

Plaice (*Pleuronectes platessa*) in divisions 7.f and 7.g (Bristol Channel, Celtic Sea)

ICES stock advice

ICES advises that when precautionary approach is applied, catches in 2018 should be no more than 1800 tonnes. If discard rates do not change from the average of the last five years (2012–2016), this implies landings of no more than 511 tonnes.

Stock development over time

Since 2004 the landings have been relatively stable but discards have been increasing up to 2013. Survey indices have generally been increasing in the recent decade.

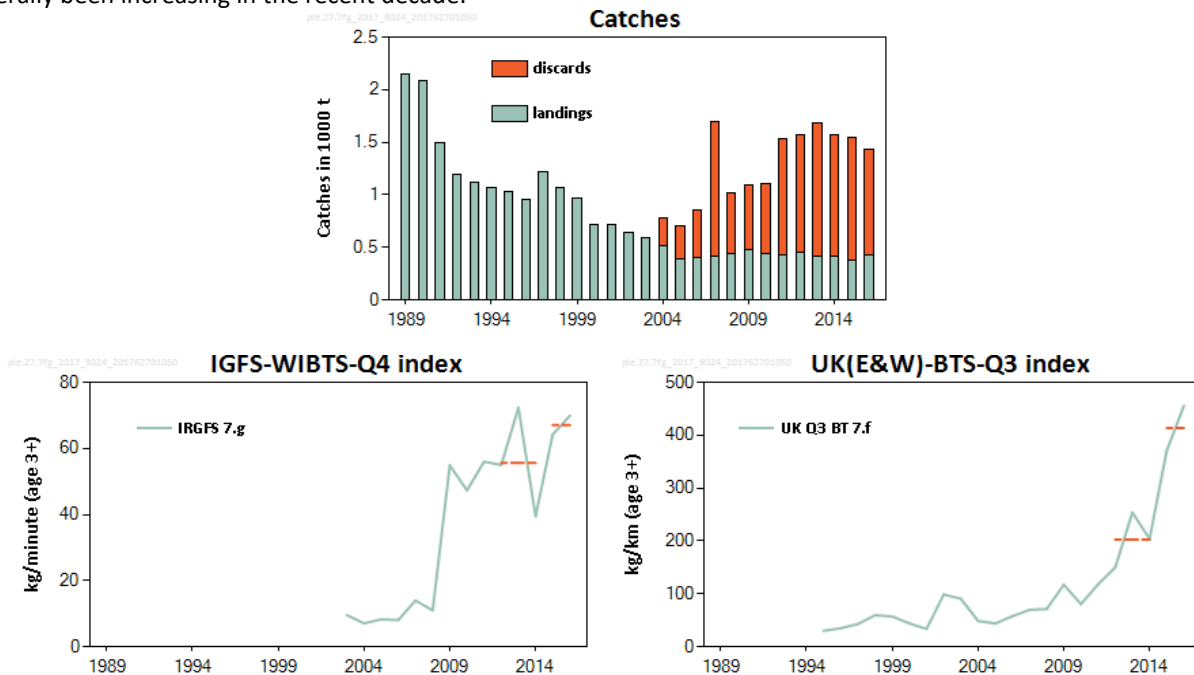


Figure 1 Plaice in divisions 7.f and 7.g. Catches (thousand tonnes). Discards only estimated from 2004. UK (E&W)-BTS-Q3 and IGFS-WIBTS-Q4 survey biomass of plaice older than or equal to 3 years old.

Stock and exploitation status

Table 1 Plaice in divisions 7.f and 7.g. State of the stock and fishery relative to reference points*.

| | | Fishing pressure | | | Stock size | | |
|---------------------------|----------------------|------------------|------|------------------------------------|-------------------------|------|------------------------------|
| | | 2013 | 2014 | 2015 | 2013 | 2014 | 2015 |
| Maximum Sustainable Yield | F_{MSY} proxy | ✓ | ✓ | ✓ Below proxy | $MSY B_{trigger}$ proxy | ✓ | ✓ Above proxy |
| Precautionary Approach | F_{pa} , F_{lim} | ✓ | ✓ | ✓ Below potential reference points | B_{pa} , B_{lim} | ✓ | ✓ Full reproductive capacity |
| Management plan | F_{MGT} | — | — | — Not applicable | B_{MGT} | — | — Not applicable |
| Qualitative evaluation | - | ? | ? | ? Unknown | - | ↗ | ↘ |

*Note: The state of the stock evaluation is based on reference point proxies (SPiCT) and relative change in stock size

[†] Version 2: Ecoregion correction

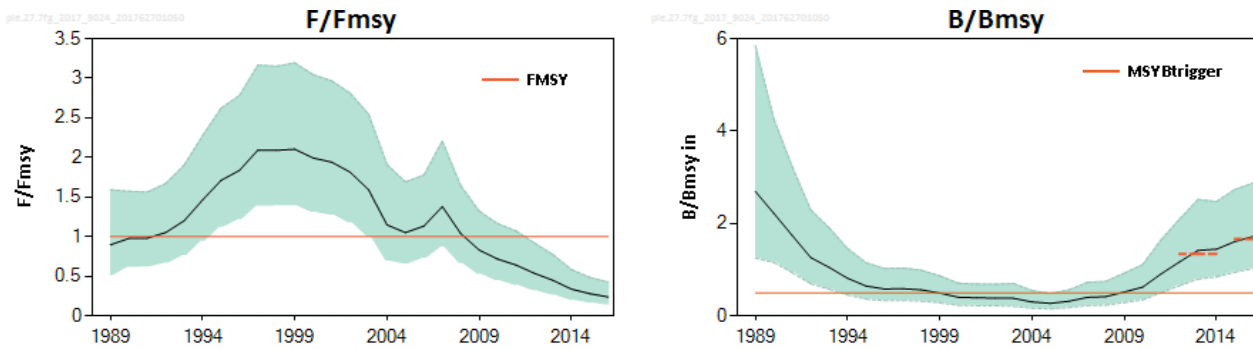


Figure 2 Plaice in divisions 7.f and 7.g. SPiCT analysis showing exploitable biomass relative to B_{MSY} and fishing mortality relative to F_{MSY} . The shaded areas in both plots indicate 95% confidence intervals. The horizontal lines indicate F_{MSY} and $MSY B_{trigger}$ proxies.

Catch options

The ICES framework for category 3 stocks was applied (ICES, 2012). Spawning biomass indices, based on the IR-GFS and UK-BTS, were applied as indicators of stock development. The advice is based on a comparison of, for each index, the two latest values (index A) with the three preceding values (index B), then averaged across the two indices and multiplied by the recent advised catch. The averaged index indicates an increase of 62% between 2012–2014 and 2015–2016 and therefore the uncertainty cap was applied.

Table 2 Plaice in Division 7.f-g The basis for the catch options*.

| | | |
|--|--|-----|
| Index A (2015–2016) | IGFS : 67.0 ; UK-BTS : 413.3 | |
| Index B (2012–2014) | IGFS : 55.6 ; UK-BTS : 202.7 | |
| Index ratio (A/B) | IGFS : 1.21 ; UK-BTS : 2.0; Average : 1.62 | |
| Uncertainty cap | Applied | 1.2 |
| Recent advised catch (2017) | 1500 tonnes | |
| Discard rate (2012–2016) | 0.72 | |
| Precautionary buffer | Not applied | - |
| Catch advice** | 1800 tonnes | |
| Landings corresponding to catch advice | 511 tonnes | |

*The figures in the table are rounded. Calculations were done with unrounded inputs and computed values may not match exactly when calculated using the rounded figures in the table.

** [recent advised catch \times uncertainty cap]

Basis of the advice

Table 3 Plaice in divisions 7.f and 7.g. The basis of the advice.

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

Quality of the assessment

Although the two surveys that are accepted as biomass indicators generally show similar trends, they show different rate of increase in the recent years.

The SPiCT model that is used to evaluate stock status is considered insufficient to assess stock development and requires further exploration on model configuration and use of input data before it can be implemented as the assessment model.

Discards used in the SPiCT analyses for the period of 1989–2003 were estimated using the mean ratio between landing and discards in 2004–2016.

Issues relevant for the advice

Sole and plaice are caught in mixed fisheries, which generates high discards of plaice owing to a mismatch in the selectivity properties of the gear and the plaice minimum landings size. In addition, the relatively low market value of plaice may contribute to the high and variable discard rates. Some of the discarded plaice might also survive.

Reference points

Table 4 Plaice in divisions 7.f and 7.g. Reference points, values, and their technical basis.

| Framework | Reference point | Value | Technical basis | Source |
|------------------------|--------------------------------|------------------------------------|--------------------|-------------|
| MSY approach | MSY $B_{\text{trigger proxy}}$ | $\frac{B}{B_{\text{MSY}}} = 0.5^*$ | Estimated by SPiCT | ICES (2017) |
| | $F_{\text{MSY proxy}}$ | $\frac{F}{F_{\text{MSY}}} = 1^*$ | Estimated by SPiCT | ICES (2017) |
| Precautionary approach | B_{lim} | Not defined | | |
| | B_{pa} | Not defined | | |
| | F_{lim} | Not defined | | |
| | F_{pa} | Not defined | | |
| Management plan | SSB_{MGT} | Not applicable | | |
| | F_{MGT} | Not applicable | | |

* No reference points are defined for this stock in terms of absolute values. The SPiCT-estimated values of the ratios F/F_{MSY} and B/B_{MSY} are used to estimate stock status relative to the proxy MSY reference points.

Basis of the assessment

Table 5 Plaice in divisions 7.f and 7.g. The basis of the assessment.

| | |
|--------------------------|--|
| ICES stock data category | 3 (ICES, 2016a) |
| Assessment type | Survey trends-based assessment (ICES, 2016b) |
| Input data | Two survey indices (UK (E&W)-BTS-Q3, IGFS-WIBTS-Q4), commercial landings and discards. |
| Discards and bycatch | Discard data are available since 2004 and used to provide advice. |
| Indicators | SPiCT model (ICES, 2017) |
| Other information | Benchmarked in 2011 (ICES, 2011) |
| Working group | Working Group for the Celtic Seas Ecoregion (WGCE) |

Information from stakeholders

There is no additional available information for this stock.

History of the advice, catch, and management

Table 6 Plaice in divisions 7.f and 7.g. History of ICES advice, the agreed TAC, and the official and ICES estimates of landings. Weights are in tonnes. N/A = French landings not available.

| Year | ICES advice | Predicted catch corresp. to advice | Predicted landings corresp. to advice | Agreed TAC | Official landings | ICES landings | ICES discards* |
|------|--|------------------------------------|---------------------------------------|------------|-------------------|---------------|----------------|
| 1987 | TAC not to be restrictive on other species | - | - | 2000 | 1912 | 1901 | - |
| 1988 | TAC not to be restrictive on other species | - | - | 2500 | 2194 | 2116 | - |
| 1989 | TAC not to be restrictive on other species | - | - | 2500 | 2583 | 2151 | - |
| 1990 | F likely to be F(88) | - | ~1900 | 1900 | 2219 | 2082 | - |
| 1991 | F likely to be F(89) | - | ~1700 | 1900 | 1827 | 1501 | - |
| 1992 | No long-term gains in increasing F | - | - | 1500 | 1362 | 1188 | - |
| 1993 | No long-term gains in increasing F | - | - | 1400 | 1303 | 1114 | - |
| 1994 | No long-term gains in increasing F | - | - | 1400 | 982 | 1070 | - |
| 1995 | No increase in F | - | 1290 | 1400 | 956 | 1028 | - |
| 1996 | 20% reduction in F | - | 930 | 1100 | 978 | 952 | - |

| Year | ICES advice | Predicted catch corresp. to advice | Predicted landings corresp. to advice | Agreed TAC | Official landings | ICES landings | ICES discards* |
|------|---|------------------------------------|---------------------------------------|------------|-------------------|---------------|----------------|
| 1997 | 20% reduction in F | - | 1100 | 1100 | 1259 | 1217 | - |
| 1998 | 20% reduction in F | - | 1000 | 1100 | 1149 | 1067 | - |
| 1999 | 35% reduction in F | - | 670 | 905 | 656 | 968 | - |
| 2000 | 30% reduction in F | - | 700 | 800 | 721 | 718 | - |
| 2001 | 40% reduction in F | - | 600 | 760 | 684 | 714 | - |
| 2002 | At least 35% reduction in F | - | 680 | 680 | 618 | 642 | - |
| 2003 | At least 40% reduction in F | - | 660 | 660 | 564 | 594 | - |
| 2004 | F < 0.10 or recovery plan | - | < 210 | 560 | 489 | 510 | 274 |
| 2005 | 70% reduction in F or recovery plan | - | < 250 | 476 | 399 | 386 | 321 |
| 2006 | 50% reduction in F or recovery plan | - | < 400 | 476 | 414 | 404 | 453 |
| 2007 | 50% reduction in F or recovery plan | - | < 380 | 417 | 417 | 410 | 1288 |
| 2008 | 60% reduction in F | - | < 240 | 491 | 375 | 437 | 583 |
| 2009 | 75% reduction in F | - | < 170 | 422 | N/A | 481 | 608 |
| 2010 | 50% reduction in F | - | < 330 | 451 | 442 | 442 | 670 |
| 2011 | See scenarios | - | - | 410 | 420 | 427 | 1107 |
| 2012 | Reduce catches | - | - | 369 | 450 | 450 | 1123 |
| 2013 | Decrease landings by 19% (1.5% increase followed by 20% PA reduction) | - | < 360 | 369 | 412 | 414 | 1274 |
| 2014 | Increase catches by 20% | < 1608 | < 519 | 461 | 411 | 410 | 1158 |
| 2015 | Catches should be no more than recent catches (last 3 years) | < 1500 | < 420 | 461 | 381 | 381 | 778 |
| 2016 | Precautionary approach (same catch value as advised for 2015) | ≤ 1500 | ≤ 420** | 420 | 431 | 443 | 571 |
| 2017 | Precautionary approach (same catch value as advised for 2016) | ≤ 1500 | ≤ 405 | 405 | | | |
| 2018 | Precautionary approach | ≤ 1800 | ≤ 511 | | | | |

* Discards only available from 2004 to 2016.

** Wanted catch.

History of catch and landings

Table 7 Plaice in divisions 7.f and 7.g. Catch distribution by fleet in 2016 as estimated by ICES.

| Catch | Landings | | | Discards | | |
|--------|------------|-------------|------------------|------------|-------------|------------------|
| | Beam trawl | Otter trawl | Other gear types | Beam trawl | Otter trawl | Other gear types |
| 1014 t | 54% | 42% | 3.3% | 49% | 50% | 1.3% |
| | 443 t | | | 571 t | | |

Table 8 Plaice in divisions 7.f and 7.g. History of official landings by country, ICES estimated landings, and discards. Weights are in tonnes.

| Year | Belgium | UK | France | Ireland | The Netherlands | Total reported | Discards | Unallocated | ICES landings | ICES catch |
|------|---------|-----|--------|---------|-----------------|----------------|----------|-------------|---------------|------------|
| 1977 | 214 | 150 | 365 | 28 | | 757 | N/A | 0 | 757 | N/A |
| 1978 | 196 | 152 | 527 | 0 | | 875 | N/A | 0 | 875 | N/A |
| 1979 | 171 | 176 | 467 | 49 | | 863 | N/A | 0 | 863 | N/A |
| 1980 | 372 | 234 | 706 | 61 | | 1373 | N/A | 0 | 1373 | N/A |
| 1981 | 365 | 251 | 697 | 64 | | 1377 | N/A | 0 | 1377 | N/A |
| 1982 | 341 | 196 | 568 | 198 | | 1303 | N/A | 0 | 1303 | N/A |
| 1983 | 314 | 279 | 532 | 48 | | 1173 | N/A | -27 | 1146 | N/A |

| Year | Belgium | UK | France | Ireland | The Netherlands | Total reported | Discards | Unallocated | ICES landings | ICES catch |
|-------|---------|-----|--------|---------|-----------------|----------------|----------|-------------|---------------|------------|
| 1984 | 283 | 366 | 558 | 72 | | 1279 | N/A | -69 | 1210 | N/A |
| 1985 | 357 | 466 | 493 | 91 | | 1407 | N/A | 345 | 1752 | N/A |
| 1986 | 665 | 539 | 878 | 302 | 9 | 2384 | N/A | -693 | 1691 | N/A |
| 1987 | 581 | 496 | 708 | 127 | | 1912 | N/A | -11 | 1901 | N/A |
| 1988 | 617 | 630 | 721 | 226 | | 2194 | N/A | -78 | 2116 | N/A |
| 1989 | 843 | 471 | 1089 | 180 | | 2583 | N/A | -432 | 2151 | N/A |
| 1990 | 794 | 498 | 767 | 160 | | 2219 | N/A | -137 | 2082 | N/A |
| 1991 | 836 | 392 | 444 | 155 | | 1827 | N/A | -326 | 1501 | N/A |
| 1992 | 371 | 307 | 504 | 180 | | 1362 | N/A | -174 | 1188 | N/A |
| 1993 | 542 | 299 | 373 | 89 | | 1303 | N/A | -189 | 1114 | N/A |
| 1994 | 350 | 252 | 298 | 82 | | 982 | N/A | 88 | 1070 | N/A |
| 1995 | 346 | 286 | 254 | 70 | | 956 | N/A | 72 | 1028 | N/A |
| 1996 | 410 | 239 | 246 | 83 | | 978 | N/A | -26 | 952 | N/A |
| 1997 | 594 | 258 | 329 | 78 | | 1259 | N/A | -42 | 1217 | N/A |
| 1998 | 540 | 176 | 298 | 135 | | 1149 | N/A | -82 | 1067 | N/A |
| 1999 | 371 | 170 | N/A | 115 | | N/A | N/A | 312 | 968 | N/A |
| 2000 | 224 | 134 | 287 | 76 | | 721 | N/A | -3 | 718 | N/A |
| 2001 | 241 | 136 | 262 | 45 | | 684 | N/A | 30 | 714 | N/A |
| 2002 | 248 | 105 | 186 | 79 | | 618 | N/A | 24 | 642 | N/A |
| 2003 | 221 | 127 | 165 | 51 | | 564 | N/A | 30 | 594 | N/A |
| 2004 | 212 | 87 | 145 | 45 | | 489 | 274 | 21 | 510 | 784 |
| 2005 | 168 | 55 | 132 | 44 | | 399 | 321 | -13 | 386 | 707 |
| 2006 | 172 | 88 | 106 | 48 | | 414 | 453 | -10 | 404 | 857 |
| 2007 | 194 | 61 | 104 | 58 | | 417 | 1288 | -7 | 410 | 1698 |
| 2008 | 187 | 63 | 62 | 63 | | 375 | 583 | 62 | 437 | 1020 |
| 2009 | 216 | 56 | N/A | 61 | | N/A | 608 | N/A | 481 | 1071 |
| 2010 | 188 | 54 | 136 | 63 | | 442 | 670 | 0 | 442 | 1103 |
| 2011 | 210 | 45 | 98 | 67 | | 420 | 1107 | -7 | 427 | 1528 |
| 2012 | 203 | 44 | 126 | 76 | | 450 | 854 | 0 | 450 | 1298 |
| 2013 | 186 | 40 | 106 | 80 | | 412 | 1274 | -2 | 414 | 1686 |
| 2014 | 181 | 24 | 155 | 50 | | 410 | 1158 | 0 | 410 | 1568 |
| 2015* | 185 | 25 | 111 | 59 | | 381 | 778 | 0 | 381 | 1159 |
| 2016* | 244 | 27 | 108 | 64 | | 431 | 571 | 0 | 443 | 1014 |

N/A = not available.

* Preliminary.

Summary of the assessment

Table 9 Output of the SPiCT model: B/B_{MSY} . High and low refer to 95% CI. Survey indices for UK (E&W)-BTS-Q3 and IGFS-WIBTS-Q4. Weights are in tonnes.

| Year | UK(E&W)-BTS-Q3 (kg/km) | IGFS-WIBTS-Q4 (kg/minute) | Landings | Discards |
|------|------------------------|---------------------------|----------|----------|
| 1989 | | | 2151 | |
| 1990 | | | 2082 | |
| 1991 | | | 1501 | |
| 1992 | | | 1188 | |
| 1993 | | | 1114 | |
| 1994 | | | 1070 | |
| 1995 | | 30.27 | 1028 | |
| 1996 | | 35.19 | 952 | |
| 1997 | | 43.09 | 1217 | |
| 1998 | | 59.8 | 1067 | |
| 1999 | | 57.39 | 968 | |

| | | | | |
|------|--------|------|-----|------|
| 2000 | 44.2 | | 718 | |
| 2001 | 33.82 | | 714 | |
| 2002 | 98.9 | | 642 | |
| 2003 | 90.79 | 9.6 | 594 | |
| 2004 | 49.03 | 7.1 | 510 | 274 |
| 2005 | 44.01 | 8.3 | 386 | 321 |
| 2006 | 57.82 | 8.1 | 404 | 453 |
| 2007 | 69.89 | 14 | 410 | 1288 |
| 2008 | 71.46 | 11 | 437 | 583 |
| 2009 | 117.43 | 54.9 | 481 | 608 |
| 2010 | 80.8 | 47.3 | 442 | 670 |
| 2011 | 118.25 | 56 | 427 | 1107 |
| 2012 | 150.25 | 55 | 450 | 1123 |
| 2013 | 253.9 | 72.3 | 414 | 1274 |
| 2014 | 203.9 | 39.5 | 411 | 1158 |
| 2015 | 371.06 | 64.2 | 381 | 1159 |
| 2016 | 455.62 | 69.9 | 431 | 1002 |

Sources and references

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