

Appendix B. Data files for model 26.0

Data files can be provided by the author in a more readable format, katie.palof@alaska.gov

Model 26.0 data file for 2026

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#
# Now base data file for model 24.0c.2 for fall 2025 25f
# historically named: bbrkc211_24f_oct24.dat / bbrkc_25f_D_1s.dat
# date: 6-12-2024/ 8-14-2024 / 10-21-2024 / 1-14-2025 v18 GMACS / 2-11-25 v20 / 4-20-2025 updated total catch time series; update for 1-shell / 8-
# adjusted to increase size bins Spring 2026 / 8-11-26
#=====
# Gmacs Main Data File Version 1.1: BBRKC Example
# GEAR_INDEX DESCRIPTION
# 1 : Pot fishery retained catch.
# 1 : Pot fishery with discarded catch.
# 2 : Trawl bycatch
# 3 : Tanner bycatch
# 4 : Fixed Gear
# 5 : NMFS Trawl Survey
# 6 : BSFRF Survey
# Fisheries: 1 Pot Fishery, 2 Pot Discard, 3 Trawl by-catch, 4 Tanner bycatch 5 fixed gear
# Surveys: 6 NMFS Trawl Survey, 7 BSFRF Survey
#=====
1975 # Start year
2025 # End year - update annually in fall
7 # Number of seasons
6 # Number of fleets (fishing fleets and surveys)
2 # Number of sexes
1 #2 # Number of shell condition types
1 # Number of maturity types
23 # Number of size-classes in the model
7 # Season recruitment occurs
7 # Season molting and growth occurs
7 #6 # Season to calculate SSB
1 # Season for N output
# maximum size-class (males then females)
23 18
# size_breaks (a vector giving the break points between size intervals, dim=nclass+1)
65 70 75 80 85 90 95 100 105 110 115 120 125 130 135 140 145 150 155 160 165 170 175 180
# Natural mortality per season input type (1 = vector by season, 2 = matrix by season/year)
2
# Proportion of the total natural mortality to be applied each season
0.0000 0.2329 0.0000 0.2671 0.000 0.194 0.306 #1975
0.0000 0.2795 0.0000 0.2205 0.000 0.194 0.306 #1976
0.0000 0.3233 0.0000 0.1767 0.000 0.194 0.306 #1977
0.0000 0.2548 0.0000 0.2452 0.000 0.194 0.306 #1978
0.0000 0.2493 0.0000 0.2507 0.000 0.194 0.306 #1979
0.0000 0.2493 0.0000 0.2507 0.000 0.194 0.306 #1980
0.0000 0.2493 0.0000 0.2507 0.000 0.194 0.306 #1981
0.0000 0.2356 0.0000 0.2644 0.000 0.194 0.306 #1982
0.0000 0.2400 0.0000 0.2600 0.000 0.194 0.306 #1983
0.0000 0.2712 0.0000 0.2288 0.000 0.194 0.306 #1984
0.0000 0.2438 0.0000 0.2562 0.000 0.194 0.306 #1985
0.0000 0.2521 0.0000 0.2479 0.000 0.194 0.306 #1986
0.0000 0.2493 0.0000 0.2507 0.000 0.194 0.306 #1987
0.0000 0.2438 0.0000 0.2562 0.000 0.194 0.306 #1988
0.0000 0.2493 0.0000 0.2507 0.000 0.194 0.306 #1989
0.0000 0.3507 0.0000 0.1493 0.000 0.194 0.306 #1990
0.0000 0.3425 0.0000 0.1575 0.000 0.194 0.306 #1991
0.0000 0.3425 0.0000 0.1575 0.000 0.194 0.306 #1992
0.0000 0.3452 0.0000 0.1548 0.000 0.194 0.306 #1993
0.0000 0.3400 0.0000 0.1600 0.000 0.194 0.306 #1994
0.0000 0.3400 0.0000 0.1600 0.000 0.194 0.306 #1995
0.0000 0.3400 0.0000 0.1600 0.000 0.194 0.306 #1996
0.0000 0.3400 0.0000 0.1600 0.000 0.194 0.306 #1997
0.0000 0.3400 0.0000 0.1600 0.000 0.194 0.306 #1998
0.0000 0.3000 0.0000 0.2000 0.000 0.194 0.306 #1999
0.0000 0.3000 0.0000 0.2000 0.000 0.194 0.306 #2000
0.0000 0.3000 0.0000 0.2000 0.000 0.194 0.306 #2001
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0.0000 0.3000 0.0000 0.2000 0.000 0.194 0.306 #2002
0.0000 0.3000 0.0000 0.2000 0.000 0.194 0.306 #2003
0.0000 0.3000 0.0000 0.2000 0.000 0.194 0.306 #2004
0.0000 0.3000 0.0000 0.2000 0.000 0.194 0.306 #2005
0.0000 0.3000 0.0000 0.2000 0.000 0.194 0.306 #2006
0.0000 0.3000 0.0000 0.2000 0.000 0.194 0.306 #2007
0.0000 0.3000 0.0000 0.2000 0.000 0.194 0.306 #2008
0.0000 0.3000 0.0000 0.2000 0.000 0.194 0.306 #2009
0.0000 0.3000 0.0000 0.2000 0.000 0.194 0.306 #2010
0.0000 0.3000 0.0000 0.2000 0.000 0.194 0.306 #2011
0.0000 0.3000 0.0000 0.2000 0.000 0.194 0.306 #2012
0.0000 0.3000 0.0000 0.2000 0.000 0.194 0.306 #2013
0.0000 0.3000 0.0000 0.2000 0.000 0.194 0.306 #2014
0.0000 0.3000 0.0000 0.2000 0.000 0.194 0.306 #2015
0.0000 0.3000 0.0000 0.2000 0.000 0.194 0.306 #2016
0.0000 0.3000 0.0000 0.2000 0.000 0.194 0.306 #2017
0.0000 0.3000 0.0000 0.2000 0.000 0.194 0.306 #2018
0.0000 0.3000 0.0000 0.2000 0.000 0.194 0.306 #2019
0.0000 0.3000 0.0000 0.2000 0.000 0.194 0.306 #2020
0.0000 0.3000 0.0000 0.2000 0.000 0.194 0.306 #2021
0.0000 0.3000 0.0000 0.2000 0.000 0.194 0.306 #2022 update annually
0.0000 0.3000 0.0000 0.2000 0.000 0.194 0.306 #2023
0.0000 0.3000 0.0000 0.2000 0.000 0.194 0.306 #2024
0.0000 0.3000 0.0000 0.2000 0.000 0.194 0.306 #2025
#0.0000 0.3000 0.0000 0.2000 0.000 0.194 0.306 #2026
# Fishing fleet names (delimited with: no spaces in names)
Pot_Fishery Trawl_Bycatch Bairdi_Fishery_Bycatch Fixed_Gear
# Survey names (delimited with: no spaces in names)
NMFS_Trawl BSFRF
# Are the seasons instantaneous (0) or continuous (1)
1 1 1 1 1 1 1
#1 1 1 1 1 1 1
# Input data format (0 = old, 1=new)
0
# option for effort extrapolation (0: standard gmacs approach; 1: TCSAM02 approach) new 20260505
0
# Number of catch data frames
7
# Number of rows in each data frame
51 36 36 50 27 27 30 # updated annually with new data
## ----- ##
## CATCH DATA
## Type of catch: 1 = retained, 2 = discard, 0 = total
## Units of catch: 1 = biomass, 2 = numbers
## for BBRKC Units are in 1000 mt for landed & discards.
## ----- ##
## Male retained pot fishery (tonnes)
#year seas fleet sex obs cv type units mult effort discard_mortality
1975 3 1 1 23281.2 0.03 1 1 1 0 0.2
1976 3 1 1 28993.6 0.03 1 1 1 0 0.2
1977 3 1 1 31736.9 0.03 1 1 1 0 0.2
1978 3 1 1 39743 0.03 1 1 1 0 0.2
1979 3 1 1 48910 0.03 1 1 1 0 0.2
1980 3 1 1 58943.6 0.03 1 1 1 0 0.2
1981 3 1 1 15236.8 0.03 1 1 1 0 0.2
1982 3 1 1 1361.3 0.03 1 1 1 0 0.2
1983 3 1 1 0.1 0.03 1 1 1 0 0.2 #AEP
1984 3 1 1 1897.1 0.03 1 1 1 0 0.2
1985 3 1 1 1893.8 0.03 1 1 1 0 0.2
1986 3 1 1 5168.2 0.03 1 1 1 0 0.2
1987 3 1 1 5574.2 0.03 1 1 1 0 0.2
1988 3 1 1 3351.1 0.03 1 1 1 0 0.2
1989 3 1 1 4656 0.03 1 1 1 0 0.2
1990 3 1 1 9272.8 0.03 1 1 1 0 0.2
1991 3 1 1 7791.8 0.03 1 1 1 0 0.2
1992 3 1 1 3660.5 0.03 1 1 1 0 0.2
1993 3 1 1 6616.9 0.03 1 1 1 0 0.2
1994 3 1 1 42.3 0.03 1 1 1 0 0.2
1995 3 1 1 36.4 0.03 1 1 1 0 0.2
1996 3 1 1 3865.4 0.03 1 1 1 0 0.2
1997 3 1 1 4032.1 0.03 1 1 1 0 0.2
1998 3 1 1 6778.7 0.03 1 1 1 0 0.2

```

1999	3	1	1	5344.6	0.03	1	1	1	0	0.2	
2000	3	1	1	3717.9	0.03	1	1	1	0	0.2	
2001	3	1	1	3848.5	0.03	1	1	1	0	0.2	
2002	3	1	1	4361.2	0.03	1	1	1	0	0.2	
2003	3	1	1	7105.0	0.03	1	1	1	0	0.2	
2004	3	1	1	6978.1	0.03	1	1	1	0	0.2	
2005	3	1	1	8305.0	0.03	1	1	1	0	0.2	
2006	3	1	1	7083.7	0.03	1	1	1	0	0.2	
2007	3	1	1	9237.9	0.03	1	1	1	0	0.2	
2008	3	1	1	9221.3	0.03	1	1	1	0	0.2	
2009	3	1	1	7226.9	0.03	1	1	1	0	0.2	
2010	3	1	1	6728.5	0.03	1	1	1	0	0.2	
2011	3	1	1	3607.1	0.03	1	1	1	0	0.2	
2012	3	1	1	3621.7	0.03	1	1	1	0	0.2	
2013	3	1	1	3991	0.03	1	1	1	0	0.2	
2014	3	1	1	4538.6	0.03	1	1	1	0	0.2	
2015	3	1	1	4613.7	0.03	1	1	1	0	0.2	
2016	3	1	1	3923.9	0.03	1	1	1	0	0.2	
2017	3	1	1	3093.7	0.03	1	1	1	0	0.2	
2018	3	1	1	2026.5	0.03	1	1	1	0	0.2	
2019	3	1	1	1775.3	0.03	1	1	1	0	0.2	
2020	3	1	1	1257.0	0.03	1	1	1	0	0.2	
2021	3	1	1	17.45	0.03	1	1	1	0	0.2	# update annually - from item7
2022	3	1	1	24.0	0.03	1	1	1	0	0.2	# looks like this is from fish ticket data for test fishery
2023	3	1	1	972.6	0.03	1	1	1	0	0.2	# fishery was open
2024	3	1	1	1048.7	0.03	1	1	1	0	0.2	# fishery was open
2025	3	1	1	1234.0	0.03	1	1	1	0	0.2	# fishery was open
## Total Male pot fishery (t)											
#year	seas	fleet	sex	obs	cv	type	units	mult	effort	discard_mortality	
1990	3	1	1	11621.8	0.04	0	1	1	0	0.2	
1991	3	1	1	9792.9	0.04	0	1	1	0	0.2	
1992	3	1	1	5936.2	0.04	0	1	1	0	0.2	
1993	3	1	1	9516.8	0.04	0	1	1	0	0.2	
1994	3	1	1	62.3	0.04	0	1	1	0	0.2	
1995	3	1	1	52.8	0.04	0	1	1	0	0.2	
1996	3	1	1	3845.2	0.04	0	1	1	0	0.2	
1997	3	1	1	3758.8	0.04	0	1	1	0	0.2	
1998	3	1	1	15644.8	0.04	0	1	1	0	0.2	
1999	3	1	1	12112.4	0.04	0	1	1	0	0.2	
2000	3	1	1	6579.7	0.04	0	1	1	0	0.2	
2001	3	1	1	5711.5	0.04	0	1	1	0	0.2	
2002	3	1	1	6961.4	0.04	0	1	1	0	0.2	
2003	3	1	1	12167.6	0.04	0	1	1	0	0.2	
2004	3	1	1	10692.0	0.04	0	1	1	0	0.2	
2005	3	1	1	13455.1	0.04	0	1	1	0	0.2	
2006	3	1	1	9118.3	0.04	0	1	1	0	0.2	
2007	3	1	1	13782.6	0.04	0	1	1	0	0.2	
2008	3	1	1	14894.9	0.04	0	1	1	0	0.2	
2009	3	1	1	12143.0	0.04	0	1	1	0	0.2	
2010	3	1	1	10052.9	0.04	0	1	1	0	0.2	
2011	3	1	1	5665.3	0.04	0	1	1	0	0.2	
2012	3	1	1	4495.5	0.04	0	1	1	0	0.2	
2013	3	1	1	5305.8	0.04	0	1	1	0	0.2	
2014	3	1	1	8079.2	0.04	0	1	1	0	0.2	
2015	3	1	1	6726.5	0.04	0	1	1	0	0.2	
2016	3	1	1	5651.8	0.04	0	1	1	0	0.2	
2017	3	1	1	4023.2	0.04	0	1	1	0	0.2	
2018	3	1	1	3423.2	0.04	0	1	1	0	0.2	
2019	3	1	1	3143.5	0.04	0	1	1	0	0.2	
2020	3	1	1	2299.5	0.04	0	1	1	0	0.2	
2021	3	1	1	33.8	0.04	0	1	1	0	0.2	
2022	3	1	1	28.3	0.04	0	1	1	0	0.2	# updated from item1a
2023	3	1	1	1543.5	0.04	0	1	1	0	0.2	# updated from item1a
2024	3	1	1	1369.0	0.04	0	1	1	0	0.2	# updated from state_catch_data_code.R
2025	3	1	1	1943.0	0.04	0	1	1	0	0.2	# updated from state_catch_data_code.R
## Female discards Pot fishery											
#year	seas	fleet	sex	obs	cv	type	units	mult	effort	discard_mortality	
1990	3	1	2	3197.3	0.07	0	1	1	0	0.2	
1991	3	1	2	234.1	0.07	0	1	1	0	0.2	
1992	3	1	2	1988.4	0.07	0	1	1	0	0.2	
1993	3	1	2	3141.2	0.07	0	1	1	0	0.2	
1994	3	1	2	1.877	0.07	0	1	1	0	0.2	

1995	3	1	2	1.612	0.07	0	1	1	0	0.2
1996	3	1	2	4.9	0.07	0	1	1	0	0.2
1997	3	1	2	182.7	0.07	0	1	1	0	0.2
1998	3	1	2	2767.7	0.07	0	1	1	0	0.2
1999	3	1	2	28.3	0.07	0	1	1	0	0.2
2000	3	1	2	820.3	0.07	0	1	1	0	0.2
2001	3	1	2	603.4	0.07	0	1	1	0	0.2
2002	3	1	2	45.4	0.07	0	1	1	0	0.2
2003	3	1	2	1774.7	0.07	0	1	1	0	0.2
2004	3	1	2	854.9	0.07	0	1	1	0	0.2
2005	3	1	2	1996.3	0.07	0	1	1	0	0.2
2006	3	1	2	183.5	0.07	0	1	1	0	0.2
2007	3	1	2	791.6	0.07	0	1	1	0	0.2
2008	3	1	2	722.6	0.07	0	1	1	0	0.2
2009	3	1	2	438.6	0.07	0	1	1	0	0.2
2010	3	1	2	589.8	0.07	0	1	1	0	0.2
2011	3	1	2	124.5	0.07	0	1	1	0	0.2
2012	3	1	2	55.6	0.07	0	1	1	0	0.2
2013	3	1	2	490.3	0.07	0	1	1	0	0.2
2014	3	1	2	422.4	0.07	0	1	1	0	0.2
2015	3	1	2	1195.0	0.07	0	1	1	0	0.2
2016	3	1	2	617.0	0.07	0	1	1	0	0.2
2017	3	1	2	266.5	0.07	0	1	1	0	0.2
2018	3	1	2	749.9	0.07	0	1	1	0	0.2
2019	3	1	2	217.8	0.07	0	1	1	0	0.2
2020	3	1	2	76.1	0.07	0	1	1	0	0.2
2021	3	1	2	29.4	0.07	0	1	1	0	0.2
2022	3	1	2	4.7	0.07	0	1	1	0	0.2 # update annually from item 1b
2023	3	1	2	65.3	0.07	0	1	1	0	0.2 # update annually from item 1b
2024	3	1	2	10.6	0.07	0	1	1	0	0.2 # update from state_catch_data_code.R
2025	3	1	2	270.0	0.07	0	1	1	0	0.2 # update from state_catch_data_code.R

Trawl fishery discards (t, without applying to handling mortality rate)

#year	seas	fleet	sex	obs	cv	type	units	mult	effort	discard_mortality
1976	5	2	0	853.494	0.10	2	1	1	0	0.8
1977	5	2	0	1562.313	0.10	2	1	1	0	0.8
1978	5	2	0	1650.775	0.10	2	1	1	0	0.8
1979	5	2	0	1664.925	0.10	2	1	1	0	0.8
1980	5	2	0	1295.625	0.10	2	1	1	0	0.8
1981	5	2	0	274.229	0.10	2	1	1	0	0.8
1982	5	2	0	718.610	0.10	2	1	1	0	0.8
1983	5	2	0	525.554	0.10	2	1	1	0	0.8
1984	5	2	0	1367.550	0.10	2	1	1	0	0.8
1985	5	2	0	487.576	0.10	2	1	1	0	0.8
1986	5	2	0	250.758	0.10	2	1	1	0	0.8
1987	5	2	0	233.045	0.10	2	1	1	0	0.8
1988	5	2	0	747.996	0.10	2	1	1	0	0.8
1989	5	2	0	219.023	0.10	2	1	1	0	0.8
1990	5	2	0	324.883	0.10	2	1	1	0	0.8
1991	5	2	0	436.783	0.10	2	1	1	0	0.8
1992	5	2	0	366.816	0.10	2	1	1	0	0.8
1993	5	2	0	501.770	0.10	2	1	1	0	0.8
1994	5	2	0	109.129	0.10	2	1	1	0	0.8
1995	5	2	0	102.623	0.10	2	1	1	0	0.8
1996	5	2	0	113.495	0.10	2	1	1	0	0.8
1997	5	2	0	71.862	0.10	2	1	1	0	0.8
1998	5	2	0	232.580	0.10	2	1	1	0	0.8
1999	5	2	0	188.101	0.10	2	1	1	0	0.8
2000	5	2	0	102.161	0.10	2	1	1	0	0.8
2001	5	2	0	241.011	0.10	2	1	1	0	0.8
2002	5	2	0	189.018	0.10	2	1	1	0	0.8
2003	5	2	0	171.114	0.10	2	1	1	0	0.8
2004	5	2	0	216.889	0.10	2	1	1	0	0.8
2005	5	2	0	155.924	0.10	2	1	1	0	0.8
2006	5	2	0	189.660	0.10	2	1	1	0	0.8
2007	5	2	0	192.571	0.10	2	1	1	0	0.8
2008	5	2	0	170.561	0.10	2	1	1	0	0.8
2009	5	2	0	118.672	0.10	2	1	1	0	0.8
2010	5	2	0	104.005	0.10	2	1	1	0	0.8
2011	5	2	0	70.286	0.10	2	1	1	0	0.8
2012	5	2	0	42.641	0.10	2	1	1	0	0.8
2013	5	2	0	83.613	0.10	2	1	1	0	0.8
2014	5	2	0	43.129	0.10	2	1	1	0	0.8

2015	5	2	0	56.410	0.10	2	1	1	0	0.8
2016	5	2	0	84.127	0.10	2	1	1	0	0.8
2017	5	2	0	114.624	0.10	2	1	1	0	0.8
2018	5	2	0	97.561	0.10	2	1	1	0	0.8
2019	5	2	0	94.599	0.10	2	1	1	0	0.8
2020	5	2	0	98.436	0.10	2	1	1	0	0.8
2021	5	2	0	43.149	0.10	2	1	1	0	0.8
2022	5	2	0	19.025	0.10	2	1	1	0	0.8 # update annually - gf_weight - trawl_thou column
2023	5	2	0	25.661	0.10	2	1	1	0	0.8
2024	5	2	0	46.60	0.10	2	1	1	0	0.8
2025	5	2	0	31.672	0.10	2	1	1	0	0.8

Tanner crab fishery discards males

#year	seas	fleet	sex	obs	cv	type	units	mult	potlifts	discard_mortality
1975	5	3	1	0	0.07	2	1	1	106.445	0.25
1976	5	3	1	0	0.07	2	1	1	233.667	0.25
1977	5	3	1	0	0.07	2	1	1	408.437	0.25
1978	5	3	1	0	0.07	2	1	1	356.594	0.25
1979	5	3	1	0	0.07	2	1	1	476.410	0.25
1980	5	3	1	0	0.07	2	1	1	496.751	0.25
1981	5	3	1	0	0.07	2	1	1	322.634	0.25
1982	5	3	1	0	0.07	2	1	1	192.538	0.25
1983	5	3	1	0	0.07	2	1	1	44.546	0.25
1984	5	3	1	0	0.07	2	1	1	67.037	0.25
#1985	5	3	1	0	0.07	2	1	1	0.0001	0.25
#1986	5	3	1	0	0.07	2	1	1	0.0001	0.25
1987	5	3	1	0	0.07	2	1	1	39.827	0.25
1988	5	3	1	0	0.07	2	1	1	92.551	0.25
1989	5	3	1	0	0.07	2	1	1	306.175	0.25
1990	5	3	1	0.000	0.07	2	1	1	493.82	0.25
1991	5	3	1	1890.540	0.07	2	1	1	360.864	0.25
1992	5	3	1	263.854	0.07	2	1	1	508.922	0.25
1993	5	3	1	118.614	0.07	2	1	1	286.62	0.25
1994	5	3	1	38.907	0.07	2	1	1	228.254	0.25
#1995	5	3	1	0.000	0.07	2	1	1	201.988	0.25
#1996	5	3	1	0.000	0.07	2	1	1	64.989	0.25
#1997	5	3	1	0.000	0.07	2	1	1	1e-4	0.25
#1998	5	3	1	0.000	0.07	2	1	1	1e-4	0.25
#1999	5	3	1	0.000	0.07	2	1	1	1e-4	0.25
#2000	5	3	1	0.000	0.07	2	1	1	1e-4	0.25
#2001	5	3	1	0.000	0.07	2	1	1	1e-4	0.25
#2002	5	3	1	0.000	0.07	2	1	1	1e-4	0.25
#2003	5	3	1	0.000	0.07	2	1	1	1e-4	0.25
#2004	5	3	1	0.000	0.07	2	1	1	1e-4	0.25
#2005	5	3	1	0.000	0.07	2	1	1	1e-4	0.25
2006	5	3	1	14.334	0.07	2	1	1	15.273	0.25
2007	5	3	1	5.536	0.07	2	1	1	26.441	0.25
2008	5	3	1	9.245	0.07	2	1	1	19.401	0.25
2009	5	3	1	3.089	0.07	2	1	1	6.635	0.25
#2010	5	3	1	0.000	0.07	2	1	1	1e-4	0.25
#2011	5	3	1	0.000	0.07	2	1	1	1e-4	0.25
#2012	5	3	1	0.000	0.07	2	1	1	1e-4	0.25
2013	5	3	1	37.426	0.07	2	1	1	16.633	0.25
2014	5	3	1	68.588	0.07	2	1	1	72.768	0.25
2015	5	3	1	189.229	0.07	2	1	1	130.302	0.25
#2016	5	3	1	0.000	0.07	2	1	1	1e-4	0.25
#2017	5	3	1	0.000	0.07	2	1	1	1e-4	0.25
#2018	5	3	1	0.000	0.07	2	1	1	1e-4	0.25
#2019	5	3	1	0.000	0.07	2	1	1	1e-4	0.25
#2020	5	3	1	0.000	0.07	2	1	1	1e-4	0.25
#2021	5	3	1	0.000	0.07	2	1	1	1e-4	0.25 # update annually
#2022	5	3	1	0.000	0.07	2	1	1	1e-4	0.25 # update annually item 2a
#2023	5	3	1	0.000	0.07	2	1	1	1e-4	0.25 # update annually item 2a
2024	5	3	1	0.15	0.07	2	1	1	1e-4	0.25 # update from state_catch_data_code.R
2025	5	3	1	2.41	0.07	2	1	1	1e-4	0.25

Tanner crab fishery discards females

#year	seas	fleet	sex	obs	cv	type	units	mult	potlifts	discard_mortality
1975	5	3	2	0	0.07	2	1	1	106.445	0.25
1976	5	3	2	0	0.07	2	1	1	233.667	0.25
1977	5	3	2	0	0.07	2	1	1	408.437	0.25
1978	5	3	2	0	0.07	2	1	1	356.594	0.25
1979	5	3	2	0	0.07	2	1	1	476.410	0.25
1980	5	3	2	0	0.07	2	1	1	496.751	0.25

1981	5	3	2	0	0.07	2	1	1	322.634	0.25
1982	5	3	2	0	0.07	2	1	1	192.538	0.25
1983	5	3	2	0	0.07	2	1	1	44.546	0.25
1984	5	3	2	0	0.07	2	1	1	67.037	0.25
#1985	5	3	2	0	0.07	2	1	1	0.0001	0.25
#1986	5	3	2	0	0.07	2	1	1	0.0001	0.25
1987	5	3	2	0	0.07	2	1	1	39.827	0.25
1988	5	3	2	0	0.07	2	1	1	92.551	0.25
1989	5	3	2	0	0.07	2	1	1	306.175	0.25
1990	5	3	2	0.000	0.07	2	1	1	493.82	0.25
1991	5	3	2	3690.303	0.07	2	1	1	360.864	0.25
1992	5	3	2	698.992	0.07	2	1	1	508.922	0.25
1993	5	3	2	99.498	0.07	2	1	1	286.62	0.25
1994	5	3	2	0.488	0.07	2	1	1	228.254	0.25
#1995	5	3	2	0.000	0.07	2	1	1	201.988	0.25
#1996	5	3	2	0.000	0.07	2	1	1	64.989	0.25
#1997	5	3	2	0.000	0.07	2	1	1	1e-4	0.25
#1998	5	3	2	0.000	0.07	2	1	1	1e-4	0.25
#1999	5	3	2	0.000	0.07	2	1	1	1e-4	0.25
#2000	5	3	2	0.000	0.07	2	1	1	1e-4	0.25
#2001	5	3	2	0.000	0.07	2	1	1	1e-4	0.25
#2002	5	3	2	0.000	0.07	2	1	1	1e-4	0.25
#2003	5	3	2	0.000	0.07	2	1	1	1e-4	0.25
#2004	5	3	2	0.000	0.07	2	1	1	1e-4	0.25
#2005	5	3	2	0.000	0.07	2	1	1	1e-4	0.25
2006	5	3	2	0.883	0.07	2	1	1	15.273	0.25
2007	5	3	2	1.606	0.07	2	1	1	26.441	0.25
2008	5	3	2	6.825	0.07	2	1	1	19.401	0.25
2009	5	3	2	3.410	0.07	2	1	1	6.635	0.25
#2010	5	3	2	0.000	0.07	2	1	1	1e-4	0.25
#2011	5	3	2	0.000	0.07	2	1	1	1e-4	0.25
#2012	5	3	2	0.000	0.07	2	1	1	1e-4	0.25
2013	5	3	2	75.637	0.07	2	1	1	16.633	0.25
2014	5	3	2	68.907	0.07	2	1	1	72.768	0.25
2015	5	3	2	449.020	0.07	2	1	1	130.302	0.25
#2016	5	3	2	0.000	0.07	2	1	1	1e-4	0.25
#2017	5	3	2	0.000	0.07	2	1	1	1e-4	0.25
#2018	5	3	2	0.000	0.07	2	1	1	1e-4	0.25
#2019	5	3	2	0.000	0.07	2	1	1	1e-4	0.25
#2020	5	3	2	0.000	0.07	2	1	1	1e-4	0.25
#2021	5	3	2	0.000	0.07	2	1	1	1e-4	0.25
#2022	5	3	2	0.000	0.07	2	1	1	1e-4	0.25 # updated annually item2b
#2023	5	3	2	0.000	0.07	2	1	1	1e-4	0.25 # updated annually item2b
2024	5	3	2	0.000	0.07	2	1	1	1e-4	0.25 #update from state_catch_data_code.R
2025	5	3	2	0.000	0.07	2	1	1	1e-4	0.25

##	Fixed gear	crab	fishery discards	(t, without applying to handling mortality rate)
1996	5	4	0	82.859 0.10 2 1 1 0 0.5
1997	5	4	0	44.979 0.10 2 1 1 0 0.5
1998	5	4	0	36.916 0.10 2 1 1 0 0.5
1999	5	4	0	100.242 0.10 2 1 1 0 0.5
2000	5	4	0	9.446 0.10 2 1 1 0 0.5
2001	5	4	0	70.553 0.10 2 1 1 0 0.5
2002	5	4	0	58.382 0.10 2 1 1 0 0.5
2003	5	4	0	25.351 0.10 2 1 1 0 0.5
2004	5	4	0	30.422 0.10 2 1 1 0 0.5
2005	5	4	0	39.802 0.10 2 1 1 0 0.5
2006	5	4	0	39.134 0.10 2 1 1 0 0.5
2007	5	4	0	64.655 0.10 2 1 1 0 0.5
2008	5	4	0	31.158 0.10 2 1 1 0 0.5
2009	5	4	0	11.614 0.10 2 1 1 0 0.5
2010	5	4	0	4.944 0.10 2 1 1 0 0.5
2011	5	4	0	21.726 0.10 2 1 1 0 0.5
2012	5	4	0	36.897 0.10 2 1 1 0 0.5
2013	5	4	0	110.208 0.10 2 1 1 0 0.5
2014	5	4	0	237.374 0.10 2 1 1 0 0.5
2015	5	4	0	154.775 0.10 2 1 1 0 0.5
2016	5	4	0	55.222 0.10 2 1 1 0 0.5
2017	5	4	0	173.310 0.10 2 1 1 0 0.5
2018	5	4	0	234.586 0.10 2 1 1 0 0.5
2019	5	4	0	96.600 0.10 2 1 1 0 0.5
2020	5	4	0	34.788 0.10 2 1 1 0 0.5

```

2021  5  4  0  114.834 0.10  2  1  1  0  0.5 # udapte annually from gf_weight
2022  5  4  0  123.855 0.10  2  1  1  0  0.5 # udapte annually
2023  5  4  0  82.0  0.10  2  1  1  0  0.5 # udapte annually
2024  5  4  0  37.8  0.10  2  1  1  0  0.5 # udapte annually from fixed_thou
2025  5  4  0  44.44  0.10  2  1  1  0  0.5 # udapte annually from fixed_thou
## ----- ##
## RELATIVE ABUNDANCE DATA
## Units of Abundance: 1 = biomass, 2 = numbers
## TODO: add column for maturity for terminal molt life-histories
## for BBRKC Units are in 1000 mt.
## ----- ##
# Input data format (0 = old, 1=new)
0
## Number of relative abundance indicies
2
# Data type (1=total selectivity; 2=retention*selectivity)
1 1
## Number of rows all indices - so both surveys combined (updated annually with NMFS +2 since male and females seperate)
114
# Survey data (abundance indices, units are 1000 mt)
#Index Year Season Fleet Sex Maturity Abundance CV Units Timing RAI_Index
#Index Year Season Fleet Sex Abundance CV Units
1 1975 1 5 1 0 133084 0.193 1 0 1
1 1976 1 5 1 0 256362.2 0.207 1 0 1
1 1977 1 5 1 0 232538.7 0.144 1 0 1
1 1978 1 5 1 0 199542.2 0.152 1 0 1
1 1979 1 5 1 0 102448.2 0.164 1 0 1
1 1980 1 5 1 0 166524.3 0.221 1 0 1
1 1981 1 5 1 0 68294.4 0.19 1 0 1
1 1982 1 5 1 0 72296.3 0.251 1 0 1
1 1983 1 5 1 0 34761.9 0.214 1 0 1
1 1984 1 5 1 0 96418.3 0.606 1 0 1
1 1985 1 5 1 0 26819.4 0.159 1 0 1
1 1986 1 5 1 0 40549.3 0.42 1 0 1
1 1987 1 5 1 0 46769.1 0.209 1 0 1
1 1988 1 5 1 0 35373.6 0.228 1 0 1
1 1989 1 5 1 0 42357.7 0.232 1 0 1
1 1990 1 5 1 0 38727.8 0.242 1 0 1
1 1991 1 5 1 0 66528 0.443 1 0 1
1 1992 1 5 1 0 25096.2 0.176 1 0 1
1 1993 1 5 1 0 35670.6 0.198 1 0 1
1 1994 1 5 1 0 23002.5 0.174 1 0 1
1 1995 1 5 1 0 27251.9 0.266 1 0 1
1 1996 1 5 1 0 26815.7 0.203 1 0 1
1 1997 1 5 1 0 59638.3 0.264 1 0 1
1 1998 1 5 1 0 46208.6 0.182 1 0 1
1 1999 1 5 1 0 44528.7 0.204 1 0 1
1 2000 1 5 1 0 38390.7 0.216 1 0 1
1 2001 1 5 1 0 27942.7 0.187 1 0 1
1 2002 1 5 1 0 45139.9 0.202 1 0 1
1 2003 1 5 1 0 74641 0.283 1 0 1
1 2004 1 5 1 0 90354.3 0.321 1 0 1
1 2005 1 5 1 0 54789.5 0.171 1 0 1
1 2006 1 5 1 0 51215.2 0.169 1 0 1
1 2007 1 5 1 0 58144.3 0.174 1 0 1
1 2008 1 5 1 0 67214.4 0.249 1 0 1
1 2009 1 5 1 0 43170.4 0.326 1 0 1
1 2010 1 5 1 0 39020.6 0.223 1 0 1
1 2011 1 5 1 0 27385.1 0.213 1 0 1
1 2012 1 5 1 0 30655.4 0.237 1 0 1
1 2013 1 5 1 0 39650.2 0.244 1 0 1
1 2014 1 5 1 0 60649.4 0.191 1 0 1
1 2015 1 5 1 0 37085.3 0.208 1 0 1
1 2016 1 5 1 0 27184.9 0.194 1 0 1
1 2017 1 5 1 0 25335.3 0.173 1 0 1
1 2018 1 5 1 0 16034.2 0.161 1 0 1
1 2019 1 5 1 0 15169.9 0.157 1 0 1
1 2021 1 5 1 0 18235.4 0.177 1 0 1
1 2022 1 5 1 0 24940.4 0.181 1 0 1
1 2023 1 5 1 0 20590.04 0.246 1 0 1
1 2024 1 5 1 0 30553.64 0.168 1 0 1
1 2025 1 5 1 0 30513.23 0.149 1 0 1

```

```

1 2026 1 5 1 0 46943.25 0.266 1 0 1 # males
1 1975 1 5 2 0 66558.7 0.193 1 0 1
1 1976 1 5 2 0 71252.4 0.207 1 0 1
1 1977 1 5 2 0 138684.3 0.144 1 0 1
1 1978 1 5 2 0 143646.6 0.152 1 0 1
1 1979 1 5 2 0 63000.5 0.164 1 0 1
1 1980 1 5 2 0 80701.3 0.221 1 0 1
1 1981 1 5 2 0 62850.4 0.19 1 0 1
1 1982 1 5 2 0 69601.4 0.251 1 0 1
1 1983 1 5 2 0 13713.6 0.214 1 0 1
1 1984 1 5 2 0 56188.5 0.606 1 0 1
1 1985 1 5 2 0 7318.7 0.159 1 0 1
1 1986 1 5 2 0 6884.6 0.42 1 0 1
1 1987 1 5 2 0 22475.5 0.209 1 0 1
1 1988 1 5 2 0 19223.7 0.228 1 0 1
1 1989 1 5 2 0 12778 0.232 1 0 1
1 1990 1 5 2 0 20722.8 0.242 1 0 1
1 1991 1 5 2 0 17363.5 0.443 1 0 1
1 1992 1 5 2 0 12238.2 0.176 1 0 1
1 1993 1 5 2 0 17235.1 0.198 1 0 1
1 1994 1 5 2 0 9101.7 0.174 1 0 1
1 1995 1 5 2 0 10816.3 0.266 1 0 1
1 1996 1 5 2 0 17143.2 0.203 1 0 1
1 1997 1 5 2 0 24392.1 0.264 1 0 1
1 1998 1 5 2 0 37892.7 0.182 1 0 1
1 1999 1 5 2 0 20225.3 0.204 1 0 1
1 2000 1 5 2 0 28990.5 0.216 1 0 1
1 2001 1 5 2 0 24512.6 0.187 1 0 1
1 2002 1 5 2 0 23946.5 0.202 1 0 1
1 2003 1 5 2 0 41118.5 0.283 1 0 1
1 2004 1 5 2 0 40201.7 0.321 1 0 1
1 2005 1 5 2 0 50937.4 0.171 1 0 1
1 2006 1 5 2 0 43262.1 0.169 1 0 1
1 2007 1 5 2 0 45183 0.174 1 0 1
1 2008 1 5 2 0 45867.2 0.249 1 0 1
1 2009 1 5 2 0 47376.6 0.326 1 0 1
1 2010 1 5 2 0 41480.2 0.223 1 0 1
1 2011 1 5 2 0 39023 0.213 1 0 1
1 2012 1 5 2 0 30042 0.237 1 0 1
1 2013 1 5 2 0 22566.7 0.244 1 0 1
1 2014 1 5 2 0 52485.7 0.191 1 0 1
1 2015 1 5 2 0 27089.5 0.208 1 0 1
1 2016 1 5 2 0 33773.1 0.194 1 0 1
1 2017 1 5 2 0 27599.3 0.173 1 0 1
1 2018 1 5 2 0 12770.5 0.161 1 0 1
1 2019 1 5 2 0 13368.6 0.157 1 0 1
1 2021 1 5 2 0 10240.7 0.177 1 0 1
1 2022 1 5 2 0 11257.5 0.181 1 0 1
1 2023 1 5 2 0 17376.5 0.246 1 0 1
1 2024 1 5 2 0 15580.8 0.168 1 0 1
1 2025 1 5 2 0 18561.6 0.149 1 0 1
1 2026 1 5 2 0 20111.3 0.266 1 0 1 # females
# BSFRF
2 2007 1 6 1 0 79542 0.116 1 0 2
2 2008 1 6 1 0 67569 0.094 1 0 2
2 2013 1 6 1 0 68384 0.209 1 0 2
2 2014 1 6 1 0 62327 0.192 1 0 2
2 2015 1 6 1 0 63709 0.161 1 0 2
2 2016 1 6 1 0 34417 0.22 1 0 2
2 2007 1 6 2 0 50811 0.116 1 0 2
2 2008 1 6 2 0 38472 0.094 1 0 2
2 2013 1 6 2 0 26633 0.209 1 0 2
2 2014 1 6 2 0 49414 0.192 1 0 2
2 2015 1 6 2 0 35244 0.161 1 0 2
2 2016 1 6 2 0 43399 0.22 1 0 2
999 #chk <-NEW as of version 2.20.29

# Input data format (0 = old, 1=new)
0
## Number of length frequency matrices
13
## Number of rows in each matrix

```

```

48 34 34 49 49 11 11 30 30 51 51 6 6 #update annually
## Number of bins in each matrix (columns of size data)
23 23 18 23 18 23 18 23 18 23 18 23 18
## SIZE COMPOSITION DATA FOR ALL FLEETS
## ----- ##
## SIZE COMP LEGEND
## Sex: 1 = male, 2 = female, 0 = both sexes combined
## Type of composition: 1 = retained, 2 = discard, 0 = total composition
## Maturity state: 1 = immature, 2 = mature, 0 = both states combined
## Shell condition: 1 = new shell, 2 = old shell, 0 = both shell types combined
## ----- ##
#Retained males
#Year Season Fleet Sex Type Shell Maturity Nsamp DataVec
1975 3 1 1 1 0 0 150 0 0 0 0 0 0 0 0 0 0 0 0.0071 0.0741 0.1721 0.2239 0.2122 0.1464 0.0858 0.0374
1976 3 1 1 1 0 0 150 0 0 0 0 0 0 0 0 0 0 0 0.0016 0.029 0.1418 0.2316 0.2199 0.1635 0.1071 0.0502
1977 3 1 1 1 0 0 150 0 0 0 0 0 0 0 0 0 0 0 0.0017 0.0192 0.1382 0.2442 0.2226 0.1605 0.104 0.0522
1978 3 1 1 1 0 0 150 0 0 0 0 0 0 0 0 0 0 0 0.0012 0.0209 0.1441 0.2588 0.2401 0.1673 0.0966 0.0338
1979 3 1 1 1 0 0 150 0 0 0 0 0 0 0 0 0 0 0 0.0013 0.0119 0.0747 0.1649 0.1998 0.2004 0.1556 0.0911
1980 3 1 1 1 0 0 150 0 0 0 0 0 0 0 0 0 0 0 0.0008 0.0138 0.0919 0.1771 0.195 0.1792 0.1404 0.0961
1981 3 1 1 1 0 0 150 0 0 0 0 0 0 0 0 0 0 0 0.0006 0.0225 0.1164 0.1743 0.1711 0.1584 0.1284 0.1087
1982 3 1 1 1 0 0 150 0 0 0 0 0 0 0 0 0 0 0 0.0000 0.0544 0.2576 0.2802 0.1667 0.0837 0.0508 0.0508
1984 3 1 1 1 0 0 150 0 0 0 0 0 0 0 0 0 0 0 0.0003 0.0023 0.0654 0.311 0.3135 0.1763 0.0846 0.0321 0.
1985 3 1 1 1 0 0 150 0 0 0 0 0 0 0 0 0 0 0 0.0005 0.0044 0.079 0.2869 0.3098 0.1898 0.086 0.0306 0.
1986 3 1 1 1 0 0 150 0 0 0 0 0 0 0 0 0 0 0 0.0016 0.0531 0.2613 0.3289 0.2084 0.0978 0.0352 0.0065
1987 3 1 1 1 0 0 150 0 0 0 0 0 0 0 0 0 0 0 0.0013 0.0284 0.1895 0.3045 0.2522 0.1421 0.0565 0.0121
1988 3 1 1 1 0 0 150 0 0 0 0 0 0 0 0 0 0 0 0.0000 0.0202 0.1294 0.2646 0.2471 0.1876 0.1033 0.0227
1989 3 1 1 1 0 0 150 0 0 0 0 0 0 0 0 0 0 0 0.0005 0.0187 0.1211 0.2209 0.219 0.1908 0.1197 0.0521
1990 3 1 1 1 0 0 150 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.
1991 3 1 1 1 0 0 150 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.
1992 3 1 1 1 0 0 150 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.
1993 3 1 1 1 0 0 150 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.
1996 3 1 1 1 0 0 150 0.0000 0.0000 0.0001 0.0000 0.0001 0.0000 0.0000 0.0001 0.0001 0.0002 0.
1997 3 1 1 1 0 0 150 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0001 0.0001 0.
1998 3 1 1 1 0 0 150 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0001 0.0000 0.0001 0.0001 0.
1999 3 1 1 1 0 0 150 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.
2000 3 1 1 1 0 0 150 0.0000 0.0000 0.0000 0.0000 0.0001 0.0000 0.0001 0.0000 0.0000 0.0001 0.
2001 3 1 1 1 0 0 150 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0001 0.0001 0.0001 0.
2002 3 1 1 1 0 0 150 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0001 0.0000 0.0001 0.
2003 3 1 1 1 0 0 150 0.0000 0.0000 0.0000 0.0000 0.0001 0.0002 0.0001 0.0001 0.0000 0.0001 0.
2004 3 1 1 1 0 0 150 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.
2005 3 1 1 1 0 0 150 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0001 0.0000 0.0000 0.0000 0.
2006 3 1 1 1 0 0 150 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.
2007 3 1 1 1 0 0 150 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.
2008 3 1 1 1 0 0 150 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.
2009 3 1 1 1 0 0 150 0.0000 0.0000 0.0000 0.0000 0.0001 0.0000 0.0000 0.0000 0.0000 0.0000 0.
2010 3 1 1 1 0 0 150 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.
2011 3 1 1 1 0 0 150 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0001 0.0000 0.0000 0.0000 0.
2012 3 1 1 1 0 0 150 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0001 0.
2013 3 1 1 1 0 0 150 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0001 0.0001 0.
2014 3 1 1 1 0 0 150 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.
2015 3 1 1 1 0 0 150 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.
2016 3 1 1 1 0 0 150 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.
2017 3 1 1 1 0 0 150 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0001 0.
2018 3 1 1 1 0 0 150 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0001 0.0000 0.0000 0.
2019 3 1 1 1 0 0 150 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.
2020 3 1 1 1 0 0 150 0 0 0 0 0 0 0 0 0 0 0 0 0
2021 3 1 1 1 0 0 5.05 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.
2022 3 1 1 1 0 0 5 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.
2023 3 1 1 1 0 0 100 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.
2024 3 1 1 1 0 0 100 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.
2025 3 1 1 1 0 0 100 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.
#Total males
#Year Season Fleet Sex Type Shell Maturity Nsamp DataVec
1990 3 1 1 0 0 0 127.2 0 0 0.0004 0.0028 0.0016 0.0043 0.0024 0.013 0.0173 0.0263 0.
1991 3 1 1 0 0 0 150 0.0009 0.0038 0.0075 0.0081 0.0092 0.0149 0.0124 0.0241 0.0236 0.0262 0.
1992 3 1 1 0 0 0 150 0 0.0006 0.0008 0.0075 0.0151 0.0375 0.0591 0.0777 0.0806 0.0838 0.
1993 3 1 1 0 0 0 150 0.0009 0.0025 0.0032 0.0028 0.0035 0.007 0.0177 0.0325 0.0445 0.0615 0.
1996 3 1 1 0 0 0 32.1 0 0 0.0047 0.0187 0.0296 0.0265 0.0109 0.0171 0.0249 0.
1997 3 1 1 0 0 0 150 0 0.0001 0.0002 0.0003 0.0006 0.0081 0.0227 0.0446 0.0519 0.0534 0.
1998 3 1 1 0 0 0 150 0.0001 0.0002 0.0004 0.0021 0.0037 0.0054 0.0056 0.0104 0.0246 0.0588 0.
1999 3 1 1 0 0 0 150 0 0 0 0.0013 0.0013 0.0006 0.0017 0.0013 0.0025 0.0059 0.
2000 3 1 1 0 0 0 150 0.0002 0.002 0.0071 0.0185 0.0234 0.0242 0.0256 0.0262 0.0254 0.0291 0.

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2001	3	1	1	0	0	0	150	0.0004	0.0023	0.0037	0.005	0.0066	0.0139	0.0249	0.0381	0.0447	0.0539	0.0616
2002	3	1	1	0	0	0	150	0.0017	0.0046	0.0044	0.0051	0.0043	0.0054	0.0066	0.0151	0.0272	0.0504	0.0616
2003	3	1	1	0	0	0	150	0.0034	0.0053	0.0065	0.0144	0.0257	0.0323	0.0355	0.0335	0.0315	0.0322	0.0322
2004	3	1	1	0	0	0	150	0.0001	0.0019	0.0061	0.016	0.021	0.0231	0.0316	0.0519	0.0613	0.0616	0.0616
2005	3	1	1	0	0	0	150	0.0001	0.0005	0.0008	0.0017	0.0044	0.0128	0.0199	0.0243	0.0264	0.0383	0.0447
2006	3	1	1	0	0	0	150	0.0001	0.0006	0.0019	0.0065	0.014	0.0171	0.0166	0.0154	0.02	0.0333	0.0447
2007	3	1	1	0	0	0	150	0.0006	0.0021	0.0034	0.0051	0.0089	0.0191	0.034	0.044	0.0477	0.044	0.044
2008	3	1	1	0	0	0	150	0.0001	0.0002	0.0007	0.0026	0.0059	0.0078	0.0088	0.0118	0.0243	0.0445	0.0445
2009	3	1	1	0	0	0	150	0.0002	0.0005	0.0009	0.0016	0.0021	0.0038	0.0093	0.0213	0.033	0.0371	0.0371
2010	3	1	1	0	0	0	150	0.0004	0.0006	0.0013	0.0028	0.0044	0.0061	0.0077	0.0113	0.0179	0.0286	0.0286
2011	3	1	1	0	0	0	150	0.0008	0.0031	0.0055	0.0097	0.01	0.0089	0.0129	0.0147	0.0193	0.0265	0.0265
2012	3	1	1	0	0	0	150	0.0002	0.0003	0.0008	0.0014	0.0037	0.0088	0.0141	0.0189	0.018	0.0192	0.0192
2013	3	1	1	0	0	0	150	0.0001	0.0007	0.0017	0.0022	0.0047	0.0058	0.0096	0.015	0.0257	0.0378	0.0378
2014	3	1	1	0	0	0	150	0.0003	0.0006	0.0008	0.0011	0.0016	0.0037	0.0063	0.0109	0.0153	0.0203	0.0203
2015	3	1	1	0	0	0	150	0.0001	0.0002	0.0008	0.0017	0.0038	0.0059	0.0063	0.007	0.012	0.0271	0.0271
2016	3	1	1	0	0	0	150	0.0001	0.0002	0.0015	0.0034	0.0046	0.0064	0.0111	0.0188	0.0225	0.0279	0.0279
2017	3	1	1	0	0	0	150	0.0002	0.0006	0.0029	0.0110	0.0235	0.0335	0.0291	0.0234	0.0199	0.0247	0.0247
2018	3	1	1	0	0	0	150	0.0004	0.0026	0.0072	0.0082	0.0067	0.0110	0.0232	0.0431	0.0643	0.0723	0.0723
2019	3	1	1	0	0	0	150	0.0000	0.0001	0.0002	0.0019	0.0084	0.0169	0.0217	0.0194	0.0196	0.0355	0.0355
2020	3	1	1	0	0	0	150	0	0.0007	0.0034	0.0075	0.0101	0.0142	0.0177	0.03	0.0426	0.0589	0.0589
2021	3	1	1	0	0	0	55	0.0009	0.0000	0.0082	0.0127	0.0073	0.0127	0.0145	0.0200	0.0218	0.0418	0.0418
2022	3	1	1	0	0	0	54.4	0.0000	0.0000	0.0000	0.0009	0.0000	0.0009	0.0074	0.0064	0.0064	0.0119	0.0119
2023	3	1	1	0	0	0	100	0.0003	0.0007	0.0008	0.0015	0.0059	0.0080	0.0125	0.0147	0.0163	0.0224	0.0224
2024	3	1	1	0	0	0	100	0.0000	0.0000	0.0004	0.0016	0.0038	0.0062	0.0110	0.0228	0.0296	0.0374	0.0374
2025	3	1	1	0	0	0	100	0.0000	0.0000	0.0011	0.0031	0.0034	0.0030	0.0048	0.0129	0.0144	0.0206	0.0206
#Total females																		
#Year	Season	Fleet	Sex	Type	Shell	Maturity	Nsamp	DataVec										
1990	3	1	2	0	0	0	34.95	0	0.0014	0.0029	0.0029	0.0057	0.0072	0.0143	0.0672	0.1016	0.1731	0.1731
1991	3	1	2	0	0	0	18.75	0.0027	0.024	0.0613	0.096	0.1333	0.16	0.1227	0.072	0.0693	0.056	0.056
1992	3	1	2	0	0	0	50	0	0.0013	0.0029	0.0177	0.0803	0.1765	0.195	0.1698	0.0958	0.0815	0.0815
1993	3	1	2	0	0	0	50	0.0013	0.0024	0.0044	0.0059	0.013	0.0326	0.1011	0.1598	0.1443	0.1139	0.1139
1996	3	1	2	0	0	0	0.55	0	0	0	0.0909	0.6364	0.2727	0	0	0	0	0
1997	3	1	2	0	0	0	45.3	0	0	0.0011	0.0011	0.0099	0.0265	0.0364	0.0464	0.0695	0.1391	0.1391
1998	3	1	2	0	0	0	50	0.0002	0.0004	0.0009	0.0026	0.0066	0.0174	0.055	0.1755	0.2268	0.1521	0.1521
1999	3	1	2	0	0	0	2	0	0	0	0.025	0.025	0.025	0.05	0.025	0	0.125	0.125
2000	3	1	2	0	0	0	50	0	0.0044	0.0256	0.0607	0.0744	0.0816	0.0701	0.0543	0.055	0.0998	0.0998
2001	3	1	2	0	0	0	50	0.0007	0.0042	0.0129	0.0307	0.0568	0.0844	0.0986	0.0909	0.0646	0.0568	0.0568
2002	3	1	2	0	0	0	35.3	0.0595	0.1714	0.1601	0.1388	0.1091	0.0581	0.0297	0.0326	0.0382	0.0326	0.0326
2003	3	1	2	0	0	0	50	0.012	0.0164	0.0231	0.0635	0.102	0.1075	0.0682	0.043	0.06	0.0866	0.0866
2004	3	1	2	0	0	0	50	0.0003	0.0056	0.0258	0.0575	0.0774	0.0918	0.1413	0.1308	0.0876	0.0449	0.0449
2005	3	1	2	0	0	0	50	0.0004	0.0013	0.0022	0.005	0.0146	0.05	0.0788	0.0931	0.1233	0.1212	0.1212
2006	3	1	2	0	0	0	50	0.0003	0.004	0.0256	0.1183	0.1939	0.1616	0.0692	0.0519	0.0672	0.0704	0.0704
2007	3	1	2	0	0	0	50	0.0029	0.0124	0.0214	0.0235	0.0461	0.0886	0.1116	0.0832	0.0556	0.0739	0.0739
2008	3	1	2	0	0	0	50	0.0004	0.0018	0.0097	0.0362	0.0775	0.0662	0.0472	0.0772	0.1071	0.0871	0.0871
2009	3	1	2	0	0	0	50	0.0036	0.0083	0.0099	0.0144	0.0164	0.0282	0.0652	0.0867	0.0803	0.0912	0.0912
2010	3	1	2	0	0	0	50	0.0036	0.0051	0.0052	0.0199	0.0276	0.0292	0.0269	0.0444	0.0882	0.1135	0.1135
2011	3	1	2	0	0	0	50	0.013	0.037	0.0604	0.101	0.076	0.0698	0.0583	0.0411	0.0266	0.0359	0.0359
2012	3	1	2	0	0	0	28.15	0.0089	0.0107	0.0124	0.0337	0.0604	0.1155	0.0941	0.0391	0.0178	0.0124	0.0124
2013	3	1	2	0	0	0	50	0.0005	0.0017	0.0083	0.0107	0.0188	0.0365	0.0714	0.1329	0.1423	0.0972	0.0972
2014	3	1	2	0	0	0	50	0.0011	0.0053	0.0068	0.0086	0.0086	0.021	0.0282	0.0274	0.0526	0.0713	0.0713
2015	3	1	2	0	0	0	50	0	0.0011	0.0019	0.0052	0.0122	0.0166	0.0196	0.0357	0.0559	0.0869	0.0869
2016	3	1	2	0	0	0	50	0	0.0003	0.0072	0.0122	0.0183	0.0189	0.0213	0.0346	0.0388	0.0636	0.0636
2017	3	1	2	0	0	0	50	0.0007	0.0032	0.0148	0.0544	0.0992	0.1096	0.0769	0.0317	0.0354	0.0477	0.0477
2018	3	1	2	0	0	0	50	0.0005	0.0054	0.0182	0.0241	0.0237	0.0371	0.0627	0.0942	0.0774	0.0647	0.0647
2019	3	1	2	0	0	0	50	0	0	0.0017	0.0059	0.0287	0.0491	0.038	0.0342	0.0549	0.0757	0.0757
2020	3	1	2	0	0	0	48.05	0	0.0114	0.0375	0.0978	0.0874	0.0499	0.0385	0.0708	0.0572	0.0583	0.0583
2021	3	1	2	0	0	0	50	0.0000	0.0021	0.0035	0.0119	0.0147	0.0272	0.0426	0.0593	0.0670	0.0823	0.0823
2022	3	1	2	0	0	0	14.95	0.0000	0.0000	0.0000	0.0033	0.0000	0.0000	0.0201	0.0167	0.0234	0.0635	0.0635
2023	3	1	2	0	0	0	45.45	0.0011	0.0066	0.0143	0.0330	0.0484	0.0814	0.0594	0.0374	0.0561	0.0418	0.0418
2024	3	1	2	0	0	0	9	0.0000	0.0000	0.0167	0.0722	0.1056						

1985	5	2	1	0.0	0	25	0.0051	0.0014	0.0034	0.0059	0.0100	0.0164	0.0256	0.0396	0.0357	0.0446	0.0538	0.0636	0.0843	0.0862	0.0	
1986	5	2	1	0.0	0	25	0.0044	0.0022	0.0087	0.0033	0.0082	0.0186	0.0224	0.0388	0.0262	0.0246	0.0252	0.0339	0.0618	0.0519	0.0	
1987	5	2	1	0.0	0	24.95	0.0036	0.0000	0.0000	0.0036	0.0073	0.0073	0.0218	0.0291	0.0255	0.0545	0.0473	0.0582	0.0582	0.0	0.0	
1988	5	2	1	0.0	0	15.75	0.0022	0.0000	0.0067	0.0045	0.0067	0.0089	0.0246	0.0157	0.0157	0.0268	0.0515	0.0470	0.0403	0.0	0.0	
1989	5	2	1	0.0	0	25	0.0134	0.0072	0.0062	0.0021	0.0062	0.0052	0.0103	0.0176	0.0176	0.0320	0.0320	0.0403	0.0434	0.0	0.0	
1990	5	2	1	0.0	0	22.7	0.0000	0.0008	0.0008	0.0004	0.0004	0.0016	0.0057	0.0065	0.0105	0.0182	0.0283	0.0420	0.0481	0.0	0.0	
1991	5	2	1	0.0	0	6.875	0.0093	0.0023	0.0047	0.0047	0.0047	0.0070	0.0117	0.0093	0.0234	0.0234	0.0234	0.0397	0.0397	0.0	0.0	
1992	5	2	1	0.0	0	8.325	0.0268	0.0357	0.0268	0.0045	0.0223	0.0134	0.0179	0.0089	0.0179	0.0134	0.0446	0.0268	0.0312	0.0	0.0	
1994	5	2	1	0.0	0	14.275	0.0000	0.0000	0.0000	0.0000	0.0000	0.0034	0.0000	0.0000	0.0000	0.0137	0.0171	0.0171	0.0274	0.0	0.0	
1995	5	2	1	0.0	0	3	0.0000	0.0000	0.0064	0.0096	0.0064	0.0000	0.0000	0.0032	0.0032	0.0096	0.0032	0.0064	0.0191	0.0	0.0	
1996	5	2	1	0.0	0	25	0.0000	0.0000	0.0000	0.0000	0.0000	0.0116	0.0000	0.0233	0.0000	0.0000	0.0000	0.0116	0.0233	0.0	0.0	
1997	5	2	1	0.0	0	8.475	0.0000	0.0013	0.0000	0.0026	0.0077	0.0128	0.0141	0.0180	0.0218	0.0295	0.0359	0.0436	0.0398	0.0	0.0	
1998	5	2	1	0.0	0	25	0.0019	0.0019	0.0000	0.0000	0.0019	0.0019	0.0019	0.0077	0.0039	0.0173	0.0231	0.0308	0.0462	0.0	0.0	
1999	5	2	1	0.0	0	15.725	0.0013	0.0013	0.0013	0.0013	0.0013	0.0000	0.0064	0.0038	0.0115	0.014	0.0178	0.0165	0.0344	0.0	0.0	
2000	5	2	1	0.0	0	18.225	0.0000	0.0000	0.0000	0.0021	0.0042	0.0021	0.0105	0.0063	0.0105	0.0126	0.0168	0.0400	0.0526	0.0	0.0	
2001	5	2	1	0.0	0	19.875	0.0000	0.0000	0.0015	0.0000	0.0000	0.0117	0.0102	0.0263	0.0365	0.0322	0.0380	0.0365	0.0409	0.0	0.0	
2002	5	2	1	0.0	0	25	0.0000	0.0000	0.0054	0.0027	0.0108	0.0244	0.0190	0.0257	0.0339	0.0379	0.0488	0.0339	0.0298	0.0	0.0	
2003	5	2	1	0.0	0	12.9	0.0014	0.0027	0.0027	0.0041	0.0054	0.0054	0.0082	0.0041	0.0095	0.0068	0.0177	0.0259	0.0341	0.0	0.0	
2004	5	2	1	0.0	0	15.9	0.0020	0.0020	0.0041	0.0041	0.0163	0.0081	0.0163	0.0224	0.0305	0.0143	0.0102	0.0122	0.0183	0.0	0.0	
2005	5	2	1	0.0	0	25	0.0030	0.0000	0.0000	0.0015	0.0000	0.0045	0.0059	0.0134	0.0163	0.0178	0.0341	0.0401	0.0445	0.0	0.0	
2006	5	2	1	0.0	0	25	0.0021	0.0041	0.0021	0.0072	0.0093	0.0124	0.0176	0.0165	0.0155	0.0279	0.0310	0.0382	0.0393	0.0	0.0	
2007	5	2	1	0.0	0	25	0.0000	0.0000	0.0000	0.0011	0.0021	0.0021	0.0042	0.0180	0.0159	0.0286	0.0244	0.0297	0.0297	0.0	0.0	
2008	5	2	1	0.0	0	25	0.0000	0.0000	0.0007	0.0007	0.0015	0.0036	0.0029	0.0066	0.008	0.0139	0.0197	0.0255	0.0328	0.0	0.0	
2009	5	2	1	0.0	0	25	0.0000	0.0000	0.0000	0.0000	0.0031	0.0023	0.0023	0.0023	0.0148	0.0241	0.0233	0.0567	0.0575	0.0	0.0	
2010	5	2	1	0.0	0	22.525	0.0000	0.0000	0.0016	0.0016	0.0025	0.0057	0.0041	0.0114	0.018	0.0172	0.0188	0.036	0.0433	0.0	0.0	
2011	5	2	1	0.0	0	10.975	0.0000	0.0000	0.0016	0.0031	0.0047	0.0016	0.0016	0.0047	0.0078	0.0078	0.0078	0.0171	0.0327	0.0	0.0	
2012	5	2	1	0.0	0	7.025	0.0000	0.0027	0.0000	0.0027	0.0000	0.0027	0.0027	0.0027	0.0055	0.0082	0.0082	0.0027	0.0137	0.0	0.0	
2013	5	2	1	0.0	0	12.025	0.0000	0.0029	0.0000	0.0029	0.0029	0.0000	0.0029	0.0058	0.0029	0.0144	0.0115	0.0173	0.0288	0.0	0.0	
2014	5	2	1	0.0	0	6.525	0.0000	0.0000	0.0000	0.0023	0.0046	0.0000	0.0000	0.0046	0.0046	0.0046	0.0139	0.0209	0.0441	0.0	0.0	
2015	5	2	1	0.0	0	10.225	0.0000	0.0037	0.0037	0.0037	0.0074	0.0037	0.0000	0.0185	0.0074	0.0185	0.0148	0.048	0.0332	0.0	0.0	
2016	5	2	1	0.0	0	15.425	0.0000	0.0000	0.0037	0.0037	0.0037	0.0056	0.0112	0.0131	0.015	0.0093	0.0206	0.0299	0.028	0.0	0.0	
2017	5	2	1	0.0	0	17.95	0.0000	0.0011	0.0023	0.0034	0.0046	0.0023	0.0080	0.0068	0.0091	0.0023	0.0091	0.0239	0.0205	0.0	0.0	
2018	5	2	1	0.0	0	22.475	0.0000	0.0000	0.0000	0.0000	0.0042	0.0042	0.0063	0.0084	0.0084	0.0147	0.0126	0.0126	0.0273	0.0	0.0	
2019	5	2	1	0.0	0	20.575	0.0018	0.0009	0.0037	0.0037	0.0028	0.0046	0.0092	0.0055	0.0175	0.0166	0.0378	0.0434	0.0415	0.0	0.0	
2020	5	2	1	0.0	0	19.1	0.0010	0.0010	0.0041	0.0093	0.0175	0.0206	0.0103	0.0093	0.0175	0.0341	0.0310	0.0299	0.0423	0.0	0.0	
2021	5	2	1	0.0	0	12.6	0.004	0.0000	0.0000	0.002	0.002	0.000	0.0080	0.0099	0.0338	0.0159	0.0378	0.0378	0.0258	0.0	0.0	
2022	5	2	1	0.0	0	2.25	0.0111	0.0000	0.0000	0.000	0.000	0.0111	0.0000	0.0000	0.0111	0.0222	0.0111	0.0333	0.0222	0.0	0.0	
2023	5	2	1	0.0	0	3.1	0.0000	0.0000	0.0000	0.0081	0.0000	0.0081	0.0081	0.0161	0.0161	0.0081	0.0484	0.0081	0.0726	0.0	0.0	
2024	5	2	1	0.0	0	6.08	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0123	0.0165	0.0247	0.0082	0.0123	0.0247	0.0165	0.0206	0.0370	0.0
2025	5	2	1	0.0	0	6.05	0.0000	0.0083	0.0083	0.0083	0.0041	0.0041	0.0124	0.0124	0.0083	0.0124	0.0207	0.0165	0.0455	0.0455	0.0579	0.0

#Trawl	bycatch female																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																												
#Year	Season	Fleet	Sex	Type	Shell	Maturity	Nsamp	DataVec																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																					

2006	5	2	2	0	0	0	25	0.0010	0.0052	0.0062	0.0031	0.0072	0.0196	0.0331	0.0413	0.0455	0.0475	0.0258	0.0227	0.0207	0.0196
2007	5	2	2	0	0	0	25	0.0000	0.0000	0.0042	0.0011	0.0053	0.0138	0.0127	0.0159	0.0233	0.0329	0.0350	0.0371	0.0509	0.0520
2008	5	2	2	0	0	0	25	0.0000	0.0000	0.0007	0.0015	0.0044	0.0109	0.0204	0.0284	0.0255	0.0277	0.0343	0.0416	0.0328	0.0336
2009	5	2	2	0	0	0	25	0.0000	0.0000	0.0000	0.0008	0.0062	0.0054	0.0117	0.0218	0.0357	0.0311	0.0272	0.0326	0.0412	0.0179
2010	5	2	2	0	0	0	22.525	0.0000	0.0000	0.0000	0.0000	0.0008	0.0025	0.0180	0.0311	0.0523	0.0442	0.0311	0.0376	0.0286	0.0392
2011	5	2	2	0	0	0	10.975	0.0016	0.0016	0.0031	0.0016	0.0093	0.0062	0.0171	0.0249	0.0373	0.0451	0.0669	0.0715	0.0669	0.0669
2012	5	2	2	0	0	0	7.025	0.0000	0.0000	0.0027	0.0137	0.0027	0.0082	0.0274	0.0110	0.0301	0.0329	0.0466	0.0493	0.0548	0.0548
2013	5	2	2	0	0	0	12.025	0.0000	0.0020	0.0000	0.0000	0.0029	0.0231	0.0173	0.0375	0.0086	0.0288	0.0231	0.0231	0.0490	0.0490
2014	5	2	2	0	0	0	6.525	0.0023	0.0000	0.0023	0.0000	0.0093	0.0070	0.0302	0.0464	0.0394	0.0441	0.0302	0.0232	0.0232	0.0232
2015	5	2	2	0	0	0	10.225	0.0000	0.0000	0.0037	0.0037	0.0037	0.0148	0.0369	0.0295	0.0517	0.0406	0.0332	0.0185	0.0111	0.0111
2016	5	2	2	0	0	0	15.425	0.0000	0.0019	0.0019	0.0056	0.0262	0.0187	0.0299	0.0336	0.0187	0.0318	0.0411	0.0374	0.0393	0.0393
2017	5	2	2	0	0	0	17.95	0.0000	0.0000	0.0046	0.0034	0.0034	0.0057	0.0068	0.0068	0.0068	0.0194	0.0148	0.0171	0.0182	0.0182
2018	5	2	2	0	0	0	22.475	0.0000	0.0000	0.0042	0.0042	0.0231	0.0084	0.0126	0.0021	0.0126	0.0105	0.0168	0.0398	0.0377	0.0377
2019	5	2	2	0	0	0	20.575	0.0009	0.0046	0.0092	0.0092	0.0083	0.0120	0.0120	0.0304	0.0166	0.0221	0.0268	0.0221	0.0277	0.0277
2020	5	2	2	0	0	0	19.1	0.0000	0.0021	0.0052	0.0062	0.0144	0.0144	0.0103	0.0083	0.0083	0.0155	0.0144	0.0155	0.0217	0.0217
2021	5	2	2	0	0	0	12.6	0.0000	0.0020	0.0000	0.0000	0.0040	0.0060	0.0099	0.0080	0.0219	0.0040	0.0080	0.0119	0.0159	0.0159
2022	5	2	2	0	0	0	2.25	0.0000	0.0000	0.0000	0.0000	0.0000	0.0222	0.0222	0.0222	0.0222	0.0444	0.0222	0.0111	0.0111	0.0111
2023	5	2	2	0	0	0	3.1	0.0000	0.0000	0.0000	0.0081	0.0161	0.0081	0.0081	0.0242	0.0242	0.0484	0.0403	0.0000	0.0161	0.0161
2024	5	2	2	0	0	0	6.08	0.0000	0.0000	0.0041	0.0000	0.0041	0.0206	0.0288	0.0206	0.0165	0.0288	0.0123	0.0412	0.0494	0.0494
2025	5	2	2	0	0	0	6.05	0.0124	0.0124	0.0083	0.0124	0.0083	0.0207	0.0124	0.0248	0.0207	0.0207	0.0248	0.0413	0.0289	0.0289

#Tanner	crab	bycatch	Male	(male and female combined compositon are normalized to be 1)																	
#Year	Season	Fleet	Sex	Type	Shell	Maturity	Nsamp	DataVec													
1991	5	1	1	0	0	0	25	0.0088	0.0165	0.0099	0.0143	0.0176	0.0143	0.0352	0.0484	0.0495	0.0385	0.0385	0.0385	0.0385	0.0385
1992	5	1	1	0	0	0	24.125	0.0000	0.0000	0.0036	0.0107	0.0393	0.0571	0.0893	0.0821	0.0893	0.1036	0.0893	0.1036	0.0893	0.0893
1993	5	1	1	0	0	0	12.425	0.0000	0.0000	0.0000	0.0000	0.0086	0.0043	0.0560	0.1034	0.1250	0.1422	0.0560	0.1034	0.1250	0.1422
1994	5	1	1	0	0	0	.425	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0625	0.0000	0.0000	0.0625	0.0625
2006	5	1	1	0	0	0	3.5	0.0000	0.0000	0.0000	0.0000	0.0000	0.0221	0.0515	0.0441	0.0515	0.0809	0.0882	0.0809	0.0882	0.0882
2007	5	1	1	0	0	0	1.325	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0189	0.0189	0.0189	0.0189	0.0189
2008	5	1	1	0	0	0	3.625	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0069	0.0138	0.0276	0.0897	0.0897	0.0897
2009	5	1	1	0	0	0	4.825	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0147	0.0441	0.0588	0.0588	0.0588	0.0588
2013	5	1	1	0	0	0	20.35	0.0000	0.0046	0.0000	0.0000	0.0000	0.0000	0.0321	0.0275	0.0505	0.0688	0.1468	0.0688	0.1468	0.1468
2014	5	1	1	0	0	0	15.775	0.0000	0.0000	0.0039	0.0000	0.0195	0.0195	0.0312	0.0469	0.0391	0.0781	0.0781	0.0781	0.0781	0.0781
2015	5	1	1	0	0	0	25	0.0069	0.0151	0.0069	0.0096	0.0714	0.0975	0.0701	0.0453	0.0604	0.0810	0.0810	0.0810	0.0810	0.0810

#Tanner	crab	bycatch	female																		
#Year	Season	Fleet	Sex	Type	Shell	Maturity	Nsamp	DataVec													
1991	5	1	2	0	0	0	25	0.0072	0.0149	0.0135	0.0144	0.0338	0.0459	0.0797	0.0657	0.1166	0.1620	0.0657	0.1166	0.1620	0.1620
1992	5	1	2	0	0	0	24.125	0.0000	0.0000	0.0015	0.0088	0.0321	0.0642	0.1153	0.1314	0.1226	0.0759	0.0759	0.0759	0.0759	0.0759
1993	5	1	2	0	0	0	12.425	0.0000	0.0000	0.0000	0.0000	0.0075	0.0642	0.1547	0.2113	0.1509	0.0679	0.0679	0.0679	0.0679	0.0679
1994	5	1	2	0	0	0	.425	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0588	0.0000	0.0000	0.0588	0.0588
2006	5	1	2	0	0	0	3.5	0.0000	0.0000	0.0000	0.0071	0.0000	0.0000	0.0000	0.0000	0.0000	0.0143	0.0000	0.0000	0.0143	0.0143
2007	5	1	2	0	0	0	1.325	0.0000	0.0000	0.0000	0.0000	0.0000	0.0189	0.1698	0.2264	0.2453	0.1321	0.1321	0.1321	0.1321	0.1321
2008	5	1	2	0	0	0	3.625	0.0000	0.0000	0.0000	0.0000	0.0000	0.0137	0.0137	0.0274	0.1233	0.1096	0.1096	0.1096	0.1096	0.1096
2009	5	1	2	0	0	0	4.825	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0155	0.0622	0.0674	0.0518	0.0518	0.0518	0.0518	0.0518
2013	5	1	2	0	0	0	20.35	0.0000	0.0000	0.0000	0.0000	0.0000	0.0302	0.0688	0.2466	0.1963	0.1057	0.1057	0.1057	0.1057	0.1057
2014	5	1	2	0	0	0	15.775	0.0000	0.0000	0.0027	0.0053	0.0187	0.0373	0.0800	0.0907	0.2427	0.2587	0.2587	0.2587	0.2587	0.2587
2015	5	1	2	0	0	0	25	0.0005	0.0019	0.0037	0.0070	0.0322	0.0466	0.0854	0.1381	0.1936	0.1493	0.1493	0.1493	0.1493	0.1493

#	Fixed	gear	crab		bycatch		Male														
#Year	season	Fleet	Sex	Type	Shell	Maturity	Nsamp	DataVec													
1996	5	4	1	0	0	0	18.9	0.0055	0.0027	0.0055	0.0082	0.0055	0.0055	0.0275	0.0247	0.0110	0.0275	0.0247	0.0055	0.0137	0.0137
1997	5	4	1	0	0	0	25	0.0000	0.0000	0.0017	0.0034	0.0051	0.0119	0.0153	0.0170	0.0221	0.0256	0.0290	0.0204	0.0341	0.0341
1998	5	4	1	0	0	0	25	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0045	0.0091	0.0364	0.0500	0.0409	0.0409	0.0409
1999	5	4	1	0	0	0	25	0.0000	0.0000	0.0017	0.0000	0.0000	0.0017	0.0017	0.0026	0.0052	0.0070	0.0175	0.0297	0.0489	0.0489
2000	5	4	1	0	0	0	14.775	0.0017	0.0017	0.0017	0.0000	0.0000	0.0000	0.0000	0.0017	0.0034	0.0067	0.0202	0.0421	0.0673	0.0673
2001	5	4	1	0	0	0	25	0.0000	0.0000	0.0005	0.0005	0.0010	0.0039	0.0058	0.0136	0.0194	0.0296	0.0286	0.0374	0.0398	0.0398
2002	5	4	1	0	0	0	25	0.0000	0.0003	0.0003	0.0003	0.0020	0.0037	0.0057	0.0060	0.0131	0.0188	0.0208	0.0243	0.0274	0.0274
2003	5	4	1	0	0	0	25	0.0006	0.0000	0.0017	0.0074	0.0068	0.0097	0.0108	0.0063	0.0074	0.0142	0.0245	0.0330	0.0330	0.0330
2004	5	4	1	0	0	0	25	0.0007	0.0007	0.0035	0.0092	0.0078	0.0135	0.0170	0.0341	0.0369	0.0376	0.0362	0.0298	0.0298	0.0298
2005	5	4	1	0	0	0	25	0.0008	0.0000	0.0016	0.0016	0.0008	0.0066	0.0025	0.0148	0.0091	0.0132	0.0256	0.0280	0.0313	0.0313
2006	5	4	1	0	0	0	25	0.0000	0.0000	0.0000	0.0000	0.0000	0.0020	0.0020	0.0030	0.0040	0.0090	0.0169	0.0169	0.0169	0.0169
2007	5	4	1	0	0	0	19.625	0.0000	0.0000	0.0000	0.0000	0.0000	0.0008	0.0024	0.0016	0.0081	0.0057	0.0105	0.0162	0.0146	0.0146
2008	5	4	1	0	0	0	25	0.0000	0.0000	0.0000	0.0000	0.0033	0.0000	0.0033	0.0112	0.0112	0.0134	0.0234	0.0257	0.0324	0.0324
2009	5	4	1	0	0	0	25	0.0000	0.0000	0.0000	0.0000	0.0010	0.0010	0.0010	0.0097	0.0145	0.0136	0.0145	0.0203	0.0407	0.0407
2010	5	4	1	0	0	0	12.825	0.0000	0.0000	0.0025	0.0000	0.0000	0.0025	0.0025	0.0000	0.0025	0.0025	0.0025	0.0100	0.0174	0.0174
2011	5	4	1	0	0	0	25	0.0046	0.0046	0.0046	0.0046	0.0023	0.0057	0.0034	0.0034	0.0080	0.0046	0.0114	0.0137	0.0205	0.0205
2012	5	4	1	0	0	0	25	0.0000	0.0000	0.0011	0.0021	0.0042	0.0032	0.0095	0.0148	0.0191	0.0180	0.0275	0.0350	0.0297	0.0297
2013	5	4	1	0	0	0	25	0.0025	0.0049	0.0083	0.0129	0.0112	0.0134	0.0158	0.0178	0.0194	0.0248	0.0269	0.0309	0.0328	0.0328
2014	5	4	1	0	0	0	25	0.0010	0.0007	0.0015	0.0020	0.0022	0.0040	0.0080	0.0137	0.0152	0.0164	0.0214	0.0244	0.0365	0.0365
2015	5	4	1	0	0	0	25	0.0005	0.0013	0.0008	0.0015	0.0059	0.0079	0.0102	0.0135	0.0138	0.0196	0.0207	0.0204	0.0176	0.0176
2016	5	4	1	0	0	0	25	0.0025	0.0022	0.0073	0.0089	0.0184	0.0222	0.0225	0.0289	0.0276	0.0247	0.0279	0.0251	0.0203	0.0203

2017	5	4	1	0	0	0	25	0.0000	0.0014	0.0000	0.0077	0.0106	0.0099	0.0113	0.0106	0.0063	0.0141	0.0077	0.0092	0.0070	0.0000
2018	5	4	1	0	0	0	25	0.0005	0.0013	0.0045	0.0091	0.0055	0.0141	0.0245	0.0416	0.0421	0.0502	0.0393	0.0295	0.0234	0.0000
2019	5	4	1	0	0	0	21.575	0.0000	0.0072	0.0119	0.0215	0.0334	0.0310	0.0382	0.0358	0.0310	0.0286	0.0119	0.0263	0.0167	0.0000
2020	5	4	1	0	0	0	6.15	0.0117	0.0000	0.0058	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0058	0.0175	0.0000	0.0000
2021	5	4	1	0	0	0	3.0	0.000	0.000	0.000	0.000	0.000	0.000	0.0083	0.0167	0.0000	0.0083	0.0083	0.0250	0.0167	0.0083
2022	5	4	1	0	0	0	1.25	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.0400	0.0200	0.0000	0.0600	0.0000	0.0600	0.0200
2023	5	4	1	0	0	0	10.7	0.0000	0.0023	0.0047	0.0047	0.0093	0.0304	0.0631	0.0234	0.0561	0.0818	0.0654	0.0724	0.0444	0.0257
2024	5	4	1	0	0	0	23.4	0.0000	0.0000	0.0000	0.0032	0.0085	0.0085	0.0139	0.0192	0.0235	0.0363	0.0353	0.0374	0.0310	0.0342

#updated from bycatch_groundfish.R

2025	5	4	1	0	0	0	25.2	0.0000	0.001	0.0000	0.001	0.0000	0.0000	0.0069	0.0139	0.0159	0.0198	0.0258	0.0347	0.0367	0.0476
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# Fixed gear	crab	bycatch	female																		
#Year	Season	Fleet	Sex	Type	Shell	Maturity	Nsamp	DataVec													
1996	5	4	2	0	0	0	18.9	0.0110	0.0027	0.0110	0.0055	0.0192	0.0055	0.0220	0.0495	0.0549	0.0742	0.0907	0.0989	0.0797	0.0000
1997	5	4	2	0	0	0	25	0.0000	0.0000	0.0017	0.0017	0.0102	0.0170	0.0358	0.0324	0.0392	0.0409	0.0307	0.0409	0.0307	0.0256
1998	5	4	2	0	0	0	25	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0182	0.0273	0.0273	0.0455	0.0409	0.0318	0.0136	0.0273
1999	5	4	2	0	0	0	25	0.0000	0.0000	0.0009	0.0000	0.0000	0.0000	0.0017	0.0061	0.0157	0.0087	0.0070	0.0070	0.0052	0.0070
2000	5	4	2	0	0	0	14.775	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0101	0.0202	0.0337	0.0320	0.0387	0.0000
2001	5	4	2	0	0	0	25	0.0010	0.0005	0.0000	0.0015	0.0005	0.0039	0.0063	0.0116	0.0092	0.0121	0.0243	0.0335	0.0325	0.0223
2002	5	4	2	0	0	0	25	0.0000	0.0003	0.0009	0.0014	0.0031	0.0074	0.0117	0.0171	0.0188	0.0208	0.0322	0.0385	0.0394	0.0285
2003	5	4	2	0	0	0	25	0.0000	0.0006	0.0006	0.0046	0.0085	0.0114	0.0046	0.0097	0.0171	0.0284	0.0319	0.0455	0.0501	0.0489
2004	5	4	2	0	0	0	25	0.0021	0.0007	0.0035	0.0050	0.0106	0.0163	0.0199	0.0185	0.0248	0.0241	0.0298	0.0334	0.0312	0.0277
2005	5	4	2	0	0	0	25	0.0000	0.0000	0.0000	0.0008	0.0008	0.0066	0.0124	0.0206	0.0165	0.0223	0.0330	0.0387	0.0322	0.0379
2006	5	4	2	0	0	0	25	0.0000	0.0000	0.0000	0.0010	0.0010	0.0010	0.0040	0.0229	0.0408	0.0667	0.0677	0.0597	0.0776	0.0726
2007	5	4	2	0	0	0	19.625	0.0000	0.0000	0.0000	0.0000	0.0008	0.0032	0.0162	0.0373	0.0665	0.0852	0.0933	0.0835	0.0673	0.0000
2008	5	4	2	0	0	0	25	0.0000	0.0011	0.0011	0.0011	0.0011	0.0067	0.0134	0.0268	0.0368	0.0502	0.0536	0.0569	0.0636	0.0368
2009	5	4	2	0	0	0	25	0.0000	0.0000	0.0000	0.0000	0.0000	0.0010	0.0058	0.0184	0.0368	0.0242	0.0494	0.0504	0.0533	0.0484
2010	5	4	2	0	0	0	12.825	0.0000	0.0000	0.0000	0.0000	0.0025	0.0050	0.0075	0.0348	0.0274	0.0522	0.0647	0.0896	0.0746	0.1219
2011	5	4	2	0	0	0	25	0.0000	0.0034	0.0011	0.0103	0.0068	0.0160	0.0171	0.0342	0.0536	0.0570	0.0775	0.0855	0.0787	0.0513
2012	5	4	2	0	0	0	25	0.0000	0.0000	0.0011	0.0064	0.0011	0.0042	0.0032	0.0021	0.0117	0.0148	0.0254	0.0265	0.0254	0.0254
2013	5	4	2	0	0	0	25	0.0032	0.0051	0.0119	0.0122	0.0197	0.0248	0.0291	0.0316	0.0354	0.0340	0.0314	0.0425	0.0466	0.0498
2014	5	4	2	0	0	0	25	0.0007	0.0010	0.0020	0.0015	0.0032	0.0067	0.0134	0.0219	0.0351	0.0365	0.0368	0.0356	0.0448	0.0554
2015	5	4	2	0	0	0	25	0.0003	0.0003	0.0003	0.0043	0.0061	0.0099	0.0217	0.0398	0.0579	0.0651	0.0730	0.0765	0.0640	0.0602
2016	5	4	2	0	0	0	25	0.0022	0.0029	0.0041	0.0111	0.0190	0.0200	0.0251	0.0387	0.0463	0.0555	0.0758	0.0739	0.0565	0.0425
2017	5	4	2	0	0	0	25	0.0007	0.0007	0.0021	0.0049	0.0035	0.0085	0.0106	0.0190	0.0218	0.0338	0.0556	0.0725	0.0775	0.0901
2018	5	4	2	0	0	0	25	0.0008	0.0020	0.0018	0.0050	0.0073	0.0179	0.0298	0.0454	0.0454	0.0517	0.0484	0.0552	0.0555	0.0540
2019	5	4	2	0	0	0	21.575	0.0000	0.0024	0.0072	0.0215	0.0191	0.0430	0.0334	0.0501	0.0692	0.0716	0.0644	0.0573	0.0549	0.0000
2020	5	4	2	0	0	0	6.15	0.0000	0.0000	0.0000	0.0000	0.0234	0.0175	0.0643	0.0468	0.0526	0.0702	0.0819	0.1053	0.0585	0.0000
2021	5	4	2	0	0	0	3.0	0.0000	0.0083	0.0083	0.0000	0.0083	0.0083	0.0250	0.0167	0.0333	0.0417	0.0583	0.0333	0.0750	0.0600
2022	5	4	2	0	0	0	1.25	0.0000	0.0000	0.0000	0.000	0.0200	0.0400	0.0400	0.0400	0.0400	0.0600	0.0600	0.0600	0.0400	0.0000
2023	5	4	2	0	0	0	10.7	0.0023	0	0.0047	0.0047	0.0093	0.0093	0.0257	0.0140	0.0374	0.0421	0.0280	0.0374	0.0210	0.0000
2024	5	4	2	0	0	0	23.4	0.0000	0	0.0011	0.0021	0.0096	0.0203	0.0342	0.0395	0.0449	0.0321	0.0363	0.0310	0.0182	0.0000
2025	5	4	2	0	0	0	25.2	0.0000	0	0	0	0.002	0.003	0.0089	0.0168	0.0218	0.0248	0.0208	0.0198	0.0228	0.0000

#NMFS	males	combined																			
#Year	Season	Fleet	Sex	Type	Shell	Maturity	Nsamp	DataVec													
1975	1	5	1	0.000	0	0	100	0.0222	0.0411	0.0299	0.0379	0.0342	0.0299	0.0309	0.0246	0.0264	0.0314	0.0268	0.0292	0.0284	0.0000
1976	1	5	1	0.000	0	0	100	0.0025	0.0127	0.0268	0.0503	0.0623	0.0522	0.0559	0.0449	0.0392	0.0329	0.0409	0.0438	0.0369	0.0000
1977	1	5	1	0.000	0	0	100	0.0040	0.0043	0.0065	0.0102	0.0199	0.0376	0.0453	0.0441	0.0414	0.0450	0.0409	0.0409	0.0311	0.0000
1978	1	5	1	0.000	0	0	100	0.0043	0.0120	0.0136	0.0240	0.0172	0.0191	0.0178	0.0279	0.0296	0.0297	0.0300	0.0304	0.0291	0.0000
1979	1	5	1	0.000	0	0	100	0.0206	0.0154	0.0103	0.0123	0.0144	0.0163	0.0137	0.0155	0.0164	0.0157	0.0235	0.0338	0.0333	0.0000
1980	1	5	1	0.000	0	0	100	0.0067	0.0133	0.0376	0.0287	0.0295	0.0296	0.0265	0.0262	0.0224	0.0192	0.0208	0.0165	0.0231	0.0000
1981	1	5	1	0.000	0	0	100	0.0160	0.0113	0.0182	0.0240	0.0366	0.0362	0.0331	0.0367	0.0291	0.0356	0.0261	0.0285	0.0194	0.0000
1982	1	5	1	0.000	0	0	100	0.0792	0.0811	0.0682	0.0287	0.0240	0.0310	0.0353	0.0287	0.0197	0.0171	0.0198	0.0141	0.0131	0.0000
1983	1	5	1	0.000	0	0	100	0.0325	0.0356	0.0497	0.0665	0.0801	0.0783	0.0598	0.0468	0.0402	0.0398	0.0320	0.0309	0.0190	0.0000
1984	1	5	1	0.000	0	0	100	0.0161	0.0626	0.1229	0.1327	0.0682	0.0389	0.0206	0.0202	0.0208	0.0154	0.0119	0.0072	0.0063	0.0000
1985	1	5	1	0.000	0	0	100	0.0026	0.0128	0.0244	0.0395	0.0589	0.0582	0.0424	0.0403	0.0602	0.0614	0.0513	0.0523	0.0497	0.0000
1986	1	5	1	0.000	0	0	100	0.0112	0.0179	0.0248	0.0201	0.0232	0.0156	0.0408	0.0400	0.0559	0.0485	0.0675	0.0734	0.0700	0.0000
1987	1	5	1	0.000	0	0	100	0.0012	0.0071	0.0340	0.0546	0.0469	0.0317	0.0290	0.0291	0.0310	0.0253	0.0332	0.0270	0.0363	0.0000
1988	1	5	1	0.000	0	0	100	0.0013	0.0013	0.0066	0.0110	0.0133	0.0215	0.0469	0.0430	0.0405	0.0374	0.0262	0.0308	0.0210	0.0000
1989	1	5	1	0.000	0	0	100	0.0017	0.0000	0.0009	0.0024	0.0149	0.0348	0.0184	0.0376	0.0232	0.0412	0.0288	0.0253	0.0450	0.0000
1990	1																				

2001	1	5	1	0.000	0	0	100	0.0069	0.0050	0.0106	0.0149	0.0156	0.0421	0.0372	0.0523	0.0346	0.0200	0.0253	0.0166	0.0140	0.0166
2002	1	5	1	0.000	0	0	100	0.0534	0.0638	0.0436	0.0272	0.0119	0.0091	0.0076	0.0106	0.0229	0.0266	0.0347	0.0290	0.0203	0.0203
2003	1	5	1	0.000	0	0	100	0.0149	0.0069	0.0142	0.0236	0.0392	0.0320	0.0301	0.0165	0.0112	0.0143	0.0133	0.0251	0.0236	0.0236
2004	1	5	1	0.000	0	0	100	0.0371	0.0289	0.0268	0.0195	0.0187	0.0187	0.0350	0.0535	0.0436	0.0445	0.0293	0.0238	0.0142	0.0142
2005	1	5	1	0.000	0	0	100	0.0353	0.0586	0.0419	0.0160	0.0098	0.0228	0.0234	0.0215	0.0184	0.0171	0.0219	0.0233	0.0159	0.0159
2006	1	5	1	0.000	0	0	100	0.0133	0.0197	0.0173	0.0276	0.0291	0.0369	0.0210	0.0208	0.0129	0.0188	0.0116	0.0128	0.0236	0.0236
2007	1	5	1	0.000	0	0	100	0.0017	0.0025	0.0053	0.0084	0.0196	0.0271	0.0345	0.0436	0.0386	0.0288	0.0187	0.0233	0.0236	0.0236
2008	1	5	1	0.000	0	0	100	0.0000	0.0008	0.0038	0.0068	0.0149	0.0188	0.0194	0.0239	0.0372	0.0470	0.0453	0.0328	0.0382	0.0382
2009	1	5	1	0.000	0	0	100	0.0010	0.0005	0.0037	0.0053	0.0053	0.0104	0.0096	0.0225	0.0330	0.0301	0.0315	0.0328	0.0363	0.0363
2010	1	5	1	0.000	0	0	100	0.0000	0.0033	0.0080	0.0094	0.0077	0.0054	0.0161	0.0134	0.0130	0.0153	0.0270	0.0363	0.0302	0.0302
2011	1	5	1	0.000	0	0	100	0.0036	0.0044	0.0125	0.0204	0.0169	0.0138	0.0168	0.0151	0.0182	0.0132	0.0181	0.0203	0.0161	0.0161
2012	1	5	1	0.000	0	0	100	0.0025	0.0040	0.0120	0.0159	0.0128	0.0227	0.0336	0.0247	0.0174	0.0174	0.0153	0.0196	0.0217	0.0217
2013	1	5	1	0.000	0	0	100	0.0008	0.0025	0.0123	0.0145	0.0101	0.0174	0.0134	0.0235	0.0280	0.0261	0.0323	0.0348	0.0303	0.0303
2014	1	5	1	0.000	0	0	100	0.0000	0.0005	0.0026	0.0030	0.0160	0.0313	0.0437	0.0348	0.0313	0.0192	0.0231	0.0326	0.0336	0.0336
2015	1	5	1	0.000	0	0	100	0.0105	0.0207	0.0103	0.0093	0.0047	0.0110	0.0158	0.0149	0.0244	0.0187	0.0285	0.0203	0.0235	0.0235
2016	1	5	1	0.000	0	0	100	0.0066	0.0009	0.0026	0.0032	0.0041	0.0042	0.0034	0.0083	0.0069	0.0129	0.0085	0.0145	0.0127	0.0127
2017	1	5	1	0.000	0	0	100	0.0032	0.0011	0.0029	0.0095	0.0243	0.0199	0.0135	0.0068	0.0083	0.0077	0.0086	0.0134	0.0064	0.0064
2018	1	5	1	0.000	0	0	80.5	0.0051	0.0173	0.0173	0.0153	0.0093	0.0161	0.0144	0.0174	0.0367	0.0160	0.0334	0.0210	0.0033	0.0033
2019	1	5	1	0.000	0	0	71.5	0.0017	0.0036	0.0106	0.0071	0.0071	0.0314	0.0157	0.0244	0.0231	0.0336	0.0299	0.0436	0.0424	0.0424
2021	1	5	1	0.000	0	0	71.375	0.0038	0.0187	0.0136	0.0140	0.0248	0.0129	0.0183	0.0211	0.0198	0.0245	0.0236	0.0229	0.0384	0.0384
2022	1	5	1	0.0000	0	0	90	0.0000	0.0044	0.0176	0.0144	0.0197	0.0098	0.0257	0.0320	0.0209	0.0242	0.0168	0.0295	0.0402	0.0402
2023	1	5	1	0.0000	0	0	100	0.0012	0.0034	0.0070	0.0229	0.0443	0.0524	0.0321	0.0166	0.0168	0.0194	0.0108	0.0261	0.0214	0.0214
2024	1	5	1	0.0000	0	0	100	0.0010	0.0019	0.0110	0.0170	0.0438	0.0266	0.0278	0.0309	0.0392	0.0340	0.0328	0.0270	0.0215	0.0215
2025	1	5	1	0.0000	0	0	100	0.0046	0.0165	0.0091	0.0072	0.0109	0.0190	0.0180	0.0355	0.0284	0.0323	0.0299	0.0284	0.0362	0.0362
2026	1	5	1	0.0000	0	0	100	0.0028	0.0050	0.0108	0.0207	0.0402	0.0668	0.0872	0.0686	0.0261	0.0207	0.0174	0.0225	0.0203	0.0203

#NMFS	female																				
#Year	Season	Fleet	Sex	Type	Shell	Maturity	Nsamp	DataVec													
1975	1	5	2	0.000	0	0	100	0.0331	0.0401	0.0481	0.0494	0.0564	0.0439	0.0444	0.0454	0.0326	0.0289	0.0162	0.0158	0.0116	
1976	1	5	2	0.000	0	0	100	0.0029	0.0092	0.0313	0.0563	0.0688	0.0628	0.0494	0.0269	0.0121	0.0137	0.0066	0.0049	0.0023	0.0023
1977	1	5	2	0.000	0	0	100	0.0026	0.0068	0.0079	0.0193	0.0337	0.0701	0.0808	0.0715	0.0453	0.0435	0.0415	0.0316	0.0151	0.0151
1978	1	5	2	0.000	0	0	100	0.0060	0.0111	0.0187	0.0201	0.0233	0.0418	0.0920	0.1212	0.0791	0.0440	0.0301	0.0267	0.0176	0.0176
1979	1	5	2	0.000	0	0	100	0.0286	0.0154	0.0121	0.0147	0.0148	0.0230	0.0381	0.0734	0.0922	0.0876	0.0565	0.0336	0.0214	0.0214
1980	1	5	2	0.000	0	0	100	0.0048	0.0219	0.0322	0.0292	0.0597	0.0820	0.0487	0.0581	0.0540	0.0424	0.0315	0.0130	0.0110	0.0110
1981	1	5	2	0.000	0	0	100	0.0152	0.0113	0.0151	0.0190	0.0366	0.0456	0.0443	0.0472	0.0600	0.0774	0.0804	0.0510	0.0252	0.0252
1982	1	5	2	0.000	0	0	100	0.0536	0.0954	0.0603	0.0378	0.0423	0.0482	0.0398	0.0232	0.0190	0.0257	0.0281	0.0203	0.0114	0.0114
1983	1	5	2	0.000	0	0	100	0.0174	0.0383	0.0475	0.0629	0.0647	0.0398	0.0341	0.0152	0.0107	0.0042	0.0090	0.0056	0.0061	0.0061
1984	1	5	2	0.000	0	0	100	0.0174	0.0585	0.1229	0.1105	0.0647	0.0325	0.0159	0.0119	0.0038	0.0017	0.0000	0.0004	0.0001	0.0001
1985	1	5	2	0.000	0	0	100	0.0009	0.0155	0.0377	0.0521	0.0643	0.0555	0.0516	0.0397	0.0161	0.0068	0.0000	0.0000	0.0015	0.0015
1986	1	5	2	0.000	0	0	100	0.0124	0.0224	0.0355	0.0274	0.0263	0.0313	0.0362	0.0388	0.0274	0.0113	0.0072	0.0008	0.0000	0.0000
1987	1	5	2	0.000	0	0	100	0.0013	0.0124	0.0525	0.0918	0.0761	0.0462	0.0445	0.0569	0.0414	0.0292	0.0179	0.0079	0.0018	0.0018
1988	1	5	2	0.000	0	0	100	0.0006	0.0076	0.0064	0.0062	0.0139	0.0695	0.0910	0.0979	0.0697	0.0600	0.0407	0.0184	0.0077	0.0077
1989	1	5	2	0.000	0	0	100	0.0017	0.0000	0.0017	0.0082	0.0310	0.0740	0.0646	0.0692	0.0531	0.0376	0.0315	0.0194	0.0064	0.0064
1990	1	5	2	0.000	0	0	100	0.0041	0.0052	0.0235	0.0513	0.0525	0.0071	0.0256	0.0601	0.0732	0.0708	0.0633	0.0410	0.0215	0.0215
1991	1	5	2	0.000	0	0	100	0.0042	0.0115	0.0196	0.0320	0.0218	0.0344	0.0343	0.0310	0.0366	0.0329	0.0281	0.0431	0.0232	0.0232
1992	1	5	2	0.000	0	0	100	0.0000	0.0053	0.0074	0.0197	0.0364	0.0414	0.0625	0.0448	0.0353	0.0273	0.0450	0.0407	0.0265	0.0265
1993	1	5	2	0.000	0	0	100	0.0066	0.0080	0.0175	0.0085	0.0131	0.0248	0.0437	0.0647	0.0639	0.0269	0.0300	0.0268	0.0271	0.0271
1994	1	5	2	0.000	0	0	81.875	0.0000	0.0016	0.0044	0.0030	0.0169	0.0092	0.0124	0.0213	0.0431	0.0416	0.0362	0.0280	0.0395	0.0395
1995	1	5	2	0.000	0	0	100	0.0294	0.0482	0.0316	0.0145	0.0139	0.0182	0.0163	0.0254	0.0234	0.0334	0.0272	0.0234	0.0240	0.0240
1996	1	5	2	0.000	0	0	100	0.0260	0.0219	0.0436	0.0794	0.0796	0.0436	0.0226	0.0218	0.0245	0.0202	0.0161	0.0285	0.0244	0.0244
1997	1	5	2	0.000	0	0	100	0.0004	0.0037	0.0016	0.0020	0.0146	0.0791	0.0969	0.0616	0.0212	0.0137	0.0095	0.0146	0.0143	0.0143
1998	1	5	2	0.000	0	0	100	0.0145	0.0196	0.0101	0.0088	0.0111	0.0116	0.0303	0.1040	0.1153	0.0594	0.0303	0.0252	0.0225	0.0225
1999	1	5	2	0.000	0	0	100	0.0243	0.0169	0.0125	0.0115	0.0044	0.0055	0.0093	0.0164	0.0512	0.0800	0.0583	0.0358	0.0340	0.0340
2000	1	5	2	0.000	0	0	100	0.0018	0.0067	0.0269	0.0403	0.0357	0.0272	0.0255	0.0226	0.0358	0.0524	0.0676	0.0603	0.0419	0.0419
2001	1	5	2	0.000	0	0	100	0.0056	0.0168	0.0195	0.0136	0.0259	0.0598	0.0779	0.0579	0.0395	0.0398	0.0291	0.0691	0.0560	0.0560
2002	1	5	2	0.000	0	0	100	0.0506	0.0769	0.0485	0.0247	0.0222	0.0176	0.0225	0.0520	0.0399	0.0296	0.0163	0.0206	0.0205	0.0205
2003	1	5	2	0.000	0	0	100	0.0163	0.0059	0.0143	0.0314	0.0414	0.0464	0.0239	0.0292	0.0351	0.0533	0.0526	0.0356	0.0219	0.0219
2004	1	5	2	0.000	0	0	100	0.0279	0.0327	0.0194	0.0132	0.0199	0.0369	0.0577	0.0514	0.0334	0.0204	0.0196	0.0232	0.0184	0.0184
2005	1	5	2	0.000	0	0	100	0.0405	0.0561	0.0457	0.0116	0.0099	0.0336	0.0386	0.0521	0.0567	0.0468	0.0336	0.0383	0.0347	0.0347
2006	1	5	2	0.000	0	0	100	0.0143	0.0139	0.0198	0.0425	0.0615	0.0462	0.0254	0.0259	0.0481	0.0656	0.0619	0.0415	0.0301	0.0301
2007	1	5	2	0.000	0	0	100	0.0015	0.0023	0.0064	0.0078	0.0155	0.0356	0.0574	0.0560	0.0325	0.0570	0.0614	0.0641	0.0459	0.0459
2008	1	5	2	0.000	0	0	100	0.0000	0.0027	0.0054	0.0136	0.0116	0.0167	0.0303	0.0570	0.0724	0.0560	0.0555	0.0562	0.0575	0.0575
2009	1	5	2	0.000	0	0	100	0.0005	0.0019	0.0050	0.0055	0.0081	0.0122	0.0206	0.0466	0.0656	0.0866	0.0645	0.0603	0.0523	0.0523
2010	1	5	2	0.000	0	0	100	0.0018	0.0006	0.0037	0.0048	0.0069	0.0116	0.0213	0.0365	0.0565	0.0927	0.0955	0.0700	0.0509	0.0509
2011	1	5	2	0.000	0	0	100	0.0058	0.0085	0.0092	0.0141	0.0284	0.0310	0.0384	0.0484	0.0299	0.0530	0.0637	0.0905	0.0635	0.0635
2012	1	5	2	0.000	0	0	100	0.0293	0.0180	0.0191	0.0250	0.0281	0.0461	0.0351	0.0220	0.0331	0.0355	0.0365	0.0461	0.0663	0.0663
2013	1	5	2	0.000	0	0	100	0.0008	0.0027	0.0093	0.0112	0.0067	0.0125	0.0202	0.0384	0.0429	0.0450	0.0304	0.0302	0.0455	0.0455
2014	1	5	2	0.000	0	0	100	0.0000	0.0000	0.0012	0.0040	0.0091	0.0258	0.0219	0.0320	0.0499	0.0770	0.0569	0.0456	0.0307	0.0307
2015	1	5	2	0.000	0	0	100	0.0074	0.0129	0.0110	0.0055	0.0120	0.0114	0.0107	0.0234	0.0408	0.0461	0.0616	0.0668	0.0531	0.0531
2016	1	5	2	0.000	0	0	100	0.0120	0.0019	0.0036	0.0042	0.0026	0.0051	0.0142	0.0140	0.0388	0.0712	0.0779	0.1019	0.0734	0.0734
2017	1	5	2	0.000	0	0	100	0.0010	0.0028	0.0030	0.0126	0.0258	0.0248	0.0167	0.0188	0.0214	0.0511	0.0665	0.0804	0.0885	0.0885
2018	1	5	2	0.000	0	0	80.5	0.0031	0.0109	0.0172	0.0186	0.0094	0.0198	0.0516	0.0362	0.0421	0.0296	0.0254	0.0652	0.0462	0.0462

```

2019 1 5 2 0.000 0 0 71.5 0.0017 0.0105 0.0018 0.0070 0.0070 0.0140 0.0143 0.0174 0.0312 0.0355 0.0335 0.0279 0.0515
2021 1 5 2 0.000 0 0 71.375 0.0107 0.0051 0.0100 0.0121 0.0033 0.0000 0.0120 0.0356 0.0296 0.0189 0.0224 0.0309 0.0446
2022 1 5 2 0.000 0 0 90 0.0100 0.0147 0.0170 0.0288 0.0125 0.0222 0.0361 0.0419 0.0441 0.0258 0.0182 0.0311 0.0237 0.
2023 1 5 2 0.000 0 0 100 0.0024 0.0107 0.0098 0.0182 0.0233 0.0164 0.0093 0.0271 0.0291 0.0349 0.0440 0.0468 0.0386 0.
2024 1 5 2 0.000 0 0 100 0.0010 0.0021 0.0077 0.0136 0.0302 0.0354 0.0348 0.0548 0.0324 0.0429 0.0327 0.0263 0.0176
2025 1 5 2 0.000 0 0 100 0.0117 0.0228 0.0100 0.0143 0.0133 0.0374 0.0533 0.0553 0.0512 0.0572 0.0298 0.0247 0.0241
2026 1 5 2 0.000 0 0 100 0.0042 0.0034 0.0122 0.0195 0.0525 0.0759 0.0623 0.0403 0.0358 0.0281 0.0142 0.0093 0.0094

#BSFRF males
#Year Season Fleet Sex Type Shell Maturity Nsamp DataVec
2007 1 6 1 0 0 0 100 0.0045 0.0074 0.0103 0.0155 0.0198 0.0321 0.0532 0.0491 0.0443 0.0354 0.0268 0.0231 0.0236 0.
2008 1 6 1 0 0 0 100 0.0017 0.001 0.0093 0.0119 0.0175 0.0279 0.0267 0.0348 0.0428 0.0596 0.0581 0.0455 0.0371 0.
2013 1 6 1 0 0 0 37.875 0 0.0073 0.0145 0.0291 0.0102 0.0136 0.0205 0.0341 0.0357 0.0458 0.0448 0.0383 0.042 0.
2014 1 6 1 0 0 0 52.875 0 0 0.003 0.0101 0.0118 0.0448 0.0546 0.0423 0.047 0.0164 0.0221 0.0321 0.0226 0.
2015 1 6 1 0 0 0 49.375 0.0208 0.0463 0.037 0.0162 0.0069 0.0162 0.0119 0.0174 0.0355 0.0206 0.0274 0.0357 0.0228 0.
2016 1 6 1 0 0 0 36.75 0.0138 0.0039 0.02 0.0193 0.0104 0.0122 0.0064 0.0126 0.0062 0.0034 0.0068 0.0134 0.0204 0.

#BSFRF females
#Year Season Fleet Sex Type Shell Maturity Nsamp DataVec
2007 1 6 2 0 0 0 100 0.0007 0.0016 0.0044 0.0198 0.0302 0.0705 0.0563 0.0345 0.0364 0.0493 0.0501 0.0448 0.0272 0.
2008 1 6 2 0 0 0 100 0.0004 0.0013 0.0088 0.0142 0.0286 0.0483 0.0754 0.0687 0.0463 0.0386 0.0411 0.0357 0.021 0.
2013 1 6 2 0 0 0 37.875 0.0035 0 0.0191 0.0258 0.0176 0.0105 0.0094 0.0407 0.024 0.0291 0.0308 0.0216 0.0232 0.
2014 1 6 2 0 0 0 52.875 0 0.0037 0.0071 0.0037 0.014 0.031 0.0238 0.0415 0.0457 0.0708 0.0481 0.0279 0.0385 0.
2015 1 6 2 0 0 0 49.375 0.0116 0.0324 0.0231 0.0069 0.0153 0.0112 0.0042 0.0231 0.0361 0.0358 0.0427 0.0364 0.0528 0.
2016 1 6 2 0 0 0 36.75 0.0039 0.0178 0.0039 0.0263 0.003 0.0124 0.0096 0.0168 0.0422 0.0514 0.0826 0.1077 0.072 0.

## Growth data
# Type of growth increment (1=growth increment with a CV;2=size-at-release; size-at)
0
# nobs_growth
0
## Note SM used loewss regression for males BBRKC data
## and cubic spine to interpolate 3 sets of female BBRKC data
# MidPoint Sex Increment CV
#67.5 2 14.766667 100000000000000000000
# MidPoint Sex MidPoint Time-at-liberty Size-trans matrix Number of points
# Release Recapture
#-----

#-----MALE MATURITY OGIVE DATA-----
0 #--has male maturity data
#-----

# Environmental data
1 #--format flag (0=old style, 1=new style)
# Number of series
0
# Year ranges

# Indices

# Index Year Value

## eof

9999

```

Model 24.0c.2 control file for 2025

```

### control file for base model 24.0c - 1 molt prob time block;based on model 23.0a fall 2024 estimate base M for males - updates to gmacs jan 2025
## updates for v16 GMACS v2.20.18 / v2.10.20 spring 25 models / updates for one shell 4-11-2025 / base for m 24.0c.2 8-7-25 / base for model 26.0
## ----- ##
## LEADING PARAMETER CONTROLS ##
## Controls for leading parameter vector (theta) ##
## LEGEND ##
## prior: 0 = uniform, 1 = normal, 2 = lognormal, 3 = beta, 4 = gamma ##
## ----- ##

# Blocks to be used in the model (block 0 is the year range)
6
# Number of blocks per group (after the first block, i.e. 1 means two blocks)

```

```

1 2 1 1 1 1
# Block definitions (first block always start with syr; year 0 is last year)
1980 1984 #Natural mortality 1985 previous b/c start of new block
1983 1993 1994 2025 # female growth transition #186
1980 2025 # molt
2005 2020 #???
1982 2026 # 5; Gear 5 selectivity
2005 2026 # 6; Gear 1 time retention

## =====##
# Treatment of environmental variable use
# Number of environmental treatments
0
## Number of links for each treatment
#1
#2
## Treatment #1
## Var power Zscore
#1 1 1990 2020
## Treatment #2
## Var power Zscore
#1 2 2000 2020
#2 1 2010 2020

## ----- ##
## GENERAL CONTROLS
## ----- ##
1975 # First rec_dev
2025 # last rec_dev ; gets updated every year #update
0 # Terminal molting (0 = off, 1 = on). If on, the calc_stock_recruitment_relationship() isn't called in the procedure
2 # Estimated rec_dev phase
2 # Estimated sex_ratio
0.5 # initial sex-ratio
3 # Initial conditions (0 = Unfished, 1 = Steady-state fished, 2 = Free parameters, 3 = Free parameters (revised))
1 # Reference size-class for initial conditons = 3 k.p think this should be 1 for bbrkc
1 # Lambda (proportion of mature male biomass for SPR reference points).
0 # Stock-Recruit-Relationship (0 = none, 1 = Beverton-Holt)
1 # Use years specified to computed average sex ratio in the calculation of average recruitment for reference points (0 = off -i.e. Rec b
200 # Year to compute equilibria !!!NEW 1/2022
5 # Devpar phase (!! )
1940 # First year of bias-correction
1950 # First full bias-correction
2050 # Last full bias-correction
2051 # Last year of bias-correction
0 # recruitment size distribution option (0: standard way; 1: Tanner crab approach) <-NEW as of version 2.20.29
0 # Set to 1 to copy growth from males to females (is tyler switch for single stock AIGKC)

#Initial Lower_bound Upper_bound Prior_type Prior_1 Prior_2 Phase Block Blk_fn Env_L Env_vr RW RW_Blz RW_Sigma
16.5 -10 18 0 -10 20 -2 0 0 0 0 0 0 0 300 # logR0
19.5 -10 25 0 10 25 3 0 0 0 0 0 0 0 300 # logRini, to estimate if NOT initialized at unfished (n68)
16.5 -10 25 0 10 20 1 0 0 0 0 0 0 0 300 #1 # logRbar, to estimate if NOT initialized at unfished #1
72.5 55 100 1 72.5 7.25 -4 0 0 0 0 0 0 0 300 # recruitment expected value (males or combined)
0.726149 0.32 1.64 0 0.1 5 3 0 0 0 0 0 0 0 300 # recruitment scale (variance component) (males or combined)
0 -5 5 0 0 20 -4 0 0 0 0 0 0 0 300 # recruitment expected value (females)
0 -1.69 0.4 0 0 20 3 0 0 0 0 0 0 0 300 # recruitment scale (variance component) (females)
-0.10536 -10 0.75 0 -10 0.75 -4 0 0 0 0 0 0 0 300 # ln(sigma_R)
0.75 0.2 1 3 3 2 -2 0 0 0 0 0 0 0 300 # steepness
0.01 0 1 3 1.01 1.01 -3 0 0 0 0 0 0 0 300 # recruitment autocorrelation
#0 -10 4 0 10 20 2 0 0 0 0 0 0 0 300 # Deviation for size-class 1 (normalization class)
1.107962886 -10 4 0 10 20 9 0 0 0 0 0 0 0 300 # Deviation for size-class 2
0.563229168 -10 4 0 10 20 9 0 0 0 0 0 0 0 300 # Deviation for size-class 3
0.681928313 -10 4 0 10 20 9 0 0 0 0 0 0 0 300 # Deviation for size-class 4
0.491057365 -10 4 0 10 20 9 0 0 0 0 0 0 0 300 # Deviation for size-class 5
0.407911778 -10 4 0 10 20 9 0 0 0 0 0 0 0 300 # Deviation for size-class 6
0.436516143 -10 4 0 10 20 9 0 0 0 0 0 0 0 300 # Deviation for size-class 7
0.406126754 -10 4 0 10 20 9 0 0 0 0 0 0 0 300 # Deviation for size-class 8
0.436145975 -10 4 0 10 20 9 0 0 0 0 0 0 0 300 # Deviation for size-class 9
0.404945229 -10 4 0 10 20 9 0 0 0 0 0 0 0 300 # Deviation for size-class 10
0.304019705 -10 4 0 10 20 9 0 0 0 0 0 0 0 300 # Deviation for size-class 11
0.297375267 -10 4 0 10 20 9 0 0 0 0 0 0 0 300 # Deviation for size-class 12
0.174680071 -10 4 0 10 20 9 0 0 0 0 0 0 0 300 # Deviation for size-class 13
0.084529846 -10 4 0 10 20 9 0 0 0 0 0 0 0 300 # Deviation for size-class 14

```

```

0.01074624 -10 4 0 10 20 9 0 0 0 0 0 0 0 300 # Deviation for size-class 15
-0.190468323 -10 4 0 10 20 9 0 0 0 0 0 0 0 300 # Deviation for size-class 16
-0.376312504 -10 4 0 10 20 9 0 0 0 0 0 0 0 300 # Deviation for size-class 17
-0.699162895 -10 4 0 10 20 9 0 0 0 0 0 0 0 300 # Deviation for size-class 18
-1.158817715 -10 4 0 10 20 9 0 0 0 0 0 0 0 300 # Deviation for size-class 19
-1.173115833 -10 4 0 10 20 9 0 0 0 0 0 0 0 300 # Deviation for size-class 20
-1.173115833 -10 4 0 10 20 9 0 0 0 0 0 0 0 300 # Deviation for size-class 21
-1.173115833 -10 4 0 10 20 9 0 0 0 0 0 0 0 300 # Deviation for size-class 22
-1.173115833 -10 4 0 10 20 9 0 0 0 0 0 0 0 300 # Deviation for size-class 23
0.425704202 -10 4 0 10 20 9 0 0 0 0 0 0 0 300 # Deviation for size-class 1
2.268408593 -10 4 0 10 20 9 0 0 0 0 0 0 0 300 # Deviation for size-class 2
1.810451373 -10 4 0 10 20 9 0 0 0 0 0 0 0 300 # Deviation for size-class 3
1.370357251 -10 4 0 10 20 9 0 0 0 0 0 0 0 300 # Deviation for size-class 4
1.158258088 -10 4 0 10 20 9 0 0 0 0 0 0 0 300 # Deviation for size-class 5
0.596196784 -10 4 0 10 20 9 0 0 0 0 0 0 0 300 # Deviation for size-class 6
0.225756761 -10 4 0 10 20 9 0 0 0 0 0 0 0 300 # Deviation for size-class 7
-0.024785757 -10 4 0 10 20 9 0 0 0 0 0 0 0 300 # Deviation for size-class 8
-0.214045895 -10 4 0 10 20 9 0 0 0 0 0 0 0 300 # Deviation for size-class 9
-0.560539578 -10 4 0 10 20 9 0 0 0 0 0 0 0 300 # Deviation for size-class 10
-0.9742183 -10 4 0 10 20 9 0 0 0 0 0 0 0 300 # Deviation for size-class 11
-1.24580072 -10 4 0 10 20 9 0 0 0 0 0 0 0 300 # Deviation for size-class 12
-1.492928975 -10 4 0 10 20 9 0 0 0 0 0 0 0 300 # Deviation for size-class 13
-1.941358213 -10 4 0 10 20 9 0 0 0 0 0 0 0 300 # Deviation for size-class 14
-2.051015607 -10 4 0 10 20 9 0 0 0 0 0 0 0 300 # Deviation for size-class 15
-1.949566064 -10 4 0 10 20 9 0 0 0 0 0 0 0 300 # Deviation for size-class 16
-1.949566064 -10 4 0 10 20 9 0 0 0 0 0 0 0 300 # Deviation for size-class 17
-1.949566064 -10 4 0 10 20 9 0 0 0 0 0 0 0 300 # Deviation for size-class 18
-100 -101 5 0 10 20 -2 0 0 0 0 0 0 0 300 # Deviation for size-class 19
-100 -101 5 0 10 20 -2 0 0 0 0 0 0 0 300 # Deviation for size-class 20
-100 -101 5 0 10 20 -2 0 0 0 0 0 0 0 300 # Deviation for size-class 21
-100 -101 5 0 10 20 -2 0 0 0 0 0 0 0 300 # Deviation for size-class 22
-100 -101 5 0 10 20 -2 0 0 0 0 0 0 0 300 # Deviation for size-class 23

# weight-at-length input method (1 = allometry [w_l = a*l^b], 2 = vector by sex)
2
## Males
0.000224781 0.000281351 0.000346923 0.000422209 0.000507927 0.000604802 0.000713564 0.00083495 0.0009697 0.00111856 0.00128229 0.00146163 0.
## Females
0.0002151 0.00026898 0.00033137 0.00040294 0.00048437 0.00062711 0.0007216 0.00082452 0.00093615 0.00105678 0.00118669 0.00132613 0.
# Proportion mature by sex
0 0 0 0 0 0 0 0 0 0 1 1 1 1 1 1 1 1 1 1 1 1
0 0 0 0 0 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1
# Proportion legal by sex
0 0 0 0 0 0 0 0 0 0 0 0 1 1 1 1 1 1 1 1 1 1
0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0

## ----- ##

## ----- ##
## GROWTH PARAMETER CONTROLS ##
## Two lines for each parameter if split sex, one line if not ##
## ----- ##
## ===== ##
7 5 # Maximum size-class for recruitment(males then females)
0 # Use functional maturity for terminally molting animals (0=no; 1=Yes)?

## General inputs
# Block: Block number for time-varying growth
# Block_fn: 0: absolute values; 1: exponential
# Env_L: Environmental link - options are 1: additive; 2: multiplicative; 3: exponential
# EnvL_var: Environmental variable
# RW: 0 for not random walk changes; 1 otherwise
# RW_blk: Block number for random walks
# Sigma_RW: Sigma for the random walk parameters
#
# Growth transition
# Type1: Options for the growth matrix
# 1: Pre-specified growth transition matrix (requires molt probability)
# 2: Pre-specified size transition matrix (molt probability is ignored)
# 3: Growth increment is gamma distributed (requires molt probability)
# 4: Post-molt size is gamma distributed (requires molt probability)
# 5: Von Bert.: kappa varies among individuals (requires molt probability)

```

```

# 6: Von Bert.: Linf varies among individuals (requires molt probability)
# 7: Von Bert.: kappa and Linf varies among individuals (requires molt probability)
# 8: Growth increment is normally distributed (requires molt probability)
## Type2: Options for the growth increment model matrix
# 1: Linear
# 2: Individual
# 3: Individual (Same as 2)
## Type1 Type2 Block
      3      3      0      # Growth-transition Males
      3      3      2      # Growth-transition Females

# Molt probability
# Options for the molt probability function
# 0: Pre-specified
# 1: Constant at 1
# 2: Logistic
# 3: Individual
## Type Block
      2      0      # Molt probability Males
      1      0      # Molt probability Females; mature

# General parameter specifications
# Relative: 0: absolute; 1 relative
# Block: Block number for time-varying growth
# Block_fn: 0: absolute values; 1: exponential
# Env_L: Environmental link - options are 1: additive; 2: multiplicative; 3: exponential
# EnvL_var: Environmental variable
# RW: 0 for not random walk changes; 1 otherwise
# RW_blk: Block number for random walks

# Inputs for sex * type 1
# MAIN PARS: Initial Lower_bound Upper_bound Prior_type Prior_1 Prior_2 Phase Block Block_fn Env_L EnvL_var RW RW_Block RW_Sigma
16.5  0  20  0  0  999 -33 0  1  0  0  0  0  0.3 # Males
16.5  0  20  0  0  999 -33 0  1  0  0  0  0  0.3 # Males
16.4  0  20  0  0  999 -33 0  1  0  0  0  0  0.3 # Males
16.3  0  20  0  0  999 -33 0  1  0  0  0  0  0.3 # Males
16.3  0  20  0  0  999 -33 0  1  0  0  0  0  0.3 # Males
16.2  0  20  0  0  999 -33 0  1  0  0  0  0  0.3 # Males
16.2  0  20  0  0  999 -33 0  1  0  0  0  0  0.3 # Males
16.1  0  20  0  0  999 -33 0  1  0  0  0  0  0.3 # Males
16.1  0  20  0  0  999 -33 0  1  0  0  0  0  0.3 # Males
16.0  0  20  0  0  999 -33 0  1  0  0  0  0  0.3 # Males
16.0  0  20  0  0  999 -33 0  1  0  0  0  0  0.3 # Males
15.9  0  20  0  0  999 -33 0  1  0  0  0  0  0.3 # Males
15.8  0  20  0  0  999 -33 0  1  0  0  0  0  0.3 # Males
15.8  0  20  0  0  999 -33 0  1  0  0  0  0  0.3 # Males
15.7  0  20  0  0  999 -33 0  1  0  0  0  0  0.3 # Males
15.7  0  20  0  0  999 -33 0  1  0  0  0  0  0.3 # Males
15.6  0  20  0  0  999 -33 0  1  0  0  0  0  0.3 # Males
15.6  0  20  0  0  999 -33 0  1  0  0  0  0  0.3 # Males
15.5  0  20  0  0  999 -33 0  1  0  0  0  0  0.3 # Males
15.5  0  20  0  0  999 -33 0  1  0  0  0  0  0.3 # Males
15.5  0  20  0  0  999 -33 0  1  0  0  0  0  0.3 # Males
15.5  0  20  0  0  999 -33 0  1  0  0  0  0  0.3 # Males
15.5  0  20  0  0  999 -33 0  1  0  0  0  0  0.3 # Males
1      0.5 3  0  0  999  6 0  1  0  0  0  0  0.3 # Males (beta)
# EXTRA PARS: Initial Lower_bound Upper_bound Prior_type Prior_1 Prior_2 Phase Relative
# Inputs for sex * type 2
# MAIN PARS: Initial Lower_bound Upper_bound Prior_type Prior_1 Prior_2 Phase Block Block_fn Env_L EnvL_var RW RW_Block RW_Sigma
13.8  0  20  0  0  999 -33 2  1  0  0  0  0  0.3 # Females
12.2  0  20  0  0  999 -33 2  1  0  0  0  0  0.3 # Females
10.5  0  20  0  0  999 -33 2  1  0  0  0  0  0.3 # Females
8.4  0  20  0  0  999 -33 2  1  0  0  0  0  0.3 # Females
7.5  0  20  0  0  999 -33 2  1  0  0  0  0  0.3 # Females
7  0  20  0  0  999 -33 2  1  0  0  0  0  0.3 # Females
6.6  0  20  0  0  999 -33 2  1  0  0  0  0  0.3 # Females
6.1  0  20  0  0  999 -33 2  1  0  0  0  0  0.3 # Females
5.6  0  20  0  0  999 -33 2  1  0  0  0  0  0.3 # Females
5.1  0  20  0  0  999 -33 2  1  0  0  0  0  0.3 # Females
4.6  0  20  0  0  999 -33 2  1  0  0  0  0  0.3 # Females
4.1  0  20  0  0  999 -33 2  1  0  0  0  0  0.3 # Females
3.6  0  20  0  0  999 -33 2  1  0  0  0  0  0.3 # Females

```

```

3.2 0 20 0 0 999 -33 2 1 0 0 0 0 0.3 # Females
2.7 0 20 0 0 999 -33 2 1 0 0 0 0 0.3 # Females
2.2 0 20 0 0 999 -33 2 1 0 0 0 0 0.3 # Females
1.7 0 20 0 0 999 -33 2 1 0 0 0 0 0.3 # Females
1.2 0 20 0 0 999 -33 2 1 0 0 0 0 0.3 # Females
0.7 0 20 0 0 999 -33 2 1 0 0 0 0 0.3 # Females
0.4 0 20 0 0 999 -33 2 1 0 0 0 0 0.3 # Females
0.4 0 20 0 0 999 -33 2 1 0 0 0 0 0.3 # Females
0.4 0 20 0 0 999 -33 2 1 0 0 0 0 0.3 # Females
0.4 0 20 0 0 999 -33 2 1 0 0 0 0 0.3 # Females
1.5 0.5 3 0 0 999 6 0 1 0 0 0 0 0.3 # Females
# EXTRA PARS: Initial Lower_bound Upper_bound Prior_type Prior_1 Prior_2 Phase Relative
15.4 0 20 0 0 999 -33 0 # Females 1 1
15.1 0 20 0 0 999 -33 0 # Females 1 2
13.8 0 20 0 0 999 -33 0 # Females 2 1
14 0 20 0 0 999 -33 0 # Females 2 2
12.2 0 20 0 0 999 -33 0 # Females 3 1
12.9 0 20 0 0 999 -33 0 # Females 3 2
10.5 0 20 0 0 999 -33 0 # Females 4 1
11.8 0 20 0 0 999 -33 0 # Females 4 2
8.9 0 20 0 0 999 -33 0 # Females 5 1
10.6 0 20 0 0 999 -33 0 # Females 5 2
7.9 0 20 0 0 999 -33 0 # Females 6 1
8.7 0 20 0 0 999 -33 0 # Females 6 2
7.2 0 20 0 0 999 -33 0 # Females 7 1
7.4 0 20 0 0 999 -33 0 # Females 7 2
6.6 0 20 0 0 999 -33 0 # Females 8 1
6.6 0 20 0 0 999 -33 0 # Females 8 2
6.1 0 20 0 0 999 -33 0 # Females 9 1
6.1 0 20 0 0 999 -33 0 # Females 9 2
5.6 0 20 0 0 999 -33 0 # Females 10 1
5.6 0 20 0 0 999 -33 0 # Females 10 2
5.1 0 20 0 0 999 -33 0 # Females 11 1
5.1 0 20 0 0 999 -33 0 # Females 11 2
4.6 0 20 0 0 999 -33 0 # Females 12 1
4.6 0 20 0 0 999 -33 0 # Females 12 2
4.1 0 20 0 0 999 -33 0 # Females 13 1
4.1 0 20 0 0 999 -33 0 # Females 13 2
3.6 0 20 0 0 999 -33 0 # Females 14 1
3.6 0 20 0 0 999 -33 0 # Females 14 2
3.2 0 20 0 0 999 -33 0 # Females 15 1
3.2 0 20 0 0 999 -33 0 # Females 15 2
2.7 0 20 0 0 999 -33 0 # Females 16 1
2.7 0 20 0 0 999 -33 0 # Females 16 2
2.2 0 20 0 0 999 -33 0 # Females 17 1
2.2 0 20 0 0 999 -33 0 # Females 17 2
1.7 0 20 0 0 999 -33 0 # Females 18 1
1.7 0 20 0 0 999 -33 0 # Females 18 2
1.2 0 20 0 0 999 -33 0 # Females 19 1
1.2 0 20 0 0 999 -33 0 # Females 19 2
0.7 0 20 0 0 999 -33 0 # Females 20 1
0.7 0 20 0 0 999 -33 0 # Females 20 2
0.7 0 20 0 0 999 -33 0 # Females 21 1
0.7 0 20 0 0 999 -33 0 # Females 21 2
0.7 0 20 0 0 999 -33 0 # Females 22 1
0.7 0 20 0 0 999 -33 0 # Females 22 2
0.7 0 20 0 0 999 -33 0 # Females 23 1
0.7 0 20 0 0 999 -33 0 # Females 23 2
# Inputs for sex * type 3
# MAIN PARS: Initial Lower_bound Upper_bound Prior_type Prior_1 Prior_2 Phase Block Block_fn Env_L EnvL_var RW RW_Block RW_Sigma
145.0386 100 500 0 0 999 3 0 0 0 0 0 0 0.3 # molt_mu male
0.053036 0.02 2 0 0 999 3 0 0 0 0 0 0 0.3 # molt_cv males
# EXTRA PARS: Initial Lower_bound Upper_bound Prior_type Prior_1 Prior_2 Phase Relative
#145.0386 100 500 0 0 999 3 0 # molt_mu males comment out for 24.0c
#0.053036 0.02 2 0 0 999 3 0 # molt_cv males comment out for 24.0c
## ----- ##

# The custom growth-increment matrix

# custom molt probability matrix

## ===== ##

```

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## NATURAL MORTALITY RATES
## =====
# Relative: 0 - absolute values; 1+ - based on another M-at-size vector (indexed by ig)
# Type: 0 for standard; 1: Spline
# Brkpts: number of changes in M by size
# Mirror: Mirror M-at-size over to that for another partition (indexed by ig)
# Block: Block number for time-varying M-at-size
# Block_fn: 0: absolute values; 1: exponential
# Env_L: Environmental link - options are 1: additive; 2: multiplicative; 3: exponential
# EnvL_var: Environmental variable
# RW: 0 for not random walk changes; 1 otherwise
# RW_blk: Block number for random walks
# Sigma_RW: Sigma for the random walk parameters
# Mirror_RW: Should time-varying aspects be mirrored (Indexed by ig)
## Relative? Type Extra SizeBrkpts Mirror Block Block_fn Env_L EnvL_Var RW RW_blk Sigma_RW Mirror_RW
      0 0 0 0 0 0 1 1 0 0 0 0 0.3 0 # Males; mature
      1 0 0 0 0 0 0 0 0 0 0 0 0.3 1 # Females; mature

## Size breakpoints
#2 3
##
## ival lb ub prior p1 p2 phz
0.180 0.15 0.4 2 0.18 0.04 4 # Males (Mature)
1.734 0.00 2.0 0 0.000 2.00 8 # Block 1 - change to 8 from 4?
0.000 -0.40 0.40 1 0.000 0.03 4 # Females (Mature)

## -----
## SELECTIVITY CONTROLS
## Selectivity P(capture of all sizes). Each gear must have a selectivity and a
## retention selectivity. If a uniform prior is selected for a parameter then the
## lb and ub are used (p1 and p2 are ignored)
## LEGEND
## sel type: 0 = parametric, 1 = coefficients (NIY), 2 = logistic, 3 = logistic95,
## 4 = double normal (NIY)
## gear index: use +ve for selectivity, -ve for retention
## sex dep: 0 for sex-independent, 1 for sex-dependent
## -----
## Gear-1 Gear-2 Gear-3 Gear-4 Gear-5 Gear-6
## PotFshry TrawlByc TCFshry FixedGr NMFS BSFRF
1 0 1 0 0 0 # sex specific selectivity
2 2 2 2 2 2 # male selectivity type
2 2 2 2 2 2 # female selectivity type
0 0 0 0 6 0 # within another gear
0 0 0 0 0 0 #-NEW: extra parameters for each pattern by fleet, males
0 0 0 0 0 0 #-NEW: extra parameters for each pattern by fleet, females
1 1 1 1 1 1 # determines if maximum selectivity at size is forced to equal 1 or not (males)
1 1 1 1 1 1 # determines if maximum selectivity at size is forced to equal 1 or not (females)
23 20 20 20 23 20 # size-class at which selectivity is 1 males
23 20 20 20 23 20 # size-class at which selectivity is 1 females
## Gear-1 Gear-2 Gear-3 Gear-4 Gear-5 Gear-6
1 0 0 0 0 0 # sex specific retention
2 5 5 5 5 5 # male retention type
5 5 5 5 5 5 # female retention type
1 0 0 0 0 0 # male retention flag (0 = no, 1 = yes)
0 0 0 0 0 0 # female retention flag (0 = no, 1 = yes)
0 0 0 0 0 0 #-NEW: extra parameters for each pattern by fleet, males
0 0 0 0 0 0 #-NEW: extra parameters for each pattern by fleet, females
0 0 0 0 0 0 # estimate asymptotic retention (males)
0 0 0 0 0 0 # estimate asymptotic retention (females)

# MAIN PARS: Initial Lower_bound Upper_bound Prior_type Prior_1 Prior_2 Phase Block Block_fn Env_L EnvL_var RW RW_Block
# Selectivity
# Gear-1; males
# 125 5 190 0 1 999 4 0 0 1 1 0 4 0.3
# 8 0.1 20 0 1 999 4 0 0 0 0 1 4 0.3
# 0.1 -1 1 0 1 999 -4 0
125 5 190 0 1 999 4 0 0 0 0 0 0 0.3
8 0.1 20 0 1 999 4 0 0 0 0 0 0 0.3

# Gear-2; males
165 5 190 0 1 999 4 0 0 0 0 0 0 0.3

```

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15 0.1 25 0 1 999 4 0 0 0 0 0 0 0.3
# Gear-3; males
103.275 5 190 1 103.275 30.98 4 0 0 0 0 0 0 0.3
8.834 0.1 25 1 8.834 2.65 4 0 0 0 0 0 0 0.3
# Gear-4; males
115 5 190 0 1 999 4 0 0 0 0 0 0 0.3
9 0.1 25 0 1 999 4 0 0 0 0 0 0 0.3
# Gear-5; males
75 30 190 0 1 999 4 5 1 0 0 0 0 0.3
5 1 50 0 1 999 4 5 1 0 0 0 0 0.3
# Gear-5; males block
80 30 190 0 1 999 4 0
10 1 50 0 1 999 4 0
# Gear-6; males
75 1 180 0 1 999 4 0 0 0 0 0 0 0.3
8.5 1 50 0 1 999 4 0 0 0 0 0 0 0.3
# Gear-1; females
84 5 150 0 1 999 4 0 0 0 0 0 0 0.3
4 0.1 20 0 1 999 4 0 0 0 0 0 0 0.3
# Gear-3; females
91.178 5 190 1 91.178 27.35 4 0 0 0 0 0 0 0.3
2.5 0.1 25 1 2.5 0.75 4 0 0 0 0 0 0 0.3
# Retained
# Gear-1; males
135 1 999 0 1 999 4 6 1 0 0 0 0 0.3
2 1 20 0 1 999 4 6 1 0 0 0 0 0.3
#1 0.001 1.01 0 1 999 4 0 0 0 0 0 0 0.3
# Gear-1; males block
140 1 999 0 1 999 4 0
2.5 1 20 0 1 999 4 0

## ----- ##
## PRIORS FOR CATCHABILITY
## If a uniform prior is selected for a parameter then the lb and ub are used (p1 ##
## and p2 are ignored). ival must be > 0 ##
## LEGEND ##
## prior: 0 = uniform, 1 = normal, 2 = lognormal, 3 = beta, 4 = gamma ##
## ----- ##
## Analytic? LAMBDA Emphasis Mirror Block Env_L EnvL_Var RW RW_blk Sigma_RW
0 1 1 0 0 0 0 0 0 0.3 # NMFS
0 1 1 0 0 0 0 0 0 0.3 # BSFRF

## ival lb ub prior p1 p2 phz # NMFS
0.896 0 2 1 0.896 0.03 6 # NMFS
1.0 0 5 0 0.001 5.00 -6 # BSFRF
## ----- ##

## ----- ##
## ADDITIONAL CV FOR SURVEYS/INDICES
## If a uniform prior is selected for a parameter then the lb and ub are used (p1 ##
## and p2 are ignored). ival must be > 0 ##
## LEGEND ##
## prior type: 0 = uniform, 1 = normal, 2 = lognormal, 3 = beta, 4 = gamma ##
## ----- ##
## Mirror Block Env_L EnvL_Var RW RW_blk Sigma_RW
0 0 0 0 0 0 0.3 # NMFS
0 0 0 0 0 0 0.3 # BSFRF

## ival lb ub prior p1 p2 phz # NMFS
0.0001 0.00001 10.0 4 1.000 100 -4 # NMFS
0.25 0.00001 10.0 0 0.001 1.00 10 # BSFRF
## ----- ##

## PENALTIES FOR AVERAGE FISHING MORTALITY RATE FOR EACH GEAR
## ----- ##
## Mean_F Female Offset STD_PHZ1 STD_PHZ2 PHZ_M PHZ_F
0.22313 0.0505 0.5 45.50 1 1 -12 4 -10 2.95 -10 10 # Pot
0.0183156 1.0 0.5 45.50 1 -1 -12 4 -10 10 -10 10 # Trawl
0.011109 1.0 0.5 45.50 1 1 -12 4 -10 10 -10 10 # Tanner (-1 -5)
0.011109 1.0 0.5 45.50 1 -1 -12 4 -10 10 -10 10 # Fixed

```



```

# Log_fdevs  meanF      Mdevs  Rec_devs Initial_devs Fst_dif_dev Mean_sex-Ratio Molt_prob Free selectivity Init_n_at_len  Fvecs Fdovs (!!!NEW f
#      10000      0      1.0      2      0      0      10      0      0      0      0      0
10000      # Log_fdevs
0      # meanF
1.0      # Mdevs
2      # Rec_devs
0      # Initial_devs
0      # Fst_dif_dev
10      # Mean_sex-Ratio
0      # Molt_prob
0      # Free selectivity
0      # Init_n_at_len
0      # Fdevs
0      # Fdovs
0      # Sel_devs

## EOF
9999

```