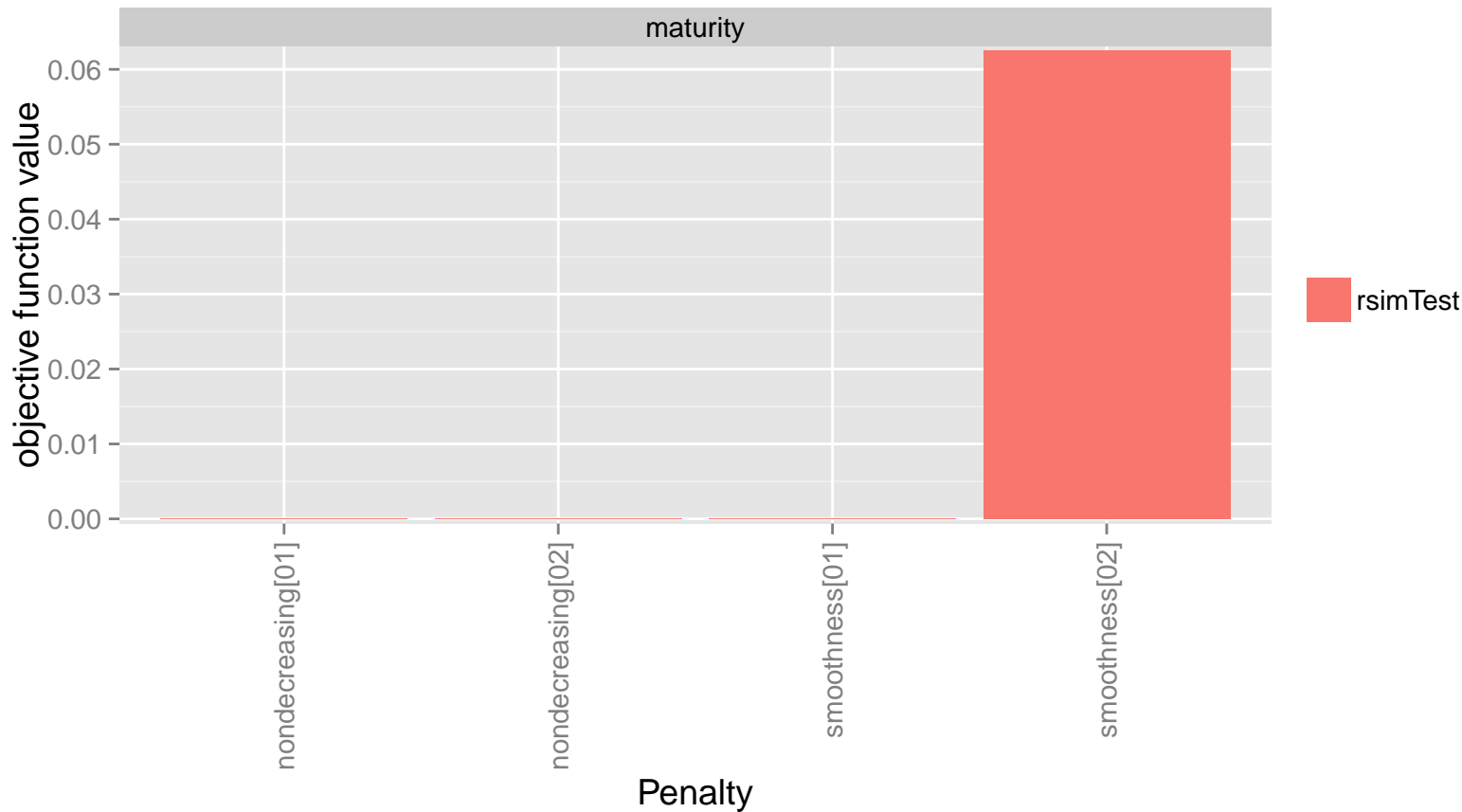


# Penalties



priors: recruitment

objective function value

0

pDevsLnR[01]

pLgtRX[01]

pLnR[01]

pLnRa[01]

pLnRb[01]

pLnRCV[01]

Parameter



rsimTest



priors: natural mortality

objective function value

0

pLnDMM[01]

pLnDMT[01]

pLnDMX[01]

pLnDMXM[01]

pLnM[01]

Parameter



rsimTest

priors: growth

objective function value

0

pLnGrA[01]

pLnGrA[02]

pLnGrB[01]

pLnGrB[02]

pLnGrBeta[01]

Parameter



rsimTest

priors: maturity

objective function value

0

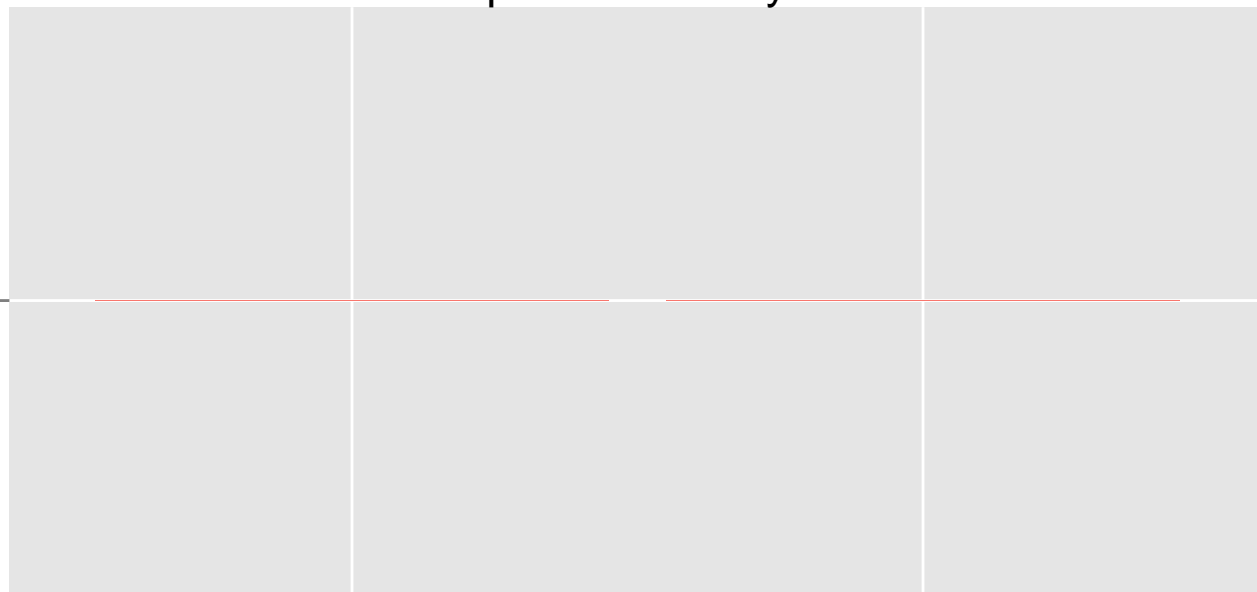
pvlGtPrMat[01]

pvlGtPrMat[02]

Parameter



rsimTest



# priors: selectivity functions

objective function value

0

pS1[01]

pS1[02]

pS1[03]

pS1[04]

pS2[01]

pS2[02]

pS2[03]

pS2[04]

Parameter



rsimTest

priors: fisheries

objective function value

0

pDevsLnC[01]

pLnC[01]

pLnDCM[01]

pLnDCT[01]

pLnDCX[01]

pLnDCXM[01]

Parameter



rsimTest

priors: surveys

objective function value

0

pLnDQM[01]

pLnDQT[01]

pLnDQX[01]

pLnDQXM[01]

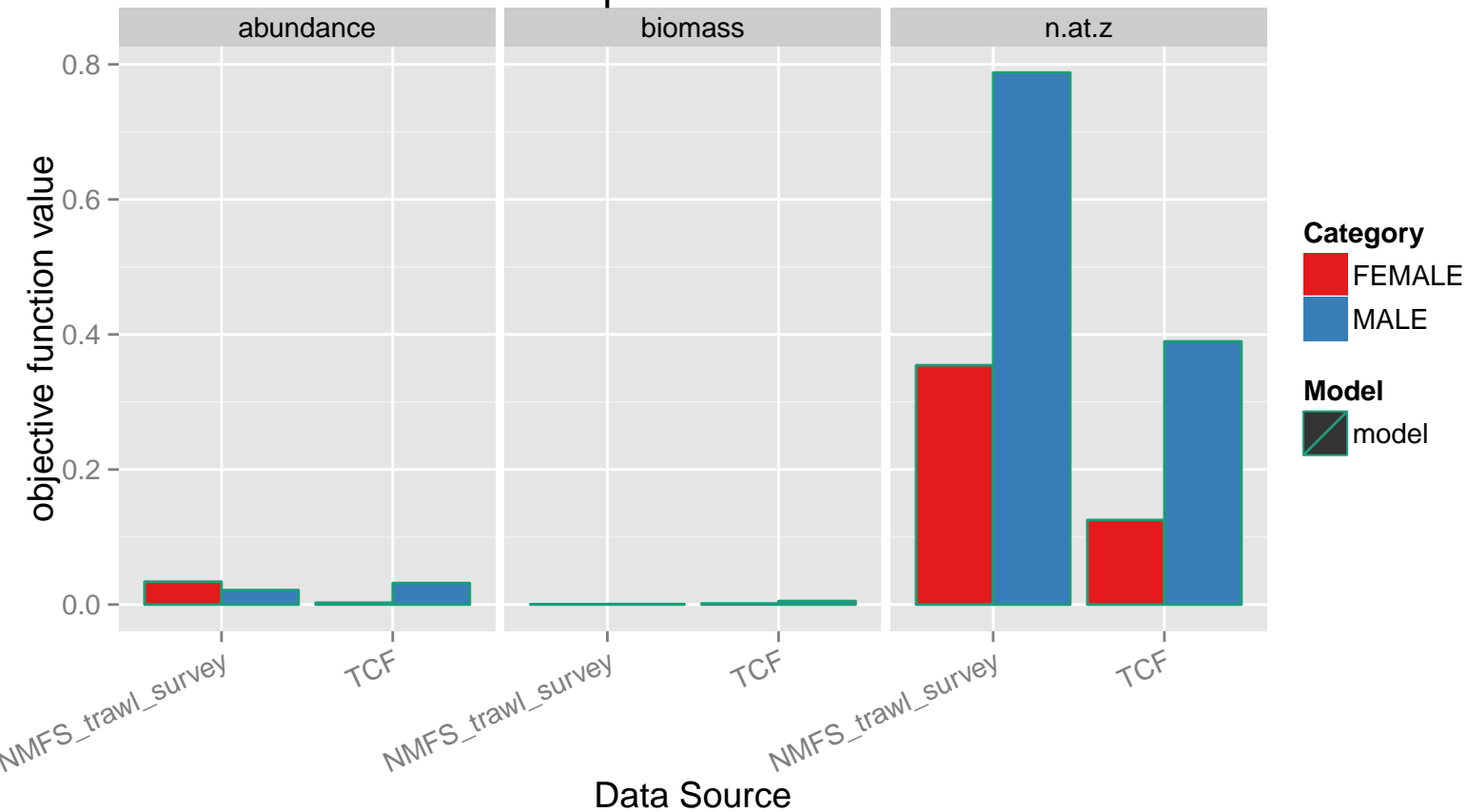
pLnQ[01]

Parameter

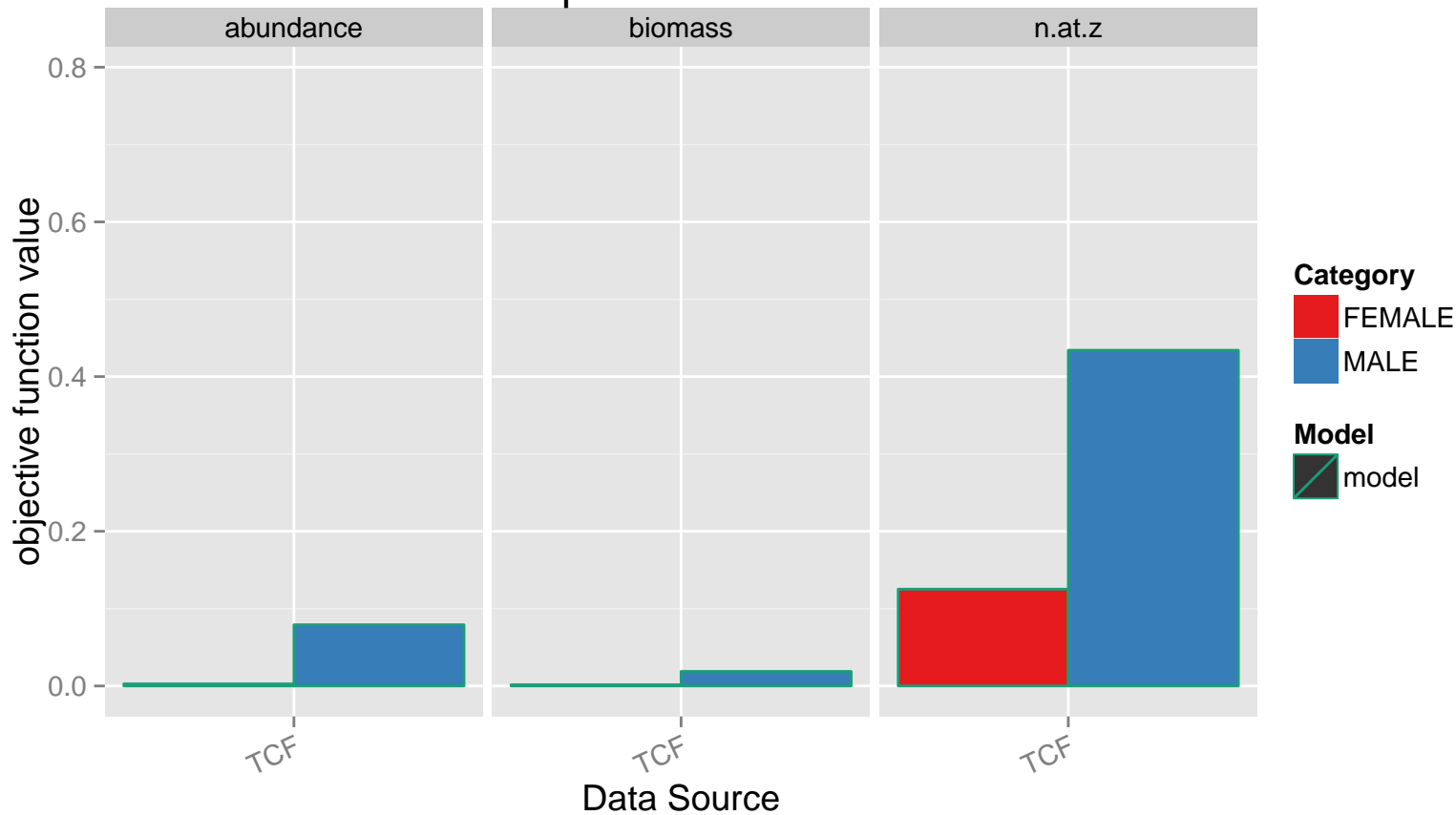


rsimTest

# Data Components: total.catch

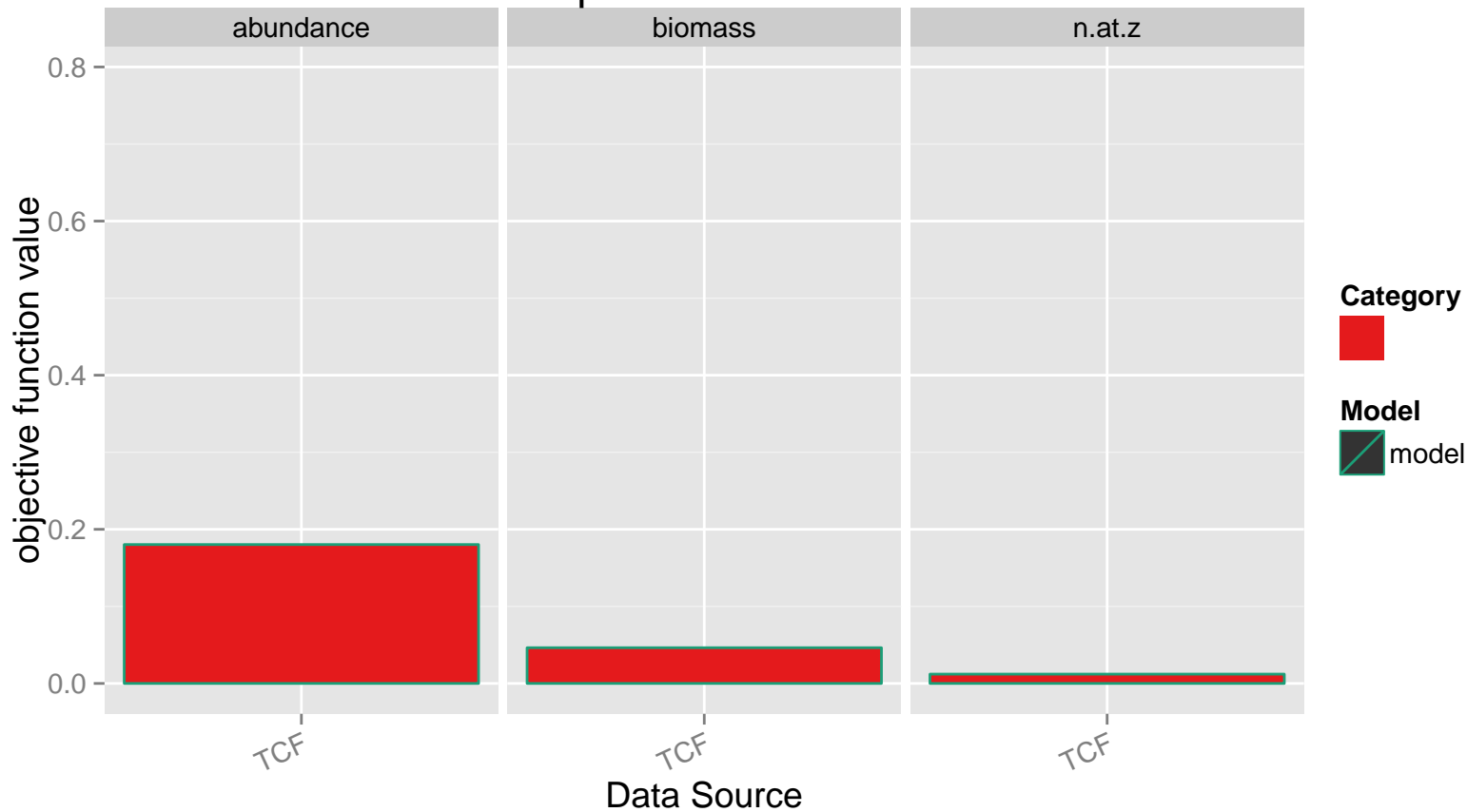


# Data Components: discard.catch

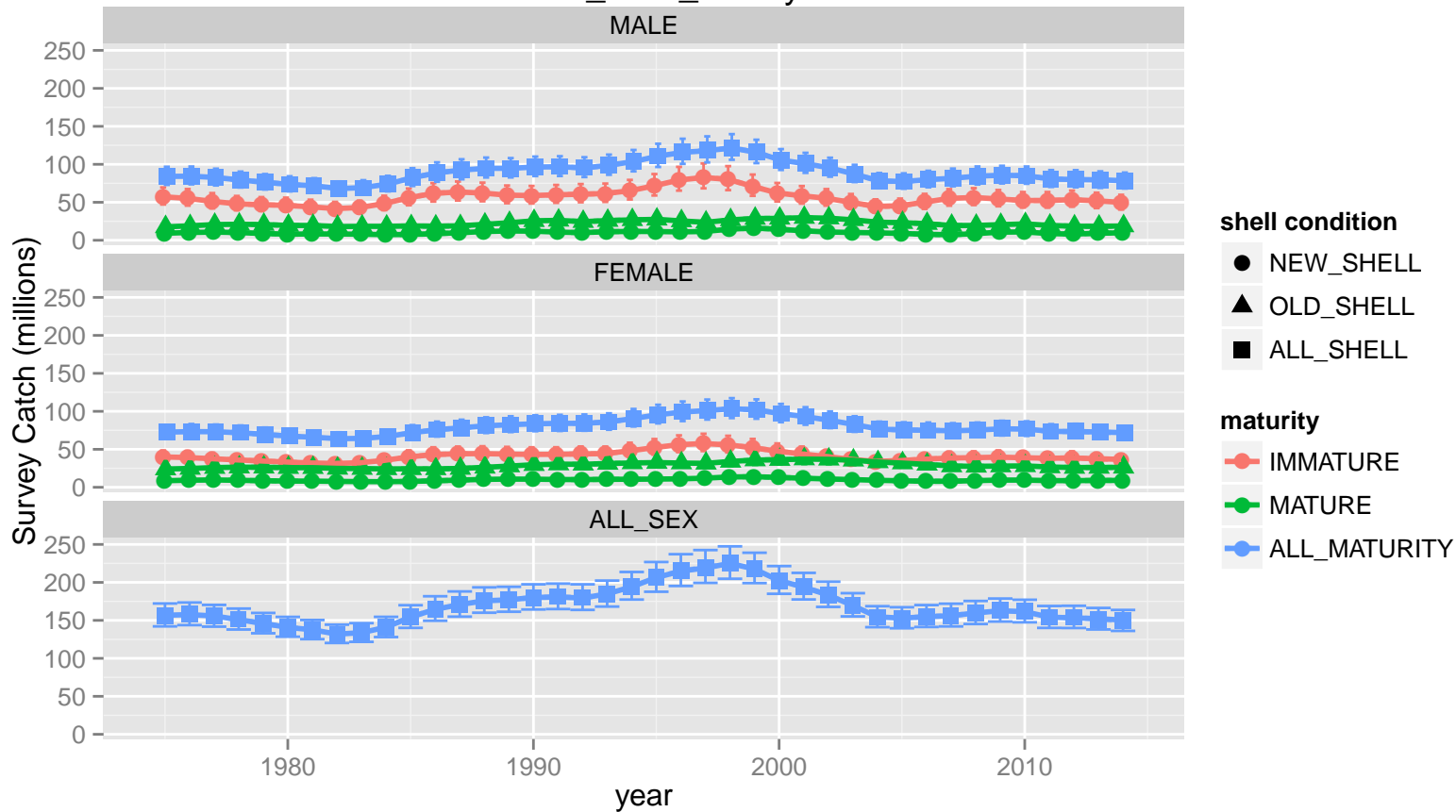




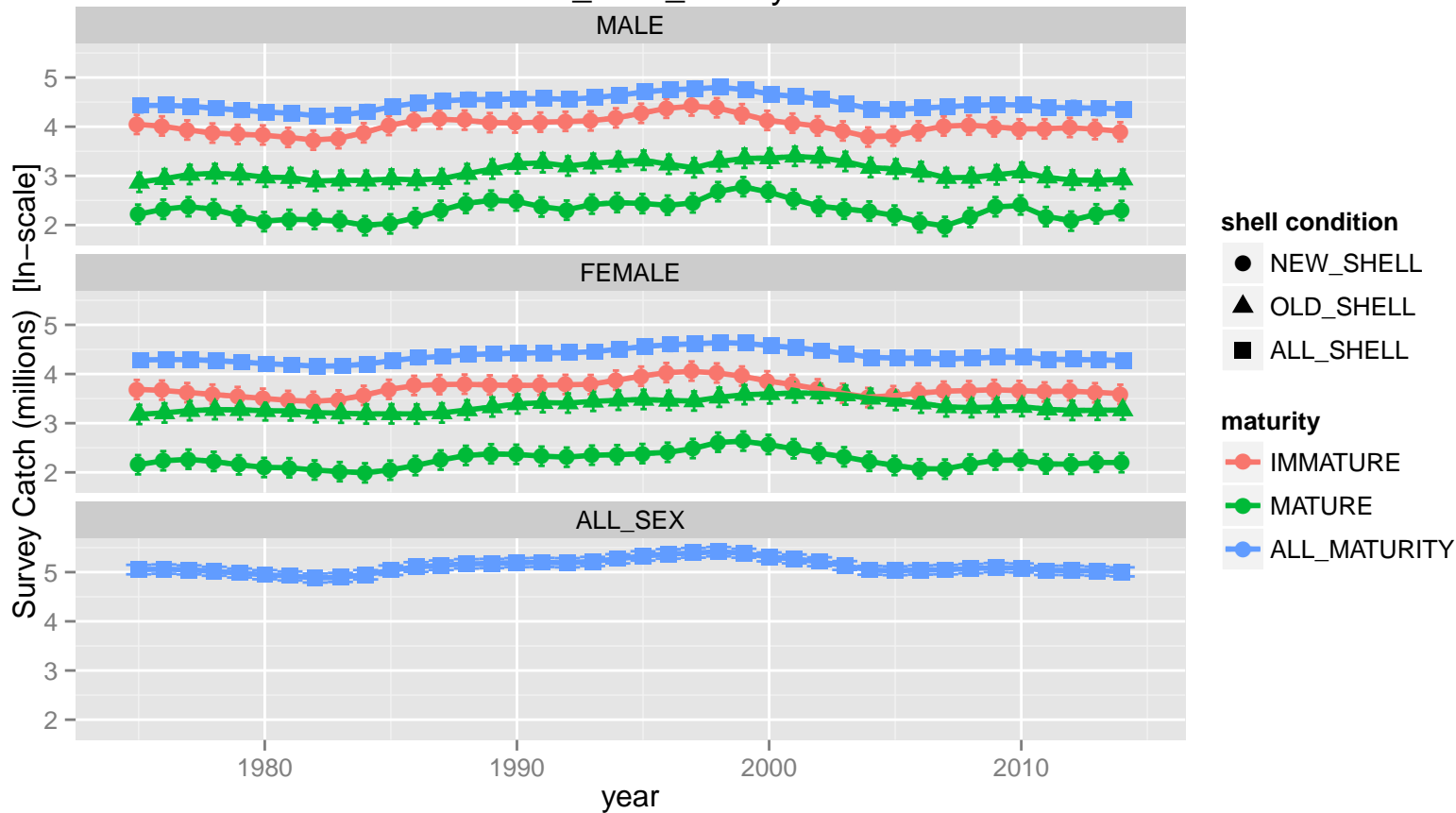
# Data Components: retained.catch



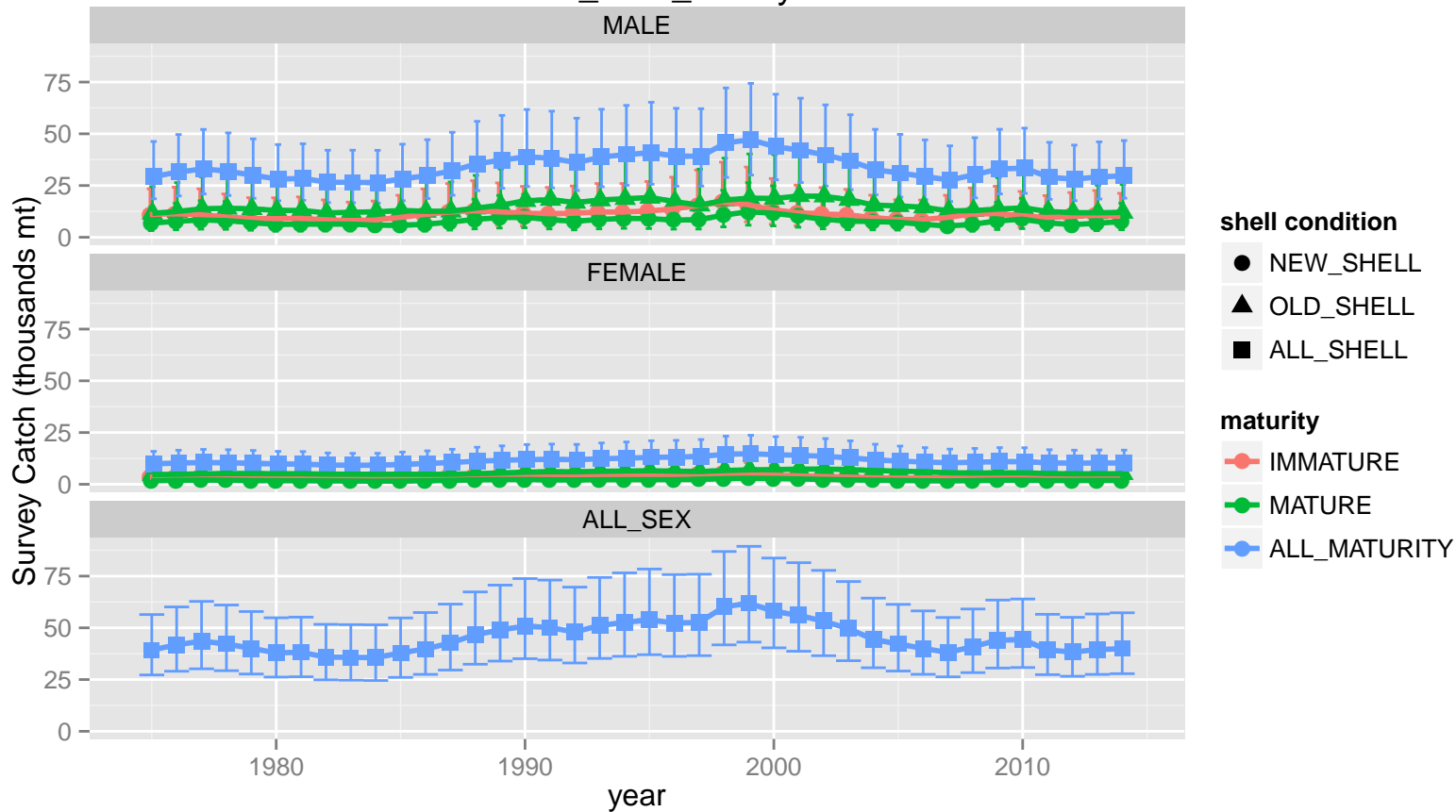
# NMFS\_trawl\_survey



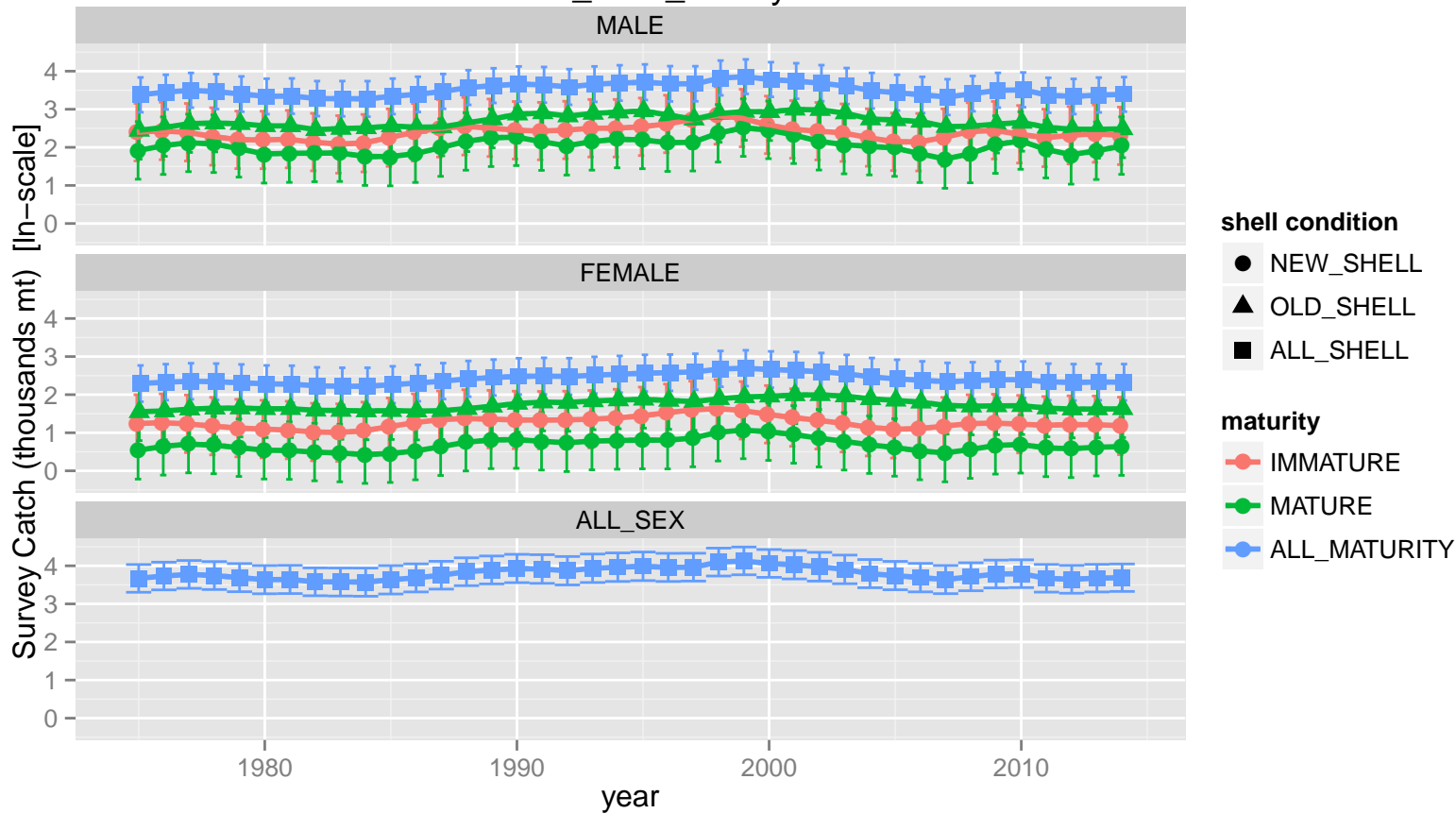
# NMFS\_trawl\_survey



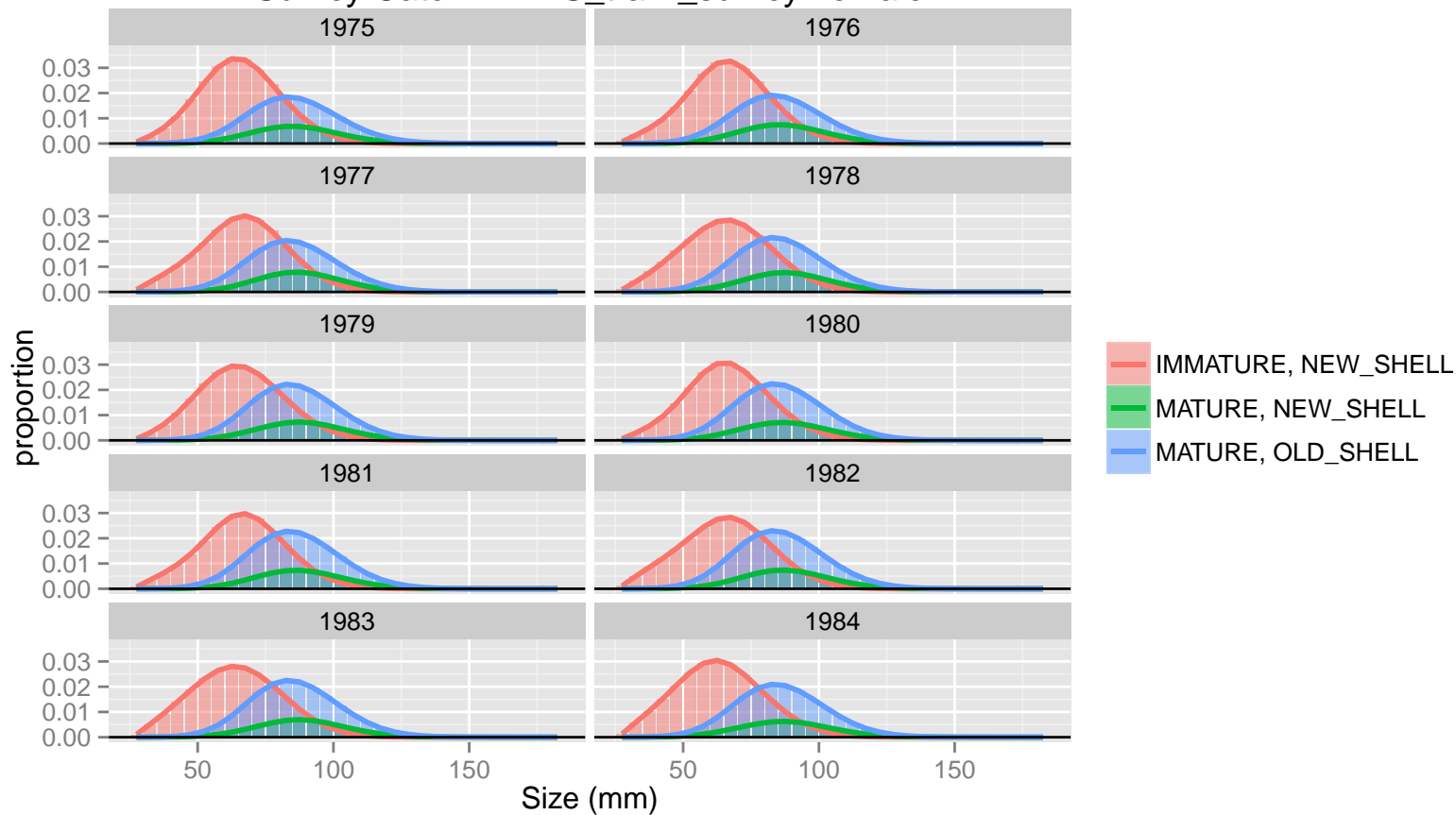
# NMFS\_trawl\_survey



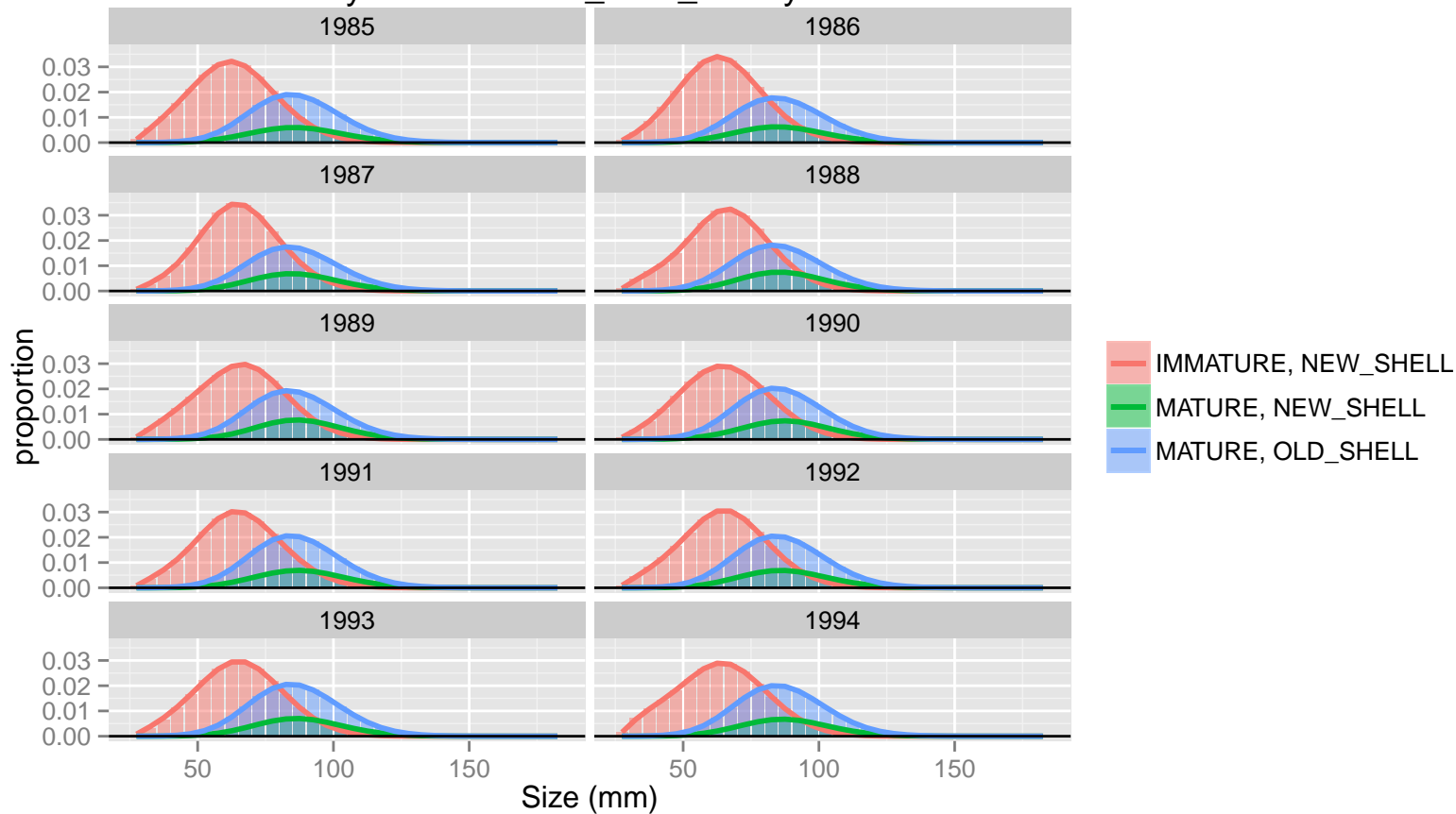
# NMFS\_trawl\_survey



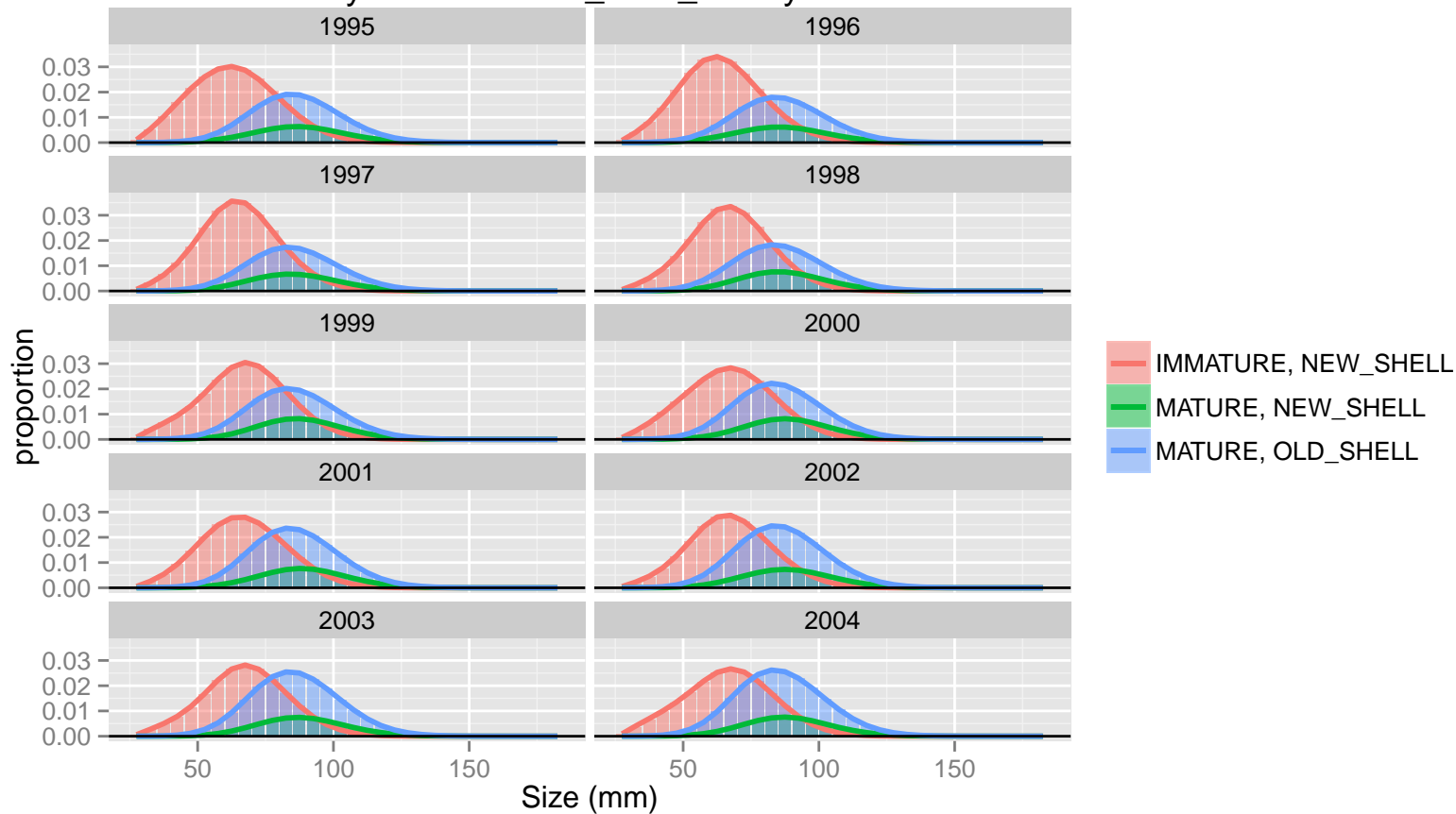
# Survey Catch: NMFS\_trawl\_survey: female



# Survey Catch: NMFS\_trawl\_survey: female

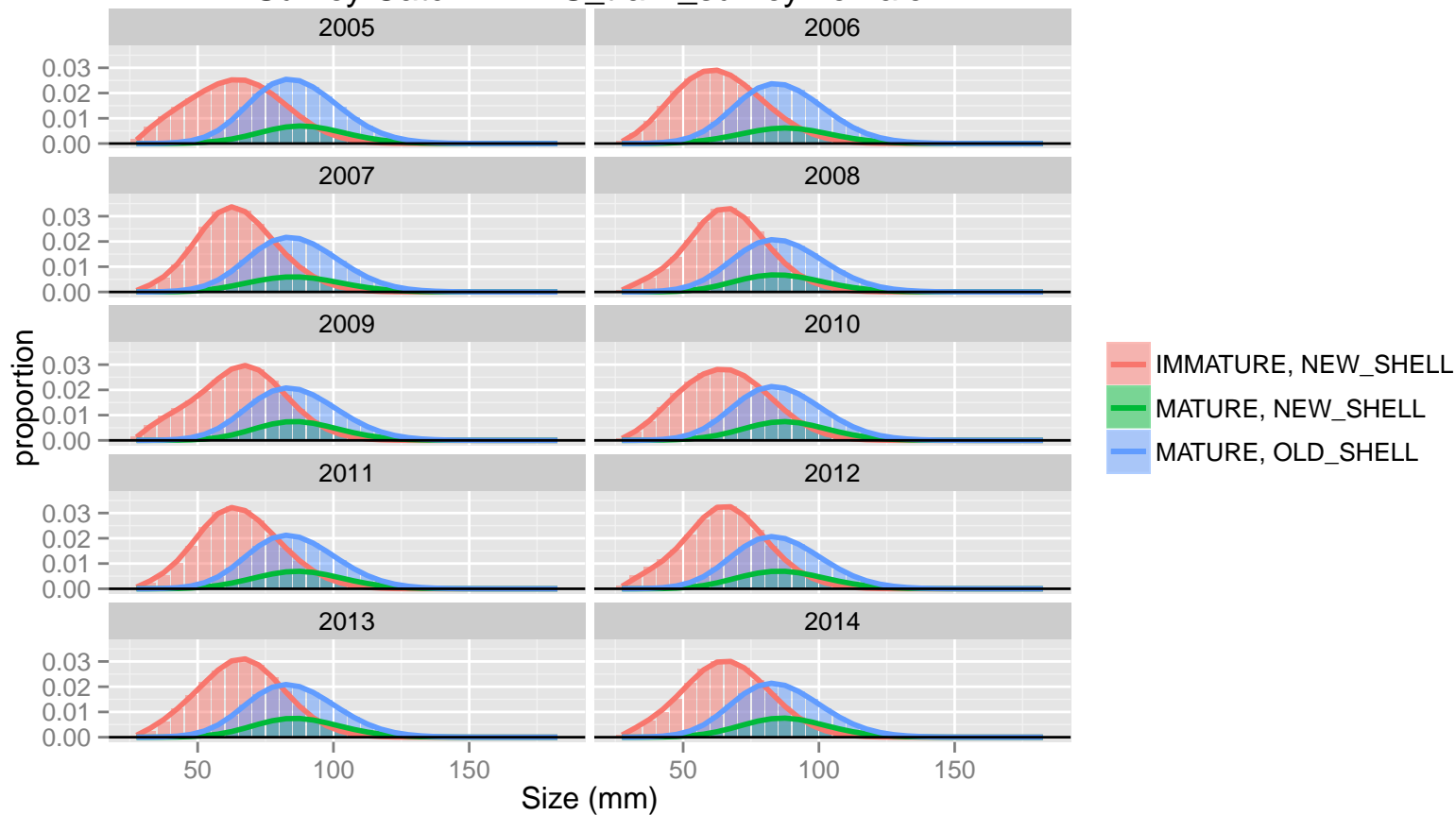


# Survey Catch: NMFS\_trawl\_survey: female

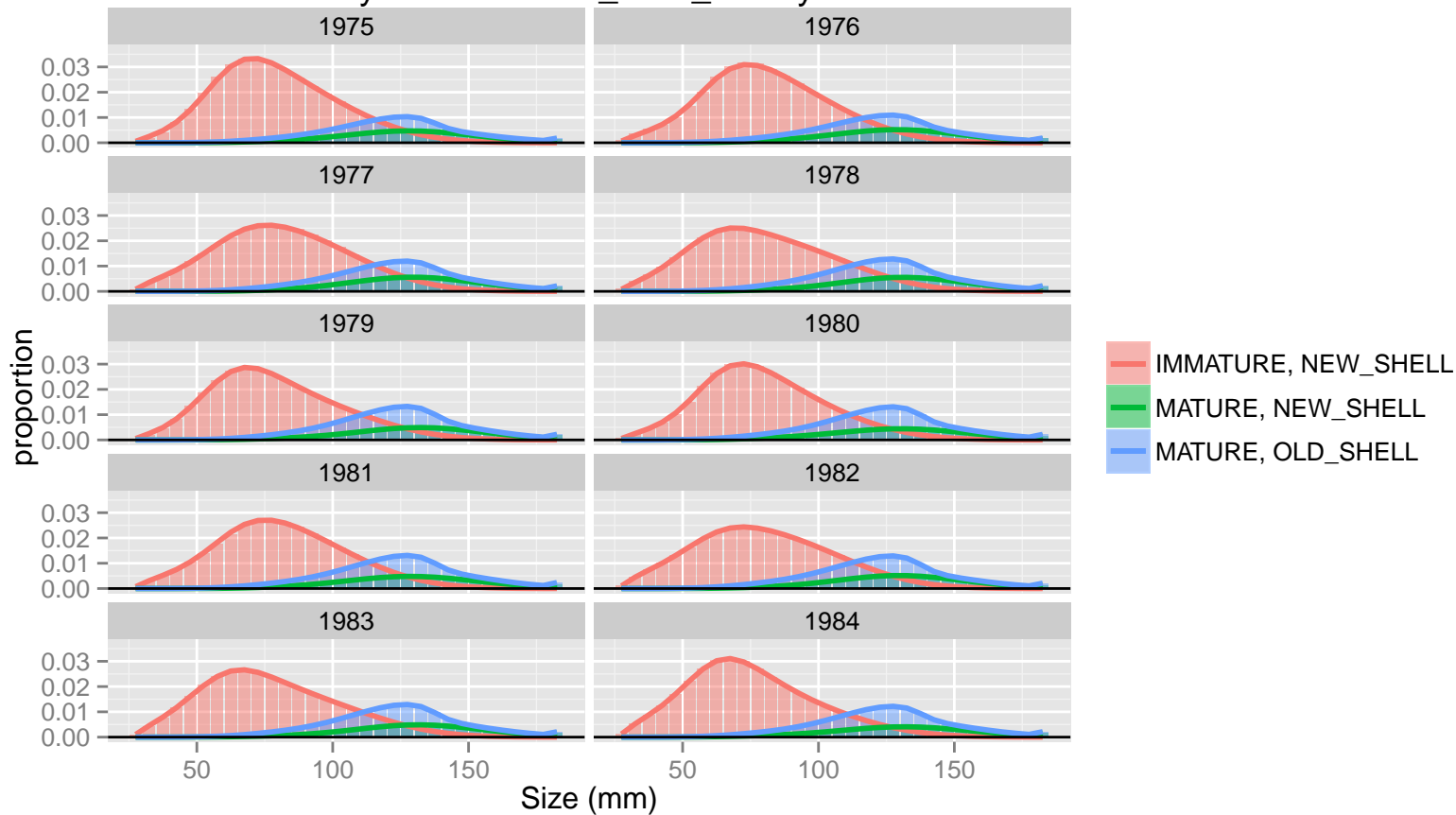




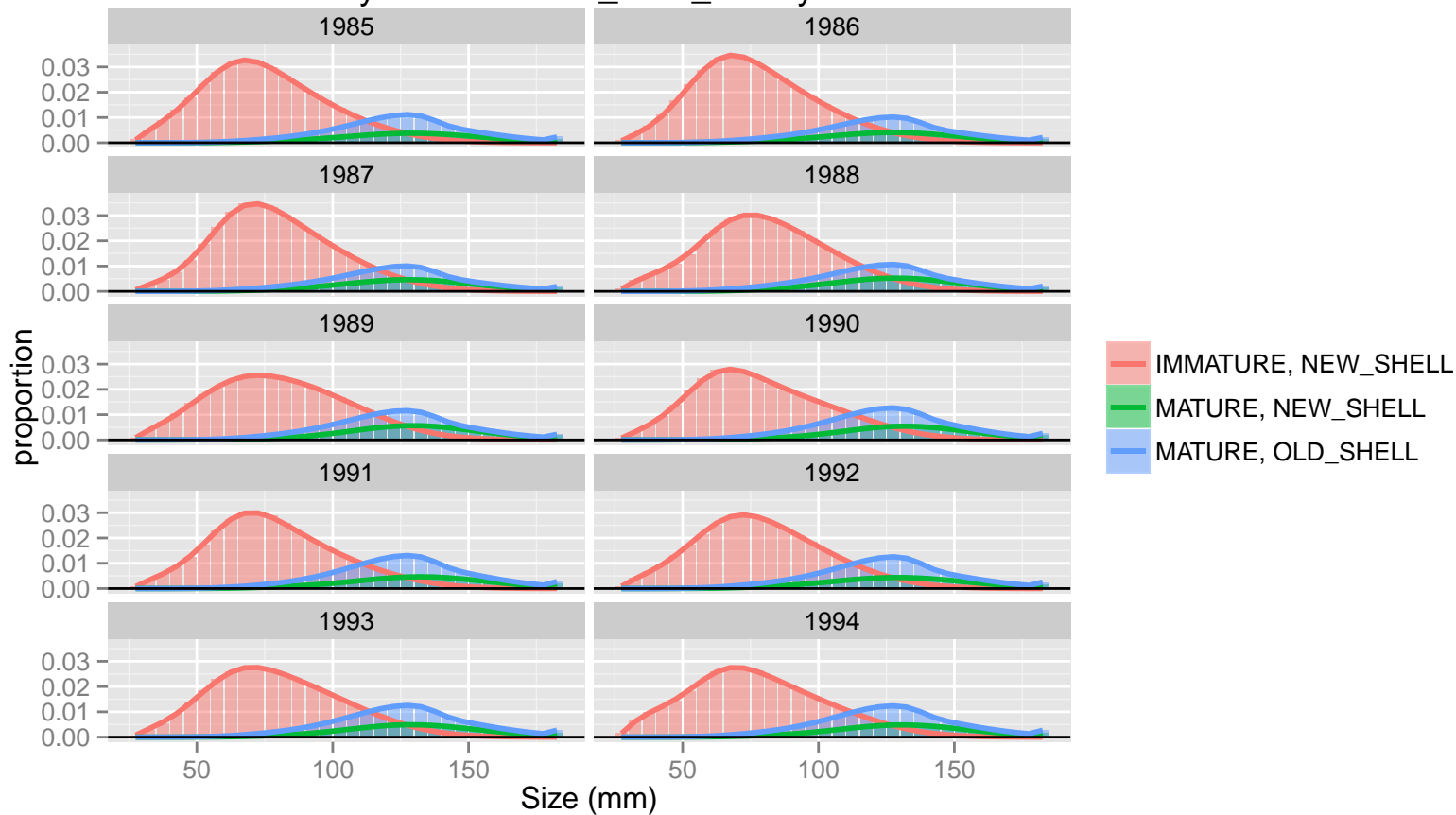
# Survey Catch: NMFS\_trawl\_survey: female



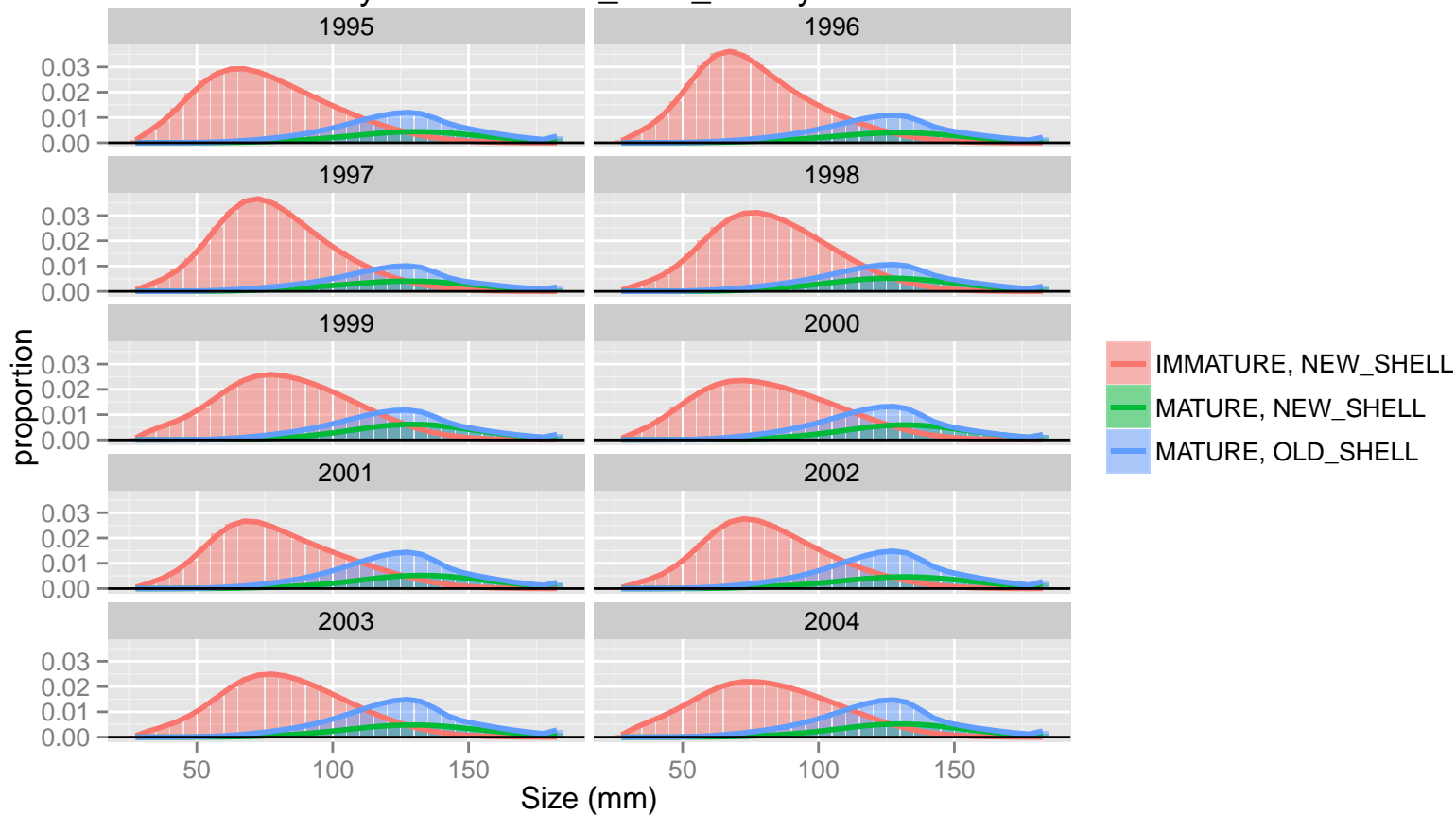
# Survey Catch: NMFS\_trawl\_survey: male



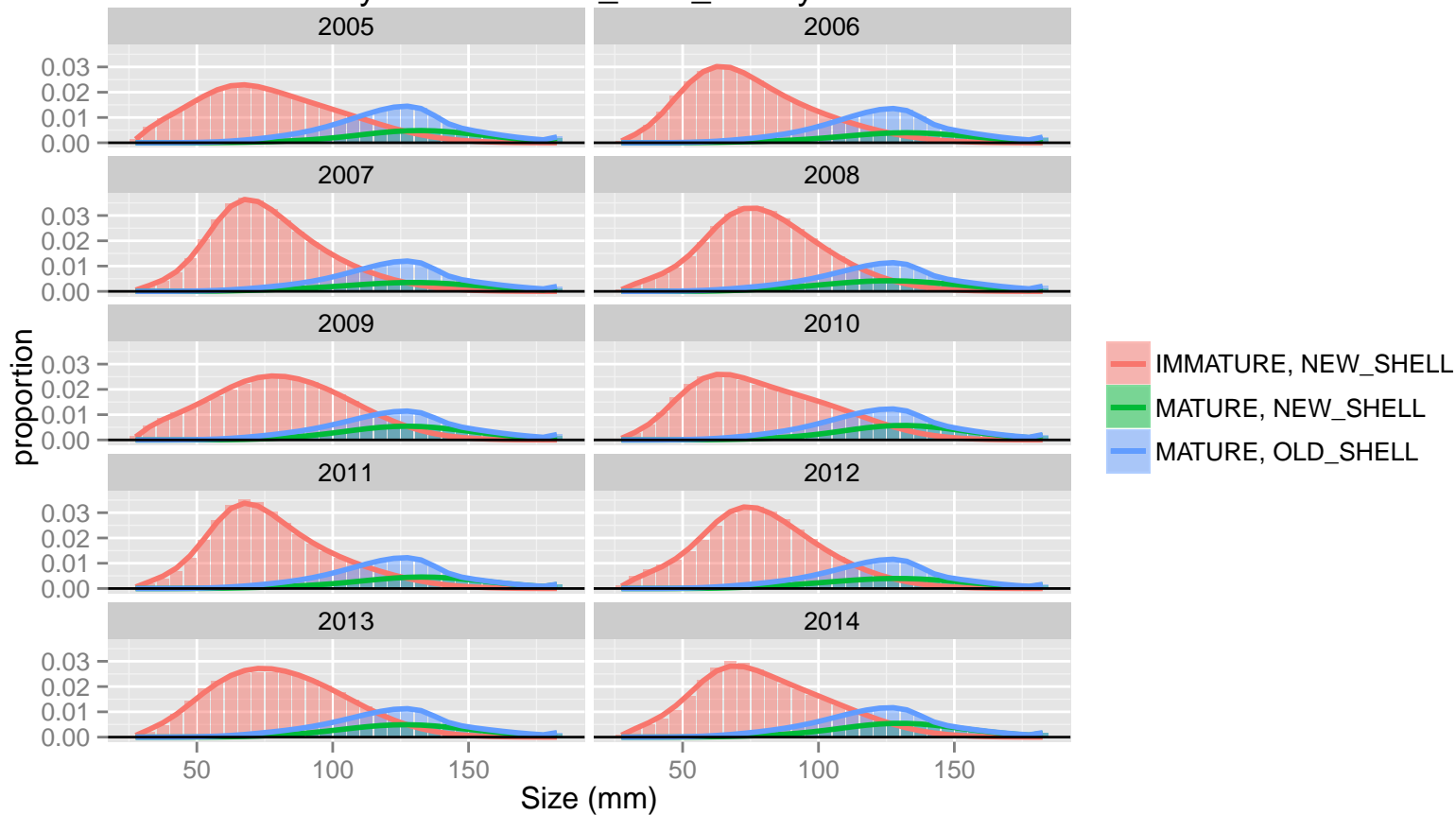
# Survey Catch: NMFS\_trawl\_survey: male



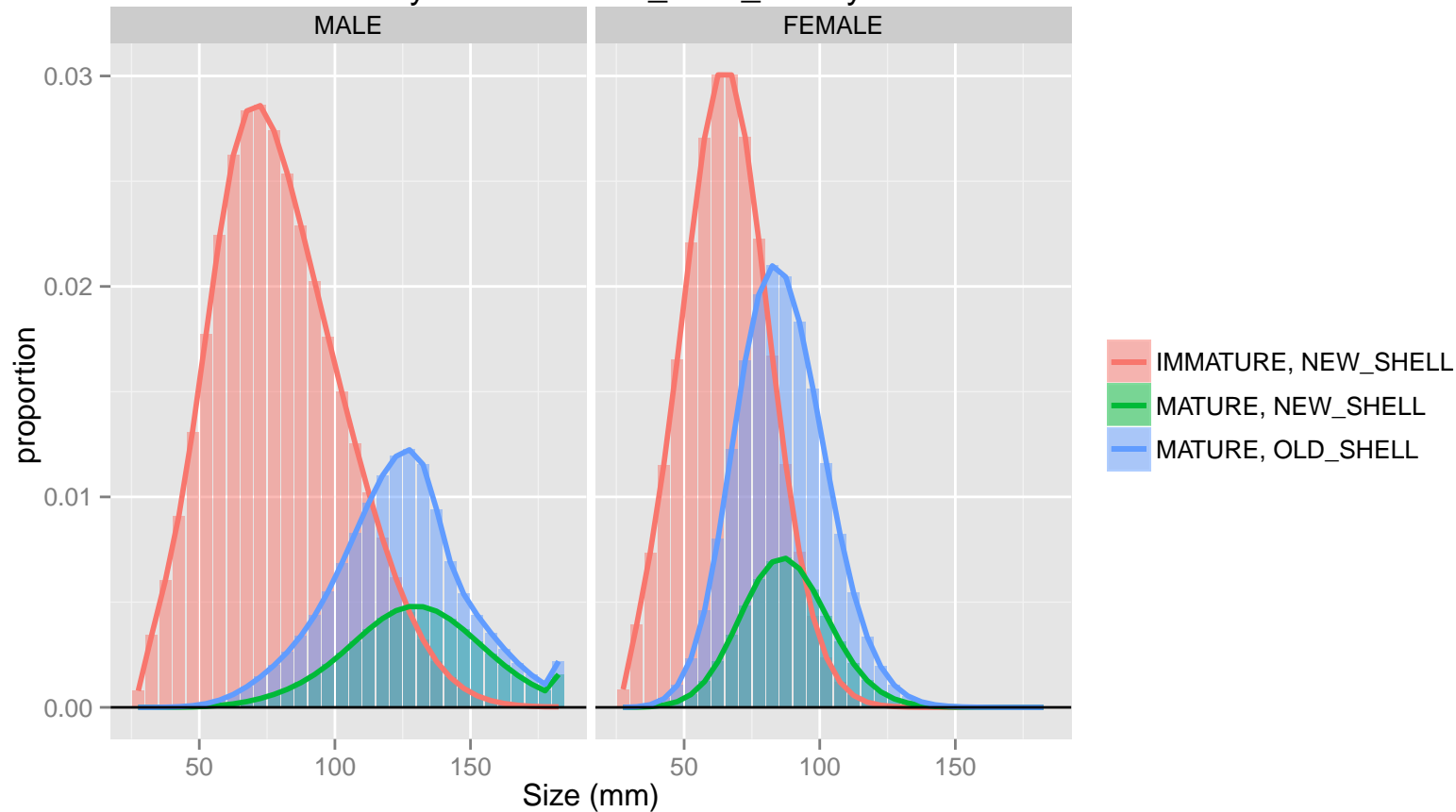
# Survey Catch: NMFS\_trawl\_survey: male



# Survey Catch: NMFS\_trawl\_survey: male



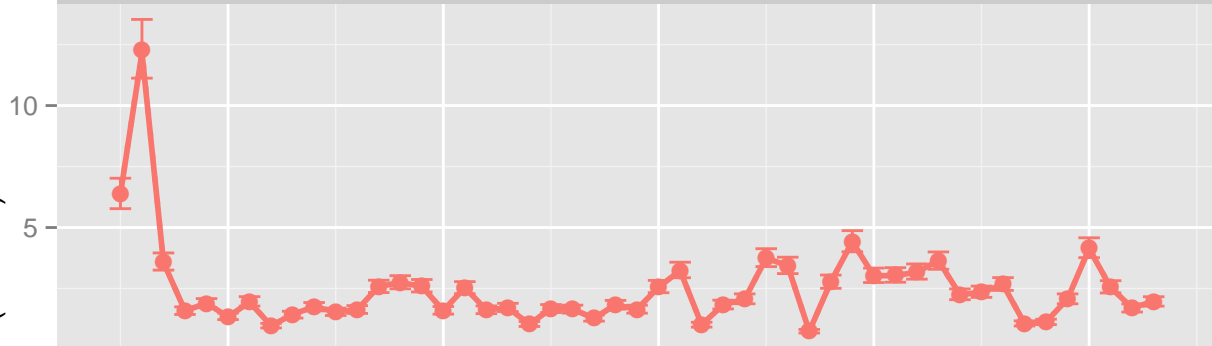
# Survey Catch: NMFS\_trawl\_survey



TCF

MALE

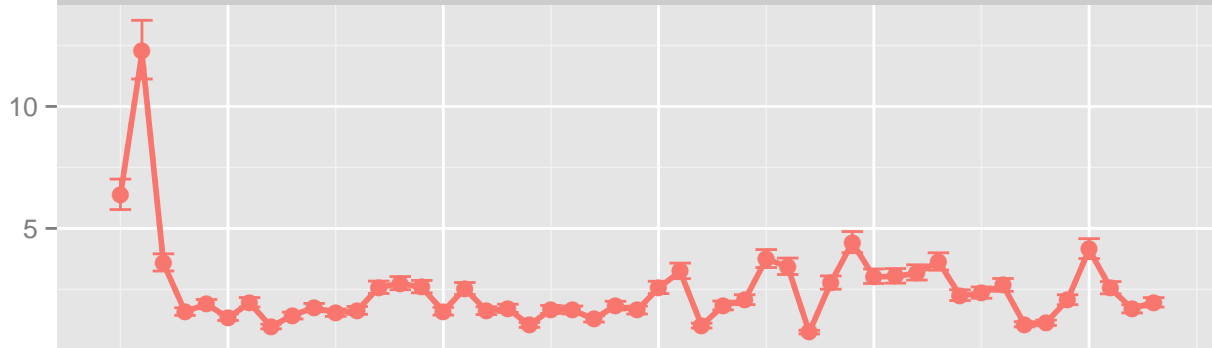
Retained Catch (millions)



maturity

ALL\_MATURITY

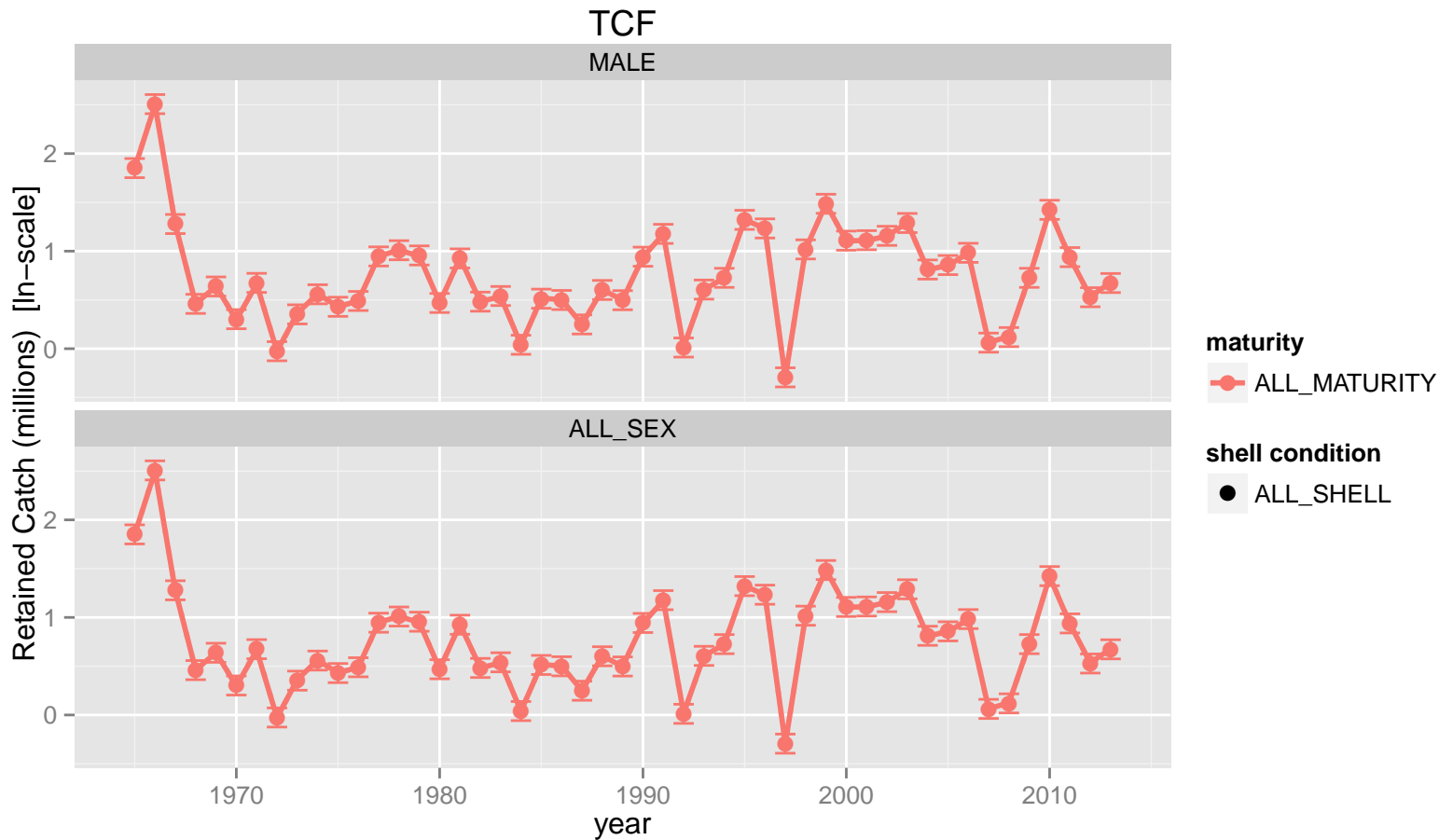
ALL\_SEX



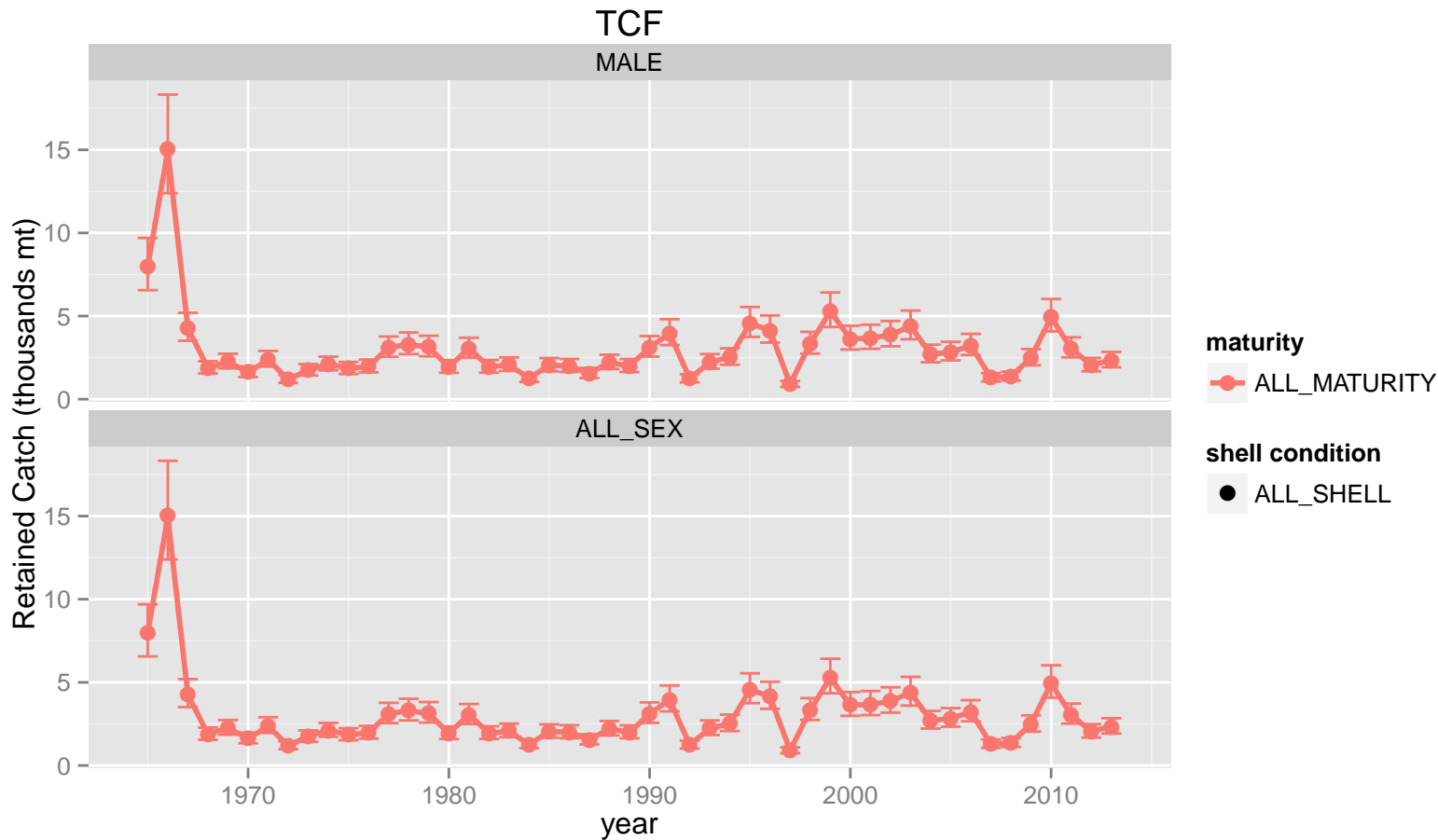
shell condition

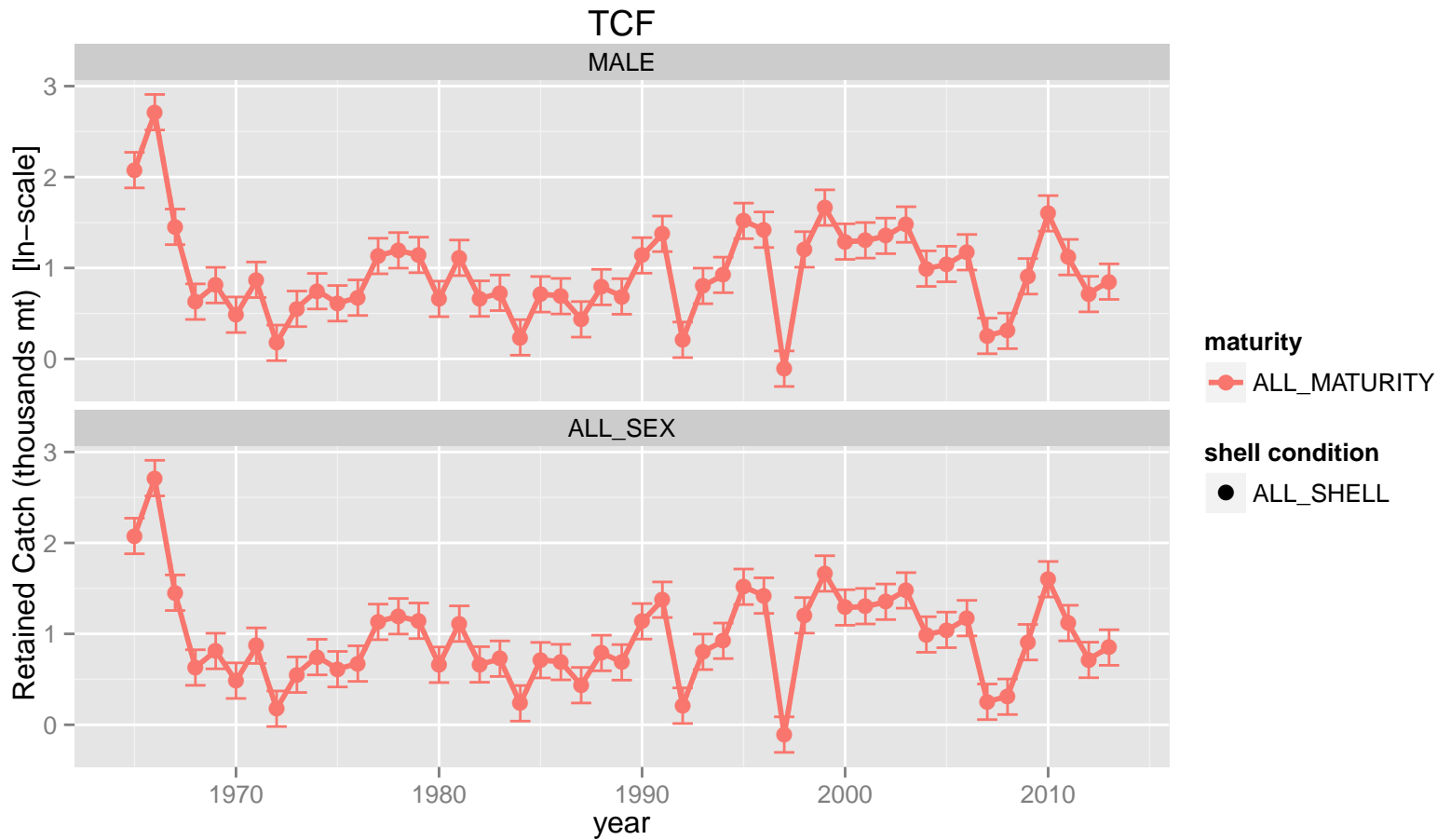
ALL\_SHELL

year

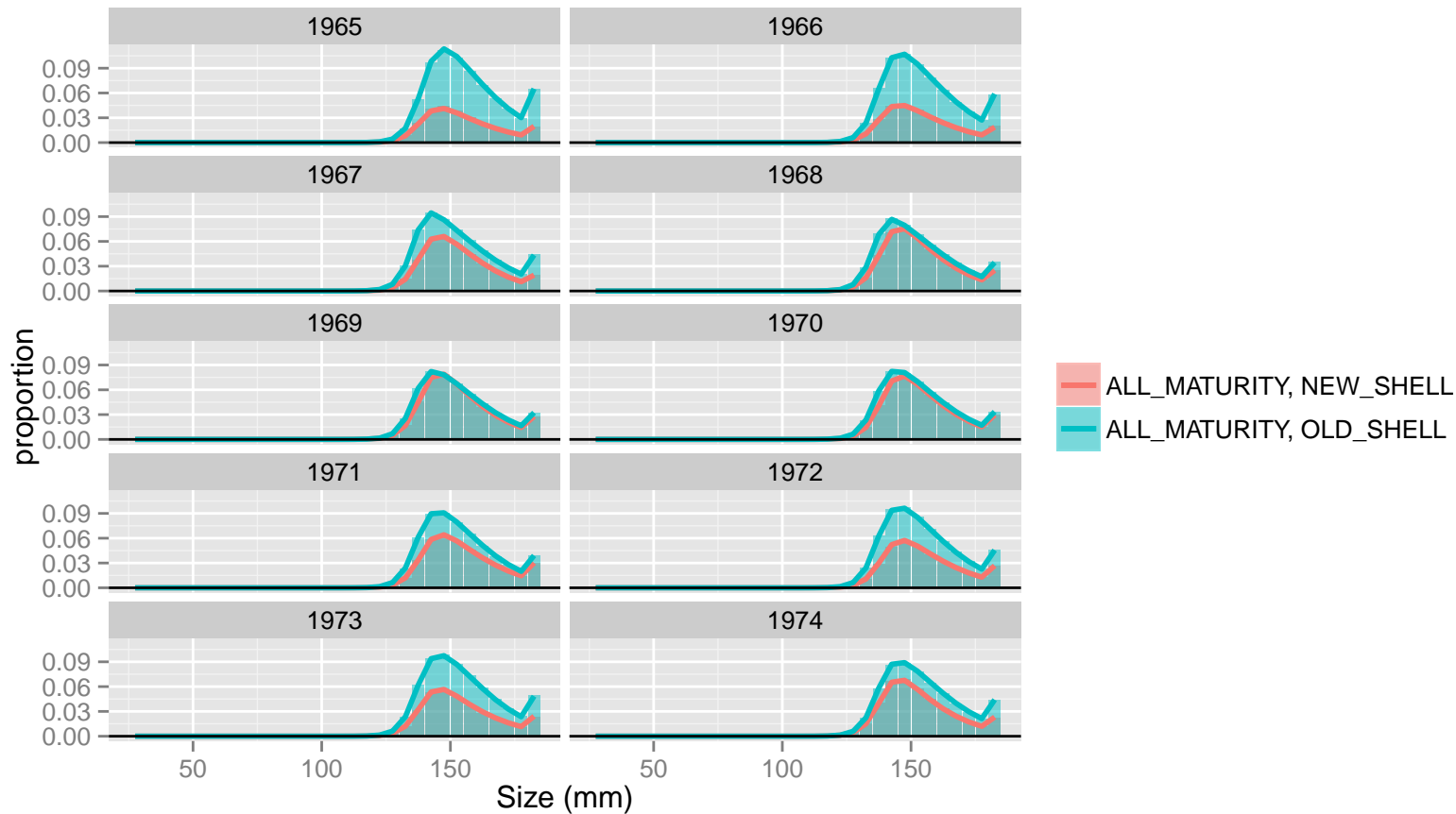




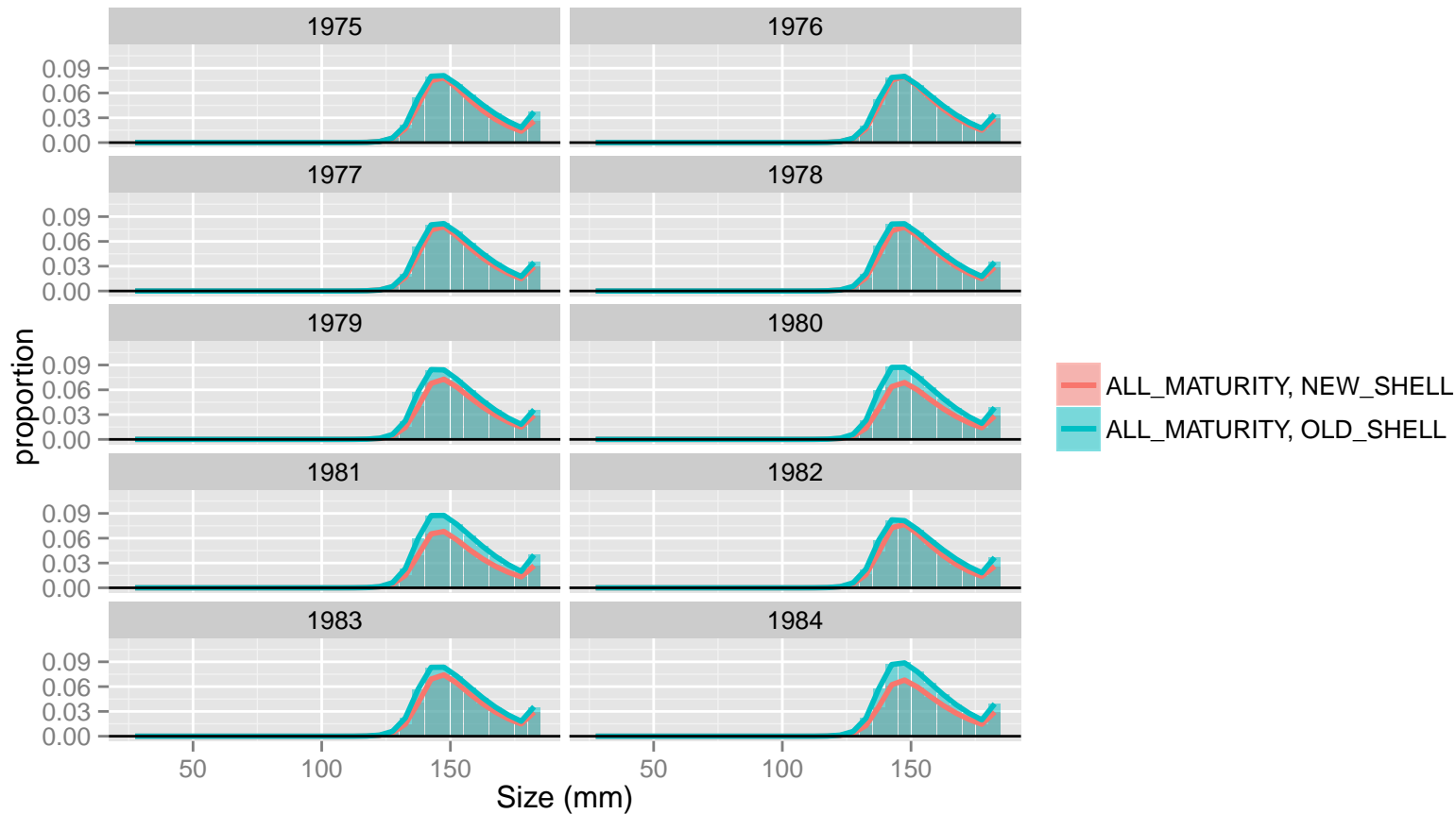




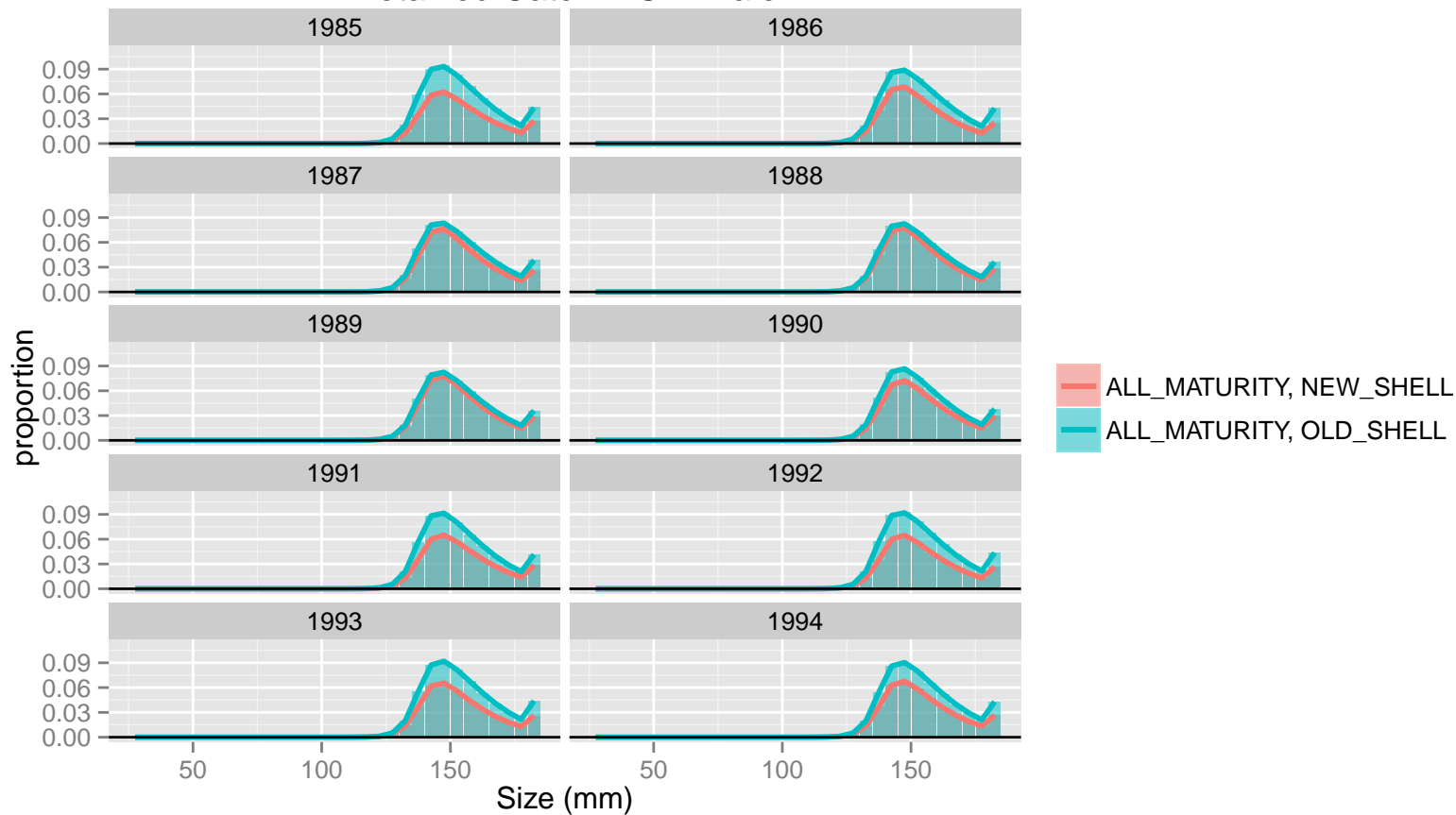
## Retained Catch: TCF: male



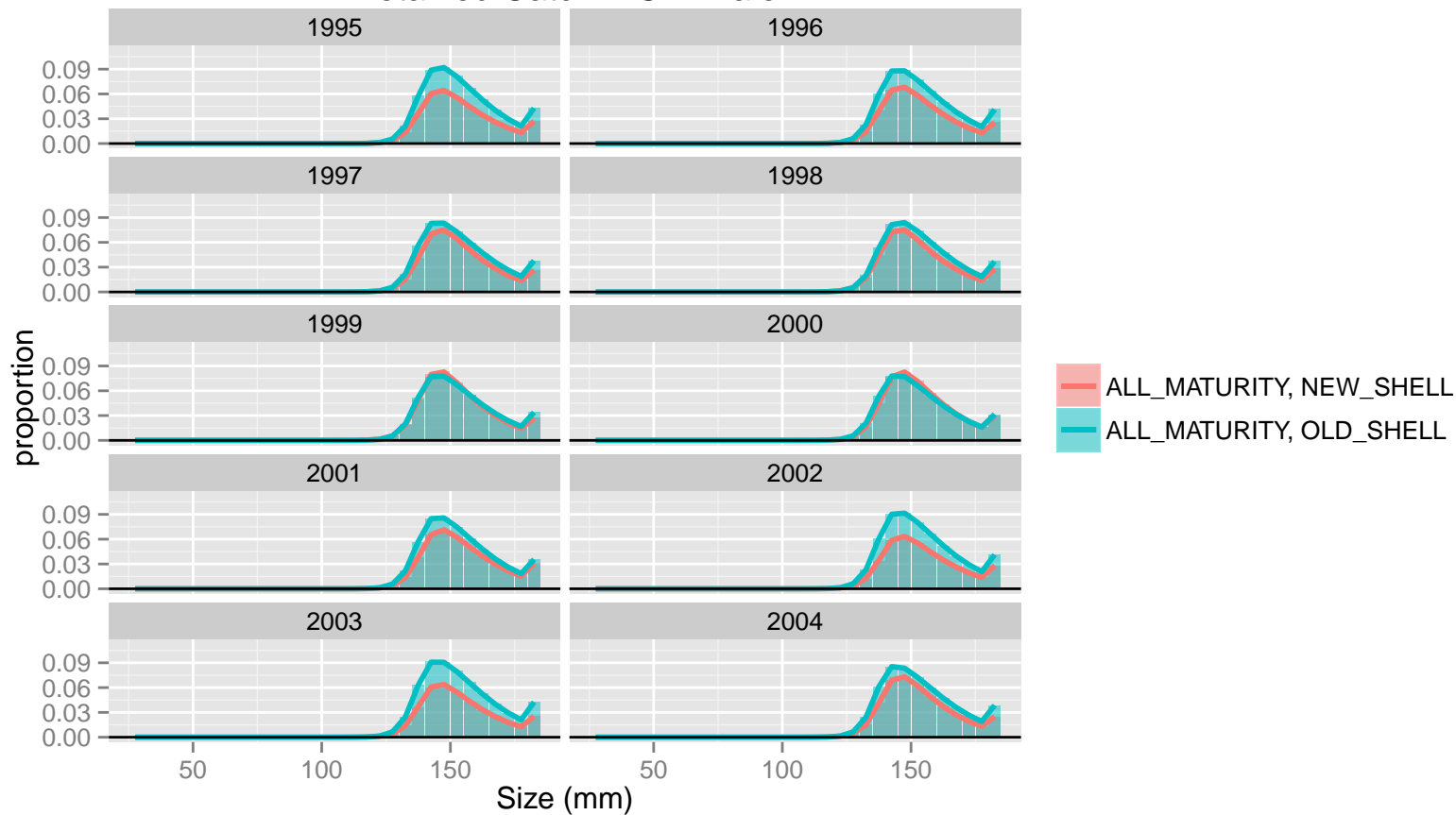
## Retained Catch: TCF: male



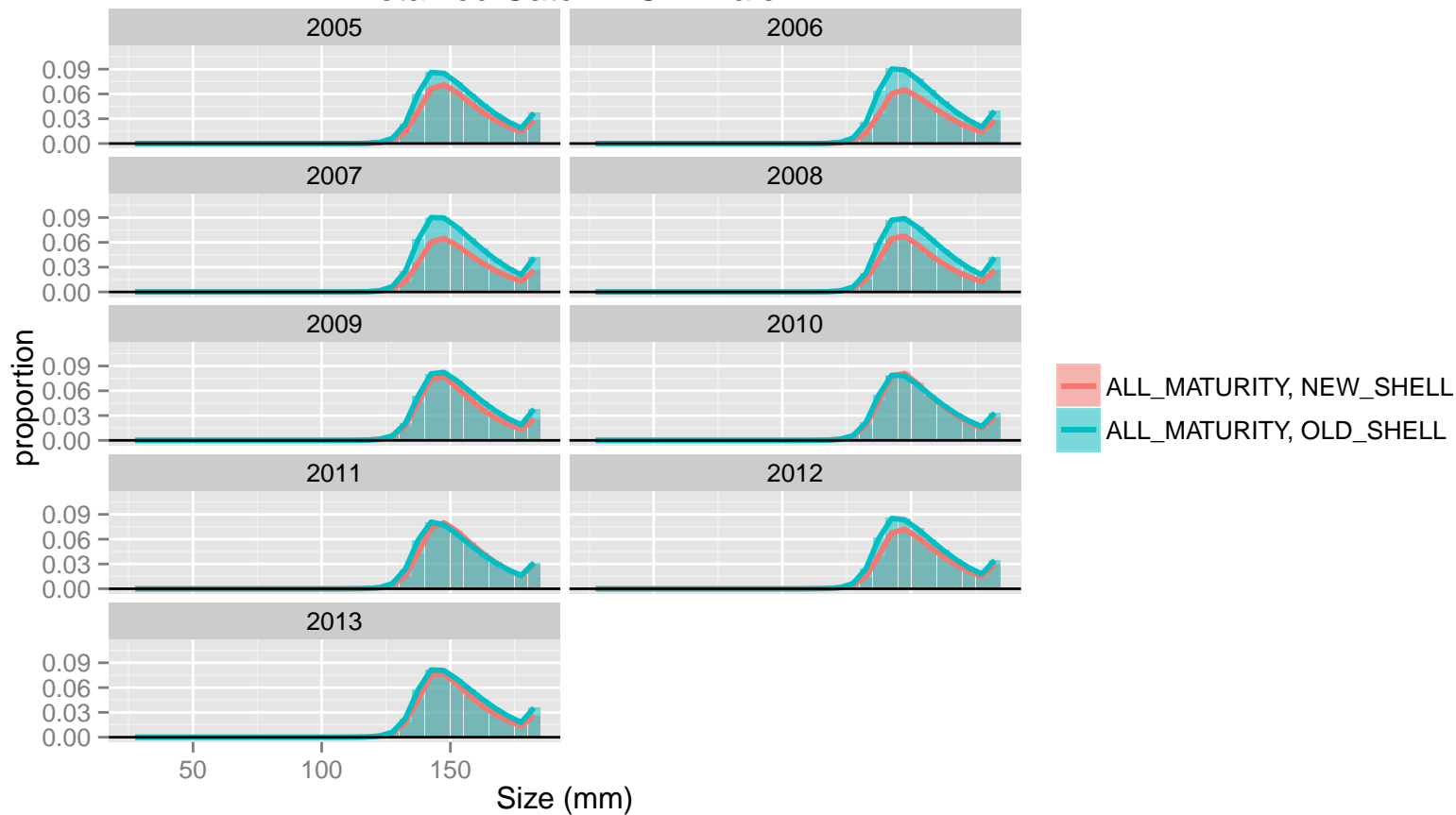
## Retained Catch: TCF: male



## Retained Catch: TCF: male

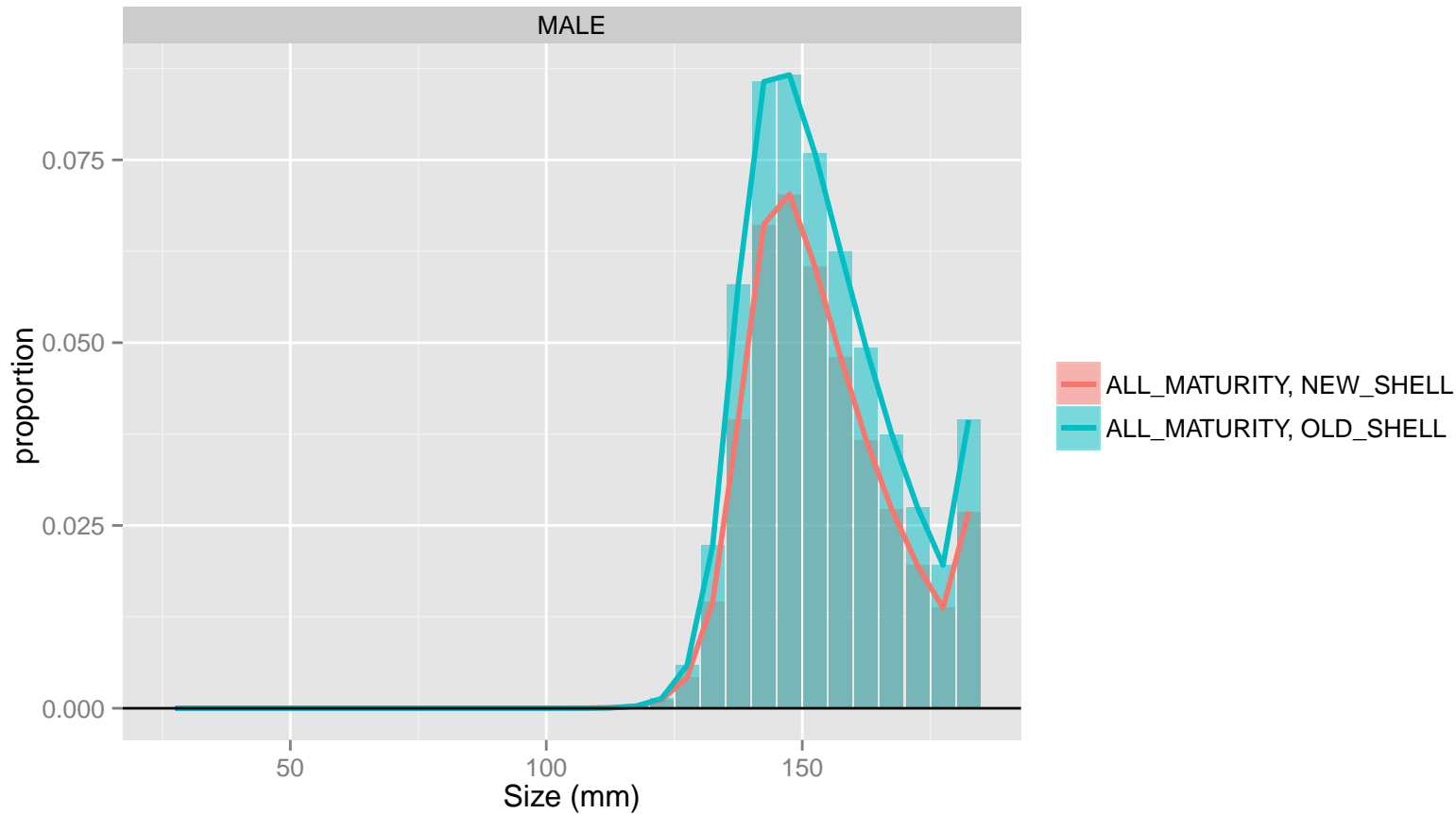


## Retained Catch: TCF: male

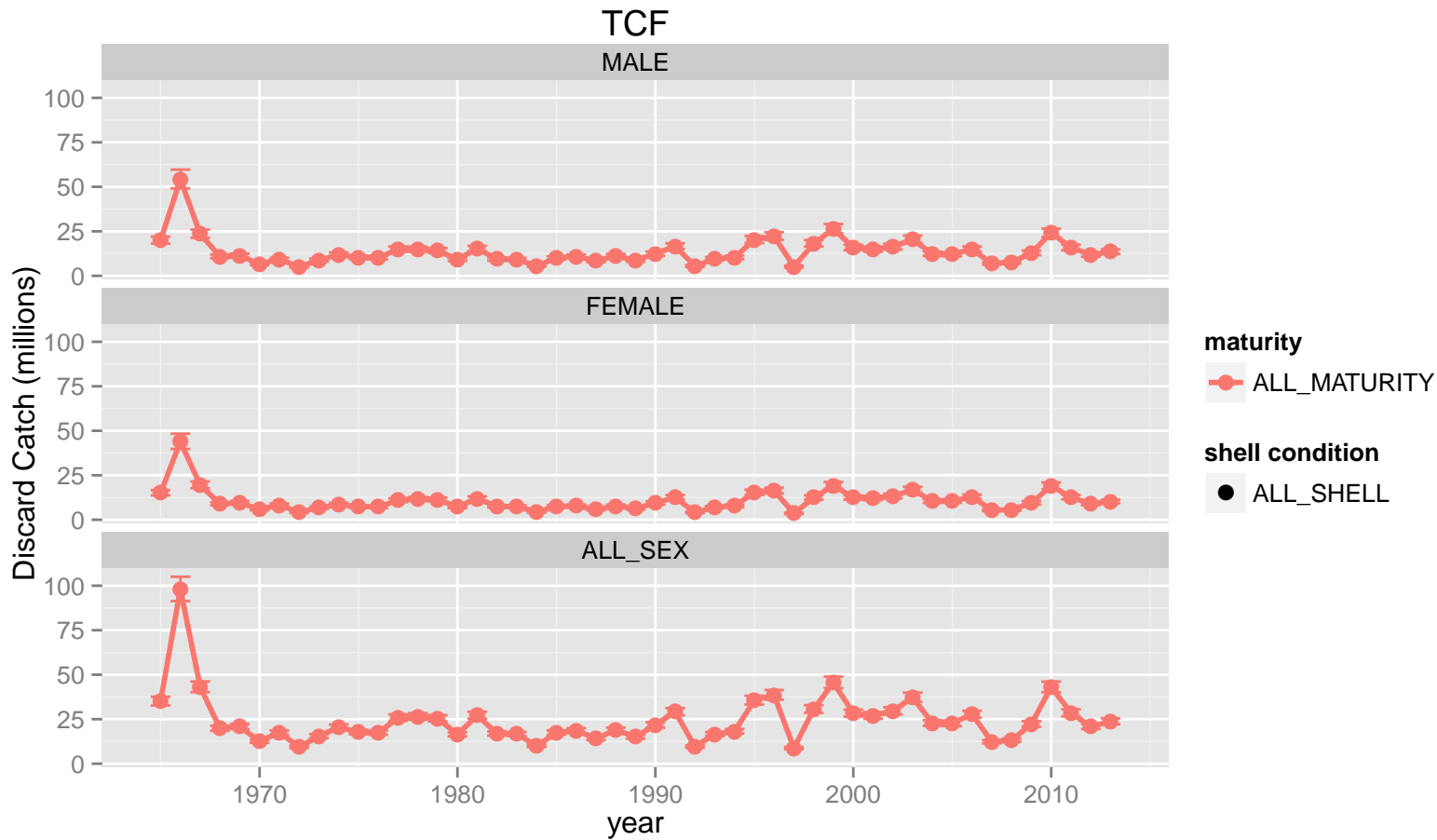


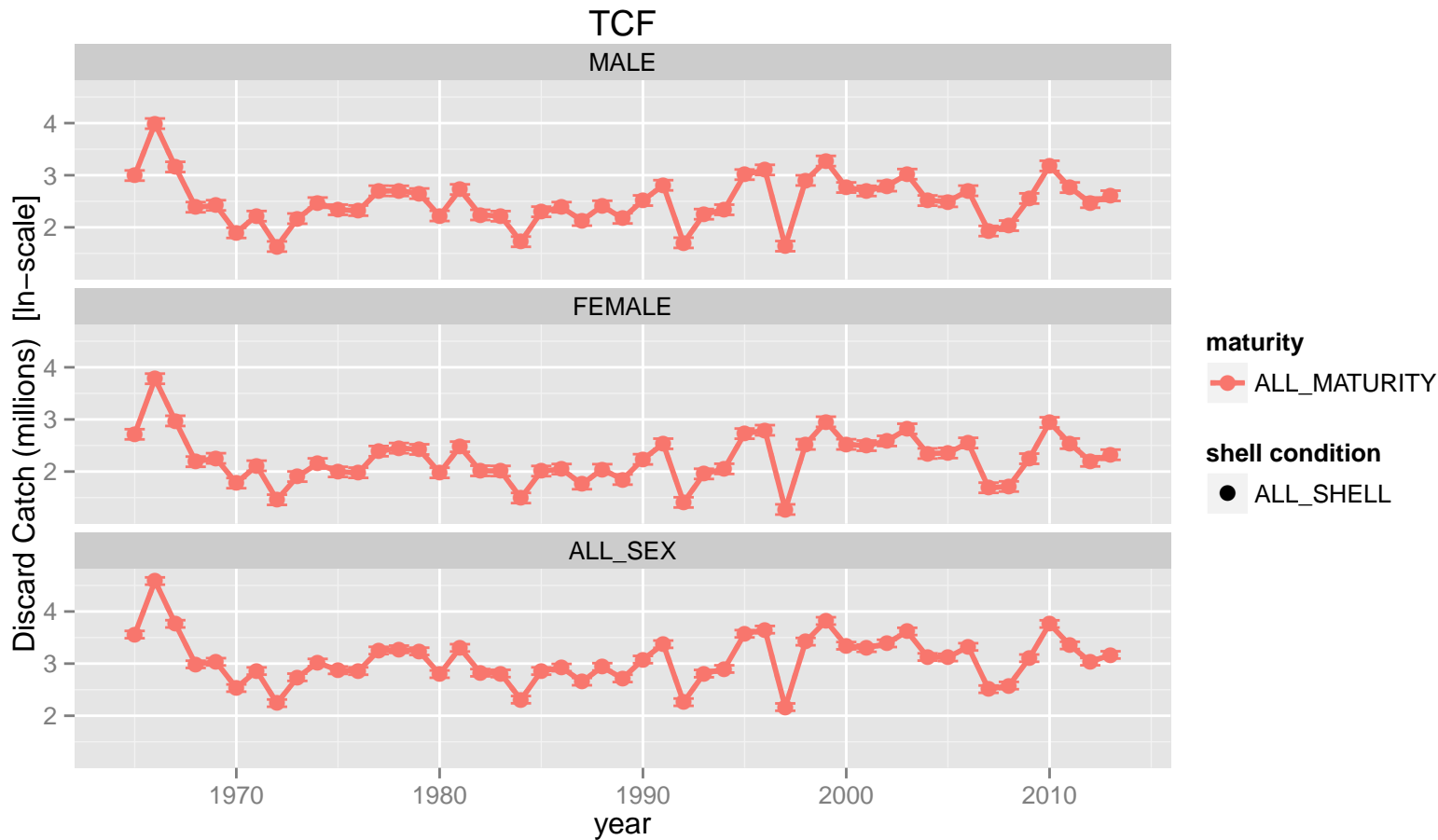
# Retained Catch: TCF

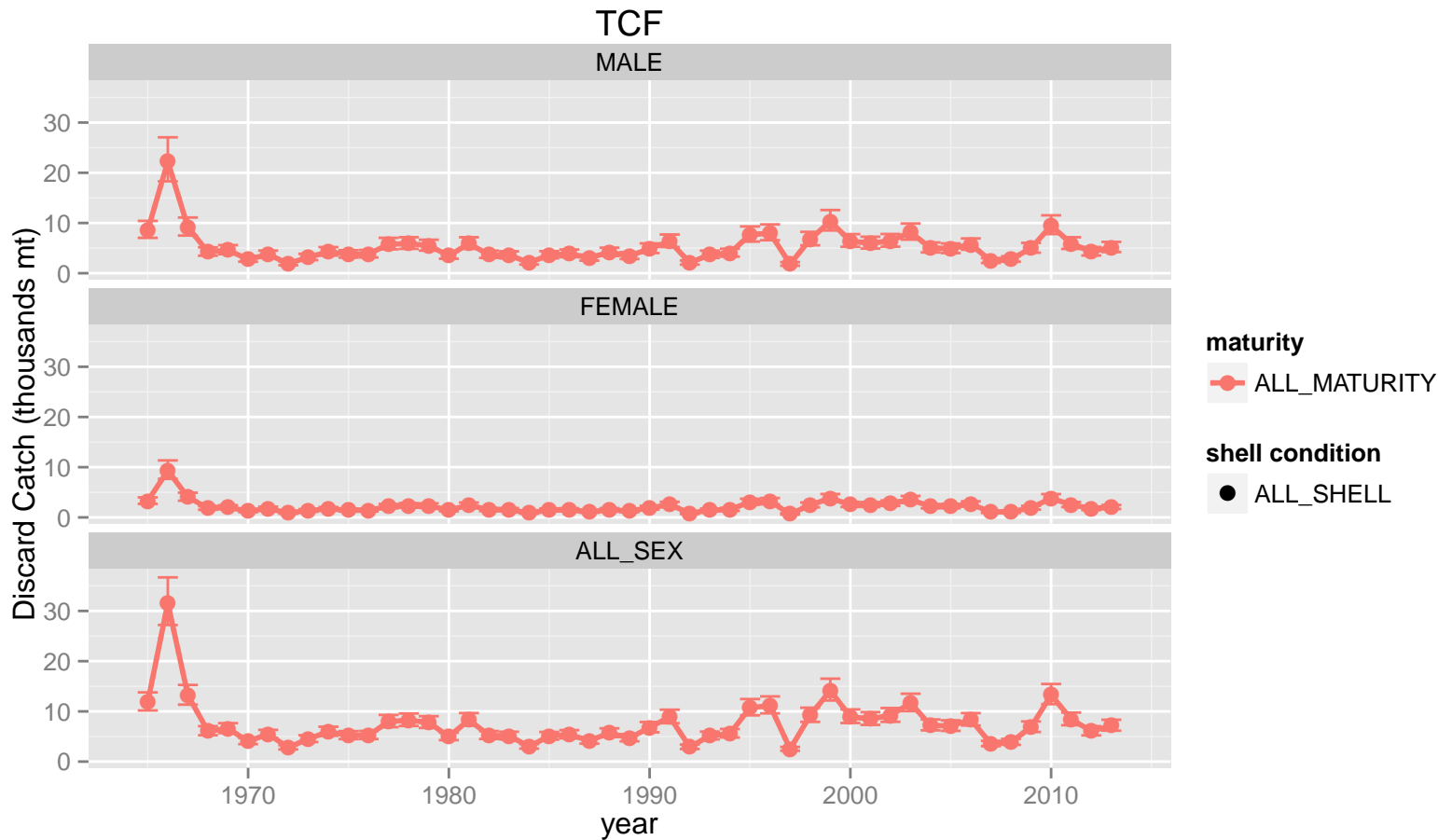
MALE

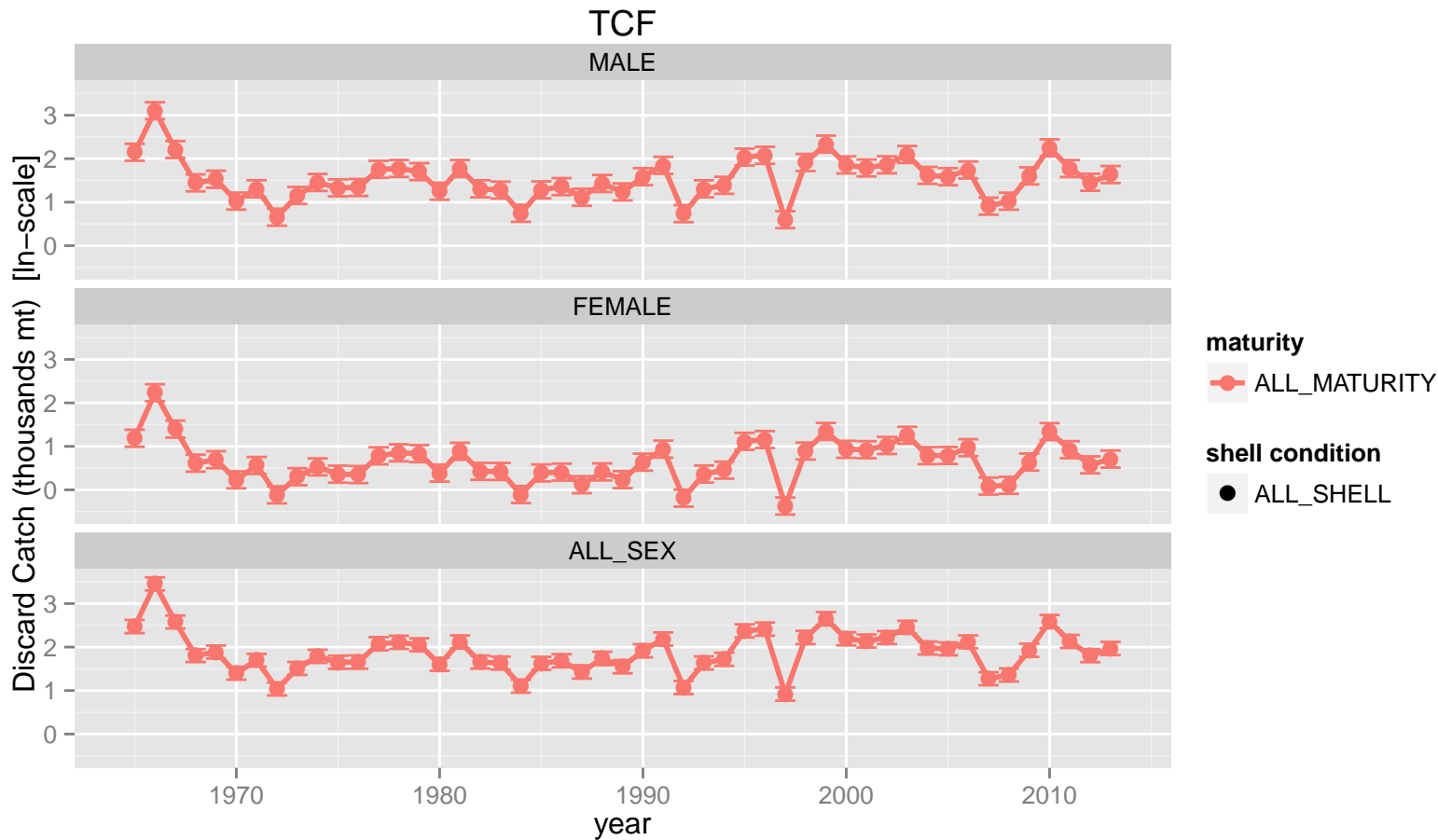




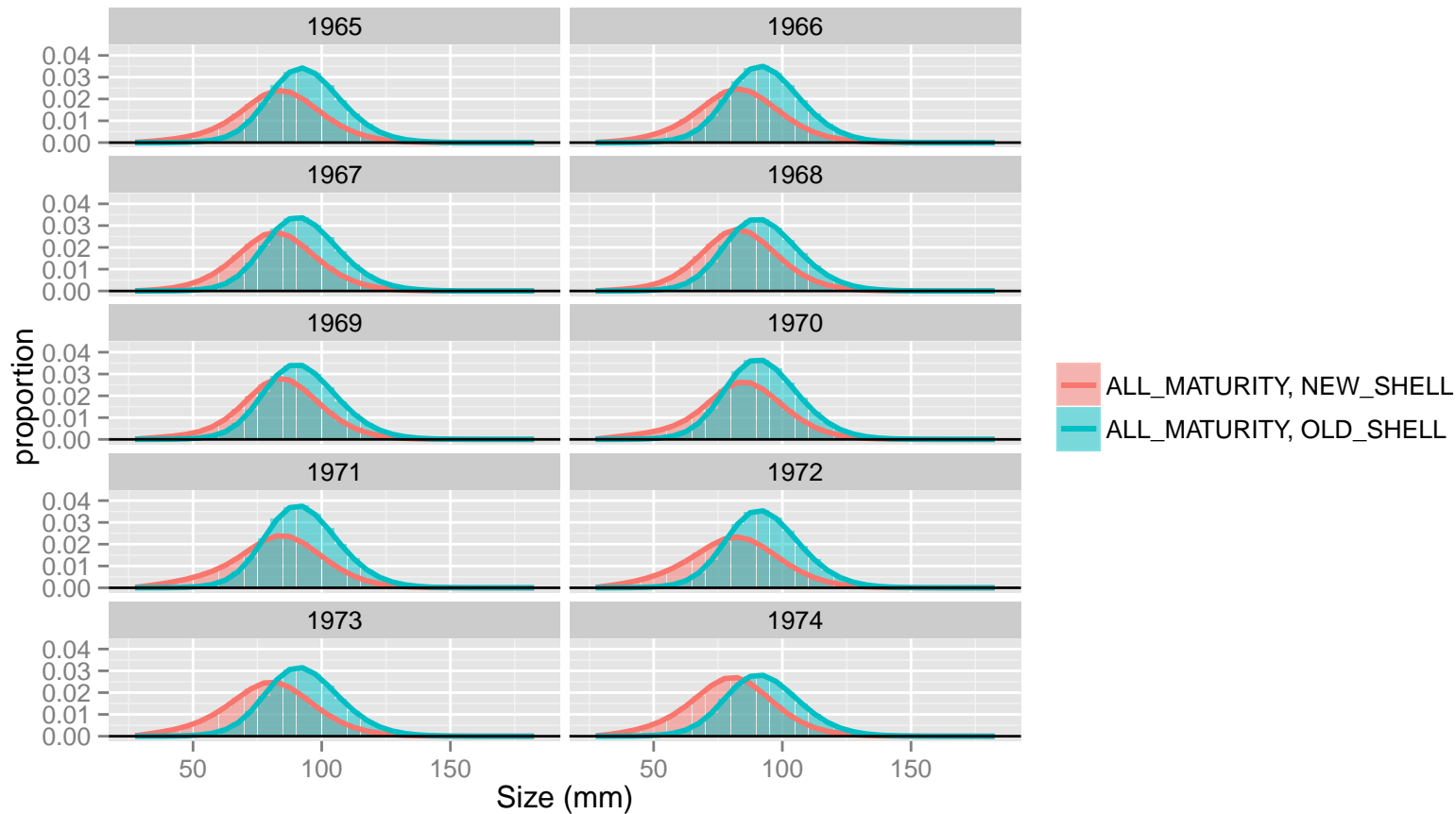




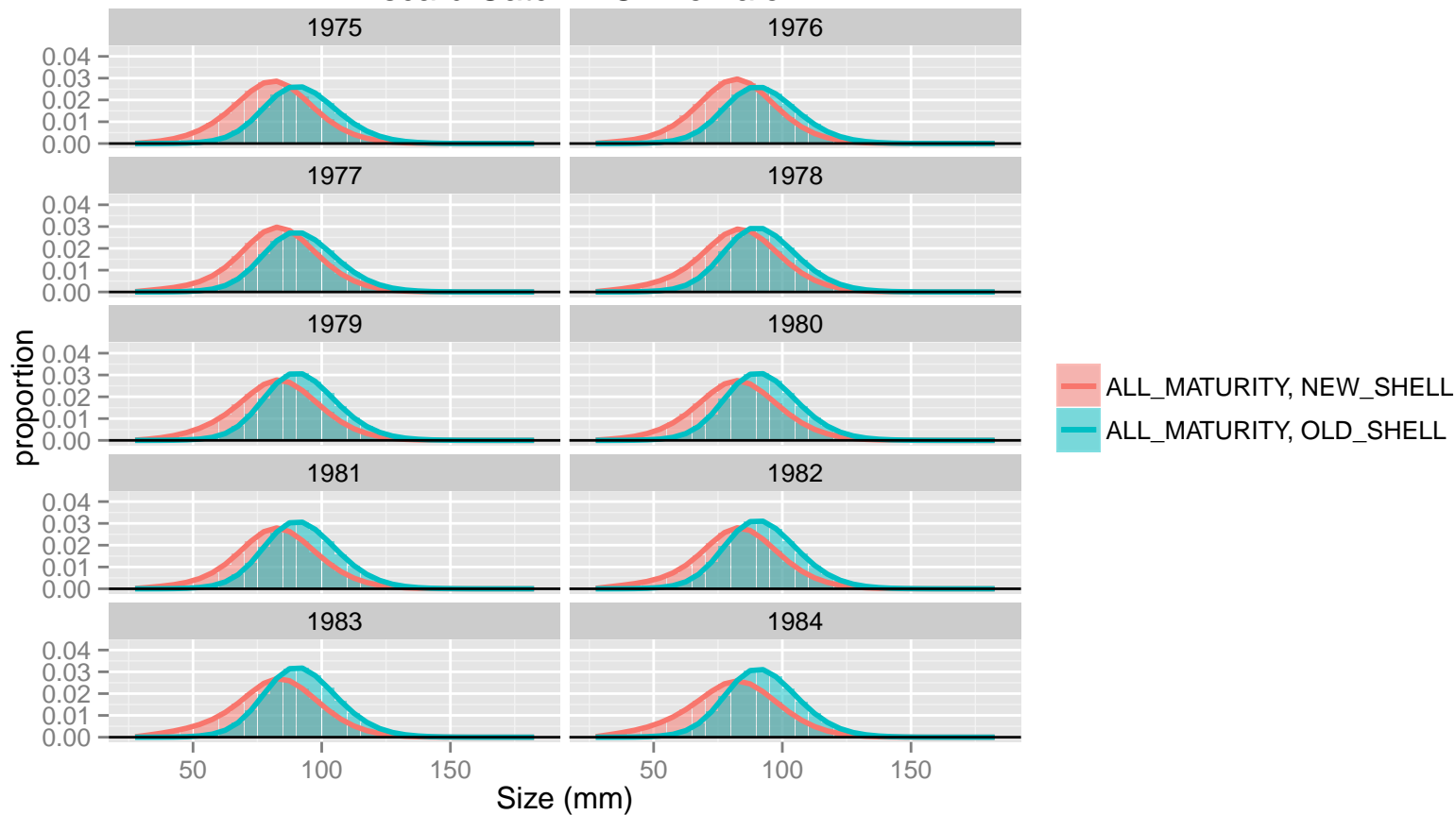




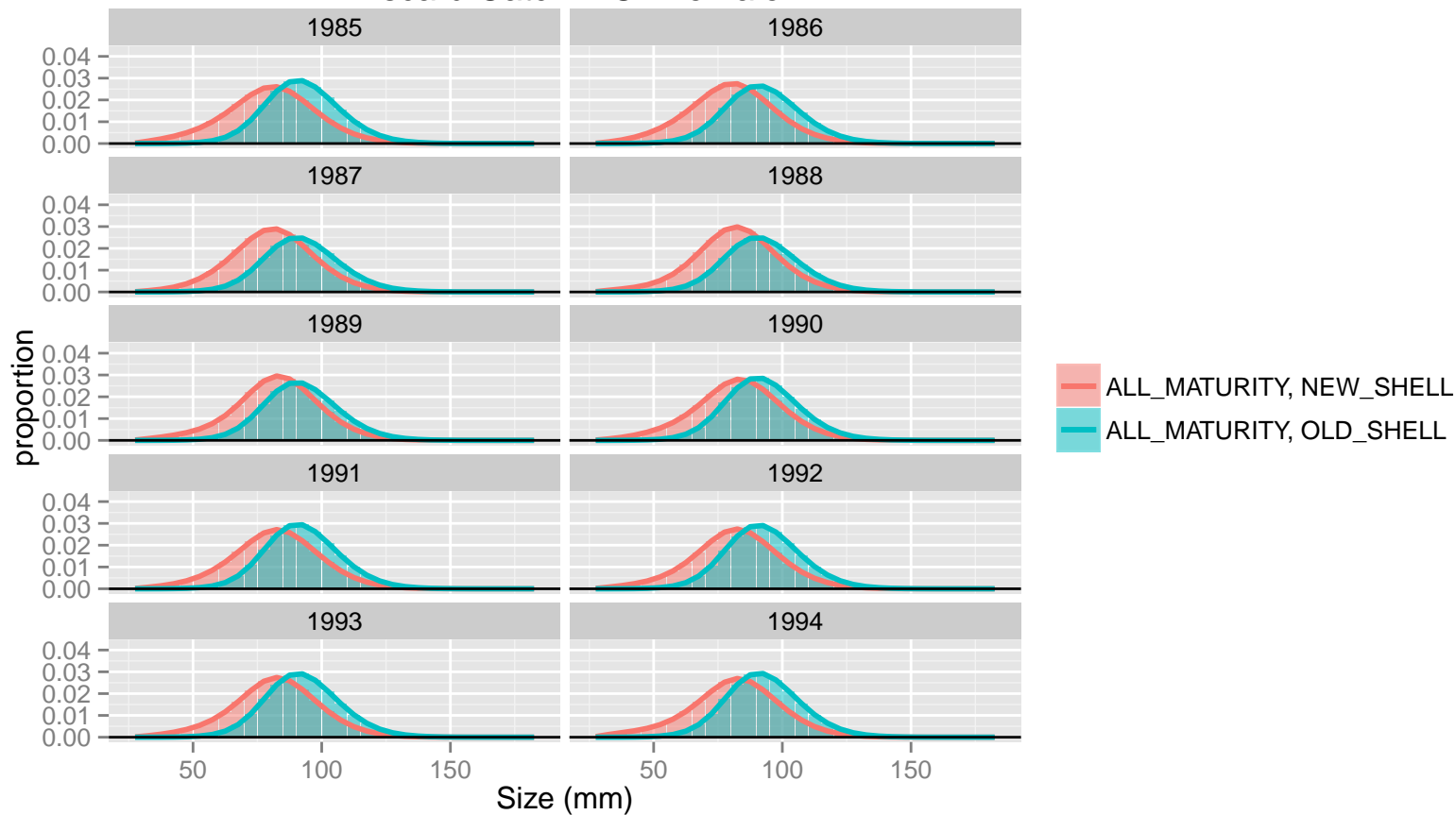
## Discard Catch: TCF: female



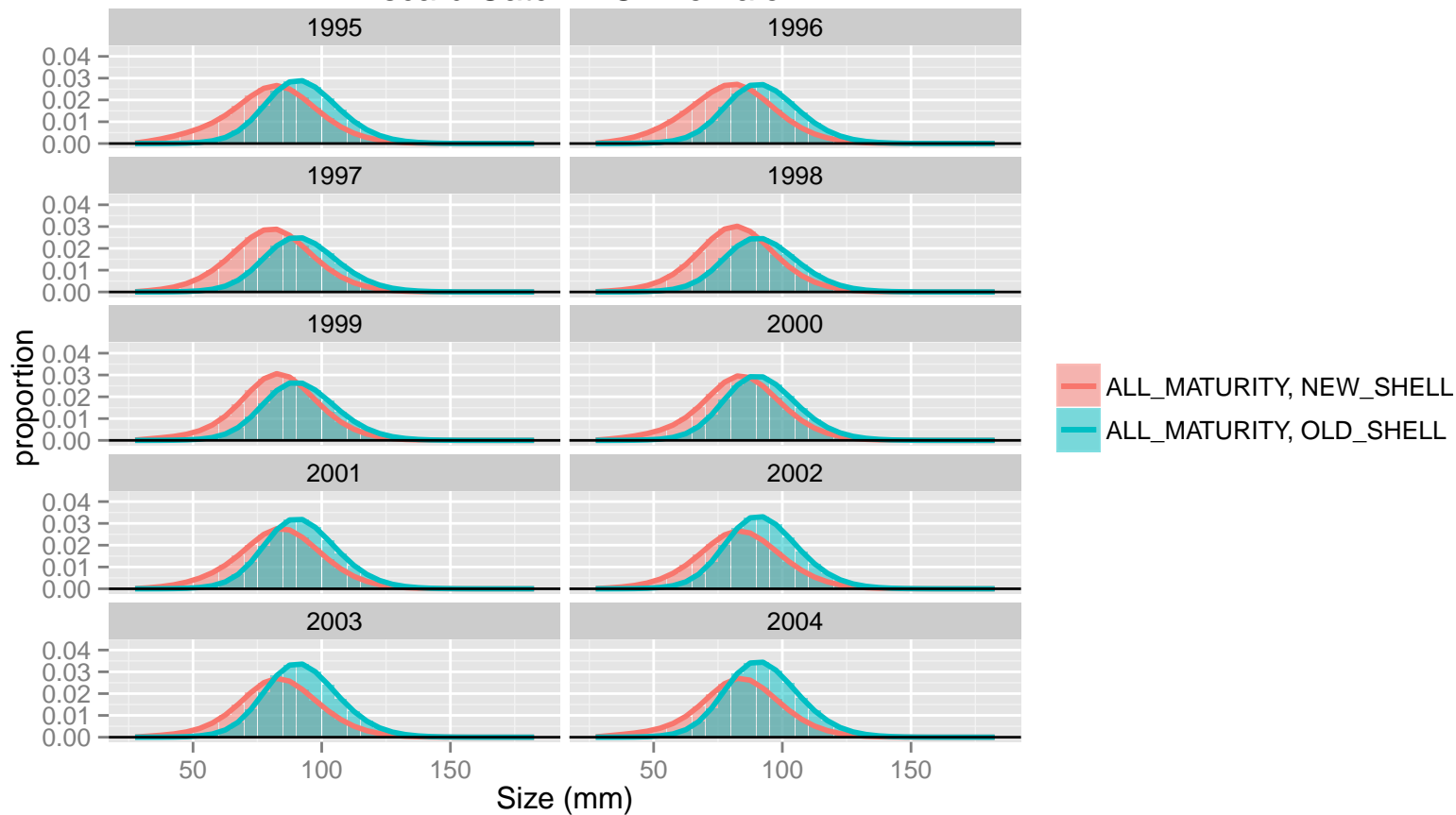
## Discard Catch: TCF: female



## Discard Catch: TCF: female

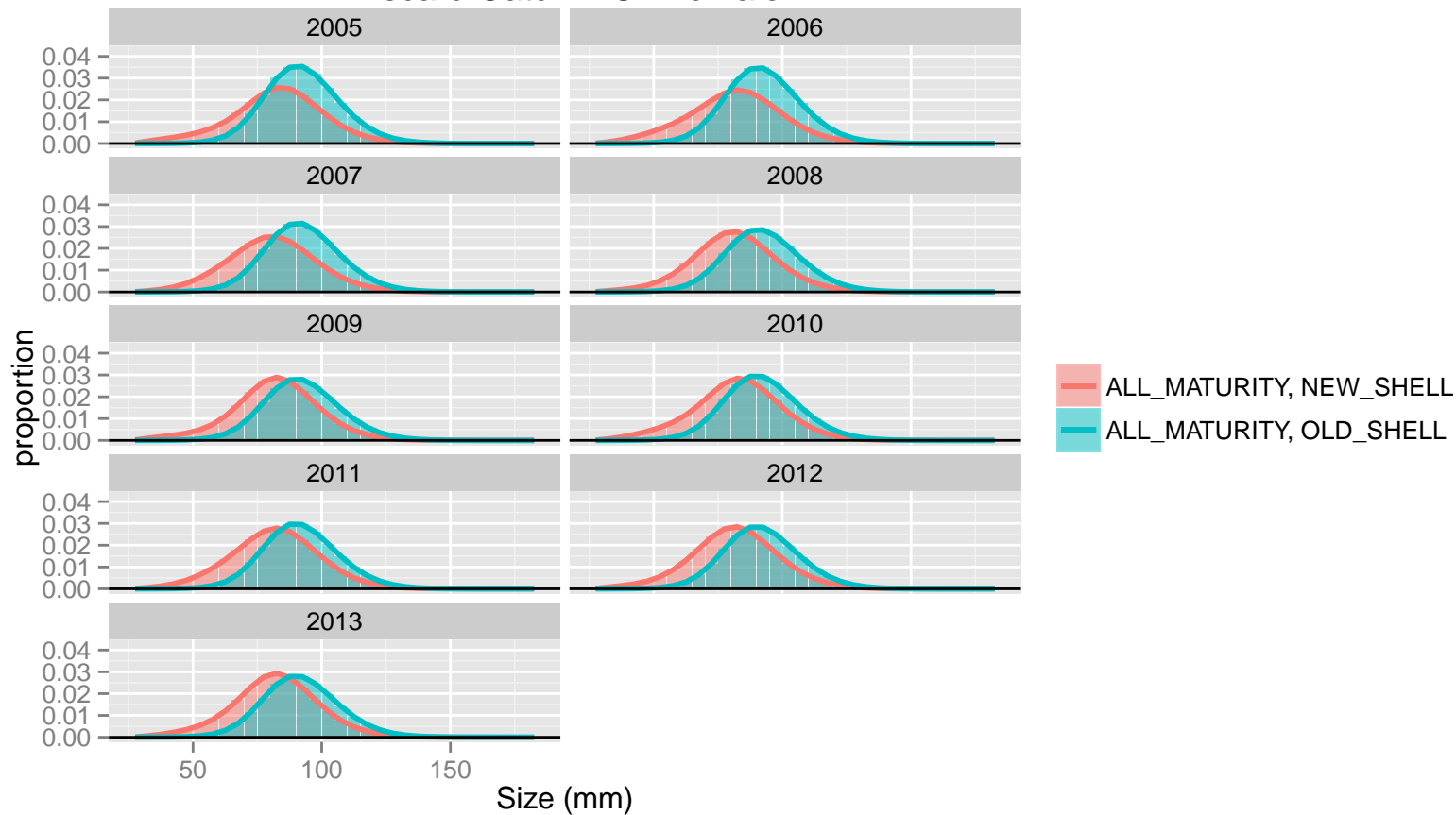


## Discard Catch: TCF: female

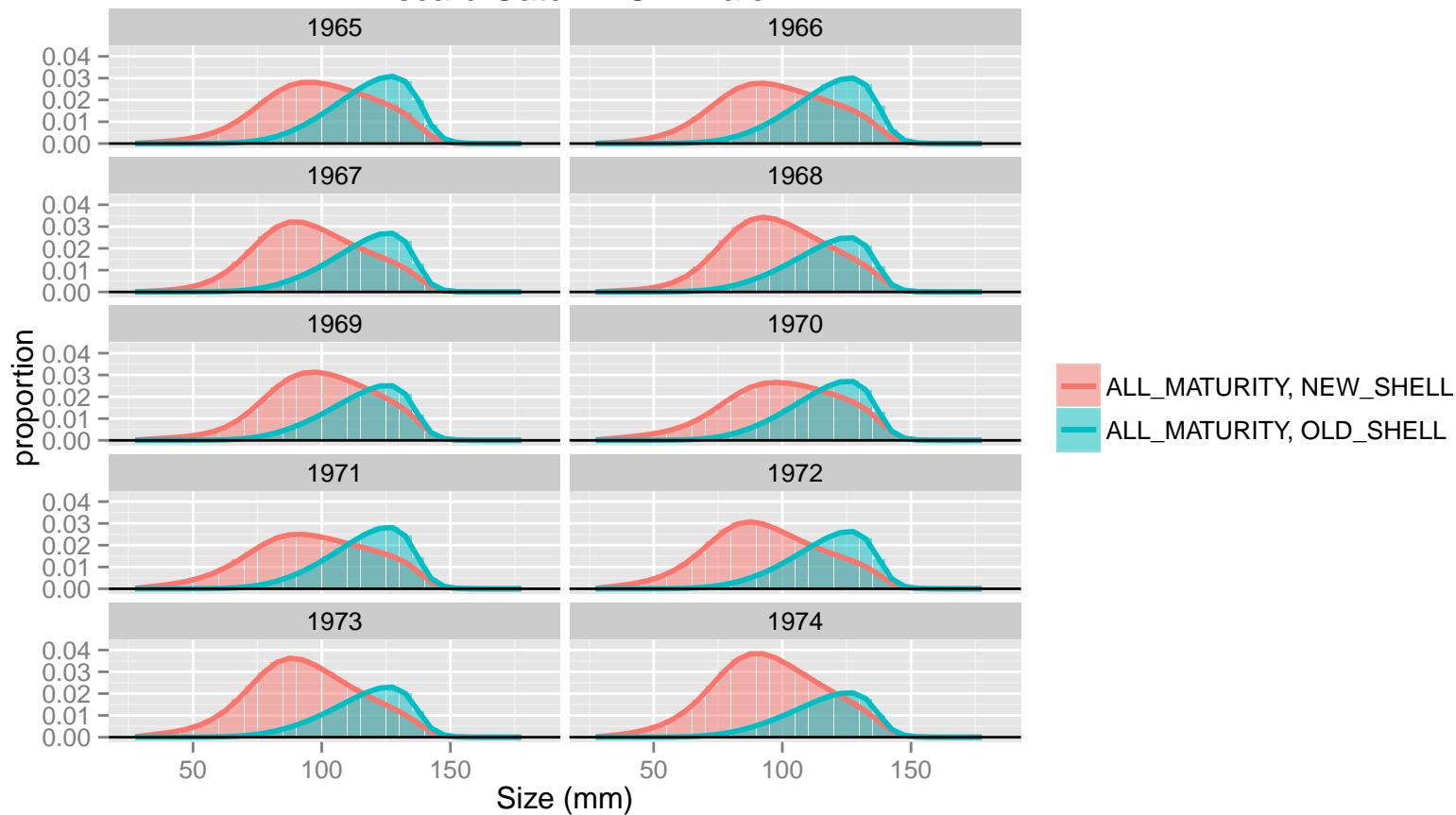




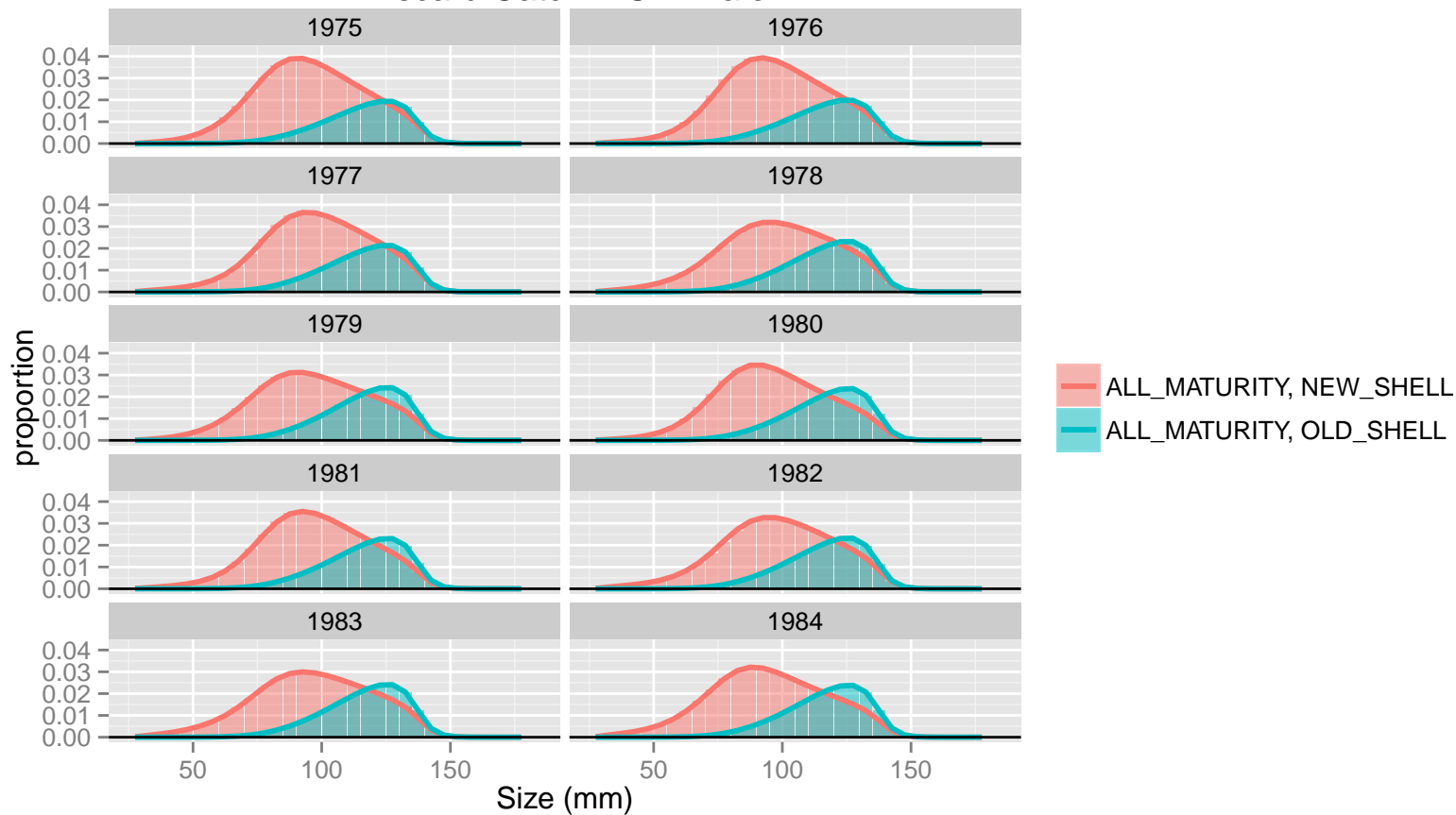
## Discard Catch: TCF: female



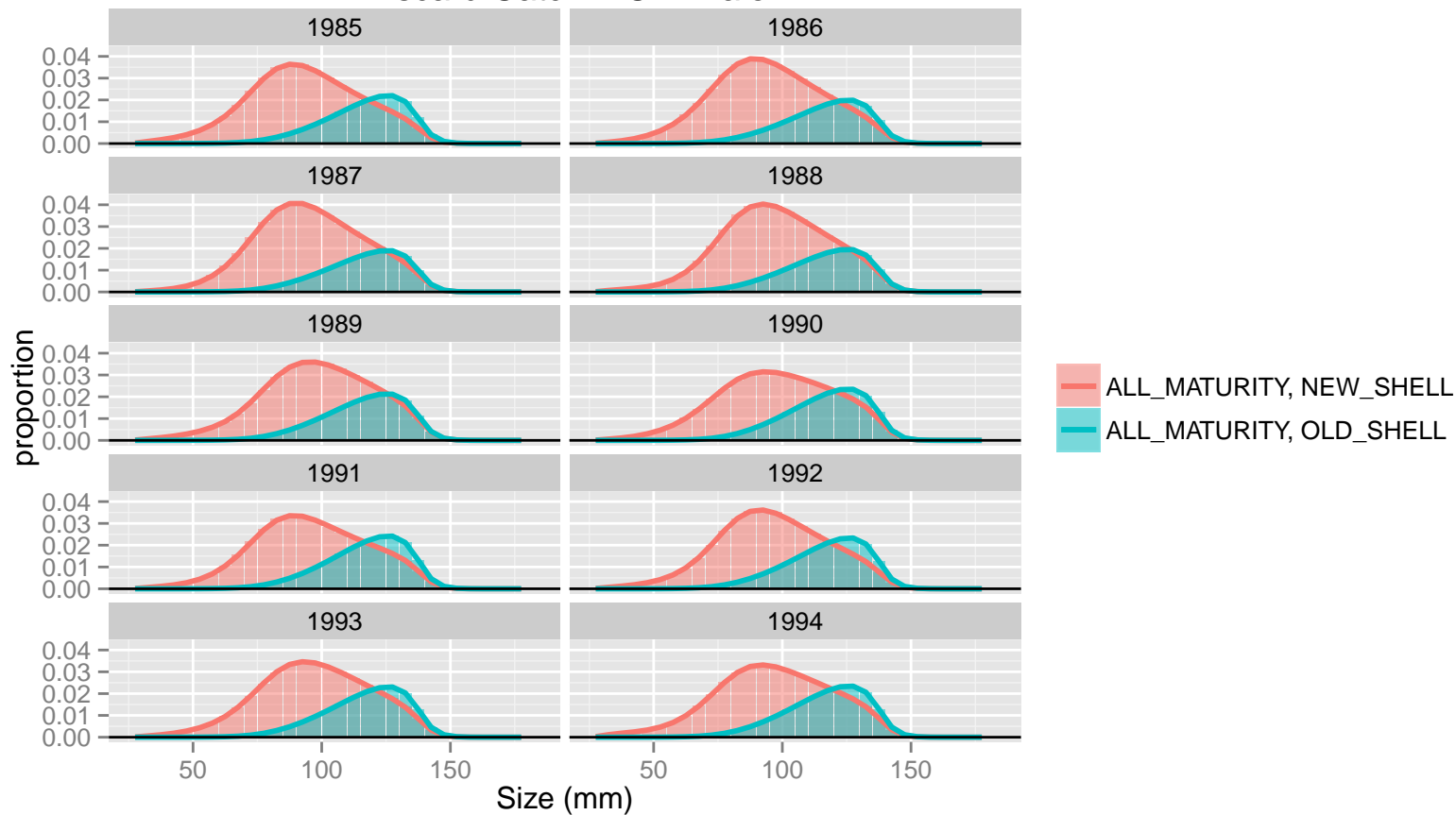
## Discard Catch: TCF: male



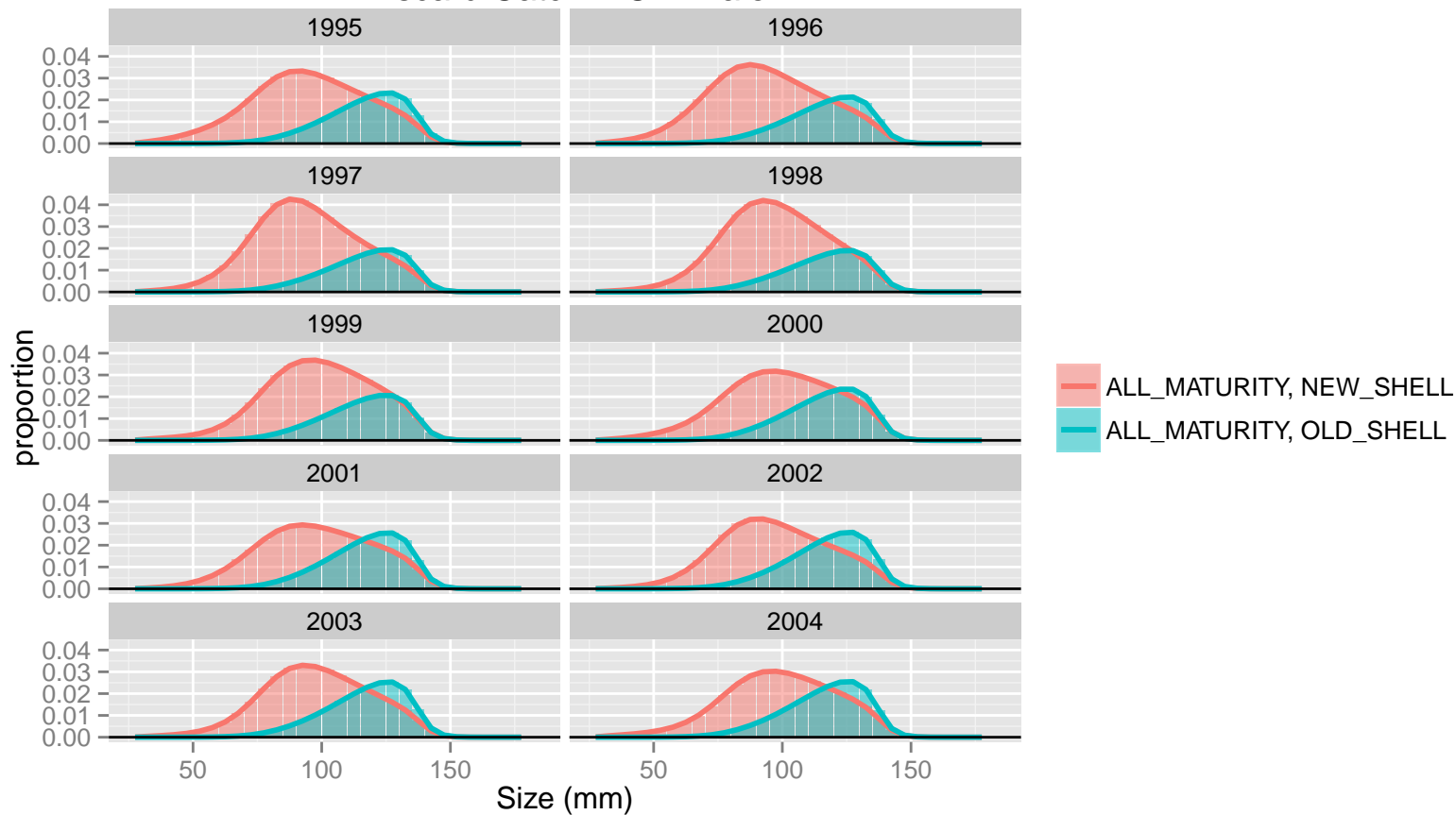
## Discard Catch: TCF: male



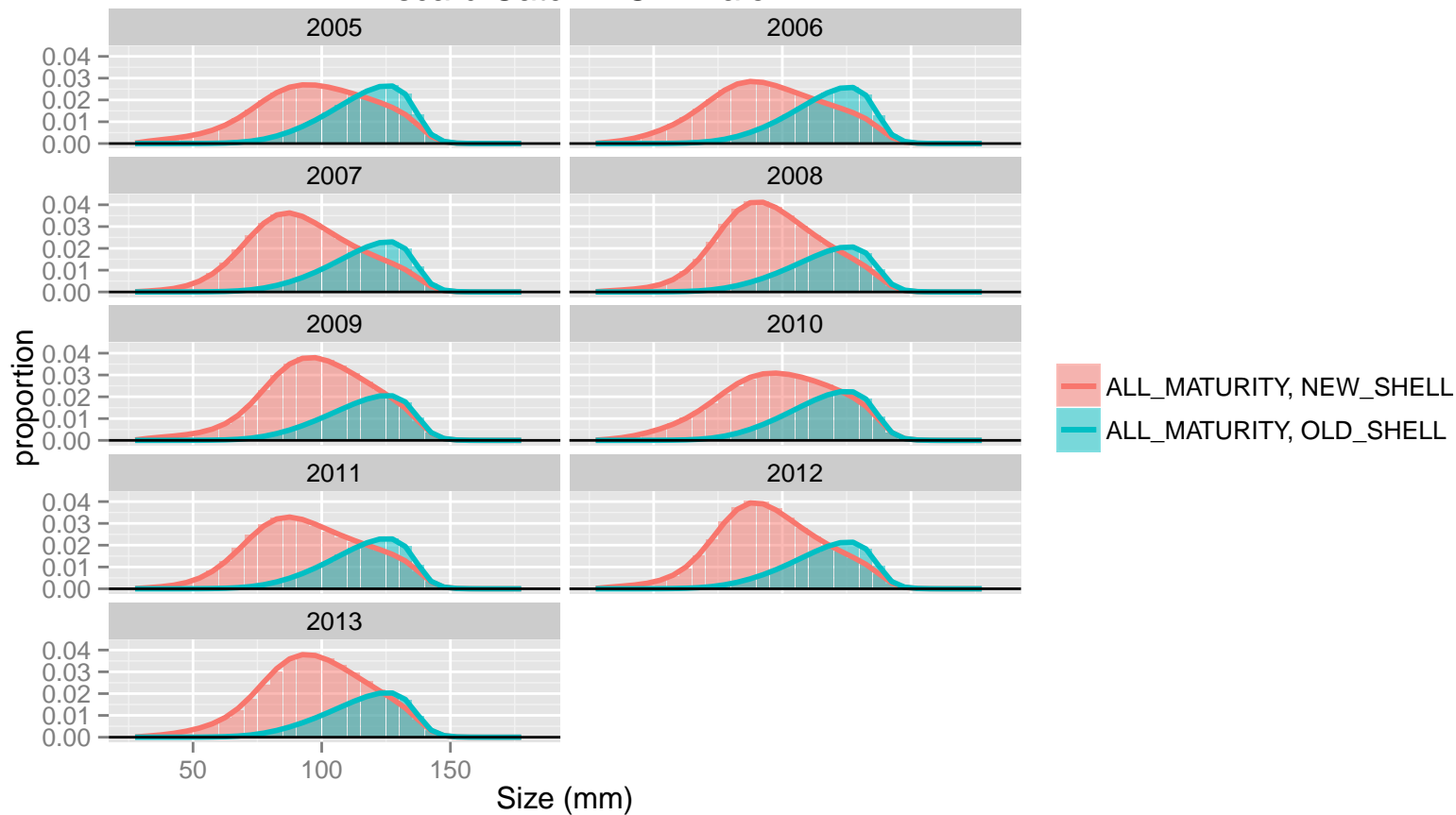
## Discard Catch: TCF: male



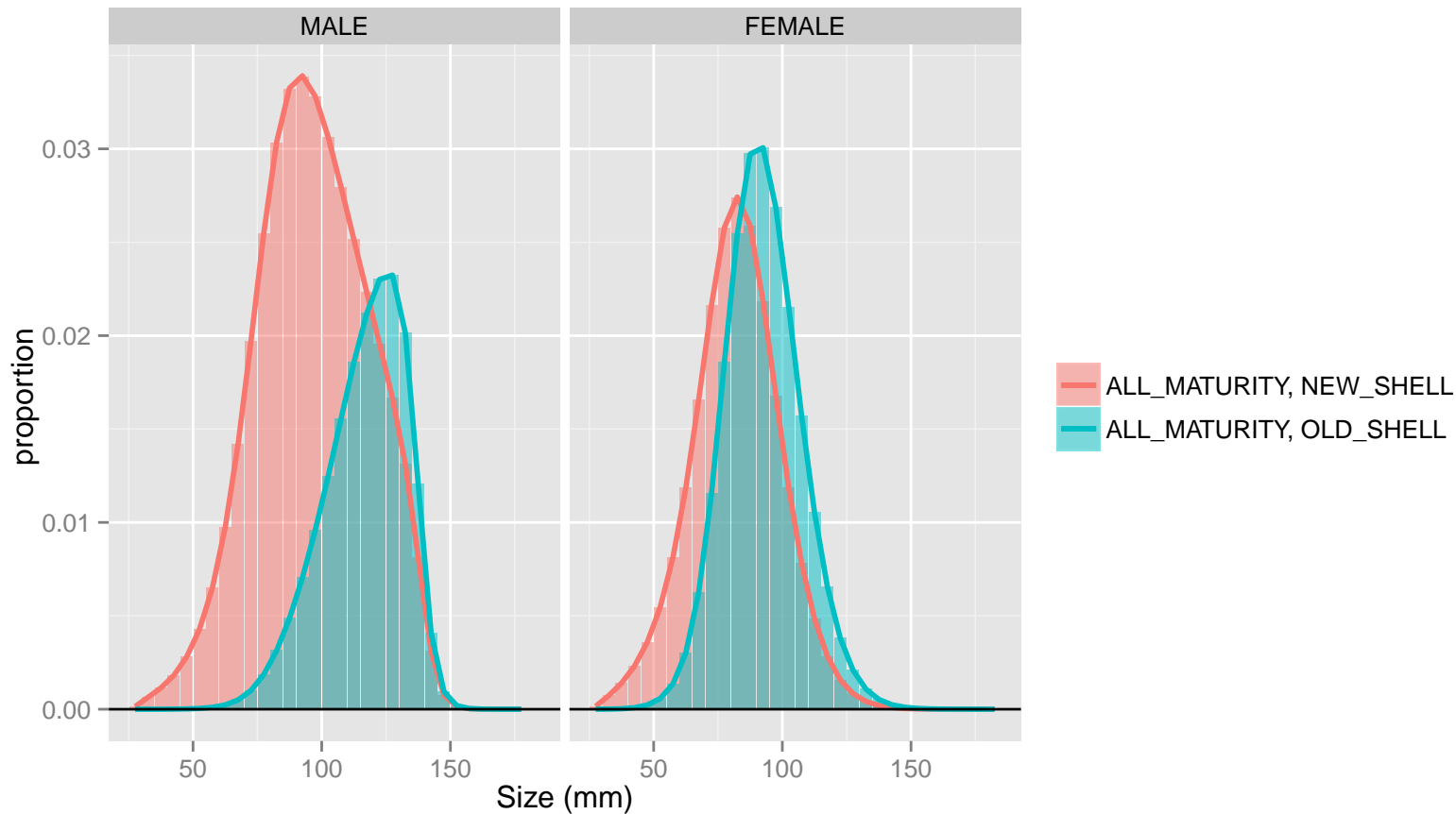
## Discard Catch: TCF: male

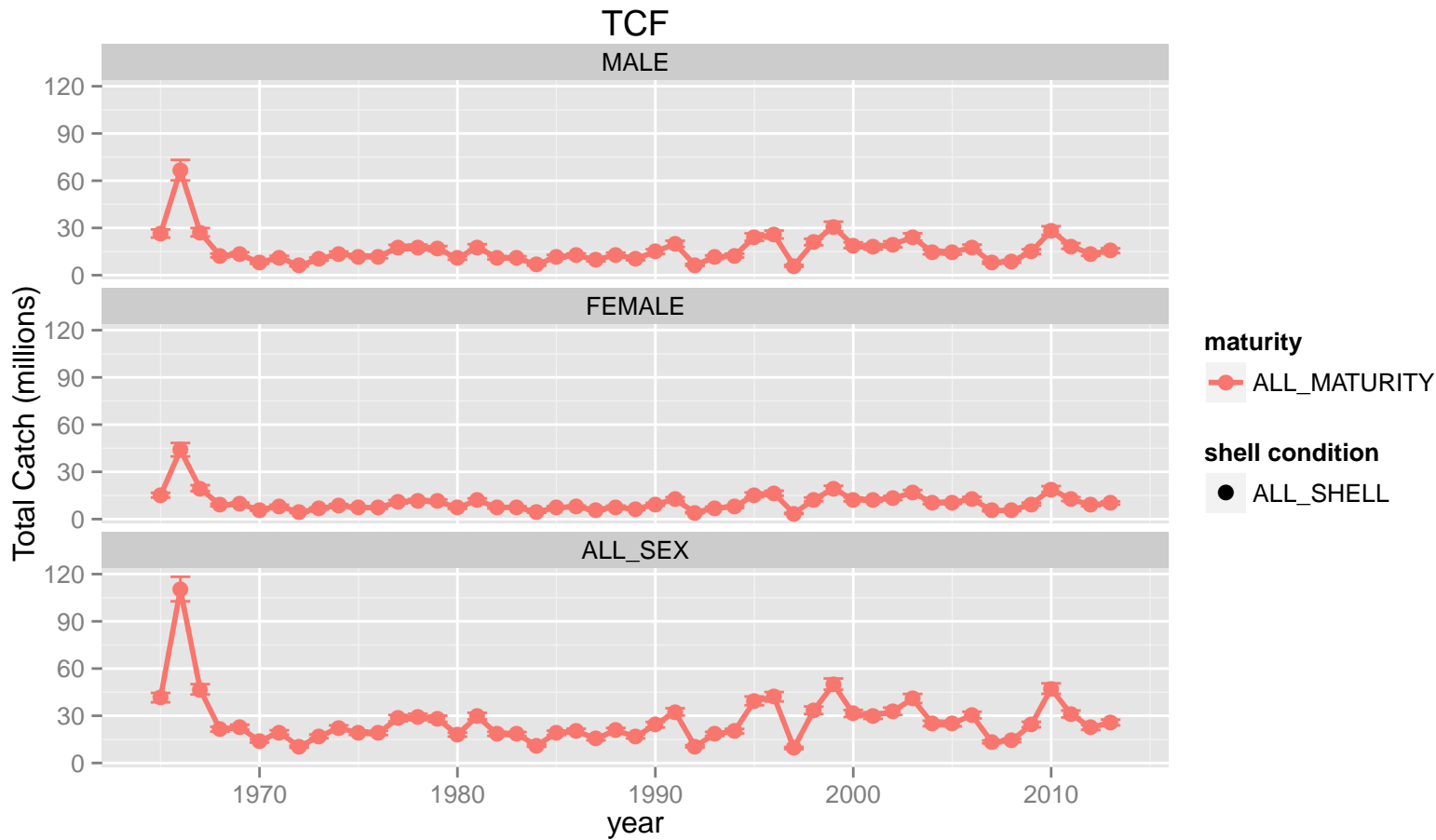


## Discard Catch: TCF: male

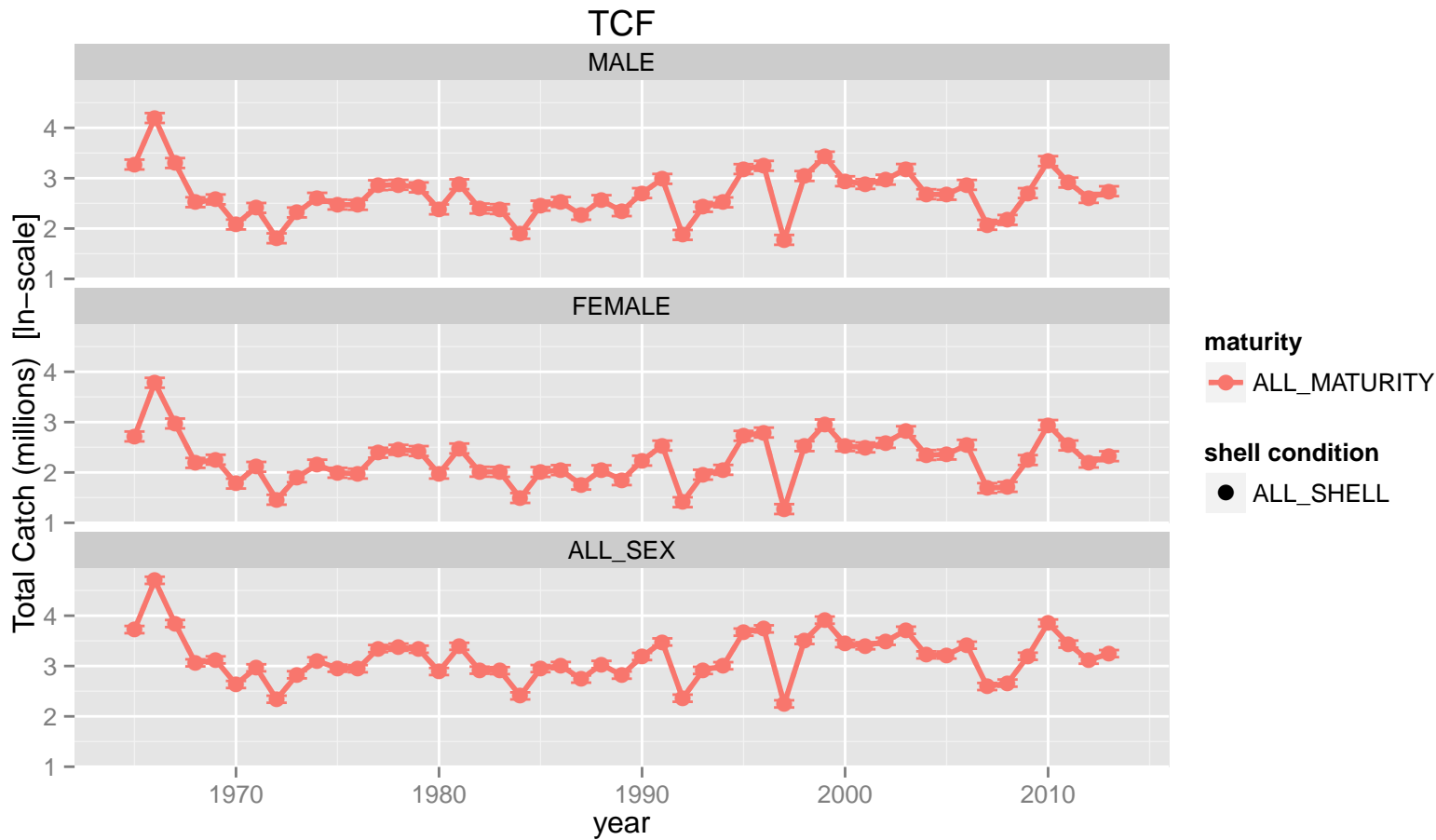


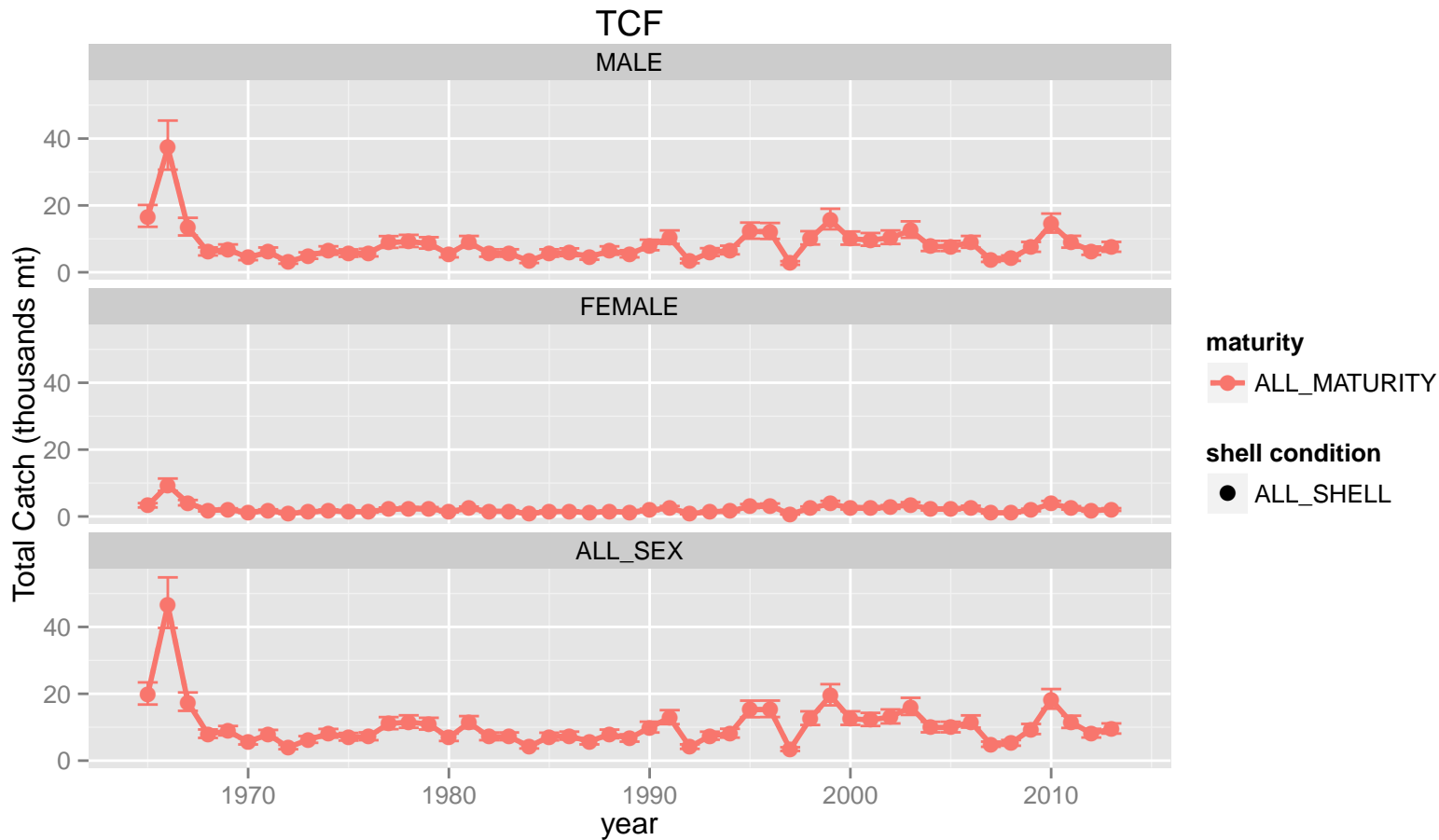
## Discard Catch: TCF

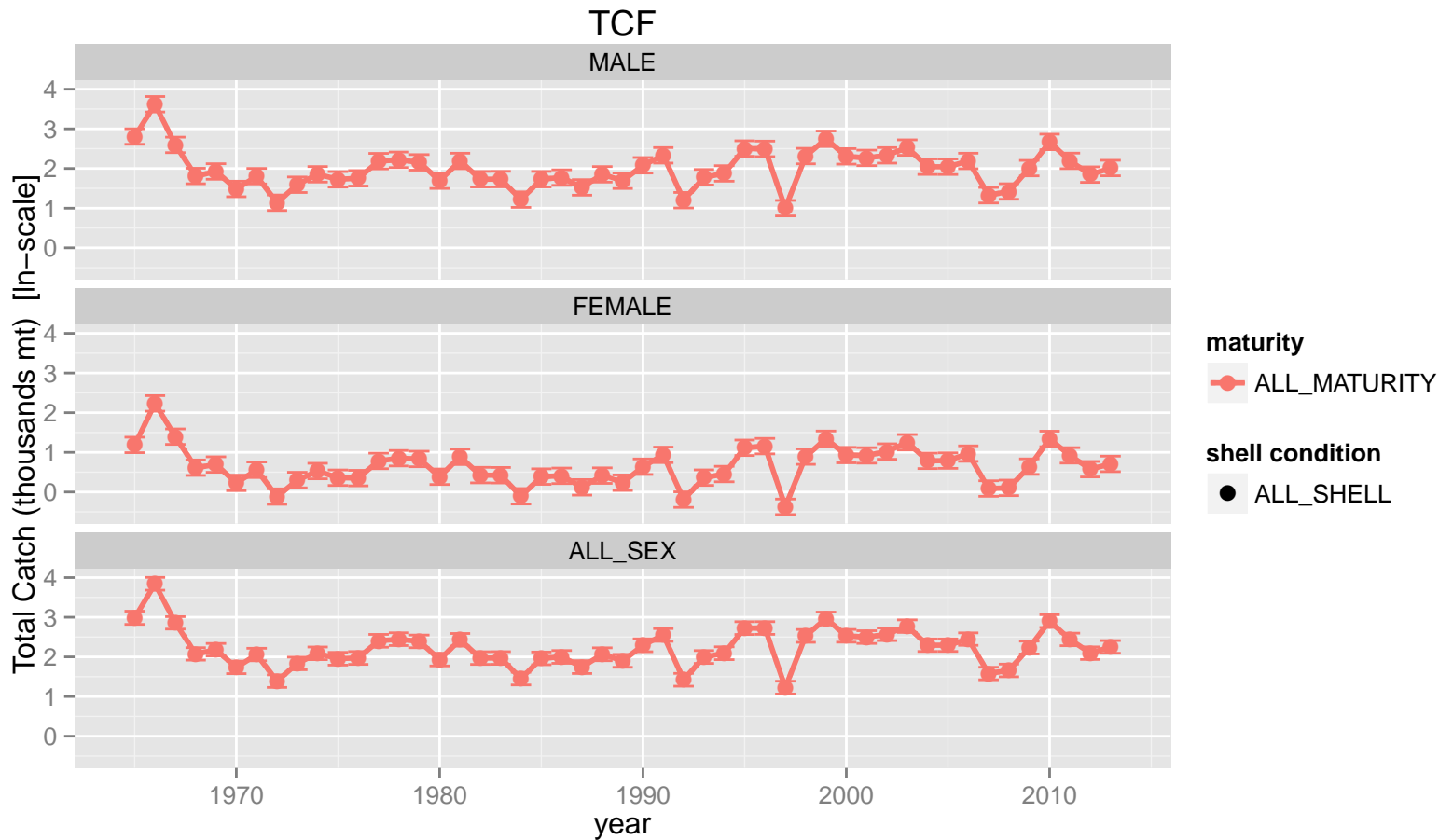




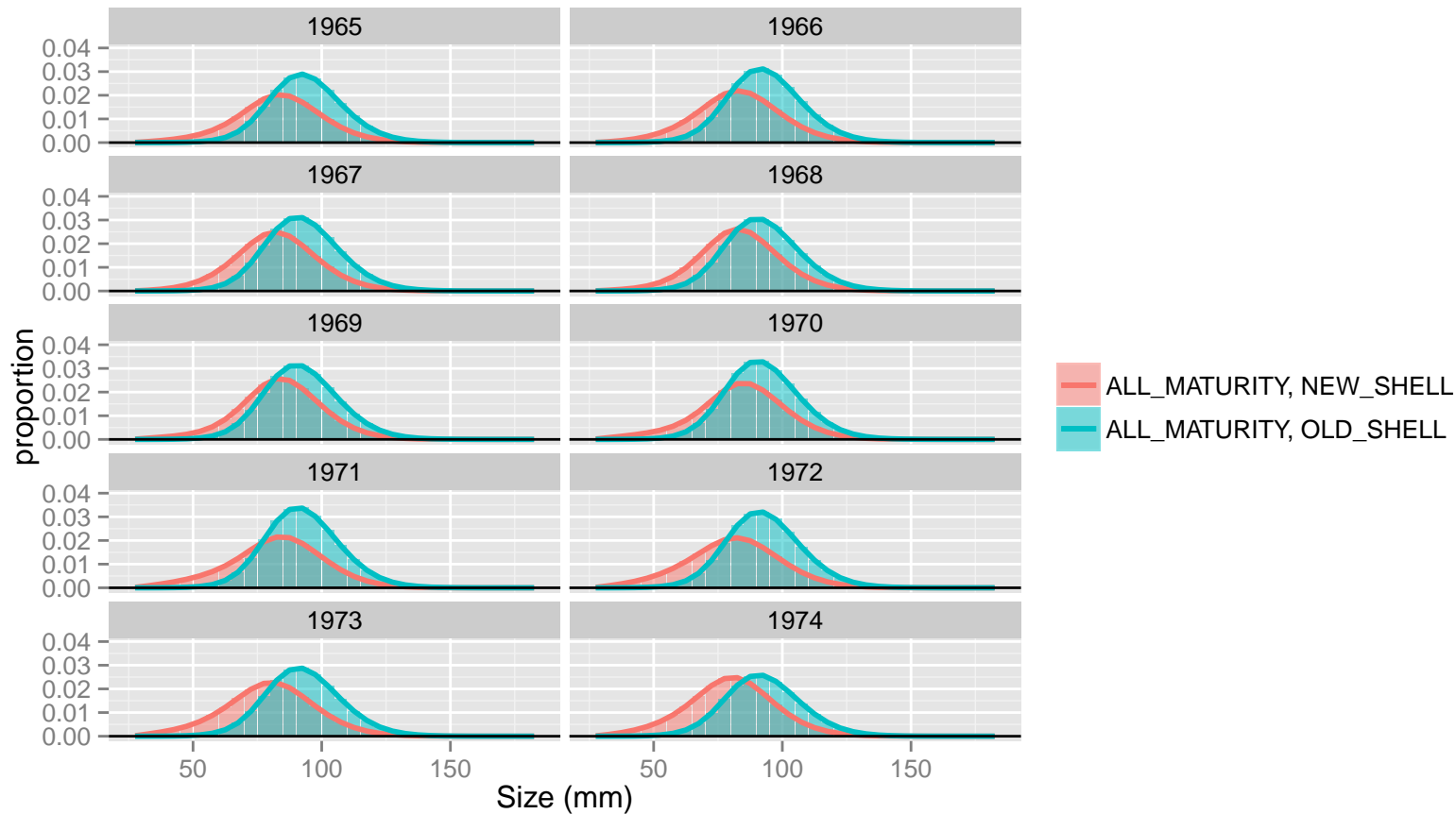




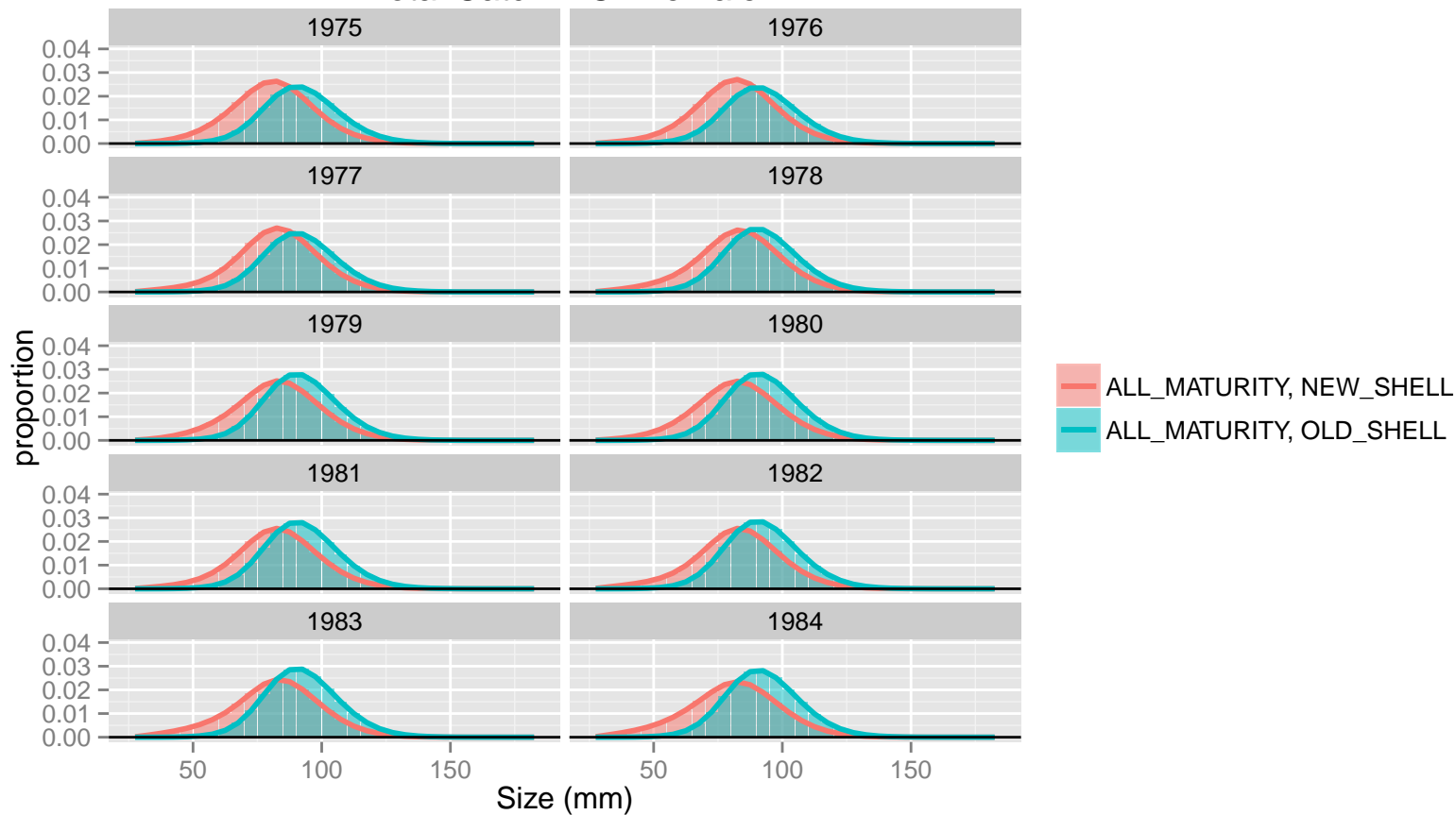




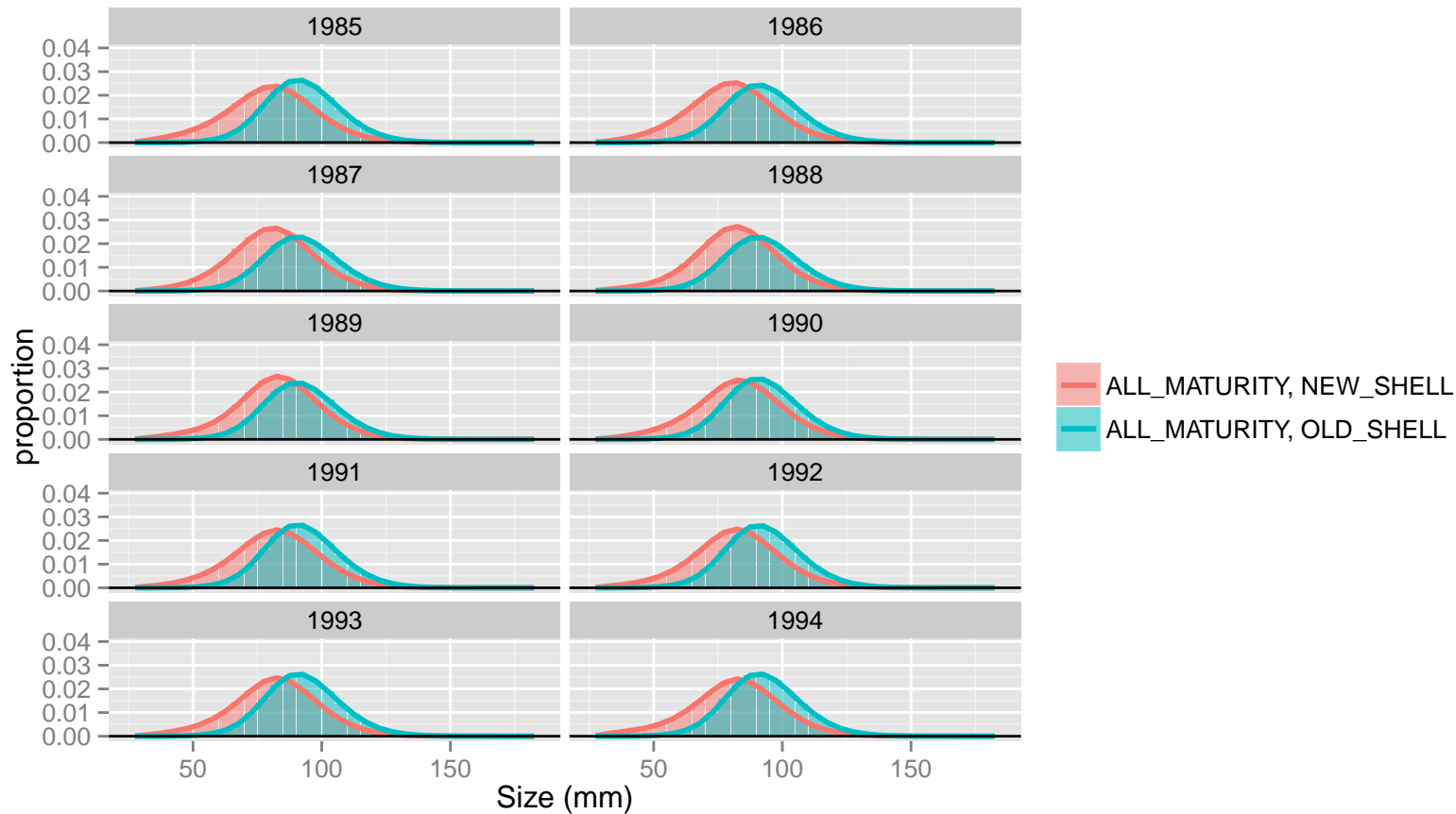
# Total Catch: TCF: female



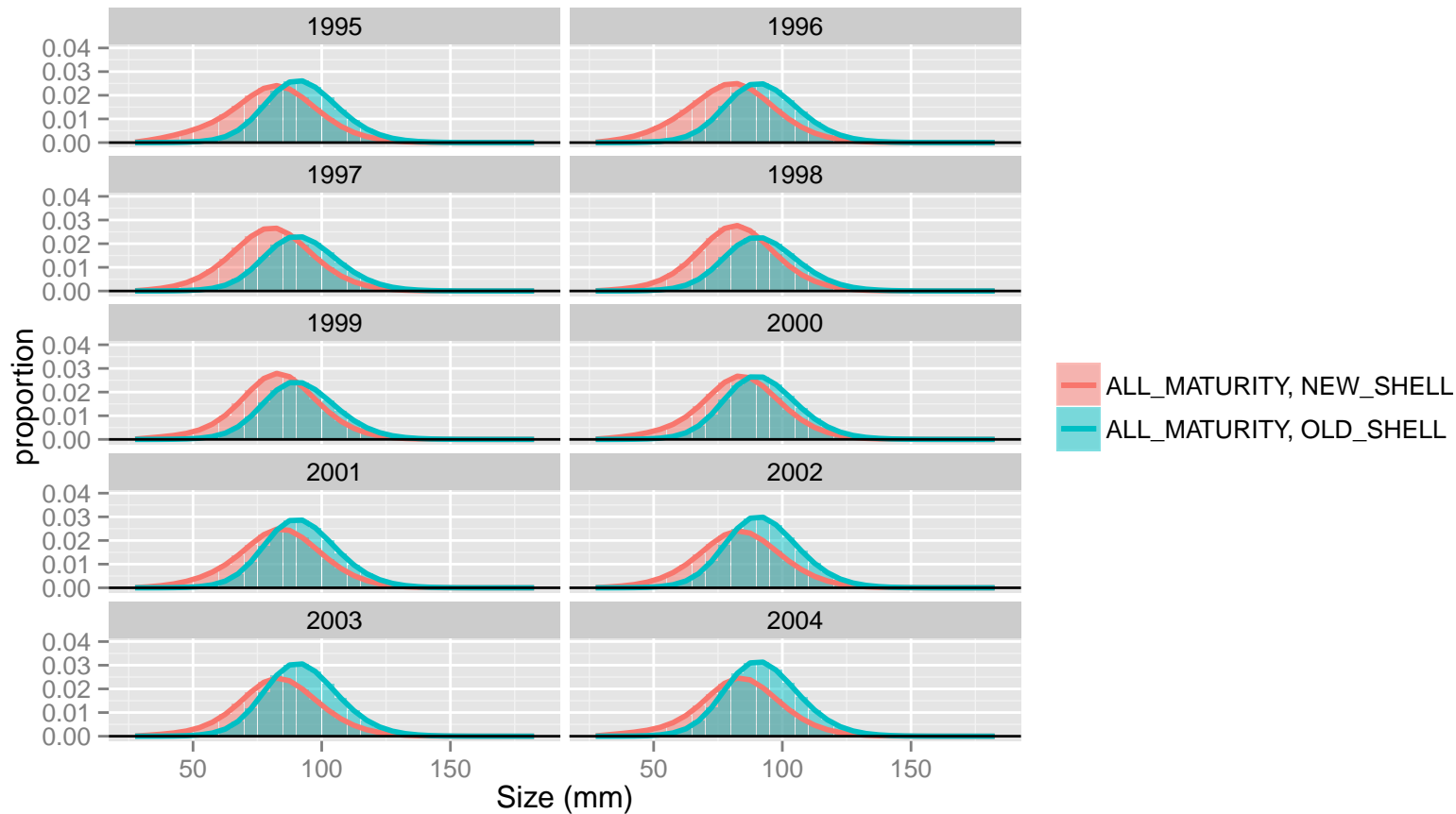
# Total Catch: TCF: female



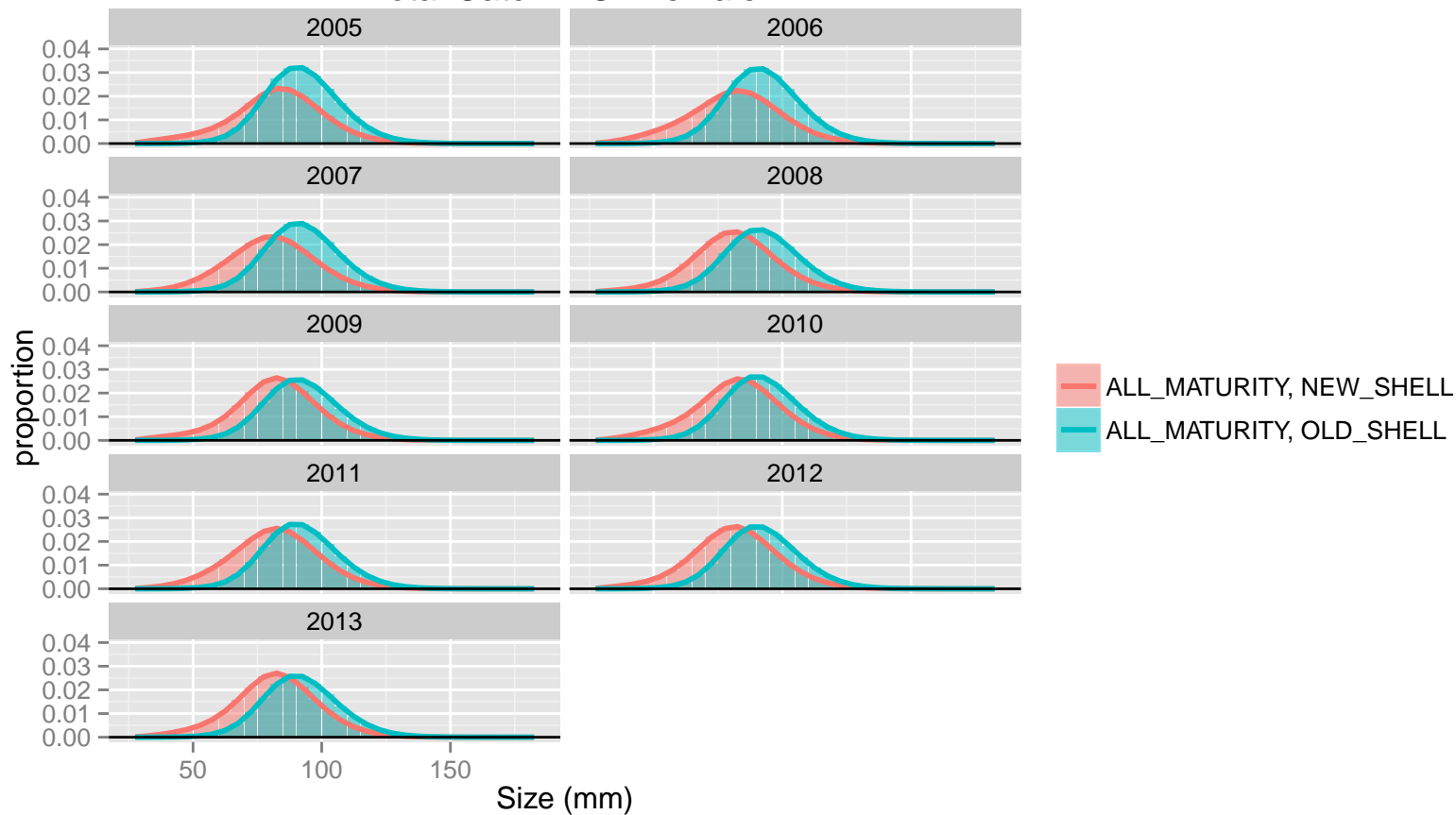
# Total Catch: TCF: female



# Total Catch: TCF: female

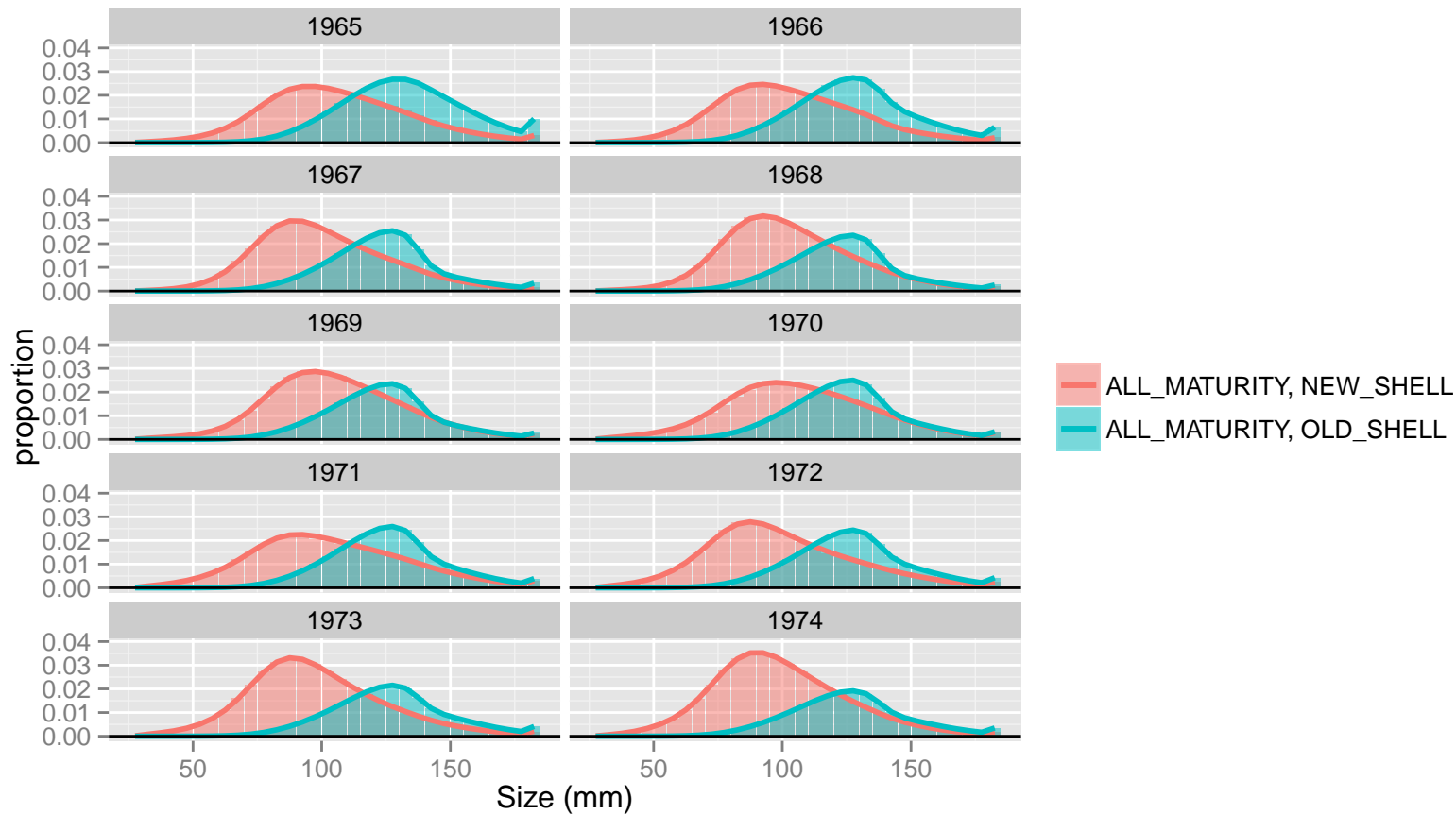


# Total Catch: TCF: female

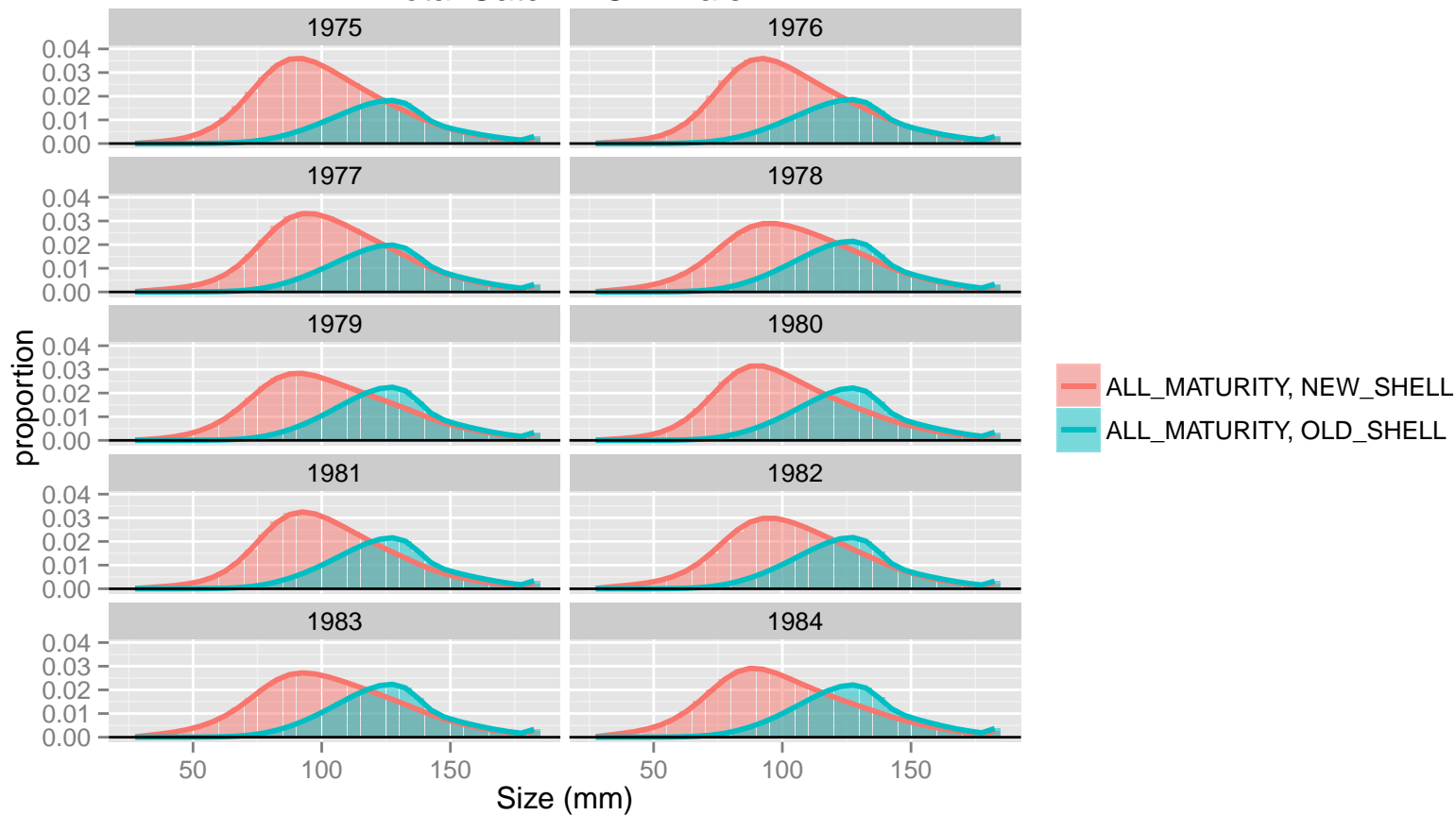




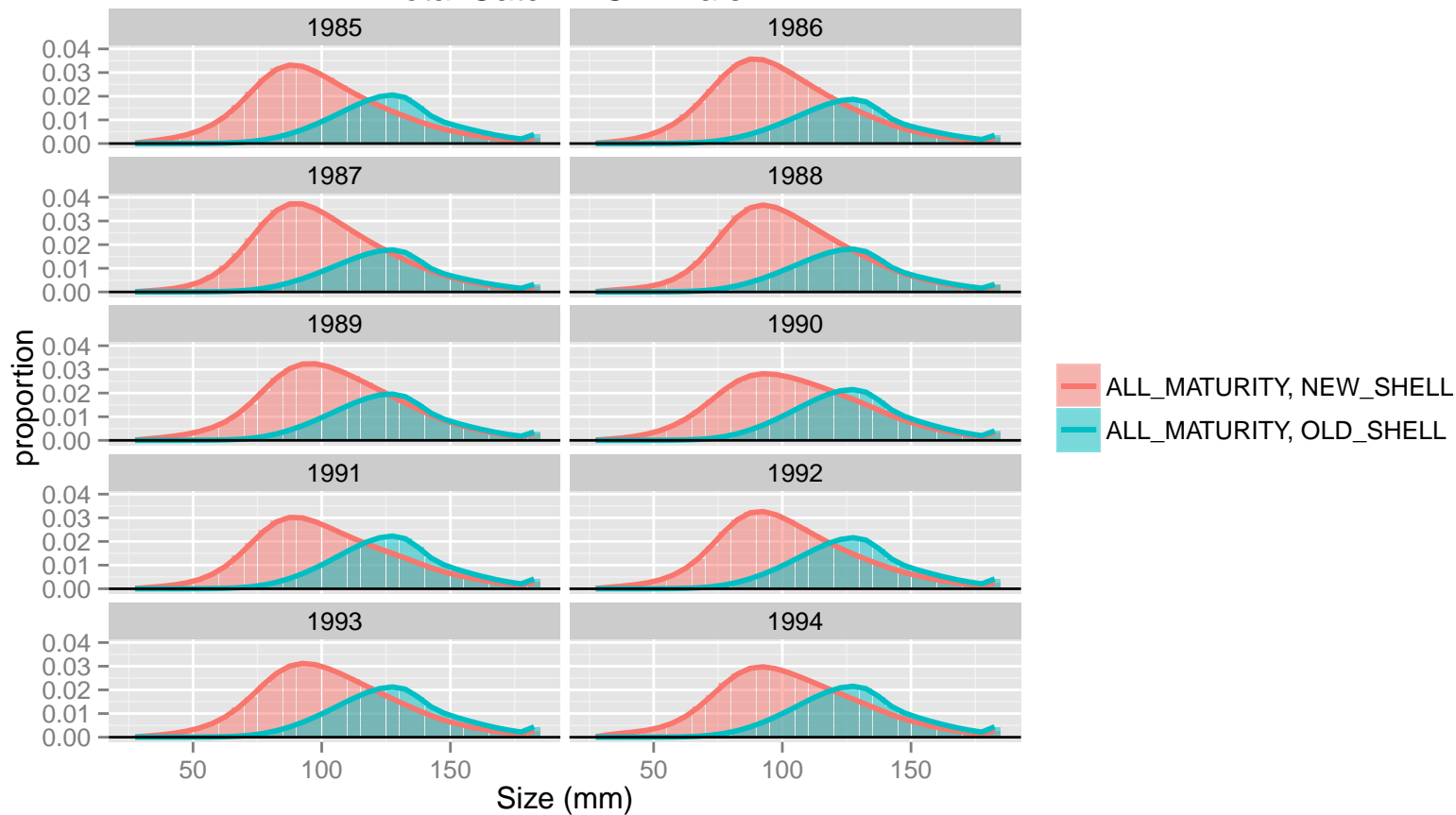
# Total Catch: TCF: male



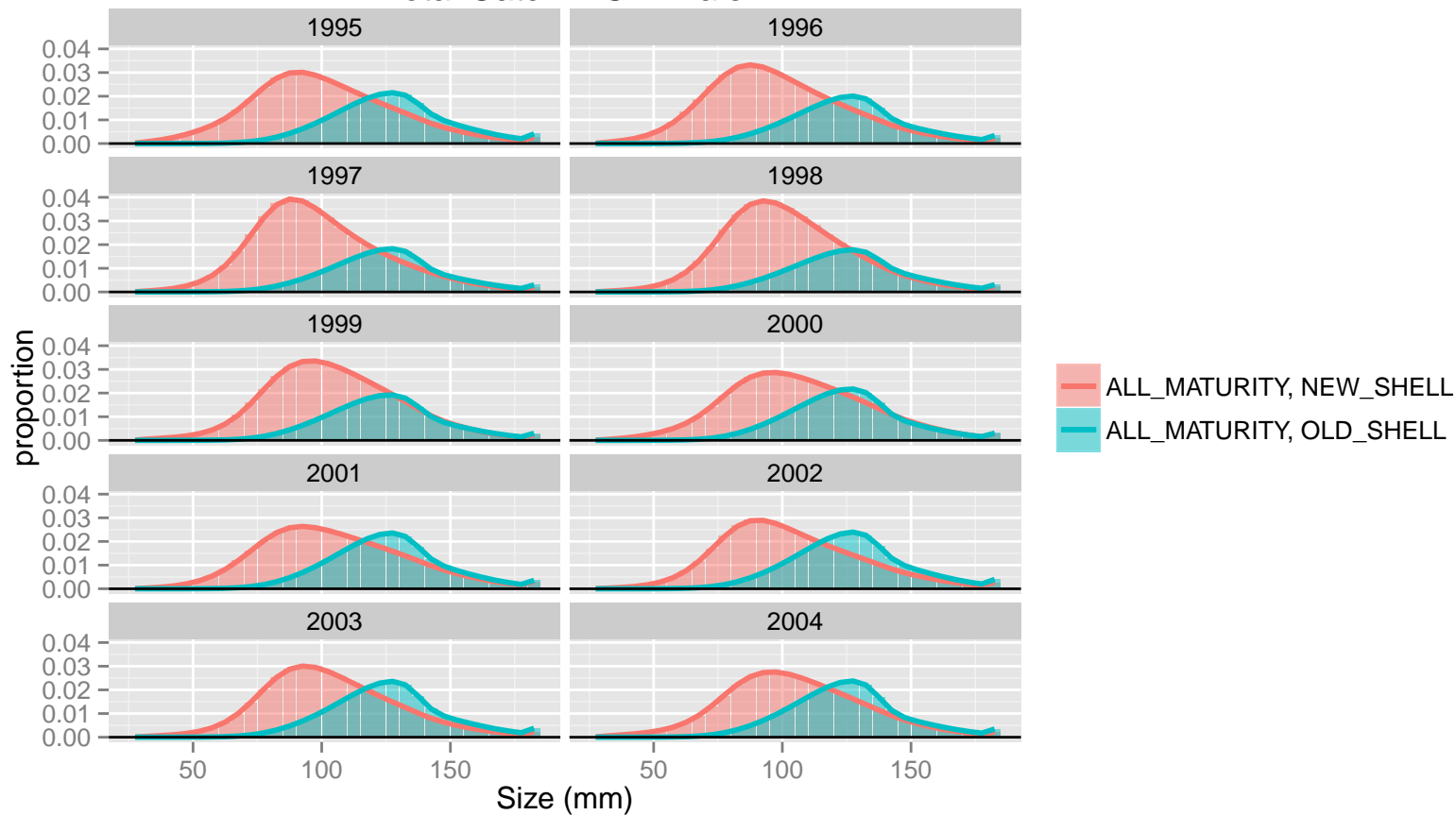
# Total Catch: TCF: male



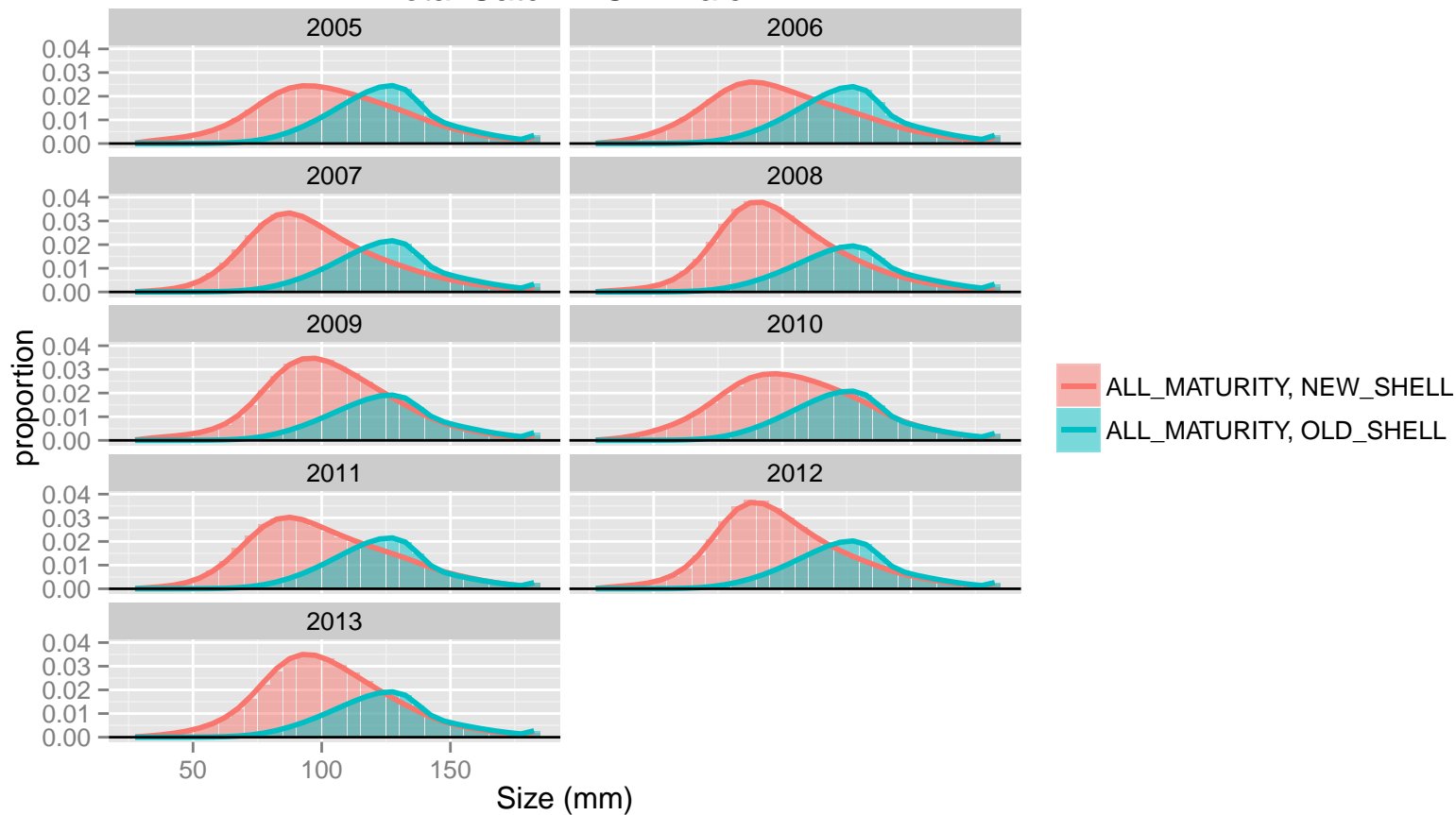
# Total Catch: TCF: male



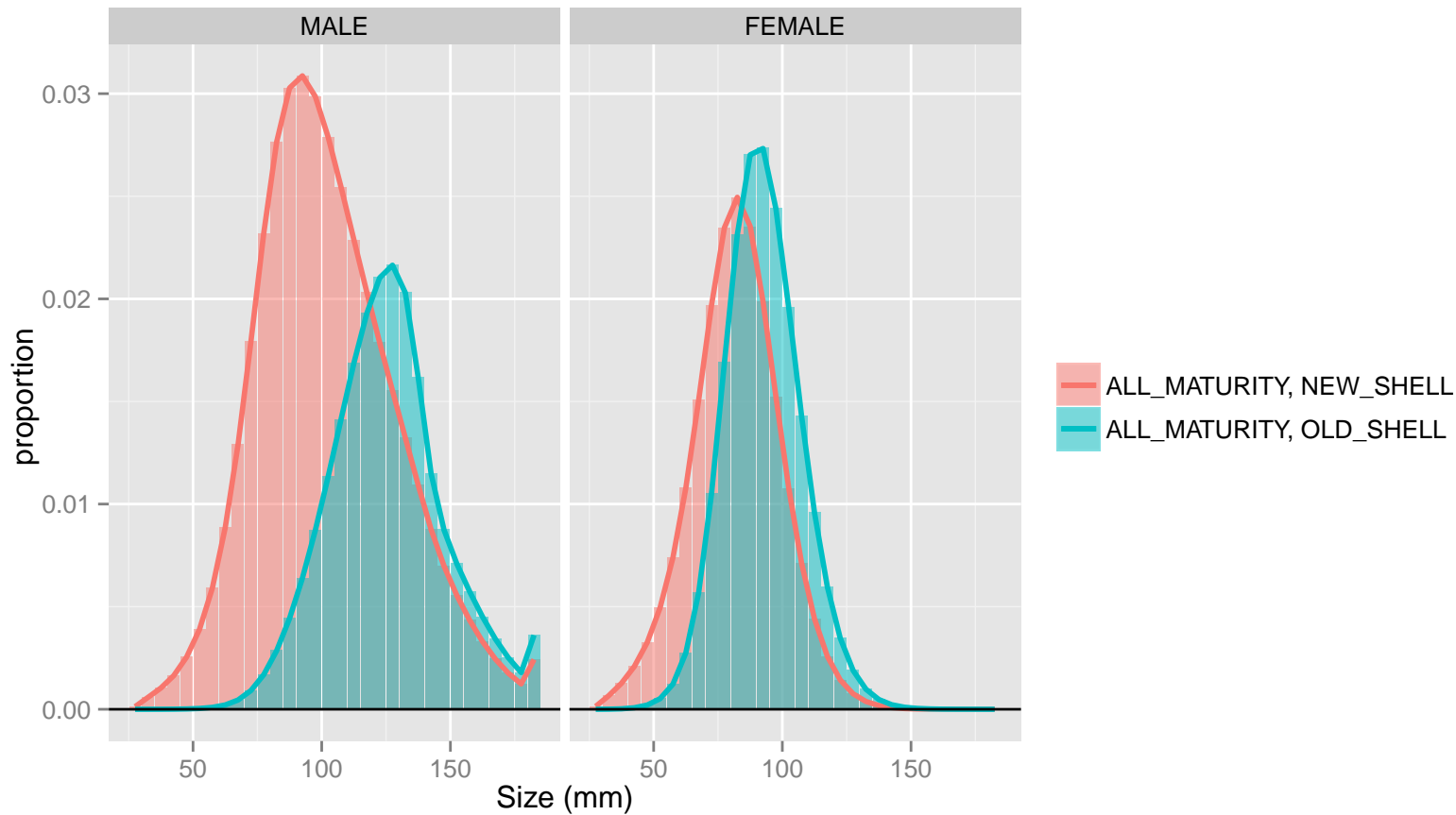
# Total Catch: TCF: male



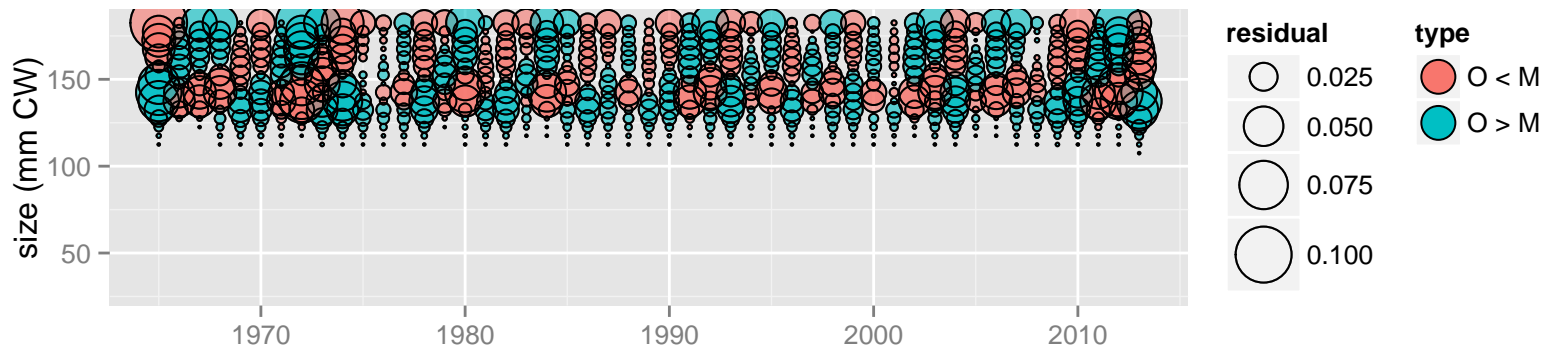
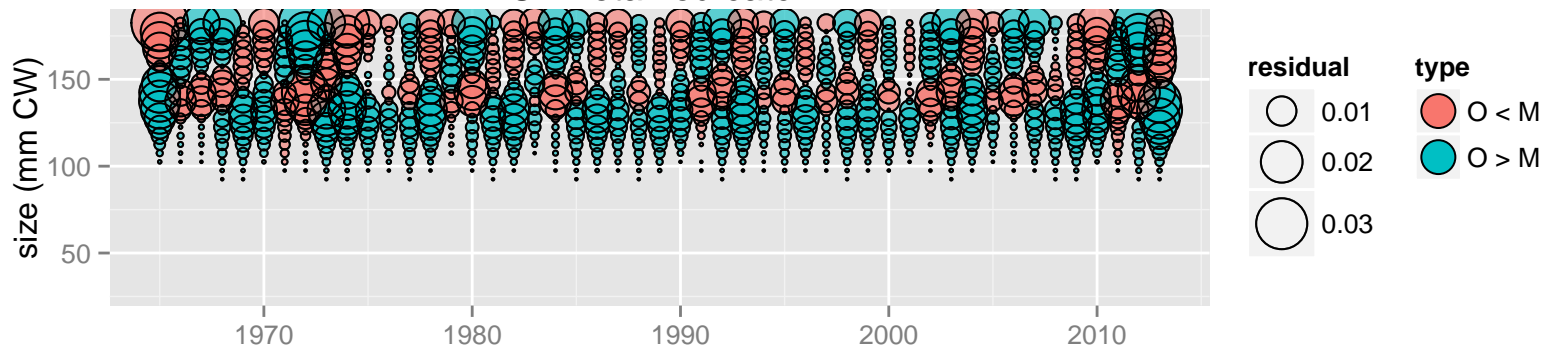
# Total Catch: TCF: male



# Total Catch: TCF



TCF: retained catch:

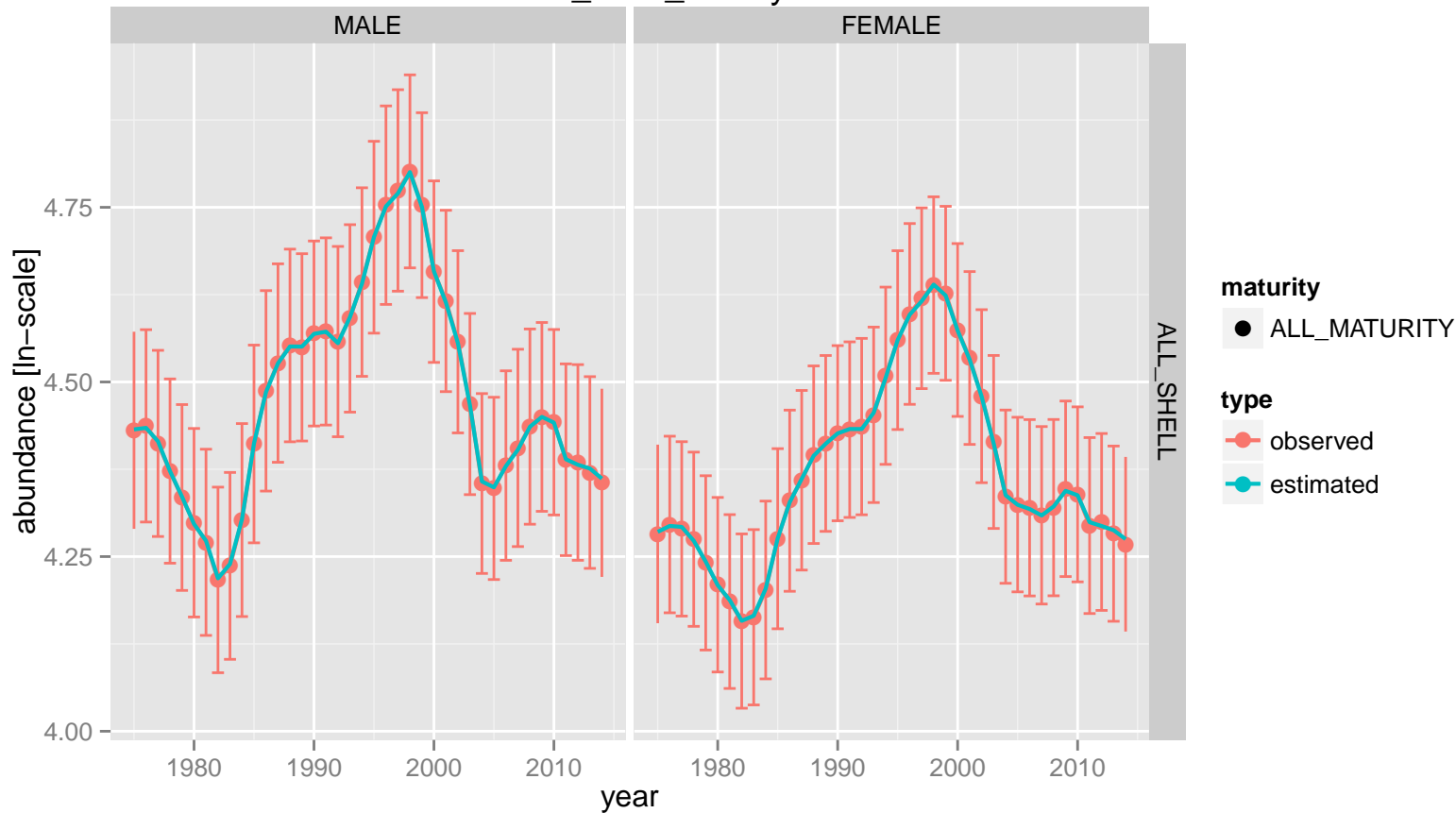


# NMFS\_trawl\_survey

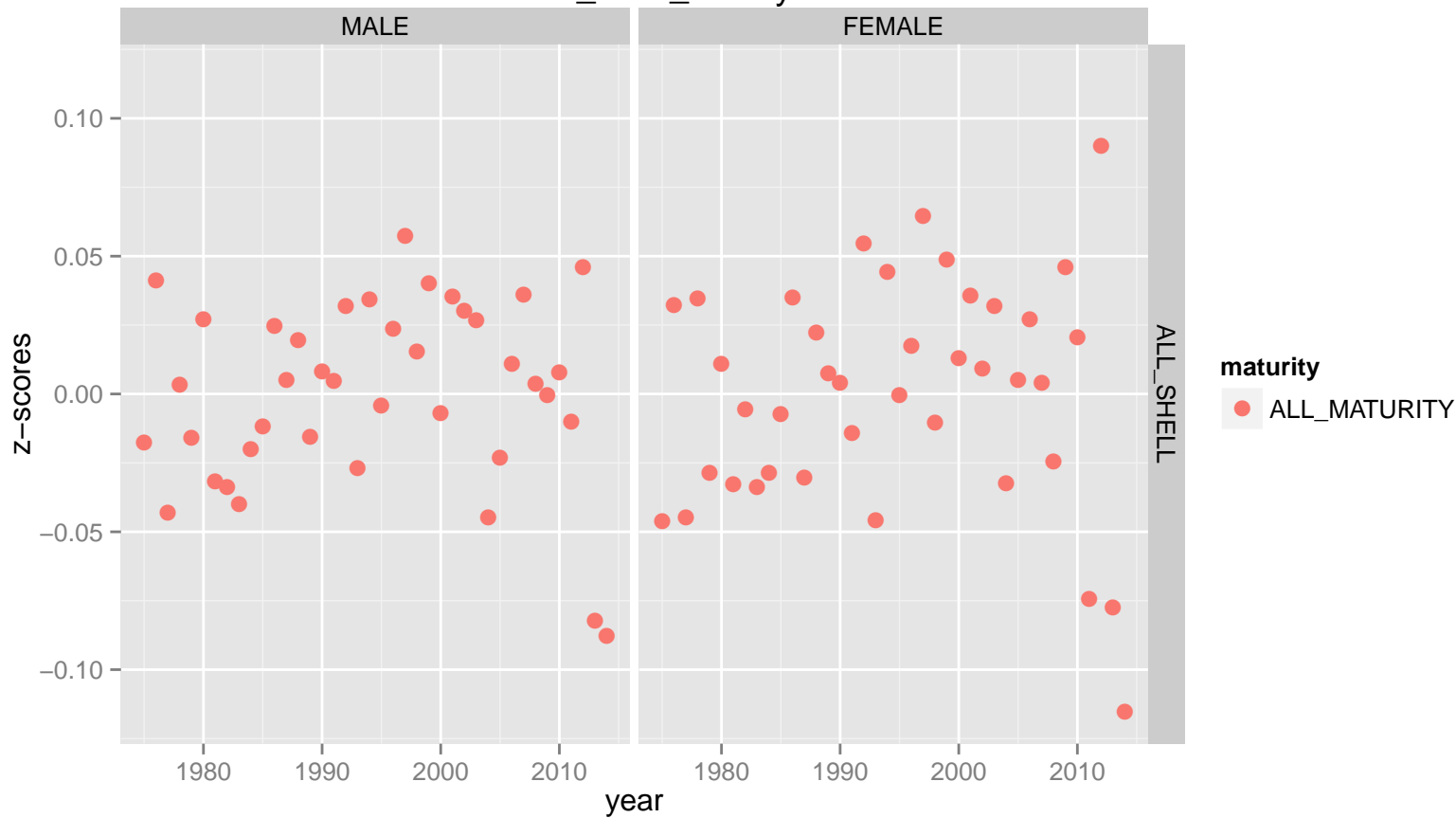




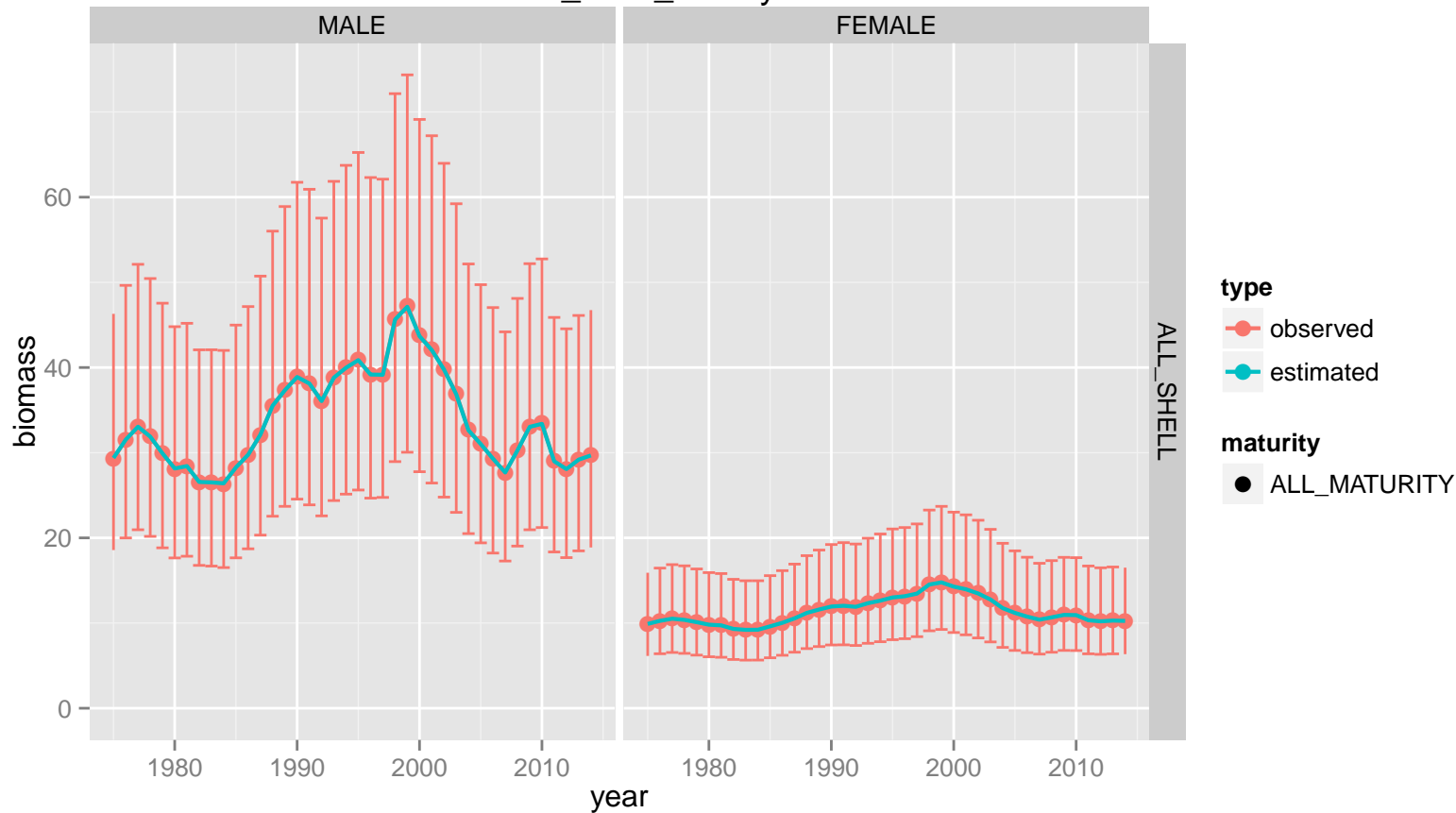
# NMFS\_trawl\_survey



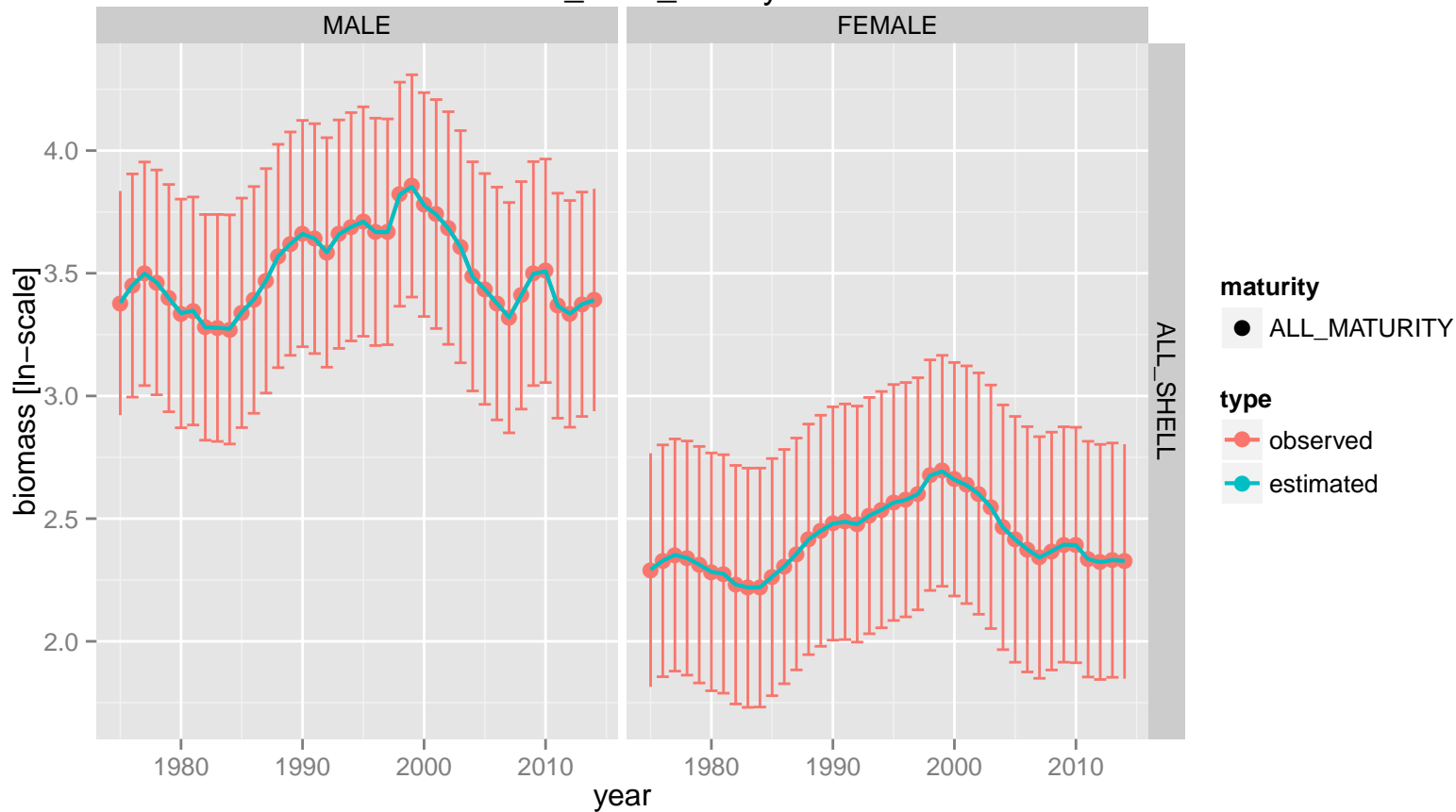
# NMFS\_trawl\_survey



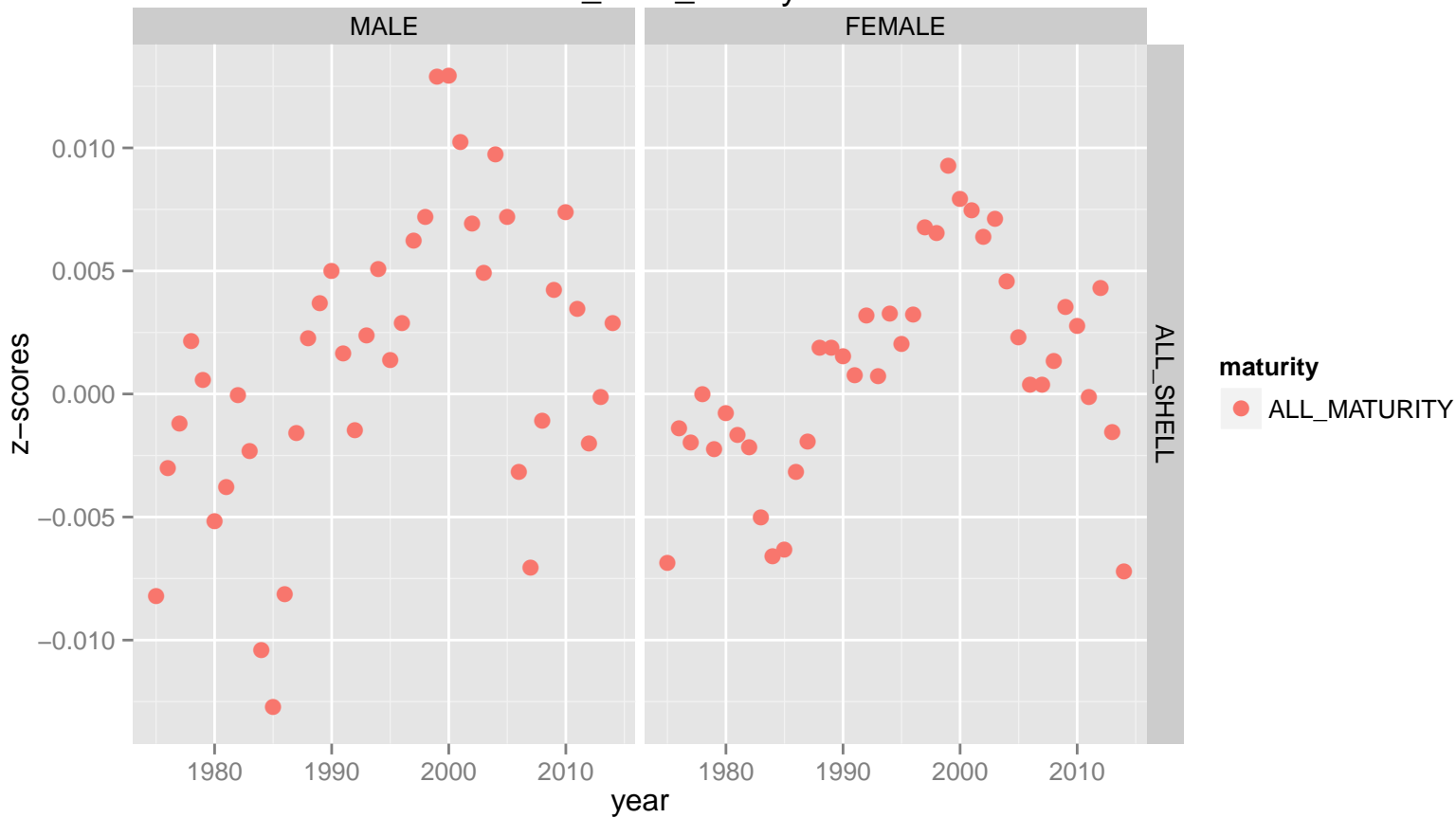
# NMFS\_trawl\_survey



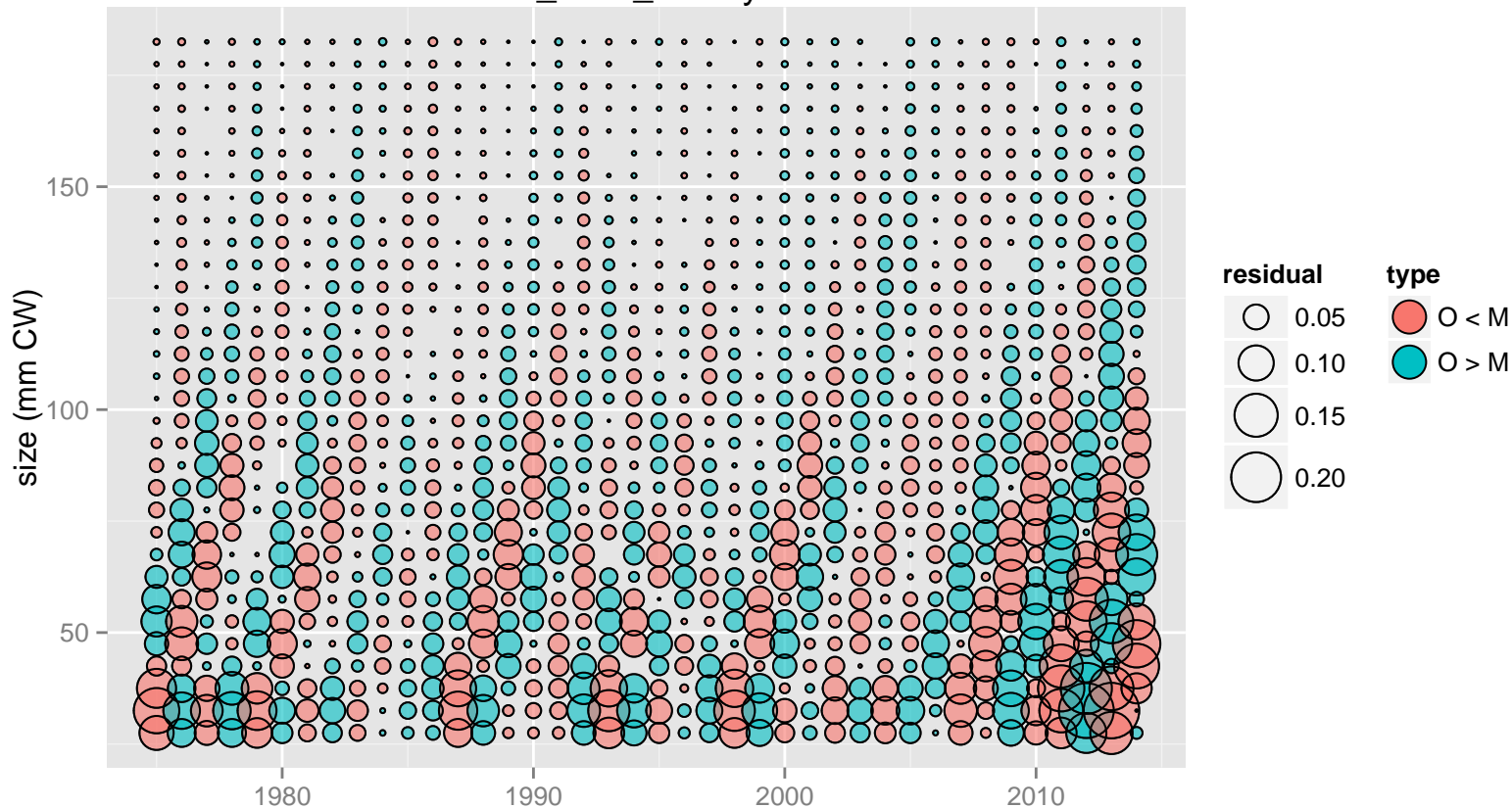
# NMFS\_trawl\_survey

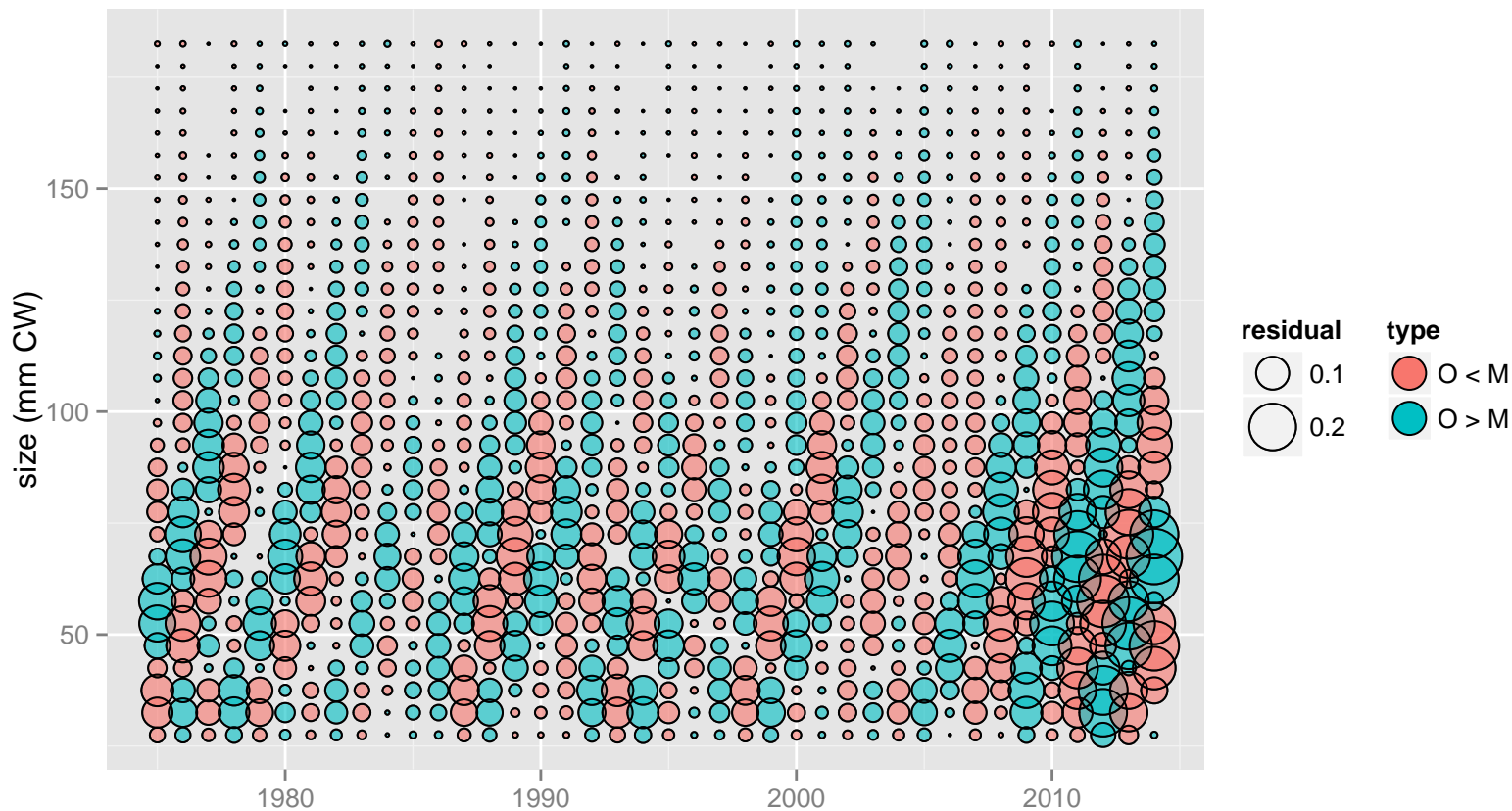


# NMFS\_trawl\_survey

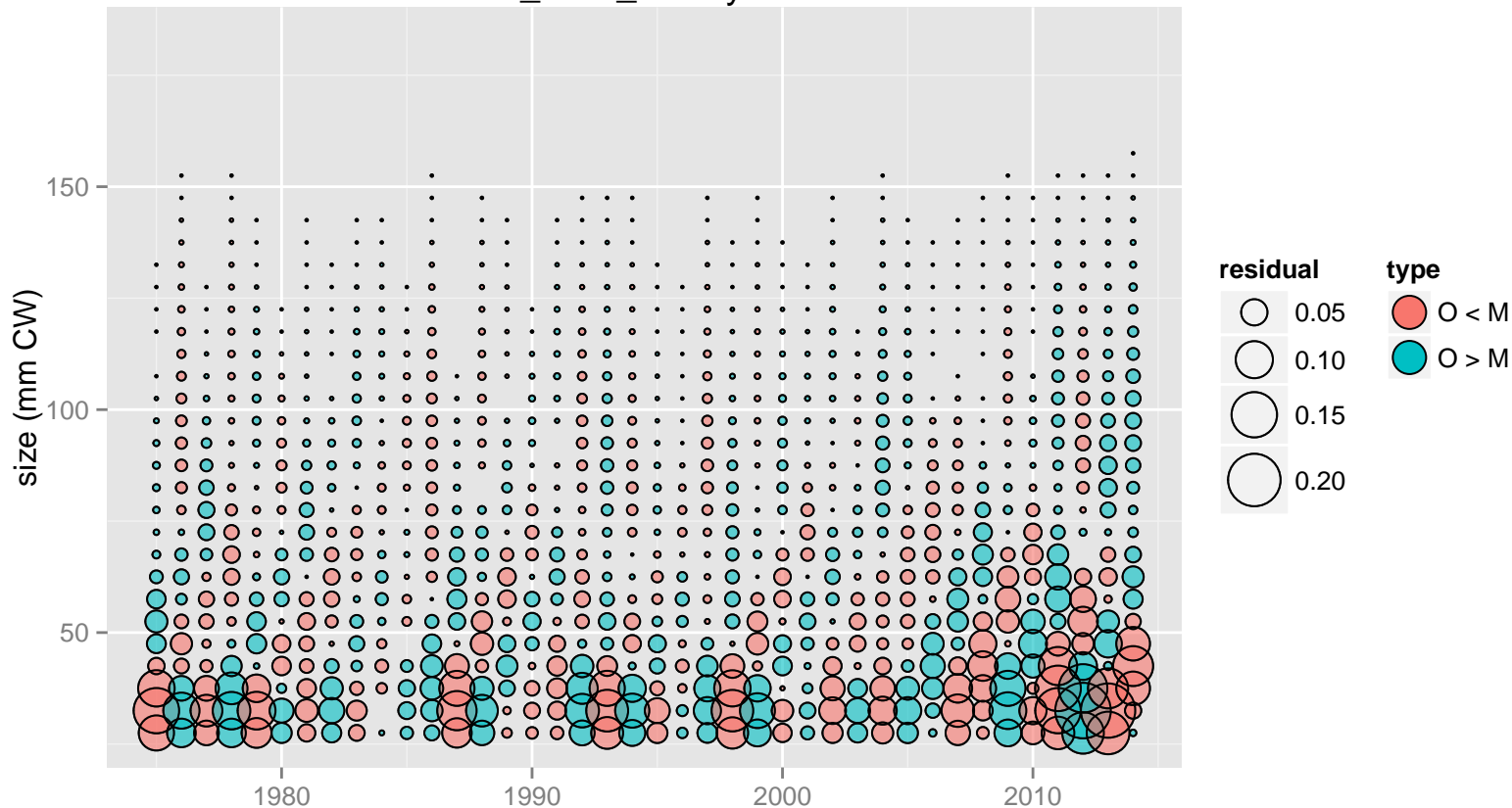


NMFS\_trawl\_survey: male

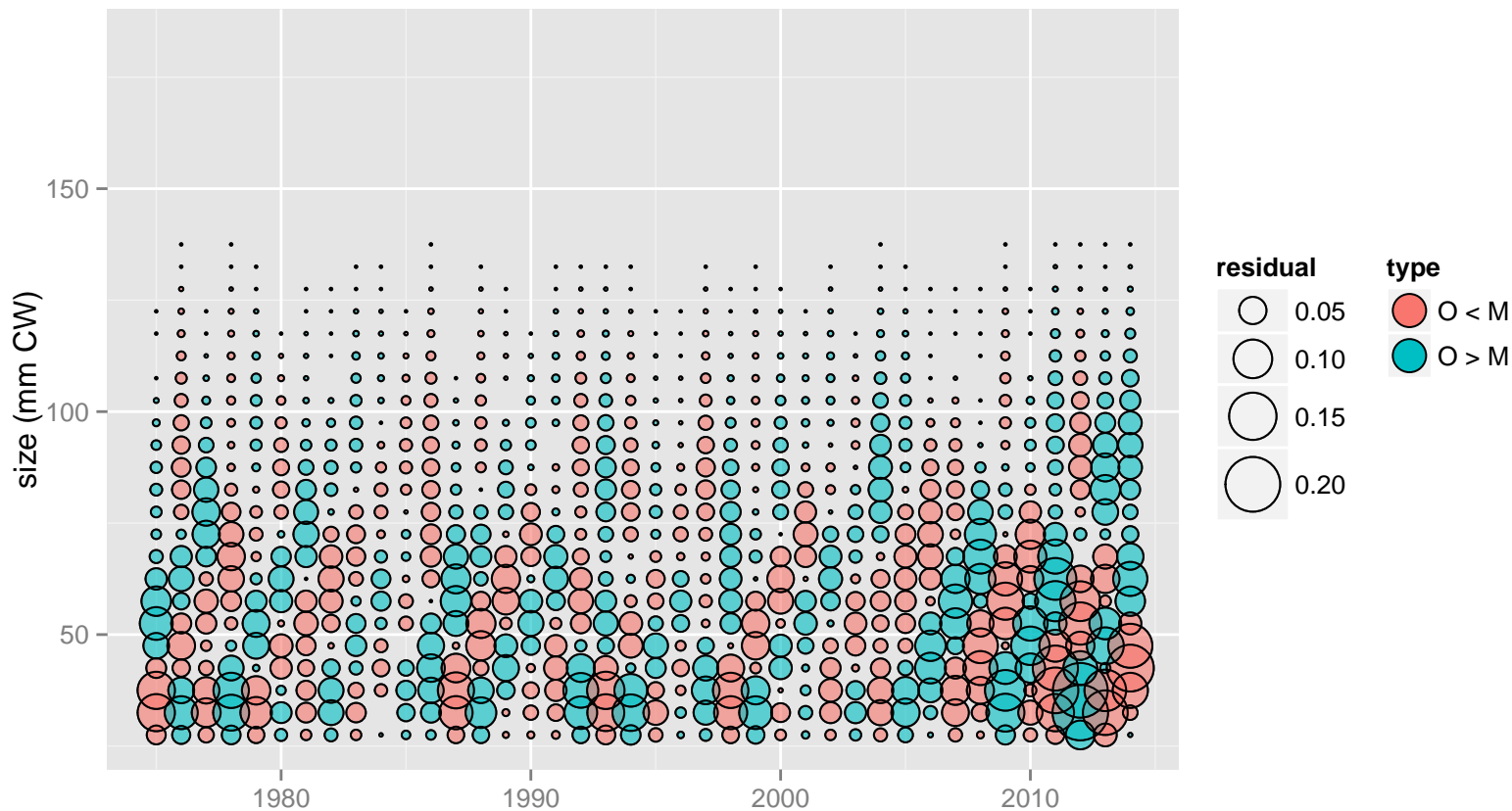




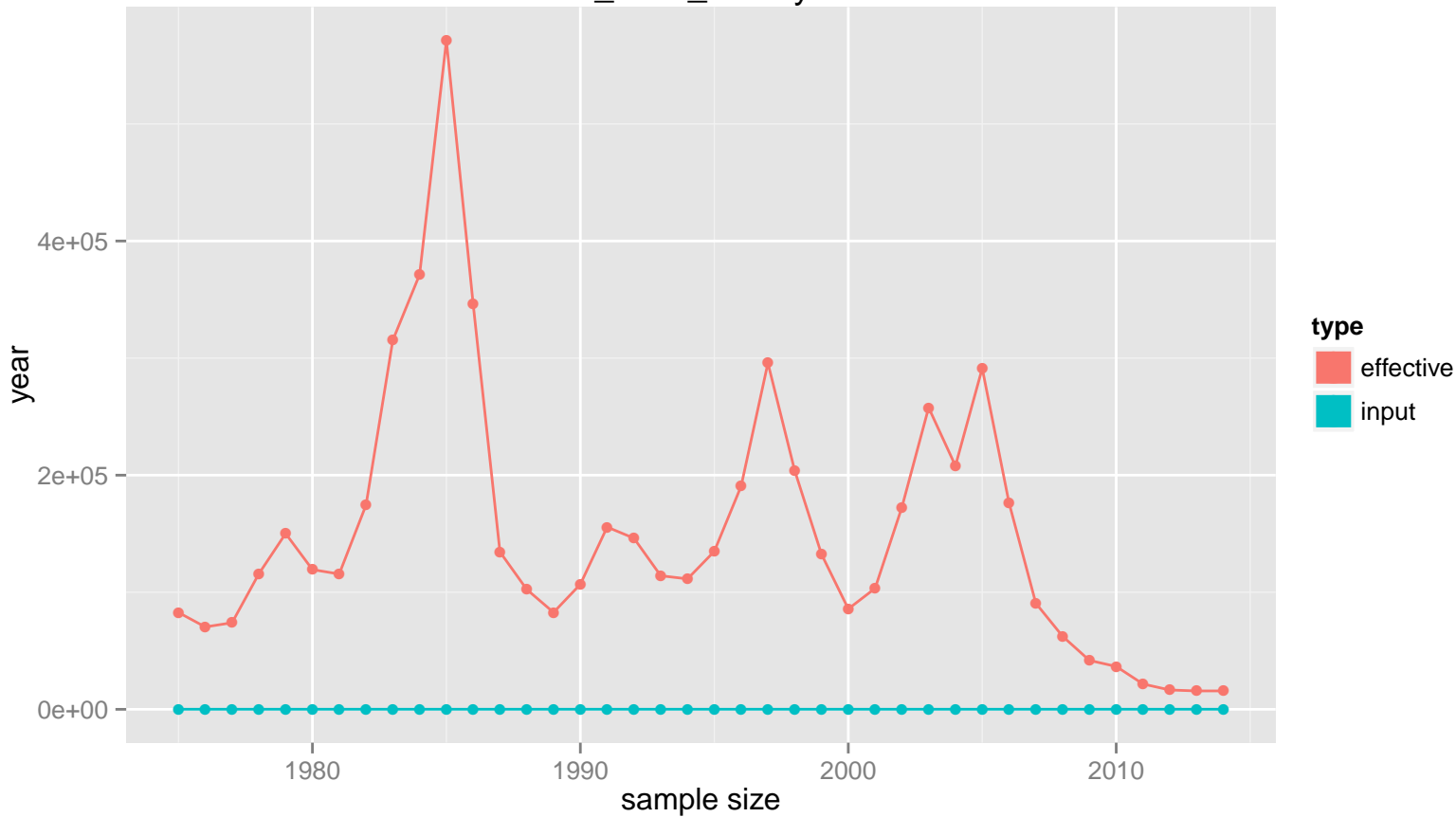
# NMFS\_trawl\_survey: female



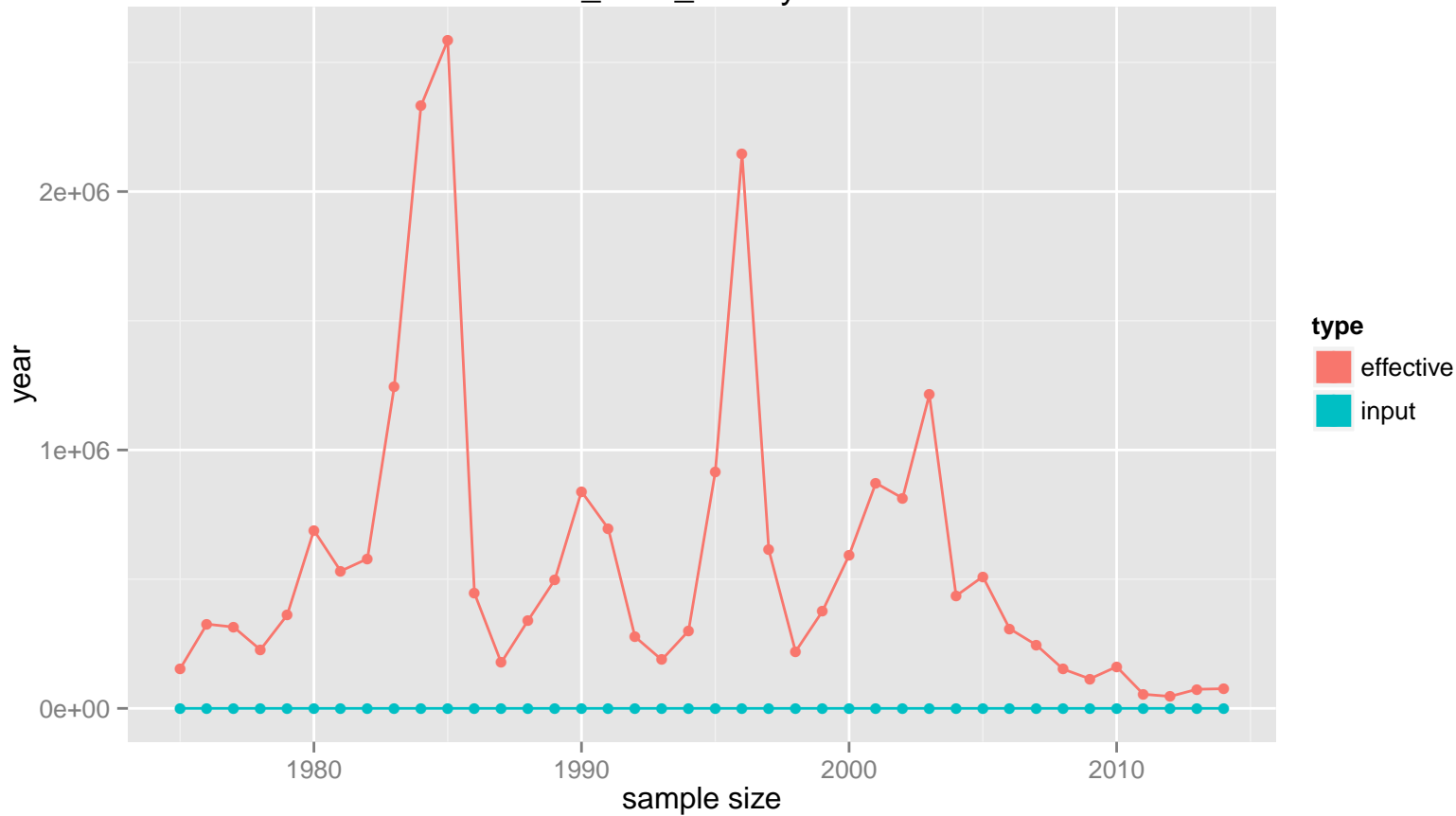




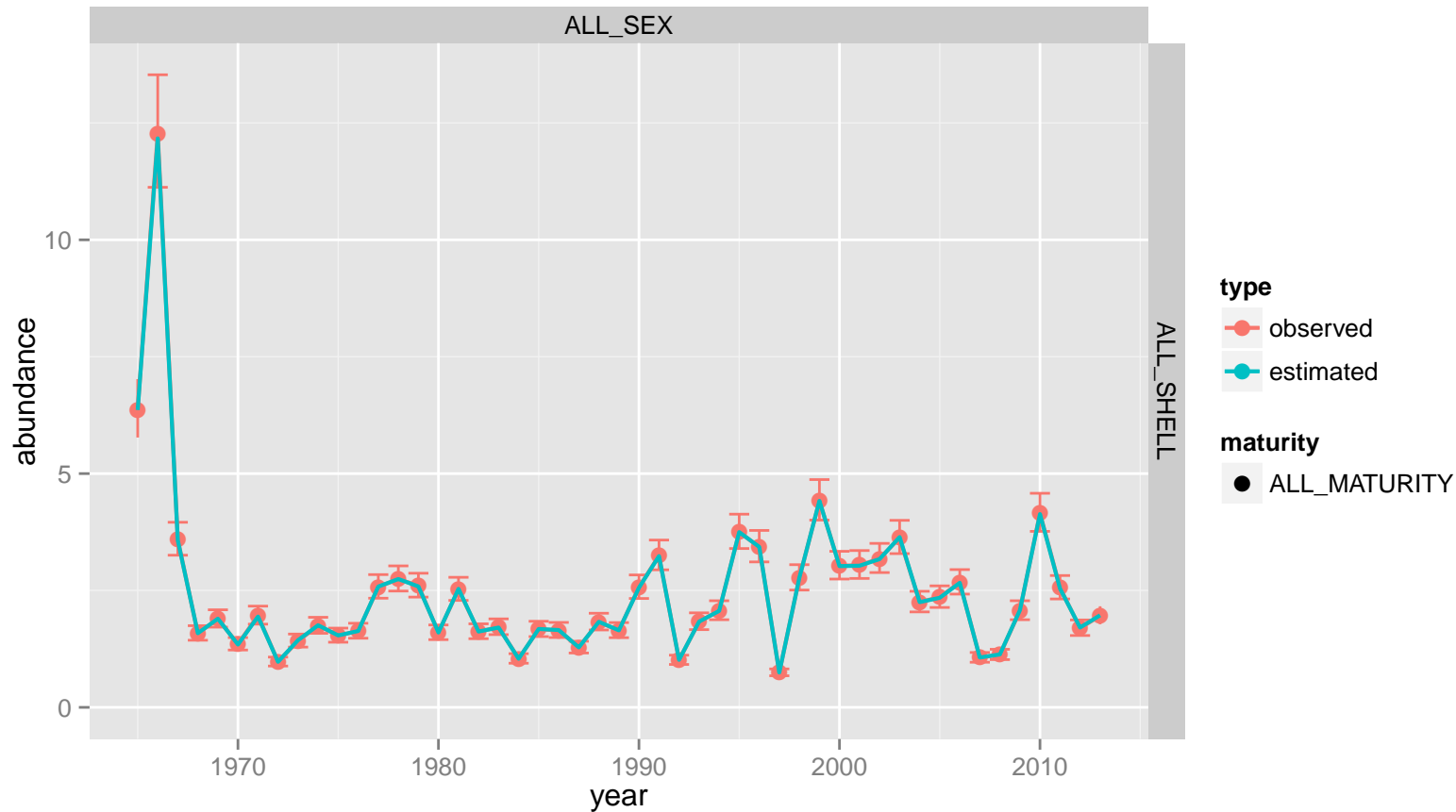
NMFS\_trawl\_survey: male



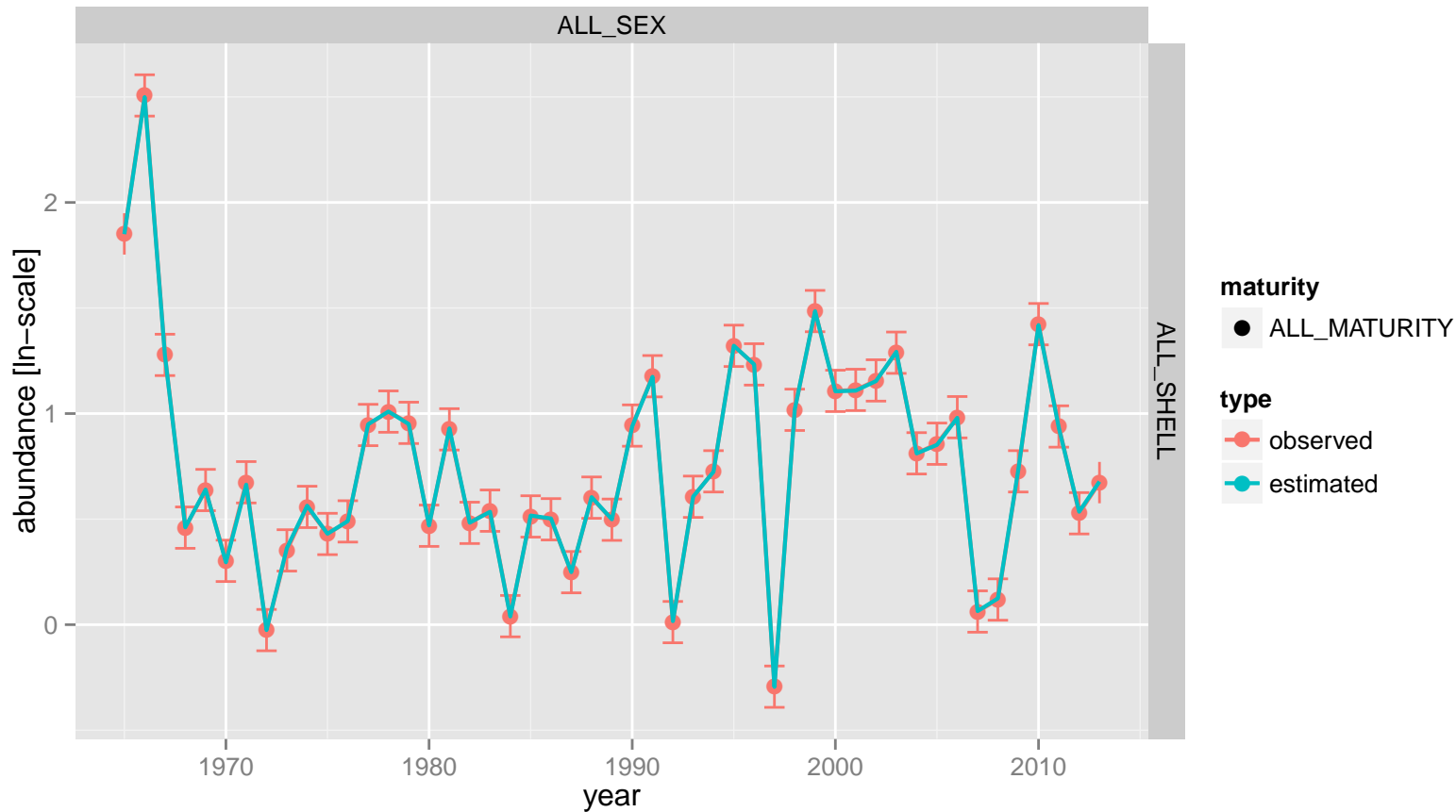
NMFS\_trawl\_survey: female



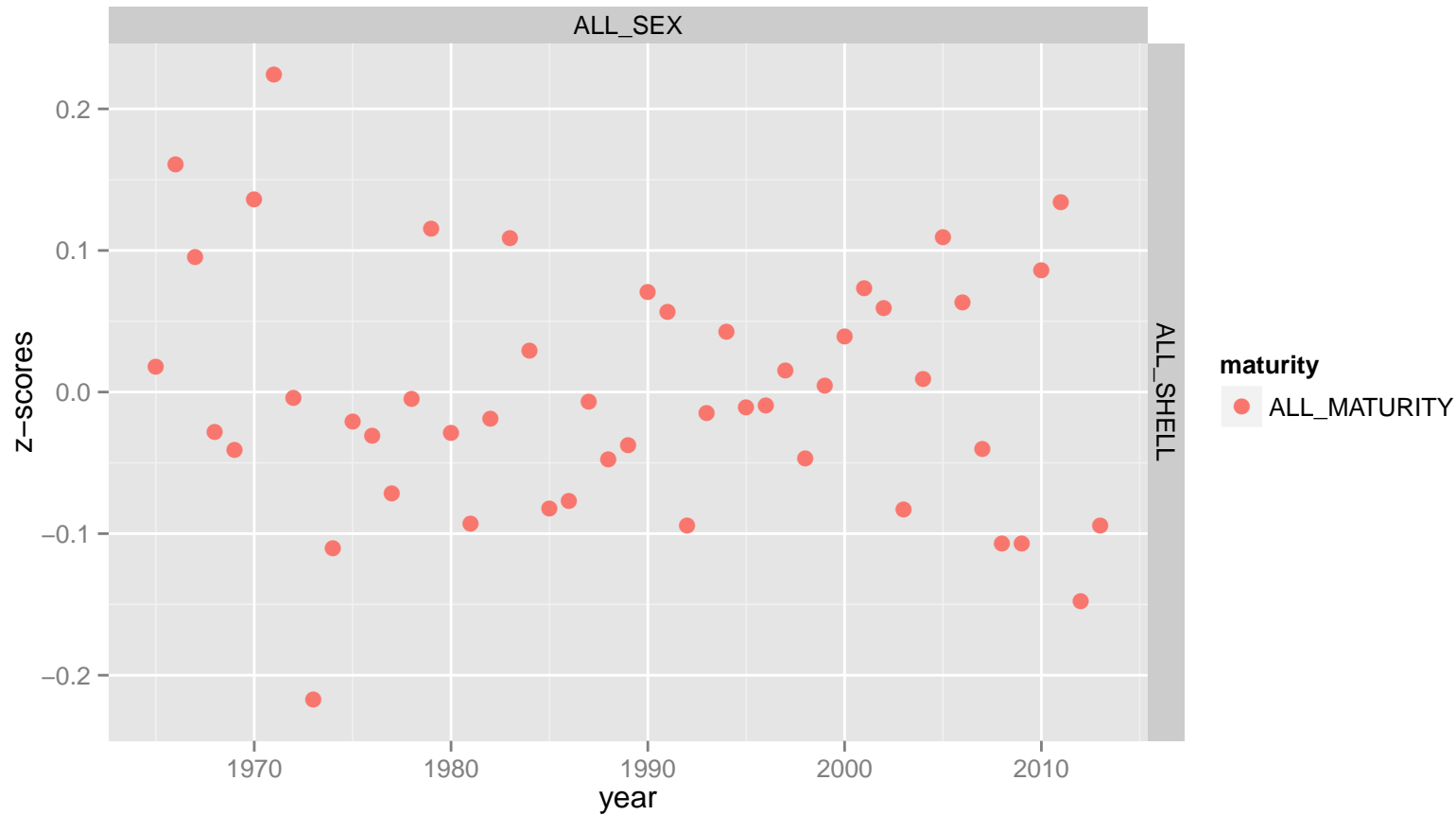
# TCF: retained catch abundance



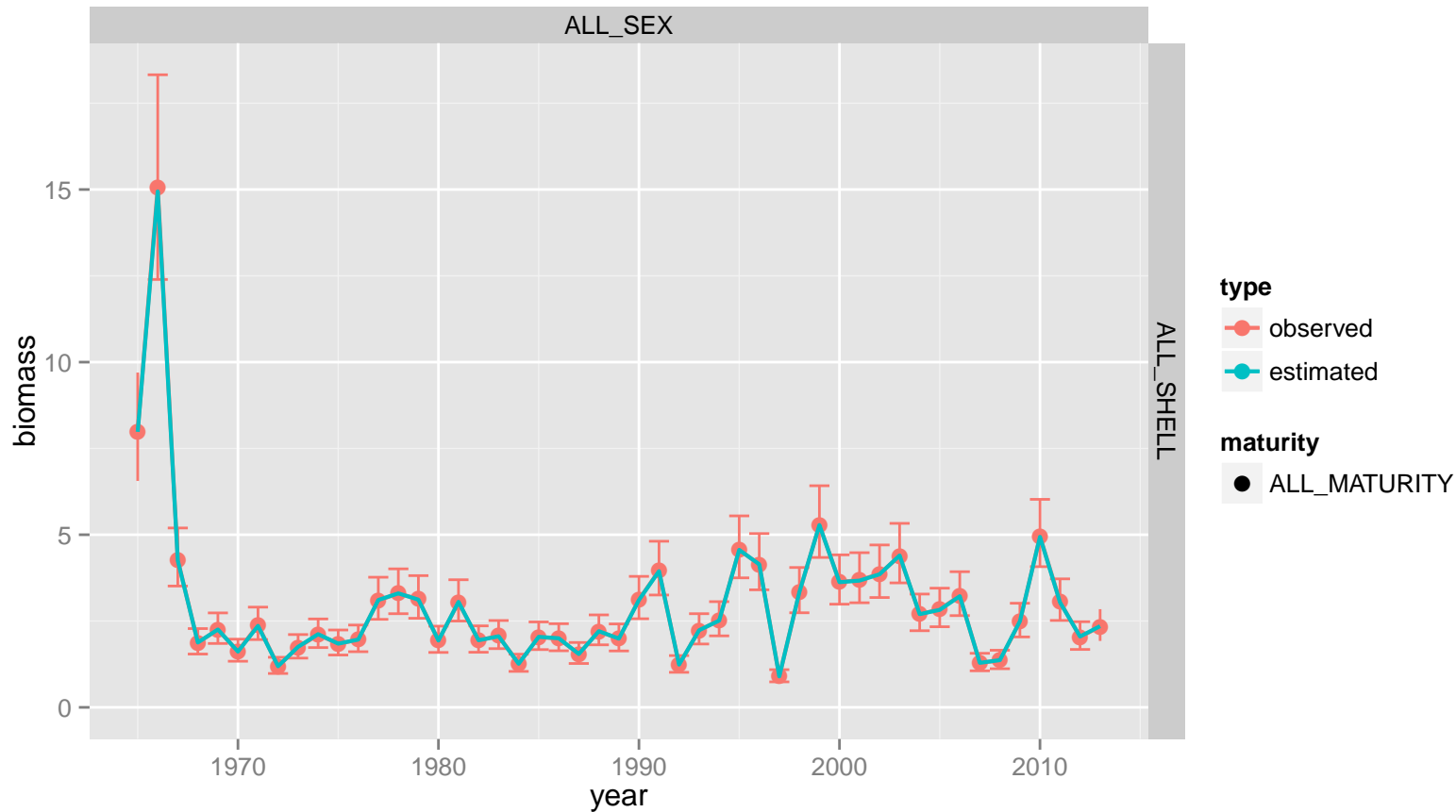
# TCF: retained catch abundance



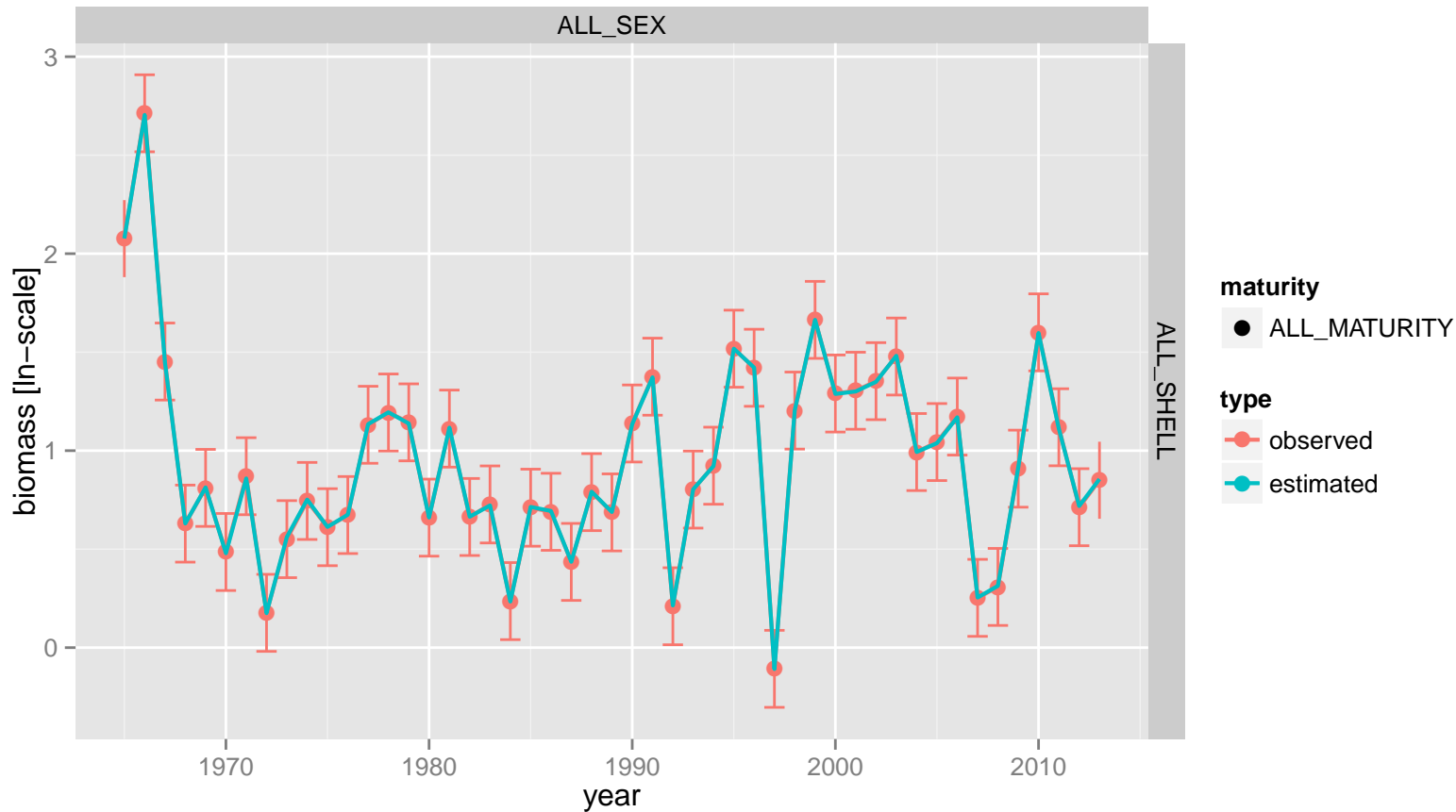
# TCF: retained catch abundance



# TCF: retained catch biomass

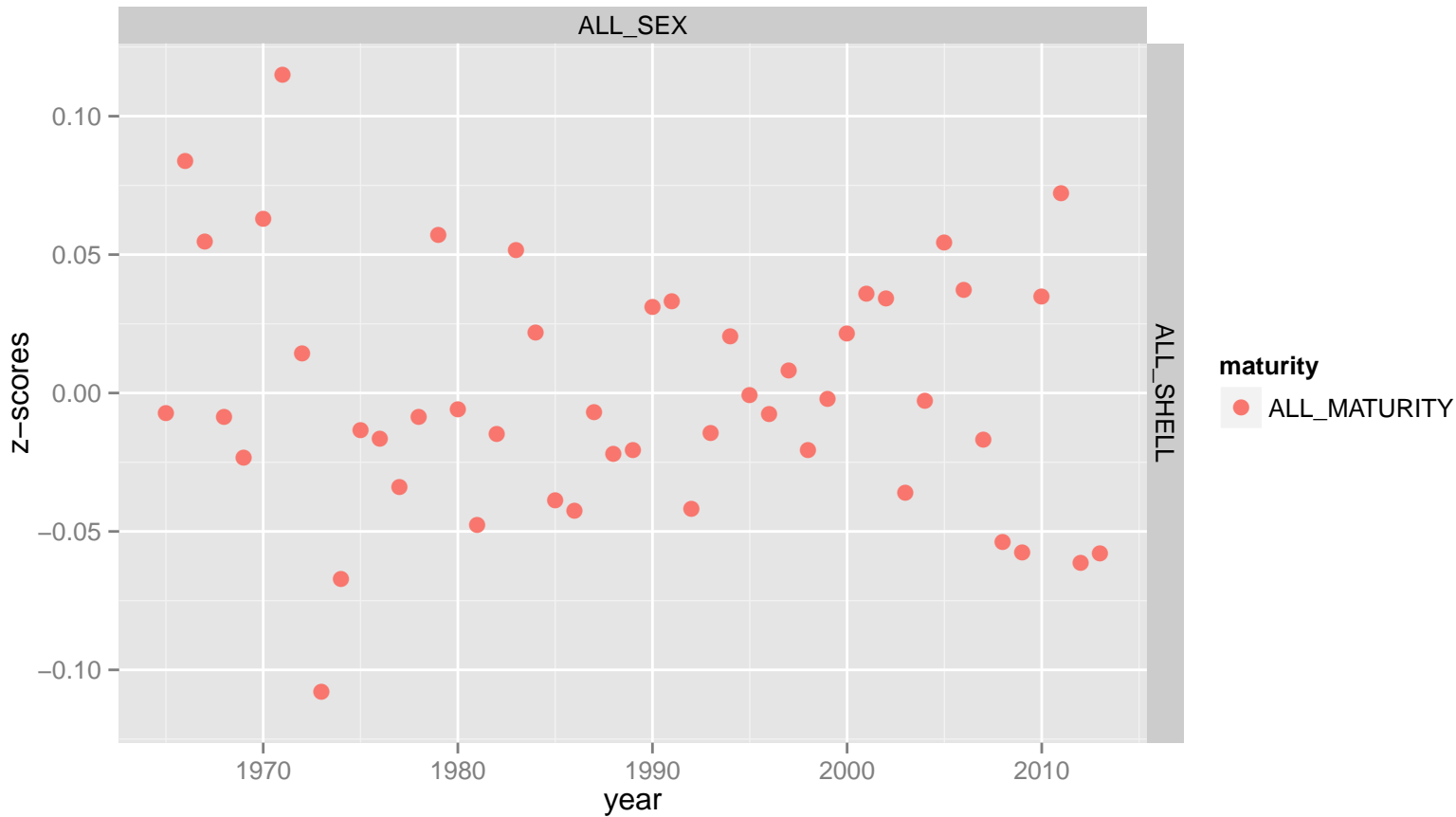


# TCF: retained catch biomass

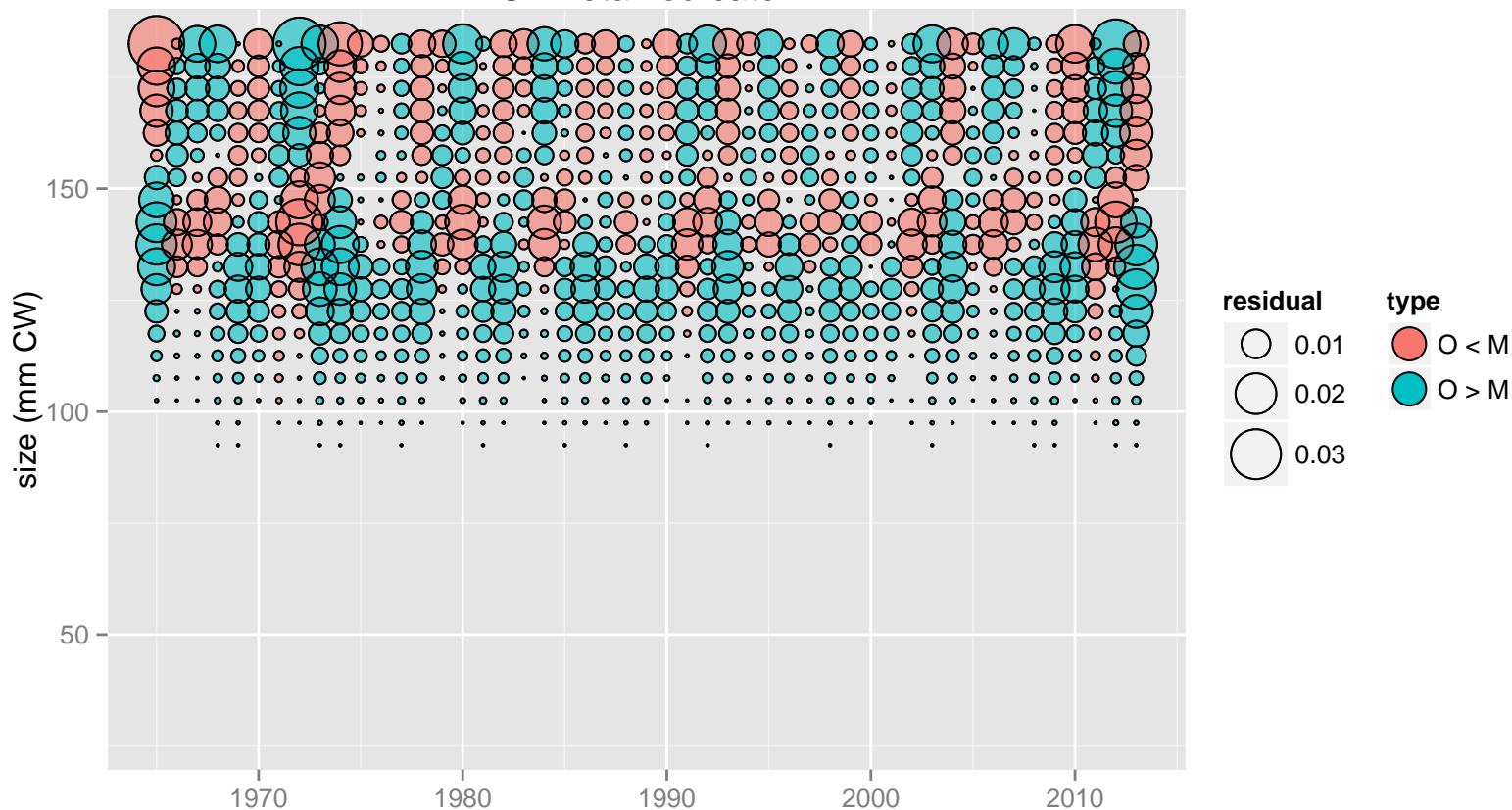


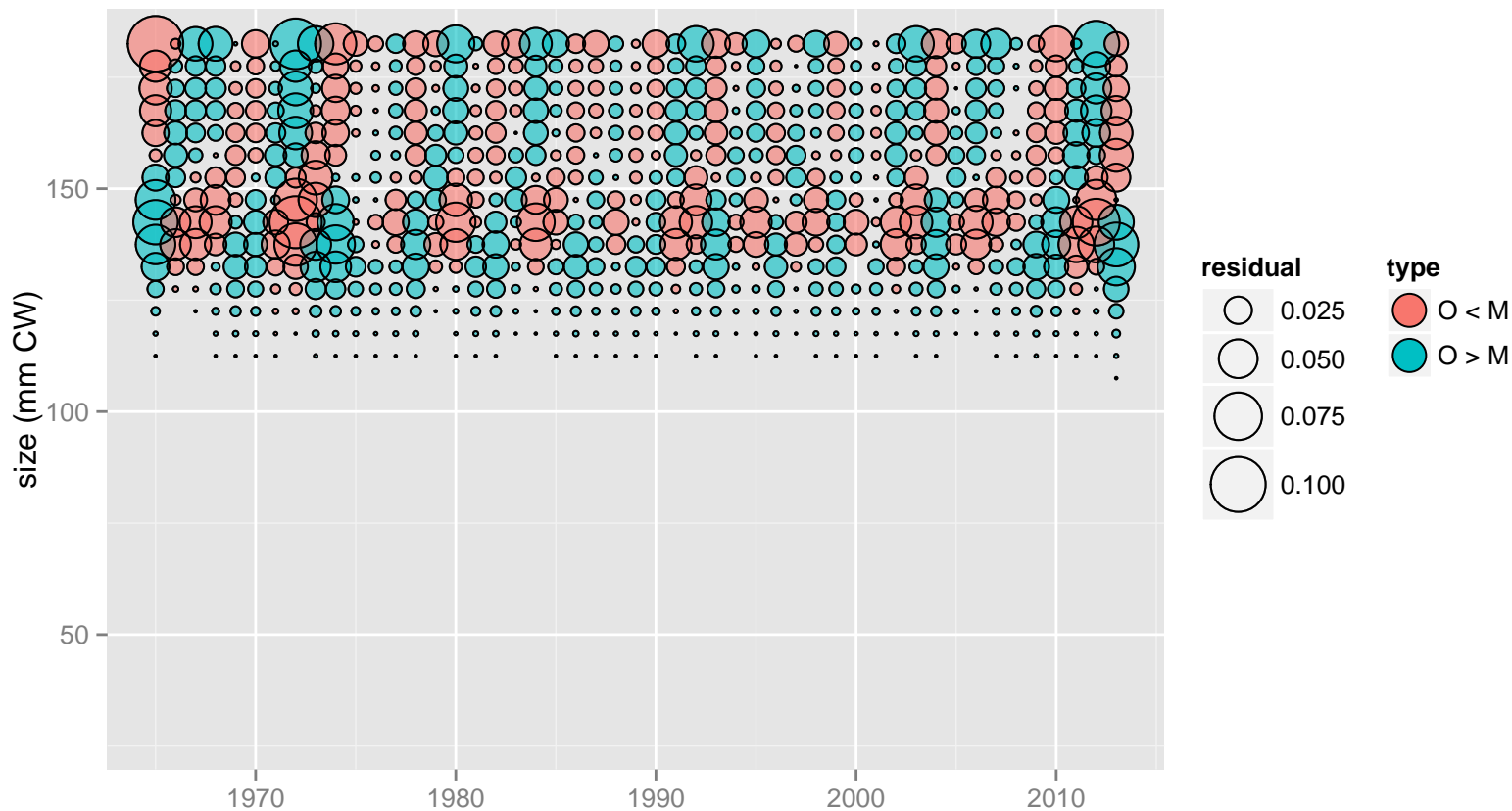


# TCF: retained catch biomass

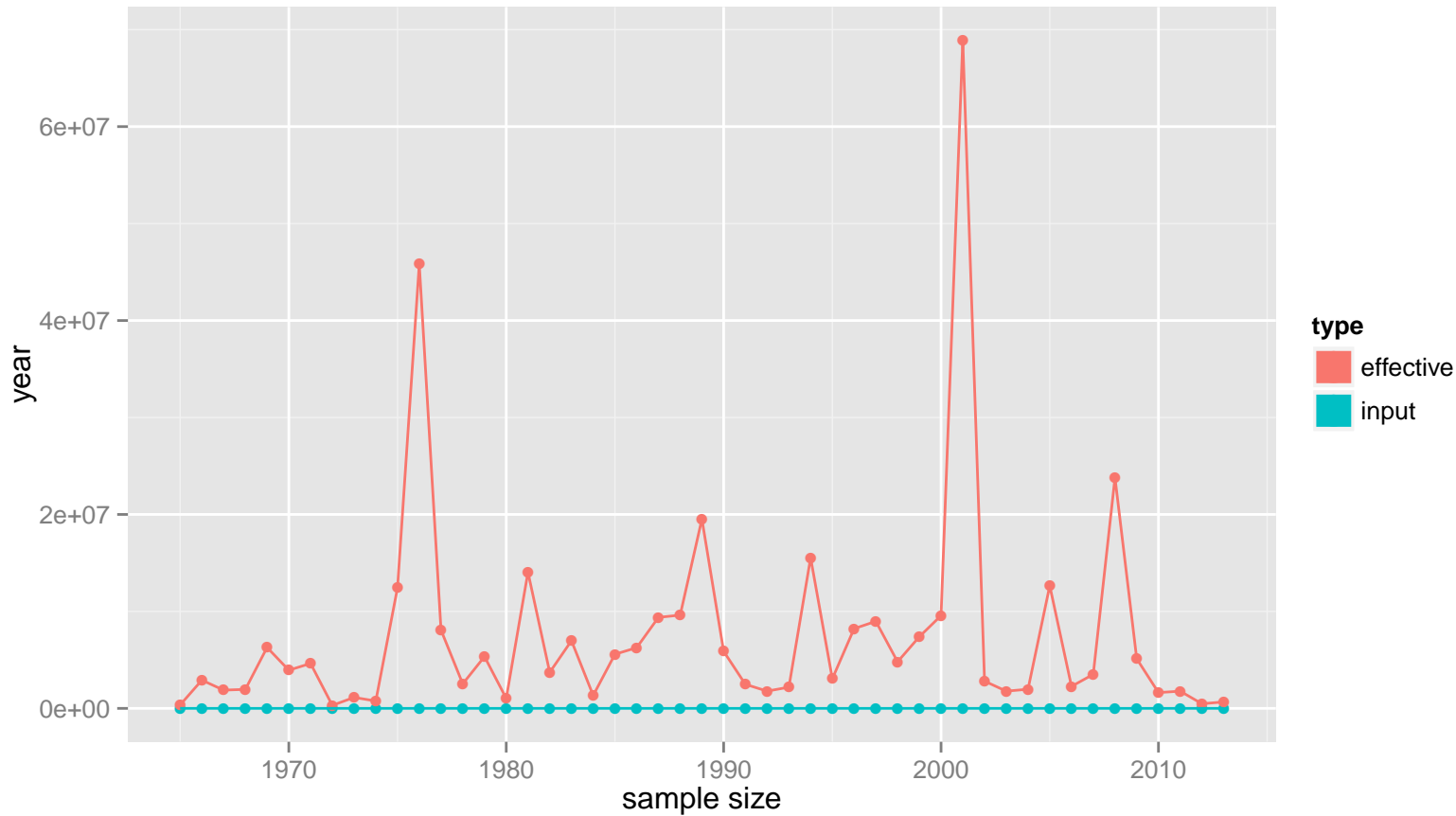


TCF: retained catch:

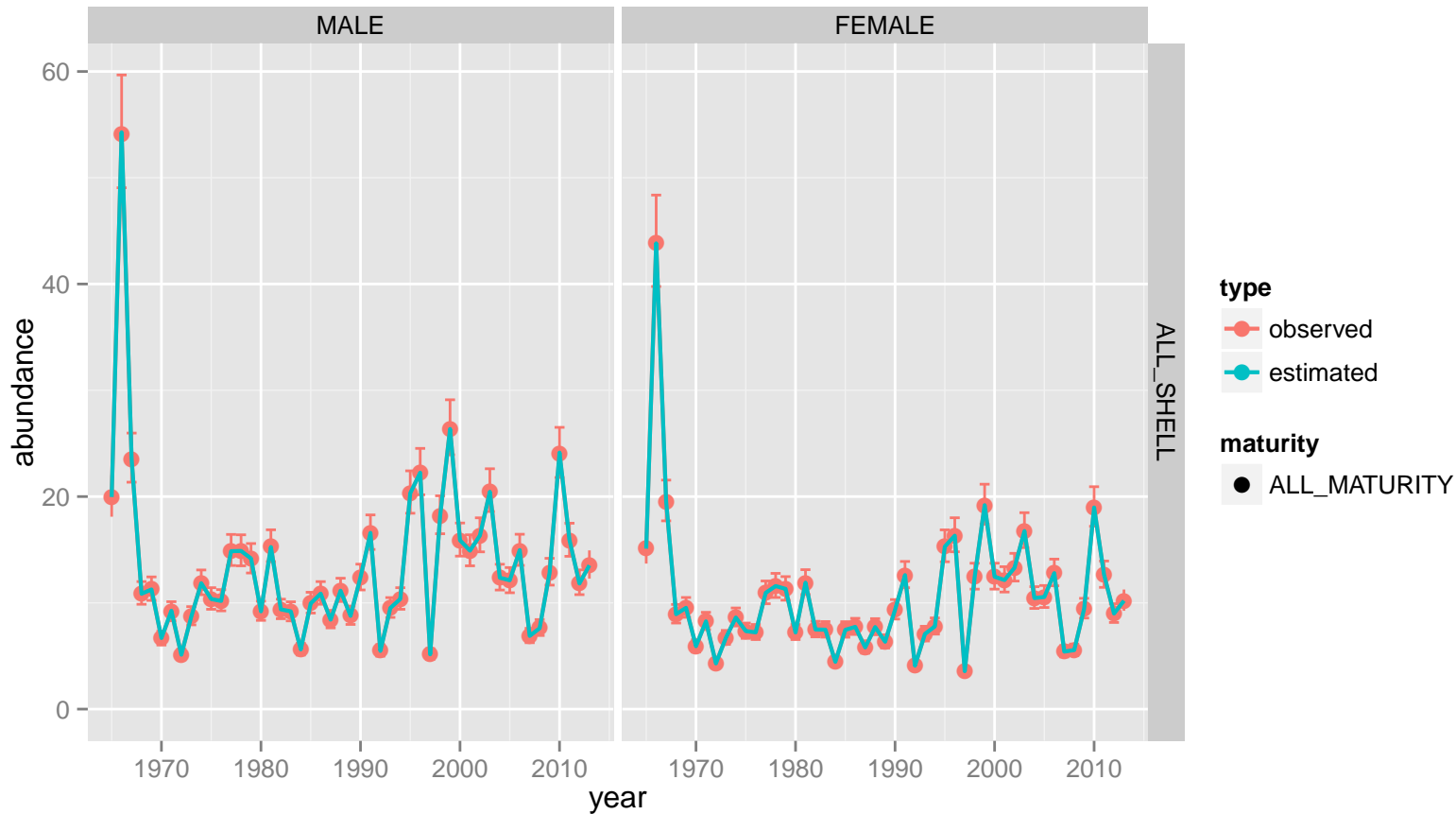




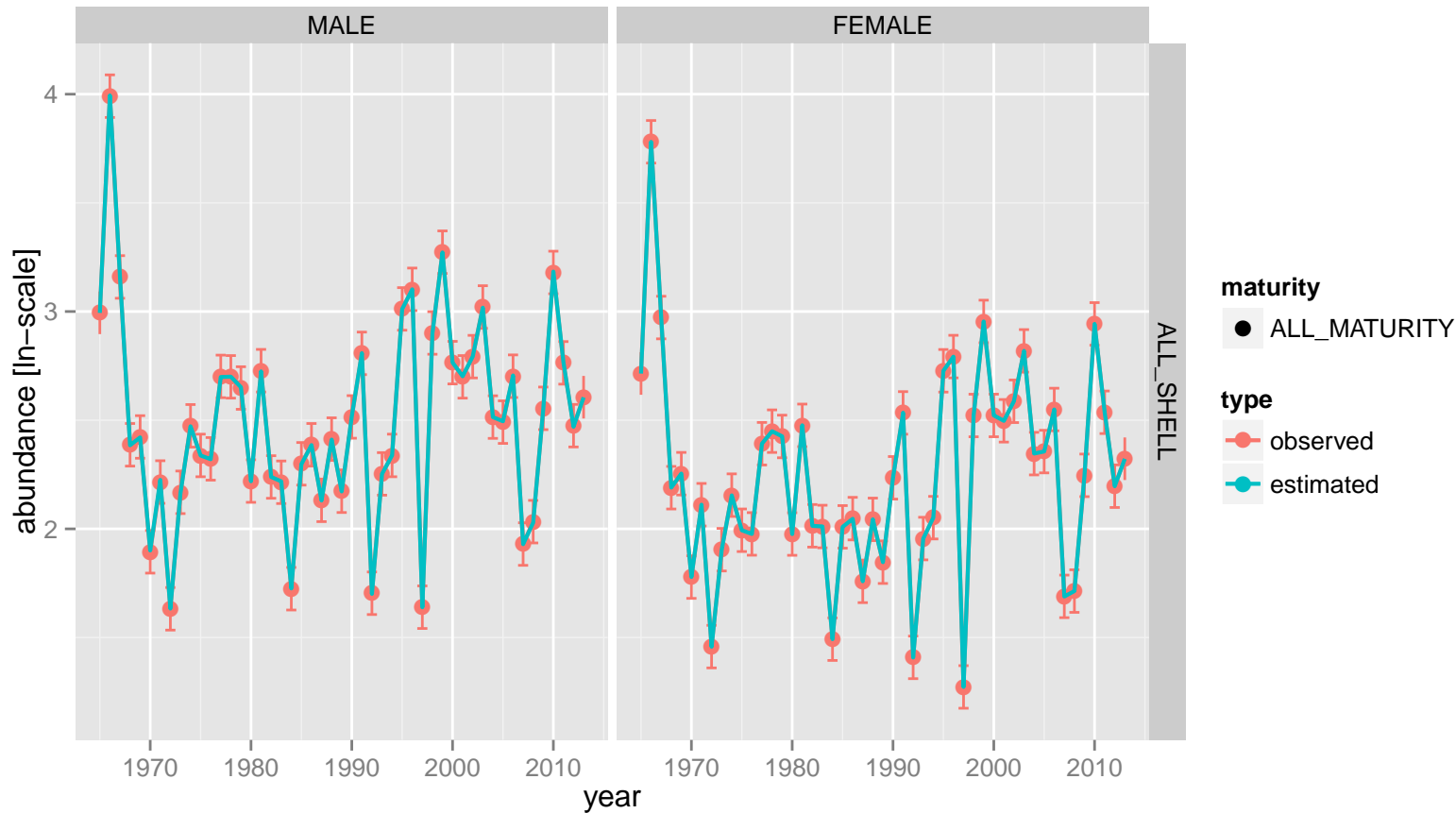
TCF: retained catch:



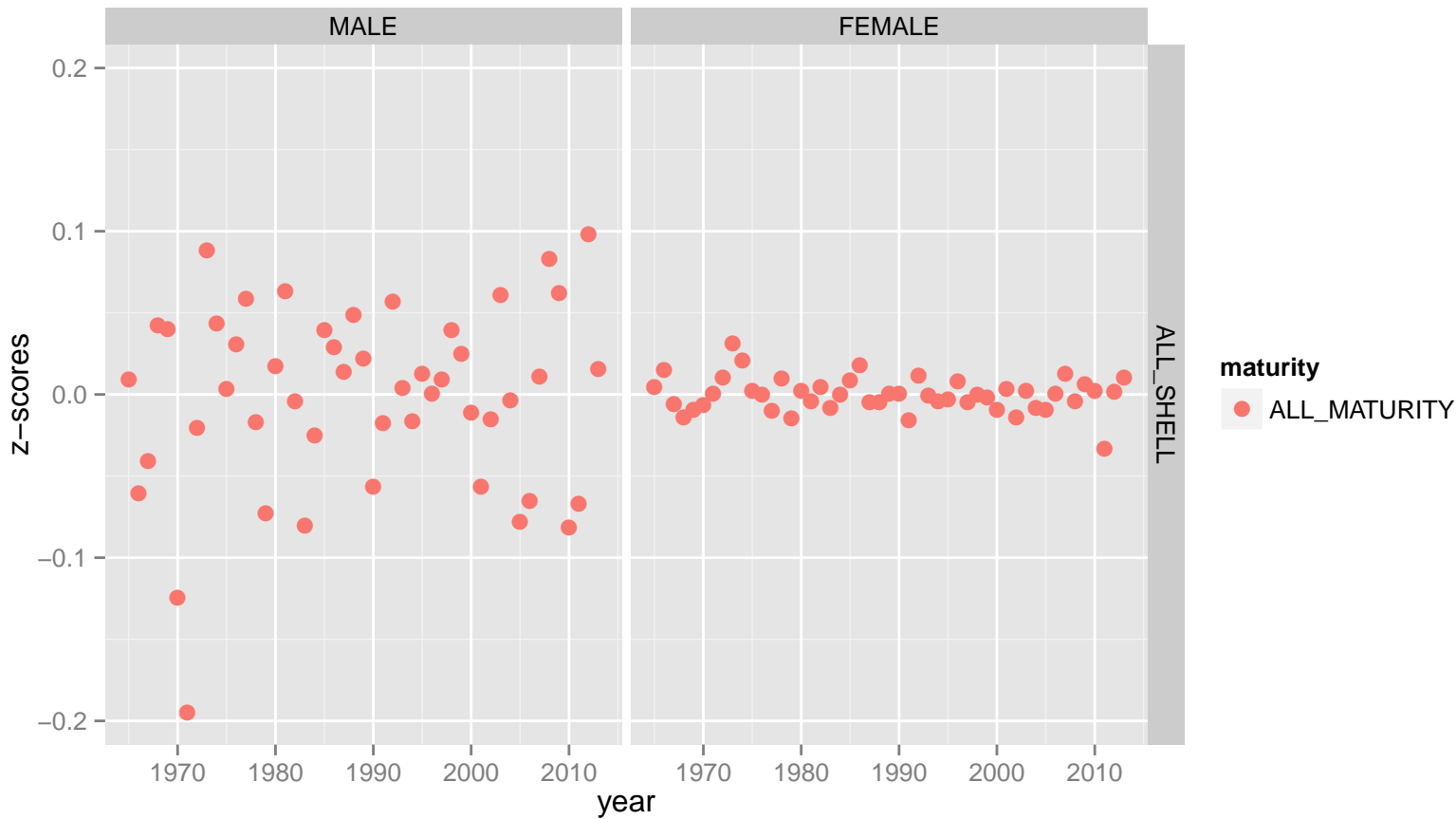
# TCF: discard catch abundance



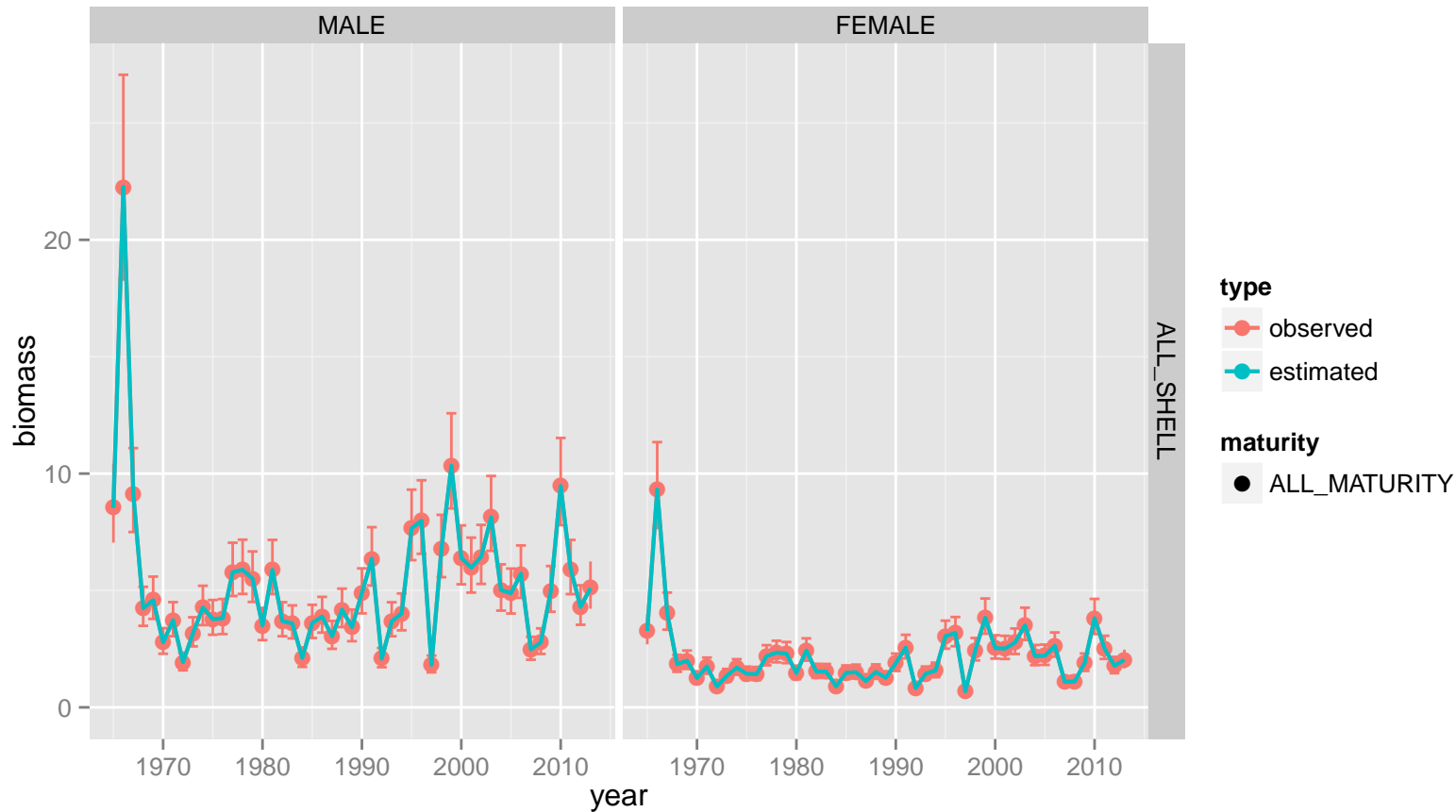
# TCF: discard catch abundance



# TCF: discard catch abundance

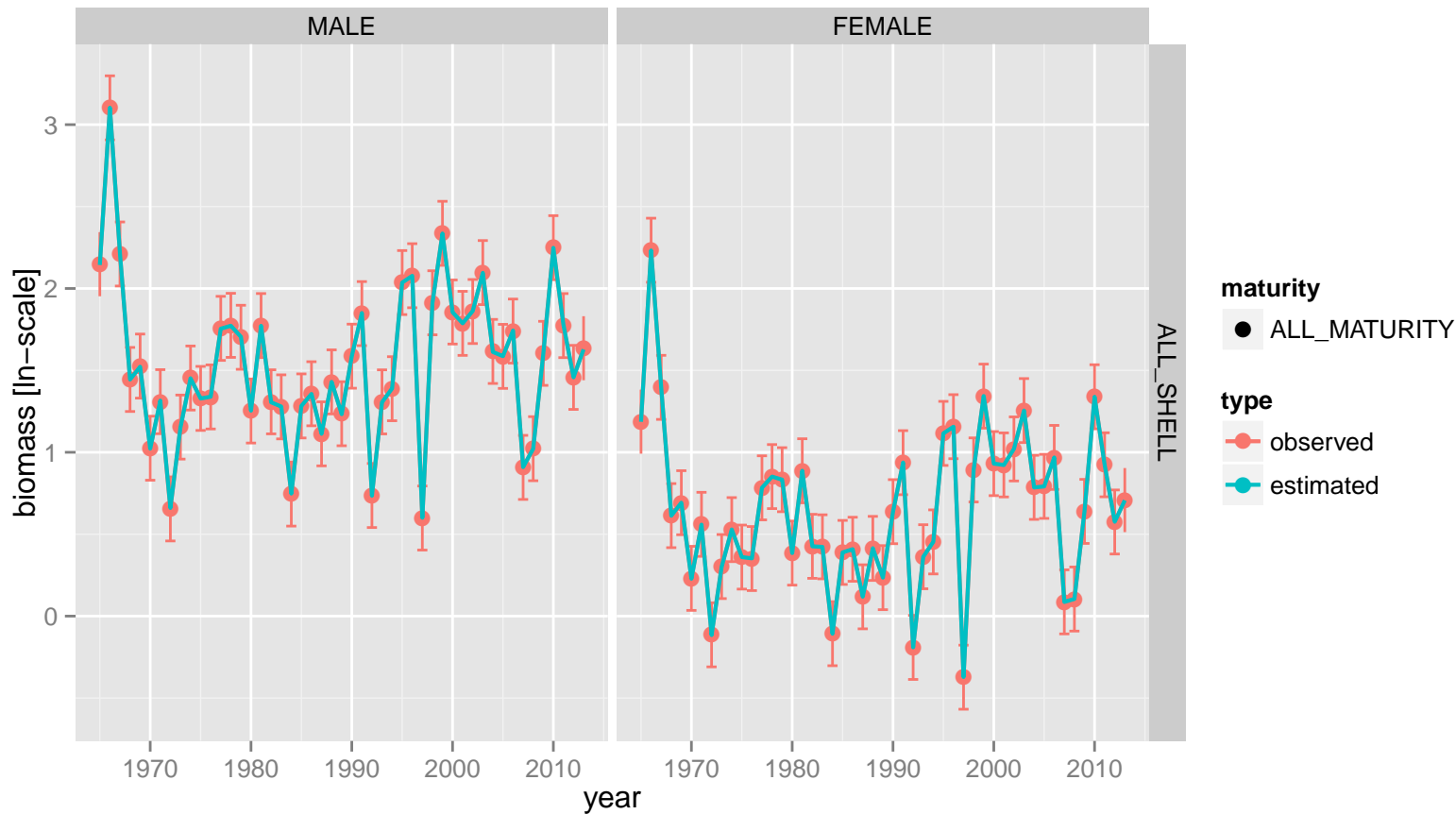


# TCF: discard catch biomass

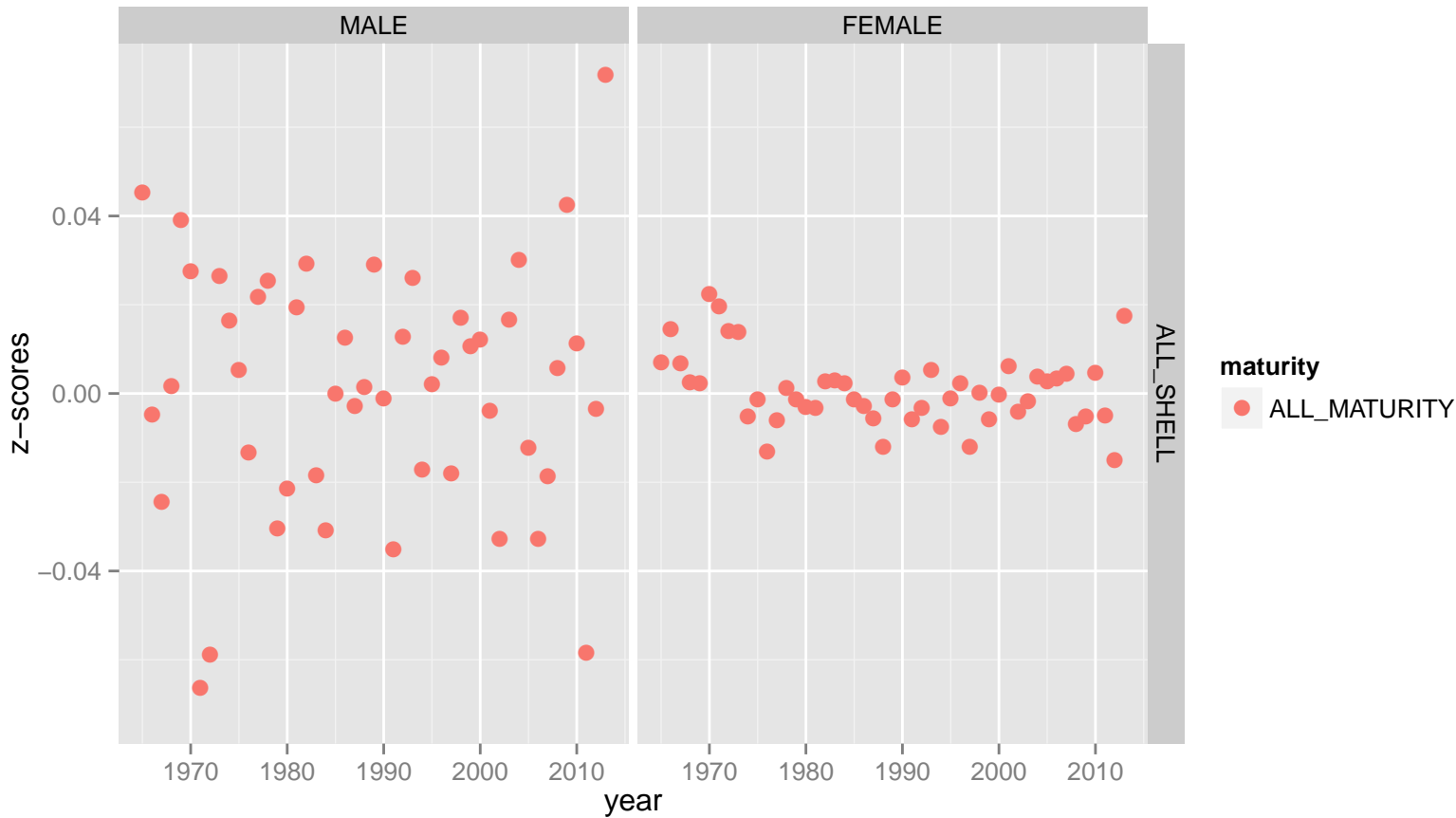




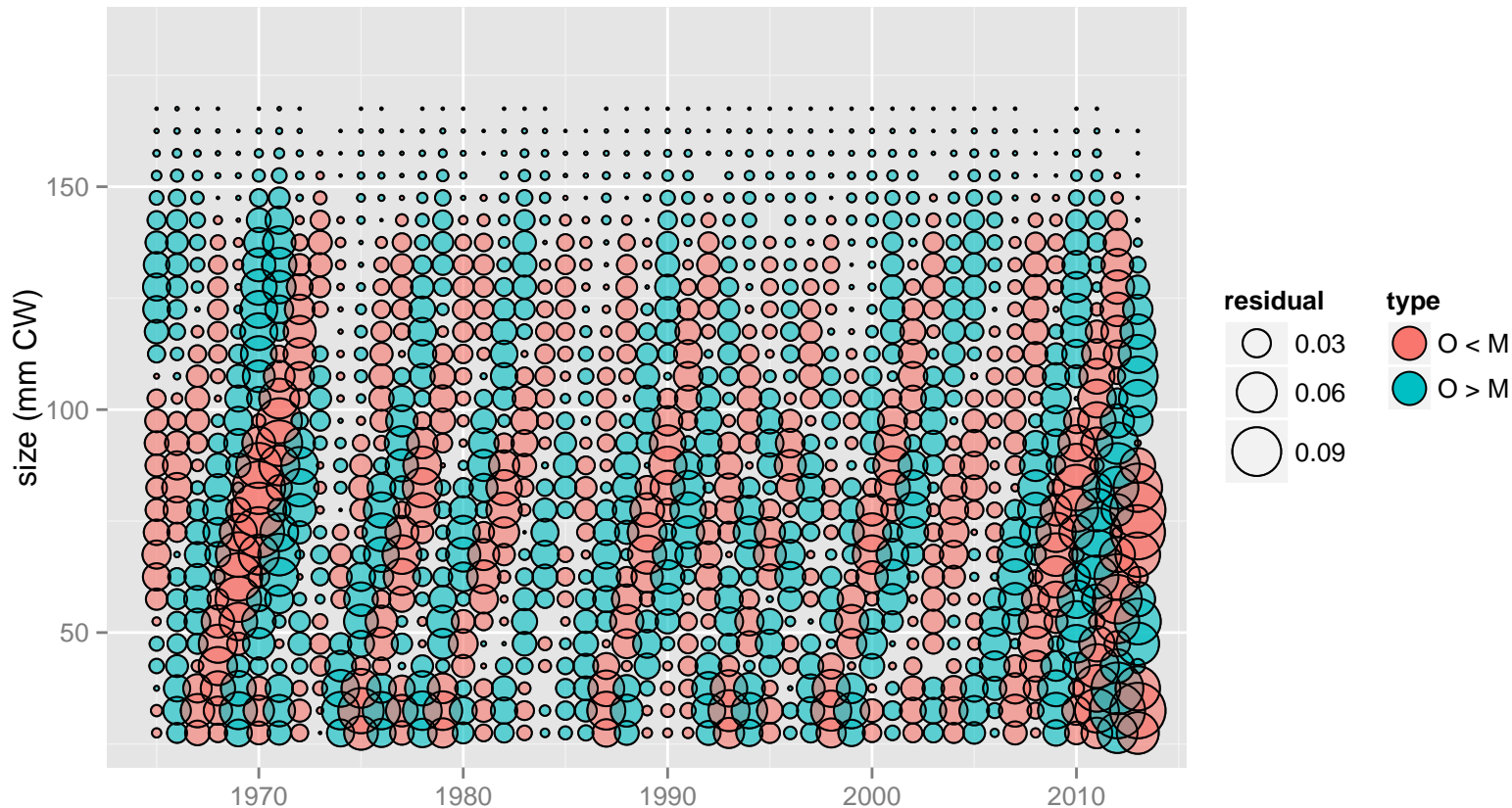
# TCF: discard catch biomass

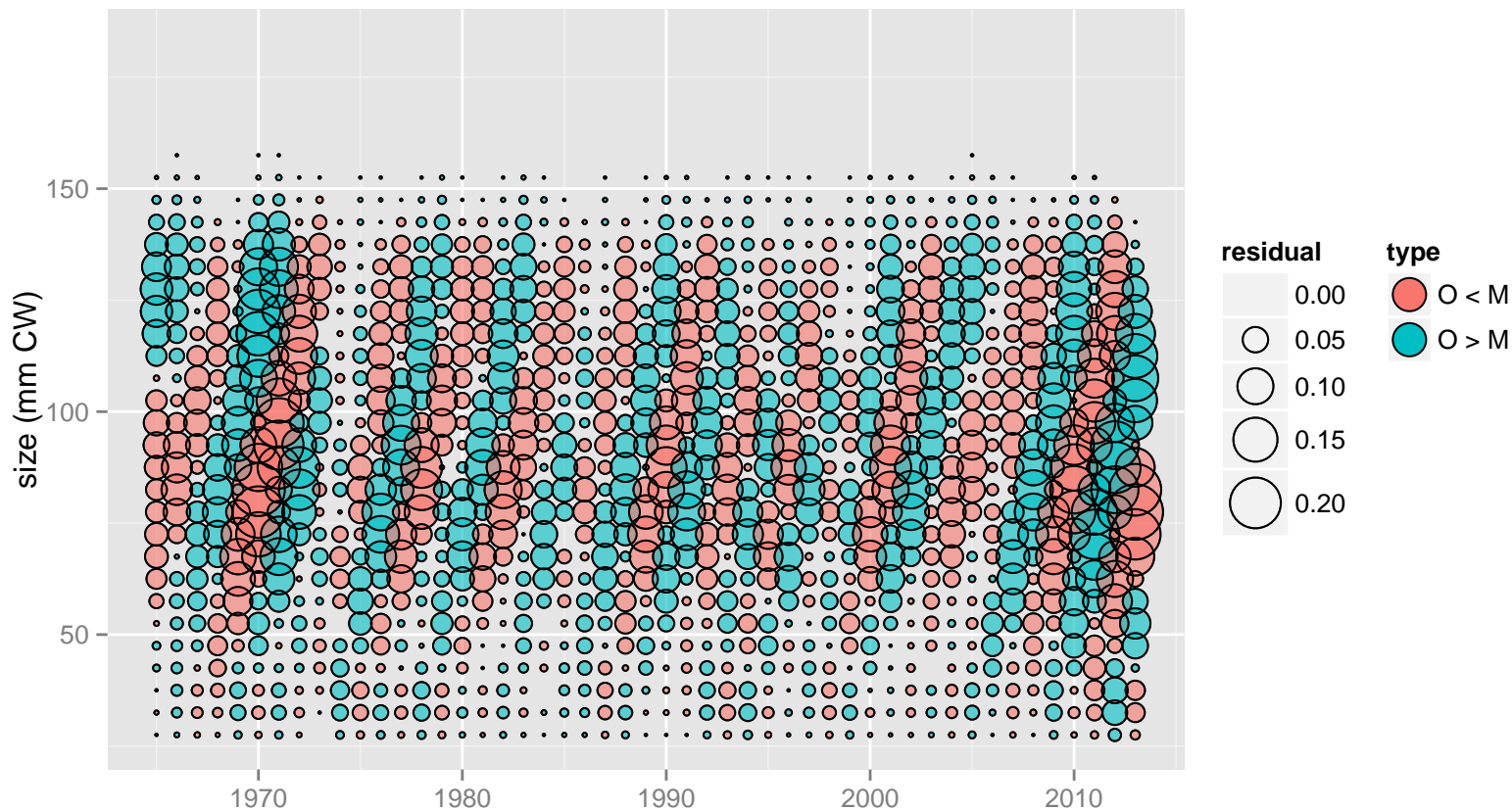


# TCF: discard catch biomass

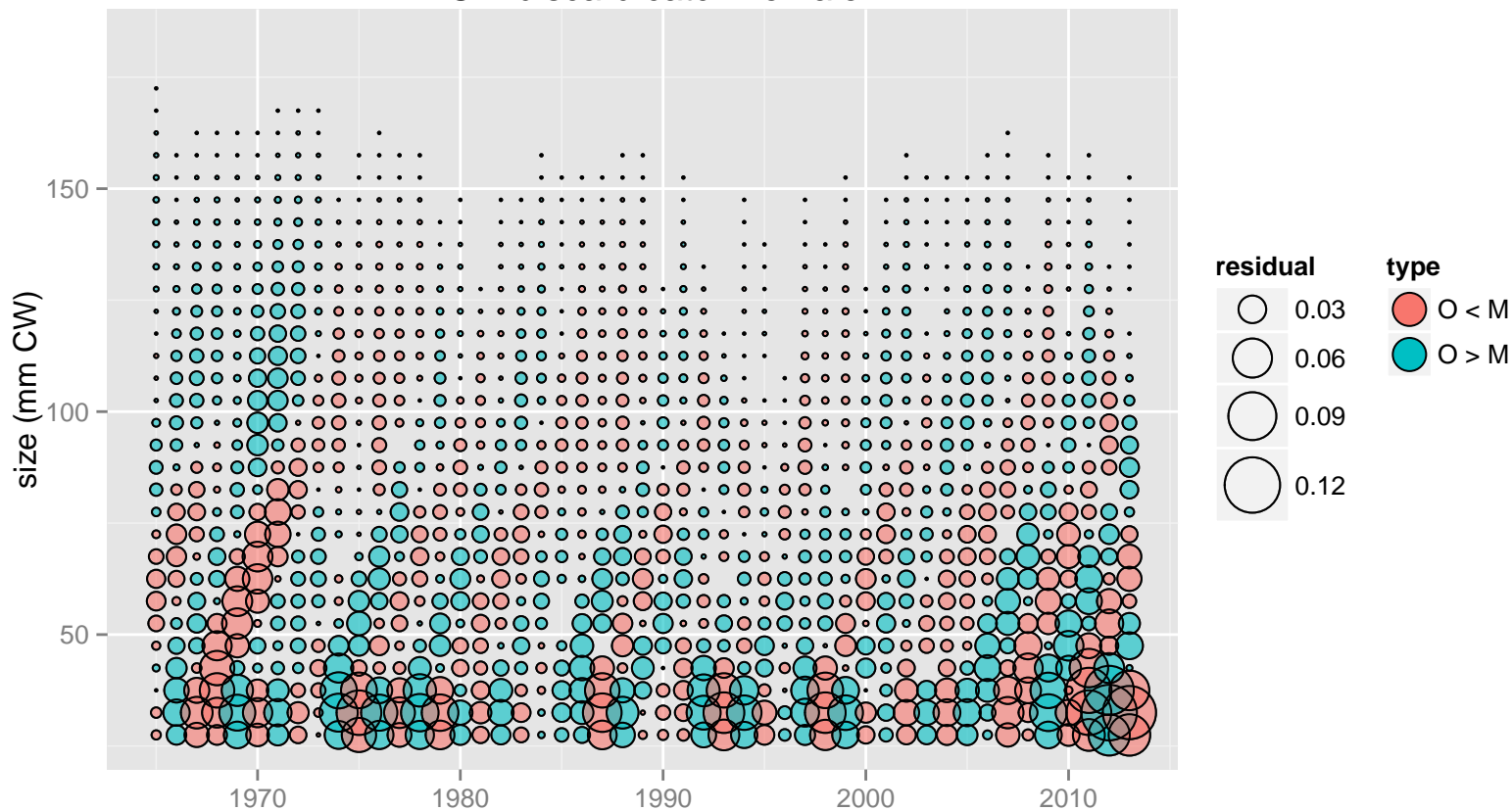


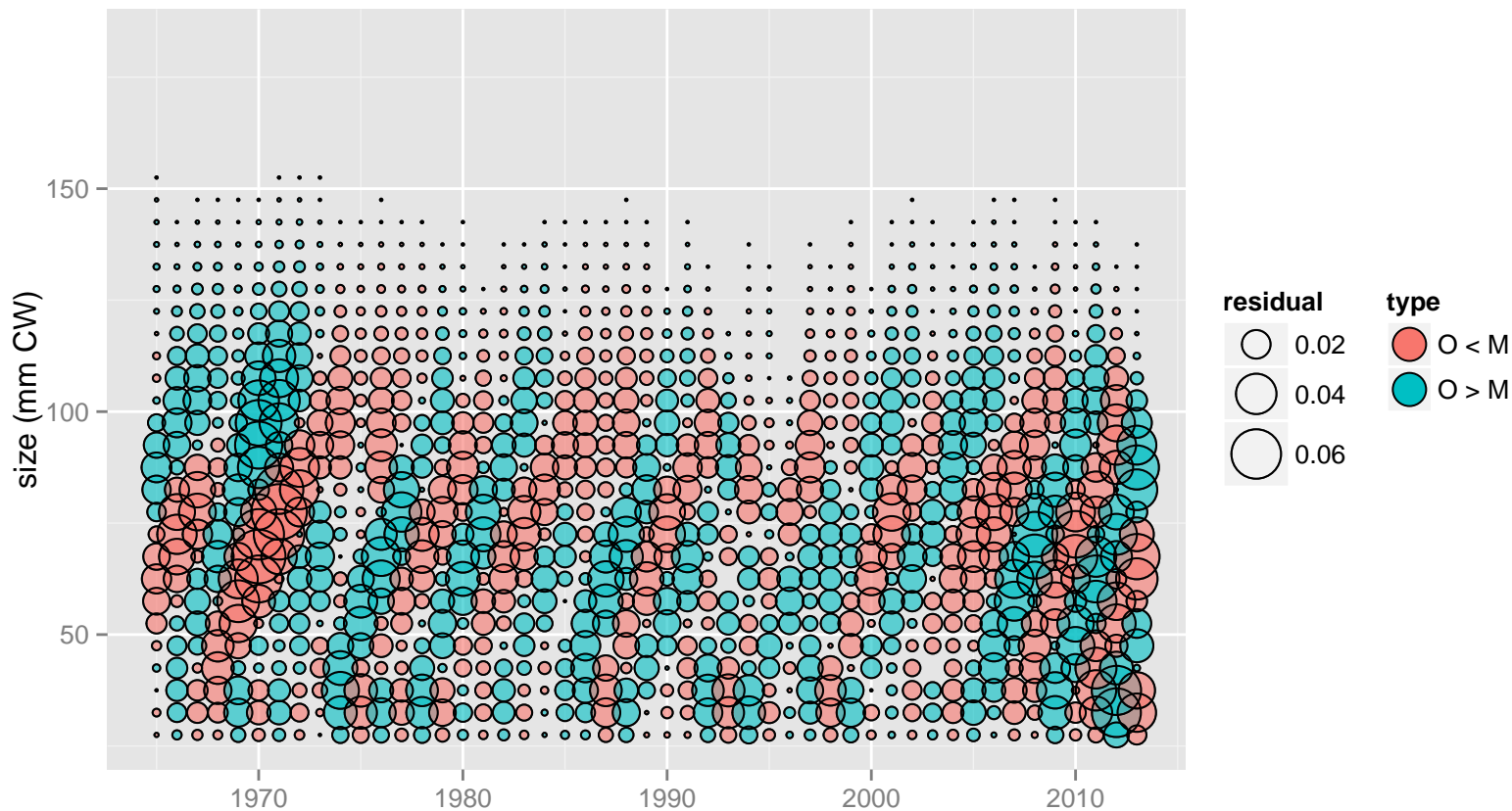
TCF: discard catch: male



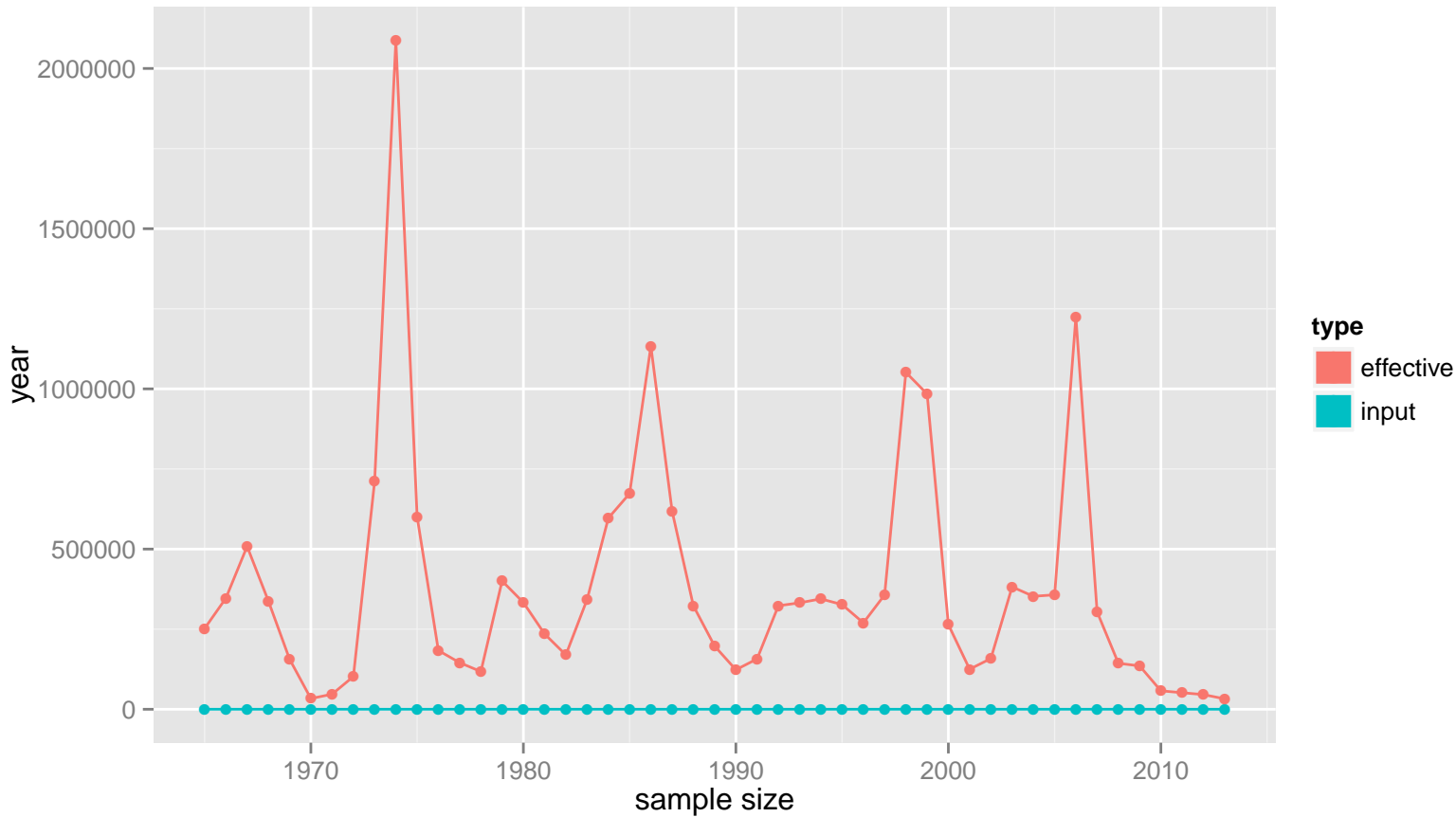


# TCF: discard catch: female

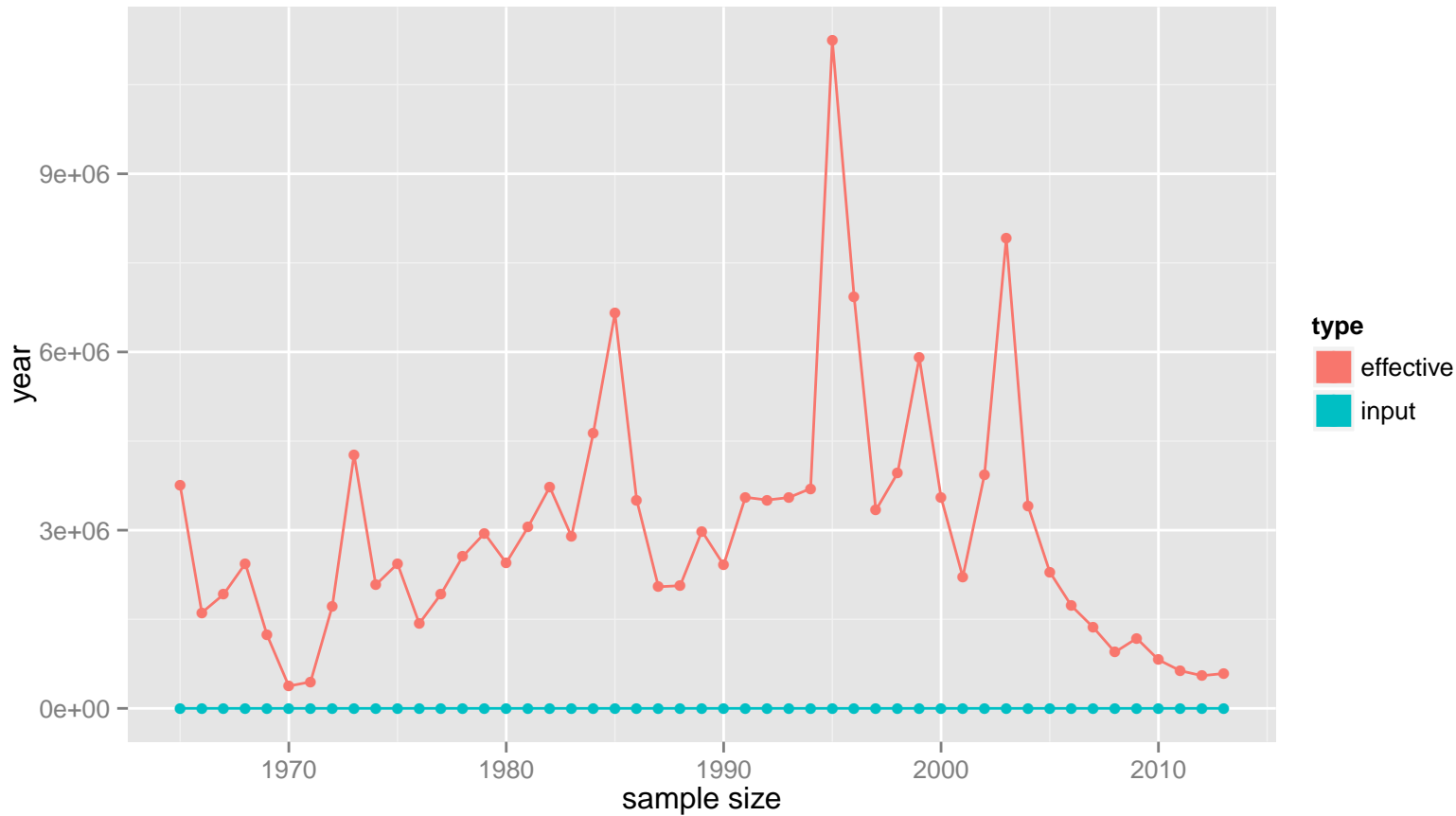




TCF: discard catch: male

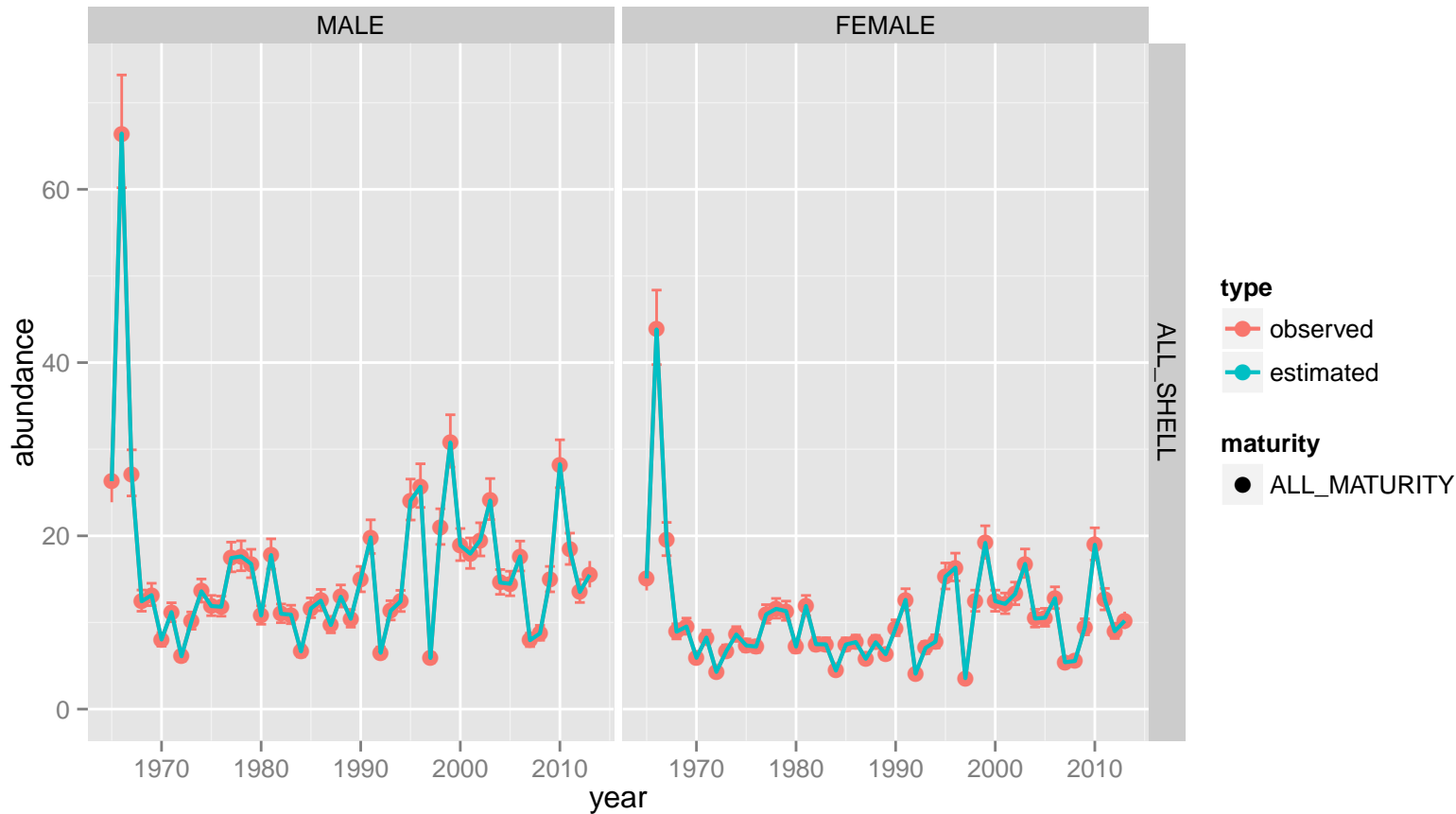


TCF: discard catch: female

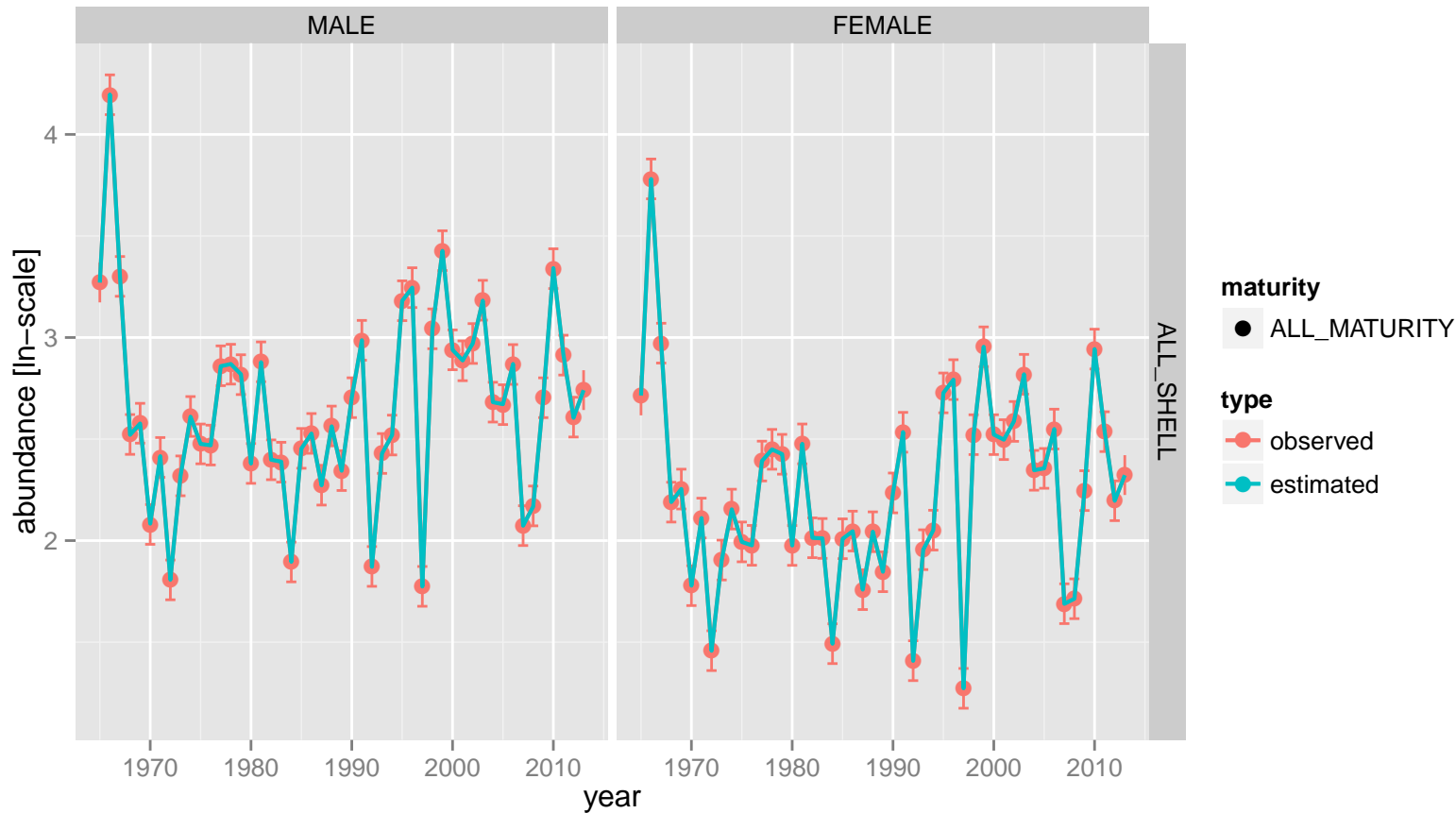




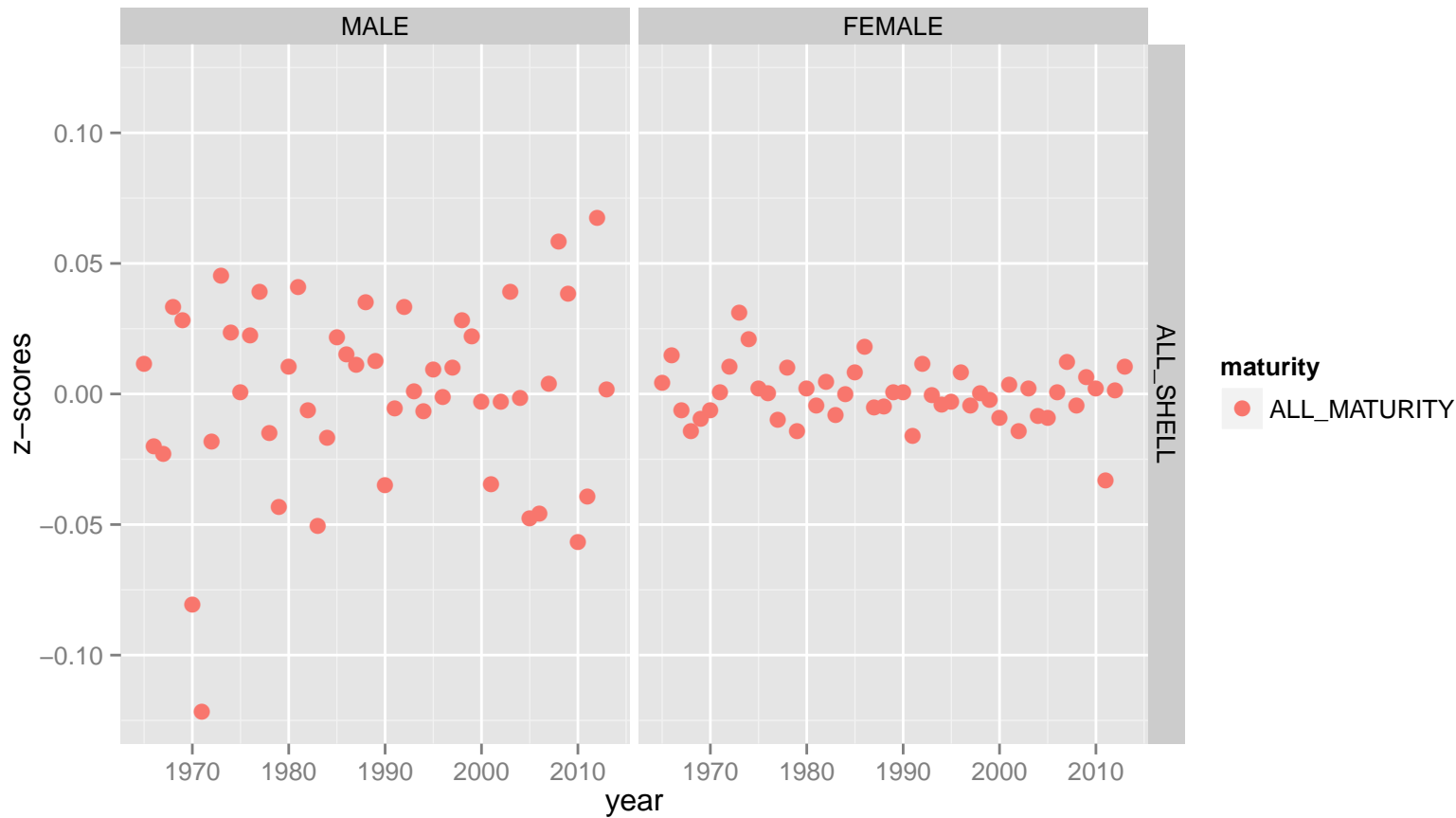
# TCF: total catch abundance



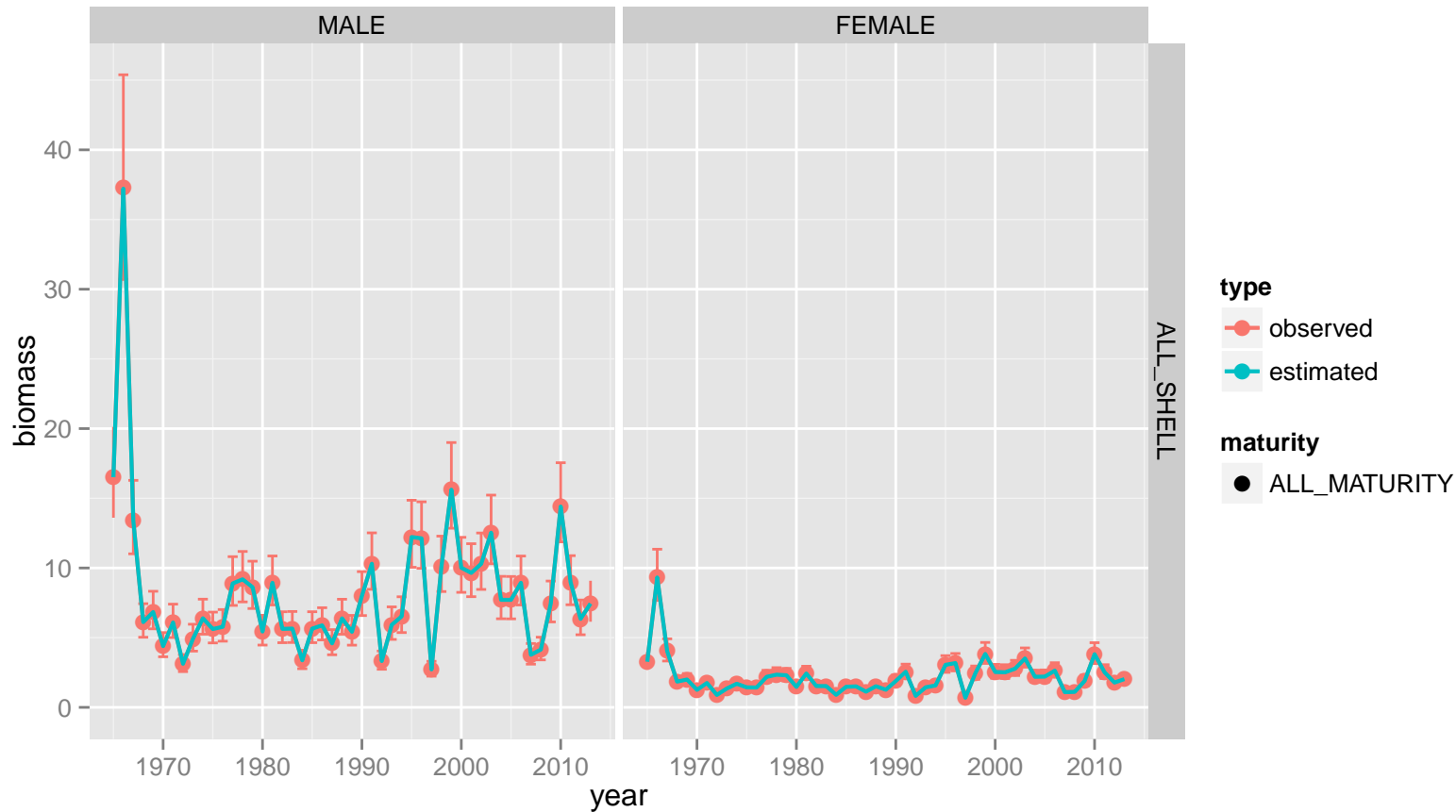
# TCF: total catch abundance



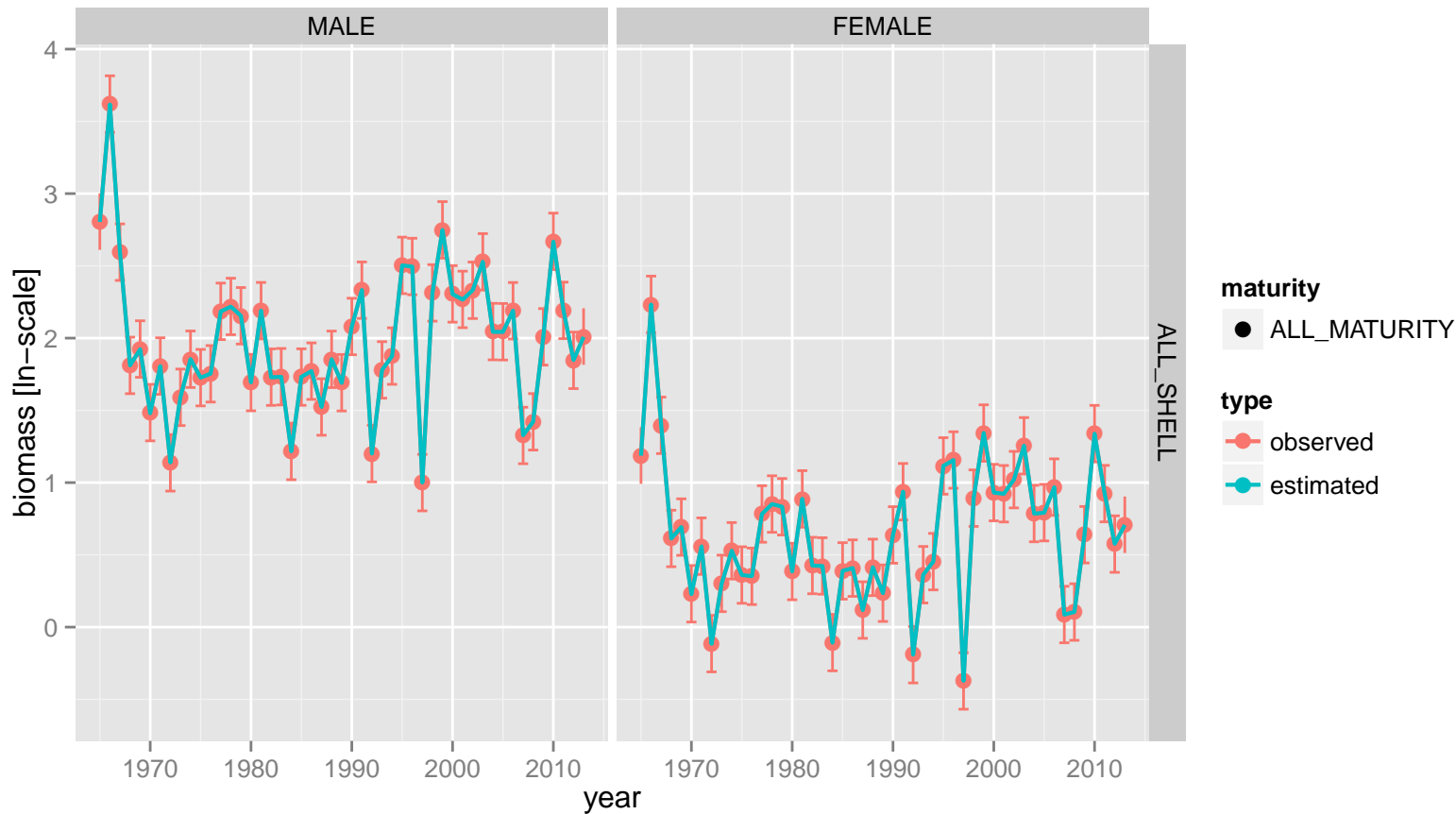
# TCF: total catch abundance



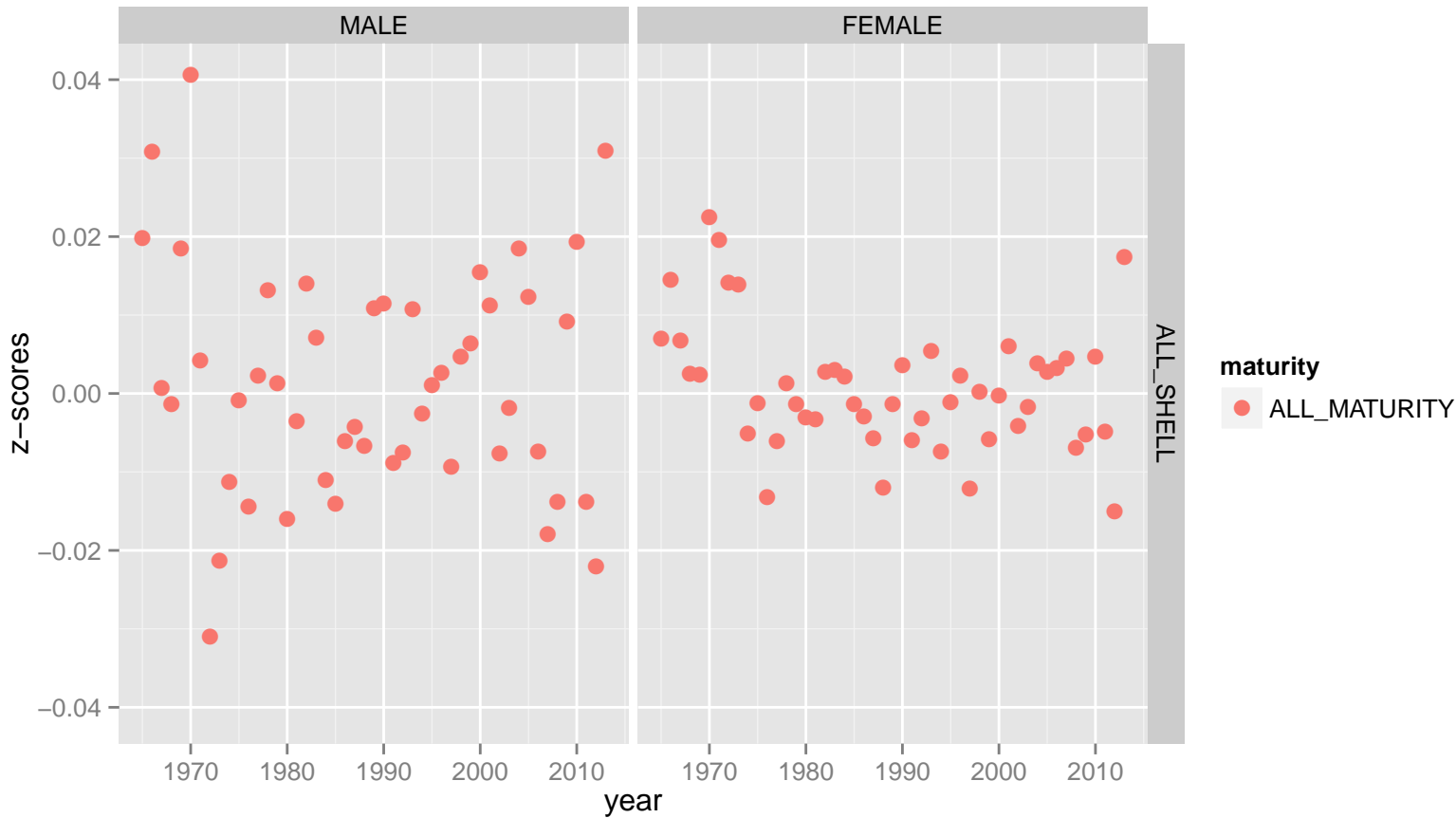
# TCF: total catch biomass



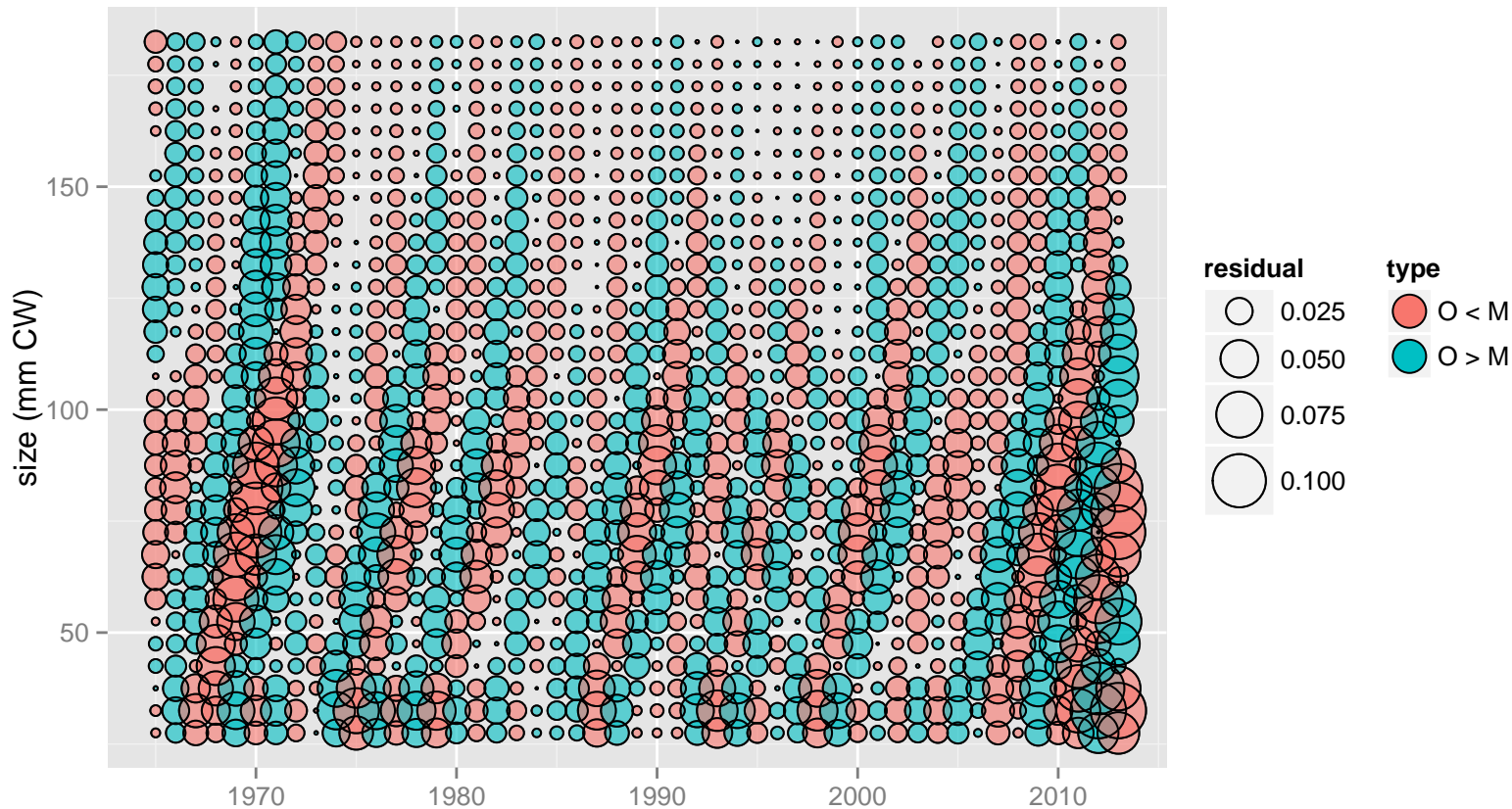
# TCF: total catch biomass

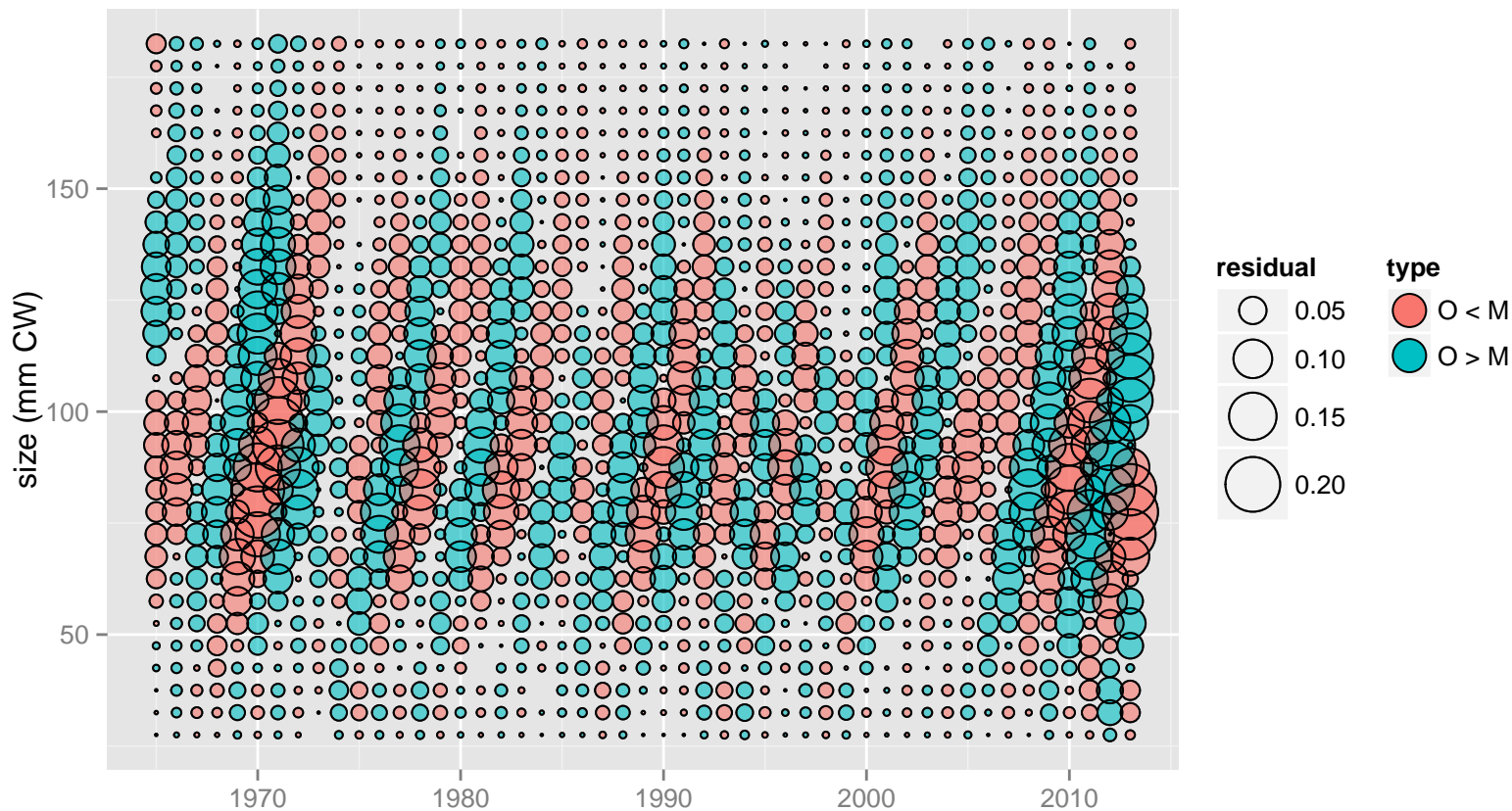


# TCF: total catch biomass



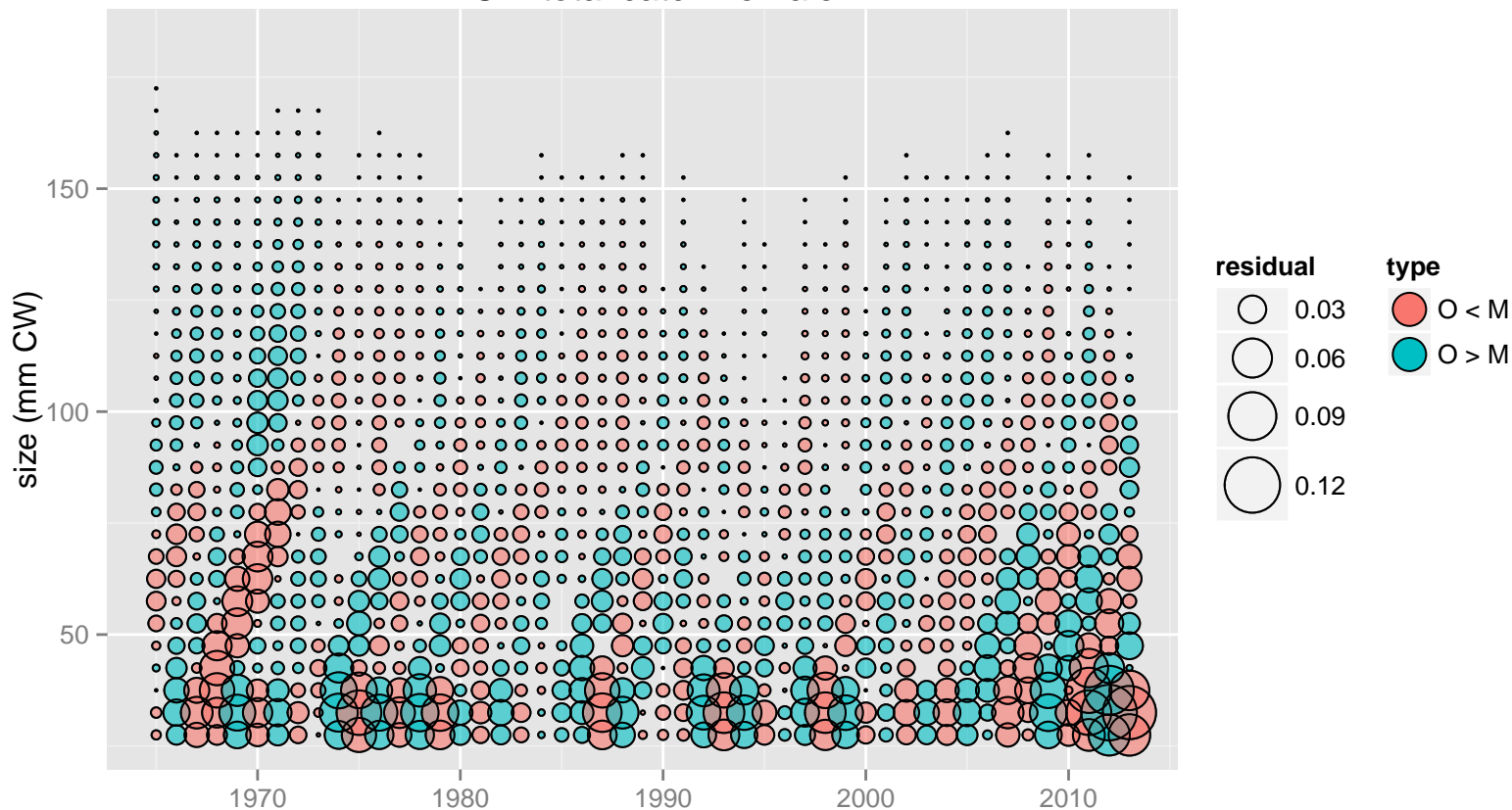
TCF: total catch: male

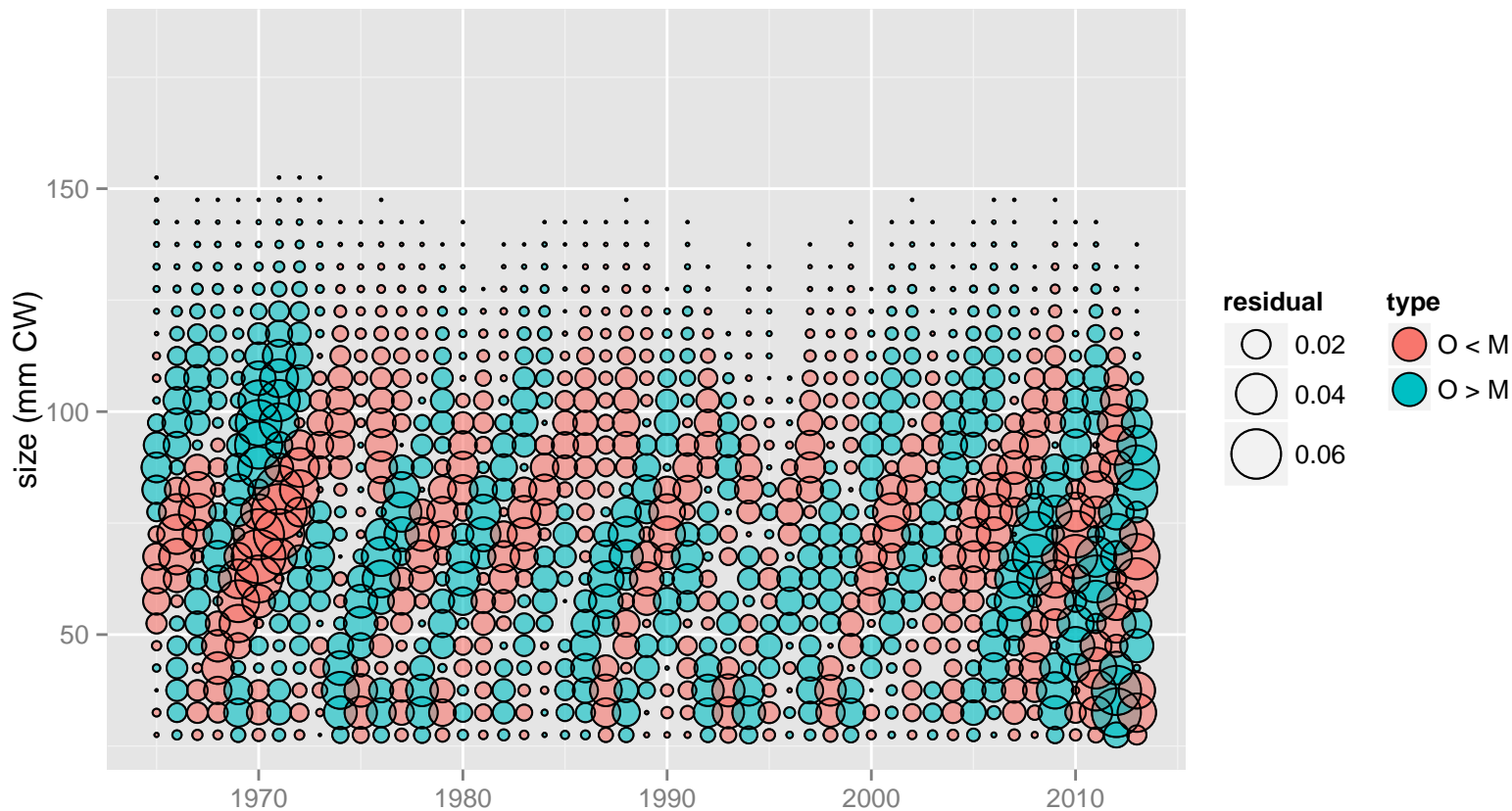




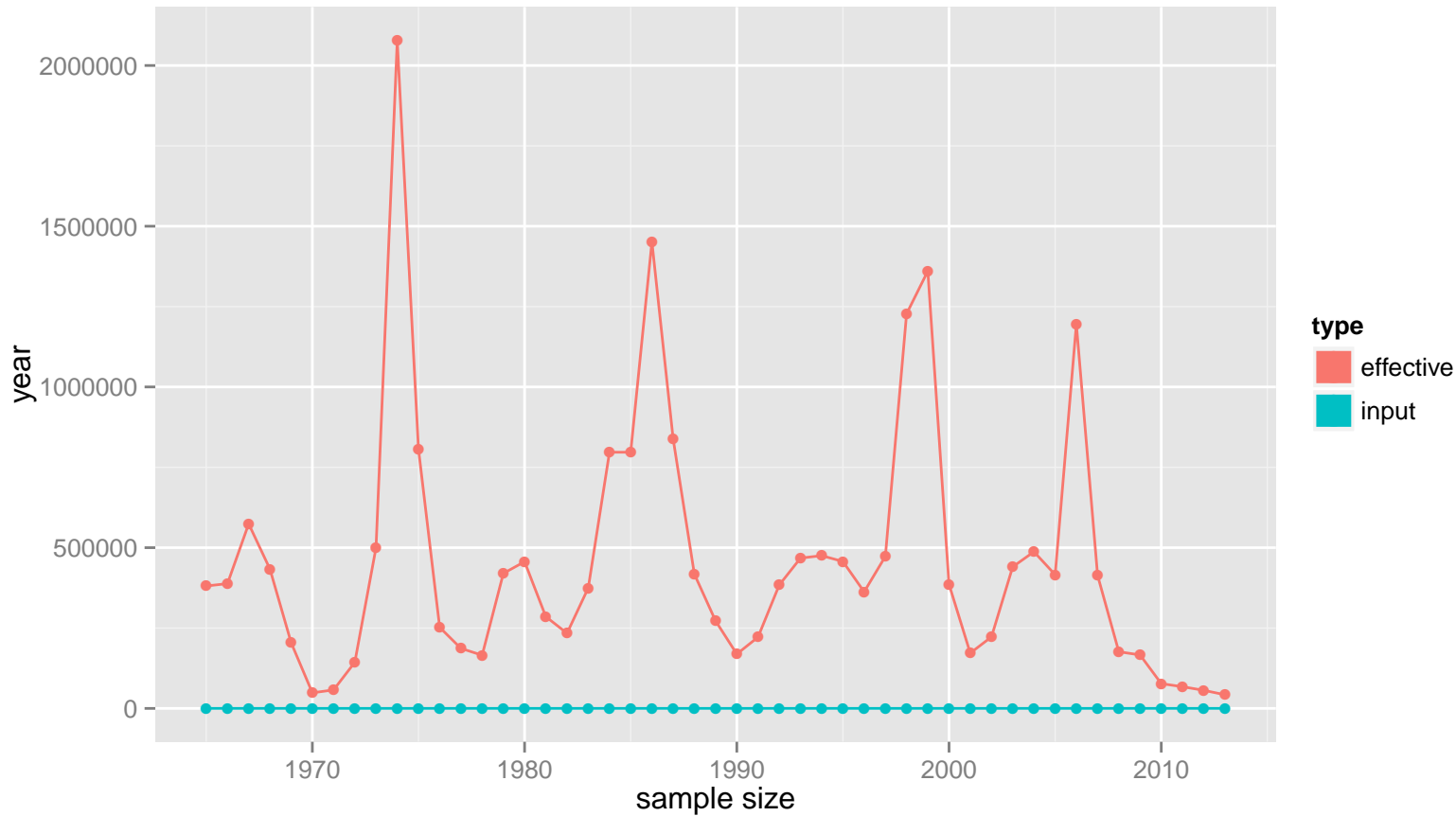


TCF: total catch: female

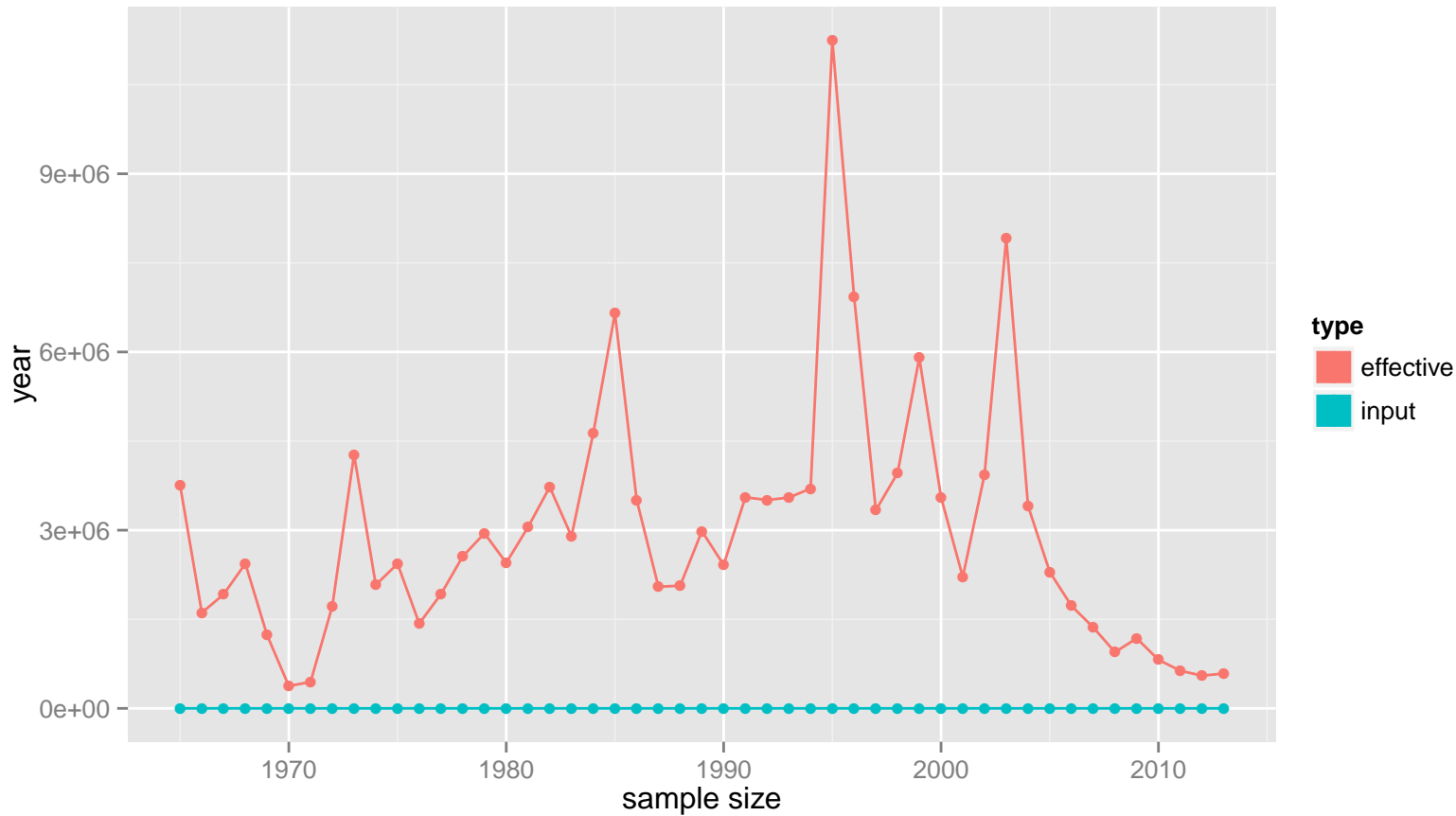


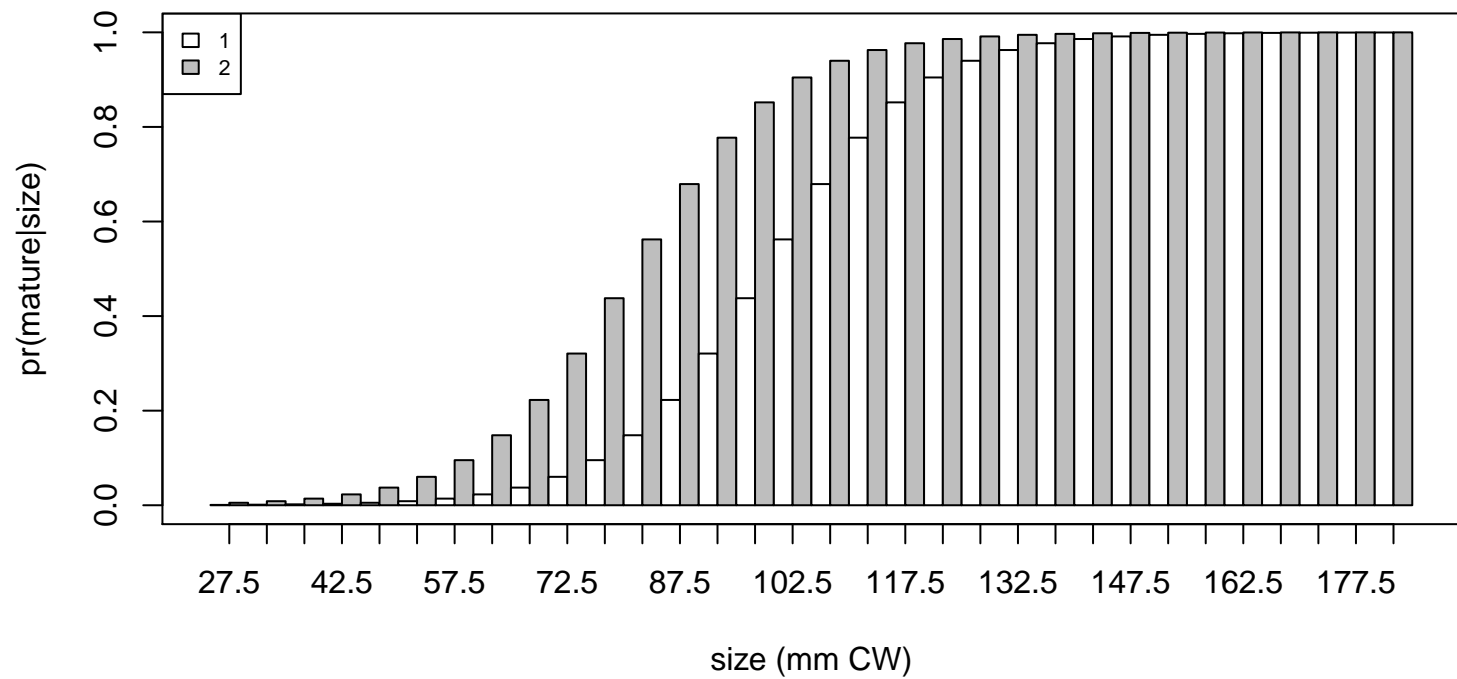


TCF: total catch: male

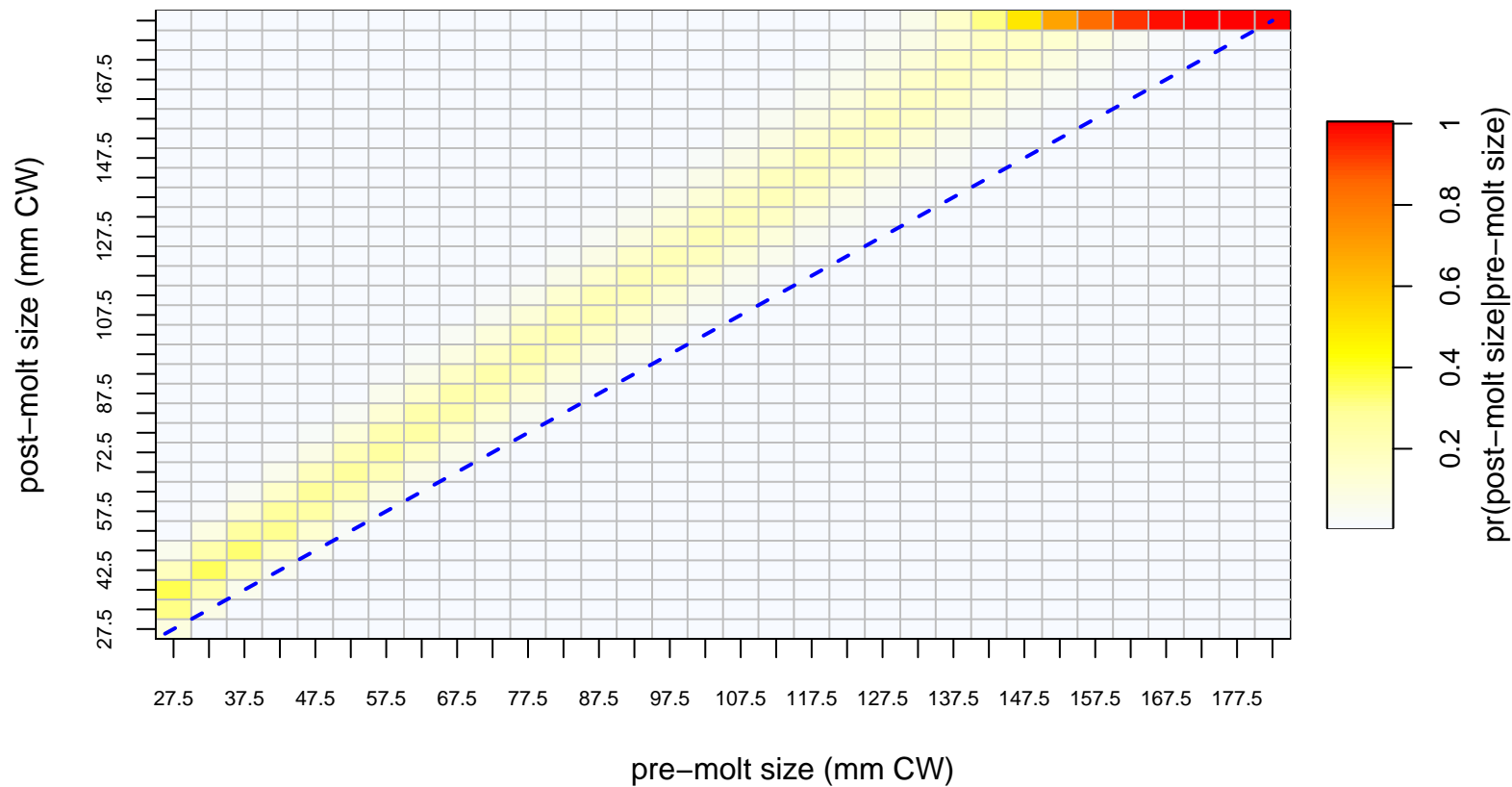


TCF: total catch: female

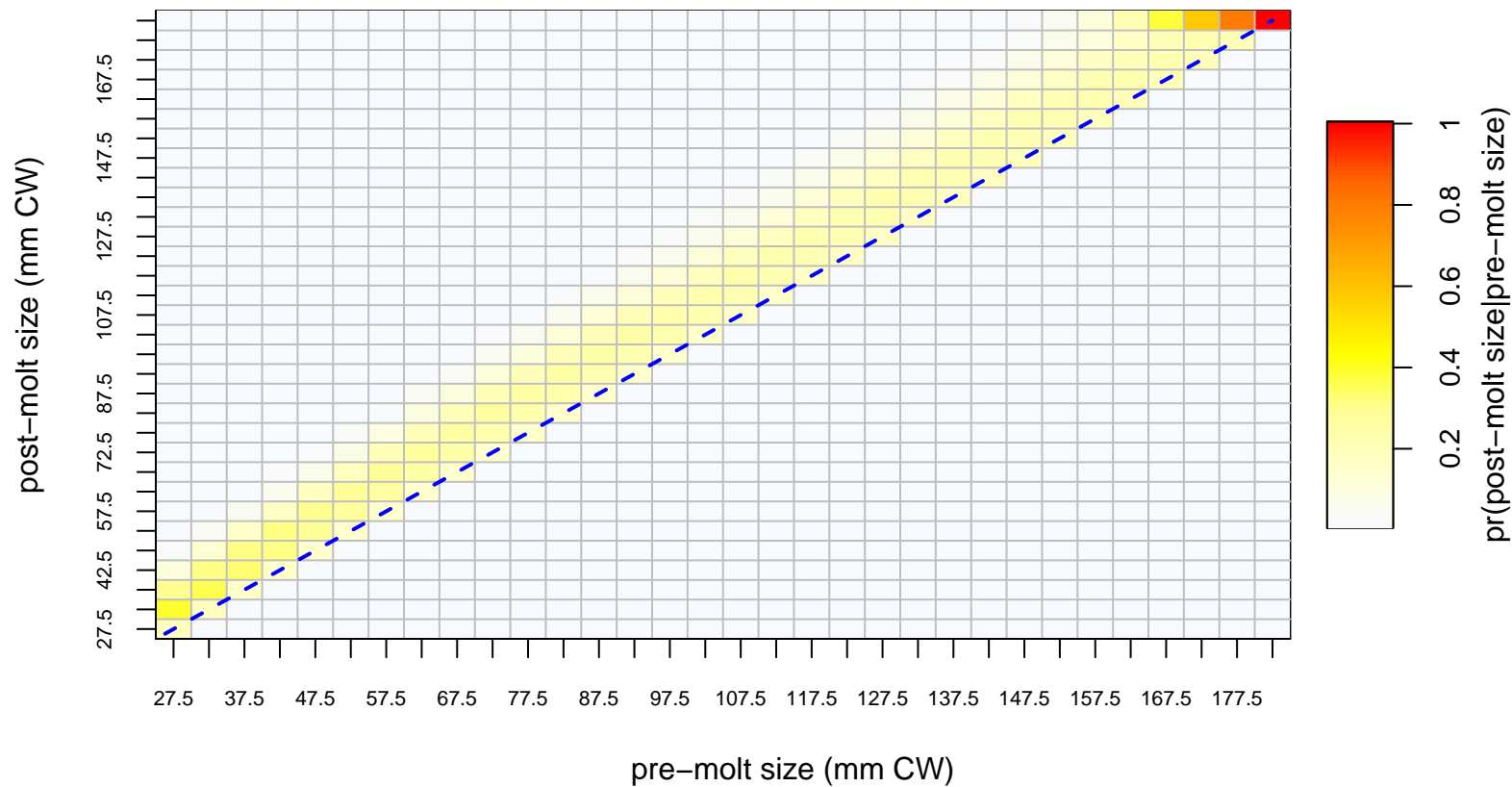




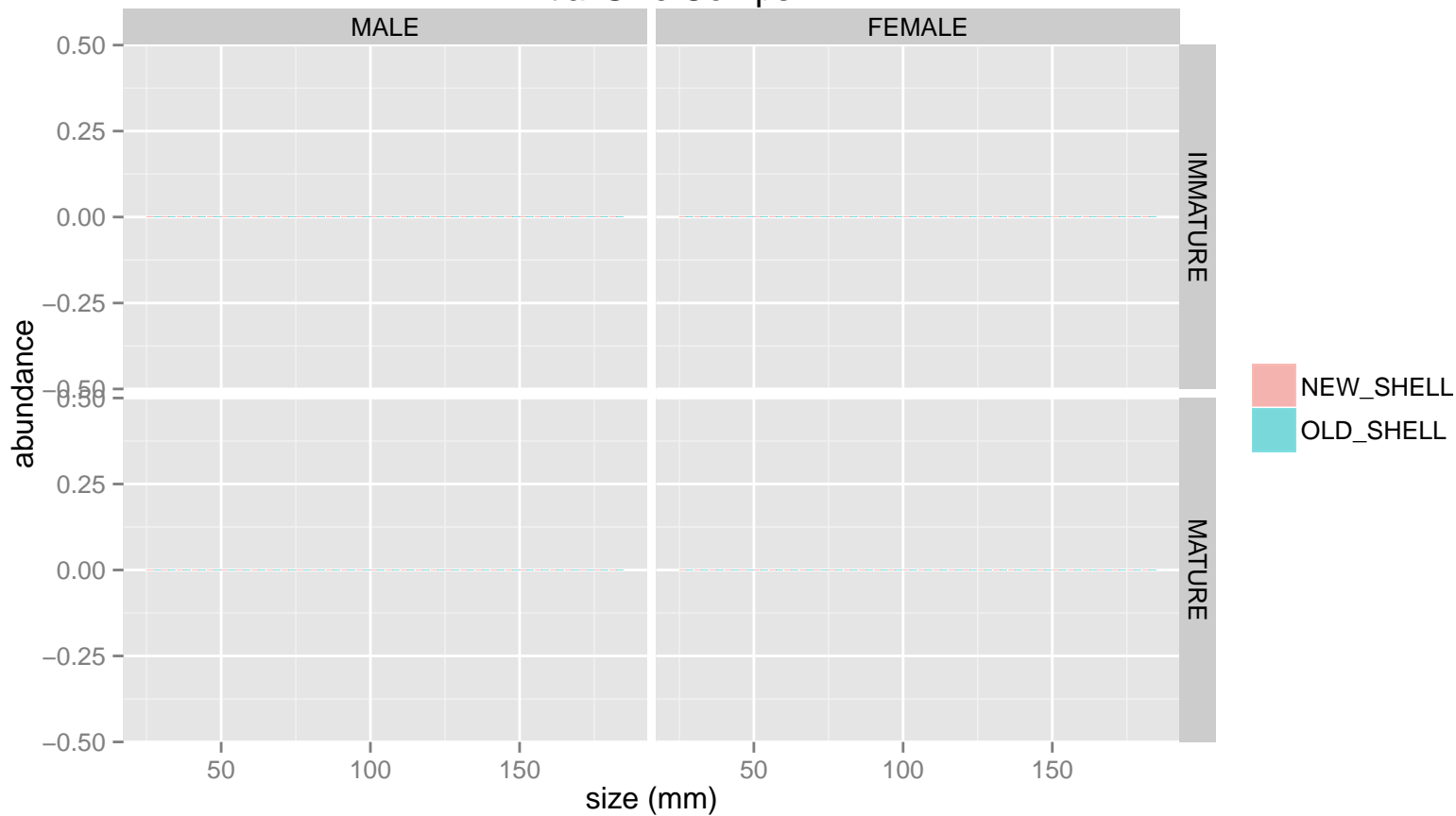
Growth Matrix (1)



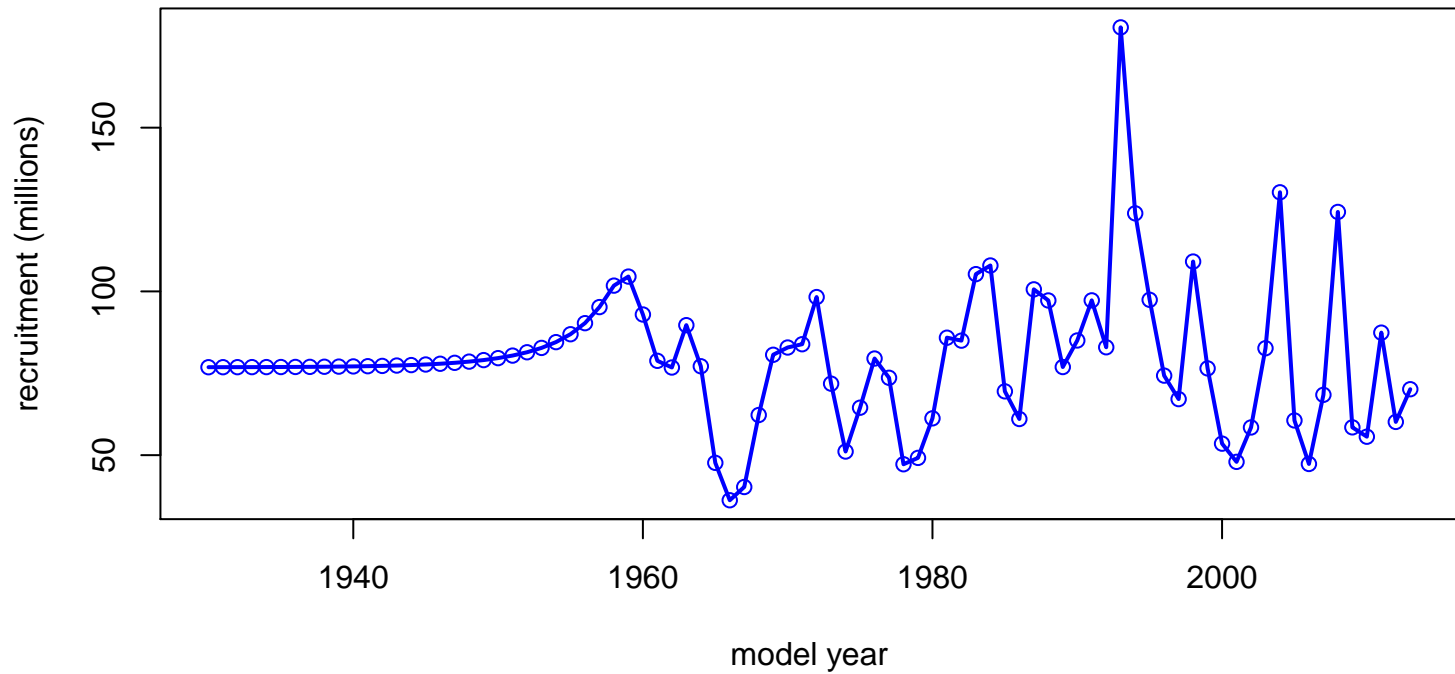
Growth Matrix (2)

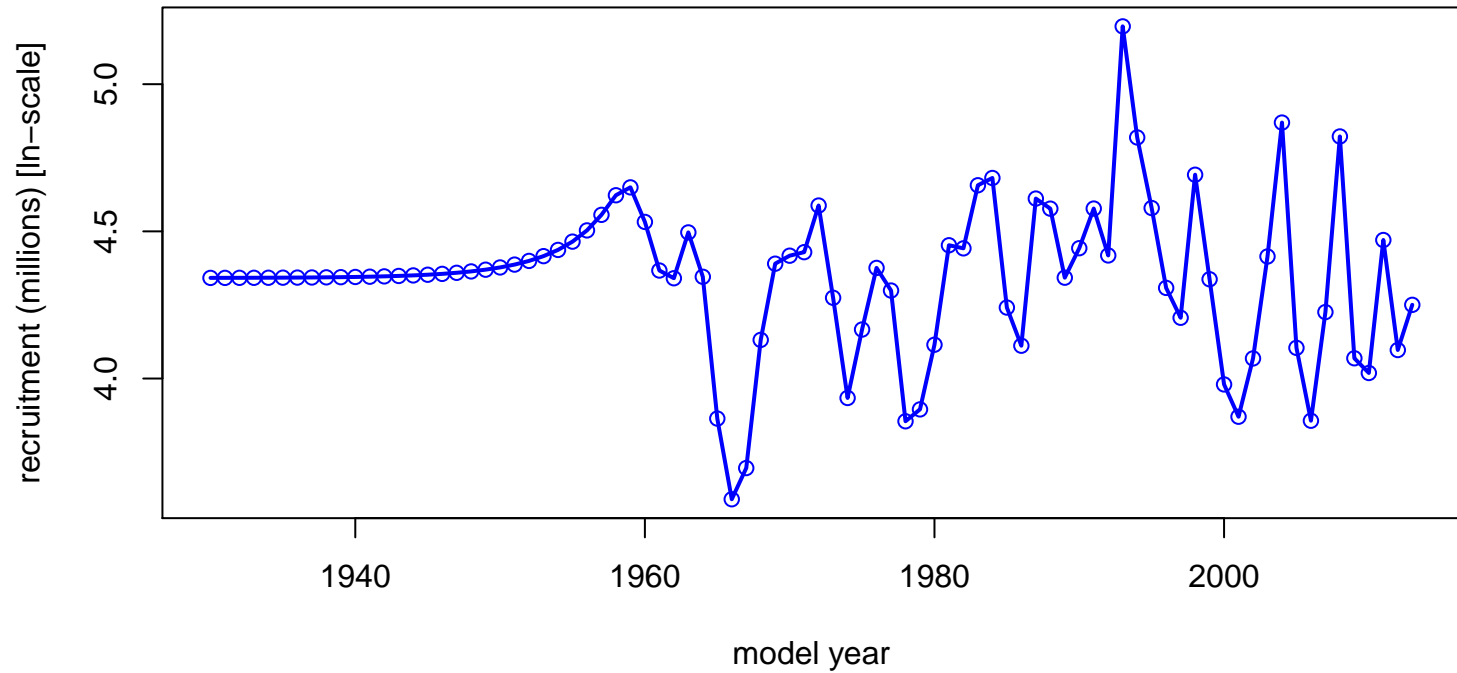


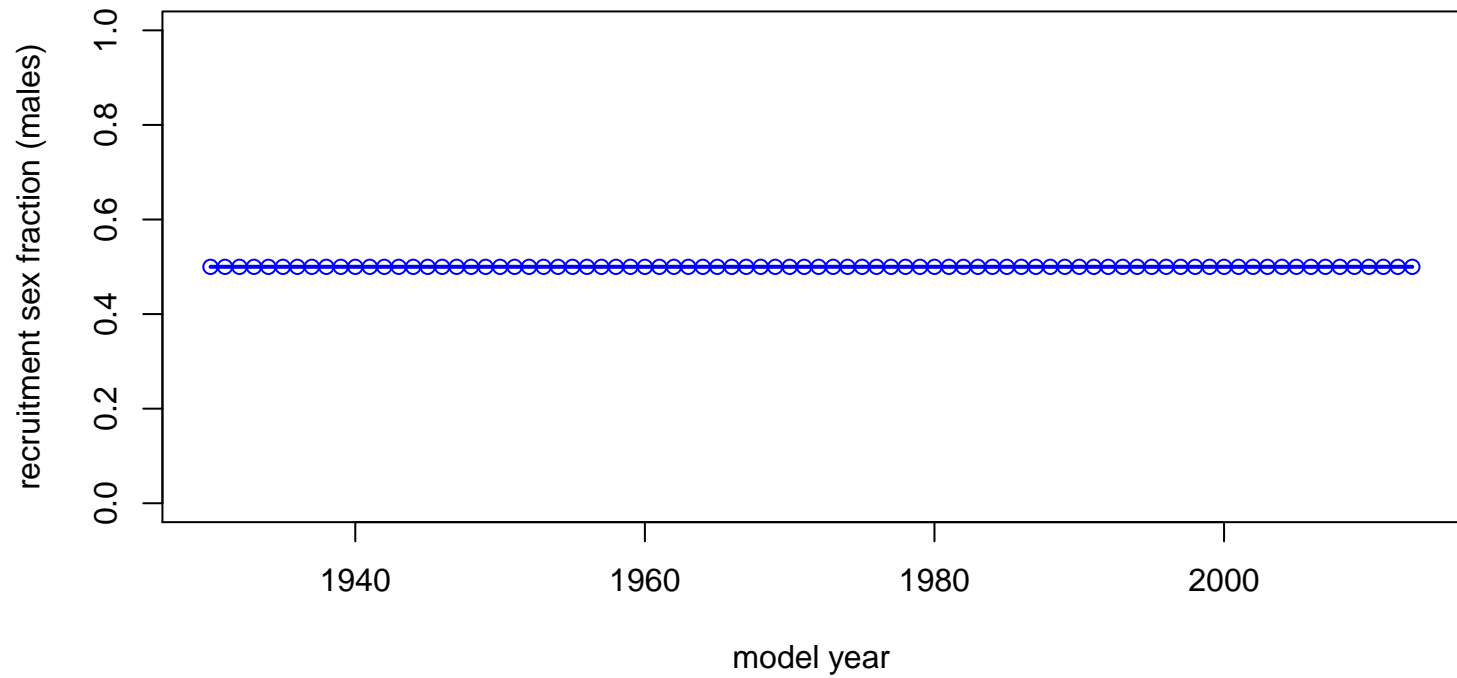
# Initial Size Comps

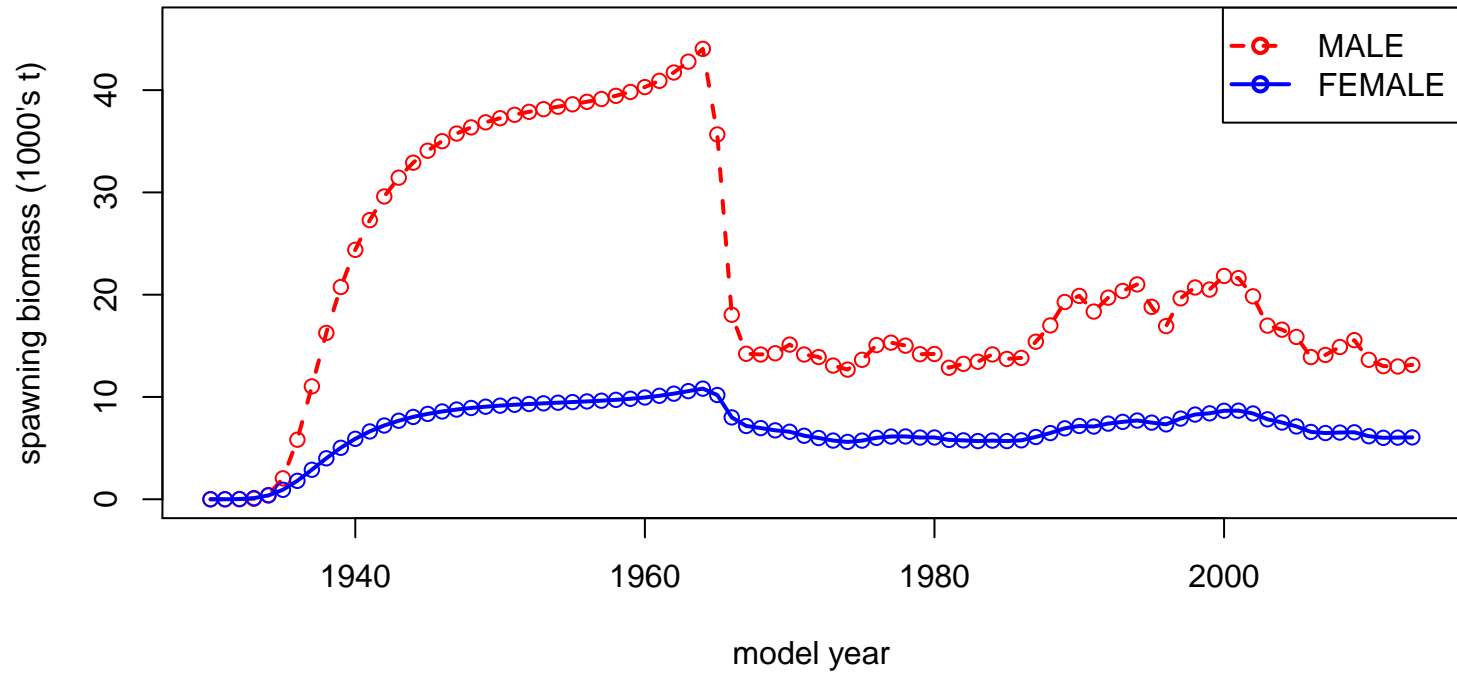


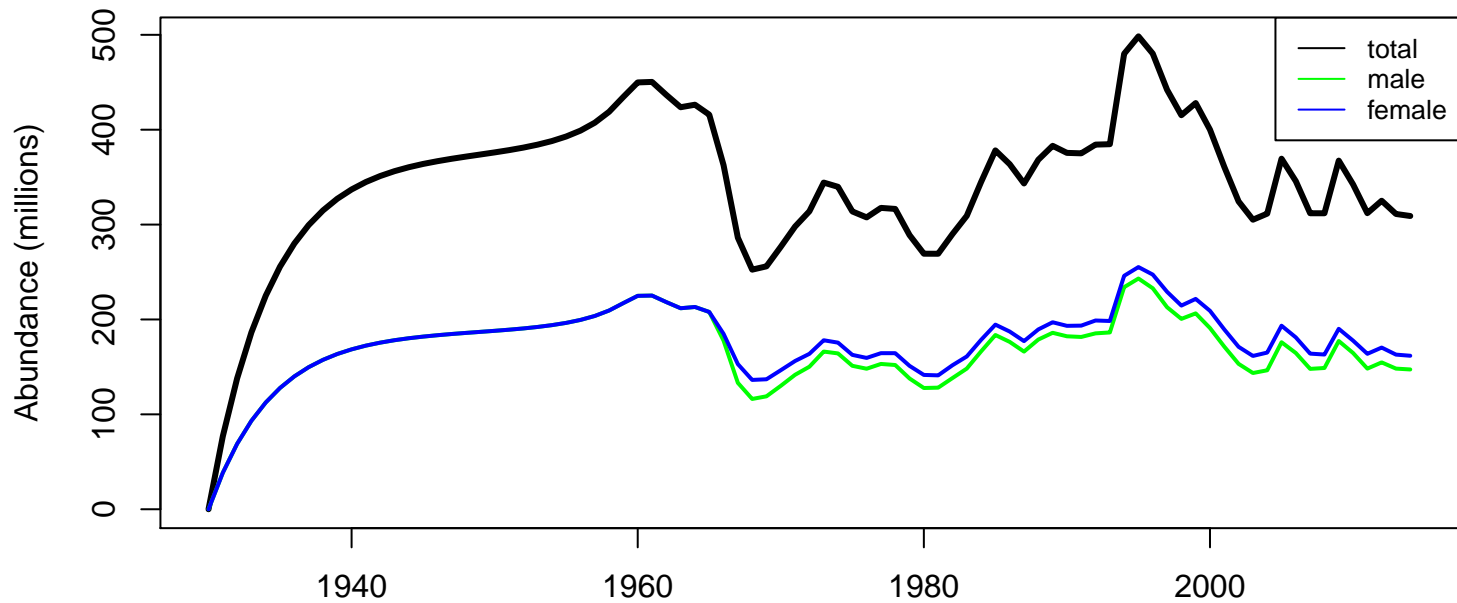


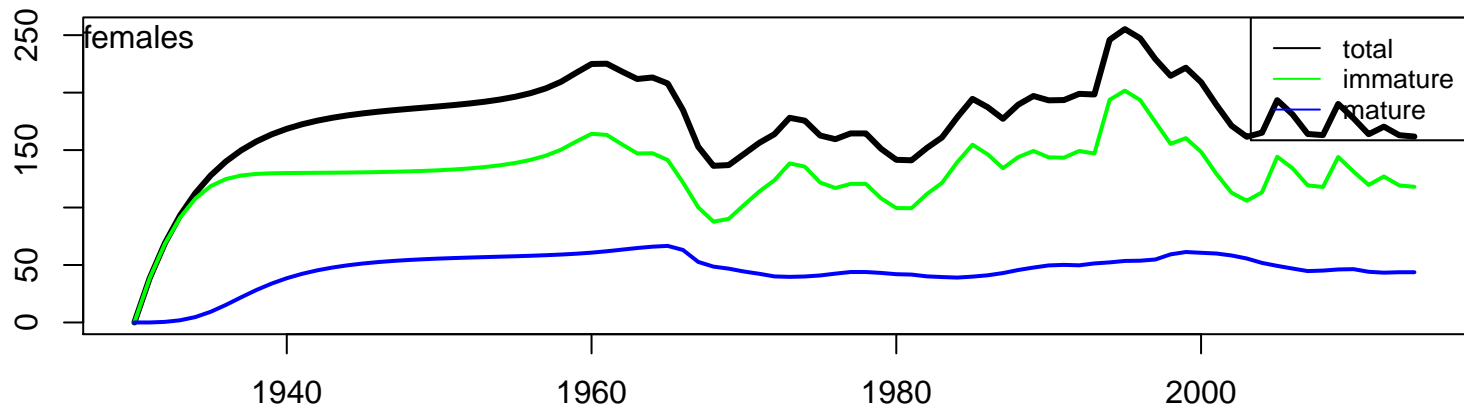
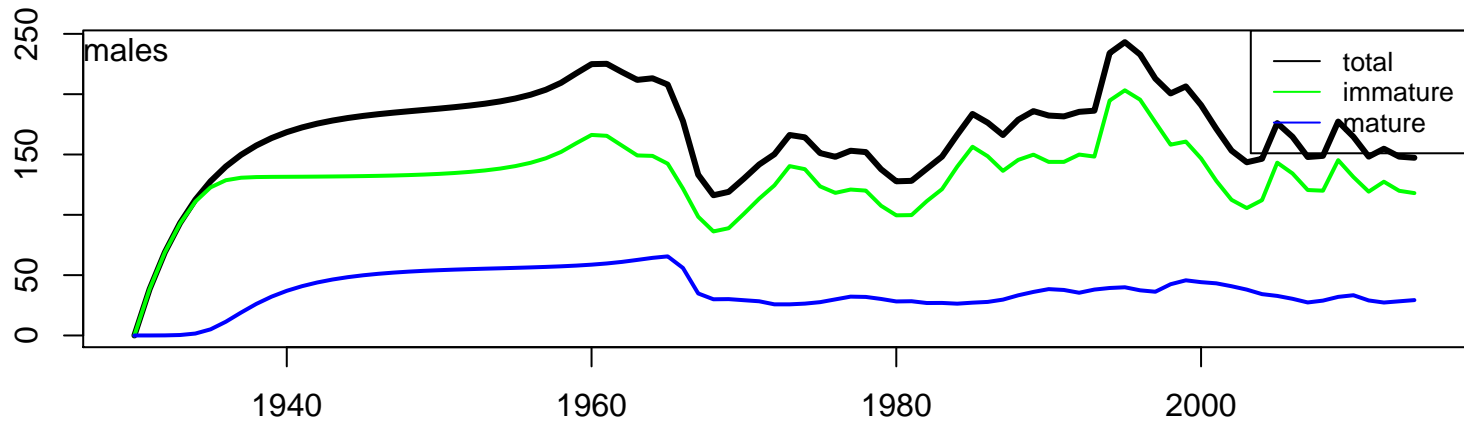


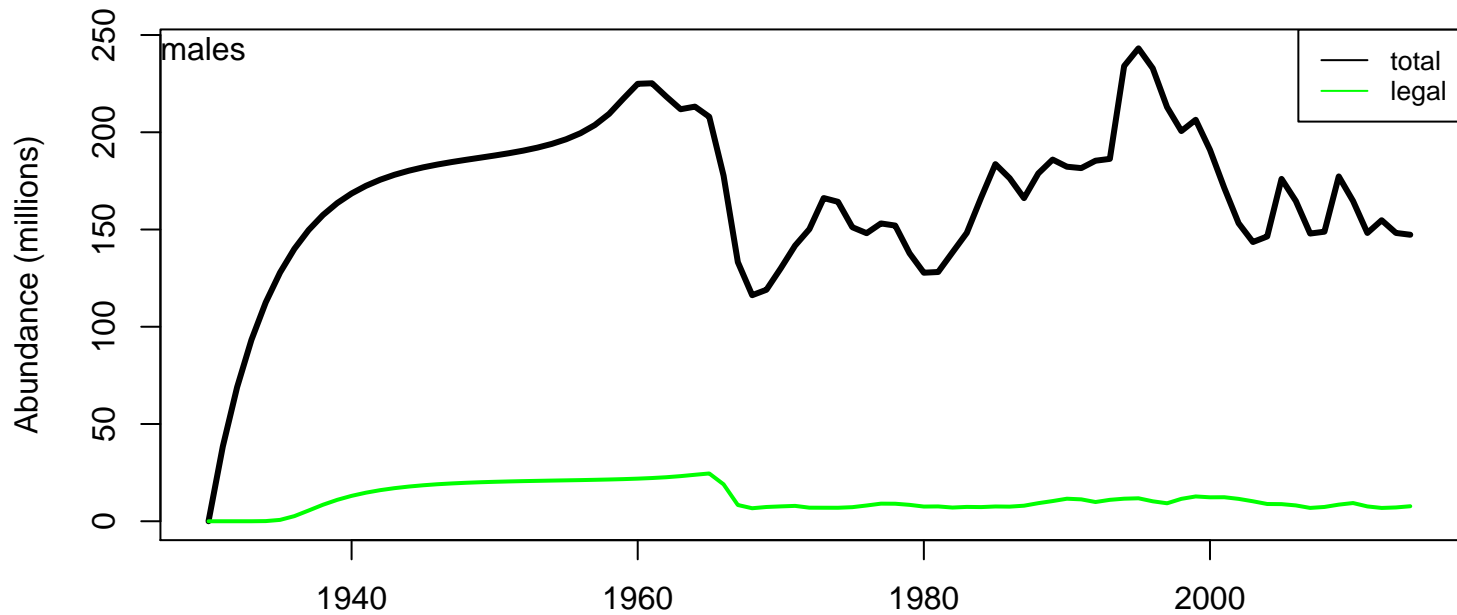


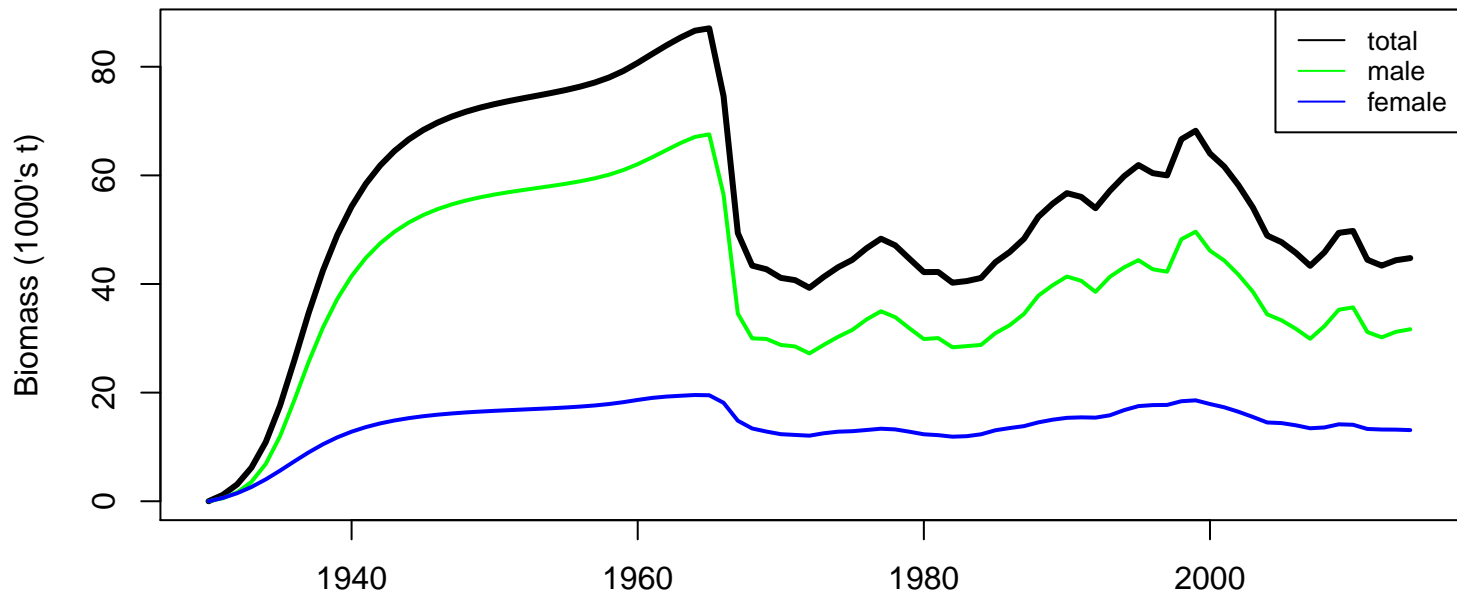




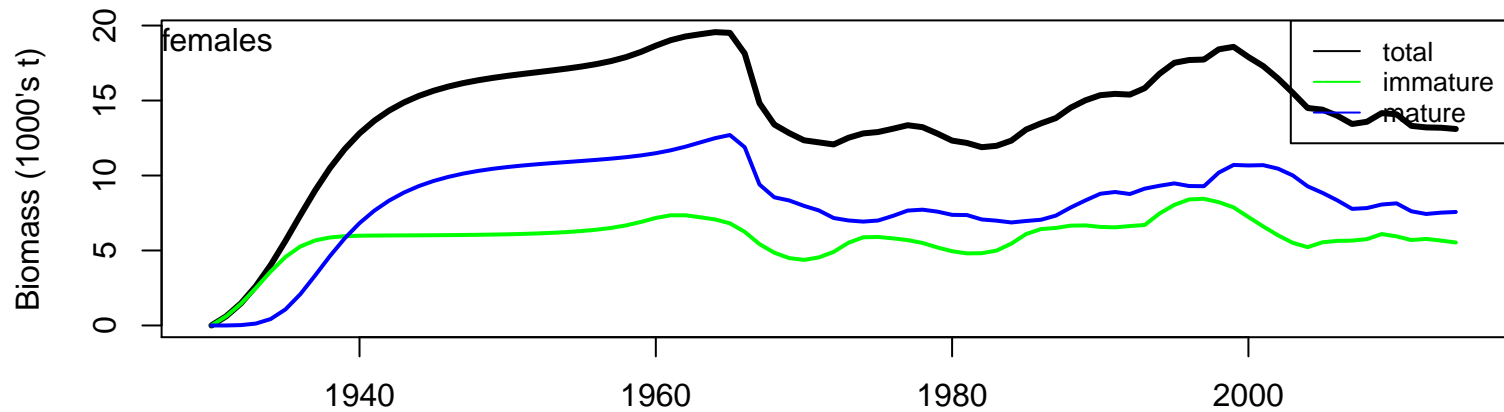
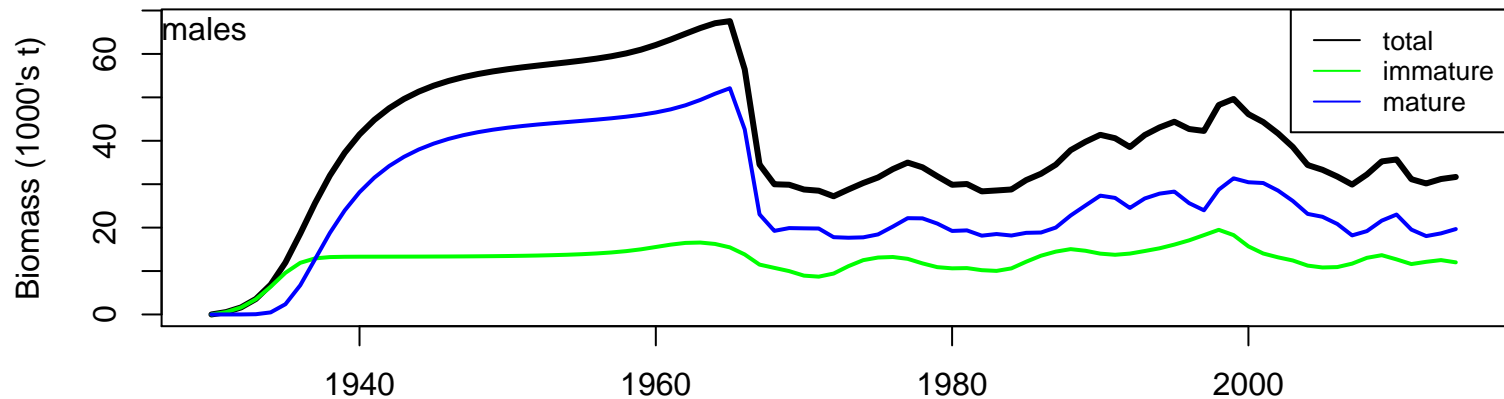


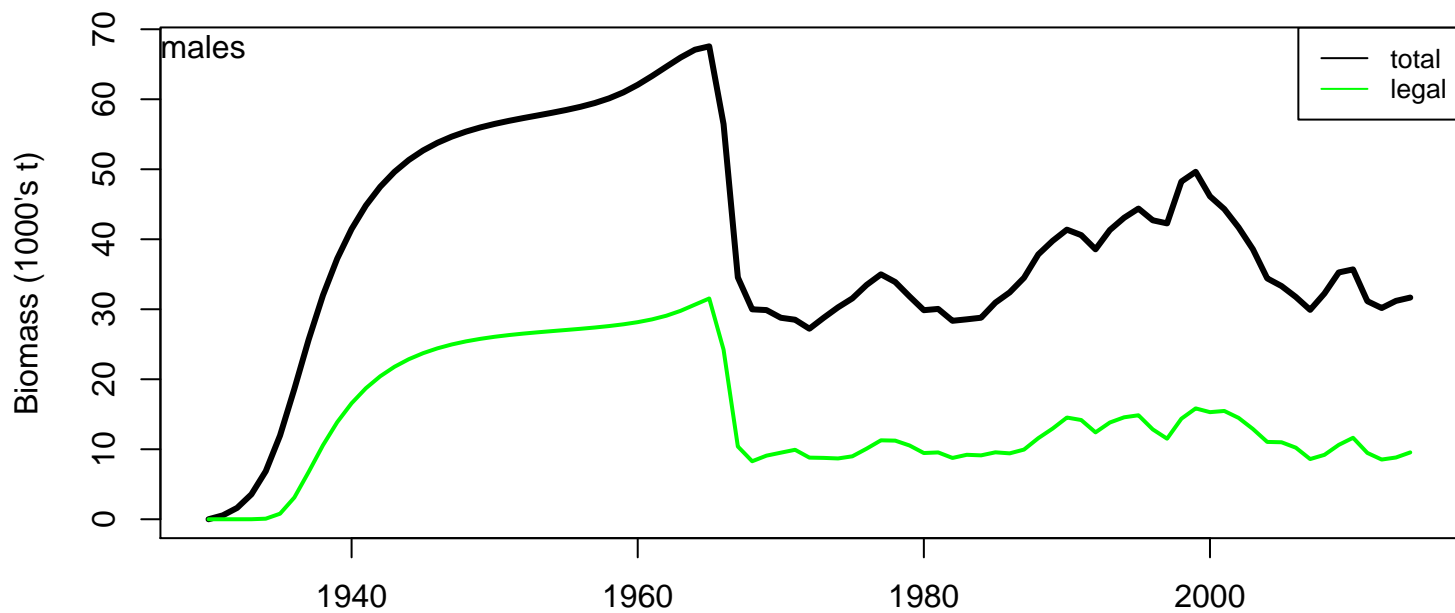


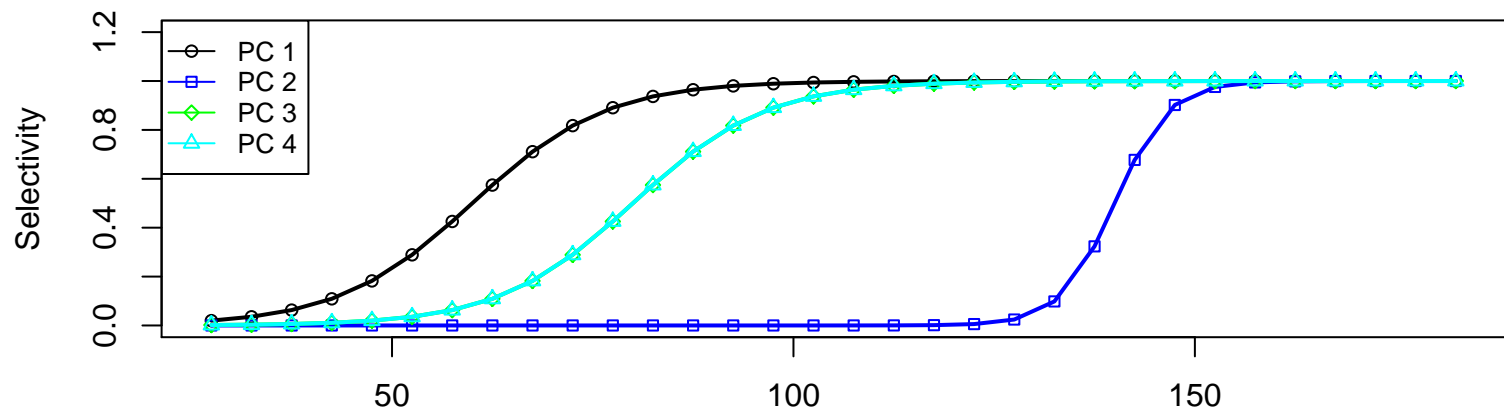












# male, immature, new\_shell

TCF



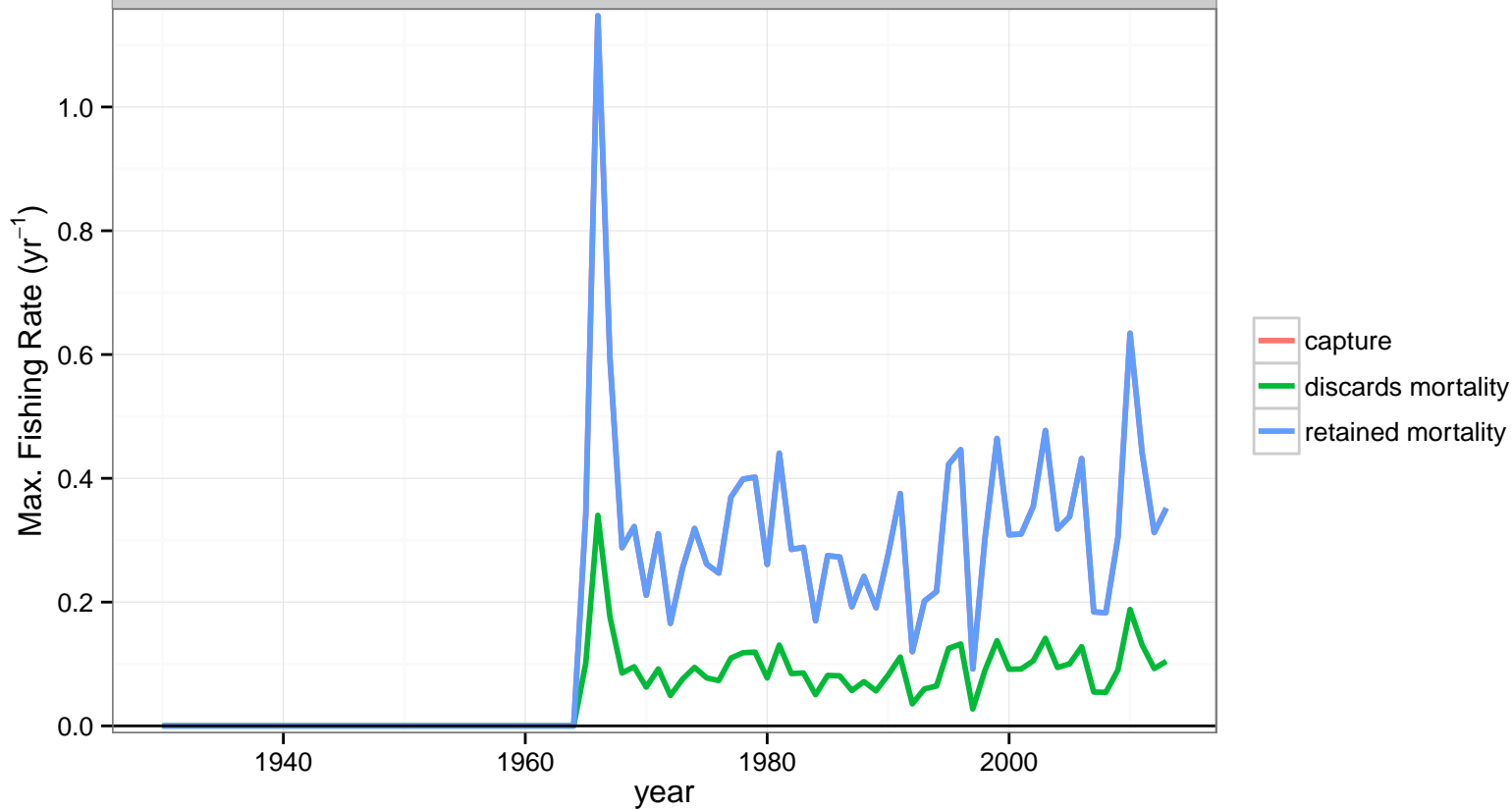
# male, immature, old\_shell

TCF



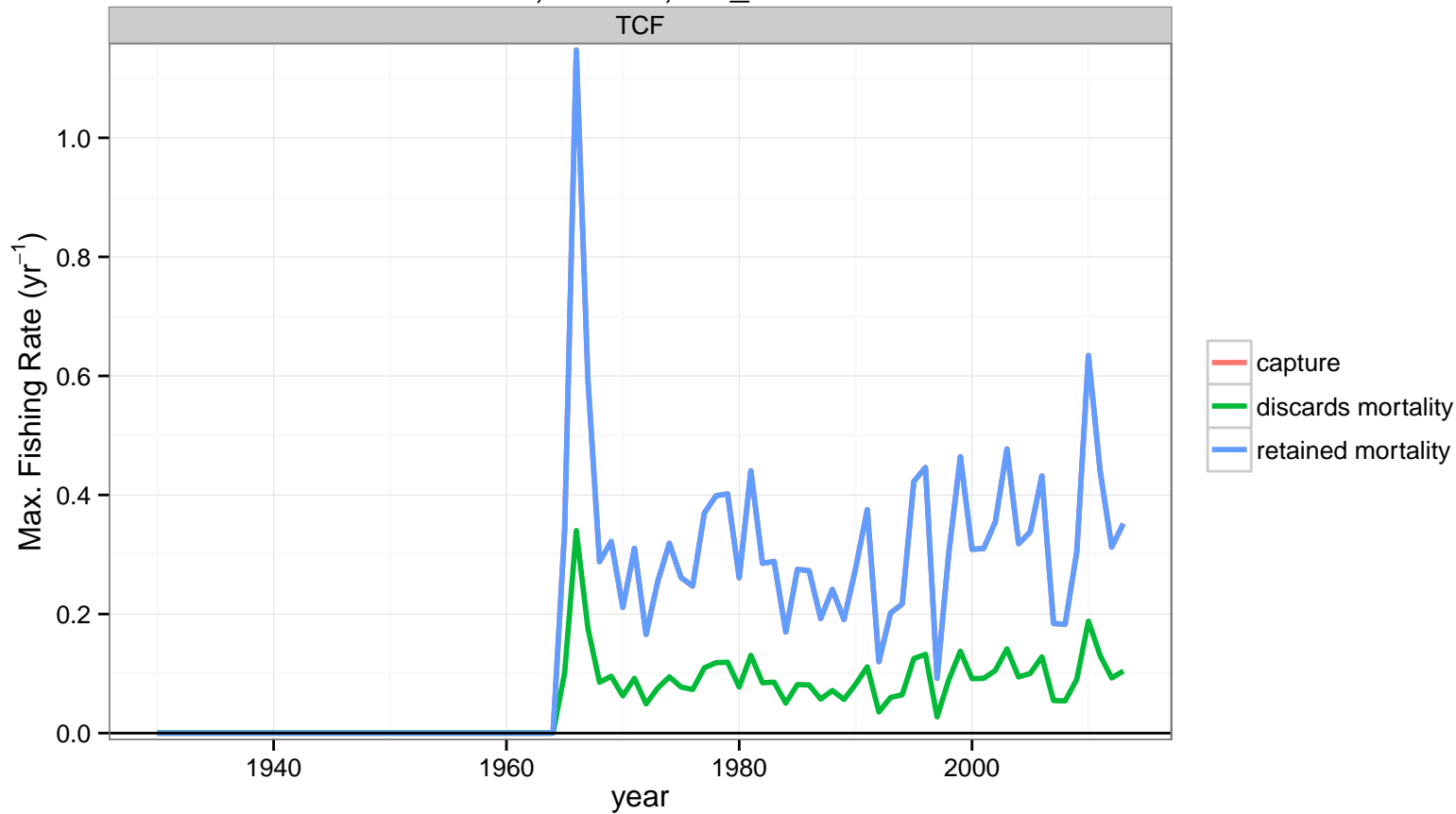
# male, mature, new\_shell

TCF



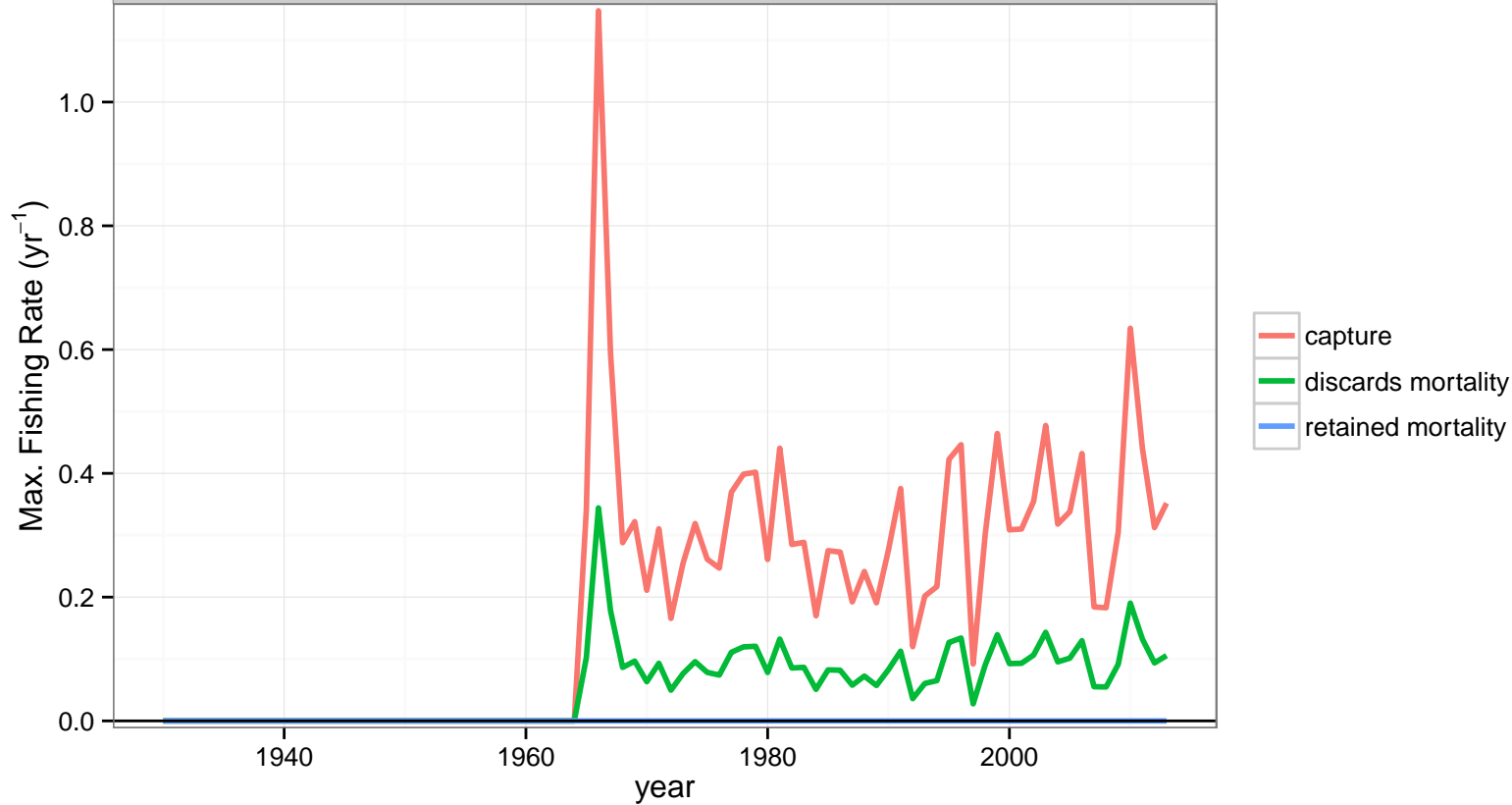
male, mature, old\_shell

TCF



# female, immature, new\_shell

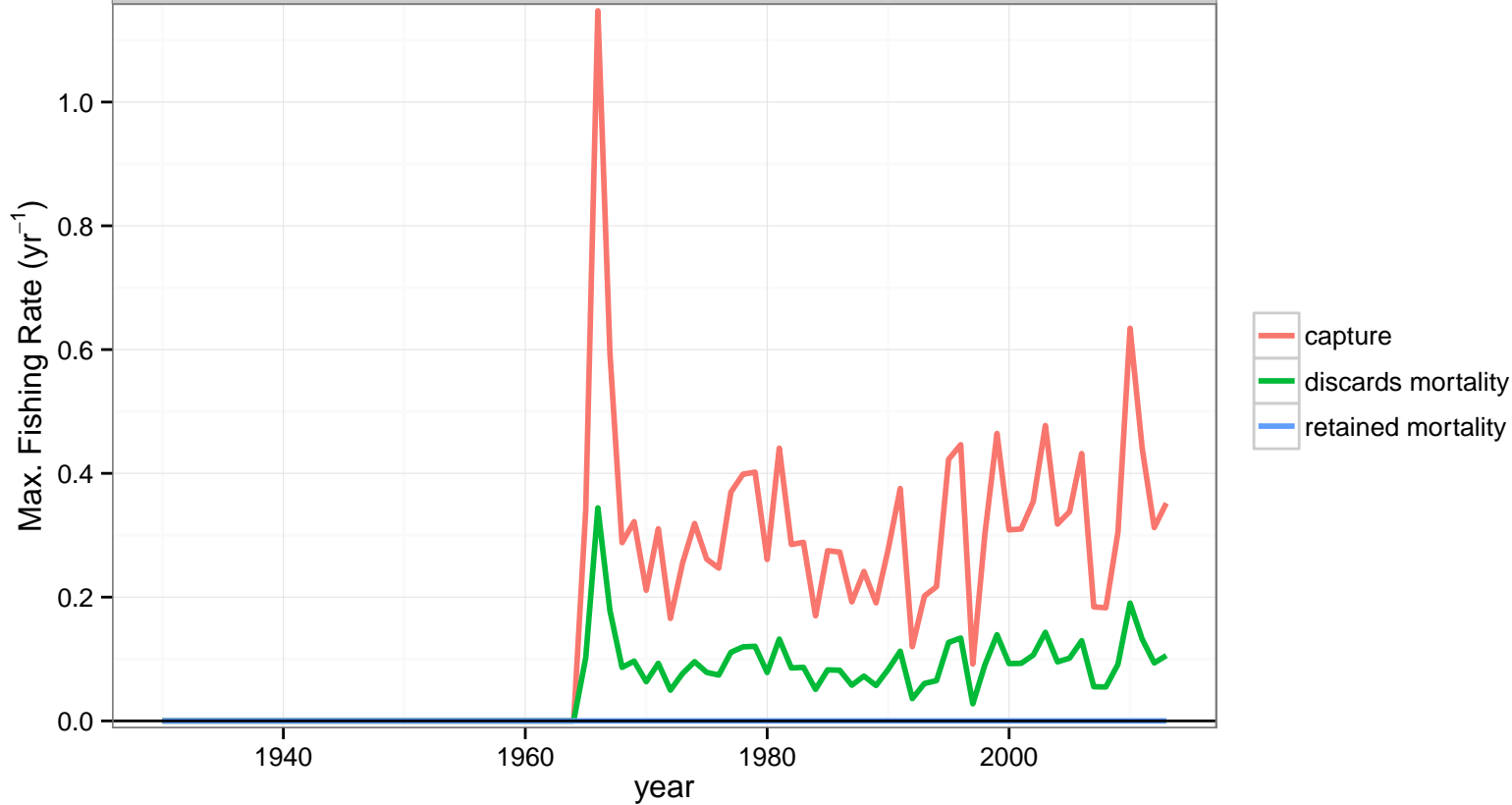
TCF





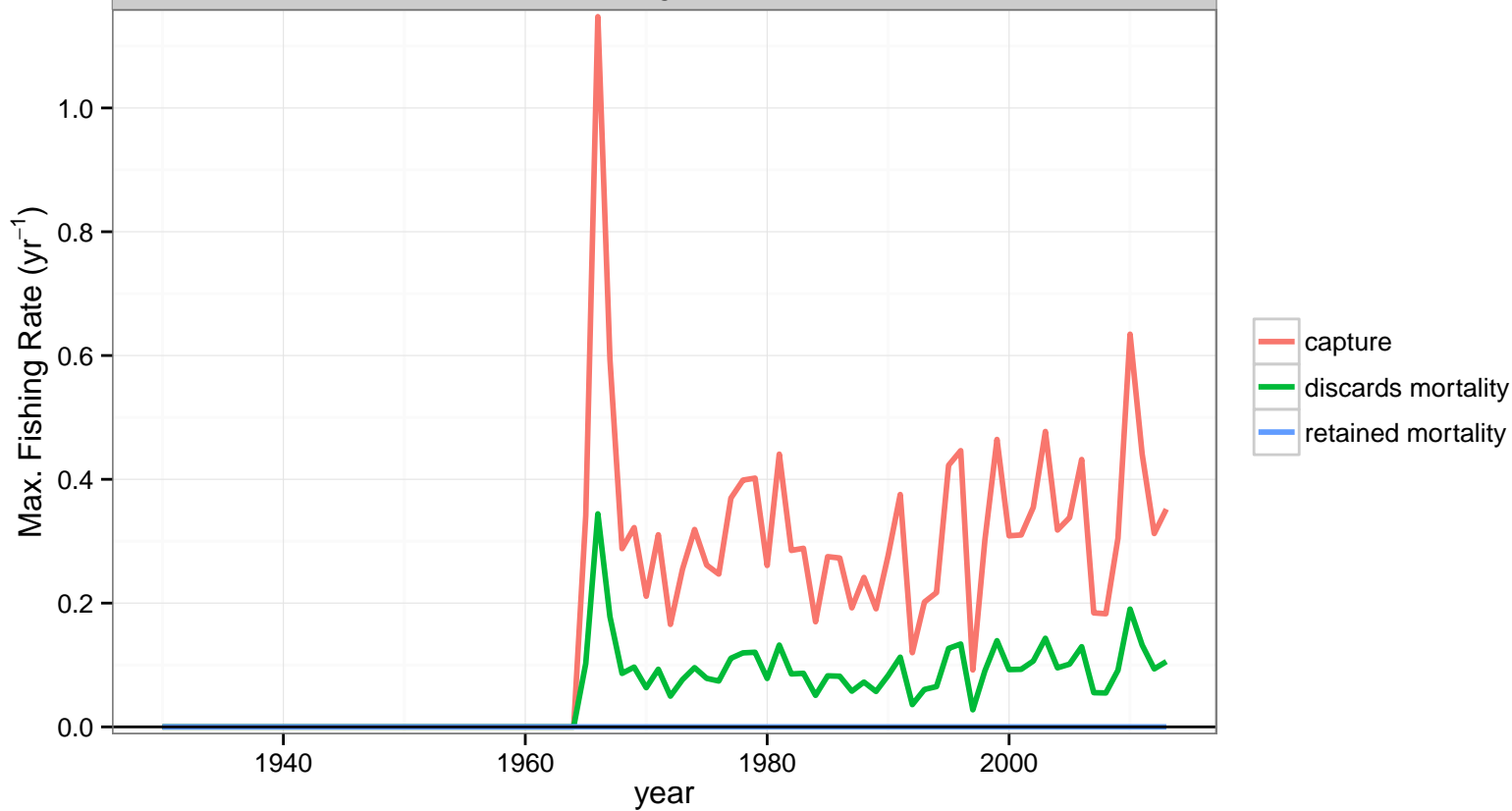
# female, immature, old\_shell

TCF



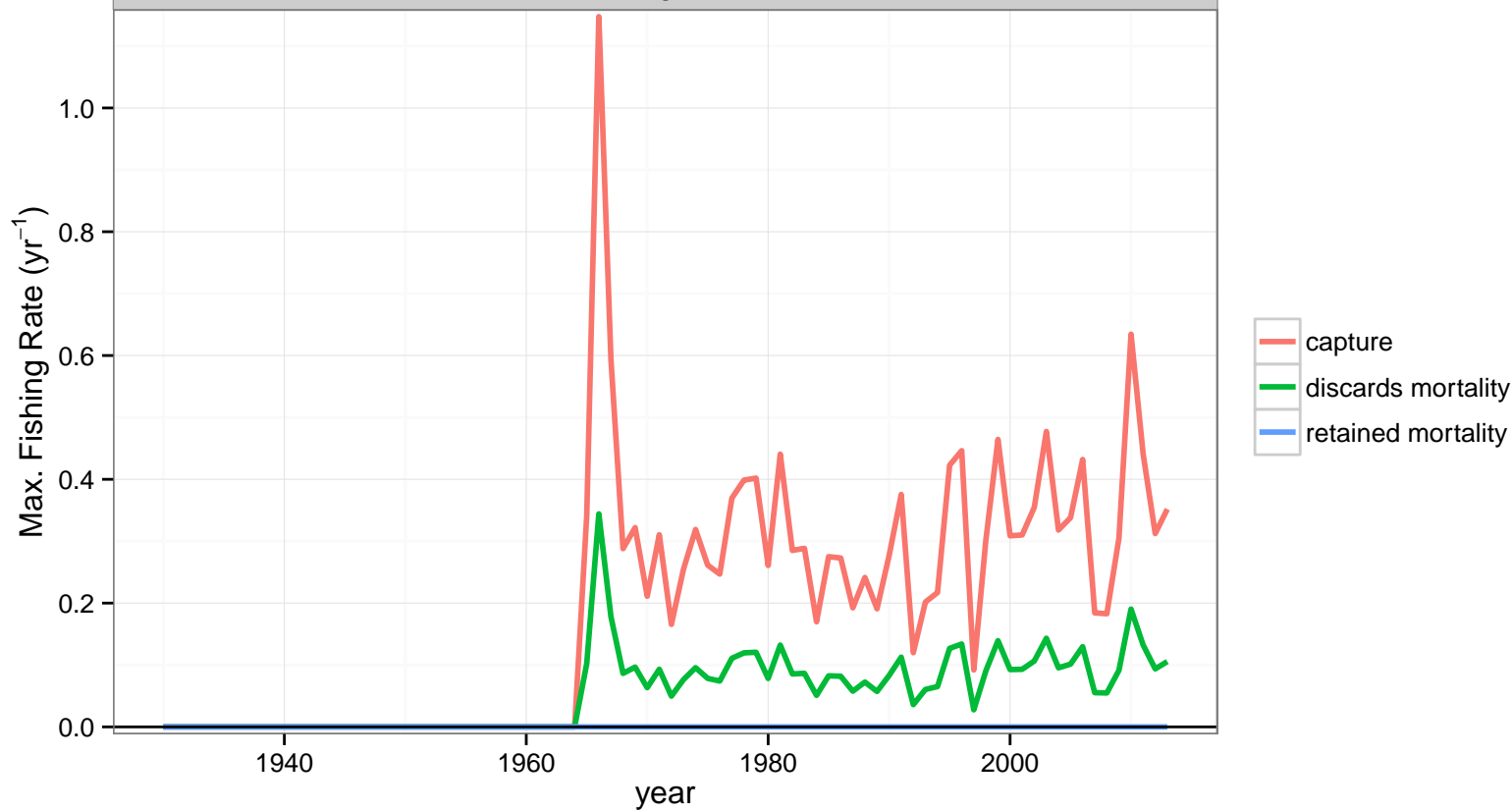
# female, mature, new\_shell

TCF



# female, mature, old\_shell

TCF



Fishery Catch

males

TCF

**type**

- capture
- discards mortality
- retained mortality

60

40

20

0

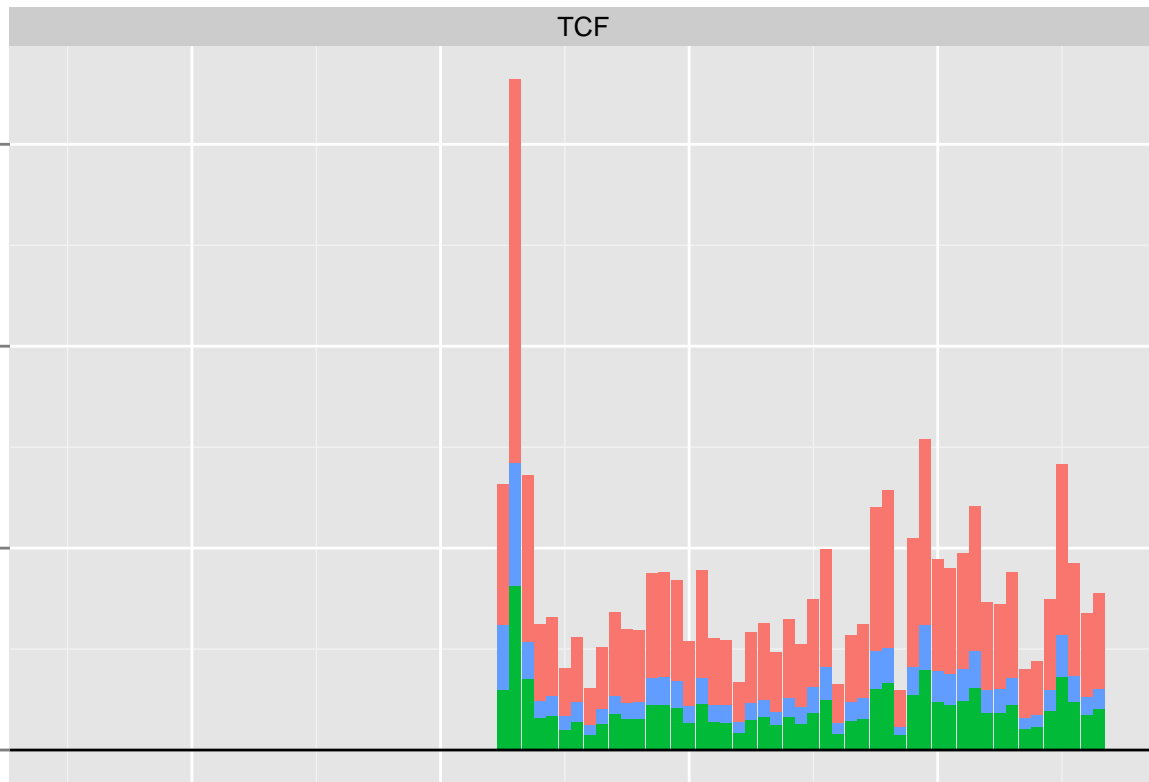
1940

1960

1980

2000

year



# females

TCF

Fishery Catch

40

30

20

10

0

1940

1960

1980

2000

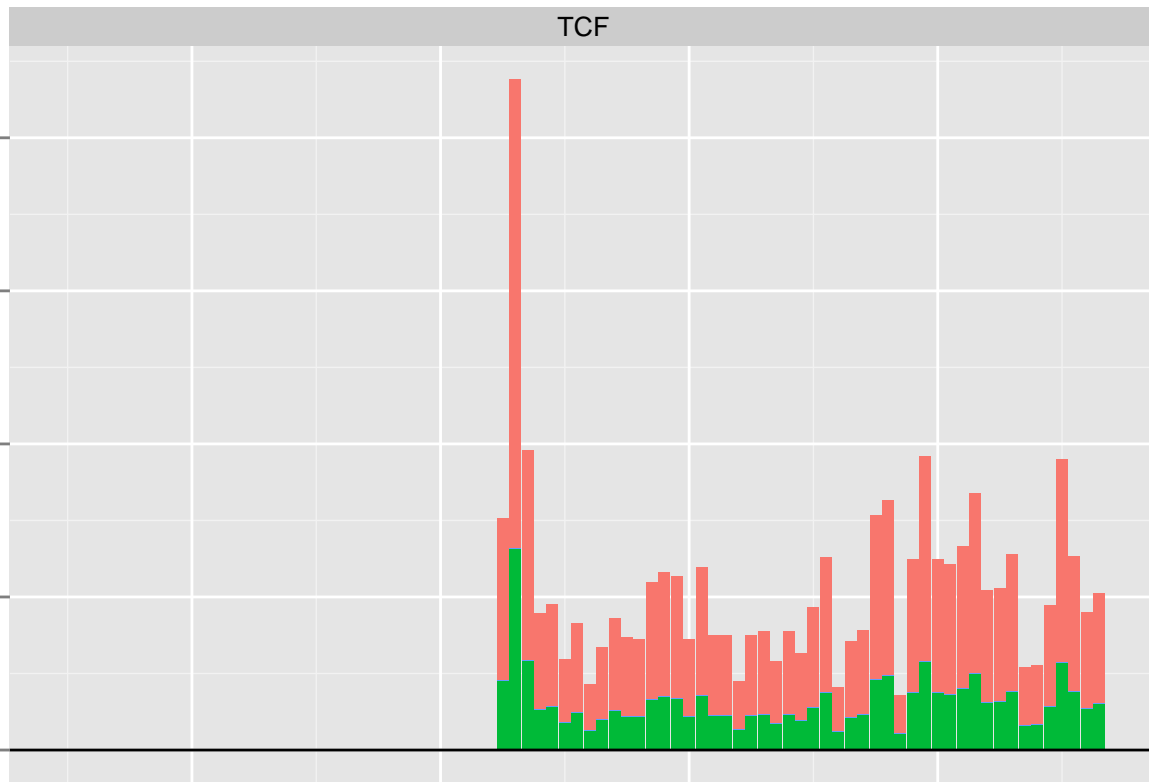
year

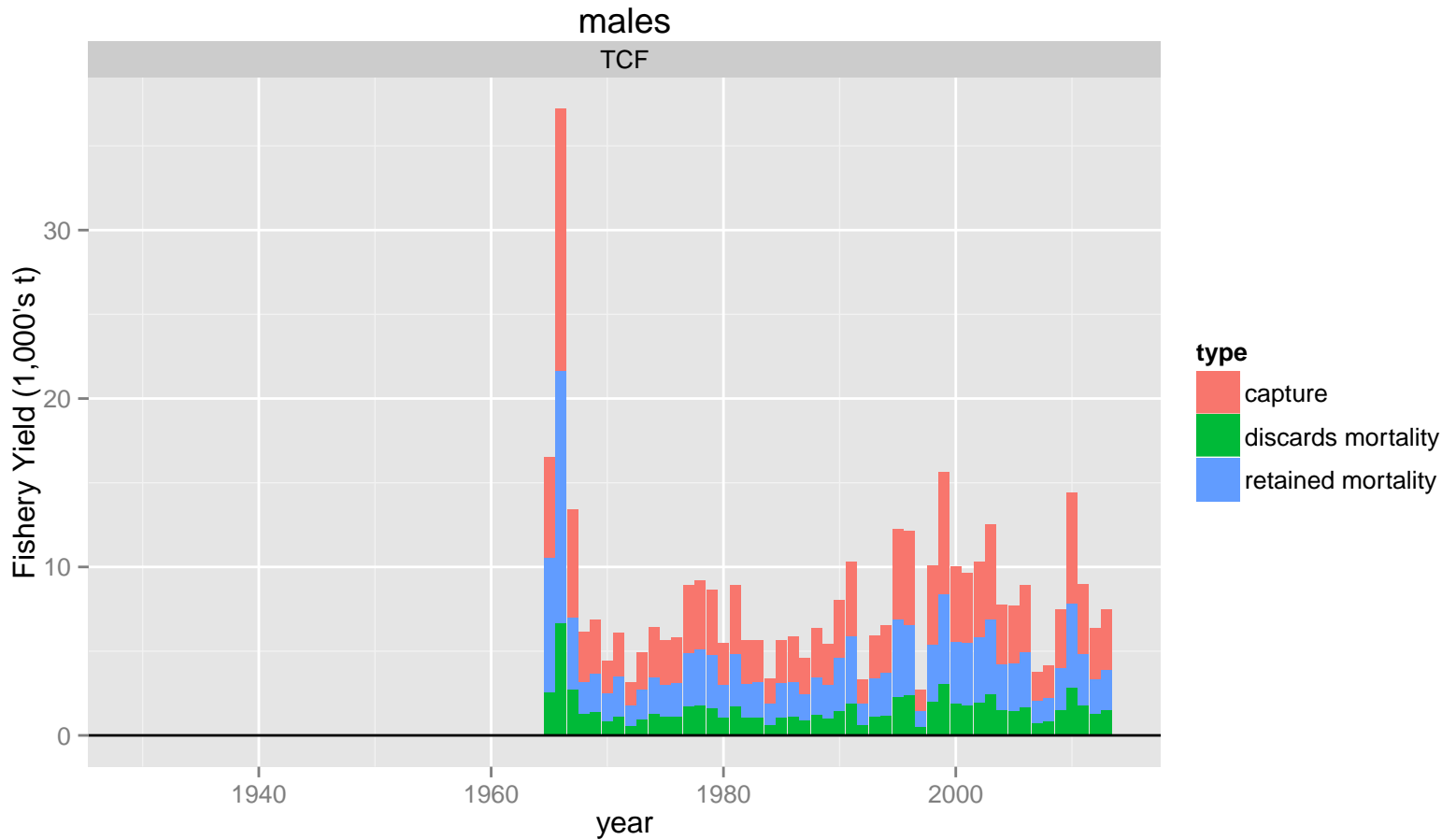
type

capture

discards mortality

retained mortality





# females

TCF

Fishery Yield (1,000's t)

7.5

5.0

2.5

0.0

1940

1960

1980

2000

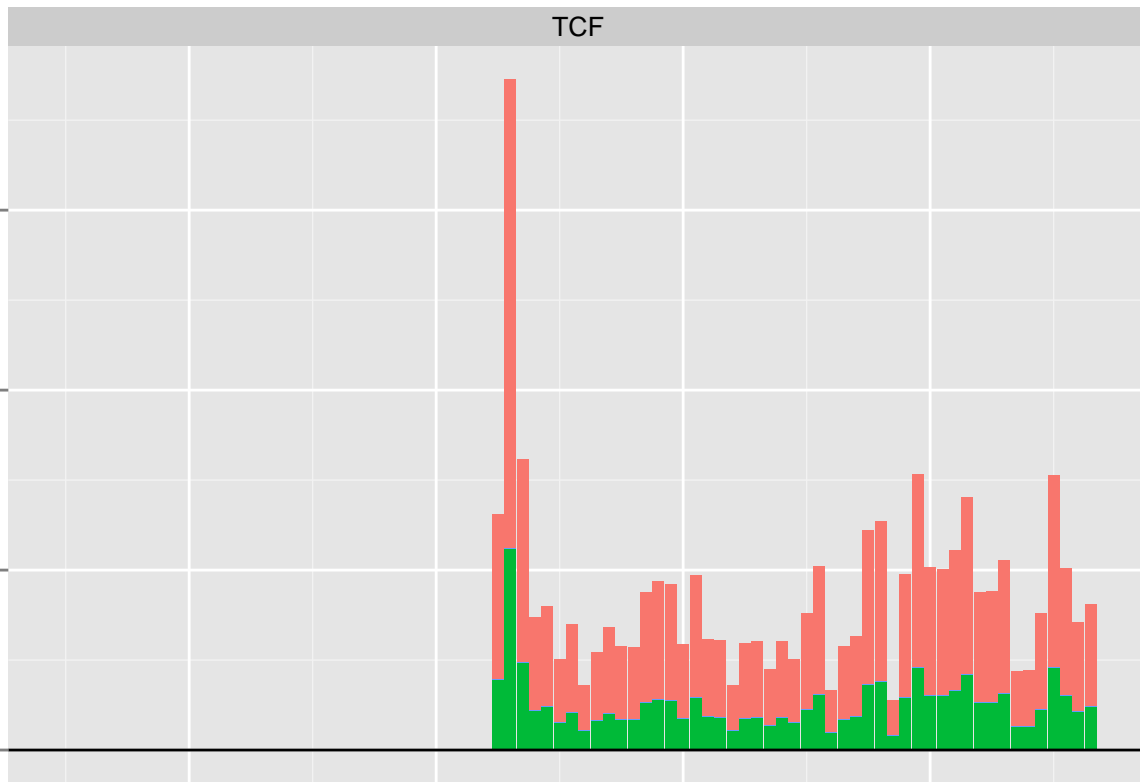
year

type

capture

discards mortality

retained mortality



# males

TCF

Exploitation Rate

0.3

0.2

0.1

0.0

1940

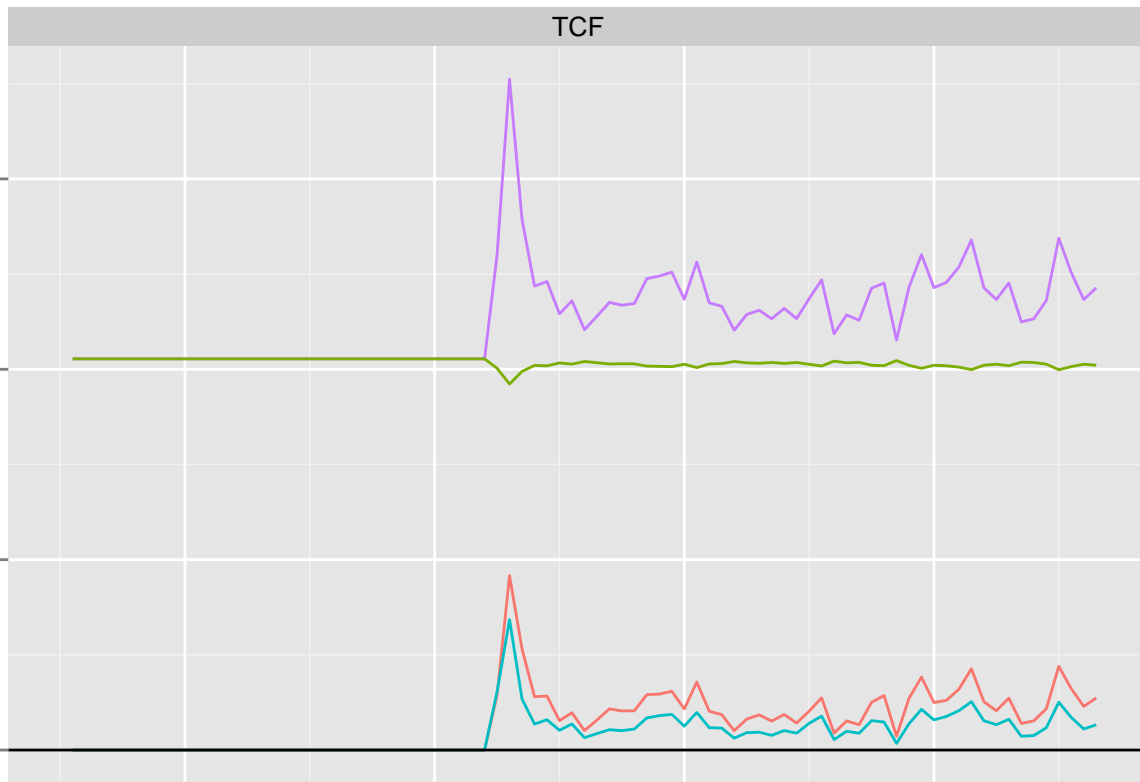
1960

1980

2000

year

- discards mortality
- natural mortality
- retained mortality
- total mortality





# females

TCF

Exploitation Rate

0.0

0.2

1940

1960

1980

2000

year

- discards mortality
- natural mortality
- retained mortality
- total mortality

