

5.3.15 Haddock (*Melanogrammus aeglefinus*) in Division VIIa (Irish Sea)

ICES stock advice

ICES advises that when the precautionary approach is applied, catches in 2016 should be no more than 1072 tonnes¹. If this stock is not under the EU landing obligation in 2016 and discard rates do not change from the average of the last three years (2012–2014), this implies landings of no more than 481 tonnes.

Stock development over time

The assessment is indicative of trends. The spawning-stock biomass (SSB) has been fluctuating due to incoming year classes. The recruitment in 2014 is among the highest in the time-series, resulting in an SSB increase in 2015.

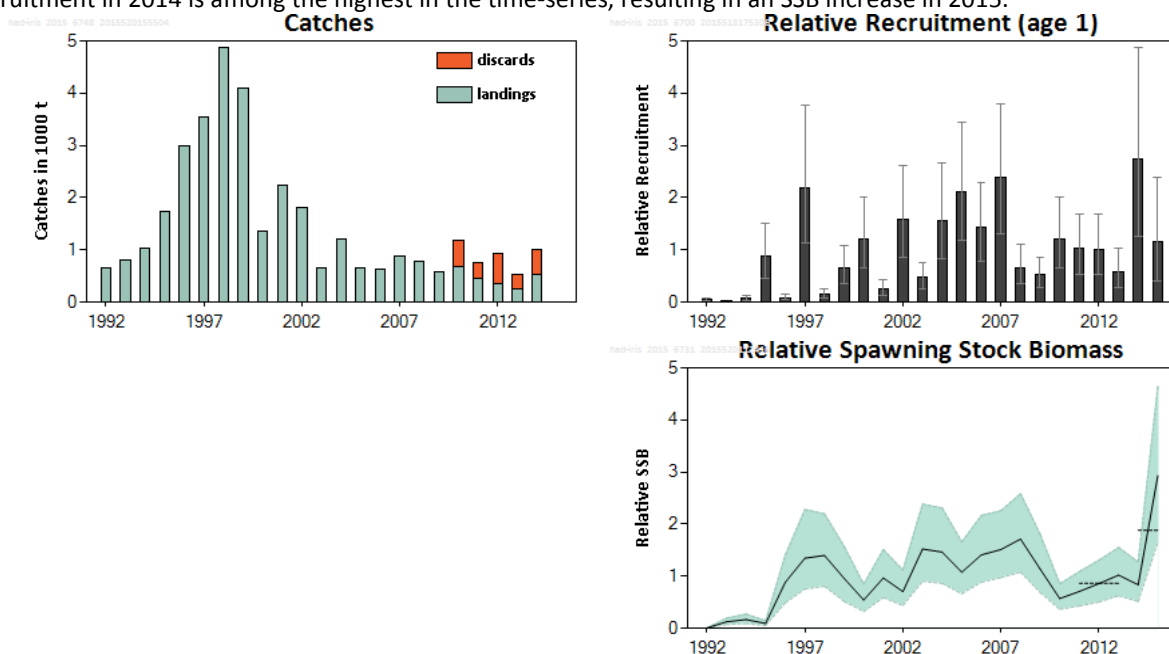


Figure 5.3.15.1 Haddock in Division VIIa. Summary of trends in ICES estimates of landings (tonnes), recruitment, and SSB relative to the mean of the time-series. The confidence intervals correspond to the 5th and 95th percentile. The horizontal lines in the SSB plot indicate the average of the respective year range. Discard estimates prior to 2010 are incomplete and therefore not included in the plot.

¹ The ICES advice is for the Division VIIa haddock stock. Catches taken or reported in rectangles 33E2 and 33E3 are not believed to belong to this stock and are not included in this advice.

Stock and exploitation status

Table 5.3.15.1 Haddock in Division VIIa. State of the stock and fishery, relative to reference points.

| | | Fishing pressure | | | | | Stock size | | | |
|---------------------------|----------------------|------------------|------|------|----------------|----------------------|------------|------|------|----------------|
| | | 2012 | 2013 | 2014 | | | 2013 | 2014 | 2015 | |
| Maximum Sustainable Yield | F_{MSY} | ? | ? | ? | Undefined | MSY | ? | ? | ? | Undefined |
| Precautionary approach | F_{pa} , F_{lim} | ? | ? | ? | Undefined | B_{pa} , B_{lim} | ? | ? | ? | Undefined |
| Management Plan | F_{MGT} | - | - | - | Not applicable | SSB_{MGT} | - | - | - | Not applicable |
| Qualitative evaluation | - | ? | ? | ? | Unknown | - | ↗ | ↘ | ↗ | Increasing |

Catch options

The ICES framework for category 3 stocks was applied (ICES, 2012). The SSB from the assessment was used as the index of stock development. The advice is based on a comparison of the two latest index values (index A) with the three preceding values (index B), multiplied by the recent advised catch.

The index is estimated to have increased by more than 20% and thus the uncertainty cap was applied. The index ratio has increased by more than 50%; therefore, no additional precautionary buffer was applied.

The discarding rate (2012–2014 average) constitutes 55% of the total catch.

Table 5.3.15.2 Haddock in Division VIIa. For stocks in ICES data categories 3–6, one catch option is provided.

| | | |
|--|------------------------------------|-----|
| Index A (2014–2015) | 0.98, relative model estimated SSB | |
| Index B (2011–2013) | 0.45, relative model estimated SSB | |
| Index ratio (A/B) | 2.18 | |
| Uncertainty cap | Applied | 1.2 |
| Recent advised catch | 893 tonnes | |
| Discard rate | 55% | |
| Precautionary buffer | Not applied | - |
| Catch advice* | 1072 tonnes | |
| Wanted catch** corresponding to the catch advice | 481 tonnes | |

* Recent advice × cap.

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

Basis of the advice

Table 5.3.15.3 Haddock in Division VIIa. The basis of the advice.

| | |
|-----------------|---|
| Advice basis | Precautionary approach |
| Management plan | There is no management plan for haddock in this area. |

Quality of the assessment

Due to the uncertainty in the mortality estimates for the stock, the advice is based only on the SSB estimated from the assessment used as indicator of stock size. Recruitment and SSB estimates are relative as survey catchabilities-at-age are not known.

Issues relevant for the advice

The ICES framework for category 3 stocks with uncertainty cap of 20 % is considered insufficiently responsive to the dynamic nature of changes in the stock, i.e. high variability in recruitment.

Landings have been adjusted since 2003 to exclude landings taken from the southern rectangles (33E2 and 33E3) in the Irish Sea as they are not believed to be part of this stock (Table 5.3.15.8). This needs to be considered when setting catch options for Divisions VIIa and VIIb–k haddock.

Reference points

No reference points are defined for this stock.

Basis of the assessment

Table 5.3.15.4 Haddock in Division VIIa. The basis of the assessment.

| | |
|--------------------------|--|
| ICES stock data category | 3.2.0 (ICES, 2015a). |
| Assessment type | SURBA analysis based on survey information, considered indicative of trends only. |
| Input data | One survey index (NIGFS-WIBTS-Q1); annual maturity and growth data from the NIGFS-WIBTS-Q1 survey and samples of commercial landings in quarter 1. |
| Discards and bycatch | Used to provide advice, but not included in the assessment. Discard information available since 2010, average discard proportion 2012–2014 from the main fleets (55% of the landings). |
| Indicators | Surveys: NIGFS-WIBTS-Q4, NIMIK, UK-FSP, IS-APEM. |
| Other information | This stock was benchmarked in 2013 (ICES, 2013); a new benchmark is planned for 2016. |
| Working group | Working Group for the Celtic Seas Ecoregion (WGCSE). |

Information from stakeholders

There is no available information.

History of advice, catch, and management

Table 5.3.15.5 Haddock in Division VIIa. History of ICES advice, the agreed TAC, and ICES estimates of landings, discards, and catches. Weights in thousand tonnes.

| Year | ICES advice | Predicted catch corresp. to advice | Predicted landings corresp. to advice | Agreed TAC* | Official landings | ICES landings | ICES discards | ICES catches |
|------|--|--|--|----------------|----------------------|------------------|------------------|-----------------|
| 1987 | Not dealt with | | | | 1.3 | 1.3 | | |
| 1988 | Not dealt with | | | | 0.7 | 0.7 | | |
| 1989 | Not dealt with | | | | 0.6 | 0.6 | | |
| 1990 | Not dealt with | | | | 0.6 | 0.6 | | |
| 1991 | Not dealt with | | | | 0.6 | 0.6 | | |
| 1992 | Not dealt with | | | | 0.7 | 0.7 | | |
| 1993 | Not dealt with | | | | 0.7 | 0.8 | | |
| 1994 | Not dealt with | | | | 0.7 | 1.0 | | |
| 1995 | Not dealt with | | | 6* | 0.8 | 1.7 | | |
| 1996 | No advice | | | 7* | 1.5 | 3.0 | | |
| 1997 | Means of setting catch limits req'd | | | 14* | 1.9 | 3.5 | | |
| 1998 | Catch limit for Division VIIa | | 3.0 | 20* | 3.0 | 4.9 | | |
| 1999 | No increase in F; catch limit for Division VIIa | | 7.0 | 4.99** | 2.4 | 4.1 | | |
| 2000 | Reduce F below F_{pa} | | < 2.8 | 3.4** | 2.4 | 1.4 | | |
| 2001 | Reduce F below F_{pa} | | < 1.71 | 2.7** | 2.2 | 2.2 | | |
| 2002 | Reduce F below F_{pa} | | < 1.20 | 1.3** | 1.1 | 1.8 | | |
| 2003 | No cod catches | | - | 0.6** | 0.7 | 0.7^ | | |
| 2004 | $F < F_{pa}$ | | < 1.5 | 1.5** | 0.8 | 1.2 | | |
| 2005 | $F < F_{pa}$ | | < 1.37 | 1.37 | 0.5 | 0.7 | | |
| 2006 | Substantial reduction in fishing mortality | - | | 1.275 | 0.7 | 0.6 | | |
| 2007 | Substantial reduction in fishing mortality | - | | 1.179 | 1.1 | 0.9 | | |
| 2008 | No increase in effort | - | | 1.238 | 0.9 | 0.8 | | |
| 2009 | No increase in effort | - | | 1.424 | 0.8 | 0.6 | | |
| 2010 | No increase in effort | - | | 1.424 | 0.9 | 0.7 | 0.5 | 1.2 |
| 2011 | See scenarios | - | | 1.317 | 0.8 | 0.4 | 0.3 | 0.8 |
| 2012 | Reduce catch and improved selectivity | - | | 1.215 | 0.8 | 0.3 | 0.6 | 0.9 |
| 2013 | Decrease catch by 18% | - | < 0.71 | 1.189 | 0.7 | 0.3 | 0.3 | 0.5 |
| 2014 | Increase catch by 17% | 1.120 | < 0.572 | 1.181 | 1.0*** | 0.5*** | 0.4*** | 1.0*** |
| 2015 | Increase catch by 20% | < 0.893 | < 0.425 | 1.181 | | | | |
| 2016 | Precautionary approach (increase catch by 20%) | ≤ 1.072 | ≤ 0.481 | | | | | |

* Precautionary TAC for Subareas VII, VIII, IX, and X up to 1998, and the Division VIIa allocation of precautionary TAC from 1999.

** Single-stock boundary and the exploitation of this stock should be conducted in the context of mixed fisheries, protecting stocks outside safe biological limits.

*** Preliminary.

^ Underestimate due to inadequate sampling.

History of catch and landings

Table 5.3.15.6 Haddock in Division VIIa. Catch distribution by fleet in 2014 as estimated by ICES.

| Catch (2014) | Estimated landings | | | |
|--------------|--------------------|----------------------|---------------------|-----------------------|
| 1006 tonnes | 29% otter trawls | 12% Scottish seines | 58% mid-water trawl | 1% other gear-types |
| | 518 tonnes | | | |
| | Estimated discards | | | |
| | 98% otter trawls | < 1% Scottish seines | 1% mid-water trawl | < 1% other gear types |
| | 488 tonnes | | | |

Table 5.3.15.7 Haddock in Division VIIa. History of landings; the official landings for each country participating in the fishery and ICES landings estimates.

| Country | 1984 | 1985 | 1986 | 1987 | 1988 | 1989 | 1990 | 1991 | 1992 | 1993 |
|-----------------------|------|------|------|-------|------|------|------|------|------|------|
| Belgium | 3 | 4 | 5 | 10 | 12 | 4 | 4 | 1 | 8 | 18 |
| France | 38 | 31 | 39 | 50 | 47 | n/a | n/a | n/a | 73 | 41 |
| Ireland | 199 | 341 | 275 | 797 | 363 | 215 | 80 | 254 | 251 | 252 |
| Netherlands | - | - | - | - | - | - | - | - | - | - |
| UK (England & Wales)* | 29 | 28 | 22 | 41 | 74 | 252 | 177 | 204 | 244 | 260 |
| UK (Isle of Man) | 2 | 5 | 4 | 3 | 3 | 3 | 5 | 14 | 13 | 19 |
| UK (N. Ireland)* | 38 | 215 | 358 | 230 | 196 | ... | ... | ... | ... | ... |
| UK (Scotland) | 78 | 104 | 23 | 156 | 52 | 86 | 316 | 143 | 114 | 140 |
| Total | 387 | 728 | 726 | 1 287 | 747 | 560 | 582 | 616 | 703 | 730 |
| ICES landings | 387 | 728 | 726 | 1 287 | 747 | 560 | 582 | 616 | 656 | 813 |

| Country | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 |
|-----------------------|------|------|------|------|------|------|------|------|------|------|
| Belgium | 22 | 32 | 34 | 55 | 104 | 53 | 22 | 68 | 44 | 20 |
| France | 22 | 58 | 105 | 74 | 86 | n/a | 49 | 184 | 72 | 146 |
| Ireland | 246 | 320 | 798 | 1005 | 1699 | 759 | 1238 | 652 | 401 | 229 |
| Netherlands | - | - | 1 | 14 | 10 | 5 | 2 | - | - | - |
| UK (England & Wales)* | 301 | 294 | 463 | 717 | 1023 | 1479 | 1061 | 1238 | 551 | 248 |
| UK (Isle of Man) | 24 | 27 | 38 | 9 | 13 | 7 | 19 | 1 | - | - |
| UK (N. Ireland)* | | | | | | | | | | |
| UK (Scotland) | 66 | 110 | 14 | 51 | 80 | 67 | 56 | 86 | 47 | 31 |
| Total | 681 | 841 | 1453 | 1925 | 3015 | 2370 | 2447 | 2229 | 1115 | 674 |
| ICES landings | 1042 | 1736 | 2981 | 3547 | 4874 | 4095 | 1357 | 2246 | 1817 | n/a |

| Country | 2004 | 2005 | 2006 | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 | 2013 |
|-----------------------|------|------|------|-------|------|------|------|------|------|------|
| Belgium | 15 | 22 | 23 | 30 | 15 | 7 | 9 | 16 | 13 | 6 |
| France | 20 | 36 | 20 | 11 | 6 | 3 | 2 | 8 | 3 | 1 |
| Ireland | 296 | 139 | 184 | 477 | 319 | 388 | 333 | 434 | 561 | 492 |
| Netherlands | - | - | - | - | - | - | - | - | - | - |
| UK (England & Wales)* | 421 | 344 | 419 | 559 | 521 | 446 | 593 | 355 | | - |
| UK (Isle of Man) | - | - | - | - | 1 | 1 | - | - | - | <.1 |
| UK (N. Ireland)* | | | | | | | | | | |
| UK (Scotland) | 9 | 6 | 9 | 1 | 17 | 1 | 2 | - | | - |
| United Kingdom | | | | | | | | | 236* | 155 |
| Total | 761 | 547 | 655 | 1 078 | 879 | 846 | 939 | 813 | 813* | 656 |
| ICES landings | 1217 | 666 | 633 | 886 | 786 | 581 | 679 | 446 | 343 | 254 |

| Country | 2014 |
|-----------------------|-------|
| Belgium | 7** |
| France | 0.1 |
| Ireland | 534** |
| Netherlands | -** |
| UK (England & Wales)* | ** |
| UK (Isle of Man) | < 1** |
| UK (N. Ireland)* | ** |
| UK (Scotland) | ** |
| United Kingdom | 412** |
| Total | 953** |
| ICES landings | 518** |

* Since 1989 Northern Ireland is included with England and Wales.

** Preliminary.

n/a = not available.

Table 5.3.15.8 Haddock in Division VIIa. ICES landings, discards, catch, % discards by weight, and landings taken or reported in rectangles 33E2 and 33E3.

| Year | ICES landings | ICES discards** | ICES catch | % Discard | Landings taken or reported in rectangles 33E2 and 33E3 |
|-------------------|---------------|-----------------|------------|-----------|--|
| 1995 | 1736 | 780 | 2516 | 31% | 16 |
| 1996 | 2981 | 709 | 3690 | 19% | 33 |
| 1997 | 3547 | 895 | 4442 | 20% | 36 |
| 1998 | 4874 | 1015 | 5889 | 17% | 28 |
| 1999 | 4095 | 634 | 4729 | 13% | 34 |
| 2000 | 1357 | 802 | 2159 | 37% | 11 |
| 2001 | 2246 | 269 | 2515 | 11% | 74 |
| 2002 | 1817 | 387 | 2204 | 18% | 82 |
| 2003* | 659 | - | - | - | 64 |
| 2004 | 1217 | 392 | 1609 | 24% | 53 |
| 2005 | 666 | 551 | 1217 | 45% | 35 |
| 2006 | 633 | 306 | 939 | 33% | 26 |
| 2007 | 886 | 722 | 1608 | 45% | 222 |
| 2008 | 786 | 643 | 1429 | 45% | 194 |
| 2009 | 581 | 579 | 1160 | 50% | 285 |
| 2010 | 679 | 508 | 1187 | 43% | 267 |
| 2011 | 446 | 307 | 753 | 41% | 374 |
| 2012 | 343 | 599 | 942 | 64% | 473 |
| 2013 | 254 | 283 | 537 | 53% | 410 |
| 2014 | 518 | 488 | 1006 | 49% | 444 |
| Average 2004–2014 | 637 | 489 | 1126 | 43% | 253 |

* Underestimate or not available due to inadequate sampling.

** Discard estimates prior to 2010 are preliminary.

Summary of the assessment

Table 5.3.15.9 Haddock in Division VIIa. Stock assessment results relative to the mean of the time-series (“high” and “low” values correspond to the respective 95th and 5th percentiles, also in relation to the time-series).

| Year | Relative Recruitment Age 1 | Relative Recruitment High | Relative recruitment Low | Relative SSB | Relative SSB High | Relative SSB Low |
|------|----------------------------|---------------------------|--------------------------|--------------|-------------------|------------------|
| 1992 | 0.043 | 0.071 | 0.023 | 0.008 | 0.012 | 0.005 |
| 1993 | 0.007 | 0.011 | 0.004 | 0.128 | 0.199 | 0.075 |
| 1994 | 0.068 | 0.117 | 0.035 | 0.17 | 0.276 | 0.094 |
| 1995 | 0.877 | 1.513 | 0.449 | 0.096 | 0.148 | 0.057 |
| 1996 | 0.089 | 0.142 | 0.049 | 0.886 | 1.409 | 0.492 |
| 1997 | 2.181 | 3.762 | 1.128 | 1.347 | 2.281 | 0.758 |
| 1998 | 0.159 | 0.267 | 0.083 | 1.4 | 2.199 | 0.808 |
| 1999 | 0.652 | 1.071 | 0.356 | 0.96 | 1.576 | 0.519 |
| 2000 | 1.198 | 2.005 | 0.648 | 0.544 | 0.85 | 0.325 |
| 2001 | 0.255 | 0.421 | 0.135 | 0.968 | 1.515 | 0.592 |
| 2002 | 1.594 | 2.619 | 0.868 | 0.707 | 1.121 | 0.439 |
| 2003 | 0.469 | 0.752 | 0.249 | 1.525 | 2.385 | 0.905 |
| 2004 | 1.55 | 2.658 | 0.83 | 1.466 | 2.312 | 0.864 |
| 2005 | 2.12 | 3.437 | 1.186 | 1.078 | 1.66 | 0.665 |
| 2006 | 1.438 | 2.286 | 0.774 | 1.412 | 2.168 | 0.887 |
| 2007 | 2.383 | 3.803 | 1.302 | 1.515 | 2.258 | 0.976 |
| 2008 | 0.658 | 1.11 | 0.348 | 1.715 | 2.588 | 1.081 |
| 2009 | 0.529 | 0.869 | 0.277 | 1.139 | 1.807 | 0.69 |
| 2010 | 1.213 | 2.022 | 0.653 | 0.573 | 0.858 | 0.367 |
| 2011 | 1.024 | 1.682 | 0.542 | 0.709 | 1.09 | 0.431 |
| 2012 | 0.997 | 1.69 | 0.535 | 0.86 | 1.311 | 0.507 |
| 2013 | 0.592 | 1.032 | 0.289 | 1.023 | 1.554 | 0.627 |
| 2014 | 2.736 | 4.864 | 1.249 | 0.837 | 1.277 | 0.516 |
| 2015 | 1.167 | 2.395 | 0.416 | 2.933 | 4.641 | 1.65 |

Sources and references

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