

Sole (*Solea solea*) in Division 7.d (eastern English Channel)

ICES stock advice

ICES advises that when the MSY approach is applied, catches in 2018 should be no more than 3866 tonnes.

Stock development over time

The spawning-stock biomass (SSB) has been fluctuating between B_{lim} and $MSY B_{trigger}$. Fishing mortality (F) has been decreasing since 2014 and is below F_{MSY} in 2016. Recruitment has been fluctuating without trend and was in 2012–2016 at the lowest of the time-series, with the exception of 2015.



Figure 1 Sole in Division 7.d. Summary of the stock assessment. Predicted recruitment values are not shaded.

Stock and exploitation status

Table 1 Sole in Division 7.d. State of the stock and fishery relative to reference points.

| | | Fishing pressure | | | | Stock size | | | |
|---------------------------|-------------------|------------------|------|------|-----------------------|-------------------|------|------|------------------|
| | | 2014 | 2015 | 2016 | | 2015 | 2016 | 2017 | |
| Maximum sustainable yield | F_{MSY} | ✗ | ✗ | ✓ | Below | $MSY B_{trigger}$ | ✗ | ✗ | ✗ Below trigger |
| Precautionary approach | F_{pa}, F_{lim} | ○ | ○ | ✓ | Harvested sustainably | B_{pa}, B_{lim} | ○ | ○ | ○ Increased risk |
| Management plan | F_{MGT} | — | — | — | Not applicable | B_{MGT} | — | — | — Not applicable |

Catch options

Table 2 Sole in Division 7.d. The basis for the catch options.

| Variable | Value | Source | Notes |
|--------------------------------|-------|--------------|--------------------------------------------------------------|
| $F_{\text{ages 3-7}}$ (2017) | 0.23 | ICES (2017a) | Average exploitation pattern in 2014–2016, rescaled to 2016. |
| SSB (2018) | 18260 | ICES (2017a) | Short-term forecast (STF); tonnes. |
| $R_{\text{age 1}}$ (2017–2018) | 29196 | ICES (2017a) | Geometric mean (GM, excluding 2014–2016); thousands. |
| Total catch (2017) | 3596 | ICES (2017a) | STF; tonnes. |
| Commercial landings (2017) | 3117 | ICES (2017a) | Average landings rate by age (2014–2016); tonnes. |
| Discards (2017) | 479 | ICES (2017a) | Average discard rate by age (2014–2016); tonnes. |

Table 3 Sole in Division 7.d. Annual catch options. All weights are in tonnes.

| Basis | Total catch (2018) | Wanted catch* (2018) | Unwanted catch* (2018) | $F_{\text{total ages 3-7}}$ (2018) | $F_{\text{wanted ages 3-7}}$ (2018) | $F_{\text{unwanted ages 1-3}}$ (2018) | SSB (2019) | % SSB change ** | % TAC change ***^ |
|---------------------------------------------------------------------------------------------|--------------------|----------------------|------------------------|------------------------------------|-------------------------------------|---------------------------------------|------------|-----------------|-------------------|
| ICES advice basis | | | | | | | | | |
| MSY approach: $F_{\text{MSY}} \times \text{SSB (2018)} / \text{MSY } B_{\text{trigger}}$ | 3866 | 3429 | 437 | 0.243 | 0.22 | 0.07 | 18697 | 2 | 42 |
| Other options | | | | | | | | | |
| Constant TAC | 2724 | 2418 | 306 | 0.168 | 0.15 | 0.05 | 19866 | 9 | 0 |
| TAC (2017) +15% ^ | 3133 | 2780 | 353 | 0.192 | 0.17 | 0.05 | 19448 | 7 | 15 |
| TAC (2017) –15% ^ | 2315 | 2056 | 259 | 0.139 | 0.13 | 0.04 | 20284 | 11 | -15 |
| $F = 0$ | 0 | 0 | 0 | 0 | - | - | 22660 | 24 | -100 |
| F_{MSY} | 4052 | 3593 | 459 | 0.256 | 0.23 | 0.07 | 18508 | 1 | 49 |
| F_{pa} | 4052 | 3593 | 459 | 0.256 | 0.23 | 0.07 | 18508 | 1 | 49 |
| F_{lim} | 5424 | 4803 | 621 | 0.359 | 0.32 | 0.1 | 17108 | -6 | 99 |
| $\text{SSB (2019)} = B_{\text{lim}}$ | 8731 | 7704 | 1027 | 0.657 | 0.59 | 0.19 | 13751 | -25 | 221 |
| $\text{SSB (2019)} = B_{\text{pa}}$ | 3325 | 2950 | 375 | 0.205 | 0.19 | 0.06 | 19251 | 5 | 22 |
| $\text{SSB (2019)} = \text{MSY } B_{\text{trigger}}$ | 3325 | 2950 | 375 | 0.205 | 0.19 | 0.06 | 19251 | 5 | 22 |
| $F = F_{2017}$ | 3698 | 3280 | 418 | 0.231 | 0.21 | 0.07 | 18869 | 3 | 36 |
| Proposed NWWAC management strategy with current F_{MSY} | 4052 | 3593 | 459 | 0.256 | 0.23 | 0.07 | 18508 | 1 | 49 |
| Proposed NWWAC management strategy with F_{MSY} as specified in the plan | 4654 | 4124 | 530 | 0.3 | 0.27 | 0.09 | 17893 | -2 | 71 |
| Mixed fisheries options | | | | | | | | | |
| A: Max. | 6132 | | | 0.41 | | | 16634 | -9 | |
| B: Min. | 2254 | | | 0.13 | | | 20594 | 13 | |
| C: HAD | 3012 | | | 0.18 | | | 20251 | 11 | |
| D: POK | 3909 | | | 0.26 | | | 17902 | -2 | |
| E: SQ effort | 3517 | | | 0.22 | | | 19146 | 5 | |
| F: Value | 3664 | | | 0.22 | | | 19151 | 5 | |
| G: Range | 4018 | | | 0.26 | | | 18451 | 1 | |

* “Wanted” and “unwanted” catch are used to describe fish that would be landed and discarded in the absence of the EU landing obligation.

** SSB 2019 relative to SSB 2018.

*** Total catch in 2018 relative to TAC in 2017 (2724 t)^.

^ Version 2: corrected TAC in 2017 (2724 t)

Mixed-fisheries assumptions (note: “fleet’s stock share” is used to describe the share of the fishing opportunities for each particular fleet, which has been calculated based on the single-stock advice for 2018 and the historical proportion of the stock landings taken by the fleet):

- A. Maximum scenario: Each fleet stops fishing when its last stock share is exhausted.
- B. Minimum scenario: Each fleet stops fishing when its first stock share is exhausted.
- C. HAD: Each fleet stops fishing when its individual haddock share is exhausted.
- D. POK: Each fleet stops fishing when its individual saithe share is exhausted.
- E. SQ (*status quo*) effort scenario: The effort of each fleet in 2017 and 2018 is as in 2016.

F. Value scenario: The effort of each fleet is equal to the weighted average of the efforts required to catch the fleet's quota share of each of the stocks, where the weights are the relative catch values of each stock in the fleet's portfolio.

G. Range scenario: where the potential for TAC mismatches in 2018 are minimized within the F_{MSY} range, for the demersal fish stocks for which such a range is available (cod.27.47d20; had.27.46a20; pok.27.3a46; ple.27.420; ple.27.7d; sol.27.4; sol.27.7d).

Basis of the advice

Table 4 Sole in Division 7.d. The basis of the advice.

| | |
|-----------------|--------------------------------------------------------------------------------------|
| Advice basis | MSY approach. |
| Management plan | ICES is not aware of any agreed precautionary management plan for sole in this area. |

Quality of the assessment

This stock was benchmarked in 2017 (ICES, 2017b), which resulted in an upward revision in SSB and downward revision in F , especially in more recent years. Factors that triggered these changes were the inclusion of discards (from 2004 to 2016), additional information concerning the stock weights, modification to one of the two existing commercial tuning indices and the inclusion of a new commercial index, and a new maturity ogive in the assessment. Reference points were also re-calculated.

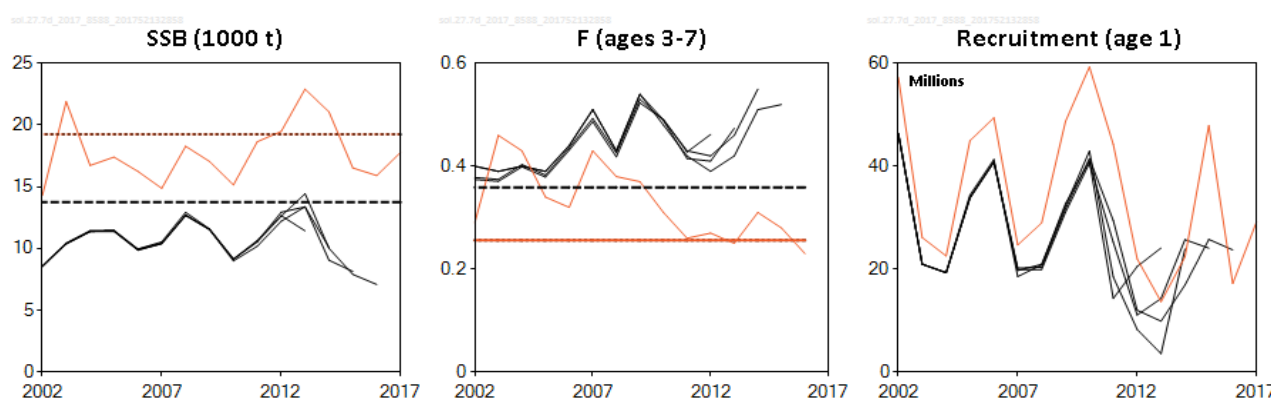


Figure 2 Sole in Division 7.d. Historical assessment results (final-year recruitment estimates included).

Issues relevant for the advice

ICES has previously provided advice on the F_{MSY} range for this stock (ICES, 2015). F_{MSY} was revised in 2017 and the F_{MSY} range was updated as follows:

| Description | Value | Source |
|-----------------|-------|--------------|
| F_{MSY} lower | 0.195 | ICES (2017b) |
| F_{MSY} upper | 0.32 | ICES (2017b) |

Technical measures applicable to the mixed flatfish beam-trawl fishery affect both sole and plaice. The minimum mesh size of 80 mm generates high discards of plaice which have a larger minimum landing size than sole. The use of larger mesh sizes would reduce the catch of undersized plaice and sole, but would also result in a loss of marketable sole in the short term.

STECF evaluated scenarios of a management strategy proposed by the North Western Waters Advisory Council and considered them to be in line with ICES precautionary approach (STECF, 2016). Given that SSB is below Bpa in 2017, following this management strategy would lead to fishing at a level corresponding to a fishing mortality = F_{MSY} . ICES has not evaluated the proposed management strategy and notes that the stock has been benchmarked since the STECF evaluation. Catch options consistent with the proposed strategy are provided at the request of the European Commission.

A catch for 2017, assuming the same F as in 2016, was considered to be more appropriate as basis for the catch options for 2018, given the revised assessment and because of carry-over of quota from 2016 to 2017 for some fleets. This assumption results in the 2017 TAC being exceeded by about 30%.

It is expected that under the EU landing obligation, below minimum size fish that would formerly have been discarded would now be reported as below minimum size (BMS) landings in logbooks. However, BMS landings reported to ICES may be lower than expected for several reasons: fish caught below minimum size could either not have been landed and not recorded in logbooks, or landed but not recorded as BMS; additionally, BMS landings recorded in logbooks may not be reported to ICES.

In the case of sole, there is no indication that fish that would formerly have been discarded are being reported as BMS, based on the observation that BMS landings reported to ICES are currently much lower than the estimates of discards from observer programmes, which estimate discards at 12% of the total catch.

Results from a North Sea mixed-fisheries analysis are presented in ICES (2017c). For 2018, assuming a strictly implemented discard ban (corresponding to the “Minimum” scenario), whiting would be the most limiting stock, being estimated to constrain 24 out of 42 fleet segments. Haddock is the second most limiting stock, constraining eight fleet segments. Additionally, if Norway lobster was managed by separate TACs for the individual functional units (FUs), Norway lobster in FU 6 would be considered the most limiting stock for ten fleet segments. Conversely, in the “Maximum” scenario, saithe and Eastern Channel plaice would be the least limiting for 20 and 11 fleet segments, respectively. Finally, if Norway lobster was managed by separate TACs, Norway lobster in FUs 7, 5, 33, and 4.nonFU would be the least limiting for nine, two, one, and two fleet segments, respectively. For those demersal fish stocks for which the F_{MSY} range is available, a “range” scenario is presented that minimizes the potential for TAC mismatches in 2018 within the F_{MSY} range. This scenario returns a fishing mortality by stock which, if used for setting single-stock fishing opportunities for 2018, may reduce the gap between the most and the least restrictive TACs, thus reducing the potential for quota over- and undershoot. This “range” scenario suggests that the potential for mixed-fisheries mismatch would be lowered with a 2018 TAC in the lower part of the F_{MSY} range for Eastern English Channel plaice and saithe, and in the upper part of the range for cod and North Sea plaice.

Reference points

Table 5 Sole in Division 7.d. Reference points, values, and their technical basis.

| Framework | Reference point | Value | Technical basis | Source |
|------------------------|-------------------|-------------|----------------------------------------------------------------------------------------------------|---------------------|
| MSY approach | MSY $B_{trigger}$ | 19251 t | B_{pa} | ICES (2016a, 2017b) |
| | F_{MSY} | 0.256 | EQsim analysis based on the recruitment period 1983–2012. | ICES (2016a, 2017b) |
| Precautionary approach | B_{lim} | 13751 t | Break-point of hockey stick stock–recruit relationship, based on the recruitment period 1983–2012. | ICES (2016a, 2017b) |
| | B_{pa} | 19251 t | $B_{lim} \times \exp(1.645 \times 0.2) \approx 1.4 \times B_{lim}$ | ICES (2016a, 2017b) |
| | F_{lim} | 0.359 | EQsim analysis, based on the recruitment period 1983–2012. | ICES (2016a, 2017b) |
| | F_{pa} | 0.256 | $F_{lim} \times \exp(-1.645 \times 0.2) \approx F_{lim} / 1.4$ | ICES (2016a, 2017b) |
| Management plan | SSB_{mgt} | Not defined | | |
| | F_{mgt} | Not defined | | |

Basis of the assessment

Table 6 Sole in Division 7.d. Basis of the assessment and advice.

| | |
|-------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| ICES stock data category | 1 (ICES, 2016b). |
| Assessment type | Age-based analytical assessment, XSA (ICES, 2017a) that uses catches in the model and in the forecast. |
| Input data | Commercial catches: international landings and discards, ages and length frequencies from catch sampling by métier; 3 survey indices: UK(E&W)-BTS ,UK(E&W)-YFS, and FR-YFS; 3 commercial indices: BE-CBT (from 2004 onwards), FR-COT and UK(E&W)-CBT; natural mortality is assumed to be constant; maturity-at-age data vary with age (ICES 2017a,b). |
| Discards, BMS landings, and bycatch | Included in the assessment, data series from the main fleets (covering around 90% of the landings). BMS landings, where reported, are included with discards as unwanted catch in the assessment from 2016. |
| Indicators | None. |
| Other information | This stock was benchmarked in 2017 (ICES, 2017b). |
| Working groups | Working Group on the Assessment of Demersal Stocks in the North Sea and Skagerrak (WGNSSK) |

Information from stakeholders

No additional information was provided.

History of the advice, catch, and management

Table 7 Sole in Division 7.d. ICES advice and official landings**. All weights are in tonnes.

| Year | ICES advice | Predicted landings corresp. to advice | Predicted catch corresp. to advice | Agreed TAC | Official landings | ICES landings | ICES discards | BMS reported to ICES |
|------|-----------------------------------|---------------------------------------------|------------------------------------------|---------------|----------------------|------------------|------------------|----------------------------|
| 1987 | Precautionary TAC | 3100 | | 3850 | 3841 | 4791 | 179 | |
| 1988 | Status quo (Shot) TAC | 3400 | | 3850 | 3302 | 3853 | 188 | |
| 1989 | Status quo (Shot) TAC | 3800 | | 3850 | 2945 | 3805 | 171 | |
| 1990 | No effort increase; TAC | 3700 | | 3850 | 3036 | 3647 | 300 | |
| 1991 | Status quo F; TAC | 3400 | | 3850 | 3784 | 4351 | 317 | |
| 1992 | TAC | 2700 | | 3500 | 3794 | 4072 | 251 | |
| 1993 | 70% of F(91)~2 800 t | 2800 | | 3200 | 3862 | 4299 | 247 | |
| 1994 | Reduce F | < 3800 | | 3800 | 4037 | 4383 | 123 | |
| 1995 | No increase in F | 3800 | | 3800 | 3743 | 4420 | 249 | |
| 1996 | No long-term gain in increasing F | 4700 | | 3500 | 4098 | 4797 | 166 | |
| 1997 | No advice | - | | 5230 | 3941 | 4764 | 143 | |
| 1998 | No increase in effort | 4500 | | 5230 | 3047 | 3363 | 120 | |
| 1999 | Reduce F to F _{pa} | 3800 | | 4700 | 3900 | 4135 | 227 | |
| 2000 | F < F _{pa} | < 3900 | | 4100 | 3832 | 3476 | 180 | |
| 2001 | F < F _{pa} | < 4700 | | 4600 | 4617 | 4025 | 280 | |
| 2002 | F < F _{pa} | < 5200 | | 5200 | 5399 | 4733 | 390 | |
| 2003 | F < F _{pa} | < 5400 | | 5400 | 6247 | 6977 | 473 | |
| 2004 | F < F _{pa} | < 5900 | | 5900 | 5667 | 6283 | 308 | |
| 2005 | F < F _{pa} | < 5700 | | 5700 | 4620 | 5056 | 319 | |
| 2006 | F < F _{pa} | < 5700 | | 5720 | 4852 | 5040 | 229 | |
| 2007 | F < F _{pa} | < 6440 | | 6220 | 5313 | 5588 | 379 | |
| 2008 | F < F _{pa} | < 6590 | | 6590 | 4972 | 5256 | 256 | |
| 2009 | F < F _{pa} | < 4380 | | 5274 | 5121 | 5251 | 360 | |
| 2010 | F < F _{pa} | < 3190 | | 4219 | 4374 | 4269 | 438 | |
| 2011 | See scenarios | < 4840 | | 4852 | 4150 | 4225 | 477 | |
| 2012 | MSY transition | < 5600 | | 5580 | 4018 | 4131 | 533 | |
| 2013 | MSY transition | < 5900 | | 5900 | 4424 | 4372 | 466 | |

| Year | ICES advice | Predicted landings corresp. to advice | Predicted catch corresp. to advice | Agreed TAC | Official landings | ICES landings | ICES discards | BMS reported to ICES |
|------|----------------|---------------------------------------|------------------------------------|------------|-------------------|---------------|---------------|----------------------|
| 2014 | MSY transition | < 3251 | | 4838 | 4621 | 4655 | 528 | |
| 2015 | MSY approach | < 1931 | | 3483 | 3372 | 3443 | 294 | |
| 2016 | MSY approach | | ≤ 2685 | 3258* | 2527 | 2538 | 344 | 0 |
| 2017 | MSY approach | | ≤ 2487 | 2724*^ | | | | |
| 2018 | MSY approach | | ≤ 3866 | | | | | |

*Catch TAC

** Values of catches for the period 2000–2015 are presented to the nearest hundred tonnes.

^ Version 2: corrected TAC in 2017 (2724 t)

History of the catch and landings

Table 8 Sole in Division 7.d. Catch distribution by fleet in 2016 as estimated by ICES.

| Catch (2016) | Wanted catch | | | | Unwanted catch | |
|--------------|--------------------------|--------------------|------------------|----------------|----------------|----------|
| 2882 tonnes | Trammel-/gillnets 43% | Beam trawls 40% | Otter trawls 16% | Other gears 1% | Discards | BMS |
| | 2538 tonnes | | | | 344 tonnes | 0 tonnes |

Table 9 Sole in Division 7.d. History of commercial catch and landings; both the official and ICES estimated values are presented by area for each country participating in the fishery. All weights are in tonnes.

| Year | Official landings | | | | | ICES estimates^ | | TAC |
|------|-------------------|--------|---------|--------|-------|-----------------|----------|------|
| | Belgium | France | UK(E+W) | others | Total | Landings | Discards | |
| 1974 | 159 | 383 | 309 | 3 | 854 | 884 | | |
| 1975 | 132 | 464 | 244 | 1 | 841 | 882 | | |
| 1976 | 203 | 599 | 404 | . | 1206 | 1305 | | |
| 1977 | 225 | 737 | 315 | . | 1277 | 1335 | | |
| 1978 | 241 | 782 | 366 | . | 1389 | 1589 | | |
| 1979 | 311 | 1129 | 402 | . | 1842 | 2215 | | |
| 1980 | 302 | 1075 | 159 | . | 1536 | 1923 | | |
| 1981 | 464 | 1513 | 160 | . | 2137 | 2477 | | |
| 1982 | 525 | 1828 | 317 | 4 | 2674 | 3190 | 183 | |
| 1983 | 502 | 1120 | 419 | . | 2041 | 3458 | 100 | |
| 1984 | 592 | 1309 | 505 | . | 2406 | 3575 | 131 | |
| 1985 | 568 | 2545 | 520 | . | 3633 | 3837 | 219 | |
| 1986 | 858 | 1528 | 551 | . | 2937 | 3932 | 139 | |
| 1987 | 1100 | 2086 | 655 | . | 3841 | 4791 | 179 | 3850 |
| 1988 | 667 | 2057 | 578 | . | 3302 | 3853 | 188 | 3850 |
| 1989 | 646 | 1610 | 689 | . | 2945 | 3805 | 171 | 3850 |
| 1990 | 996 | 1255 | 785 | . | 3036 | 3647 | 300 | 3850 |
| 1991 | 904 | 2054 | 826 | . | 3784 | 4351 | 317 | 3850 |
| 1992 | 891 | 2187 | 706 | 10 | 3794 | 4072 | 251 | 3500 |
| 1993 | 917 | 2322 | 610 | 13 | 3862 | 4299 | 247 | 3200 |
| 1994 | 940 | 2382 | 701 | 14 | 4037 | 4383 | 123 | 3800 |
| 1995 | 817 | 2248 | 669 | 9 | 3743 | 4420 | 249 | 3800 |
| 1996 | 899 | 2322 | 877 | . | 4098 | 4797 | 166 | 3500 |
| 1997 | 1306 | 1702 | 933 | . | 3941 | 4764 | 143 | 5230 |
| 1998 | 541 | 1703 | 803 | . | 3047 | 3363 | 120 | 5230 |
| 1999 | 880 | 2251 | 769 | . | 3900 | 4135 | 227 | 4700 |
| 2000 | 1021 | 2190 | 621 | . | 3832 | 3476 | 180 | 4100 |
| 2001 | 1313 | 2482 | 822 | . | 4617 | 4025 | 280 | 4600 |
| 2002 | 1643 | 2780 | 976 | . | 5399 | 4733 | 390 | 5200 |
| 2003 | 1657 | 3475 | 1114 | 1 | 6247 | 6977 | 473 | 5400 |
| 2004 | 1485 | 3070 | 1112 | . | 5667 | 6283 | 308 | 5900 |
| 2005 | 1221 | 2832 | 567 | . | 4620 | 5056 | 319 | 5700 |
| 2006 | 1547 | 2627 | 678 | . | 4852 | 5040 | 229 | 5720 |

| | | | | | | | | |
|-------|------|------|-----|-------|------|------|-----|--------|
| 2007 | 1530 | 2981 | 801 | 1 | 5313 | 5588 | 379 | 6220 |
| 2008 | 1368 | 2880 | 724 | . | 4972 | 5256 | 256 | 6593 |
| 2009 | 1475 | 2886 | 754 | 6 | 5121 | 5251 | 360 | 5274 |
| 2010 | 1294 | 2407 | 674 | . | 4374 | 4269 | 438 | 4219 |
| 2011 | 1181 | 2283 | 686 | . | 4150 | 4225 | 477 | 4852 |
| 2012 | 920 | 2475 | 623 | 0.25 | 4018 | 4131 | 533 | 5580 |
| 2013 | 954 | 2865 | 605 | . | 4424 | 4372 | 466 | 5900 |
| 2014 | 1493 | 2481 | 649 | 0.1 | 4621 | 4655 | 528 | 4838 |
| 2015 | 1048 | 1856 | 468 | . | 3372 | 3443 | 294 | 3483** |
| 2016* | 799 | 1337 | 391 | 0.044 | 2527 | 2538 | 344 | 3258** |

* Preliminary.

** TAC = catch.

^ Landing and discards estimates were updated from 2003 to 2015 as a result of the benchmark (WKNSEA; ICES, 2017b) data call.

Summary of the assessment

Table 10 Sole in Division 7.d. Assessment summary. Weights are in tonnes.

| Year | Recruitment Age 1 thousands | SSB tonnes | Landings tonnes | Discards tonnes* | F Ages 3–7 Year–1 |
|------|-----------------------------------|---------------|--------------------|---------------------|-------------------------|
| 1982 | 14824 | 10550 | 3190 | 183 | 0.29 |
| 1983 | 27535 | 13127 | 3458 | 100 | 0.31 |
| 1984 | 25152 | 13824 | 3575 | 131 | 0.37 |
| 1985 | 14322 | 15891 | 3837 | 219 | 0.25 |
| 1986 | 29797 | 16048 | 3932 | 139 | 0.28 |
| 1987 | 12621 | 16285 | 4791 | 179 | 0.45 |
| 1988 | 33481 | 16558 | 3853 | 188 | 0.34 |
| 1989 | 19215 | 19080 | 3805 | 171 | 0.48 |
| 1990 | 56111 | 17005 | 3647 | 300 | 0.32 |
| 1991 | 40224 | 16345 | 4351 | 317 | 0.39 |
| 1992 | 39749 | 19783 | 4072 | 251 | 0.29 |
| 1993 | 18284 | 19651 | 4299 | 247 | 0.25 |
| 1994 | 31910 | 16798 | 4383 | 123 | 0.29 |
| 1995 | 24008 | 17113 | 4420 | 249 | 0.34 |
| 1996 | 22115 | 17660 | 4797 | 166 | 0.40 |
| 1997 | 33458 | 18259 | 4764 | 143 | 0.50 |
| 1998 | 21407 | 13752 | 3363 | 120 | 0.38 |
| 1999 | 31564 | 15690 | 4135 | 227 | 0.42 |
| 2000 | 43058 | 14444 | 3476 | 180 | 0.32 |
| 2001 | 39174 | 14010 | 4025 | 280 | 0.31 |
| 2002 | 57268 | 14290 | 4733 | 390 | 0.29 |
| 2003 | 26138 | 21905 | 6977 | 473 | 0.46 |
| 2004 | 22550 | 16730 | 6283 | 308 | 0.43 |
| 2005 | 44955 | 17407 | 5056 | 319 | 0.34 |
| 2006 | 49428 | 16253 | 5040 | 229 | 0.32 |
| 2007 | 24696 | 14873 | 5588 | 379 | 0.43 |
| 2008 | 28972 | 18285 | 5256 | 256 | 0.38 |
| 2009 | 48721 | 17053 | 5251 | 360 | 0.37 |
| 2010 | 59315 | 15151 | 4269 | 438 | 0.31 |
| 2011 | 44252 | 18653 | 4225 | 477 | 0.26 |
| 2012 | 21980 | 19489 | 4131 | 533 | 0.27 |

| Year | Recruitment Age 1 thousands | SSB tonnes | Landings tonnes | Discards tonnes* | F Ages 3–7 Year–1 |
|------|-----------------------------------|---------------|--------------------|---------------------|-------------------------|
| 2013 | 13660 | 22917 | 4372 | 466 | 0.25 |
| 2014 | 22367 | 21068 | 4655 | 528 | 0.31 |
| 2015 | 47912 | 16525 | 3443 | 294 | 0.28 |
| 2016 | 17198 | 15912 | 2538 | 344 | 0.23 |
| 2017 | 29196** | 17784 | | | |

* Discard estimates prior to 2004 assume the average discard proportion by age for 2004–2008.

** Geometric mean.

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