

goa\_cod\_1

Model years: 1977-2022

Projection years: none

Number of fleets: 3

Fleet Age Comp Models: Multinomial, Multinomial, Multinomial

Number of indices: 2

Index Age Comp Models: Multinomial, Multinomial

Recruitment model: Random about mean

Environmental covariate 1: env1 modeled as AR1. Effects on q for index 2 estimated.

Number of Selectivity blocks: 5

Selectivity Block Types: NA, NA, NA, NA, NA

Fleet 1 Selectivity Blocks: 1

Fleet 2 Selectivity Blocks: 2

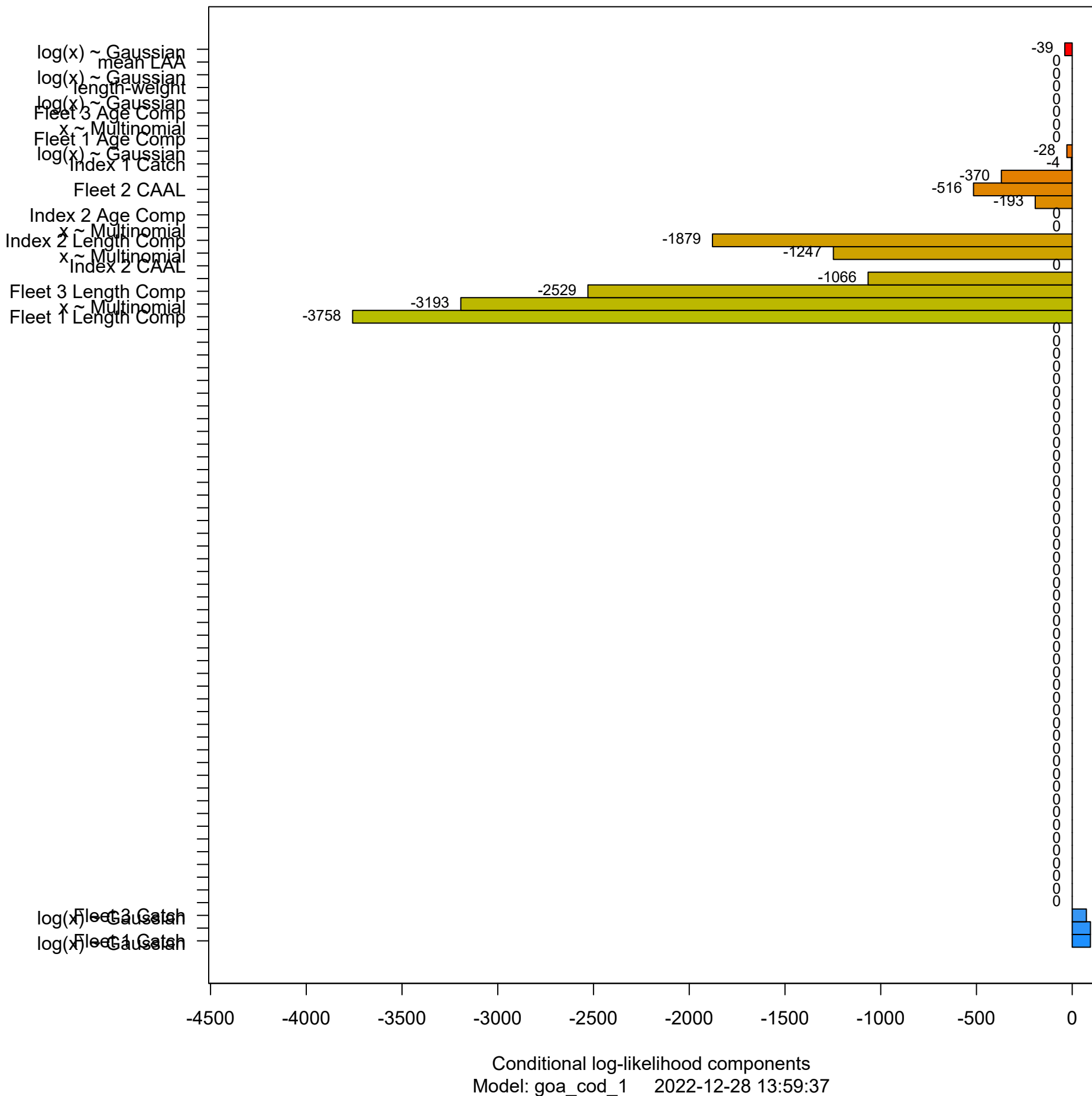
Fleet 3 Selectivity Blocks: 3

Index 1 Selectivity Blocks: 4

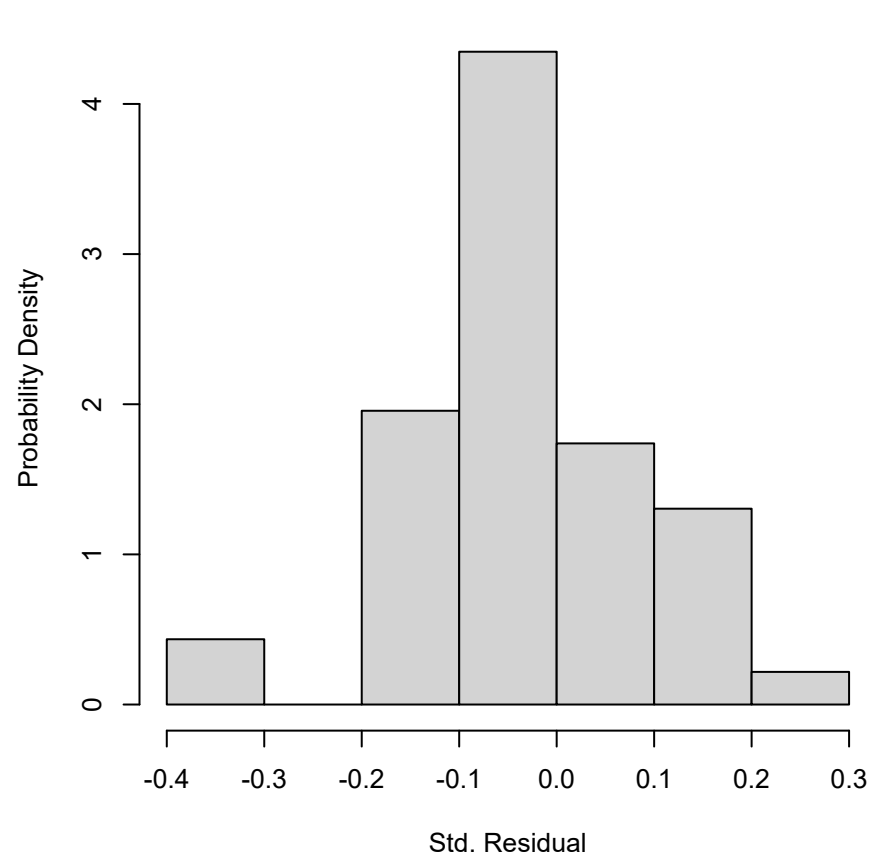
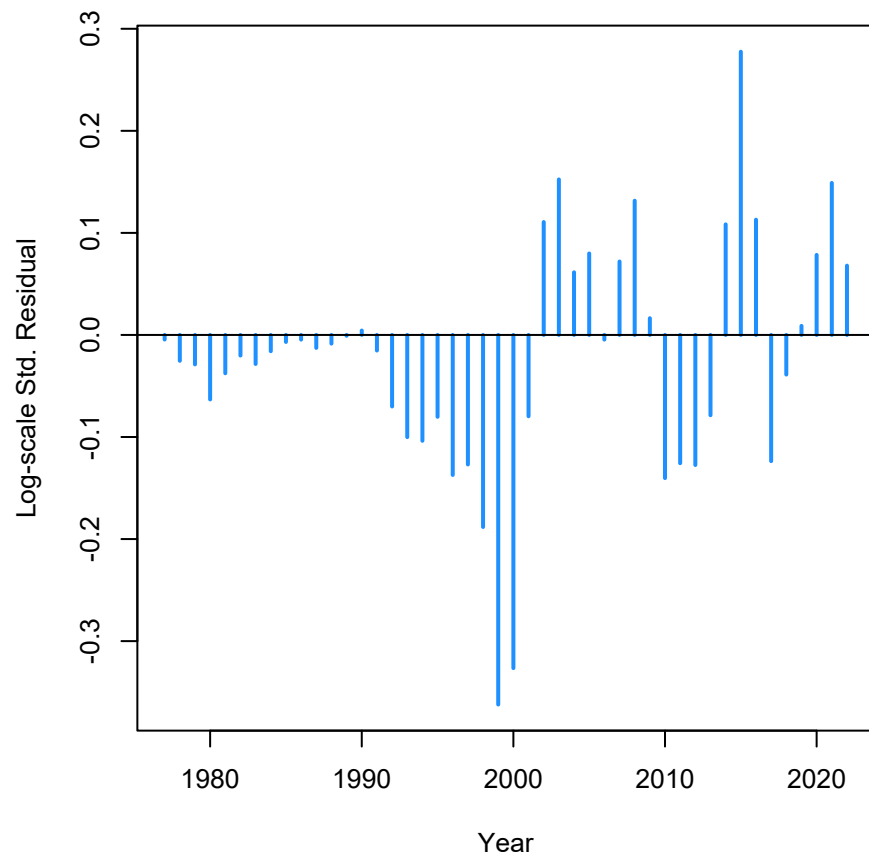
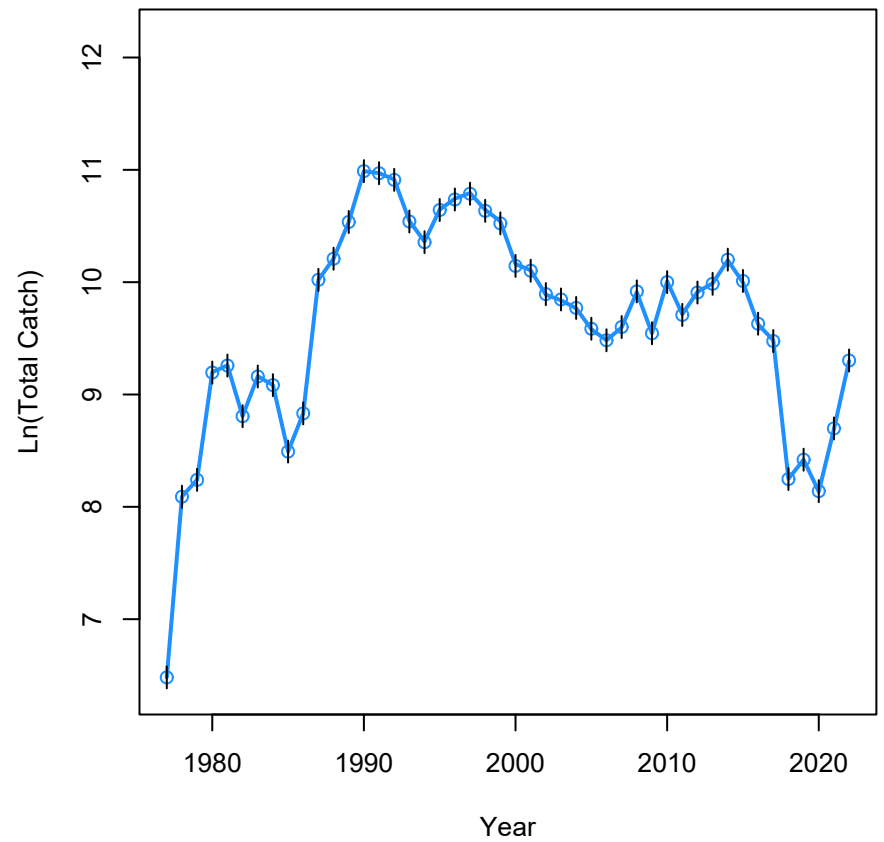
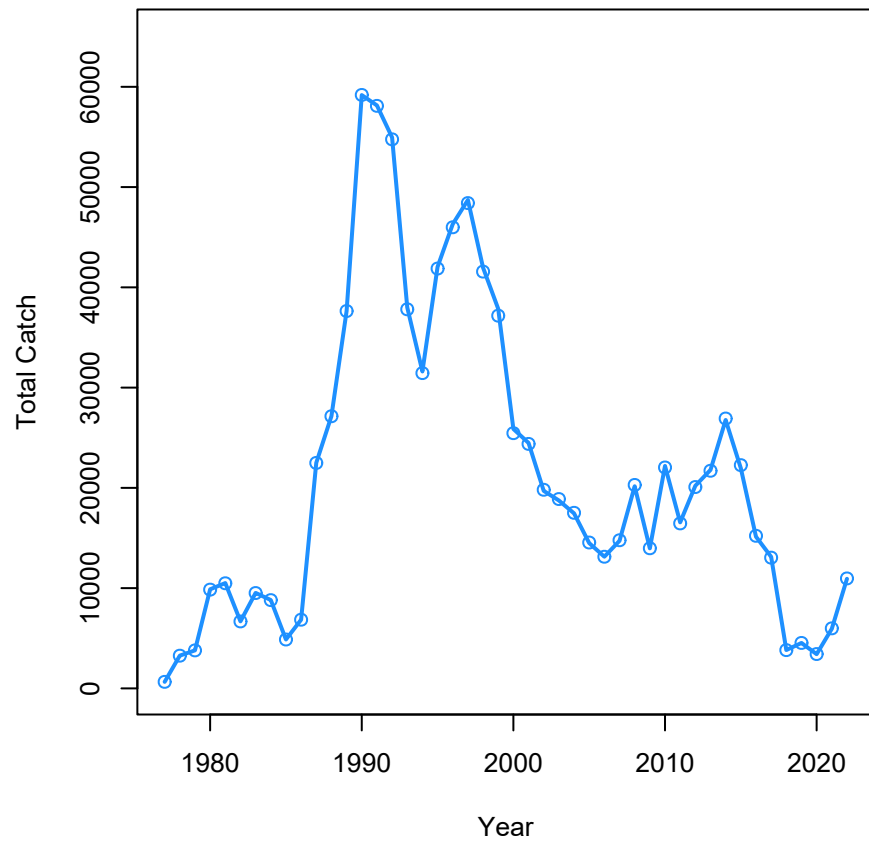
Index 2 Selectivity Blocks: 5

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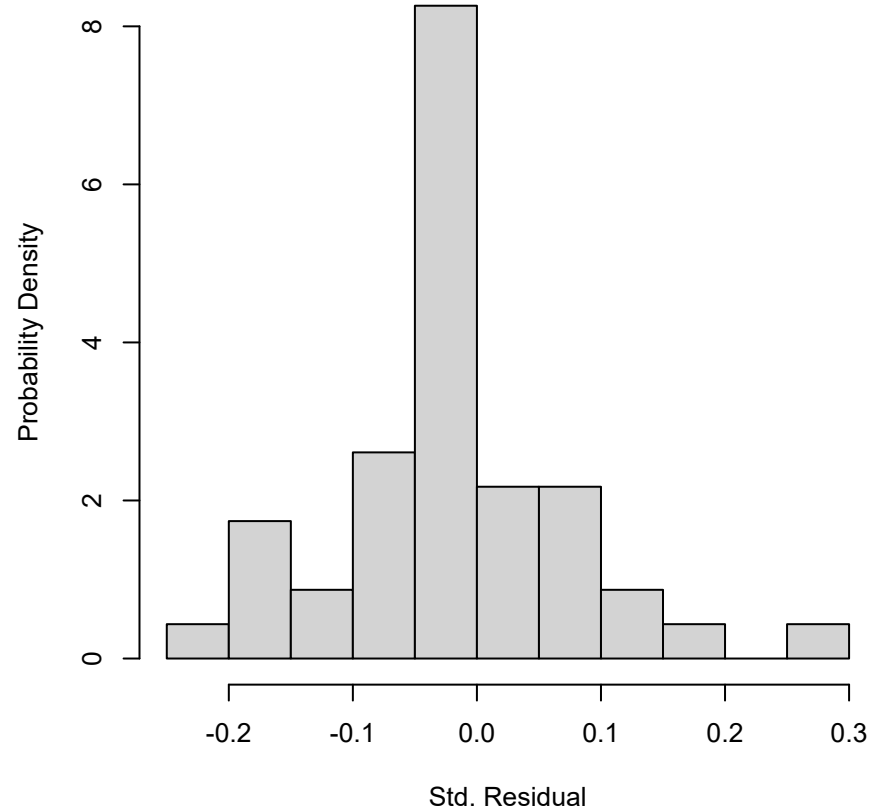
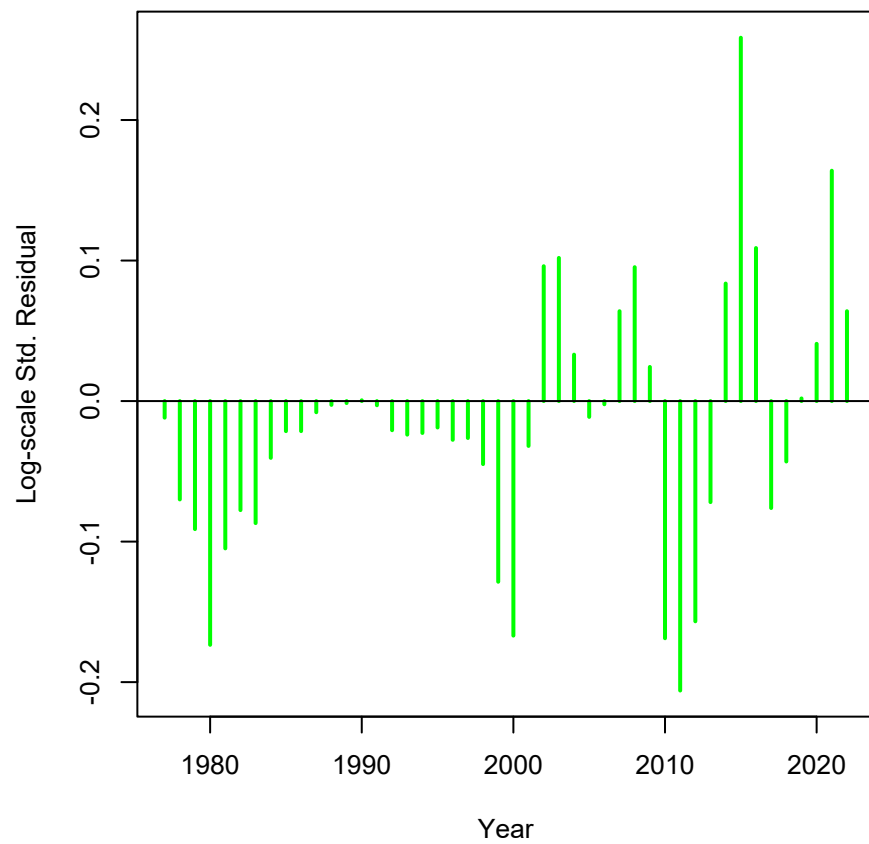
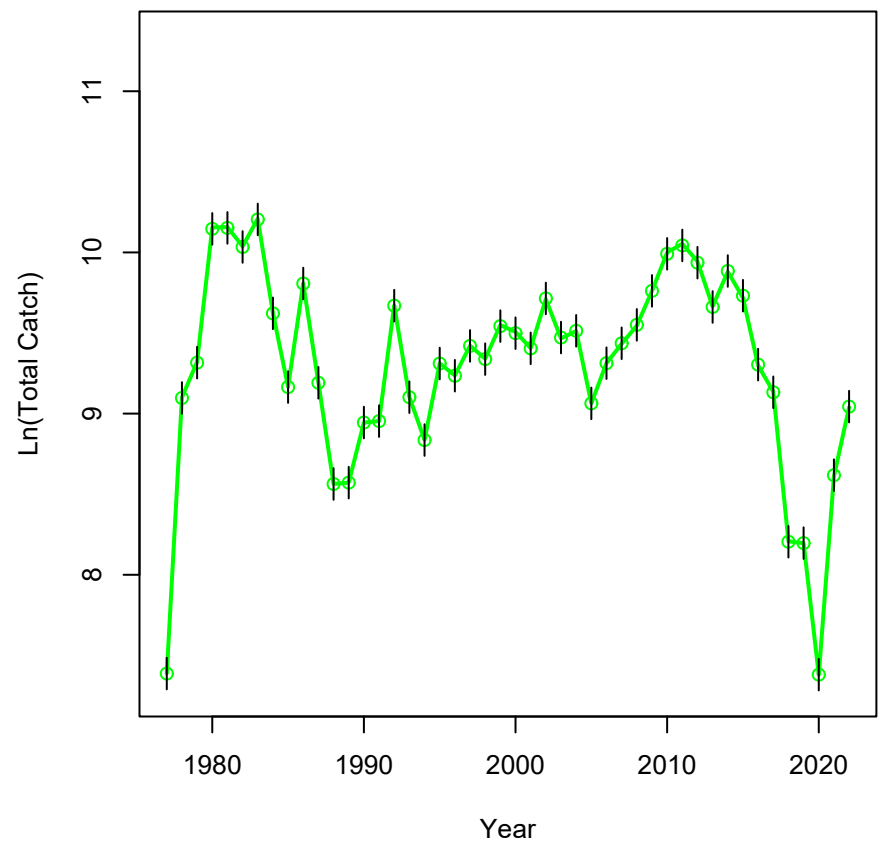
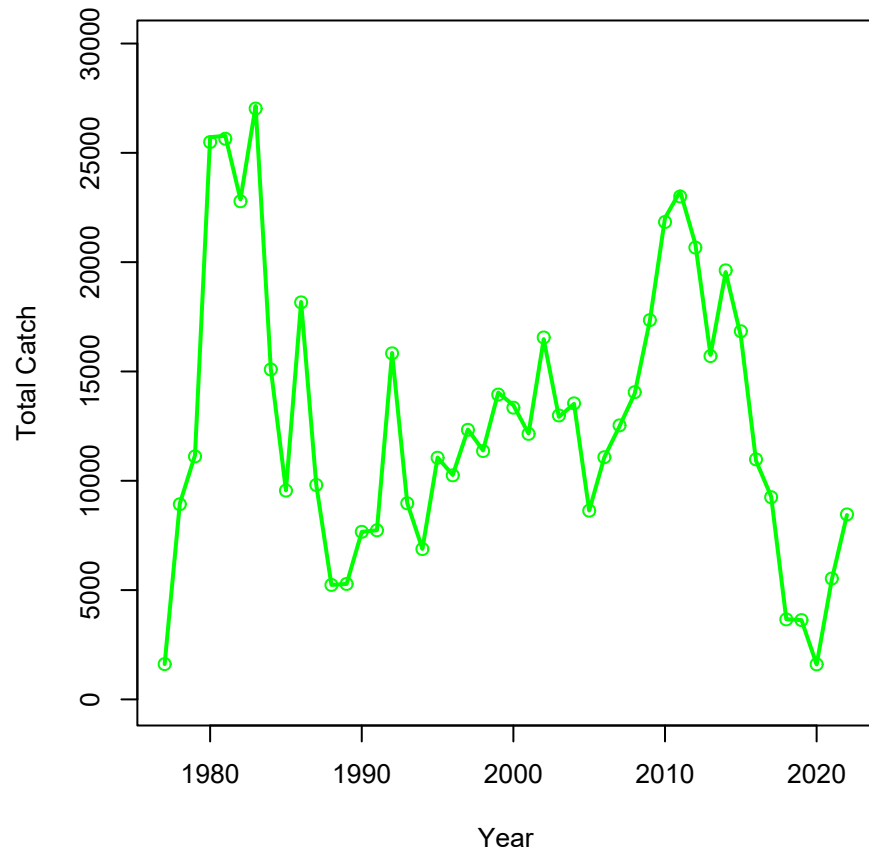
Run directory: C:/Users/moroncog/Documents/GitHub/AKWHAM



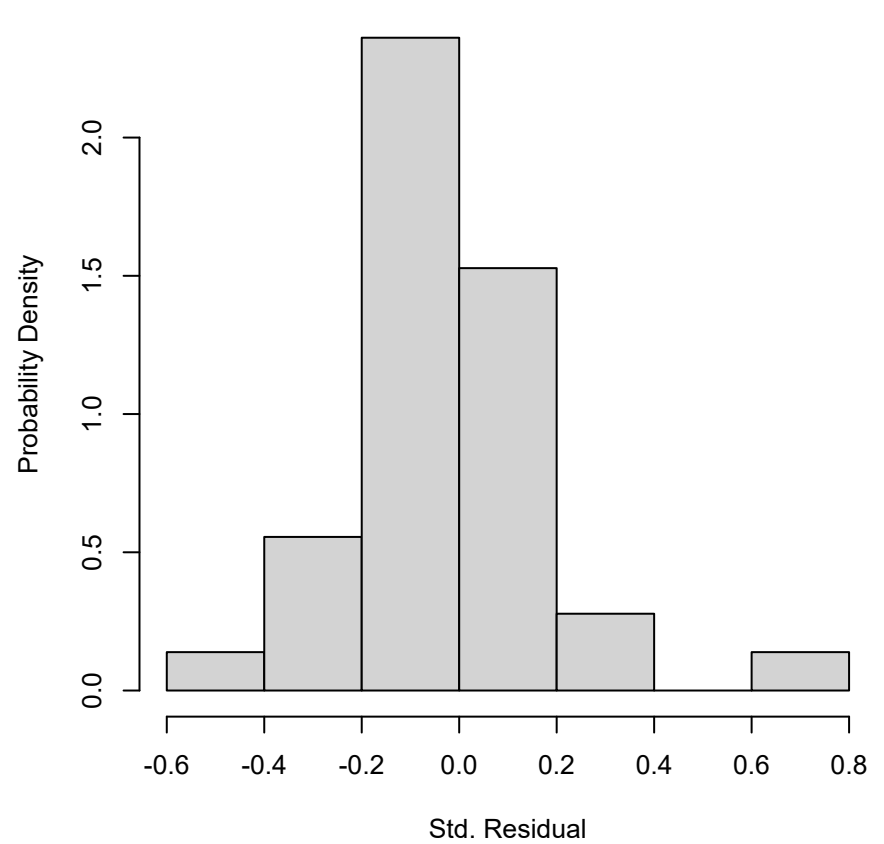
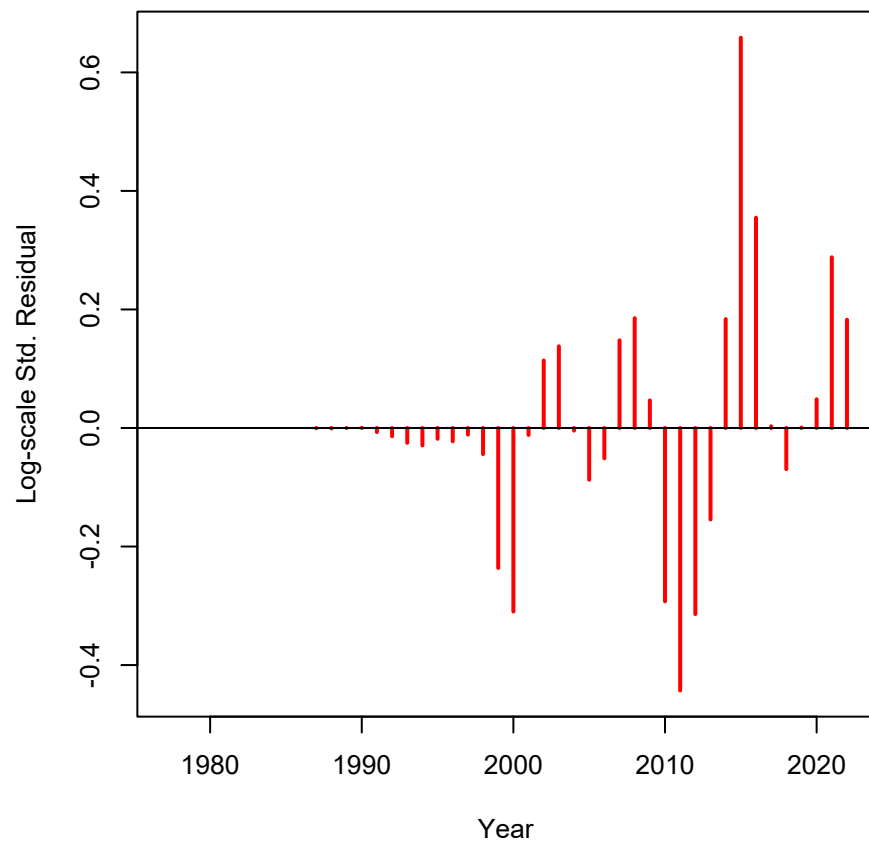
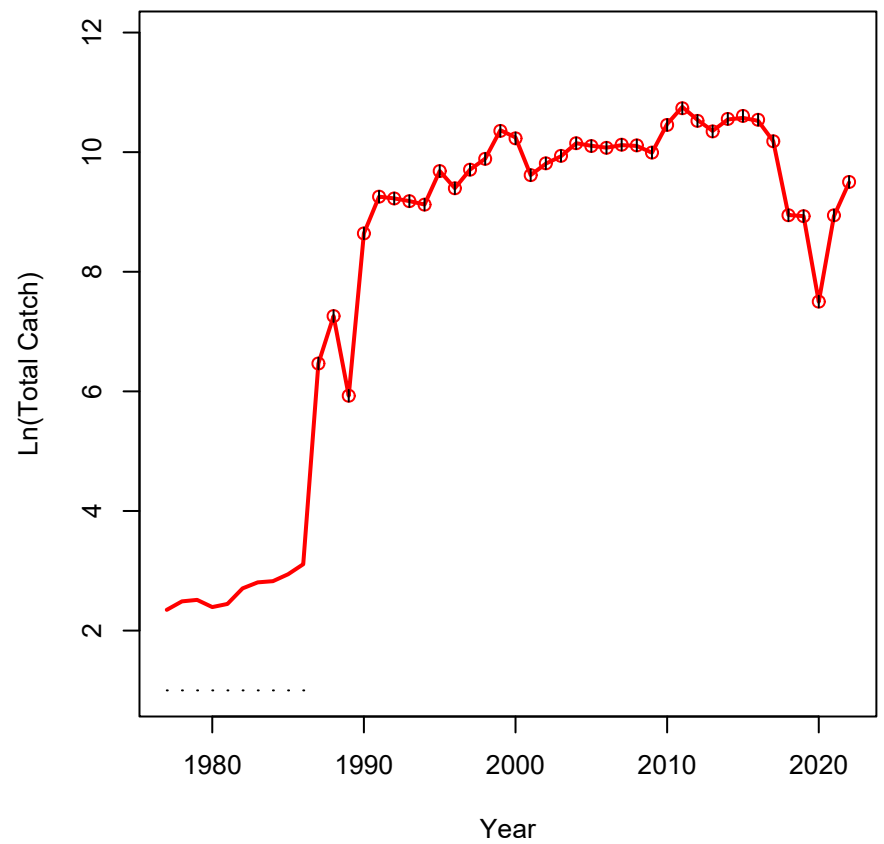
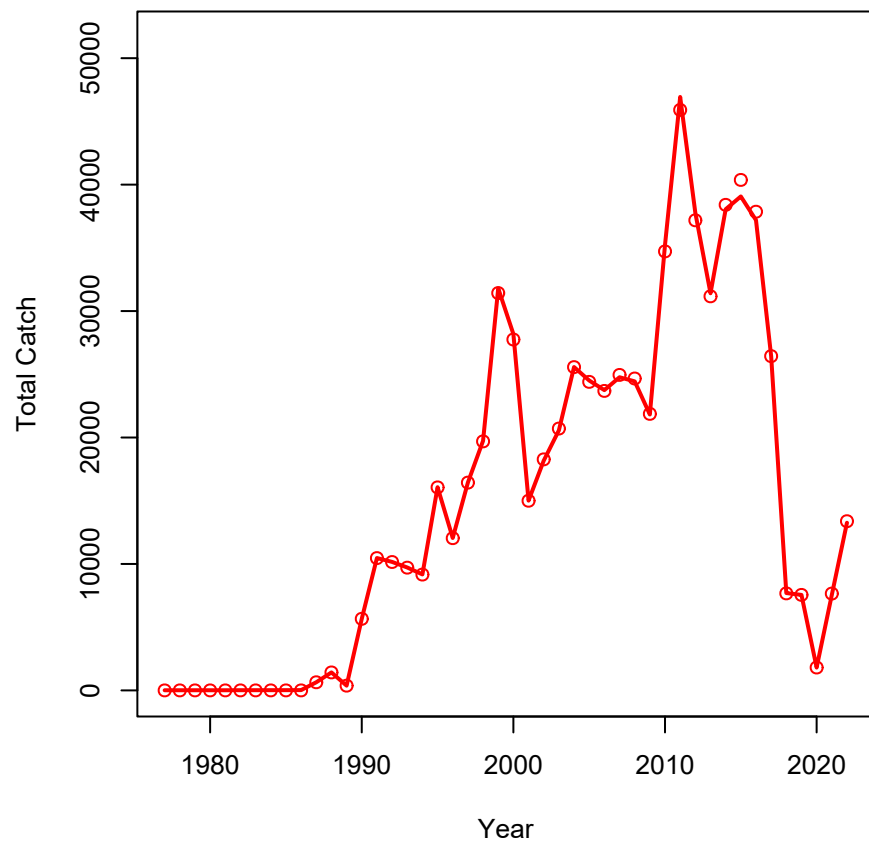
**Fleet 1 Catch**



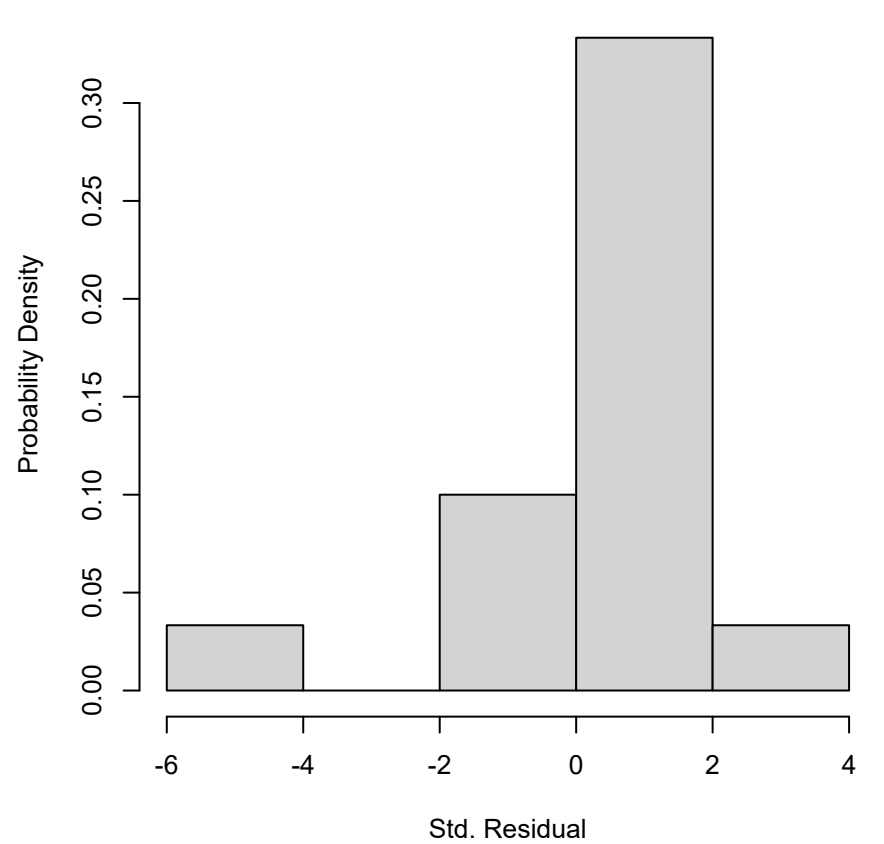
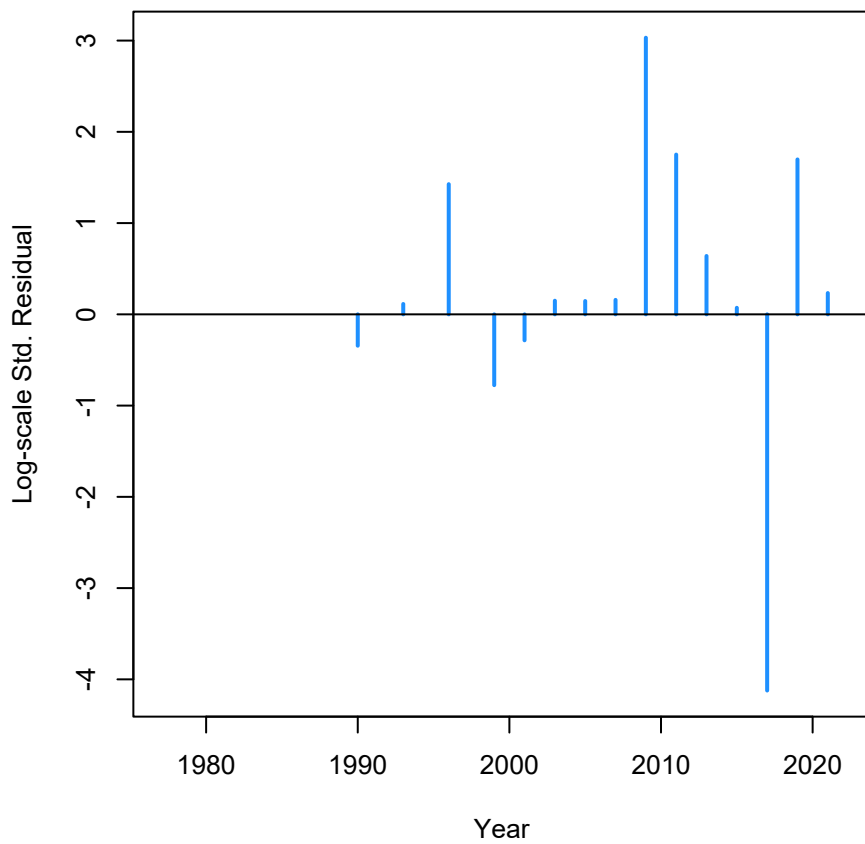
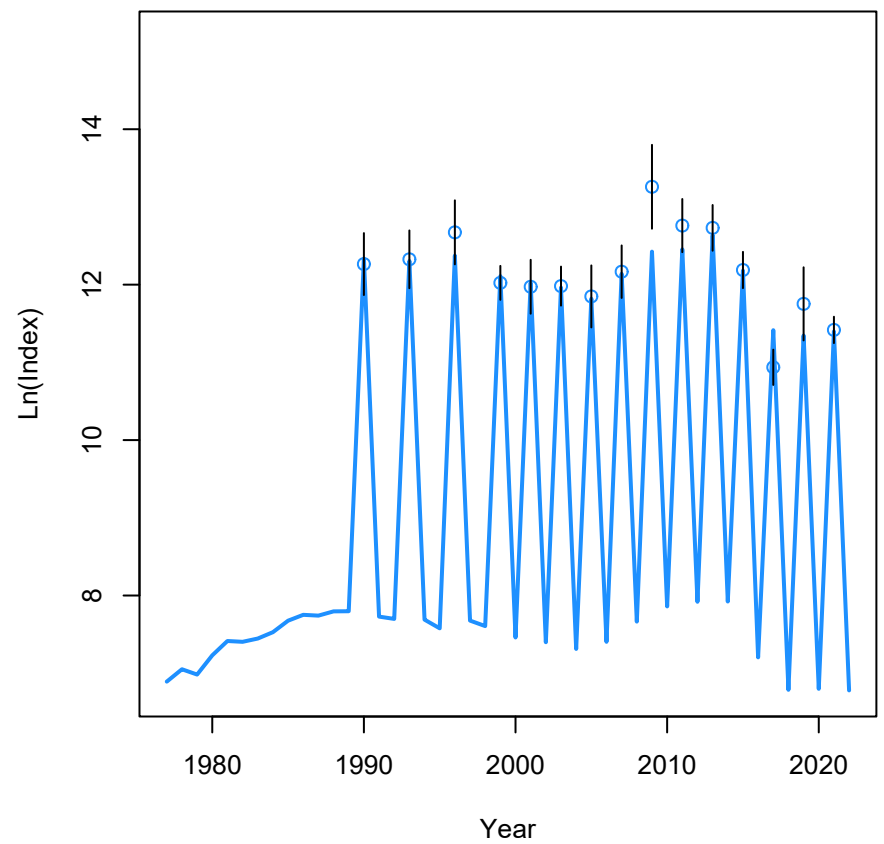
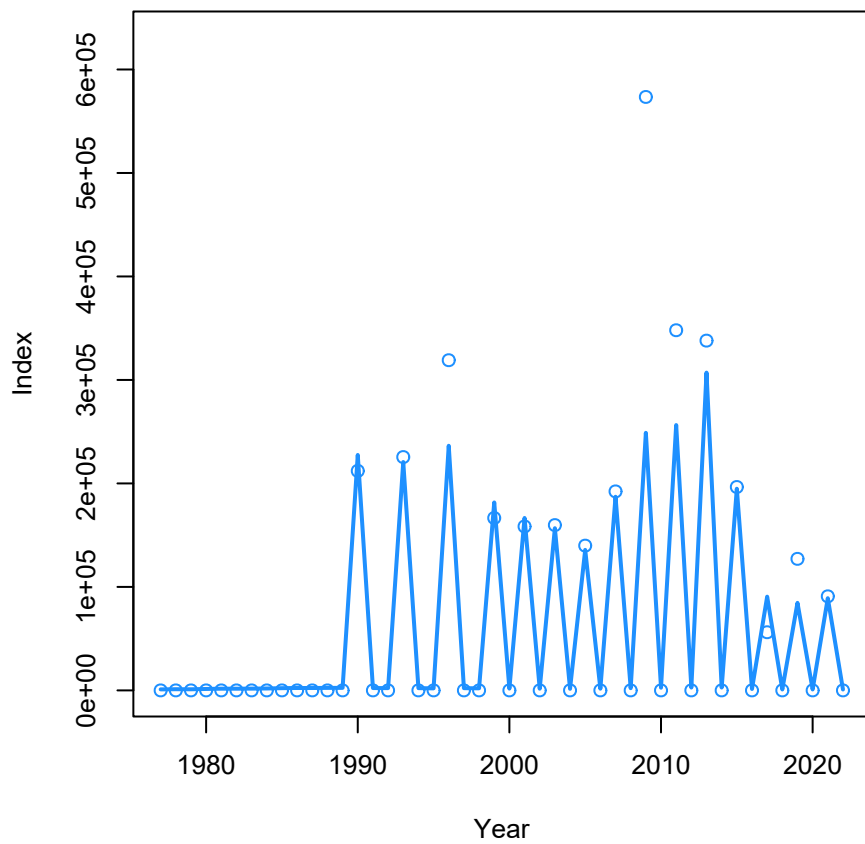
**Fleet 2 Catch**



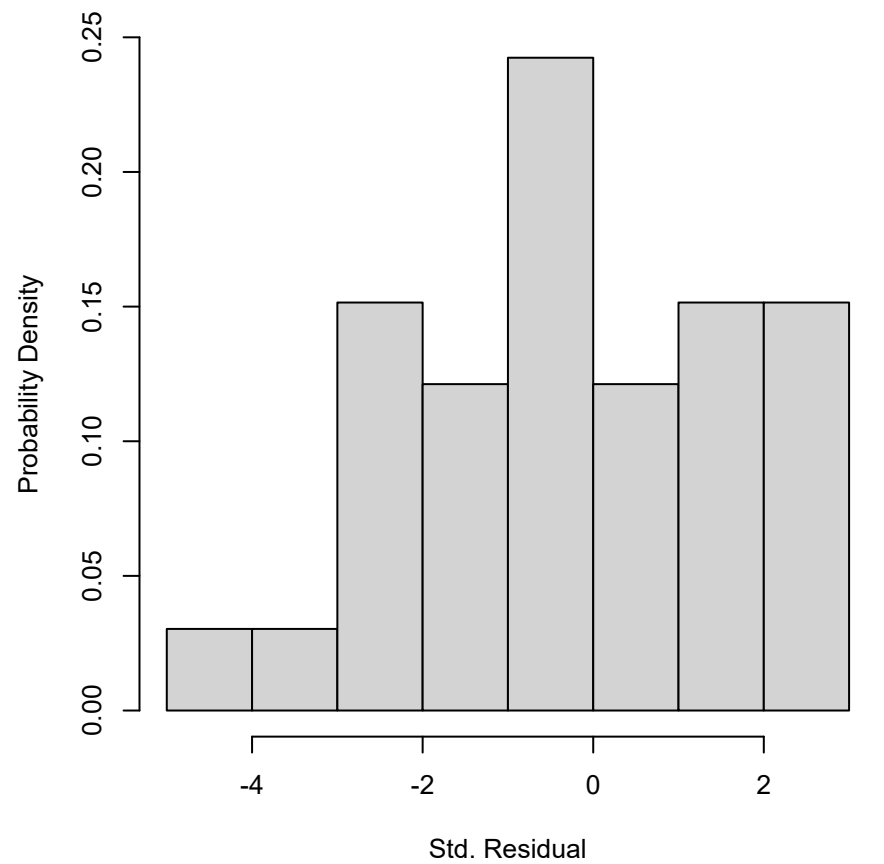
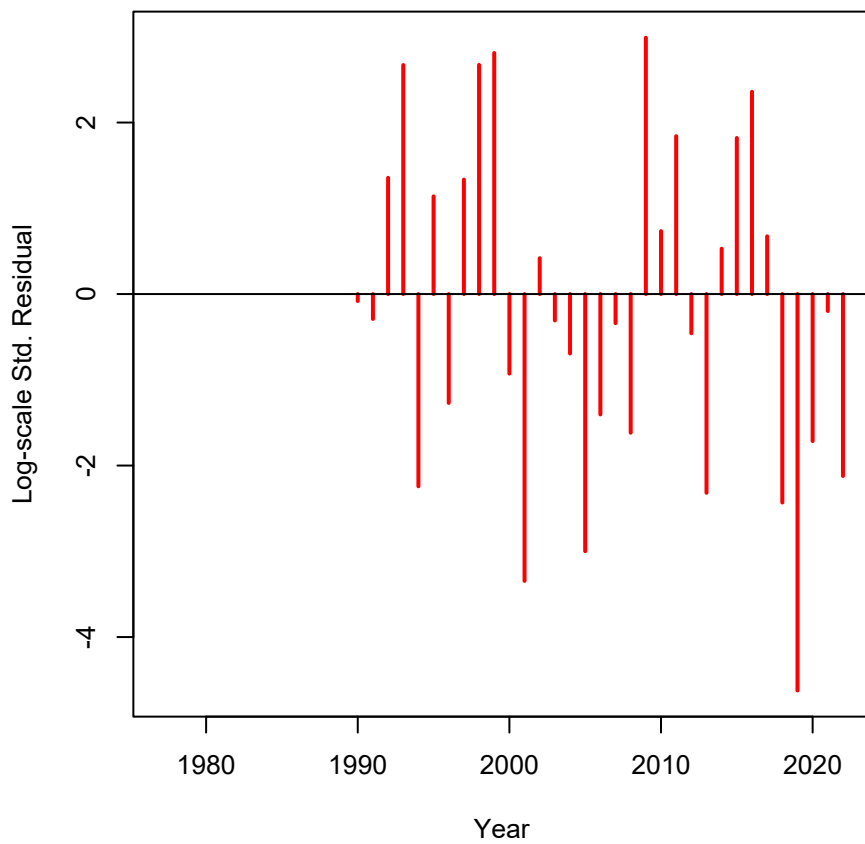
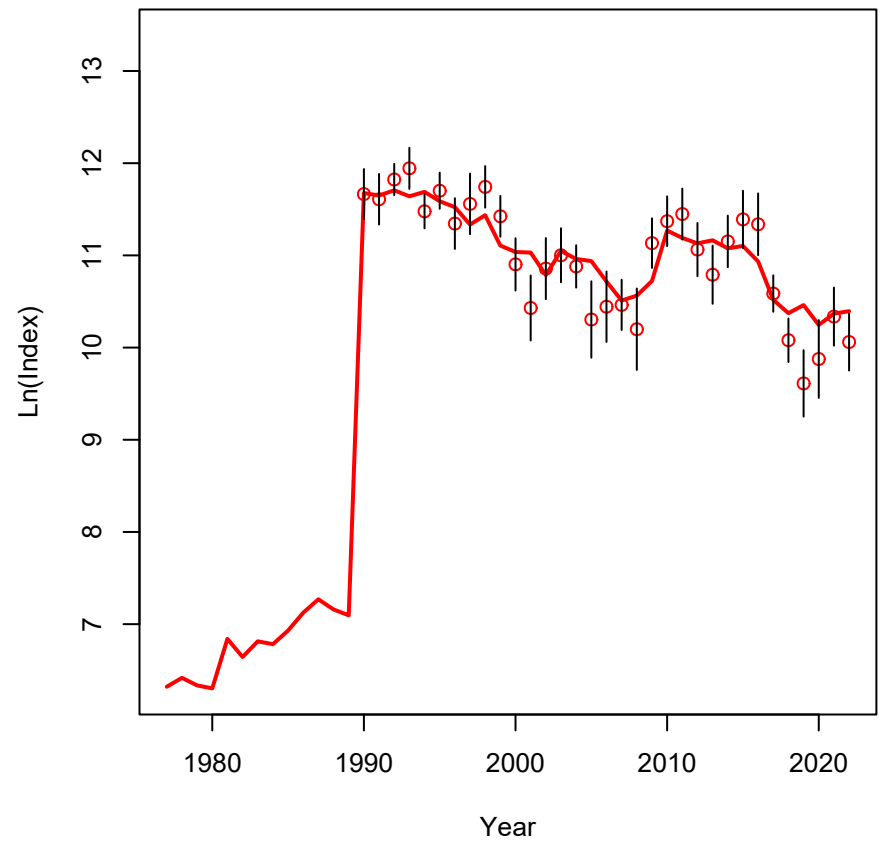
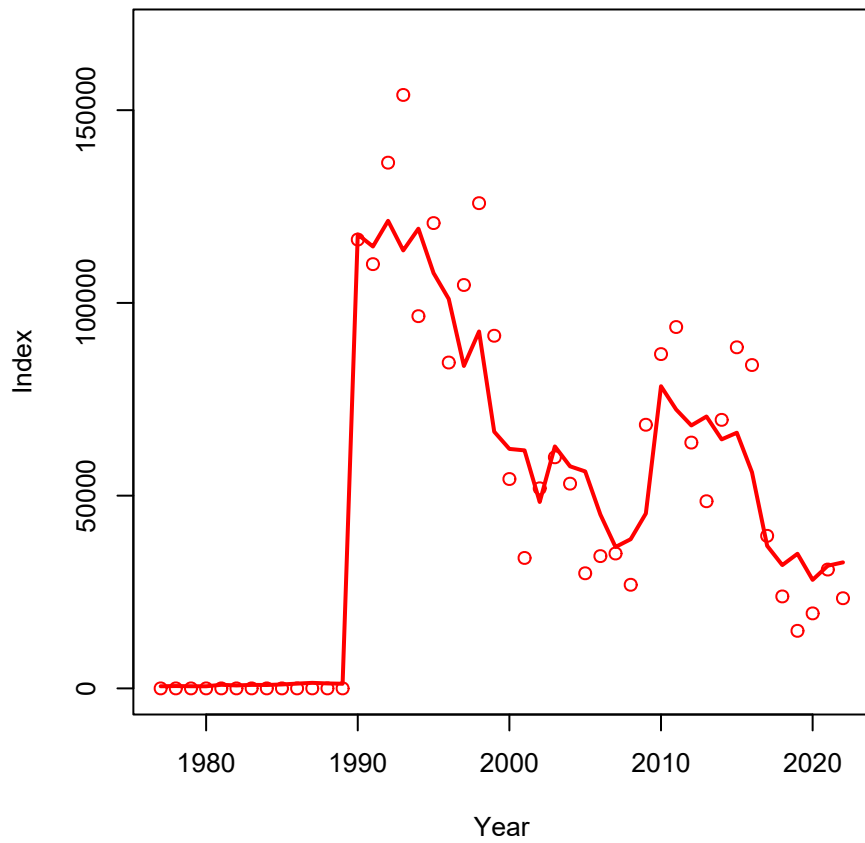
**Fleet 3 Catch**



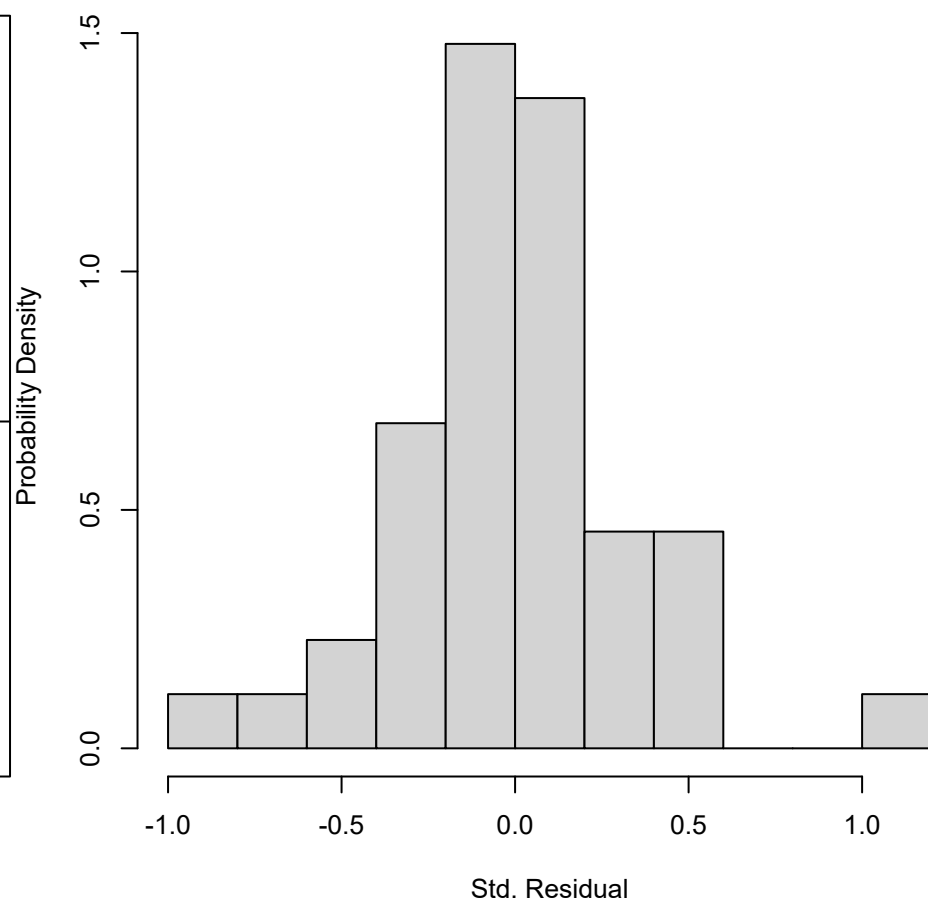
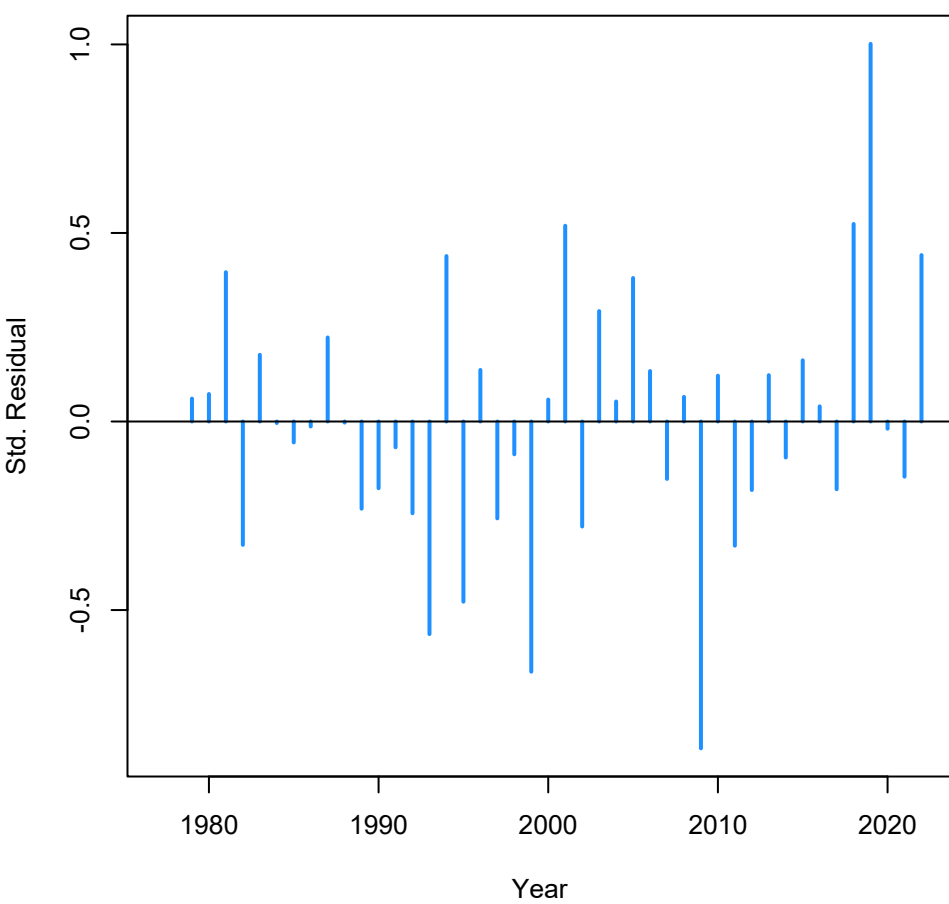
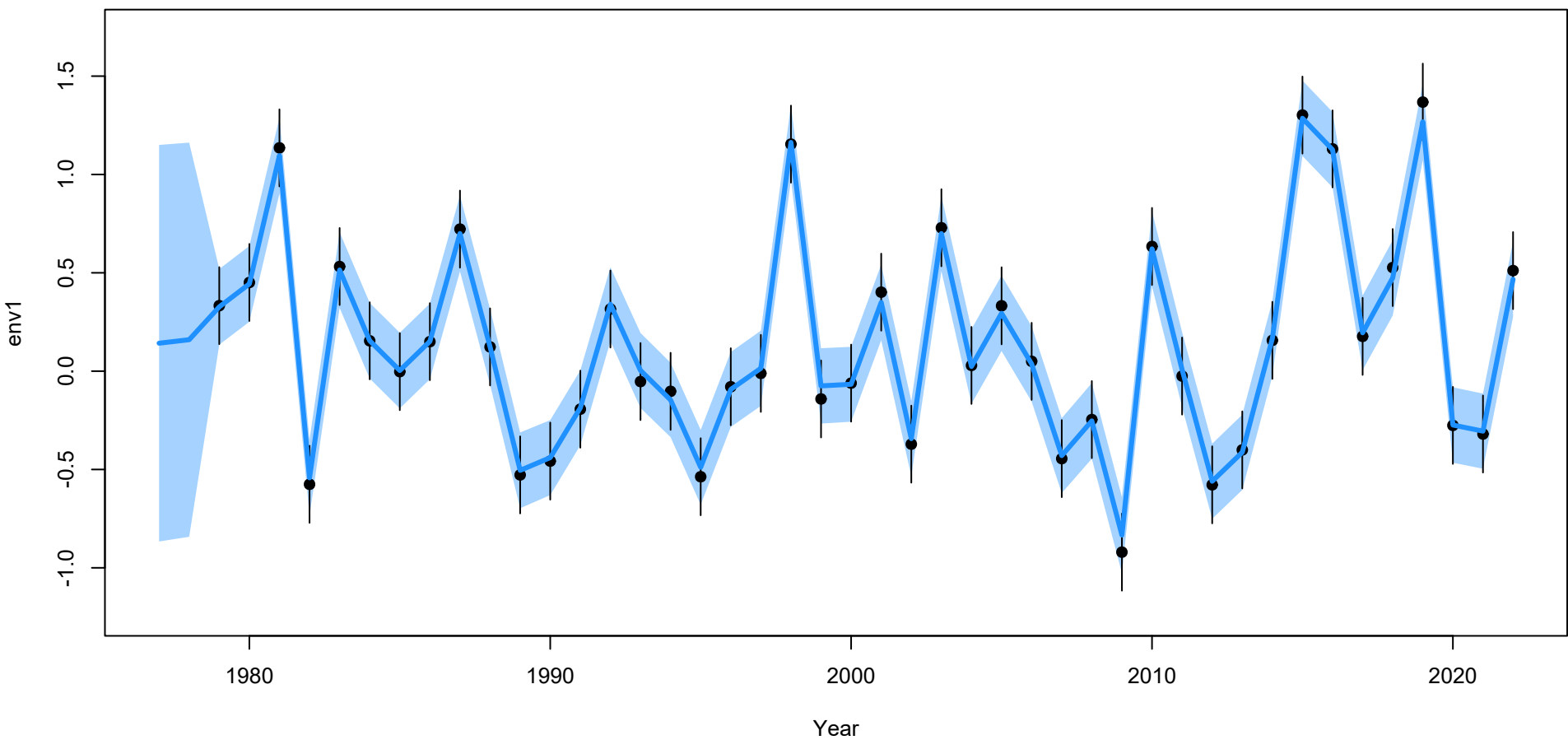
Index 1



Index 2

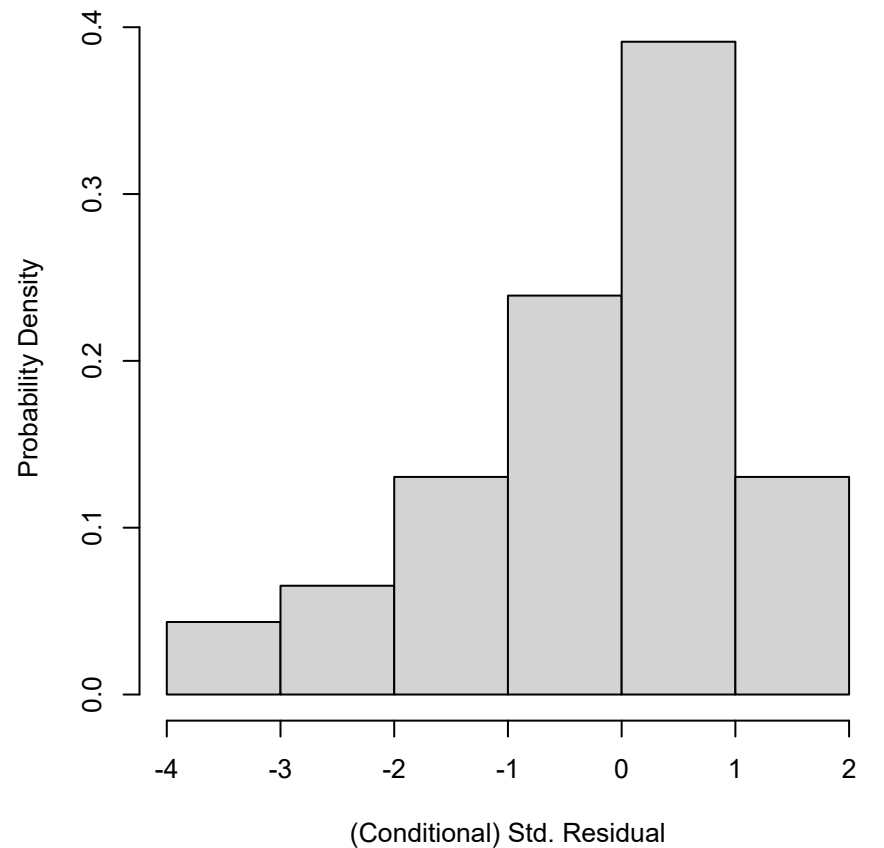
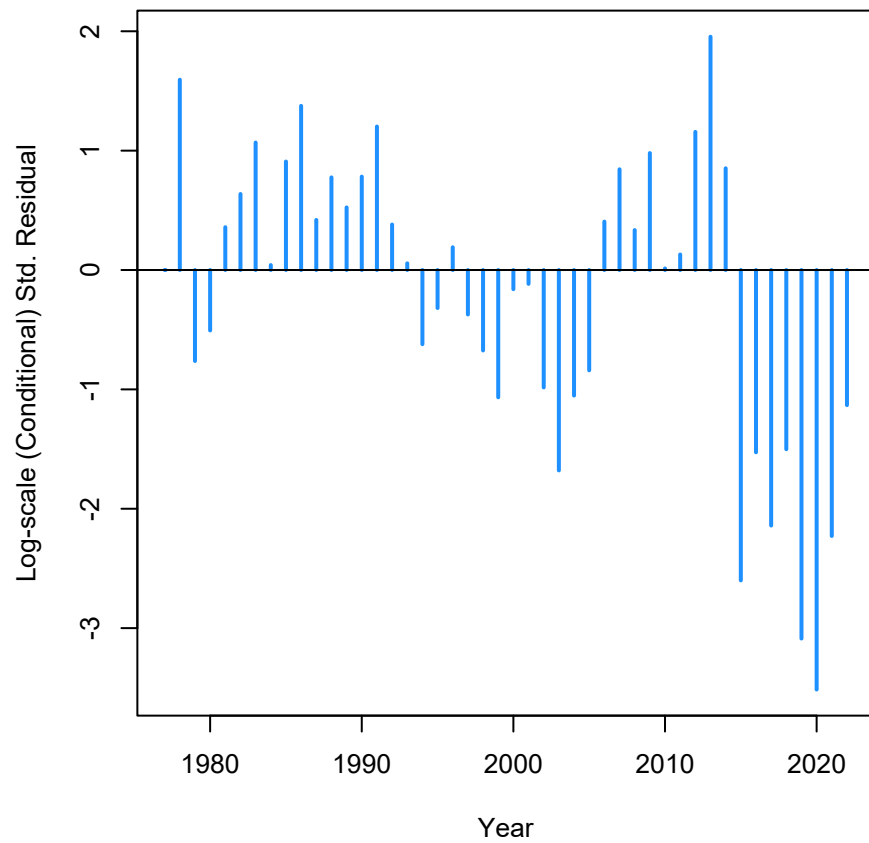
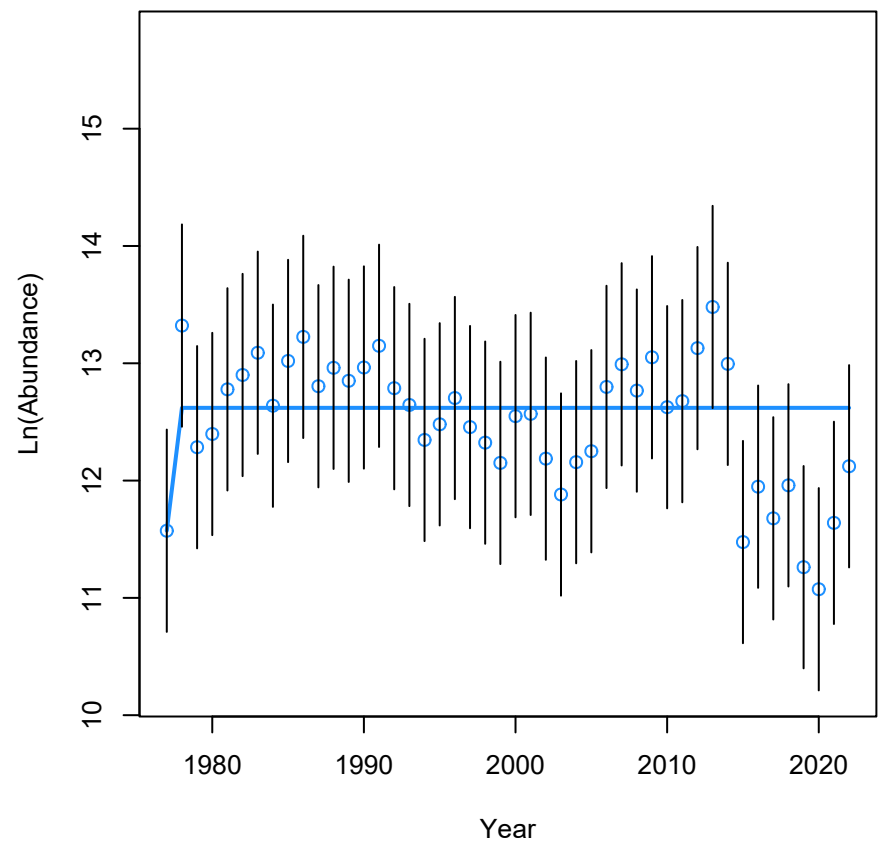
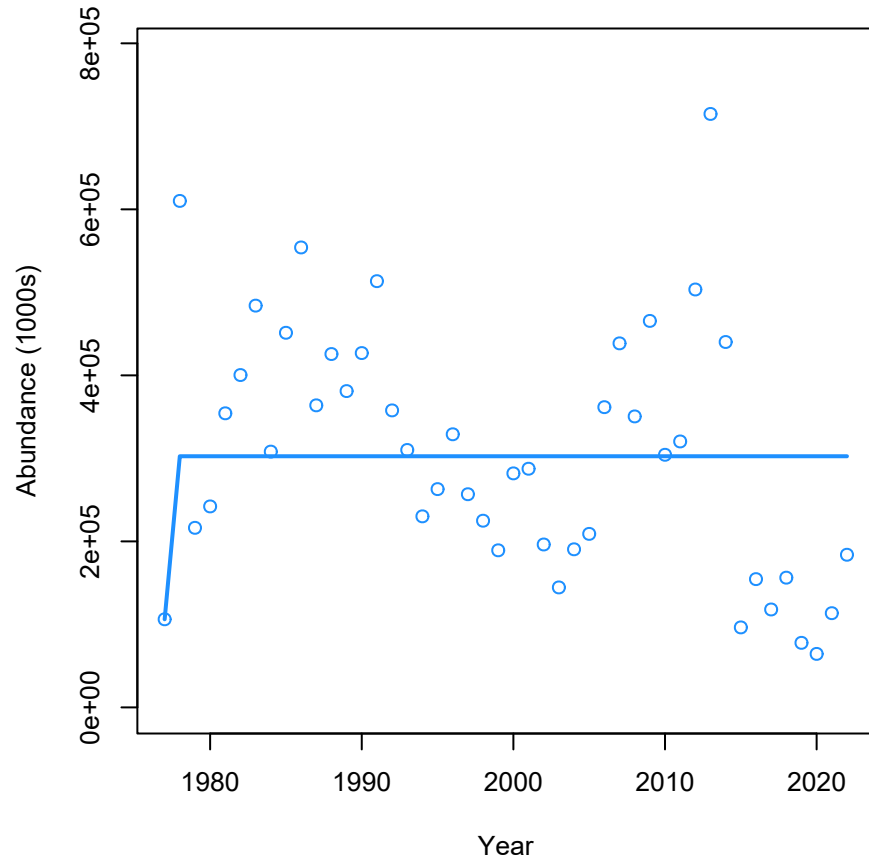


Ecov 1: env1

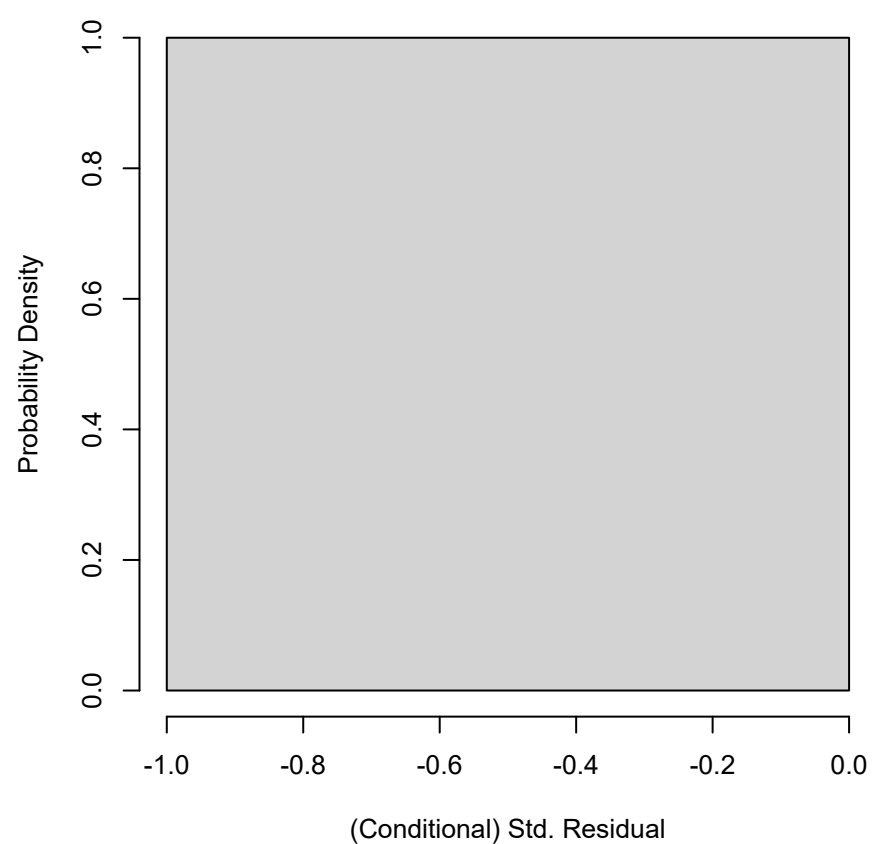
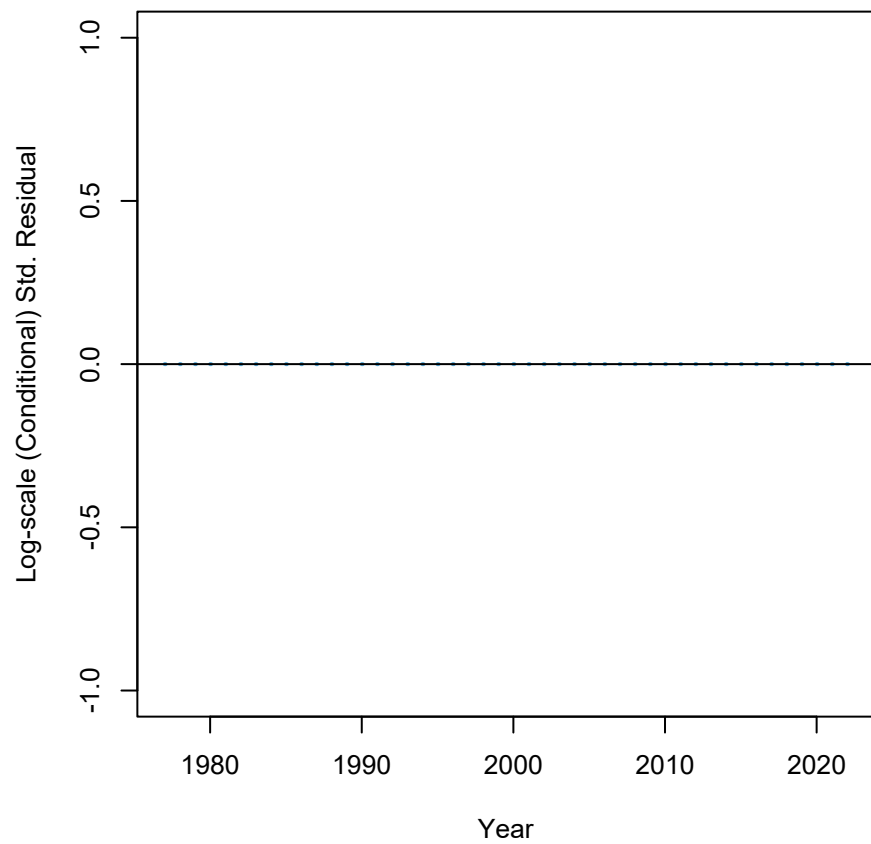
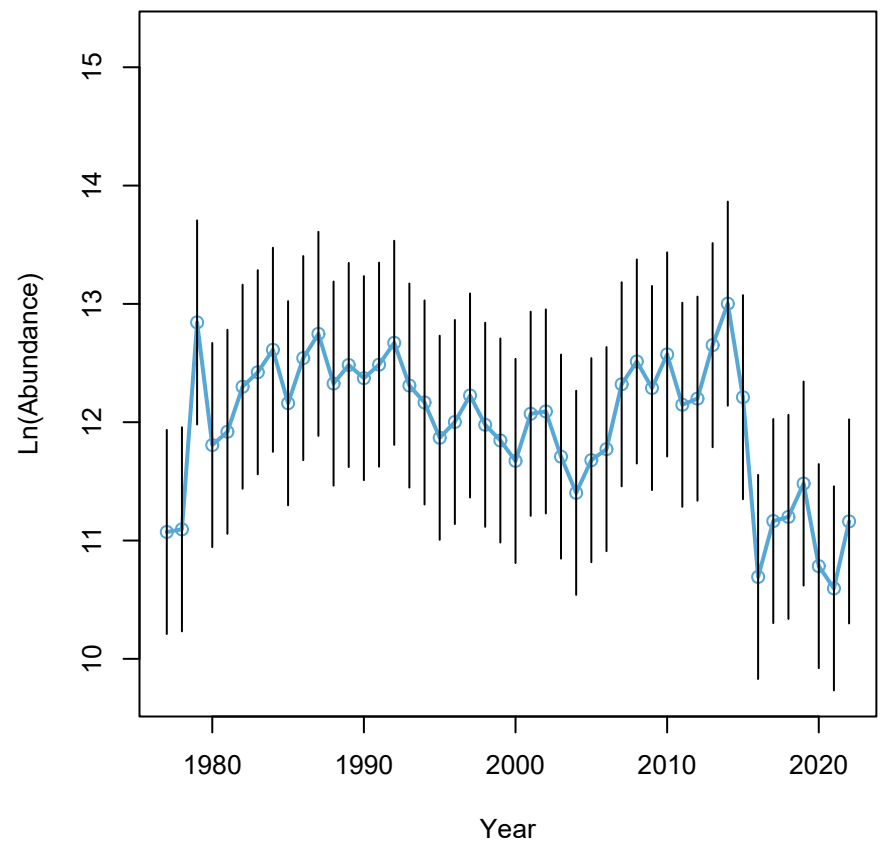
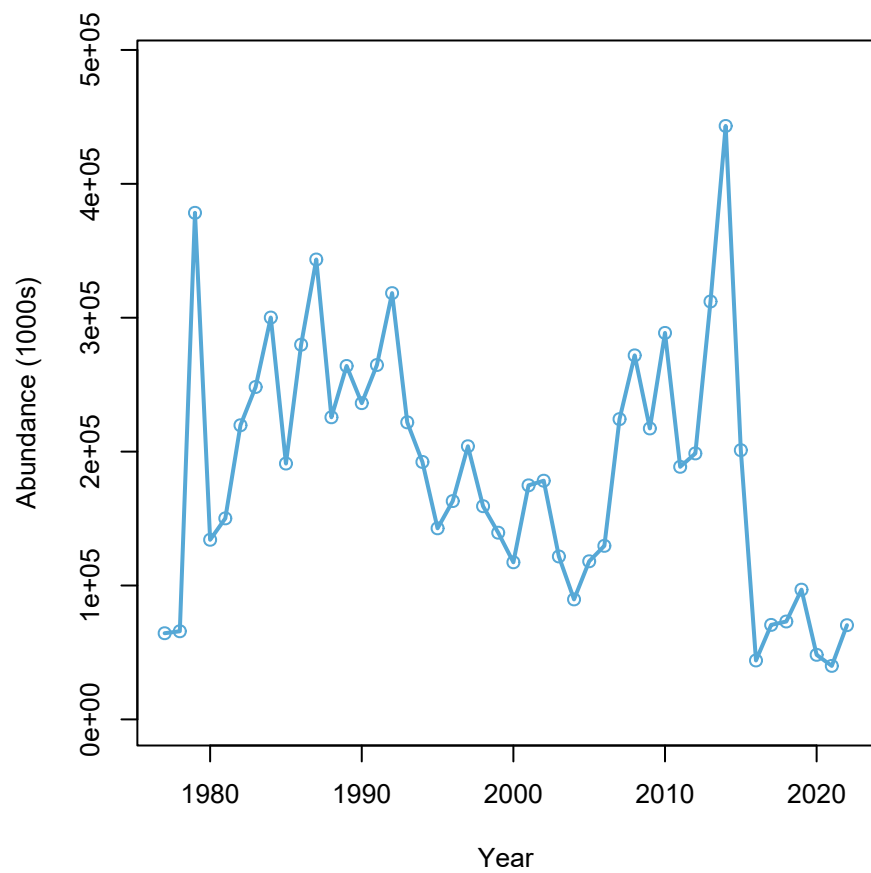




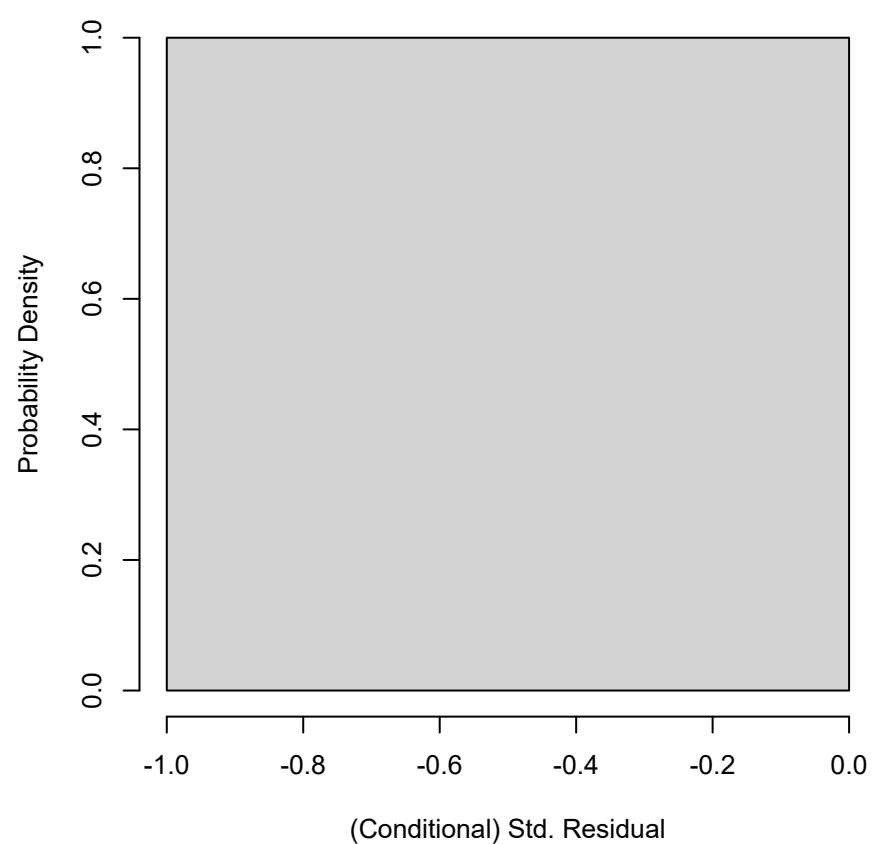
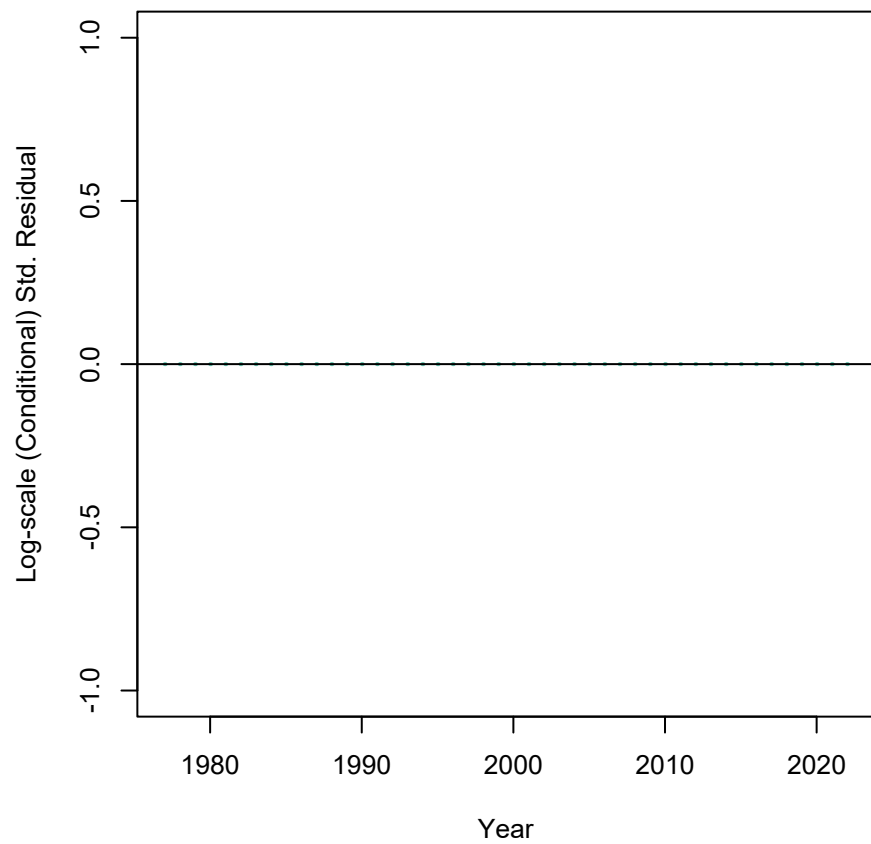
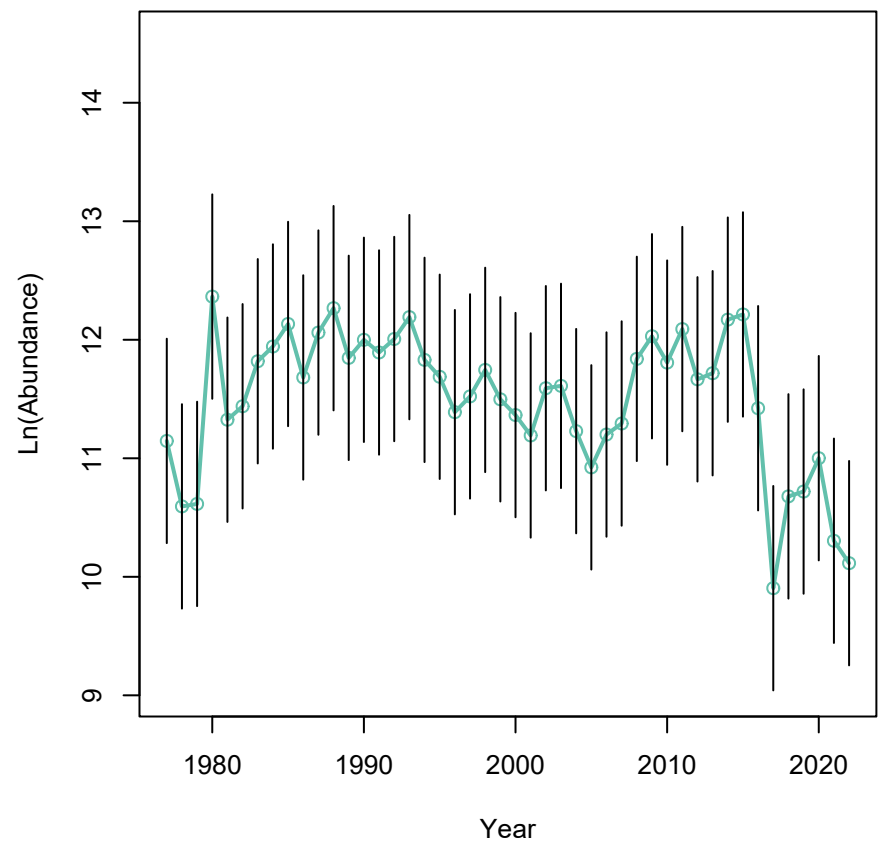
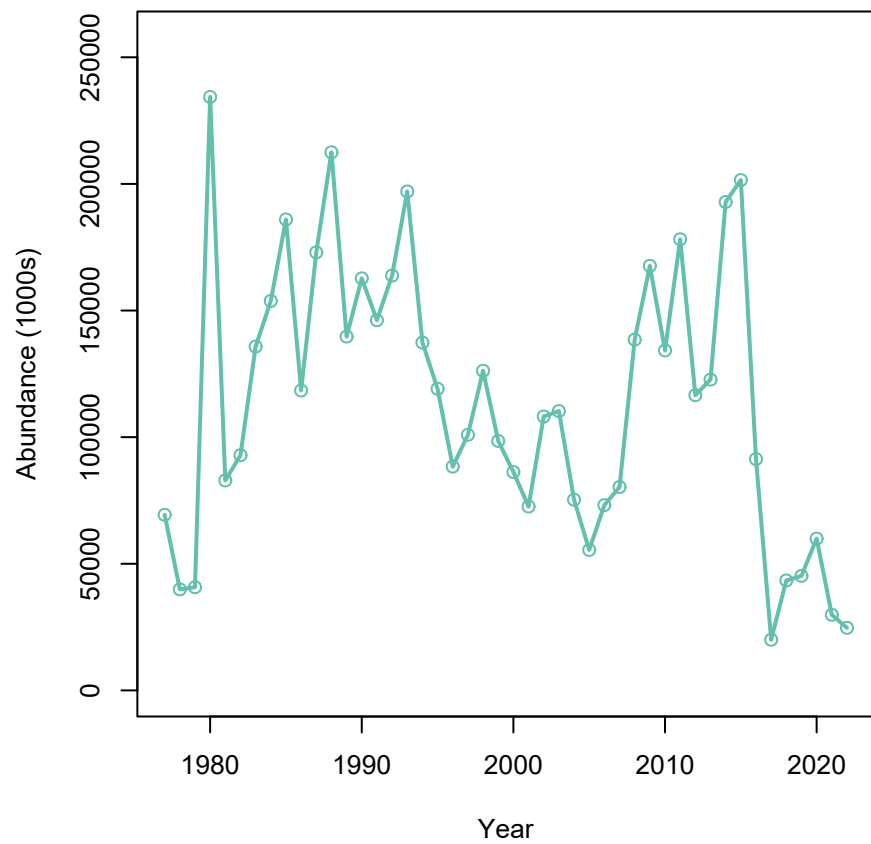
# Conditional Expected and Posterior Estimates of Age 1 Abundance



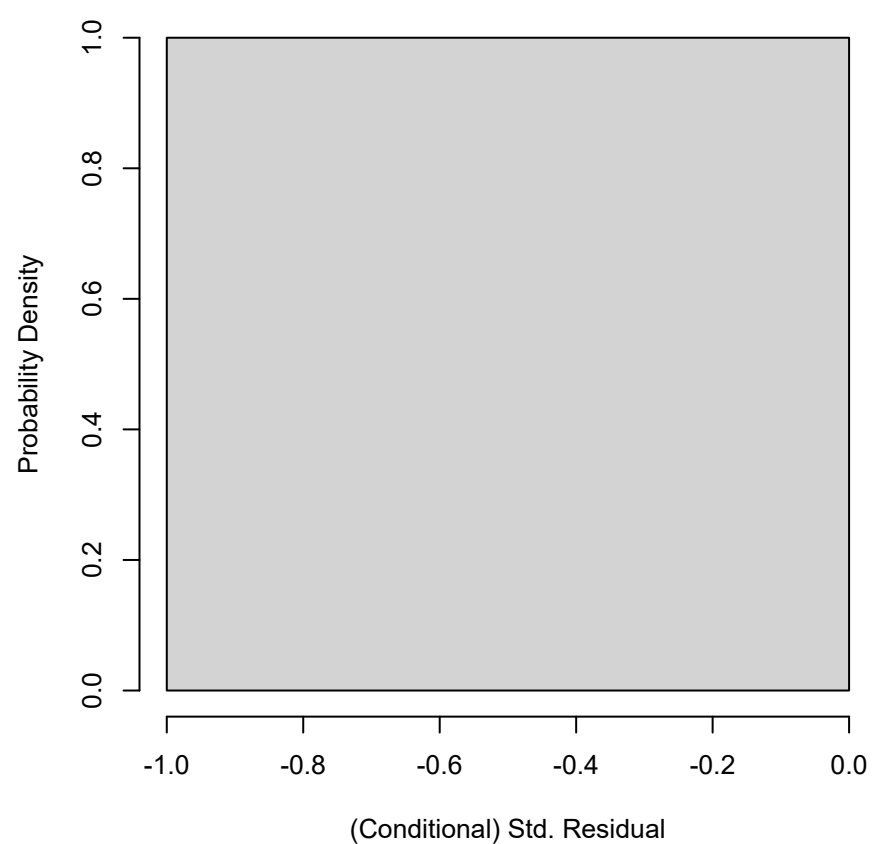
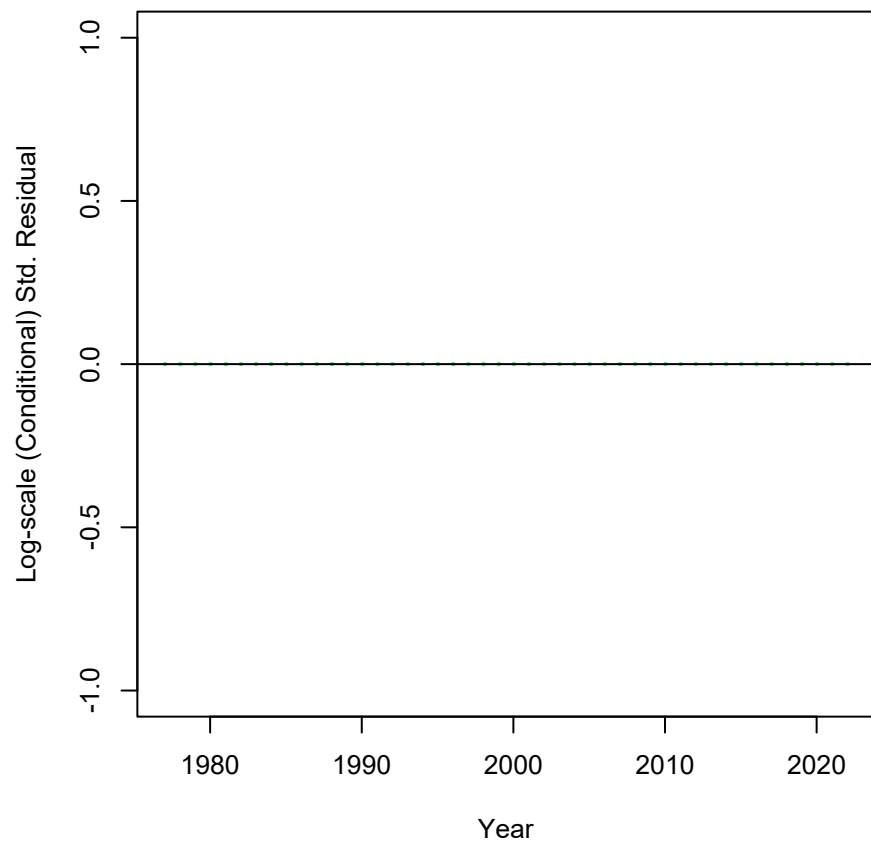
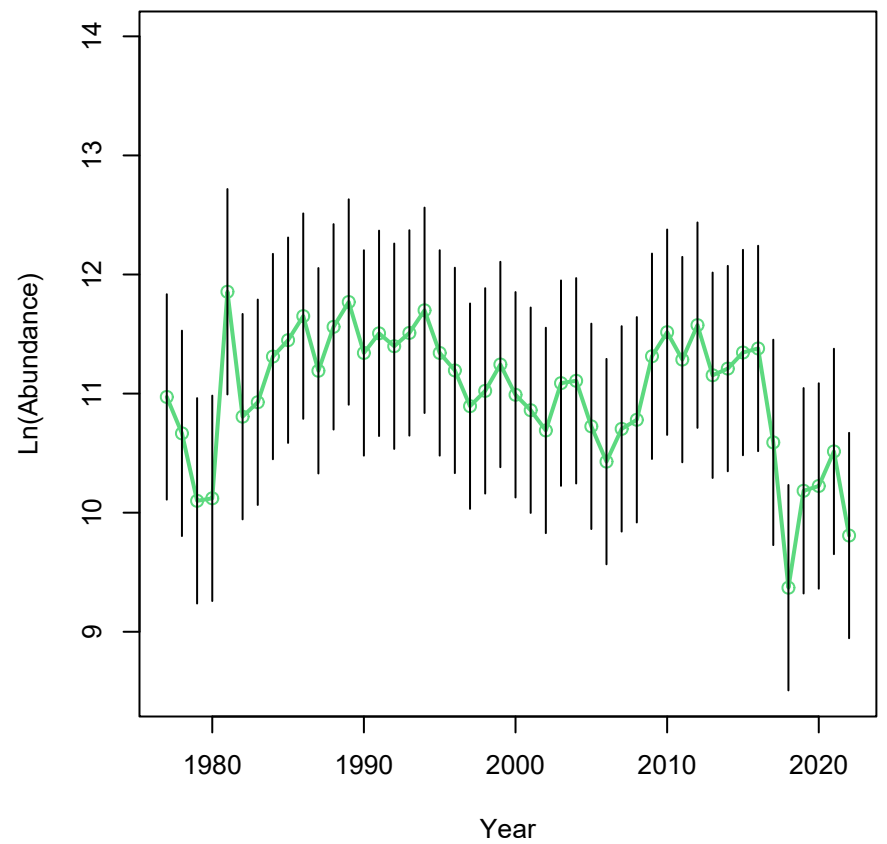
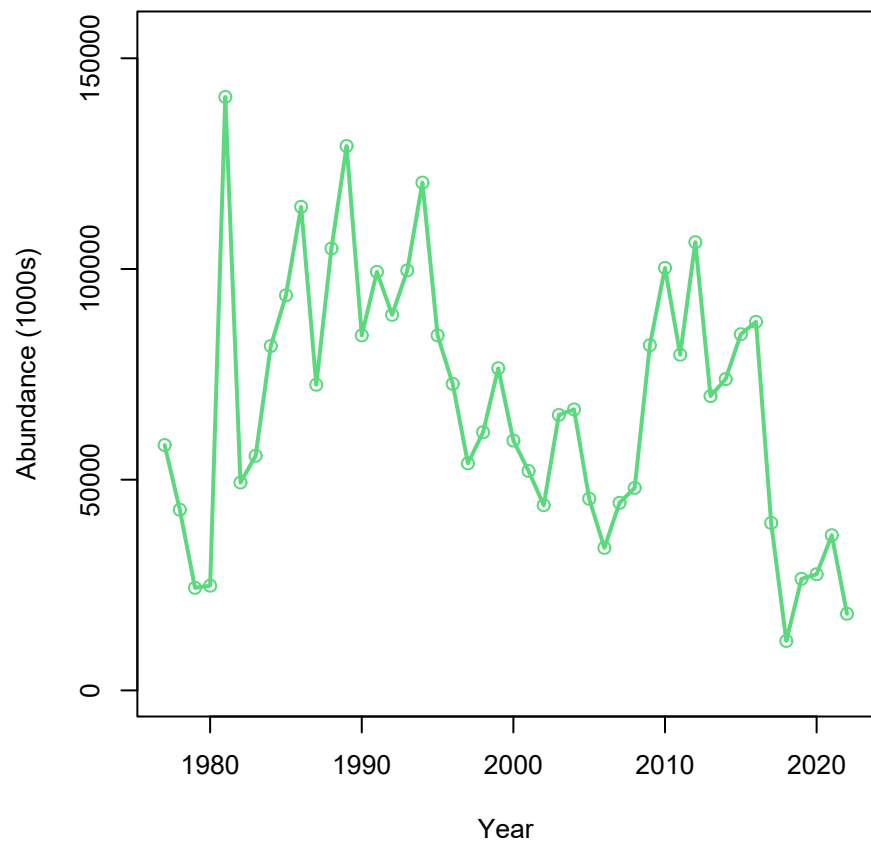
# Conditional Expected and Posterior Estimates of Age 2 Abundance



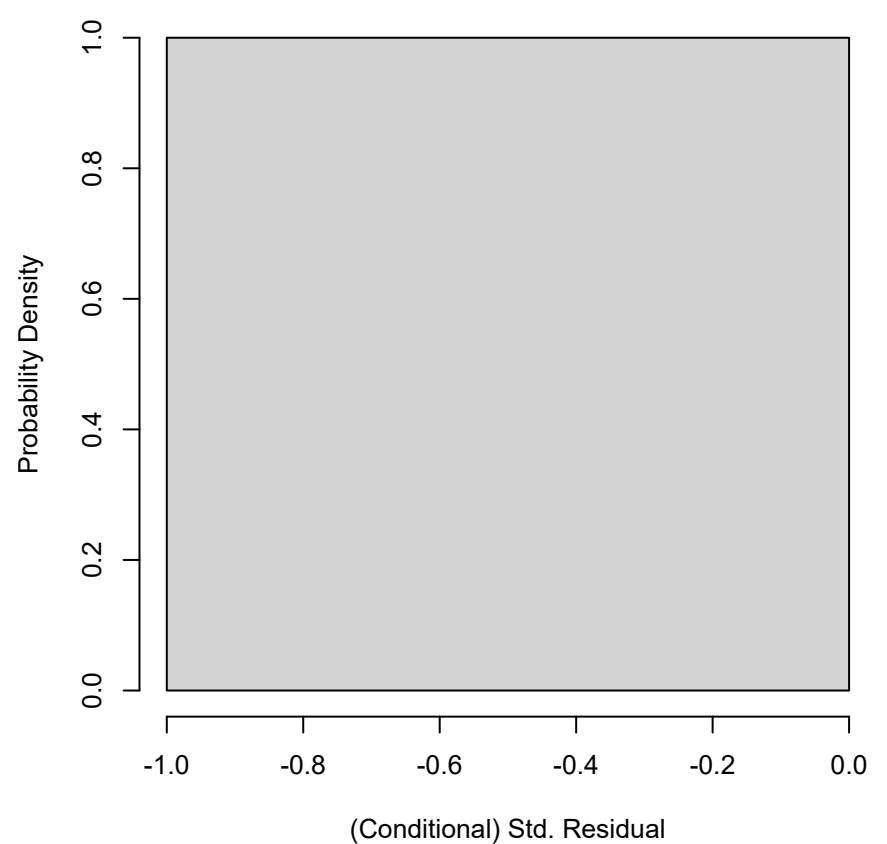
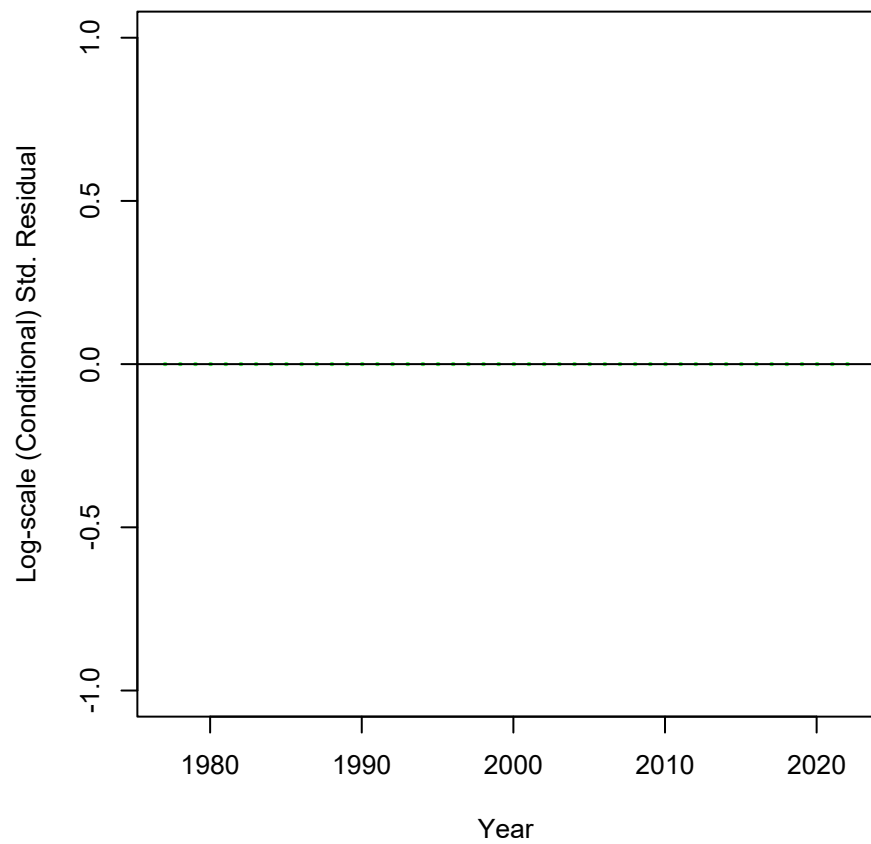
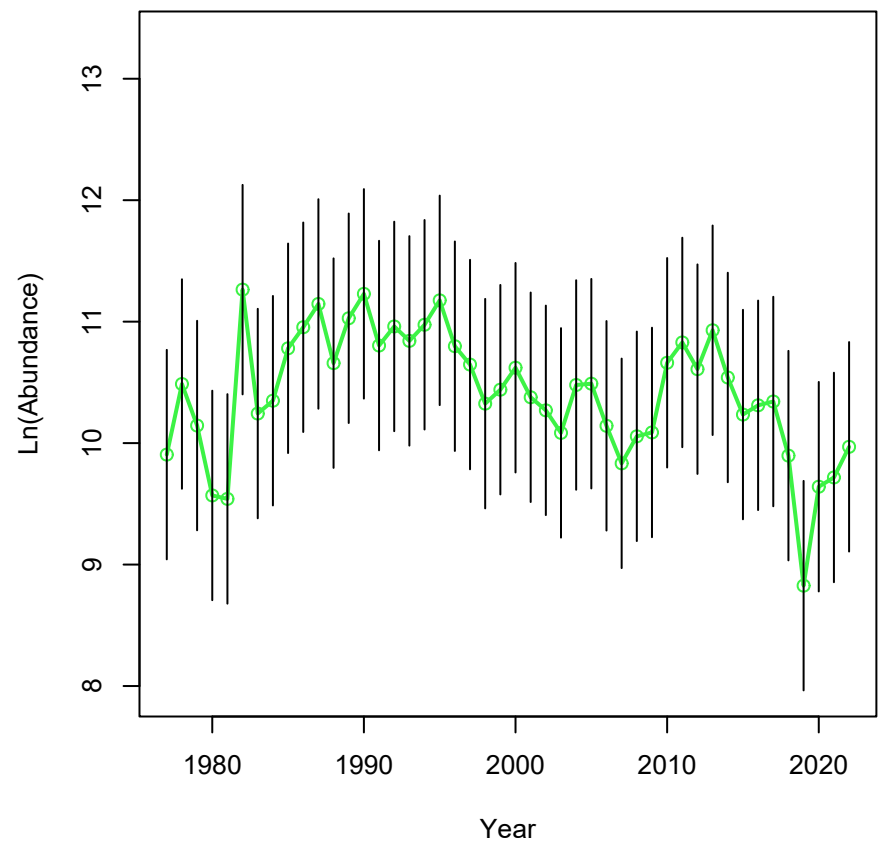
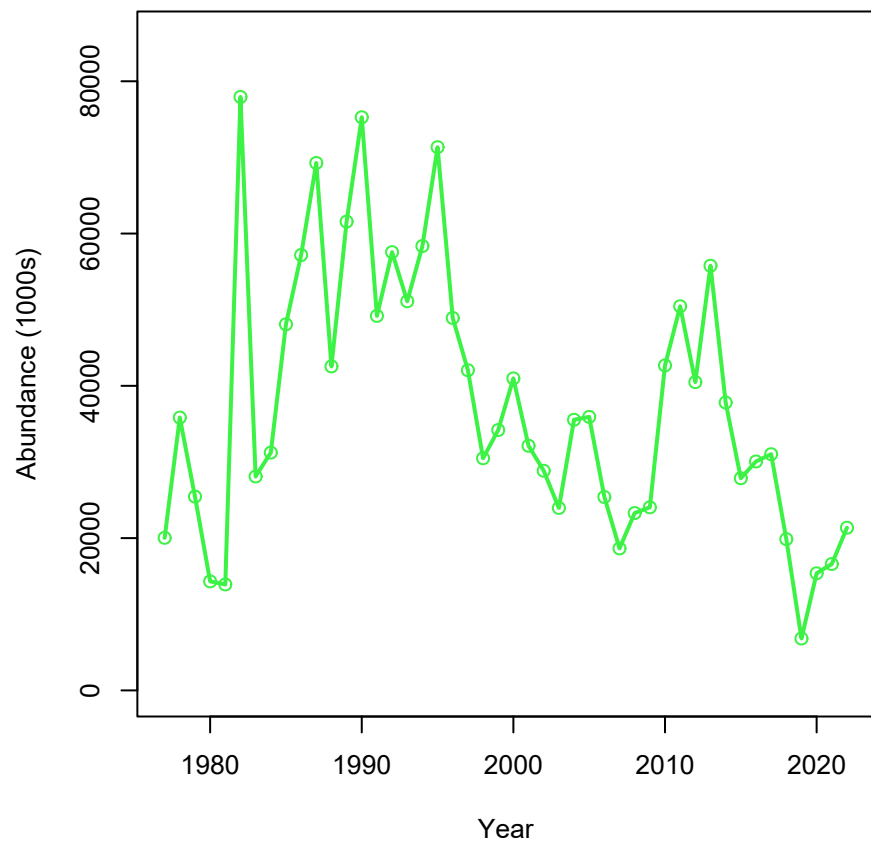
# Conditional Expected and Posterior Estimates of Age 3 Abundance



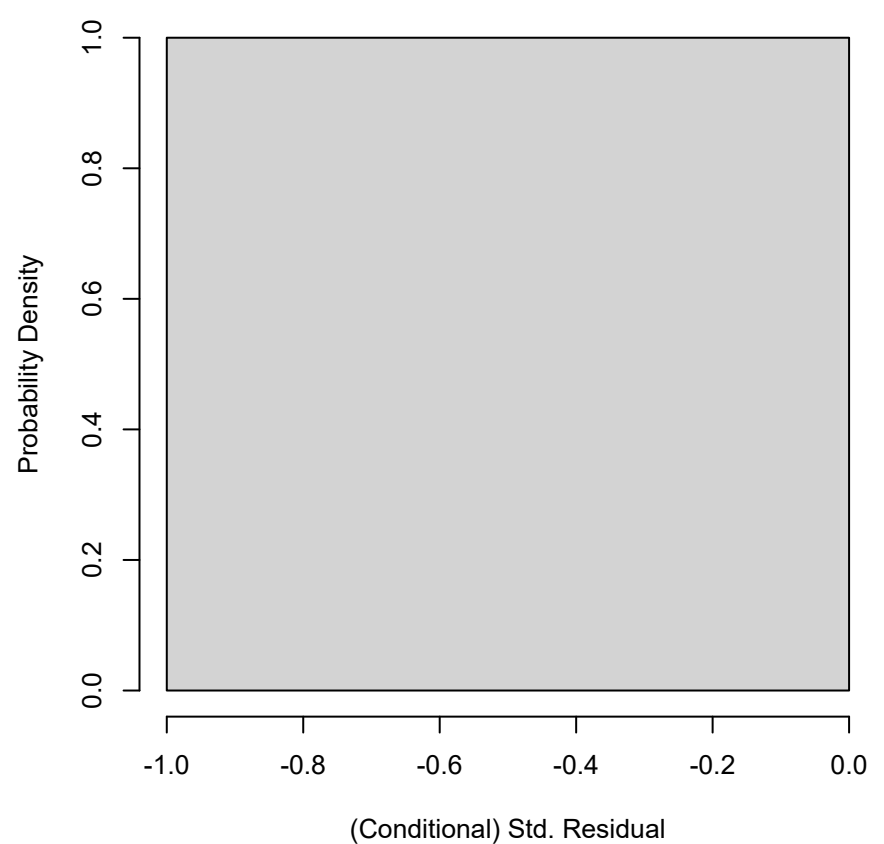
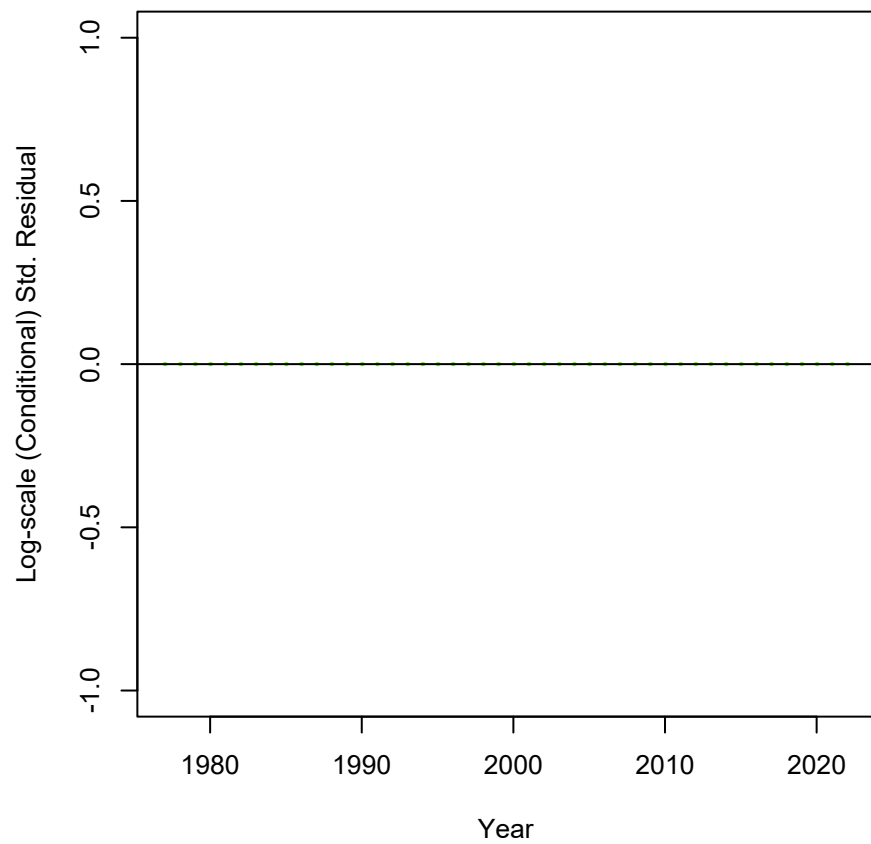
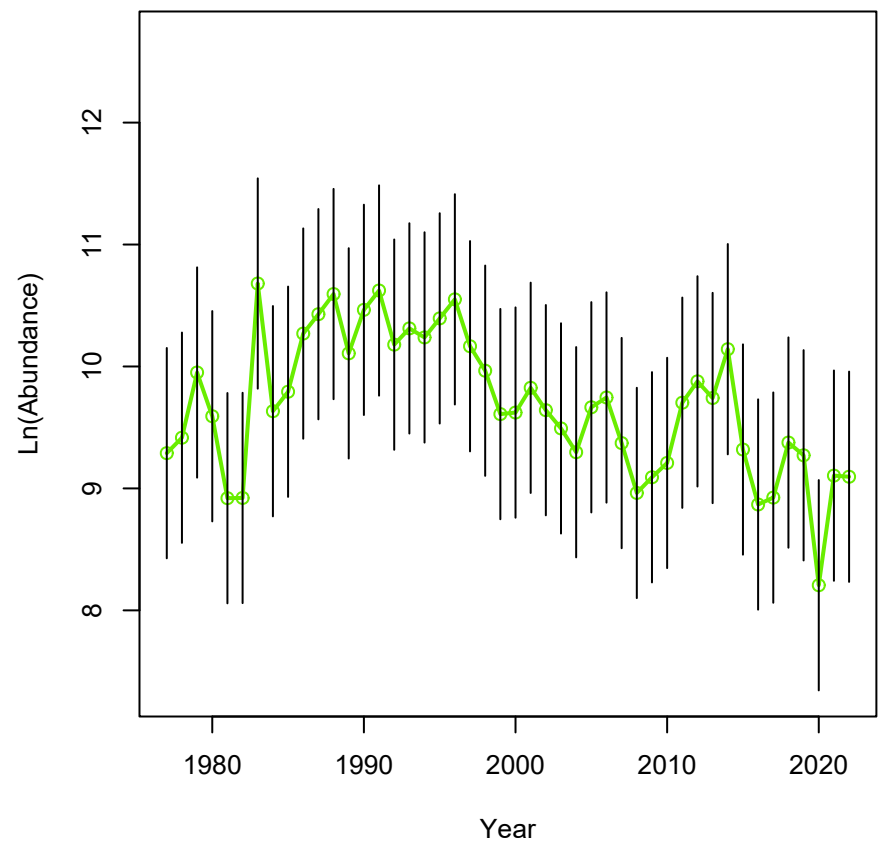
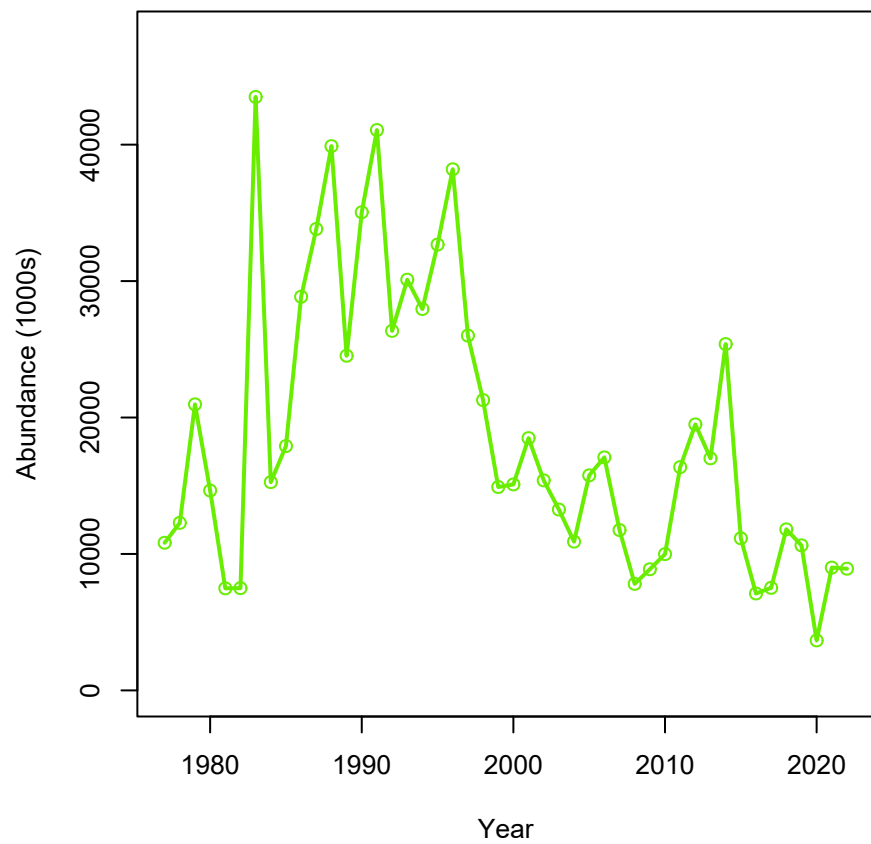
# Conditional Expected and Posterior Estimates of Age 4 Abundance



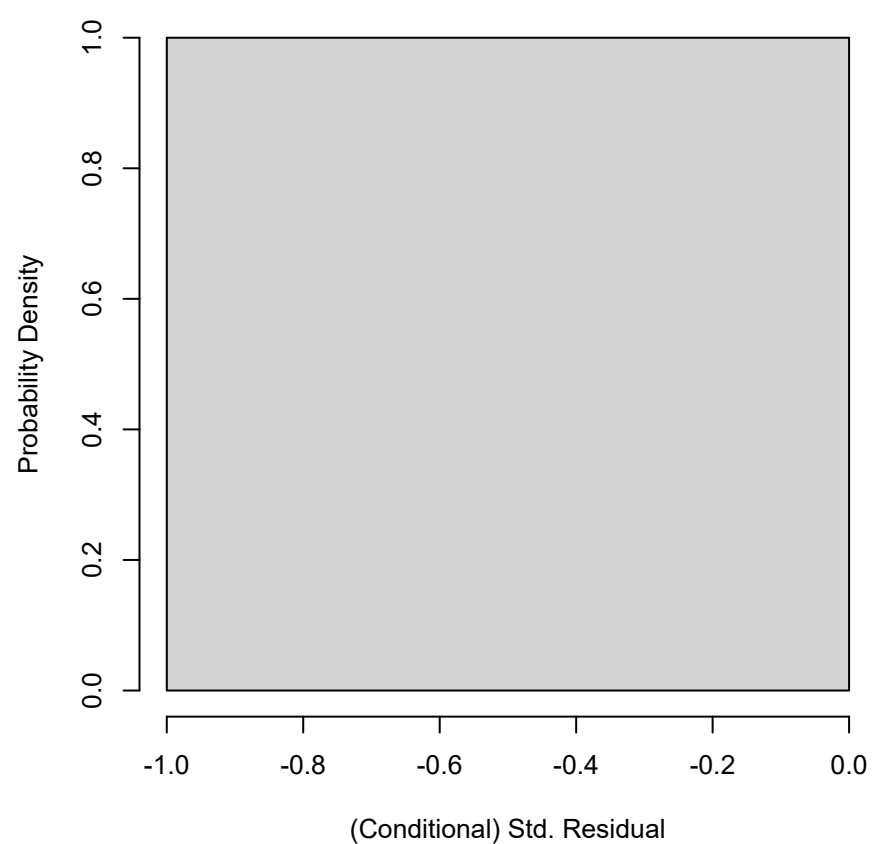
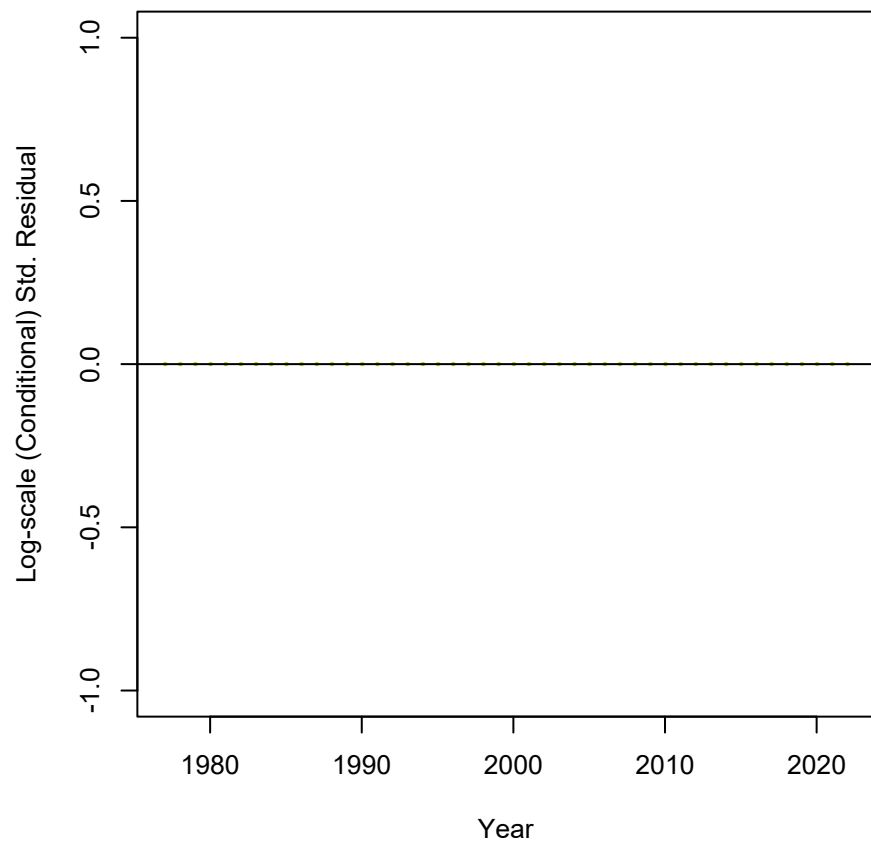
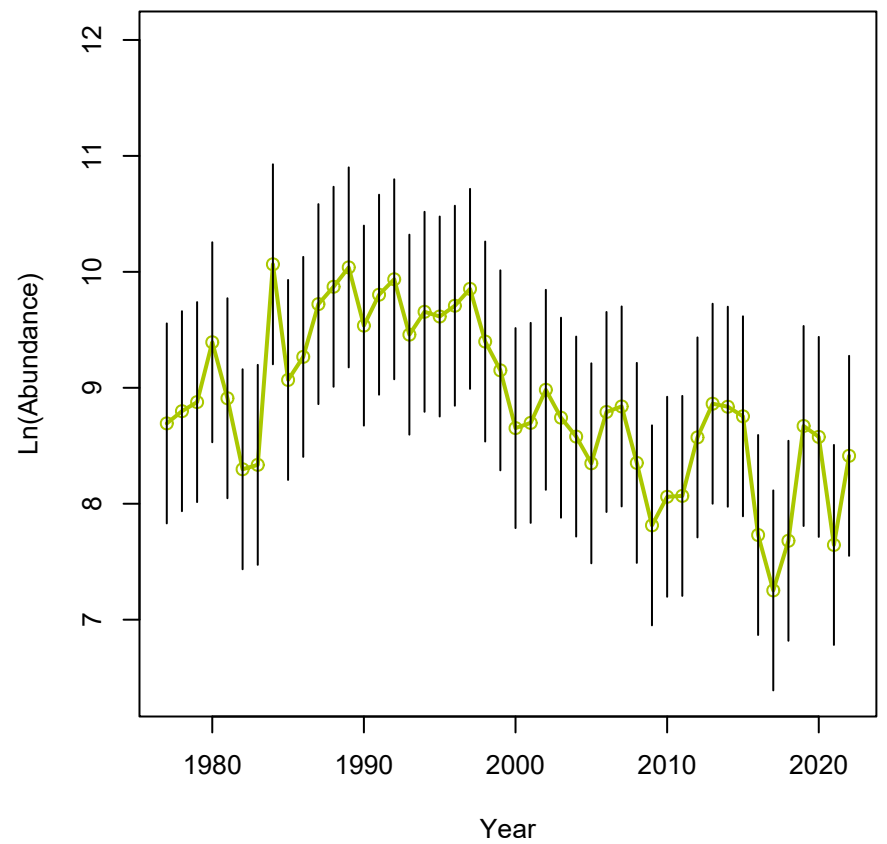
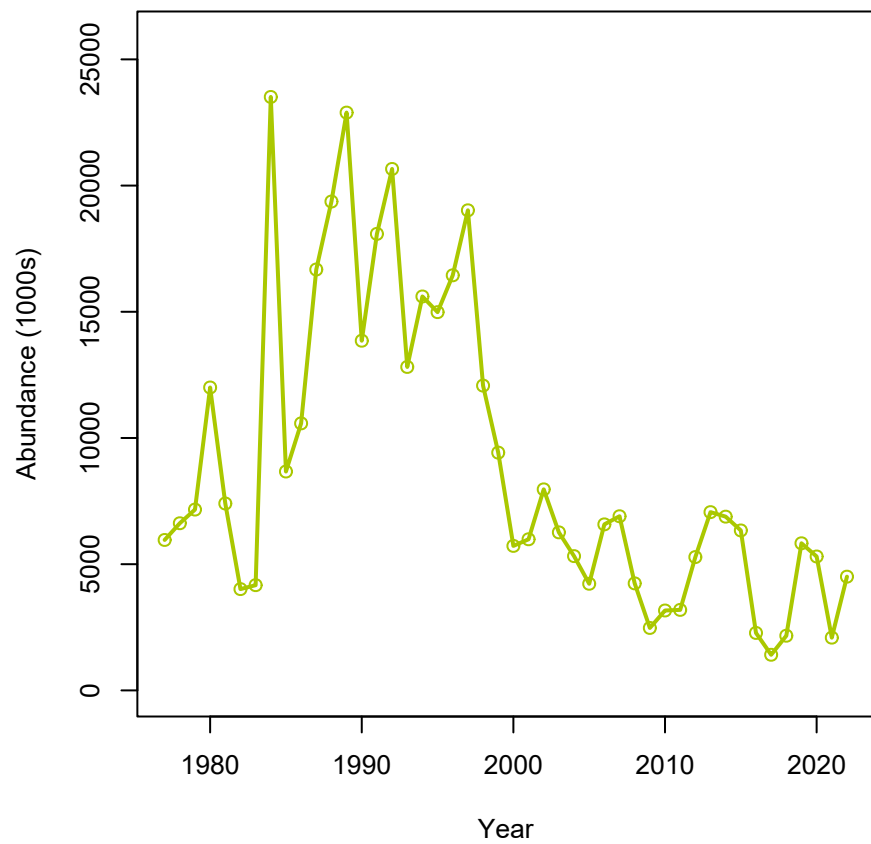
# Conditional Expected and Posterior Estimates of Age 5 Abundance



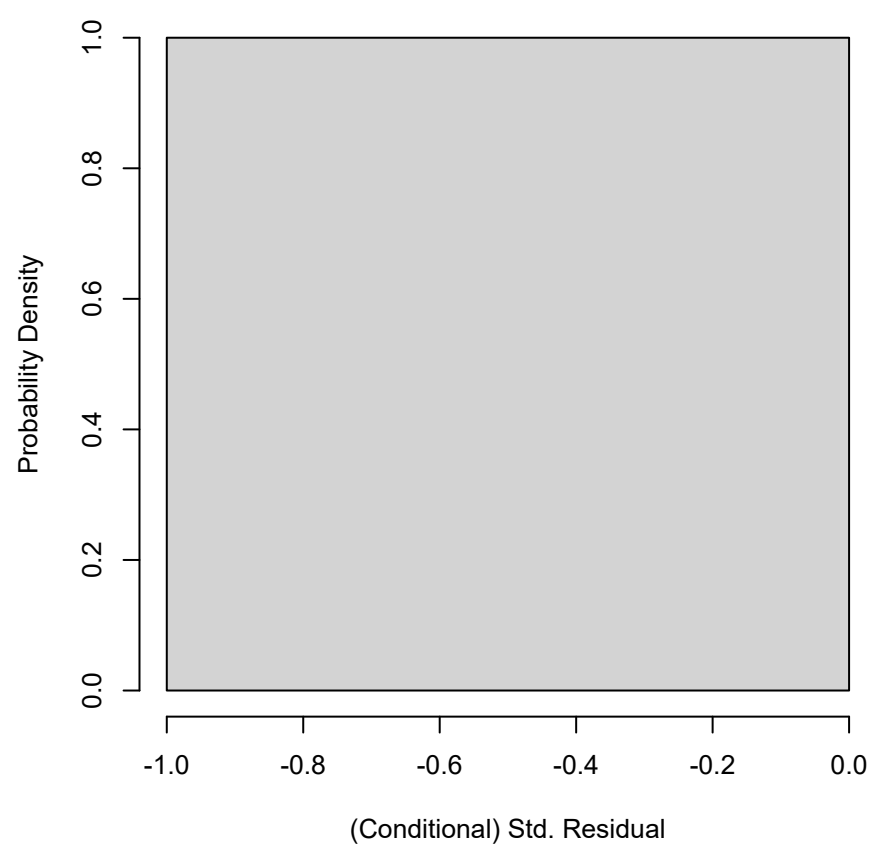
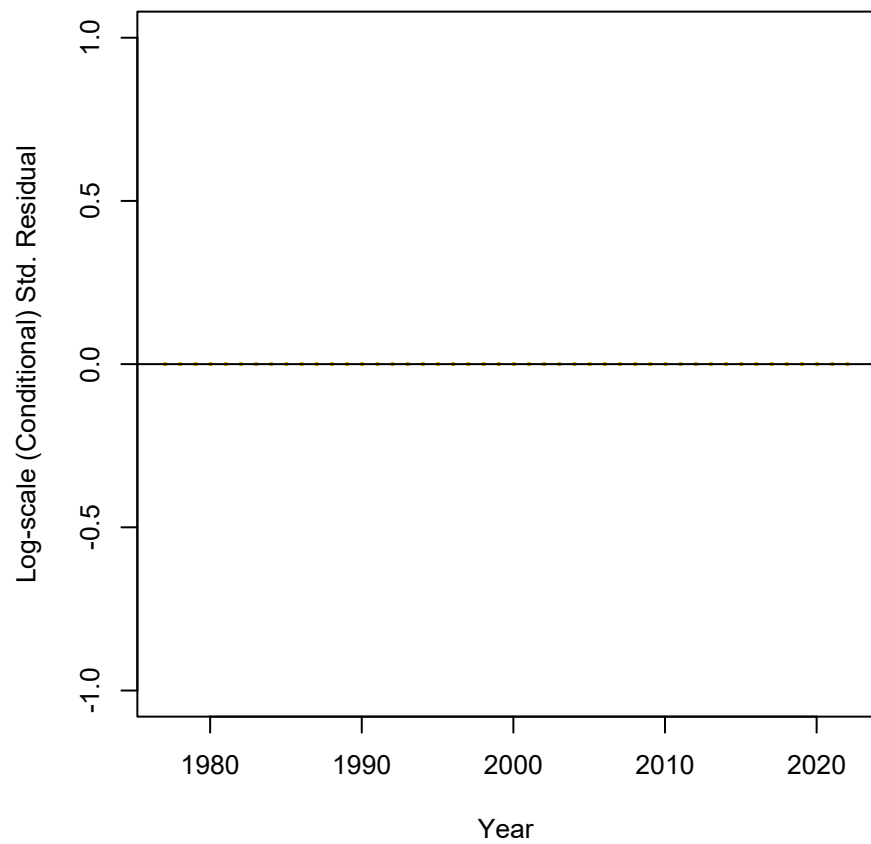
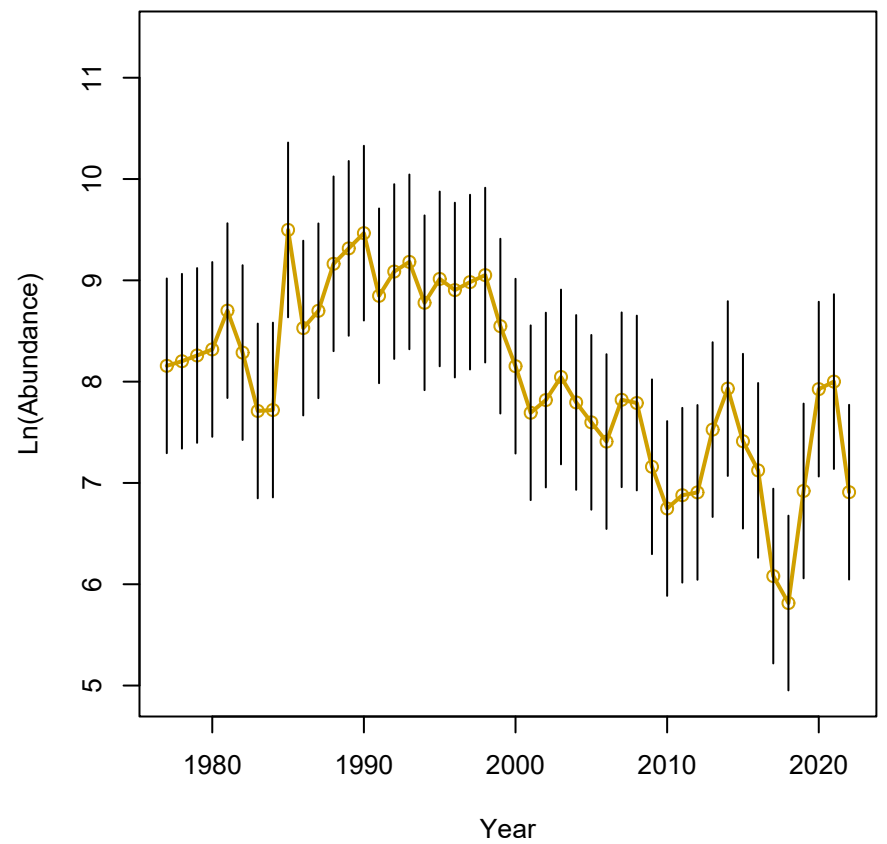
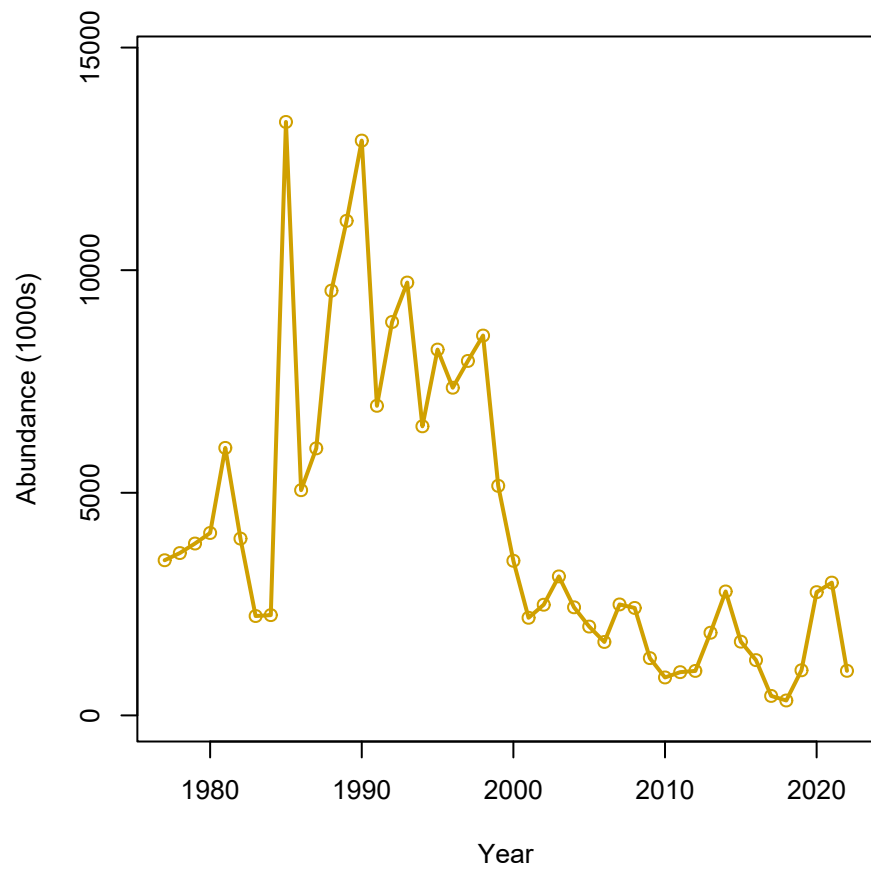
# Conditional Expected and Posterior Estimates of Age 6 Abundance



# Conditional Expected and Posterior Estimates of Age 7 Abundance

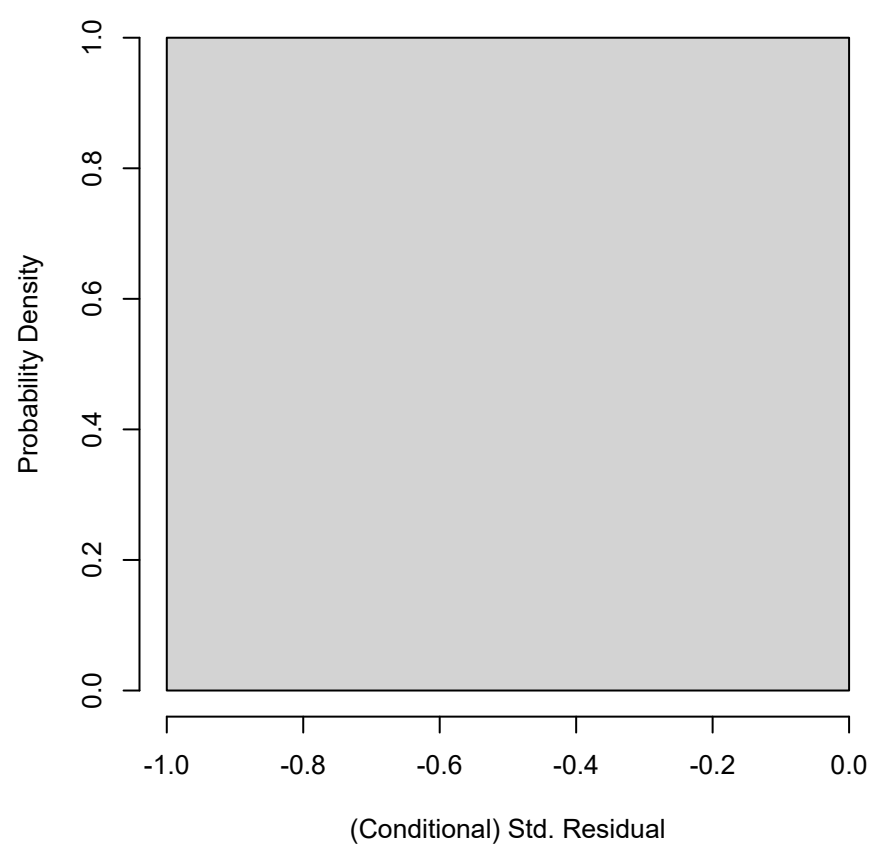
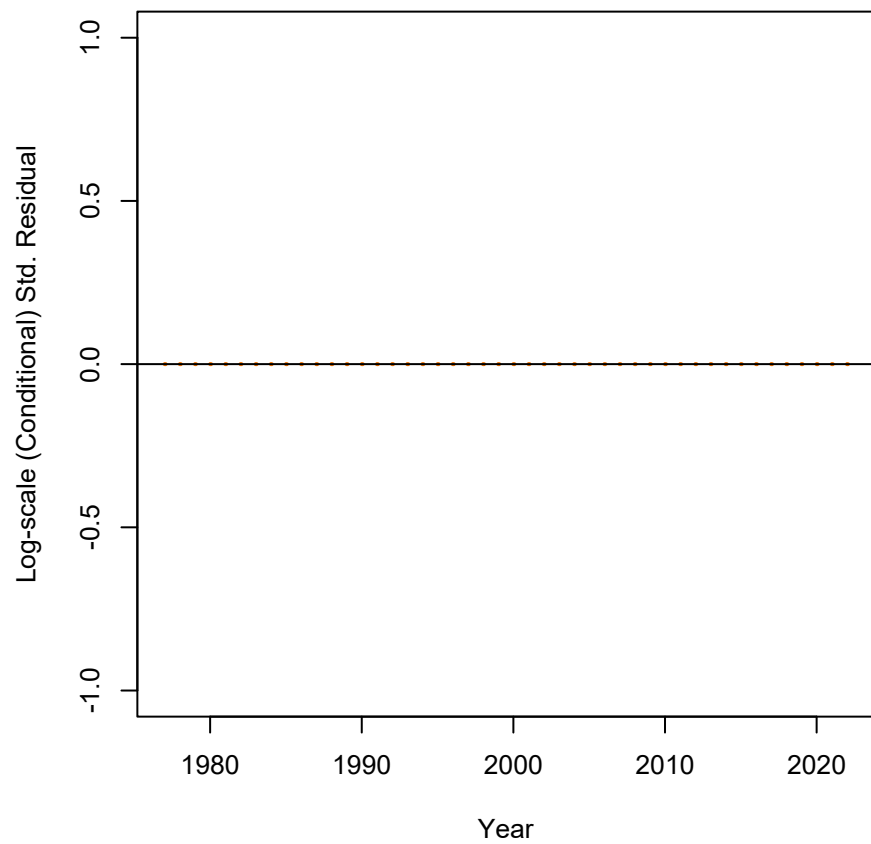
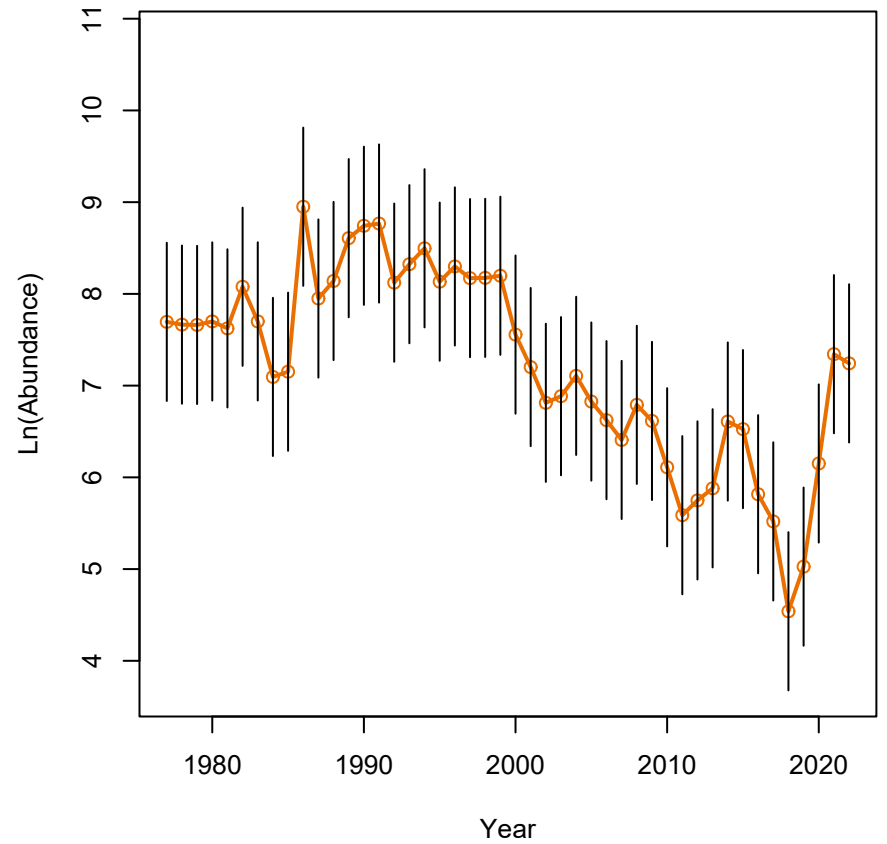
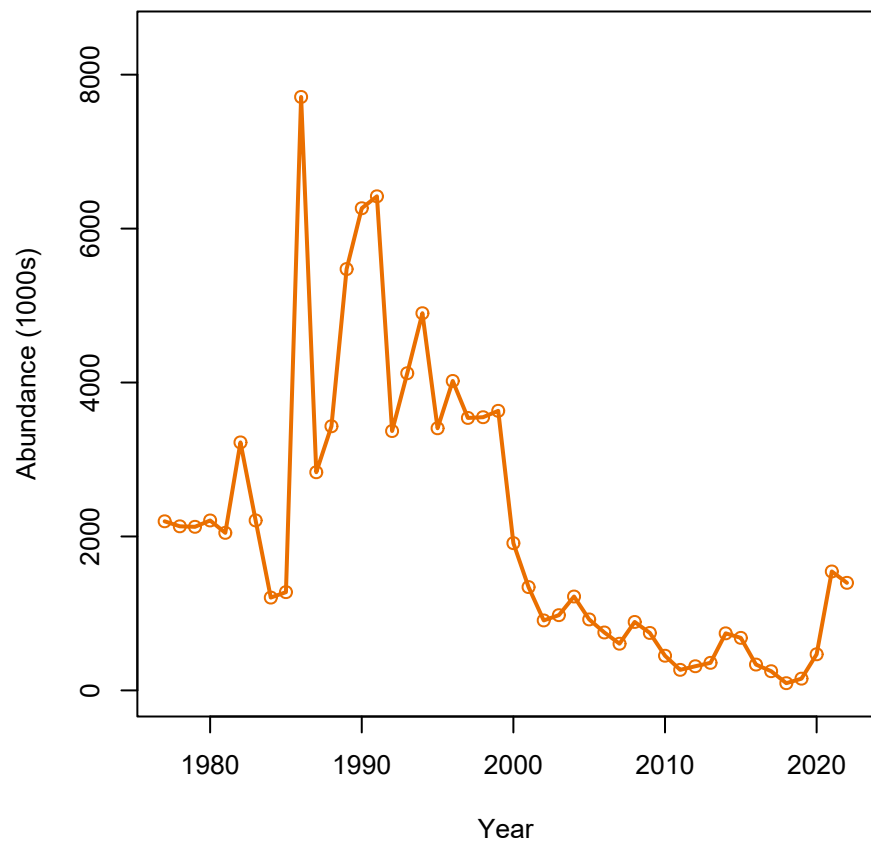


# Conditional Expected and Posterior Estimates of Age 8 Abundance

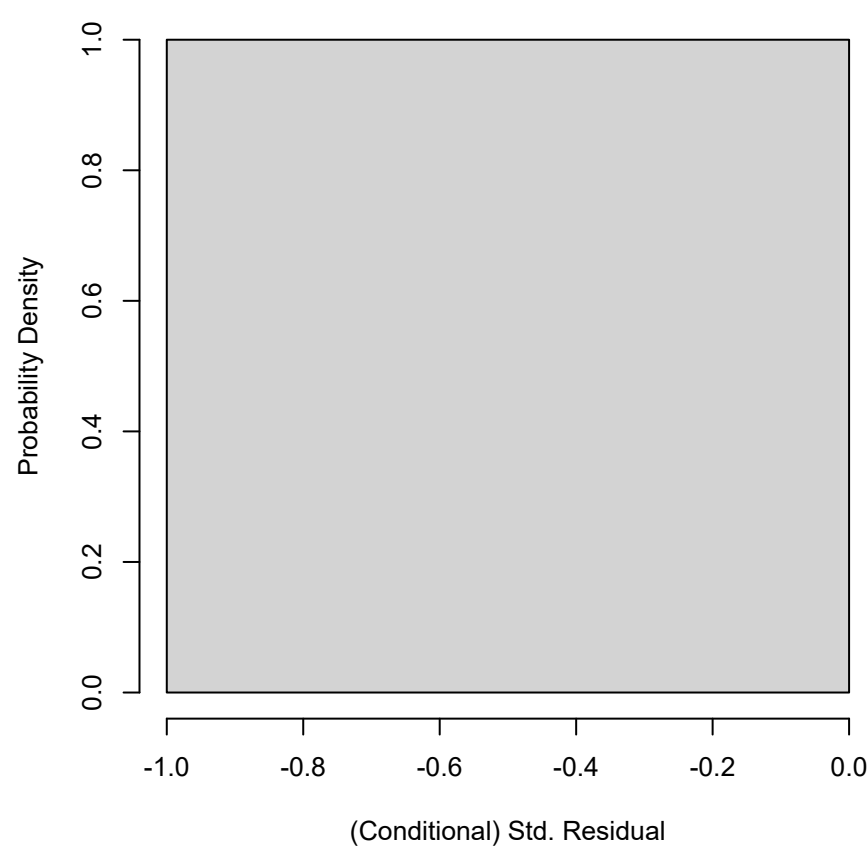
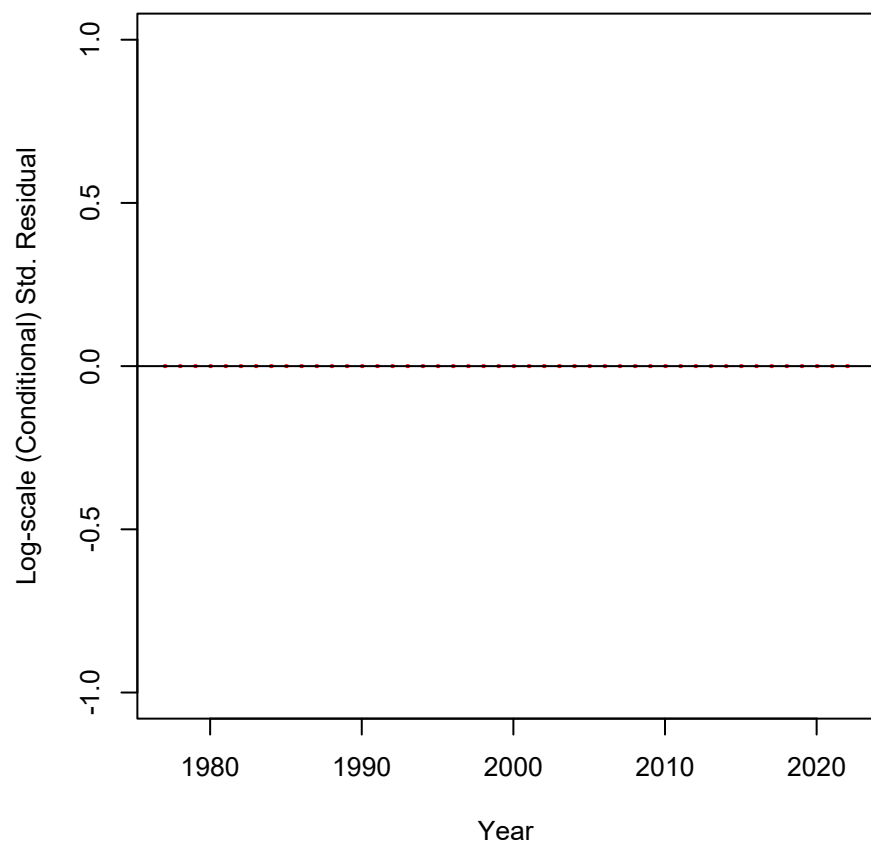
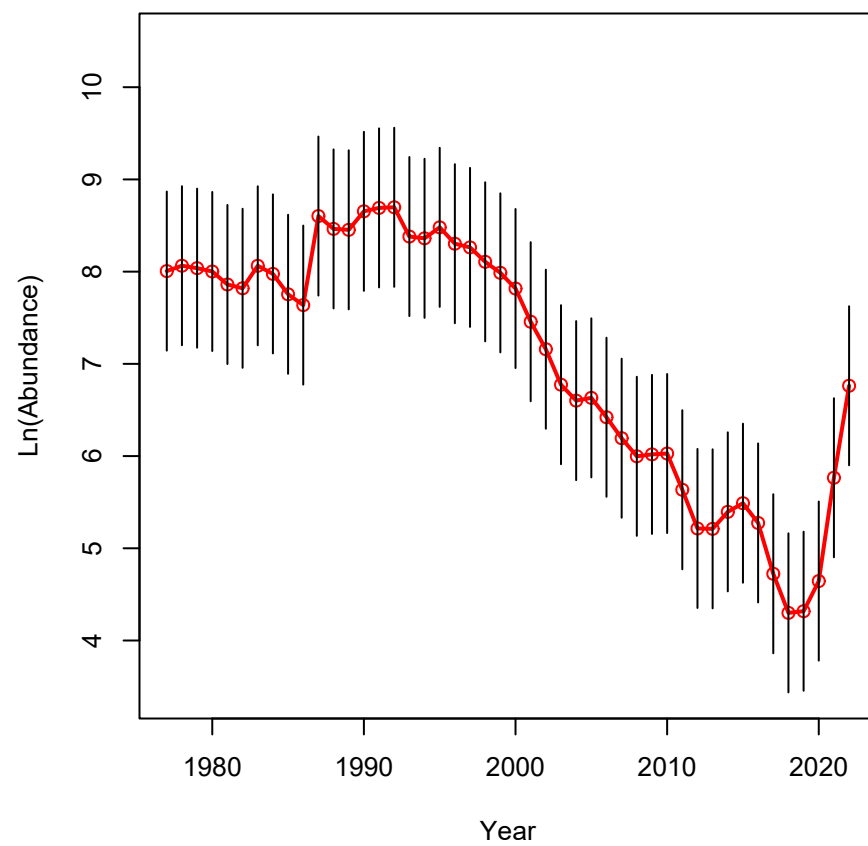
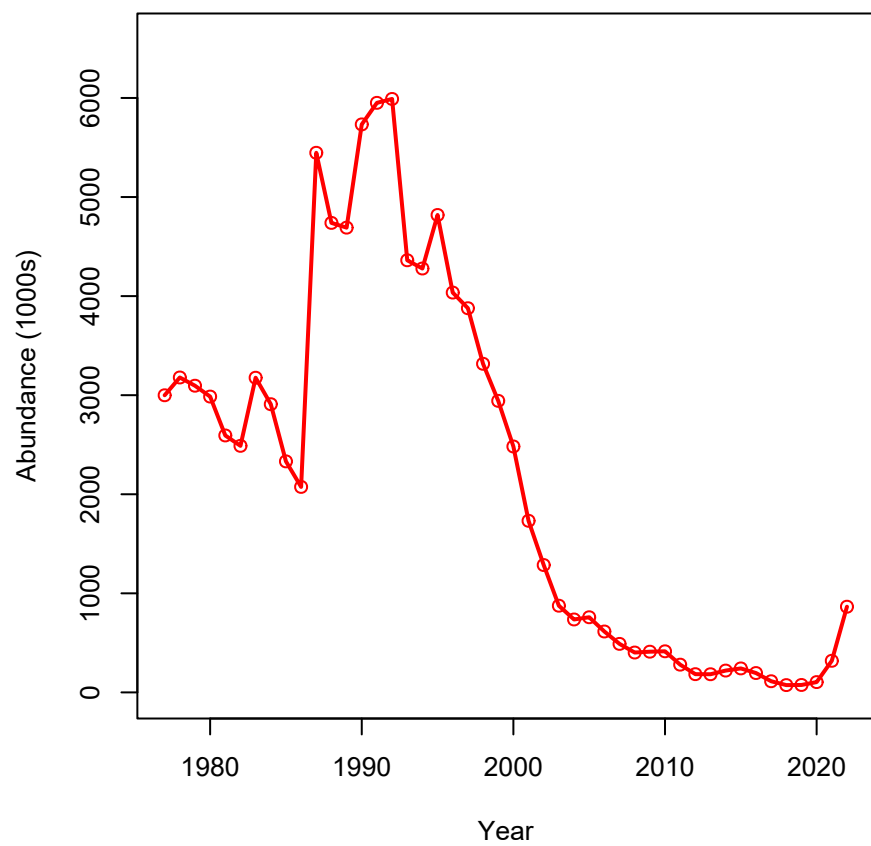




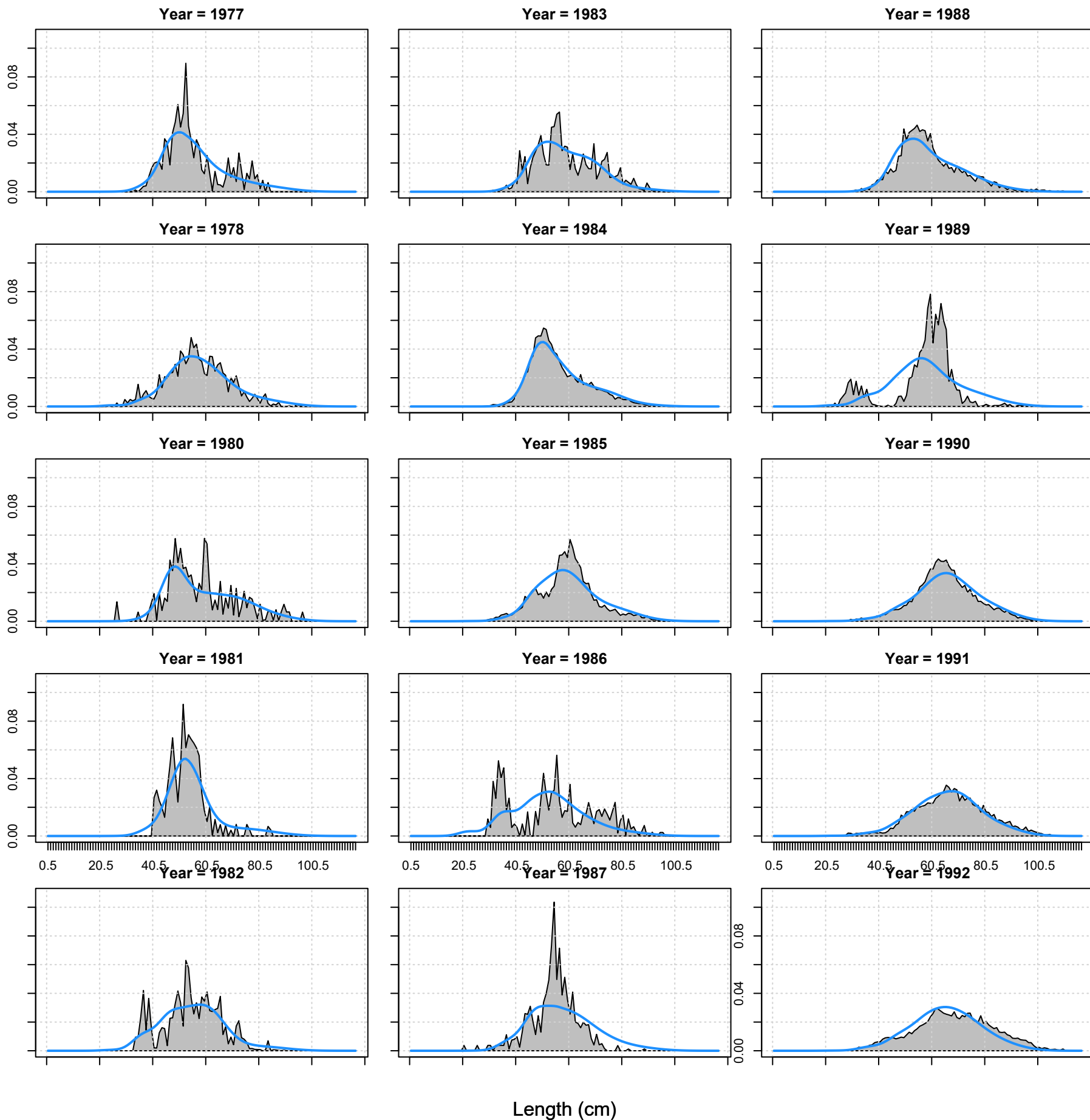
# Conditional Expected and Posterior Estimates of Age 9 Abundance



Conditional Expected and Posterior Estimates of Age 10 Abundance



**Fleet 1**  
**Year = 1983**



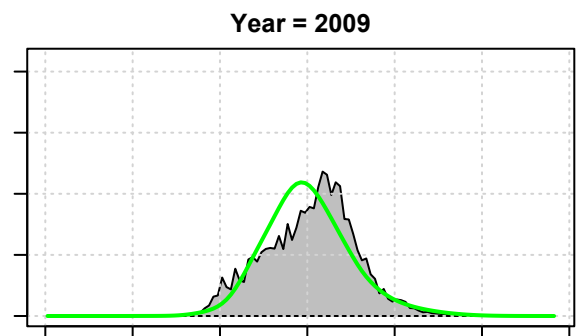
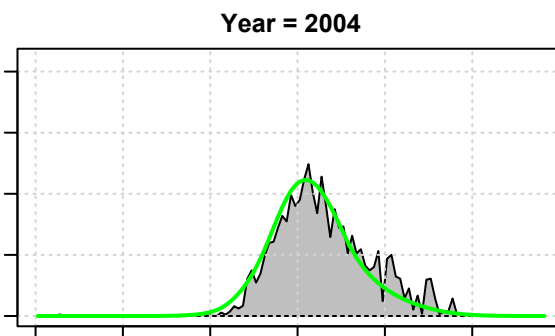
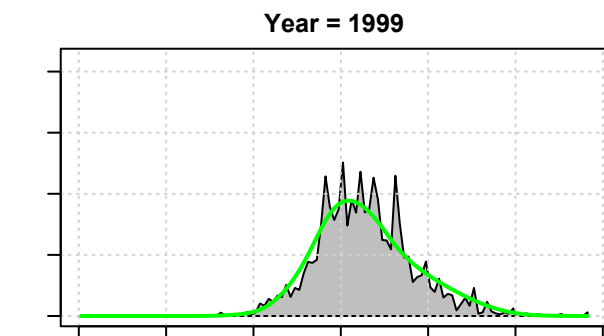
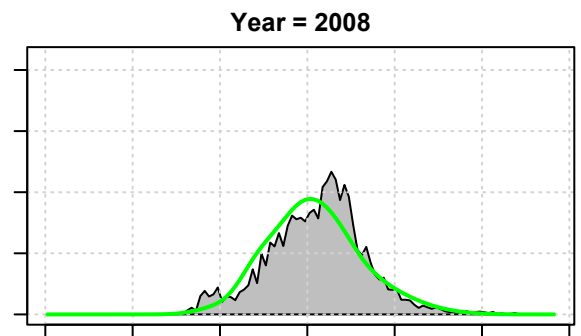
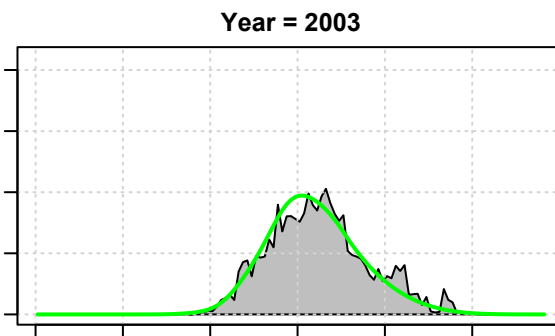
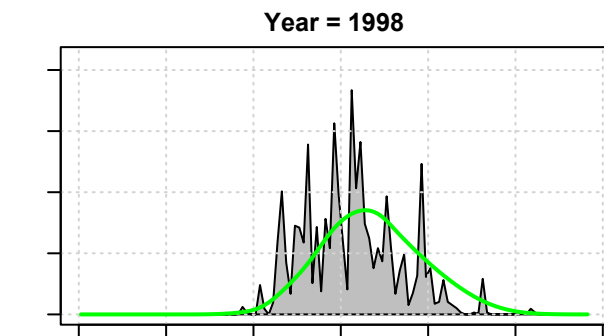
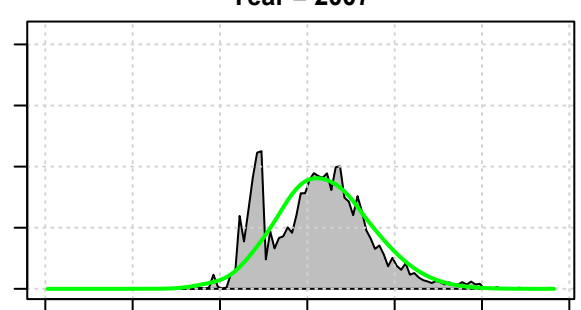
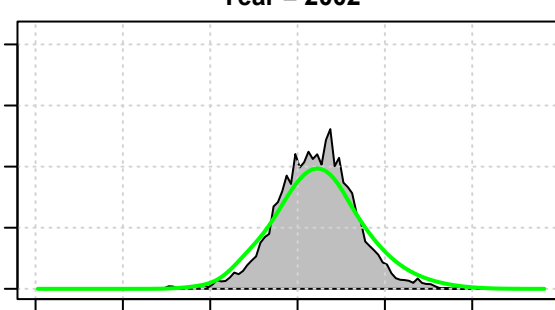
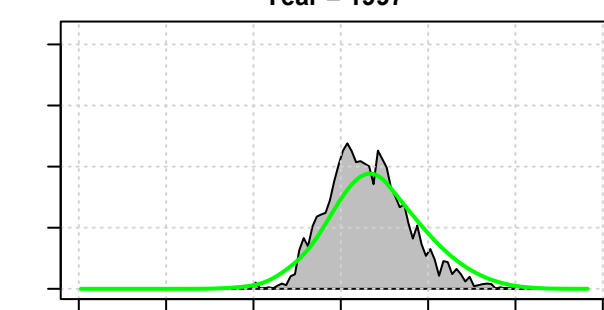
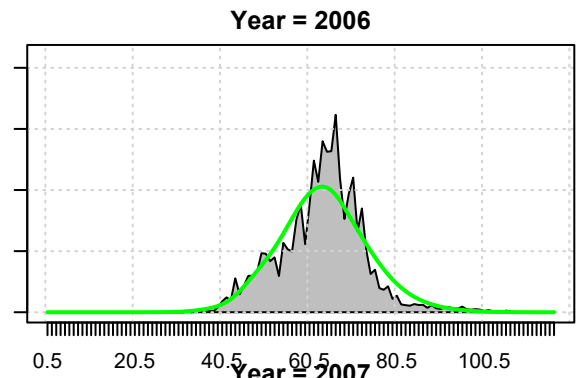
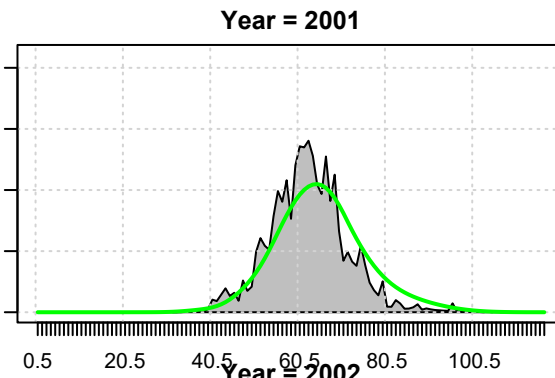
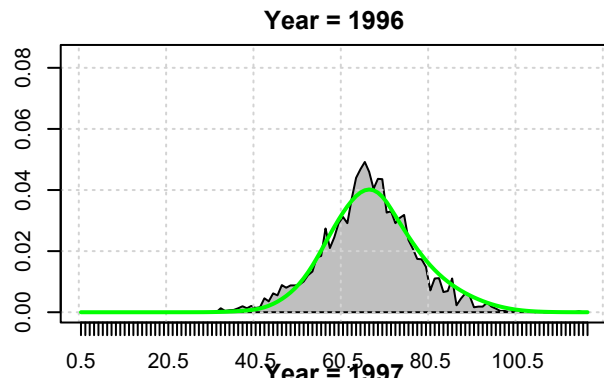
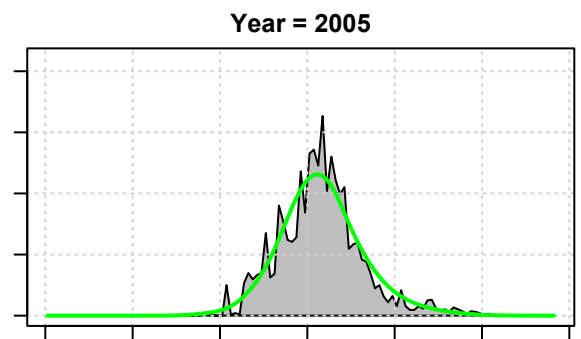
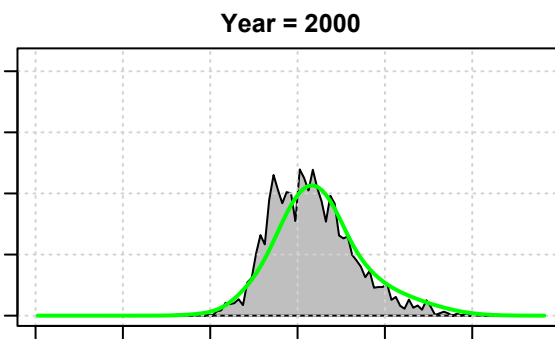
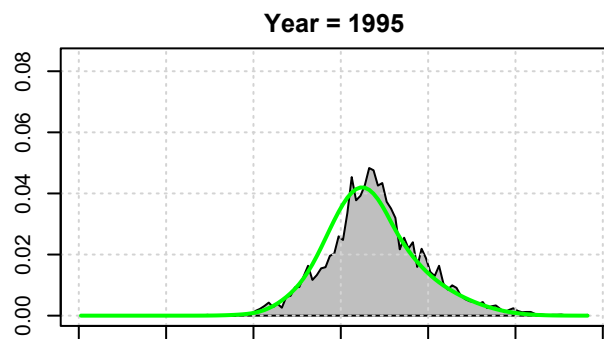








**Fleet 2**  
**Year = 2000**



Length (cm)





**Fleet 3**  
**Year = 1995**

**Year = 1990**

**Year = 2000**

**Year = 1991**

**Year = 1996**

**Year = 2001**

**Year = 1992**

**Year = 1997**

**Year = 2002**

**Year = 1993**

**Year = 1998**

**Year = 2003**

**Year = 1994**

**Year = 1999**

**Year = 2004**

0.00  
0.02  
0.04  
0.06  
0.08

0.00  
0.02  
0.04  
0.06  
0.08

0.00  
0.02  
0.04  
0.06  
0.08

0.00  
0.02  
0.04  
0.06  
0.08

0.00  
0.02  
0.04  
0.06  
0.08

0.00  
0.02  
0.04  
0.06  
0.08

0.5 20.5 40.5 60.5 80.5 100.5

0.5 20.5 40.5 60.5 80.5 100.5

0.5 20.5 40.5 60.5 80.5 100.5

Length (cm)

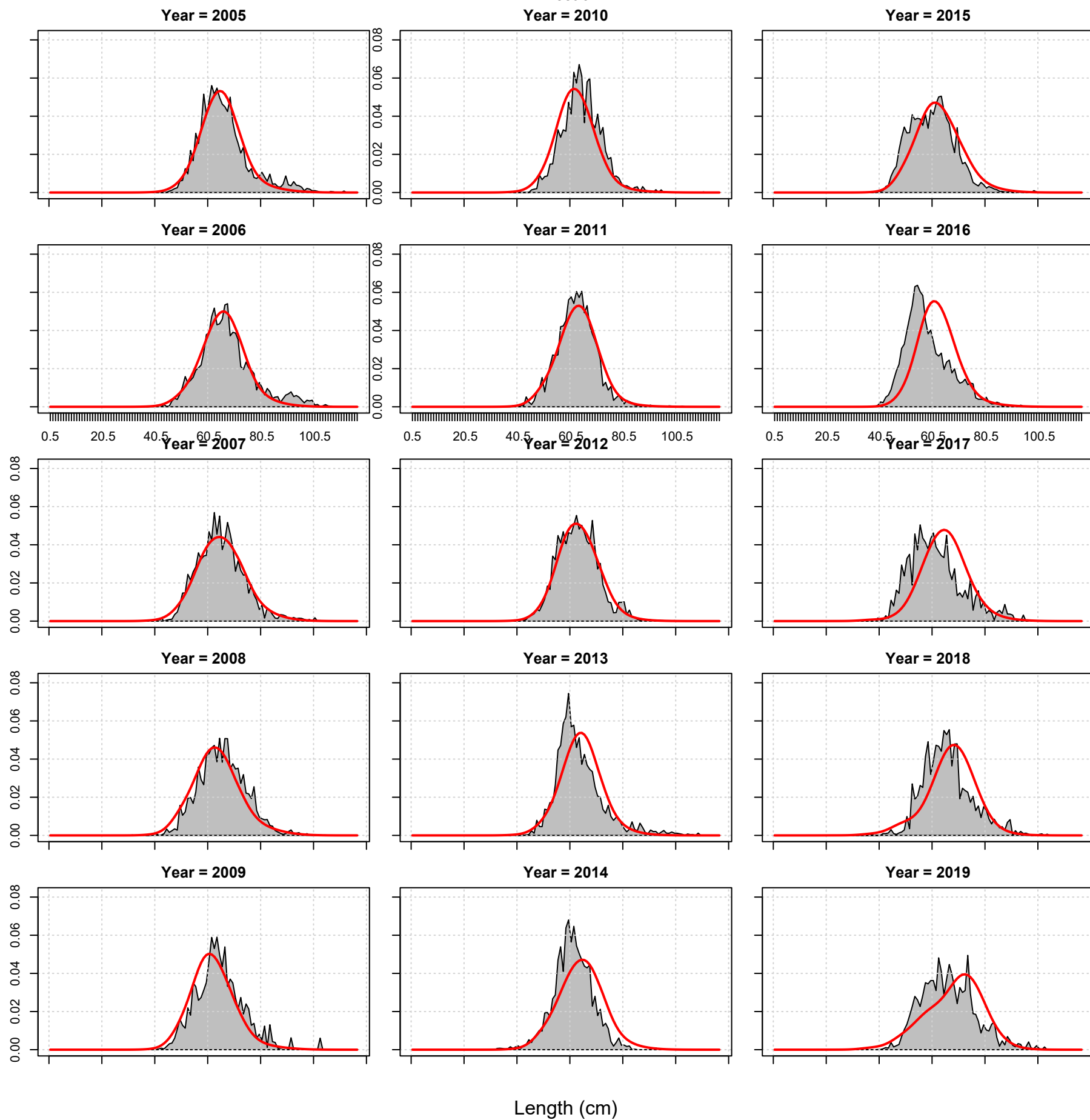
Proportion

0.00  
0.02  
0.04  
0.06  
0.08

0.00  
0.02  
0.04  
0.06  
0.08

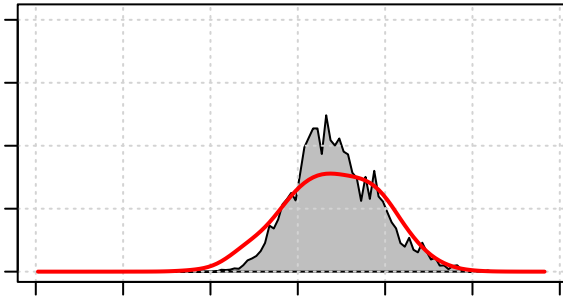
0.00  
0.02  
0.04  
0.06  
0.08

**Fleet 3**  
**Year = 2010**

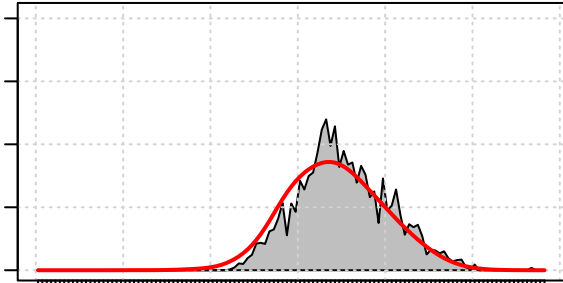


Fleet 3

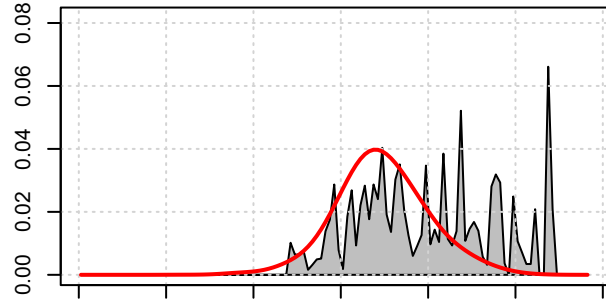
Year = 2020



Year = 2021

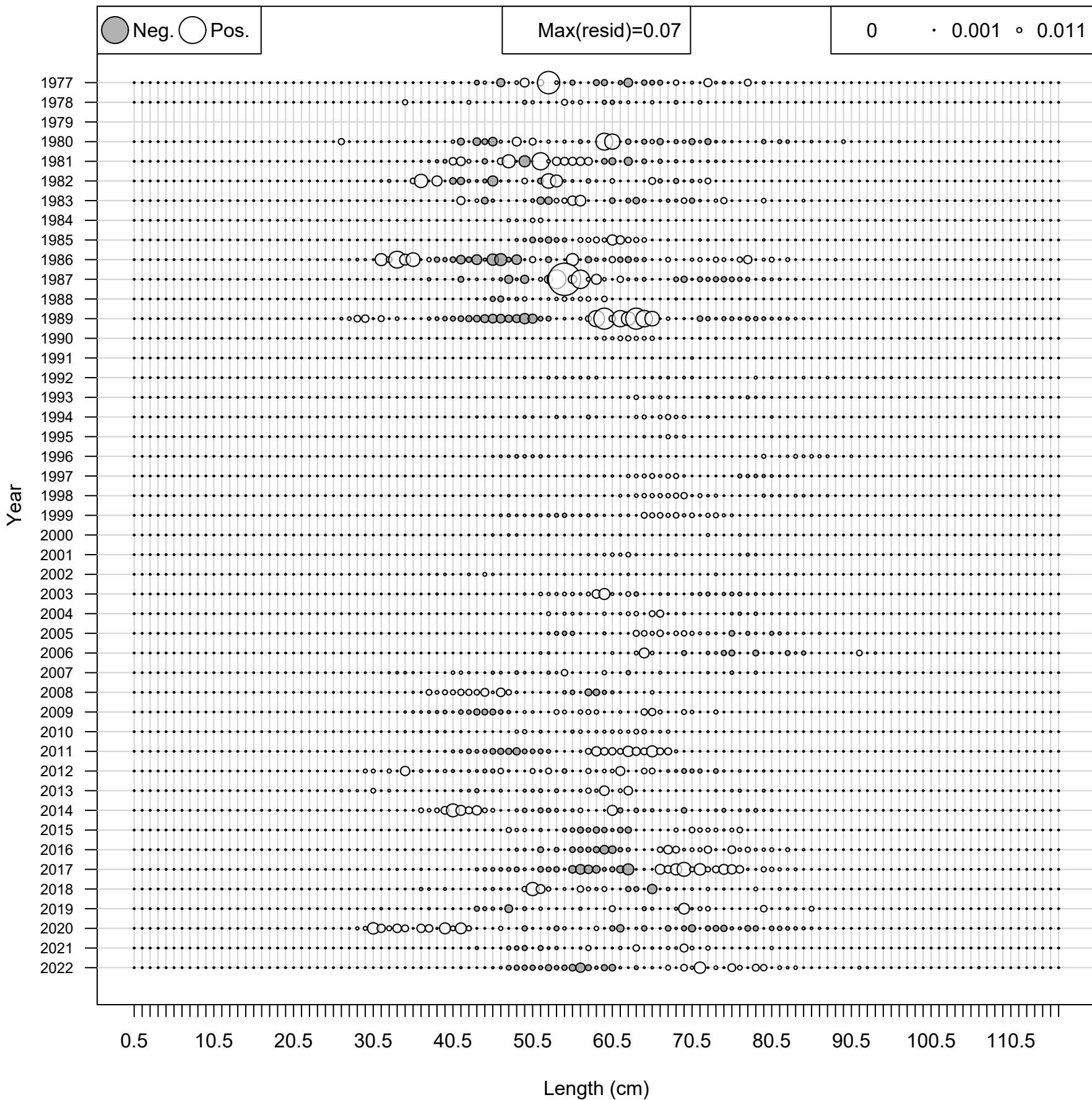


Year = 2022



Length (cm)

# Length Comp Residuals (Observed-Predicted) for Fleet 1



# Length Comp Residuals (Observed-Predicted) for Fleet 2

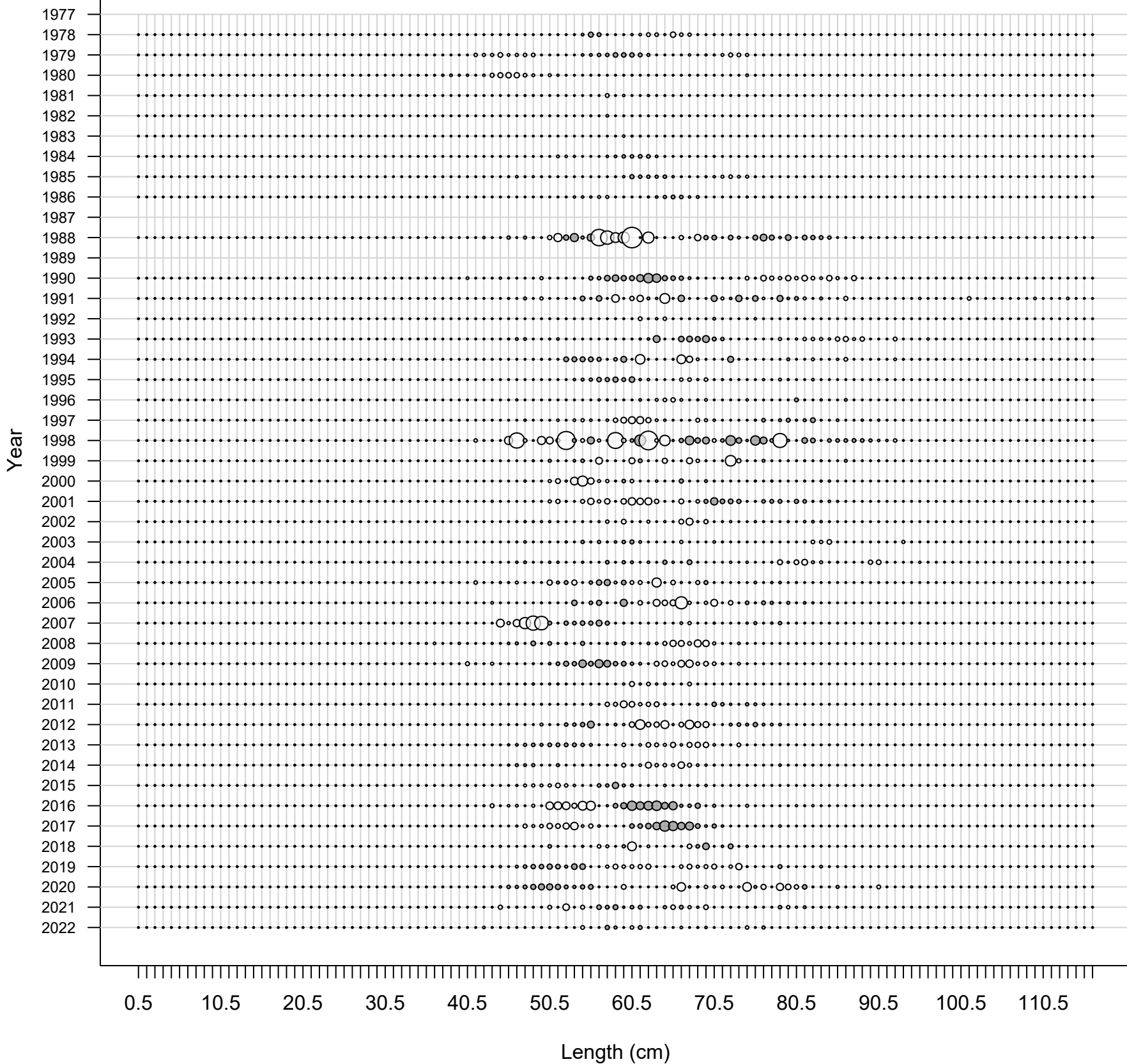
● Neg. ○ Pos.

Max(resid)=0.04

0

0

◦ 0.009



# Length Comp Residuals (Observed-Predicted) for Fleet 3

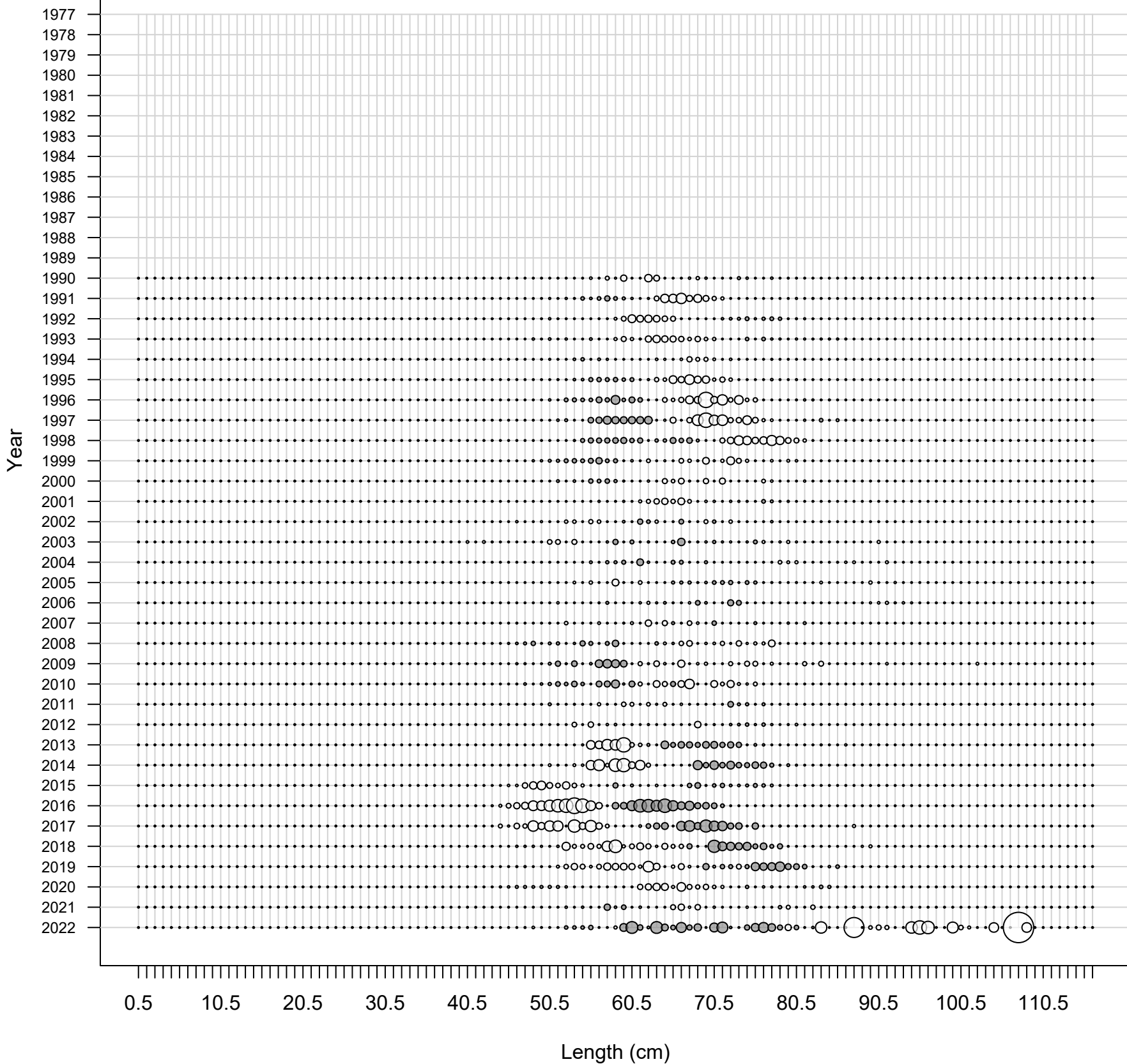
● Neg. ○ Pos.

Max(resid)=0.07

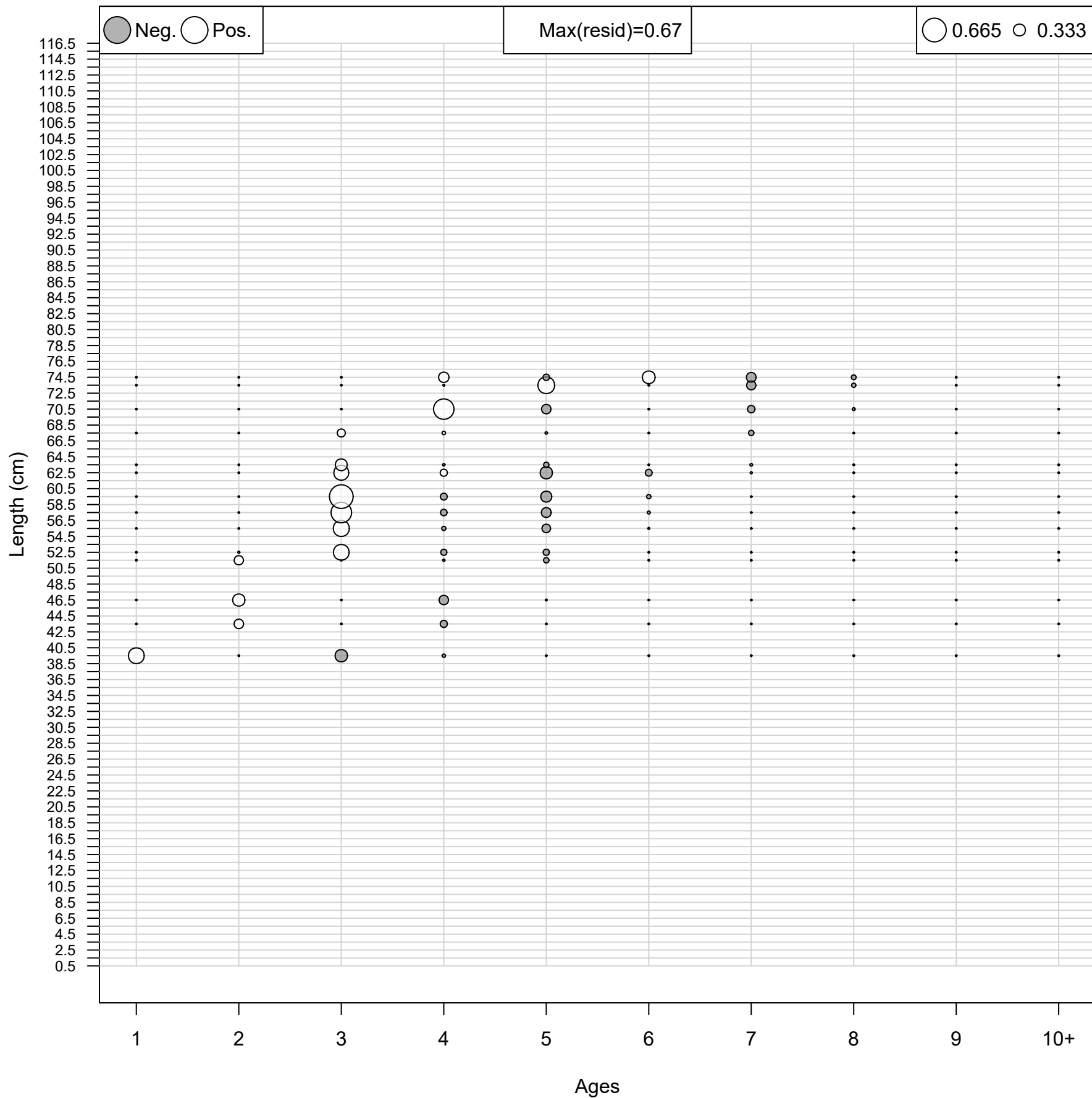
0

0

○ 0.013

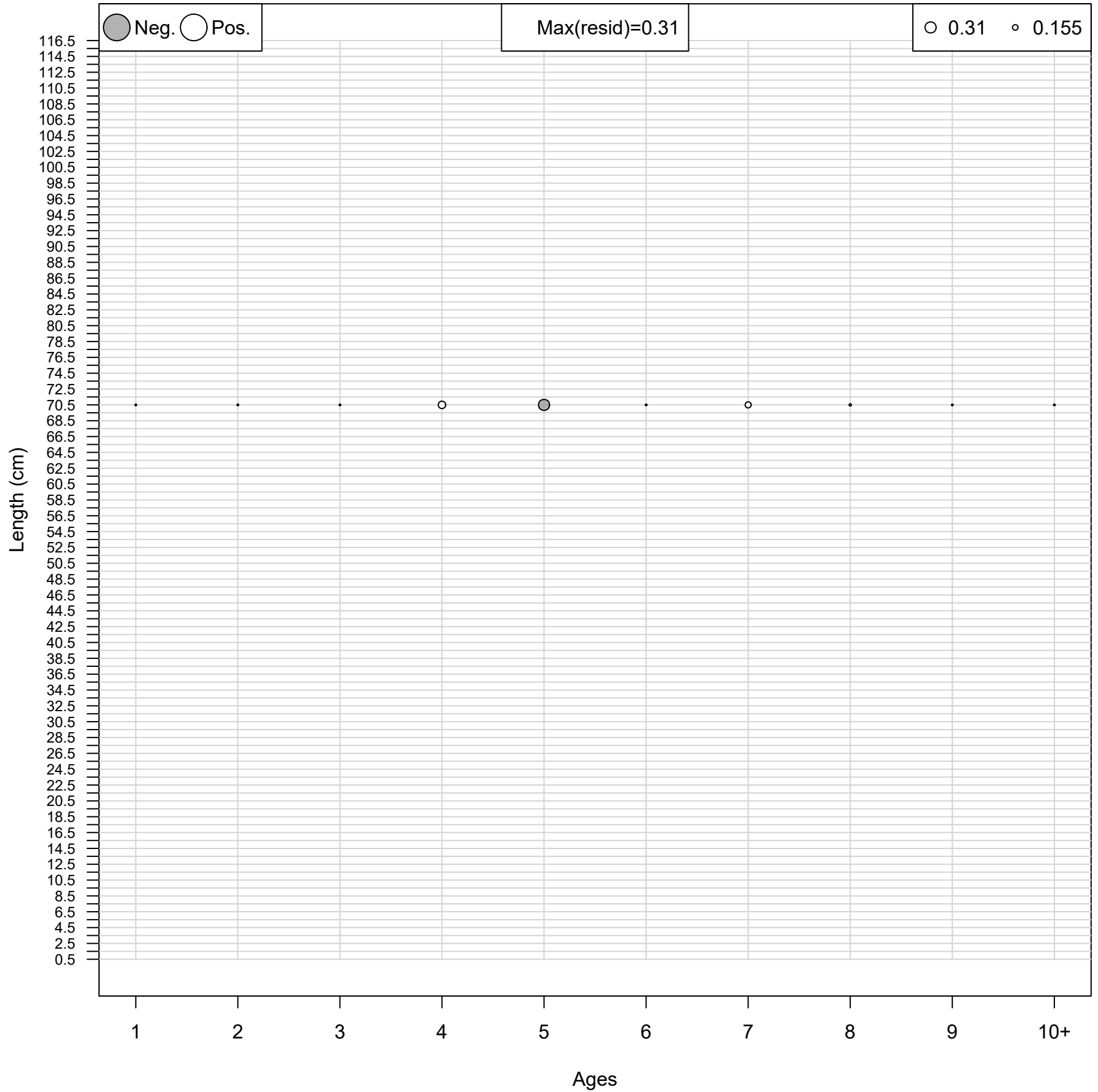


# CAAL Residuals (Observed-Predicted) for Fleet 1 Year 2007

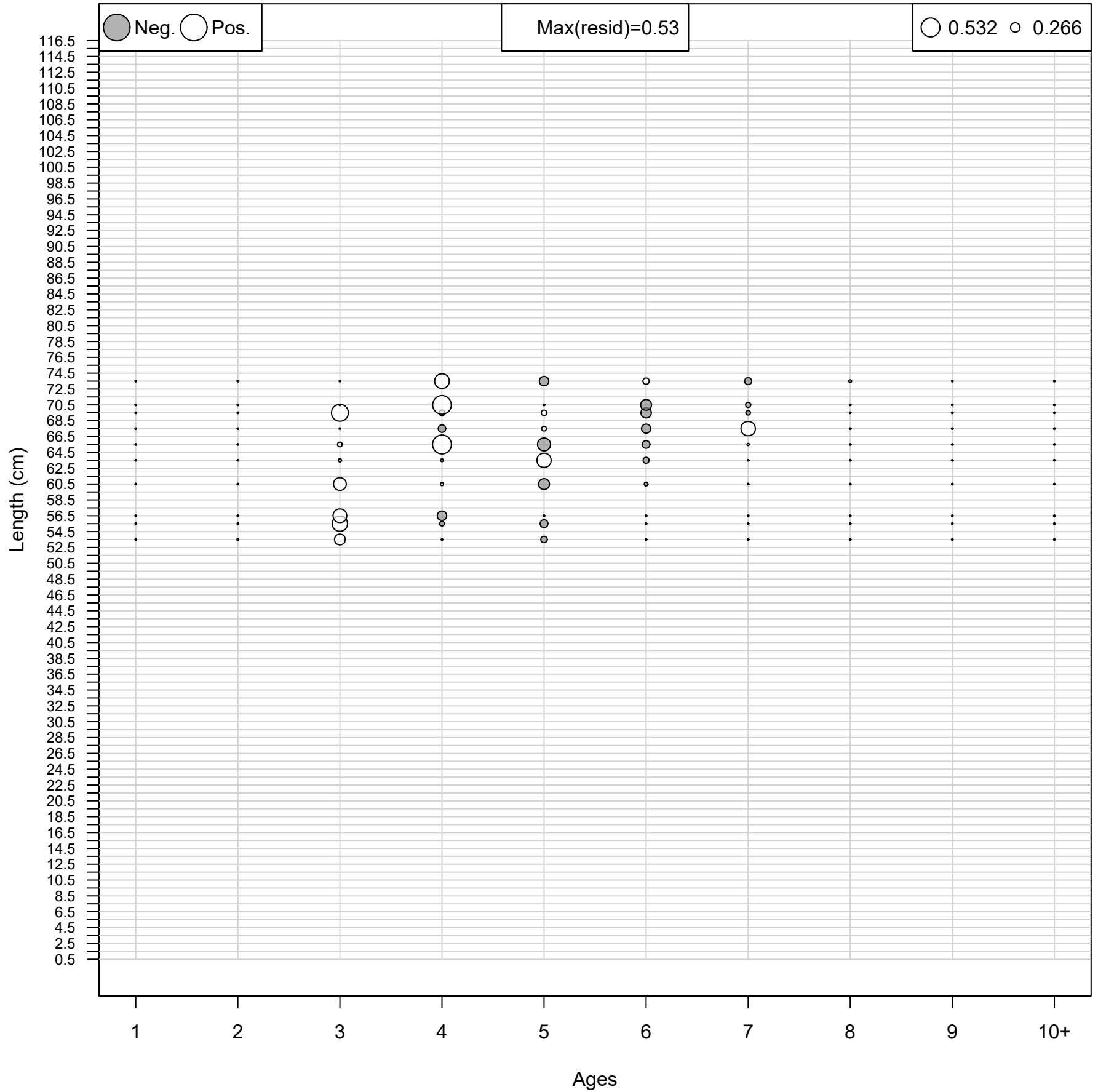




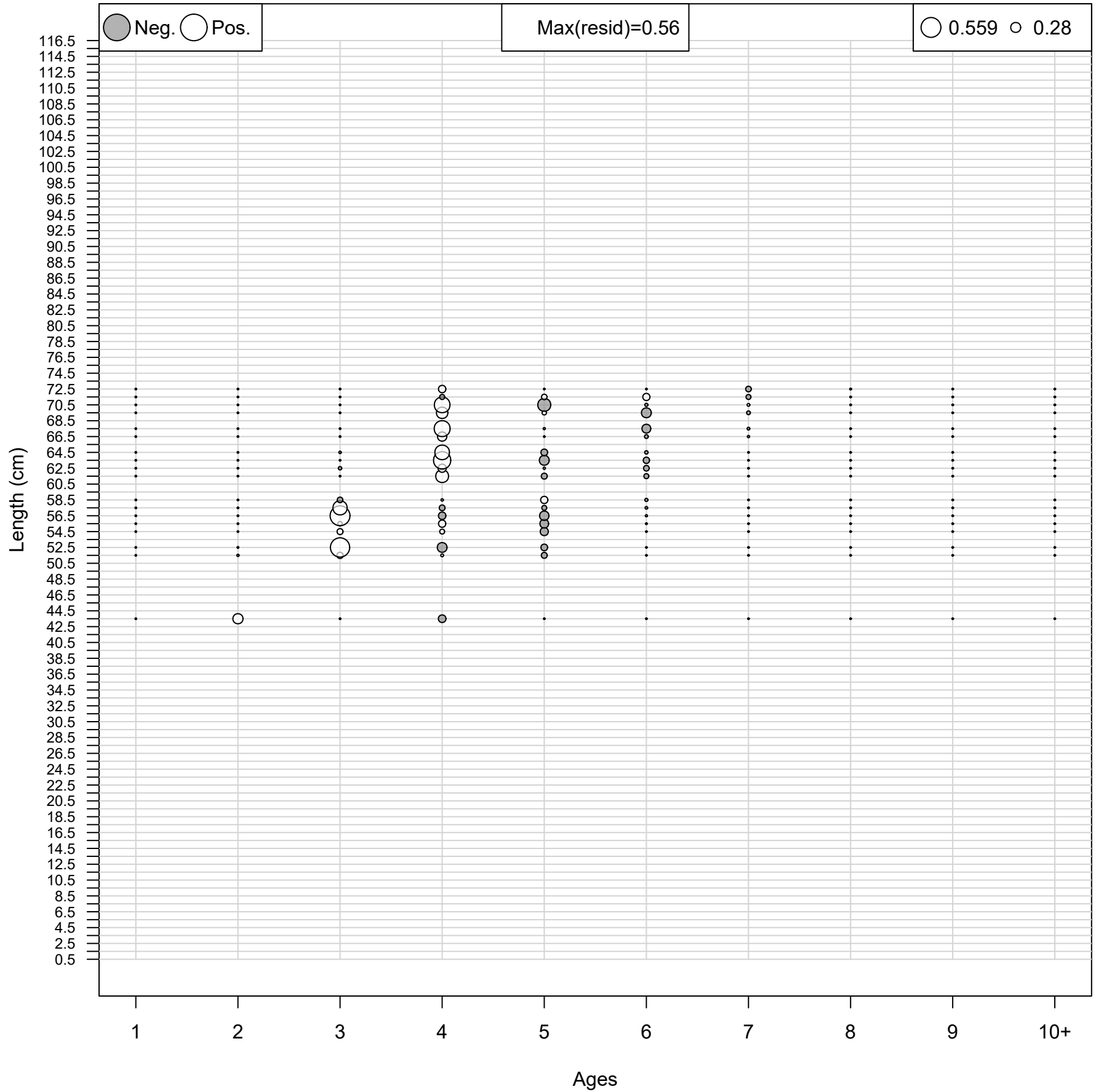
# CAAL Residuals (Observed-Predicted) for Fleet 1 Year 2008



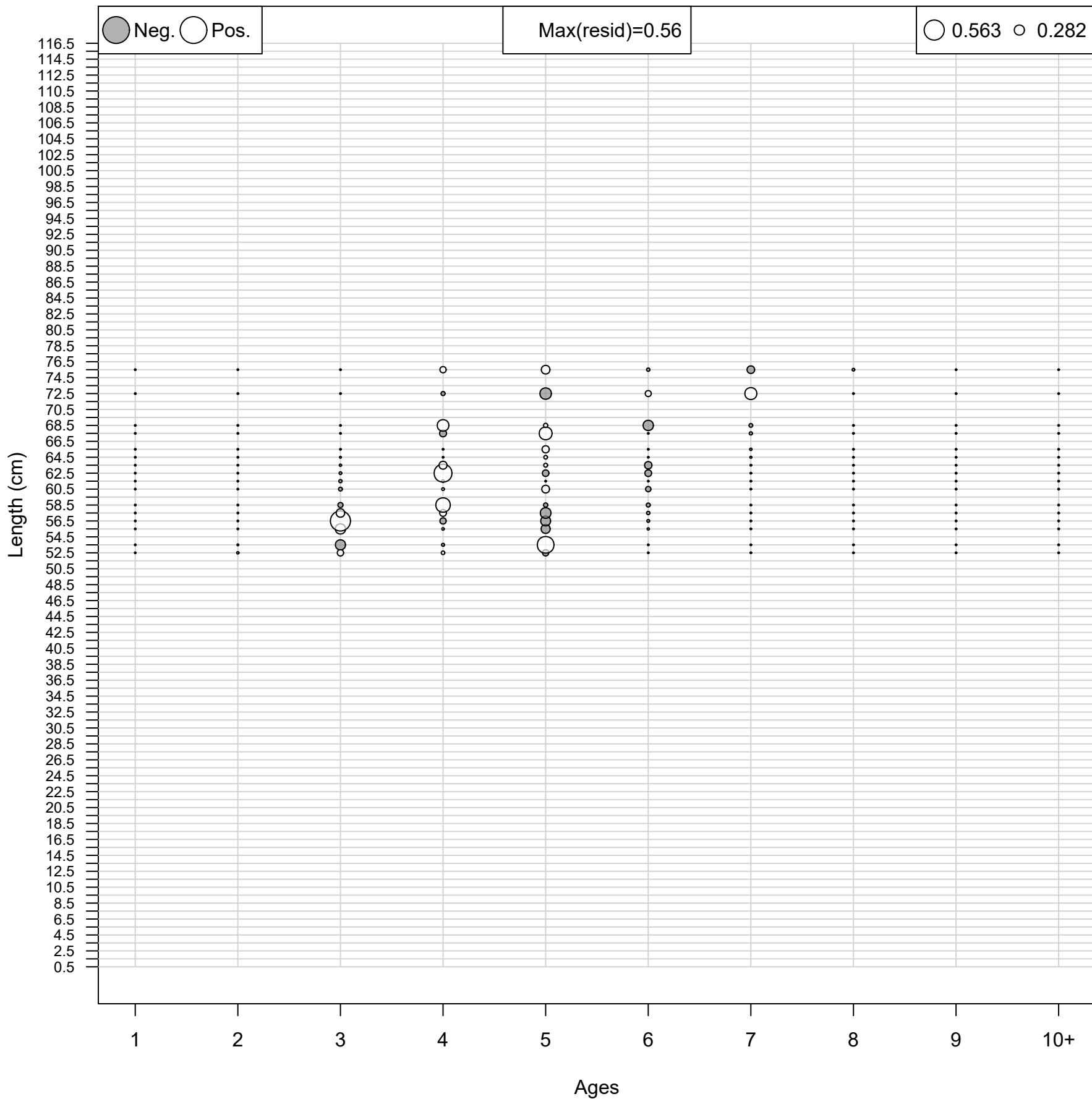
# CAAL Residuals (Observed-Predicted) for Fleet 1 Year 2009



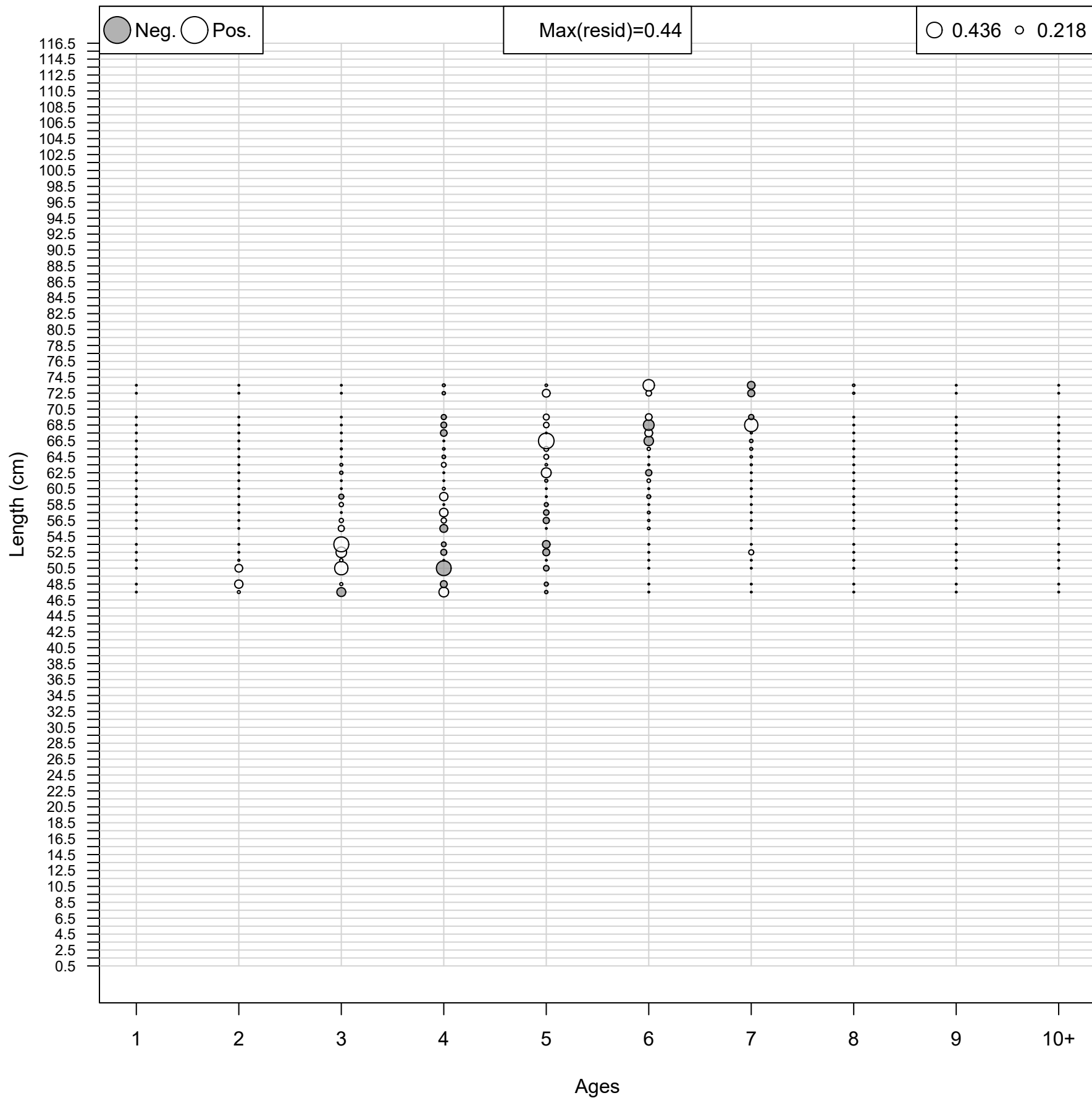
# CAAL Residuals (Observed-Predicted) for Fleet 1 Year 2010



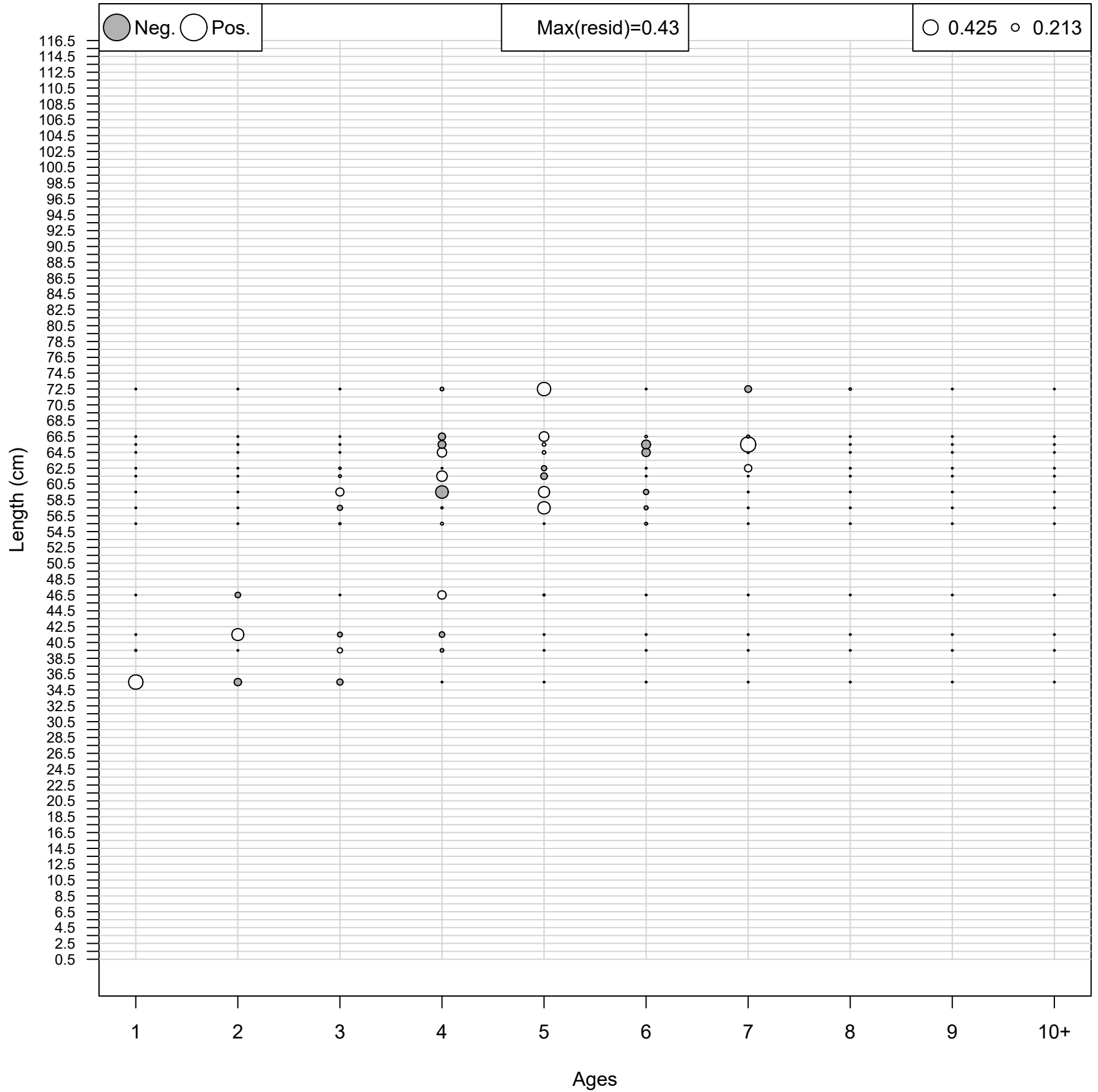
# CAAL Residuals (Observed-Predicted) for Fleet 1 Year 2011



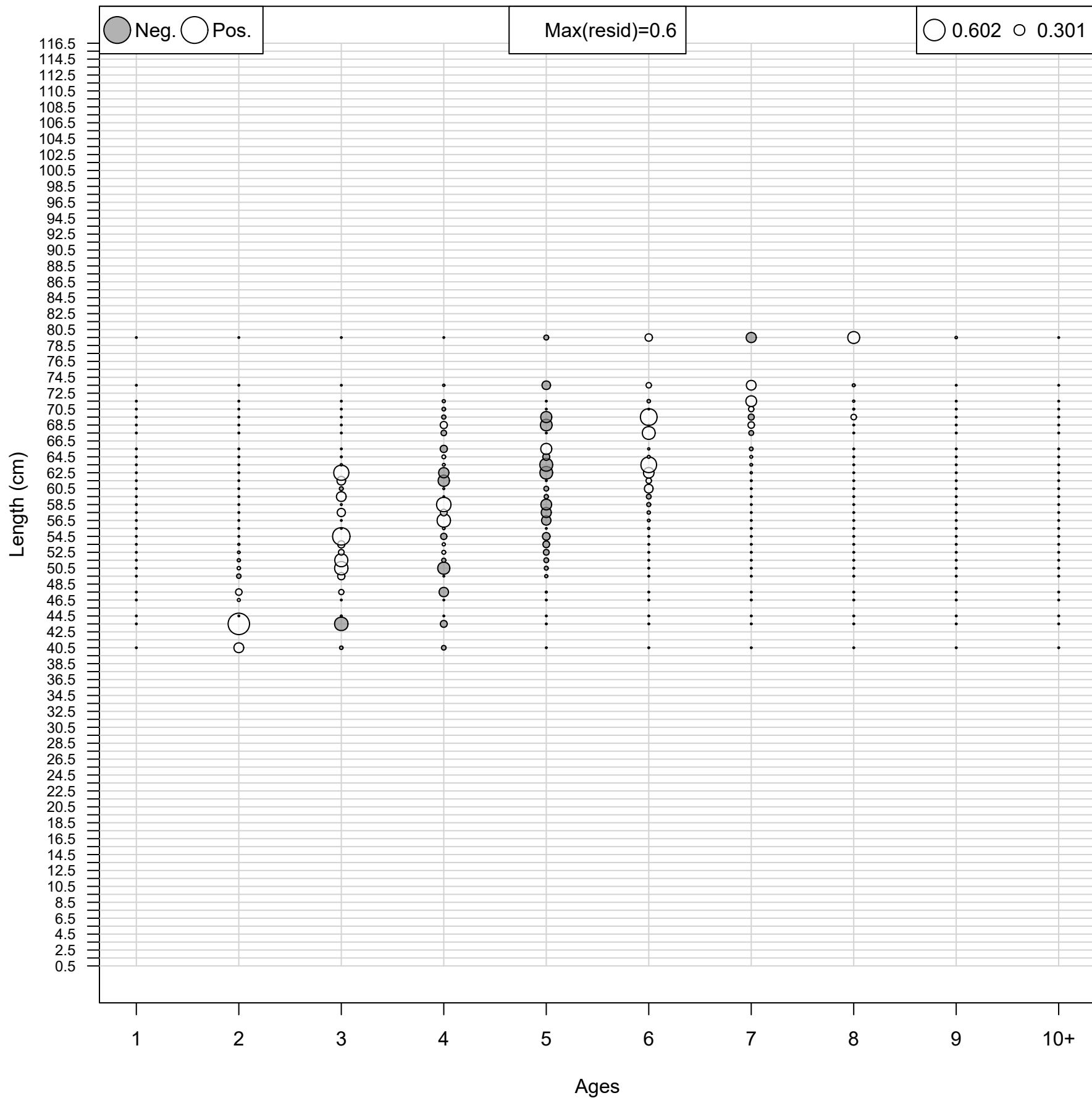
# CAAL Residuals (Observed-Predicted) for Fleet 1 Year 2012



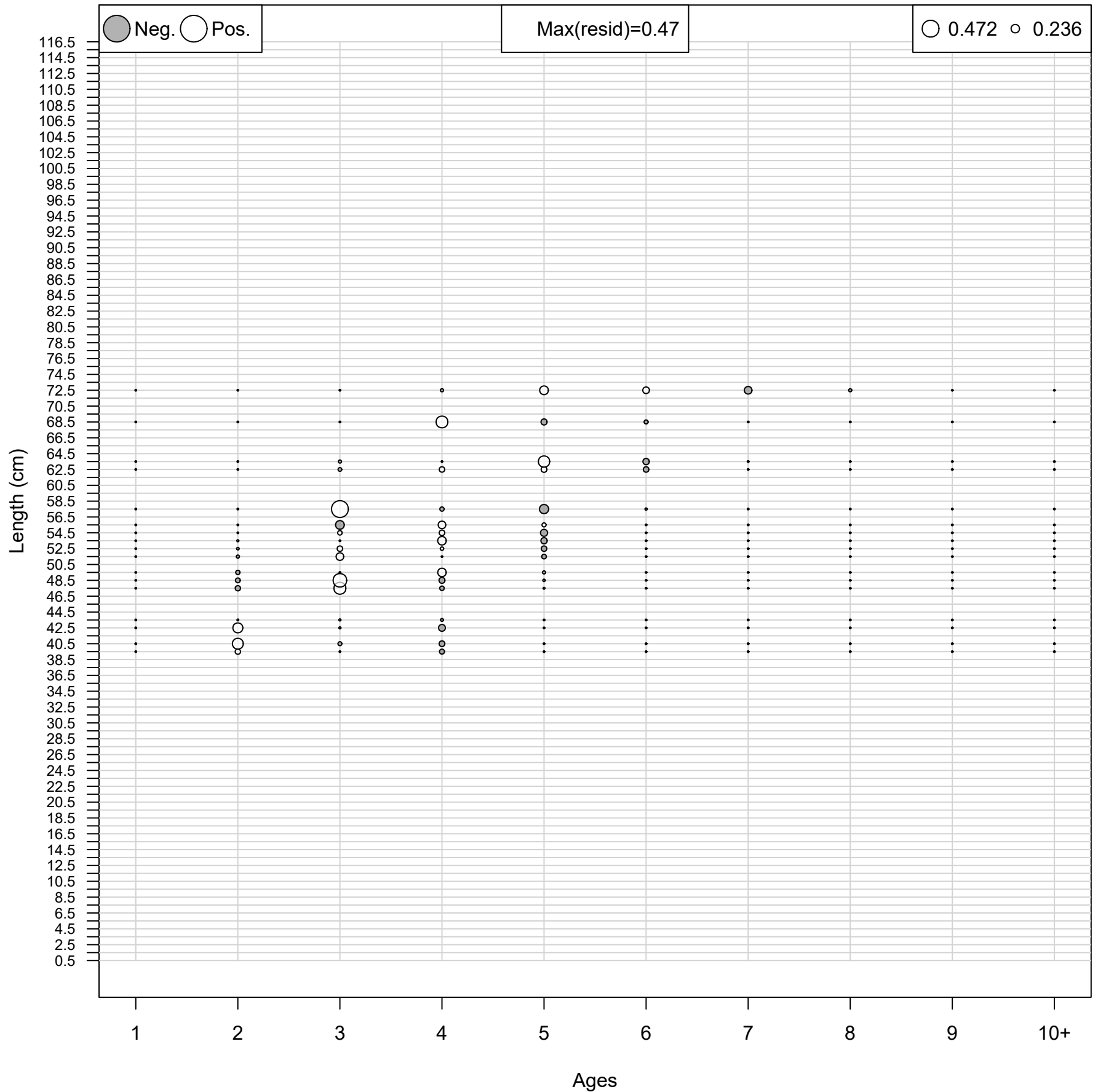
# CAAL Residuals (Observed-Predicted) for Fleet 1 Year 2013



# CAAL Residuals (Observed-Predicted) for Fleet 1 Year 2014

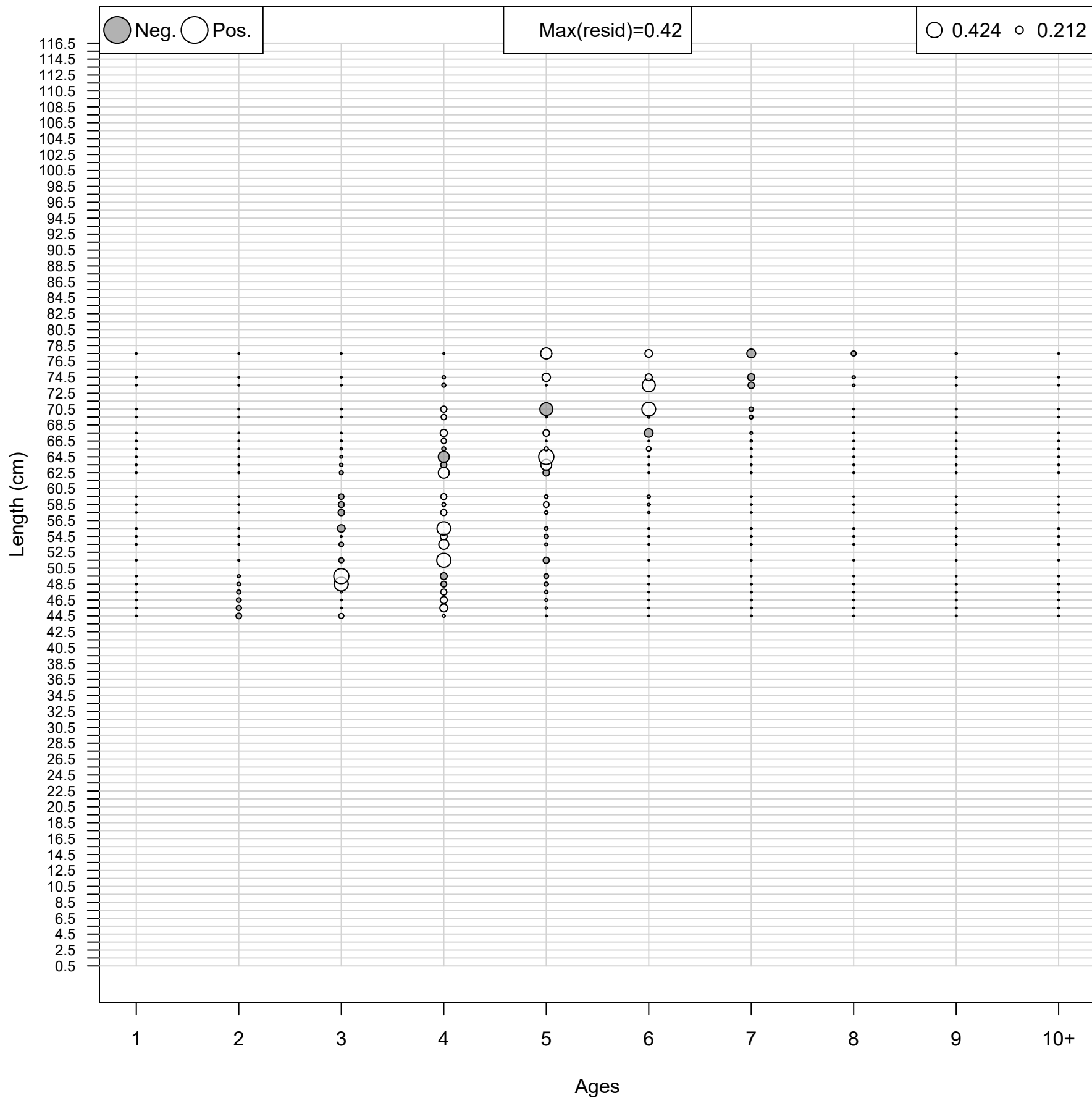


# CAAL Residuals (Observed-Predicted) for Fleet 1 Year 2015

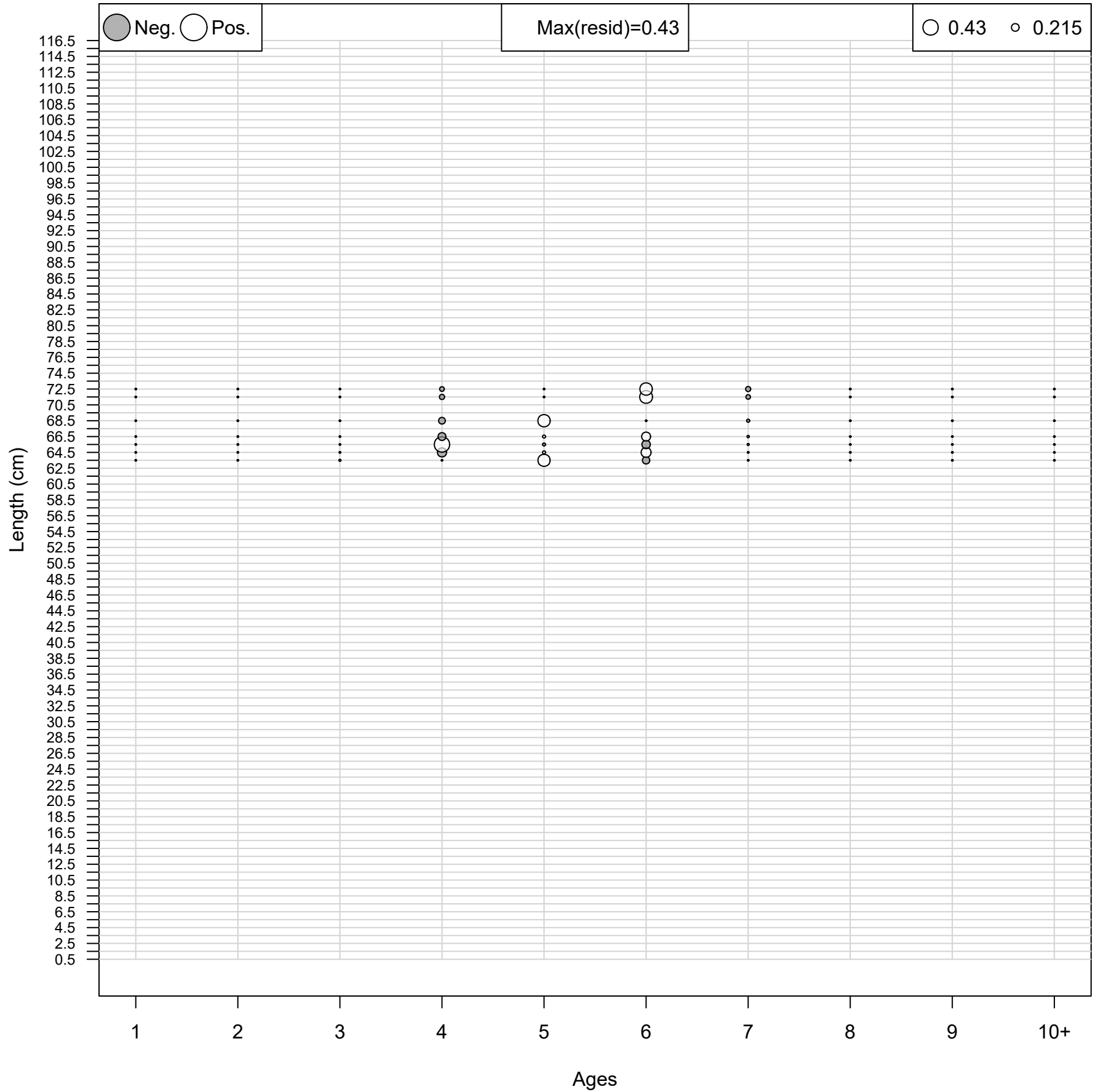




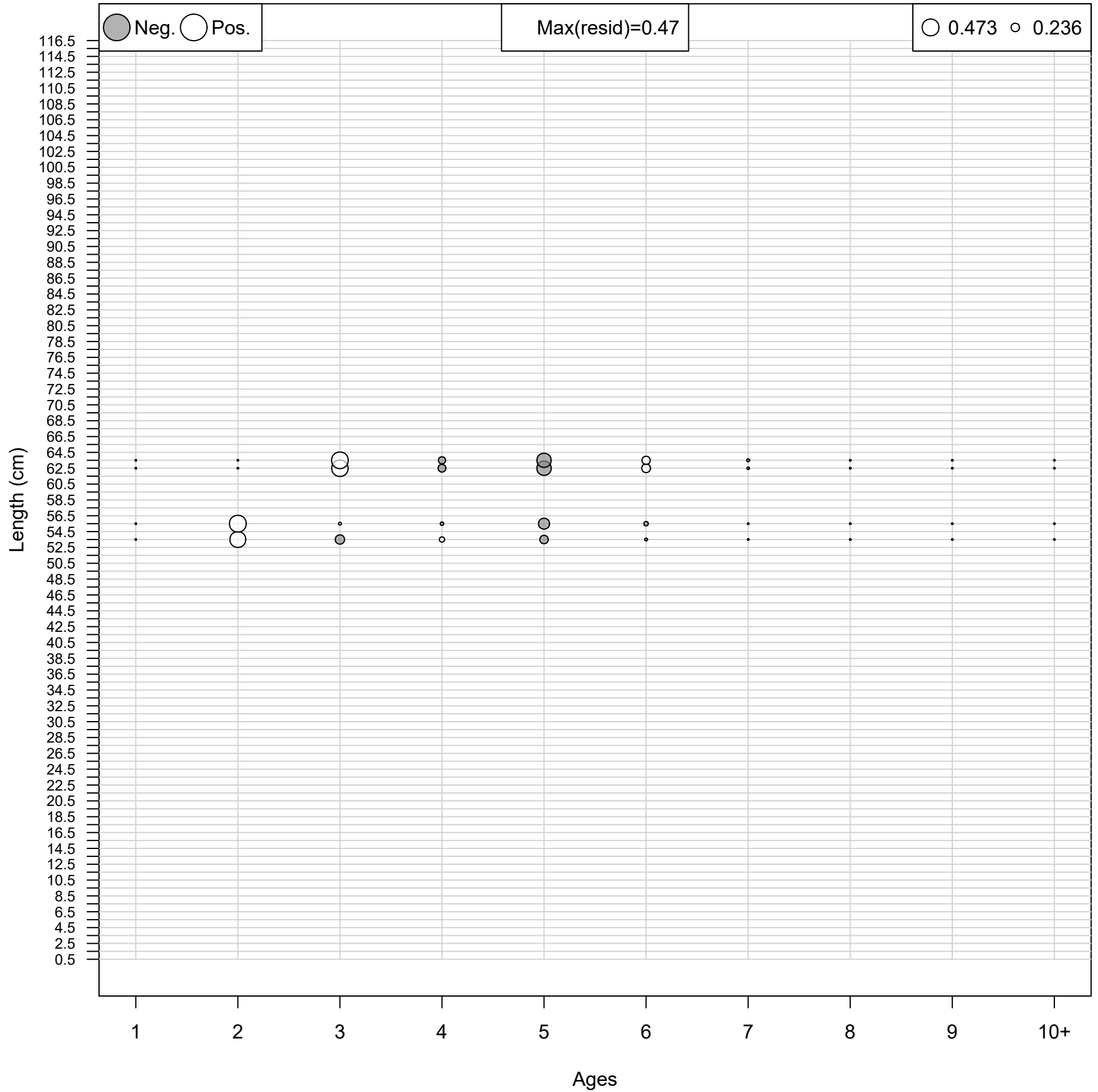
# CAAL Residuals (Observed-Predicted) for Fleet 1 Year 2016



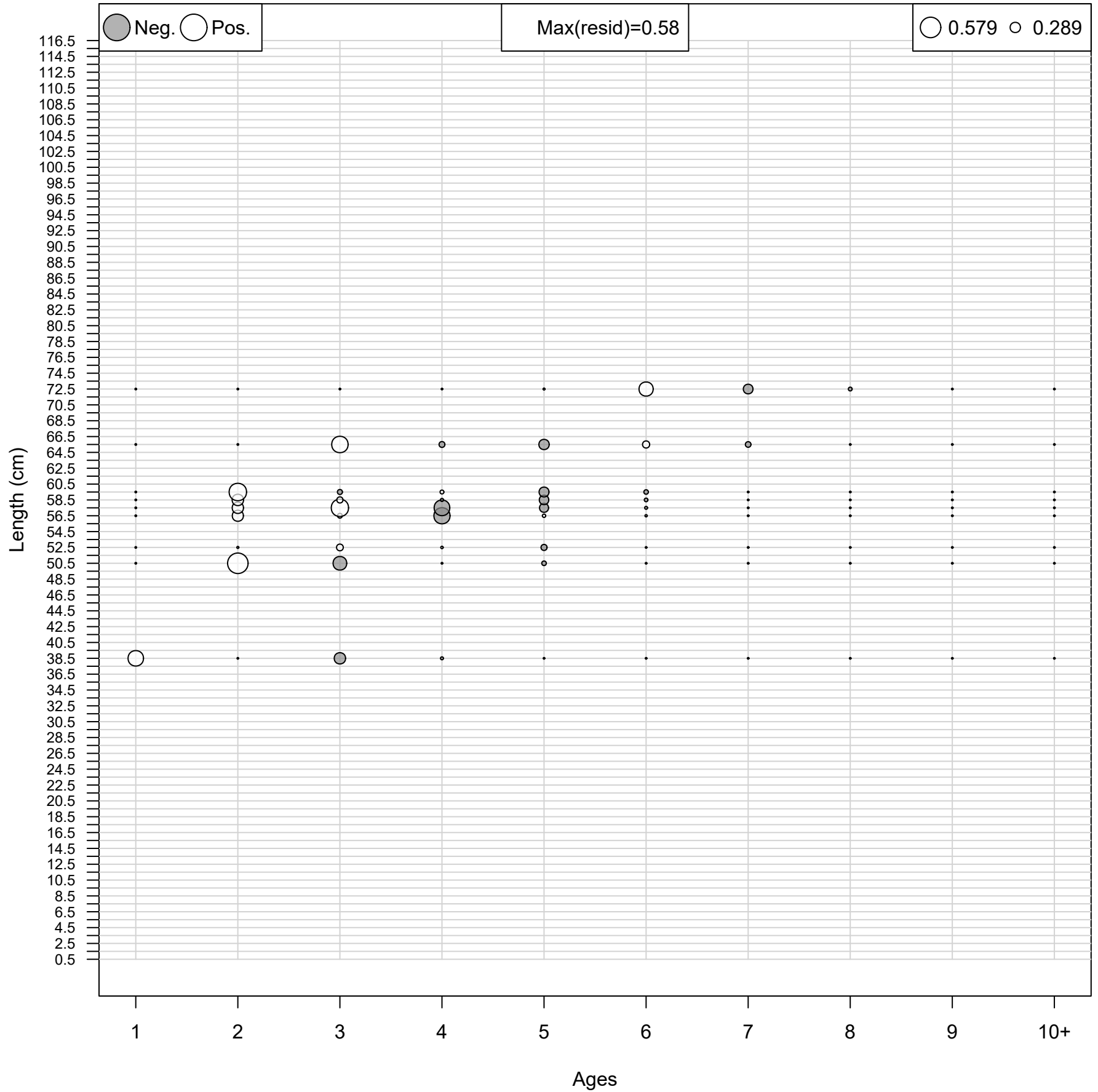
# CAAL Residuals (Observed-Predicted) for Fleet 1 Year 2017



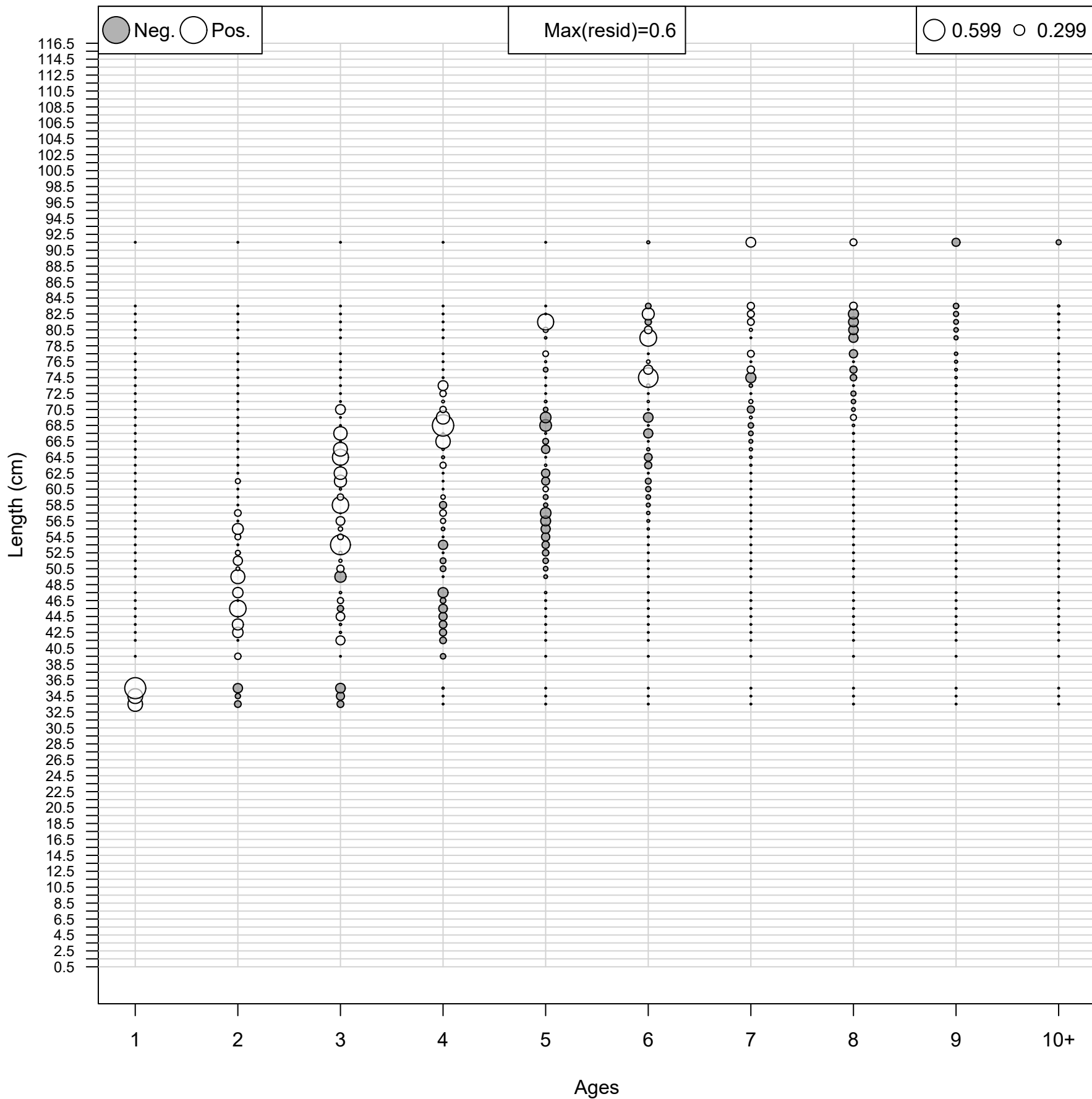
# CAAL Residuals (Observed-Predicted) for Fleet 1 Year 2018



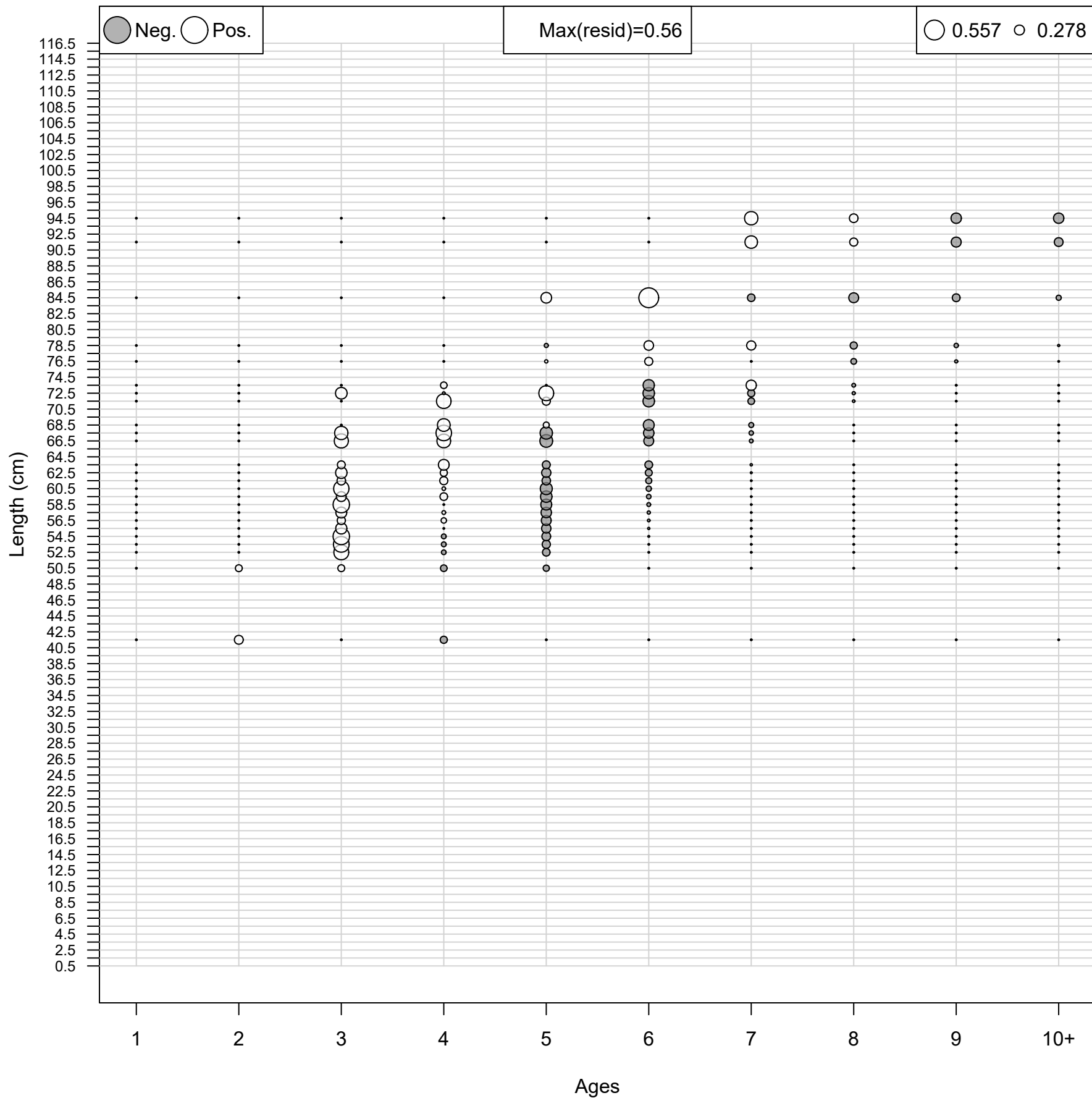
# CAAL Residuals (Observed-Predicted) for Fleet 1 Year 2019



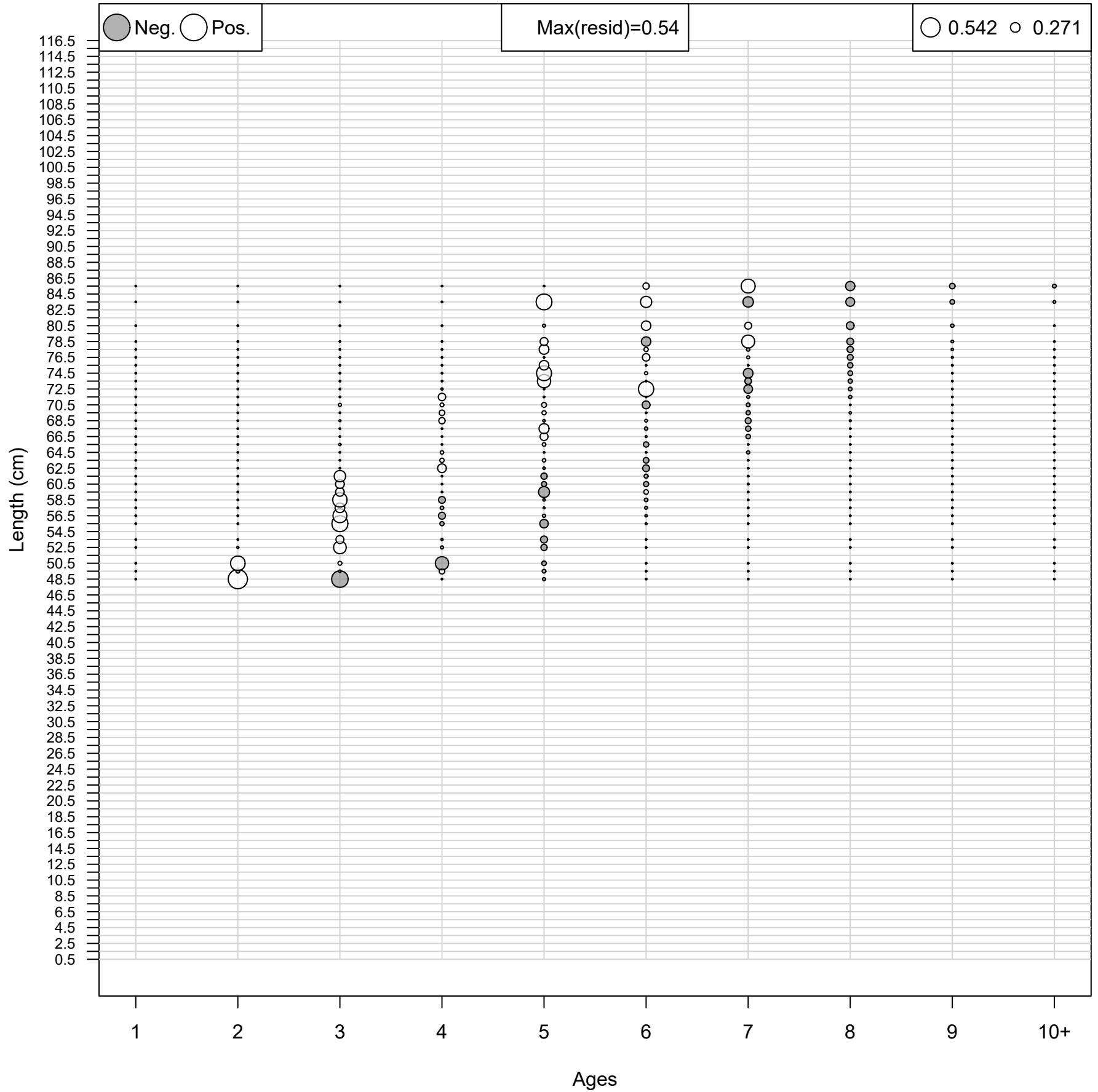
# CAAL Residuals (Observed-Predicted) for Fleet 1 Year 2020



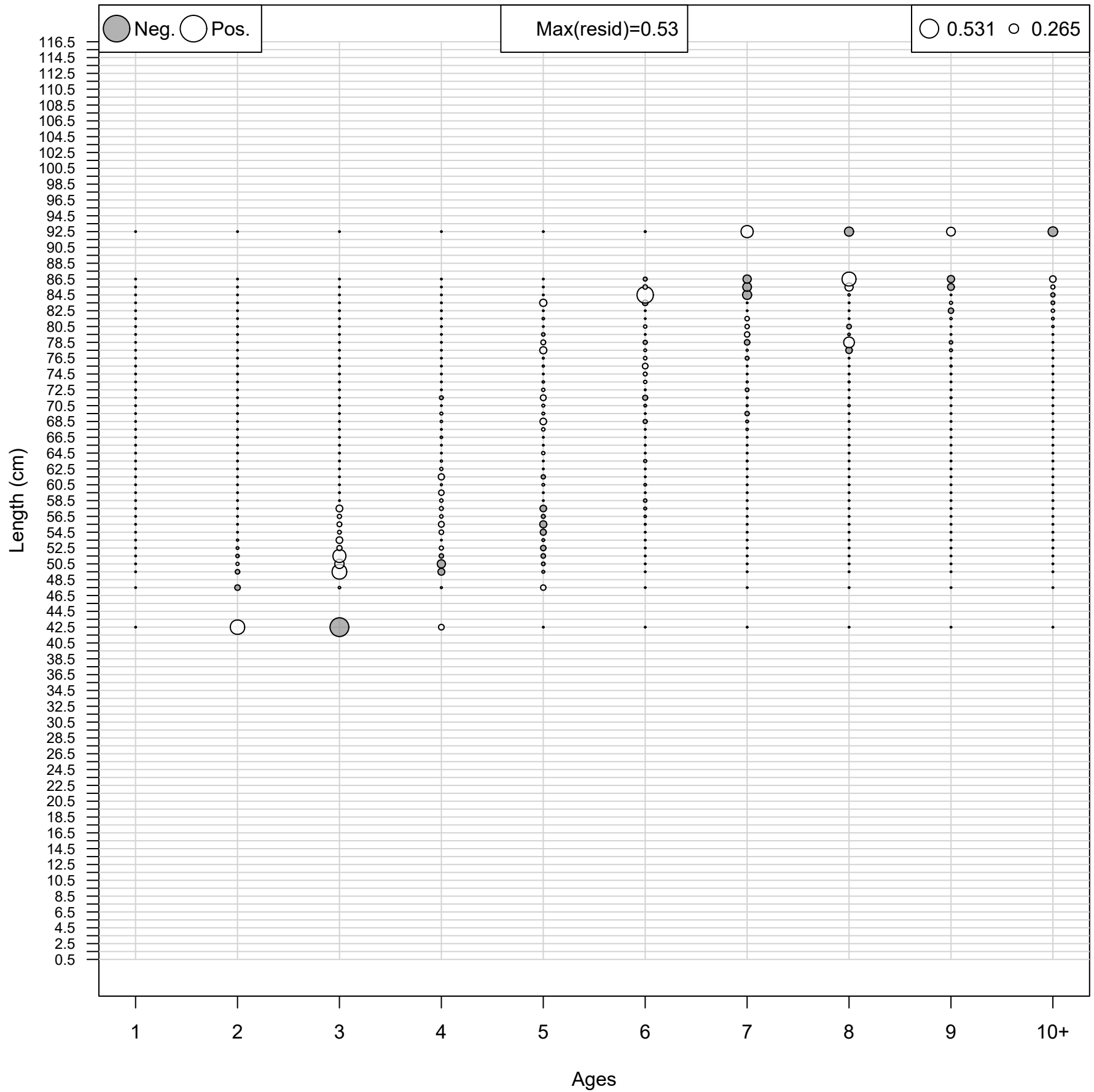
# CAAL Residuals (Observed-Predicted) for Fleet 1 Year 2021



# CAAL Residuals (Observed-Predicted) for Fleet 2 Year 2007

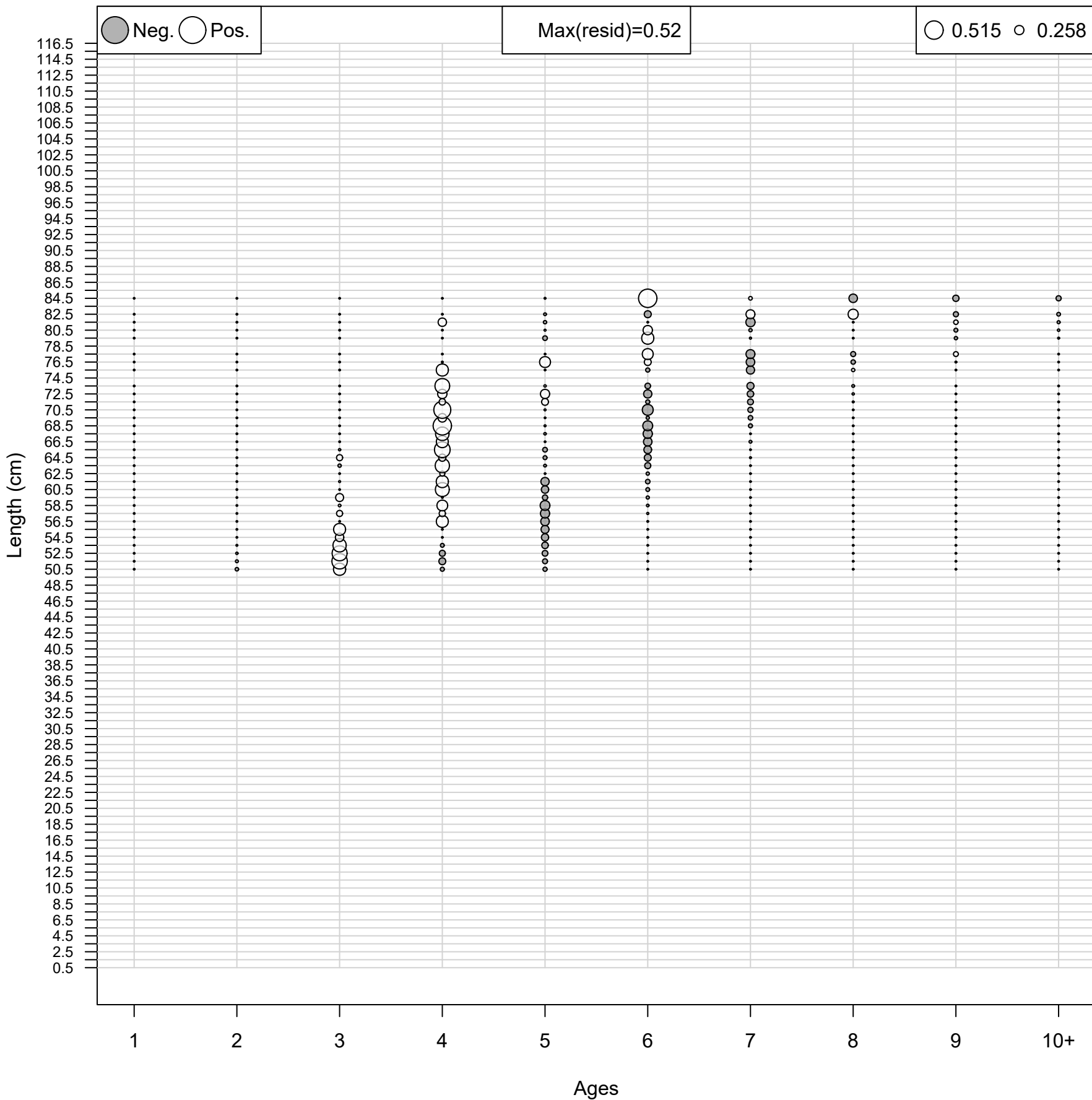


### CAAL Residuals (Observed-Predicted) for Fleet 2 Year 2008

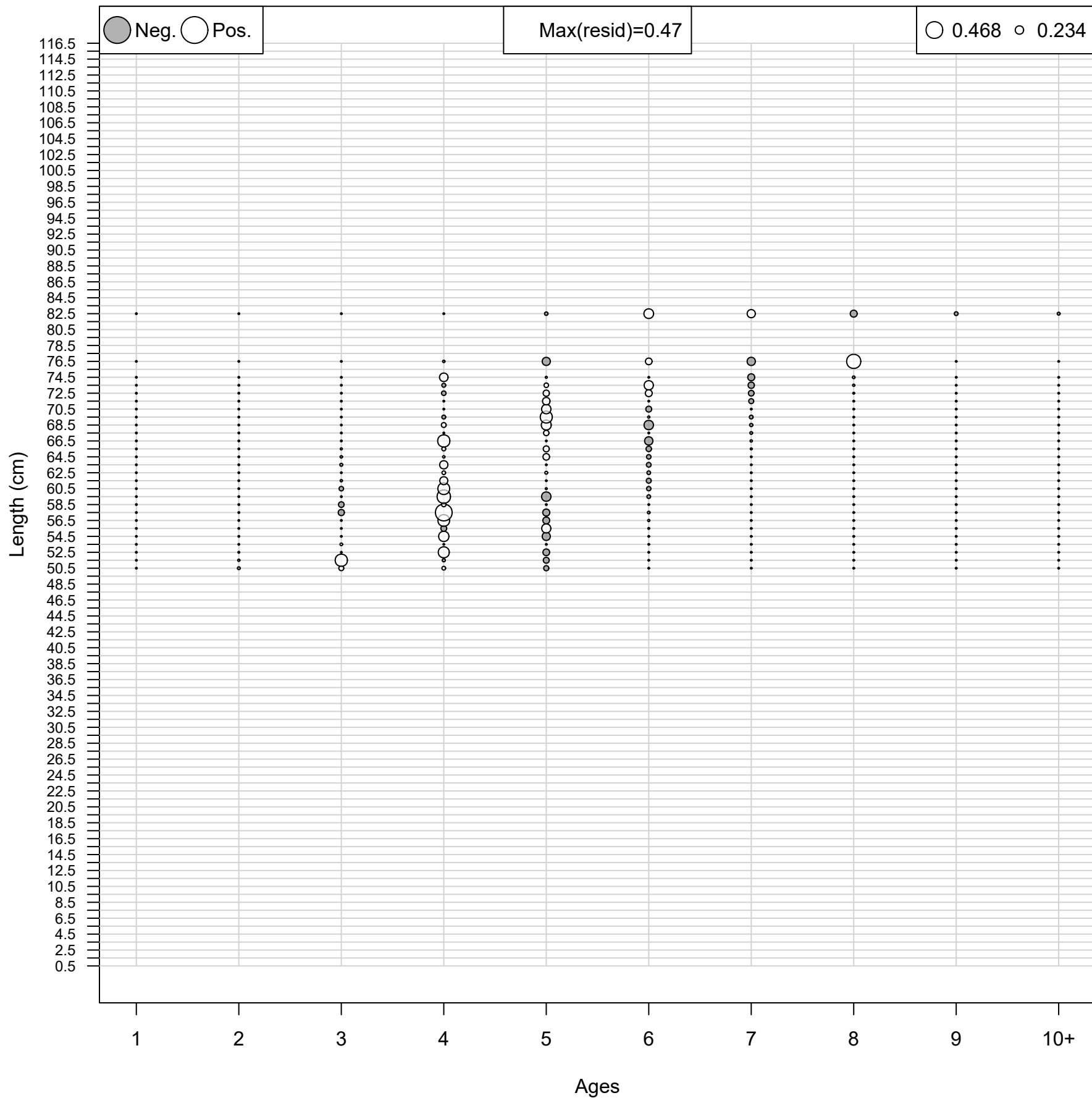




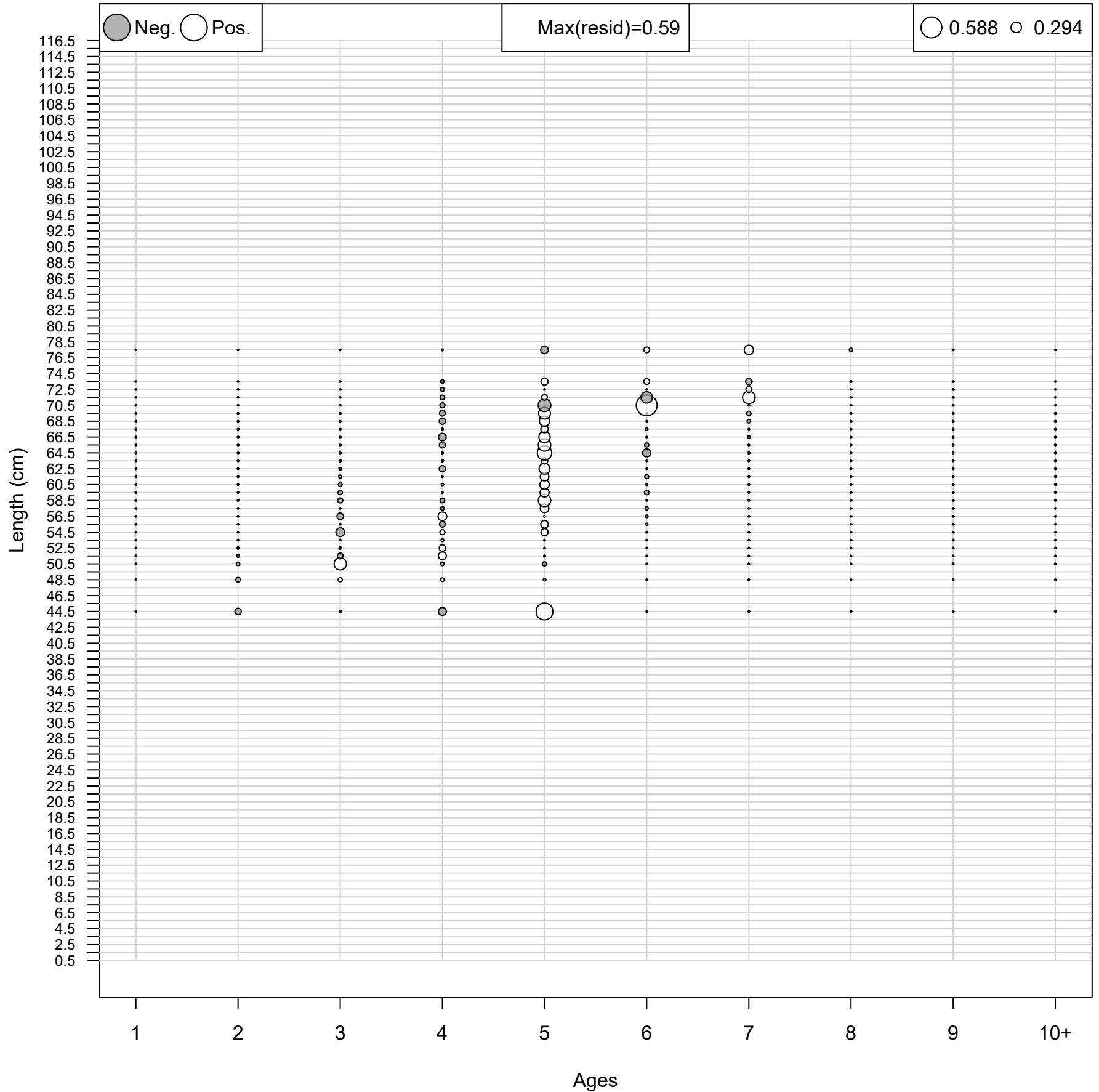
# CAAL Residuals (Observed-Predicted) for Fleet 2 Year 2009



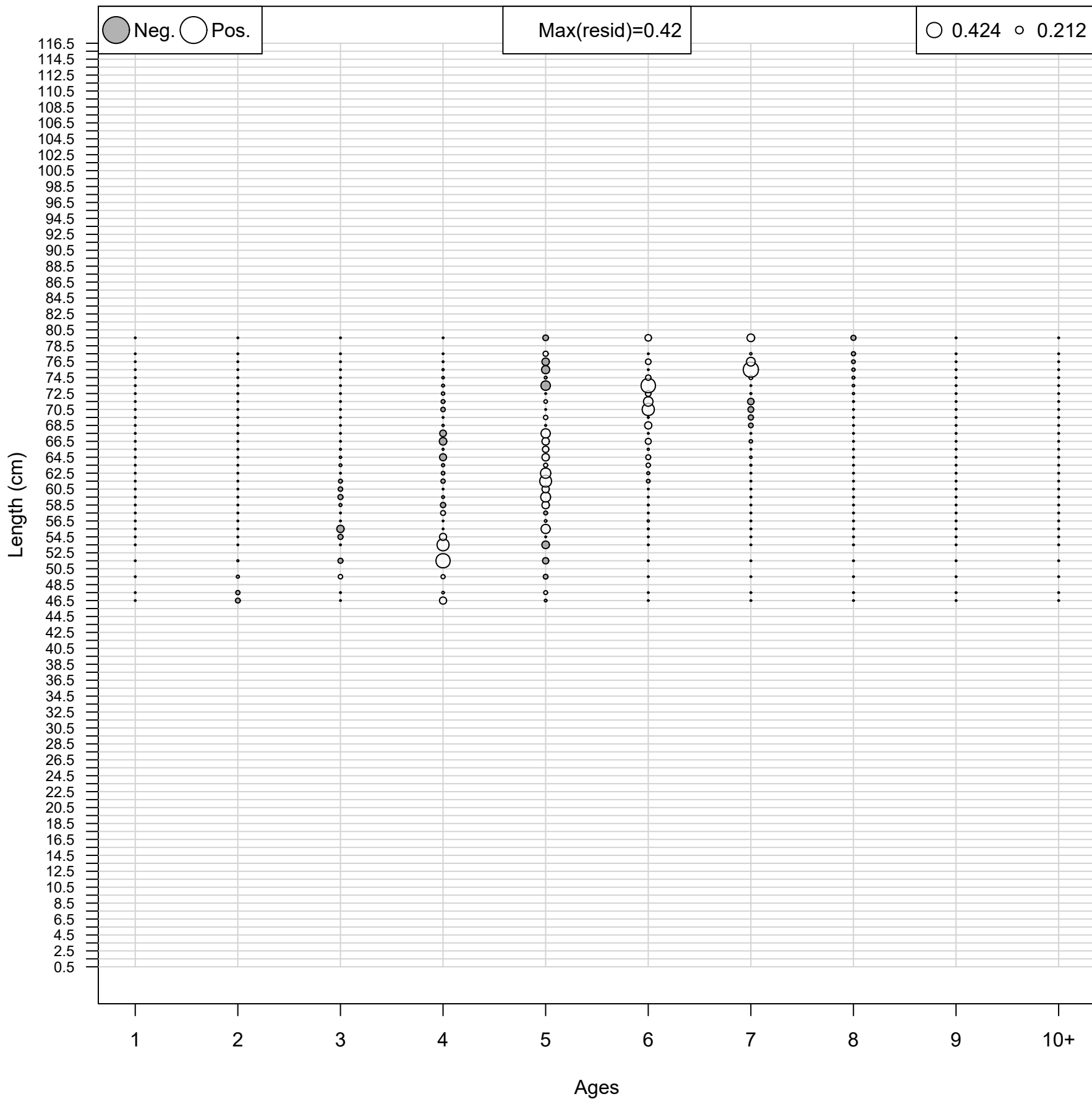
# CAAL Residuals (Observed-Predicted) for Fleet 2 Year 2010



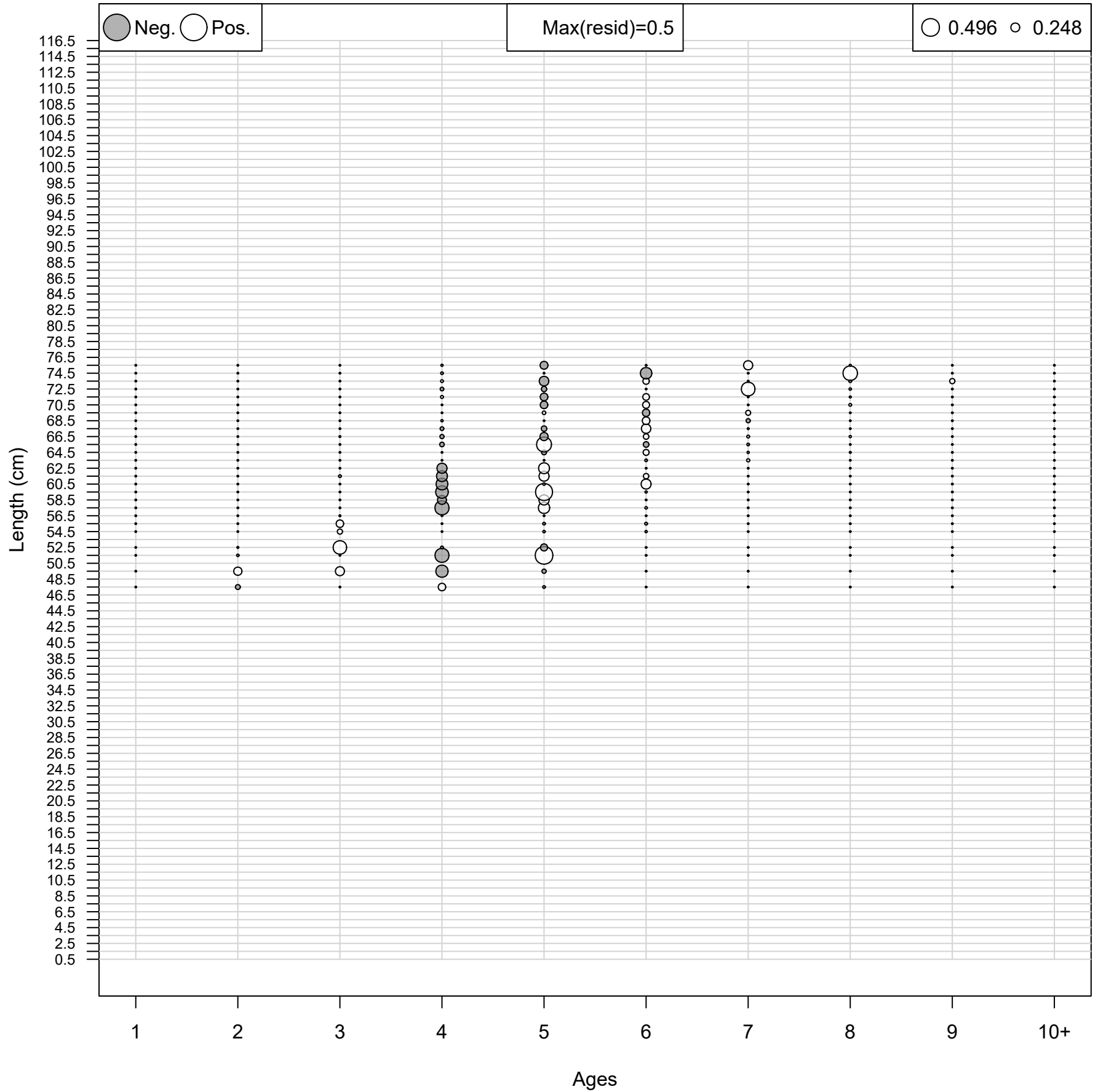
# CAAL Residuals (Observed-Predicted) for Fleet 2 Year 2011



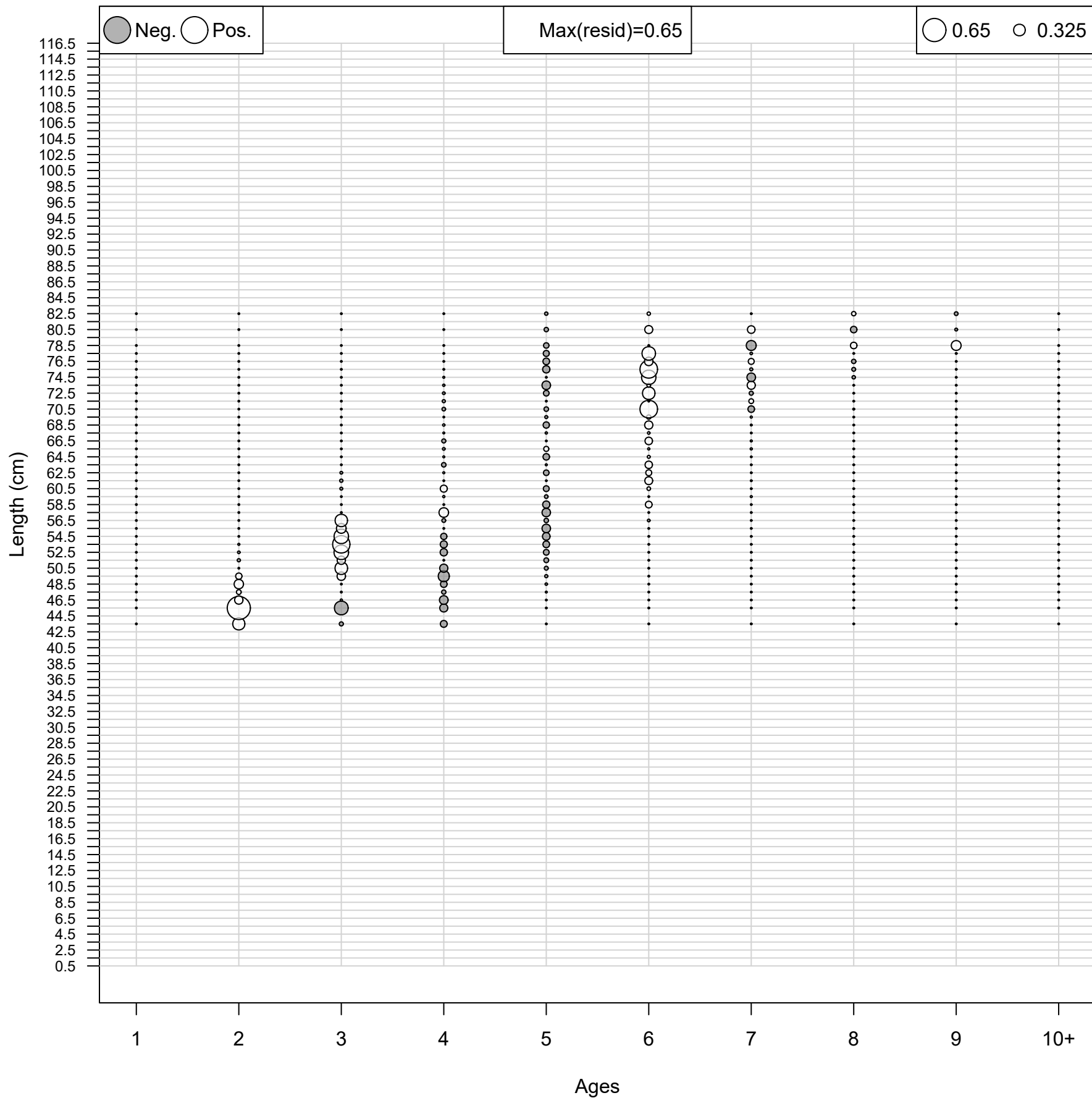
# CAAL Residuals (Observed-Predicted) for Fleet 2 Year 2012



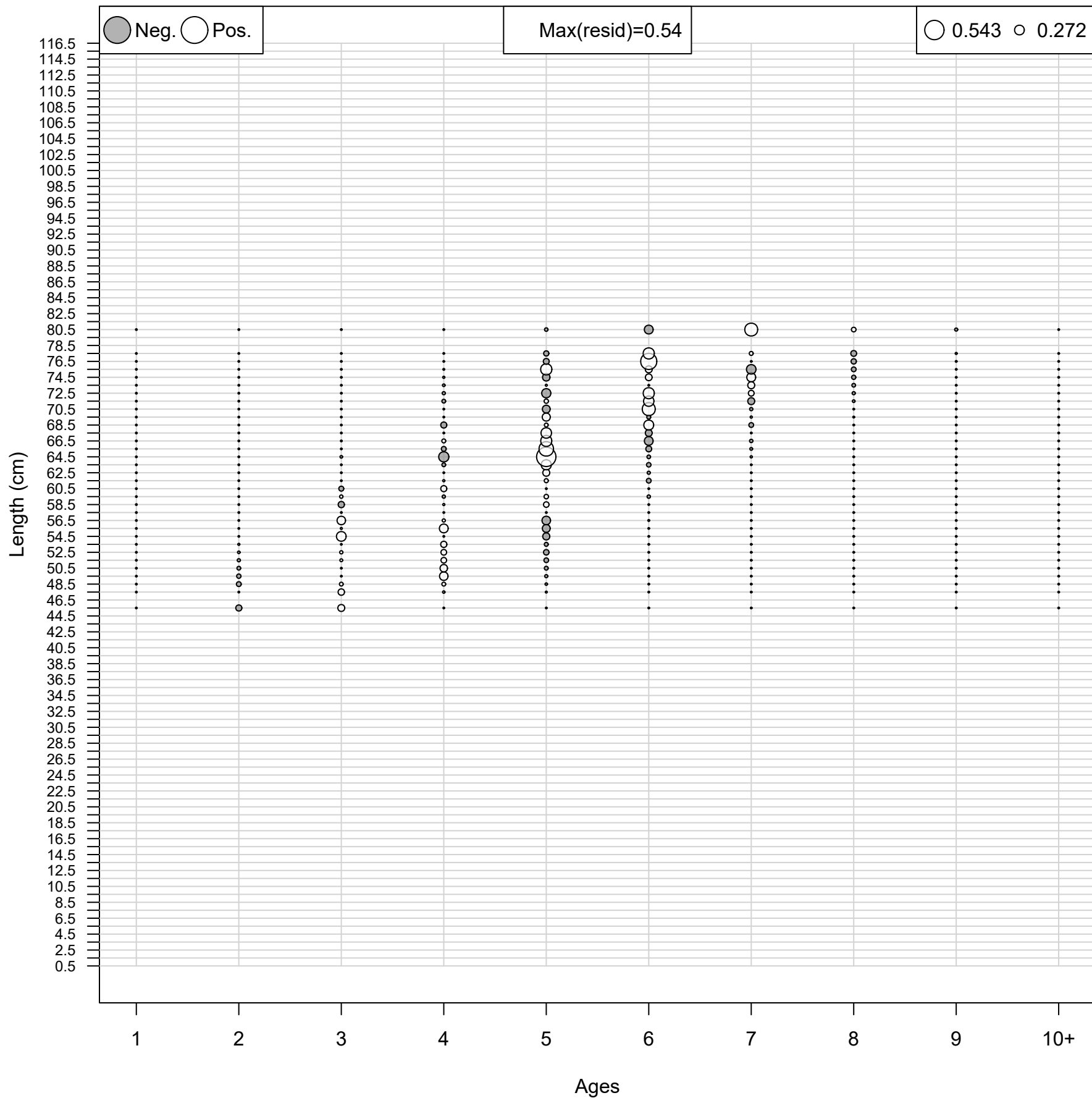
# CAAL Residuals (Observed-Predicted) for Fleet 2 Year 2013



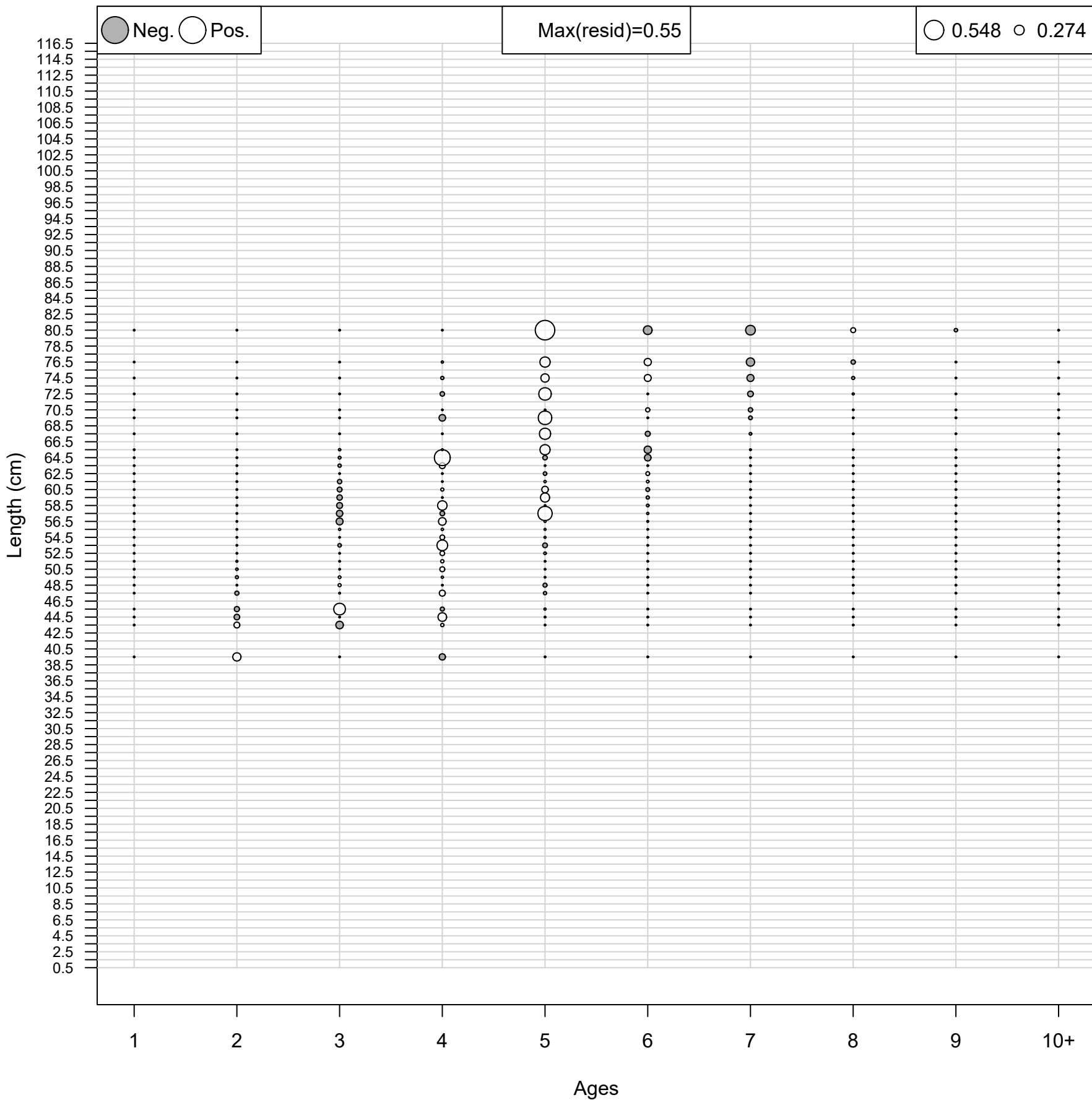
# CAAL Residuals (Observed-Predicted) for Fleet 2 Year 2014



# CAAL Residuals (Observed-Predicted) for Fleet 2 Year 2015

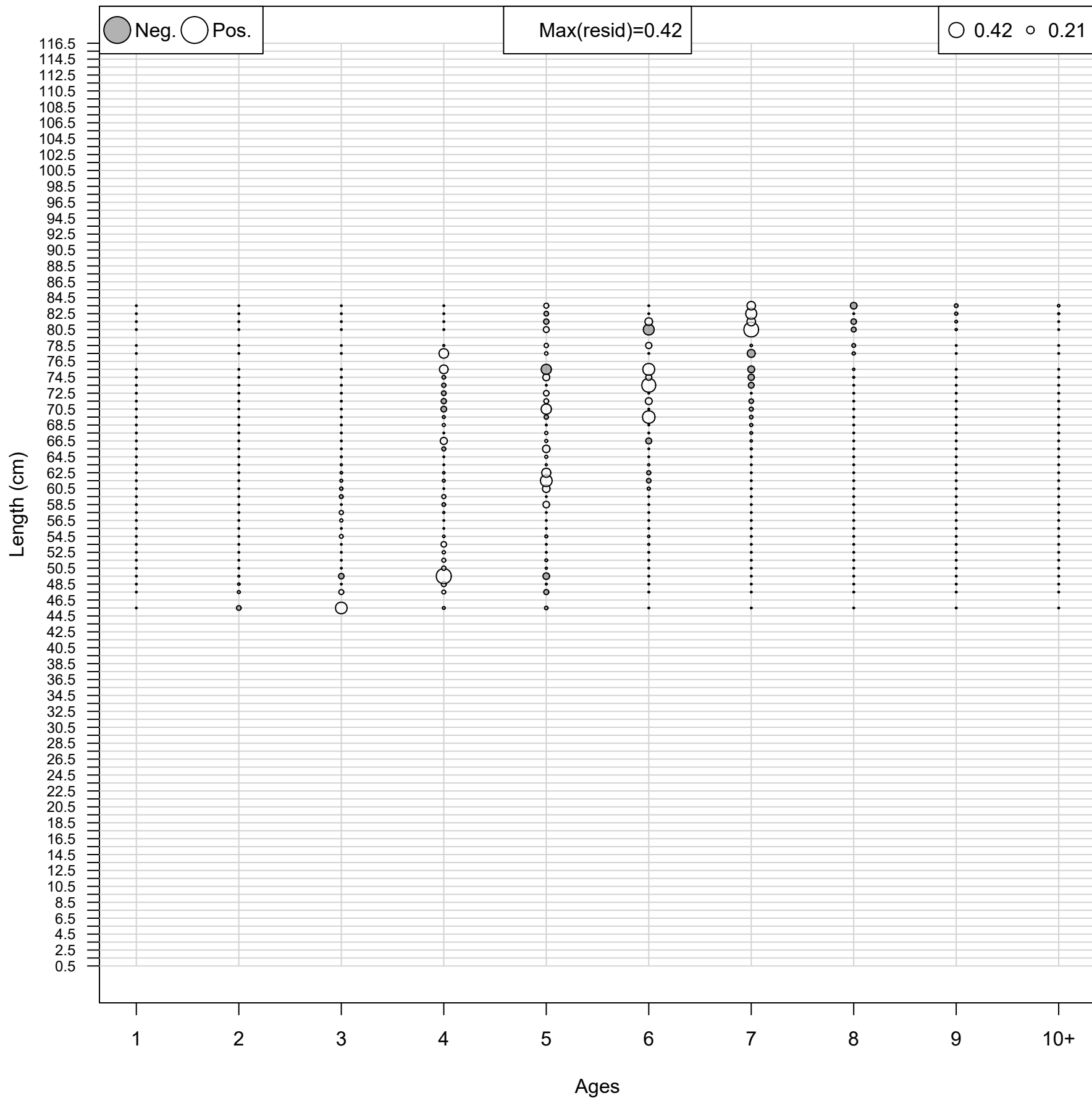


# CAAL Residuals (Observed-Predicted) for Fleet 2 Year 2016

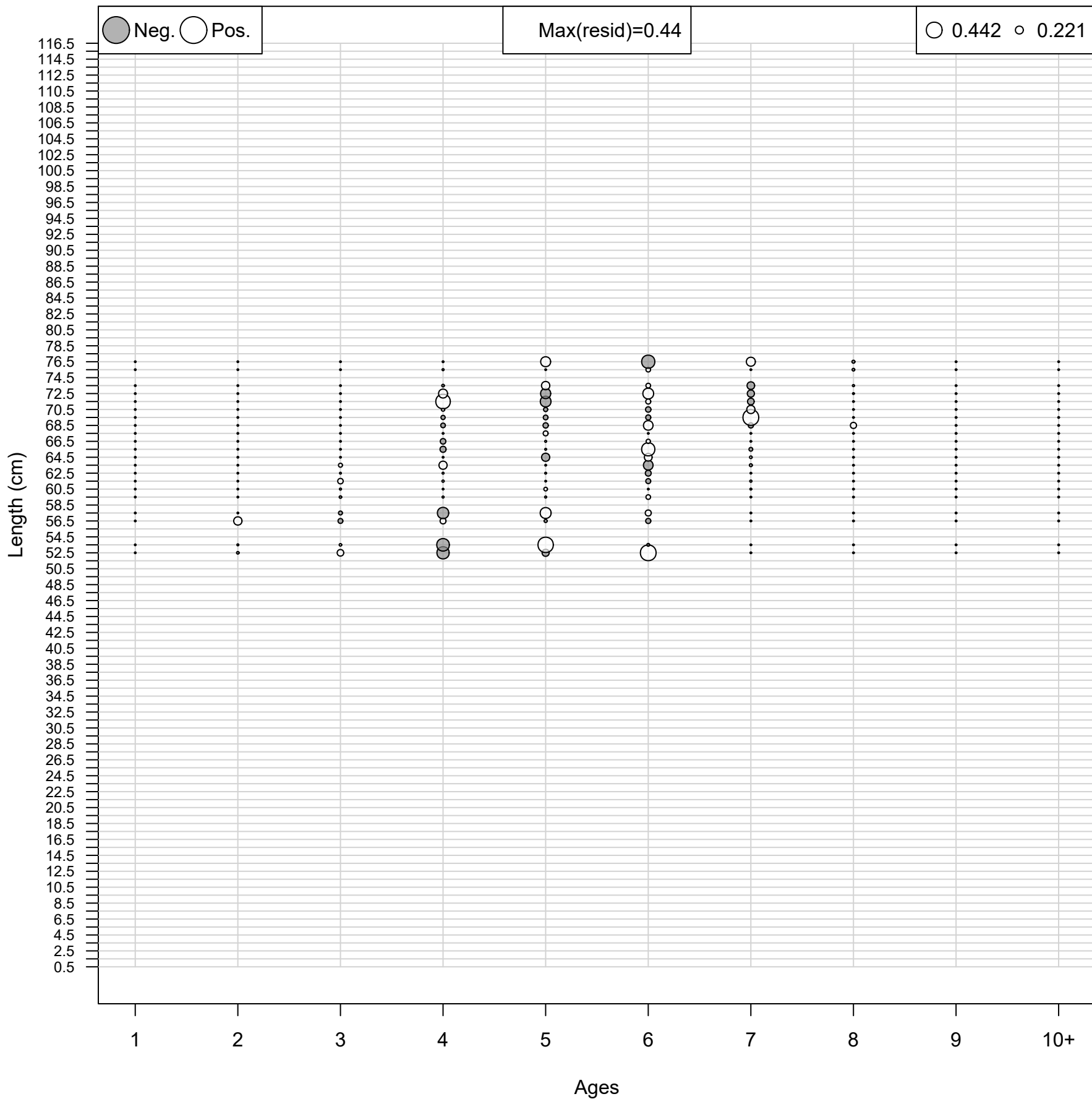




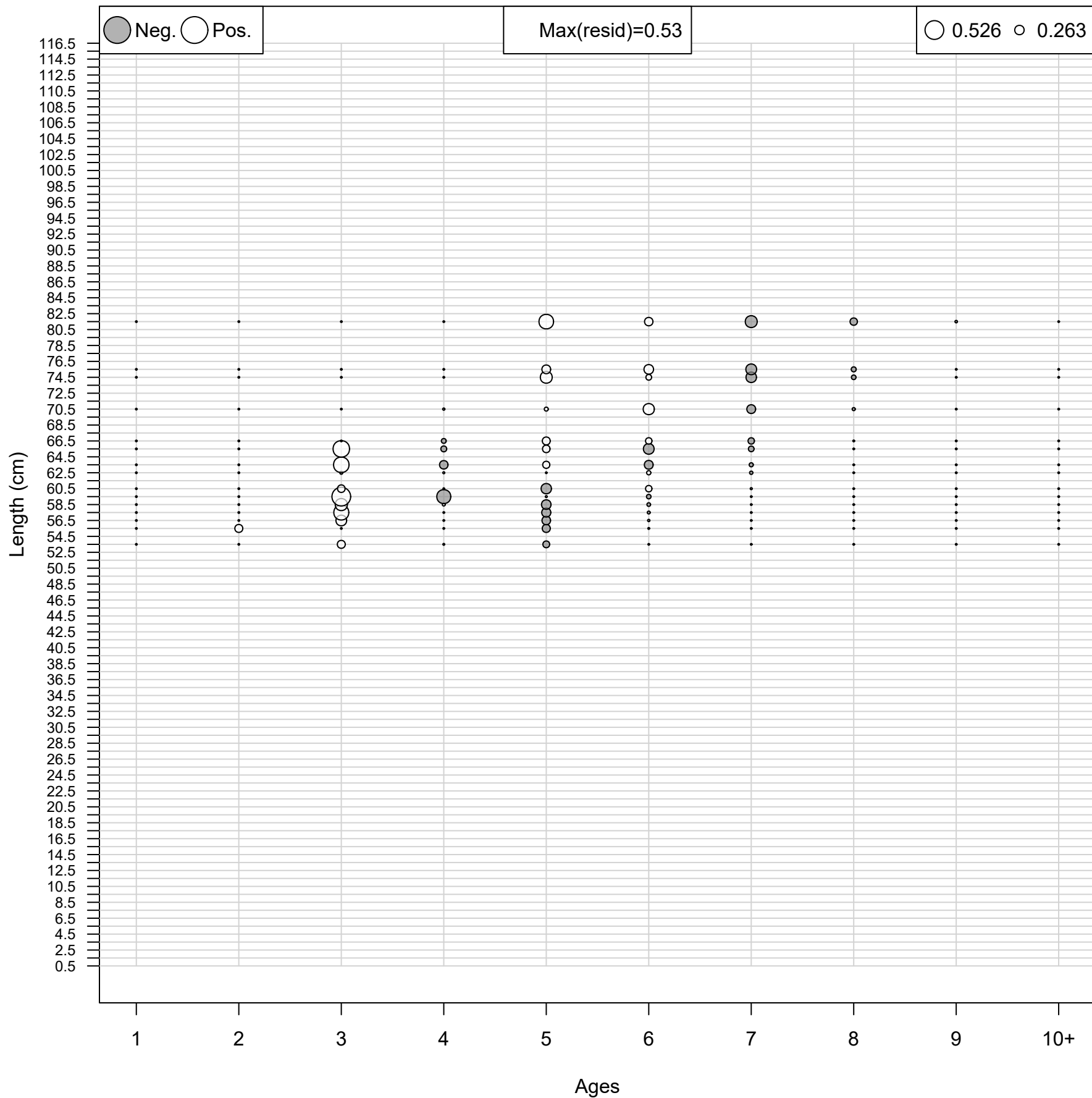
# CAAL Residuals (Observed-Predicted) for Fleet 2 Year 2017



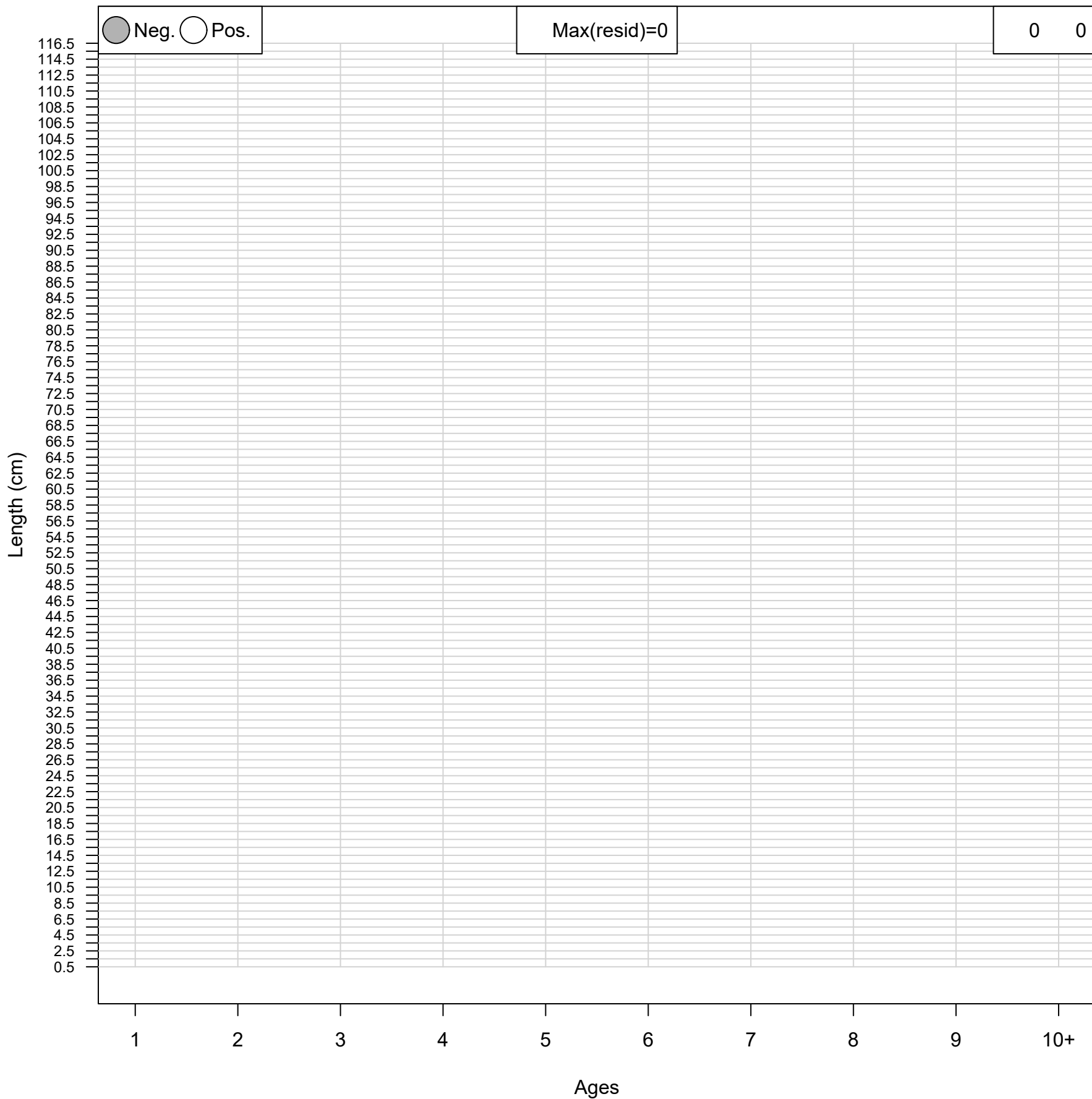
# CAAL Residuals (Observed-Predicted) for Fleet 2 Year 2018



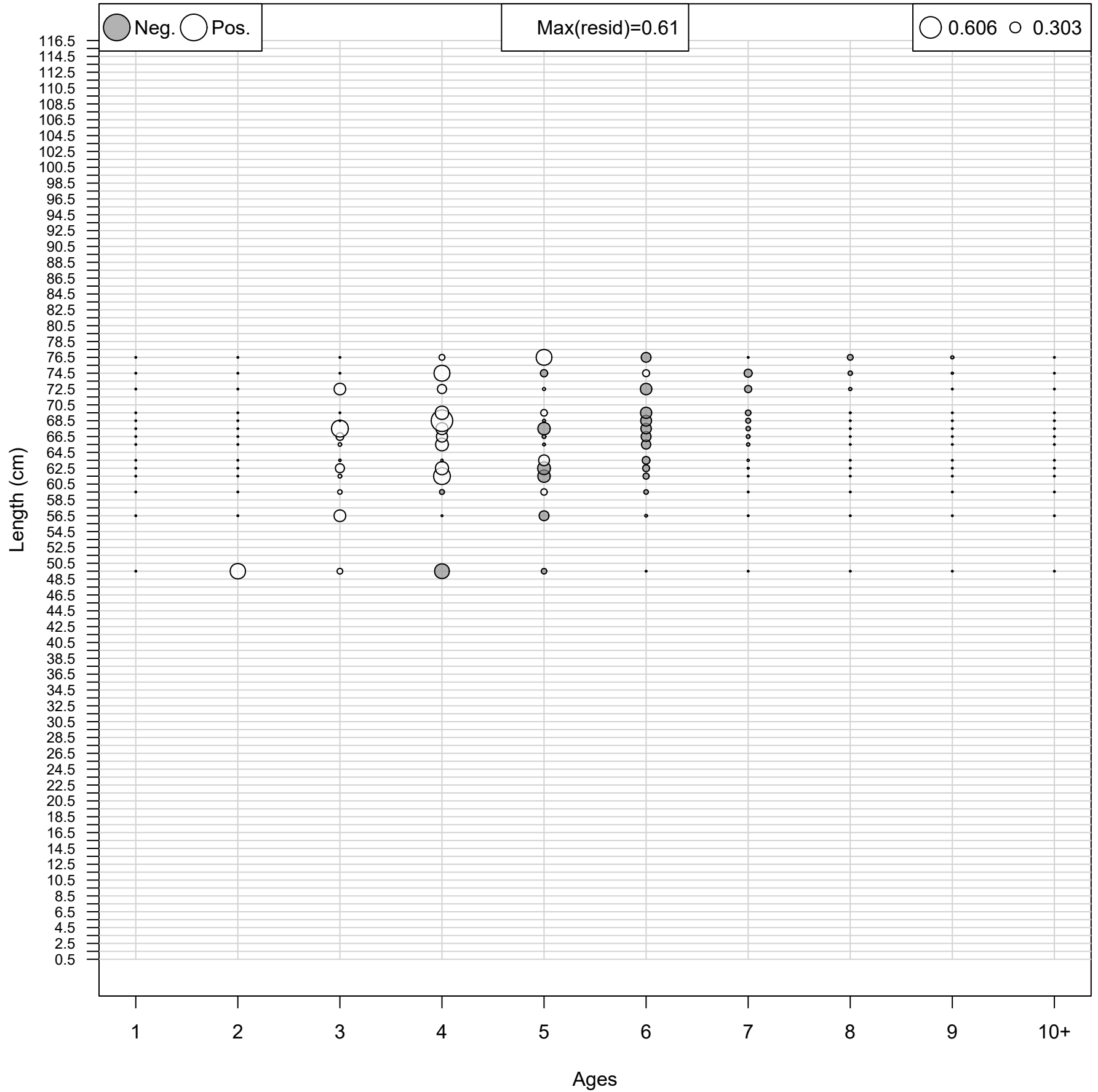
# CAAL Residuals (Observed-Predicted) for Fleet 2 Year 2019



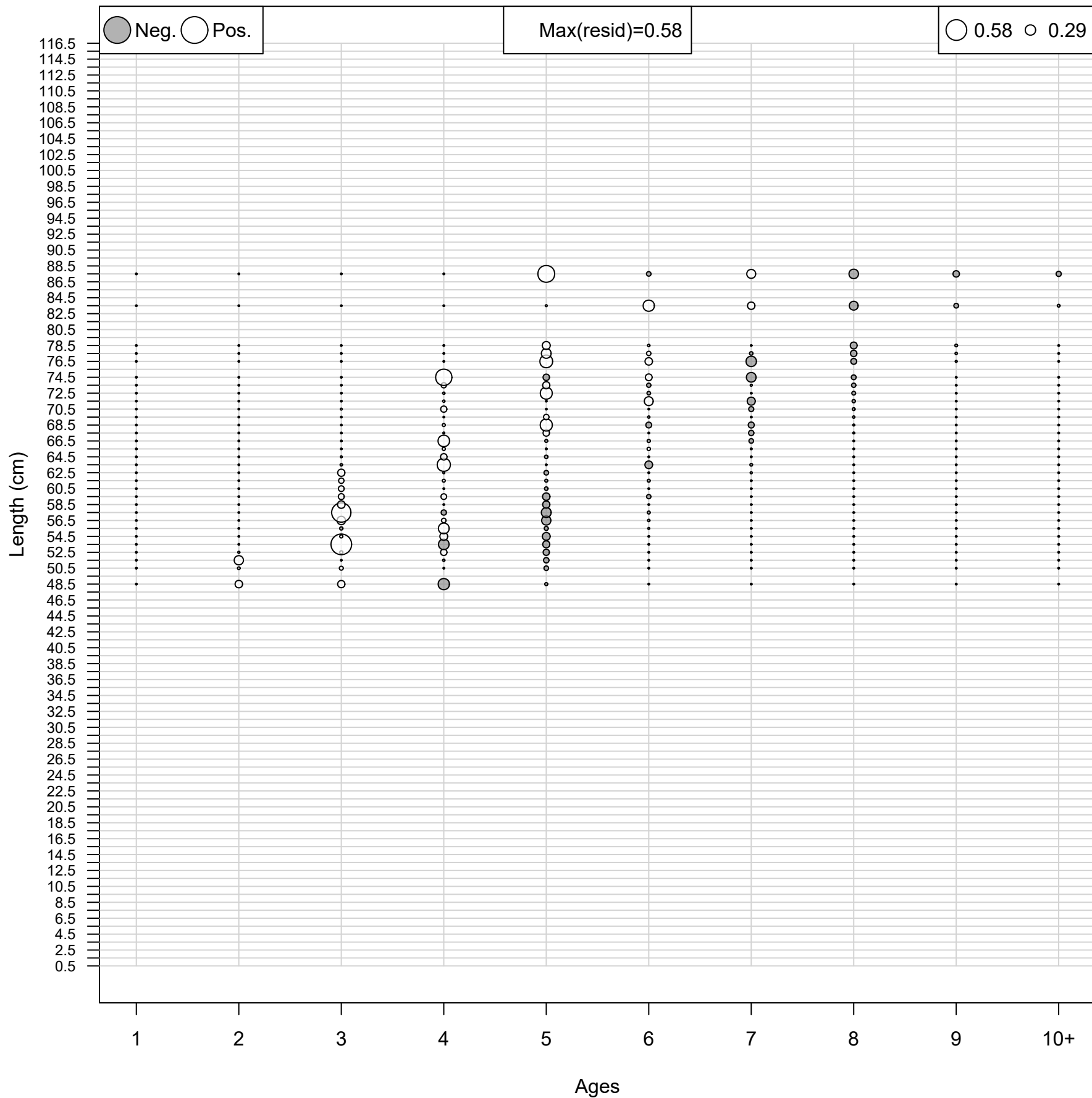
# CAAL Residuals (Observed-Predicted) for Fleet 2 Year 2020



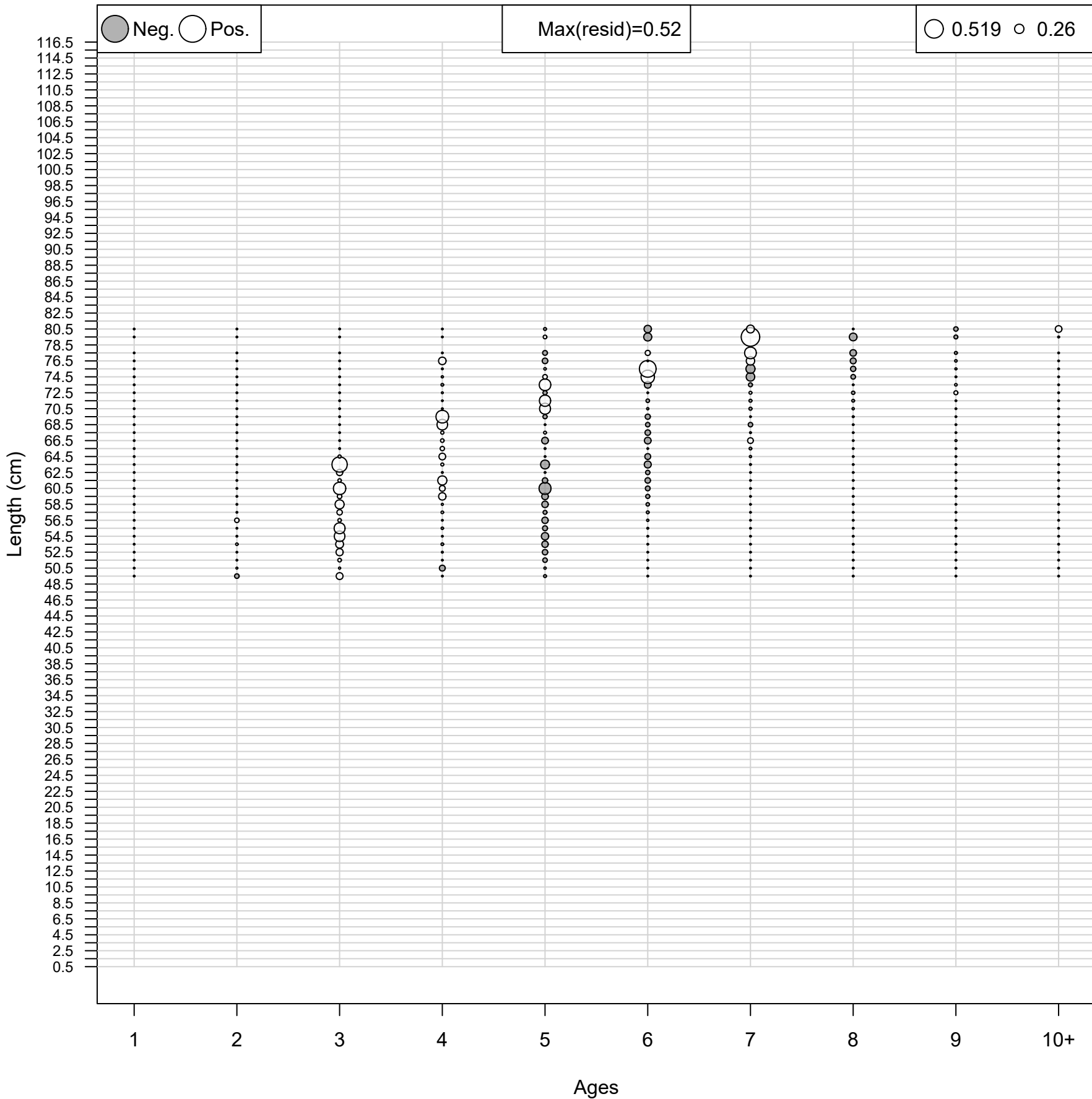
# CAAL Residuals (Observed-Predicted) for Fleet 2 Year 2021



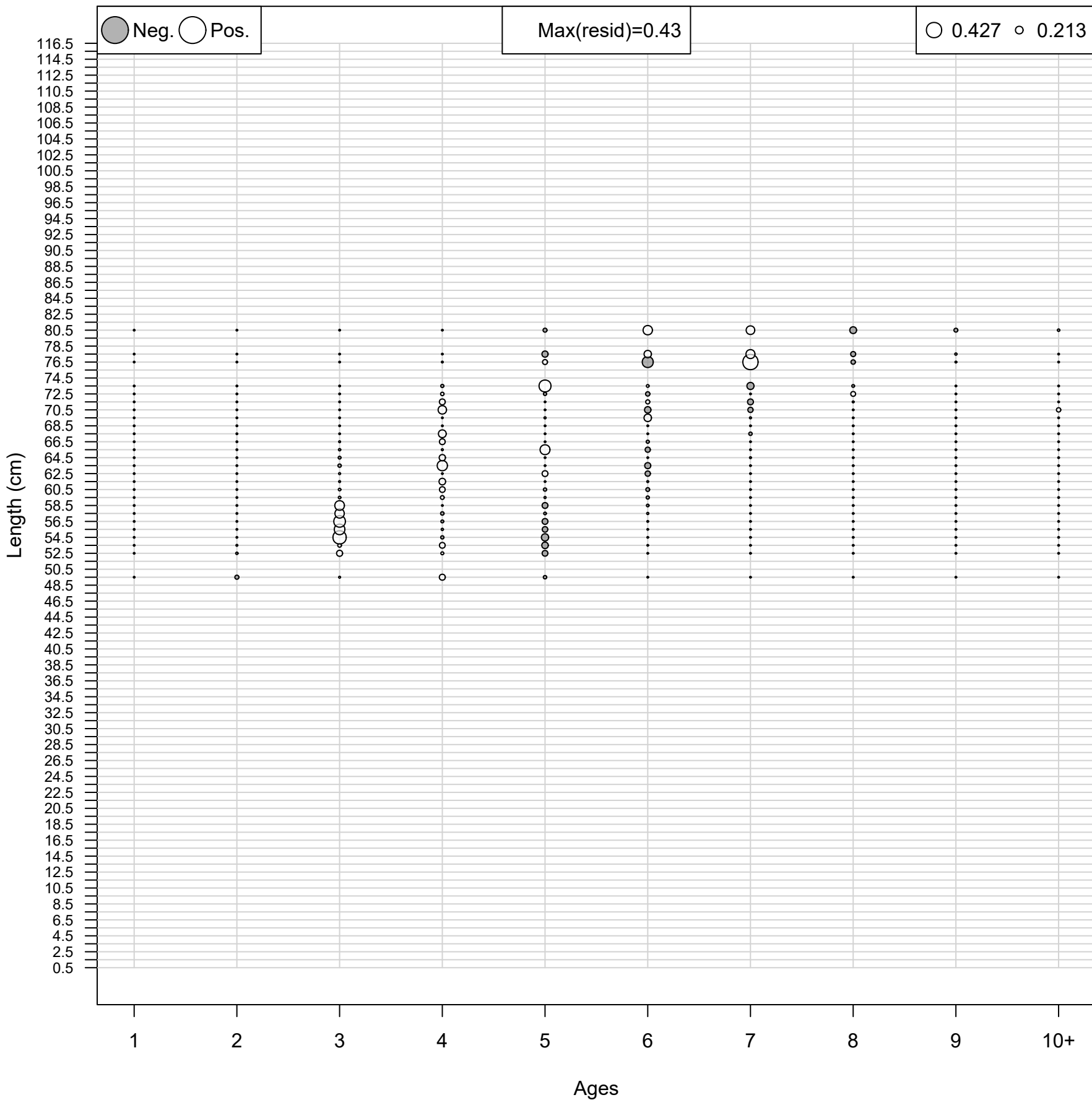
# CAAL Residuals (Observed-Predicted) for Fleet 3 Year 2007



# CAAL Residuals (Observed-Predicted) for Fleet 3 Year 2008

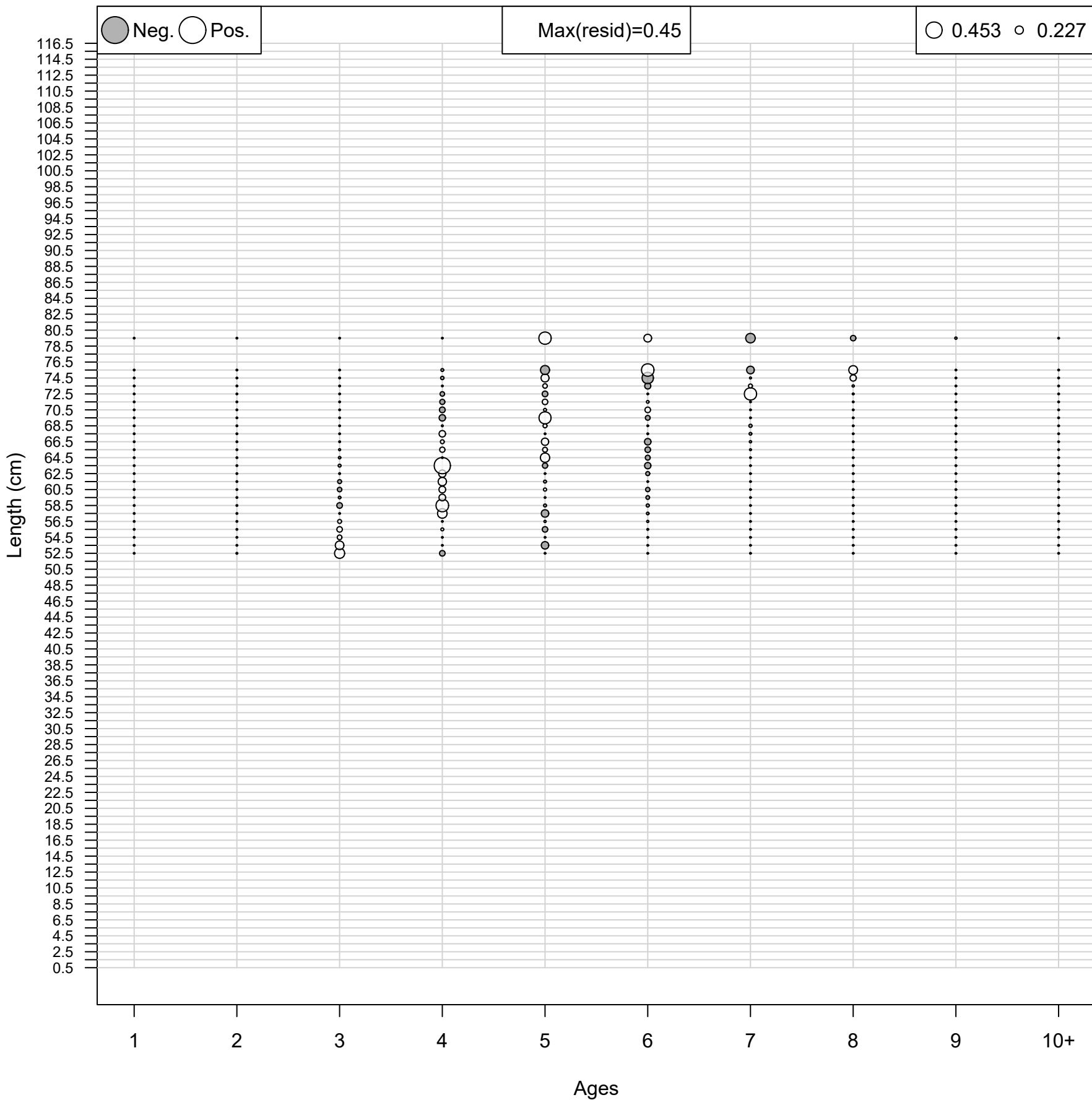


# CAAL Residuals (Observed-Predicted) for Fleet 3 Year 2009

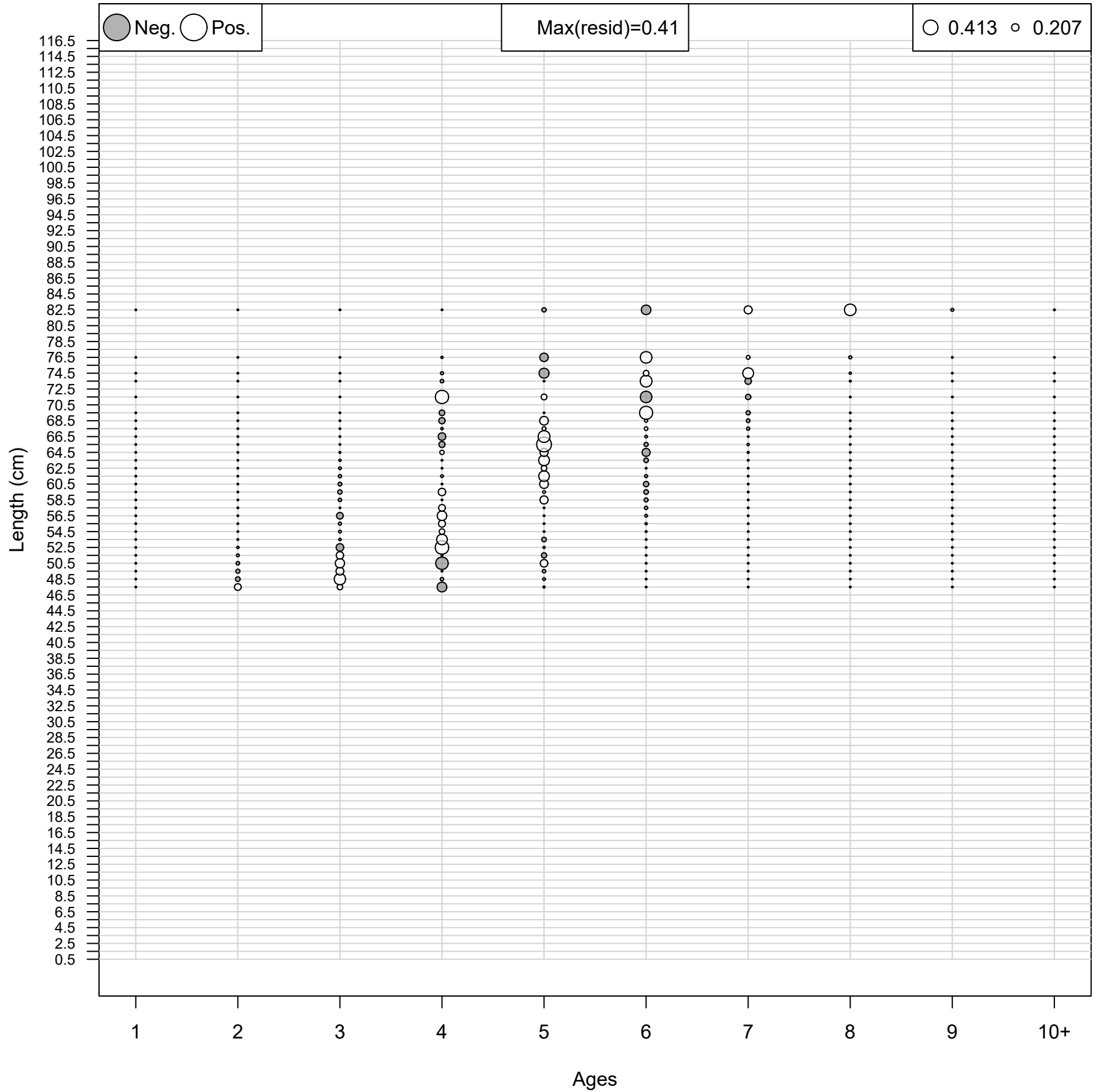




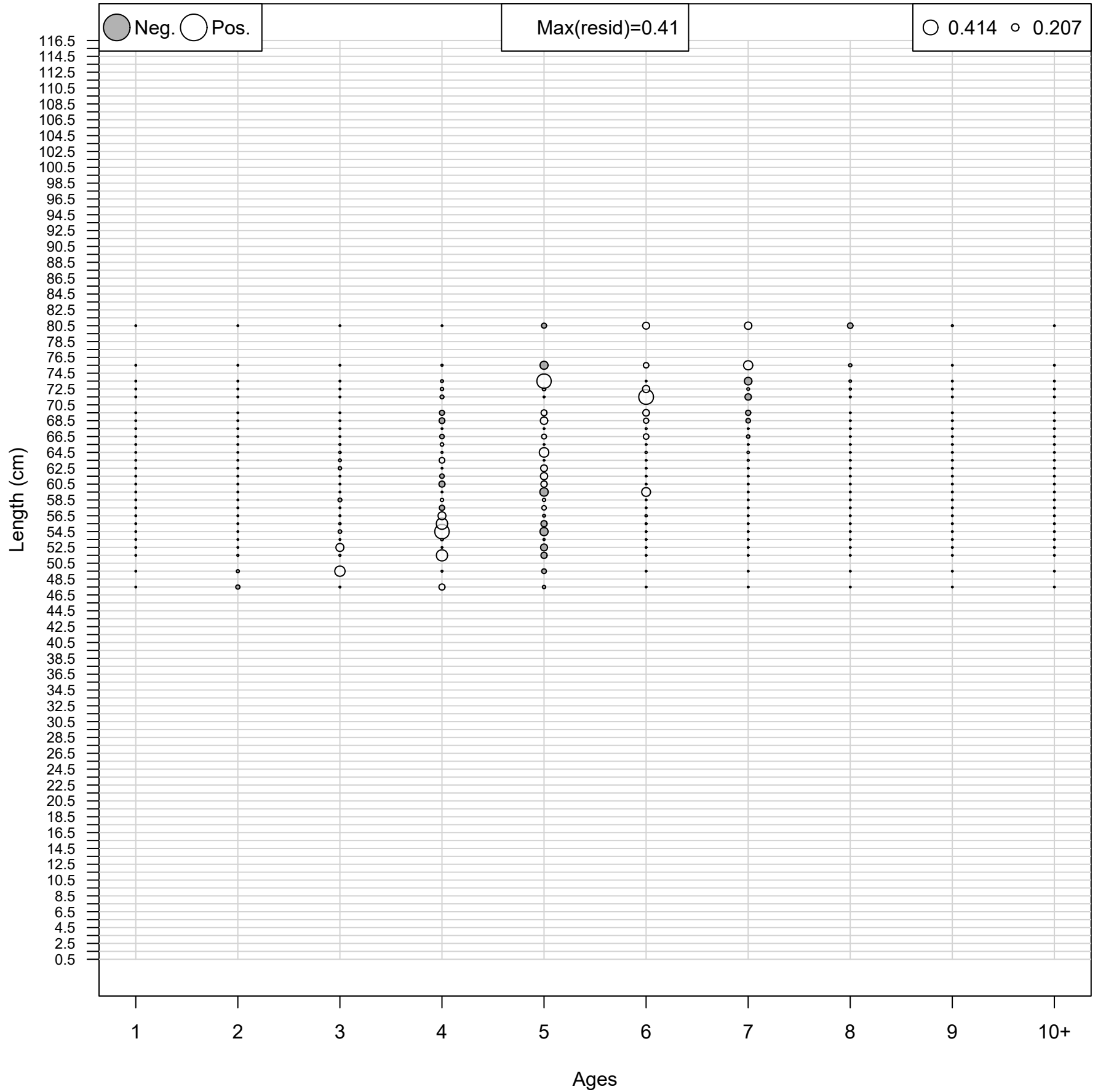
# CAAL Residuals (Observed-Predicted) for Fleet 3 Year 2010



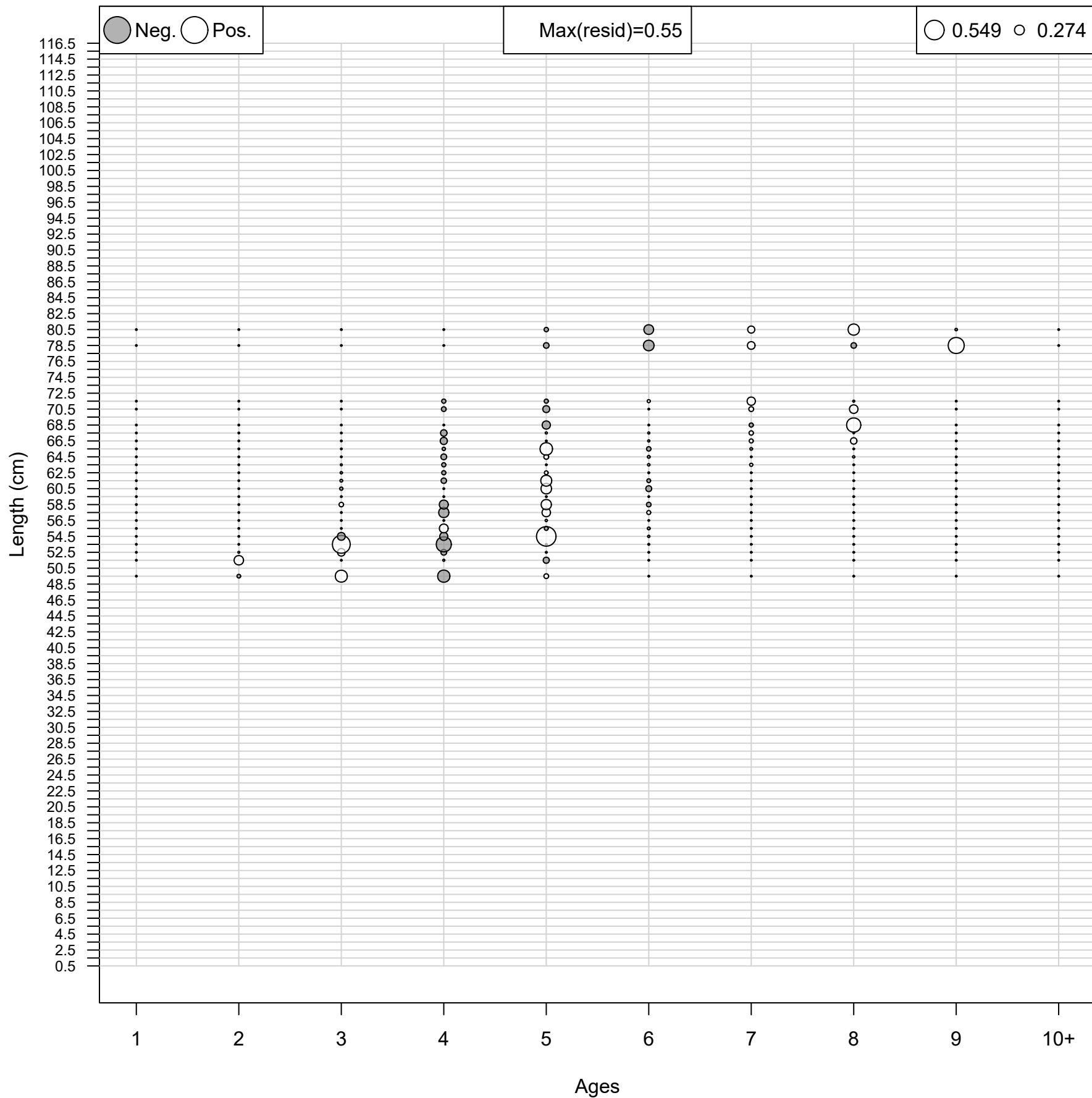
# CAAL Residuals (Observed-Predicted) for Fleet 3 Year 2011



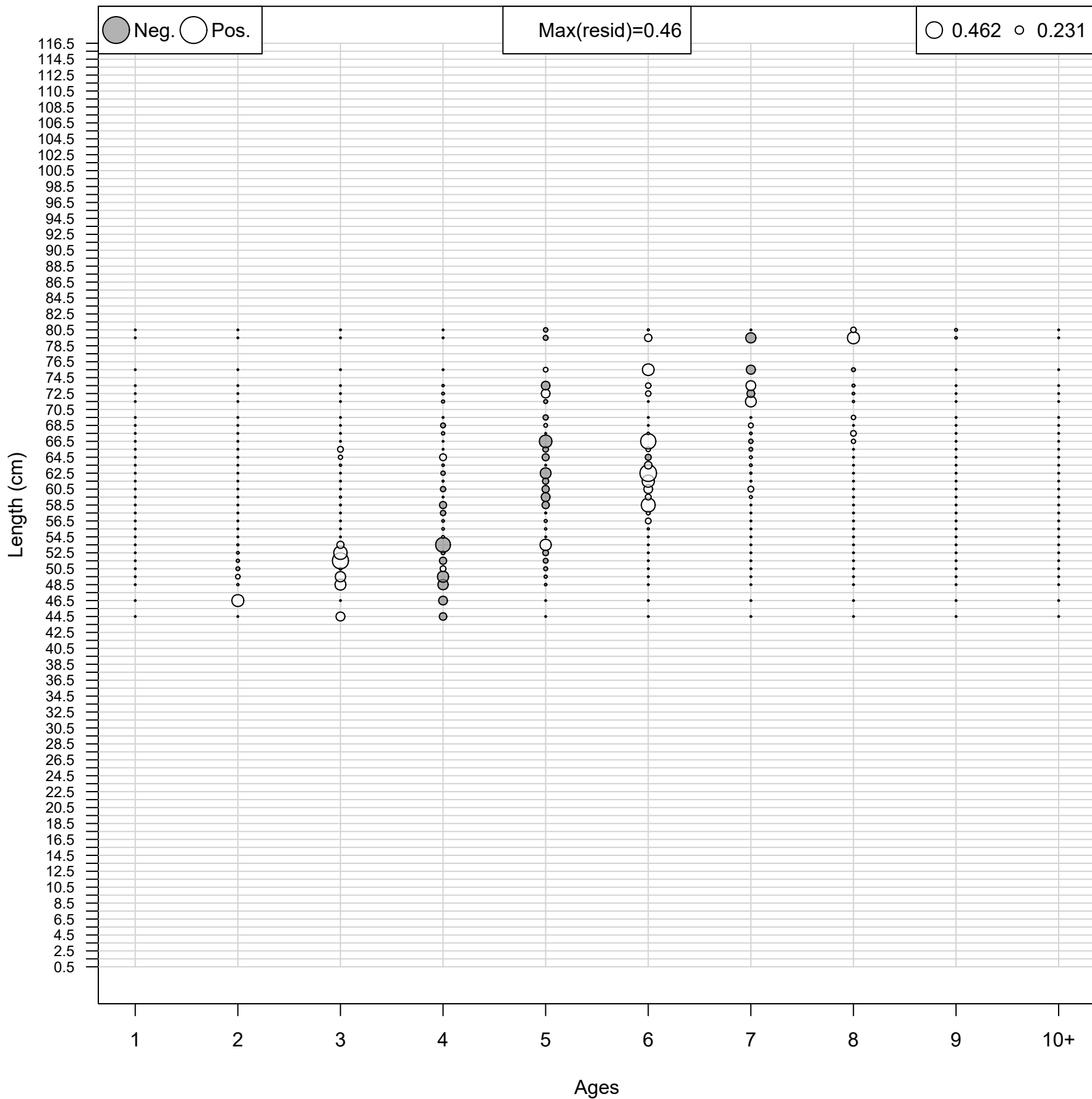
# CAAL Residuals (Observed-Predicted) for Fleet 3 Year 2012



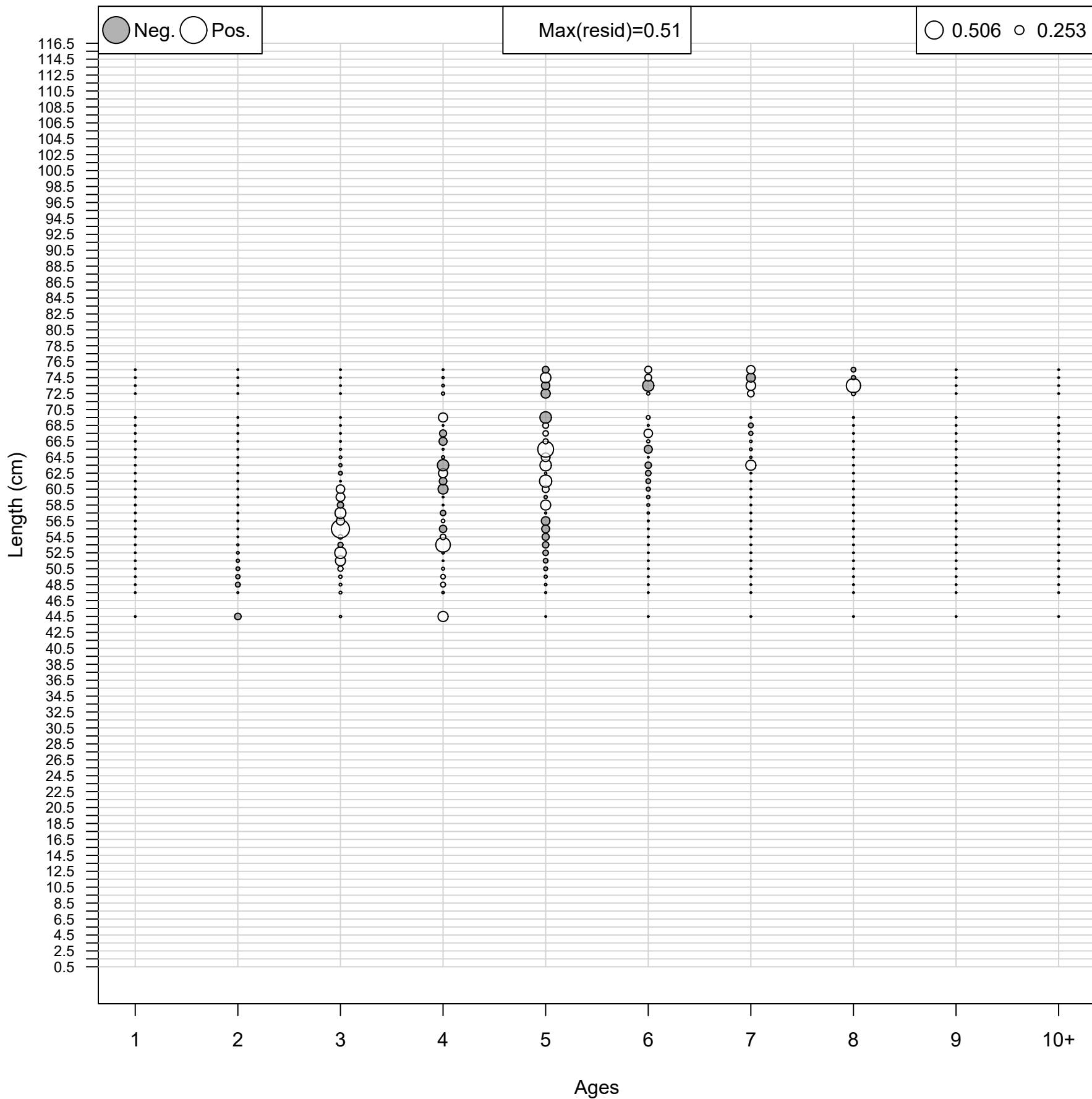
# CAAL Residuals (Observed-Predicted) for Fleet 3 Year 2013



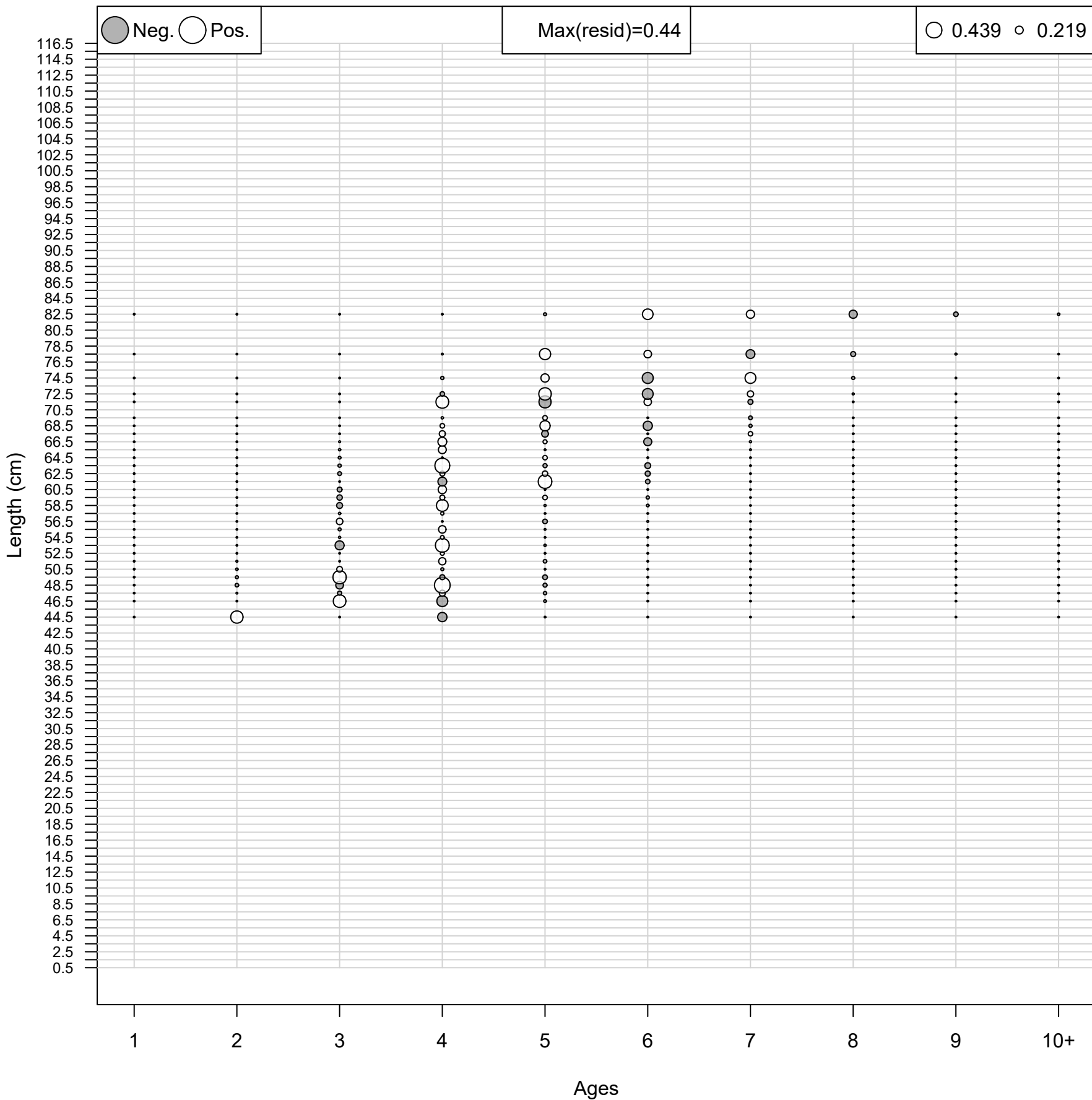
# CAAL Residuals (Observed-Predicted) for Fleet 3 Year 2014



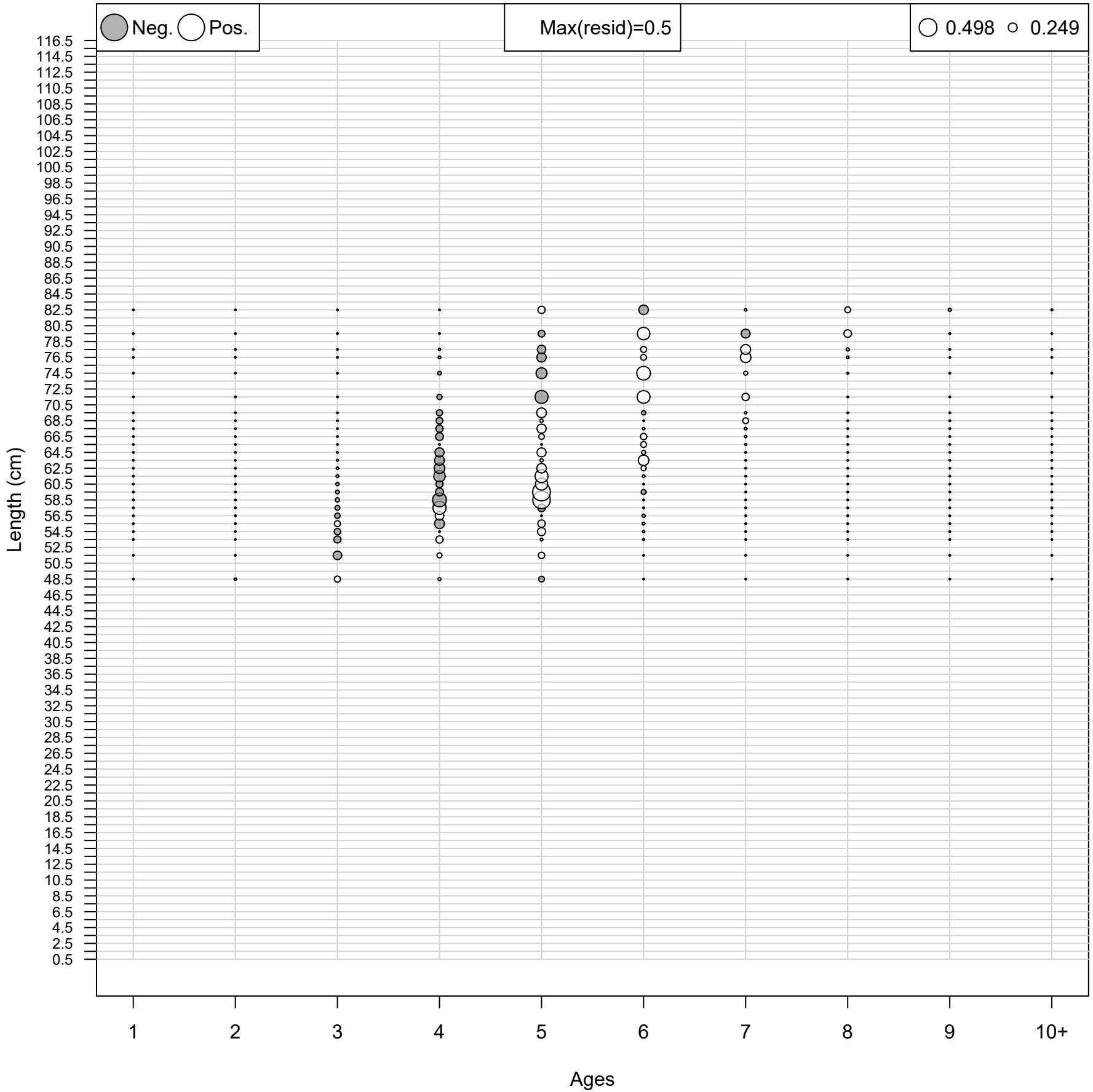
# CAAL Residuals (Observed-Predicted) for Fleet 3 Year 2015



# CAAL Residuals (Observed-Predicted) for Fleet 3 Year 2016

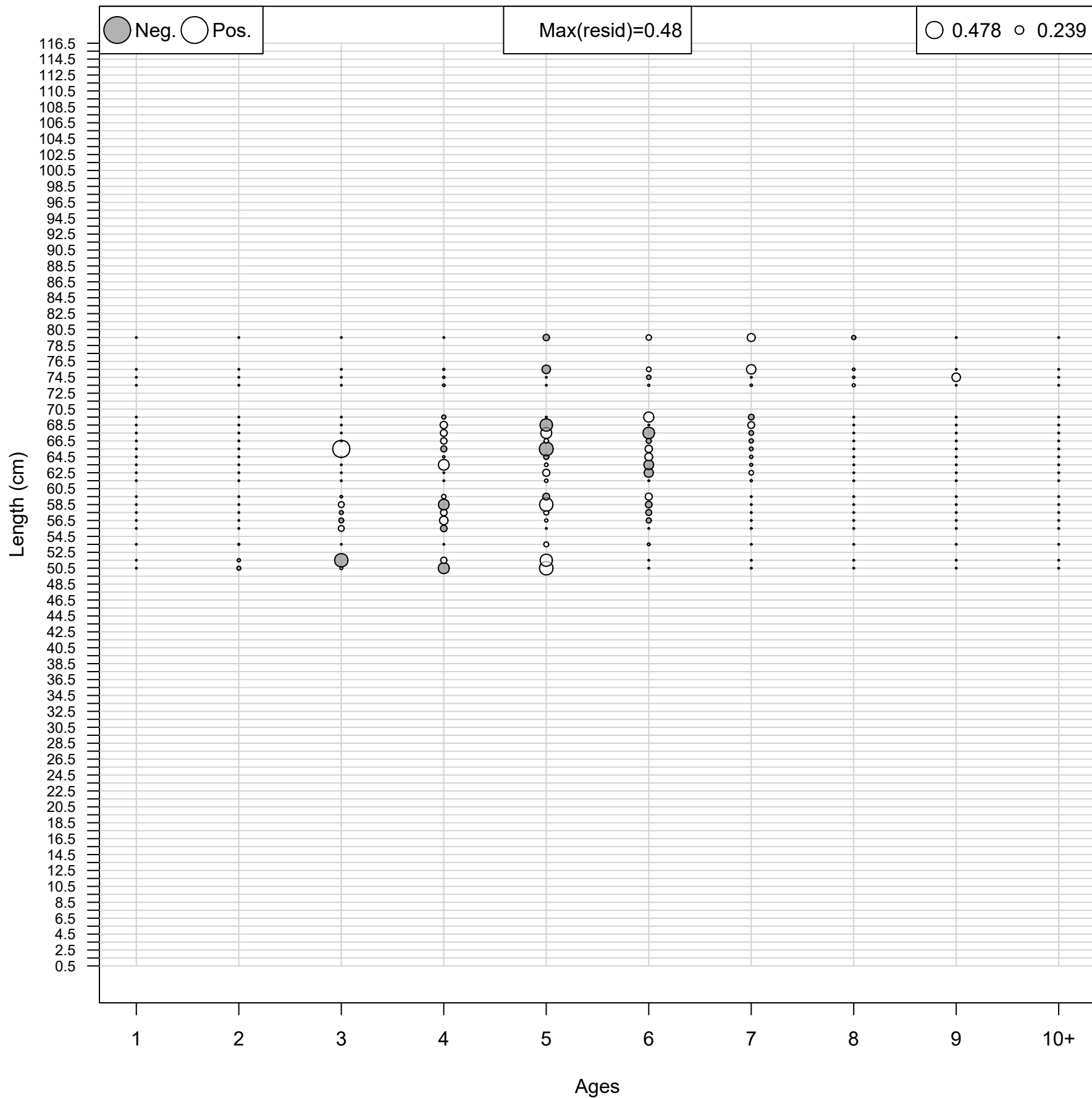


# CAAL Residuals (Observed-Predicted) for Fleet 3 Year 2017

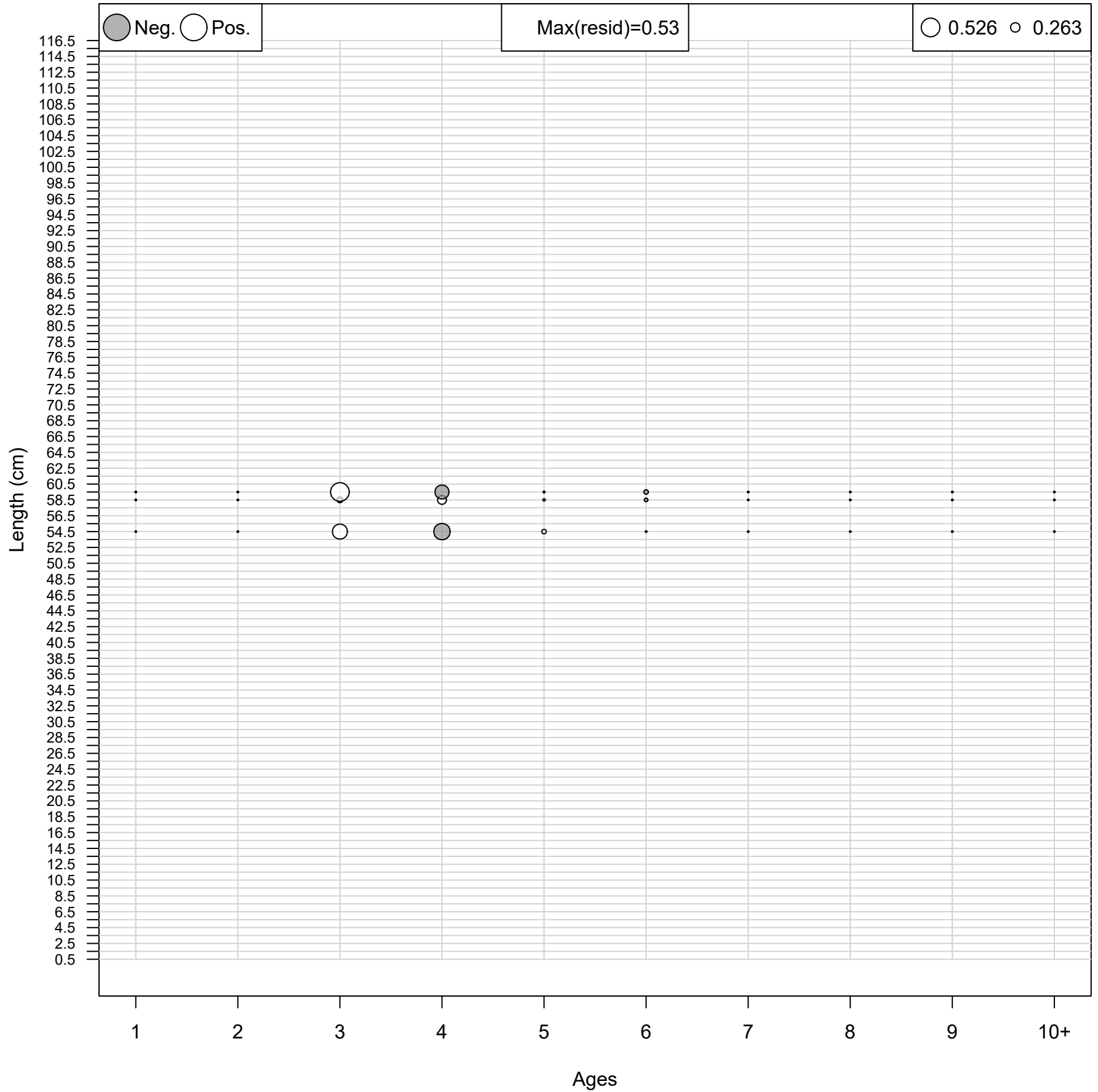




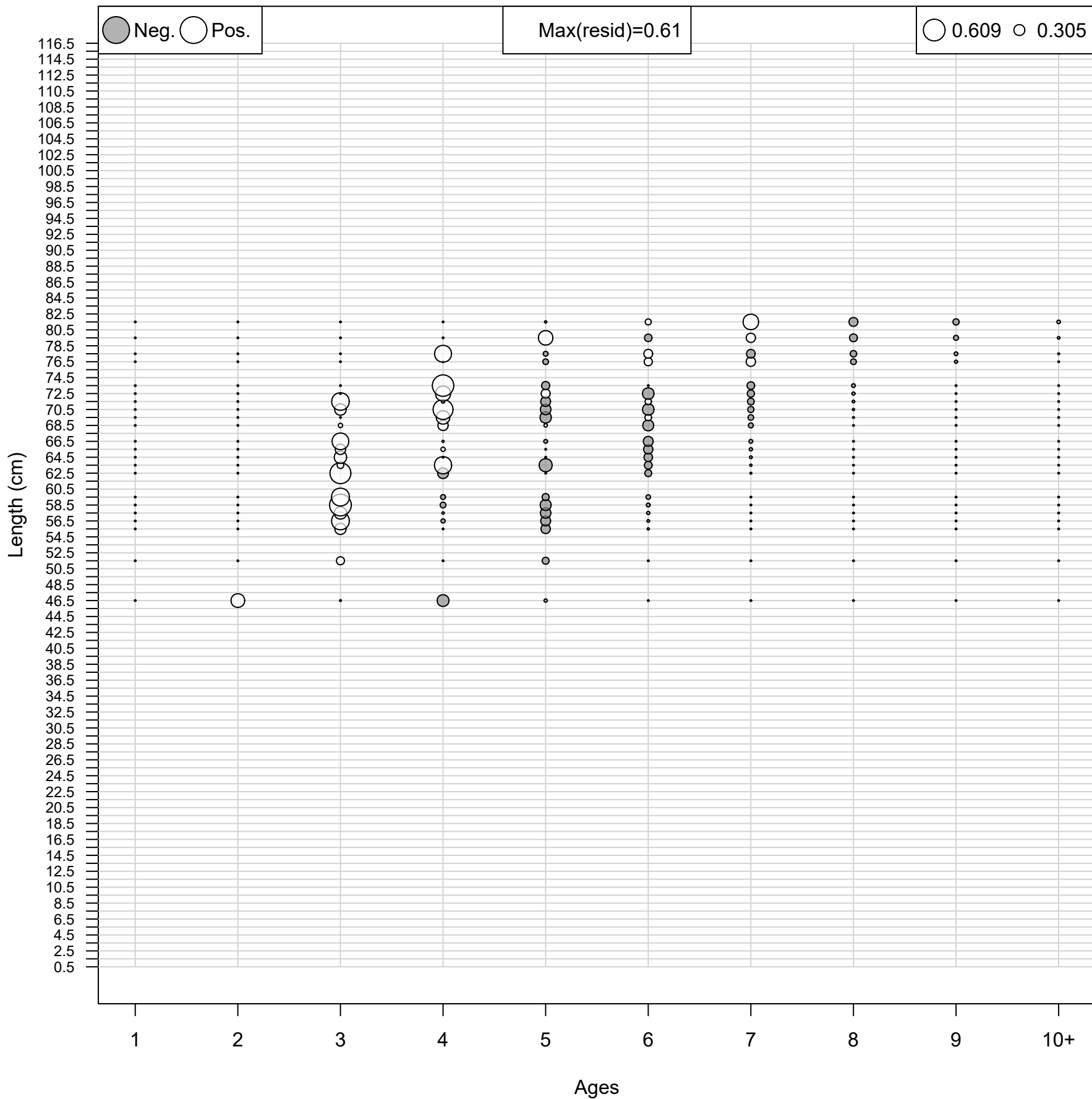
# CAAL Residuals (Observed-Predicted) for Fleet 3 Year 2018



# CAAL Residuals (Observed-Predicted) for Fleet 3 Year 2019



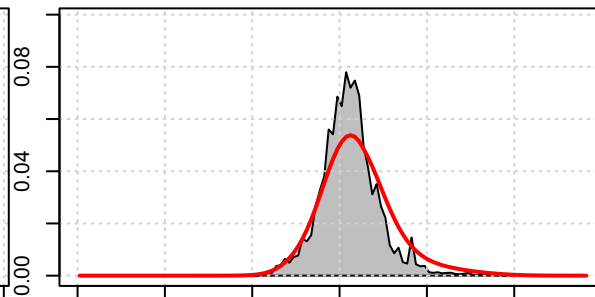
# CAAL Residuals (Observed-Predicted) for Fleet 3 Year 2021



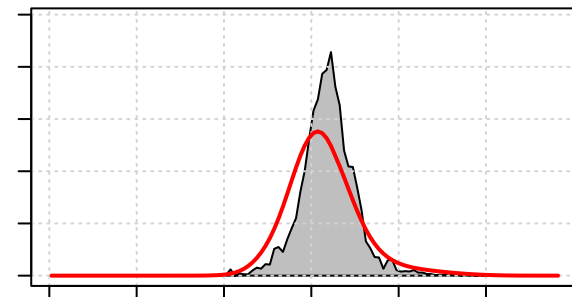




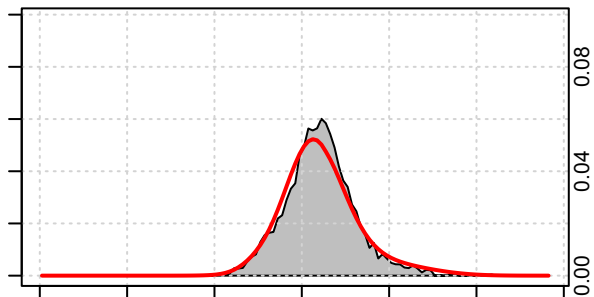
Index 2  
Year = 1995



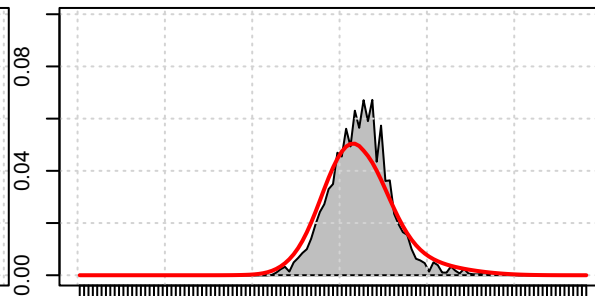
Year = 2000



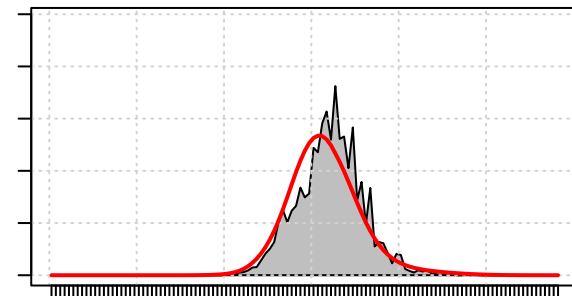
Year = 1990



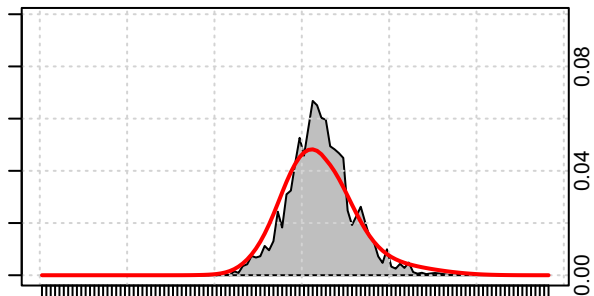
Year = 1996



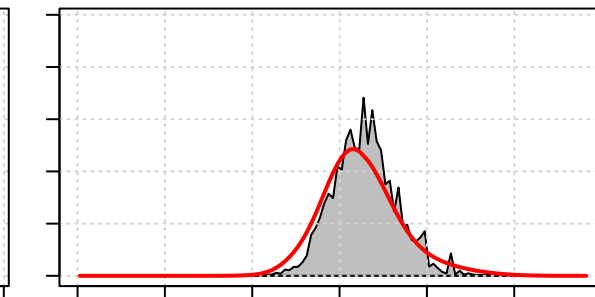
Year = 2001



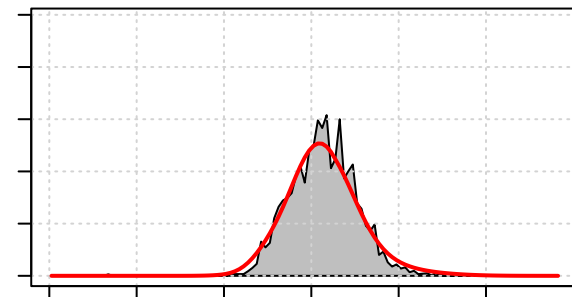
Year = 1991



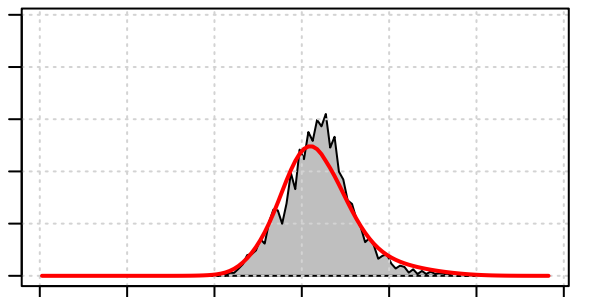
Year = 1997



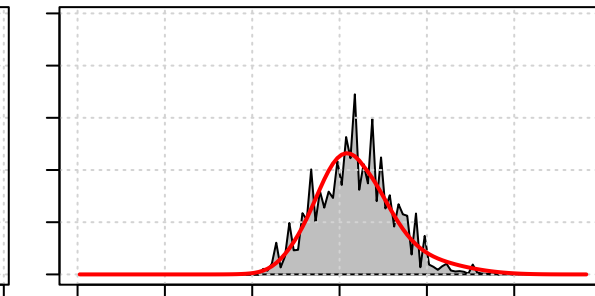
Year = 2002



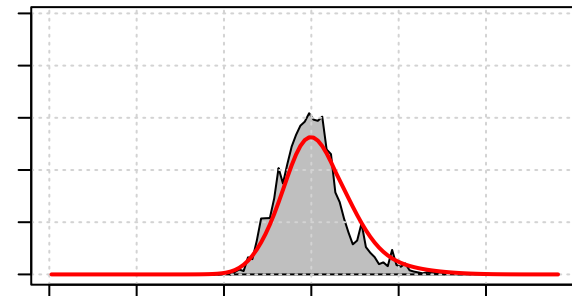
Year = 1992



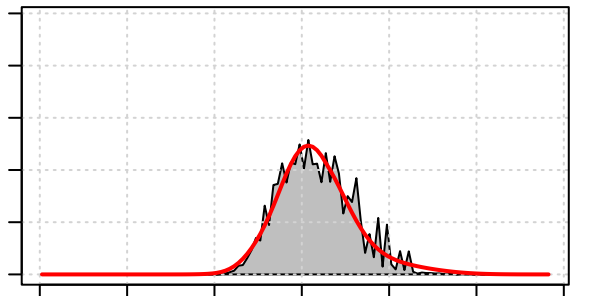
Year = 1998



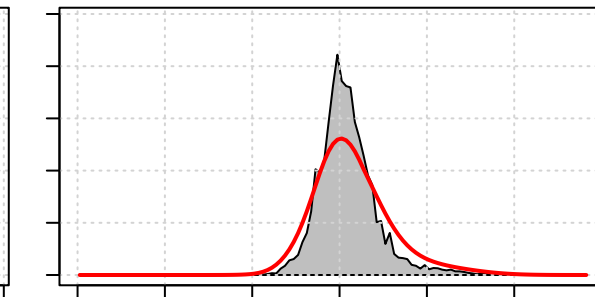
Year = 2003



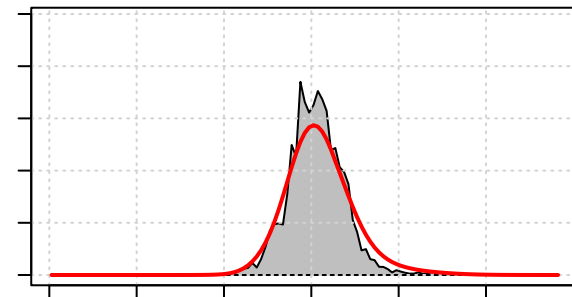
Year = 1993



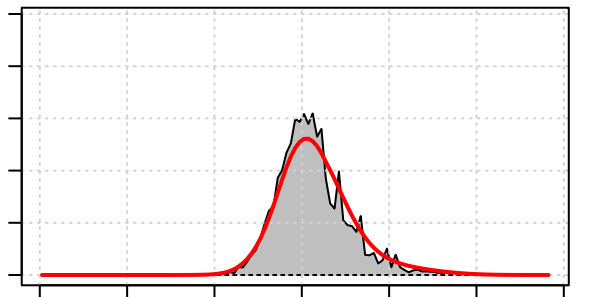
Year = 1999



Year = 2004



Year = 1994



Length (cm)

0.08  
0.04  
0.00

0.08  
0.04  
0.00

0.08  
0.04  
0.00

0.08  
0.04  
0.00

0.08  
0.04  
0.00

Proportion

0.5 20.5 40.5 60.5 80.5 100.5

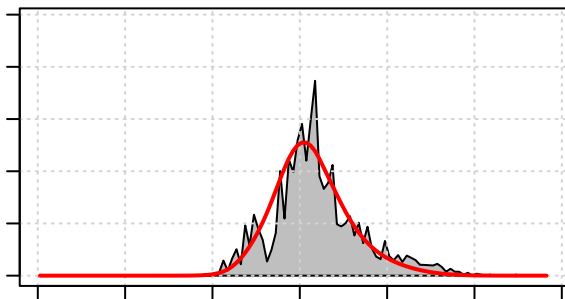
0.5 20.5 40.5 60.5 80.5 100.5

0.5 20.5 40.5 60.5 80.5 100.5

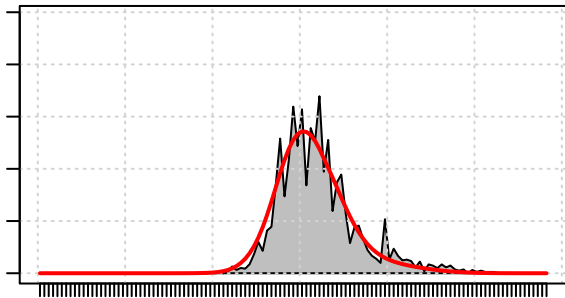


Index 2

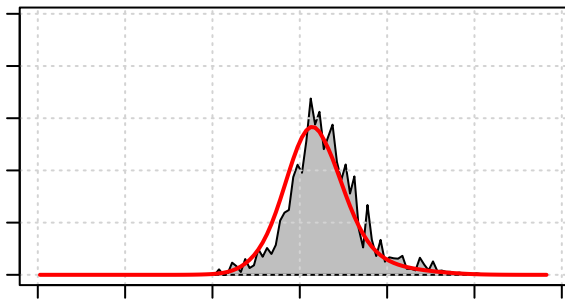
Year = 2020



Year = 2021



Year = 2022



Length (cm)

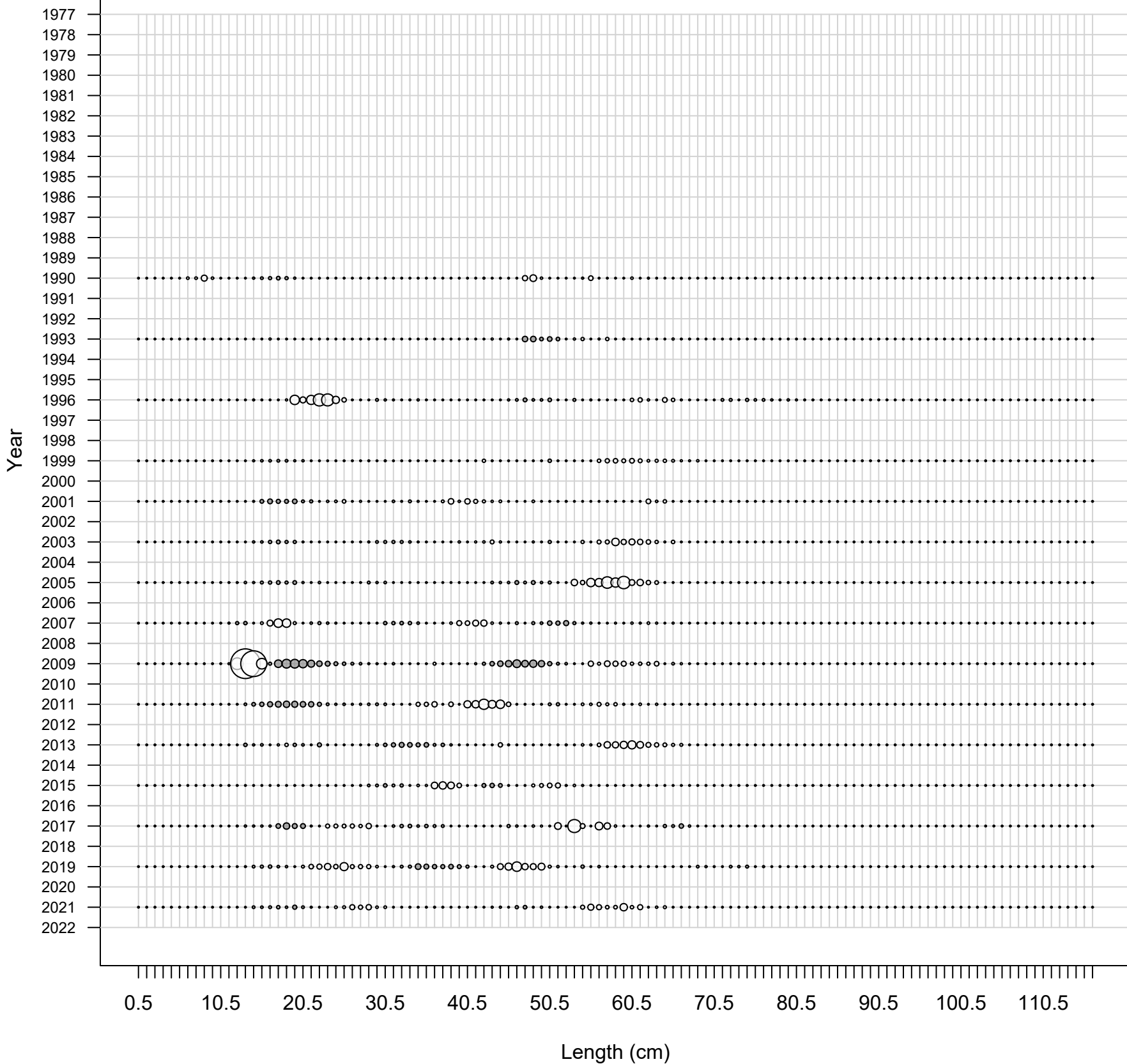


# Length Comp Residuals (Observed-Predicted) for Index 1

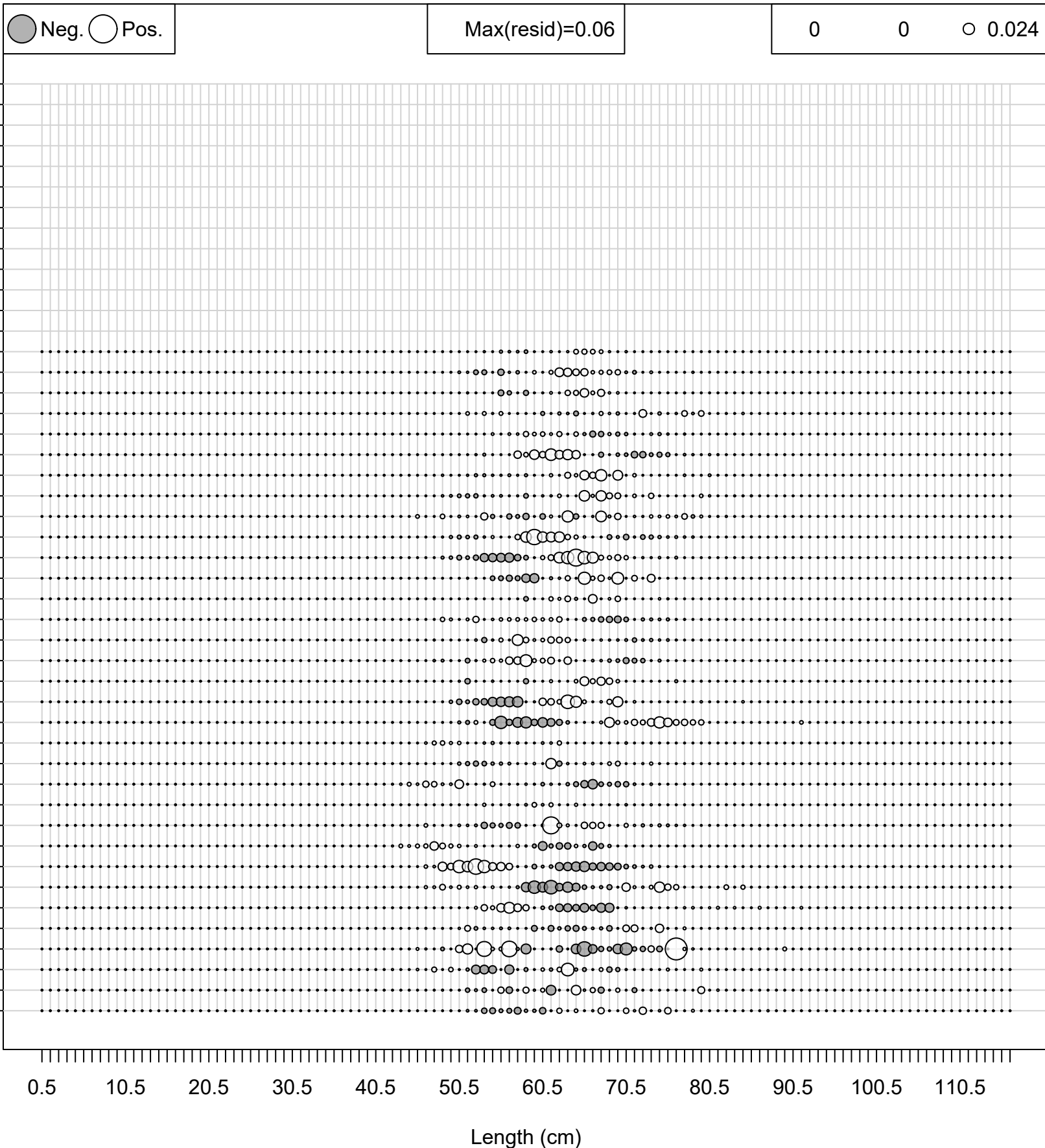
● Neg. ○ Pos.

Max(resid)=0.06

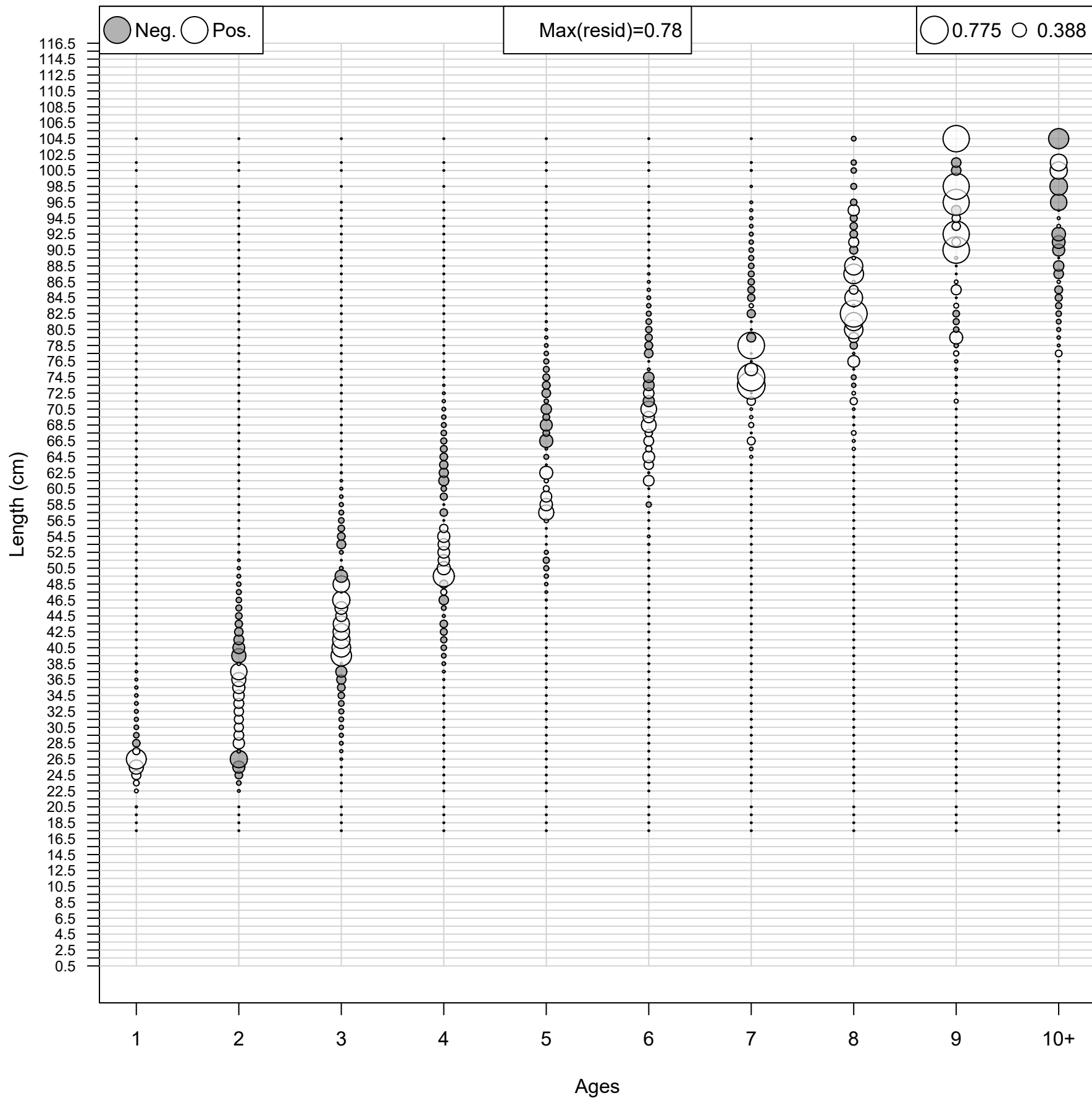
0 · 0.003 ○ 0.027



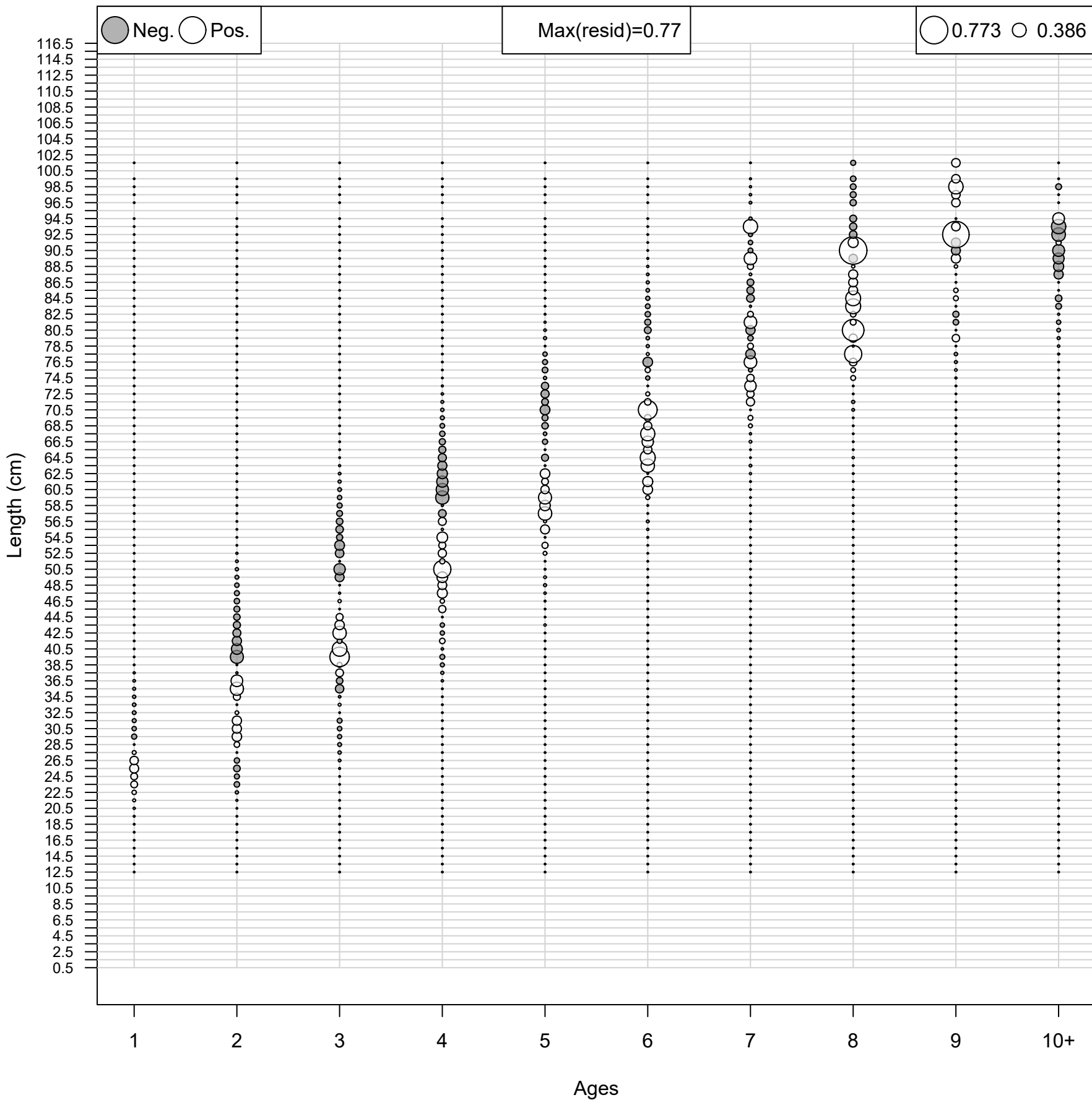
# Length Comp Residuals (Observed-Predicted) for Index 2



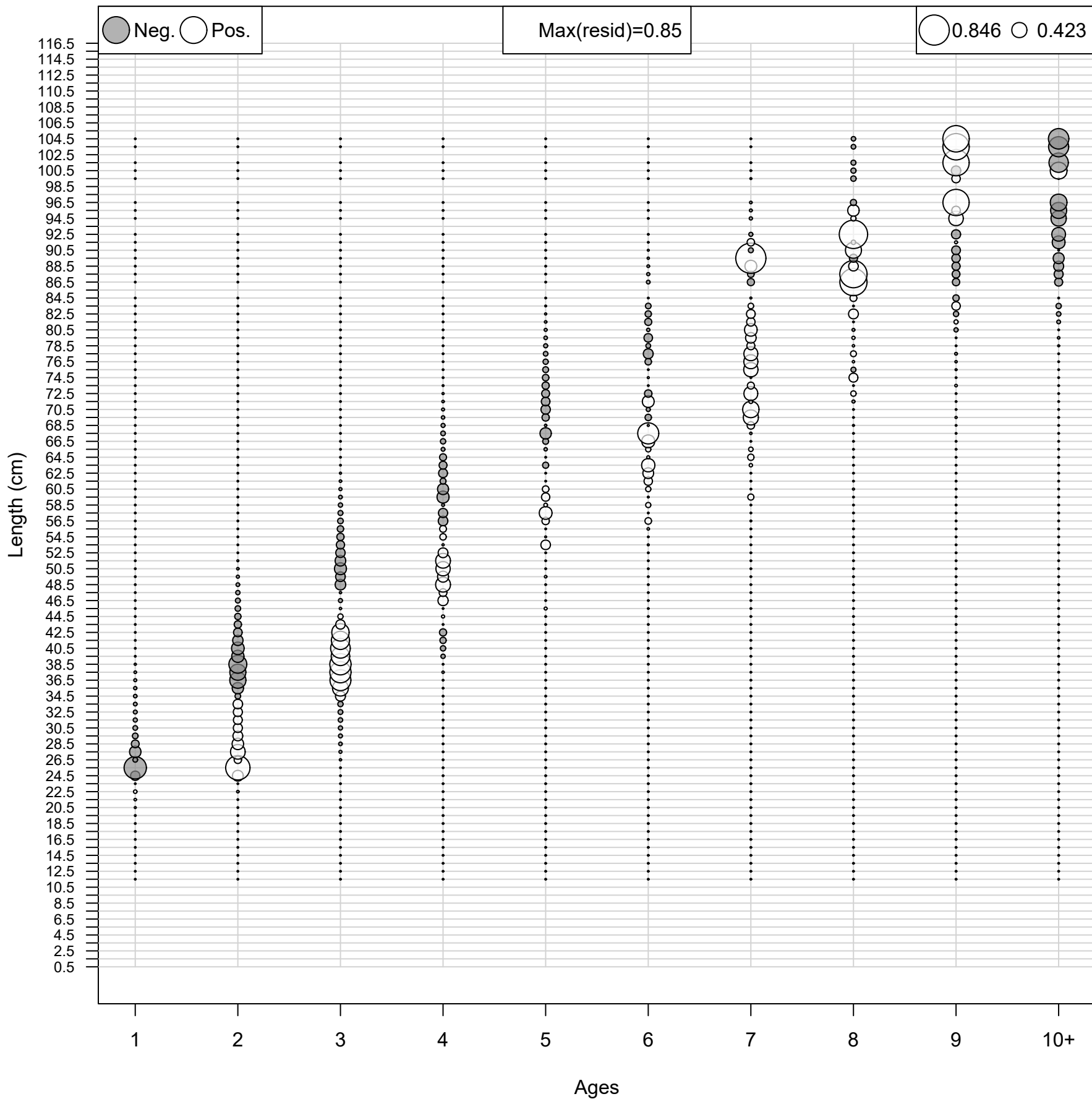
# CAAL Residuals (Observed-Predicted) for Index 1 Year 1990



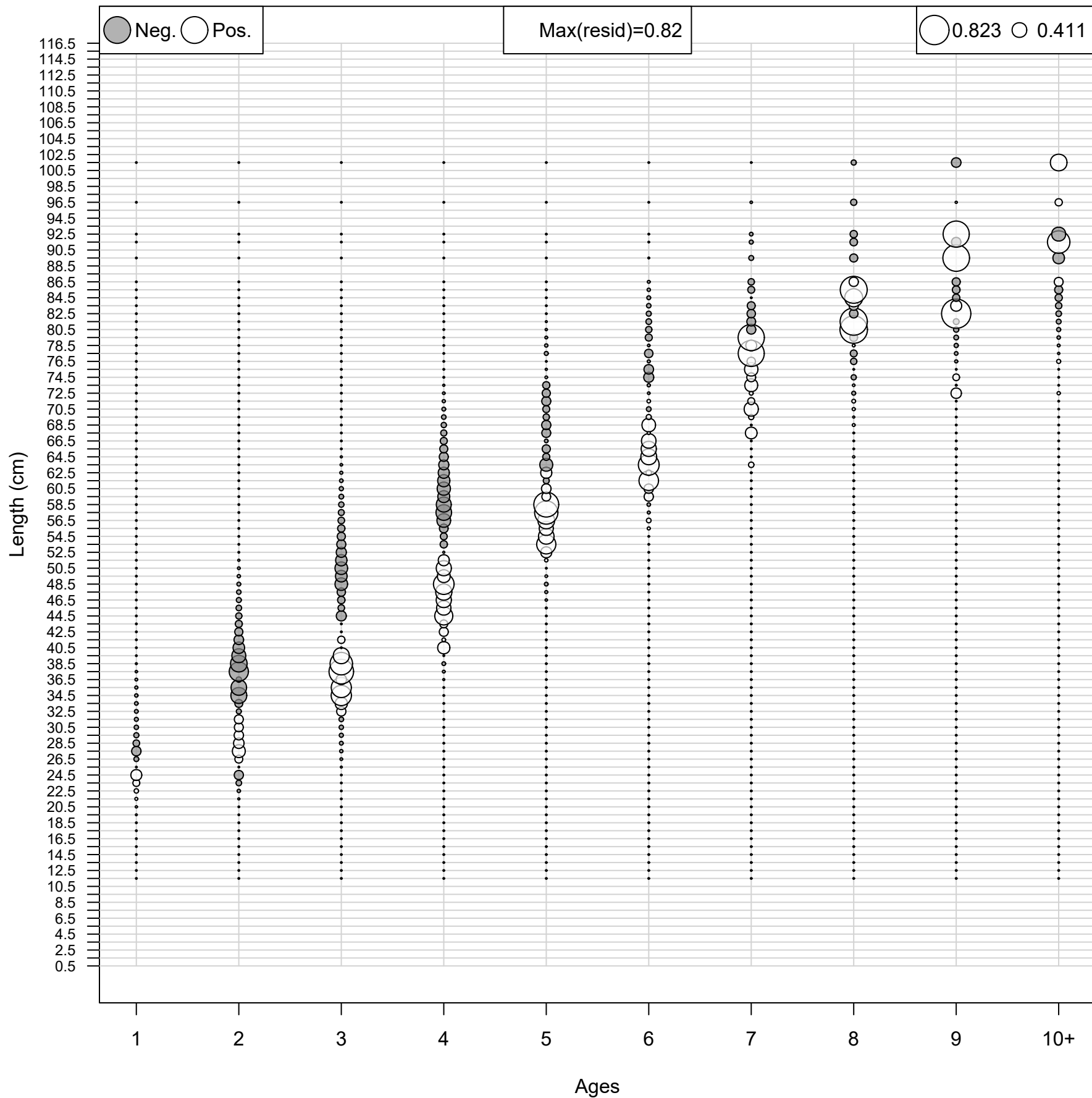
# CAAL Residuals (Observed-Predicted) for Index 1 Year 1993



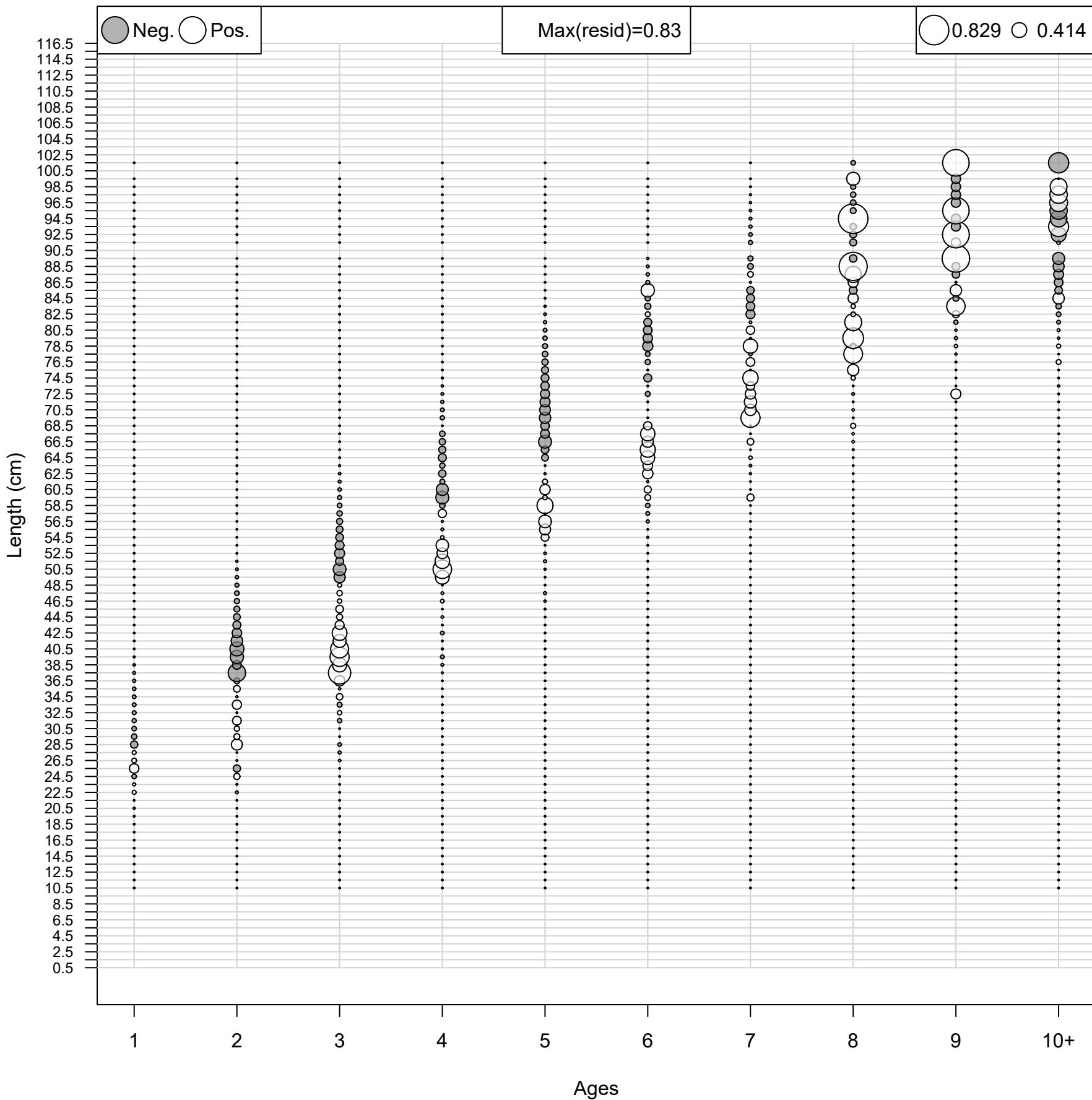
# CAAL Residuals (Observed-Predicted) for Index 1 Year 1996



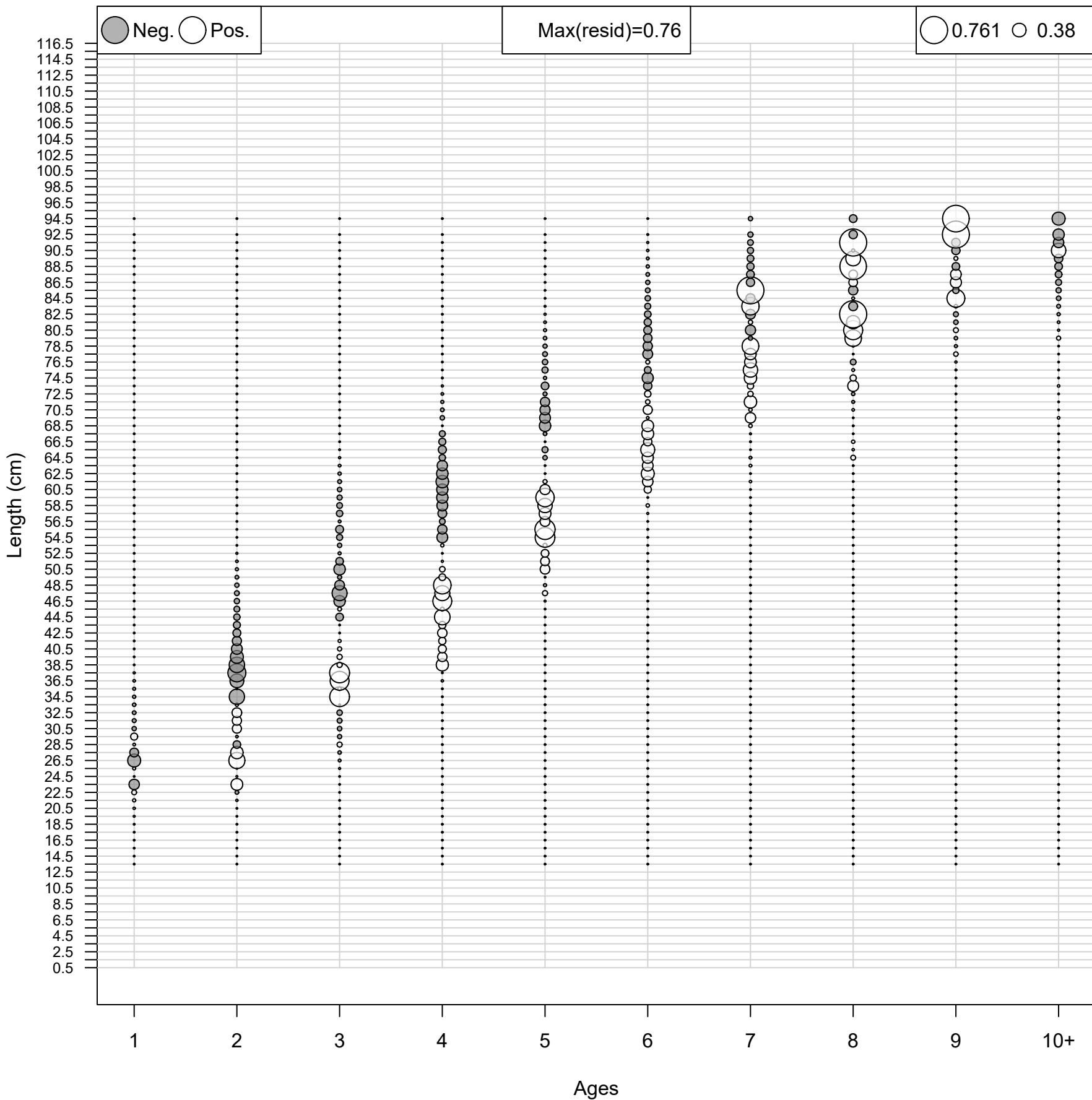
# CAAL Residuals (Observed-Predicted) for Index 1 Year 1999



# CAAL Residuals (Observed-Predicted) for Index 1 Year 2001

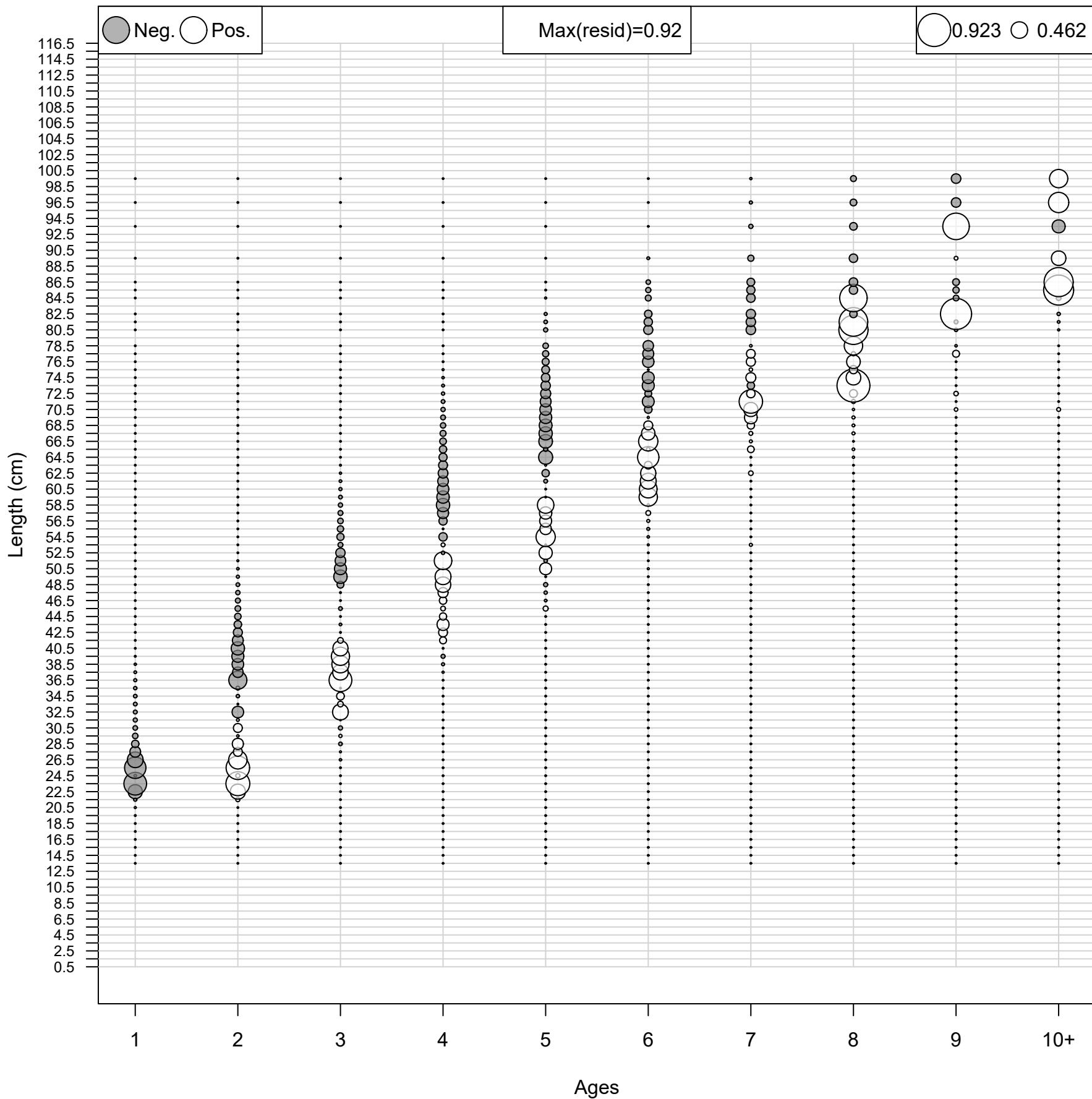


# CAAL Residuals (Observed-Predicted) for Index 1 Year 2003

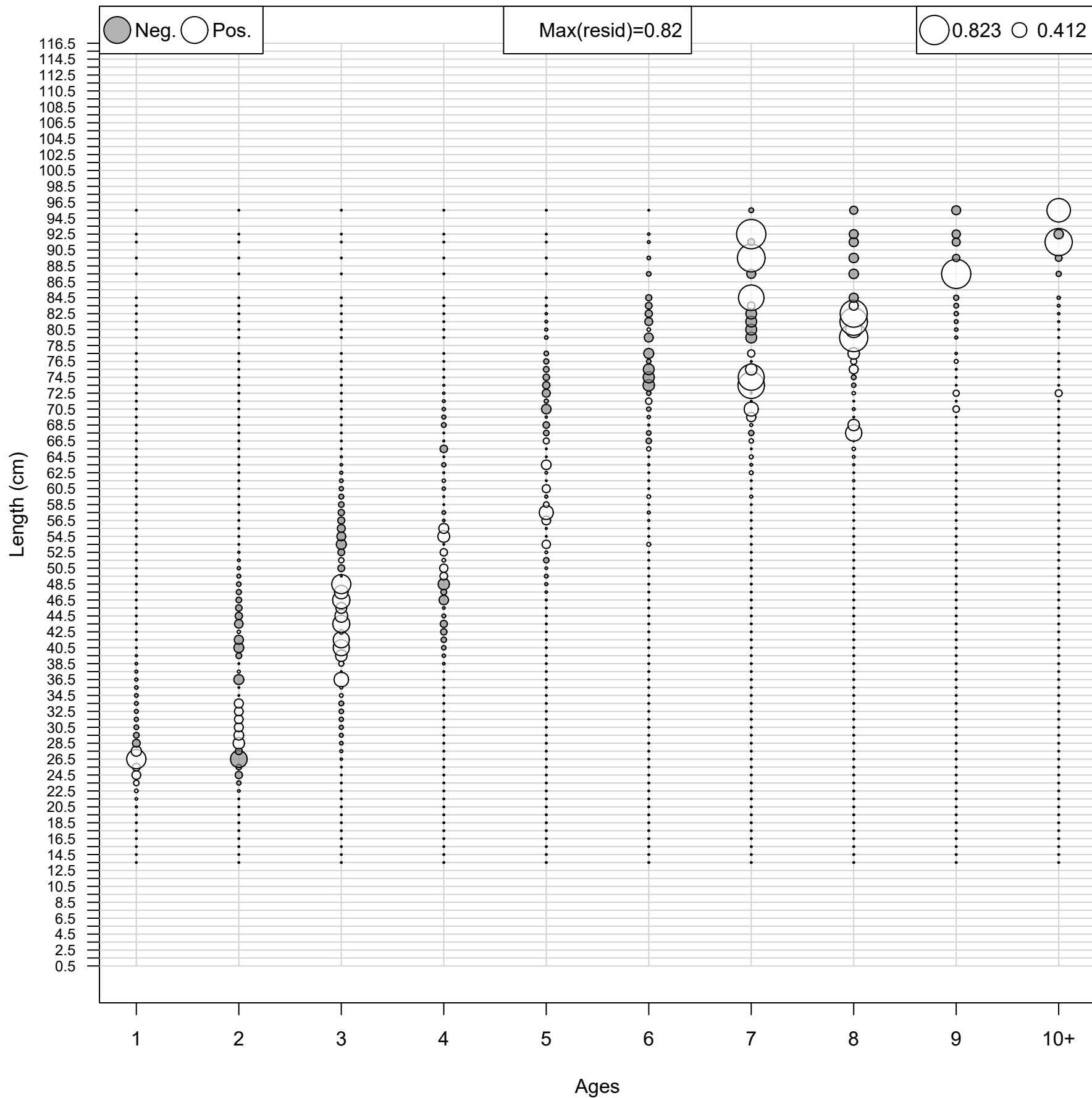




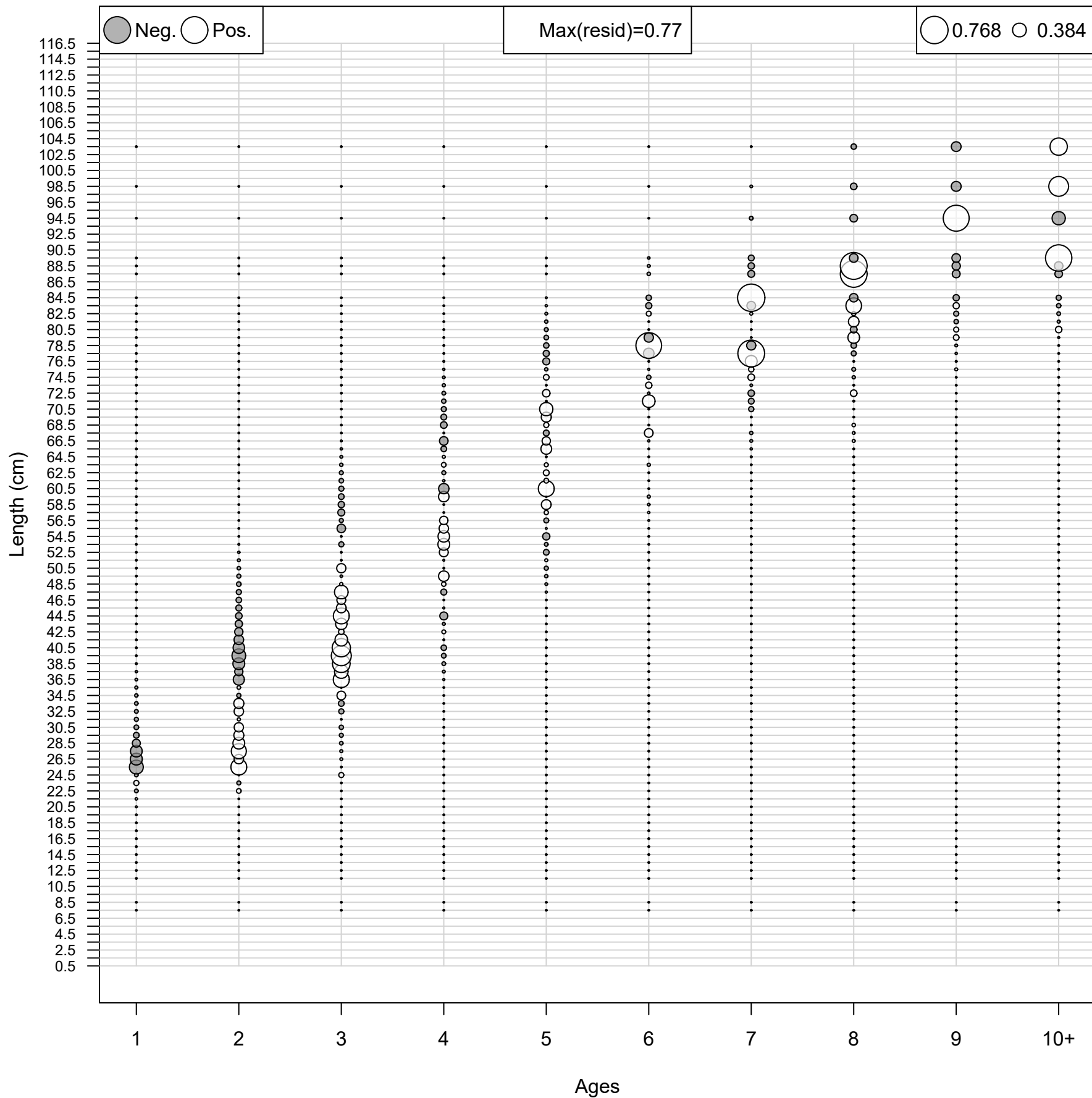
# CAAL Residuals (Observed-Predicted) for Index 1 Year 2005



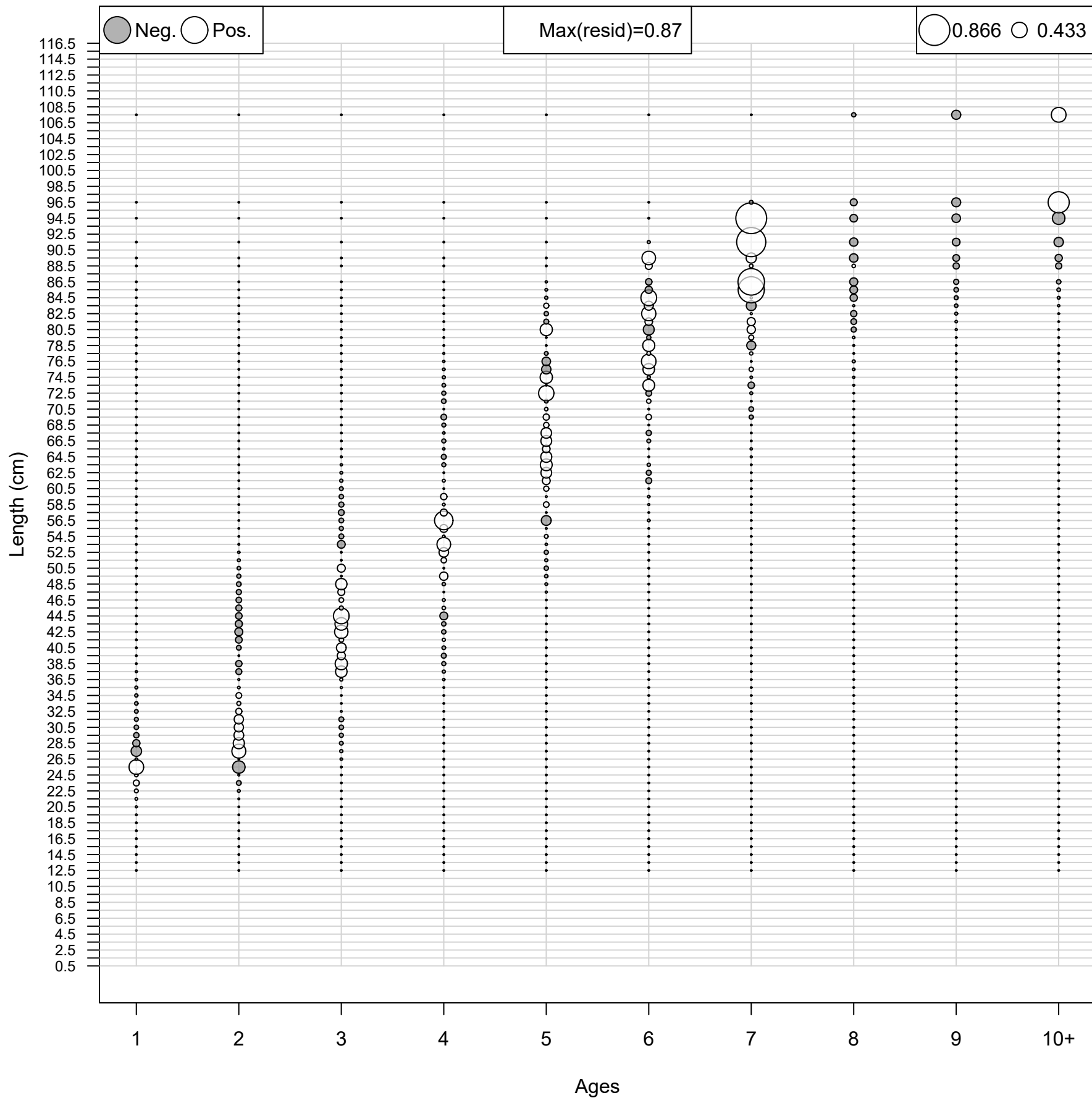
# CAAL Residuals (Observed-Predicted) for Index 1 Year 2007



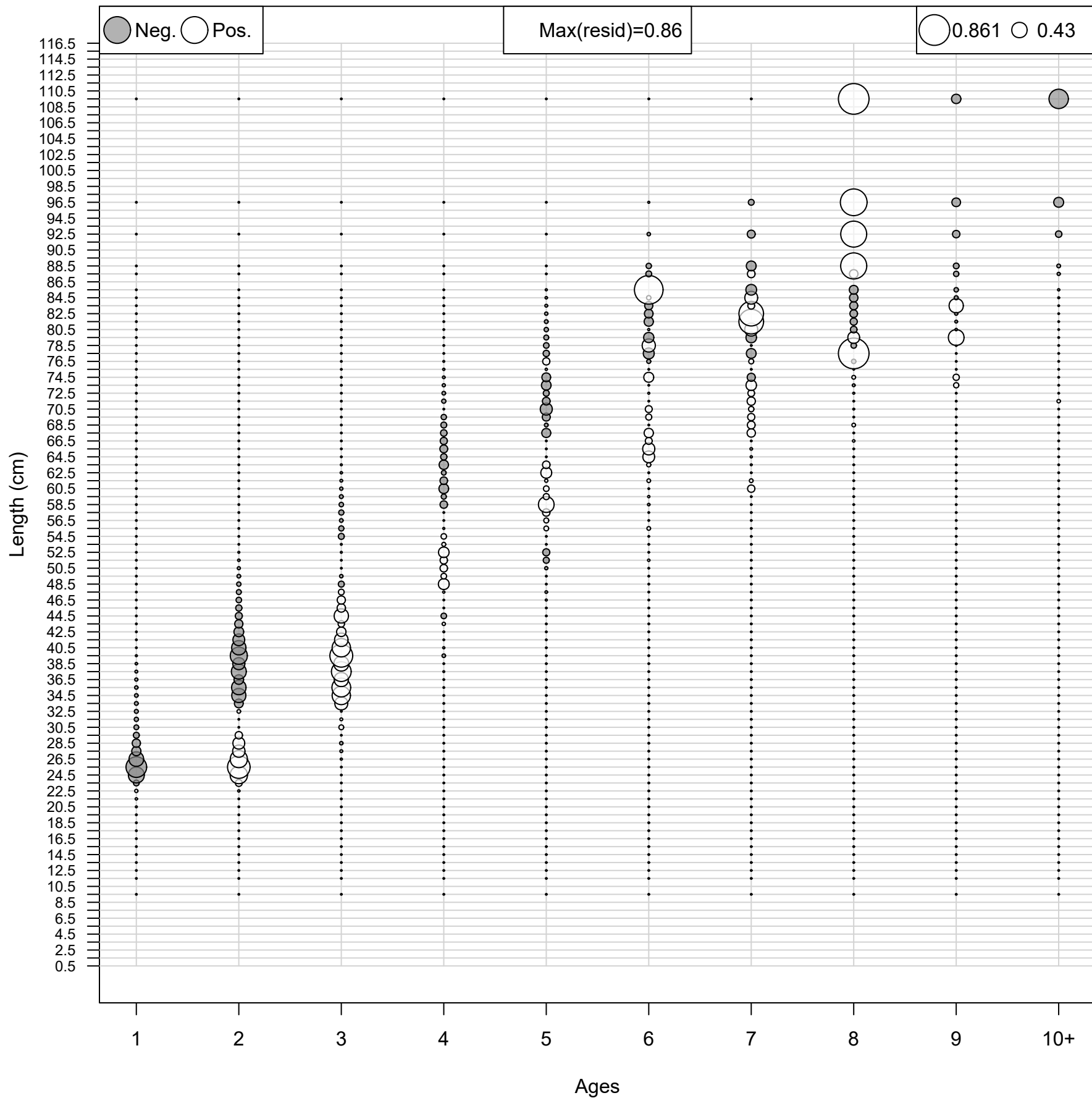
# CAAL Residuals (Observed-Predicted) for Index 1 Year 2009



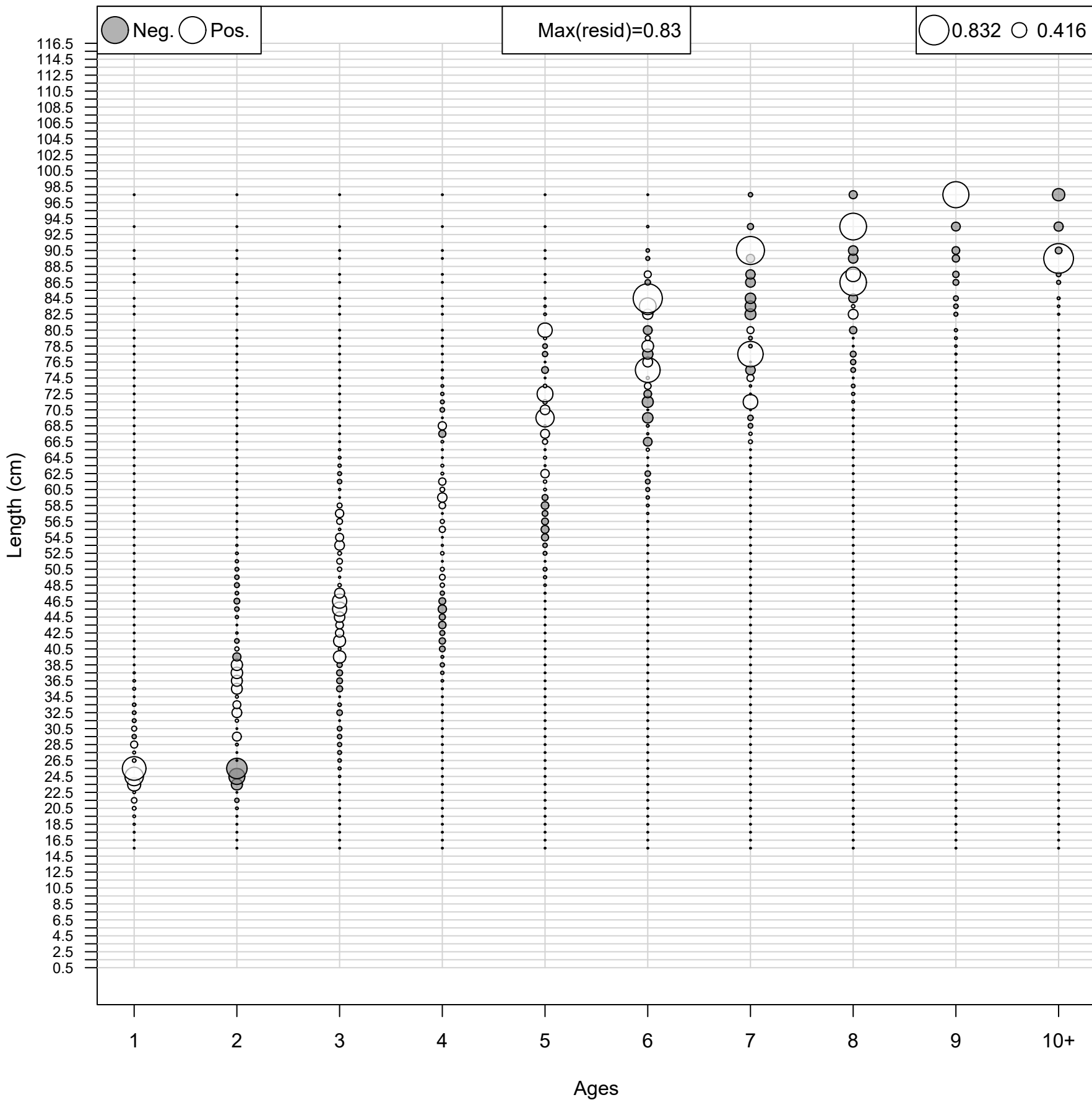
# CAAL Residuals (Observed-Predicted) for Index 1 Year 2011



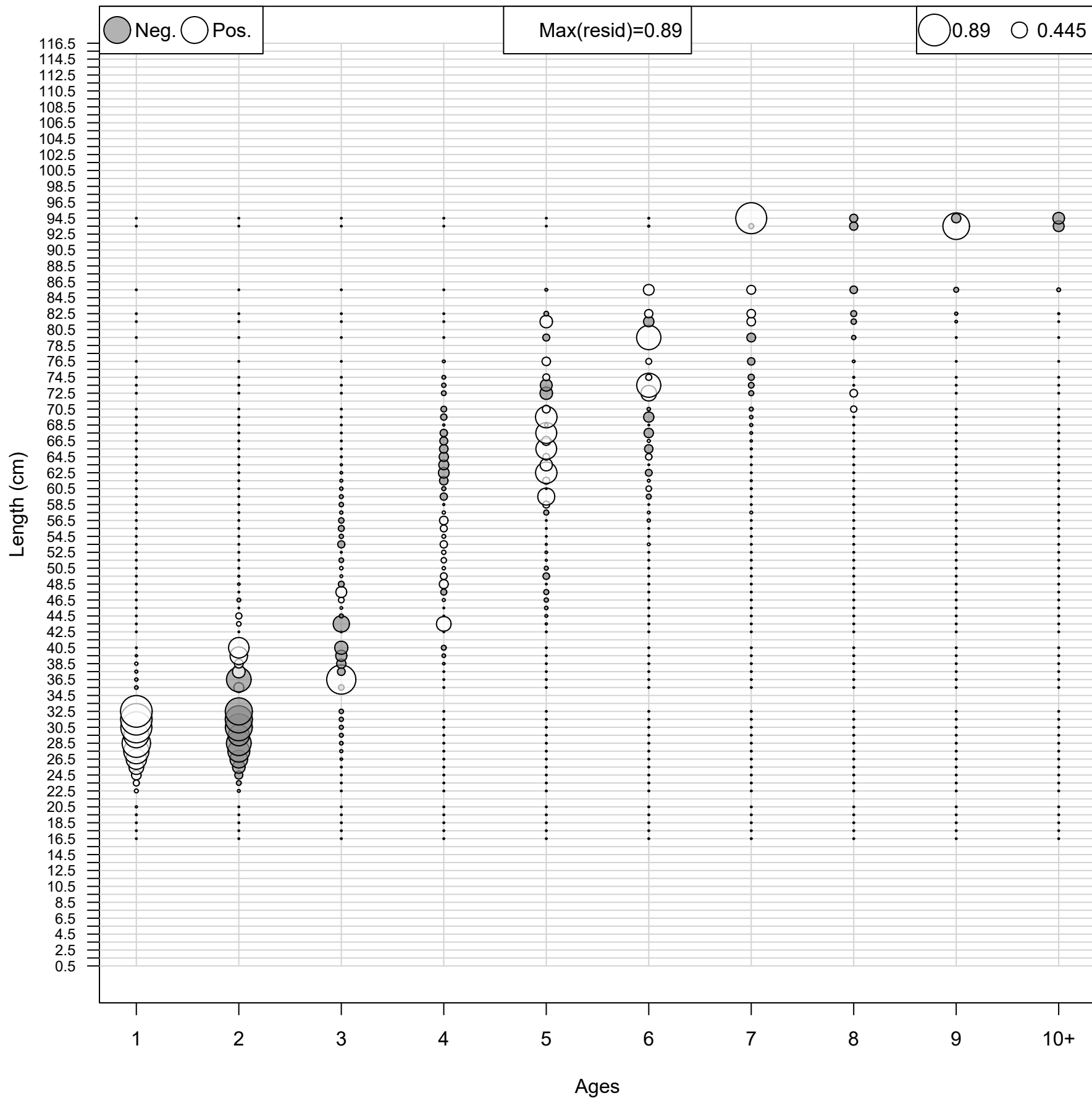
# CAAL Residuals (Observed-Predicted) for Index 1 Year 2013



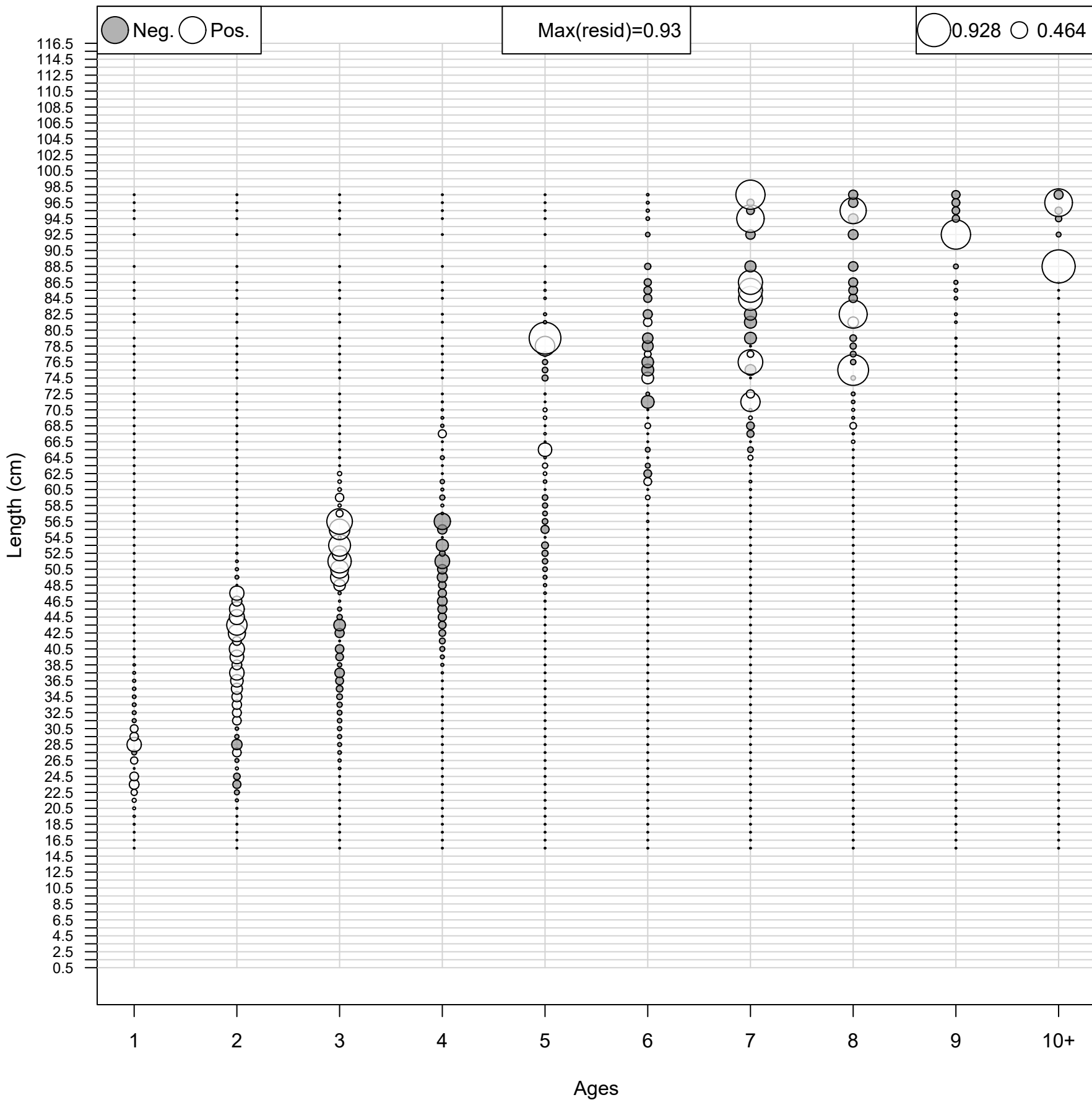
# CAAL Residuals (Observed-Predicted) for Index 1 Year 2015



# CAAL Residuals (Observed-Predicted) for Index 1 Year 2017



# CAAL Residuals (Observed-Predicted) for Index 1 Year 2019





# CAAL Residuals (Observed-Predicted) for Index 1 Year 2021

