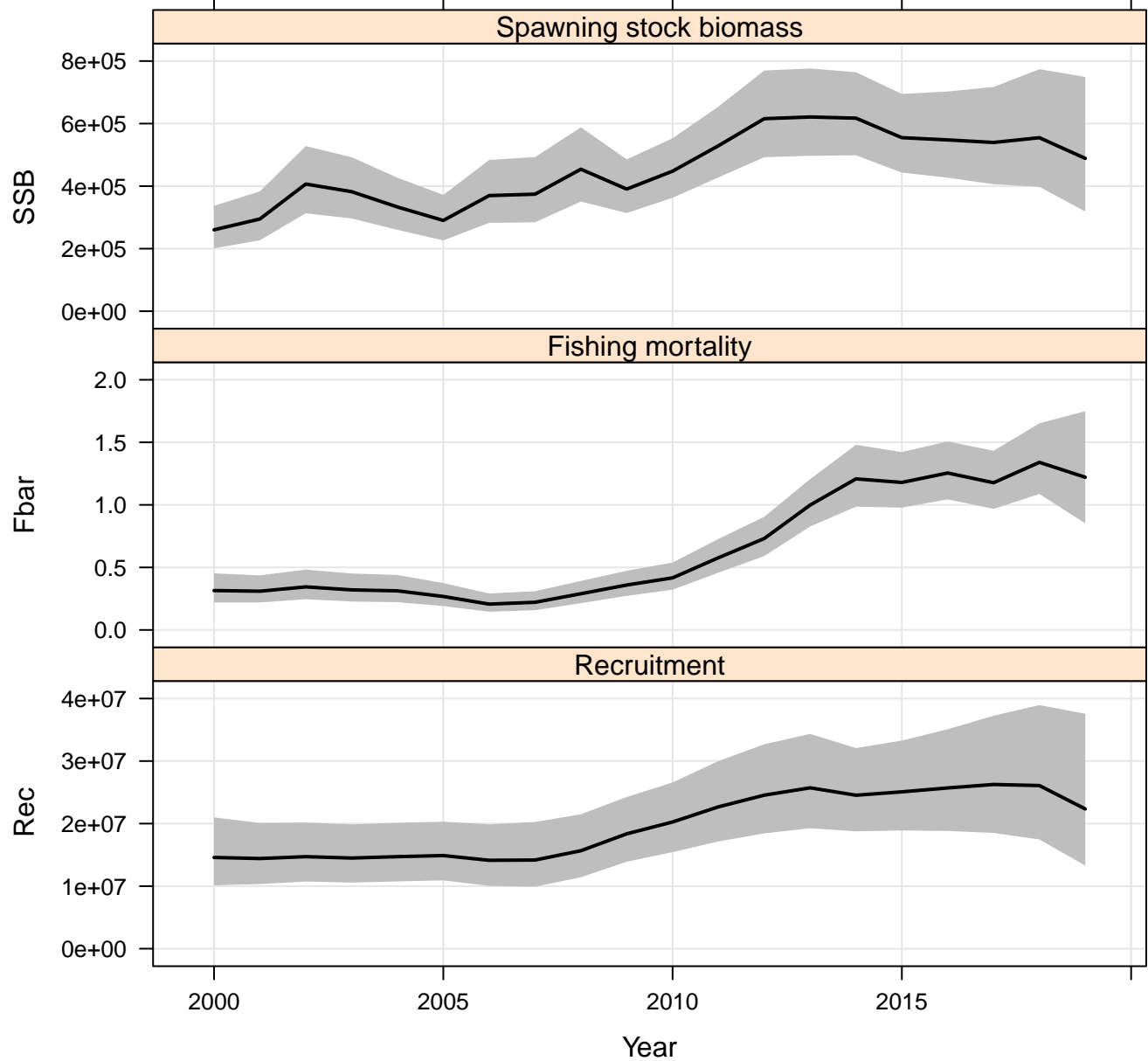
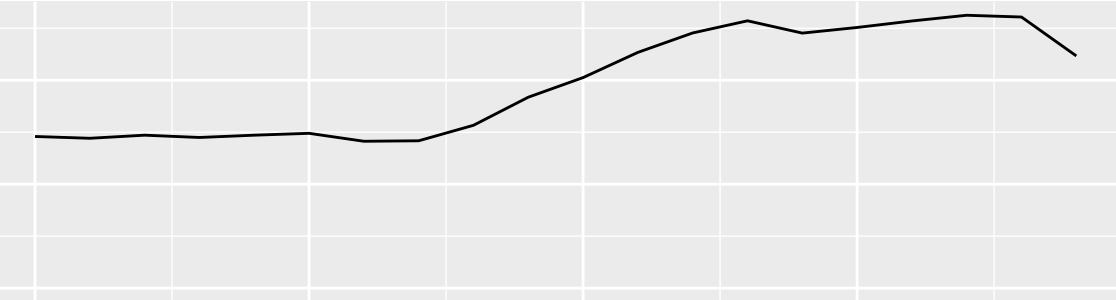


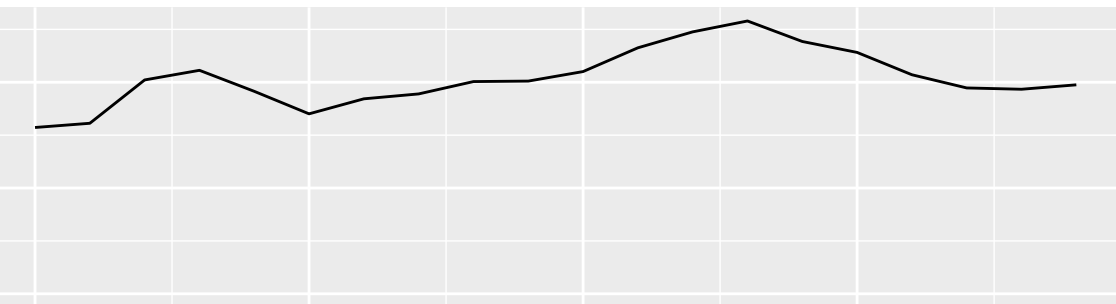
# Sardine GSA 17-18 latest input



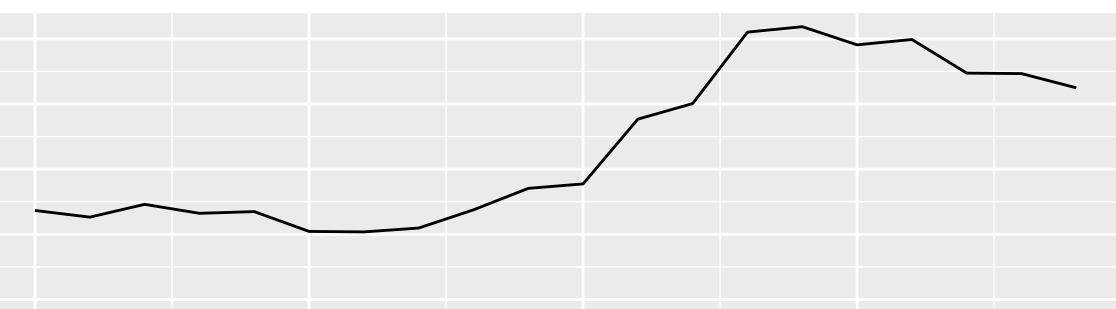
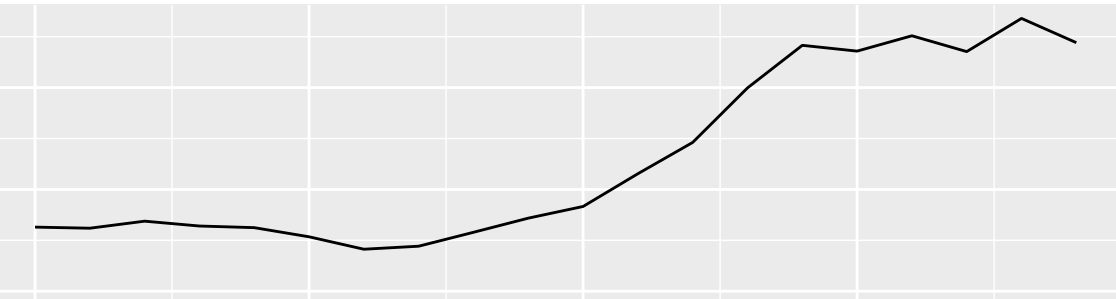
Rec

2e+07  
1e+07  
0e+00

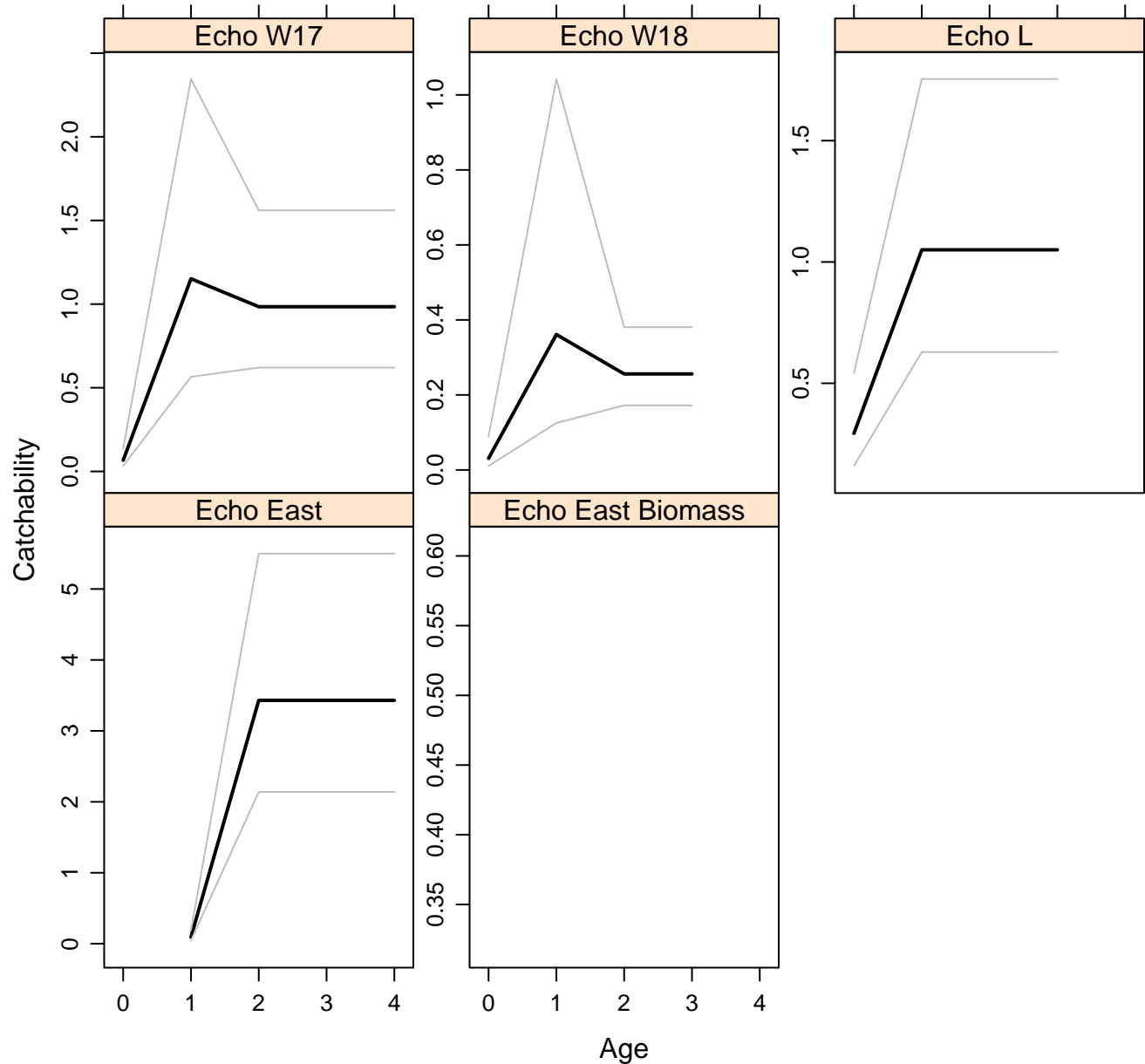
SSB

2e+05  
1e+05  
0e+00

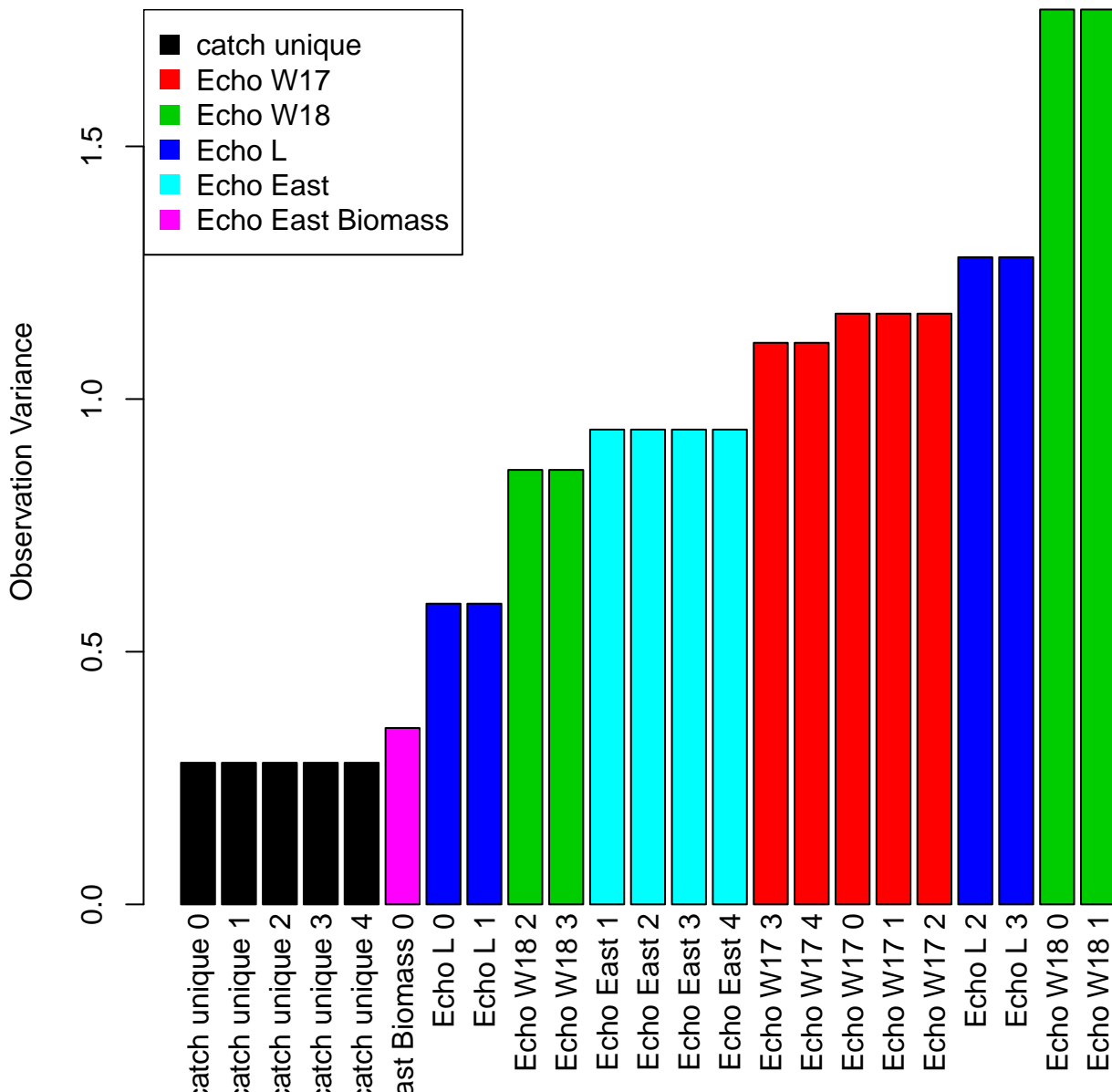
Catch (tonnes)

80000  
60000  
40000  
20000  
0 $F(1-3)$ 1.0  
0.5  
0.0

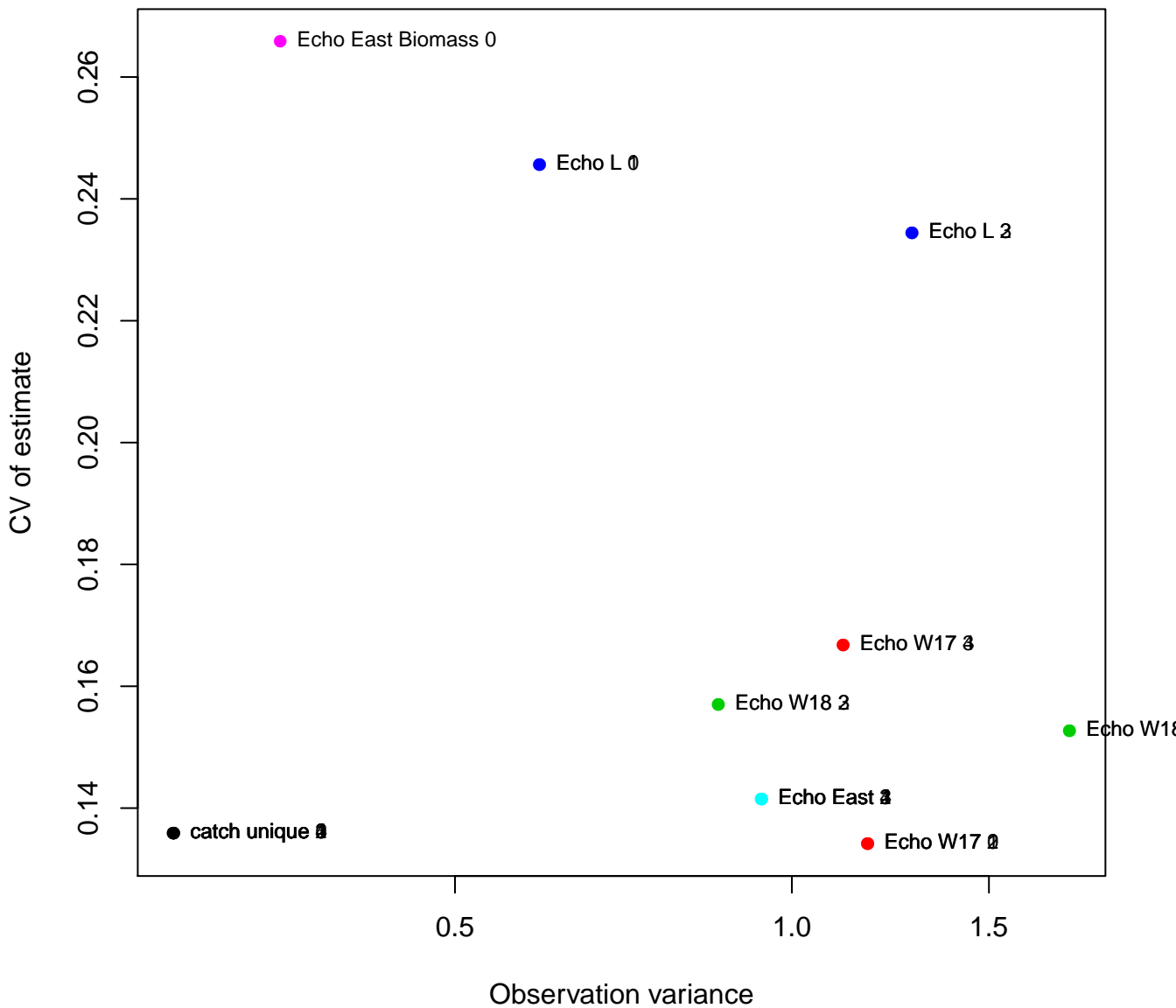
# Survey catchability parameters



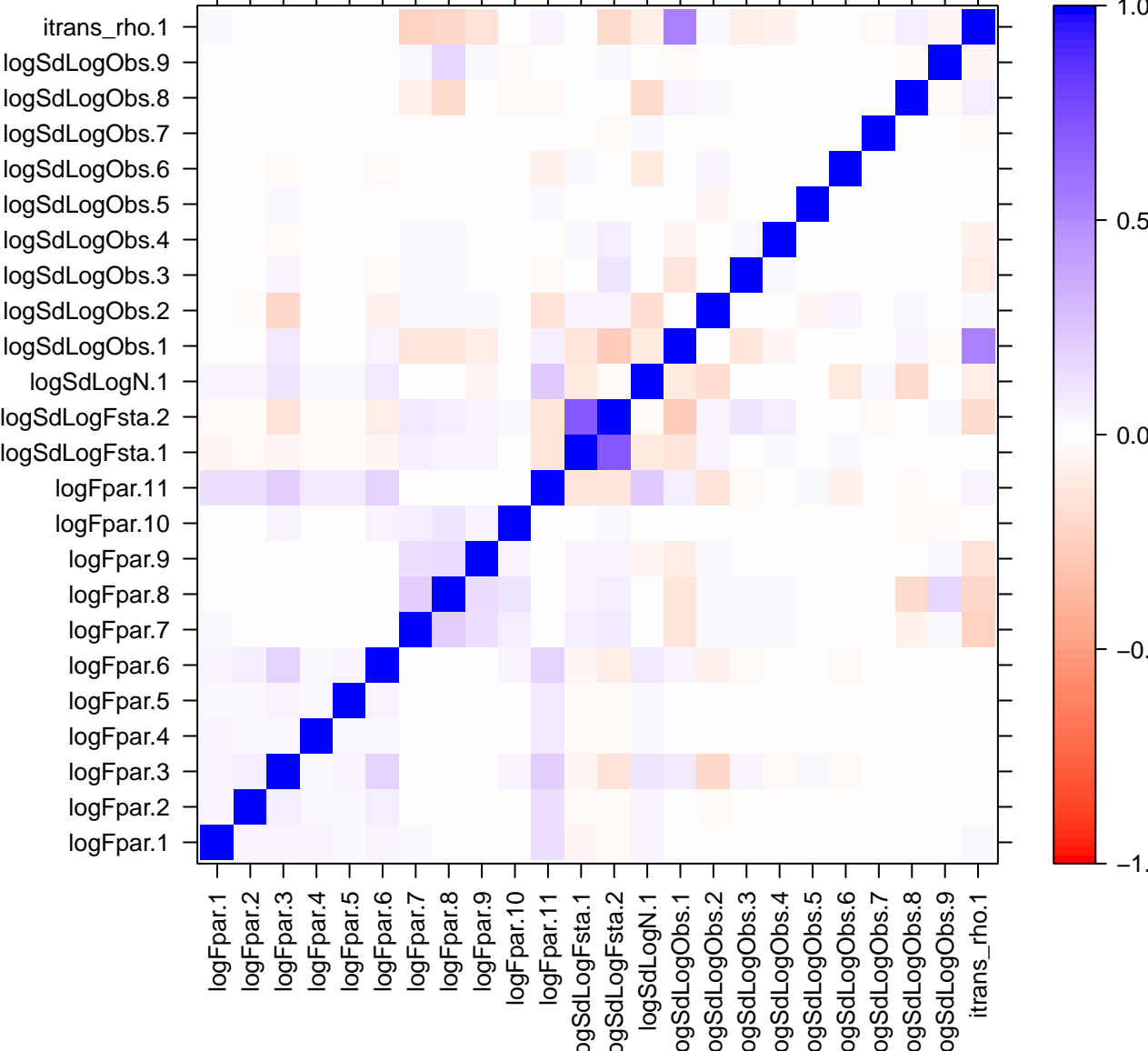
Observation variances by data source



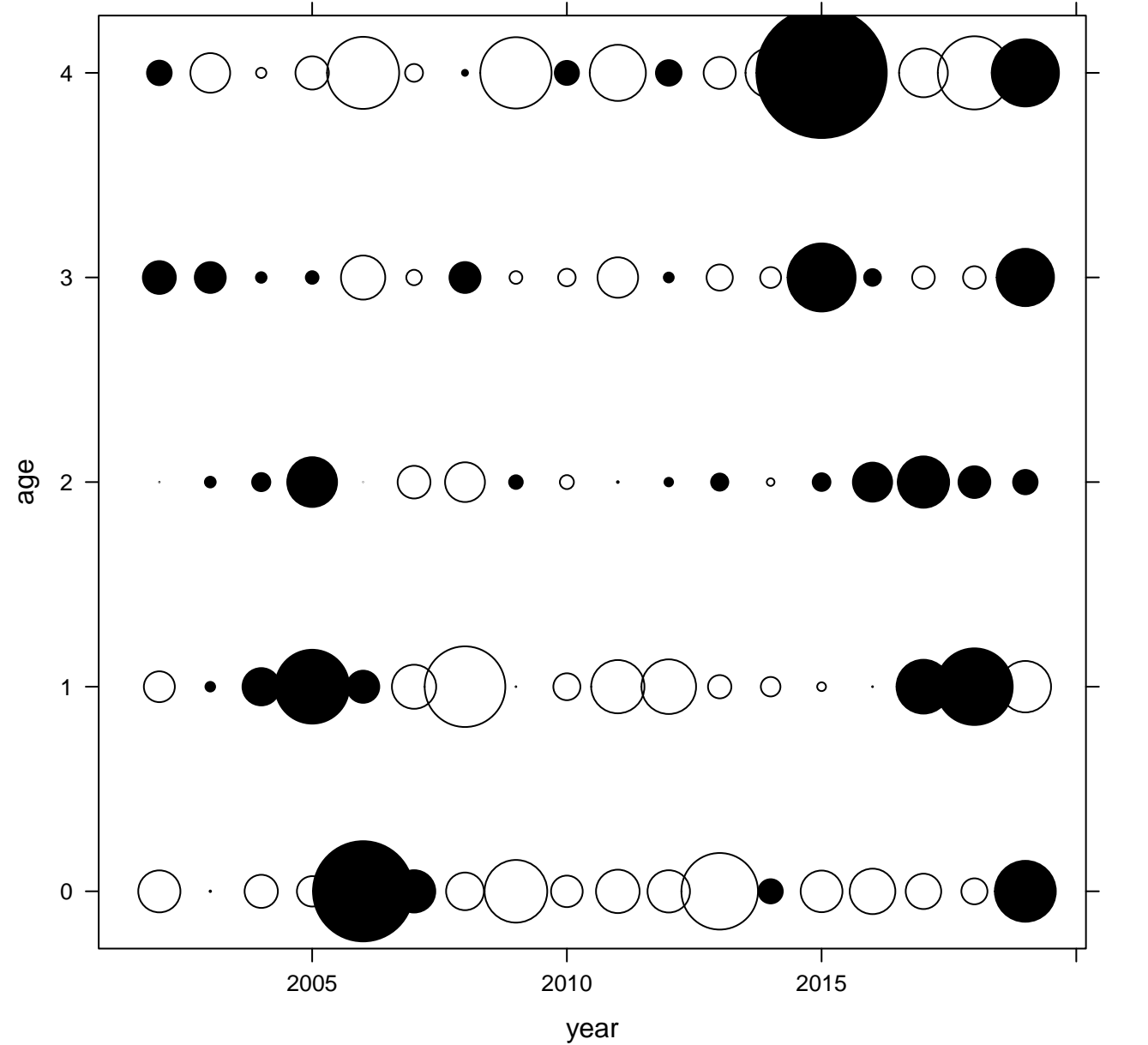
## Observation variance vs uncertainty



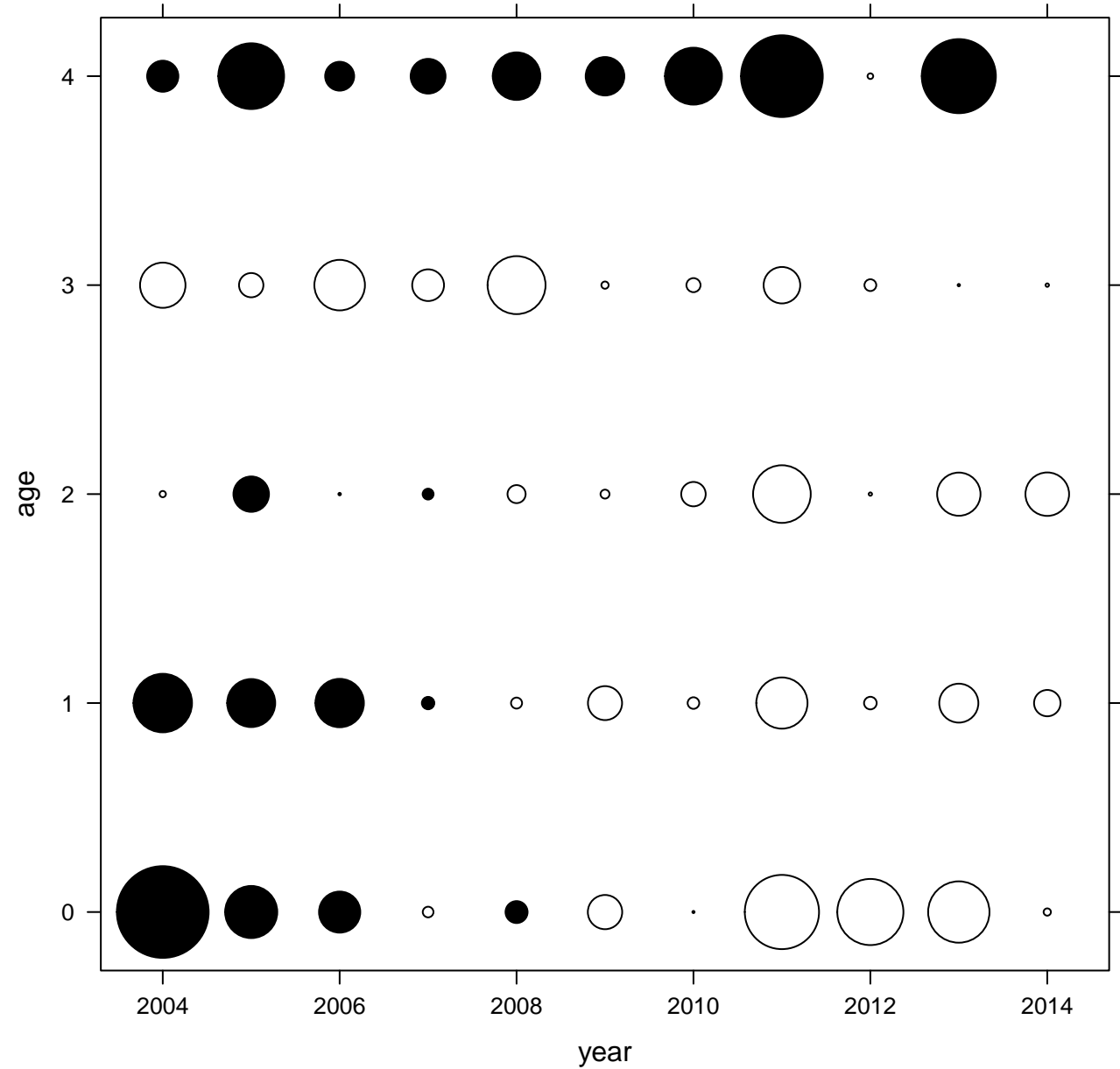
## Sardine GSA 17-18 latest input



Residuals by year Catch

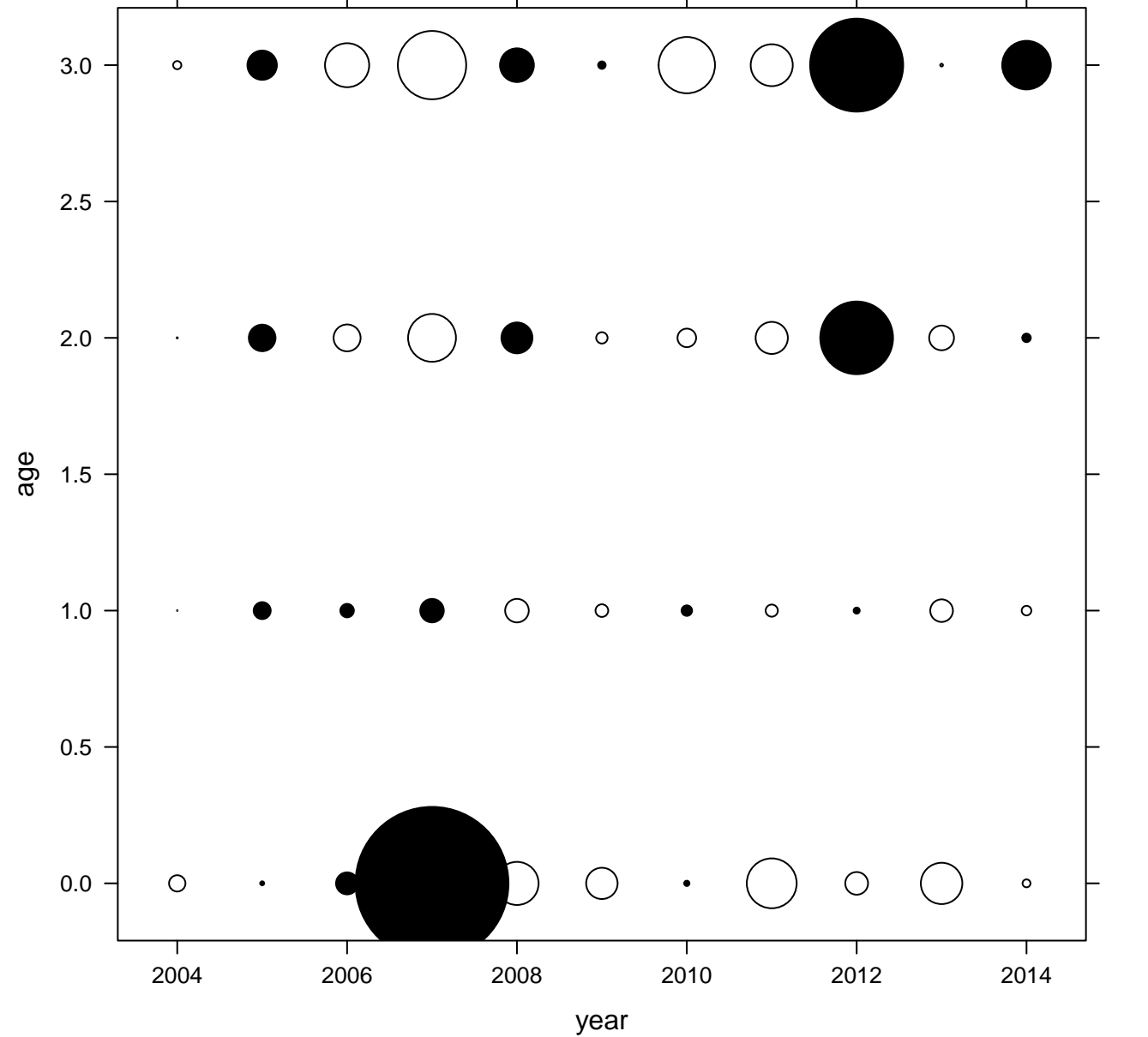


**Residuals by year Echo W17**

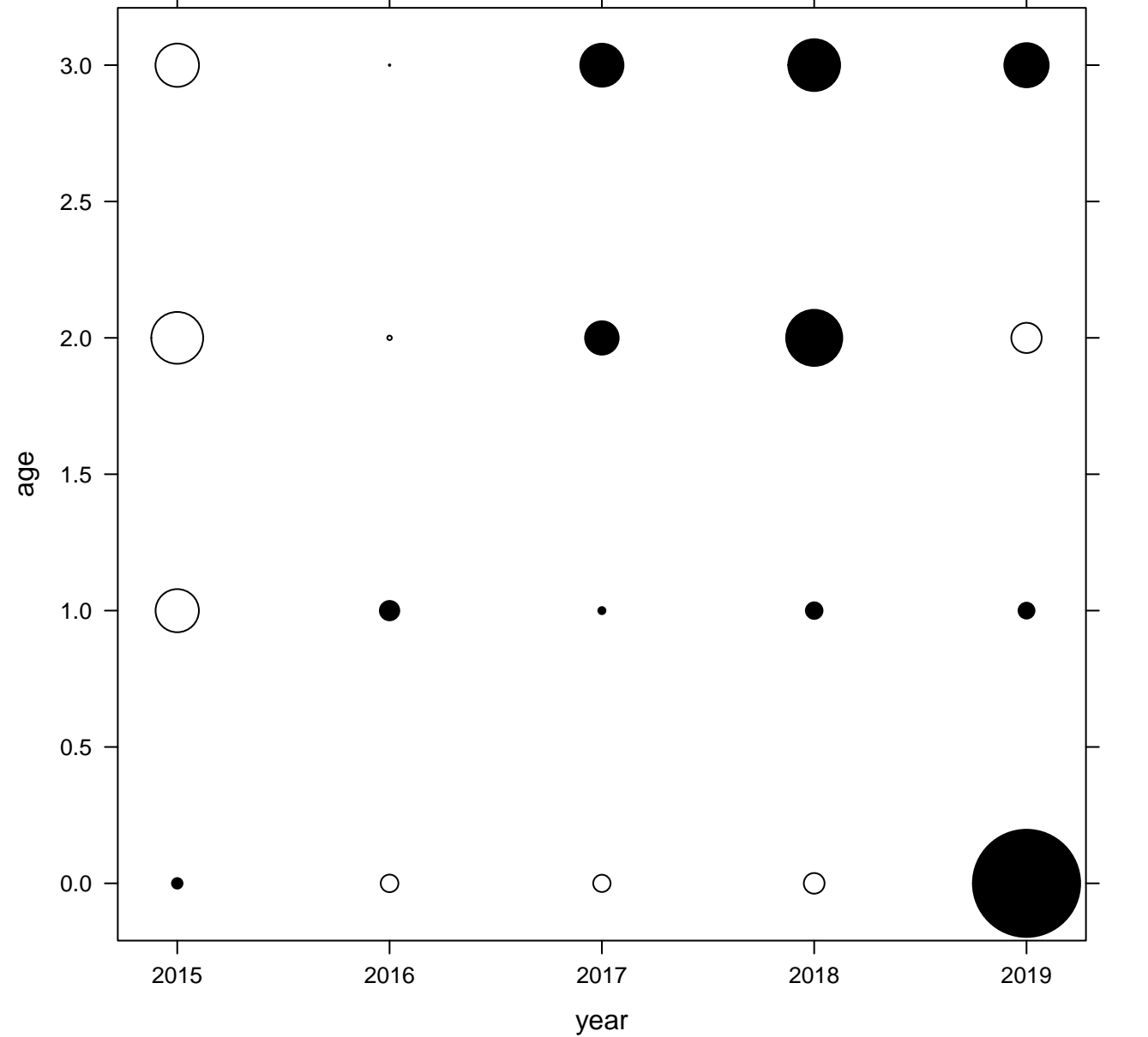




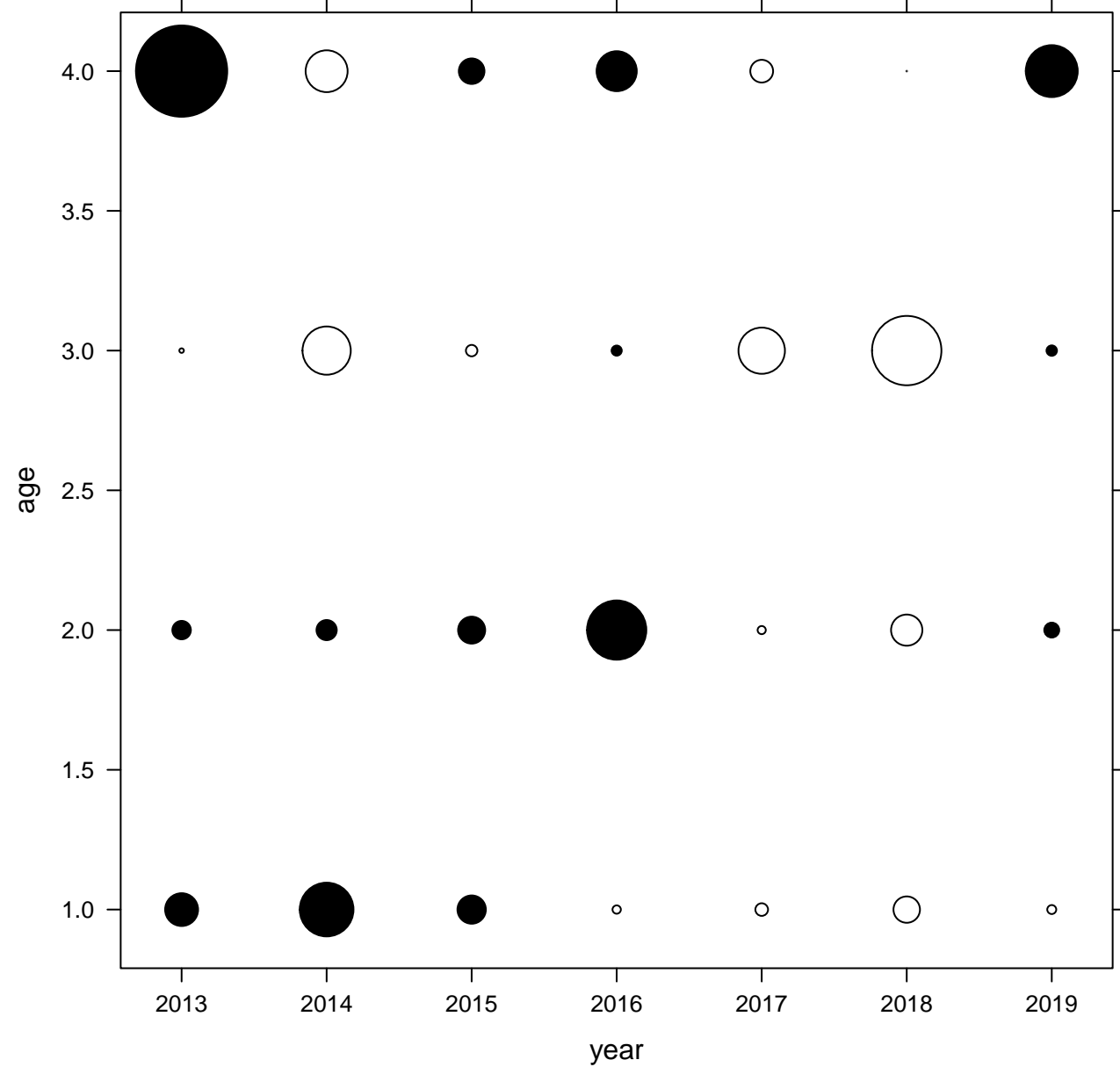
**Residuals by year Echo W18**



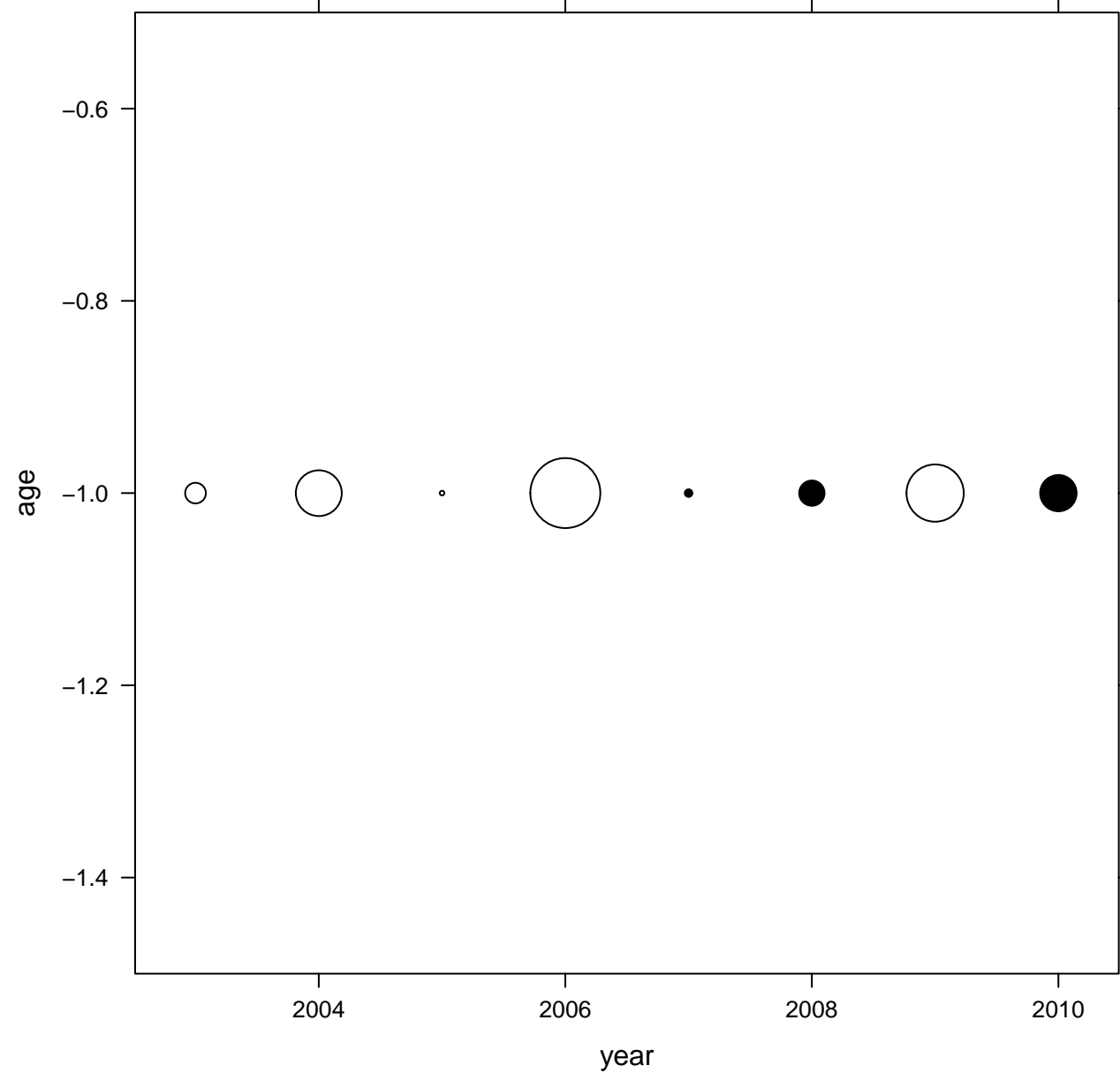
Residuals by year Echo L

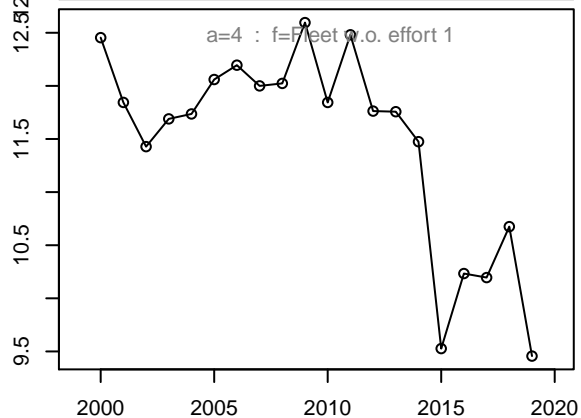
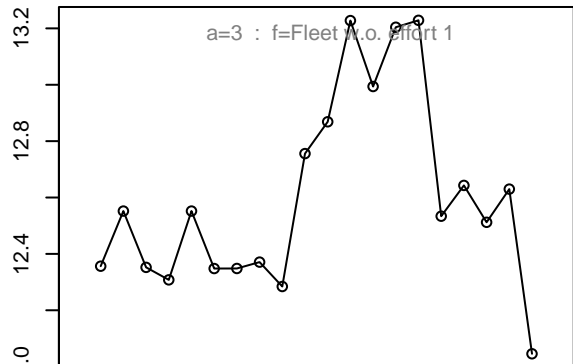
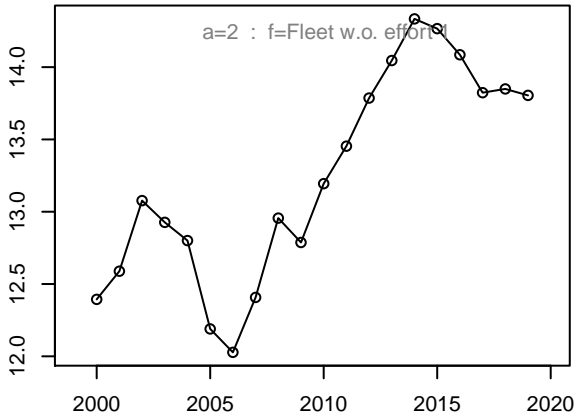
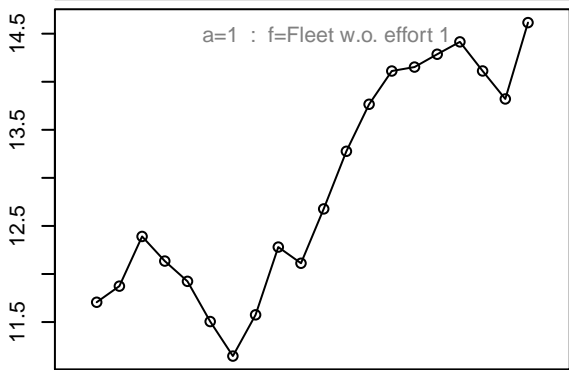
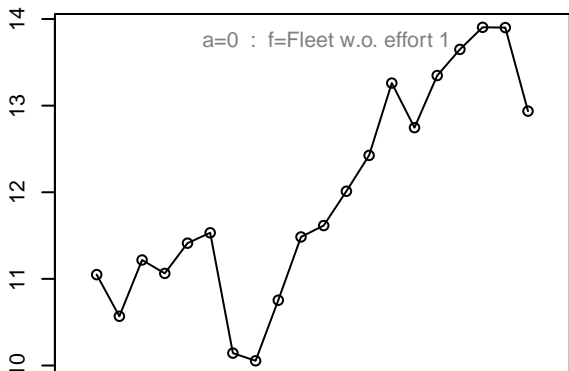


**Residuals by year Echo East**

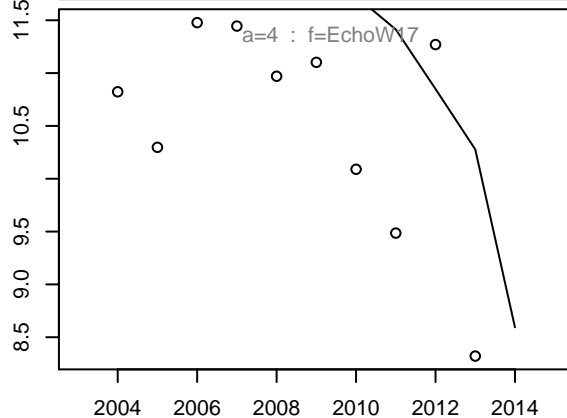
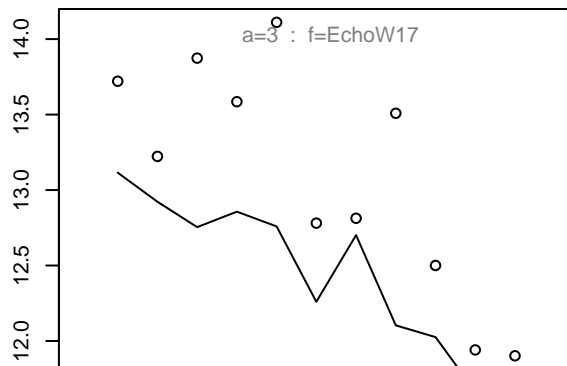
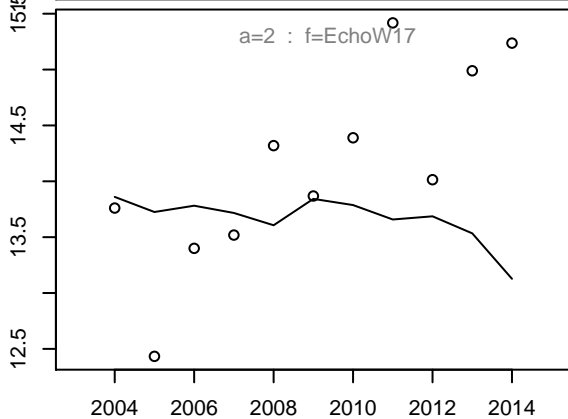
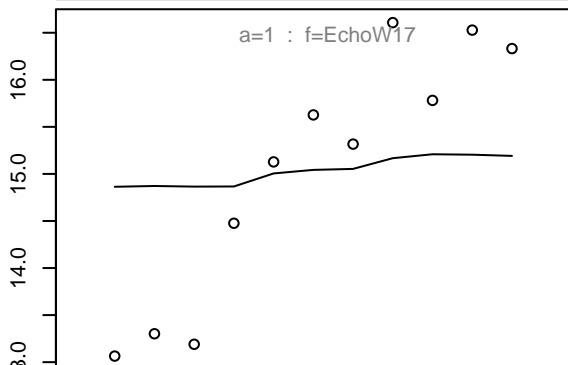
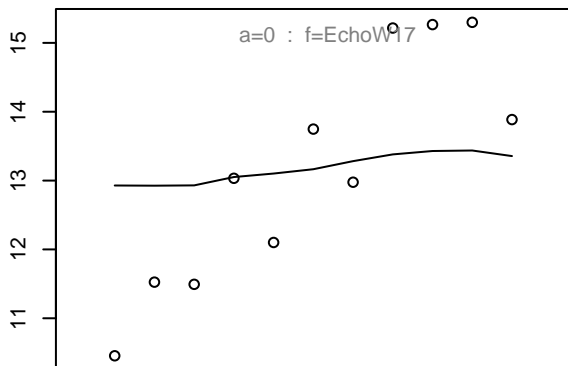


**Residuals by year Echo East Biomass**

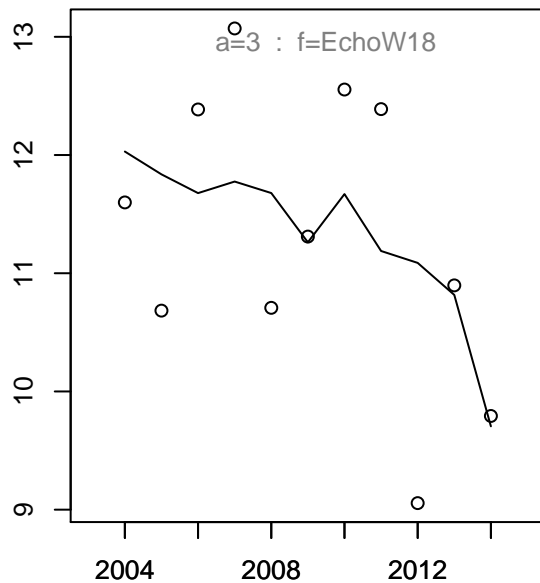
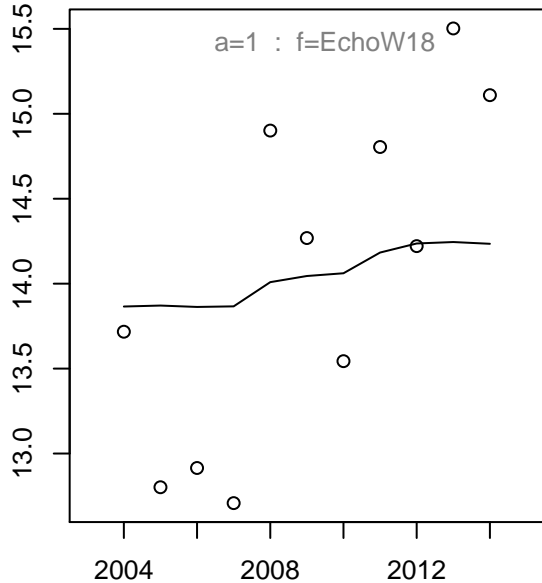
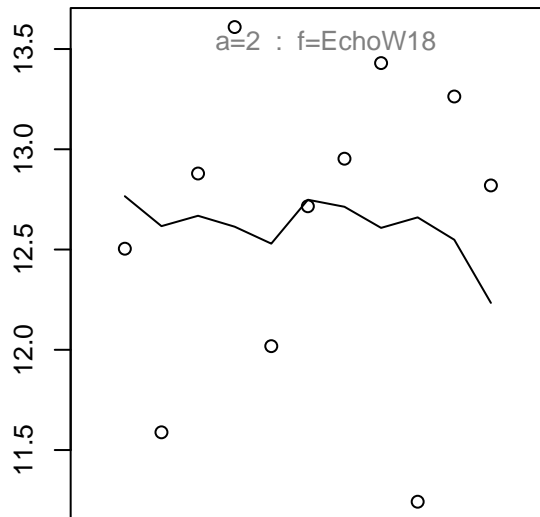
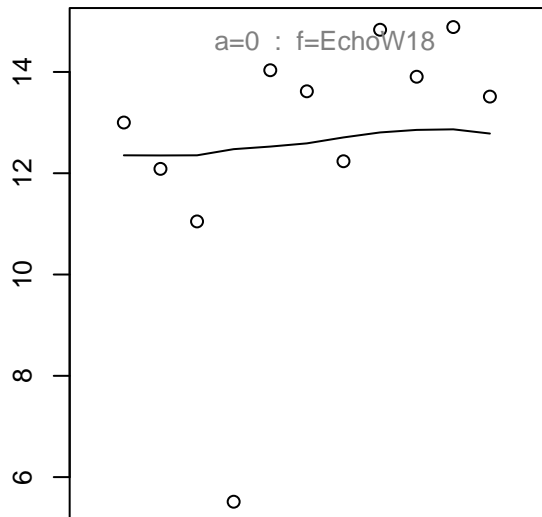




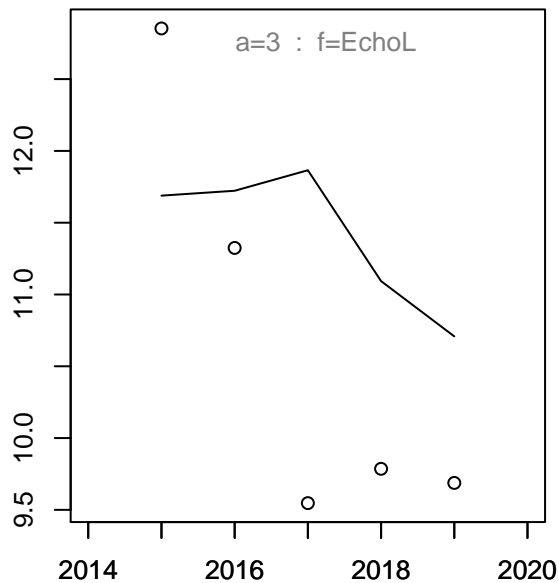
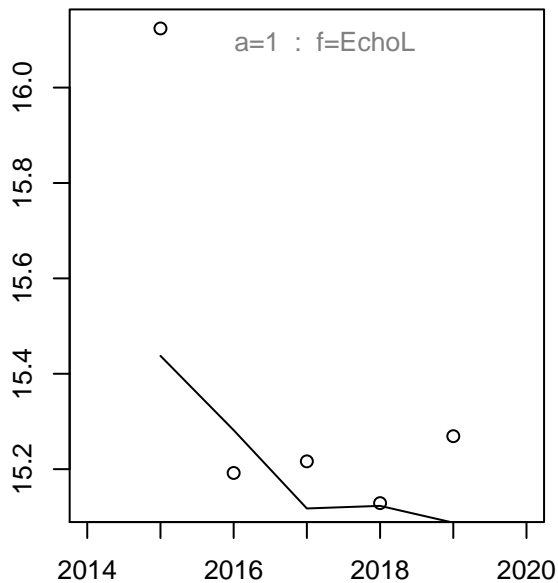
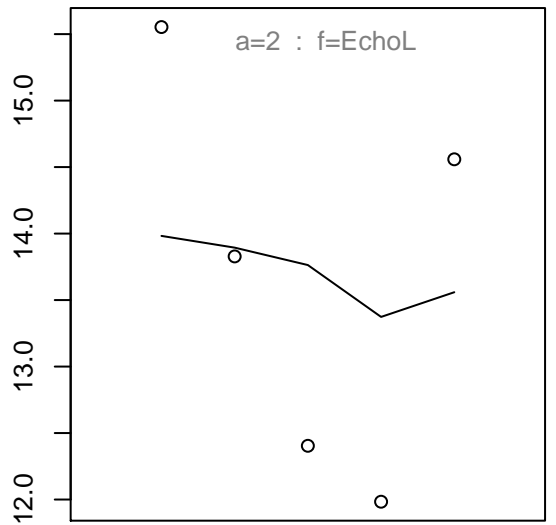
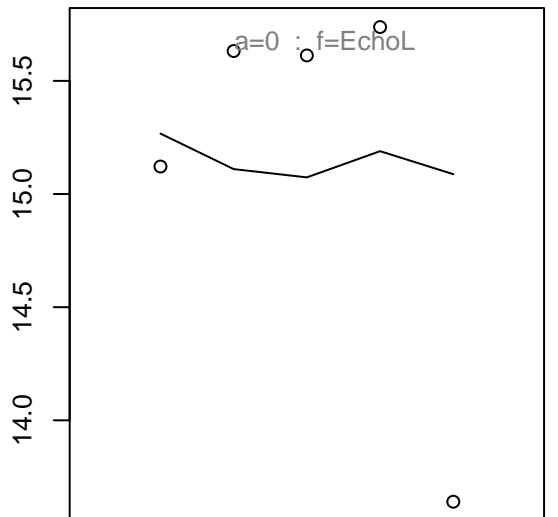
Year



Year

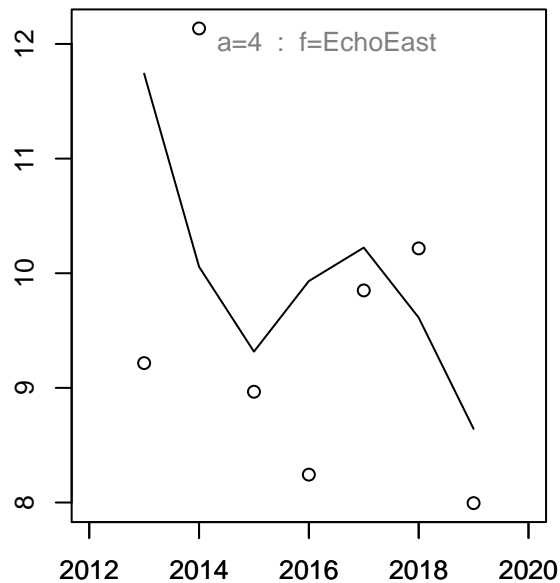
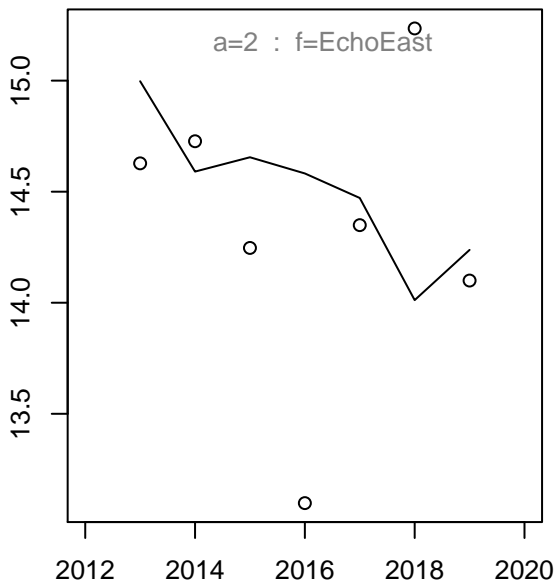
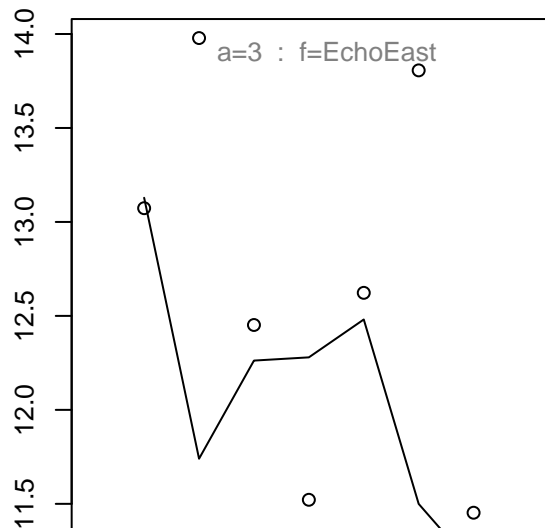
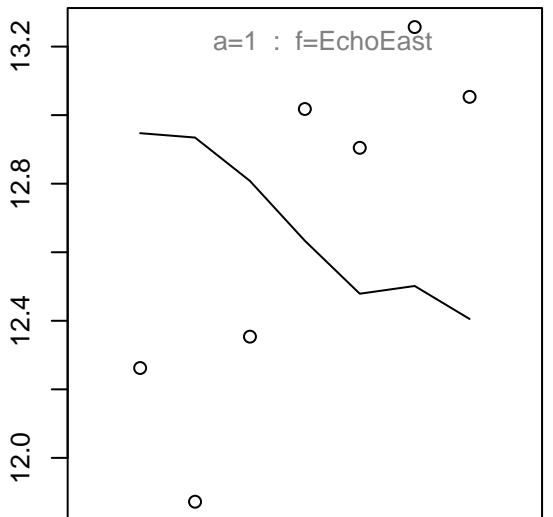


Year



Year





Year

