

Hake (*Merluccius merluccius*) in divisions 8.c and 9.a, Southern stock (Cantabrian Sea and Atlantic Iberian waters)

ICES advice on fishing opportunities

ICES advises that when the EU multiannual plan (MAP) for Western Waters and adjacent waters is applied, catches in 2020 that correspond to the F ranges in the MAP are between 4694 tonnes and 8991 tonnes. According to the MAP, catches higher than those corresponding to F_{MSY} (6615 tonnes) can only be taken under conditions specified in the MAP, whilst the entire range is considered precautionary when applying the ICES advice rule.

Stock development over time

The spawning-stock biomass (SSB) has increased since 1998 and has been above $MSY B_{trigger}$, B_{pa} , and B_{lim} since 2007. The fishing mortality (F) is decreasing although it remains above F_{MSY} , but below F_{pa} and F_{lim} . Since 2010, recruitment (R) has been close to the historical average.

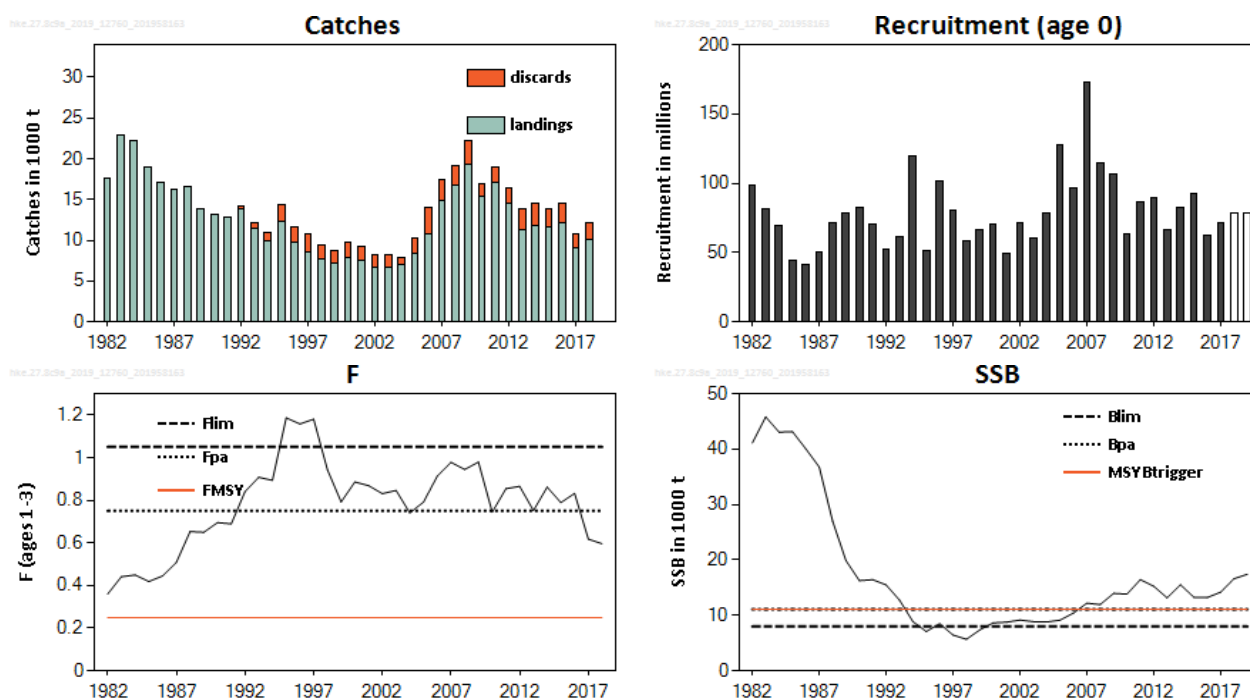


Figure 1 Hake in divisions 8.c and 9.a, Southern stock. Summary of the stock assessment. Assumed recruitment values are unshaded.

Stock and exploitation status

ICES assesses that fishing pressure on the stock is above F_{MSY} but below F_{pa} and F_{lim} ; spawning stock size is above $MSY B_{trigger}$, B_{pa} , and B_{lim} .

Table 1 Hake in divisions 8.c and 9.a, Southern stock. State of the stock and fishery relative to reference points.

| Take in divisions 01c and 01a, southern stock state of the stock and fishery relative to reference points. | | | | | | | | | |
|--|-------------------|------------------|------|------|-----------------------|-------------------|------|------|------------------------------|
| | | Fishing pressure | | | | Stock size | | | |
| | | 2016 | 2017 | 2018 | | 2017 | 2018 | 2019 | |
| Maximum sustainable yield | F_{MSY} | ✗ | ✗ | ✗ | Above | MSY | ✓ | ✓ | ✓ Above trigger |
| Precautionary approach | F_{pa}, F_{lim} | ⦿ | ✓ | ✓ | Harvested sustainably | B_{pa}, B_{lim} | ✓ | ✓ | ✓ Full reproductive capacity |
| Management plan | F_{MGT} | ✗ | ✗ | ✗ | Above the range | B_{MGT} | ✓ | ✓ | ✓ Above trigger |

Catch scenarios

Table 2 Hake in divisions 8.c and 9.a, Southern stock. Assumptions made for the interim year and in the forecast.

| Variable | Value | Notes |
|----------------|--------|---------------------------------------|
| F (2019) | 0.68 | Mean F (2016–2018) |
| SSB (2020) | 17 448 | Tonnes; short term forecast |
| R (2019, 2020) | 78 620 | Thousands; geometric mean (1989–2017) |
| Catch (2019) | 14 368 | Tonnes; based on F_{2019} |

Table 3 Hake in divisions 8.c and 9.a, Southern stock. Annual catch scenarios. All weights are in tonnes. Note: The % change in TAC is not computed because the stock area does not correspond to the area for the TAC.

| Basis | Total catch (2020) | Wanted catch (2020) | Unwanted catch (2020) | F_{total} (2020) | F_{wanted} (2020) | $F_{unwanted}$ (2020) | SSB (2021) | % SSB change * | % TAC change ** | % Advice change *** |
|---|--------------------|---------------------|-----------------------|--------------------|---------------------|-----------------------|------------|----------------|-----------------|---------------------|
| ICES advice basis | | | | | | | | | | |
| EU MAP \wedge : F_{MSY} | 6615 | 5679 | 936 | 0.25 | 0.21 | 0.04 | 29972 | 72% | –29% | –20% |
| F = MAP F_{MSY} lower | 4694 | 4033 | 661 | 0.17 | 0.15 | 0.02 | 33123 | 90% | –49% | –43% |
| F = MAP F_{MSY} upper | 8991 | 7709 | 1282 | 0.36 | 0.31 | 0.05 | 26131 | 50% | –3% | 9% |
| Other scenarios | | | | | | | | | | |
| MSY approach = F_{MSY} | 6615 | 5679 | 936 | 0.25 | 0.21 | 0.04 | 29972 | 72% | –29% | –20% |
| F = 0 | 0 | 0 | 0 | 0 | 0 | 0 | 40956 | 135% | –100% | –100% |
| F_{pa} | 15387 | 13140 | 2247 | 0.75 | 0.64 | 0.11 | 16137 | –8% | 66% | 86% |
| F_{lim} | 18682 | 15906 | 2776 | 1.05 | 0.89 | 0.16 | 11204 | –36% | 102% | 126% |
| SSB (2021) = B_{lim} | 20875 | 17725 | 3150 | 1.33 | 1.13 | 0.2 | 8000 | –54% | 125% | 152% |
| SSB (2021) = B_{pa} = MSY $B_{trigger}$ | 18752 | 15965 | 2787 | 1.06 | 0.9 | 0.16 | 11100 | –36% | 103% | 126% |
| $F=F_{2019}$ | 14452 | 12351 | 2101 | 0.68 | 0.58 | 0.1 | 17564 | 1% | 56% | 75% |
| Equal SSB | 14528 | 12415 | 2113 | 0.69 | 0.59 | 0.1 | 17448 | 0% | 57% | 75% |
| Equal TAC | 9258 | 7937 | 1321 | 0.37 | 0.32 | 0.05 | 25703 | 47% | 0% | 12% |

* SSB 2021 relative to SSB 2020.

** Total catch in 2020 relative to 2019 TAC (9258 tonnes).

*** Total catch in 2020 relative to the advised catch for 2019 (8281 tonnes).

\wedge EU multiannual plan (MAP) for the Western Waters and adjacent waters (EU, 2019).

The advice based on the MSY approach produces a reduction of 20% compared to last year's advice, primarily because of a downward revision of the population size compared to the previous assessment.

Basis of the advice

Table 4 Hake in divisions 8.c and 9.a, Southern stock. The basis of the advice.

| Advice basis | Management plan approach |
|-----------------|--|
| Management plan | The EU multiannual plan (MAP) for stocks in the Western Waters and adjacent waters applies to this stock. The plan specifies conditions for setting fishing opportunities depending on stock status and making use of the F_{MSY} range for the stock. |
| | In accordance with the MAP, catches higher than those corresponding to F_{MSY} can only be taken providing SSB is greater than MSY $B_{trigger}$, and one of the following conditions is met: <ul style="list-style-type: none"> a) if it is necessary for the achievement of objectives of mixed fisheries; b) if it is necessary to avoid serious harm to a stock caused by intra- or inter-species stock dynamics; c) in order to limit variations in fishing opportunities between consecutive years to not more than 20%. |
| | ICES considers that the F_{MSY} range for this stock used in the MAP is precautionary. |
| | Full details of the plan are described in EU (2019). |

Quality of the assessment

The assessment has shown a retrospective tendency to overestimate SSB and to underestimate F (Figure 2). The reason for this pattern is not yet clear (ICES, 2019). An ICES workshop is planned (Workshop on Catch Forecasts from Biased Assessments, WKFORBIAS) to provide guidance on addressing such bias in the assessment and forecast.

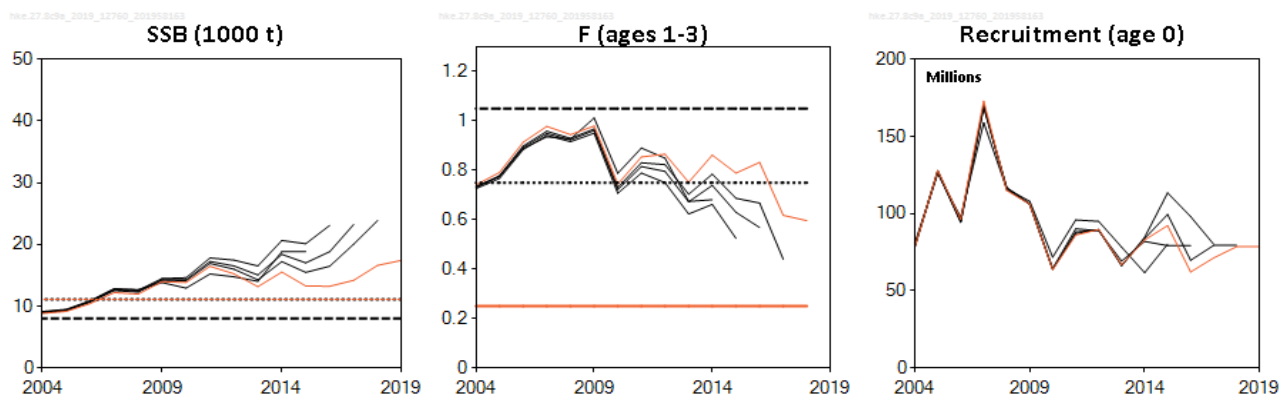


Figure 2 Hake in divisions 8.c and 9.a, Southern stock. Historical assessment results.

Issues relevant for the advice

According to the MAP, catches higher than those corresponding to F_{MSY} can only be taken under conditions specified in the MAP. ICES considers that owing to the strong retrospective bias in the assessment, some consideration is needed when setting catches above F_{MSY} . Annual revisions of historical fishing mortality have shown increases of approximately 20%. TAC set above F_{MSY} may overshoot F_{upper} as defined by the MAP.

Reference points

Table 5 Hake in divisions 8.c and 9.a, Southern stock. Reference points, values, and their technical basis. All weights are in tonnes.

| Framework | Reference point | Value | Technical basis | Source |
|------------------------|--------------------------|-------------|--|----------------------------|
| MSY approach | MSY $B_{trigger}$ | 11100 | B_{pa} | ICES (2016a) |
| | F_{MSY} | 0.25 | Stochastic simulations using segmented regression | ICES (2016a) |
| Precautionary approach | B_{lim} | 8000 | Break point in segmented regression | ICES (2016b) |
| | B_{pa} | 11100 | $B_{lim} \times e^{1.645\sigma}$; $\sigma = 0.20$ | ICES (2016b) |
| | F_{lim} | 1.05 | F corresponding with the slope of the segmented regression | ICES (2016b) |
| | F_{pa} | 0.75 | $F_{lim} \times e^{-1.645\sigma}$; $\sigma = 0.20$ | ICES (2016b) |
| Management plan | SSB_{mgt} | Not defined | | |
| | F_{mgt} | Not defined | | |
| | MAP MSY $B_{trigger}$ | 11100 | B_{pa} | ICES (2016a) and EU (2019) |
| | MAP B_{lim} | 8000 | Break point in segmented regression | ICES (2016a) and EU (2019) |
| | MAP F_{MSY} | 0.25 | Stochastic simulations using segmented regression | ICES (2016a) and EU (2019) |
| | MAP range F_{lower} | 0.170 | Consistent with ranges resulting in no more than 5% reduction in long-term yield compared with MSY (ICES, 2016a) | ICES (2016a) and EU (2019) |
| | MAP range F_{upper} | 0.36 | Consistent with ranges resulting in no more than 5% reduction in long-term yield compared with MSY (ICES, 2016a) | ICES (2016a) and EU (2019) |

Basis of the assessment

Table 6 Hake in divisions 8.c and 9.a, Southern stock. Basis of the assessment and advice.

| | |
|--------------------------|---|
| ICES stock data category | 1 (ICES, 2018). |
| Assessment type | Length–age analytical assessment (GADGET; ICES, 2019) that uses catches in the model and in the forecast. |
| Input data | Commercial catches (international landings, discards, and length frequencies from catch sampling); three survey indices (SP-NSGFS-WIBTS-Q4 [1983 to 2018], SPGCGFS-WIBTS-Q4 [1997 to 2018], and PT-PGFS-Q4 [1989 to 2018]); two commercial indices (SP-CORUTR [1985 to 2012] and P-TR [1989 to 2018]); annual maturity data from commercial catch; for natural mortality a constant value (0.4) was used. |
| Discards and bycatch | Included in the assessment since 1992 and considered negligible before. Data series from the main fleets raised to the effort. |
| Indicators | None. |
| Other information | Last benchmark in 2014 (ICES, 2014). |
| Working group | Working Group for the Bay of Biscay and the Iberian Waters Ecoregion (WGBIE). |

Information from stakeholders

There is no additional available information.

History of the advice, catch, and management

Table 7 Hake in divisions 8.c and 9.a, Southern stock. ICES advice and official landings. All weights are in tonnes.

| Year | ICES advice | Catch/landings corresponding to advice ** | Agreed TAC *** | ICES estimated landings | ICES estimated discards | ICES estimated catch |
|------|---|---|----------------|-------------------------|-------------------------|----------------------|
| 1987 | Precautionary TAC; juvenile protection | 15000 | 25000 | 16185 | - | - |
| 1988 | TAC; juvenile protection | 15000 | 25000 | 16653 | - | - |
| 1989 | TAC; juvenile protection | 15000 | 20000 | 13786 | - | - |
| 1990 | TAC; juvenile protection | 15000 | 20000 | 13190 | - | - |
| 1991 | Precautionary TAC | 10000 | 18000 | 12827 | - | - |
| 1992 | Precautionary TAC | 10300 | 16000 | 13798 | 473 | 14271 |
| 1993 | $F = 10\%$ of F_{91} | 1000 | 12000 | 11489 | 683 | 12172 |
| 1994 | F lowest possible, at least reduced by 80% | 2000 | 11500 | 9865 | 994 | 10859 |
| 1995 | F lowest possible | - | 8500 | 12239 | 2102 | 14341 |
| 1996 | F lowest possible | - | 9000 | 9730 | 1910 | 11640 |
| 1997 | F lowest possible | - | 9000 | 8499 | 2270 | 10769 |
| 1998 | 60% reduction in F | 4000 | 8200 | 7683 | 1681 | 9364 |
| 1999 | Reduce F below F_{pa} | 9500 | 9000 | 7171 | 1519 | 8690 |
| 2000 | 20% reduction from 1994–98 average landings | <7700 | 8500 | 7902 | 1835 | 9737 |
| 2001 | Reduce F below F_{pa} ; no increase in landings | 8500 | 8900 | 7581 | 1662 | 9243 |
| 2002 | F below F_{pa} | < 8000 | 8000 | 6697 | 1492 | 8189 |
| 2003 | Lowest possible catch / rebuilding plan | 0 | 7000 | 6745 | 1461 | 8206 |
| 2004 | Zero catch | 0 | 5950 | 6940 | 913 | 7854 |
| 2005 | Zero catch | 0 | 5968 | 8302 | 1978 | 10280 |
| 2006 | Zero catch | 0 | 6661 | 10799 | 3262 | 14061 |
| 2007 | Zero catch | 0 | 6128 | 14934 | 2504 | 17438 |
| 2008 | Zero catch | 0 | 7047 | 16773 | 2311 | 19084 |
| 2009 | Zero catch | 0 | 8104 | 19242 | 2935 | 22177 |
| 2010 | Reach B_{pa} in 2011 | 4900 | 9300 | 15736 | 1580 | 17316 |
| 2011 | See scenarios | < 9900 | 10695 | 17072 | 1948 | 19020 |
| 2012 | MSY transition | < 14323 | 12299 | 14573 | 1822 | 16395 |
| 2013 | MSY transition | < 10552 | 14144 | 11661 | 2549 | 14209 |
| 2014 | MSY transition | < 13123* | 16266 | 12011 | 2602 | 14614 |
| 2015 | MSY approach | < 8417* | 13826 | 11786 | 2292 | 14077 |
| 2016 | MSY approach | ≤ 6078 | 10674 | 12443 | 2313 | 14756 |
| 2017 | MSY approach | ≤ 8049 | 10520 | 9171 | 1676 | 10847 |
| 2018 | MSY approach | ≤ 8561 | 9258 | 10183 # | 1942 # | 12125 # |
| 2019 | MSY approach | ≤ 8281 | 9258 | | | |
| 2020 | Management plan | 6615 (range 4694–8991) ## | | | | |

*This value refers to total catch, including discards.

** From 2016 refer to total catch, including unwanted catch.

*** Applies to ICES Division 8.c and subareas 9 and 10; EU waters of CECAF 34.1.1.

^ EU multiannual plan (MAP) for the Western Waters and adjacent waters (EU, 2019).

Preliminary.

Catches corresponding to F_{MSY} , EU MAP range in brackets.

History of the catch and landings

Table 8 Hake in divisions 8.c and 9.a, Southern stock. Catch distribution by fleet in 2018 as estimated by ICES.

| Catch (2018) | Landings | | | Discards |
|---------------|---------------|------------------|-----------------|-------------|
| 12 125 tonnes | 37% trawlers | 42% other fleets | 21% unallocated | 1942 tonnes |
| | 10 183 tonnes | | | |

Table 9 Hake in divisions 8.c and 9.a, Southern stock. History of commercial catch and landings; both the official and ICES estimated values are presented by country for each country participating in the fishery. All weights are in tonnes. Cd-Trw – Cadiz trawl; Pr-Bk TRW – Pair-Baka trawl; Pa-Trw – Pair-trawl; Ba-Trw – Baka-trawl.

| Year | Spain | | | | | | | | | Portugal | | | | France * | Unallocated ** | Total | | |
|------|-----------|---------|----------|--------|-----------|--------|--------|----------|----------|-----------|-------|----------|----------|----------|----------------|----------|----------|-------|
| | Artisanal | Gillnet | Longline | Cd-Trw | Pr-Bk TRW | Pa-Trw | Ba-Trw | Discards | Landings | Artisanal | Trawl | Discards | Landings | Total | | Discards | Landings | Catch |
| 1972 | | | | | 10200 | | | | 17300 | 4700 | 4100 | | 8800 | 0 | | | 26100 | 26100 |
| 1973 | | | | | 12300 | | | | 20800 | 6500 | 7300 | | 13800 | 200 | | | 34800 | 34800 |
| 1974 | | | 2200 | | 8300 | | | | 14100 | 5100 | 3500 | | 8600 | 100 | | | 22800 | 22800 |
| 1975 | | | 3000 | | 11200 | | | | 19000 | 6100 | 4300 | | 10400 | 100 | | | 29500 | 29500 |
| 1976 | | | 2600 | | 10000 | | | | 16900 | 6000 | 3100 | | 9100 | 100 | | | 26100 | 26100 |
| 1977 | | | 1300 | | 5800 | | | | 9200 | 4500 | 1600 | | 6100 | 200 | | | 15500 | 15500 |
| 1978 | | | 2100 | | 4900 | | | | 8500 | 3400 | 1400 | | 4800 | 100 | | | 13400 | 13400 |
| 1979 | | | 2100 | | 7200 | | | | 11200 | 3900 | 1900 | | 5800 | | | | 17000 | 17000 |
| 1980 | | | 5000 | | 5300 | | | | 12700 | 4500 | 2300 | | 6800 | | | | 19500 | 19500 |
| 1981 | | | 4600 | | 4100 | | | | 10500 | 4100 | 1900 | | 6000 | | | | 16500 | 16500 |
| 1982 | | | 4177 | 485 | 3923 | | | | 10098 | 5009 | 2485 | | 7494 | | | | 17592 | 17592 |
| 1983 | | | 6568 | 574 | 5293 | | | | 14906 | 5185 | 2859 | | 8044 | | | | 22950 | 22950 |
| 1984 | | | 7521 | 694 | 5844 | | | | 16664 | 4296 | 1219 | | 5515 | | | | 22179 | 22179 |
| 1985 | | | 4420 | 789 | 5334 | | | | 13121 | 3768 | 2052 | | 5820 | | | | 18941 | 18941 |
| 1986 | | | 3464 | 976 | 4861 | | | | 12207 | 3159 | 1788 | | 4947 | 7 | | | 17161 | 17161 |
| 1987 | | | 4409 | 952 | 3501 | | | | 11362 | 3470 | 1328 | | 4798 | 25 | | | 16185 | 16185 |
| 1988 | | | 2967 | 986 | 3977 | | | | 10612 | 4303 | 1714 | | 6017 | 24 | | | 16653 | 16653 |
| 1989 | | | 1950 | 899 | 3920 | | | | 9187 | 2736 | 1847 | | 4583 | 16 | | | 13786 | 13786 |
| 1990 | | | 2128 | 1196 | 4131 | | | | 9765 | 2261 | 1138 | | 3399 | 26 | | | 13190 | 13190 |
| 1991 | 417 | 1406 | 2201 | 1210 | 3632 | | | | 8866 | 2710 | 1245 | | 3955 | 6 | | | 12827 | 12827 |
| 1992 | 404 | 7100 | | 975 | 3788 | | | 143 | 8700 | 3773 | 1325 | 329 | 5098 | | | 473 | 13798 | 14271 |
| 1993 | 367 | 8500 | | 541 | 2671 | | | 242 | 7577 | 3042 | 870 | 441 | 3912 | | | 683 | 11489 | 12172 |
| 1994 | 374 | 1000 | 2600 | 325 | | 820 | 1898 | 286 | 6778 | 2298 | 789 | 709 | 3087 | | | 994 | 9865 | 10859 |
| 1995 | 365 | 1300 | 3500 | 457 | | 2337 | 2937 | 927 | 8648 | 2565 | 1026 | 1175 | 3591 | | | 2102 | 12239 | 14341 |
| 1996 | 227 | 1200 | 3100 | 976 | | 1462 | 2174 | 915 | 6966 | 2007 | 758 | 995 | 2765 | | | 1910 | 9730 | 11640 |
| 1997 | 304 | 600 | 1500 | 879 | | 1317 | 1778 | 1070 | 6084 | 1519 | 897 | 1199 | 2415 | | | 2270 | 8499 | 10769 |
| 1998 | 318 | 100 | 1400 | 525 | | 878 | 1953 | 571 | 5045 | 1668 | 970 | 1110 | 2638 | | | 1681 | 7683 | 9364 |
| 1999 | 335 | 200 | 1700 | 570 | | 867 | 1588 | 353 | 3961 | 2120 | 1090 | 1166 | 3210 | | | 1519 | 7171 | 8690 |
| 2000 | 260 | 200 | 2200 | 584 | | 827 | 1980 | 622 | 4651 | 2092 | 1158 | 1213 | 3251 | | | 1835 | 7902 | 9737 |
| 2001 | 317 | 300 | 1500 | 1203 | | 1055 | 1124 | 370 | 4359 | 2023 | 1198 | 1292 | 3222 | | | 1662 | 7581 | 9243 |

| Year | Spain | | | | | | | | | Portugal | | | | France * | Unallocated ** | Total | | |
|----------|-----------|---------|----------|--------|-----------|--------|--------|----------|----------|-----------|-------|----------|----------|----------|----------------|----------|----------|-------|
| | Artisanal | Gillnet | Longline | Cd-Trw | Pr-Bk TRW | Pa-Trw | Ba-Trw | Discards | Landings | Artisanal | Trawl | Discards | Landings | Total | | Discards | Landings | Catch |
| 2002 | 221 | 265 | 1249 | 883 | | 1372 | 748 | 379 | 3923 | 1808 | 965 | 1112 | 2774 | | | 1492 | 6697 | 8189 |
| 2003 | 373 | 374 | 2097 | 1251 | | 1363 | 1065 | 411 | 4653 | 1129 | 962 | 1050 | 2092 | | | 1461 | 6745 | 8206 |
| 2004 | 476 | 333 | 2272 | 1062 | | 1657 | 1131 | 222 | 4875 | 1266 | 799 | 691 | 2065 | | | 913 | 6940 | 7854 |
| 2005 | 717 | 768 | 1810 | 885 | | 2769 | 1143 | 379 | 6241 | 1096 | 965 | 1599 | 2061 | | | 1978 | 8302 | 10280 |
| 2006 | 479 | 833 | 2073 | 634 | | 4699 | 1808 | 2654 | 8673 | 1218 | 908 | 608 | 2126 | | | 3262 | 10799 | 14061 |
| 2007 | 827 | 533 | 1967 | 505 | | 6709 | 2069 | 1192 | 12802 | 1408 | 724 | 1312 | 2132 | | | 2504 | 14934 | 17438 |
| 2008 | 1115 | 697 | 1985 | 529 | | 6325 | 2436 | 1455 | 14563 | 1274 | 936 | 856 | 2210 | | | 2311 | 16773 | 19084 |
| 2009 | 1412 | 555 | 1863 | 551 | | 7370 | 2537 | 976 | 16889 | 1390 | 964 | 1959 | 2353 | | | 2935 | 19242 | 22177 |
| 2010 | 724 | 587 | 1723 | 680 | | 6332 | 1711 | 1004 | 13033 | 1614 | 727 | 575 | 2341 | 362 | | 1580 | 15736 | 17316 |
| 2011 | 419 | 1091 | 761 | 527 | | 2184 | 1479 | 1209 | 6462 | 1721 | 493 | 739 | 2214 | | 8396 | 1948 | 17072 | 19020 |
| 2012 | 340 | 851 | 1079 | 500 | | 1644 | 1416 | 1352 | 5831 | 1793 | 814 | 470 | 2607 | | 6136 | 1822 | 14573 | 16395 |
| 2013 | 641 | 1751 | 1110 | 624 | | 1863 | 1165 | 2219 | 7154 | 1933 | 812 | 330 | 2744 | 308 | 1455 | 2549 | 11661 | 14209 |
| 2014 | 754 | 1458 | 1604 | 540 | | 1716 | 1184 | 2020 | 7256 | 1713 | 661 | 582 | 2374 | 136 | 2246 | 2602 | 12011 | 14614 |
| 2015 | 902 | 1115 | 1234 | 359 | | 2014 | 1134 | 2061 | 6758 | 1238 | 763 | 231 | 2000 | 238 | 2789 | 2292 | 11786 | 14077 |
| 2016 | 909 | 1641 | 1305 | 419 | | 2279 | 1509 | 2149 | 8063 | 1221 | 752 | 164 | 1973 | 233 | 2174 | 2313 | 12443 | 14756 |
| 2017 | 687 | 1514 | 1714 | 267 | | 1599 | 1075 | 1432 | 6857 | 909 | 575 | 244 | 1484 | 67 | 763 | 1676 | 9171 | 10847 |
| 2018 *** | 765 | 1642 | 995 | 395 | | 1543 | 1101 | 1765 | 6441 | 792 | 697 | 177 | 1489 | 60 | 2193 | 1942 | 10183 | 12125 |

* French catches are not considered in the assessment model until the full time-series has been reviewed.

** Unallocated landings have been estimated and included since 2011.

*** Preliminary.

Summary of the assessment

Table 10 Hake in divisions 8.c and 9.a, Southern stock. Assessment summary. Weights are in tonnes.

| Year | Recruitment | SSB | Landings ** | Discards | F |
|------|----------------------|-------|-------------|----------|----------|
| | Age 0 (in thousands) | | | | Ages 1–3 |
| 1982 | 98400 | 41104 | 17592 | 0 | 0.36 |
| 1983 | 81482 | 45800 | 22950 | 0 | 0.44 |
| 1984 | 69479 | 43048 | 22179 | 0 | 0.45 |
| 1985 | 44091 | 43141 | 18941 | 0 | 0.42 |
| 1986 | 40961 | 40024 | 17161 | 0 | 0.45 |
| 1987 | 50138 | 36766 | 16185 | 0 | 0.51 |
| 1988 | 71237 | 27027 | 16653 | 0 | 0.65 |
| 1989 | 78050 | 19896 | 13786 | 0 | 0.65 |
| 1990 | 82335 | 16279 | 13190 | 0 | 0.70 |
| 1991 | 69999 | 16450 | 12827 | 0 | 0.69 |
| 1992 | 52273 | 15513 | 13798 | 473 | 0.84 |
| 1993 | 61110 | 12767 | 11484 | 683 | 0.91 |
| 1994 | 119477 | 8899 | 9865 | 994 | 0.89 |
| 1995 | 51171 | 7093 | 12239 | 2102 | 1.19 |
| 1996 | 101262 | 8512 | 9715 | 1910 | 1.16 |
| 1997 | 80723 | 6477 | 8498 | 2270 | 1.18 |
| 1998 | 57995 | 5706 | 7683 | 1681 | 0.94 |
| 1999 | 66811 | 7401 | 7170 | 1519 | 0.79 |
| 2000 | 70302 | 8666 | 7902 | 1835 | 0.89 |
| 2001 | 49304 | 8791 | 7580 | 1662 | 0.87 |
| 2002 | 70950 | 9161 | 6690 | 1492 | 0.83 |
| 2003 | 60143 | 8880 | 6744 | 1461 | 0.85 |
| 2004 | 78177 | 8830 | 6942 | 913 | 0.74 |
| 2005 | 127913 | 9158 | 8333 | 1978 | 0.79 |
| 2006 | 96260 | 10432 | 10816 | 3262 | 0.91 |
| 2007 | 172949 | 12206 | 14932 | 2504 | 0.98 |
| 2008 | 115000 | 11955 | 16795 | 2311 | 0.94 |
| 2009 | 106295 | 13983 | 19240 | 2935 | 0.98 |
| 2010 | 63747 | 13837 | 15368 | 1580 | 0.74 |
| 2011 | 86060 | 16461 | 17062 | 1948 | 0.85 |
| 2012 | 89734 | 15247 | 14573 | 1823 | 0.87 |
| 2013 | 66812 | 13166 | 11353 | 2553 | 0.75 |
| 2014 | 82908 | 15533 | 11875 | 2602 | 0.86 |
| 2015 | 92259 | 13267 | 11547 | 2292 | 0.79 |
| 2016 | 62180 | 13229 | 12210 | 2313 | 0.83 |
| 2017 | 71296 | 14199 | 9103 | 1676 | 0.62 |
| 2018 | 78620 * | 16619 | 10123 | 1942 | 0.60 |
| 2019 | 78620 * | 17430 | | | |

* Geometric mean 1989–2017.

** Landings do not include the French landings presented in Table 9.

Sources and references

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