

Table 7.11. Estimated recruitment (age 0), total stock biomass (TSB), spawning-stock biomass (SSB), and average fishing mortality for ages 2 to 4 (F_{bar}).

| year | Recruitment Low | Recruitment | Recruitment High | TSB | SSB low | SSB | SSB high | catch | F low | F_{bar} | F high |
|------|-----------------|-------------|------------------|-----|----------|----------|----------|----------|----------|-----------|----------|
| 1968 | 46089.08 | 49788.78 | 53488.48 | NA | 14856.32 | 15691.18 | 16526.04 | 9826.43 | 0.572225 | 0.599813 | 0.627401 |
| 1969 | 64352.14 | 70916.94 | 77481.74 | NA | 14425.68 | 15242.27 | 16058.86 | 9889.34 | 0.732815 | 0.795616 | 0.858417 |
| 1970 | 107886 | 116626.7 | 125367.4 | NA | 10720.8 | 11707.45 | 12694.1 | 7133.87 | 0.542141 | 0.595329 | 0.648517 |
| 1971 | 36011.98 | 41581.58 | 47151.18 | NA | 11736.74 | 12866.84 | 13996.94 | 9609.42 | 0.602533 | 0.654678 | 0.706823 |
| 1972 | 101420.6 | 110047.9 | 118675.2 | NA | 15117.34 | 16340.44 | 17563.54 | 10779.94 | 0.535351 | 0.575275 | 0.615199 |
| 1973 | 21363.48 | 25382.48 | 29401.48 | NA | 19191.12 | 20615.62 | 22040.12 | 13040.64 | 0.691599 | 0.745257 | 0.798915 |
| 1974 | 80730.64 | 87804.34 | 94878.04 | NA | 16086.58 | 17311.28 | 18535.98 | 11999.59 | 0.624428 | 0.667979 | 0.71153 |
| 1975 | 24127.89 | 27893.89 | 31659.89 | NA | 16579.25 | 17776.95 | 18974.65 | 10720.16 | 0.689577 | 0.744163 | 0.798749 |
| 1976 | 38039.31 | 42582.61 | 47125.91 | NA | 12810.14 | 13812.04 | 14813.94 | 10628.04 | 0.704799 | 0.754884 | 0.804969 |
| 1977 | 40955.65 | 45993.25 | 51030.85 | NA | 12306.73 | 13267.95 | 14229.17 | 8255.27 | 0.7106 | 0.775803 | 0.841006 |
| 1978 | 87823.02 | 95694.92 | 103566.8 | NA | 8838.647 | 9780.457 | 10722.27 | 5662.05 | 0.507212 | 0.561035 | 0.614858 |
| 1979 | 104819 | 113785.2 | 122751.4 | NA | 9581.71 | 10647.01 | 11712.31 | 7548.09 | 0.593832 | 0.65333 | 0.712828 |
| 1980 | 58166.02 | 64883.32 | 71600.62 | NA | 11388.53 | 12503.23 | 13617.93 | 10599.14 | 0.624744 | 0.673166 | 0.721588 |
| 1981 | 24848.51 | 28800.81 | 32753.11 | NA | 16428.11 | 17616.41 | 18804.71 | 13958.08 | 0.707716 | 0.752082 | 0.796448 |
| 1982 | 37195.26 | 41796.86 | 46398.46 | NA | 18905.07 | 20117.97 | 21330.87 | 13694.07 | 0.787906 | 0.840895 | 0.893884 |
| 1983 | 59431.43 | 65423.43 | 71415.43 | NA | 15341.6 | 16537.1 | 17732.6 | 10387.16 | 0.710731 | 0.772537 | 0.834343 |
| 1984 | 56351.16 | 62609.76 | 68868.36 | NA | 10565.9 | 11647.1 | 12728.3 | 8384.85 | 0.676008 | 0.742073 | 0.808138 |
| 1985 | 43967.27 | 49816.97 | 55666.67 | NA | 10829.36 | 11915.26 | 13001.16 | 10544.33 | 0.746086 | 0.812658 | 0.87923 |
| 1986 | 129960.4 | 140508.4 | 151056.4 | NA | 11105.9 | 12219.6 | 13333.3 | 10006.06 | 0.740458 | 0.8111 | 0.881742 |
| 1987 | 60466.72 | 67137.92 | 73809.12 | NA | 11719.46 | 13039.56 | 14359.66 | 13021.91 | 0.862871 | 0.939897 | 1.016923 |
| 1988 | 26482.02 | 30475.62 | 34469.22 | NA | 11411.4 | 12465.5 | 13519.6 | 14276.98 | 0.912462 | 0.97393 | 1.035398 |

| year | Recruitment Low | Recruitment | Recruitment High | TSB | SSB low | SSB | SSB high | catch | F low | F _{bar} | F high |
|------|-----------------|-------------|------------------|----------|----------|----------|----------|----------|----------|------------------|----------|
| 1989 | 31335.21 | 35851.21 | 40367.21 | NA | 13087.46 | 14053.13 | 15018.8 | 12952.54 | 1.021814 | 1.094396 | 1.166978 |
| 1990 | 34222.74 | 39224.54 | 44226.34 | NA | 9008.765 | 9878.955 | 10749.15 | 7537.94 | 0.80383 | 0.885825 | 0.96782 |
| 1991 | 60501.66 | 66160.06 | 71818.46 | NA | 6307.948 | 7128.088 | 7948.228 | 7258.45 | 0.993872 | 1.106962 | 1.220052 |
| 1992 | 13521.25 | 15559.25 | 17597.25 | NA | 5261.152 | 6047.362 | 6833.572 | 7832.71 | 1.070707 | 1.170421 | 1.270135 |
| 1993 | 39327.25 | 42872.35 | 46417.45 | NA | 5189.1 | 5729.53 | 6269.96 | 7709.97 | 1.175266 | 1.265724 | 1.356182 |
| 1994 | 31647.93 | 34669.43 | 37690.93 | 30955.39 | 4400.366 | 4908.016 | 5415.666 | 5543.64 | 1.203267 | 1.329407 | 1.455547 |
| 1995 | 30316.14 | 33208.94 | 36101.74 | 31986.54 | 3106.617 | 3515.417 | 3924.217 | 4753.16 | 0.865729 | 0.94572 | 1.025711 |
| 1996 | 45394.41 | 49018.61 | 52642.81 | 35670.06 | 3972.496 | 4417.016 | 4861.536 | 5104.06 | 0.929735 | 1.012121 | 1.094507 |
| 1997 | 13497.05 | 15143.05 | 16789.05 | 36610.58 | 4740.637 | 5222.717 | 5704.797 | 5978.56 | 0.984894 | 1.061036 | 1.137178 |
| 1998 | 3279.212 | 3913.782 | 4548.352 | 42675.87 | 5378.379 | 5766.259 | 6154.139 | 5347.25 | 0.900999 | 0.957888 | 1.014777 |
| 1999 | 26975.81 | 28820.11 | 30664.41 | 39296.65 | 4907.68 | 5256.15 | 5604.62 | 4943.34 | 1.57482 | 1.75681 | 1.9388 |
| 2000 | 10711.47 | 11840.57 | 12969.67 | 38787.02 | 1290.772 | 1592.532 | 1894.292 | 1973.14 | 1.189697 | 1.354877 | 1.520057 |
| 2001 | 13562.76 | 14782.96 | 16003.16 | 32659.38 | 2508.276 | 2765.786 | 3023.296 | 2316.45 | 0.888625 | 0.978128 | 1.067631 |
| 2002 | 4622.188 | 5194.148 | 5766.108 | 29050.73 | 2947.344 | 3243.844 | 3540.344 | 2740.7 | 1.16252 | 1.29777 | 1.43302 |
| 2003 | 8184.806 | 8858.996 | 9533.186 | 25100.8 | 2190.47 | 2456.97 | 2723.47 | 1500.41 | 0.870784 | 0.96812 | 1.065456 |
| 2004 | 4595.796 | 5039.796 | 5483.796 | 28256.52 | 1998.431 | 2239.831 | 2481.231 | 1326.44 | 0.76875 | 0.86077 | 0.95279 |
| 2005 | 5100.197 | 5505.867 | 5911.537 | 36998.43 | 1937.62 | 2157.03 | 2376.44 | 1114.1 | 0.820632 | 0.904686 | 0.98874 |
| 2006 | 5867.921 | 6282.431 | 6696.941 | 40441.04 | 1671.012 | 1855.022 | 2039.032 | 1025.03 | 0.949839 | 1.045625 | 1.141411 |
| 2007 | 1139.322 | 1301.582 | 1463.842 | 38109.72 | 1550.264 | 1756.104 | 1961.944 | 847.16 | 0.928407 | 1.015422 | 1.102437 |
| 2008 | 4116.047 | 4474.757 | 4833.467 | 34922.82 | 1439.948 | 1621.178 | 1802.408 | 723.47 | 0.977018 | 1.074138 | 1.171258 |
| 2009 | 7448.993 | 8134.283 | 8819.573 | 33496.91 | 913.418 | 1046.168 | 1178.918 | 554.36 | 0.908009 | 1.028109 | 1.148209 |
| 2010 | 3586 | 4084.52 | 4583.04 | 30080.94 | 1118.442 | 1288.842 | 1459.242 | 850.31 | 0.919395 | 1.048475 | 1.177555 |
| 2011 | 3781.373 | 4466.403 | 5151.433 | 32949.67 | 1336.6 | 1534.72 | 1732.84 | 412.71 | 0.311817 | 0.36833 | 0.424843 |

| year | Recruitment Low | Recruitment | Recruitment High | TSB | SSB low | SSB | SSB high | catch | F low | F _{bar} | F high |
|------|-----------------|-------------|------------------|----------|----------|----------|----------|--------|----------|------------------|----------|
| 2012 | 5291.062 | 6435.362 | 7579.662 | 39715.04 | 1676.427 | 1945.987 | 2215.547 | 875.65 | 0.537235 | 0.672405 | 0.807575 |
| 2013 | 7291.352 | 9012.852 | 10734.35 | 43665.61 | 1626.818 | 2058.758 | 2490.698 | 358.02 | 0.177945 | 0.23194 | 0.285935 |
| 2014 | 3646.031 | 4621.101 | 5596.171 | 34251.47 | 2402.228 | 3101.298 | 3800.368 | 396.53 | 0.127988 | 0.16688 | 0.205772 |
| 2015 | 6499.184 | 8298.284 | 10097.38 | 29191.85 | 3189.895 | 4146.315 | 5102.735 | 308.02 | 0.078848 | 0.102759 | 0.12667 |
| 2016 | 459.6125 | 670.0225 | 880.4325 | 22214.04 | 3737.4 | 4891.5 | 6045.6 | 142.23 | 0.033741 | 0.043575 | 0.053408 |
| 2017 | 5126.218 | 8018.318 | 10910.42 | 22959.22 | 5359.438 | 6938.838 | 8518.238 | 143.95 | 0.030554 | 0.039215 | 0.047876 |
| 2018 | NA | 5107 | NA | 21161.56 | NA | 8109.616 | NA | NA | NA | 0.254415 | NA |

Table 7.12. Forecast input, including landing, discard, total catch numbers (in thousands) and total F-at-age for 2017.

| Age | Landings | Discards | Catch | F (total catch) |
|-----|----------|----------|-------|-----------------|
| 0 | 0 | 0.43 | 0.43 | 0.000821 |
| 1 | 2.52 | 9.85 | 12.37 | 0.009744 |
| 2 | 27.91 | 0 | 27.91 | 0.038558 |
| 3 | 15.85 | 0 | 15.84 | 0.053469 |
| 4 | 2.81 | 0 | 2.81 | 0.025618 |
| 5 | 0.425 | 0 | 0.425 | 0.003028 |
| 6 | 0.197 | 0 | 0.197 | 0.000257 |