

Plots created using the 'r4ss' package in R

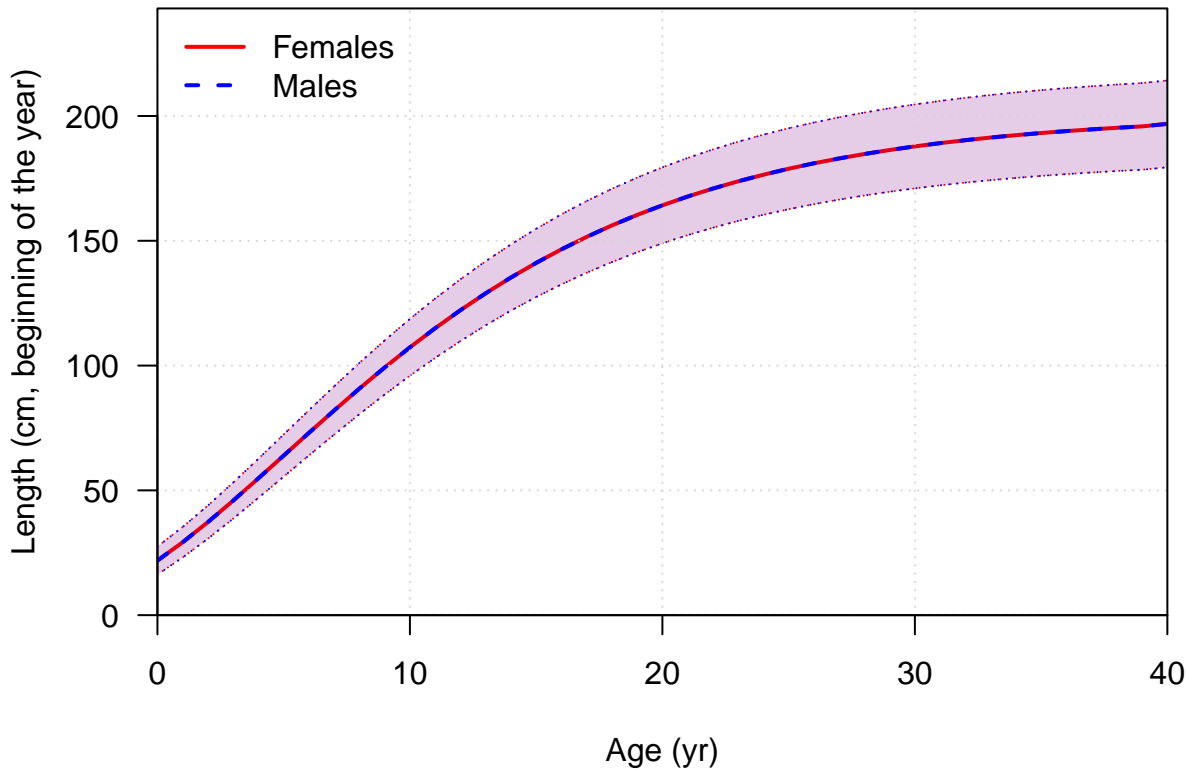
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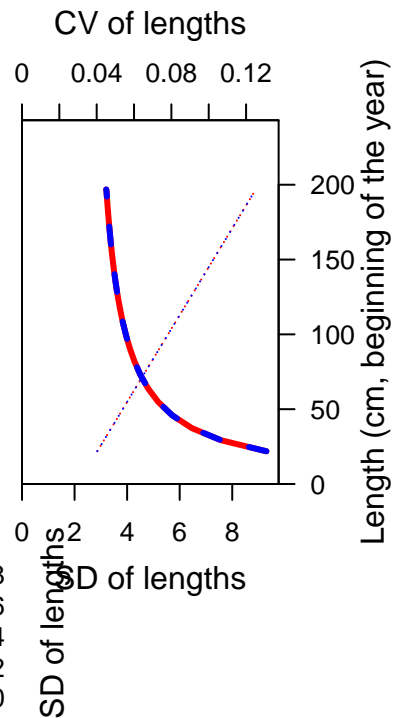
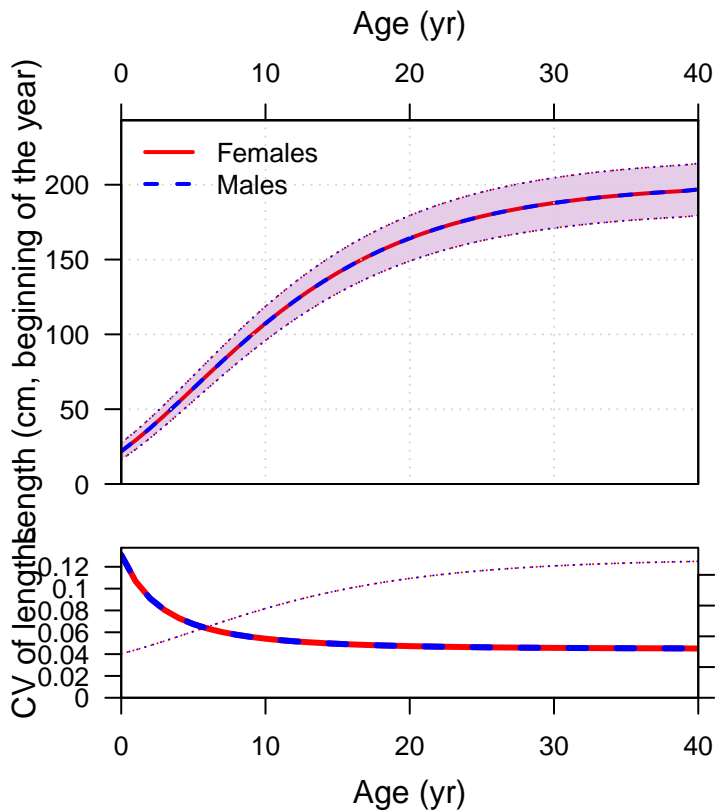
StartTime: Mon May 11 17:18:20 2020

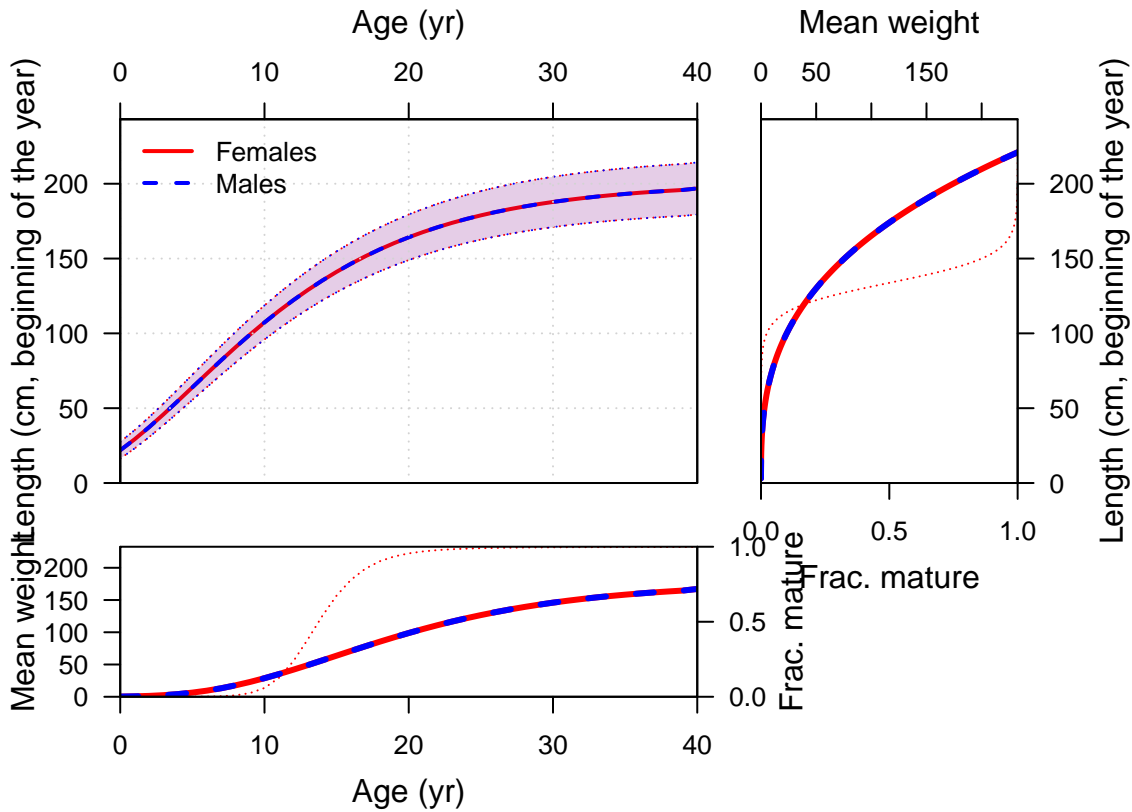
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Control\_File: BET-EPO.ctl

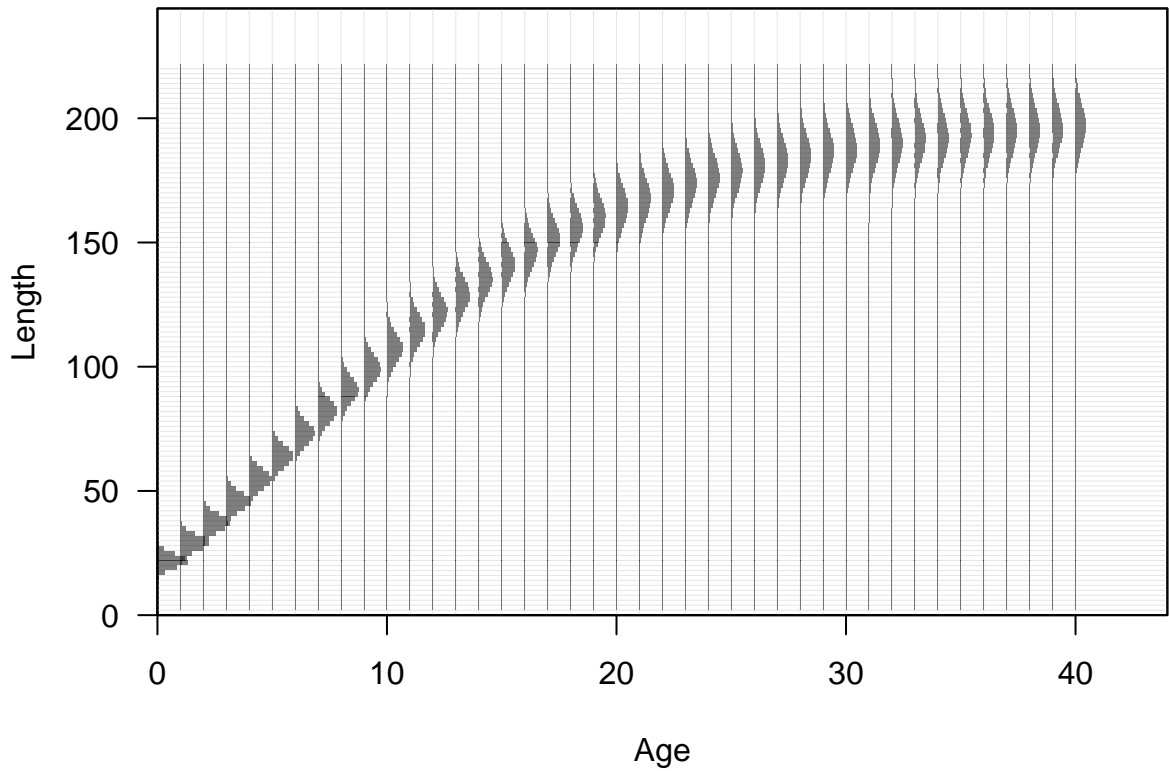
## Ending year expected growth (with 95% intervals)

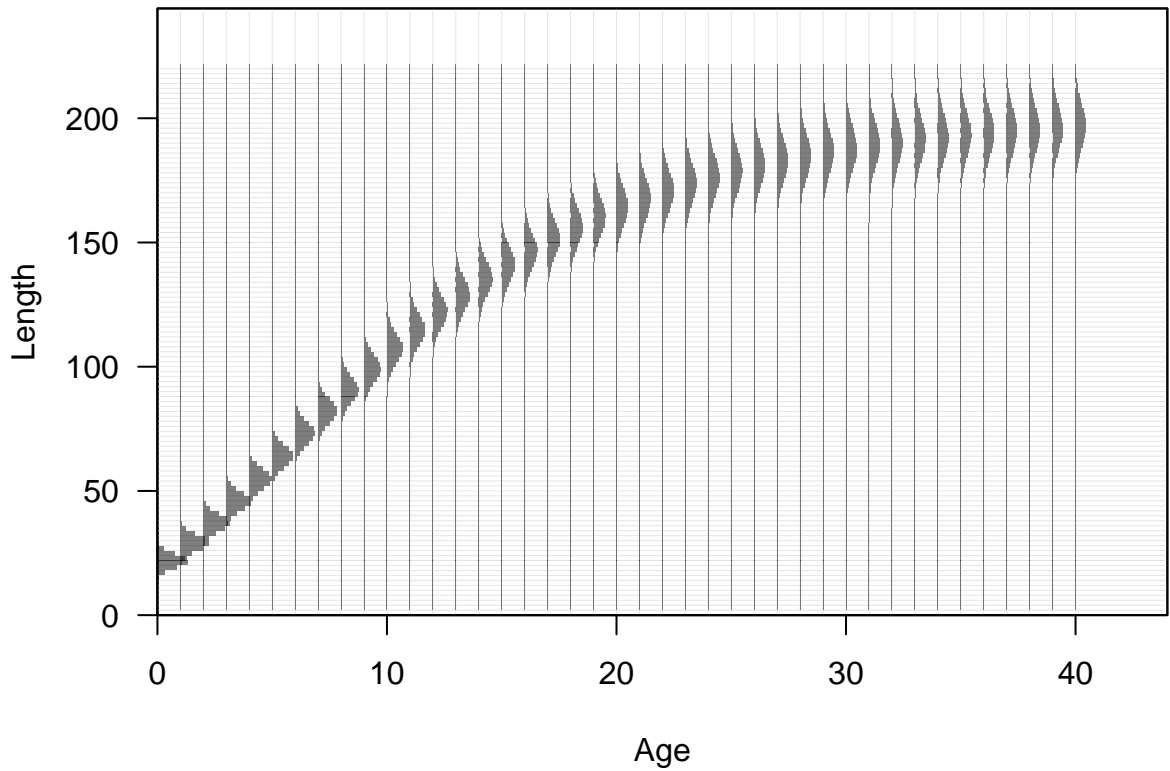


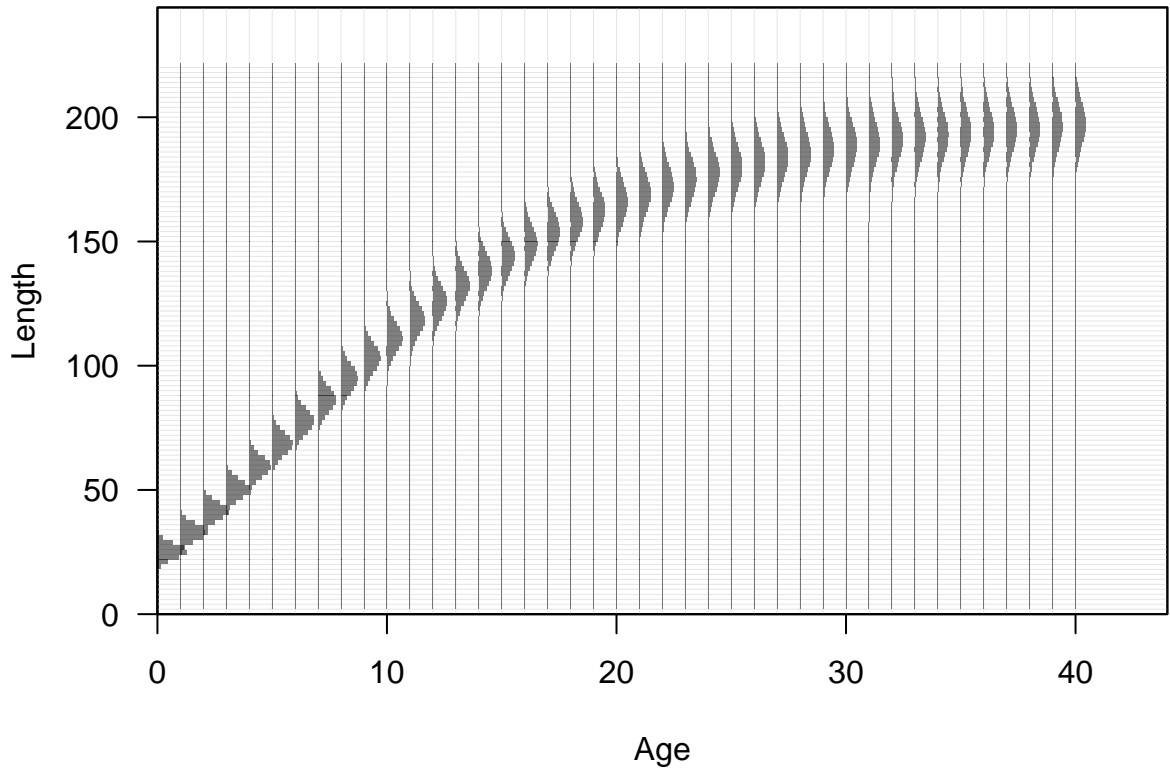


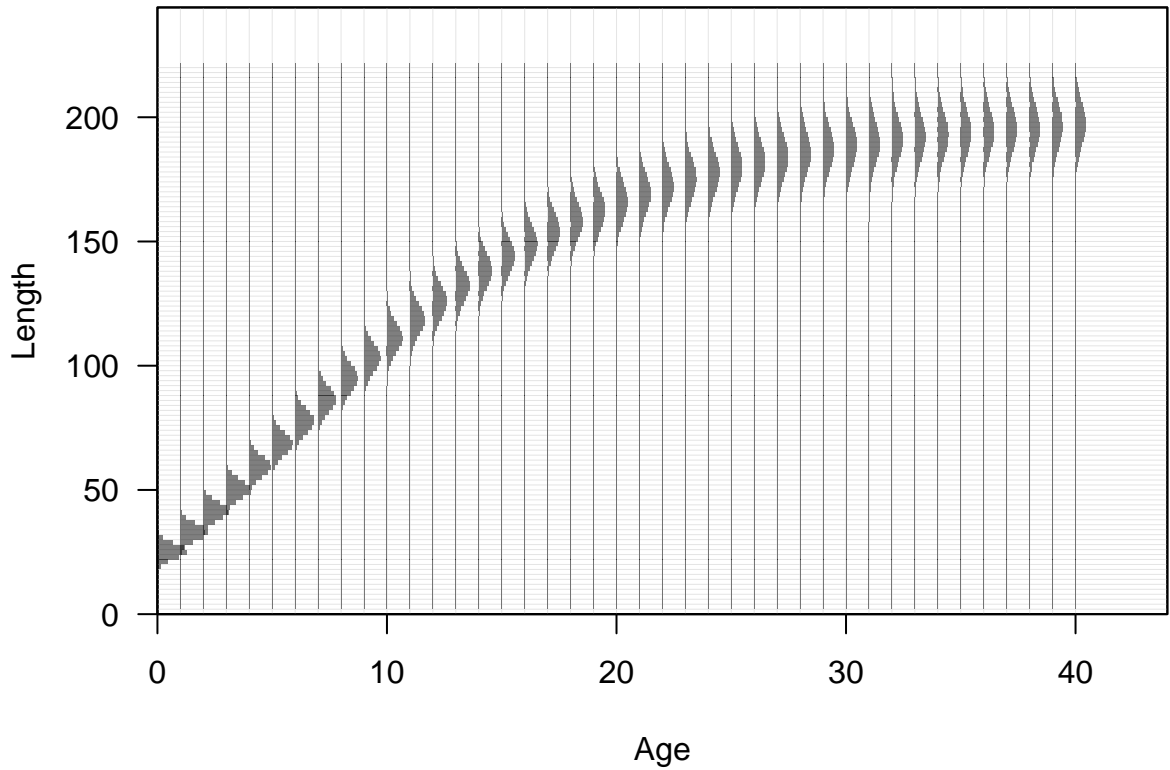


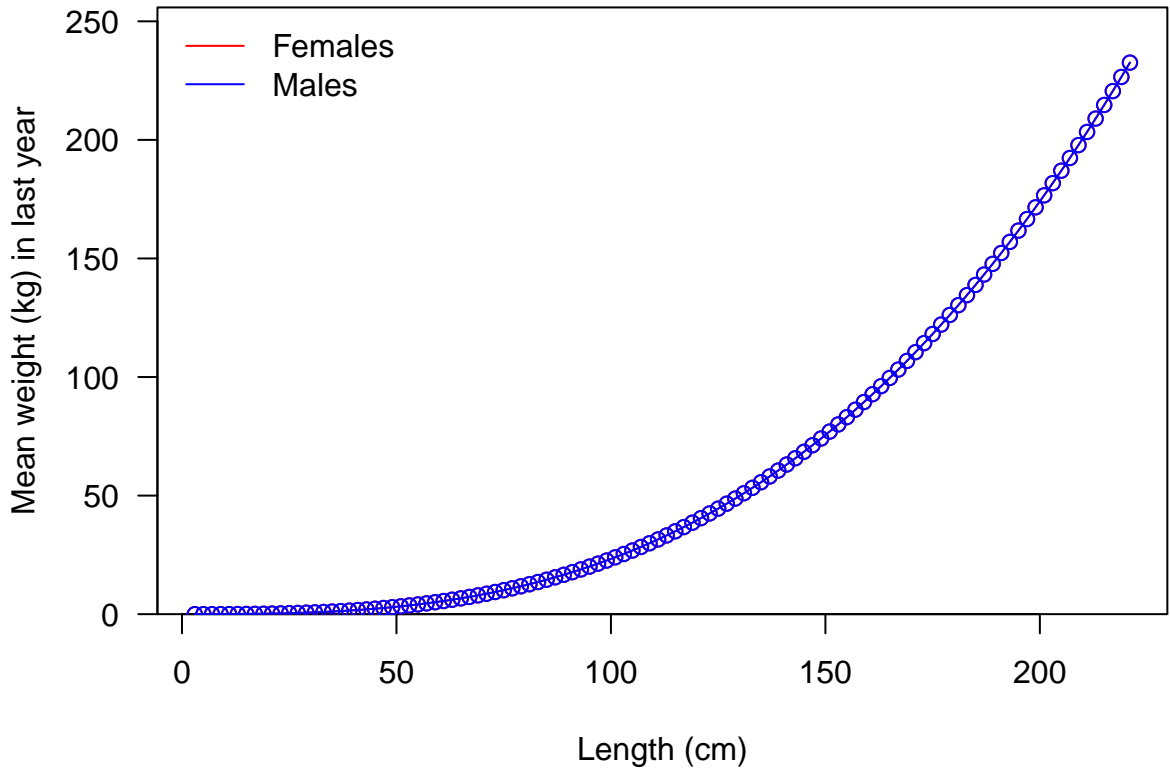


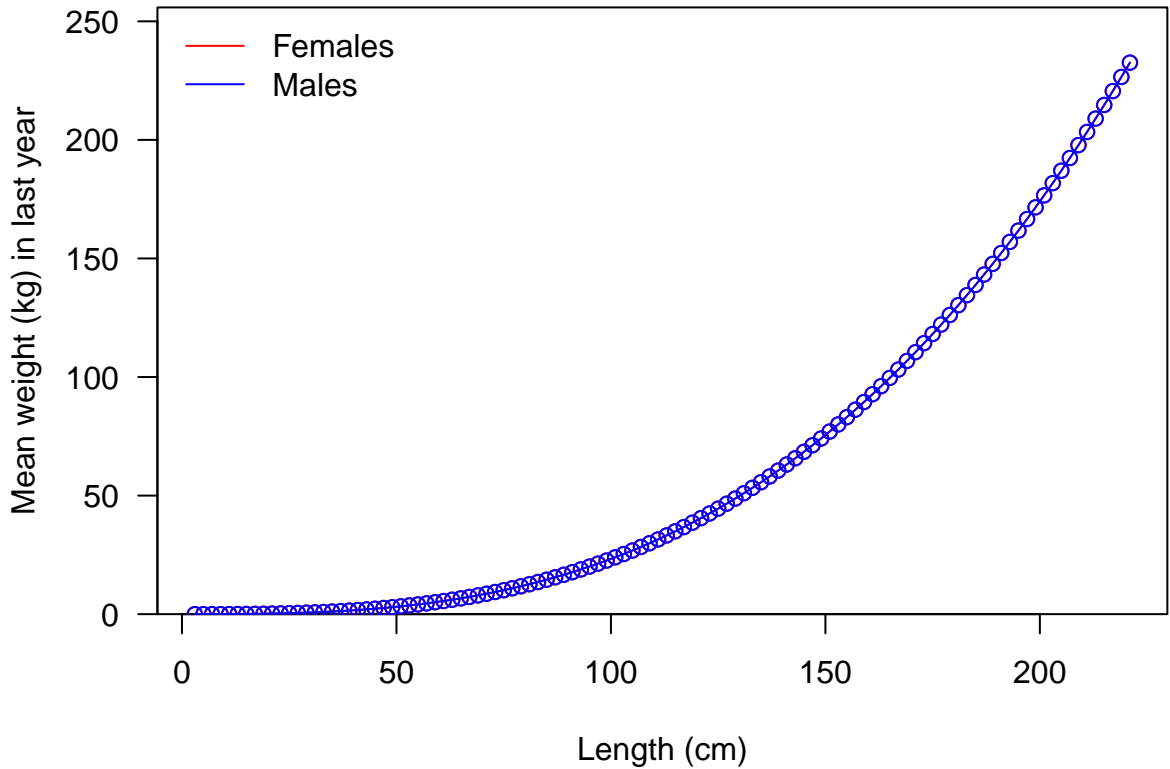


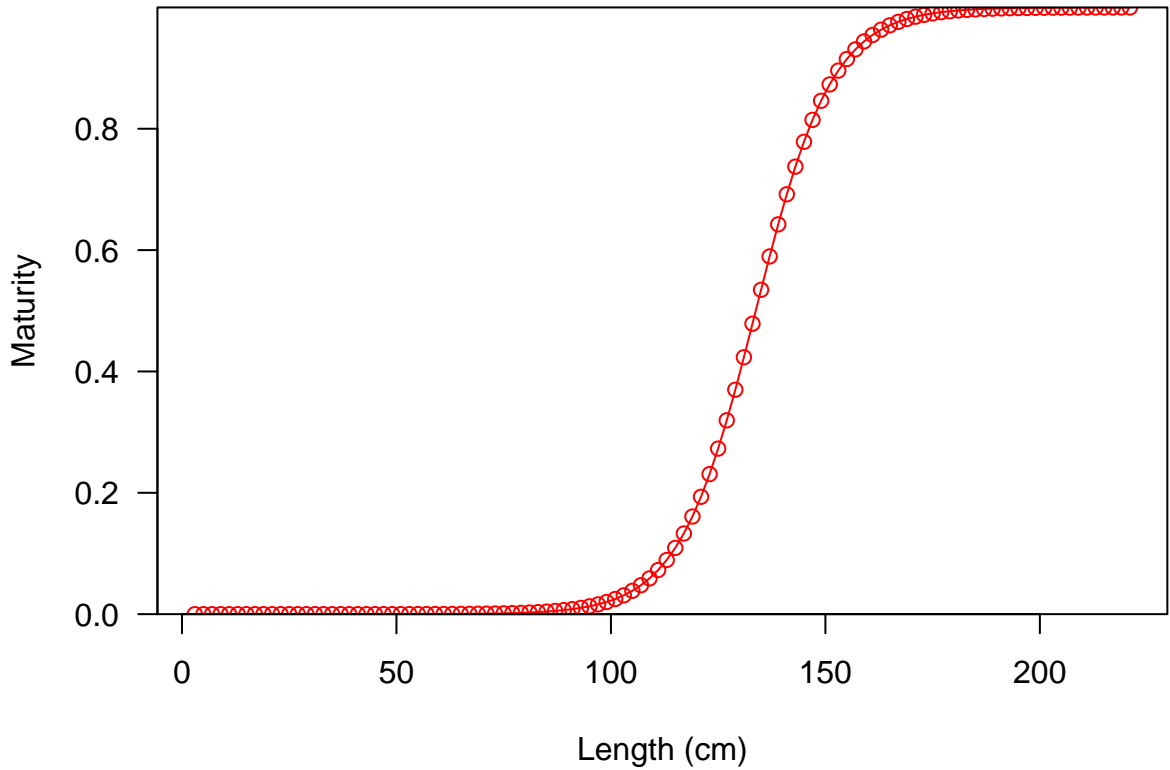


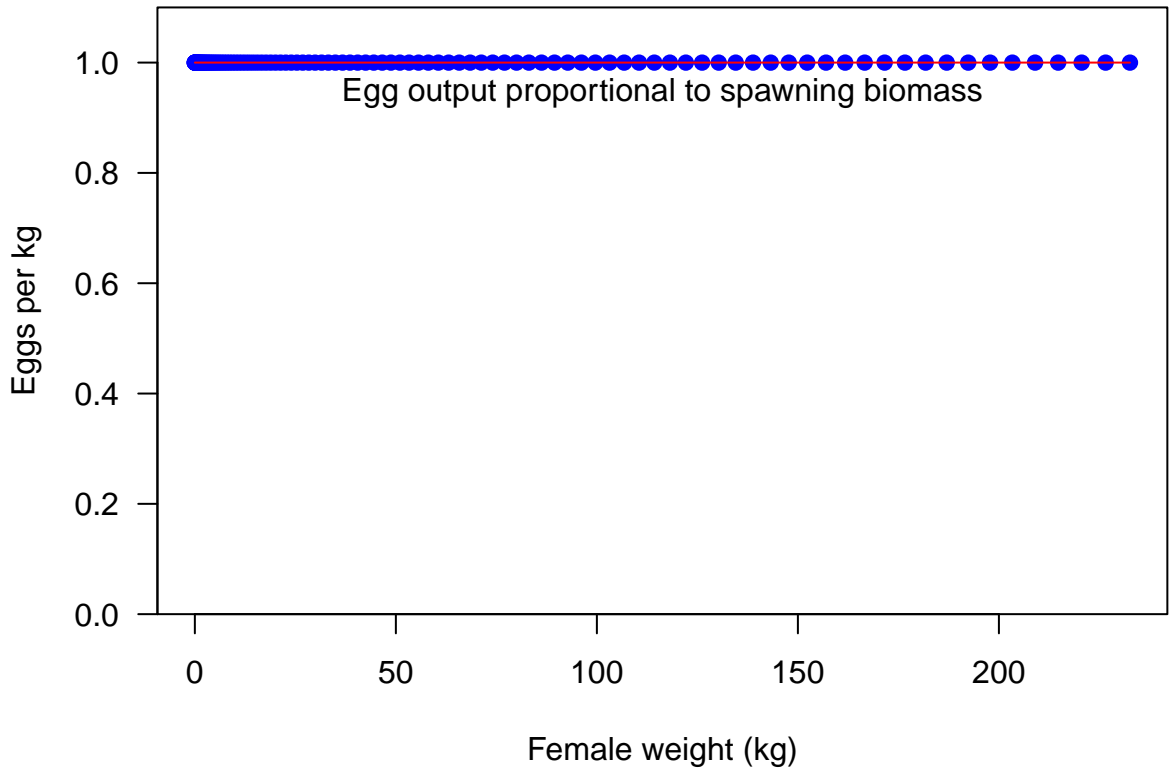




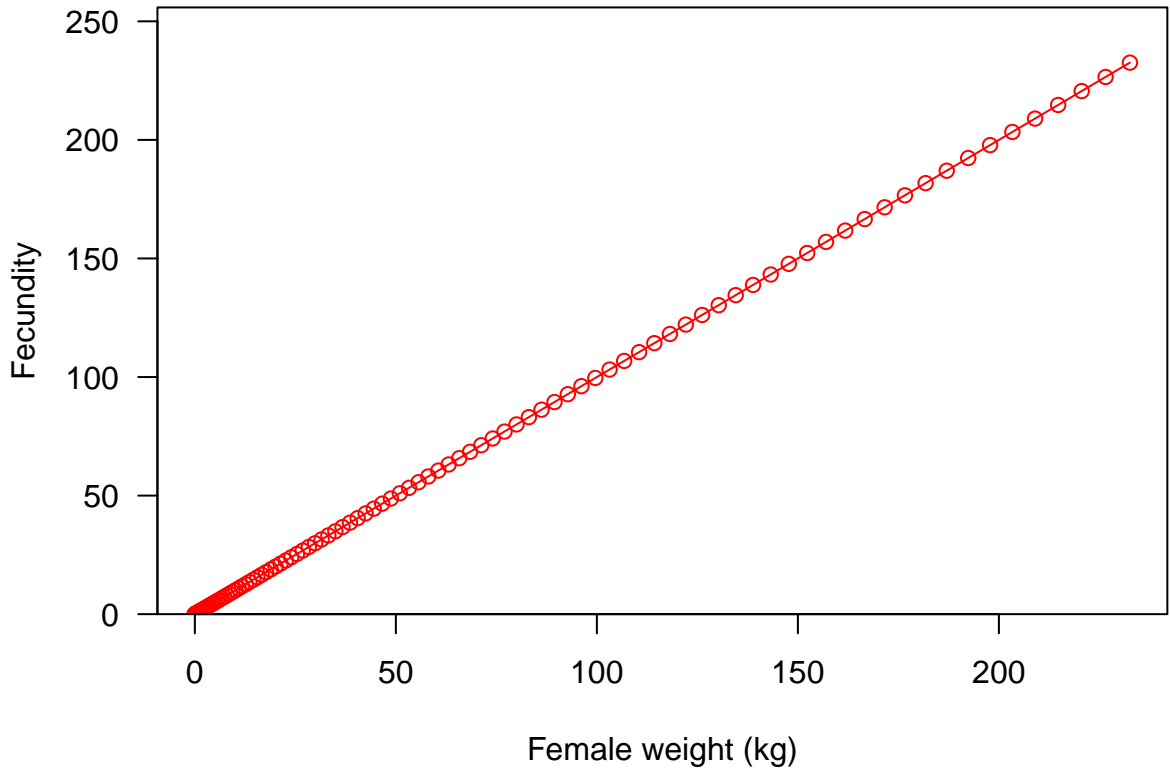


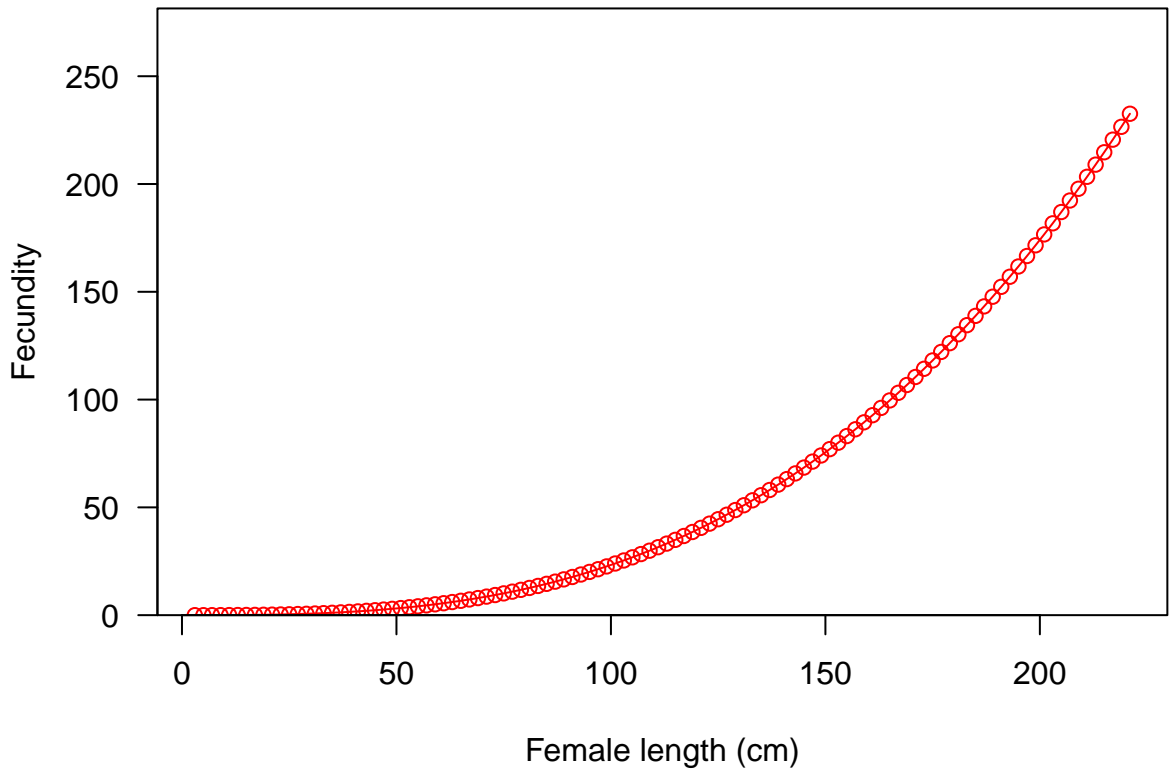


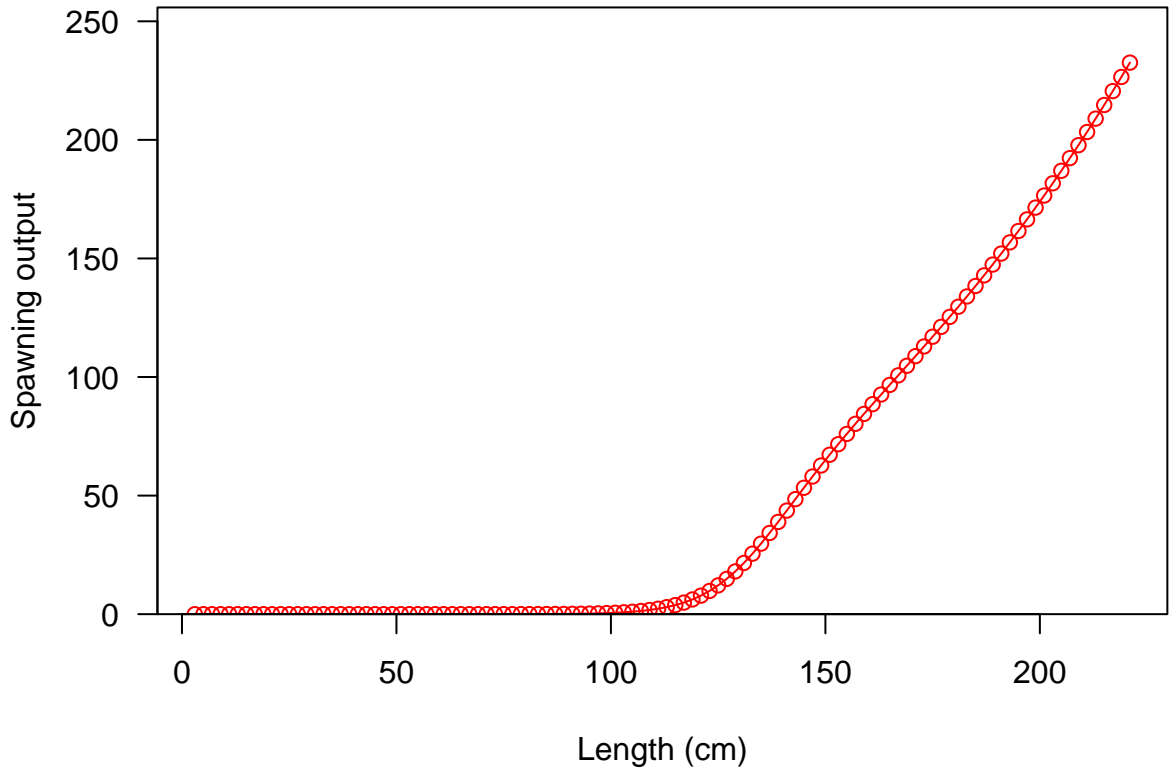


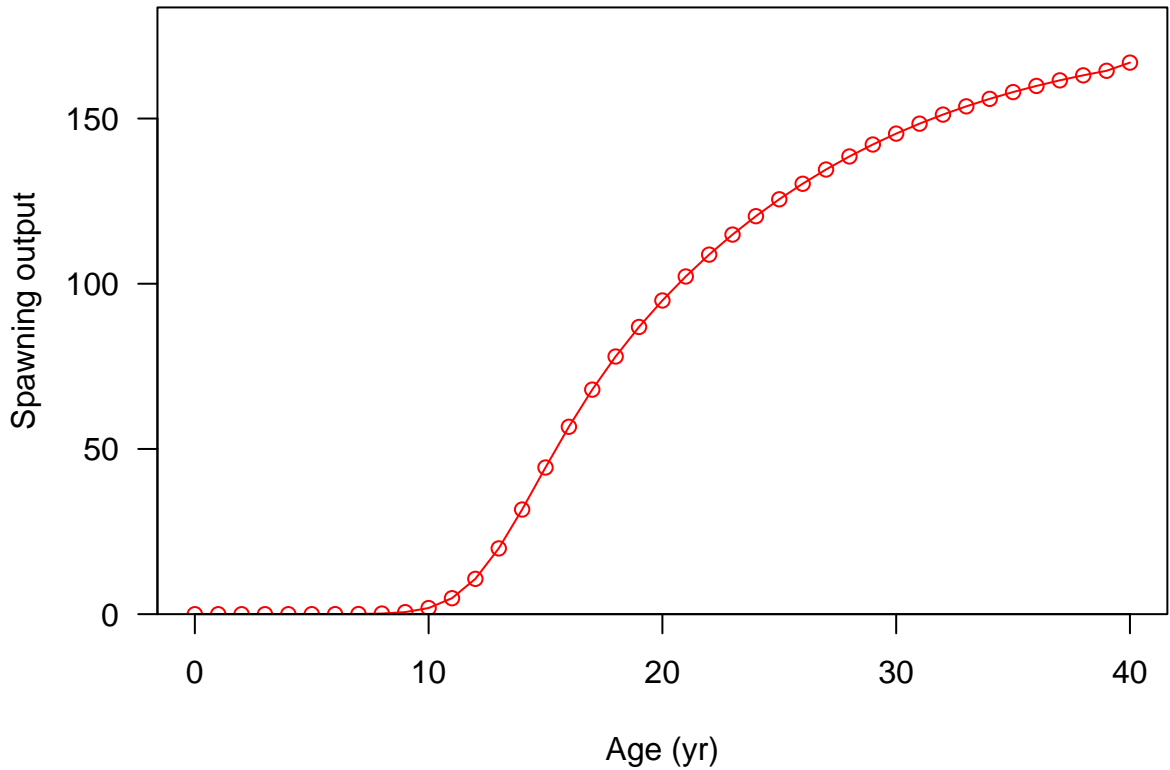




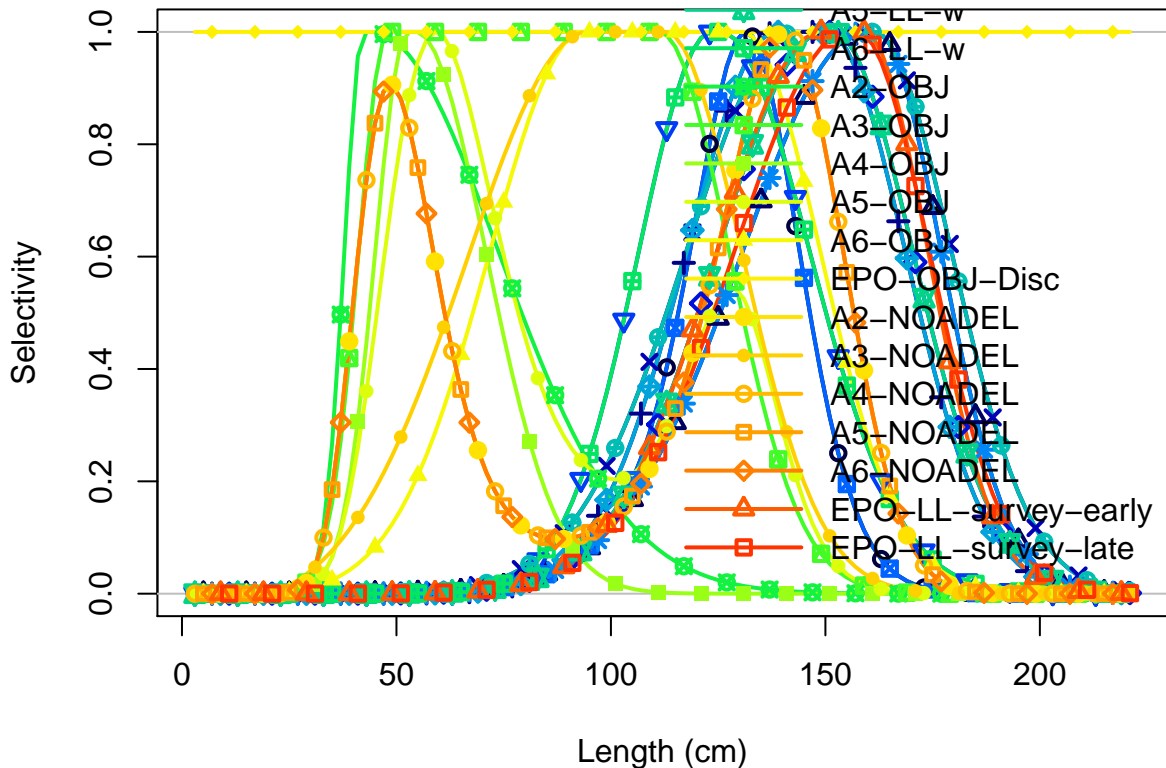






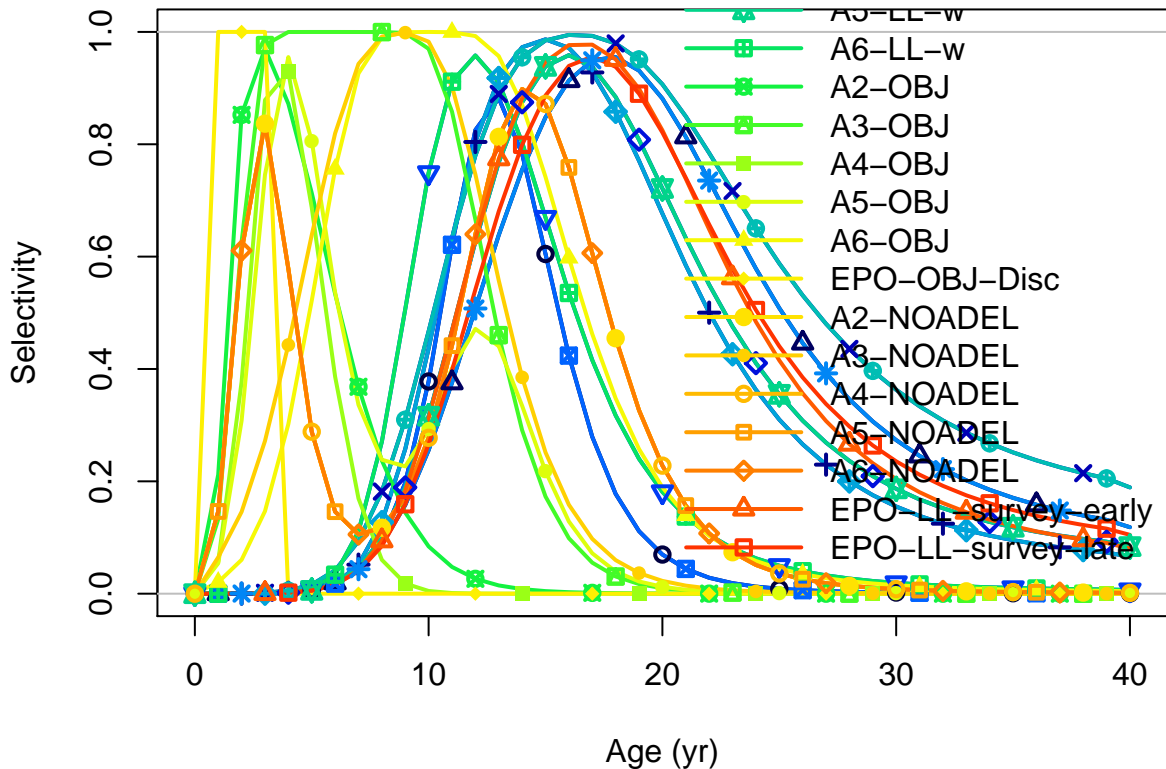


# Length-based selectivity by fleet in 180

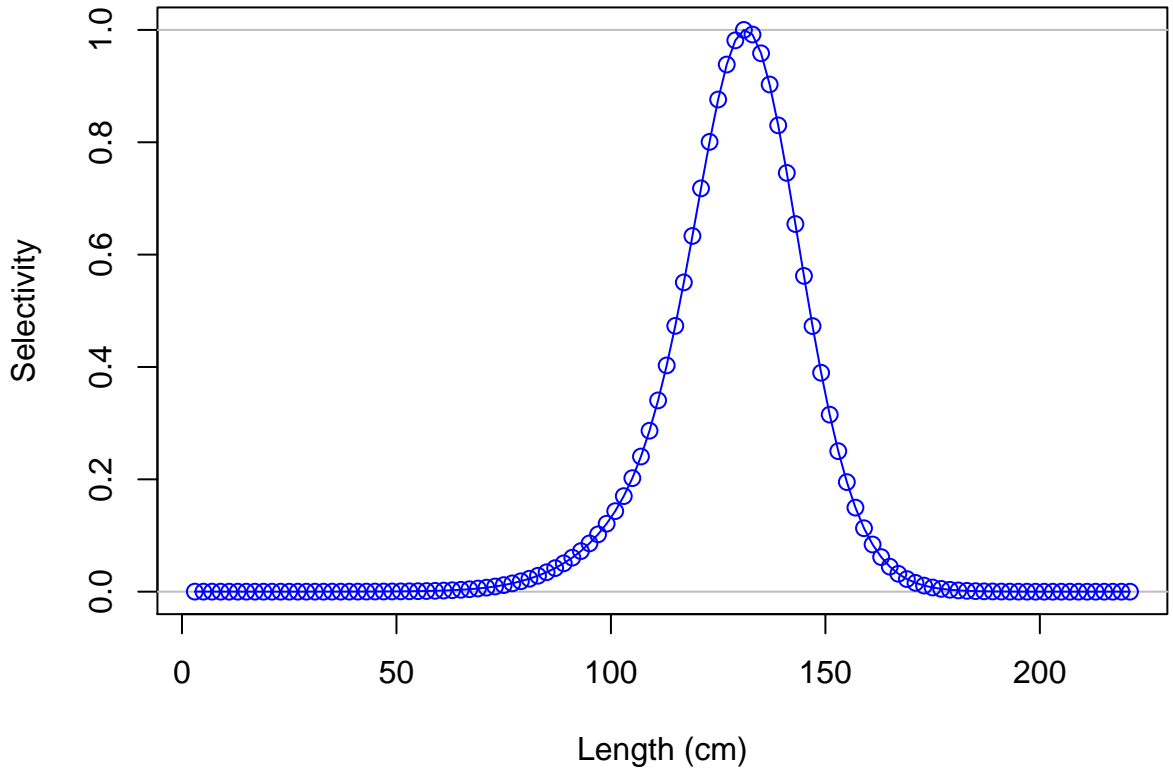




# Derived age-based from length-based selectivity by fleet in 180

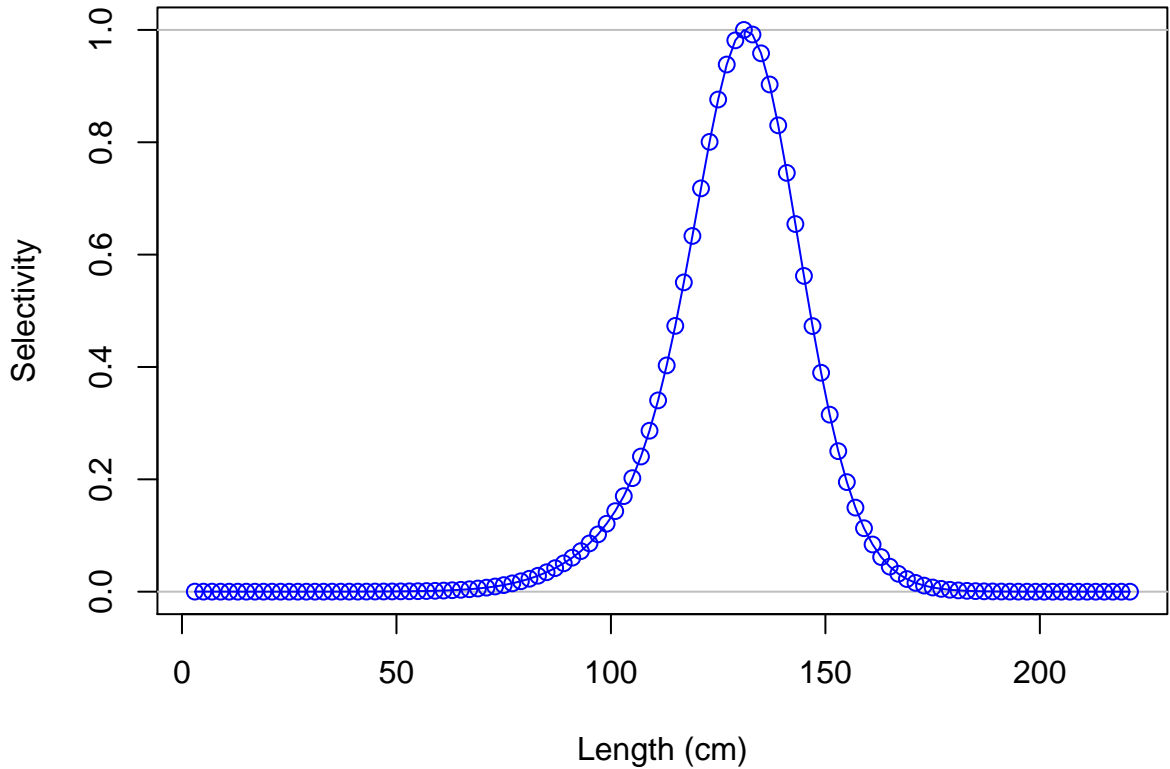


# Female ending year selectivity for A1-LL-n

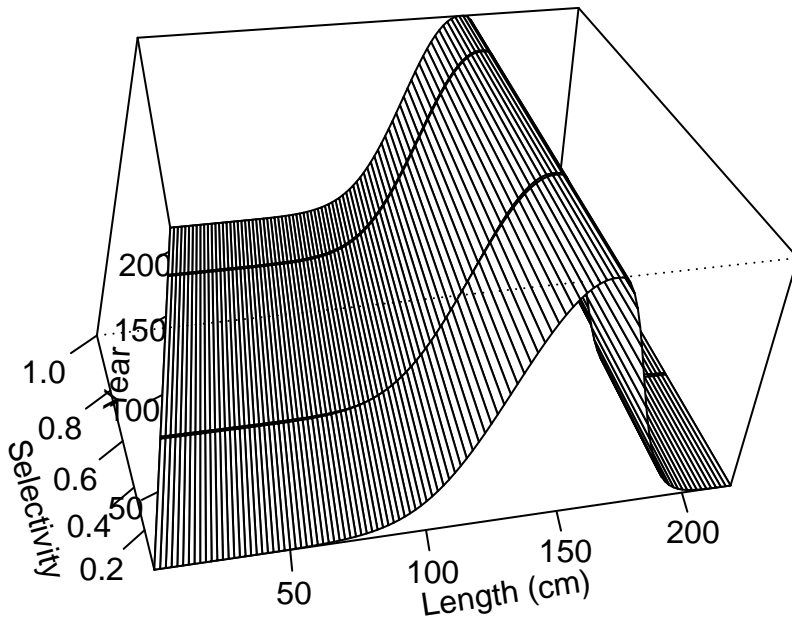




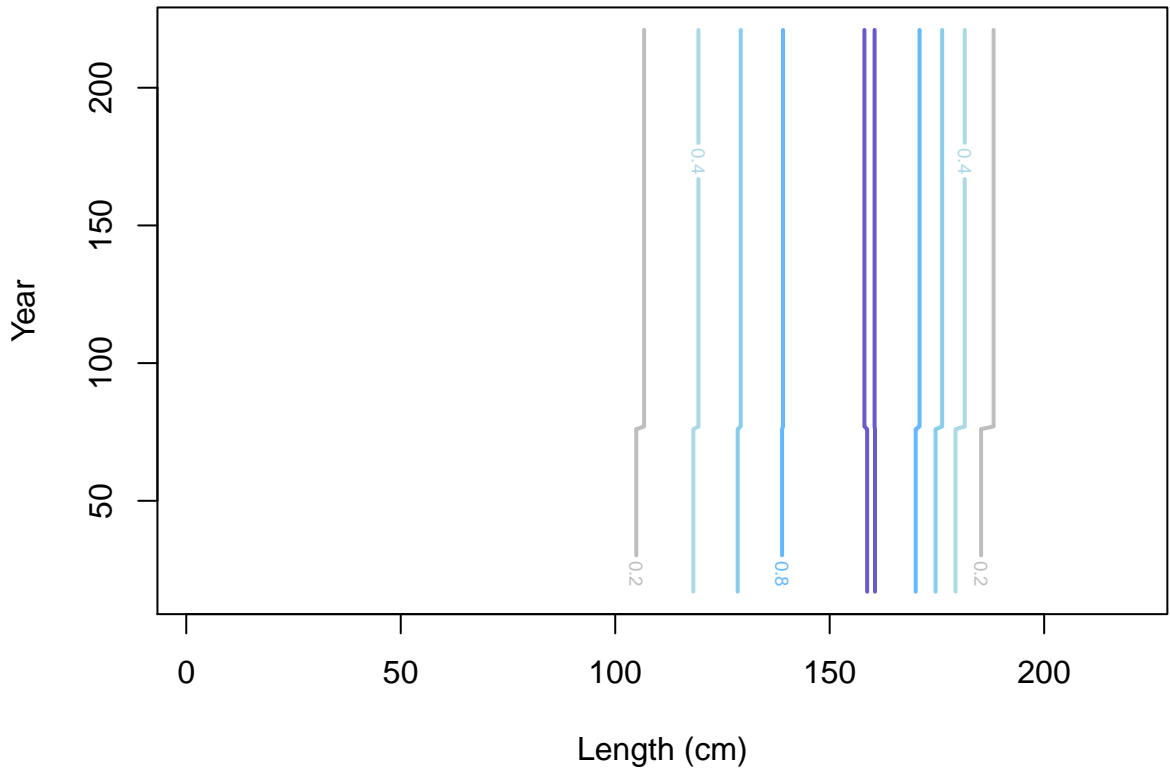
## Male ending year selectivity for A1-LL-n



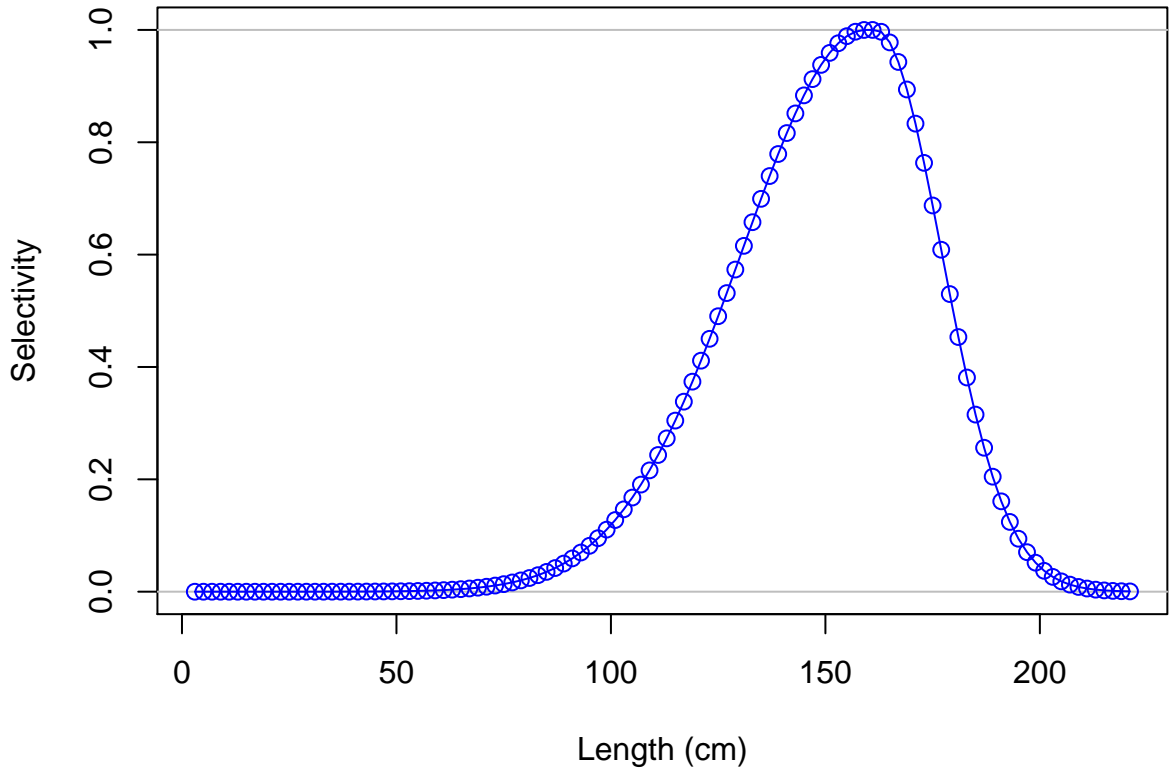
## Female time-varying selectivity for A2-LL-n



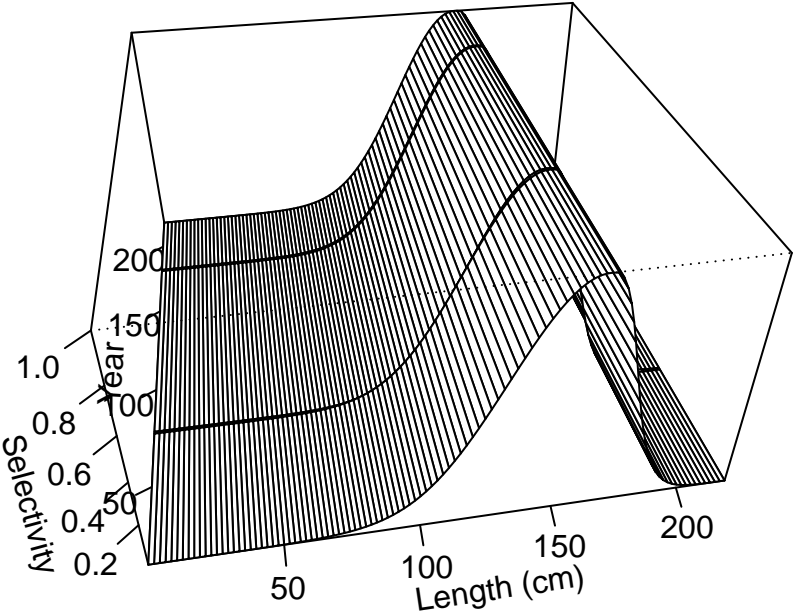
# Female time-varying selectivity for A2-LL-n



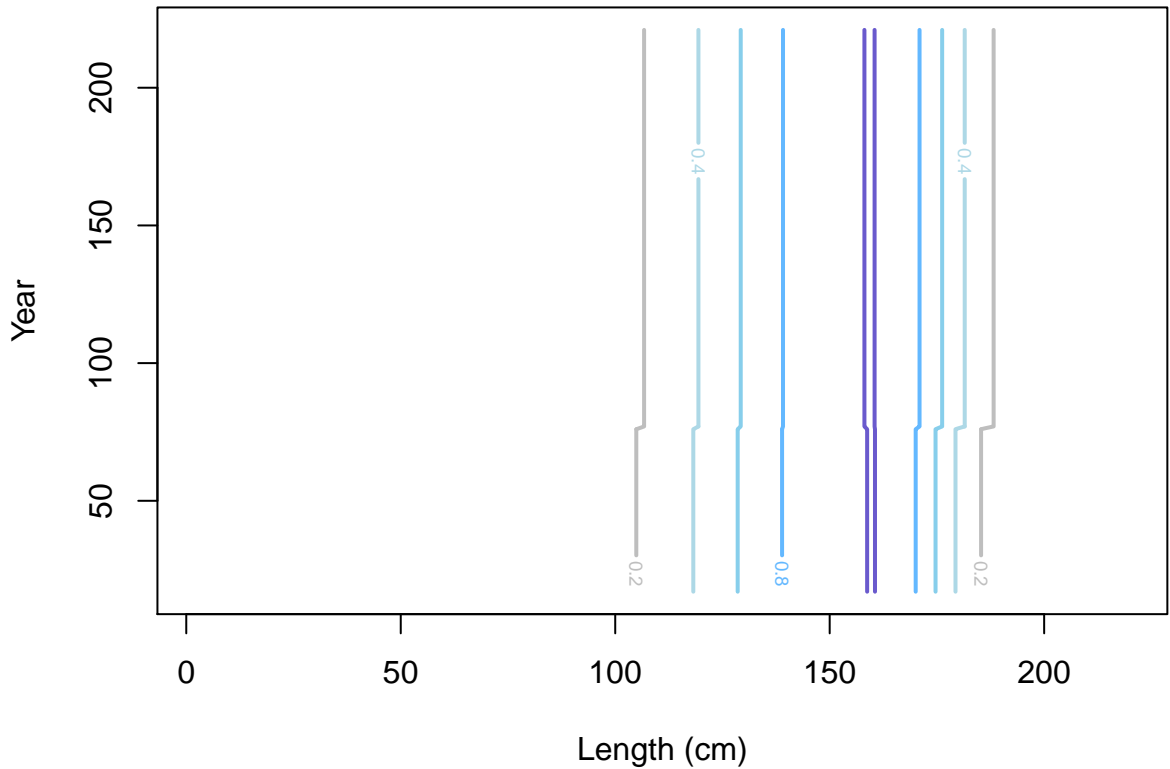
## Female ending year selectivity for A2-LL-n



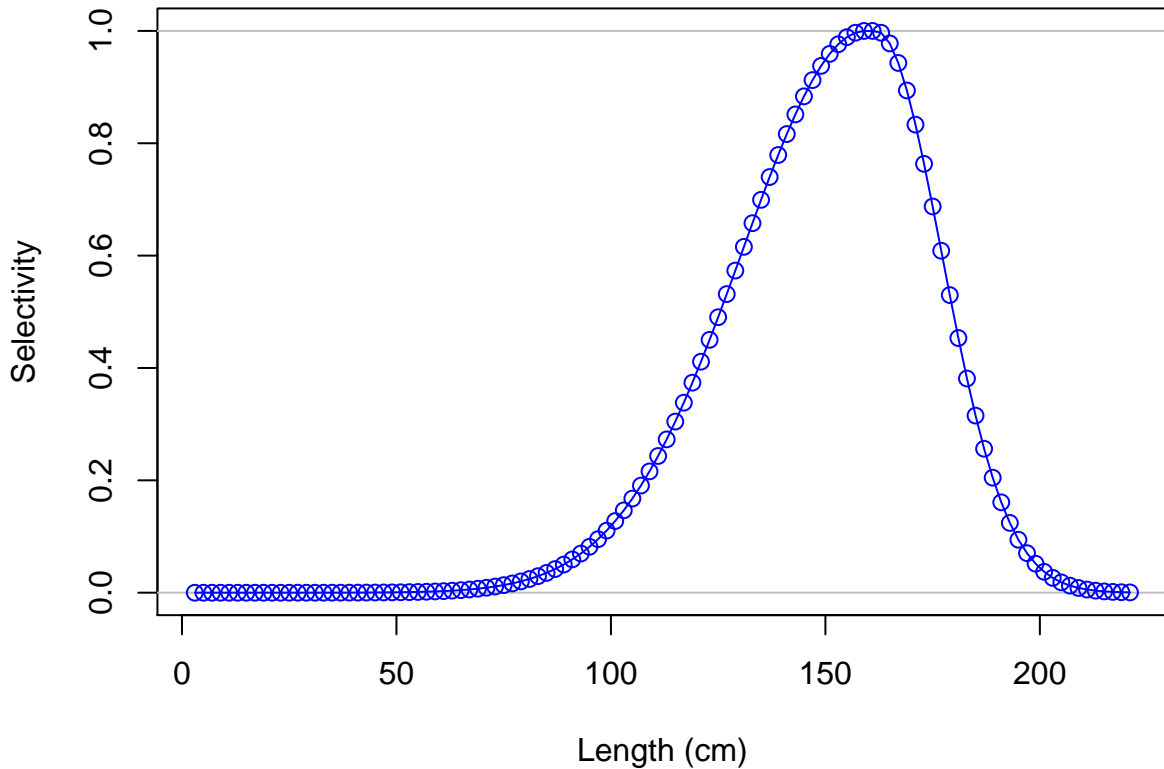
# Male time-varying selectivity for A2-LL-n



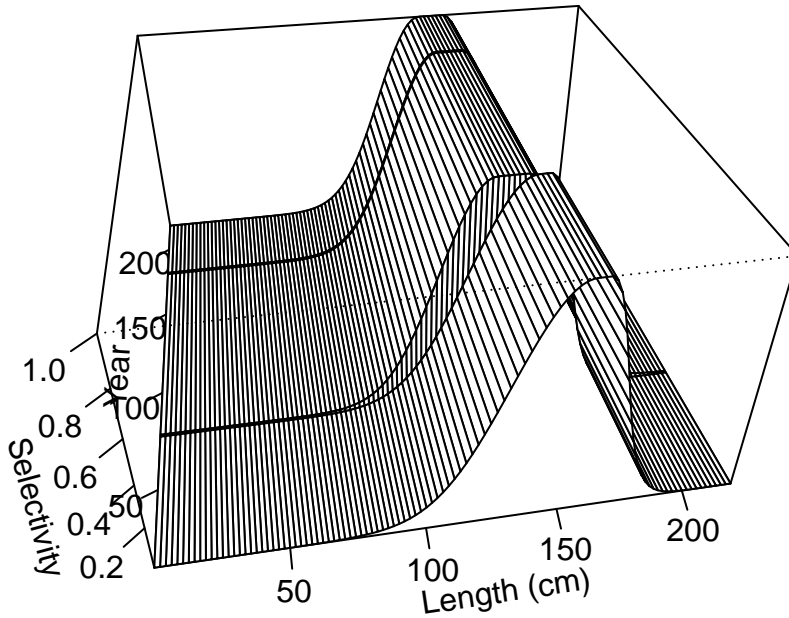
# Male time-varying selectivity for A2-LL-n



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

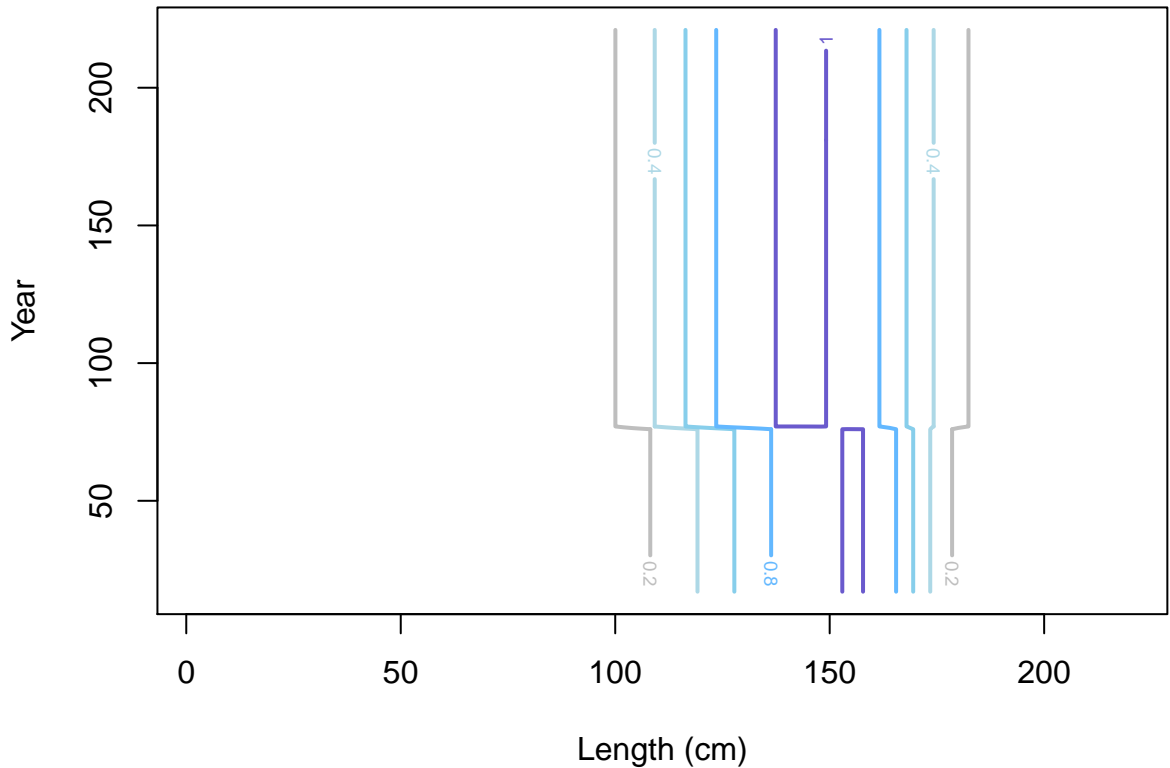


## Female time-varying selectivity for A3-LL-n

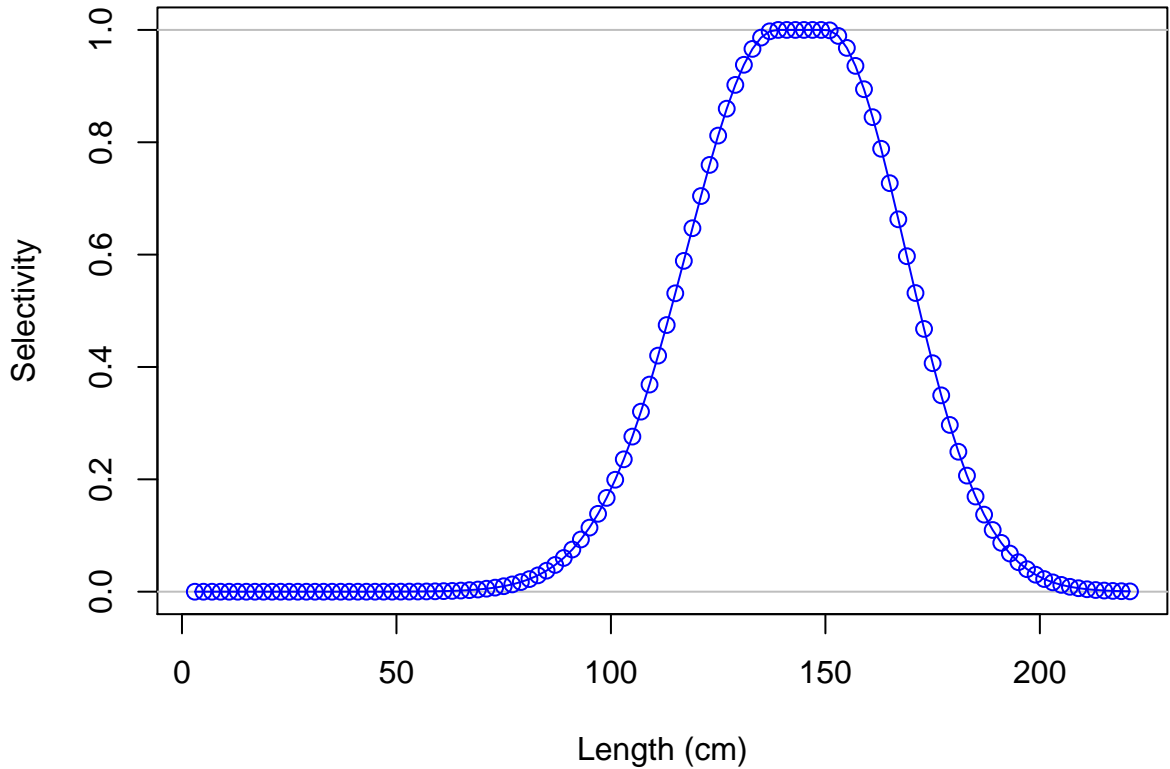




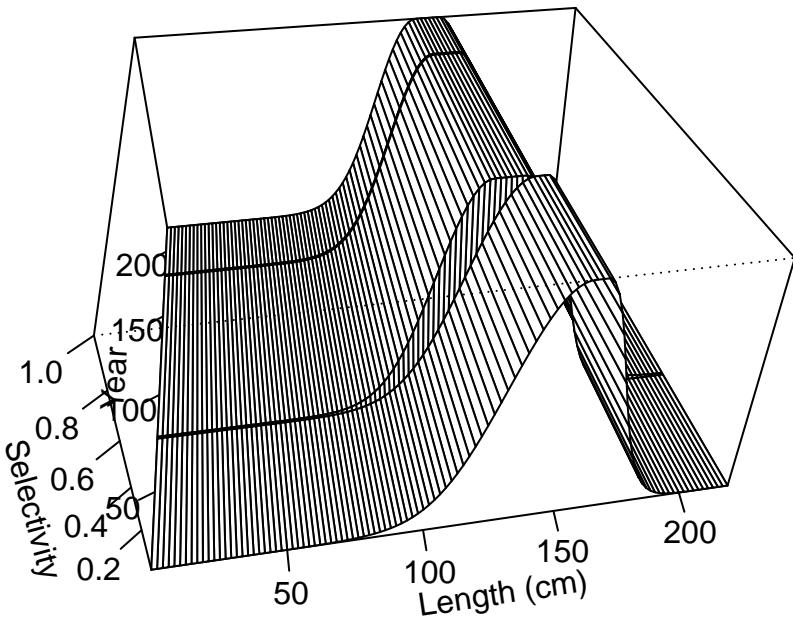
# Female time-varying selectivity for A3-LL-n



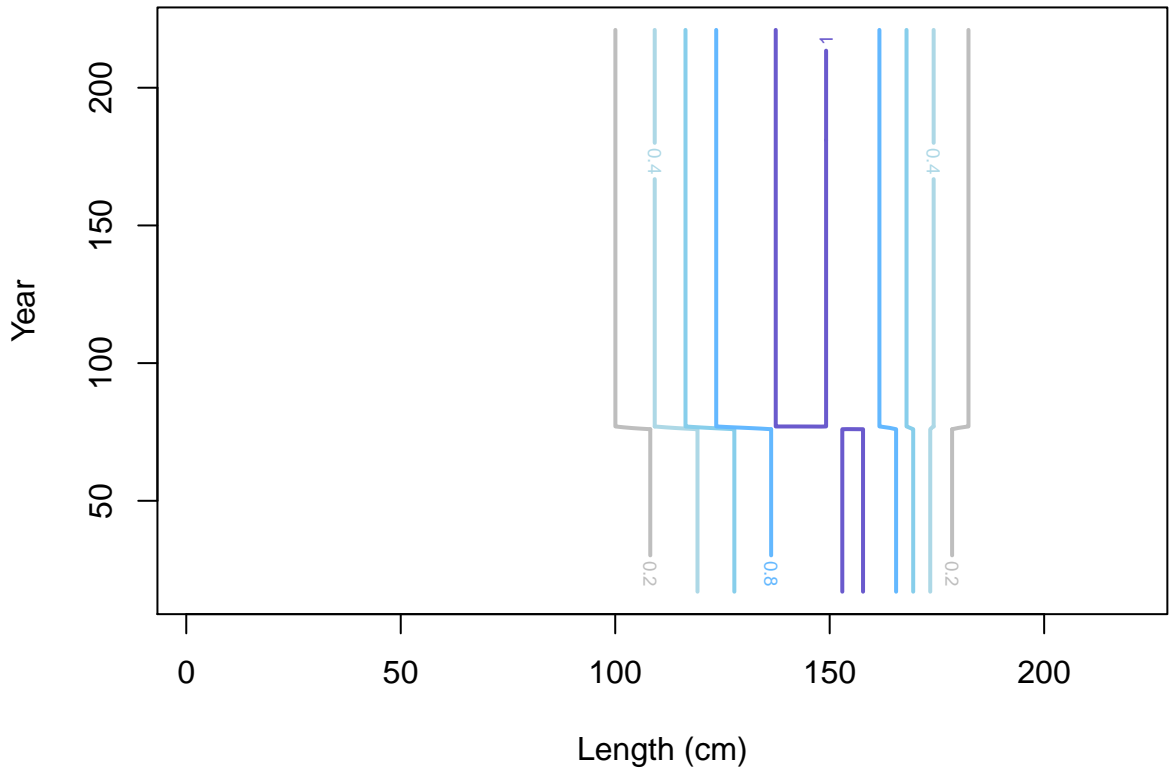
# Female ending year selectivity for A3-LL-n



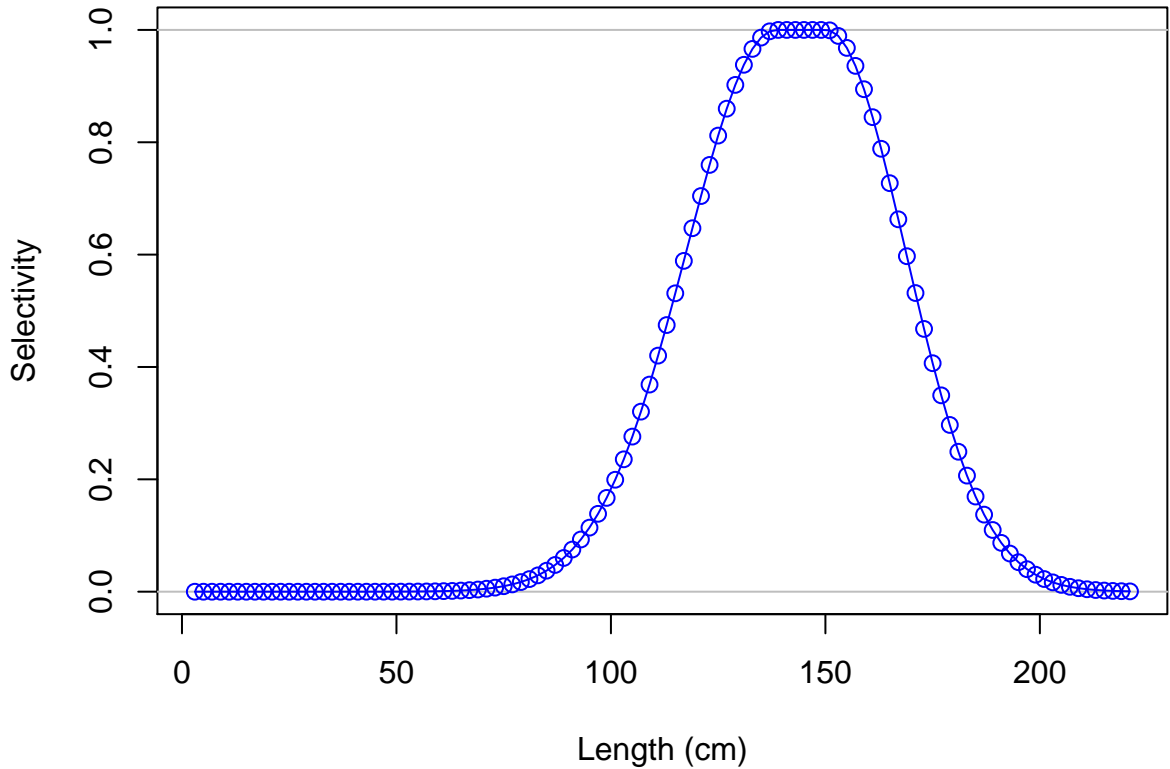
# Male time-varying selectivity for A3-LL-n



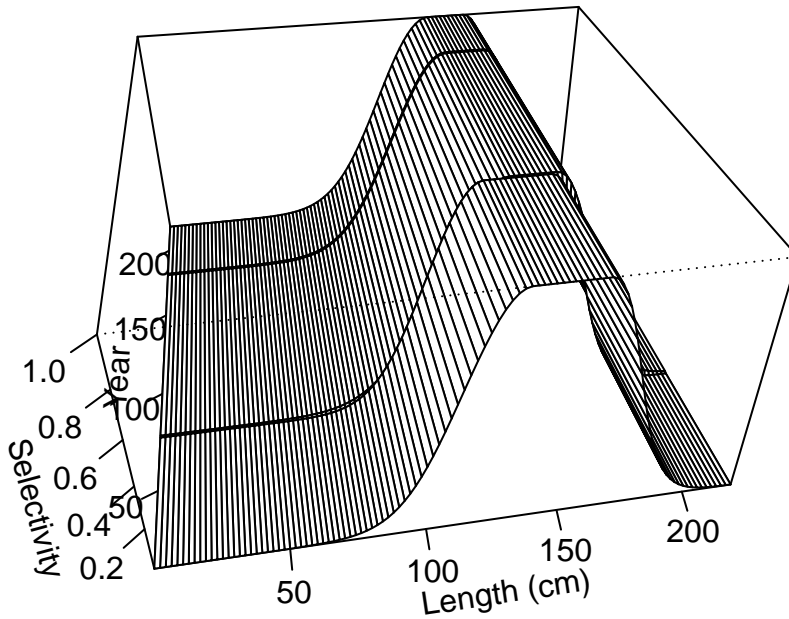
# Male time-varying selectivity for A3-LL-n



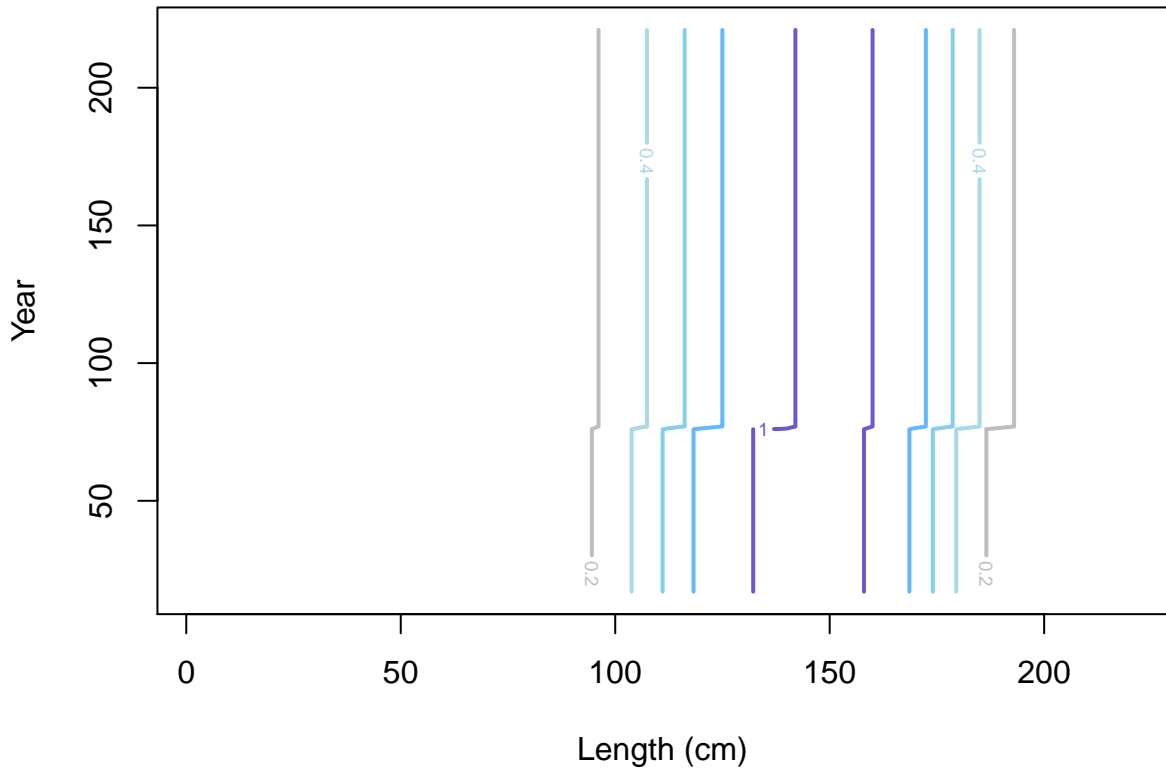
## Male ending year selectivity for A3-LL-n



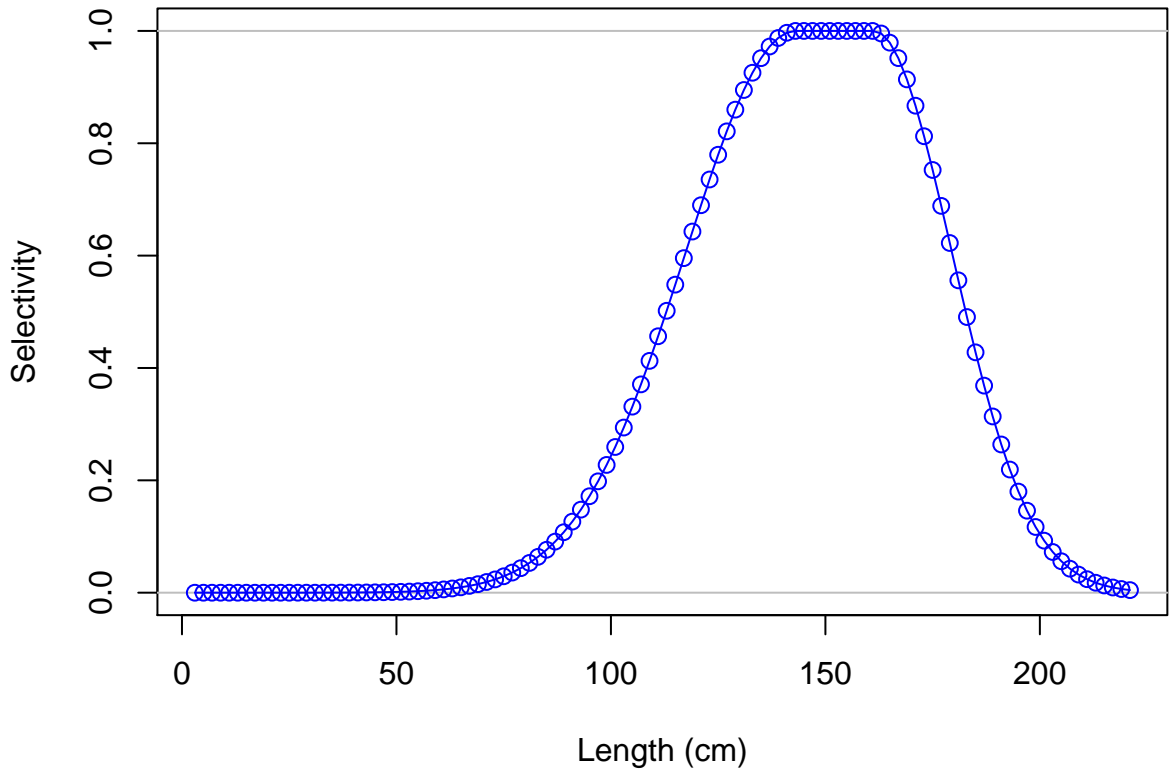
## Female time-varying selectivity for A4-LL-n



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

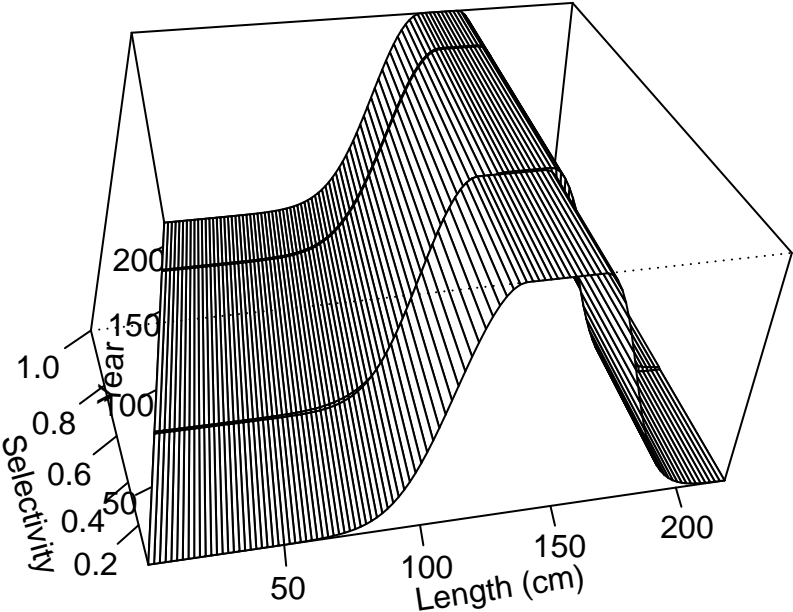


## Female ending year selectivity for A4-LL-n

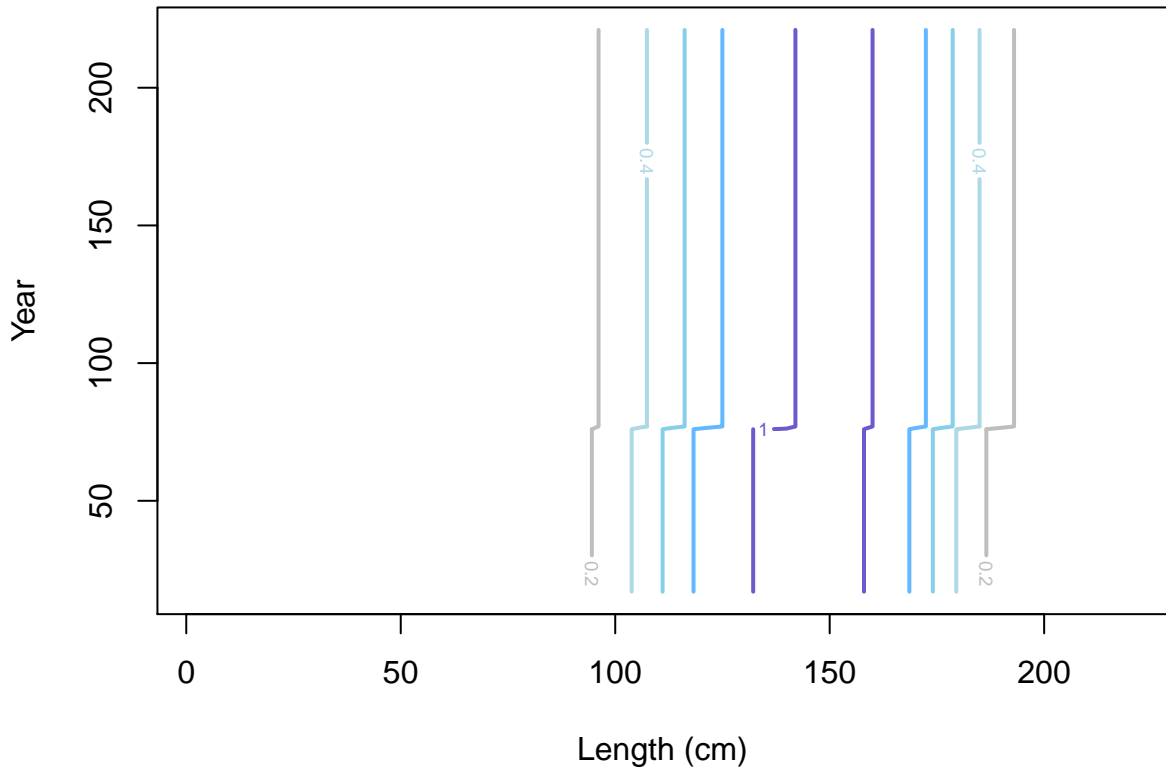




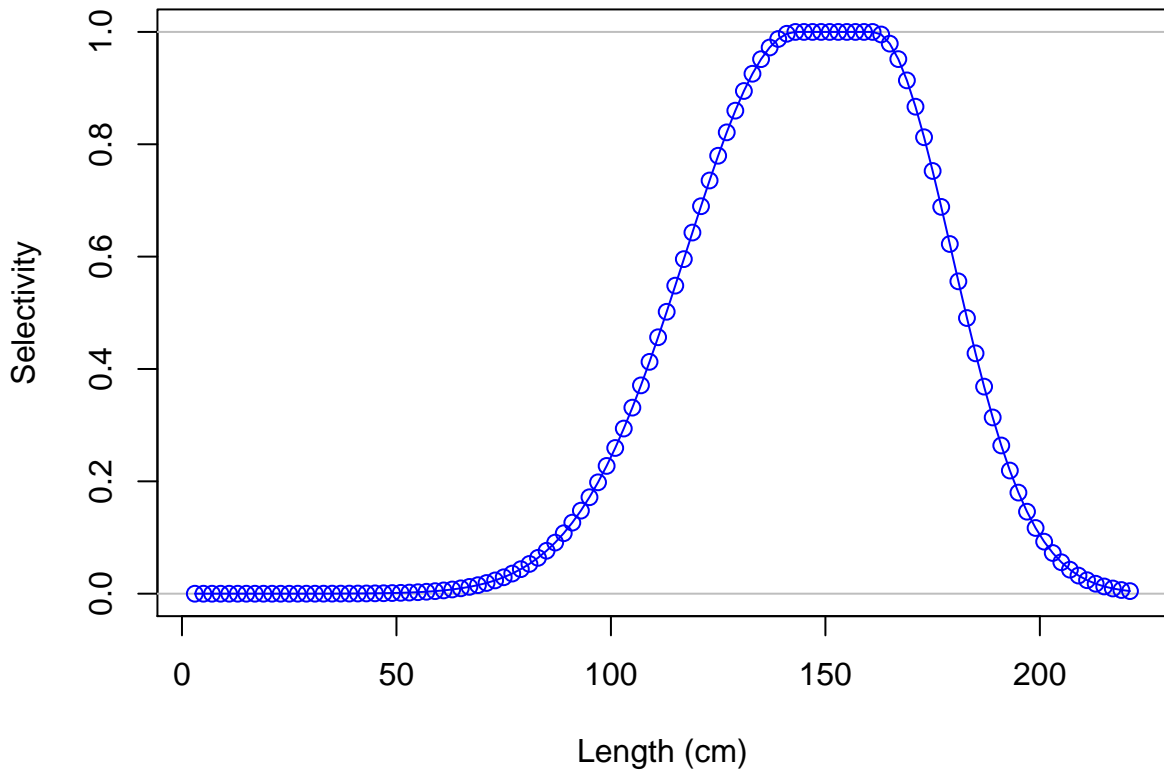
# Male time-varying selectivity for A4-LL-n



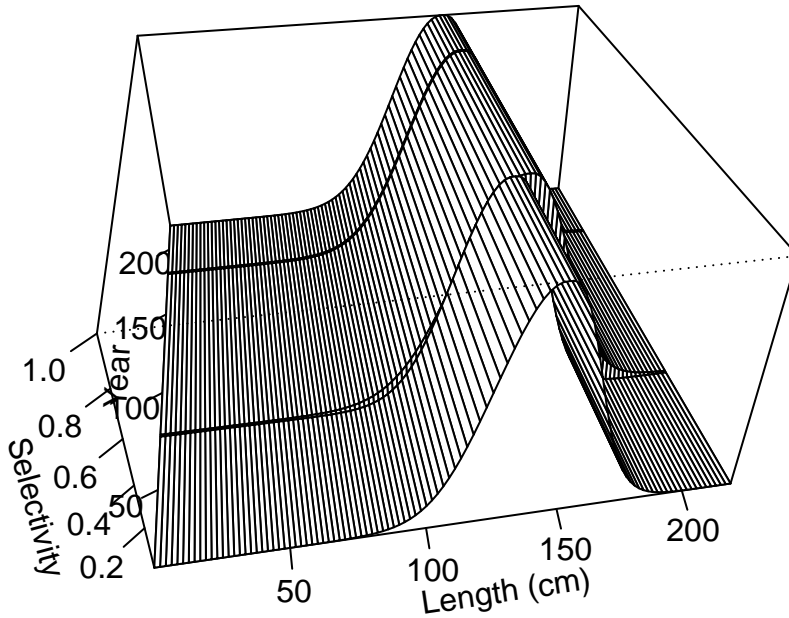
# Male time-varying selectivity for A4-LL-n



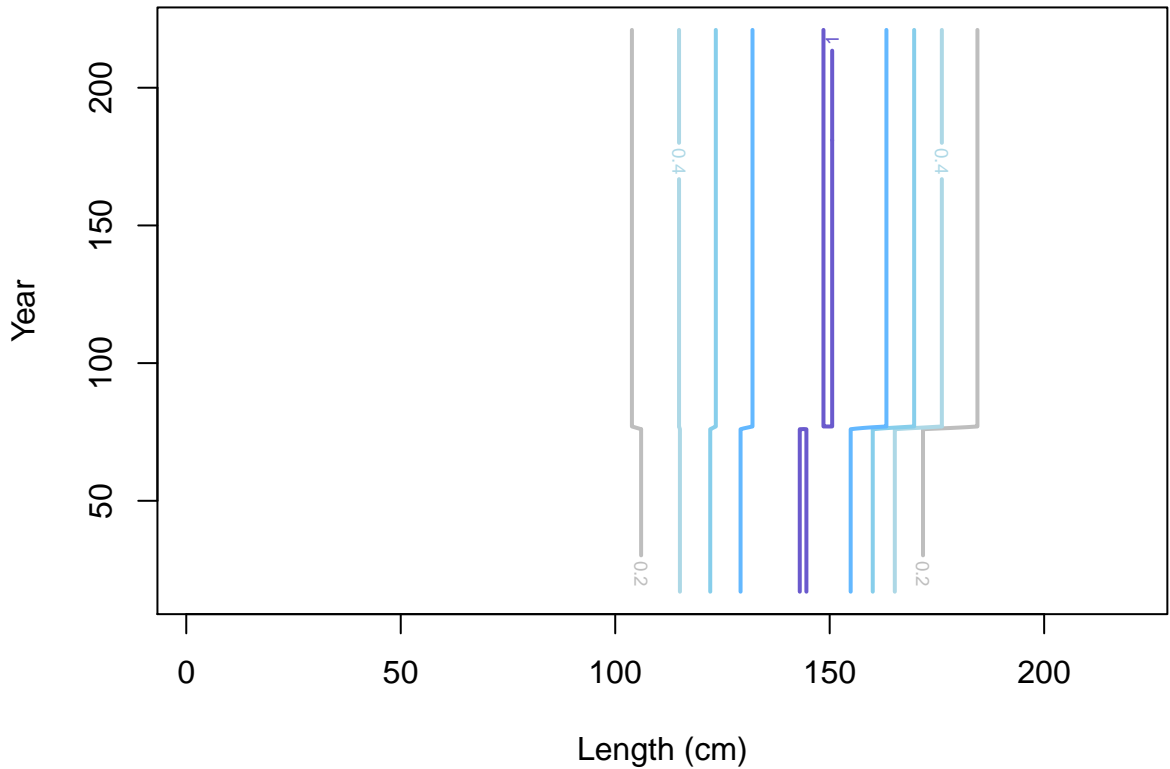
## Male ending year selectivity for A4-LL-n



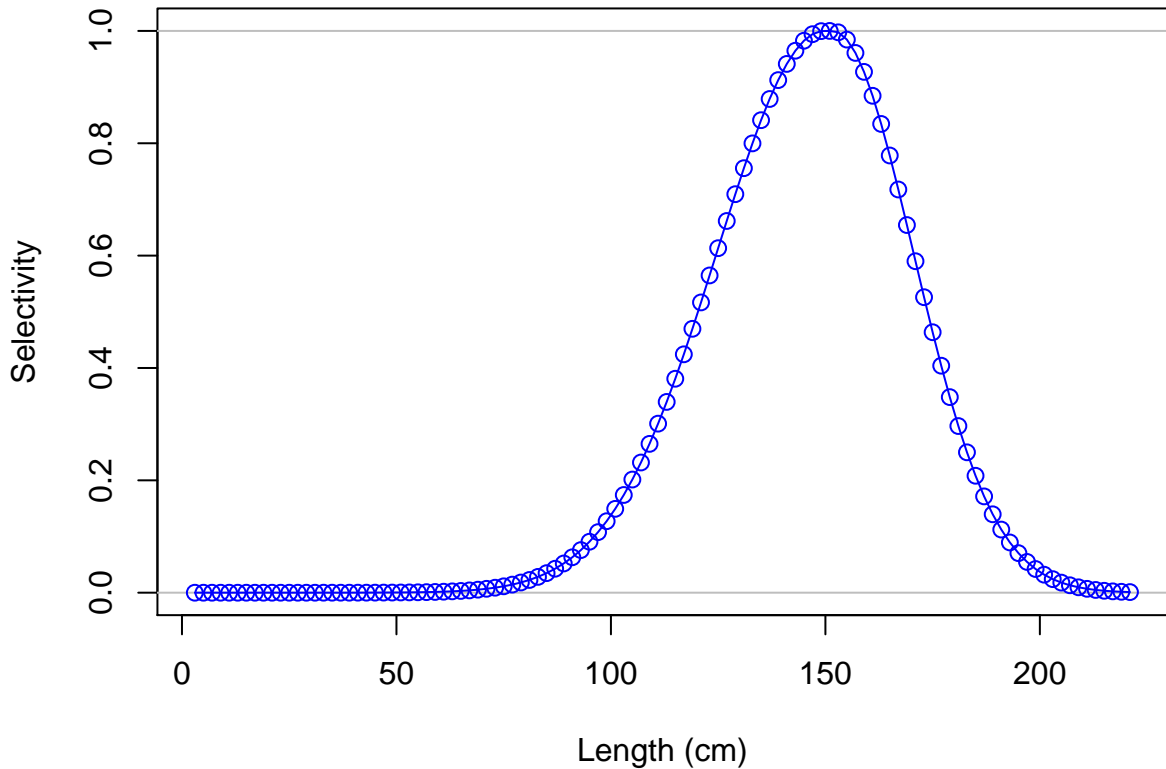
## Female time-varying selectivity for A5-LL-n



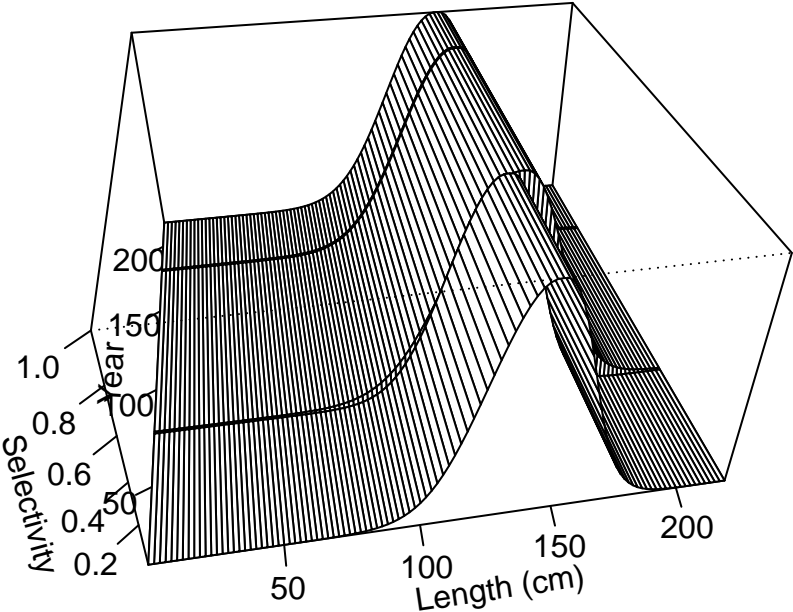
# Female time-varying selectivity for A5-LL-n



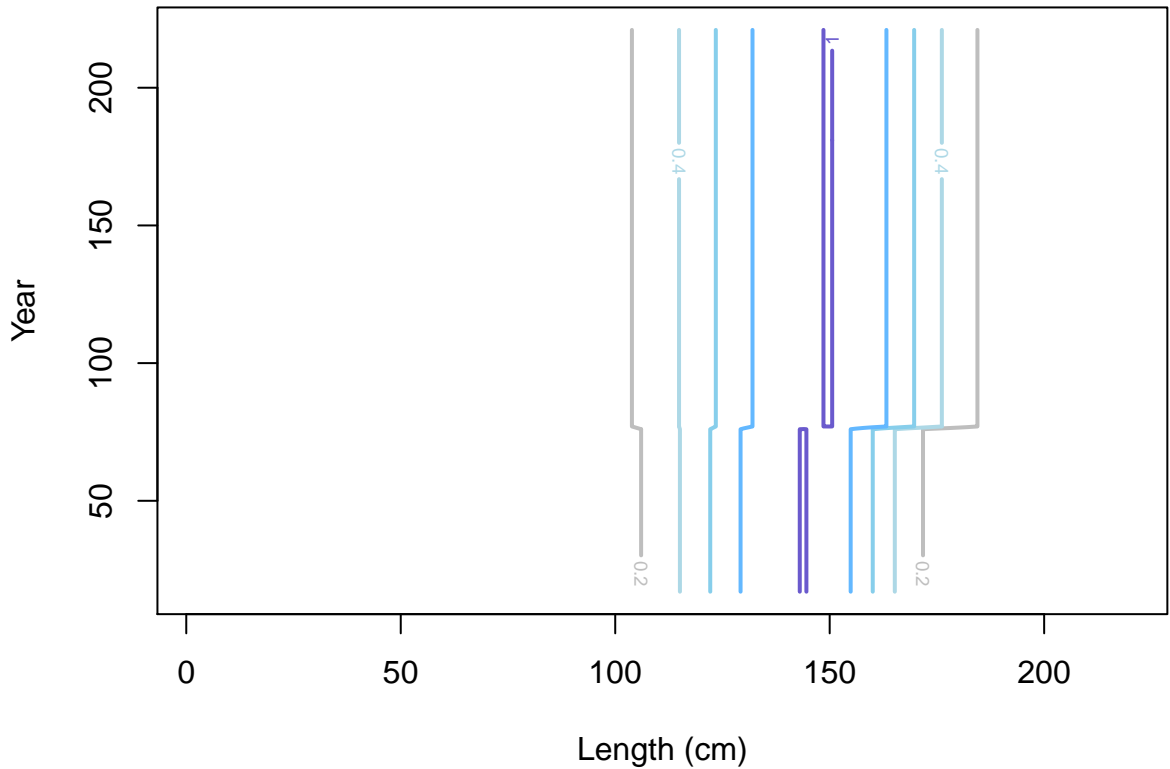
## Female ending year selectivity for A5-LL-n



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

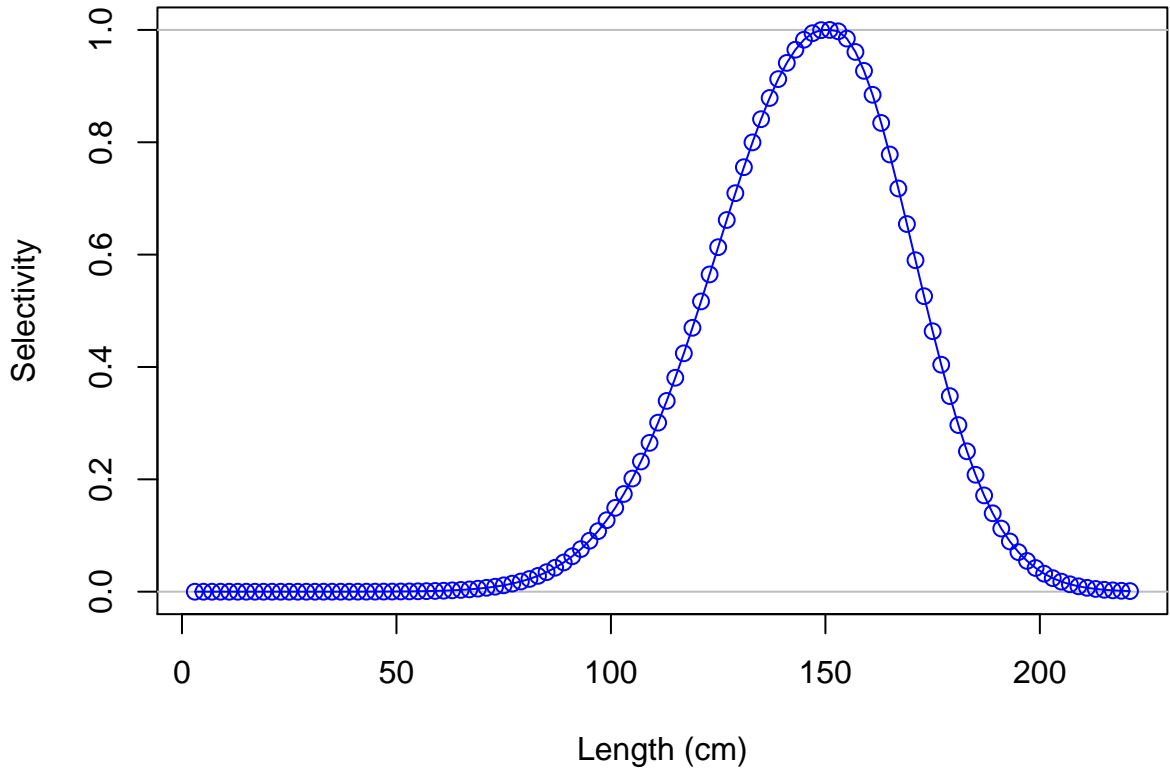


# Male time-varying selectivity for A5-LL-n

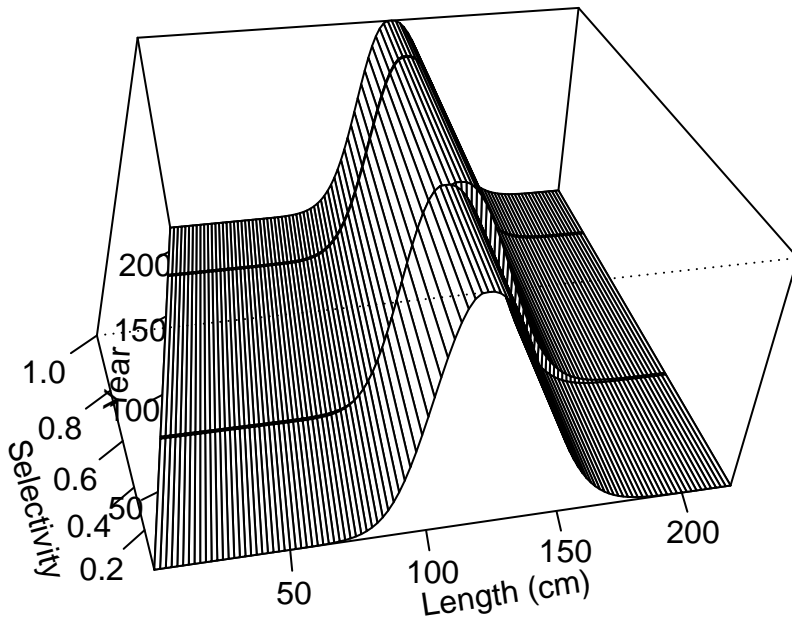




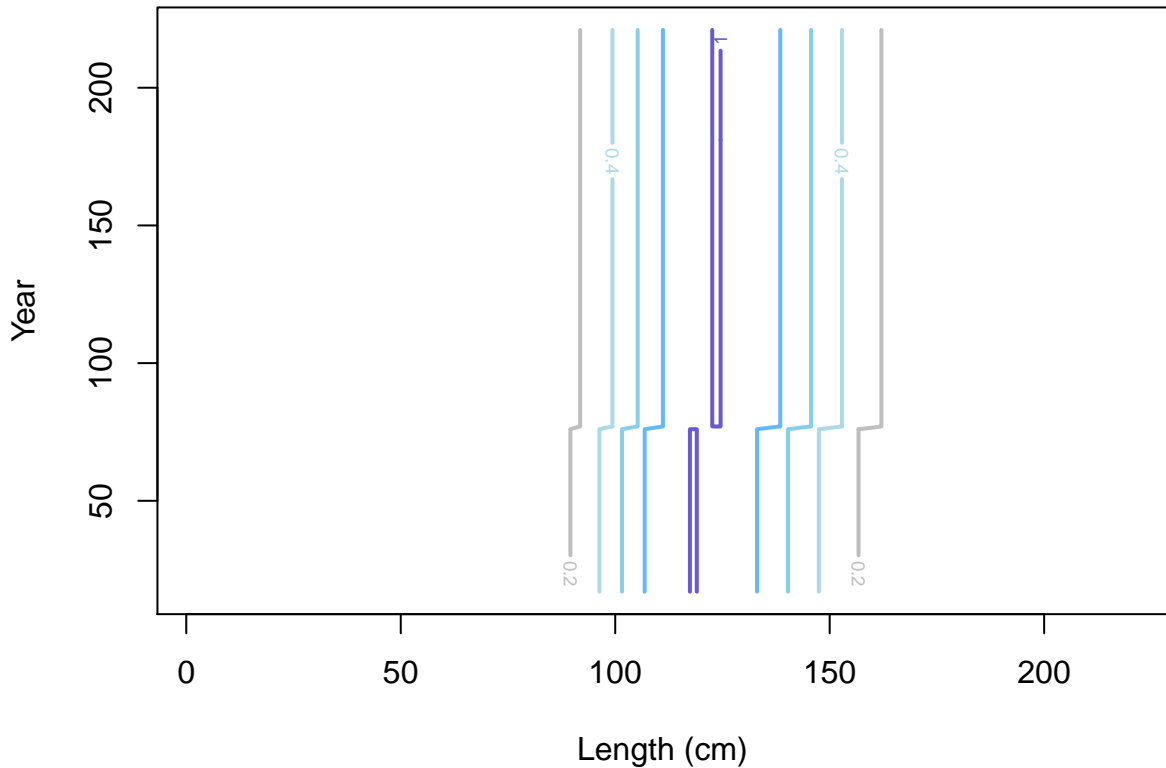
## Male ending year selectivity for A5-LL-n



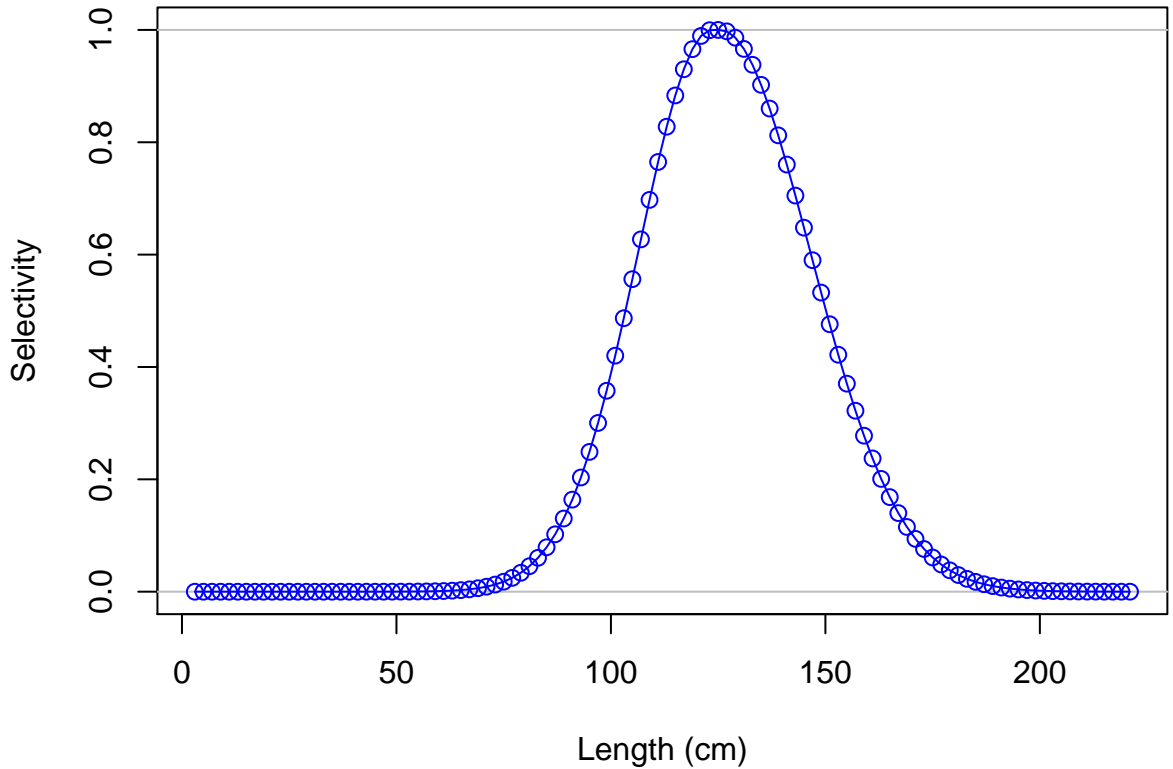
## Female time-varying selectivity for A6-LL-n



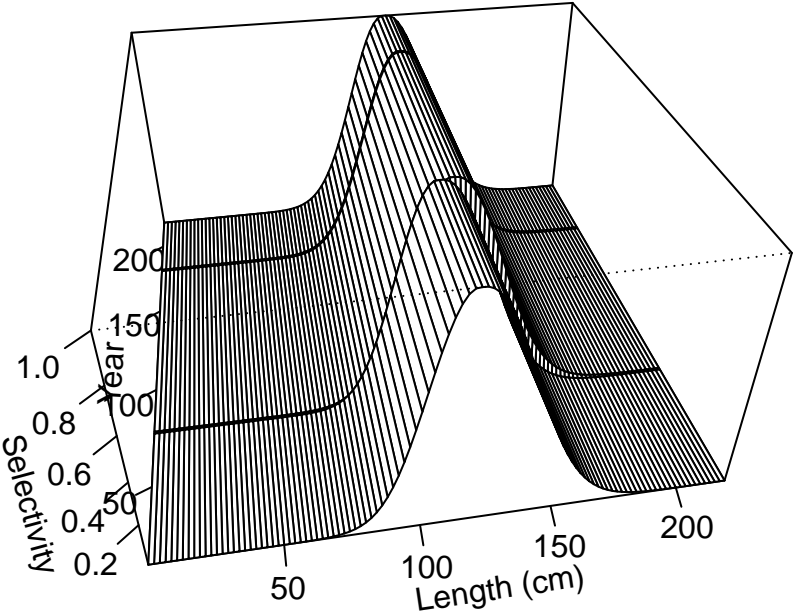
# Female time-varying selectivity for A6-LL-n



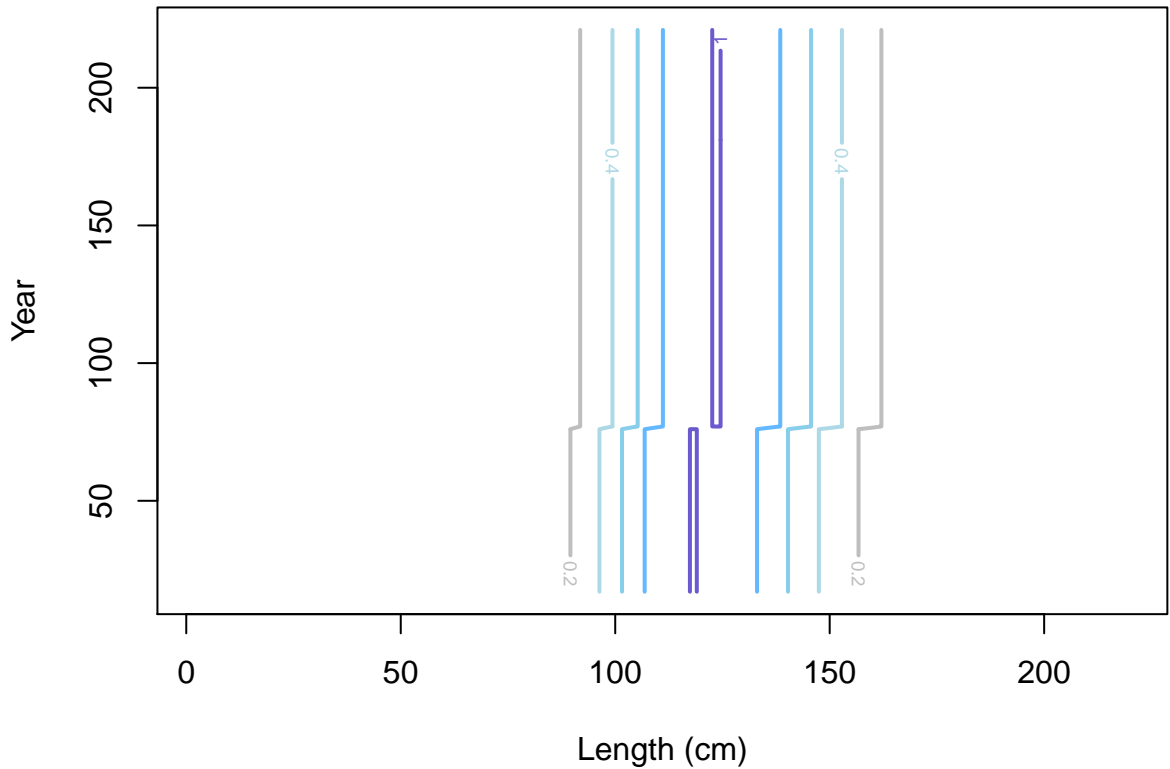
## Female ending year selectivity for A6-LL-n



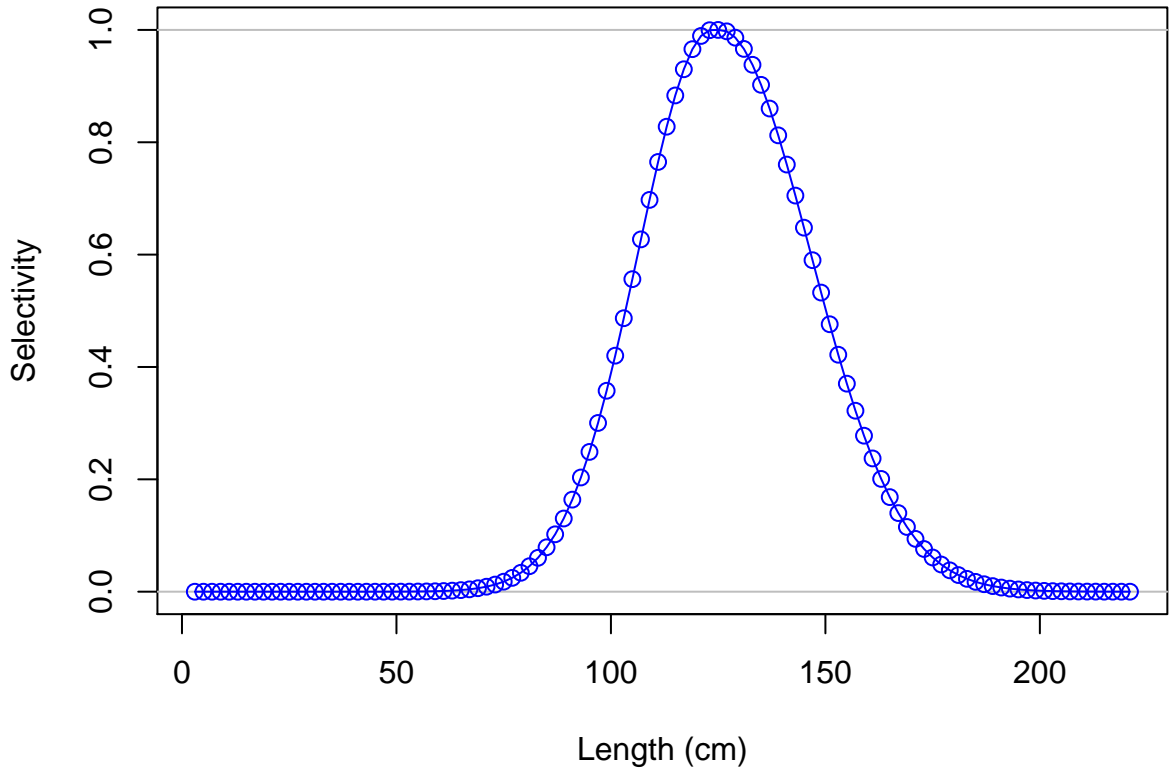
# Male time-varying selectivity for A6-LL-n



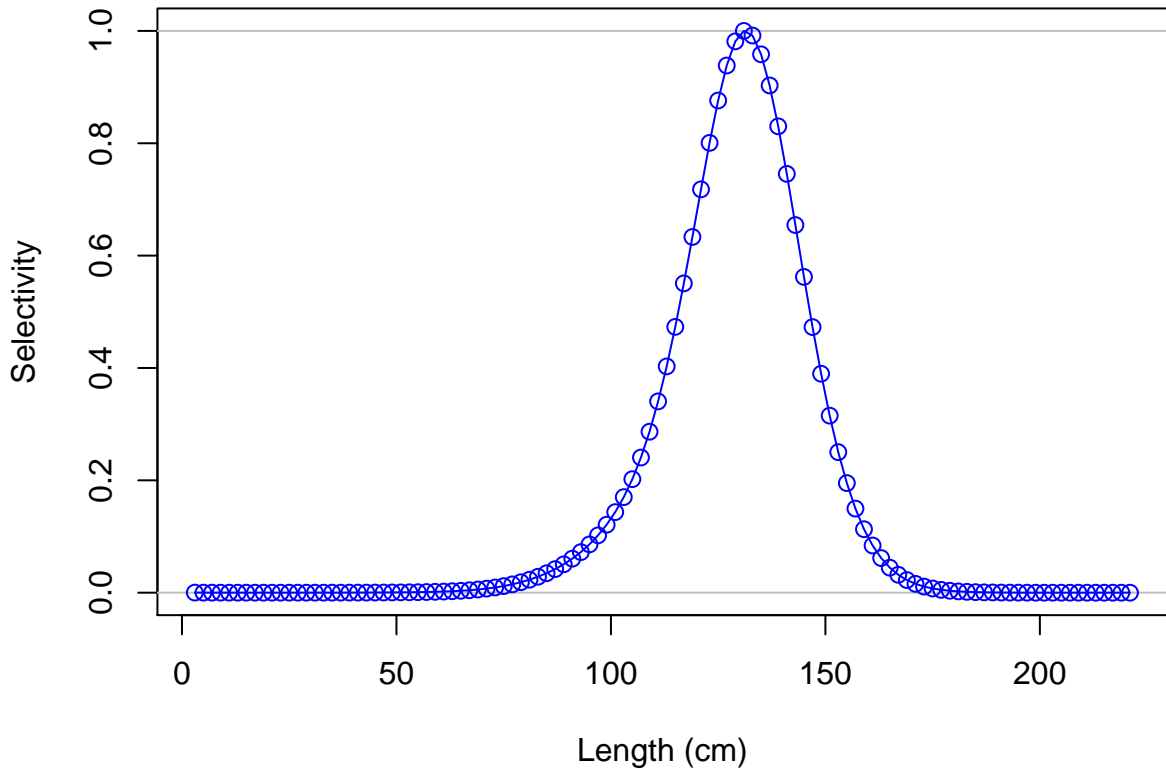
# Male time-varying selectivity for A6-LL-n



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

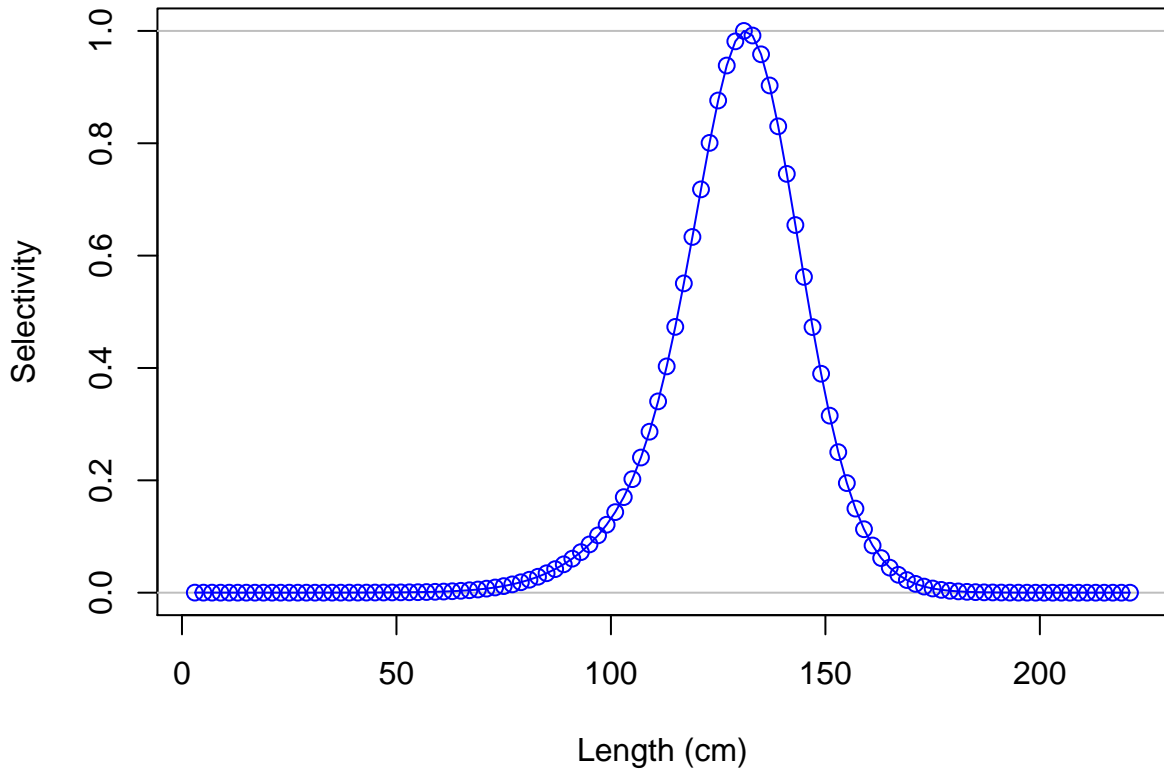


## Female ending year selectivity for A1-LL-w

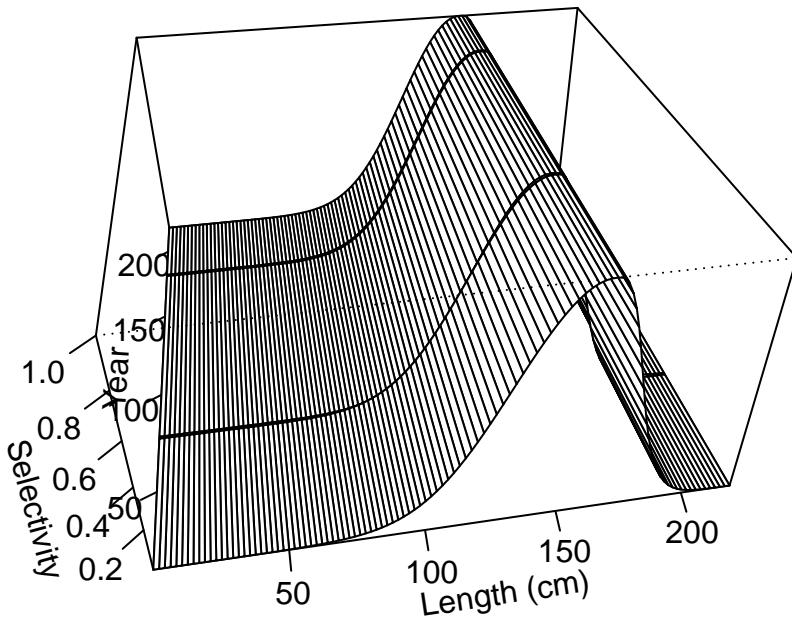




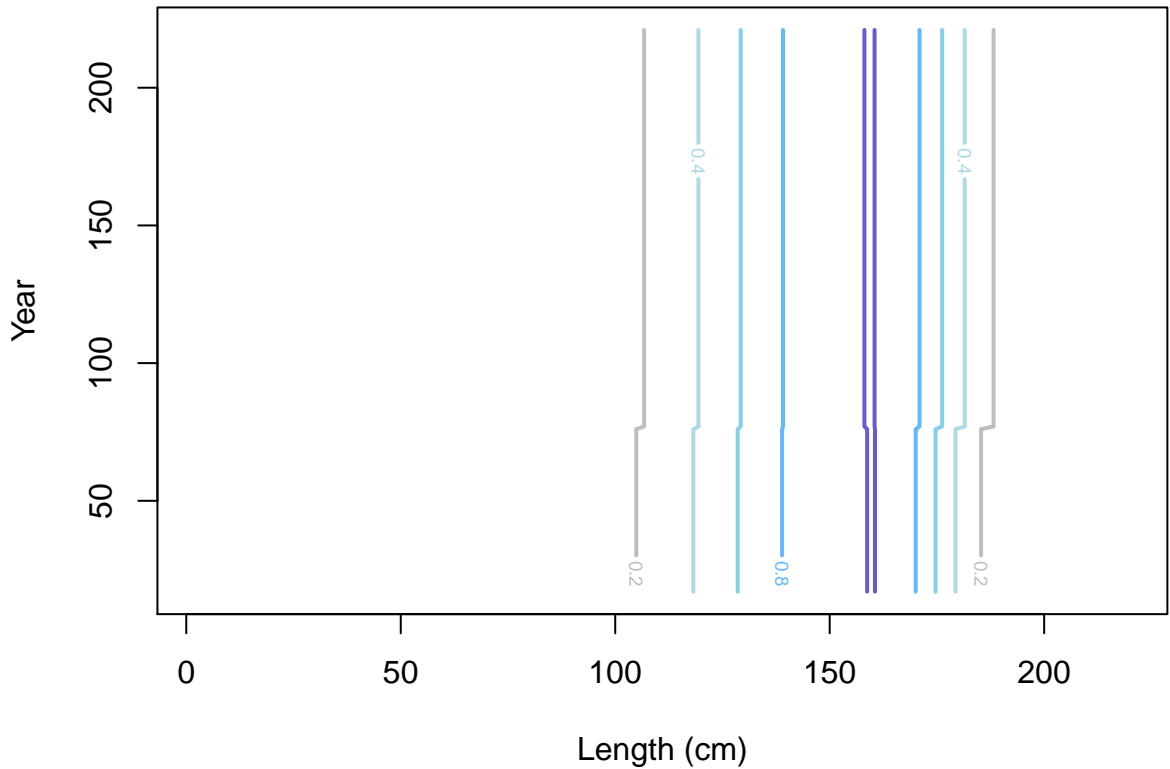
# Male ending year selectivity for A1-LL-w



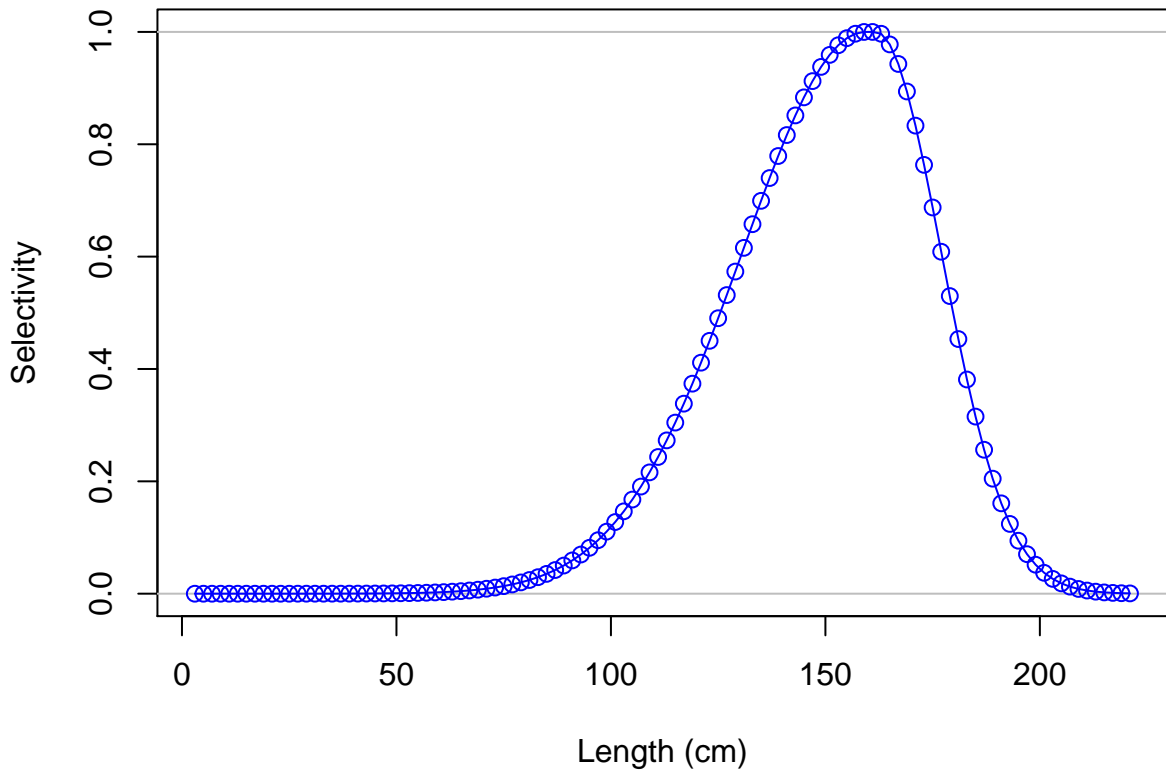
## Female time-varying selectivity for A2-LL-w



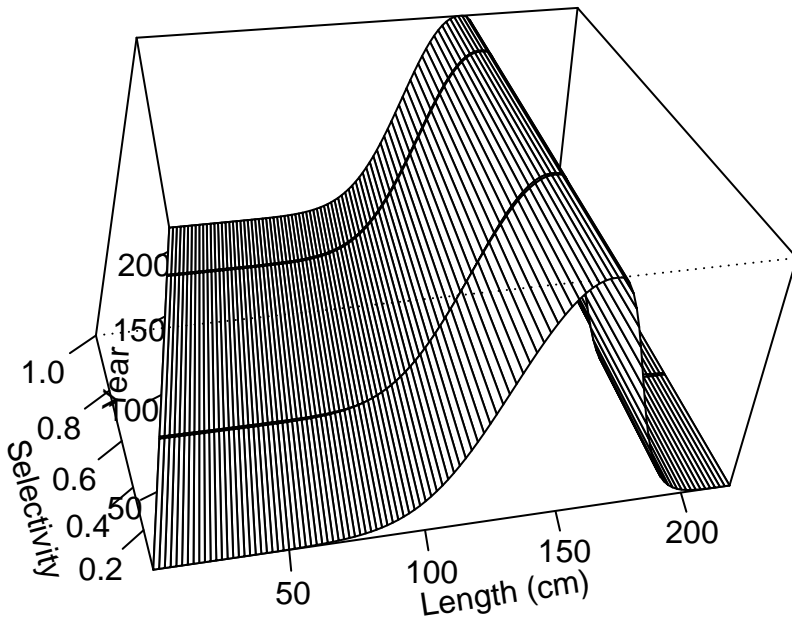
# Female time-varying selectivity for A2-LL-w



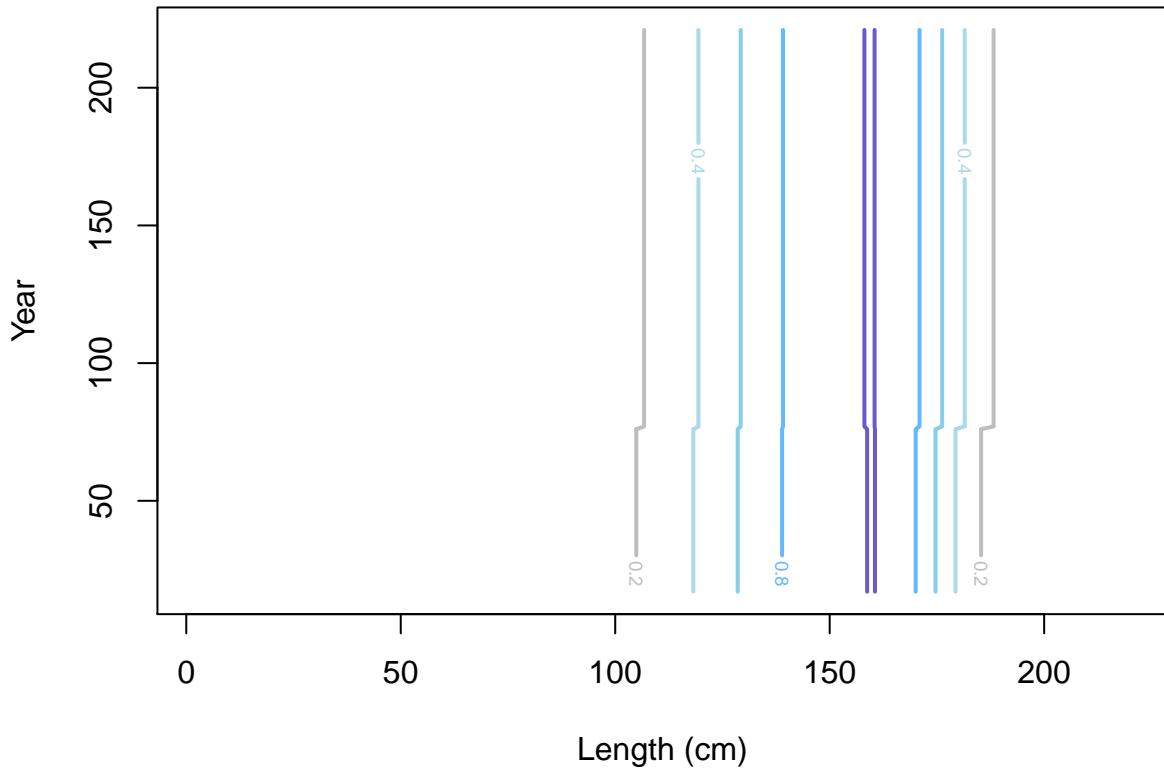
## Female ending year selectivity for A2-LL-w



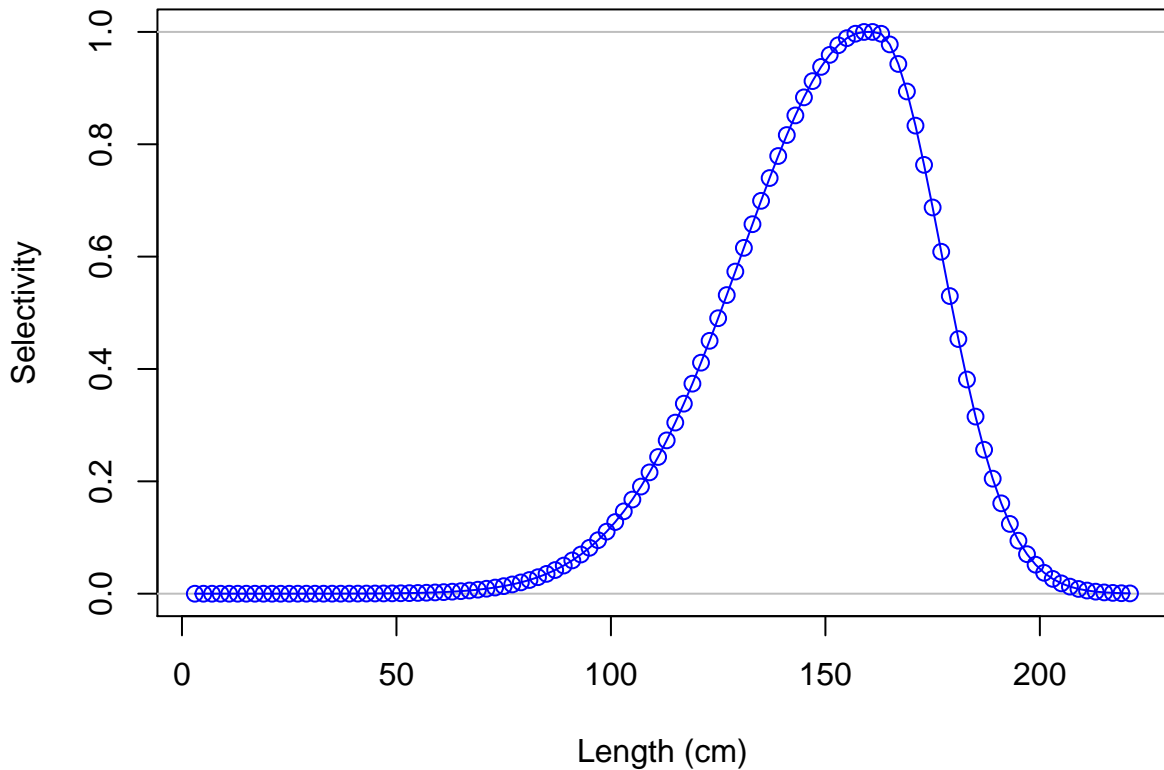
## Male time-varying selectivity for A2-LL-w



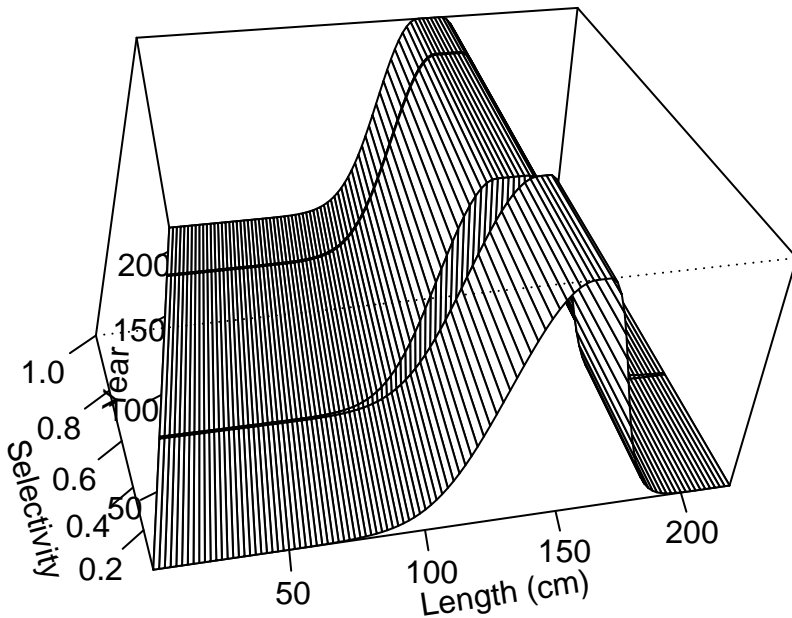
# Male time-varying selectivity for A2-LL-w



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

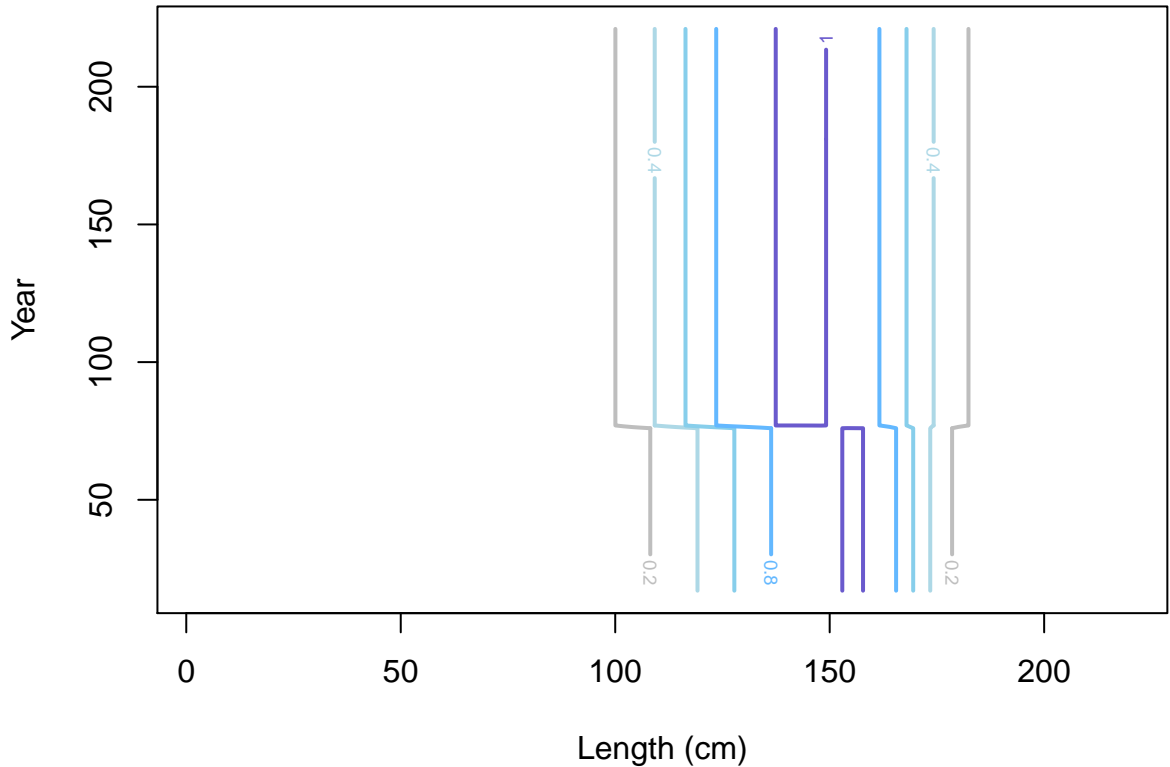


## Female time-varying selectivity for A3-LL-w

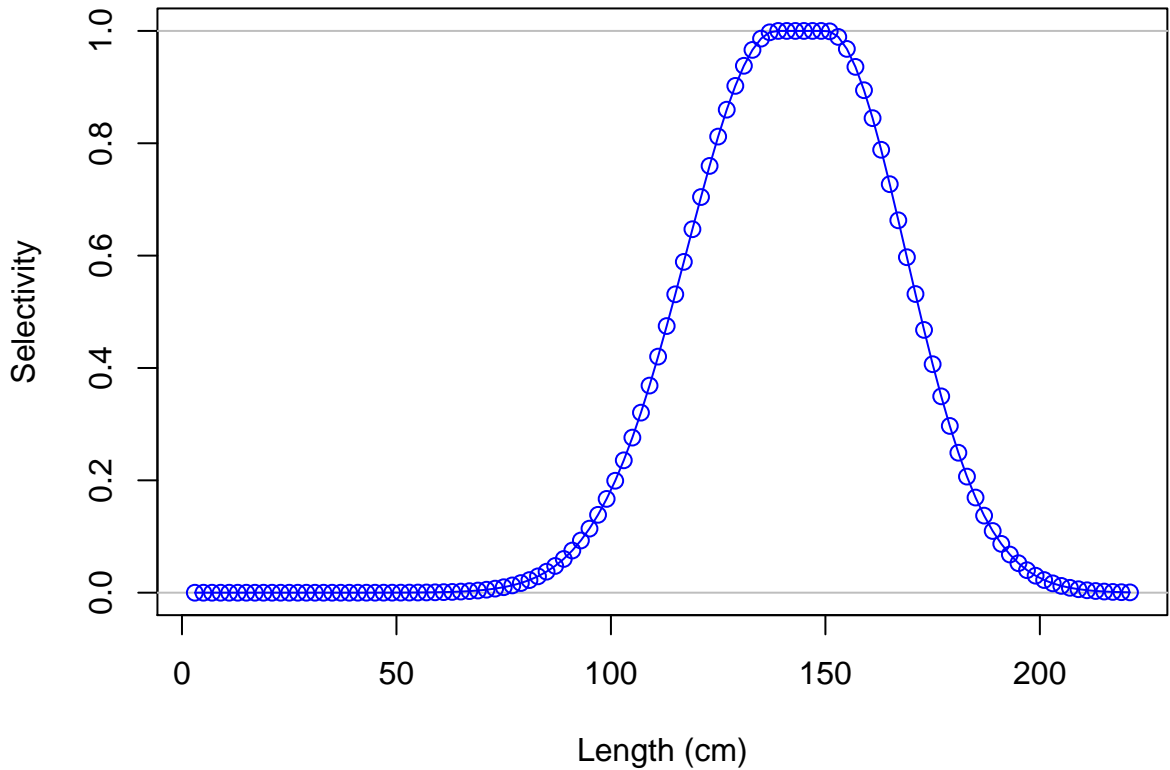




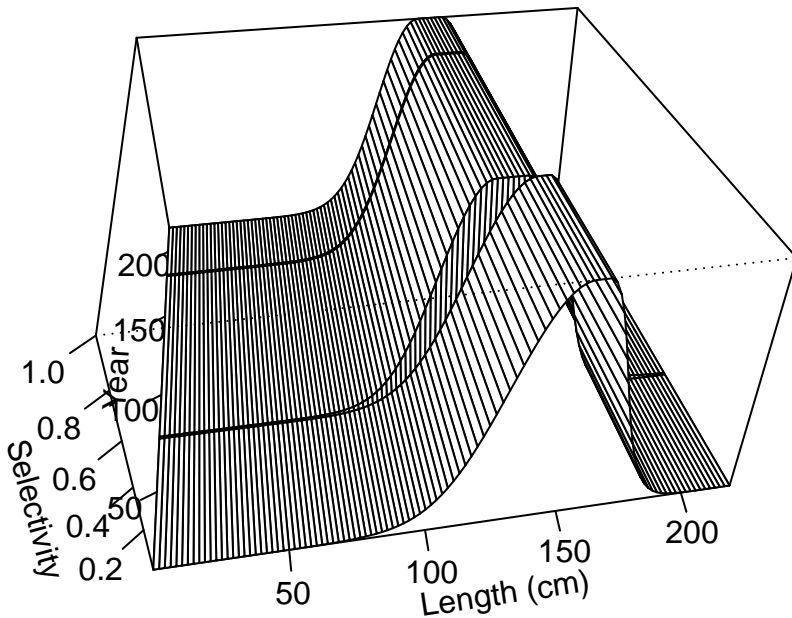
# Female time-varying selectivity for A3-LL-w



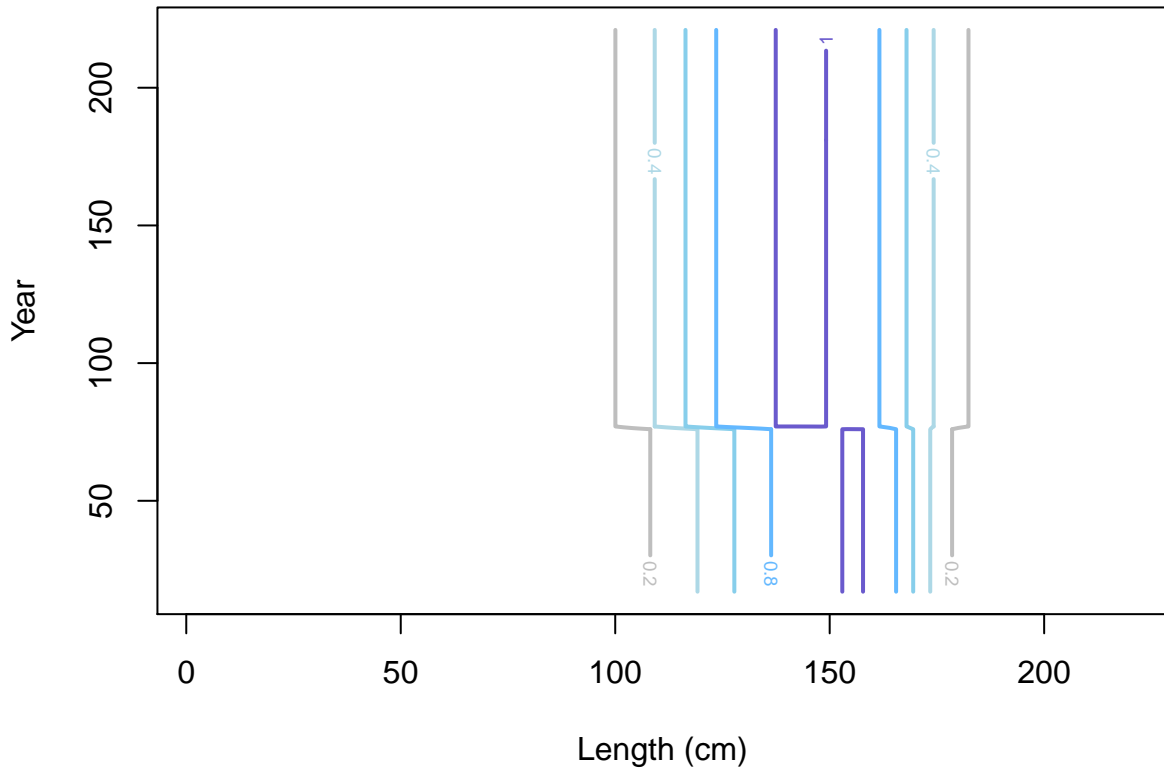
# Female ending year selectivity for A3-LL-w



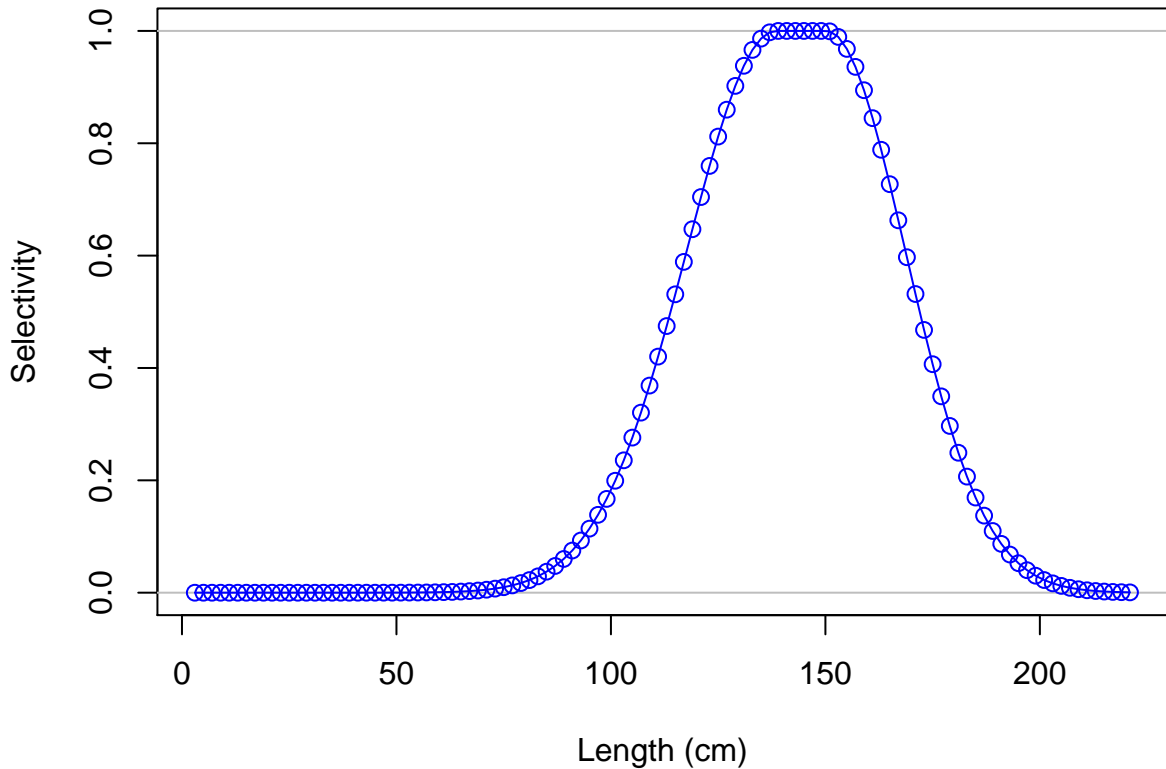
# Male time-varying selectivity for A3-LL-w



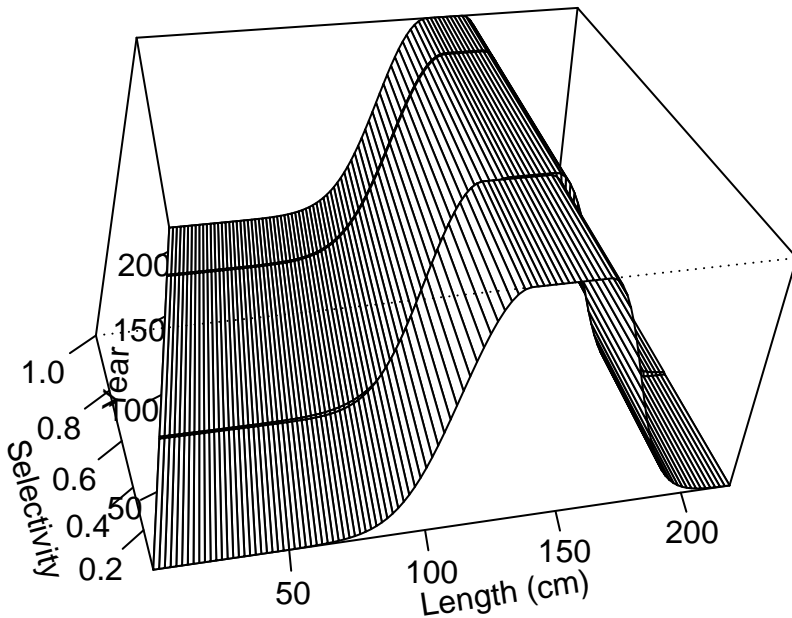
# Male time-varying selectivity for A3-LL-w



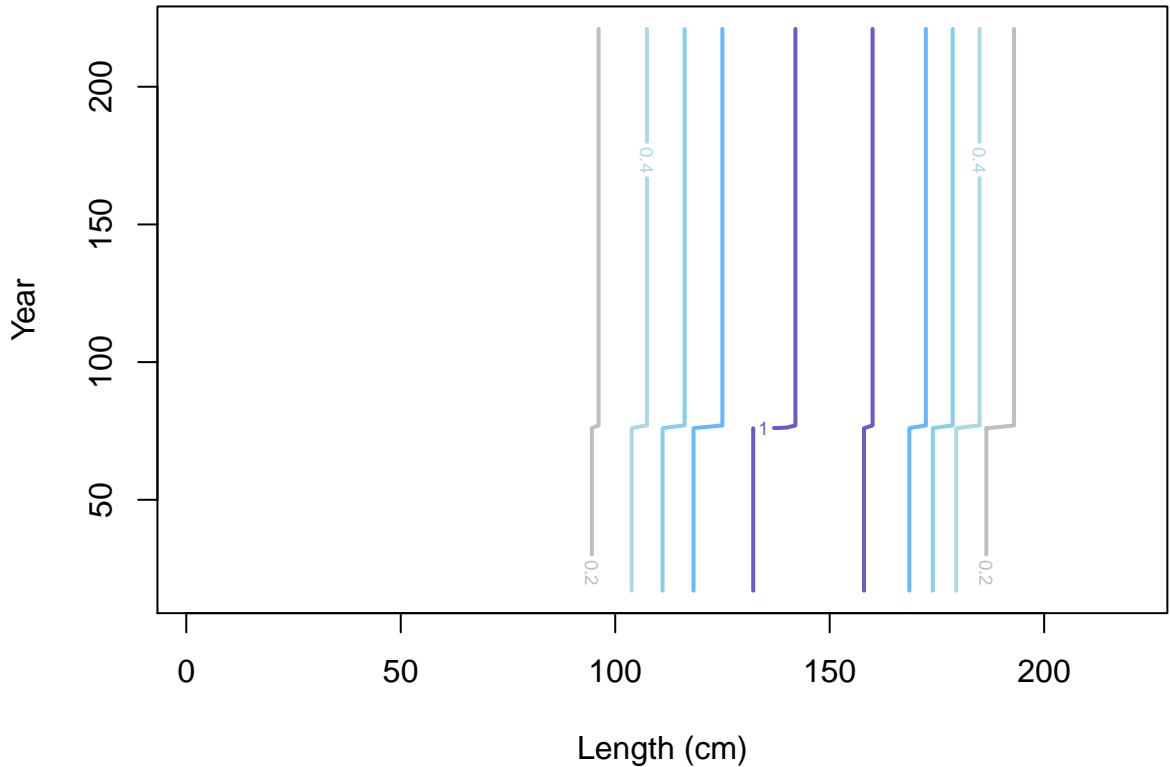
# Male ending year selectivity for A3-LL-w



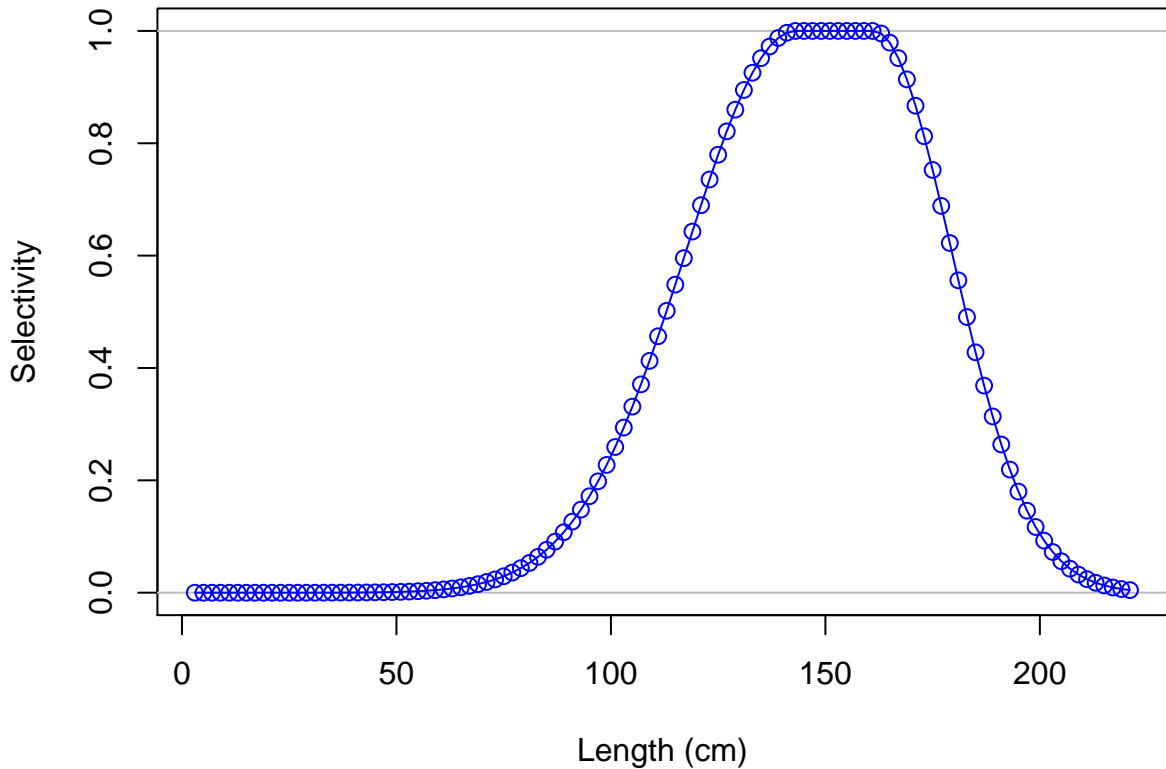
## Female time-varying selectivity for A4-LL-w



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

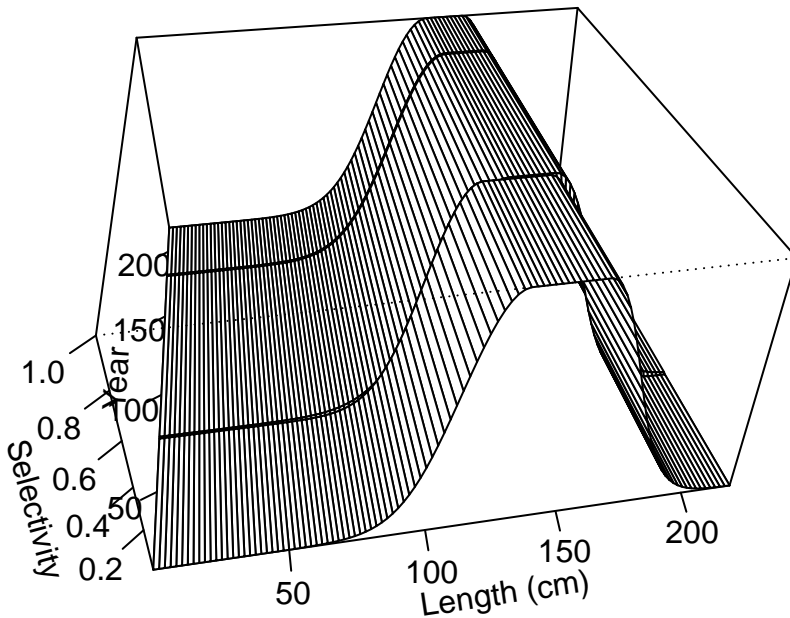


## Female ending year selectivity for A4-LL-w

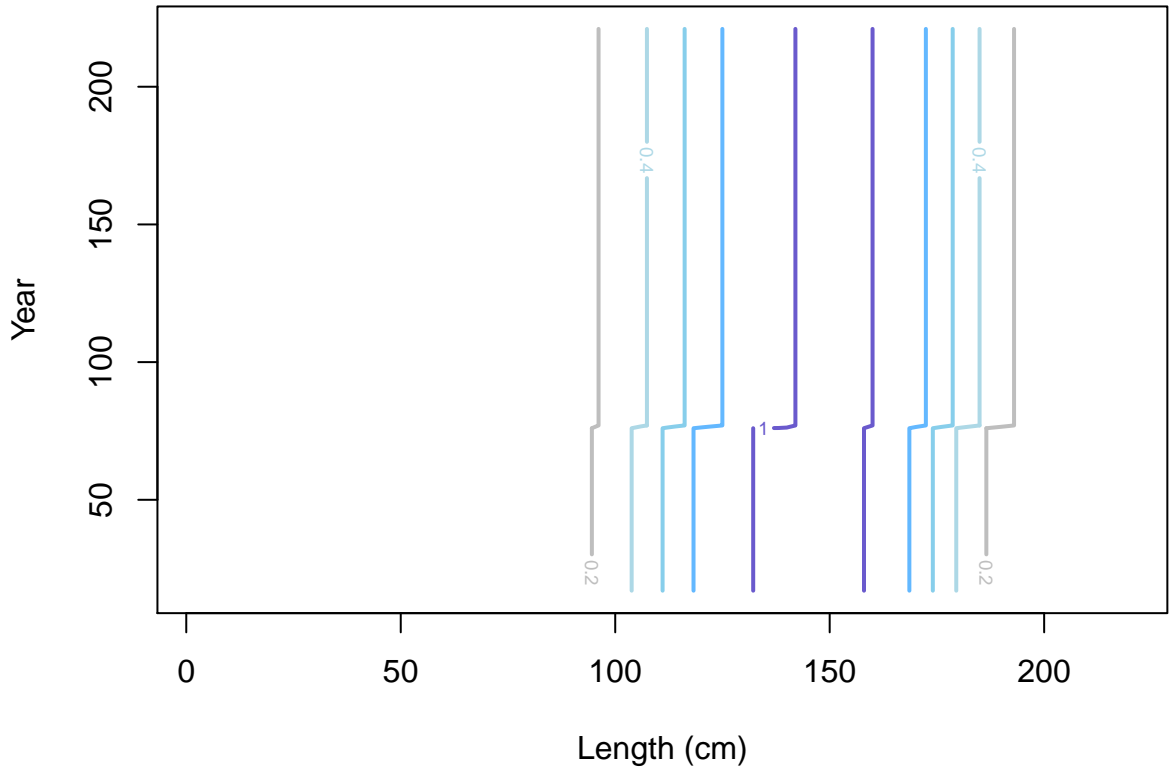




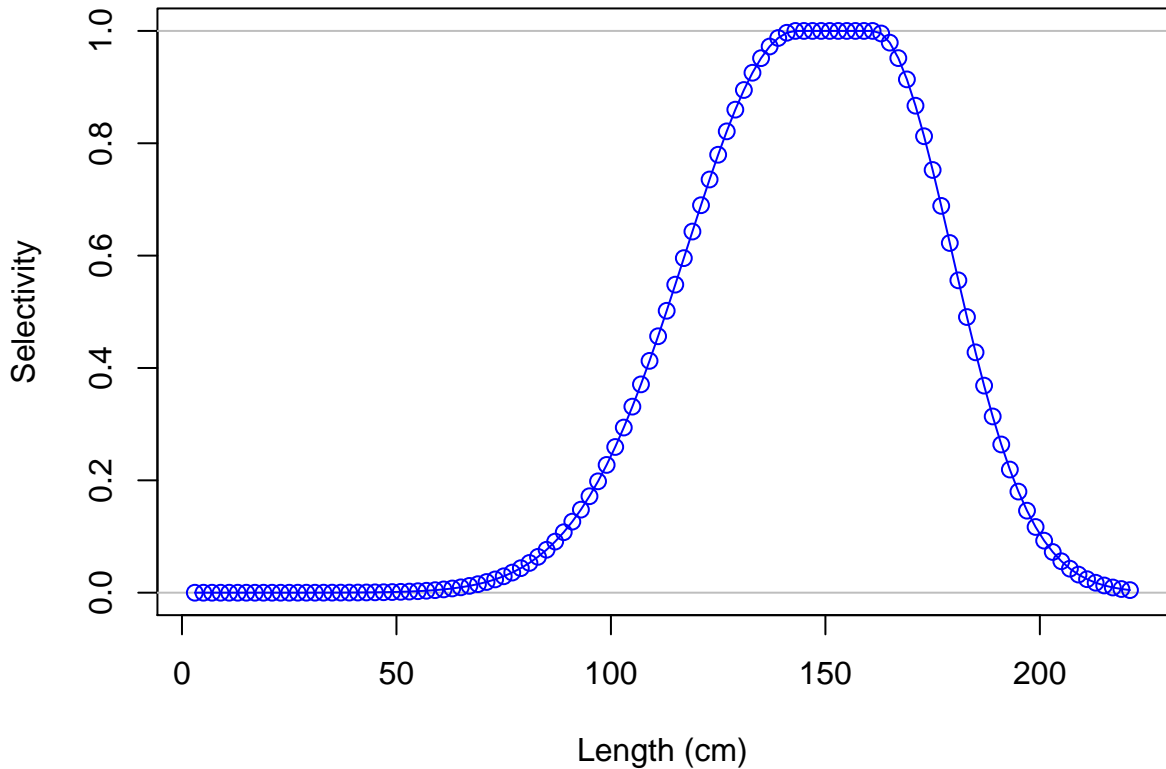
# Male time-varying selectivity for A4-LL-w



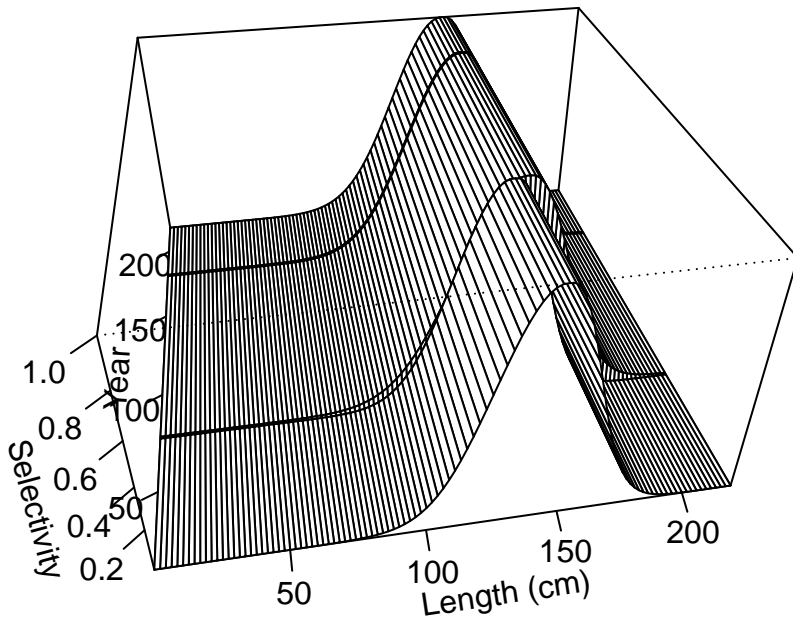
# Male time-varying selectivity for A4-LL-w



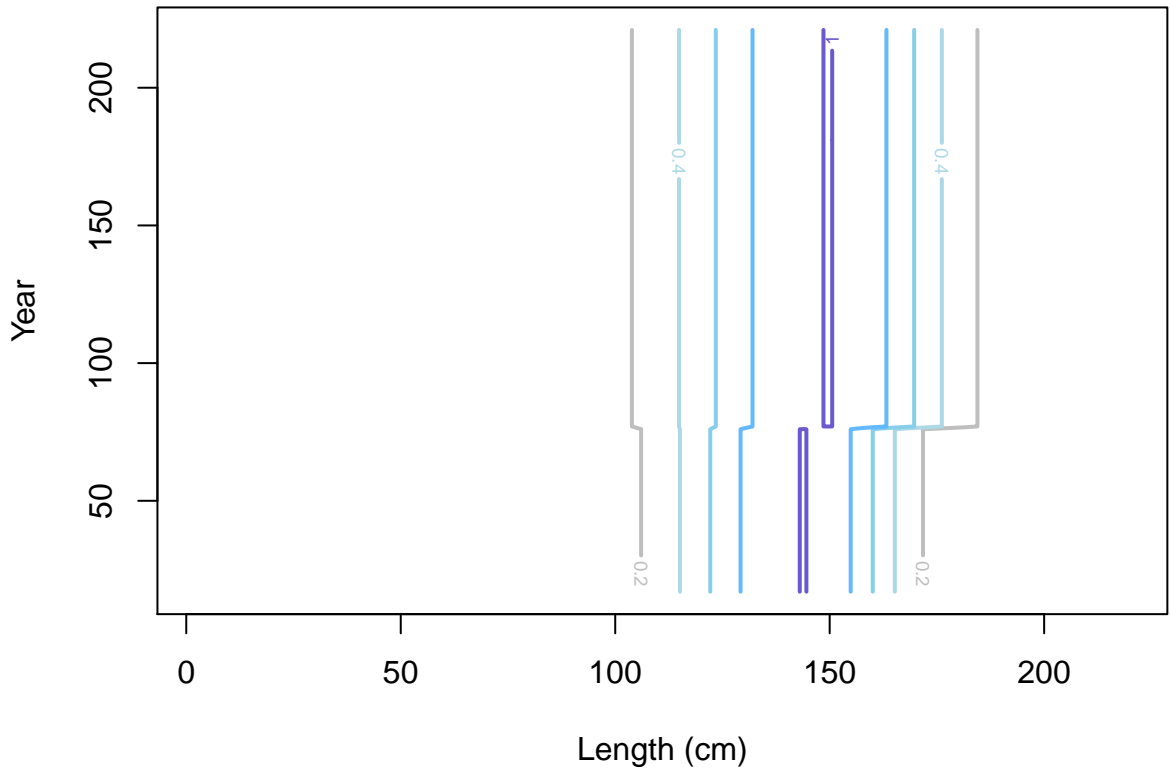
### Male ending year selectivity for A4-LL-w



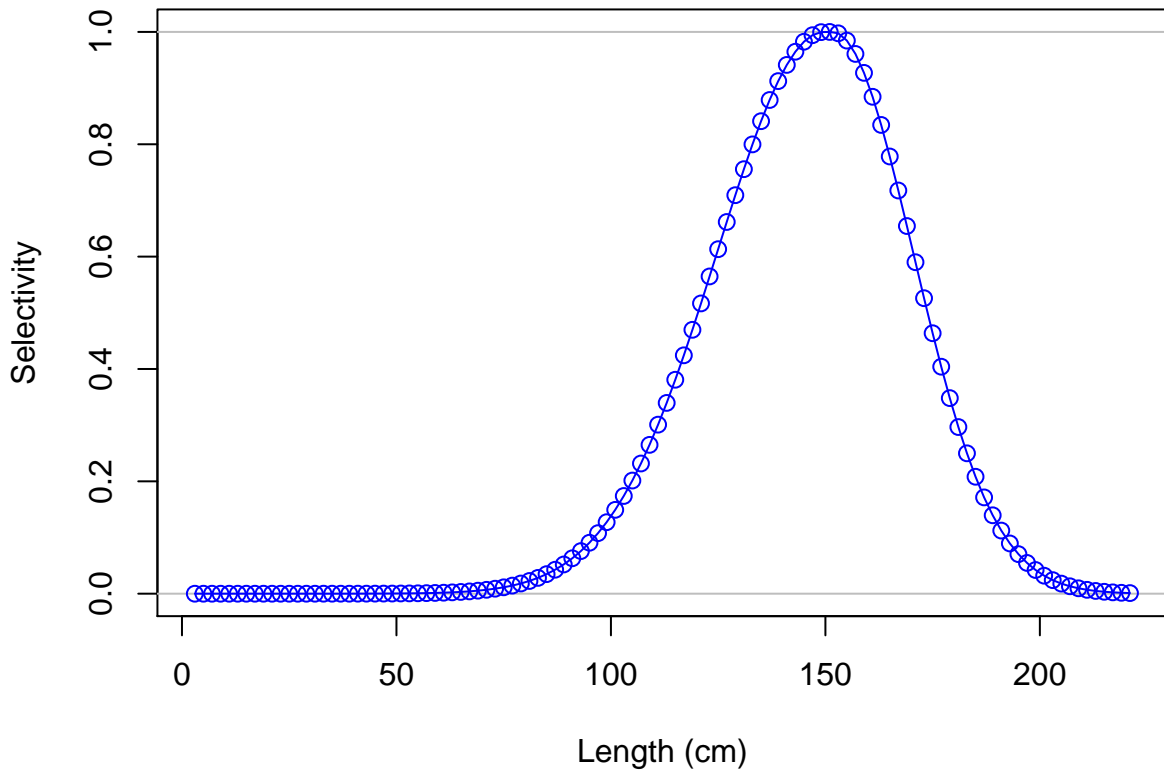
## Female time-varying selectivity for A5-LL-w



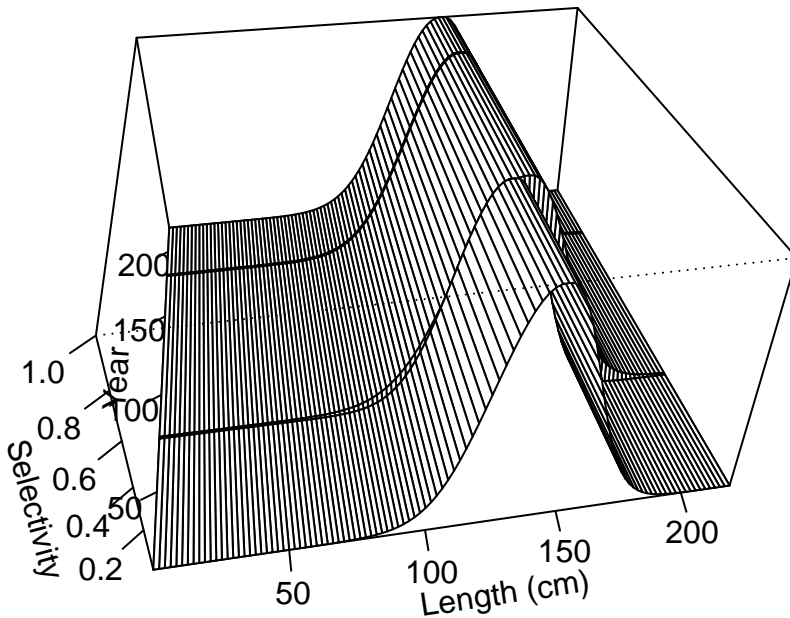
# Female time-varying selectivity for A5-LL-w



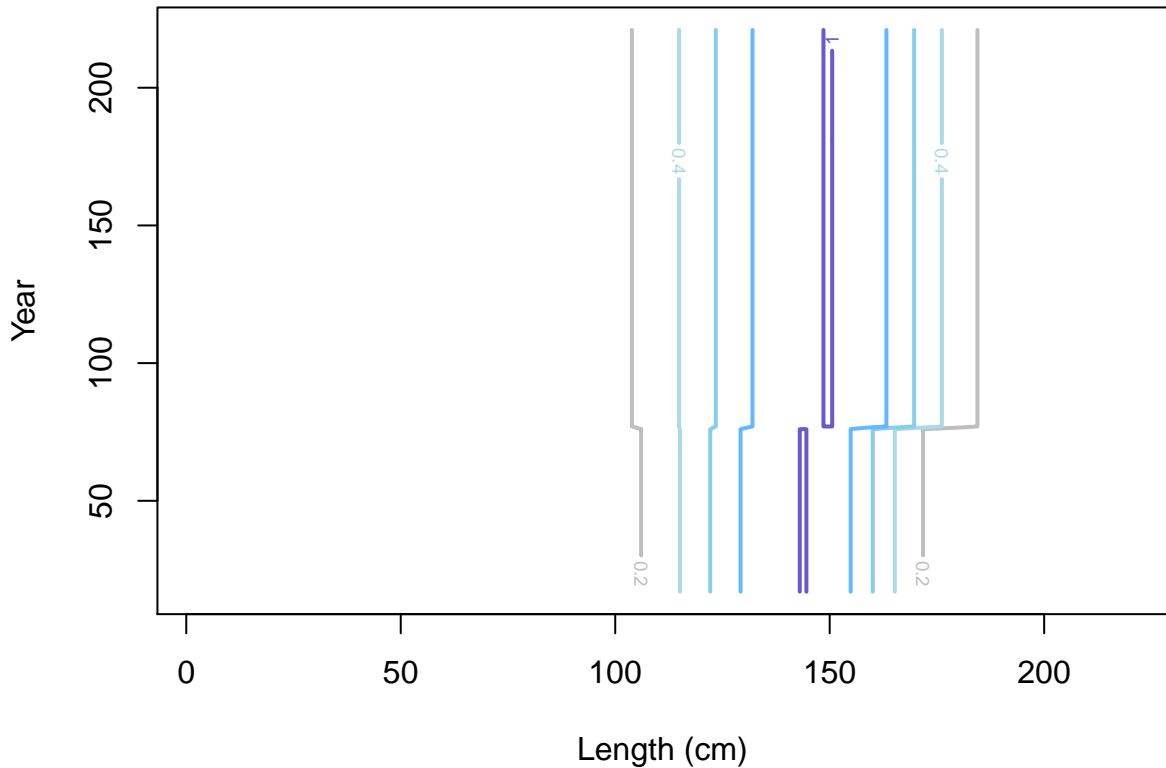
## Female ending year selectivity for A5-LL-w



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

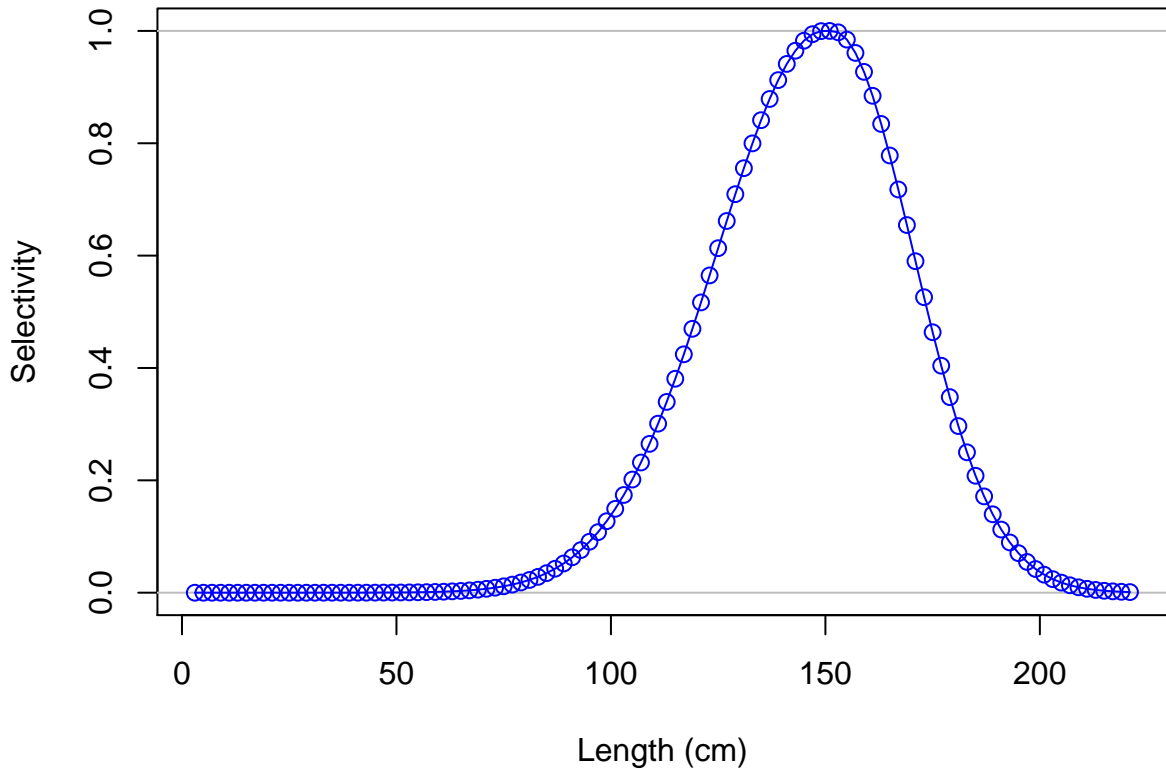


# Male time-varying selectivity for A5-LL-w

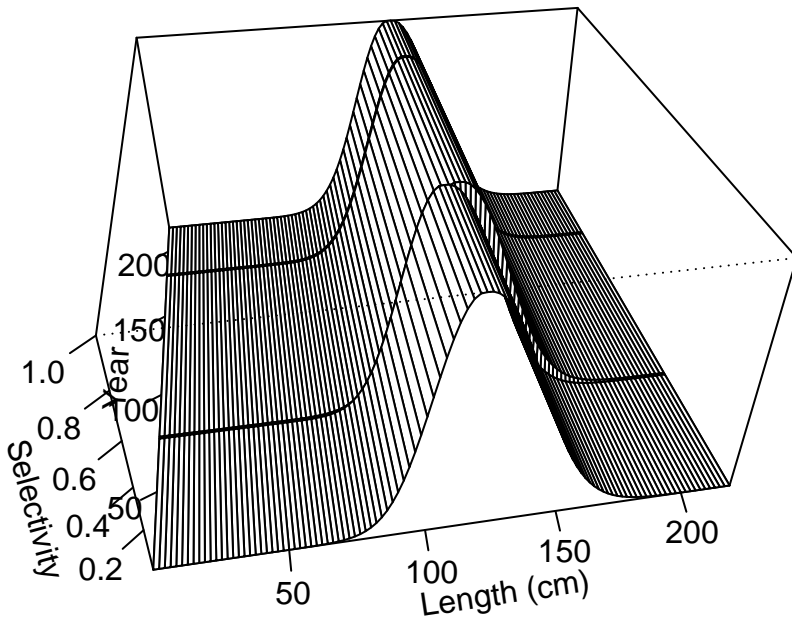




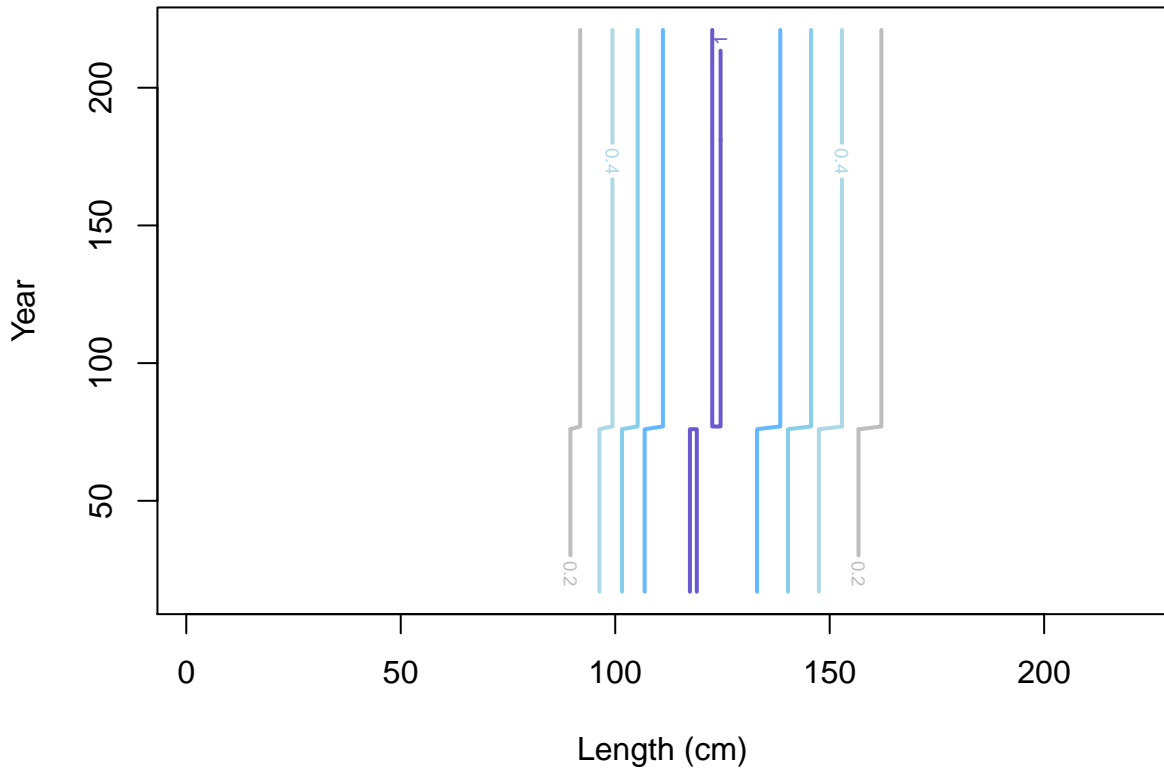
# Male ending year selectivity for A5-LL-w



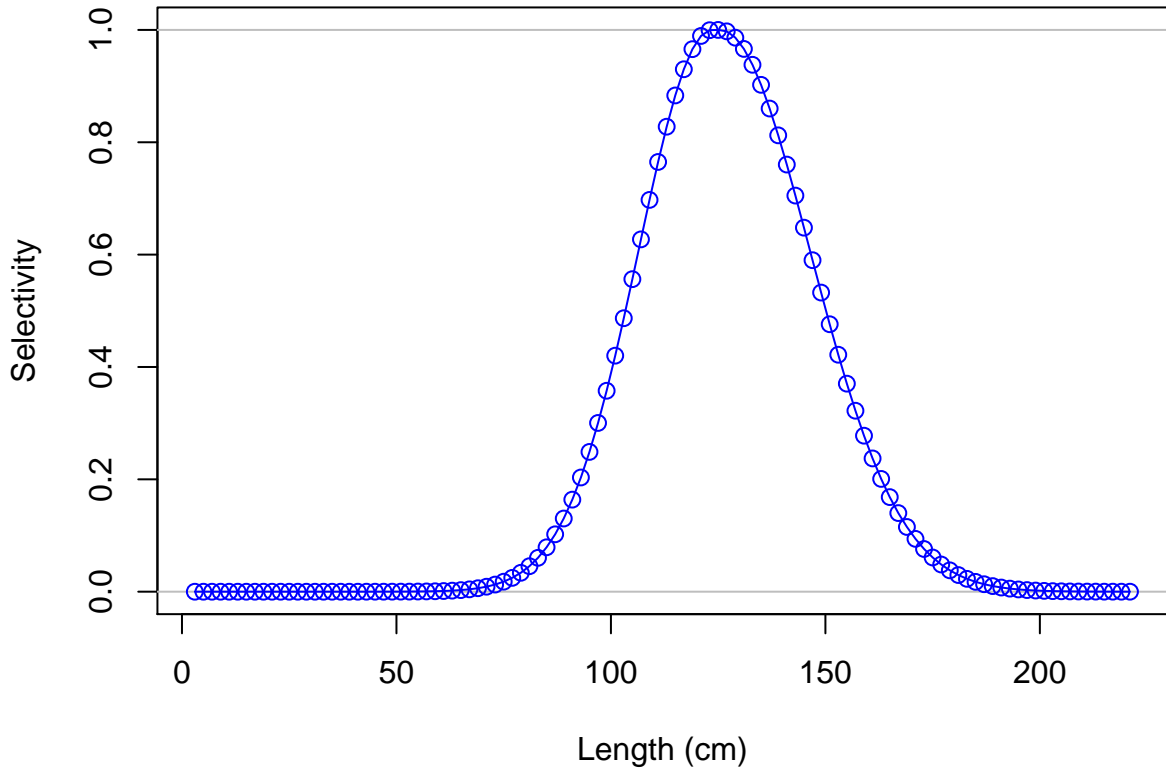
## Female time-varying selectivity for A6-LL-w



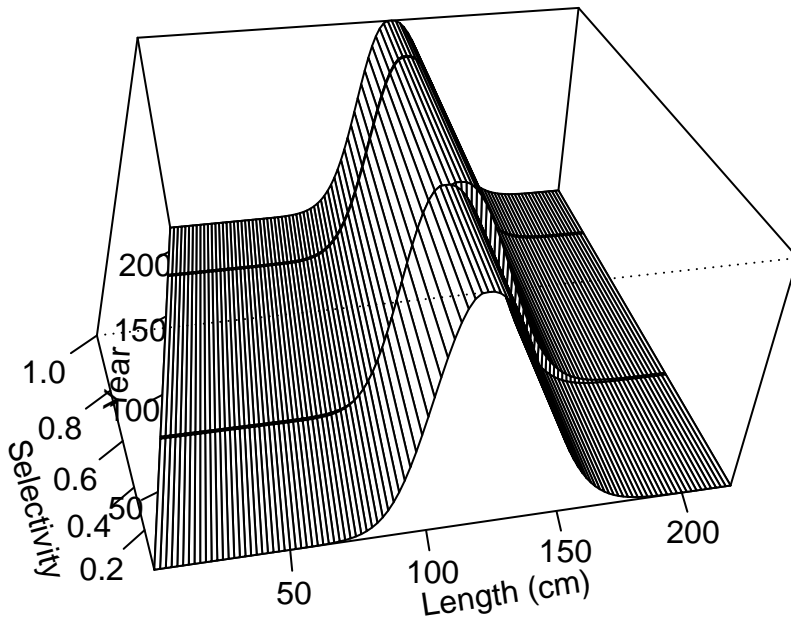
# Female time-varying selectivity for A6-LL-w



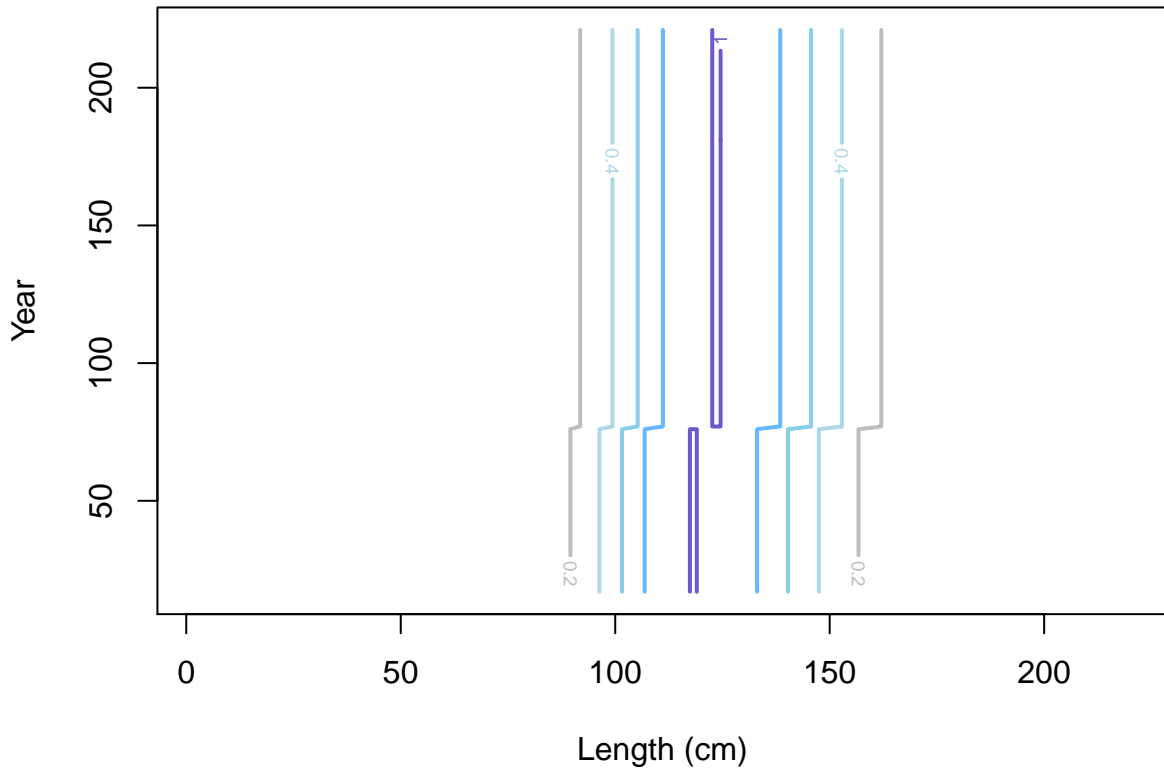
## Female ending year selectivity for A6-LL-w



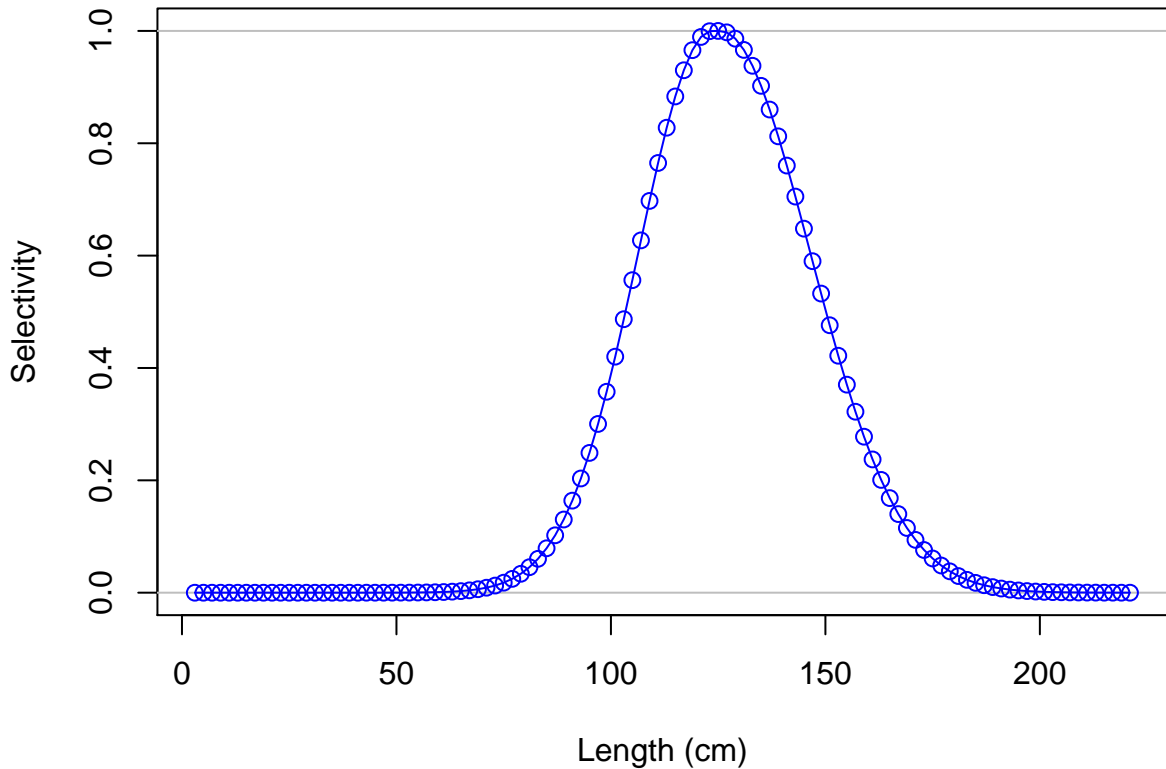
## Male time-varying selectivity for A6-LL-w



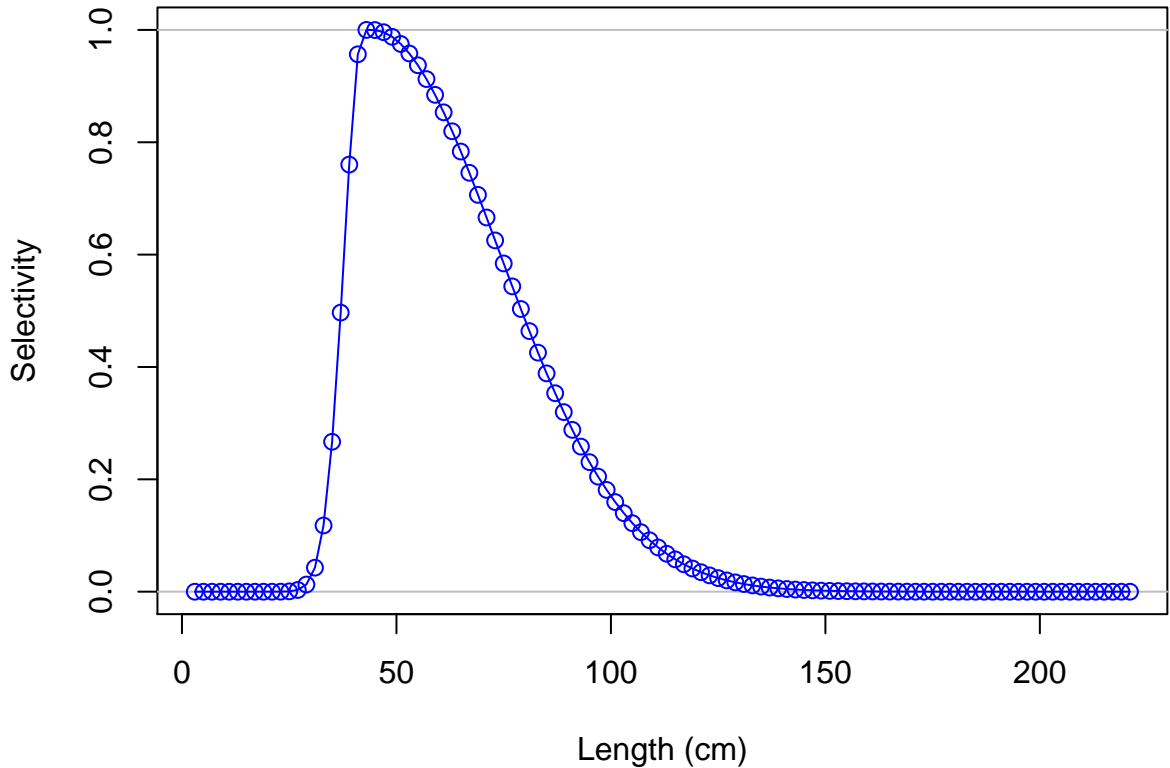
# Male time-varying selectivity for A6-LL-w



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

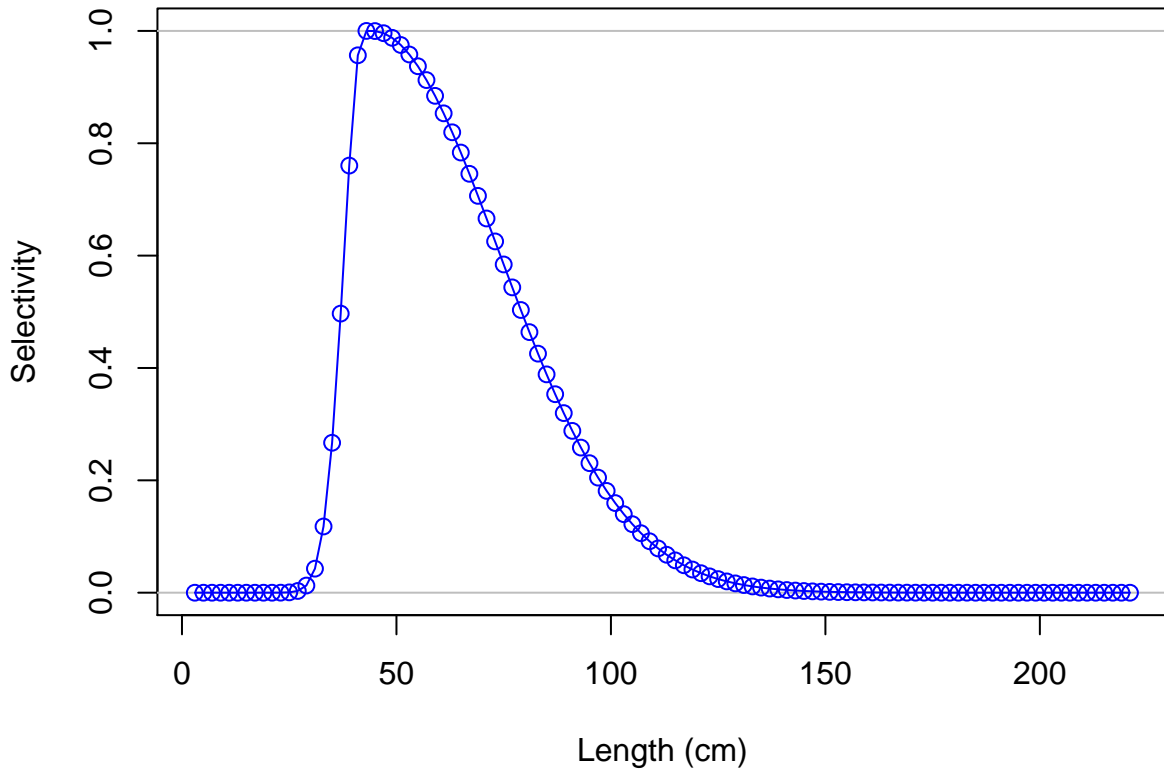


## Female ending year selectivity for A2-OBJ

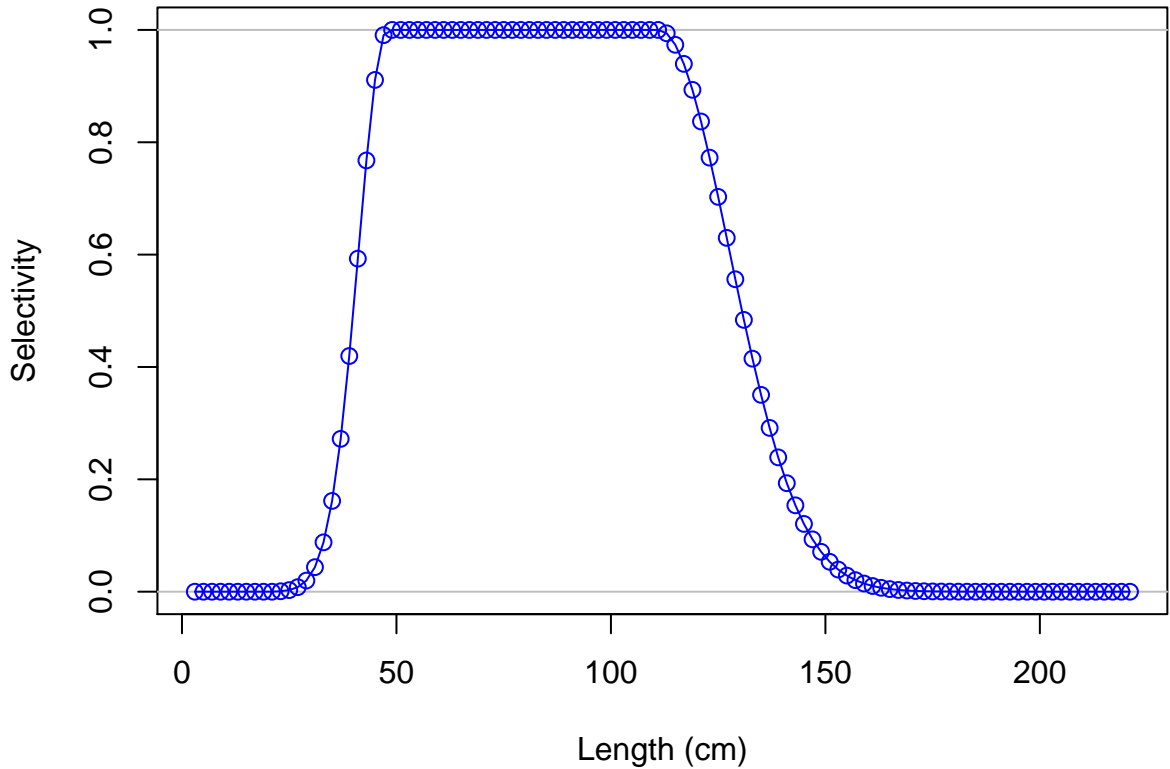




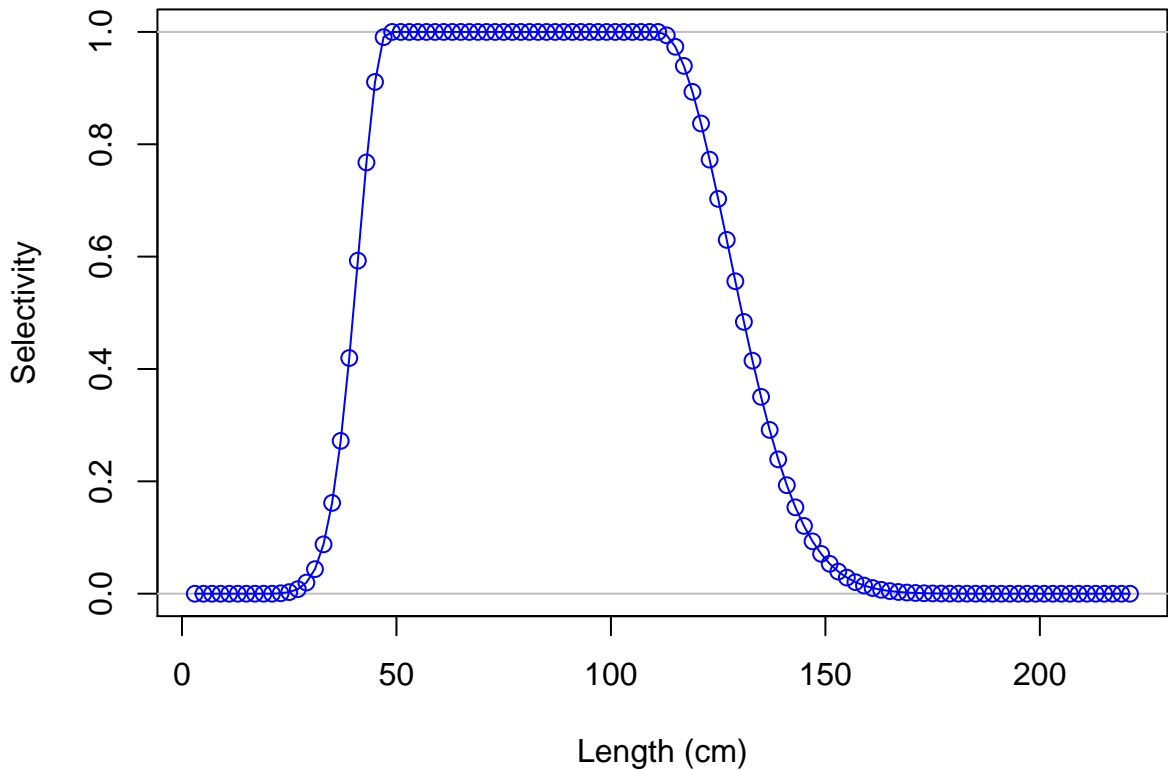
### Male ending year selectivity for A2-OBJ



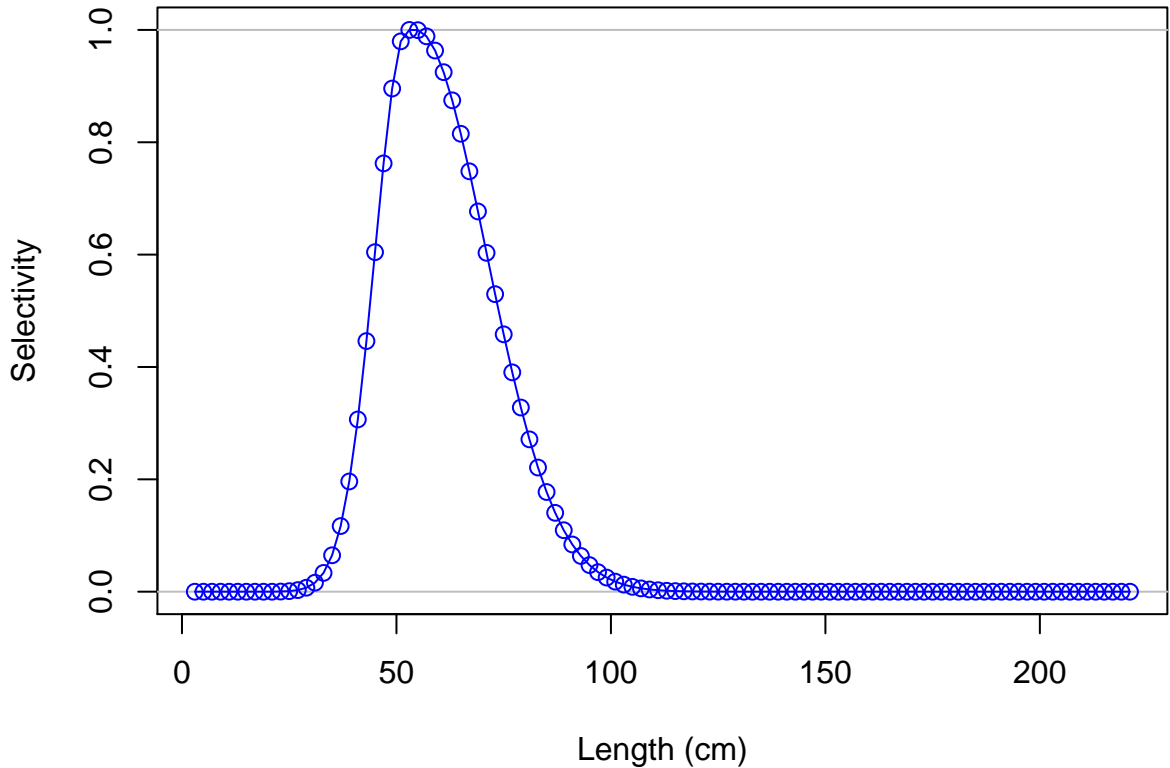
## Female ending year selectivity for A3-OBJ



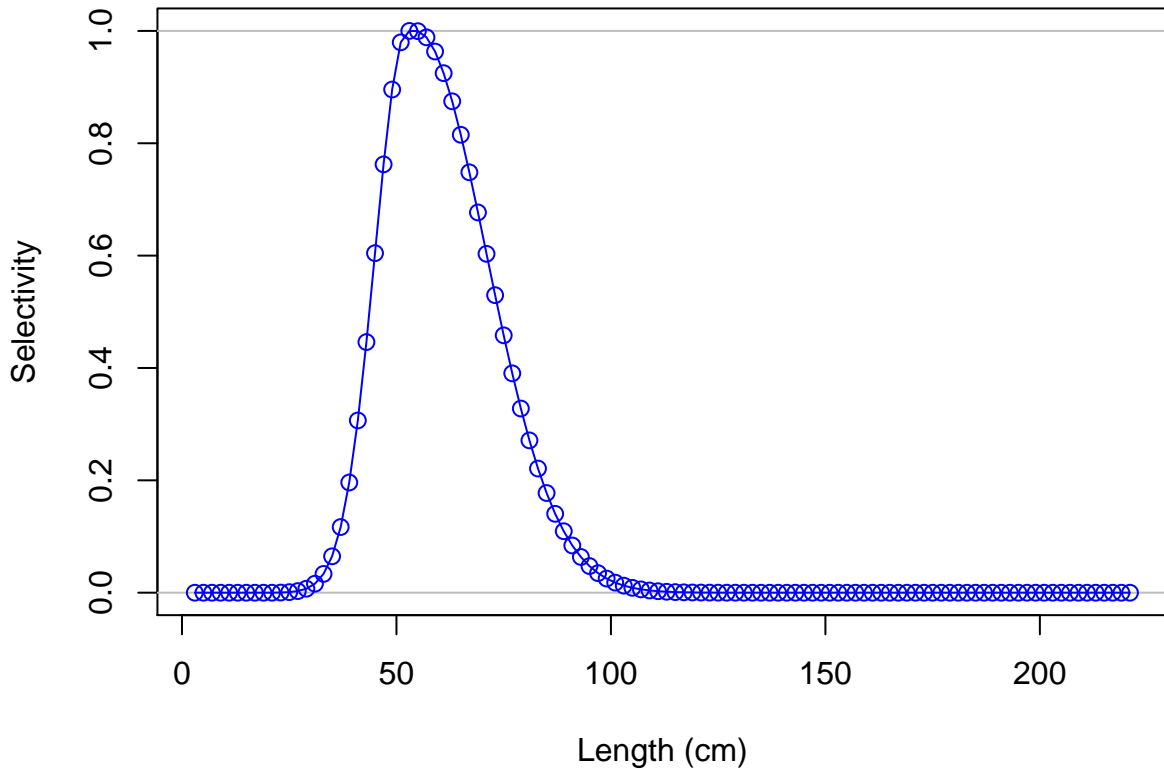
## Male ending year selectivity for A3-OBJ



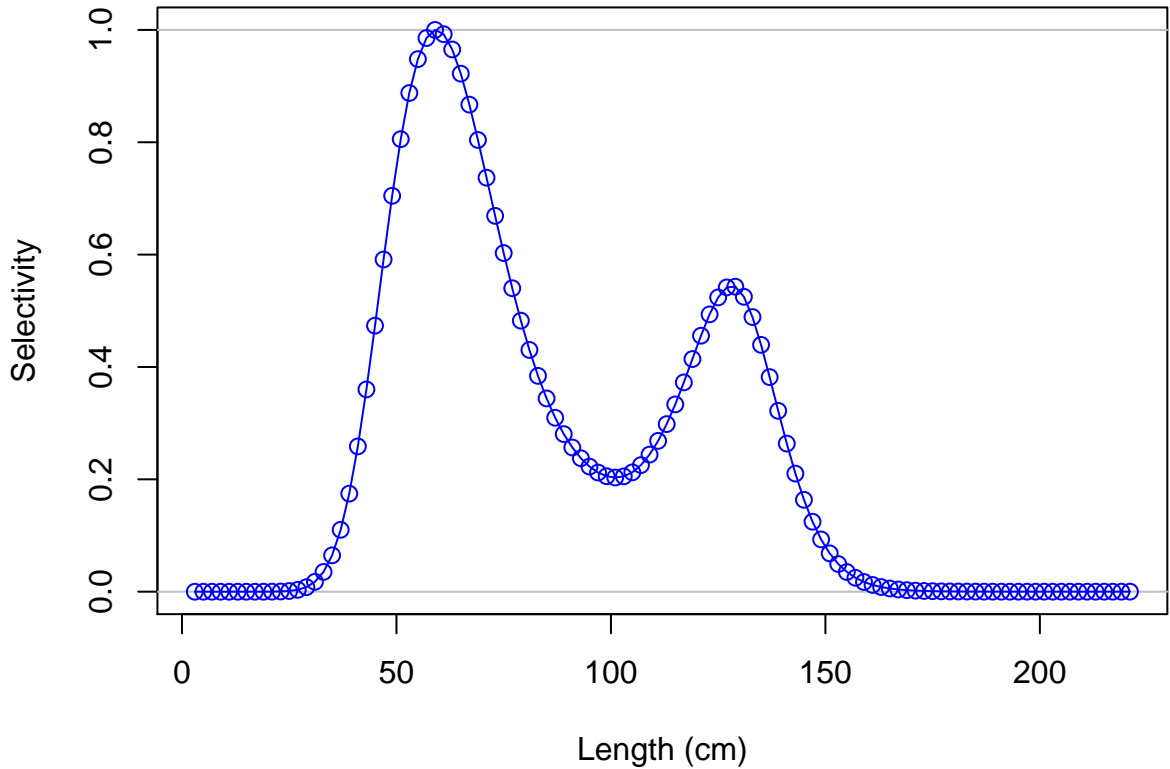
## Female ending year selectivity for A4-OBJ



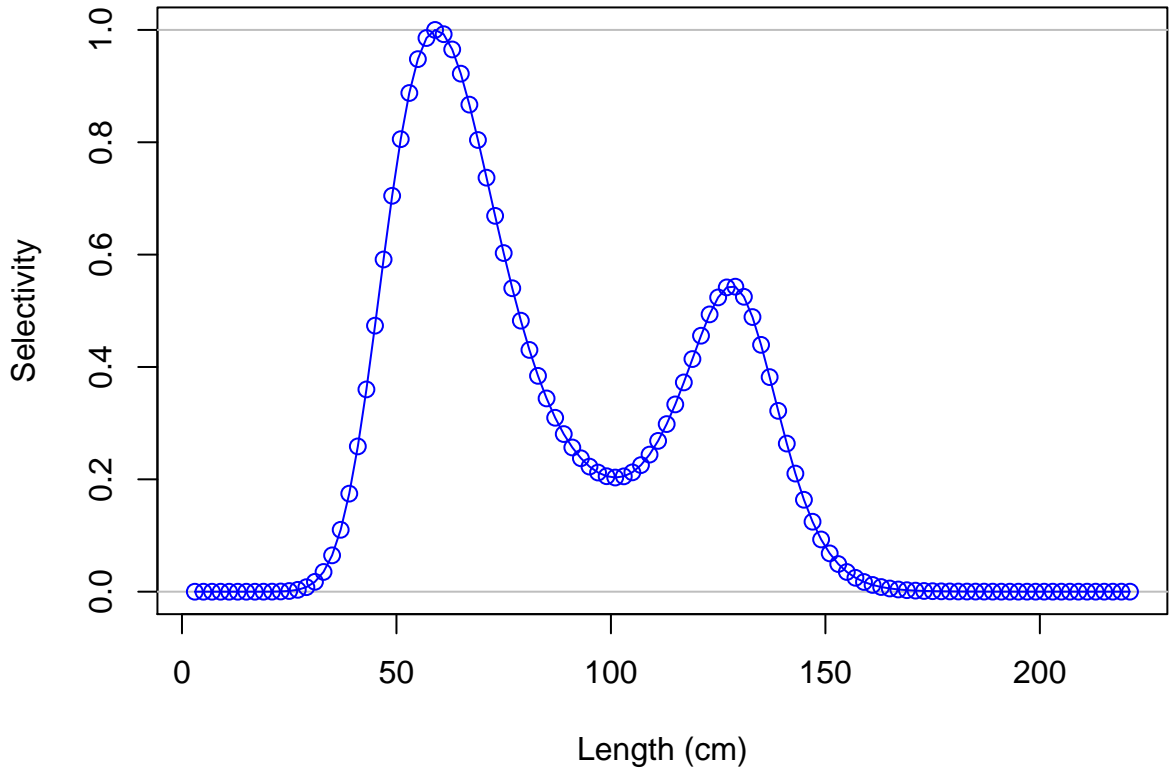
## Male ending year selectivity for A4-OBJ



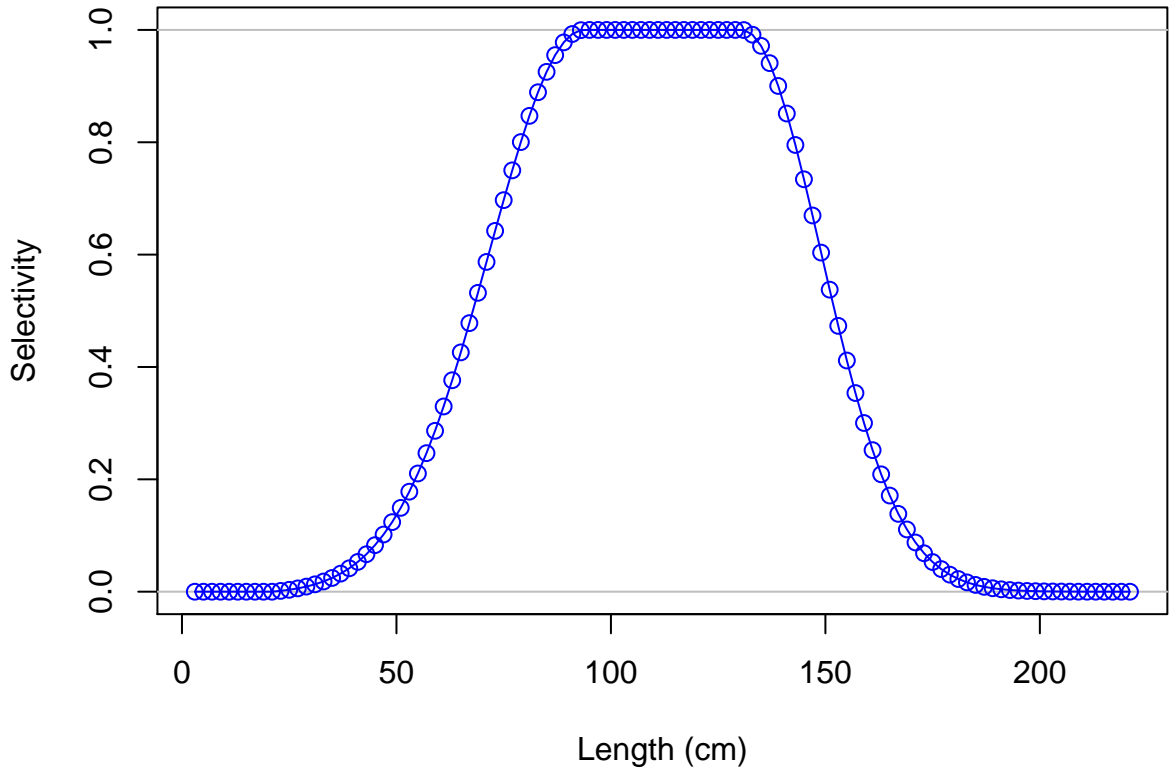
## Female ending year selectivity for A5-OBJ



## Male ending year selectivity for A5-OBJ

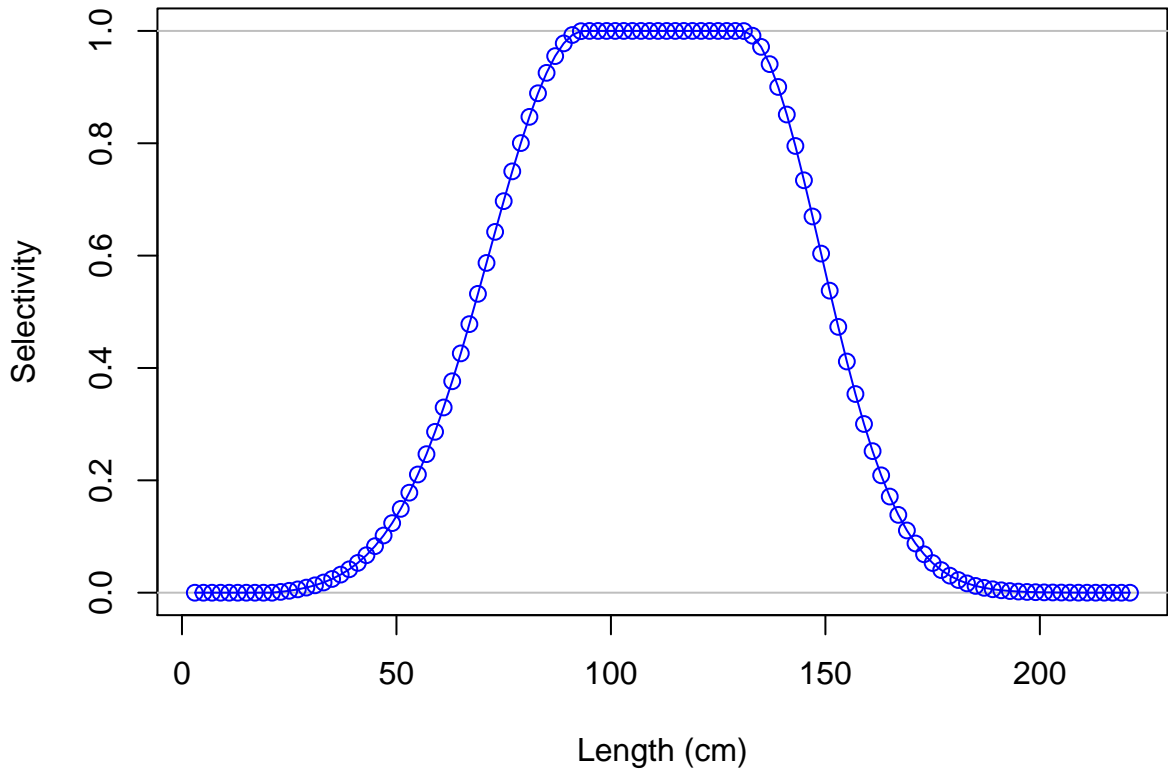


## Female ending year selectivity for A6-OBJ

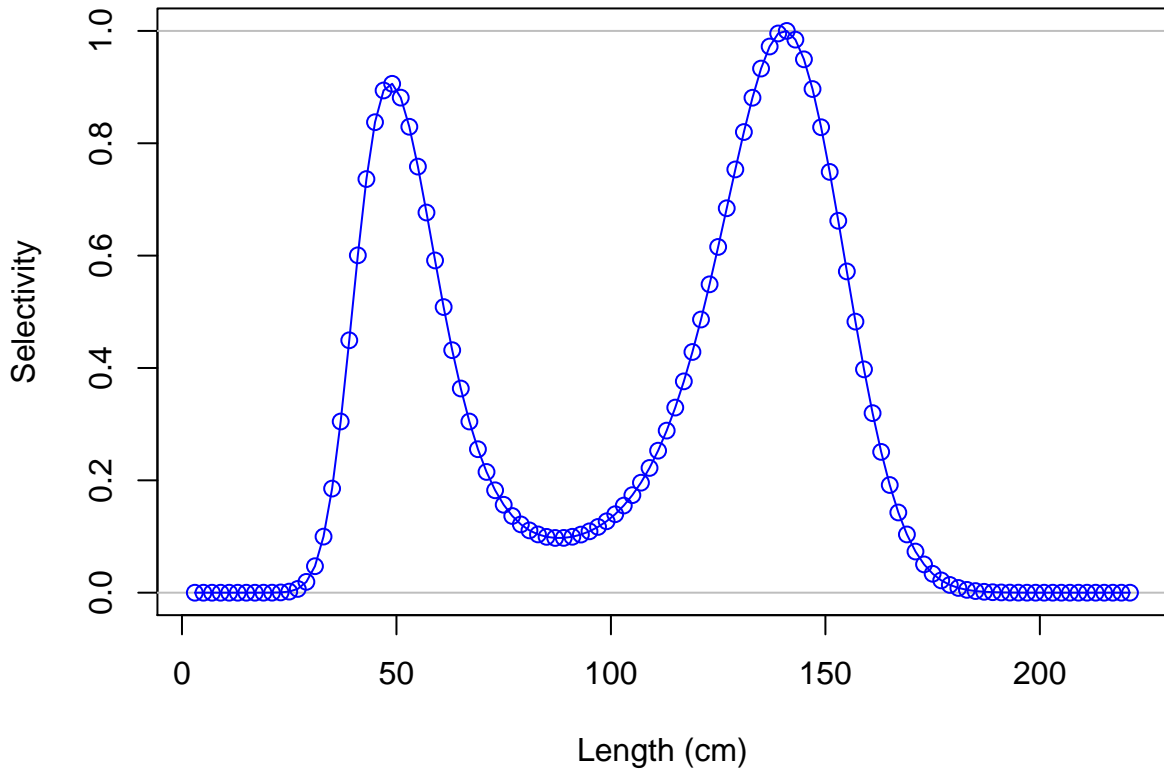




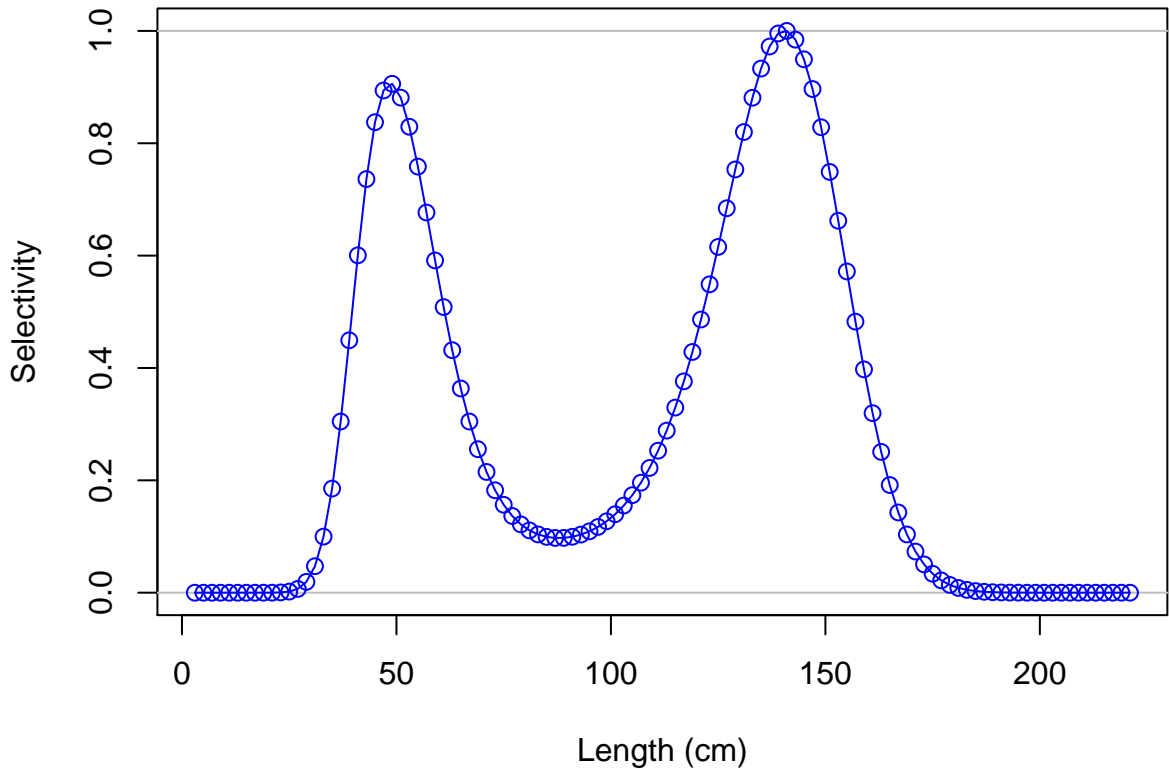
## Male ending year selectivity for A6-OBJ



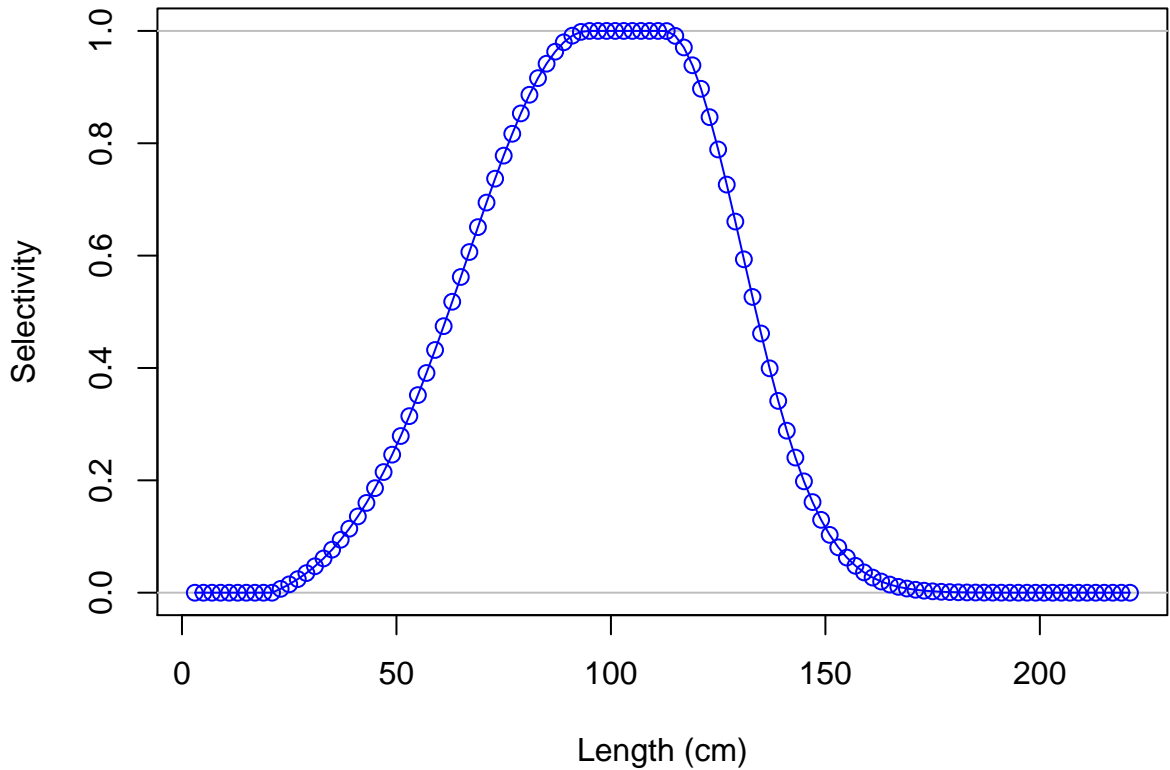
## Female ending year selectivity for A2-NOADEL



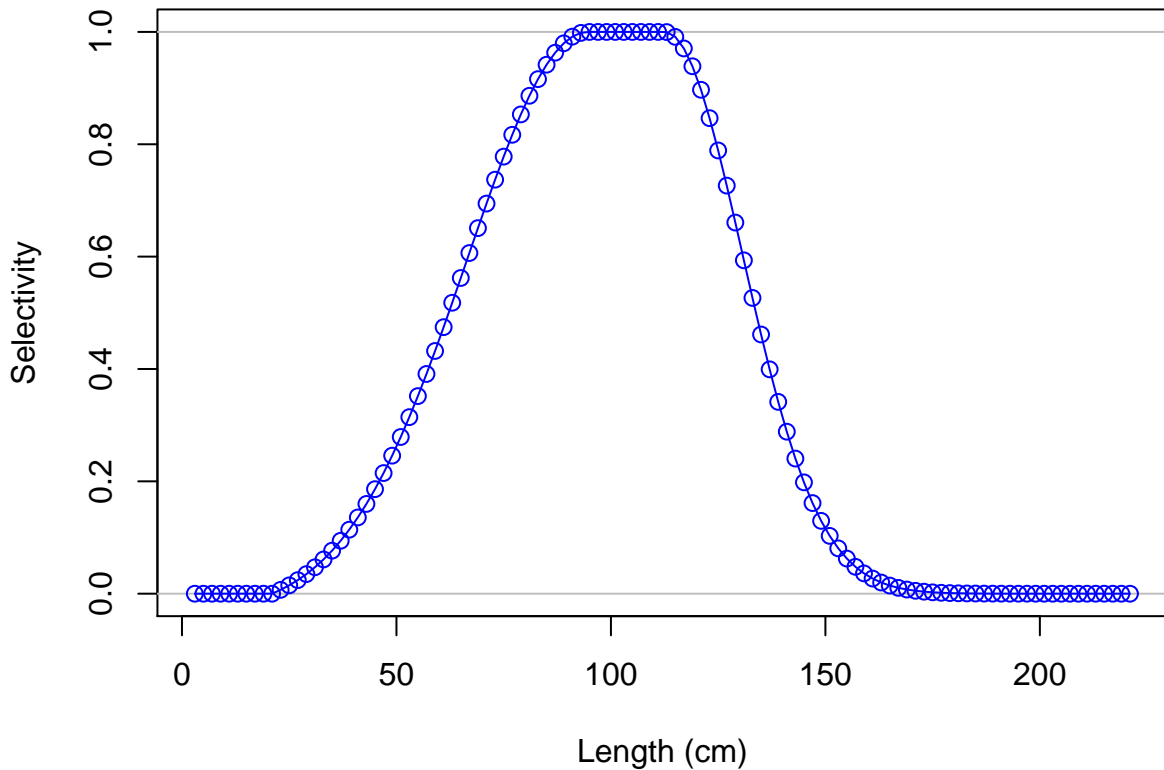
## Male ending year selectivity for A2-NOADEL



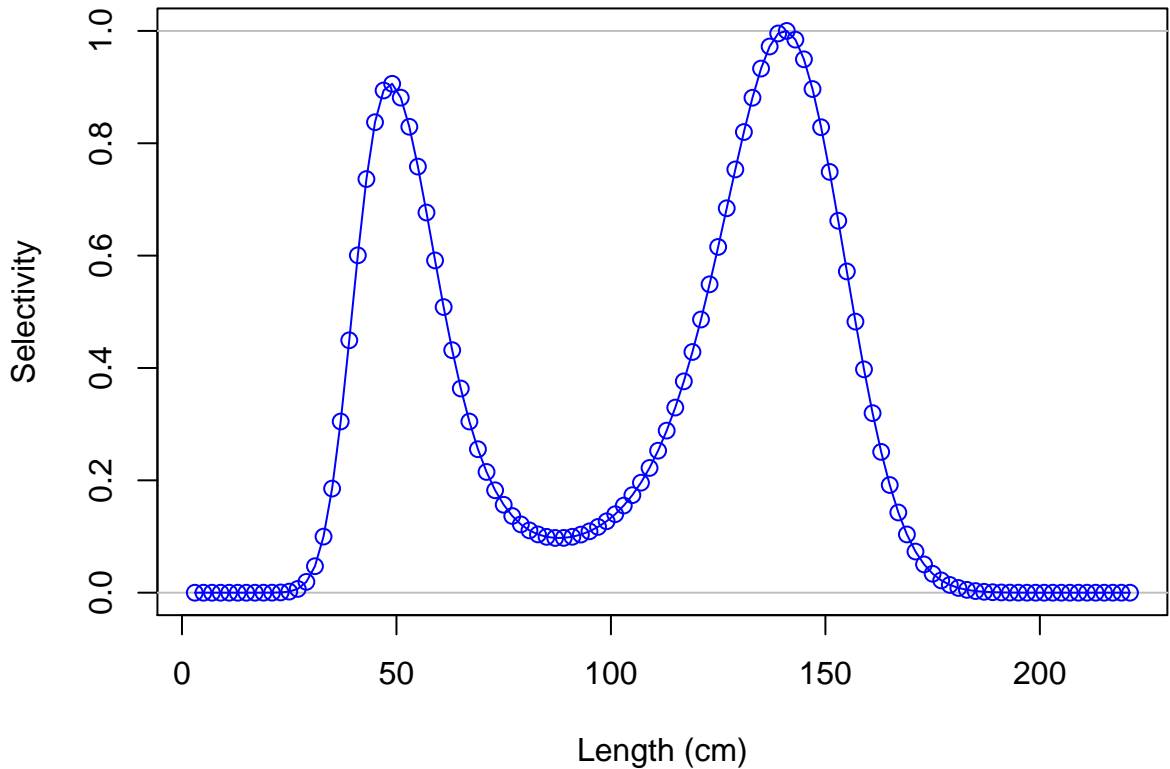
## Female ending year selectivity for A3-NOADEL



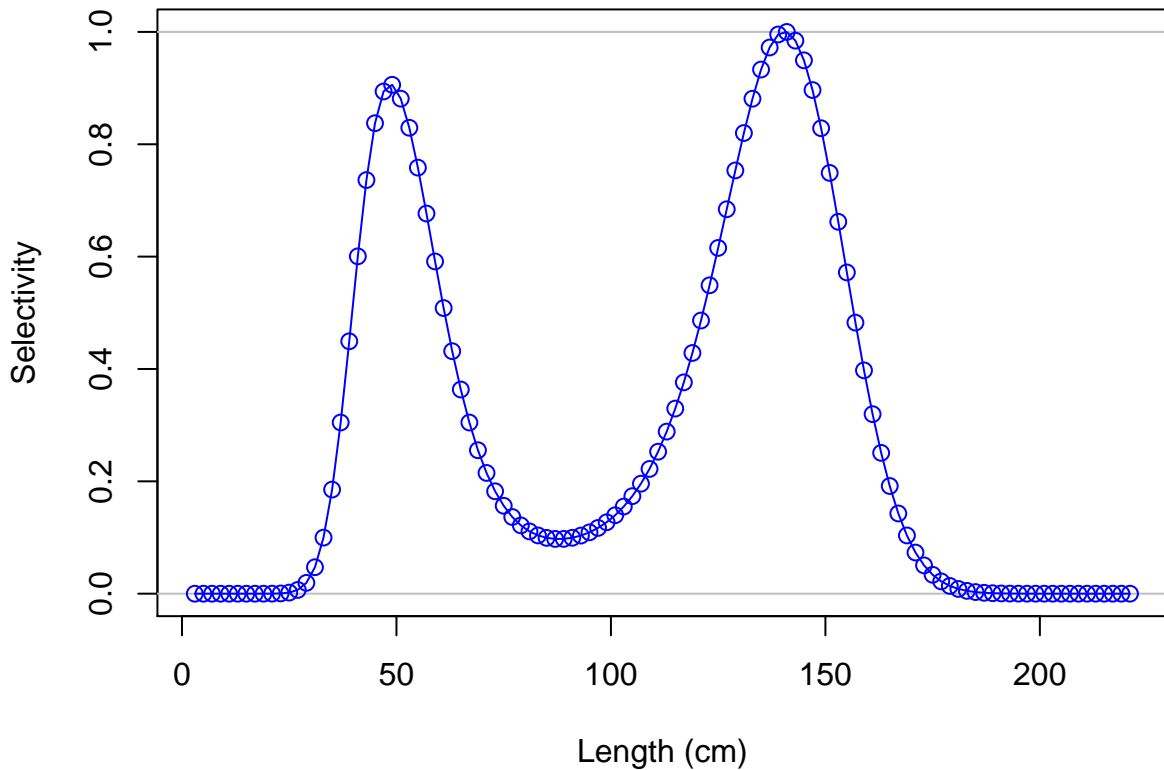
## Male ending year selectivity for A3-NOADEL



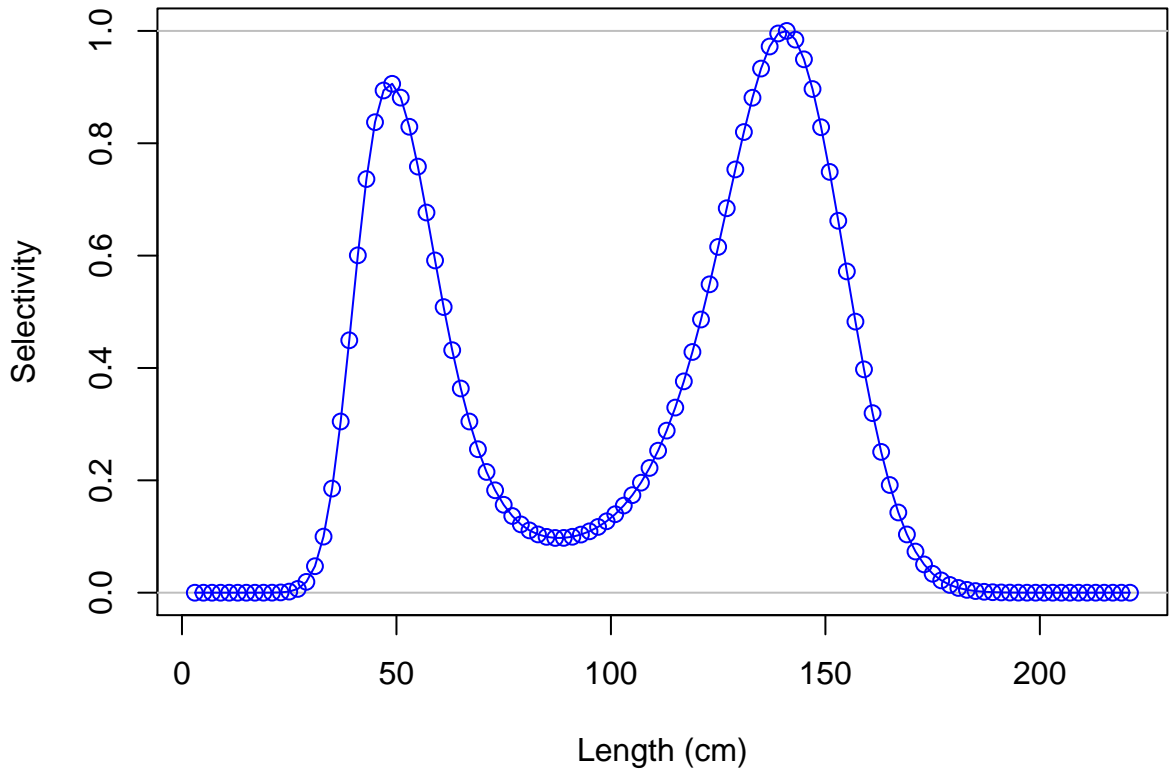
## Female ending year selectivity for A4-NOADEL



## Male ending year selectivity for A4-NOADEL

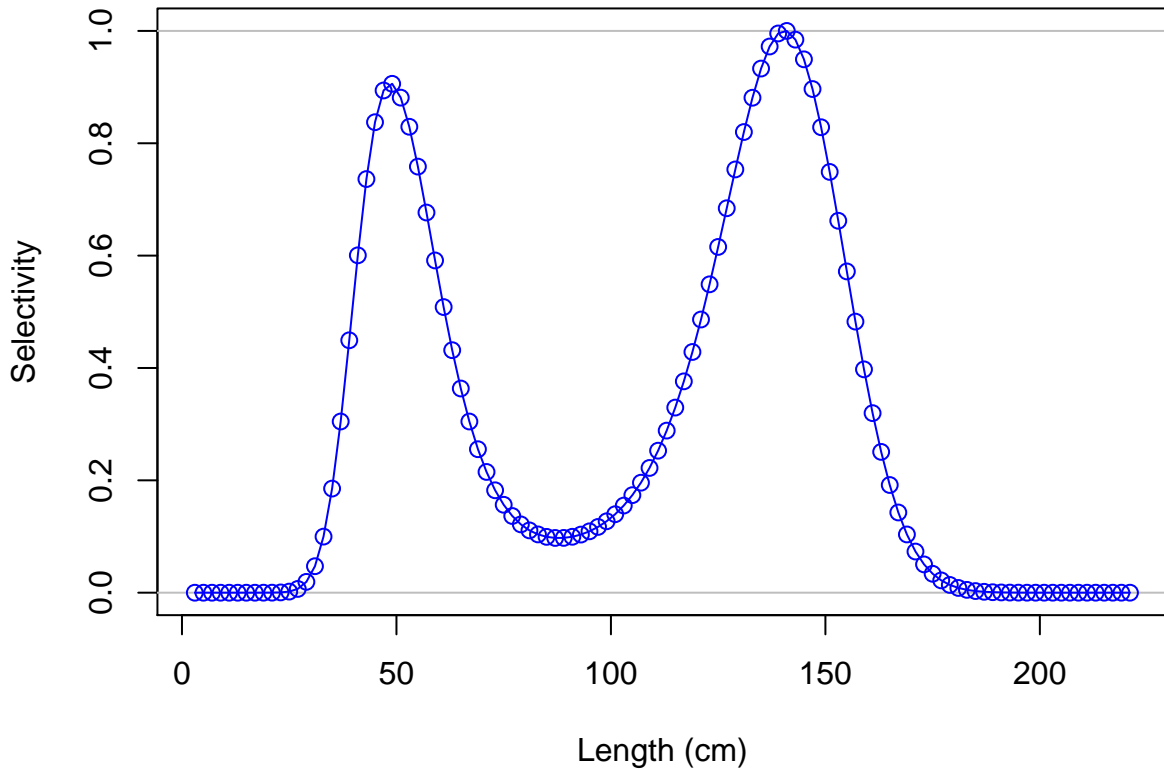


## Female ending year selectivity for A5-NOADEL

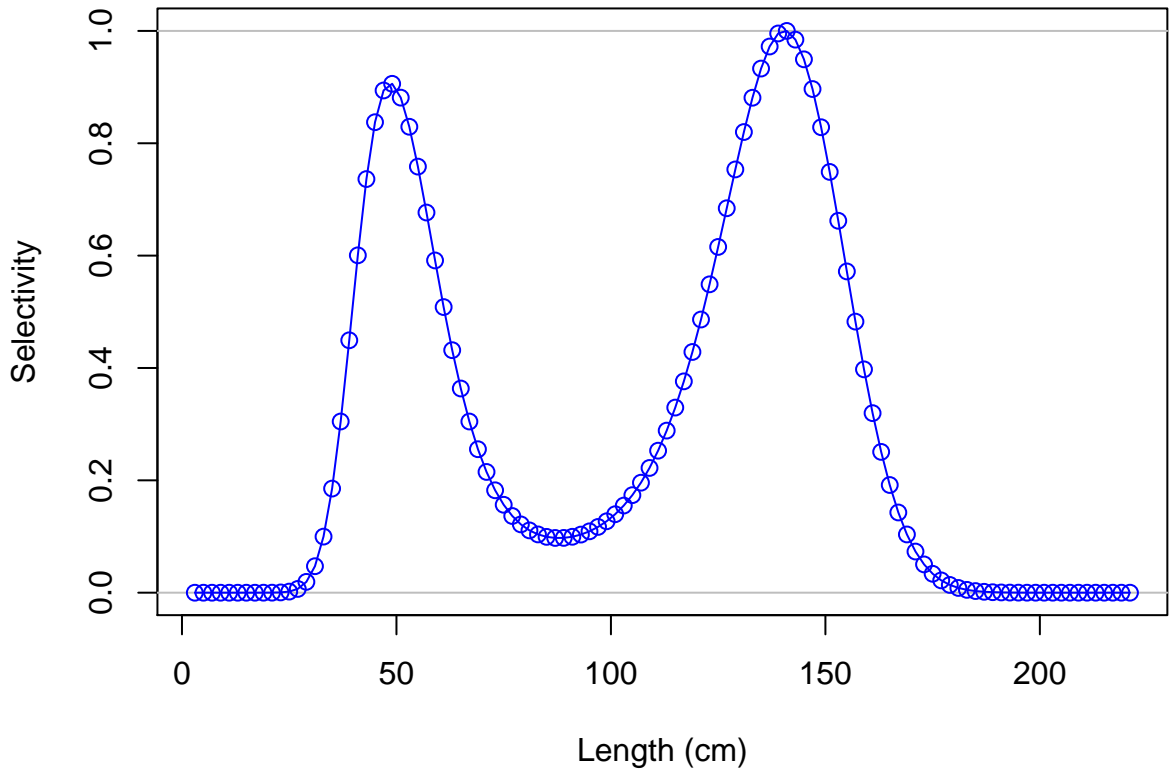




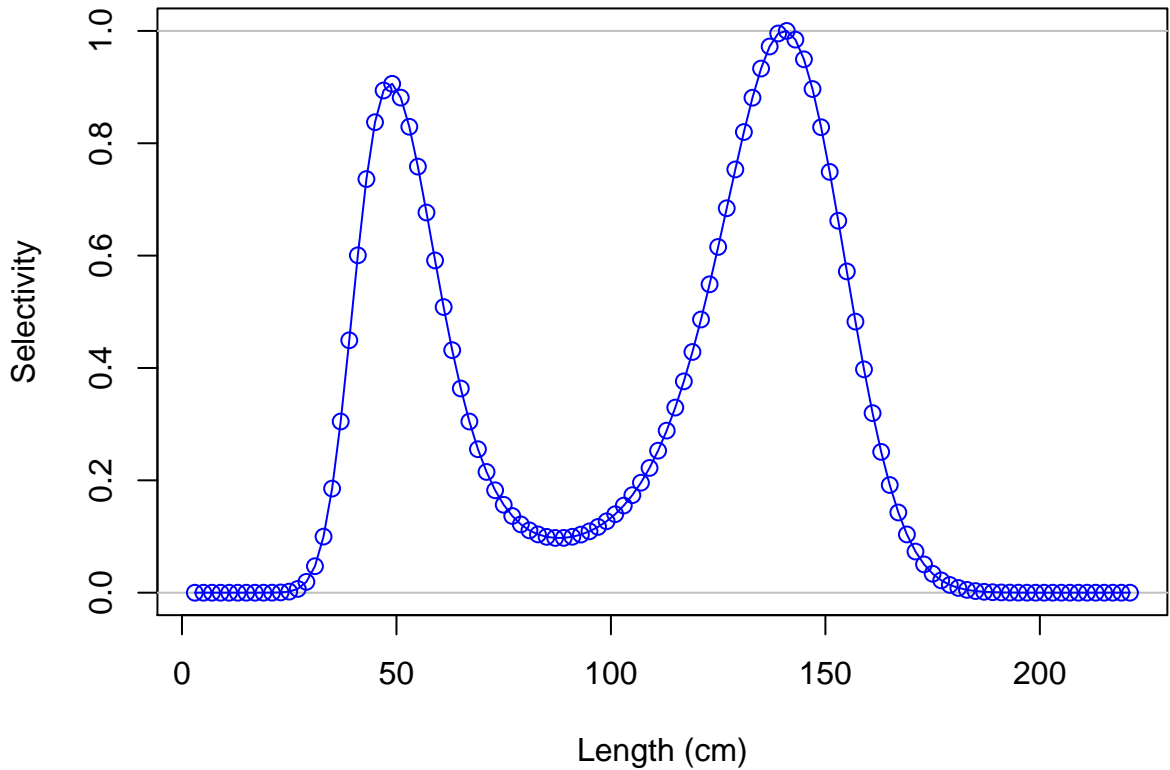
## Male ending year selectivity for A5-NOADEL



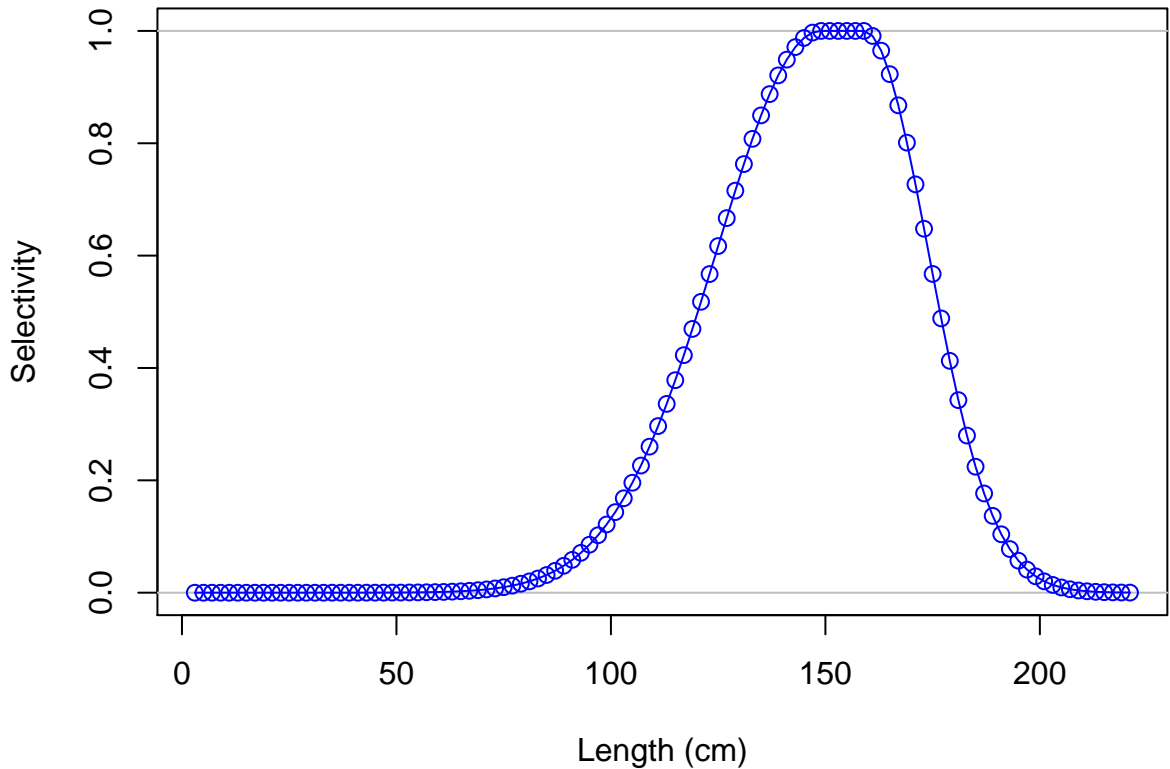
## Female ending year selectivity for A6-NOADEL



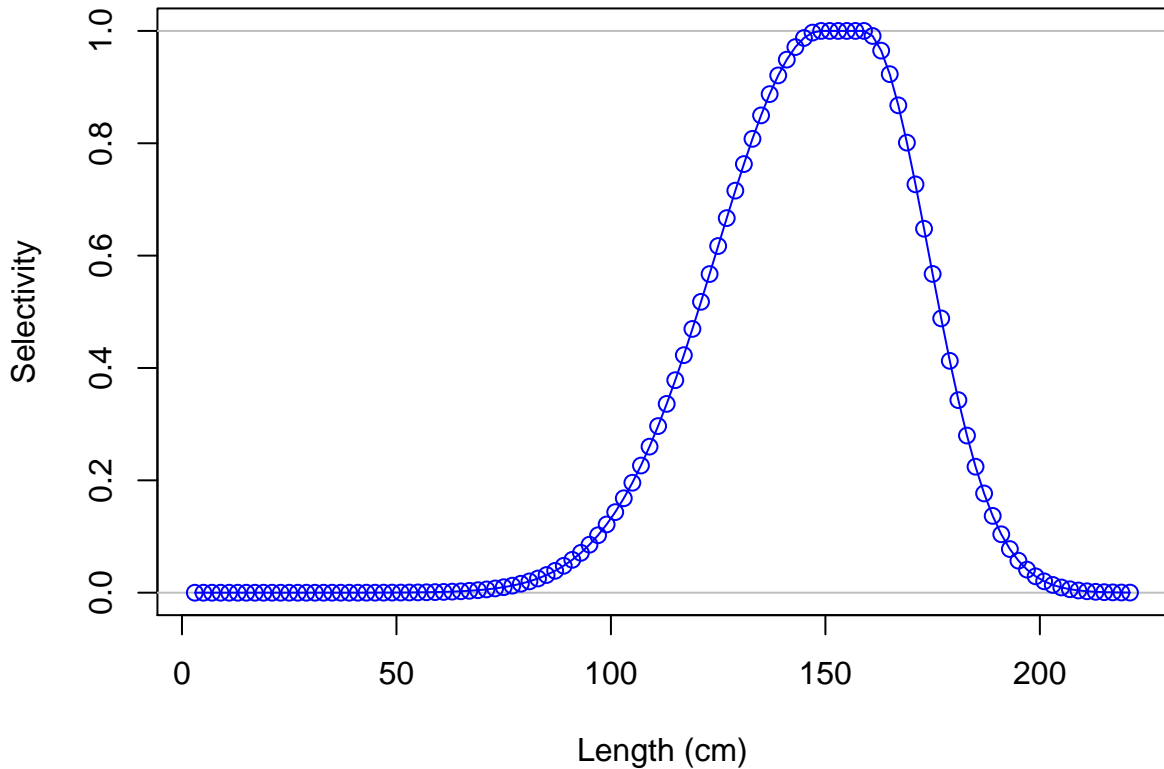
## Male ending year selectivity for A6-NOADEL



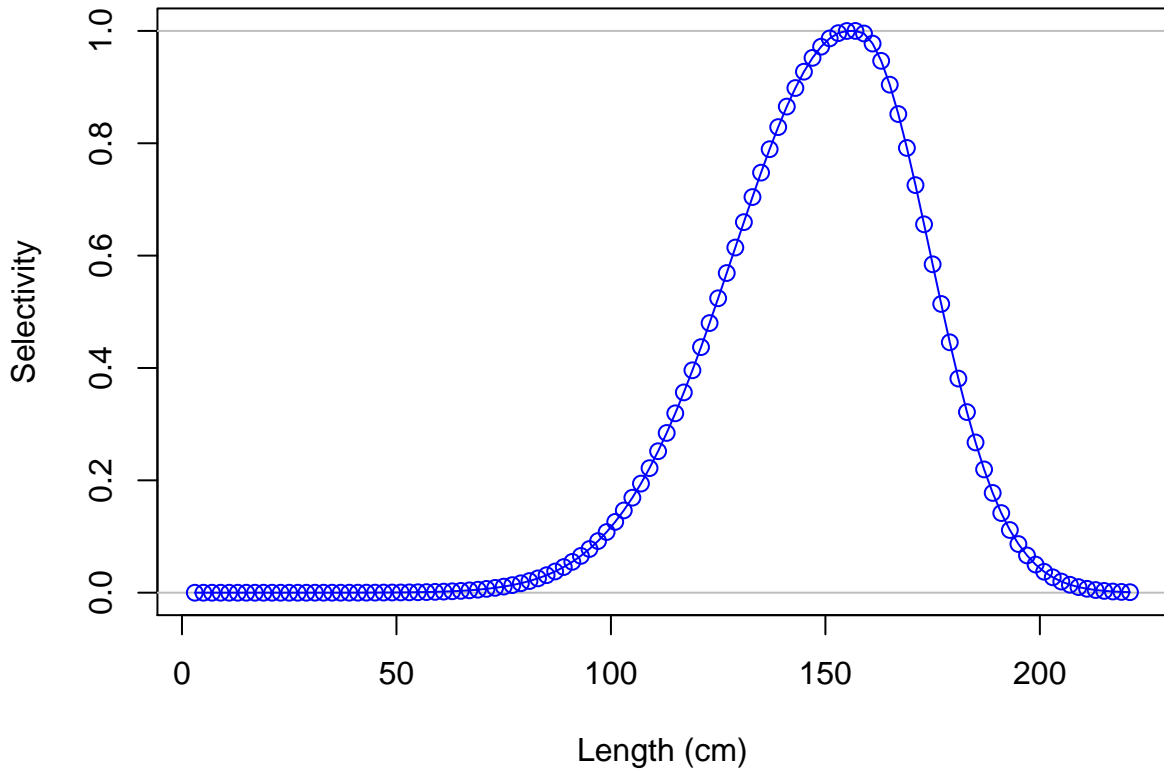
# Female ending year selectivity for EPO-LL-survey-early



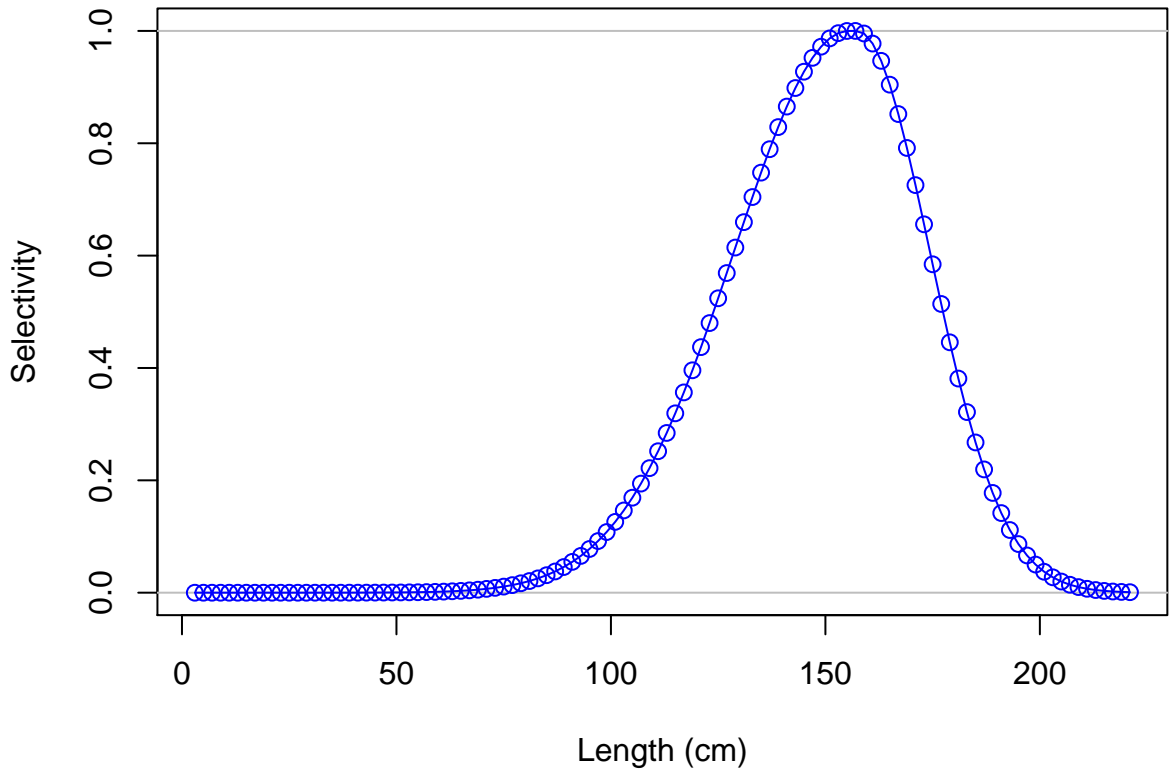
# Male ending year selectivity for EPO-LL-survey-early



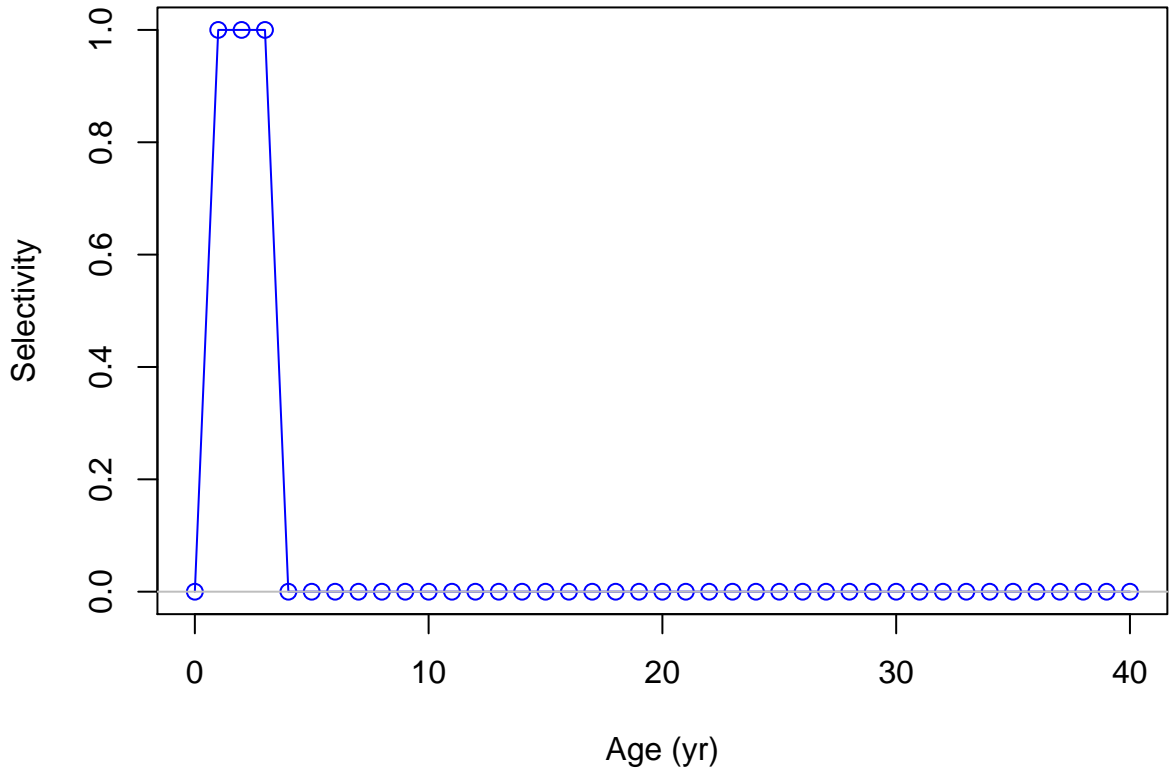
# Female ending year selectivity for EPO-LL-survey-late



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

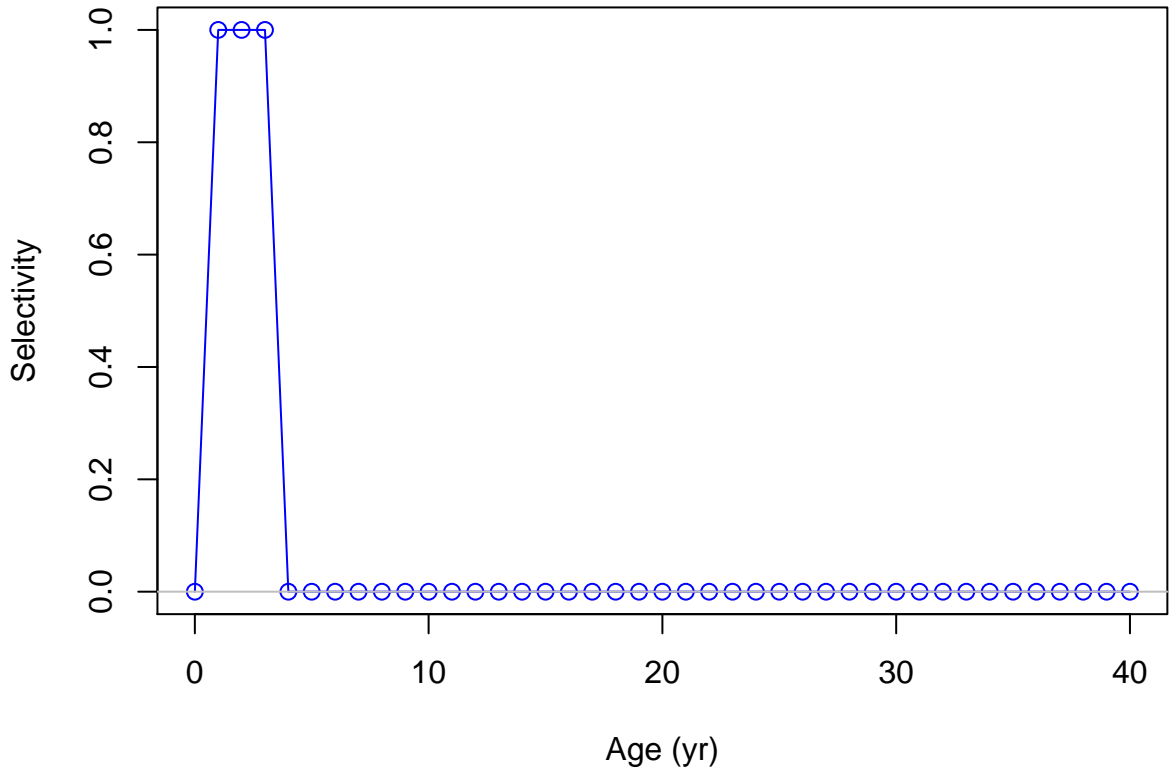


## Female ending year selectivity for EPO-OBJ-Disc

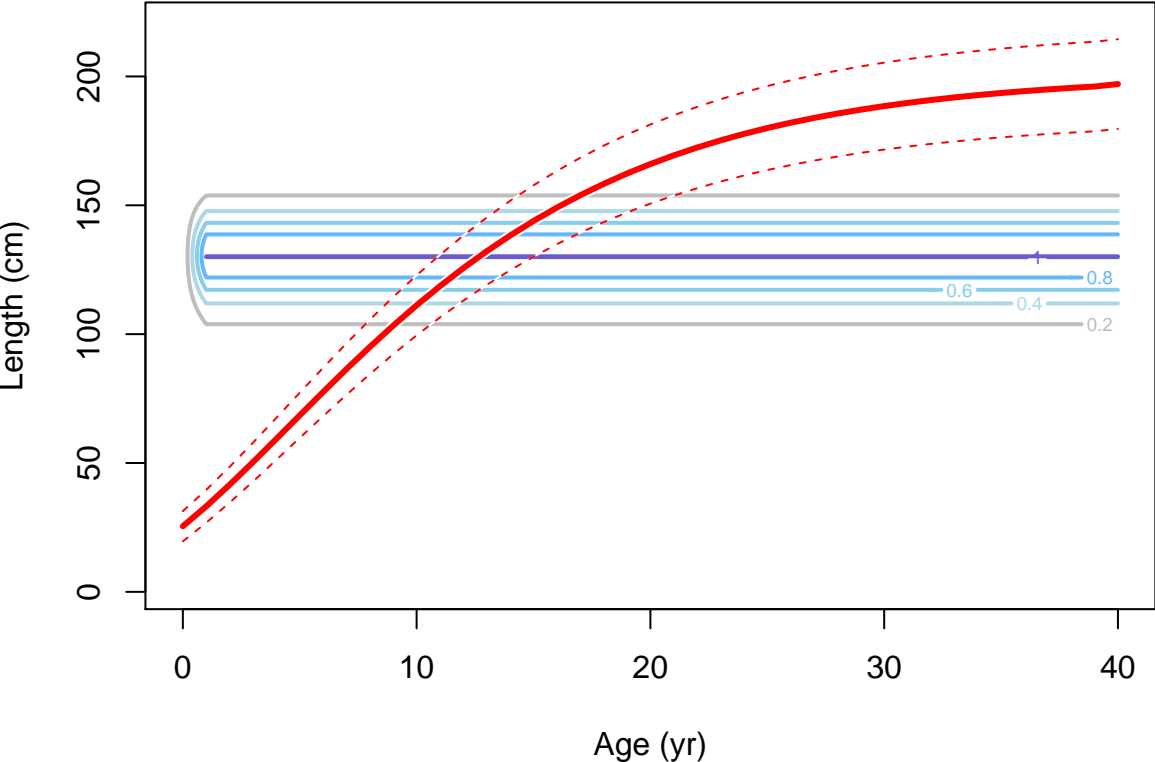




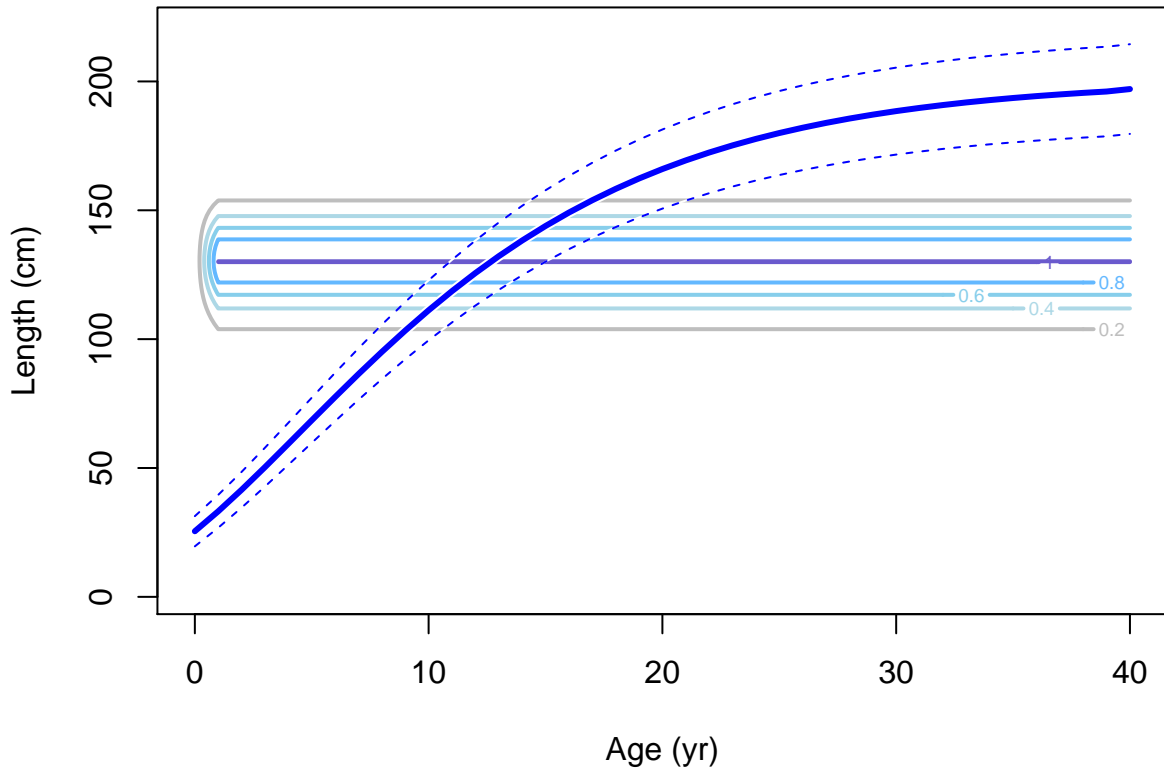
# Male ending year selectivity for EPO-OBJ-Disc



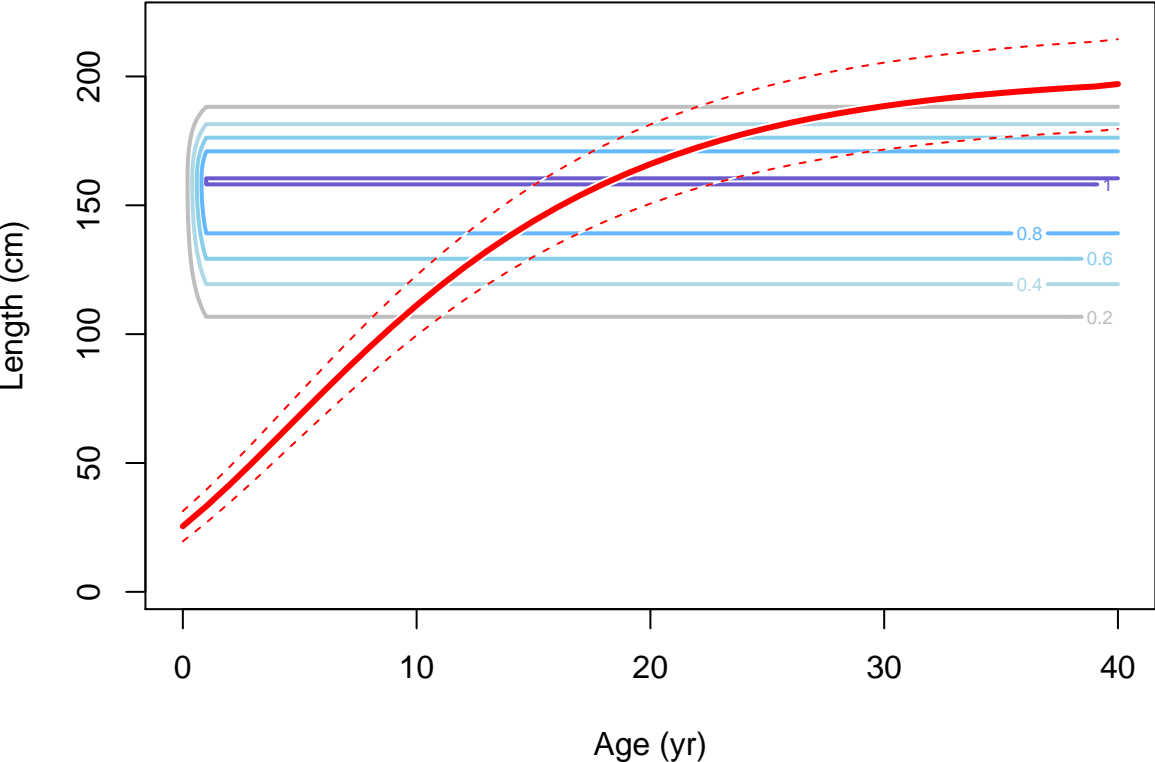
# Female ending year selectivity and growth for A1-LL-n



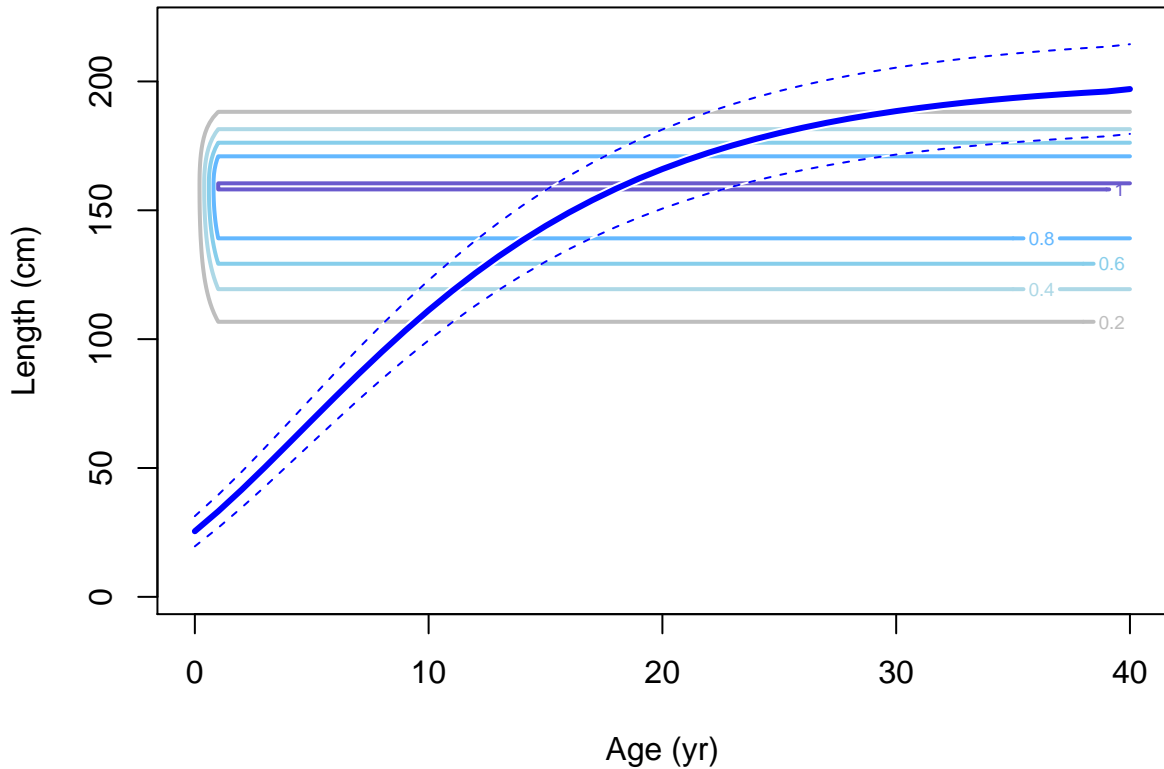
# Male ending year selectivity and growth for A1-LL-n



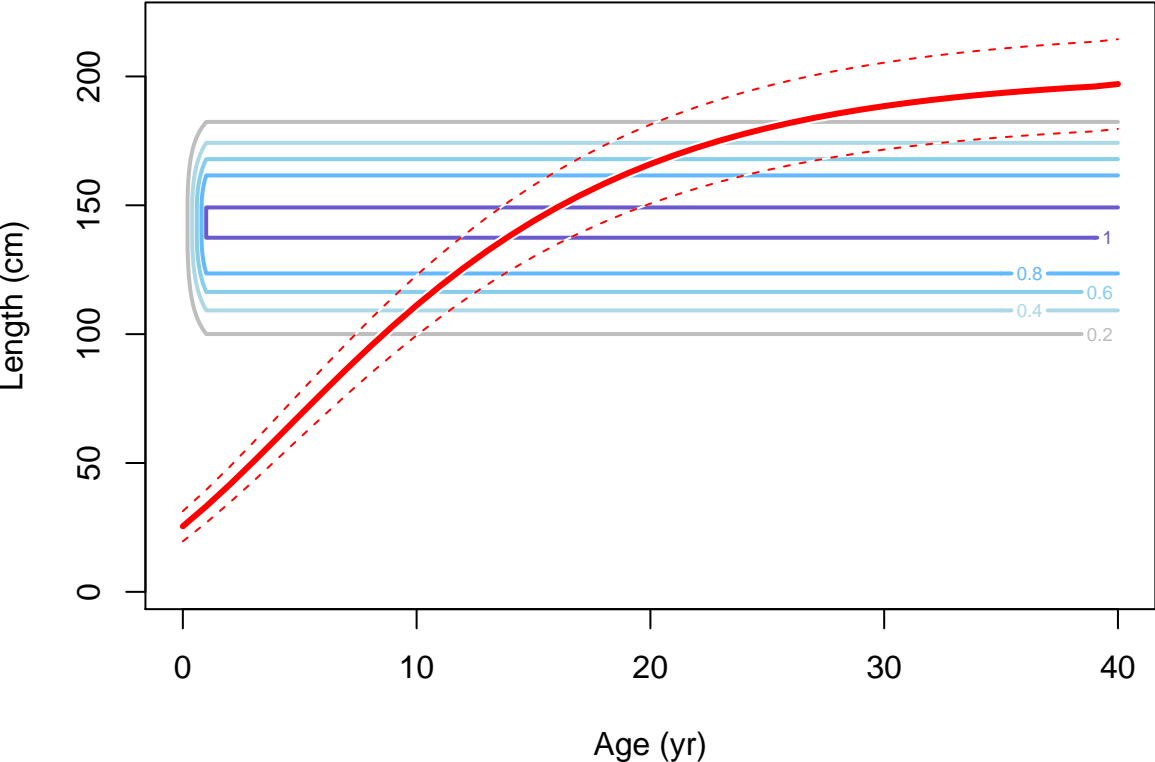
# Female ending year selectivity and growth for A2-LL-n



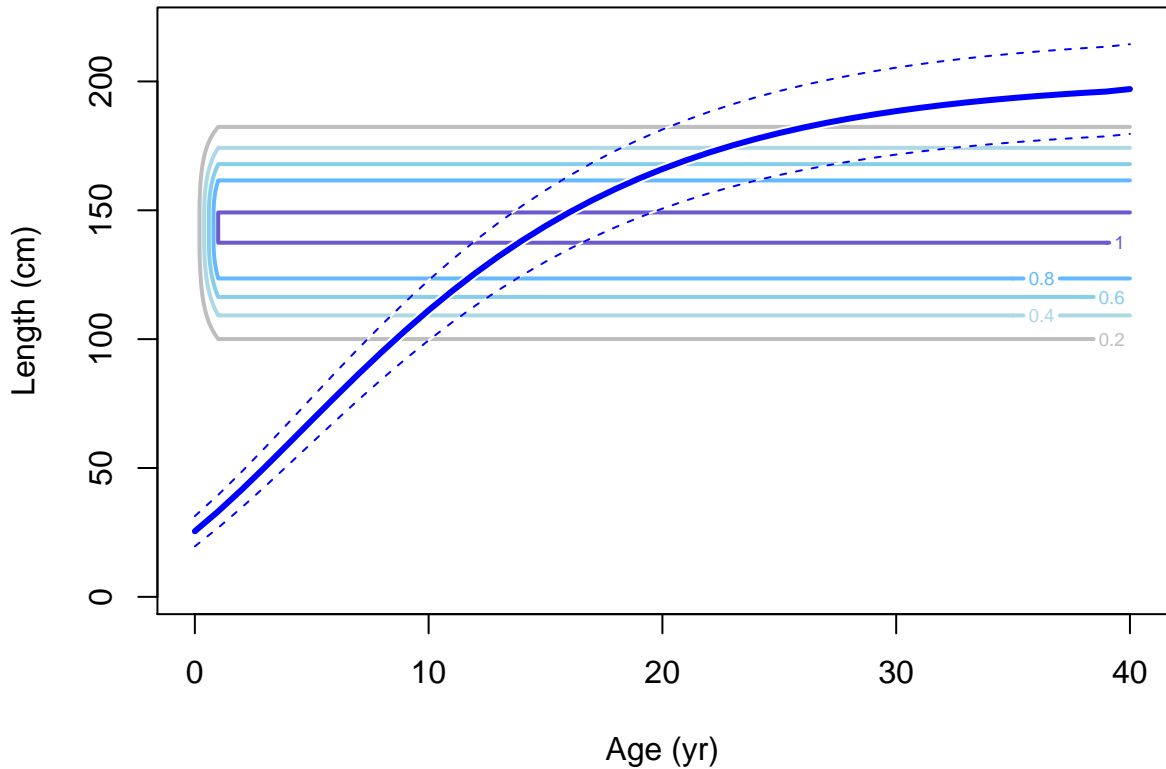
## Male ending year selectivity and growth for A2-LL-n



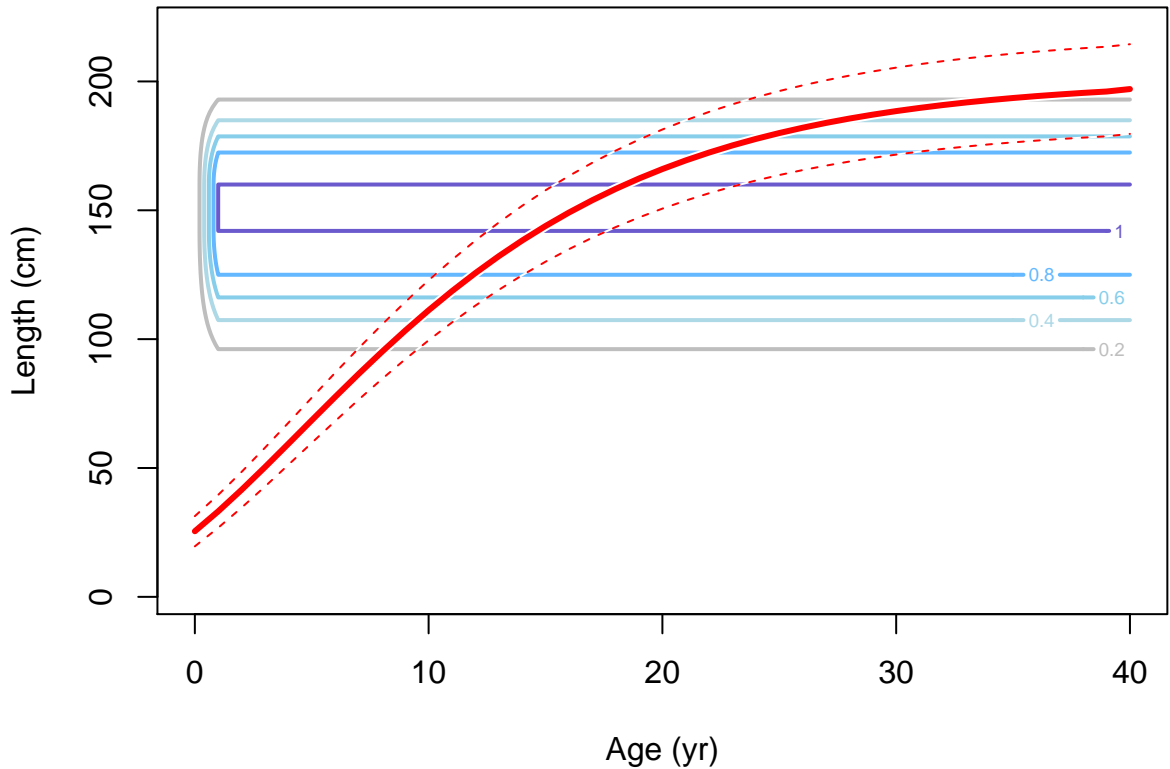
# Female ending year selectivity and growth for A3-LL-n



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

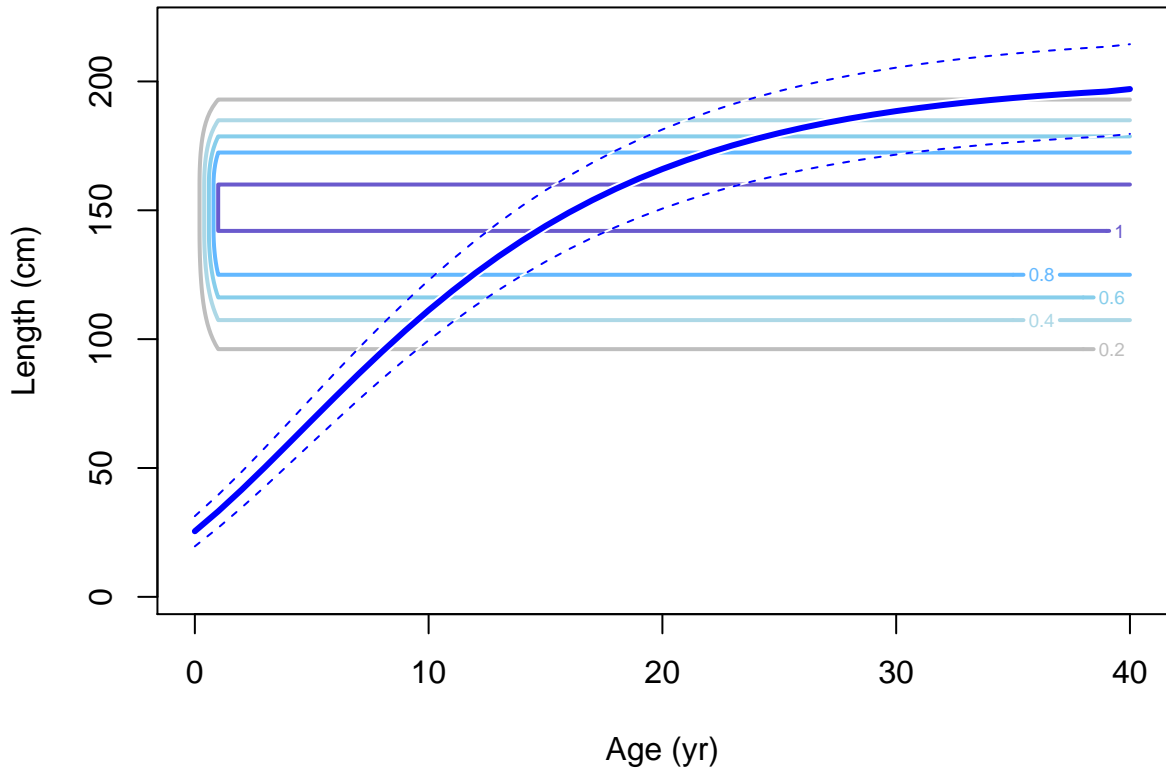


## Female ending year selectivity and growth for A4-LL-n

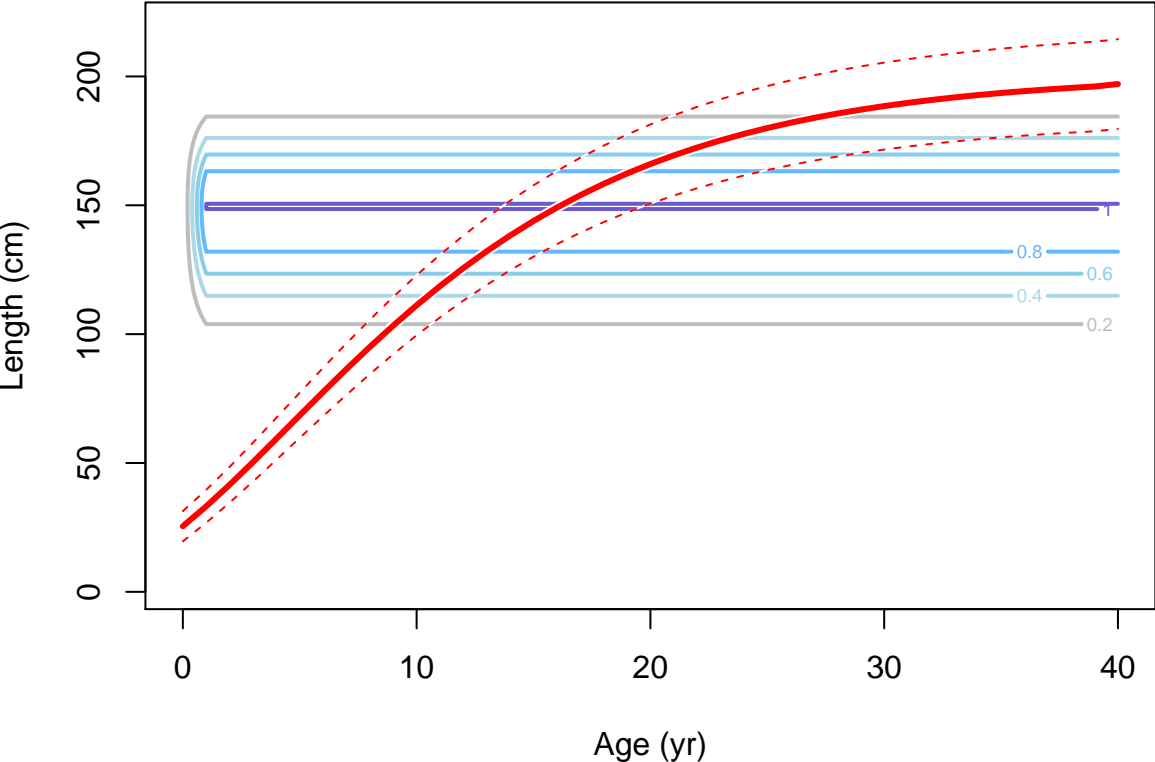




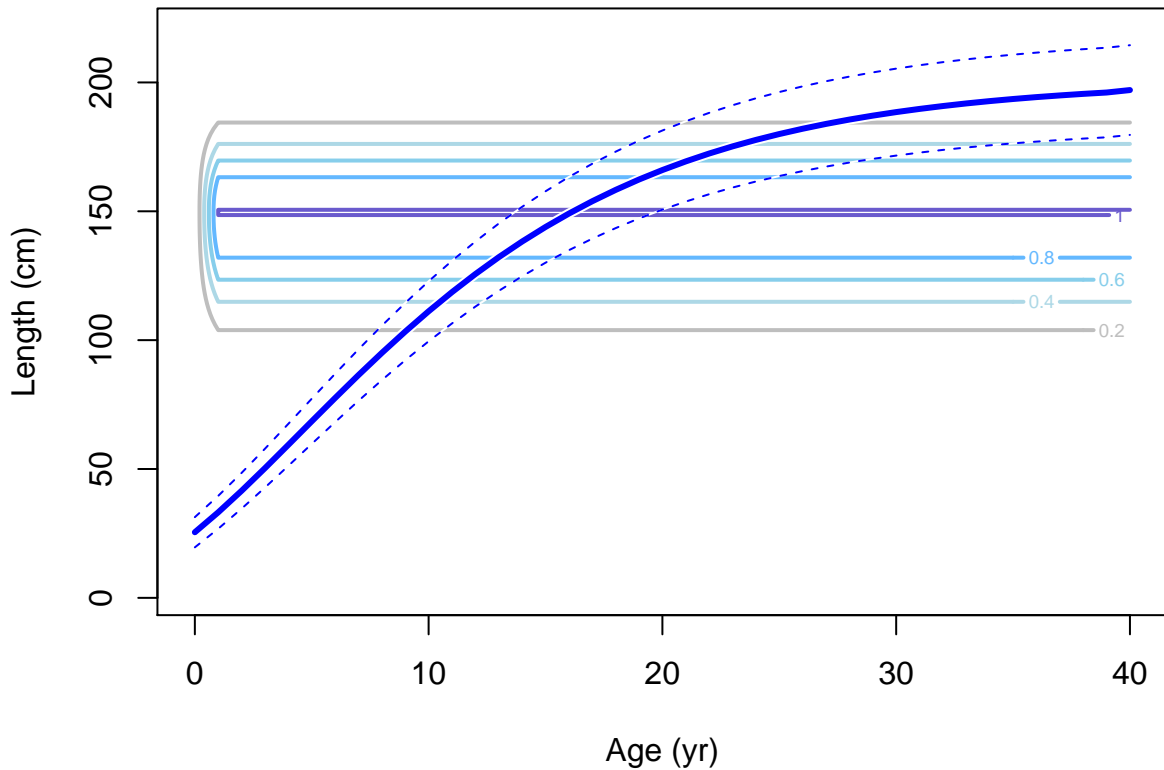
# Male ending year selectivity and growth for A4-LL-n



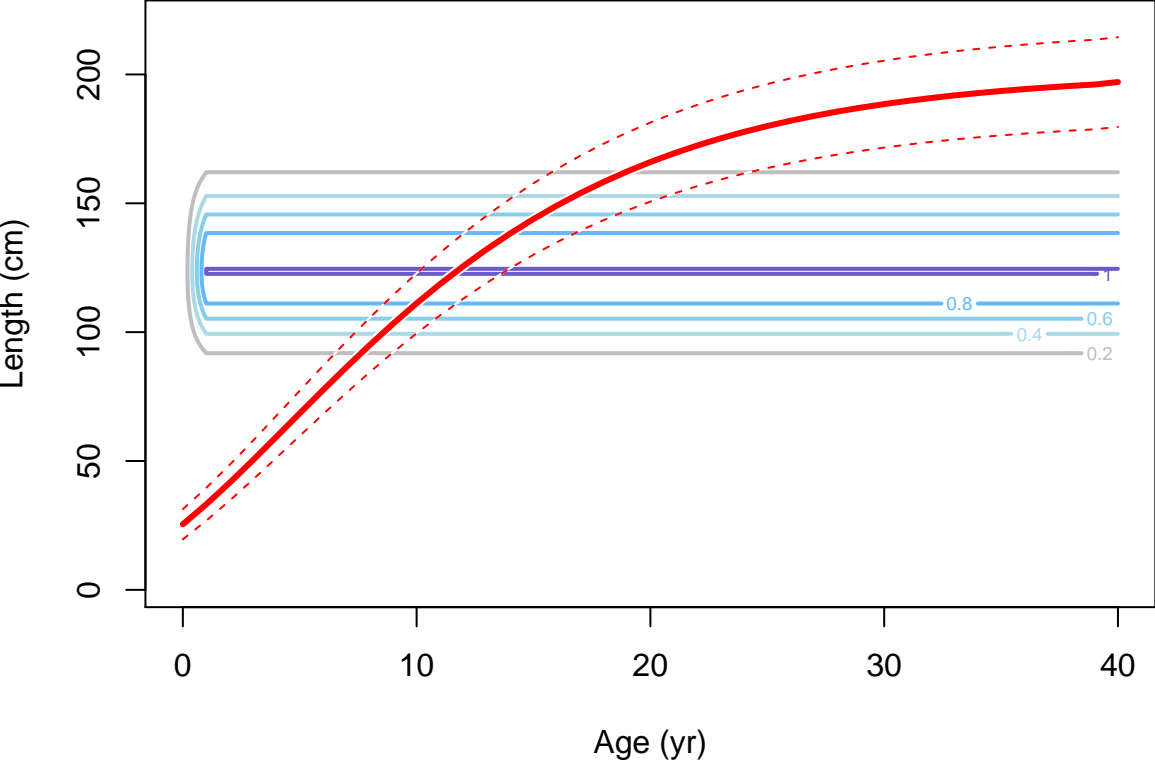
# Female ending year selectivity and growth for A5-LL-n



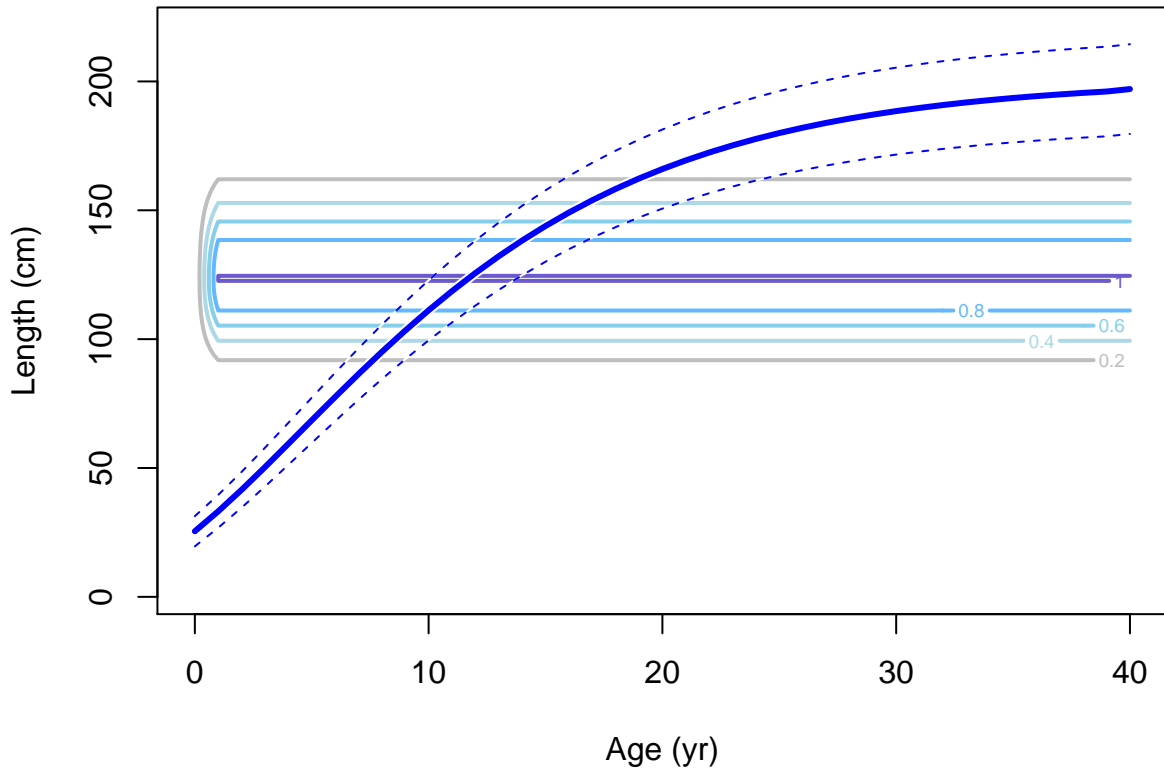
## Male ending year selectivity and growth for A5-LL-n



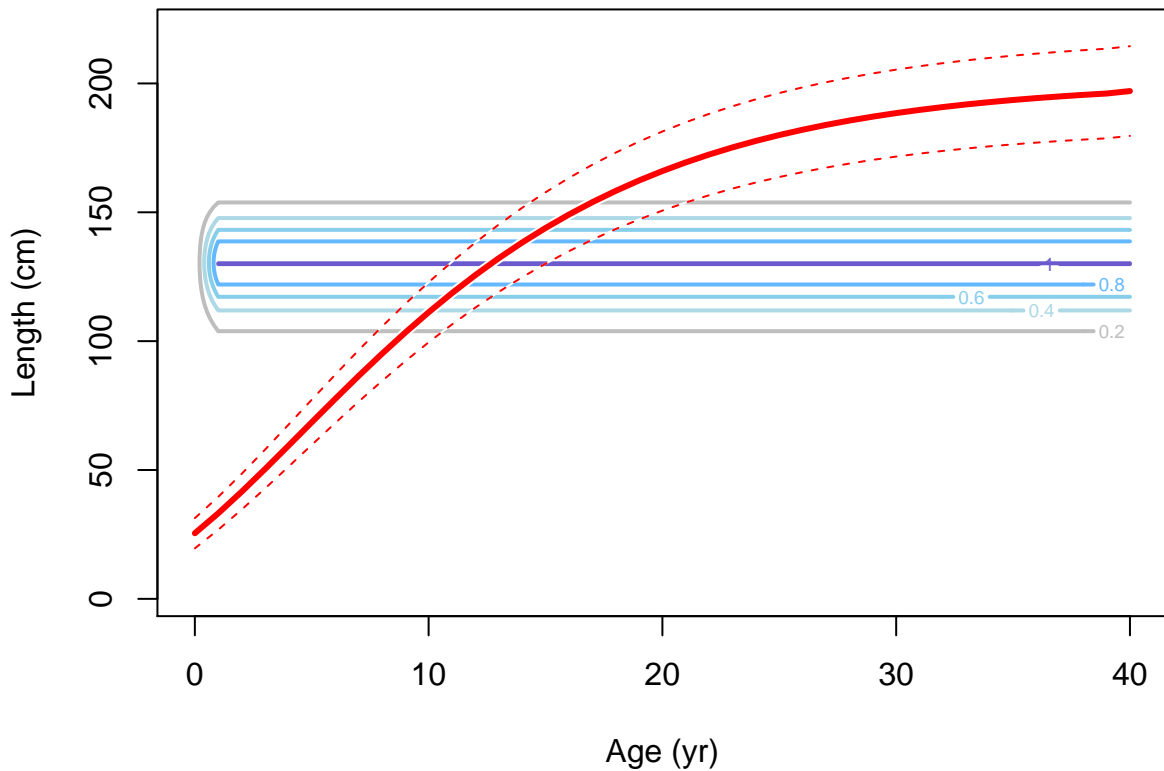
# Female ending year selectivity and growth for A6-LL-n



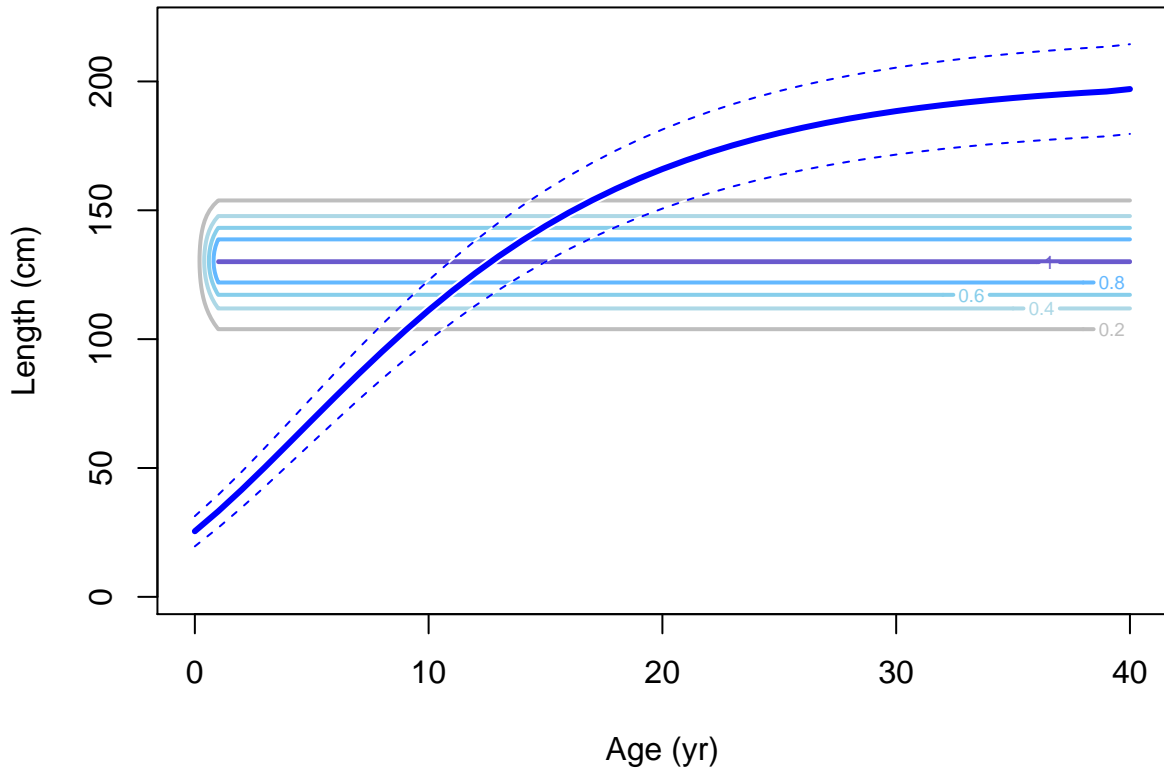
# Male ending year selectivity and growth for A6-LL-n



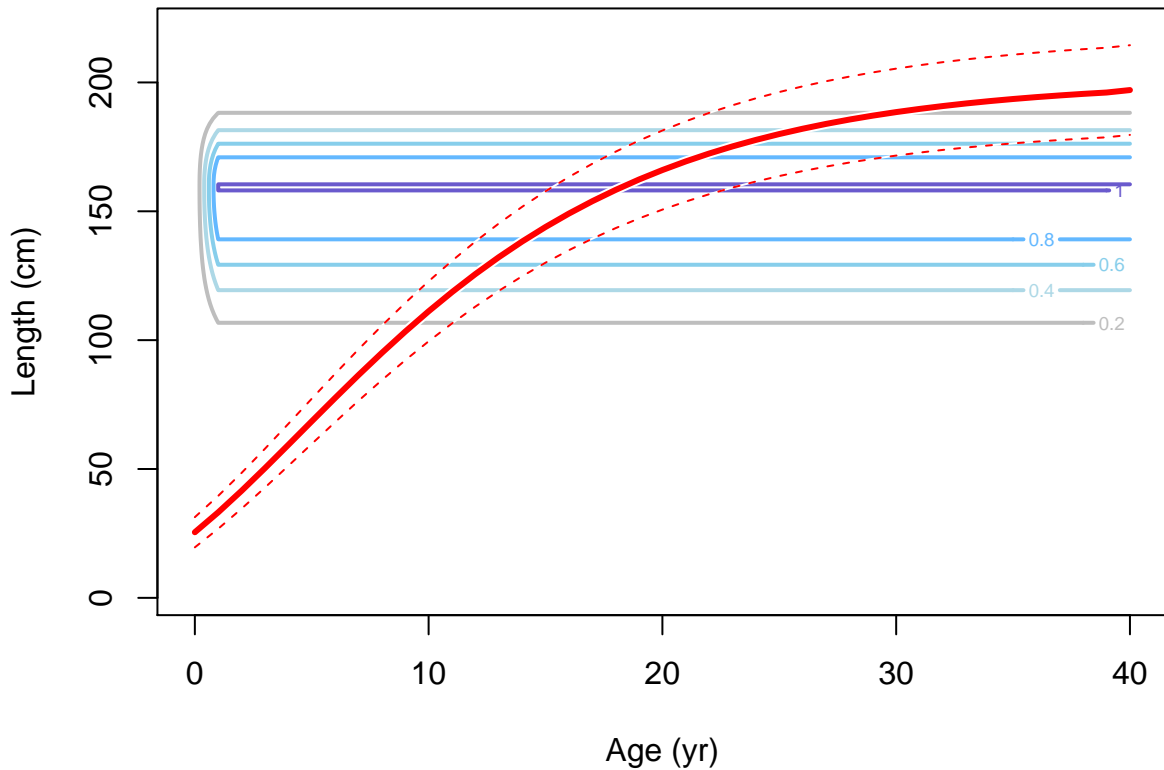
## Female ending year selectivity and growth for A1-LL-w



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

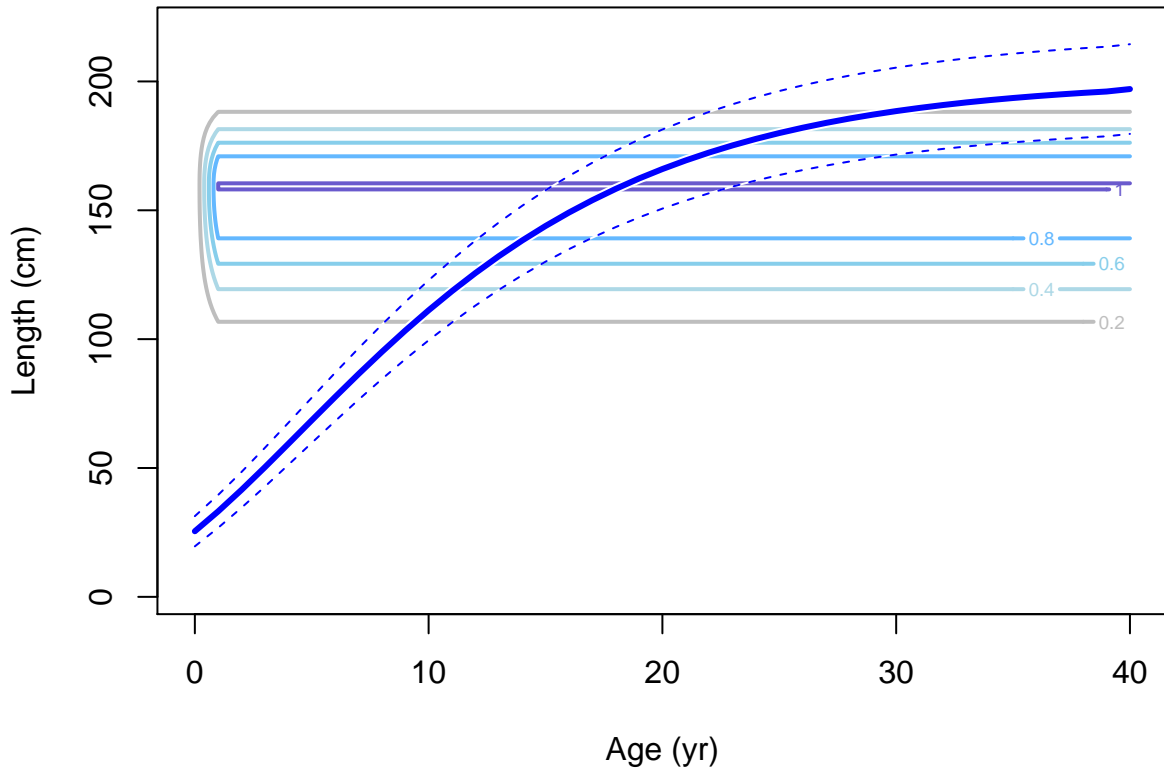


## Female ending year selectivity and growth for A2-LL-w

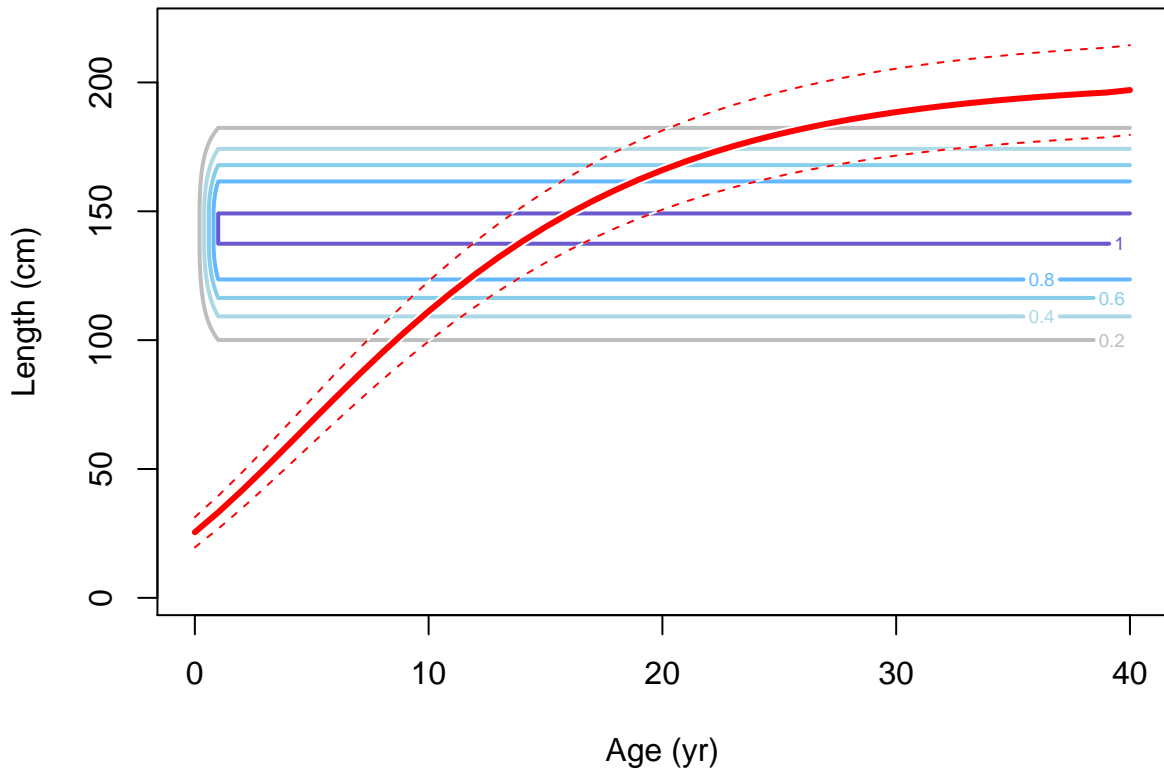




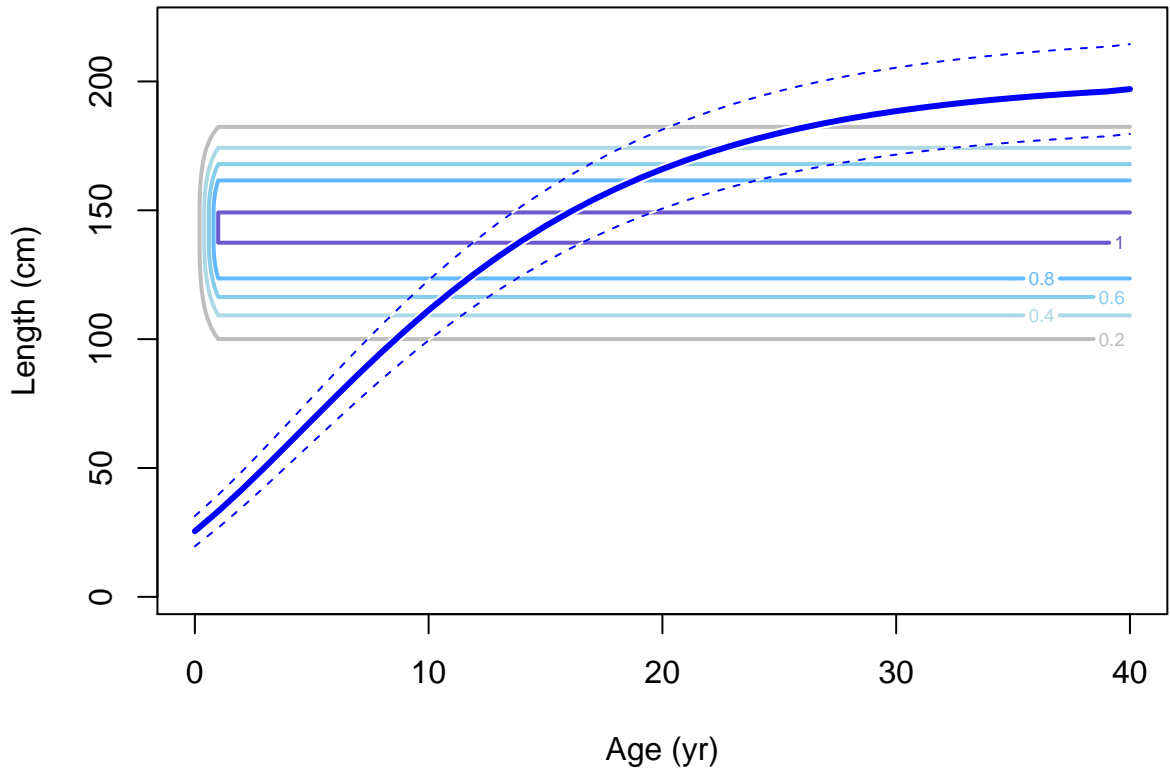
## Male ending year selectivity and growth for A2-LL-w



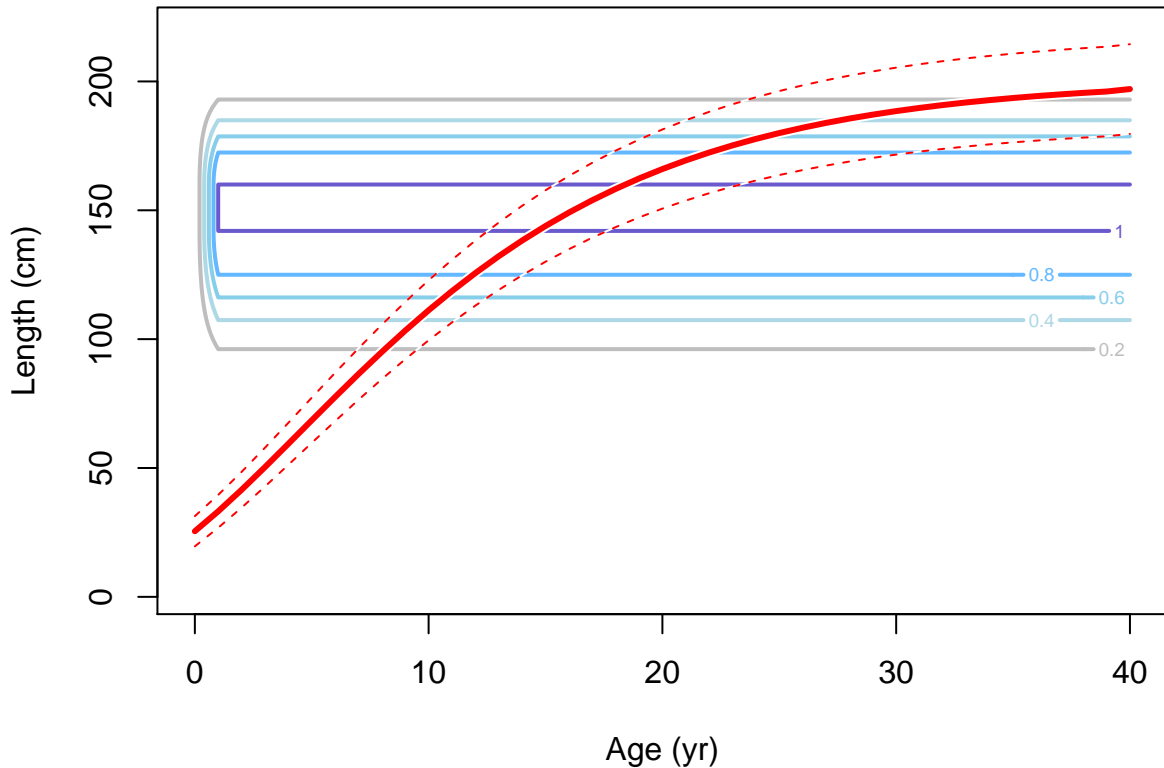
## Female ending year selectivity and growth for A3-LL-w



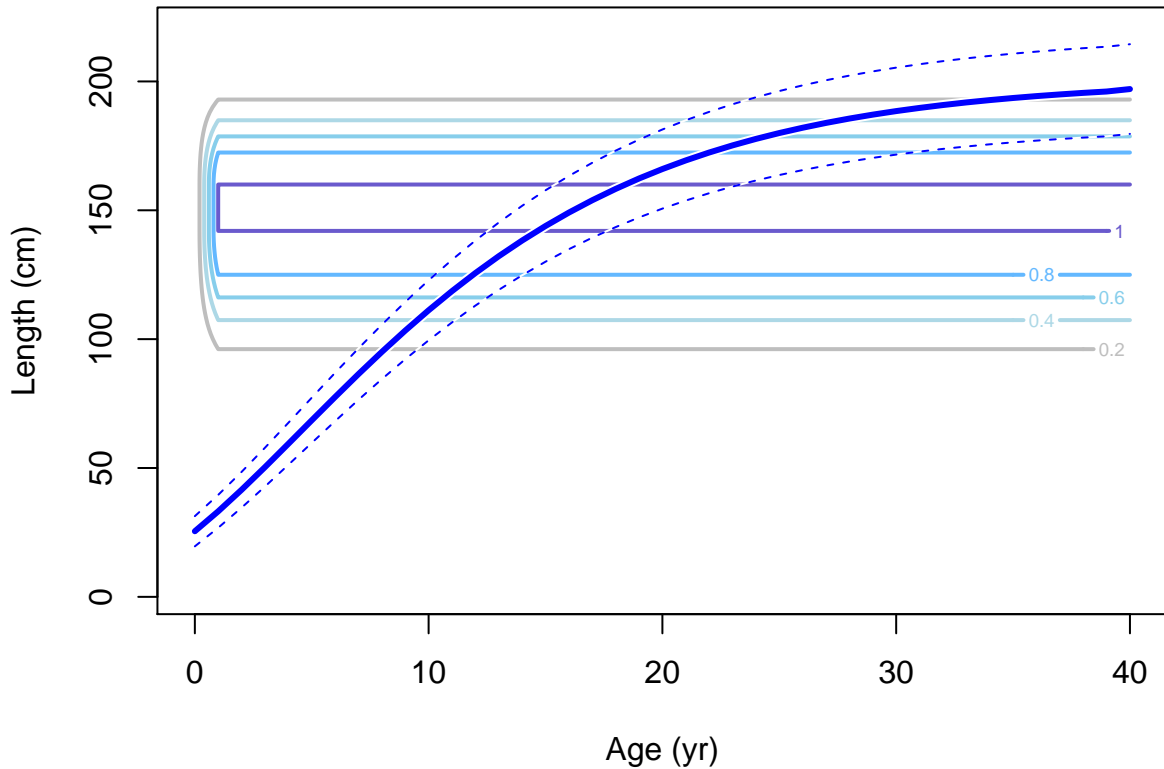
# Male ending year selectivity and growth for A3-LL-w



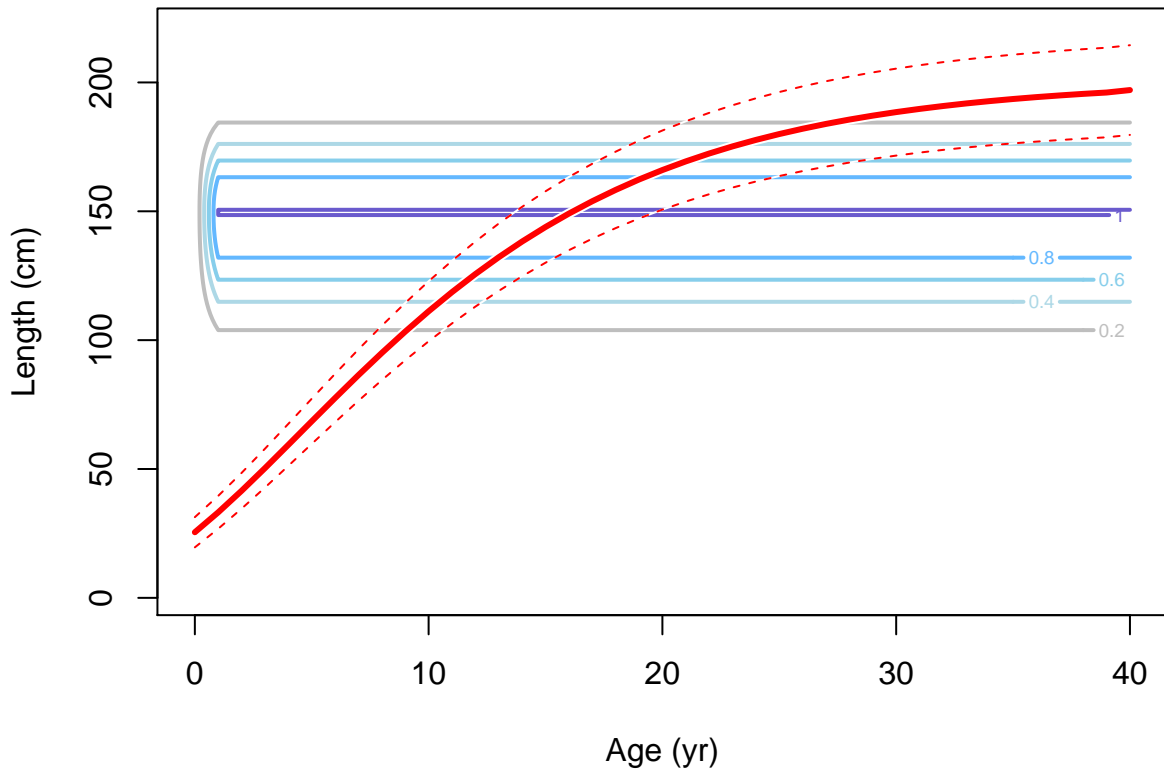
## Female ending year selectivity and growth for A4-LL-w



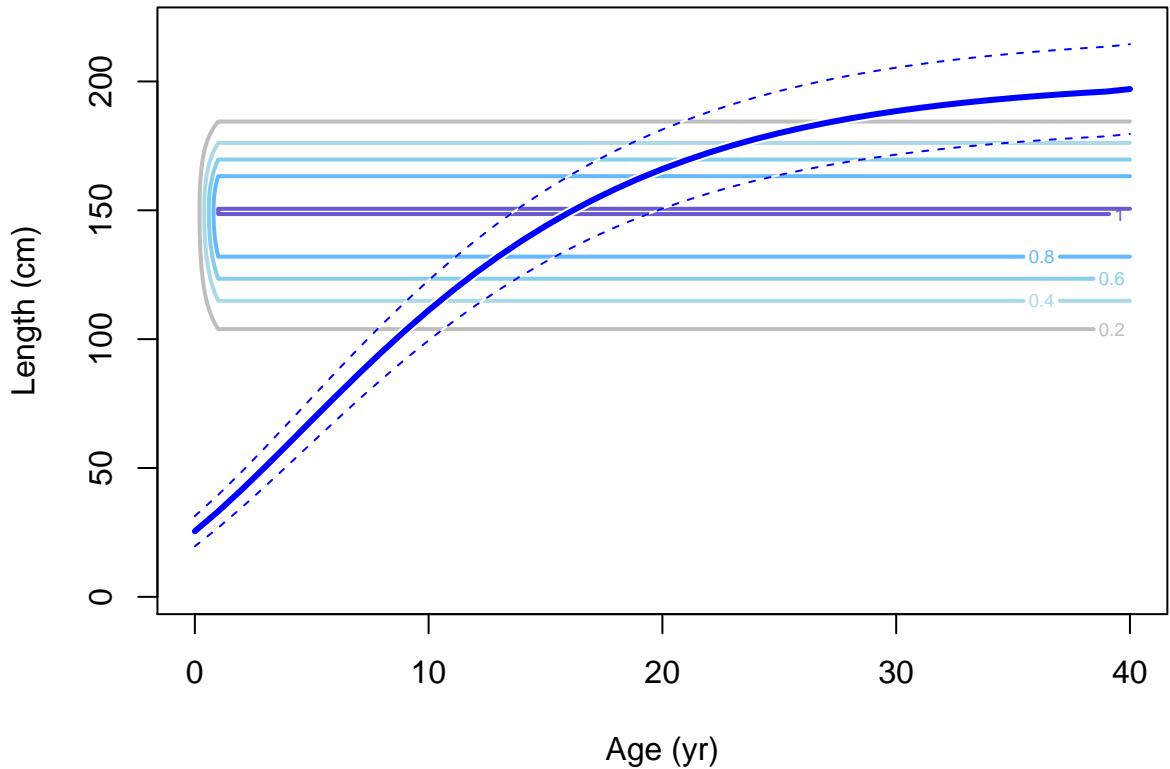
## Male ending year selectivity and growth for A4-LL-w



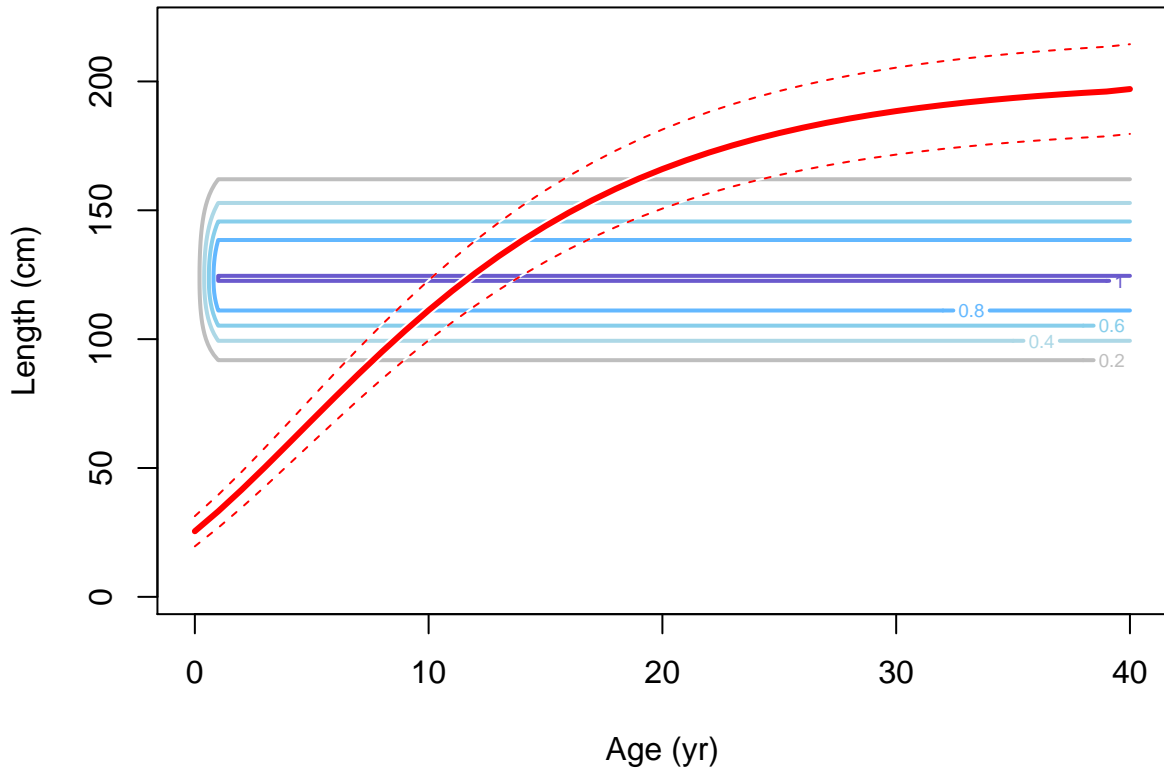
## Female ending year selectivity and growth for A5-LL-w



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

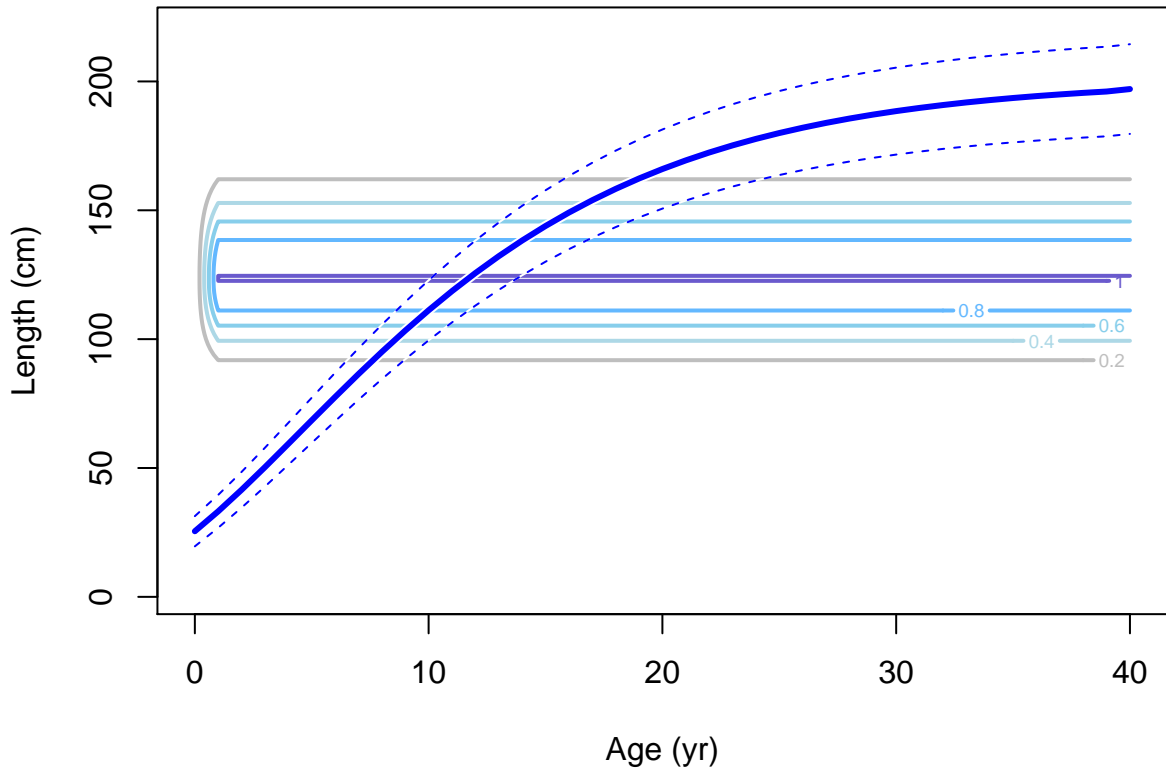


## Female ending year selectivity and growth for A6-LL-w

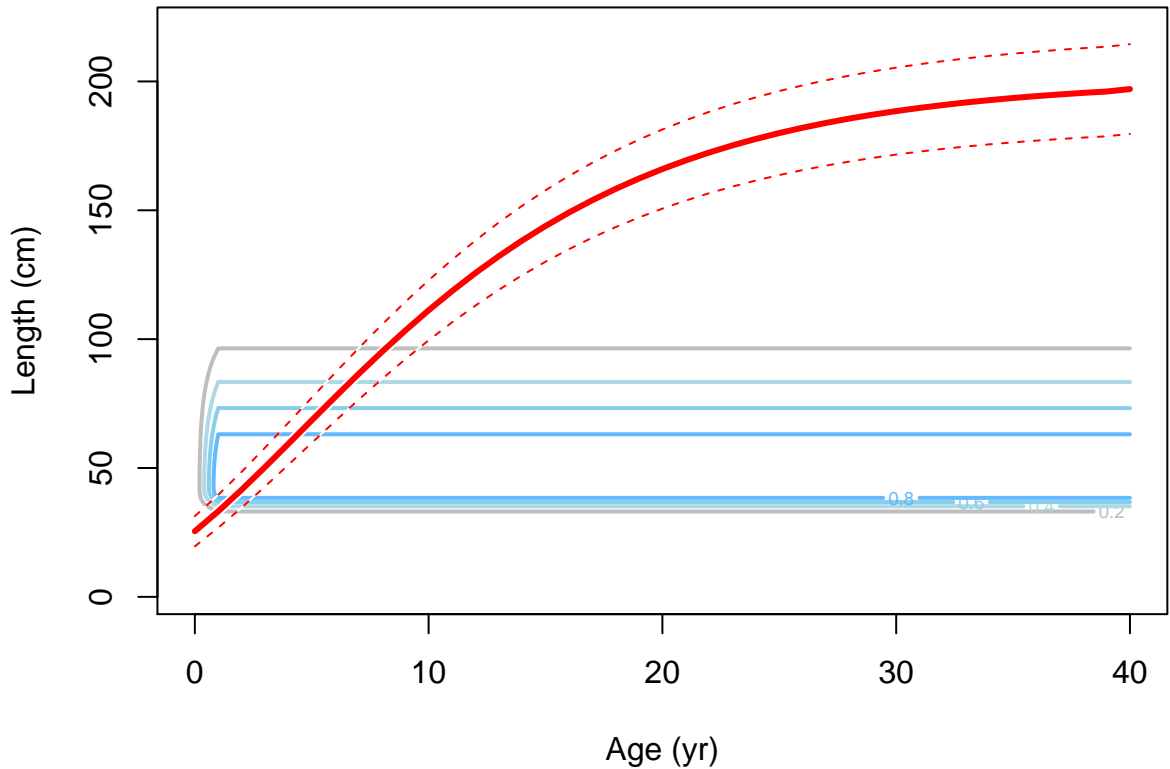




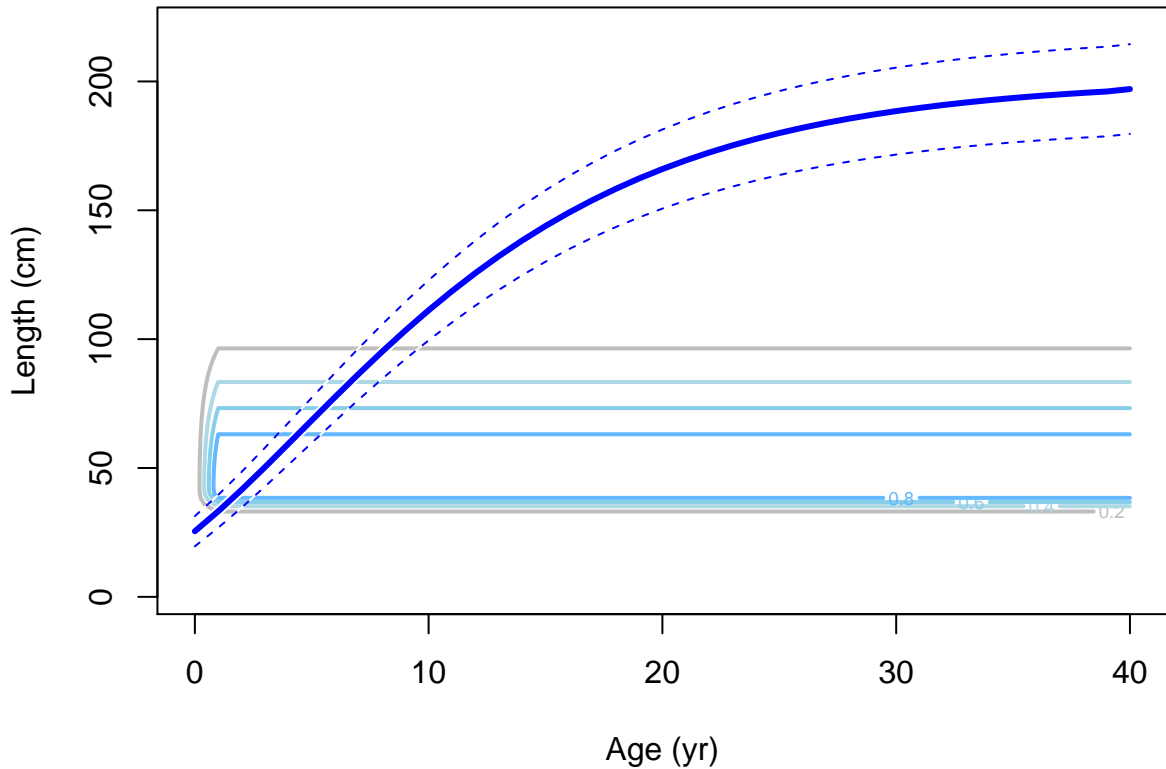
# Male ending year selectivity and growth for A6-LL-w



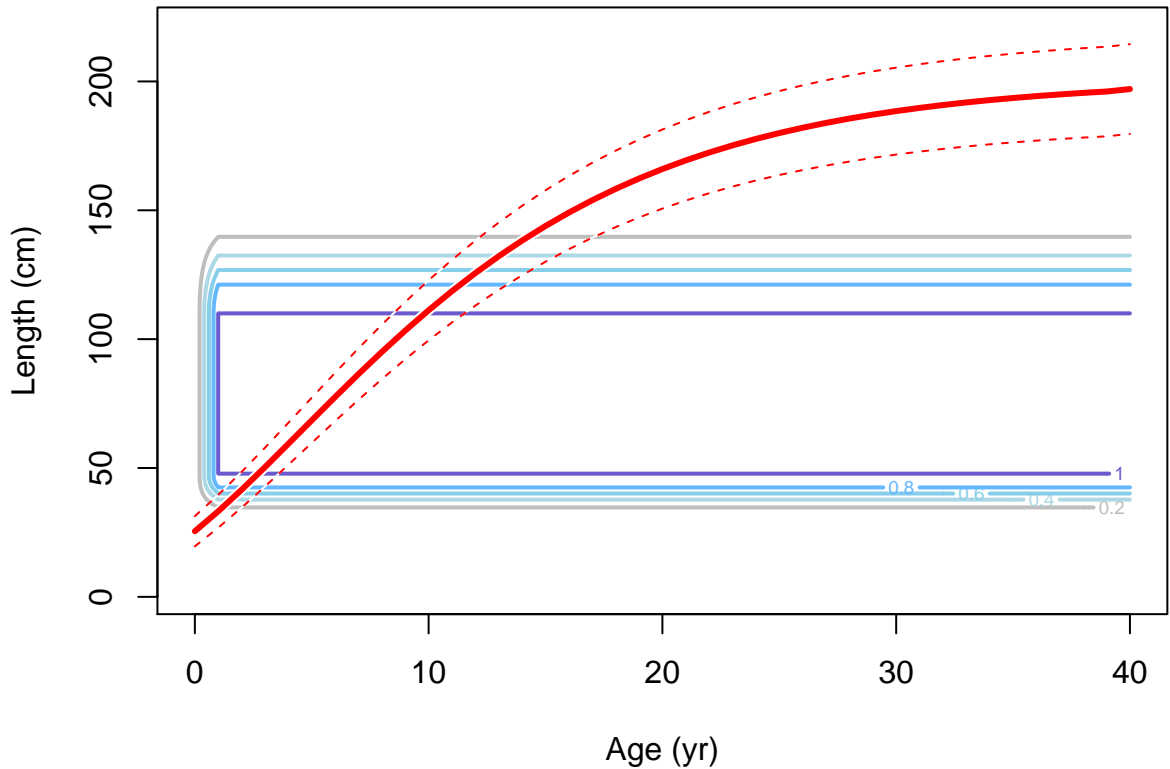
## Female ending year selectivity and growth for A2-OBJ



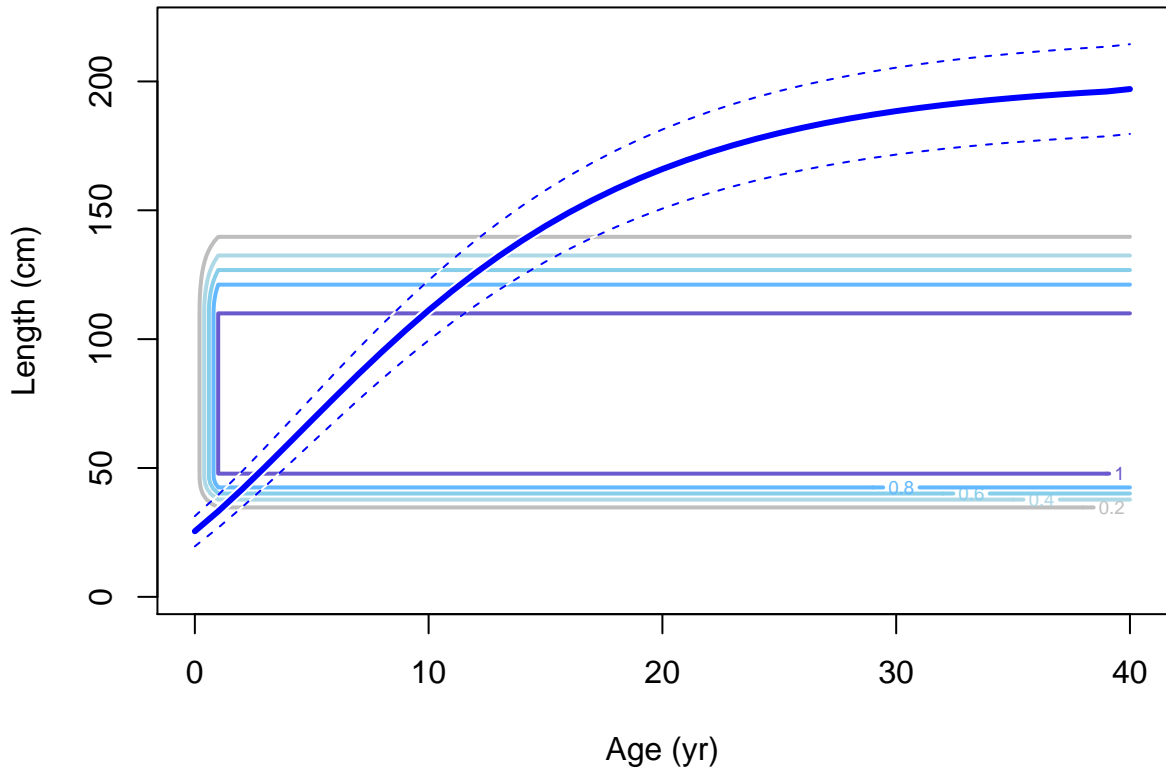
# Male ending year selectivity and growth for A2-OBJ



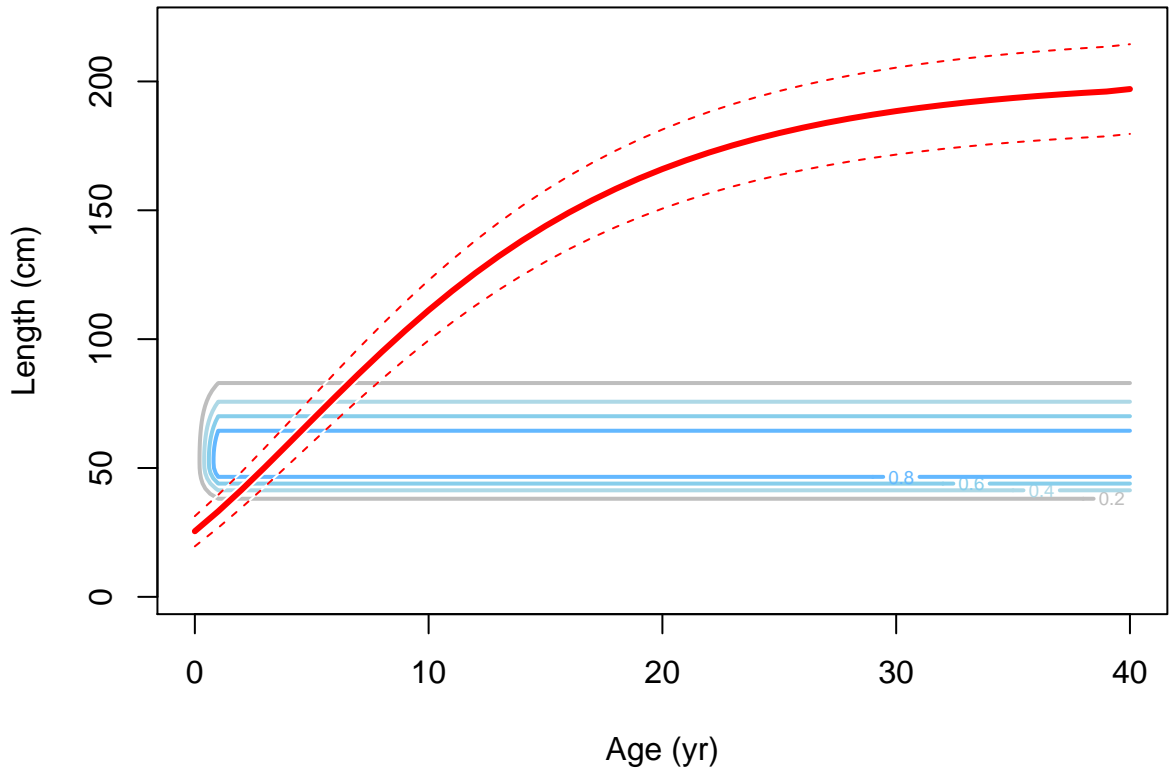
## Female ending year selectivity and growth for A3-OBJ



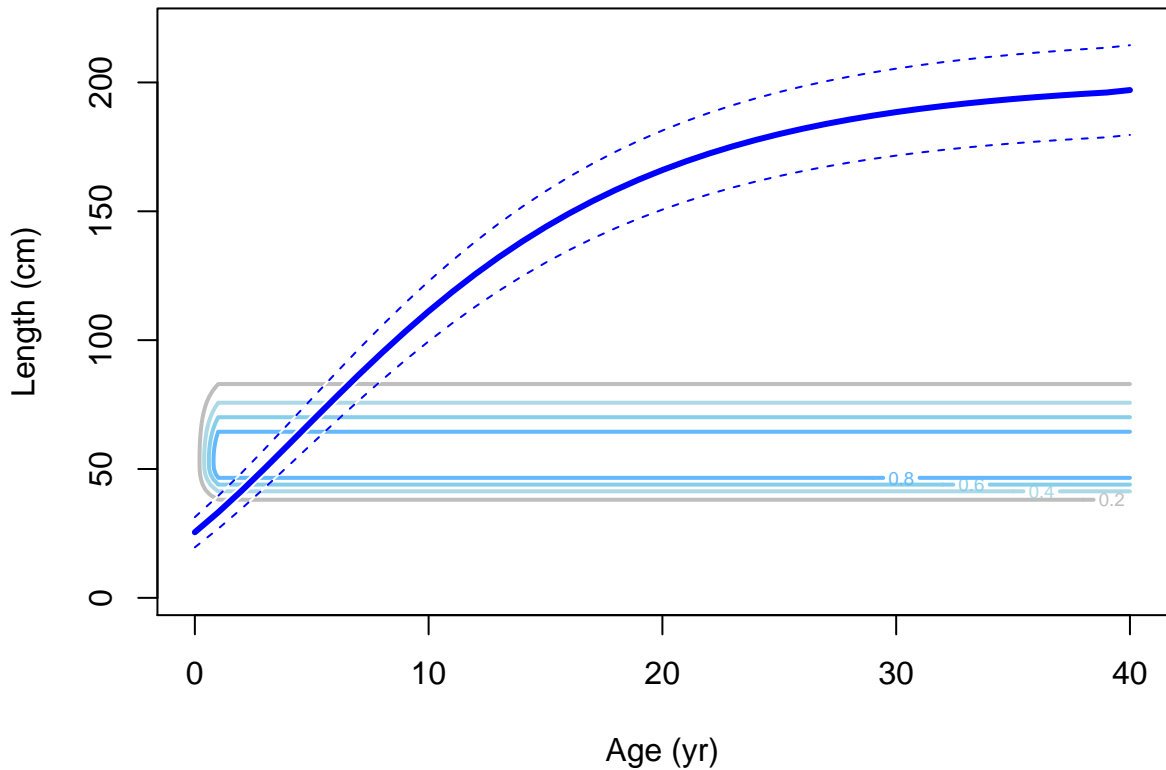
# Male ending year selectivity and growth for A3-OBJ



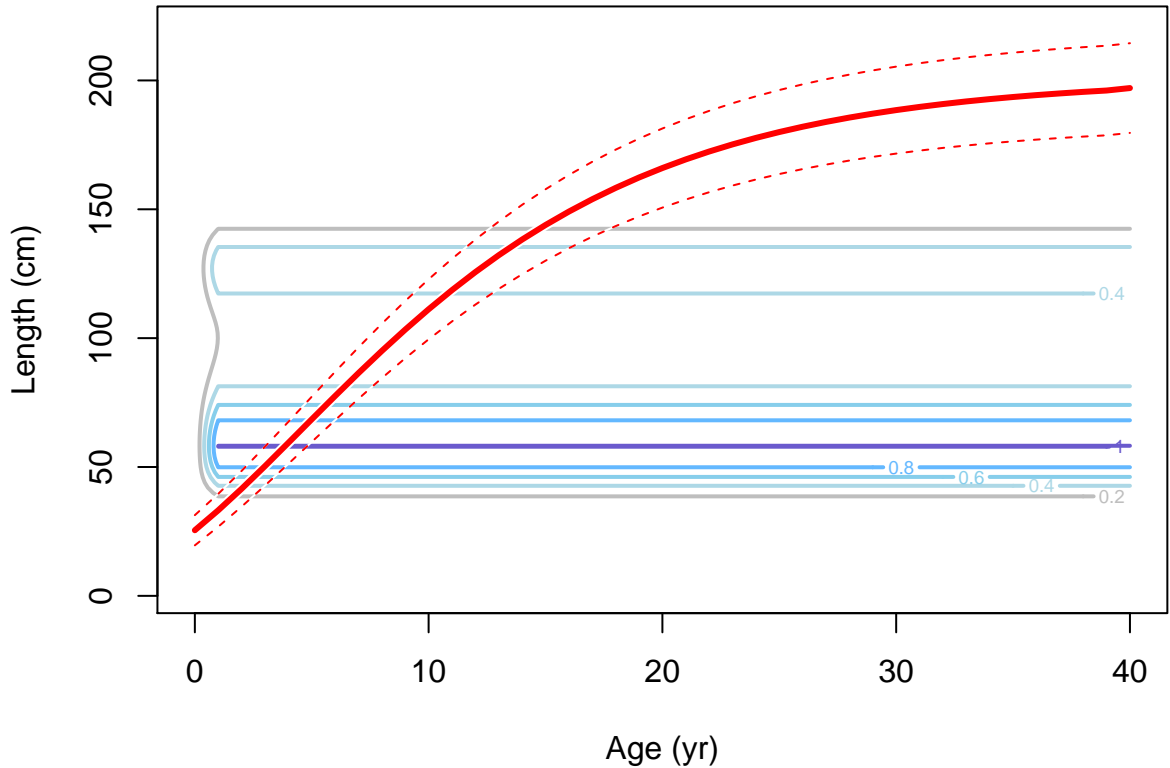
## Female ending year selectivity and growth for A4-OBJ



# Male ending year selectivity and growth for A4-OBJ

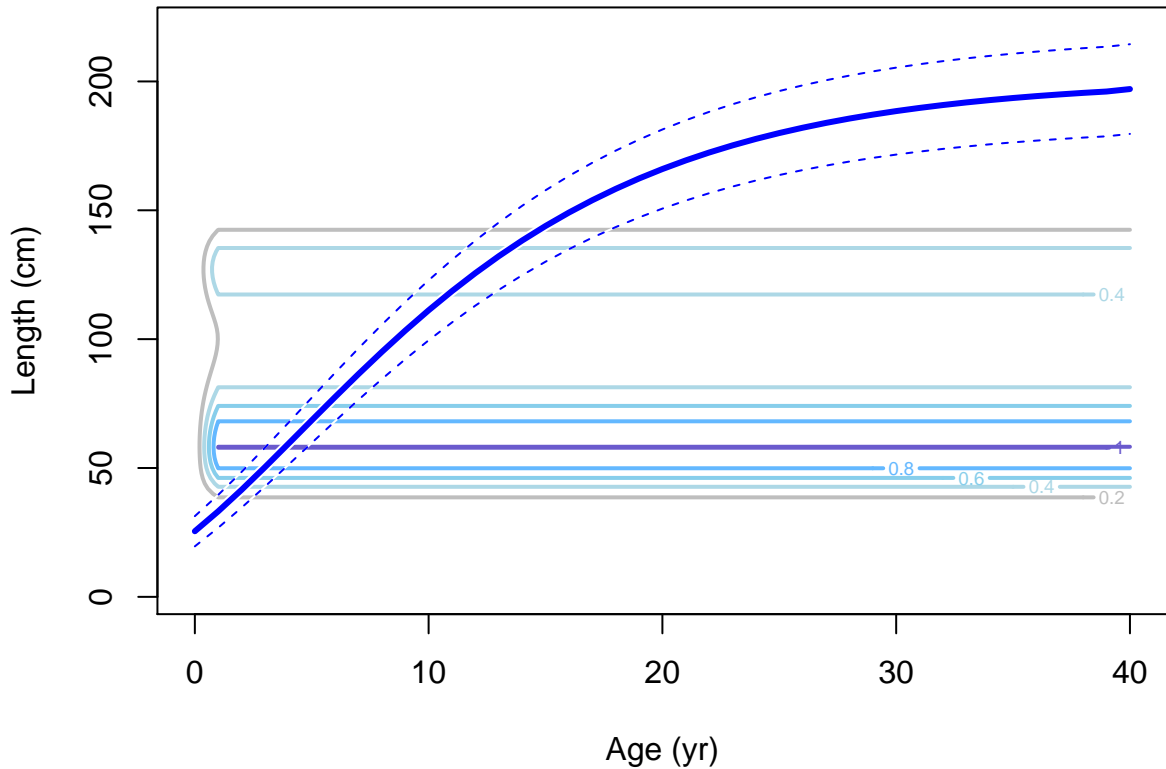


## Female ending year selectivity and growth for A5-OBJ

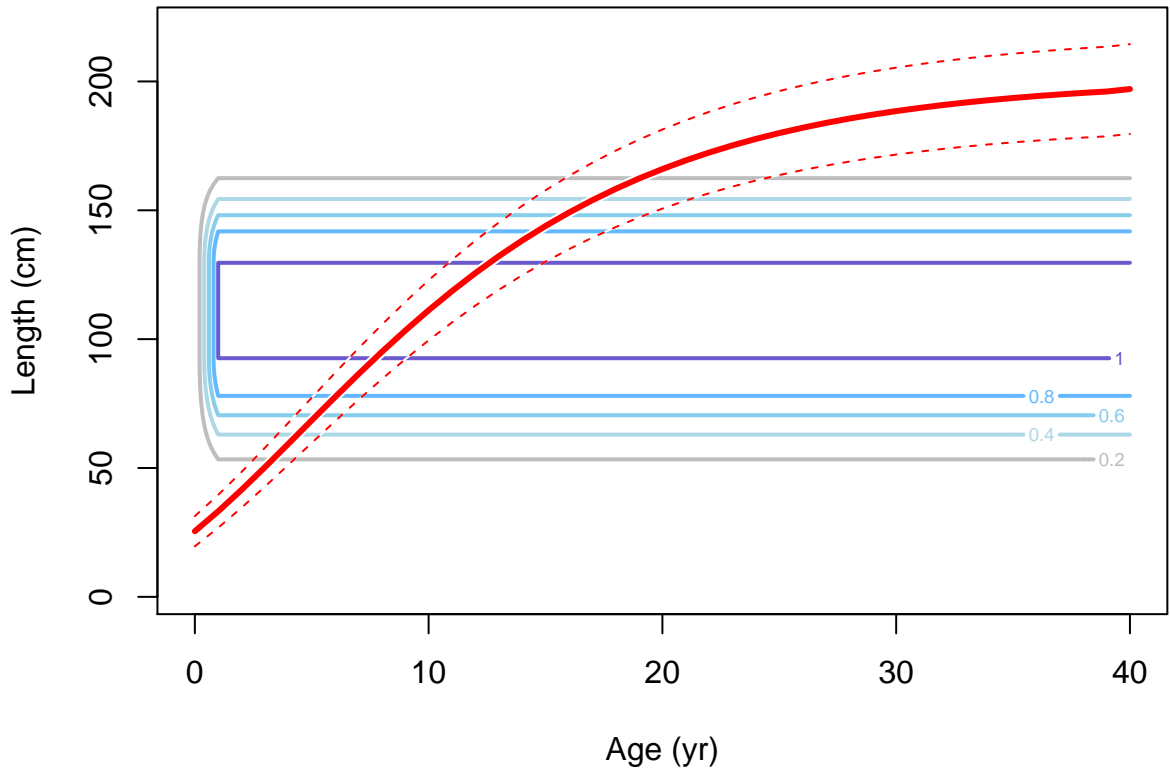




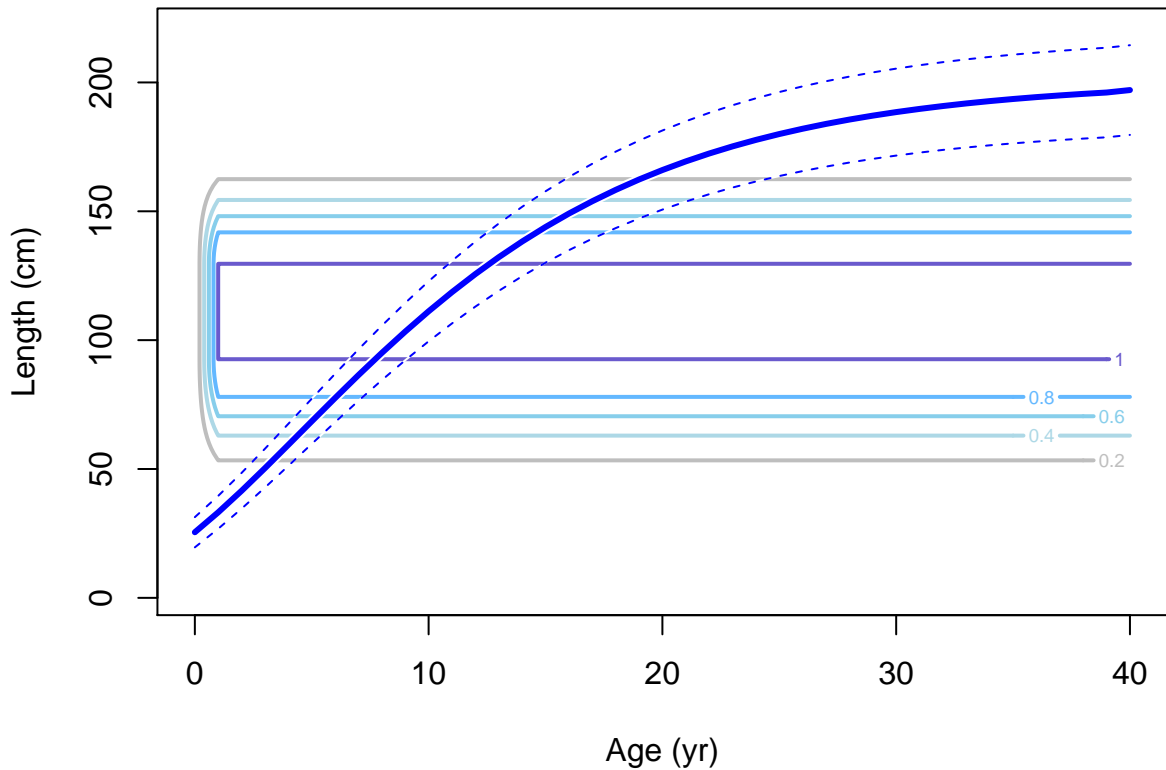
## Male ending year selectivity and growth for A5-OBJ



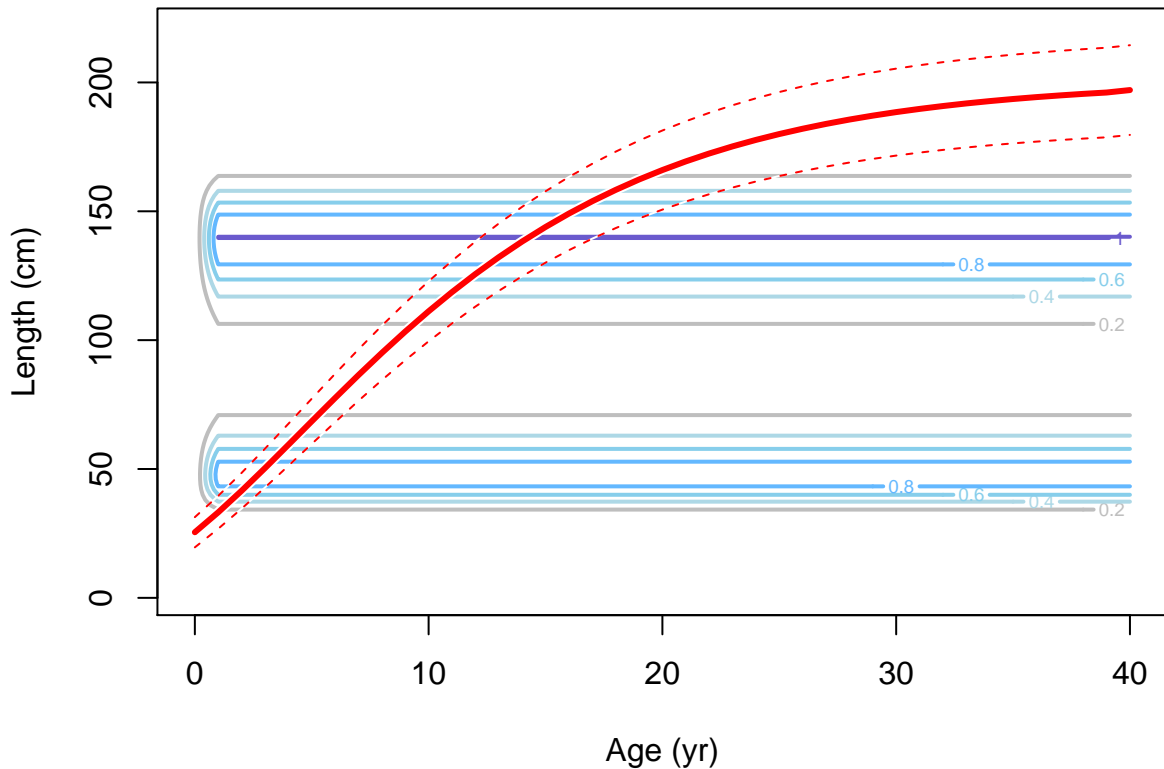
## Female ending year selectivity and growth for A6-OBJ



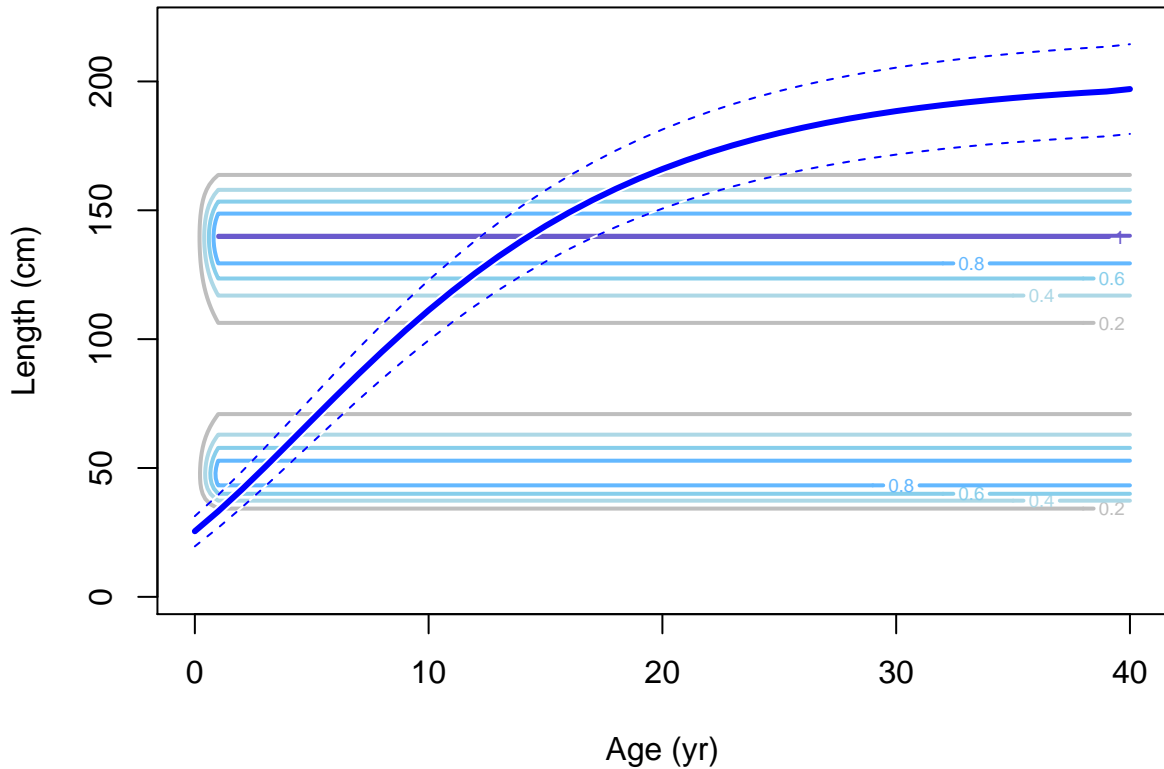
## Male ending year selectivity and growth for A6-OBJ



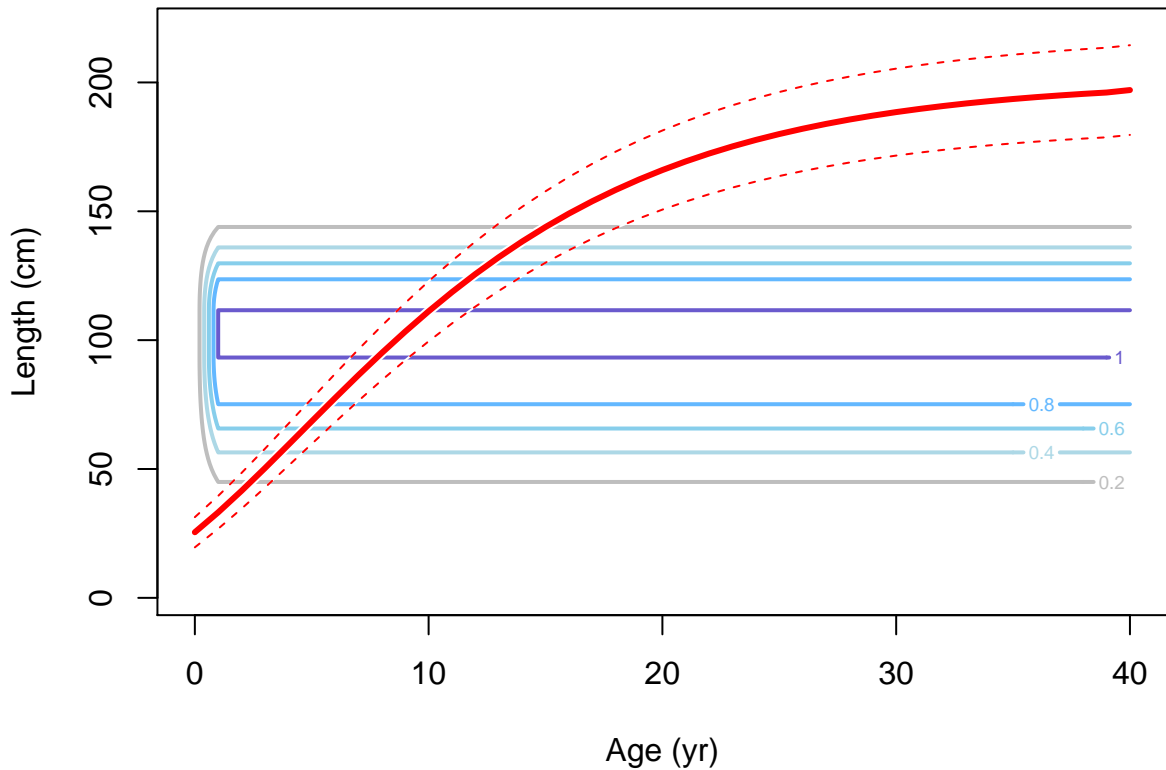
## Female ending year selectivity and growth for A2-NOADEL



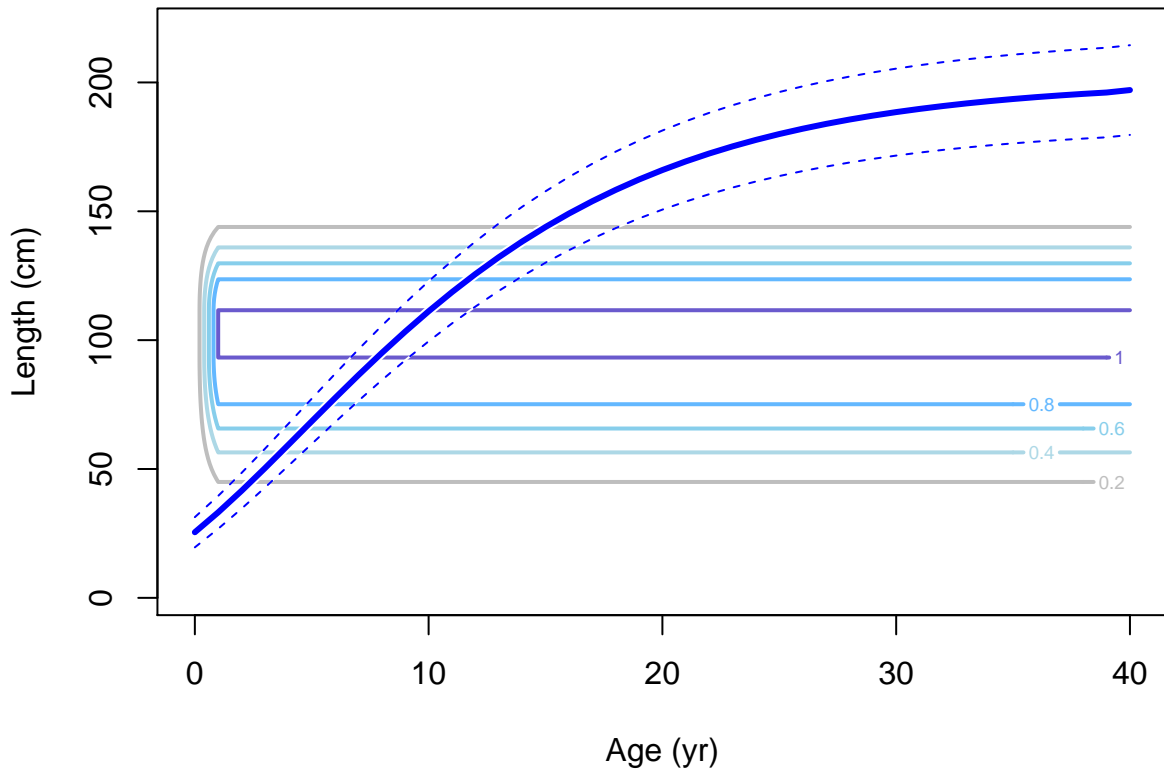
# Male ending year selectivity and growth for A2-NOADEL



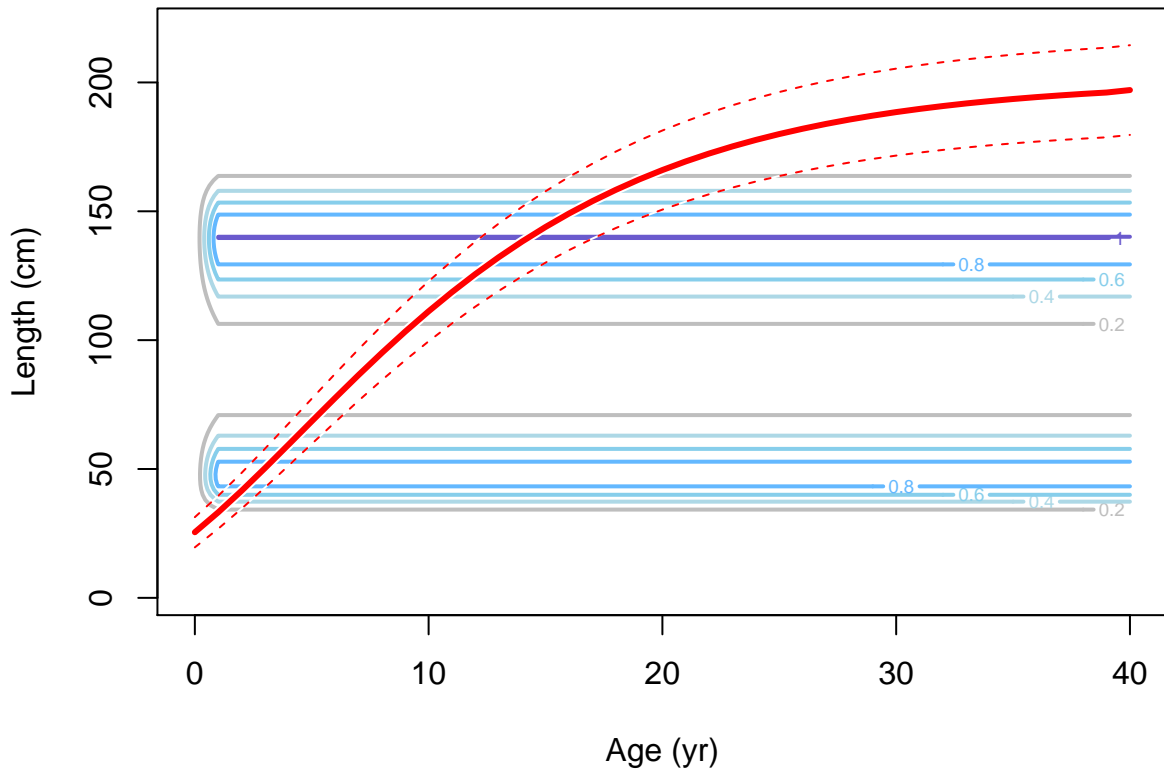
## Female ending year selectivity and growth for A3-NOADEL



# Male ending year selectivity and growth for A3-NOADEL

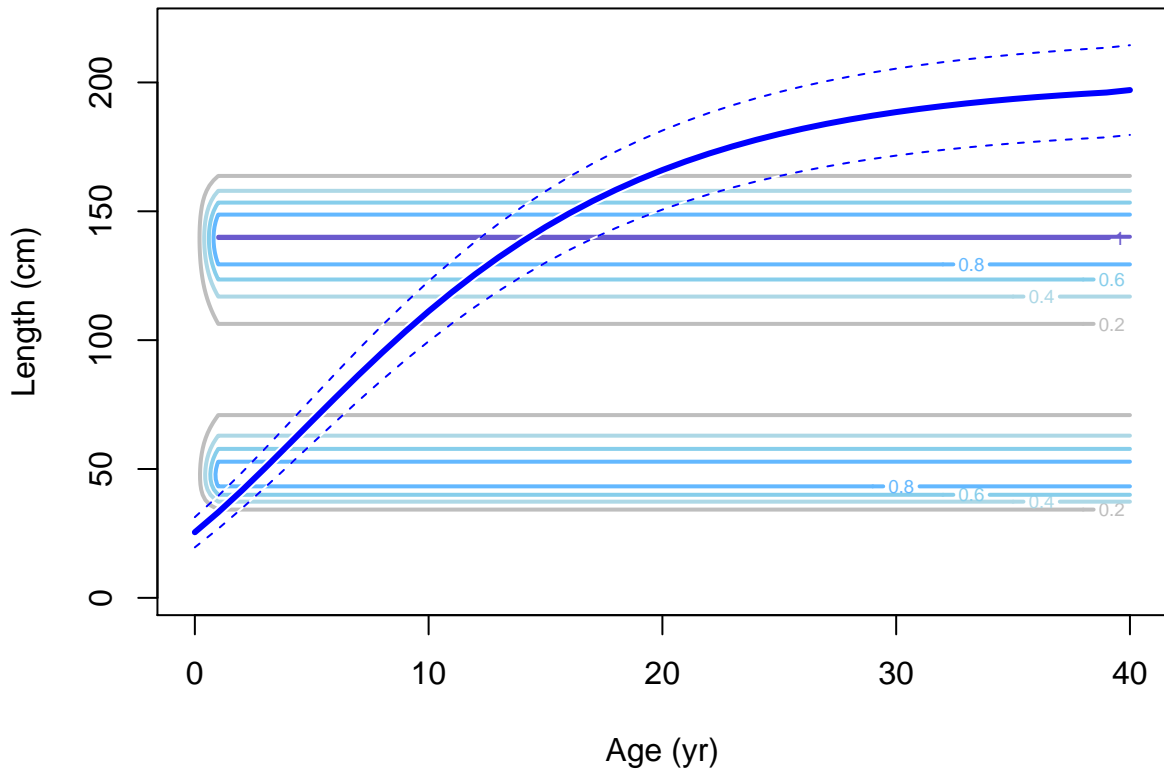


# Female ending year selectivity and growth for A4-NOADEL

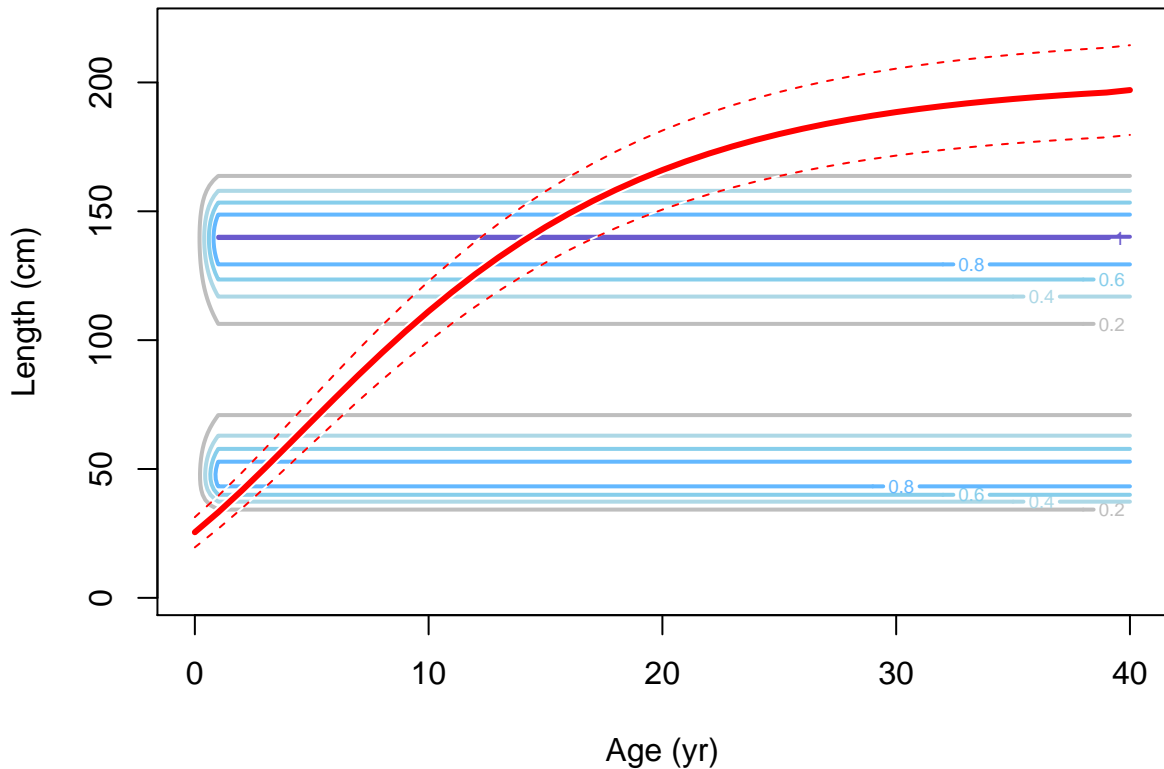




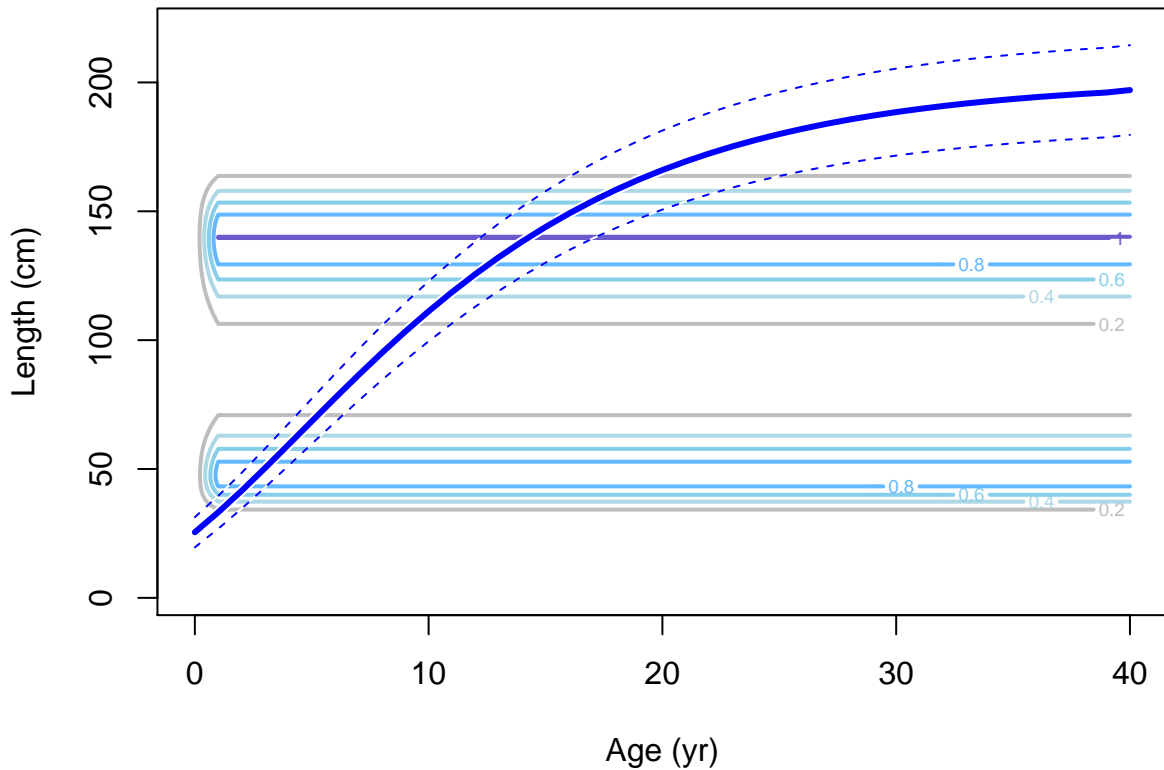
# Male ending year selectivity and growth for A4-NOADEL



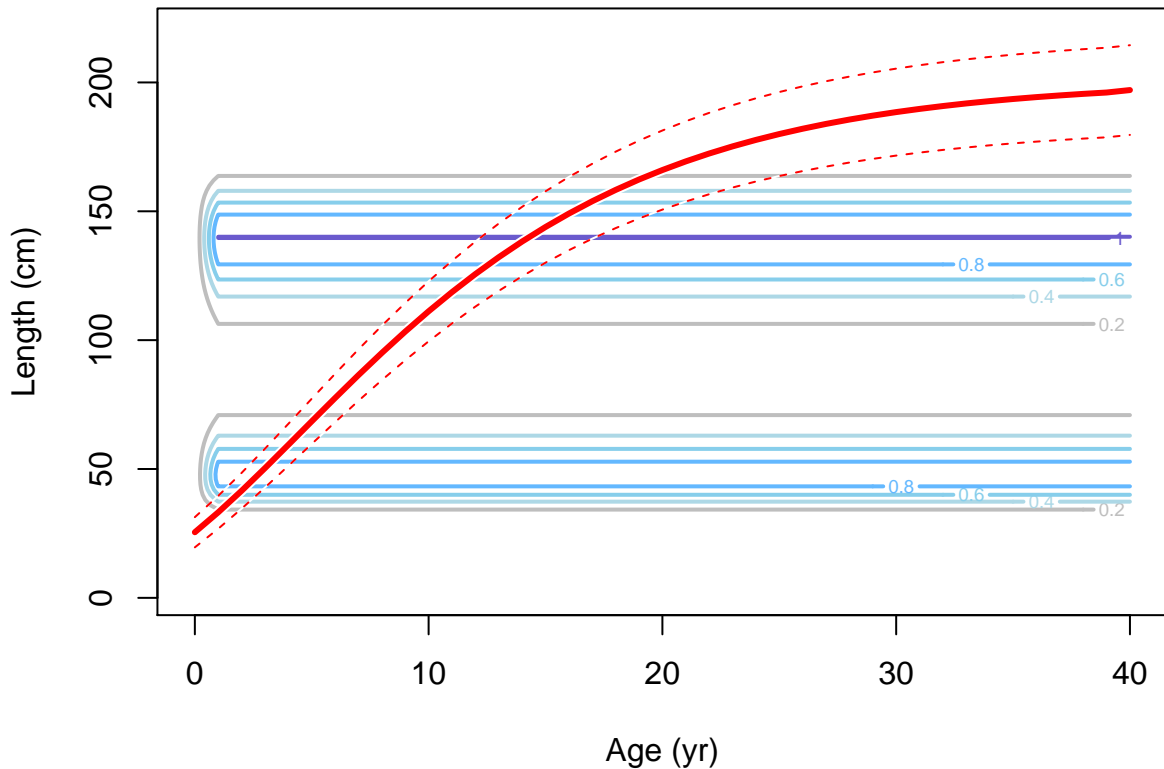
## Female ending year selectivity and growth for A5-NOADEL



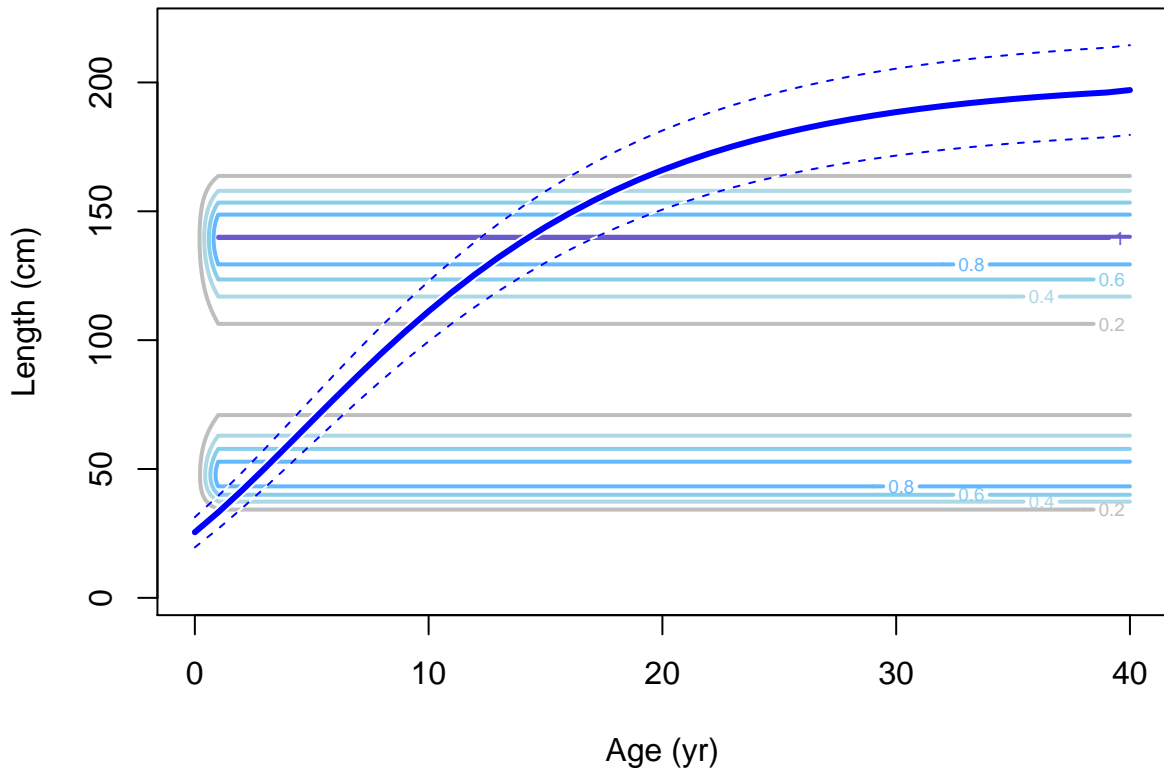
# Male ending year selectivity and growth for A5-NOADEL



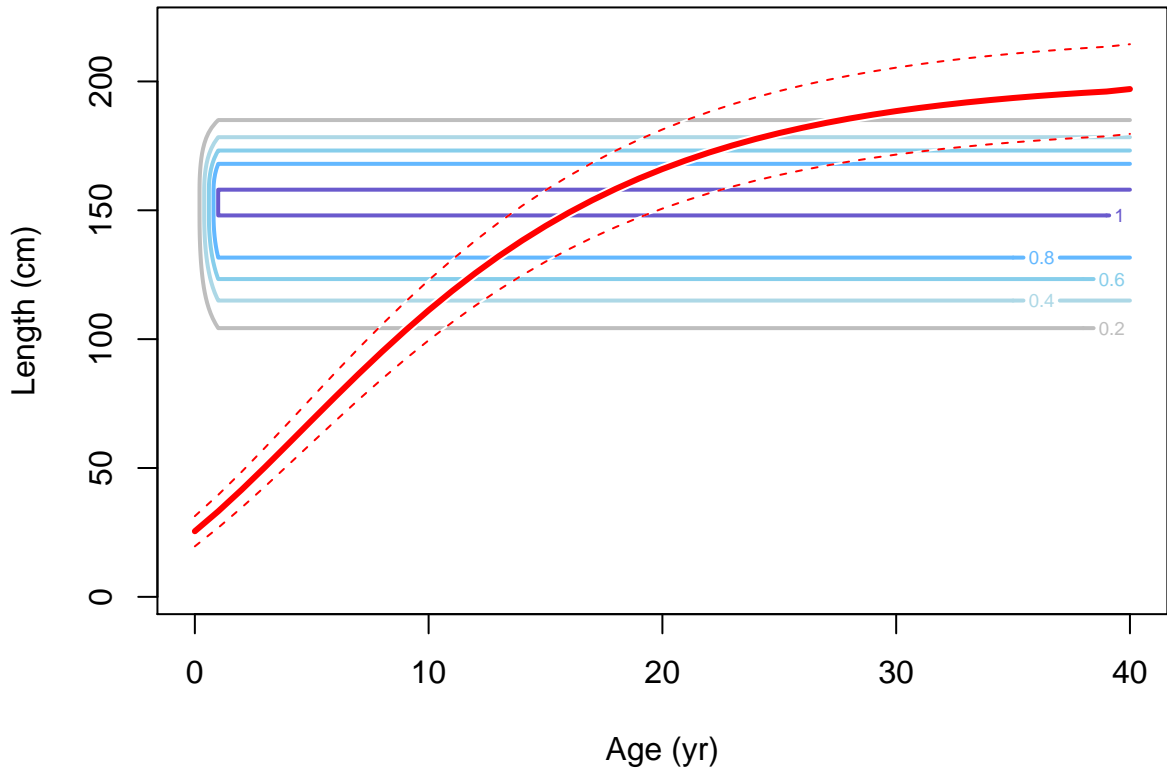
## Female ending year selectivity and growth for A6-NOADEL



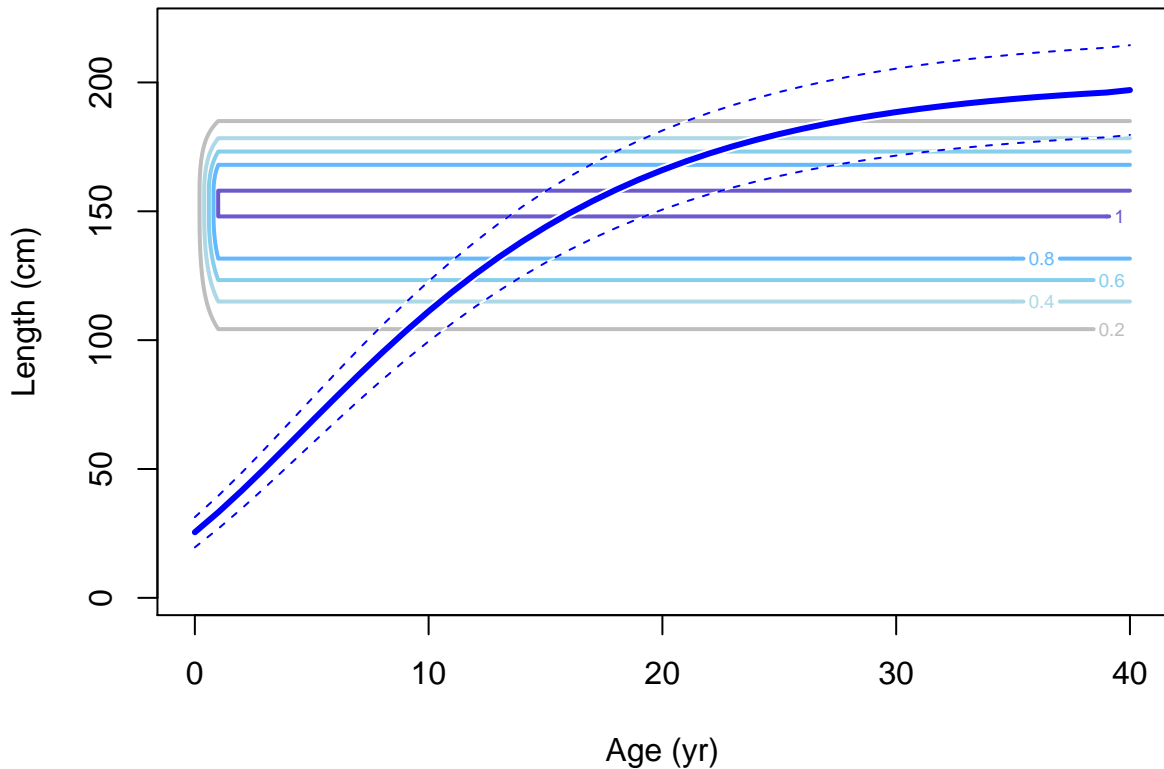
# Male ending year selectivity and growth for A6-NOADEL



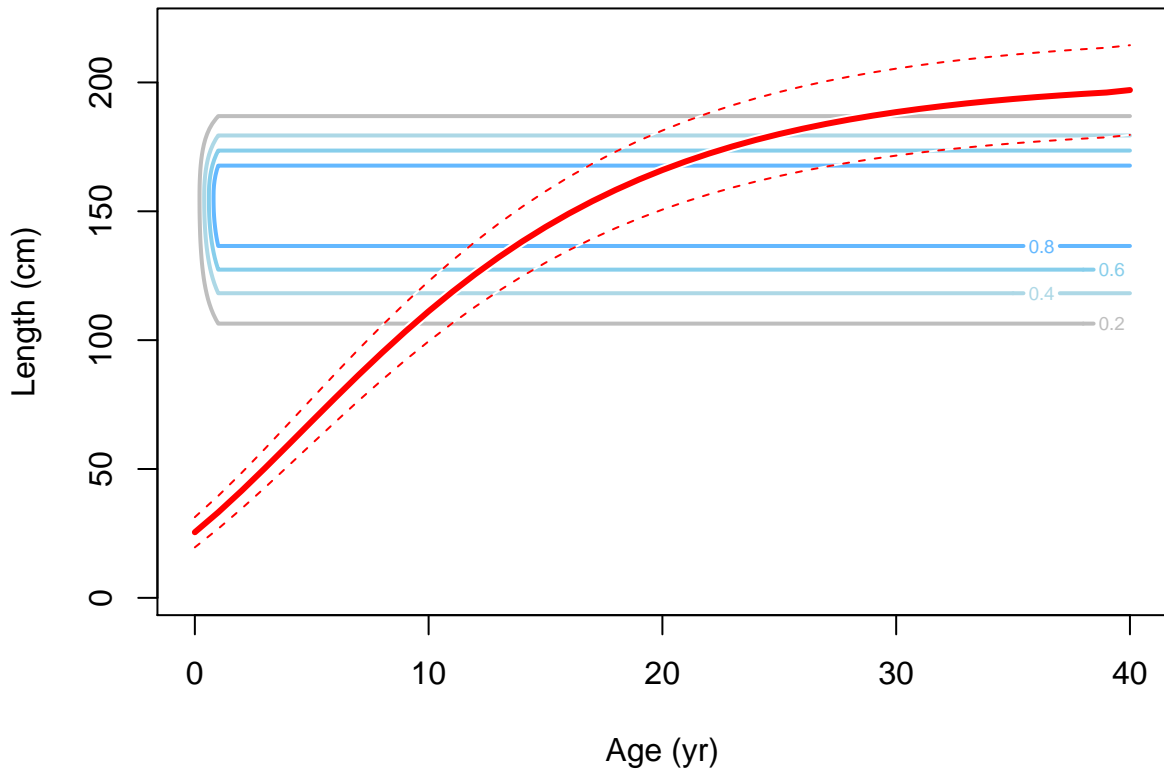
# Female ending year selectivity and growth for EPO-LL-survey-early



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

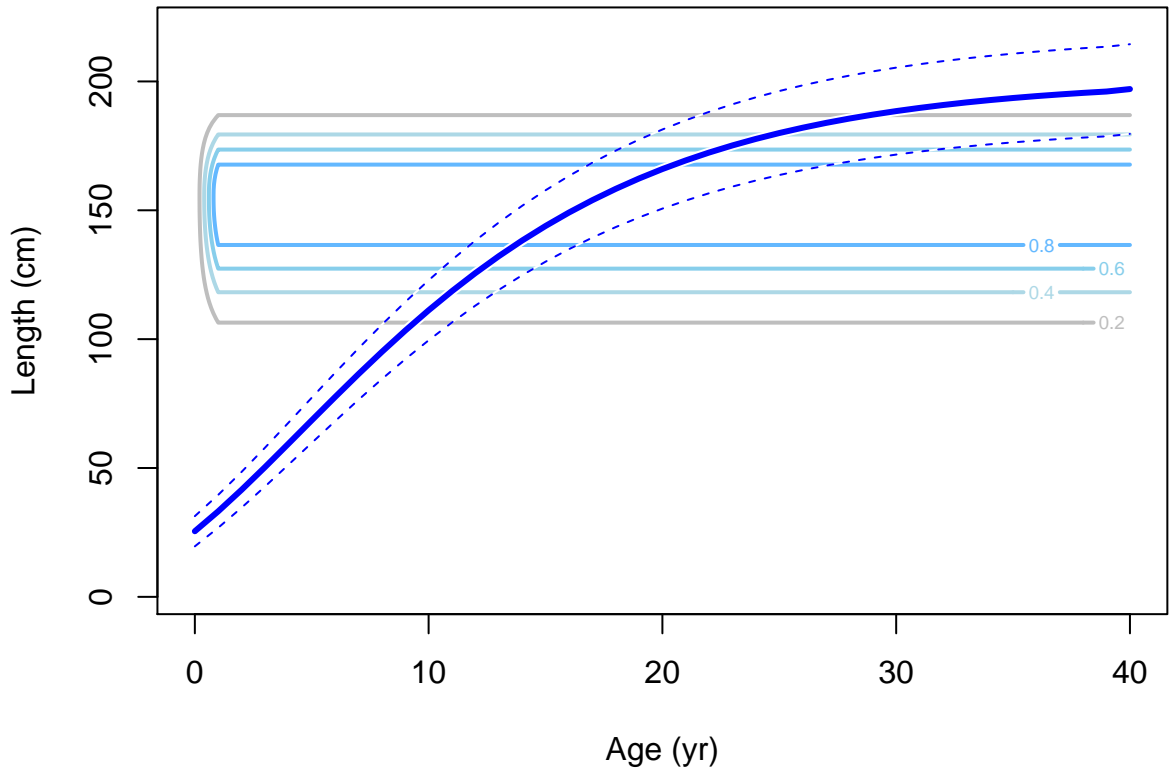


# Female ending year selectivity and growth for EPO-LL-survey-late

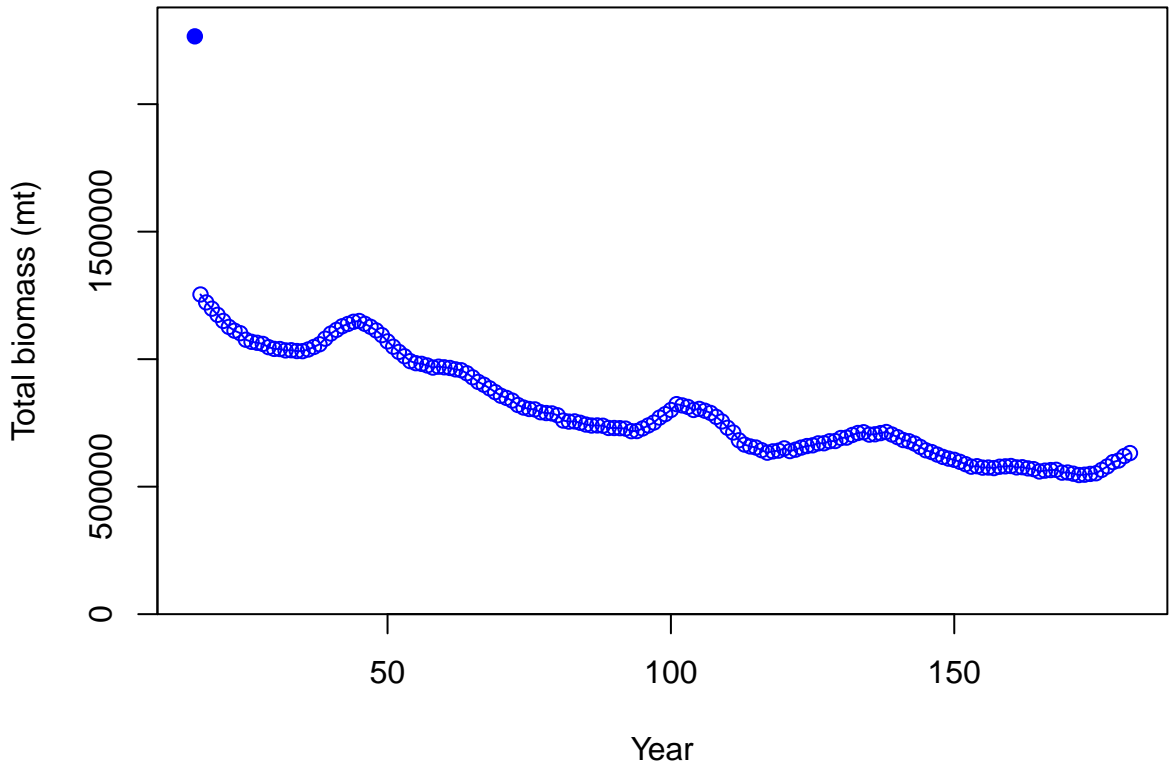




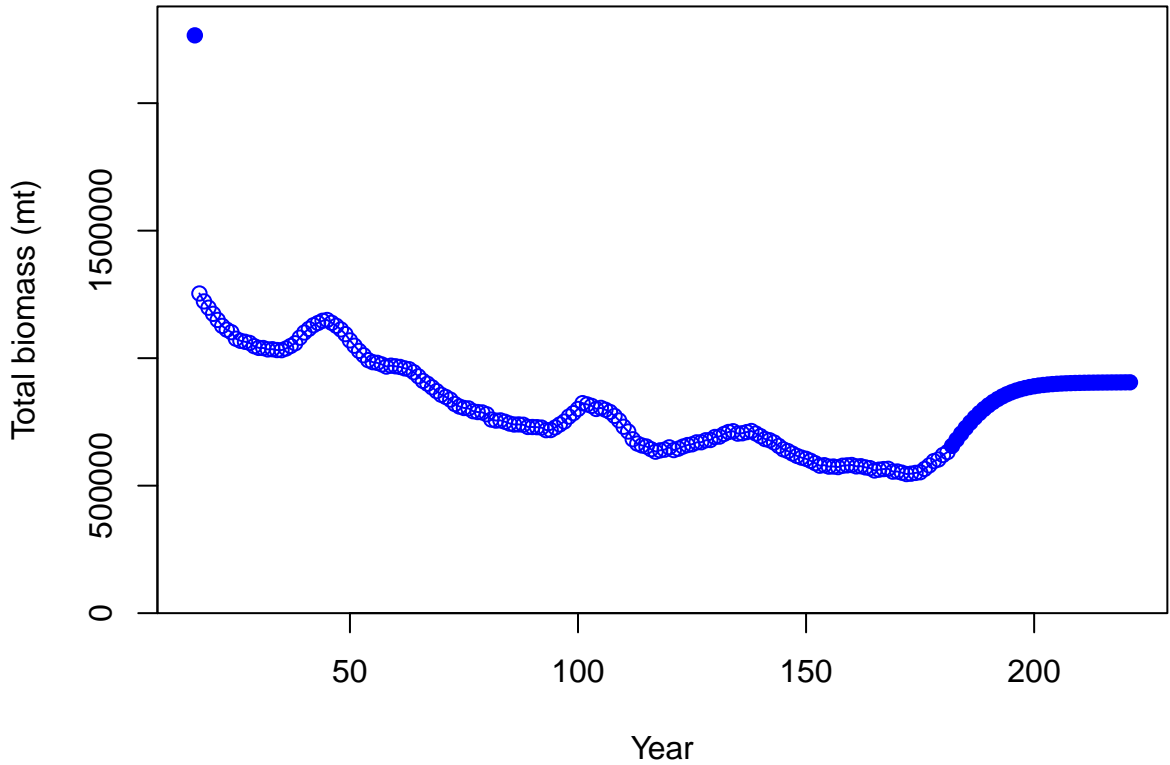
# Male ending year selectivity and growth for EPO-LL-survey-late



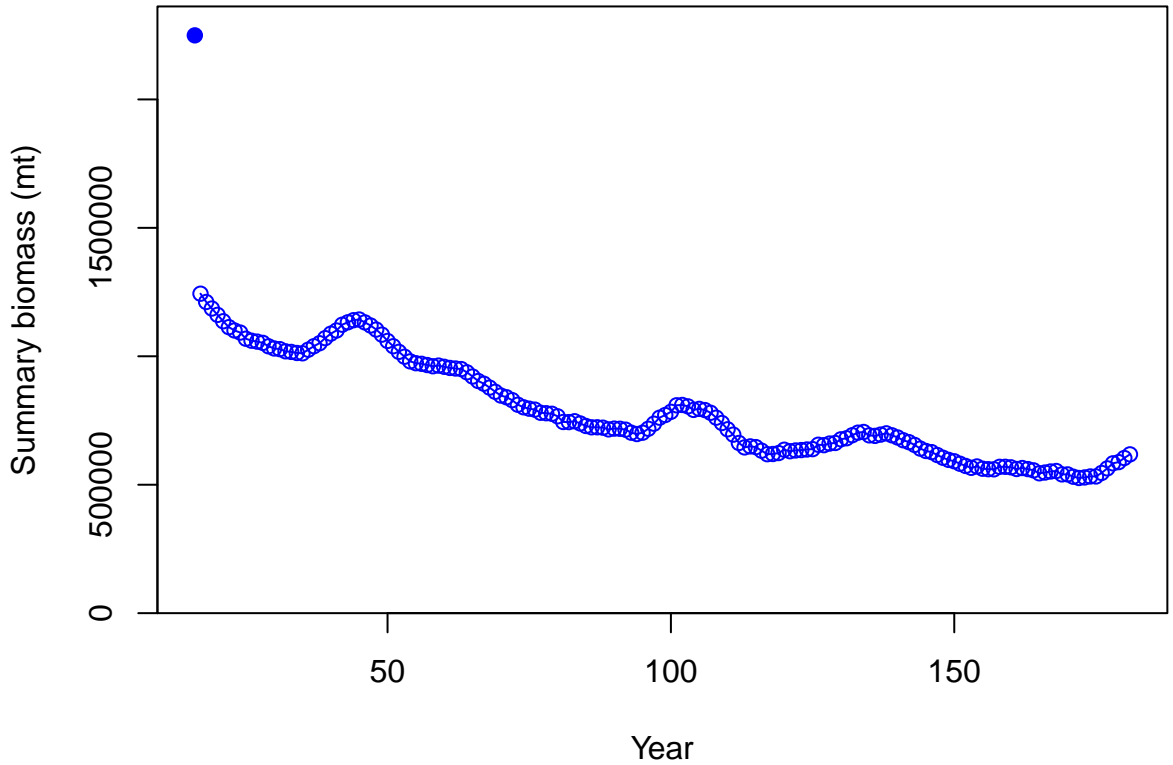
# Total biomass (mt)



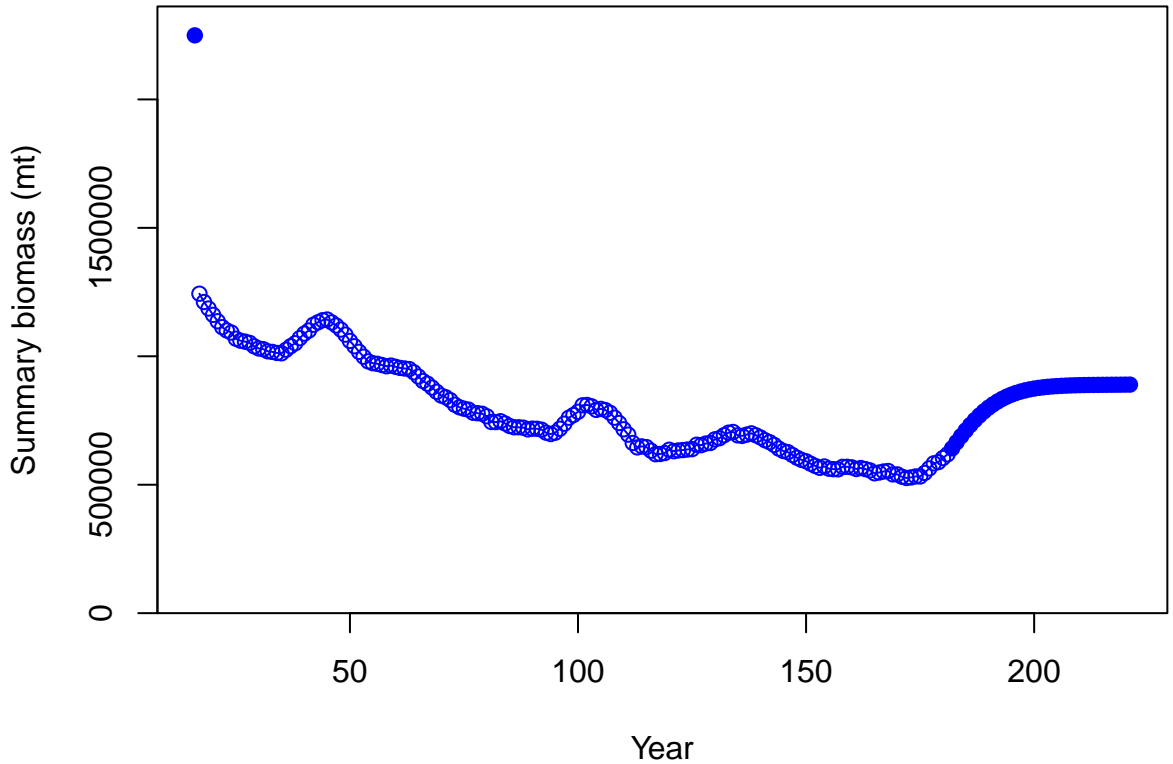
# Total biomass (mt) with forecast



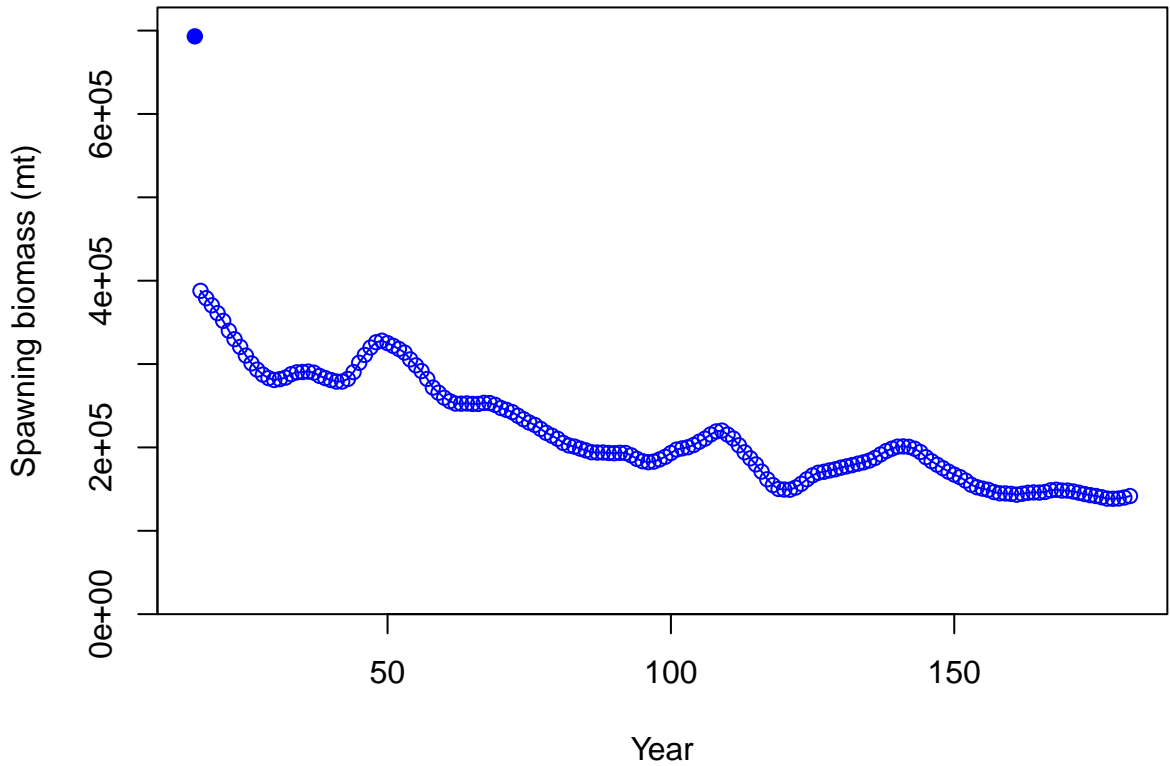
# Summary biomass (mt)



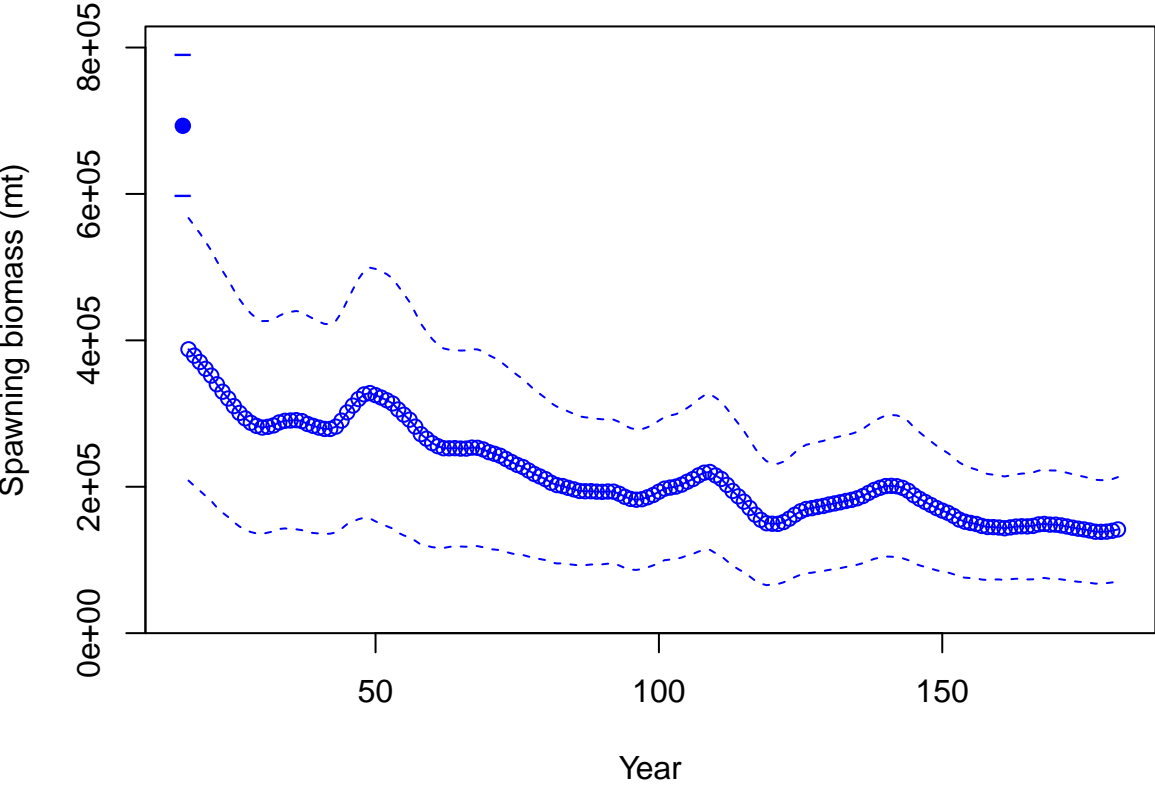
Summary biomass (mt) with forecast



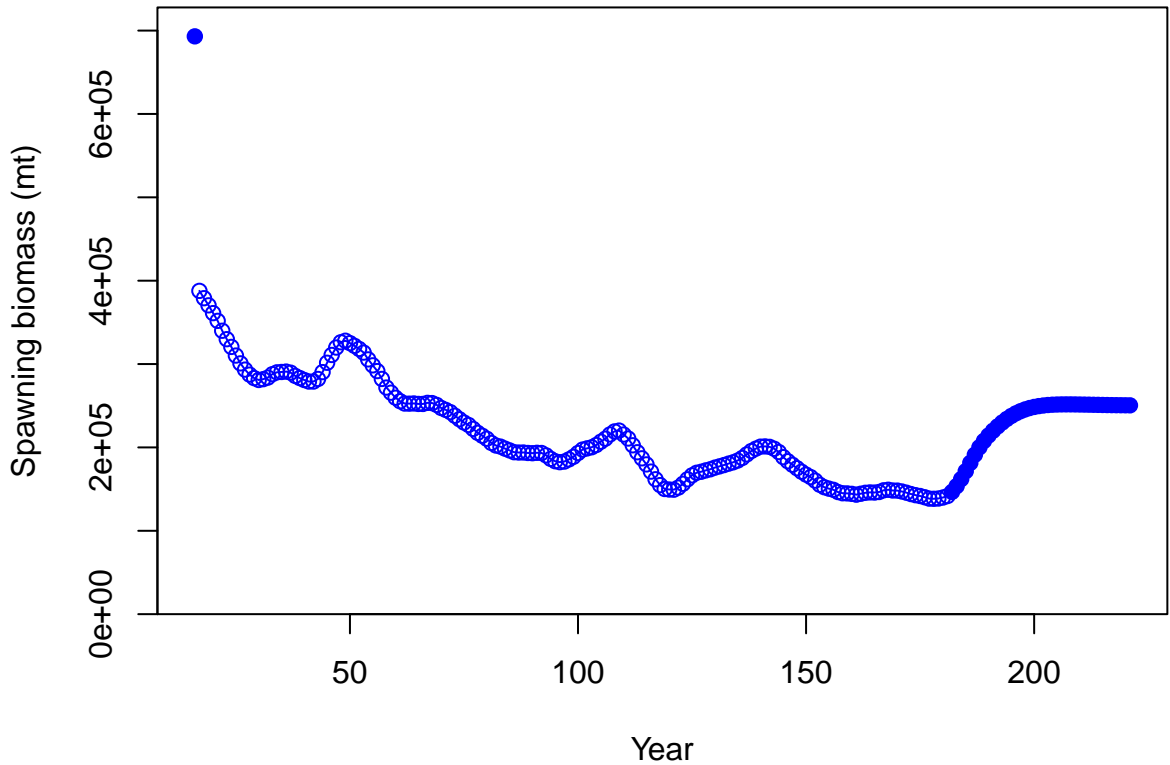
# Spawning biomass (mt)



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

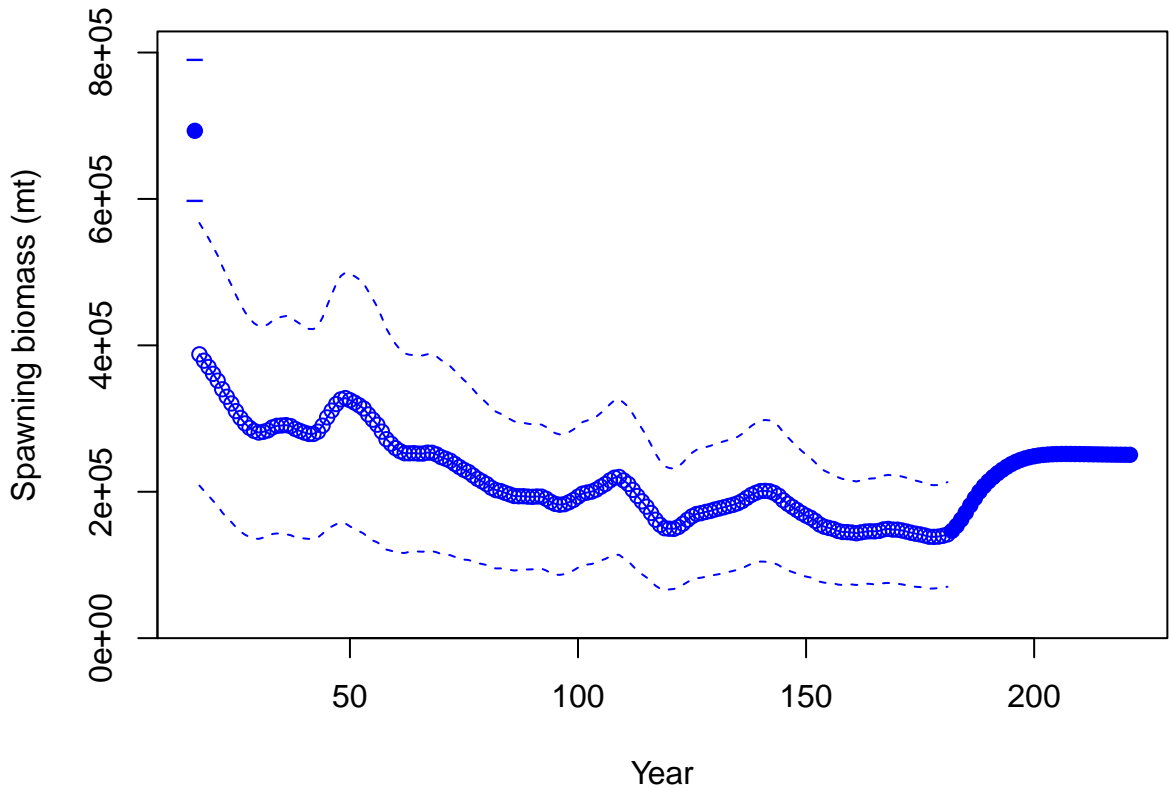


# Spawning biomass (mt) with forecast

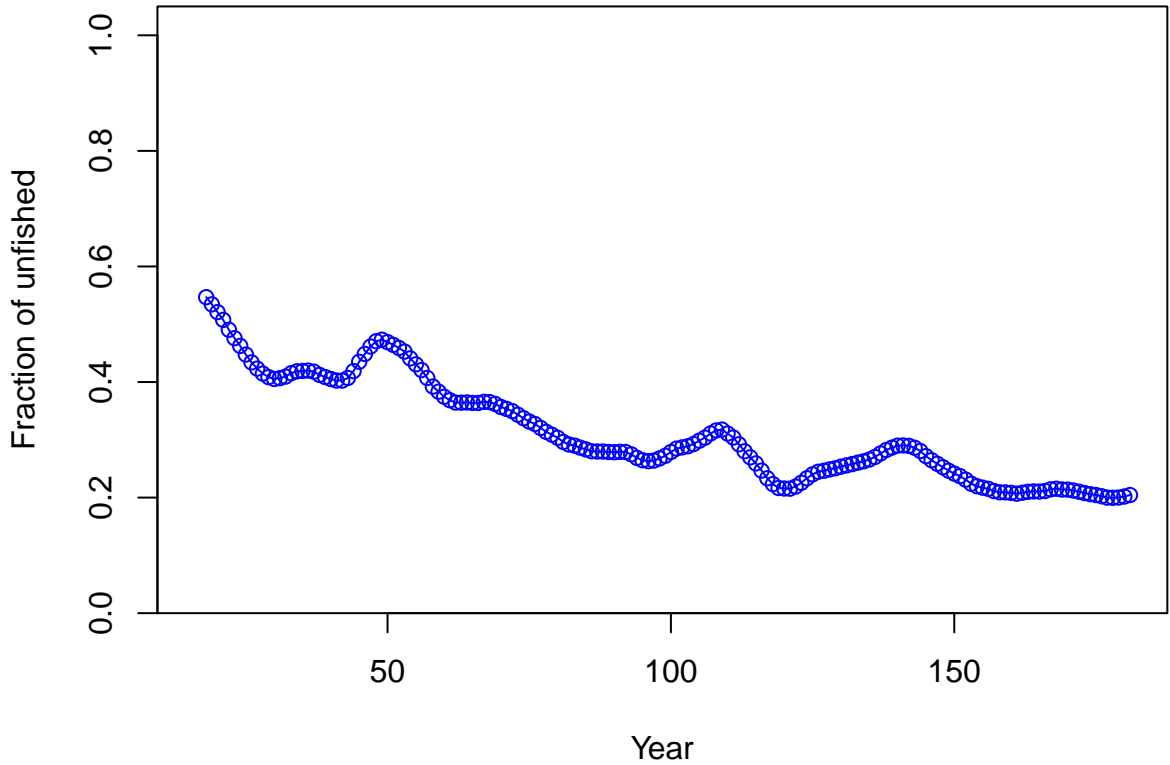




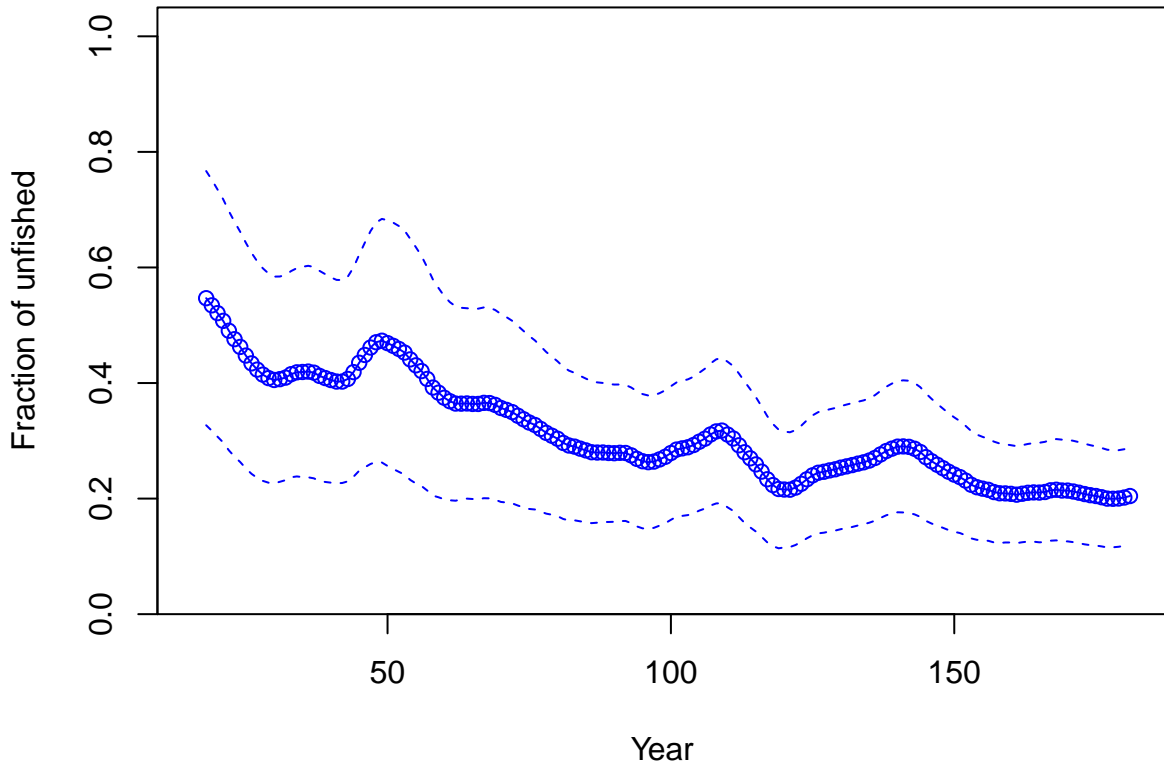
# Spawning biomass (mt) with forecast with ~95% asymptotic intervals



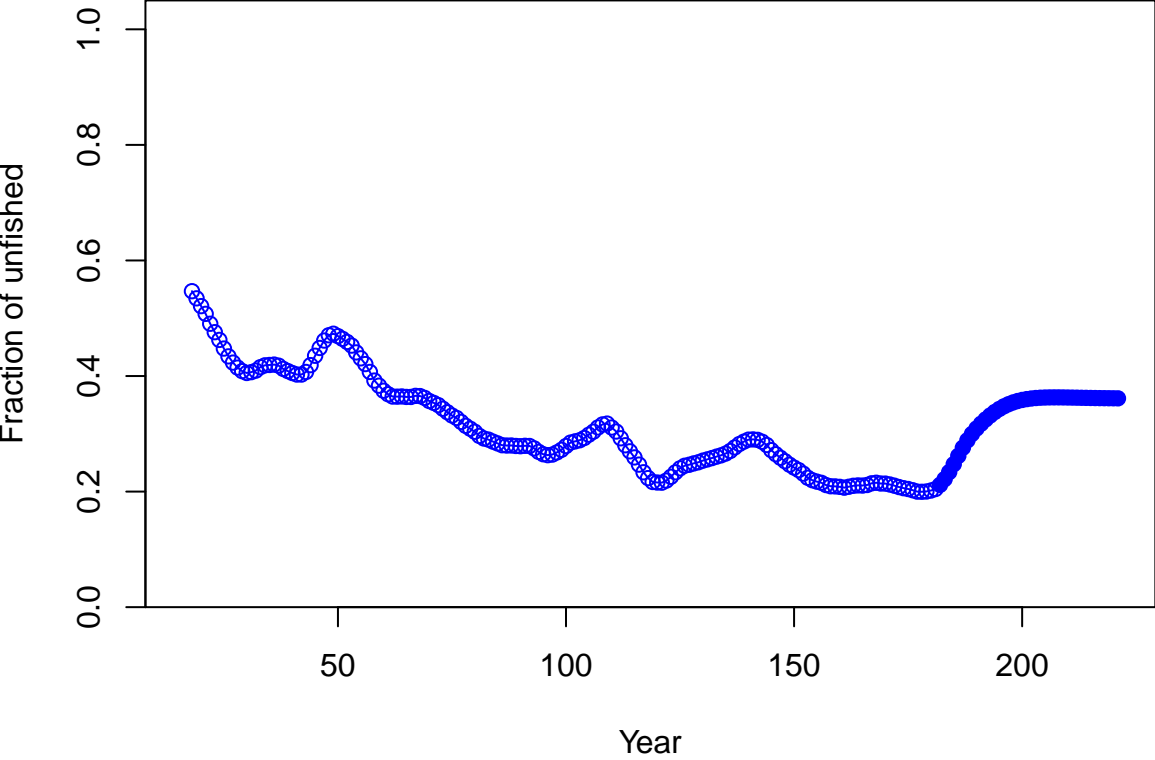
# Fraction of unfished



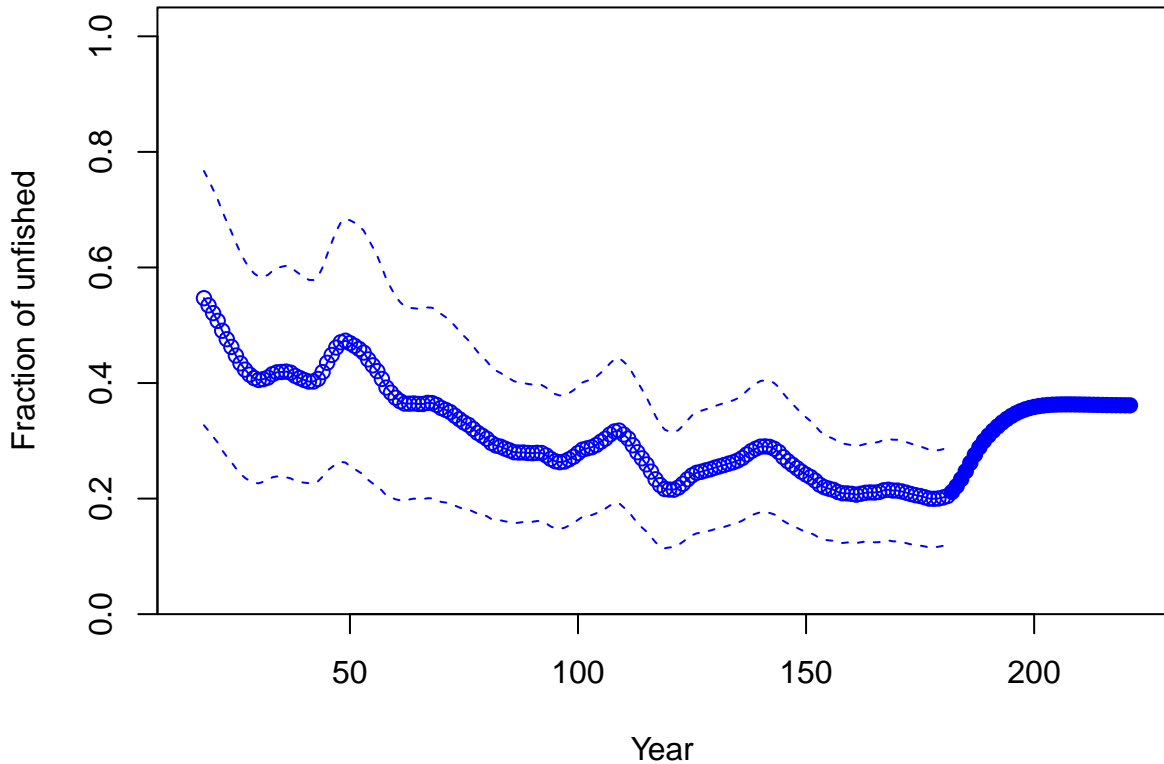
**Fraction of unfished with ~95% asymptotic intervals**



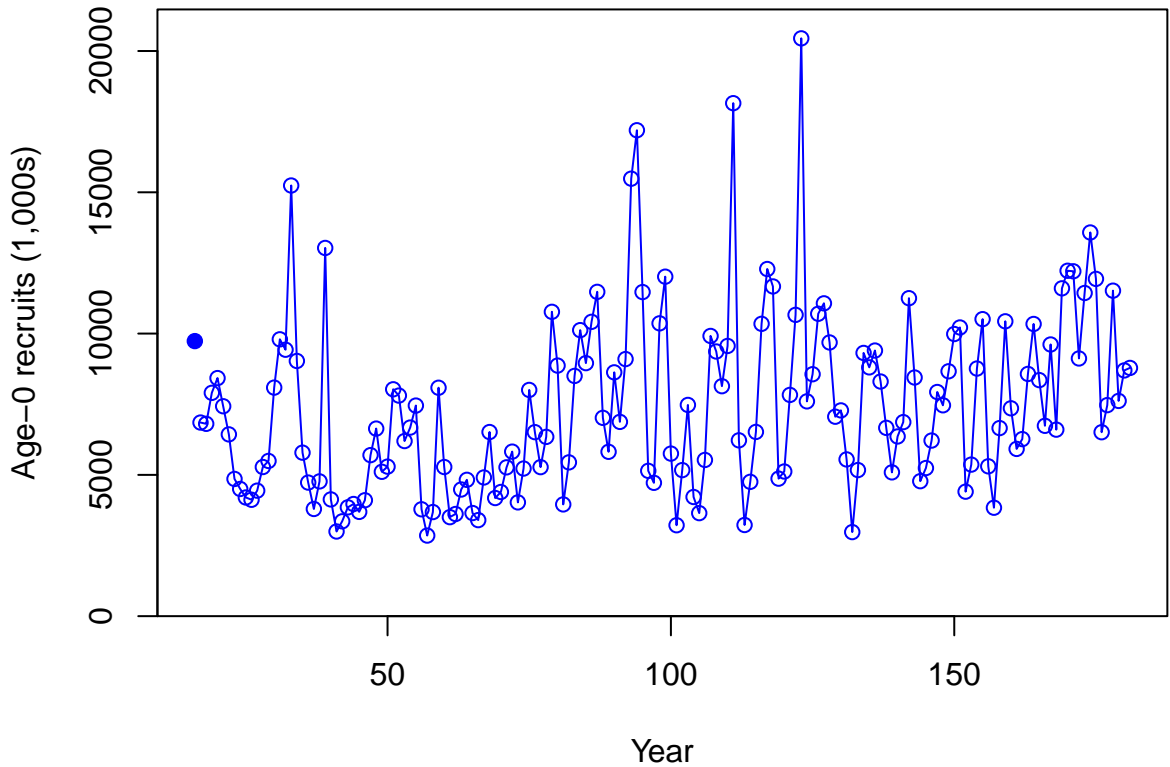
**Fraction of unfished with forecast**



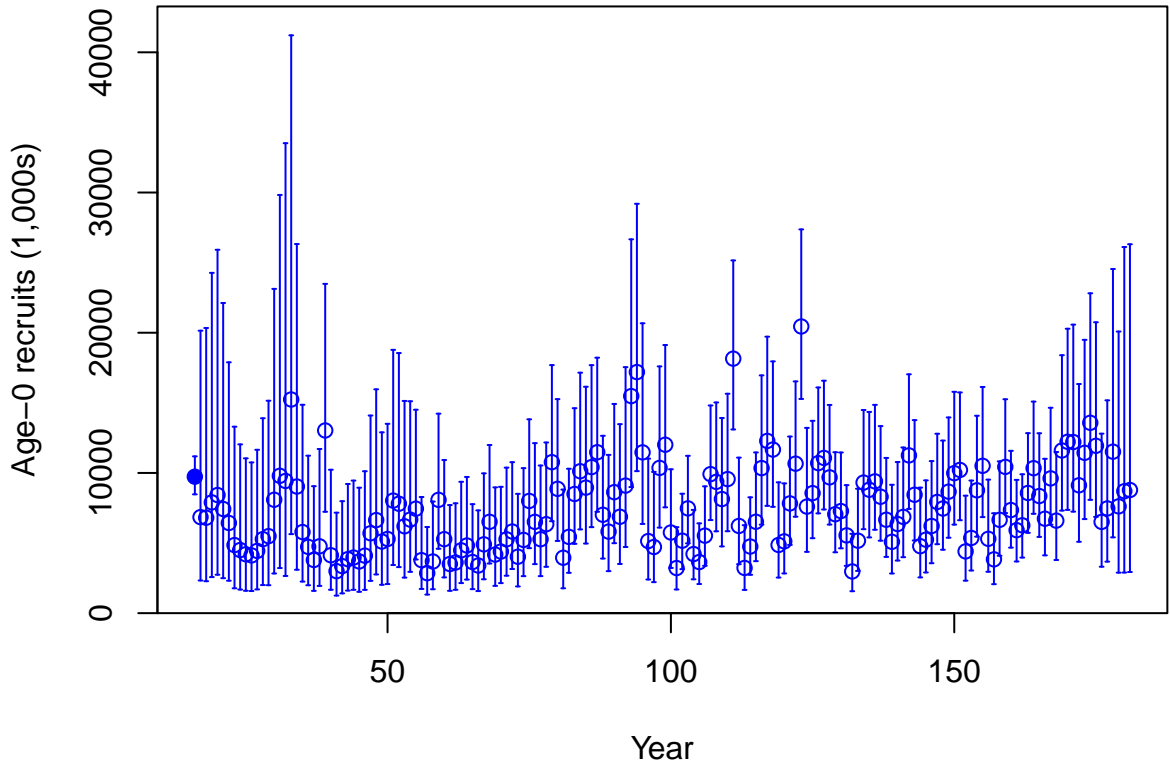
**Fraction of unfished with forecast with ~95% asymptotic intervals**



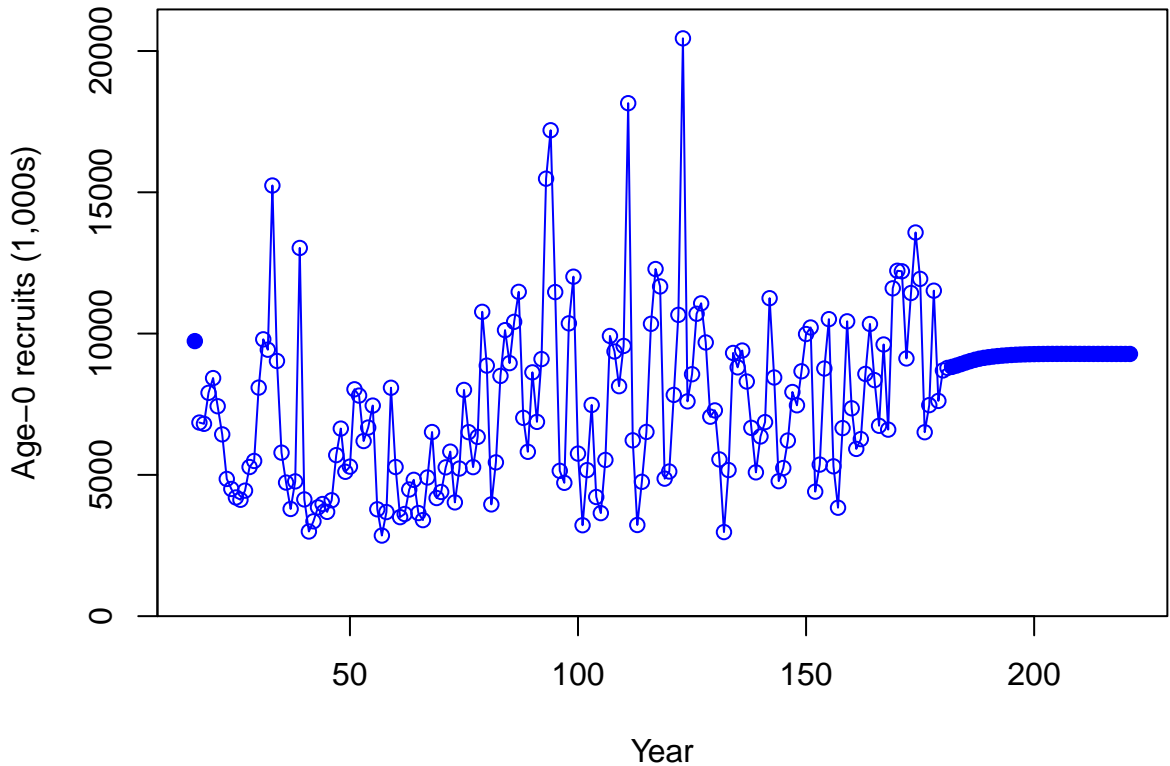
### Age-0 recruits (1,000s)



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

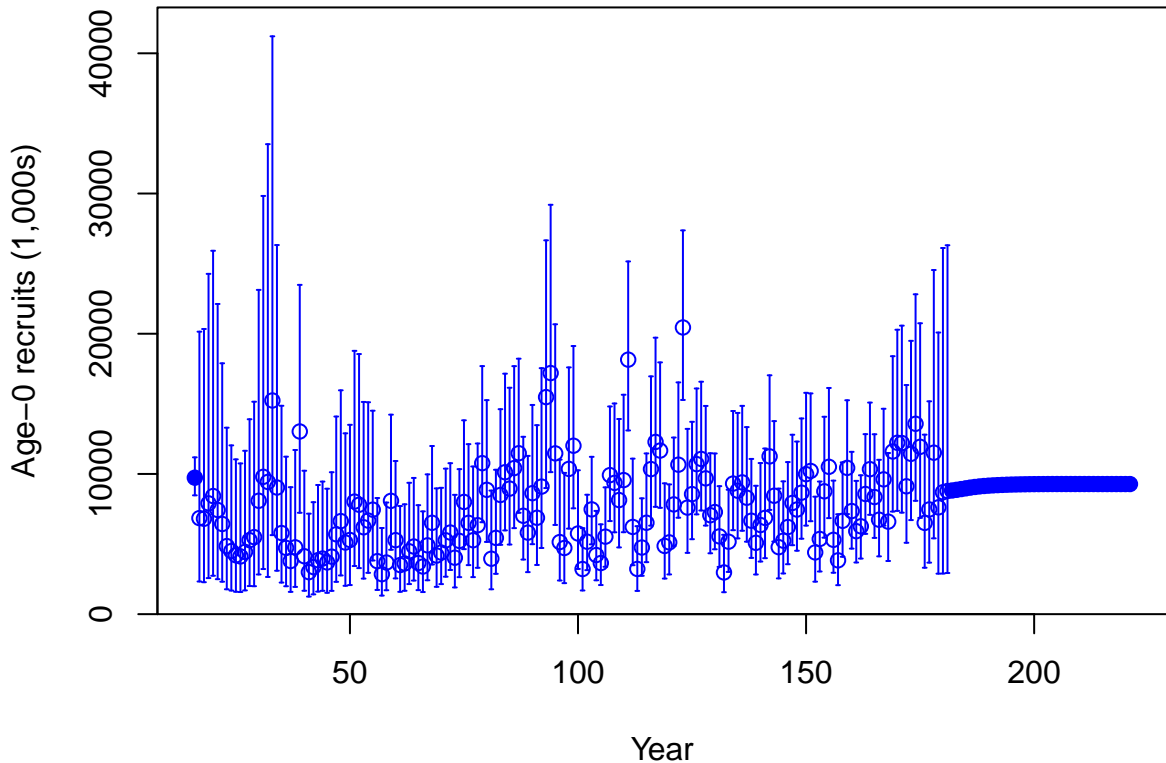


**Age-0 recruits (1,000s) with forecast**

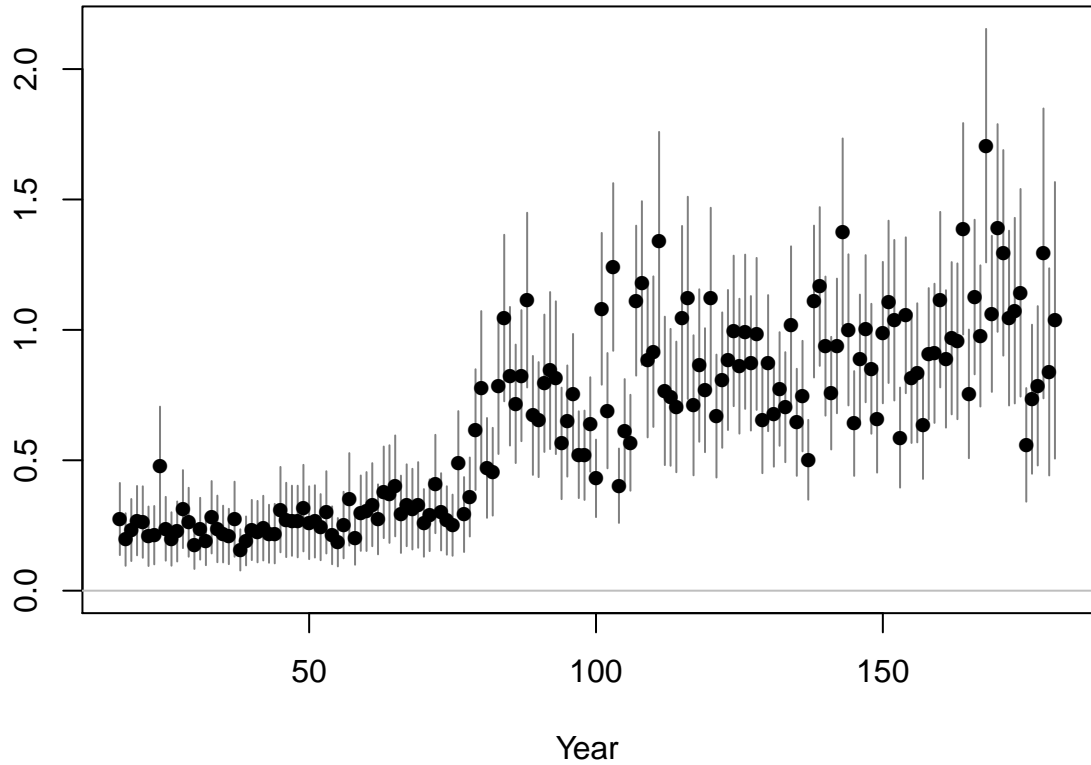


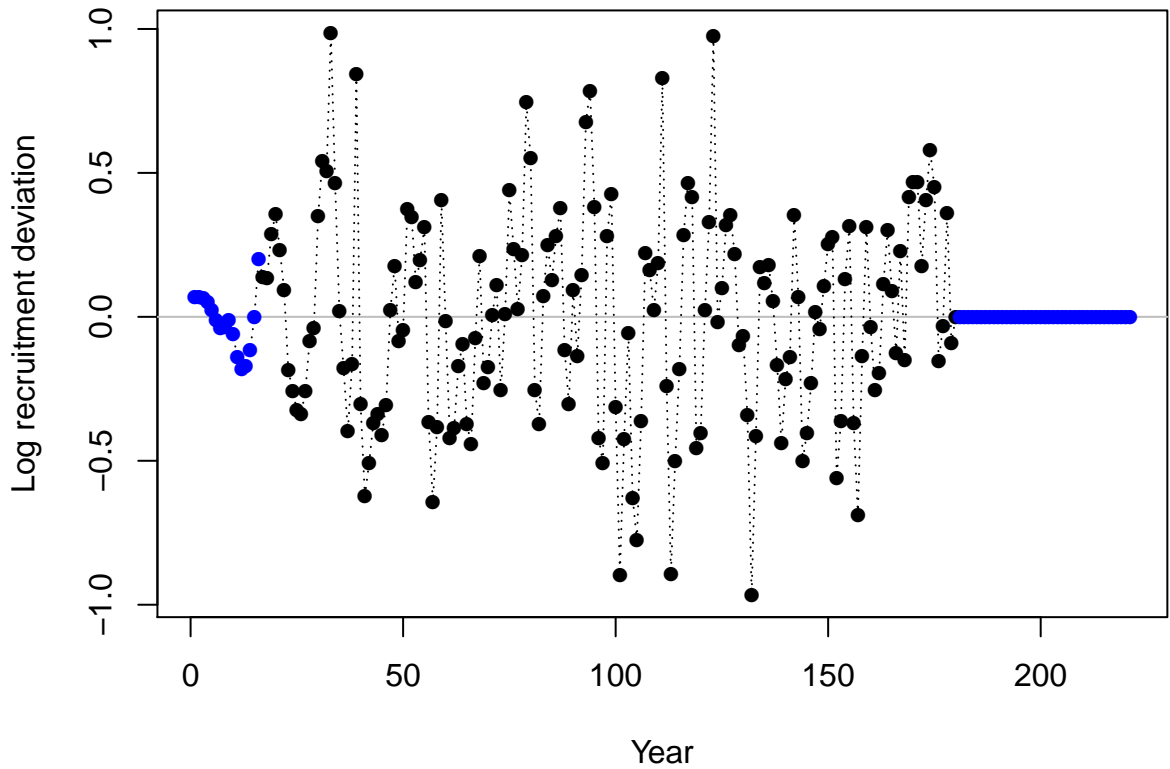


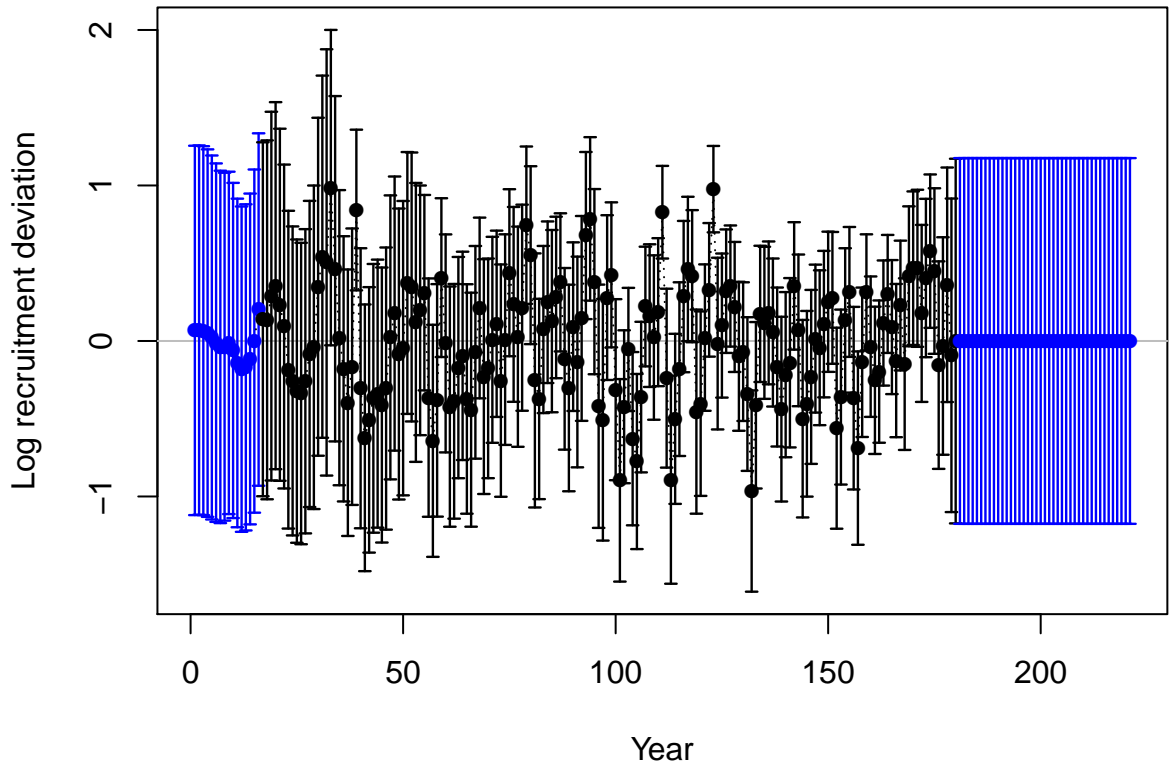
# Age-0 recruits (1,000s) with forecast with ~95% asymptotic intervals



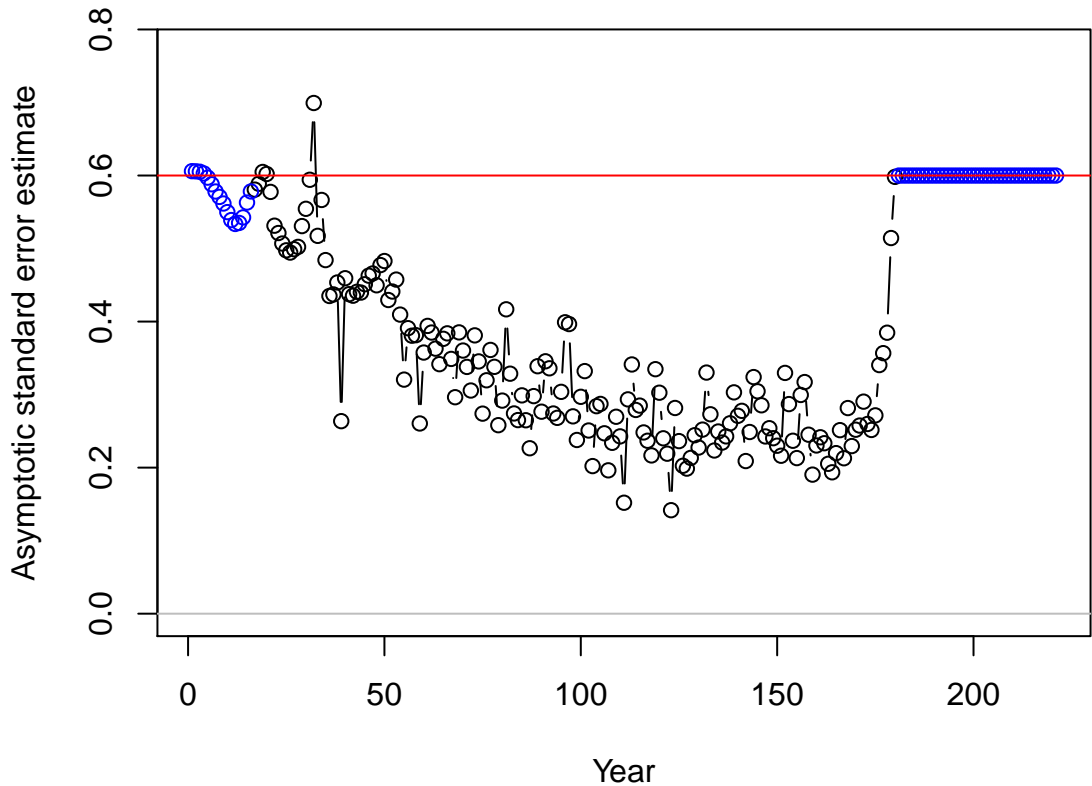
Summary Fishing Mortality

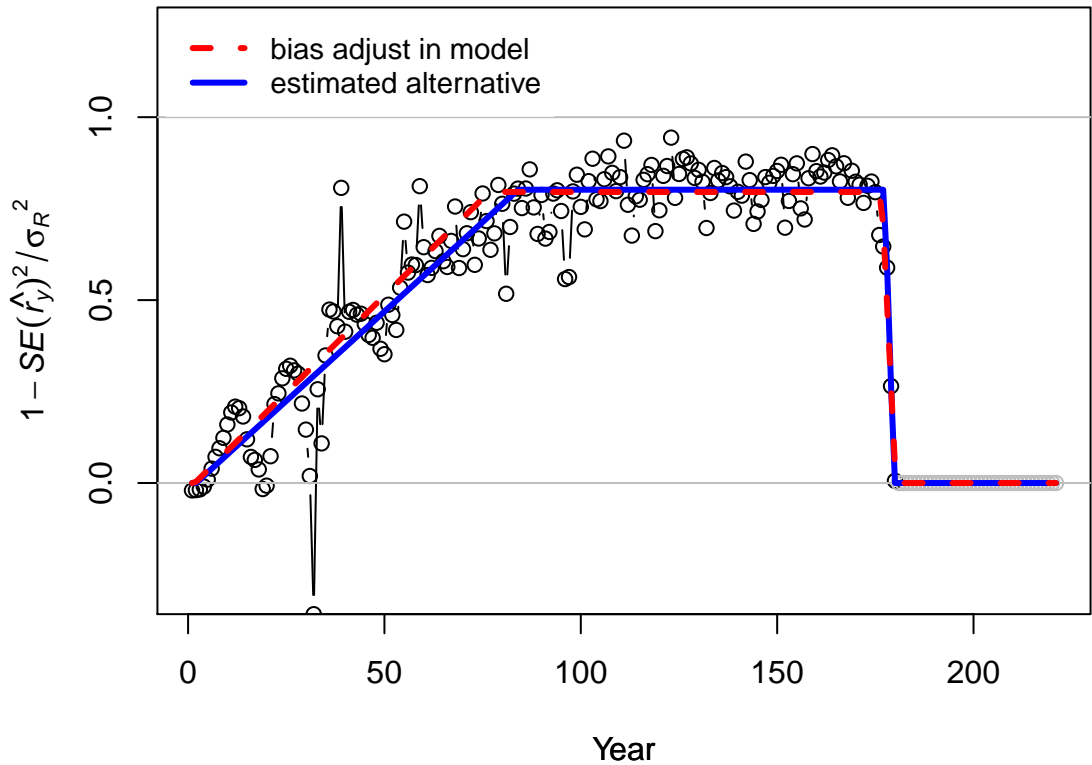




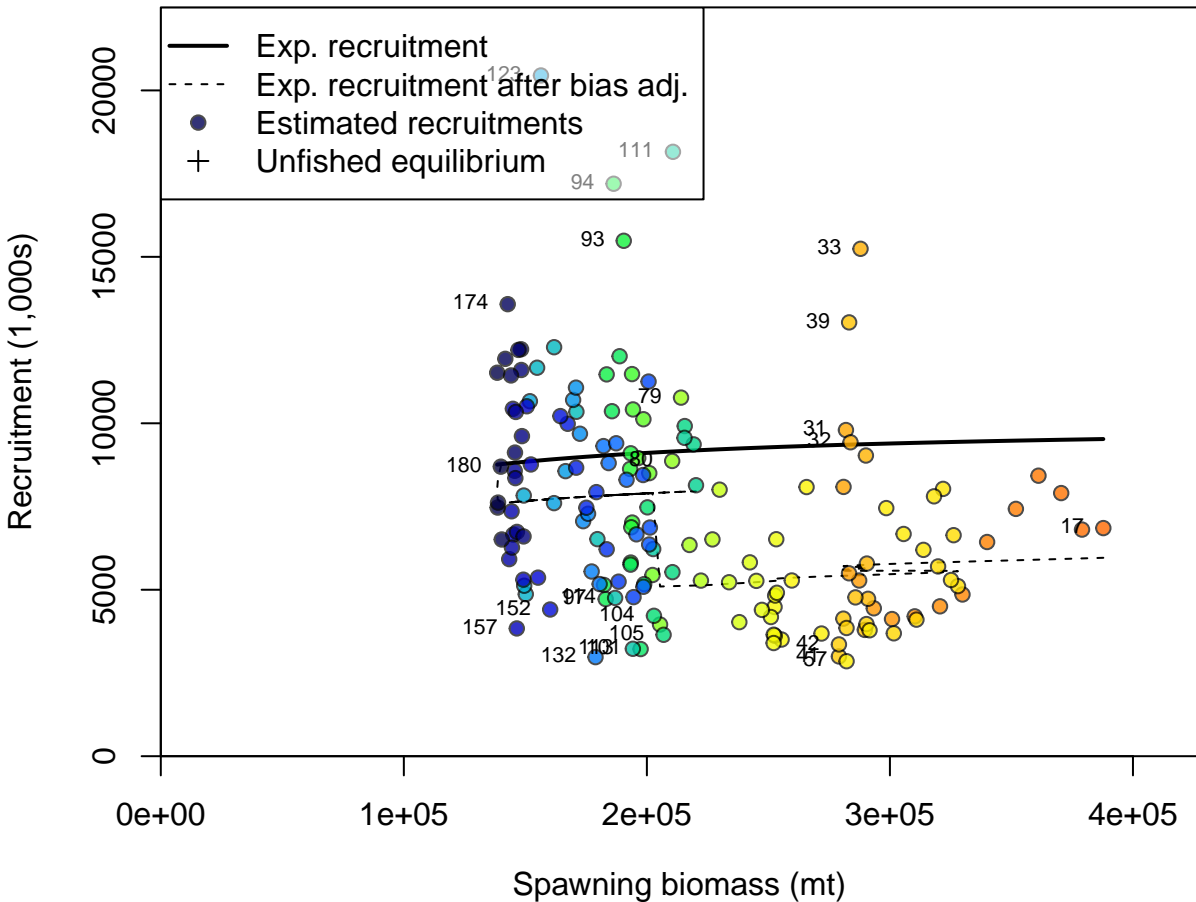


# Recruitment deviation variance

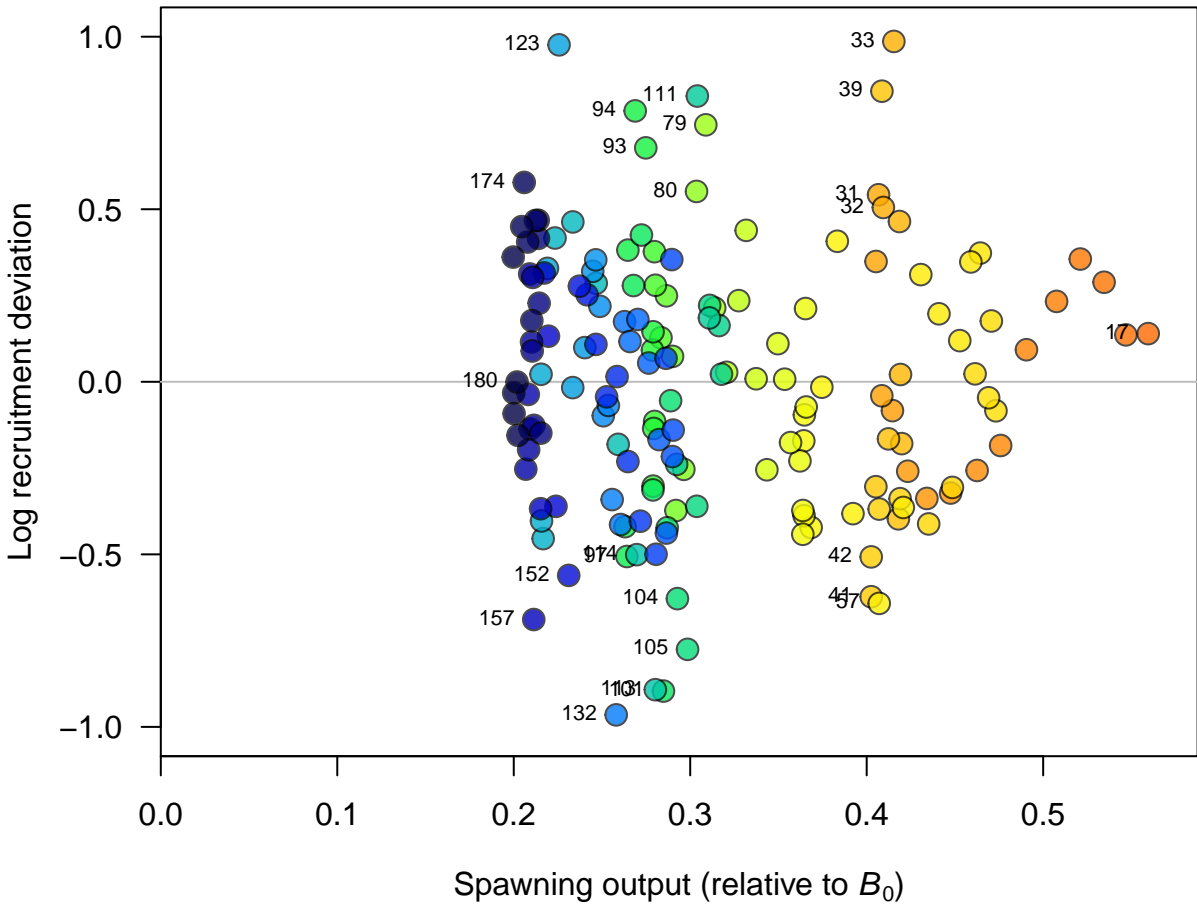


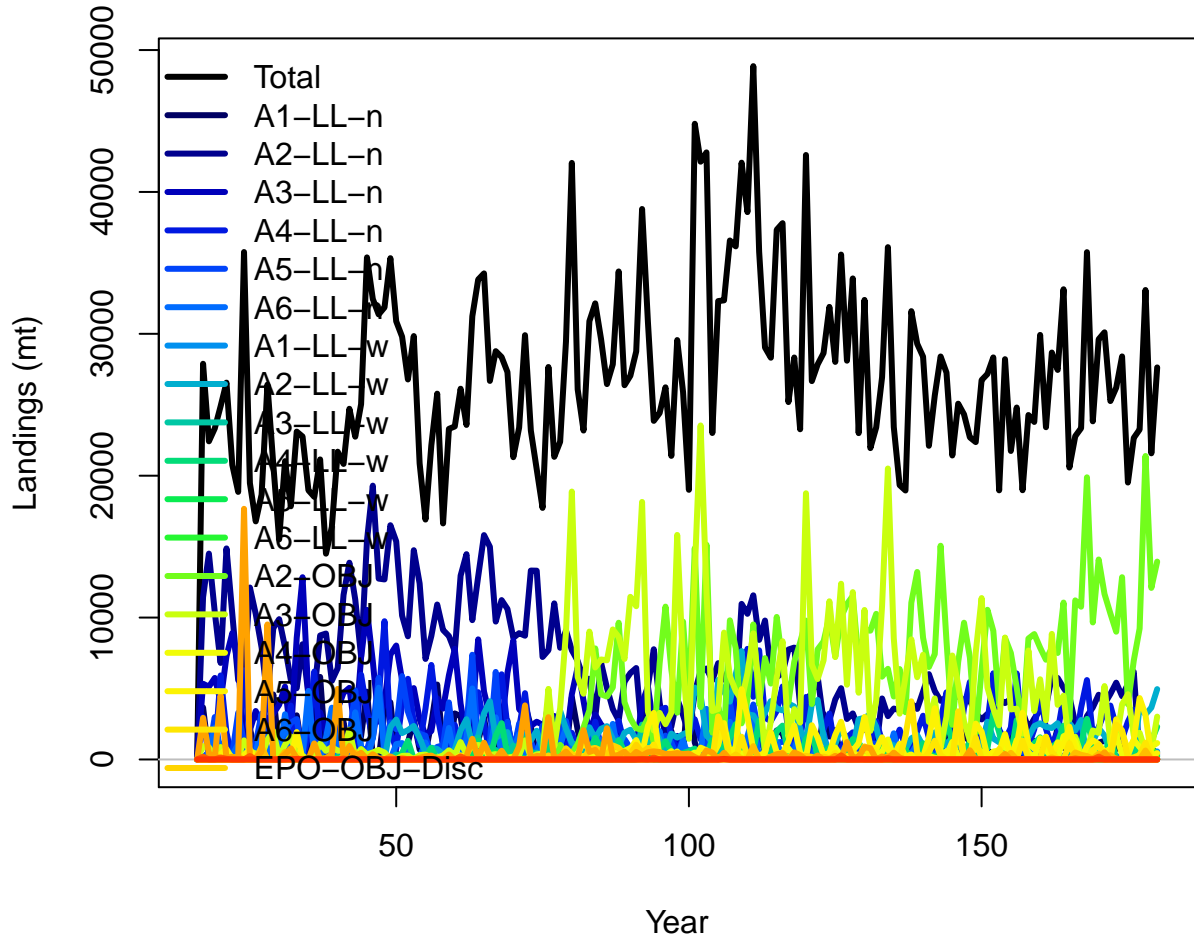






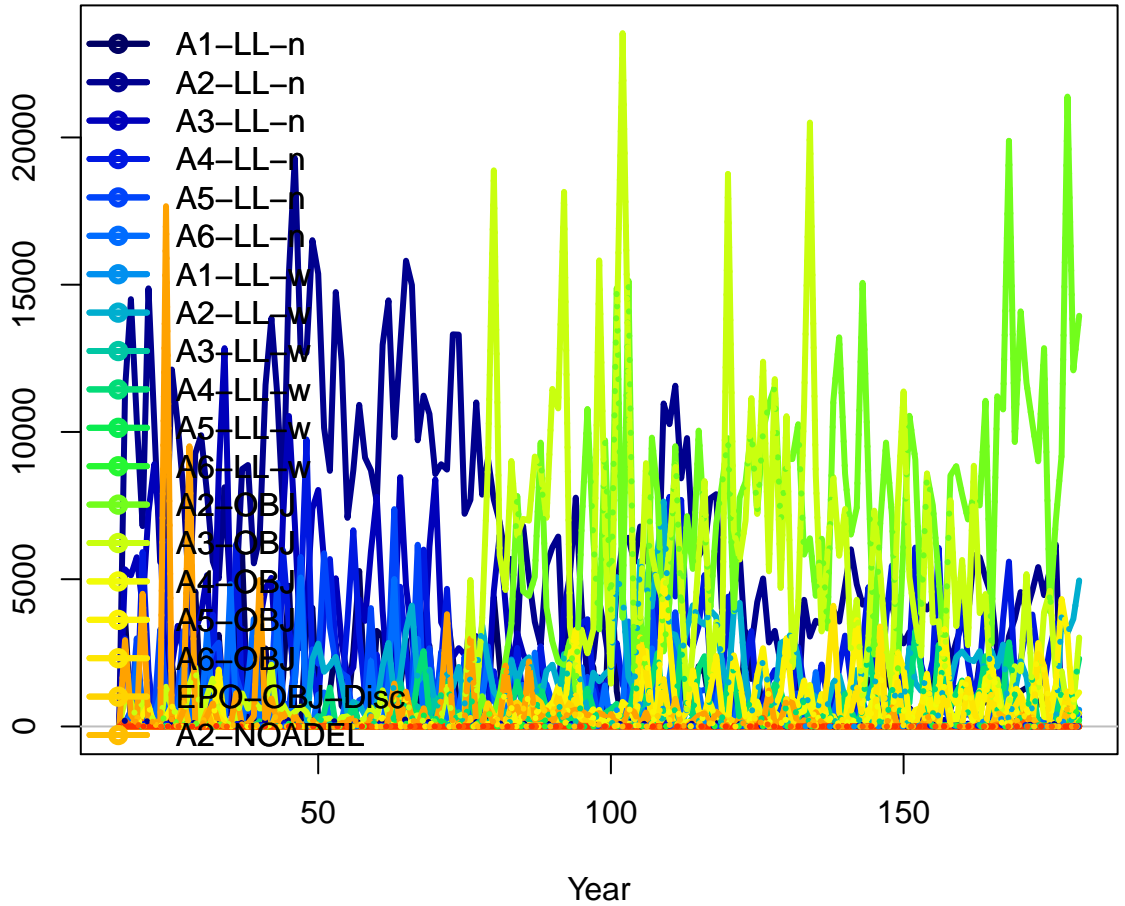






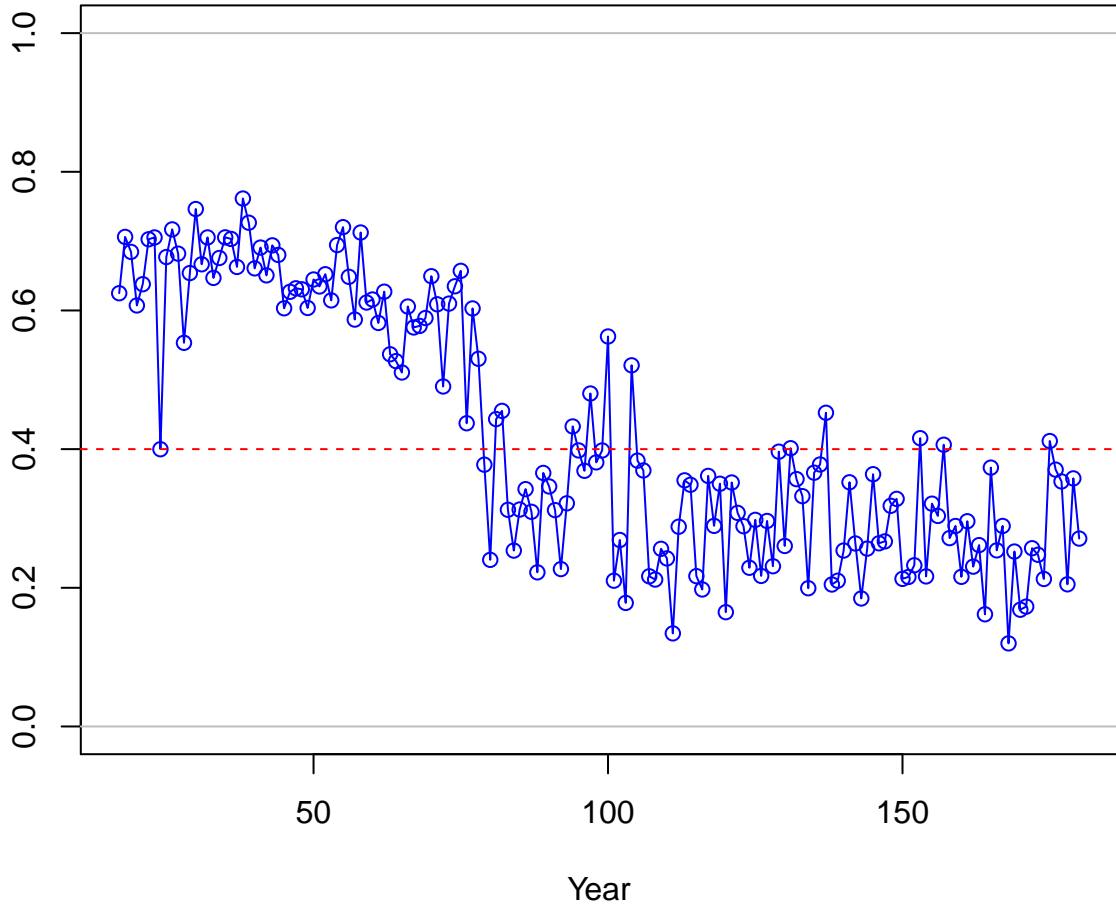


Observed and expected Landings (mt)



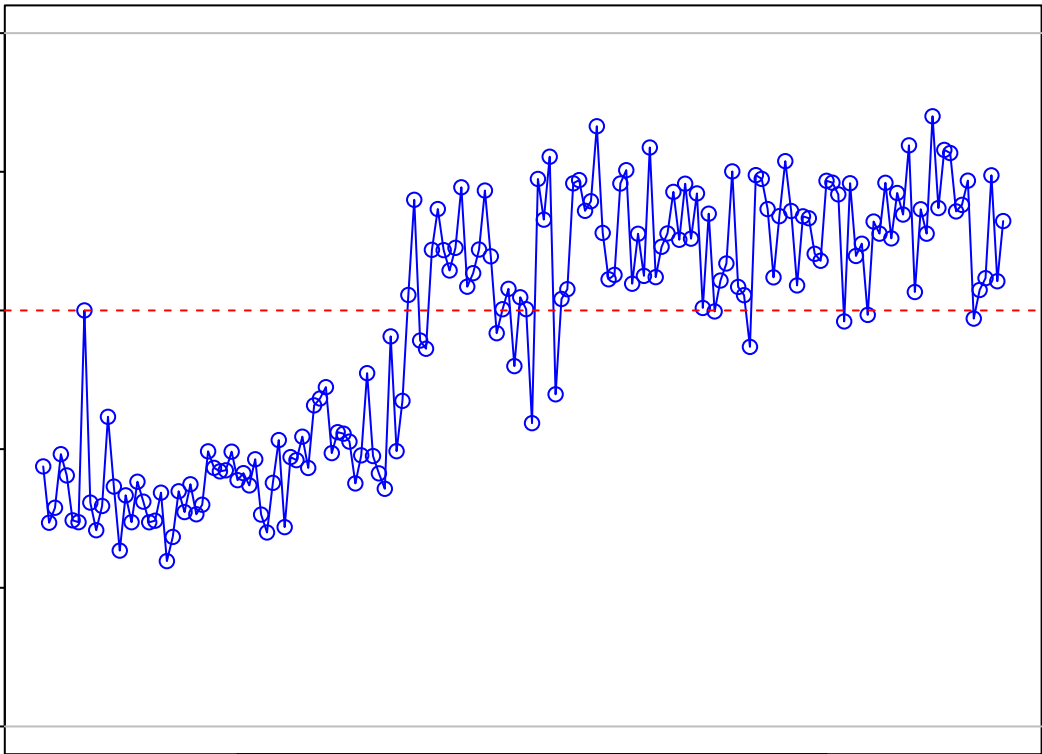


SPR



1-SPR

1.0  
0.8  
0.6  
0.4  
0.2  
0.0

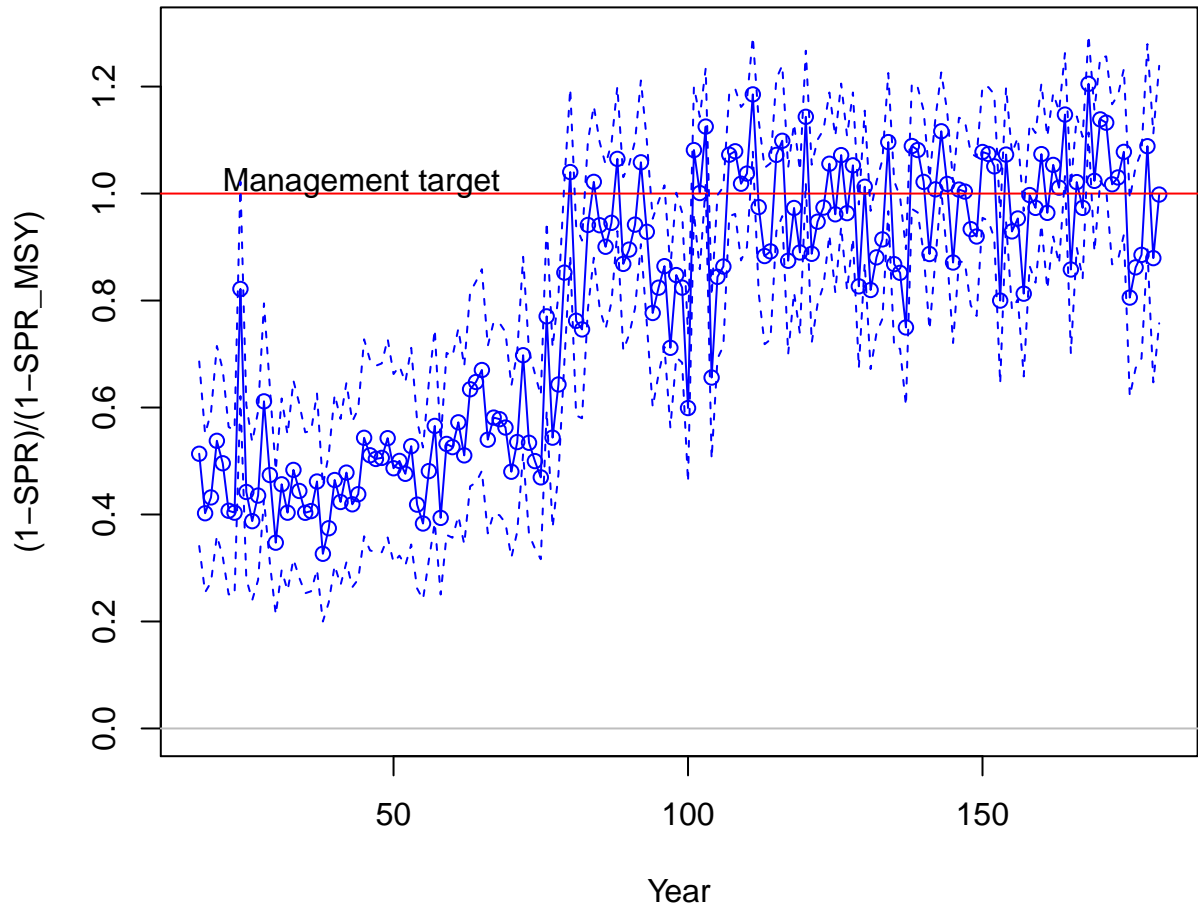


50

100

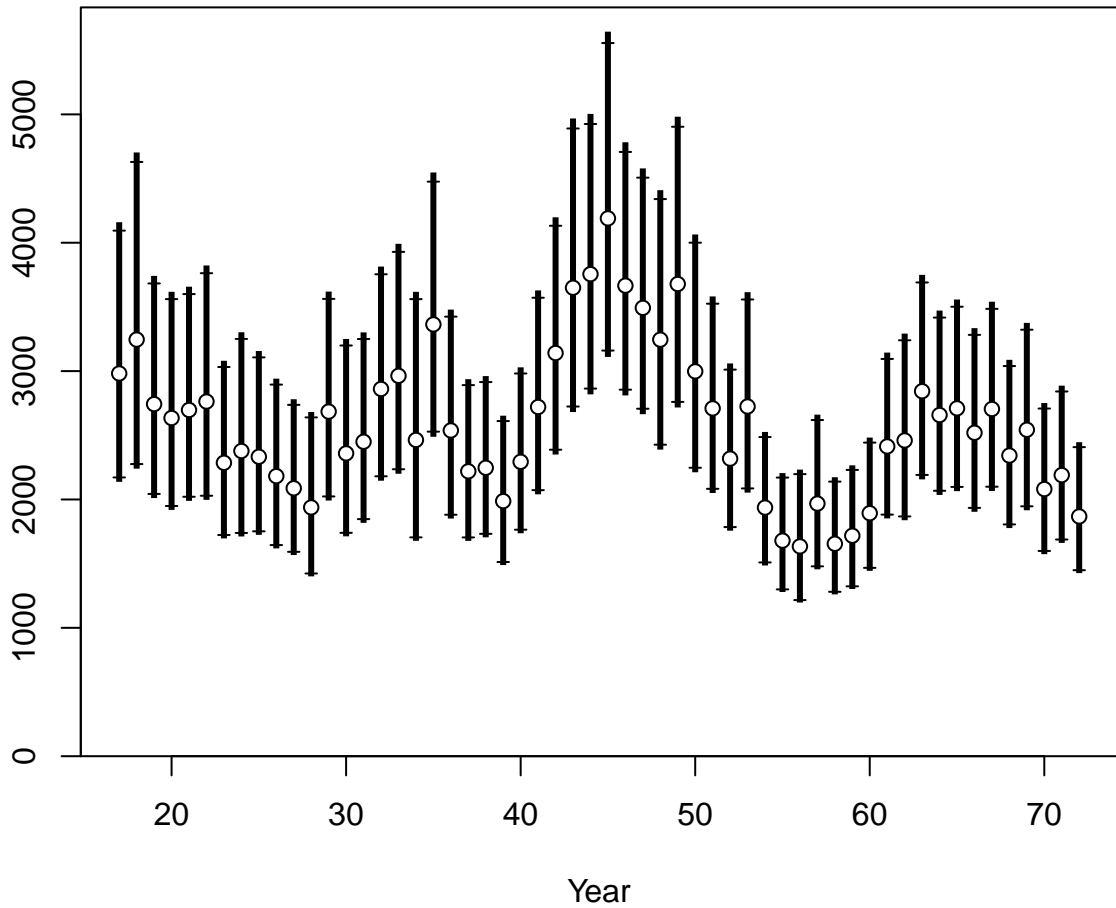
150

Year

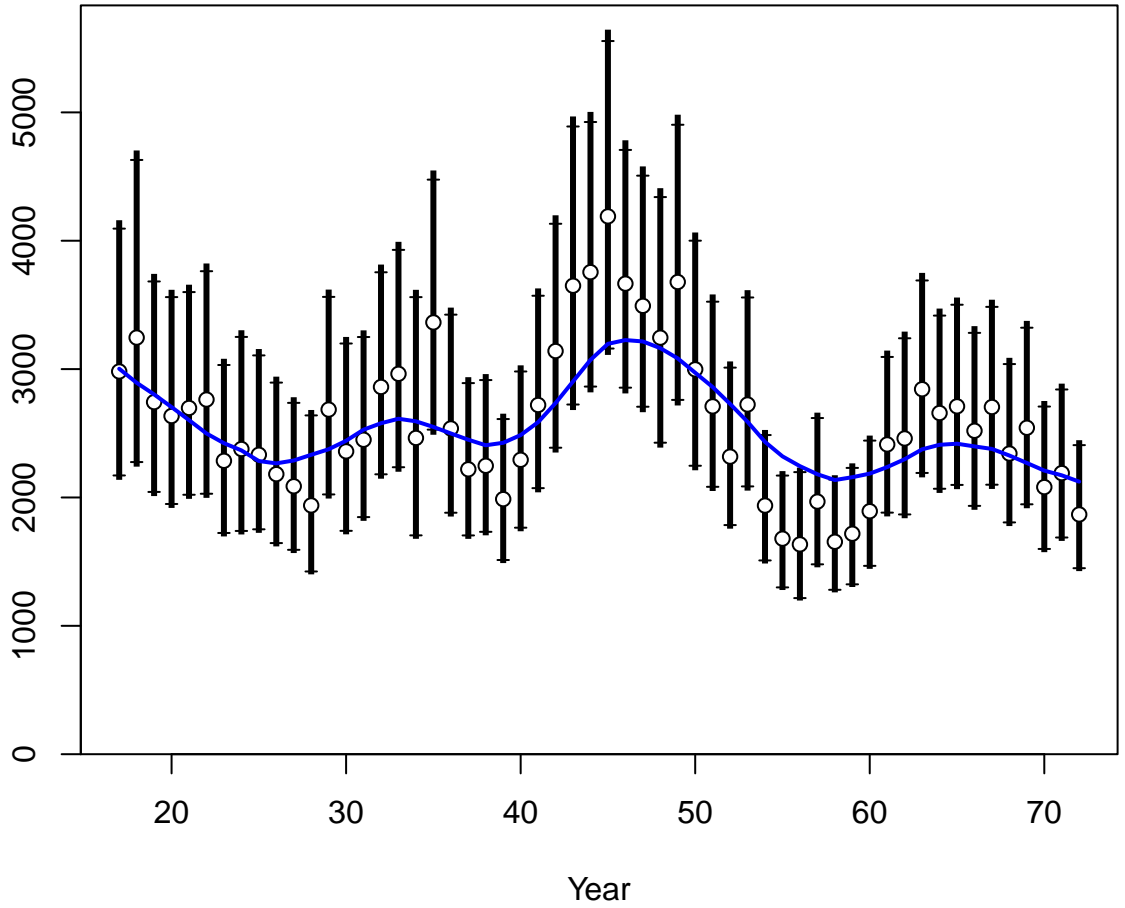




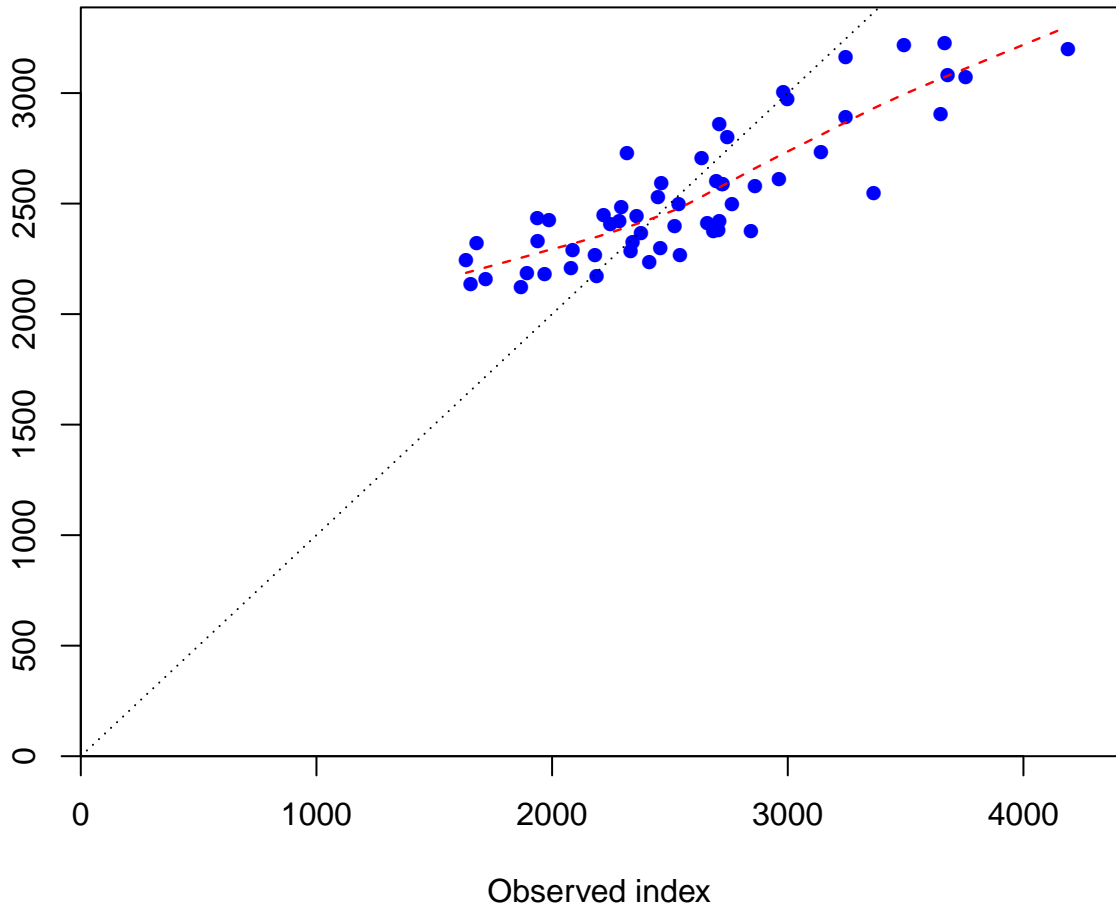
Index



Index



Expected index



Log index

8.5

8.0

7.5

20

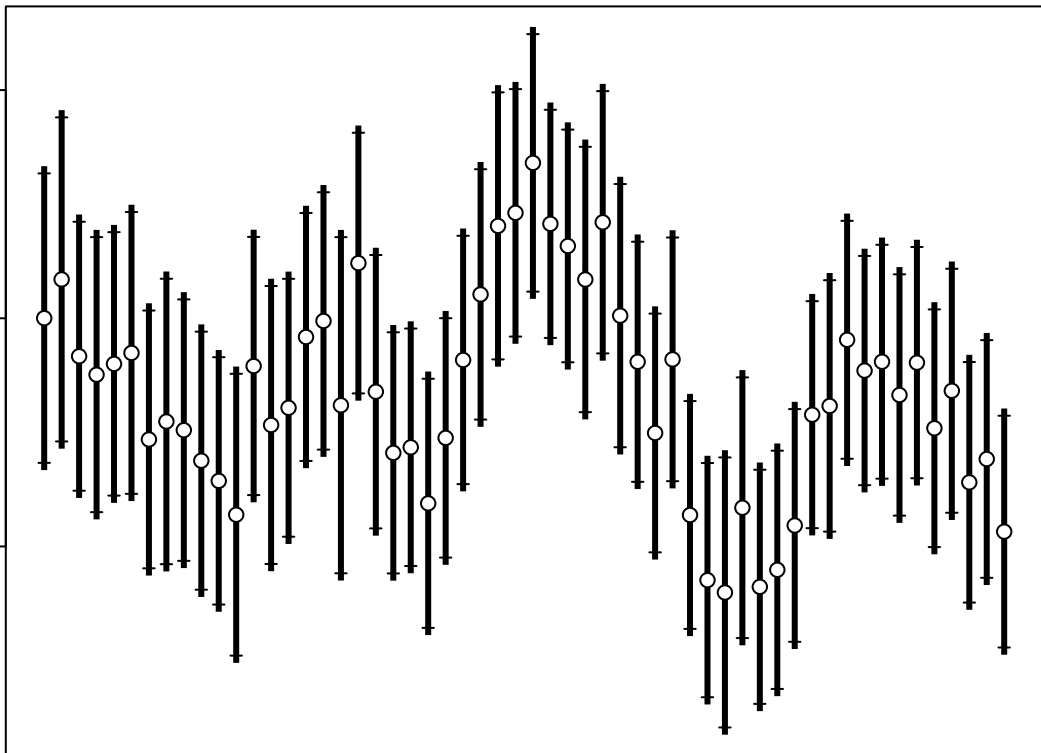
30

40

60

70

Year



Log index

8.5

8.0

7.5

20

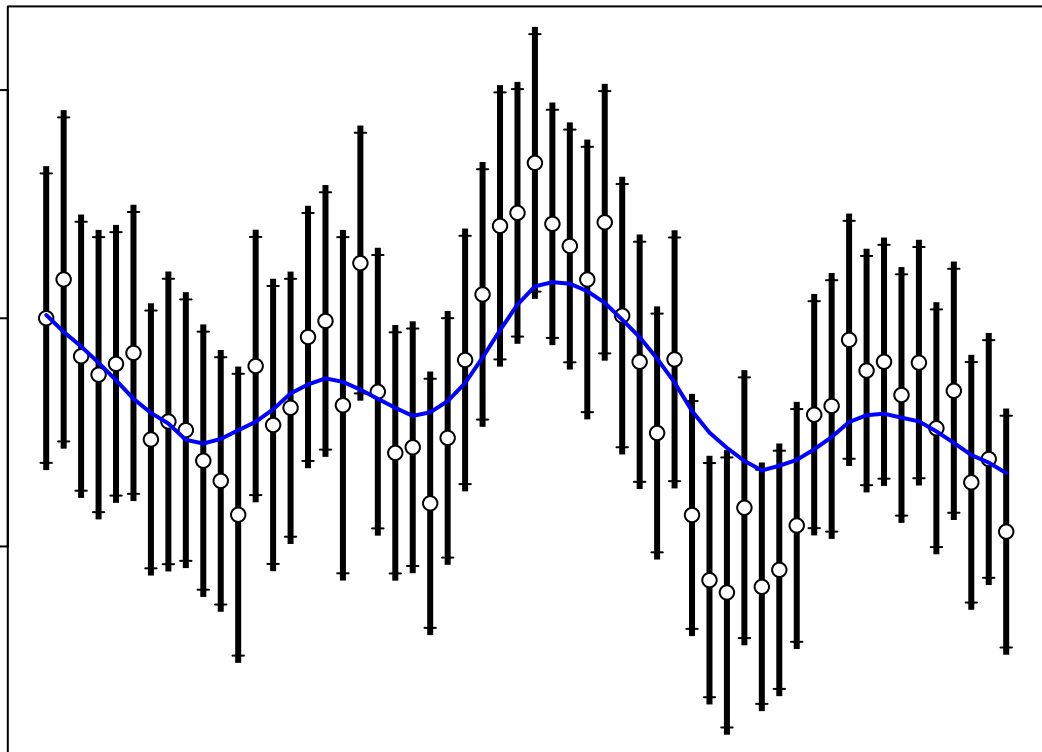
30

40

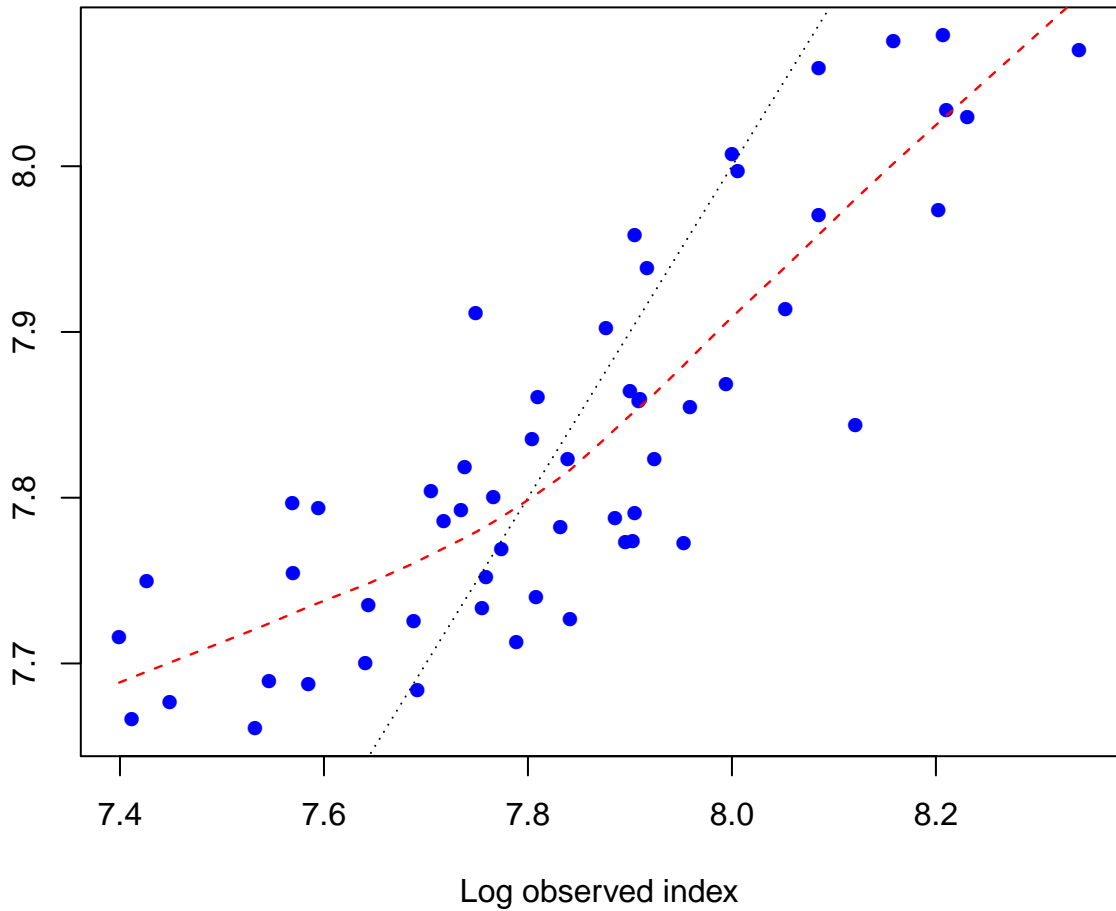
60

70

Year



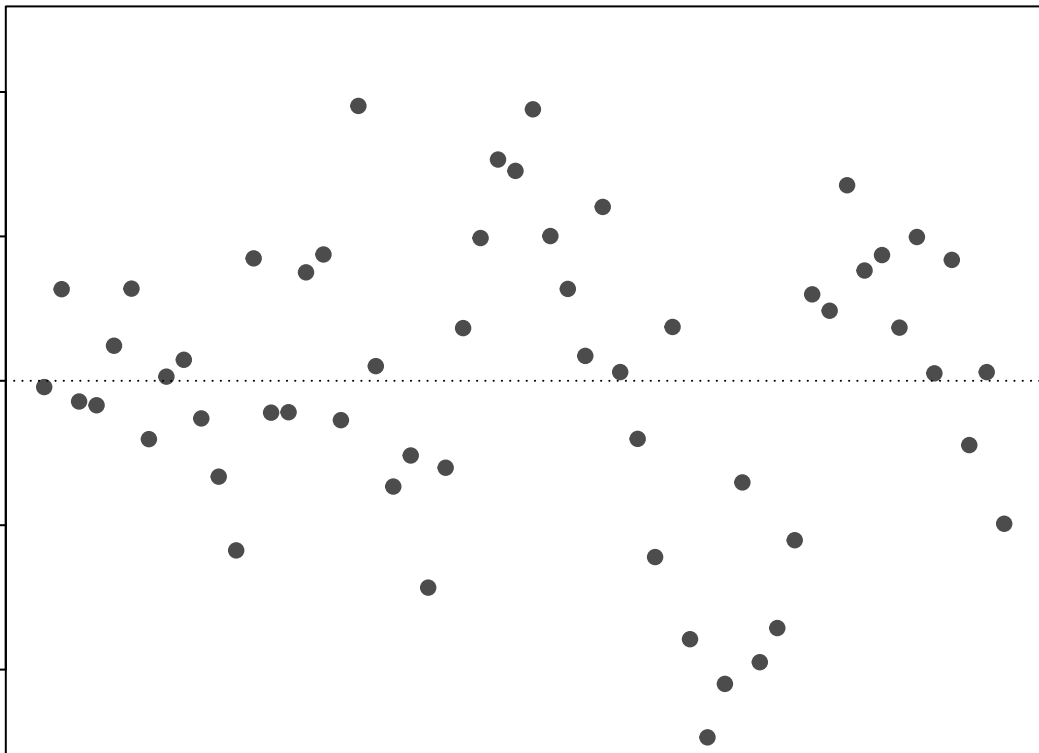
Log expected index



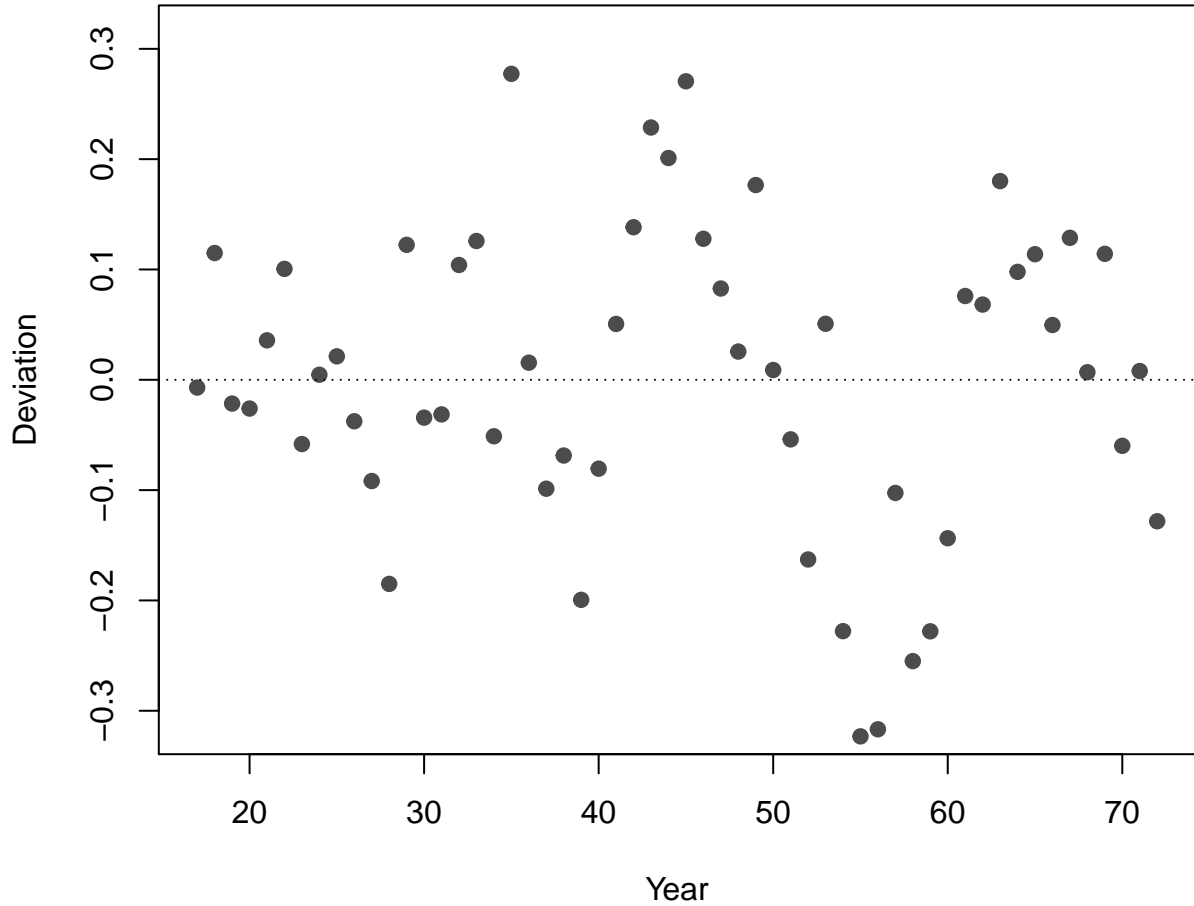
Log observed index

Residual

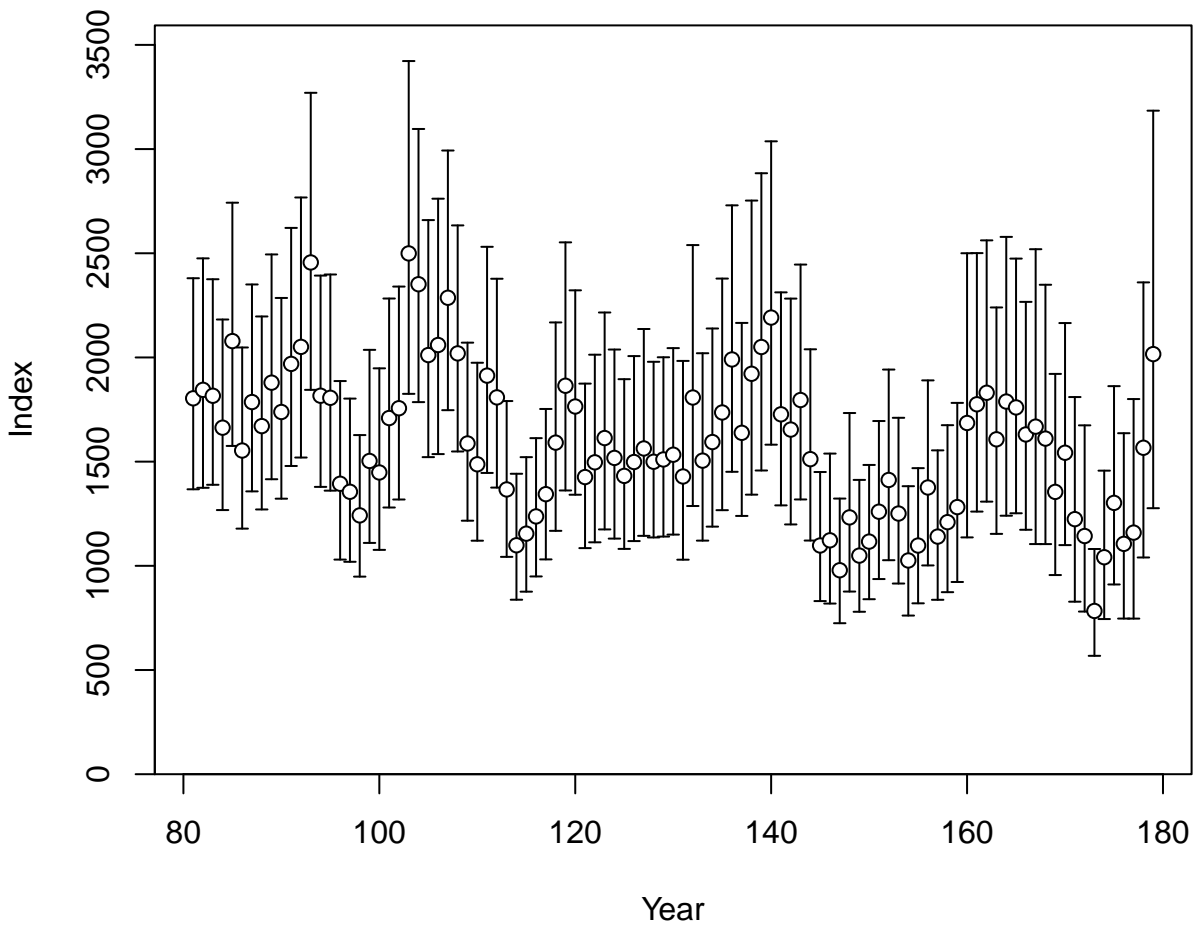
2  
1  
0  
-1  
-2

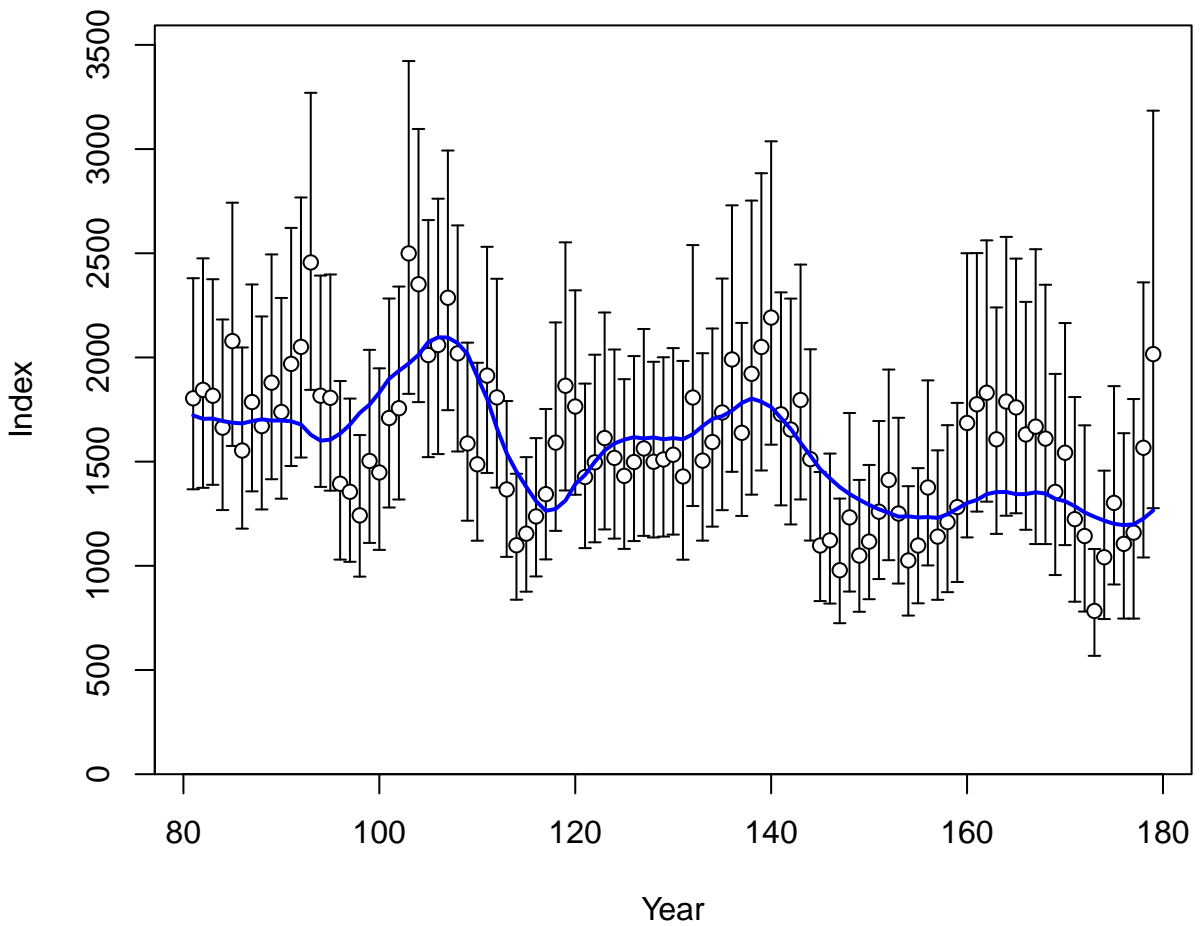


Year

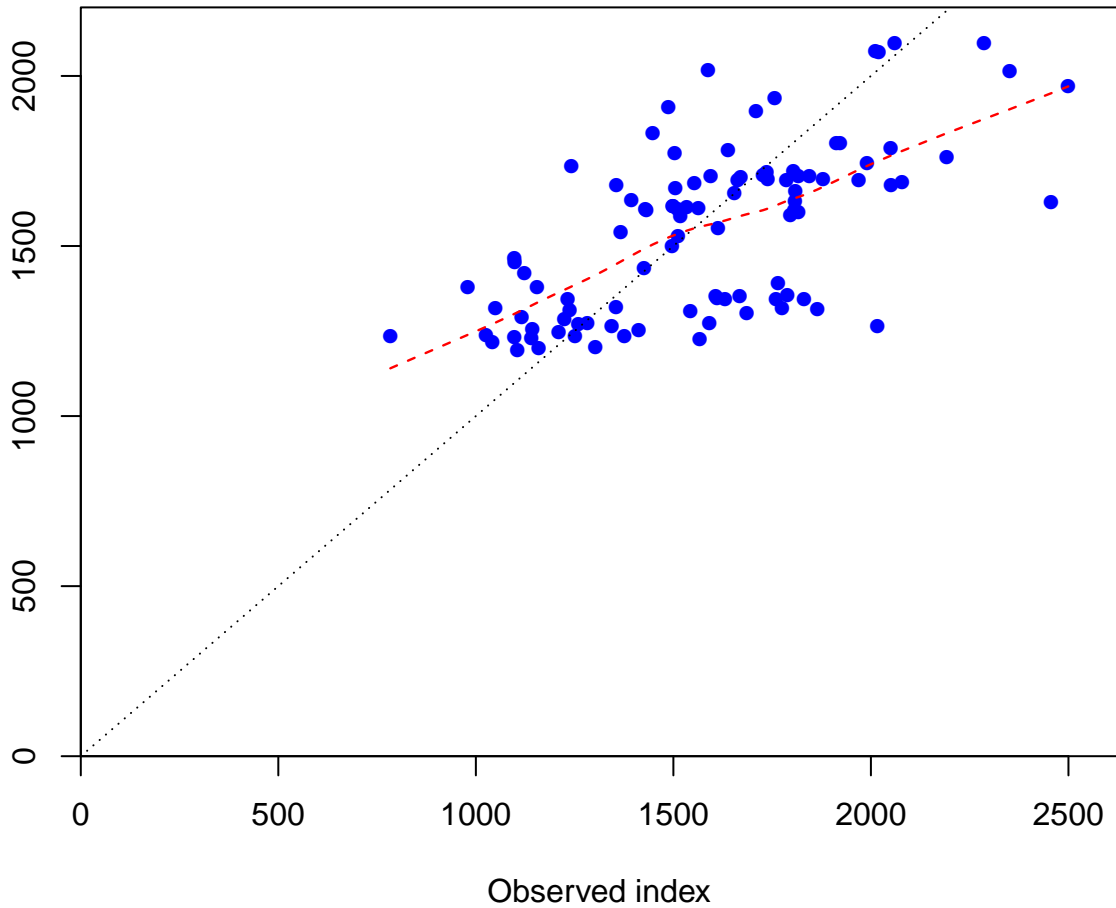








Expected index



Observed index

Log index

8.0  
7.5  
7.0  
6.5

80

100

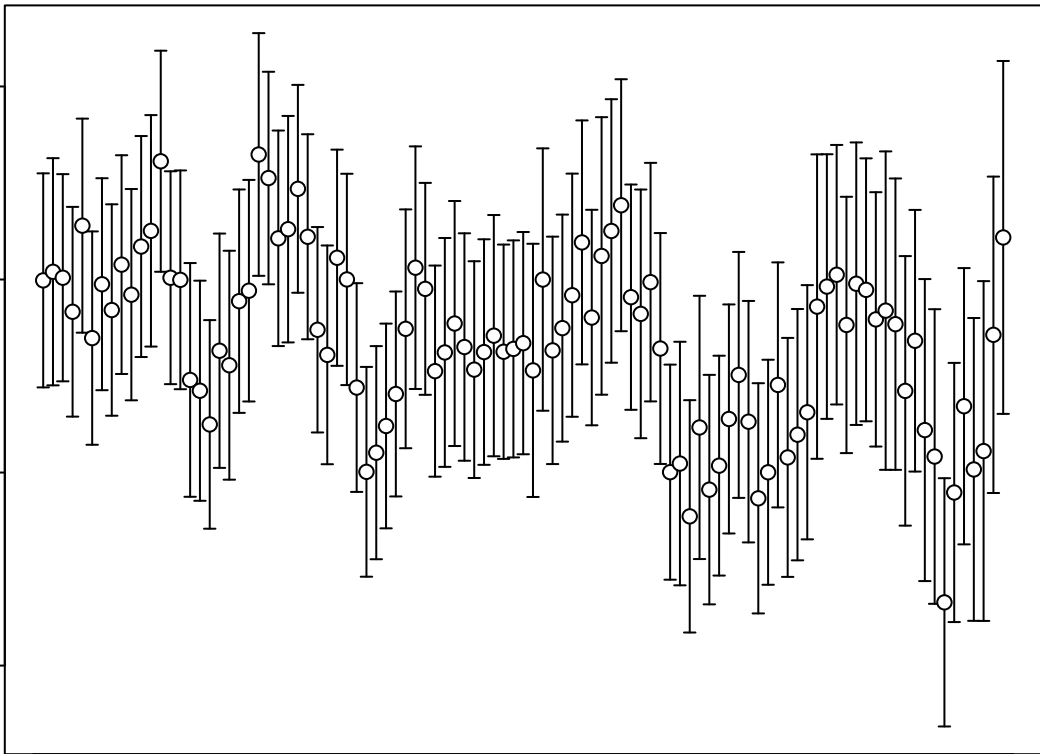
120

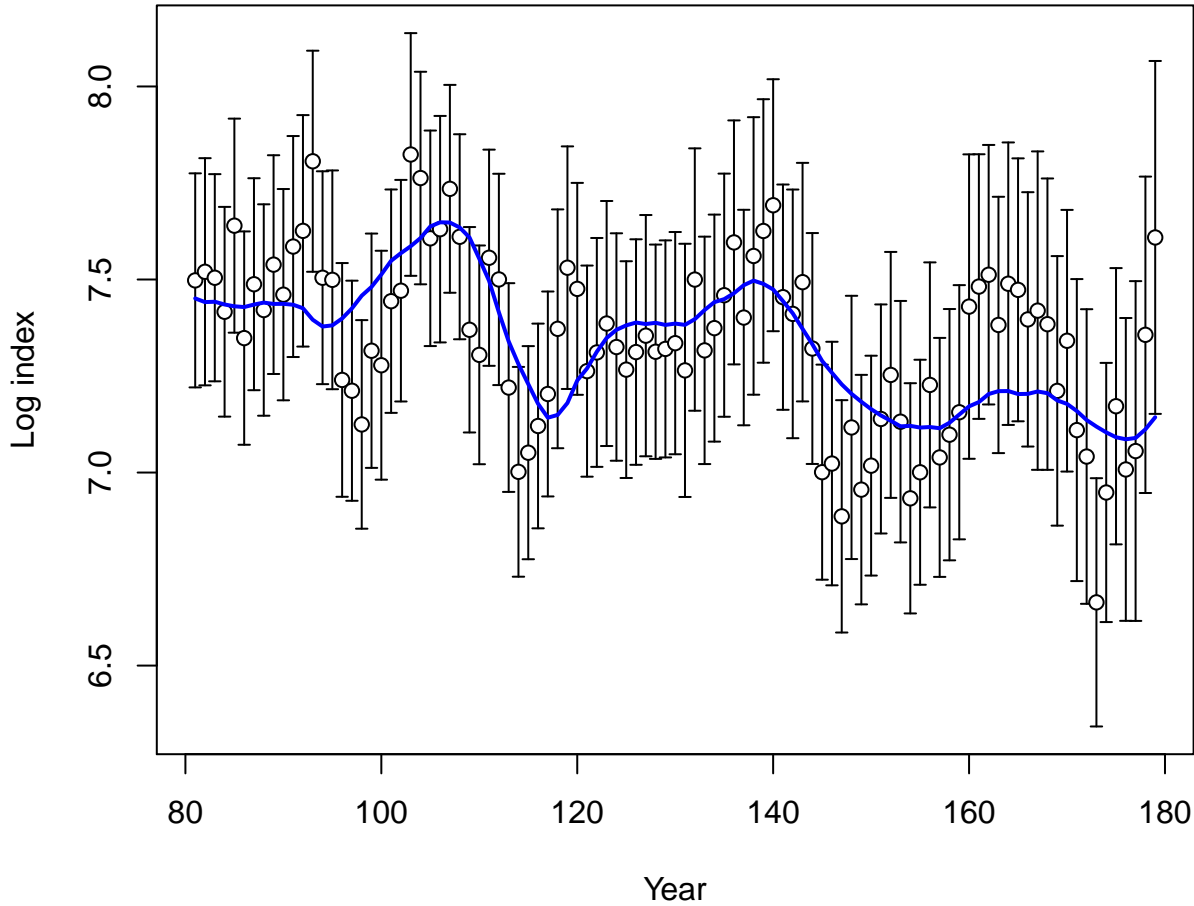
140

160

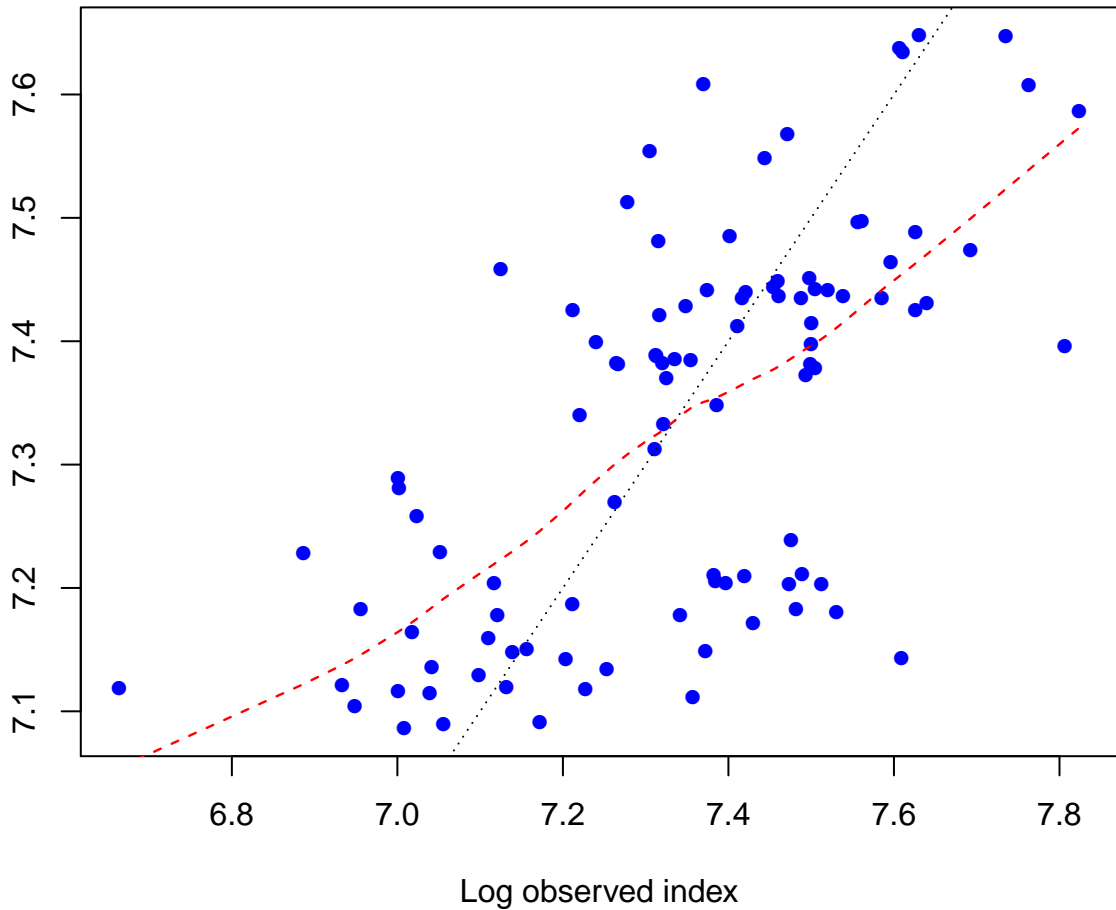
180

Year

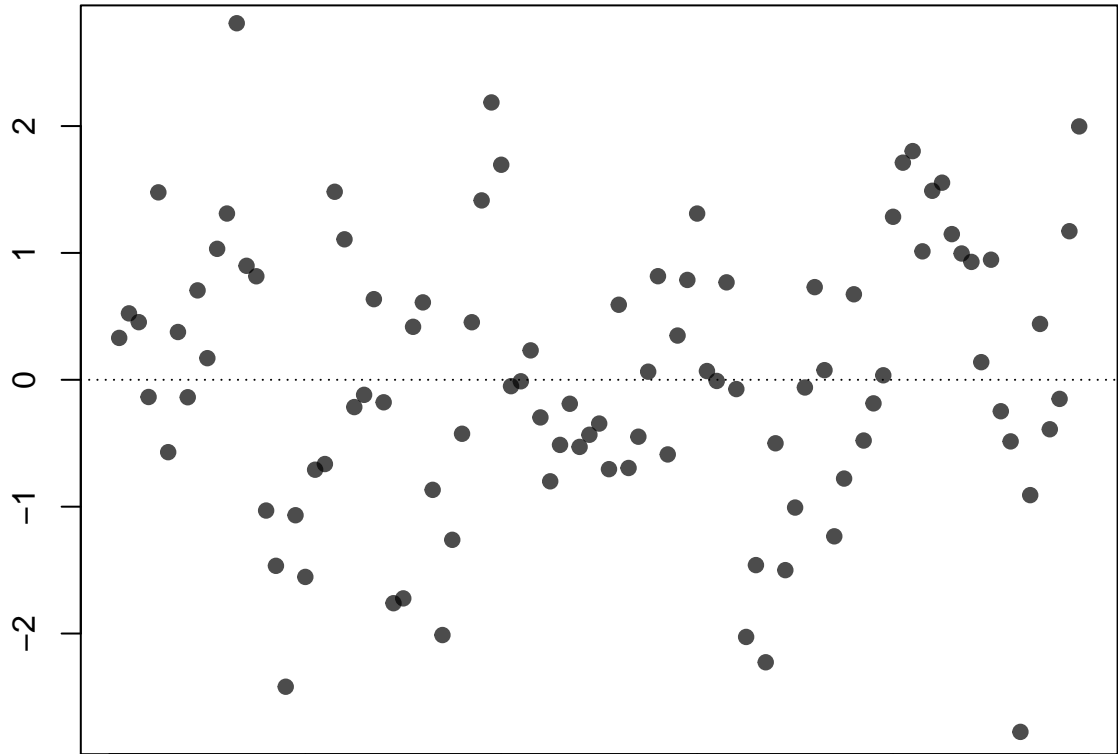




Log expected index



Residual



Year

Deviation

0.4  
0.2  
0.0  
-0.2  
-0.4

80

100

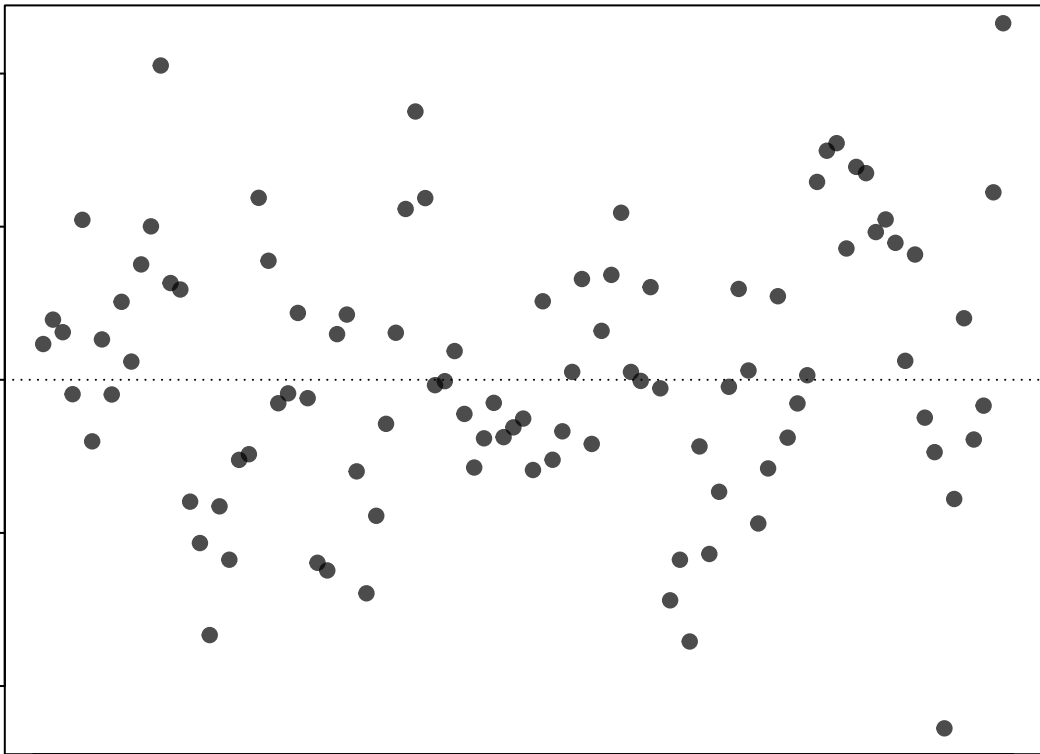
120

140

160

180

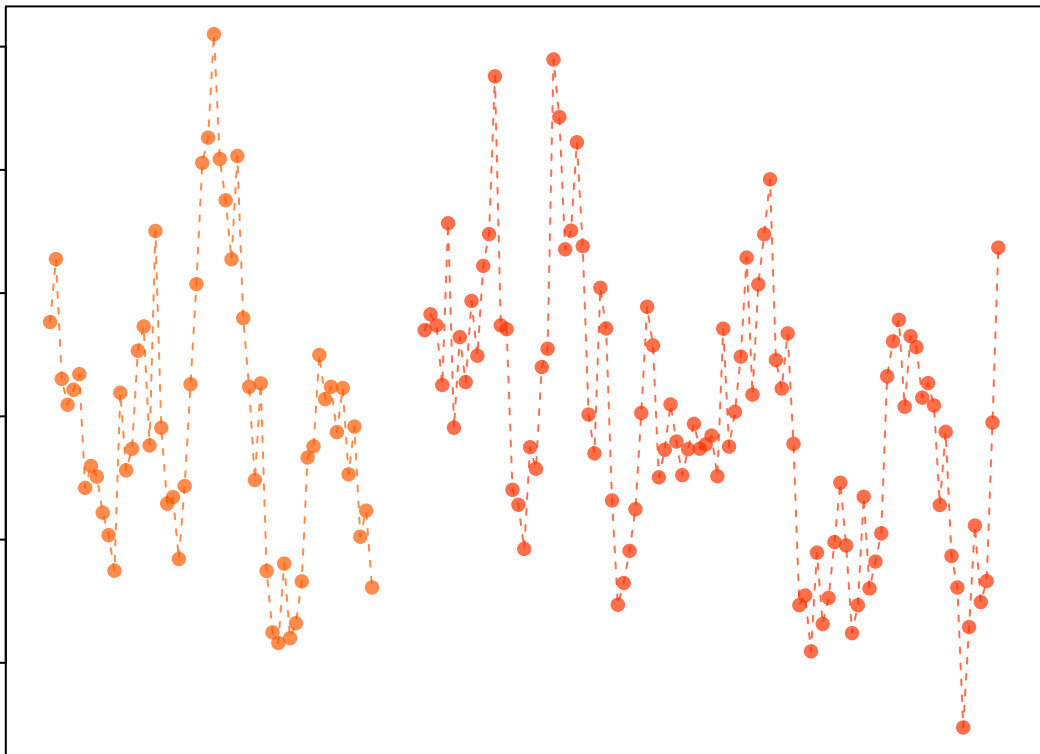
Year





Standardized index

1.6  
1.4  
1.2  
1.0  
0.8  
0.6



50

100

150

Year

Age

40

30

20

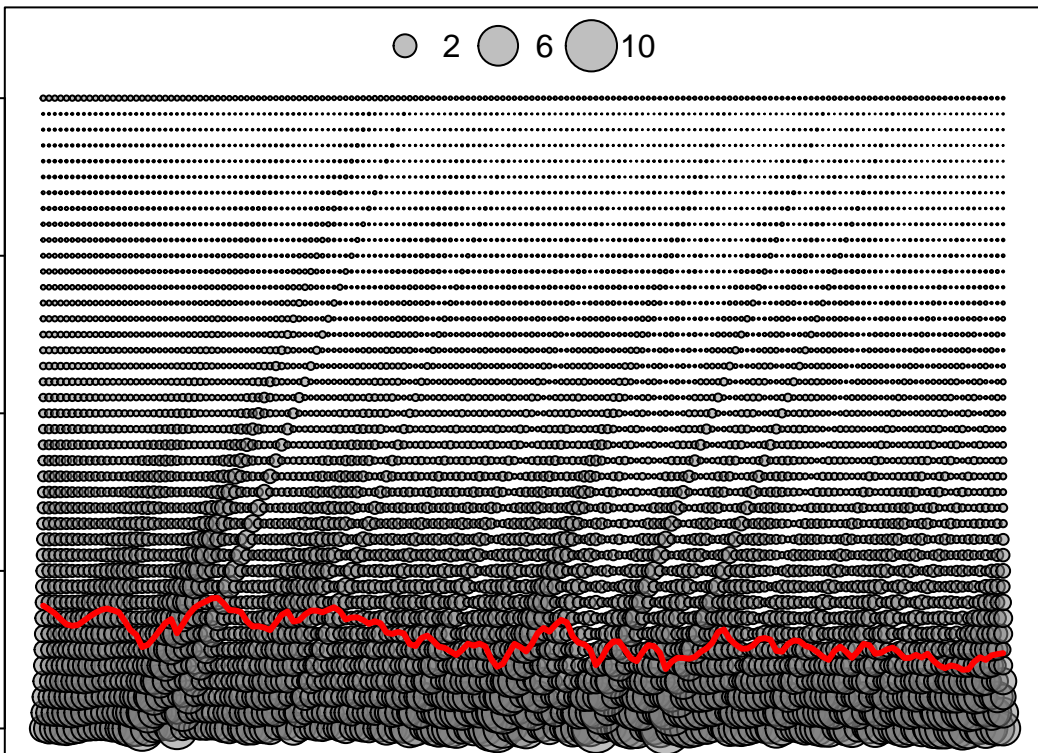
10

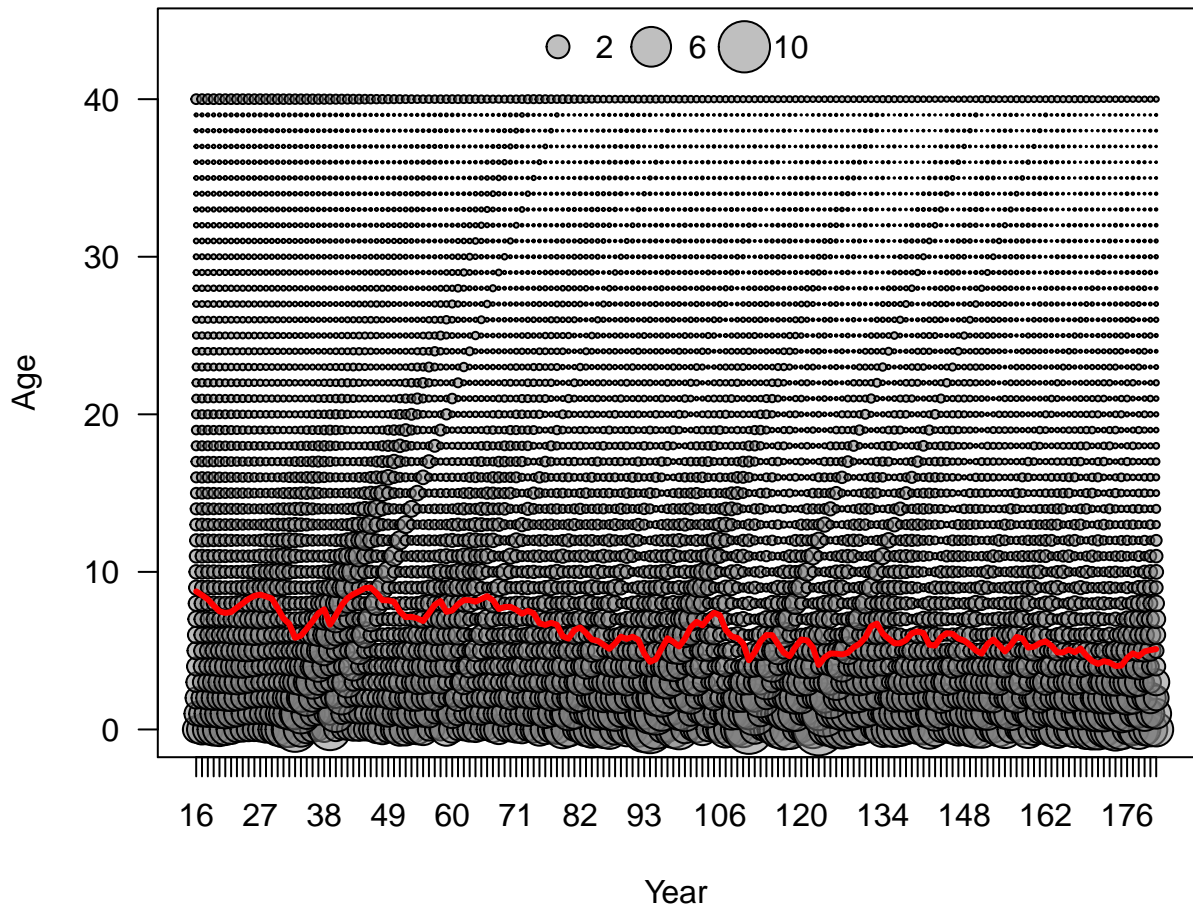
0

○ 2 ○ 6 ○ 10

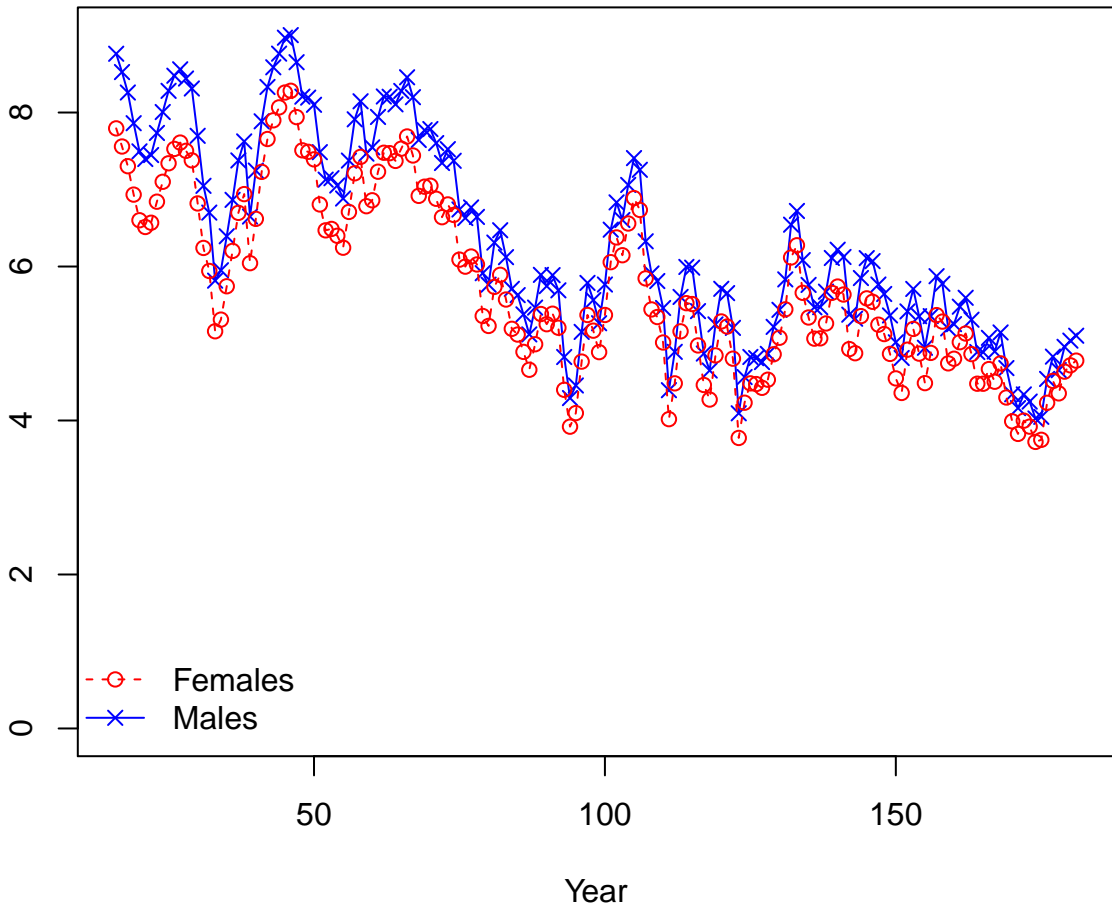
16 27 38 49 60 71 82 93 106 120 134 148 162 176

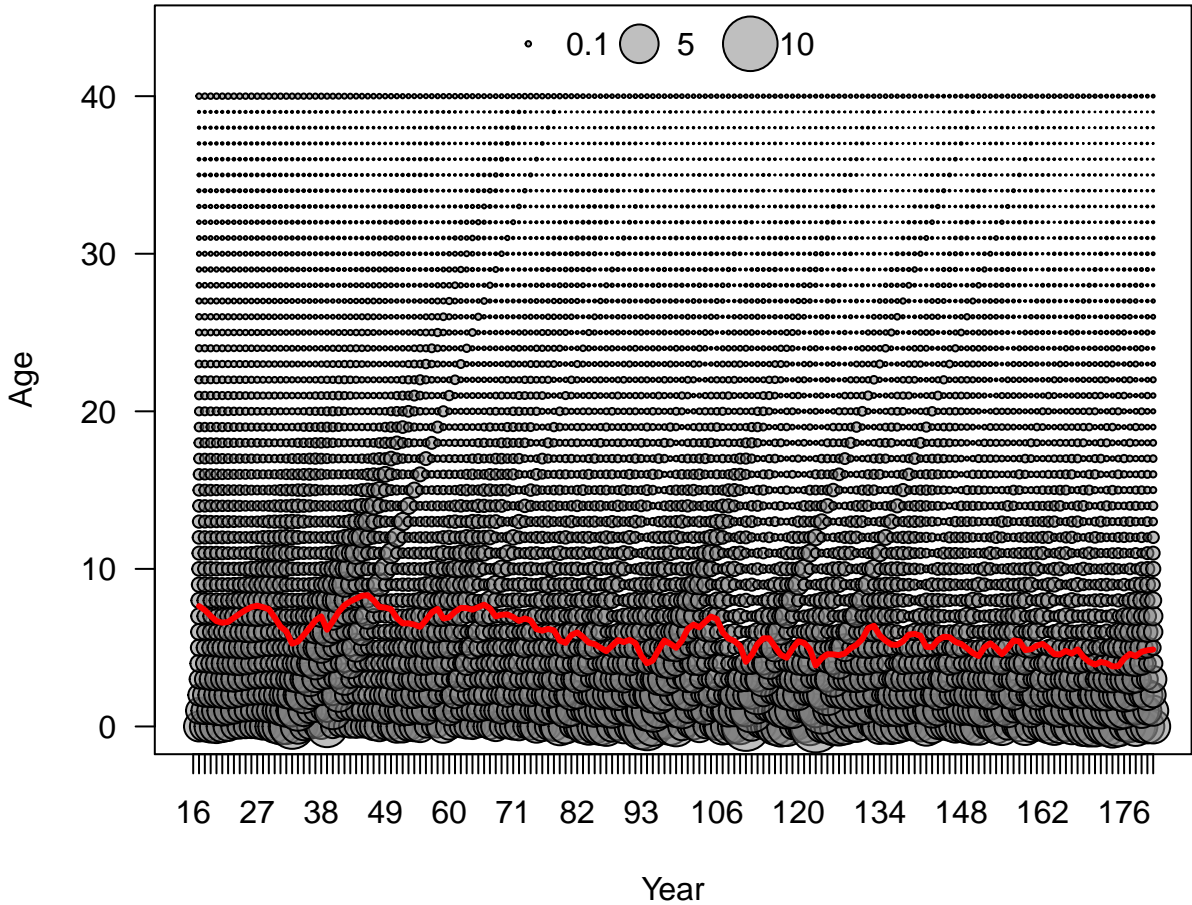
Year





Mean age (yr)





Age

40

30

20

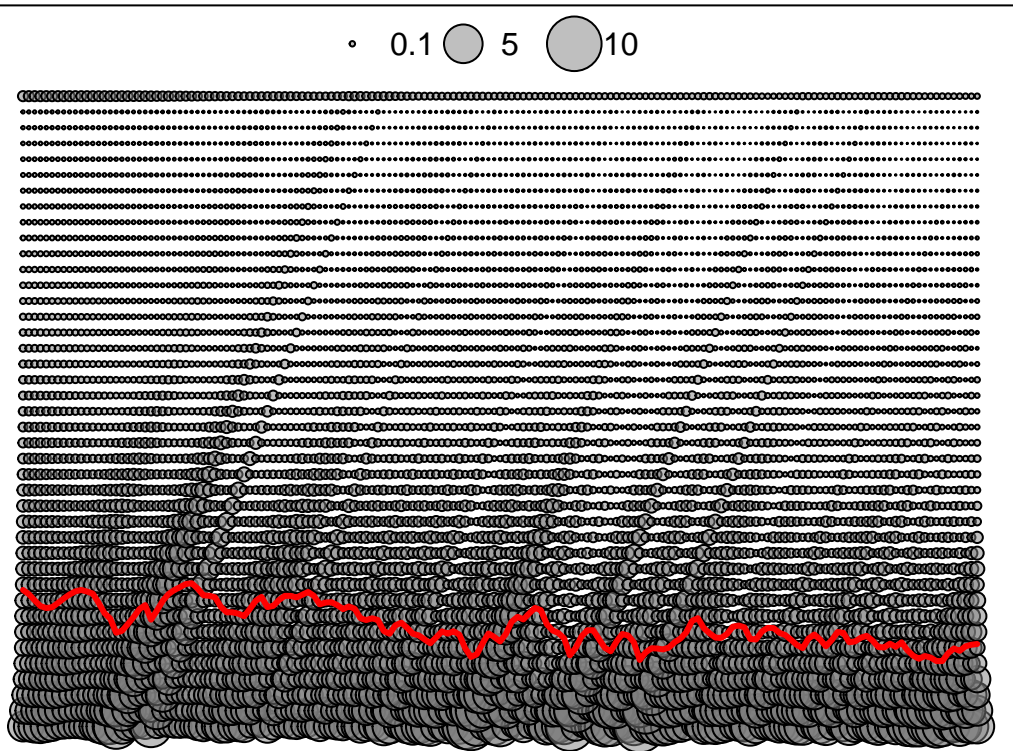
10

0

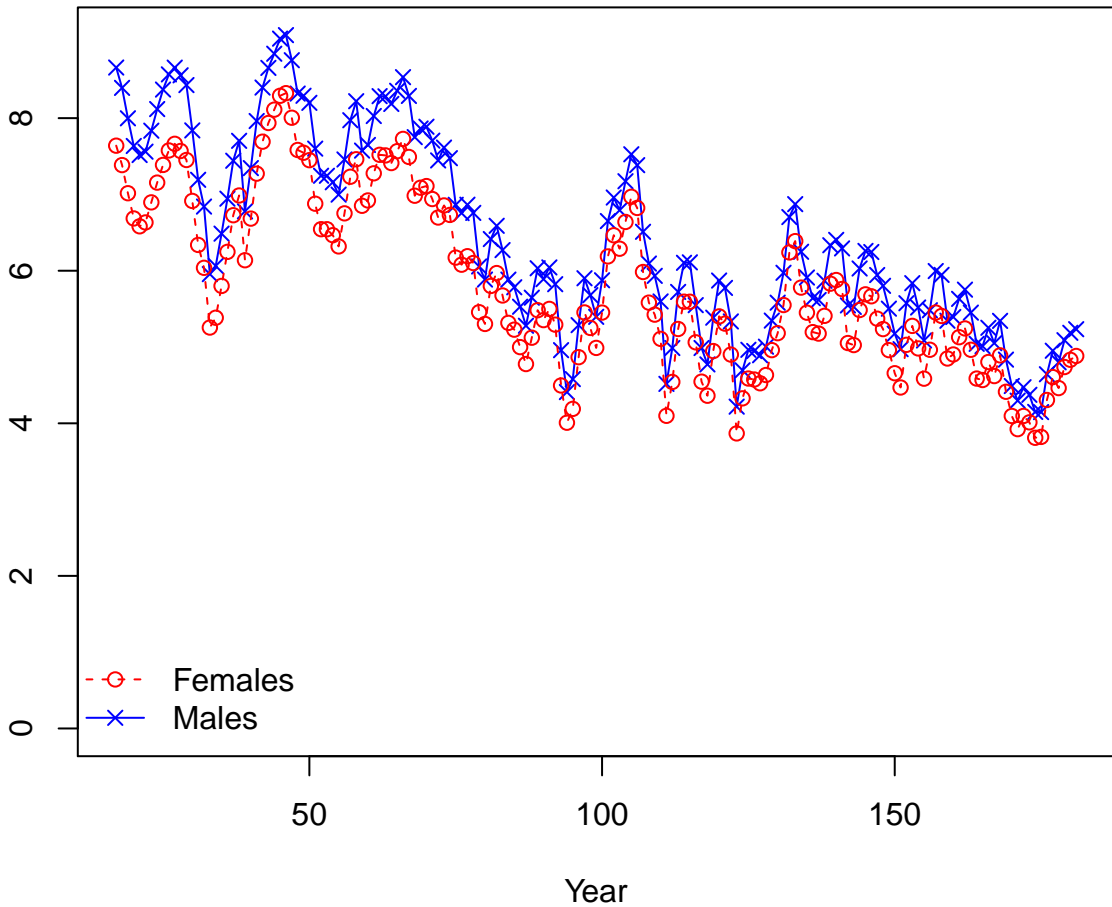
○ 0.1 ○ 5 ○ 10

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

Year



Mean age (yr)



-o- Females

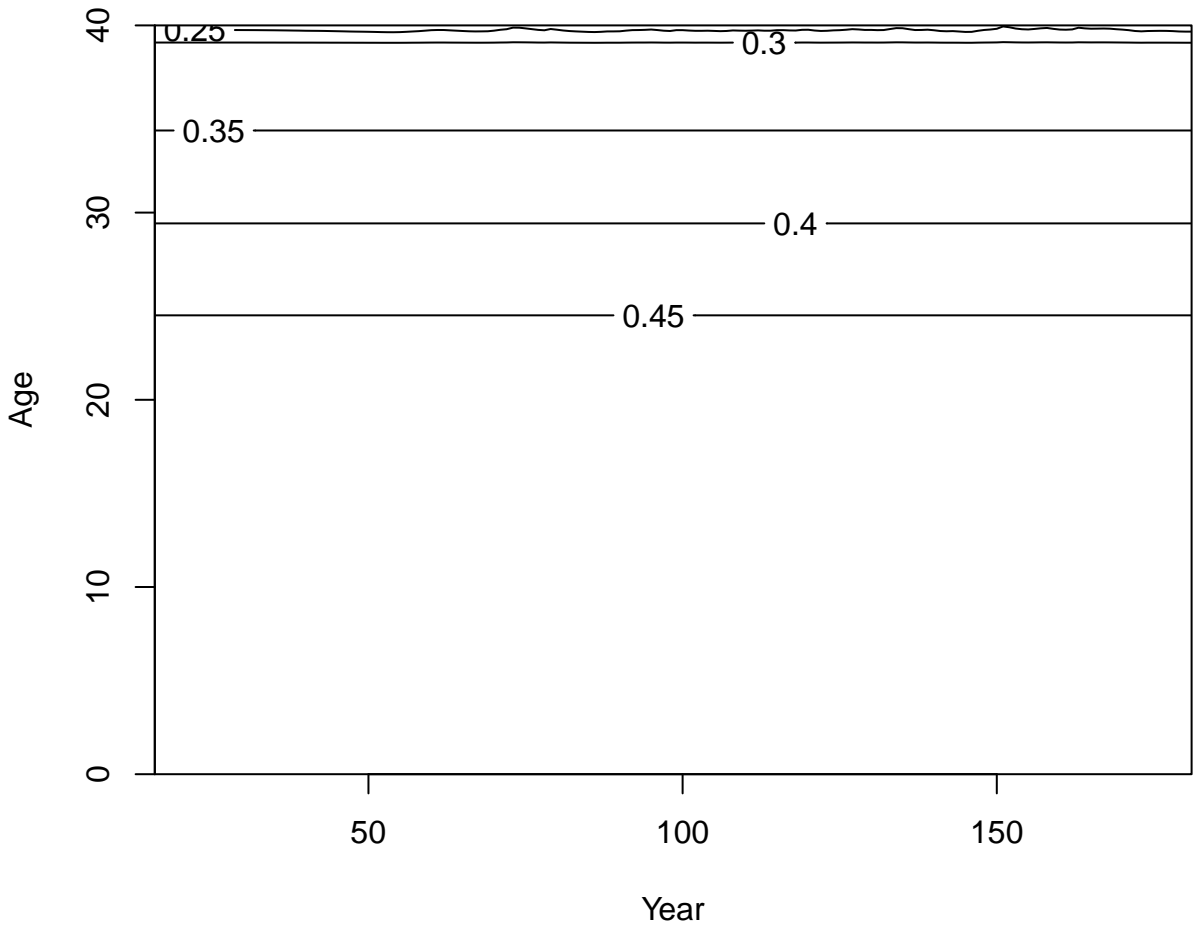
\* Males

50

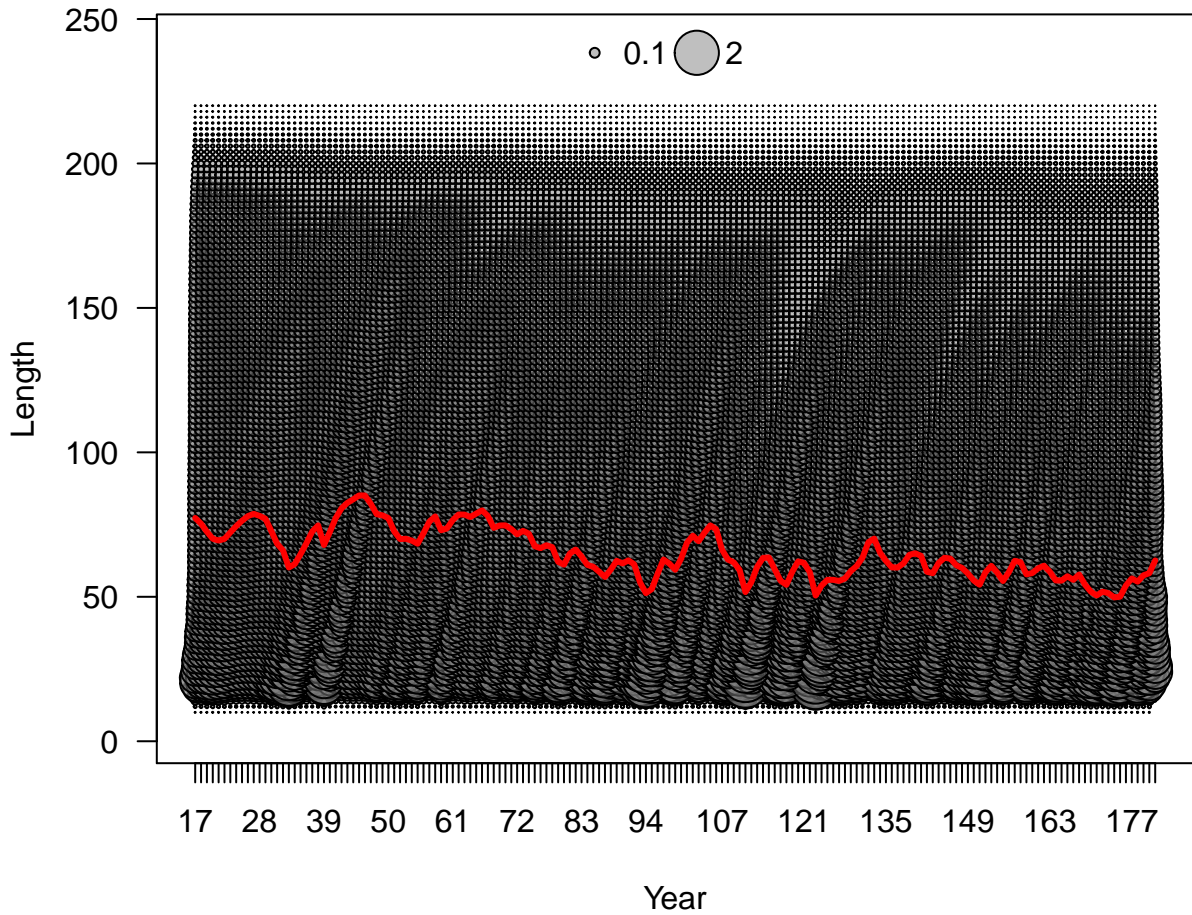
100

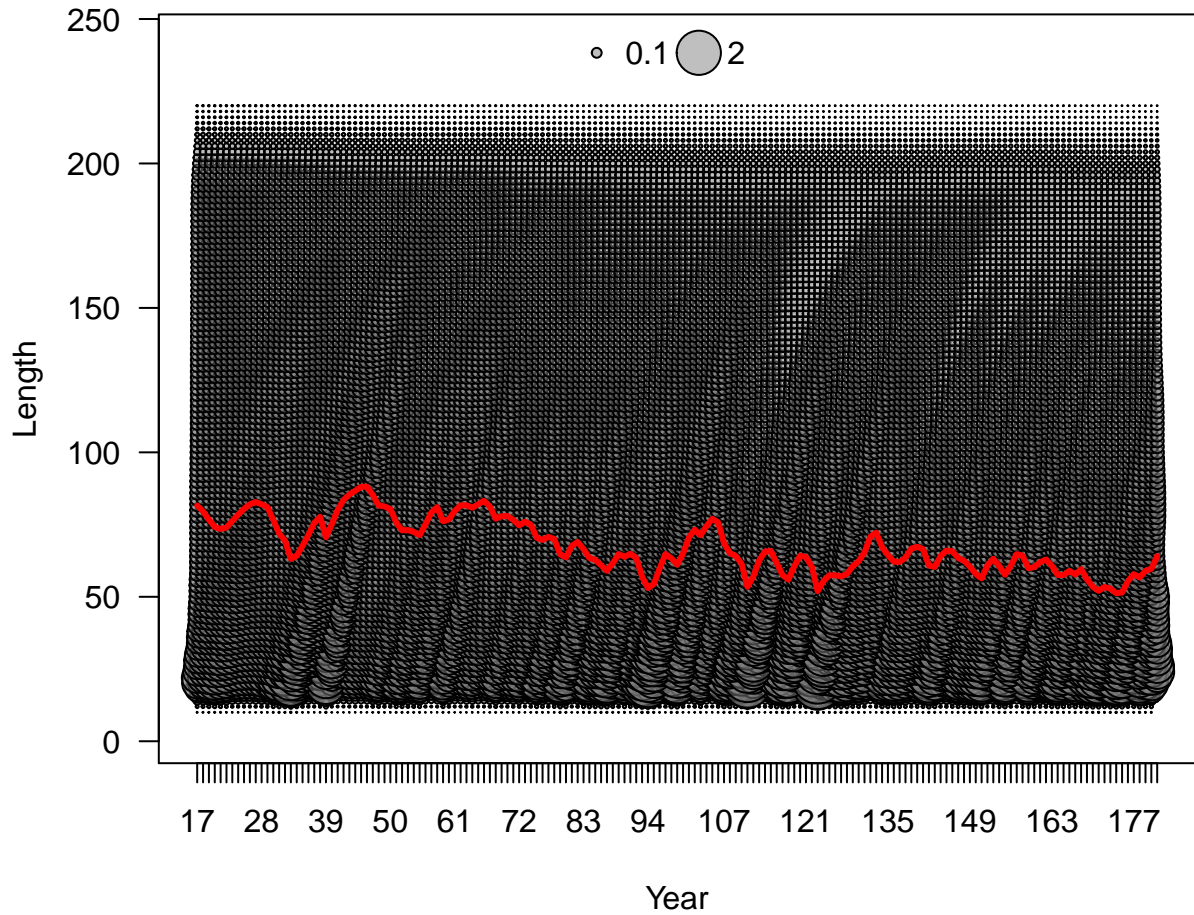
150

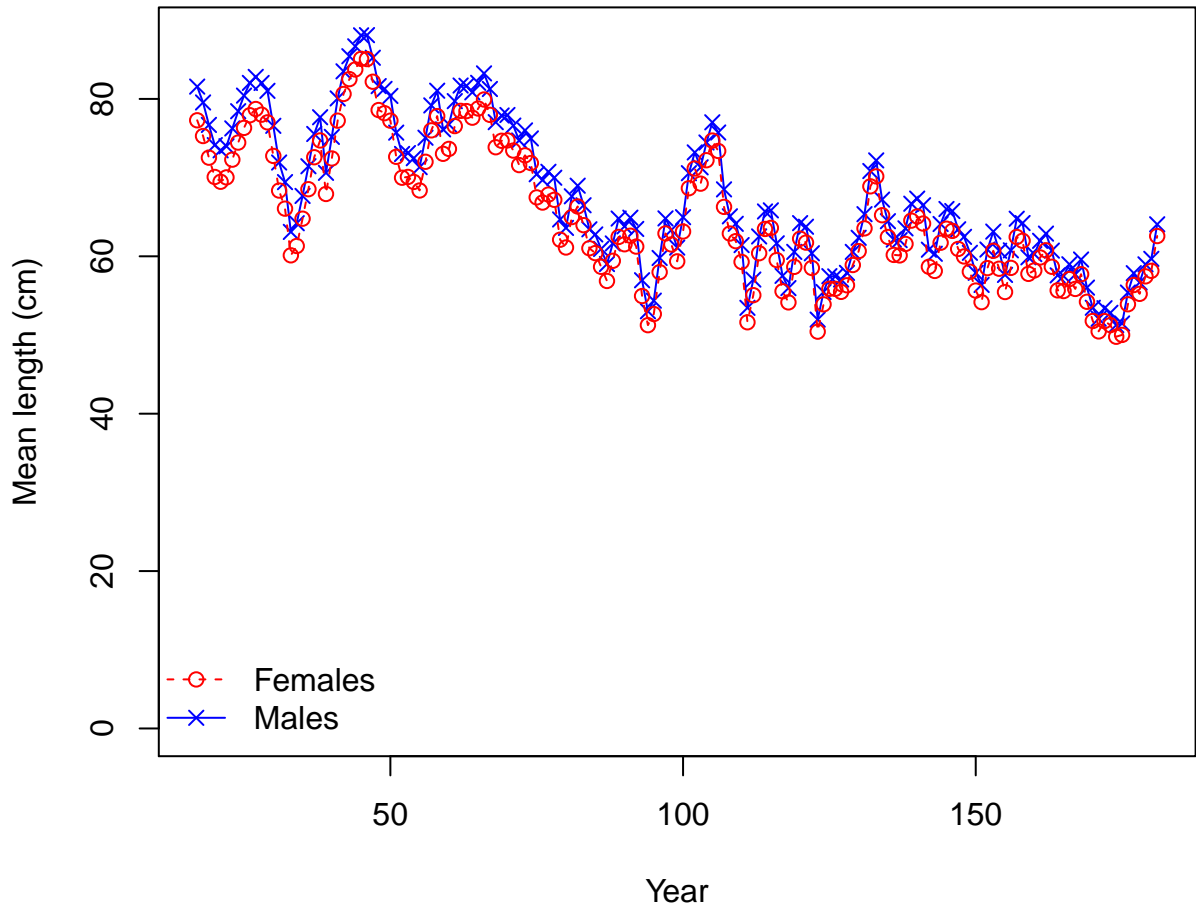
Year

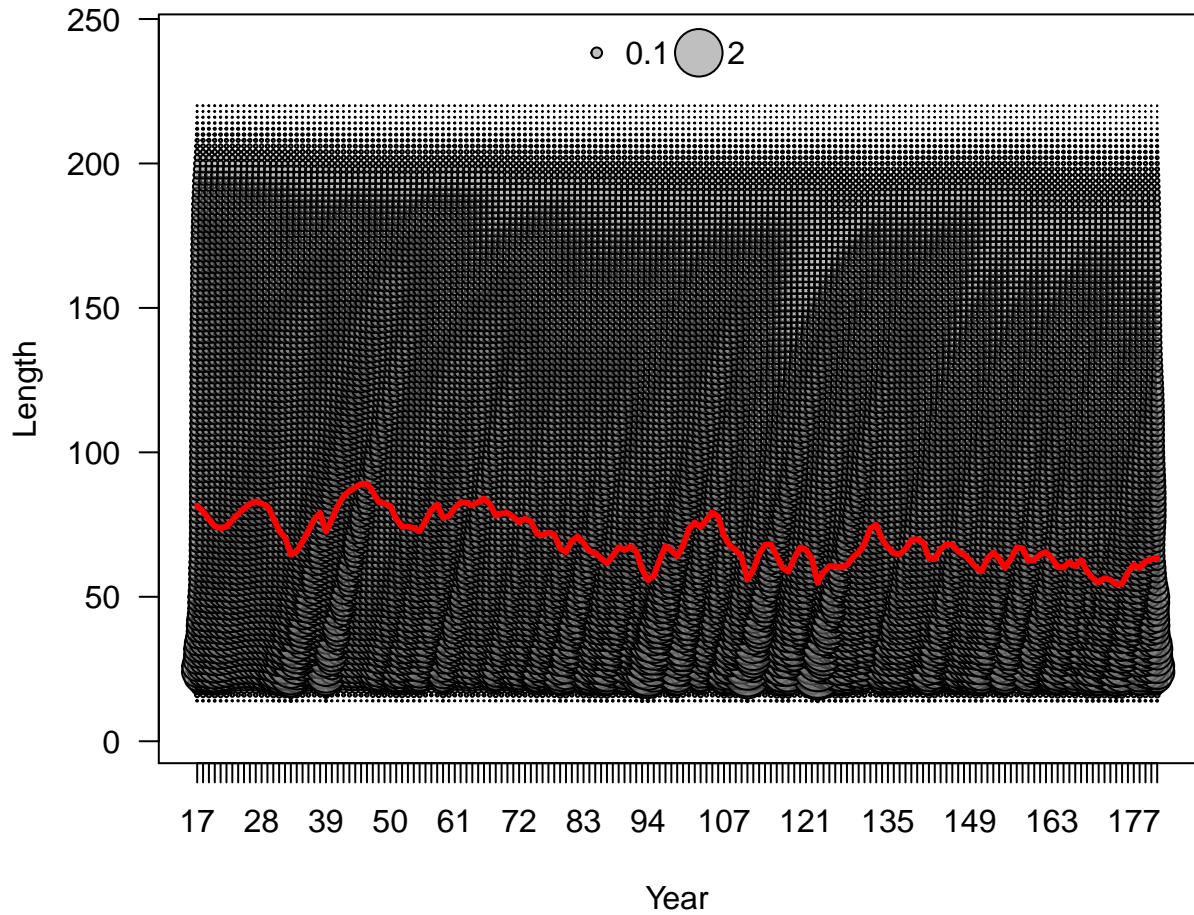




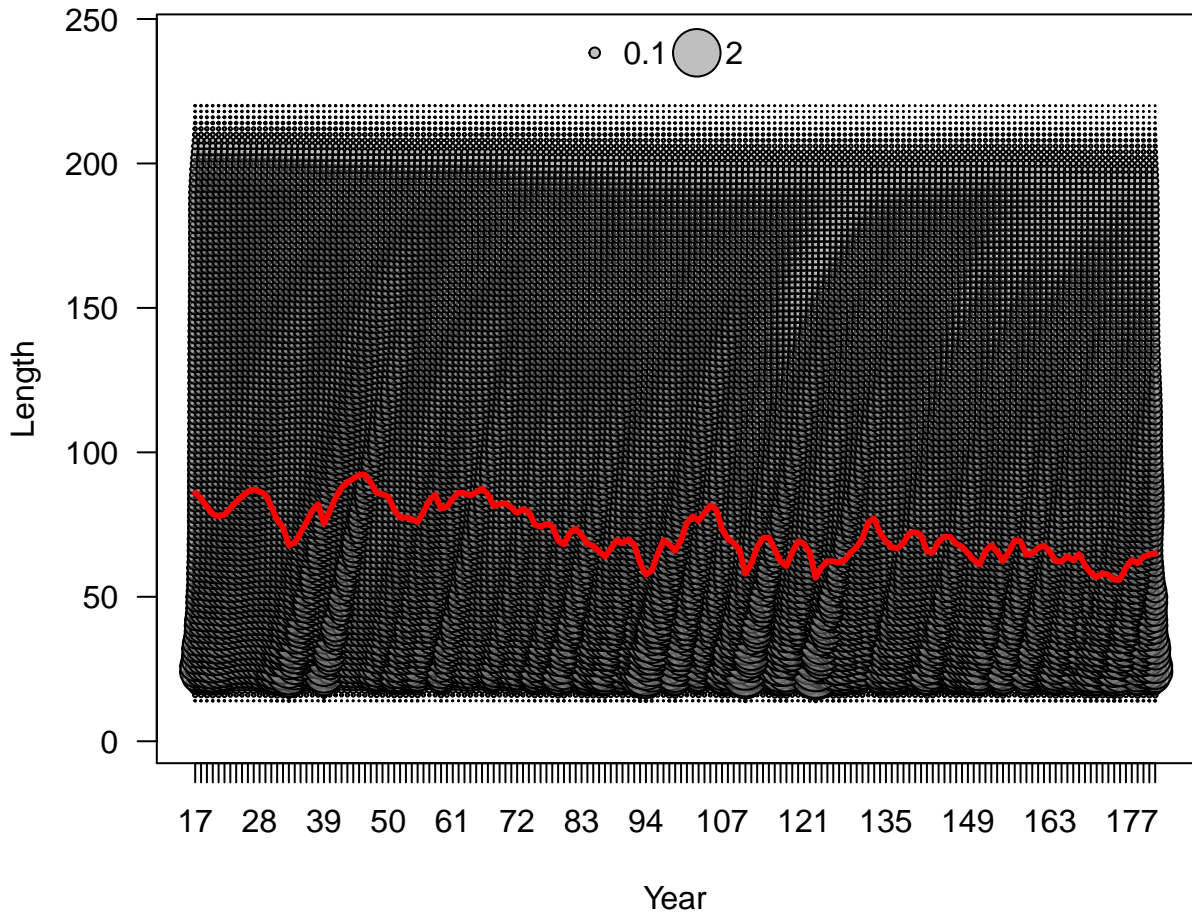


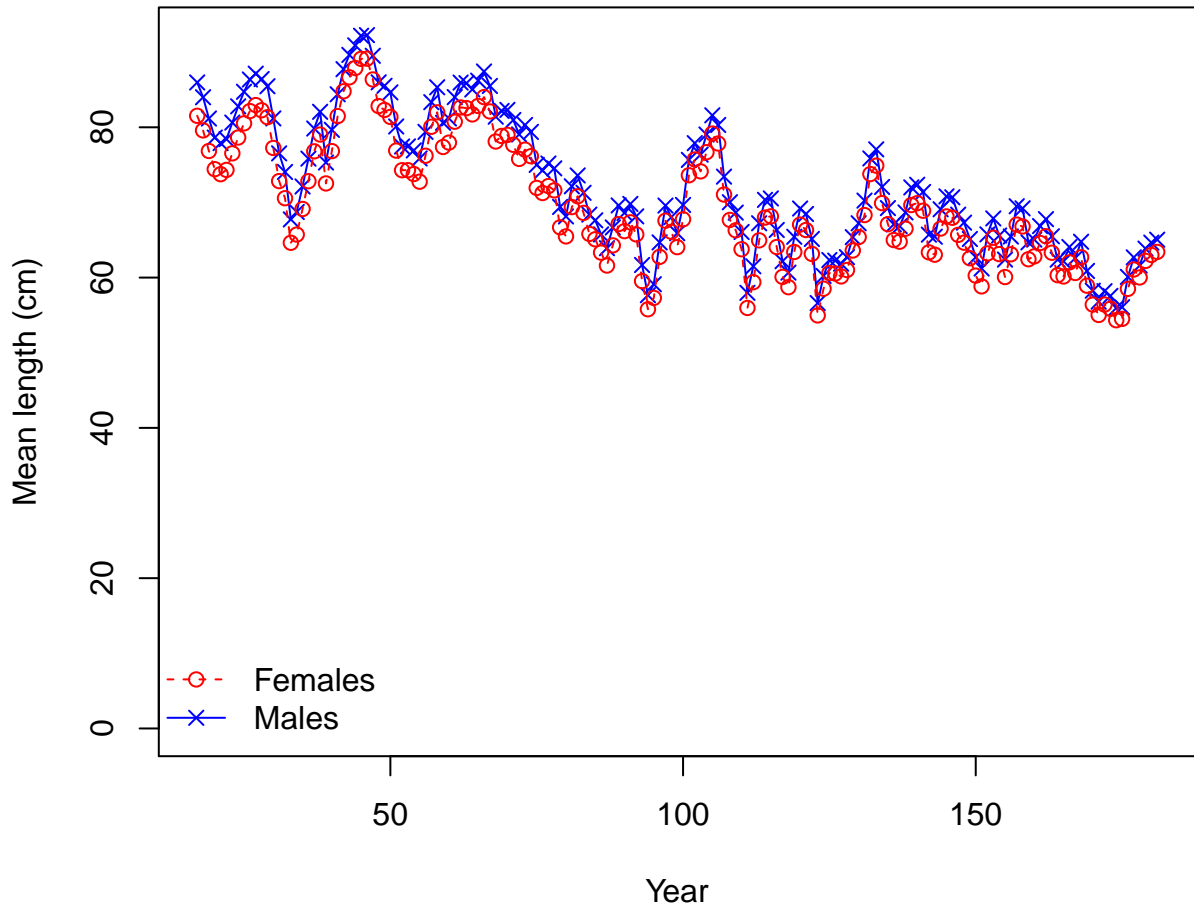




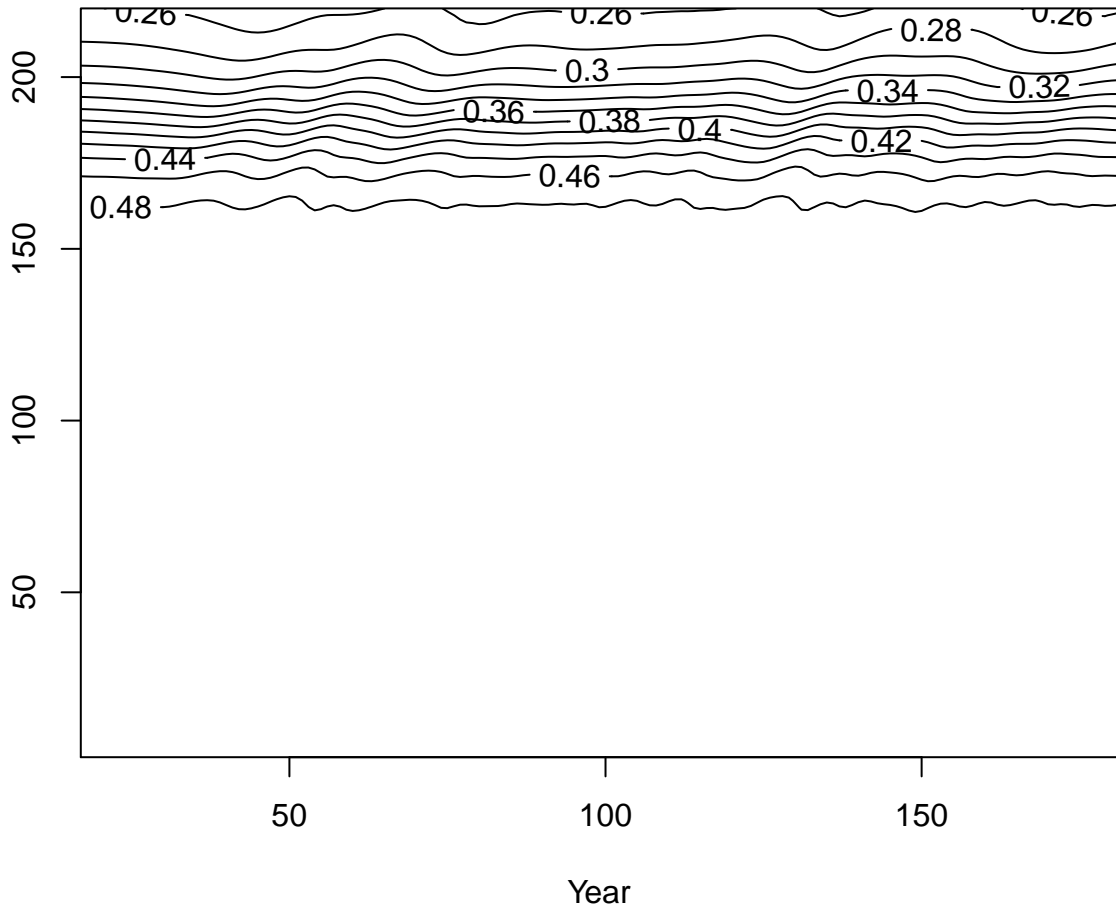


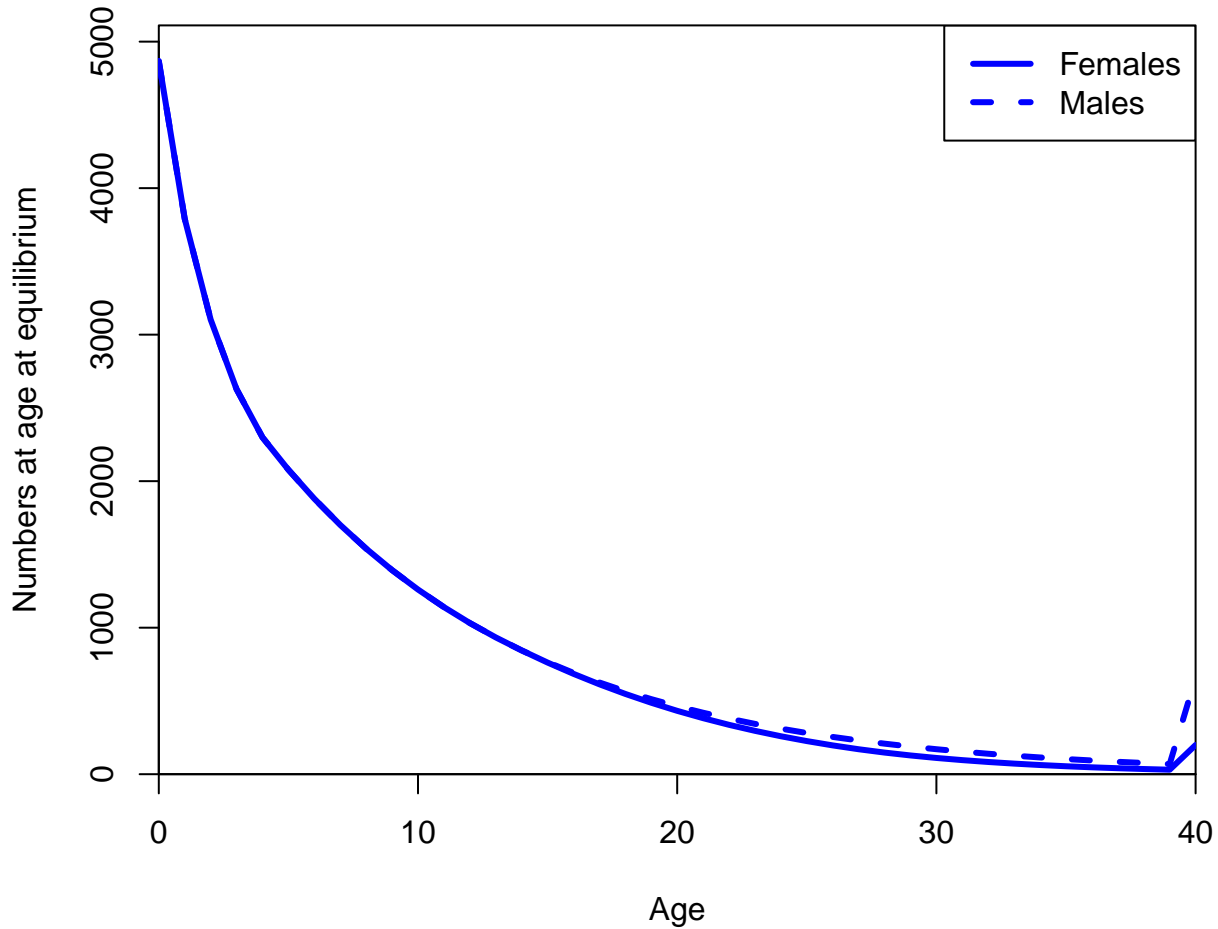




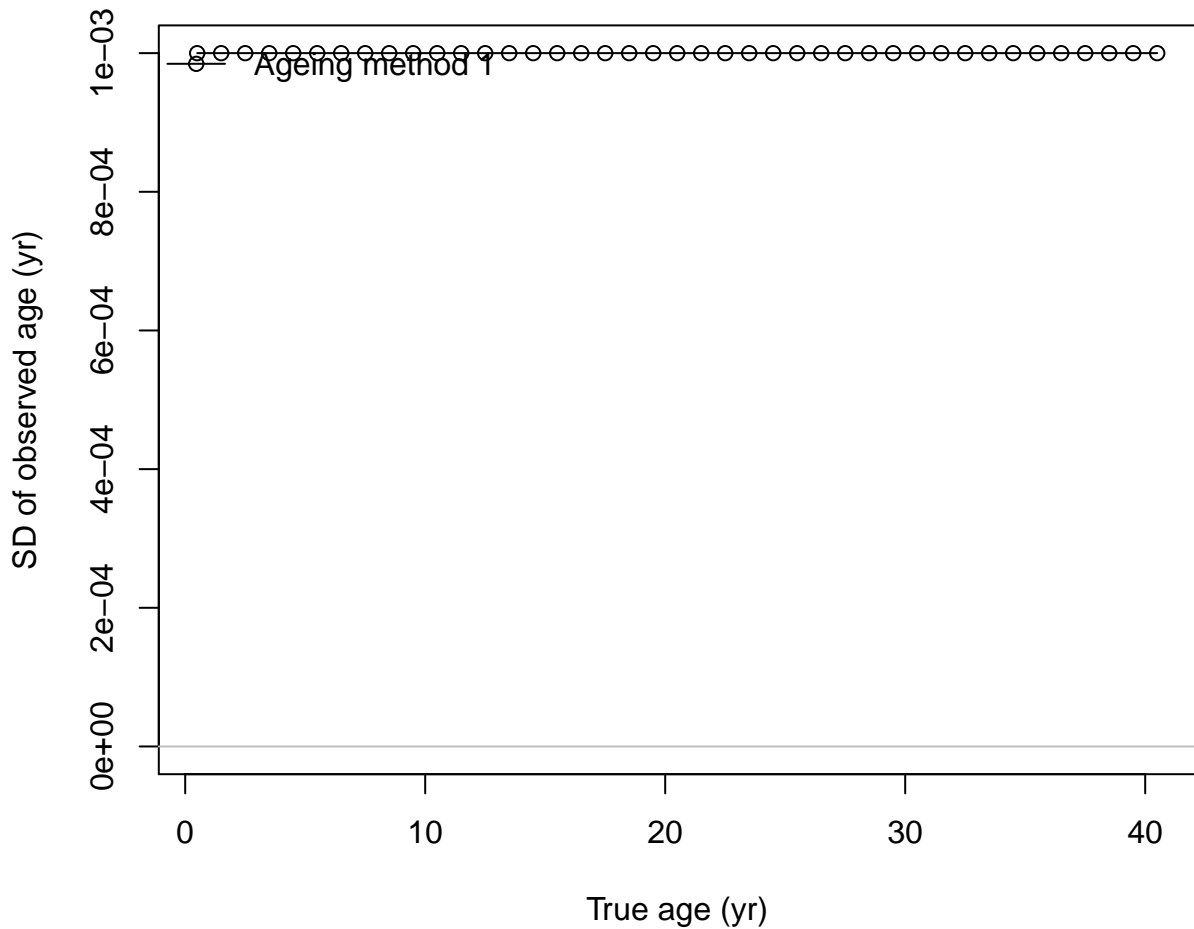


Length

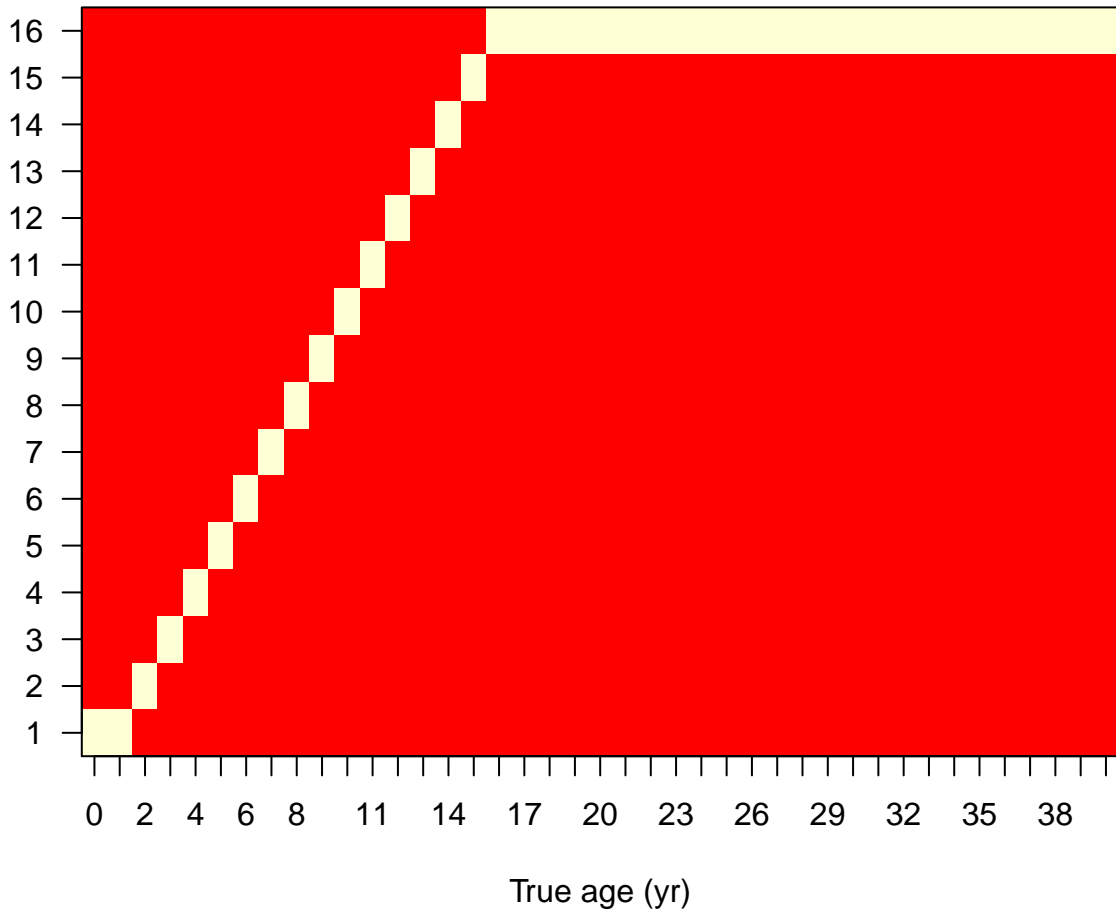




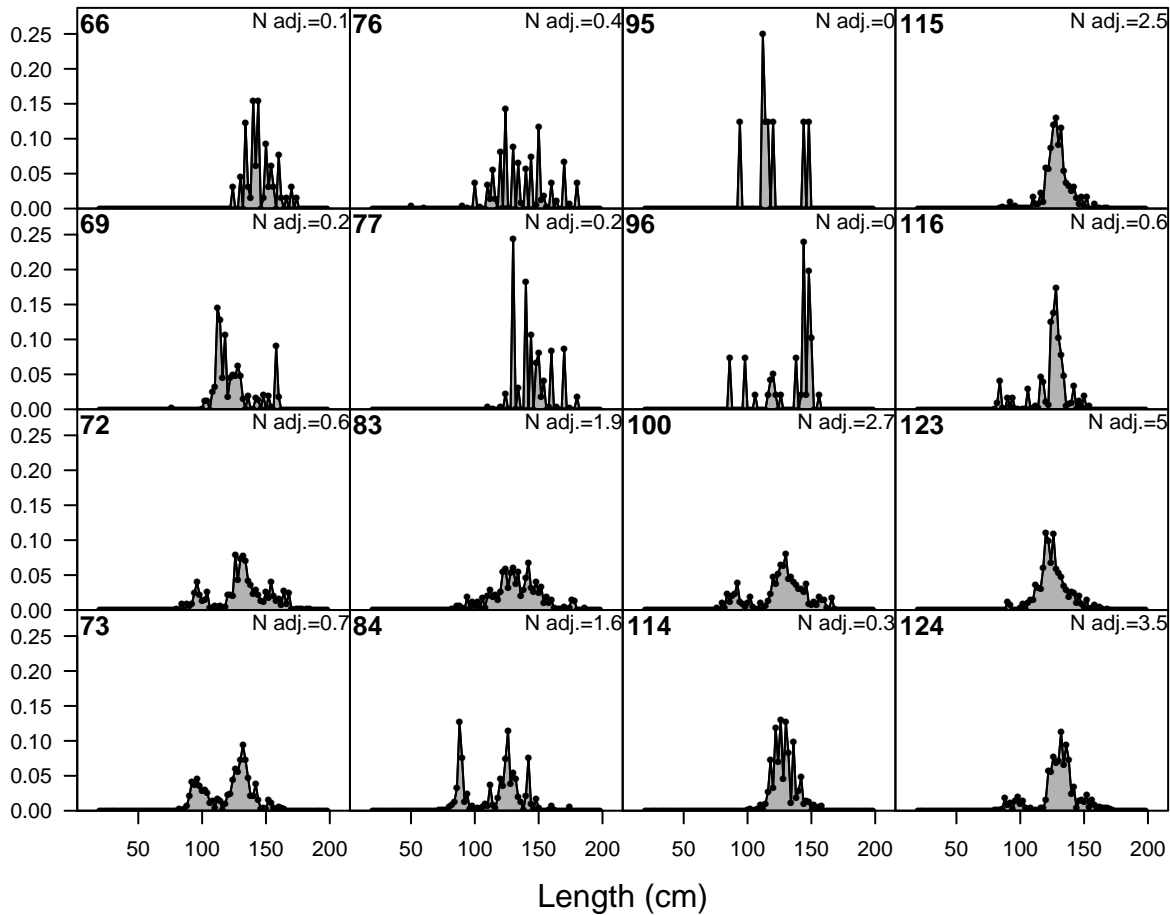


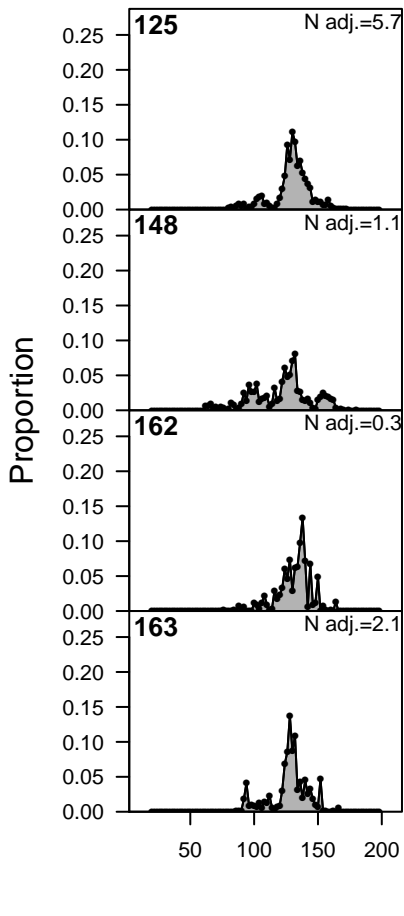


Observed age (yr)

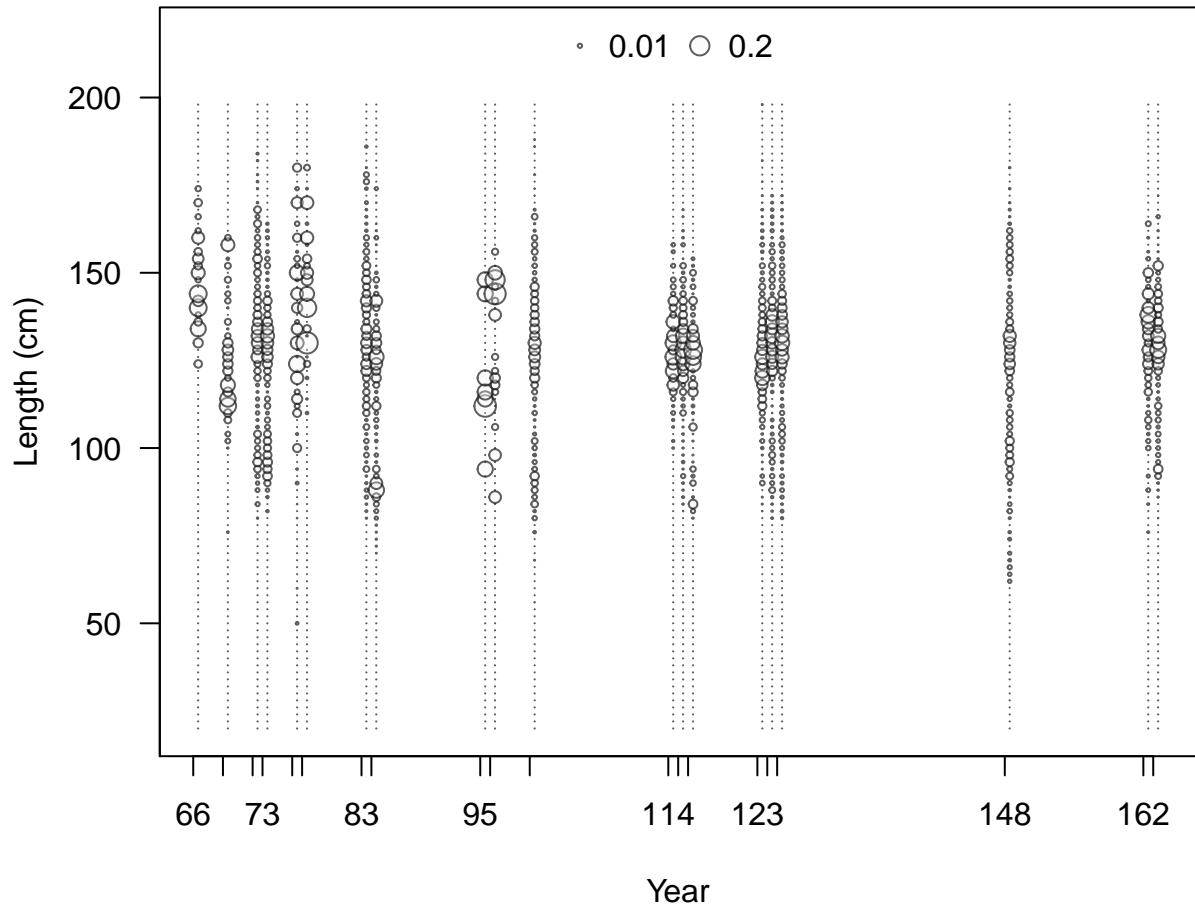


Proportion

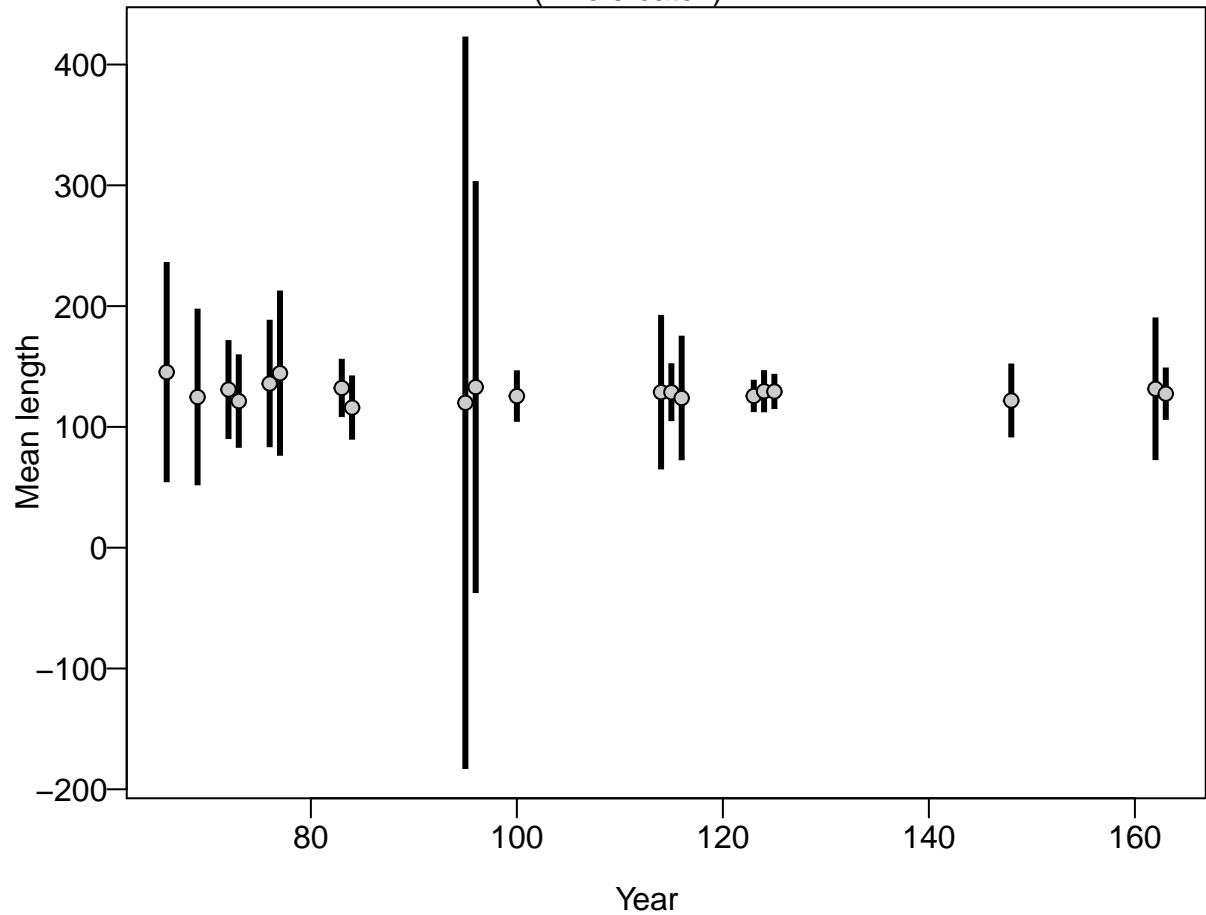




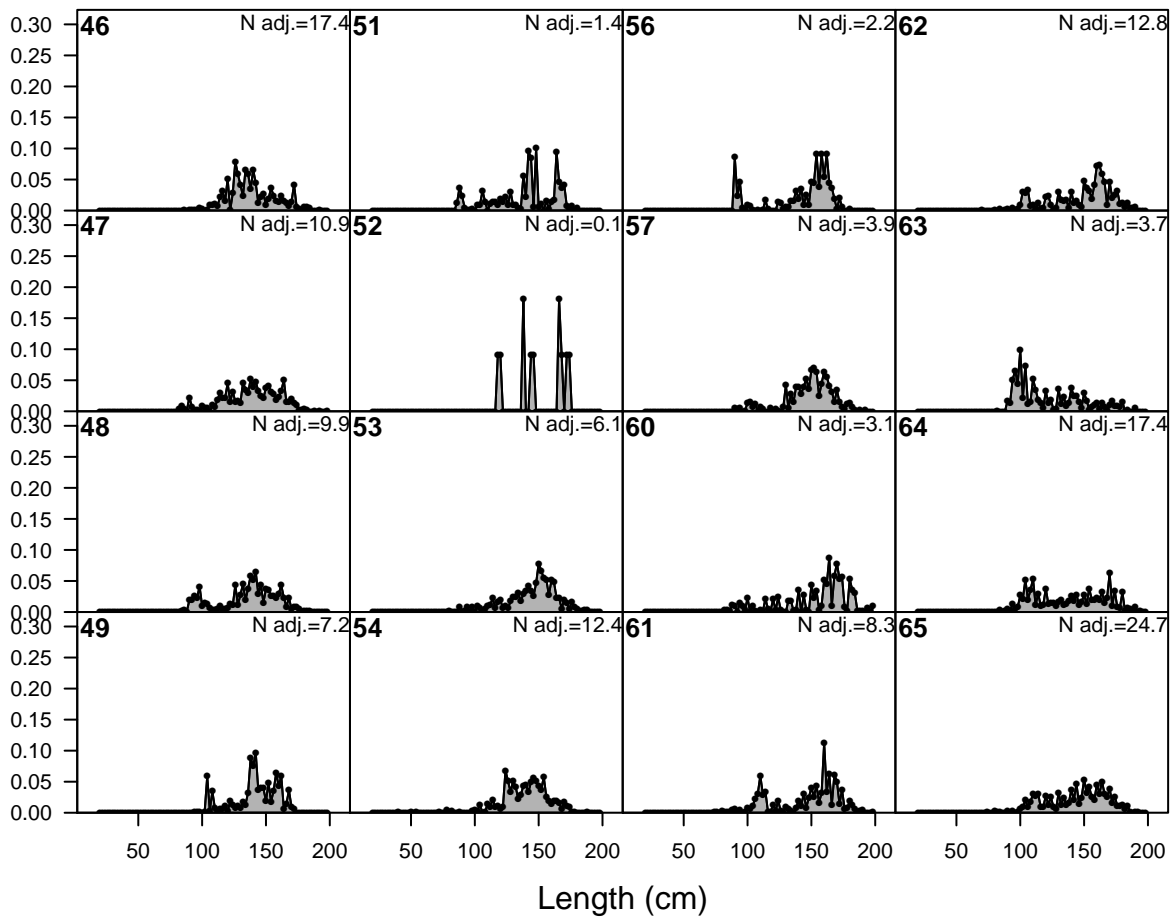
Length (cm)



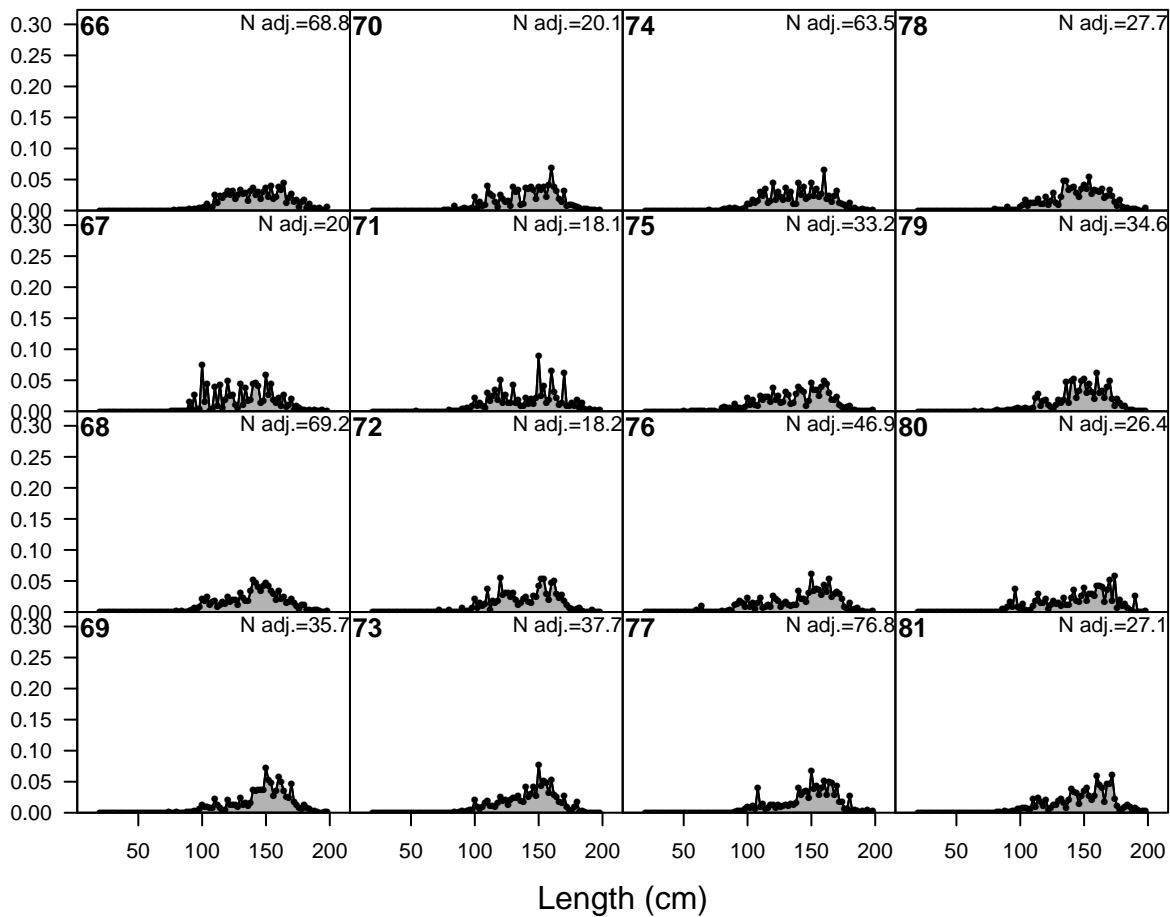
A1-LL-n (whole catch)



Proportion

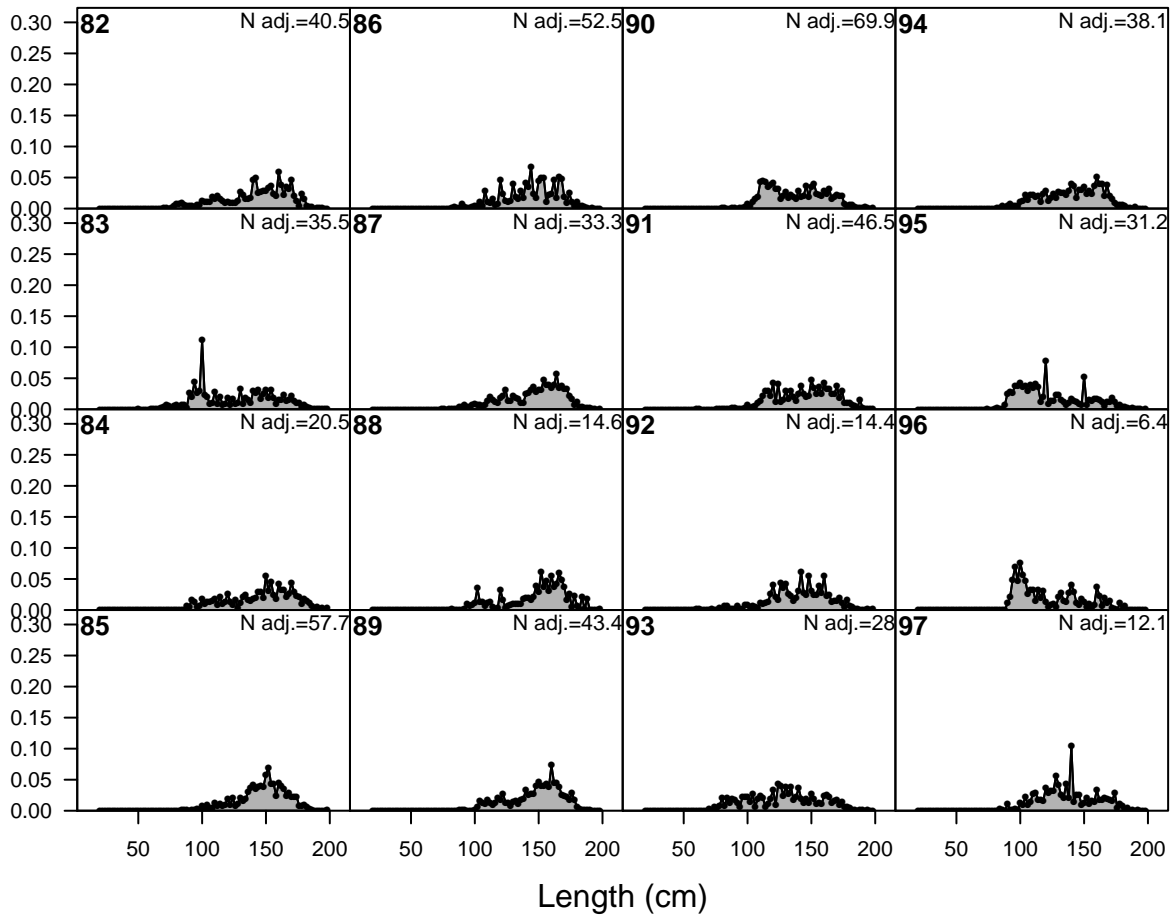


Proportion

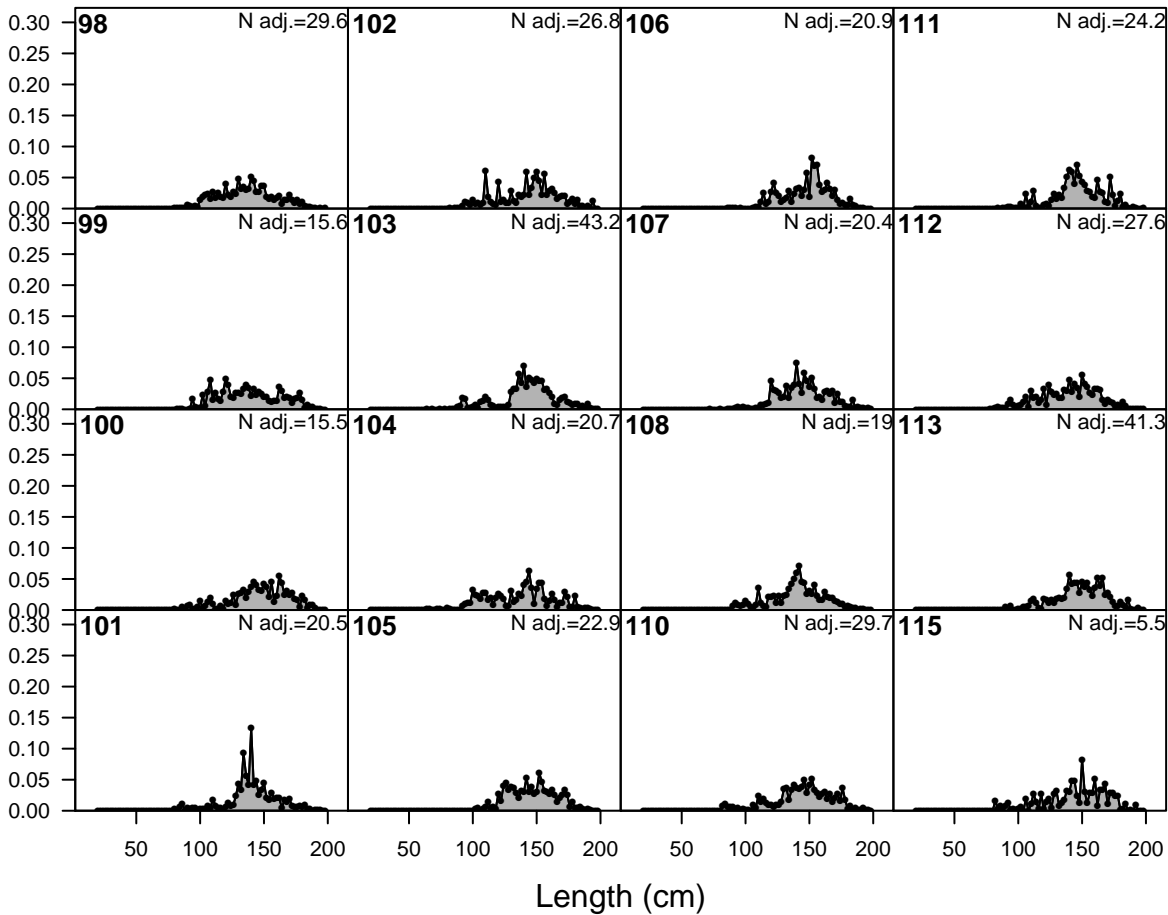




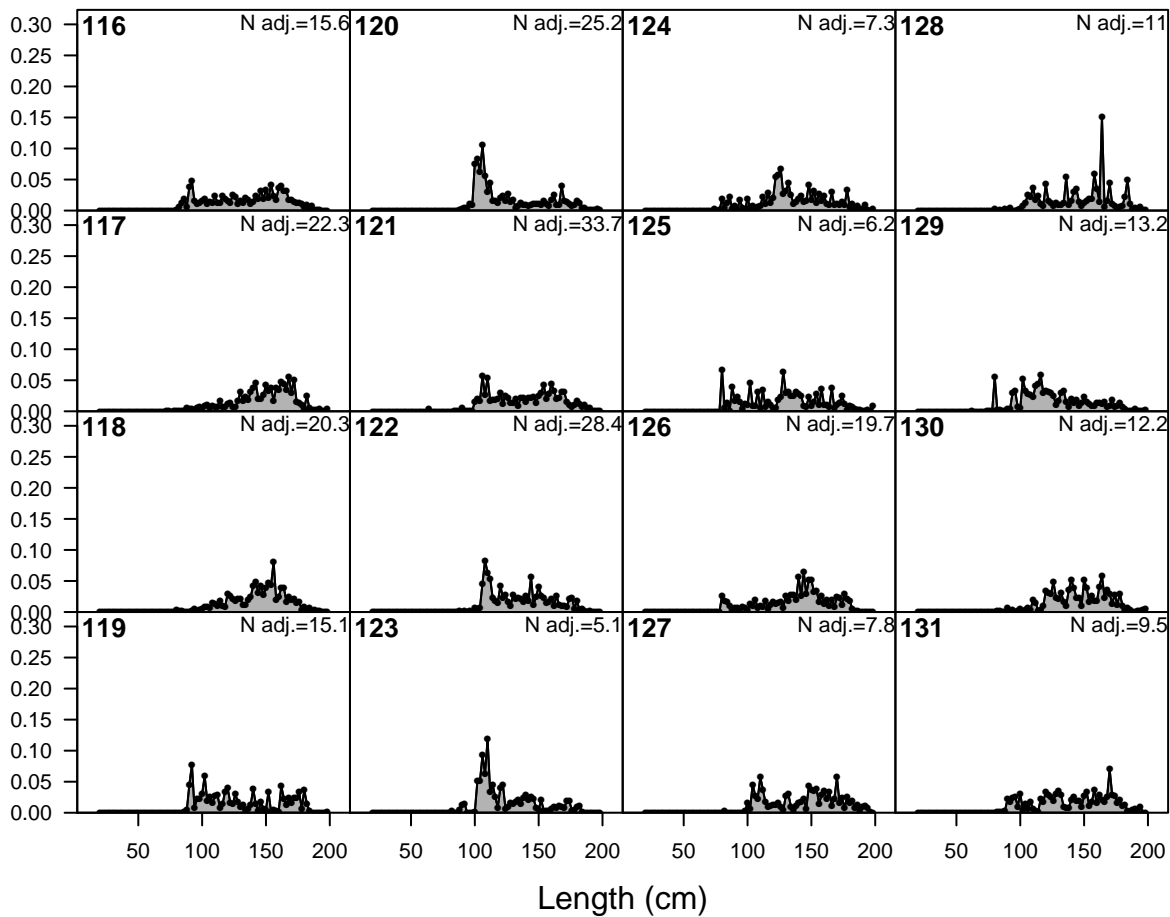
Proportion



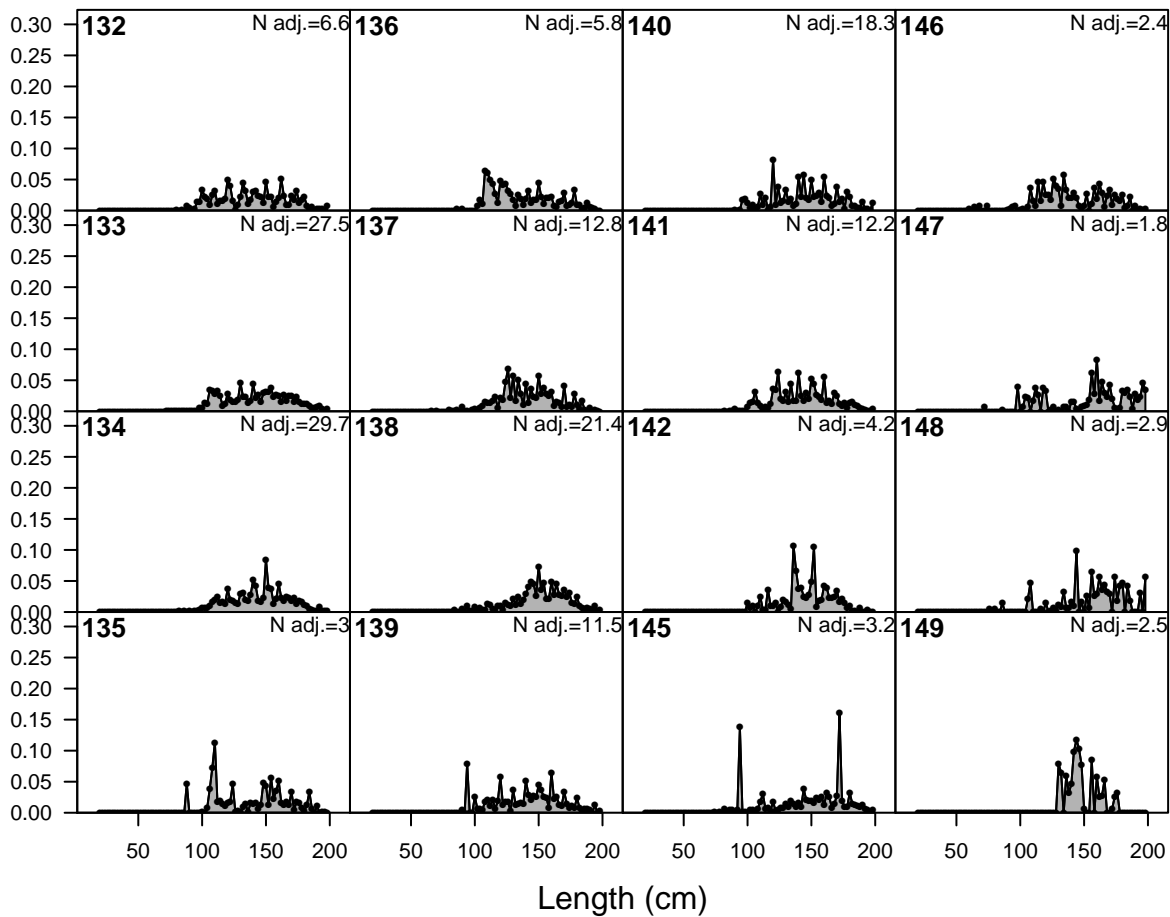
Proportion



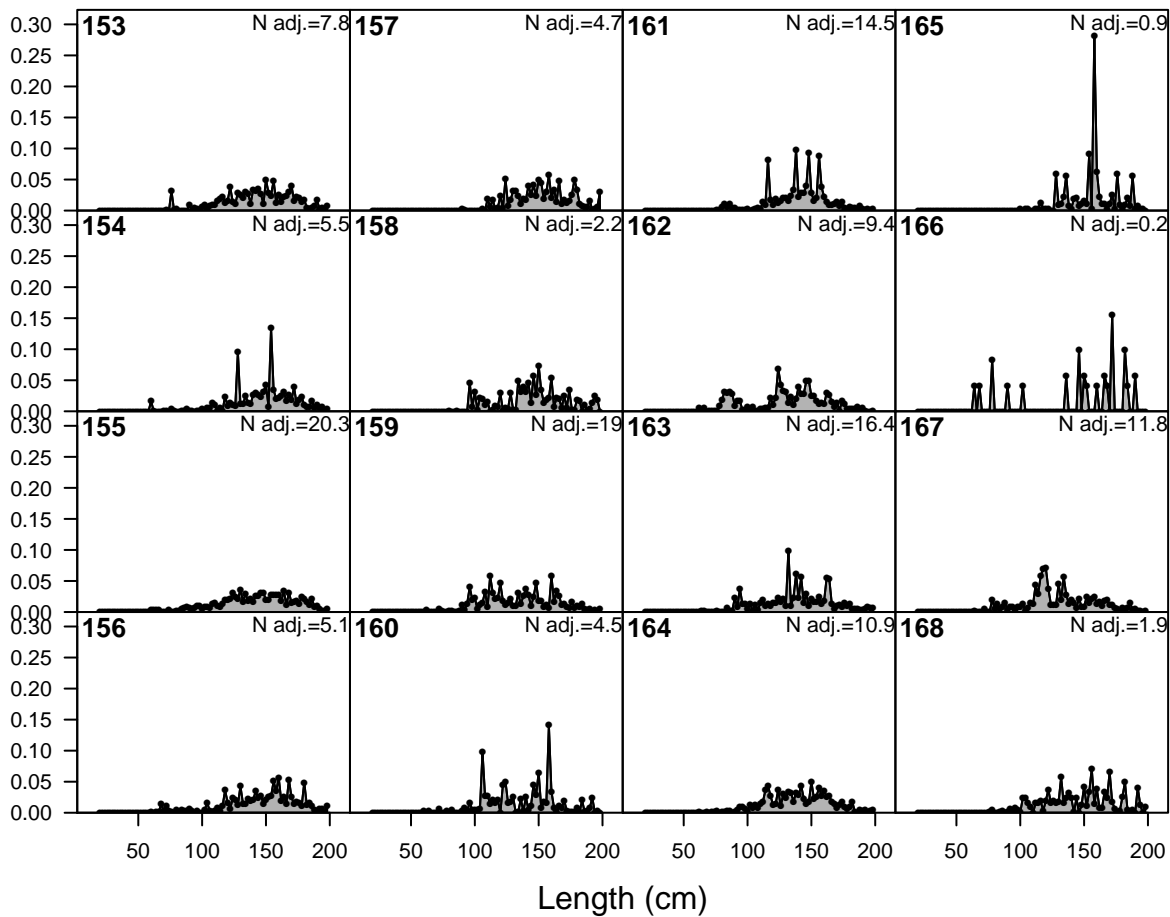
Proportion



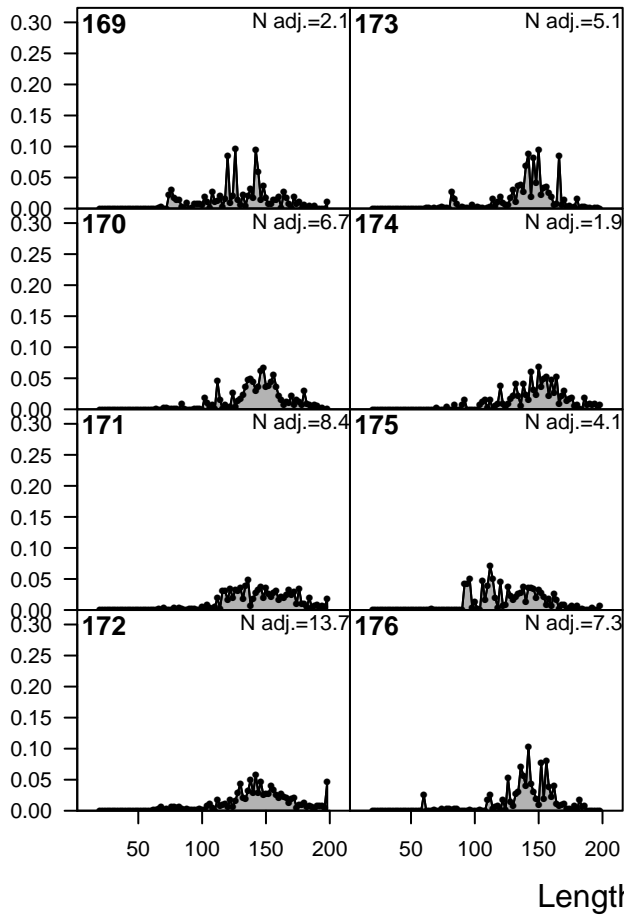
Proportion

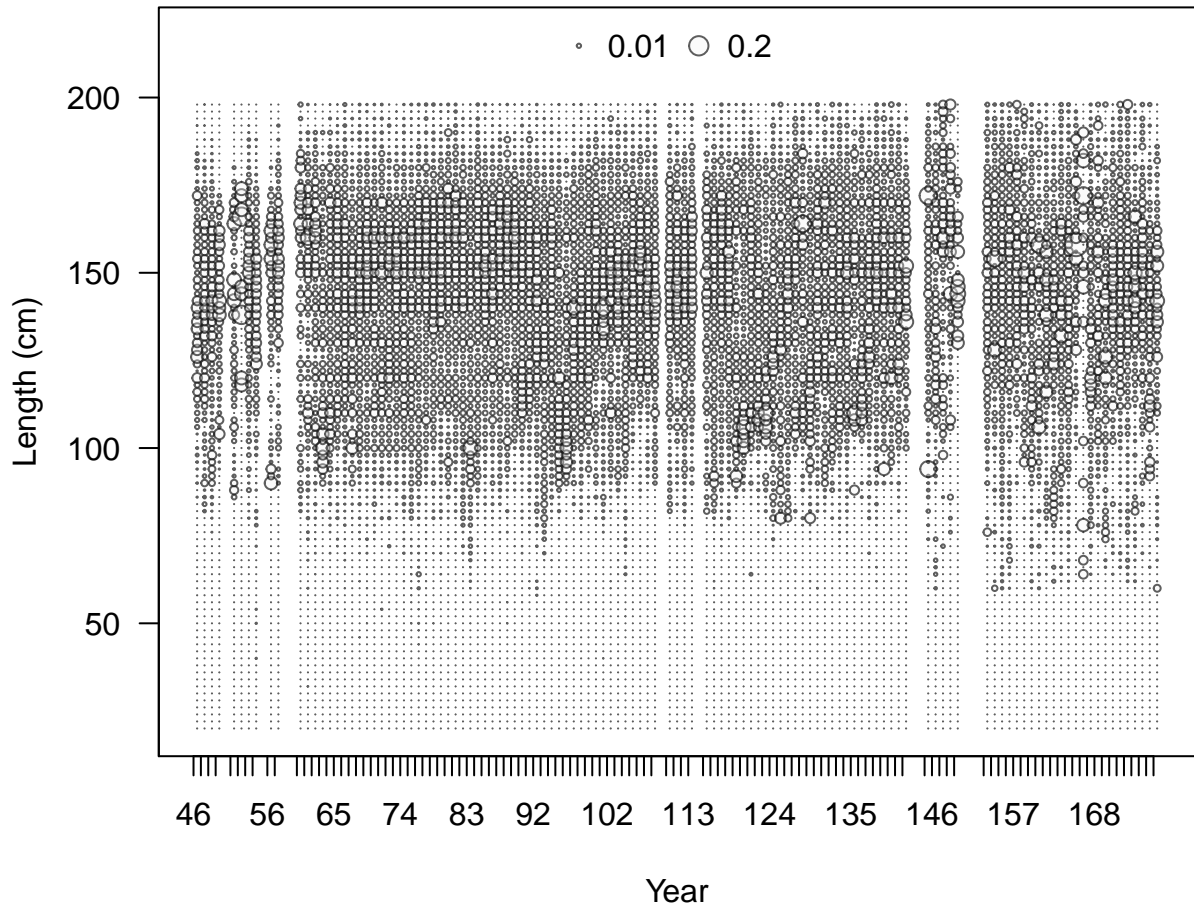


Proportion

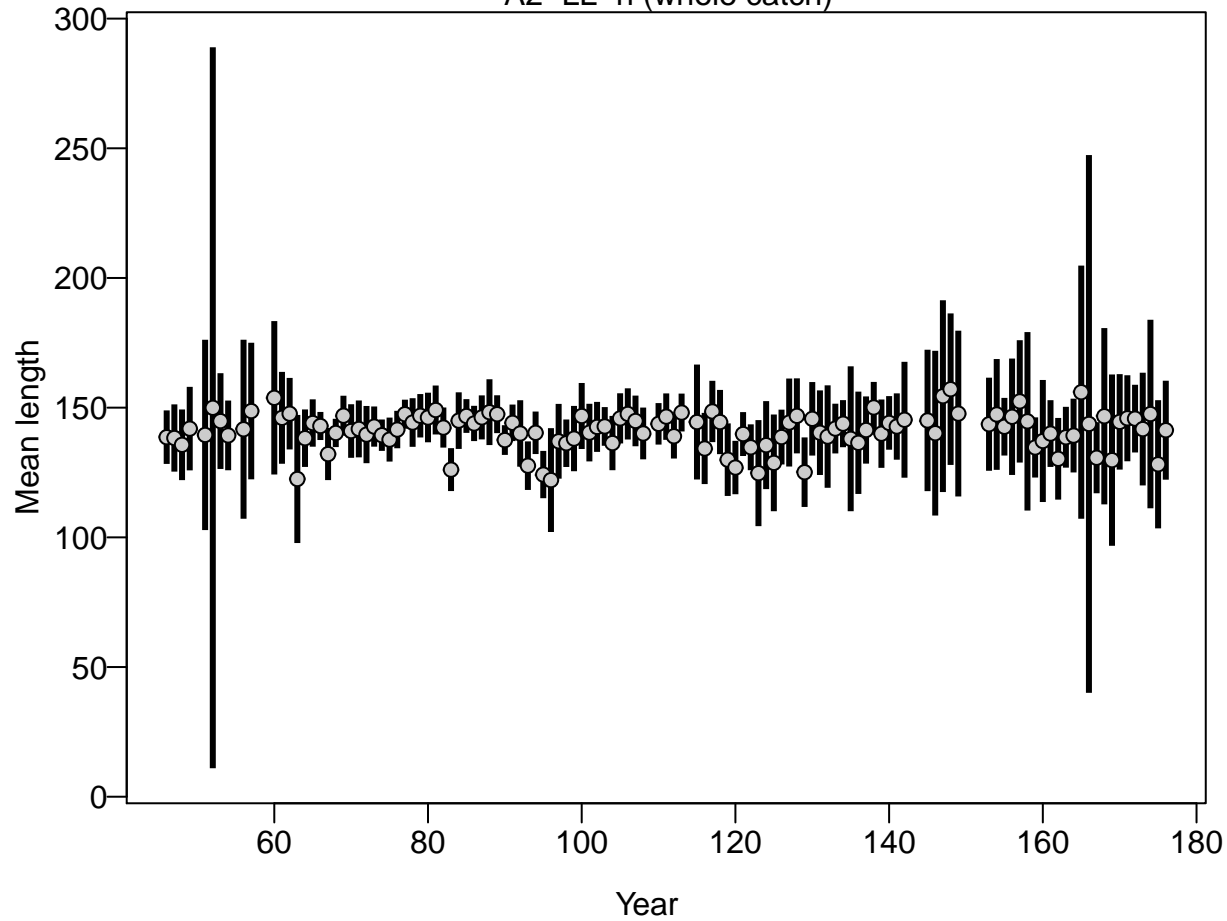


Proportion



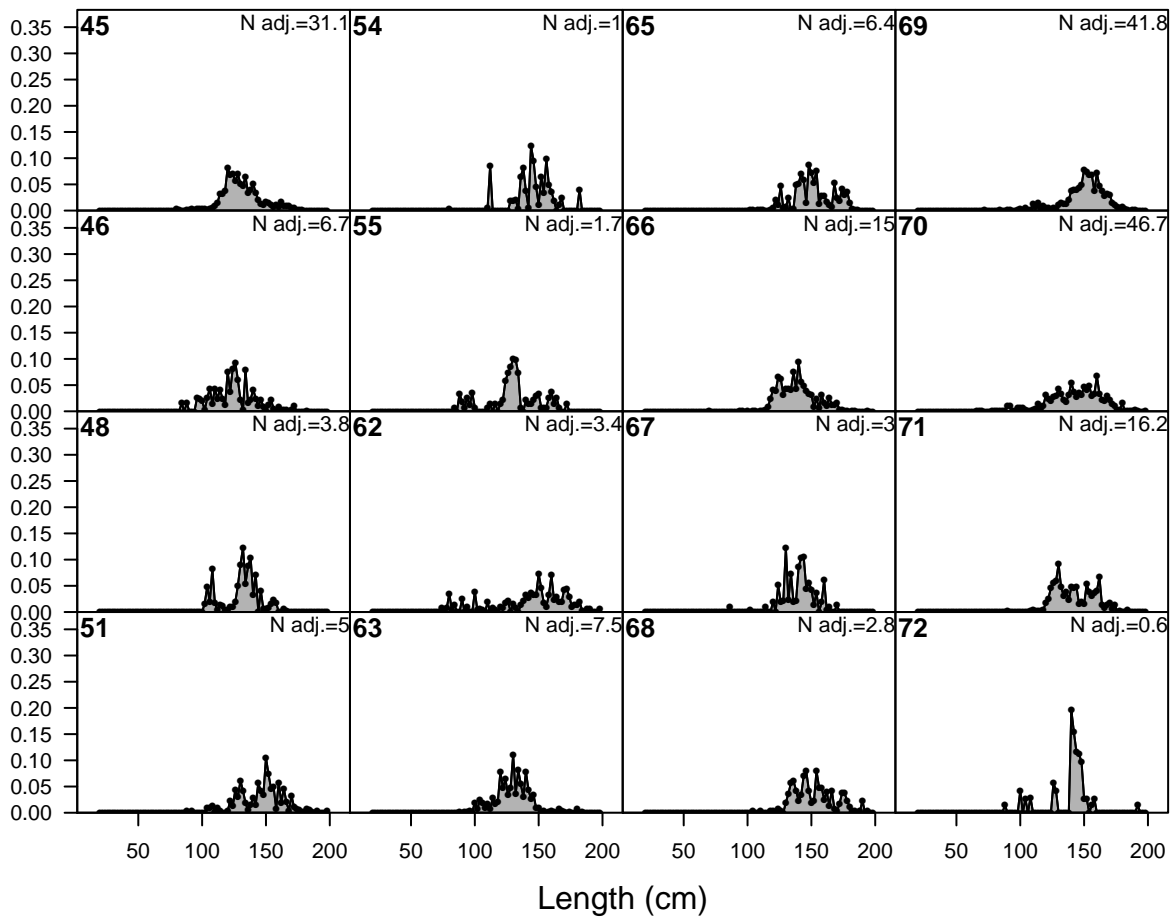


A2-LL-n (whole catch)

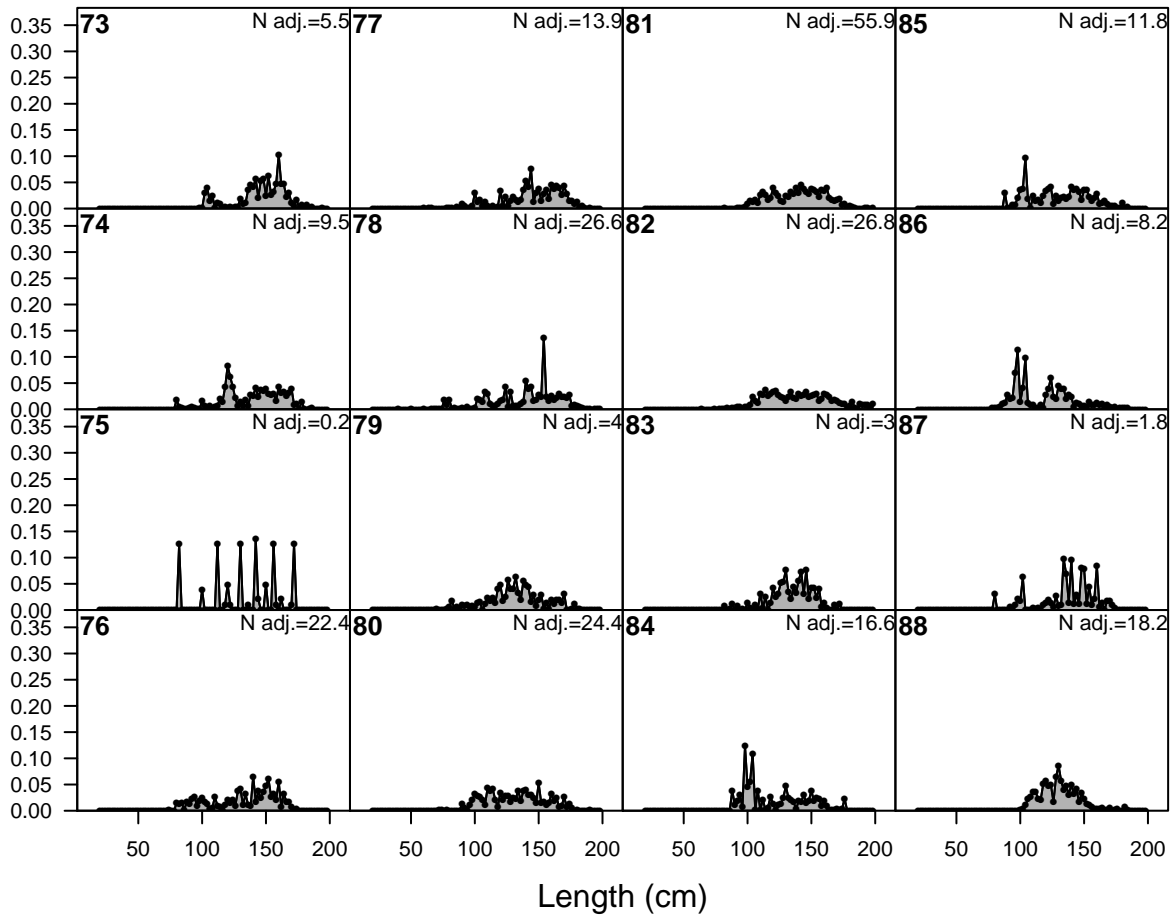




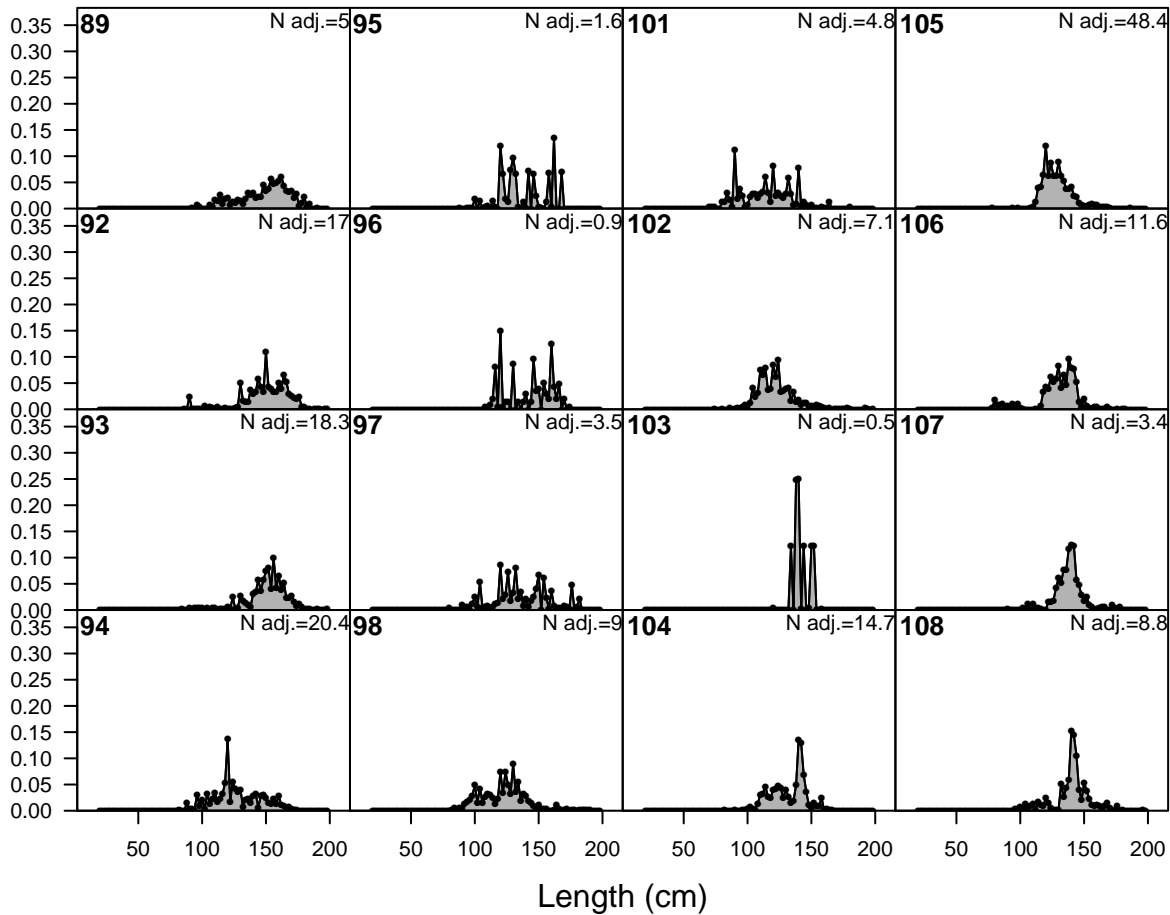
Proportion



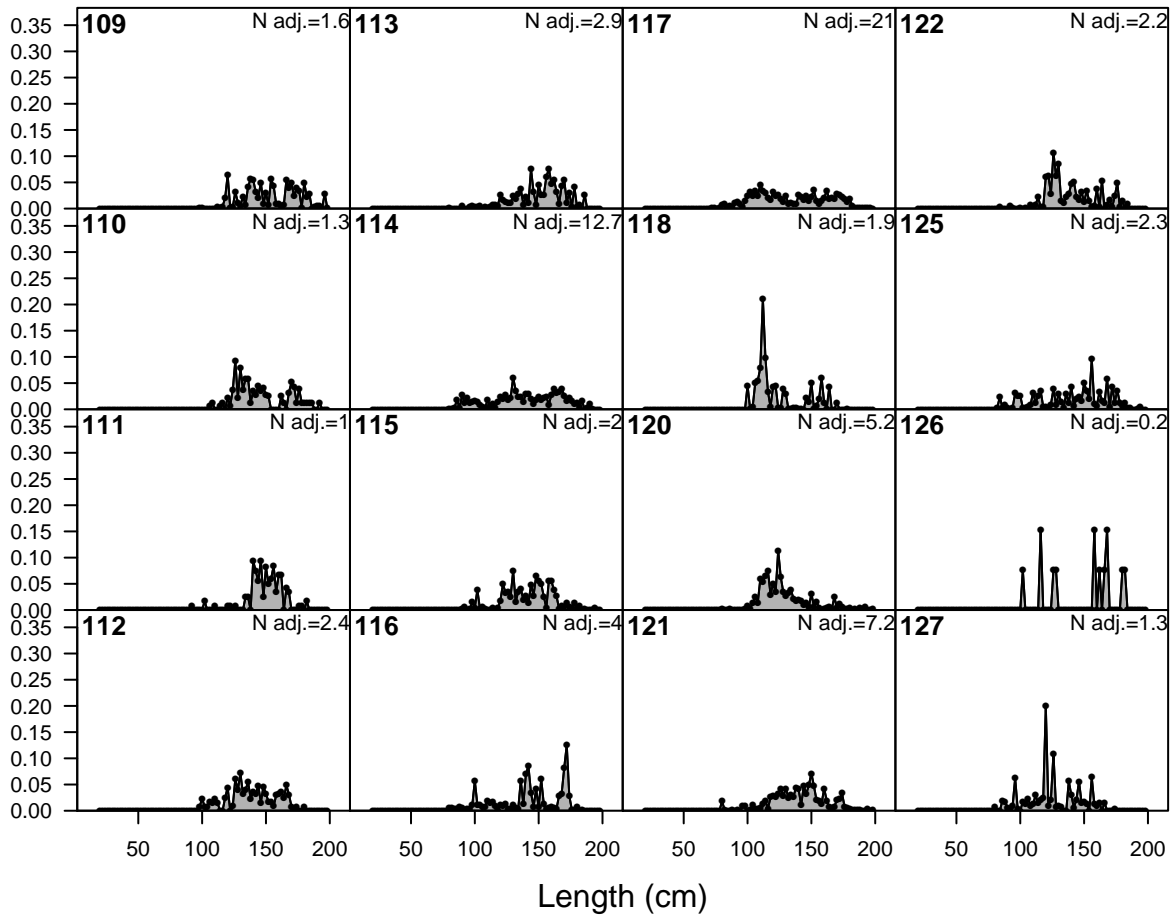
Proportion



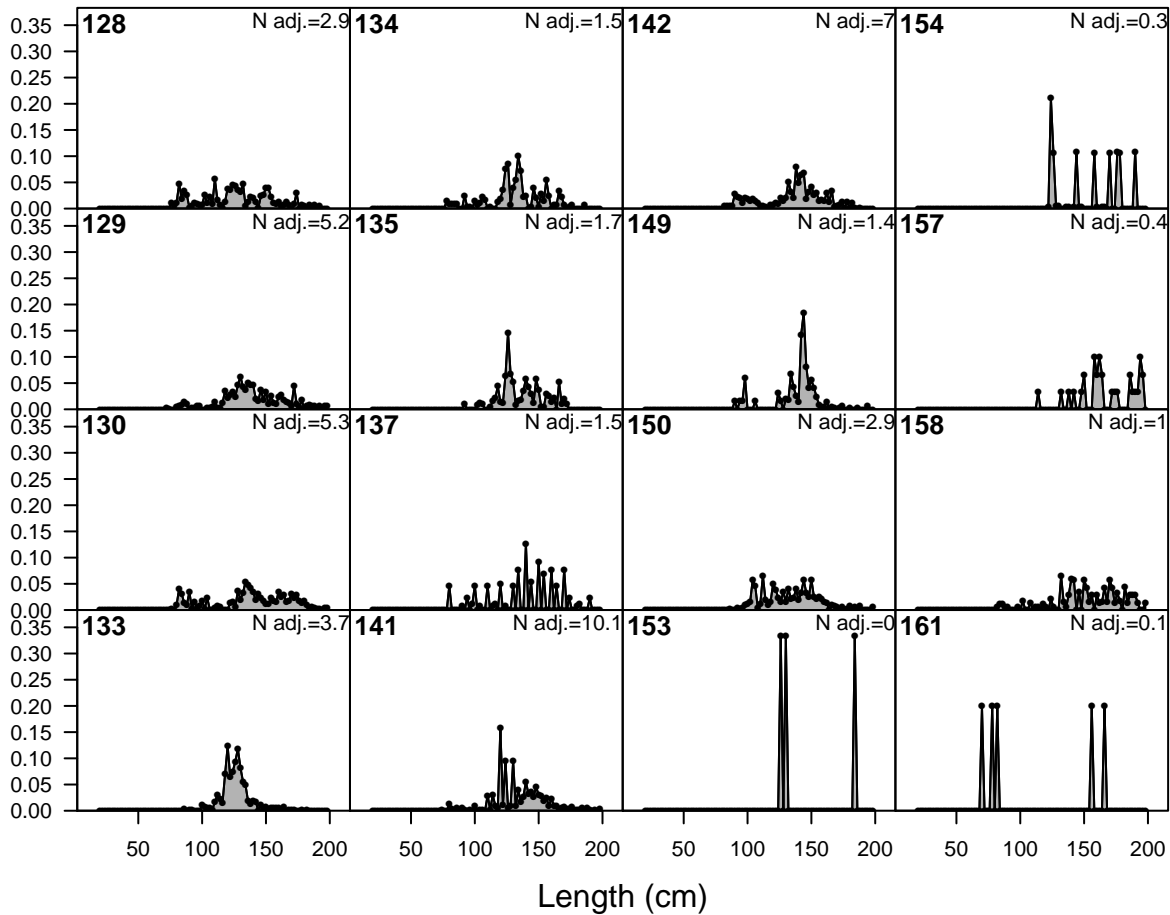
Proportion



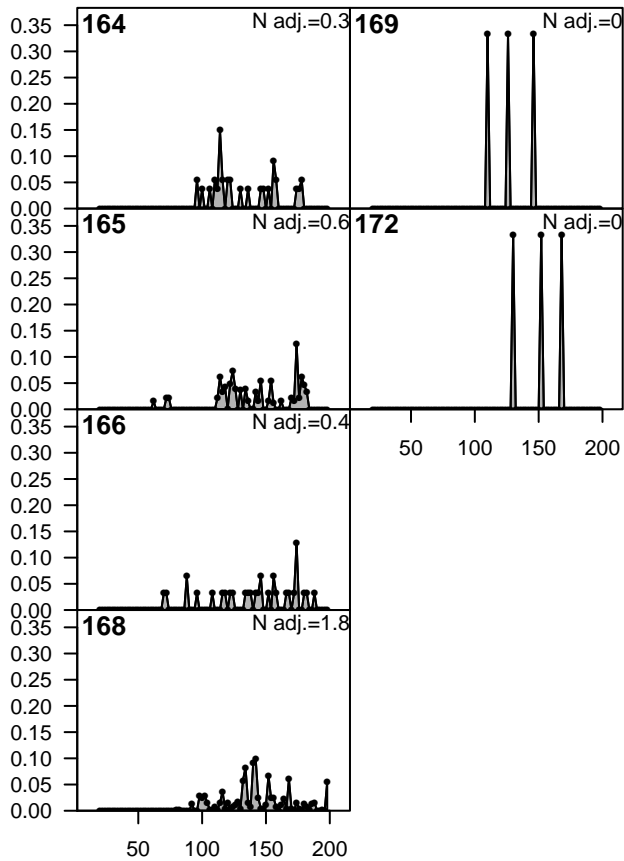
Proportion



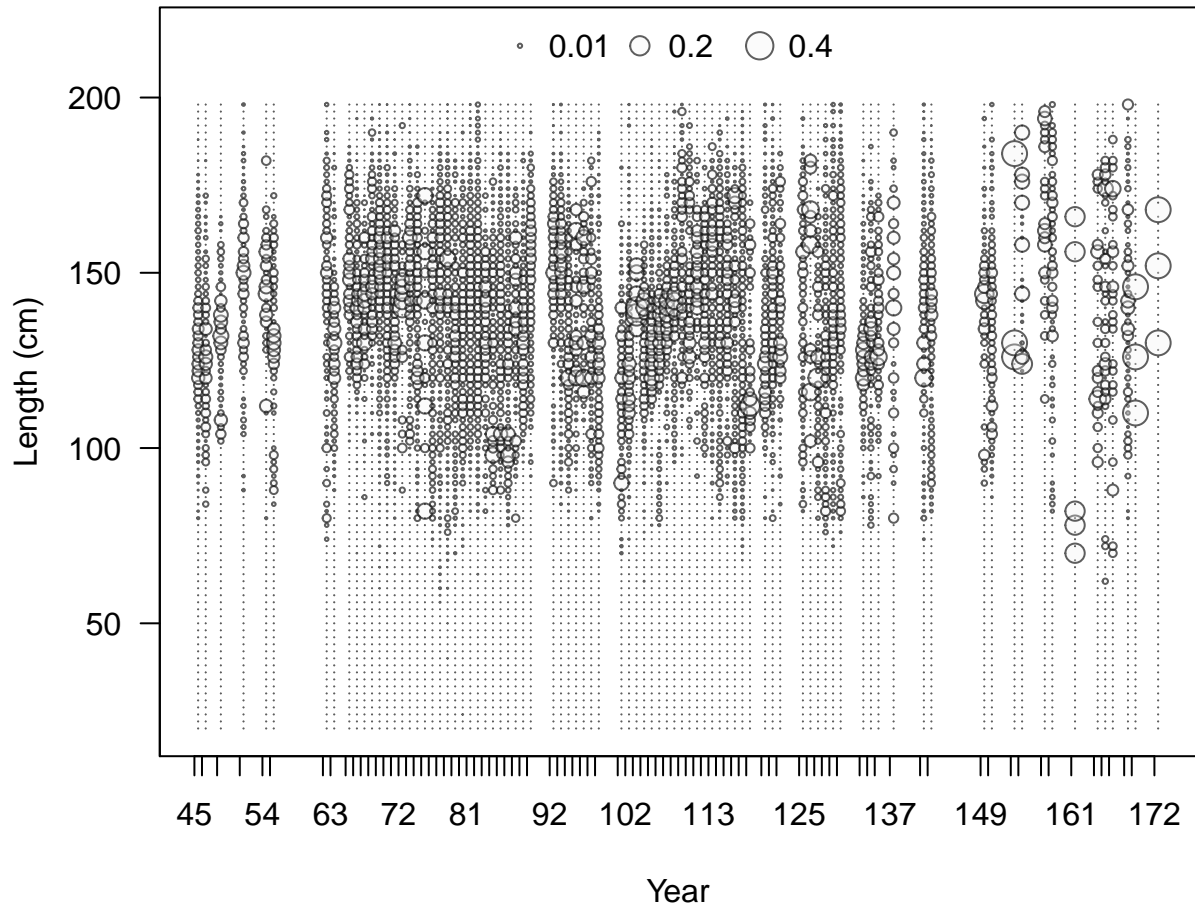
Proportion



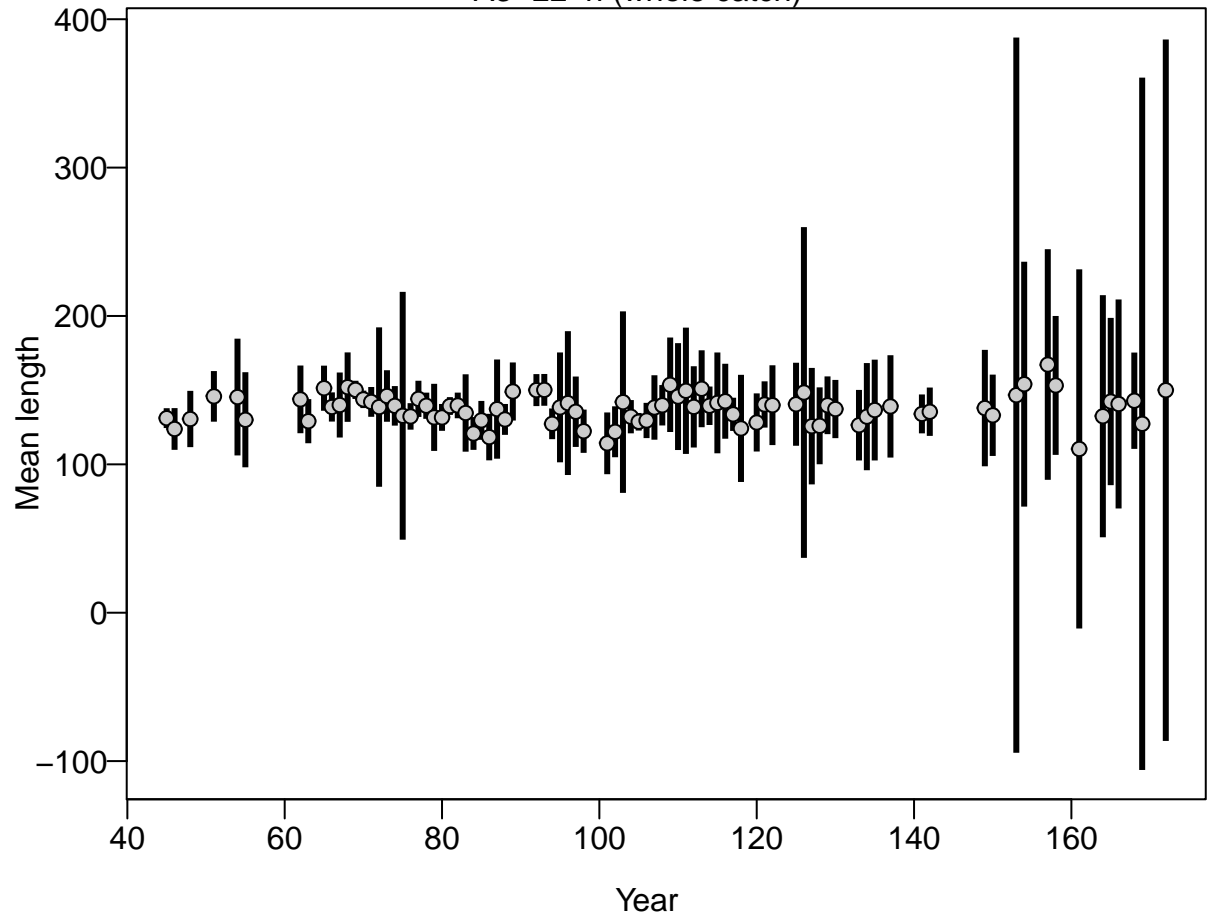
Proportion



Length (cm)

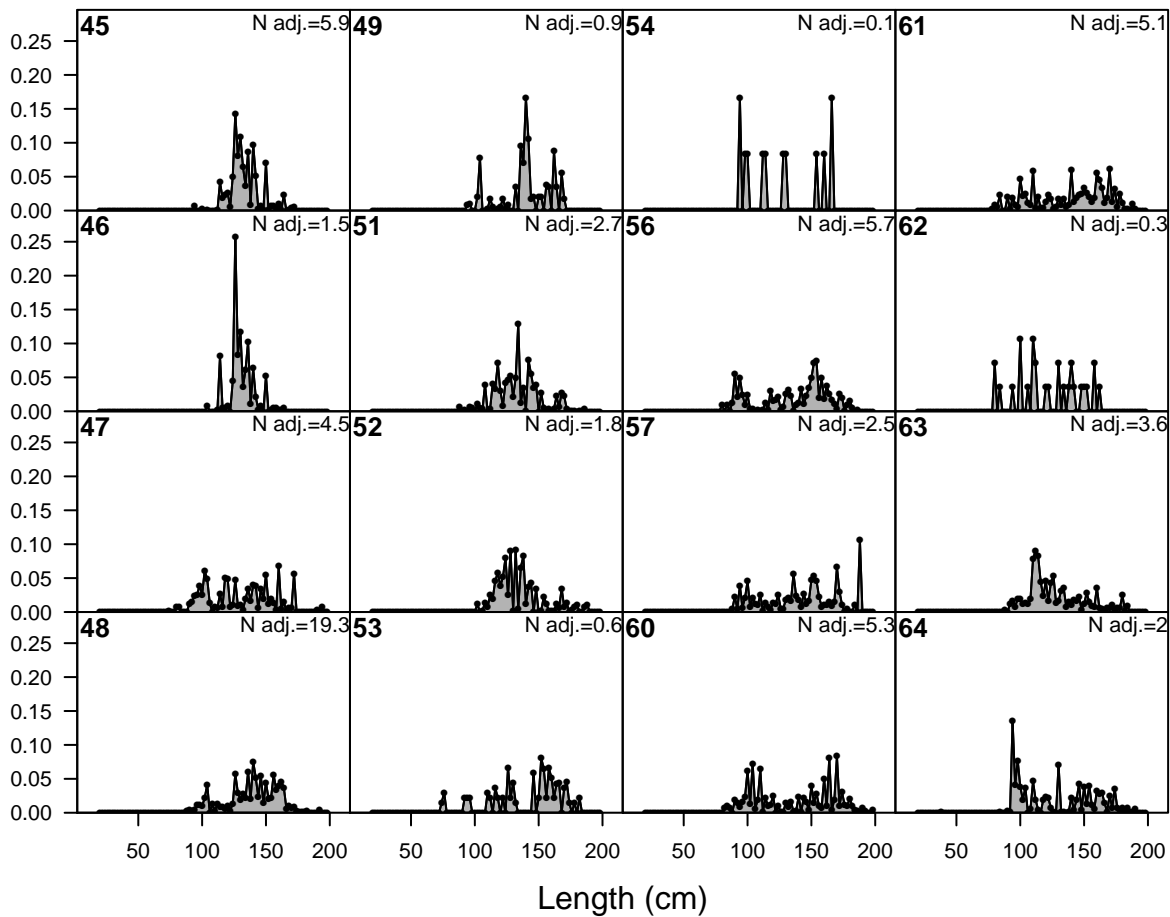


A3-LL-n (whole catch)

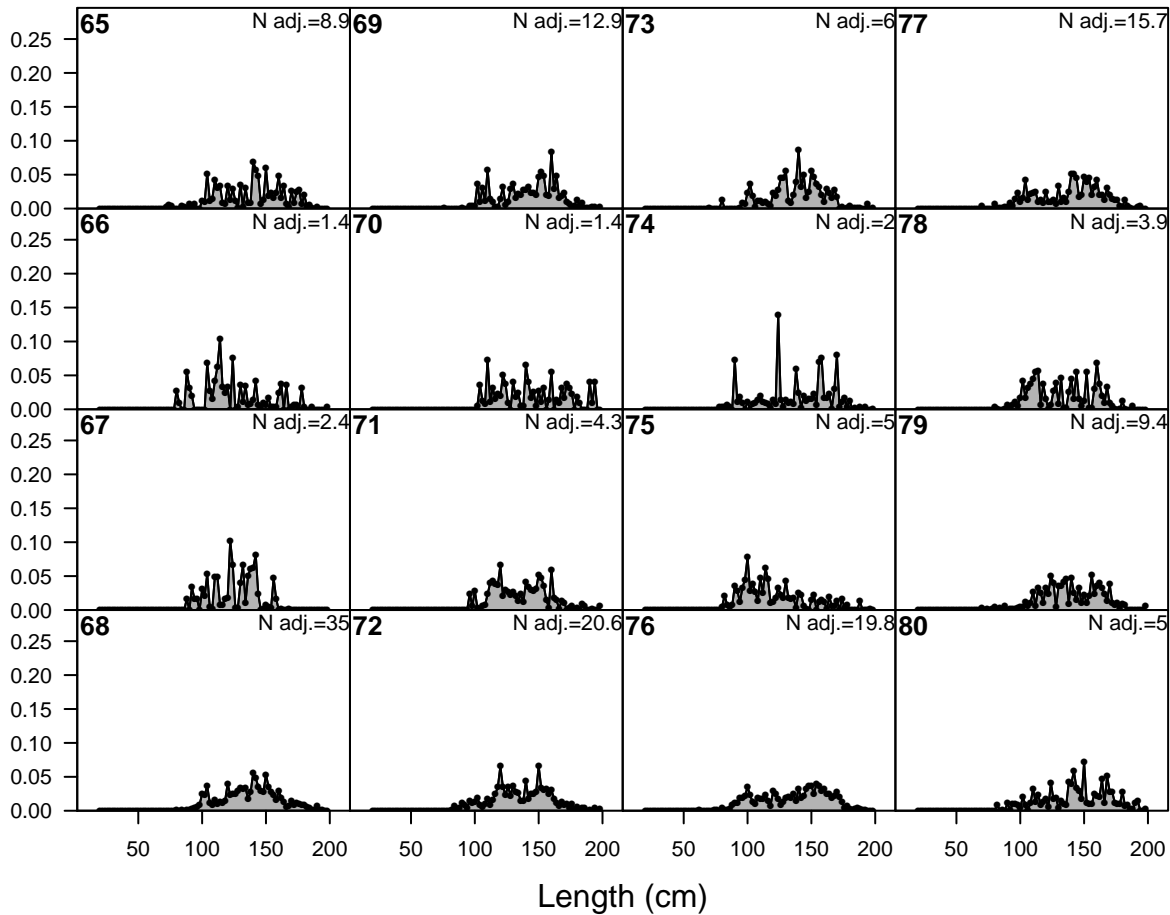




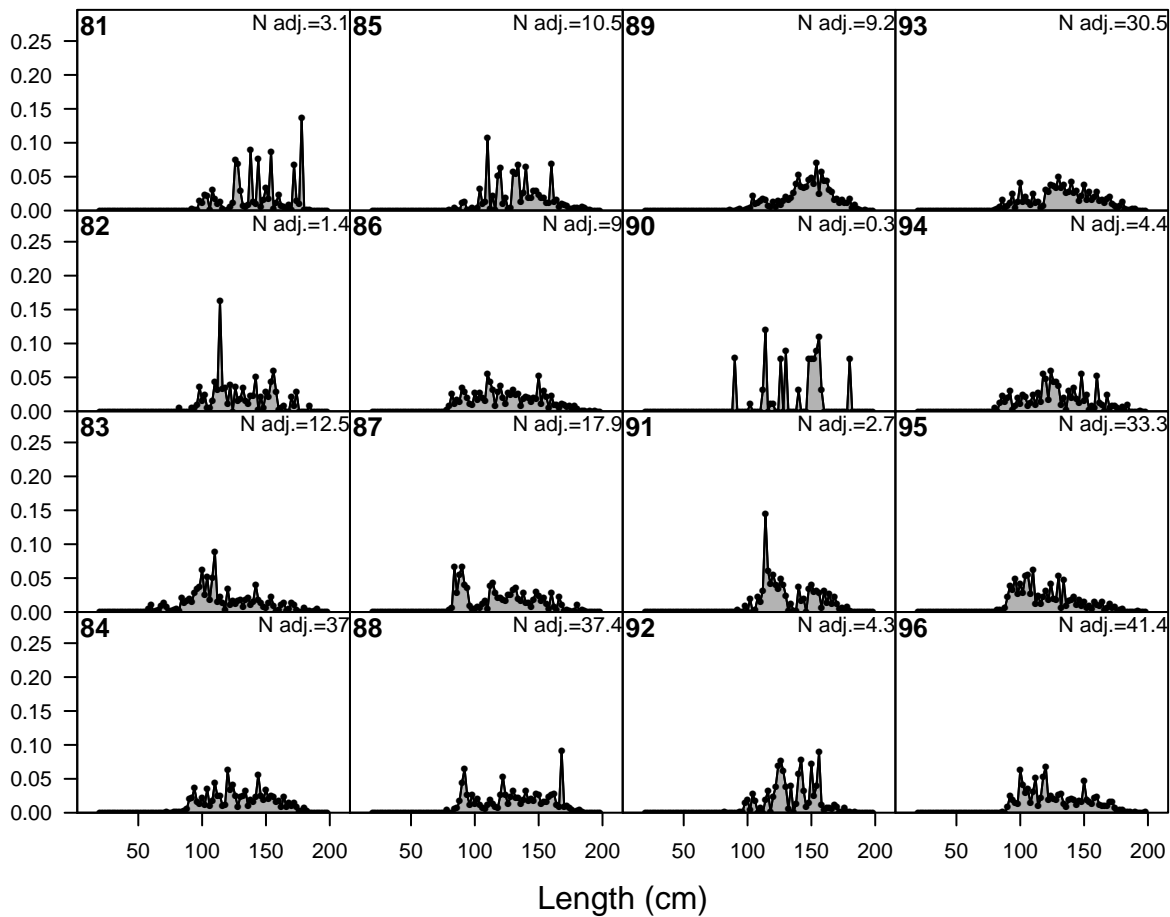
Proportion



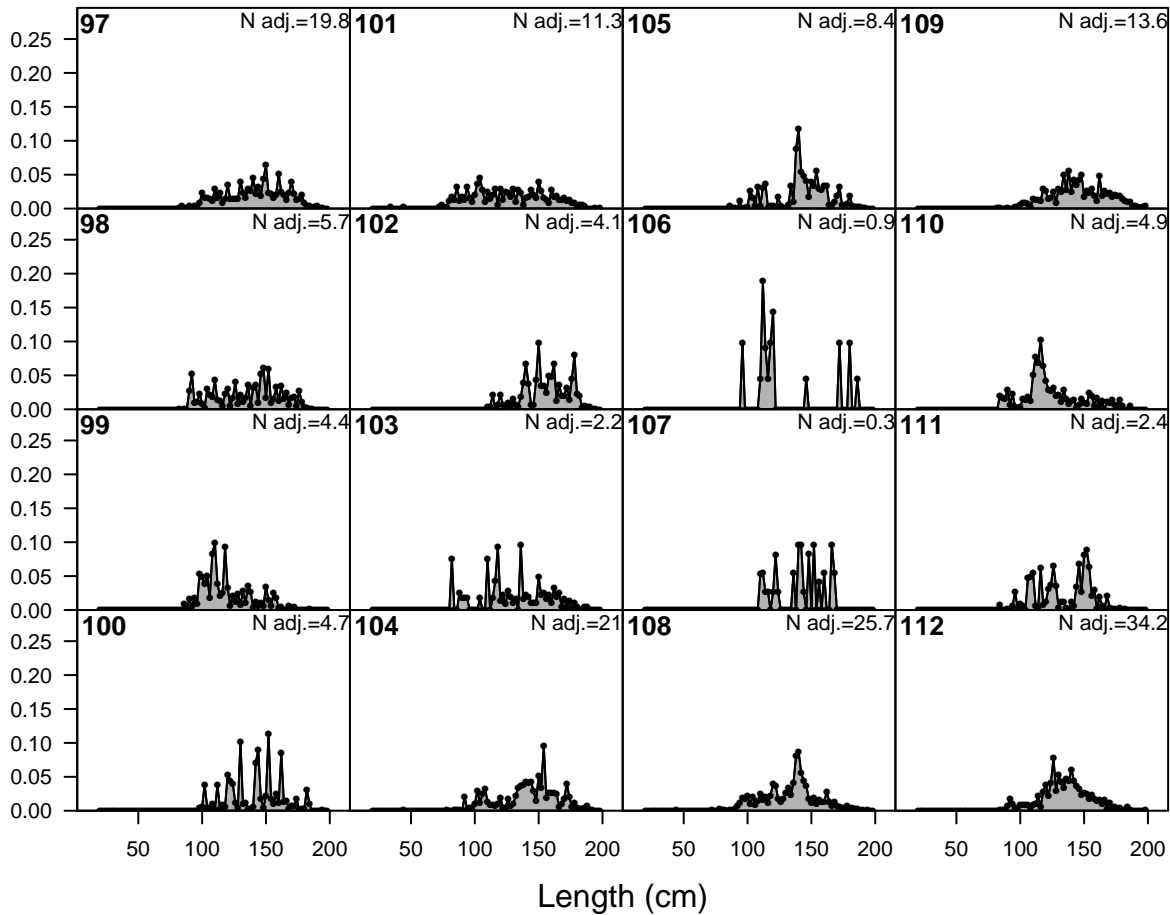
Proportion



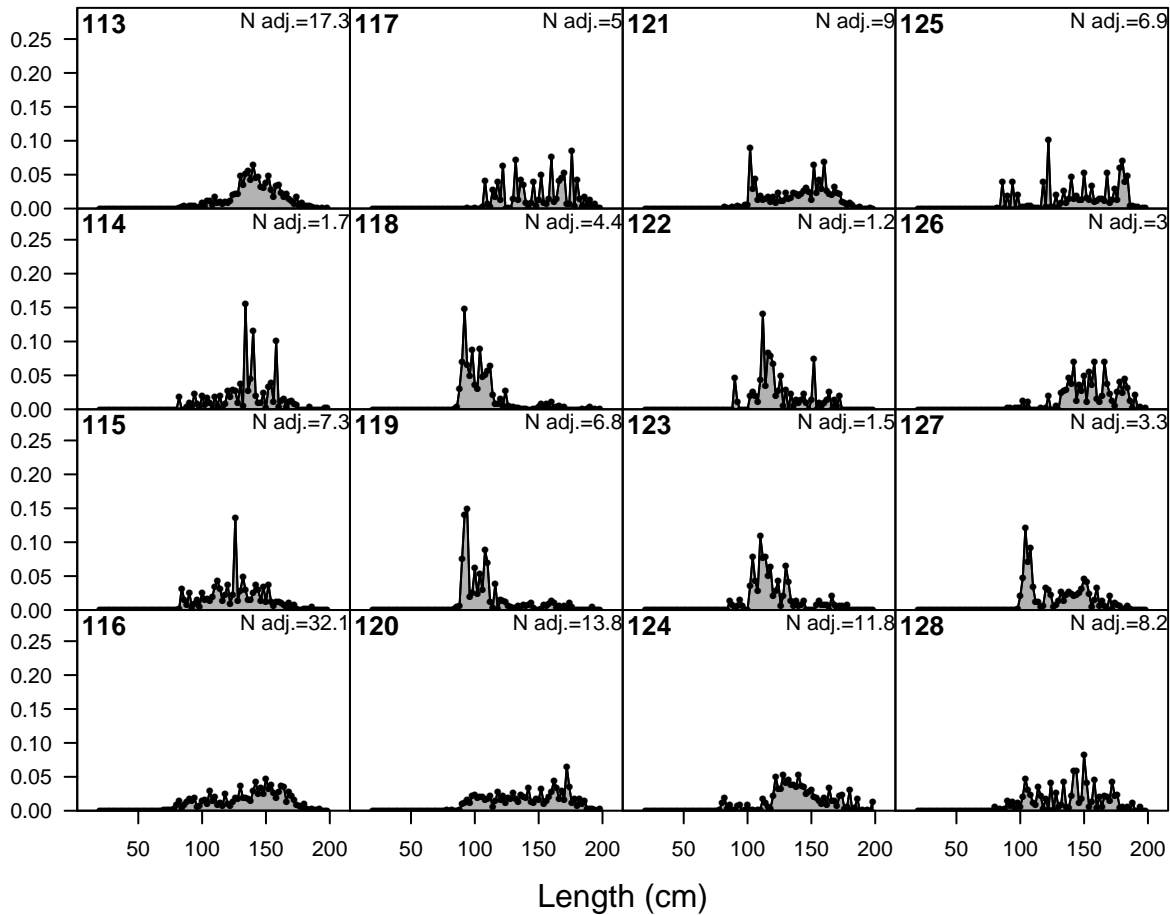
Proportion



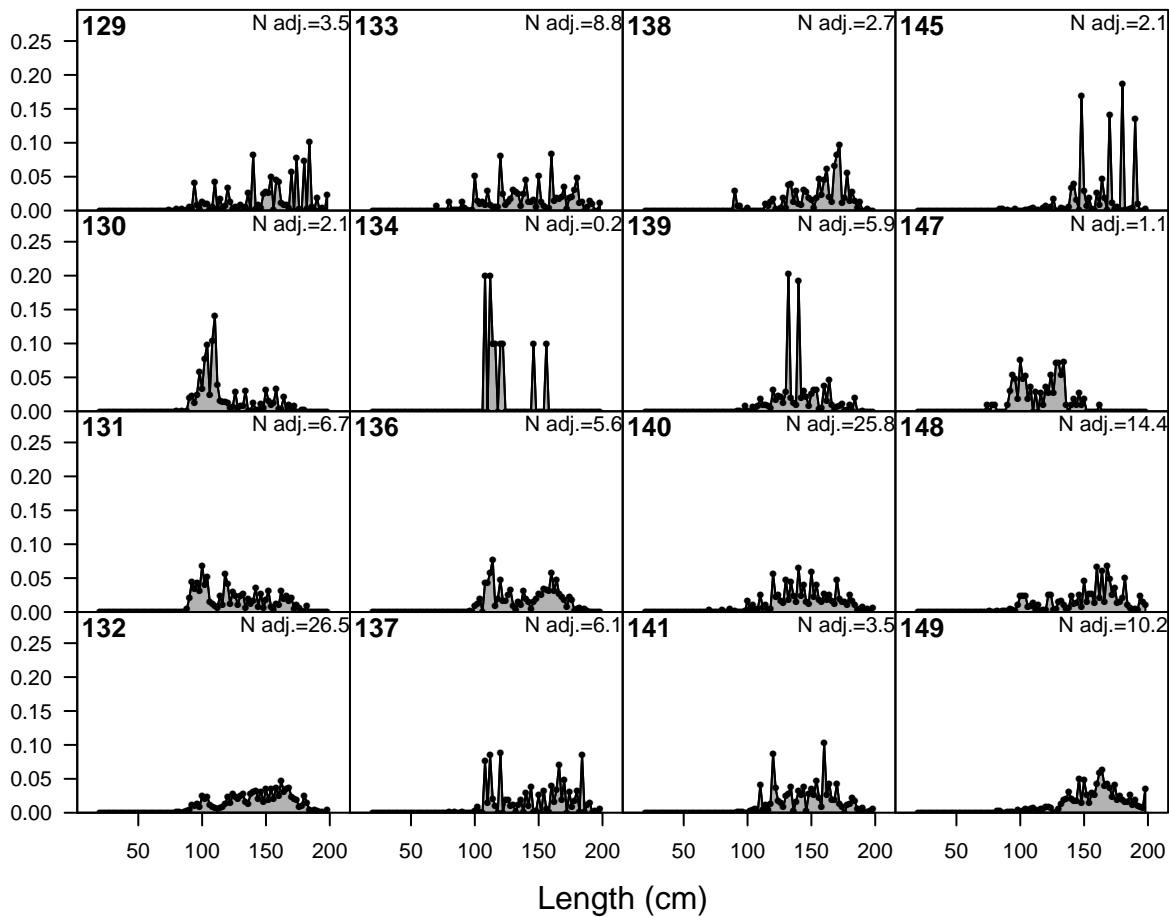
Proportion



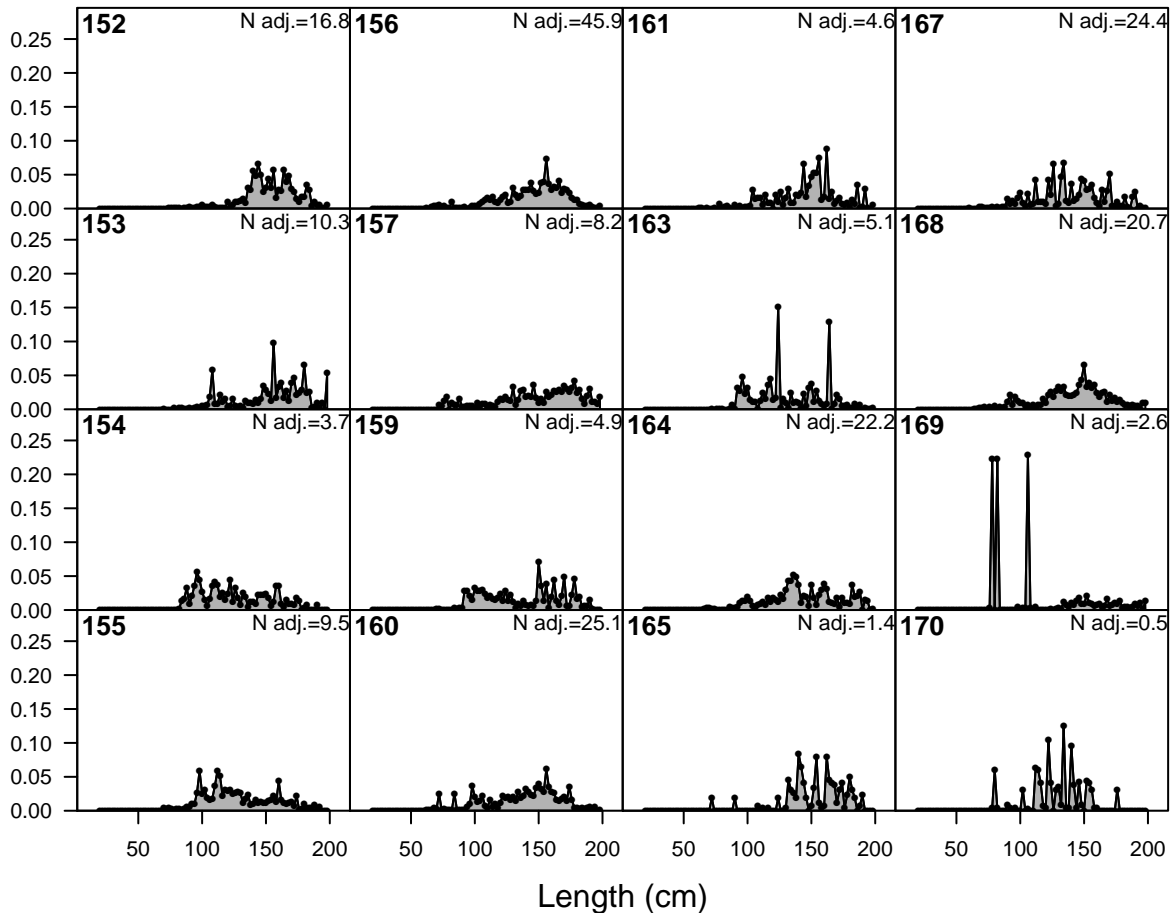
Proportion



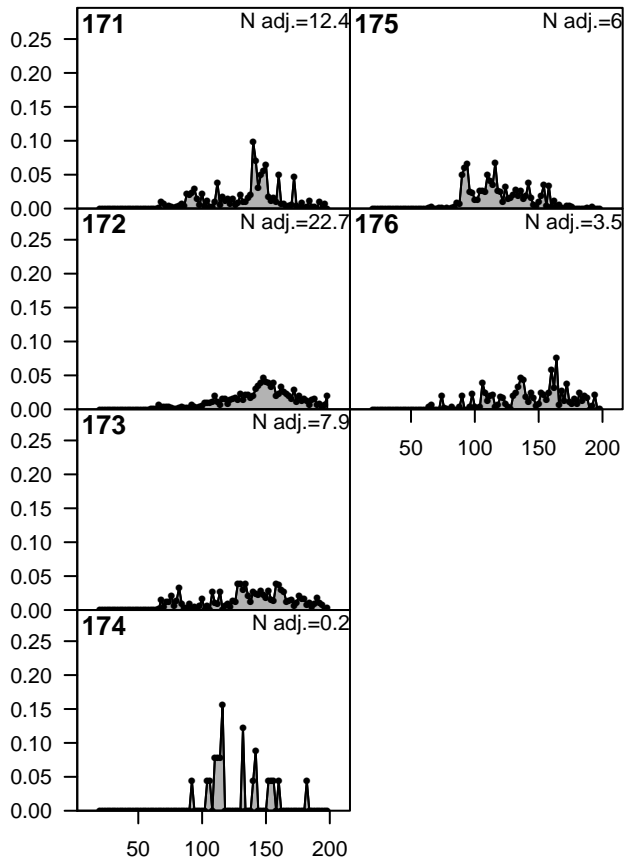
Proportion



Proportion

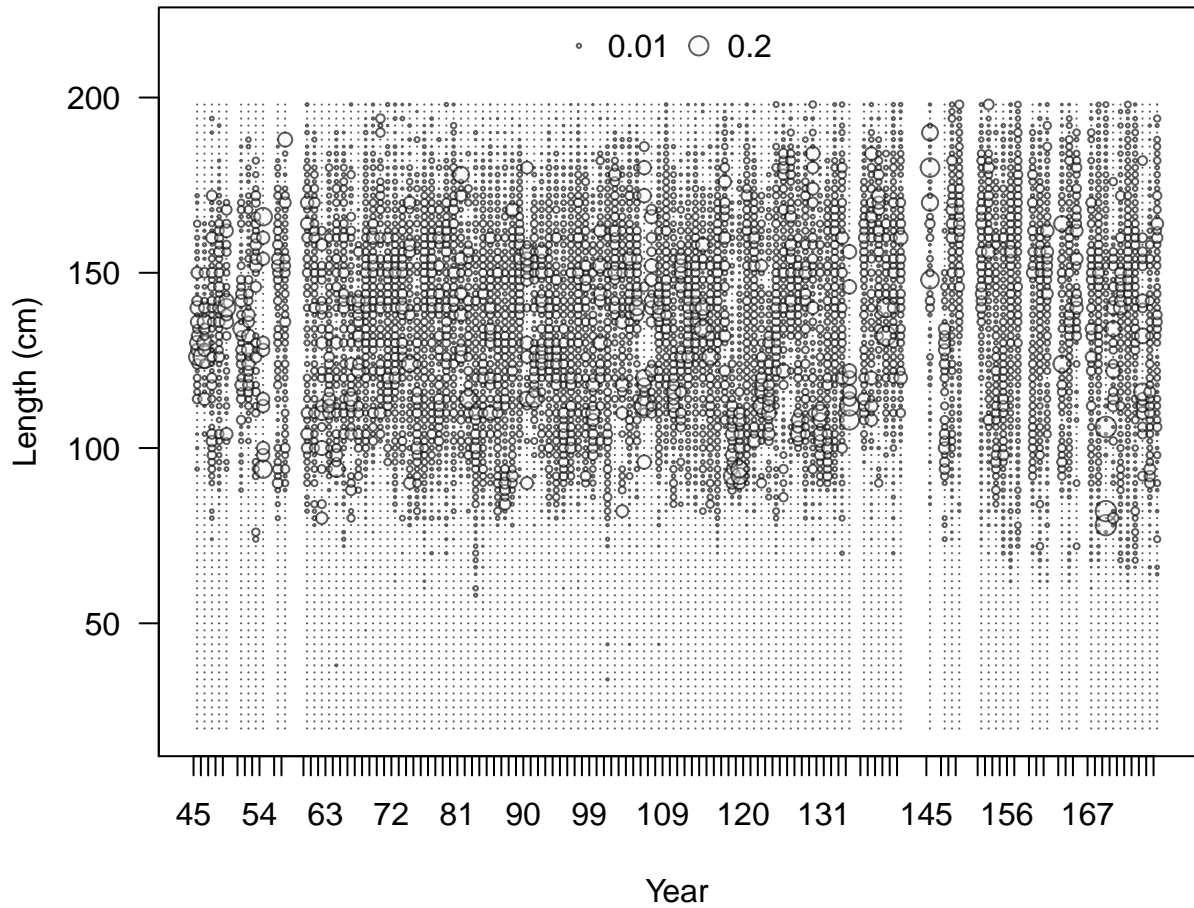


Proportion

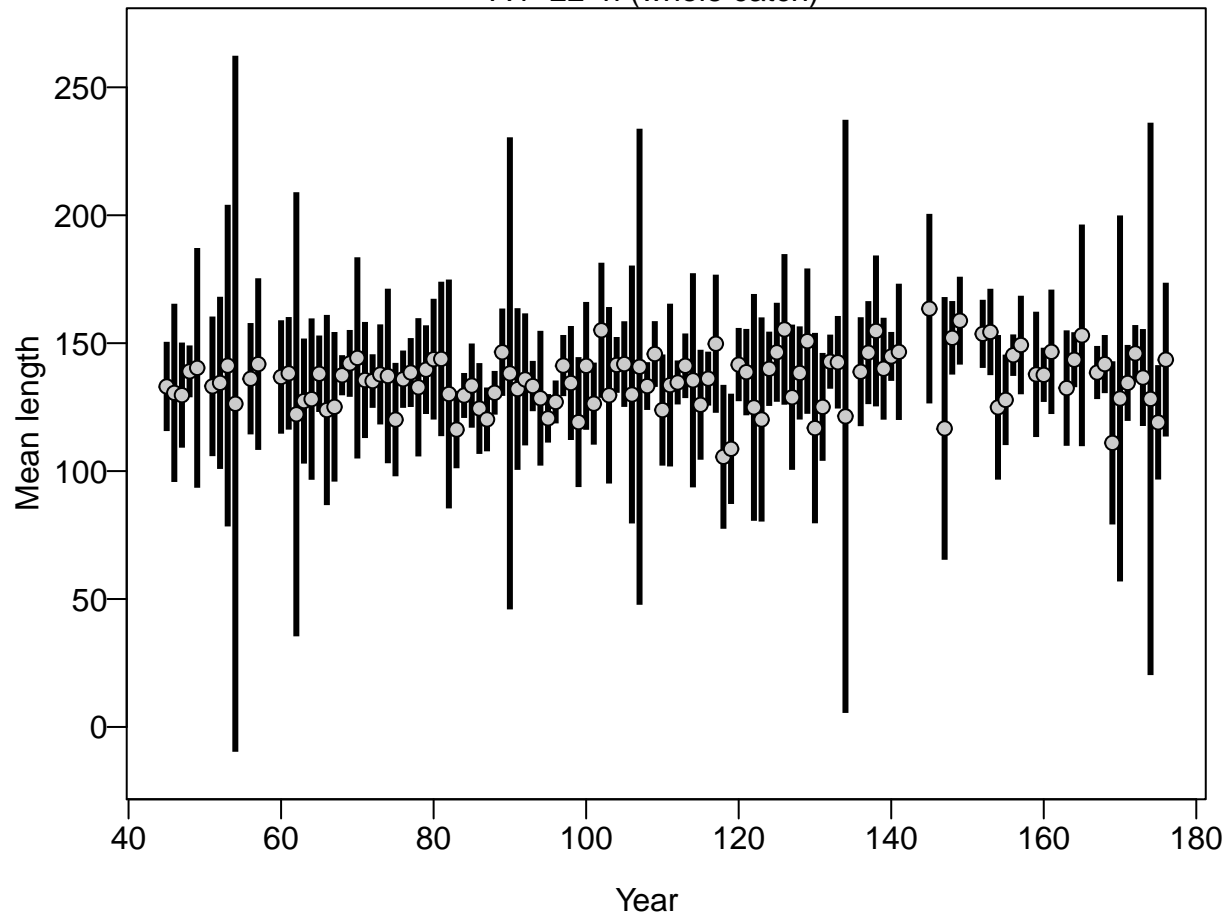


Length (cm)

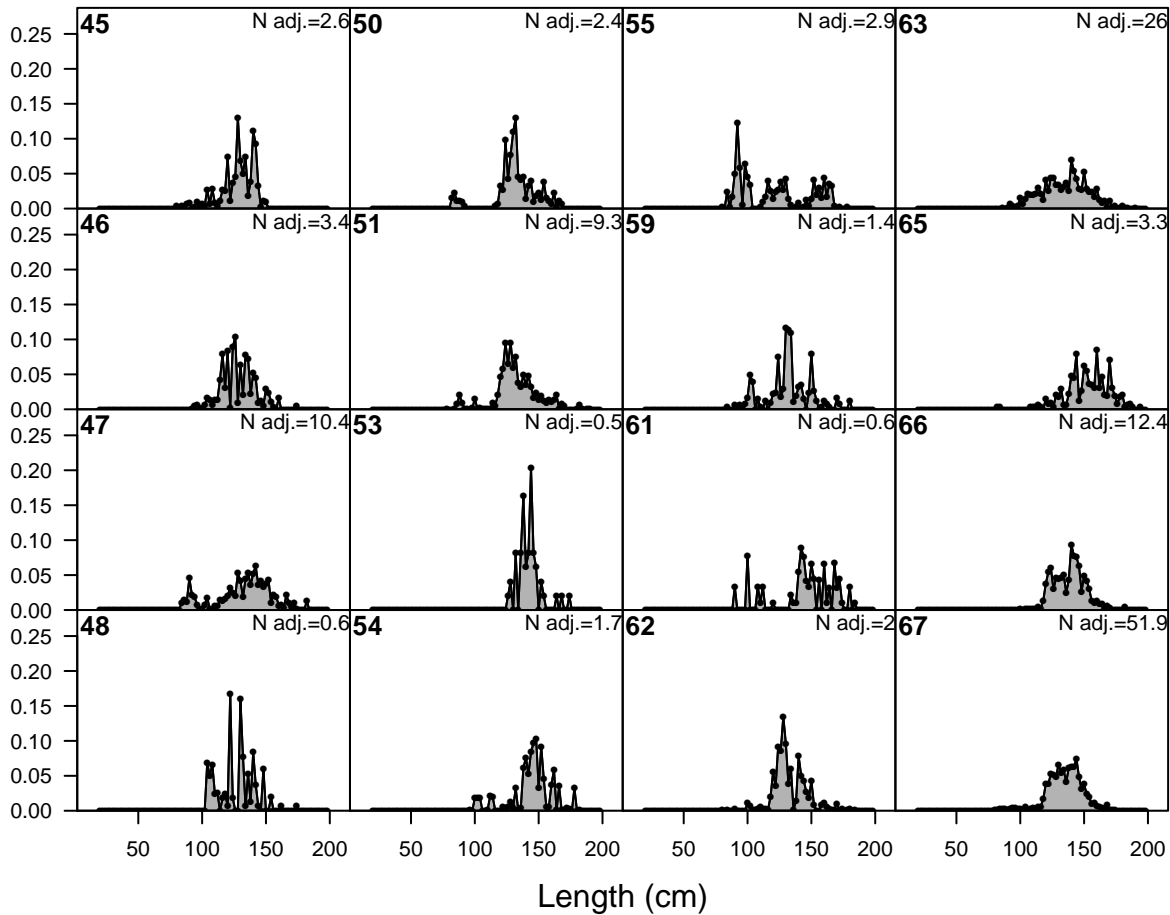




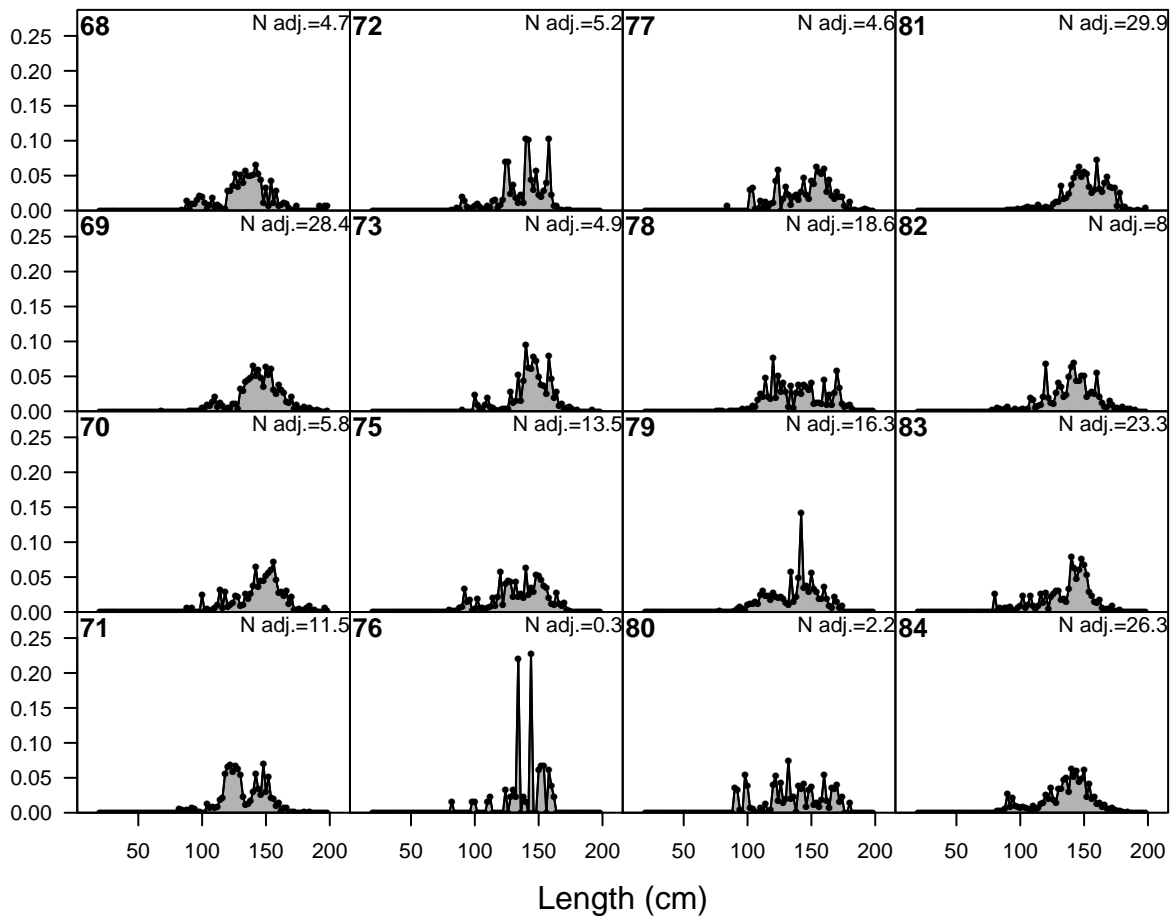
A4-LL-n (whole catch)



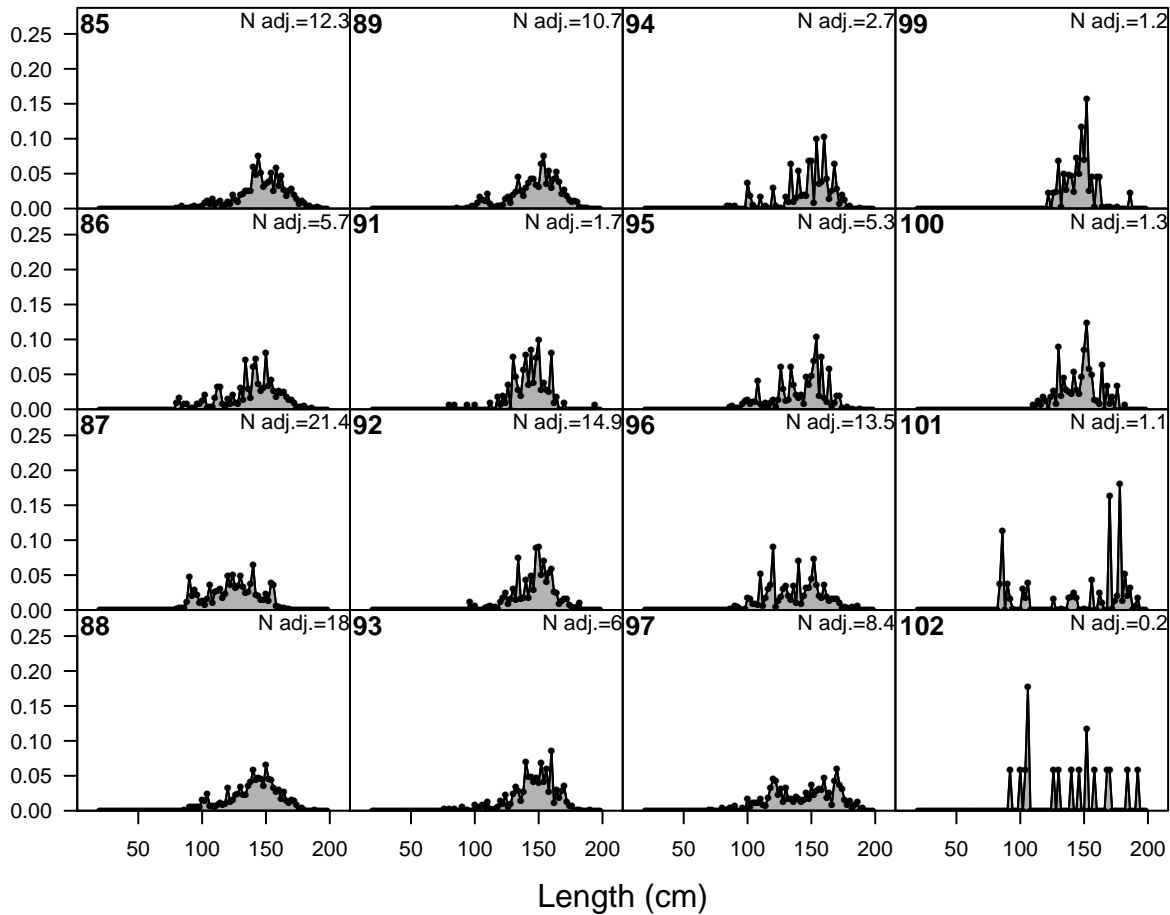
Proportion



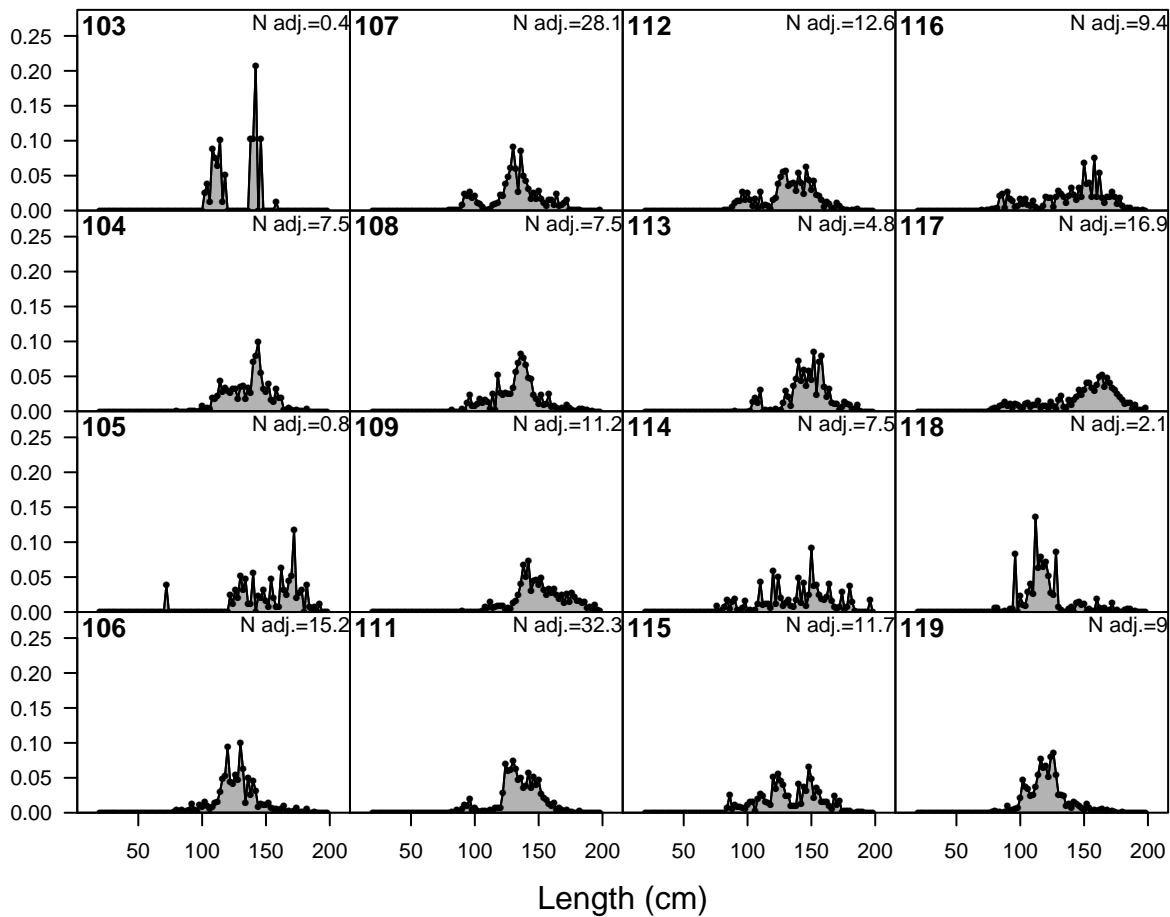
Proportion



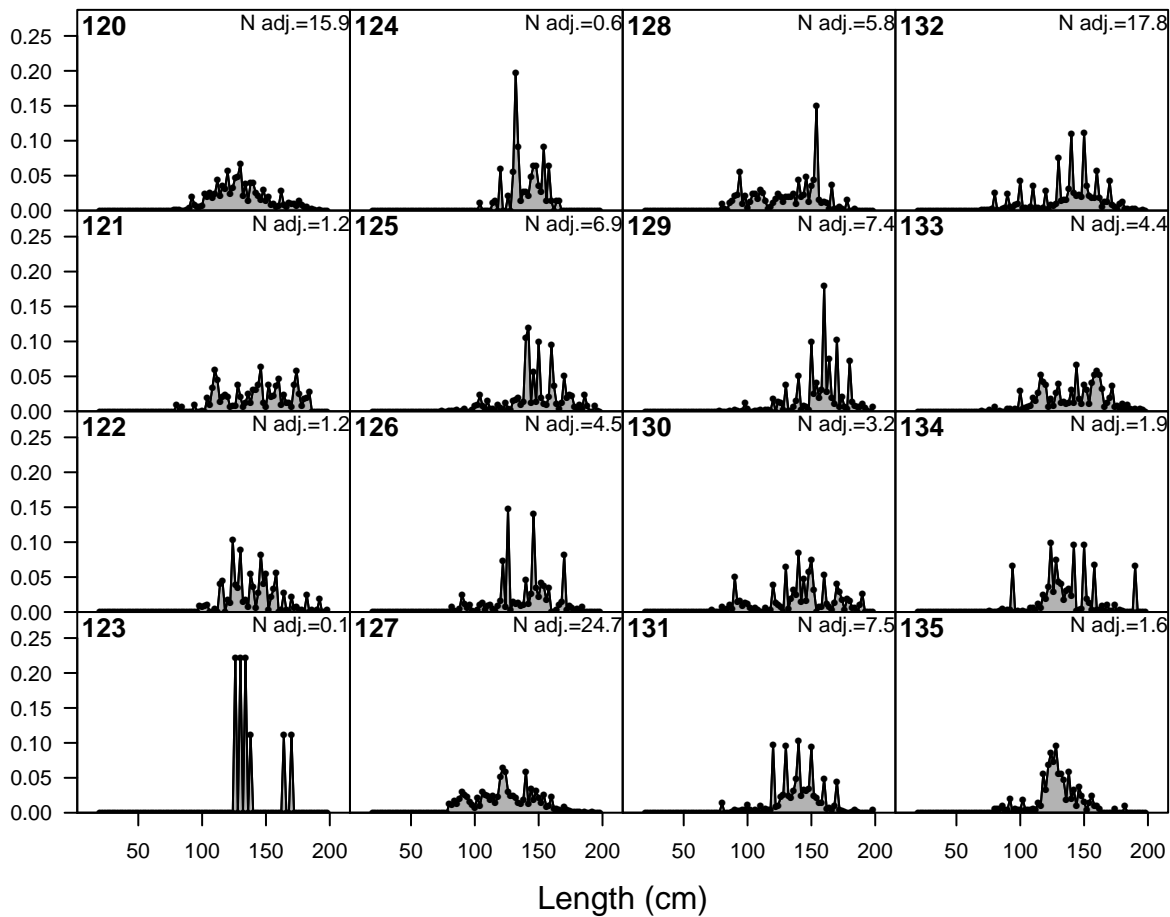
Proportion



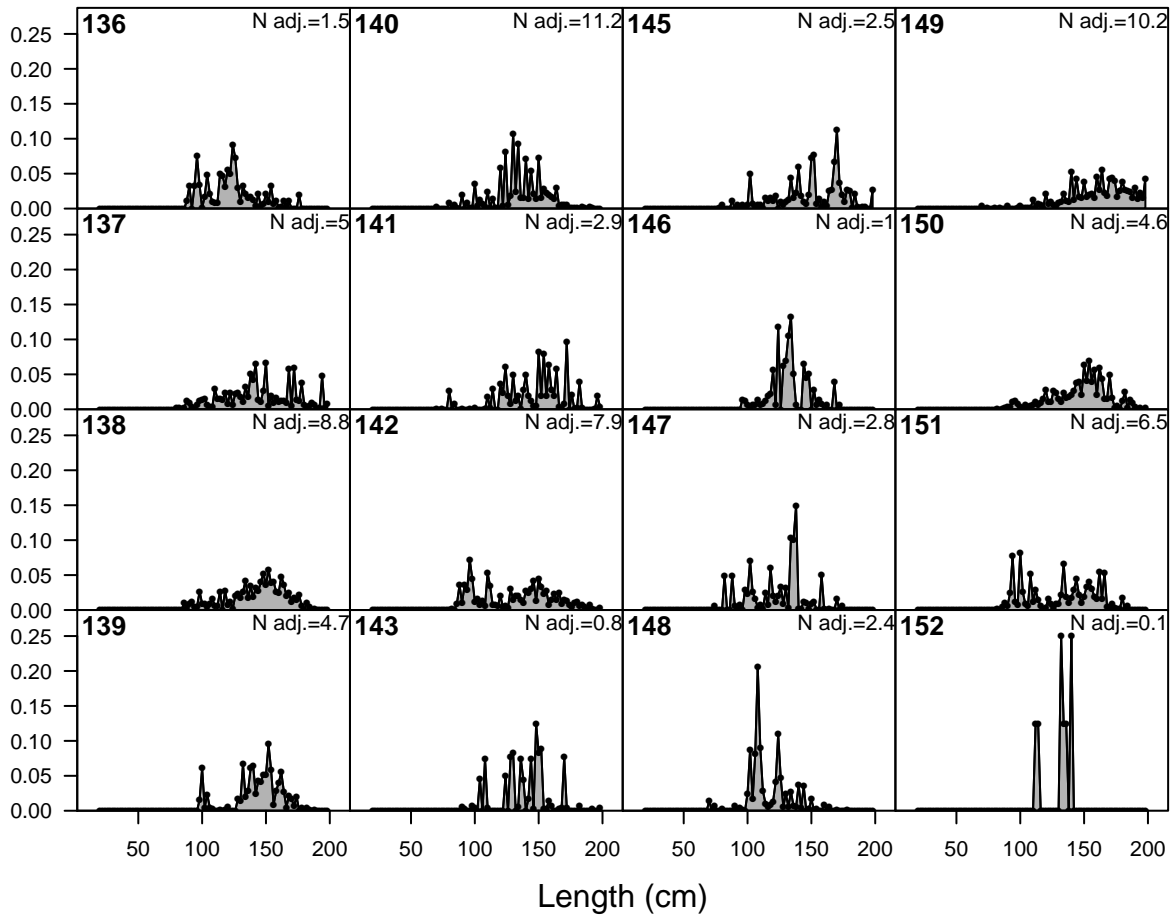
Proportion



Proportion

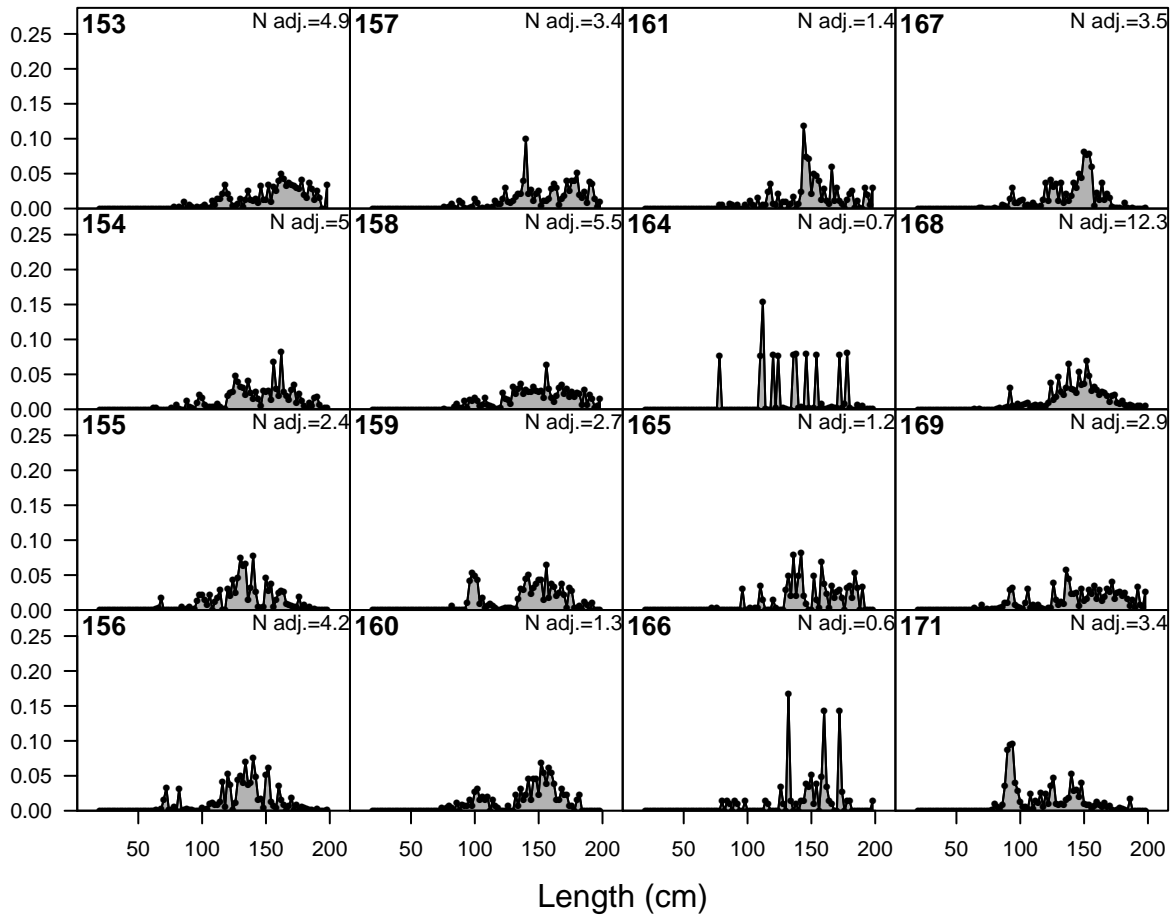


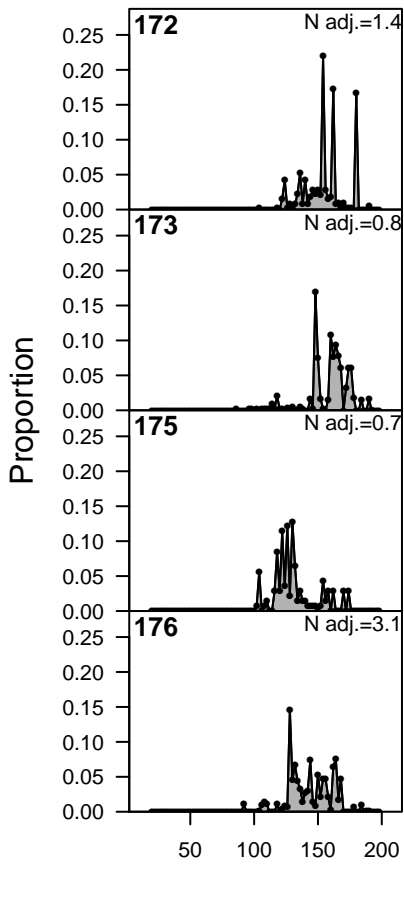
Proportion



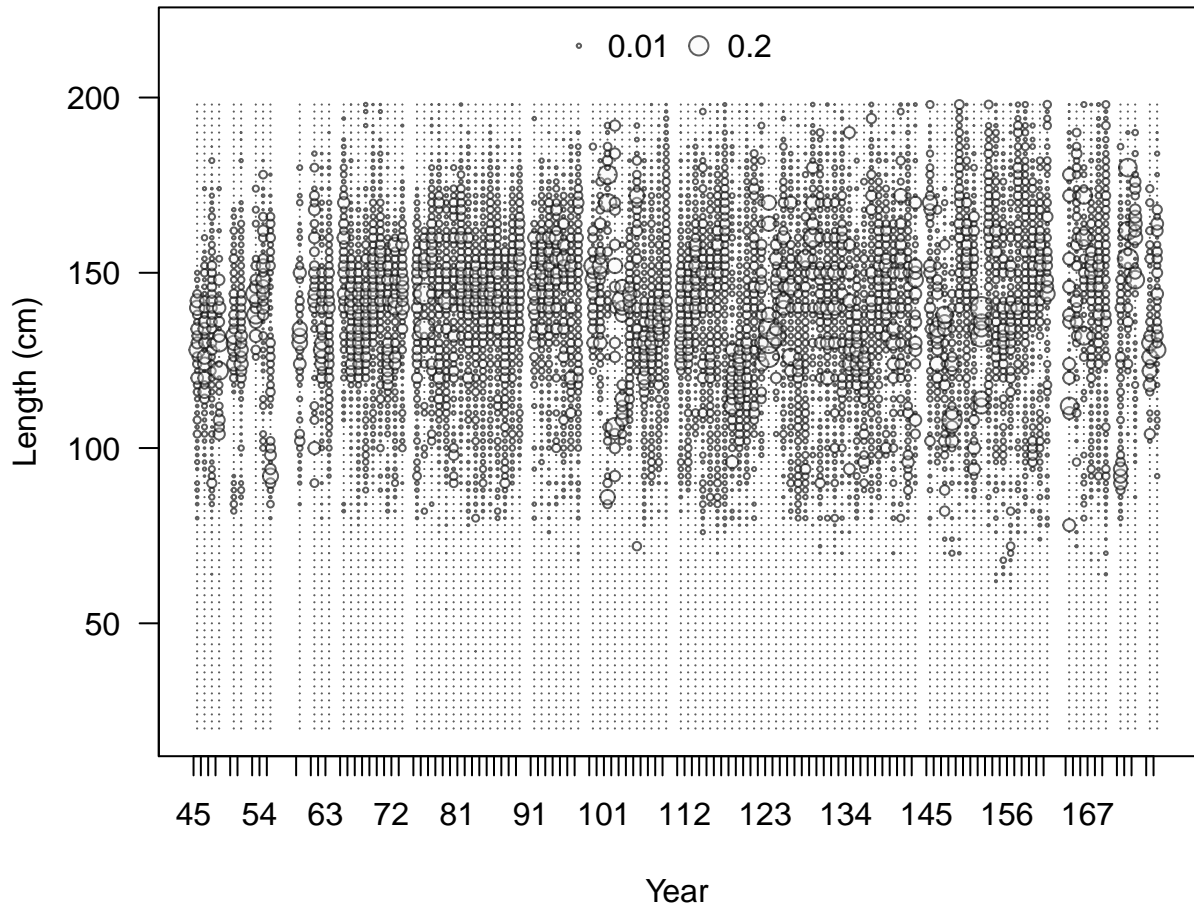


Proportion

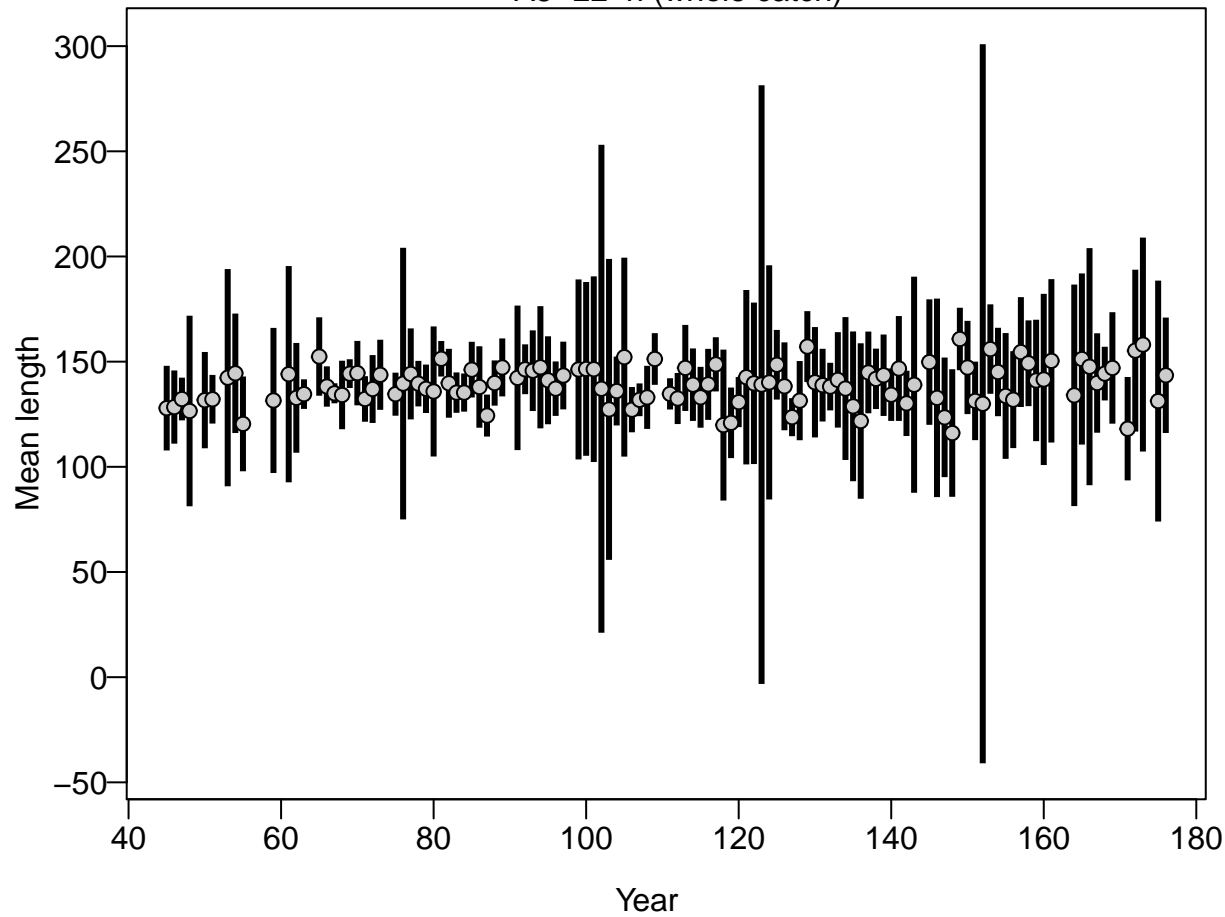


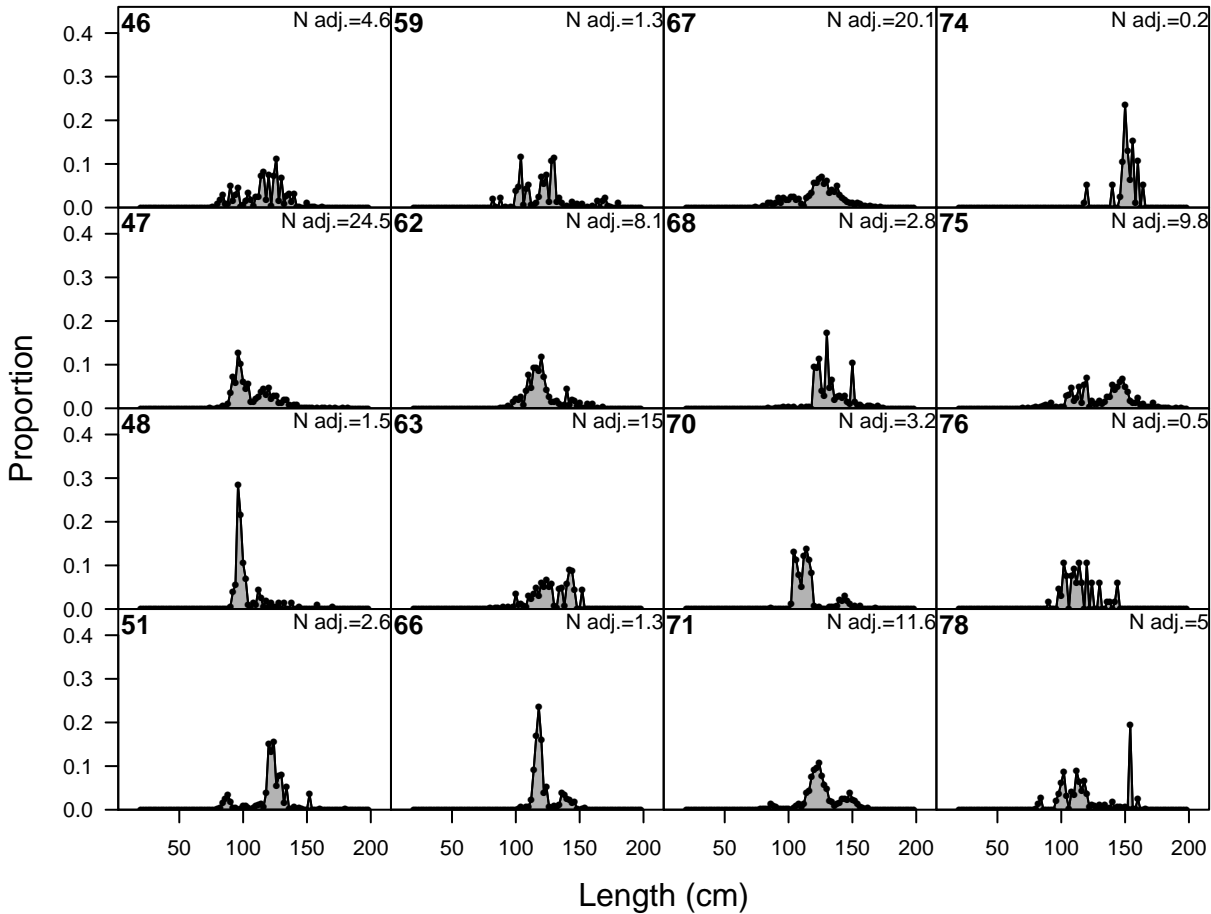


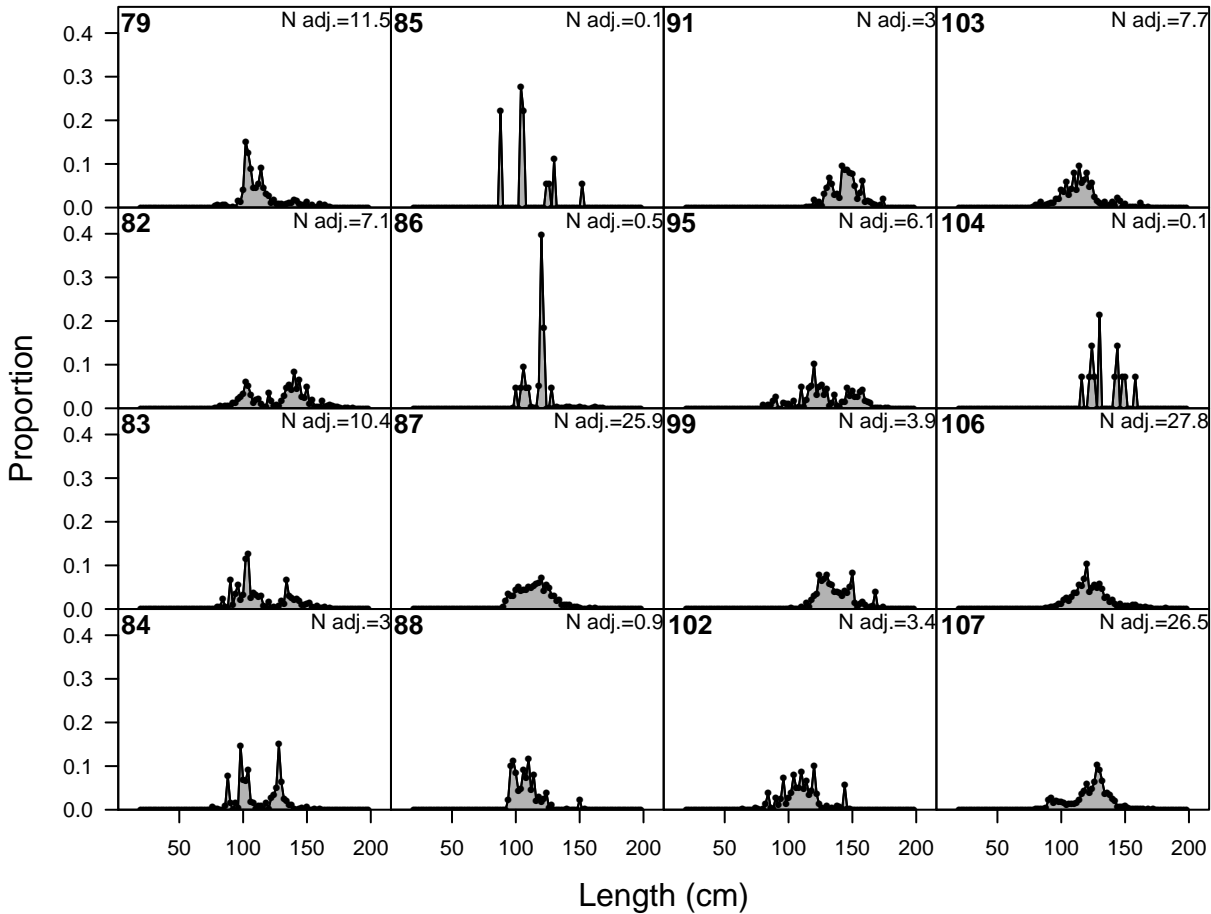
Length (cm)

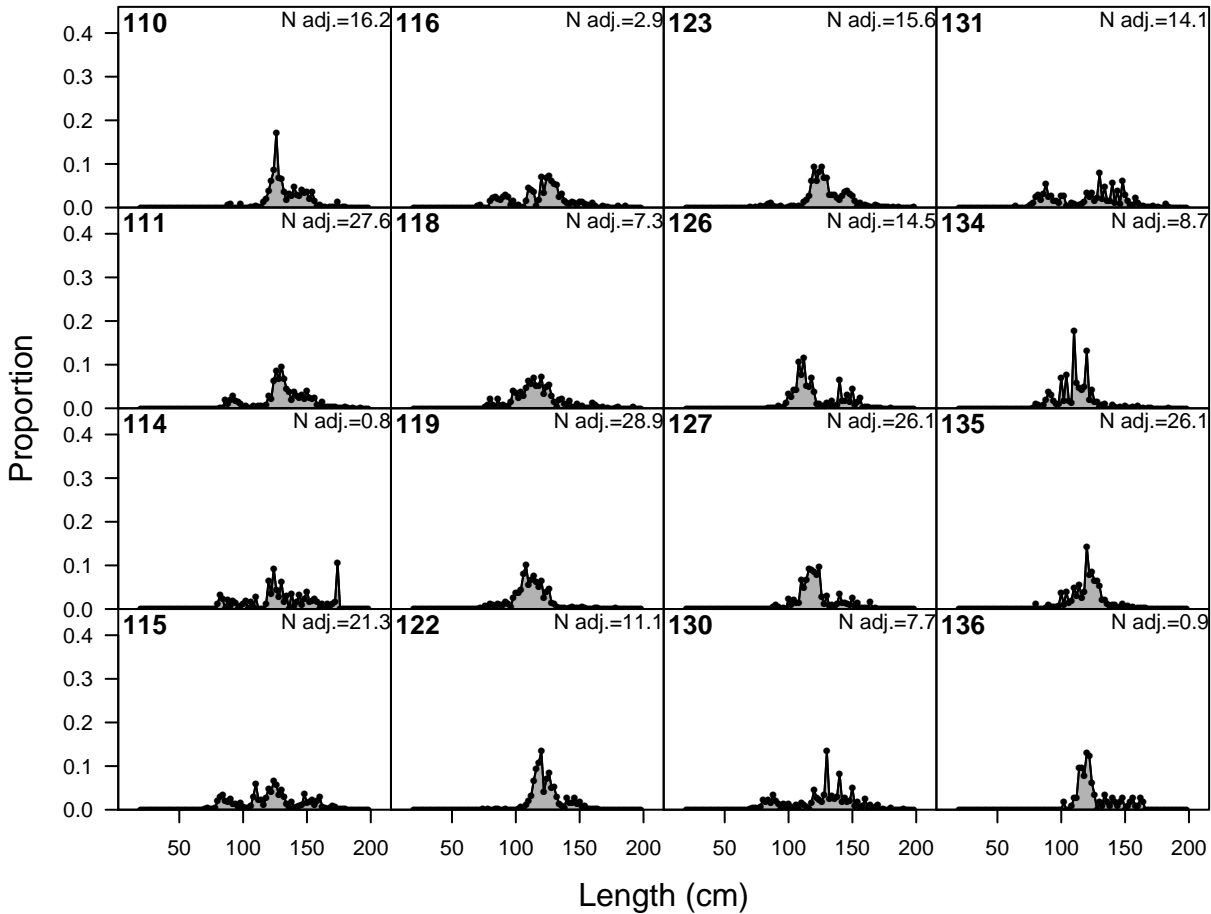


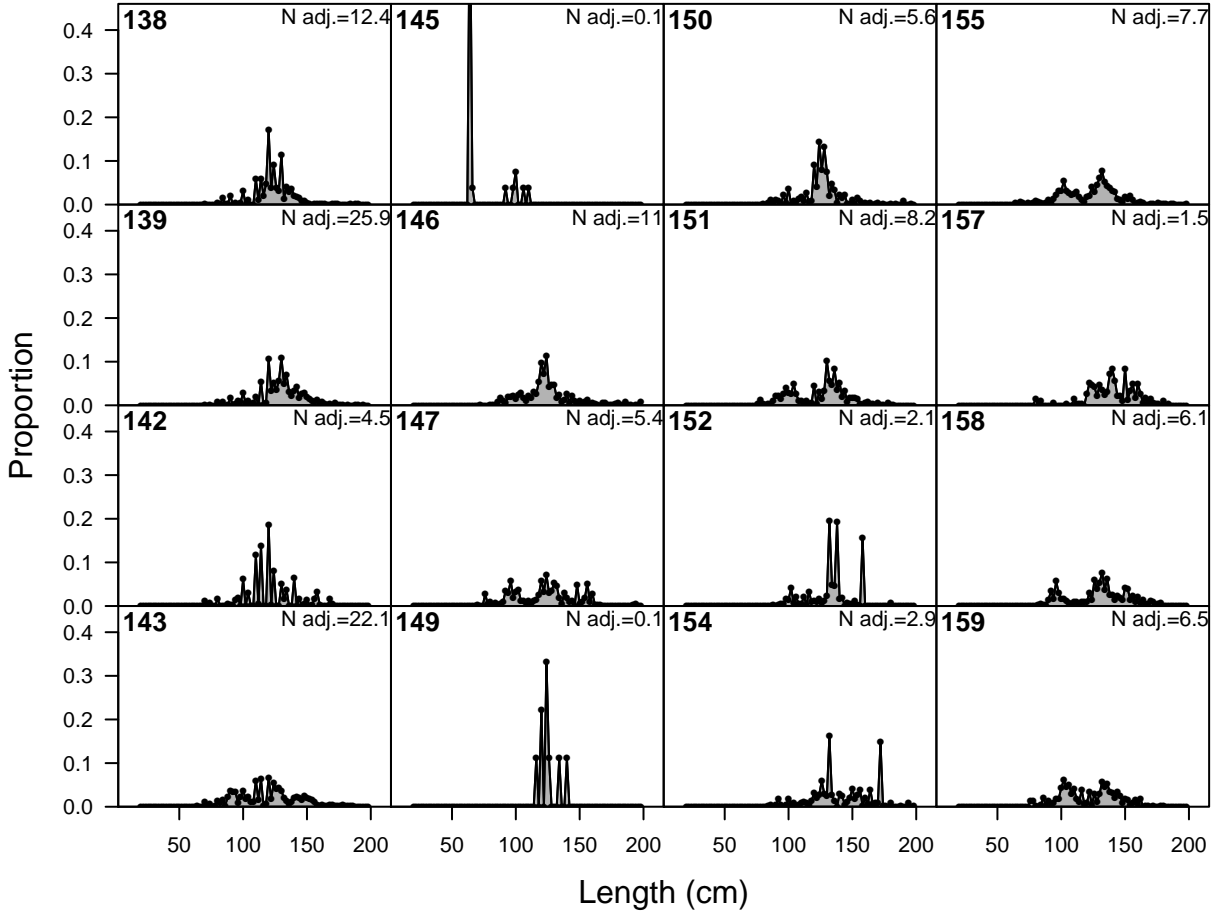
A5-LL-n (whole catch)



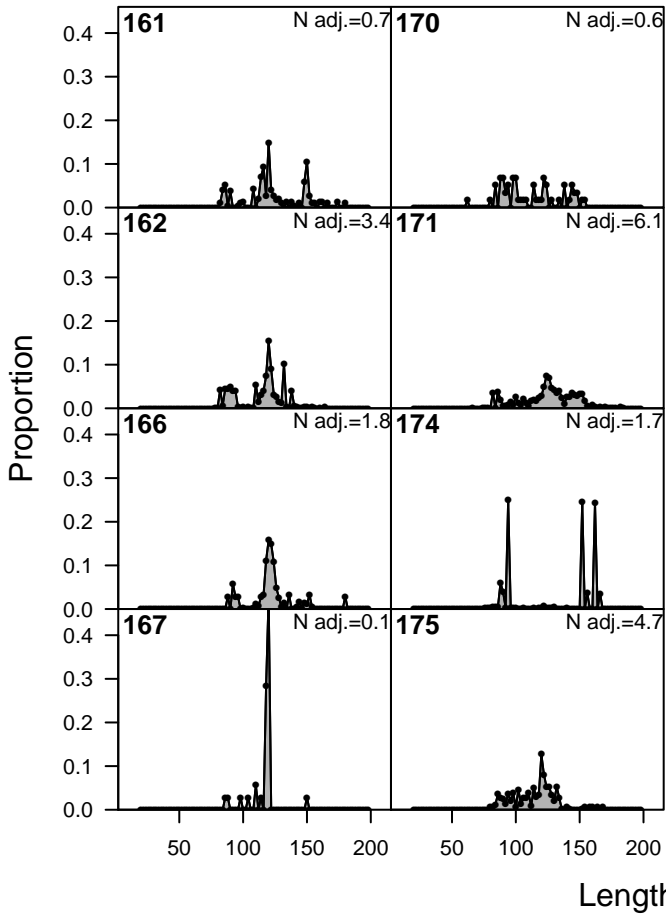


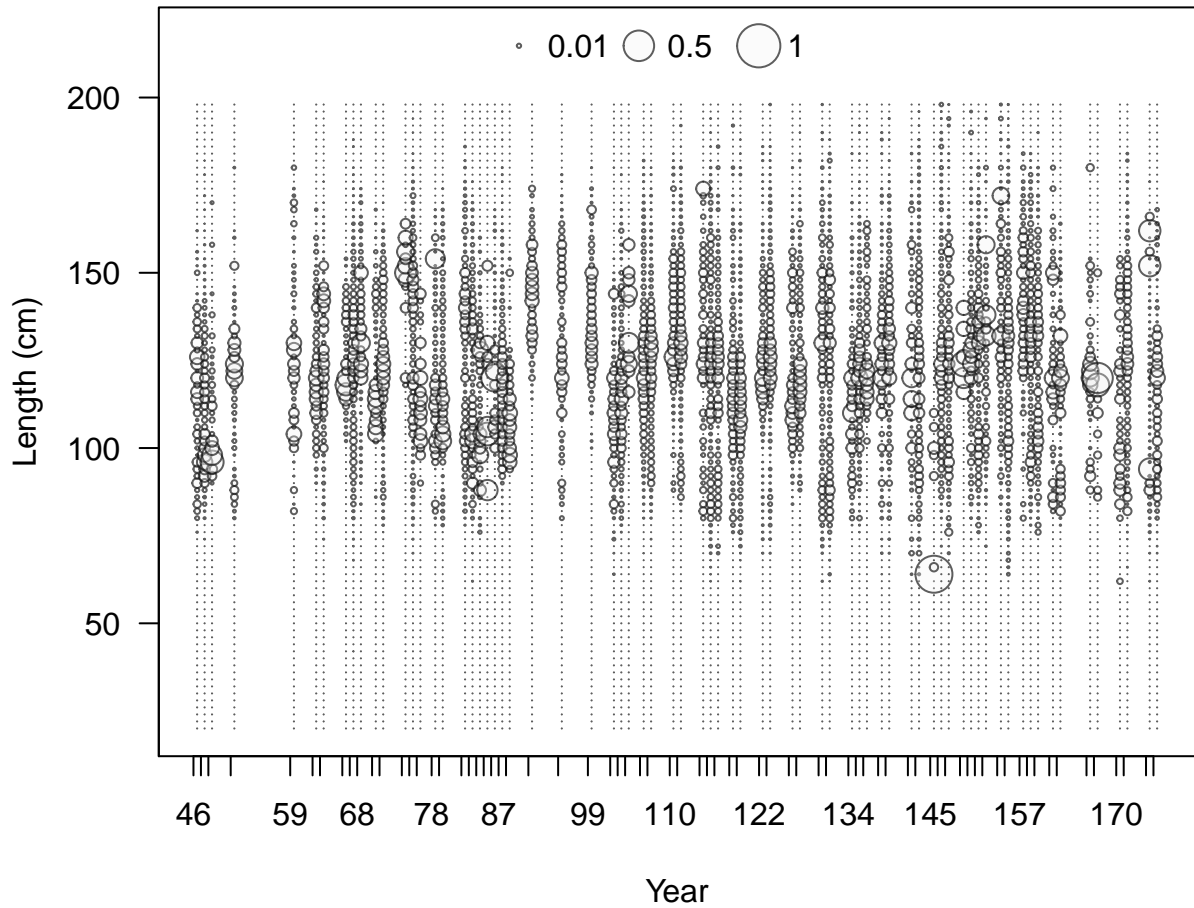




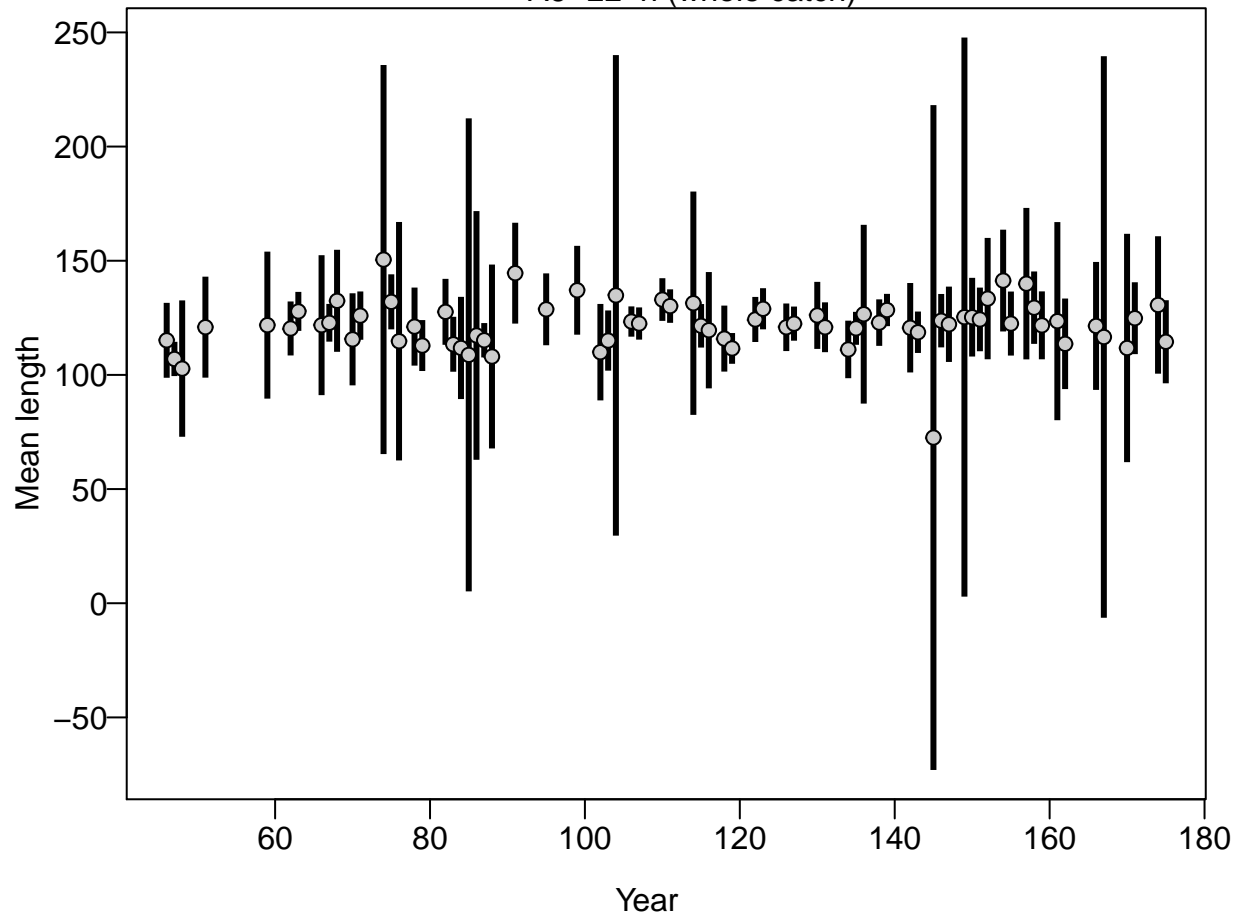


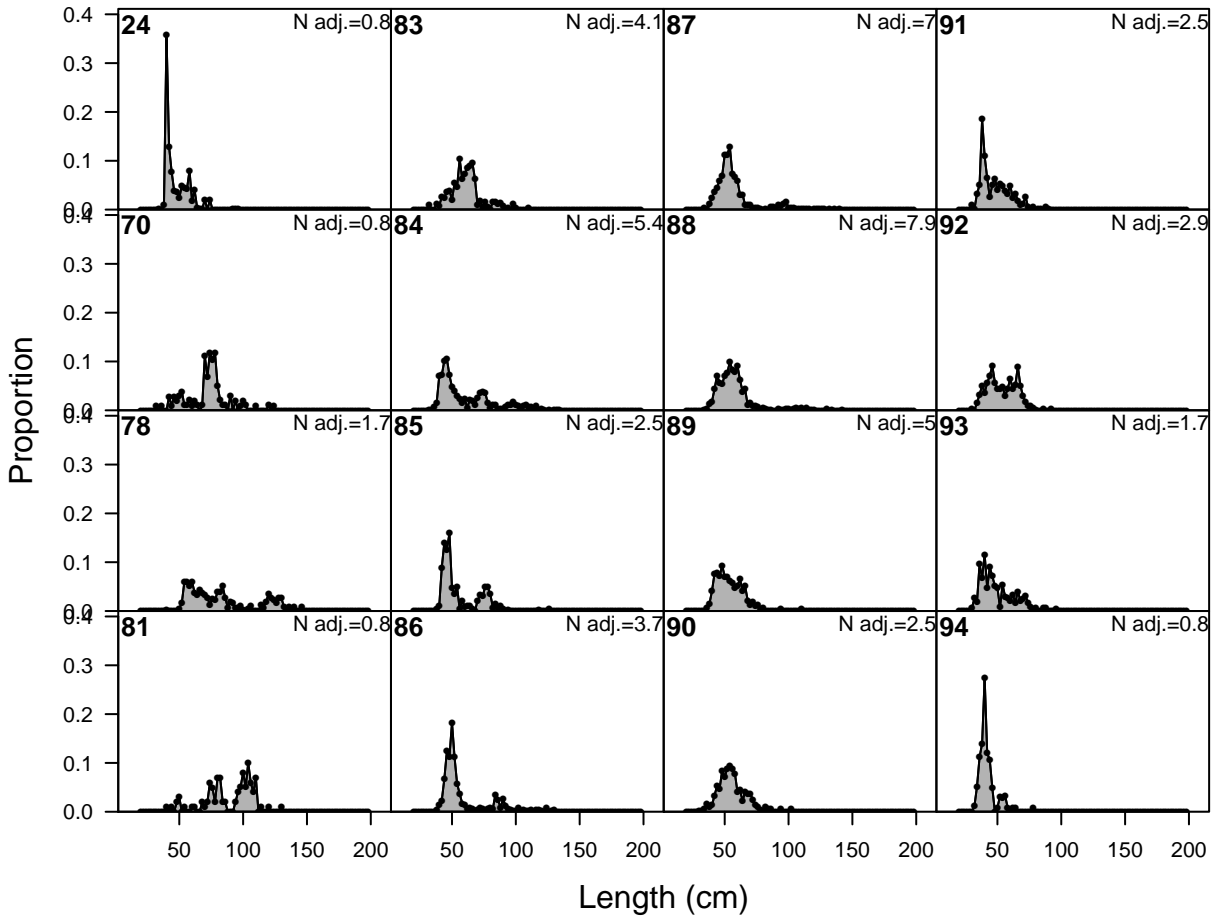


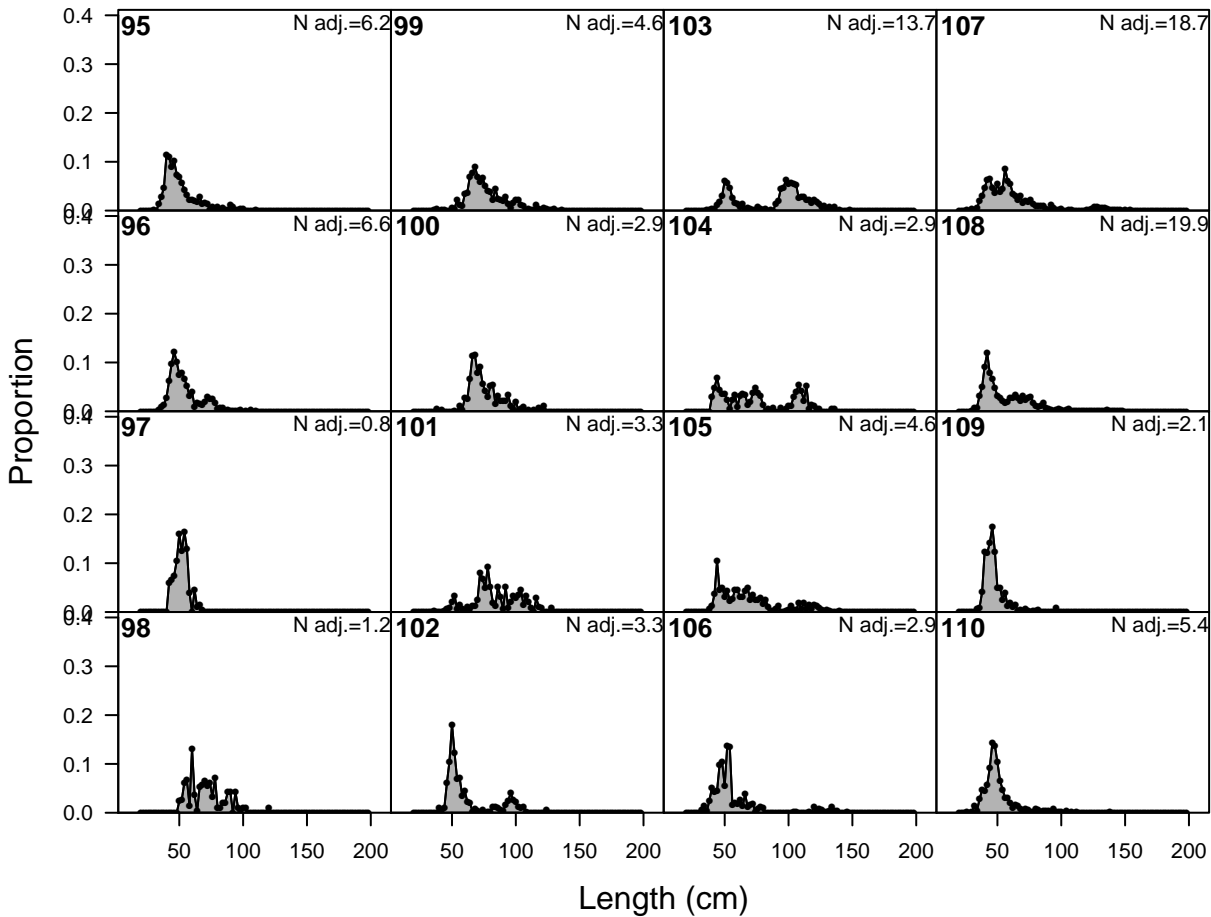


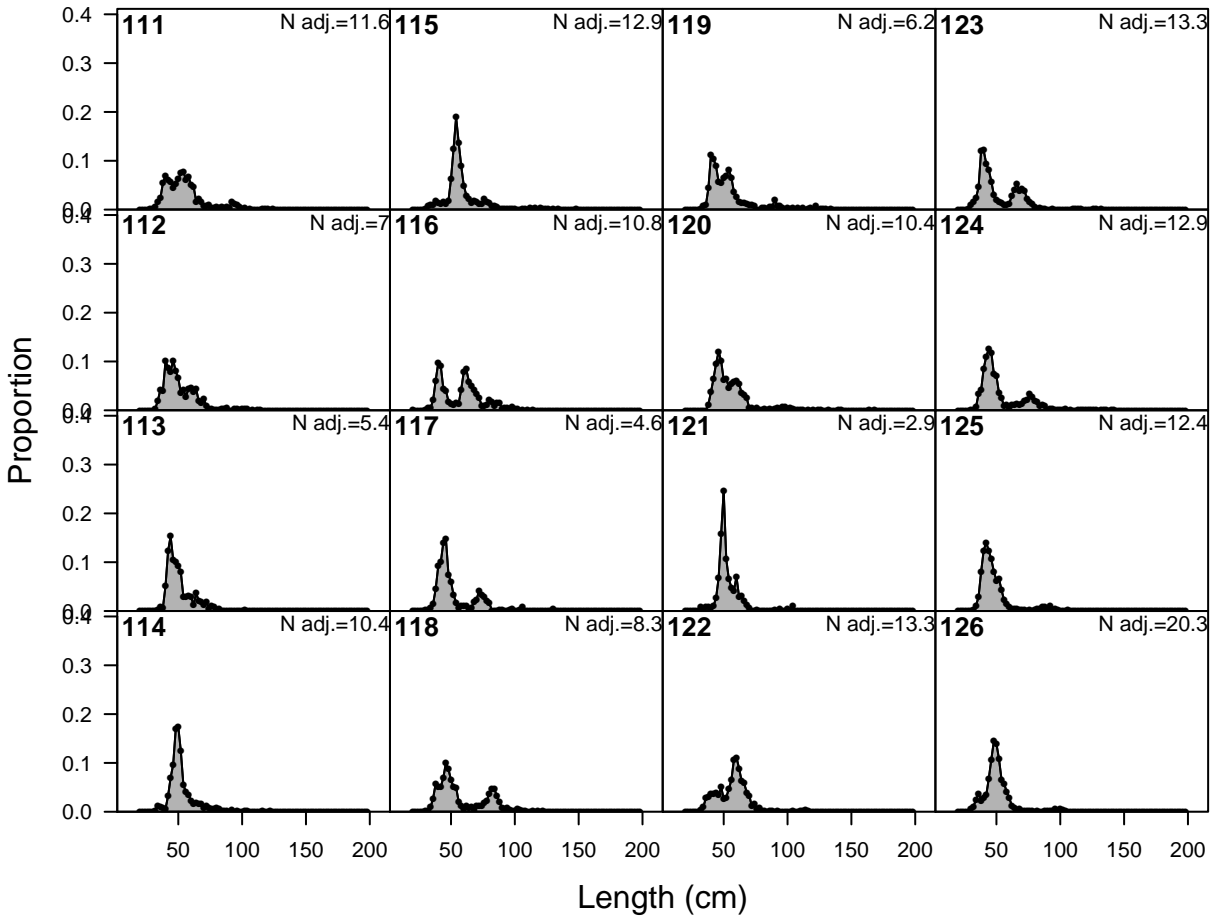


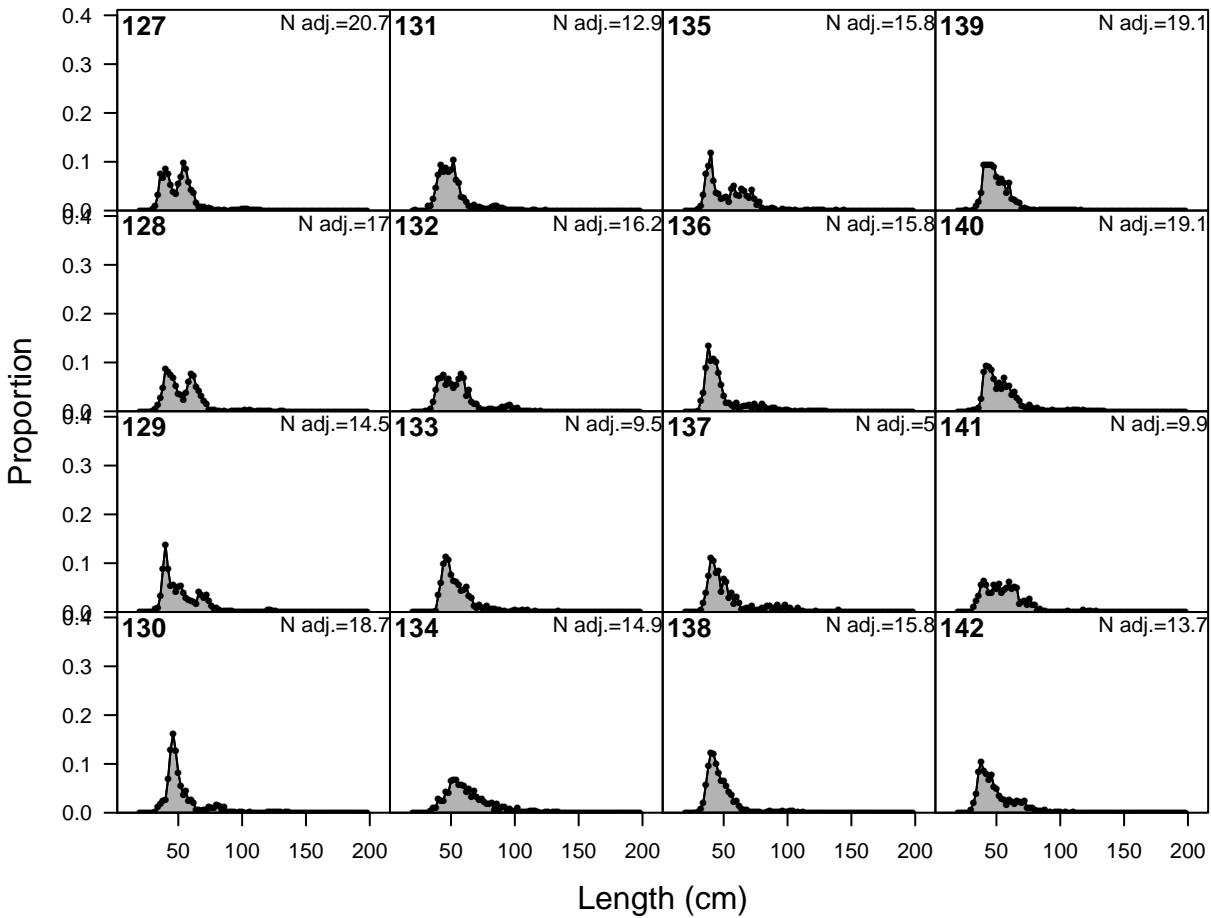
A6-LL-n (whole catch)

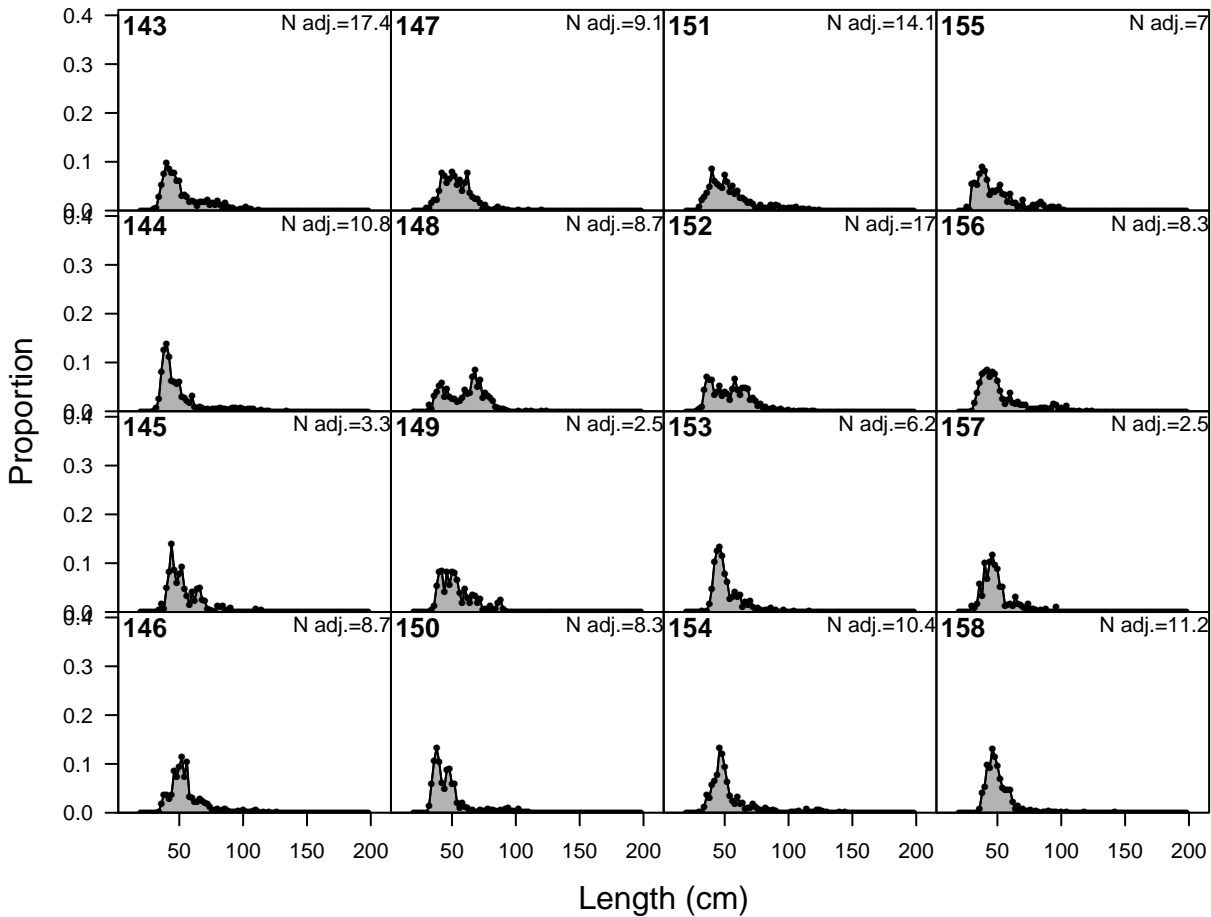




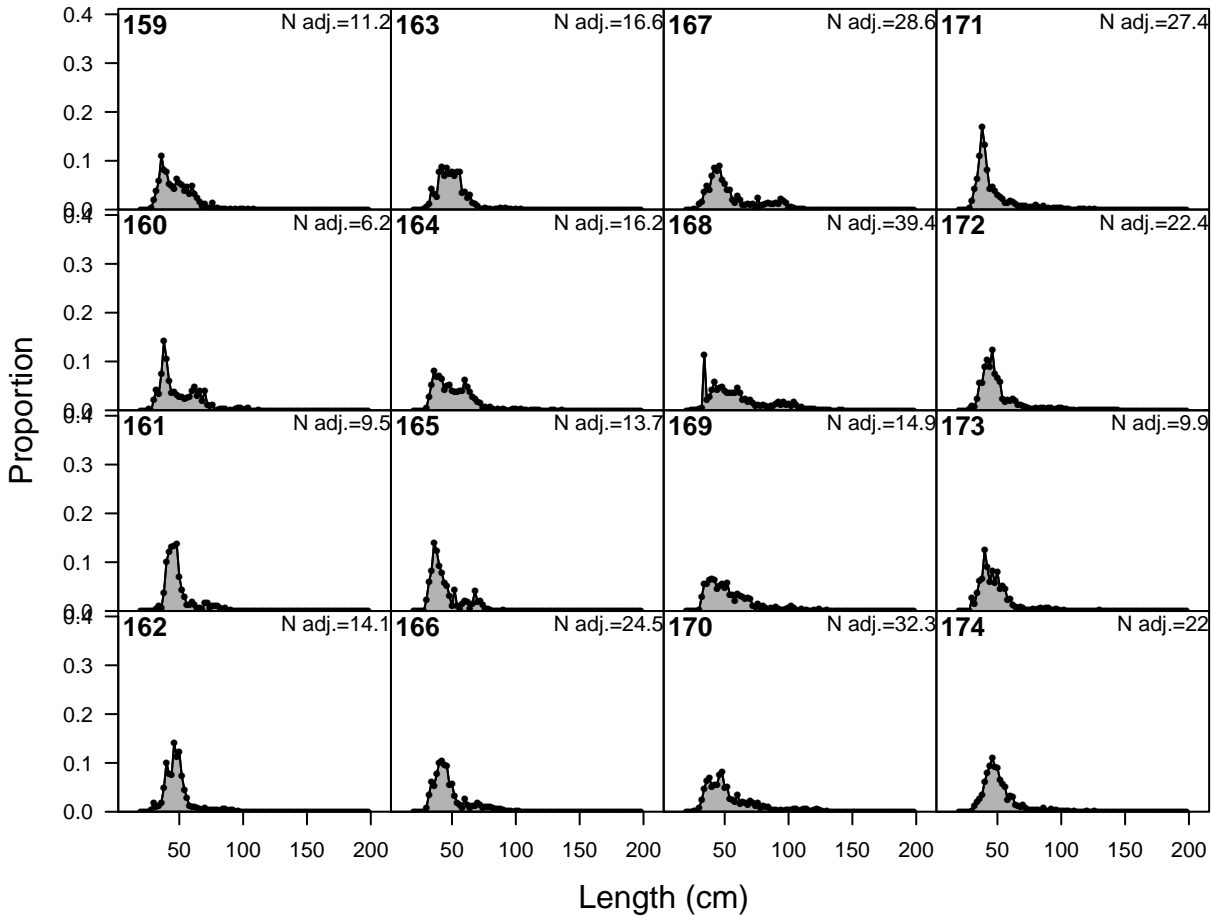


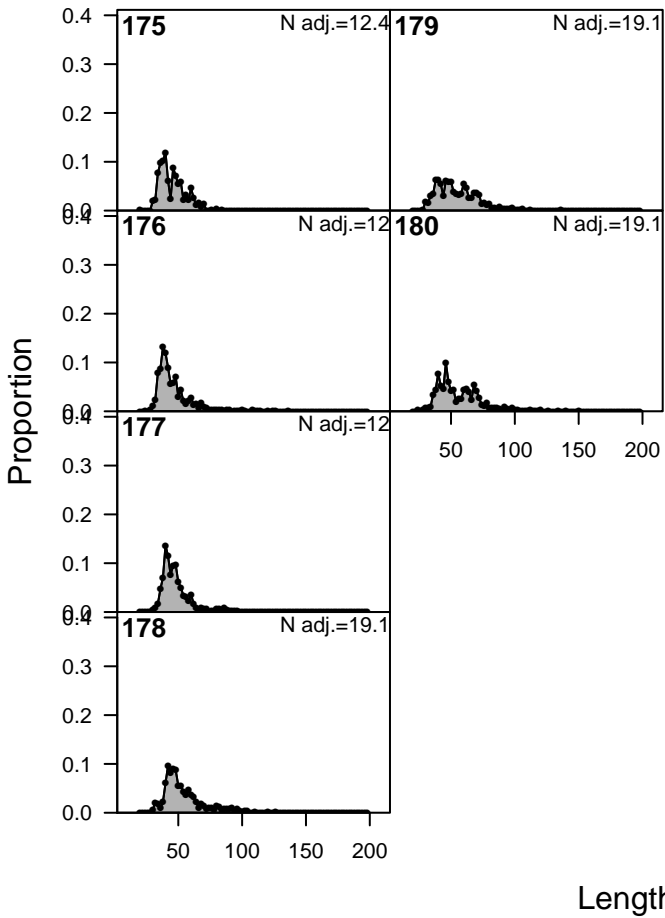


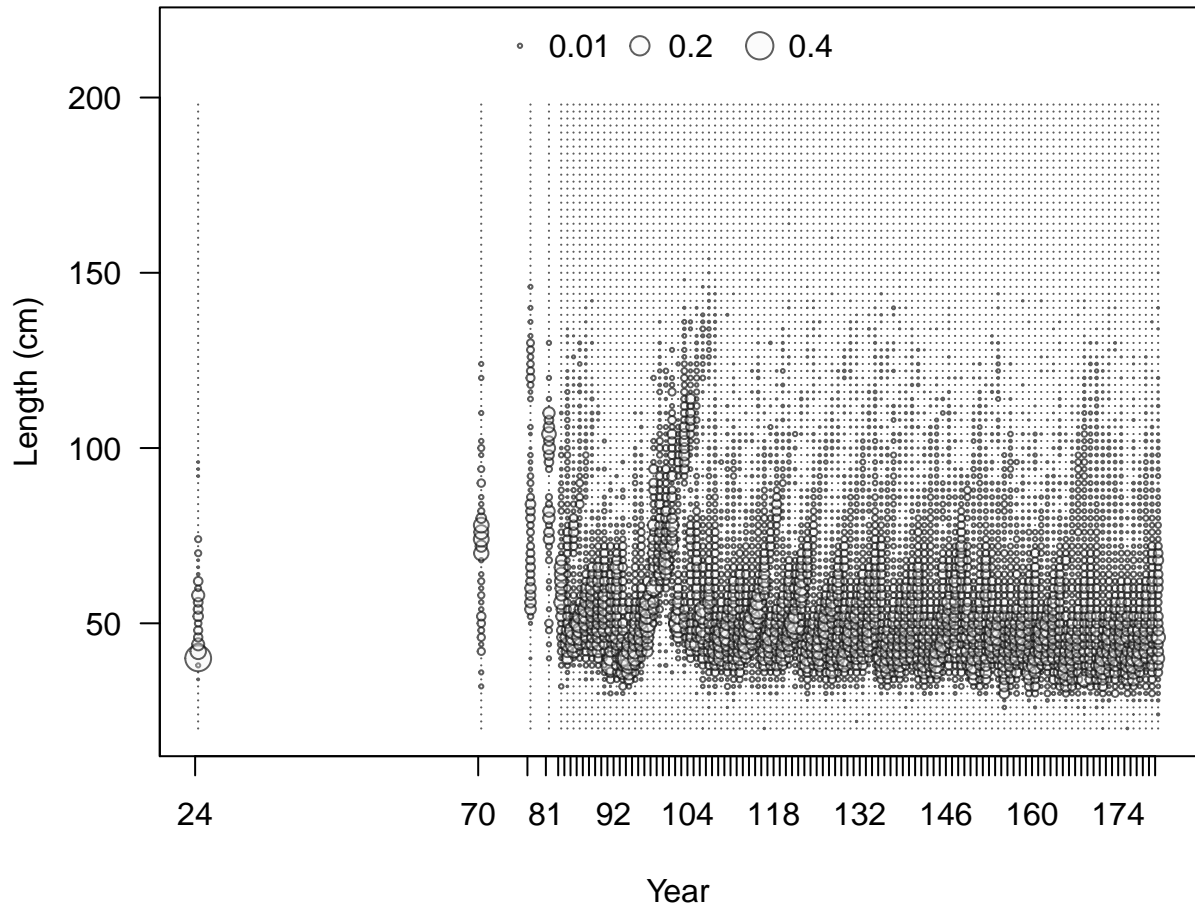




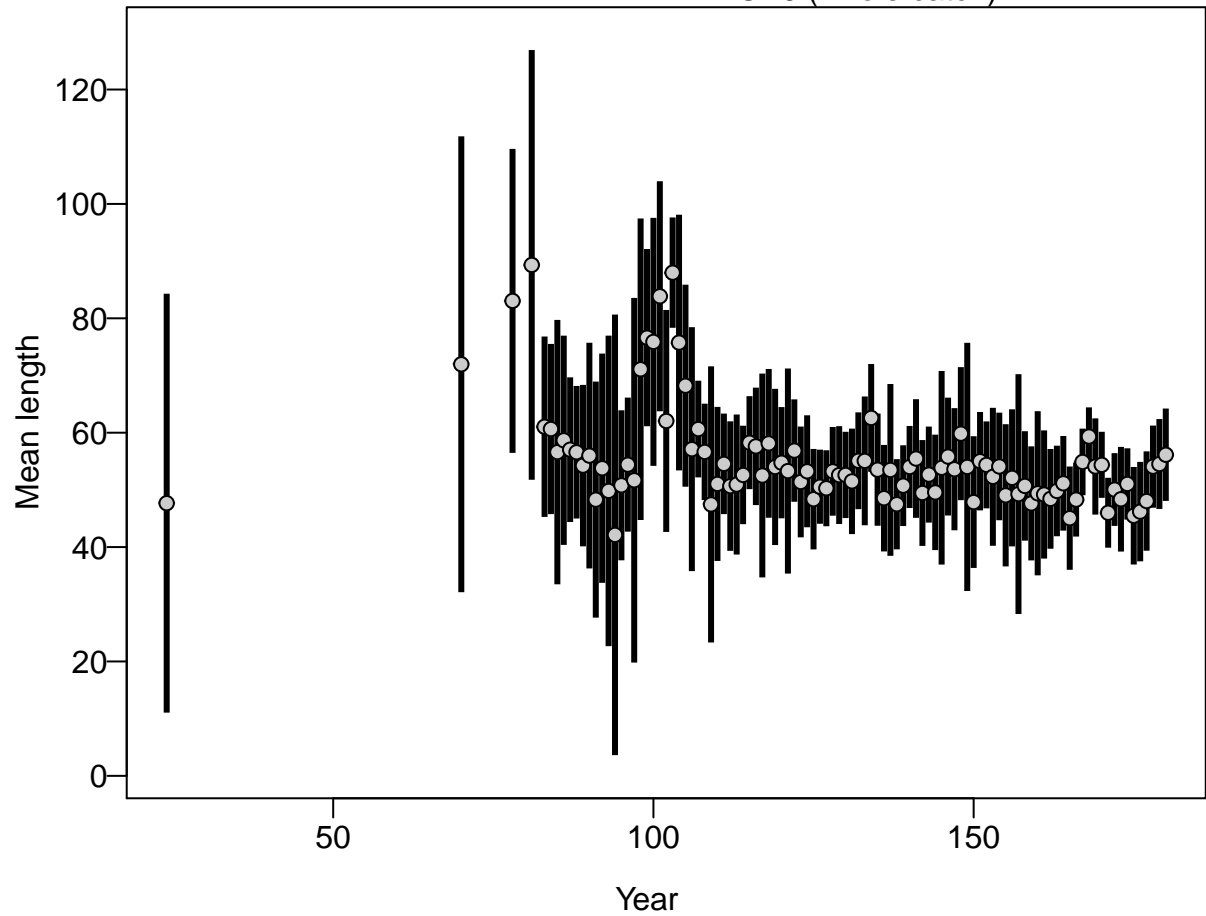


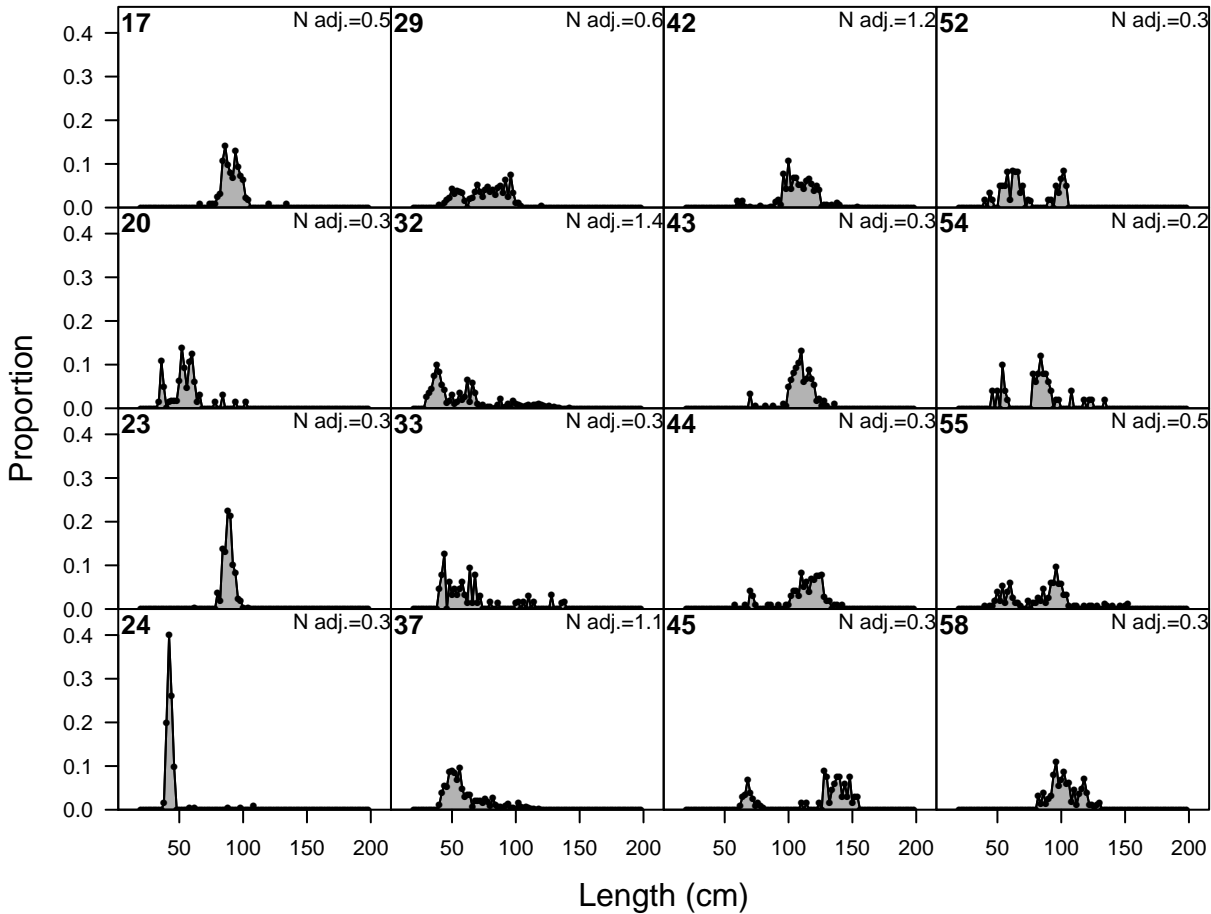


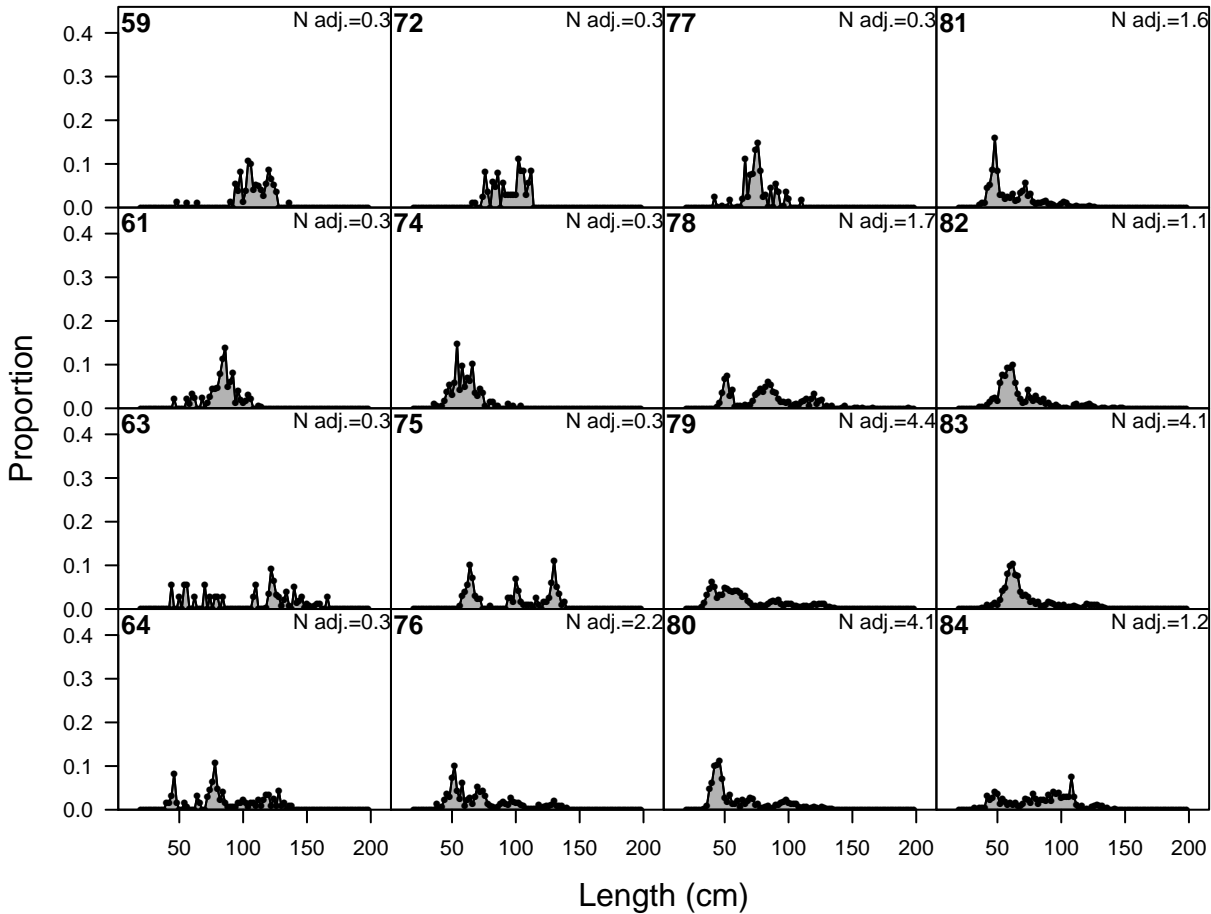


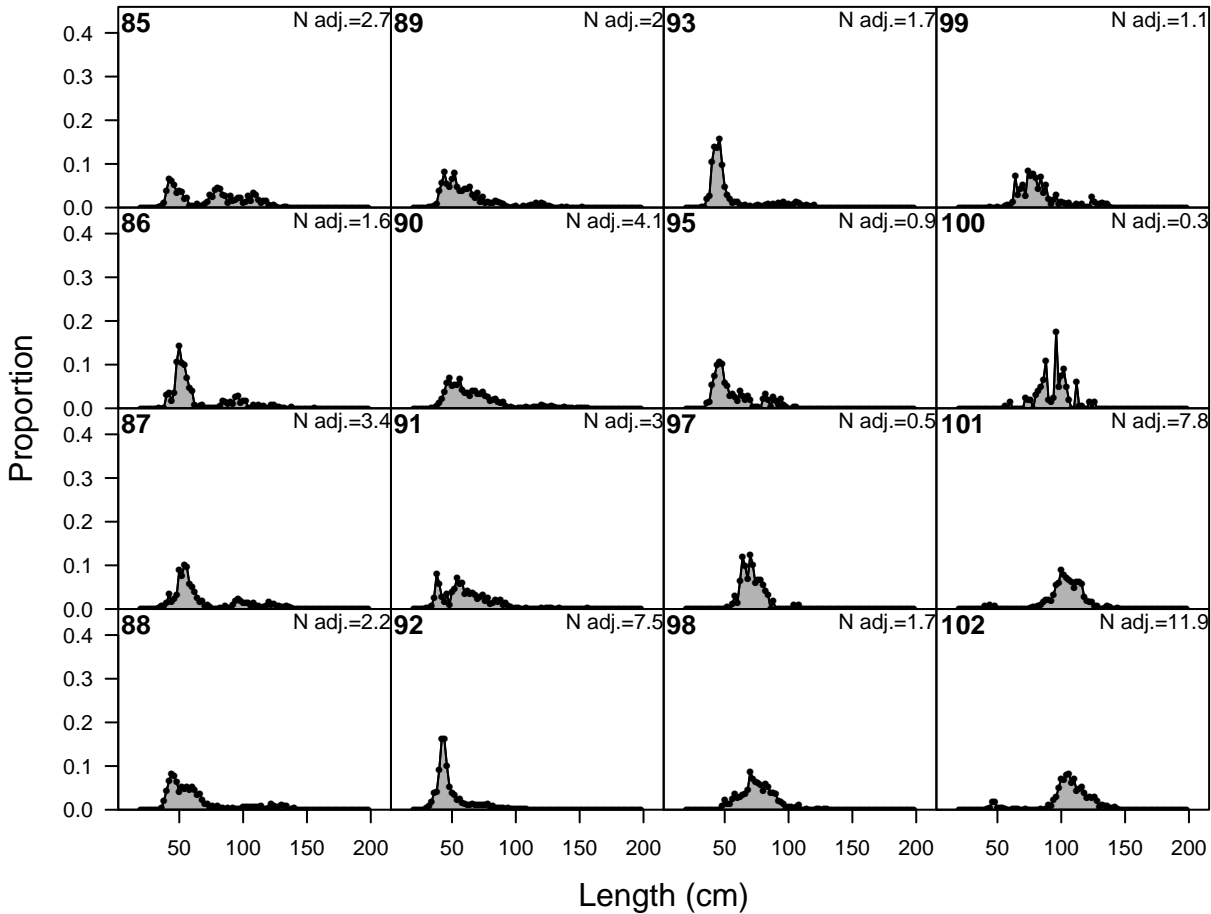


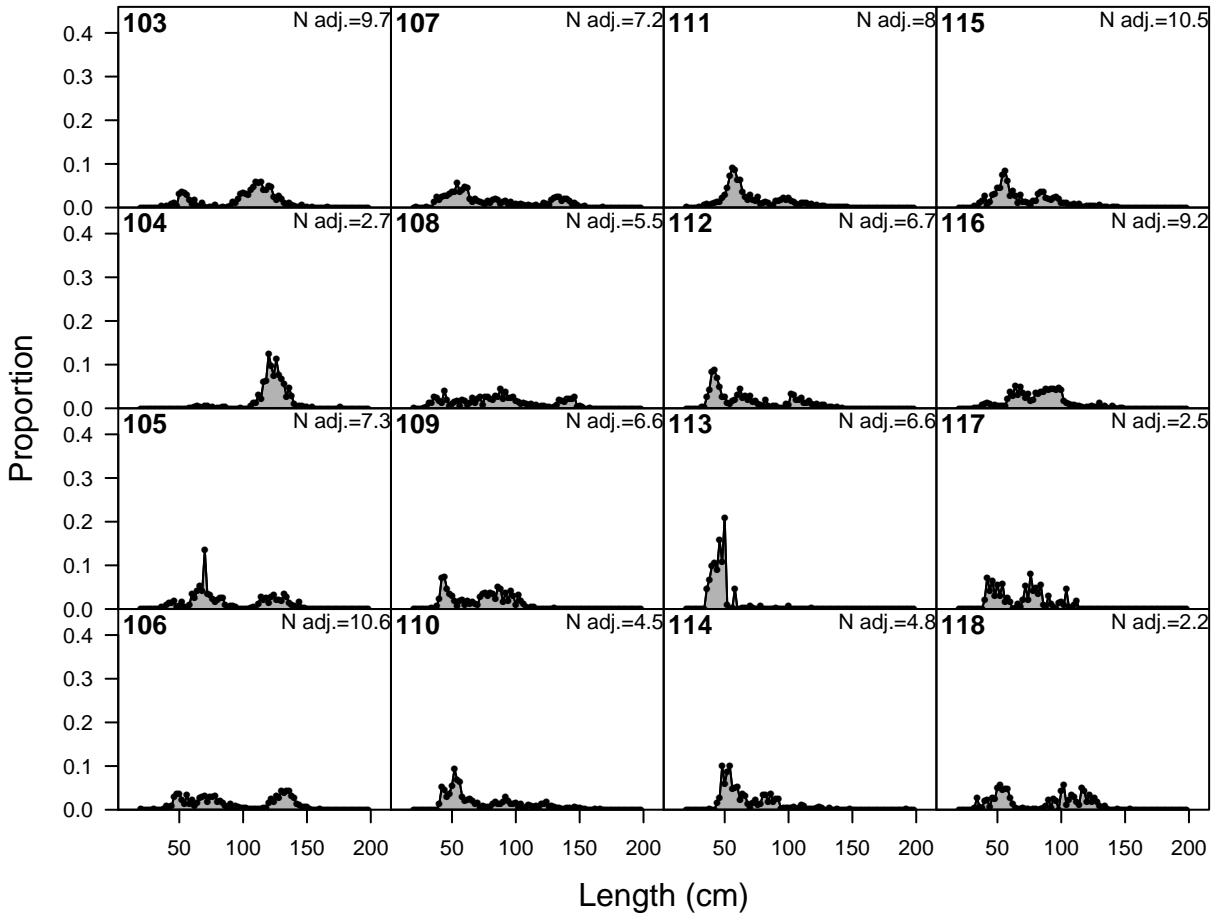
## A2-OBJ (whole catch)



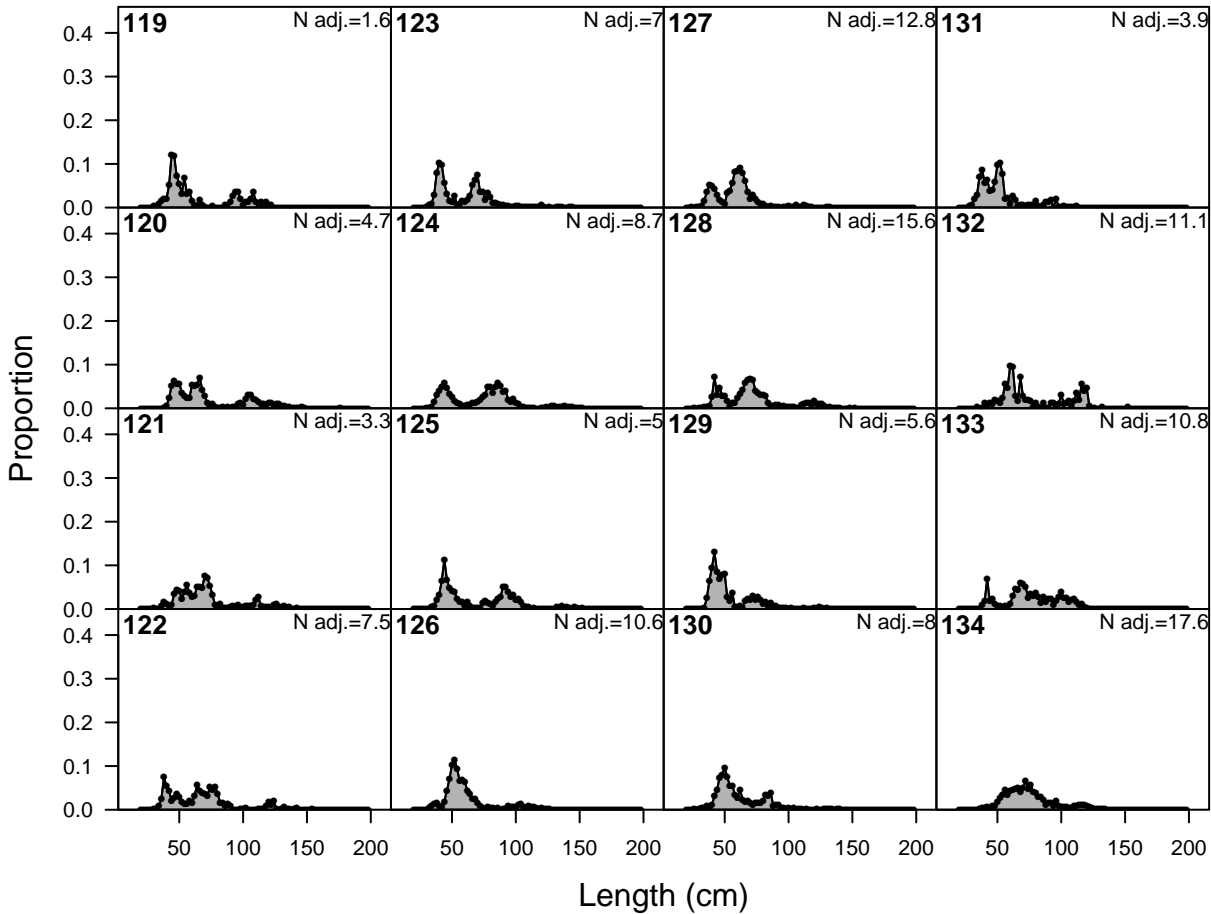


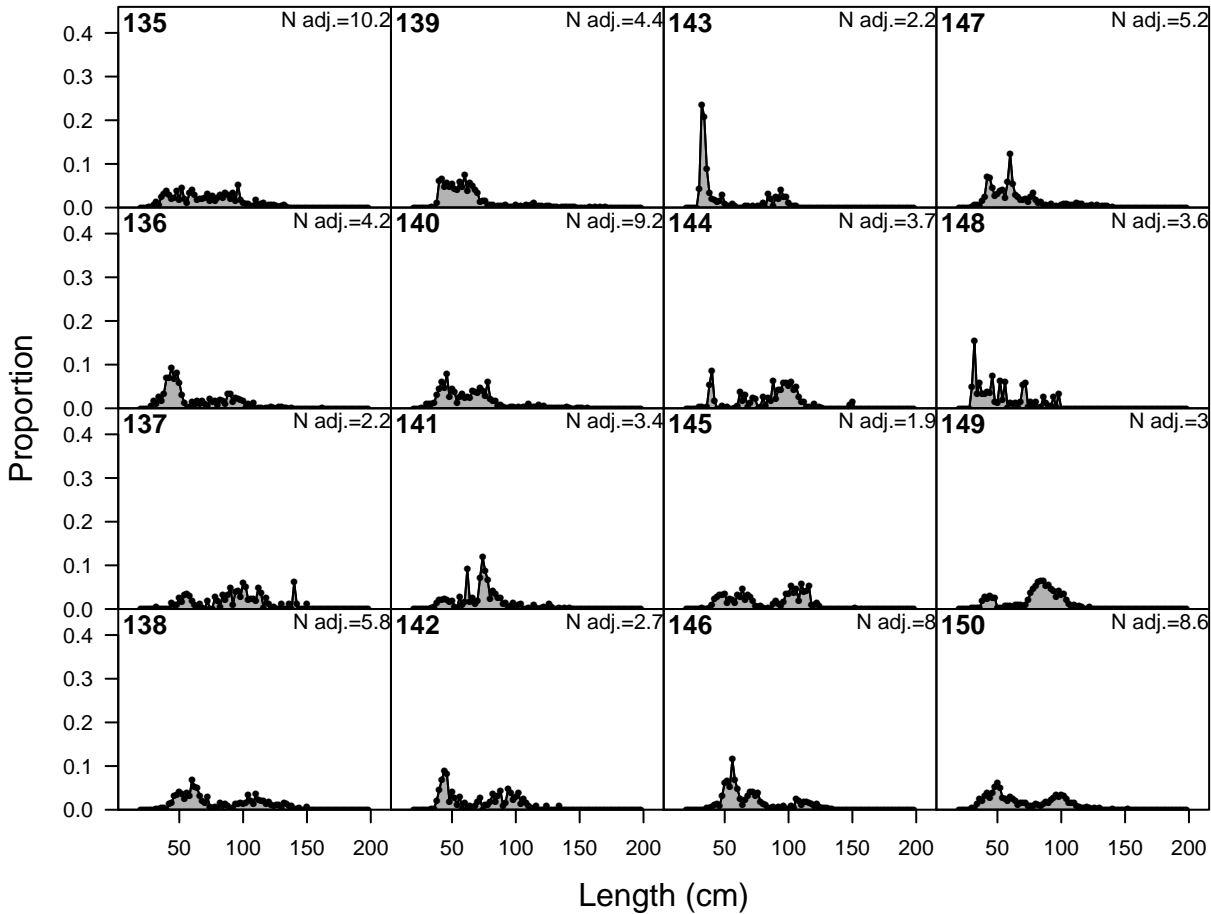


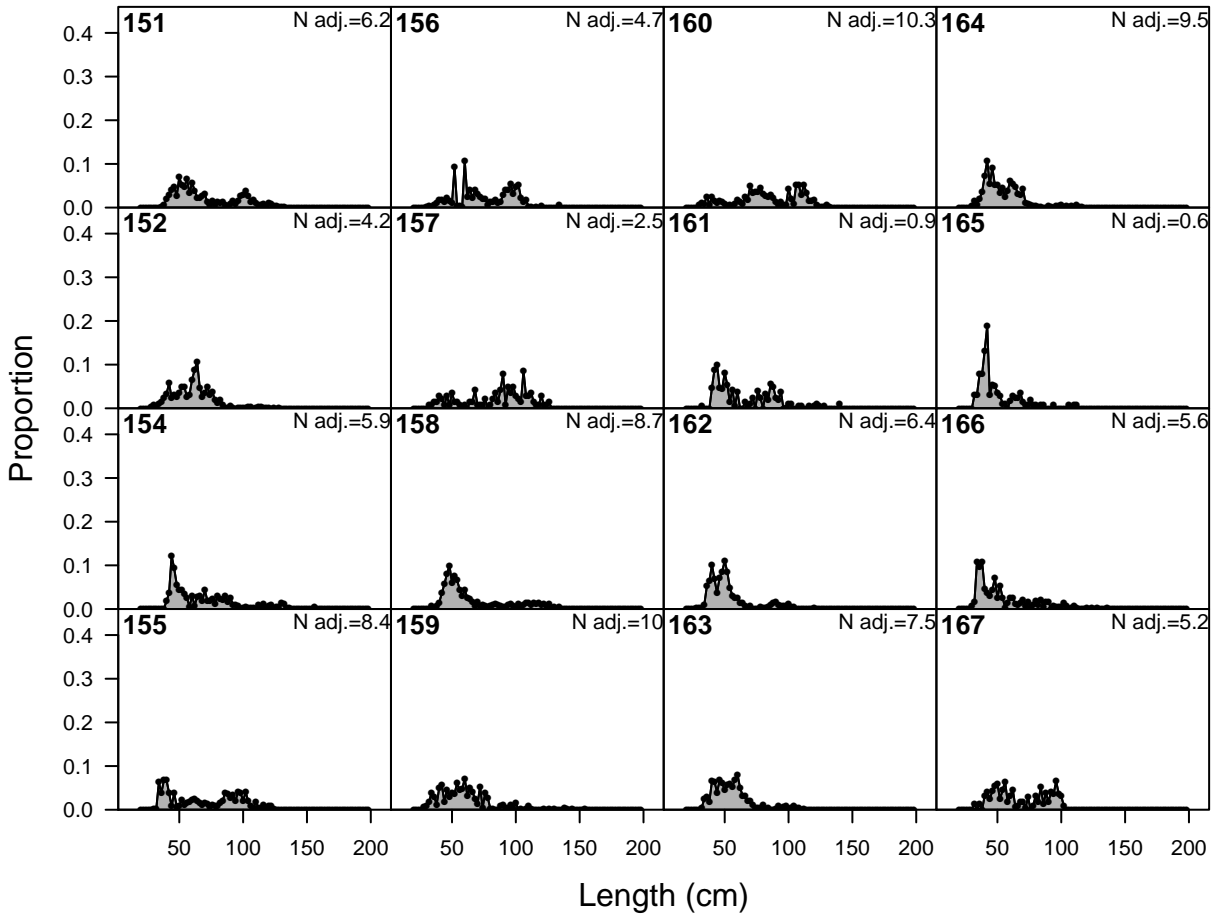


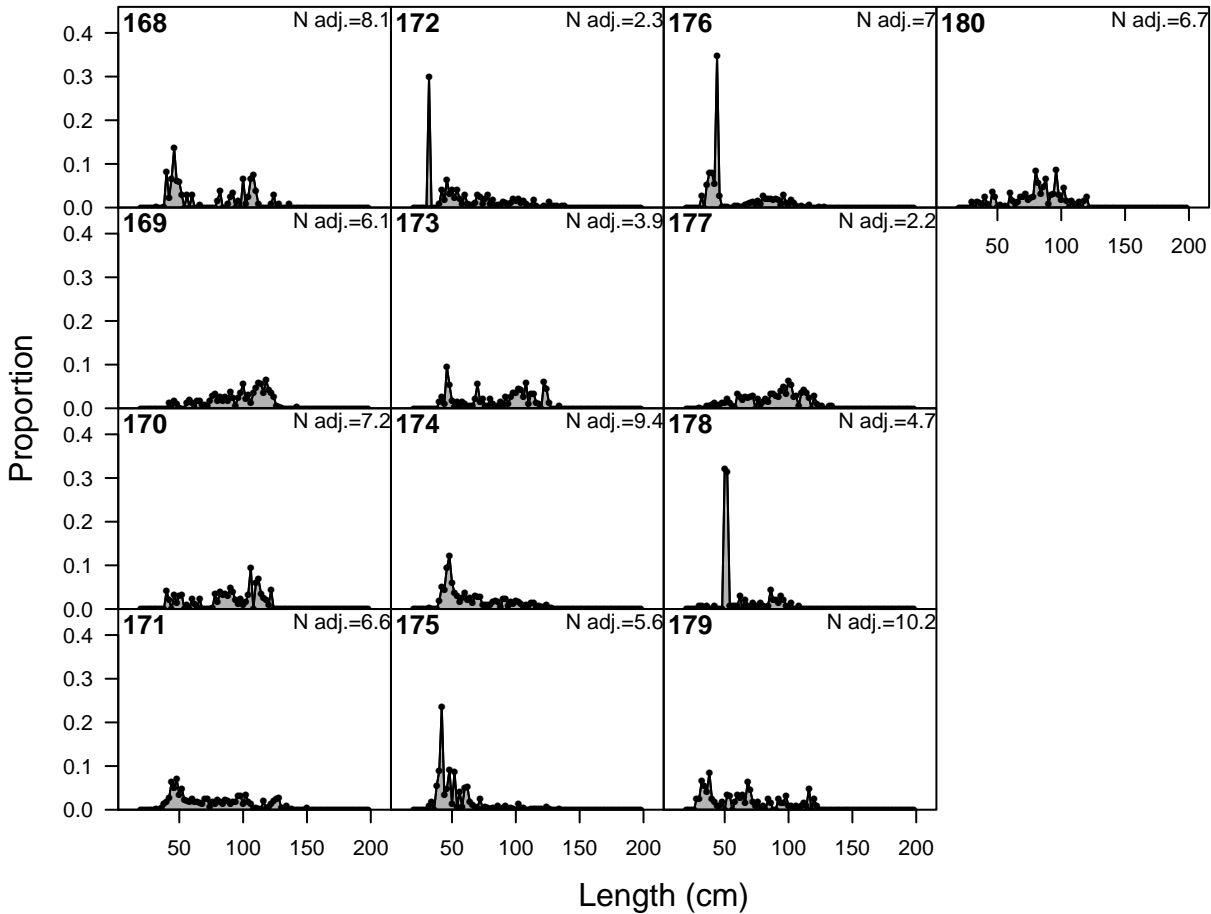


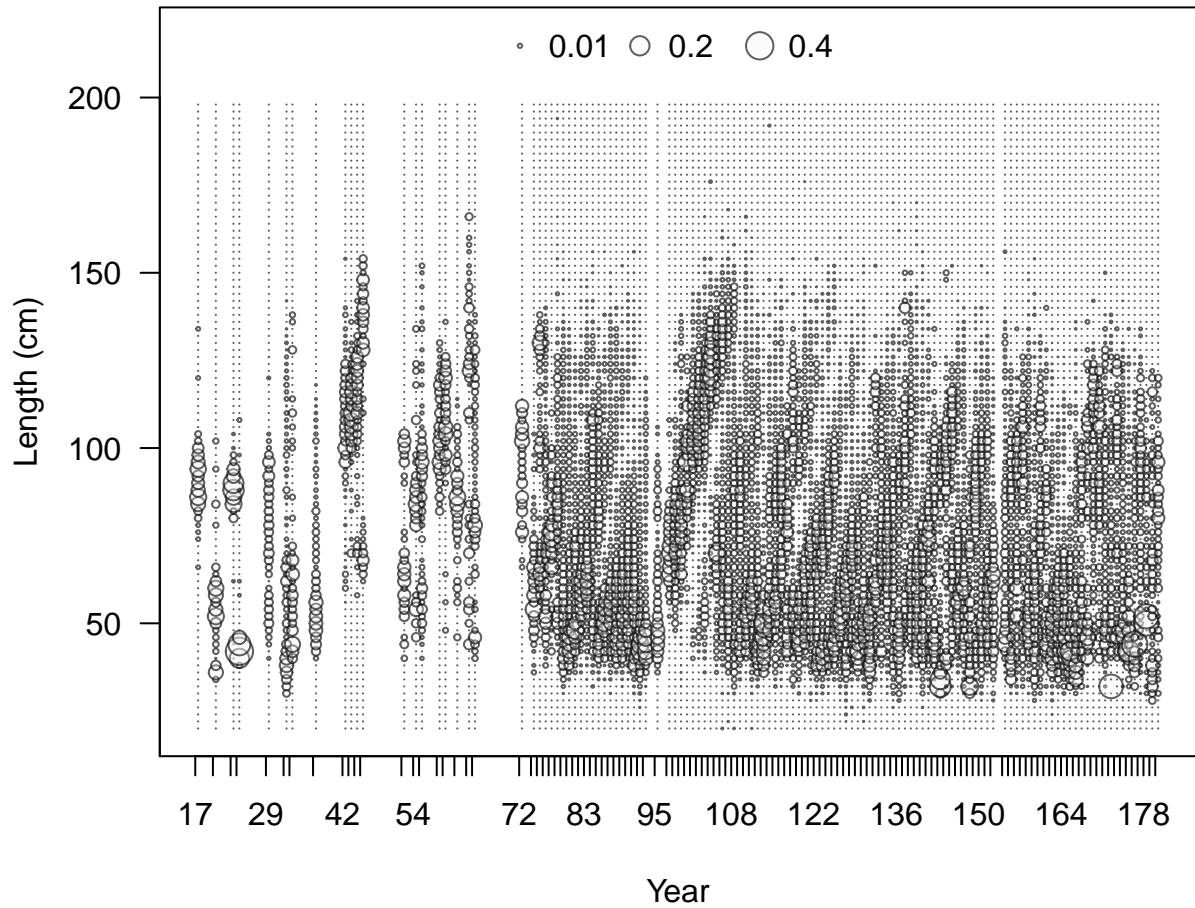




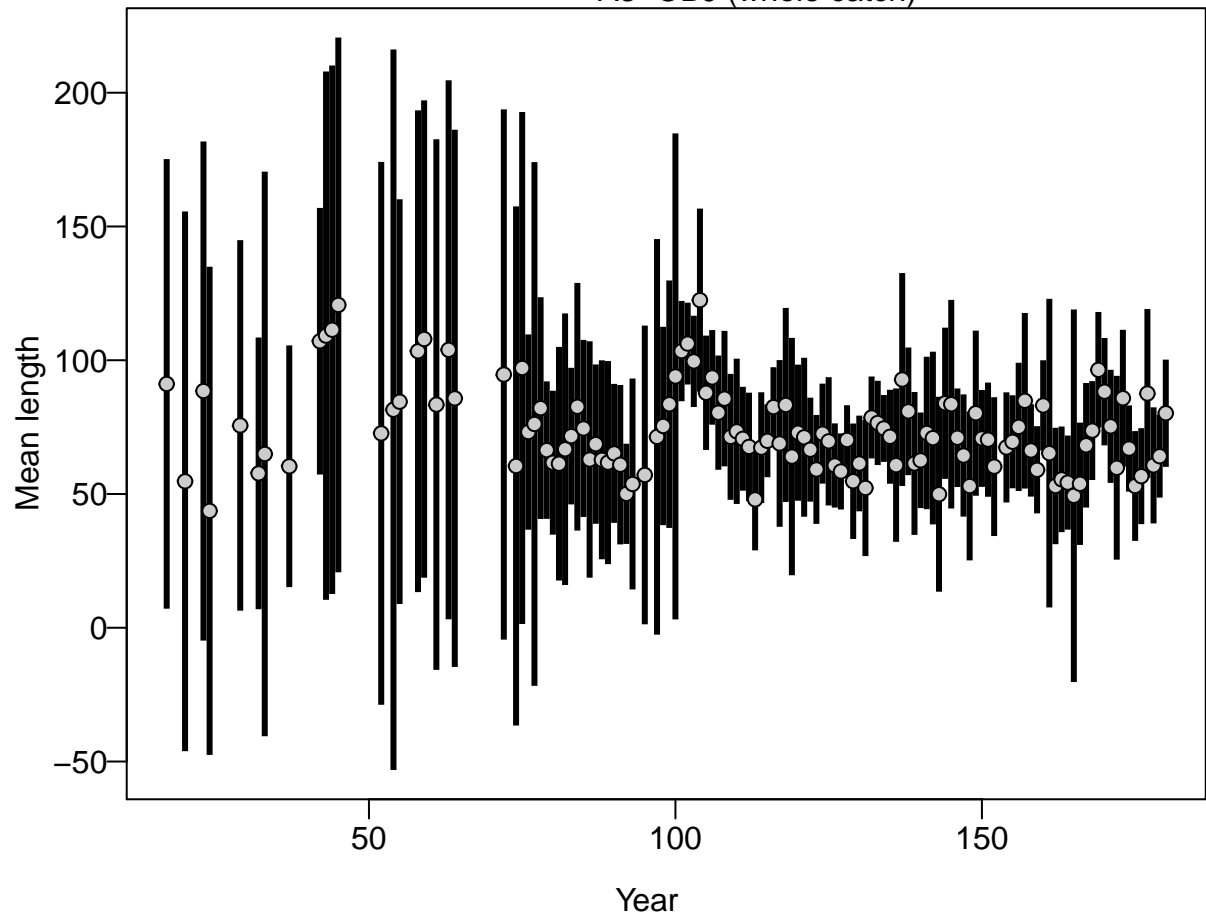




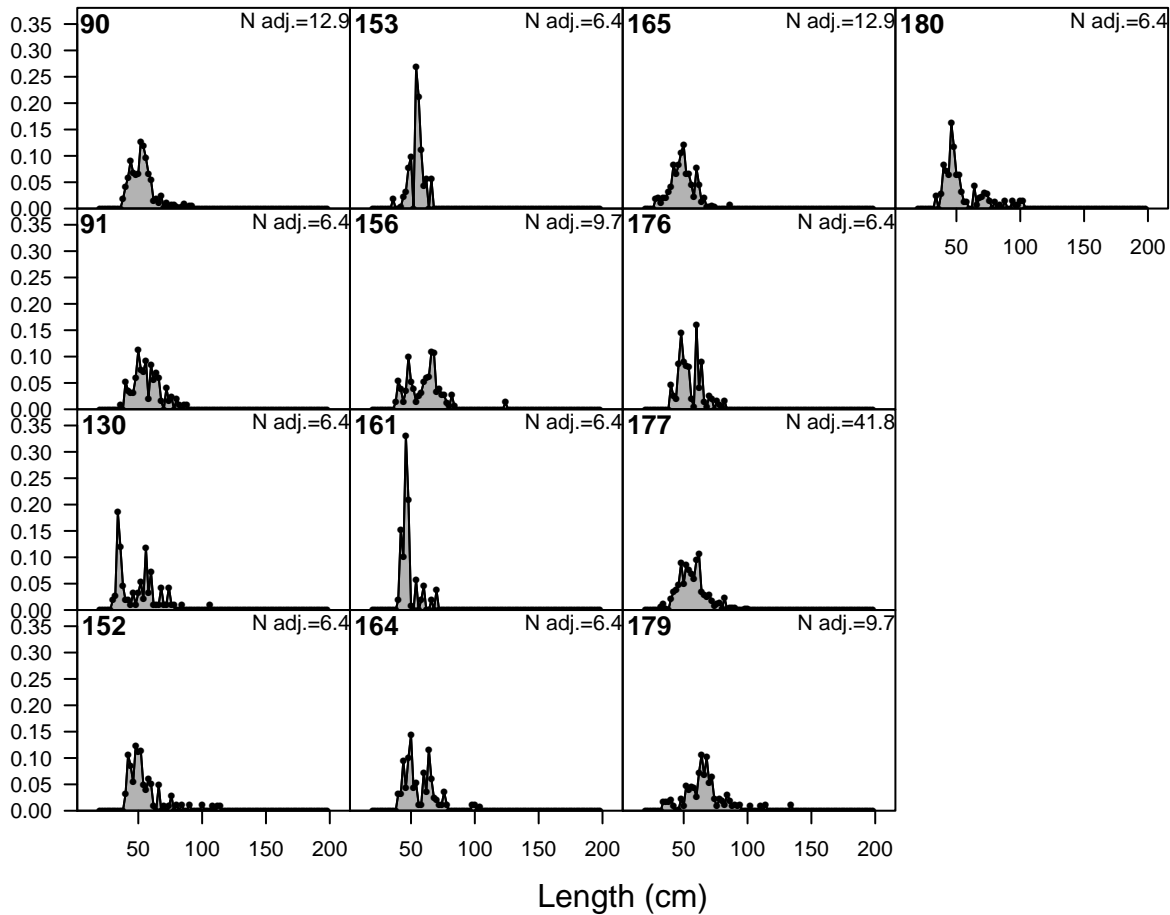


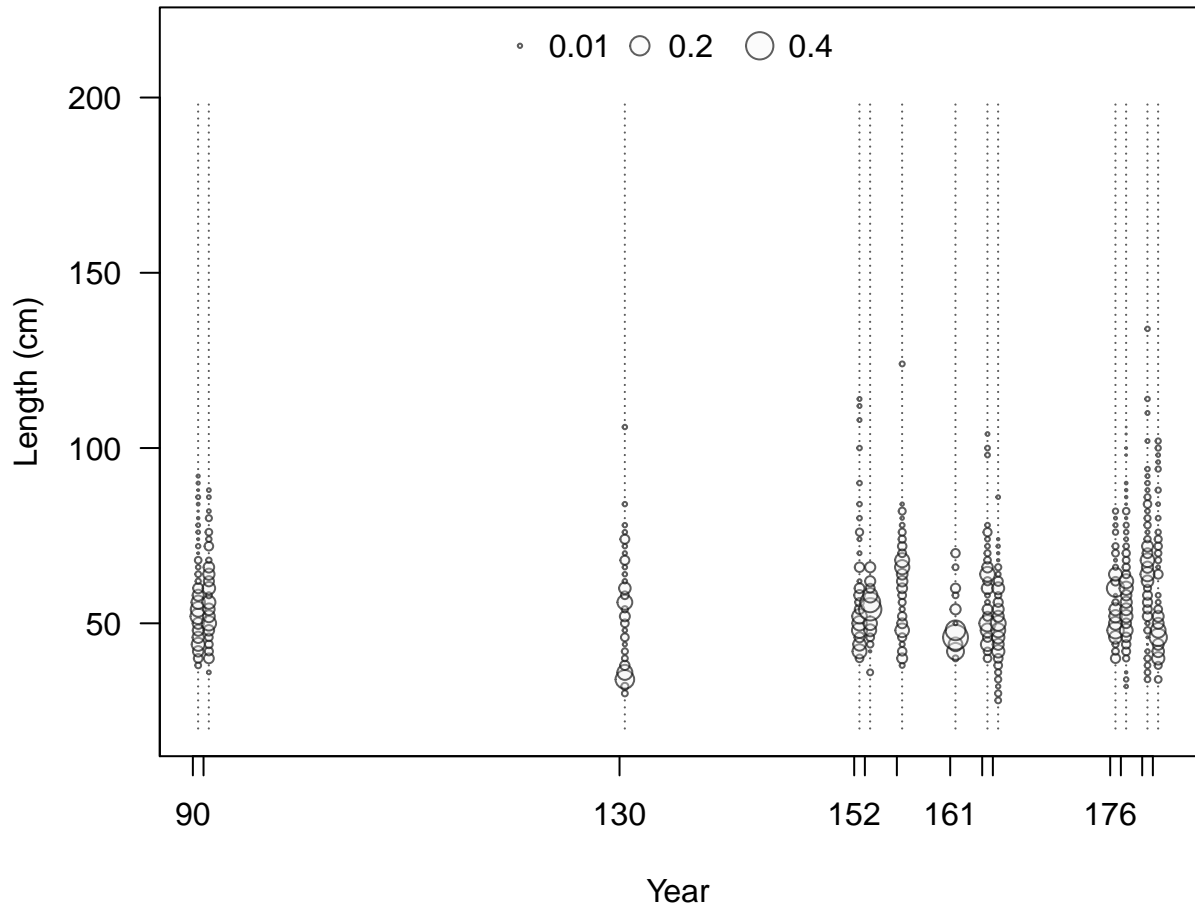


## A3-OBJ (whole catch)



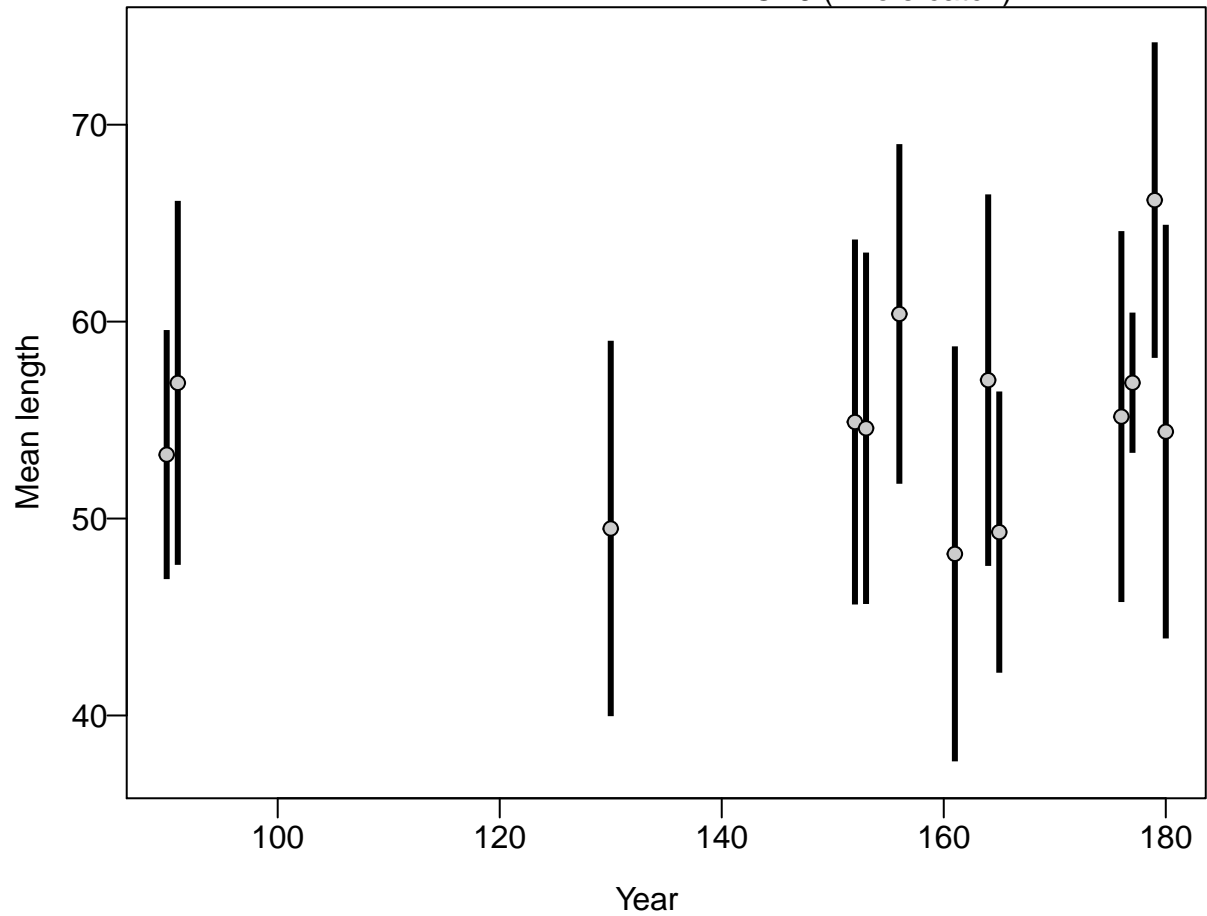
Proportion



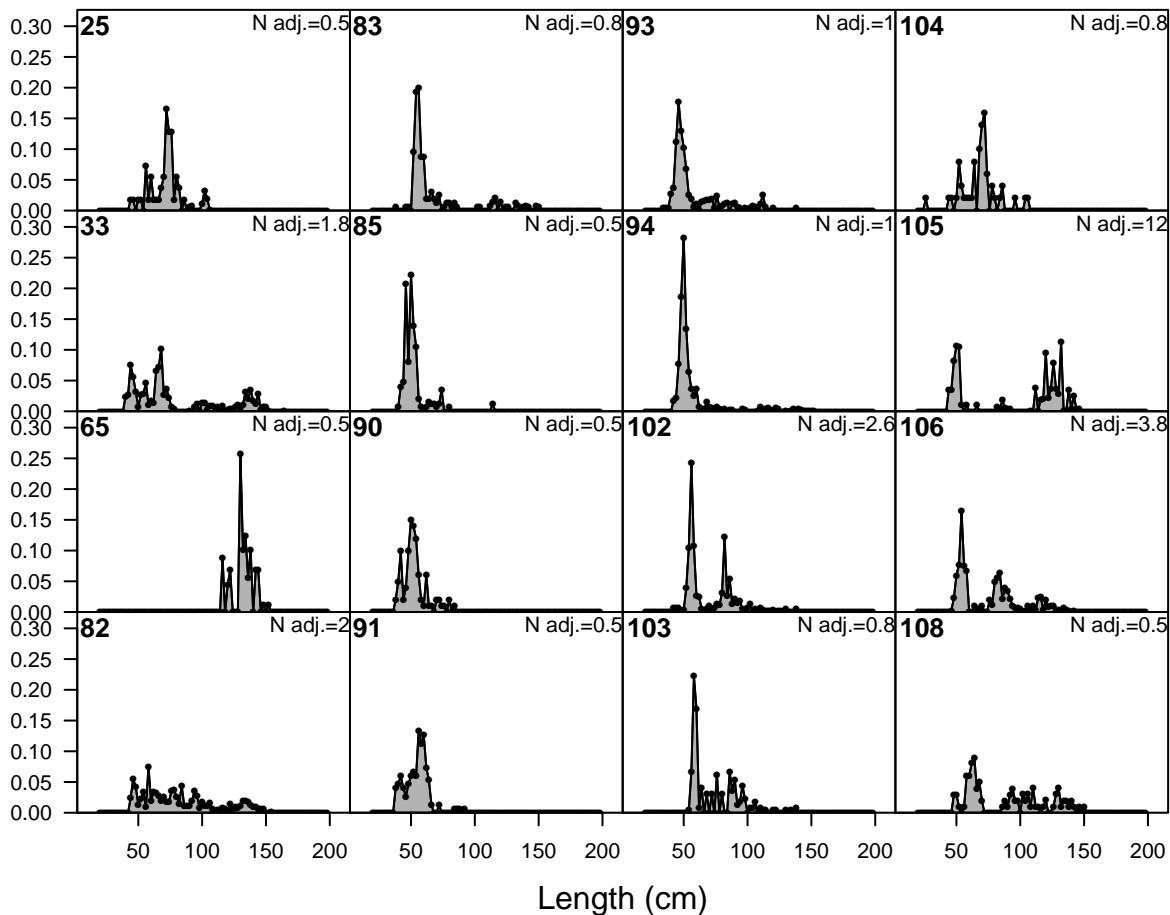




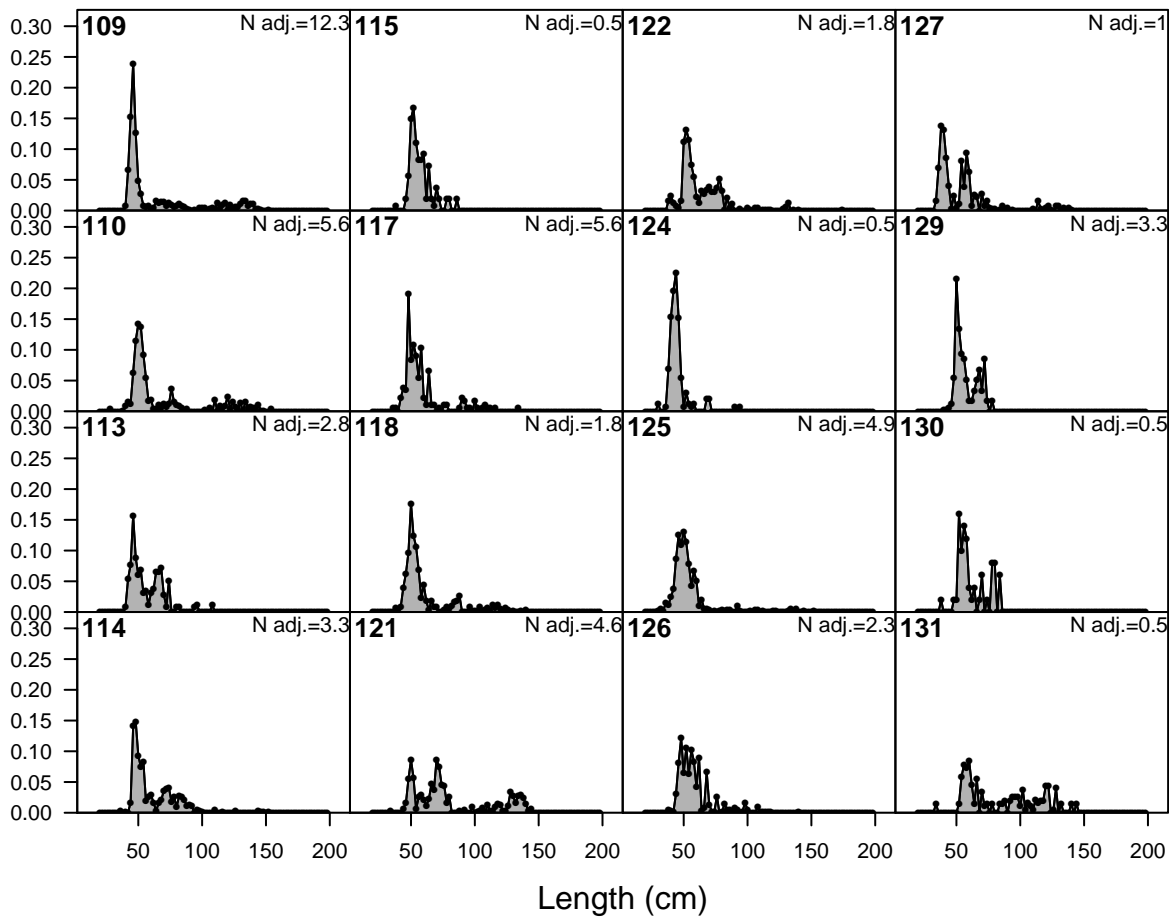
## A4-OBJ (whole catch)



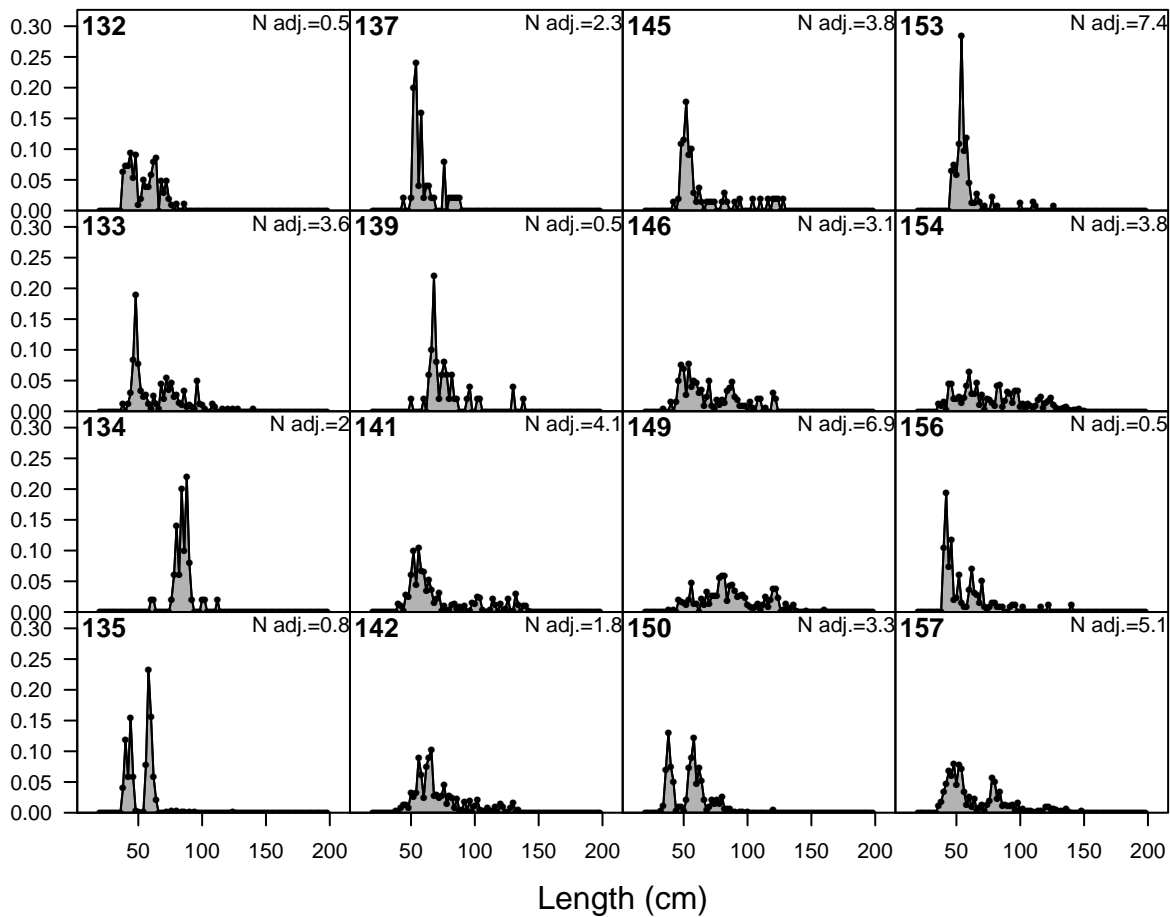
Proportion



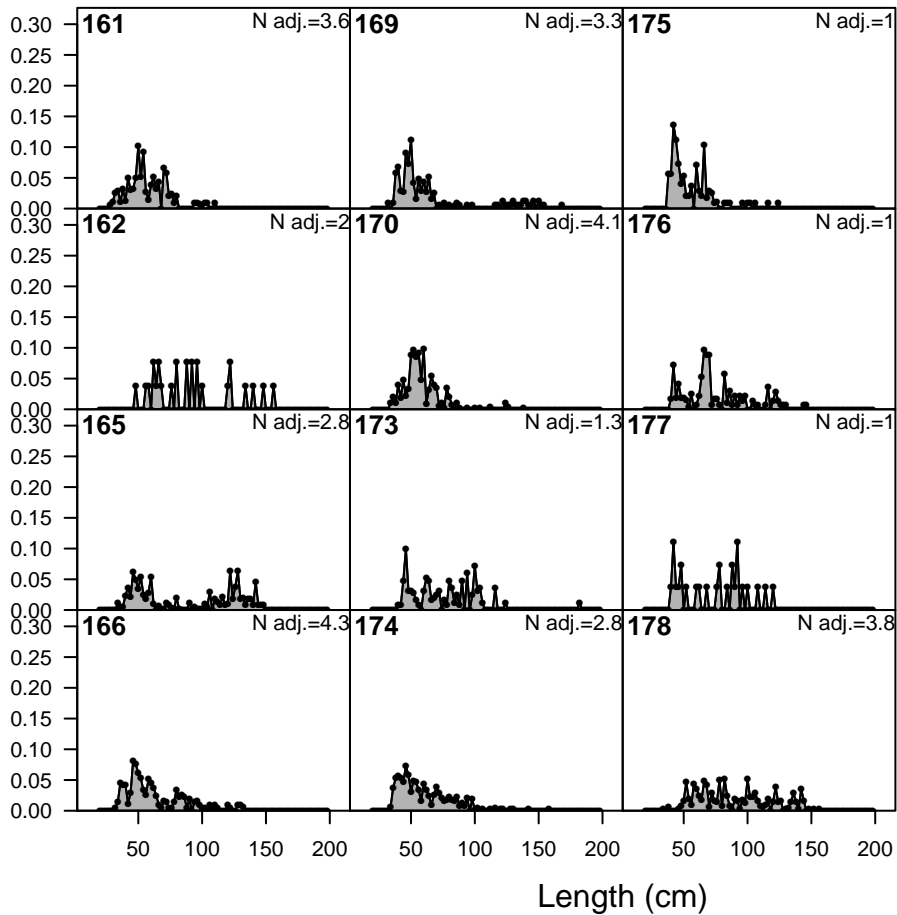
Proportion

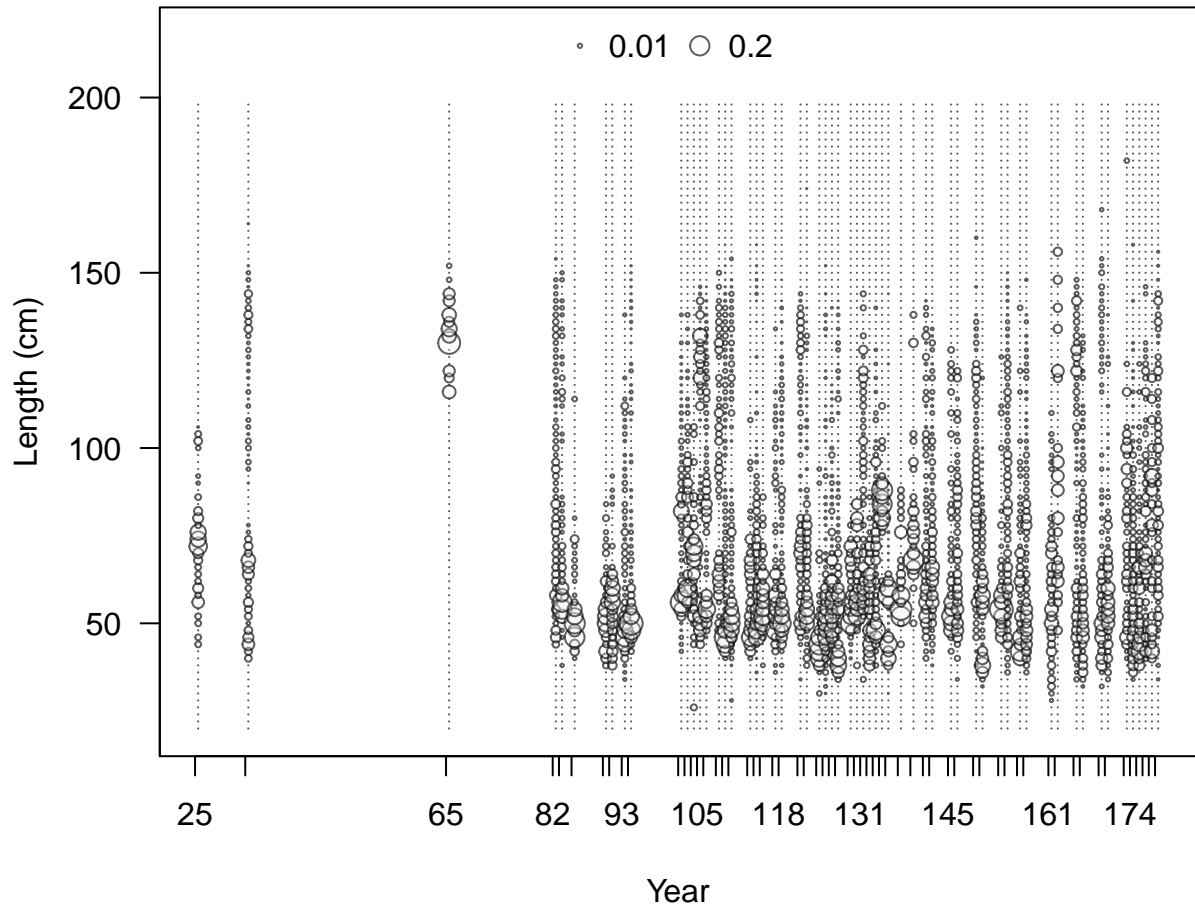


Proportion

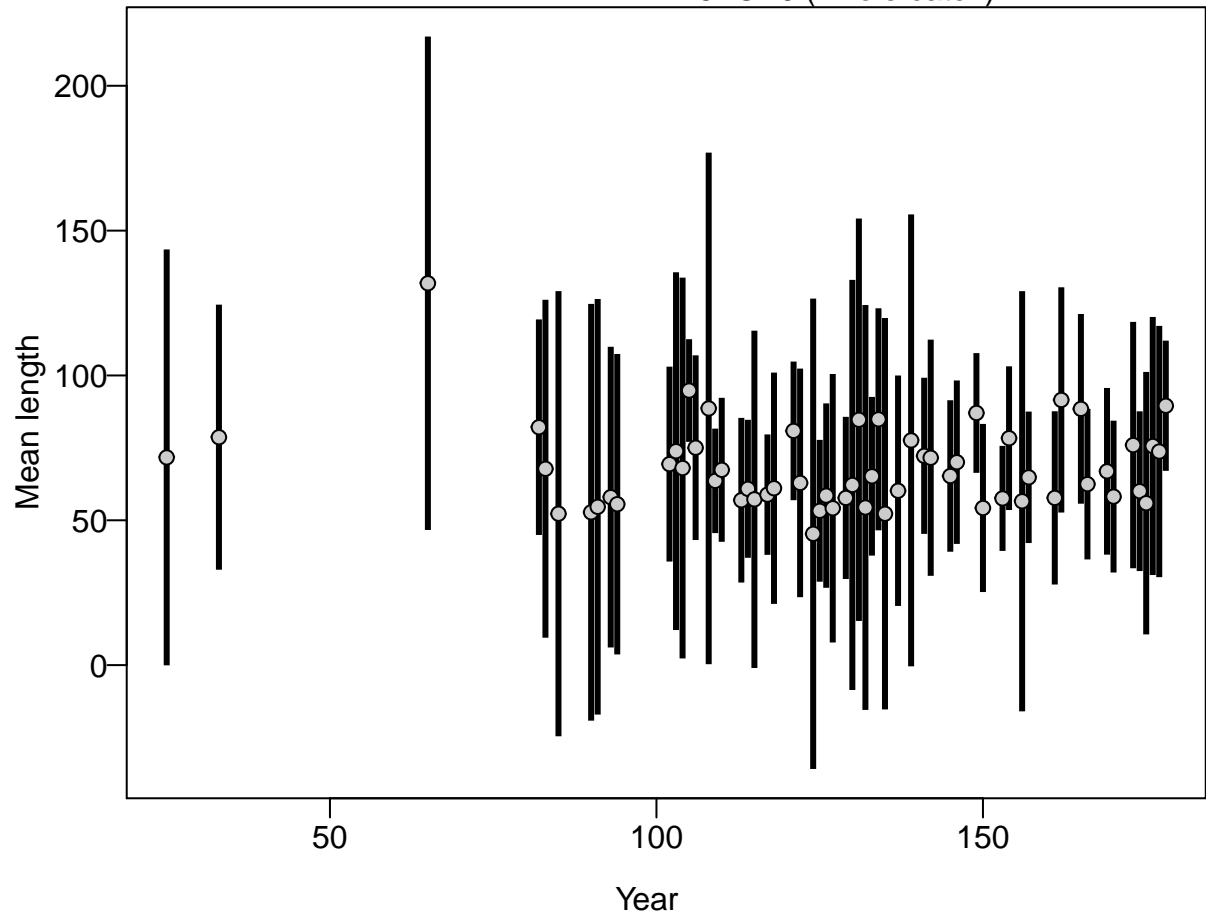


Proportion

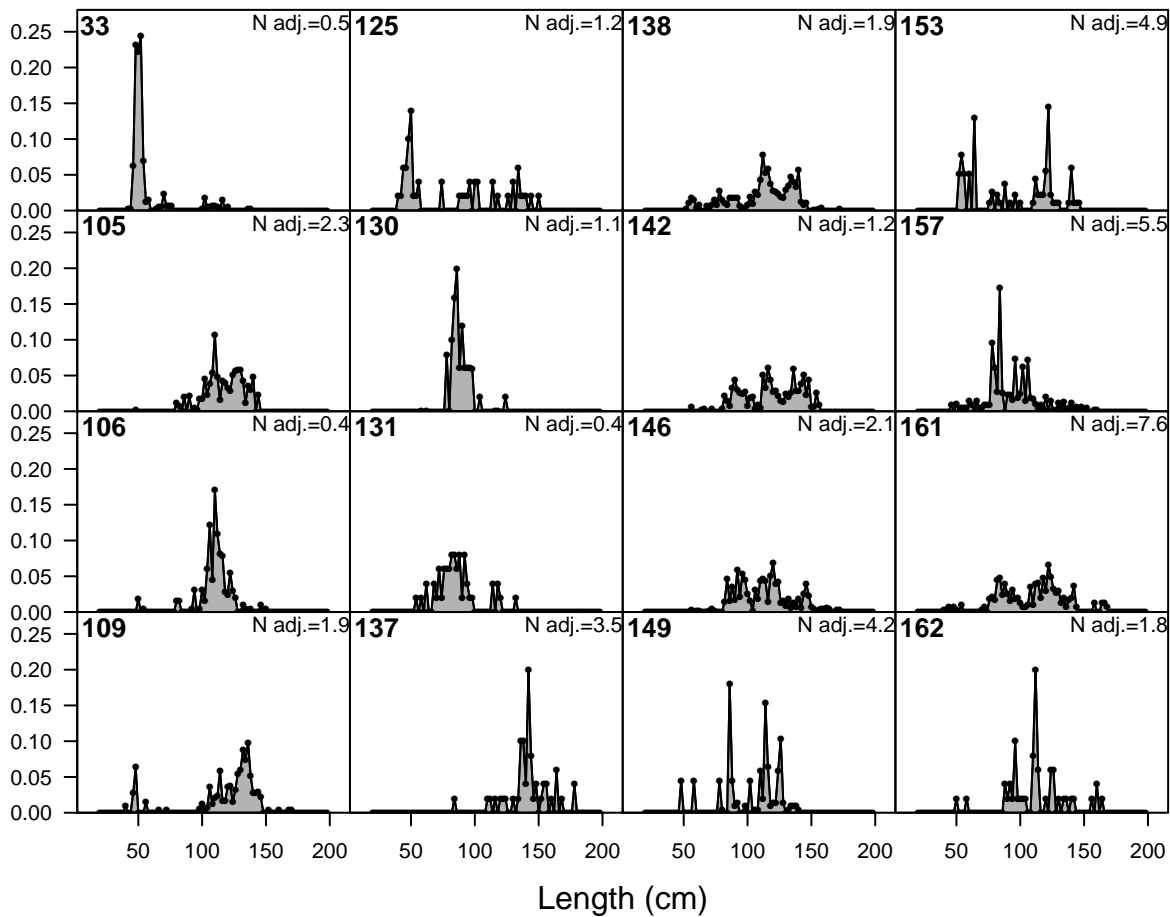




## A5-OBJ (whole catch)

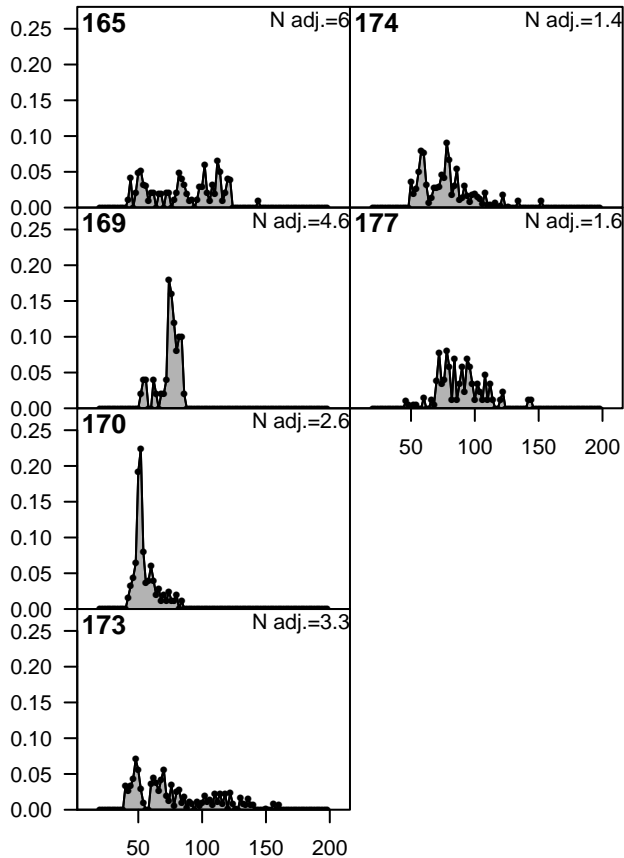


Proportion

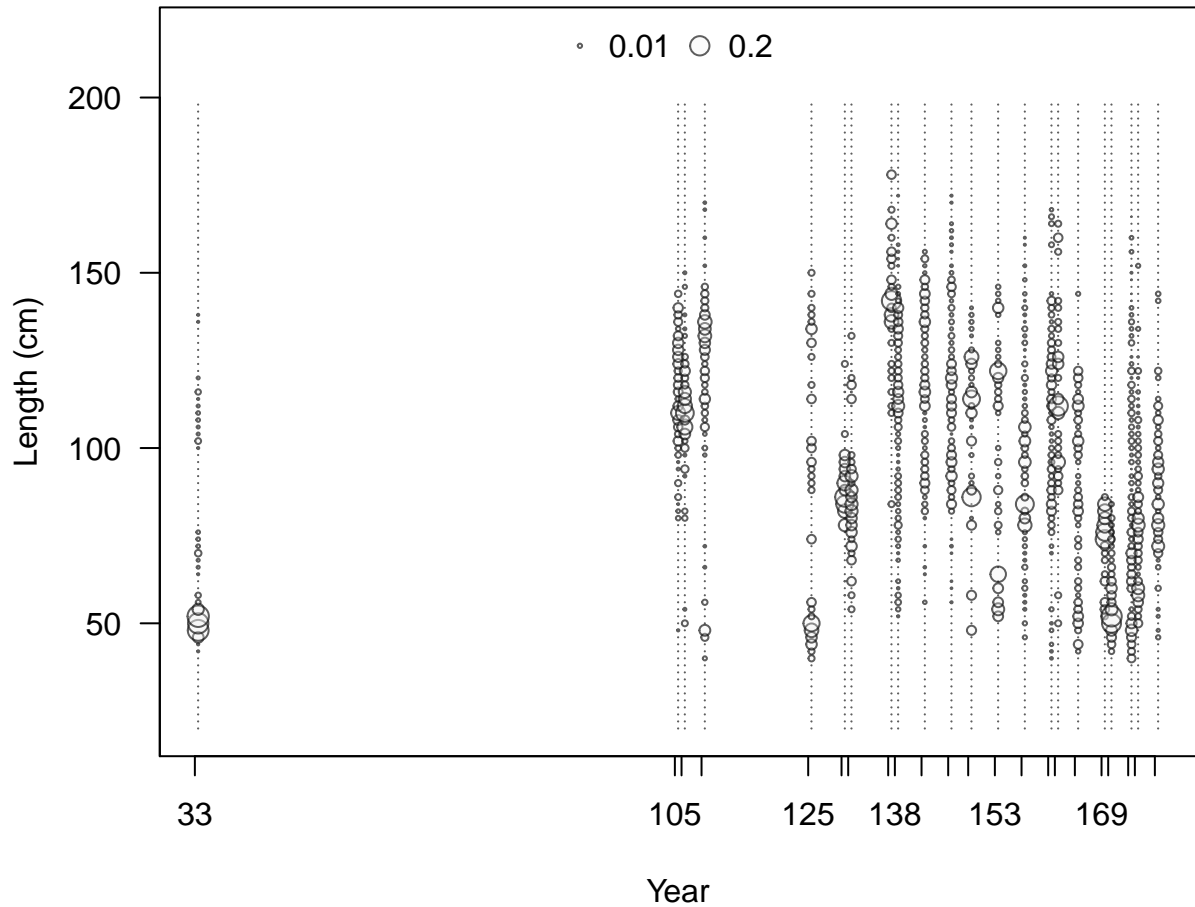




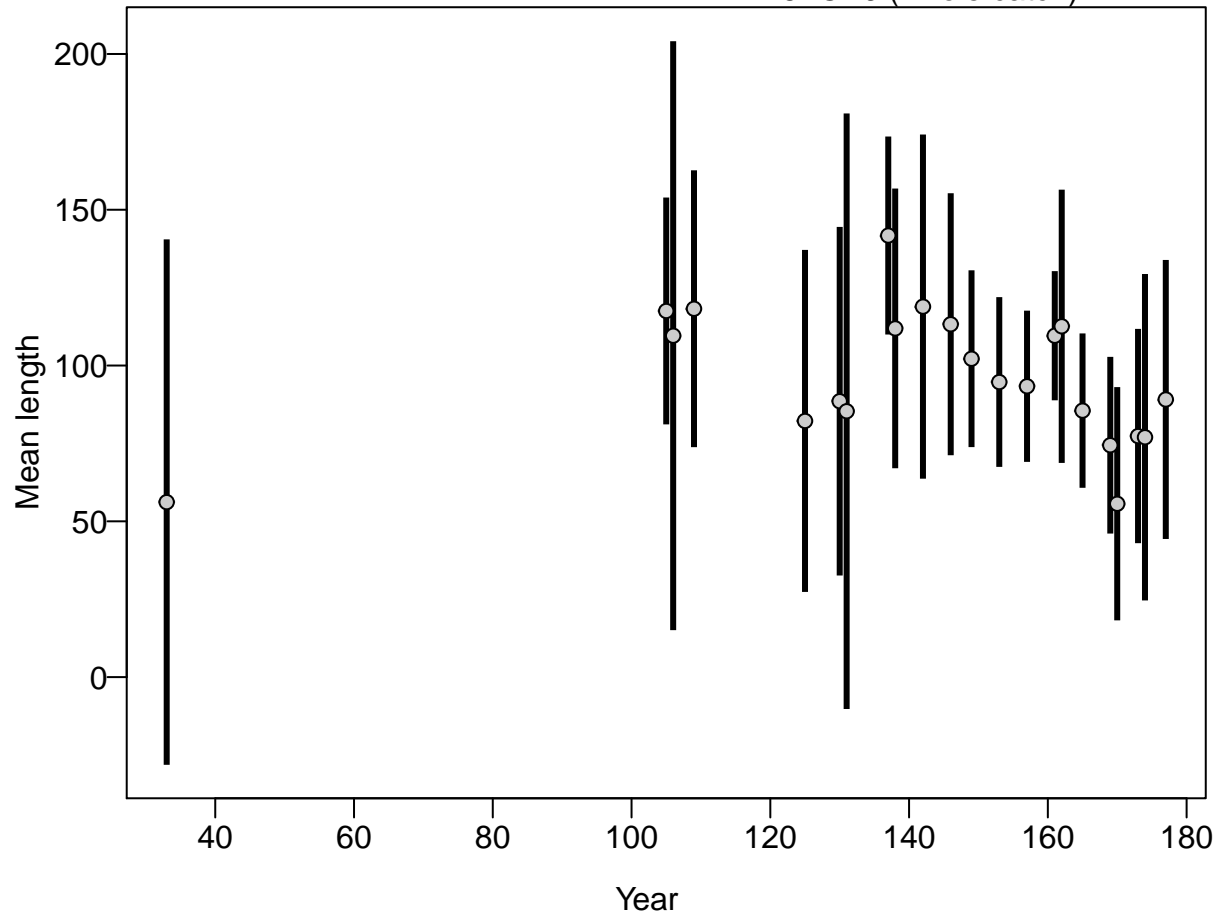
Proportion

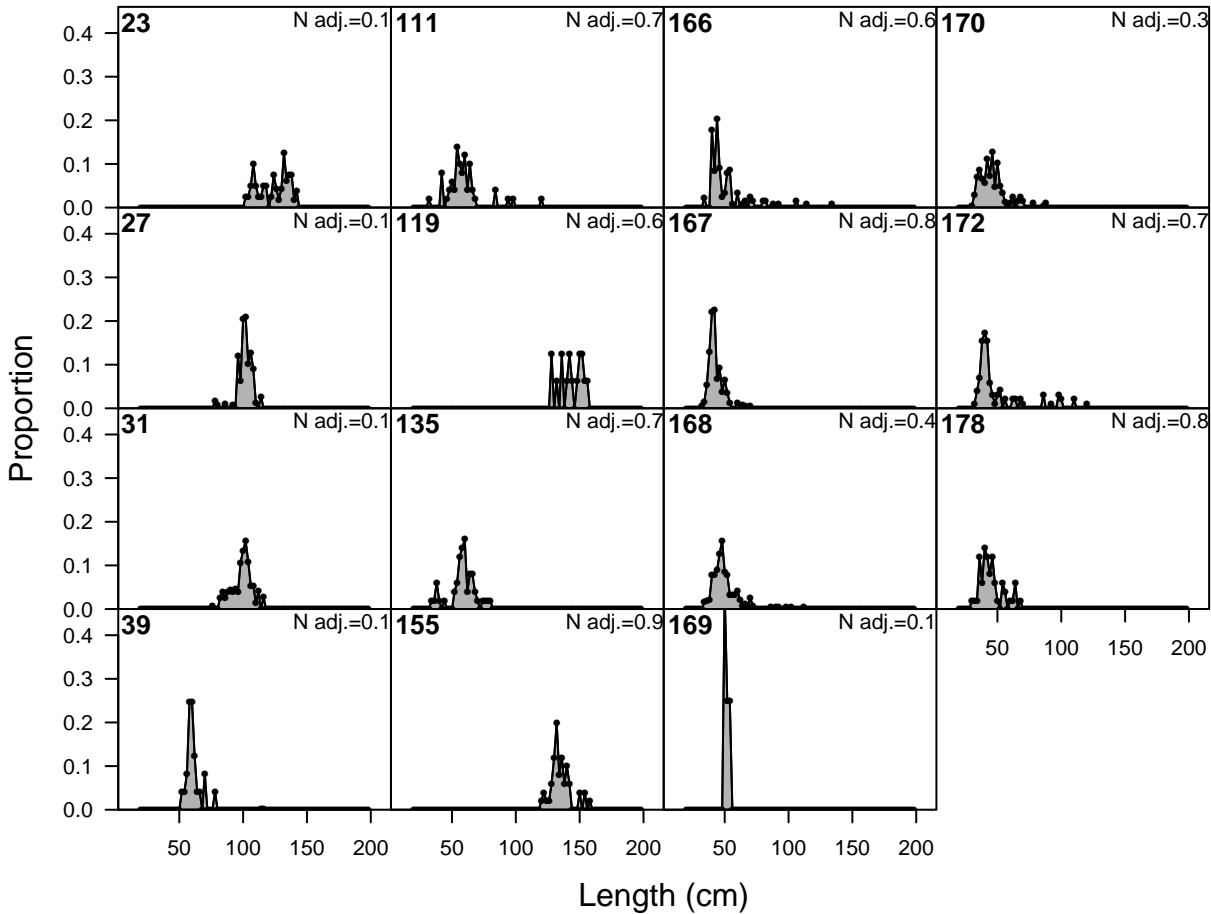


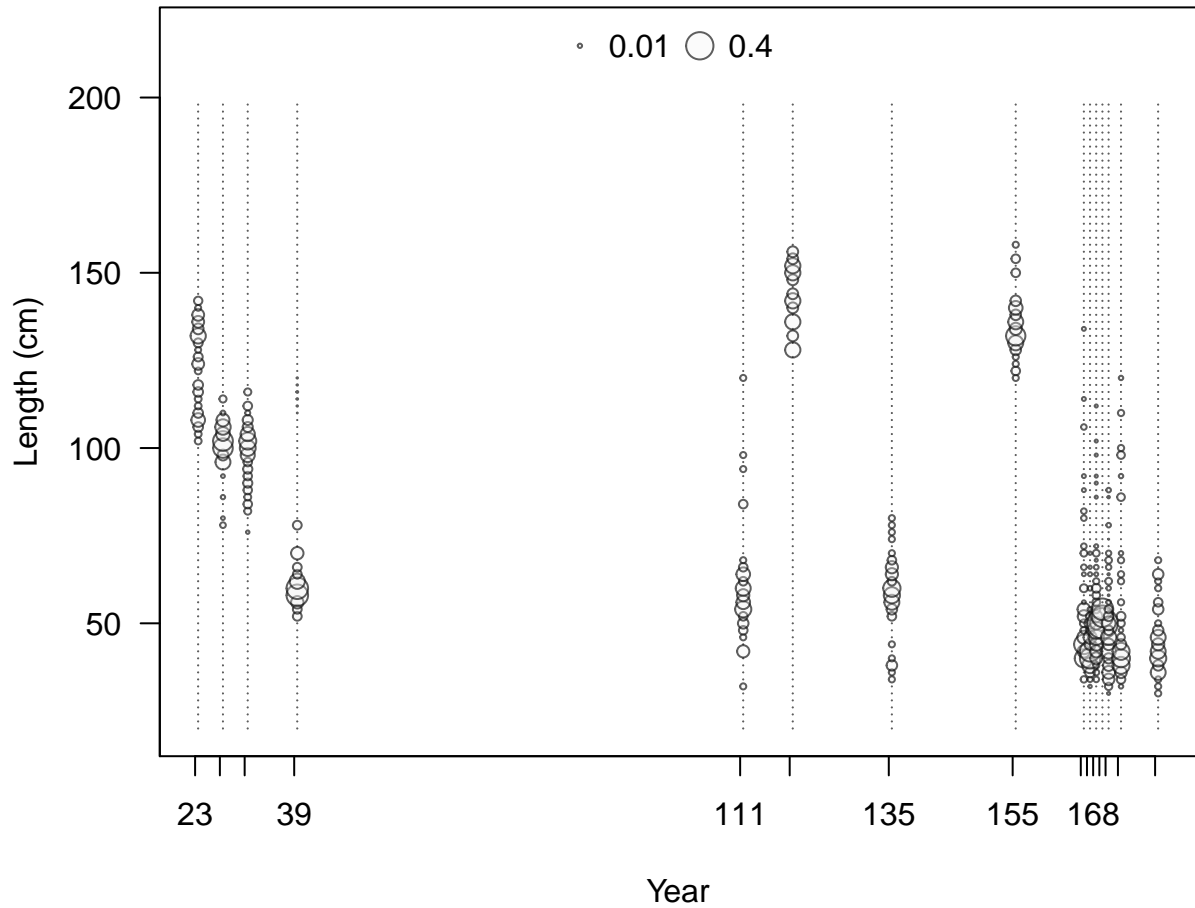
Length (cm)



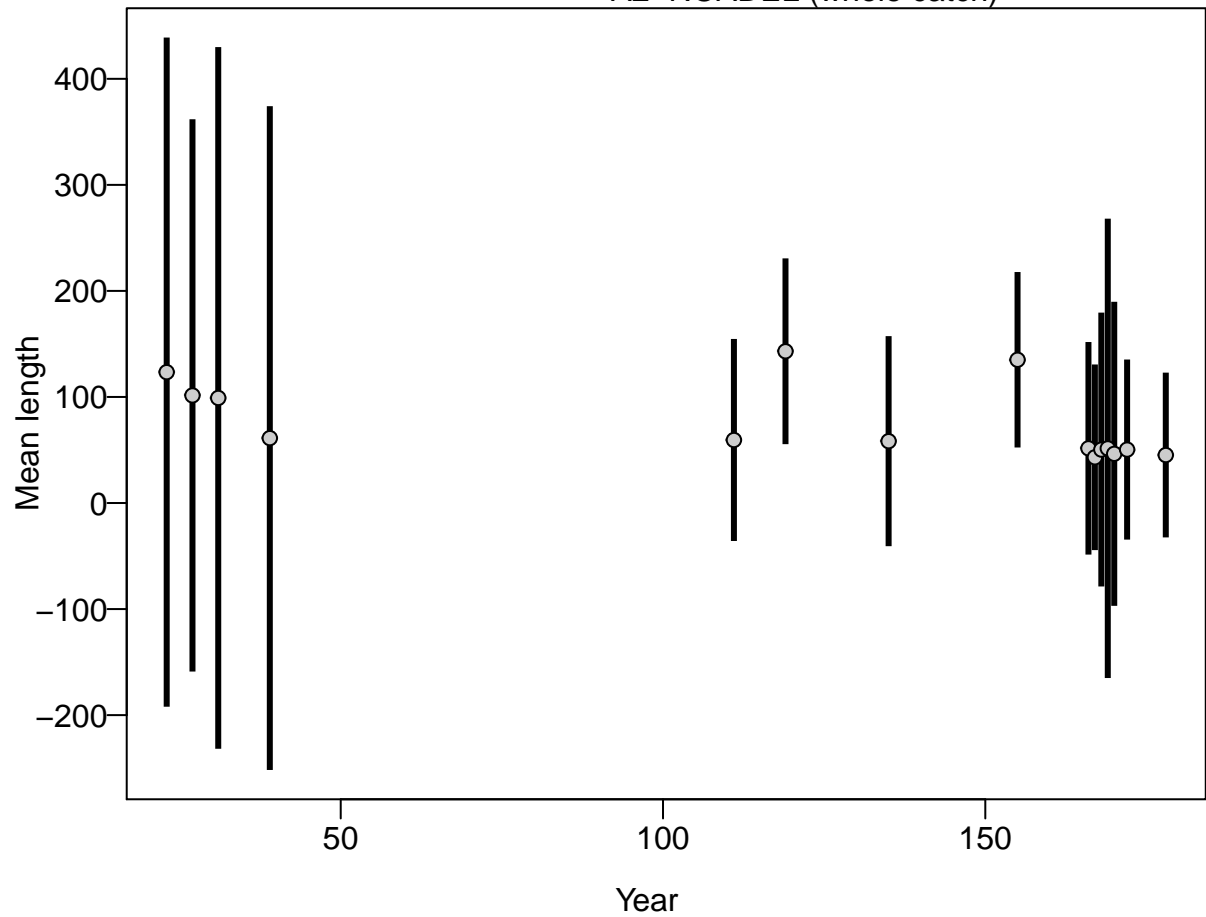
## A6-OBJ (whole catch)

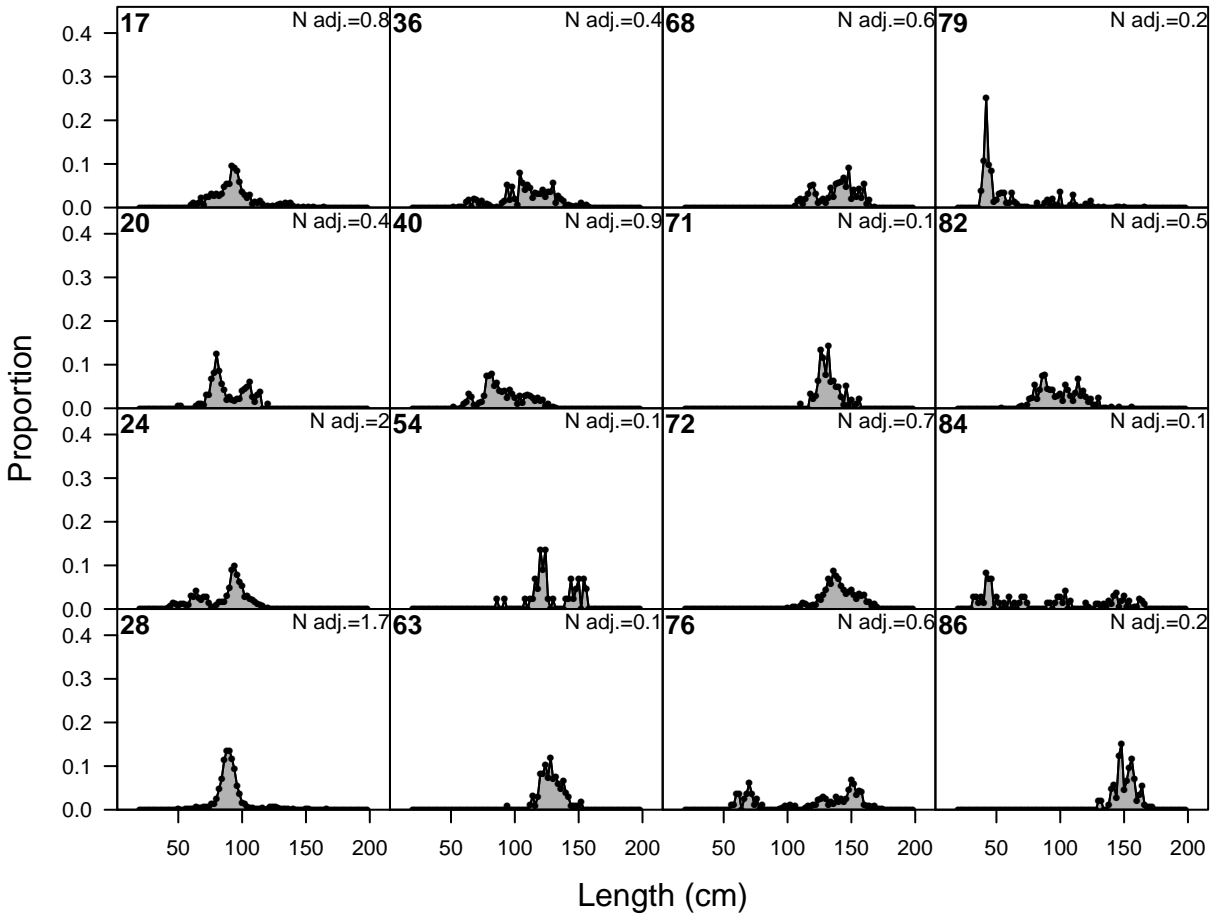


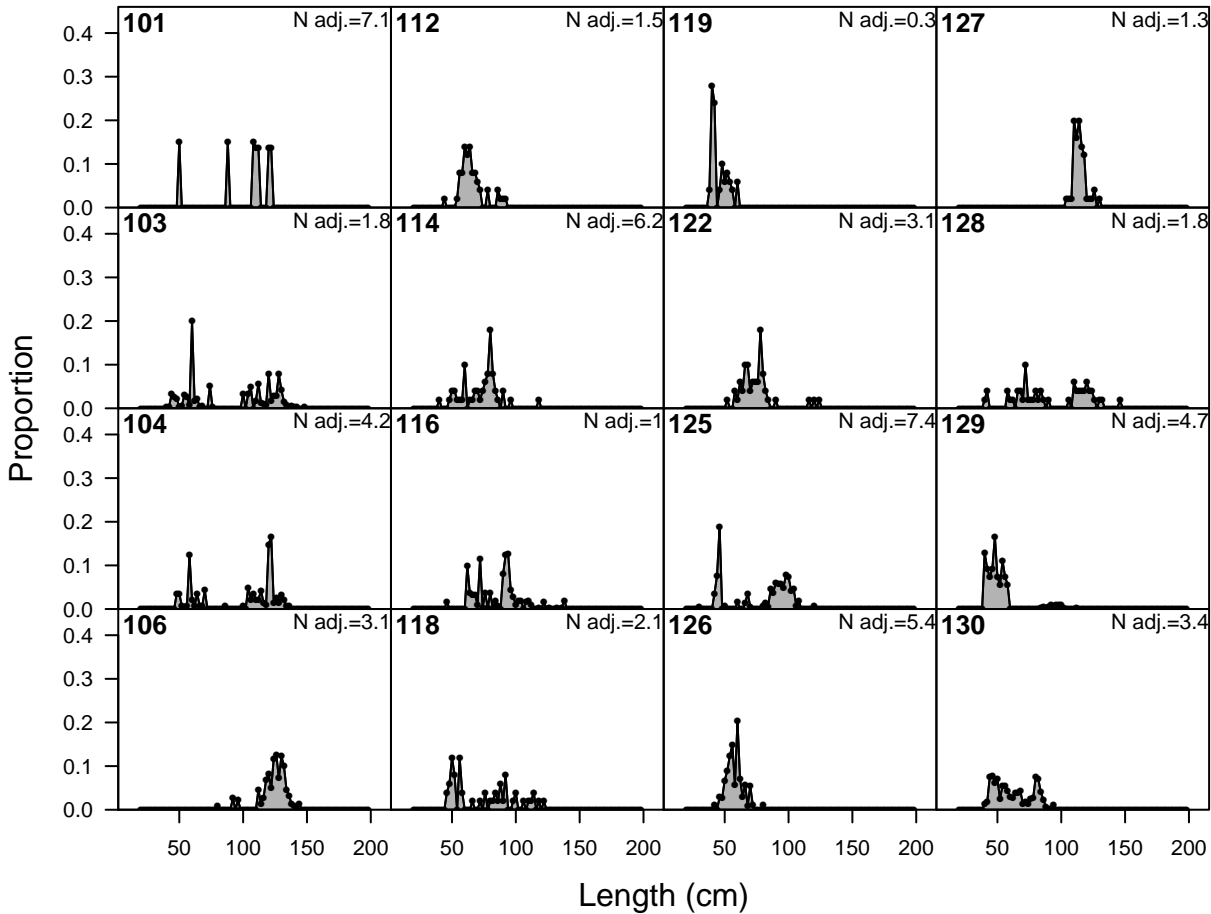




## A2-NOADEL (whole catch)

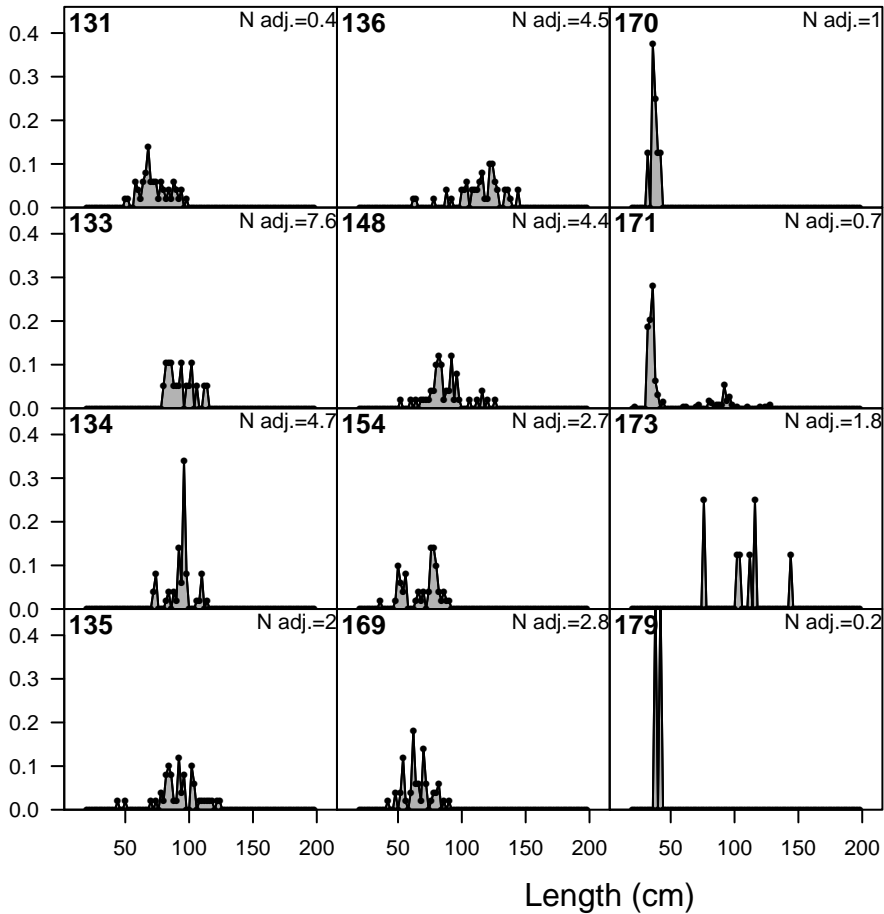


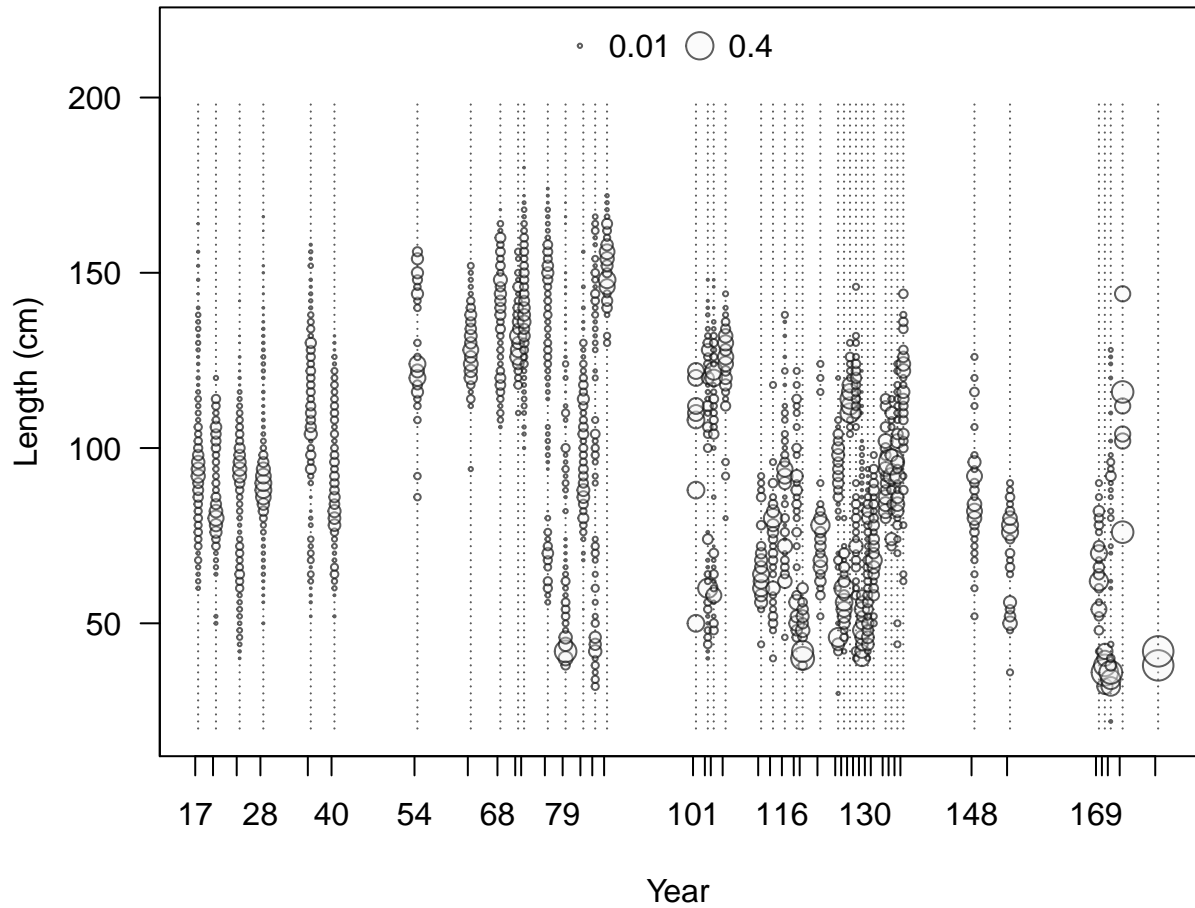




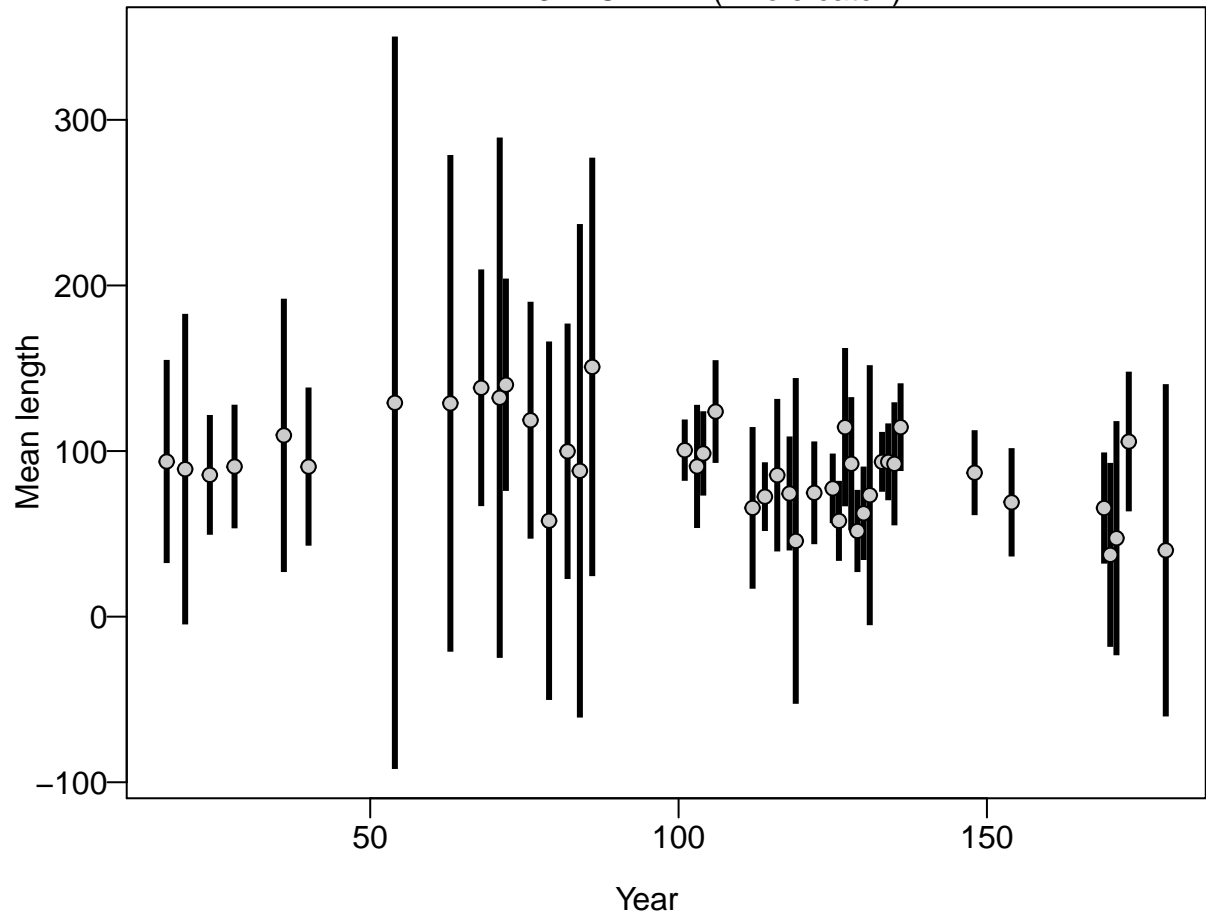


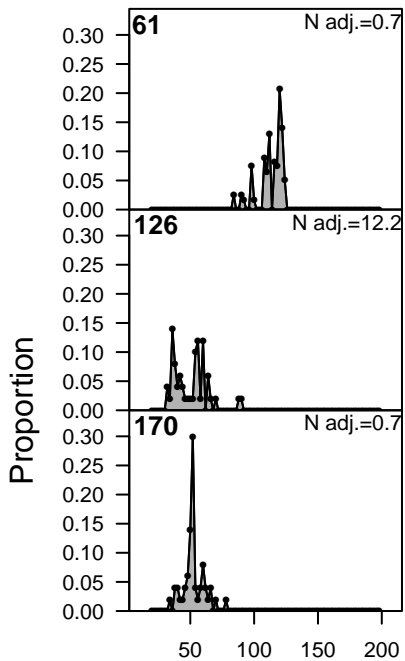
Proportion



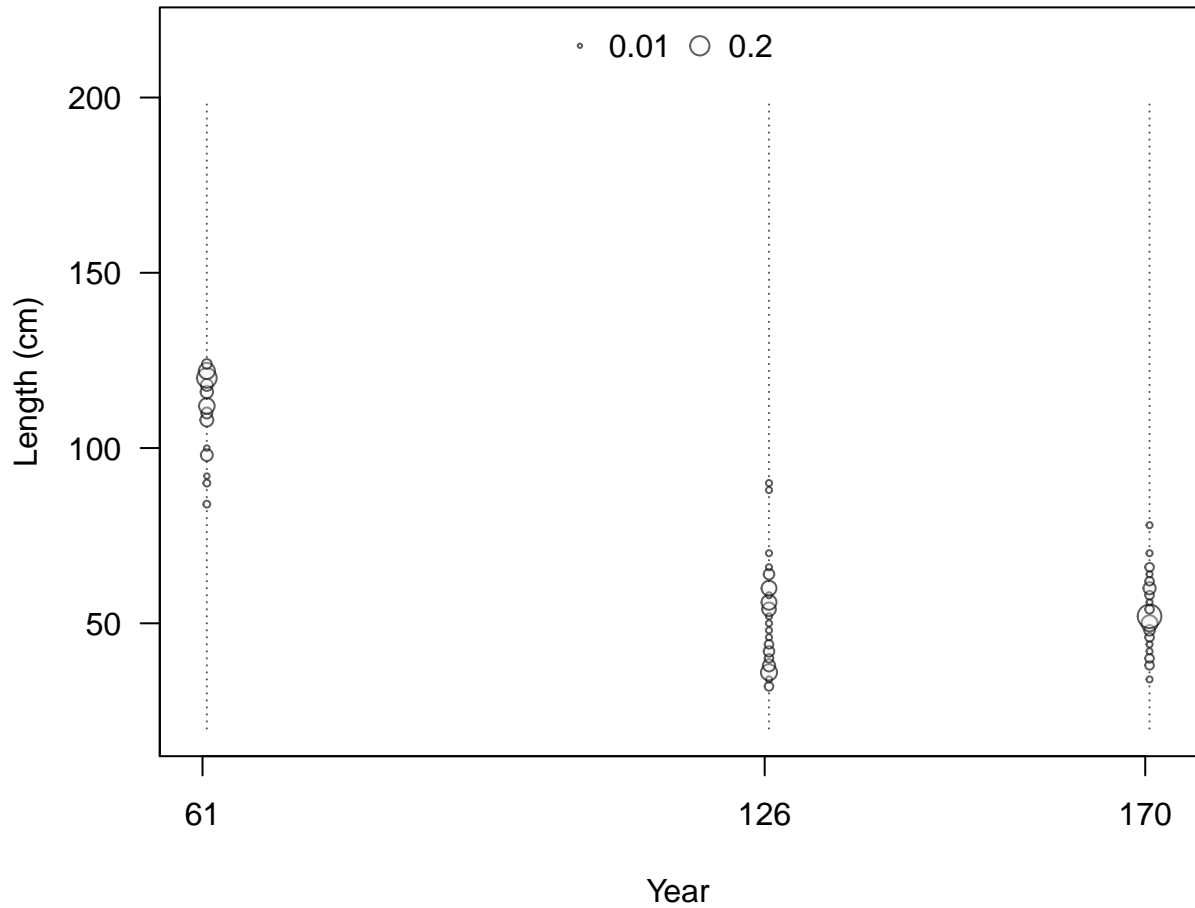


A3-NOADEL (whole catch)

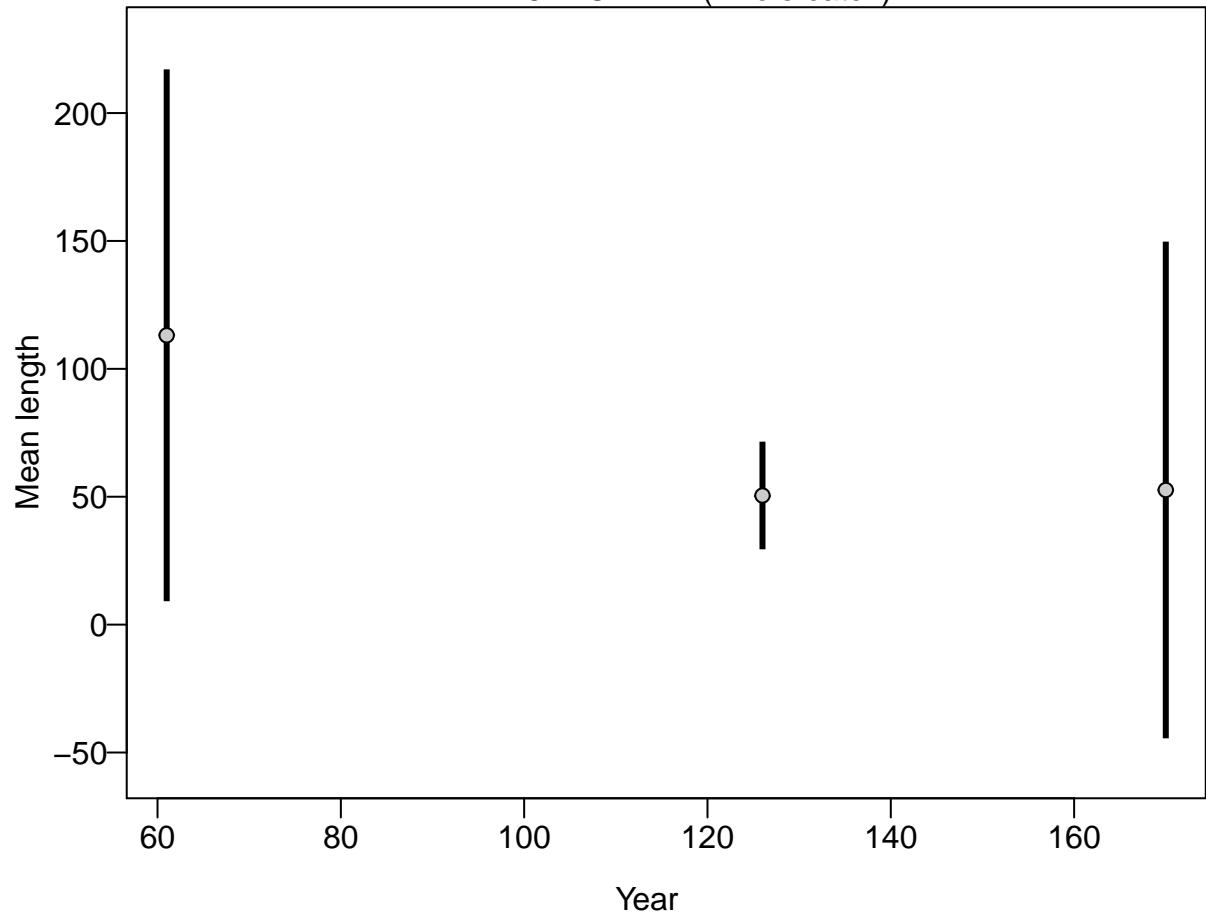




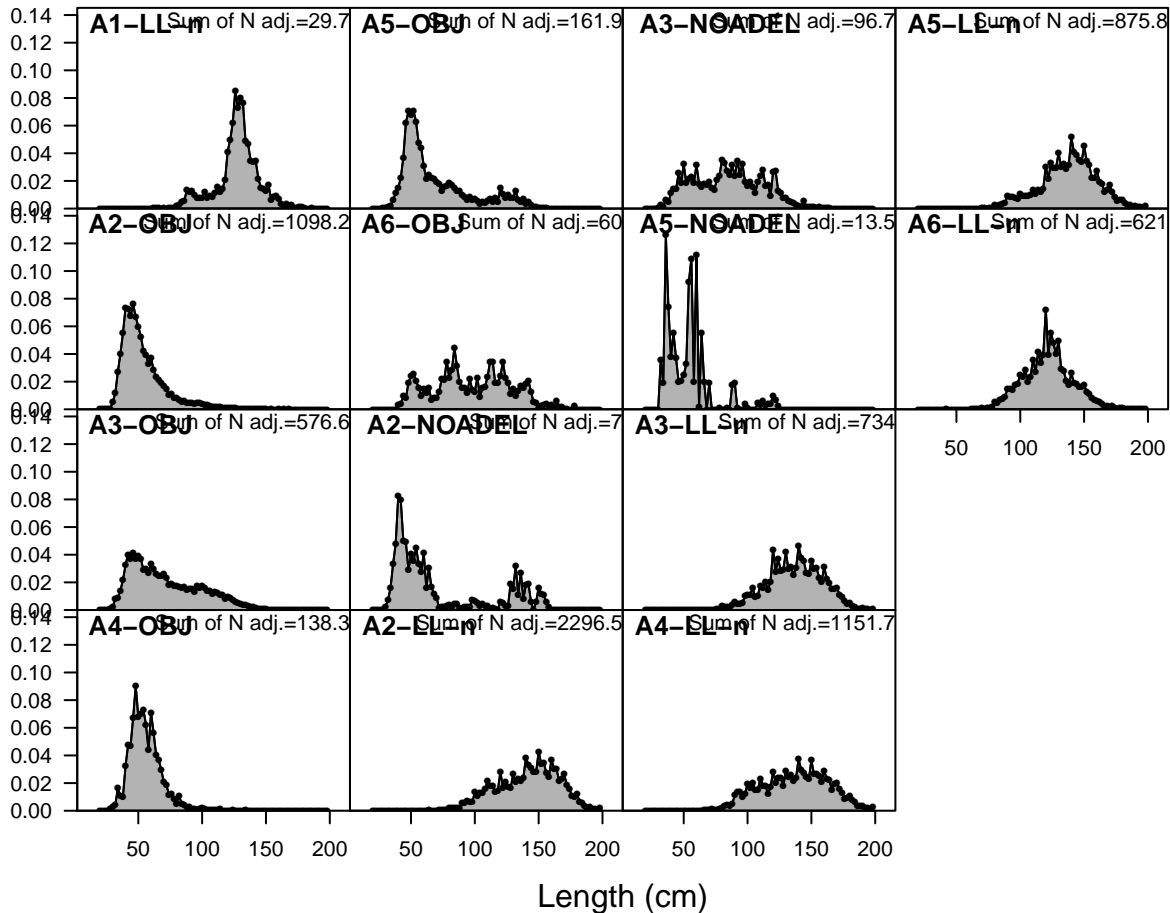
Length (cm)

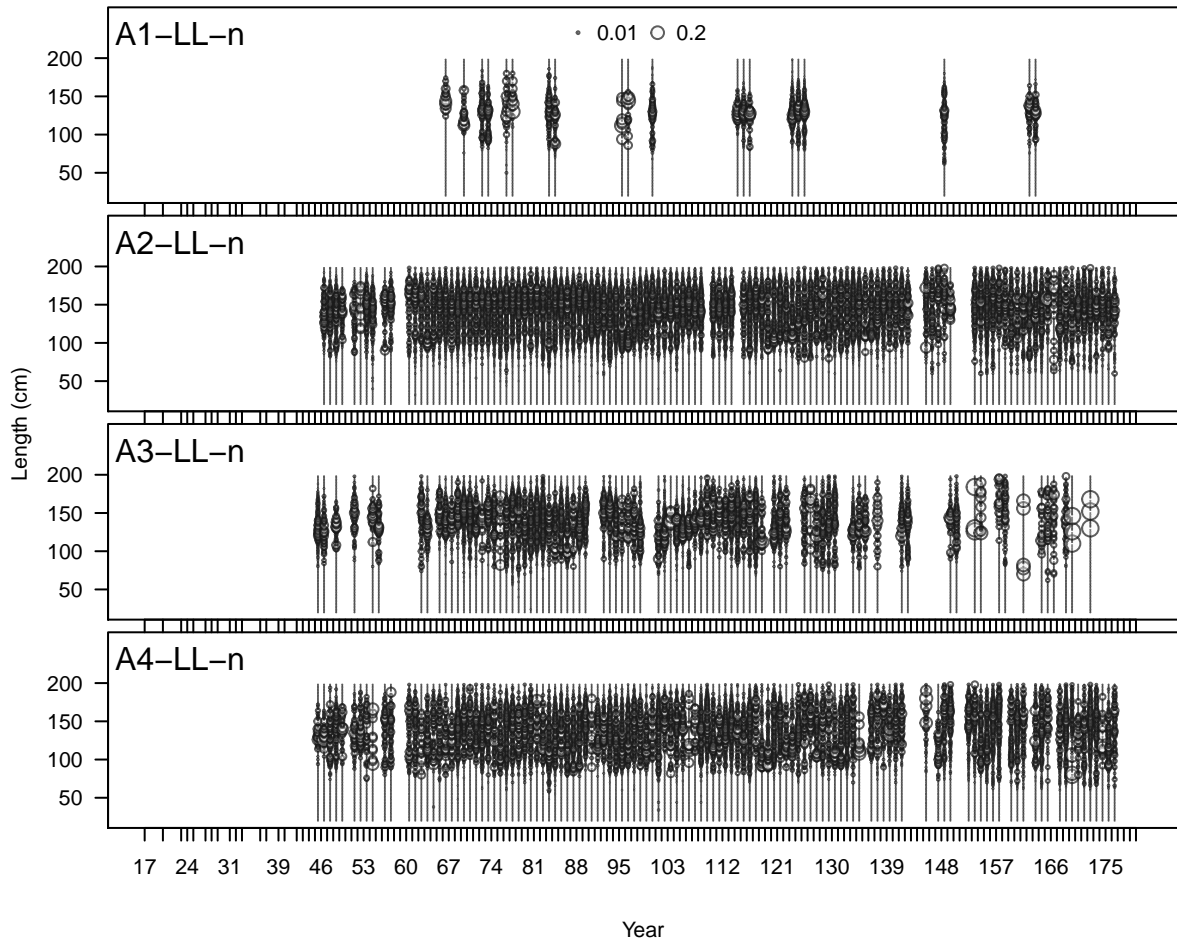


A5-NOADEL (whole catch)

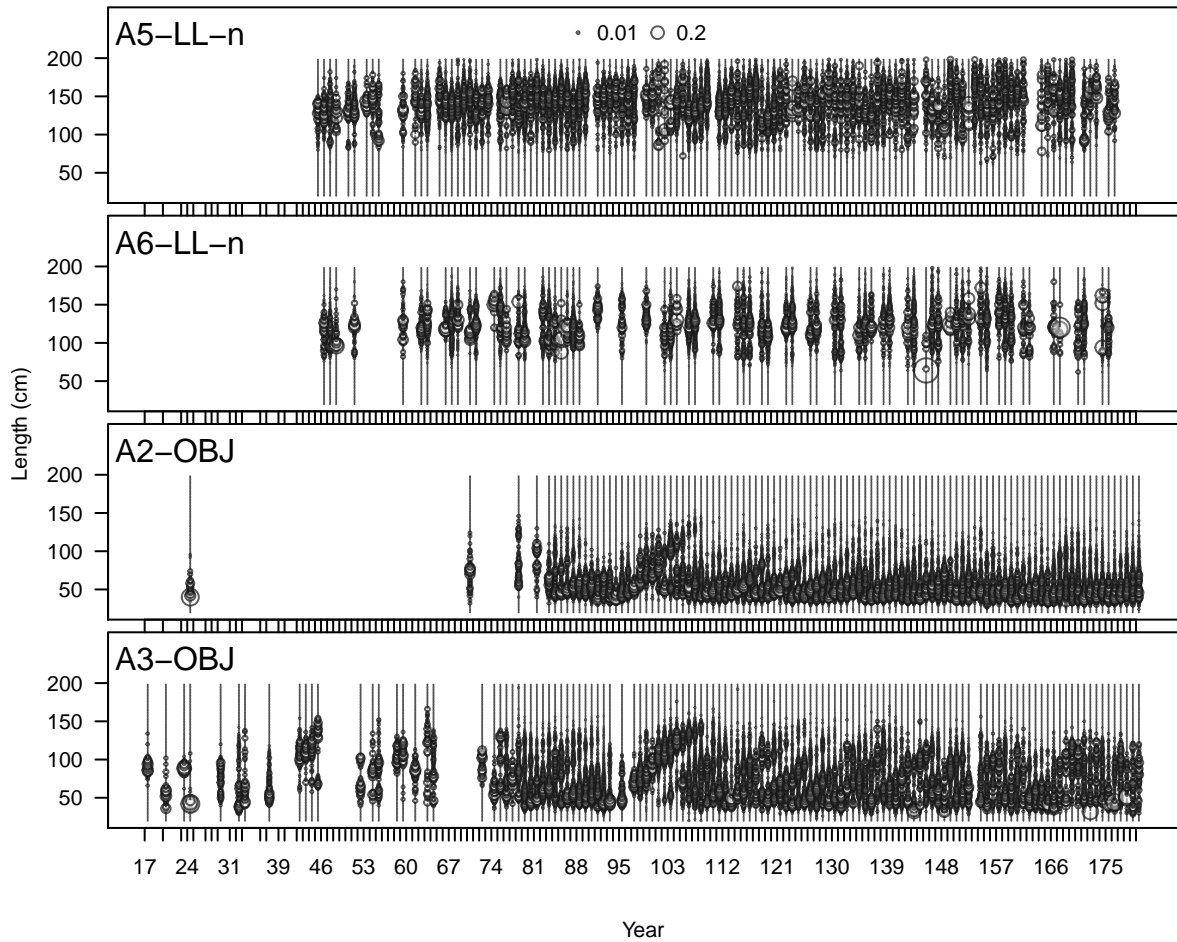


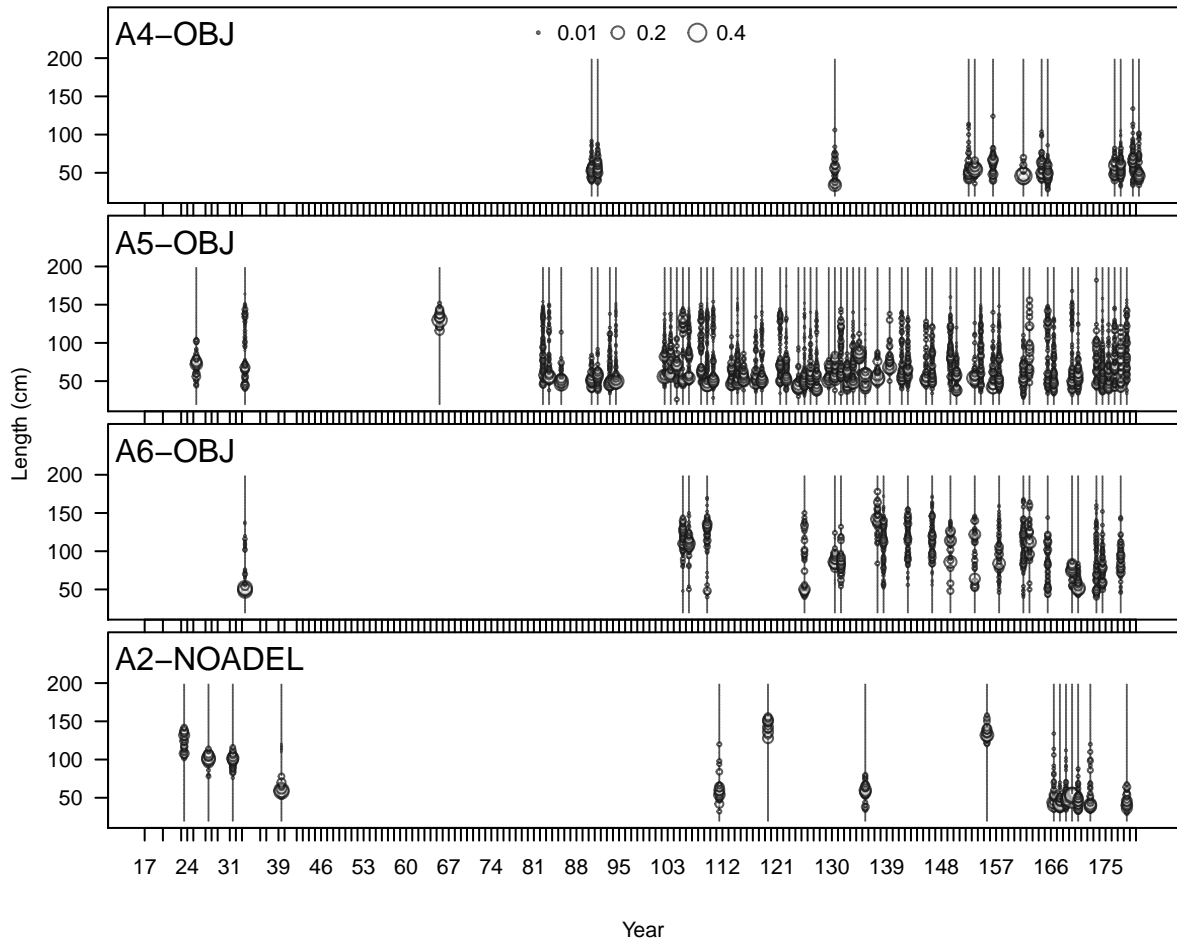
Proportion

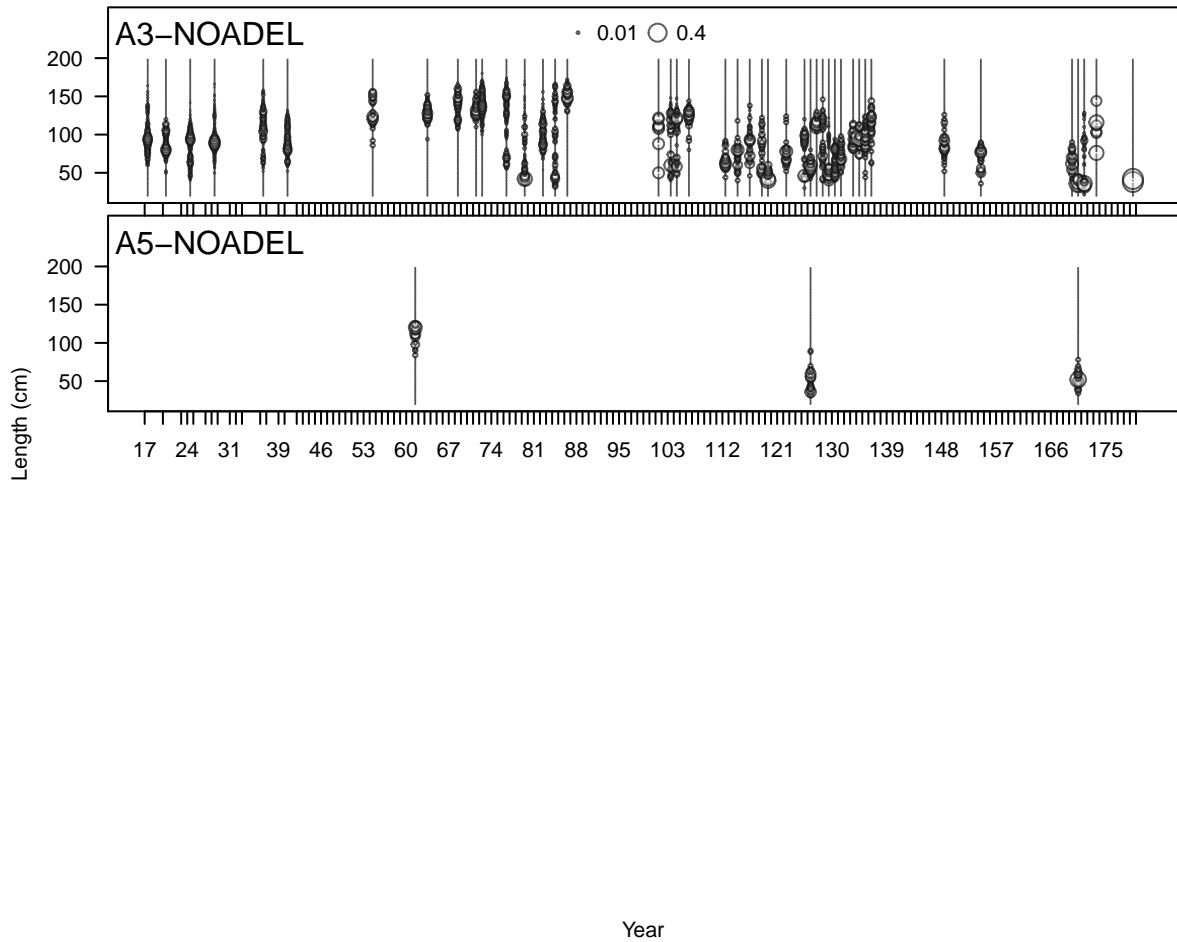




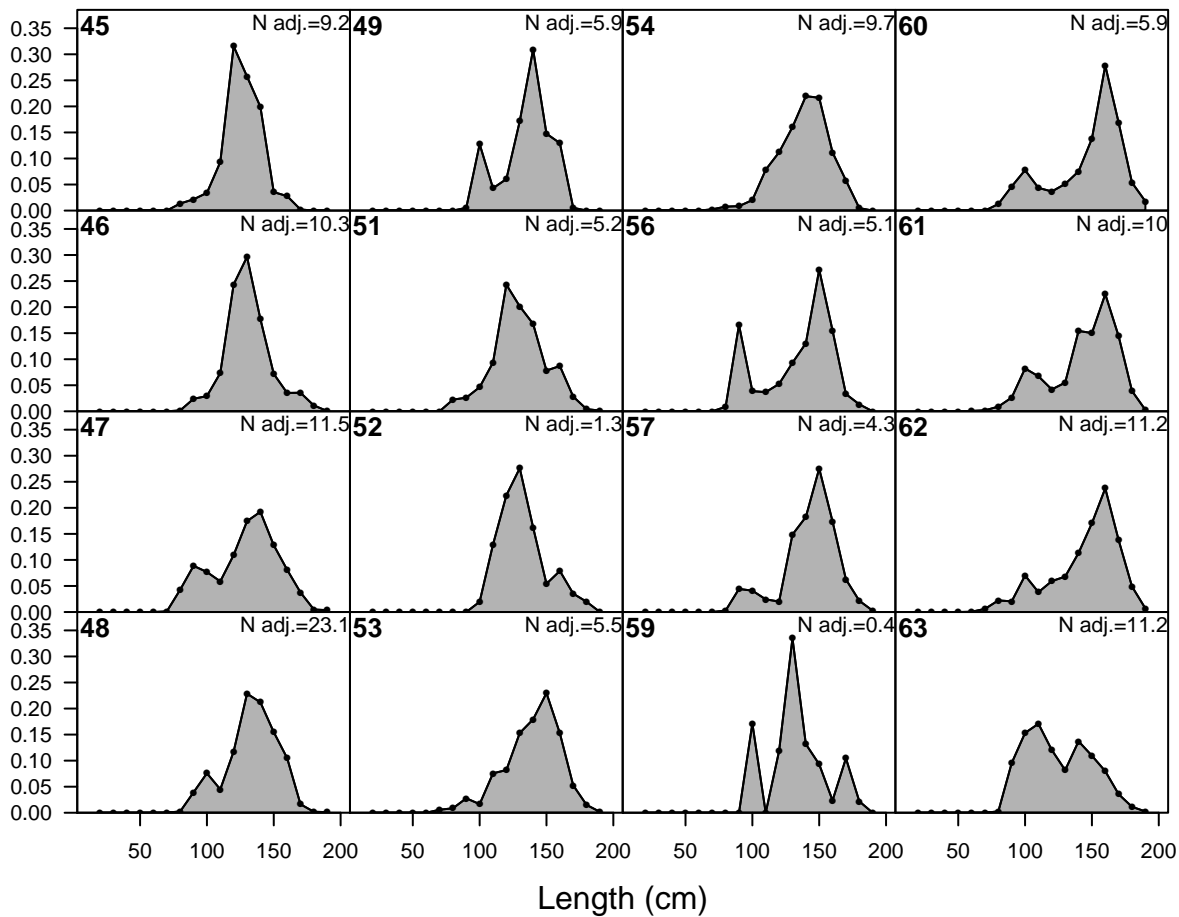




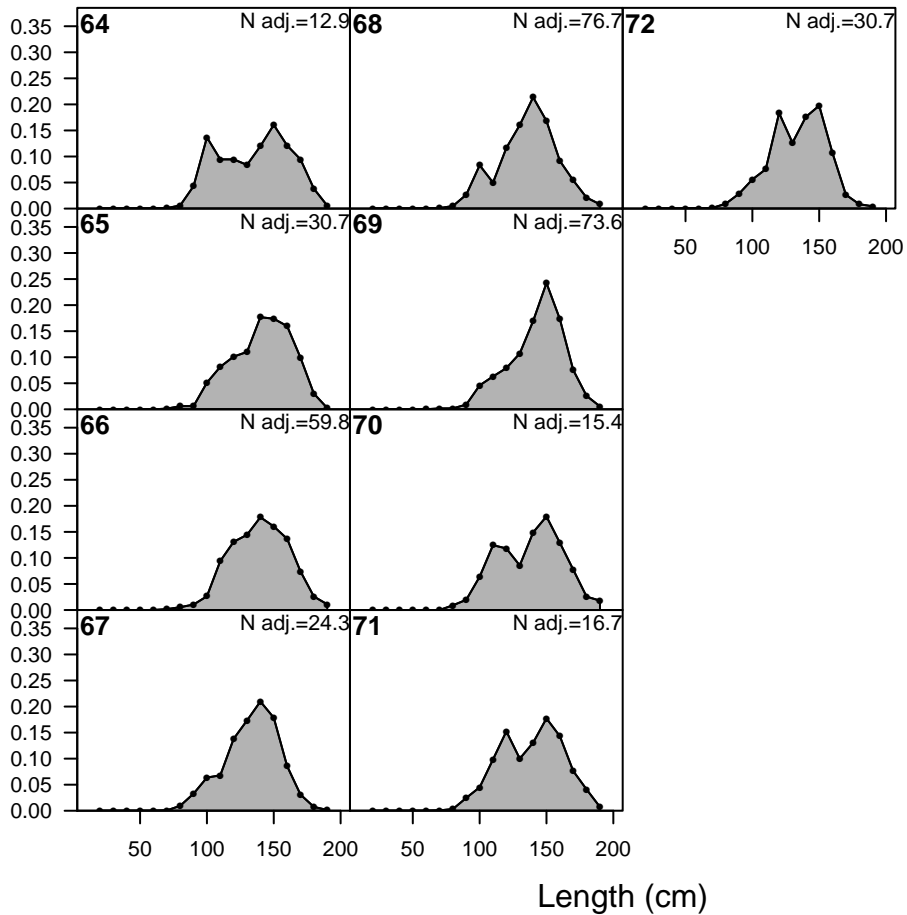


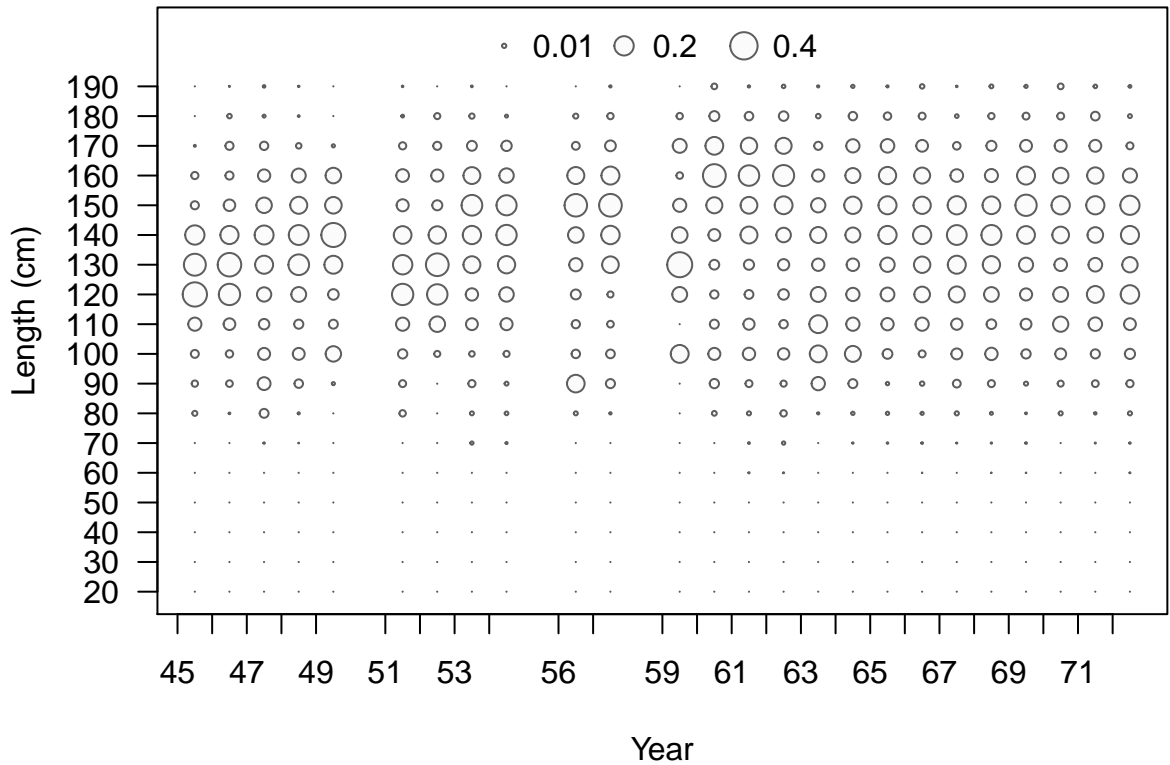


Proportion

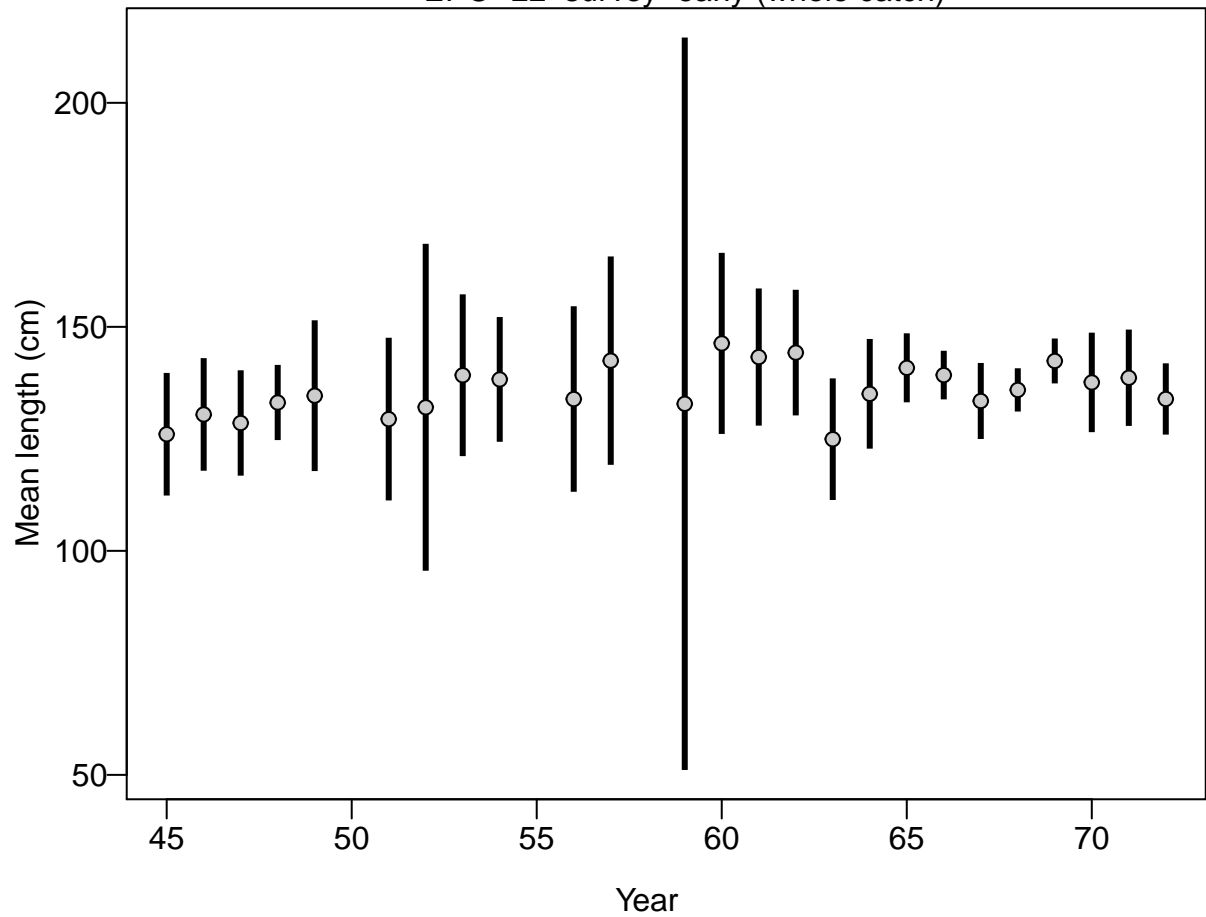


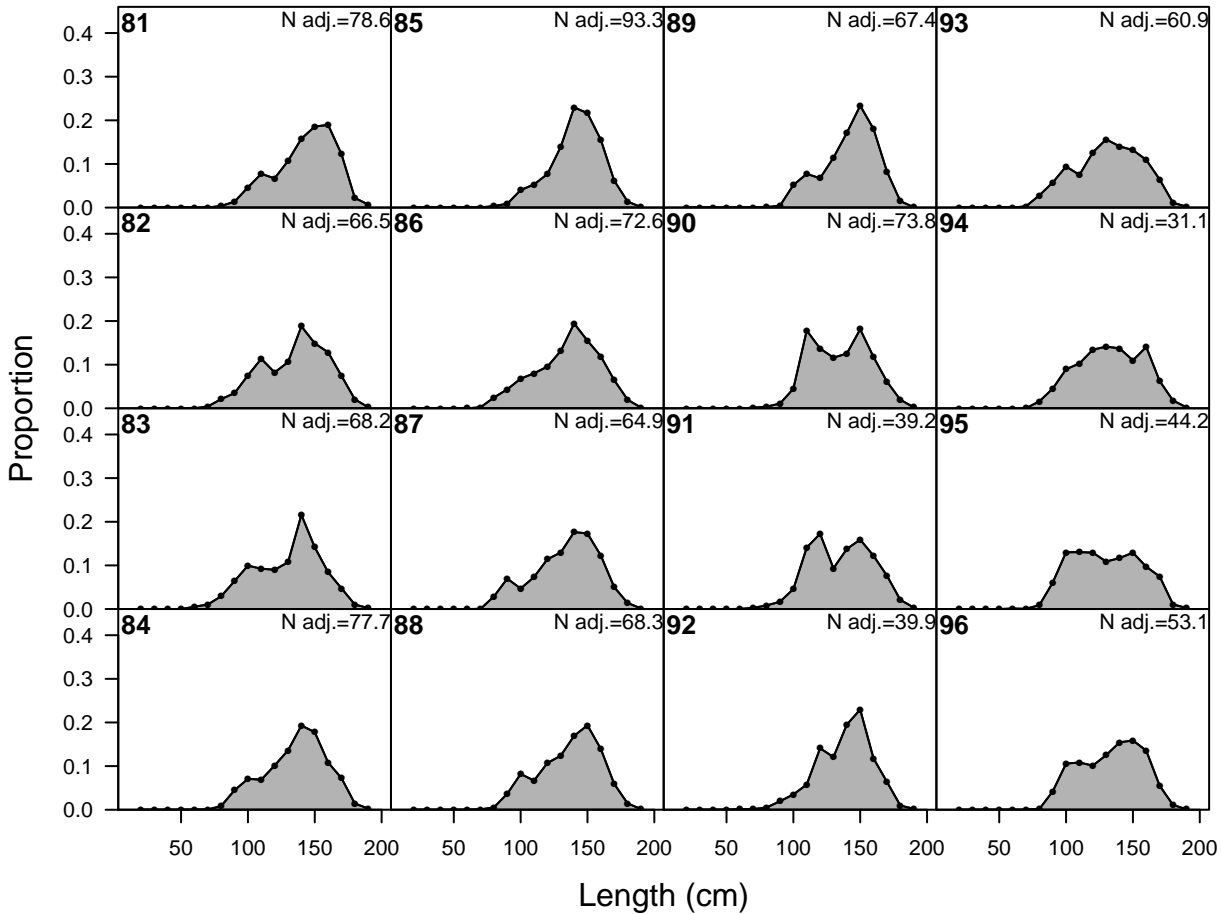
Proportion



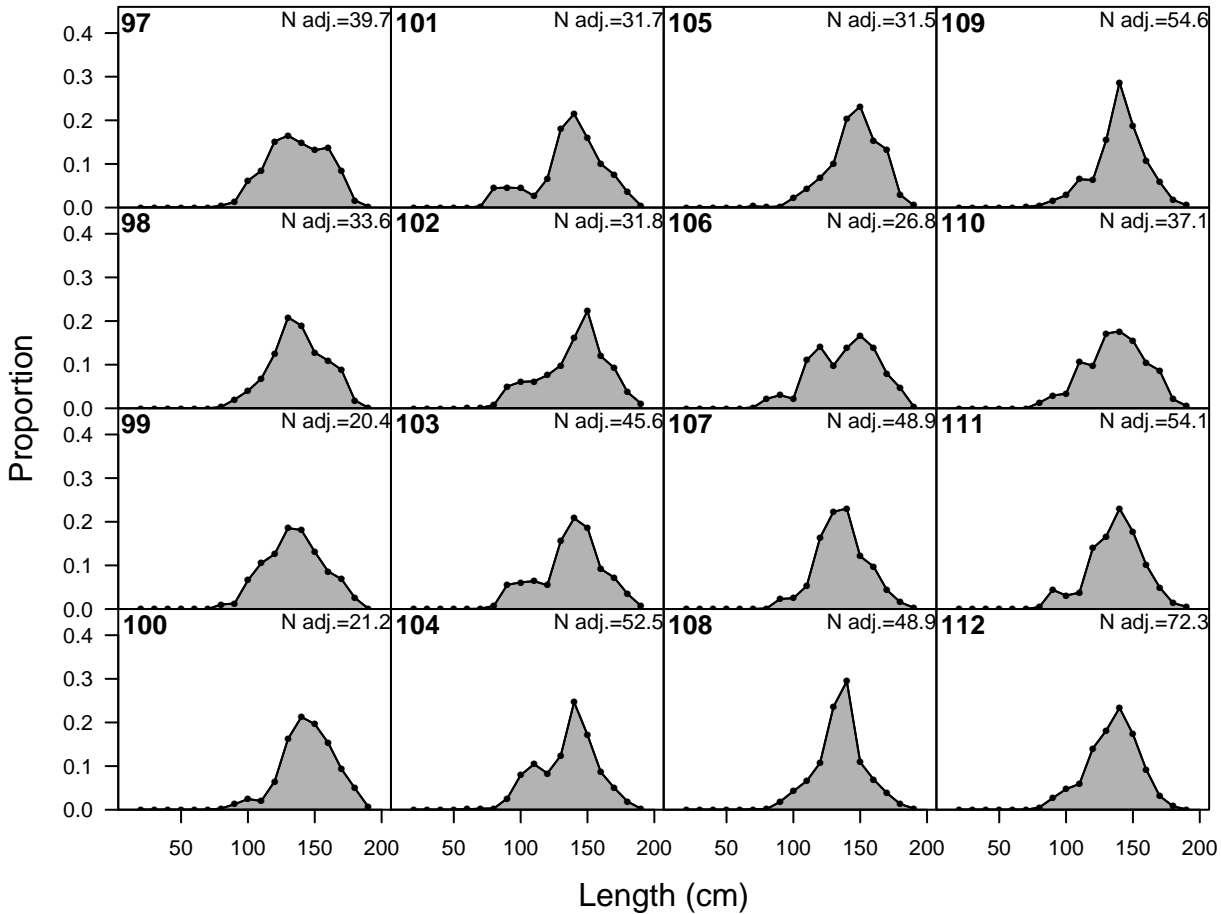


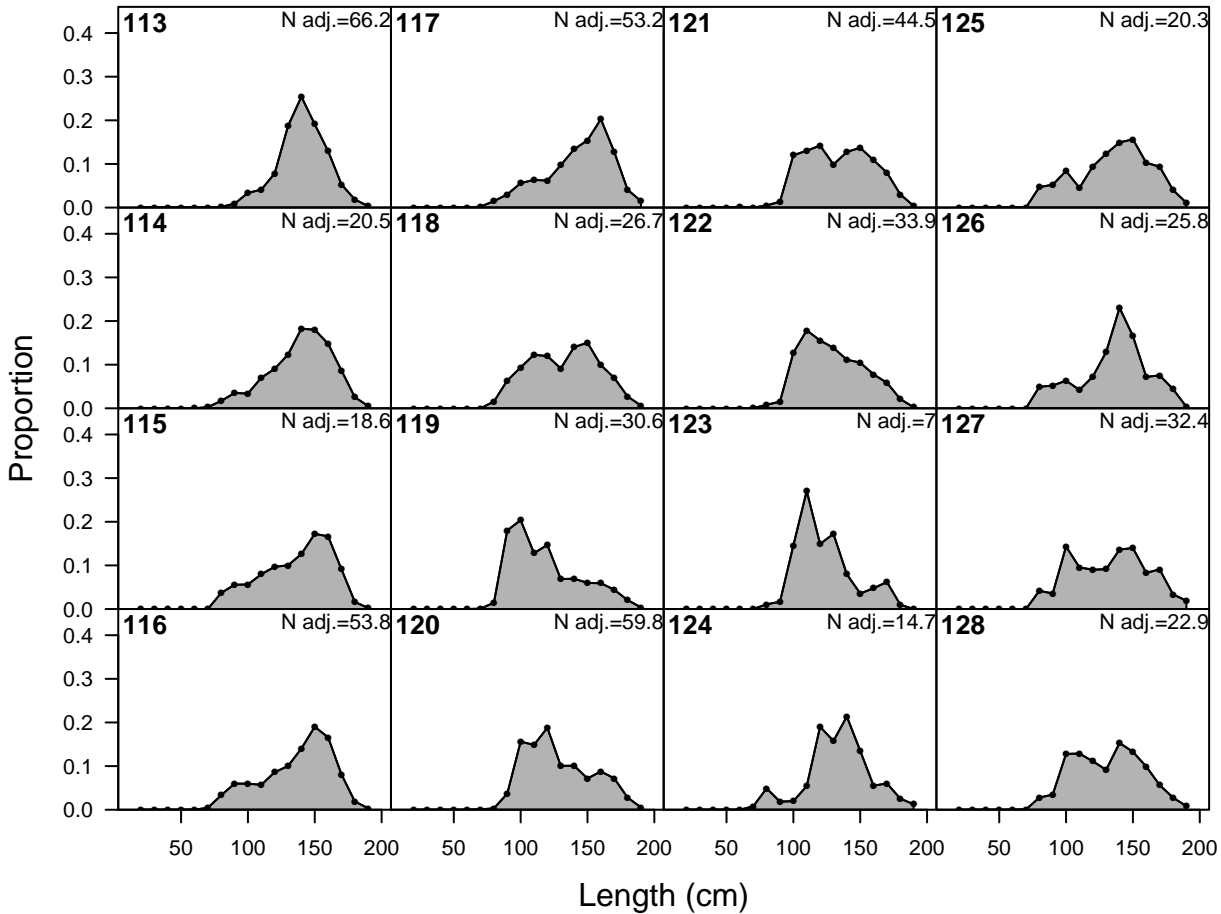
EPO-LL-survey-early (whole catch)

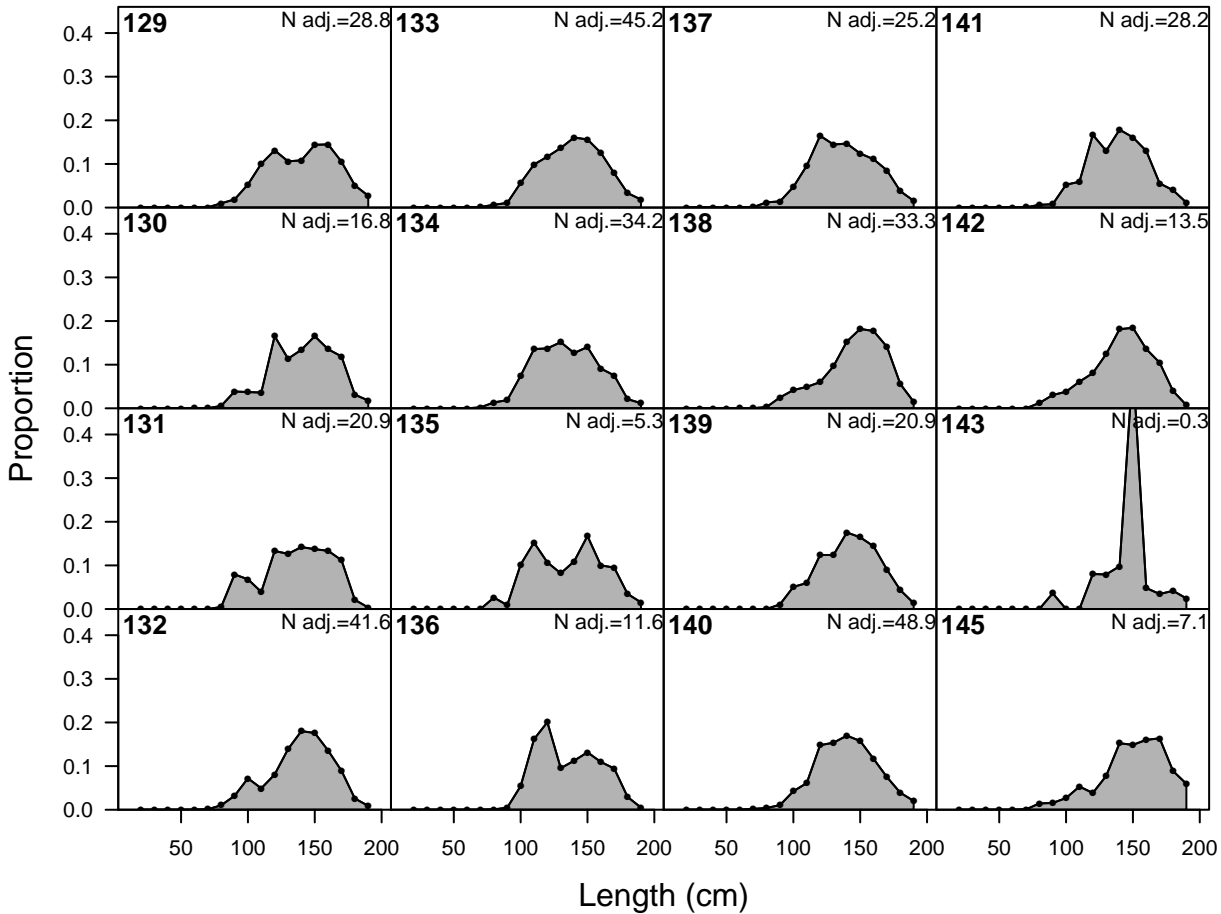


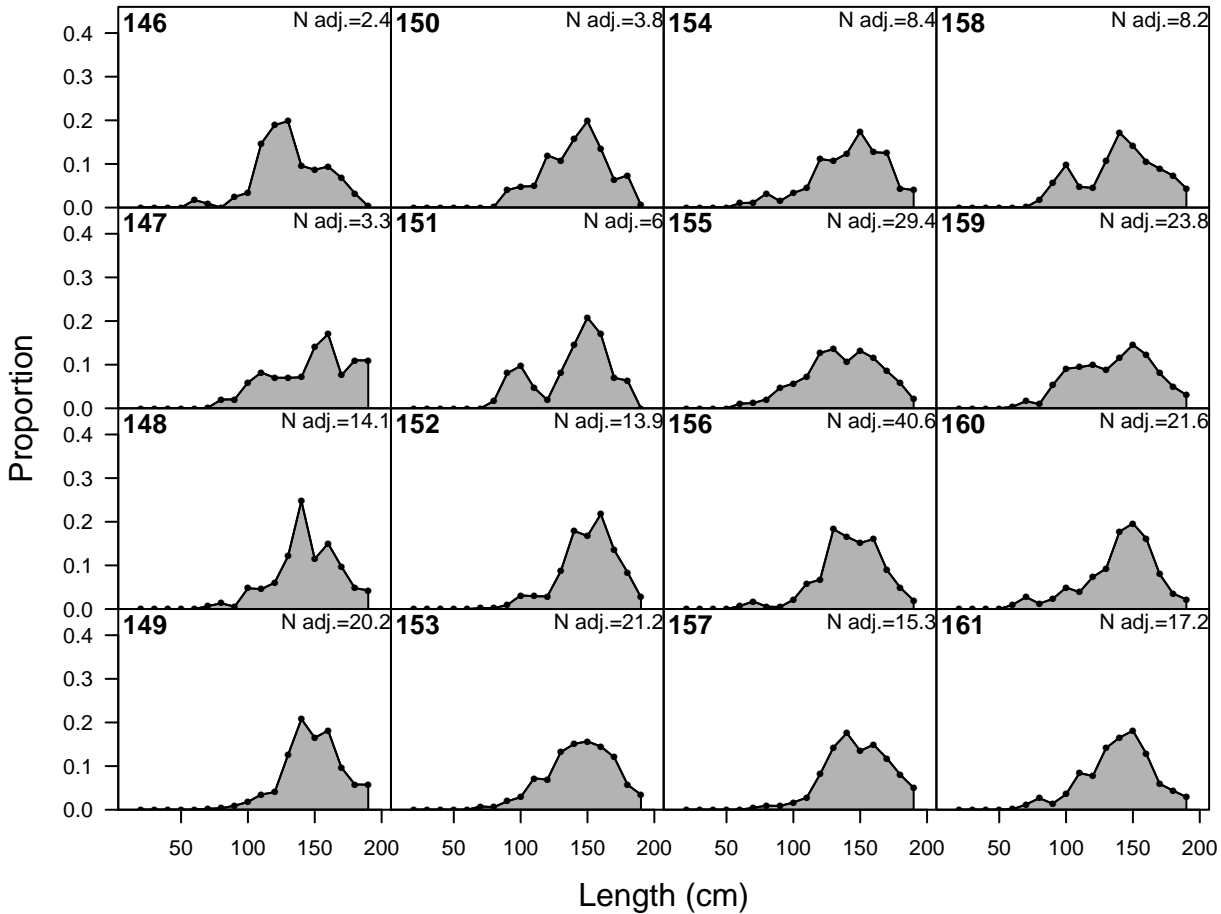


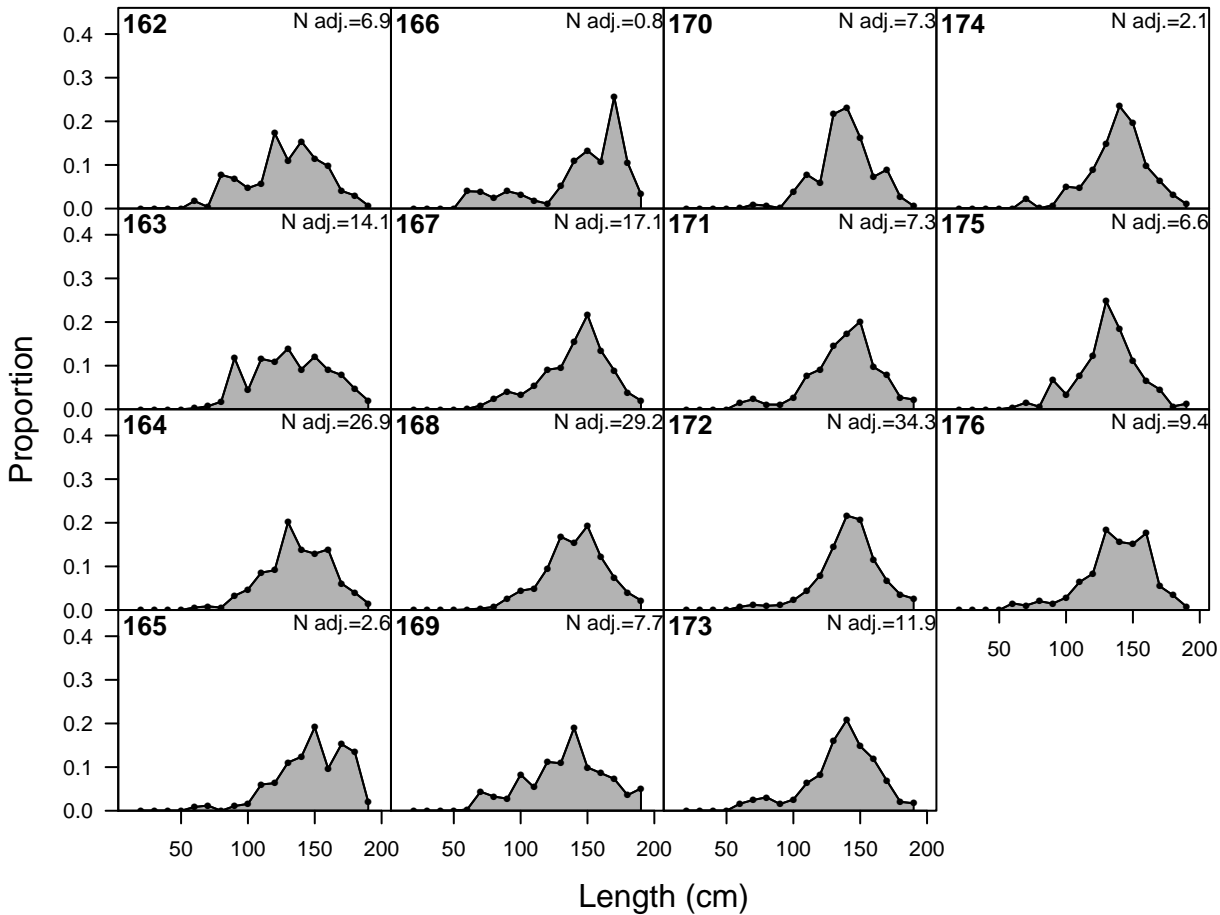


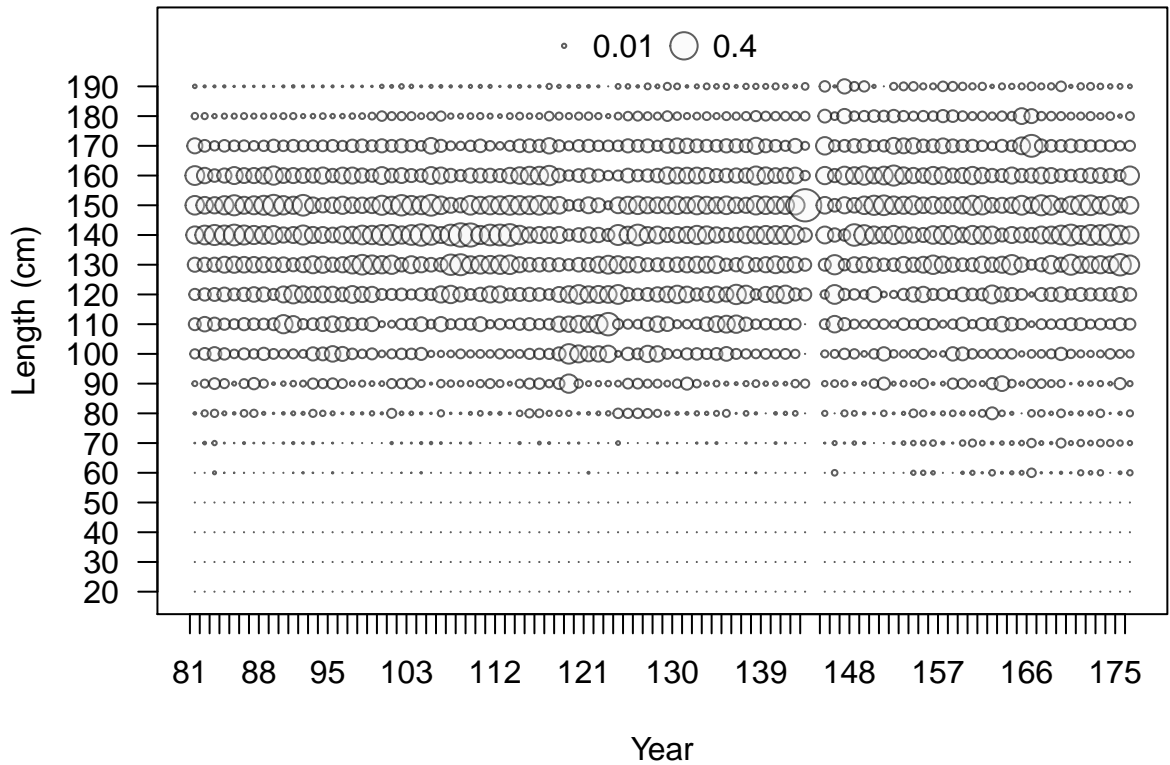




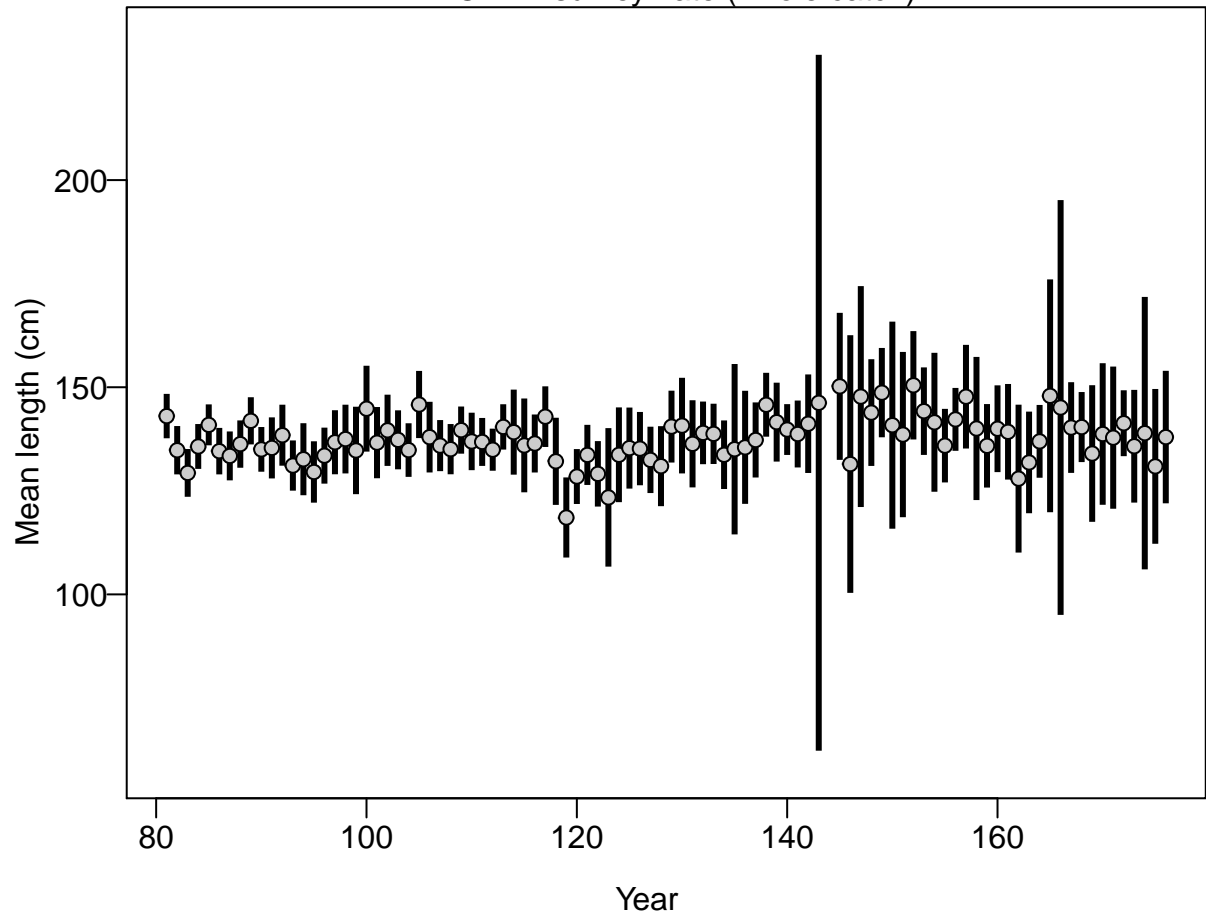




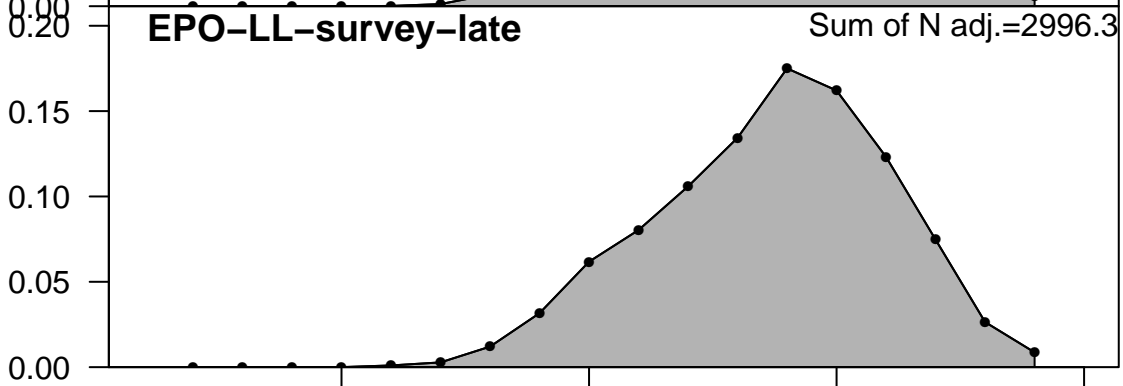
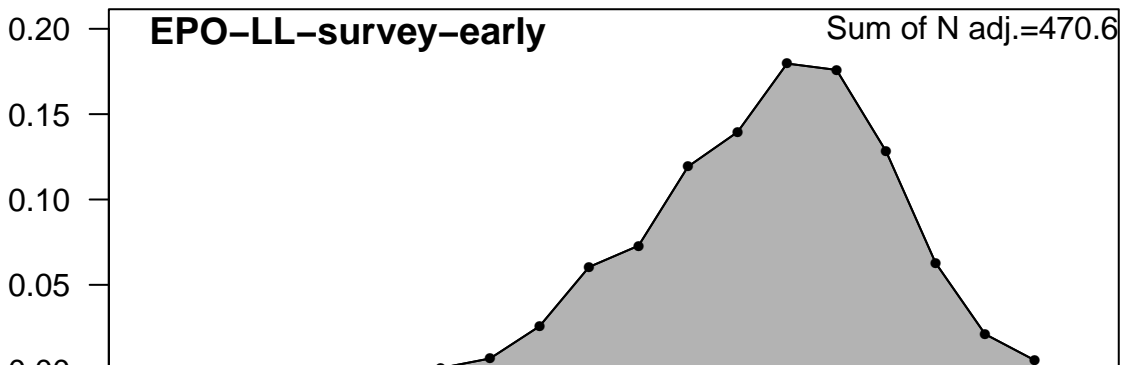




EPO-LL-survey-late (whole catch)



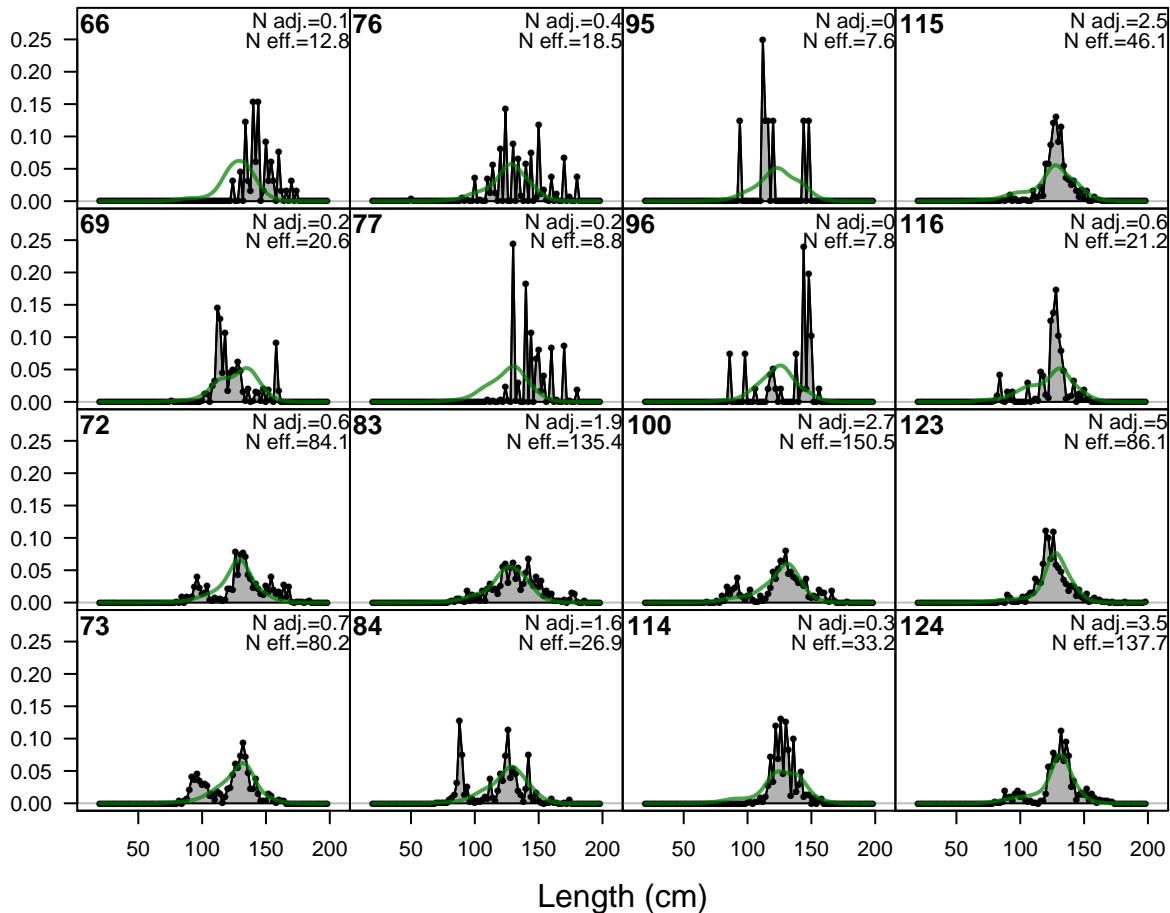
Proportion

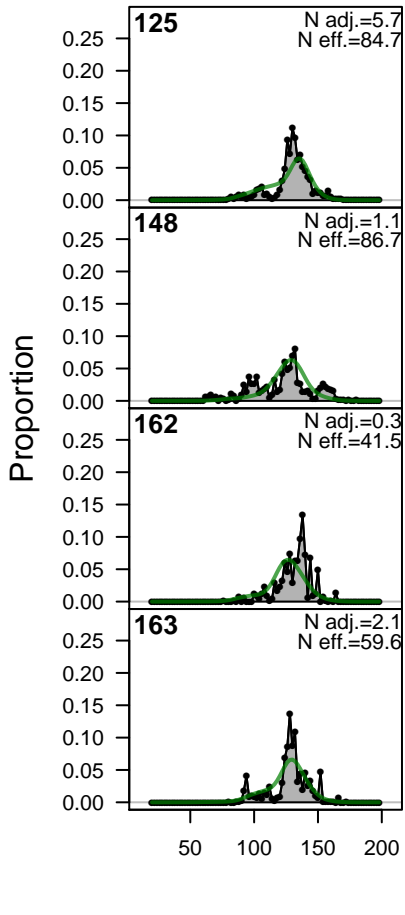


Length (cm)

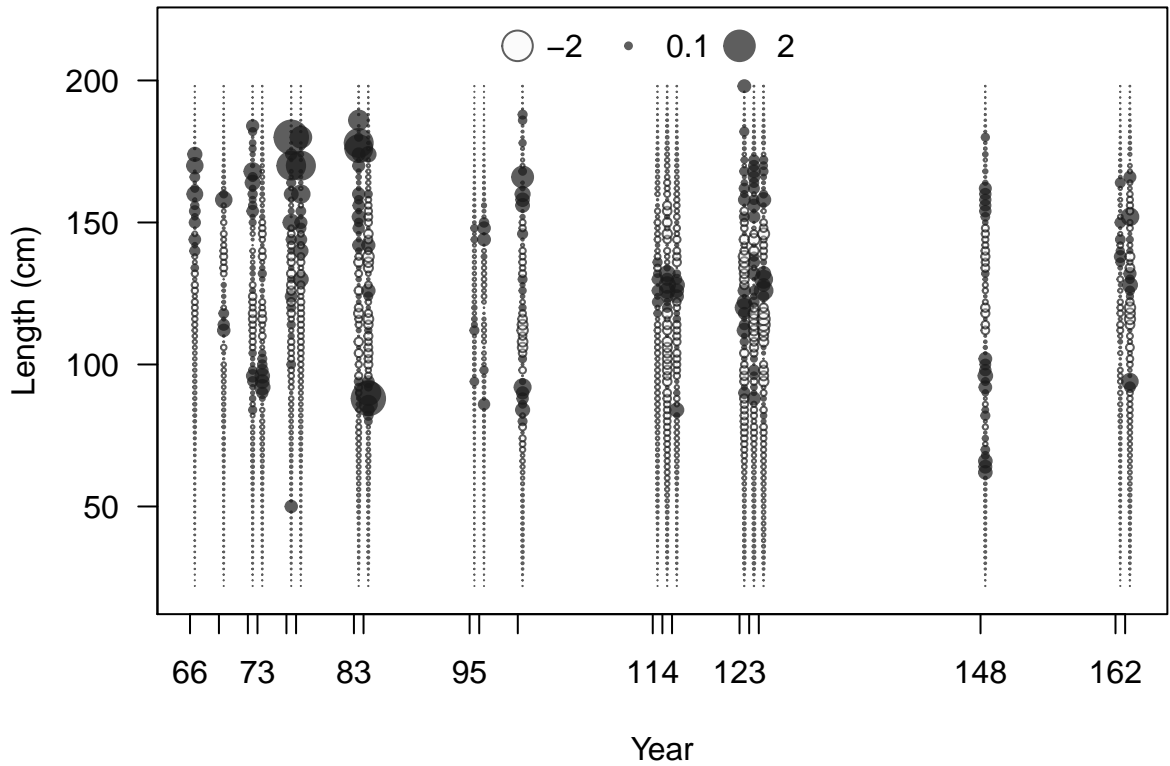


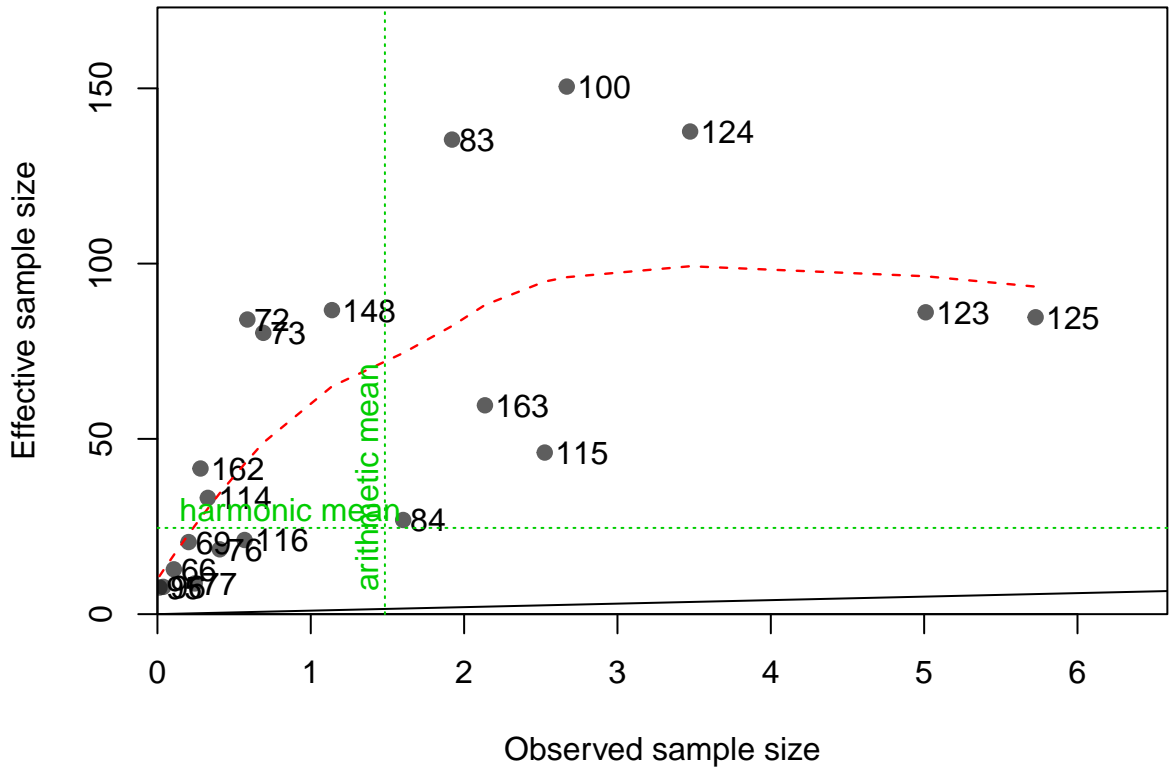
Proportion



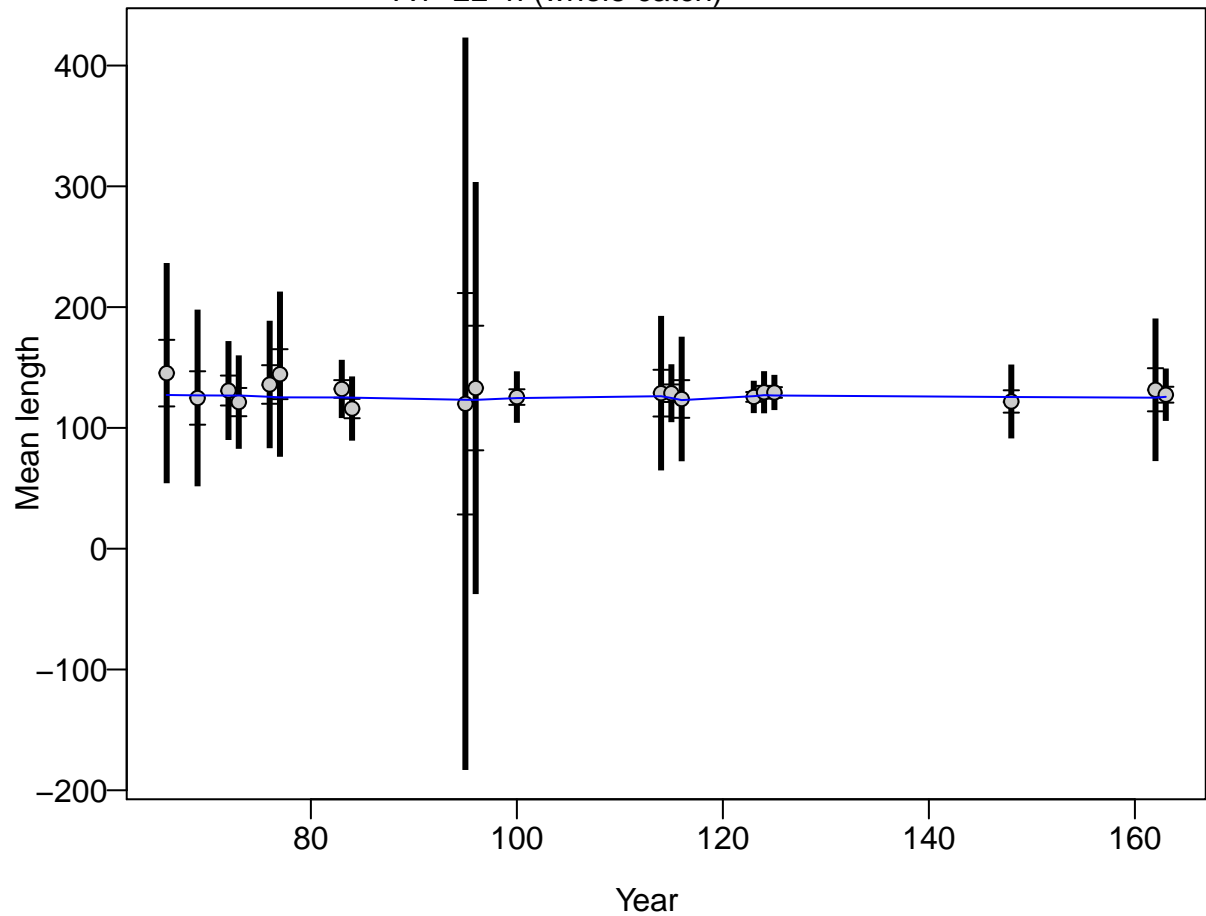


Length (cm)

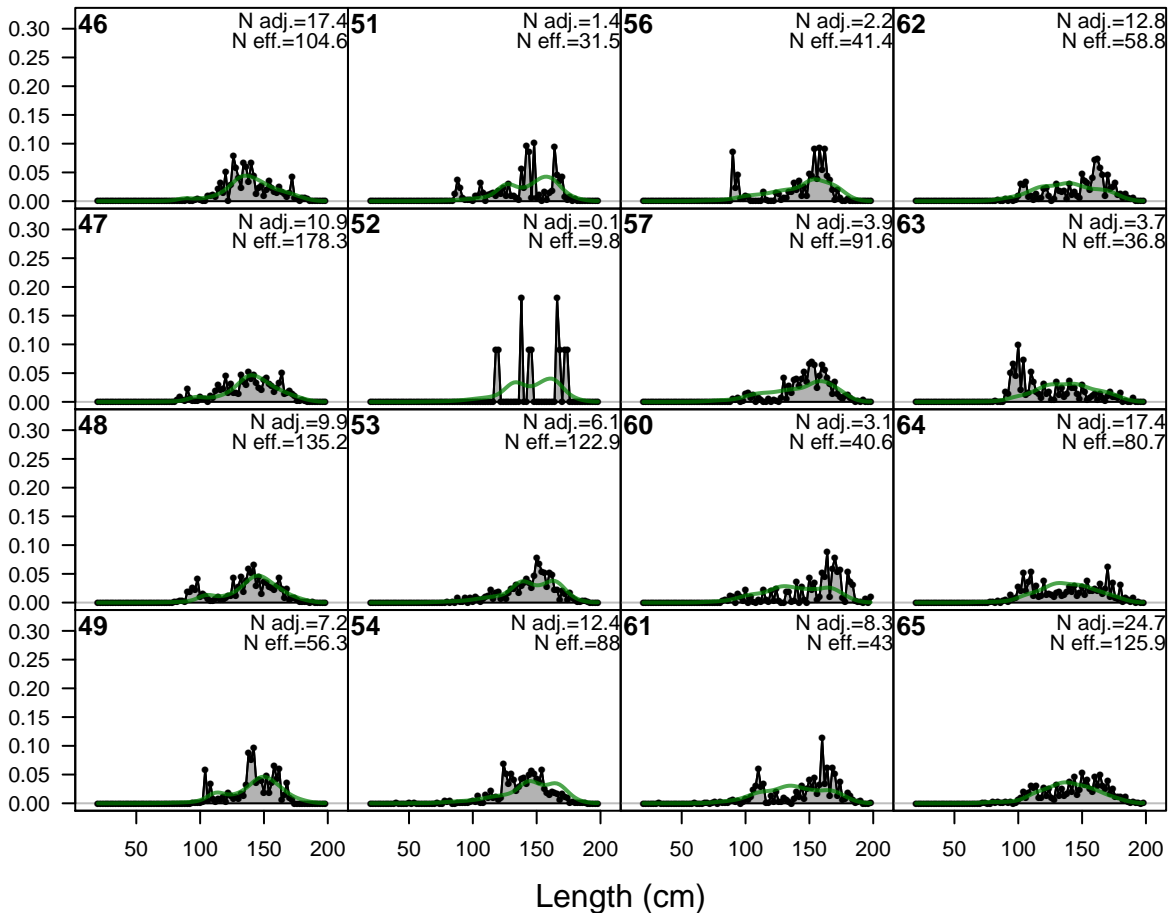




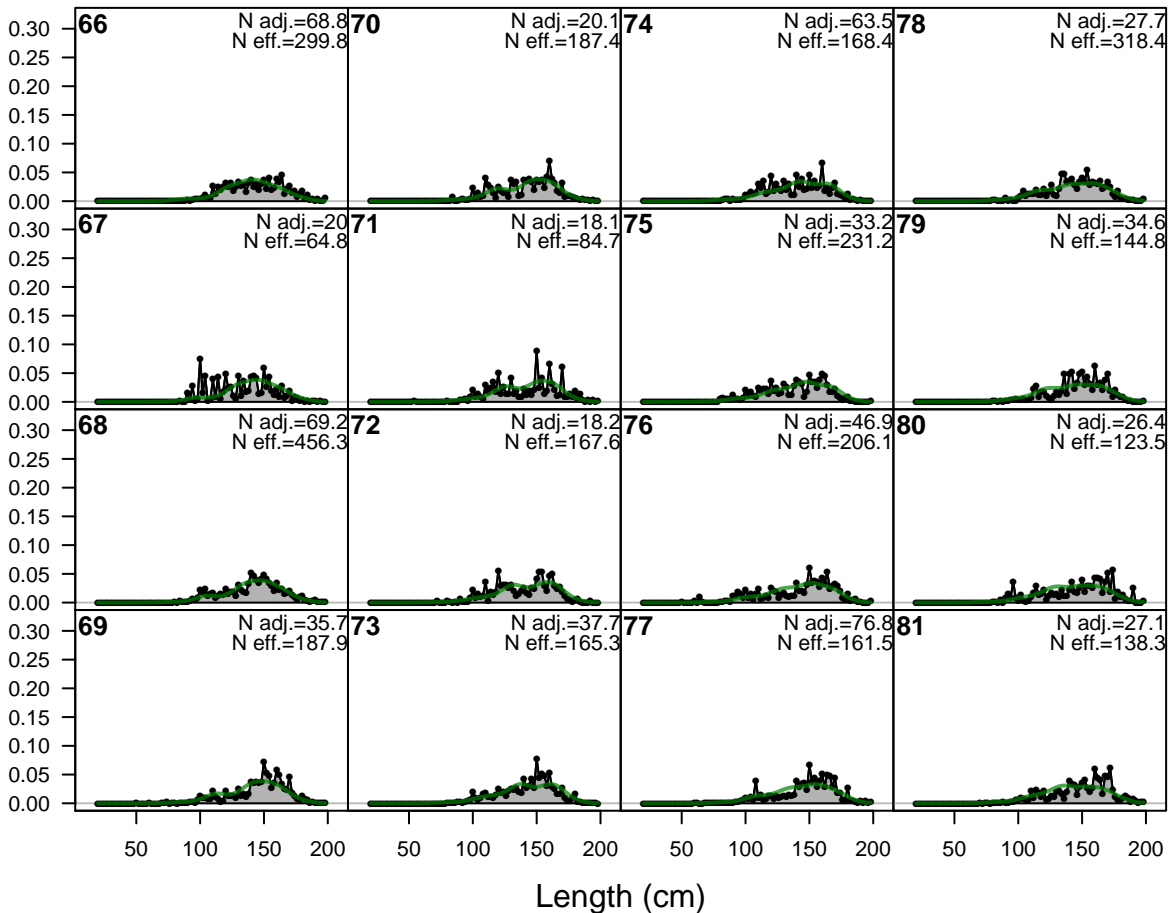
A1-LL-n (whole catch)



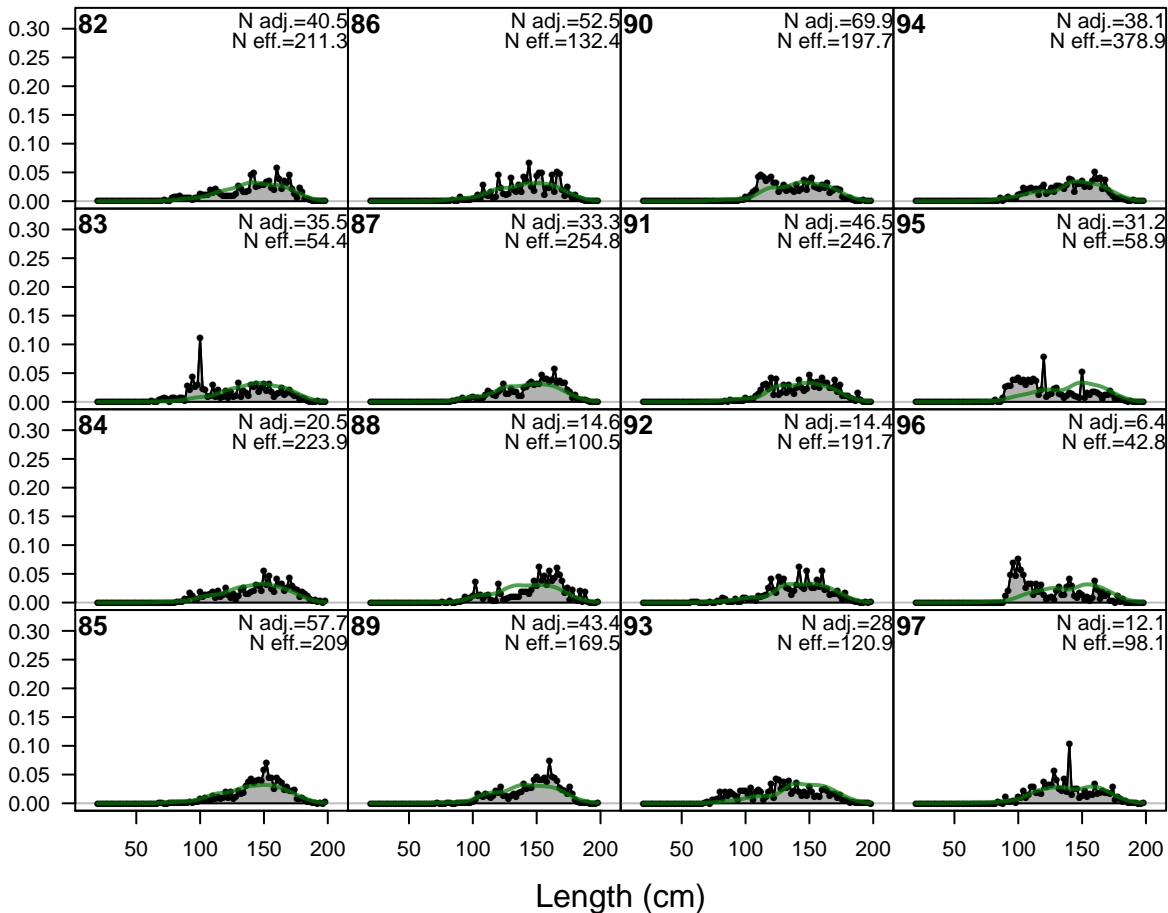
Proportion



Proportion

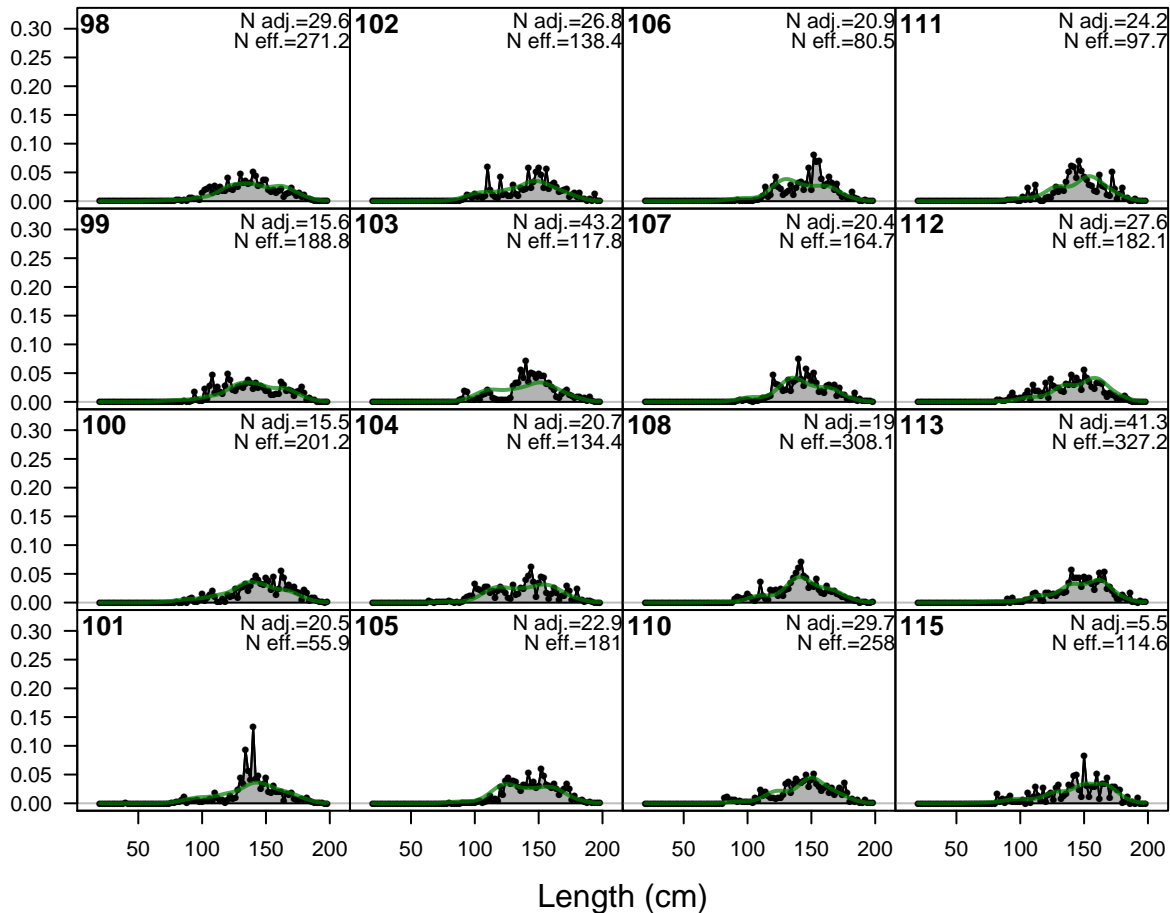


Proportion

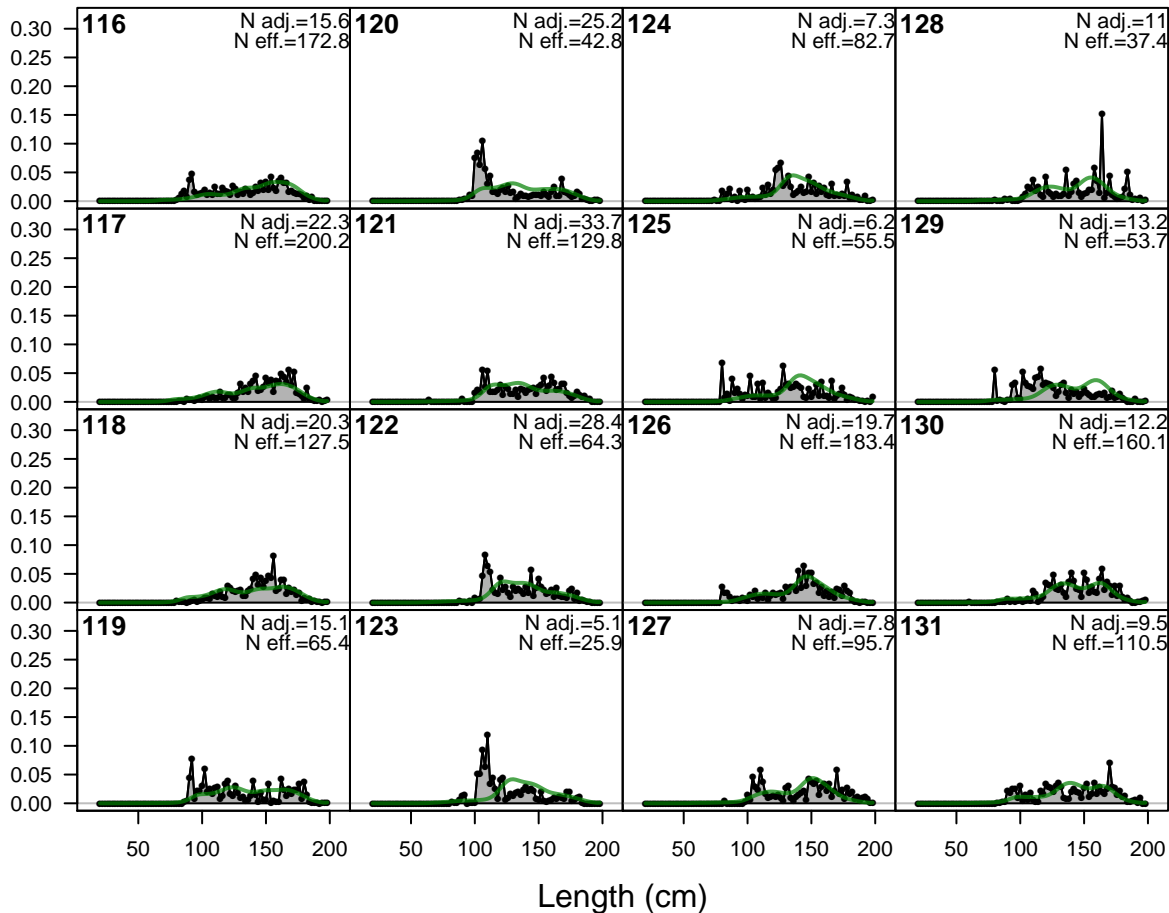




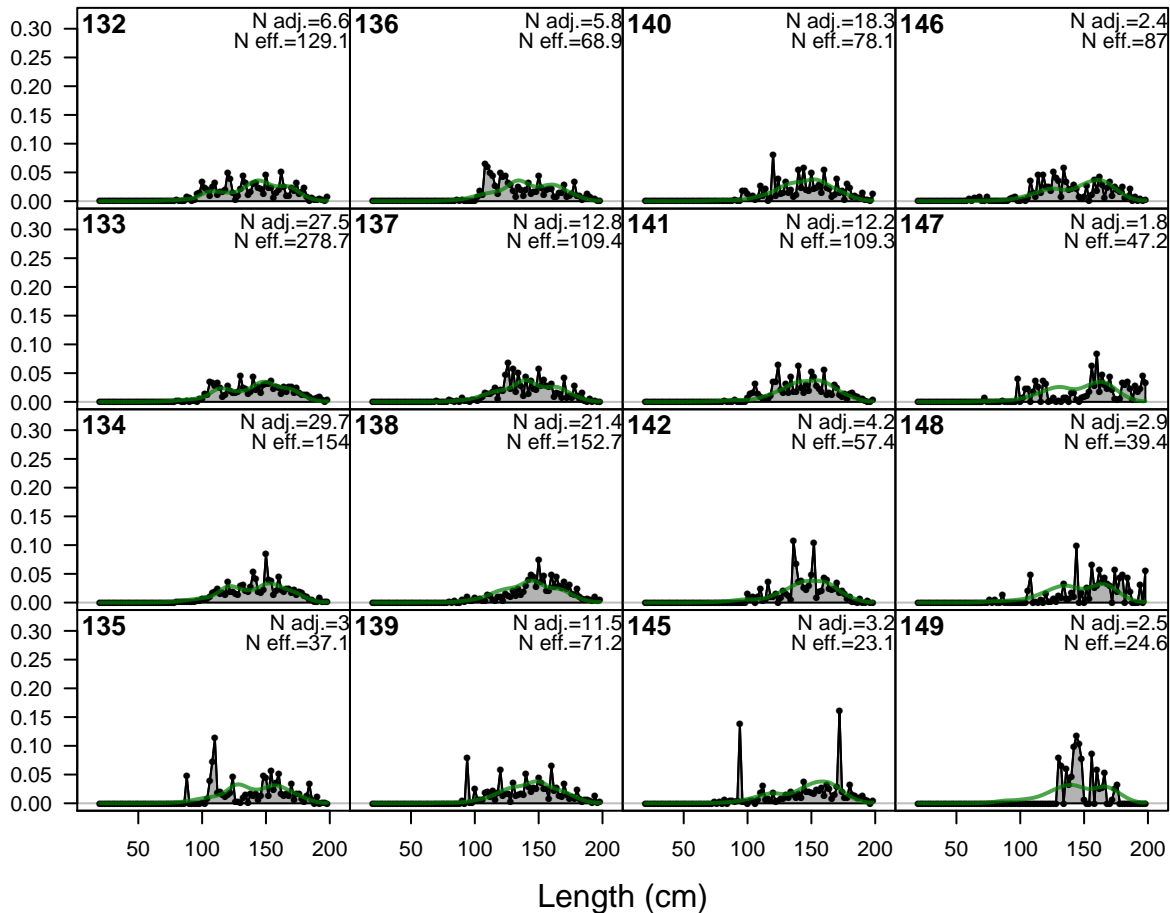
Proportion



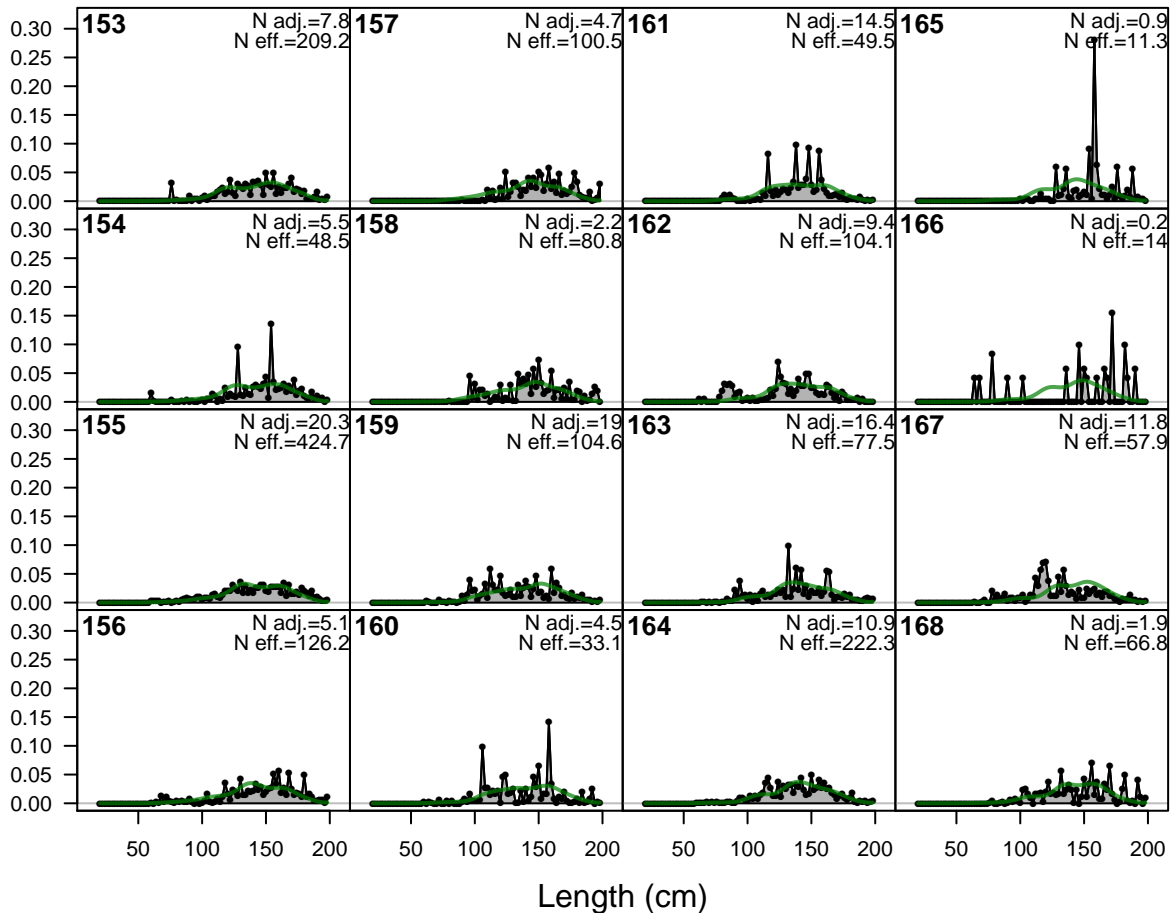
Proportion



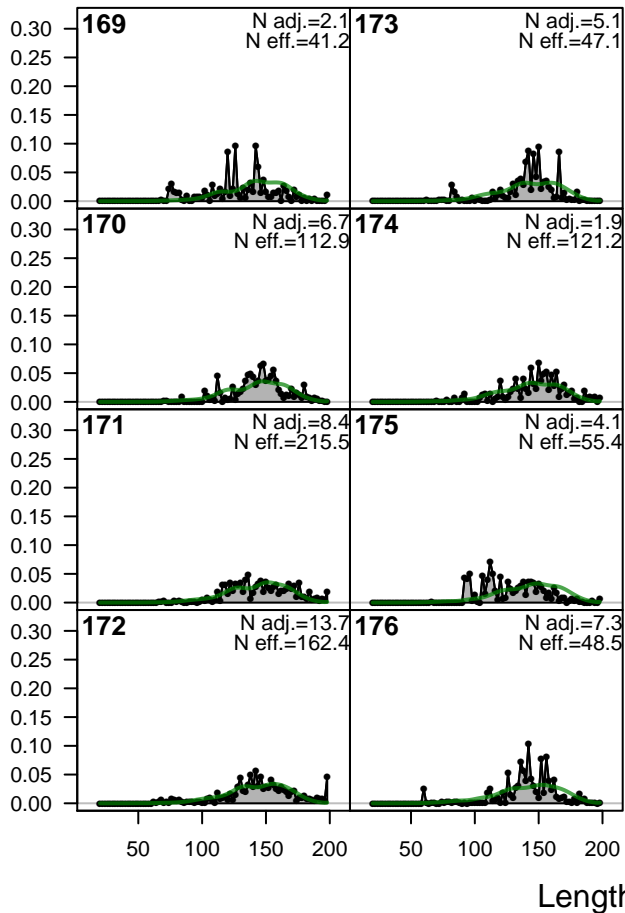
Proportion

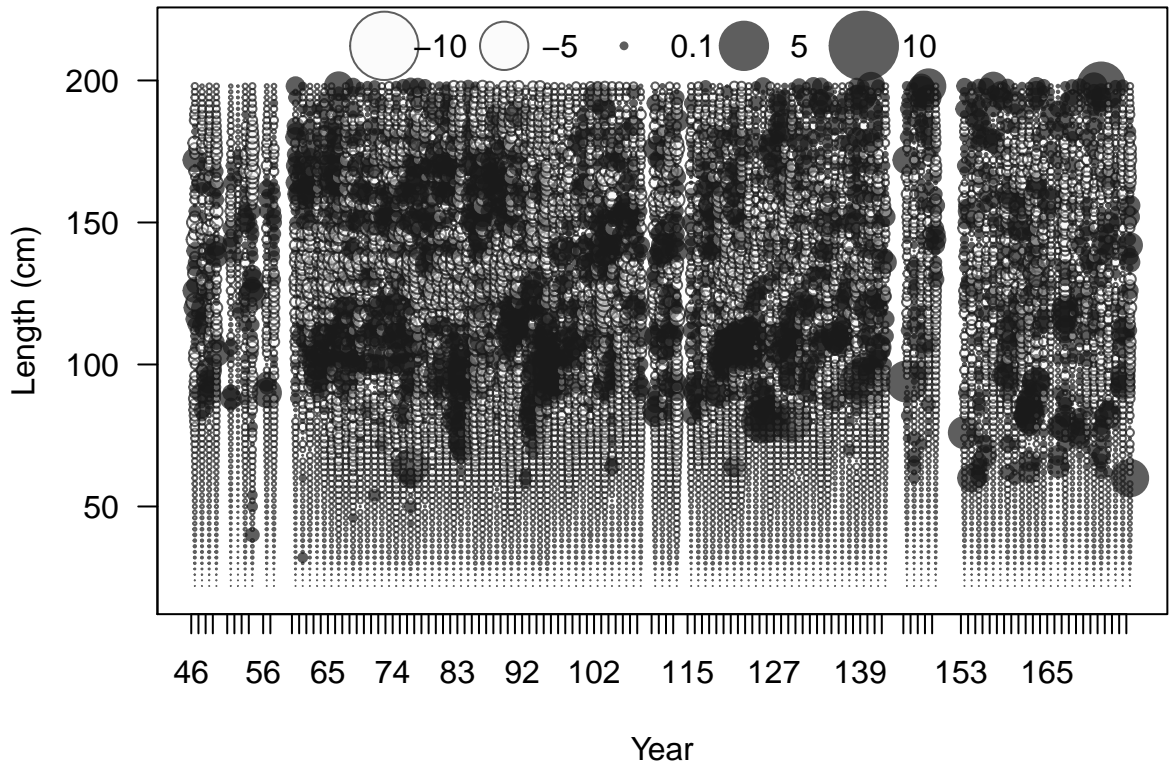


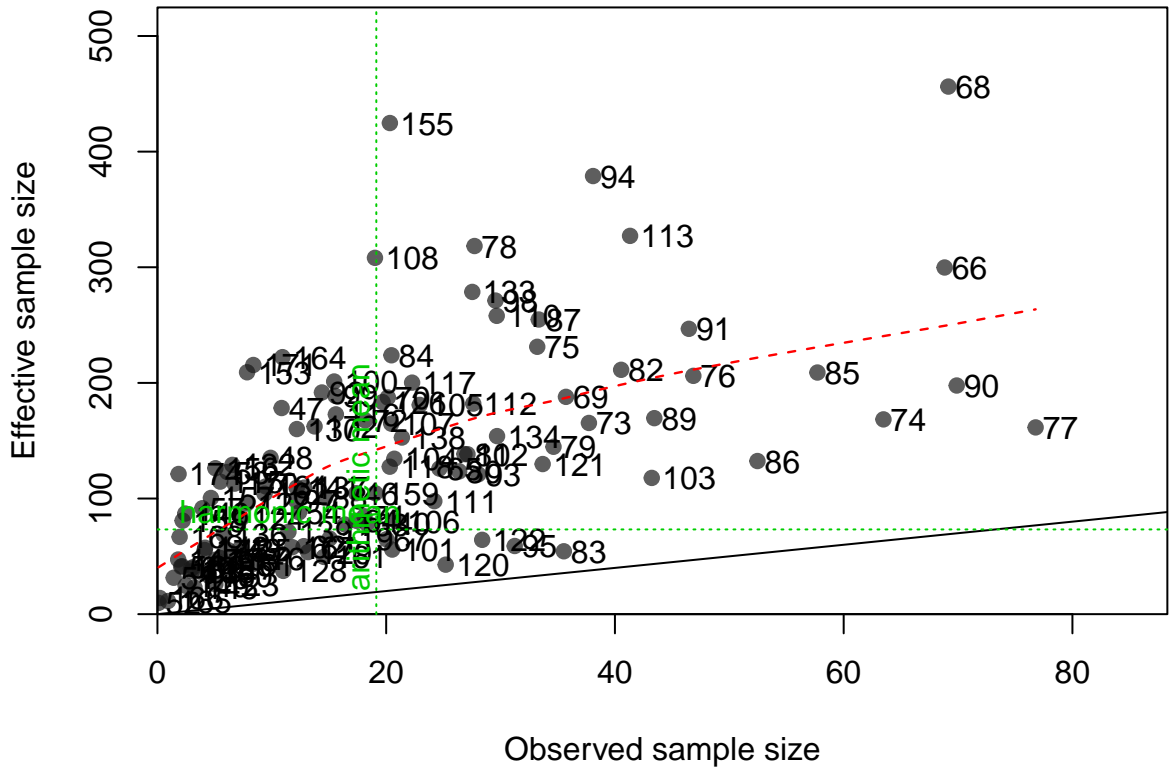
Proportion



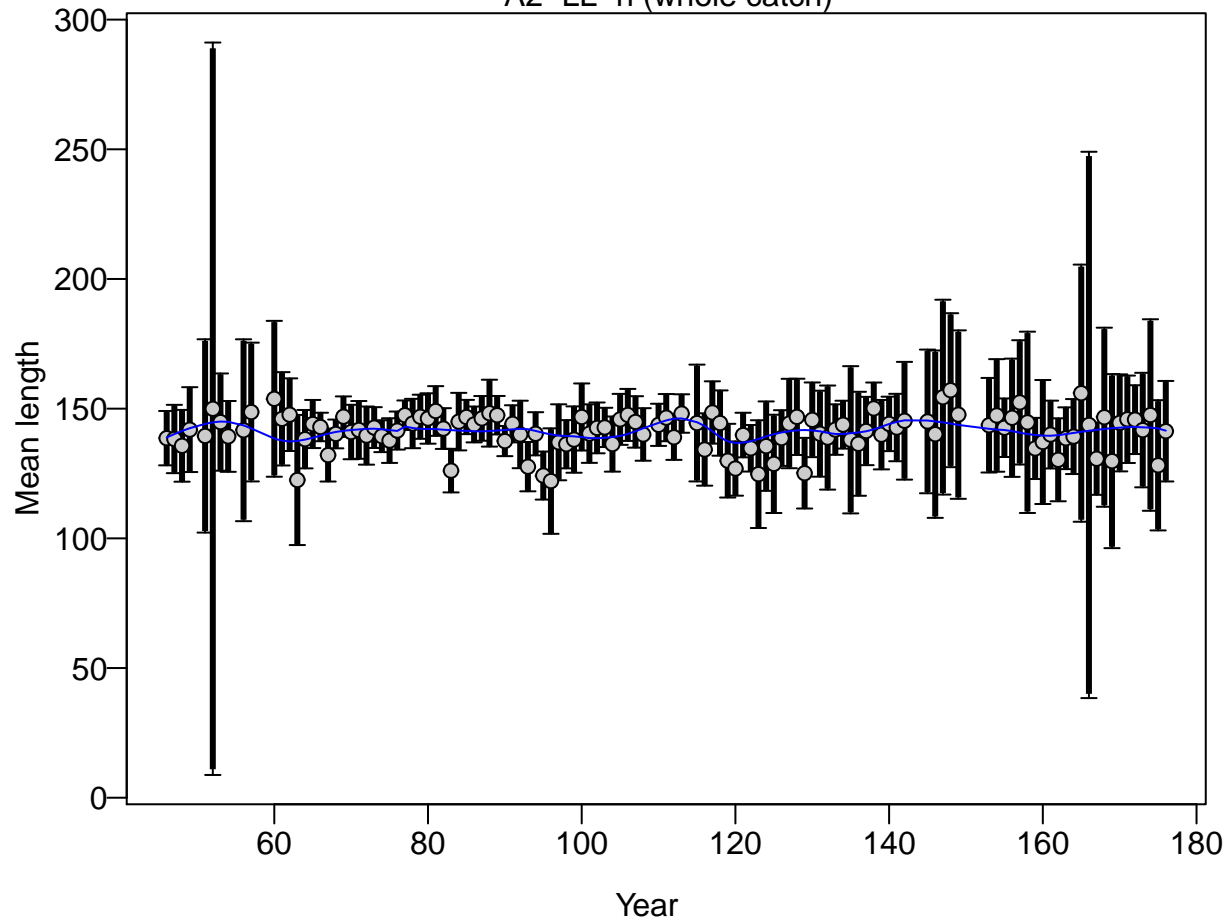
Proportion





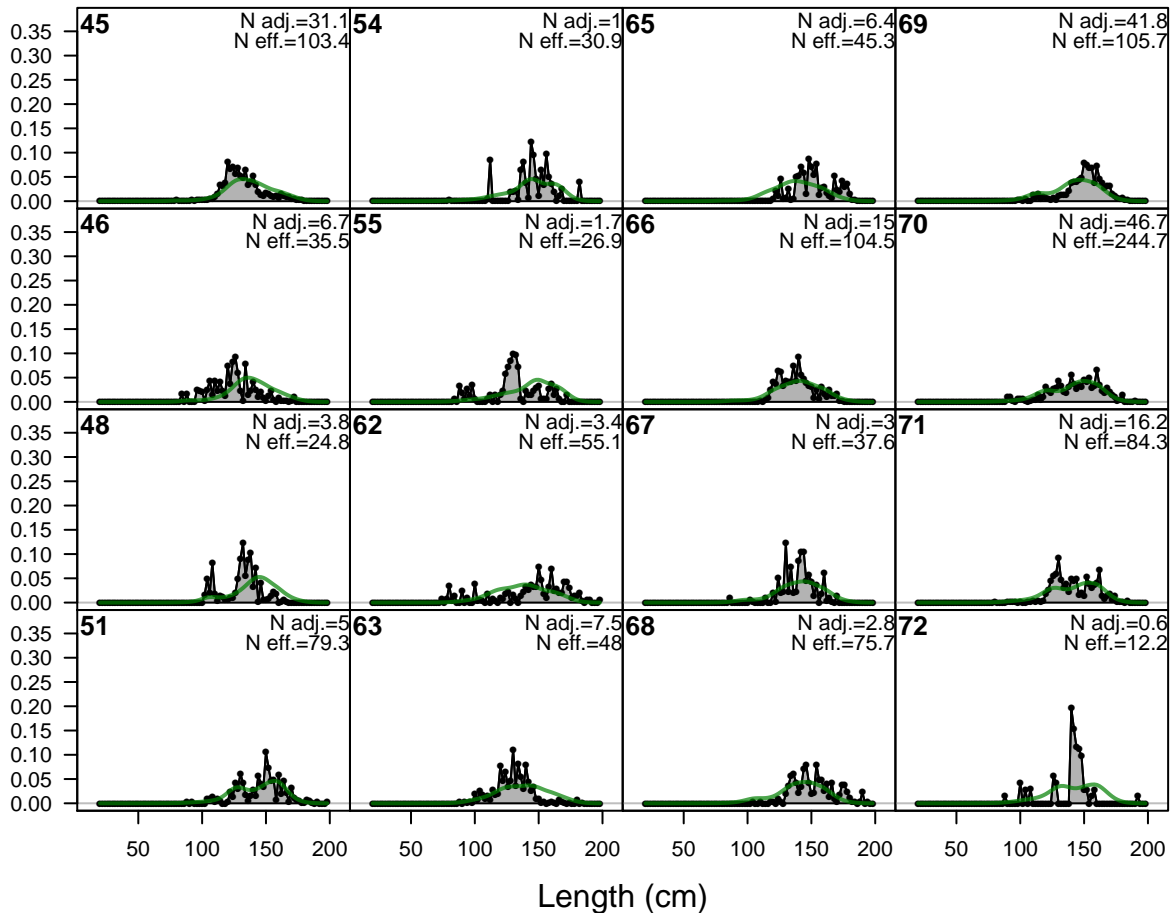


## A2-LL-n (whole catch)

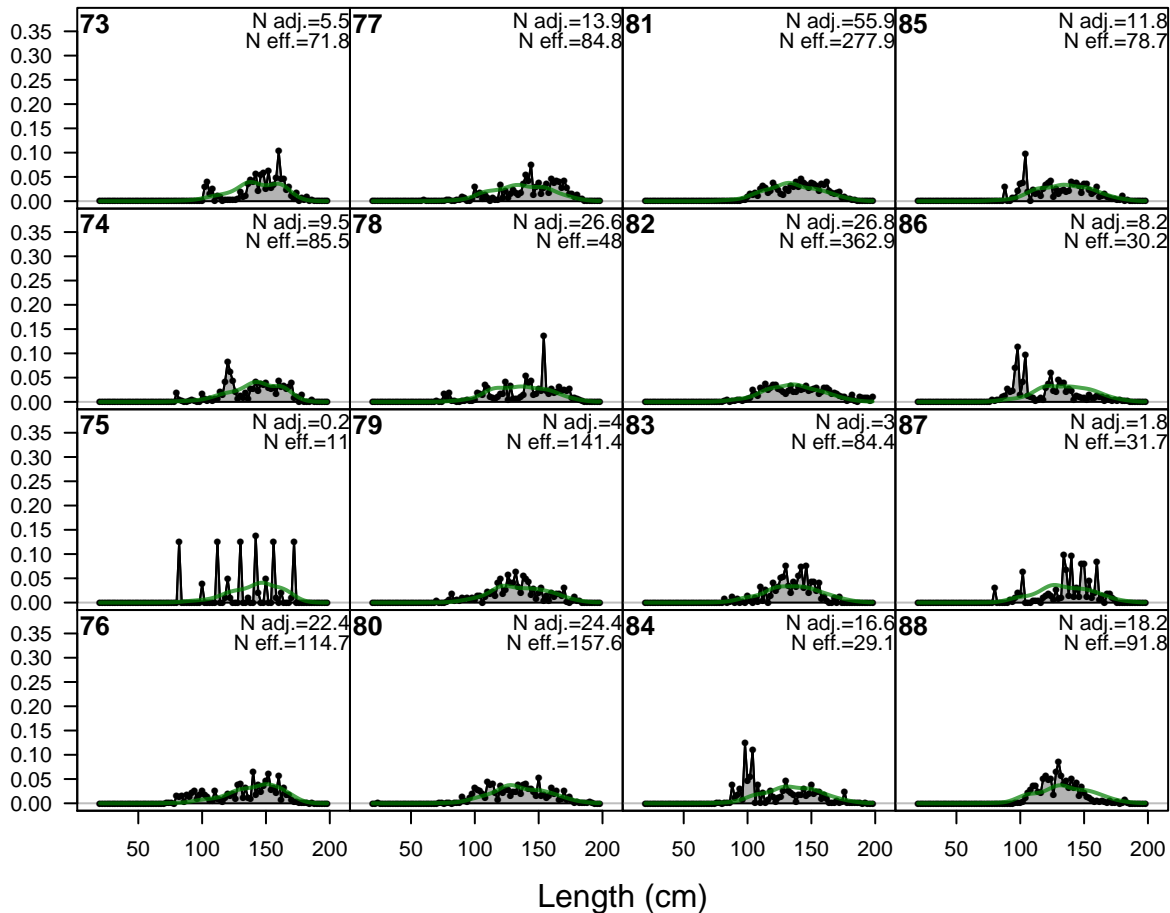




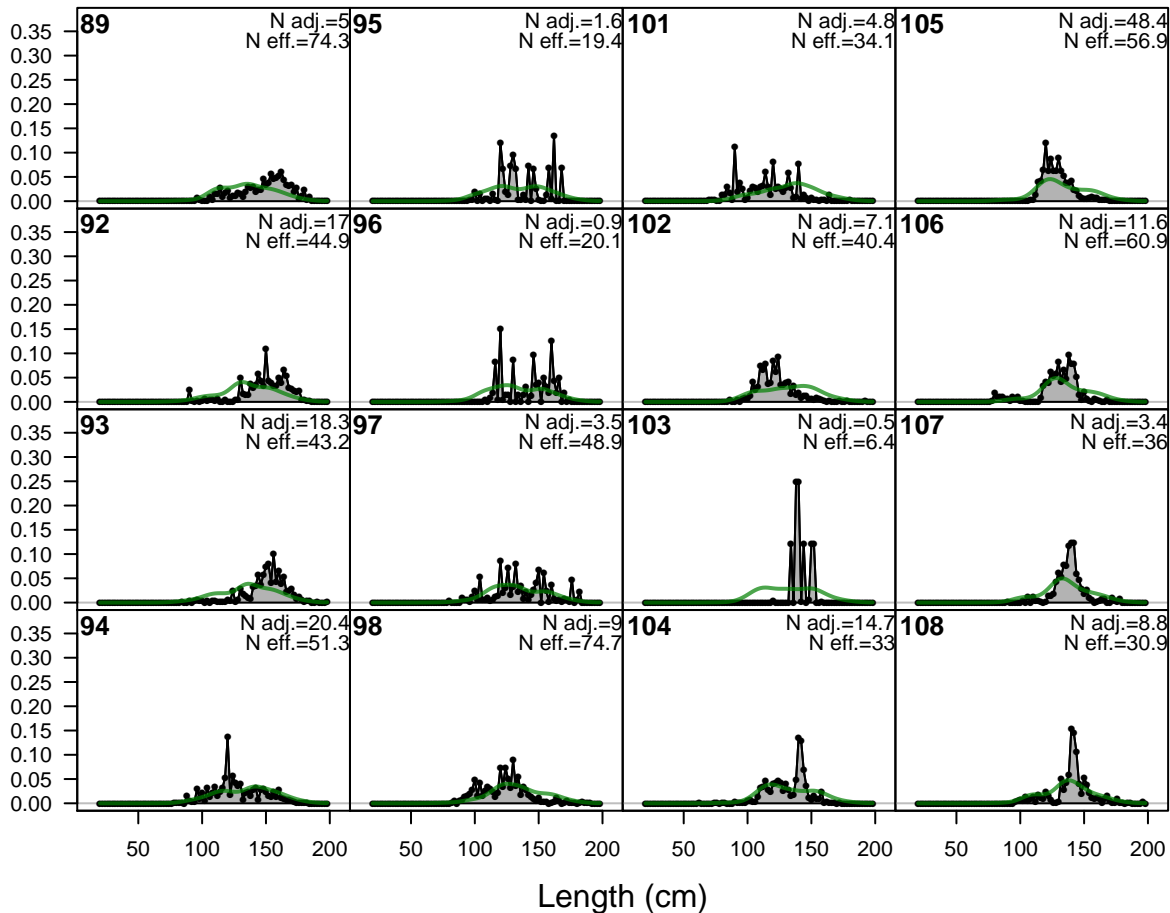
Proportion



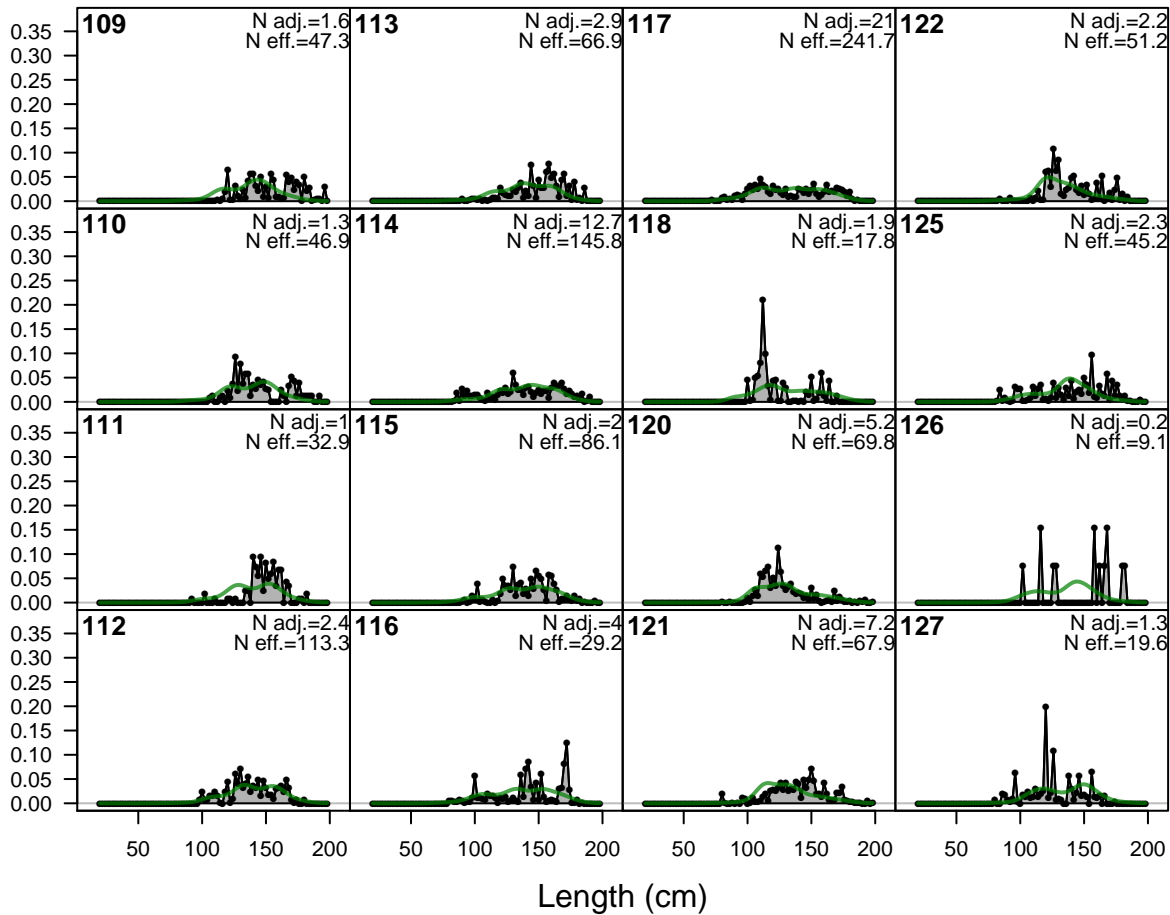
Proportion



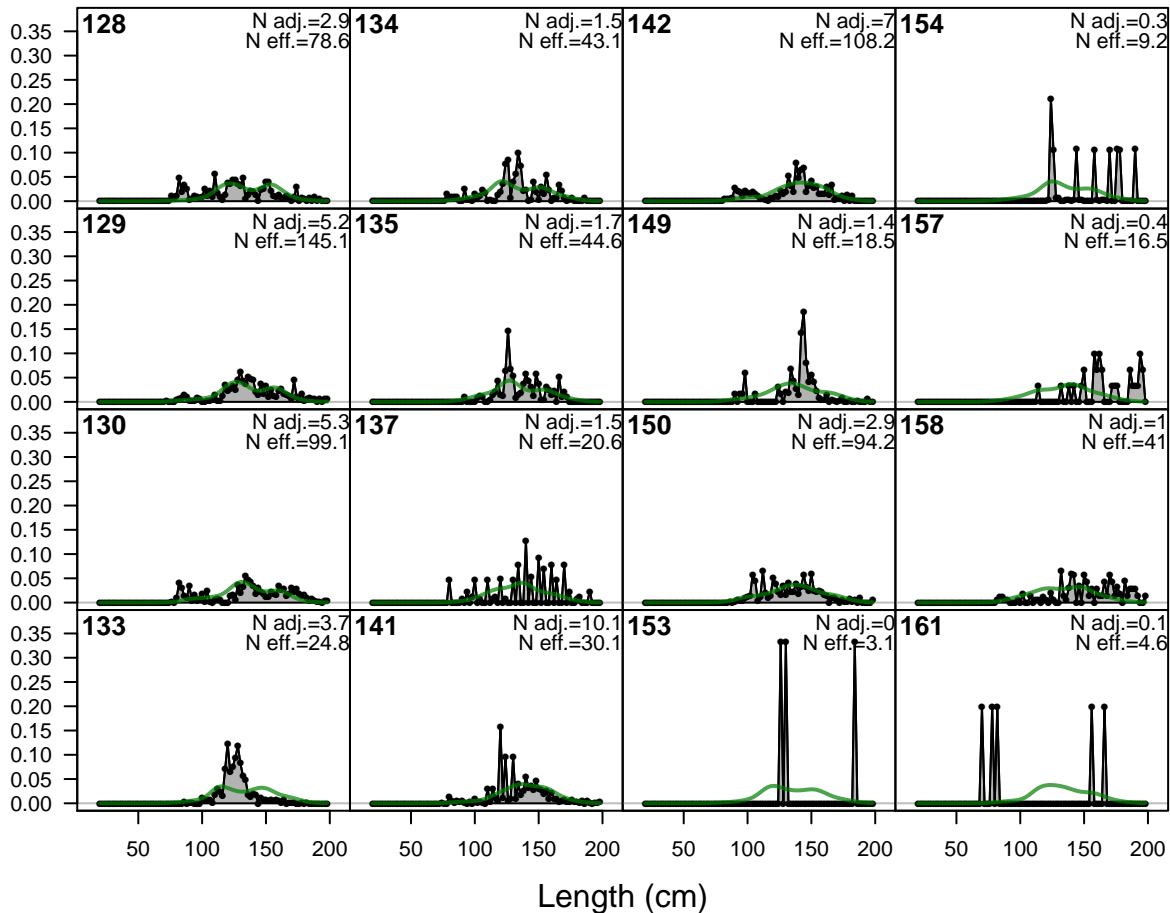
Proportion



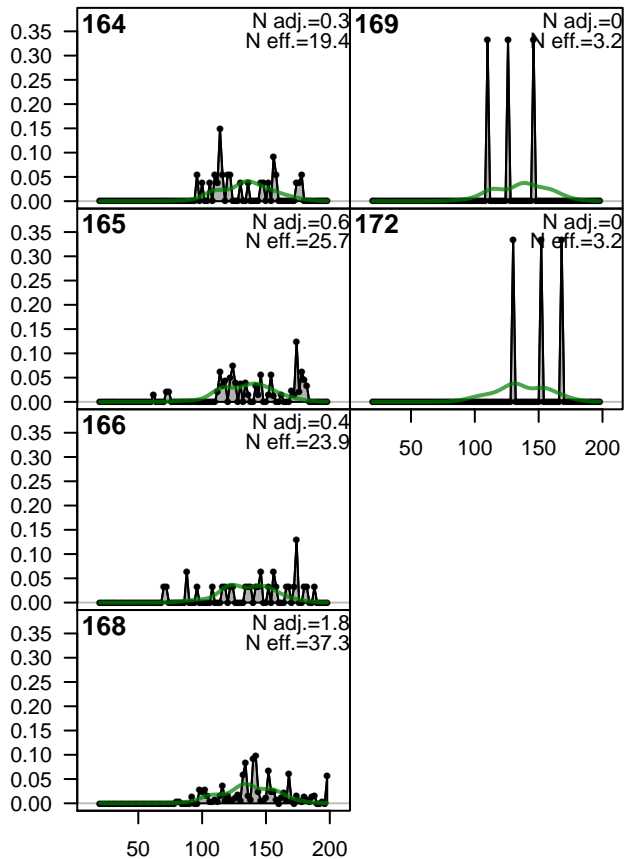
Proportion



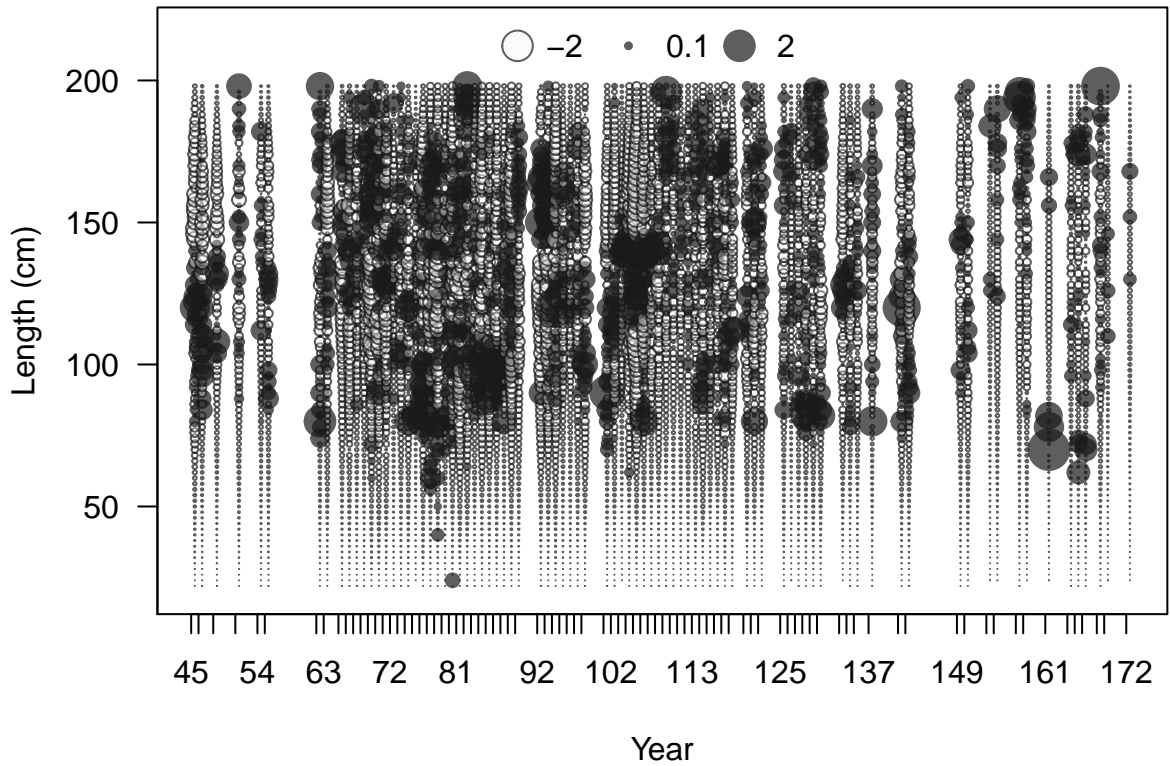
Proportion

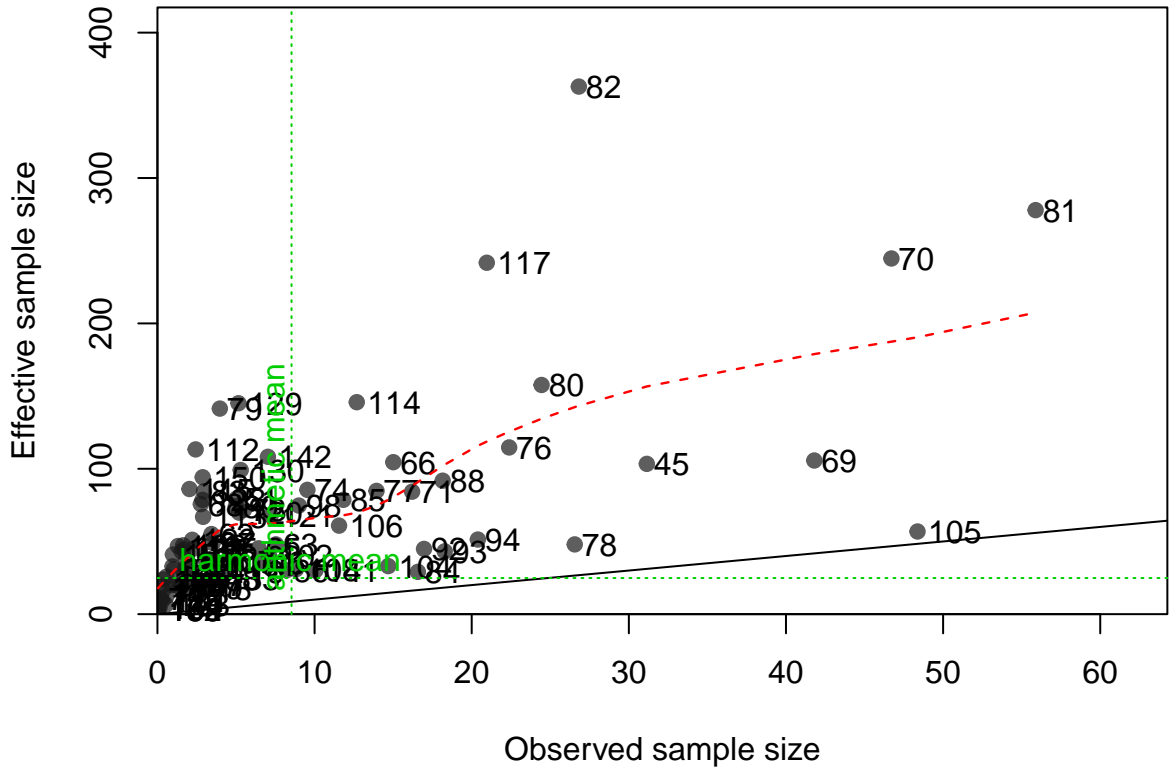


Proportion



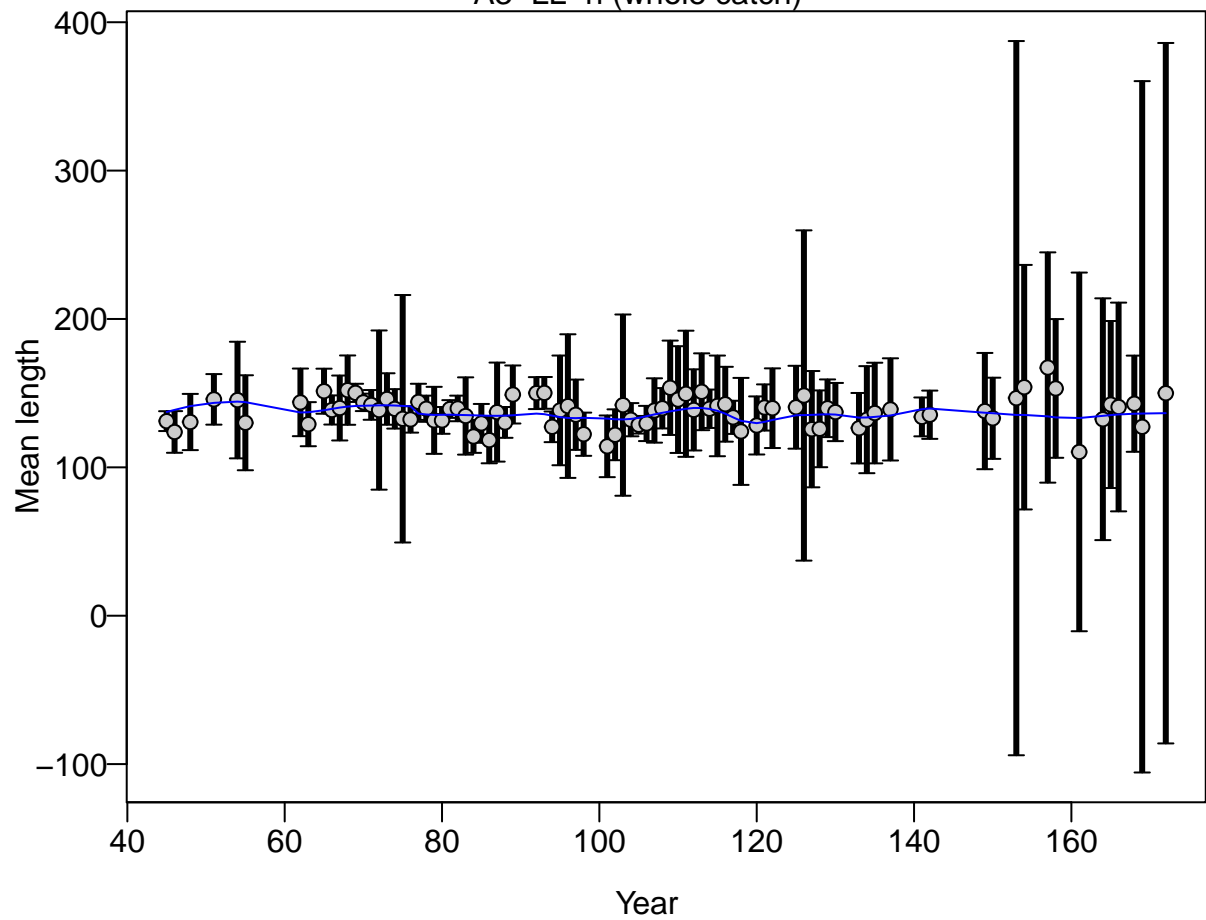
Length (cm)



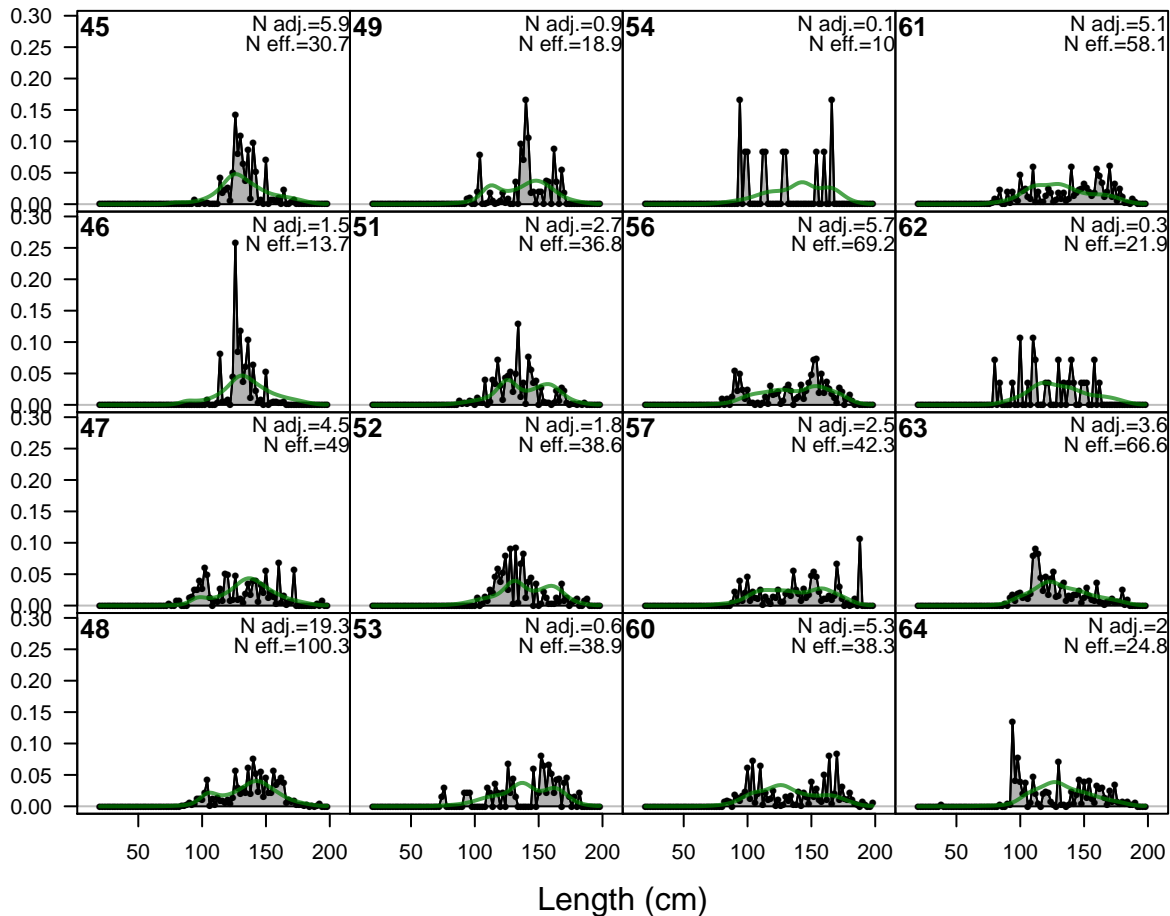




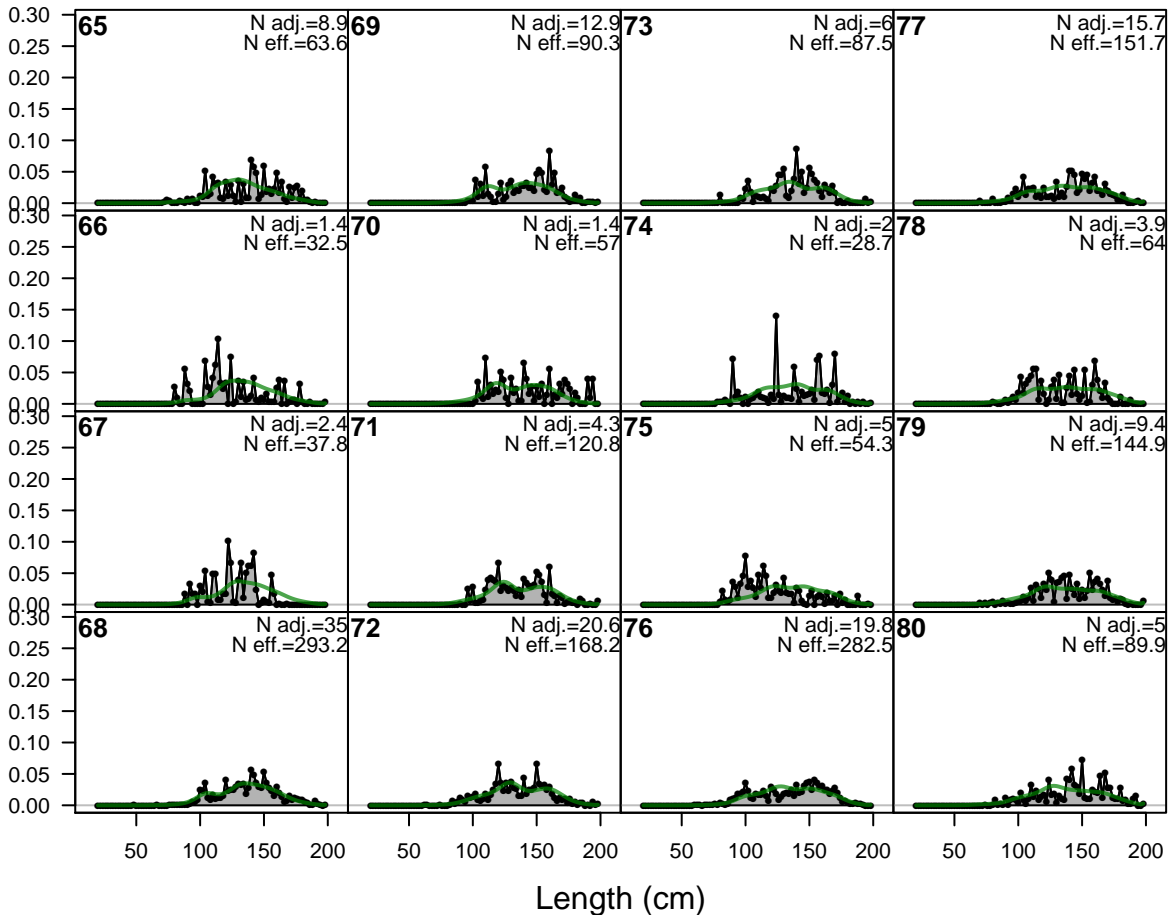
A3-LL-n (whole catch)



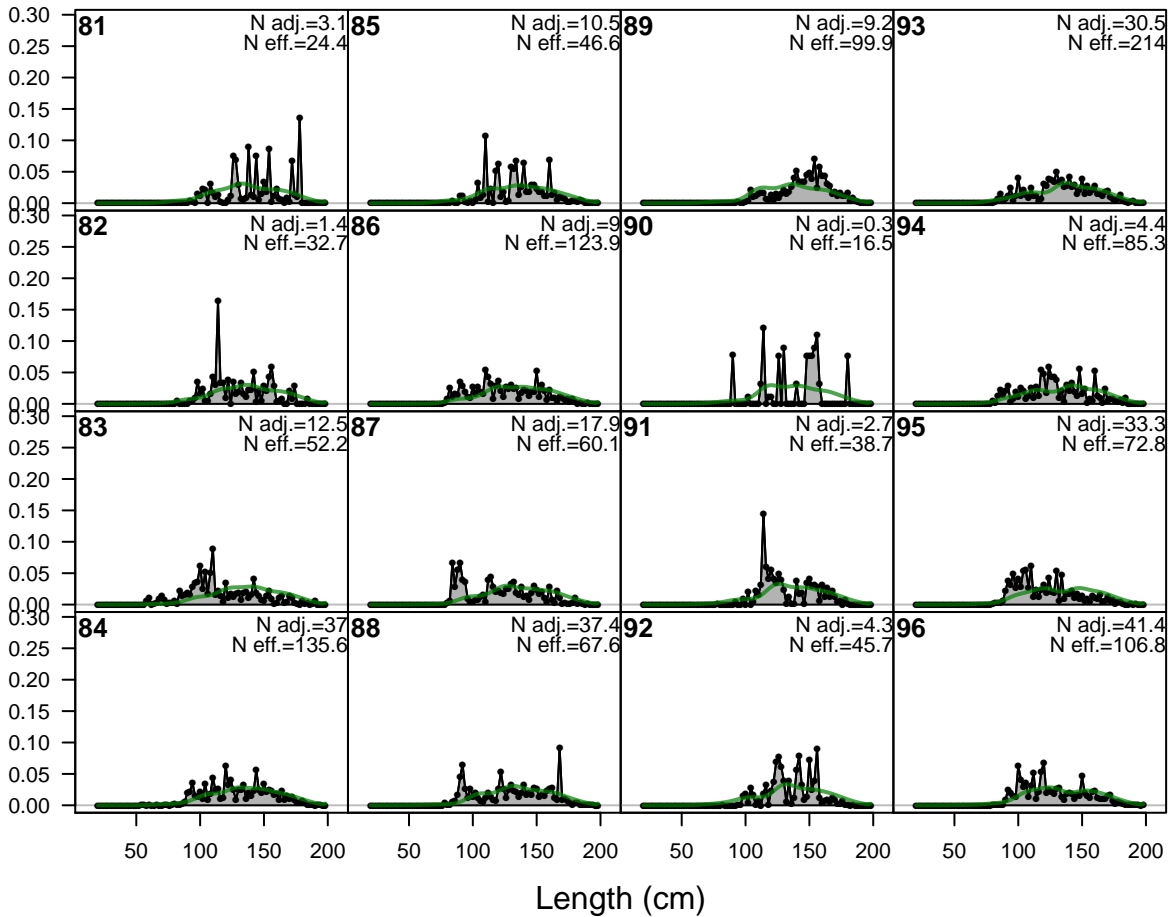
Proportion



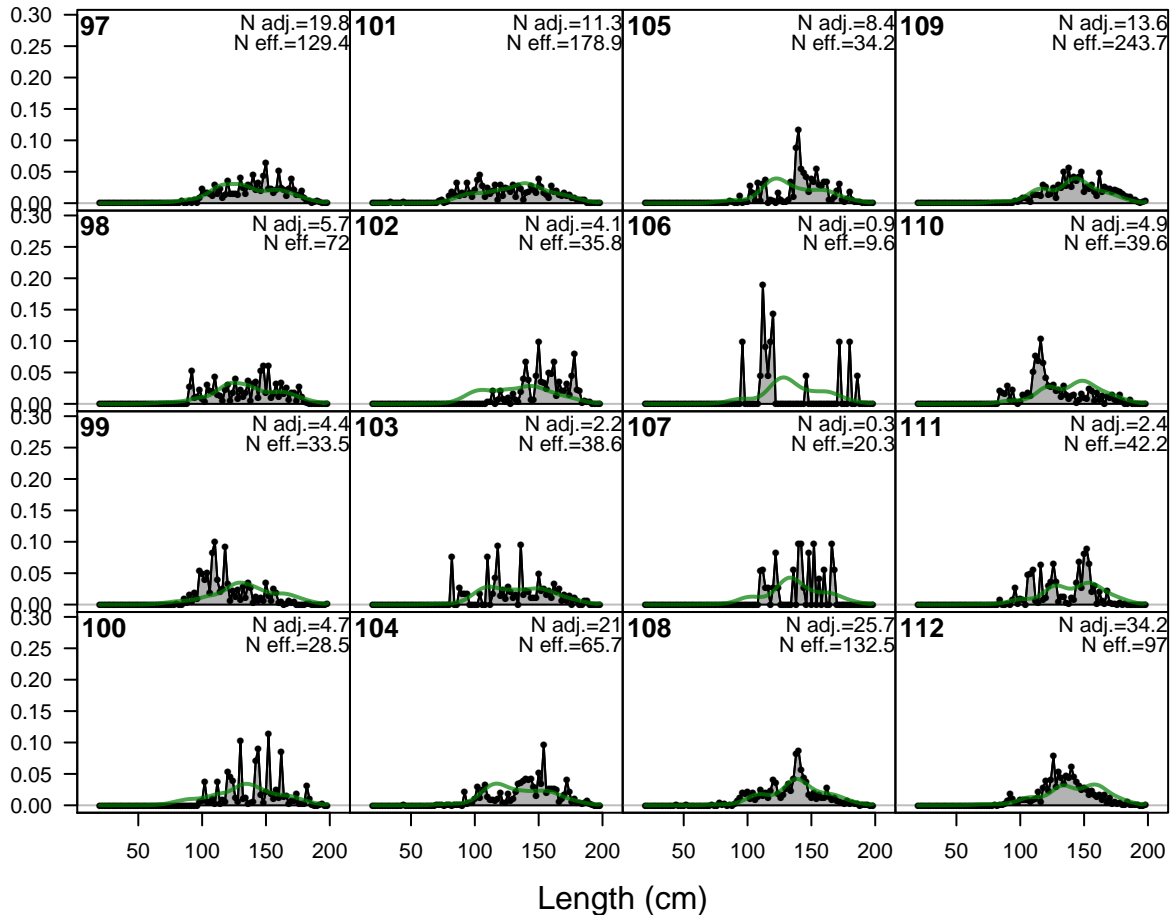
Proportion



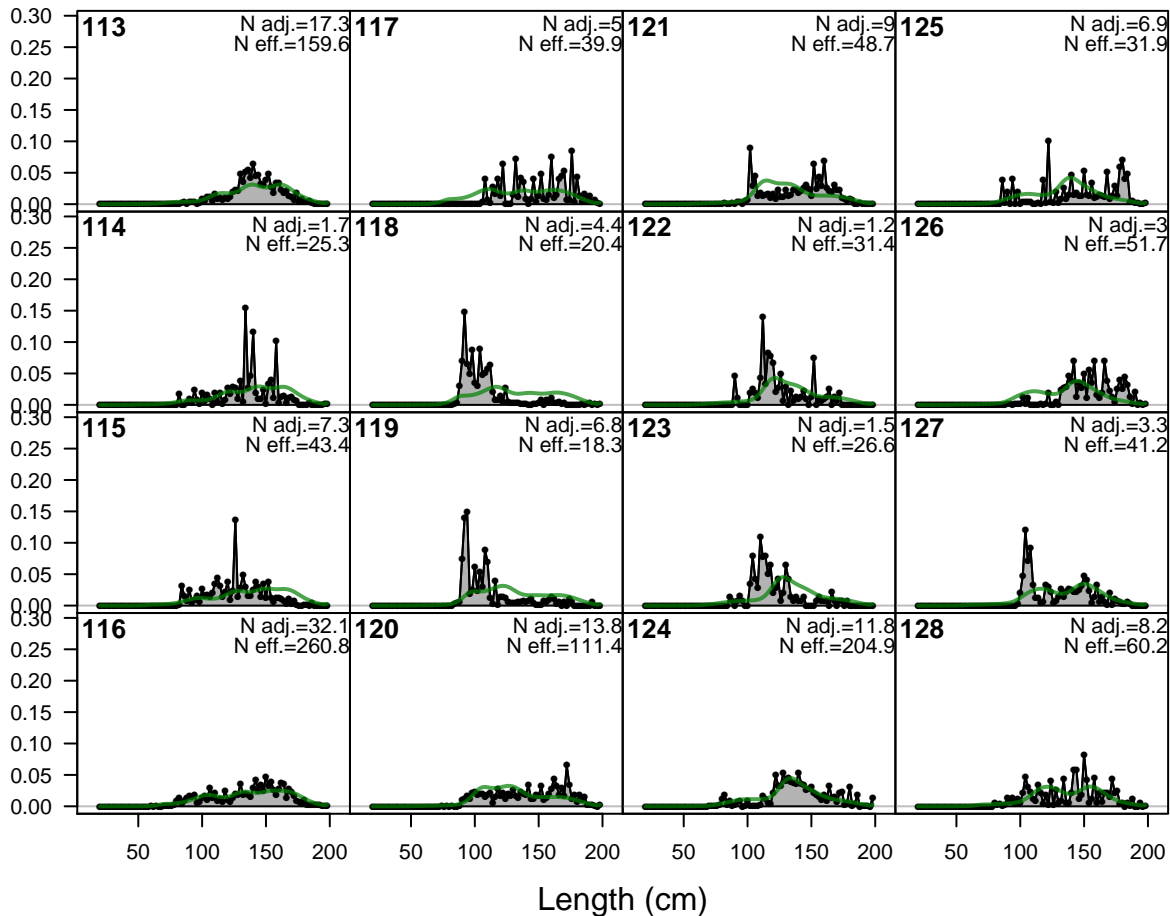
Proportion



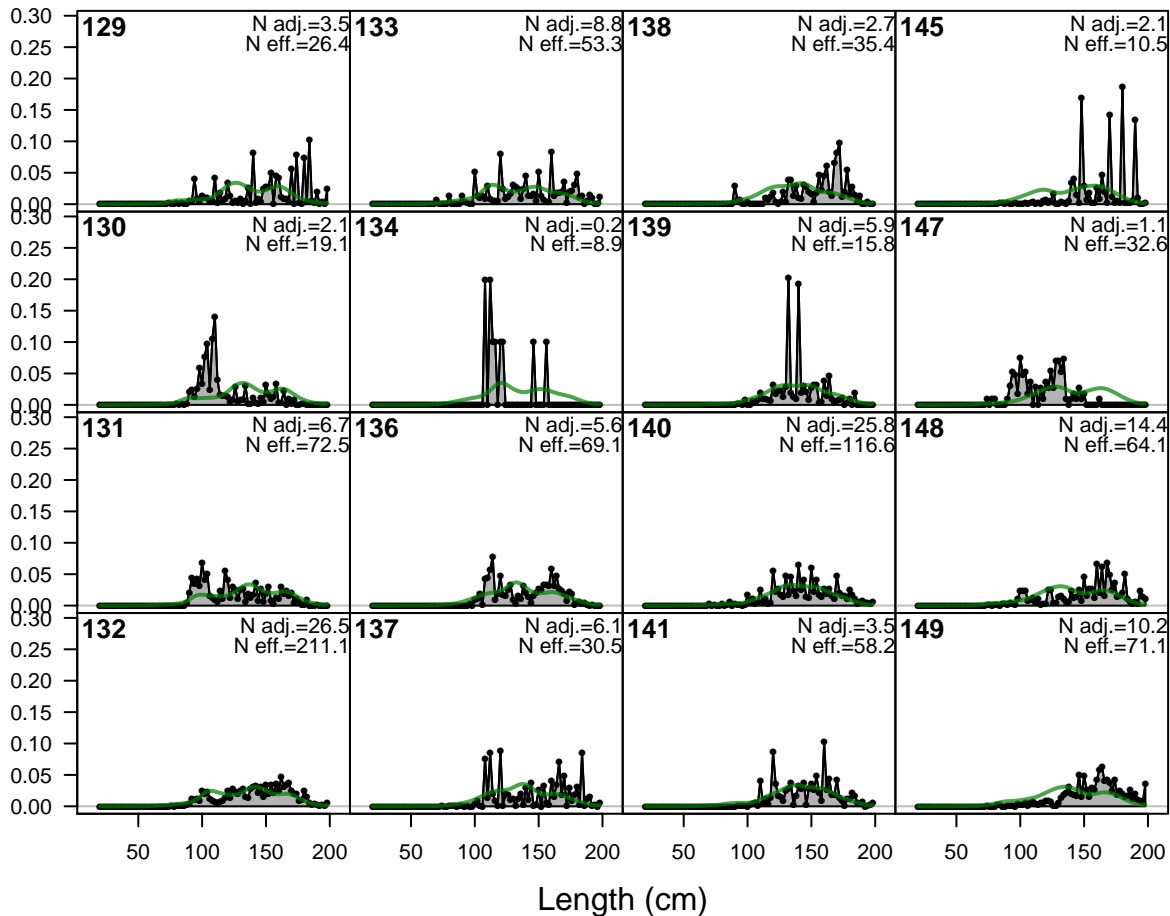
Proportion



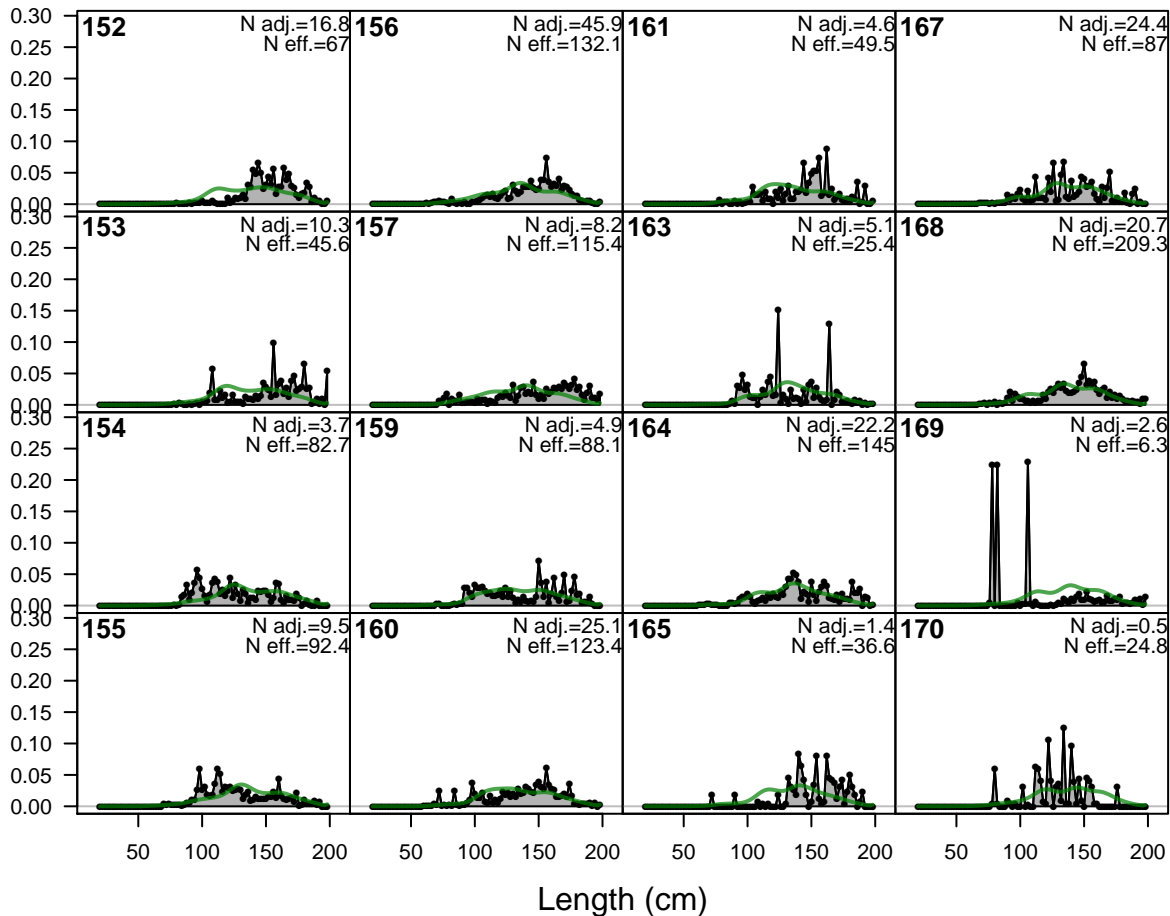
Proportion



Proportion

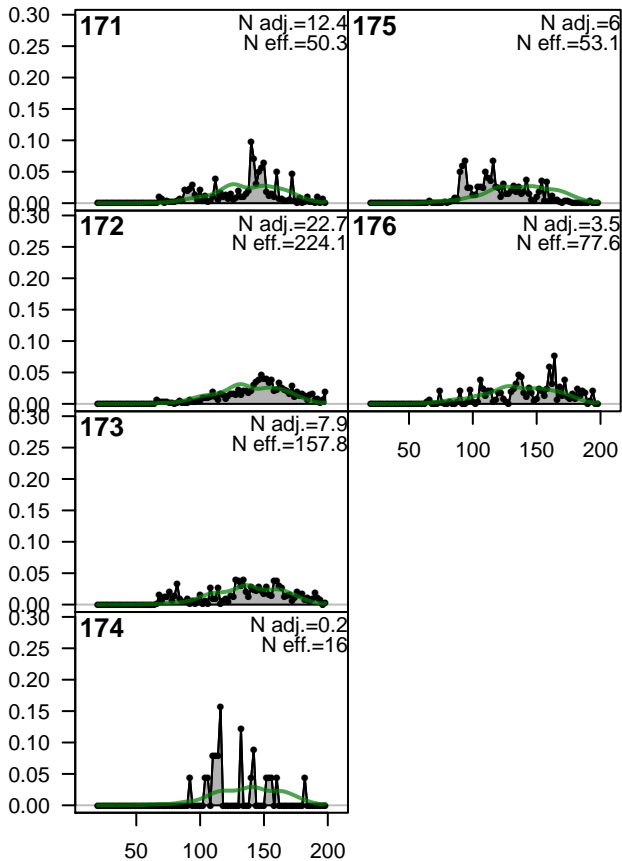


Proportion

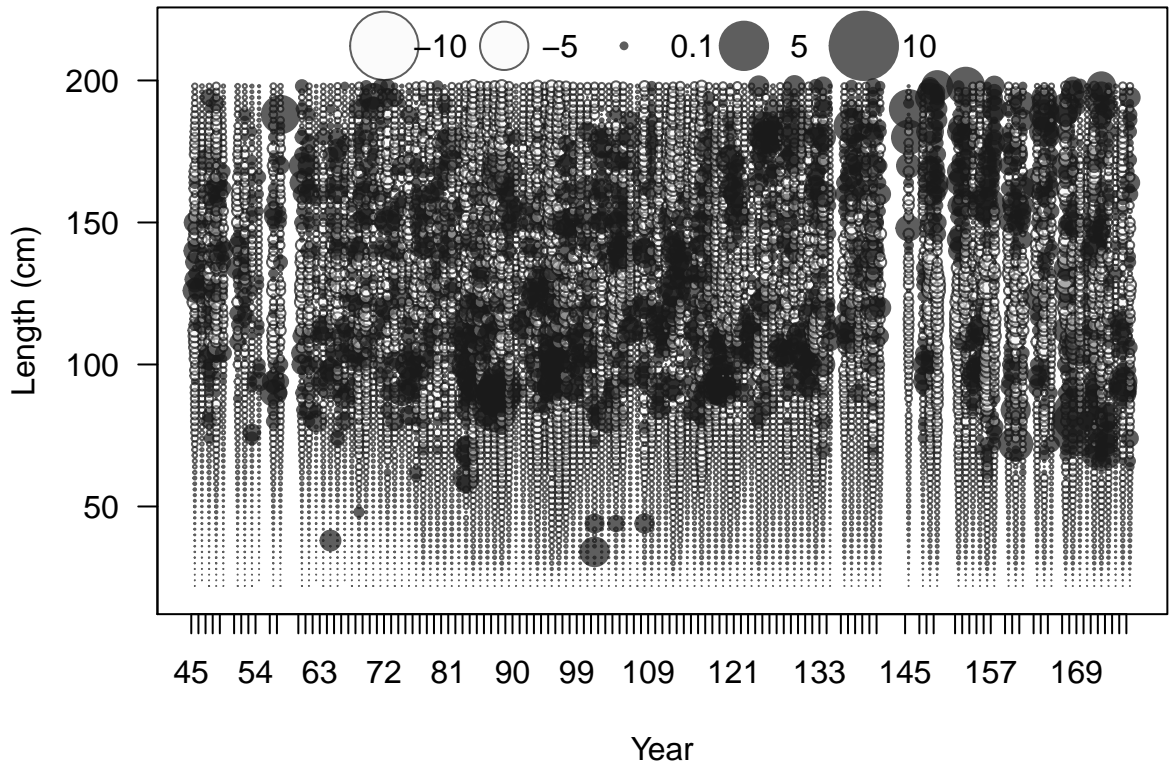


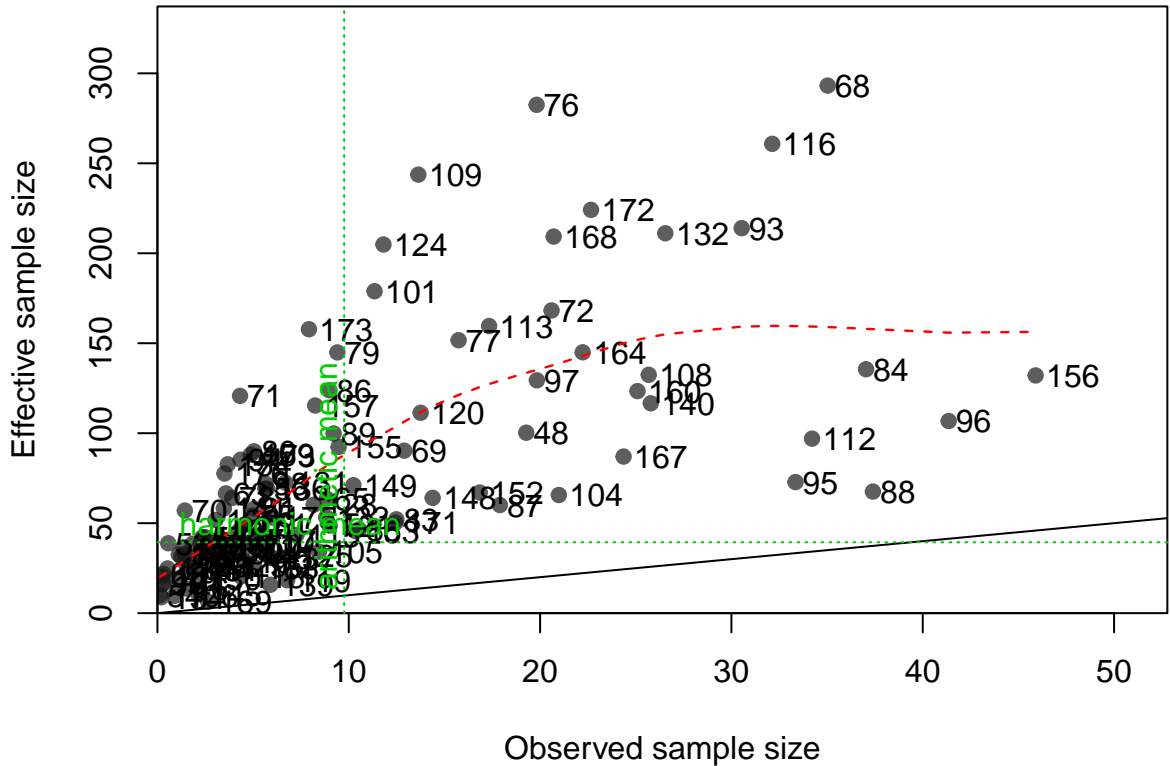


Proportion

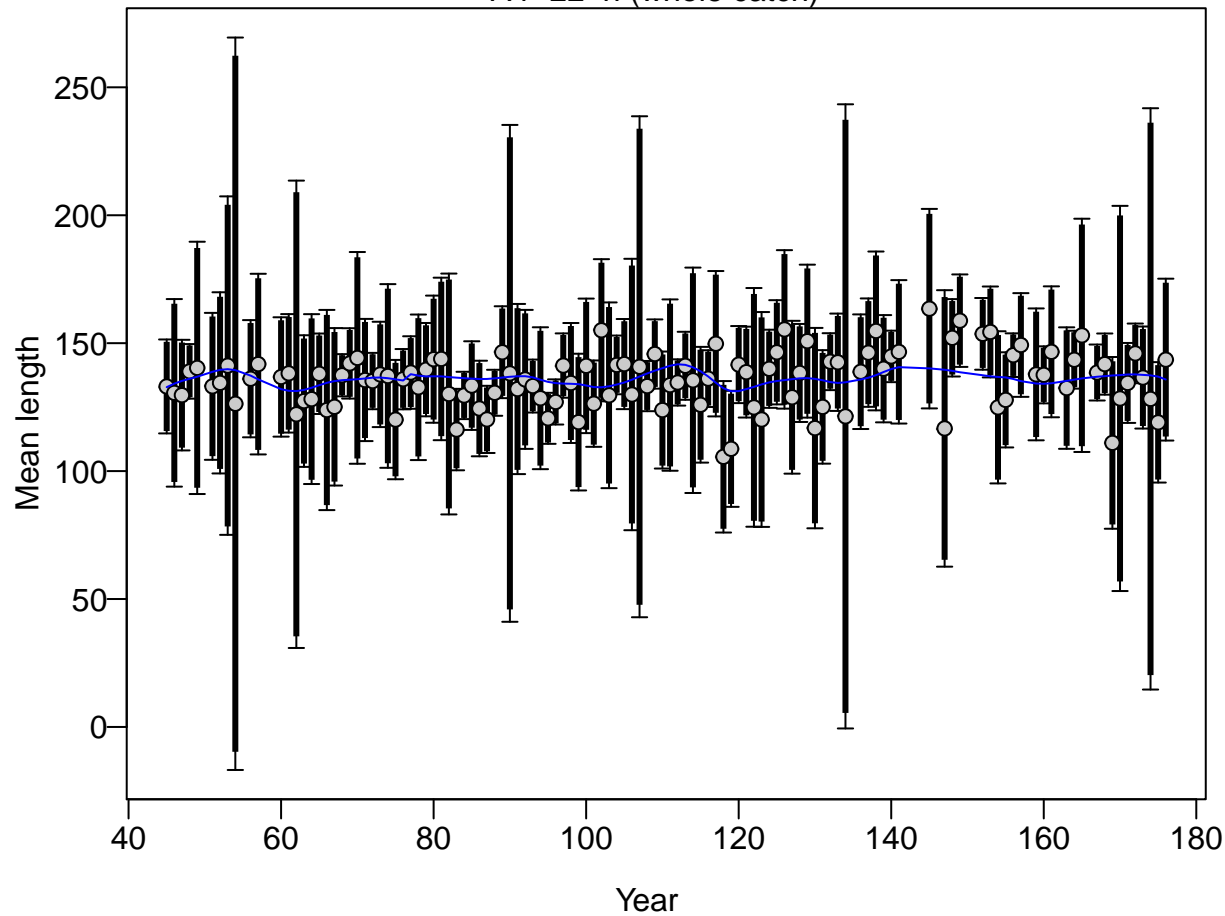


Length (cm)

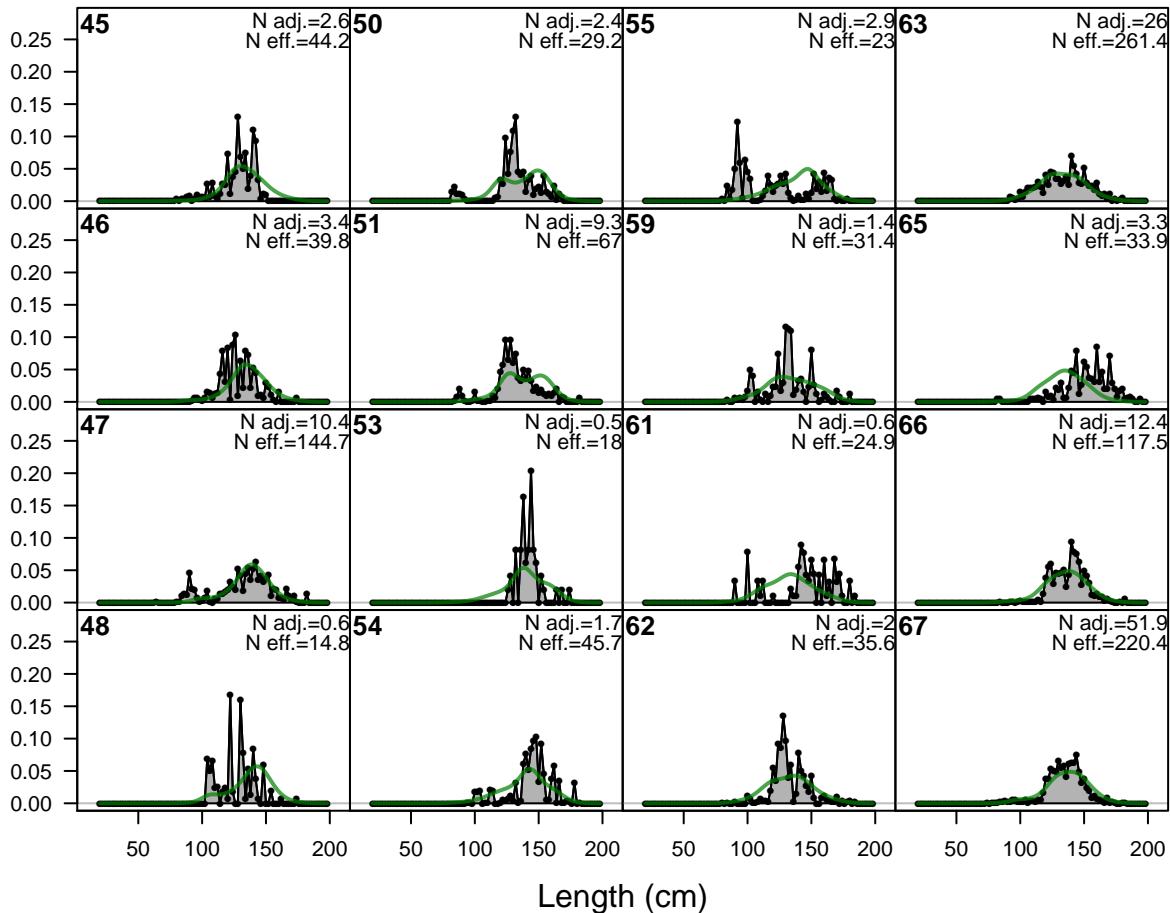




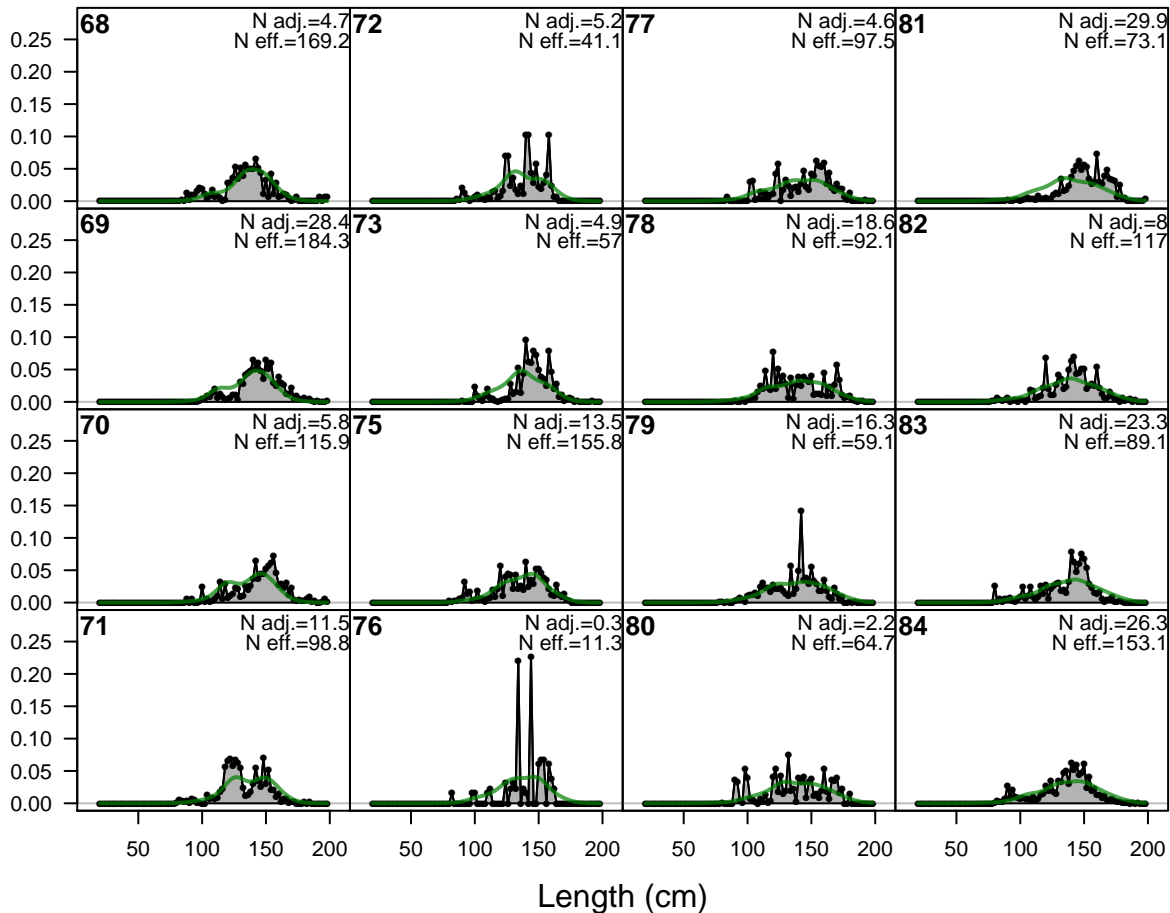
A4-LL-n (whole catch)



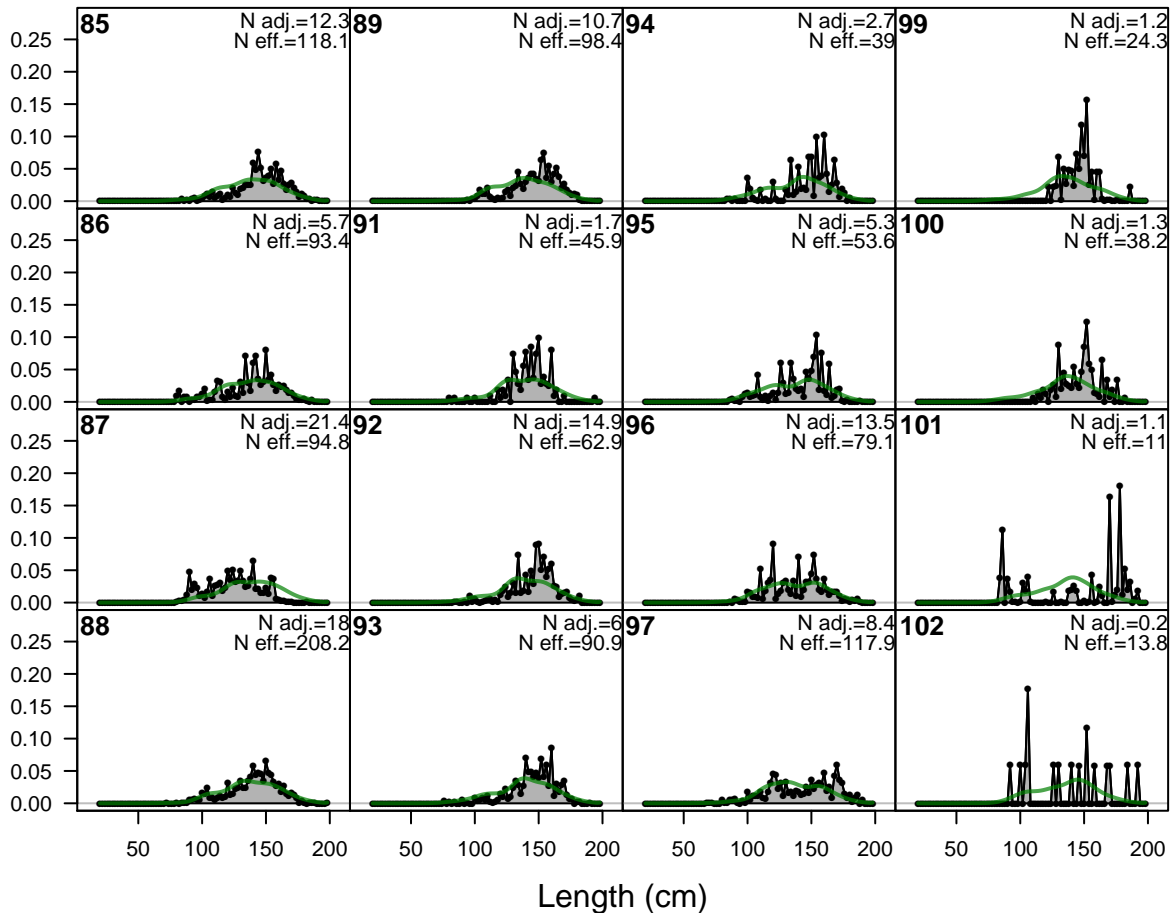
Proportion



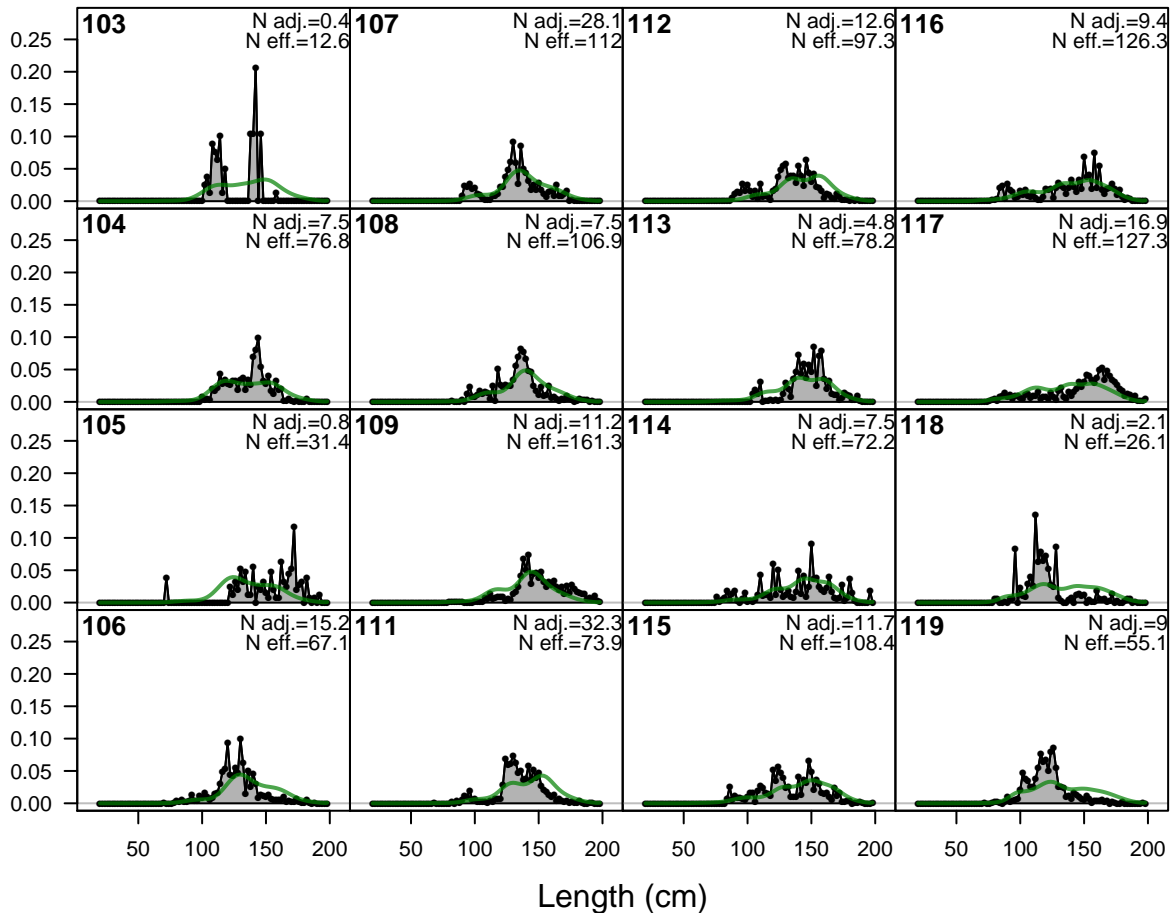
Proportion



Proportion

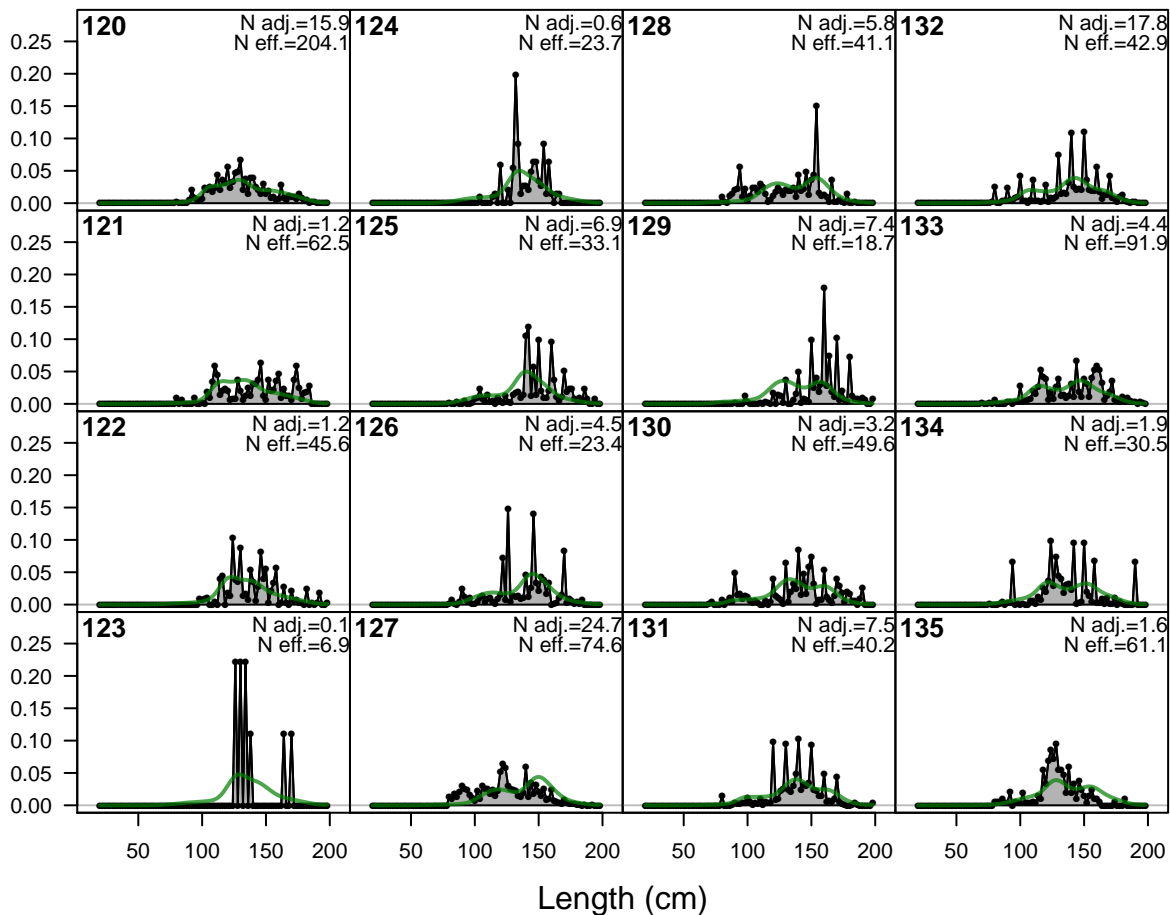


Proportion

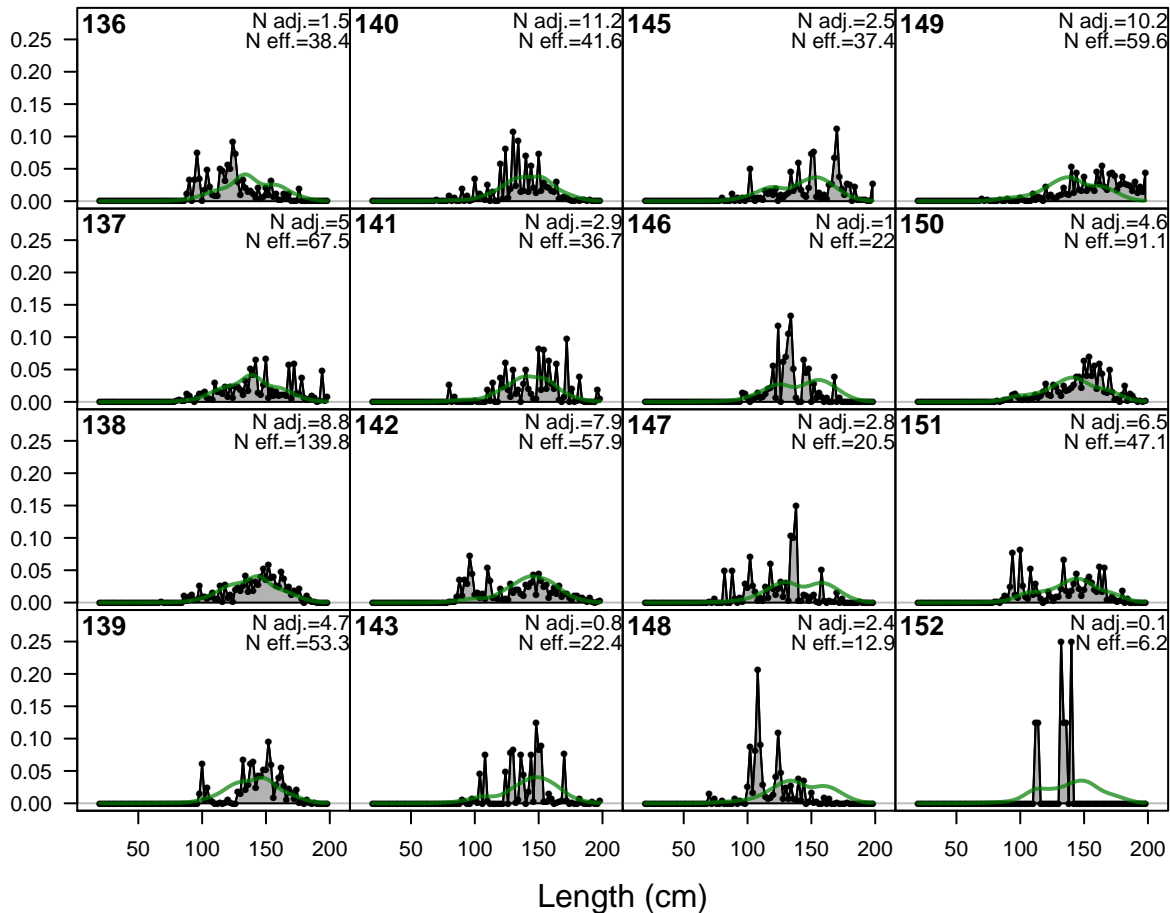




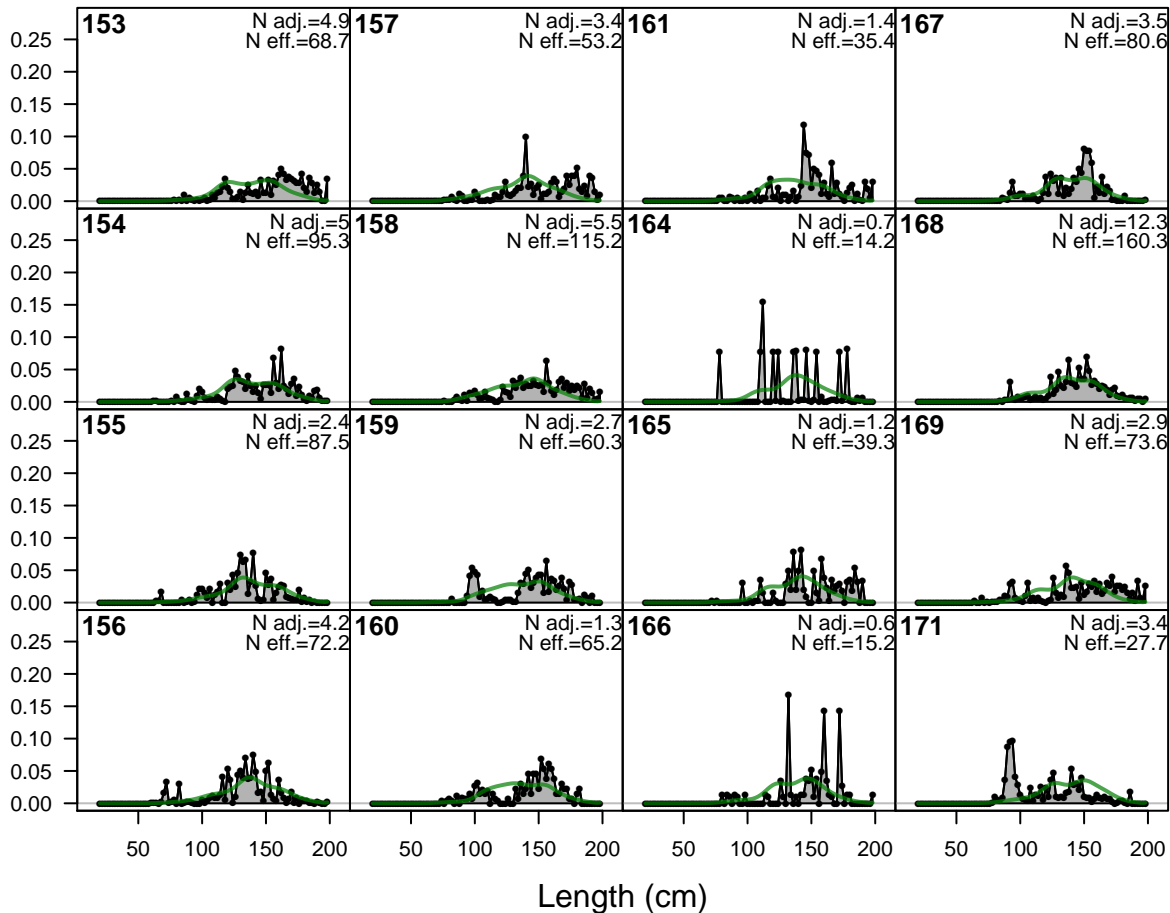
Proportion



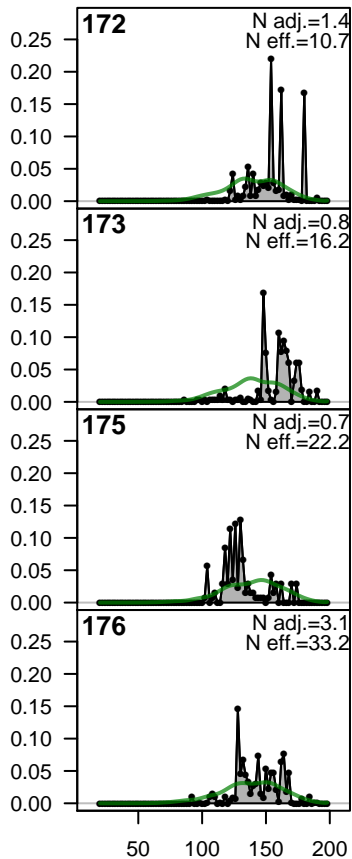
Proportion



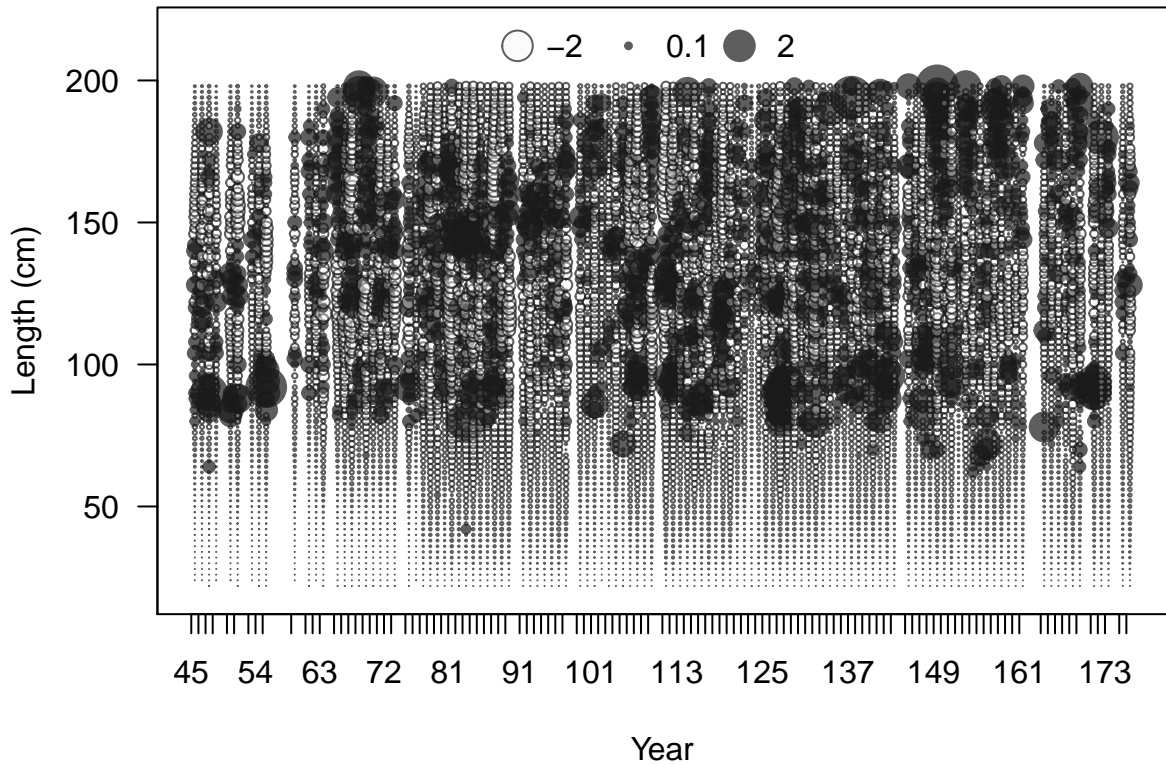
Proportion

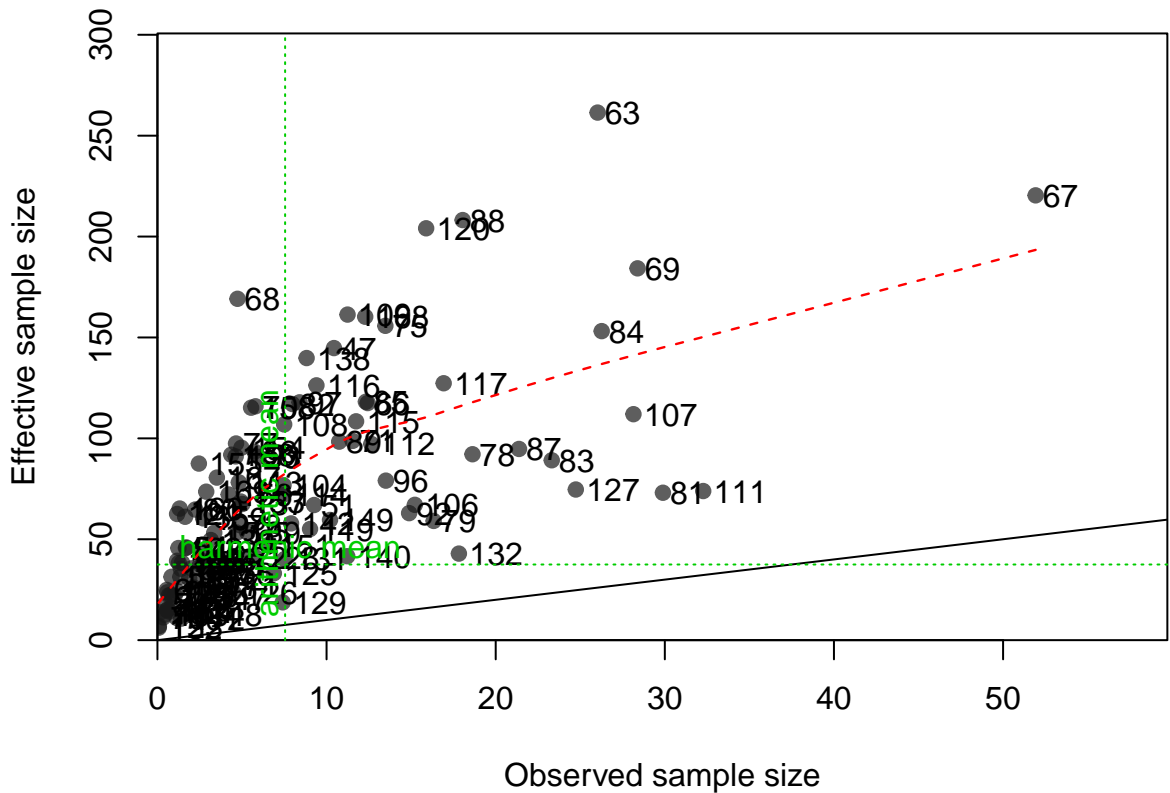


Proportion

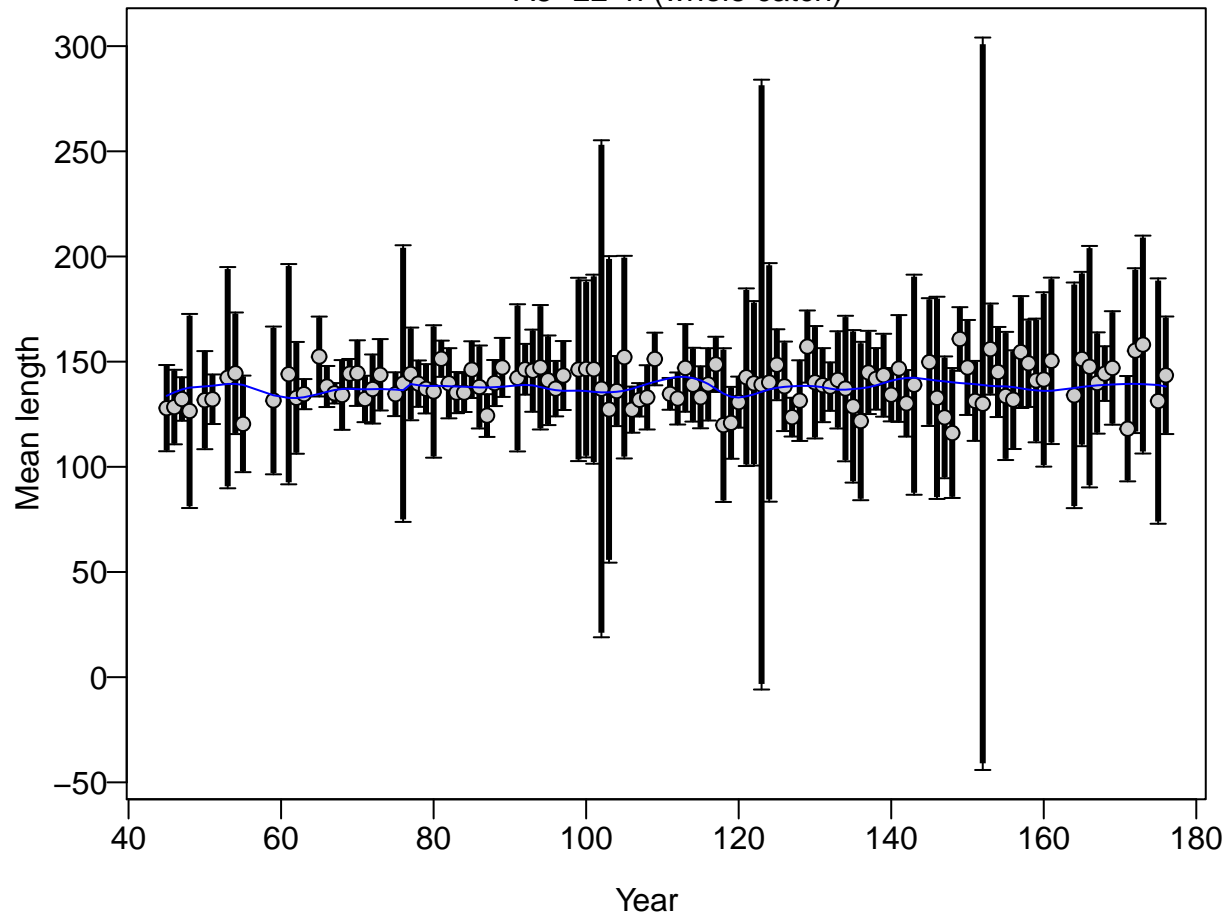


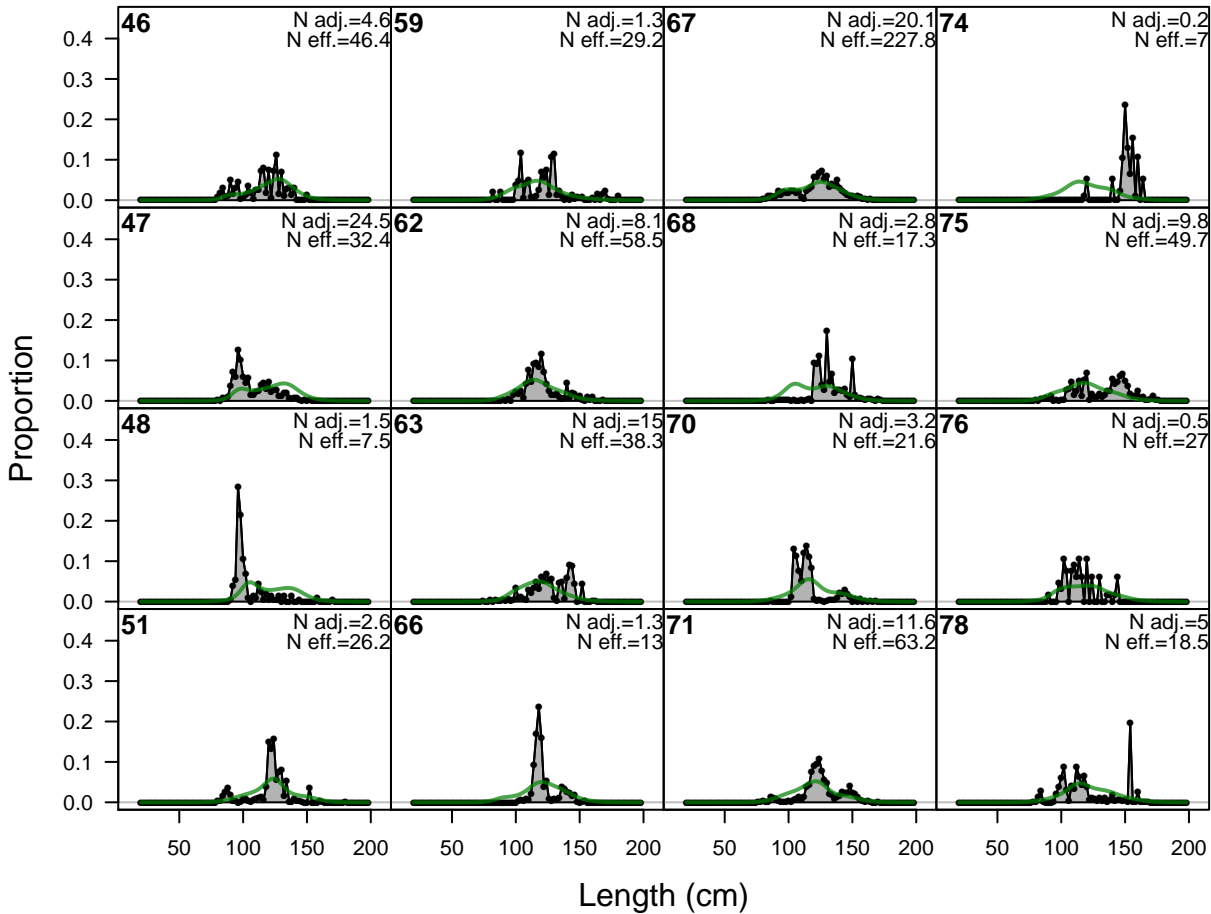
Length (cm)





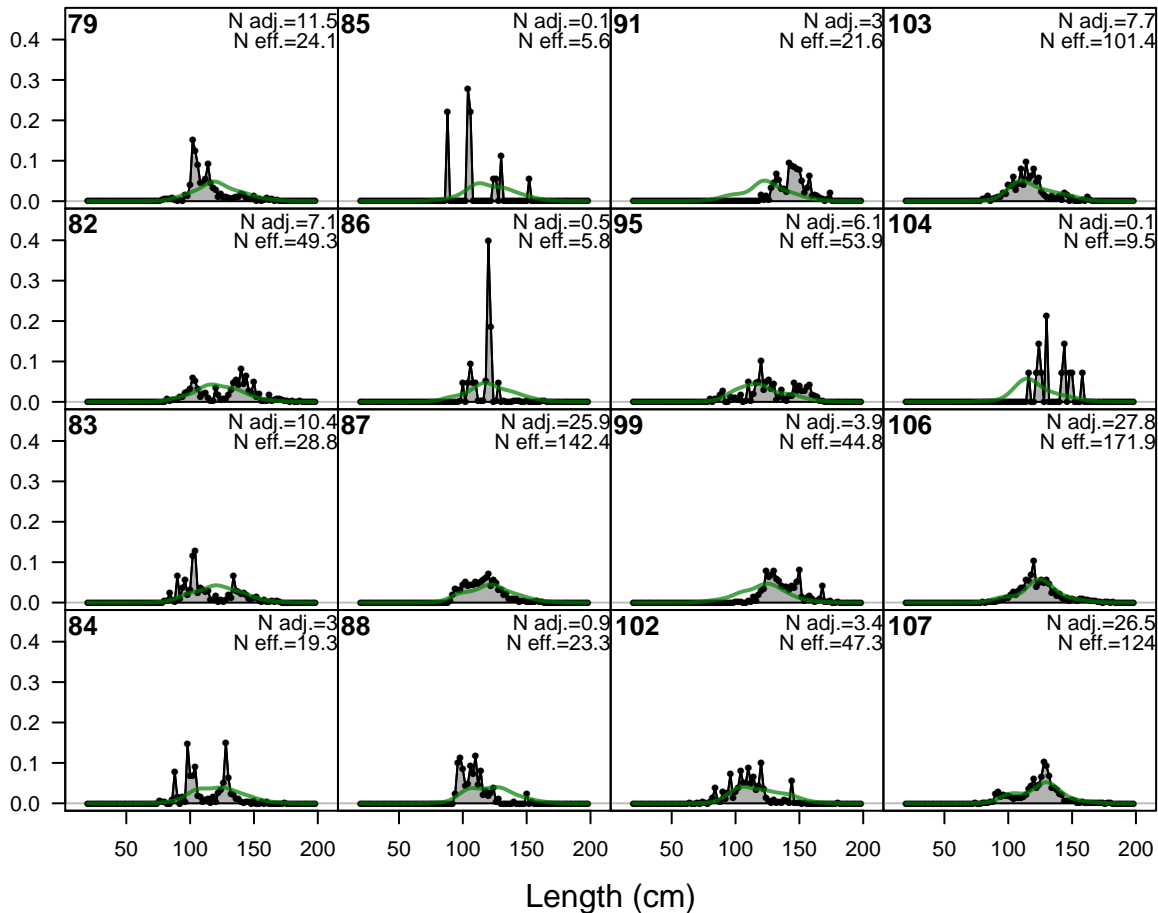
A5-LL-n (whole catch)



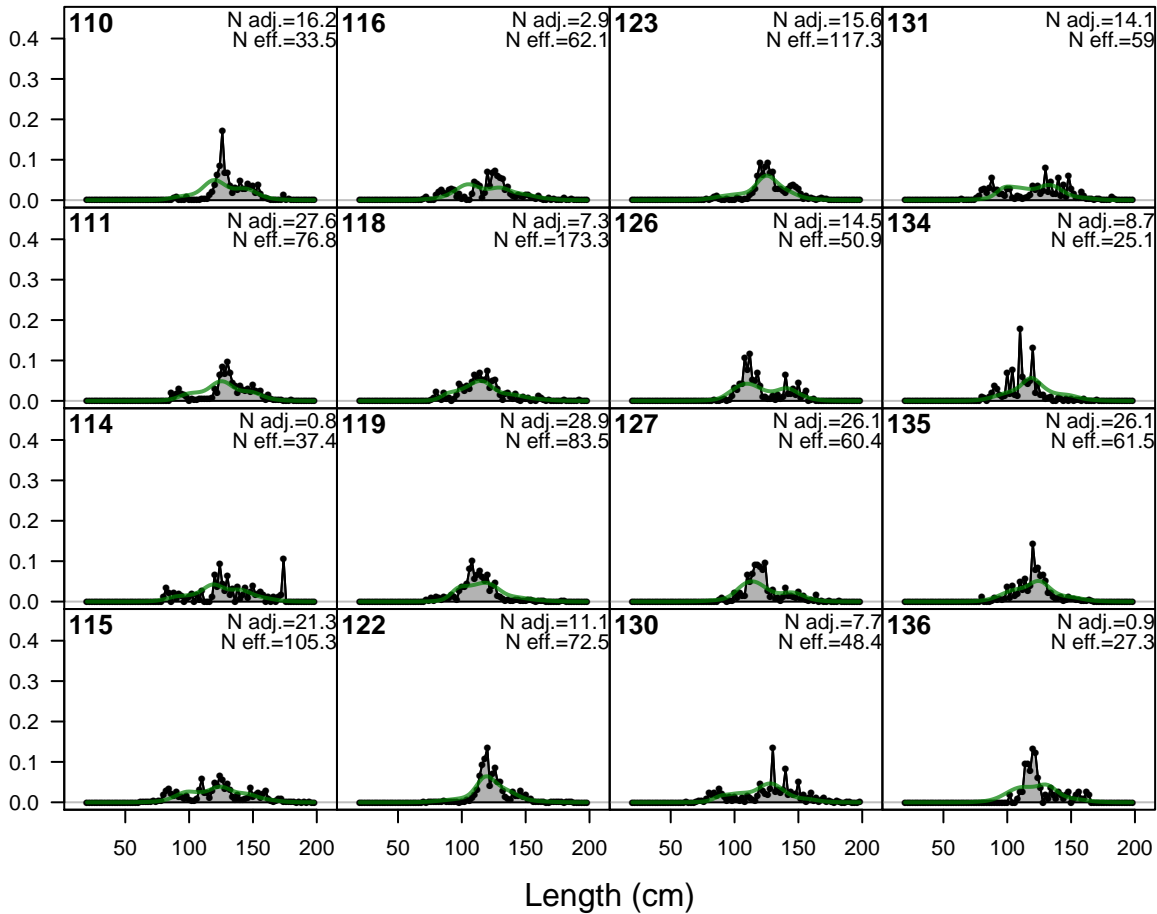




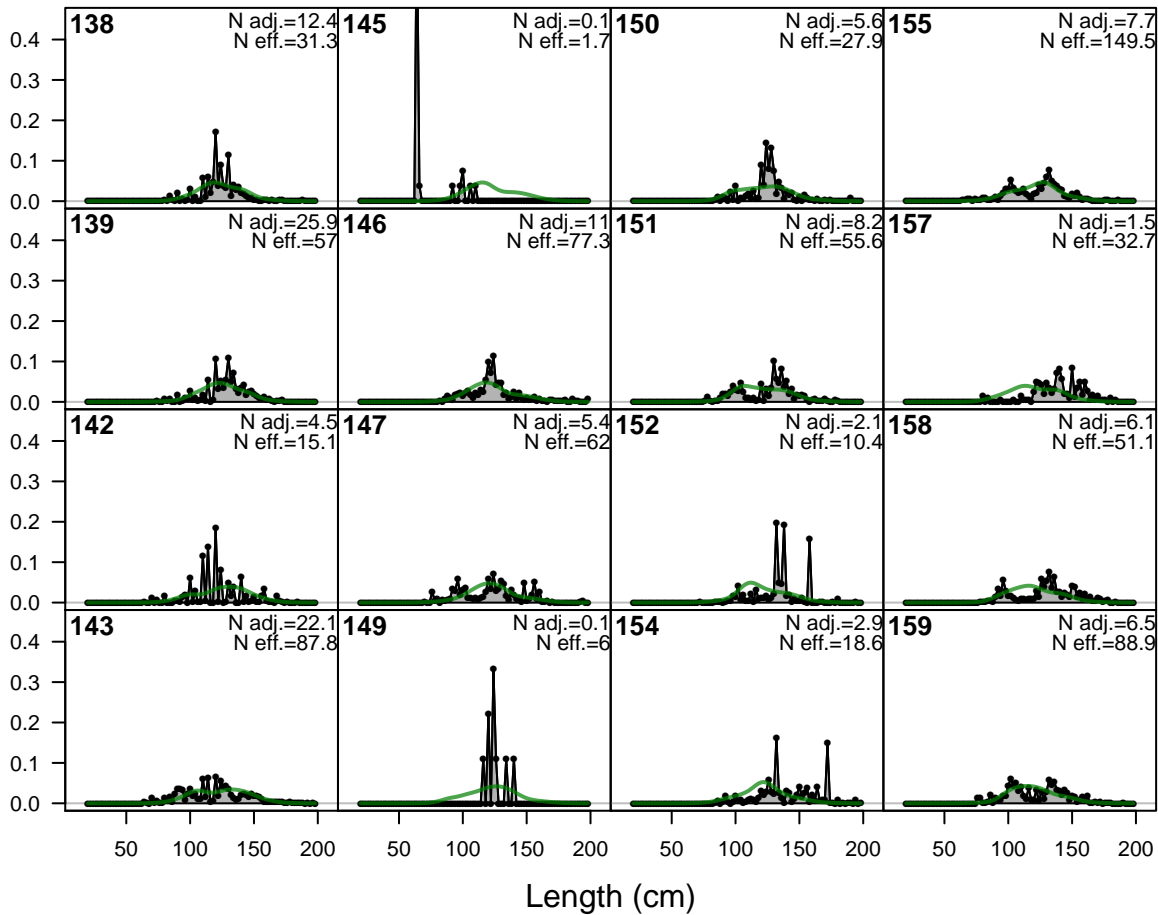
Proportion



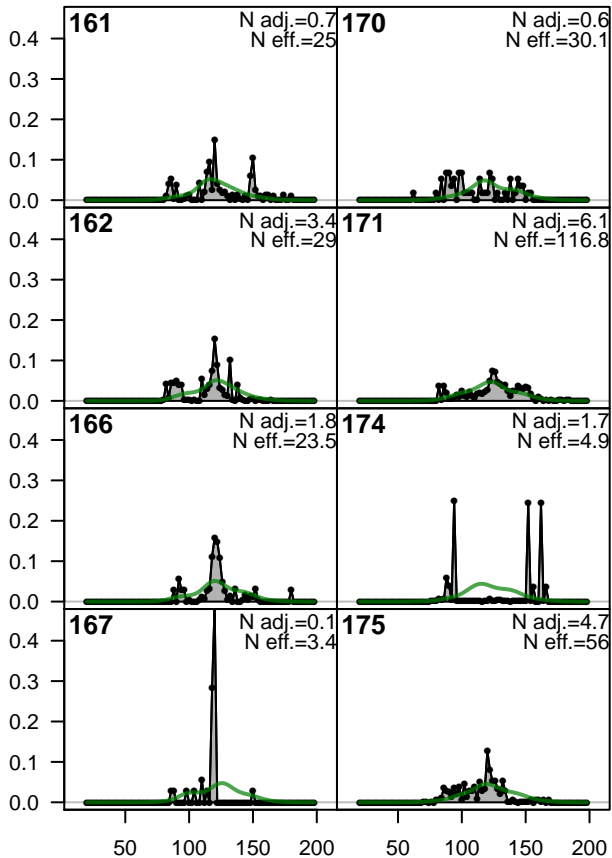
Proportion



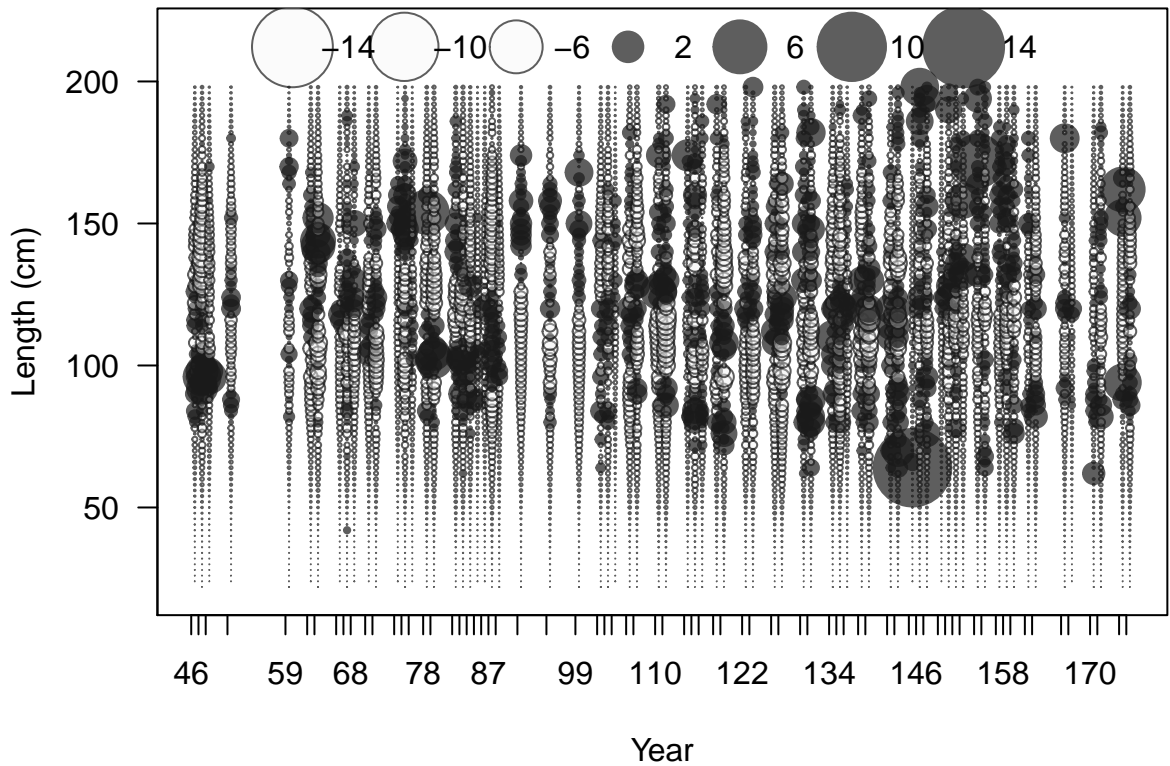
Proportion

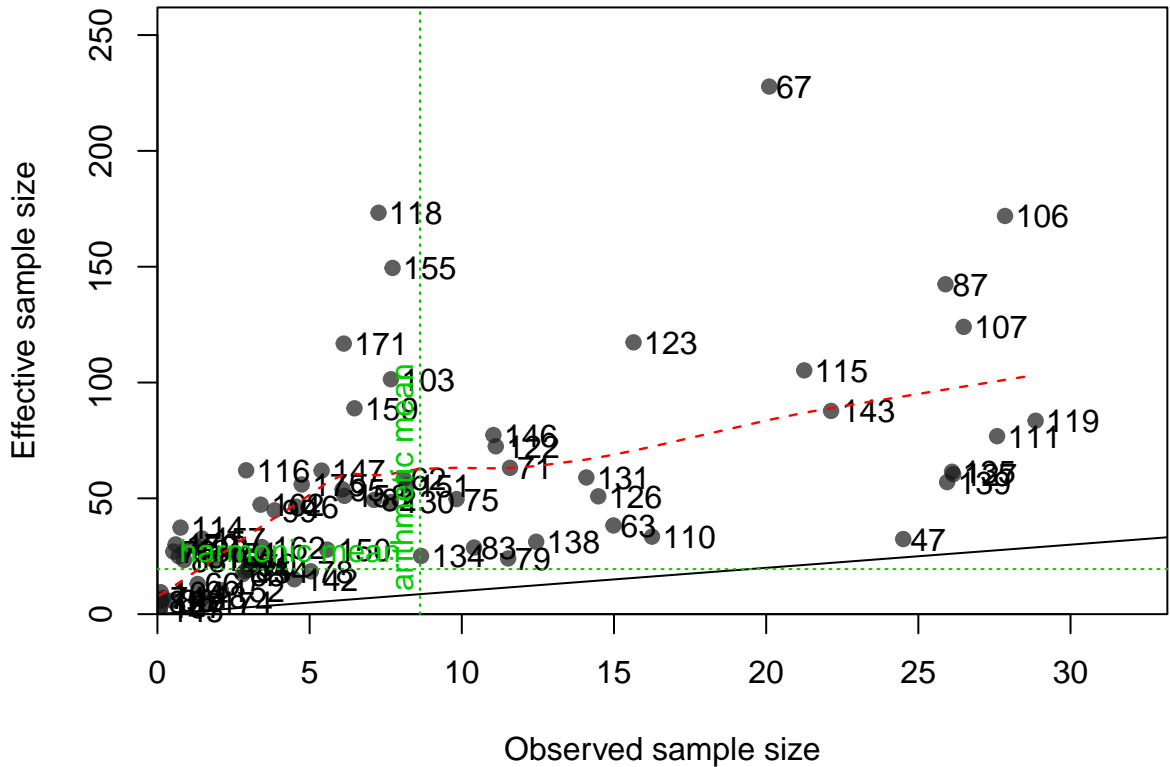


Proportion

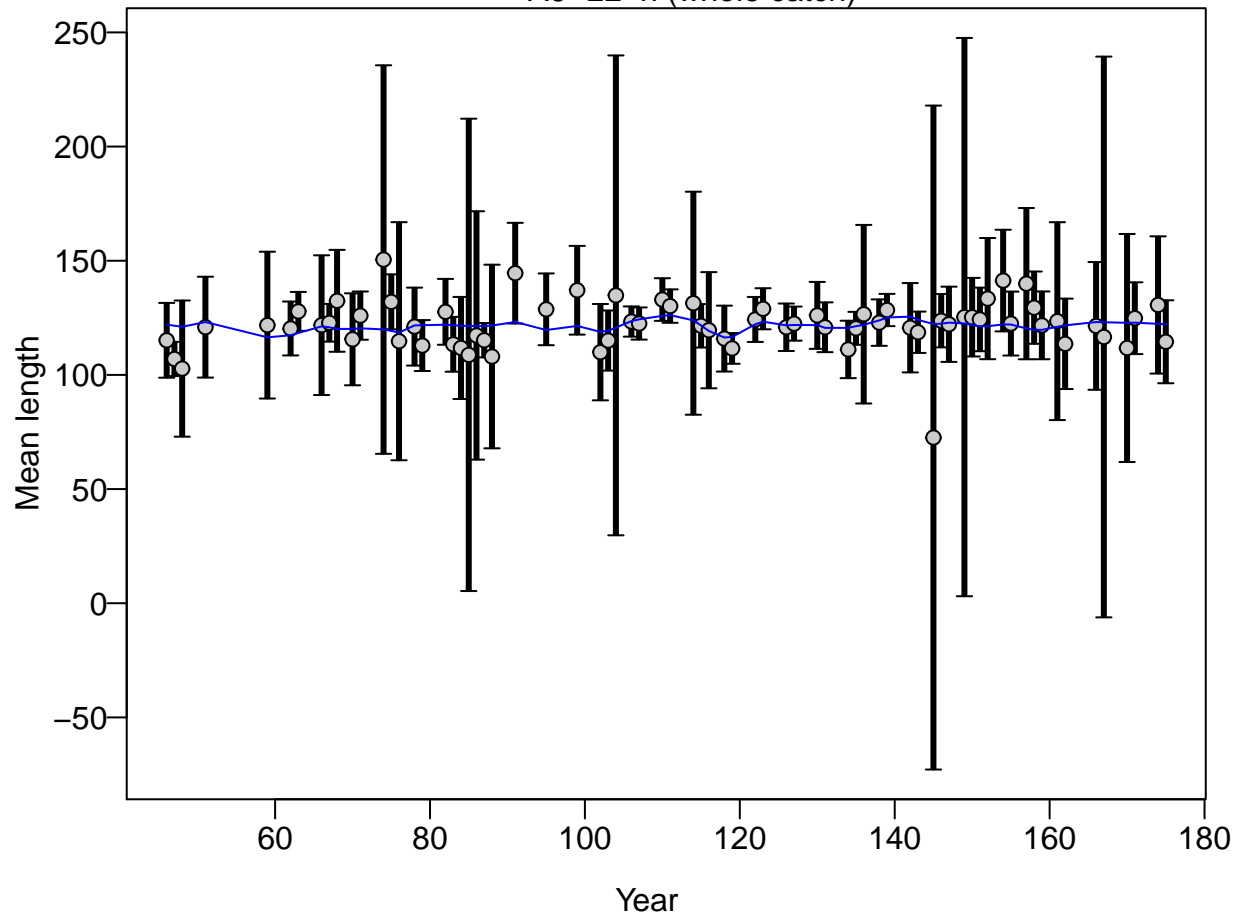


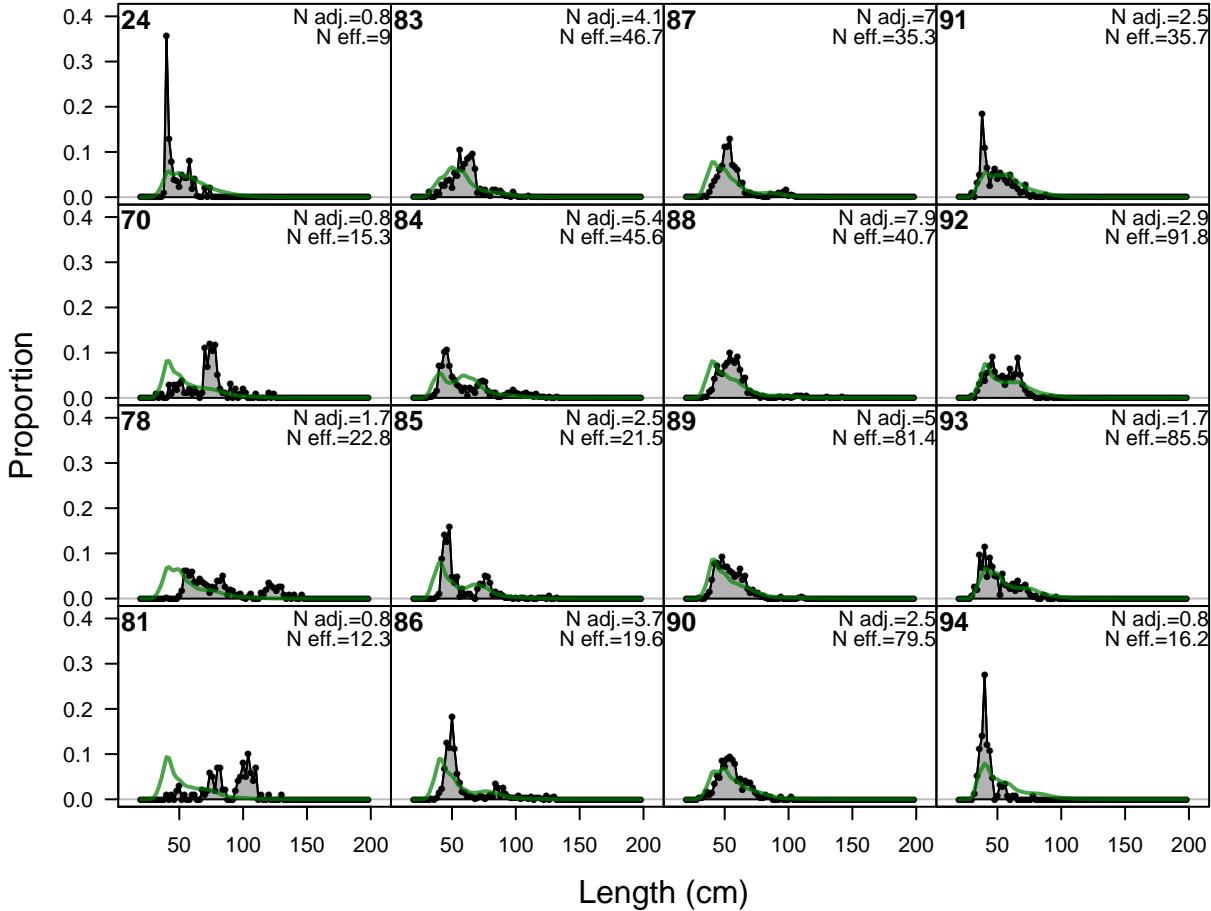
Length (cm)



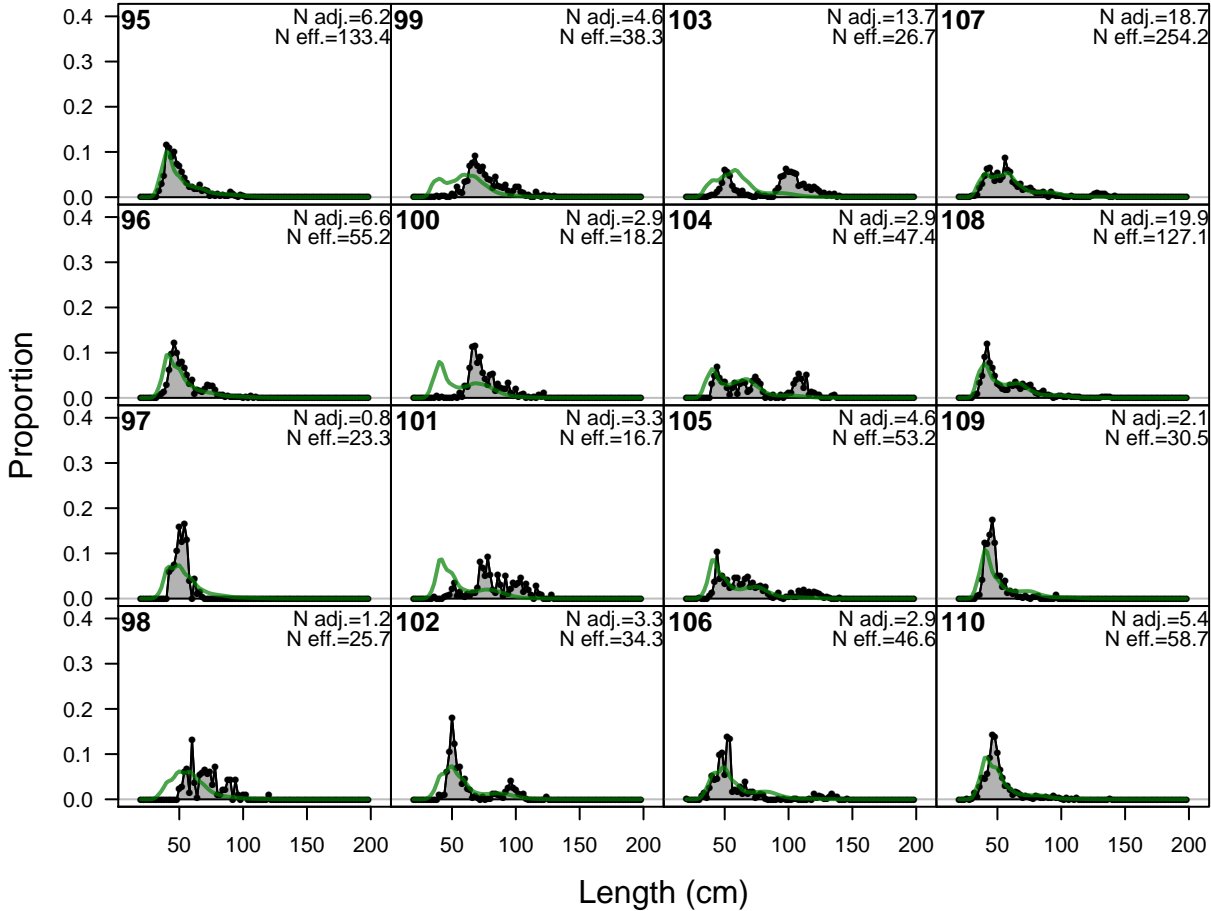


A6-LL-n (whole catch)

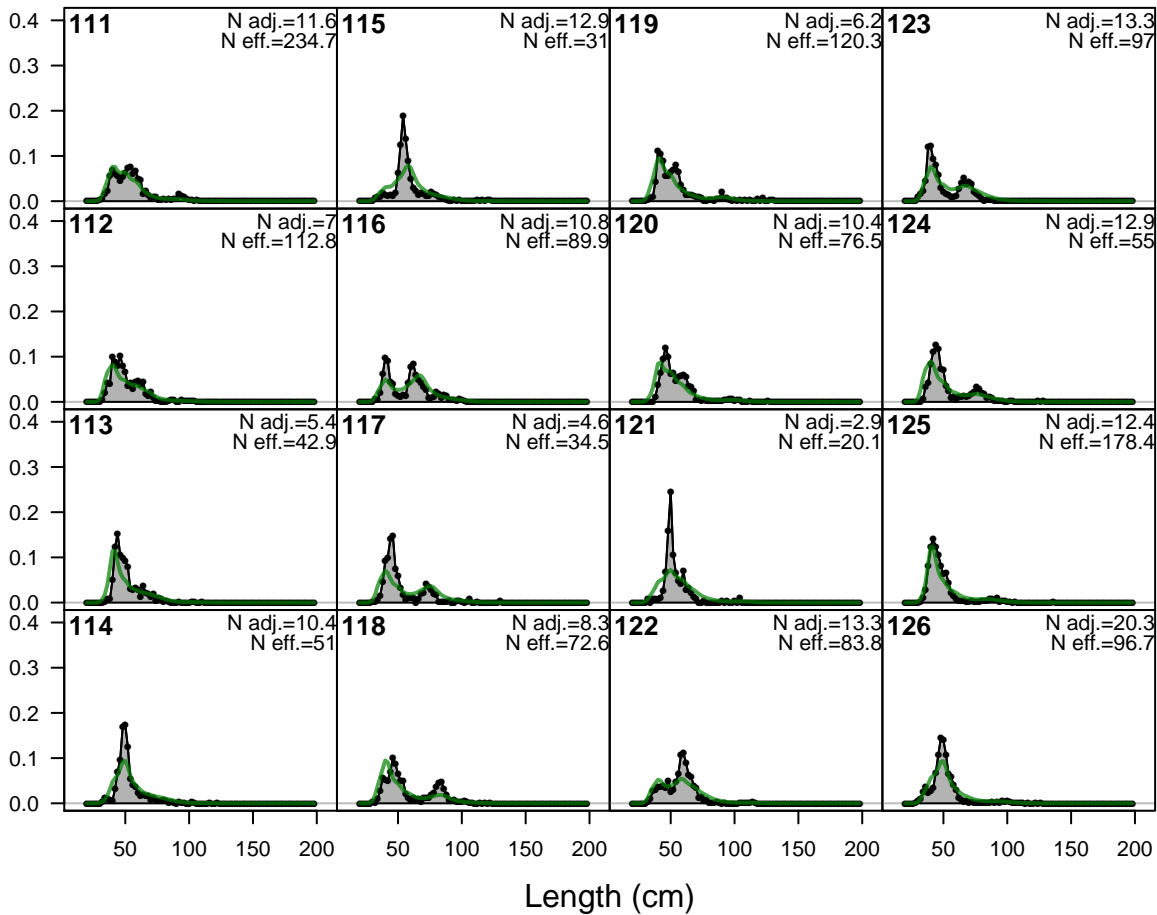




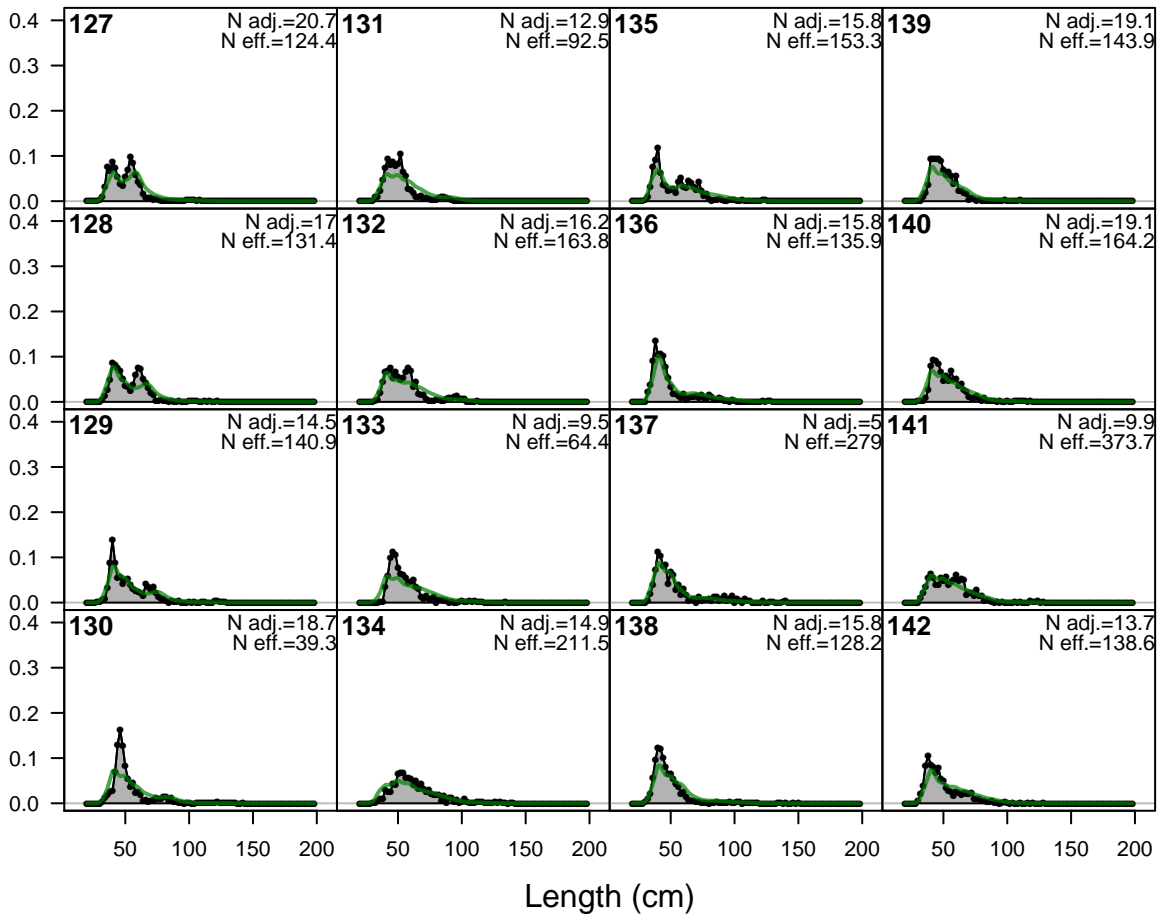




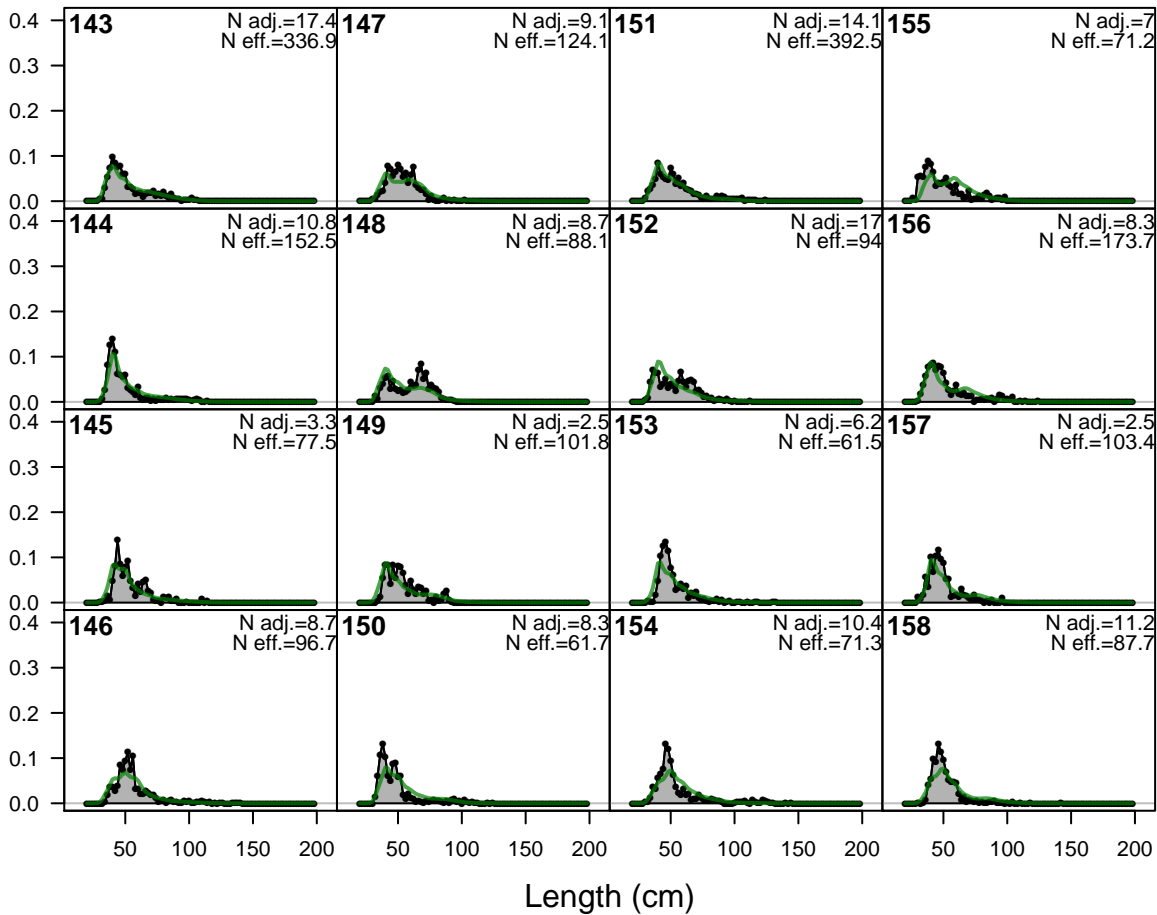
Proportion

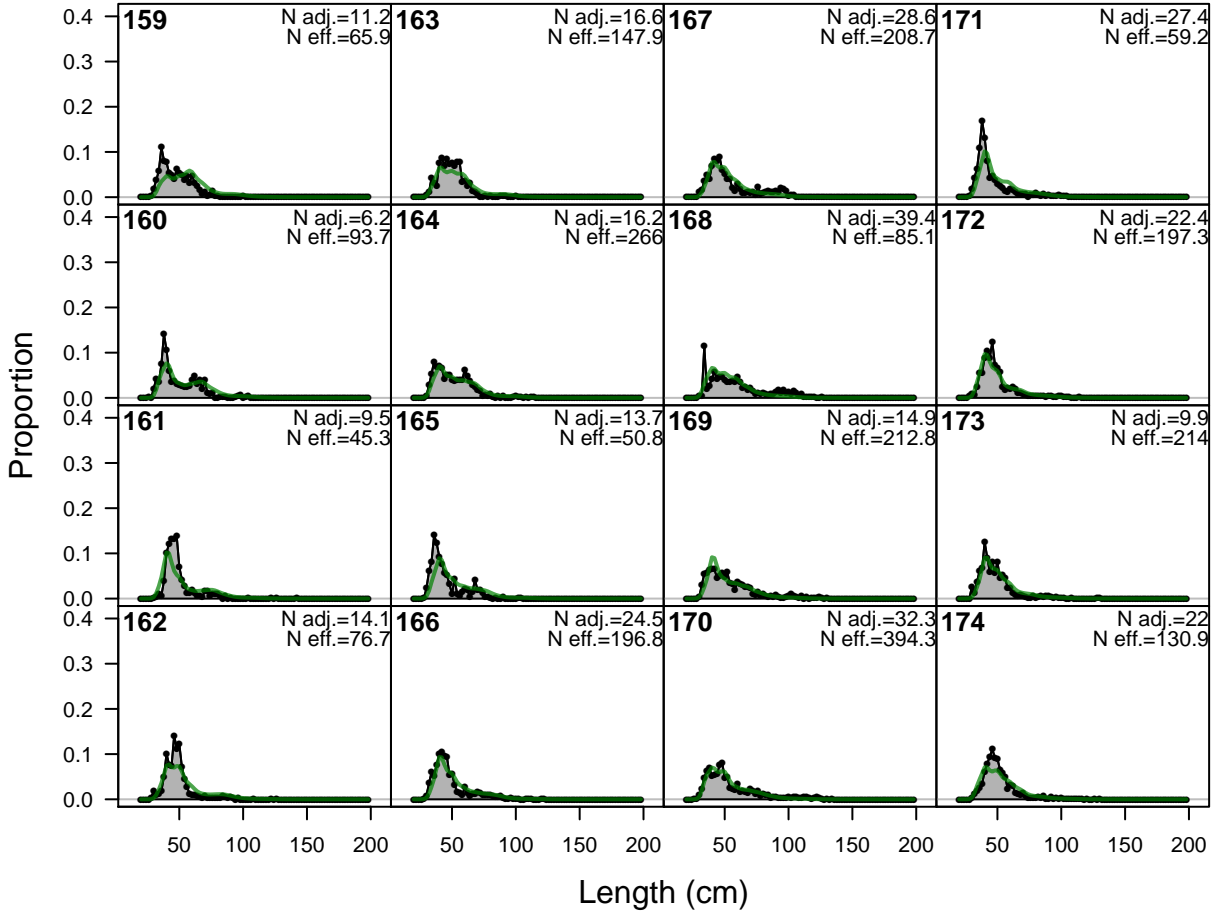


Proportion

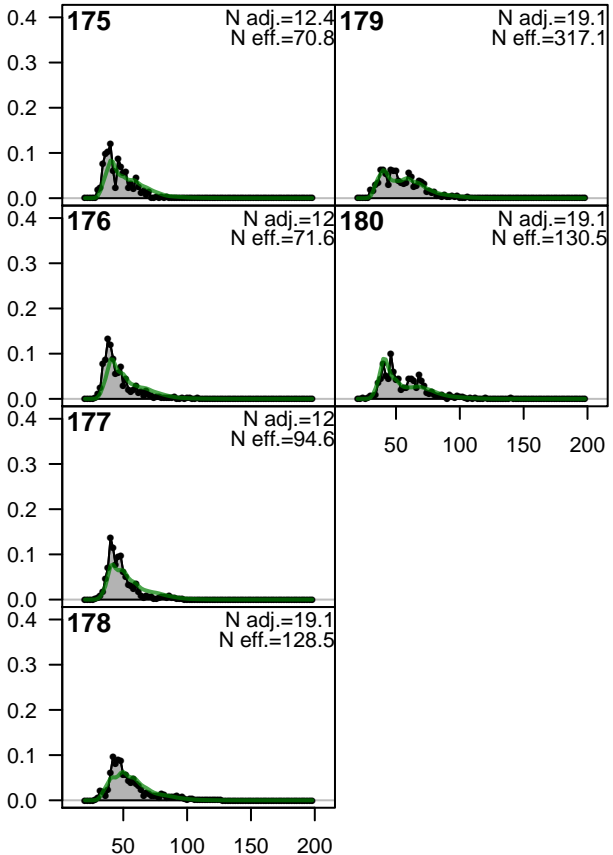


Proportion

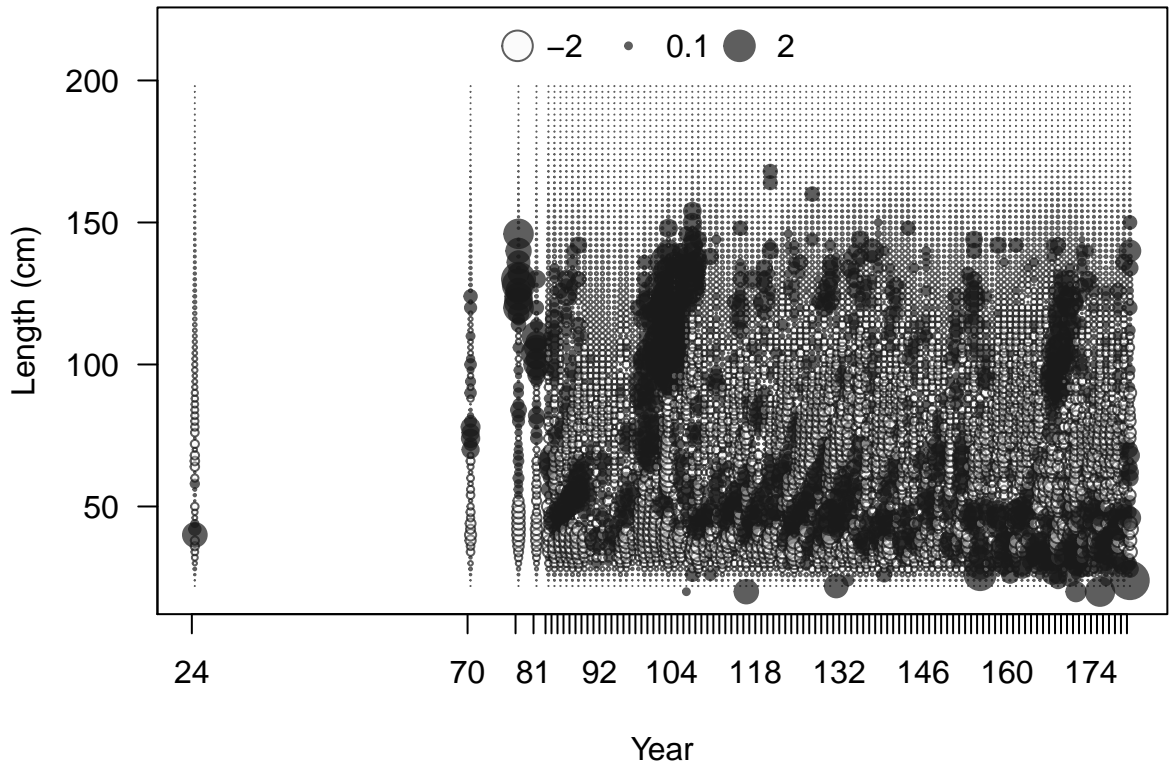


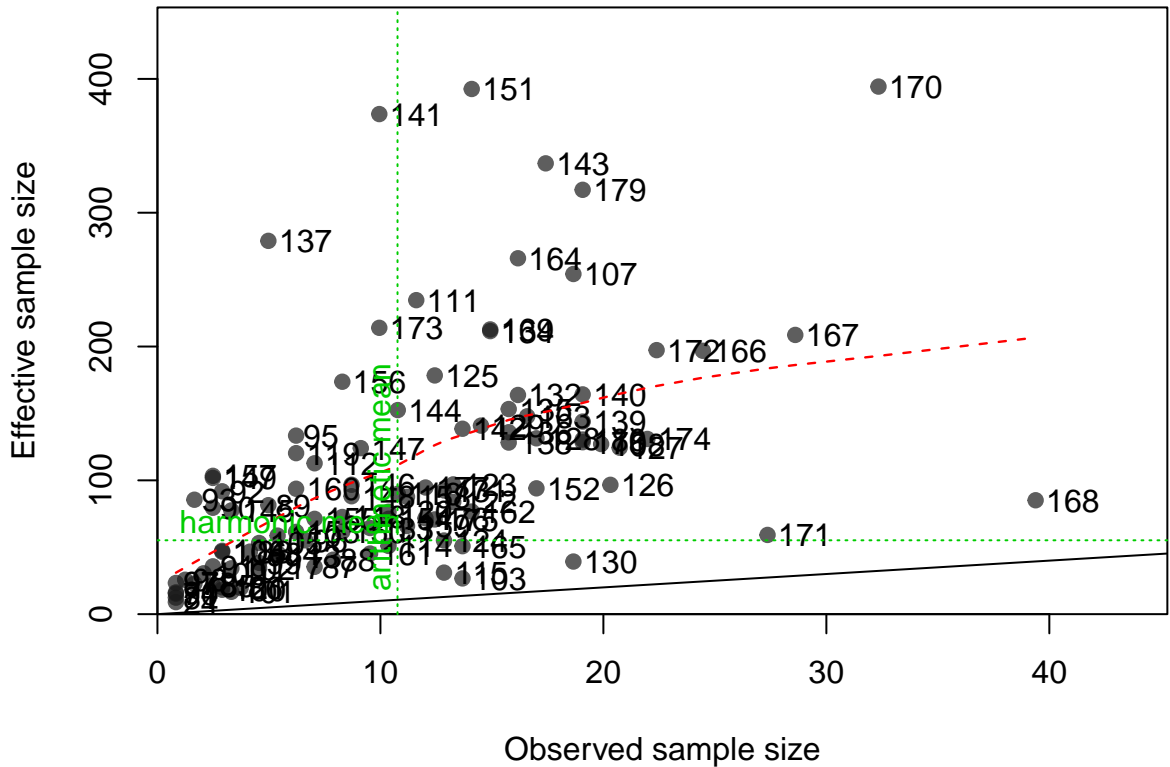


Proportion



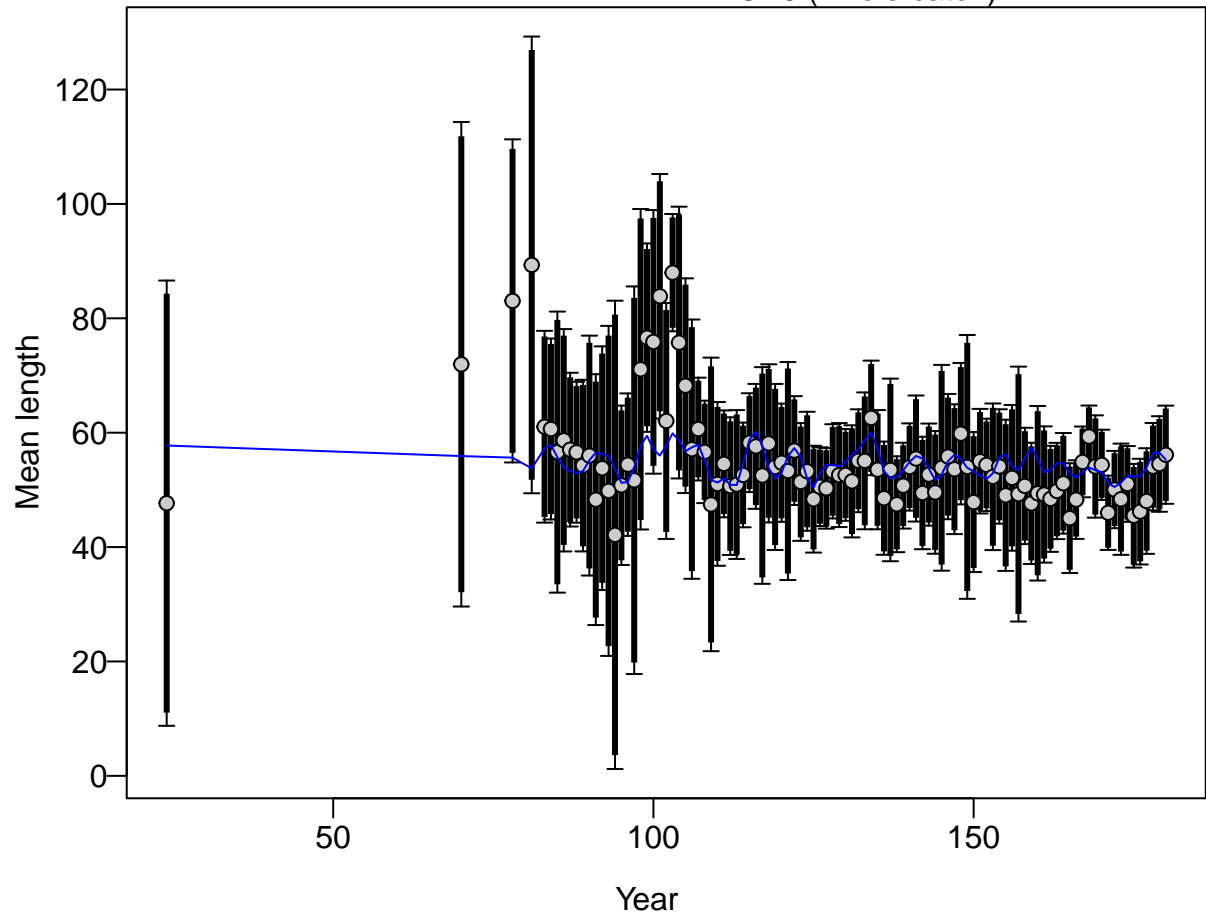
Length (cm)



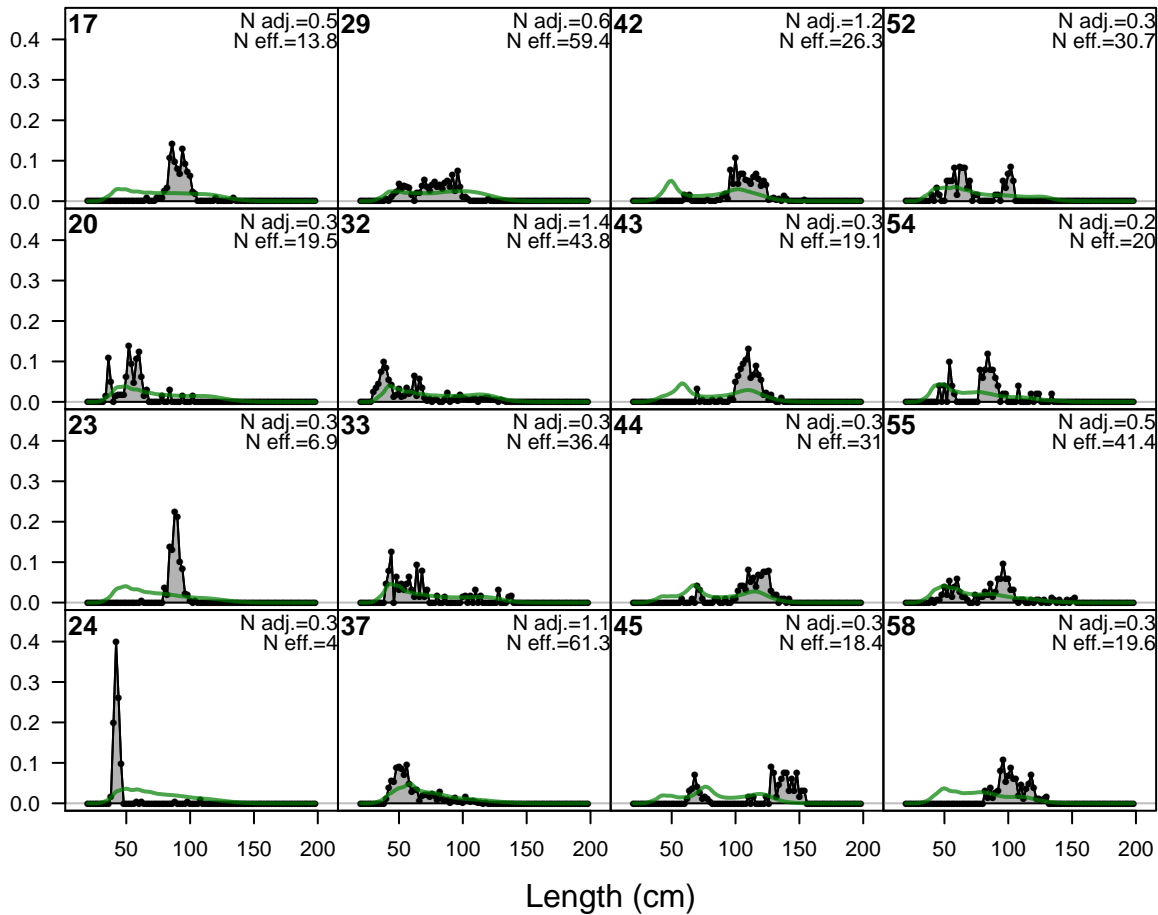




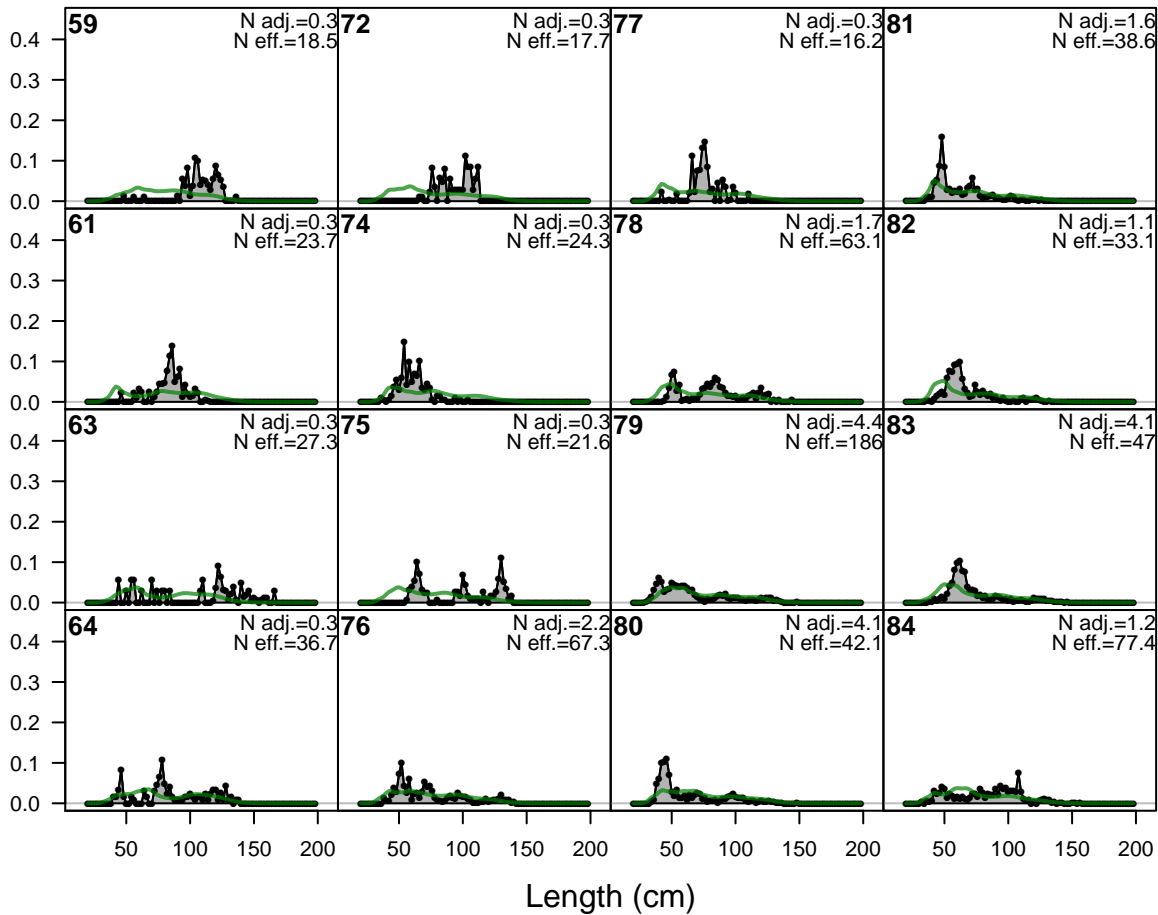
## A2-OBJ (whole catch)



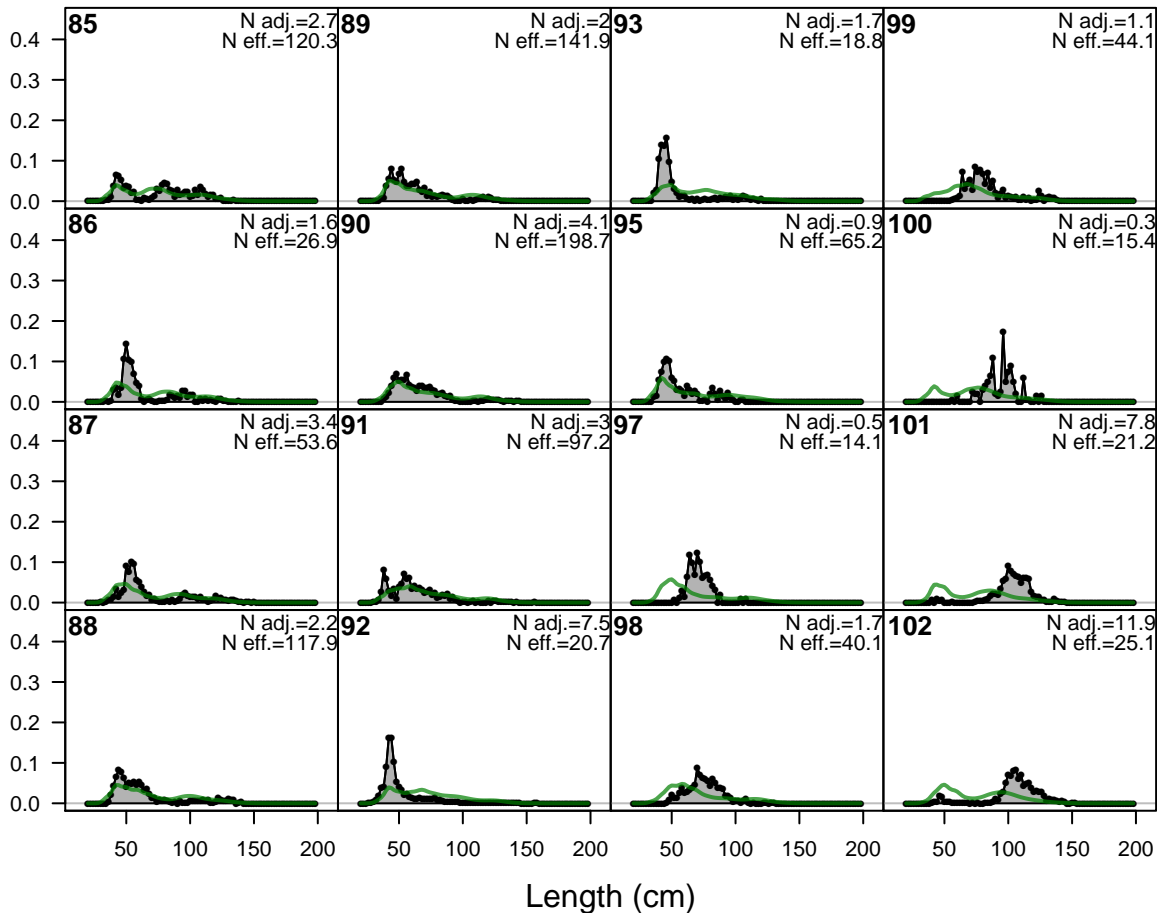
Proportion



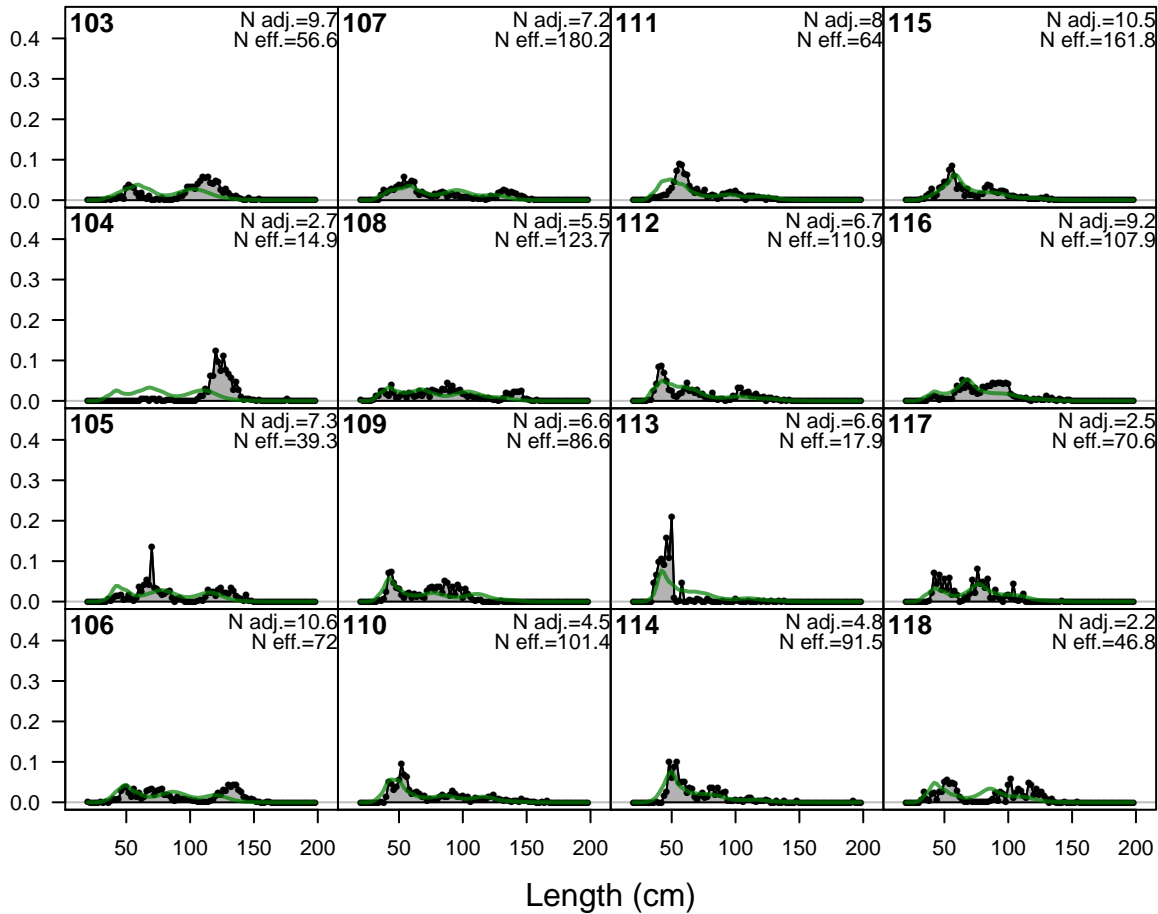
Proportion



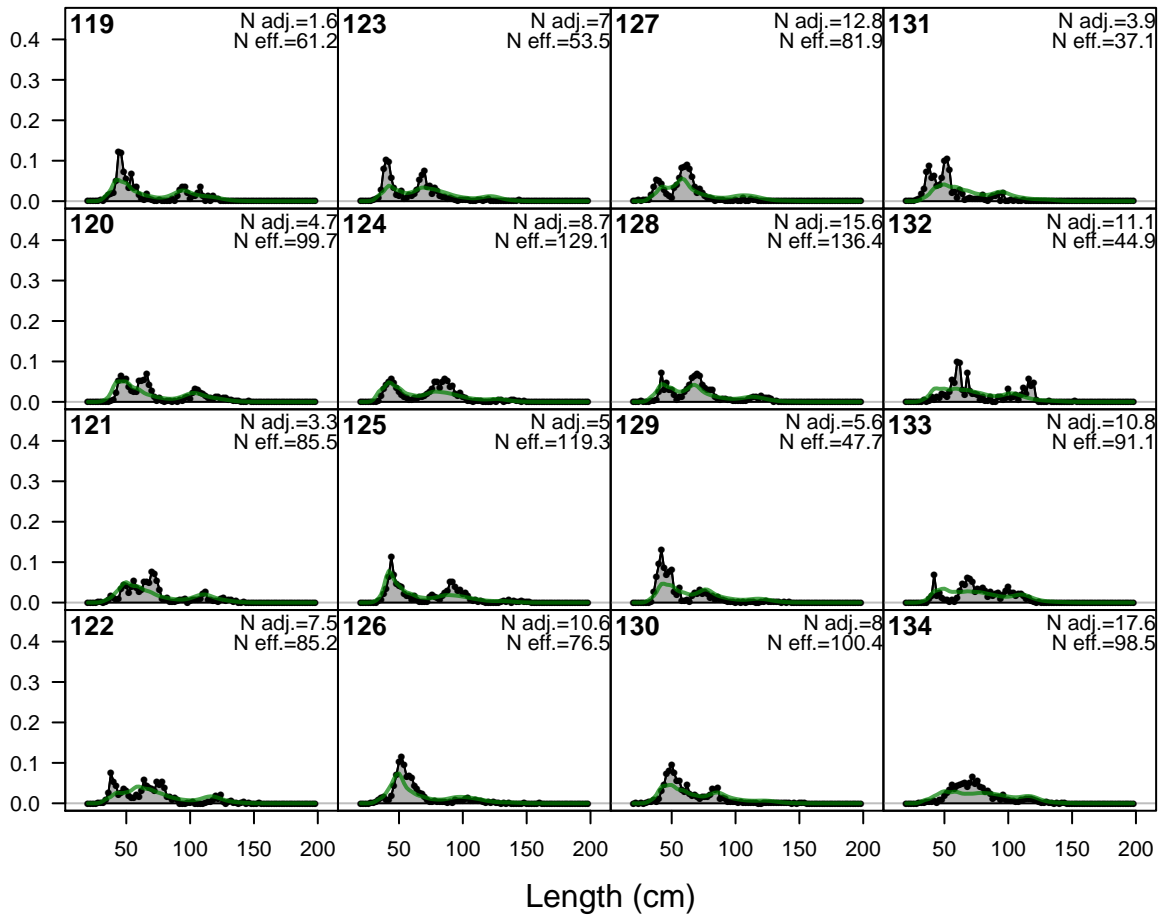
Proportion



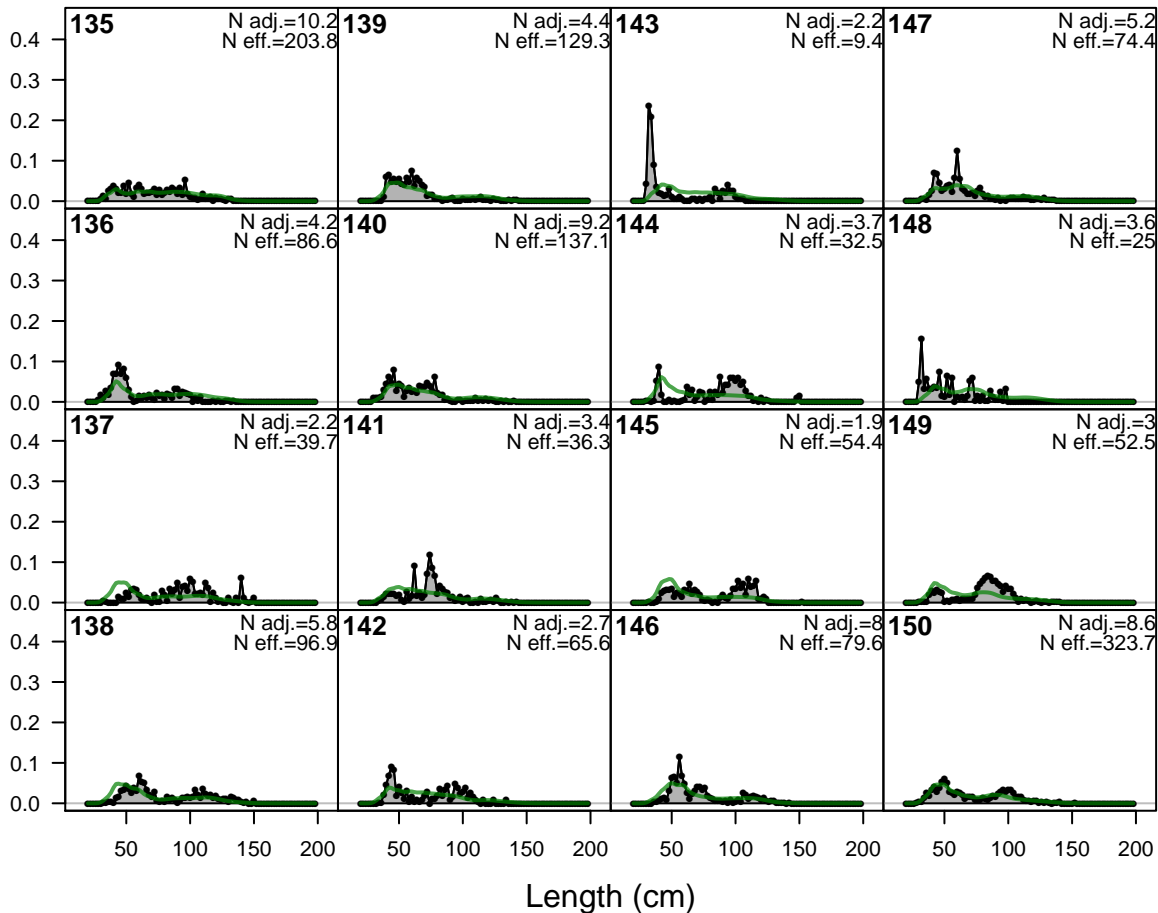
Proportion



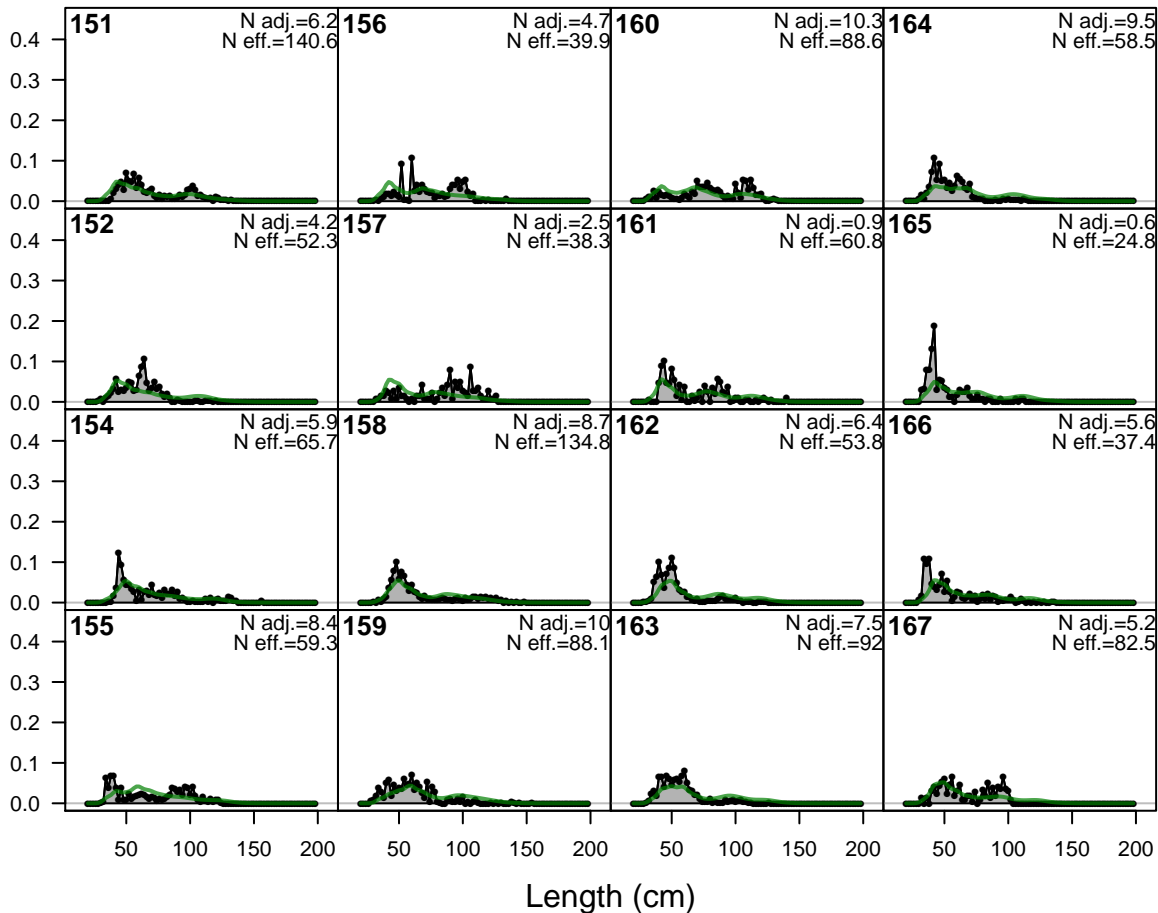
Proportion



Proportion

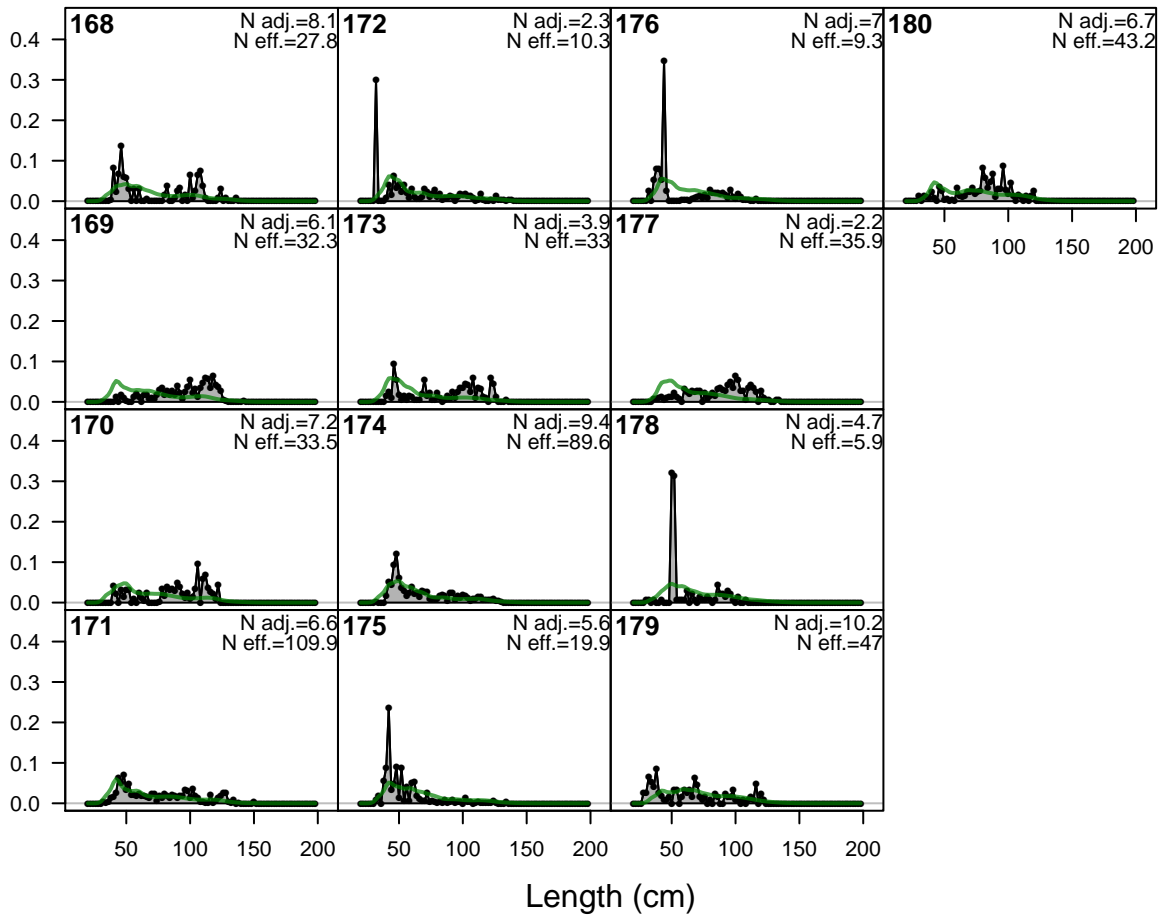


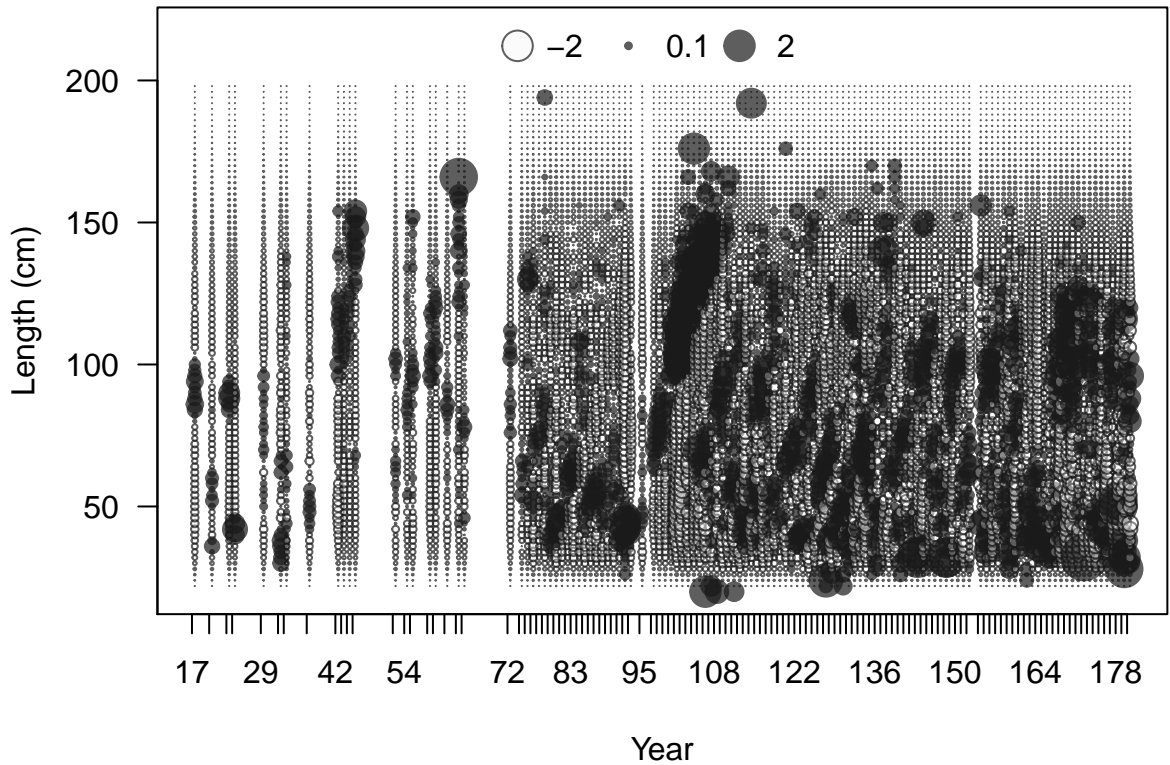
Proportion

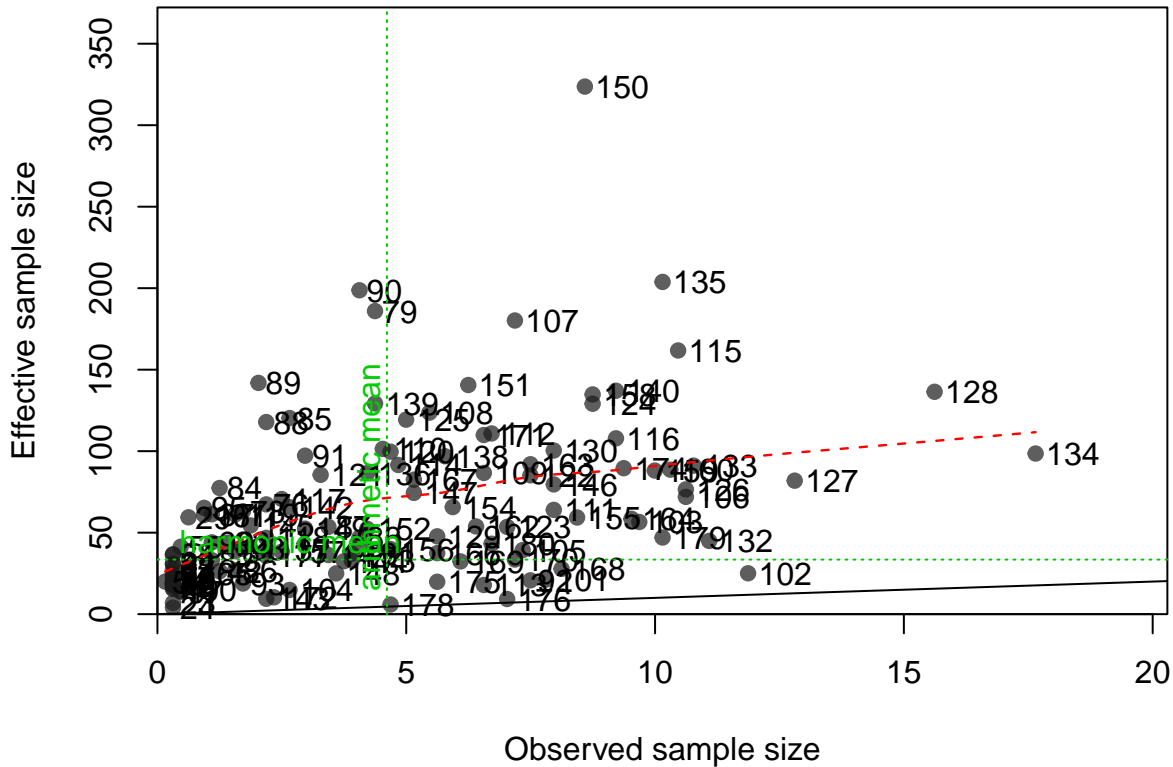




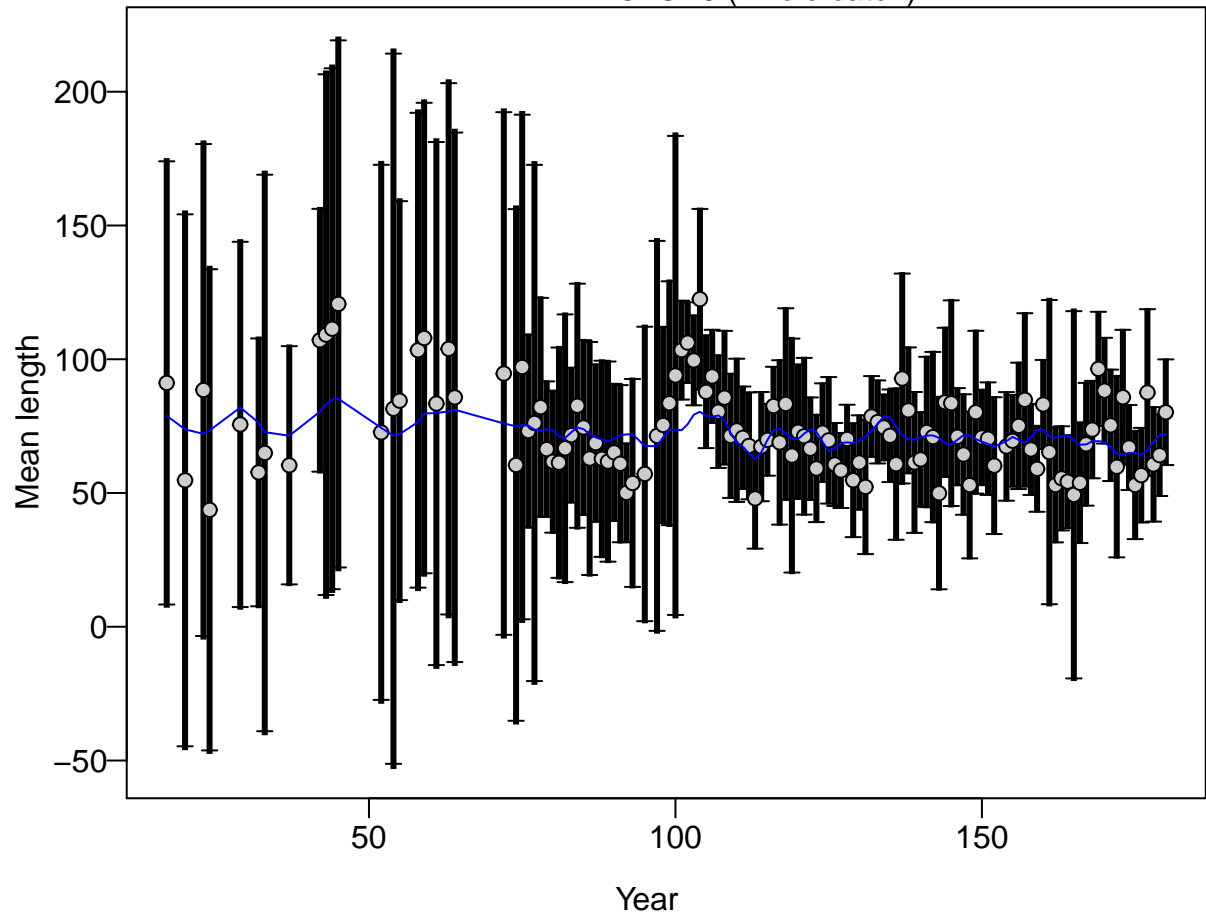
Proportion



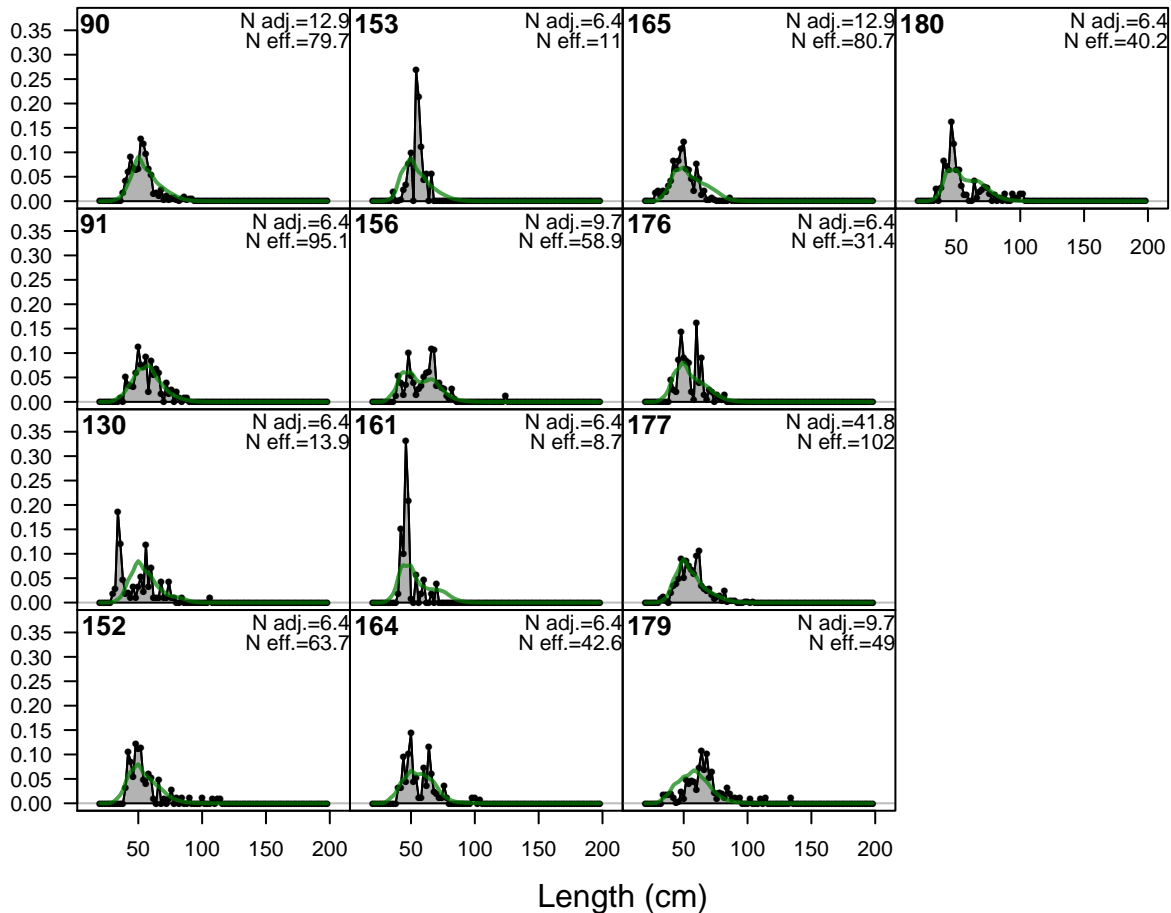


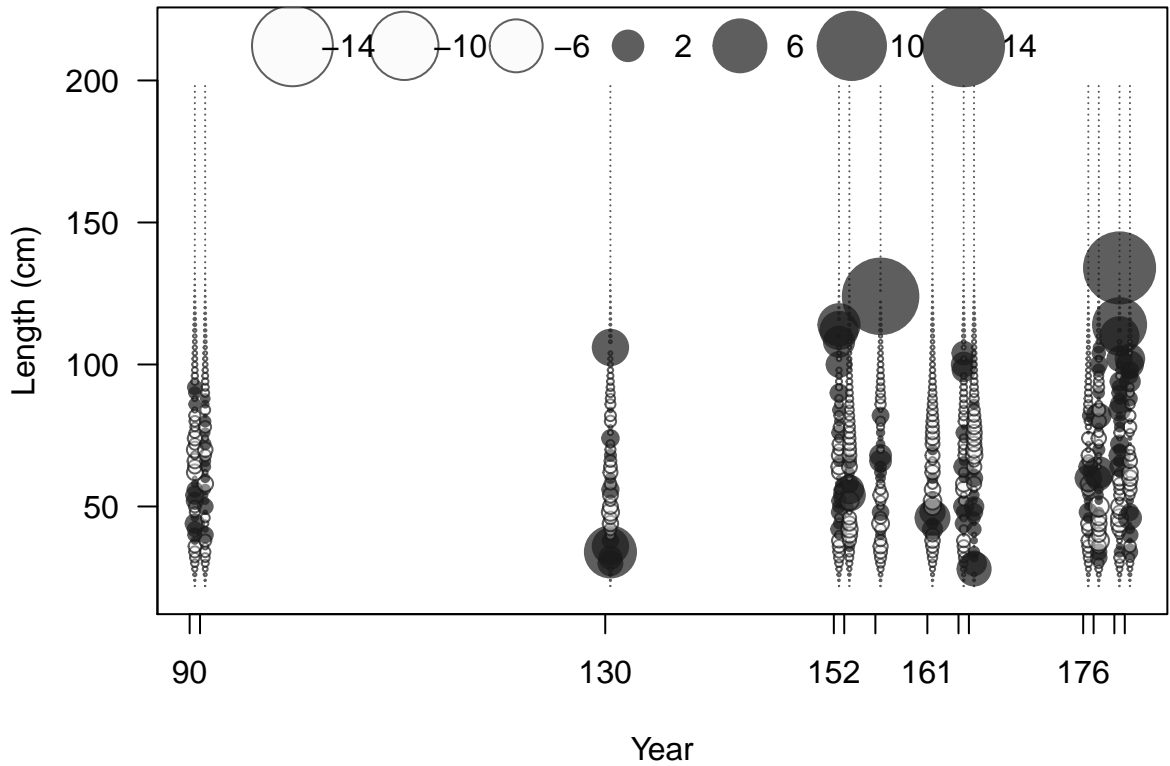


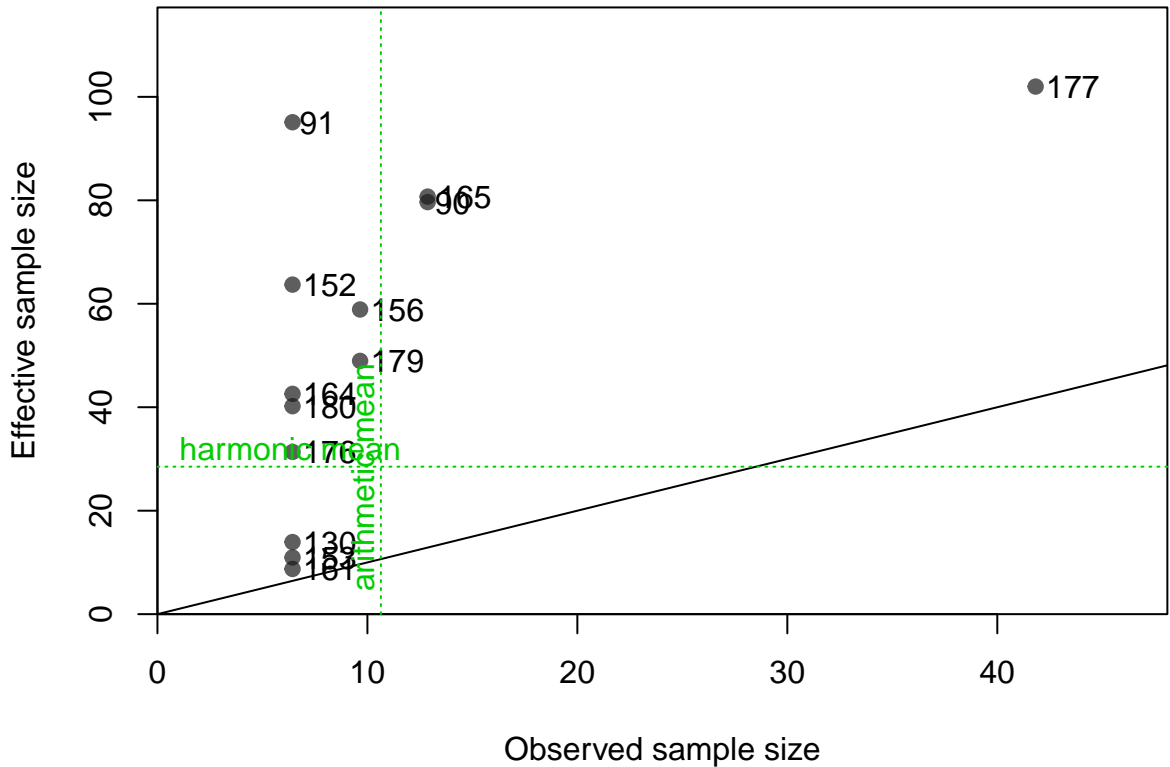
## A3-Obj (whole catch)



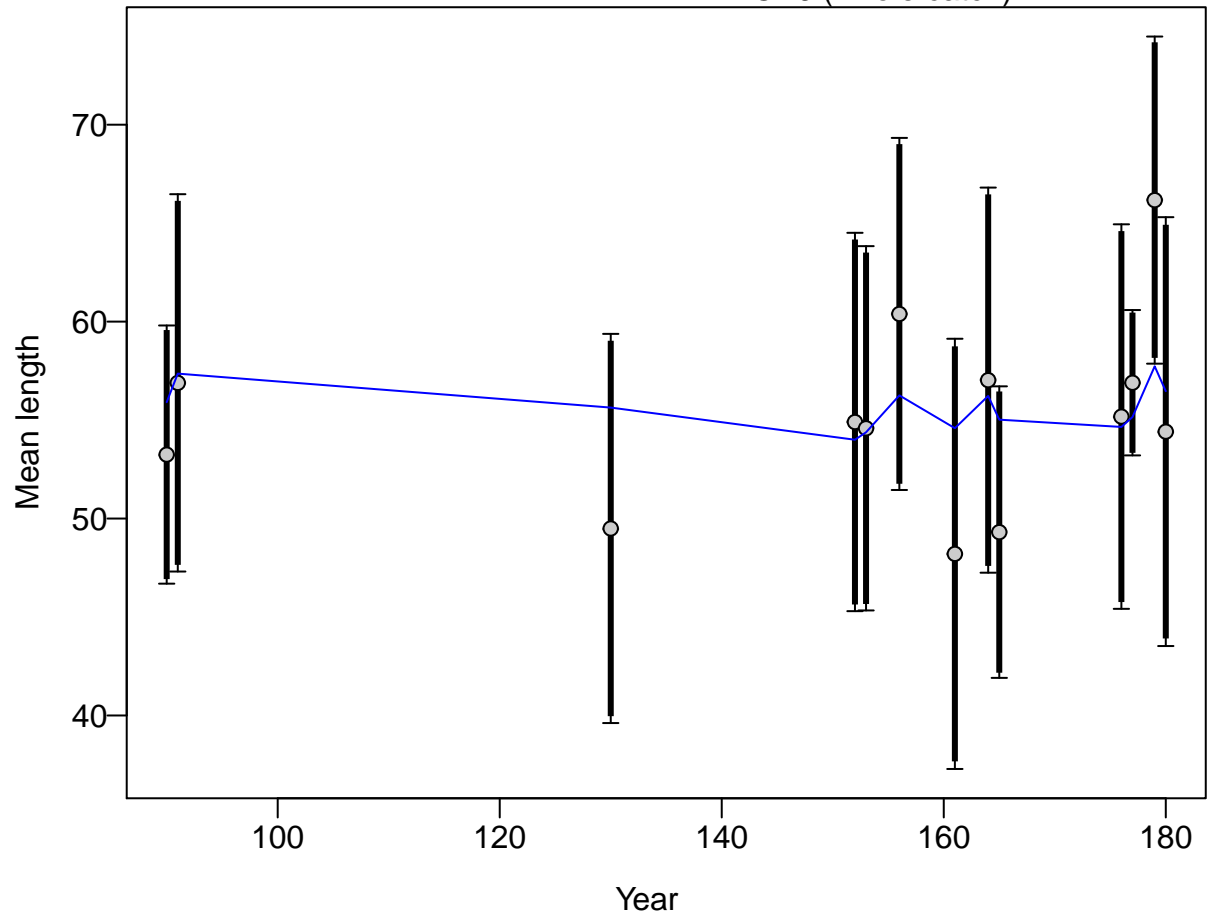
Proportion





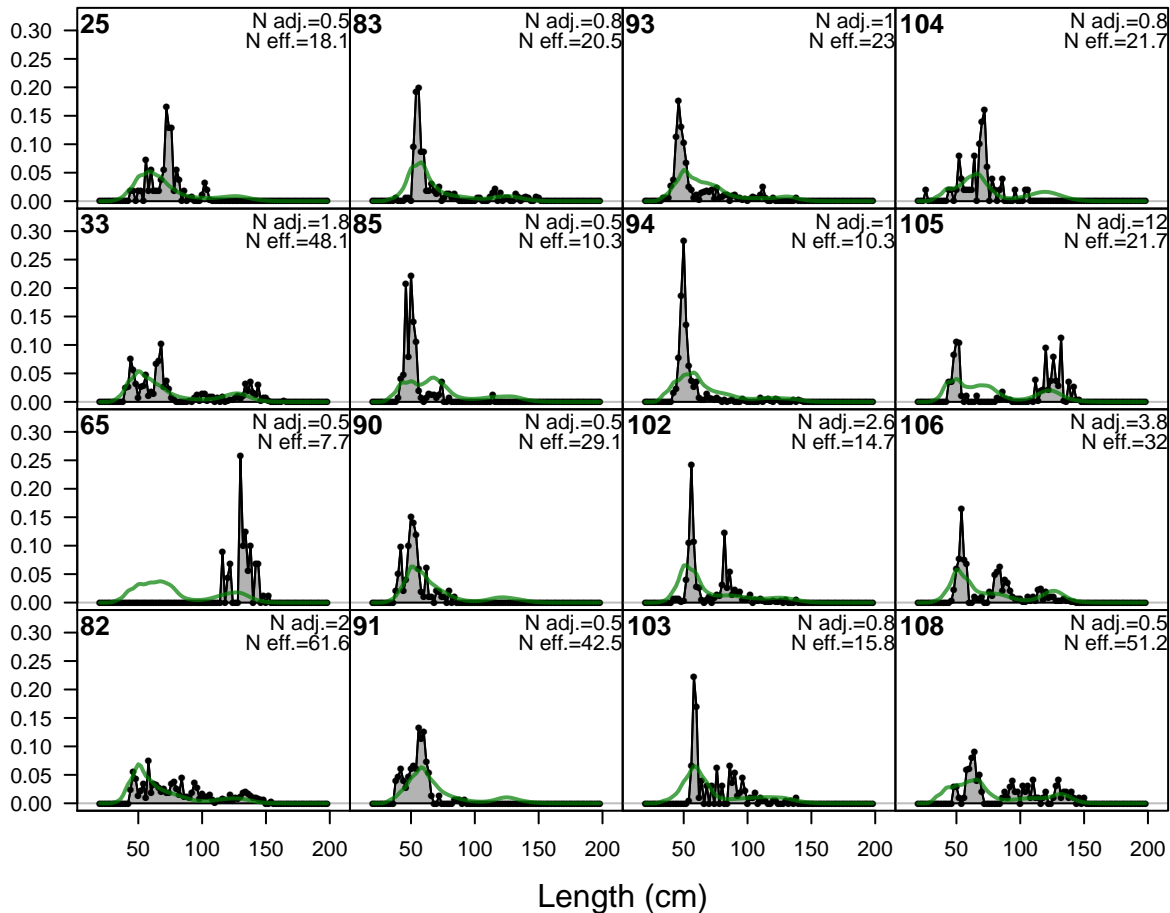


## A4-OBJ (whole catch)

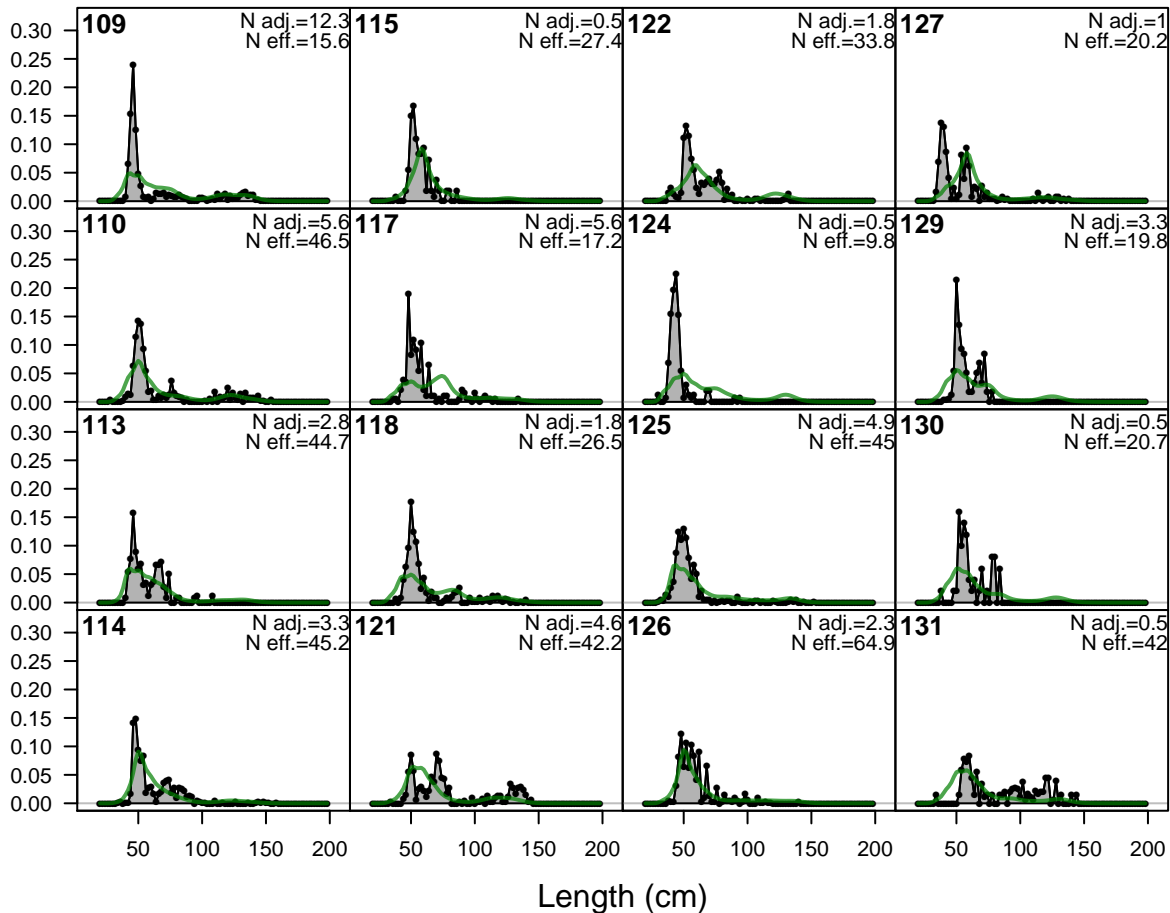




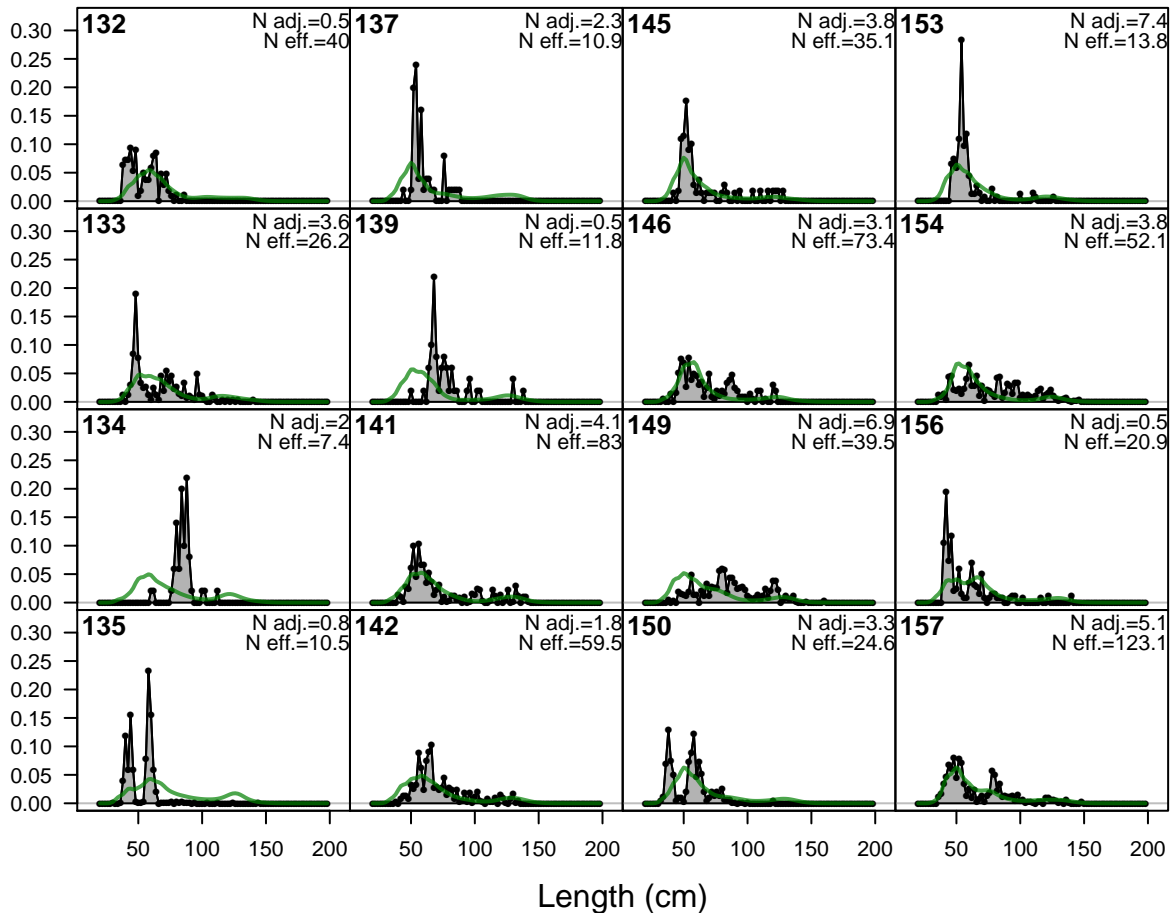
Proportion



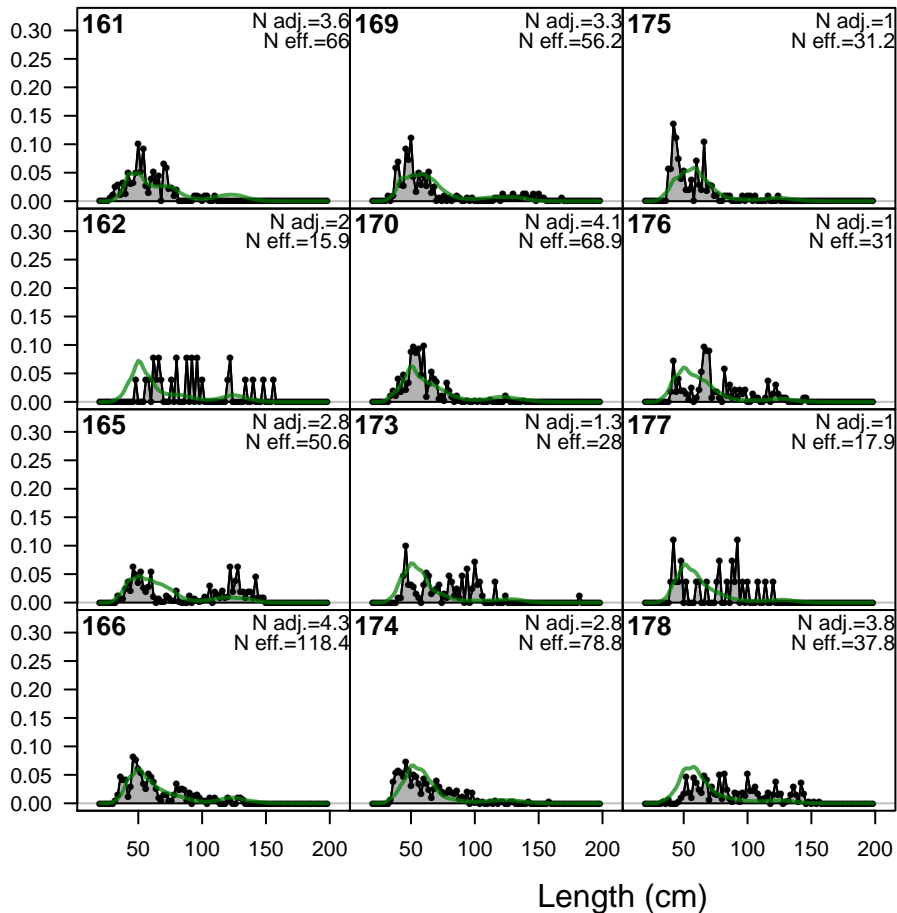
Proportion

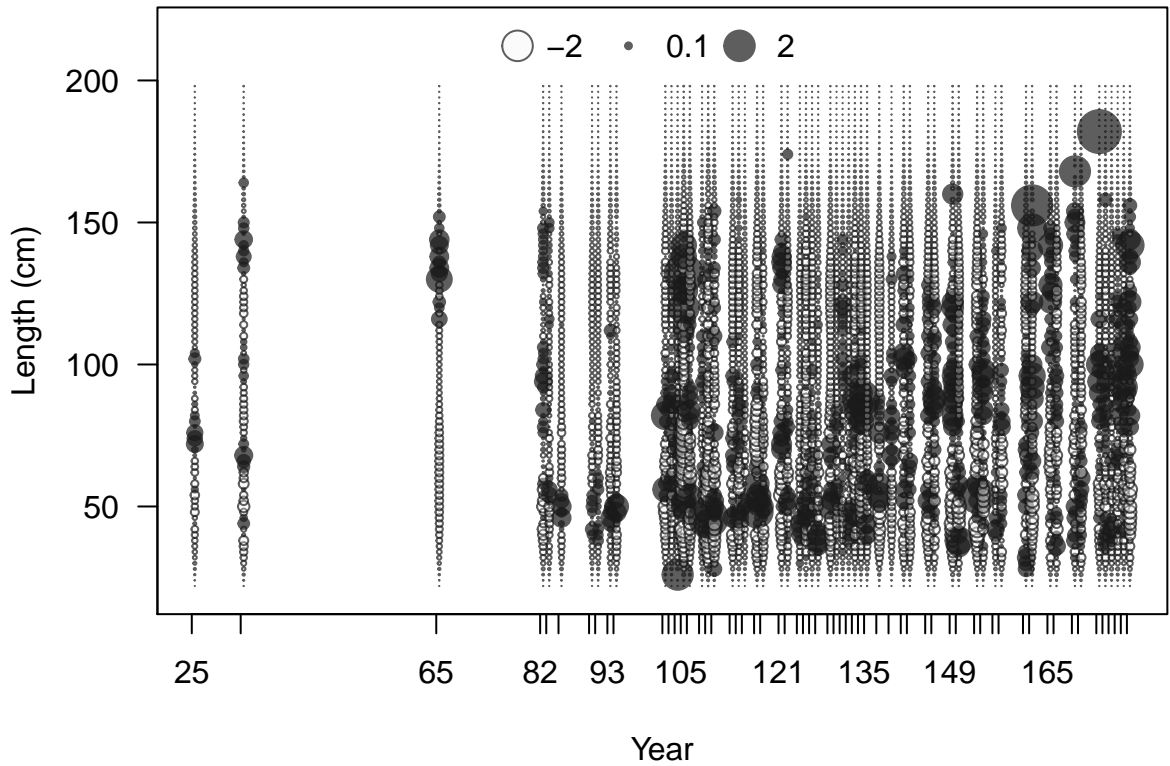


Proportion



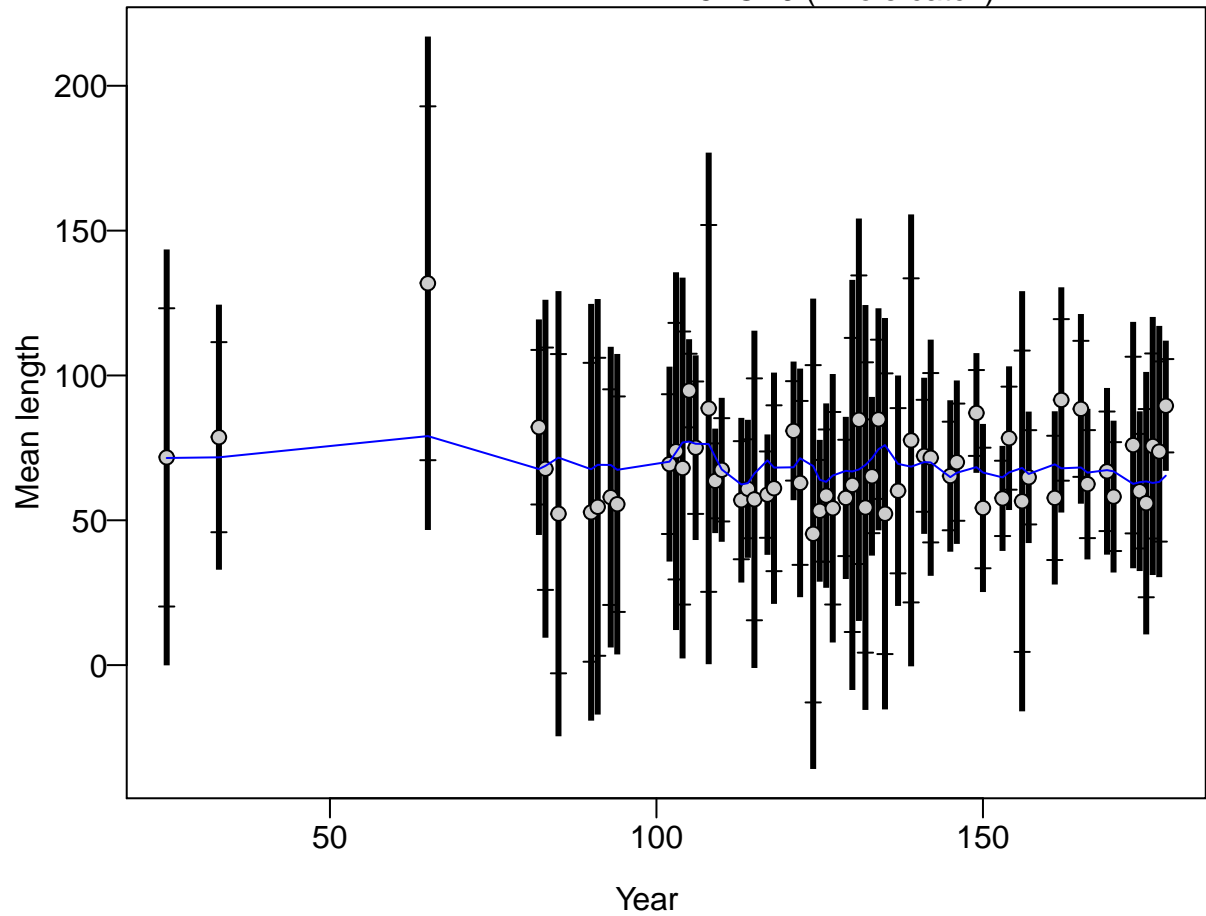
Proportion



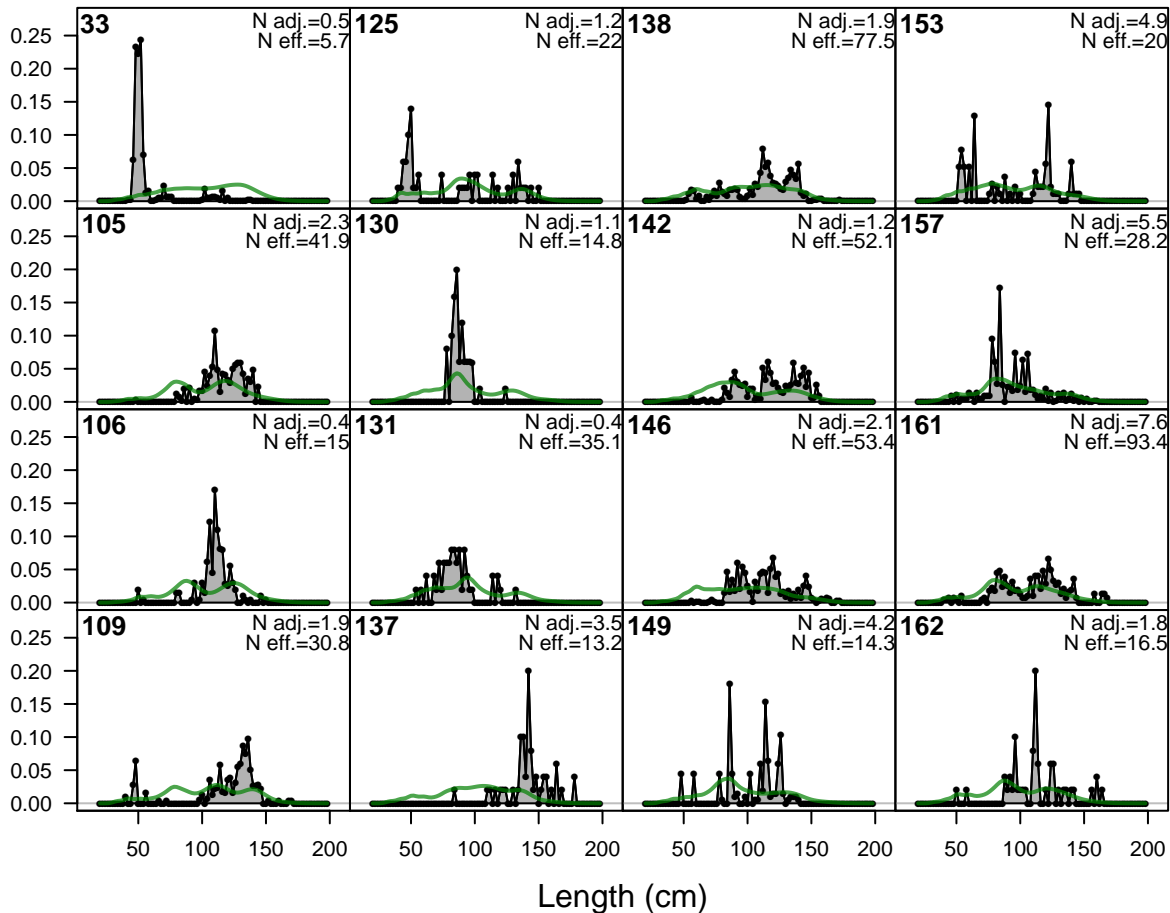




## A5-OBJ (whole catch)

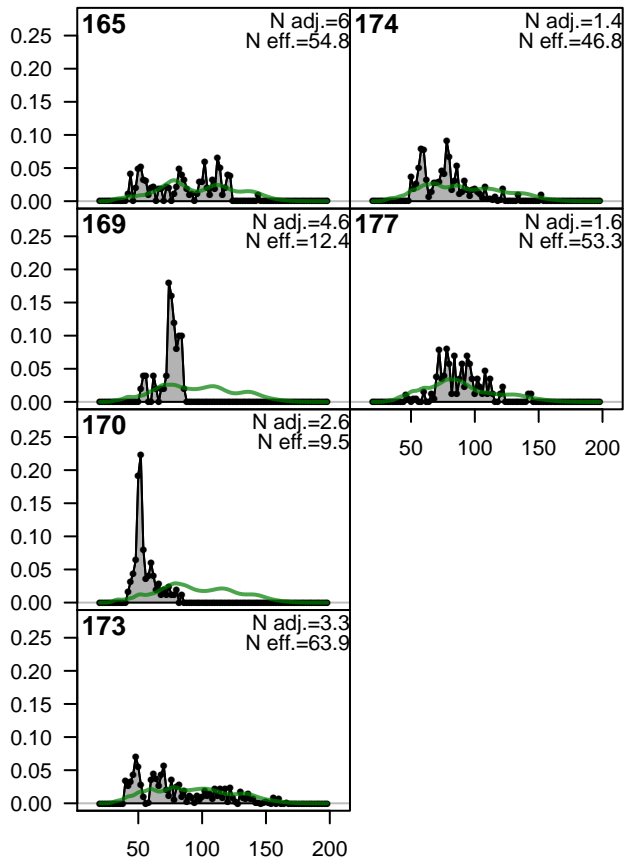


Proportion

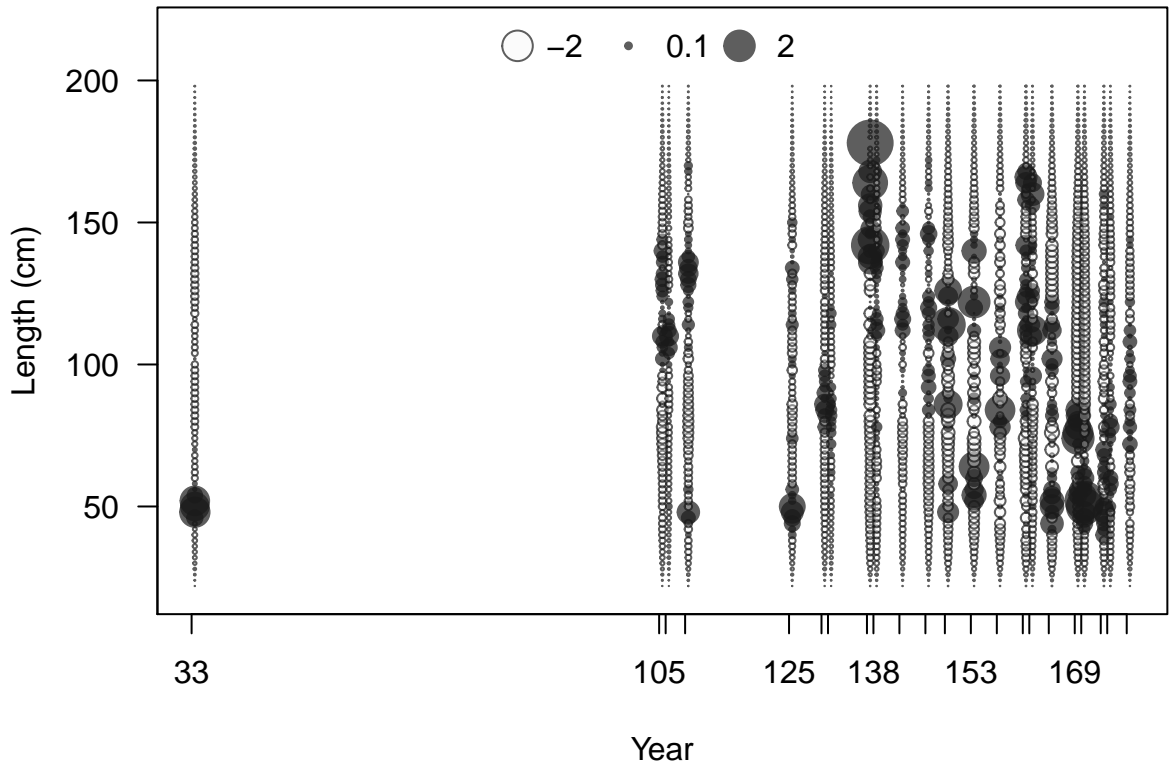


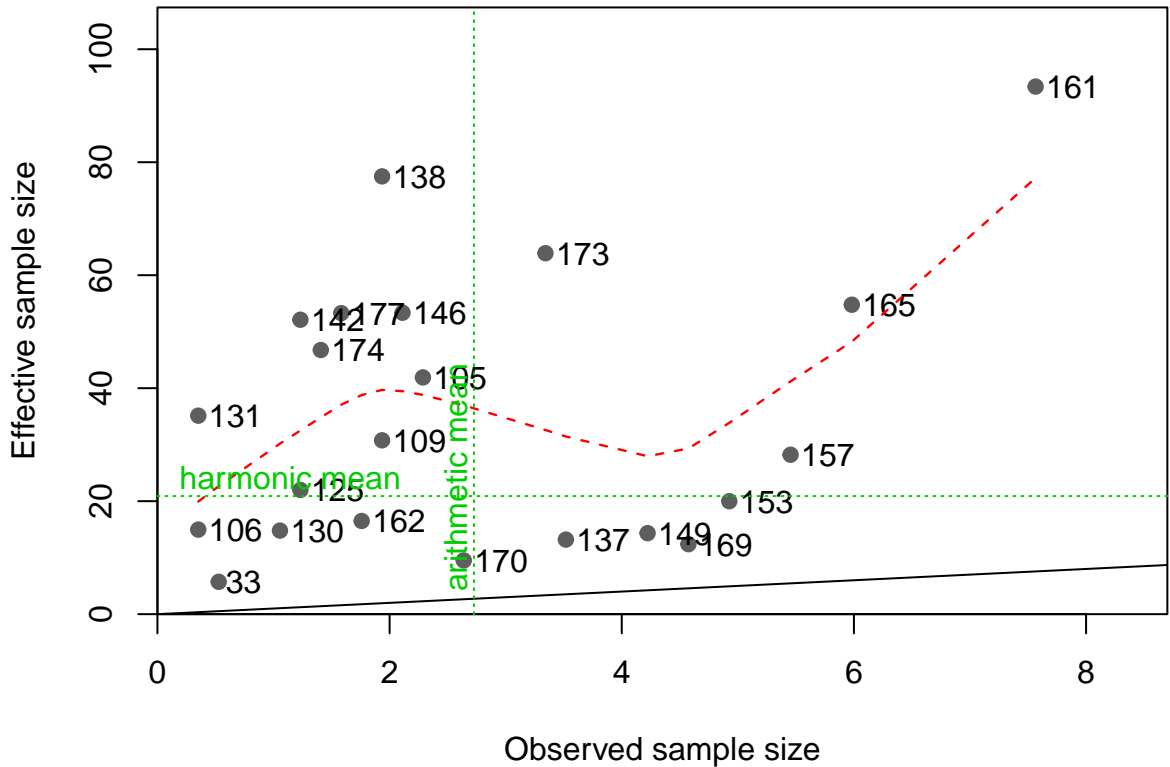


Proportion

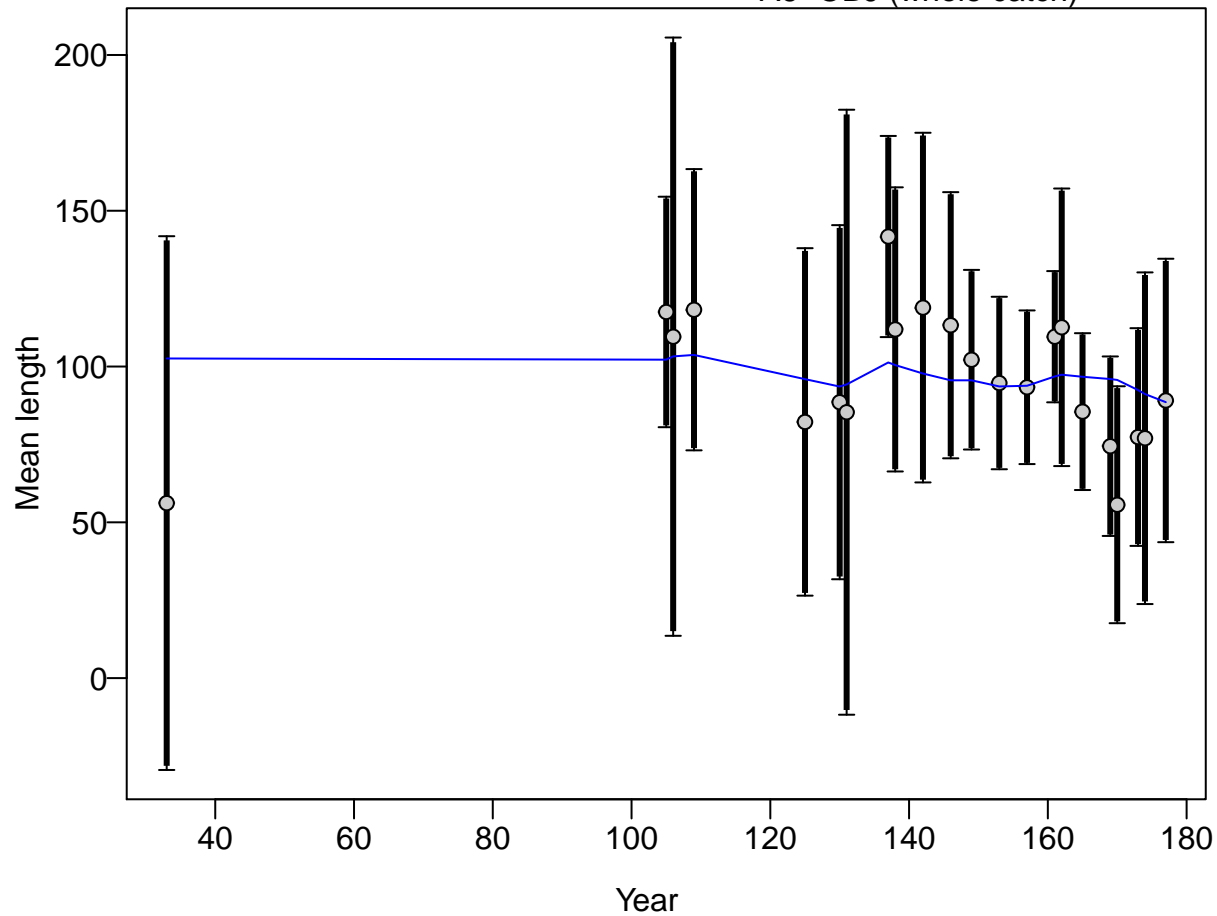


Length (cm)

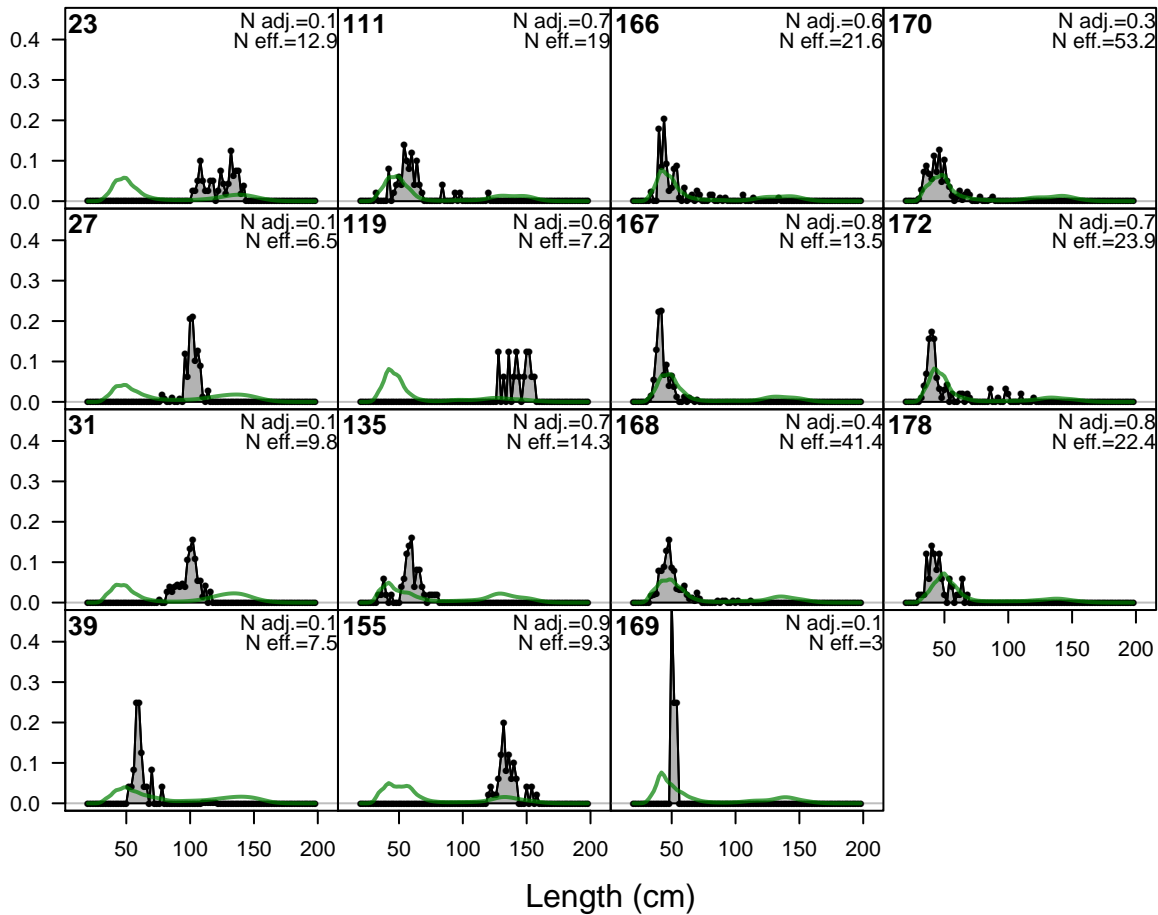


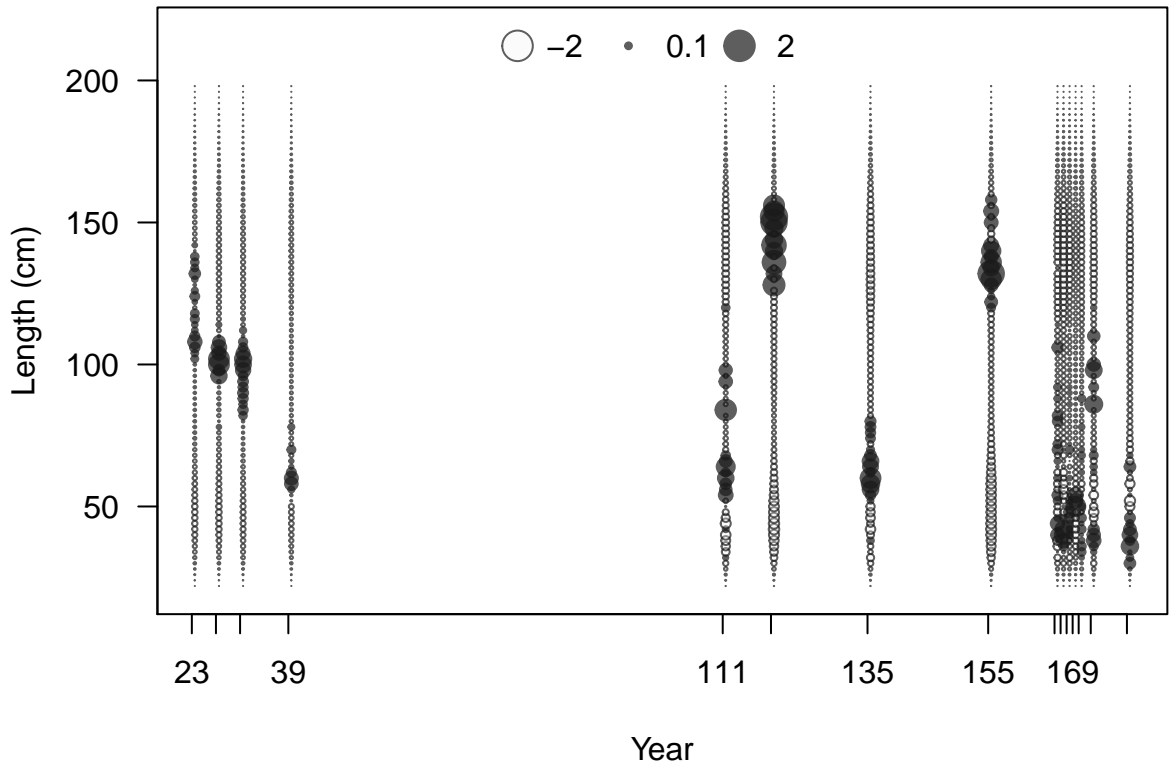


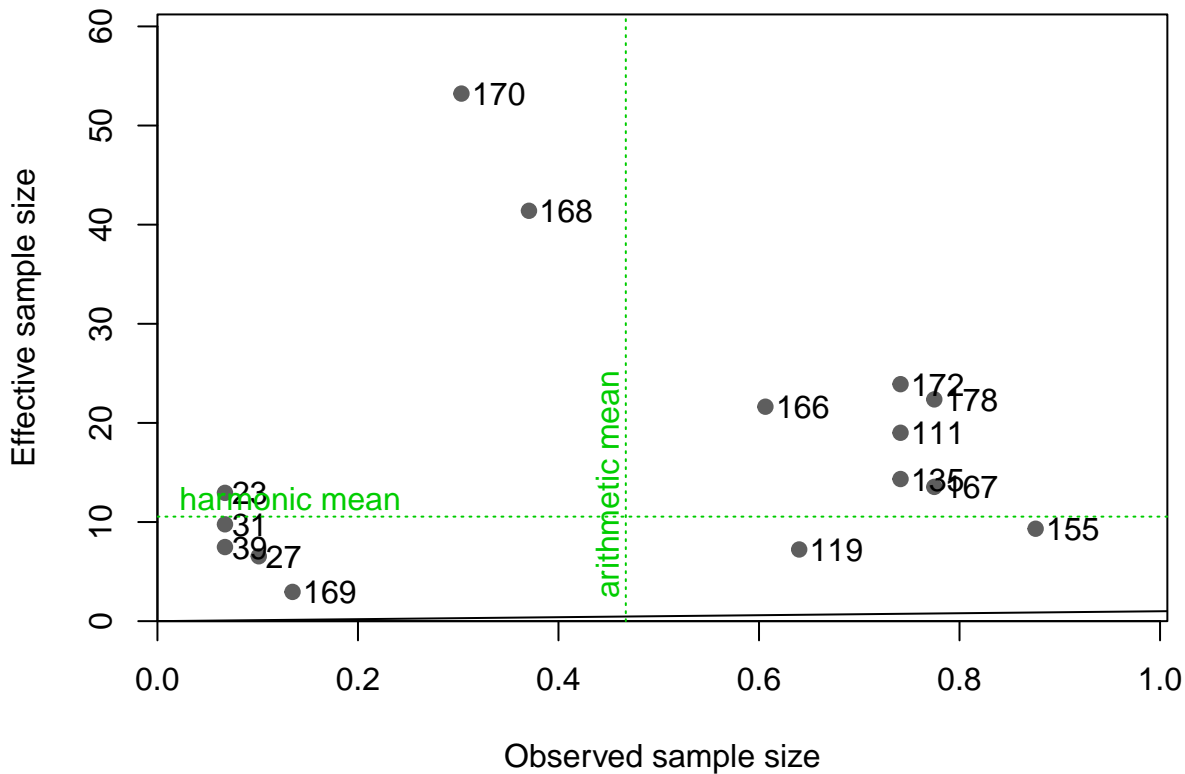
## A6-OBJ (whole catch)



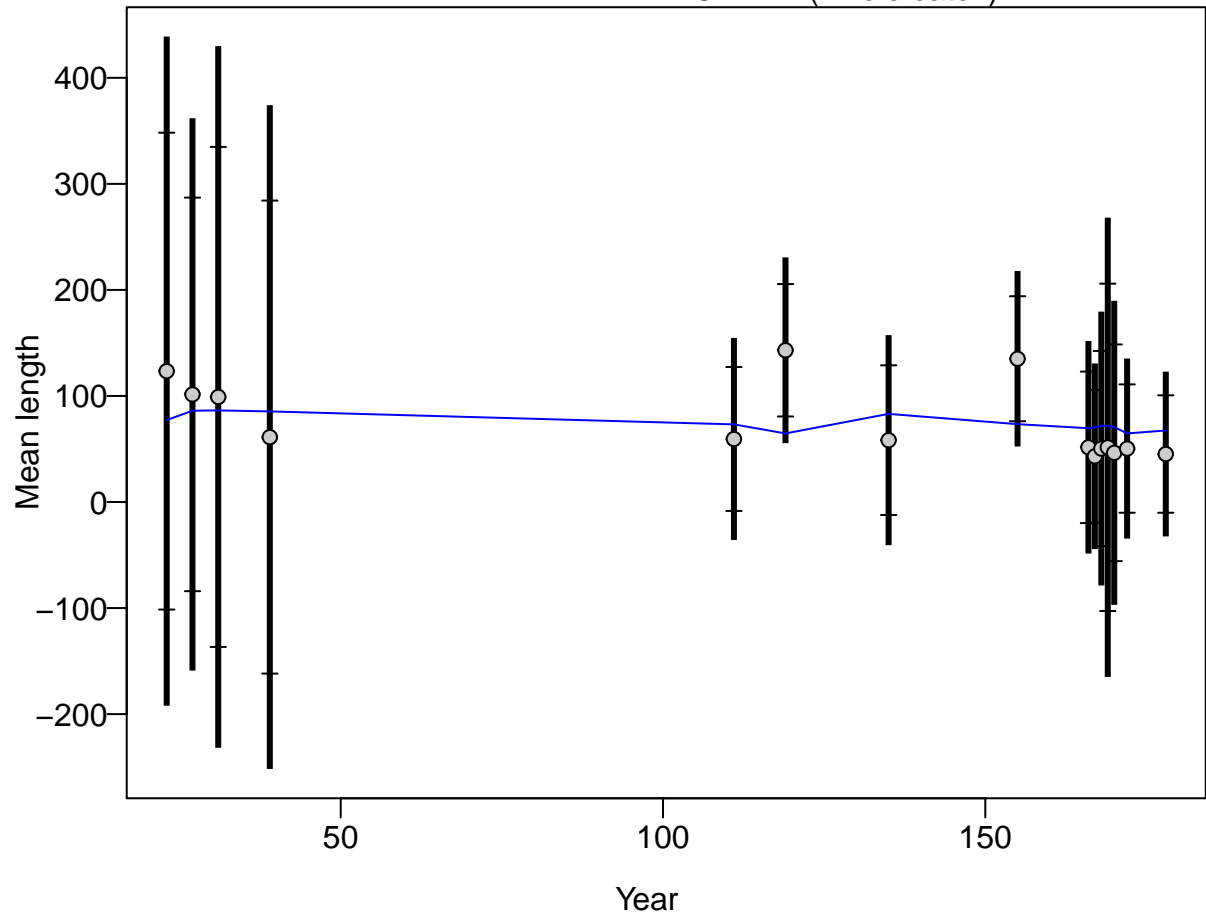
Proportion





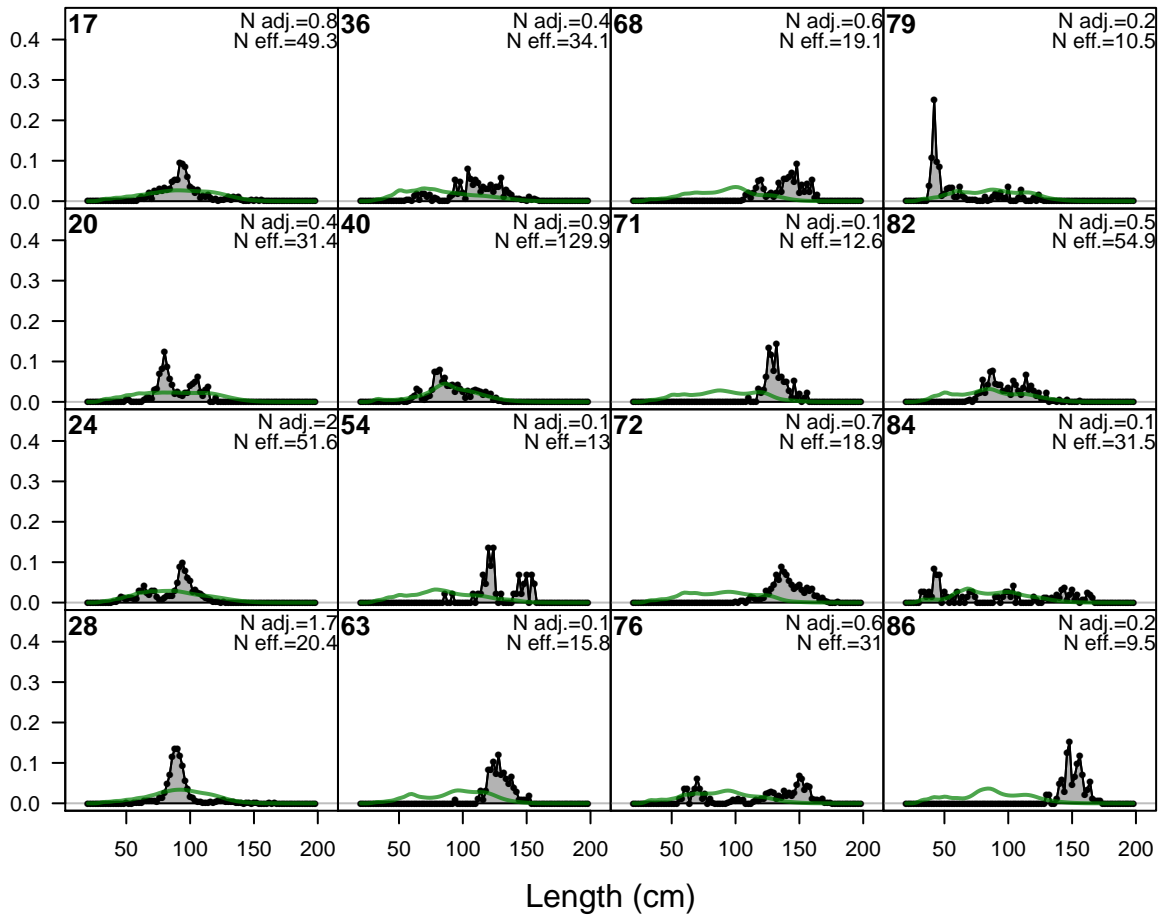


## A2-NOADEL (whole catch)

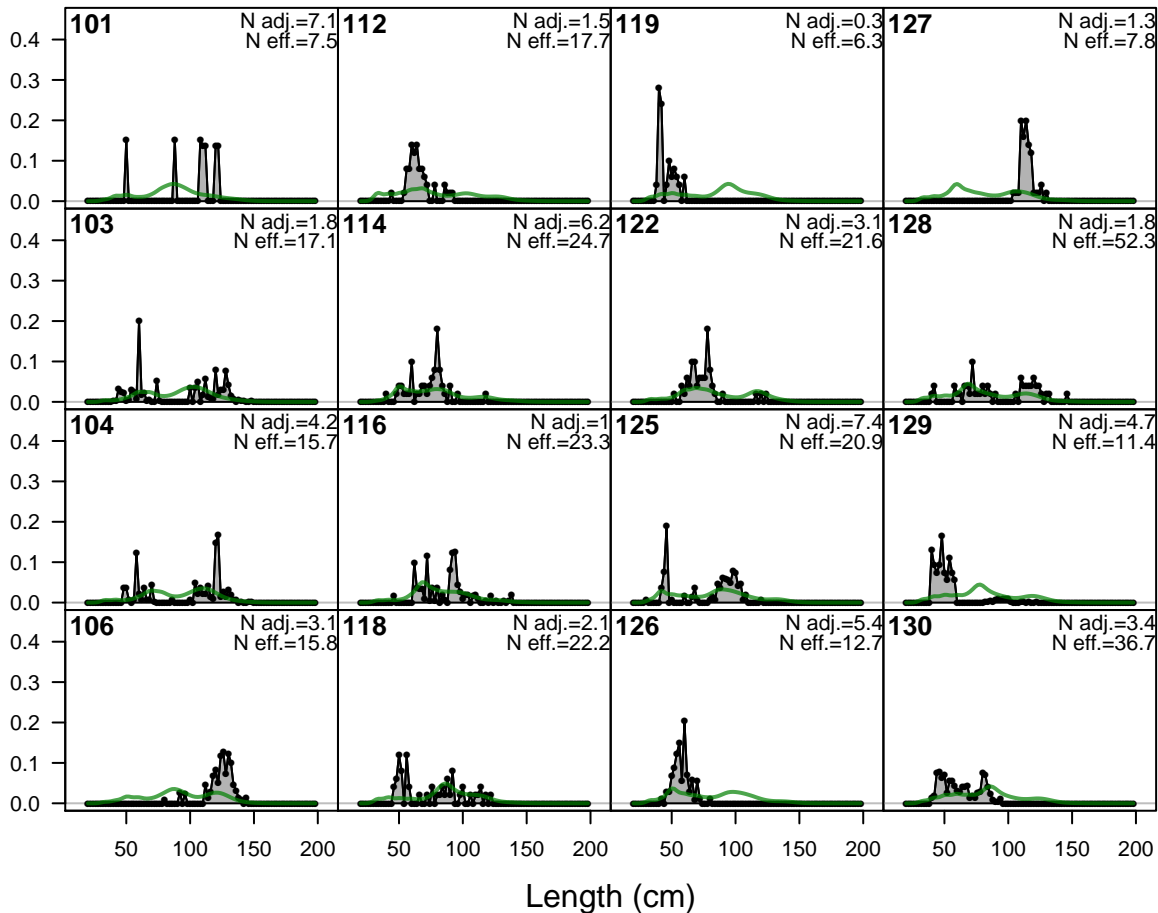




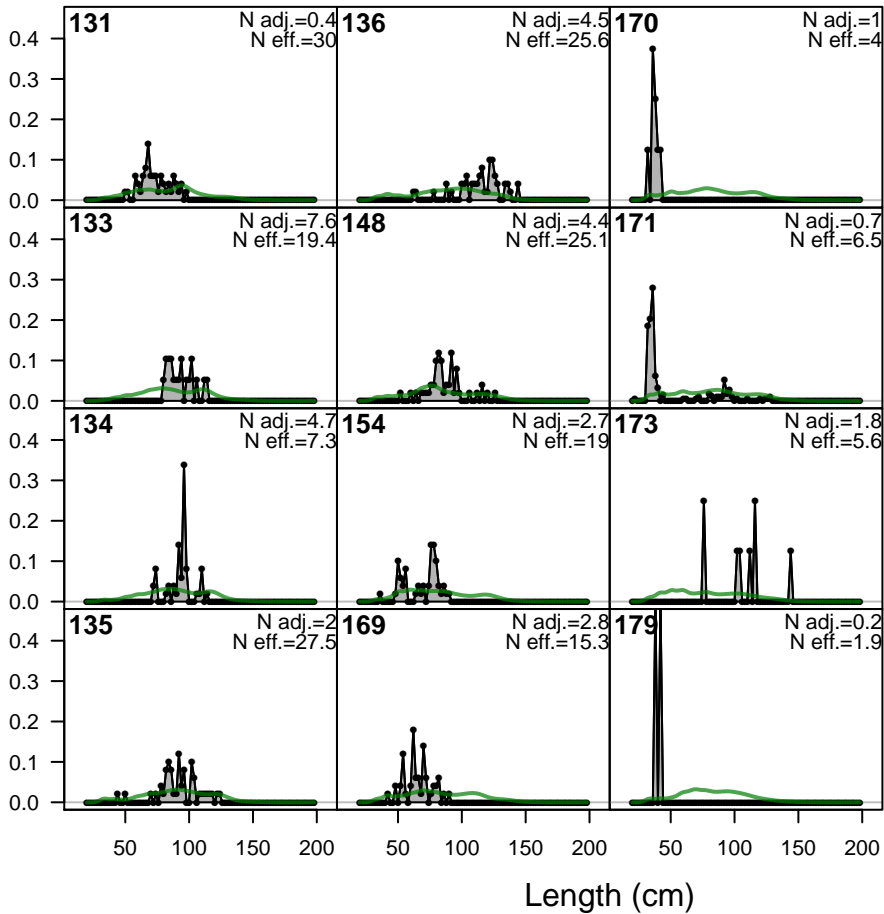
Proportion

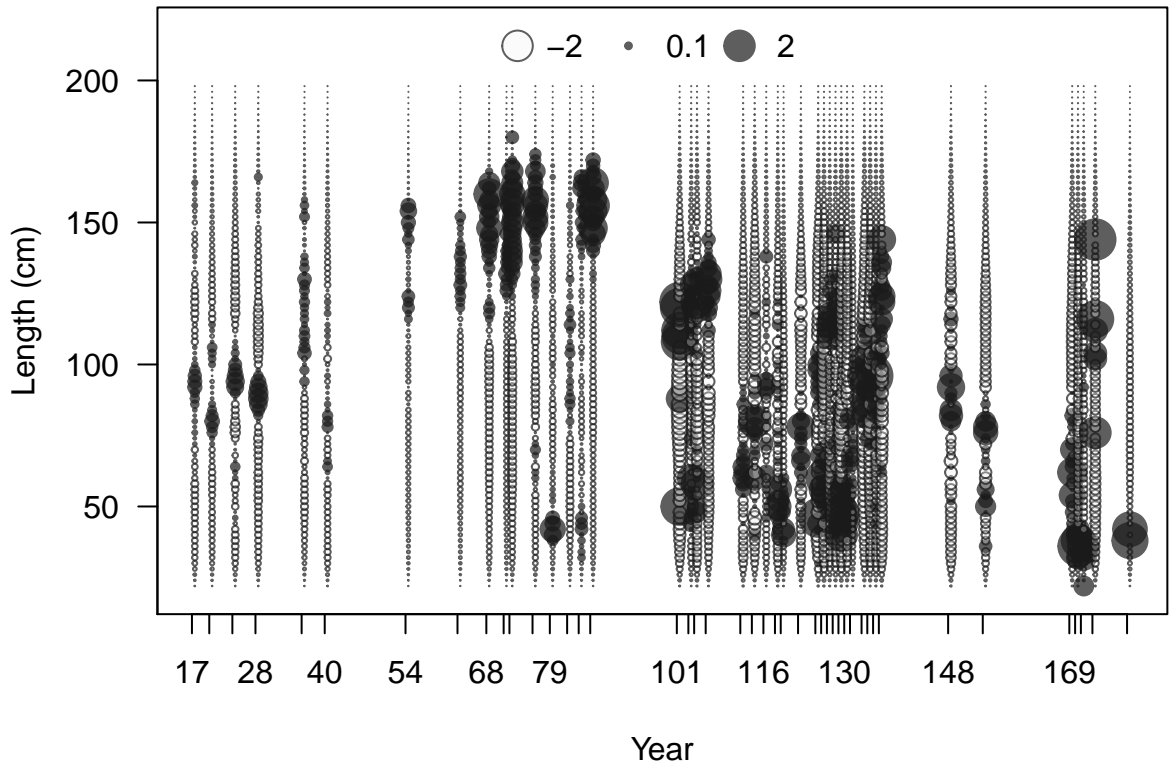


Proportion



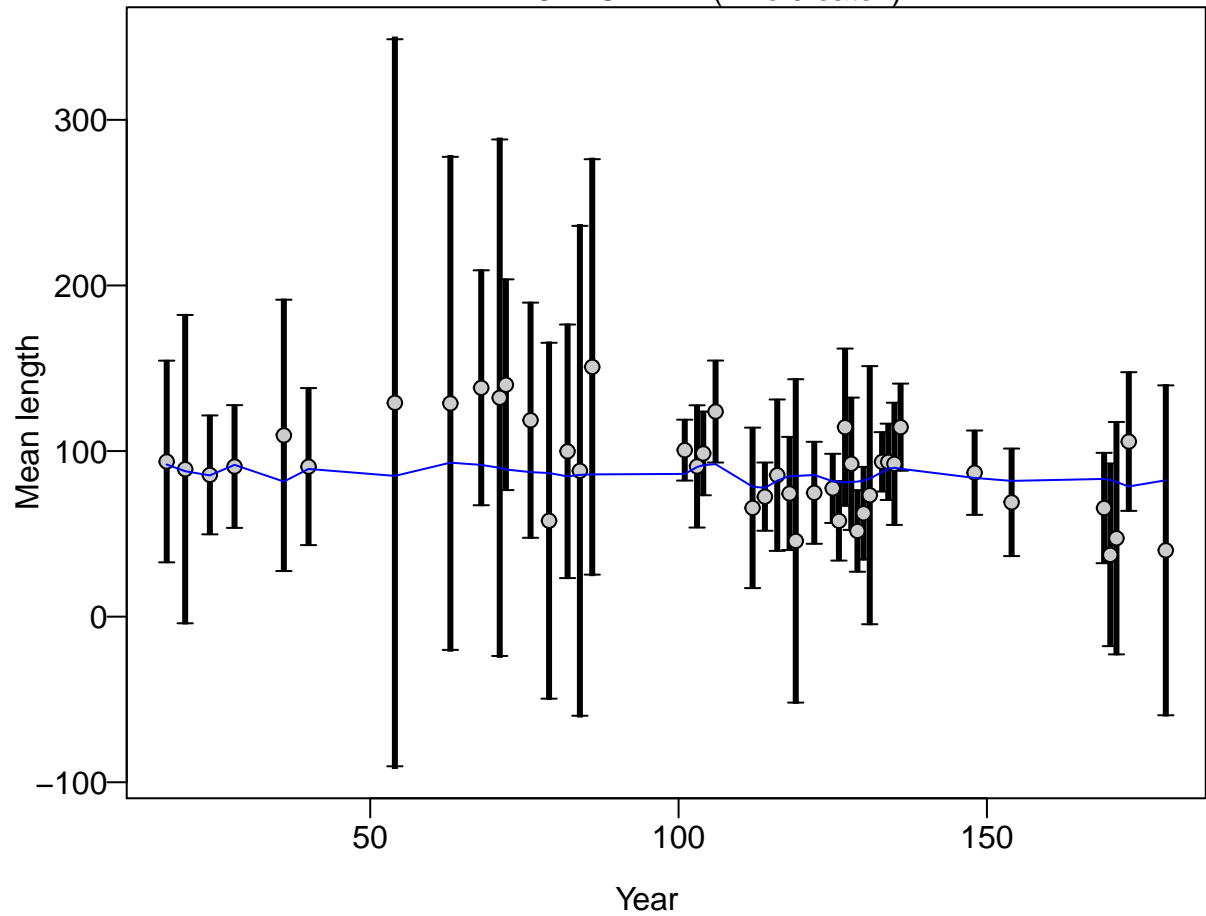
Proportion

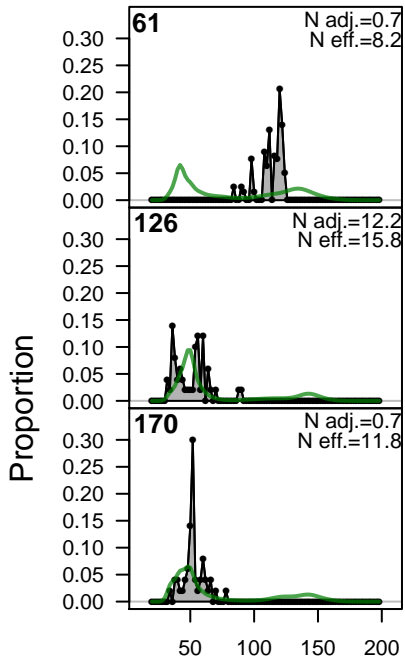




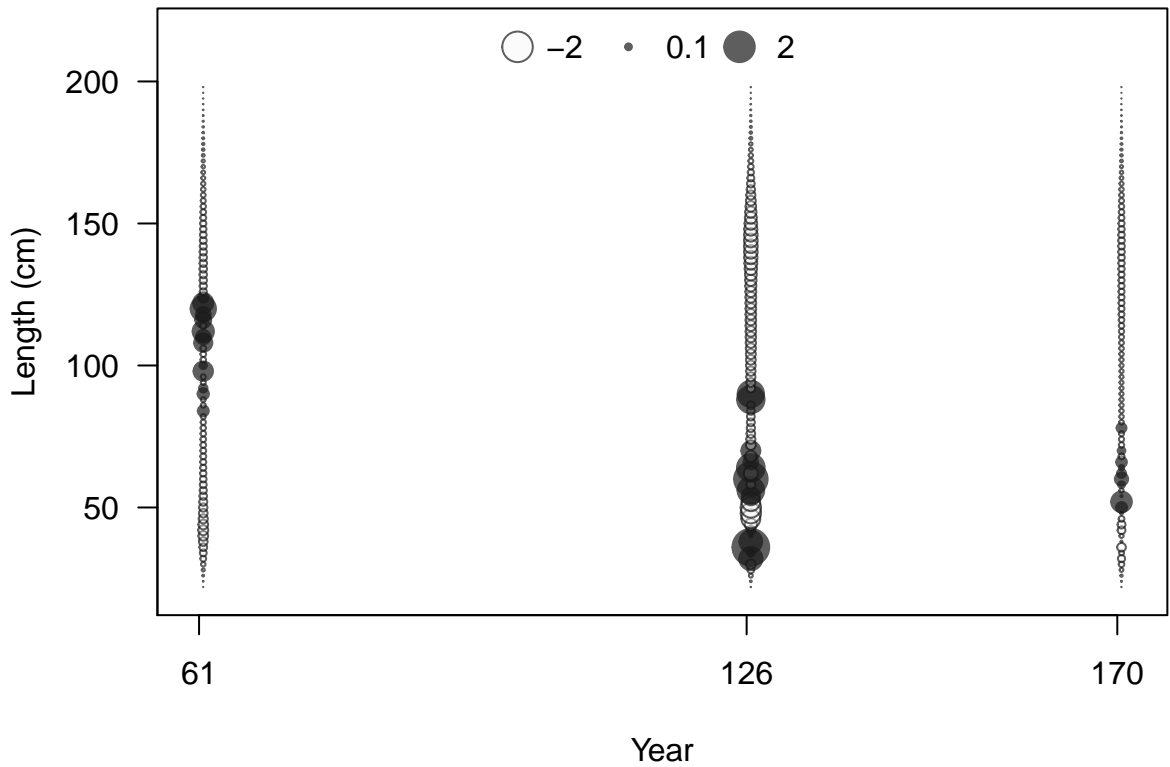


A3-NOADEL (whole catch)

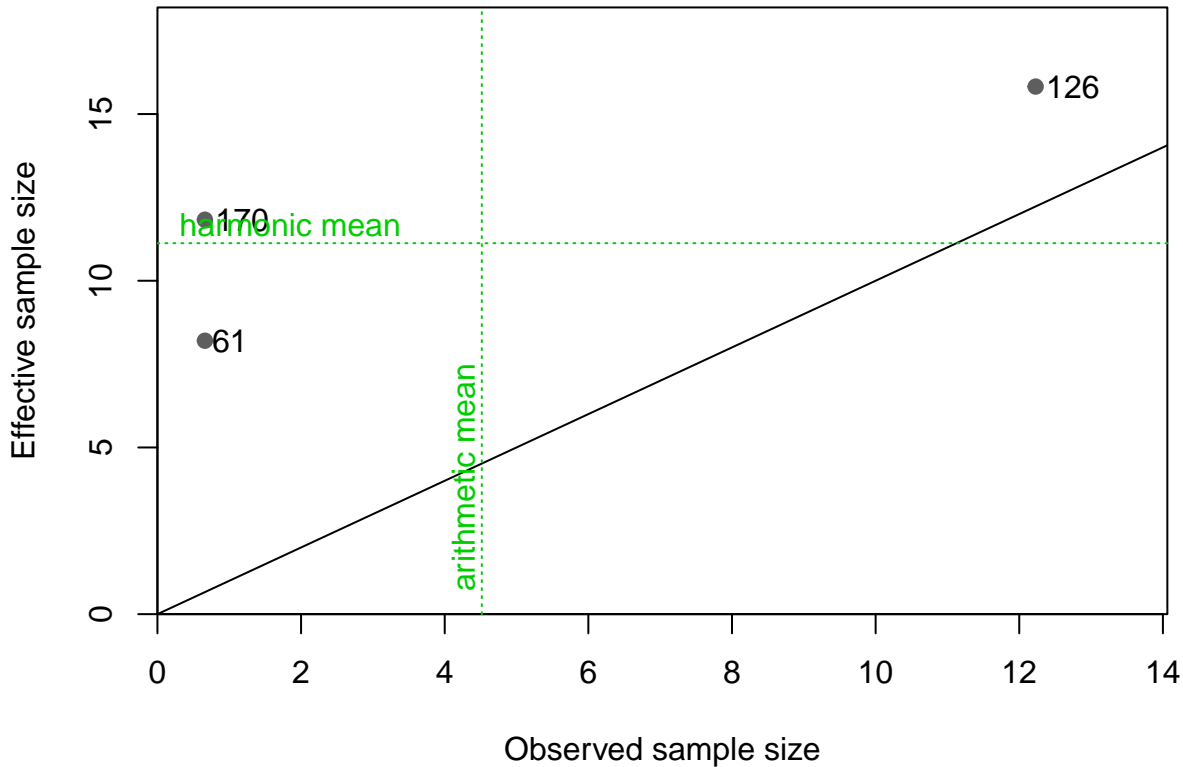




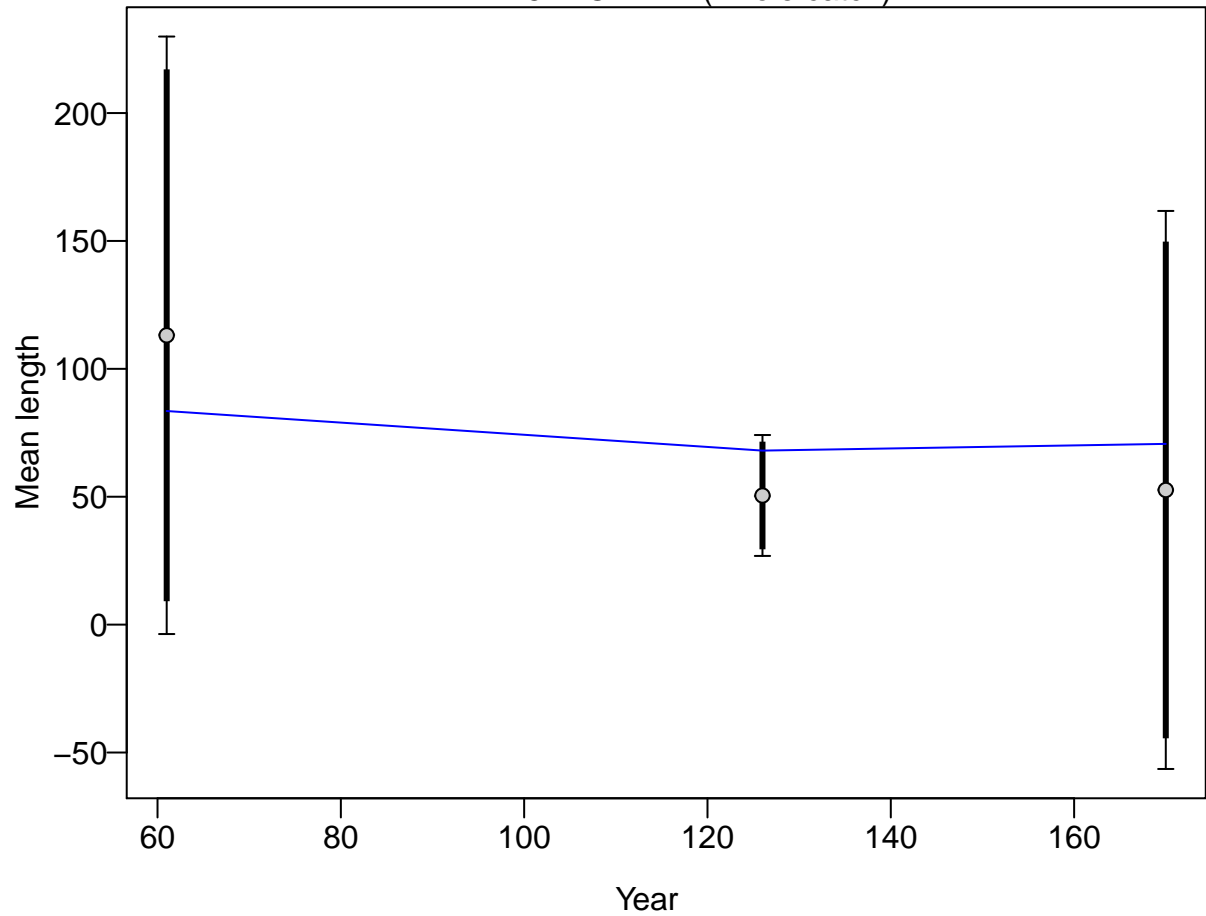
Length (cm)



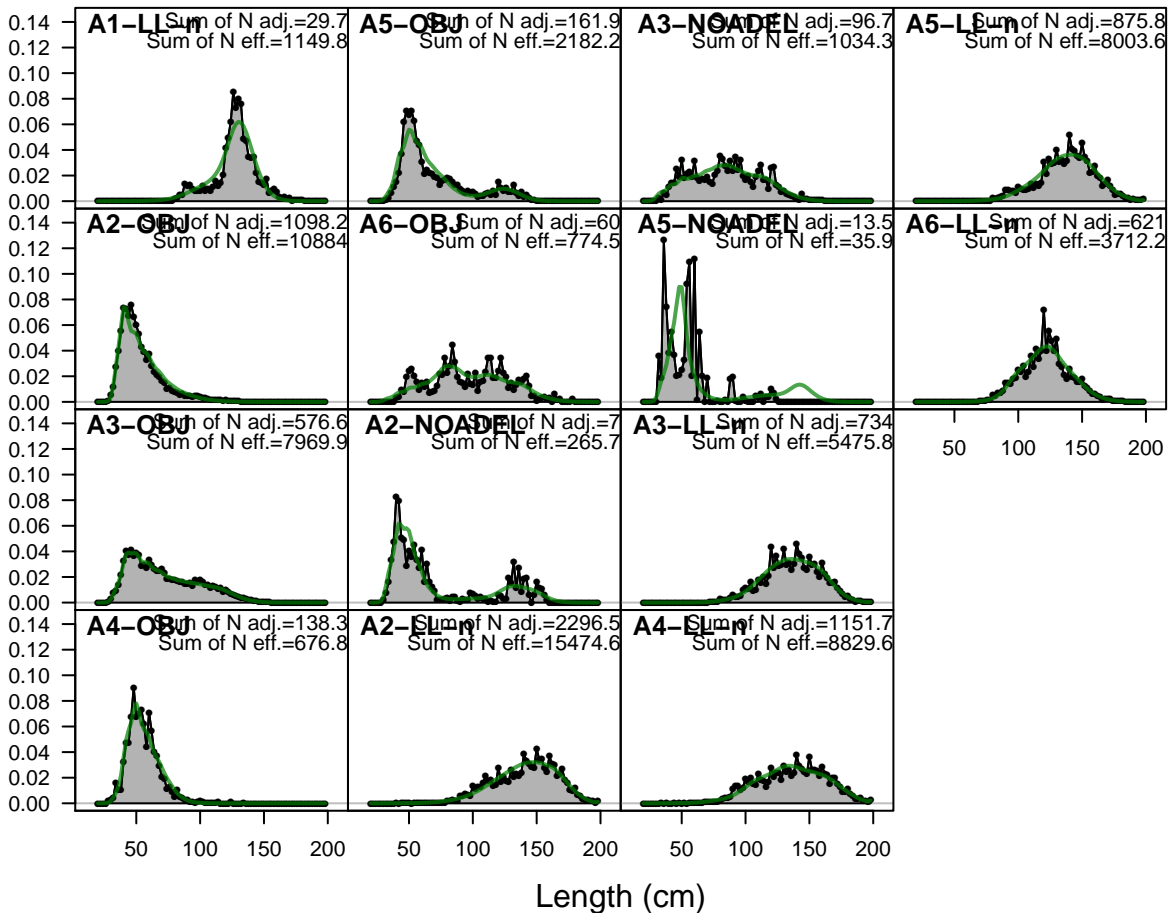


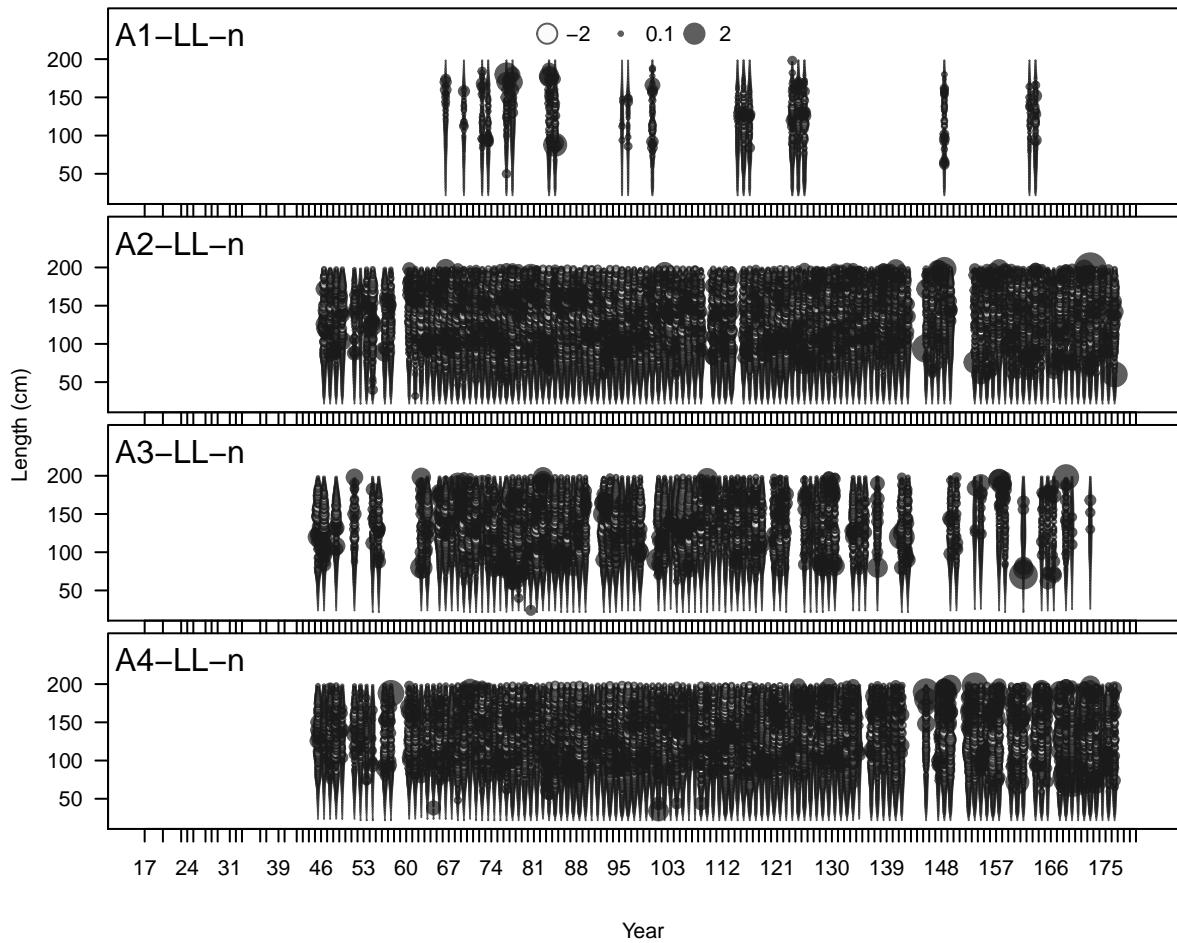


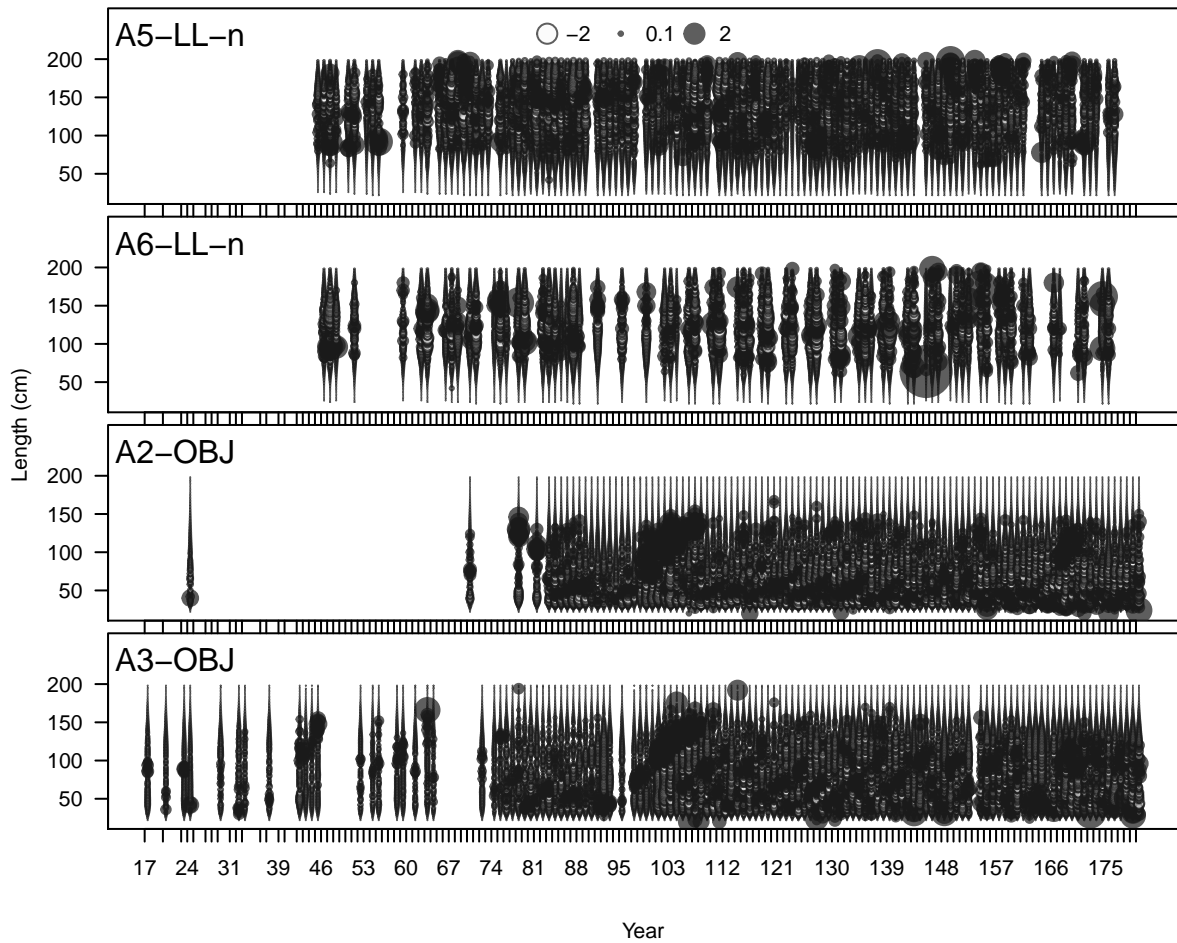
A5-NOADEL (whole catch)

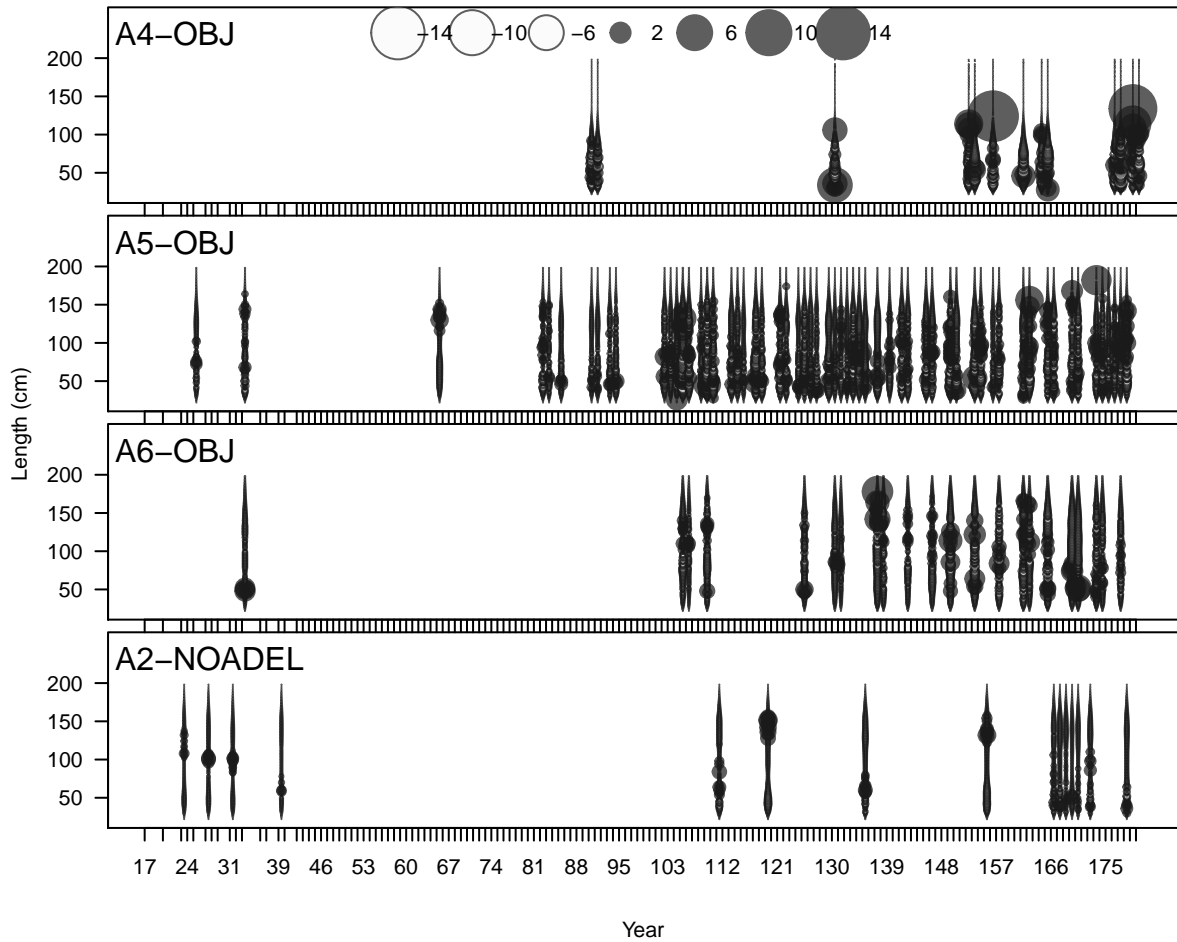


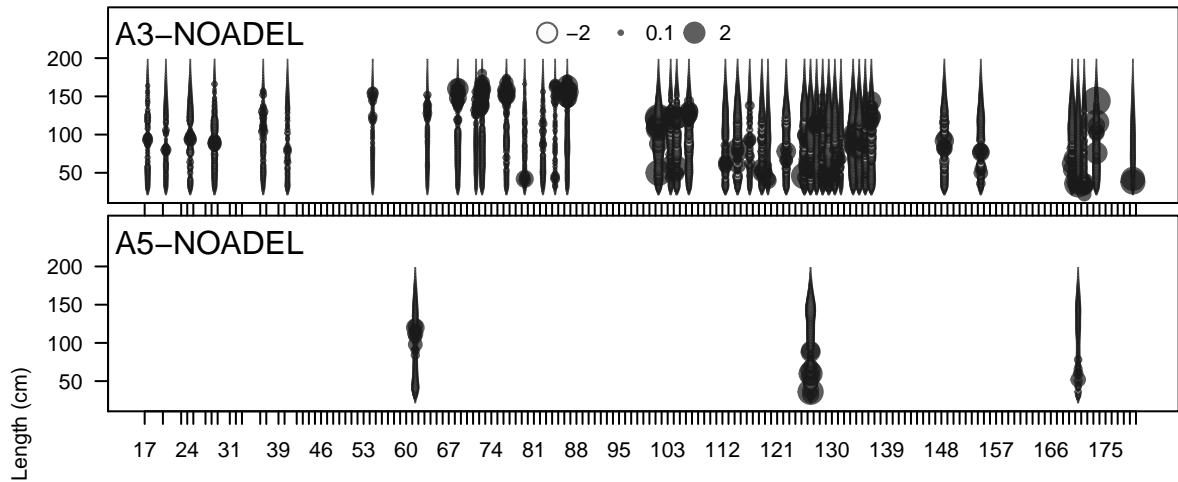
Proportion





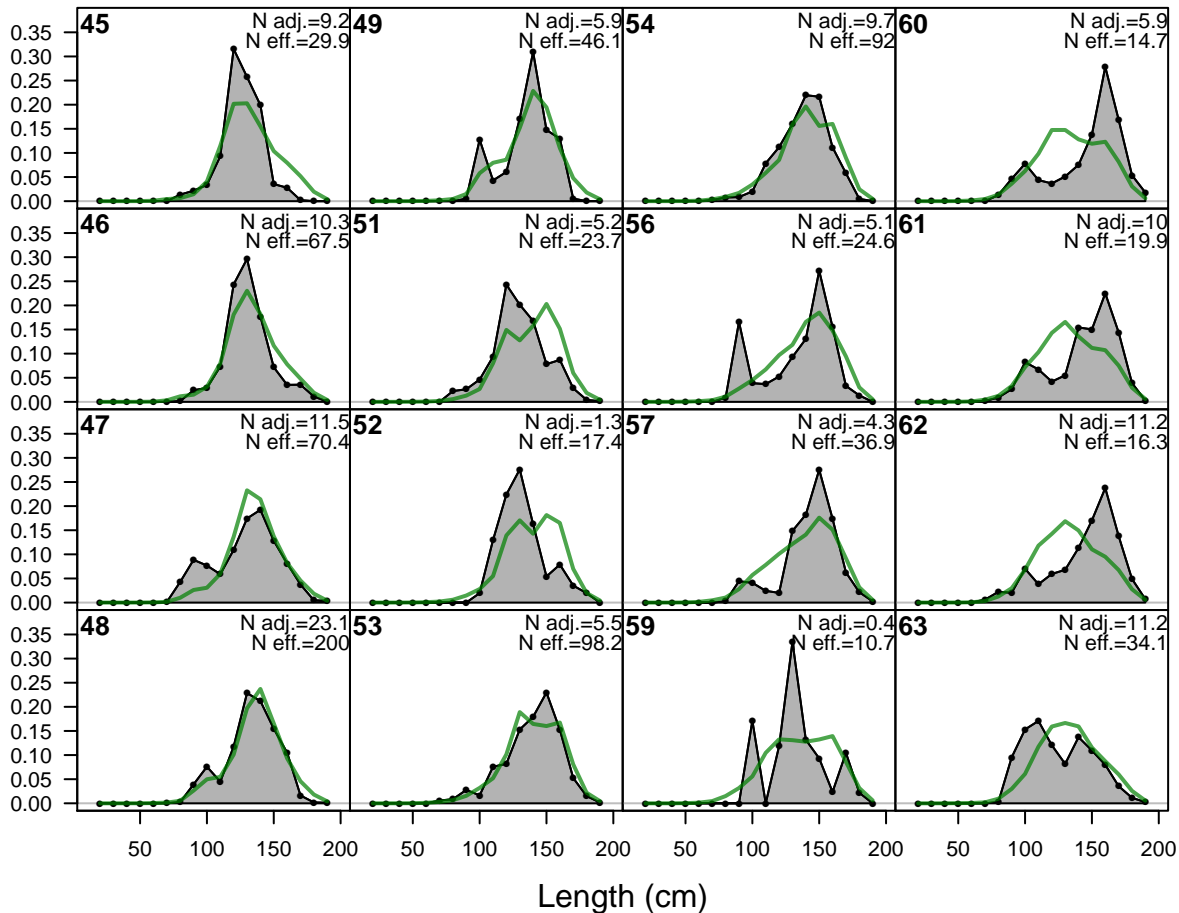






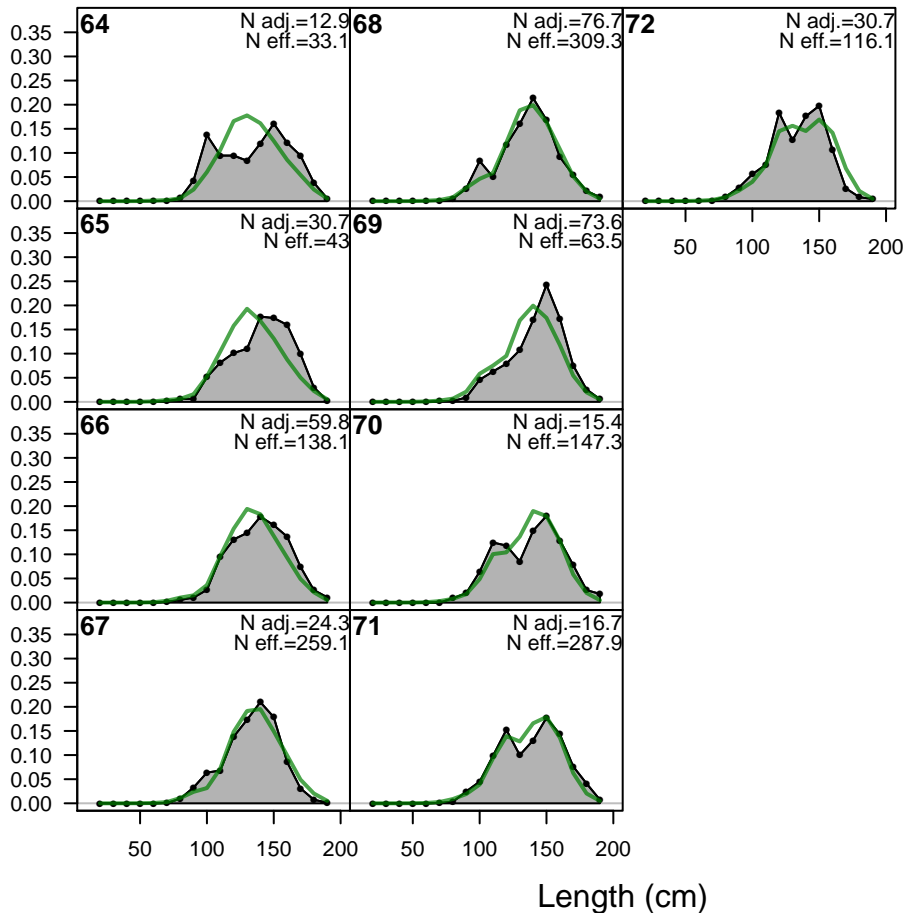
Year

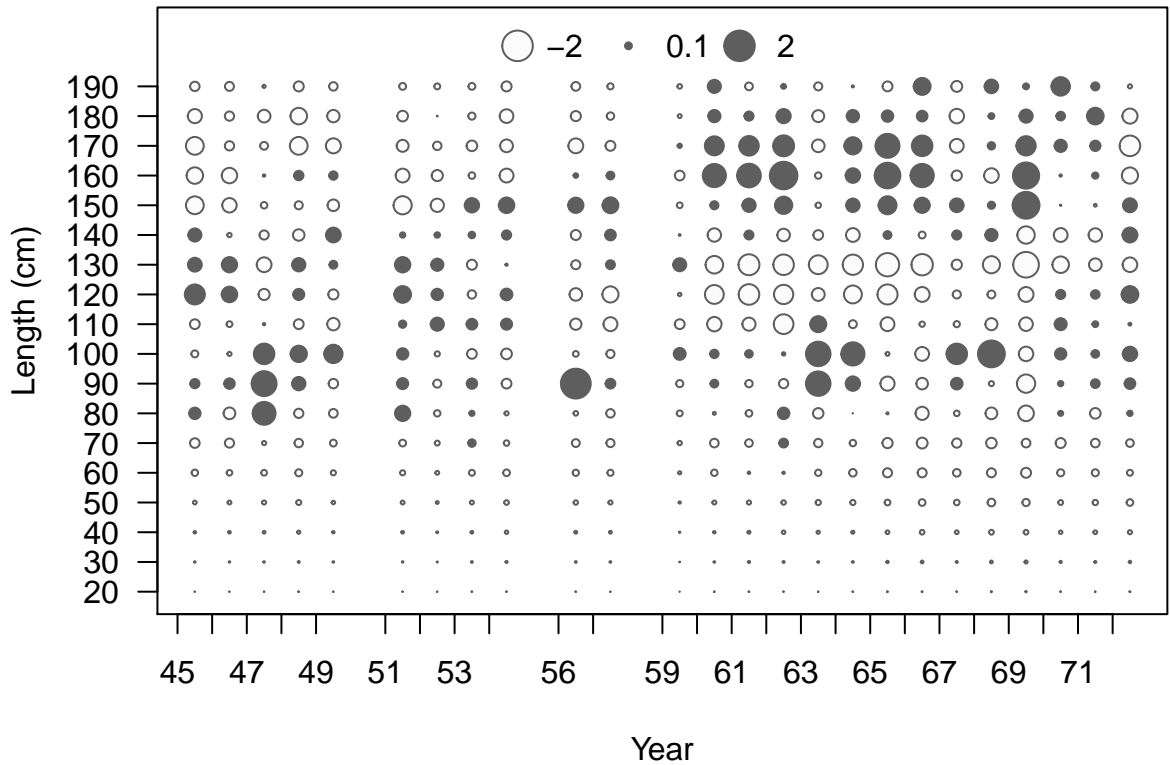
Proportion

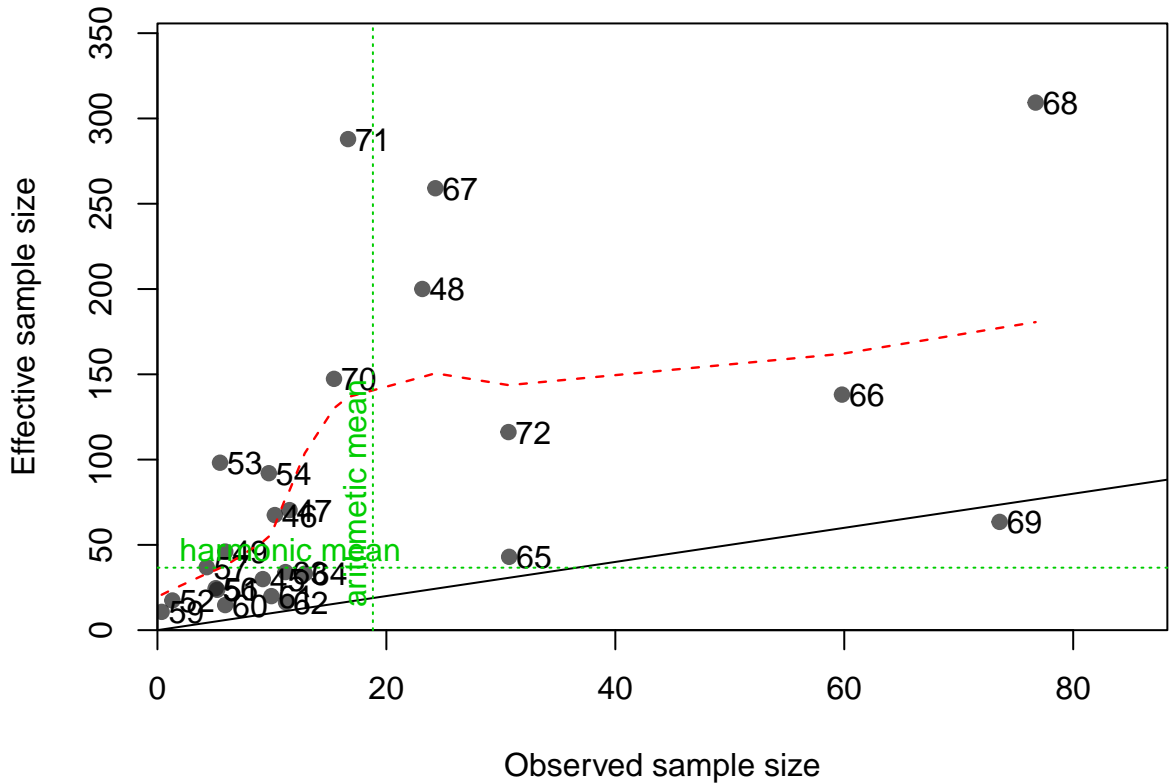




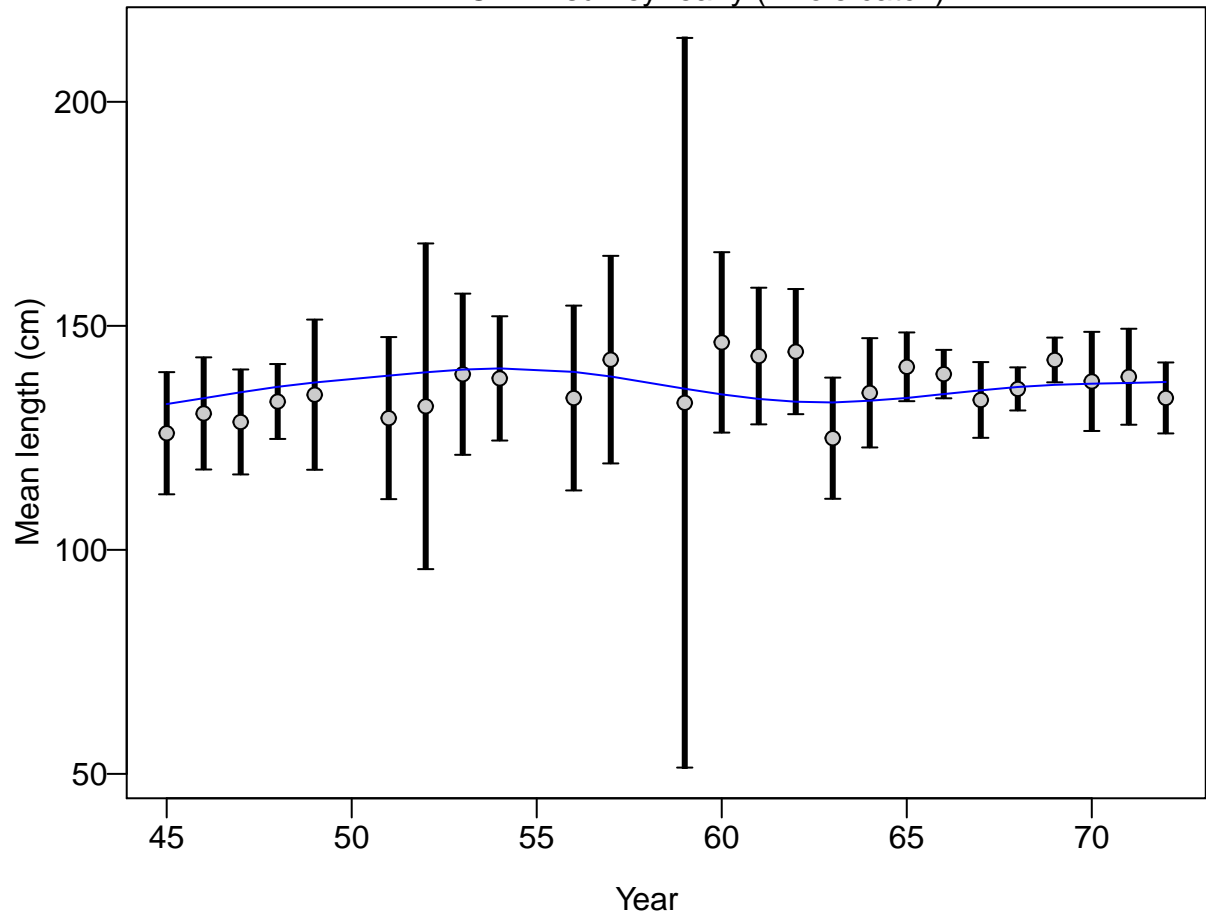
Proportion



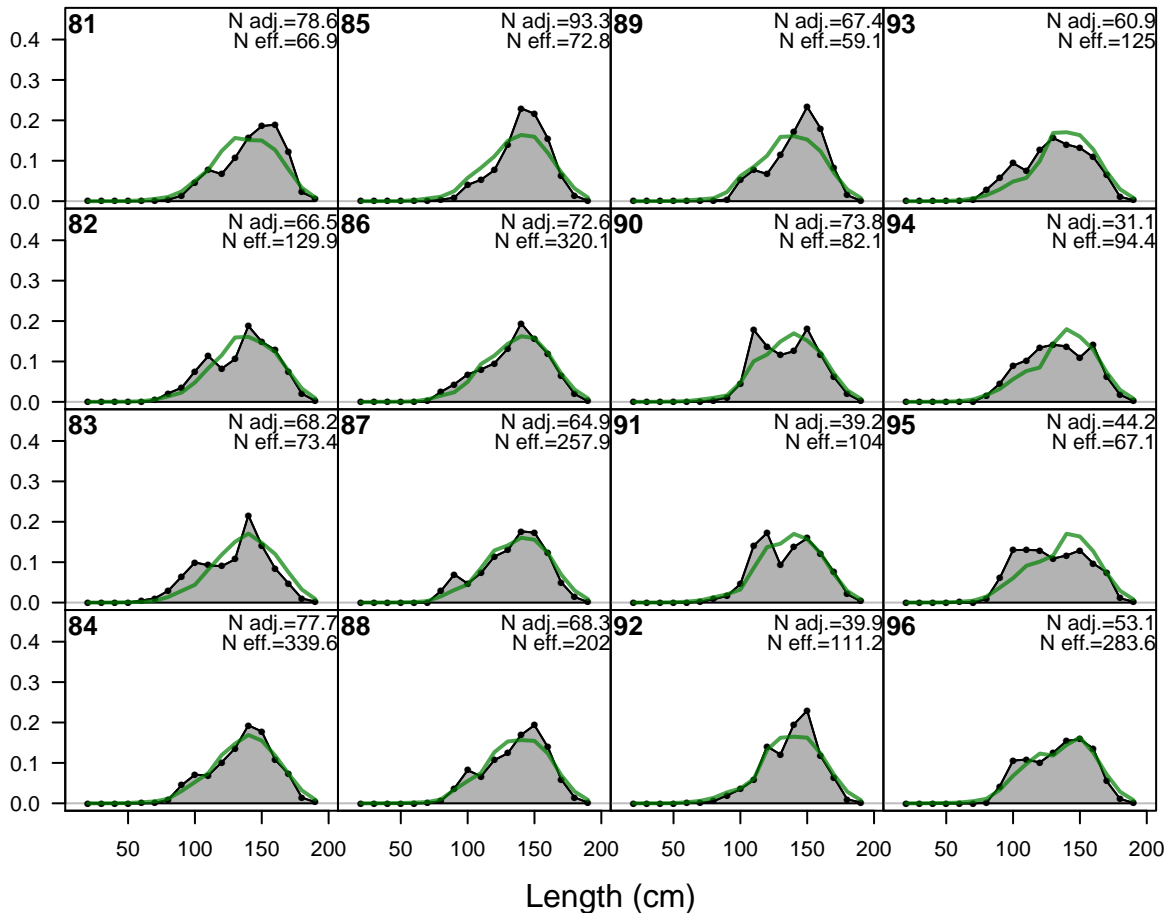




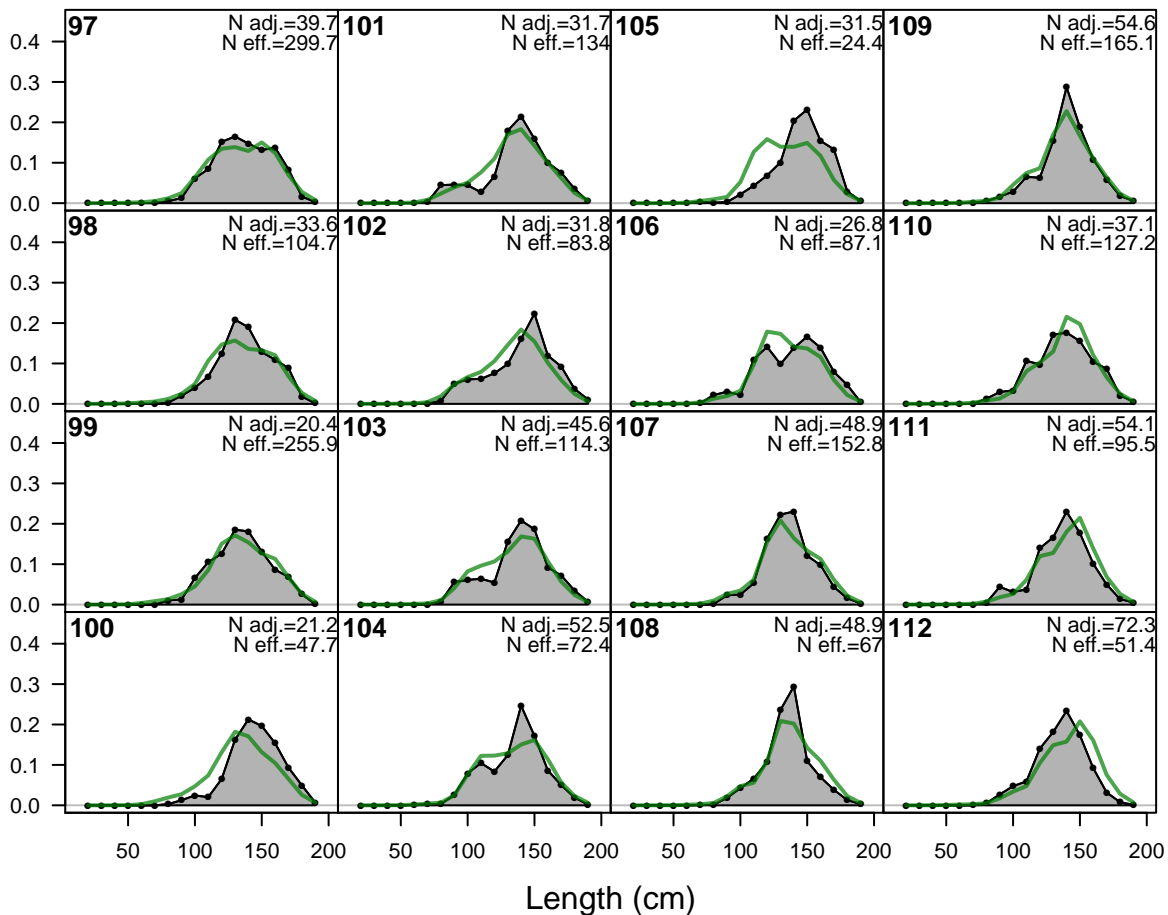
EPO-LL-survey-early (whole catch)



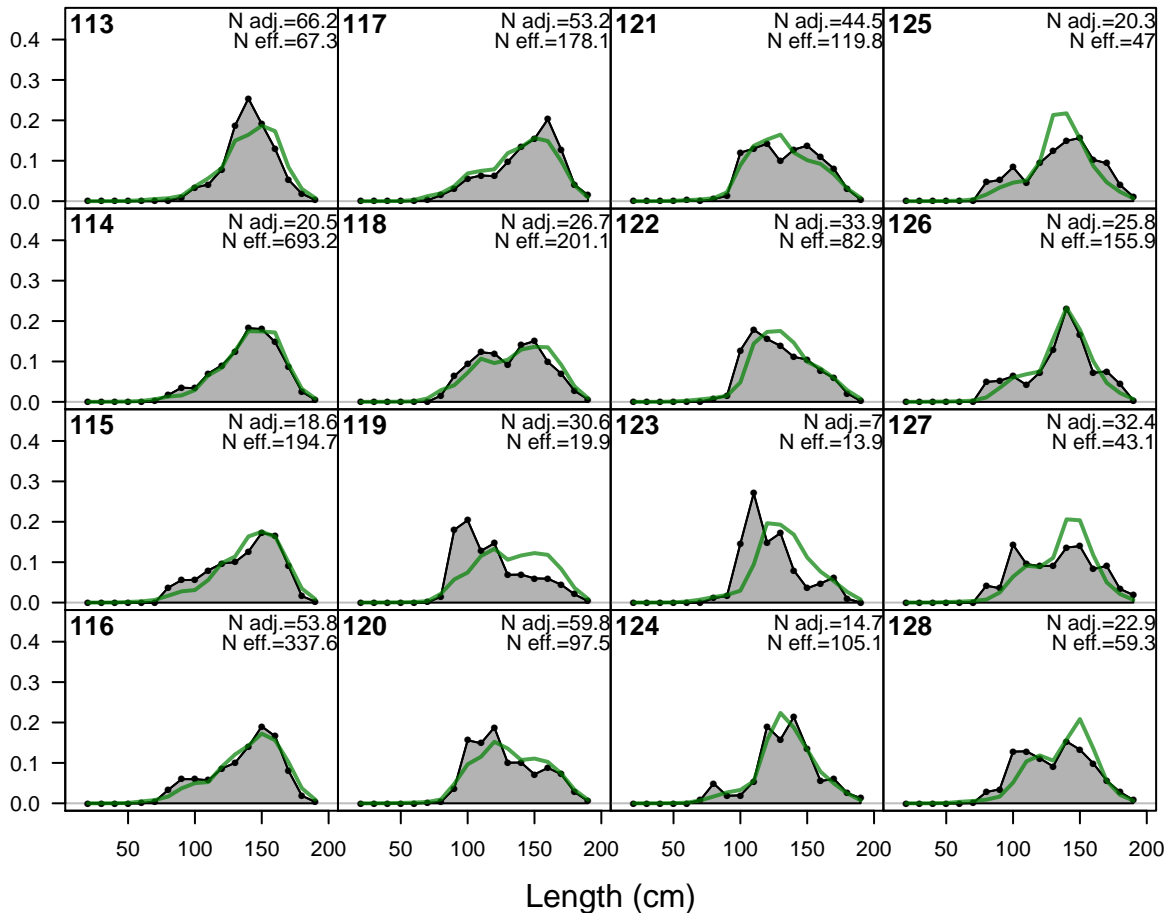
Proportion



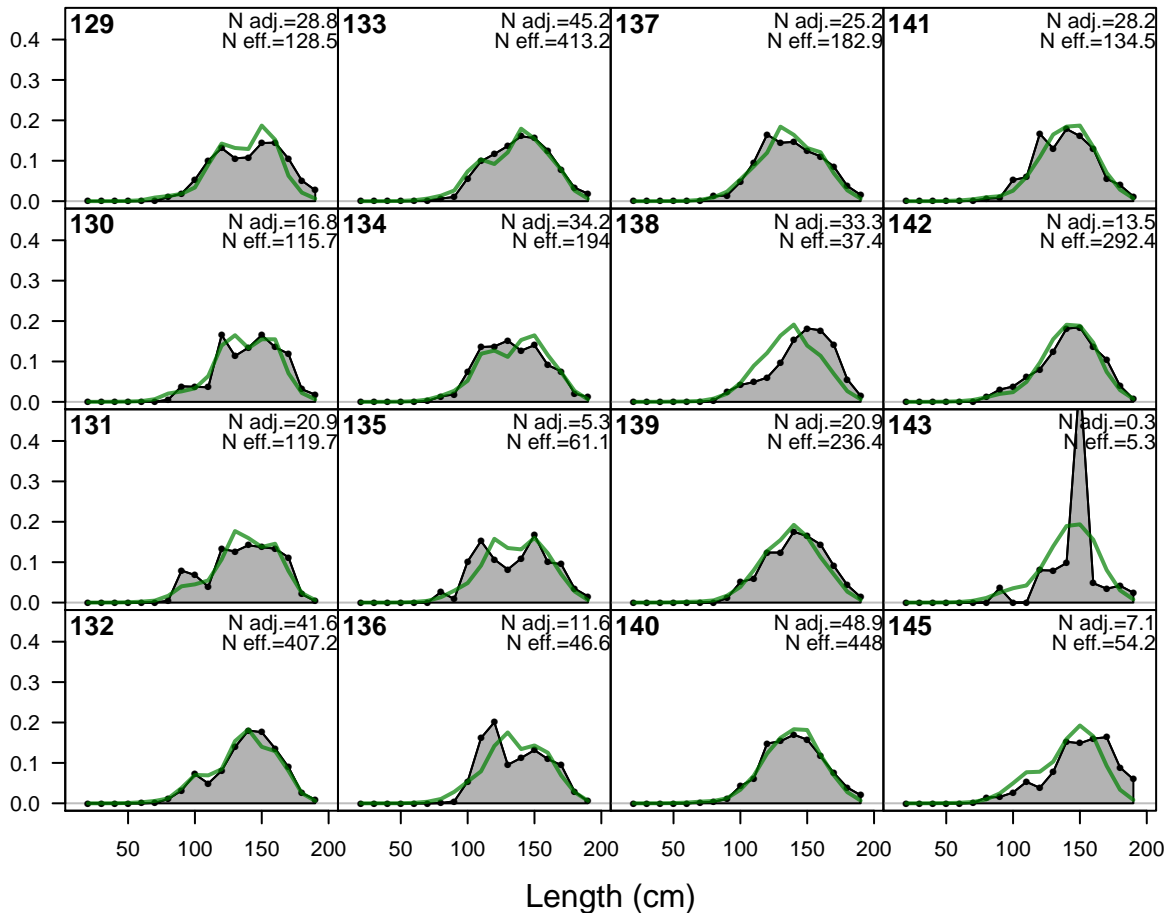
Proportion



Proportion

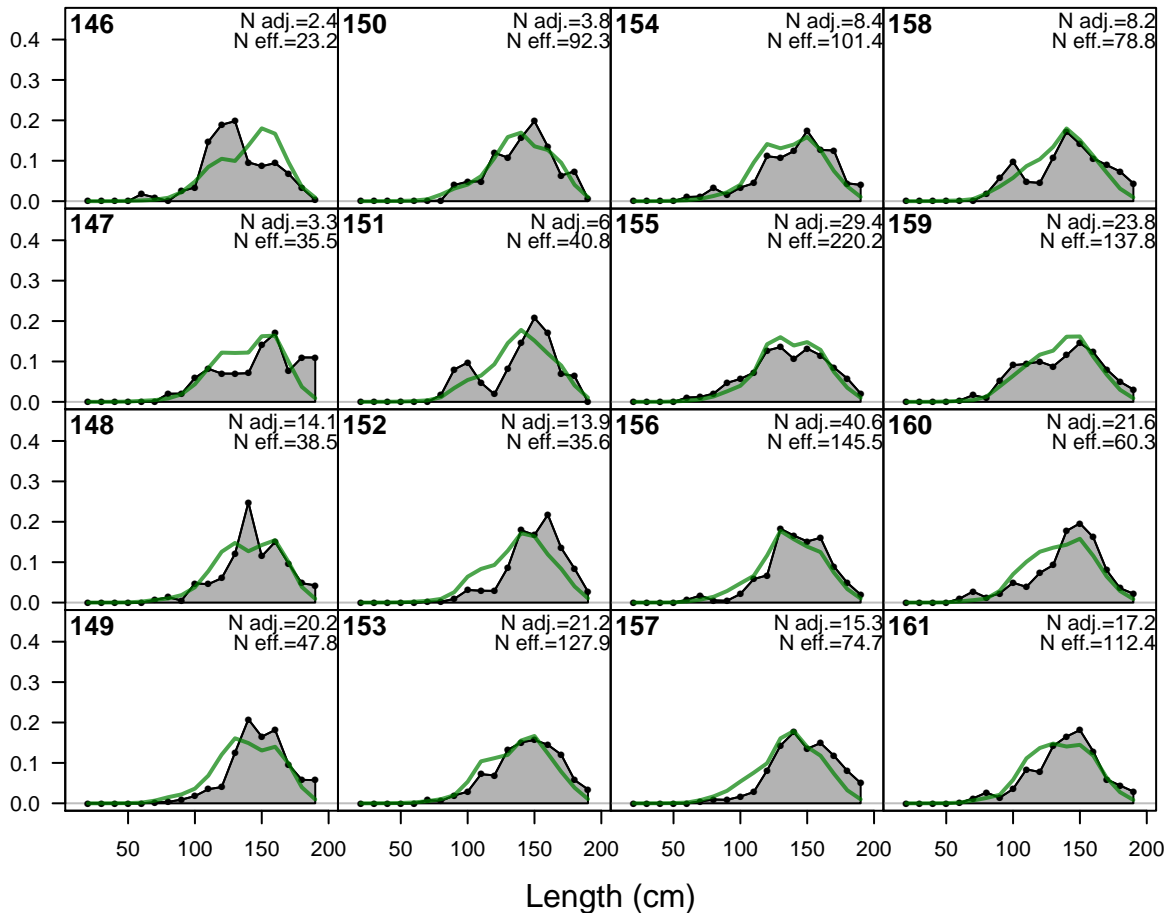


Proportion

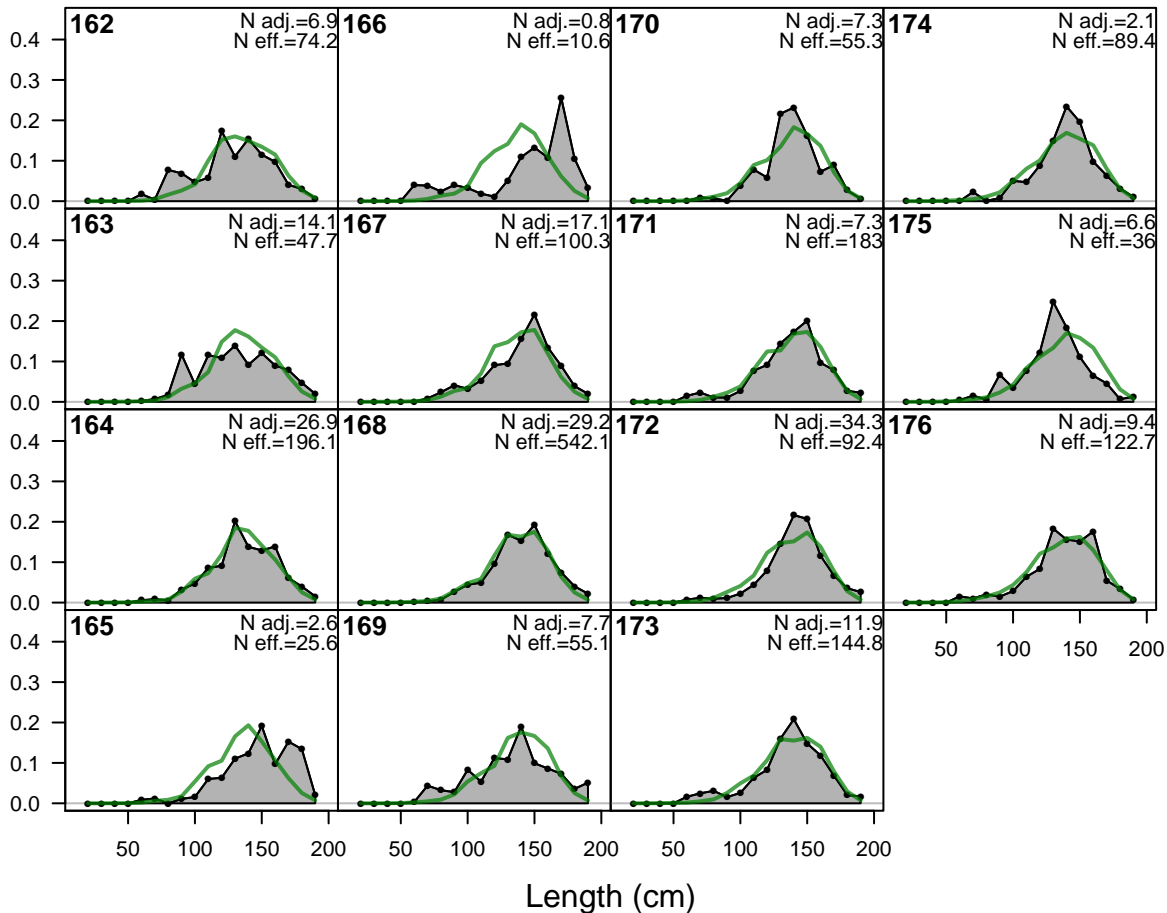


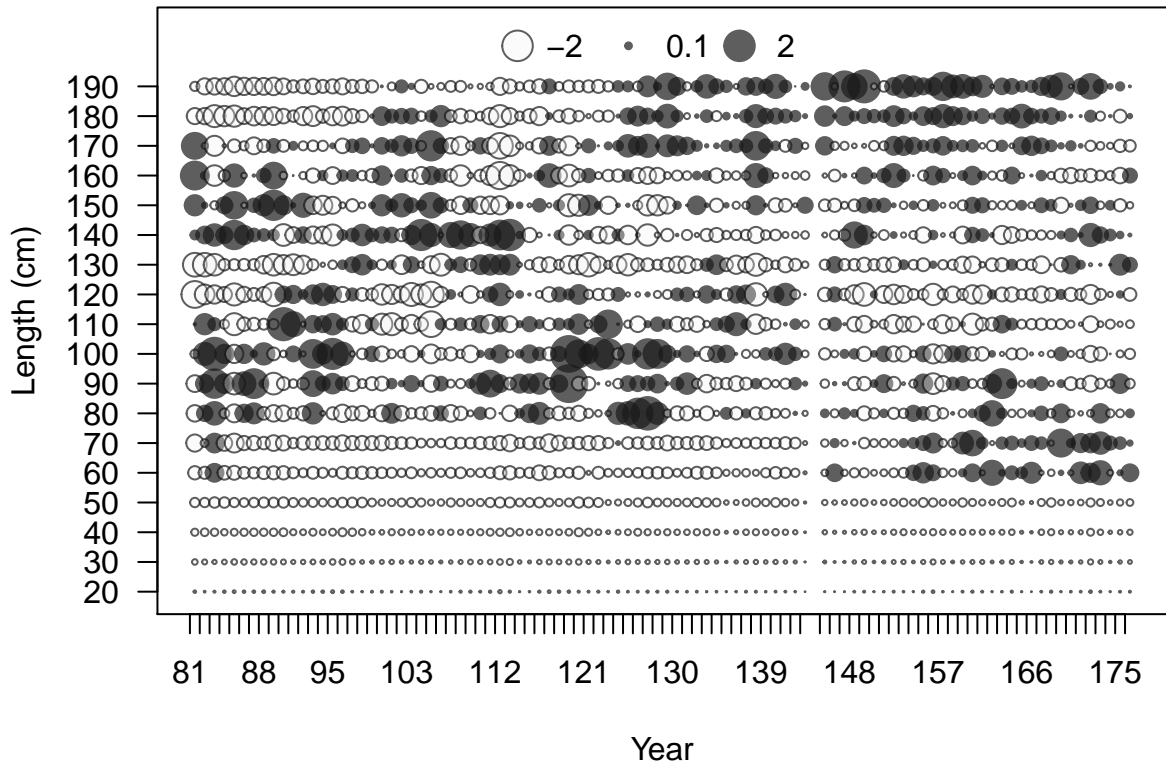


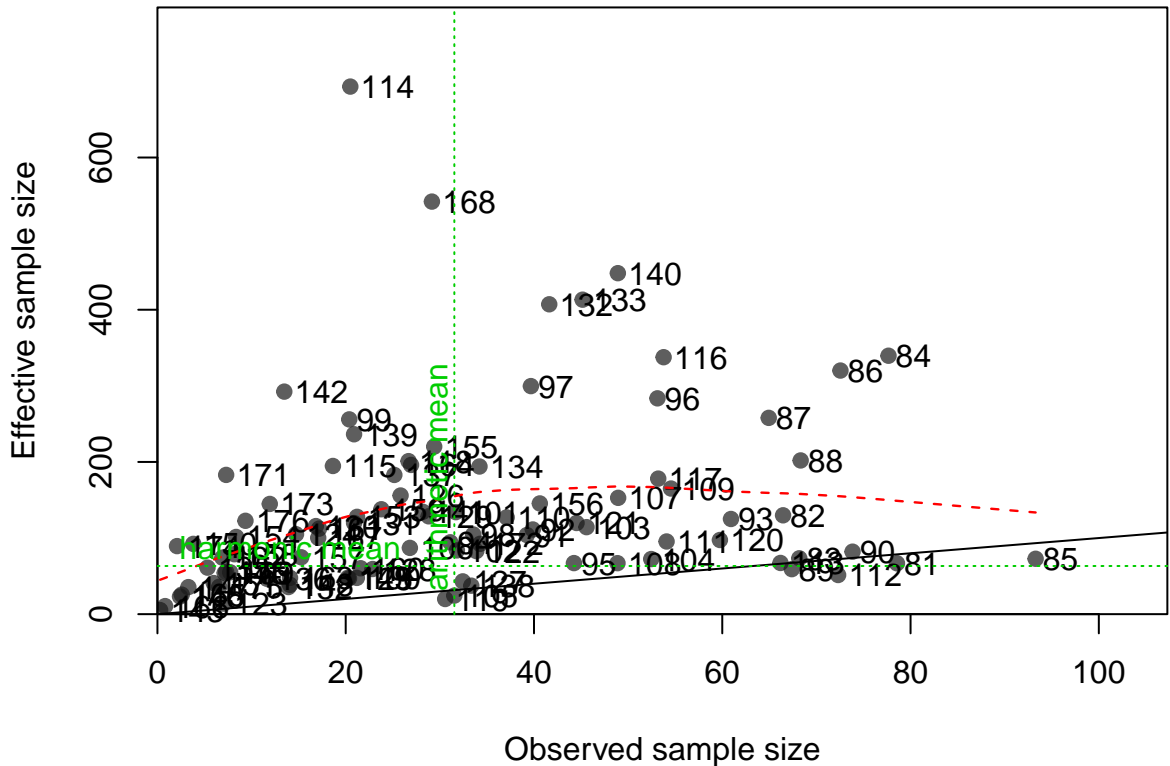
Proportion



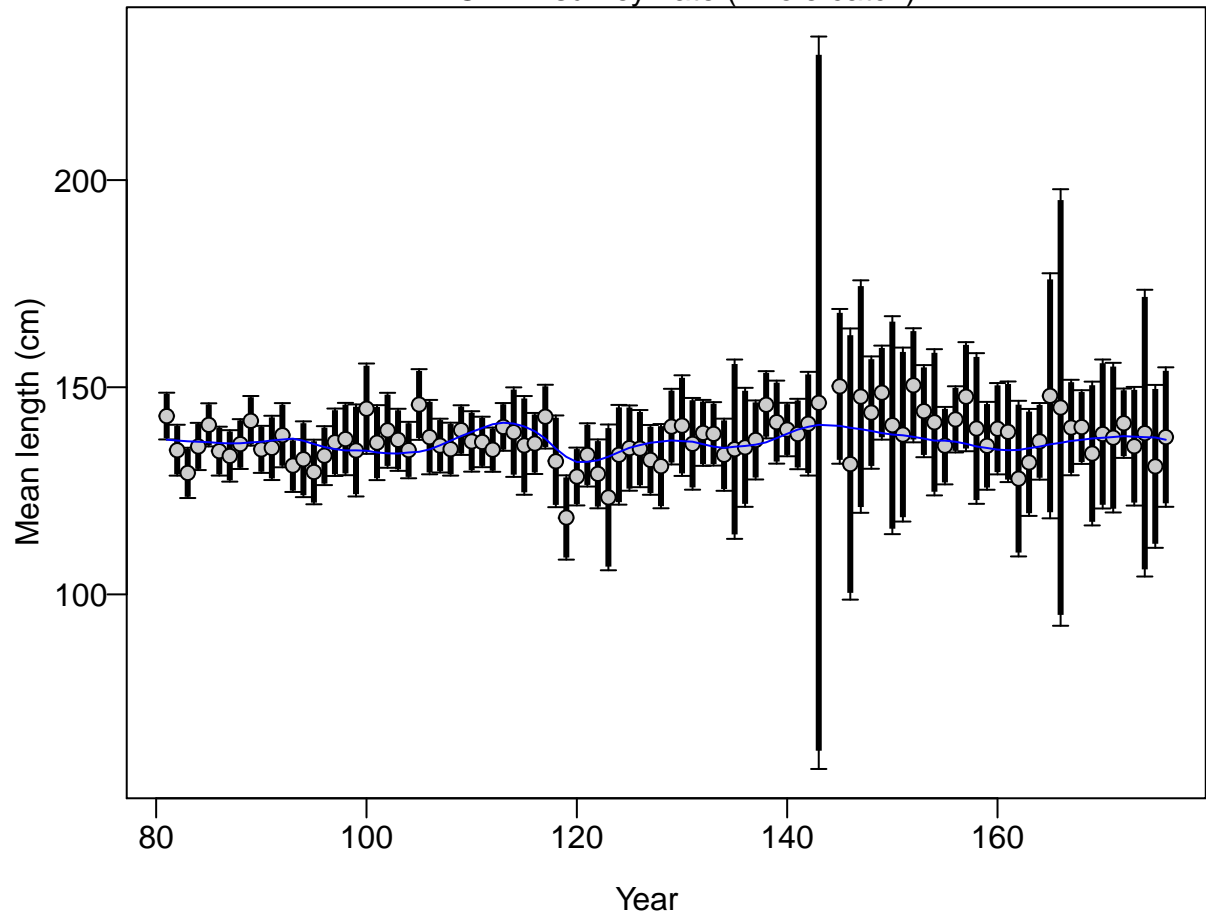
Proportion



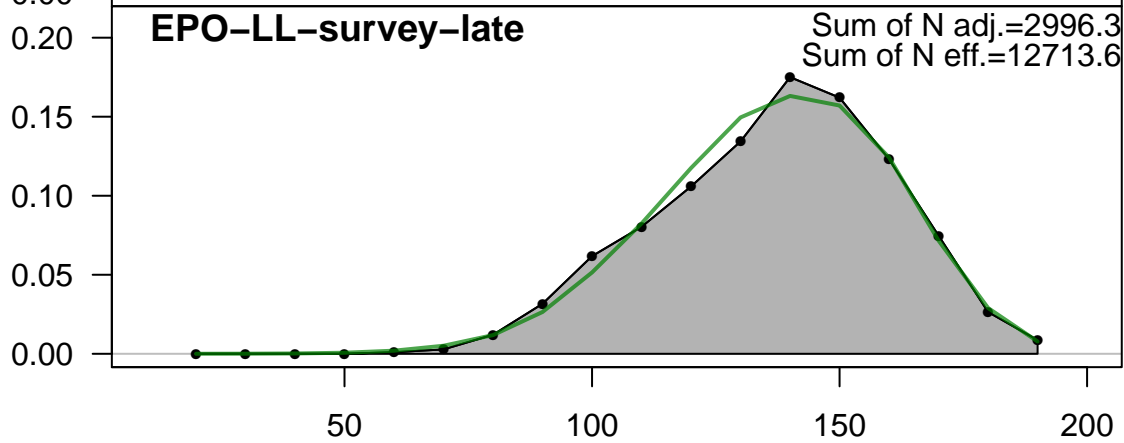
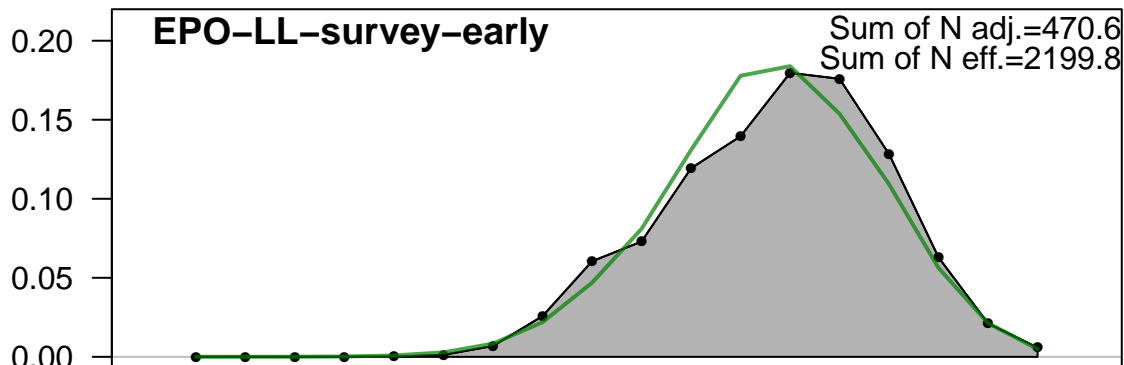




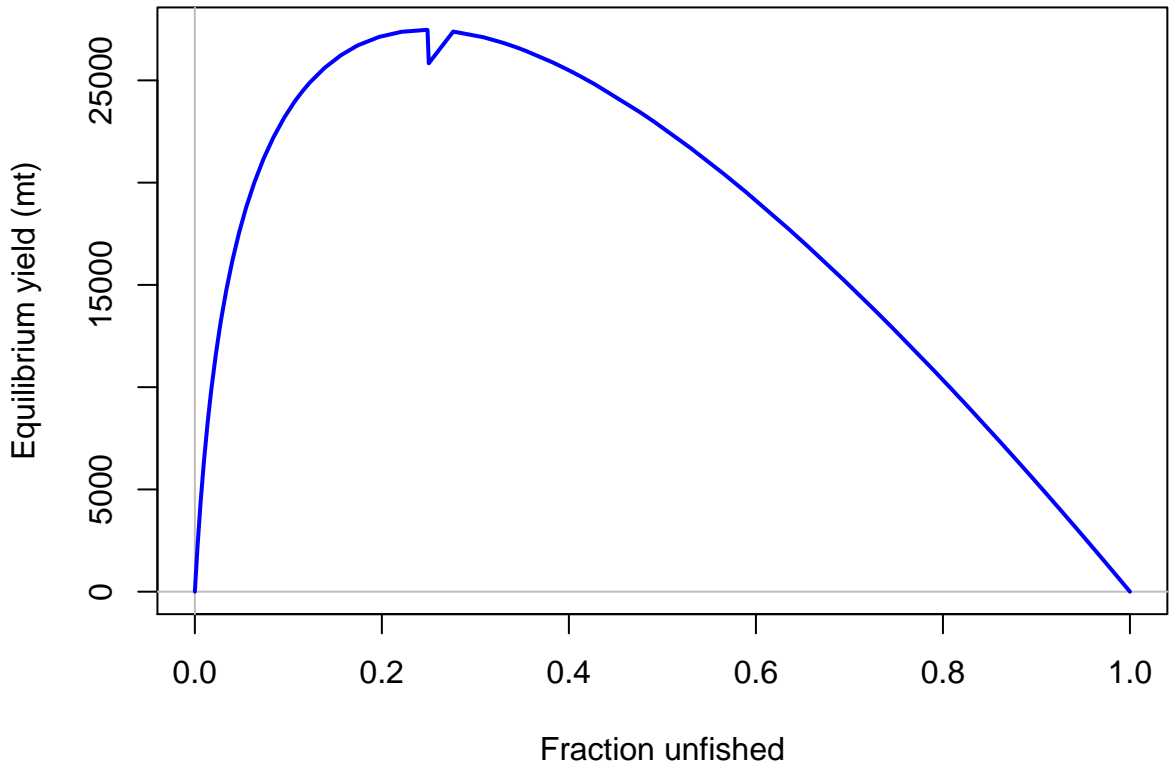
EPO-LL-survey-late (whole catch)

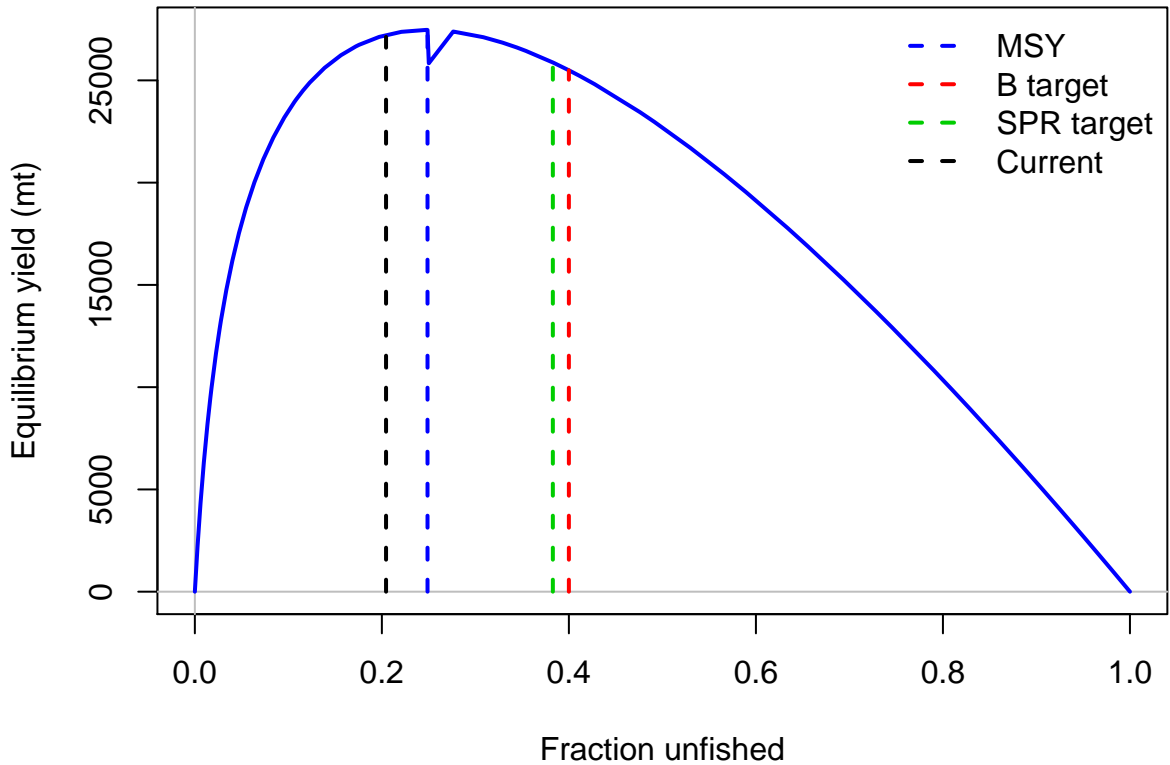


Proportion

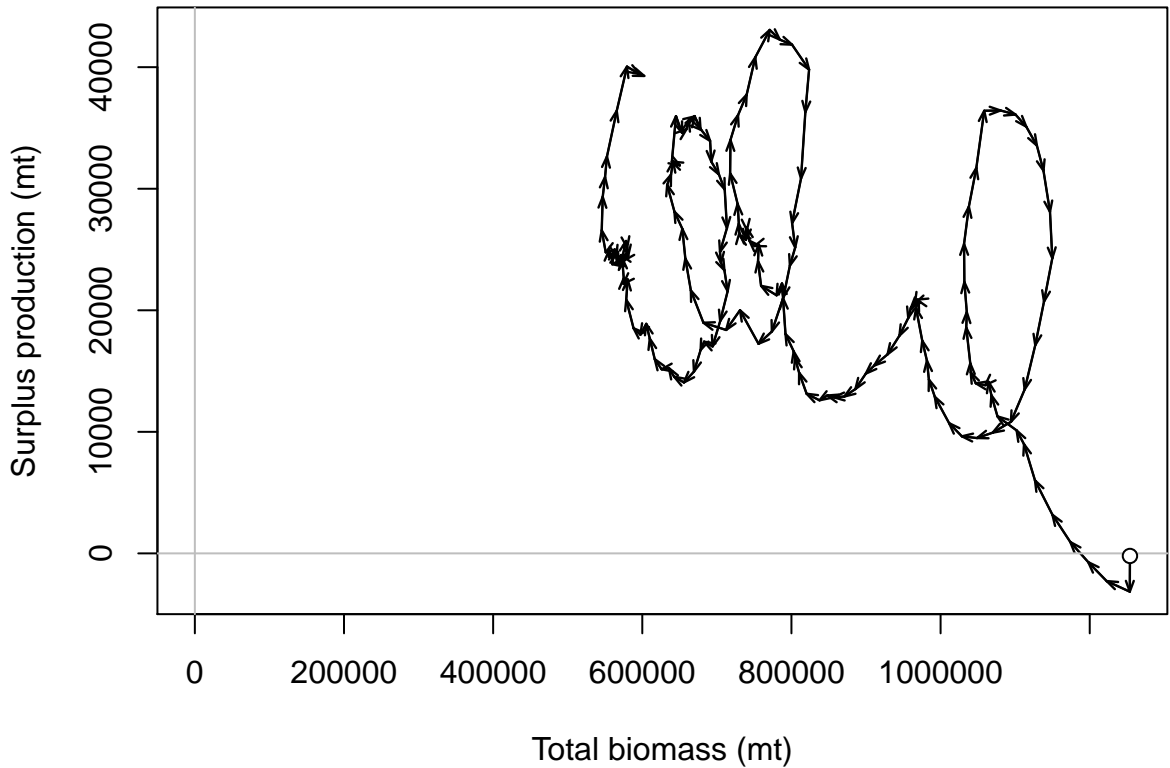


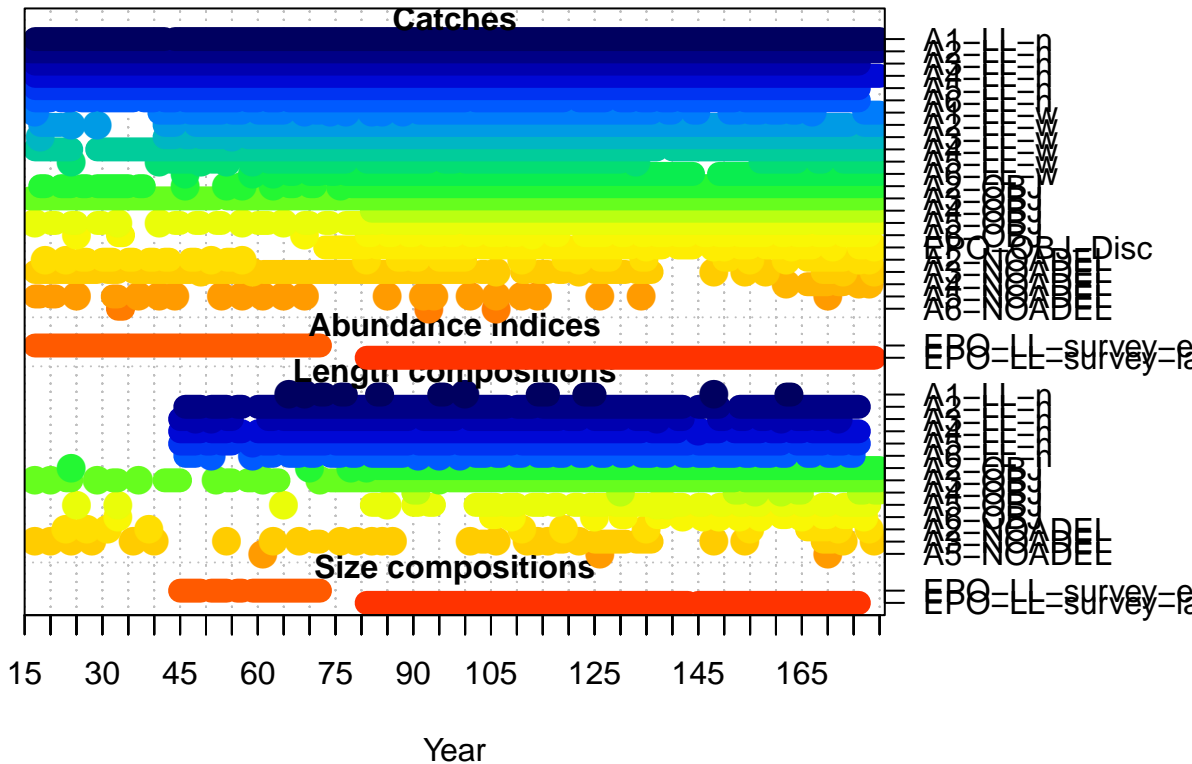
Length (cm)

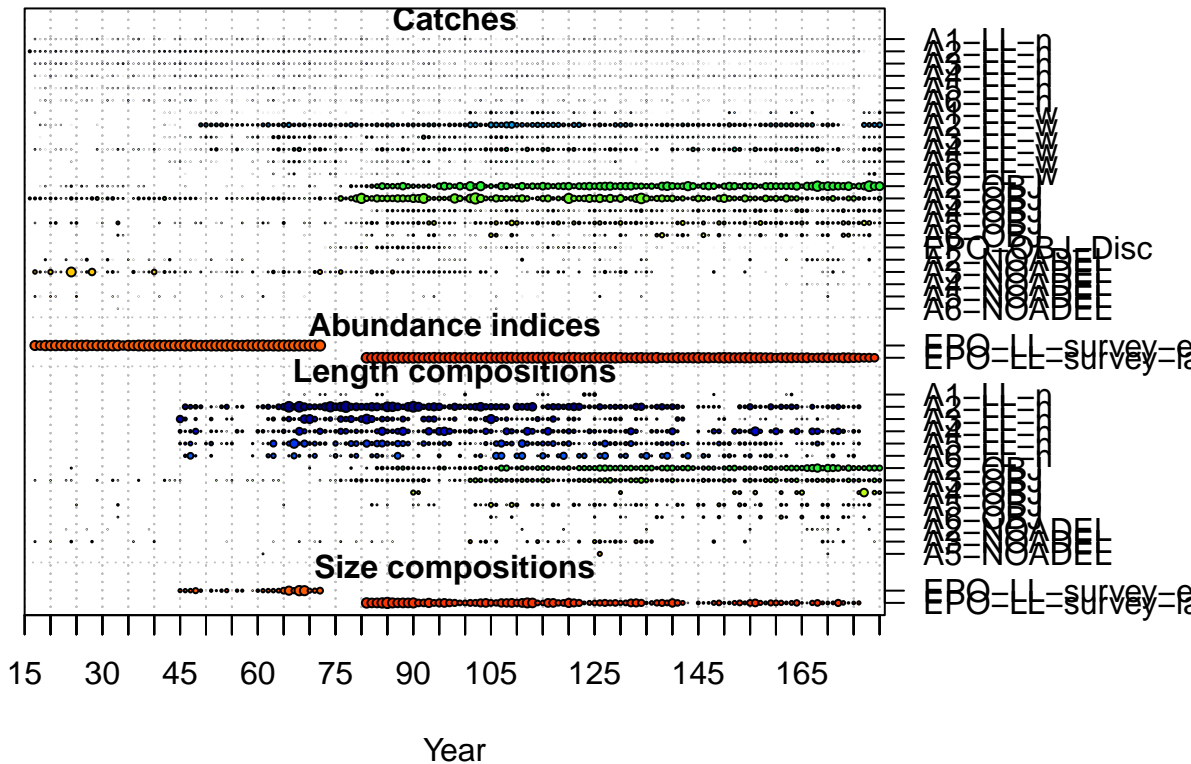




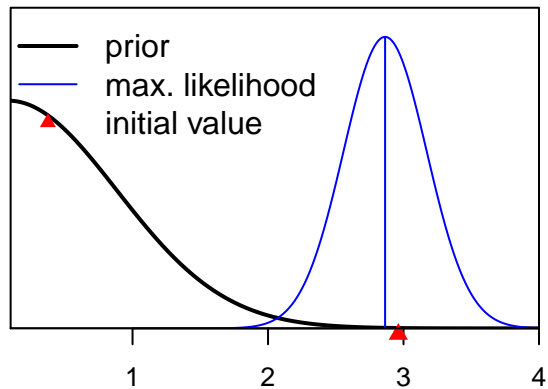




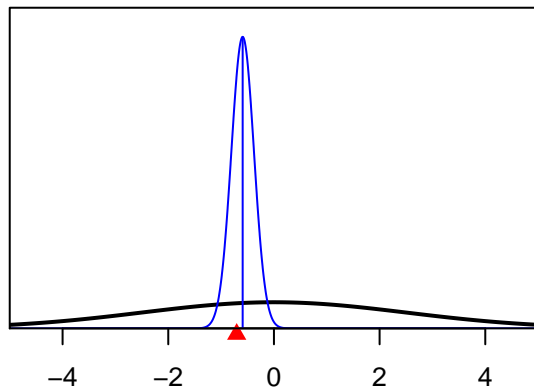




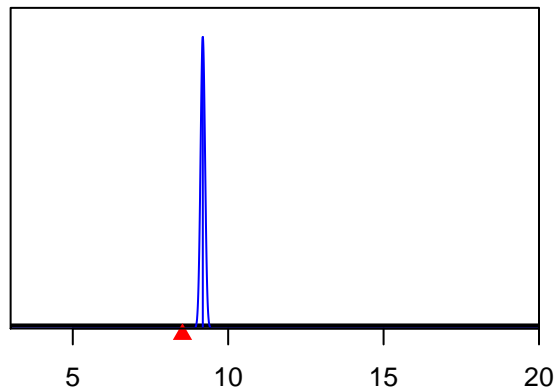
SD\_young\_Fem\_GP\_1



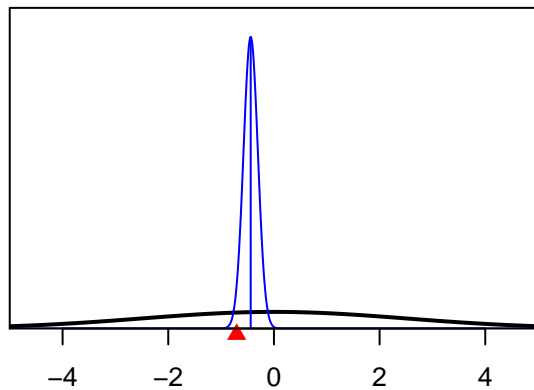
SR\_regime\_BLK1add\_16



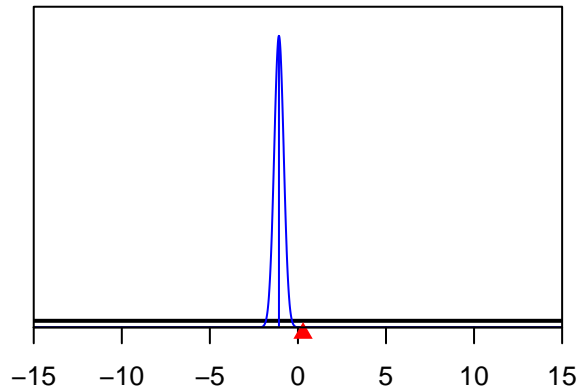
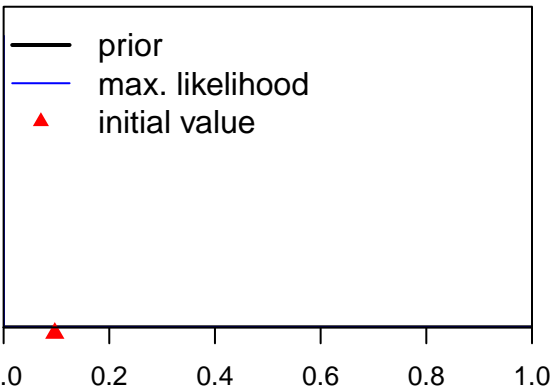
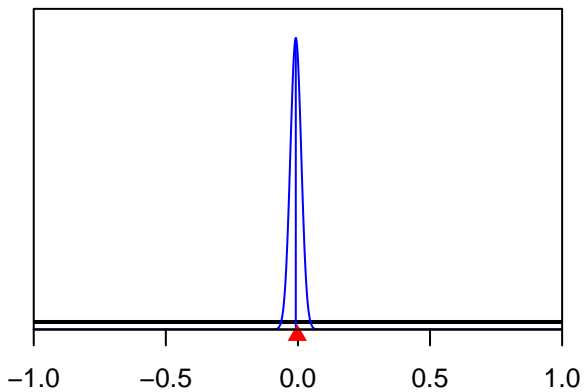
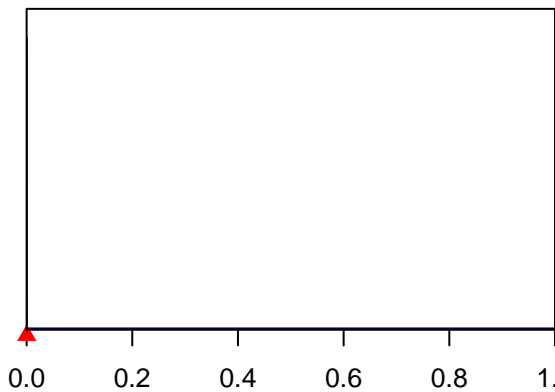
SR\_LN(R0)



SR\_regime\_BLK1add\_17

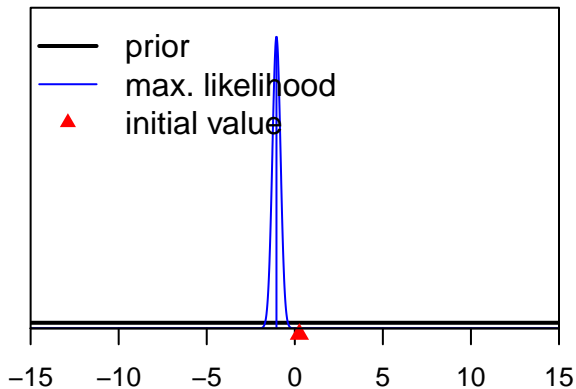


Parameter value

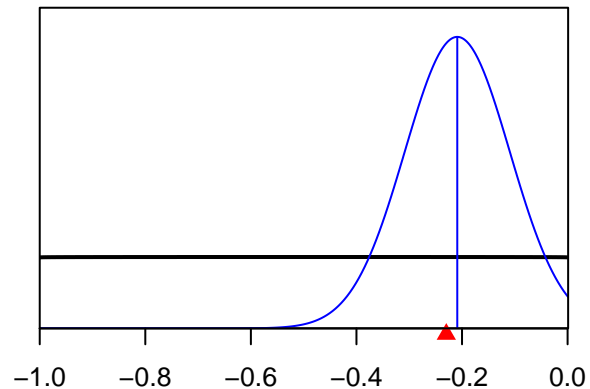
**InitF\_seas\_1\_flt\_2A2-LL-n****LnQ\_base\_EPO-LL-survey-early(24)****InitF\_seas\_1\_flt\_14A3-OBJ****Q\_extraSD\_EPO-LL-survey-early(24)**

Parameter value

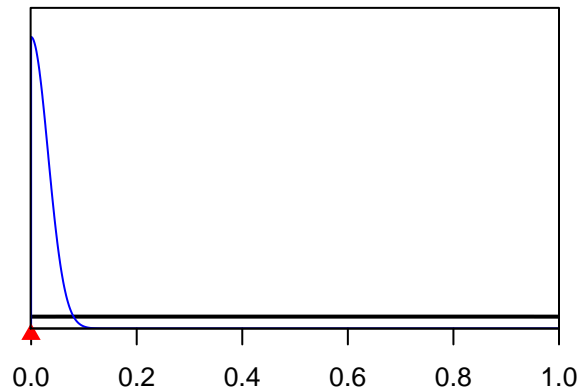
LnQ\_base\_EPO-LL-survey-late(25)



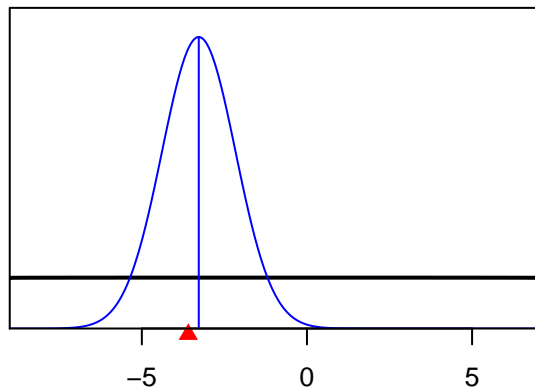
SizeSpline\_GradHi\_A1-LL-n(1)



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

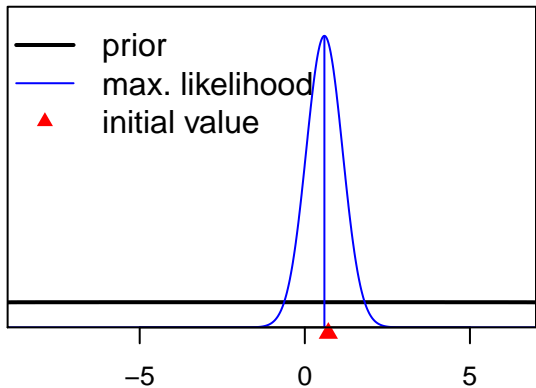


SizeSpline\_Val 2\_A1-LL-n(1)

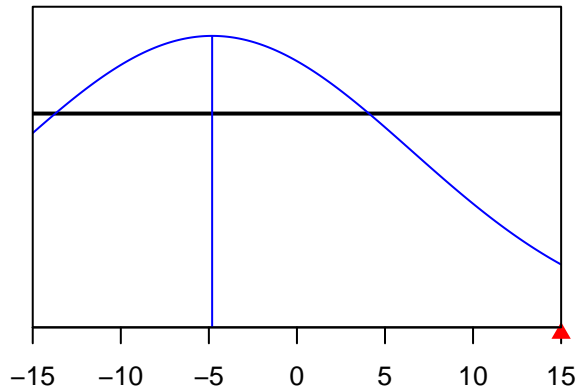


Parameter value

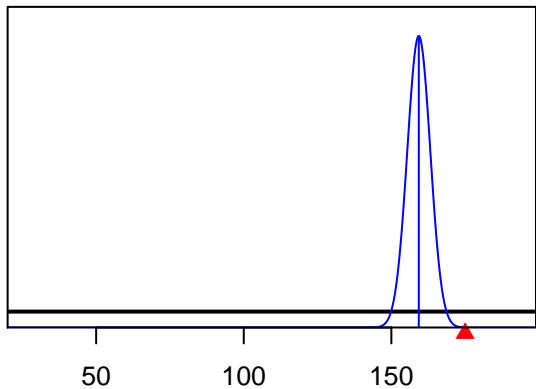
SizeSpline\_Val\_4\_A1-LL-n(1)



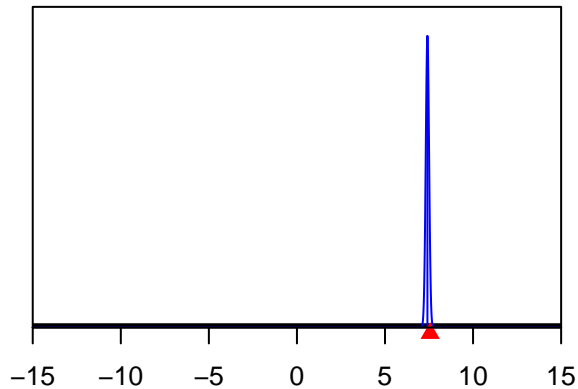
Size\_DbIN\_top\_logit\_A2-LL-n(2)



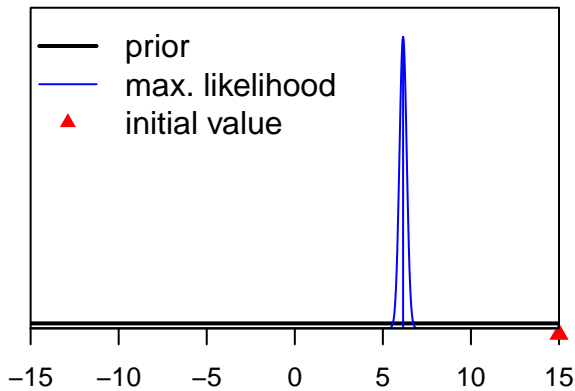
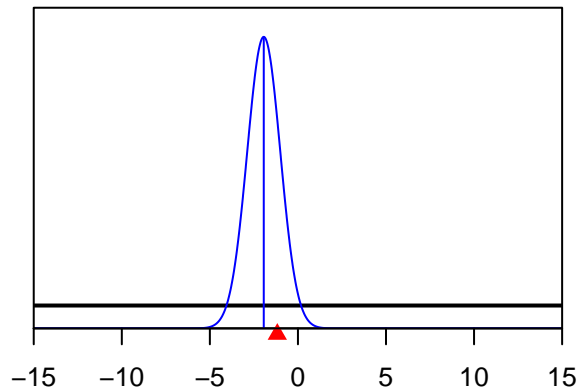
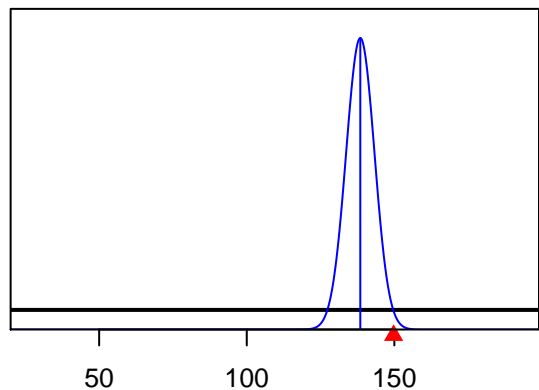
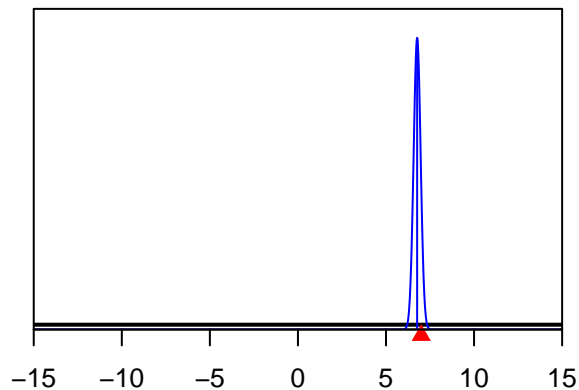
Size\_DbIN\_peak\_A2-LL-n(2)



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



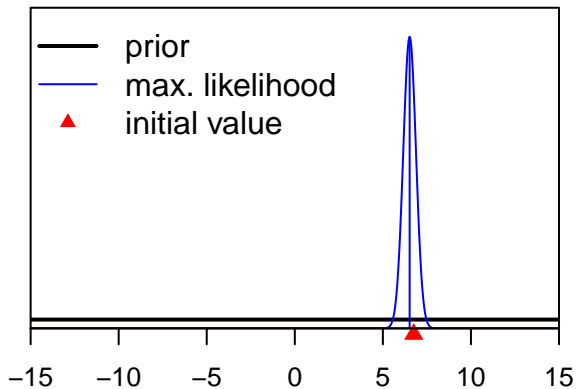
Parameter value

**Size\_DbIN\_descend\_se\_A2-LL-n(2)****Size\_DbIN\_top\_logit\_A3-LL-n(3)****Size\_DbIN\_peak\_A3-LL-n(3)****Size\_DbIN\_ascend\_se\_A3-LL-n(3)**

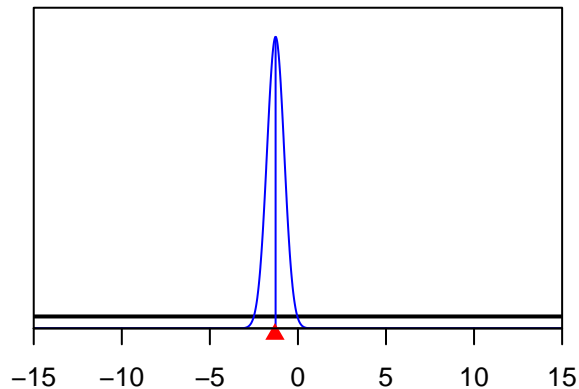
Parameter value



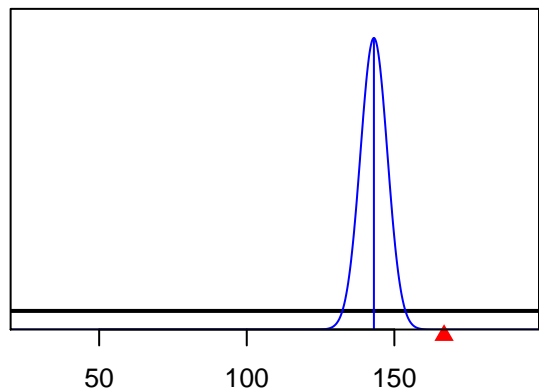
Size\_DbIN\_descend\_se\_A3-LL-n(3)



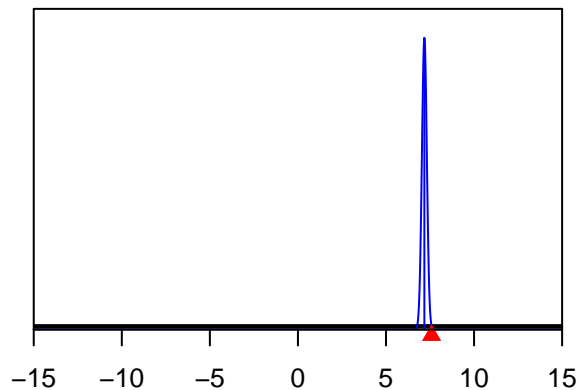
Size\_DbIN\_top\_logit\_A4-LL-n(4)



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

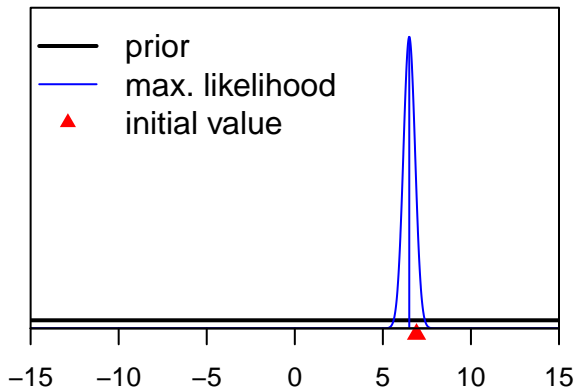


Size\_DbIN\_ascend\_se\_A4-LL-n(4)

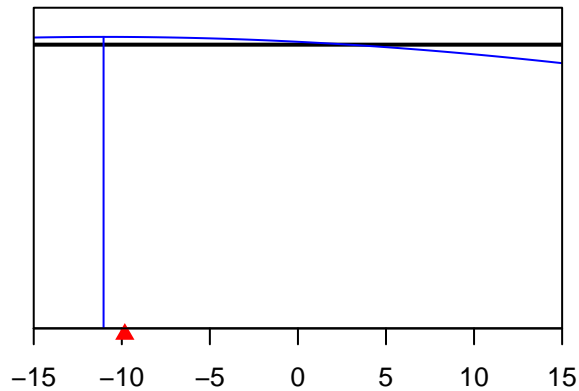


Parameter value

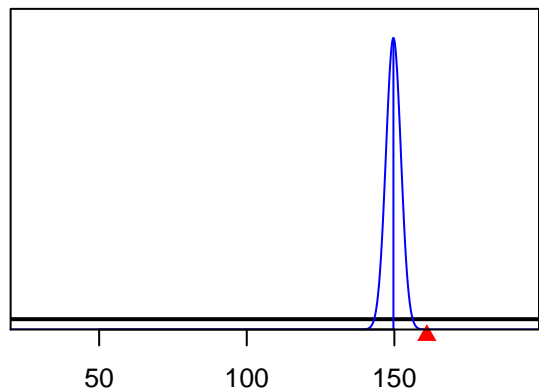
Size\_DbIN\_descend\_se\_A4-LL-n(4)



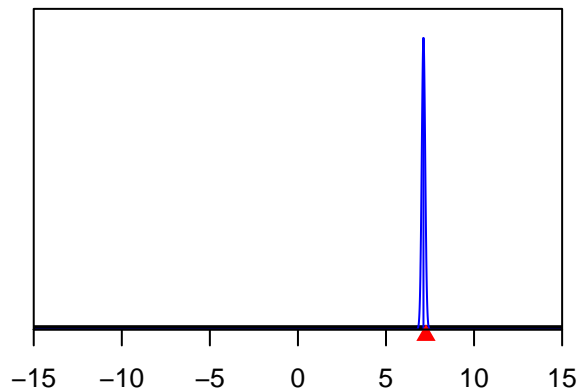
Size\_DbIN\_top\_logit\_A5-LL-n(5)



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

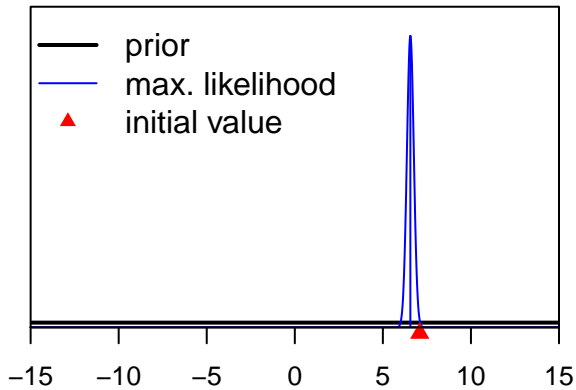


Size\_DbIN\_ascend\_se\_A5-LL-n(5)

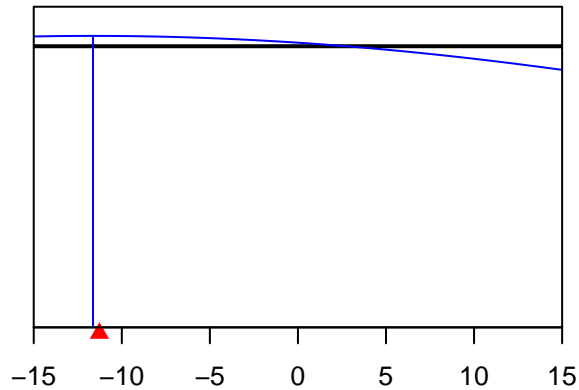


Parameter value

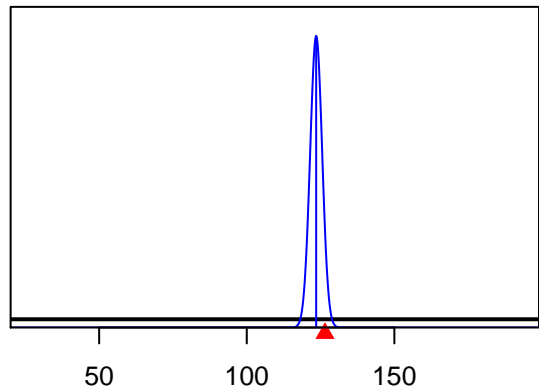
Size\_DbIN\_descend\_se\_A5-LL-n(5)



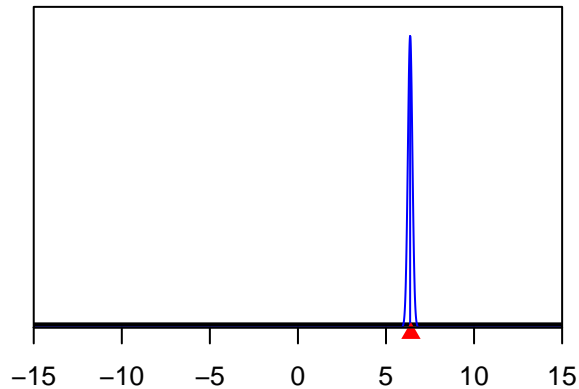
Size\_DbIN\_top\_logit\_A6-LL-n(6)



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

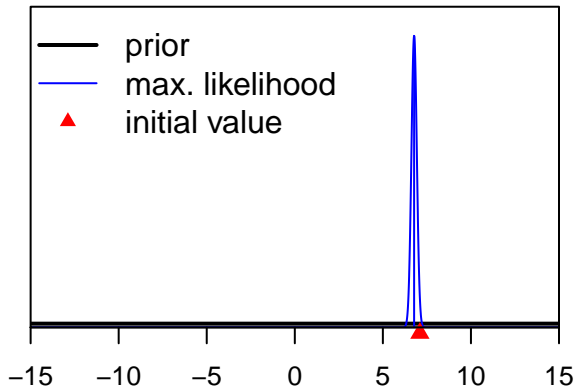


Size\_DbIN\_ascend\_se\_A6-LL-n(6)

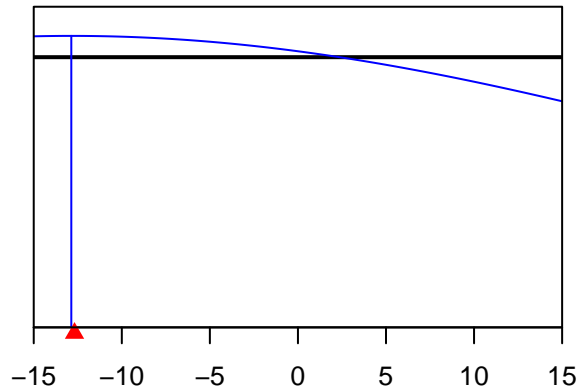


Parameter value

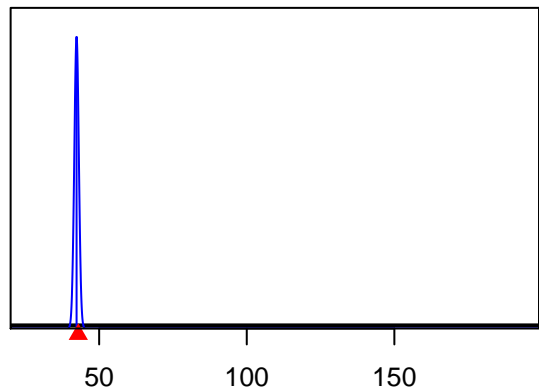
Size\_DbIN\_descend\_se\_A6-LL-n(6)



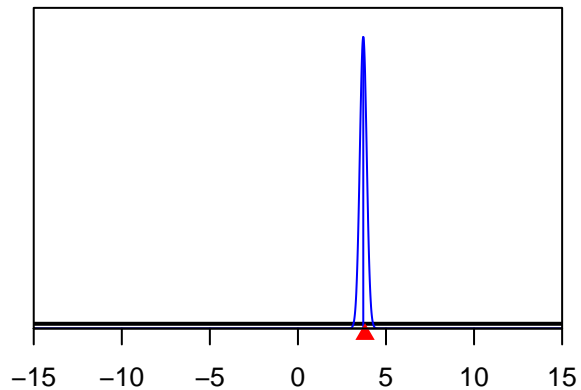
Size\_DbIN\_top\_logit\_A2-OBJ(13)



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

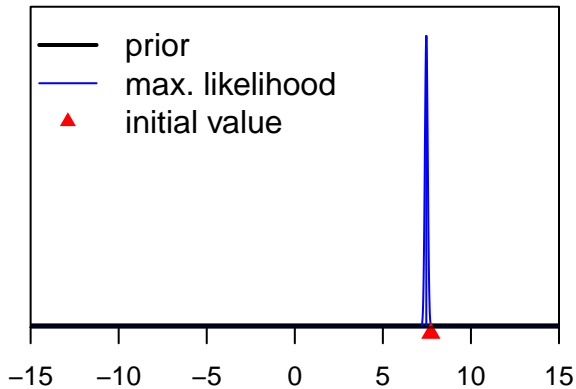


Size\_DbIN\_ascend\_se\_A2-OBJ(13)

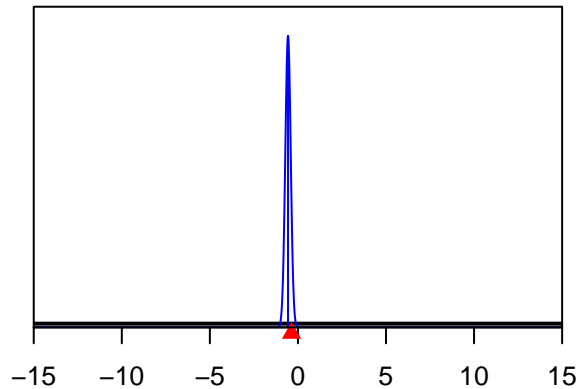


Parameter value

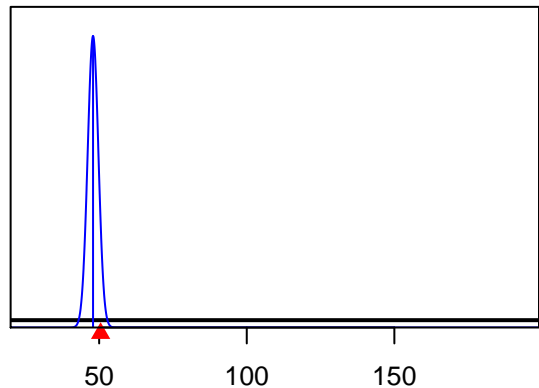
Size\_DbIN\_descend\_se\_A2-Obj(13)



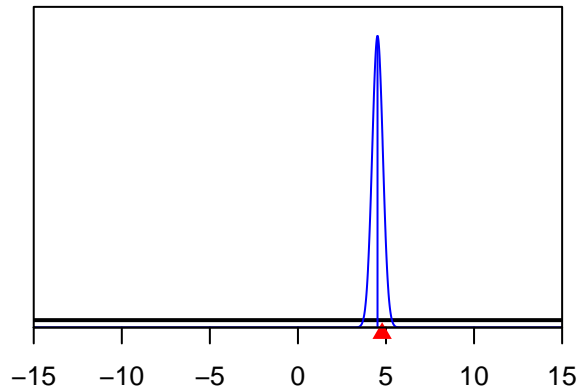
Size\_DbIN\_top\_logit\_A3-Obj(14)



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

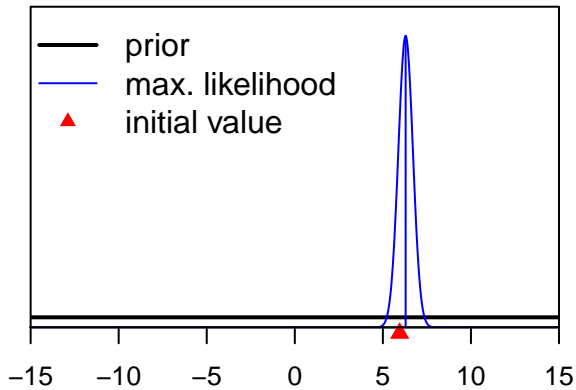


Size\_DbIN\_ascend\_se\_A3-Obj(14)

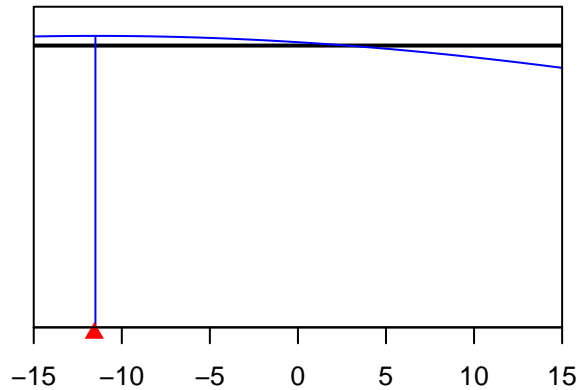


Parameter value

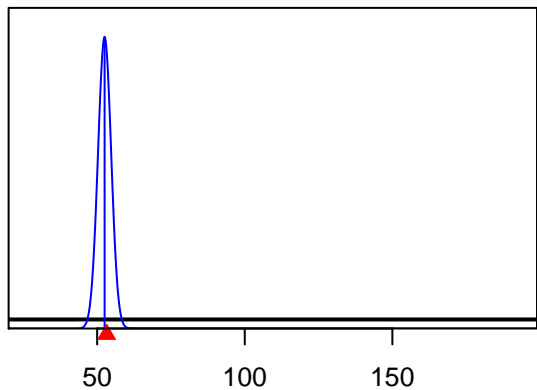
Size\_DbIN\_descend\_se\_A3-Obj(14)



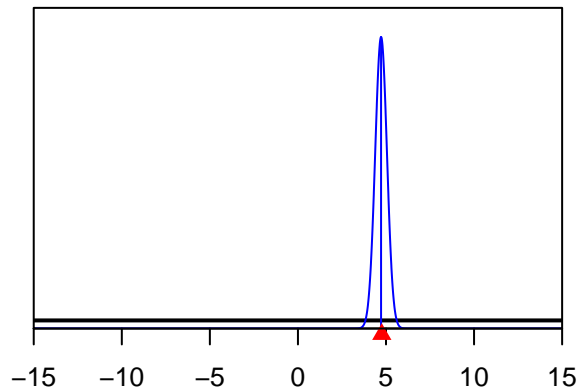
Size\_DbIN\_top\_logit\_A4-Obj(15)



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

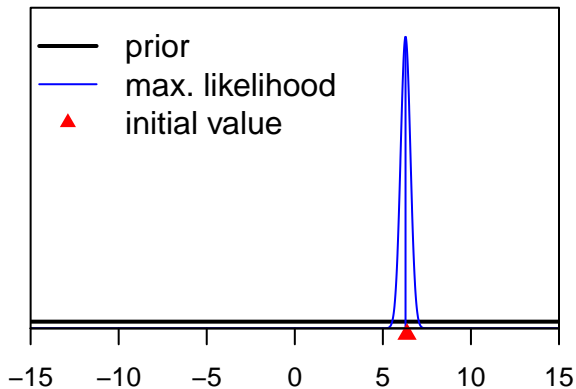


Size\_DbIN\_ascend\_se\_A4-Obj(15)

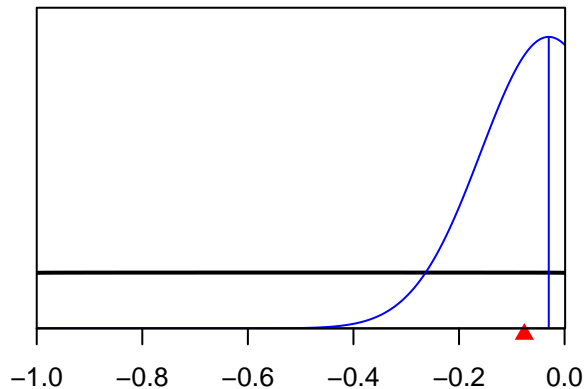


Parameter value

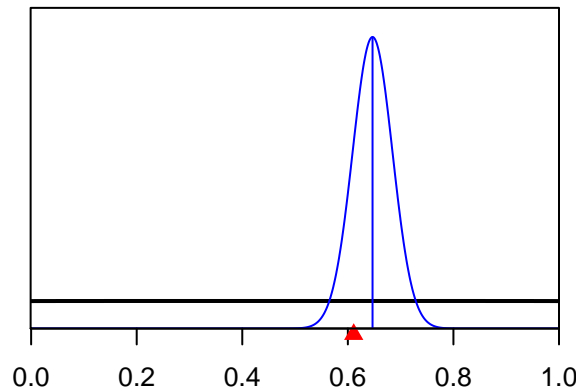
Size\_DblN\_descend\_se\_A4-Obj(15)



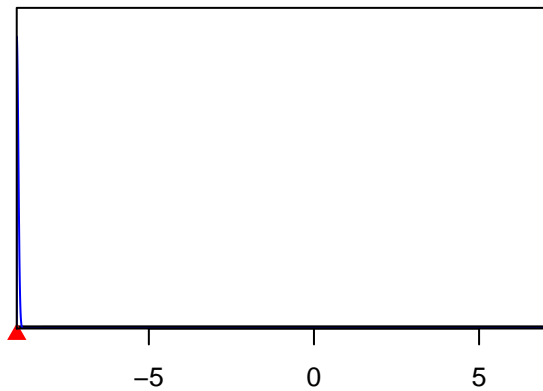
SizeSpline\_GradHi\_A5-Obj(16)



SizeSpline\_GradLo\_A5-Obj(16)

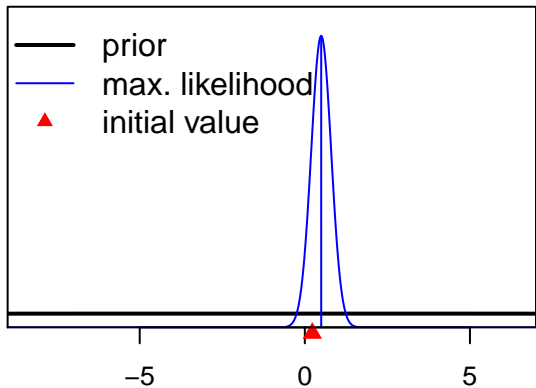


SizeSpline\_Val\_1\_A5-Obj(16)

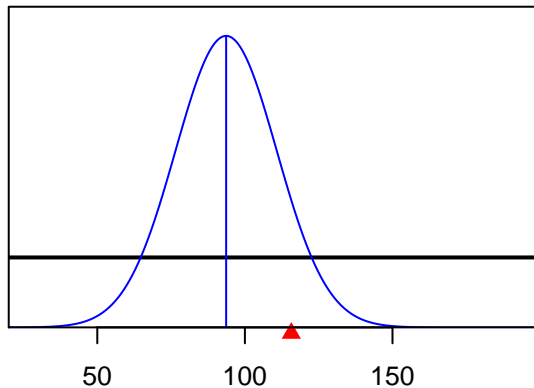


Parameter value

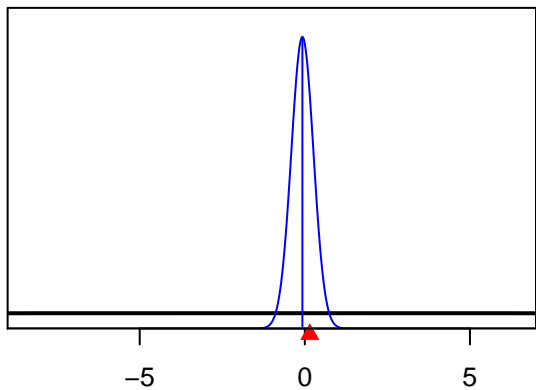
SizeSpline\_Val\_2\_A5-OBJ(16)



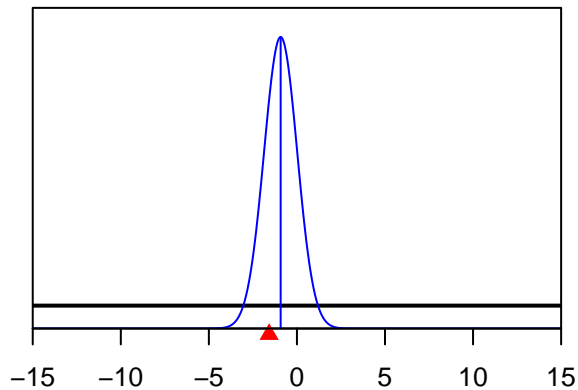
Size\_DblN\_peak\_A6-OBJ(17)



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



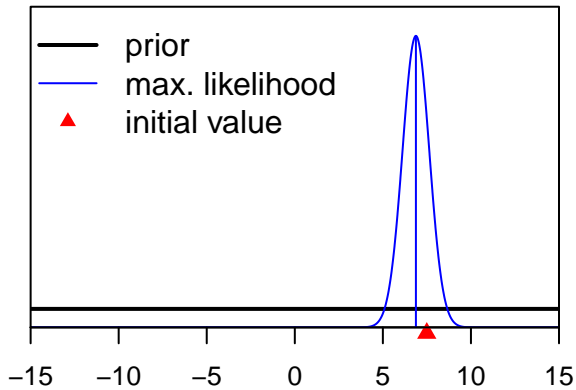
Size\_DblN\_top\_logit\_A6-OBJ(17)



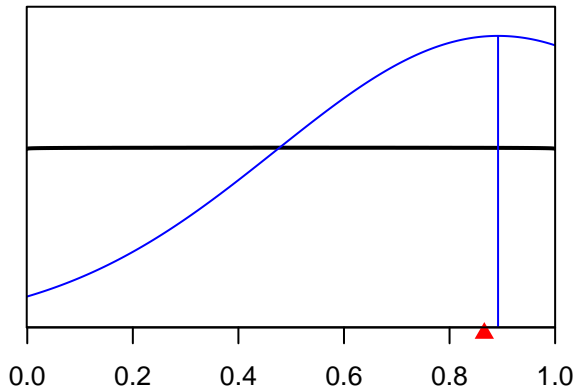
Parameter value



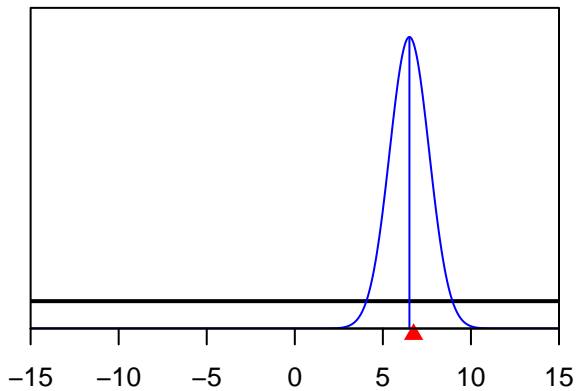
Size\_DbIN\_ascend\_se\_A6-OBJ(17)



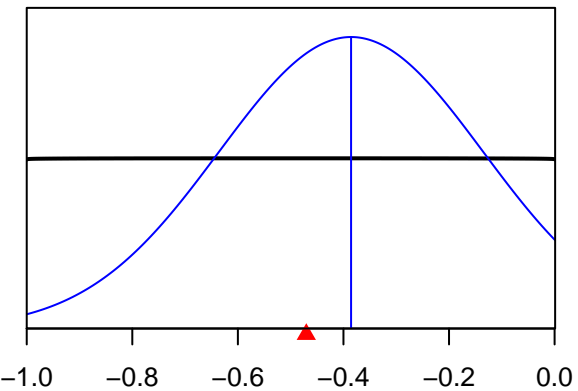
SizeSpline\_GradLo\_A2-NOADEL(19)



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

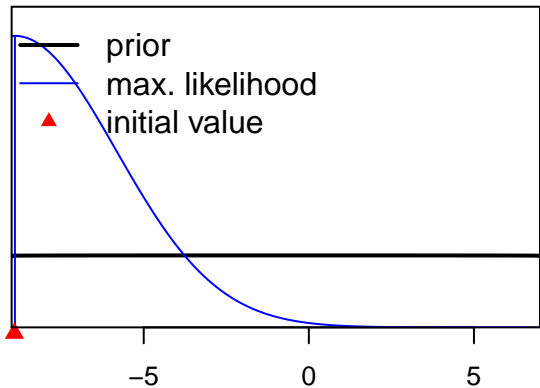


SizeSpline\_GradHi\_A2-NOADEL(19)

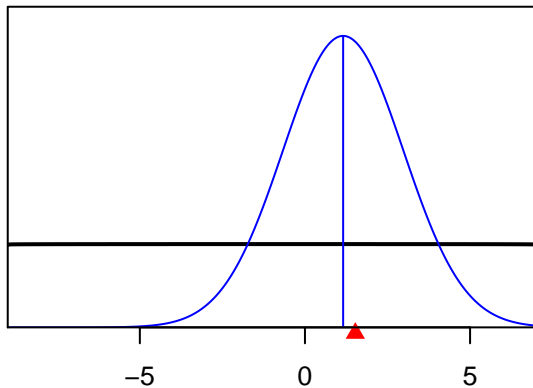


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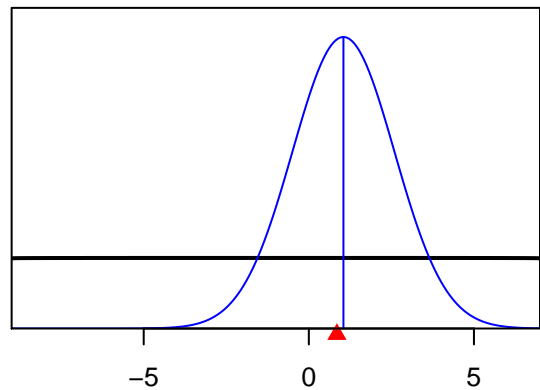
SizeSpline\_Val\_1\_A2-NOADEL(19)



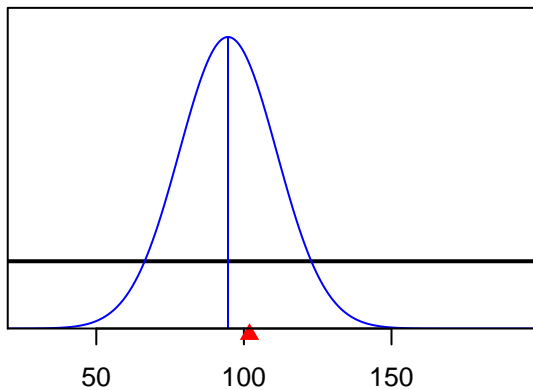
SizeSpline\_Val\_4\_A2-NOADEL(19)



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



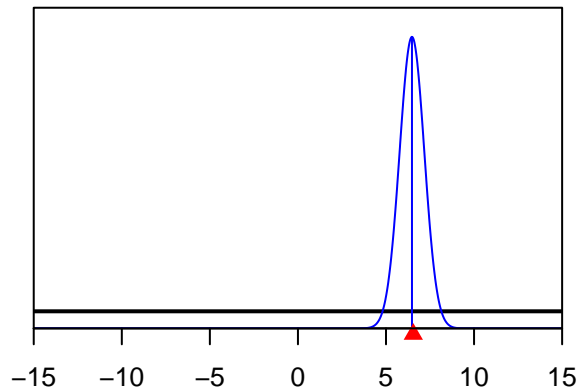
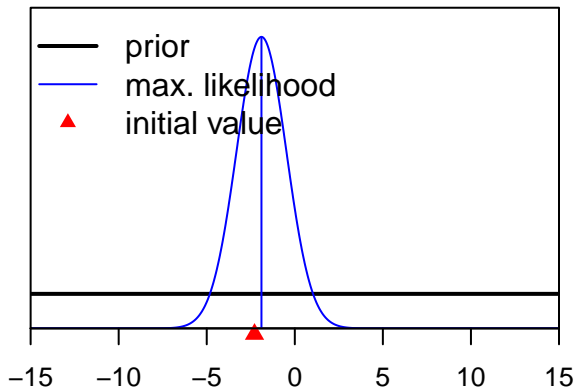
Size\_DblN\_peak\_A3-NOADEL(20)



Parameter value

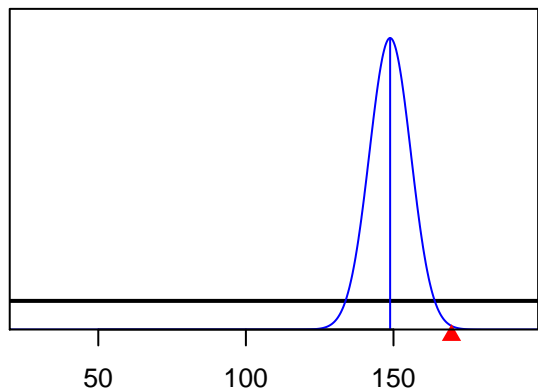
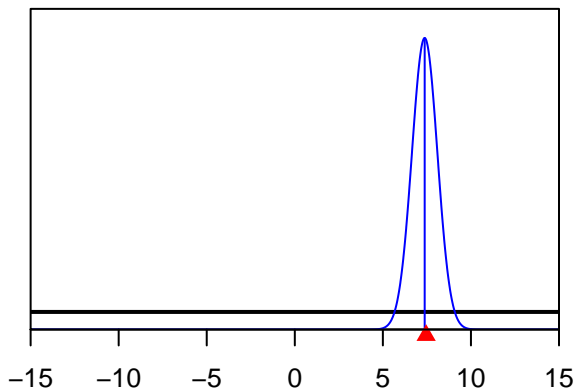
Size\_DbIN\_top\_logit\_A3-NOADEL(20)

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



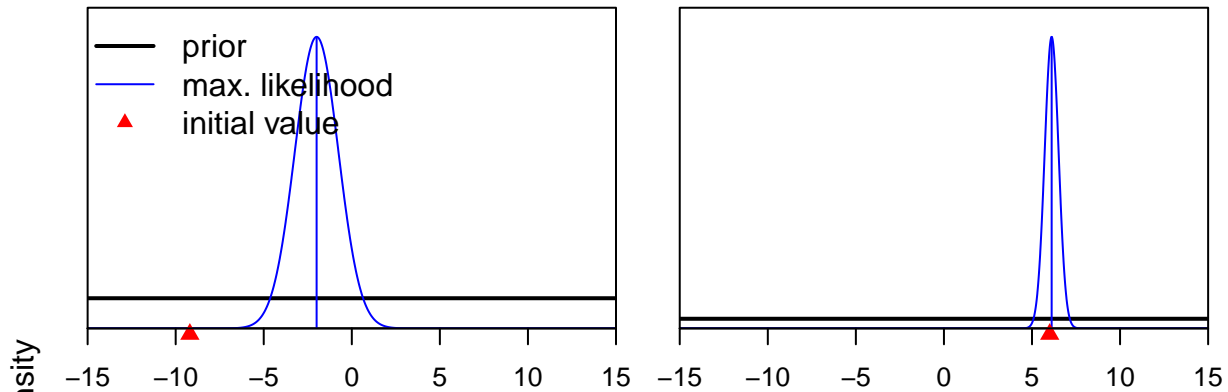
Size\_DbIN\_ascend\_se\_A3-NOADEL(20)

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

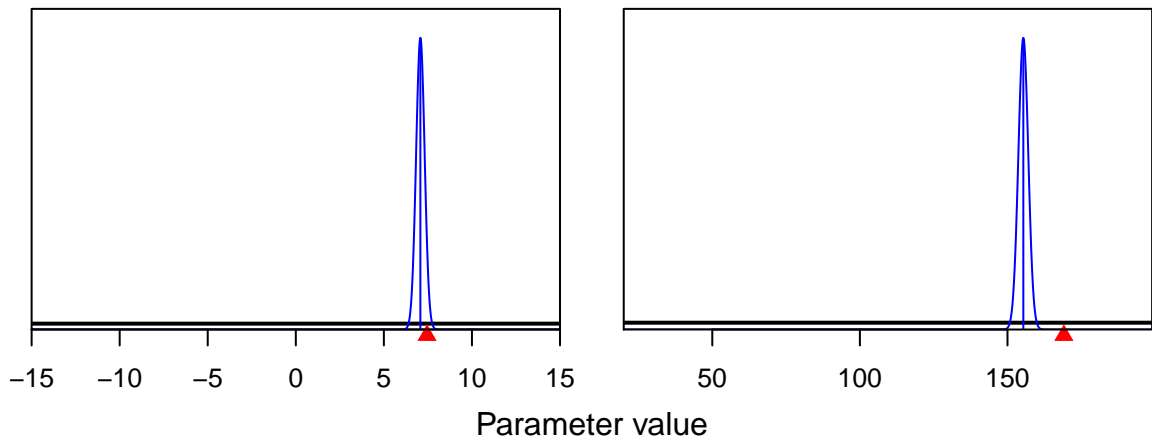


Parameter value

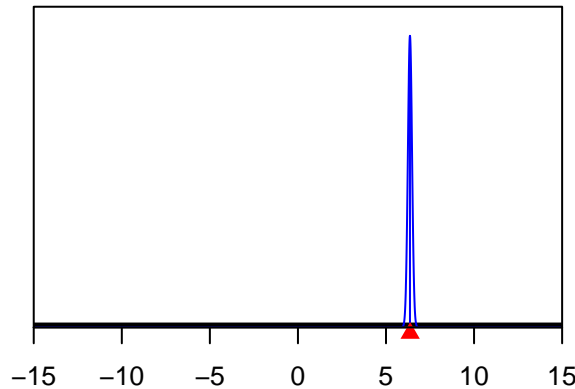
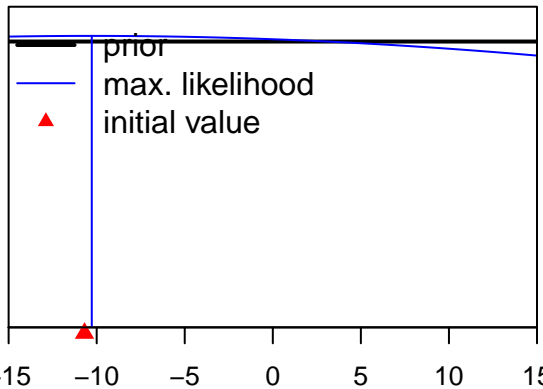
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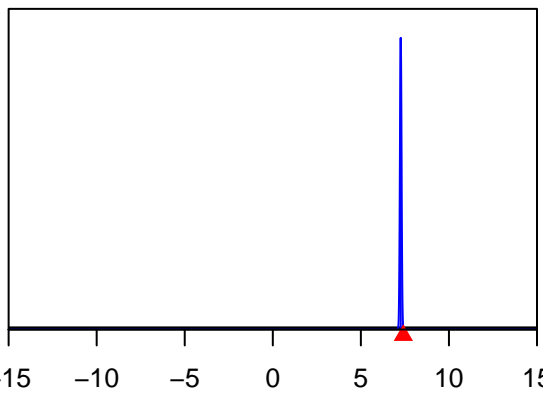
Size\_DbIN\_ascend\_se\_EPO-LL-survey-early(24) Size\_DbIN\_peak\_EPO-LL-survey-late(25)



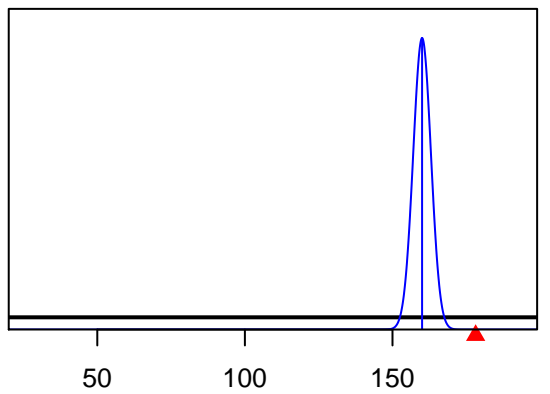
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size\_DbIN\_ascend\_se\_EPO-LL-survey-late(25)

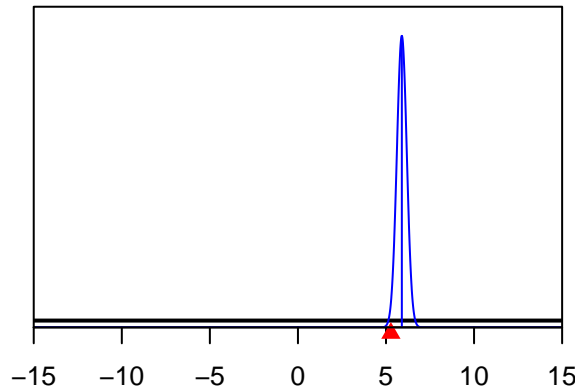
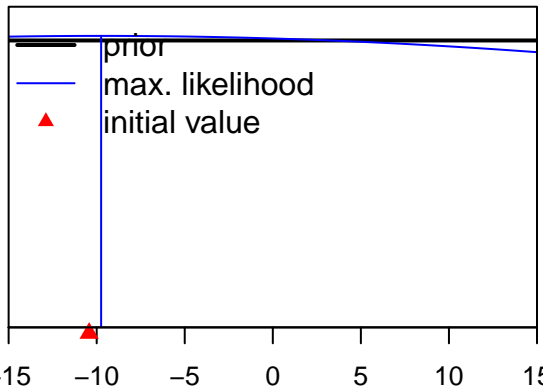


Size\_DbIN\_peak\_A2-LL-n(2)\_BLK2repl\_17



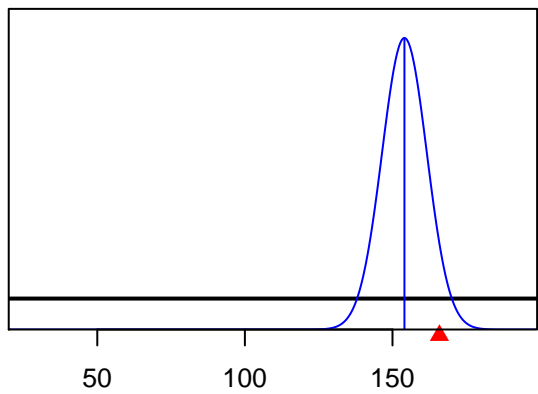
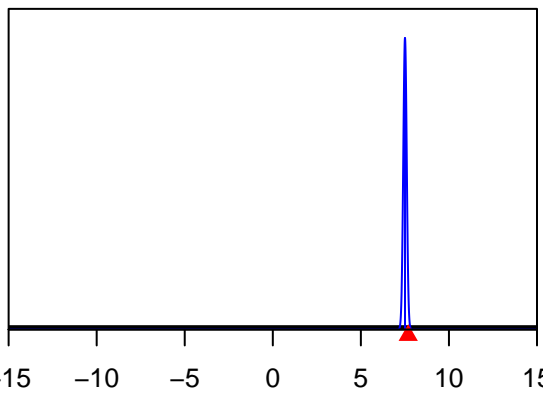
Parameter value

Size\_DbIN\_top\_logit\_A2-LL-n(2)\_BLK2repl\_17ze\_DbIN\_descend\_se\_A2-LL-n(2)\_BLK2repl\_1



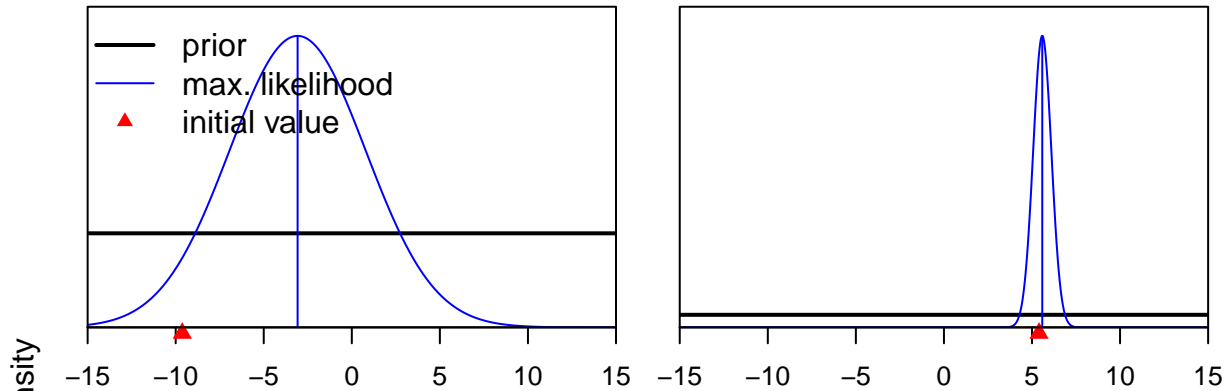
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Size\_DbIN\_peak\_A3-LL-n(3)\_BLK2repl\_17

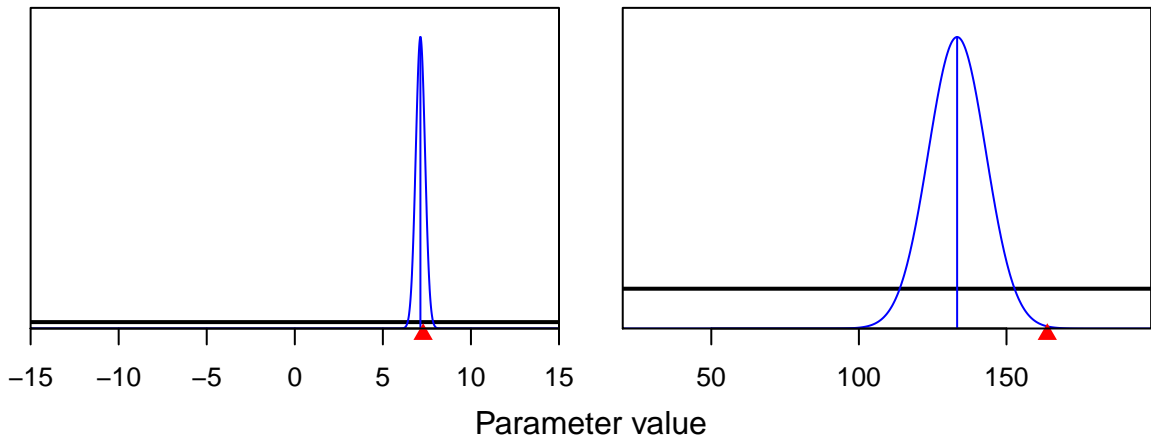


Parameter value

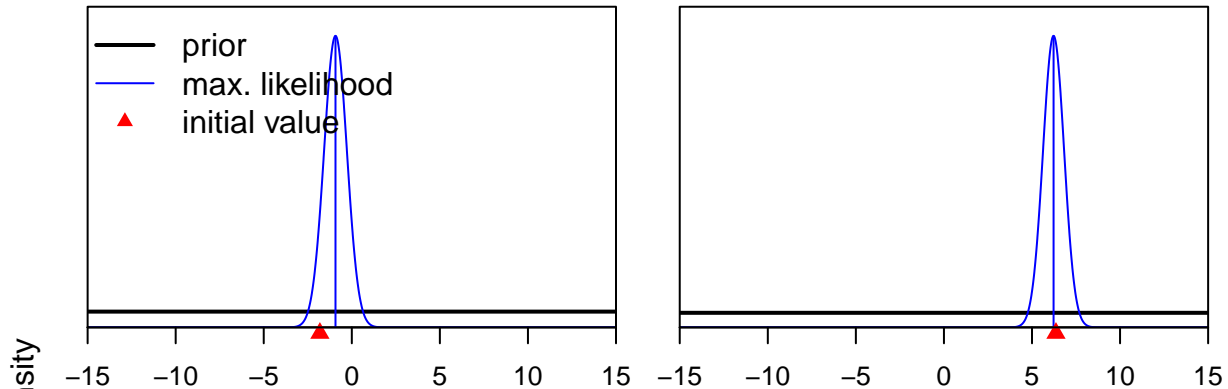
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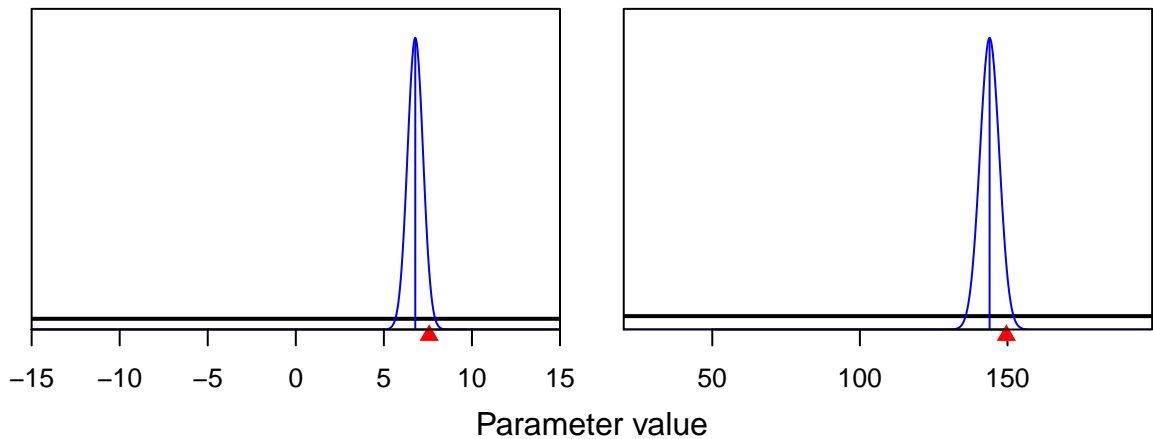
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Size\_DbIN\_top\_logit\_A4-LL-n(4)\_BLK2repl\_17ze\_DbIN\_descend\_se\_A4-LL-n(4)\_BLK2repl\_1

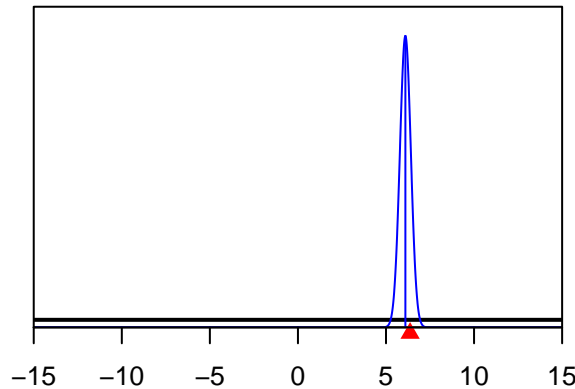
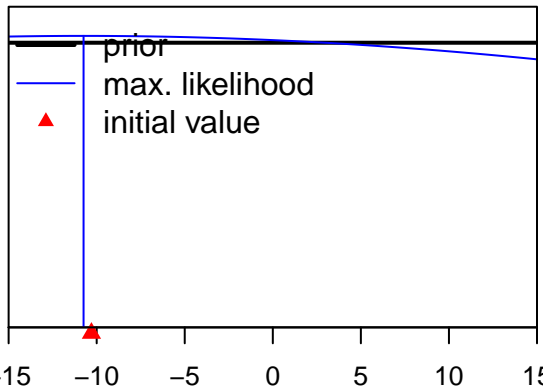


ize\_DbIN\_ascend\_se\_A4-LL-n(4)\_BLK2repl\_1 Size\_DbIN\_peak\_A5-LL-n(5)\_BLK2repl\_17



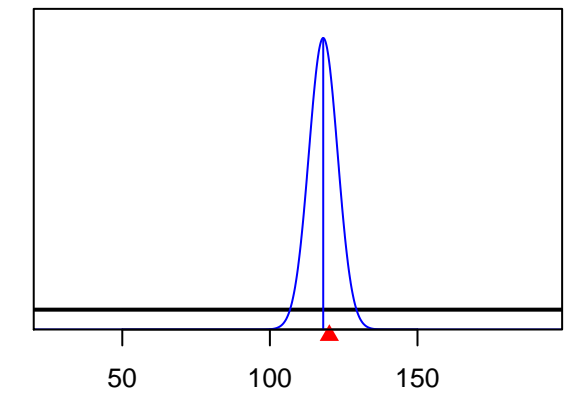
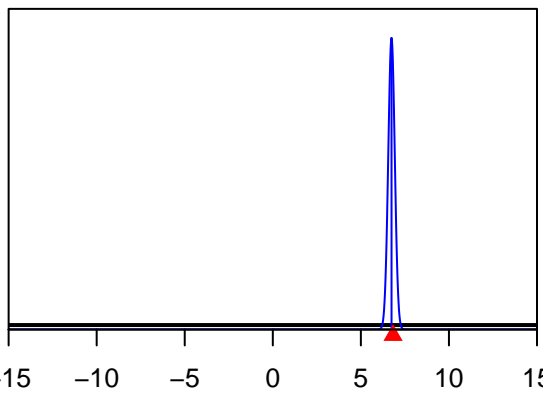


Size\_DbIN\_top\_logit\_A5-LL-n(5)\_BLK2repl\_17ze\_DbIN\_descend\_se\_A5-LL-n(5)\_BLK2repl\_1



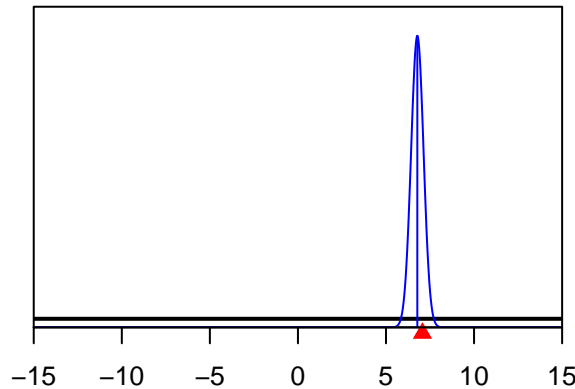
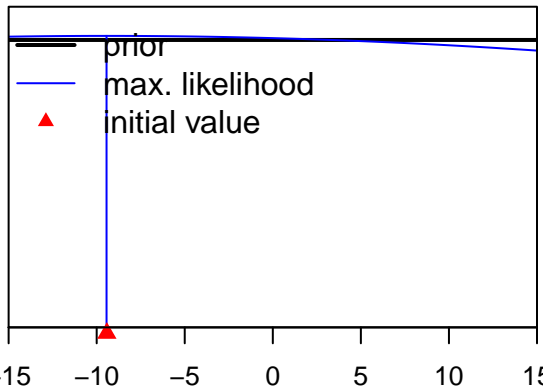
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Size\_DbIN\_peak\_A6-LL-n(6)\_BLK2repl\_17

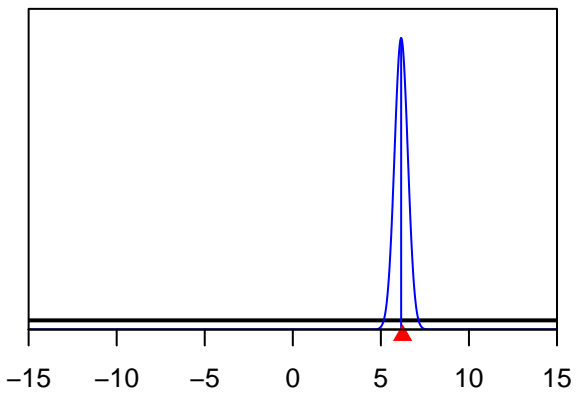


Parameter value

Size\_DbIN\_top\_logit\_A6-LL-n(6)\_BLK2repl\_17ze\_DbIN\_descend\_se\_A6-LL-n(6)\_BLK2repl\_1



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



Parameter value