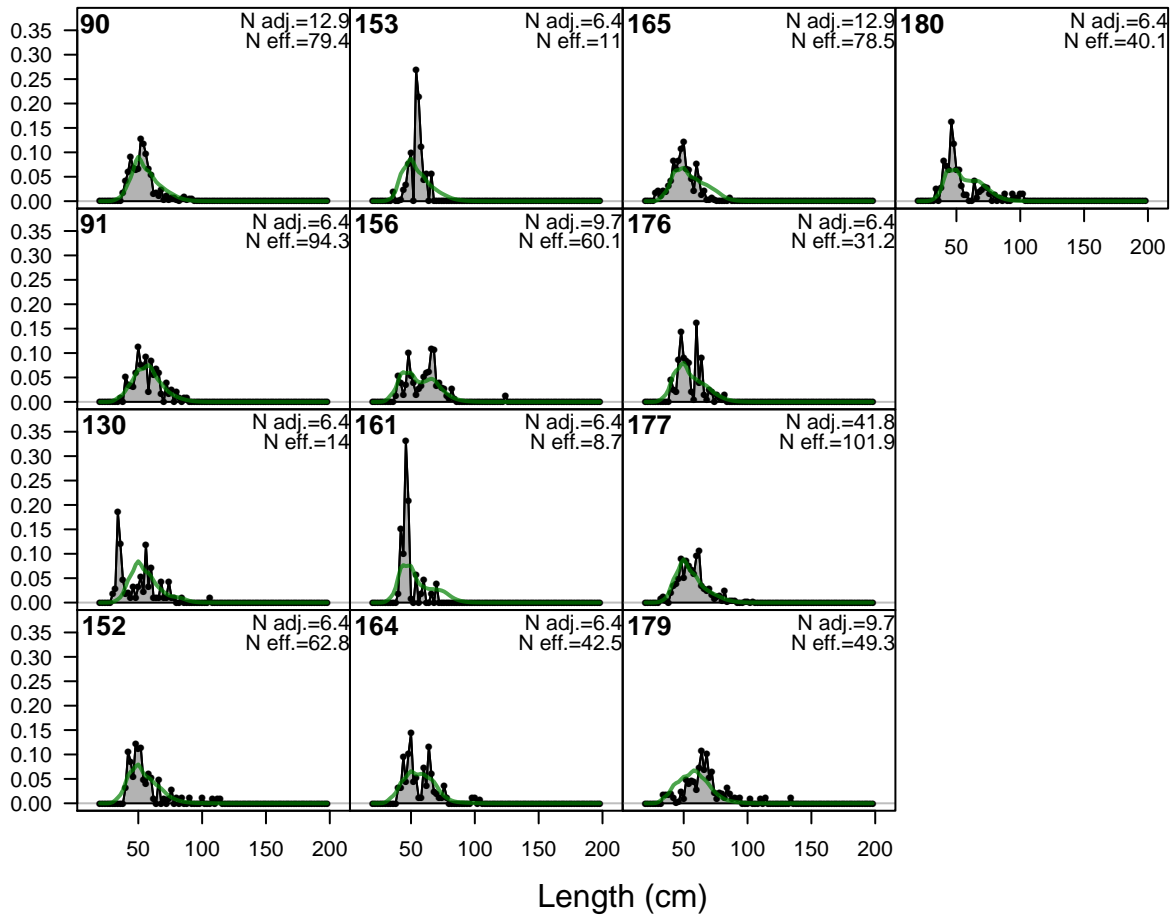


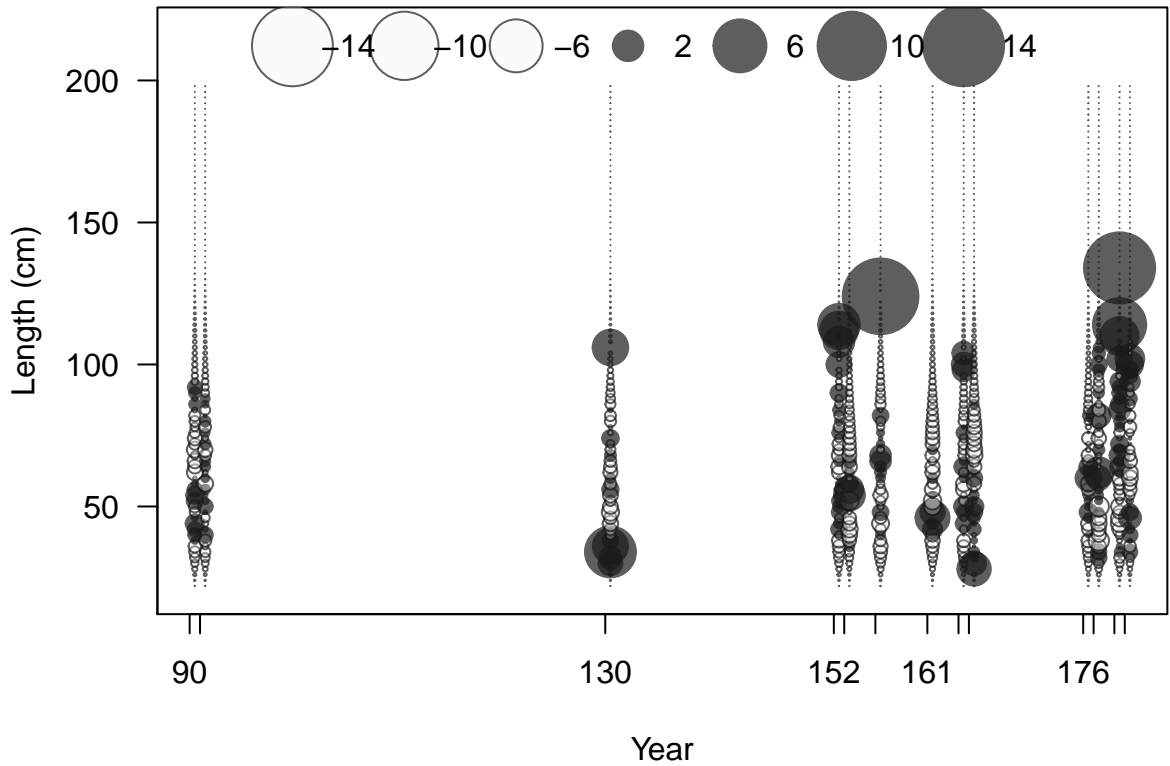


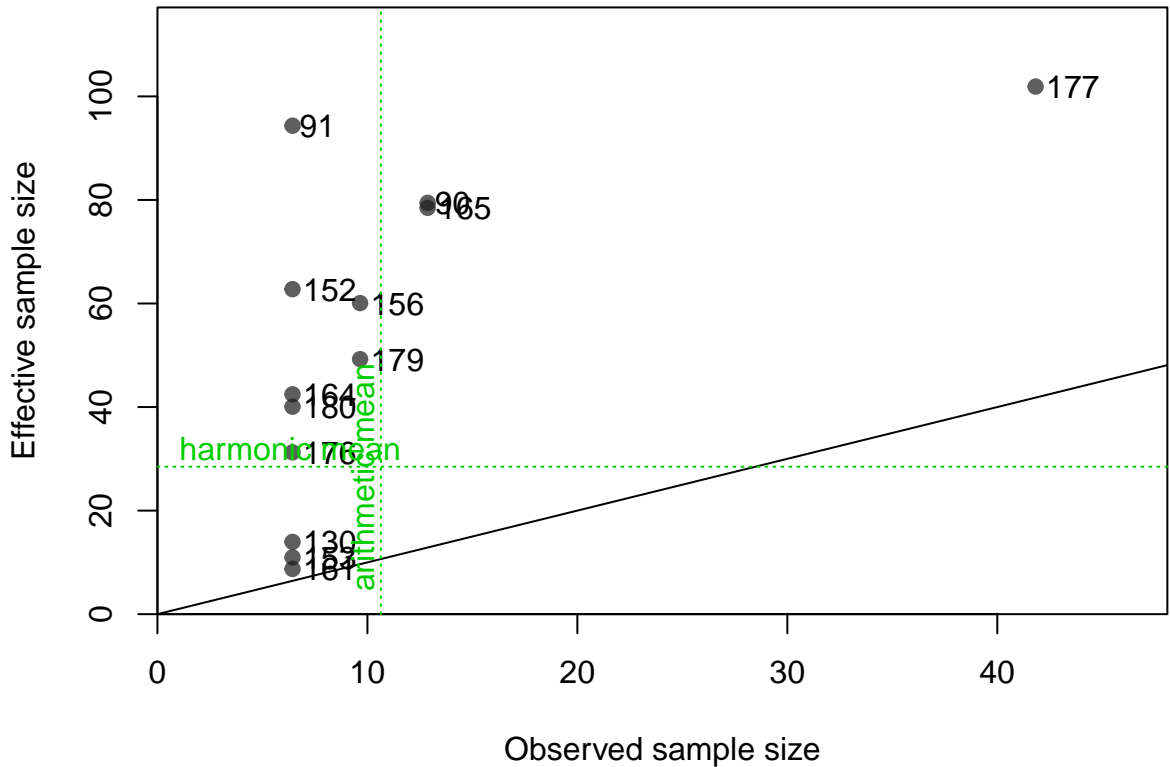
## A3-OBJ (whole catch)



Proportion

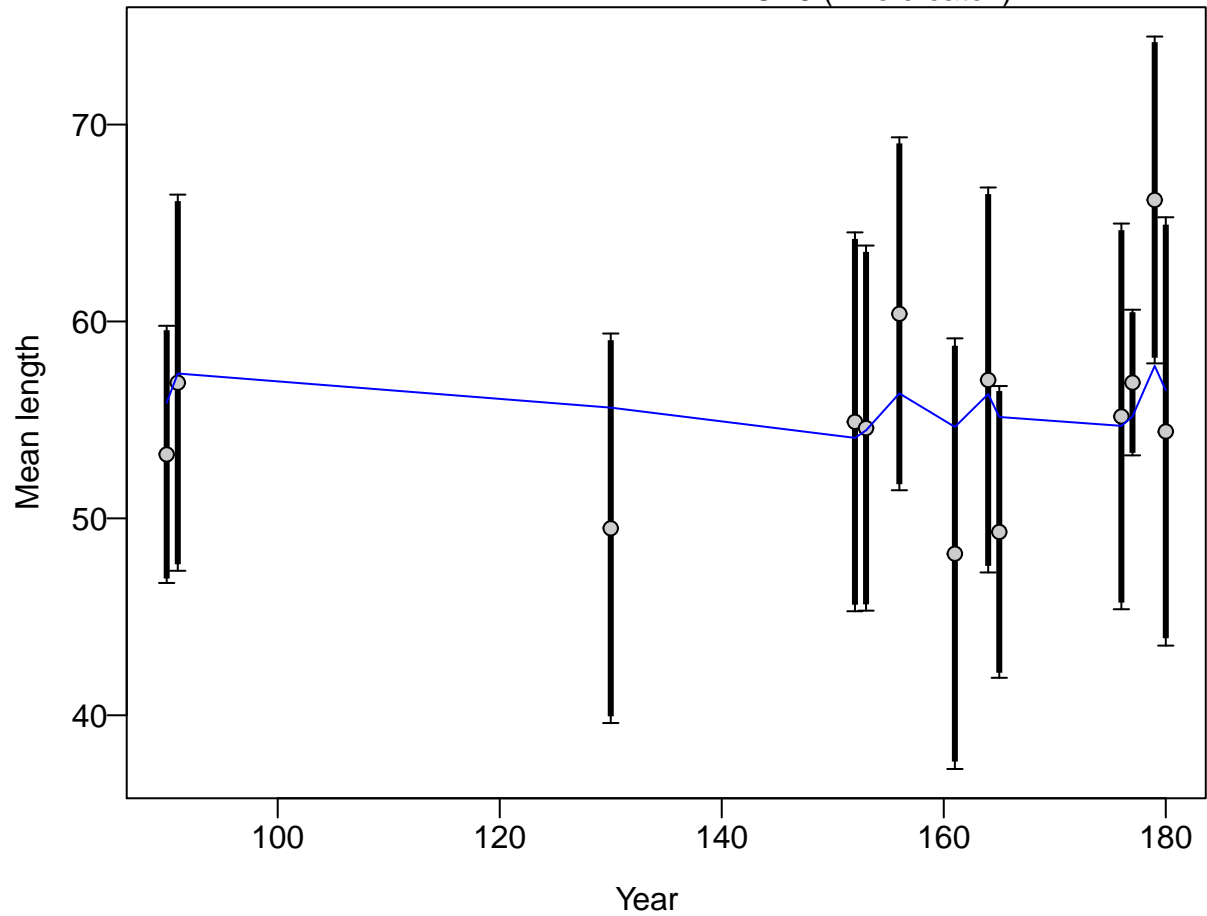




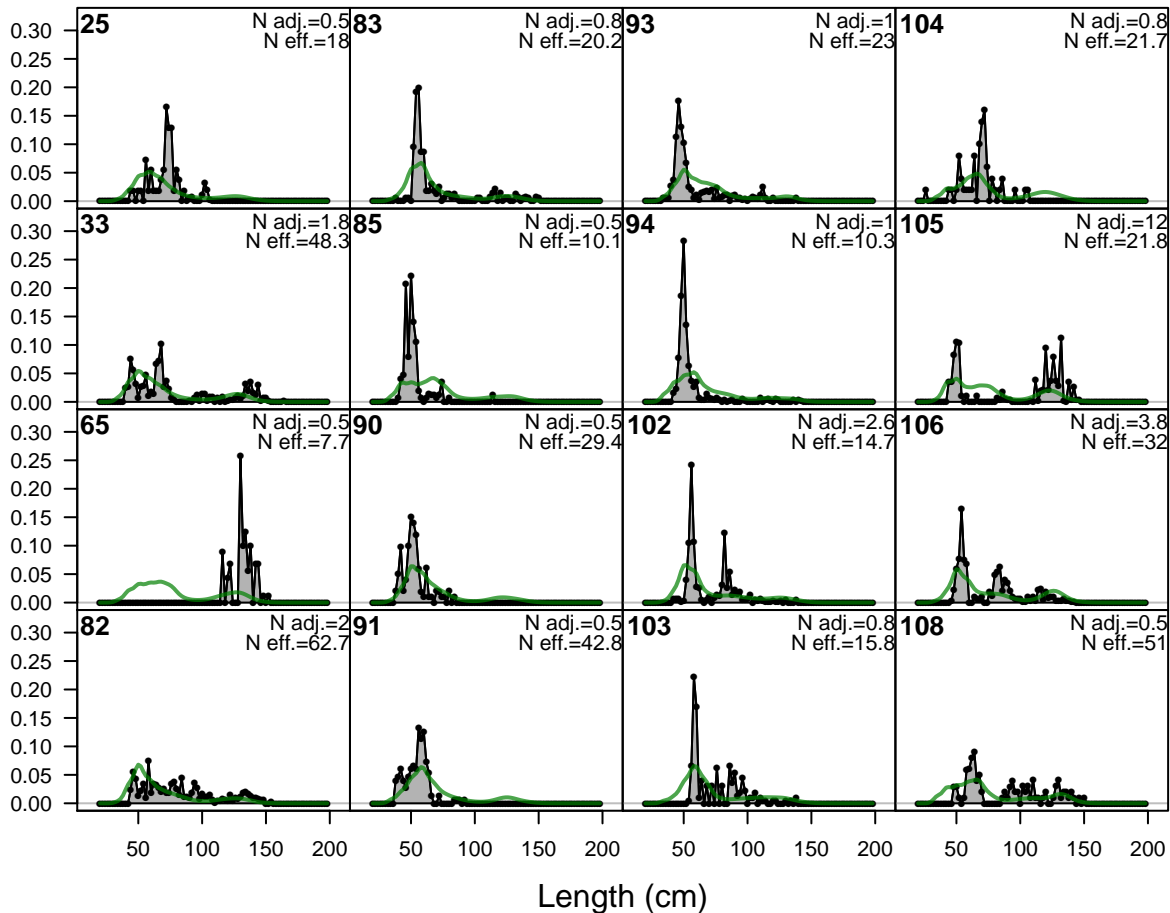




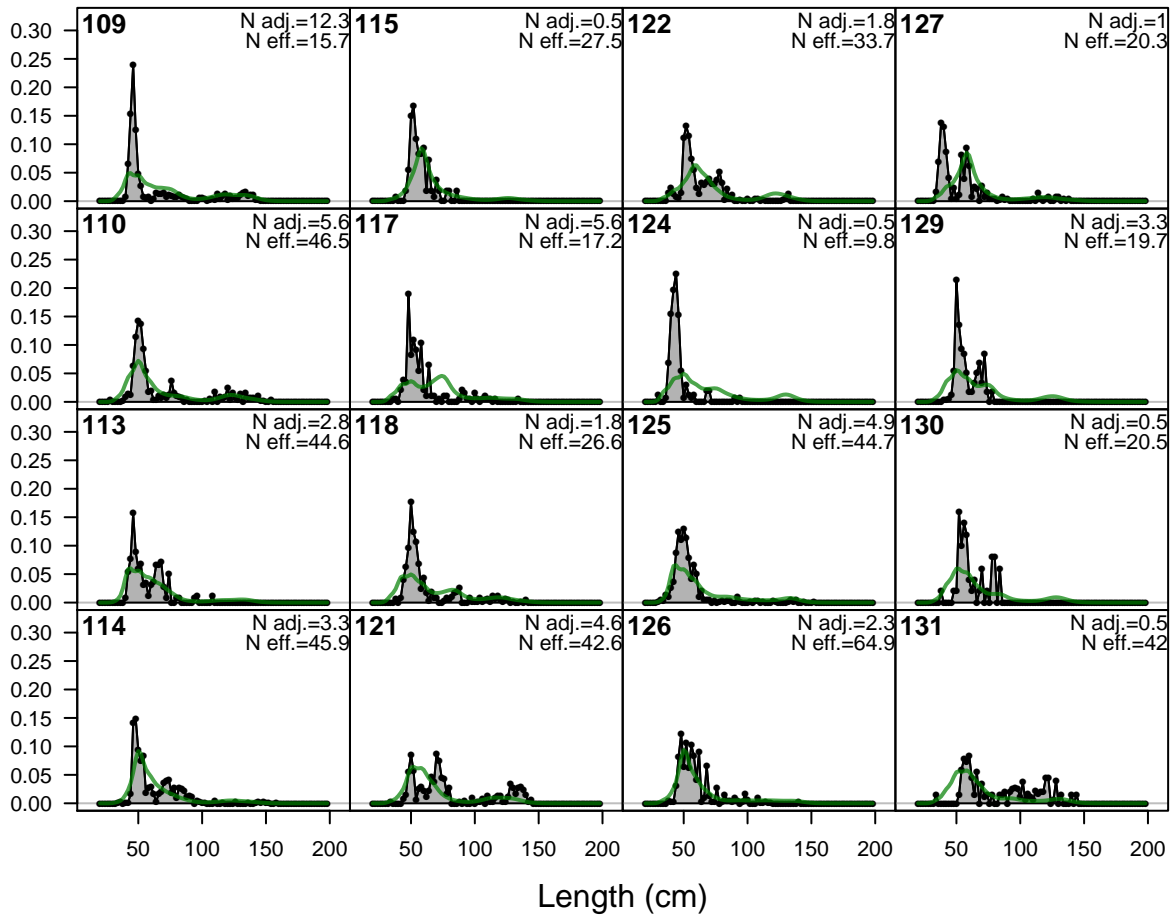
## A4-OBJ (whole catch)



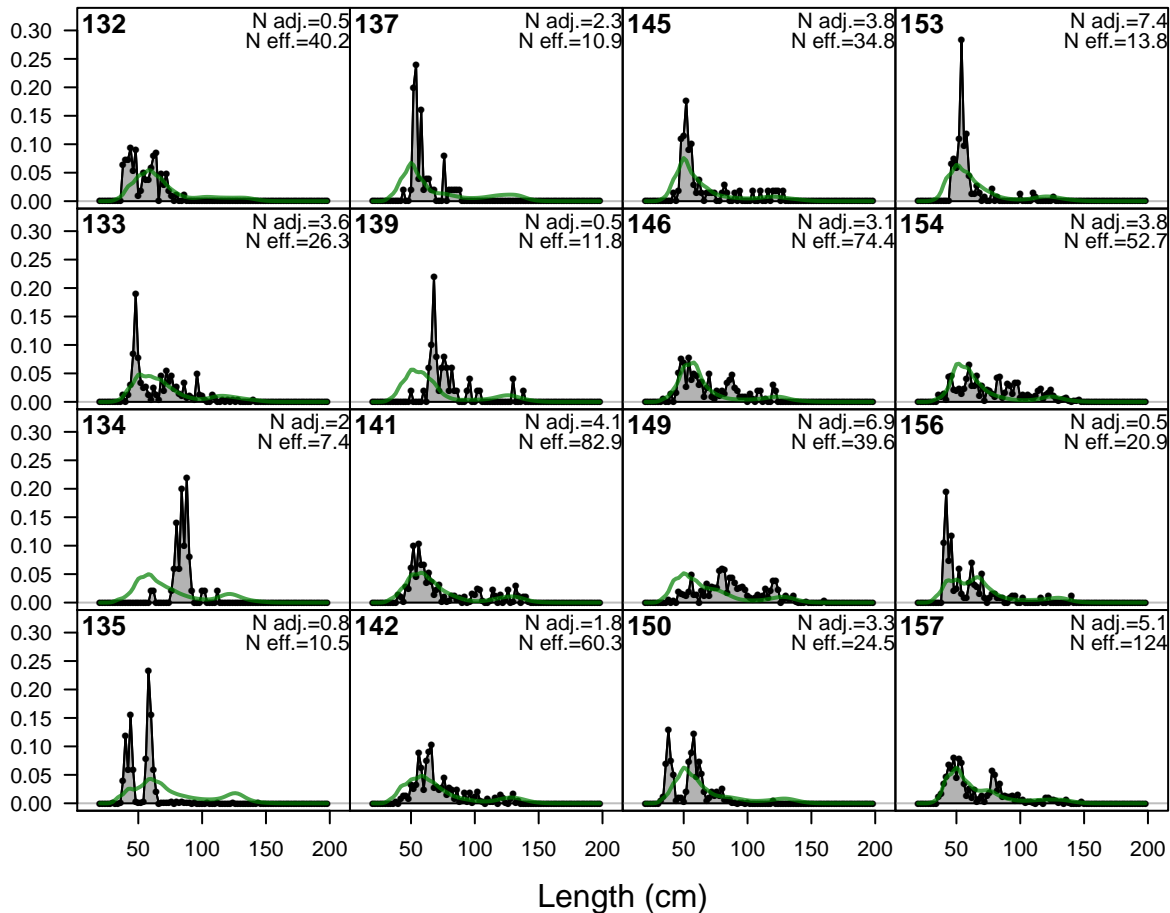
Proportion



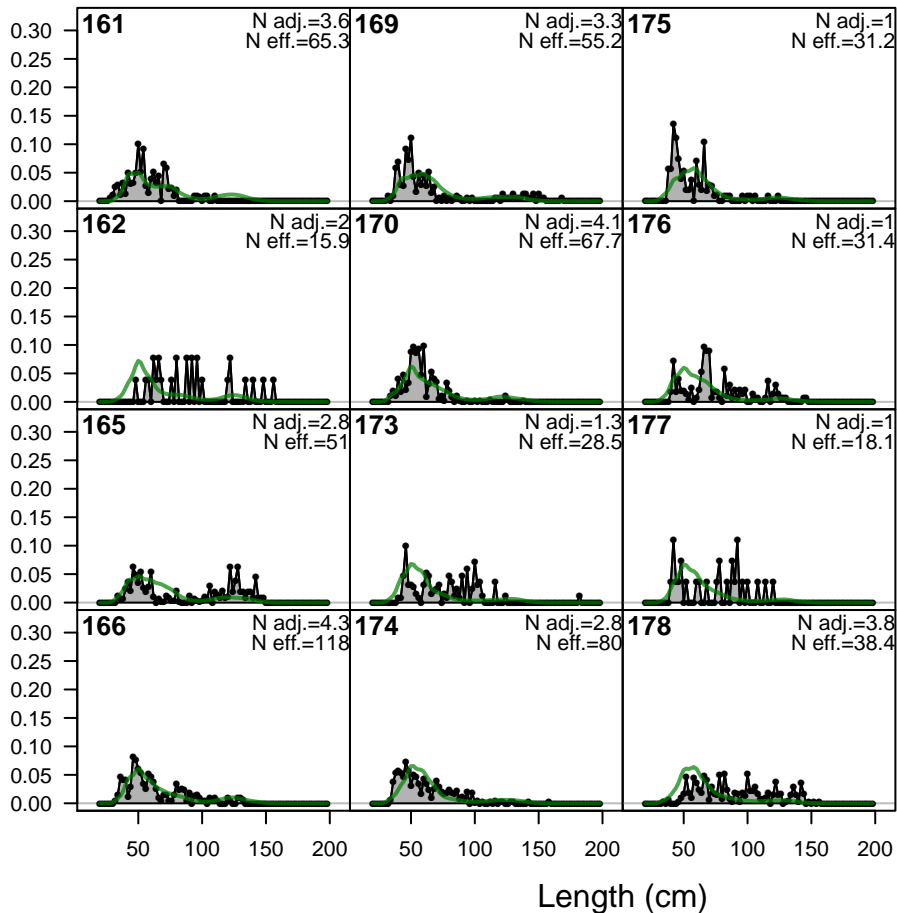
Proportion

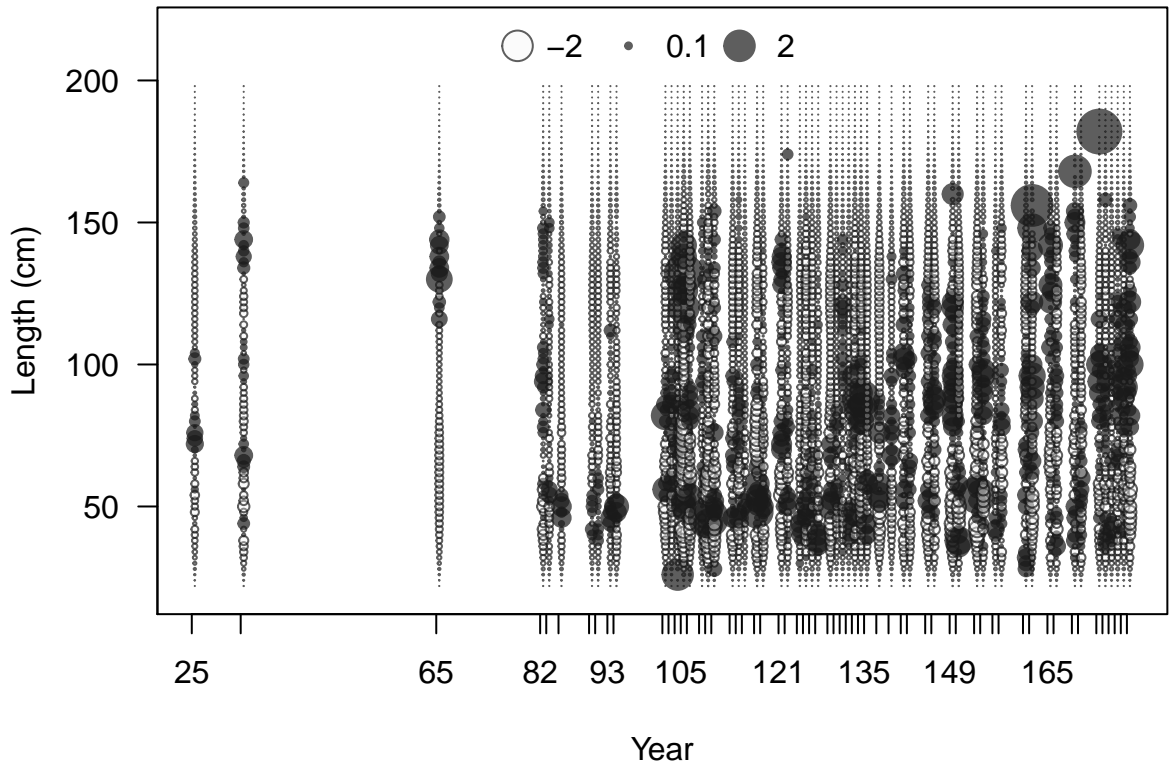


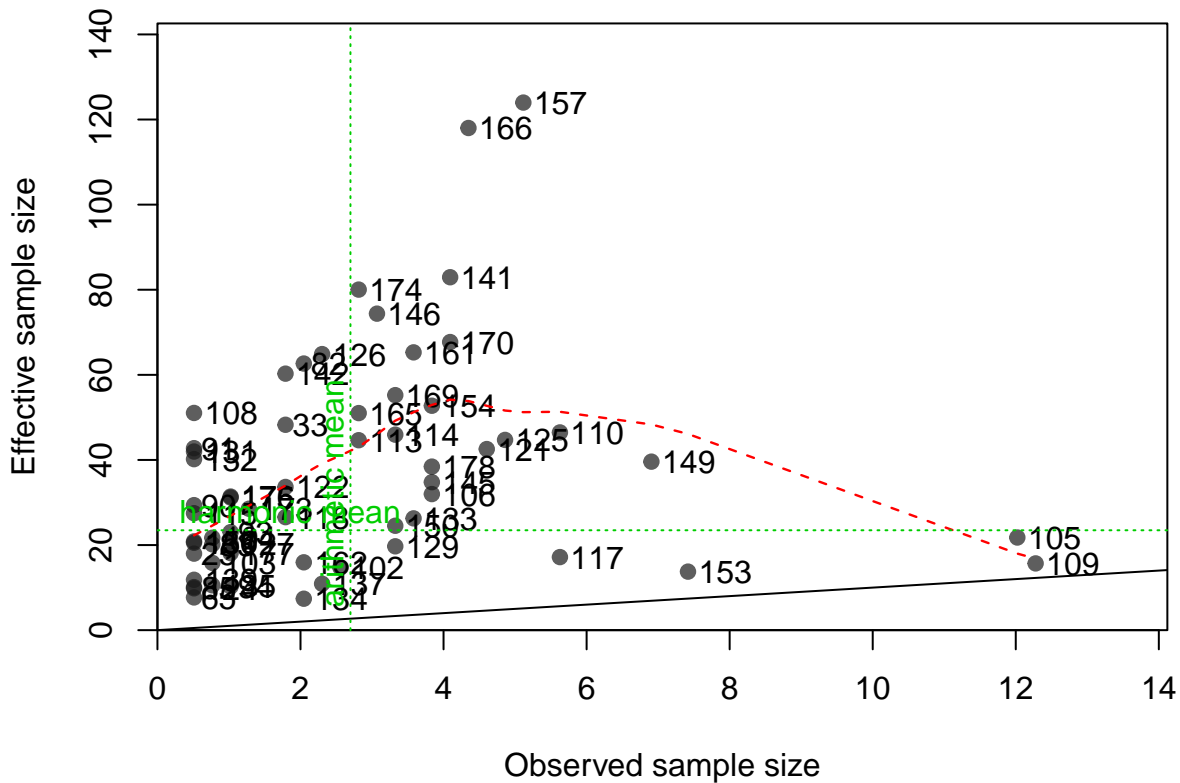
Proportion



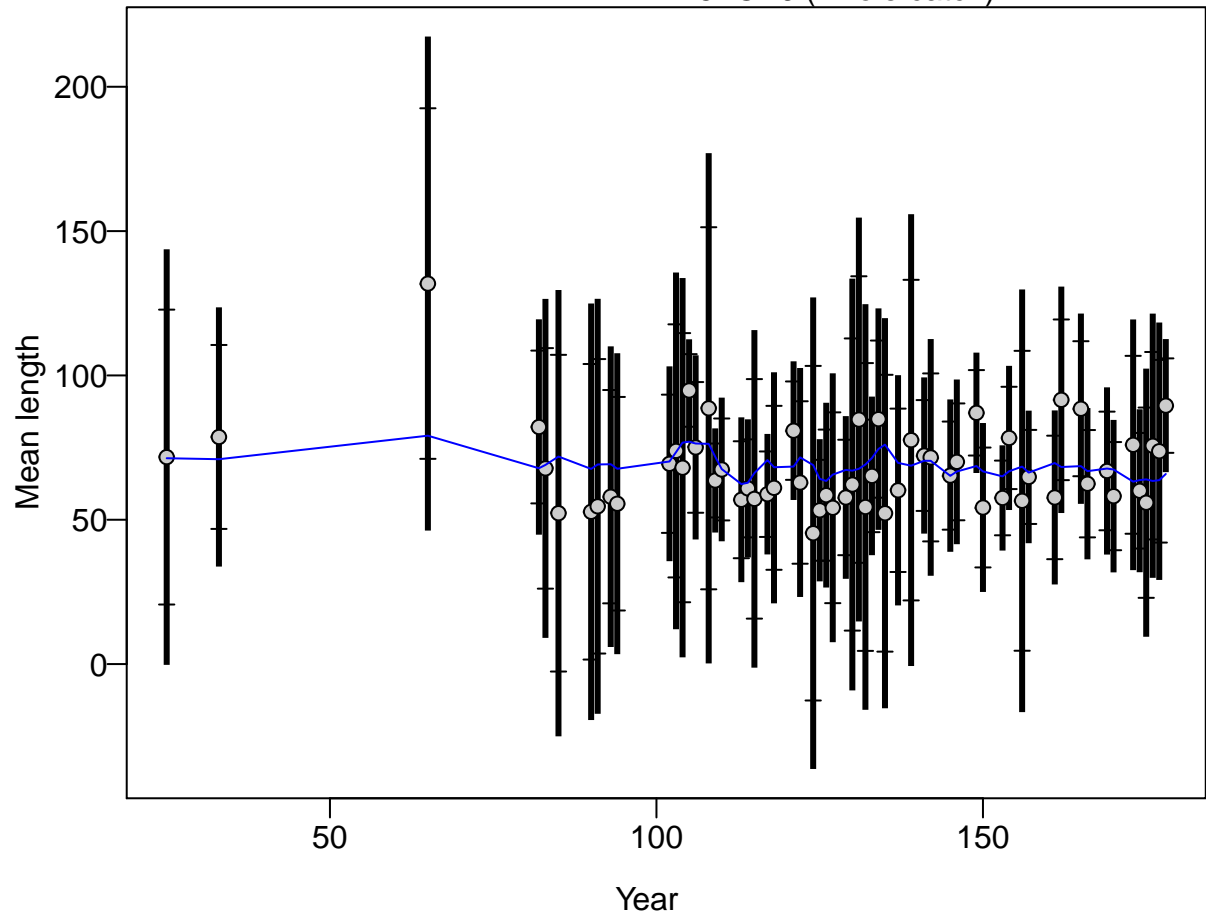
Proportion





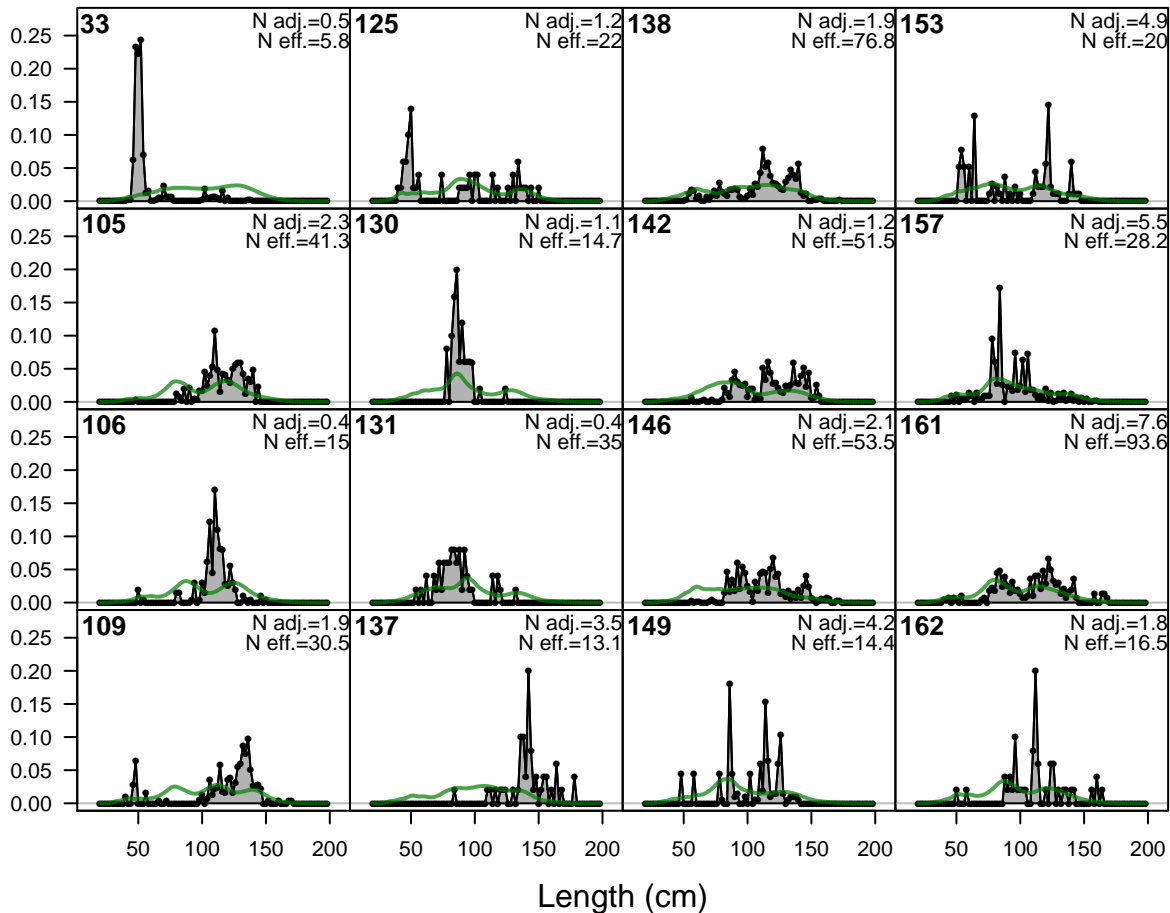


## A5-OBJ (whole catch)

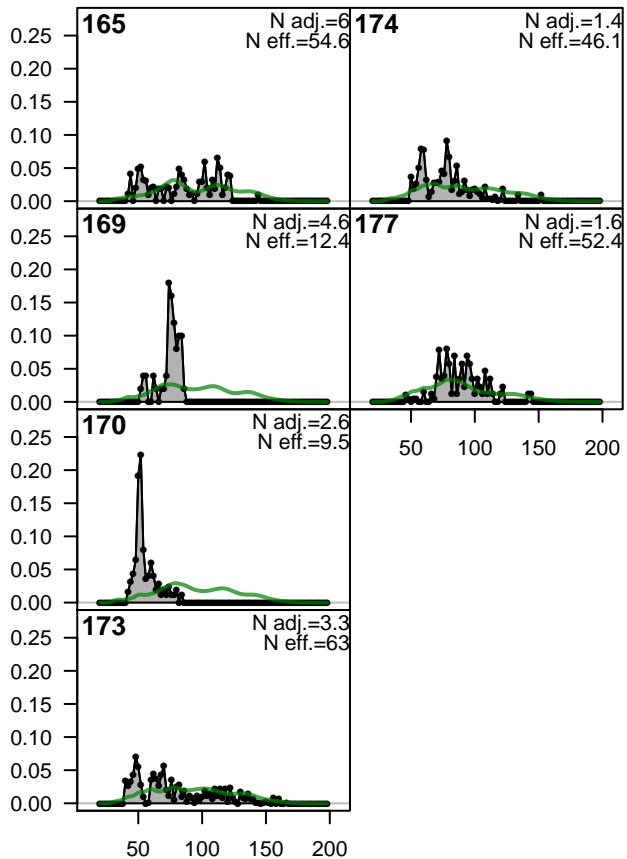




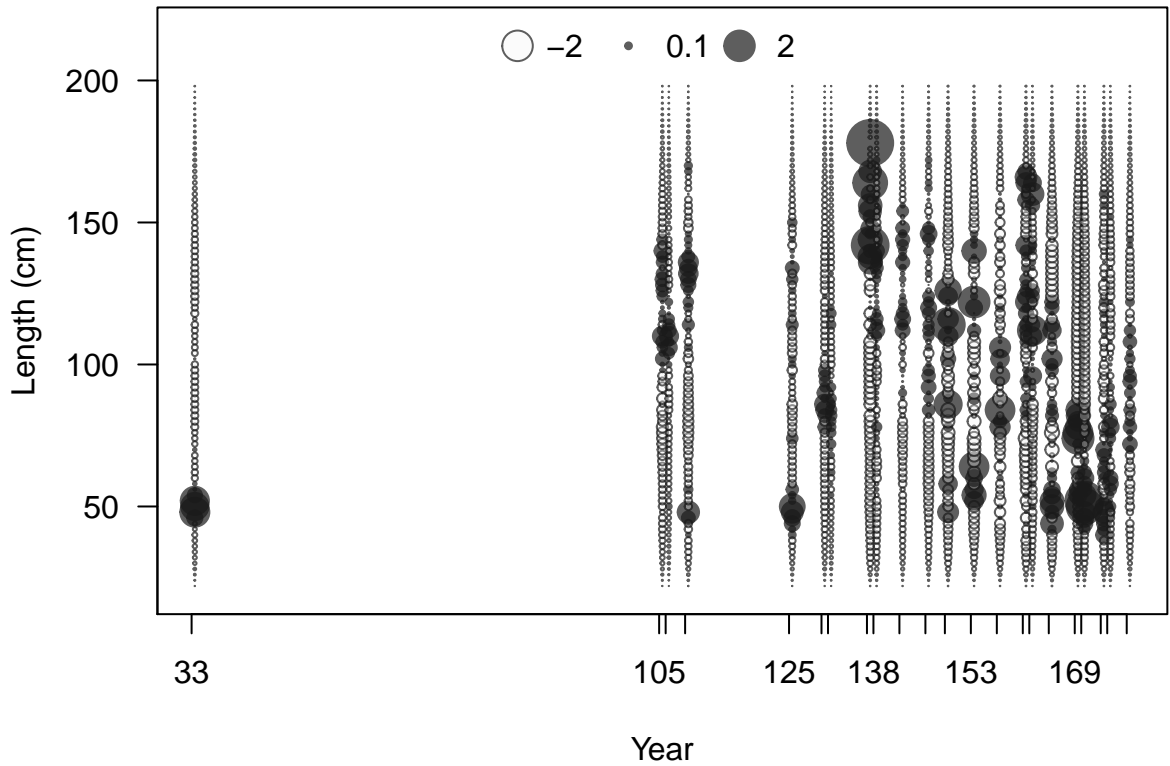
Proportion

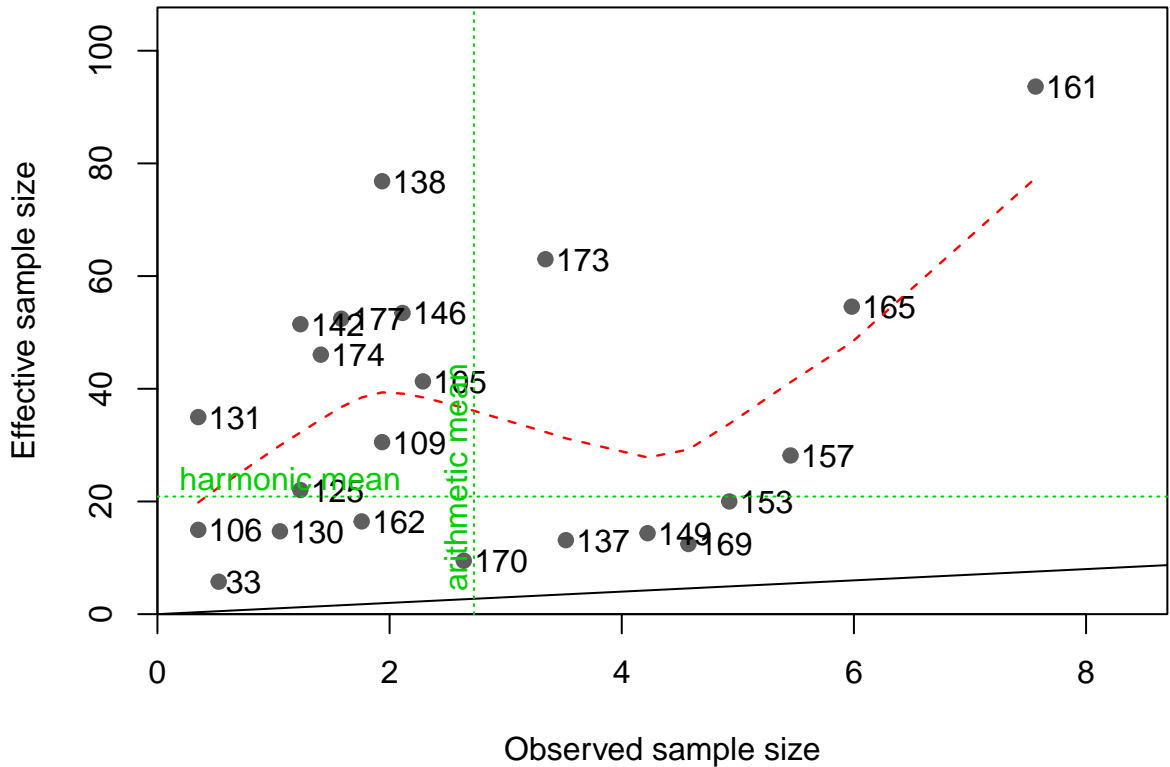


Proportion

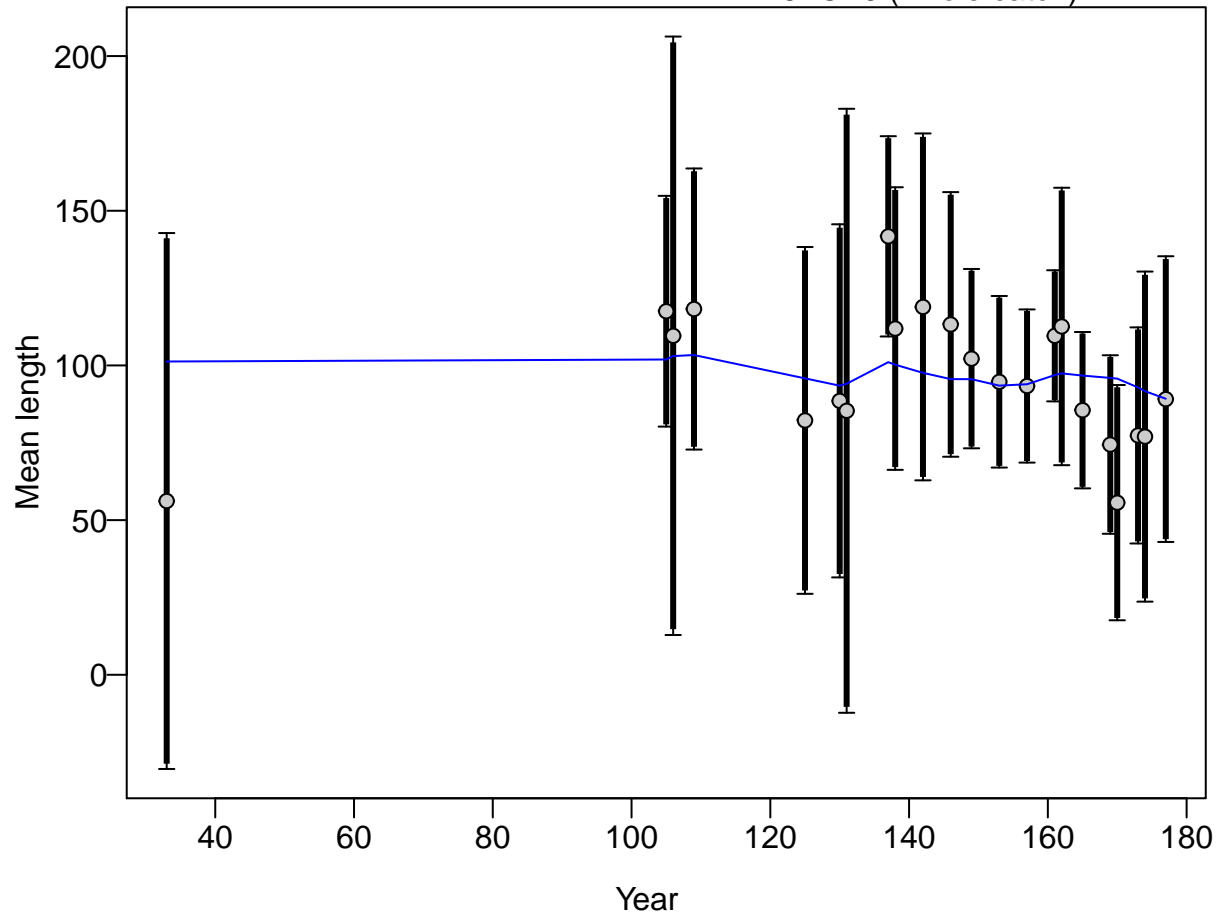


Length (cm)

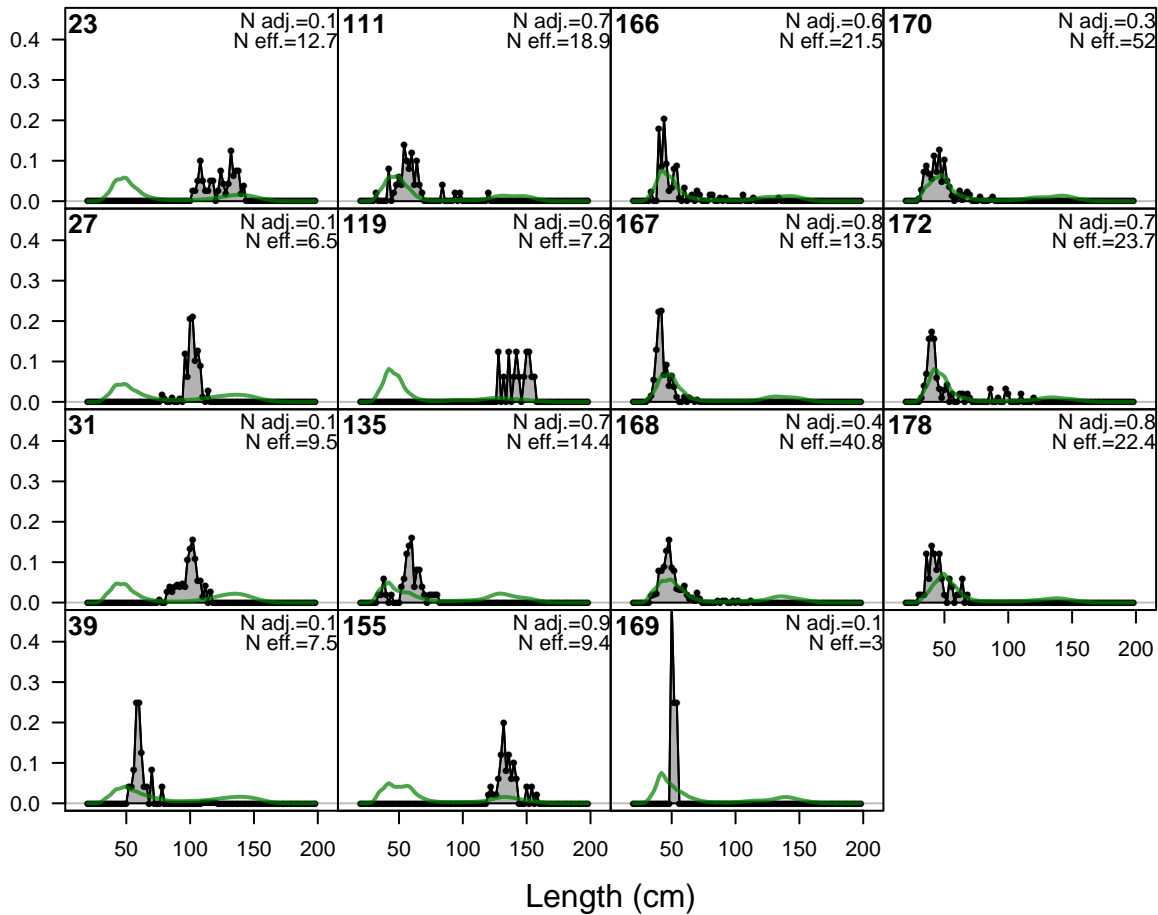


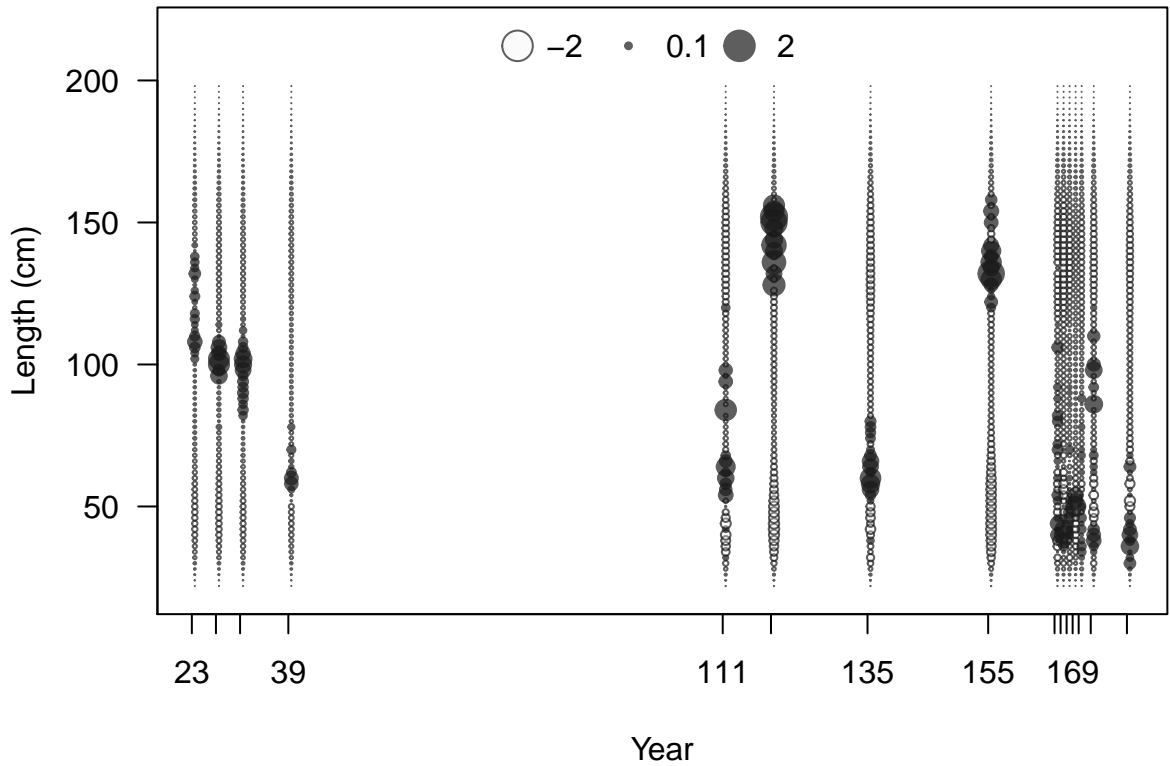


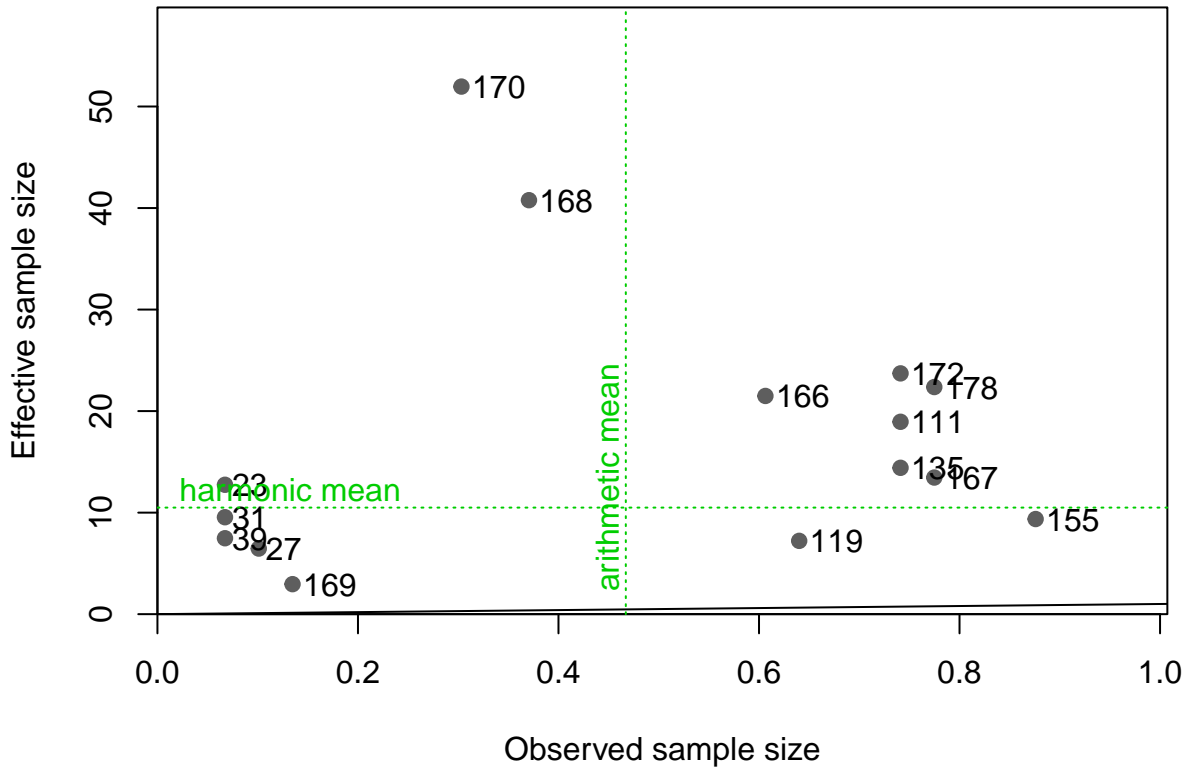
## A6-OBJ (whole catch)



Proportion

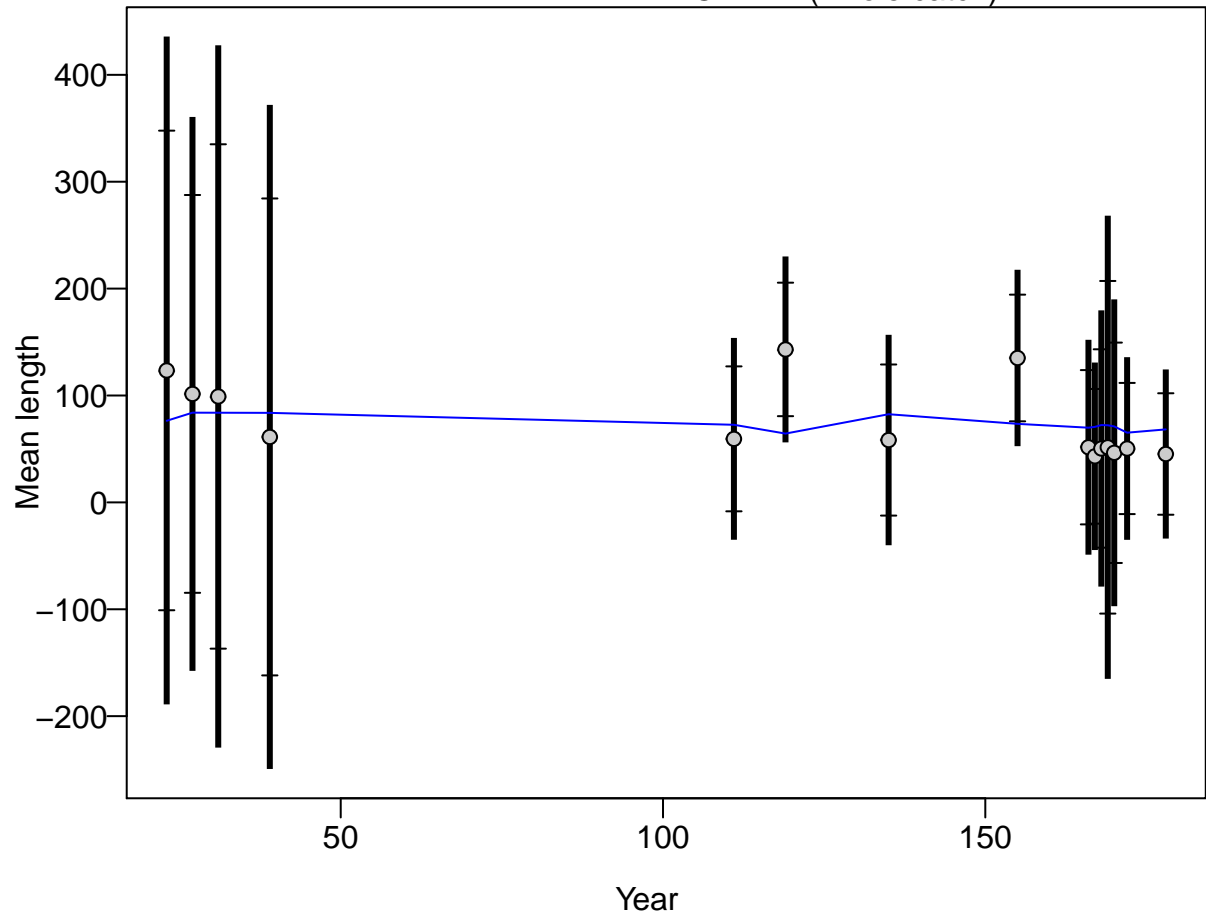


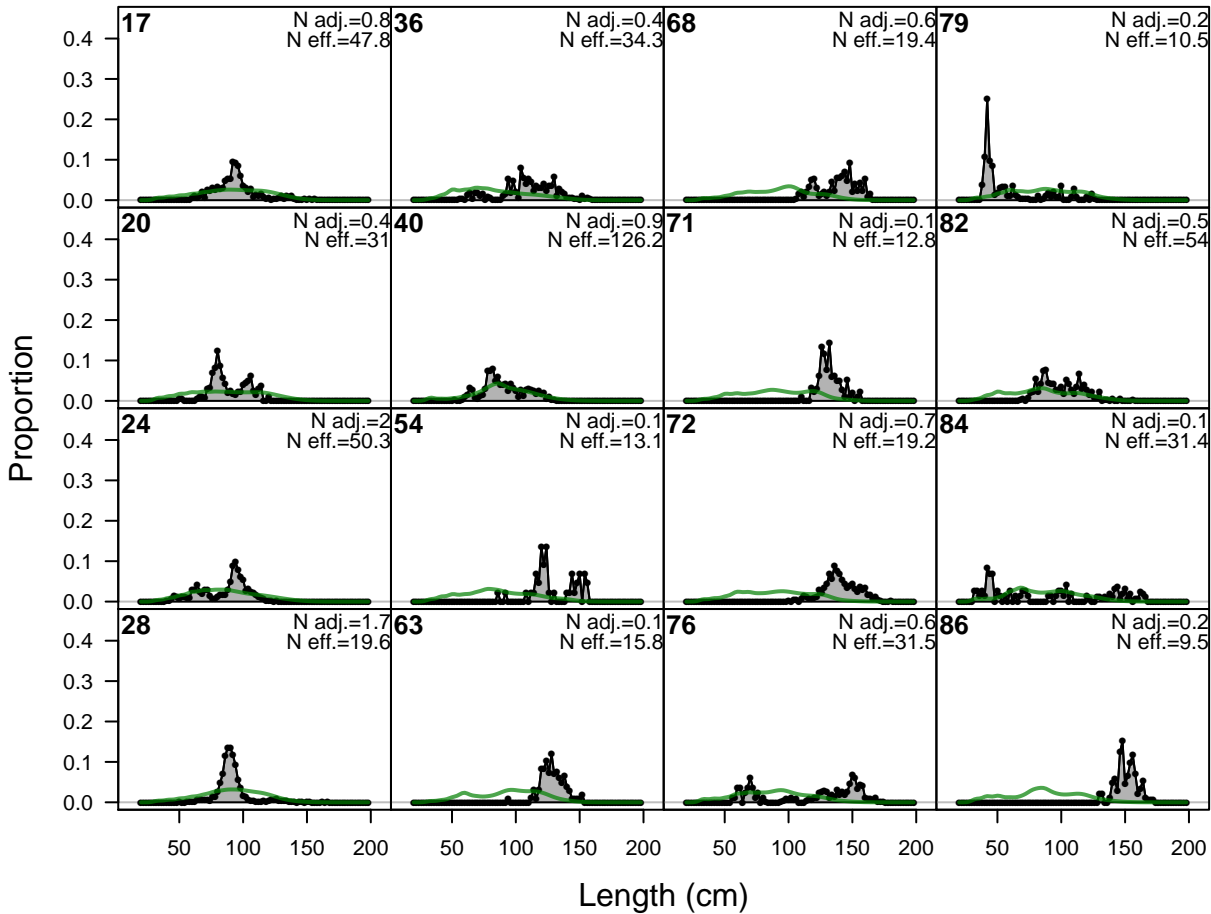




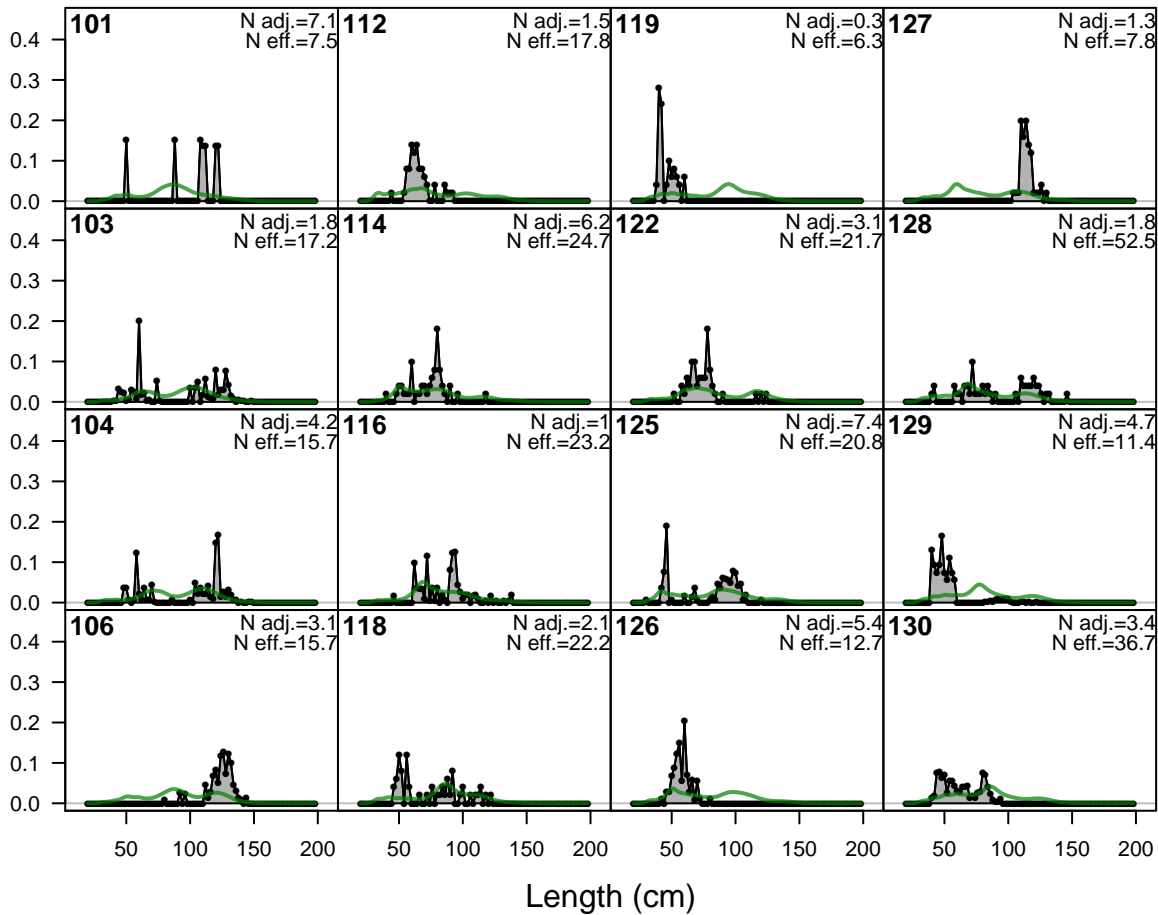


## A2-NOADEL (whole catch)

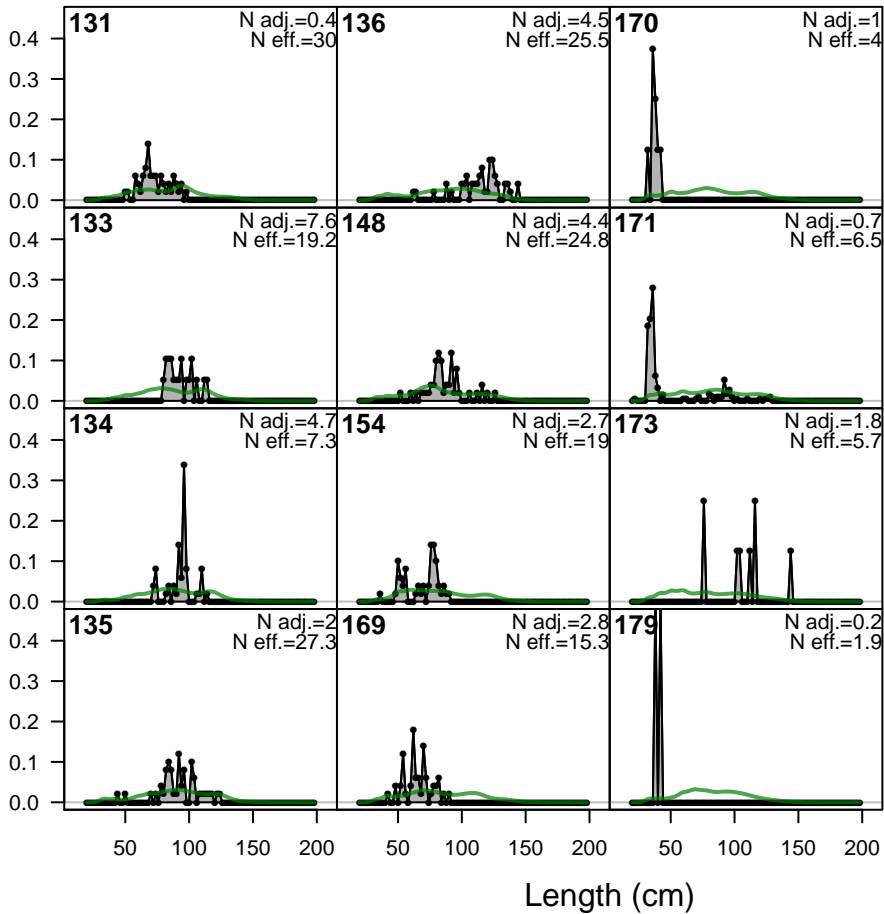


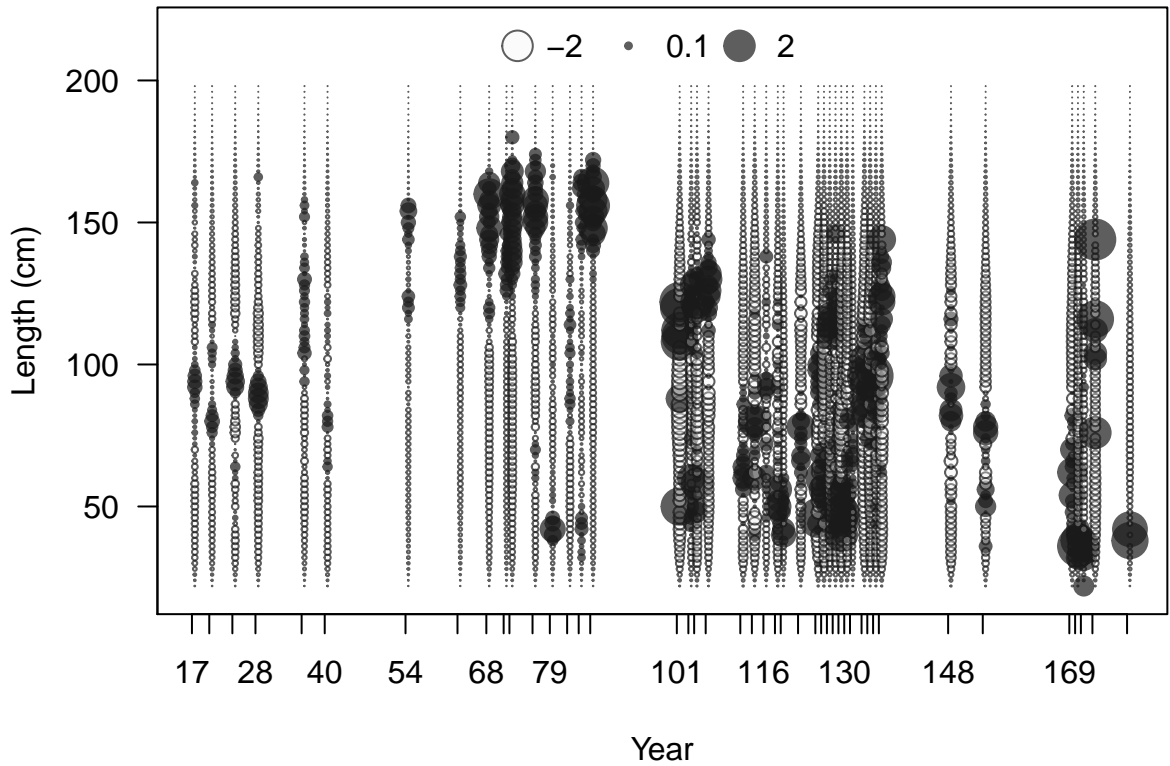


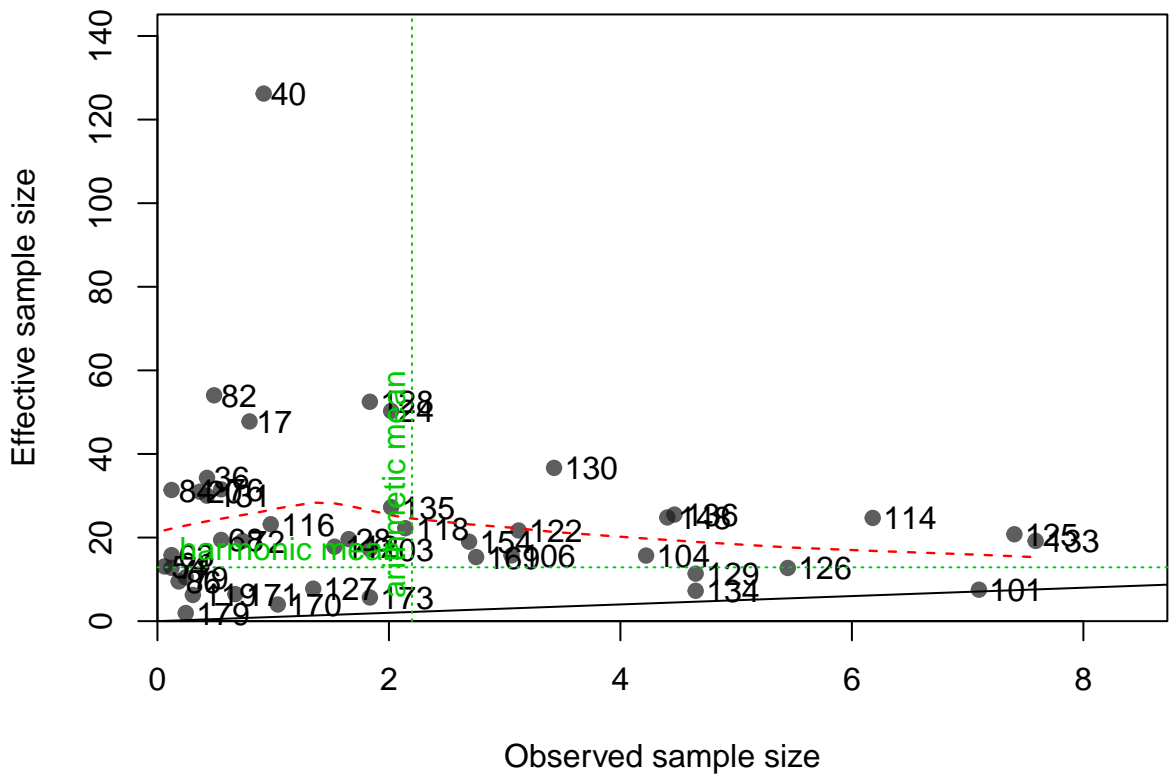
Proportion



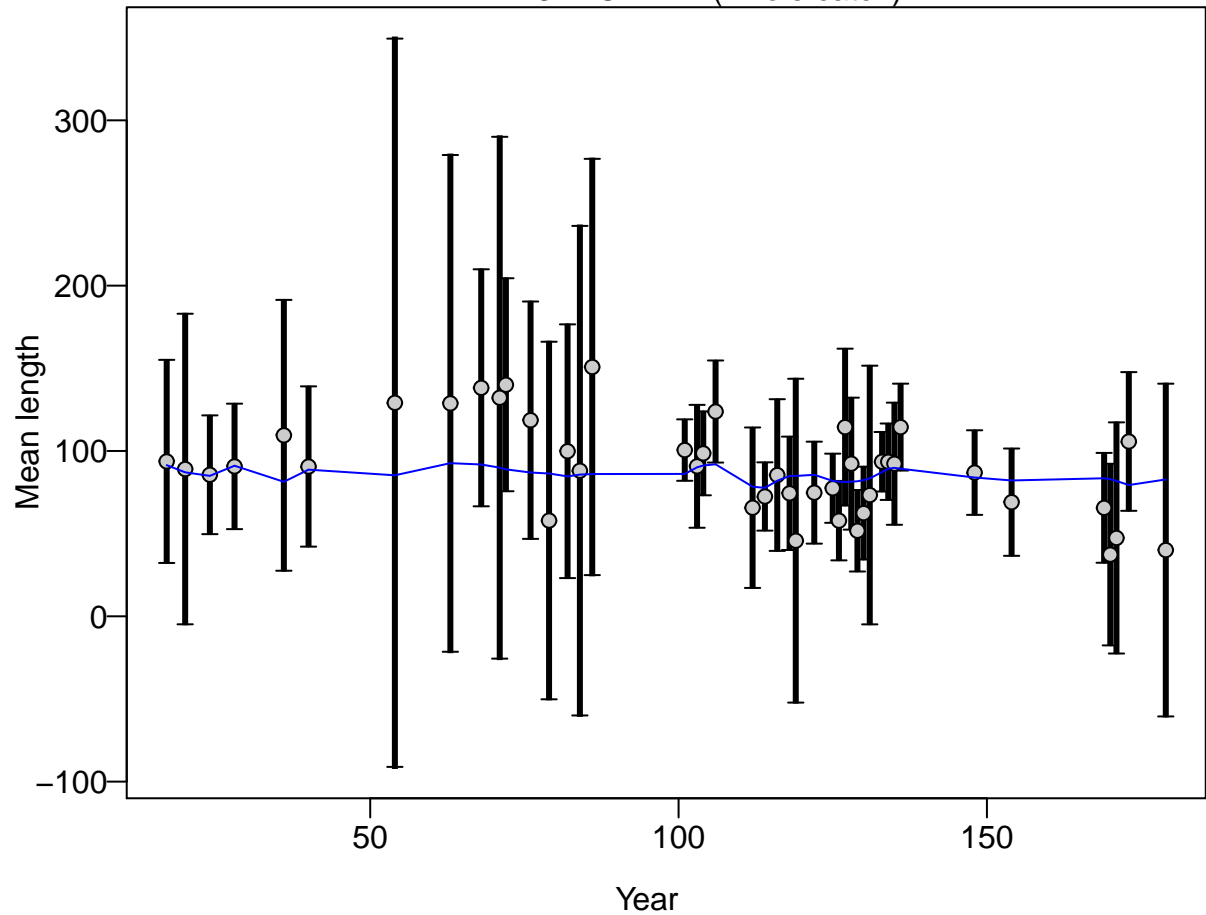
Proportion

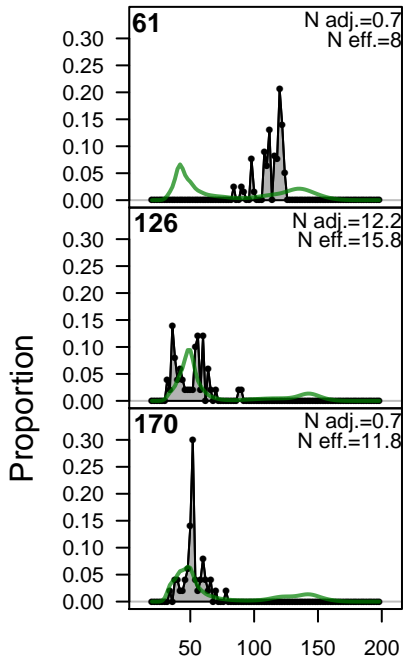






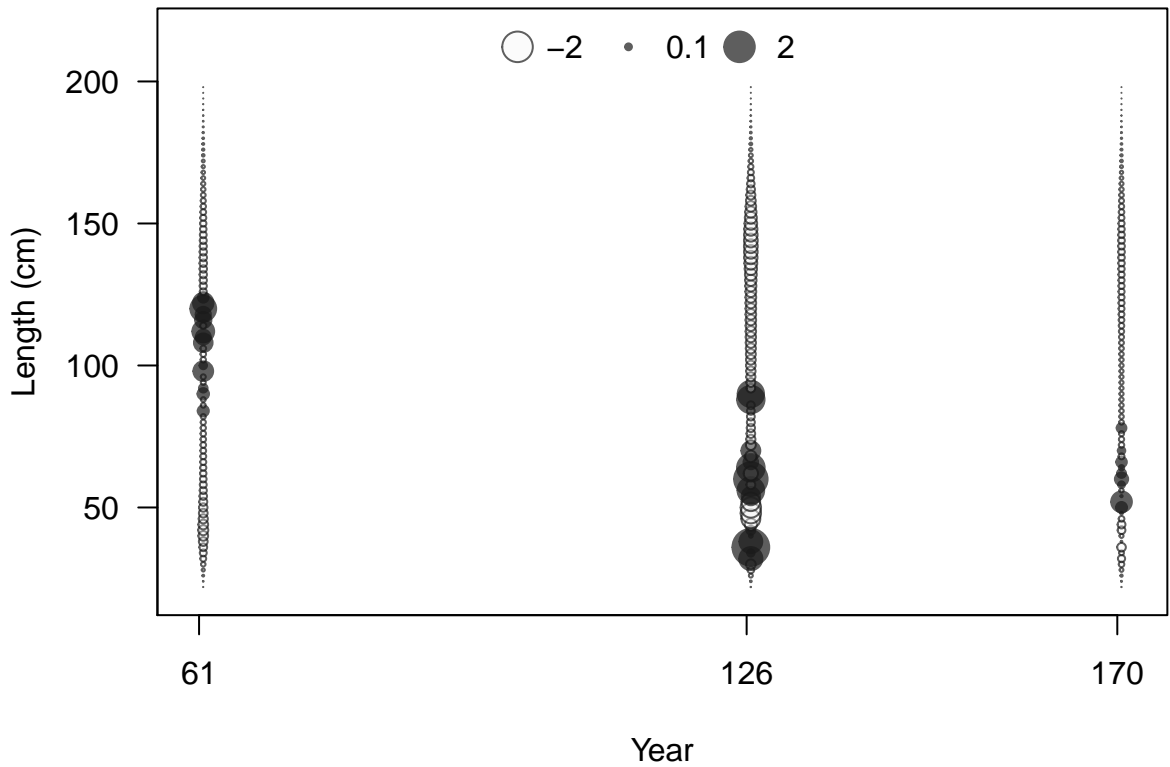
A3-NOADEL (whole catch)

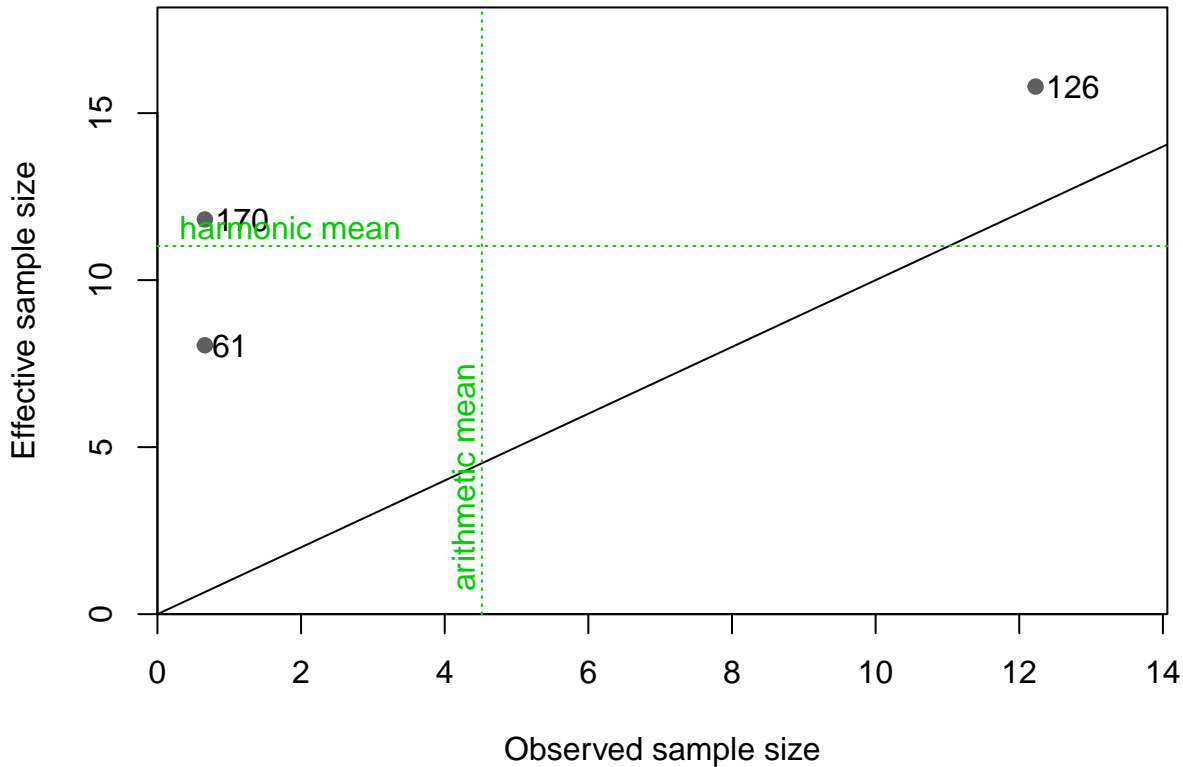




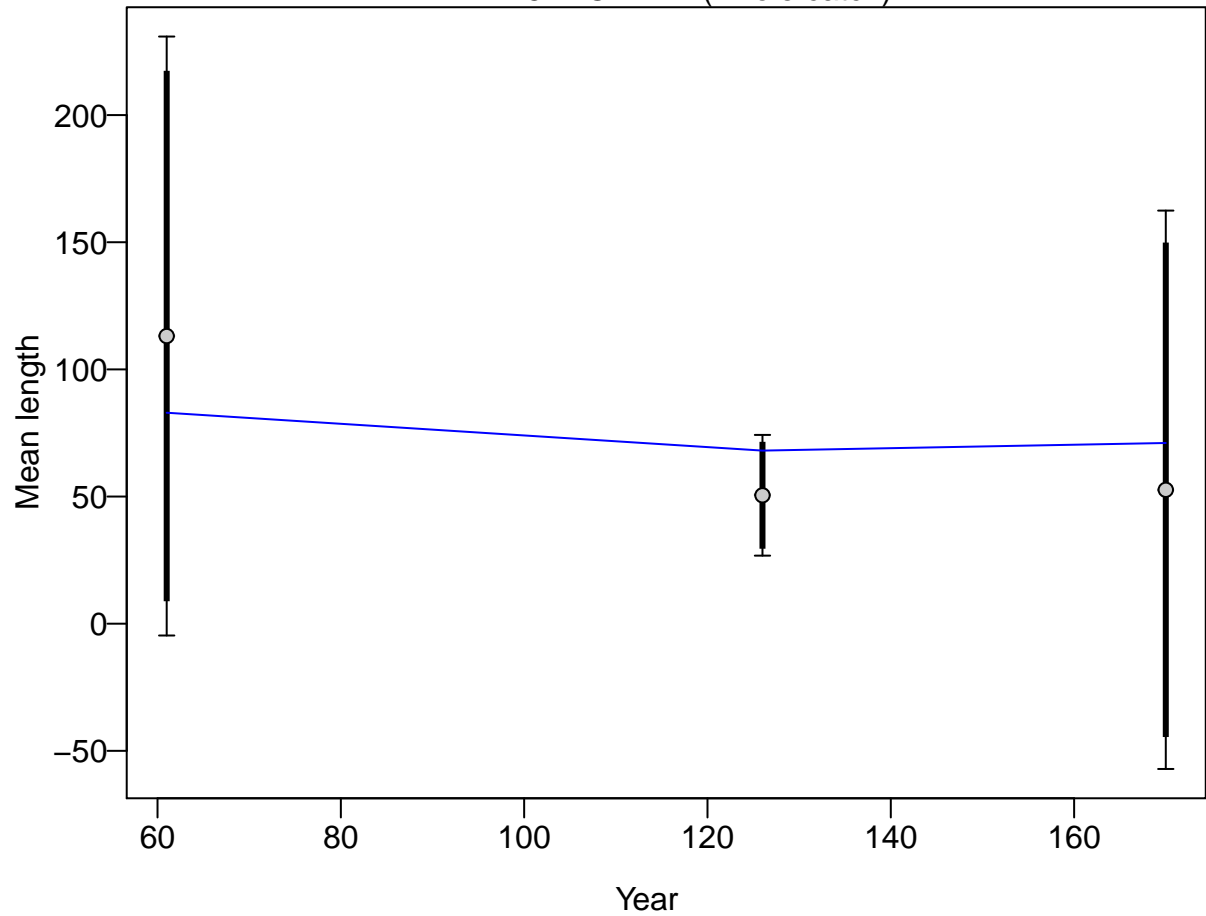
Length (cm)



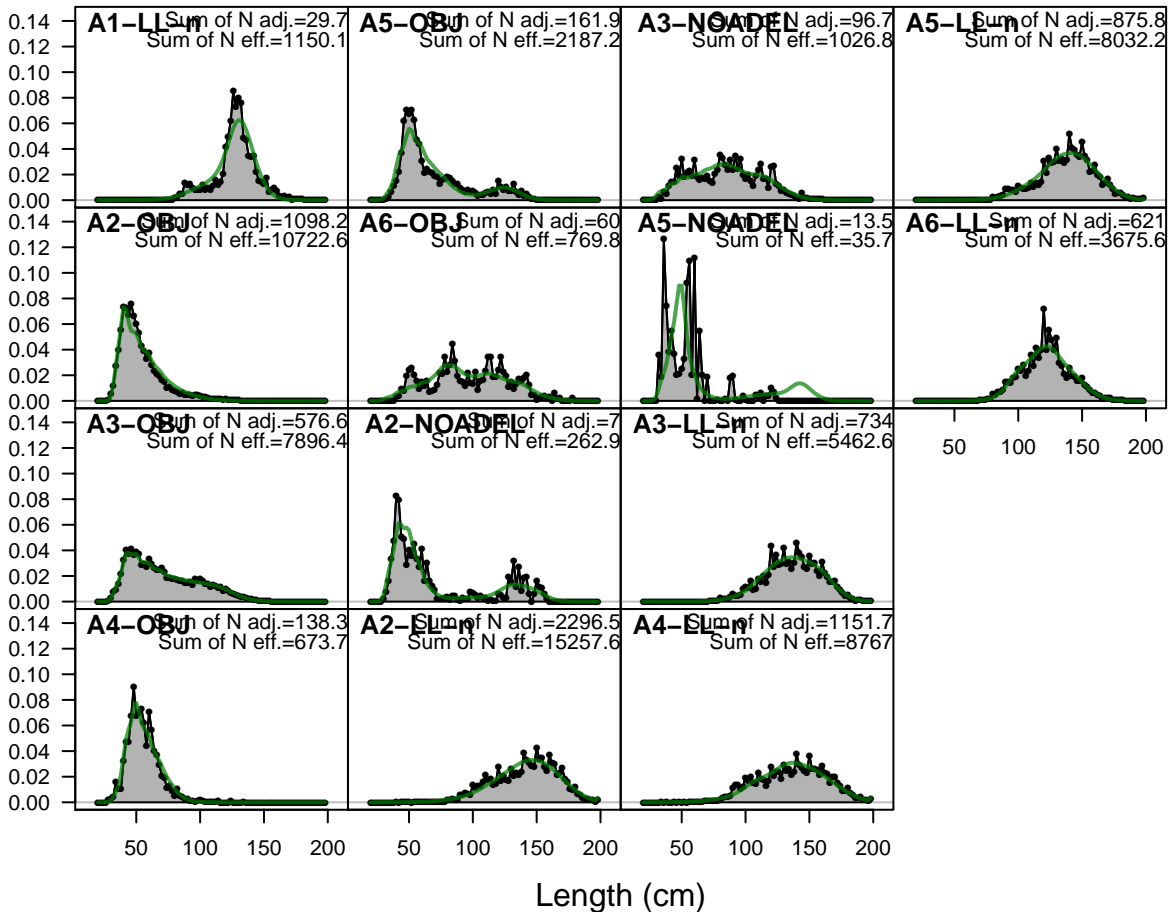




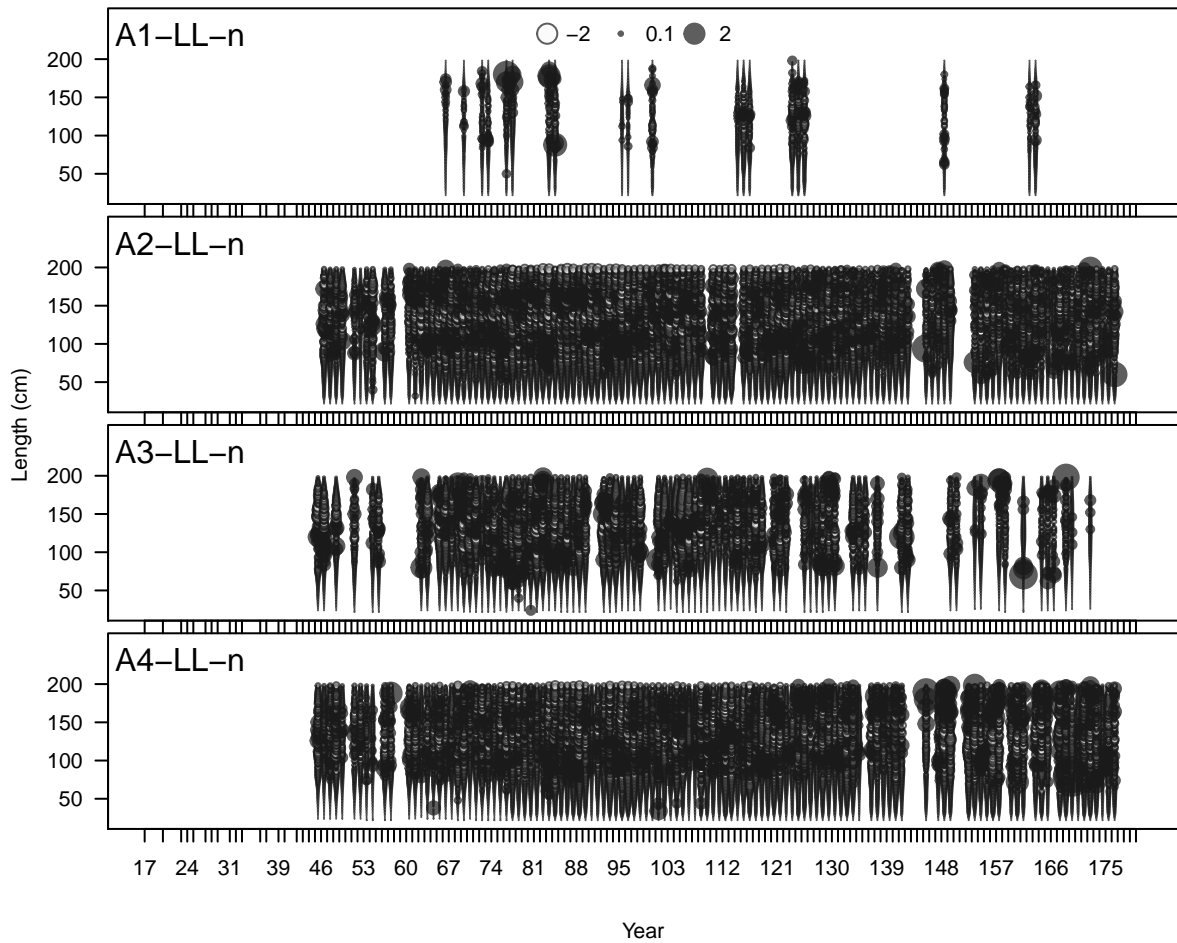
A5-NOADEL (whole catch)

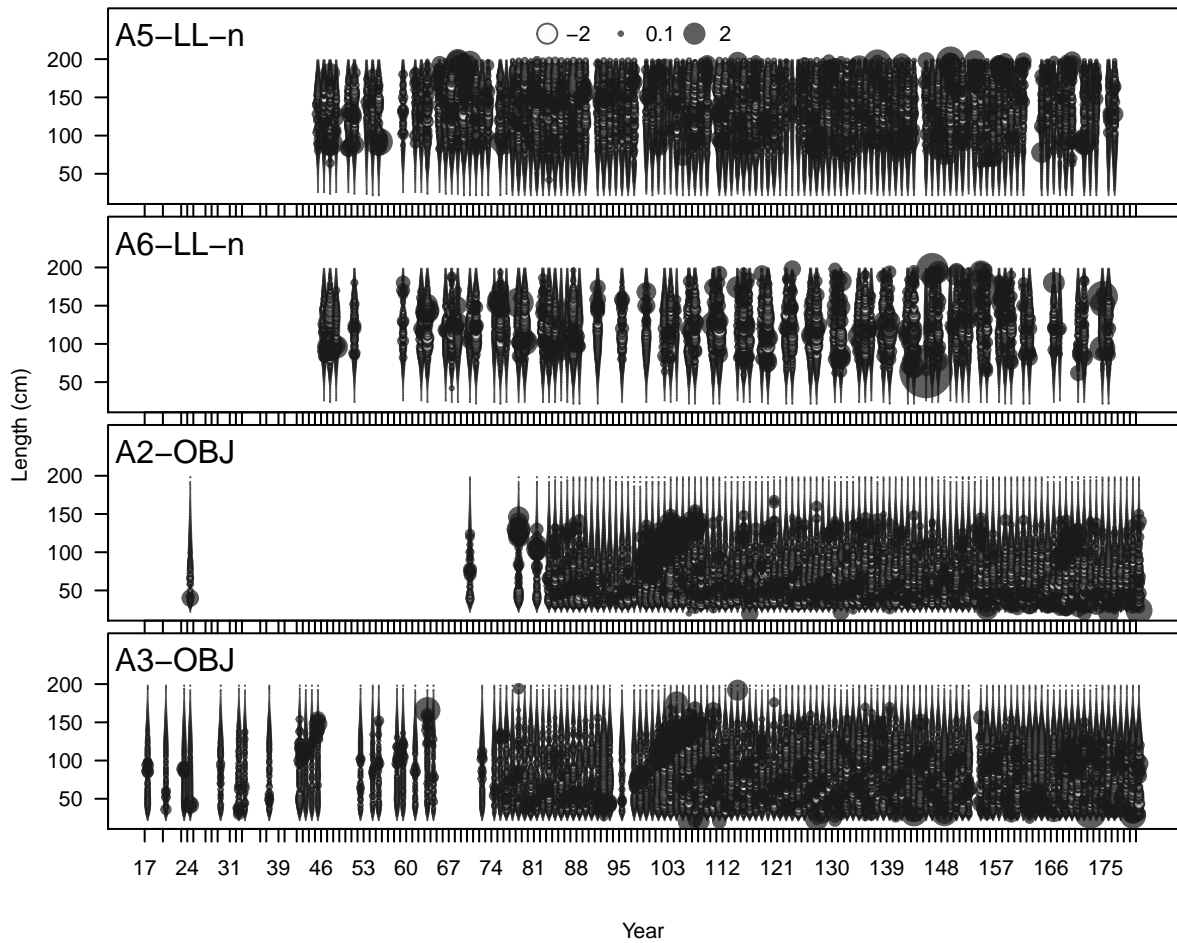


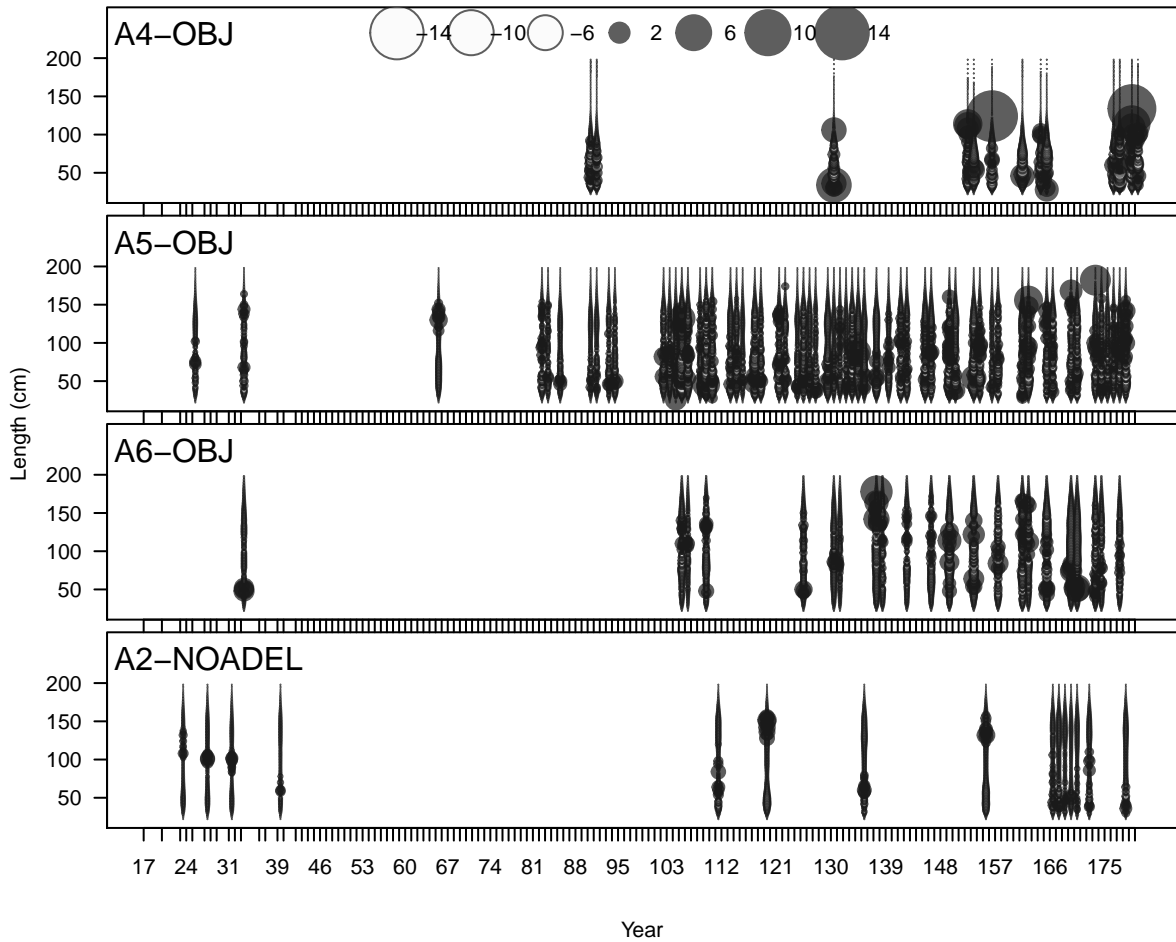
Proportion

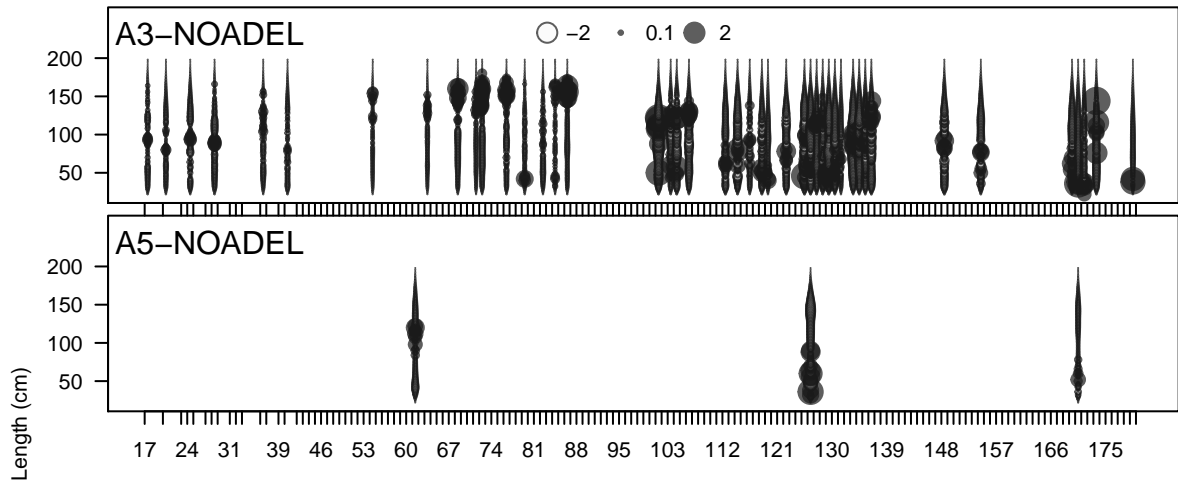


Length (cm)





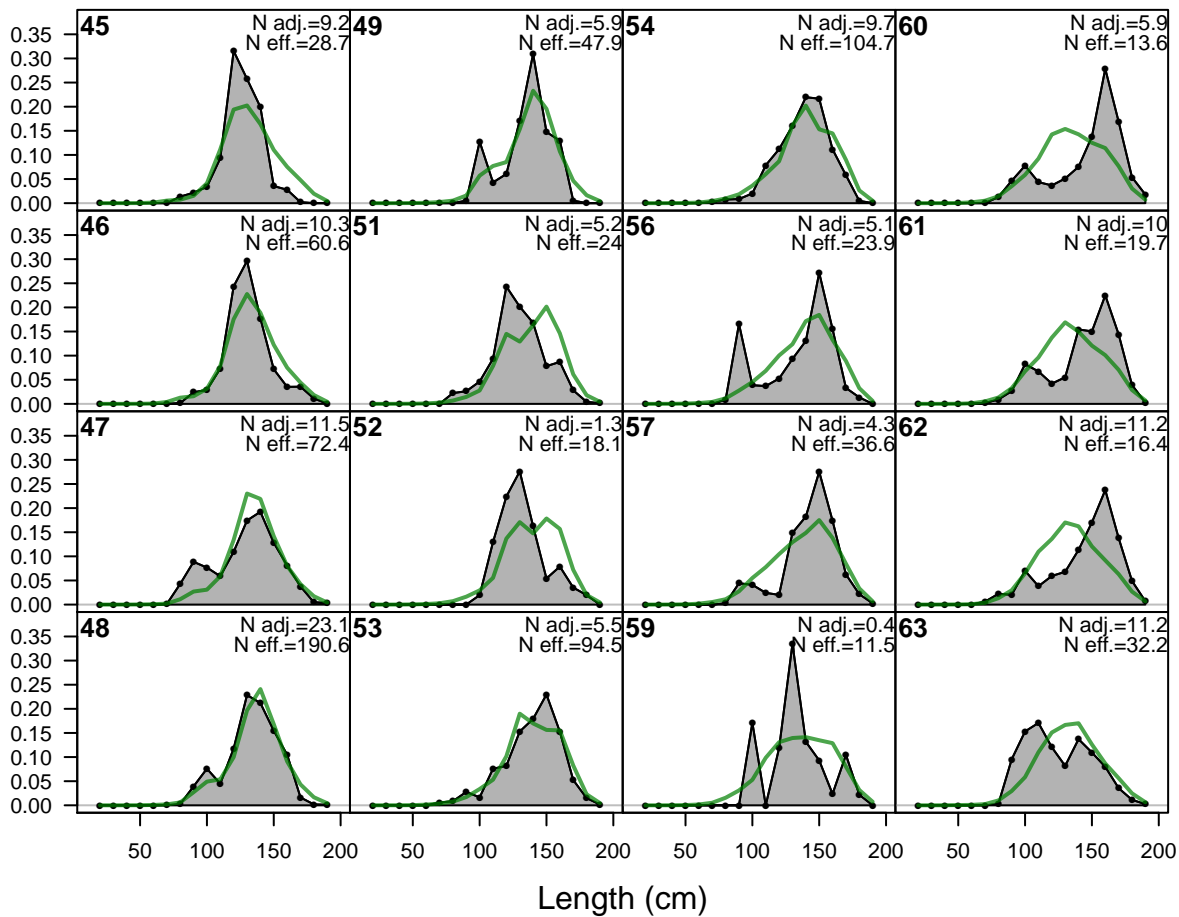




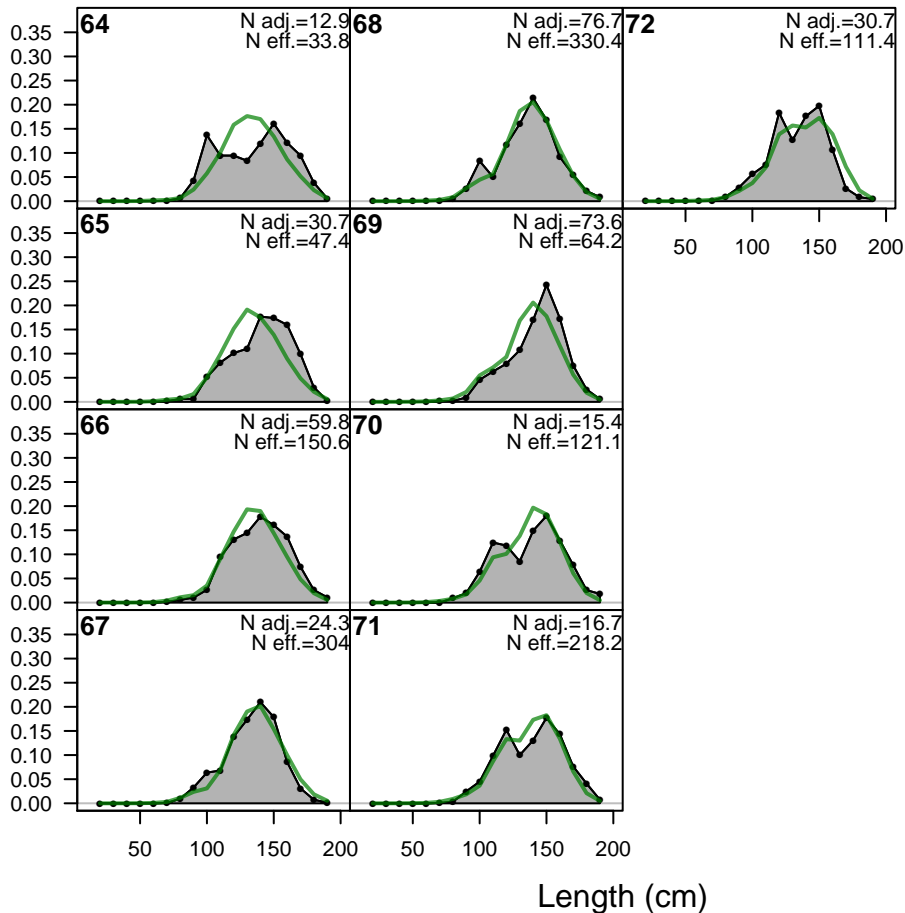
Year

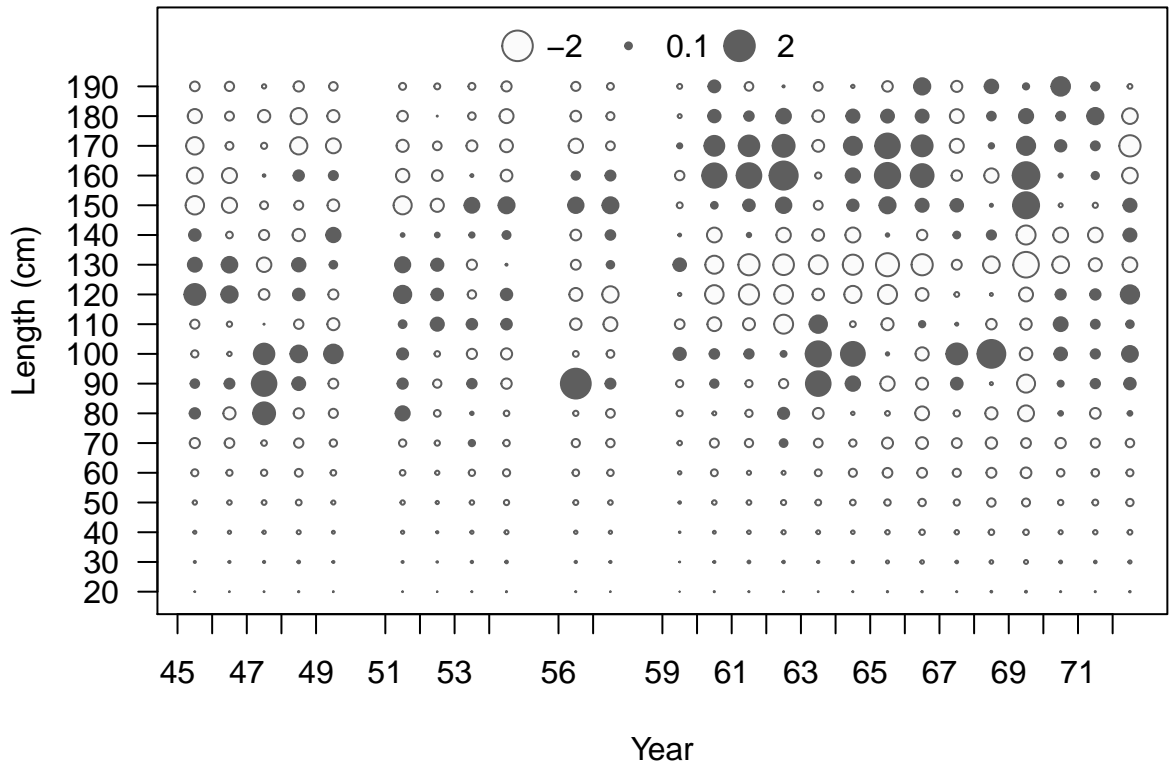


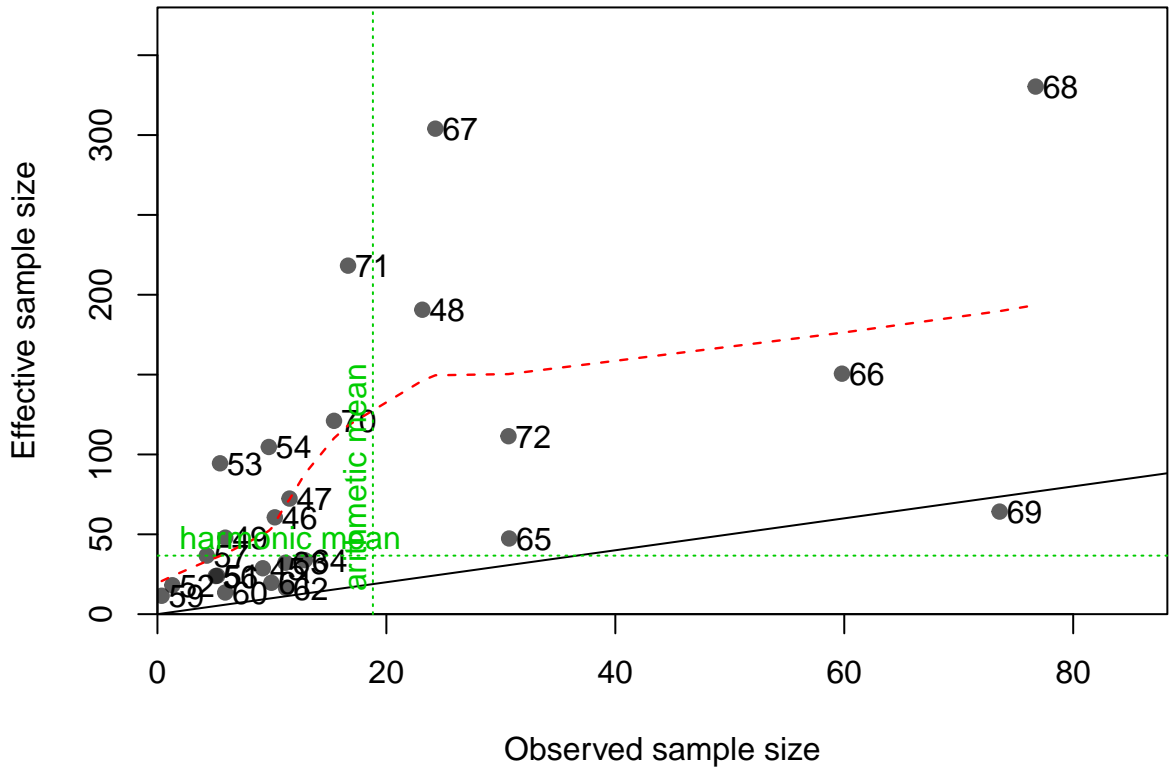
Proportion



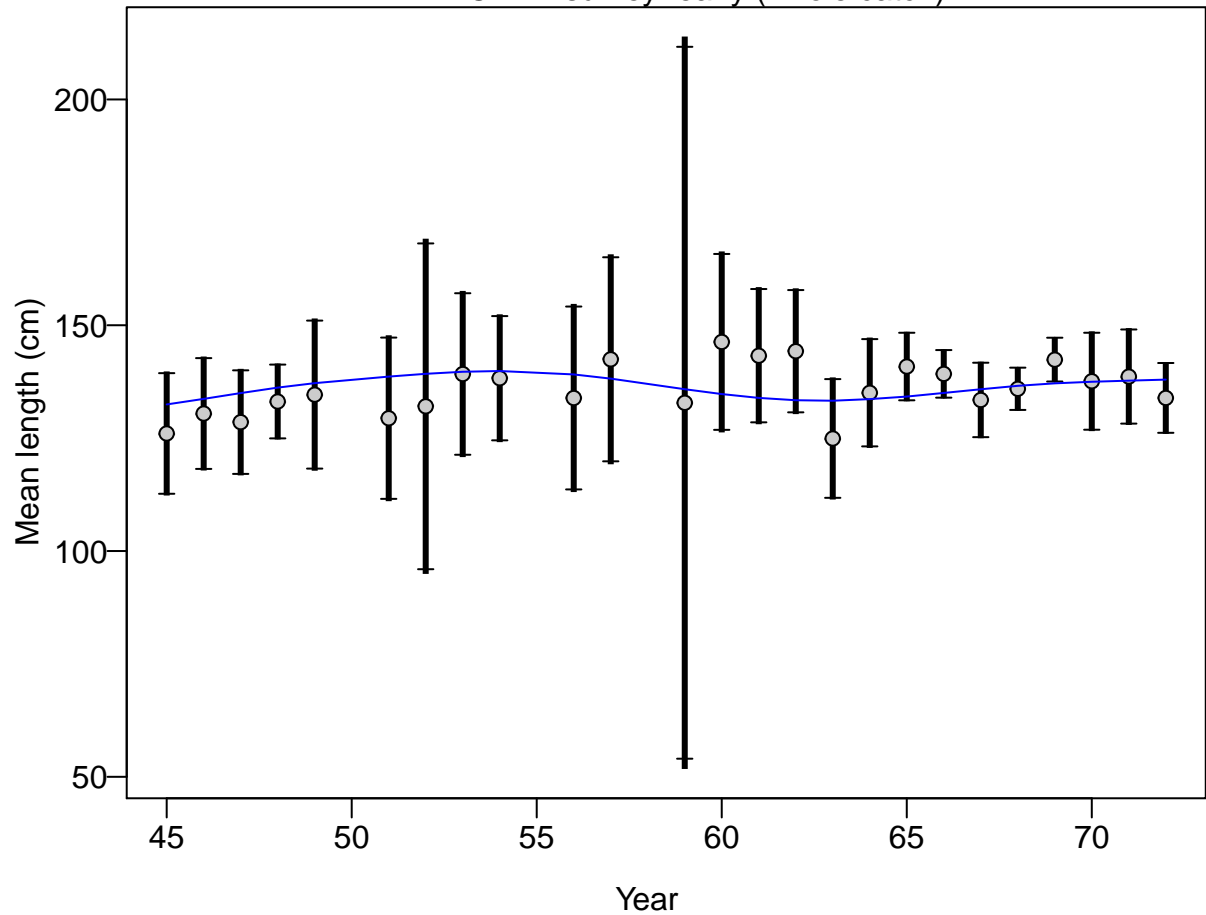
Proportion



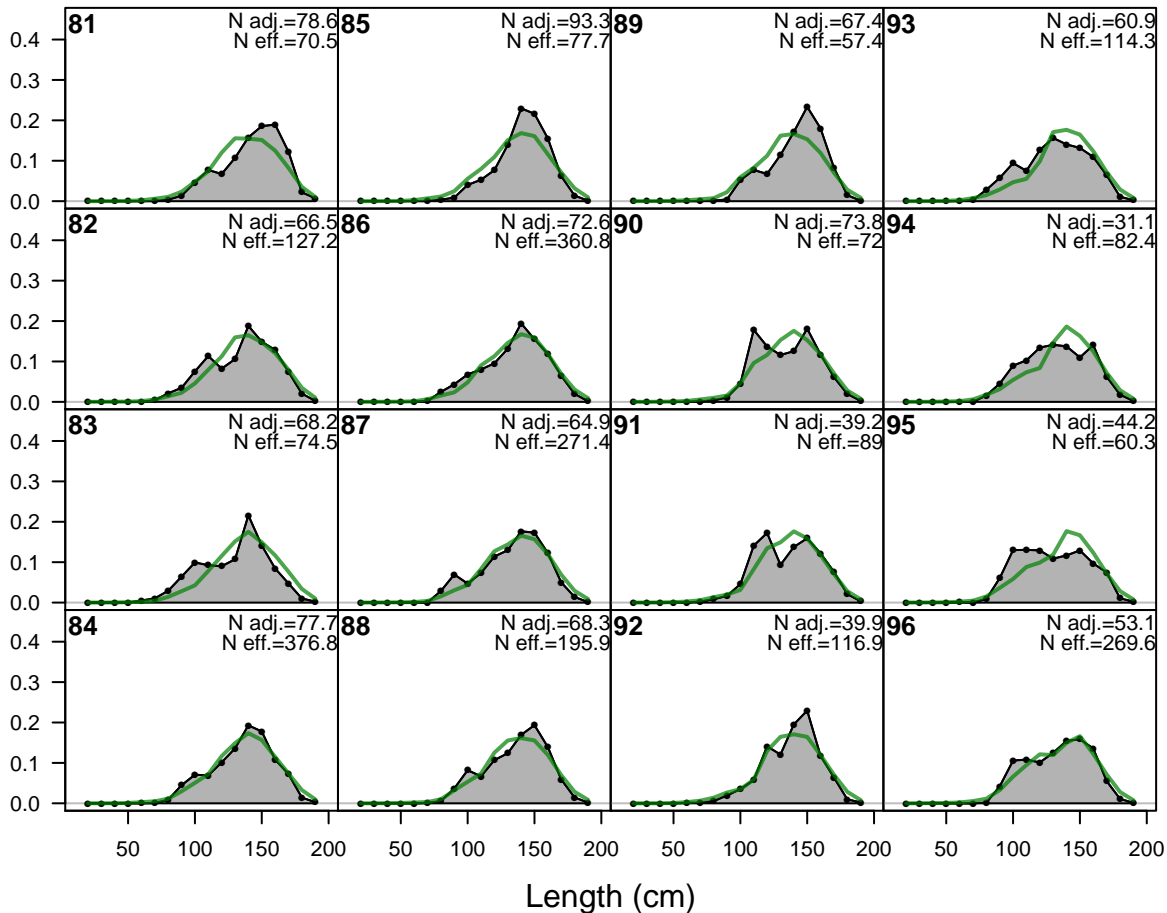




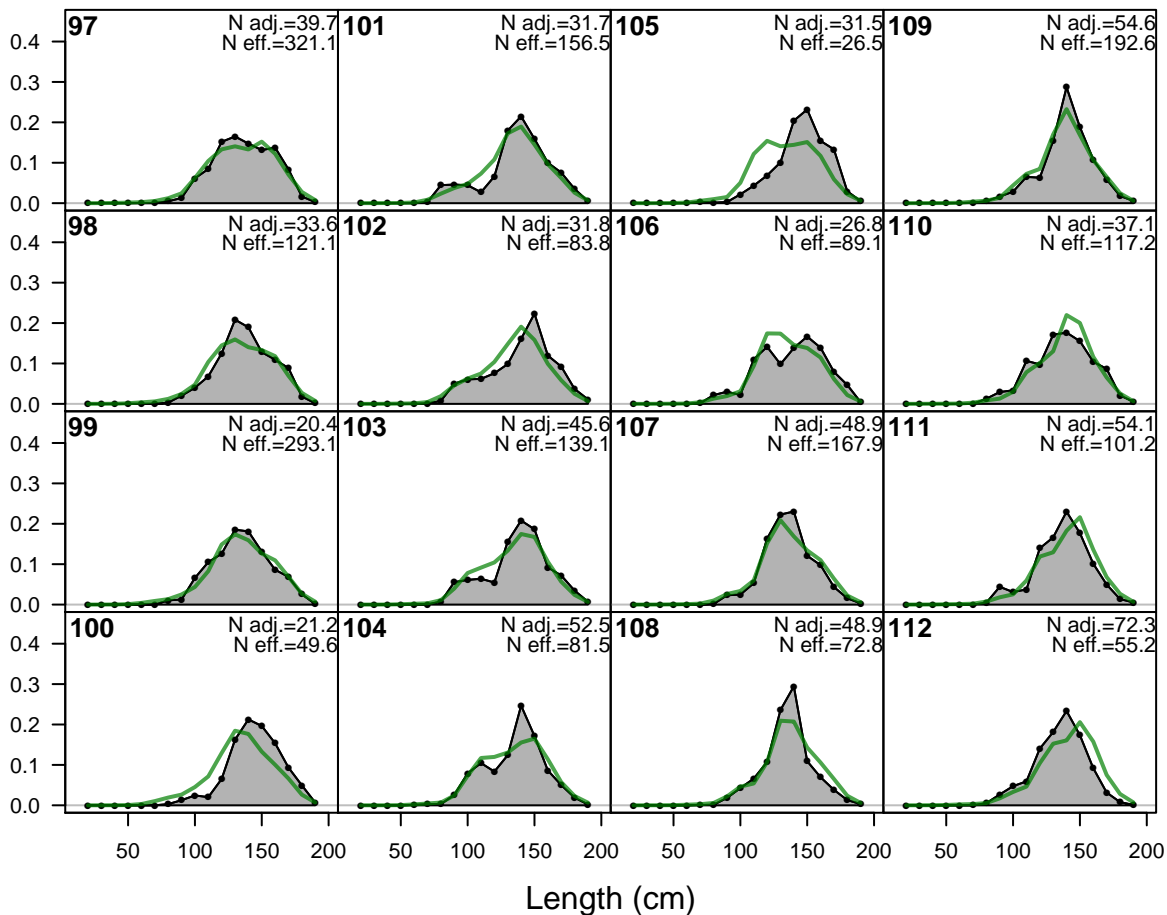
EPO-LL-survey-early (whole catch)



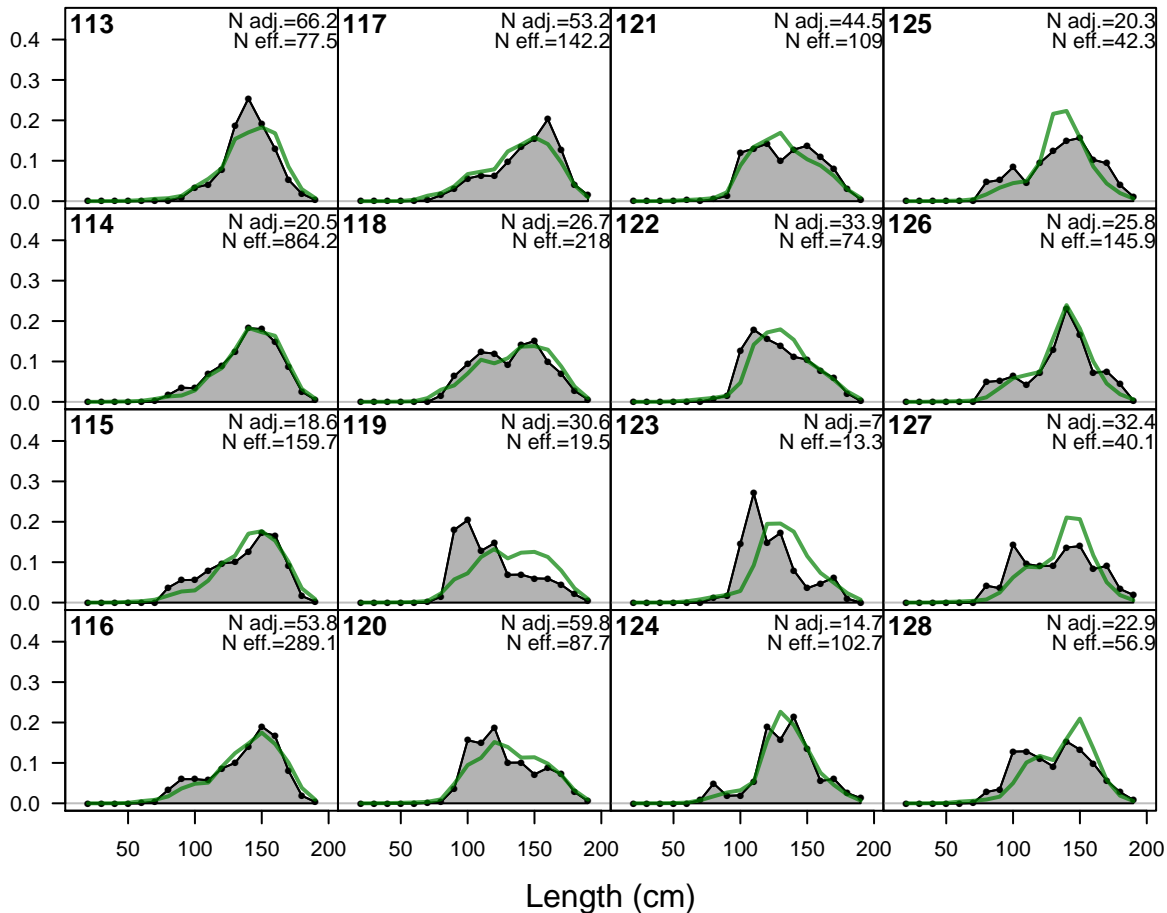
Proportion



Proportion

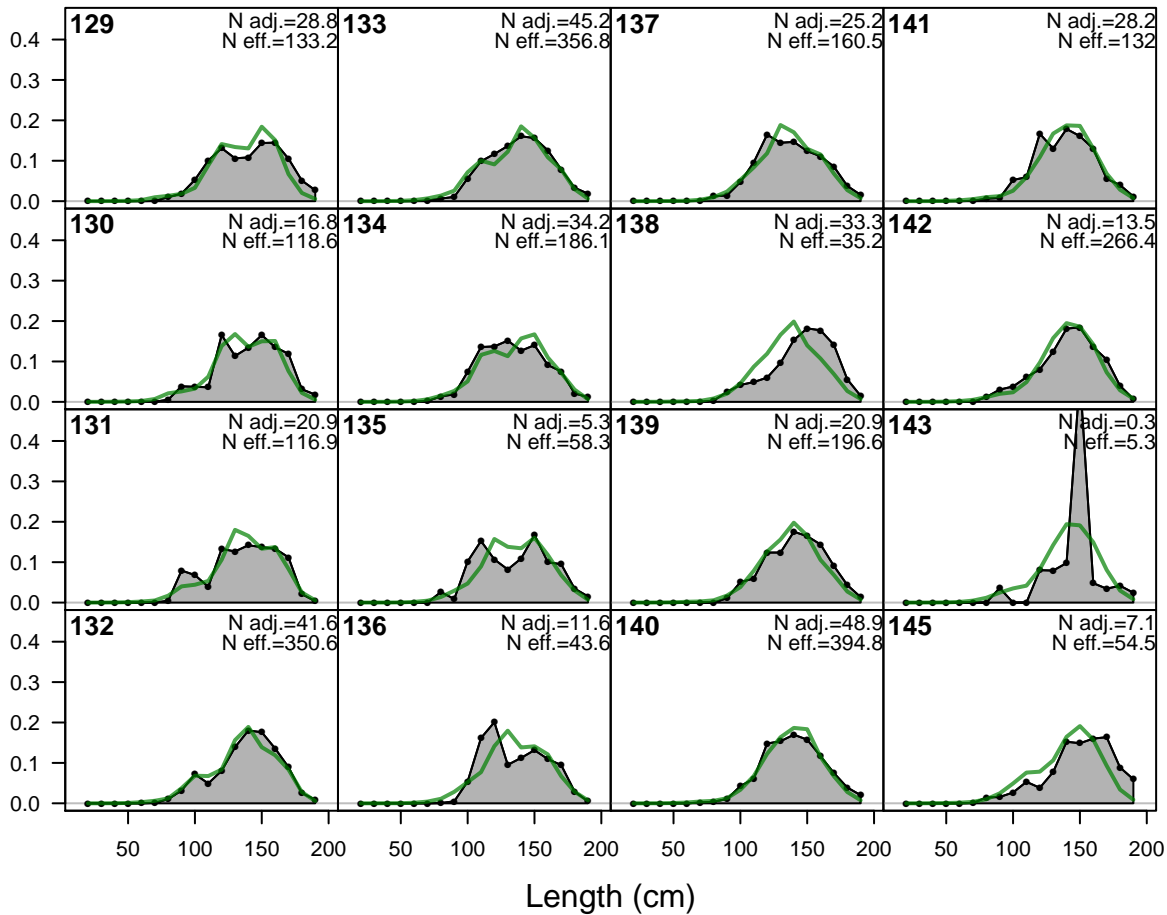


Proportion

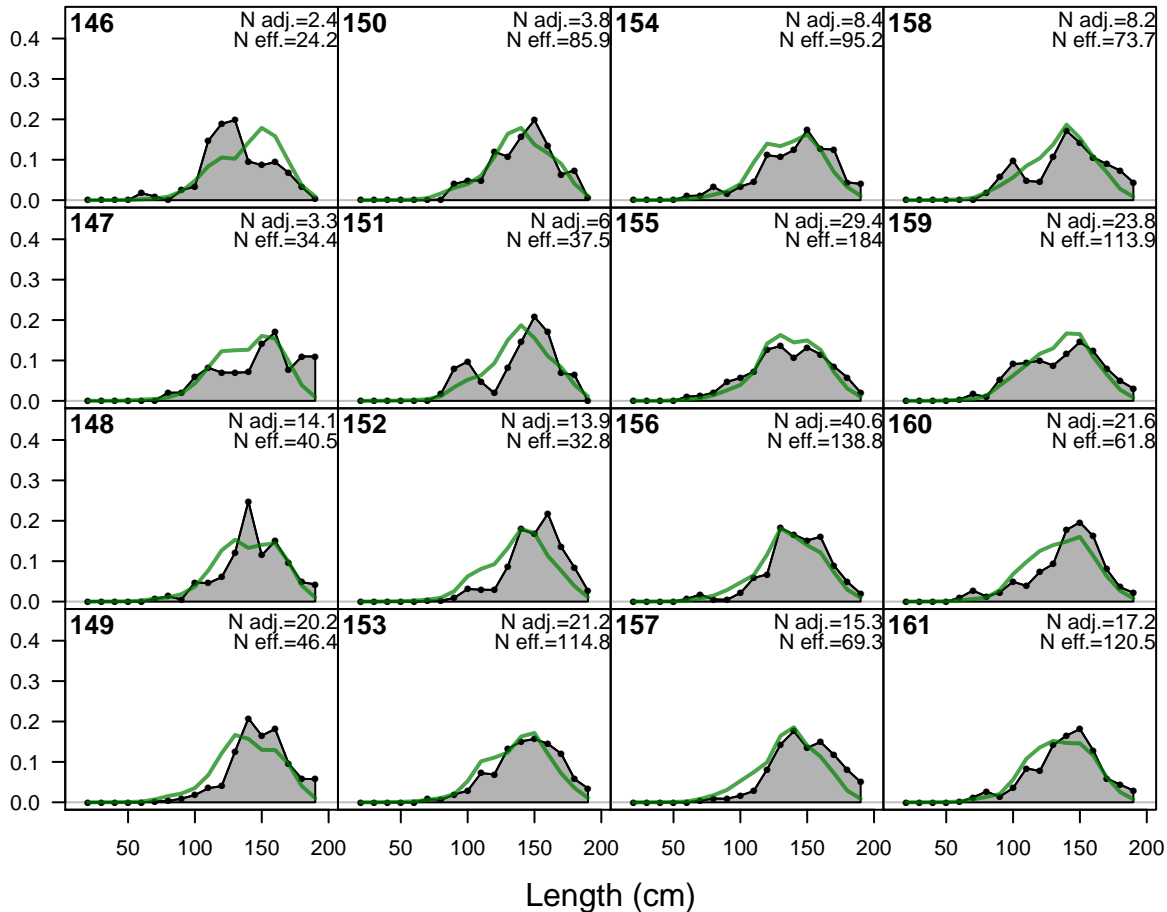




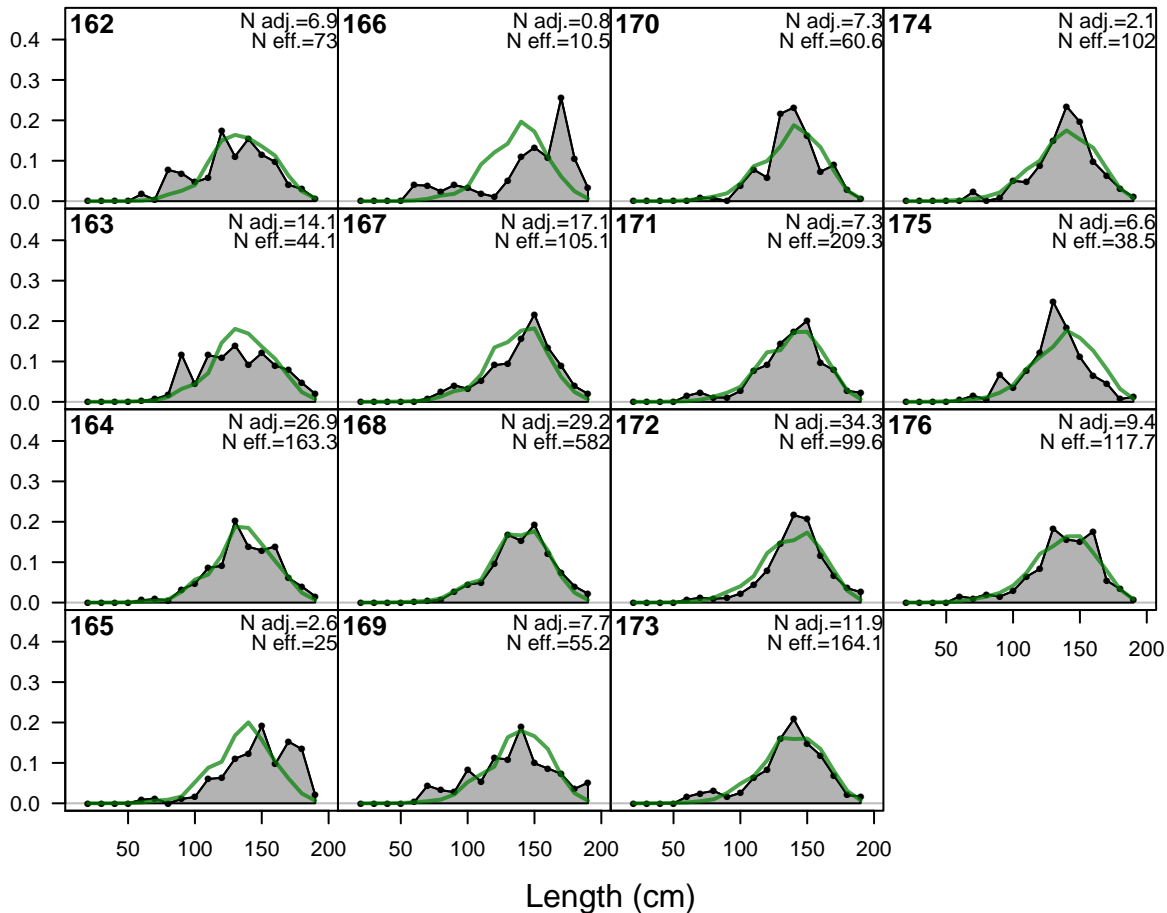
Proportion

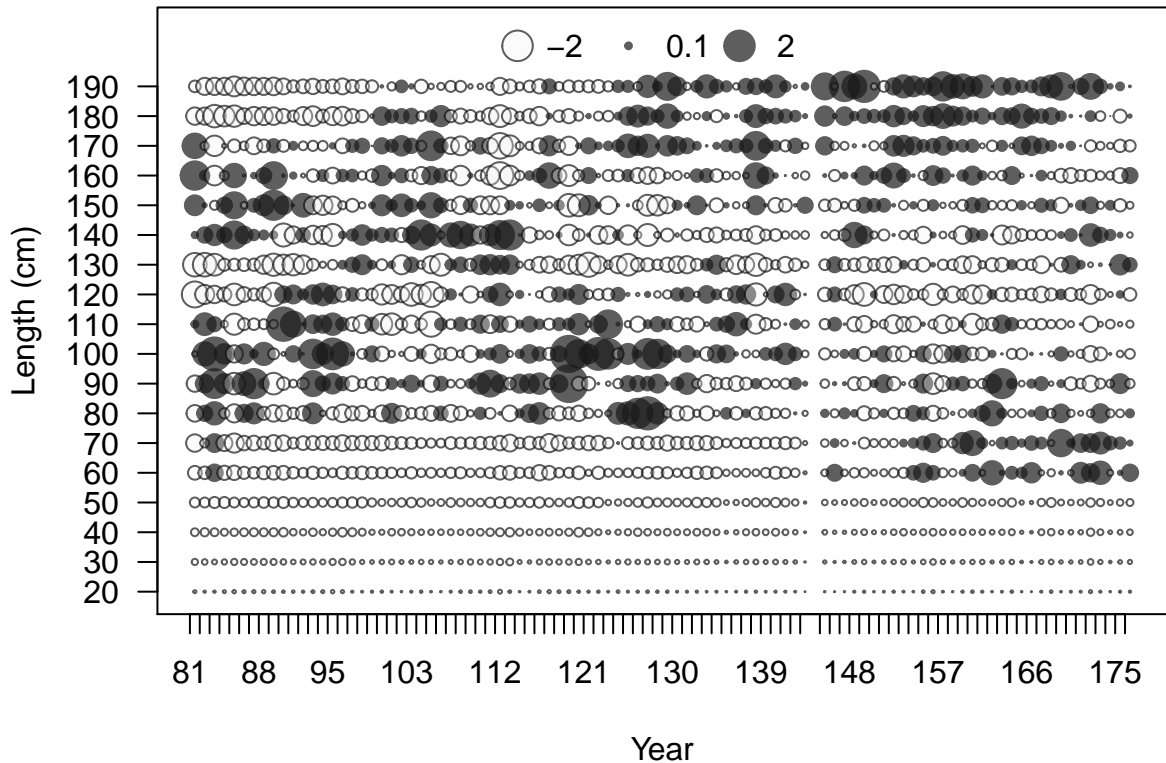


Proportion

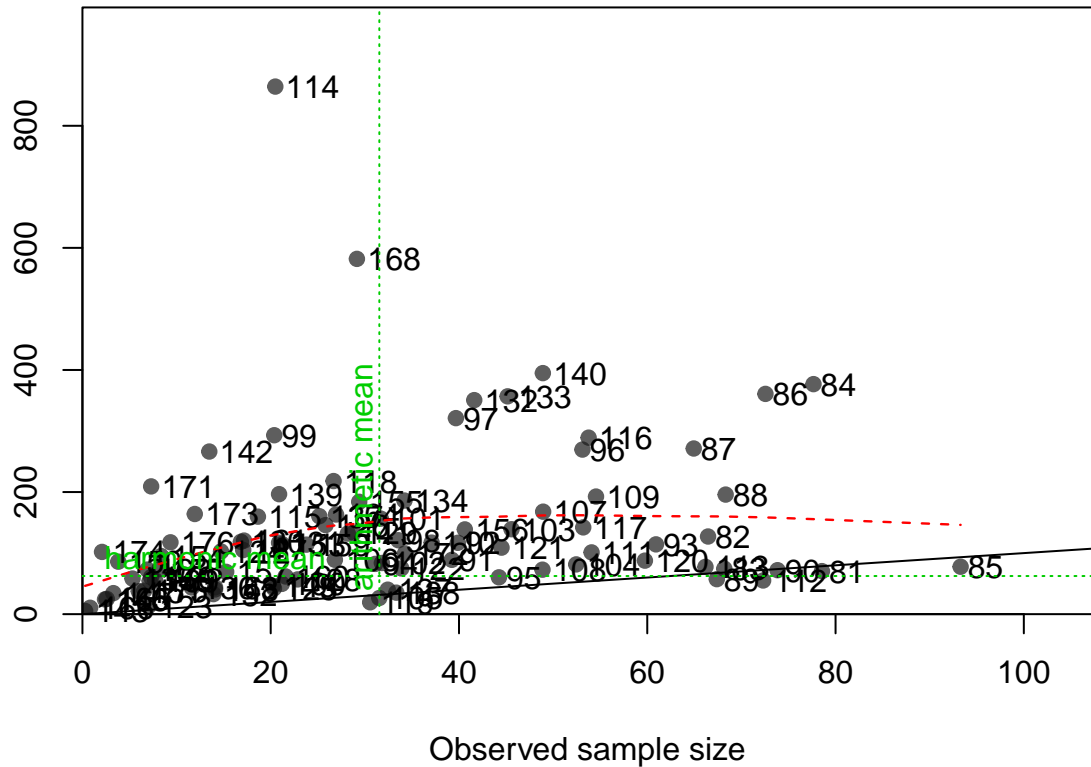


Proportion

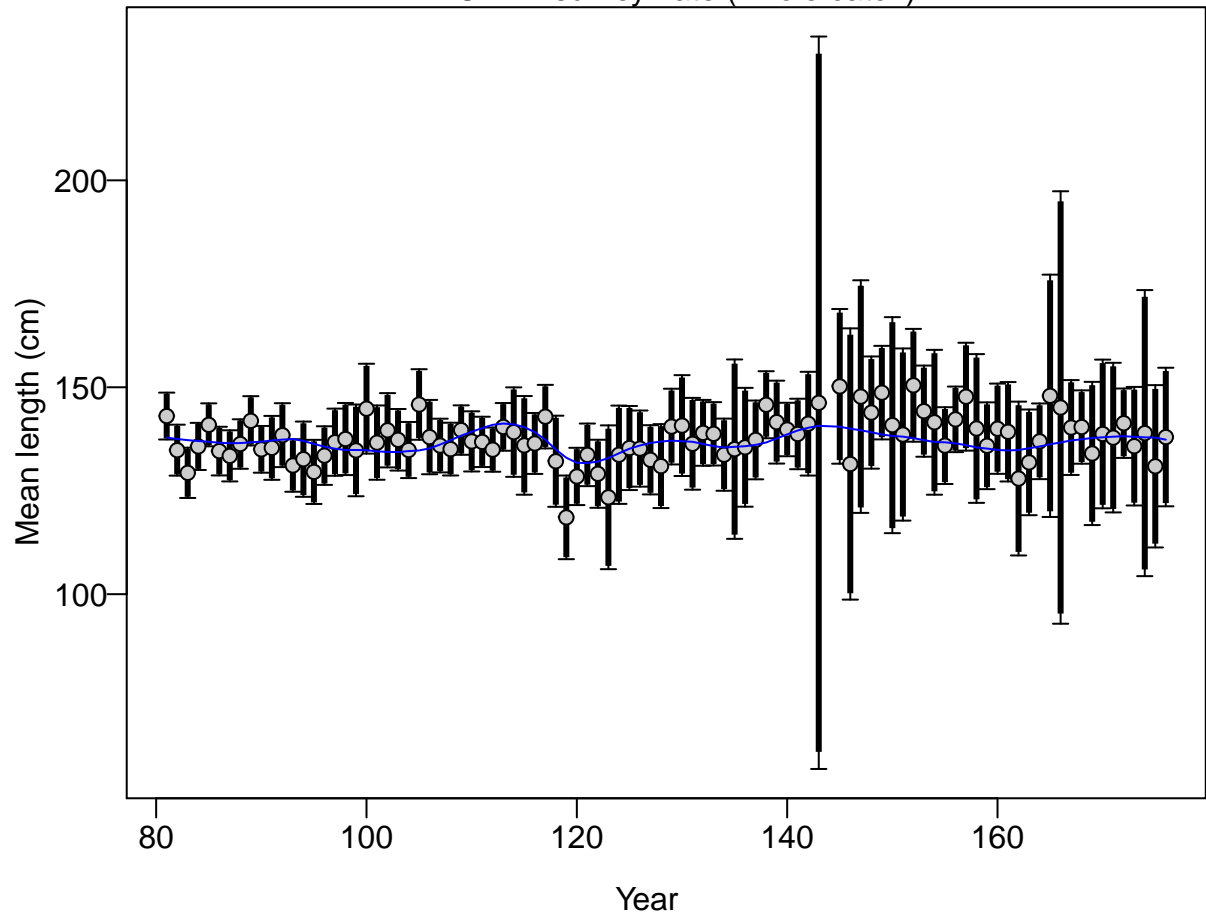




Effective sample size

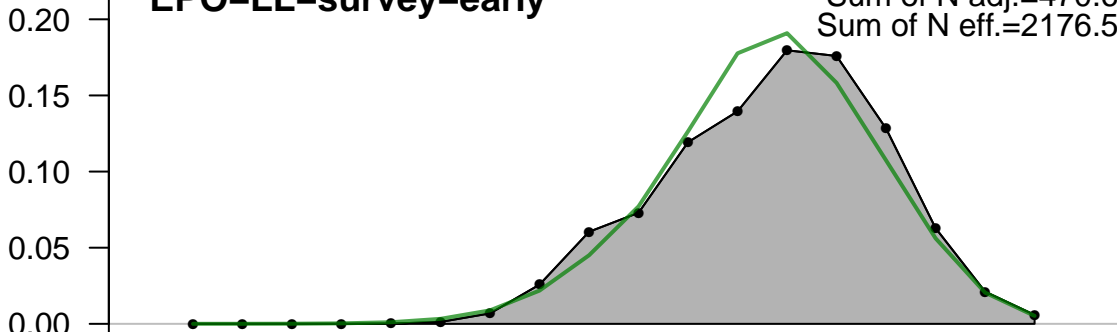


EPO-LL-survey-late (whole catch)



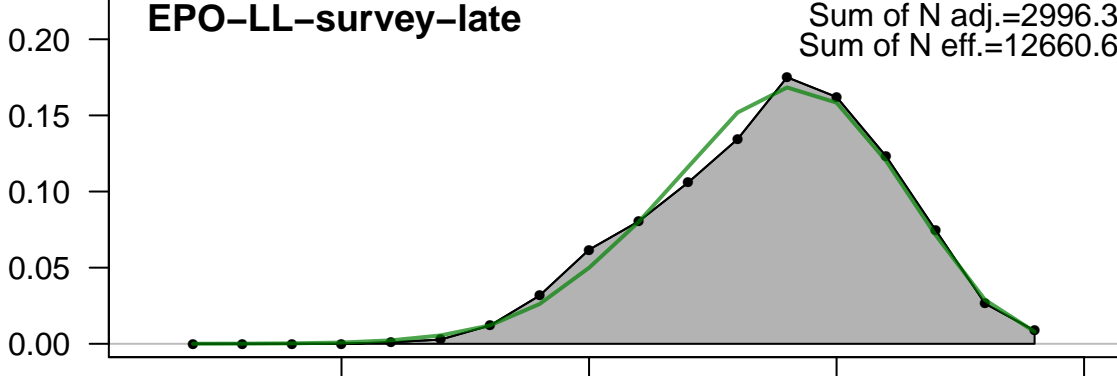
### EPO-LL-survey-early

Sum of N adj.=470.6  
Sum of N eff.=2176.5



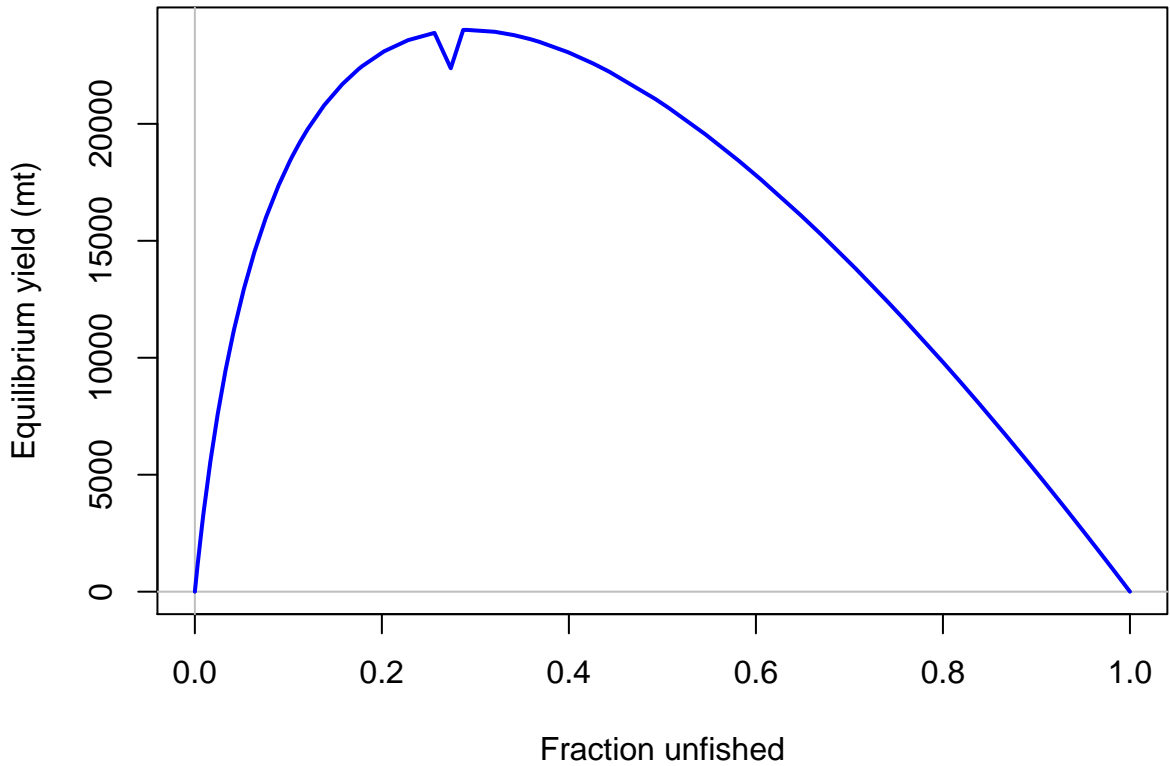
### EPO-LL-survey-late

Sum of N adj.=2996.3  
Sum of N eff.=12660.6

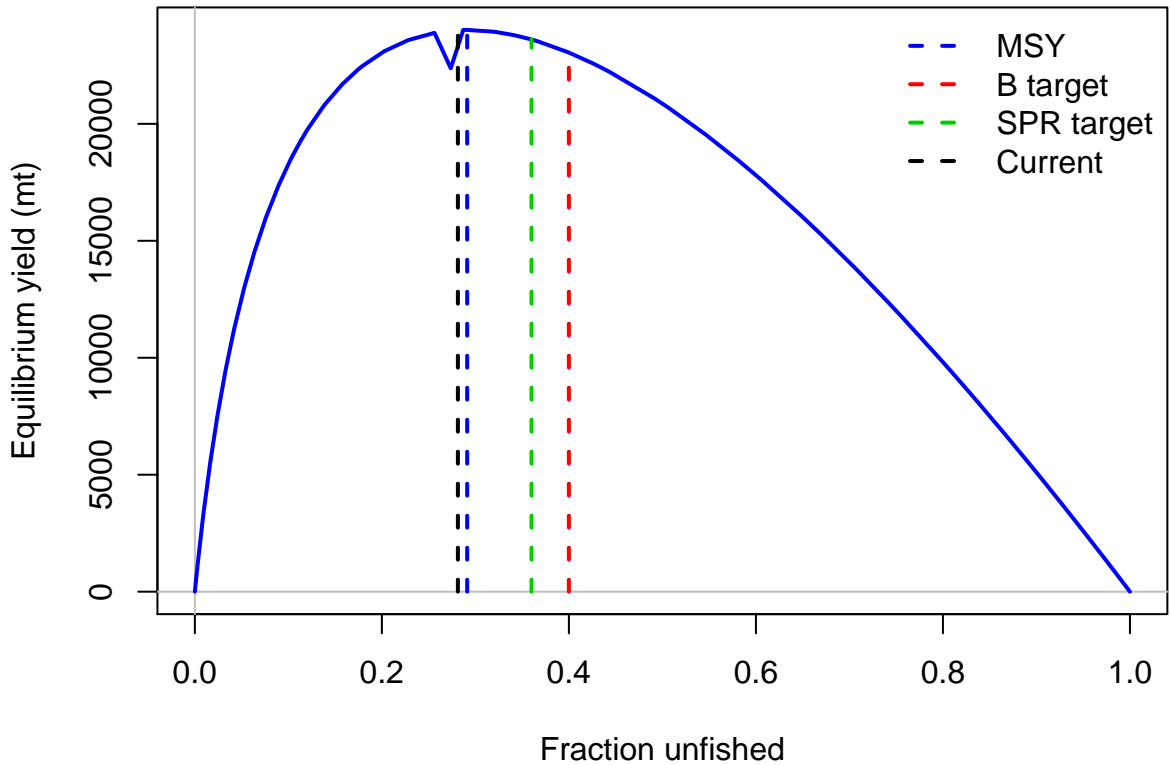


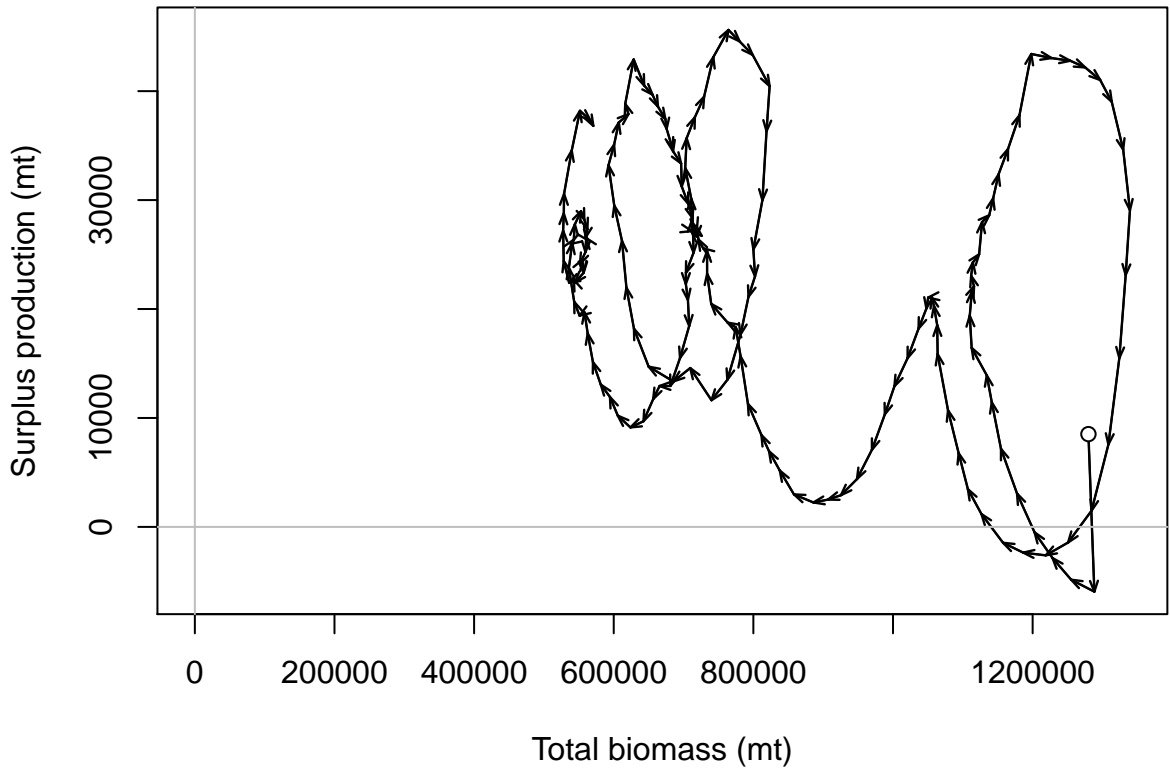
Length (cm)

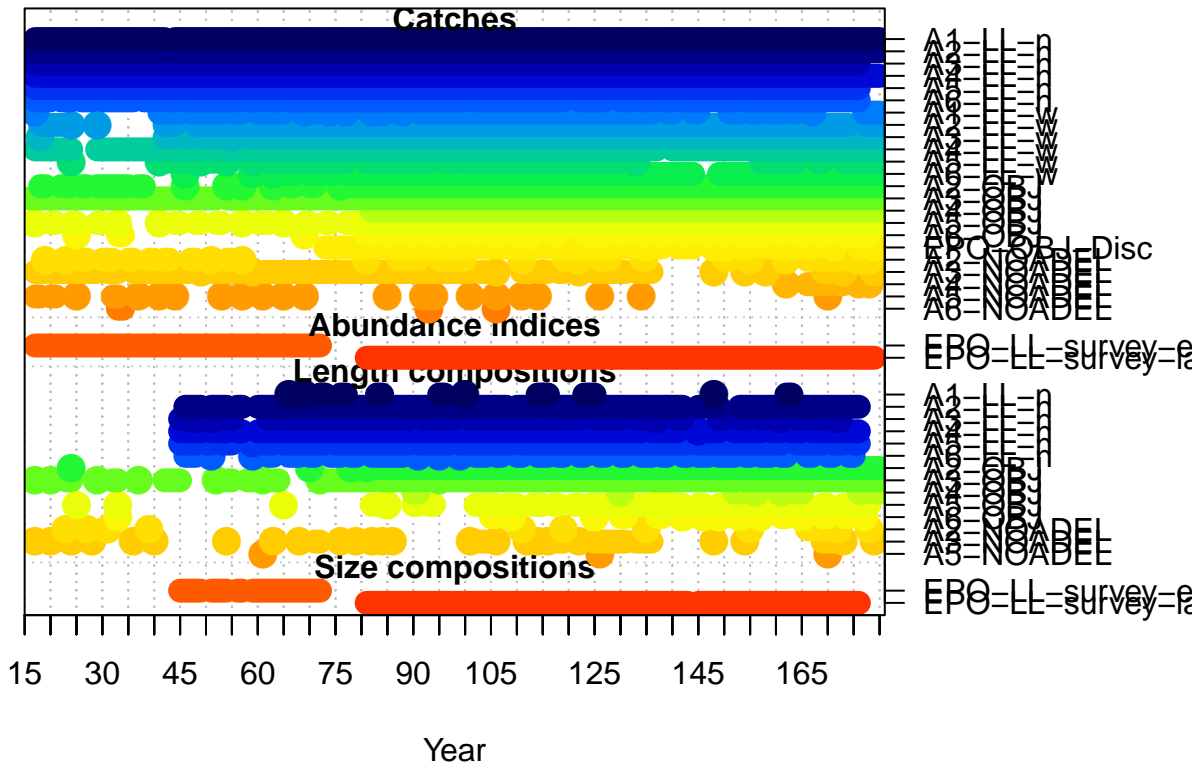
Proportion

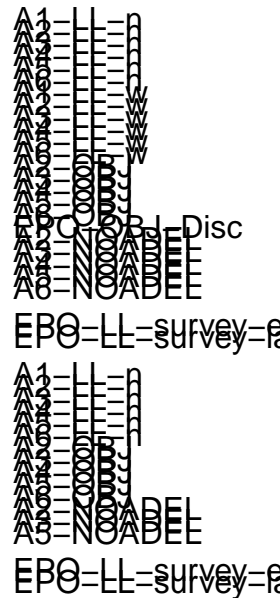
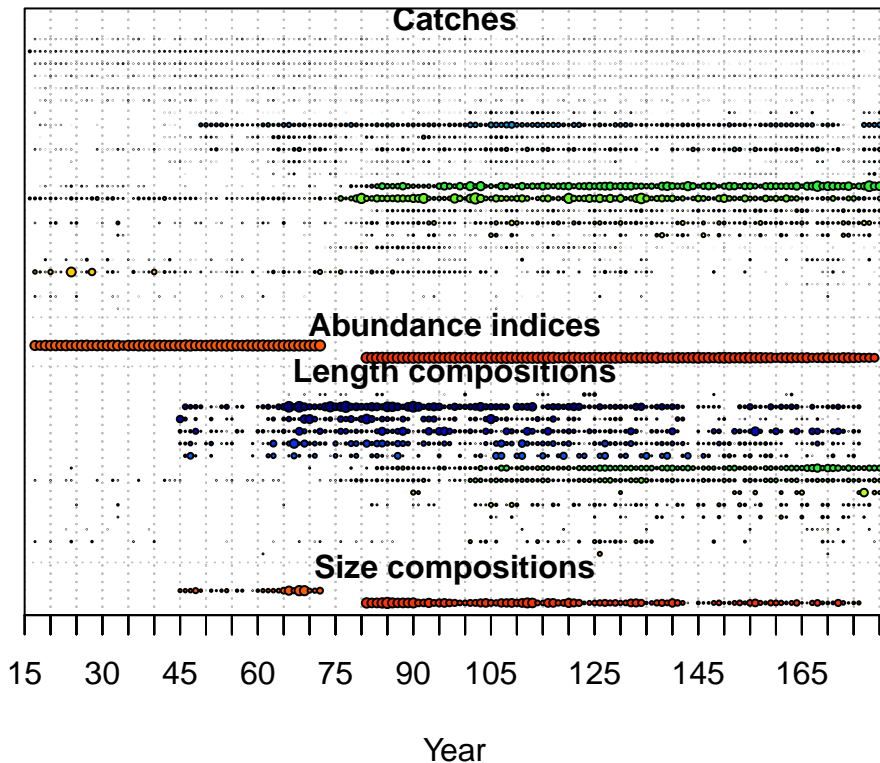


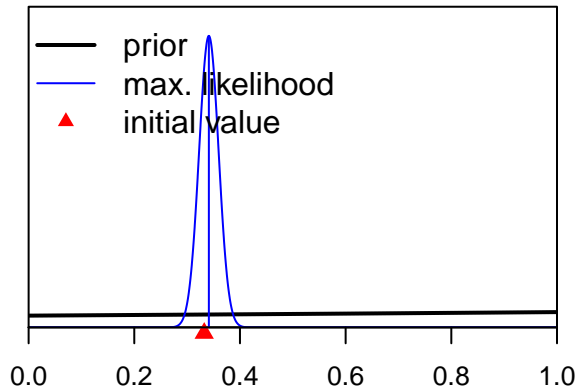
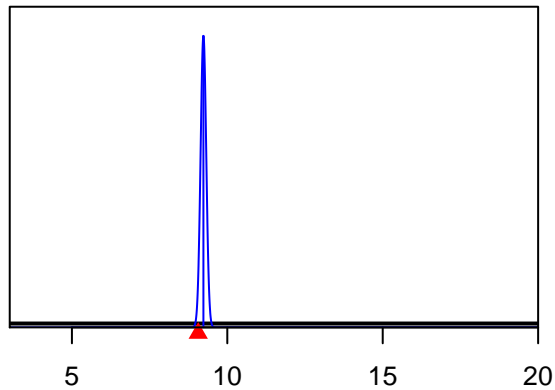
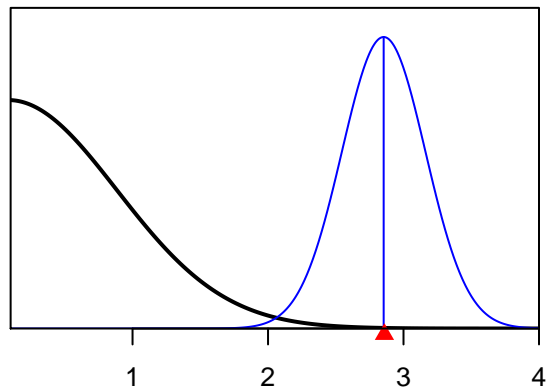
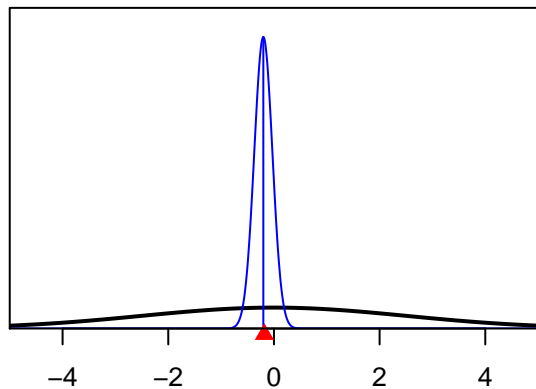






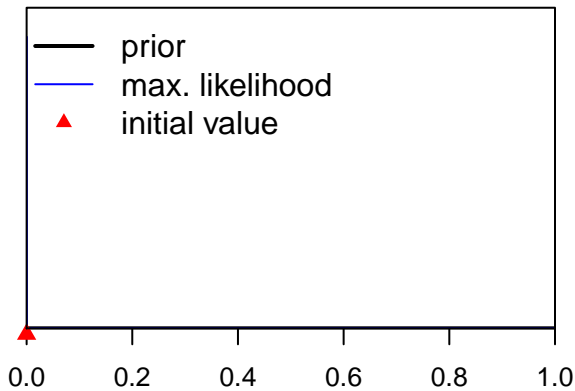




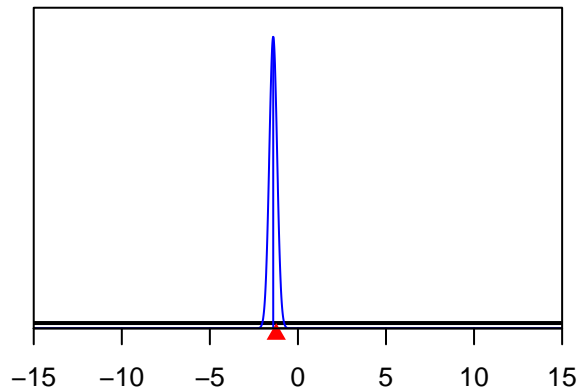
**NatM\_p\_4\_Fem\_GP\_1****SR\_LN(R0)****SD\_young\_Fem\_GP\_1****SR\_regime\_BLK1add\_16**

Parameter value

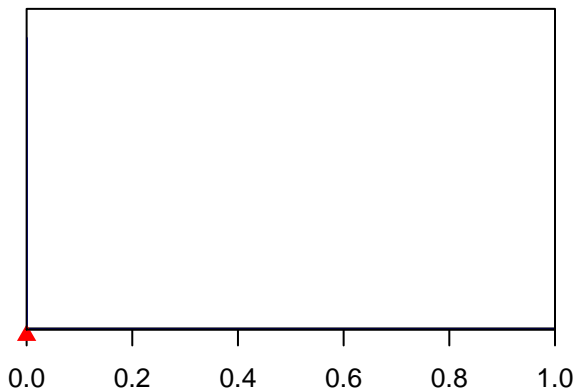
InitF\_seas\_1\_flt\_2A2-LL-n



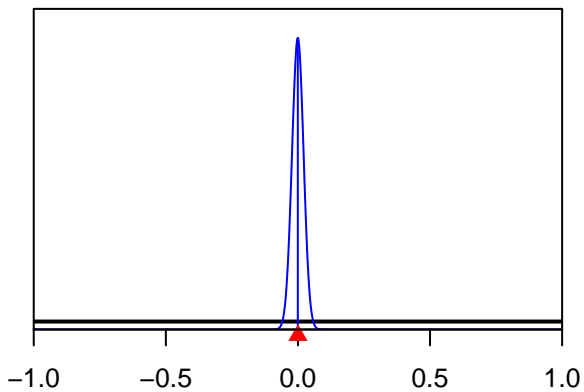
LnQ\_base\_EPO-LL-survey-early(24)



InitF\_seas\_1\_flt\_14A3-OBJ

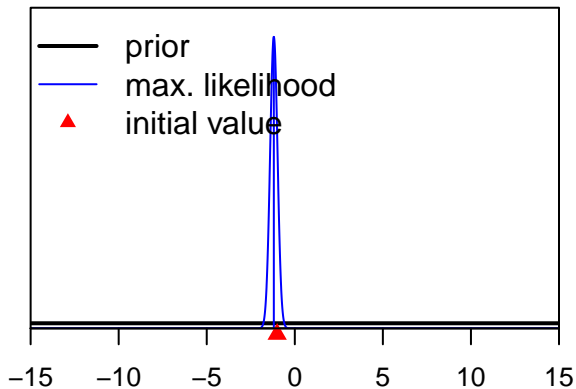


Q\_extraSD\_EPO-LL-survey-early(24)

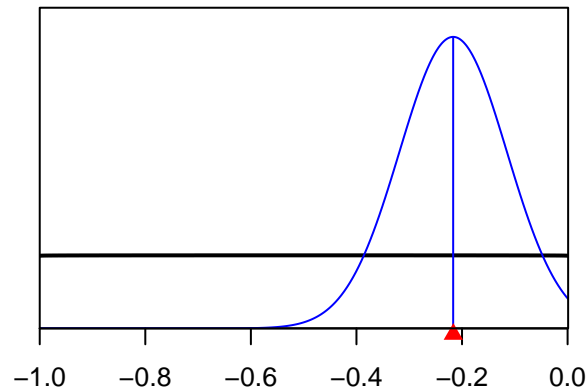


Parameter value

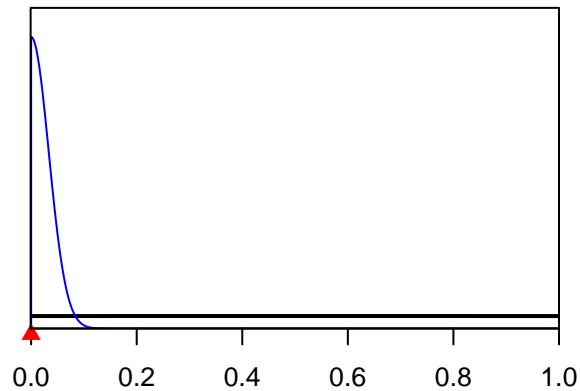
LnQ\_base\_EPO-LL-survey-late(25)



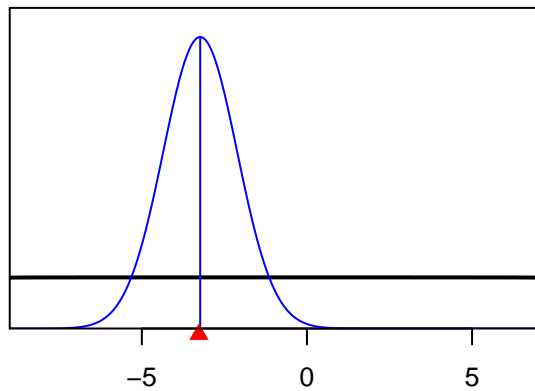
SizeSpline\_GradHi\_A1-LL-n(1)



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

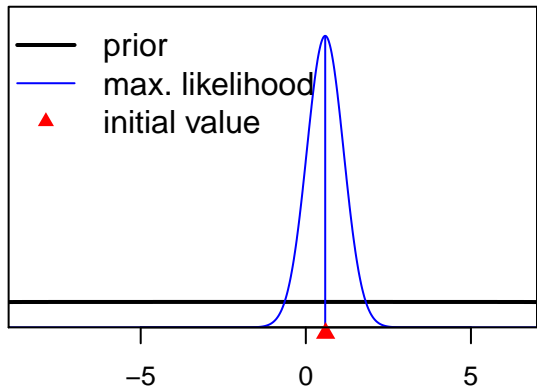


SizeSpline\_Val 2\_A1-LL-n(1)

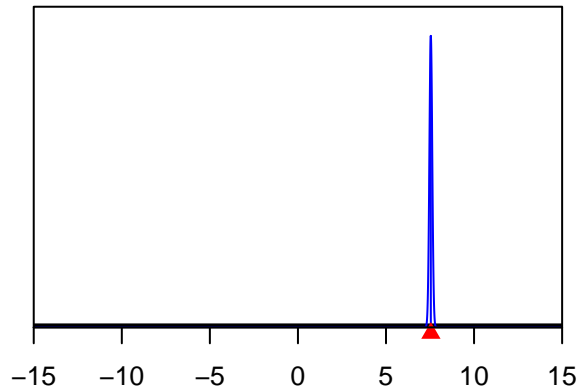


Parameter value

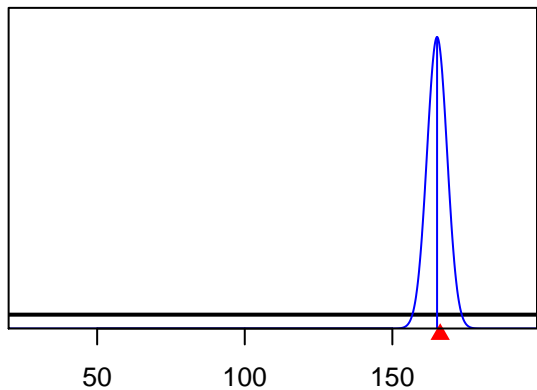
SizeSpline\_Val\_4\_A1-LL-n(1)



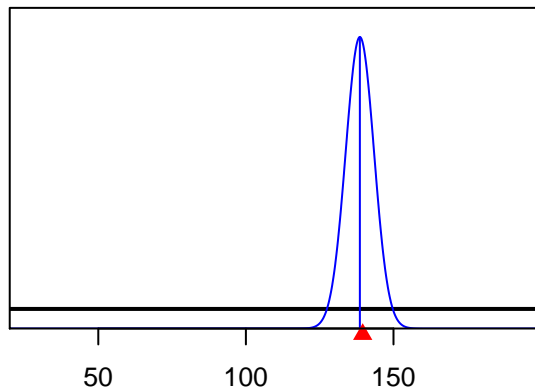
Size\_DbIN\_ascend\_se\_A2-LL-n(2)



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



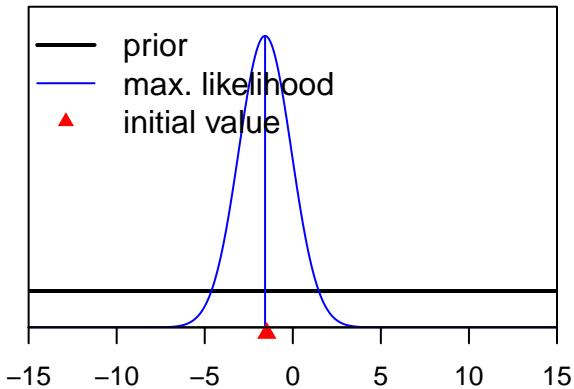
Size\_DbIN\_peak\_A3-LL-n(3)



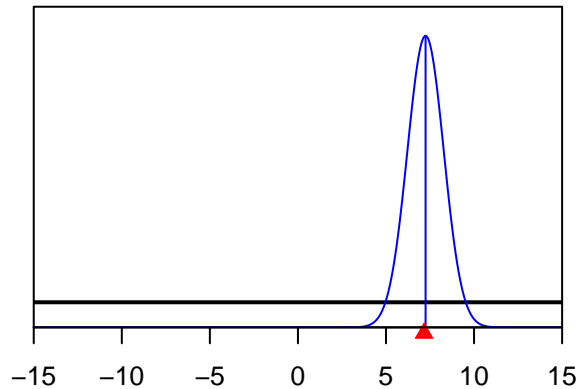
Parameter value



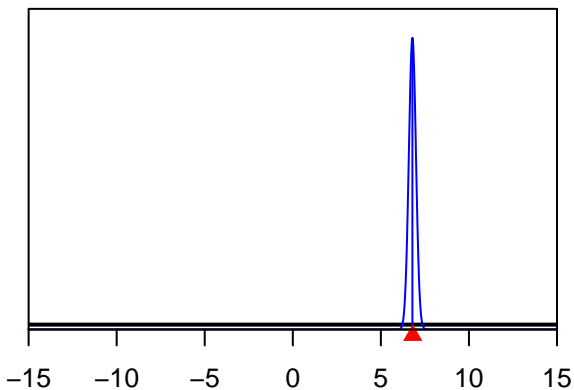
Size\_DbIN\_top\_logit\_A3-LL-n(3)



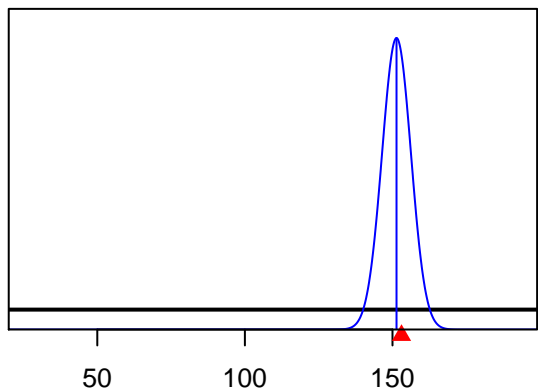
Size\_DbIN\_descend\_se\_A3-LL-n(3)



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

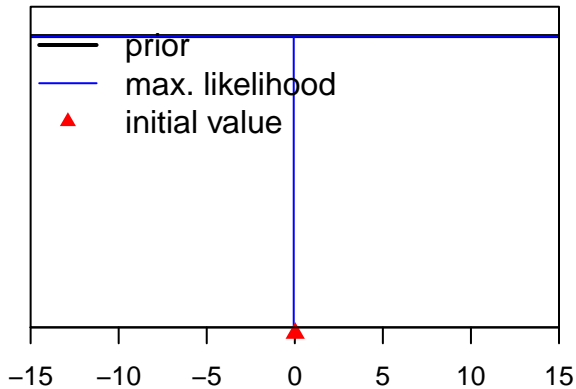


Size\_DbIN\_peak\_A4-LL-n(4)

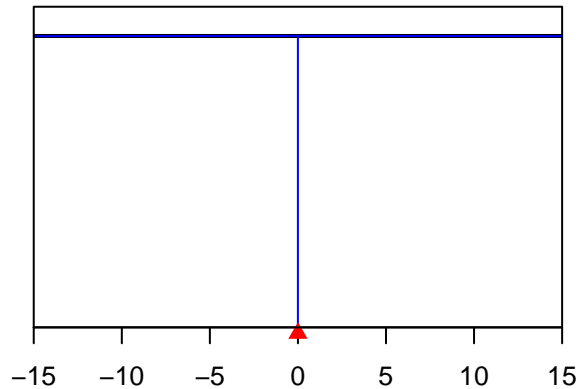


Parameter value

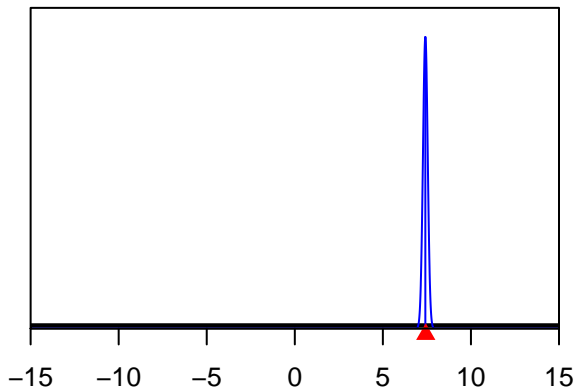
Size\_DbIN\_top\_logit\_A4-LL-n(4)



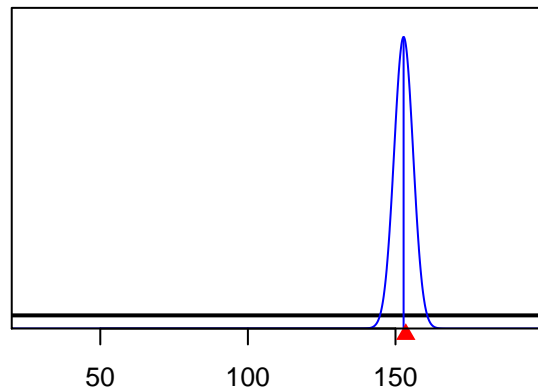
Size\_DbIN\_descend\_se\_A4-LL-n(4)



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

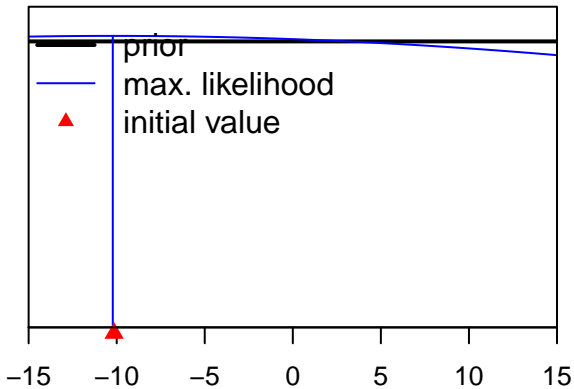


Size\_DbIN\_peak\_A5-LL-n(5)

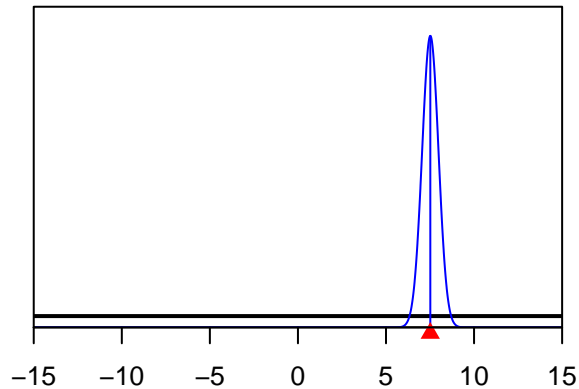


Parameter value

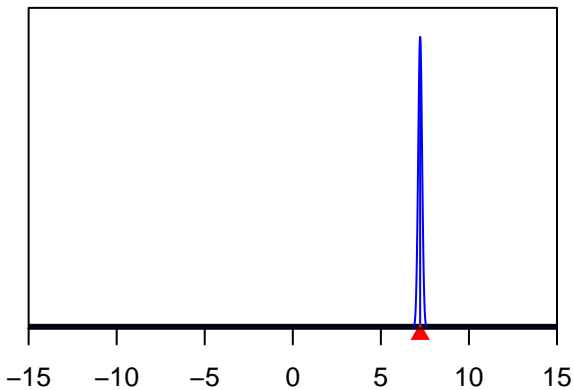
Size\_DbIN\_top\_logit\_A5-LL-n(5)



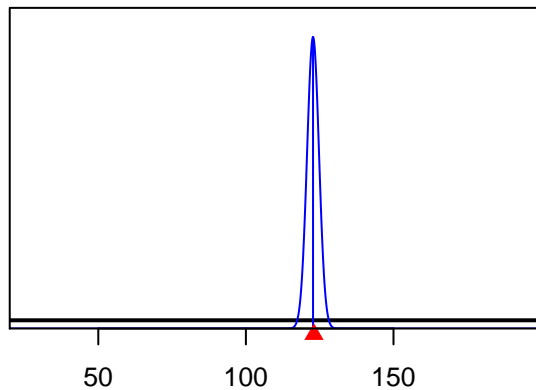
Size\_DbIN\_descend\_se\_A5-LL-n(5)



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

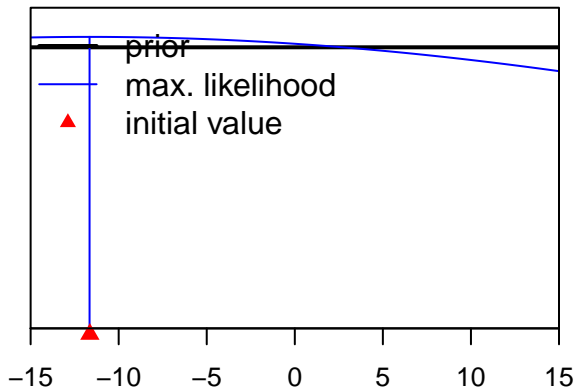


Size\_DbIN\_peak\_A6-LL-n(6)

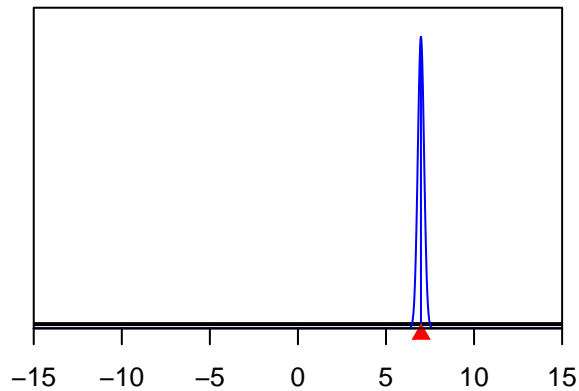


Parameter value

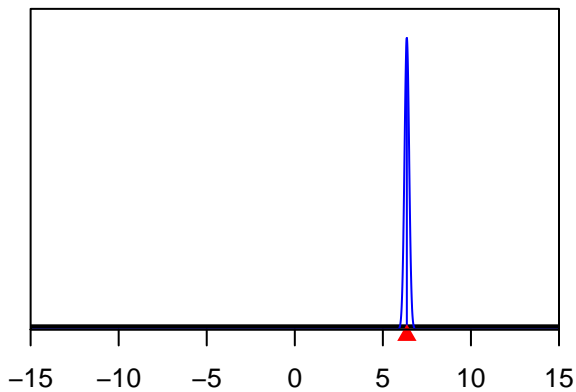
Size\_DbIN\_top\_logit\_A6-LL-n(6)



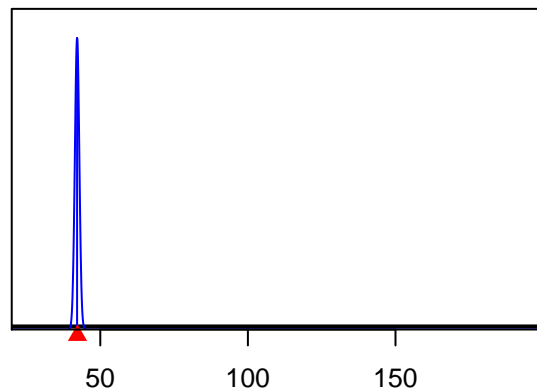
Size\_DbIN\_descend\_se\_A6-LL-n(6)



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

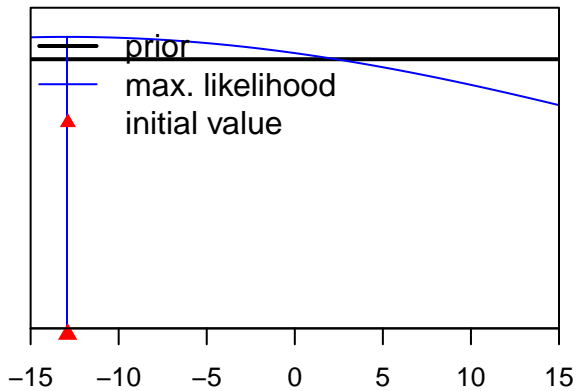


Size\_DbIN\_peak\_A2-OBJ(13)

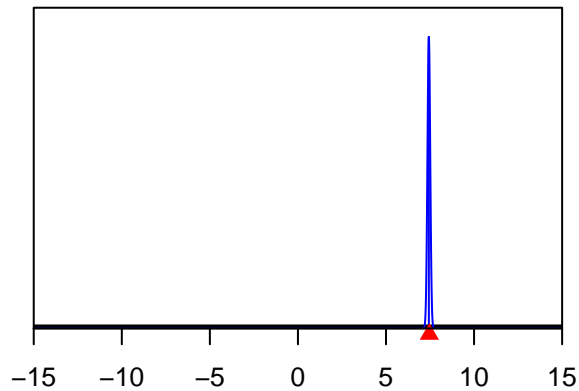


Parameter value

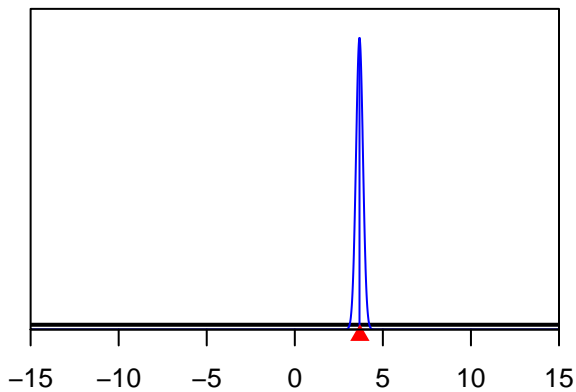
Size\_DbIN\_top\_logit\_A2-OBJ(13)



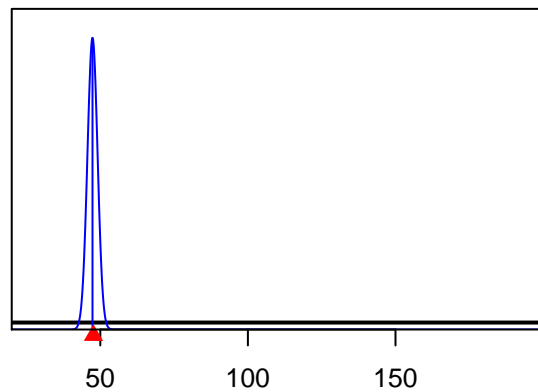
Size\_DbIN\_descend\_se\_A2-OBJ(13)



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



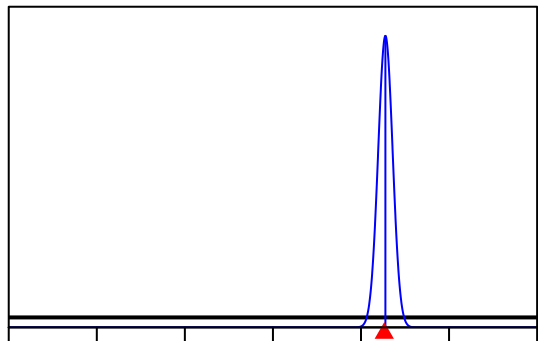
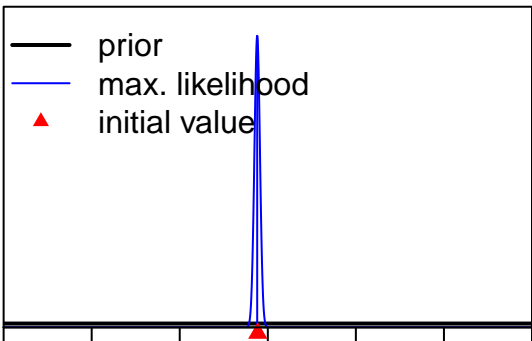
Size\_DbIN\_peak\_A3-OBJ(14)



Parameter value

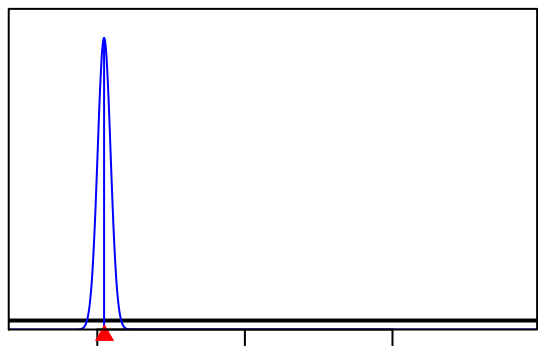
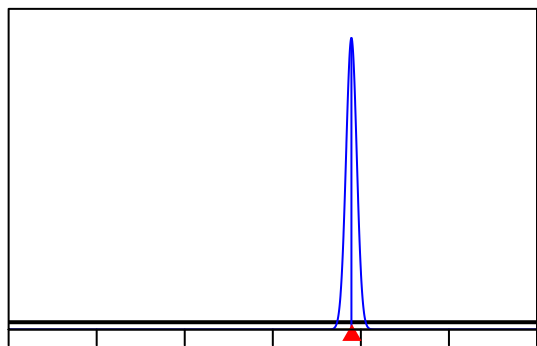
Size\_DbIN\_top\_logit\_A3-OBJ(14)

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



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

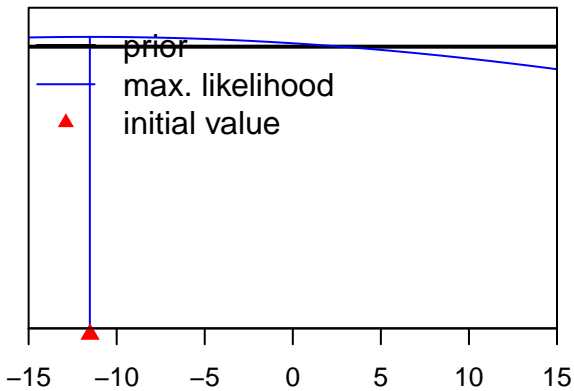
Size\_DbIN\_peak\_A4-OBJ(15)



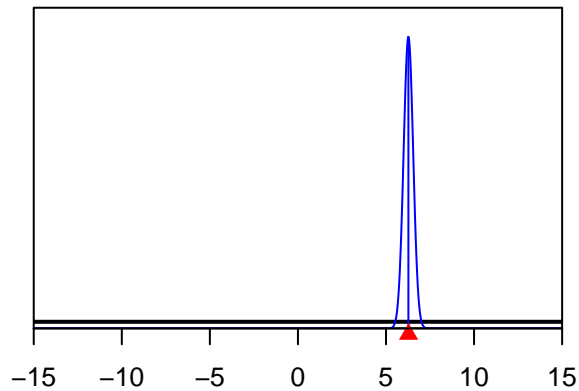
Density

Parameter value

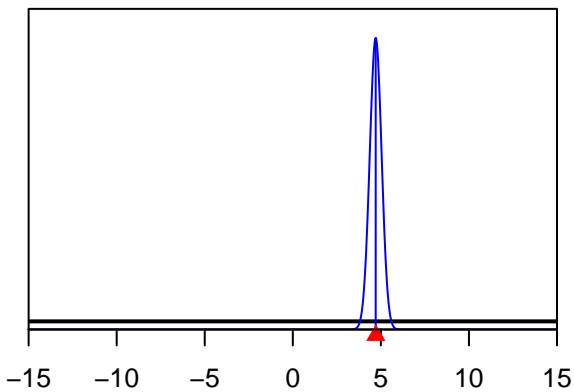
Size\_DbIN\_top\_logit\_A4-OBJ(15)



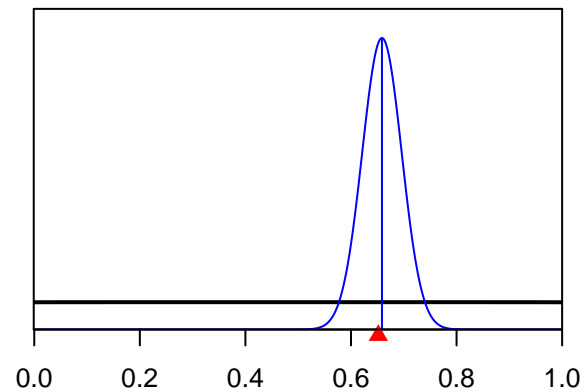
Size\_DbIN\_descend\_se\_A4-OBJ(15)



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

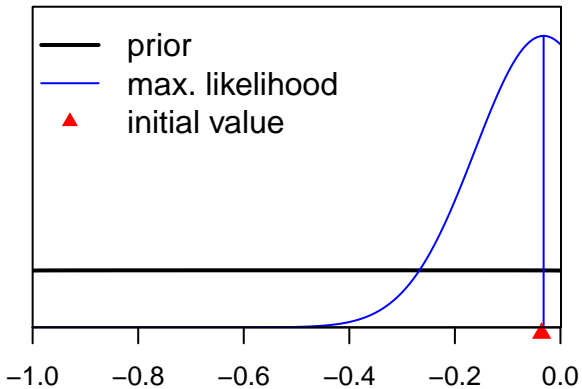


SizeSpline\_GradLo\_A5-OBJ(16)

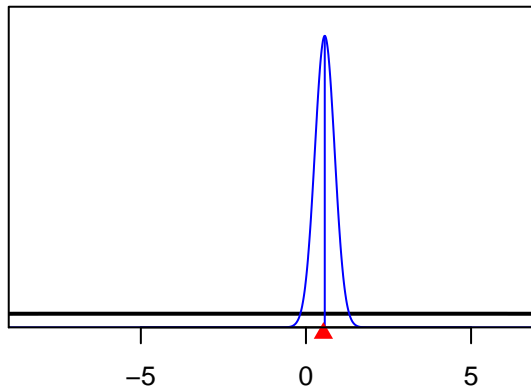


Parameter value

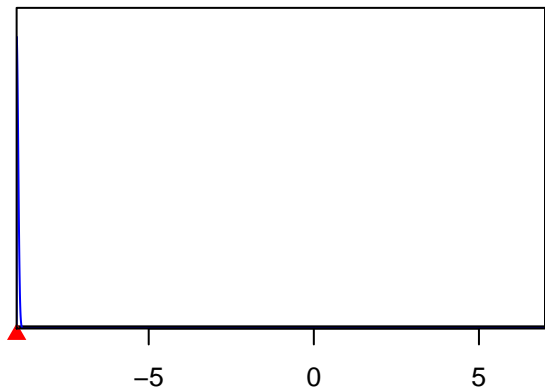
SizeSpline\_GradHi\_A5-Obj(16)



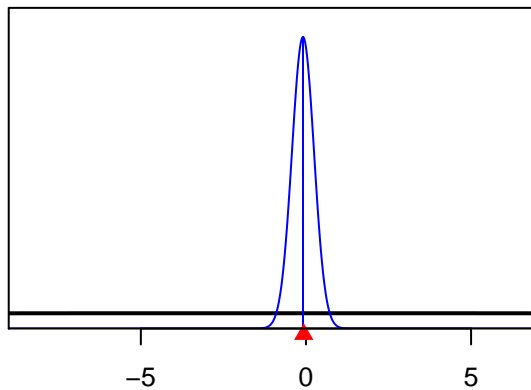
SizeSpline\_Val\_2\_A5-Obj(16)



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



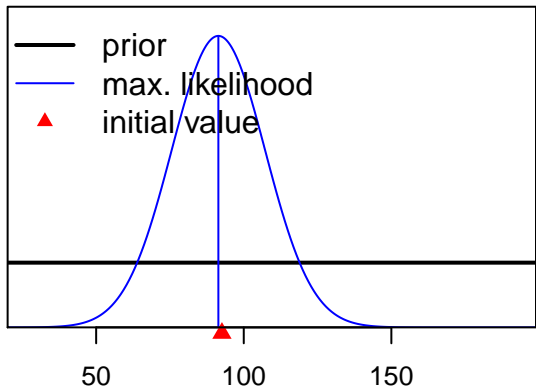
SizeSpline\_Val\_4\_A5-Obj(16)



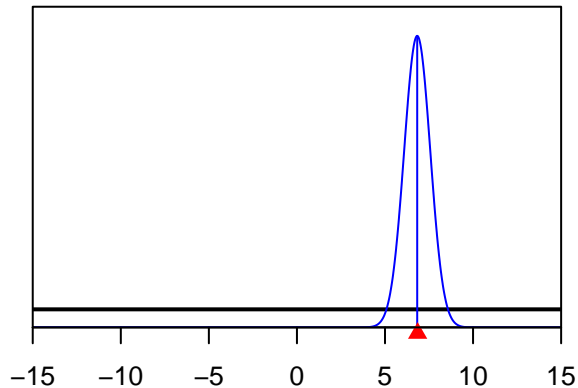
Parameter value



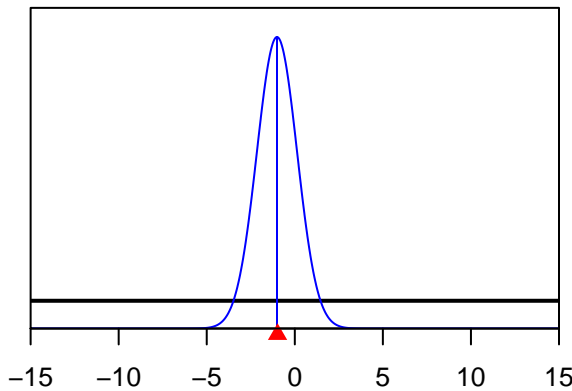
Size\_DbIN\_peak\_A6-OBJ(17)



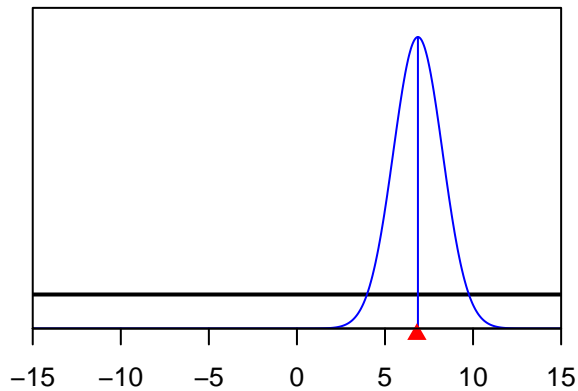
Size\_DbIN\_ascend\_se\_A6-OBJ(17)



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



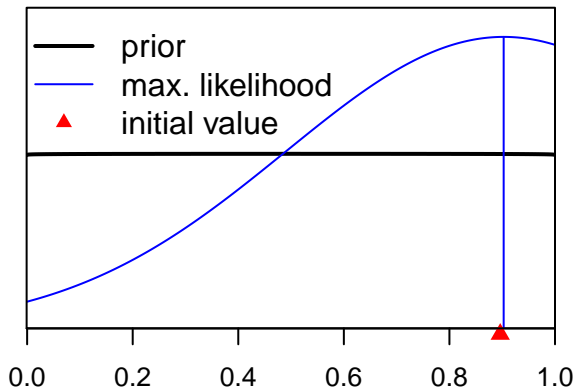
Size\_DbIN\_descend\_se\_A6-OBJ(17)



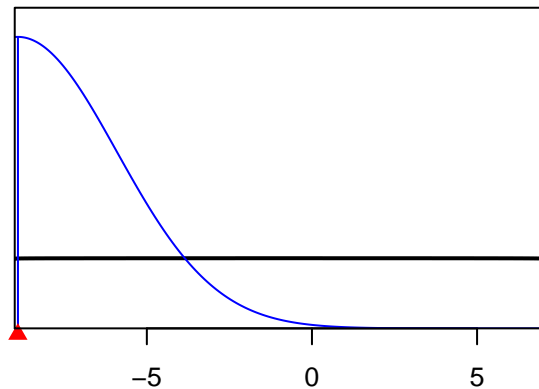
Parameter value

Density

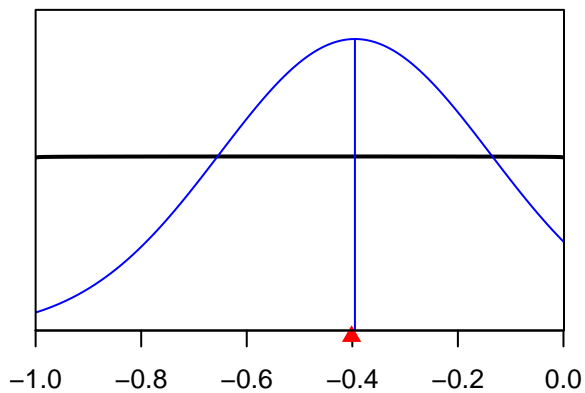
SizeSpline\_GradLo\_A2-NOADEL(19)



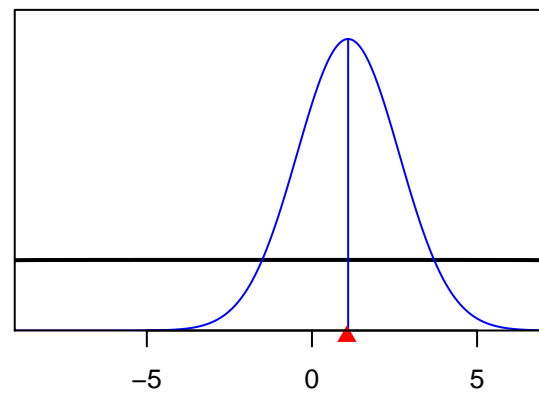
SizeSpline\_Val\_1\_A2-NOADEL(19)



SizeSpline\_GradHi\_A2-NOADEL(19)

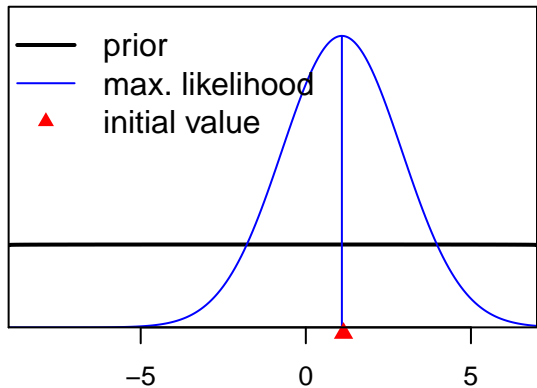


SizeSpline\_Val\_2\_A2-NOADEL(19)

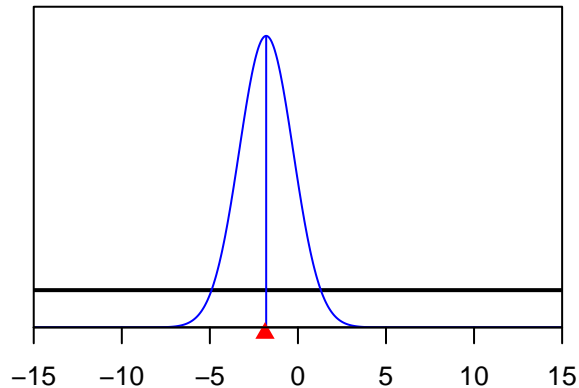


Parameter value

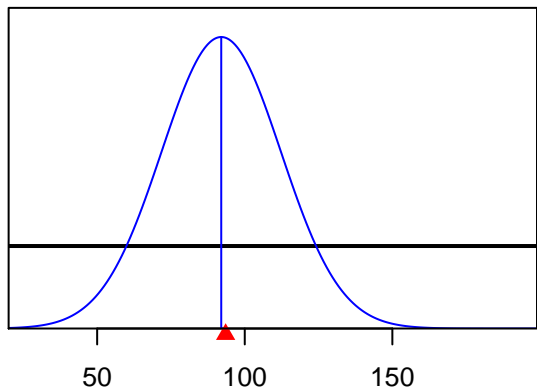
SizeSpline\_Val\_4\_A2-NOADEL(19)



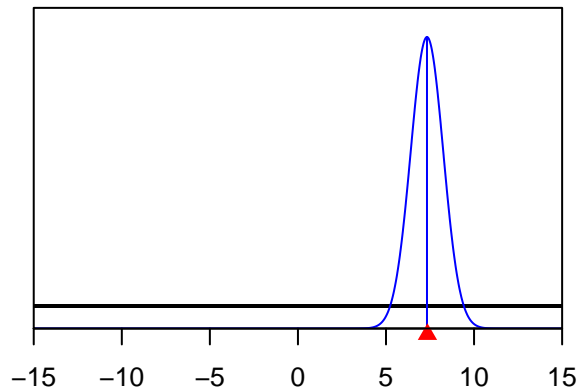
Size\_DbIN\_top\_logit\_A3-NOADEL(20)



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



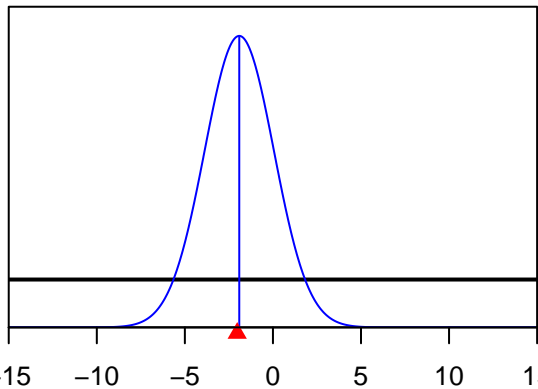
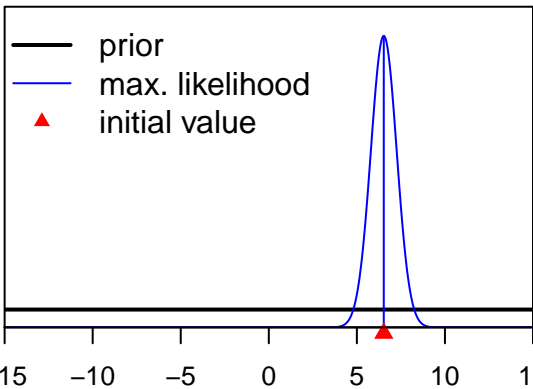
Size\_DbIN\_ascend\_se\_A3-NOADEL(20)



Parameter value

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

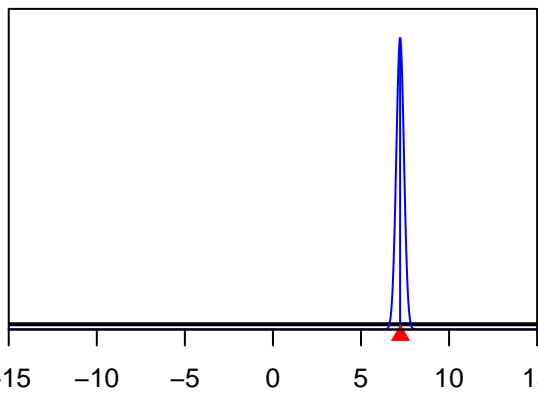
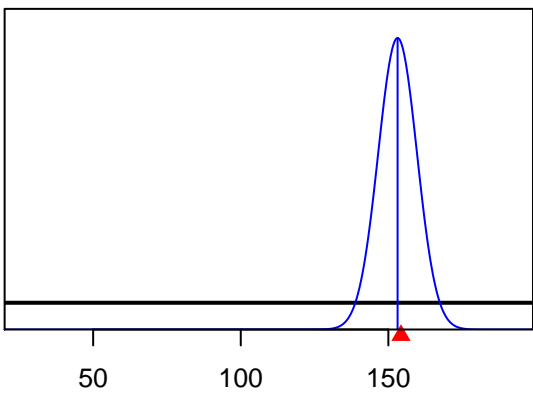
Size\_DbIN\_top\_logit\_EPO-LL-survey-early(24)



Density

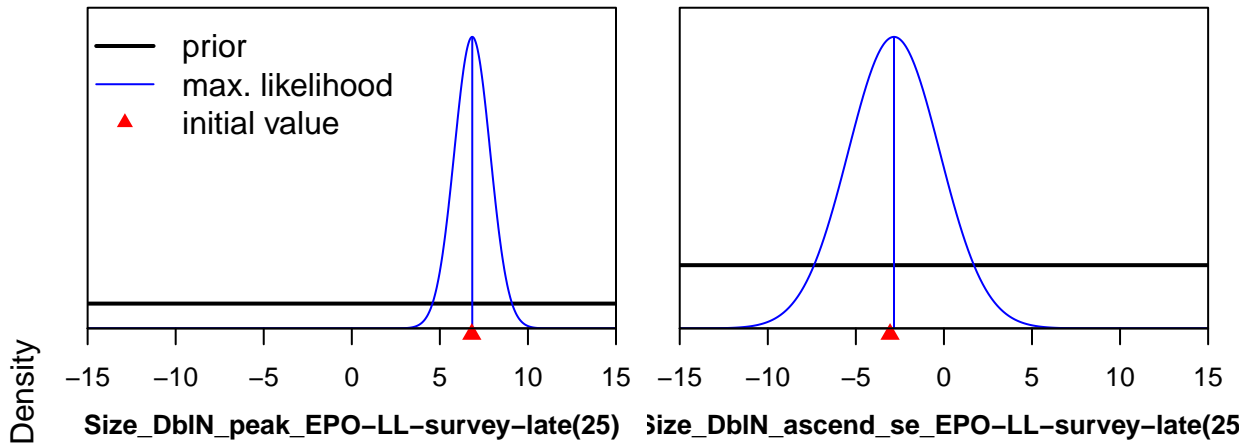
Size\_DbIN\_peak\_EPO-LL-survey-early(24)

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

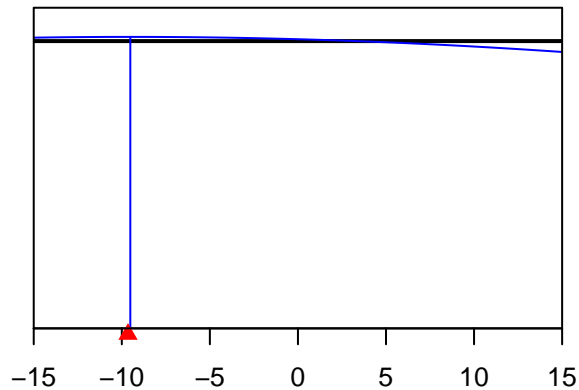
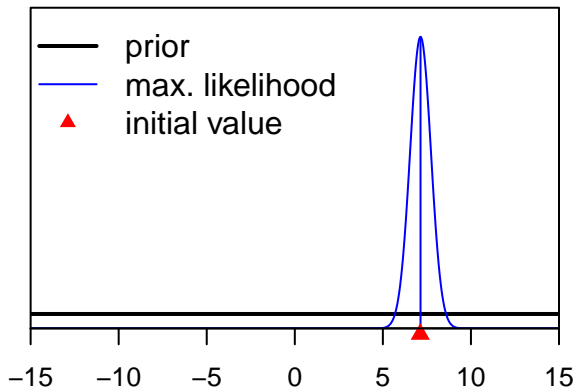


Parameter value

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

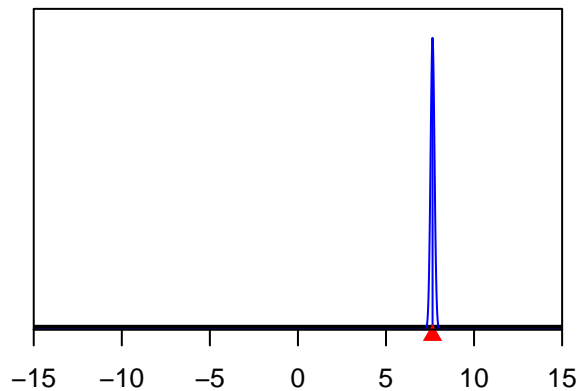
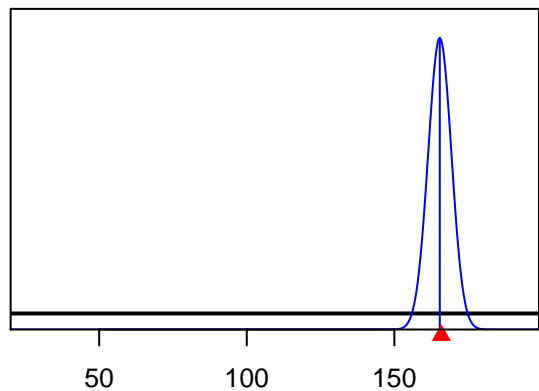


ize\_DbIN\_descend\_se\_EPO-LL-survey-late(2)Size\_DbIN\_top\_logit\_A2-LL-n(2)\_BLK2repl\_17



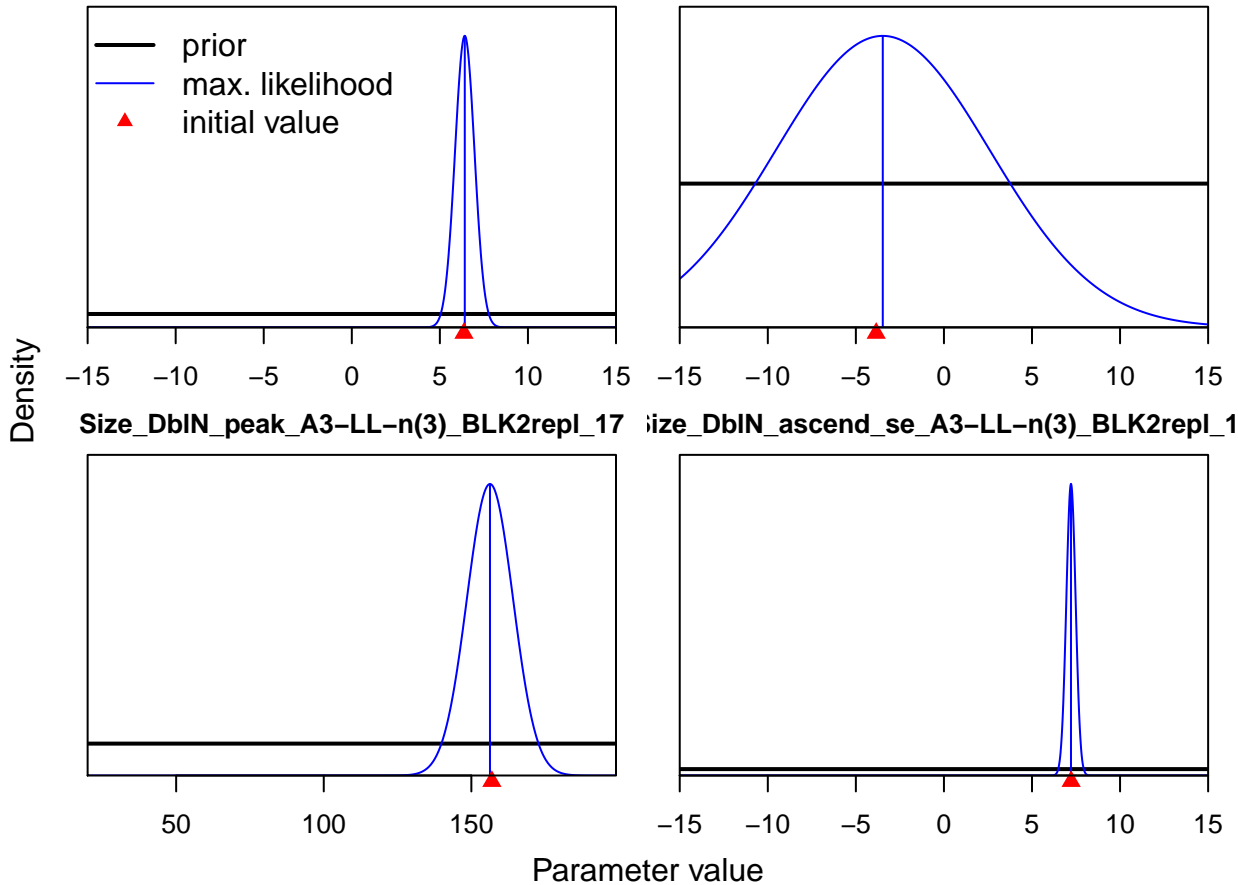
Size\_DbIN\_peak\_A2-LL-n(2)\_BLK2repl\_17

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

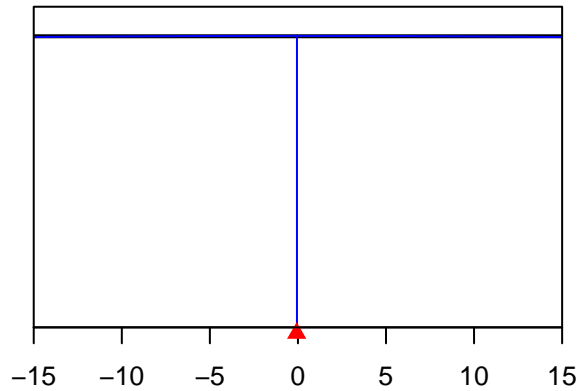
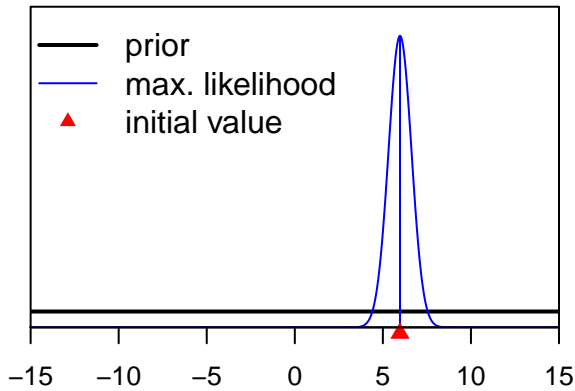


Parameter value

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

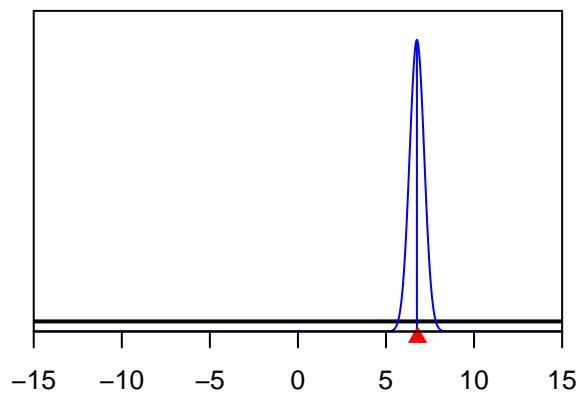
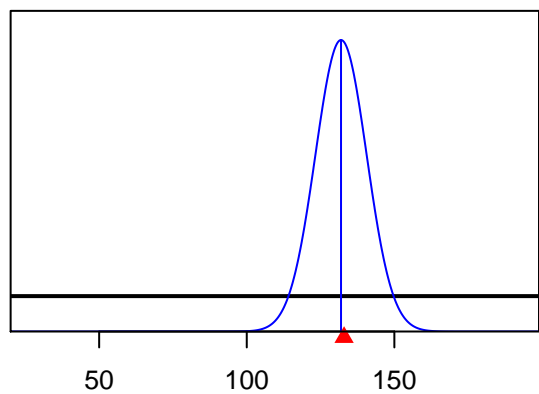


ize\_DbIN\_descend\_se\_A3-LL-n(3)\_BLK2repl\_Size\_DbIN\_top\_logit\_A4-LL-n(4)\_BLK2repl\_17



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

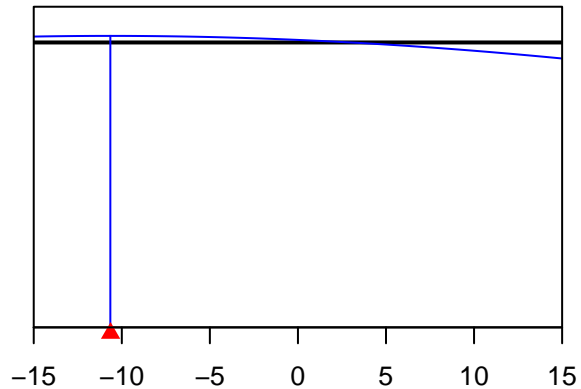
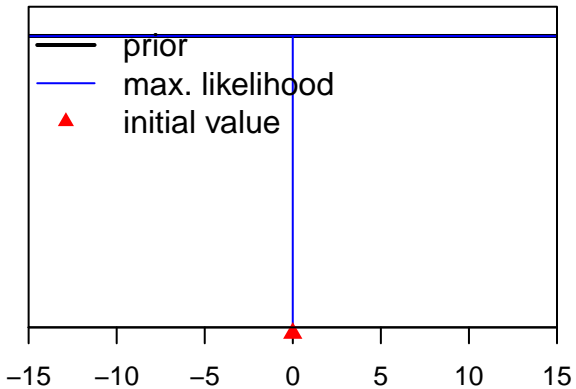
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Parameter value

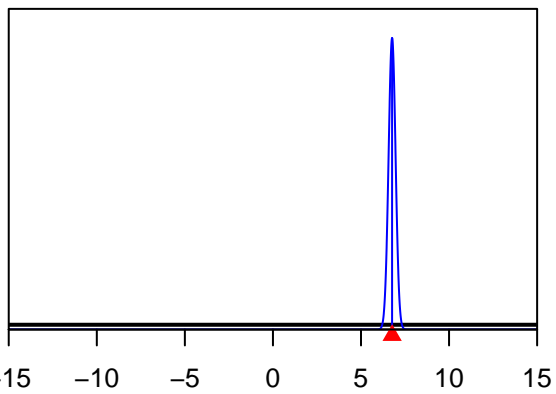
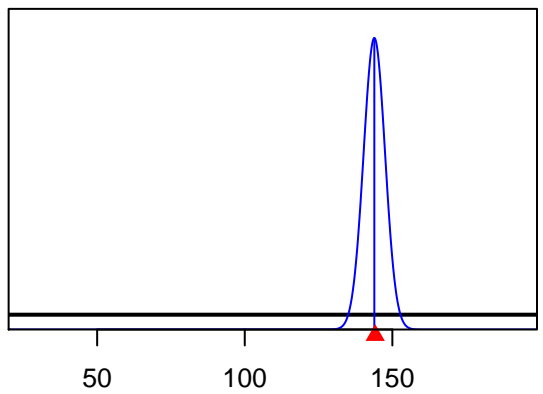


ize\_DbIN\_descend\_se\_A4-LL-n(4)\_BLK2repl\_Size\_DbIN\_top\_logit\_A5-LL-n(5)\_BLK2repl\_17



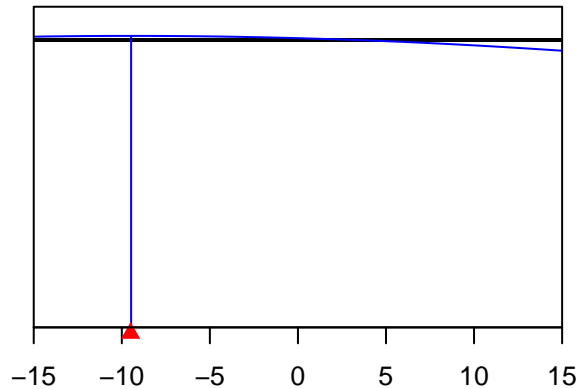
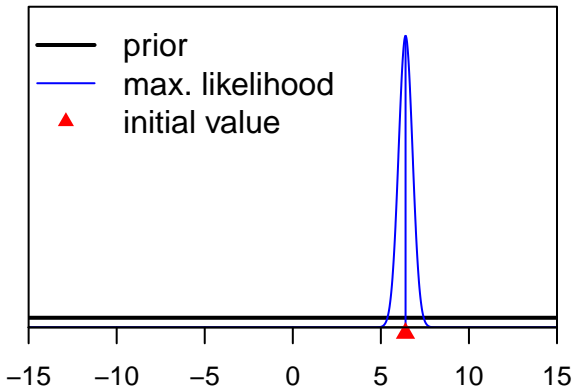
Size\_DbIN\_peak\_A5-LL-n(5)\_BLK2repl\_17

ize\_DbIN\_ascend\_se\_A5-LL-n(5)\_BLK2repl\_17



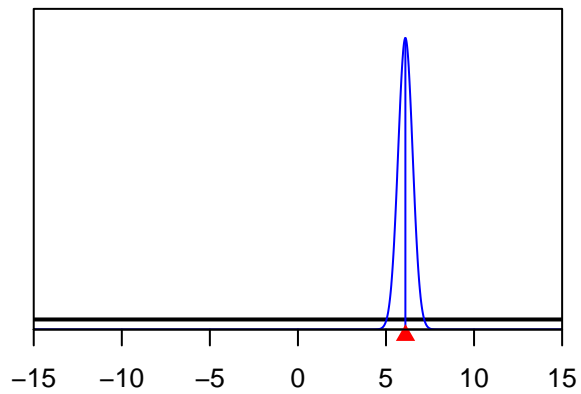
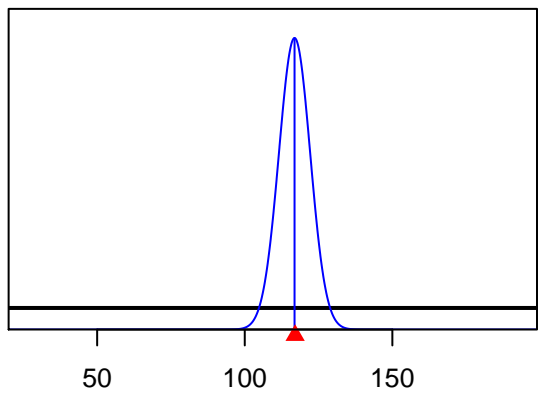
Parameter value

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



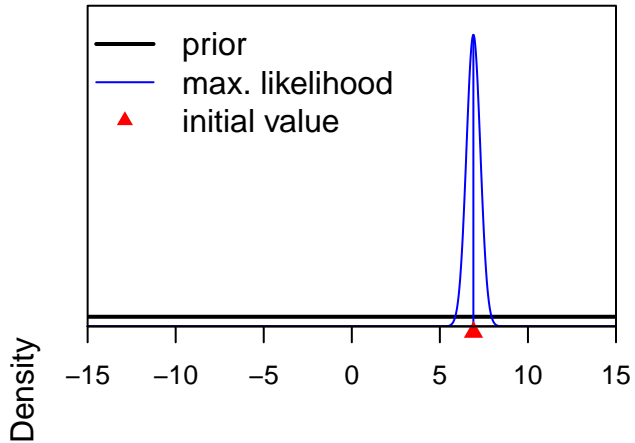
Size\_DbIN\_peak\_A6-LL-n(6)\_BLK2repl\_17

ize\_DbIN\_ascend\_se\_A6-LL-n(6)\_BLK2repl\_17



Parameter value

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



Parameter value