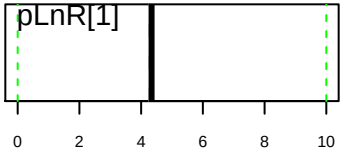
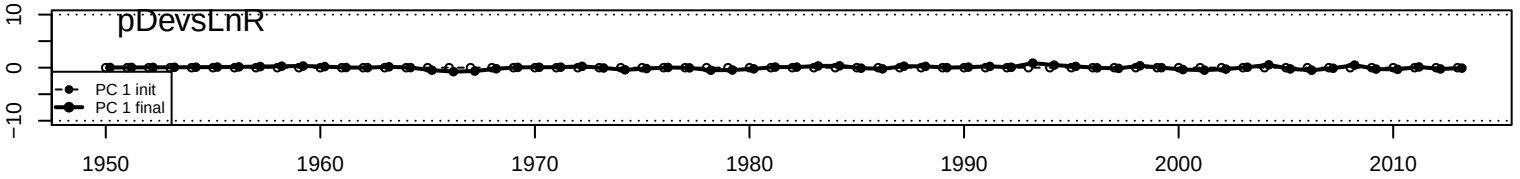
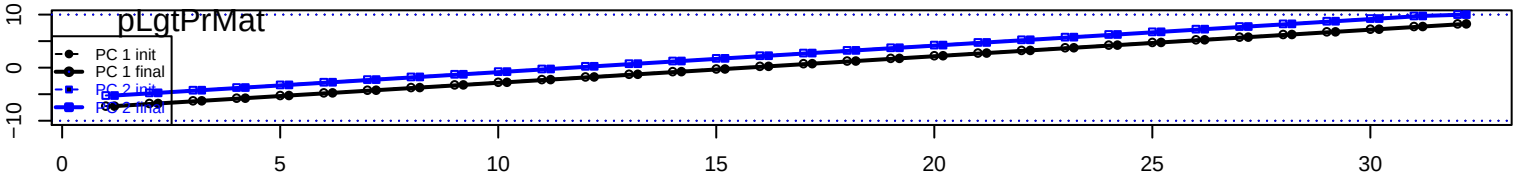
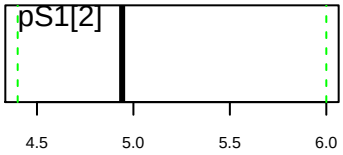
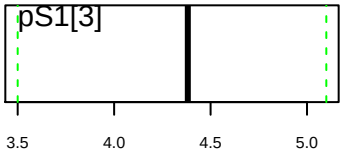
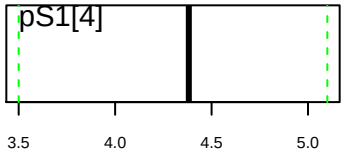

pLnR[1]
0
2
4
6
8
10

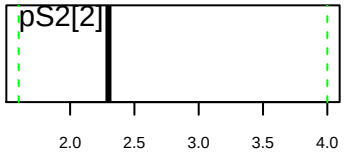

pDevsLnR
10
0
−10
PC 1 init
PC 1final
1950
1960
1970
1980
1990
2000
2010

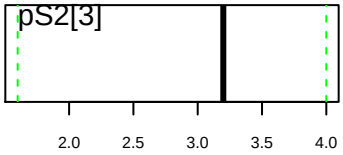

pLgtPrMat
PC 1 init
PC 1 final
PC 2 init
PC 2 final
10
0
−10
0
5
10
15
20
25
30

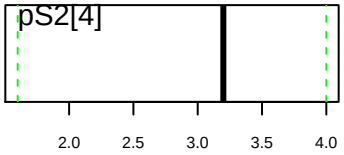

pS1[2]
4.5
5.0
5.5
6.0

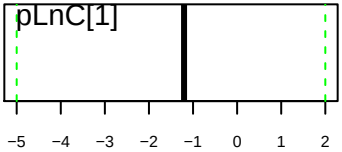

pS1[3]
3.5
4.0
4.5
5.0

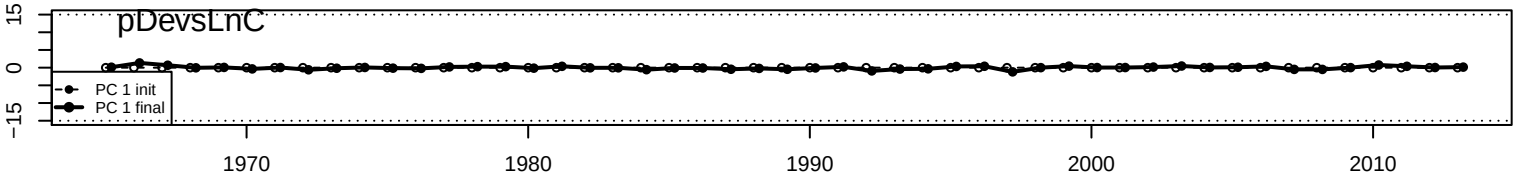

pS1[4]
3.5
4.0
4.5
5.0

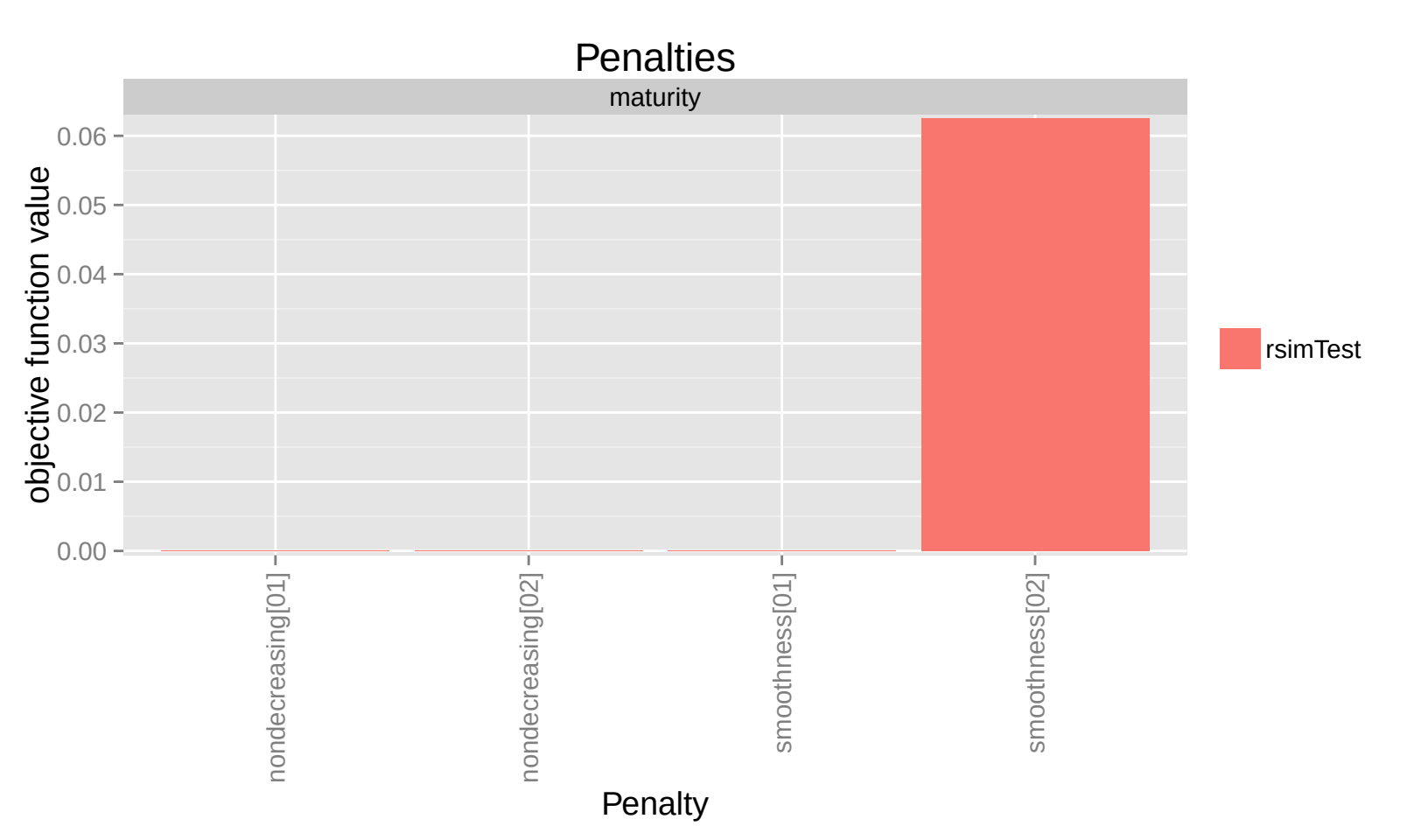

pS2[2]
2.0
2.5
3.0
3.5
4.0

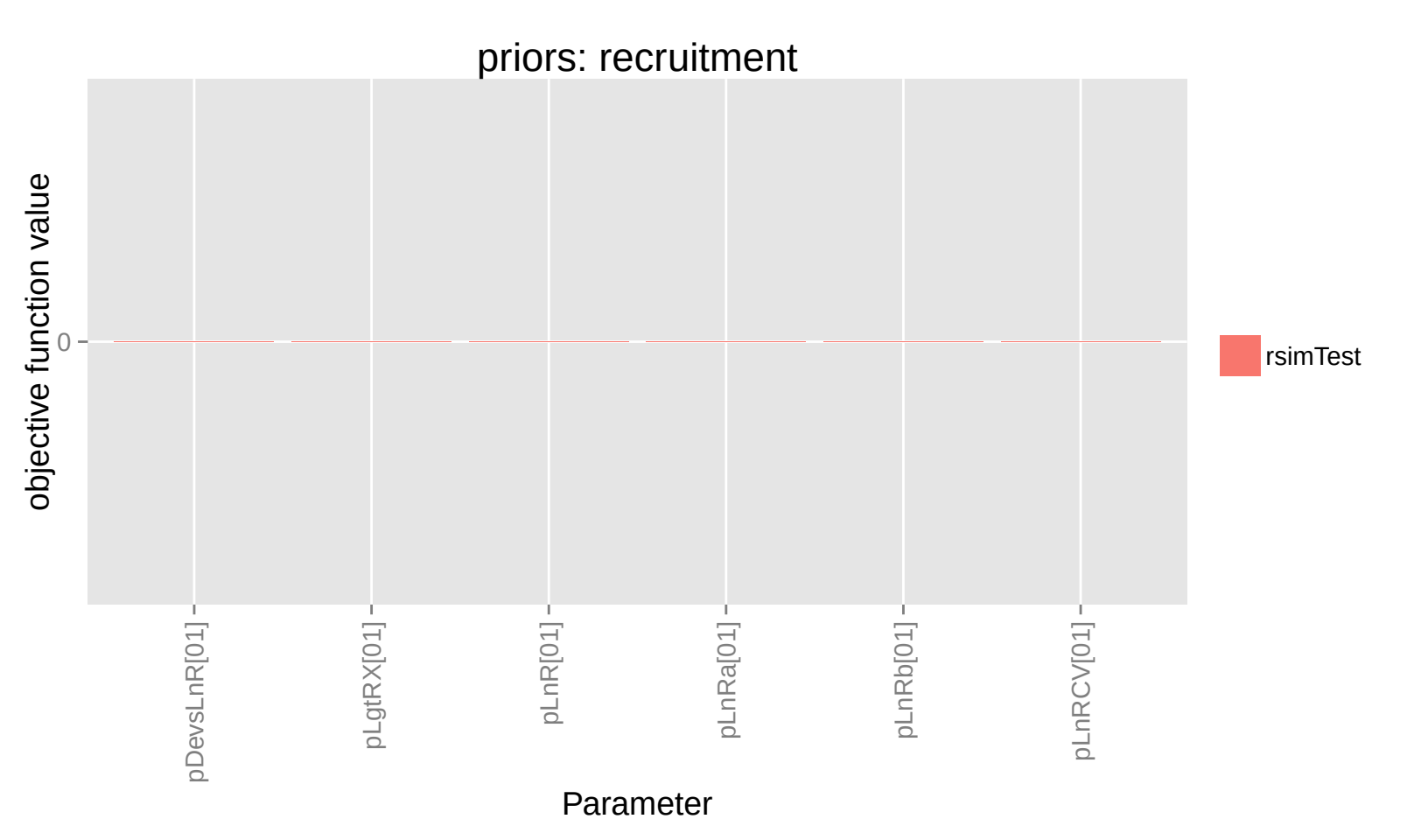

pS2[3]
2.0
2.5
3.0
3.5
4.0

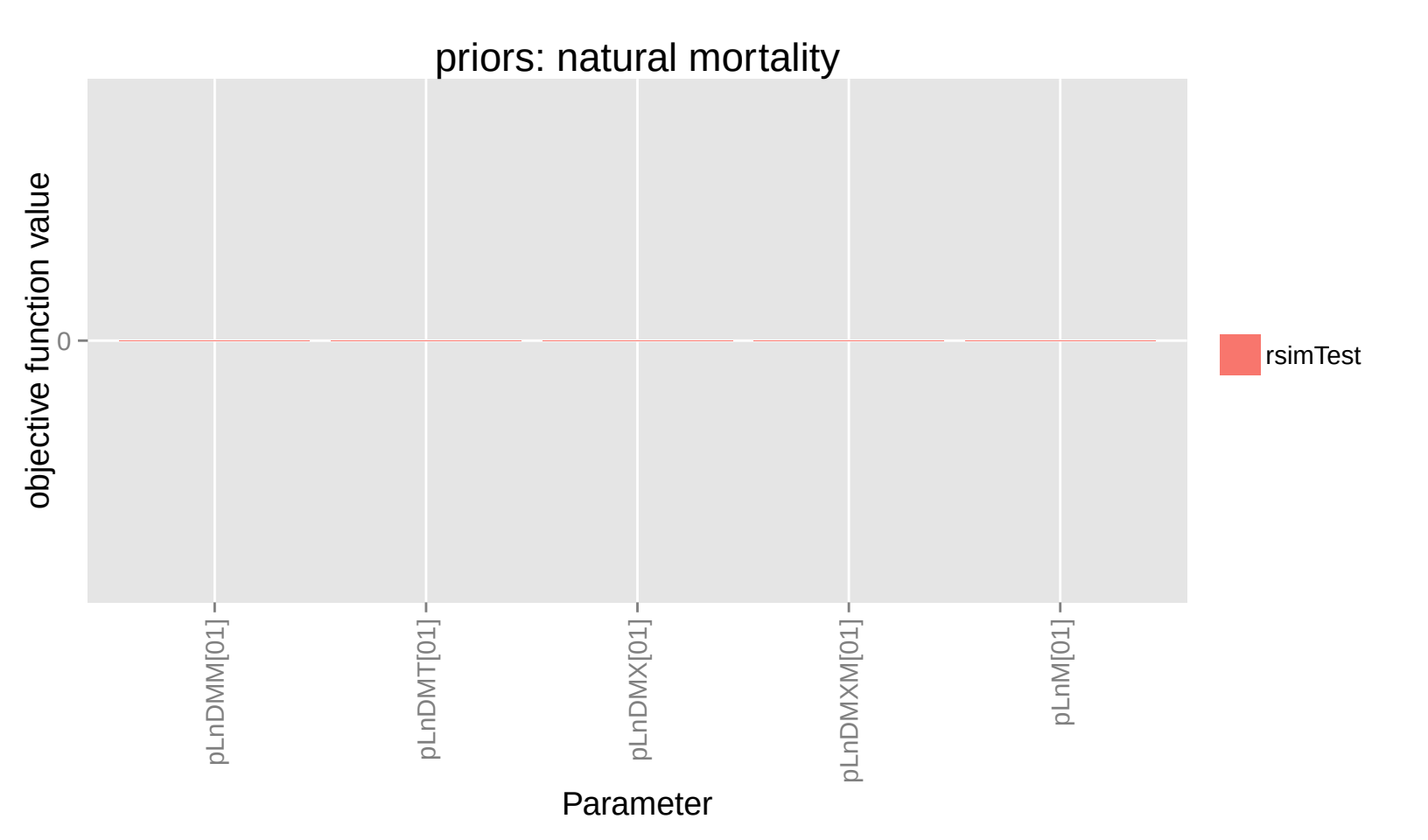

pS2[4]
2.0
2.5
3.0
3.5
4.0

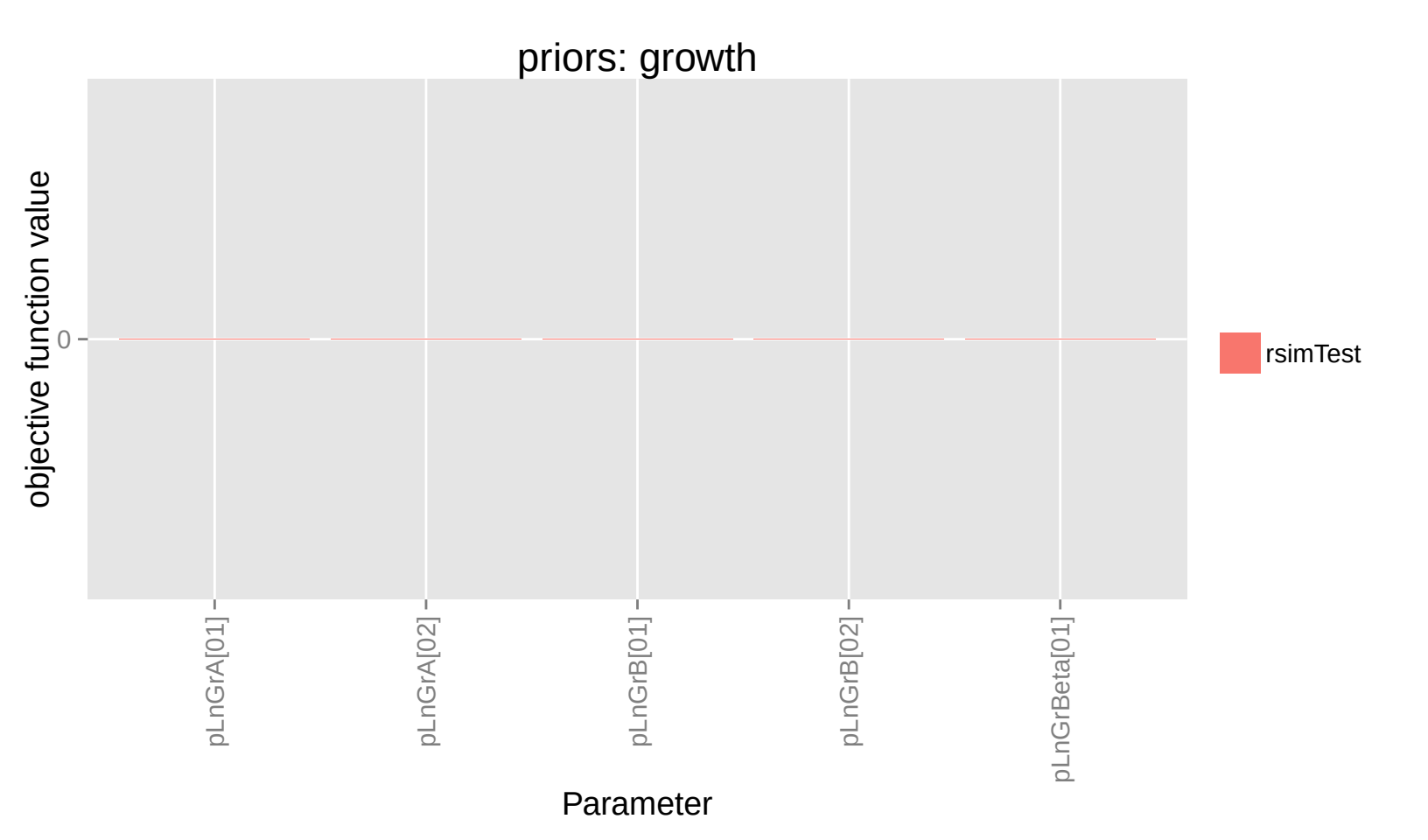

pLnC[1]
−5
−4
−3
−2
−1
0
1
2

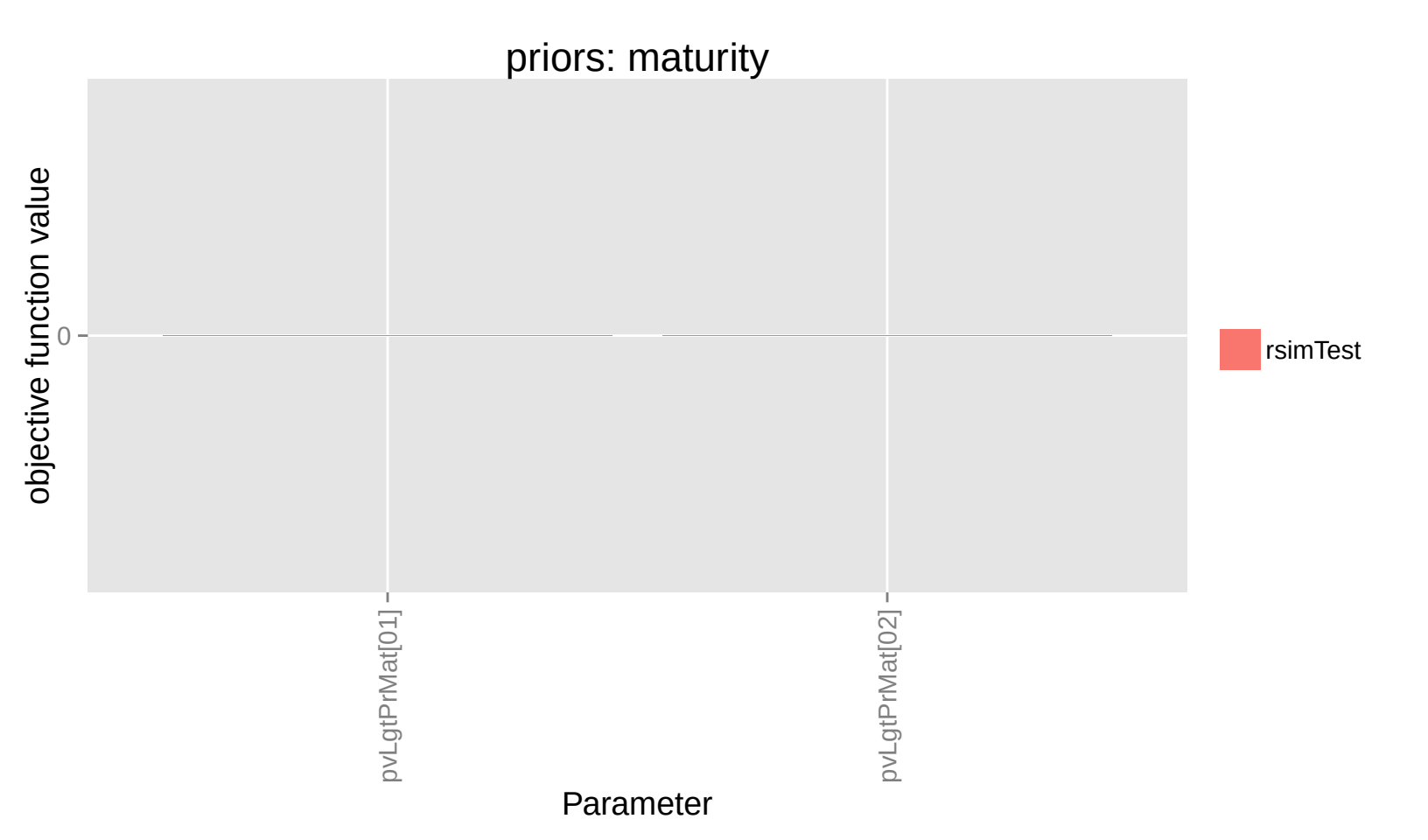

pDevsLnC
15
0
−15
PC 1 init
PC 1 final
1970
1980
1990
2000
2010

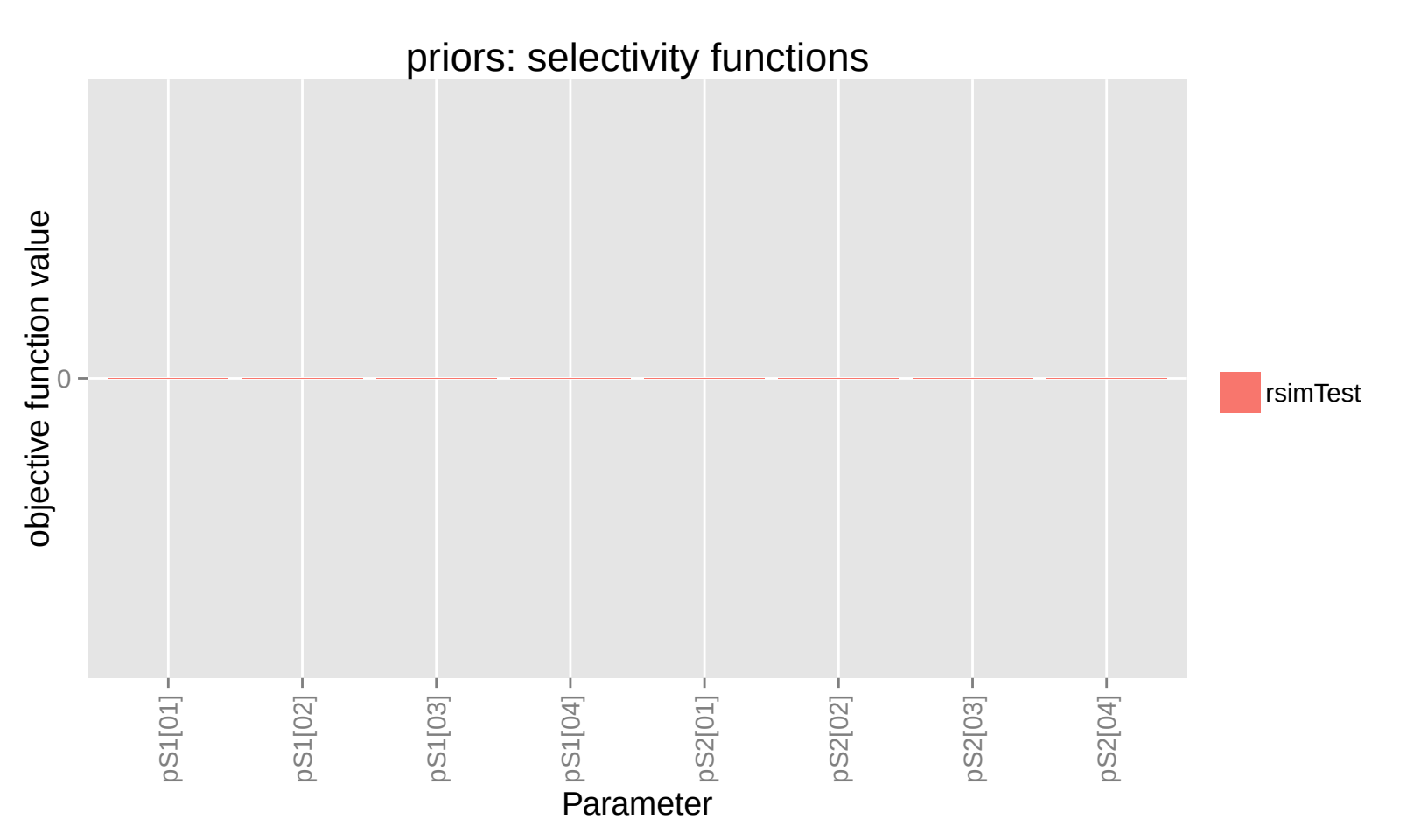

Penalties
maturity
objective function value
0.06
0.05
0.04
0.03
0.02
0.01
0.00
nondecreasing[01]
nondecreasing[02]
smoothness[01]
smoothness[02]
Penalty
rsimTest

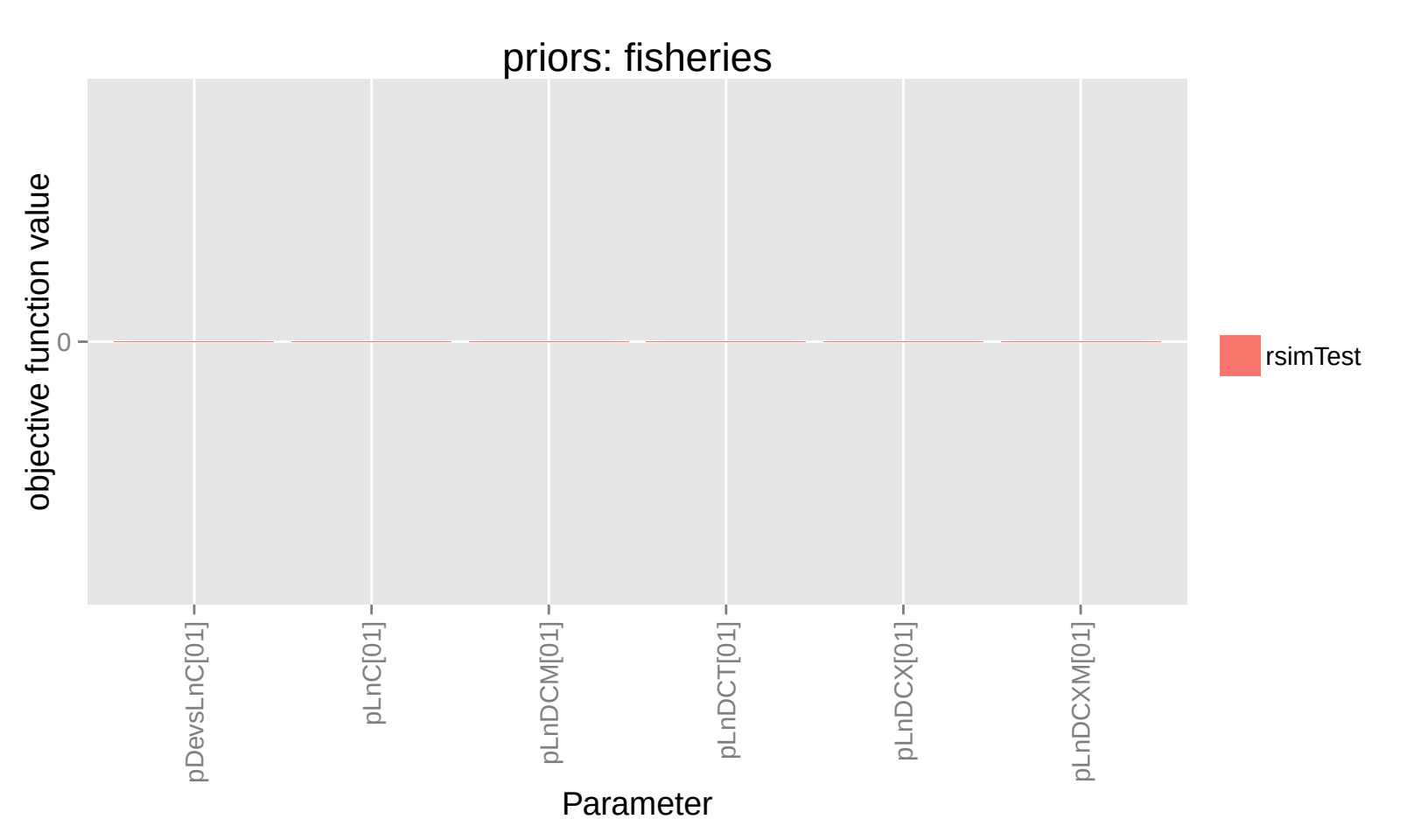

priors: recruitment
objective function value
0
pDevsLnR[01]
pLgtRX[01]
pLnR[01]
pLnRa[01]
pLnRb[01]
pLnRCV[01]
Parameter
rsimTest

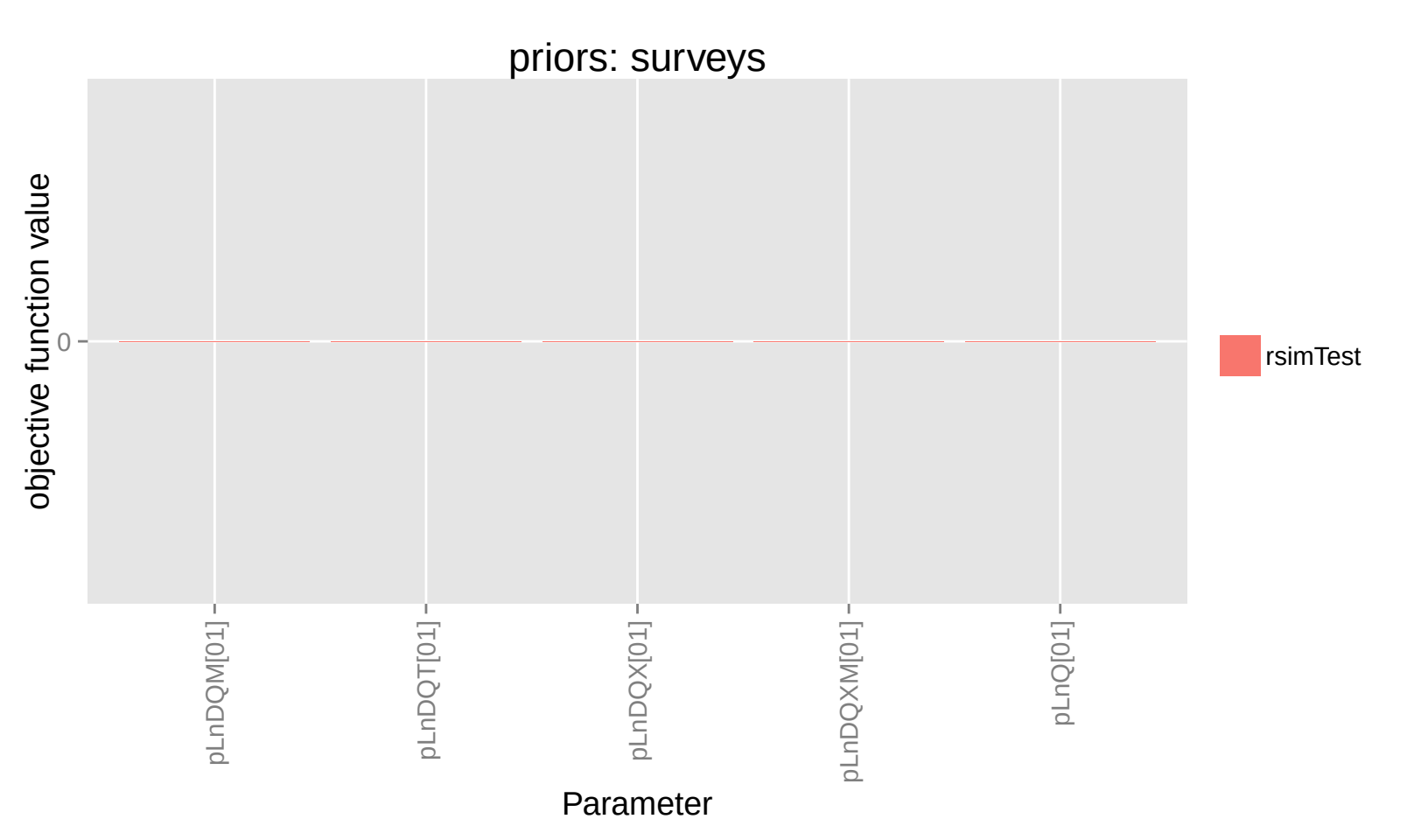

priors: natural mortality
objective function value
0
pLnDMM[01]
pLnDMT[01]
pLnDMX[01]
pLnDMXM[01]
pLnM[01]
Parameter
rsimTest

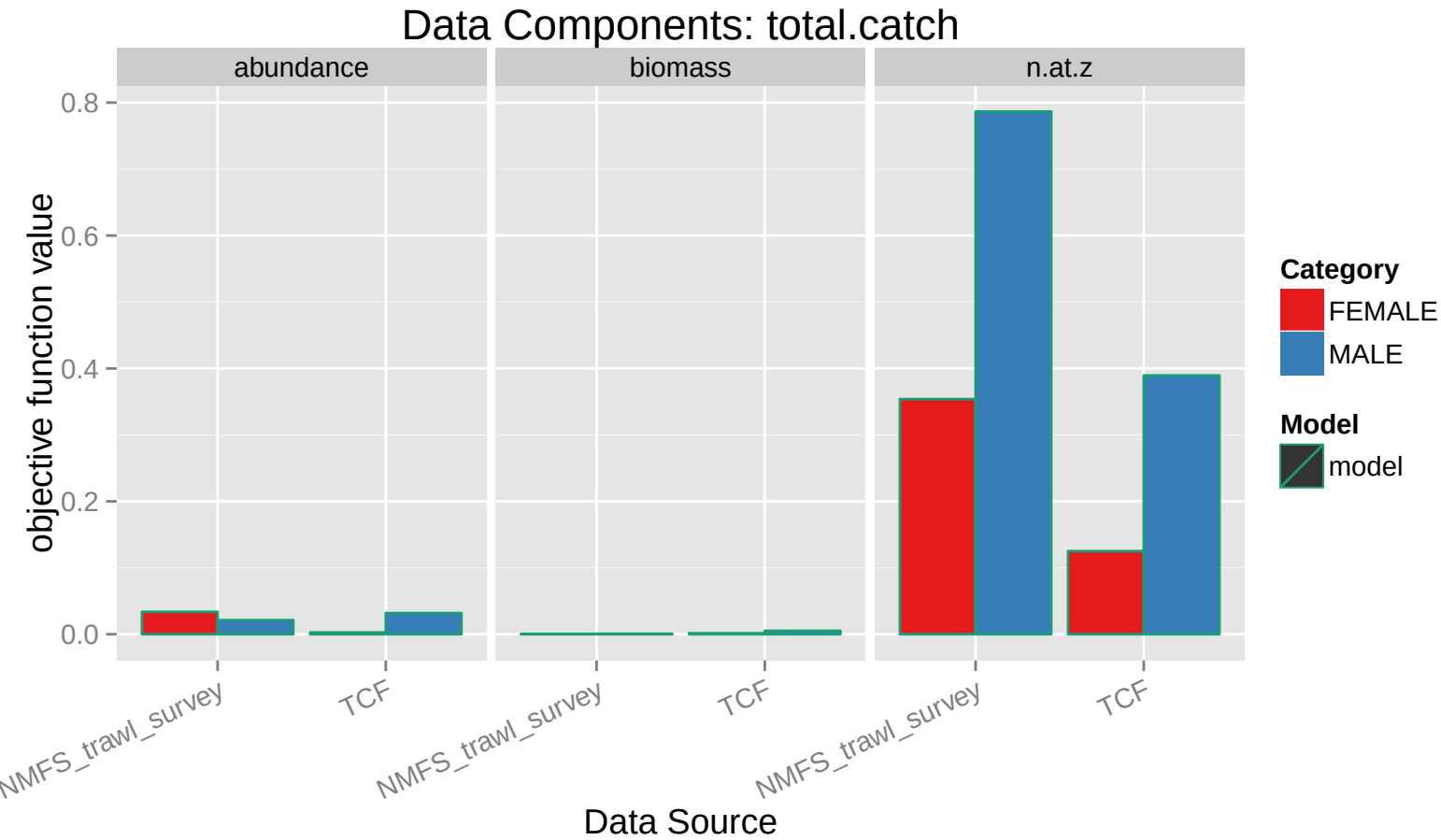

priors: growth
objective function value
0
pLnGrA[01]
pLnGrA[02]
pLnGrB[01]
pLnGrB[02]
pLnGrBeta[01]
Parameter
rsimTest

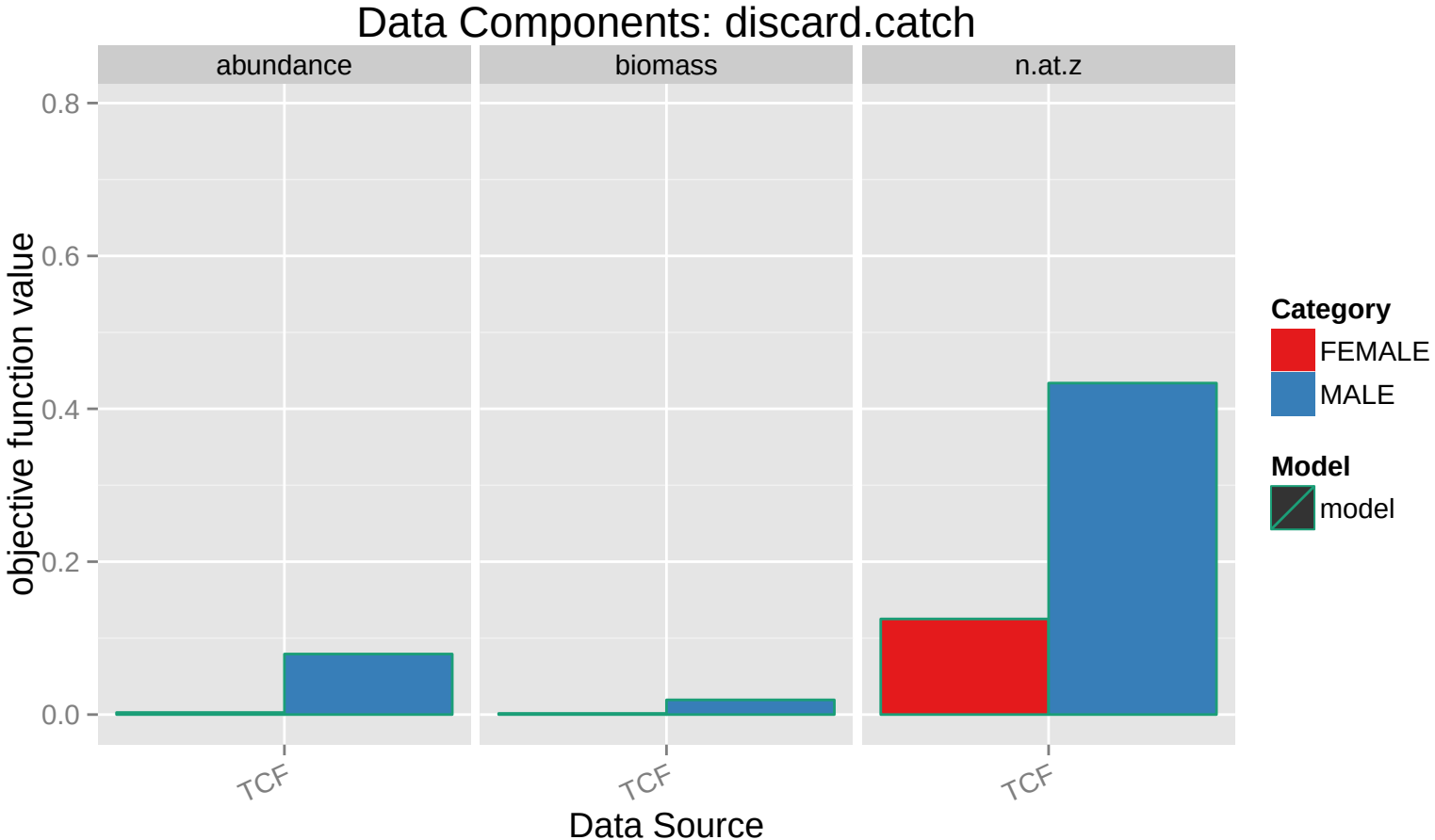

priors: maturity
objective function value
0
pvLgtPrMat[01]
pvLgtPrMat[02]
Parameter
rsimTest

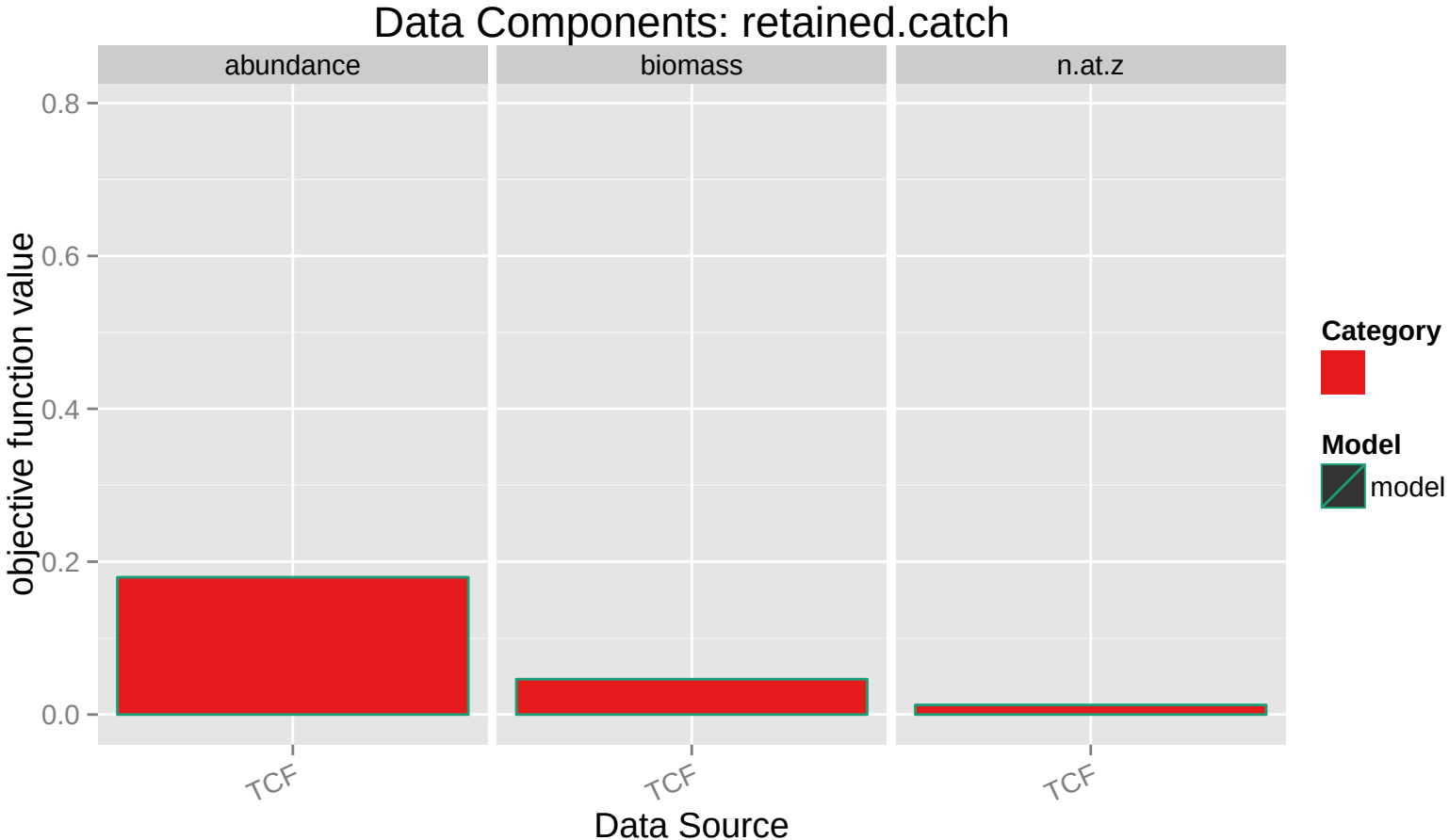

priors: selectivity functions
objective function value
0
pS1[01]
pS1[02]
pS1[03]
pS1[04]
pS2[01]
pS2[02]
pS2[03]
pS2[04]
Parameter
rsimTest

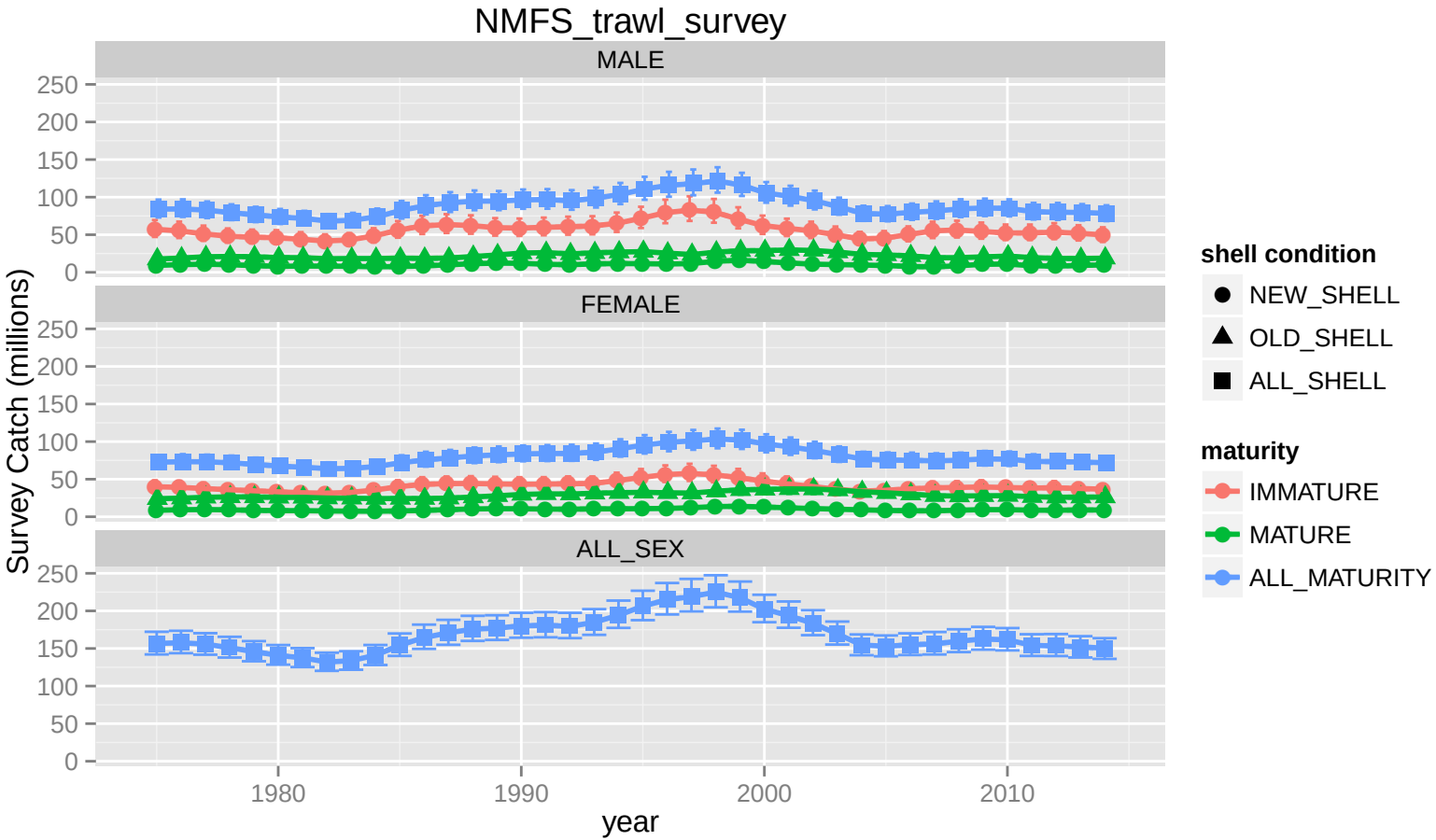

priors: fisheries
objective function value
0
pDevsLnC[01]
pLnC[01]
pLnDCM[01]
pLnDCT[01]
pLnDCX[01]
pLnDCXM[01]
Parameter
rsimTest

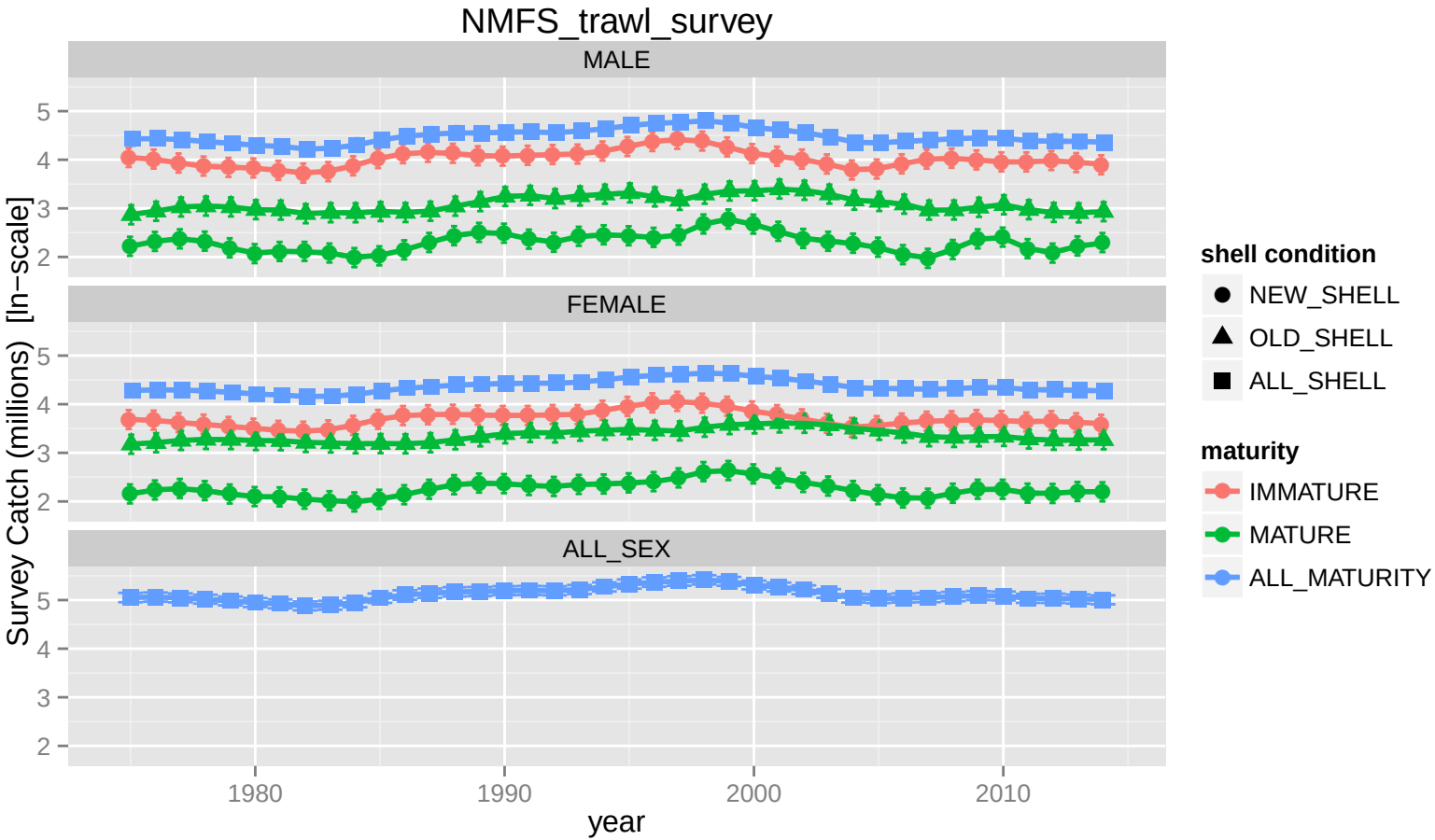

priors: surveys
objective function value
0
pLnDQM[01]
pLnDQT[01]
pLnDQX[01]
pLnDQXM[01]
pLnQ[01]
Parameter
rsimTest

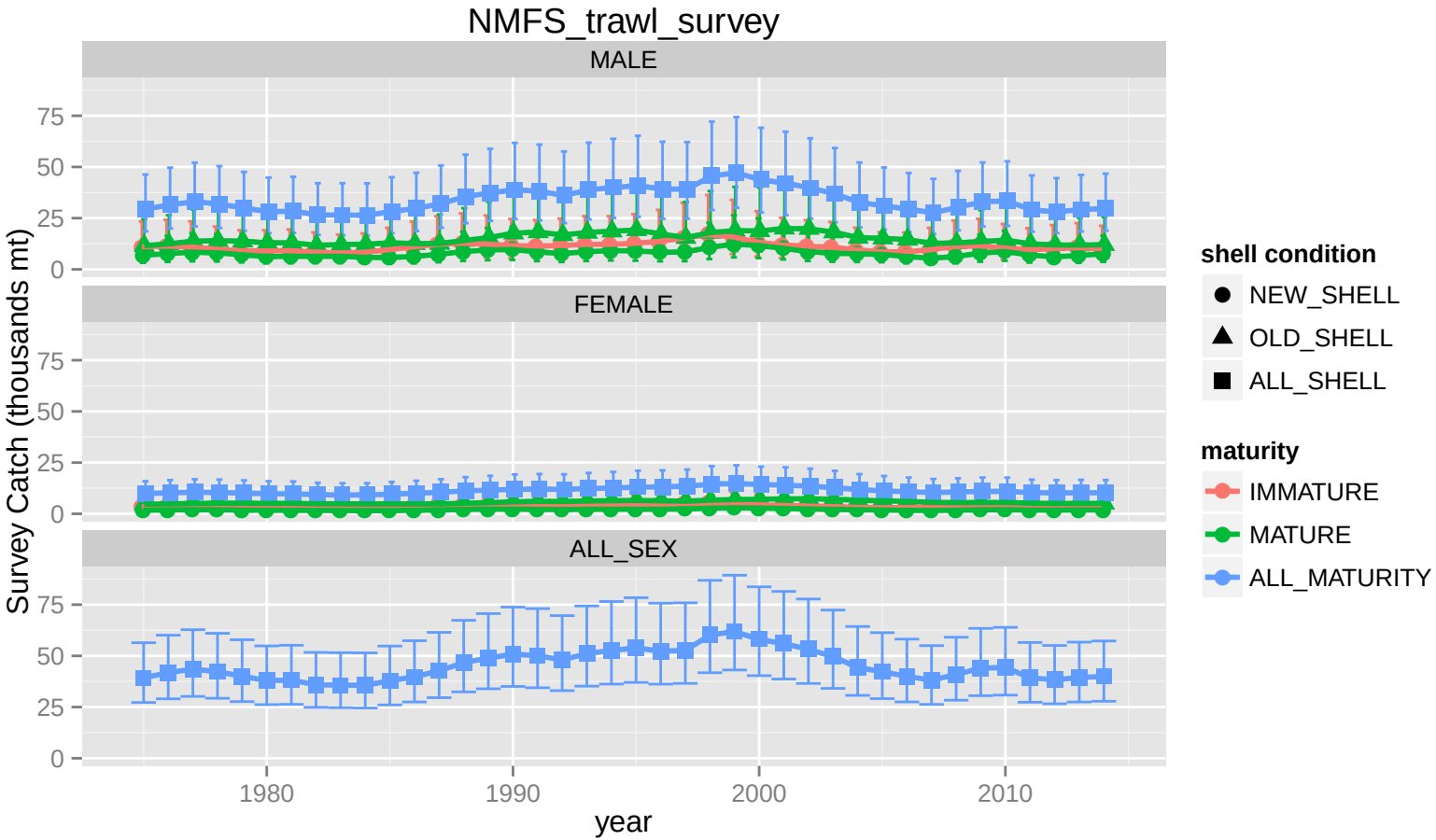

Data Components: total.catch
abundance
biomass
n.at.z
objective function value
0.8
0.6
0.4
0.2
0.0
NMFS_trawl_survey
TCF
NMFS_trawl_survey
TCF
NMFS_trawl_survey
TCF
Data Source
Category
FEMALE
MALE
Model
model

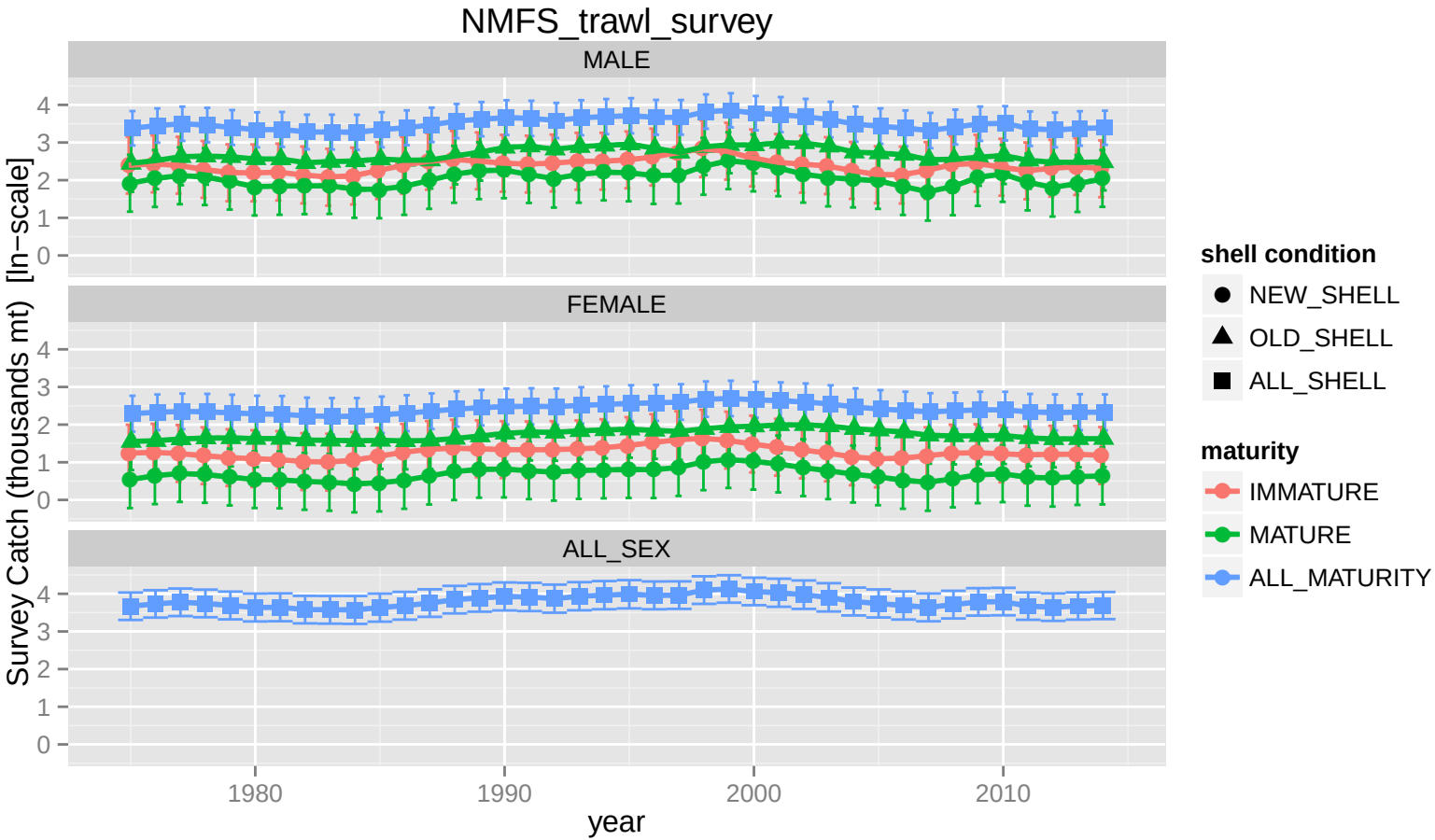

Data Components: discard.catch
abundance
biomass
n.at.z
objective function value
0.8
0.6
0.4
0.2
0.0
TCF
TCF
TCF
Data Source
Category
FEMALE
MALE
Model
model

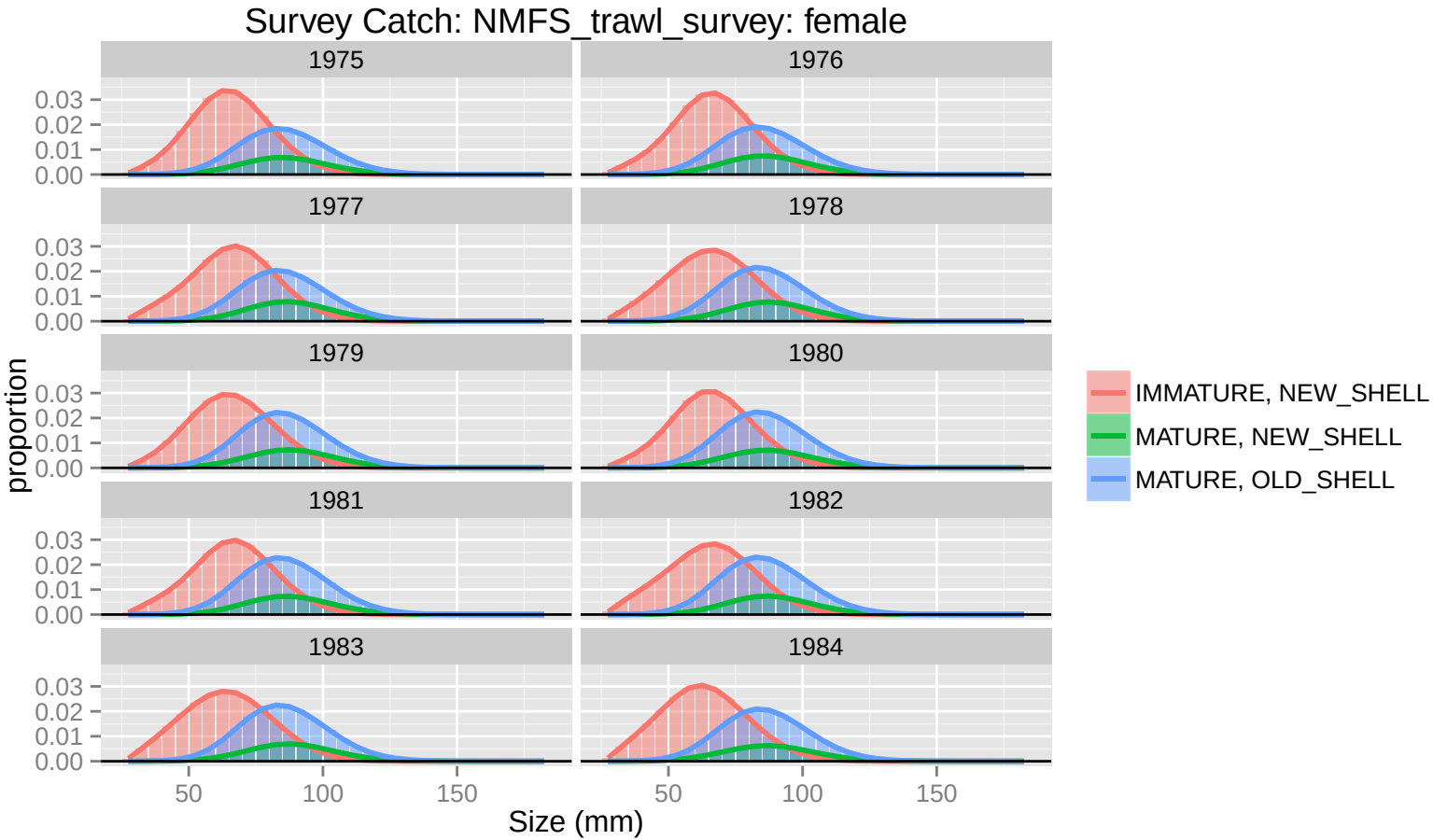

Data Components: retained.catch
abundance
biomass
n.at.z
0.8
0.6
0.4
0.2
0.0
objective function value
TCF
TCF
TCF
Data Source
Category
Model
model

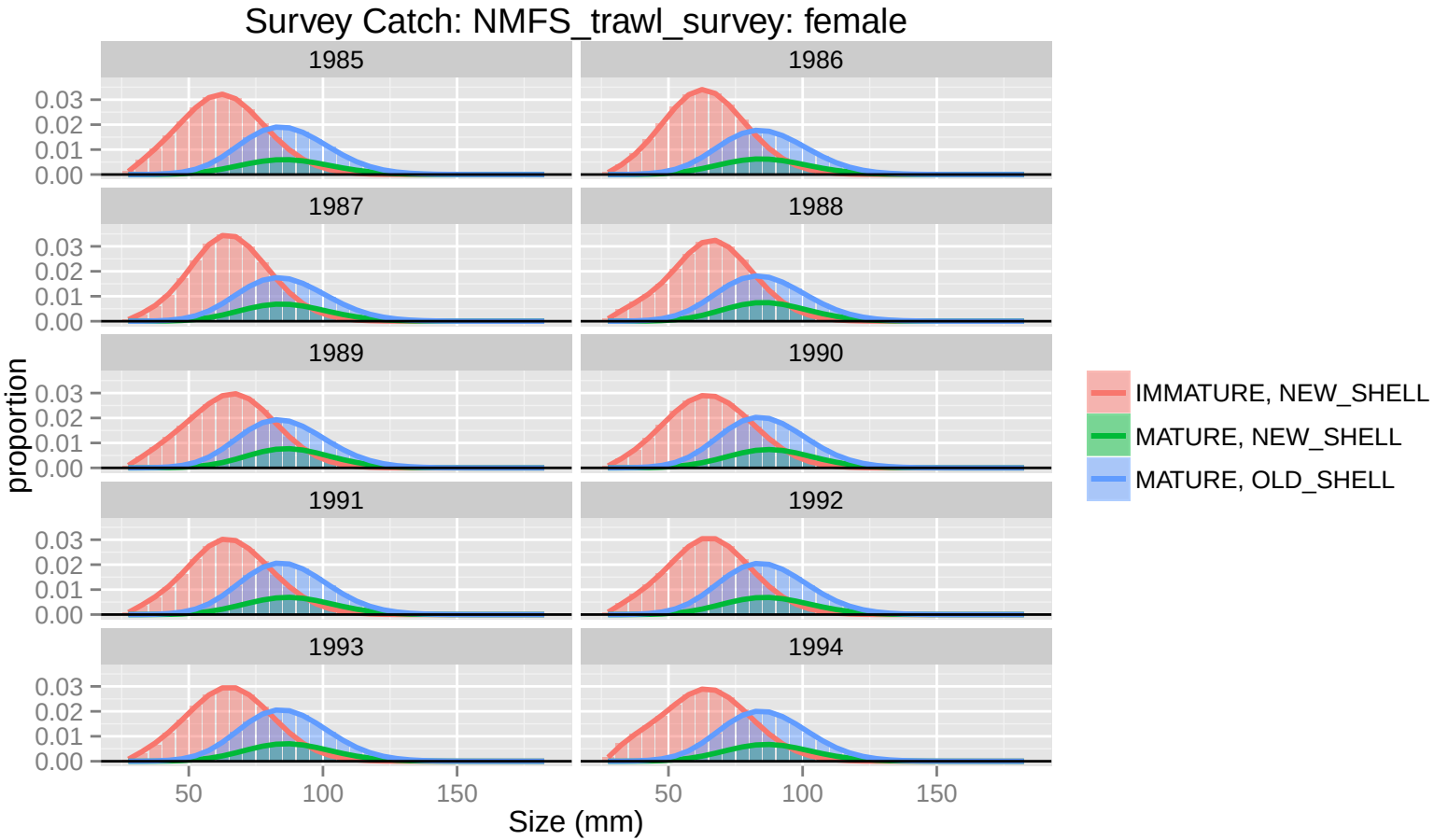

NMFS_trawl_survey
MALE
FEMALE
ALL_SEX
Survey Catch (millions)
0
50
100
150
200
250
1980
1990
2000
2010
year
shell condition
NEW_SHELL
OLD_SHELL
ALL_SHELL
maturity
IMMATURE
MATURE
ALL_MATURITY

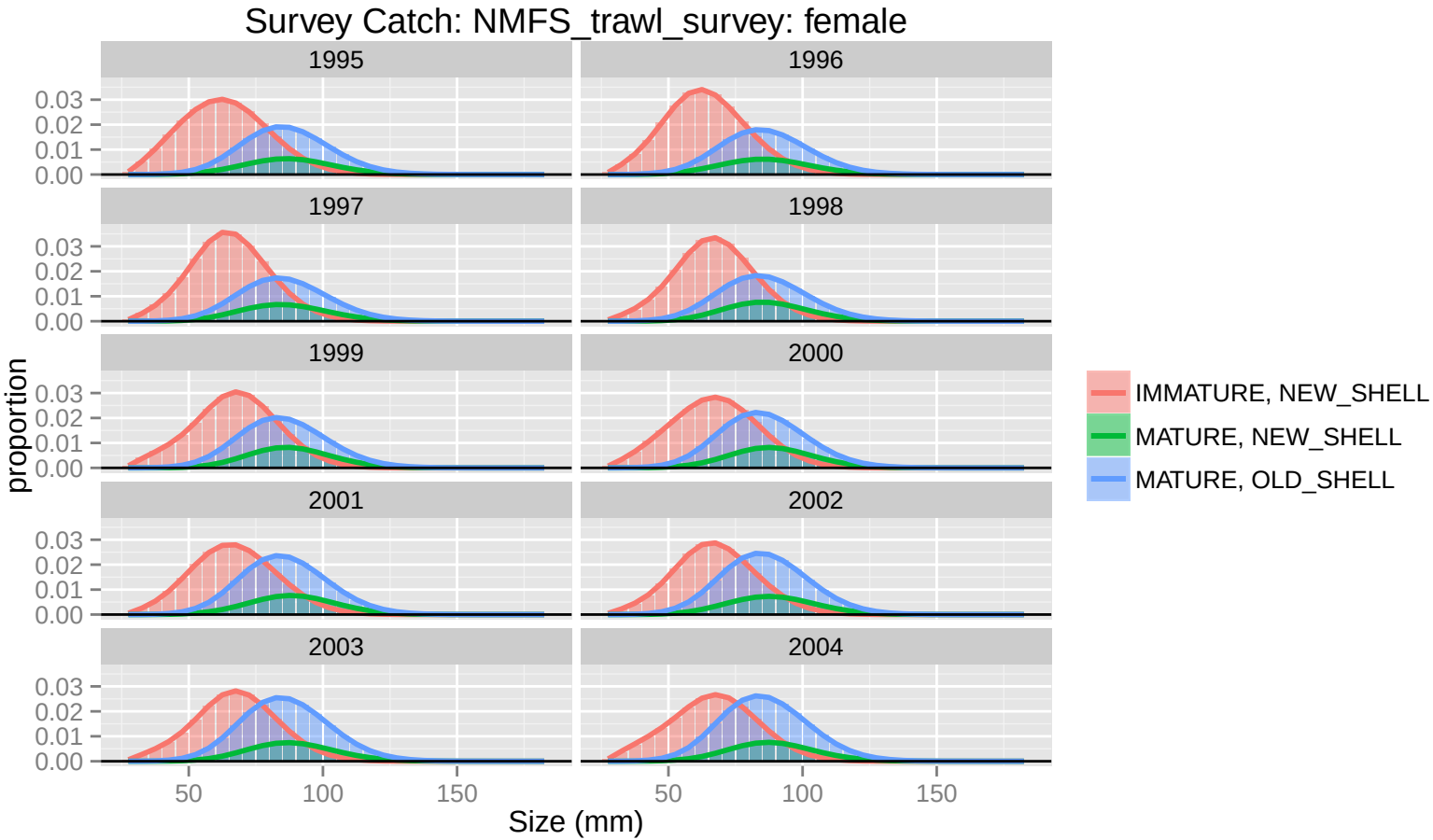

NMFS_trawl_survey
MALE
FEMALE
ALL_SEX
Survey Catch (millions) [ln−scale]
5
4
3
2
1980
1990
2000
2010
year
shell condition
NEW_SHELL
OLD_SHELL
ALL_SHELL
maturity
IMMATURE
MATURE
ALL_MATURITY

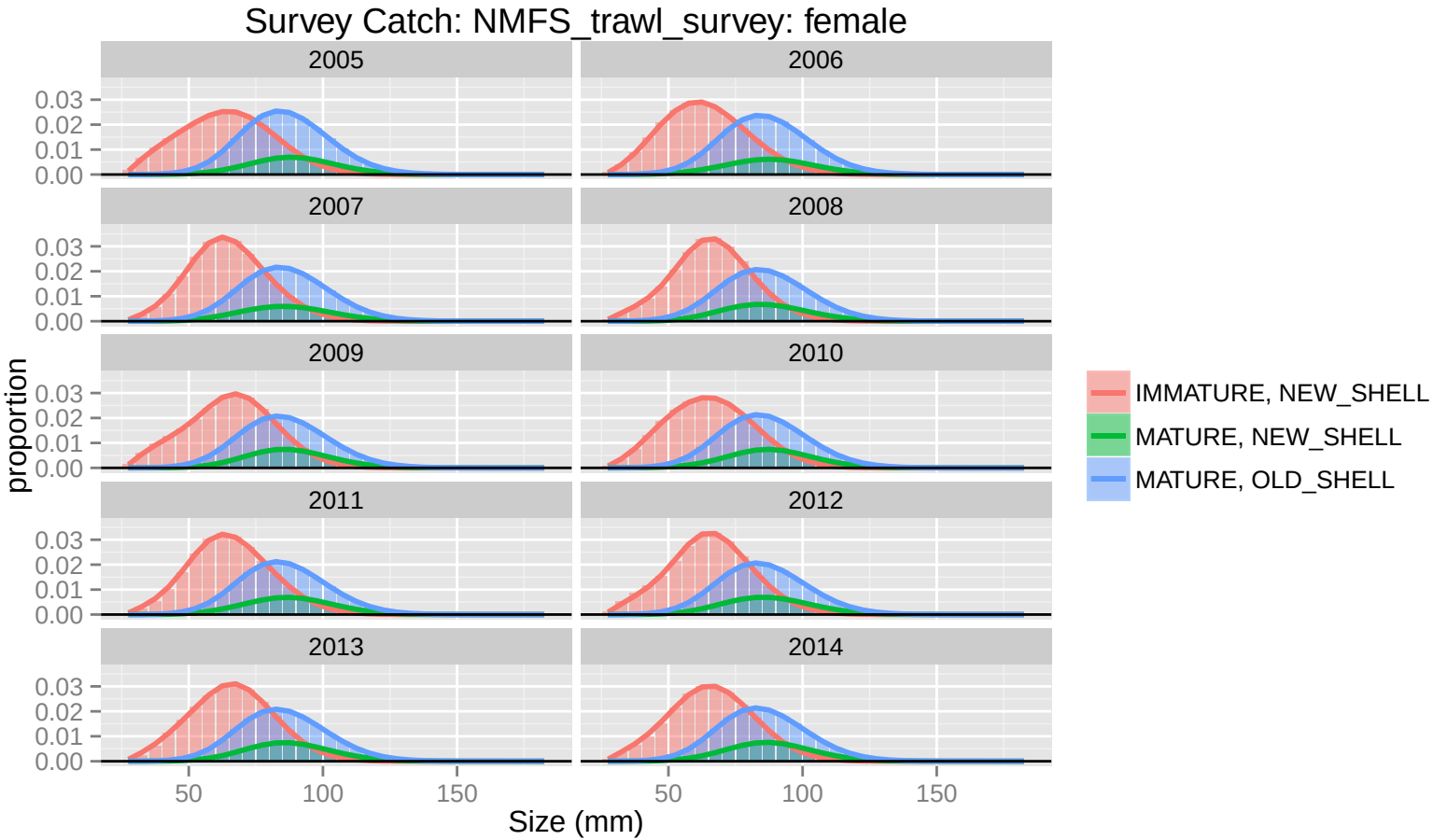

NMFS_trawl_survey
MALE
FEMALE
ALL_SEX
Survey Catch (thousands mt)
0
25
50
75
1980
1990
2000
2010
year
shell condition
NEW_SHELL
OLD_SHELL
ALL_SHELL
maturity
IMMATURE
MATURE
ALL_MATURITY

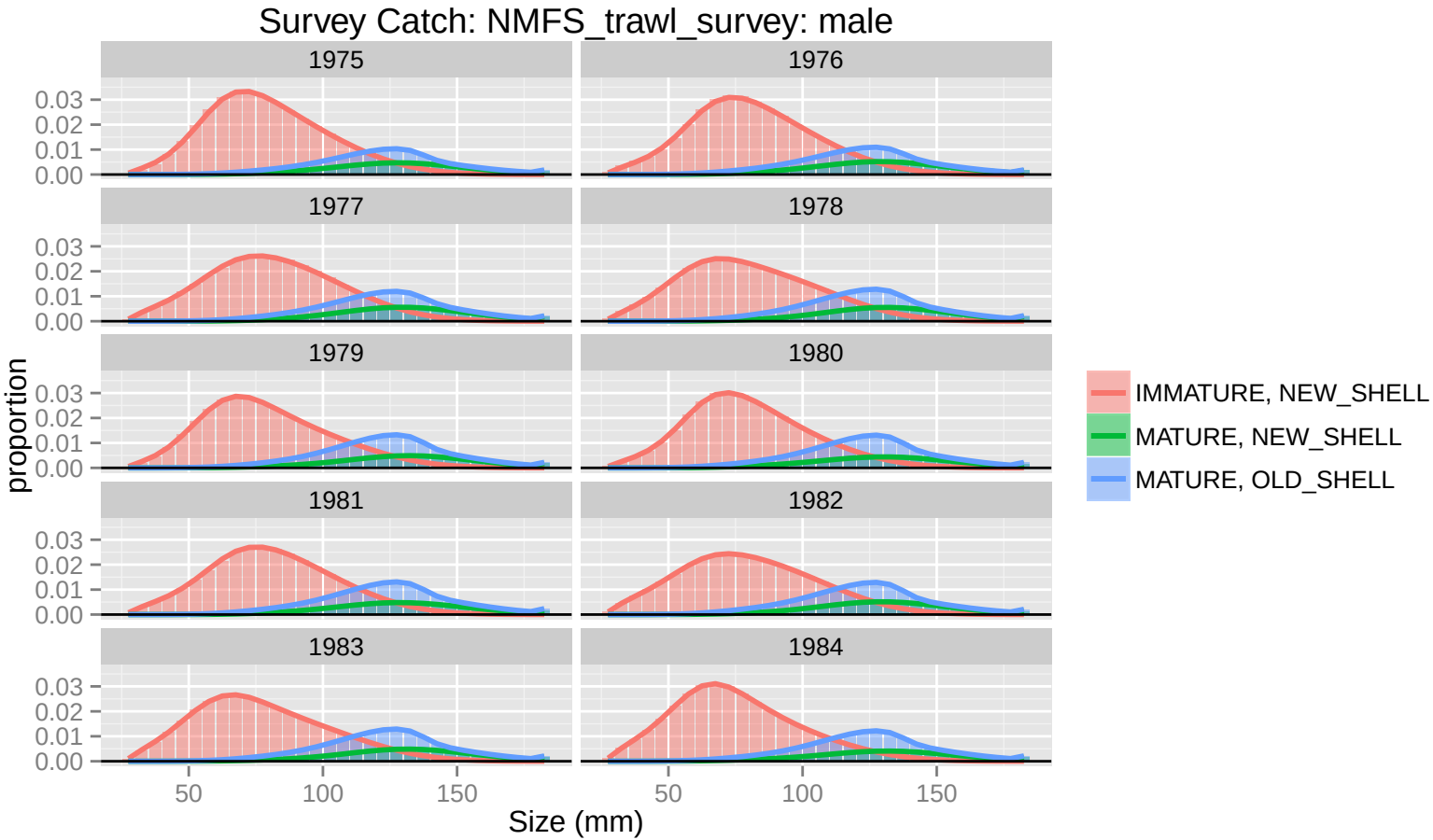

NMFS_trawl_survey
MALE
FEMALE
ALL_SEX
Survey Catch (thousands mt) [ln−scale]
0
1
2
3
4
1980
1990
2000
2010
year
shell condition
NEW_SHELL
OLD_SHELL
ALL_SHELL
maturity
IMMATURE
MATURE
ALL_MATURITY

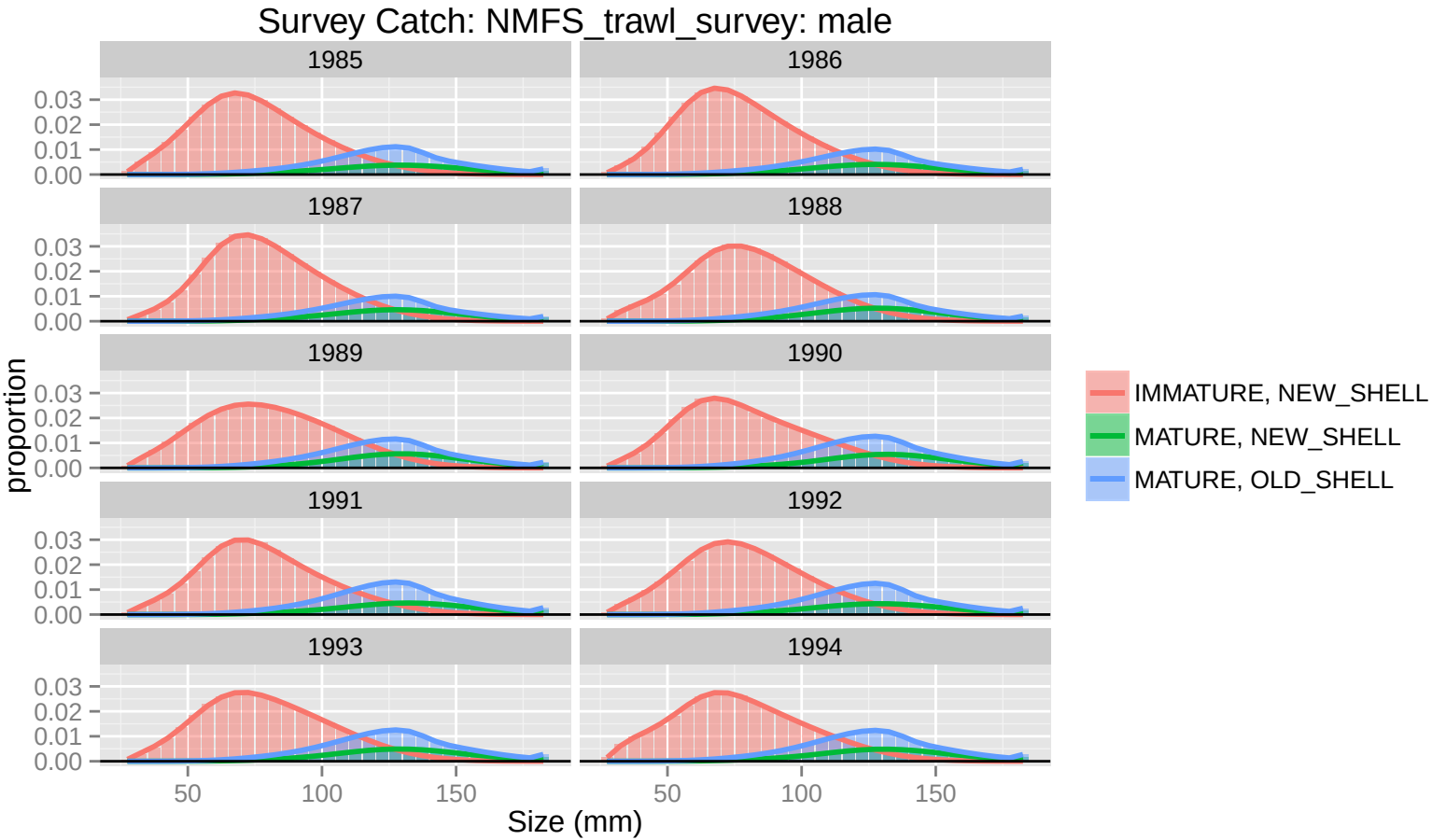

Survey Catch: NMFS_trawl_survey: female
1975
1976
1977
1978
1979
1980
1981
1982
1983
1984
0.03
0.02
0.01
0.00
proportion
50
100
150
Size (mm)
IMMATURE, NEW_SHELL
MATURE, NEW_SHELL
MATURE, OLD_SHELL

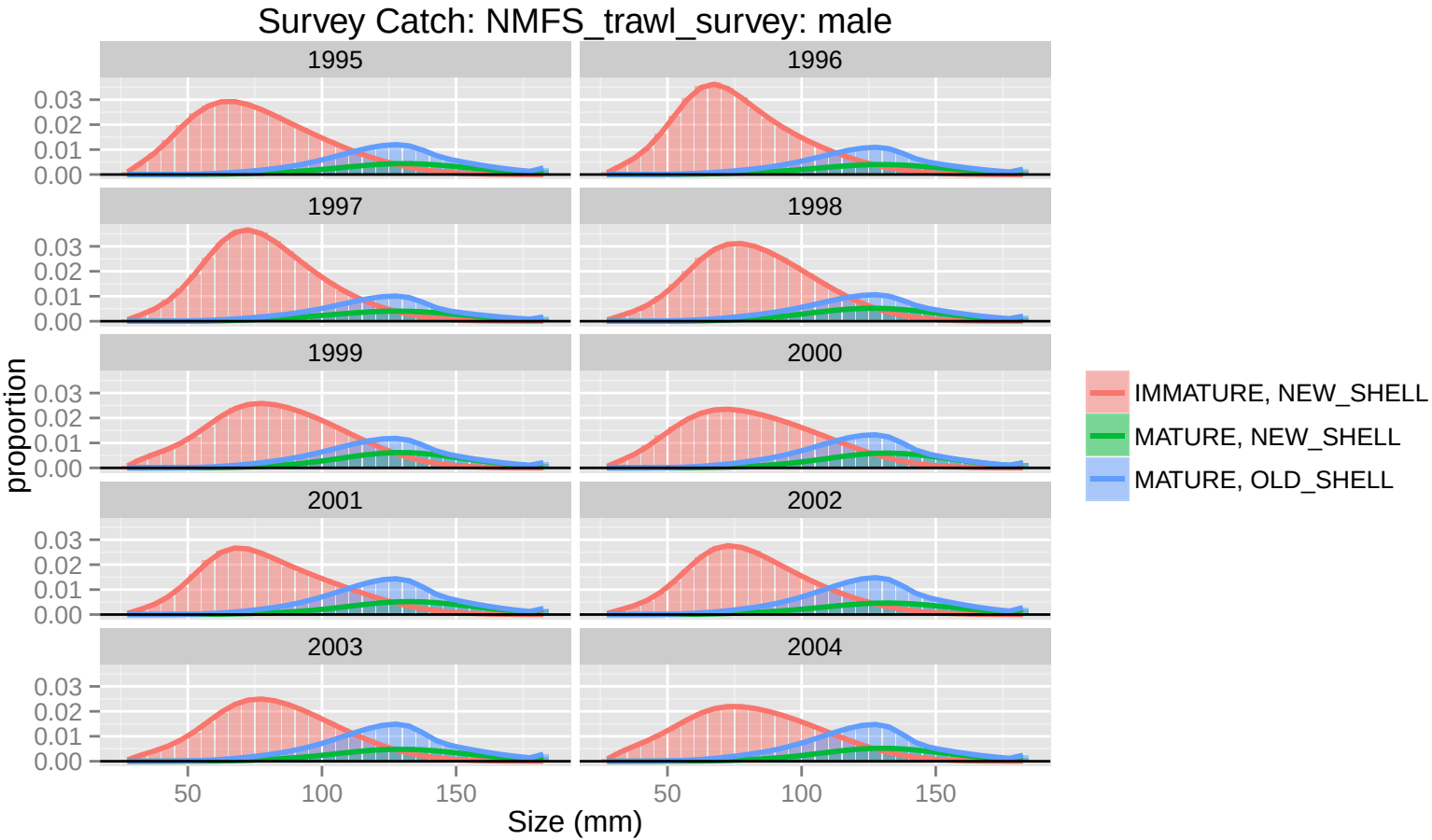

Survey Catch: NMFS_trawl_survey: female
1985
1986
1987
1988
1989
1990
1991
1992
1993
1994
0.03
0.02
0.01
0.00
proportion
50
100
150
Size (mm)
IMMATURE, NEW_SHELL
MATURE, NEW_SHELL
MATURE, OLD_SHELL

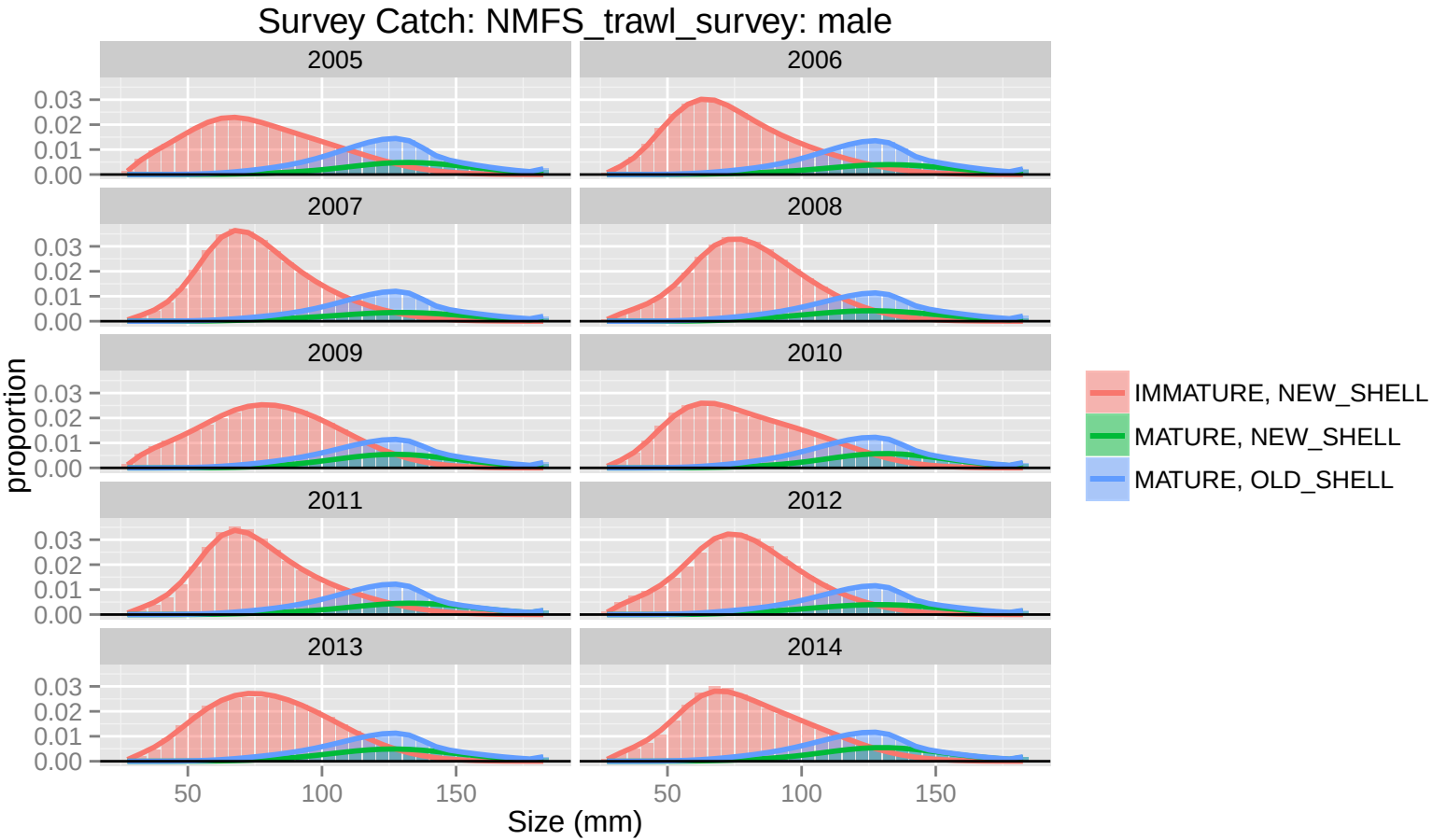

Survey Catch: NMFS_trawl_survey: female
1995
1996
1997
1998
1999
2000
2001
2002
2003
2004
0.03
0.02
0.01
0.00
proportion
50
100
150
Size (mm)
IMMATURE, NEW_SHELL
MATURE, NEW_SHELL
MATURE, OLD_SHELL

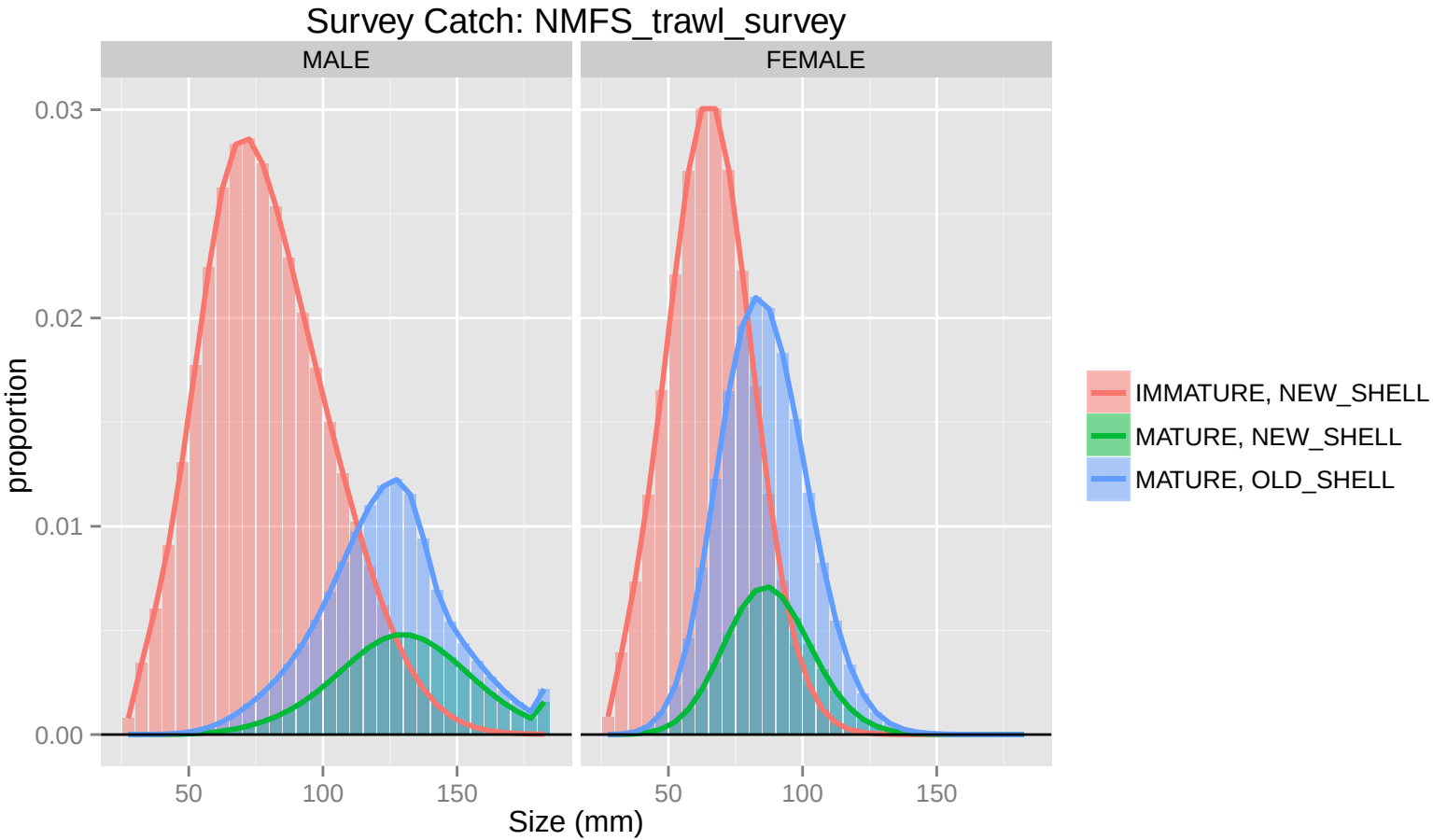

Survey Catch: NMFS_trawl_survey: female
2005
2006
2007
2008
2009
2010
2011
2012
2013
2014
0.03
0.02
0.01
0.00
proportion
50
100
150
Size (mm)
IMMATURE, NEW_SHELL
MATURE, NEW_SHELL
MATURE, OLD_SHELL

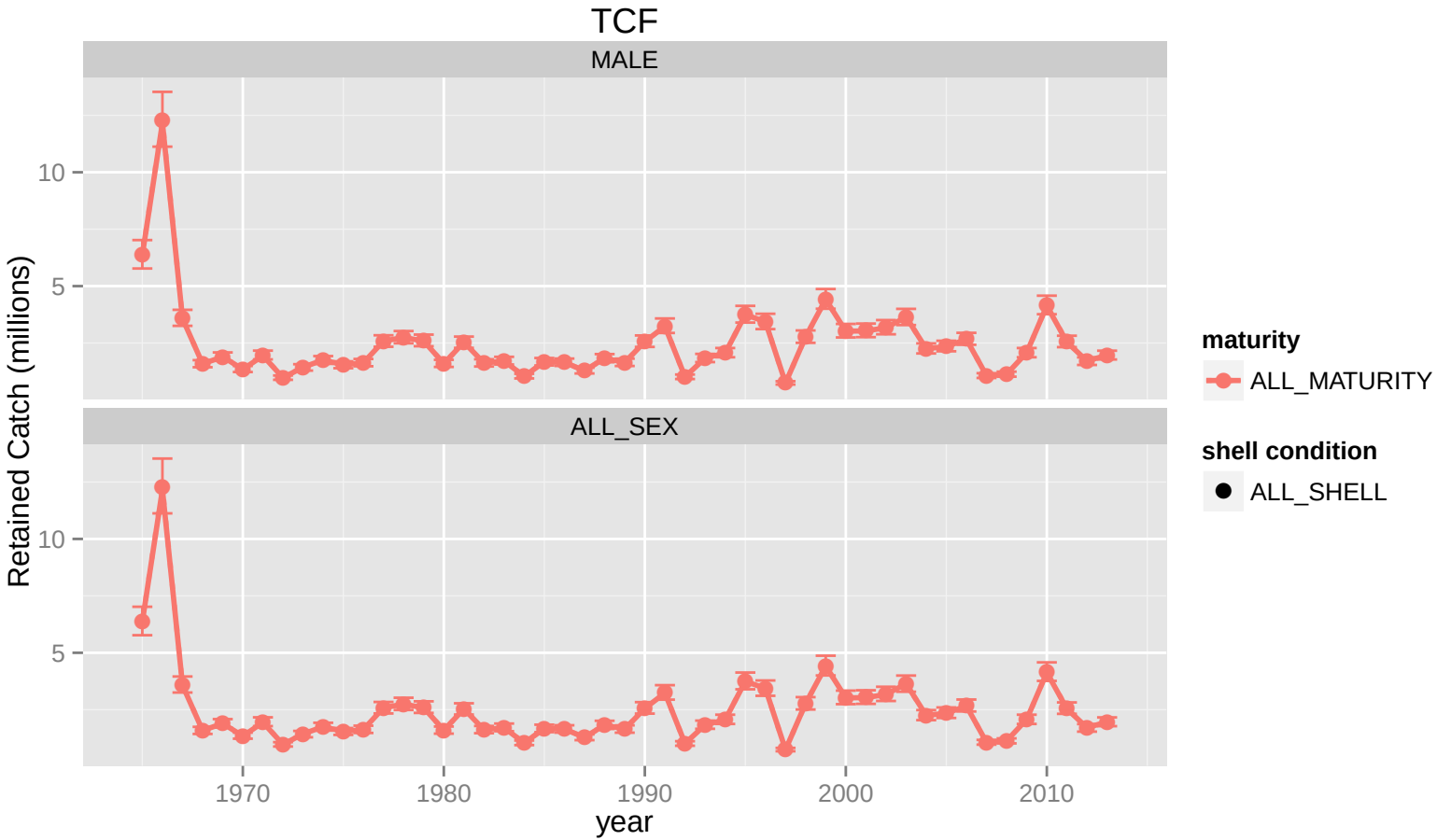

Survey Catch: NMFS_trawl_survey: male
1975
1976
1977
1978
1979
1980
1981
1982
1983
1984
0.03
0.02
0.01
0.00
proportion
50
100
150
Size (mm)
IMMATURE, NEW_SHELL
MATURE, NEW_SHELL
MATURE, OLD_SHELL

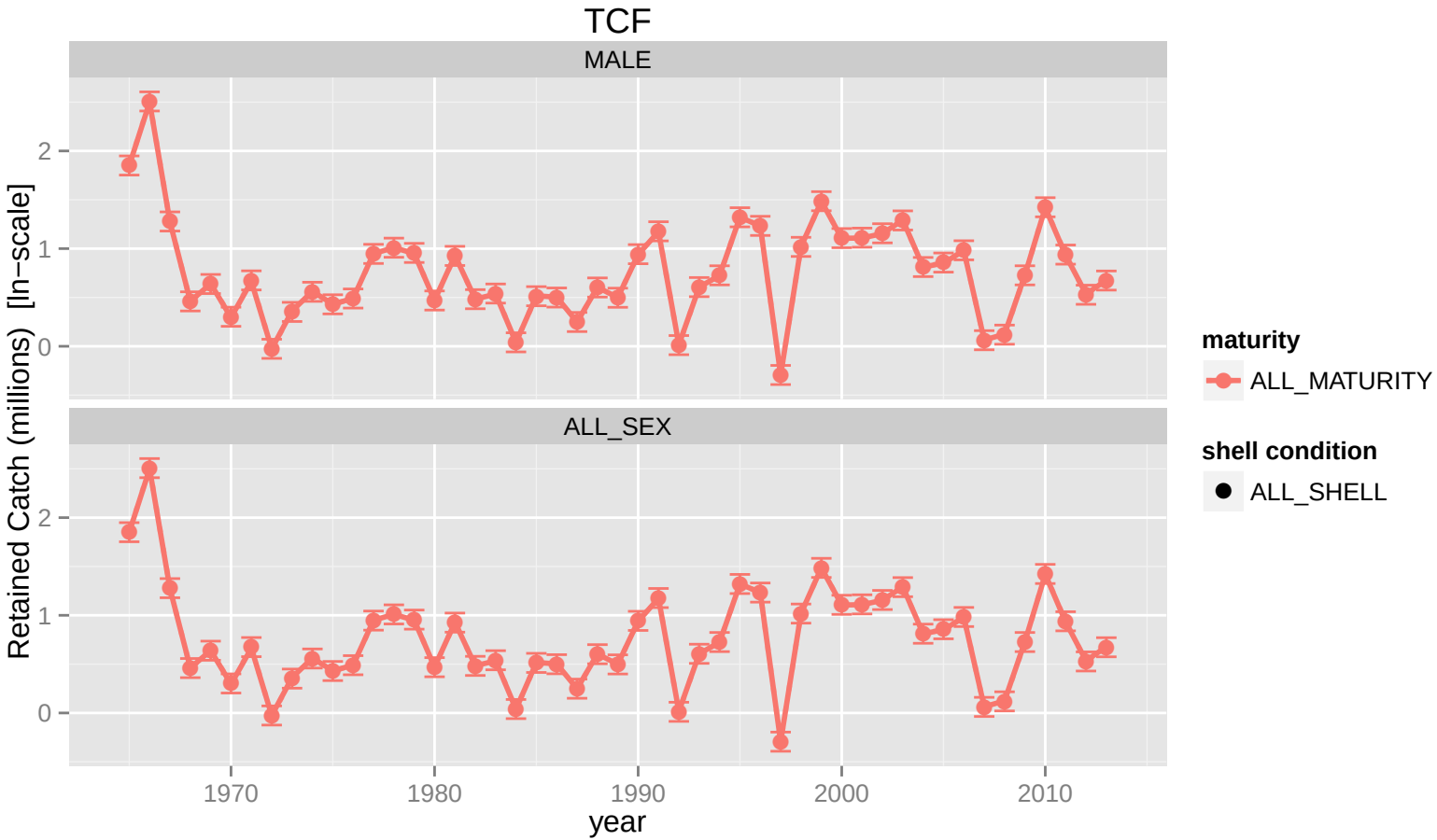

Survey Catch: NMFS_trawl_survey: male
1985
1986
1987
1988
1989
1990
1991
1992
1993
1994
0.03
0.02
0.01
0.00
proportion
50
100
150
Size (mm)
IMMATURE, NEW_SHELL
MATURE, NEW_SHELL
MATURE, OLD_SHELL

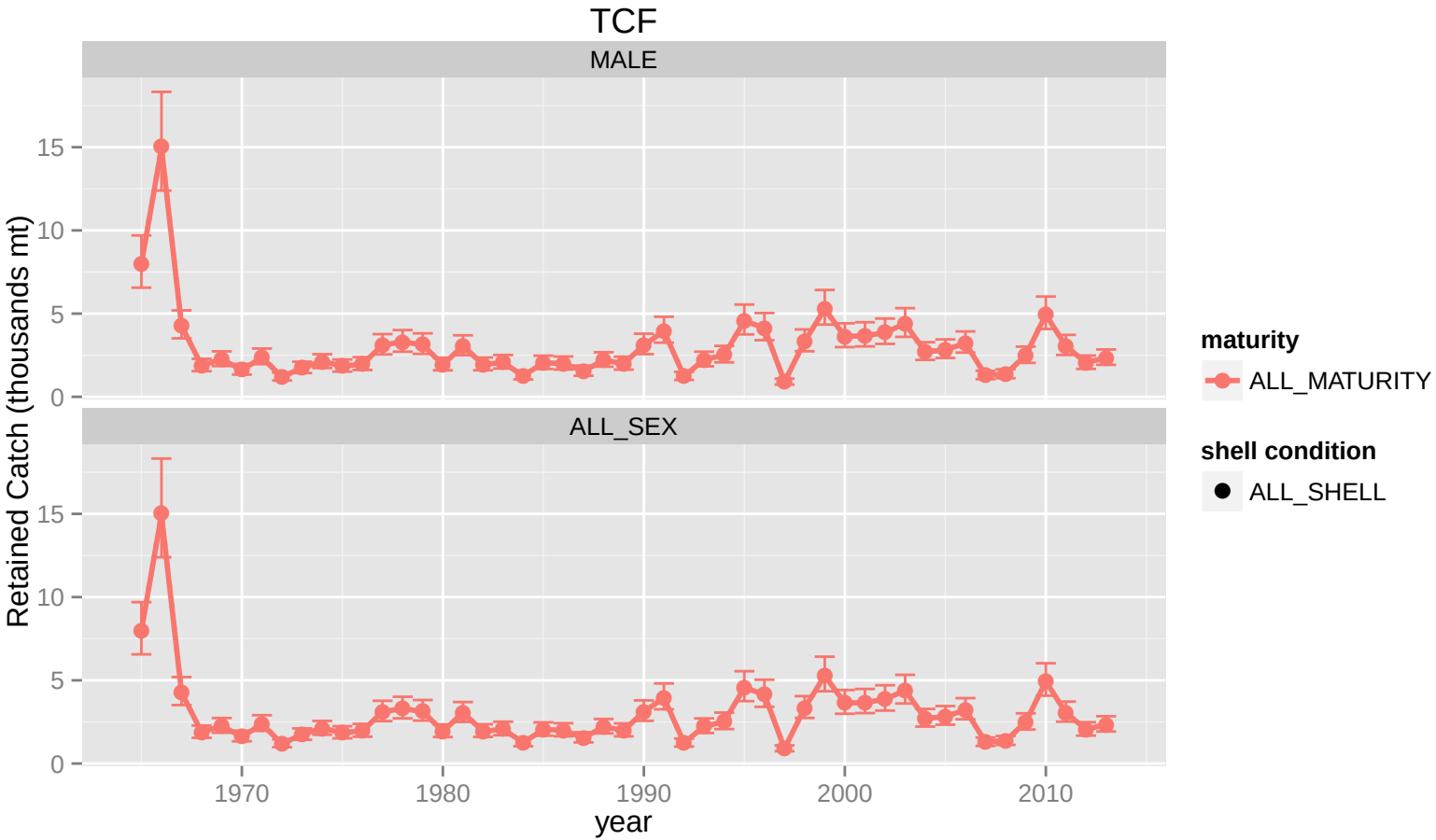

Survey Catch: NMFS_trawl_survey: male
1995
1996
1997
1998
1999
2000
2001
2002
2003
2004
0.03
0.02
0.01
0.00
proportion
50
100
150
Size (mm)
IMMATURE, NEW_SHELL
MATURE, NEW_SHELL
MATURE, OLD_SHELL

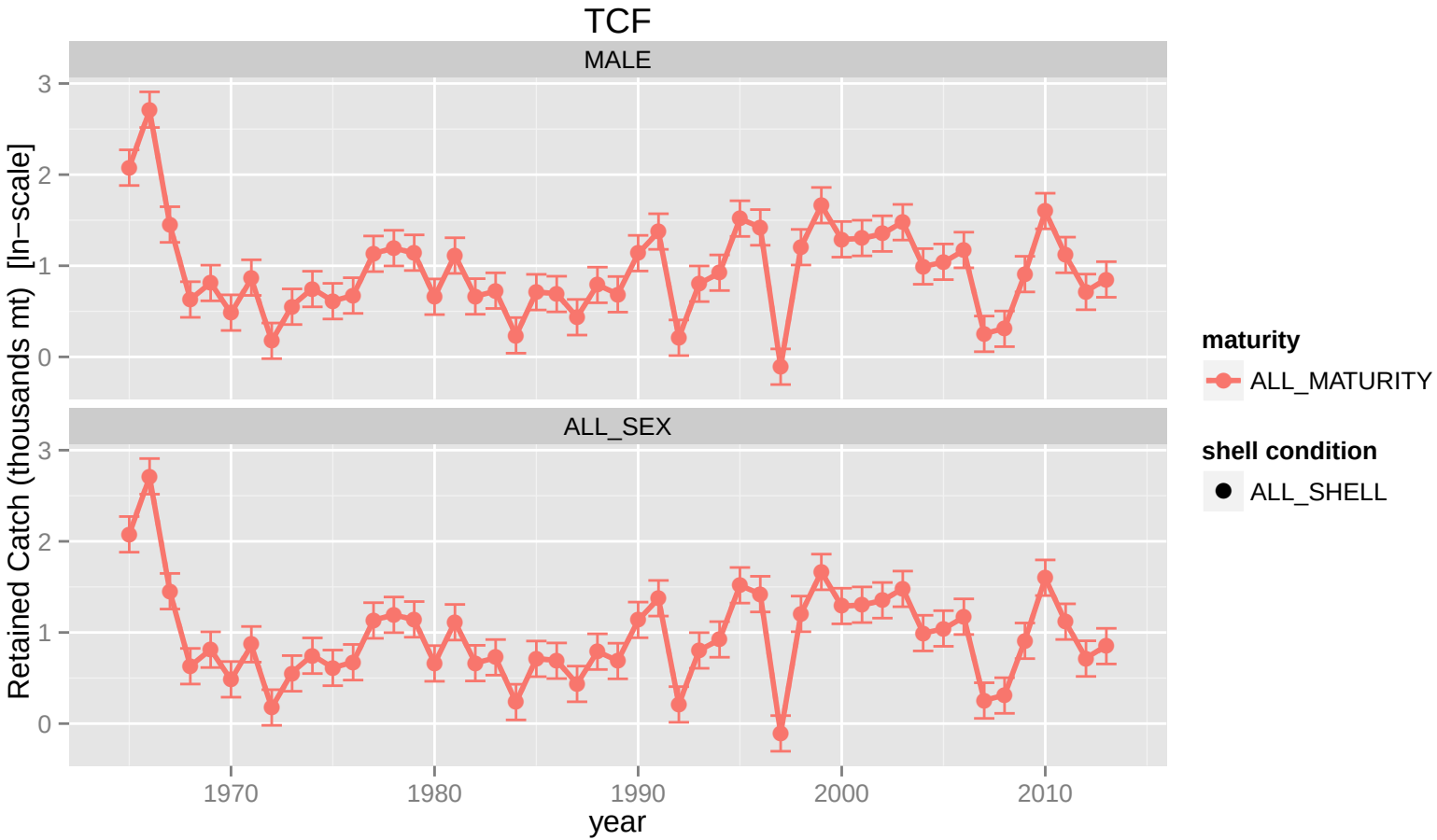

Survey Catch: NMFS_trawl_survey: male
2005
2006
2007
2008
2009
2010
2011
2012
2013
2014
0.03
0.02
0.01
0.00
proportion
50
100
150
Size (mm)
IMMATURE, NEW_SHELL
MATURE, NEW_SHELL
MATURE, OLD_SHELL

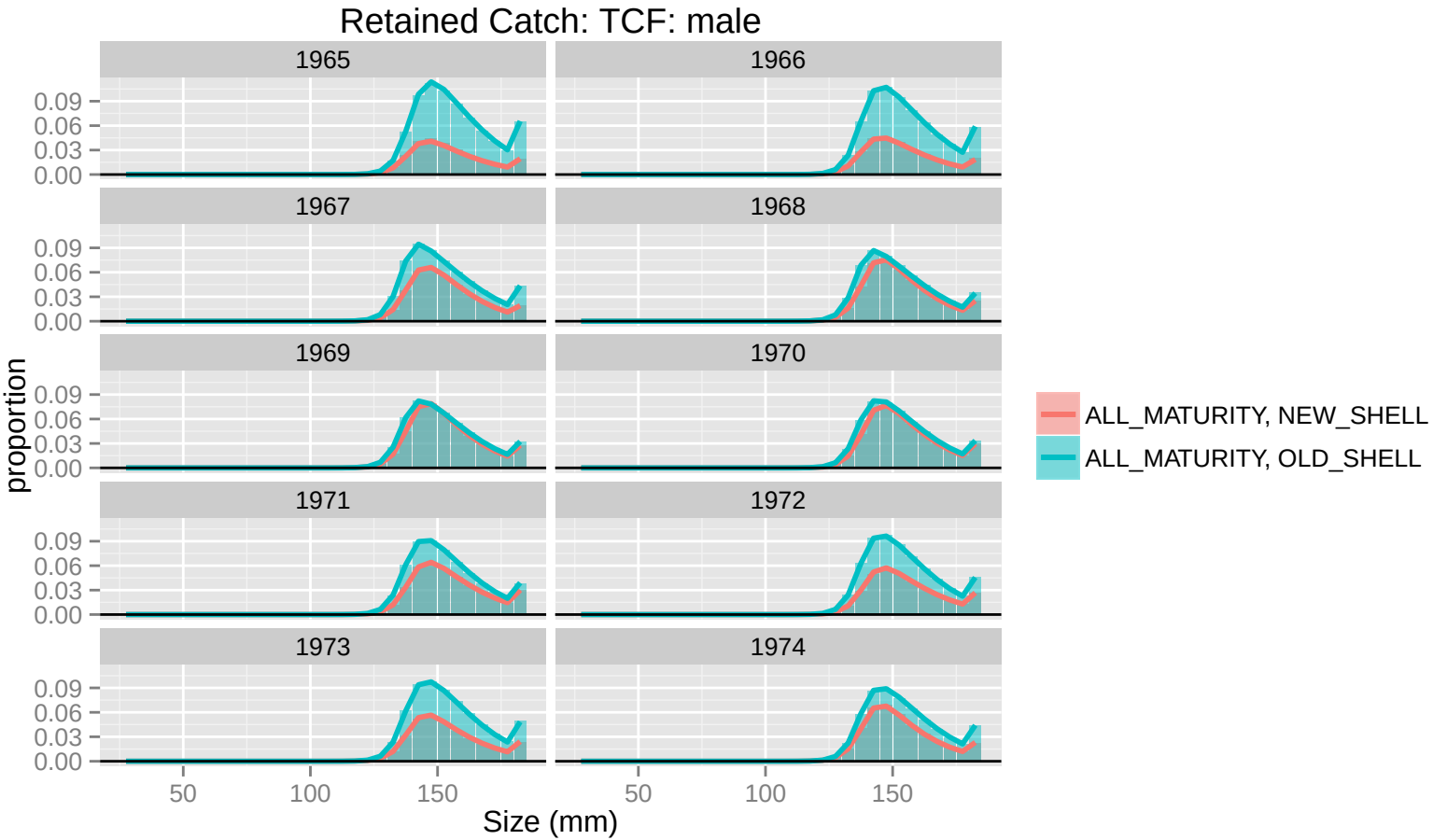

Survey Catch: NMFS_trawl_survey
MALE
FEMALE
0.03
0.02
0.01
0.00
proportion
50
100
150
Size (mm)
IMMATURE, NEW_SHELL
MATURE, NEW_SHELL
MATURE, OLD_SHELL

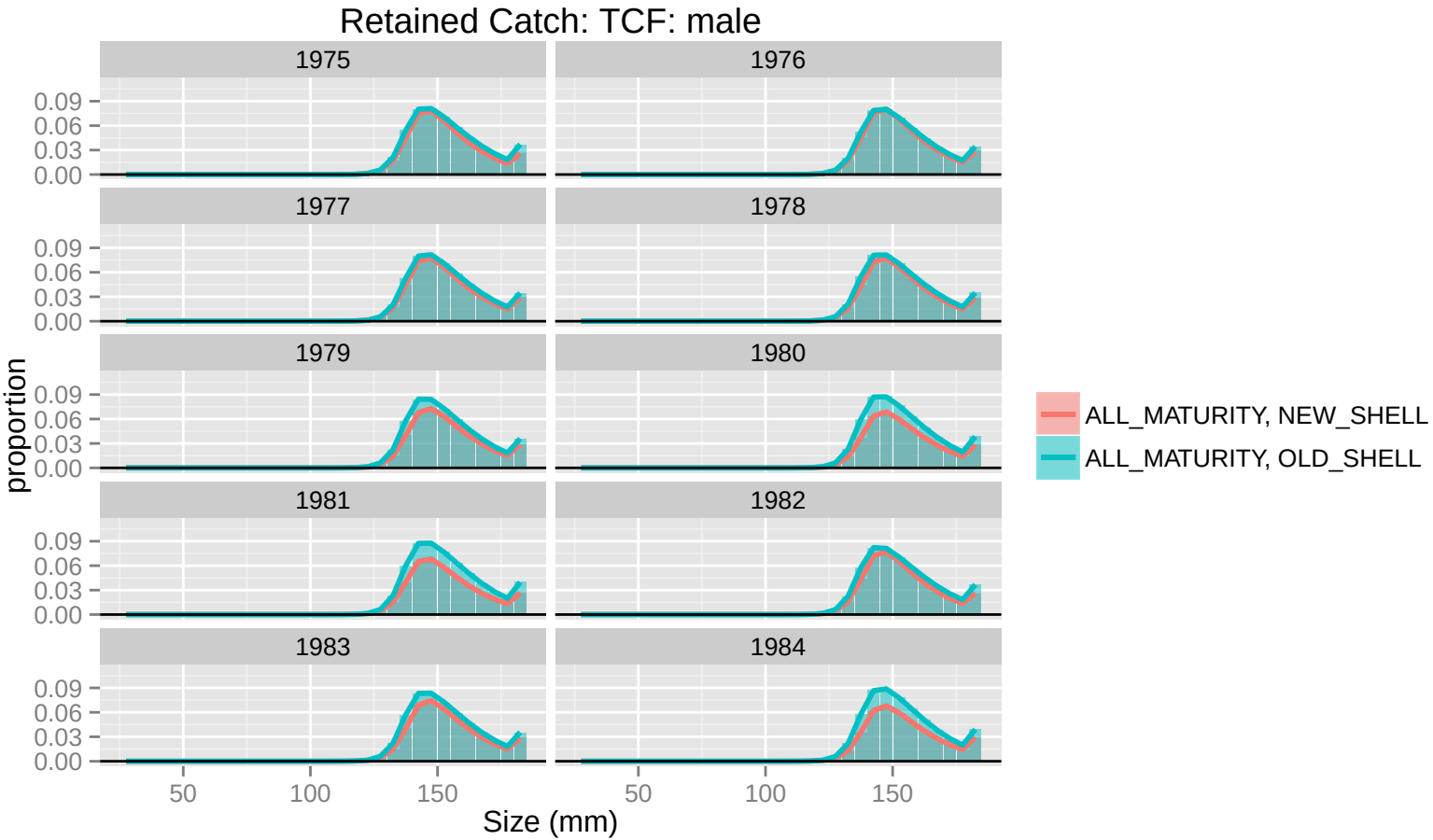

TCF
MALE
ALL_SEX
Retained Catch (millions)
10
5
1970
1980
1990
2000
2010
year
maturity
ALL_MATURITY
shell condition
ALL_SHELL

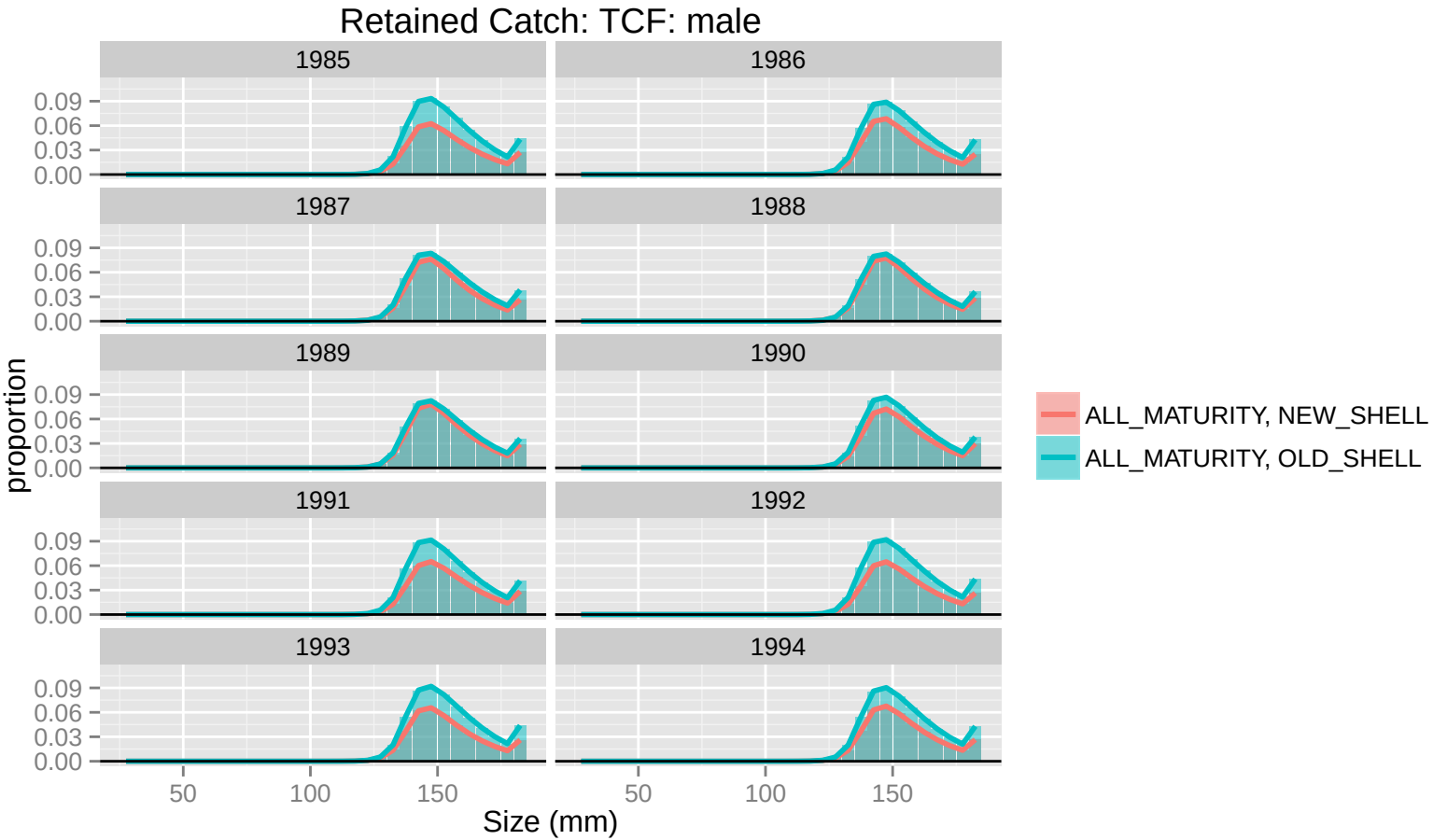

TCF
MALE
ALL_SEX
Retained Catch (millions) [ln−scale]
2
1
0
1970
1980
1990
2000
2010
year
maturity
ALL_MATURITY
shell condition
ALL_SHELL

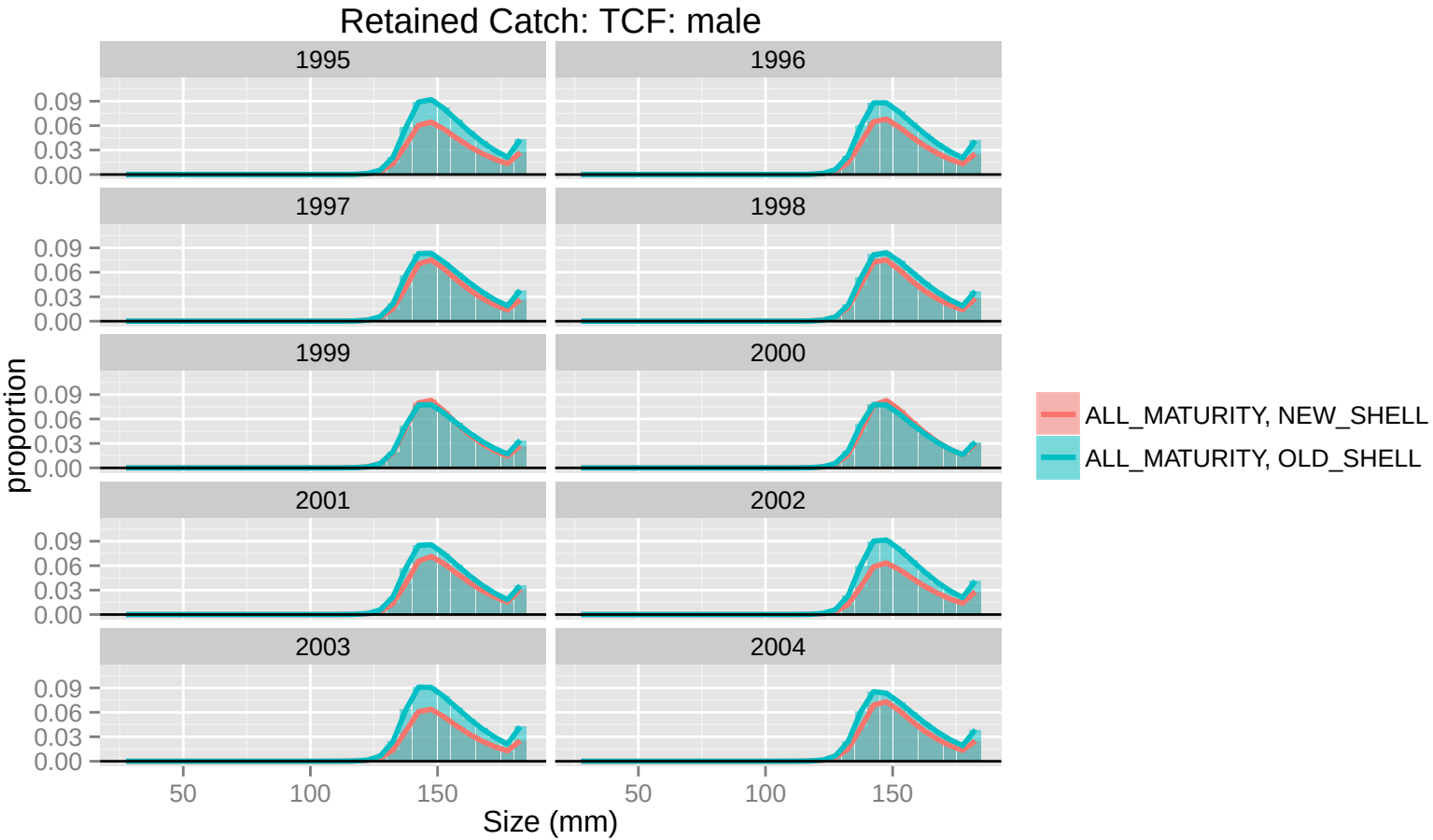

TCF
MALE
ALL_SEX
Retained Catch (thousands mt)
0
5
10
15
1970
1980
1990
2000
2010
year
maturity
ALL_MATURITY
shell condition
ALL_SHELL

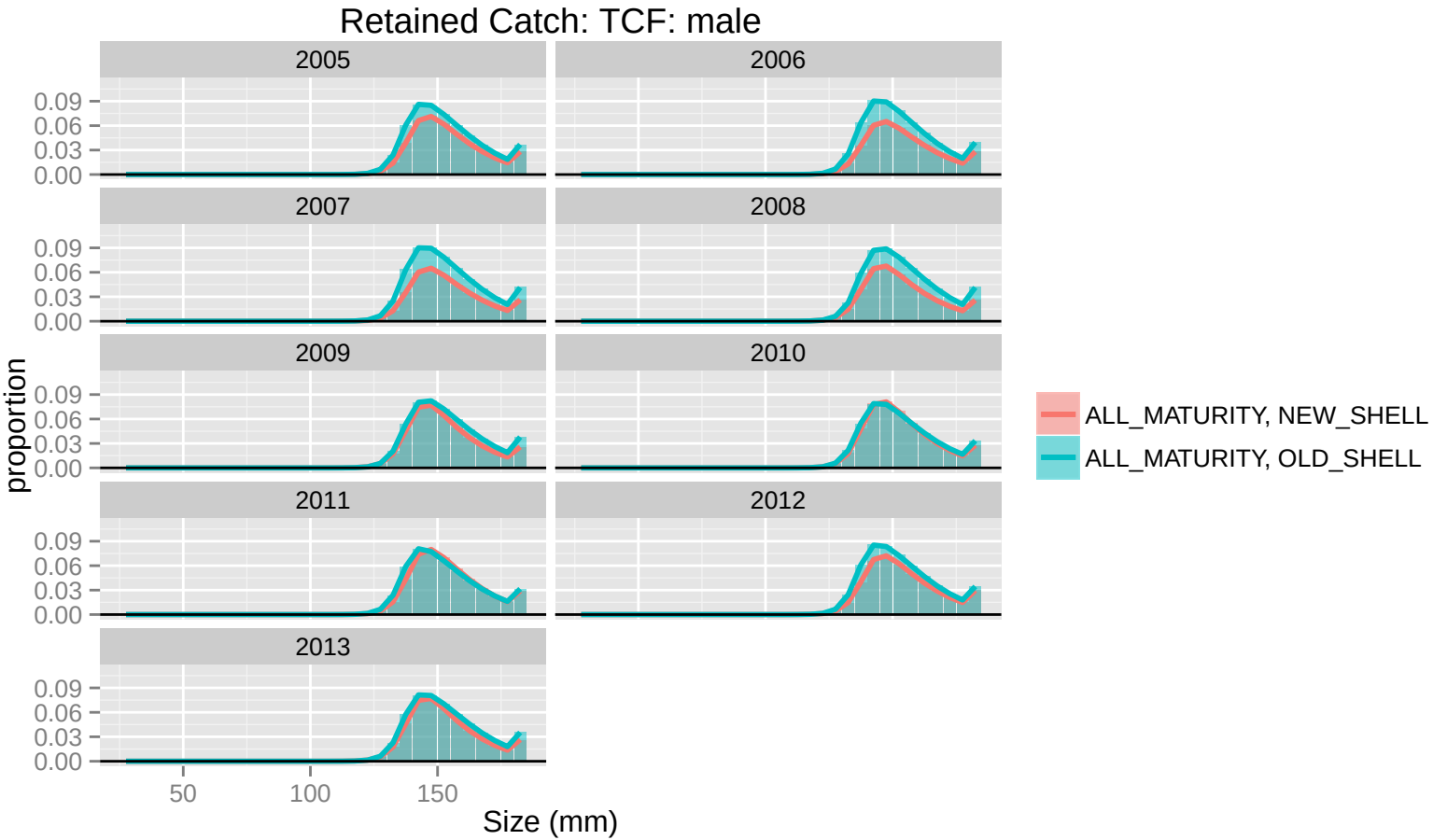

TCF
MALE
ALL_SEX
Retained Catch (thousands mt) [ln−scale]
3
2
1
0
1970
1980
1990
2000
2010
year
maturity
ALL_MATURITY
shell condition
ALL_SHELL

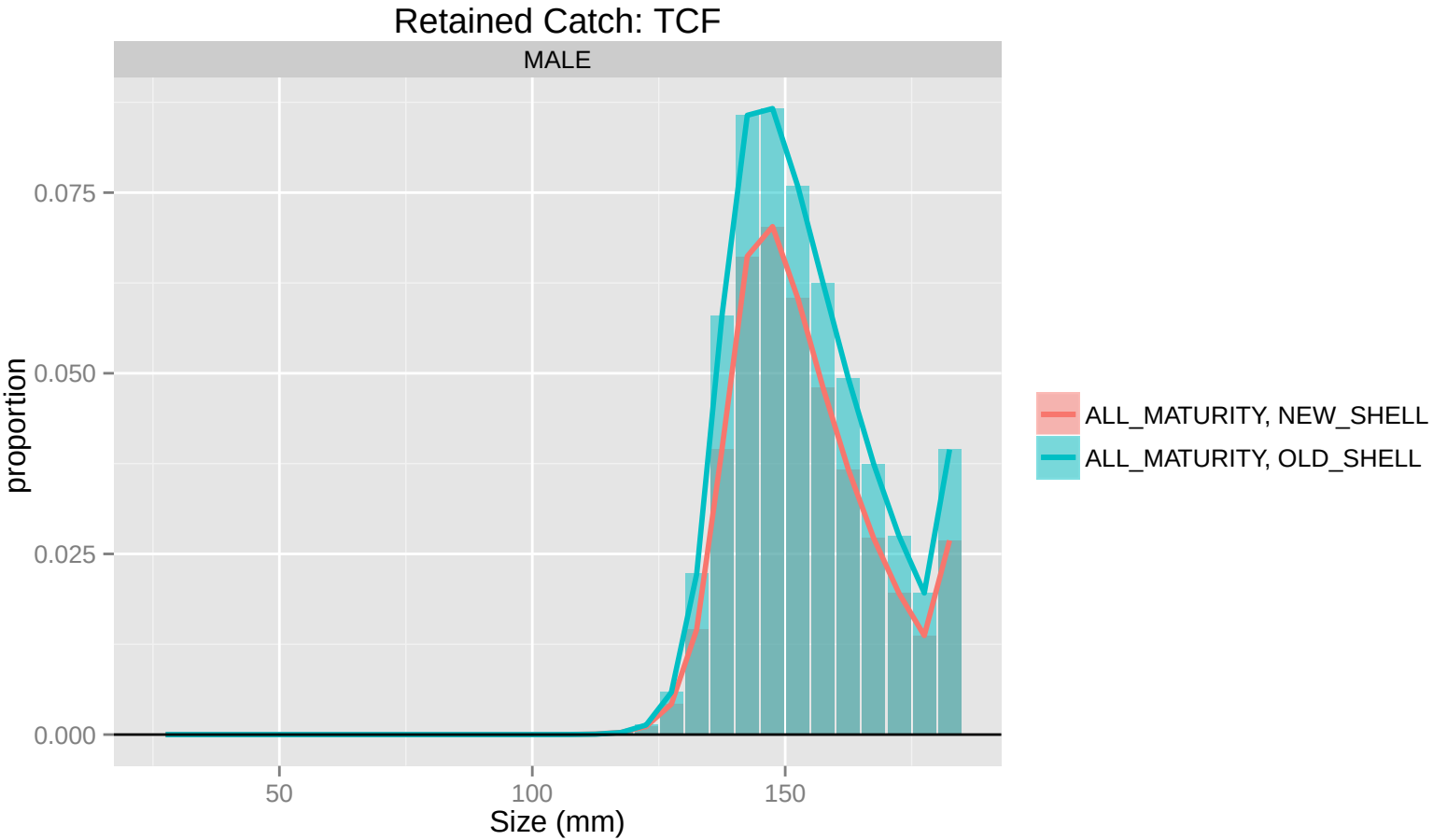

Retained Catch: TCF: male
1965
1966
1967
1968
1969
1970
1971
1972
1973
1974
0.09
0.06
0.03
0.00
proportion
50
100
150
Size (mm)
ALL_MATURITY, NEW_SHELL
ALL_MATURITY, OLD_SHELL

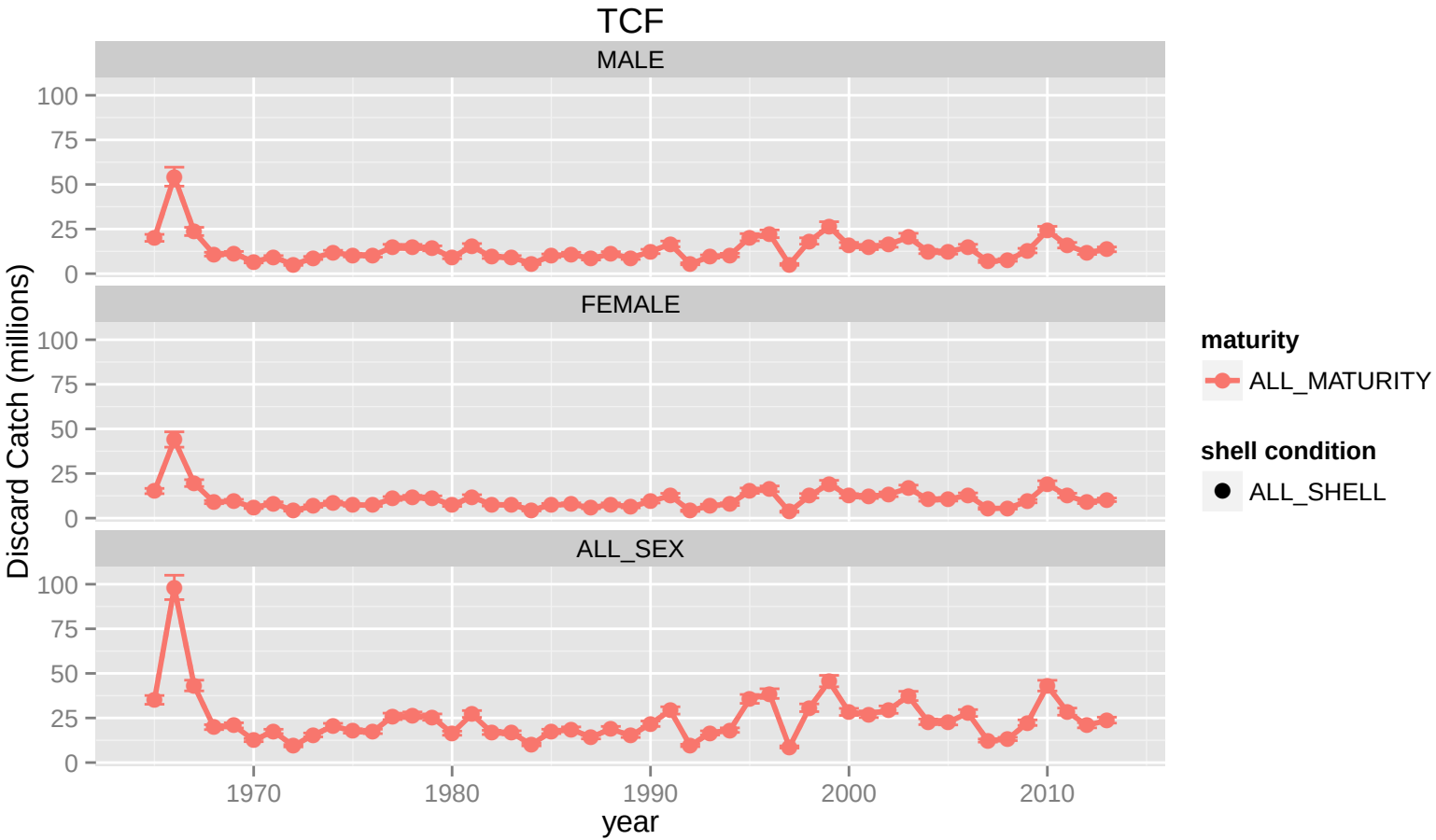

Retained Catch: TCF: male
1975
1976
1977
1978
1979
1980
1981
1982
1983
1984
0.09
0.06
0.03
0.00
proportion
50
100
150
Size (mm)
ALL_MATURITY, NEW_SHELL
ALL_MATURITY, OLD_SHELL

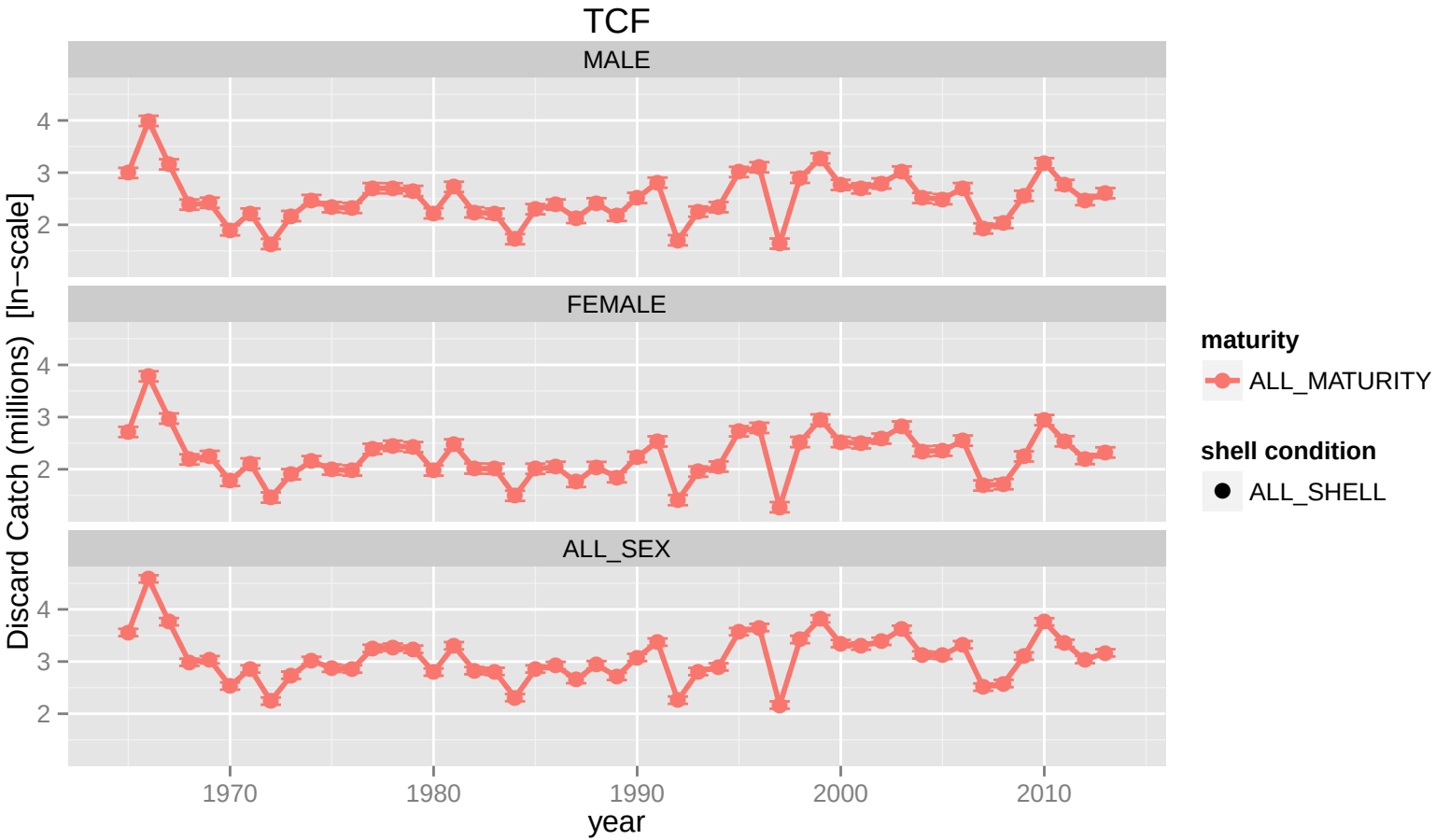

Retained Catch: TCF: male
1985
1986
1987
1988
1989
1990
1991
1992
1993
1994
0.09
0.06
0.03
0.00
proportion
50
100
150
Size (mm)
ALL_MATURITY, NEW_SHELL
ALL_MATURITY, OLD_SHELL

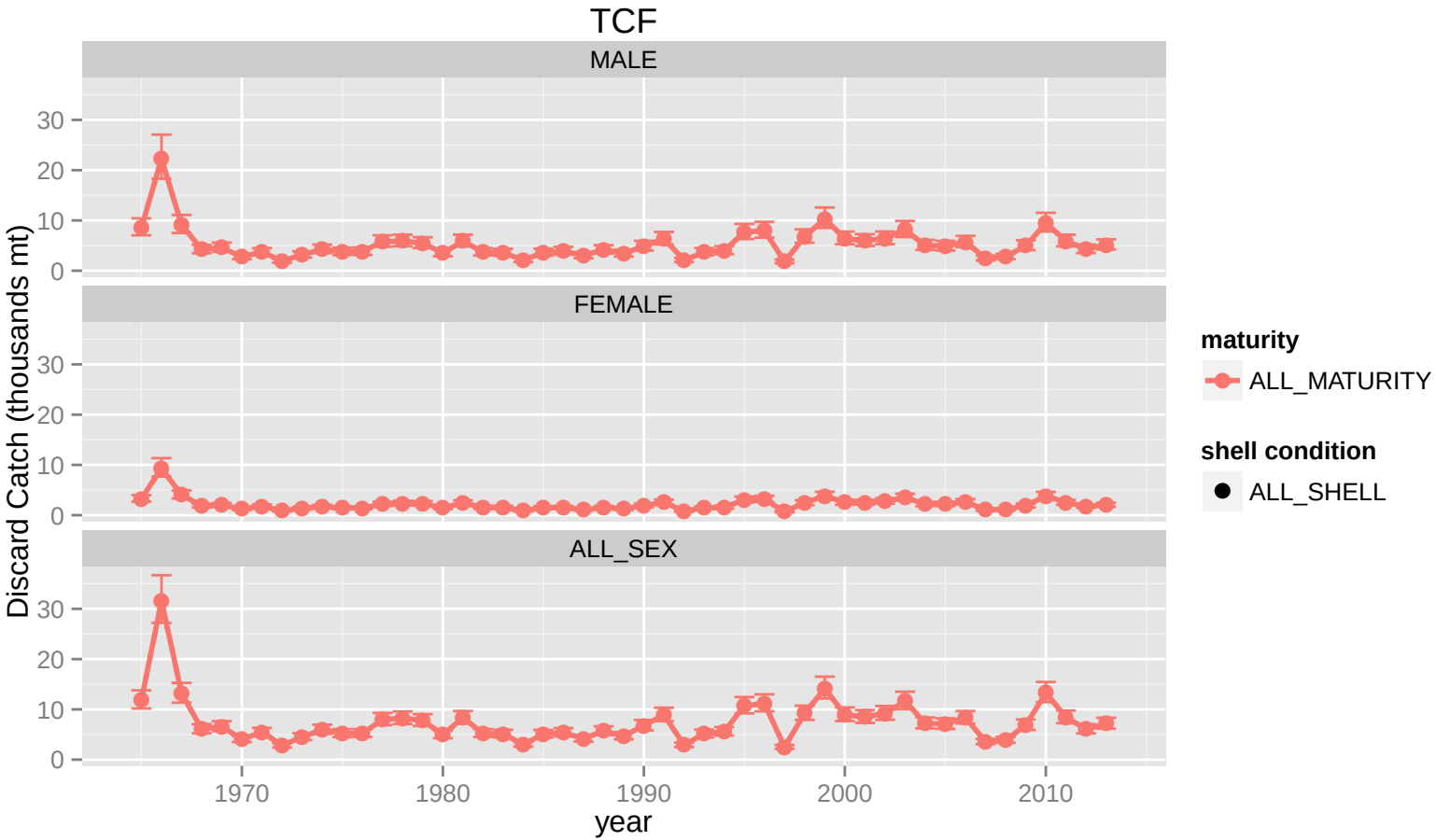

Retained Catch: TCF: male
1995
1996
1997
1998
1999
2000
2001
2002
2003
2004
0.09
0.06
0.03
0.00
proportion
50
100
150
Size (mm)
ALL_MATURITY, NEW_SHELL
ALL_MATURITY, OLD_SHELL

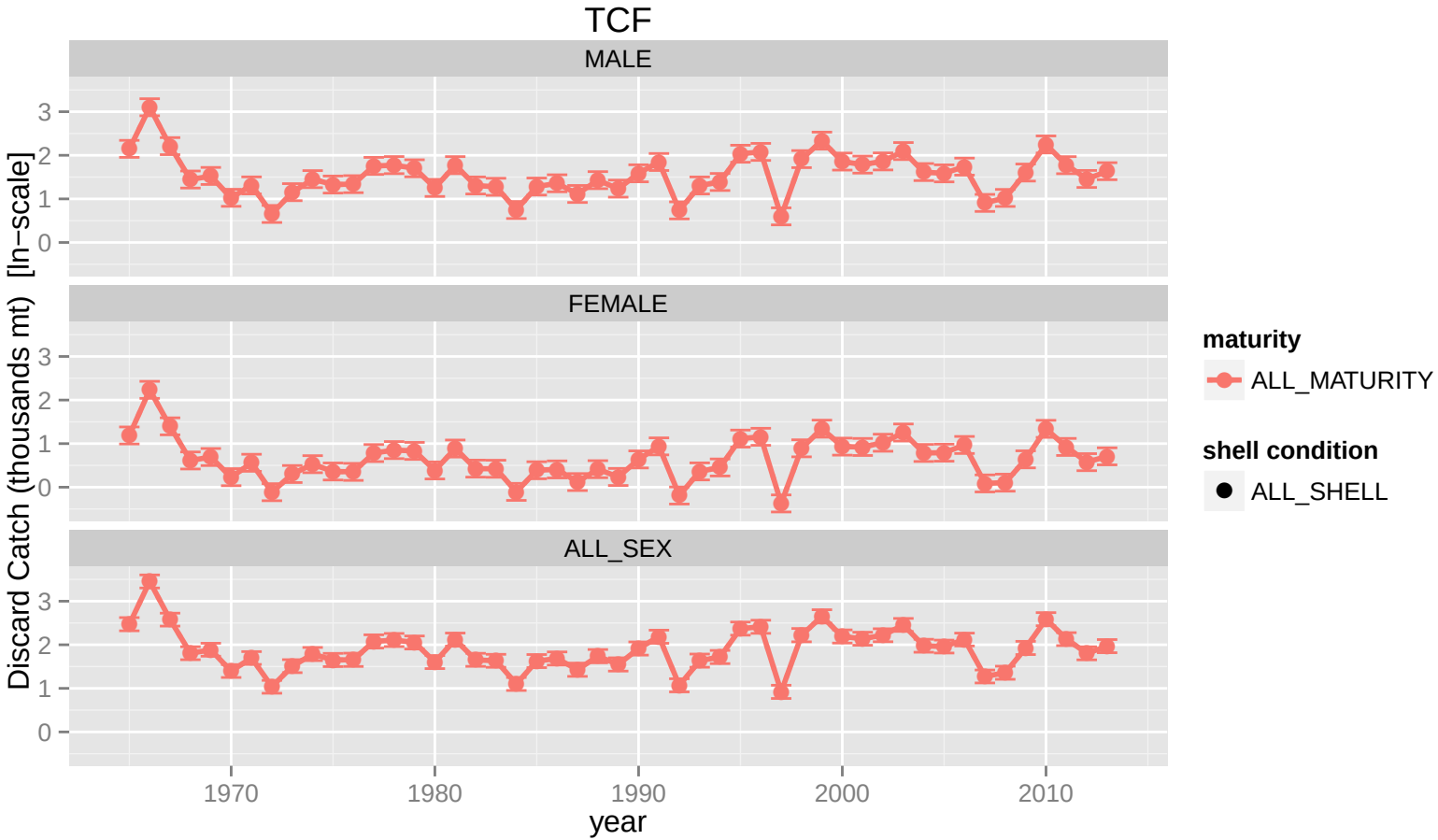

Retained Catch: TCF: male
2005
2006
2007
2008
2009
2010
2011
2012
2013
0.09
0.06
0.03
0.00
proportion
50
100
150
Size (mm)
ALL_MATURITY, NEW_SHELL
ALL_MATURITY, OLD_SHELL

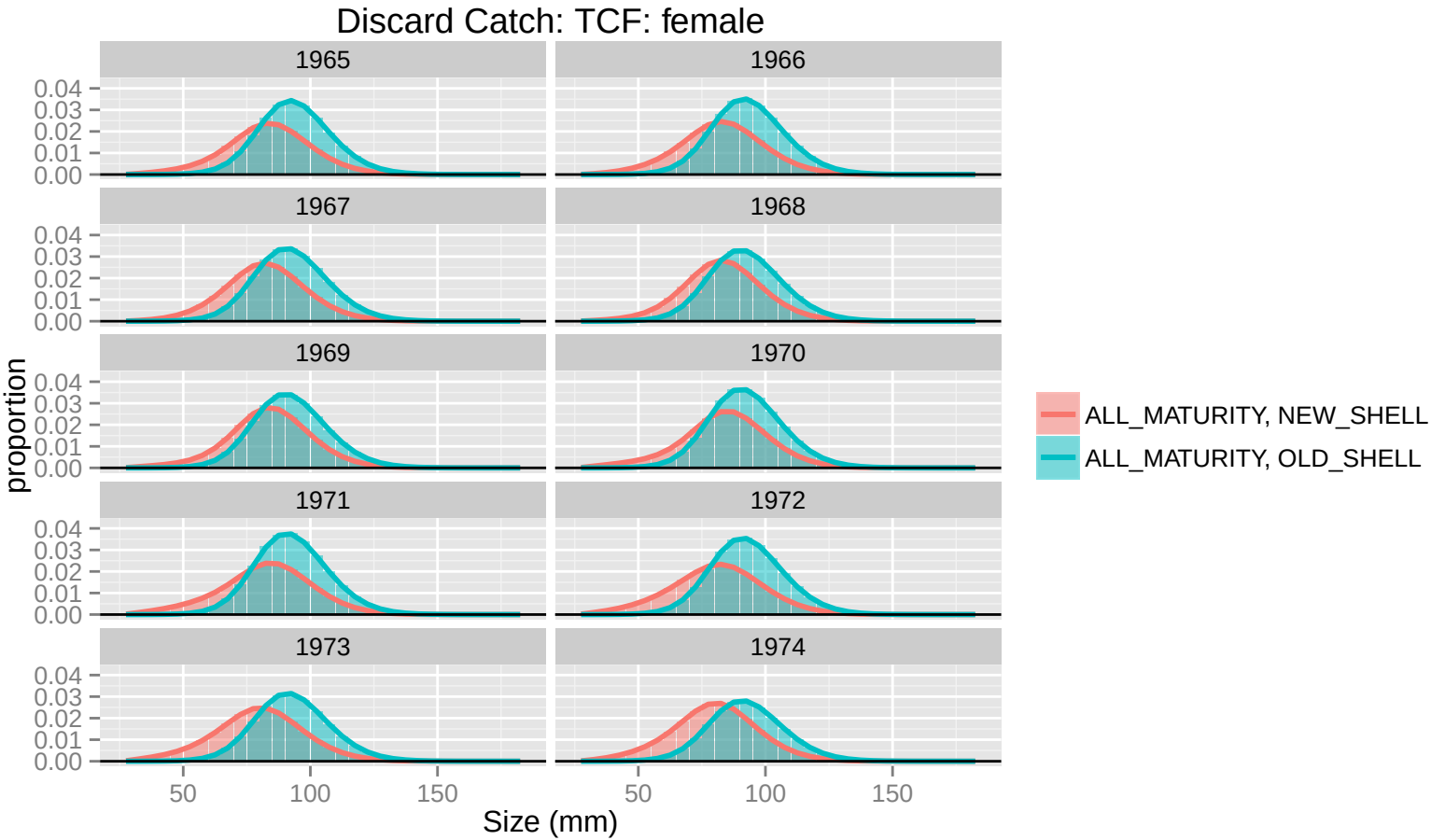

Retained Catch: TCF
MALE
0.075
0.050
0.025
0.000
proportion
50
100
150
Size (mm)
ALL_MATURITY, NEW_SHELL
ALL_MATURITY, OLD_SHELL

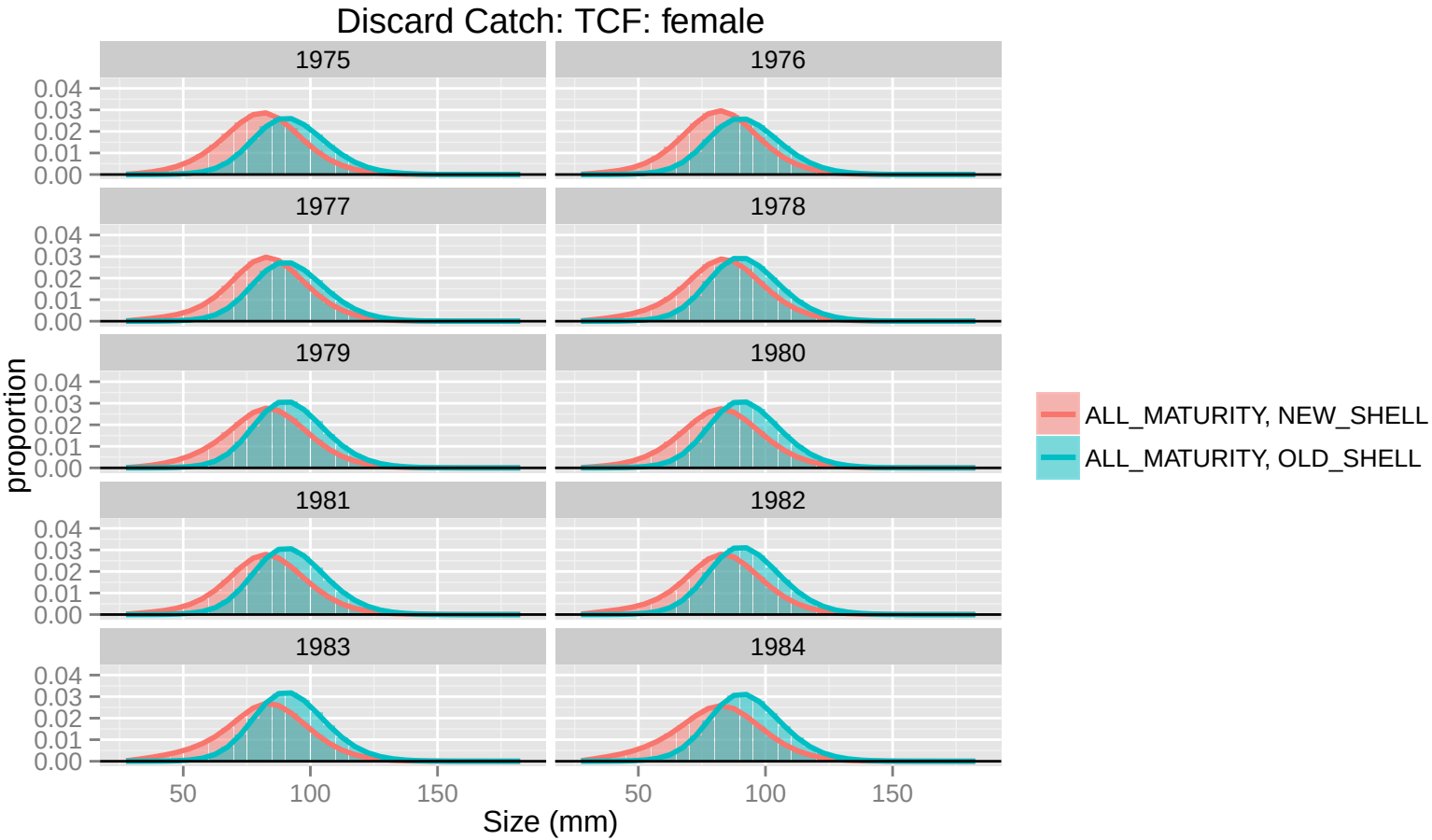

TCF
MALE
FEMALE
ALL_SEX
Discard Catch (millions)
100
75
50
25
0
1970
1980
1990
2000
2010
year
maturity
ALL_MATURITY
shell condition
ALL_SHELL

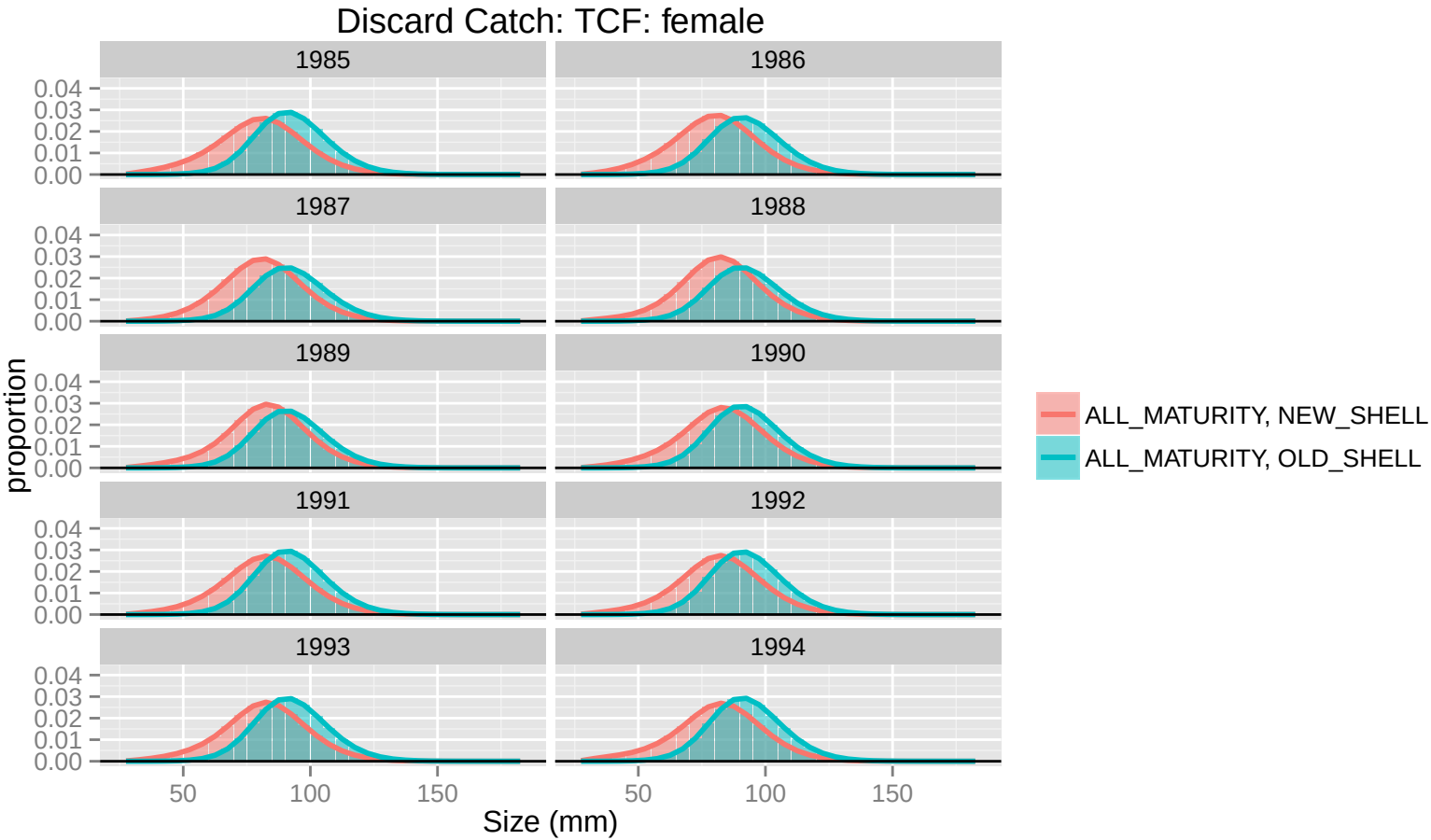

TCF
MALE
FEMALE
ALL_SEX
Discard Catch (millions) [ln−scale]
4
3
2
1970
1980
1990
2000
2010
year
maturity
ALL_MATURITY
shell condition
ALL_SHELL

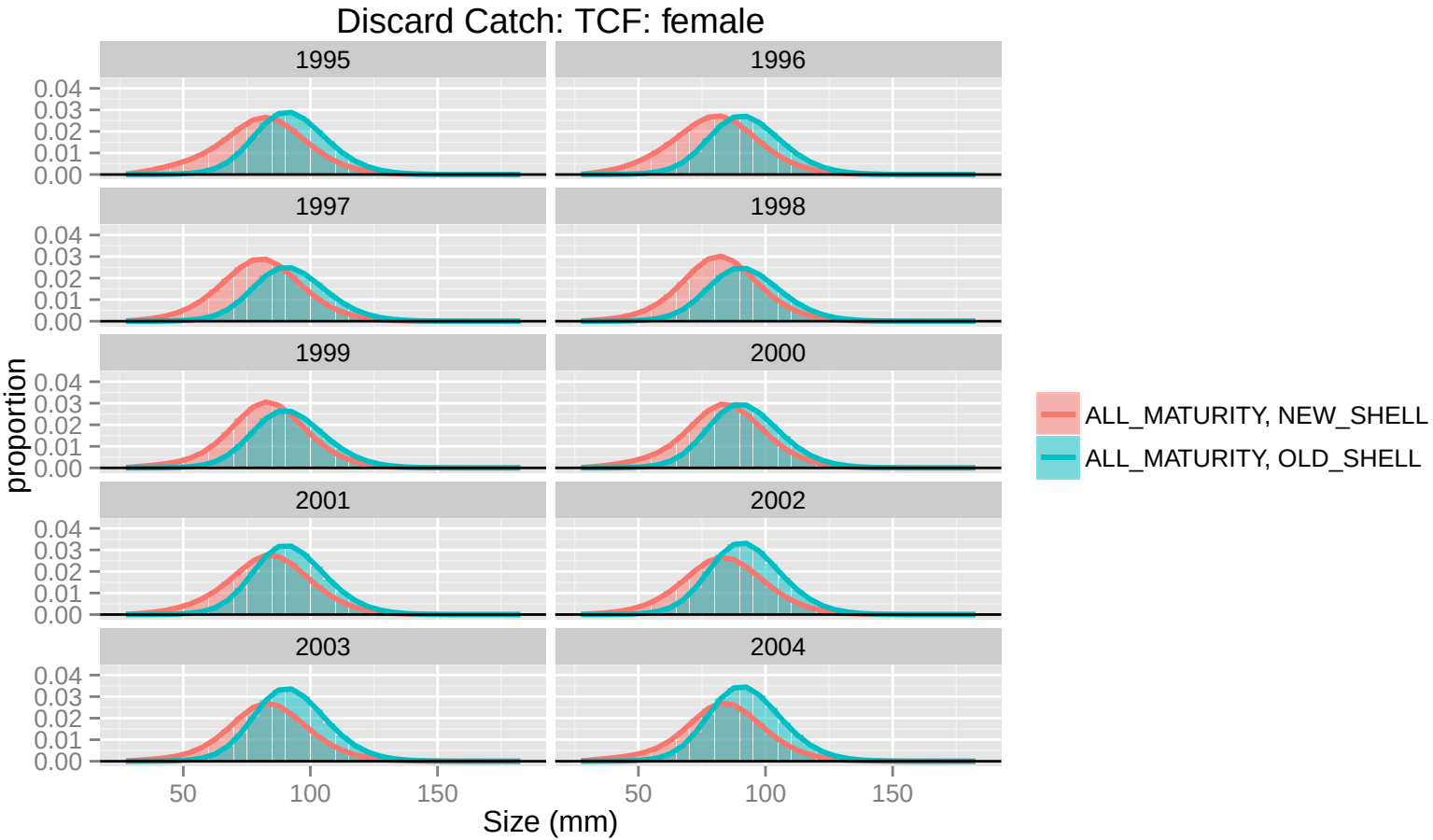

TCF
MALE
FEMALE
ALL_SEX
Discard Catch (thousands mt)
0
10
20
30
1970
1980
1990
2000
2010
year
maturity
ALL_MATURITY
shell condition
ALL_SHELL

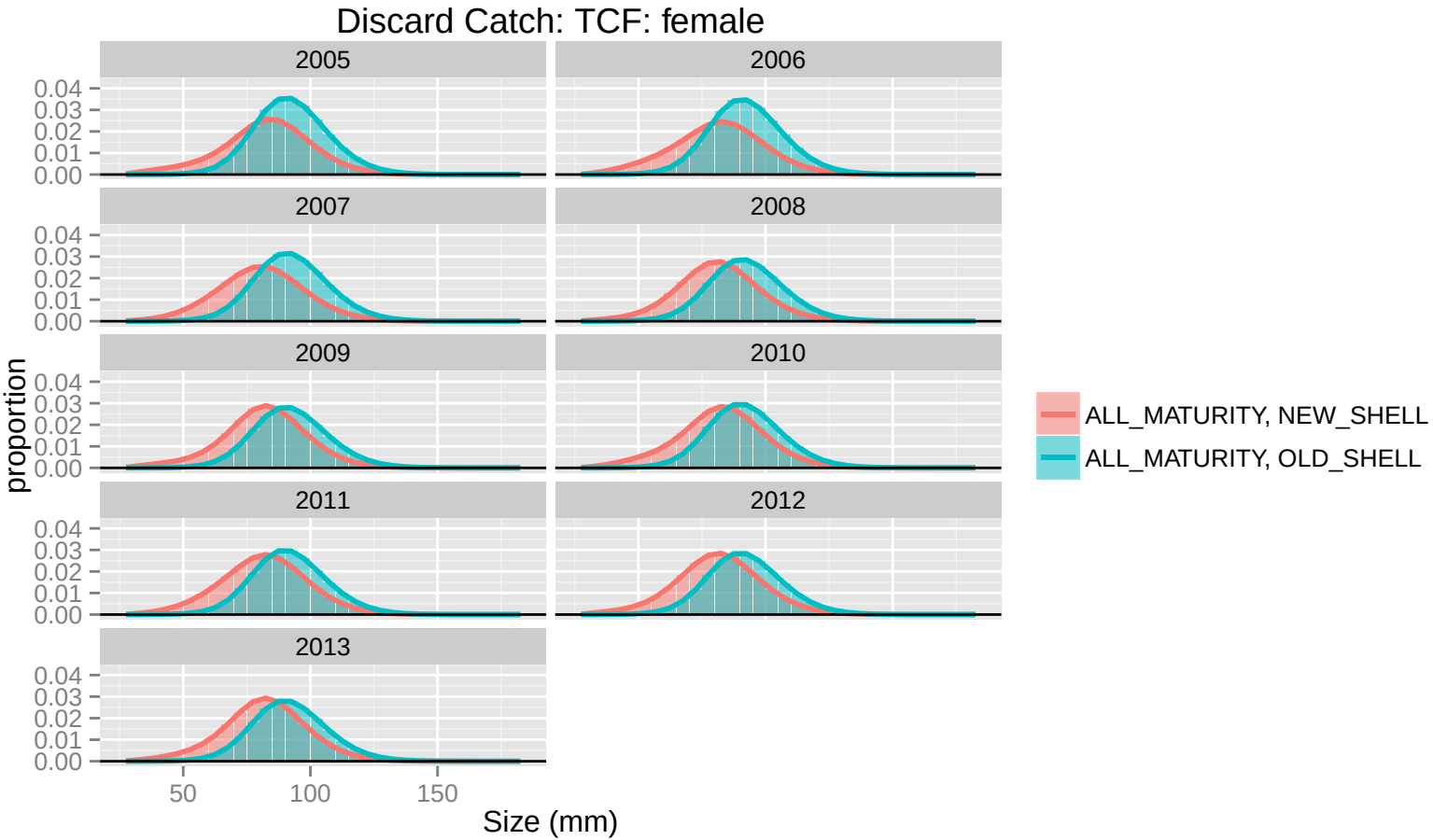

TCF
MALE
FEMALE
ALL_SEX
Discard Catch (thousands mt) [ln−scale]
0
1
2
3
1970
1980
1990
2000
2010
year
maturity
ALL_MATURITY
shell condition
ALL_SHELL

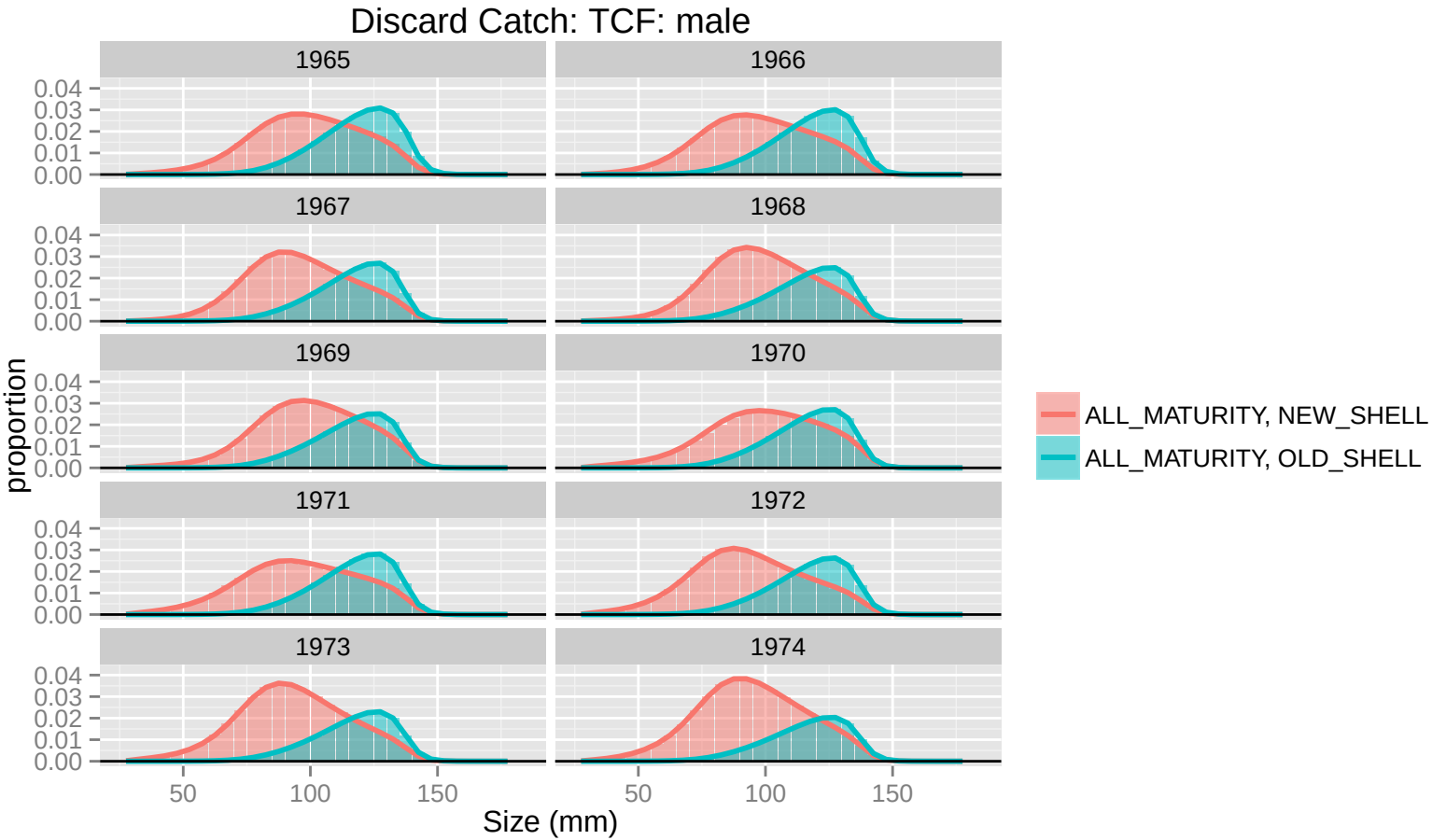

Discard Catch: TCF: female
1965
1966
1967
1968
1969
1970
1971
1972
1973
1974
0.04
0.03
0.02
0.01
0.00
proportion
50
100
150
Size (mm)
ALL_MATURITY, NEW_SHELL
ALL_MATURITY, OLD_SHELL

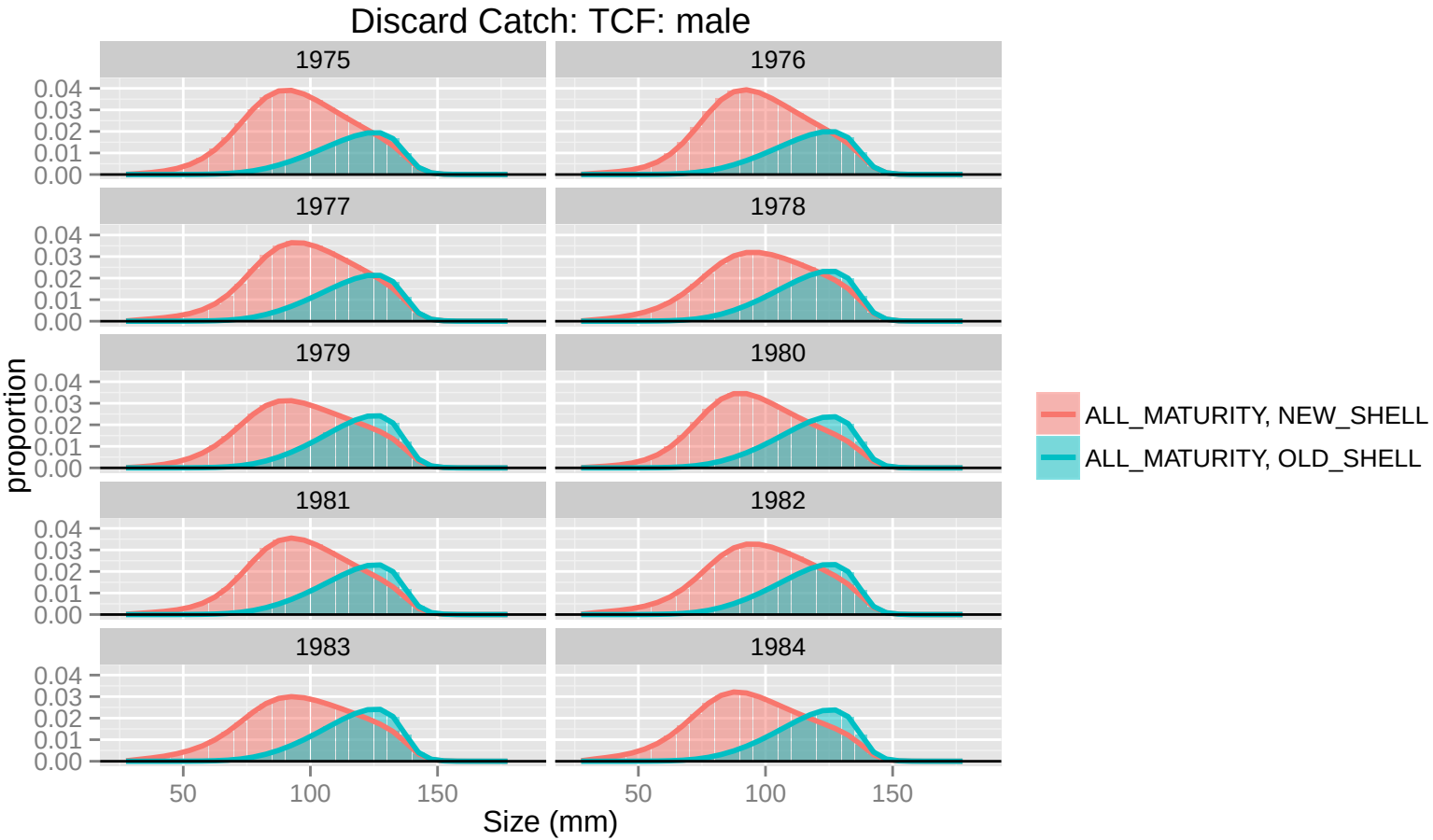

Discard Catch: TCF: female
1975
1976
1977
1978
1979
1980
1981
1982
1983
1984
0.04
0.03
0.02
0.01
0.00
proportion
50
100
150
Size (mm)
ALL_MATURITY, NEW_SHELL
ALL_MATURITY, OLD_SHELL

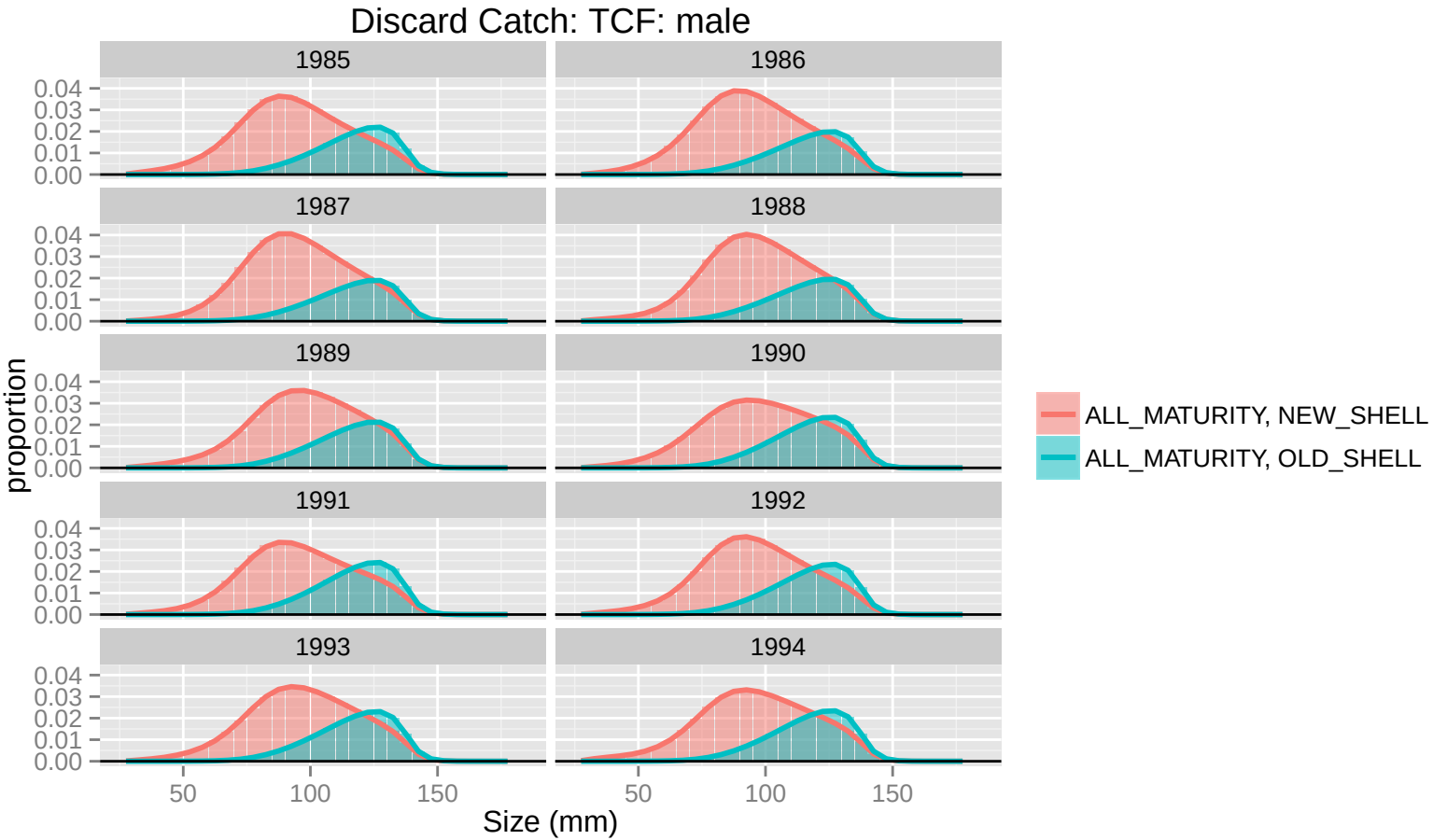

Discard Catch: TCF: female
1985
1986
1987
1988
1989
1990
1991
1992
1993
1994
0.04
0.03
0.02
0.01
0.00
proportion
50
100
150
Size (mm)
ALL_MATURITY, NEW_SHELL
ALL_MATURITY, OLD_SHELL

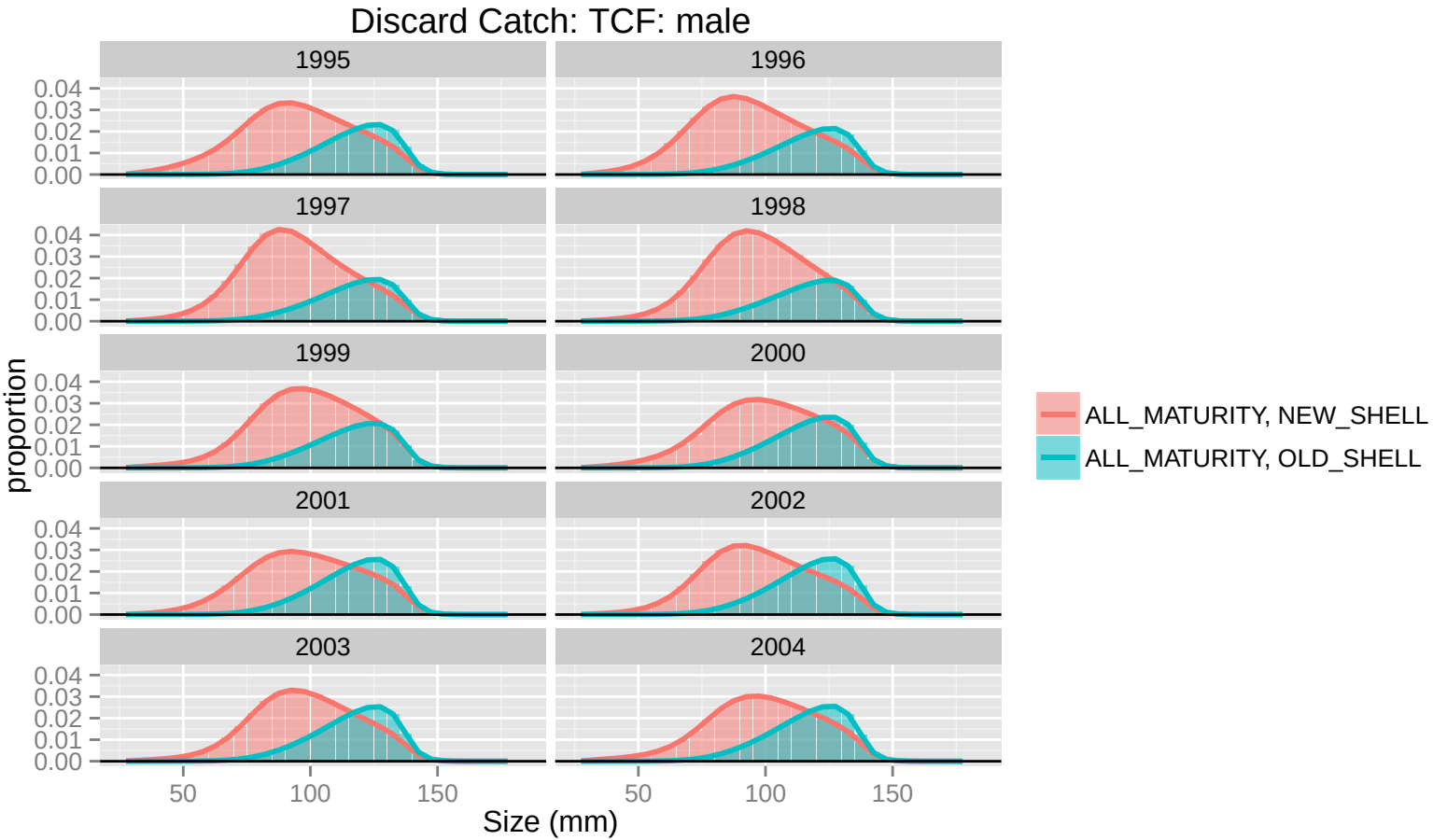

Discard Catch: TCF: female
1995
1996
1997
1998
1999
2000
2001
2002
2003
2004
proportion
0.04
0.03
0.02
0.01
0.00
50
100
150
Size (mm)
ALL_MATURITY, NEW_SHELL
ALL_MATURITY, OLD_SHELL

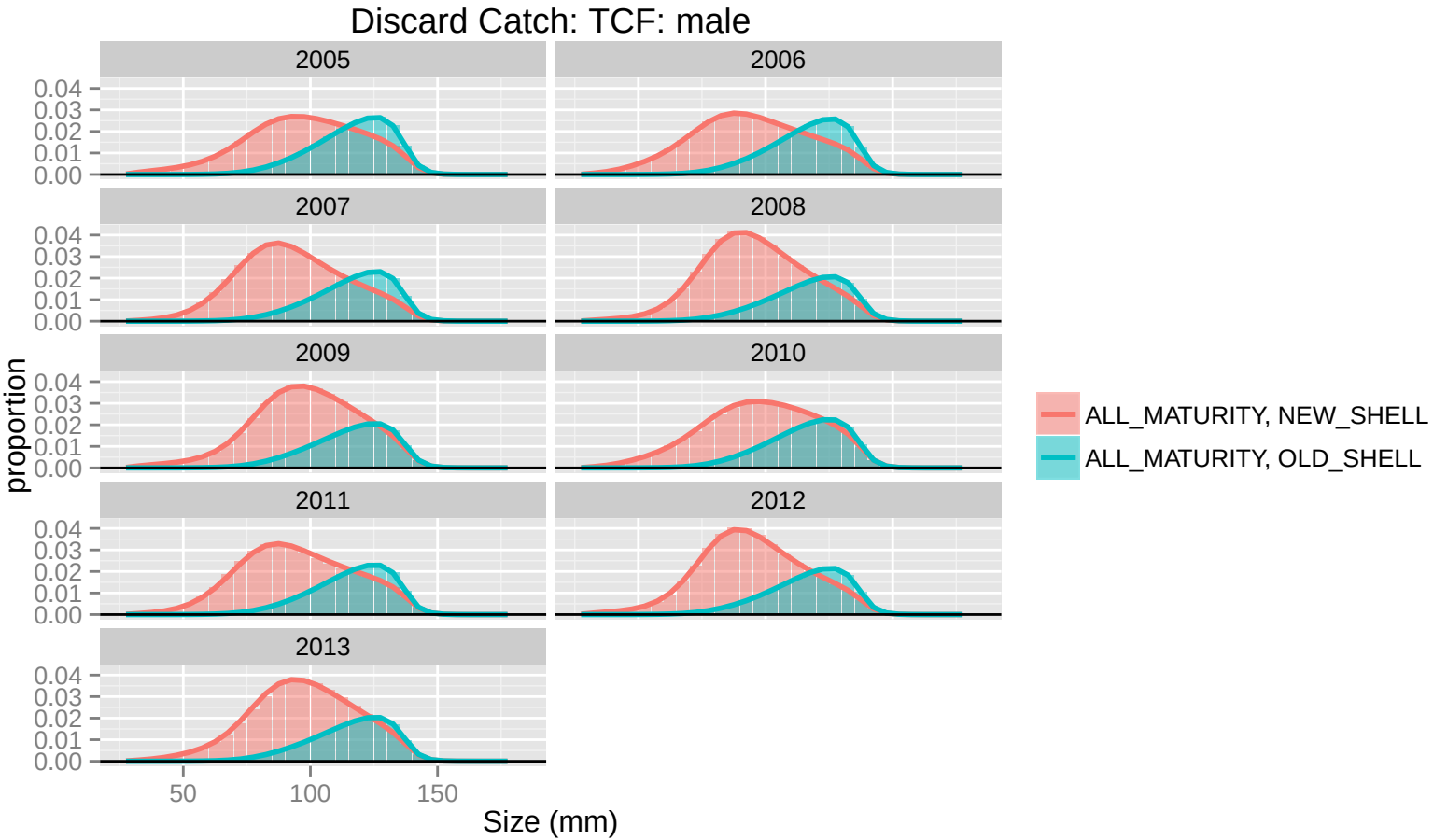

Discard Catch: TCF: female
2005
2006
2007
2008
2009
2010
2011
2012
2013
0.04
0.03
0.02
0.01
0.00
proportion
50
100
150
Size (mm)
ALL_MATURITY, NEW_SHELL
ALL_MATURITY, OLD_SHELL

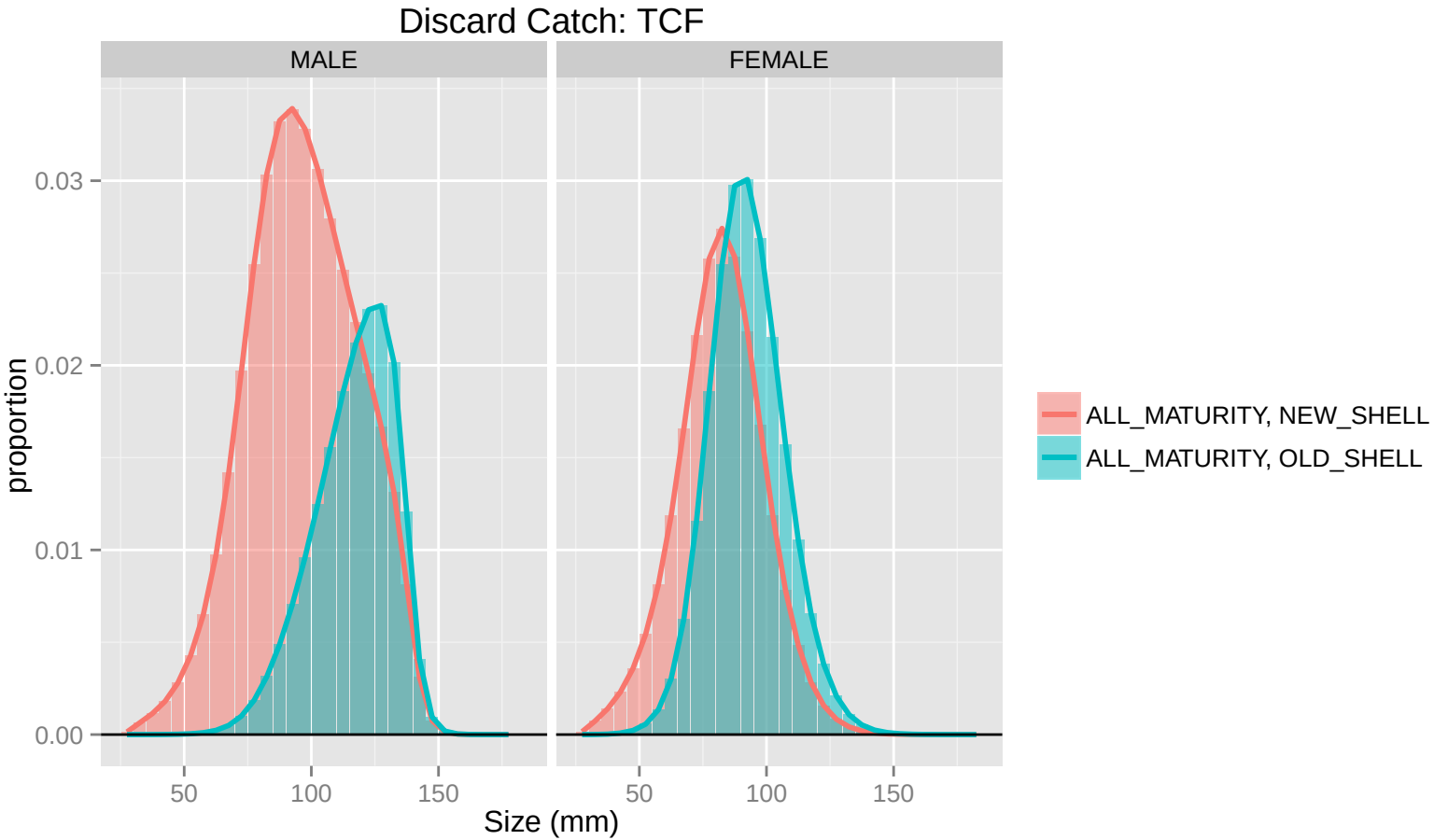

Discard Catch: TCF: male
1965
1966
1967
1968
1969
1970
1971
1972
1973
1974
0.04
0.03
0.02
0.01
0.00
proportion
50
100
150
Size (mm)
ALL_MATURITY, NEW_SHELL
ALL_MATURITY, OLD_SHELL

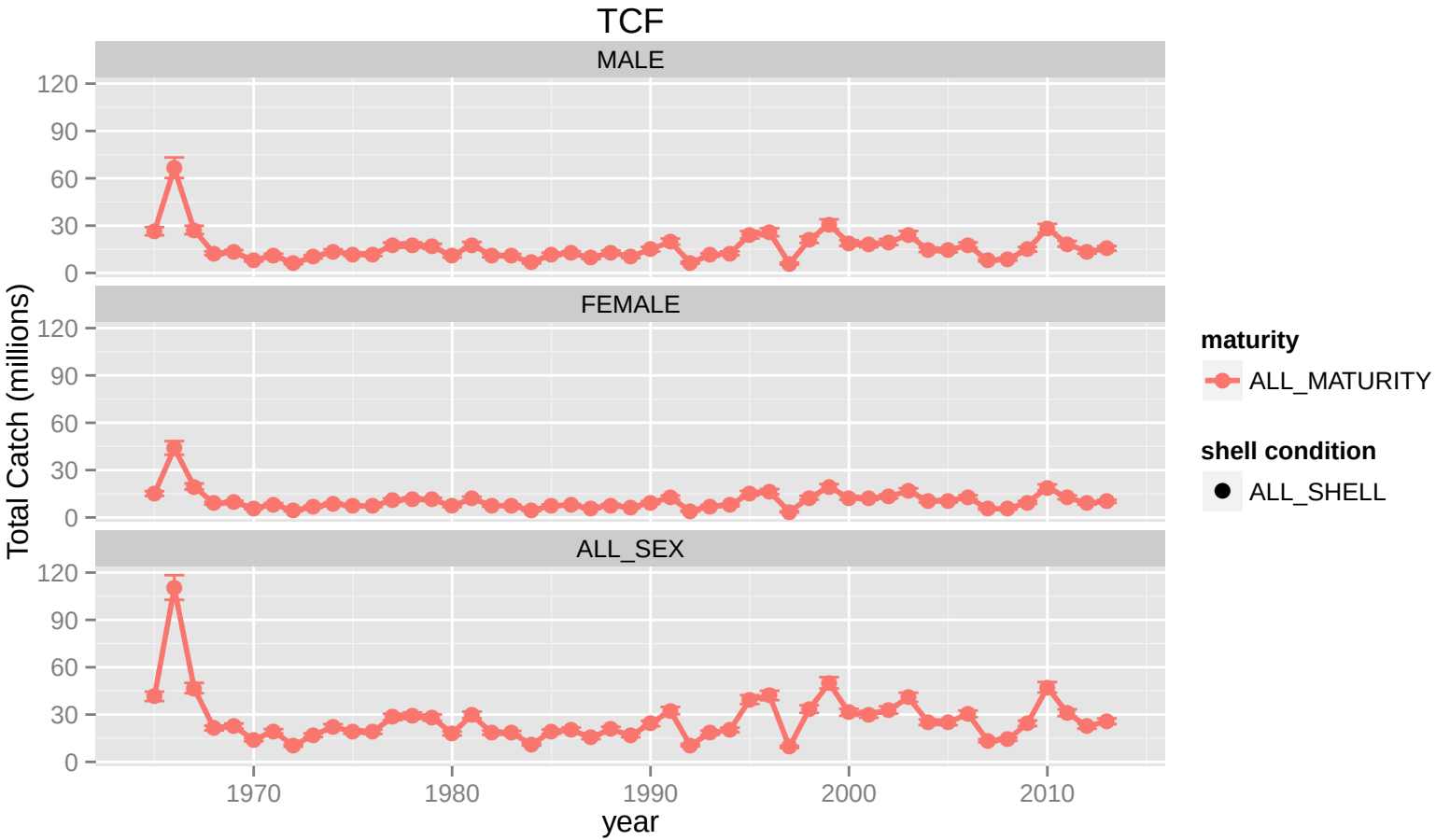

Discard Catch: TCF: male
1975
1976
1977
1978
1979
1980
1981
1982
1983
1984
0.04
0.03
0.02
0.01
0.00
proportion
50
100
150
Size (mm)
ALL_MATURITY, NEW_SHELL
ALL_MATURITY, OLD_SHELL

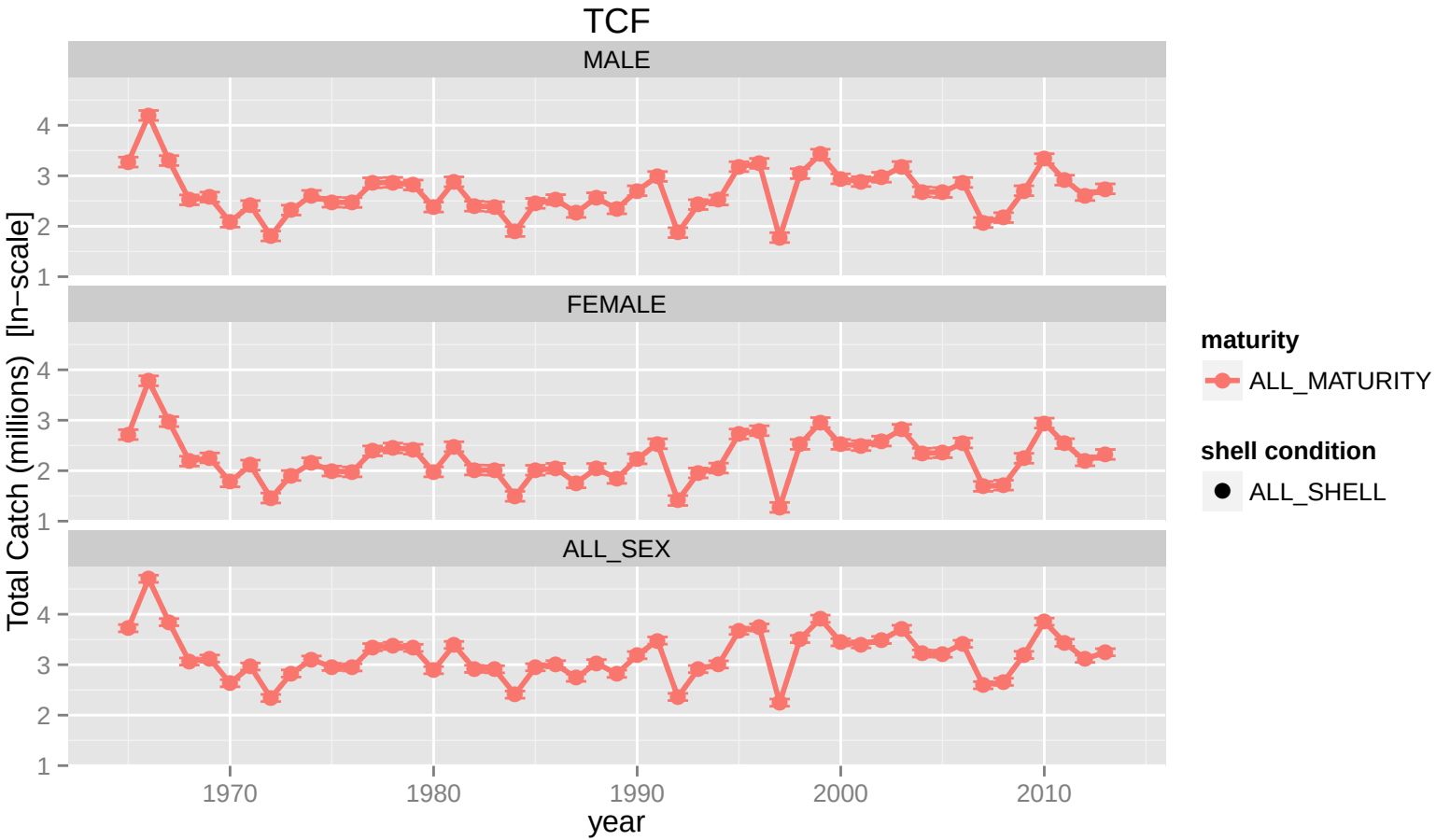

Discard Catch: TCF: male
1985
1986
1987
1988
1989
1990
1991
1992
1993
1994
0.04
0.03
0.02
0.01
0.00
proportion
50
100
150
Size (mm)
ALL_MATURITY, NEW_SHELL
ALL_MATURITY, OLD_SHELL

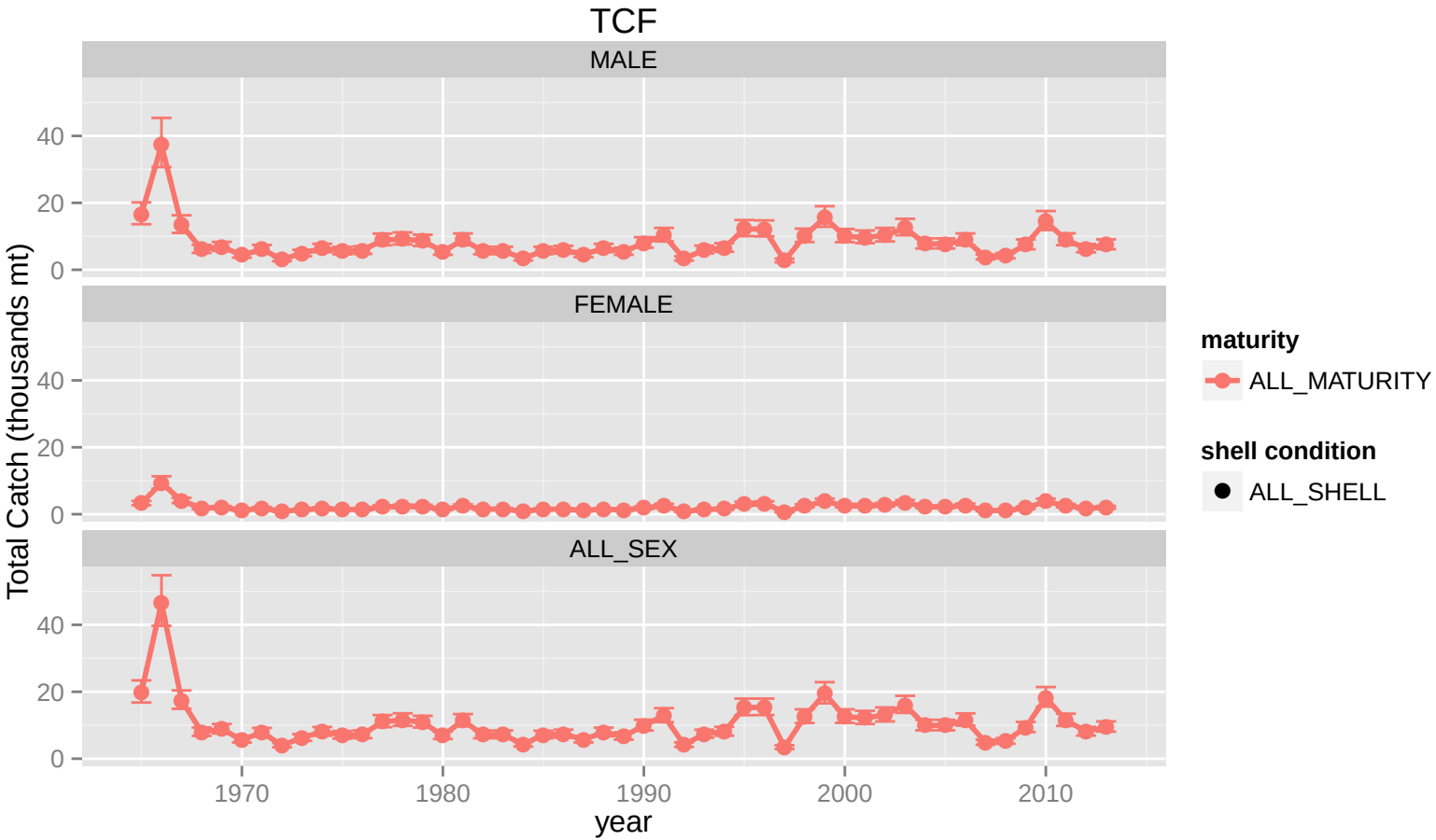

Discard Catch: TCF: male
1995
1996
1997
1998
1999
2000
2001
2002
2003
2004
0.04
0.03
0.02
0.01
0.00
proportion
50
100
150
Size (mm)
ALL_MATURITY, NEW_SHELL
ALL_MATURITY, OLD_SHELL

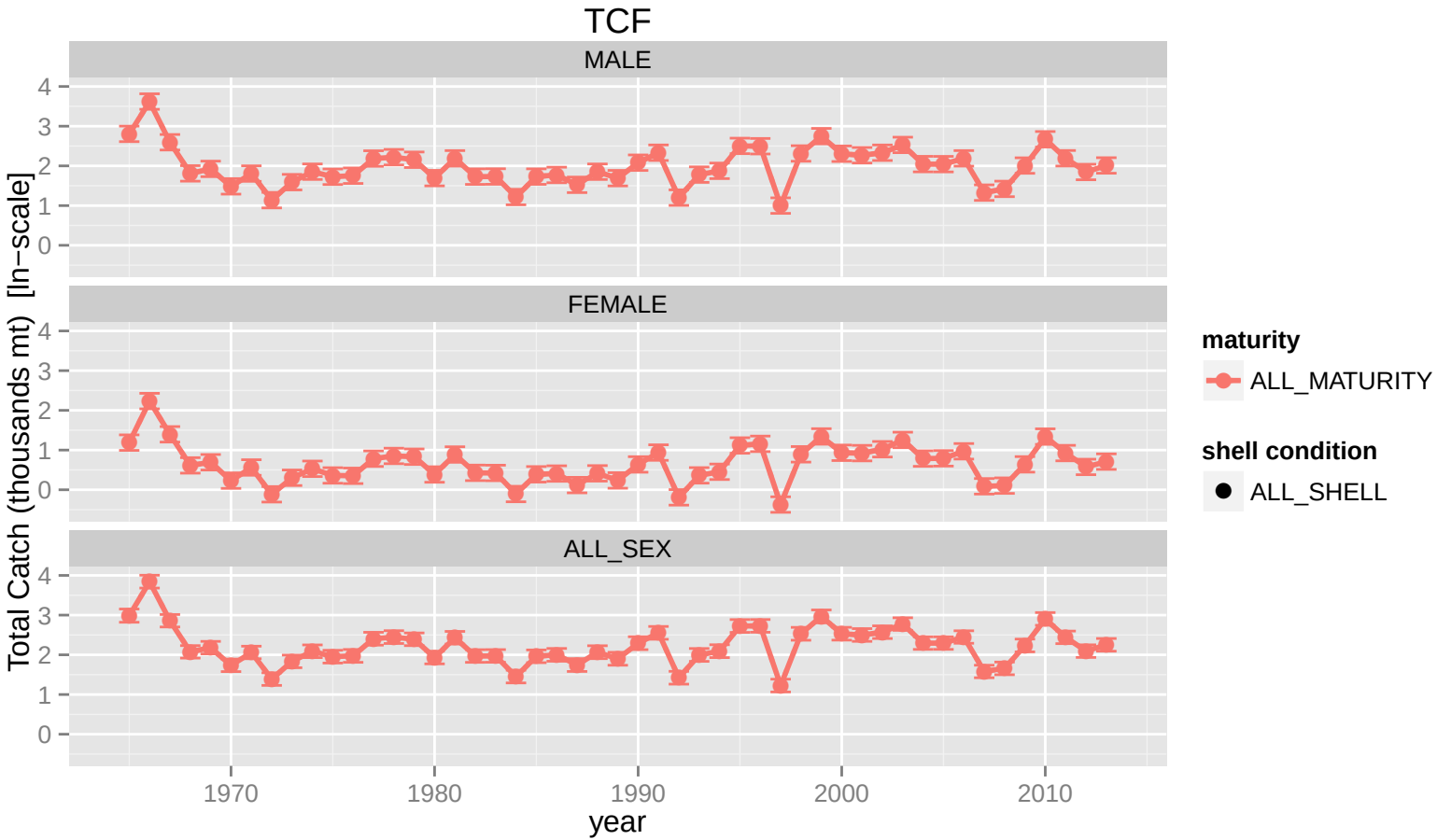

Discard Catch: TCF: male
2005
2006
2007
2008
2009
2010
2011
2012
2013
0.04
0.03
0.02
0.01
0.00
proportion
50
100
150
Size (mm)
ALL_MATURITY, NEW_SHELL
ALL_MATURITY, OLD_SHELL

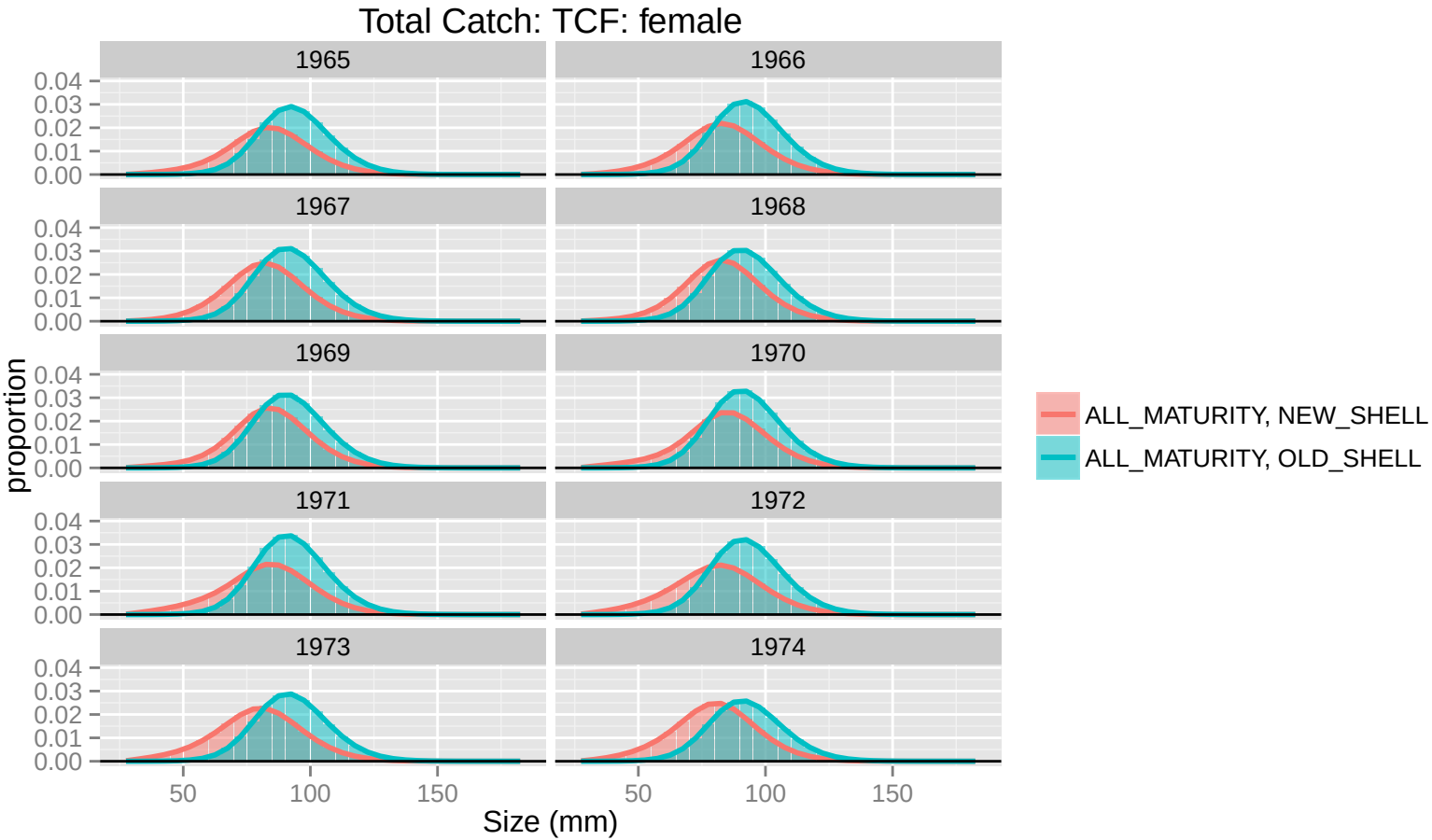

Discard Catch: TCF
MALE
FEMALE
proportion
0.03
0.02
0.01
0.00
50
100
150
Size (mm)
ALL_MATURITY, NEW_SHELL
ALL_MATURITY, OLD_SHELL

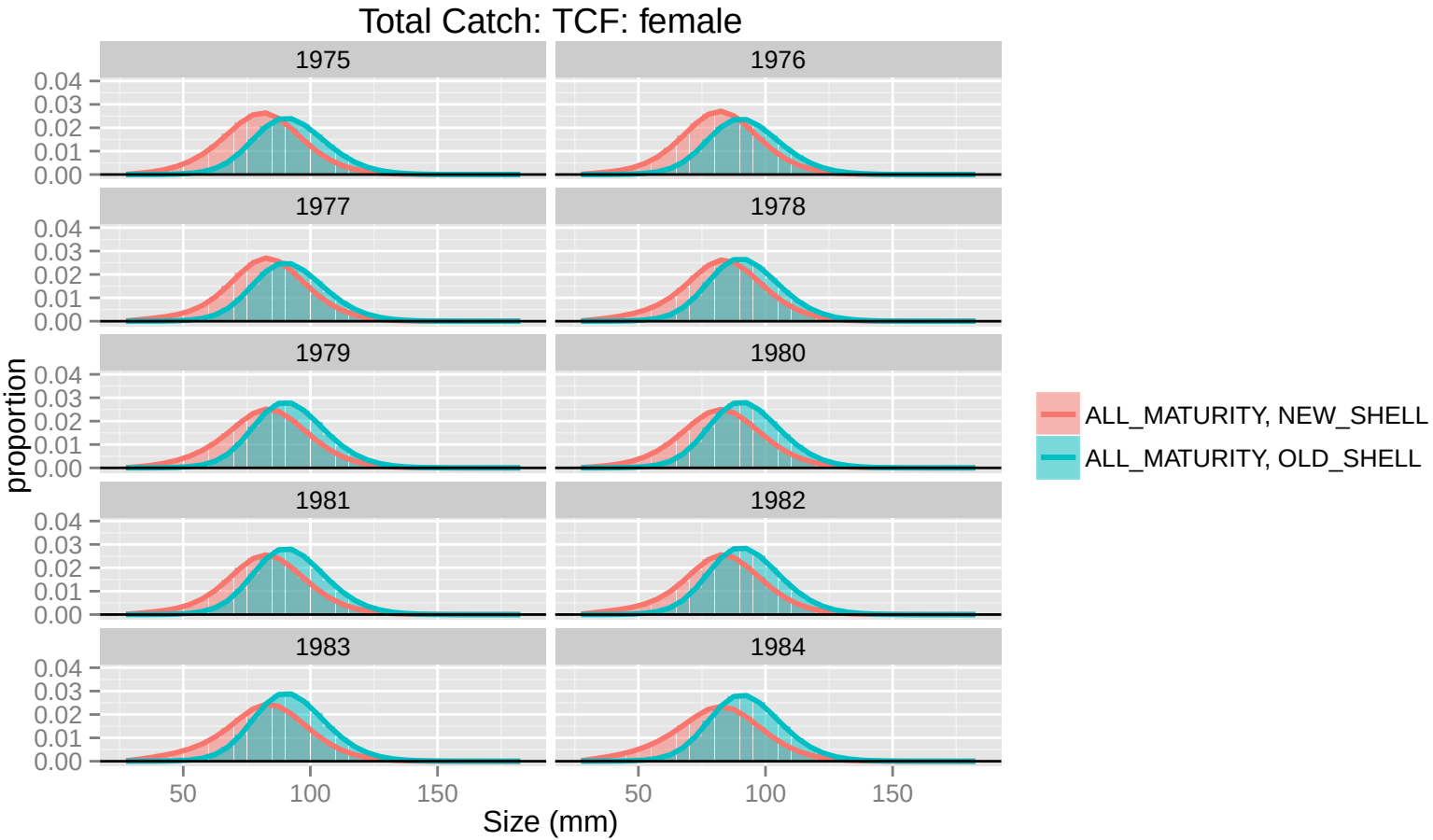

TCF
MALE
FEMALE
ALL_SEX
120
90
60
30
0
Total Catch (millions)
1970
1980
1990
2000
2010
year
maturity
ALL_MATURITY
shell condition
ALL_SHELL

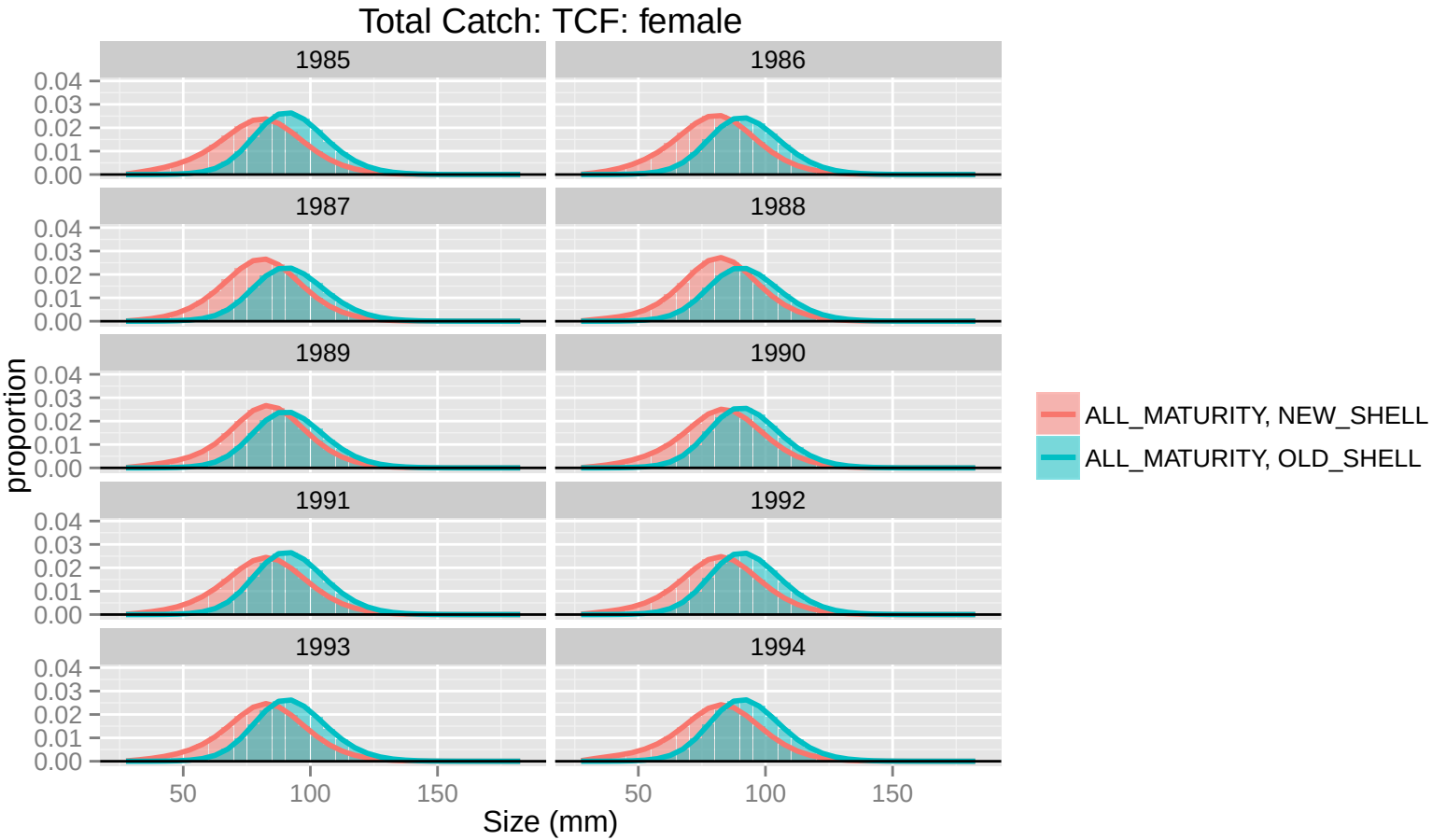

TCF
MALE
FEMALE
ALL_SEX
Total Catch (millions) [ln−scale]
4
3
2
1
1970
1980
1990
2000
2010
year
maturity
ALL_MATURITY
shell condition
ALL_SHELL

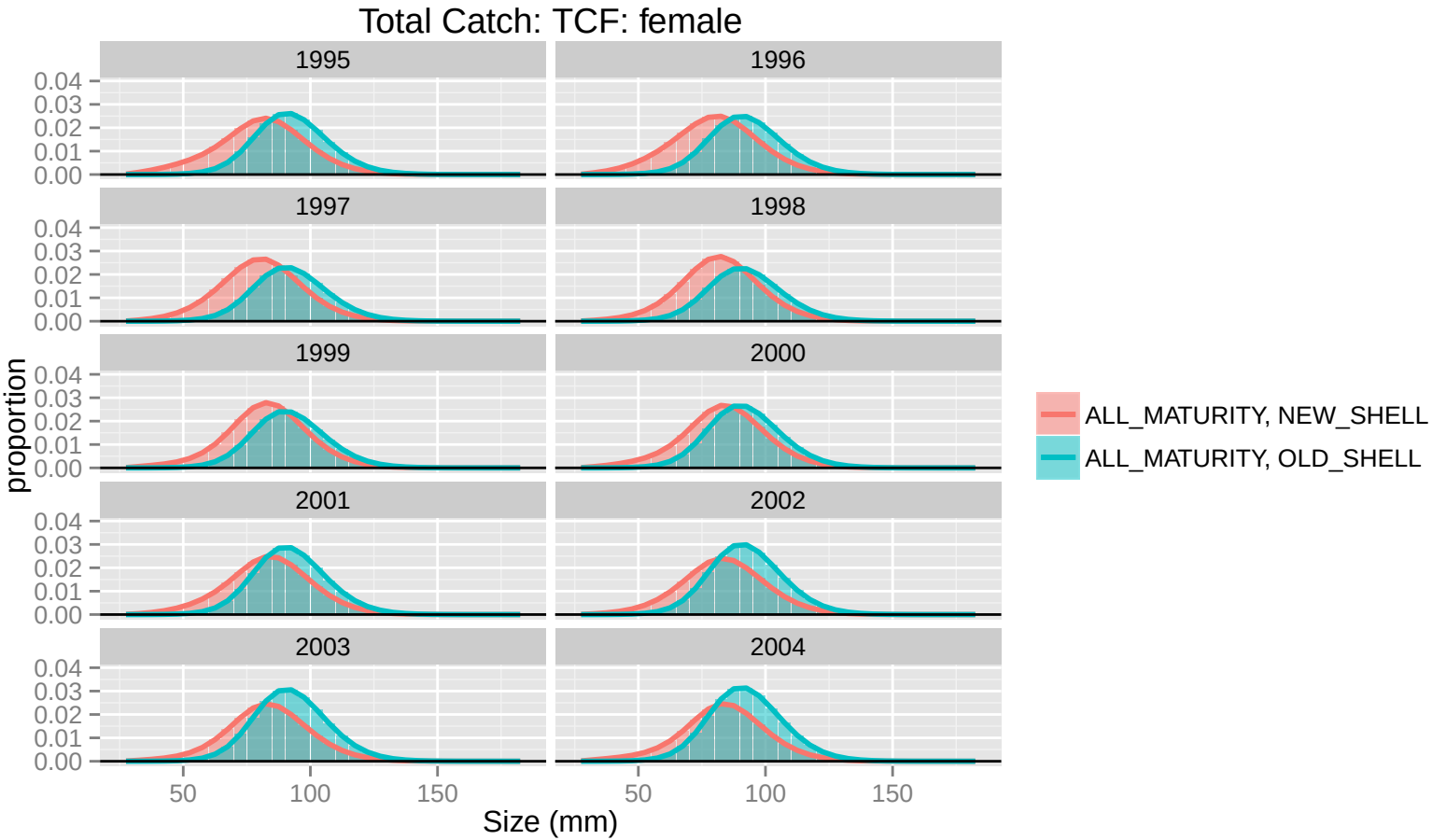

TCF
MALE
FEMALE
ALL_SEX
Total Catch (thousands mt)
0
20
40
1970
1980
1990
2000
2010
year
maturity
ALL_MATURITY
shell condition
ALL_SHELL

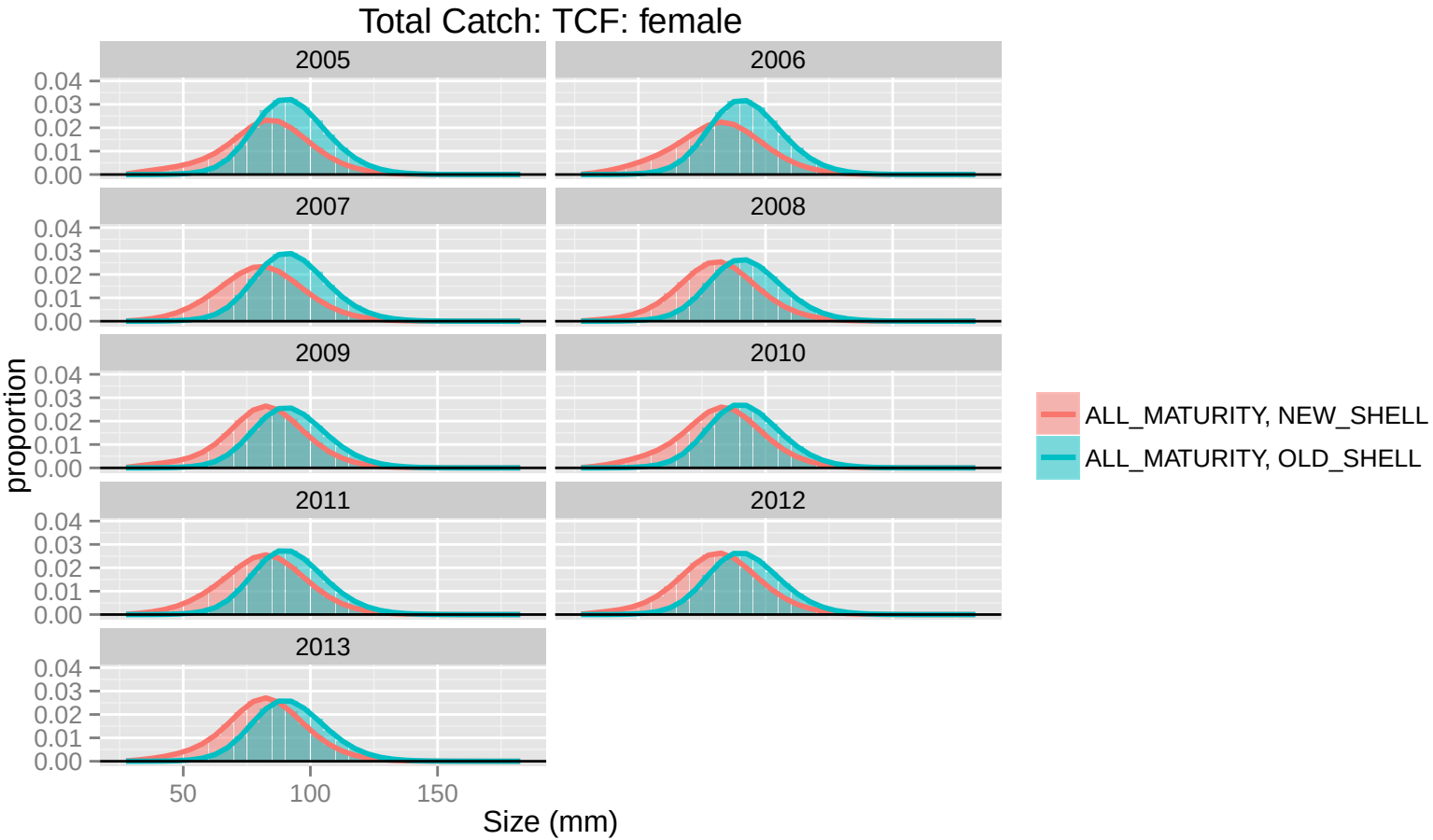

TCF
MALE
FEMALE
ALL_SEX
Total Catch (thousands mt) [ln−scale]
0
1
2
3
4
1970
1980
1990
2000
2010
year
maturity
ALL_MATURITY
shell condition
ALL_SHELL

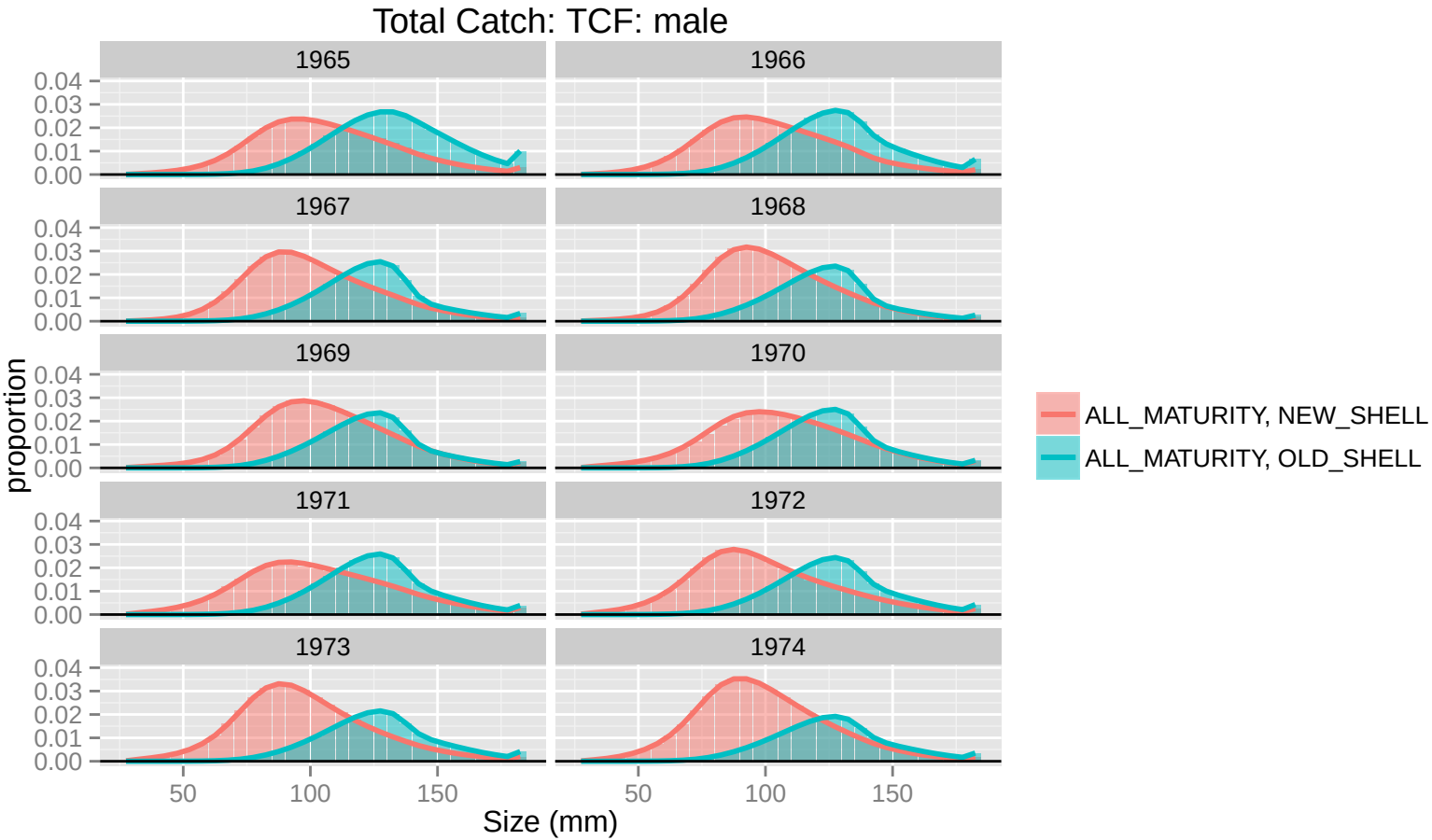

Total Catch: TCF: female
1965
1966
1967
1968
1969
1970
1971
1972
1973
1974
0.04
0.03
0.02
0.01
0.00
proportion
50
100
150
Size (mm)
ALL_MATURITY, NEW_SHELL
ALL_MATURITY, OLD_SHELL

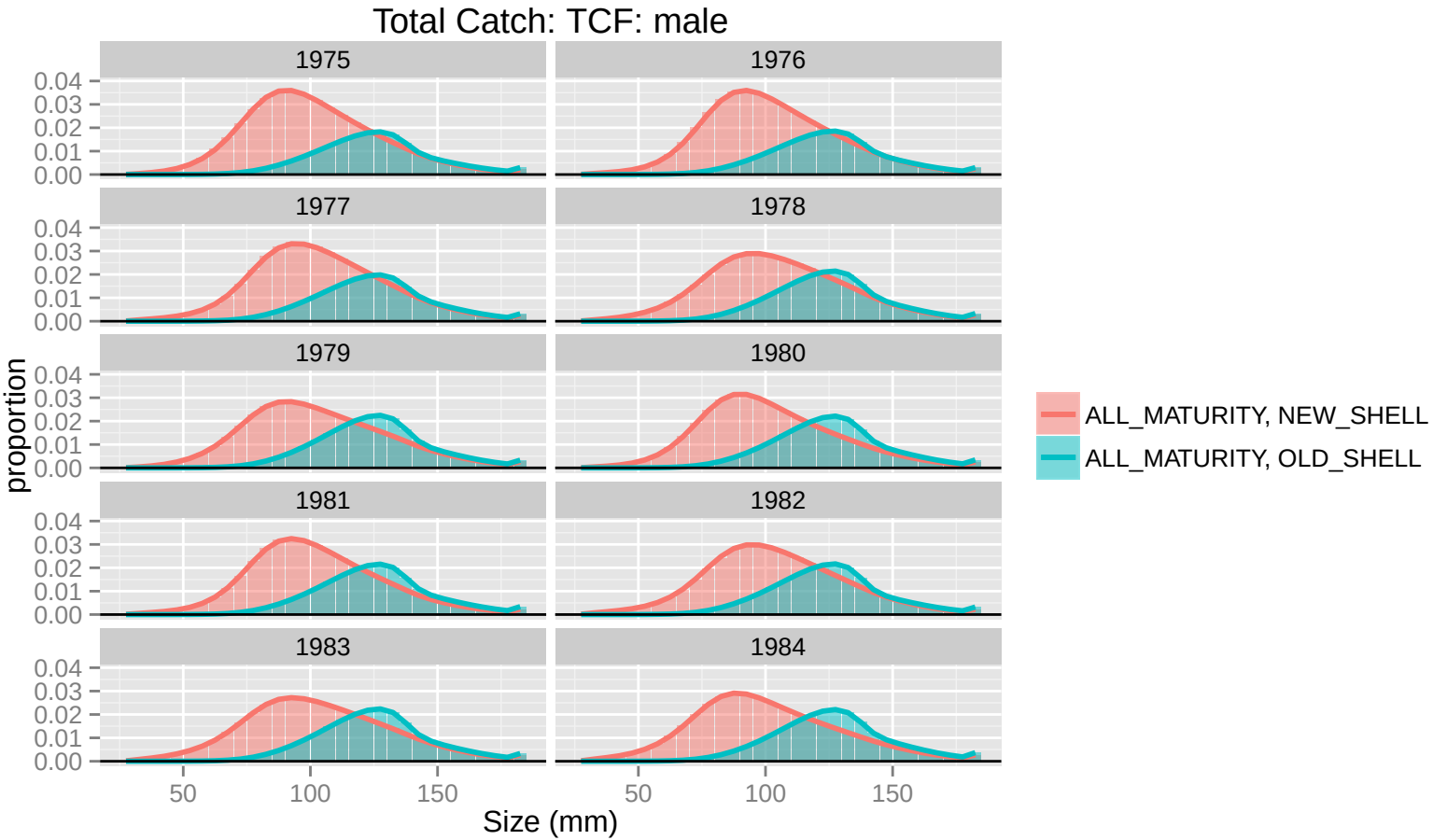

Total Catch: TCF: female
1975
1976
1977
1978
1979
1980
1981
1982
1983
1984
0.04
0.03
0.02
0.01
0.00
proportion
50
100
150
Size (mm)
ALL_MATURITY, NEW_SHELL
ALL_MATURITY, OLD_SHELL

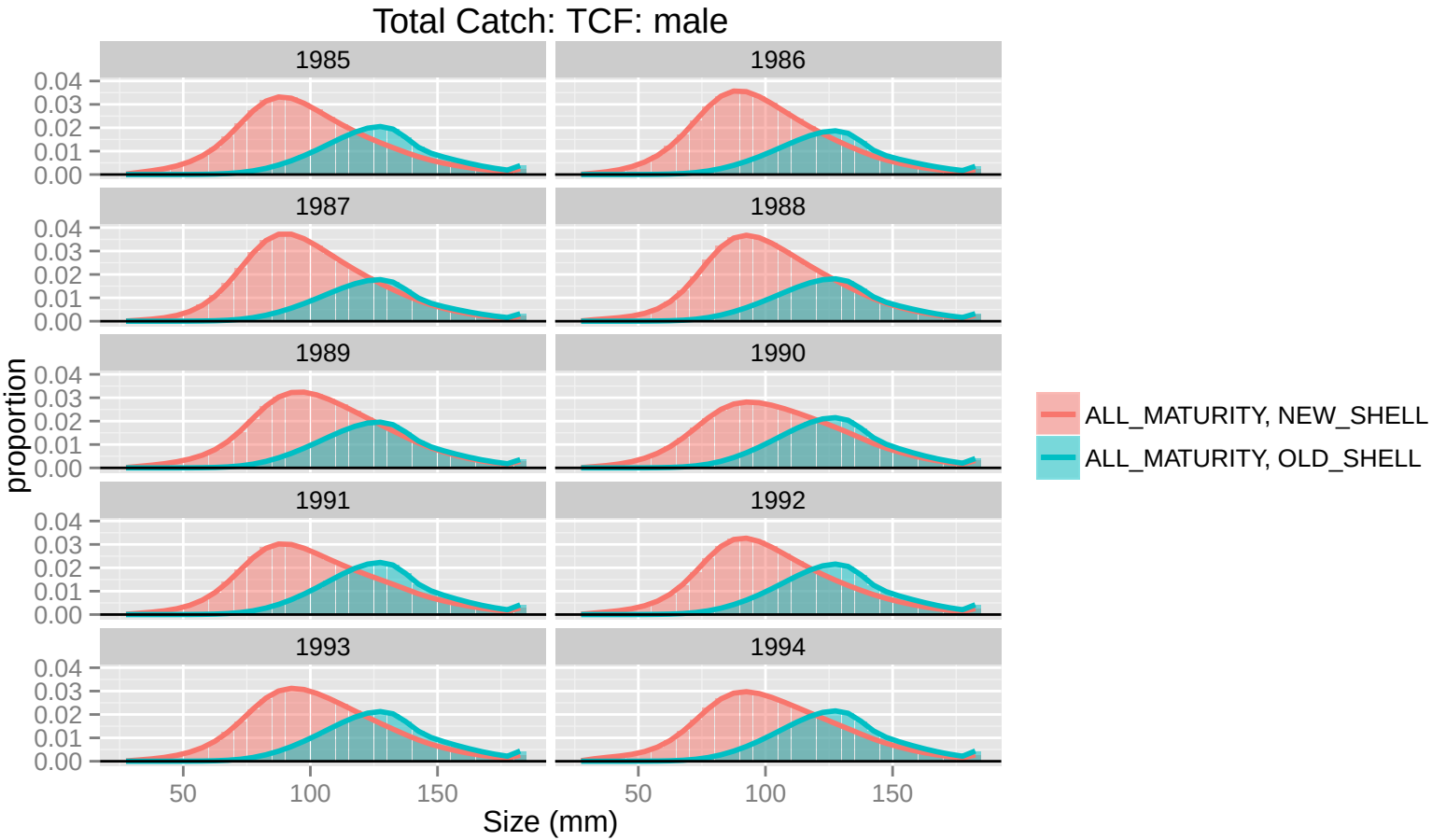

Total Catch: TCF: female
1985
1986
1987
1988
1989
1990
1991
1992
1993
1994
0.04
0.03
0.02
0.01
0.00
proportion
50
100
150
Size (mm)
ALL_MATURITY, NEW_SHELL
ALL_MATURITY, OLD_SHELL

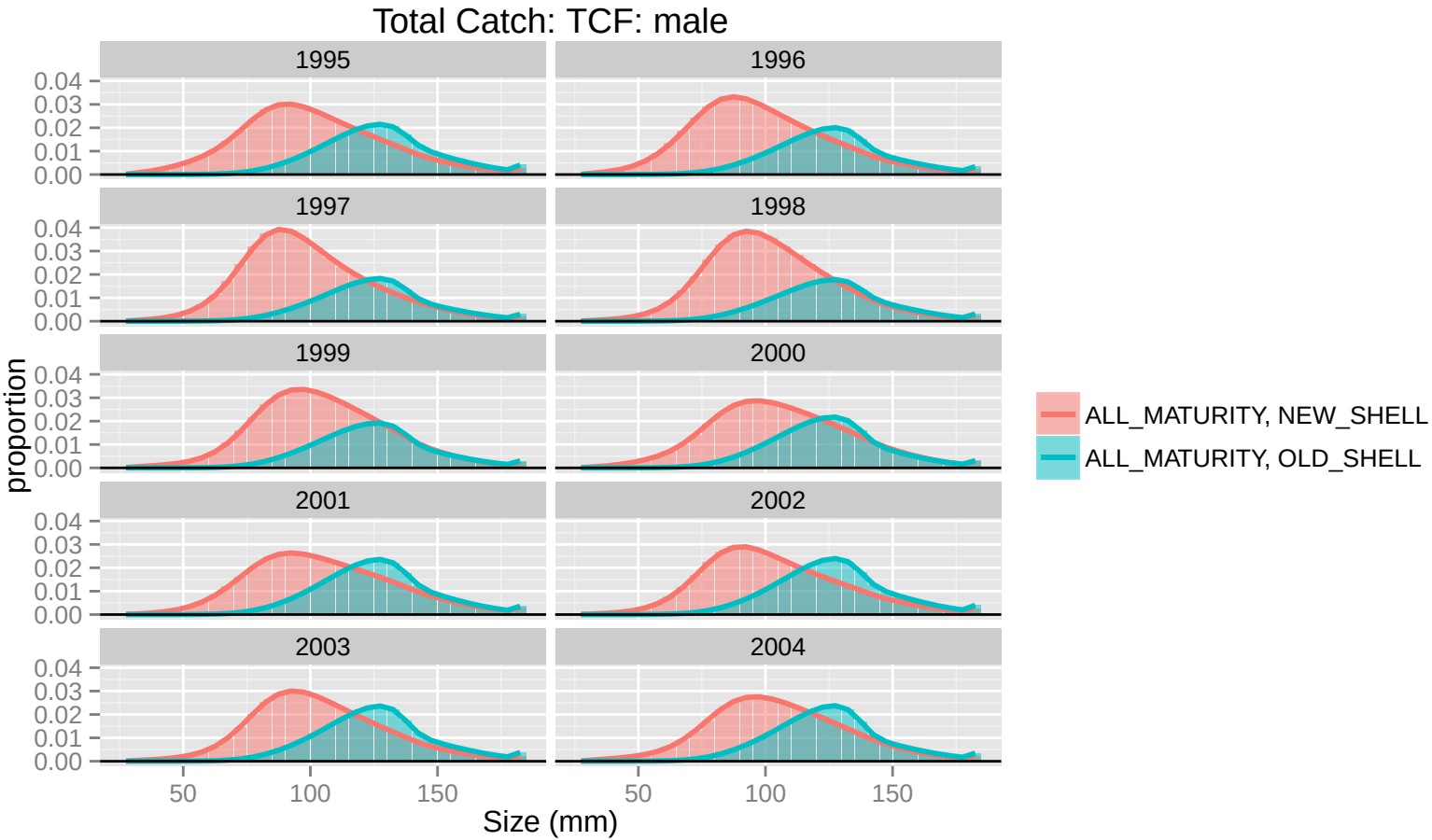

Total Catch: TCF: female
1995
1996
1997
1998
1999
2000
2001
2002
2003
2004
0.04
0.03
0.02
0.01
0.00
proportion
50
100
150
Size (mm)
ALL_MATURITY, NEW_SHELL
ALL_MATURITY, OLD_SHELL

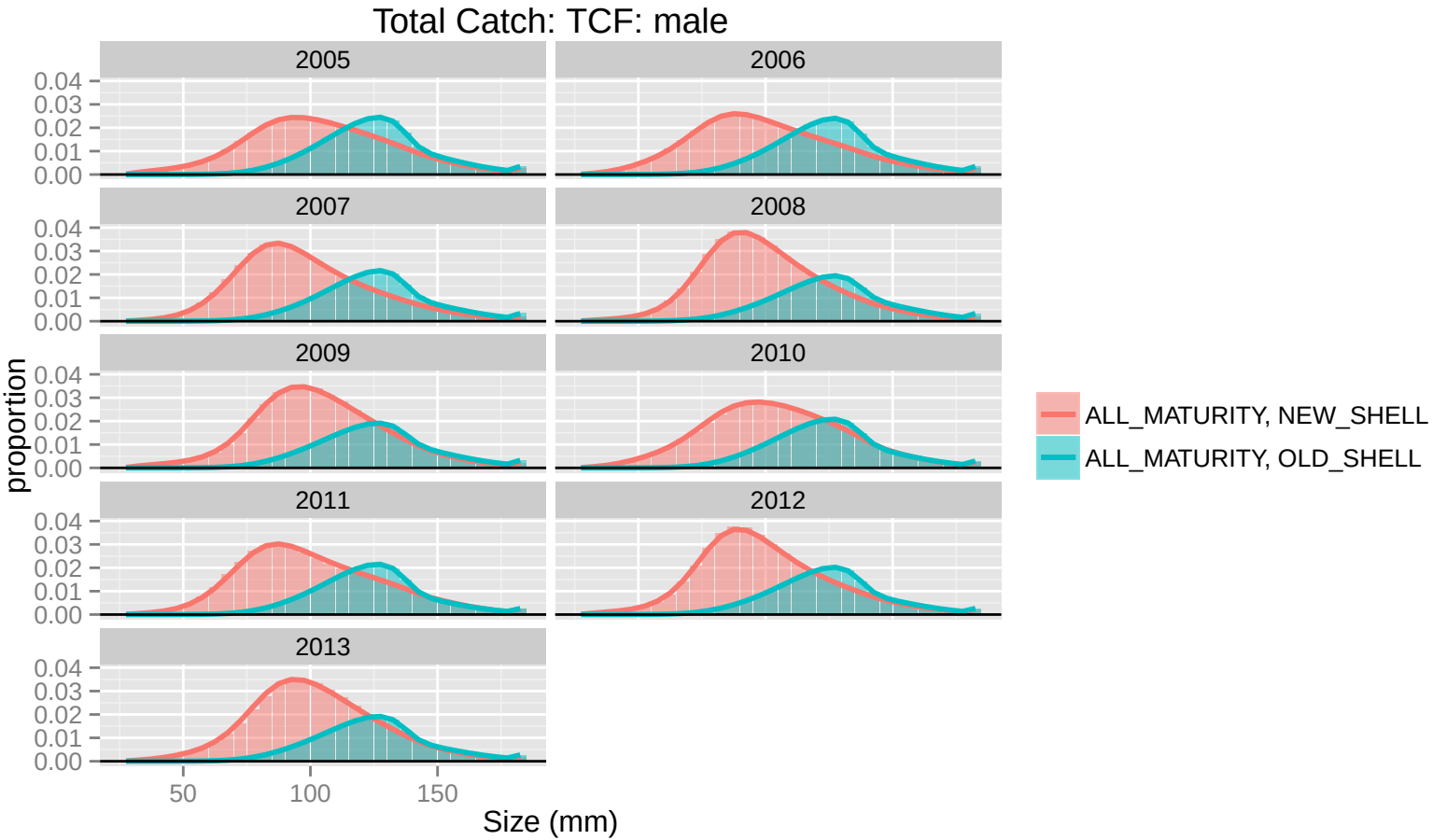

Total Catch: TCF: female
2005
2006
2007
2008
2009
2010
2011
2012
2013
0.04
0.03
0.02
0.01
0.00
proportion
50
100
150
Size (mm)
ALL_MATURITY, NEW_SHELL
ALL_MATURITY, OLD_SHELL

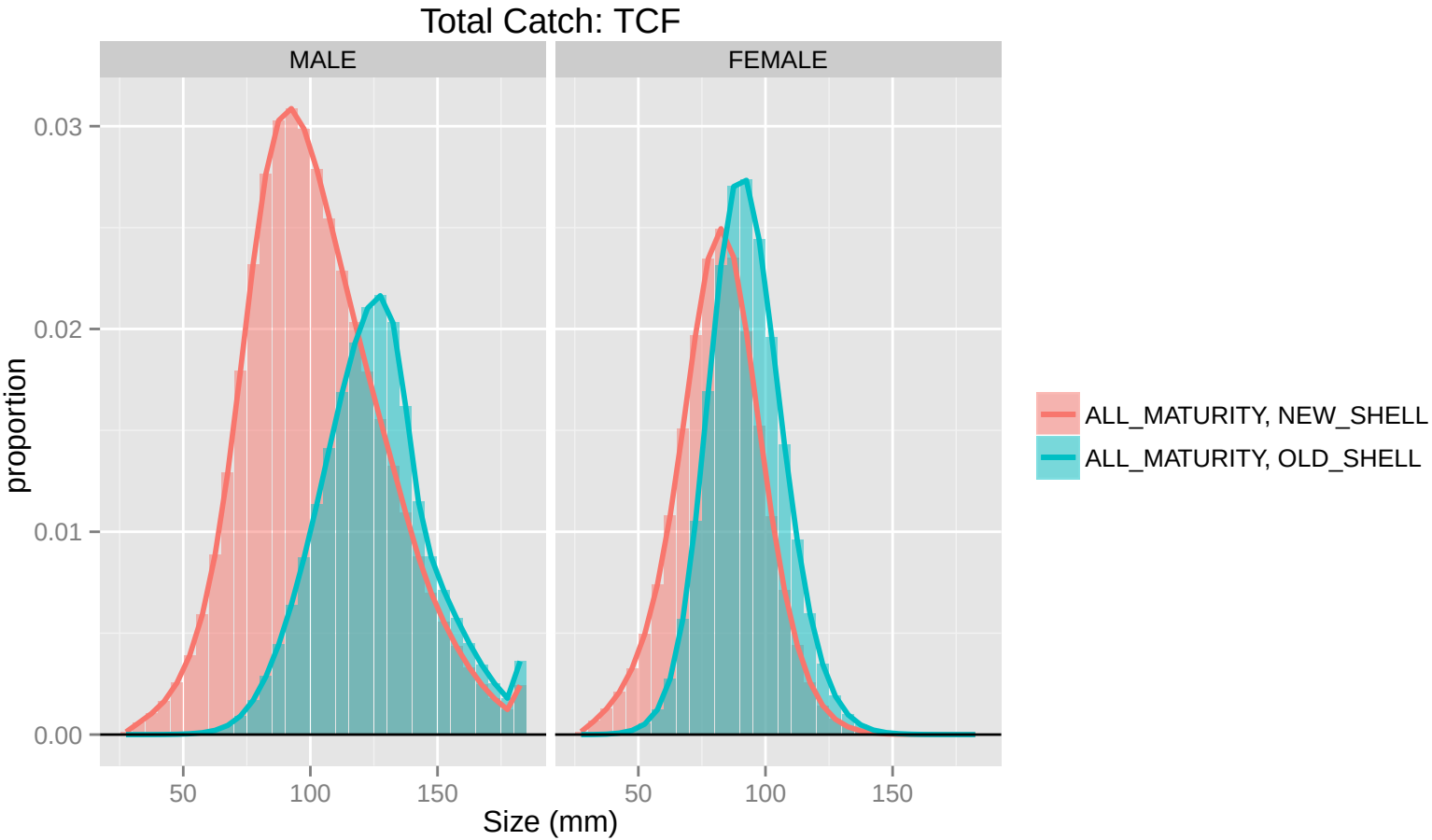

Total Catch: TCF: male
1965
1966
1967
1968
1969
1970
1971
1972
1973
1974
0.04
0.03
0.02
0.01
0.00
proportion
50
100
150
Size (mm)
ALL_MATURITY, NEW_SHELL
ALL_MATURITY, OLD_SHELL

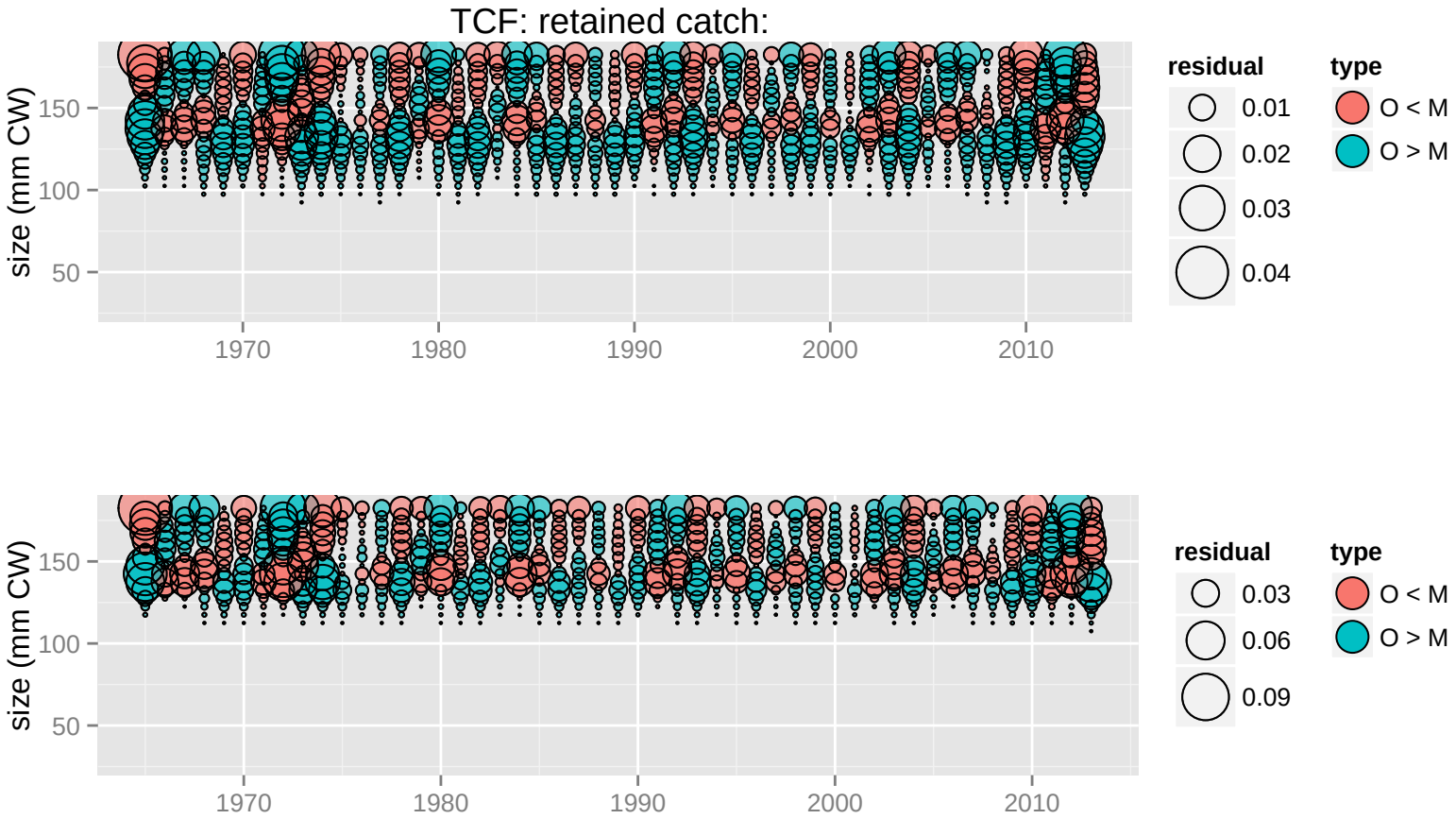

Total Catch: TCF: male
1975
1976
1977
1978
1979
1980
1981
1982
1983
1984
0.04
0.03
0.02
0.01
0.00
proportion
50
100
150
Size (mm)
ALL_MATURITY, NEW_SHELL
ALL_MATURITY, OLD_SHELL

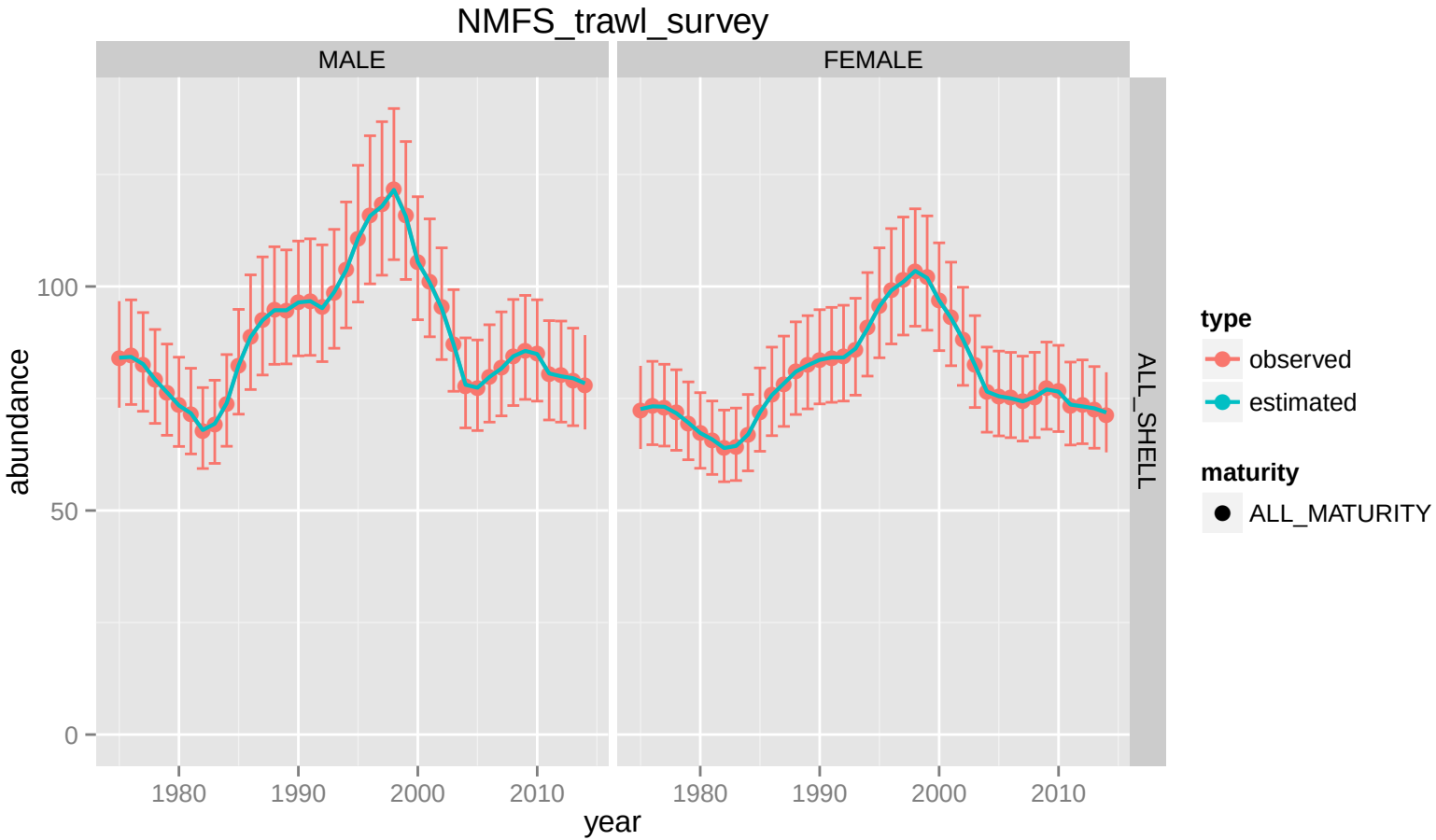

Total Catch: TCF: male
1985
1986
1987
1988
1989
1990
1991
1992
1993
1994
0.04
0.03
0.02
0.01
0.00
proportion
50
100
150
Size (mm)
ALL_MATURITY, NEW_SHELL
ALL_MATURITY, OLD_SHELL

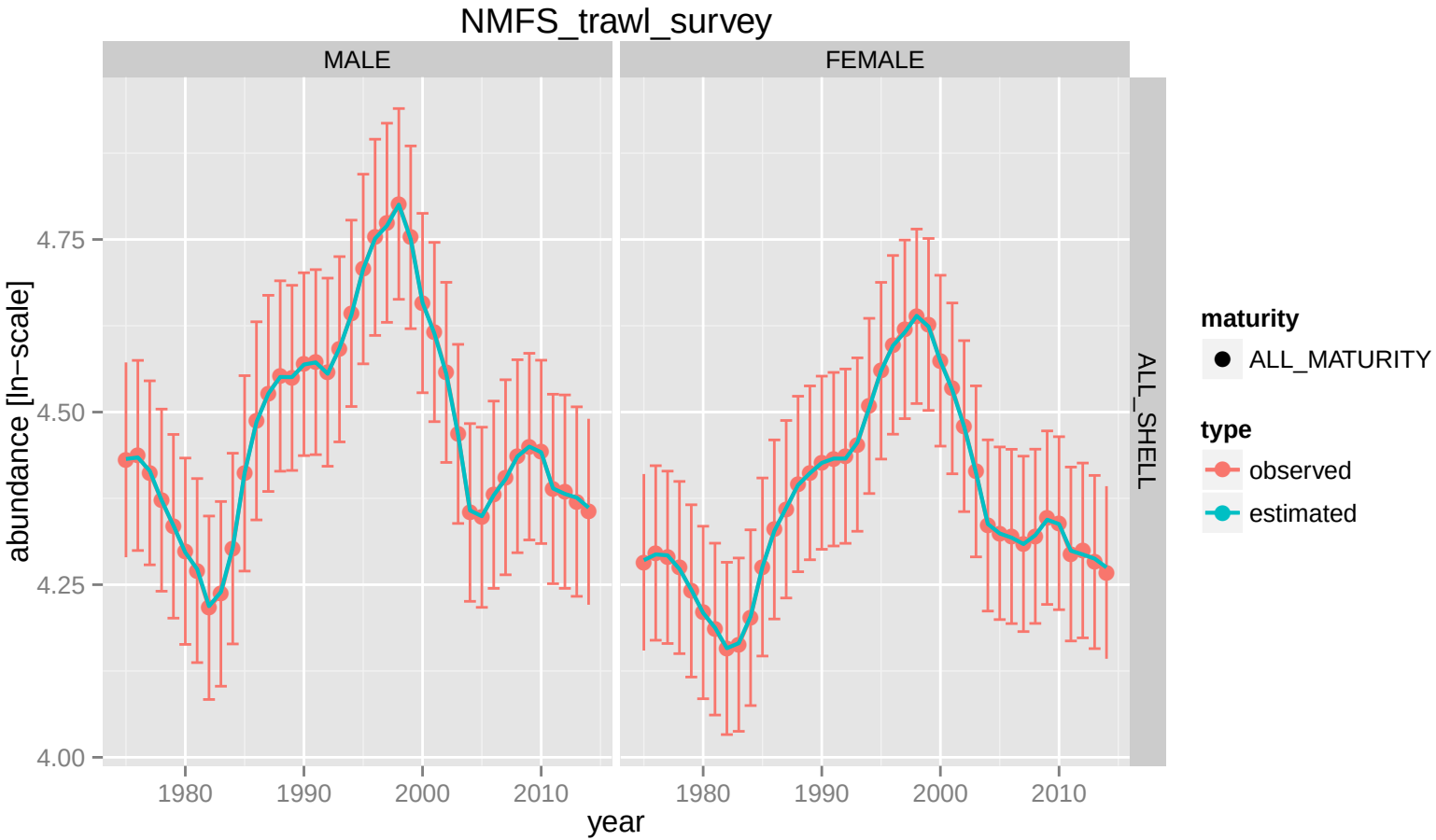

Total Catch: TCF: male
1995
1996
1997
1998
1999
2000
2001
2002
2003
2004
0.04
0.03
0.02
0.01
0.00
proportion
50
100
150
Size (mm)
ALL_MATURITY, NEW_SHELL
ALL_MATURITY, OLD_SHELL

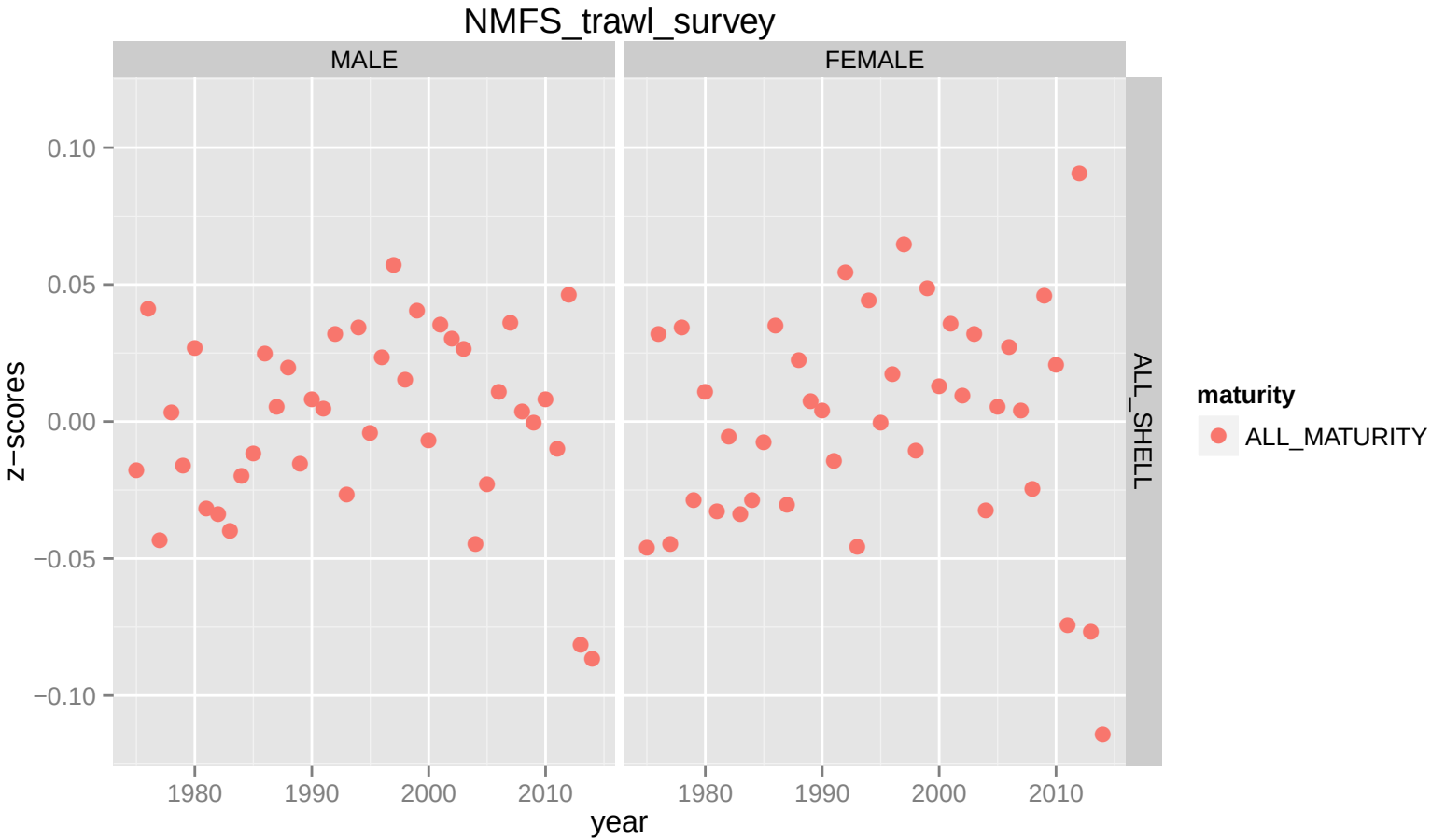

Total Catch: TCF: male
2005
2006
2007
2008
2009
2010
2011
2012
2013
0.04
0.03
0.02
0.01
0.00
proportion
50
100
150
Size (mm)
ALL_MATURITY, NEW_SHELL
ALL_MATURITY, OLD_SHELL

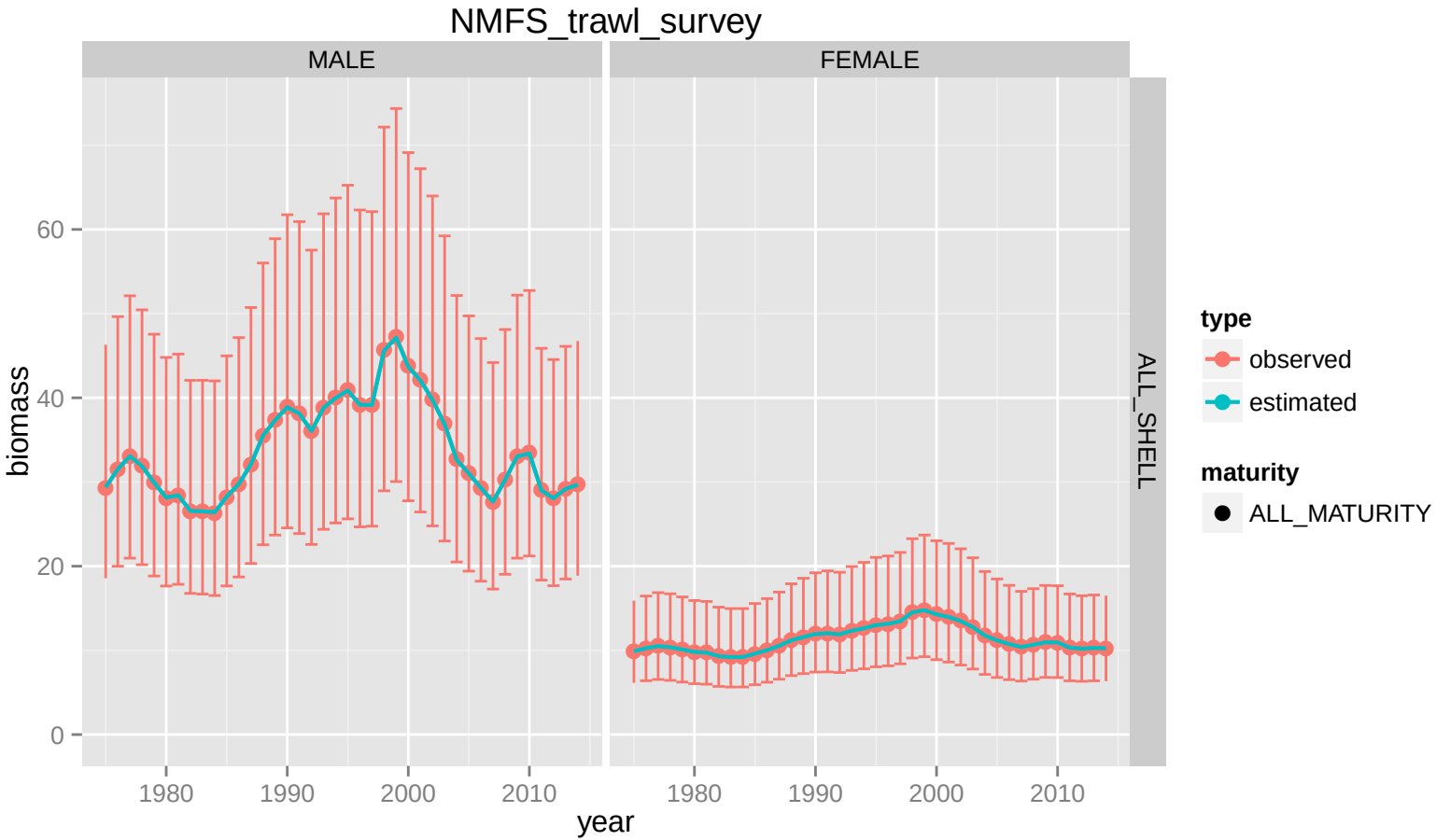

Total Catch: TCF
MALE
FEMALE
0.03
0.02
0.01
0.00
proportion
50
100
150
Size (mm)
ALL_MATURITY, NEW_SHELL
ALL_MATURITY, OLD_SHELL

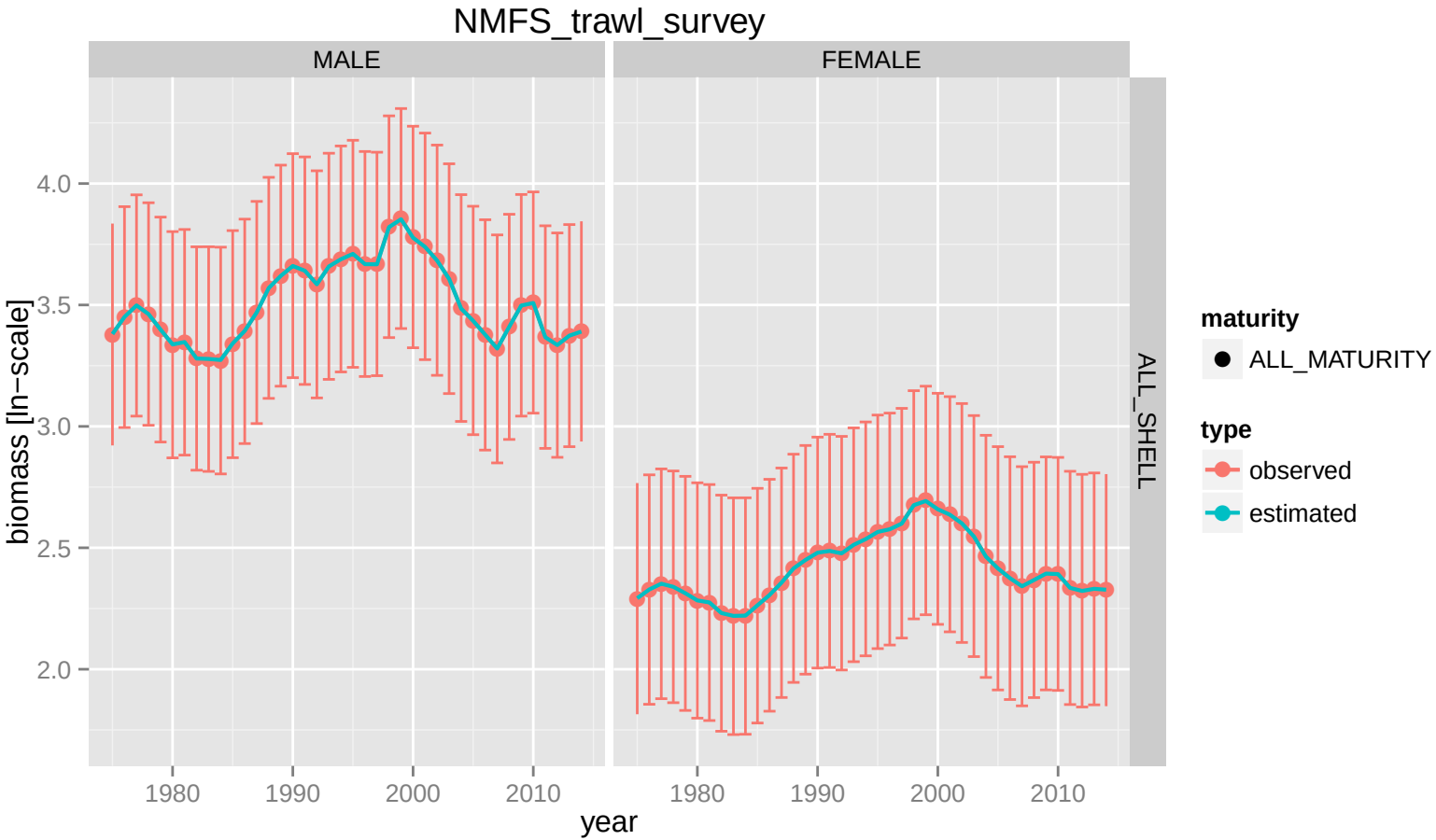

TCF: retained catch:
size (mm CW)
150
100
50
1970
1980
1990
2000
2010
residual
0.01
0.02
0.03
0.04
type
O < M
O > M
size (mm CW)
150
100
50
1970
1980
1990
2000
2010
residual
0.03
0.06
0.09
type
O < M
O > M

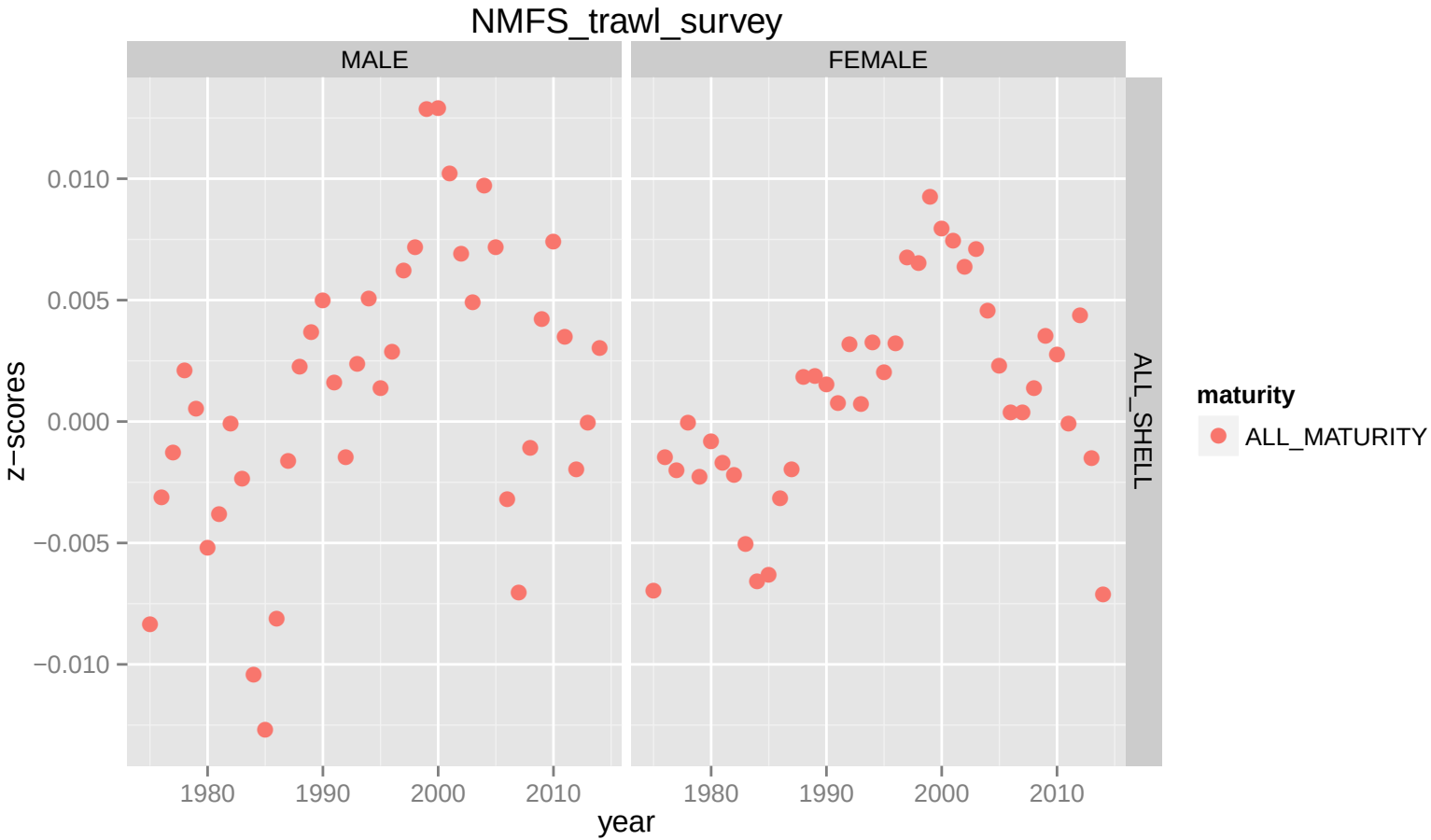

NMFS_trawl_survey
MALE
FEMALE
ALL_SHELL
abundance
100
50
0
1980
1990
2000
2010
year
type
observed
estimated
maturity
ALL_MATURITY

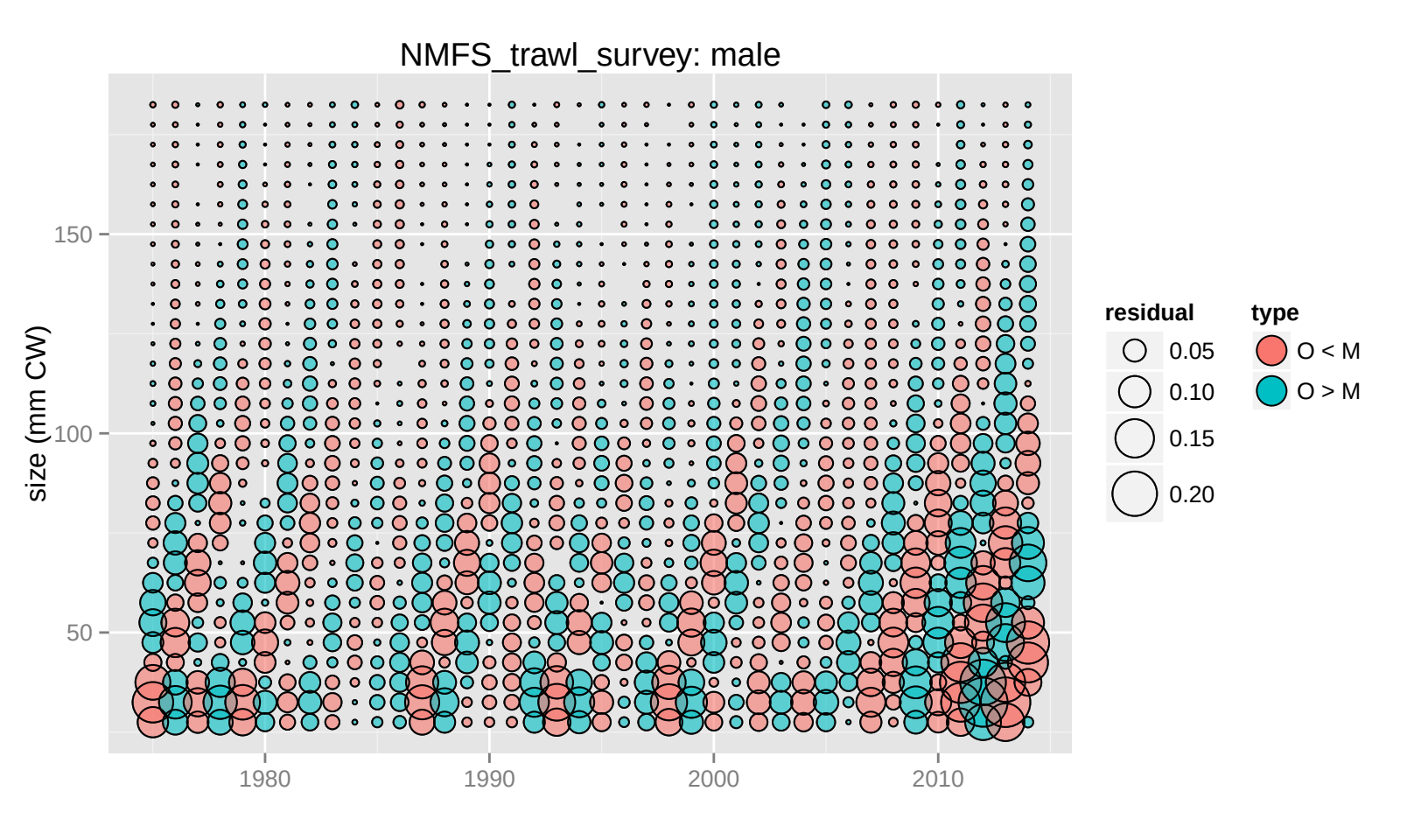

NMFS_trawl_survey
MALE
FEMALE
ALL_SHELL
abundance [ln−scale]
4.75
4.50
4.25
4.00
1980
1990
2000
2010
year
maturity
ALL_MATURITY
type
observed
estimated

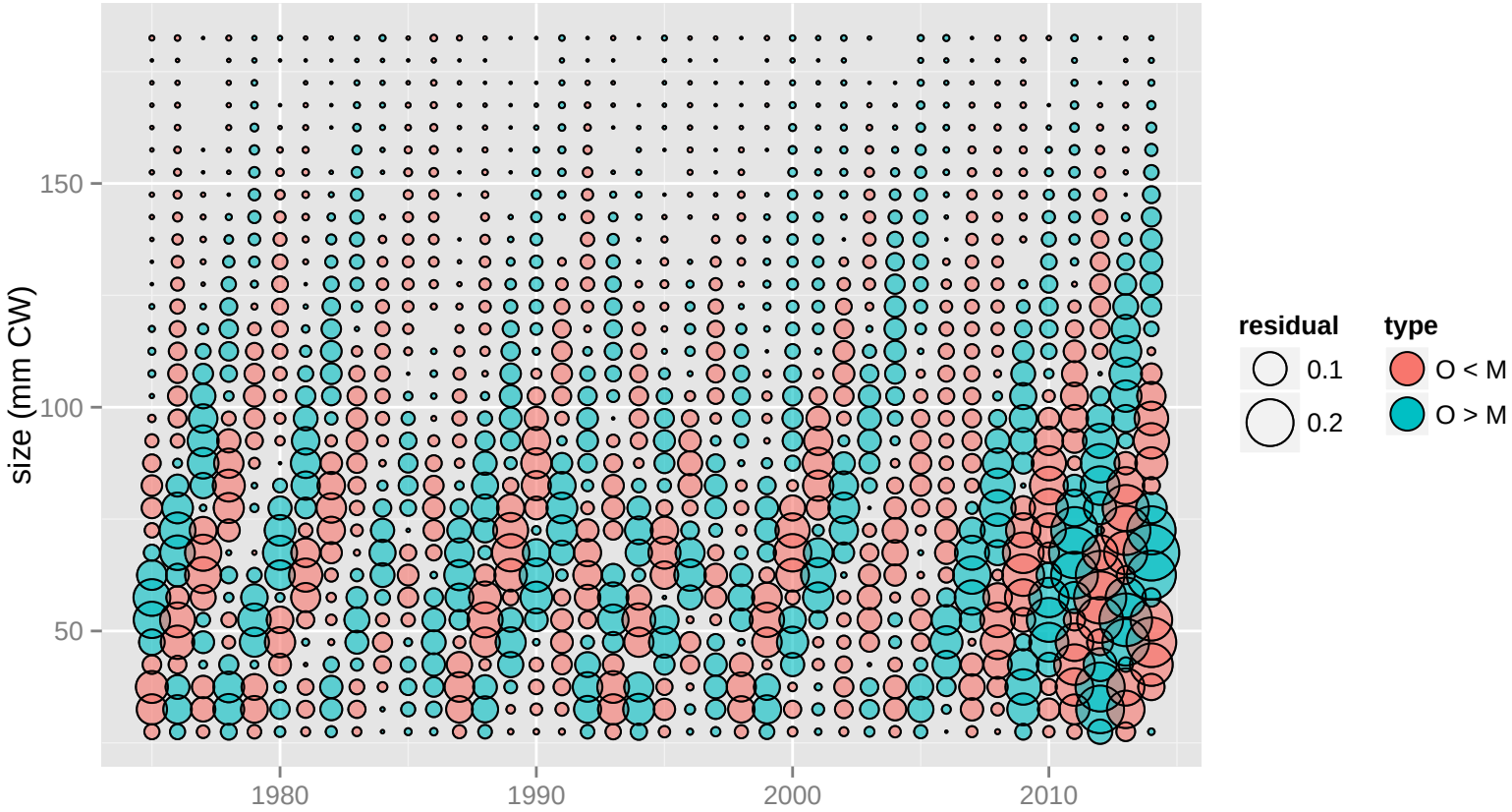

NMFS_trawl_survey
MALE
FEMALE
ALL_SHELL
z−scores
0.10
0.05
0.00
−0.05
−0.10
1980
1990
2000
2010
year
maturity
ALL_MATURITY

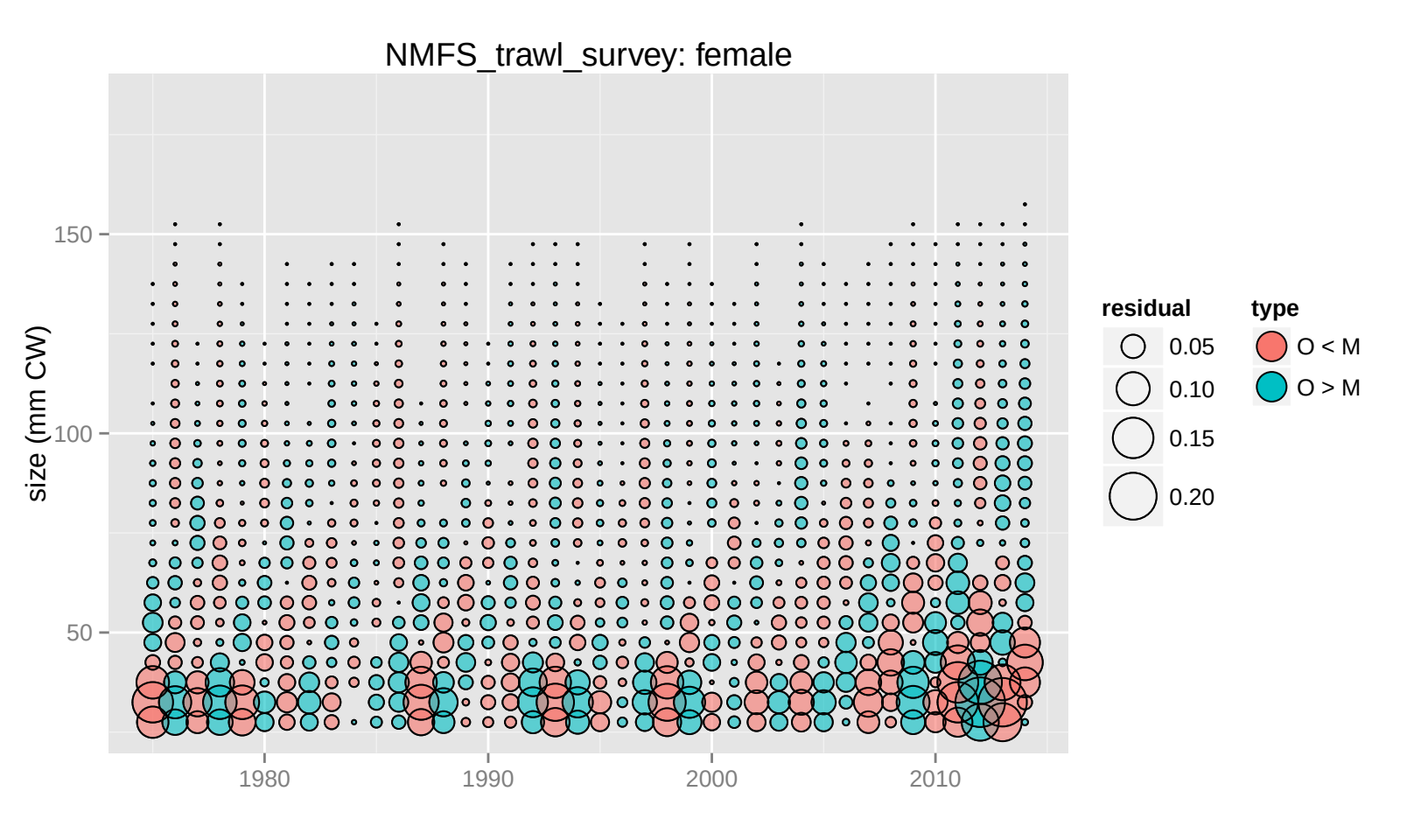

NMFS_trawl_survey
MALE
FEMALE
ALL_SHELL
biomass
0
20
40
60
1980
1990
2000
2010
year
type
observed
estimated
maturity
ALL_MATURITY

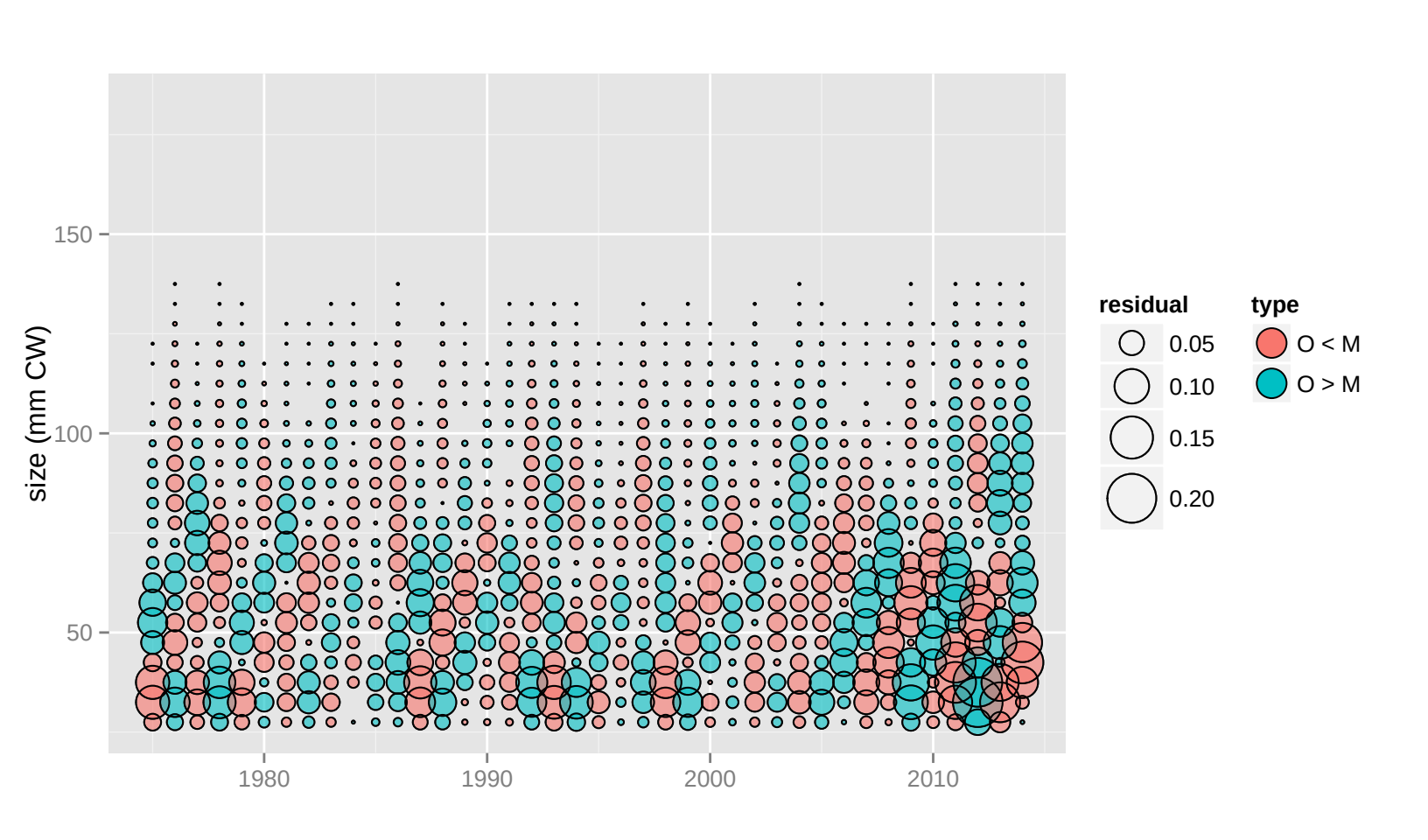

NMFS_trawl_survey
MALE
FEMALE
ALL_SHELL
biomass [ln−scale]
4.0
3.5
3.0
2.5
2.0
1980
1990
2000
2010
year
maturity
ALL_MATURITY
type
observed
estimated

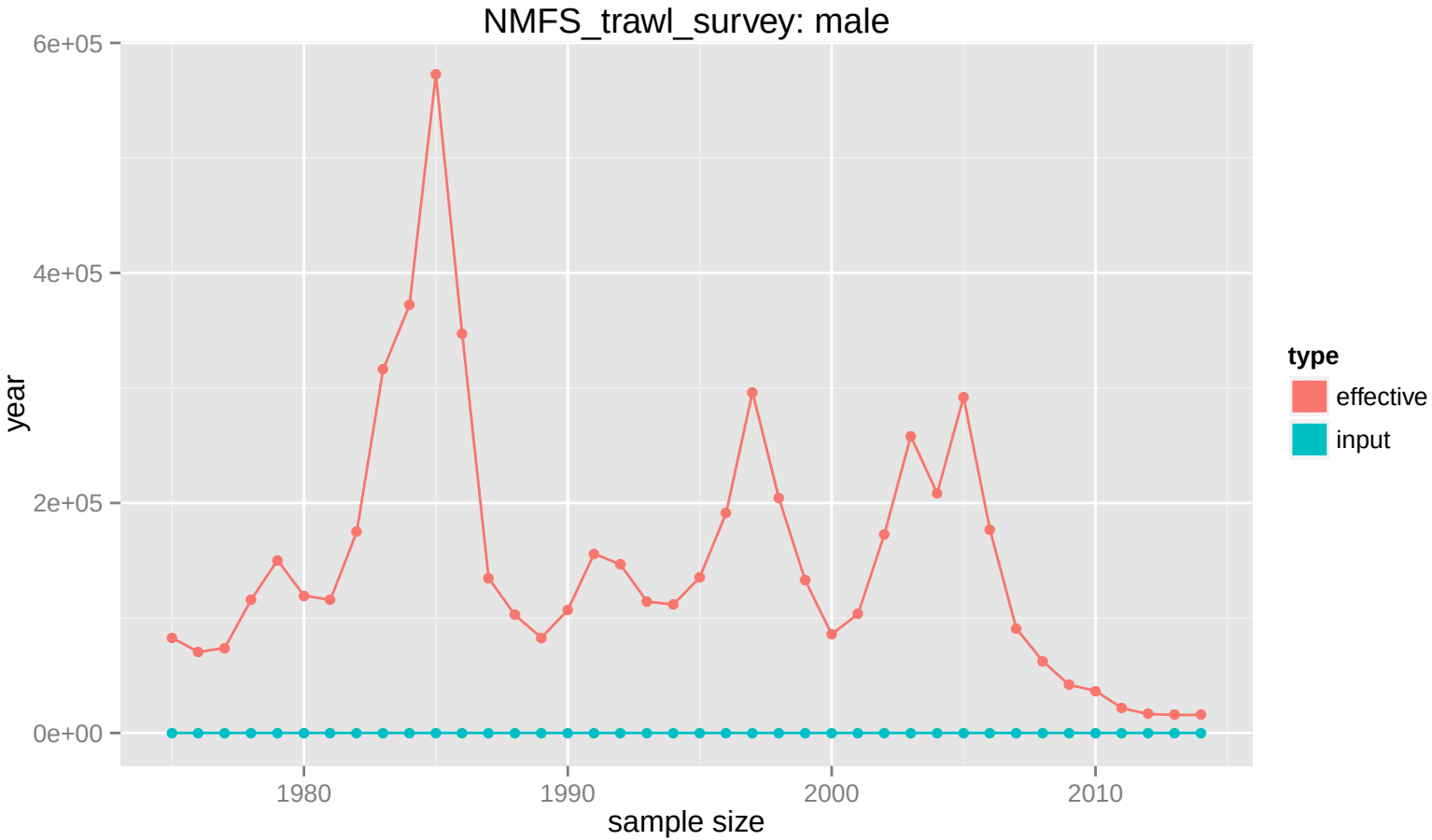

NMFS_trawl_survey
MALE
FEMALE
ALL_SHELL
z−scores
0.010
0.005
0.000
−0.005
−0.010
1980
1990
2000
2010
year
maturity
ALL_MATURITY

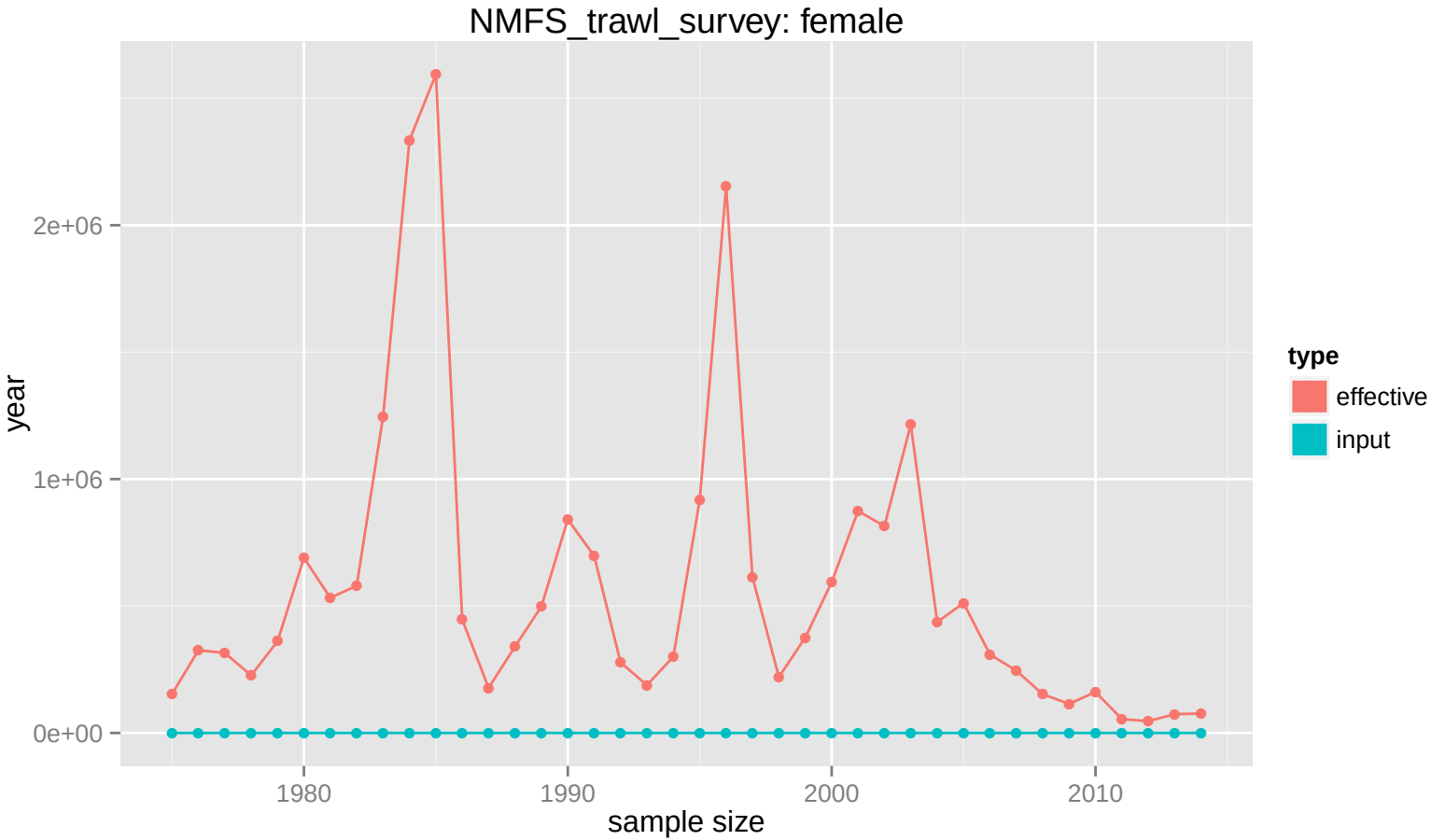

NMFS_trawl_survey: male
size (mm CW)
150
100
50
1980
1990
2000
2010
residual
0.05
0.10
0.15
0.20
type
O < M
O > M

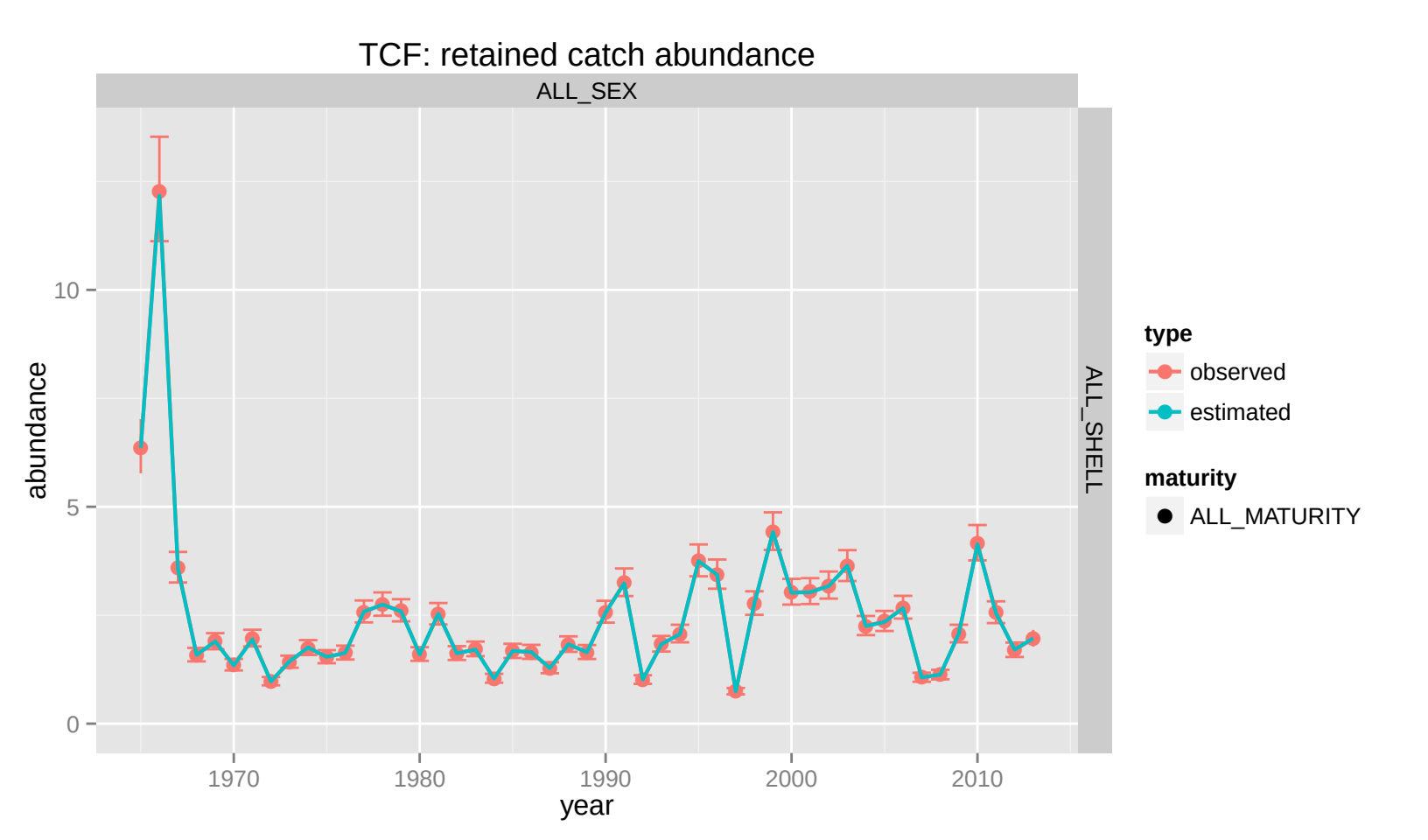

size (mm CW)
150
100
50
1980
1990
2000
2010
residual
0.1
0.2
type
O < M
O > M

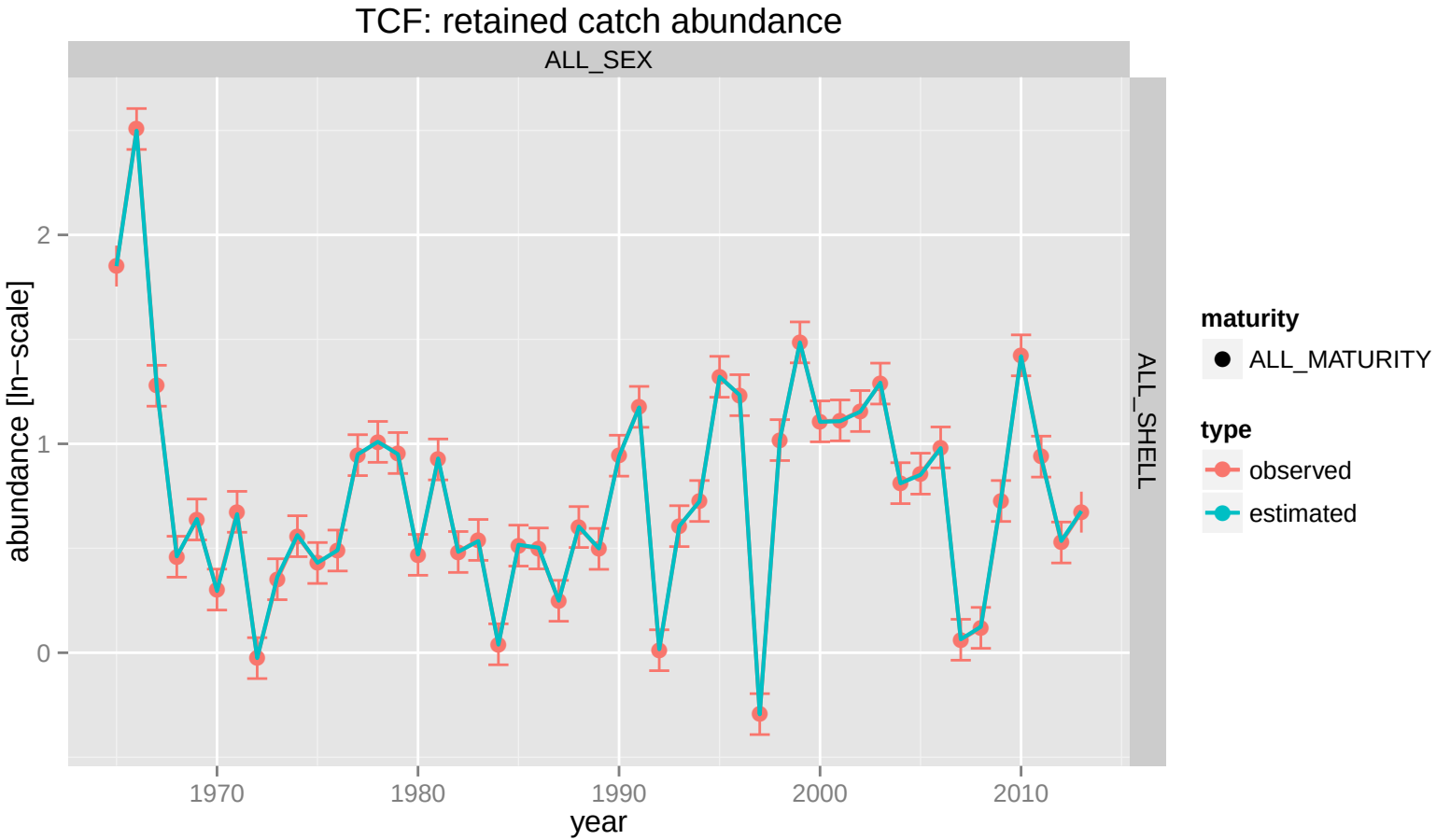

NMFS_trawl_survey: female
size (mm CW)
150
100
50
1980
1990
2000
2010
residual
0.05
0.10
0.15
0.20
type
O < M
O > M

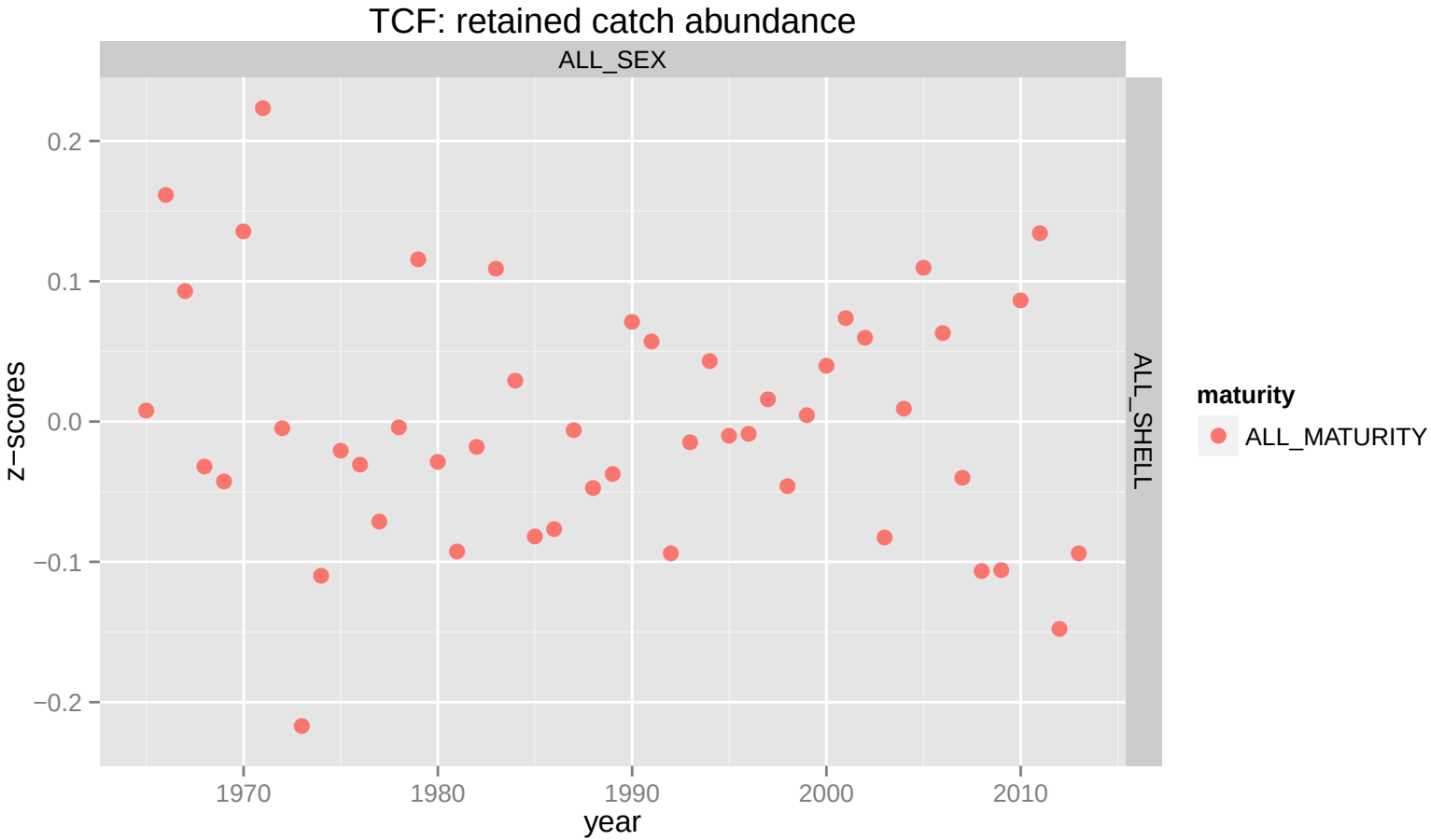

size (mm CW)
150
100
50
1980
1990
2000
2010
residual
0.05
0.10
0.15
0.20
type
O < M
O > M

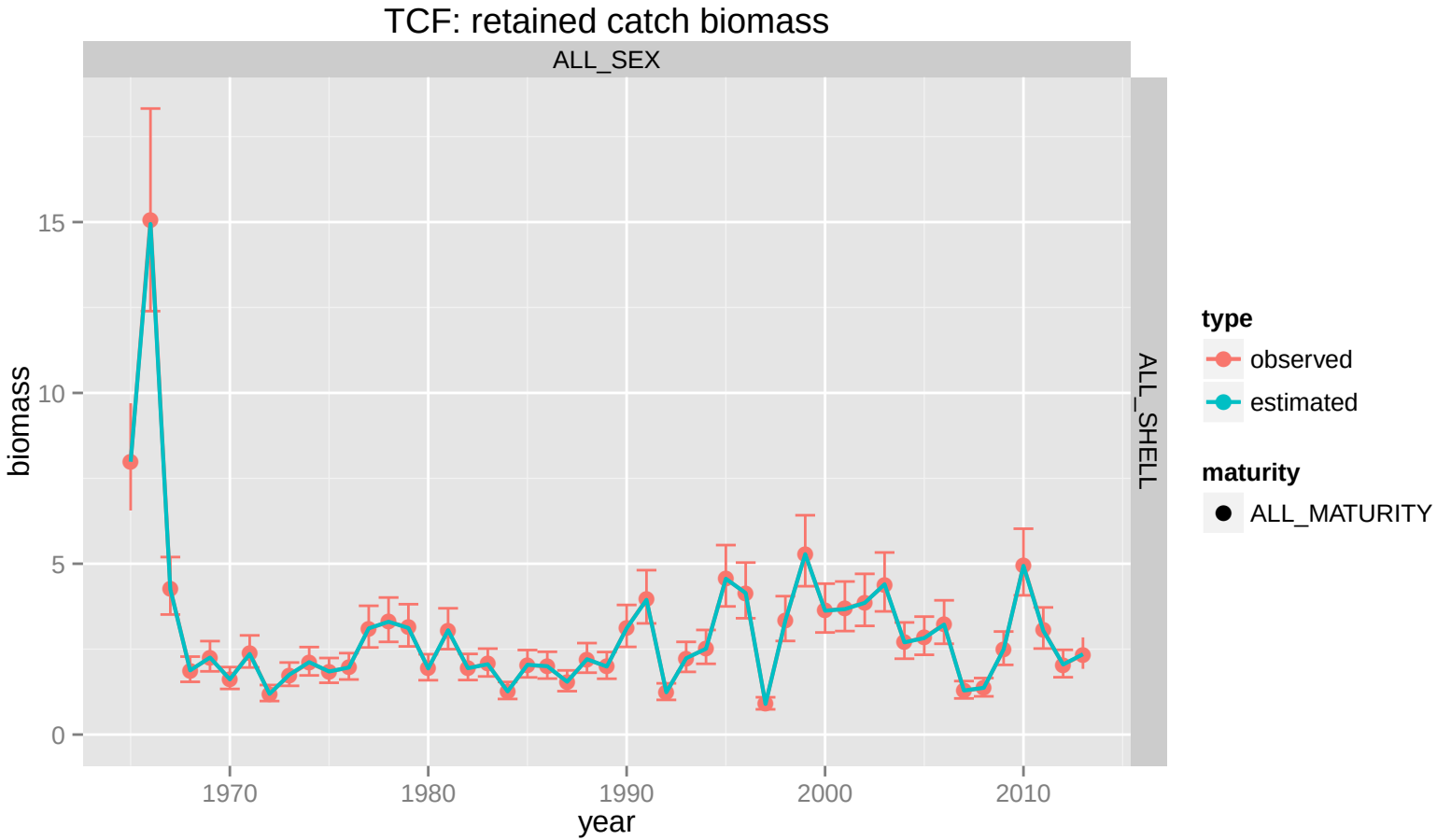

NMFS_trawl_survey: male
6e+05
4e+05
2e+05
0e+00
year
1980
1990
2000
2010
sample size
type
effective
input

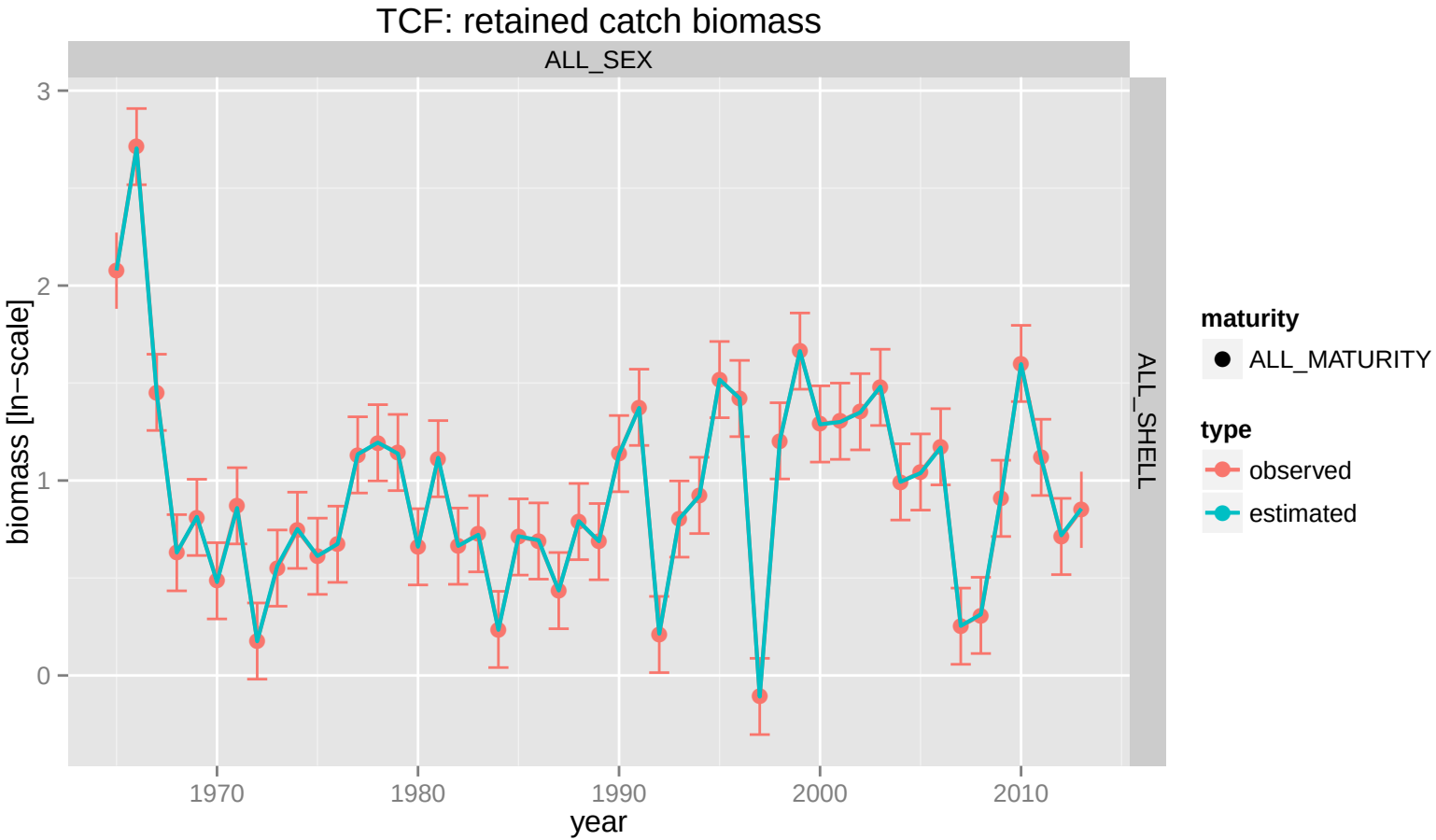

NMFS_trawl_survey: female
year
2e+06
1e+06
0e+00
1980
1990
2000
2010
sample size
type
effective
input

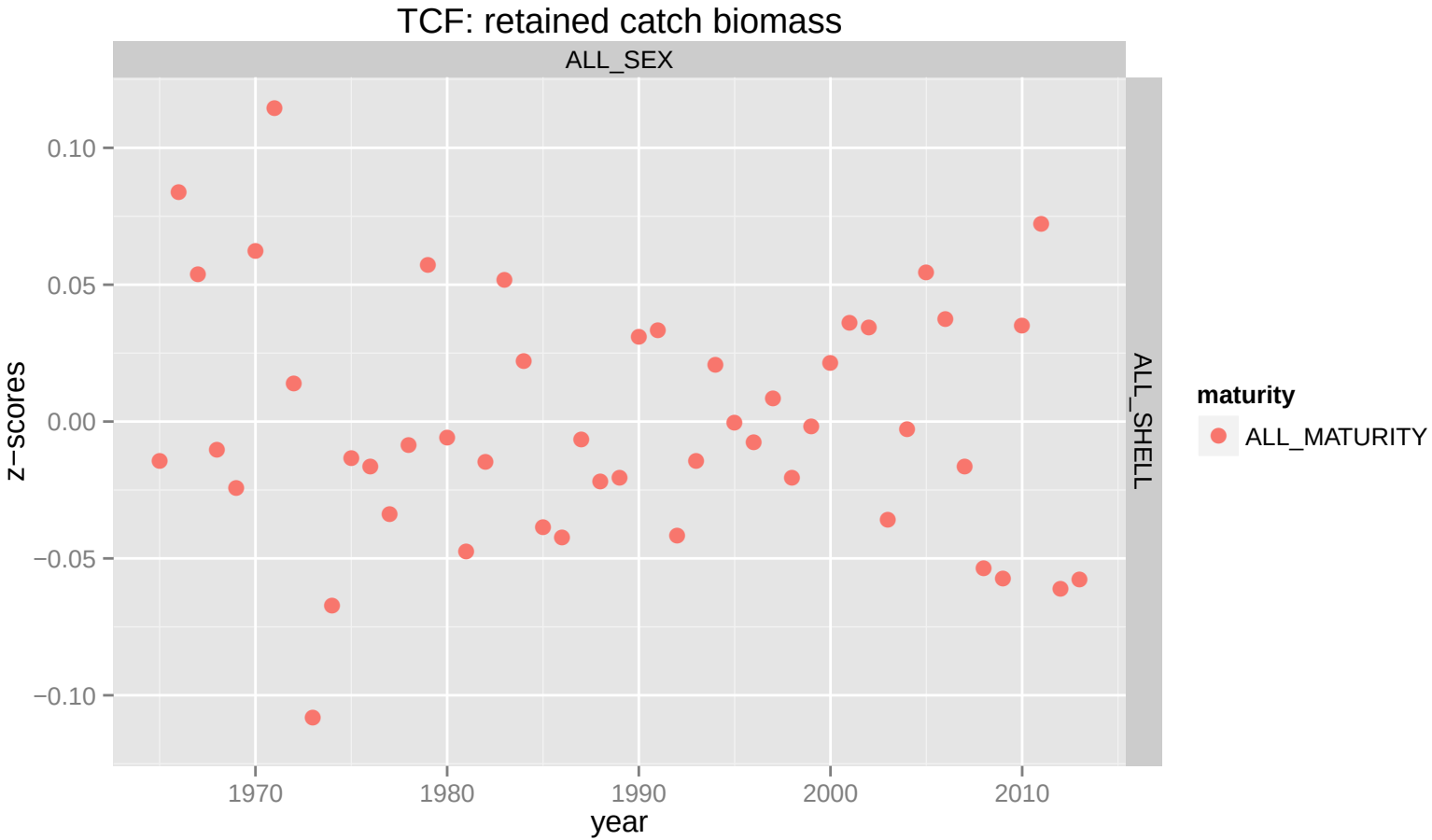

TCF: retained catch abundance
ALL_SEX
ALL_SHELL
abundance
year
0
5
10
1970
1980
1990
2000
2010
type
observed
estimated
maturity
ALL_MATURITY

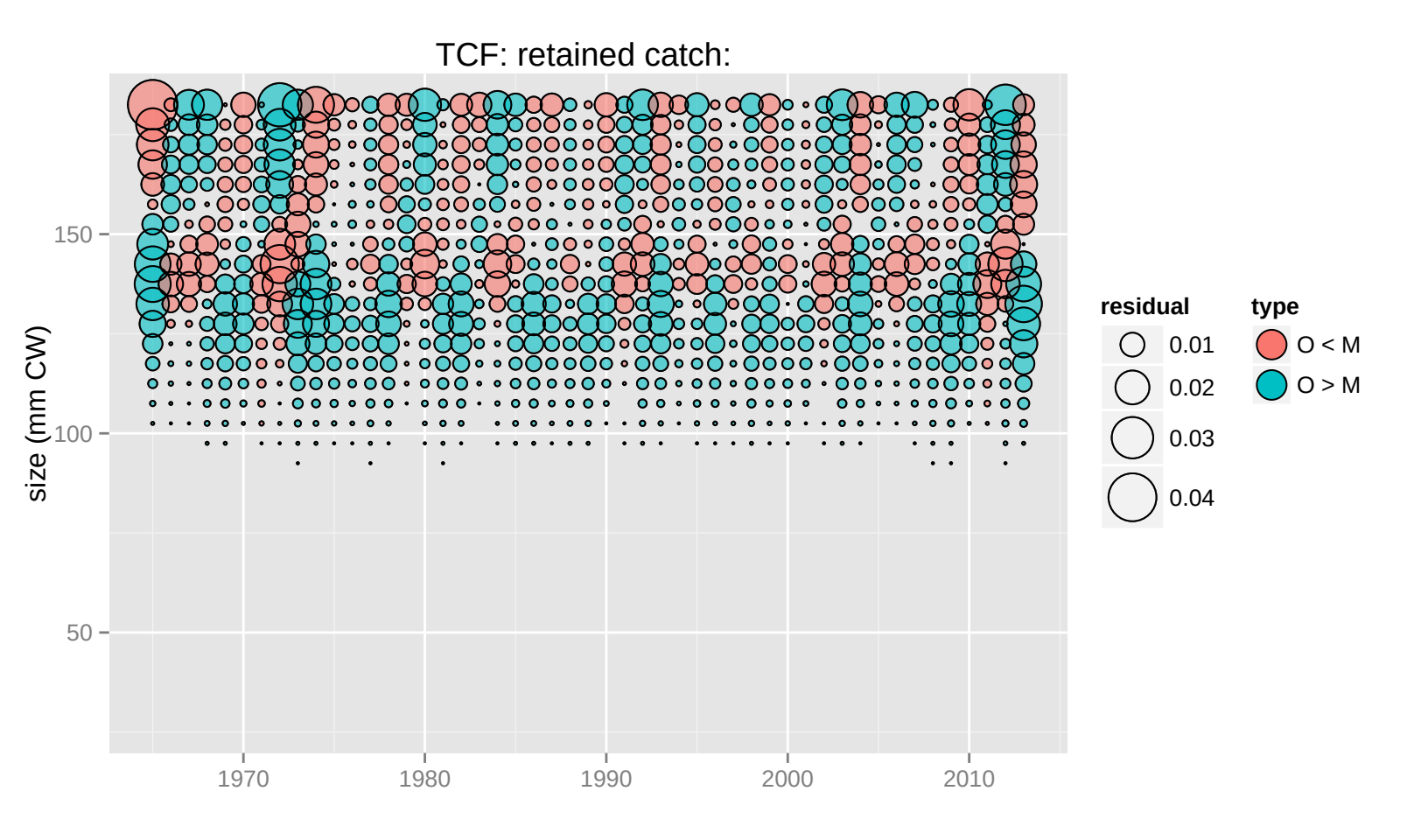

TCF: retained catch abundance
ALL_SEX
ALL_SHELL
abundance [ln−scale]
2
1
0
1970
1980
1990
2000
2010
year
maturity
ALL_MATURITY
type
observed
estimated

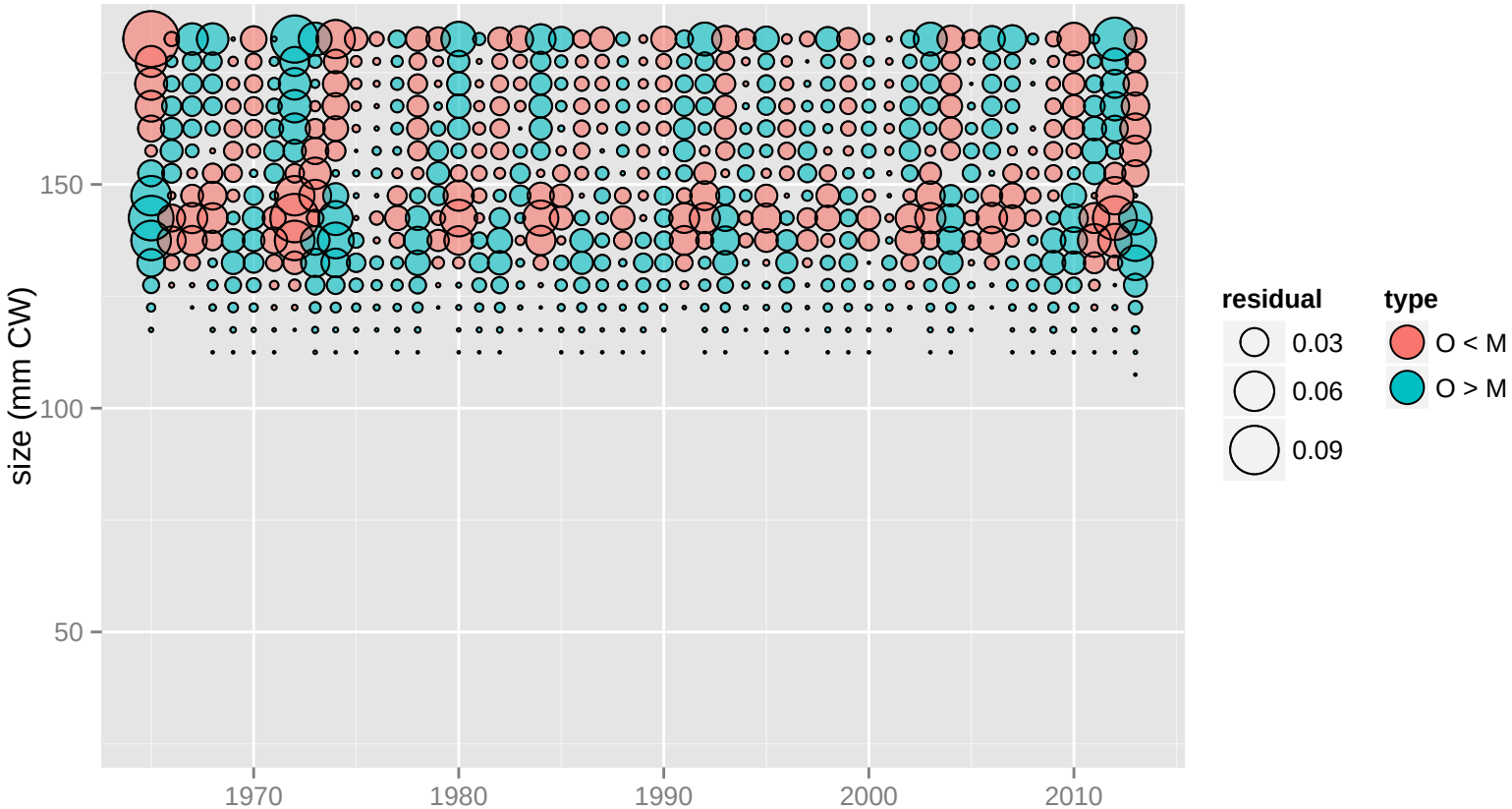

TCF: retained catch abundance
ALL_SEX
ALL_SHELL
z−scores
0.2
0.1
0.0
−0.1
−0.2
1970
1980
1990
2000
2010
year
maturity
ALL_MATURITY

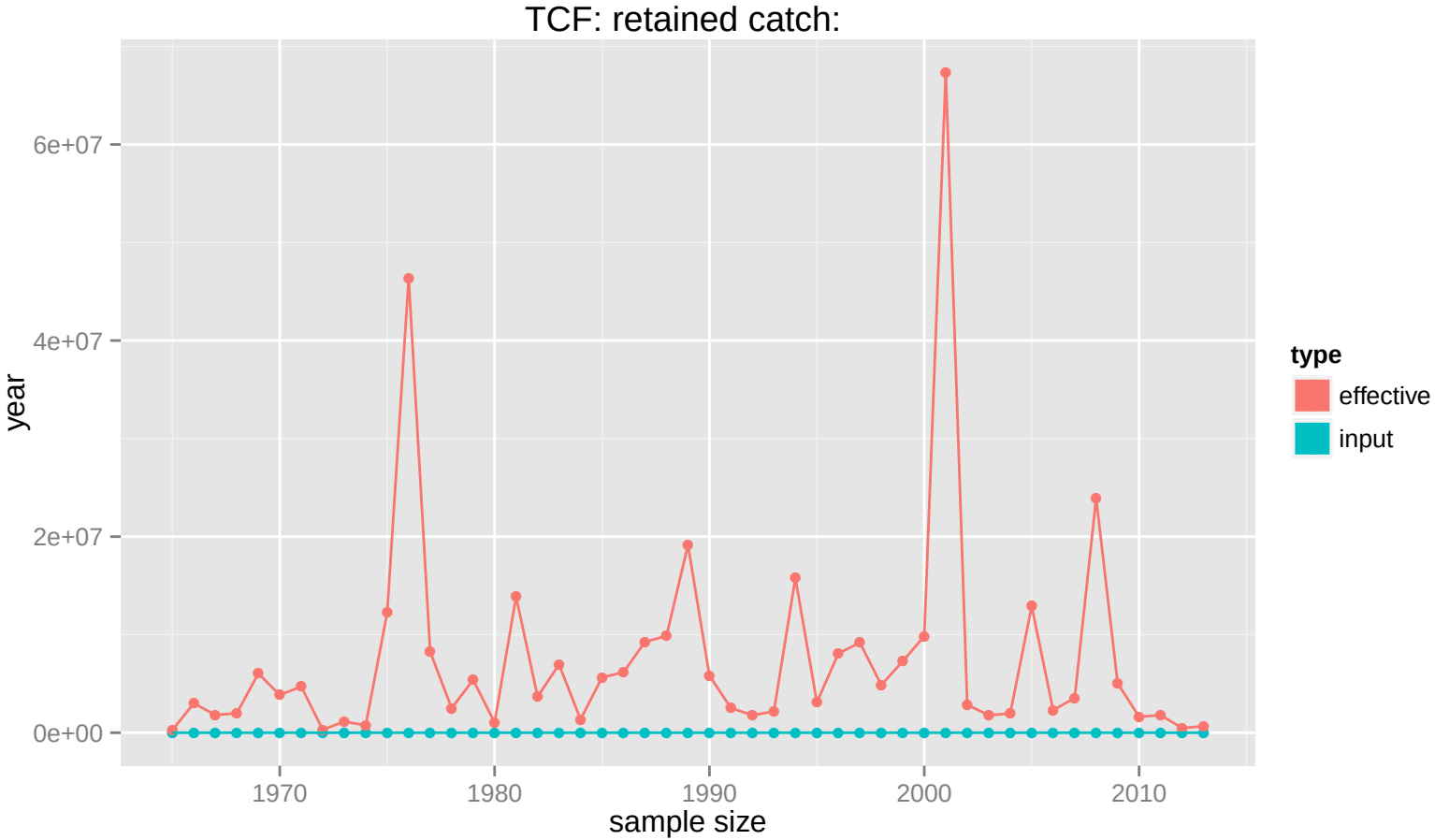

TCF: retained catch biomass
ALL_SEX
ALL_SHELL
biomass
year
0
5
10
15
1970
1980
1990
2000
2010
type
observed
estimated
maturity
ALL_MATURITY

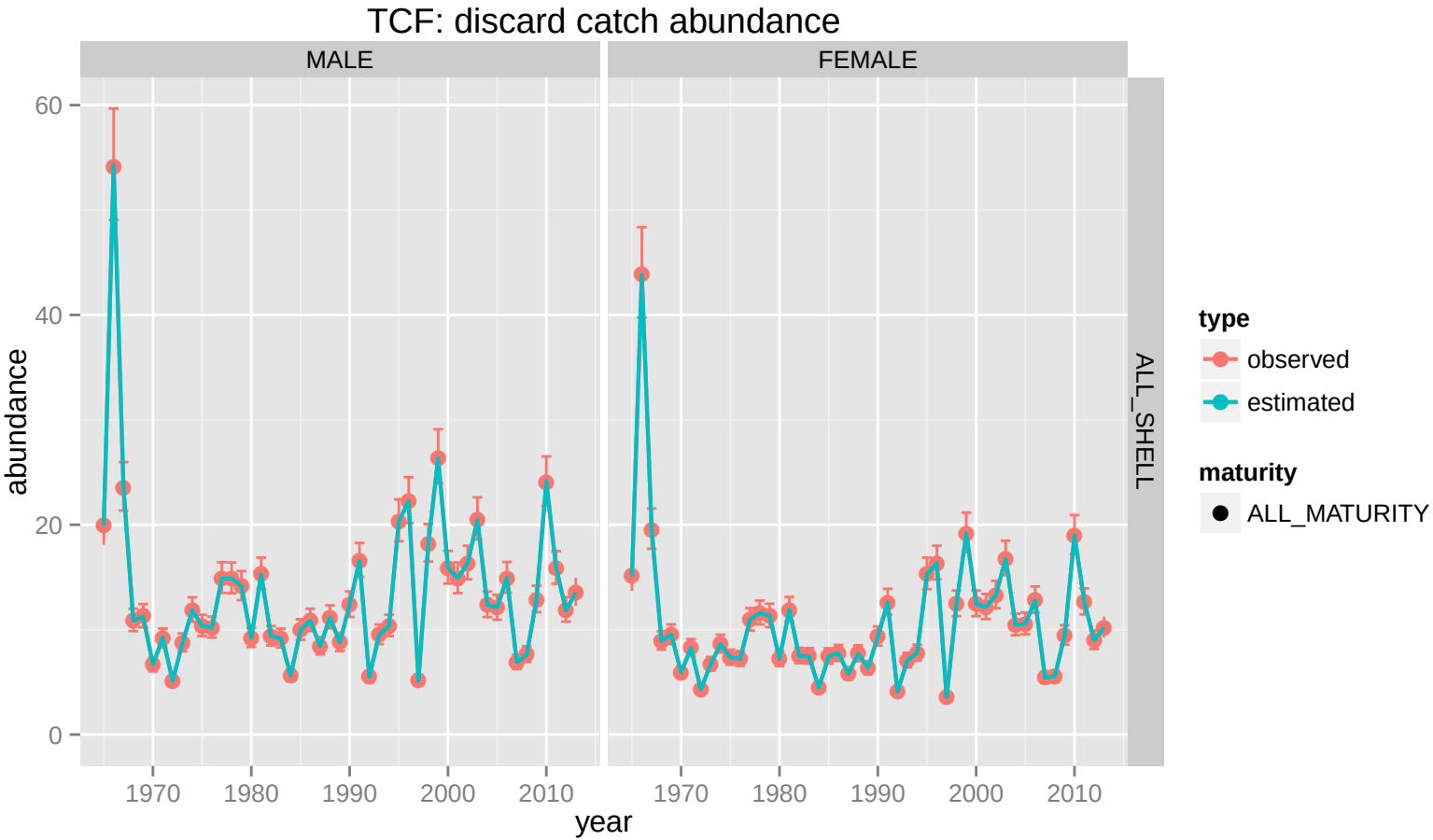

TCF: retained catch biomass
ALL_SEX
ALL_SHELL
biomass [ln−scale]
3
2
1
0
1970
1980
1990
2000
2010
year
maturity
ALL_MATURITY
type
observed
estimated

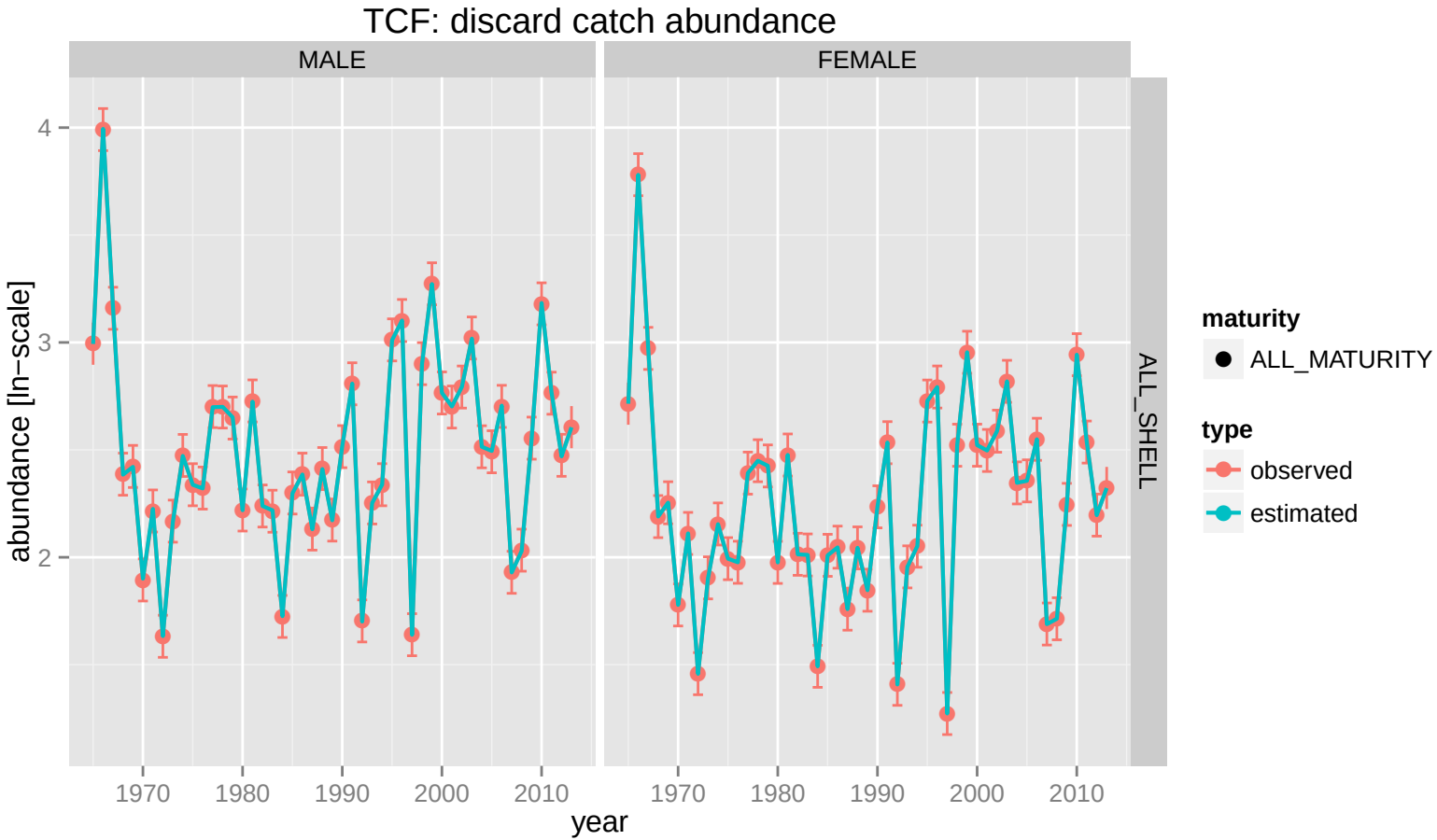

TCF: retained catch biomass
ALL_SEX
ALL_SHELL
z−scores
0.10
0.05
0.00
−0.05
−0.10
1970
1980
1990
2000
2010
year
maturity
ALL_MATURITY

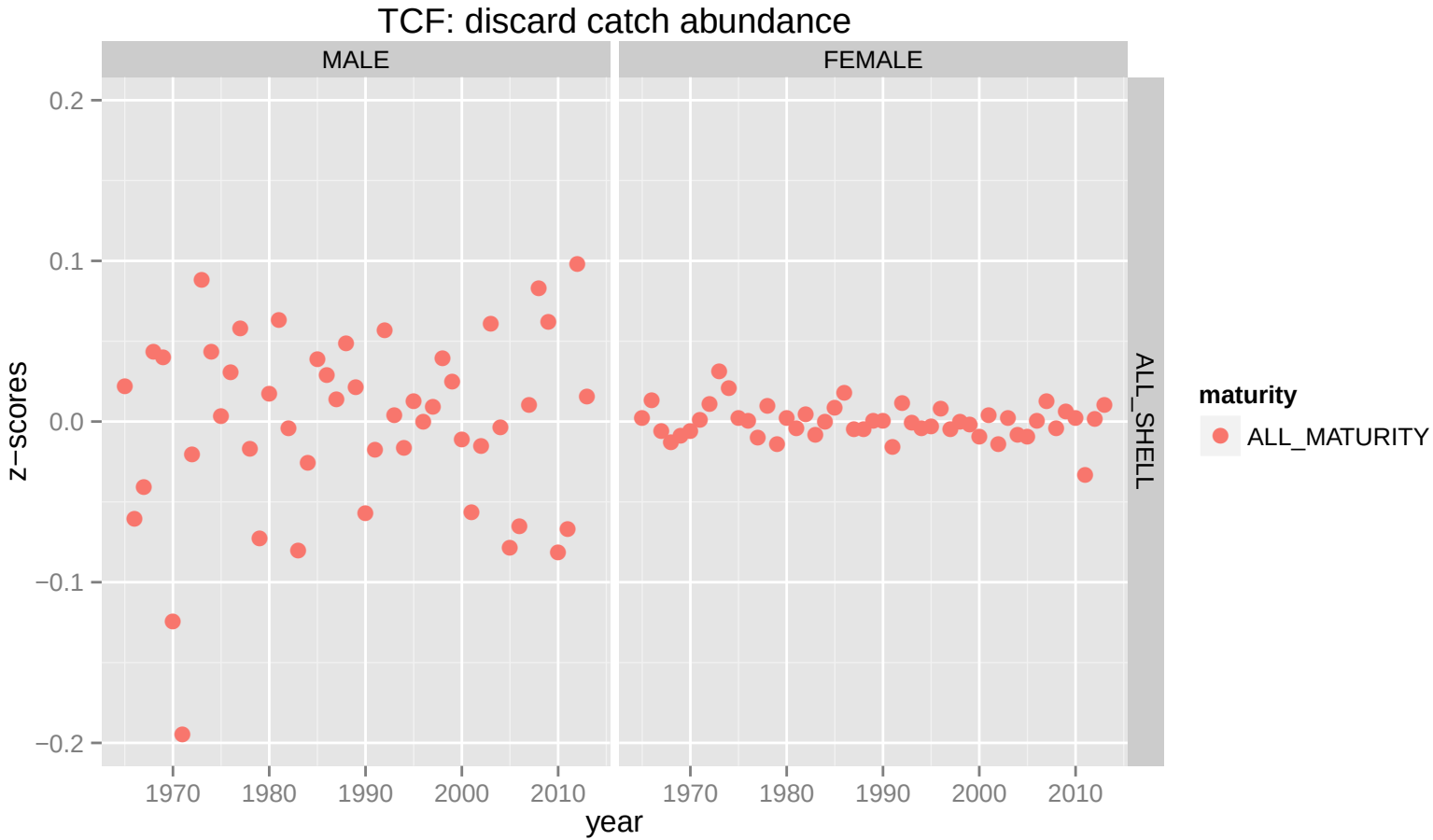

TCF: retained catch:
size (mm CW)
150
100
50
1970
1980
1990
2000
2010
residual
0.01
0.02
0.03
0.04
type
O < M
O > M

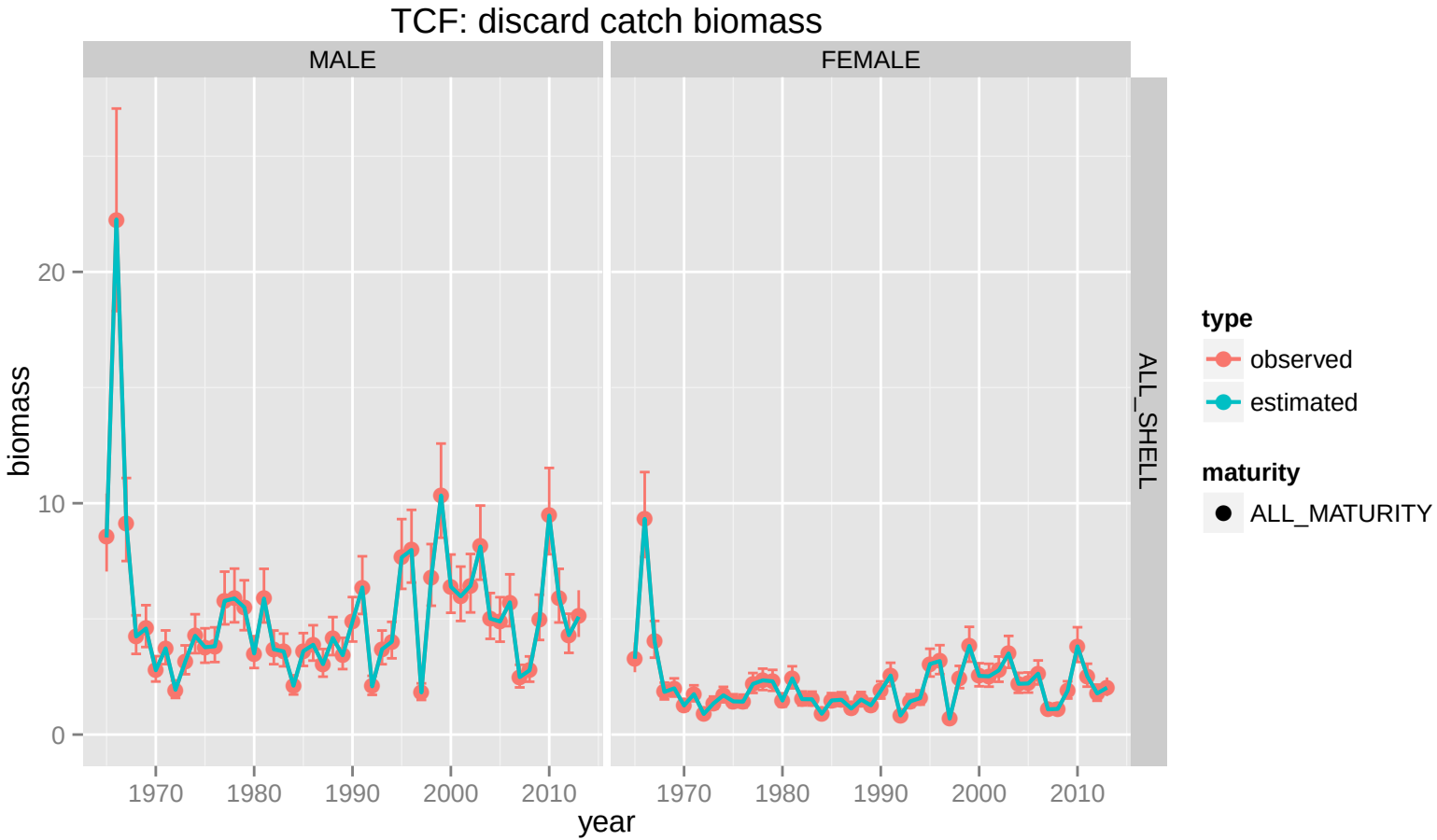

size (mm CW)
150
100
50
1970
1980
1990
2000
2010
residual
0.03
0.06
0.09
type
O < M
O > M

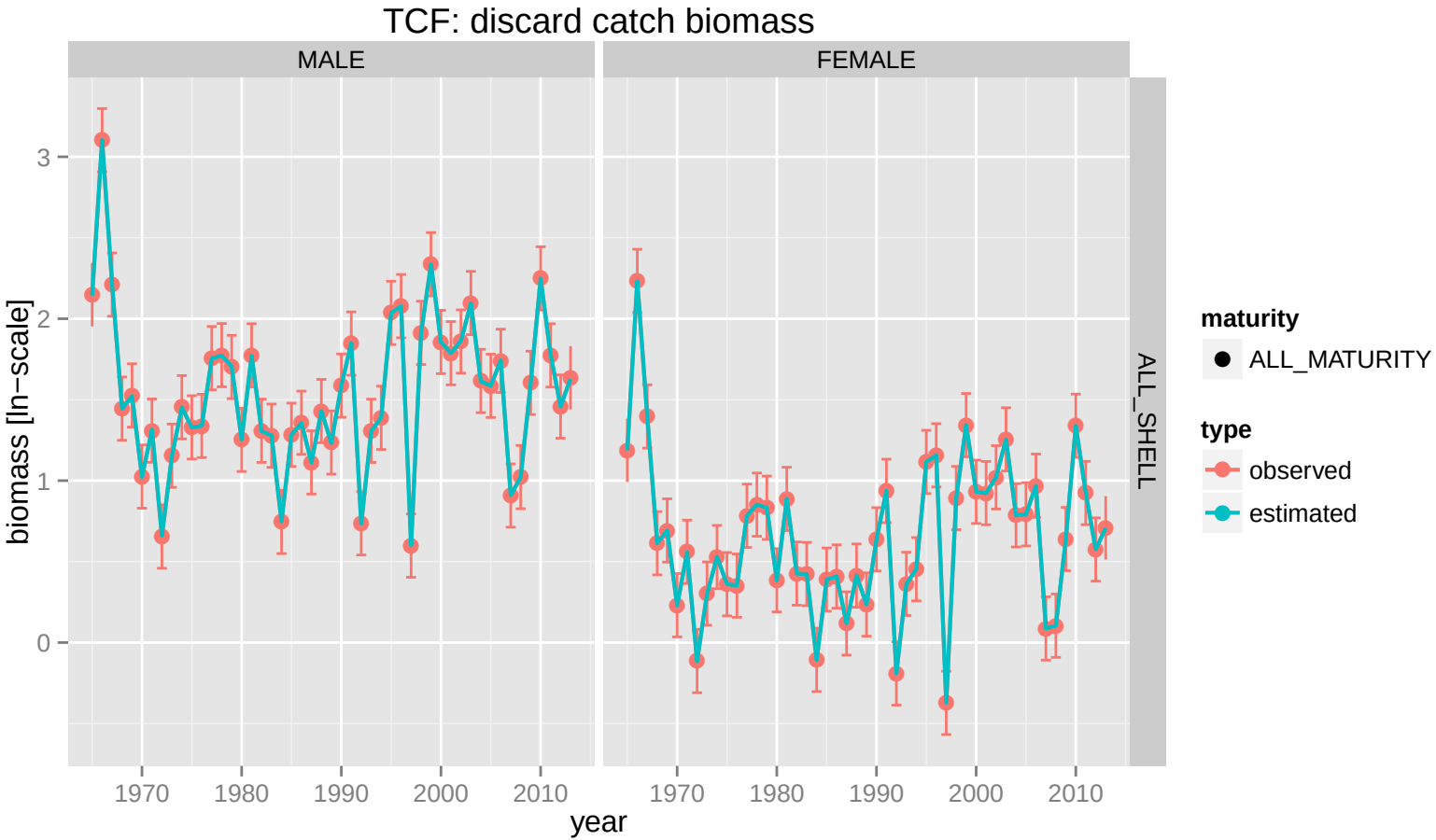

TCF: retained catch:
6e+07
4e+07
2e+07
0e+00
year
1970
1980
1990
2000
2010
sample size
type
effective
input

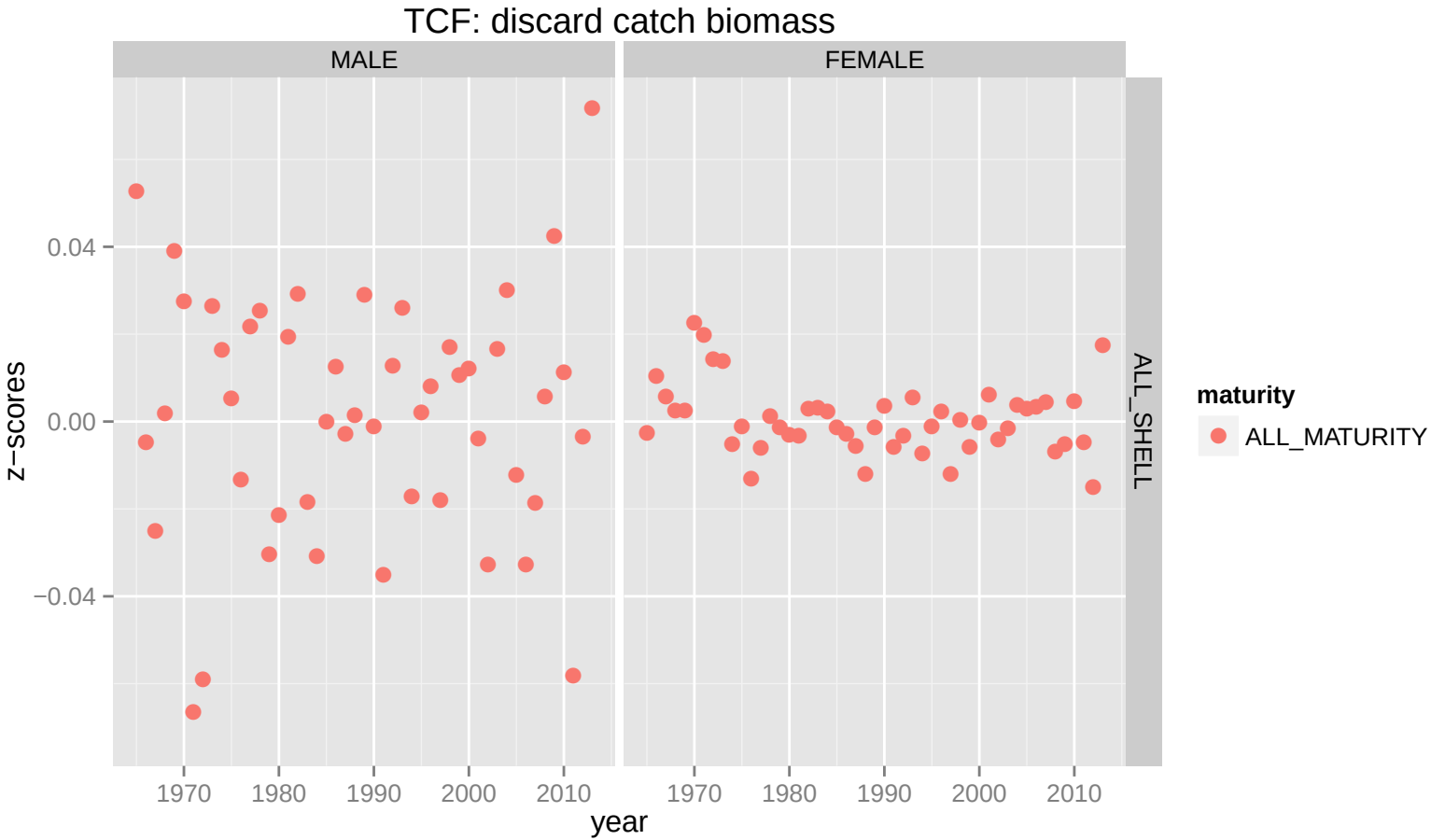

TCF: discard catch abundance
MALE
FEMALE
ALL_SHELL
abundance
year
0
20
40
60
1970
1980
1990
2000
2010
type
observed
estimated
maturity
ALL_MATURITY

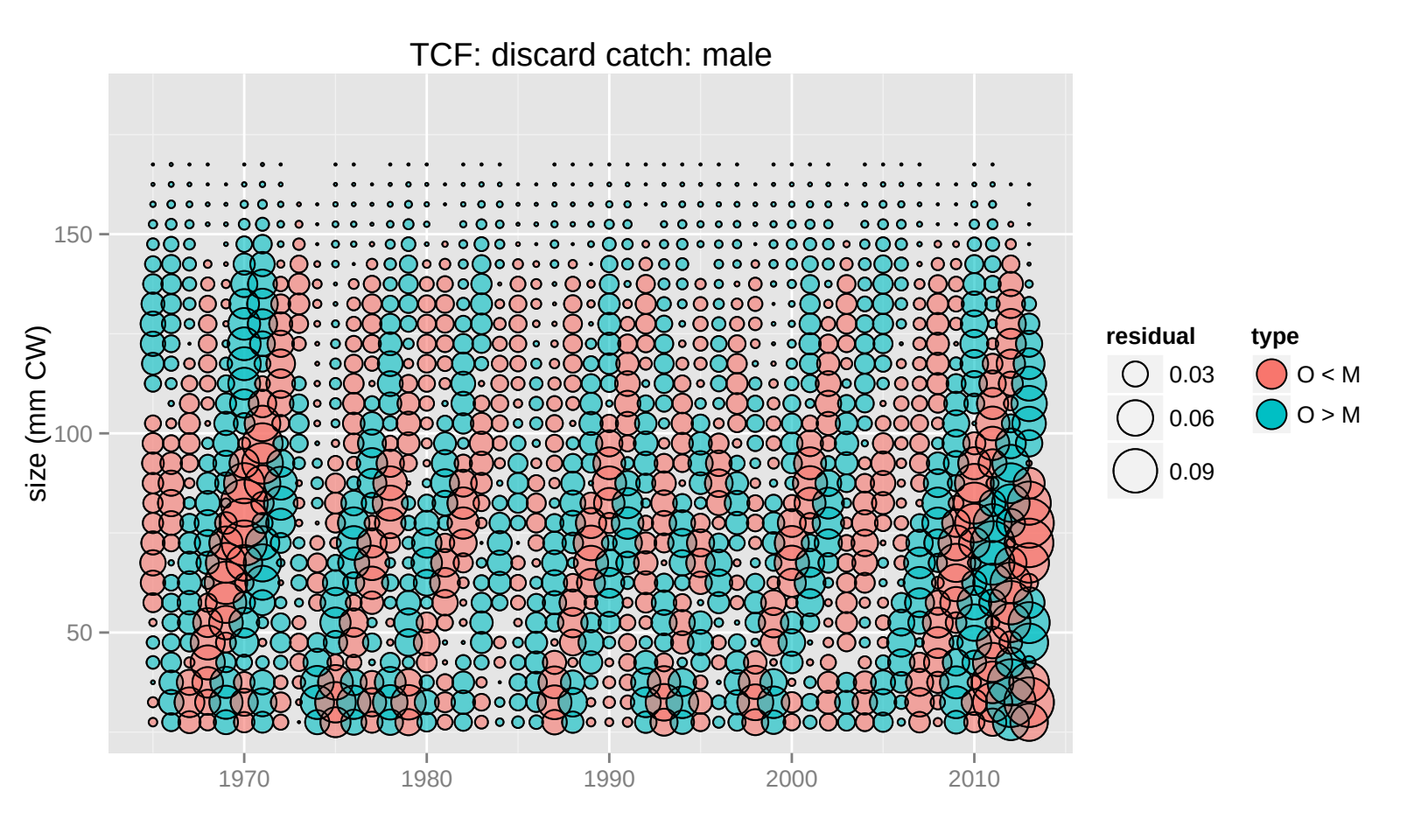

TCF: discard catch abundance
MALE
FEMALE
ALL_SHELL
abundance [ln−scale]
4
3
2
1970
1980
1990
2000
2010
year
maturity
ALL_MATURITY
type
observed
estimated

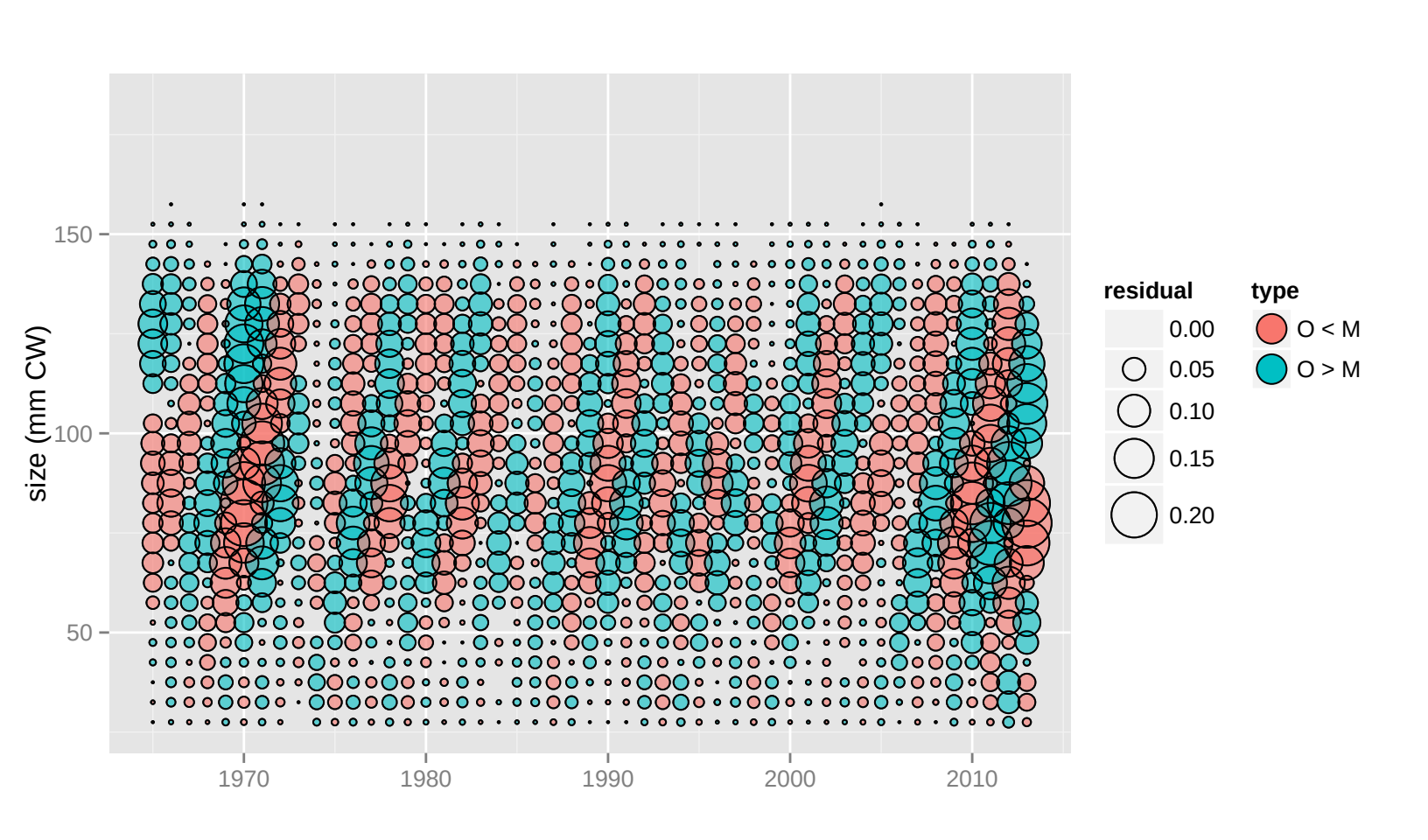

TCF: discard catch abundance
MALE
FEMALE
ALL_SHELL
z−scores
0.2
0.1
0.0
−0.1
−0.2
1970
1980
1990
2000
2010
year
maturity
ALL_MATURITY

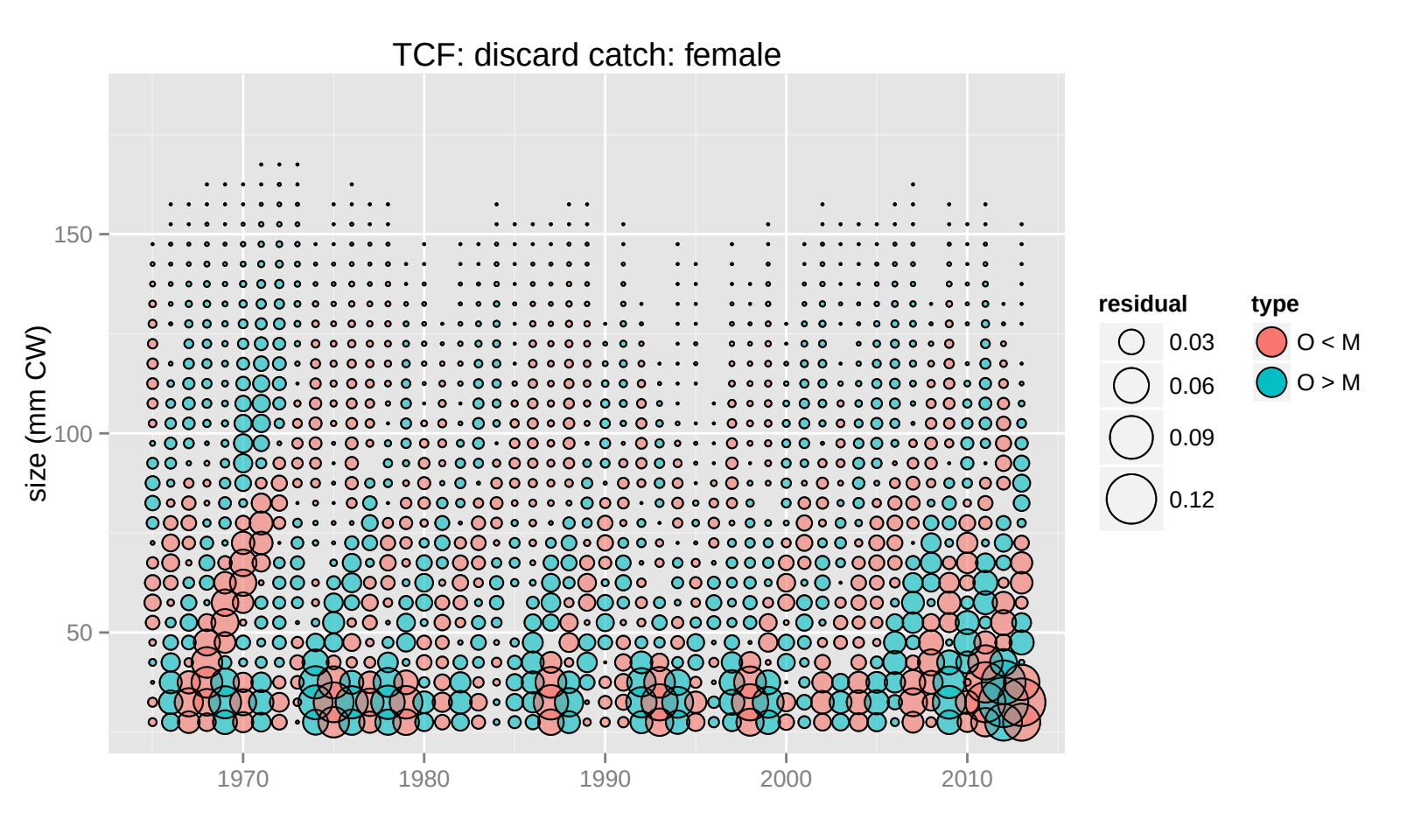

TCF: discard catch biomass
MALE
FEMALE
ALL_SHELL
biomass
0
10
20
1970
1980
1990
2000
2010
year
type
observed
estimated
maturity
ALL_MATURITY

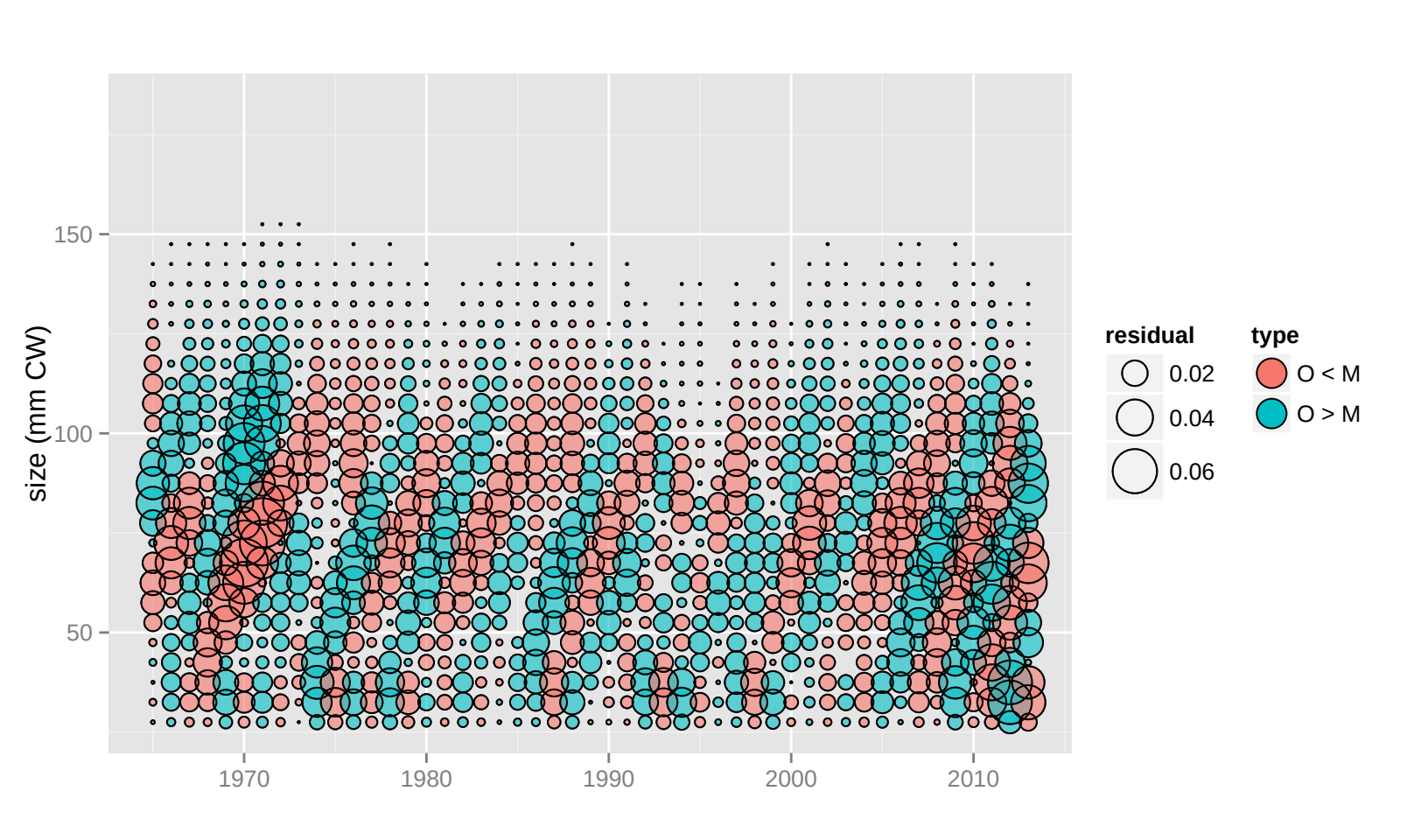

TCF: discard catch biomass
MALE
FEMALE
ALL_SHELL
biomass [ln−scale]
3
2
1
0
1970
1980
1990
2000
2010
year
maturity
ALL_MATURITY
type
observed
estimated

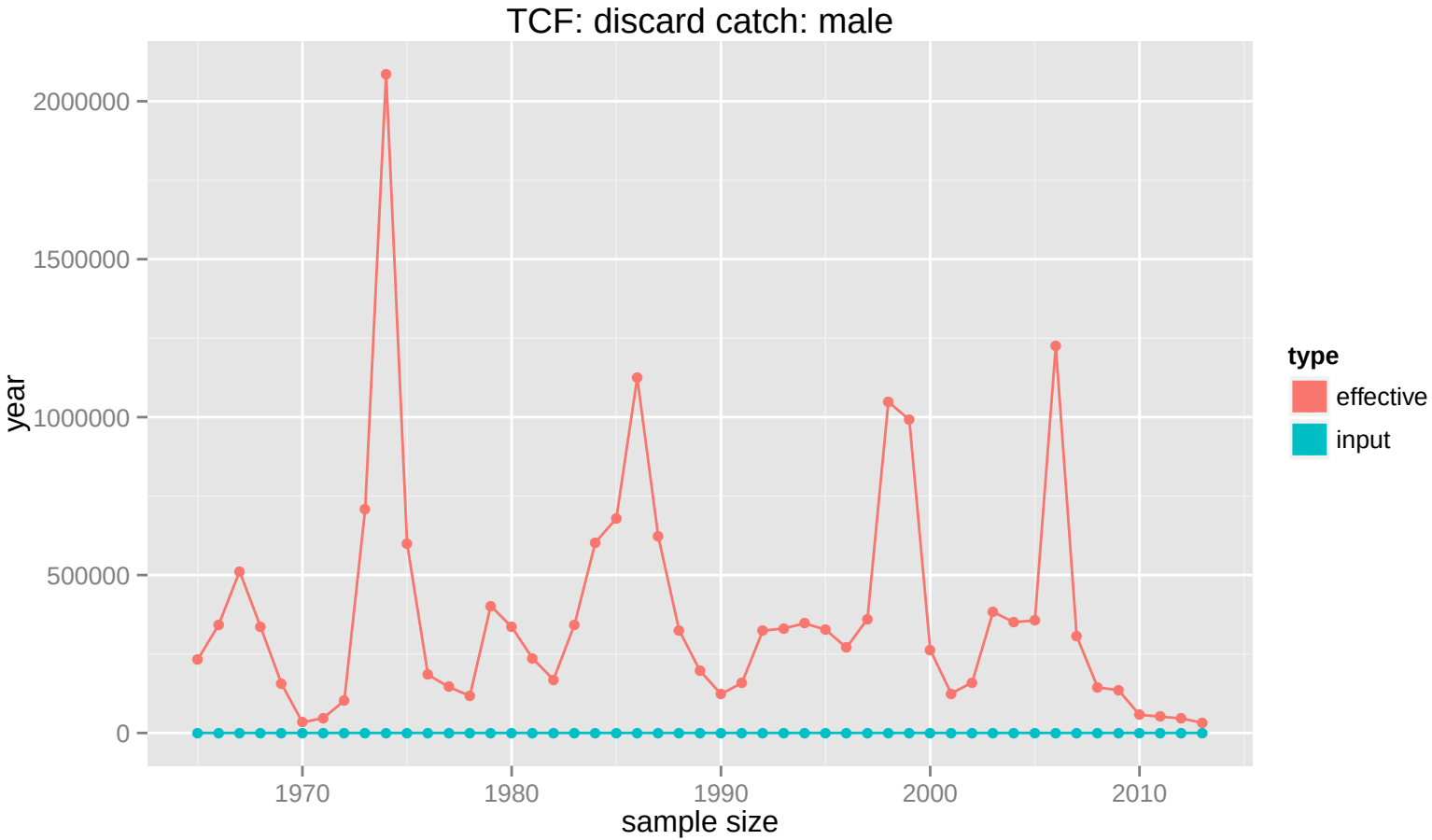

TCF: discard catch biomass
MALE
FEMALE
ALL_SHELL
z−scores
0.04
0.00
−0.04
1970
1980
1990
2000
2010
year
maturity
ALL_MATURITY

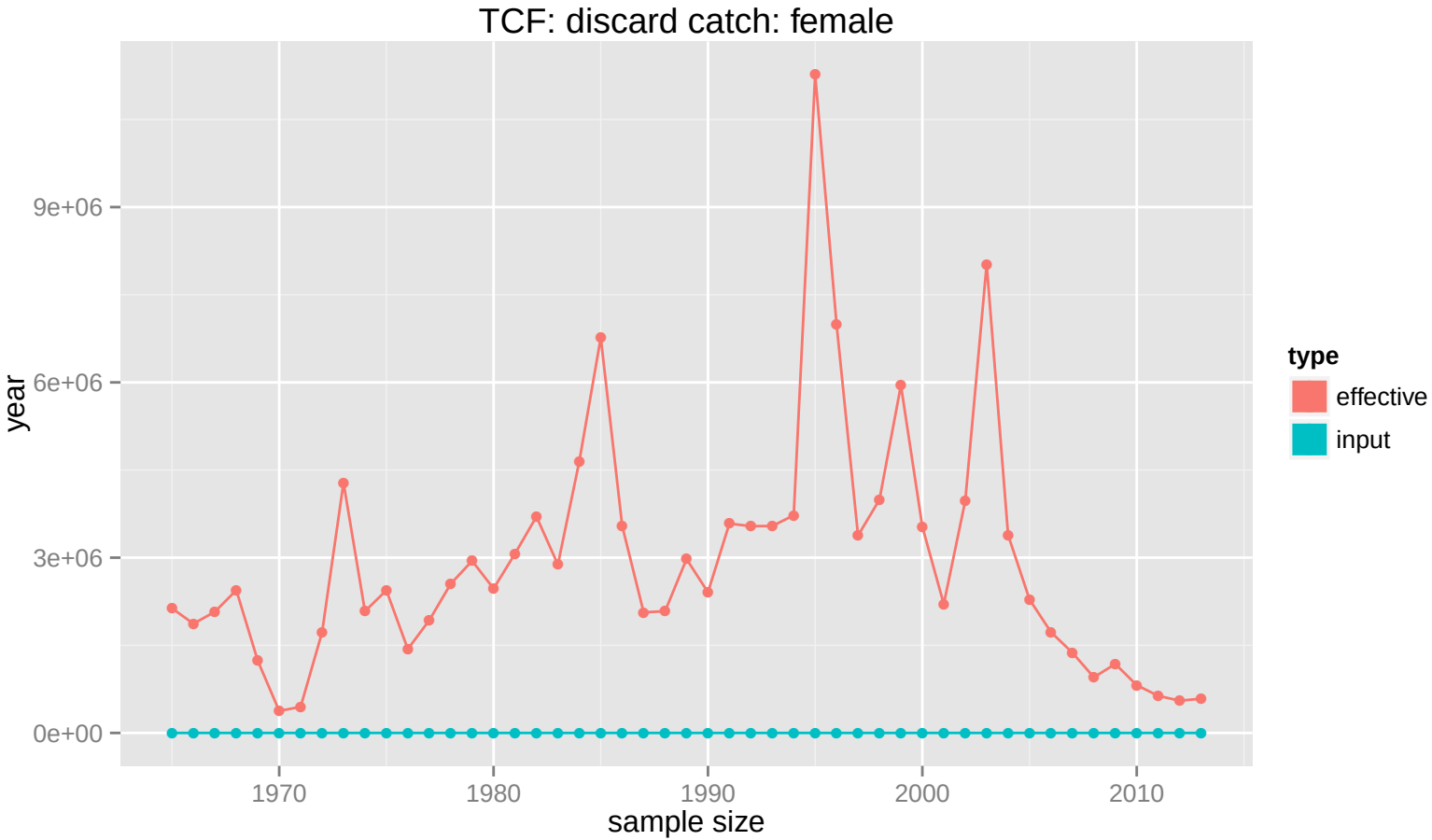

TCF: discard catch: male
size (mm CW)
150
100
50
1970
1980
1990
2000
2010
residual
0.03
0.06
0.09
type
O < M
O > M

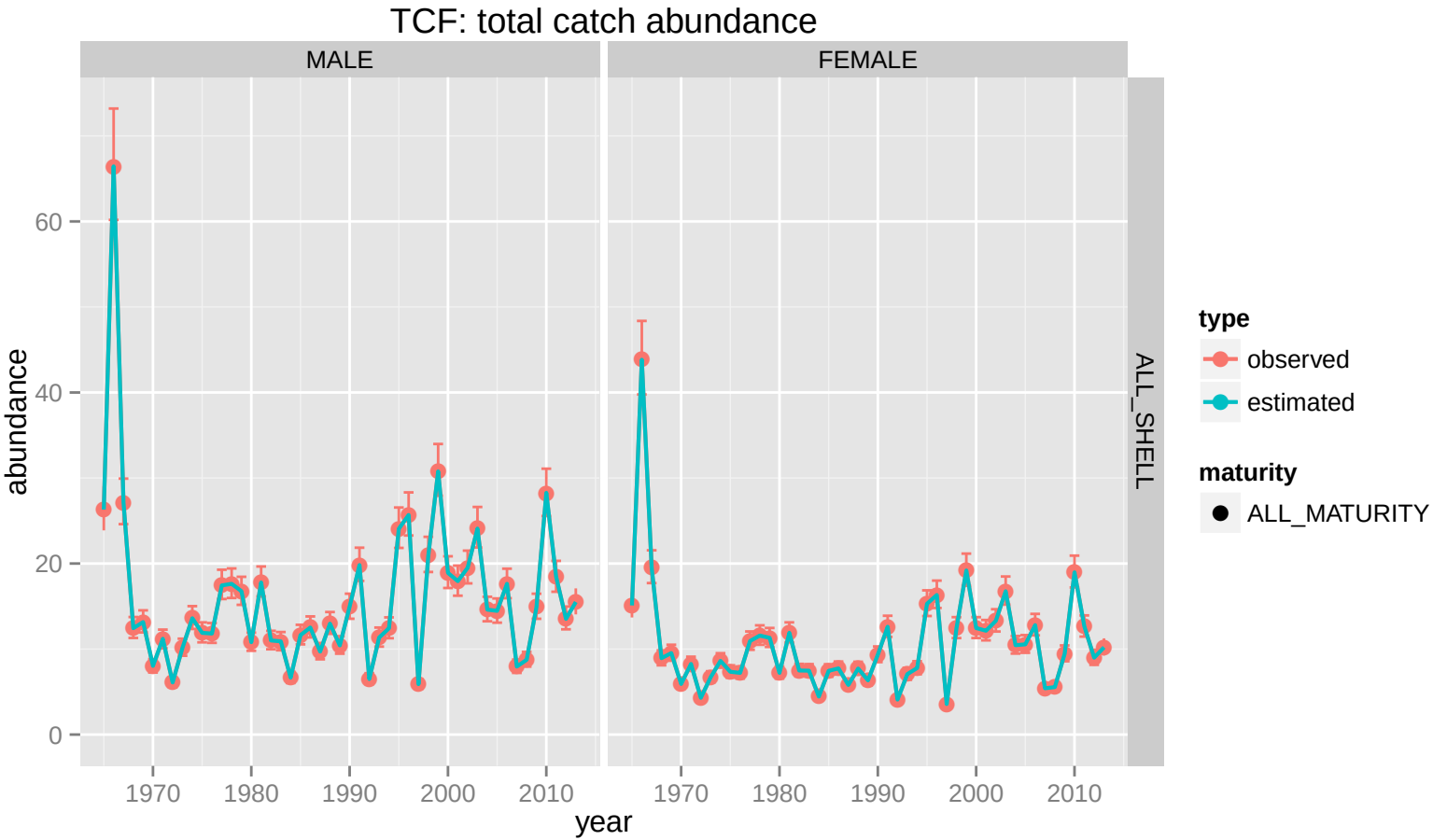

size (mm CW)
150
100
50
1970
1980
1990
2000
2010
residual
0.00
0.05
0.10
0.15
0.20
type
O < M
O > M

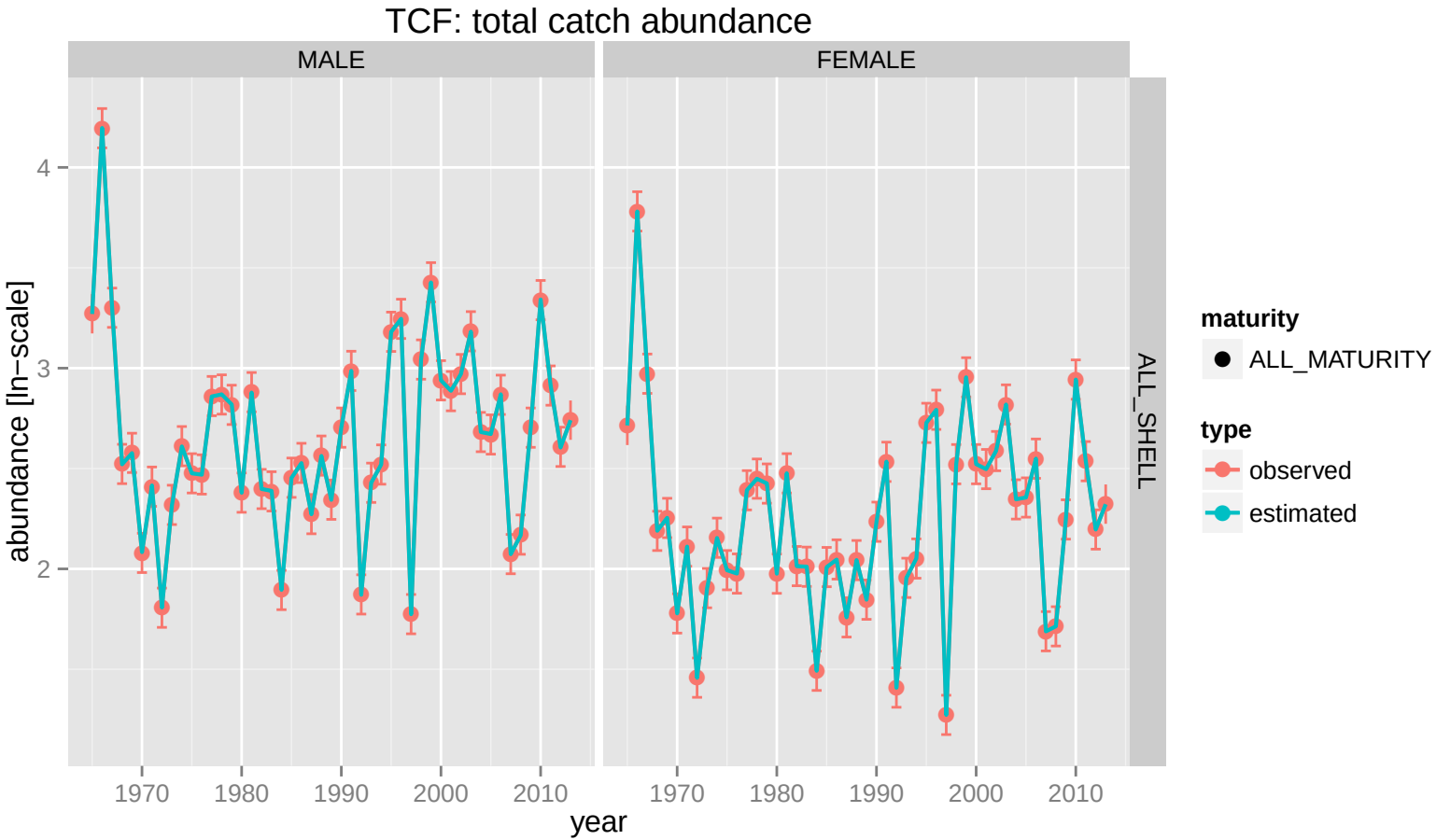

TCF: discard catch: female
size (mm CW)
150
100
50
1970
1980
1990
2000
2010
residual
0.03
0.06
0.09
0.12
type
O < M
O > M

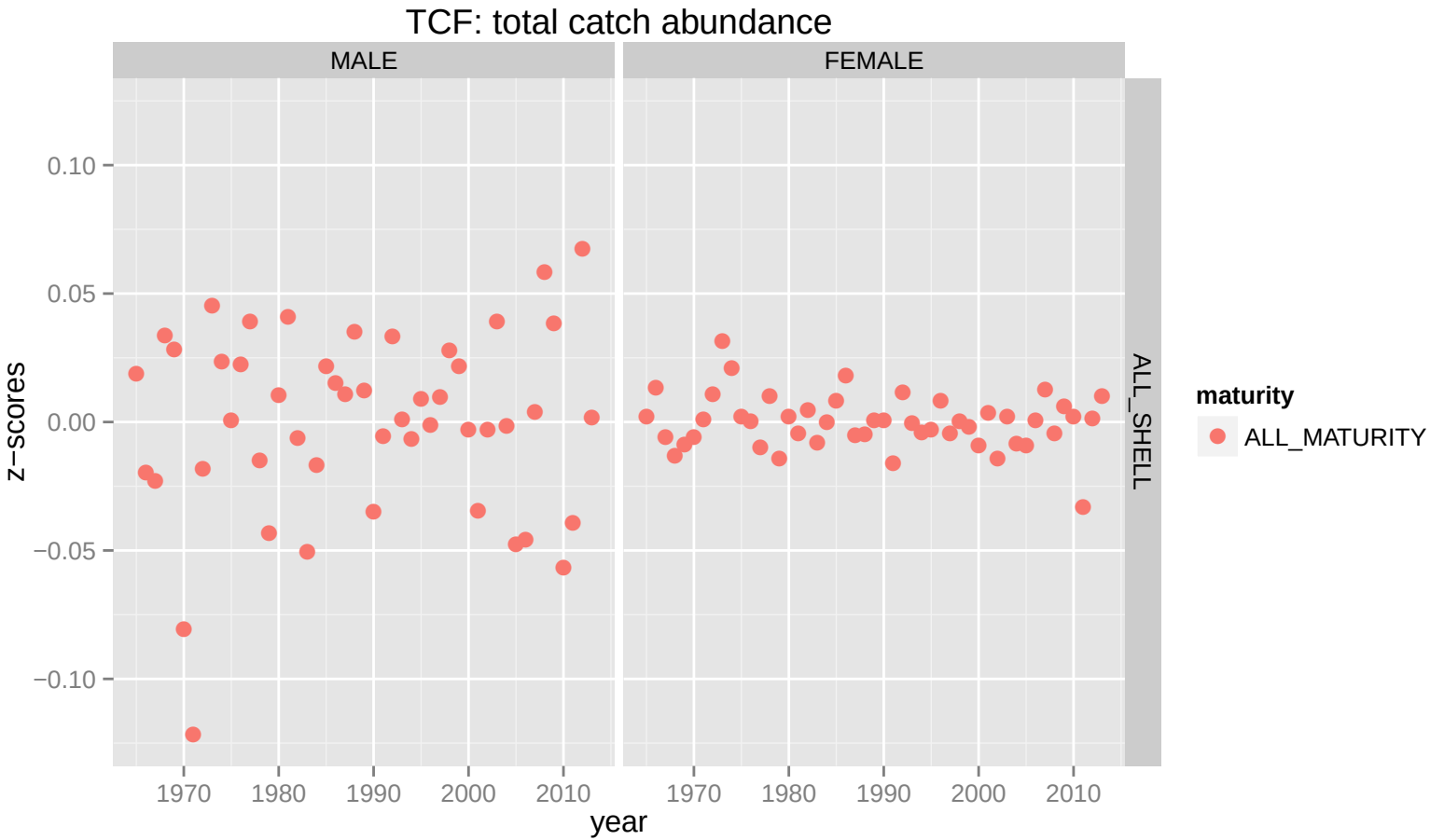

size (mm CW)
150
100
50
1970
1980
1990
2000
2010
residual
0.02
0.04
0.06
type
O < M
O > M

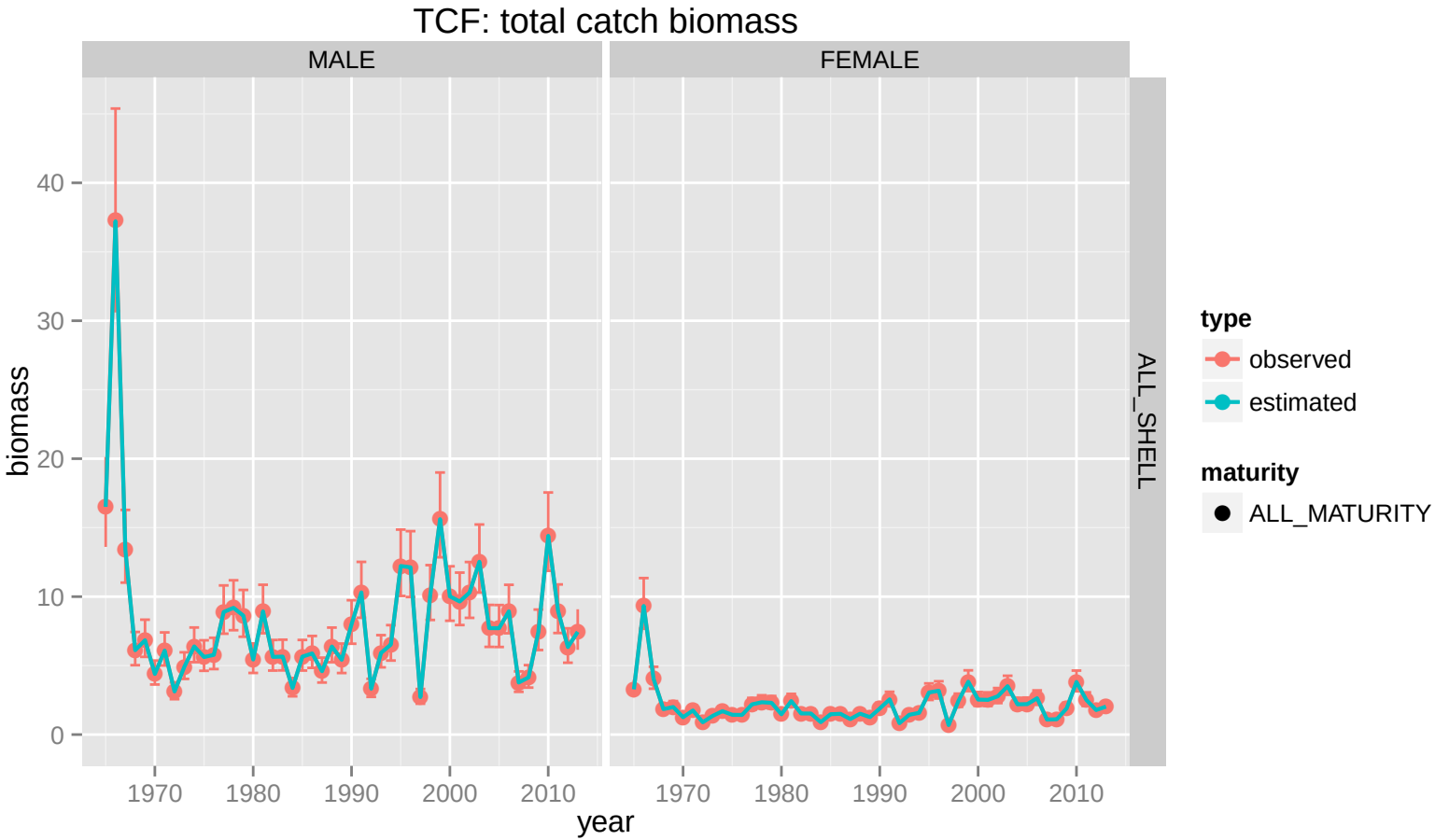

TCF: discard catch: male
2000000
1500000
1000000
500000
0
year
1970
1980
1990
2000
2010
sample size
type
effective
input

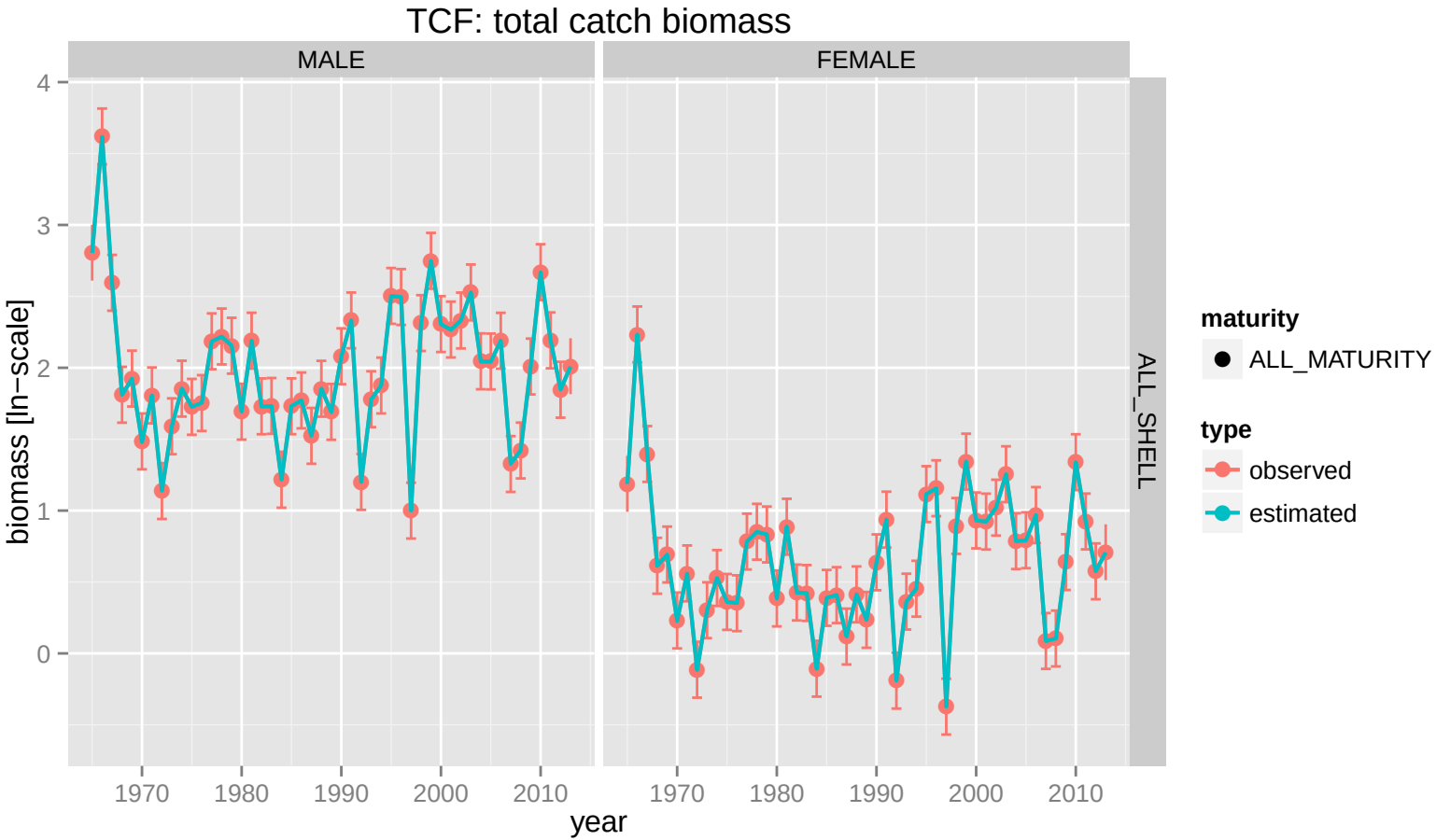

TCF: discard catch: female
year
9e+06
6e+06
3e+06
0e+00
1970
1980
1990
2000
2010
sample size
type
effective
input

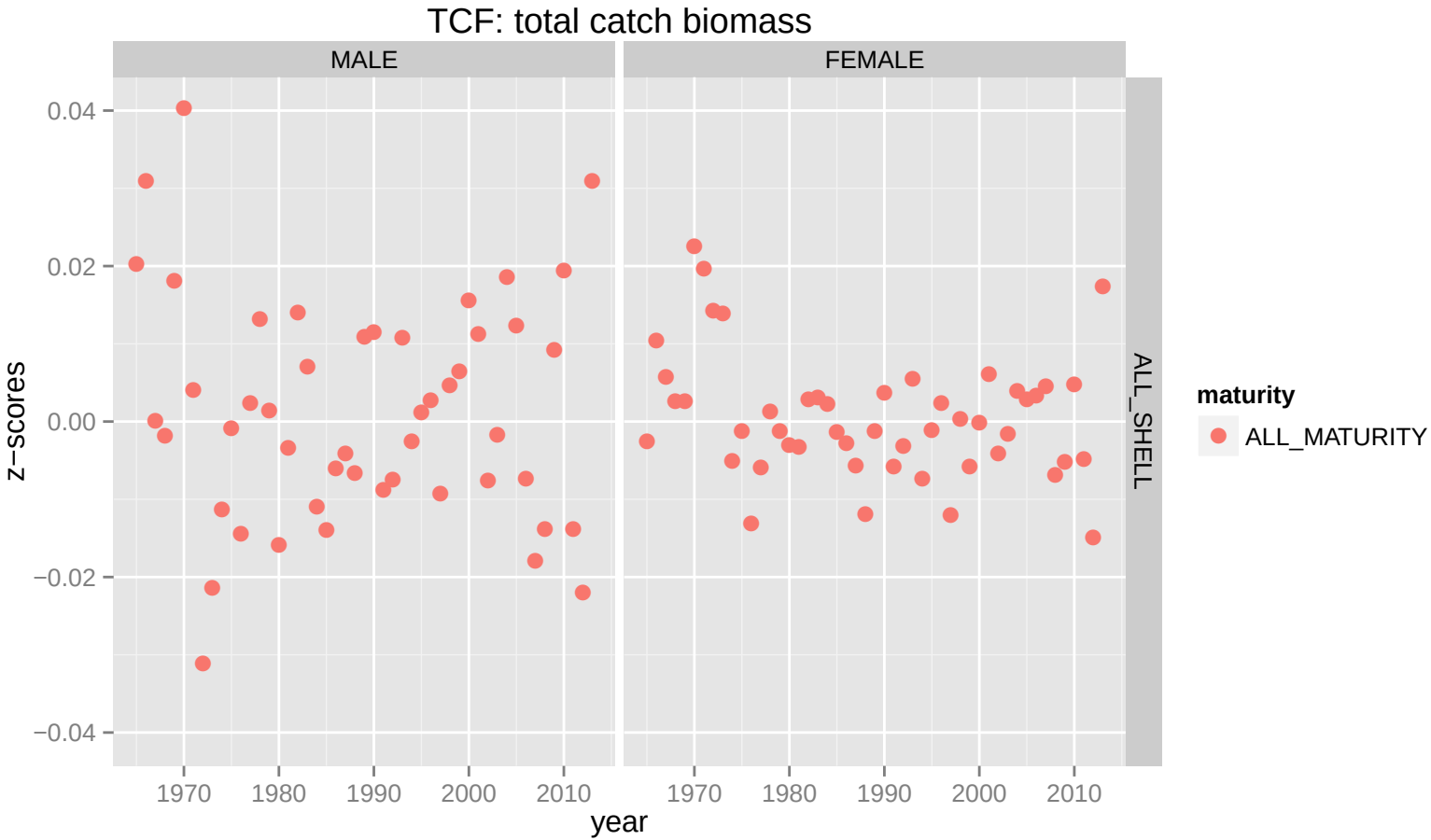

TCF: total catch abundance
MALE
FEMALE
ALL_SHELL
abundance
0
20
40
60
1970
1980
1990
2000
2010
year
type
observed
estimated
maturity
ALL_MATURITY

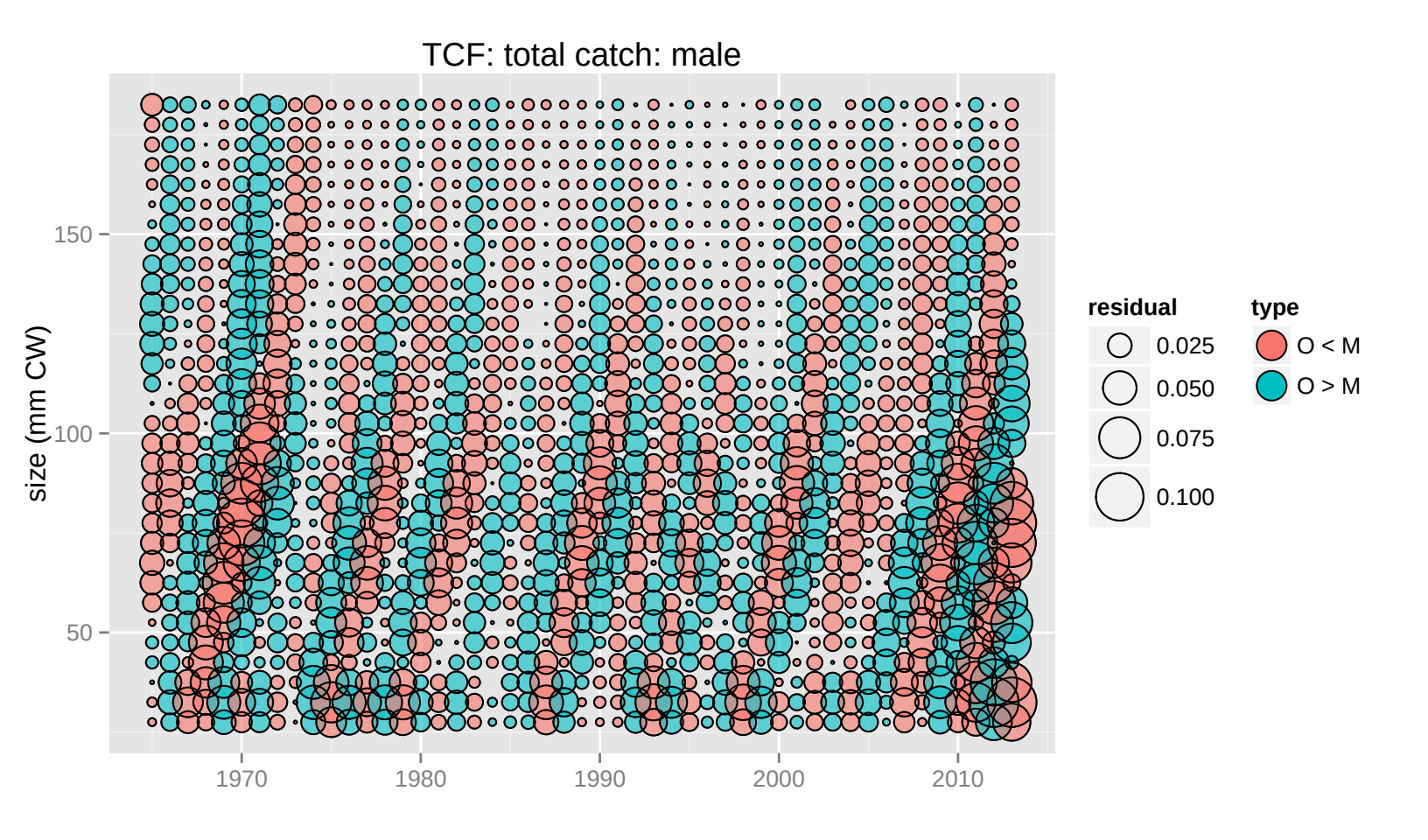

TCF: total catch abundance
MALE
FEMALE
ALL_SHELL
abundance [ln−scale]
4
3
2
1970
1980
1990
2000
2010
year
maturity
ALL_MATURITY
type
observed
estimated

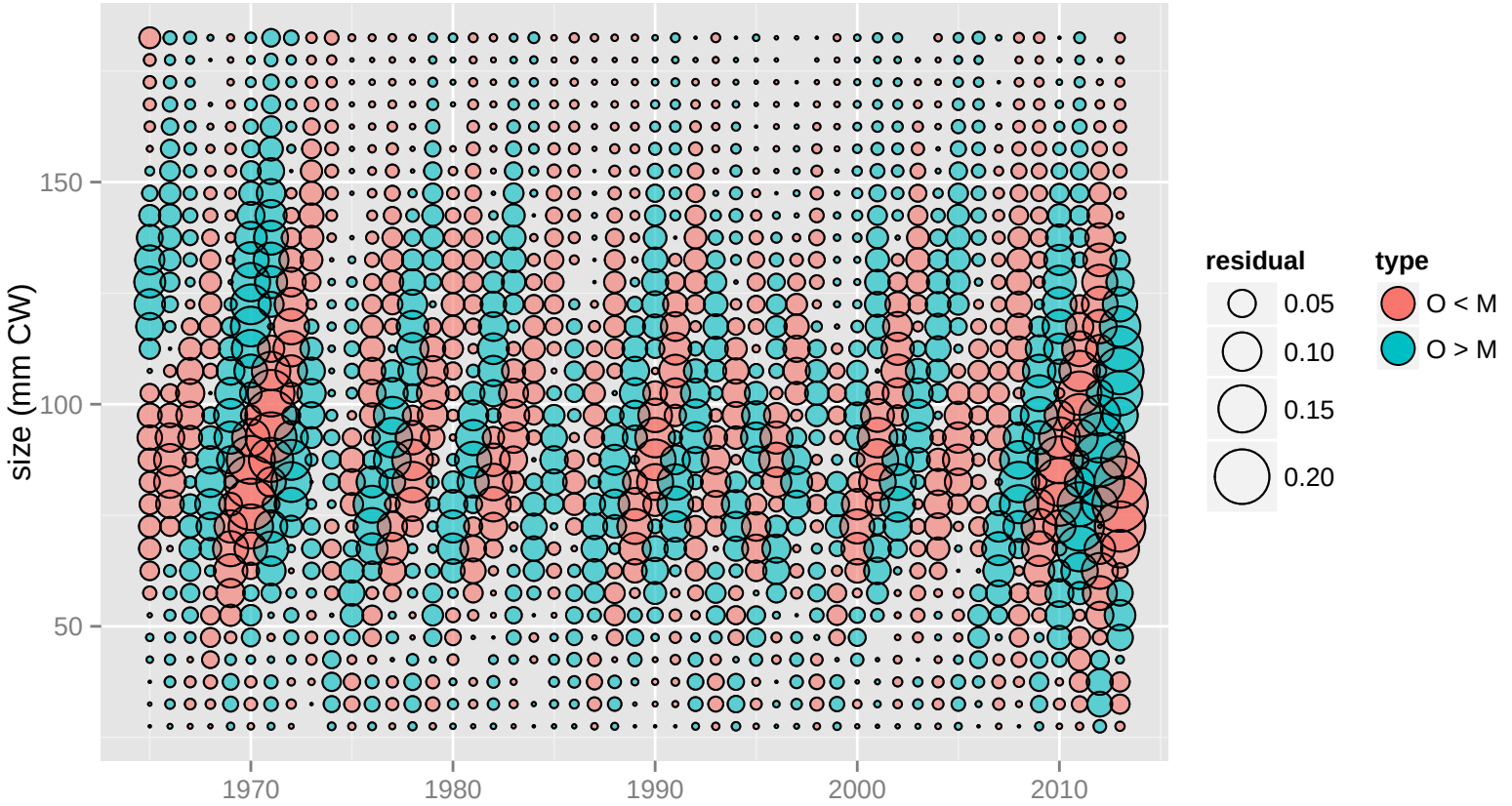

TCF: total catch abundance
MALE
FEMALE
ALL_SHELL
z−scores
0.10
0.05
0.00
−0.05
−0.10
1970
1980
1990
2000
2010
year
maturity
ALL_MATURITY

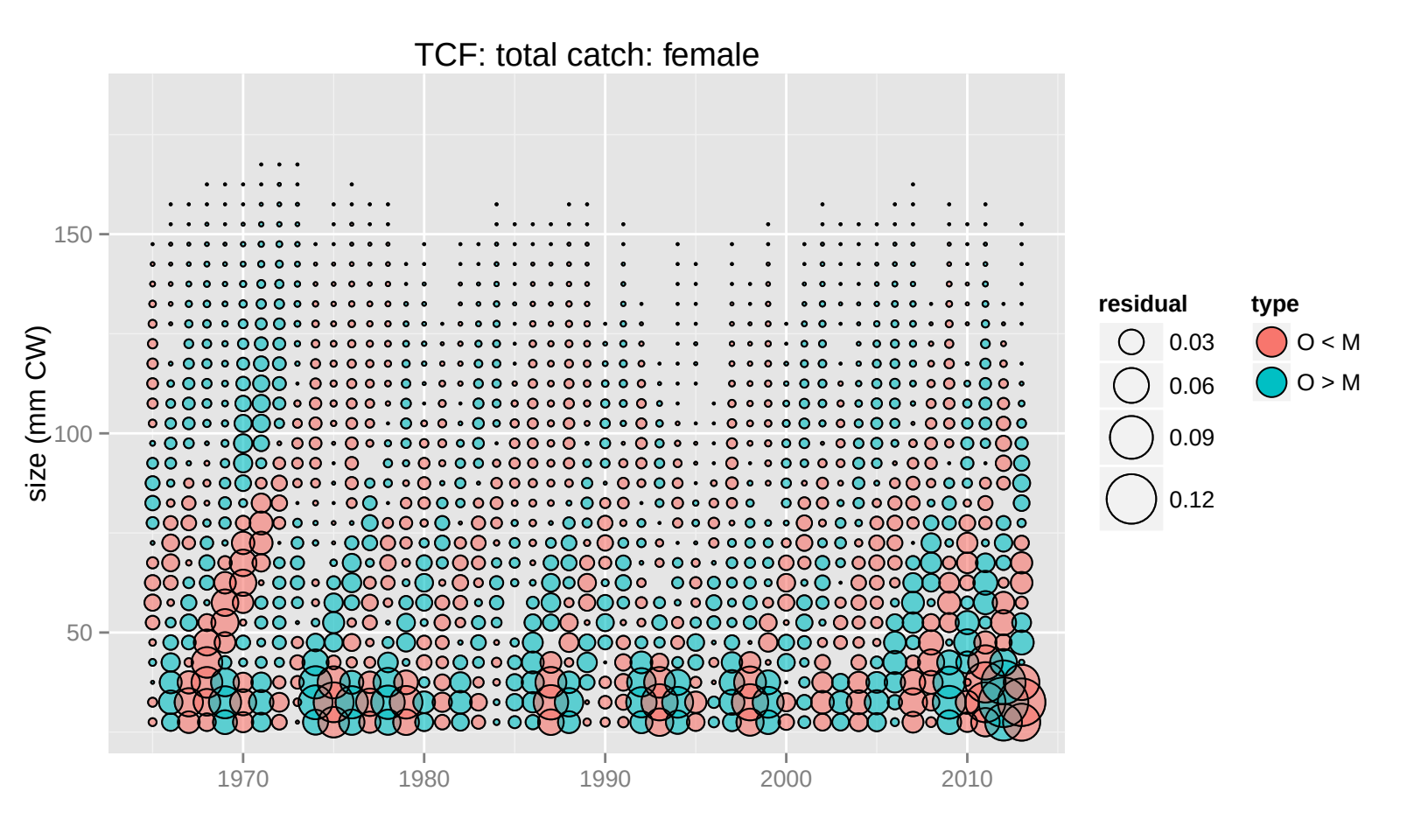

TCF: total catch biomass
MALE
FEMALE
ALL_SHELL
biomass
year
0
10
20
30
40
1970
1980
1990
2000
2010
type
observed
estimated
maturity
ALL_MATURITY

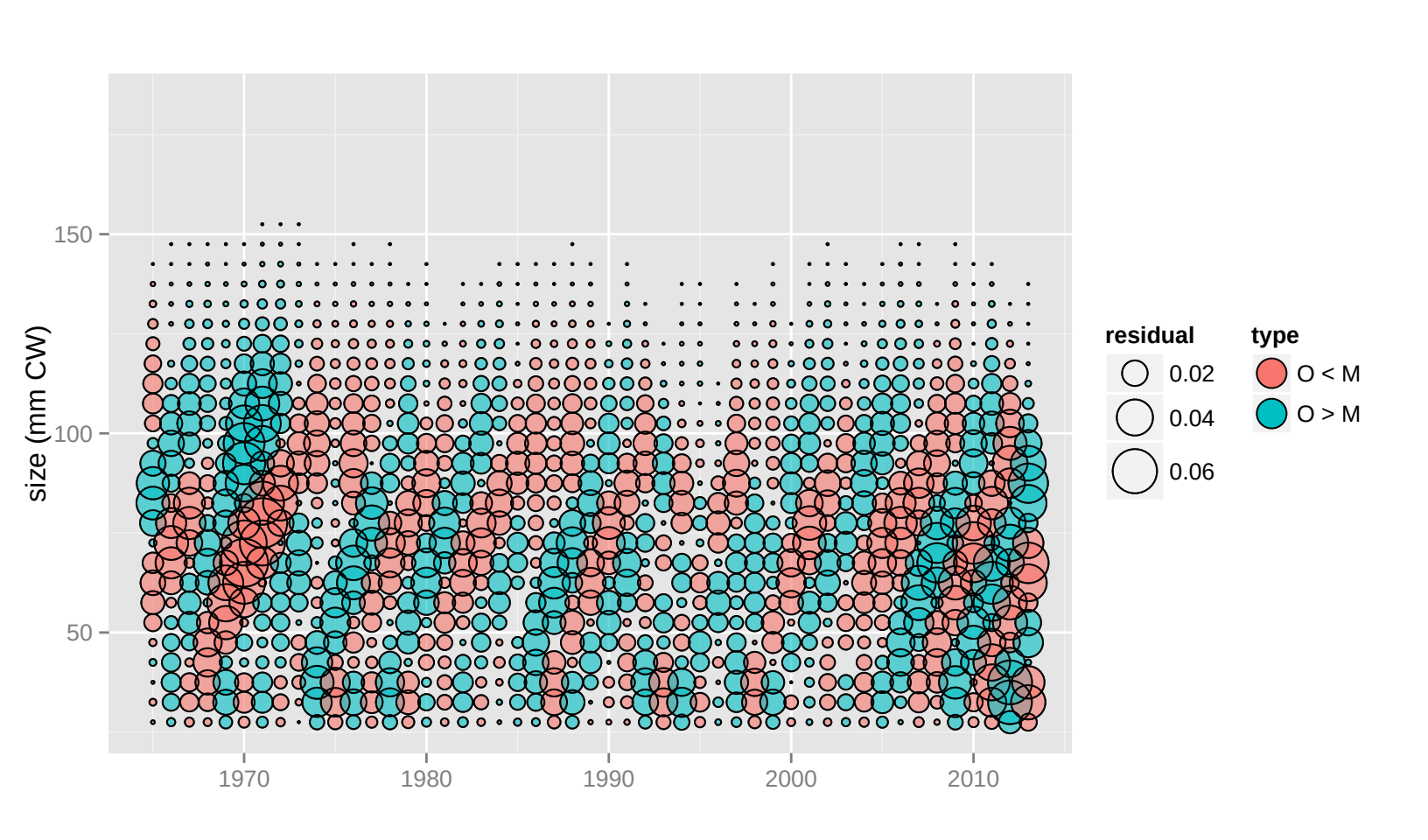

TCF: total catch biomass
MALE
FEMALE
ALL_SHELL
biomass [ln−scale]
year
4
3
2
1
0
1970
1980
1990
2000
2010
maturity
ALL_MATURITY
type
observed
estimated

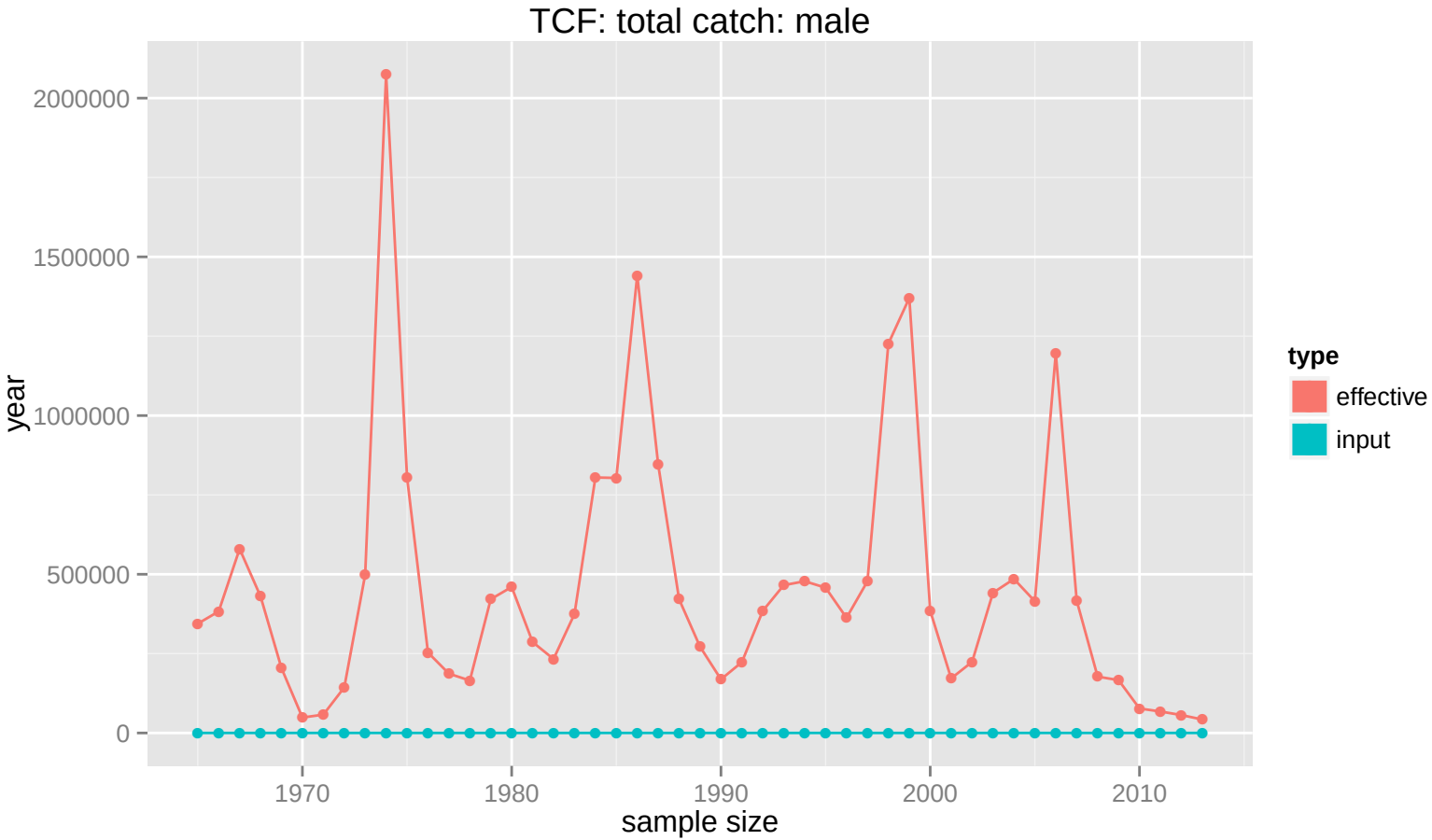

TCF: total catch biomass
MALE
FEMALE
ALL_SHELL
0.04
0.02
0.00
−0.02
−0.04
z−scores
1970
1980
1990
2000
2010
year
maturity
ALL_MATURITY

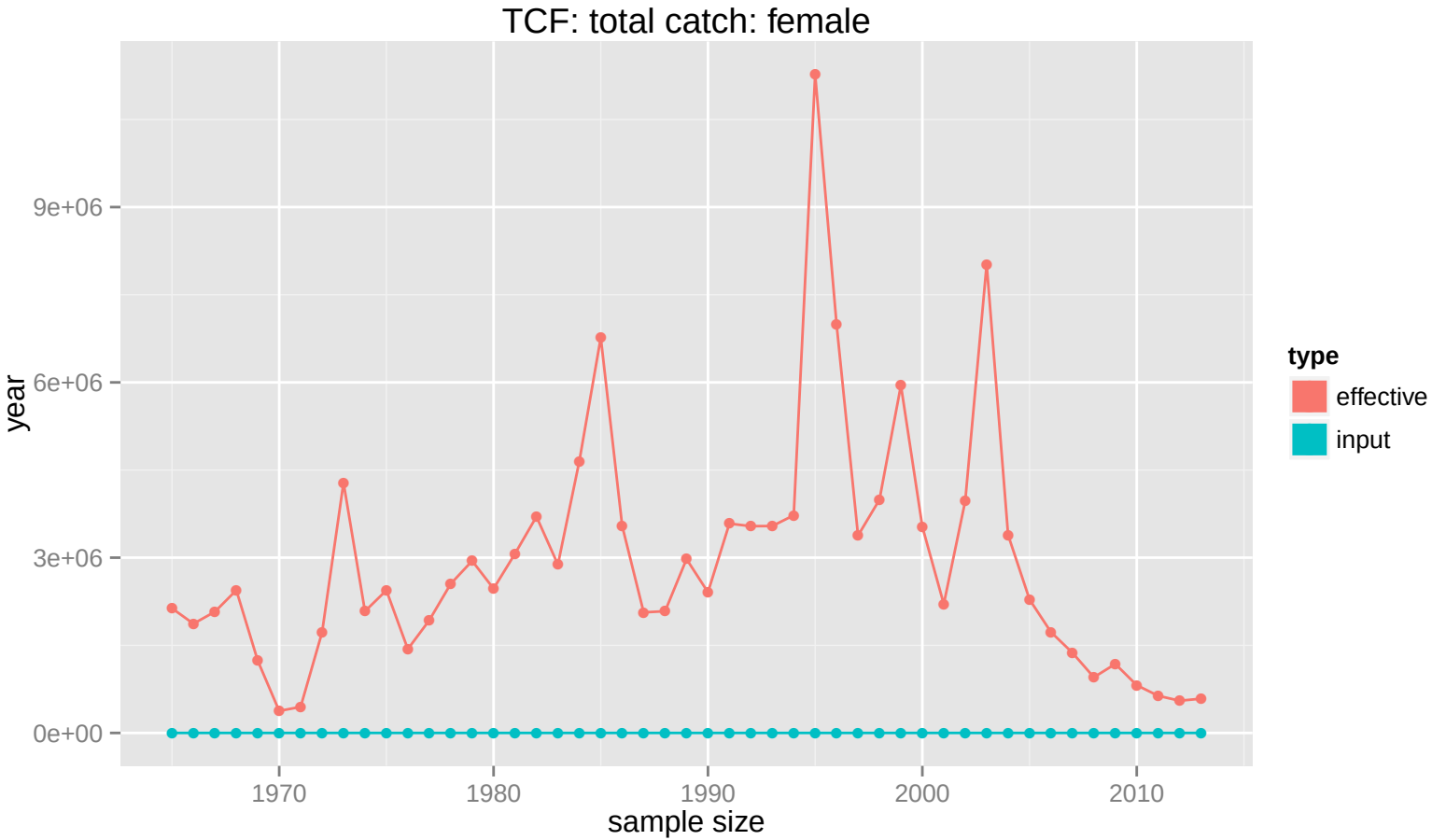

TCF: total catch: male
size (mm CW)
150
100
50
1970
1980
1990
2000
2010
residual
0.025
0.050
0.075
0.100
type
O < M
O > M

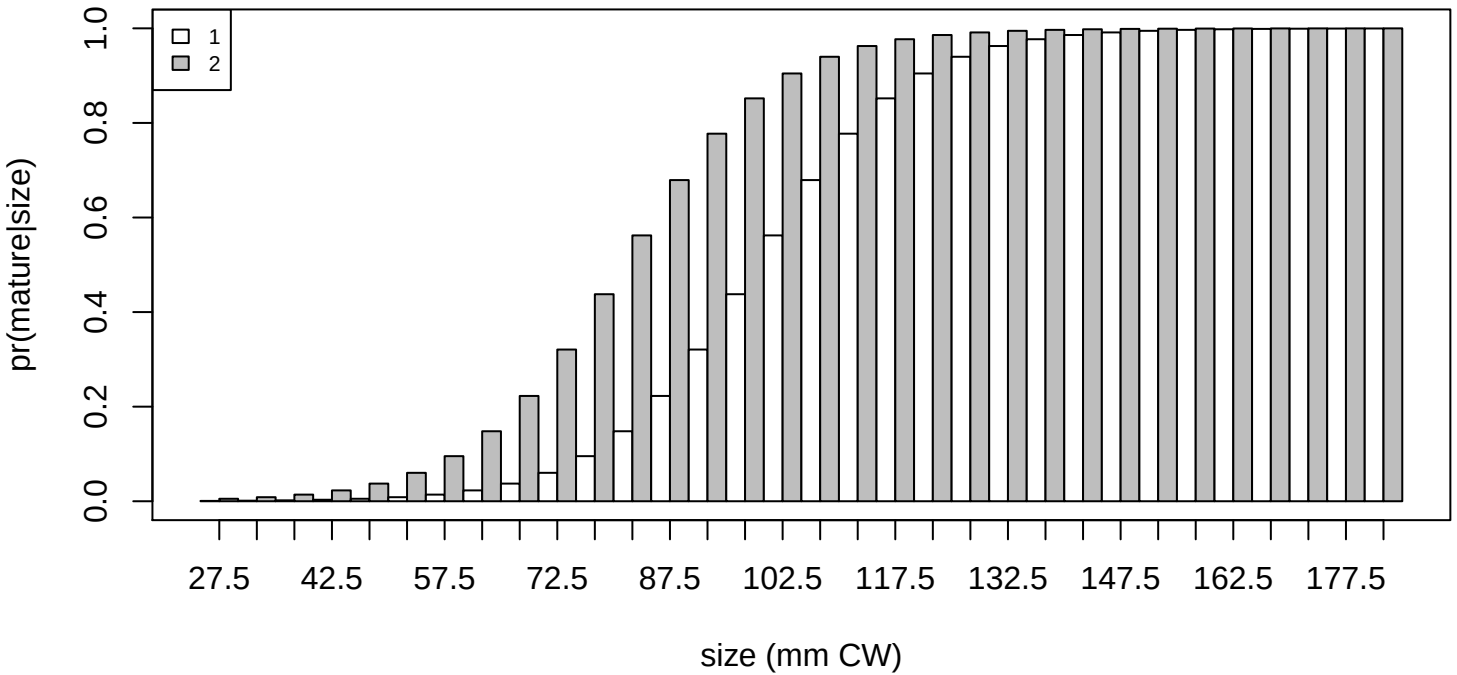

size (mm CW)
150
100
50
1970
1980
1990
2000
2010
residual
0.05
0.10
0.15
0.20
type
O < M
O > M

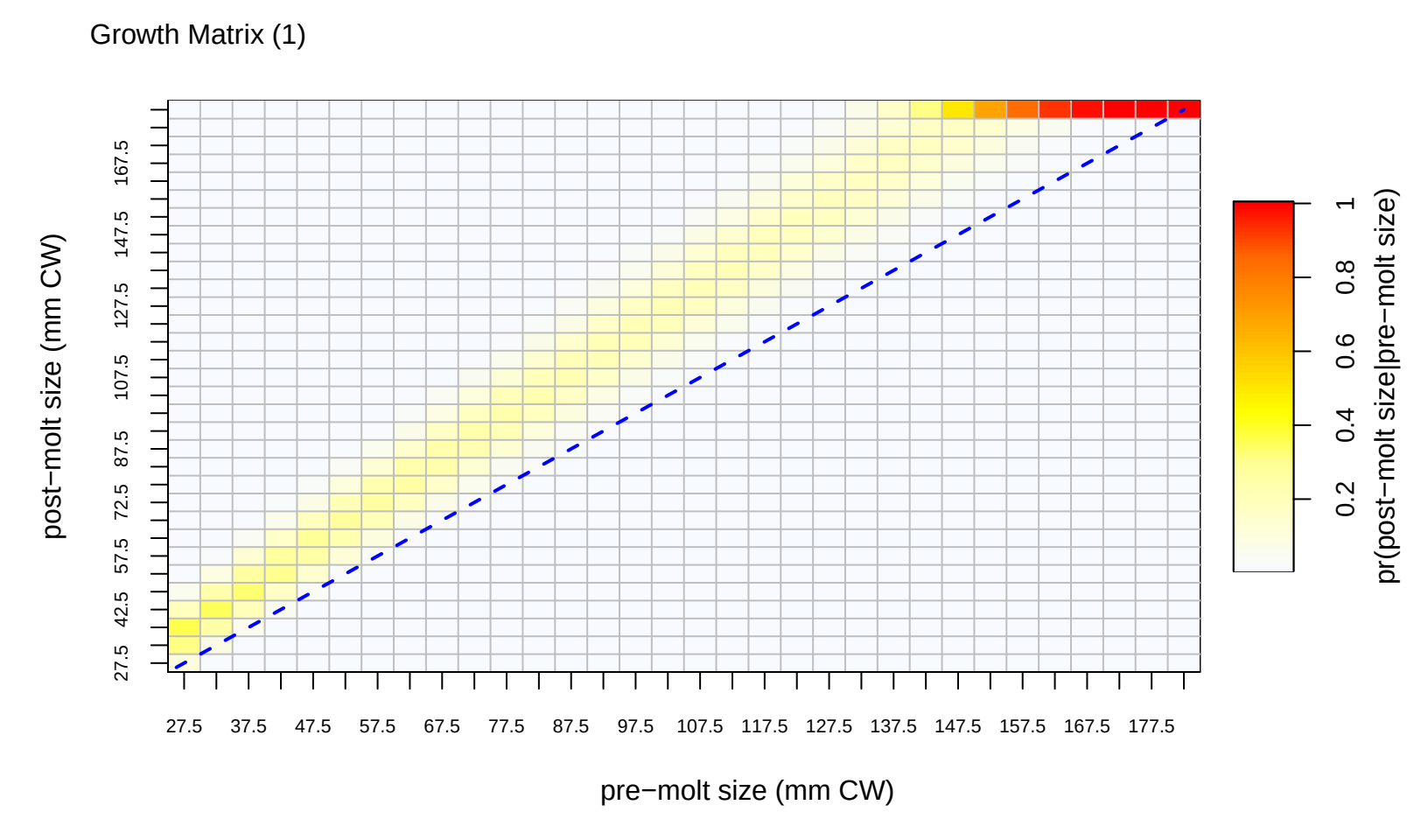

TCF: total catch: female
size (mm CW)
150
100
50
1970
1980
1990
2000
2010
residual
0.03
0.06
0.09
0.12
type
O < M
O > M

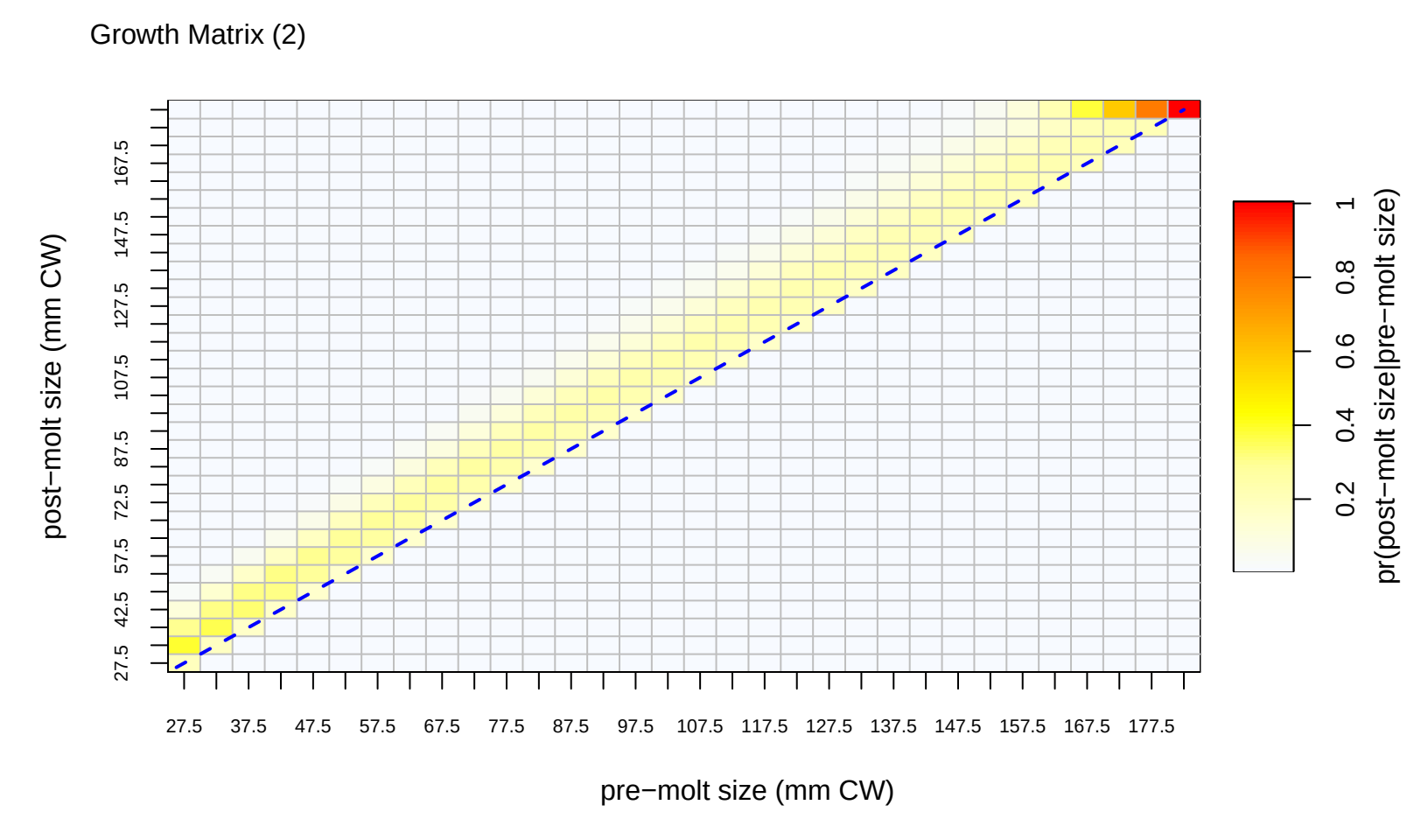

size (mm CW)
150
100
50
1970
1980
1990
2000
2010
residual
0.02
0.04
0.06
type
O < M
O > M

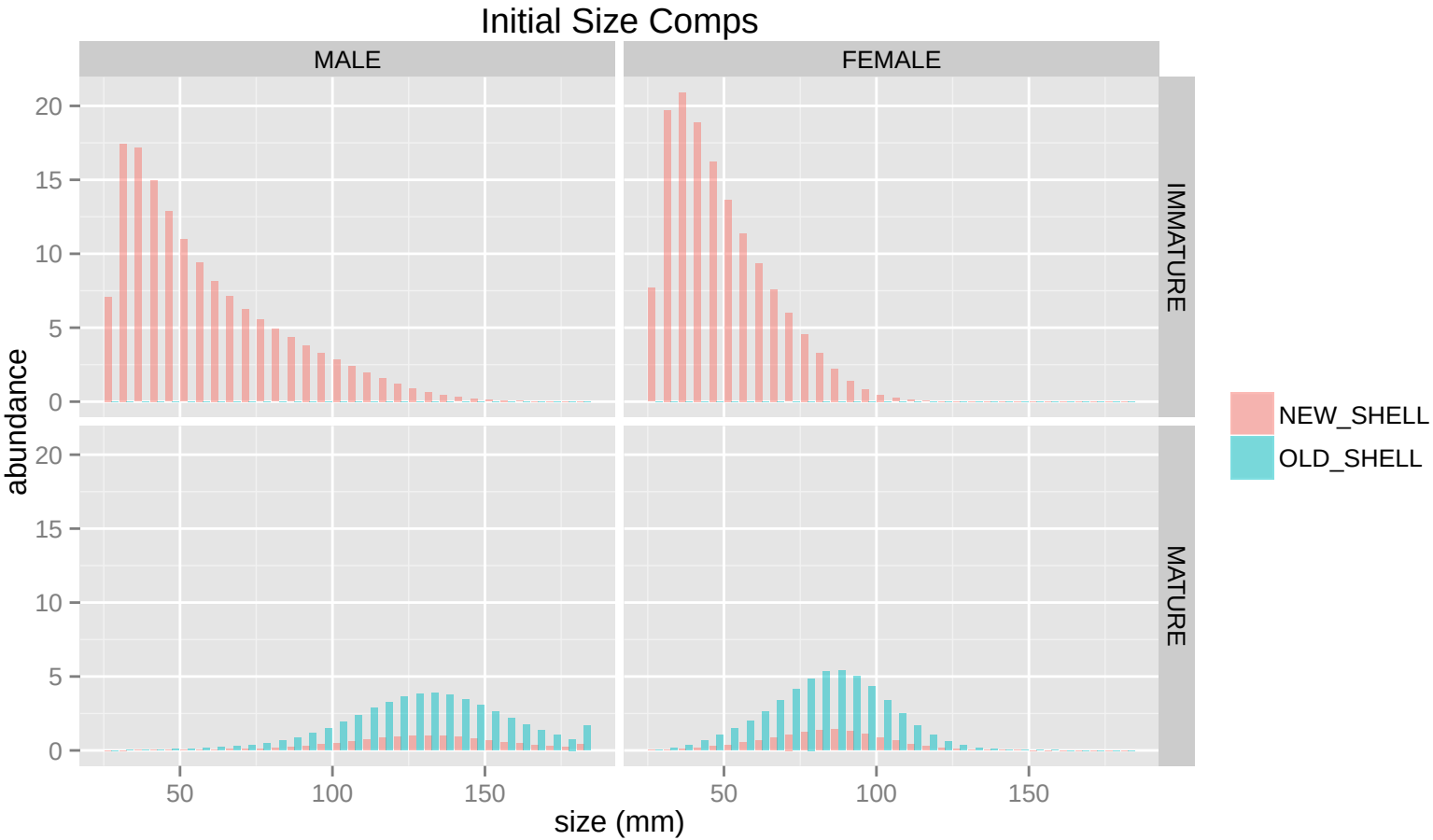

TCF: total catch: male
2000000
1500000
1000000
500000
0
year
1970
1980
1990
2000
2010
sample size
type
effective
input

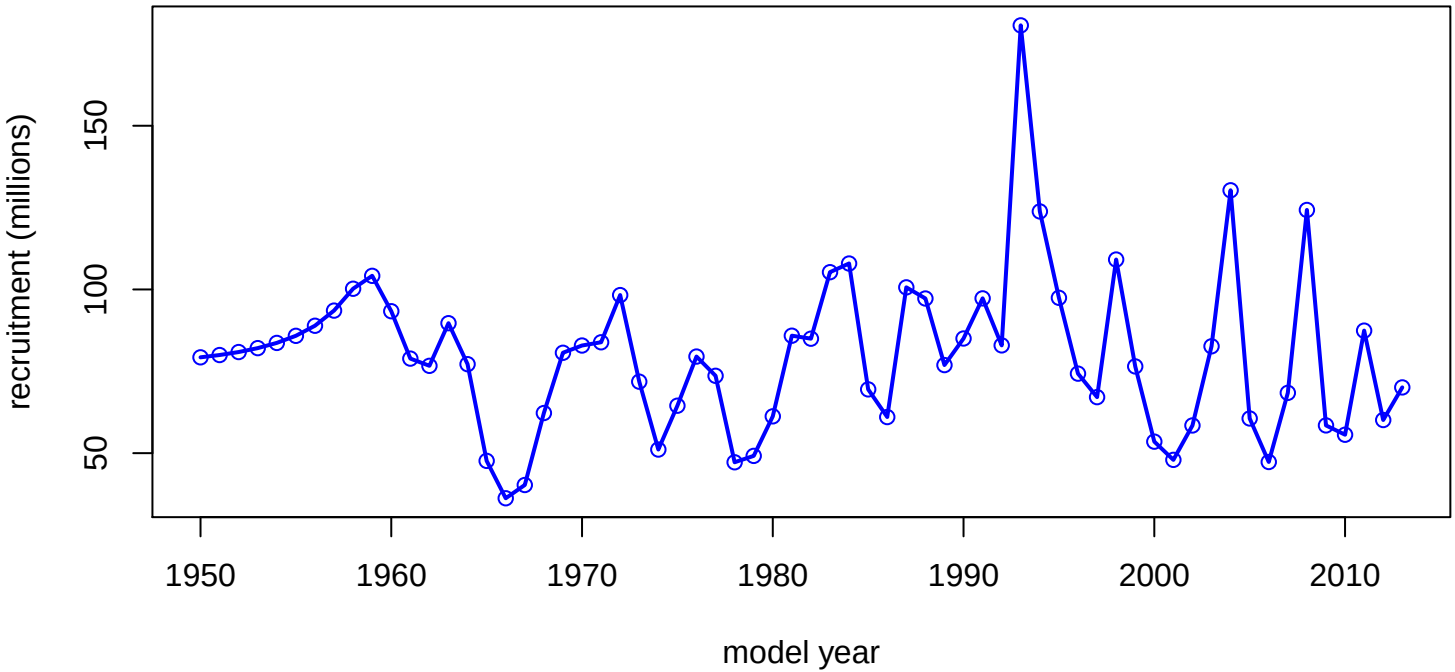

TCF: total catch: female
year
9e+06
6e+06
3e+06
0e+00
1970
1980
1990
2000
2010
sample size
type
effective
input

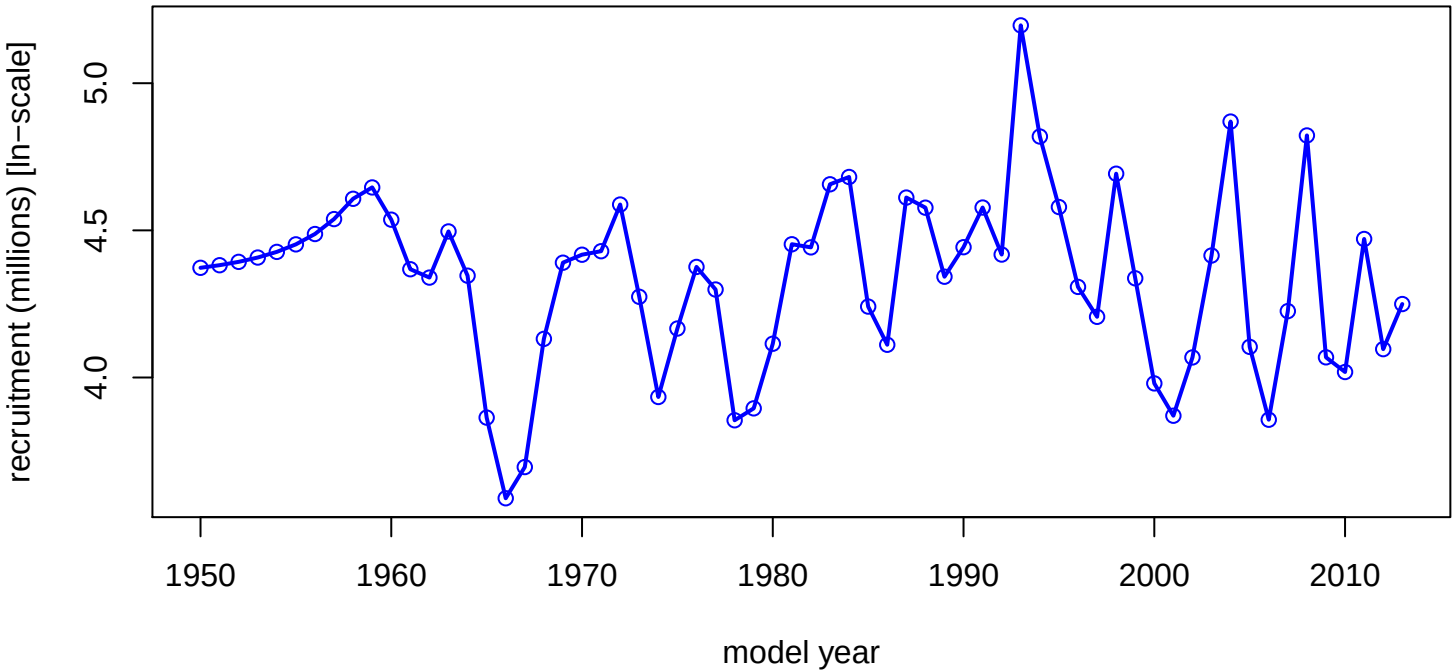

1
2
pr(mature|size)
0.0
0.2
0.4
0.6
0.8
1.0
27.5
42.5
57.5
72.5
87.5
102.5
117.5
132.5
147.5
162.5
177.5
size (mm CW)

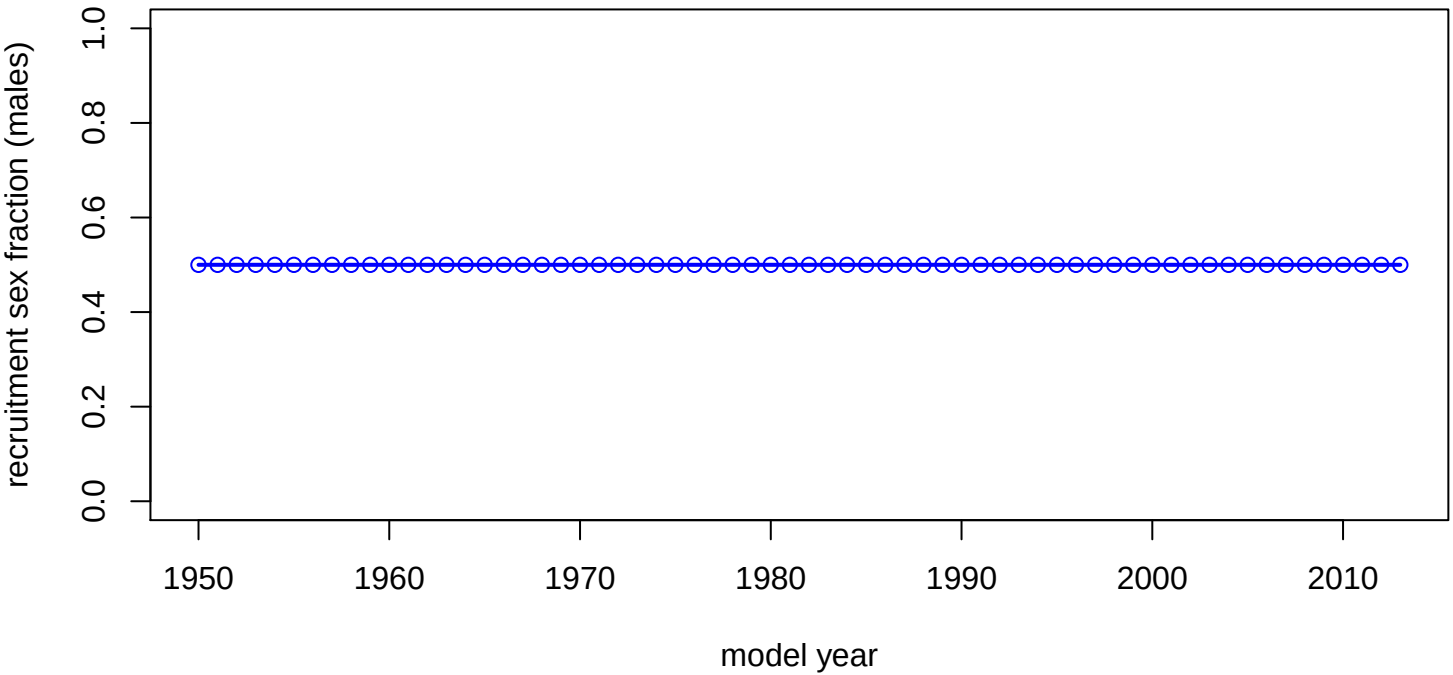

Growth Matrix (1)
post−molt size (mm CW)
27.5
42.5
57.5
72.5
87.5
107.5
127.5
147.5
167.5
pre−molt size (mm CW)
27.5
37.5
47.5
57.5
67.5
77.5
87.5
97.5
107.5
117.5
127.5
137.5
147.5
157.5
167.5
177.5
pr(post−molt size|pre−molt size)
0.2
0.4
0.6
0.8
1

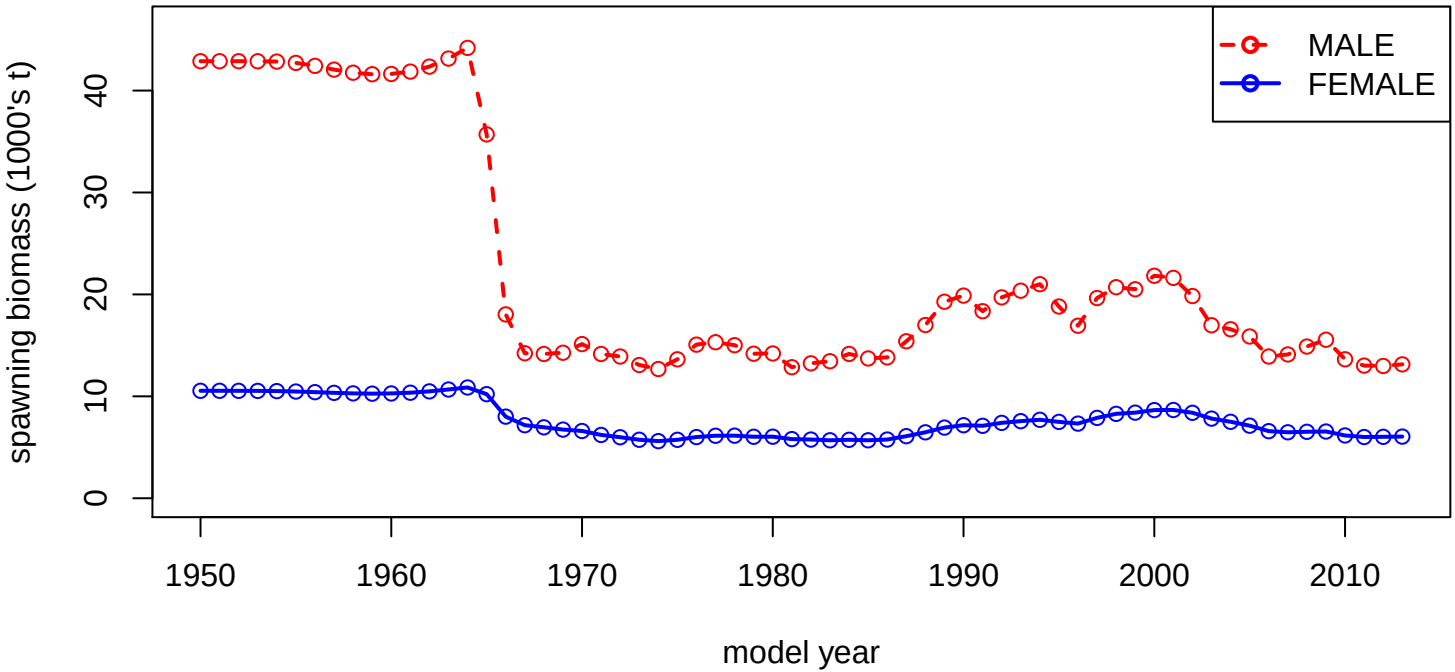

Growth Matrix (2)
post−molt size (mm CW)
27.5
42.5
57.5
72.5
87.5
107.5
127.5
147.5
167.5
pre−molt size (mm CW)
27.5
37.5
47.5
57.5
67.5
77.5
87.5
97.5
107.5
117.5
127.5
137.5
147.5
157.5
167.5
177.5
pr(post−molt size|pre−molt size)
0.2
0.4
0.6
0.8
1


Initial Size Comps
MALE
FEMALE
IMMATURE
MATURE
abundance
size (mm)
0
5
10
15
20
50
100
150
NEW_SHELL
OLD_SHELL

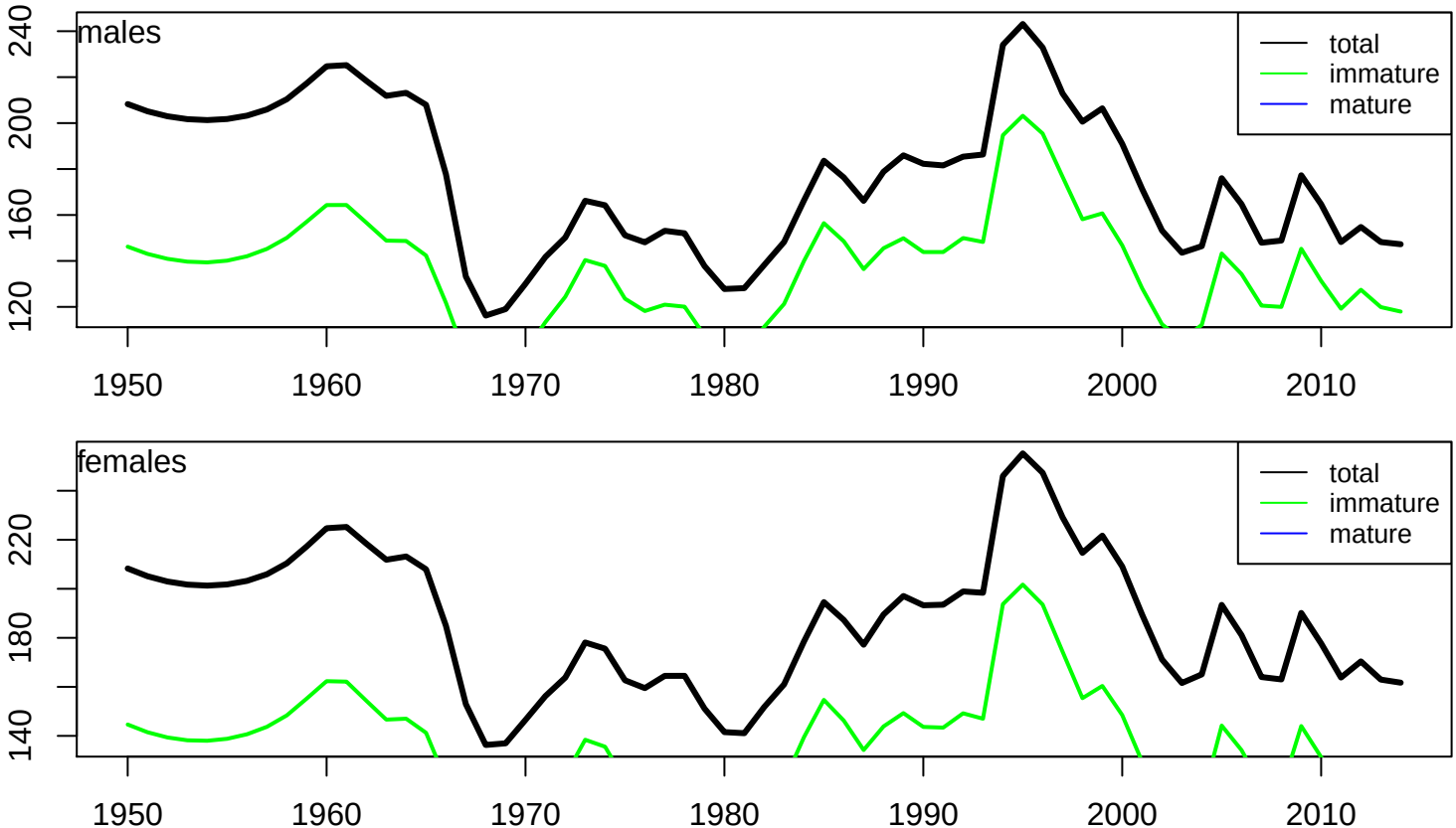

recruitment (millions)
50
100
150
1950
1960
1970
1980
1990
2000
2010
model year

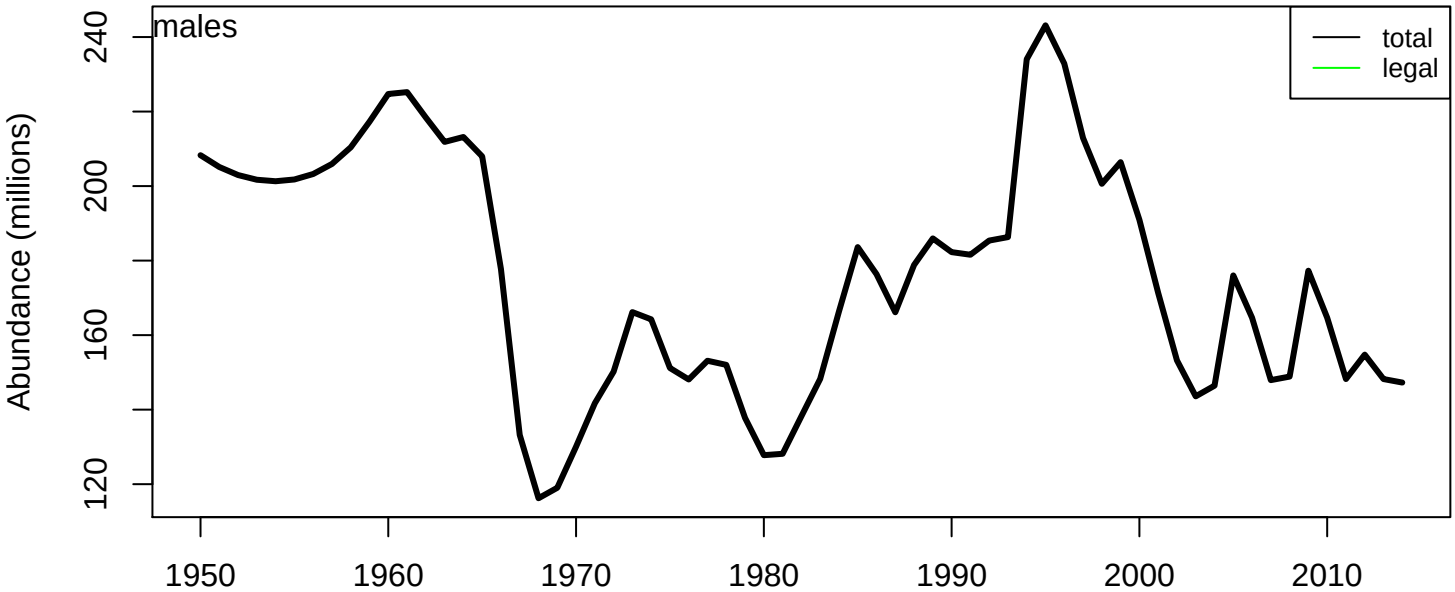

recruitment (millions) [ln−scale]
4.0
4.5
5.0
1950
1960
1970
1980
1990
2000
2010
model year

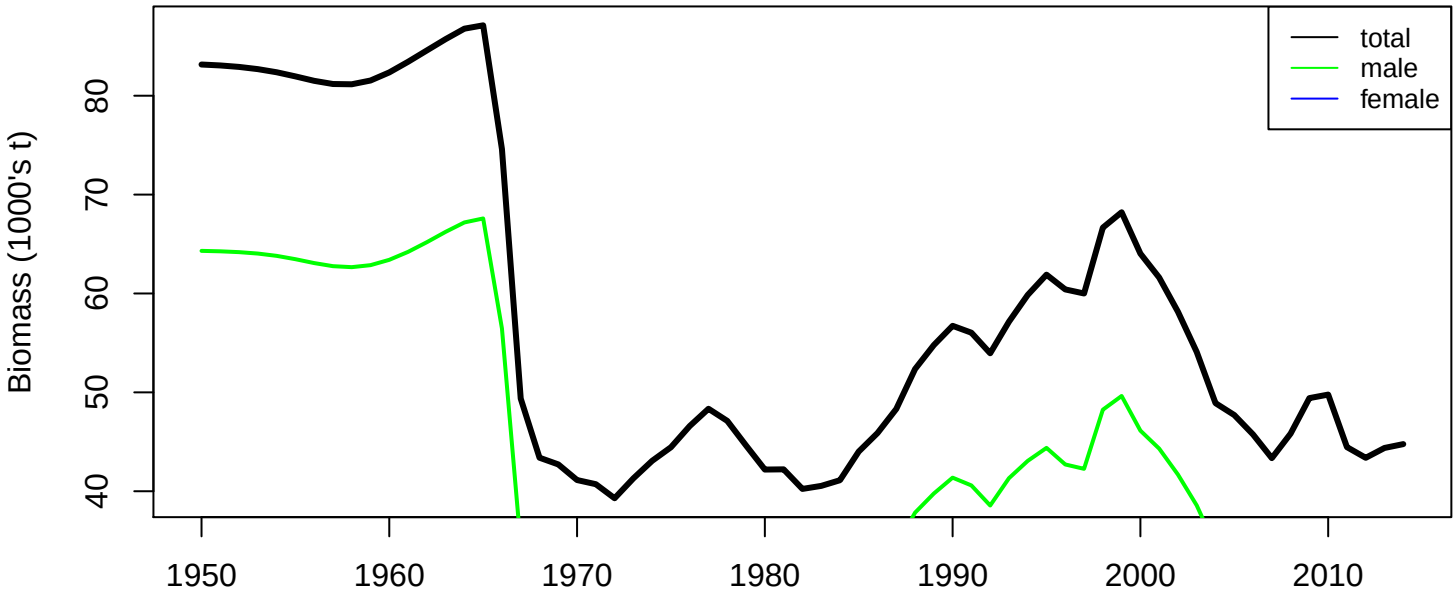

recruitment sex fraction (males)
0.0
0.2
0.4
0.6
0.8
1.0
1950
1960
1970
1980
1990
2000
2010
model year

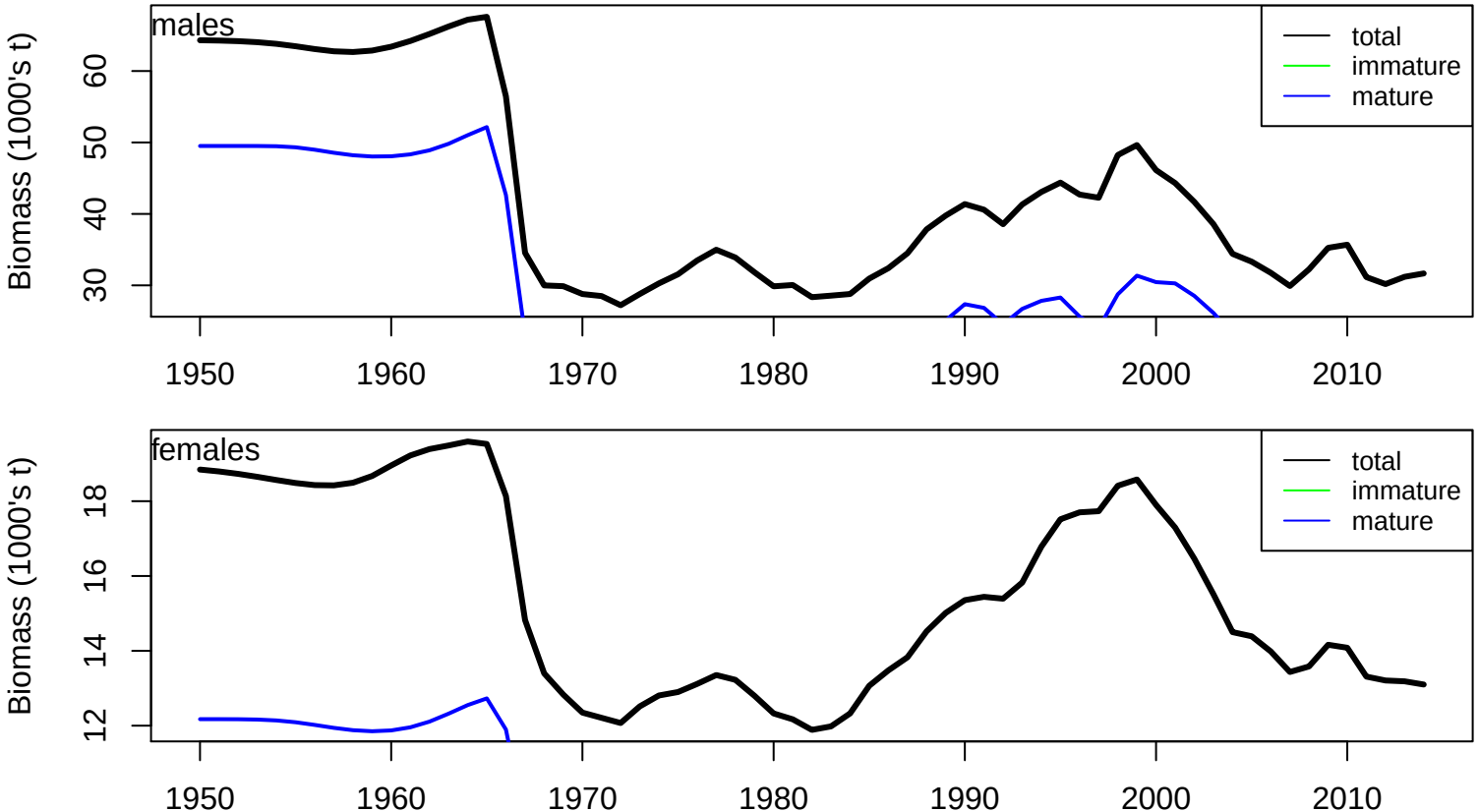

MALE
FEMALE
spawning biomass (1000's t)
0
10
20
30
40
1950
1960
1970
1980
1990
2000
2010
model year

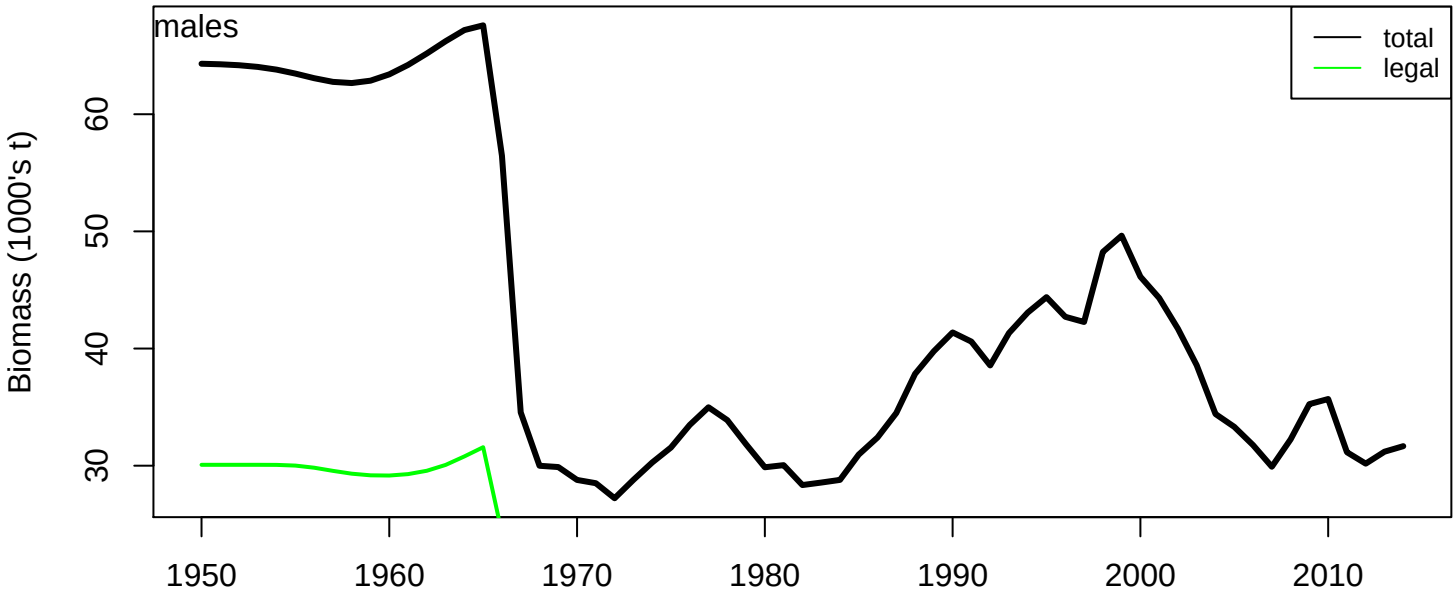

Abundance (millions)
250
300
350
400
450
500
1950
1960
1970
1980
1990
2000
2010
total
male
female

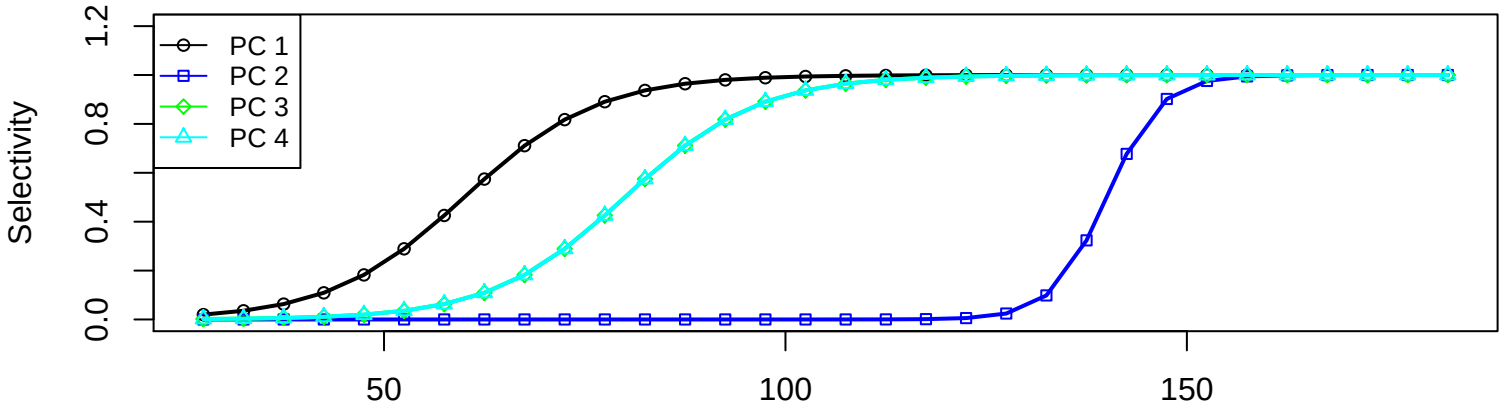

males
total
immature
mature
240
200
160
120
1950
1960
1970
1980
1990
2000
2010
females
total
immature
mature
220
180
140
1950
1960
1970
1980
1990
2000
2010

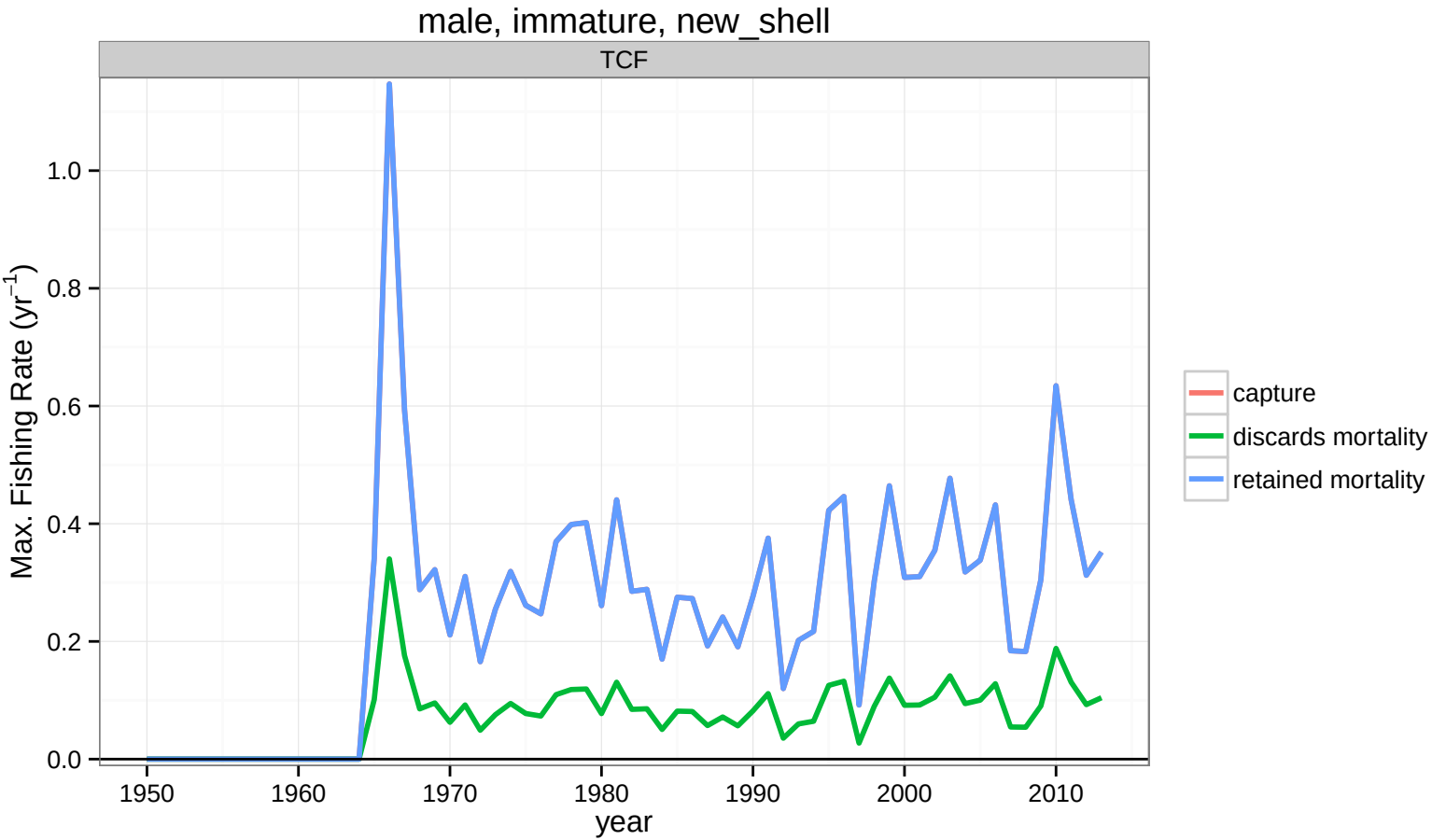

males
total
legal
Abundance (millions)
120
160
200
240
1950
1960
1970
1980
1990
2000
2010

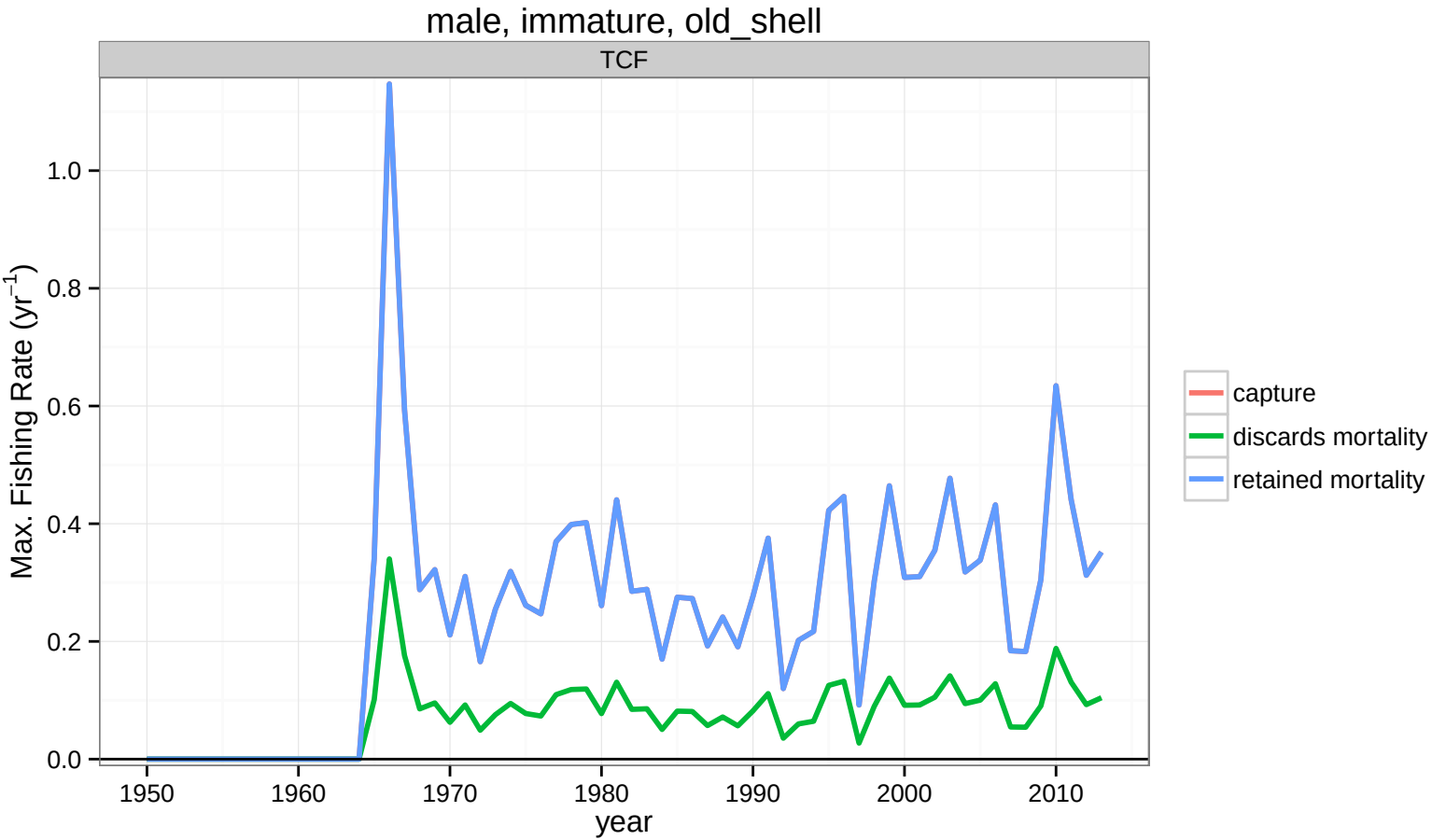

Biomass (1000's t)
40
50
60
70
80
1950
1960
1970
1980
1990
2000
2010
total
male
female

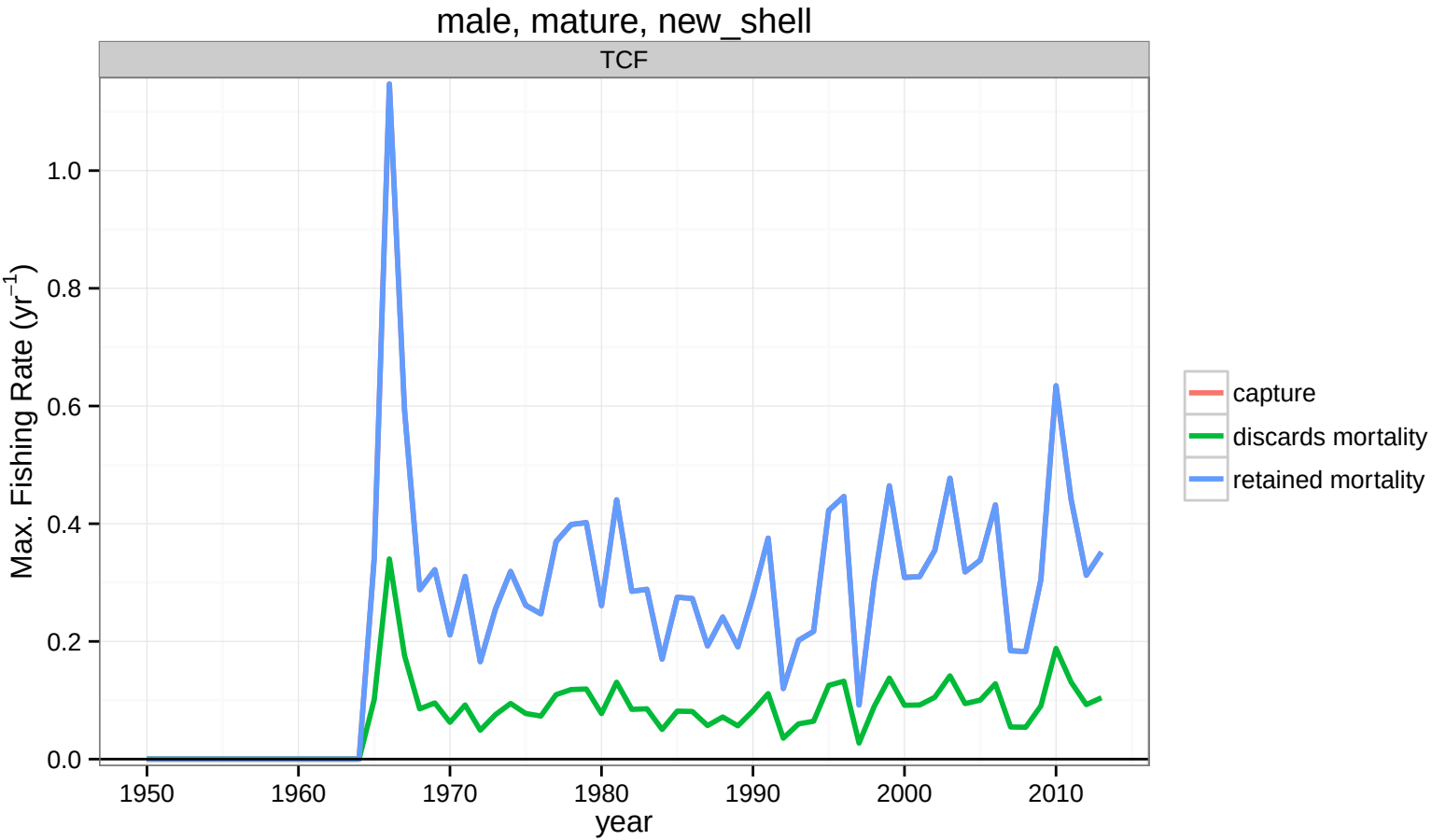

males
total
immature
mature
Biomass (1000's t)
30
40
50
60
1950
1960
1970
1980
1990
2000
2010
females
total
immature
mature
Biomass (1000's t)
12
14
16
18
1950
1960
1970
1980
1990
2000
2010

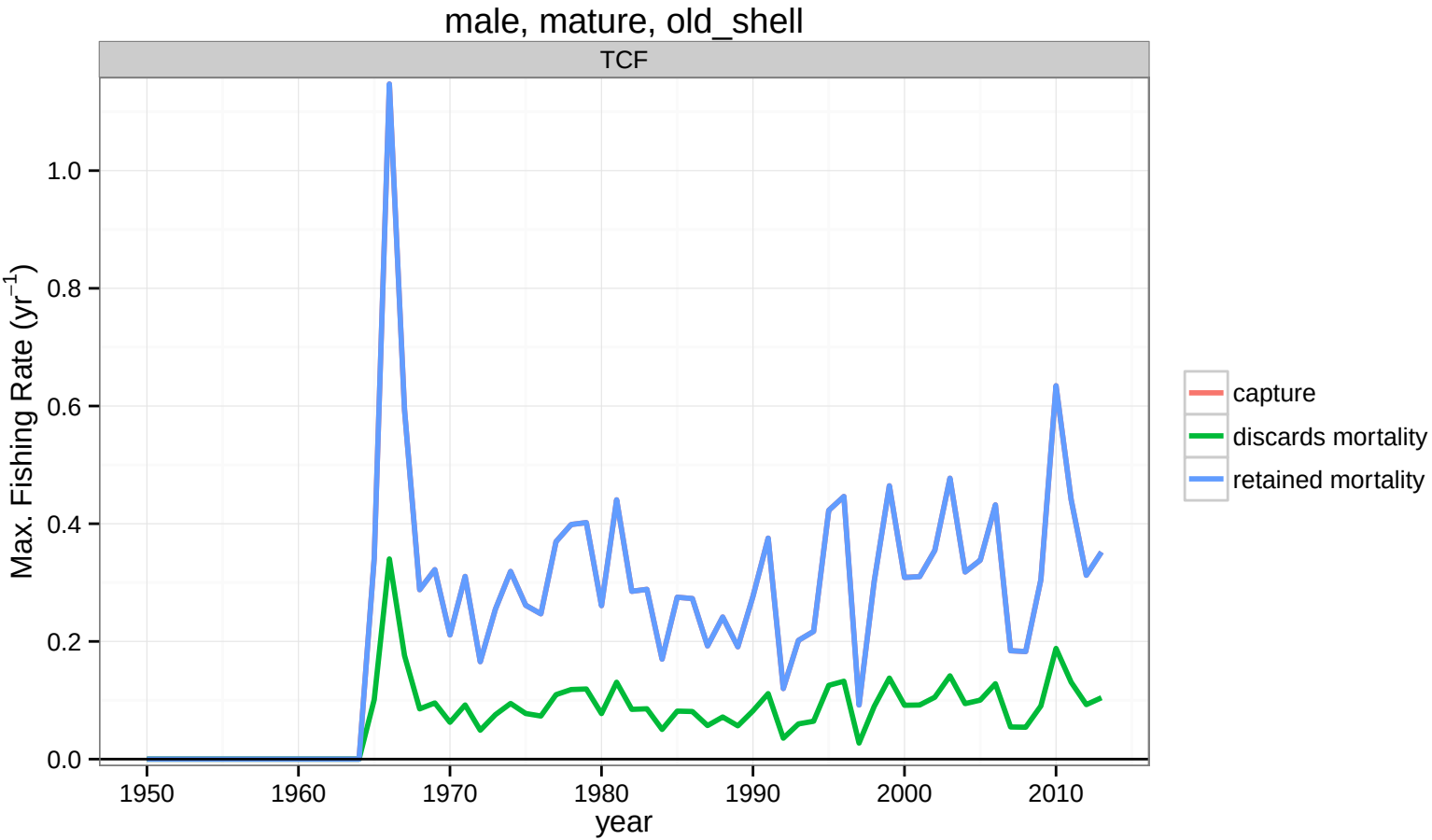

males
total
legal
Biomass (1000's t)
30
40
50
60
1950
1960
1970
1980
1990
2000
2010

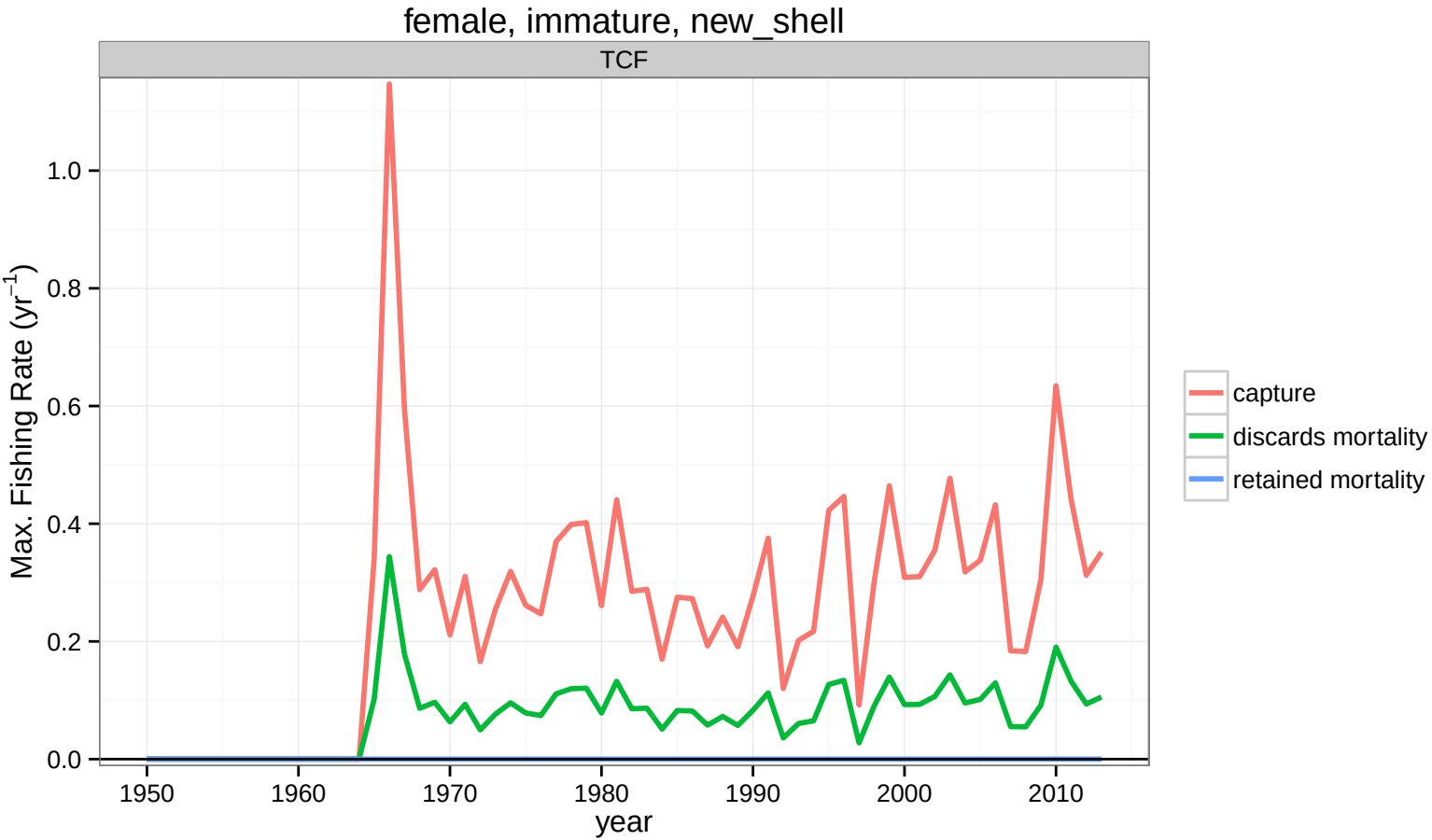

Selectivity
0.0
0.4
0.8
1.2
50
100
150
PC 1
PC 2
PC 3
PC 4

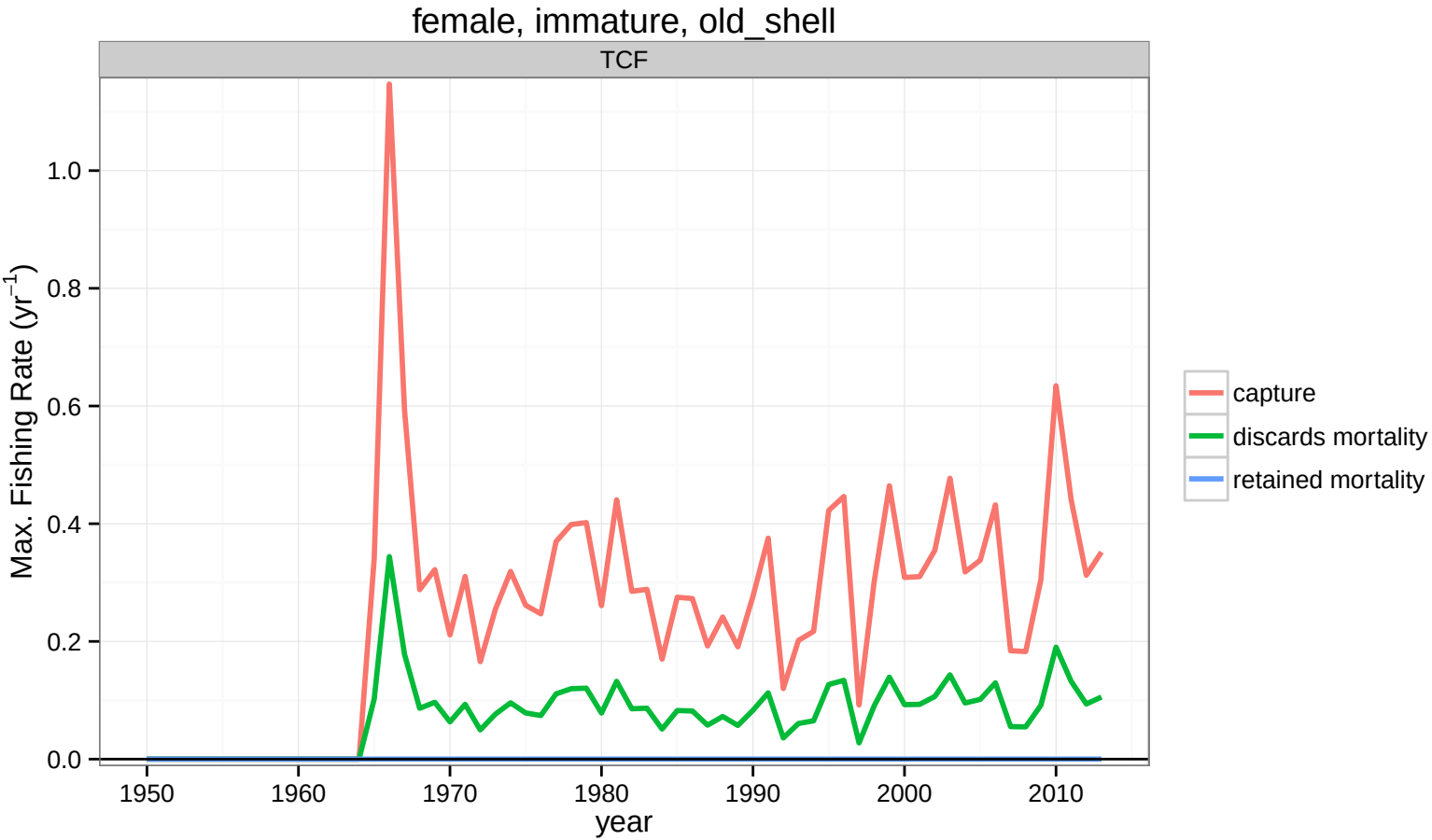

male, immature, new_shell
TCF
Max. Fishing Rate (yr^{-1})
1.0
0.8
0.6
0.4
0.2
0.0
1950
1960
1970
1980
1990
2000
2010
year
capture
discards mortality
retained mortality

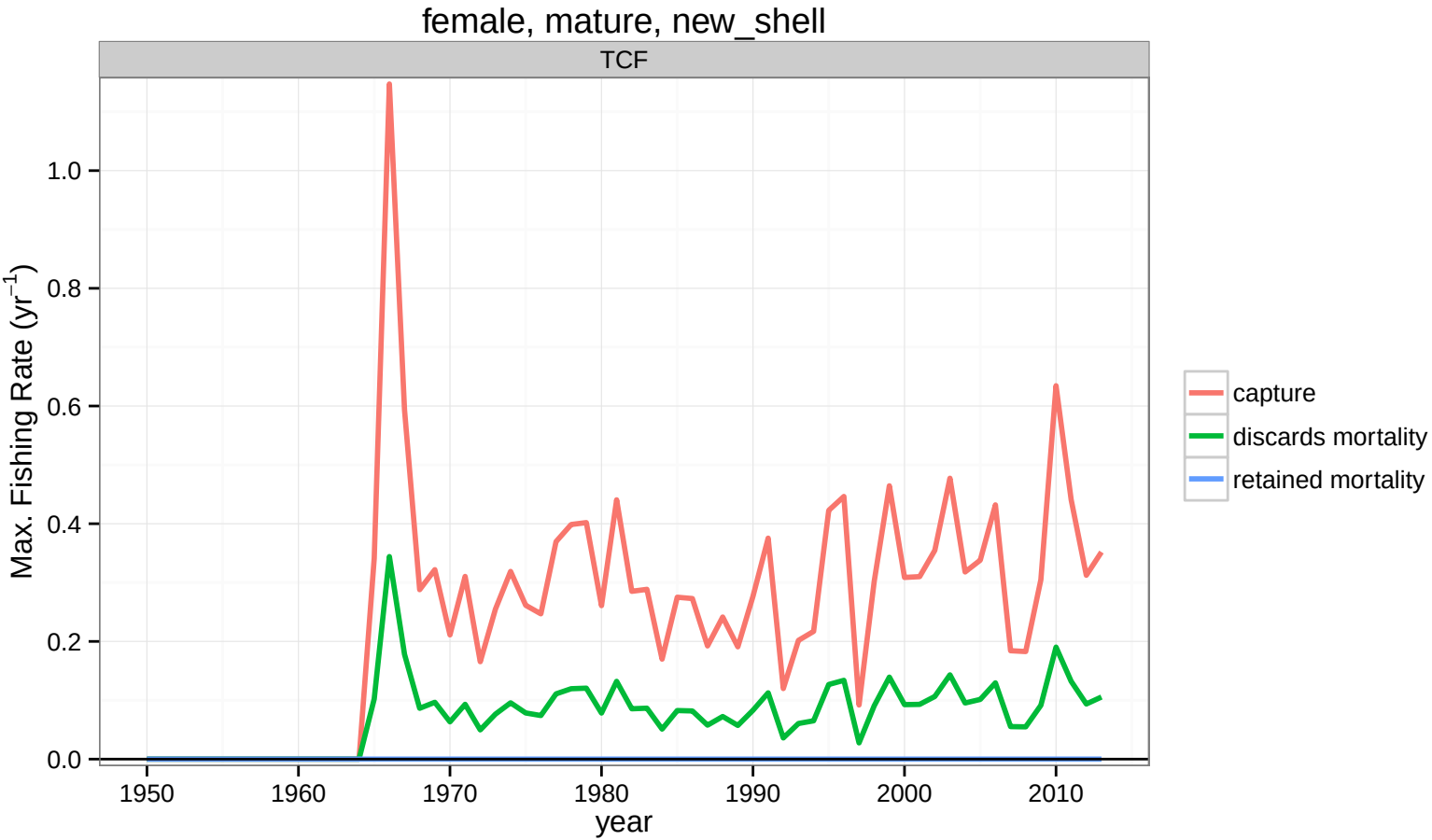

male, immature, old_shell
TCF
Max. Fishing Rate (yr^{-1})
1.0
0.8
0.6
0.4
0.2
0.0
1950
1960
1970
1980
1990
2000
2010
year
capture
discards mortality
retained mortality

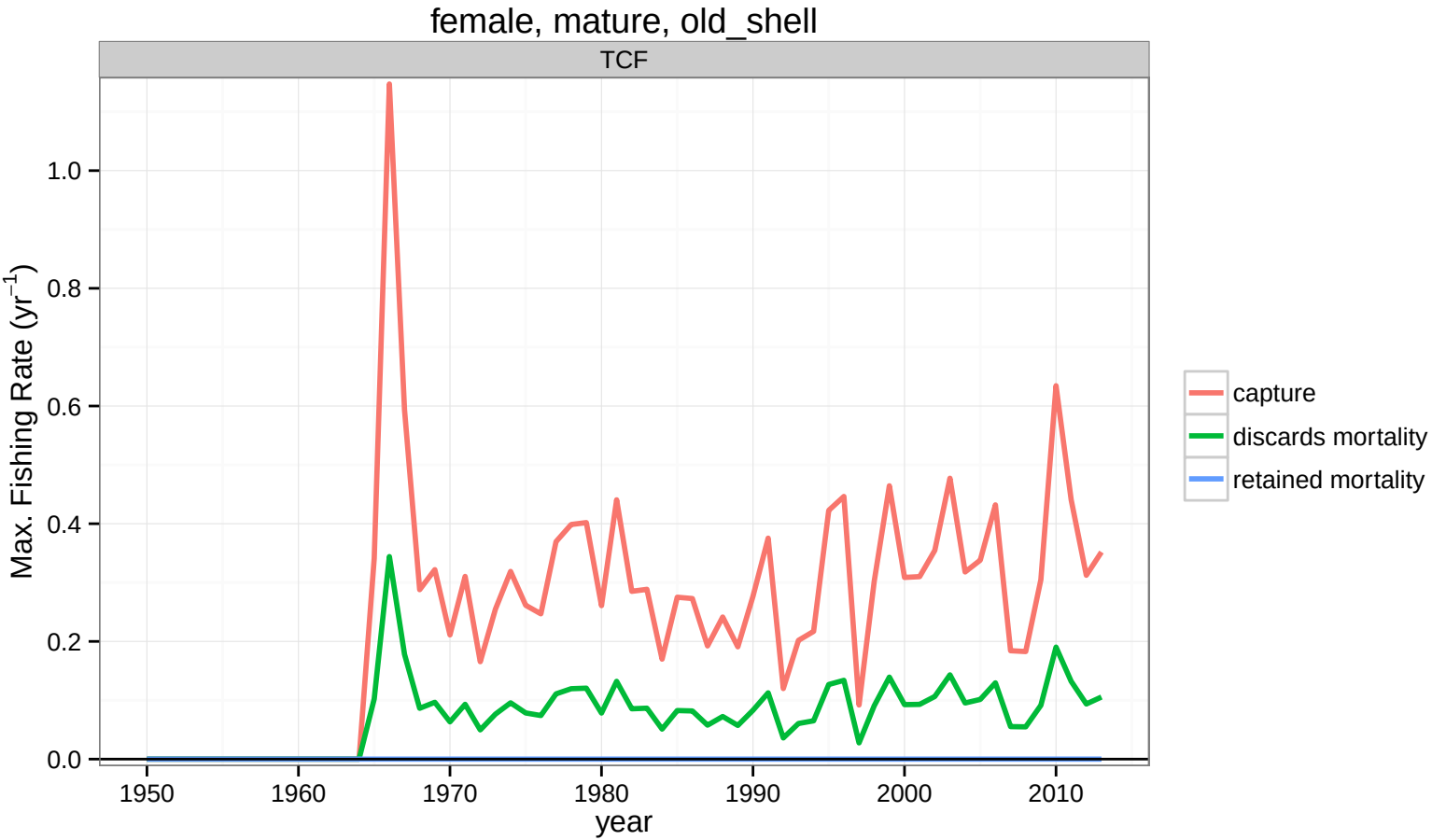

male, mature, new_shell
TCF
Max. Fishing Rate (yr^{-1})
1.0
0.8
0.6
0.4
0.2
0.0
1950
1960
1970
1980
1990
2000
2010
year
capture
discards mortality
retained mortality

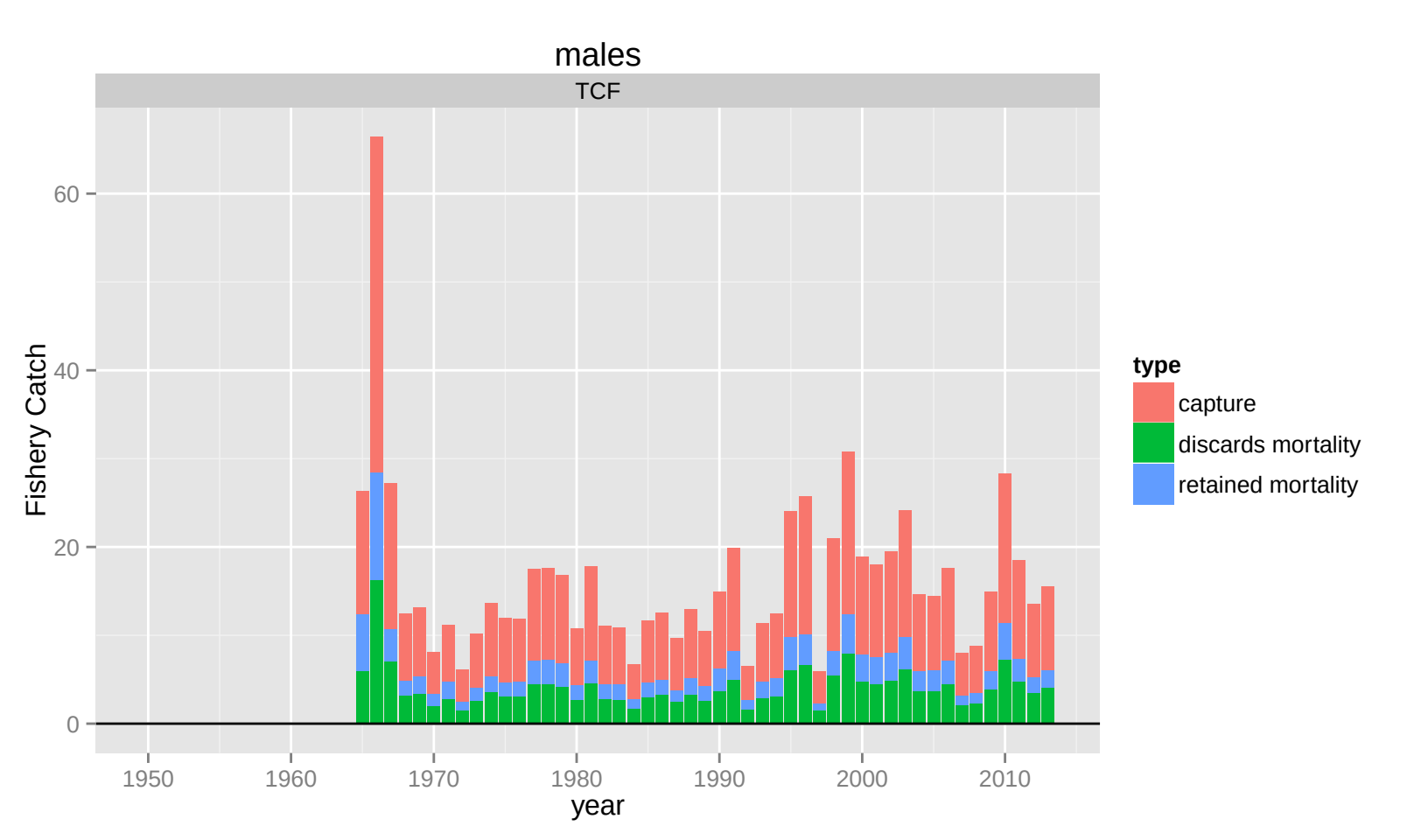

male, mature, old_shell
TCF
Max. Fishing Rate (yr^{-1})
1.0
0.8
0.6
0.4
0.2
0.0
1950
1960
1970
1980
1990
2000
2010
year
capture
discards mortality
retained mortality

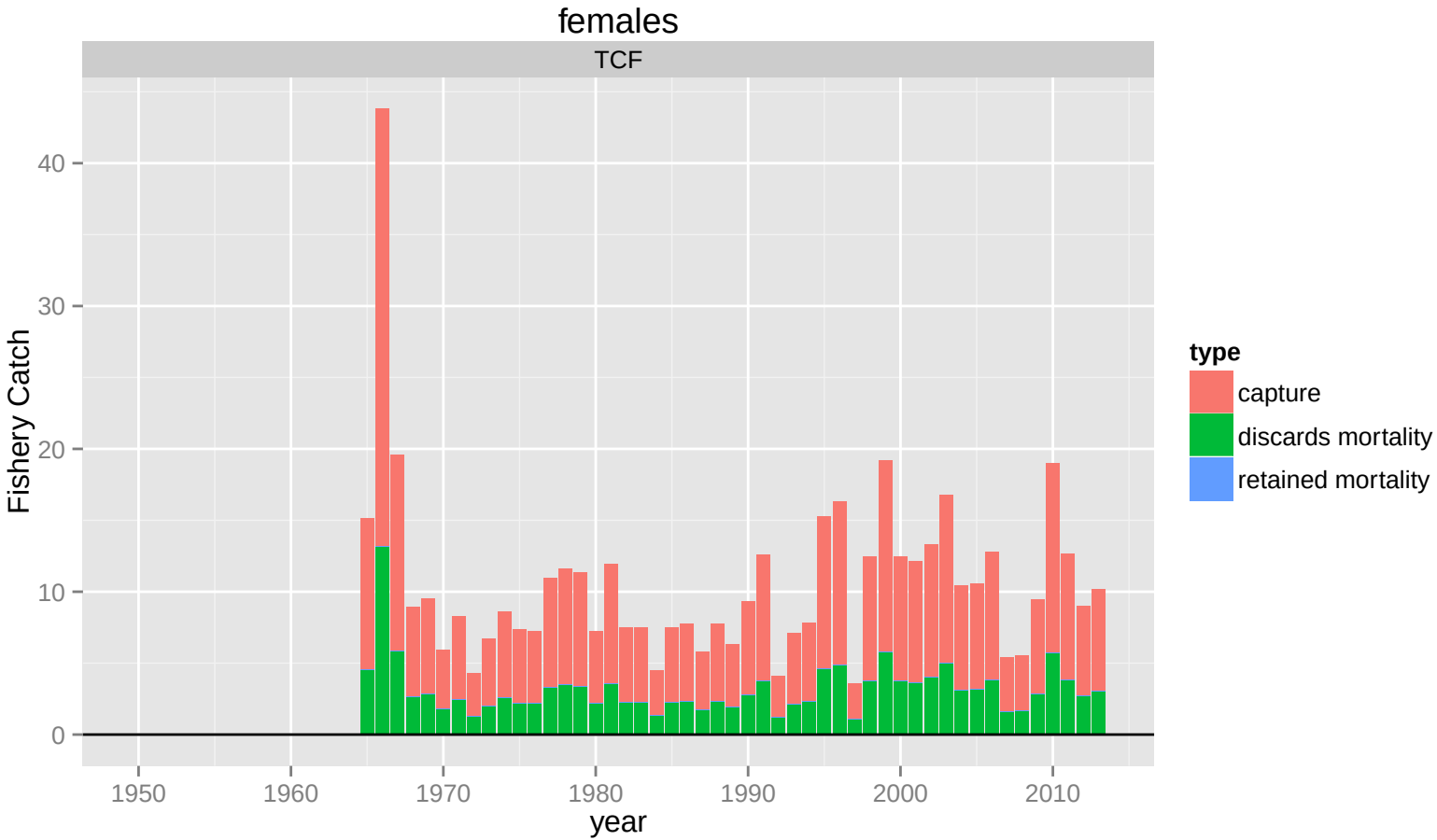

female, immature, new_shell
TCF
Max. Fishing Rate (yr^{-1})
1.0
0.8
0.6
0.4
0.2
0.0
1950
1960
1970
1980
1990
2000
2010
year
capture
discards mortality
retained mortality

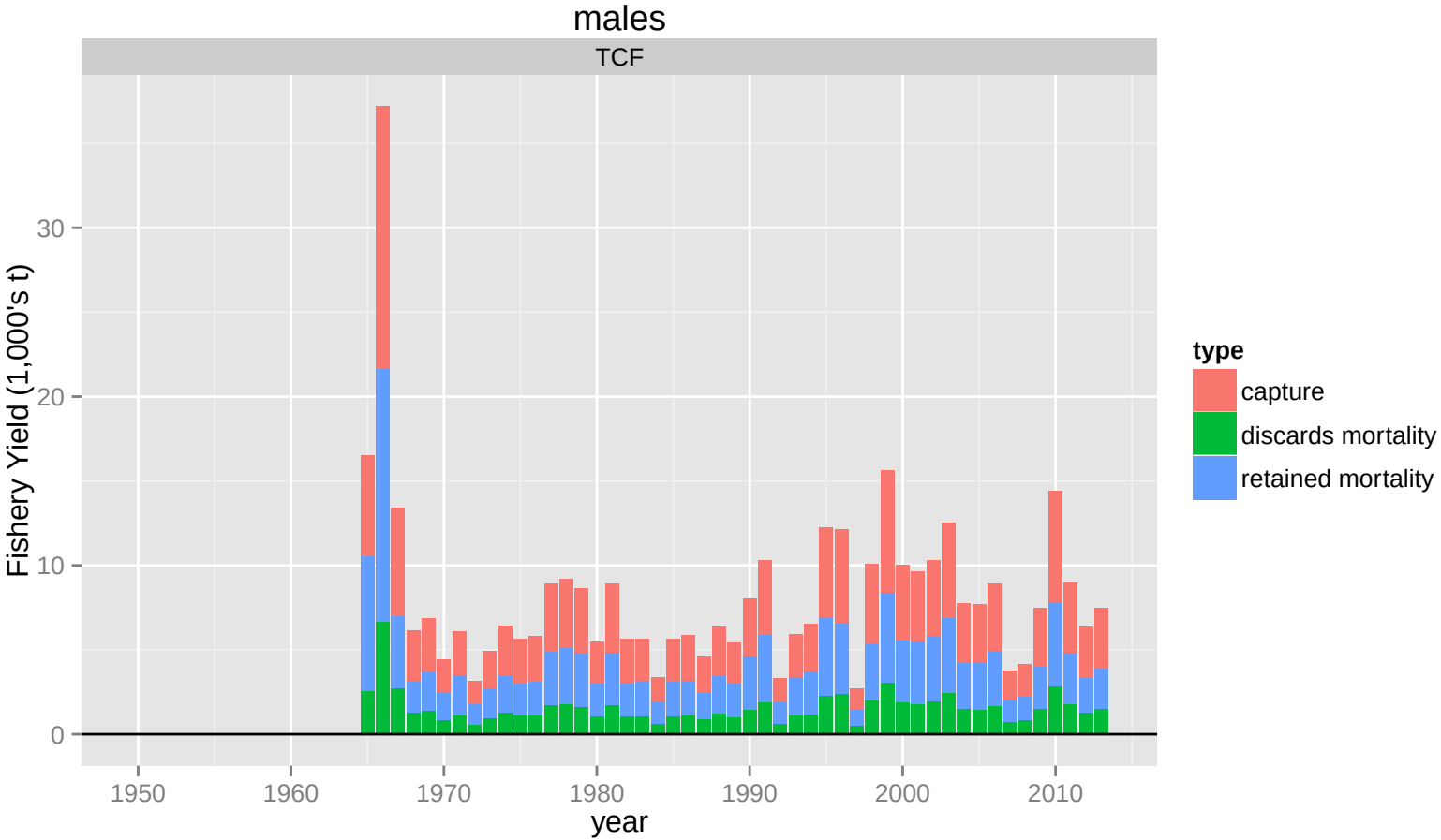

female, immature, old_shell
TCF
Max. Fishing Rate (yr^{-1})
1.0
0.8
0.6
0.4
0.2
0.0
1950
1960
1970
1980
1990
2000
2010
year
capture
discards mortality
retained mortality

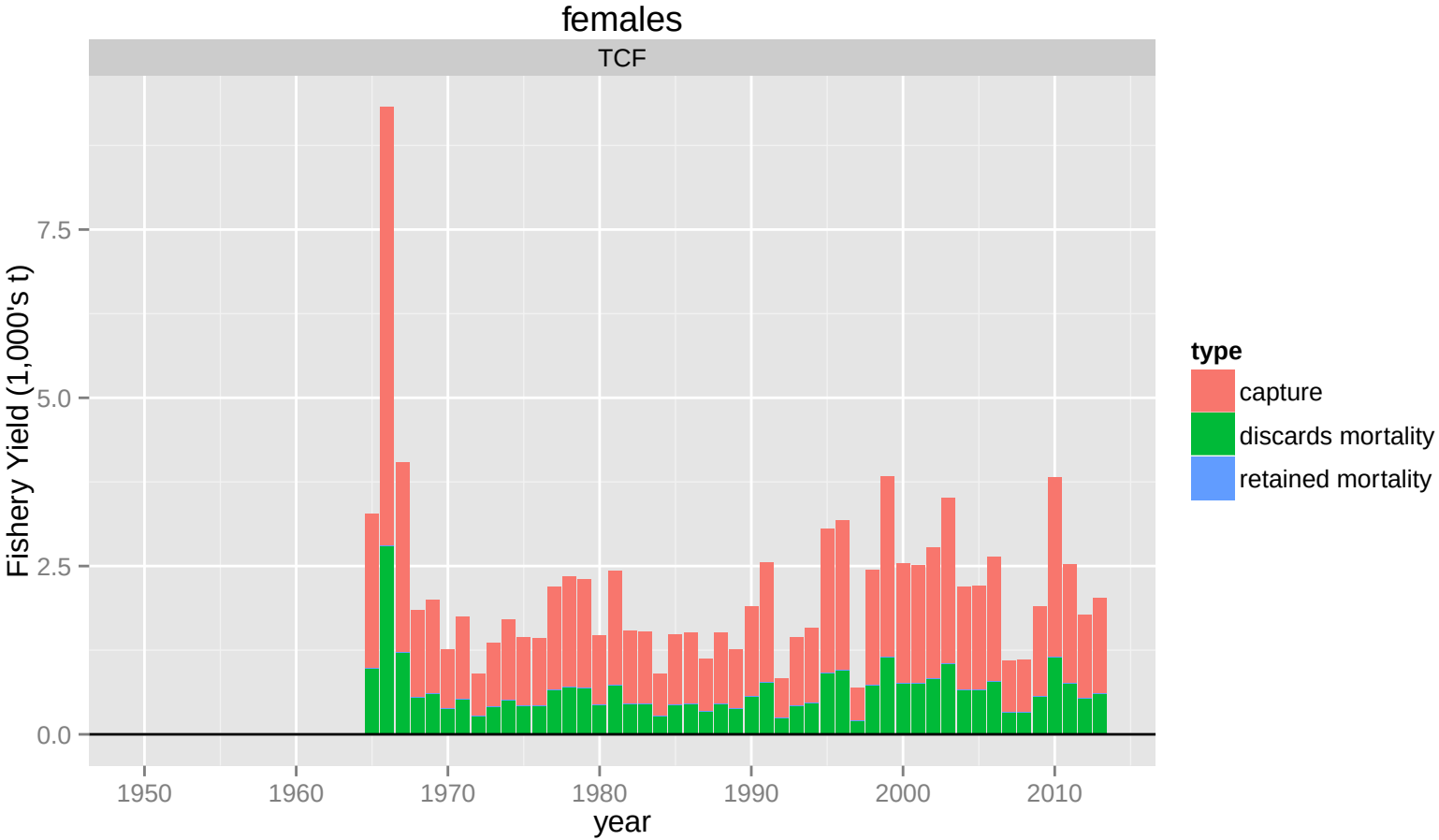

female, mature, new_shell
TCF
Max. Fishing Rate (yr^{-1})
1.0
0.8
0.6
0.4
0.2
0.0
1950
1960
1970
1980
1990
2000
2010
year
capture
discards mortality
retained mortality

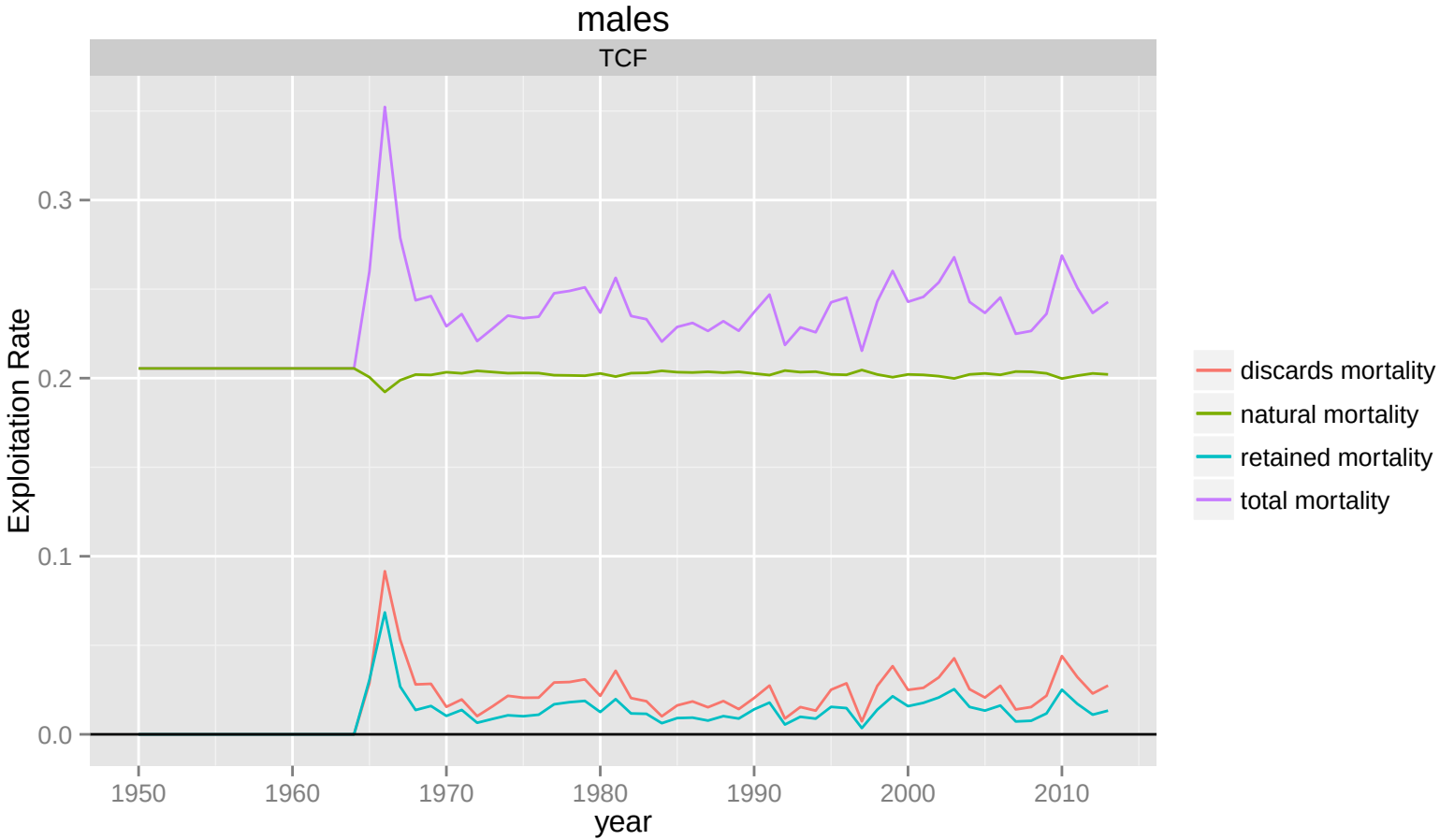

female, mature, old_shell
TCF
Max. Fishing Rate (yr^{-1})
1.0
0.8
0.6
0.4
0.2
0.0
1950
1960
1970
1980
1990
2000
2010
year
capture
discards mortality
retained mortality

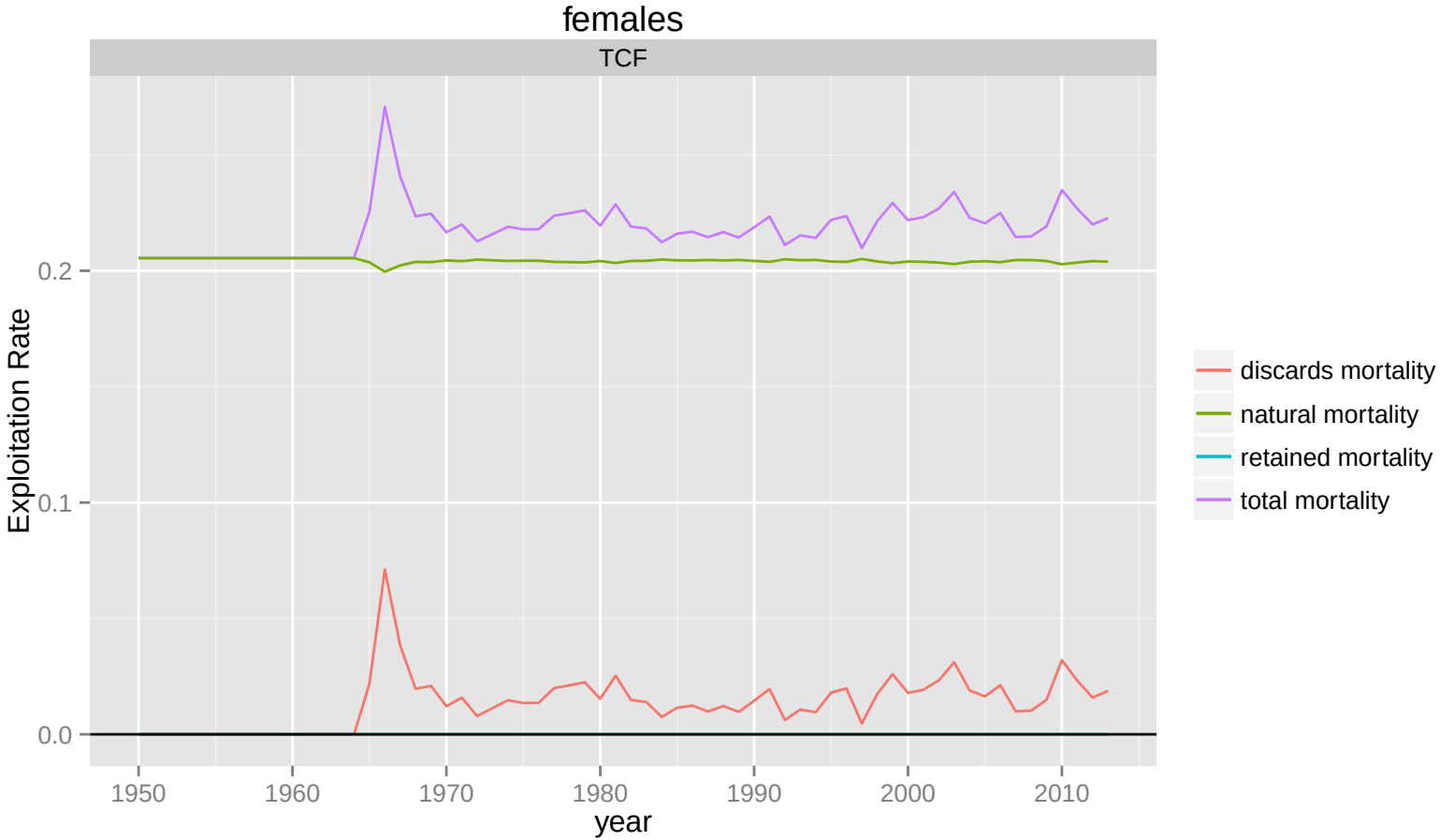

males
TCF
Fishery Catch
60
40
20
0
1950
1960
1970
1980
1990
2000
2010
year
type
capture
discards mortality
retained mortality


females
TCF
Fishery Catch
0
10
20
30
40
1950
1960
1970
1980
1990
2000
2010
year
type
capture
discards mortality
retained mortality


males
TCF
Fishery Yield (1,000's t)
0
10
20
30
1950
1960
1970
1980
1990
2000
2010
year
type
capture
discards mortality
retained mortality


females
TCF
Fishery Yield (1,000's t)
7.5
5.0
2.5
0.0
1950
1960
1970
1980
1990
2000
2010
year
type
capture
discards mortality
retained mortality


males
TCF
Exploitation Rate
0.0
0.1
0.2
0.3
1950
1960
1970
1980
1990
2000
2010
year
discards mortality
natural mortality
retained mortality
total mortality


females
TCF
Exploitation Rate
0.0
0.1
0.2
1950
1960
1970
1980
1990
2000
2010
year
discards mortality
natural mortality
retained mortality
total mortality